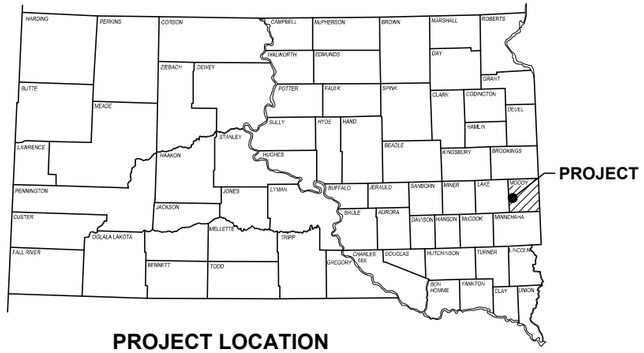

PROJECT LOCATION

COLMAN, SOUTH DAKOTA
PLANS FOR PROPOSED

FOR BIDDING PURPOSES ONLY

SD HWY 34 - UTILITY IMPROVEMENTS

SANITARY SEWER AND WATER
21005951( ), MOODY COUNTY, PCN X06M

Water Distribution	Wastewater Distribution
SRF # C462144-05	SRF # C461144-03
ARPA 2022G-ARP-407	ARPA 2022-ARP-406

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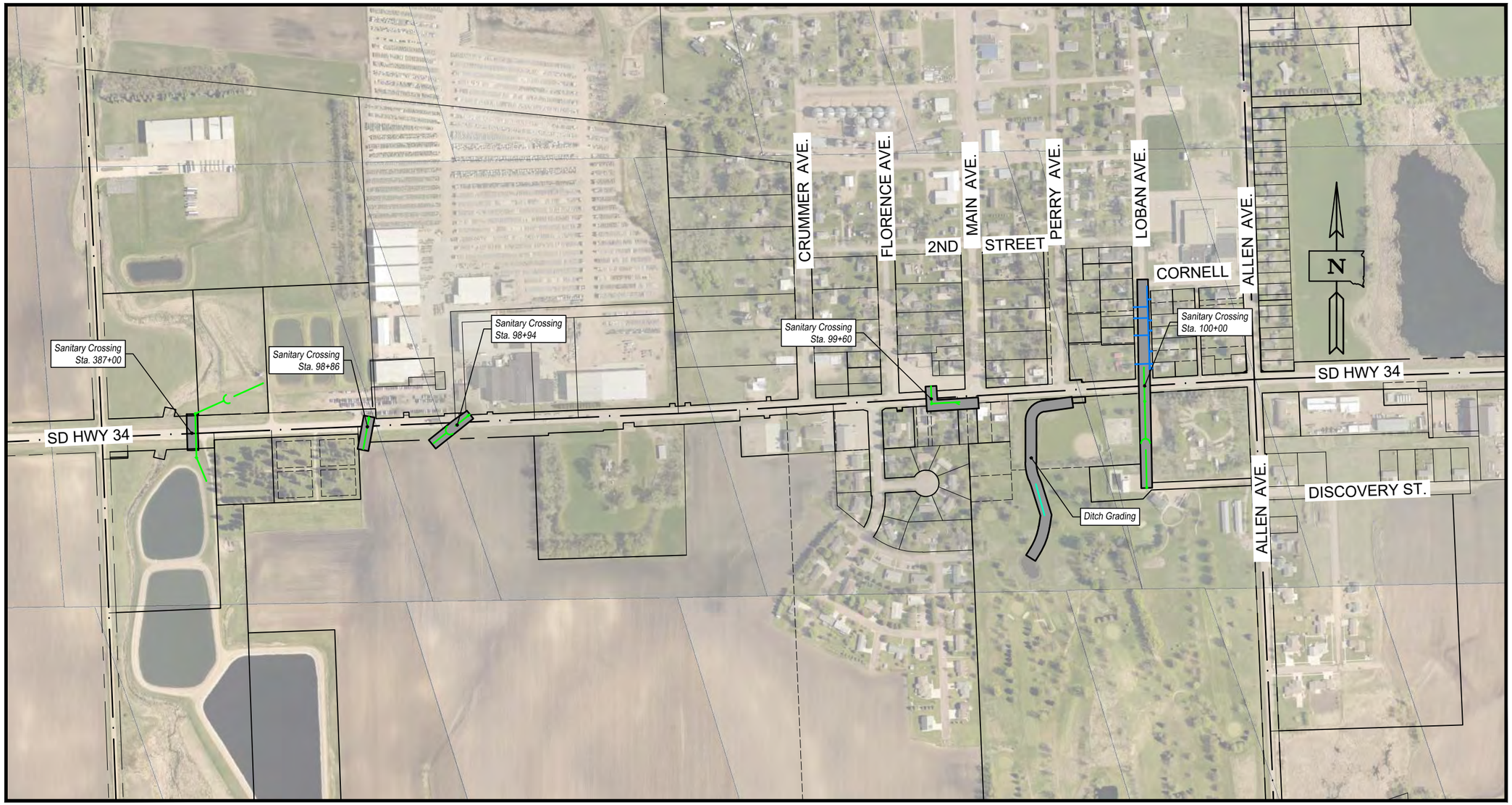
Sheet No. 29 - 32	Storm Water Pollution Prevention Plan (SWPPP)
Sheet No. 33	Horizontal and Vertical Control Data
Sheet No. 34 - 41	Plan and Profile
Sheet No. 42	Typical Grading Section



STORM WATER PERMIT

Major Stream:	Bachelor Creek
Area Disturbed:	1.20 Acres
Project Area:	1.50 Acres
Latitude:	N 43.9792°
Longitude:	W -96.8167°

CITY OFFICIALS

Mayor	Mike Preheim
Finance Officer	Maria Groos
Council Member	Mike Uhing
Council Member	Mitch Clark
Council Member	Cody Fritz
Council Member	Troy Smallfield
Council Member	Roger Broghammer
Utility Manager	Grant Groos

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

IMEG

November 20, 2024

Plotted on: 9/4/24 9:58:09 AM Plotted by: Jo-Hannah Hamann
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FOR BIDDING PURPOSES ONLY

BID SCHEDULE

Line Item No.	Bid Item No.	Item Description	Quantity	Unit
1	009E0010	Mobilization	Lump Sum	LS
2	110E0460	Remove Manhole	6	Each
3	110E0530	Remove Storm Sewer Pipe	220	Ft
4	110E1010	Remove Asphalt Concrete Pavement	68.2	SqYd
5	110E1130	Remove Concrete Driveway Pavement	44.3	SqYd
6	110E1140	Remove Concrete Sidewalk	21.8	SqYd
7	110E1640	Remove Granular Material	150	CuYd
8	110E1910	Remove Fire Hydrant	1	Each
9	110E7150	Remove Sign for Reset	2	Each
10	110E7500	Remove Pipe for Reset	98	Ft
11	110E7501	Remove Pipe End Section for Reset	4	Each
12	120E0010	Unclassified Excavation	1,200	CuYd
13	230E0010	Placing Topsoil	500	CuYd
14	230E0020	Contractor Furnished Topsoil	40	CuYd
15	250E0010	Incidental Work	Lump Sum	LS
16	260E1010	Base Course	34.0	Ton
17	260E3010	Gravel Surfacing	300.0	Ton
18	320E1200	Asphalt Concrete Composite	16.4	Ton
19	380E3000	4" Concrete Driveway Pavement	44.3	SqYd
20	450E2017	24" RCP Flared End, Install	4	Each
21	450E3020	24" RCP Arch, Install	98	Ft
22	450E4759	18" CMP 16 Gauge, Furnish	74	Ft
23	450E4760	18" CMP 16, Install	74	Ft
24	450E5409	24" CMP Safety End with Bars, Furnish	2	Each
25	450E5411	24" CMP Safety End, Install	2	Each
26	450E7029	24" High Density Polyethylene Pipe, Furninsh	148	Ft
27	450E7030	24" High Density Polyethylene Pipe, Install	148	Ft
28	451E0606	6" PVC Water Main	388	Ft
29	451E1006	4" PVC Sewer Pipe	119	Ft
30	451E1006	6" PVC Sewer Pipe	68	Ft
31	451E1008	8" PVC Sewer Pipe	899	Ft
32	451E1012	12" PVC Sewer Pipe	209	Ft
33	451E1275	1" Water Service	9	Each
34	451E1506	6" Sanitary Sewer Service Cleanout	1	Each
35	451E1550	Sanitary Sewer Video Inspection	1,044	Ft
36	451E2012	8"x4" Pipe Wye	3	Each
37	451E2013	8"x6" Pipe Wye	1	Each
38	451E2014	8"x8" Pipe Wye	1	Each
39	451E2207	6"x6" Pipe Tee	1	Each
40	451E2802	1" Corporation Stop with Tapping Saddle	9	Each
41	451E2902	1" Curb Stop with Box	9	Each
42	451E4206	6" Gate Valve with Box	1	Each
43	451E4580	Standard Fire Hydrant	1	Each
44	451E4589	Install Fire Hydrant	1	Each
45	451E4926	Water Main Bedding Material	388	Ft
46	451E4944	6" Sewer Pipe Bedding Material	68	Ft
47	451E4945	8" Sewer Pipe Bedding Material	899	Ft
48	451E4947	12" Sewer Pipe Bedding Material	209	Ft
49	451E5020	Trench Dewatering	600	Ft
50	451E5116	Bore and Jack 16" Pipe	125	FT
51	451E6107	Temporary Water Main Bypass	2	Each
52	462E0250	Cellular Grout	3.0	CuYd
53	632E3500	Reset Sign	2	Each
54	634E0700	Traffic Control Movable Concrete Barrier	12	Each
55	634E0705	Remove and Reset Traffic Control Movable Concrete Barrier	84	Each
56	634E0750	Temporary Concrete Barrier End Protection	2	Each
57	634E0755	Remove and Reset Temporary Concrete Barrier End Protection	14	Each
58	651E0140	4" Reinforced Concrete Sidewalk	9	SqYd
59	671E1131	48" Manhole 6' to 8' Deep	2	Each
60	671E1132	48" Manhole 8' to 10' Deep	3	Each
61	671E1133	48" Manhole 10' to 12' Deep	1	Each
62	671E1134	48" Manhole 12' to 14' Deep	1	Each
63	730E0206	Type D Permanent Seed Mixture	293	Lb
64	731E0100	Fertilizing	96	Lb
65	732E0250	Fiber Mulching	1,500	Lb
66	734E0010	Erosion Control	Lump Sum	LS
67	734E0102	Type 2 Erosion Control Blanket	3,439	SqYd
68	734E0133	Type 3 Turf Reinforcement Mat	100	SqYd
69	734E0154	12" Diameter Erosion Control Wattle	340	Ft
70	734E0165	Remove and Reset Erosion Control Wattle	120	Ft
71	734E0604	High Flow Silt Fence	70	Ft
72	734E0610	Mucking Silt Fence	20	CuYd
73	734E0620	Repair Silt Fence	70	Ft
74	900E0022	Remove and Reset Mailbox	3	Each
75	900E6837	Remove Existing Plant and Landscape Materials	Lump Sum	LS

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

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#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

ESTIMATE OF QUANTITIES

PROJ. NO.	21005951.00
DRAWN BY:	WDL
CHECKED BY:	SLW
DATE:	AUGUST 2024

SHEET 2 OF 43

GENERAL NOTES

SCOPE OF WORK

This project consists of installation of sanitary sewer crossings coordinated with SDDOT PROJECT NH 0034(193)403 S.D. HIGHWAY 34, MOODY COUNTY, PCN 0609. Installation of sanitary sewer main, sanitary sewer services, water main, water services and ditch grading for the City of Colman, SD. Work will include installation of new infrastructure and connecting to the existing distribution and drainage systems.

TIME PROVISIONS

Work for the project will be in junction with SDDOT PROJECT NH-CR 0034(193)402 S.D. HIGHWAY 34, MOODY COUNTY, SD.

SPECIFICATIONS TO BE USED

The most current edition of the Office of the State Engineer General Conditions, City of Colman (IMEG) 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 (IMEG), 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 Supplemental Standard Specifications can also be downloaded from… 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 http://www.sddot.com/.

ELECTRONIC DESIGN FILES

Electronic design files WILL NOT be available to the Contractor. The contractor shall rely on the contract documents to prepare their bid.

CONSTRUCTION LIMITS

The construction limits will be within the right-of-way, easement areas, and land owned by the State of South Dakota and the City of Colman. Material storage and vehicle and equipment traffic will 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 will 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 will be carefully preserved by the Contractor. In no case will 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 will 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 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 will be carefully preserved by the Contractor and will not be disturbed or moved from the exact position and elevation as set by the Engineer. No excavated material will be placed over or against said stakes and, except where necessary to remove the stakes as the work progresses, stakes will be carefully preserved in the original position and elevation until the work has been accepted. Stakes which must be removed as the work progresses will 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 re-staked by the Engineer and may result in a price adjustment to the contract.

SUBMITTALS

The following documents shall be submitted by the Contractor:

Submittals	Date Submitted
Construction Schedule(s)	
Materials Certifications	
Shop Drawings	
Sanitary Sewer Bypass Pumping Plan	
Water Bypass Pumping Plan	
Dewatering Plan	
Record Drawings	
Disinfection Reports	
Density/Compaction Test Reports	
Pay Application(s)	

CONSTRUCTION SCHEDULE

The Contractor will prepare a construction schedule for approval to the Engineer that will ensure the completion of the project within the time frame specified. The Contractor will refer to Articles 2.03 - 2.05 for the Standard General Conditions and Articles 2.03A of the Supplementary General Conditions of the Contract Documents for information regarding Progress Schedules to be submitted.

Significant items of work include but are not limited to: erosion control, removals, grading, the installation of water main, sanitary sewer, storm sewer, and roadway surfacing. When applicable, the schedule will include submission dates for shop drawings and dates for manufacturing and installation of materials, supplies, equipment, and testing for various parts of the work.

The Contractor will ensure full coordination with the SD DOT project and Contractors working within the Hwy 34 right of way.

All work to be performed under this contract will be substantially completed by referring to SDDOT Schedule.

SEQUENCE OF OPERATIONS

The Sequence of Operation will be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. An alternate sequence of operations will be submitted for review a minimum of one week prior to the potential implementation.

Phase 1

Construct five (5) sanitary sewer replacement crossings along Hwy 34 between 469th Avenue to Loban Avenue. Construct water main replacement beginning at the intersection of Loban Avenue and Cornell Street and include all water services from Cornell Street continuing to SD HWY 34. Remove and reset storm sewer on Loban Avenue and construct all approach pipes disturbed by water main installation.

Phase 2

Construct drainage ditch south of SD HWY 34 continuing to Sunrise Ridge Golf Course Pond, installation of storm sewer pipe at fairway crossing.

All work schedules must coordinate with the SD DOT Hwy 34 Contractor.

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

GENERAL NOTES AND TABLES (1 OF 10)

PROJ. NO.	21005951.00
DRAWN BY:	WDL
CHECKED BY:	SLW
DATE:	AUGUST 2024

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COORDINATION MEETINGS

The Contractor will conduct coordination meetings with the subcontractors, utilities, the Engineer, and the public. These meetings will be held periodically at a location on or near the project. The Contractor shall determine the time and location and as approved by the Engineer.

Landowners, business owners, and the public will be invited to the first half of the meeting. The Contractor will give a 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 coordination meetings will be incidental to the project.

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 will not be responsible for the Contractor's failure to follow all applicable rules and regulations.

PORTABLE TOILET FACILITIES

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

DRAINAGE

Drainage is the Contractor's responsibility. The Contractor will be aware of existing drainage conditions and facilities and will provide for drainage during all phases of construction. The Contractor will not divert or otherwise alter the pre-existing drainage patterns without the explicit permission of the Engineer. Damage caused by improper temporary drainage facilities will be repaired at the Contractor's expense and to the satisfaction of the Engineer.

ACCEPTANCE TESTING

The Contractor 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 will be as outlined in the SD DOT Project Manual. Testing frequency shall be at the discretion of the Engineer.

The Owner 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 Owner also reserves the right to assess a price deduction in lieu of removal and replacement at the Owner's sole discretion. The method of assessing a price deduction for work not meeting specifications shall be at the sole discretion of the Owner.

UTILITIES

The Contractor will contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It will be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor will contact the Engineer to determine modifications that will be necessary to avoid utility impacts.

The Contactor will be aware that the existing utilities shown in the plans were surveyed prior to the design of this project and might have been relocated or replaced by a new utility facility prior to construction of this project, might be relocated or replaced by a new utility facility during the construction of this project, or might not require adjustment and may remain in its current location. The Contractor will contact each utility owner and confirm the status of all existing and new utility facilities. The utility contact information is provided elsewhere in the (SDDOT) plans or bidding documents.

Subsurface utility explorations were done for this project (within the SDDOT project limits only) The findings can be found in the SUBSURFACE UTILITY LOCATIONS table elsewhere in the (SDDOT) plans. The table is provided to aid the Contractor during construction. All information in the table is approximate and will be verified by the Contractor prior to construction in those areas.

UTILITIES (CON'T)

The following utility companies are known to have facilities on the Logan Avenue (City of Colman portion of the project:

Big Sioux Community Water System
23343 479th Avenue
Egan, SD, 57042
605-997-2098
bscws@bigsiouxcws.com

Midcontinent Communications
3901 N. Louis Avenue
Sioux Falls, SD 57107
605-229-1775

Century Link aka Lumen
Chris Adamson
125 S. Dakota Avenue
Sioux Falls, SD 57104
605-977-2835

SDN Communications
John Mingo
2900 W. 10th Street
Sioux Falls, SD 57104
605-978-7119

City of Colman
Grant Groos
112 Main Avenue
Colman, SD 57017
605-534-3611

Vast Broadband aka Bluepeak
5100 S Broadband Lane
Sioux Falls, SD 57108
605-965-9588

East River Electric Power Cooperative
Wade Bialas
211 South Harth Avenue
Madison, SD 57042
605-256-8249

Valley FiberCom
209 Kasan Avenue
Volga, SD 57071
866-453-4237

The Contractor will cooperate with and coordinate his efforts to work with the utility companies and their contractors. Each bidder will be responsible for determining the effects or utility work on the project work scope and schedule and will 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.

CONTRACTOR INSTALLED UTILITIES

The Contractor will be responsible for locating City utilities installed with the project until final acceptance is granted. All costs associated with locating City utilities installed with the project until final acceptance will be incidental to the project.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

GENERAL NOTES AND TABLES (2 OF 10)

PROJ. NO.	21005951.00
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PROTECTION OF EXISTING WATER MAIN, SANITARY SEWER, AND STORM SEWER SYSTEMS

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

Existing storm sewer inlets and pipes within the construction limits will be protected from the entrance of stone, dirt, gravel, asphalt, concrete or any other debris during construction.

DEWATERING

It is anticipated that groundwater may be encountered during excavation. Dewatering may be needed to perform the contract work. There is no separate bid item for dewatering and all costs associated will be incidental to the various related bid items.

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

SERVICE WORK ON PRIVATE PROPERTY

The project will require the Contractor to complete sanitary sewer service work & water service work within the yards of residents. The Contractor will be required to select equipment, use practical methods such as plywood ground cover, trench excavation back castings, or other necessary means to minimize the amount of disruption and restoration to the property owner's lawn. In all cases, the Contractor will avoid and take necessary precautions to prohibit damaging any trees. If it is determined that through the carelessness or the Contractor, they have created or caused unnecessary damage or restoration to the project, they will be responsible for the restoration or replacement of trees. In most cases, the Contractor should minimize his work area to a 10' width when installing the sanitary sewer and water services to the main.

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 will be incidental to the various contract items.

REMOVALS

REMOVAL OF EXISTING ASPHALT PAVEMENT

The asphalt concrete pavement will be disposed of by the Contractor at a site approved by the Engineer. Payment for asphalt mat removal is included in the contract unit price per square yard for "Remove Asphalt Concrete Pavement". Payment will be at the contract unit price per square yard, regardless of variations in thickness.

When asphalt is laid over concrete pavement, removal of the asphalt surfacing will be incidental to the unit price for "Remove Concrete Driveway Pavement".

REMOVAL OF EXISTING CONCRETE PAVEMENT

The concrete pavement will be disposed of by the Contractor at a site approved by the Engineer. Payment for removal of miscellaneous concrete will be included in the contract unit price per square yard for "Remove Concrete Driveway Pavement". Payment shall be at the contract unit price per square yard, regardless of variations in thickness.

REMOVE EXISTING PLANT AND LANDSCAPE MATERIALS

The Engineer will establish right-of-way lines and construction limit lines prior to the start of clearing operations. The Engineer, at the start of the project, will mark the project limits.

The lump sum payment for "Remove Existing Plant and Landscape Materials" will be full compensation for all removal and disposal of plants, mulch, timbers, trees less than six (6) inches in diameter, stumps, roots, and other vegetation designated for removal and mowing, as required. No trees will be removed until all services lines have been located in the work area.

Organic material will not be used to fill in trenches or embankment. The Contractor will dispose of all trees, brush, stumps, roots, and other remains in a legal manner. Burying or burning of debris on or adjacent to the project will be prohibited. Tree branches will be saw cut.

Erosion control measures will be installed and functioning prior to clearing and excavation. See erosion control plans and notes.

SAW EXISTING ASPHALT PAVEMENT

Asphalt sawing will be performed at all locations shown on the plans or as directed by the Engineer during construction. The pavement will be sawed full depth. Sawing will not be paid for if the Contractor utilizes a means or method of removing asphalt pavement that does not require saw cutting (e.g. milling). The Contractor will exercise particular care to ensure that the adjacent surface is left intact and undamaged when removing the sawed-out portion. Sawing of asphalt will be paid for once at each location. Additional sawing required to form neat edges prior to paving will be incidental to sawing bid item.

Where new surfacing is placed adjacent to existing asphalt concrete, a joint will be sawed in the existing bituminous material prior to placing new materials.

Saw Existing Asphalt will be incidental to the bid item "Remove Asphalt Concrete Pavement".

SAW EXISTING CONCRETE PAVEMENT

Concrete sawing will be performed at all locations shown on the plans or as directed by the Engineer during construction. The pavement and curb and gutter will be sawed at full depth. The Contractor will exercise particular care to ensure that the adjacent surface is left intact and undamaged when removing the sawed-out portion. Sawing of PCC Pavement and curb and gutter will be paid for once at each location. Additional sawing required to form neat edges prior to paving will be incidental to sawing bid item.

Where new Portland Cement Concrete (PCC) pavement and curb and gutter is to be placed adjacent to existing PCC pavement and curb and gutter, the existing PCC pavement and curb and gutter will be sawed full depth to a true line with a vertical face.

Saw Existing PCC Pavement will be incidental to the bid item "Remove Concrete Driveway Pavement".

REMOVAL OF SEWER MANHOLE

The removal of sewer manholes will be measured as a unit for each manhole removed. The removal of a sewer manhole will be paid for at the contract unit price for each sewer manhole removed along with any influent and effluent pipe sections that must be removed to complete the removal. Payment for removal of sewer manhole will be full compensation for removal and disposal of the manhole, frame and covers if specified, boots and all appurtenances necessary for the proper removal of the manhole.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

GENERAL NOTES AND TABLES (3 OF 10)

PROJ. NO.	21005951.00
DRAWN BY:	WDL
CHECKED BY:	SLW
DATE:	AUGUST 2024

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GRADING

UNCLASSIFIED EXCAVATION

Excavate the existing subgrade to provide for the required depth of aggregate base course and asphalt surfacing. Earthwork shall be performed as shown on appropriate cross sections.

Due to the difficulty in making field measurements on this project and to expedite final payment, the computed quantity of Unclassified Excavation will be the basis of payment for this item. No field measurements will be made for payments except when changes from the plan shown construction limits are ordered by the Engineer.

All excavations made for underground utilities are incidental to the installation of that utility. All spoil material removed for pipe installation is the property of the Contractor and is to be removed from the project by the Contractor. All spoil material and costs for removing it are incidental to pipe installation costs.

Total Unclassified Excavation 1,200 CuYd

Water for compaction of subgrade will be provided by the Contractor and used to maintain soil at or near optimum moisture content to obtain required density. Compaction of subgrade will be governed by the specified density method. Compaction of embankment will be no less than 95% of Standard proctor density. Separate payment will not be made for water used for compaction of subgrade.

PLACING TOPSOIL

Prior to starting construction operations, the topsoil within the disturbed areas will be removed from the construction limits and will be paid for under the bid item “Unclassified Excavation”.

Following completion of grading operations, topsoil will be spread evenly over the disturbed areas to a depth of 6 inches.

The basis of payment for “Placing Topsoil” will be the plan quantity. No separate measurement will be made unless changes from the plan shown construction limits are ordered by the Engineer.

Topsoil is to be salvaged and replaced. A minimum of 6 inches is desired. Topsoil will only be imported onto job site after approval of Engineer.

STREET EXCAVATION/STREET RECONSTRUCTION

This project consists of various degrees of street reconstruction. Some areas of the project will be within the limits of the existing street surfacing width, other areas will be a total reconstruction. The typical construction will consist of excavating existing materials to subgrade depth. The existing asphalt surfacing will be removed during the water and sewer utility work. Clay excavation will remain on-site until all backfilling has been completed. There will be no payment for material hauled back onsite to complete backfilling to subgrade level. Work in specific areas is further described on the plan sheets and cross sections.

Following the utility work, the Contractor will excavate and shape, and compact subgrade as required to provide a stable uniform grade for placement of new gravel base course as shown on the details of the typical street sections.

STREET EXCAVATION/STREET RECONSTRUCTION (CON’T)

Anticipating the streets will be opened to local traffic prior to placing asphalt, the street will be finish shaped by equalizing the gravel at centerline, redistribute, water, and compact, as necessary.

The Contractor can close a maximum of three blocks for construction during the excavation and placement of aggregate base course. Street surfacing will be fully completed before construction proceeds into the next area of work on any part of the project.

SANITARY SEWER

SANITARY SEWER - GENERAL

1. Due to the work area and unique nature of this project, a visual inspection of each repair location will be made prior to the submission of any bid proposal. Additional compensation will not be provided for surface features not shown on the plans. It will be the Contractors responsibility to determine their own considerations for challenges with removing and installing the pipe and manholes along with the repairs shown given the surrounding conditions.
2. The Contractor will take care not to allow debris into the sanitary sewer during any repairs. Any debris impeding flow will be removed immediately at the Contractors expense and the Contractor will be liable for any sanitary sewer overflows caused by Contractor negligence. The Contractor will be responsible for all damages to adjacent properties and structures, which may result during the repair of the existing sanitary sewer infrastructures.
3. Generally, once the Contractor starts work on a repair, it will be completed (except for final surface restoration) the same day. The Engineer shall approve work that will require multiple days to complete.
4. Invert elevations for existing manholes to be replaced are shown on the Drawings. Shop drawings will be submitted to the Engineer for all manholes to be constructed on this project prior to installation. The Engineer may review and comment on manhole designs as necessary. Exact manhole locations may be adjusted at the time of construction to the satisfaction of the Engineer.
5. Excavation limits were laid out assuming the use of a trench box. Request for the use of additional quantities and or compensation to complete the work per OSHA standards without the use of a trench box will not be considered.
6. The Contractor will be aware that all quantities are estimates to be used for bidding purposes and the final quantities may vary. The Contractor will be paid for only the work completed and materials used. At no time should the planned quantities for each repair be exceeded without the written permission from the Engineer.

SANITARY SEWER MANHOLES

Manholes will be of the size and type as shown on the detail sheet. Exact manhole locations may be adjusted at the time of construction to the satisfaction of the Engineer.

Any couplings required will be incidental for the corresponding size of coupling size used to the cost of the “48” Precast Sanitary Sewer Manhole” bid items.

Payment at the contract unit price per each for sanitary sewer manholes will include providing all manhole parts, pipe, bedding, insulation, joint seals, labor, and all appurtenances necessary for the proper installation of the sanitary sewer manhole.

All frames and covers will be installed in accordance to details immediately after manhole installation. Manhole frame and covers will be the types shown on the plans. Frames and covers will be included in the contract unit price for the manholes.

Any infiltration, sediment or construction debris that enters the manholes will be removed at the Contractor's expense.

SANITARY SEWER PIPE BEDDING

The Contractor will place bedding material according to the bedding detail. The material will be shovel-sliced or hand tamped under and around the haunches of the pipe to ensure adequate support. Payment for sanitary sewer bedding material will be at the contract unit price per foot for the pipe size installed.

RECONNECT SEWER SERVICE

Approximate locations of the existing sanitary sewer services are shown on the plans. Actual locations will be determined by the Contractor during construction. Detailed records do not exist for the sewer service locations for the houses in the project area. Some of the wye and tap service connections will require the Contractor to perform a dye test to determine which buildings are connected to which sanitary sewer service lines. Some of the wyes and/or taps may be "inactive" or may have never been used. It will be the responsibility of the Contractor to determine, as the sewer installation progresses, which services are active and need to be reconnected. City personnel or Engineer will be available, when requested by the Contractor to assist with working with property owners, dye testing, and other methods necessary to investigate which services need to be reconnected. Locating the sewer service and dye testing the service will be included in the unit price bid per each for "Reconnect to Existing Sewer Service".

Reconnection of existing service lines will terminate into a properly sized wye fitting installed into the main sewer line. Abandoned service lines will be removed as much as possible and then plugged with a solvent welded plug/cap or other methods approved by Engineer.

The contact unit price per each for the various sizes of wyes, bends, service piping, and repair couplings will be used for payment for the furnishing and installation of each service connection.

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#	REVISIONS

SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

GENERAL NOTES AND TABLES (4 OF 10)

PROJ. NO.	21005951.00
DRAWN BY:	WDL
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SHEET 6 OF 43

SANITARY SEWER TEMPORARY BYPASS

Where existing flow cannot be maintained, interruption of service will be minimized such that no discharge of sanitary sewage to any natural waterway, storm sewer, open trench, ground surface, streets, or gutters occurs, nor will such interruption create a public health hazard from sewage backups or overflows. Bypass operations must be approved by the City before starting. Contractor will provide a detailed written plan, including a drawing, of how the bypass operation will be performed, for approval, before or at the preconstruction meeting and at least two weeks prior to the operation.

The bypass system will be of sufficient capacity to handle peak flow of the pipe. The Contractor will provide 24-hr monitoring or backup pumping equipment as needed.

Contractor will provide the necessary labor and supervision to set up and operate the bypassing system. The Contractor will coordinate with the City if pumping is required between the hours of 10:00 PM and 6:00 AM. Pumping equipment will be manned continuously. During bypass pumping operations, the Contractor will provide the necessary labor to continually monitor the operation and always ensure uninterrupted and sufficient pumping.

Bypass pumping equipment will include pumps, conduits, engines, and related equipment necessary to divert the flow of sewage around the section in which the work is to be performed. In addition, the Contractor will maintain at the same location and in operable condition, duplicate equipment to be used in case there is equipment failure. In this event, the Contractor will promptly repair or replace the failed equipment to the satisfaction of the Engineer.

The new sewer line may be used by the Contractor to carry the sanitary flows after the new pipe has passed inspection and testing. Any "temporary" connections to the new sewer are subject to City approval.

STORM SEWER

STORM SEWER - GENERAL

Reinforced concrete pipe will be bell and spigot. The pipe sections will be adjoined such that the ends are fully entered, and the inner surfaces are reasonably flush and even.

All reinforced concrete pipe will be the Class stated in the respective bid item for areas of normal trench construction.

All lift holes will be satisfactorily sealed with a concrete plug. The form material used for the plug will be removed prior to installing the plug. No separate payment will be made for the concrete plugs and the costs will be included with the bide item for respective size of pipe used.

Contractor will furnish and install all bedding material. Bedding material (Class I or Class II) for reinforced concrete storm sewer pipe will be considered incidental to the installation of the storm sewer pipe. No separate measurement or payment will be made for standard bedding material.

Watertight joints are required where reinforced concrete pipe, drop inlets, manholes, and junction boxes where storm sewers run parallel to and within 10 feet horizontally from existing or proposed water mains.

Watertight joints are required where reinforced concrete pipes, drop inlets, manholes, or junction boxes cross water mains and are separated at a distance of 18 inches or less, above or below, the water main.

If watertight joints are required, then the watertight joints will extend 10 feet beyond the water main. This measurement will be from the sealed concrete joint to the outer most surface of the water main.

Watertight joint seals will conform to the following requirements:

1. **Reinforced Concrete Pipe (Circular)**: Gasketed pipe will conform to the requirements of ASTM C443 and the gasket will be in conformance with Section 990 of the Specifications. Non-gasketed concrete pipe shall be sealed with a mastic joint seal conforming to the requirements of ASTM C990 and encased with a minimum 2’ wide by 6” thick M6 concrete collar reinforced with 6x6 W2.9 x W2.9 wire mesh.

Gaskets and seals (mastic, waterstop, and seal wraps) will be installed in accordance with the Manufacturer’s recommendations.

The cost for furnishing and installing all gaskets, mastic joint seal, water stop seal, seal wrap, concrete collars, and for plugging the lift holes will be incidental to the contract unit price per foot for the corresponding pipe bid item.

The Contractor will notify the Owner or Engineer upon completion of the storm drainage work. Inspection of the storm drainage work will be completed by Engineer who will identify all deficiencies. Deficiencies will be corrected prior to paving.

CORRUGATED METAL PIPE

Corrugated metal pipes will have 2 ⅔-inch x ½-inch corrugations for 42-inch and smaller round pipe and 48-inch and smaller arch pipe unless otherwise stated in the plans. Corrugated metal pipes will have 3-inch x 1-inch or 5-inch x 1-inch corrugations for 48-inch and larger round pipe and 54-inch and larger arch pipe unless otherwise stated in the plans.

POLYETHYLENE PIPE CULVERTS

Corrugated polyethylene pipe culverts and high-density polyethylene pipe culverts will be installed according to manufacturer recommendations.

High Density Polyethylene Pipe: High Density Polyethylene pipe, couplings, and fittings will conform to the requirements of AASHTO M 294.

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

GENERAL NOTES AND TABLES (5 OF 10)

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DATE:	AUGUST 2024

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WATER

WATER MAIN AND APPURTENANCES

All valve operation will be done by the Contractor but verified and coordinated with the Owner.

Size of water services is mostly 3/4-inch but varies throughout the project. Use of 1" service connections to tie onto the existing water main is anticipated. Deviations require Engineer's approval.

All ductile iron pipe and fittings will be wrapped with polyethylene tube material to protect the pipe from any future corrosion. The poly material will 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 will 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.

Coat and line all buried metallic (steel, ductile iron, and cast iron) valves, fittings, flexible couplings, incidental metallic piping, glands, and hydrants internally and externally with liquid epoxy or fusion bonded epoxy coating in accordance with AWWA C116 or AWWA C550. Internal coatings will be NSF approved for potable water service. Valve boxes and hydrant interiors do not require fusion bonded epoxy coating.

All fittings will be installed with a three-part wax tape coating system: primer, wax-tape, and outer wrap which conform to AWWA C217 as referenced in Section 13900 of the technical specifications. All labor and materials to install wax tape per the requirements will be incidental to the respective appurtenance bid item.

EXISTING SERVICES

Some service records are not complete; therefore, the Contractor will need to field verify which existing water services are active for each existing residence or business along the project. Field verification may require working with the City to obtain permission to enter buildings to run water. The Contractor will notify the Engineer if inactive services are found or if active services are found that are not shown on the plans. Connection of new services to existing services will be incidental.

PROPOSED WATER SERVICES

There are nine (9) active water services scheduled for Loban Avenue from Hwy 34 to Cornell Street. Four (4) of the service lines cross Loban Avenue to the west side of the street. These four service lines (240 LF) shall be installed by directional boring methods to preserve the integrity of the asphalt pavement. The directional drilling shall be incidental to the cost of bid item for 1" Water Service per each. Connection of new services to existing services will be incidental.

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, will be collected from the new main. The samples must be submitted to a health laboratory acceptable to the SDDANR. 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 will not reach a stream, river, or water way if the chlorine residual exceeds 0.05 mg/L.

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

WATER MAIN PARALLELING OR CROSSING SEWERS

Installation of water mains parallel to sanitary or storm sewer lines will be completed in a manner such that the water mains will 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 will 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.

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 will 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 will 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 will be adequately sealed with a rubber boot. PVC casing pipe will meet the requirements of restrained joint PVC pipe material in Section 300 Supplemental Standard specifications for Water Main Construction. Payment for crossings will be incidental to the contract unit prices for the water main items.

TRACER WIRE

Tracer wire will be installed on all water main. Tracer wire will be installed on services if they are not perpendicular to the water main. Installation will be in accordance with the Manufacturer's recommendations. If the Contractor wants to substitute a product not shown on the list, they must have Engineer's approval.

The locator will be able to locate wire at low frequency (512Hz).

Approved Products

Manufacturer: Copperhead Industries

Manufacturer: Coleman Cable

Manufacturer: Kris-Tech Wire

DISCHARGE OF CHLORINATED WATER

All water mains will be disinfected in accordance with AWWA C651-14. Before being placed in service, the entire water system will be chlorinated. Chlorine may be applied by any of the following methods: liquid chlorine gas-water mixture, direct chlorine gas feed or a calcium hypochlorite and water mixture.

Water from the distribution system that is drained into work areas or open trenches must be discharged without impact to the environment. The following is a prioritized list for the disposition of chlorinated or heavily chlorinated water from the distribution system:

1. Water from the distribution system will be pumped to the City's sanitary sewer system. Contractor is responsible for verifying hydraulic loading on the existing sanitary sewer system during dewatering of the water distribution system to ensure that sewer backups do not occur.
2. Water from the distribution system will be pumped to areas where water can be stored and discharged through infiltration. Overland flow is not allowed. If discharge is on private property, the Contractor will secure permission prior to discharge.
3. Water from the distribution system may be pumped into vactor trucks or septic tank trucks and hauled to a facility permitted by (DANR) to accept such discharge.

The above items will be considered incidental to the work necessary to complete tie-ins to existing and operational waterlines.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

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COLMAN, SOUTH DAKOTA

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TEMPORARY WATER MAIN

This work will be paid under the bid item “Temporary Water Main” and/or “Temporary Water Service”. Payment will include layout, pipe, appurtenances, and any additional items and labor necessary to complete the work.

Temporary water usage will be metered by the City. The Contractor will coordinate the installation and removal of a temporary water meter with the City. City crews will install and remove the meter. If meters are damaged, the Contractor will be responsible for all costs for repairs or for the full replacement cost if the meter cannot be repaired. The Contractor is responsible for all set, daily, and removal fees associated with the temporary water meters. The Contractor is not responsible for water use fees.

The Contractor, with the approval of the inspector on site, will coordinate with all property owners when a disruption in water service is expected. Contractor will be expected to complete water service reconnections to the temporary water main either during the day (9 AM until 4 PM during the work week) or at other suitable times that meet the needs and requirements of the property owners.

The Contractor must provide a 24-hour contact person with adequate parts and equipment to make necessary repairs to temporary water service in a timely manner.

All temporary water piping and fittings will be NSF approved for potable water use. The Contractor is responsible for verifying all connections are watertight and functioning properly. Any damage by connection, equipment or part failures are the responsibility of the Contractor. Any damage to private property during the installation, usage and removal of the temporary water is the responsibility of the Contractor.

Temporary water main will be minimum 2-inch diameter. No additional payment will be made for temporary water main larger than 2-inch diameter. Temporary water main and its appurtenances will meet the requirements of the City of Sioux Falls Supplemental Standard Specifications. Recorded pressure tests in this area indicate static pressures of approximately 75 psi. Temporary water main is required to be tested for pressure and coliform bacteria prior to any service connections. The temporary water main will be tested at static main pressure. The temporary watermain will be filled, disinfected, flushed, and sampled. A single passing test will be required prior to the temporary water main being put into service.

Temporary watermain will be installed as shown on sheet D-10 unless changes are approved by the Engineer prior to the installation of the temporary watermain.

Gravel Ramps will be constructed over the temporary water main where necessary and at all driveway approaches and will be paid for separately as “Aggregate Base Course”. The Contractor will be responsible for maintaining sidewalk ADA accessibility. Maintaining ADA accessibility will be incidental to the temporary water main bid item(s).

Chlorination, testing, pipe, necessary isolation valves, bends, fittings, hydrants, all necessary appurtenances, gravel ramp construction, maintenance and removal, and all other materials and labor necessary to construct the temporary water main and flush each individual service before connection to the City water system will be considered incidental to bid item for temporary water main.

TEMPORARY WATER MAIN (CON’T)

Submittals:

Contractor is to submit temporary water main layout, sequence of operations, schedule, material and fitting specifications to the project Engineer four days prior to the project preconstruction meeting. Any changes to the proposed temporary water service layout will be approved by the project Engineer prior to the preconstruction submittal.

Approved Products: CertainTeed – Certa-Lok Yelomine or pre-bid Engineer approved equal.

WATER MAIN INSULATION – (Not included in the Project Plans)

The Contractor will furnish and install insulation board to insulate water main as indicated on the plans and details or as directed by the Engineer. All insulation installed will be 4-inch thick and 48-inch wide unless directed otherwise by the Engineer.

Insulation will be an extruded polystyrene board and meet the requirements of ASTM C578, Type IV. The minimum R-value will be 5.0 as determined by ASTM C518. The minimum compressive strength will be 25 psi as determined by ASTM D1621. The maximum water absorption will be 0.1 percent by volume as determined by ASTM C272. The maximum water vapor permeability shall be 1.1 perm as determined by ASTM E96.

Water main insulation will be STYROFOAM™ Square Edge by the Dow Chemical Company, STYROFOAM™ Brand Scoreboard by the Dow Chemical Company, or pre-bid Engineer-approved equal.

Compensation for furnishing and installing insulation will include all materials, equipment, and labor necessary to excavate, place insulation, and backfill and compact trench as shown on the detail in the plans. Payment for furnishing and installing Insulation Board for water main will be based on the unit bid price under the bid item "Water Main Insulation".

CONNECTION OF WATER SERVICES

There are several water services that will be connected from the new water mains to a new curb stop & box normally located in public R.O.W.

The Contractor will be accessing private property in most cases to complete the water service connection. He will limit his traffic and coordinate the work with the homeowner to minimize disturbance of the property.

The Contractor will provide necessary fittings, couplings & other related appurtenances to complete the tie-in to the new curb stop. No separate payment for those items will be made. The cost for necessary appurtenances to complete the tie-in will be included in the cost for the water service line, and/or curb stop & box bid items.

Water service may not be interrupted or shut off from residences or businesses for more than a six (6) hour period. Those six hours typically being 9 a.m. to 3 p.m. The Contractor will provide at least one day advance notice to the City of Colman and the Engineer of their plans to disrupt water service at any location so that businesses and/or homeowners can be advised of the planned interruption in service.

WATER MAIN PRESSURE TESTING

The Contractor will determine the length and location of the water main to be pressure tested. Any additional water mains needed for pressure testing not included on the plans will be provided by the Contractor at no additional expense to the Owner.

The Contractor will provide necessary materials and connections not included in the plans to provide for pressure testing each segment of the water line. The cost for testing and flushing water main, will be included in unit price for water main. Water will be provided by Owner.

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

GENERAL NOTES AND TABLES (7 OF 10)

PROJ. NO.	21005951.00
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DATE:	AUGUST 2024

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SURFACING

AGGREGATE BASE COURSE

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

Aggregate Base Course will be compacted with pneumatic rollers and will continue on each lift of the base course until the surface is firm and unyielding and attains a density of 97% of the maximum dry density as determined by SD 104, Method 4 and SD 105 or SD 114.

The Aggregate Base Course was calculated assuming 8 inches to be used in all paved areas. Use of additional Aggregate Base Course will be approved by the Engineer.

Payment will be made on a per ton basis. Any base course delivered to the site without a scale ticket will not be measured for payment.

ASPHALT CONCRETE FOR PATCHING

Asphalt patching will be provided by the Contractor for all repairs unless otherwise specified.

“Asphalt Concrete for Patching” will be installed in locations shown in the plans or as directed by the Engineer. The Contractor will match the depth of the patching to the existing pavement at that location. The minimum depth of all asphalt concrete patching shall be 4 inches.

Compaction of asphalt concrete will be by the specified density method. The minimum density requirement is 92% (rice method) of specified density or to the satisfaction of the Engineer.

Asphalt concrete composite will conform to the SDDOT specifications for Class E, Asphalt Concrete. The top lift will conform to Class E-2 for the mineral aggregate specifications. All lower lift(s) shall conform to Class E-1 for the mineral aggregate specifications unless otherwise noted or by direction of the Engineer. The surface course will not exceed 2” in thickness when laid and compacted.

The asphalt cement used in the mixture will be Performance Graded AASHTO Designation PG 58-28 and will conform to the current SDDOT Specifications. Certificates of compliance will be required on the asphalt concrete composite mix and the performance graded asphalt binder.

The Engineer may accept the mixture on the basis of the certificate of compliance and visual inspection or may test the mixture for specification compliance.

Asphalt Concrete Composite will include MC-70 Asphalt for Prime placed at the rate of 0.30 gallons per square yard. The Asphalt Prime will be applied to the Base Course for the full width of the bottom layer of Asphalt Concrete Composite.

Asphalt for tack SS-1h or CSS-1h will be applied prior to each lift of Asphalt Concrete Composite. Asphalt for tack will be applied at a rate of 0.09 gallons per square yard on existing pavement or milled asphalt concrete surfaces and at a rate of 0.06 gallons per square yard on primed base course or new asphalt concrete pavement. The Asphalt for tack will be applied for the full width of the bottom layer of Asphalt Concrete Composite.

MISCELLANEOUS CONCRETE

Concrete for inlets, curb and gutter, valley gutters, sidewalk, driveway approaches, and outlet structures will be Class M-6 as detailed in the SDDOT Standards Specifications Section 462.

Concrete will be cured using a curing compound in accordance with Section 821.1 of the SDDOT Standard Specification for Roads and Bridges. A ½” preformed expansion material will be placed between the sidewalk and other concrete items (back of curb, driveways, existing sidewalks, etc.) except at curb ramps, where the expansion material will be placed on the back side of the landing area. Payment for this item will be incidental and included in the unit price for the respective bid item.

TRAFFIC CONTROL

GENERAL MAINTENANCE OF TRAFFIC

1. Installation of traffic control will conform to the Manual on Uniform Traffic Control Devices (MUTCD) 2009 Edition unless otherwise modified in plans.
2. The Contractor will notify the Engineer 48 hours in advance of all substantial traffic control changes.
3. Removing, relocating, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. The Contractor will notify the City 72 hours in advance to schedule signs to be removed. Any delineations and signs damaged or lost will be replaced by the Contractor at no cost to the City.
4. Storage of vehicles and equipment will be outside of the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.
5. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators, and existing signs resulting from such indiscriminate use will be repaired and/or restored by the Contractor to the satisfaction of the Engineer, at no expense to the City.
6. All breakaway sign supports will comply with FHWA NCHRP 350 crash-worthy requirements. The Contractor will provide post installation details as the preconstruction meeting for all steel post breakaway sign support assemblies.
7. Installation, maintenance, relocation, and removal of Type I and II barricades, cones, vertical panels, drums, barricades warning lights, watchmen, tubular markers, and flags will be included in the lump sum price bid for "Traffic Control Miscellaneous".

GENERAL MAINTENANCE OF TRAFFIC (CON’T)

8. The Contractor will designate an employee or subcontractor whose responsibility is the maintenance of traffic, 24 hours a day and 7 days a week. The designated person must have training and experience in the field of construction traffic control and be knowledgeable about the MUTCD. The designated employee or subcontractor must be approved by the Engineer and the name, phone number, and location of the person(s) responsible will be provided to the City, Engineer, and County, and SDDOT. The cost of the traffic control person will be included in the lump sum price bid for "Traffic Control Miscellaneous".
9. The Contractor or designated traffic control subcontractor will ensure the adequacy, legibility, and reflectivity of each sign and device. Sign washing will be considered incidental to Traffic Control and required as directed by the Engineer.
10. The Contractor will provide temporary access routes for residences and businesses located in the construction area unless otherwise noted in the plans. Adequate passage and ramping shall be provided. The Contractor will keep businesses and residents informed of construction sequences in areas which have a direct effect on their access. Temporary routes and drives will be considered incidental to all items of the project.

TRAFFIC CONTROL, CONSTRUCTION SIGNING & GENERAL MAINTENANCE OF TRAFFIC

The Contractor will be responsible for protection of the public and the work regarding safety during construction. Barricades, signs, cones, flashing lights, etc., will be used, as necessary. The Contractor will make necessary provisions for access by residents along the closed streets.

Safety precautions, including construction safety and construction signing, removing, relocating, covering, salvaging, and resetting of construction traffic control devices, will be the responsibility of the Contractor. Any permanent signs damaged or lost will be replaced by the Contractor at no cost to the City.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

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SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

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EROSION & SEDIMENT CONTROL MEASURES

TRAFFIC CONTROL MOVEABLE CONCRETE BARRIERS

Concrete barriers and related appurtenances will be provided by the Contractor.

Barriers to be adjusted or moved will be disconnected from adjacent barriers to minimize damage to connecting pins.

Concrete barrier sections will be placed as depicted in the plans to comply with clear zone requirements and as required by the Engineer. The barriers will be pinned and bolted together as directed by the Engineer.

After the initial placement, the concrete barriers may need to be adjusted. Adjustment of the barriers, where they do not need to be loaded on a truck for transport, will be incidental to the contract unit price per each for Traffic Control Moveable Concrete Barrier. All costs associated with removing, loading, unloading, and resetting of the barriers at a new site, will be incidental to the contract unit price per each for Remove and Reset Traffic Control Moveable Concrete Barrier. No additional payment will be made for barriers that are not immediately reset at a new location on the project and stored on-site until they are either reset on the project or removed from the project as indicated in these plans.

TEMPORARY CONCRETE BARRIER END PROTECTION

Crash attenuators meeting the requirements of NCHRP 350 or MASH TL-3 will be furnished and installed by the Contractor. Attachment of the attenuators to the concrete barriers will be by approved methods.

All costs associated with furnishing, transporting, initial setup, connecting, maintaining, and removing the crash attenuators will be incidental to the contract unit price per each for Temporary Concrete Barrier End Protection.

All costs associated with moving and resetting crash attenuators to accommodate traffic flows after initial set-up will be paid for at the contract unit price per each for Remove & Reset Temporary Concrete Barrier End Protection. All costs associated with removing from initial placement and resetting at anew location will be incidental to the contract unit price per each. No additional payment will be made for crash attenuators that are not immediately reset or removed from the project as determined by the Engineer. No additional payment will be made for minor adjustments.

The Contractor will have replacement hardware available so that in the event the crash attenuator is hit and made unusable, the crash attenuator can be made functional within 24 hours. The cost of replacement will be incidental to the contract unit price per each for Temporary Concrete Barrier End Protection if no repairs are necessary.

SILT FENCE

Maintenance Requirements: Areas of damage including water damage, fabric tears, and failures will be repaired. When accumulated sediment reaches one half of the height of the fence, new silt fence will be installed. When site conditions require that silt fence be cleaned and mucked out, rather than replaced, care must be taken to ensure the existing silt fence is not damaged.

Mucking silt fence is the removal of muck trapped by the silt fence as described above. Removed muck should be spread out and stabilized within the projects limits or at an alternate location approved by the Engineer.

Repair Silt Fence will consist of repairing silt fence to meet installation requirements specified in the plans.

Measurement: Silt Fence will be measured to the nearest foot.

CONCRETE WASHOUT AREA

Construction Requirements: A concrete washout area will be installed on the project site at a location approved by the Engineer if concrete trucks deliver concrete to the site. No washout area is necessary if all concrete trucks are going to wash out at approved site constructed by the concrete supplier.

Maintenance Requirements: The concrete washout area must be kept in a condition to maintain the capacity for all wasted concrete and washout water on the project.

Measurement: Concrete washout area will only be measured if the corresponding bid item has been included in the plans and a concrete washout area has been constructed on the project site.

FERTILIZING

A commercial fertilizer with a minimum guaranteed analysis of 13-13-13, 14-46-0, 11-52-0, or an approved alternate fertilizer sold for use as a lawn starter fertilizer will be applied to all areas designated for permanent seeding. The application rate of fertilizer shall be 100 lbs per acre.

TYPE D PERMANENT SEED MIXTURE

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways, sidewalks, areas normally under water, and temporary easements under cultivation.

Type D Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/1000 SqFt)
Kentucky Bluegrass	Avalanche, Appalachian, Wildhorse, Blue Bonnet, Action	1.4
Perennial Ryegrass	Turf Type Varieties	1.4
Creeping Red Fescue	Epic, Boreal, Chantilly	1.4
Chewings Fescue	Ambrose, K2, Zodiac, Shadow III	1.4
Alkali Grass	Fults, Fults II, Quill, Salty	1.4
	Total:	7

FIBER MULCHING

Fiber mulching will be applied in a separate operation following permanent seeding.

An additional 2% by weight of tackifier will be added to the fiber mulch product selected form the approved product list. If the product selected had guar gum tackifier included, then the additional 2% of tackifier will be guar gum. If the product selected had synthetic tackifier included, then the additional 2% of tackifier will be synthetic.

Fiber mulch will be applied at the rate of 2,000 pounds per acre.

The Contractor will allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

All costs for the additional tackifier added to the fiber mulch including labor, equipment, and materials will be incidental to the contract unit price per pound for "Fiber Mulching".

The fiber mulch provided will be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

http://sddot.com/business/certification/products/Default.aspx

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

IMEG

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

GENERAL NOTES AND TABLES (9 OF 10)

PROJ. NO.	21005951.00
DRAWN BY:	WDL
CHECKED BY:	SLW
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SEDIMENT CONTROL WATTLE

Construction Requirements: The Contractor shall provide certification that the sediment control wattles do not contain noxious weed seeds.

Maintenance: Sediment should be removed on a routine basis when the level of sedimentation reaches one-half the height of the exposed wattle. Damaged areas should be repaired immediately until the vegetation is established and growing through the material.

Measurement: Sediment control wattles will be measured to the nearest foot.

Payment: Sediment control wattles will be paid for at the contract unit price per lineal foot. Payment for all materials, labor and equipment necessary to install, maintain, repair, and remove the sediment control wattles will be included in the contract unit price per lineal foot.

Materials: The erosion control wattle will be 12" diameter with biodegradable netting and selected from the Manufacturers listed below, or approved equal:

Manufacturer	Product Name
American Excelsior Company Arlington, TX Phone: 1-800-777-7645 www.amerexcel.com	Curlex Sediment Log
Western Excelsior Corporation Mancos, CO Phone: 1-800-833-8573 www.westernexcelsior.com	Aspen Fiber Logs and Straw Logs
R.H. Dyck Inc. Winters, CA Phone: 1-530-662-7700 www.earth-savers.com	Earth-saver Rice Straw Wattles

EROSION CONTROL BLANKET

Erosion Control Blanket will be installed as determined in the field by the Engineer. The Contractor will install erosion control blanket according to the Manufacturer's installation instructions.

Material: The erosion control blanket will be a Type 2 erosion control blanket according to SDDOT specifications.

Measurement: Measurement for the erosion control blanket will be per square yard of the area covered.

Payment: Payment for the erosion control blanket will be at the contract unit price per square yard of the area covered. Payment will be full compensation for all materials, labor, equipment, and incidentals required to furnish and install the erosion control blanket and will be included in the bid item "Erosion Control Blanket".

Maintenance: Damaged areas should be repaired immediately until the vegetation is established and growing through the material.

TURF REINFORCEMENT MAT

Turf Reinforcement Mat will be installed at locations shown in the plans, and at locations determined by the Engineer during construction. The Contractor will use a turf reinforcement mat from the approved products list. The approved product list for turf reinforcement mat may be viewed at the following internet site:

http://apps.sd.gov/HC60ApprovedProducts/main.aspx

BORE AND JACK CASING PIPE

Bore and Jack will be installed at the location shown in the plans. Furnish and install steel pipe casing by bore and jack methods.

Install carrier pipe within the steel casing pipe. The steel casing pipe shall include casing chocks, neoprene rubber liner, and other necessary items will be subsidiary to the carrier pipe installation within the casing. Refer to plan notes for measurement and payment for the carrier pipe.

Provide shop drawings for the casing pipe, casing chocks and rubber liner.

Submit the description of proposed jacking equipment and methods for Engineer's review.

Pipe boring and jacking will be measured by the linear foot of casing pipe installed by boring and jacking methods.

Payment will be at the contract unit price per linear foot of steel casing pipe of the respective size furnished and installed in the manner specified.

The bore and jack pits shown in the plans are to identify general site conditions. The Contractor will determine the exact boring pit dimensions, depth, and trench slope to fit the criteria of their equipment and safety program.

CELLULAR GROUT

The Contractor will submit a proposed grouting procedure to the Engineer at least two weeks prior to beginning this work.

Bulkheads will be constructed at each end of the pipe. Each bulkhead will be constructed to withstand the pressure of the grouting operation. The bulkhead will extend from the end of the existing pipe inward a minimum depth of 18 inches and will be free from leaks.

Pressure grouting will be done to ensure all the voids are filled including all breaks or holes in and around the existing pipe.

The grout will be a cellular grout (grout with pre-generated foam) with a minimum 28-day compressive strength of 100 pounds per square inch. If water is not present within the pipe a low-density grout with a minimum of 30 pounds per cubic foot wet density may be used. When it is not possible to dewater the existing pipe, a high-density grout with a minimum of 70 pounds per cubic foot will be used which may include approved sand. The foaming agent used will meet the requirements of ASTM C869 when tested in accordance with ASTM C796.

Both of the cellular grout mix designs will be submitted to the SDDOT Concrete Engineer for approval prior to use. The mix design submittal will include the base cement slurry mix per cubic yard, expansion factor from the foaming agent, and the cellular grout wet density (pounds per cubic foot).

The Contractor will install a bypass valve adjacent to the location where the pressure grouting hose is attached for obtaining samples to be checked for wet density. The wet density of the cellular grout will be checked by the SDDOT Engineer.

Contractor to verify the proper minimum wet density before the cellular grout filling operations begin and at a minimum once every two hours during production. The SDDOT will document the results of the density checks.

Cellular grout will be wasted until the cellular grout meets the minimum wet density required; however, if 0.5 cubic yards or more of base cement slurry is wasted trying to meet density requirements, then that quantity will not be measured for payment.

If grout holes are utilized, cylindrical wooden plugs or other approved plugs will be inserted to plug holes until the grout has set. After the plugs are removed the holes will be filled with concrete.

The quantity of cellular grout was estimated based on volume of the existing pipe and voids along the existing pipe.

CELLULAR GROUT (CON'T)

The quantity of base cement slurry ordered will be approved by the Engineer. The quantity of base cement slurry needed will be calculated to the nearest tenth of a cubic yard using the approved mix design, expansion factor of the foaming agent, and estimated amount of cellular grout. The quantity for payment to the nearest tenth of a cubic yard of "Cellular Grout" is a calculated quantity based on the amount of base cement slurry used on the project to the nearest tenth of a cubic yard, expansion factor of the foaming agent, and approved mix design.

All costs for furnishing and installing the cellular grout including bulkhead construction, inlet bevel construction, and incidentals necessary to satisfactorily complete the work will be included in the contract unit price per cubic yard for "Cellular Grout".

The estimated quantity of Cellular Grout has been calculated to be 3.0 cubic yards.

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

GENERAL NOTES AND TABLES (10 OF 10)

PROJ. NO.	21005951.00
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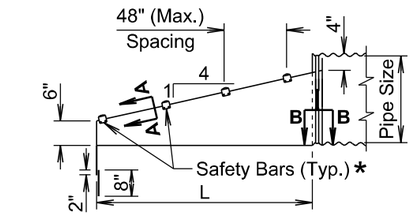
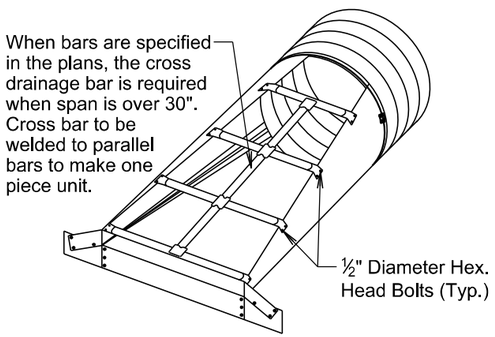
CHECKED BY:	SLW
DATE:	AUGUST 2024

SHEET **12** OF 43

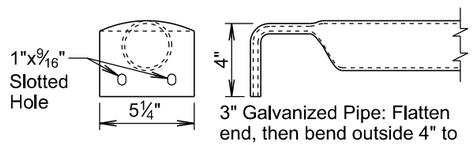


* Number of bars required will vary depending on the length of the end section.

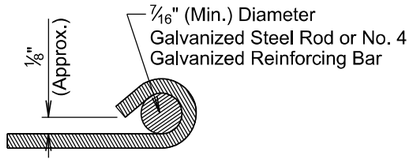
ELEVATION VIEW



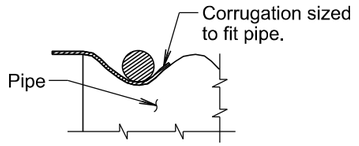
ISOMETRIC VIEW



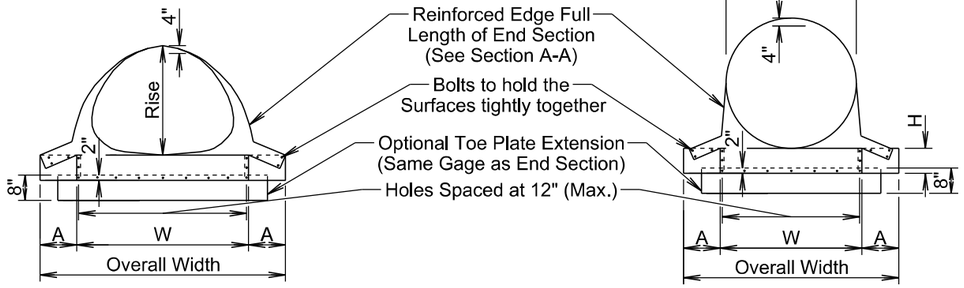
DETAIL OF SAFETY BARS



SECTION A-A

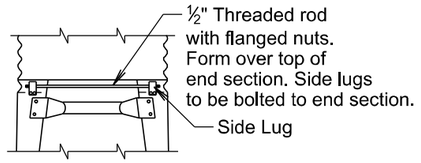


SECTION B-B



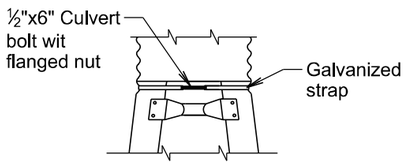
FRONT VIEW

FRONT VIEW



TYPE #2 CONNECTOR DETAIL

(For 30" and Larger)
(For 21"x15" and Larger)



TYPE #1 CONNECTOR DETAIL

(For 15" Through 24")

August 31, 2022

Published Date: 2025	SDDOT	C.M.P. SLOPED ENDS	PLATE NUMBER 450.37 Sheet 1 of 2

FOR BIDDING PURPOSES ONLY

ARCH C.M.P. SLOPED ENDS

Equiv. Dia. (Inch)	(Inches) Span	Rise	(Min.) Thick. Inch	Gage	Dimensions (Inches) A	H	W	Overall Width	L Dimensions Slope	Length (Inch)
18	21	15	.064	16	8	6	27	43	4:1	20
21	24	18	.064	16	8	6	30	46	4:1	32
24	28	20	.064	16	8	6	34	50	4:1	40
30	35	24	.079	14	12	9	41	65	4:1	56
36	42	29	.109	12	12	9	48	72	4:1	76
42	49	33	.109	12	16	12	55	87	4:1	92
48	57	38	.109	12	16	12	63	95	4:1	112
54	64	43	.109	12	16	12	70	102	4:1	132
60	71	47	.109	12	16	12	77	109	4:1	148
72	83	57	.109	12	16	12	89	121	4:1	188

CIRCULAR C.M.P. SLOPED ENDS

Pipe Dia. (Inch)	(Min.) Thick. Inch	Gage	Dimensions (Inches) A	H	W	Overall Width	L Dimensions Slope	Length (Inch)
15	.064	16	8	6	21	37	4:1	20
18	.064	16	8	6	24	40	4:1	32
21	.064	16	8	6	27	43	4:1	44
24	.064	16	8	6	30	46	4:1	56
30	.109	12	12	9	36	60	4:1	80
36	.109	12	12	9	42	66	4:1	104
42	.109	12	16	12	48	80	4:1	128
48	.109	12	16	12	54	86	4:1	152
54	.109	12	16	12	60	92	4:1	176
60	.109	12	16	12	66	98	4:1	200

GENERAL NOTES:

Safety bars will be provided when specified in the plans.

Sloped ends will be fabricated from galvanized steel and will conform to the requirements of the Specifications.

Safety bars will be fabricated from steel schedule 40 pipe in conformance with ASTM A53, grade B or HSS 3.5x.216 in conformance with ASTM A500, grade B.

Slotted holes for safety bar attachment will be provided for all end sections.

Attachment to circular pipes 15" through 24" diameter will be made with Type #1 straps. All other sizes will be attached with Type #2 rods and lugs.

When stated in the plans, optional toe plate extension will be punched and bolted to end section apron lip with ⅜" diameter galvanized bolts. Steel for toe plate extension will be same gauge as end section. Dimensions will be overall width less 6" by 8" high.

Installation will be performed in accordance with the Specifications.

Cost of all work and materials required for fabrication and installation of sloped ends will be incidental to the bid items for the various sizes of sloped ends.

August 31, 2022

Published Date: 2025	SDDOT	C.M.P. SLOPED ENDS	PLATE NUMBER 450.37 Sheet 2 of 2

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

STANDARD PLATES
450.37

PROJ. NO.	21005951.00
DRAWN BY:	WDL
CHECKED BY:	SLW
DATE:	AUGUST 2024

SHEET 13 OF 43

For 12" Thru 30" Diameter Pipe

Cover from 1.5 to 10 feet

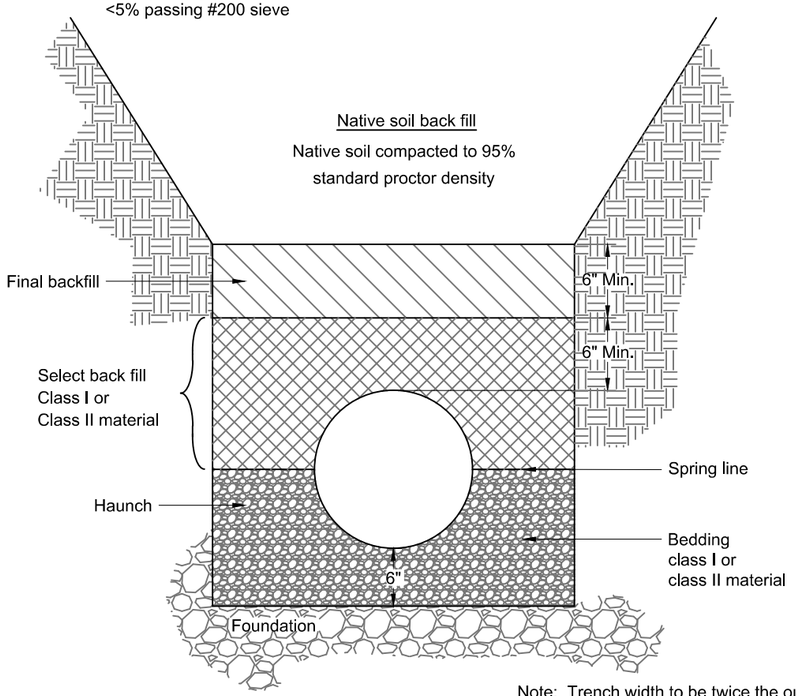
Material

Class I: Crushed rock or gravel
100% passing 11/2"sieve
<5% passing #200 sieve

Class II: Coarse grained soils includes sand
100% passing 1 1/2" sieve
<5% passing #200 sieve

Select Material Compaction Requirements Are:

Class I	Knifed
Class II	90% Standard proctor density



Assume: 140 lbs. per cubic foot
6" of select fill above pipe
6" of bedding material below pipe

Note: Trench width to be twice the outside diameter, or the outside diameter plus two feet, which ever is less.

Quantity Estimate Table For Bedding Material

12"	0.14 Ton/L.F.
15"	0.20 Ton/L.F.
18"	0.25 Ton/L.F.
24"	0.36 Ton/L.F.
30"	0.45 Ton/L.F.

Quantity Estimate Table For Select Fill MateriaL

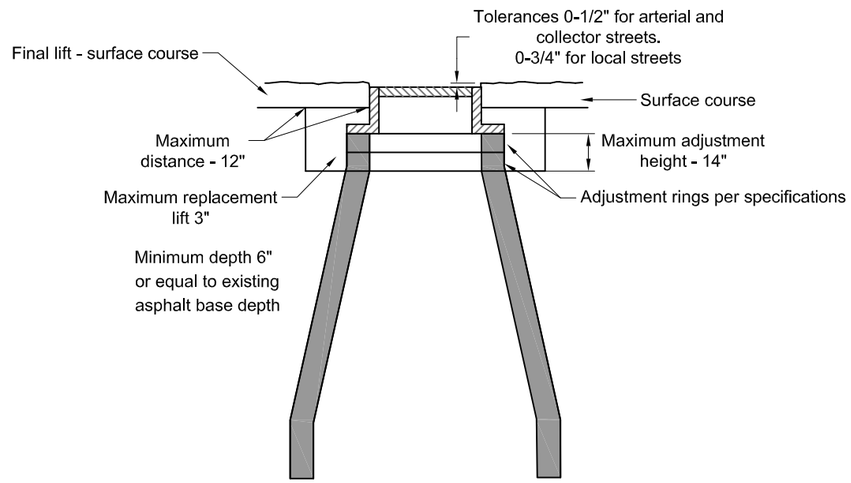
12"	0.14 Ton/L.F.
15"	0.20 Ton/L.F.
18"	0.25 Ton/L.F.
24"	0.36 Ton/L.F.
30"	0.45 Ton/L.F.

Applies to both soil tight and water tight joints

Revised: May 2019

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	**Bedding and Backfill for HDPE & PPE Pipe**	Specification Reference: Special	Plate Number: 450.09

FOR BIDDING PURPOSES ONLY



Note:

1. Asphalt concrete - manhole and casting shall be adjusted to final grade prior to placement of surface course.

2. Concealed pick holes and the seal between the frame and cover shall be protected from asphalt, concrete pavement, chip seal and soil. It shall be the contractors responsibility to provide a system to prevent material from entering the concealed pick hole and frame and cover seal during the work.

3. For chip seal projects, the entire manhole cover and frame shall be protected from the chip seal installation.

Revised: January 2021

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	**Manhole Casting and Cover Adjustment**	Specification Reference: No. 671	Plate Number: 671.01

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

STANDARD PLATES
450.09 & 671.01

PROJ. NO.	21005951.00
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CHECKED BY:	SLW
DATE:	AUGUST 2024

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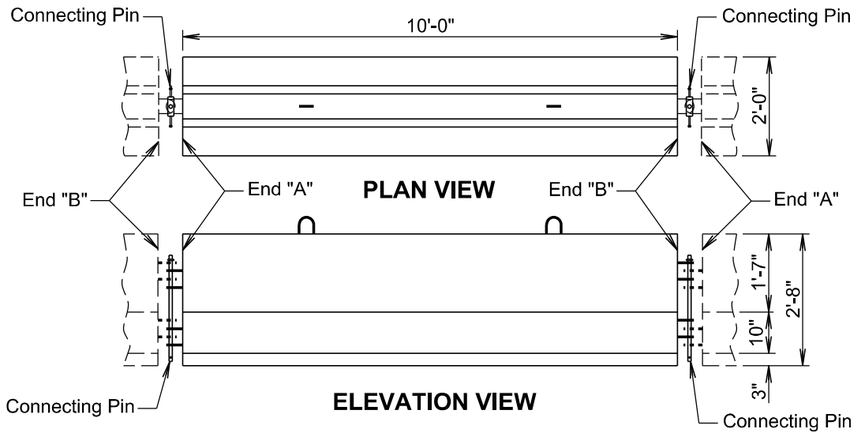
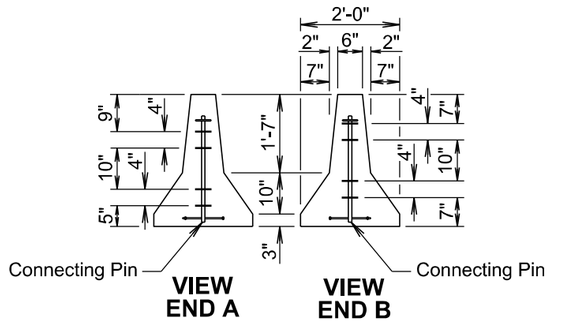
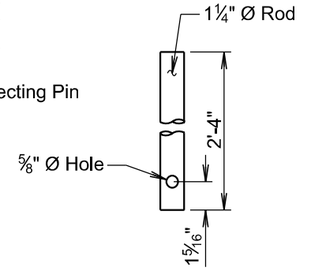


ELEVATION VIEW



VIEW END A

VIEW END B



CONNECTING PIN DETAIL

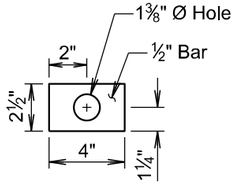
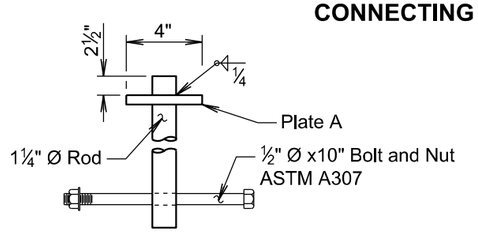


PLATE A



ASSEMBLED CONNECTING PIN

September 14, 2018

Published Date: 2025	SDDOT	TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (JERSEY SHAPE INTERIOR SECTION)	PLATE NUMBER 628.03 Sheet 1 of 2

FOR BIDDING PURPOSES ONLY

GENERAL NOTES:

The detailed drawings are for illustrative purpose and depicts the Jersey shape movable concrete barrier. If new movable concrete barriers are requested on a project, they will be constructed according to the F shape movable concrete barrier details on standard plate 628.10.

Each movable concrete barrier section weighs 4120 ± pounds.

Each movable concrete barrier section is detailed to provide end "A" to end "B" connection by insertion of a pin through steel loops.

The Jersey shape or any version of the F shape traffic control movable concrete barriers may be used on project, however, only the same type or version will be used for each run of barriers.

Movable concrete barrier sections will be placed to provide uniform bearing of the sections with the paved surface as approved by the Engineer.

Movable concrete barrier sections will never be moved or lifted using the end loops.

Movable concrete barrier sections that have been damaged will not be used. Barrier sections are considered damaged if the loops are end welded onto existing damaged loops, loops are fractured, or there is exposed rebar from fractured concrete.

All cost for transporting the barriers from the specified location to the project site, installing, and returning the barriers to the specified location will be incidental to the contract unit price per each for "Traffic Control Movable Concrete Barrier".

If the concrete barriers need to be moved and reset on the project, requiring the barriers to be transported by truck, all cost for removing, transporting, and resetting the barriers will be incidental to the contract unit price per each for "Remove and Reset Traffic Control Movable Concrete Barrier". All cost for small shifts in alignment of the barriers, not requiring the barriers to be transported by truck, will be incidental to various contract items.

September 14, 2018

Published Date: 2025	SDDOT	TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (JERSEY SHAPE INTERIOR SECTION)	PLATE NUMBER 628.03 Sheet 2 of 2

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

STANDARD PLATE
628.03

PROJ. NO.	21005951.00
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DATE:	AUGUST 2024

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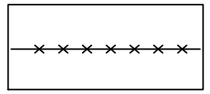


Silt Fence

SF

Definition:

A temporary sediment barrier consisting of a filter fabric stretched across and attached to supporting posts and entrenched. The silt fence is a temporary linear barrier constructed of synthetic filter fabric and supported by wooden or steel posts.

Purposes:

1. To intercept and detain small amounts of sediment from disturbed areas during construction operations in order to reduce sediment in runoff from leaving the site.
2. To decrease the velocity of sheet flows and low-to-moderate level concentrated flows.

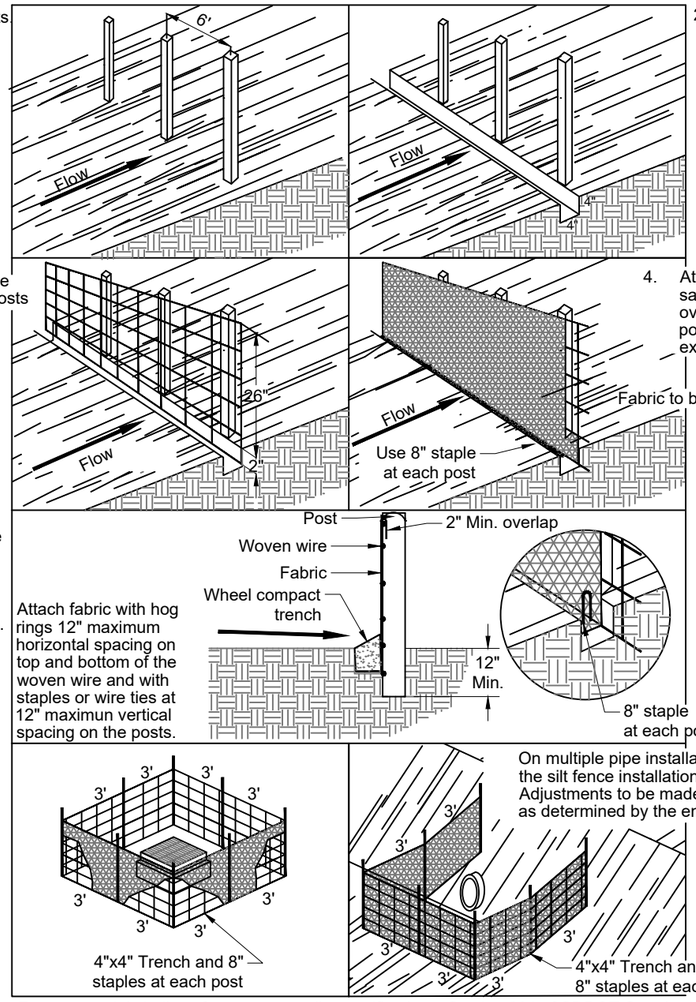
1. Set posts

2. Excavate a 4" x 4" trench upslope along the posts.

3. Attach a supporting wire fence to the posts

4. Attach fabric, sandwich fabric overlap between posts and wire and extend into trench.

5. Backfill trench. If rock type soils are encountered, utilize 30 to 40 lb sandbags butted end to end to prevent underflow.

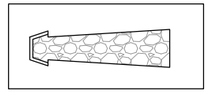


Fence material shall conform to geotextile specifications, Section 831 of SDDOT Standard Specifications for Roads and Bridges, latest edition.

Revised: October 2005

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Silt Fence (Woven Wire)	Specification Reference No. 734	Plate Number 734.09

FOR BIDDING PURPOSES ONLY



OP

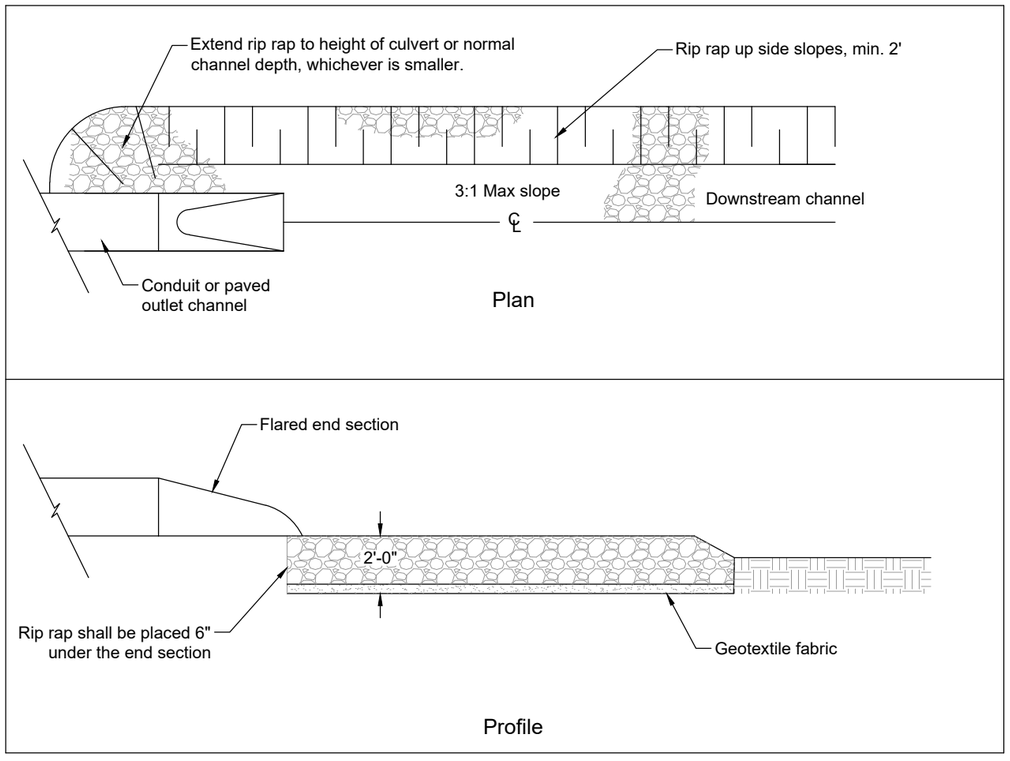
Outlet Protection

Definition:

Structurally lined aprons or other acceptable energy dissipating devices placed at the outlets of pipes or paved channel sections.

Purposes:

To prevent scour at storm water outlets and to minimize the potential for downstream erosion by reducing the velocity of concentrated storm water flows.



Quantity and size of rip rap to be determined by design. All rip rap shall be underlaid by a suitable filter fabric.

Revised: December 2009

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Outlet Protection	Specification Reference No. 734	Plate Number 734.14

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

STANDARD PLATES
734.09 & 734.14

PROJ. NO.	21005951.00
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SHEET 16 OF 43

Plotted by: Jo-Hannah Hamann
Plotted on: 9/4/24 9:58:45 AM
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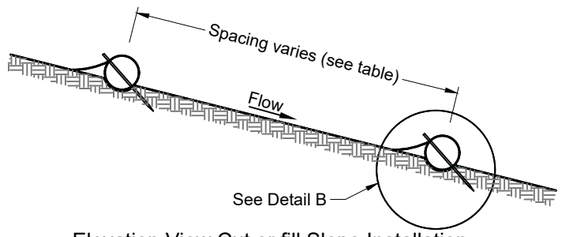
Sediment Control Wattle

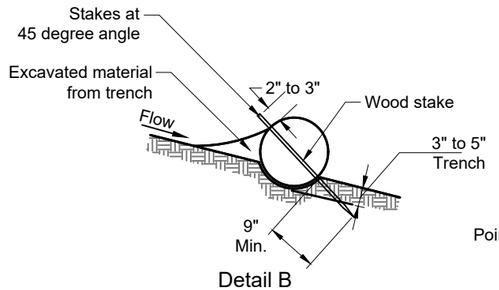
W



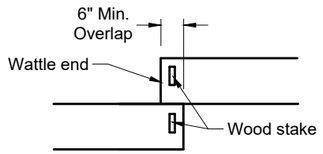
Elevation View Cut or fill Slope Installation

Cut or Fill Slope Installation	
Slope	Spacing (FT)
1:1	10
2:1	20
3:1	30
4:1	40

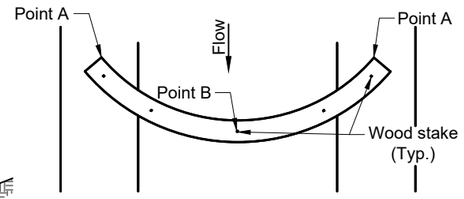
Note: If only one wattle is required, the slope shall not exceed 20:1.



Detail B
(Typical of all installations)



Detail C
(Plan View)



Section A-A

Plan View Ditch
Installation

Ditch Installation	
Grade	Spacing (FT)
2%	150
3%	100
4%	75
5%	50

General Notes:

At cut or fill slope installations, wattles shall be installed along the contour and perpendicular to the water flow.

At ditch installations, point "A" must be higher than point "B" to ensure that water flows over the wattle and not around the ends.

The contractor shall dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

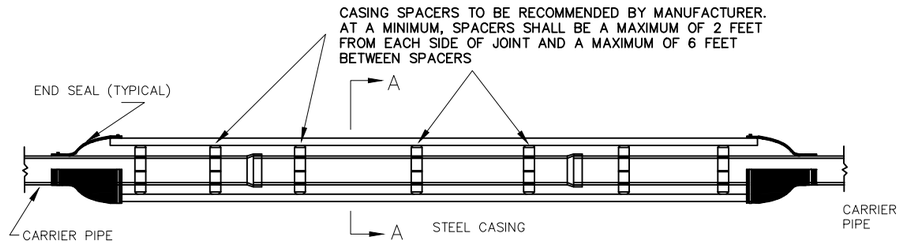
The stakes shall be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the engineer. The stakes shall be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles shall be 3' to 4'.

Where installing running lengths of wattles, the contractor shall overlap ends 6" min. and stake both ends. See Detail C.

Revised: May 2024

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Sediment Control Wattle	Specification Reference No. 734	Plate Number 734.29

FOR BIDDING PURPOSES ONLY



ELEVATION

CASING SPACERS AND END SEALS SHALL BE MANUFACTURED BY ADVANCED PRODUCTS AND SYSTEMS, INC. P.O. BOX 60399 LAYAYETTE, LA. 70596-0399 OR EQUAL AND MEET THESE REQUIREMENTS.

CASING SPACERS – MODEL SSI8. (PIPE SIZES 36 INCHES IN DIAMETER AND SMALLER)
BAND – 14 GAUGE T-304 STAINLESS STEEL
RISER – 10 GAUGE T-304 STAINLESS STEEL

ROLLERS – SHALL BE APOGEE-AERO MANUFACTURED BY ADVANCE PRODUCTS AND SOLUTIONS INC. THE NUMBER OF ROLLERS SHALL BE RECOMMENDED BY THE MANUFACTURER, BUT FOUR IS THE MINIMUM

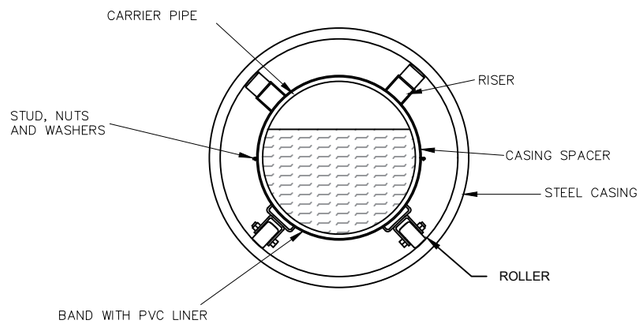
STUDS, NUTS, AND WASHERS – T-304 STAINLESS STEEL.

HEIGHT – AS REQUIRED FOR CENTER RESTRAINING OR AS SHOWN IN THE DRAWINGS

END SEALS – CONICAL SHAPED WRAP-AROUND ⅛ INCH SYNTHETIC RUBBER WITH T-304 STAINLESS STEEL STRAPS

CASINGS AND CARRIER PIPE: SHALL BE AS SPECIFIED IN THE SUPPLEMENTAL STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, OR DRAWINGS

GROUTING OF THE ANNULAR SPACE WILL NOT BE REQUIRED UNLESS OTHERWISE NOTED



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: NOVEMBER 2018

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Standard Casing/Carrier For Sanitary Sewer Pipe	Specification Reference No. 950	Plate Number 950.16

IMEG

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

STANDARD PLATES
734.29 & 950.16

PROJ. NO.	21005951.00
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OF 43

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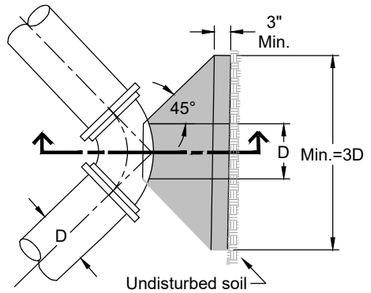
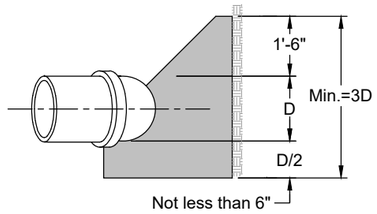
Concrete Thrust Blocks

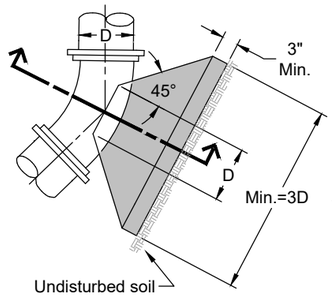


Plan View

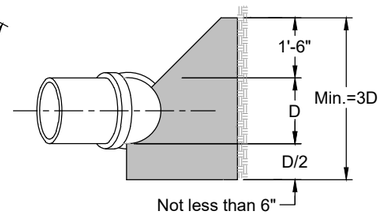


Section View

90 - Degree Bend

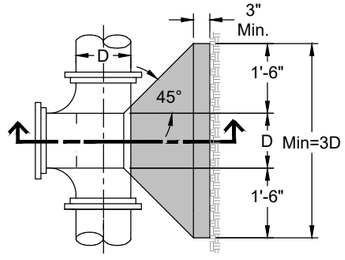


Plan View

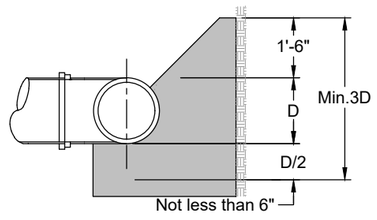


Section View

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

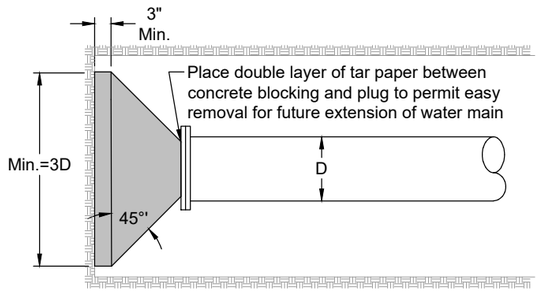


Plan View



Section View

Tee



S.J./M.J. Plug

Revised: December 2020

Concrete Thrust Blocks

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Specification Reference No. 900

Plate Number 900.01

Plotted by: Jo-Hannah Hamann
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SD HWY 34 - UTILITY IMPROVEMENTS
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COLMAN, SOUTH DAKOTA

STANDARD PLATE 900.01

PROJ. NO.	21005951.00
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DATE:	AUGUST 2024

SHEET 18 OF 43

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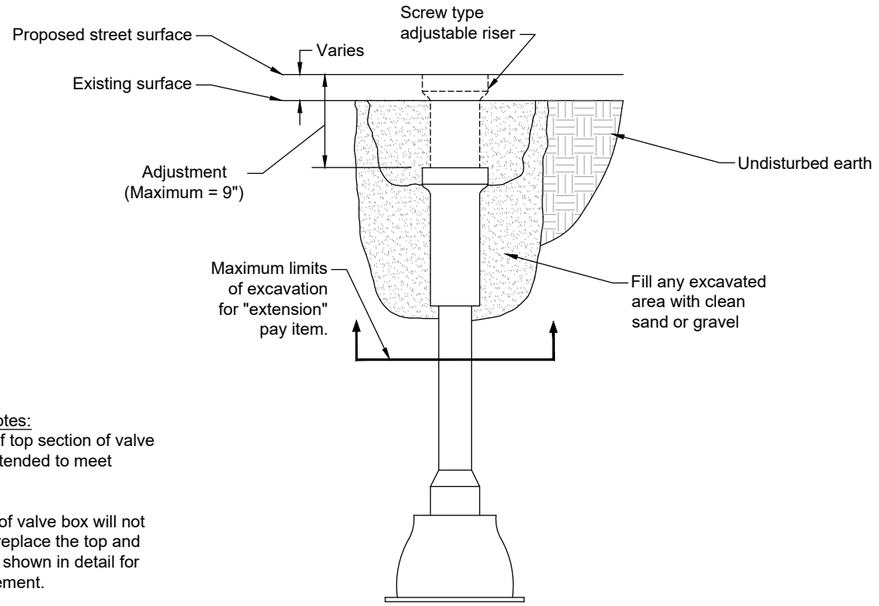
Valve Box Extension
(or replacement of top section)



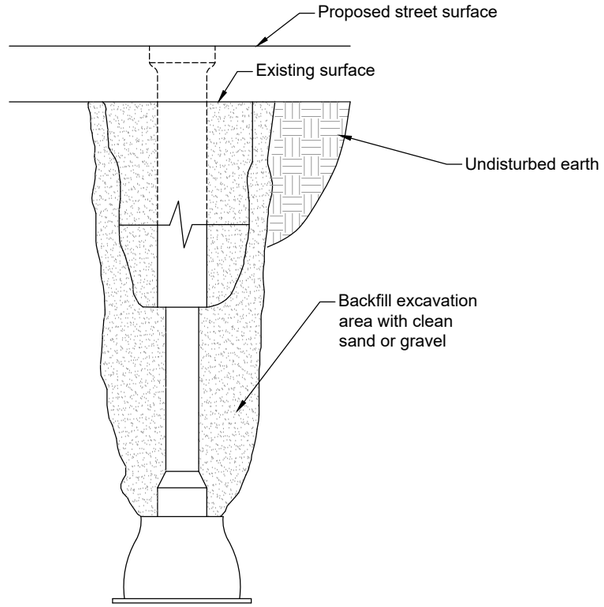
No Scale

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 No. 900

Plate Number 900.02

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COLMAN, SOUTH DAKOTA

STANDARD PLATE
900.02

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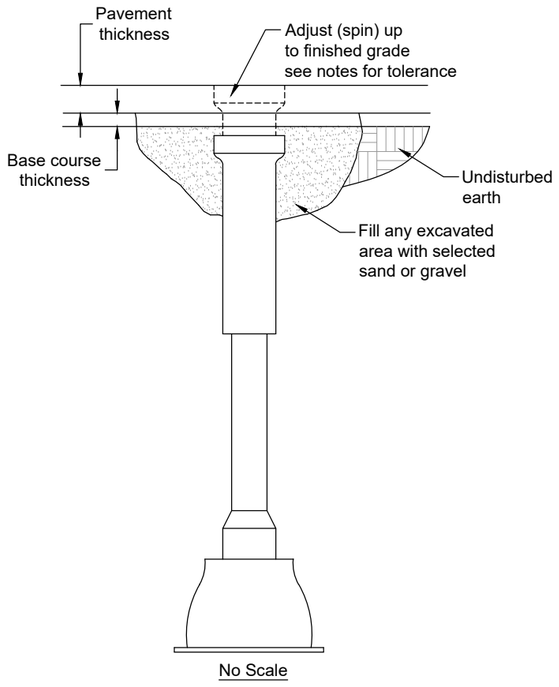
Valve Box Adjustment

Spin Up Method



No Scale

Spin Up Method:

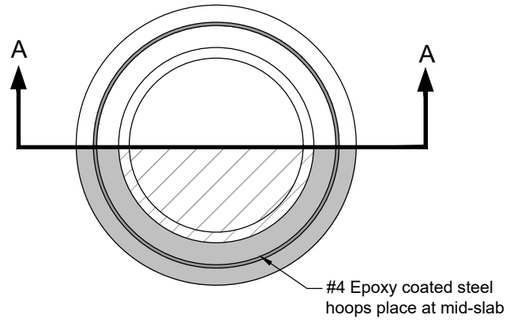
1. Use this method if top section of valve box can be adjusted to finished grade.

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.

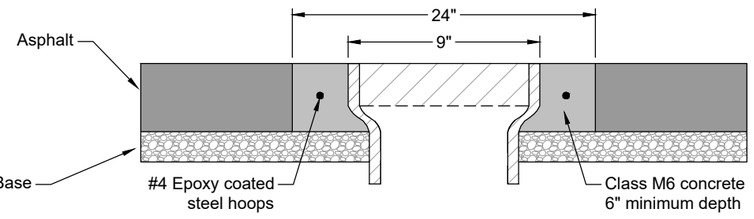
3. If the 0" to 1/2" tolerance can not be met by the "spin up" method on concrete streets, the repair method will be determined by the engineer. This additional work shall be incidental to the "valve box adjustment" bid item.

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 No. 900

Plate Number 900.03

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STANDARD PLATE 900.03

PROJ. NO.	21005951.00
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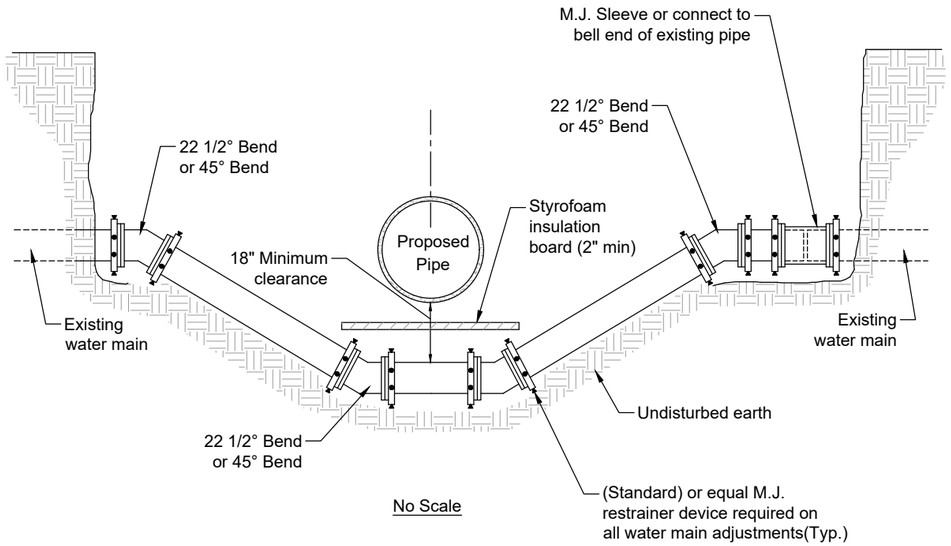
Water Main Adjustment



No Scale

General Notes:

1. The pipe, fittings and restrainer devices shall be bid as separate items from the water main adjustment.

2. All exposed pipe joints shall be restrained

Revised: December 2020

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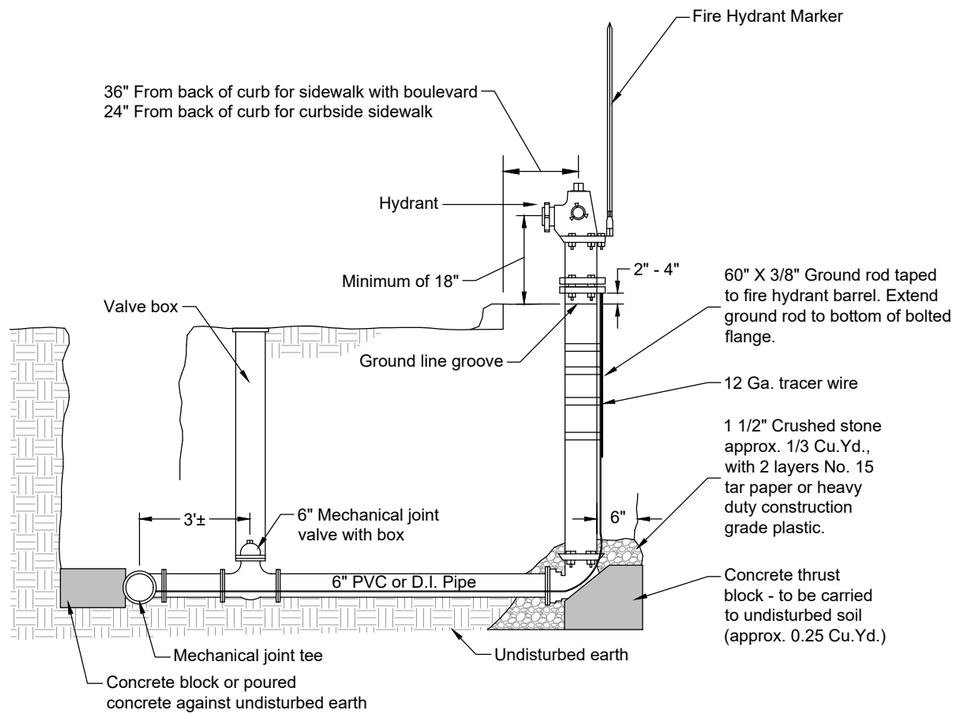
Hydrant Connection



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

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STANDARD PLATES
900.05 & 900.06

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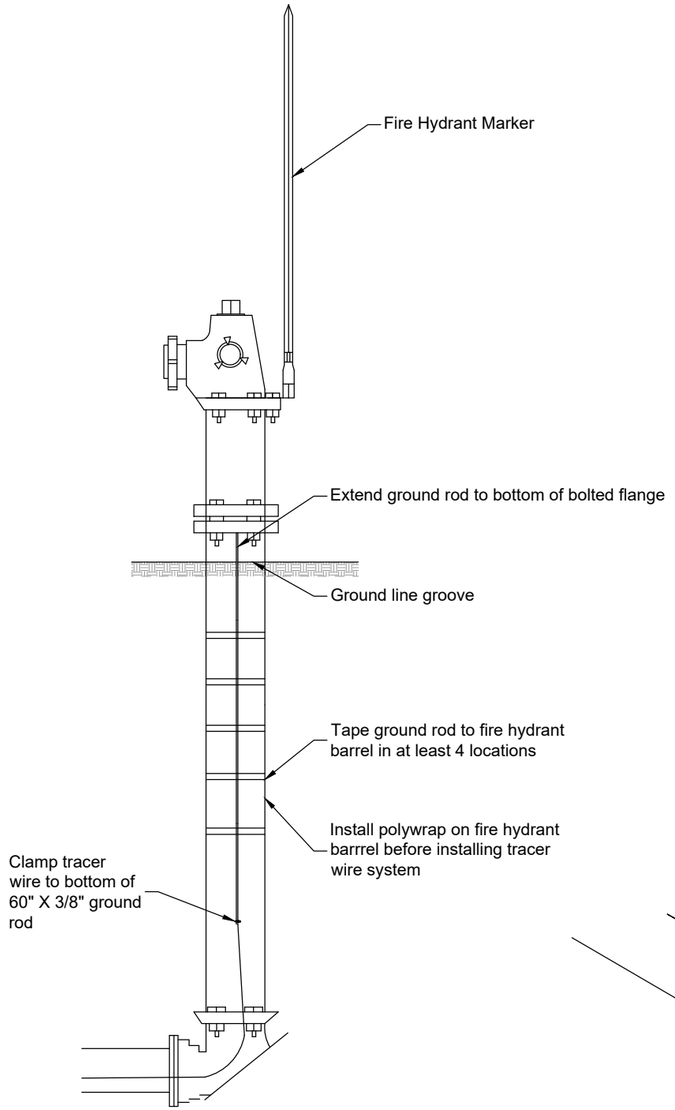
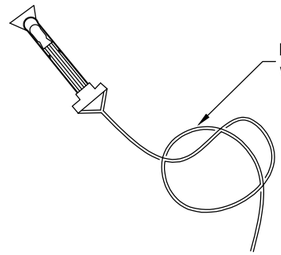


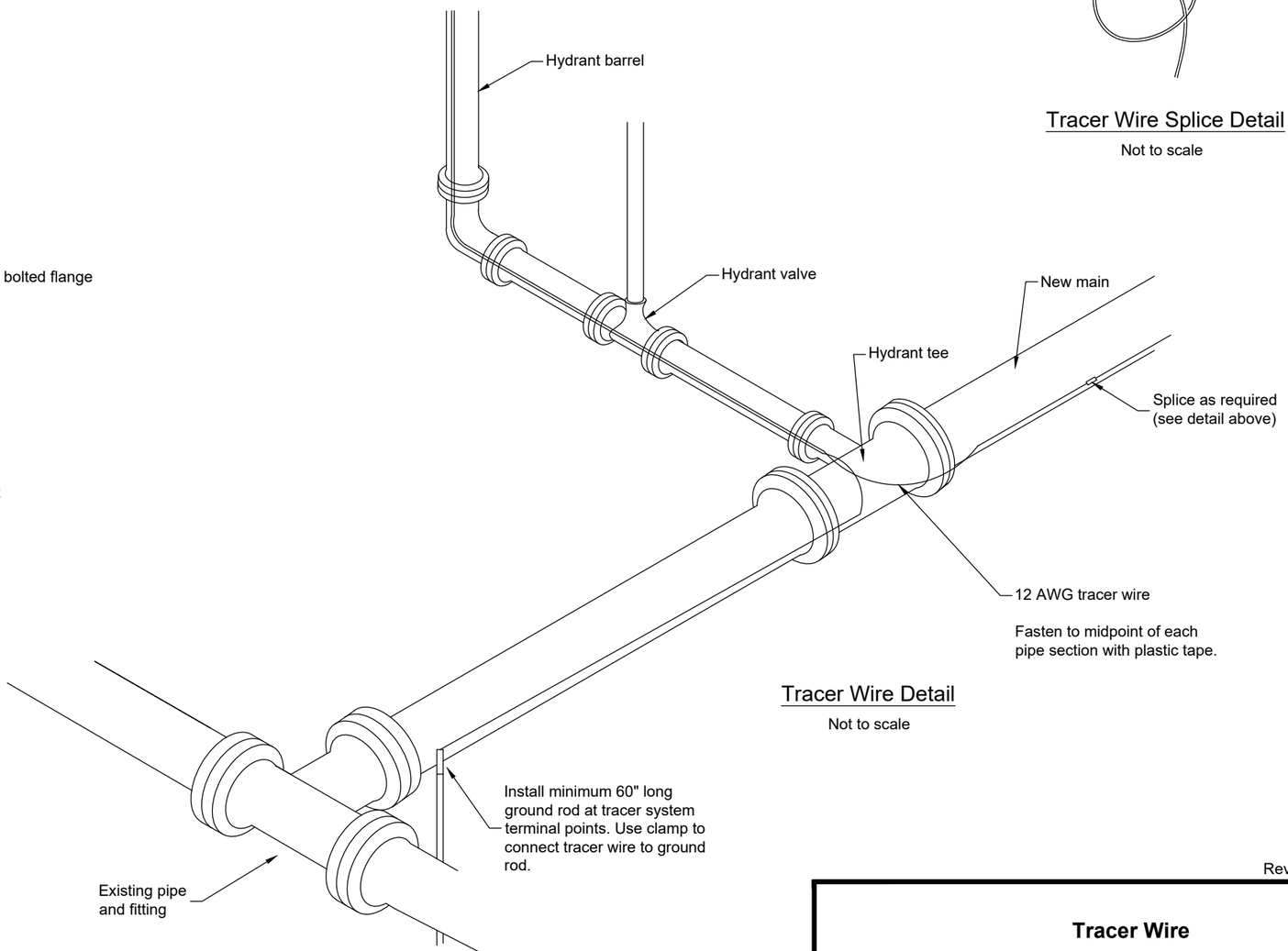
Tracer Wire Detail at Fire Hydrant

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 No. 900

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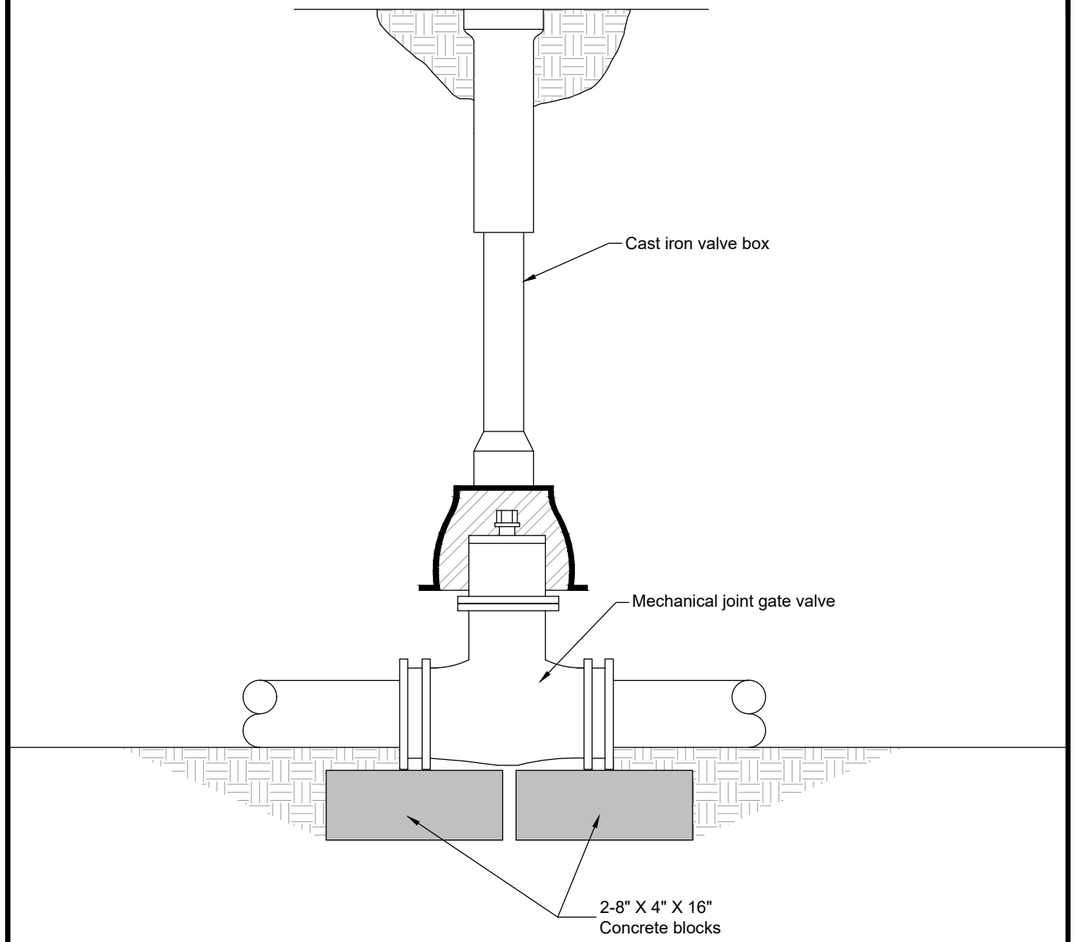

PVC Gate Valve Installation

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

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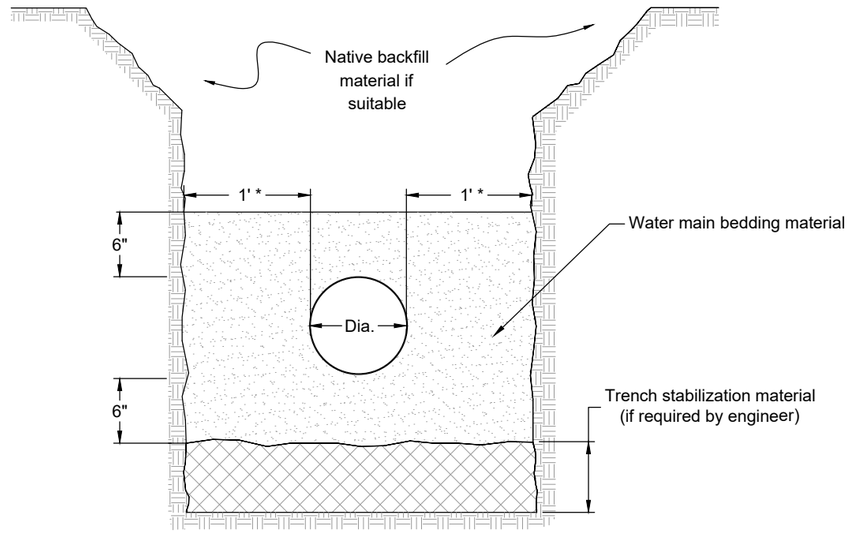
Water Main Bedding



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

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STANDARD PLATES
900.08 & 900.11

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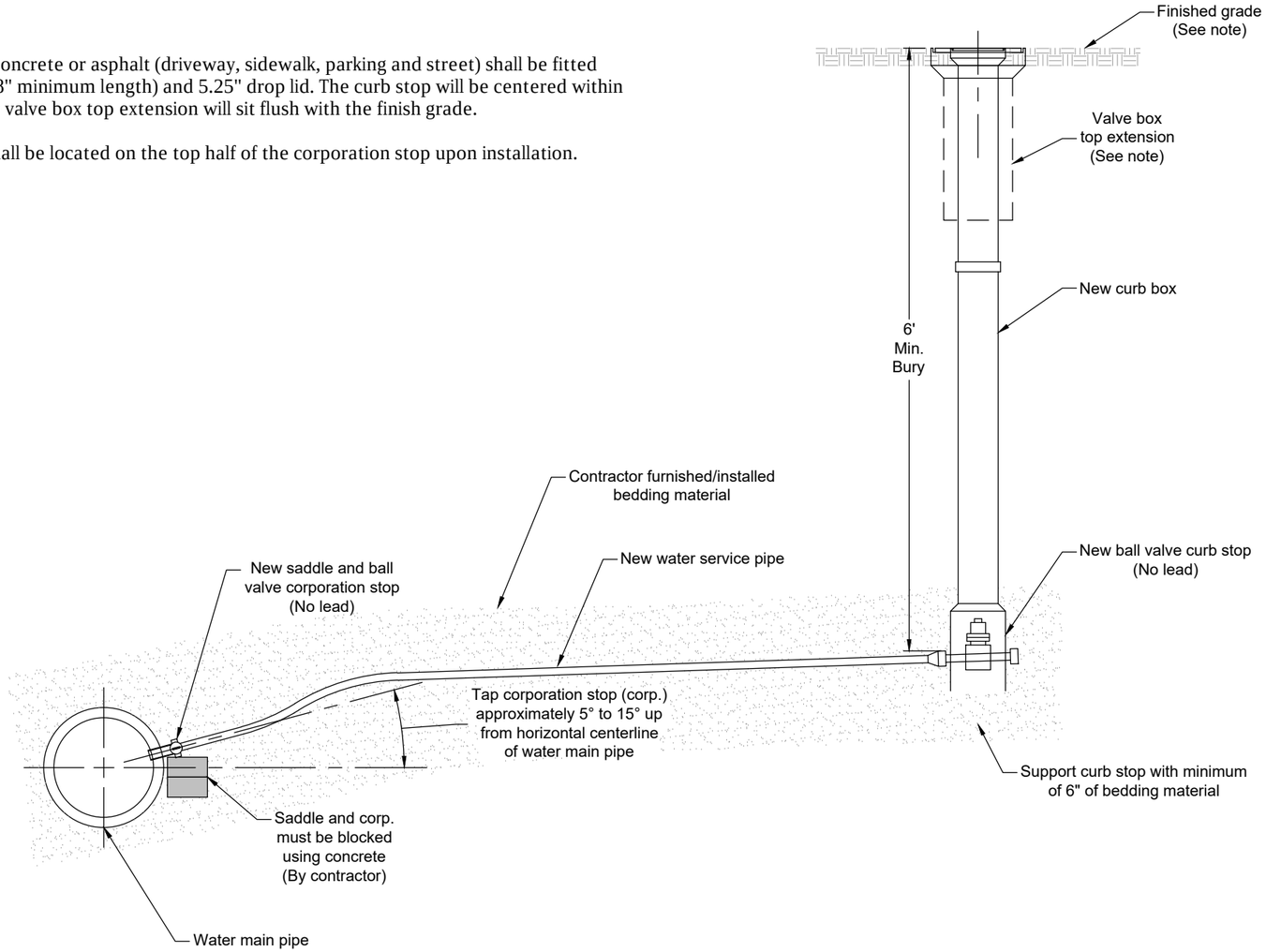
General Notes:

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
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Specification Reference	Plate Number
No. 900	900.15

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#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

STANDARD PLATE
900.15

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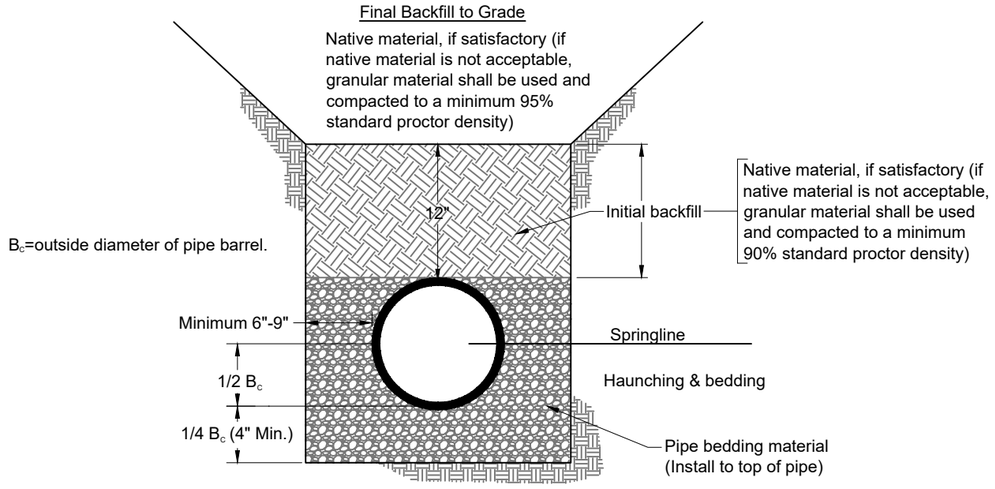
OF 43



Note:

1. If base is unstable, trench shall be undercut and stabilized with trench stabilization material. Specifications as per manufacturer's recommendations and A.S.T.M. C12.

2. Bedding Material

   95% Passing 3/4" sieve
   95% Retained #4 sieve

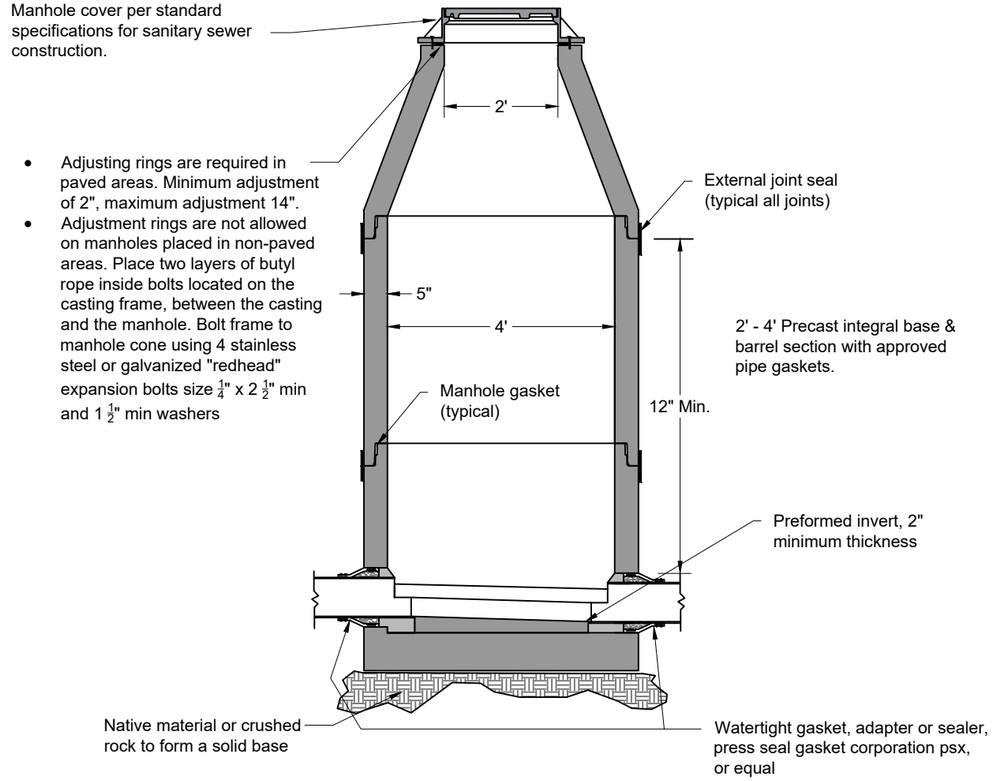
   (Clean angular, well-graded, crushed rock. Pea rock may be used for sanitary sewer service lines.)

3. The required bedding material under the bottom of the pipe shall be installed prior to pipe installation.

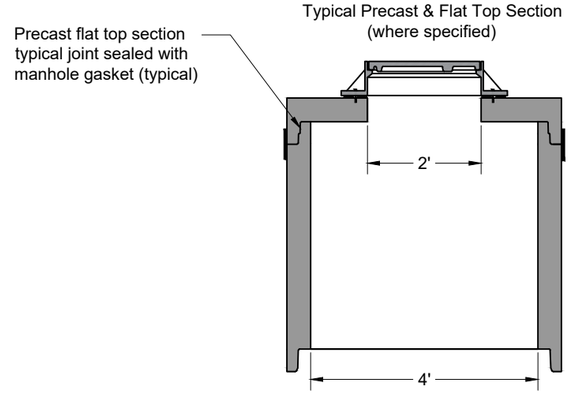
Revised: September 2020

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Bedding and Backfill Requirements For 4" to 12" Sanitary Sewer Pipe	Specification Reference No. 950	Plate Number 950.01

FOR BIDDING PURPOSES ONLY



- Adjusting rings are required in paved areas. Minimum adjustment of 2", maximum adjustment 14".
- Adjustment rings are not allowed on manholes placed in non-paved areas. Place two layers of butyl rope inside bolts located on the casting frame, between the casting and the manhole. Bolt frame to manhole cone using 4 stainless steel or galvanized "redhead" expansion bolts size $\frac{1}{4}$" x 2 $\frac{1}{2}$" min and 1 $\frac{1}{2}$" min washers



Revised: September 2020

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Sanitary Sewer Manhole	Specification Reference No. 950	Plate Number 950.03

#	REVISIONS	DATE	BY

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STANDARD PLATES
950.01 & 950.03

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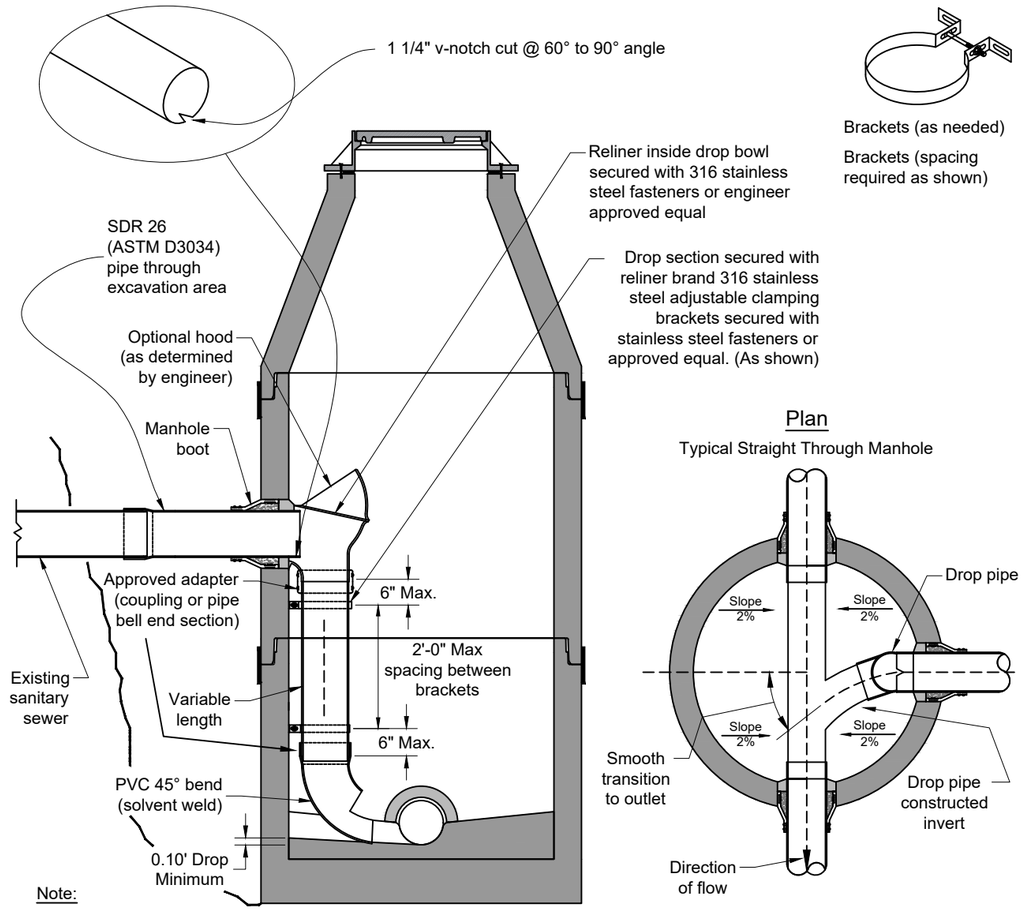


Note:

The lower bend shall be securely set on the concrete invert and angled to create a smooth transition to discharge with the flow. The manhole bench shall be constructed with an invert for the drop pipe to discharge into. When drop sections are added to existing manholes, a channel shall be formed in the bench by removing a portion of the bench and forming a flow line to a depth of half the pipe radius.

The PVC drop section shall be secured to the barrel section with approved non-corrosive adjustable clamping bracket(s), and the lower bend shall be secured and formed into the bench of the flowline. The drop bowl shall be secured with stainless steel fasteners or engineer approved equal and connected to the drop pipe with approved adapters. The drop bowl shall allow clearance for maintenance equipment into the existing line. SDR 26 (ASTM D3034) pipe shall be laid through the excavation area (to prevent breakage during settlement) and connected to the existing manhole through a manhole boot. The cost of the SDR 26 (ASTM D3034) pipe shall be absorbed in the unit price bid for the manhole drop section.

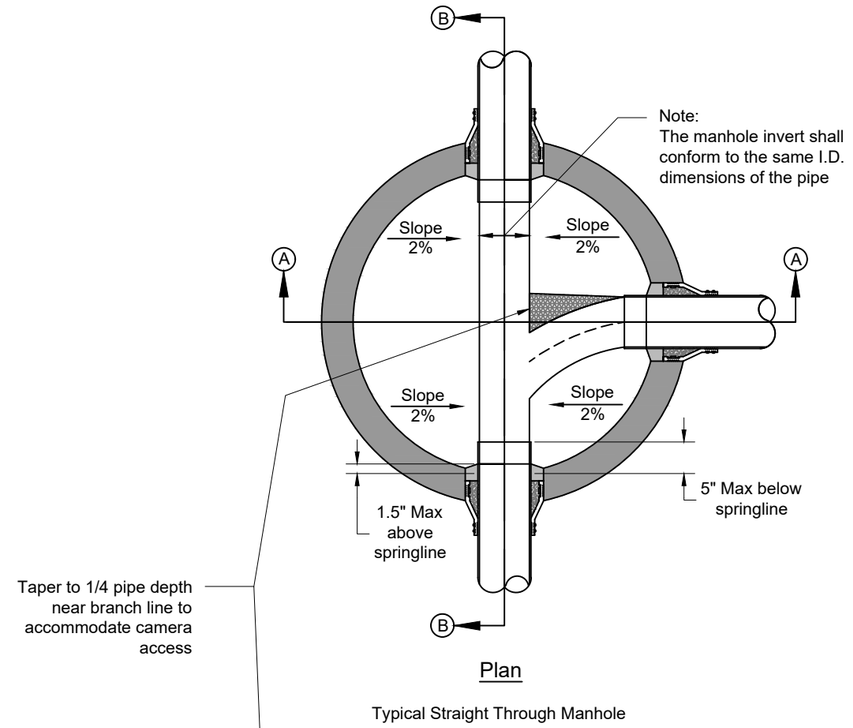
The manhole boot shall be similar to the manhole base section specification minimum of 8" between the opening for the drop section and the nearest joint.

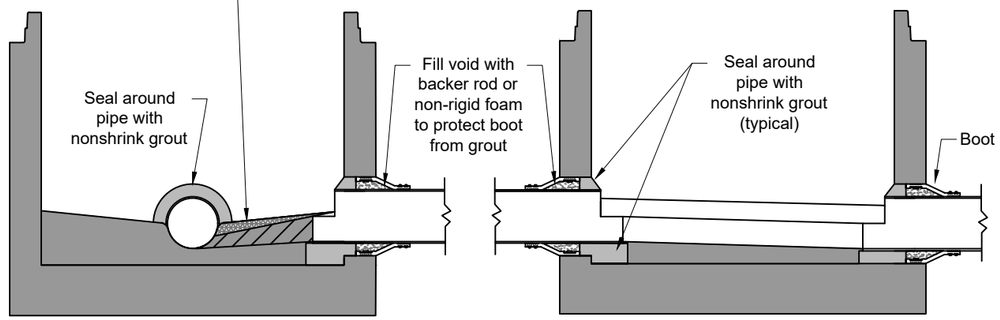
The diameter of the drop pipe shall be the same diameter as the incoming pipe.

Revised: November 2018

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Sanitary Sewer Manhole Bowl Type Drop Section For 8"-15" Pipe	Specification Reference No. 950	Plate Number 950.05

FOR BIDDING PURPOSES ONLY





Revised: September 2020

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Manhole Bench and Invert Detail	Specification Reference No. 950	Plate Number 950.07

#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
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STANDARD PLATES
950.05 & 950.07

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SHEET 26 OF 43

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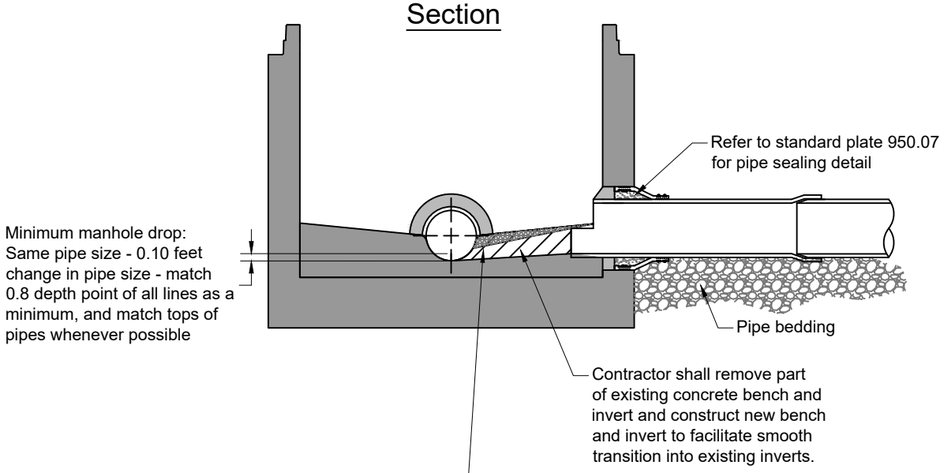
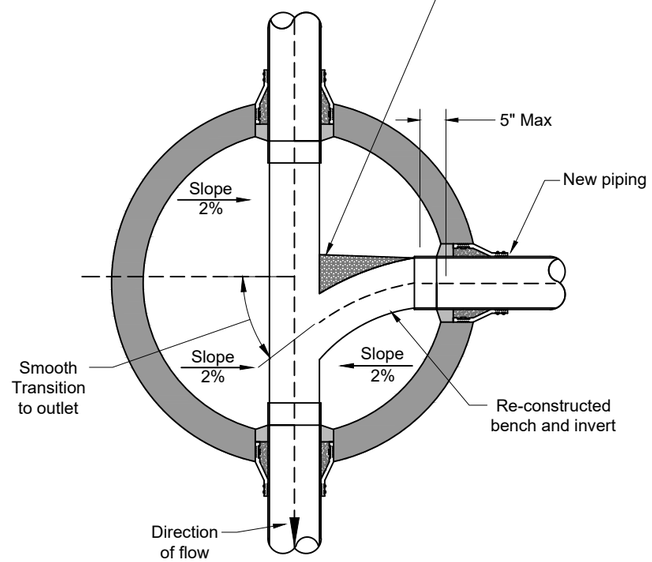
Section



Plan

Typical Straight Through Manhole

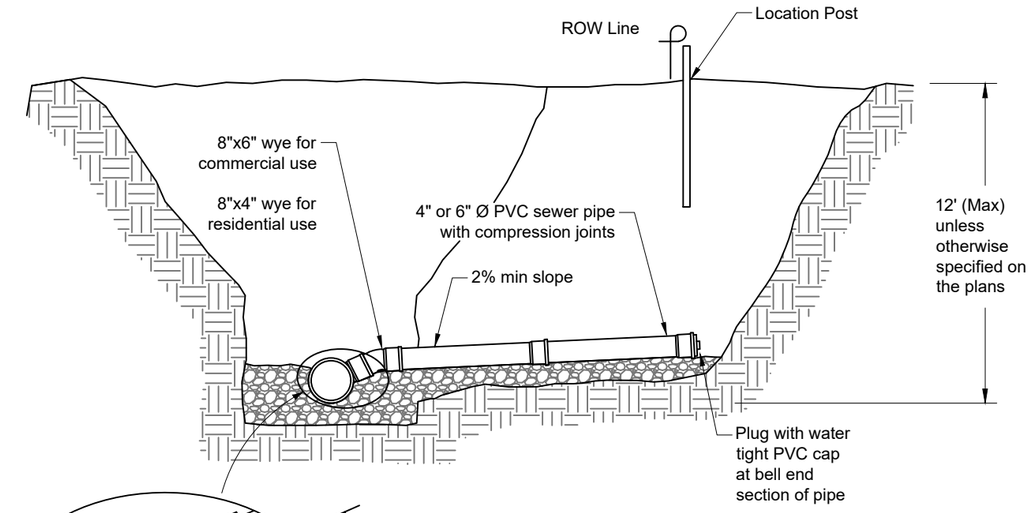


Note:
The concrete bench and invert shall be angled (30° & 45° degree) to discharge with the flow. The manhole bench shall be reconstructed with a smooth as glass invert for the new pipe to discharge into.

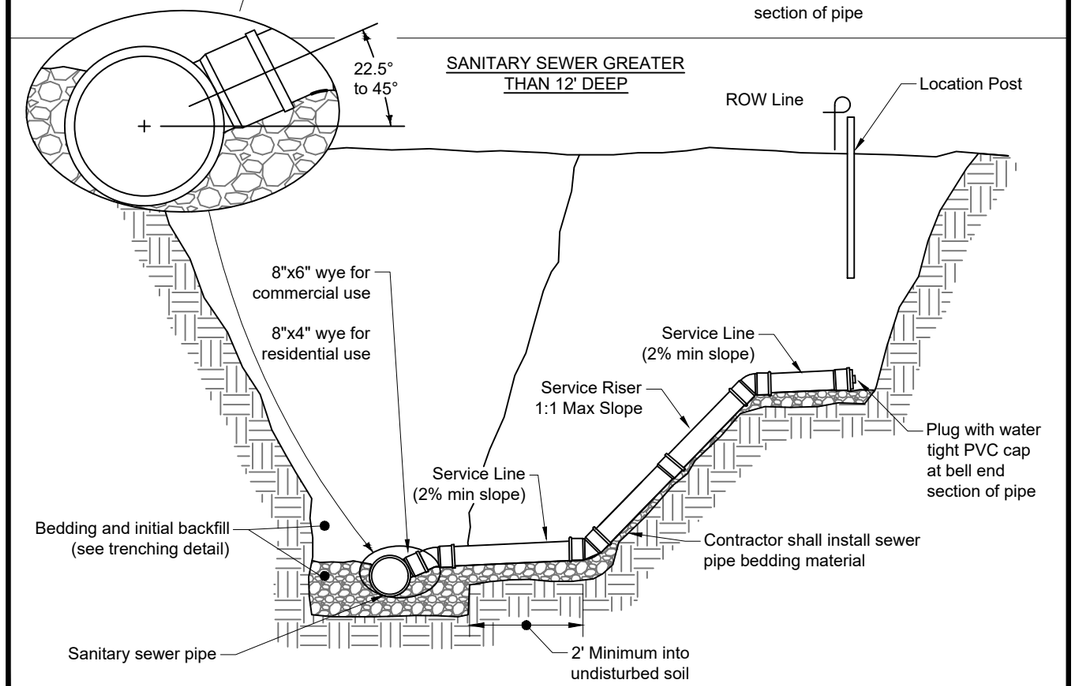
Revised: September 2020

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Connection to Existing Manhole	Specification Reference No. 950	Plate Number 950.09

TYPICAL SANITARY SEWER LESS THAN 12' DEEP



SANITARY SEWER GREATER THAN 12' DEEP



Revised: September 2020

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Typical Sanitary Sewer Service and Riser	Specification Reference No. 950	Plate Number 950.13

#	REVISIONS	DATE	BY

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SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

STANDARD PLATES
950.09 & 950.13

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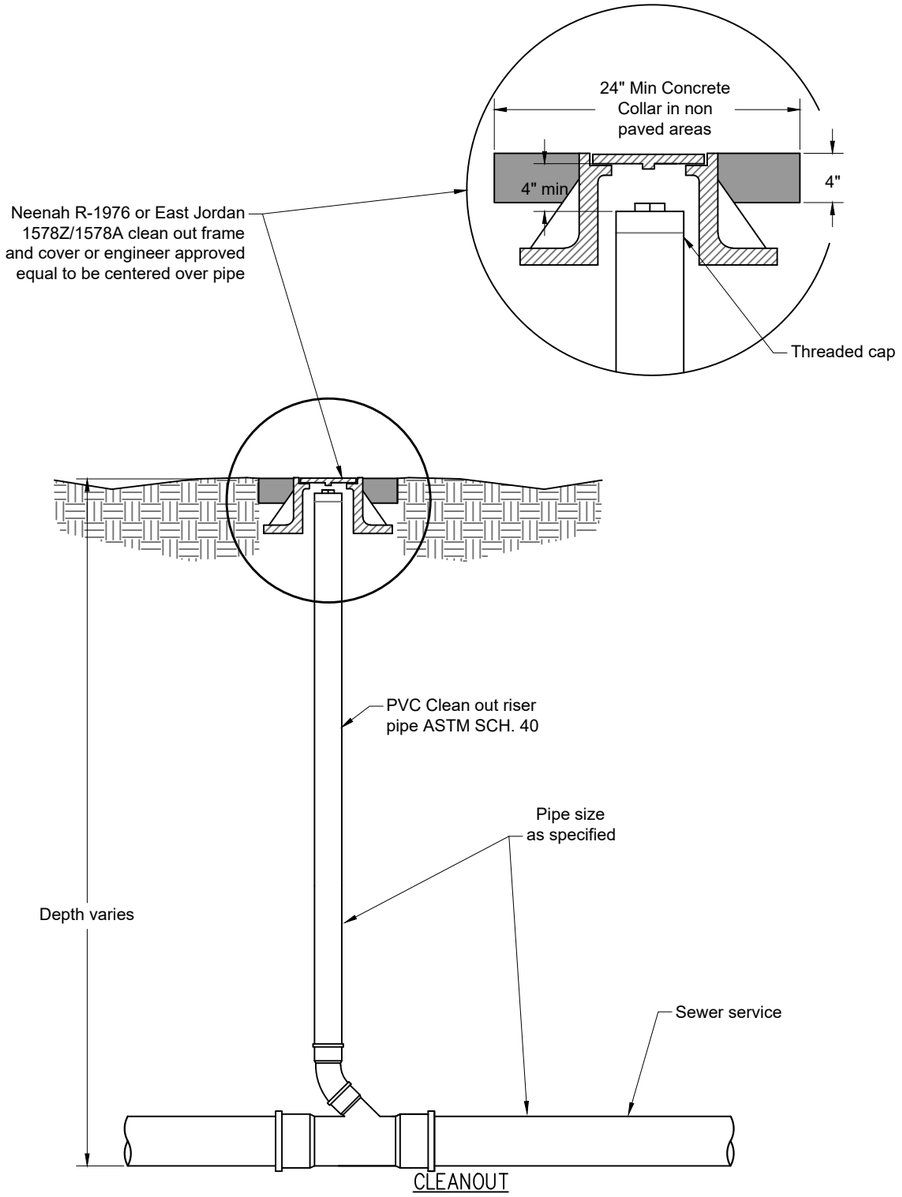
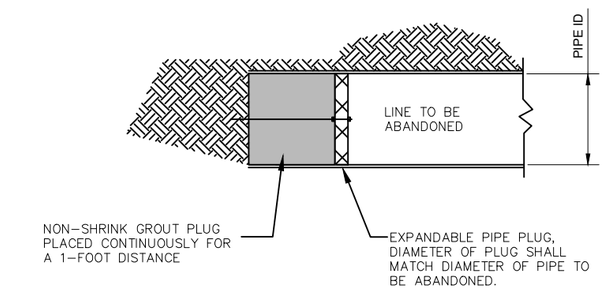


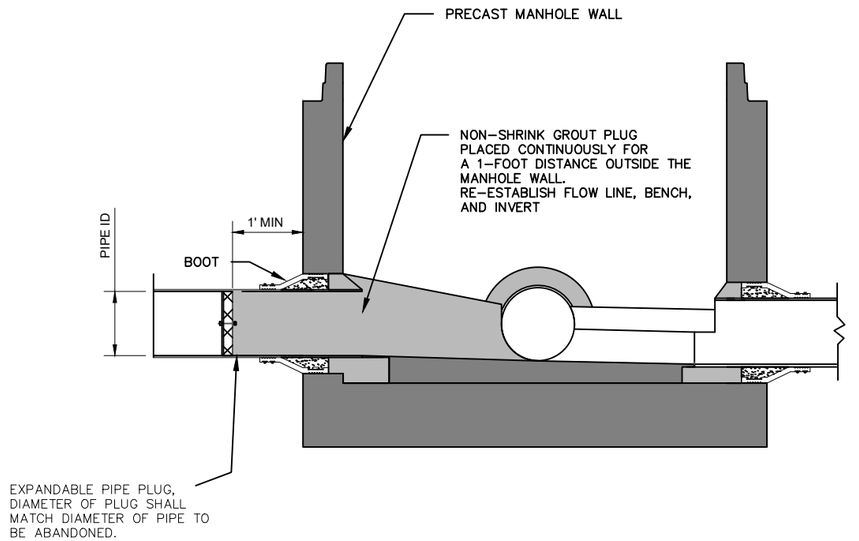
CLEANOUT

Revised: September 2020

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Cleanout Manhole Frame and Cover	Specification Reference No. 950	Plate Number 950.15



PLUG ABANDONED SEWER LINE



PLUG ABANDONED SEWER LINE FROM MANHOLE

Revised: October 2020

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Plug Existing Sanitary Sewer Line	PLATE NUMBER 950.23

#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
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COLMAN, SOUTH DAKOTA

STANDARD PLATES
950.15 & 950.23

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SHEET **28** OF 43

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CONTROL LEGEND

Benchmark	
Control Point	

BOUNDARY

Found Corner	
Set Corner	
Section Line	
Quarter Line	
16th Line	
32nd Line	
Easement Line	
Right of Way Line	

SURFACING LEGEND

Gravel	
Asphalt Pavement	
Concrete	
Sidewalk	

EROSION CONTROL LEGEND

Fiber Reinforced Matrix	
Erosion Control Wattles	
Silt Fence	SF SF SF

SANITARY SEWER LEGEND

	Existing	Proposed
Sanitary Manhole		
Sewer Cleanout		
Unknown Manhole		
Sanitary Sewer		

STORM SEWER LEGEND

	Existing	Proposed
Storm Inlet		
Storm Manhole		
Flared End Section		
Storm Sewer		
Pipe Underdrain		

WATER LEGEND

	Existing	Proposed
Curb Stop		
Fire Hydrant		
Water Spigot		
Water Meter		
Water Valve		
Water Well		
Sprinkler Box		
Underground Water Main	W W	

COMMUNICATIONS LEGEND

Fiber Optic Cable	FOC FOC
Telephone Manhole	
Telephone Pedestal	
Telephone Pole	
Telephone Line	
Cable Television Pedestal	
Television Line	

GAS LEGEND

Gas Meter	
Gas Valve	
Gas Line	

ELECTRIC LEGEND

Air Conditioner/Cooling Unit	
Guy Pole	
Guy Wire	
Light Pole	
Electric Manhole	
Electric Pedestal/Transformer	
Electric Meter	
Power Pole	
Power Pole with Light	
Power Pole with Meter	
Junction Box	
Overhead Electric	OE OE
Underground Electric	E E

FENCING/POST LEGEND

Post/Bollard	
Wire Fence	
Chain Link Fence	
Woven Wire Fence	
Guardrail	

VEGETATION LEGEND

Bush	
Coniferous Tree	
Deciduous Tree	
Tree Stump	
Edge of Woods	

SIGN/PARK LEGEND

Mail Box	
Single Post Sign	
Double Post Sign	
Flagpole	
ADA Stall	

GENERIC UTILITY LEGEND

Utility Manhole	
Utility Marker	
Handhole (Single/Double)	H H H
Utility Line	UT UT

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

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SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

LEGEND

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SHEET 29 OF 43

STORMWATER POLLUTION PREVENTION PLAN CHECKLIST

*(The numbers left of the title headings are **reference numbers** to the GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES (Stormwater Permit))*

5.3 (2): STAFF TRAINING/SWPPP IMPLEMENTATION

To promote stormwater management awareness specific for this project, the Contractor's Erosion Control Supervisor should provide correspondence of how the SWPPP will be implemented. The Contractor's Erosion Control Supervisor is responsible for providing this information at the preconstruction meeting, and subsequently completing an attendance log, which should identify site-specific implementation of the SWPPP and the names of the personnel who attended the preconstruction meeting. Documentation of the preconstruction meeting will be filed with the SWPPP documents.

5.3 (3): DESCRIPTION OF CONSTRUCTION ACTIVITIES

- **5.3 (3a): Project Limits** (See Title Sheet)
- **5.3 (3a): Project Description** (See Title Sheet)
- **5.3 (4): Site Map(s)** (See Title Sheet and Plans)
- **Major Soil Disturbing Activities** (check all that apply)
  - ☒ Clearing and grubbing
  - ☒ Excavation/borrow
  - ☒ Grading and shaping
  - ☐ Filling
  - ☐ Other (describe): N/A
- **5.3 (3b): Total Project Area:** 3.00 Acres
- **5.3 (3b): Total Area to be Disturbed:** 1.00 Acre
- **5.3 (3c): Maximum Area Disturbed at One Time:** 1.00 Acre
- **5.3 (3d): Existing Vegetative Cover (%):** 25%
- **5.3 (3d): Description of Vegetative Cover:** 30% grass with some deciduous and coniferous trees.
- **5.3 (3e): Soil Properties:** AASHTO Soil A-4, A-5, A-6, A-7
- **5.3 (3f): Name of Receiving Water Body/Bodies:** N/A
- **5.3 (3g): Location of Construction Support Activity Areas:** N/A

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install perimeter protection where runoff may exit site.	
Remove and stockpile topsoil.	
Stabilize disturbed areas.	
Final grading.	
Removal of protection devices.	
Reseed areas disturbed by removal activities.	

5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES

All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report. Include the technical reasoning for selecting each control. (check all that apply)

Perimeter Controls (See Detail Plan Sheets)

Description	Estimated Start Date
☐ Natural Buffers (within 50 ft of Waters of State)	
☒ Silt Fence	
☒ Erosion Control Wattles	
☐ Temporary Berm / Windrow	
☐ Floating Silt Curtain	
☐ Stabilized Construction Entrances	
☐ Entrance/Exit Equipment Tire Wash	
☐ Other:	

Structural Erosion and Sediment Controls

Description	Estimated Start Date
☒ Silt Fence	
☐ Temporary Berm/Windrow	
☒ Erosion Control Wattles	
☐ Temporary Sediment Barriers	
☐ Erosion Bales	
☐ Temporary Slope Drain	
☒ Turf Reinforcement Mat	
☐ Riprap	
☐ Gabions	
☐ Rock Check Dams	
☐ Sediment Traps/Basins	
☒ Culvert Inlet Protection	
☐ Transition Mats	
☐ Median/Area Drain Inlet Protection	
☐ Curb Inlet Protection	
☐ Interceptor Ditch	
☒ Concrete Washout Facility	
☐ Work Platform	
☐ Temporary Water Barrier	
☐ Temporary Water Crossing	
☐ Permanent Stormwater Ponds	
☐ Permanent Open Vegetated Swales	
☐ Natural Depressions to allow for Infiltration	
☐ Sequential Systems that combine several practices	
☐ Other:	

Dust Controls

Description	Estimated Start Date
☐ Tarps & Wind impervious fabrics	
☐ Watering	
☐ Stockpile location/orientation	
☐ Dust Control Chlorides	
☐ Other	

Dewatering BMPs

Description	Estimated Start Date
☐ Sediment Basins	
☐ Dewatering bags	
☐ Weir tanks	
☐ Temporary Diversion Channel	
☐ Other:	

Stabilization Practices (See Detail Plan Sheets)

(Stabilization measures will begin the following work day whenever earth disturbing activity on any portion of the site has temporarily or permanently ceased. Temporary stabilization will be completed as soon as practicable but no later than 14 days after initiating soil stabilization activities (**3.18**))

Description	Estimated Start Date
☐ Vegetation Buffer Strips	
☐ Temporary Seeding (Cover Crop Seeding)	
☒ Permanent Seeding	
☐ Sodding	
☐ Planting (Woody Vegetation for Soil Stabilization)	
☐ Mulching (Grass Hay or Straw)	
☐ Fiber Mulching (Wood Fiber Mulch)	
☐ Soil Stabilizer	
☐ Bonded Fiber Matrix	
☐ Fiber Reinforced Matrix	
☒ Erosion Control Blankets	
☐ Surface Roughening (e.g. tracking)	
☐ Other:	

Wetland Avoidance

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes ☐ No ☒ If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 1/3 of the height of the silt fence.
- Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
- Check dams will be inspected for stability. Sediment will be removed when depth reaches ½ the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The Project Engineer and Contractor's Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

Stormwater management will be handled by temporary controls outlined in "DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES" above, and any permanent controls needed to meet permanent stormwater management needs in the post construction period will be shown in the plans and noted as permanent.

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

➢ **Material Management**

- Housekeeping
  - Only needed products will be stored on-site by the Contractor.
  - Except for bulk materials the Contractor will store all materials under cover and/or in appropriate containers.
  - Products must be stored in original containers and labeled.
  - Material mixing will be conducted in accordance with the Manufacturer's recommendations.
  - When possible, all products will be completely used before properly disposing of the container off-site.
  - The Manufacturer's directions for disposal of materials and containers will be followed.
  - The Contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
  - Dust generated will be controlled in an environmentally safe manner.

- Hazardous Materials
  - Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.
  - Original labels and material safety data sheets will be retained in a safe place to relay important product information.
  - If surplus product must be disposed of, the Manufacturer's label directions for disposal will be followed.
  - Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
  - Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any stormwater system or stormwater treatment system.
  - Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.

➢ **Spill Control Practices**

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the Manufacturer's recommended methods for spill cleanup will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the Contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for cleanup purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The Contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator.

➢ **Spill Response**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into stormwater runoff and conveyance systems. If the release has impacted on-site stormwater, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens stormwater or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The Contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SDDANR.
- Personnel with primary responsibility for spill response and cleanup will receive training by the Contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

5.3 (8b): WASTE MANAGEMENT PROCEDURES

➢ **Waste Disposal**

- All liquid waste materials will be collected and stored in approved sealed containers. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal and notices stating proper practices will be posted. The Contractor is responsible for ensuring waste disposal procedures are followed.

➢ **Hazardous Waste**

- All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the Manufacturer. Site personnel will be instructed in these practices, and the Contractor will be responsible for seeing that these practices are followed.

➢ **Sanitary Waste**

- Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units which must be secured to prevent tipping and serviced in a timely manner by a licensed waste management Contractor or as required by any local regulations.

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#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

STORM WATER POLLUTION PREVENTION PLAN (2 OF 4)

PROJ. NO.	21005951.00
DRAWN BY:	WDL
CHECKED BY:	SLW
DATE:	AUGUST 2024

SHEET **31** OF 43

5.3 (9): CONSTRUCTION SITE POLLUTANTS

gThe following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the heading "POLLUTION PREVENTION PROCEDURES" (check all that apply).

- ☒ Concrete and Portland Cement
- ☐ Detergents
- ☐ Paints
- ☒ Metals
- ☒ Bituminous Materials
- ☒ Petroleum Based Products
- ☒ Diesel Exhaust Fluid
- ☐ Cleaning Solvents
- ☒ Wood
- ☒ Cure
- ☐ Texture
- ☐ Chemical Fertilizers
- ☐ Other:

Product Specific Practices

- **Petroleum Products**
  All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

- **Fertilizers**
  Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to stormwater. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

- **Paints**
  All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the Manufacturer's instructions and any applicable state and local regulations.

- **Concrete Trucks**
  Contractors will provide designated truck washout facilities on the site. These areas must be self-contained and not connected to any stormwater outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

5.3 (10): NON-STORMWATER DISCHARGES

The following non-stormwater discharges are anticipated during the course of this project (check all that apply).

- ☐ Discharges from water line flushing.
- ☐ Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
- ☒ Uncontaminated ground water associated with dewatering activities.

5.3 (11): INFEASIBILITY DOCUMENTATION

If it is determined to be infeasible to comply with any of the requirements of the Stormwater Permit, the infeasibility determination must be thoroughly documented in the SWPPP.

7.0: SPILL NOTIFICATION

In the event of a spill, the Contractor's site superintendent will make the appropriate notification(s), consistent with the following procedures:

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to SDDANR immediately **if any one of the following** conditions exists:
  - The release or spill threatens or is able to threaten waters of the state (surface water or ground water)
  - The release or spill causes an immediate danger to human health or safety
  - The release or spill exceeds 25 gallons
  - The release or spill causes a sheen on surface water
  - The release or spill of any substance that exceeds the ground water quality standards of ARSD Chapter 74:54:01
  - The release or spill of any substance that exceeds the surface water quality standards of ARSD Chapter 74:51:01
  - The release or spill of any substance that harms or threatens to harm wildlife or aquatic life
  - The release or spill is required to be reported according to Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists, Consolidated List of Chemicals Subject to Reporting Under the Emergency Planning and Community Right to Know Act, US Environmental Protection Agency.

- To report a release or spill, call SDDANR at (605) 773-3296 during regular office hours (8 a.m. to 5 p.m. Central Standard Time). To report the release after hours, on weekends or holidays, call South Dakota Emergency Management at (605) 773-3231. Reporting the release to SDDANR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, you must also contact local authorities to determine the local reporting requirements for releases. A written report of the unauthorized release of any regulated substance, including quantity discharged, and the location of the discharge will be sent to SDDANR within 14 days of the discharge.

IMEG

#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

STORM WATER POLLUTION PREVENTION PLAN (3 OF 4)

PROJ. NO.	21005951.00
DRAWN BY:	WDL
CHECKED BY:	SLW
DATE:	AUGUST 2024

SHEET **32** OF 43

5.4: SWPPP CERTIFICATIONS

➢ **Certification of Compliance with Federal, State, and Local Regulations**

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

➢ **City of Colman, South Dakota**

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

_____

Authorized Signature (See the General Permit, Section 7.4 (1))

➢ **Prime Contractor**

This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

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

_____

Authorized Signature

CONTACT INFORMATION

The following personnel are duly authorized representatives and have signatory authority for modifications made to the SWF

➢ **Contractor Information**:

- Prime Contractor Name: _____
- Contractor Contact Name: _____
- Address: _____
- _____
- City: _____State: _____Zip: _____
- Office Phone: _____Field: _____
- Cell Phone: _____Fax: _____

➢ **Erosion Control Supervisor**

- Name: _____
- Address: _____
- _____
- City: _____State: _____Zip: _____
- Office Phone: _____Field: _____
- Cell Phone: _____Fax: _____

➢ **Project Engineer**

- Name: _____
- Business Address: _____
- Job Office Location: _____
- City: _____State: _____Zip: _____
- Office Phone: _____Field: _____
- Cell Phone: _____Fax: _____

➢ **SDDANR Contact Spill Reporting**
- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➢ **SDDANR Contact for Hazardous Materials.**
- (605) 773-3153

➢ **National Response Center Hotline**
- (800) 424-8802.

➢ **SDDANR Stormwater Contact Information**

SDDANR Stormwater (800) 737-8676
Surface Water Quality Program (605) 773-3351

5.5: REQUIRED SWPPP MODIFICATIONS

➢ **5.5 (1): Conditions Requiring SWPPP Modification**

The SWPPP must be modified, including the site map(s), in response to any of the following conditions:

- When a new operator responsible for implementation of any part the SWPPP begins work on the site.
- When changes to the construction plans, sediment and erosion control measures, or any best management practices on site that are no longer accurately reflected in the SWPPP. This includes changes made in response to corrective actions triggered by inspections.
- To reflect areas on the site map where operational control has been transferred (including the date of the transfer) or has been covered under a new permit since initiating coverage under this general permit.
- If inspections by site staff, local officials, SDDANR, or U.S. EPA determine that SWPPP modifications are necessary for compliance with the Stormwater Permit.
- To reflect any revisions to applicable federal, state, or local requirements that affect the control measures implemented at the site.
- If approved by the Secretary, to reflect any changes in chemical water treatment systems or controls, including the use of a different water treatment chemical, age rates, different areas, or methods of application.

➢ **5.5 (2): Deadlines for SWPPP Modification**

Any required revisions to the SWPPP must be completed within 7 calendar days following any of the items listed above.

➢ **5.5 (3): Documentation of Modifications to the Plan**

All SWPPP modification records are required to be maintained showing the dates of when the modification occurred. The records must include the name of the person authorizing each change and a brief summary of all changes.

➢ **5.5 (4): Certification Requirements**

All modifications made to the SWPPP must be signed and certified as required in Section 7.4.

➢ **5.5 (5): Required Notice to Other Operators**

If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.

When modifications as described above occur, the SWPPP will be modified to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The Project Engineer will modify the SWPPP using the DOT 298 form and drawings on the plan will be modified to reflect the needed changes. Copies of the DOT 298 forms and the SWPPP will be retained on site in a designated place for review throughout the course of the project. A copy of the DOT 298 form will be given to the Contractor Erosion Control Supervisor and a copy will be emailed to the Project Engineer in accordance with the DOT 298 Form.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

SD HWY 34 - HORIZONTAL ALIGNMENT DATA

Type	Station	Length	Radius	Direction	Delta (∠)	Northing (y)	Easting (x)
POB	356+85.16					619245.358	2889479.017
		1089.93'		N 87°48'44.13" E			
PI	367+75.09					619286.965	2890568.149
		2364.98'		N 87°49'44.76" E			
PC	391+40.07					619376.551	2892931.428
PI	394+02.57		23,661.33		1°16'17"(LT)	619386.495	2893193.751
PT	396+65.06					619402.256	2893455.788
		1968.68'		N 86°33'28.14" E			
PC	416+33.75					619376.551	2892931.428
PI	420+33.78		22,988.02		1°59'38"(RT)	619544.478	2895820.236
PT	424+33.75					619554.588	2896220.148
		23.27'		N 88°33'06.30" E			
PI	424+57.12					619555.179	2896243.509
		2,263.43'		N 88°33'06.30" E			
PI	447+20.54					619612.385	2898506.214
		655.47'		N 88°35'31.44" E			
PI	453+76.01					619628.490	2899161.487
		24296.16'		N 88°35'31.44" E			
PI	474+00.69					619678.238	2901185.552
		337.12'		N 88°35'31.44" E			
POE	477+37.81					619686.521	2901522.566

HORIZONTAL & VERTICAL CONTROL POINTS

FOR BIDDING PURPOSES ONLY

POINT	STATION	OFFSET	DESCRIPTION	Northing (y)	Easting (x)	Elevation (z)
CP 1	374+64.18	84.37 L	NAIL	619397.380	2891253.553	1679.90
CP 2	379+00.75	27.62 L	NAIL	619357.210	2891691.955	1681.53
CP 3	384+13.09	25.58 R	NAIL	619323.451	2892205.941	1682.52
CP 4	391+02.20	26.55 R	NAIL	619348.589	2892894.596	1687.04
CP 5	399+13.09	29.12 L	NAIL	619446.875	2893712.645	1696.97
CP 6	405+17.12	30.31 L	NAIL	619483.665	2894304.483	1695.89
CP 7	407+92.83	28.80 R	NAIL	619441.218	2894583.248	1695.67
CP 8	415+07.36	28.89 L	NAIL	619541.713	2895293.029	1694.56
CP 9	419+87.58	30.98 R	NAIL	619508.039	2895775.646	1701.48
1212	420+31.41	2.93 L	ALUMINUM MONUMENT GROUND OFF	619543.824	2895817.930	1701.03
1213	394+02.84	0.85 L	ALUMINUM MONUMENT GROUND OFF	619388.809	2893193.909	1687.79
1237	477+20.53	0.03 R	ALUMINUM MONUMENT GROUND OFF	619612.352	2898506.205	1695.55
1286			ALUMINUM MONUMENT	619209.800	2888721.072	1665.21
1287	360+74.14	0.06 R	ALUMINUM MONUMENT	619260.692	2889867.693	1672.61
1288	391+42.92	0.39 R	ALUMINUM MONUMENT	619376.266	2892934.294	1687.79
1289	396+61.36	0.21 R	ALUMINUM MONUMENT	619401.825	2893452.101	1689.56
1290	400+42.82	0.24 R	ALUMINUM MONUMENT	619424.695	2893832.878	1696.84

LOBAN AVE

Type	Station	Length	Direction	Northing (y)	Easting (x)
POB	94+00			618914.344	2895327.694
		684.26'	N 1°05'19.79" W		
PI	100+84.26			618914.344	2985297.253
		615.74'	N 1°37'18.02" W		
POE	107+00.00			620213.974	2895297.266

SD34 372+02 - SANITARY CROSSING

Type	Station	Length	Direction	Northing (y)	Easting (x)
POB	0+00			619081.291	2891042.980
		115.17'	N 22°54'25.32" W		
PI	1+15.17			619187.375	2890998.152
		199.95'	N 1°36'31.85" W		
PI	3+15.12			619387.251	2890992.539
		338.82'	N 65°48'46.38" E		
POE	6+53.94			619526.073	2891301.617

SD34 379+85 - SANITARY CROSSING

Type	Station	Length	Direction	Northing (y)	Easting (x)
POB	10+00			618990.573	2891748.135
		235.73'	N 2°27'17.96" E		
PI	12+35.73			619226.090	2891758.233
		140.65'	10°22'40.70" E		
PI	13+76.38			619364.440	2891783.570
		138.50'	N 1°53'54.78" W		
PI	15+14.88			619502.864	2891778.982
		34.35'	N 43°23'13.27" E		
POE	15+49.24			619527.830	2891802.580

SD34 384+06 - SANITARY CROSSING

Type	Station	Length	Direction	Northing (y)	Easting (x)
POB	20+00			619226.090	2891758.233
		322.01'	N 85°07'03.57" E		
PI	23+22.01			619253.496	2892079.072
		201.00'	N 51°27'48.82" E		
PI	25+23.01			619378.721	2892236.297
		287.92'	N 49°09'19.80" E		
POE	28+10.93			619567.024	2892454.105

SD34 405+58 - SANITARY CROSSING

Type	Station	Length	Direction	Northing (y)	Easting (x)
POB	30+00			619750.220	2894336.040
		317.34'	S 2°08'06.42" E		
PI	33+17.34			619433.101	2894347.862
		227.65'	N 86°39'52.94" E		
POE	35+44.99			619446.346	2894575.127

Plotted by: Jo-Hannah Hamann
Plotted on: 9/4/24 9:59:34 AM
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#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

ALIGNMENT & CONTROL DATA

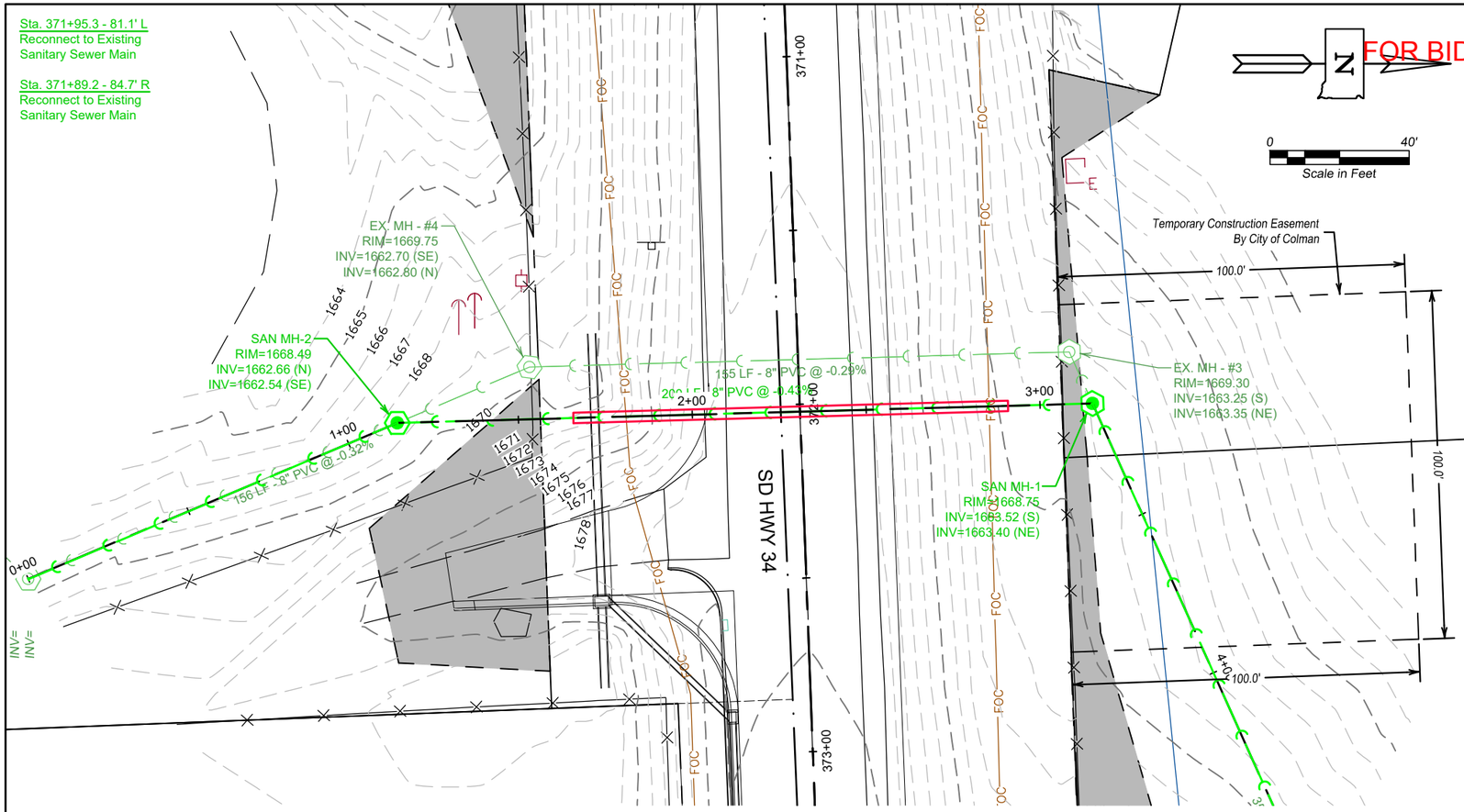
PROJ. NO.	21005951.00
DRAWN BY:	WDL
CHECKED BY:	SLW
DATE:	AUGUST 2024

SHEET **34** OF 43

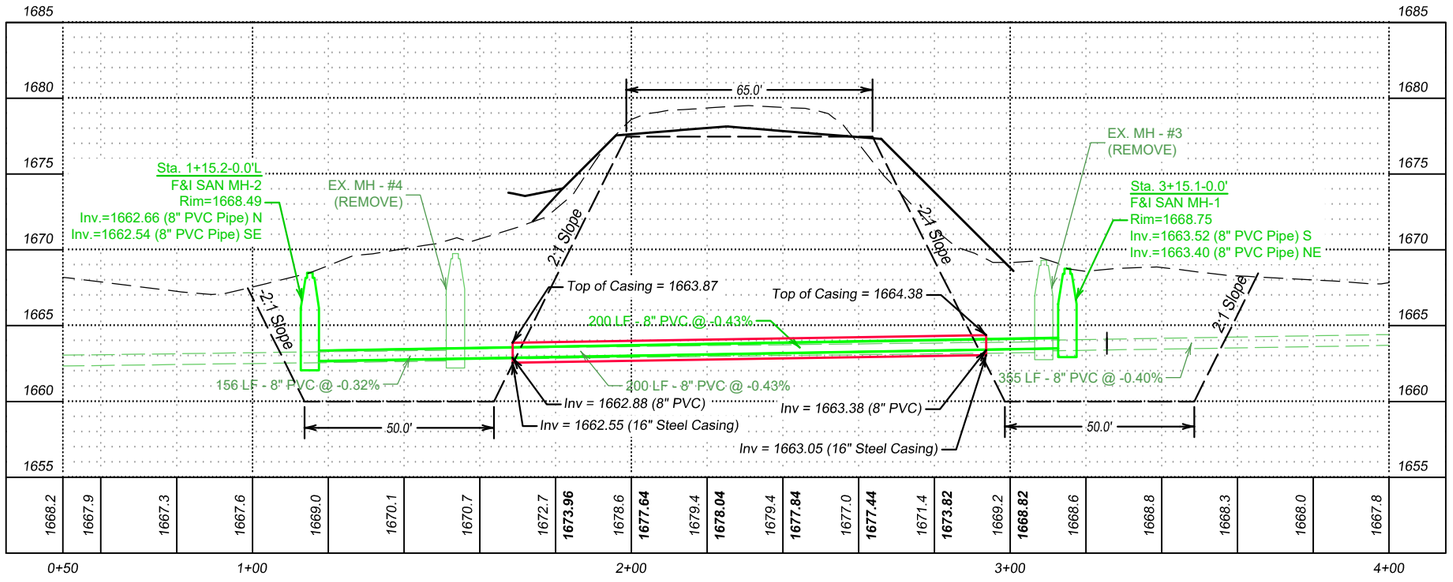
FOR BIDDING PURPOSES ONLY

Sta. 371+95.3 - 81.1' L
Reconnect to Existing
Sanitary Sewer Main

Sta. 371+89.2 - 84.7' R
Reconnect to Existing
Sanitary Sewer Main



Sta. 1+68 - 15.0'R to Sta. 2+94 - 15.0'R
Pressure Grout Abandoned 8" PVC Pipe



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

PLAN & PROFILE
370+00 - 376+00
(SD HWY34)

PROJ. NO.	21005951.00
DRAWN BY:	WDL
CHECKED BY:	SLW
DATE:	AUGUST 2024

SHEET **35** OF 43

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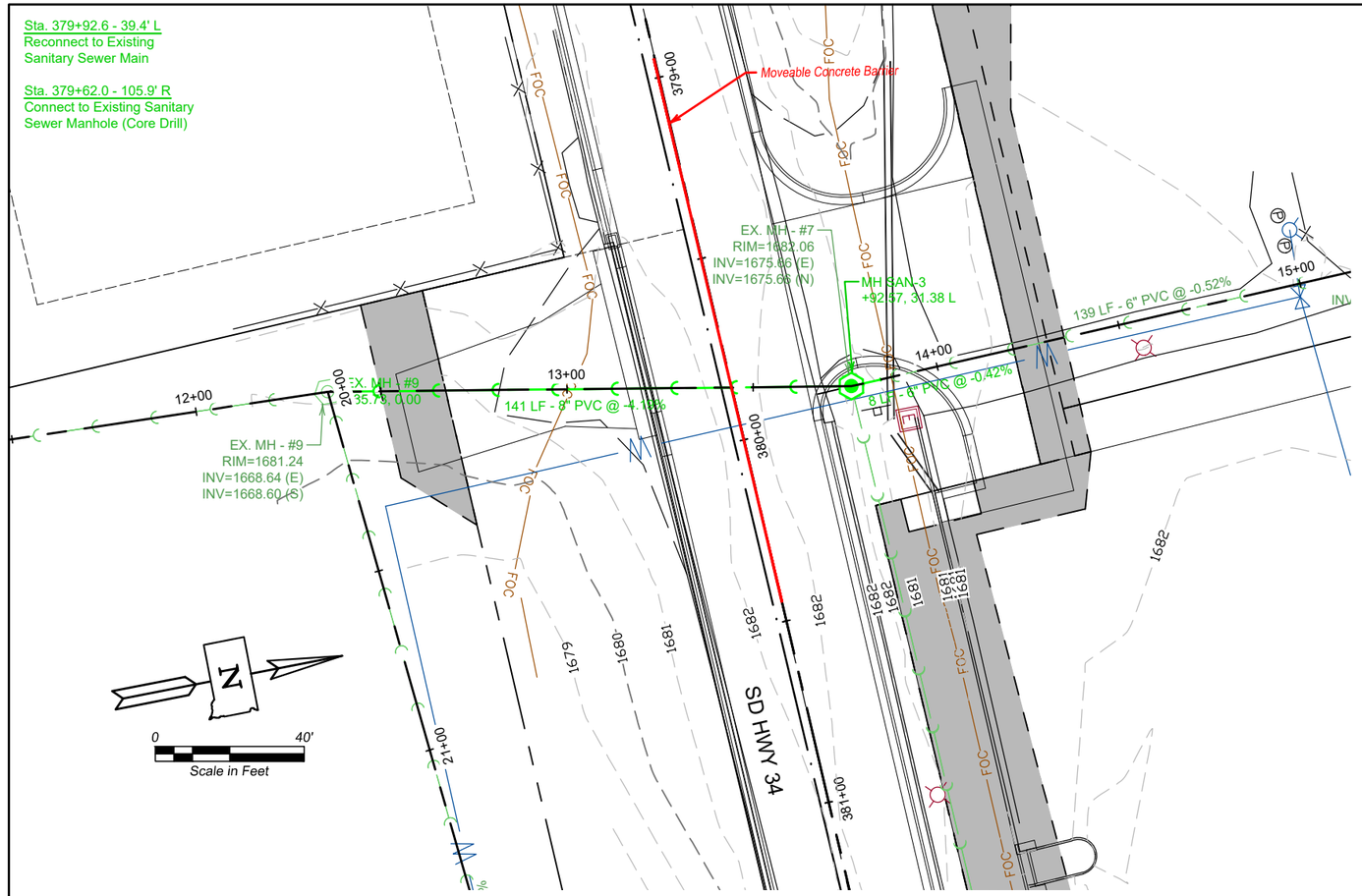
Sta. 379+92.6 - 39.4' L
Reconnect to Existing
Sanitary Sewer Main

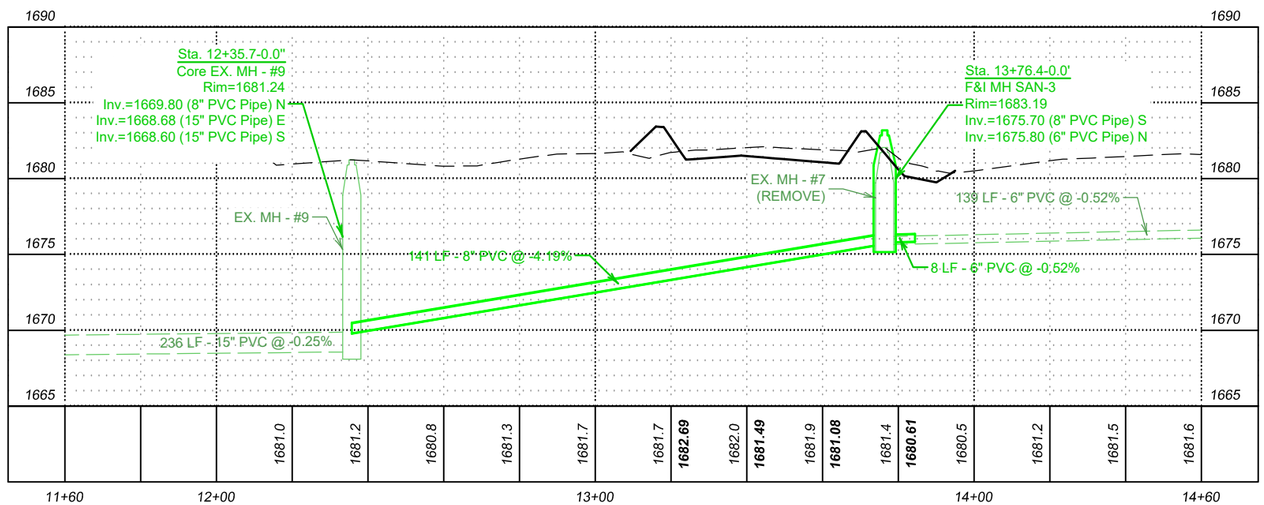
Sta. 379+62.0 - 105.9' R
Connect to Existing Sanitary
Sewer Manhole (Core Drill)

F&I 150 LF. of Traffic Control Moveable
Concrete Barrier with Temporary Concrete
Barrier End Protection

Concrete Barriers will be installed and/or
reset in or adjacent to the 5 foot-wide buffer
zone between project phases as required to
protect the planned utility replacement work.

FOR BIDDING PURPOSES ONLY





REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

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#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

PLAN & PROFILE
379+00 - 381+00
(SD HWY34)

PROJ. NO.	21005951.00
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CHECKED BY:	SLW
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SHEET
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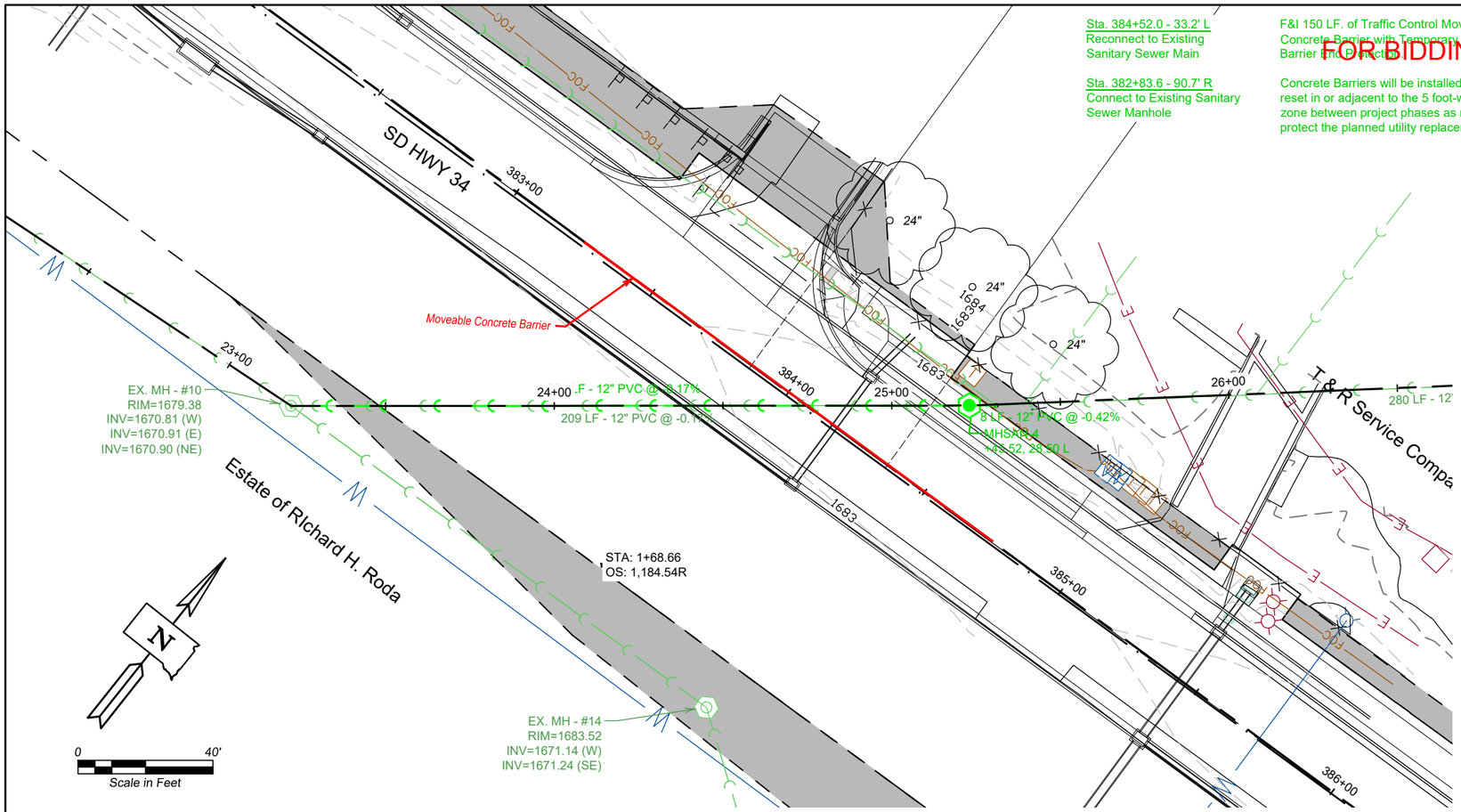
FOR BIDDING PURPOSES ONLY

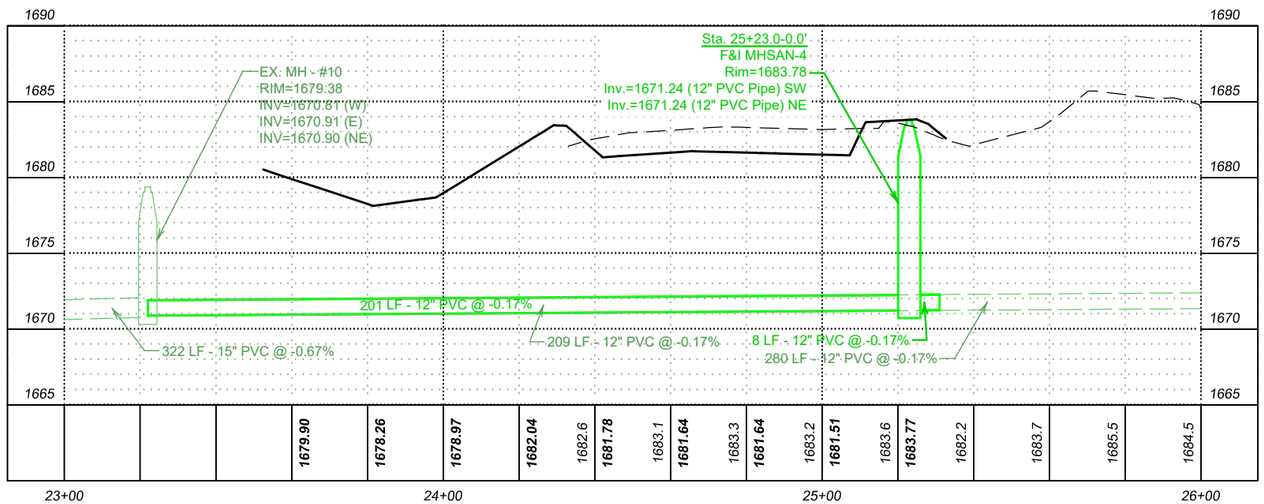
Sta. 384+52.0 - 33.2' L
Reconnect to Existing
Sanitary Sewer Main

Sta. 382+83.6 - 90.7' R
Connect to Existing Sanitary
Sewer Manhole

F&I 150 LF. of Traffic Control Moveable
Concrete Barrier with Temporary Concrete
Barrier End Protection

Concrete Barriers will be installed and/or
reset in or adjacent to the 5 foot-wide buffer
zone between project phases as required to
protect the planned utility replacement work.





REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

PLAN & PROFILE
379+00 - 384+00
(SD HWY34)

PROJ. NO.	21005951.00
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DATE:	AUGUST 2024

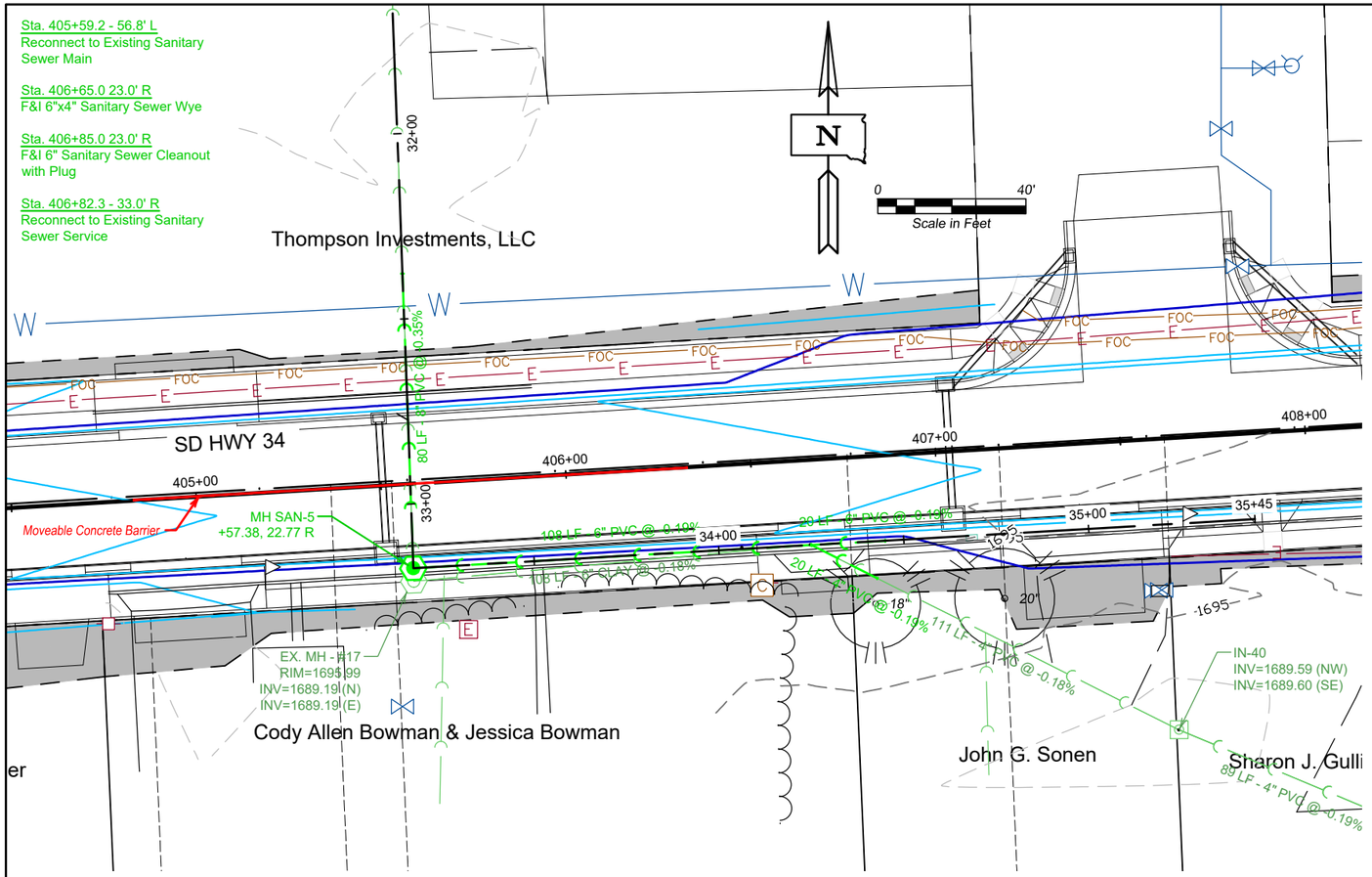
SHEET
37
OF 43

Sta. 405+59.2 - 56.8' L
Reconnect to Existing Sanitary Sewer Main

Sta. 406+65.0 23.0' R
F&I 6"x4" Sanitary Sewer Wye

Sta. 406+85.0 23.0' R
F&I 6" Sanitary Sewer Cleanout with Plug

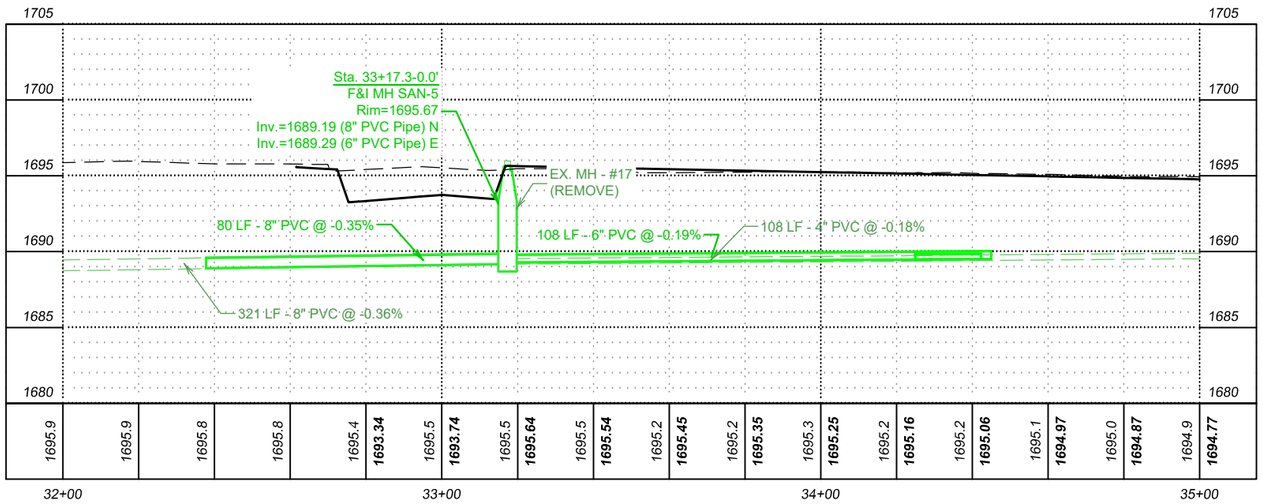
Sta. 406+82.3 - 33.0' R
Reconnect to Existing Sanitary Sewer Service



F&I 150 LF of Temporary Concrete Barrier and Temporary Concrete Barrier End Protection.

Concrete Barriers will be installed and/or reset in or adjacent to the 5 foot-wide buffer zone between project phases as required to protect the planned utility replacement work.

FOR BIDDING PURPOSES ONLY



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

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#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

PLAN & PROFILE
404+00 - 410+00
(SD HWY34)

PROJ. NO.	21005951.00
DRAWN BY:	WDL
CHECKED BY:	SLW
DATE:	AUGUST 2024

SHEET **38** OF 43

Sta. 95+31.1 - 10.2' R
Reconnect to Existing 8" Sanitary Sewer Main

Sta. 95+49.6 - 2.7' R
F&I 8"x8" Sanitary Sewer Wye

Sta. 95+45.9 - 2.7' R
F&I 8"x6" Sanitary Sewer Wye

Sta. 95+45.9 - 17.3' L
Reconnect to Existing 6" Sanitary Sewer Service

Sta. 97+19.4 - 2.0' R
F&I 8"x4" Sanitary Sewer Wye

Sta. 97+19.5 - 35.0' R
F&I 4" Sanitary Sewer Service

F&I 150 LF. of Traffic Control Moveable Concrete Barrier with Temporary Concrete Barrier End Protection.

Concrete Barriers will be installed and/or reset in or adjacent to the 5 foot-wide buffer zone between project phases as required to protect the planned utility replacement work.

Sta. 98+06.0 14.8' Lt to 13.1' Rt
13.1 SqYd - Remove existing concrete.

Sta. 95+25 to 99+36 10' Lt & 10' Rt
79 CuYd - Salvage Granular Material

Sta. 98+73.1 - 1.4' R
F&I 8"x4" Sanitary Sewer Wye

Sta. 98+72.9 - 31.0' L
F&I 4" Sanitary Sewer Service

Sta. 98.87.2 - 1.4' R
F&I 8"x4" Sanitary Sewer Wye

Sta. 98+87.4 - 34.0' R
F&I 4" Sanitary Sewer Service

FOR BIDDING PURPOSES ONLY

0 40'
Scale in Feet

City of Colman
(Community Pool)

City of Colman

SD HWY 34

Moveable Concrete Barrier

S Loban Ave

EX. MH - #18
RIM=1698.40
INV=1691.08 (N)
INV=1691.25 (W)
INV=1691.08 (SE)

MH SAN-6
+37.13, 2.74 R

EX. MH - #19
RIM=1694.98
INV=1686.23 (N)
INV=1686.28 (S)

MH SAN-7
+29.49, 1.19 R

79 LF - 6" PVC @ -0.40%

392 LF - 8" PVC @ -0.95%

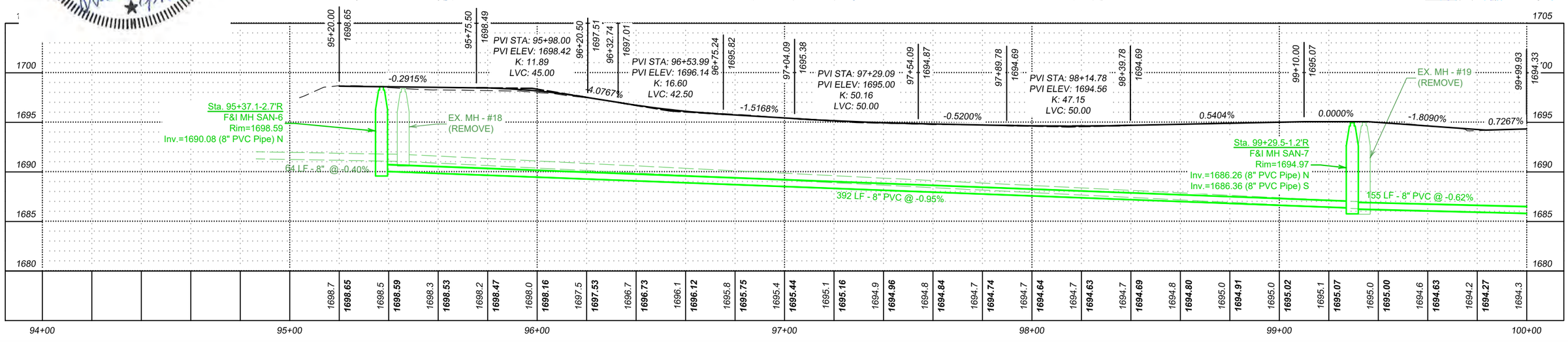
388 LF - 8" PVC @ -1.24%

150 LF - 8

8" CLAY

94+00 95+00 96+00 97+00 98+00 99+00 100+00

415+00 416+00



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

Plotted by: Zachary J. Bauer
Plotted on: 9/4/24 2:02:16 PM
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#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

PLAN & PROFILE
95+00 - 100+00
(LOBAN AVE.)

PROJ. NO.	21005951.00
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DATE:	AUGUST 2024

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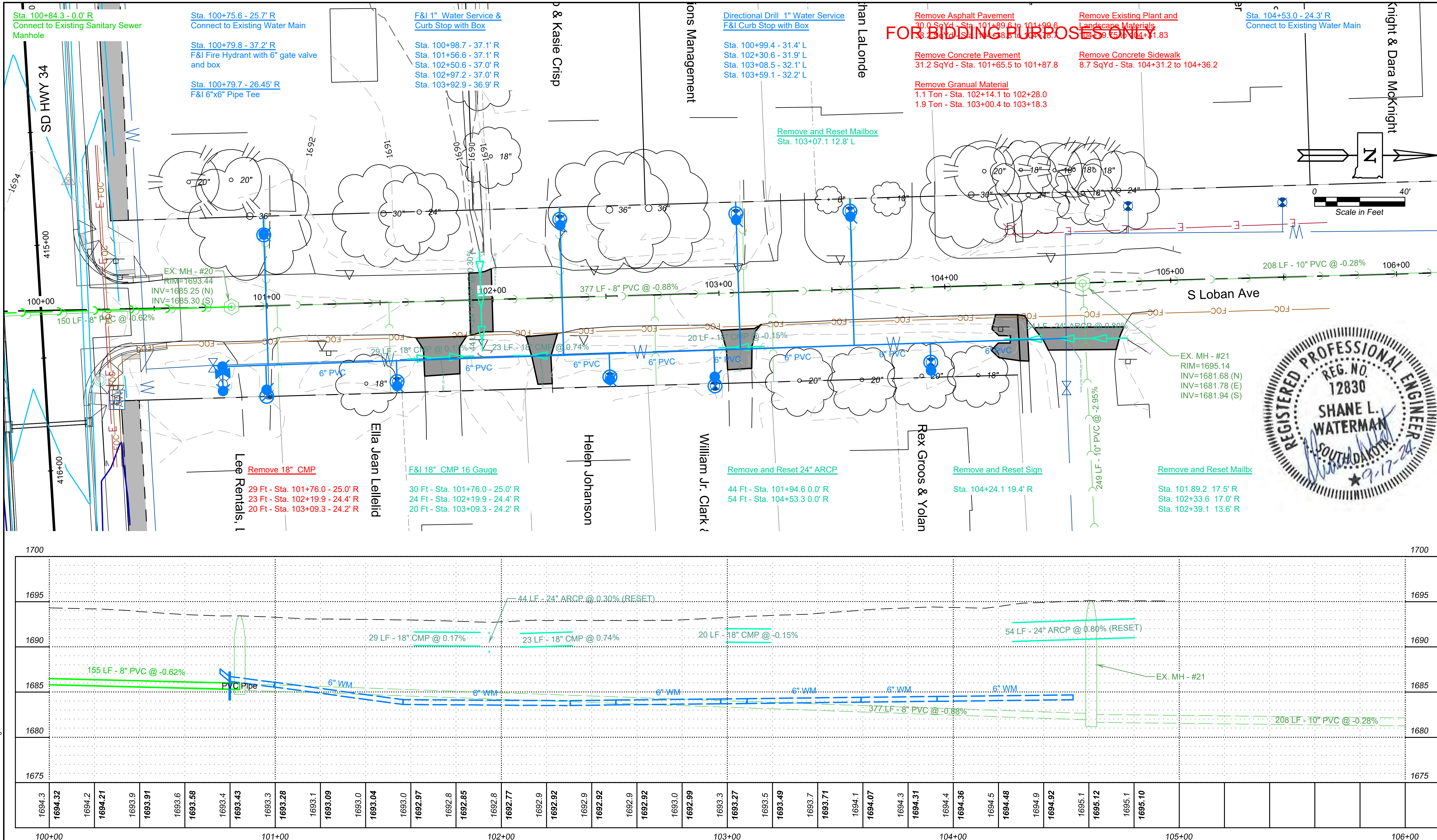
OF 43


FOR BIDDING PURPOSES ONLY
Sta. 100+84.3 - 0.0' R
Connect to Existing Sanitary Sewer Manhole
Sta. 100+75.6 - 25.7' R
Connect to Existing Water Main
Sta. 100+79.8 - 37.2' R
F&I Fire Hydrant with 6" gate valve and box
Sta. 100+79.7 - 26.45' R
F&I 6"x6" Pipe Tee
F&I 1" Water Service & Curb Stop with Box
Sta. 100+98.7 - 37.1' R
Sta. 101+56.6 - 37.1' R
Sta. 102+50.6 - 37.0' R
Sta. 102+97.2 - 37.0' R
Sta. 103+92.9 - 36.9' R
Directional Drill 1" Water Service
F&I Curb Stop with Box
Sta. 100+99.4 - 31.4' L
Sta. 102+30.6 - 31.9' L
Sta. 103+08.5 - 32.1' L
Sta. 103+59.1 - 32.2' L
Remove Asphalt Pavement
Remove Existing Plant and Landscape Materials
Remove Concrete Pavement
31.2 SqYd - Sta. 101+65.5 to 101+87.8
Remove Concrete Sidewalk
8.7 SqYd - Sta. 104+31.2 to 104+36.2
Remove Granual Material
1.1 Ton - Sta. 102+14.1 to 102+28.0
1.9 Ton - Sta. 103+00.4 to 103+18.3
Remove and Reset Mailbox
Sta. 103+07.1 12.8' L
Sta. 104+53.0 - 24.3' R
Connect to Existing Water Main
SD HWY 34
S Loban Ave
Scale in Feet
EX. MH - #20
RIM=1693.44
INV=1685.25 (N)
INV=1685.30 (S)
150 LF - 8" PVC @ -0.62%
377 LF - 8" PVC @ -0.88%
208 LF - 10" PVC @ -0.28%
29 LF - 18" CMP @ 0.17%
23 LF - 18" CMP @ 0.74%
20 LF - 18" CMP @ -0.15%
EX. MH - #21
RIM=1695.14
INV=1681.68 (N)
INV=1681.78 (E)
INV=1681.94 (S)
249 LF - 10" PVC @ -2.95%
Lee Rentals
Ella Jean Lellelid
Helen Johanson
William Jr. Clark
Rex Groos & Yolan
Kasie Crisp
LaLonde
Knight & Dara McKnight
Remove 18" CMP
29 Ft - Sta. 101+76.0 - 25.0' R
23 Ft - Sta. 102+19.9 - 24.4' R
20 Ft - Sta. 103+09.3 - 24.2' R
F&I 18" CMP 16 Gauge
30 Ft - Sta. 101+76.0 - 25.0' R
24 Ft - Sta. 102+19.9 - 24.4' R
20 Ft - Sta. 103+09.3 - 24.2' R
Remove and Reset 24" ARCP
44 Ft - Sta. 101+94.6 0.0' R
54 Ft - Sta. 104+53.3 0.0' R
Remove and Reset Sign
Sta. 104+24.1 19.4' R
Remove and Reset Mailbox
Sta. 101.89.2 17.5' R
Sta. 102+33.6 17.0' R
Sta. 102+39.1 13.6' R
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24
44 LF - 24" ARCP @ 0.30% (RESET)
54 LF - 24" ARCP @ 0.80% (RESET)
155 LF - 8" PVC @ -0.62%
PVC Pipe
6" WM
100+00
101+00
102+00
103+00
104+00
105+00
106+00

#	REVISIONS	DATE	BY

SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

PLAN & PROFILE
100+00 - 106+00
(LOBAN AVE.)

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FOR BIDDING PURPOSES ONLY

Sta. 202+66 to 211+75
F&I Topsoil - 500 SqYd

F& I 12" Ø Erosion Control Wattle
Sta. 202+66 0' Lt - 20 LF
Sta. 203+53 0' Lt - 20 LF
Sta. 204+40 0' Lt - 20 LF
Sta. 204+51 10' Lt - 20 LF
Sta. 204+51 10' Rt - 20 LF
Sta. 204+67 0' Lt - 20 LF
Sta. 206+10 10' Lt - 20 LF
Sta. 206+10 10' Rt - 20 LF
Sta. 206+20 0' Lt - 20 LF
Sta. 207+00 0' Lt - 20 LF
Sta. 207+05 22' Lt - 20 LF
Sta. 208+00 0' Lt - 20 LF

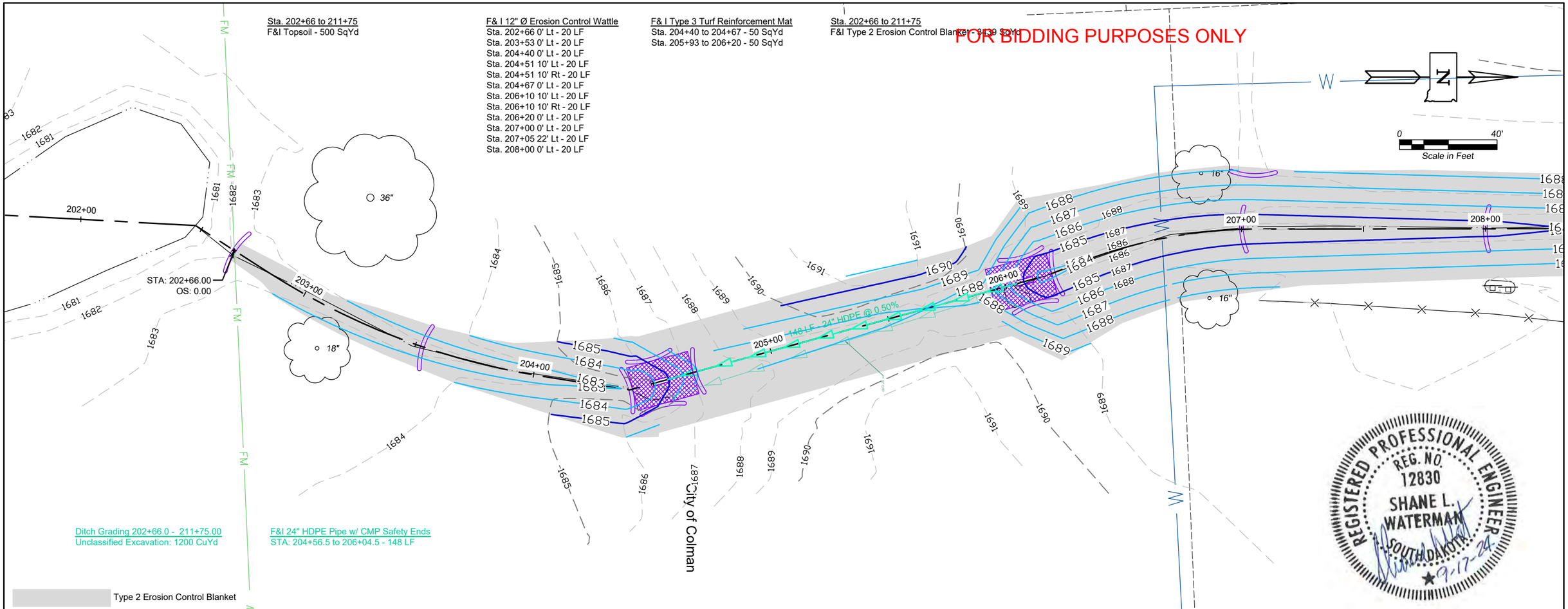
F& I Type 3 Turf Reinforcement Mat
Sta. 204+40 to 204+67 - 50 SqYd
Sta. 205+93 to 206+20 - 50 SqYd

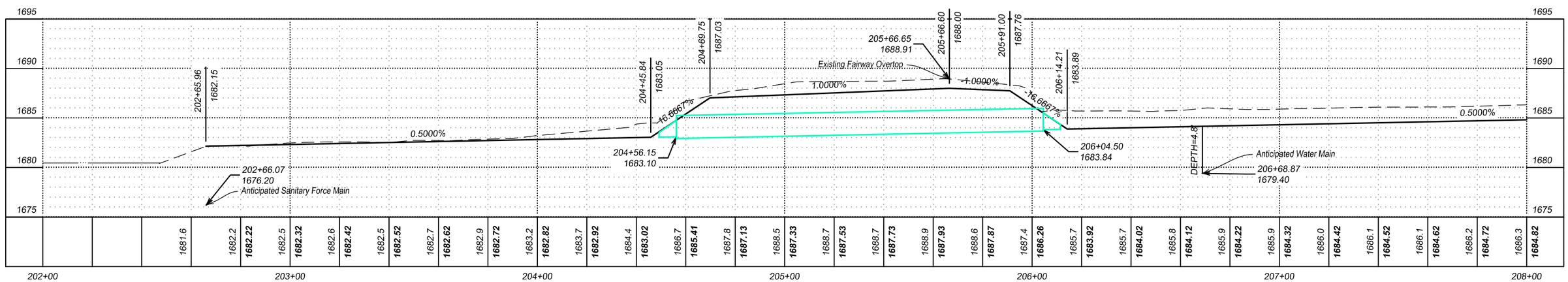
Sta. 202+66 to 211+75
F&I Type 2 Erosion Control Blanket - 3139 SqYd

Ditch Grading 202+66.0 - 211+75.00
Unclassified Excavation: 1200 CuYd

F&I 24" HDPE Pipe w/ CMP Safety Ends
STA: 204+56.5 to 206+04.5 - 148 LF

Type 2 Erosion Control Blanket





1681.6	1682.2	**1682.22**	1682.5	**1682.32**	1682.6	**1682.42**	1682.5	**1682.52**	1682.7	**1682.62**	1682.9	**1682.72**	1683.2	**1682.82**	1683.7	**1682.92**	1684.4	**1683.02**	1686.7	**1685.41**	1687.8	**1687.13**	1688.5	**1687.33**	1688.7	**1687.53**	1688.7	**1687.73**	1688.9	**1687.93**	1688.6	**1687.87**	1687.4	**1686.26**	1685.7	**1683.92**	1685.7	**1684.02**	1685.8	**1684.12**	1685.9	**1684.22**	1685.9	**1684.32**	1686.0	**1684.42**	1686.1	**1684.52**	1686.1	**1684.62**	1686.2	**1684.72**	1686.3	**1684.82**
202+00				203+00				204+00				205+00				206+00				207+00				208+00																																

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Plotted on: 9/4/24 10:00:45 AM
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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

PLAN & PROFILE
200+00 - 206+00
(DITCH)

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REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

FOR BIDDING PURPOSES ONLY

SD HWY 34

Classic Convenience, Inc.

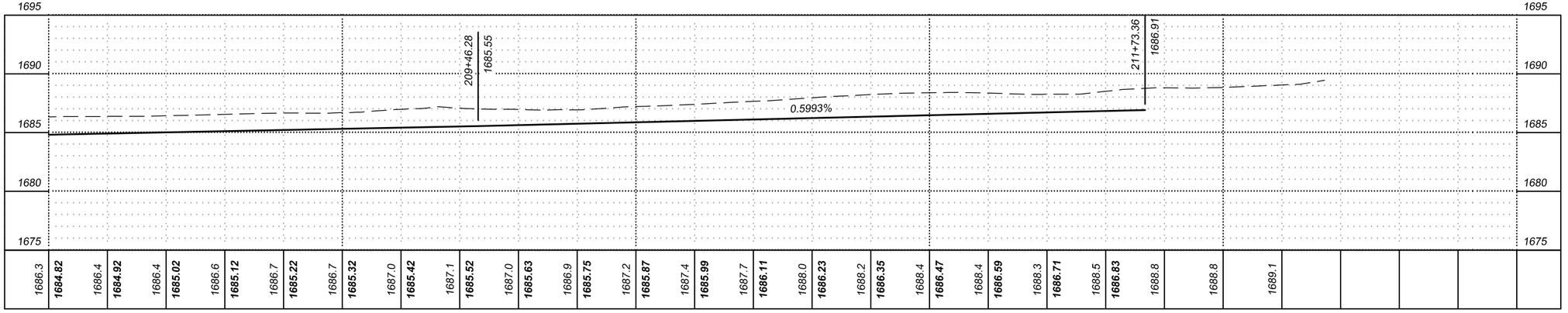
Scale in Feet

Ditch Grading 202+66.0 - 211+75.00
Unclassified Excavation: 1200 CuYd

F& I 12" Ø Erosion Control Wattle
Sta. 209+00 0' Lt - 20' LF
Sta. 209+46 28' Lt - 20' LF
Sta. 210+00 0' Lt - 20' LF
Sta. 211+00 0' Lt - 20' LF
Sta. 212+00 0' Lt - 20' LF

Type 2 Erosion Control Blanket

24 LF - 18" RCP @ -0.33%
24 LF - 18" RCP @ 0.17%



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

Plotted by: Jo-Hannah Hamann
Plotted on: 9/4/24 10:00:51 AM
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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

PLAN & PROFILE
206+00 - 212+00
(DITCH)

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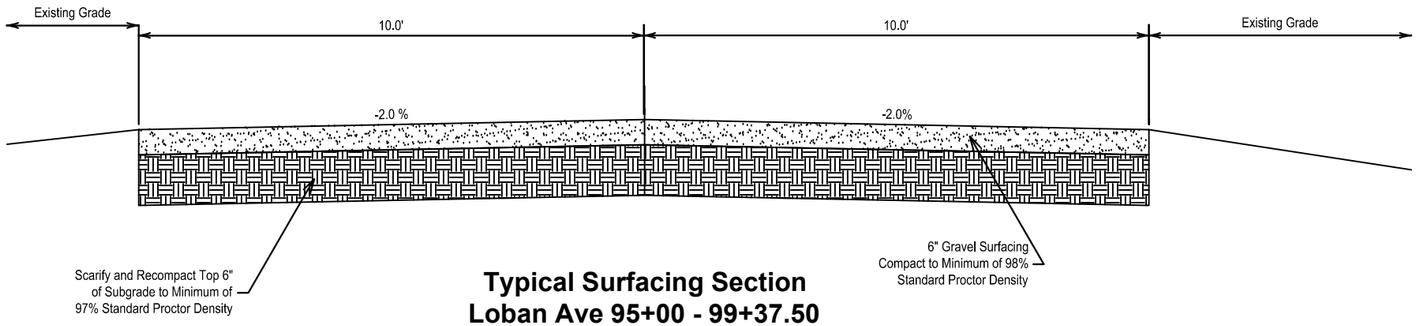
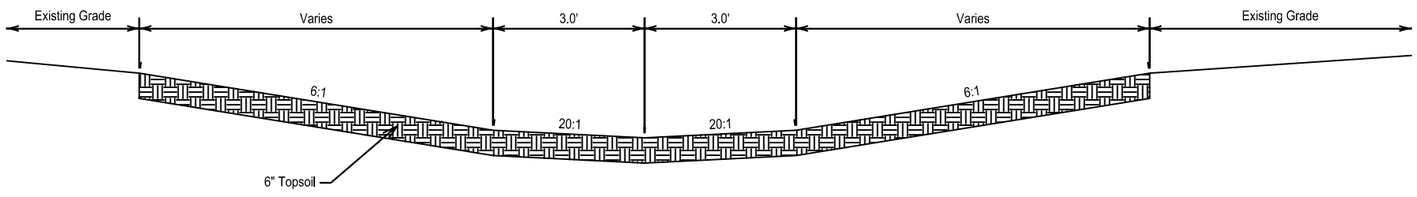
FOR BIDDING PURPOSES ONLY



Typical Surfacing Section
Loban Ave 95+00 - 99+37.50



Ditch Grading
202+66 - 211+75

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 12830
SHANE L. WATERMAN
SOUTH DAKOTA
9-17-24

Plotted on: 9/4/24 10:00:56 AM
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SD HWY 34 - UTILITY IMPROVEMENTS
SANITARY SEWER AND WATER
COLMAN, SOUTH DAKOTA

TYPICAL SECTION

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