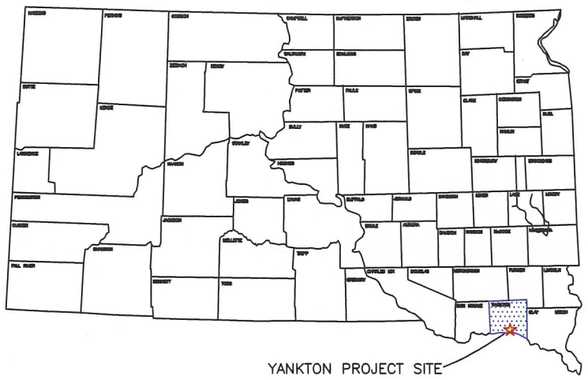
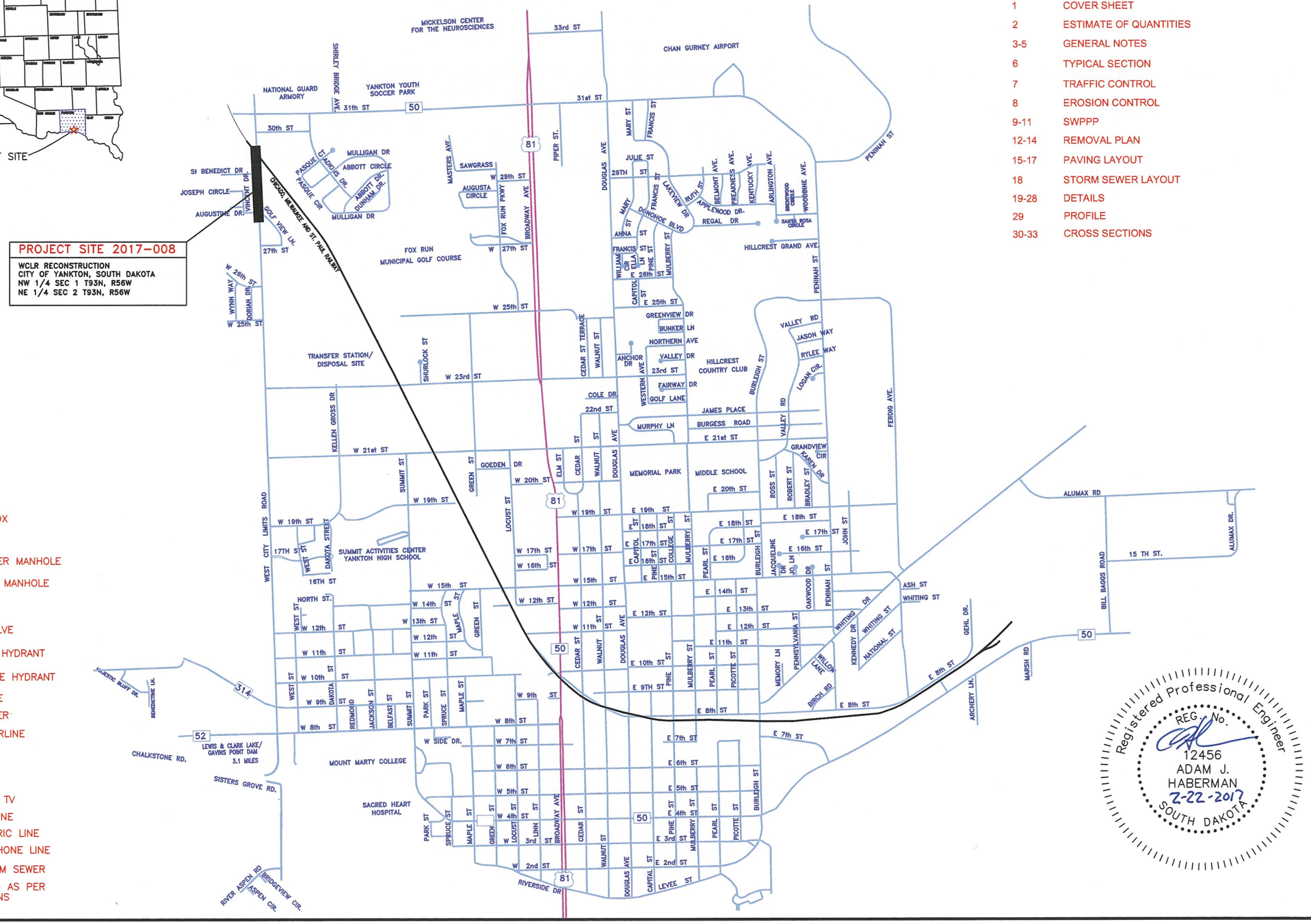
REGION NO.	STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
8	S.D.	2017–008	1	33
COVER SHEET				

WEST CITY LIMITS ROAD PAVEMENT REPLACEMENT FROM GOLF VIEW LANE TO THE CHICAGO MILWAUKEE AND ST. PAUL RAILROAD ROW CITY OF YANKTON, SOUTH DAKOTA CITY PROJECT NO. 2017-008





LEGEND

- POWER POLE
- TELEPHONE BOX
- CURB INLET
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- VALVE
- PROPOSED VALVE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- PROPERTY LINE
- SANITARY SEWER
- STREET CENTERLINE
- CURB
- WATER
- BURIED CABLE TV
- BURIED GAS LINE
- BURIED ELECTRIC LINE
- BURIED TELEPHONE LINE
- EXISTING STORM SEWER
- WORK LIMITS – AS PER CROSS SECTIONS

INDEX OF SHEETS

Registered Professional Engineer
REG. No. 12456
ADAM J. HABERMAN
2-22-2017
SOUTH DAKOTA

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	2	33
Quantities	2/15/2017	

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY		UNIT
	Removals and Grading			
1	Mobilization	1		LS
2	Saw Existing Concrete	100		LF
3	Saw Existing Asphalt	225		LF
4	Removal of Concrete Pavement	225		SY
5	Removal of Asphalt Pavement	7105		SY
6	Removal of Curb & Gutter	20		LF
7	Unclassified Excavation (See Note on Sheet 3)	1		LS
8	Undercutting	100		CY
9	Topsoil (See Note on Sheet 5)	1		LS
10	Water for Embankment or Granular Material	50		KGal
11	Remove & Replace Mailbox	2		EA
	Erosion Control			
12	Seeding, Mulching, Fertilizer (See Note on Sheet 5)	1		LS
13	Vehicle Tracking Control and Maintenance	2		EA
14	Sediment Control Wattle	180		LF
15	Inlet Sediment Control	2		EA
16	Geotextile Fabric	200		SY
	Traffic Control			
17	Traffic Control	686		UNITS
18	Traffic Control Miscellaneous	1		LS
	Surfacing			
19	8" P.C.C. Pavement	6304		SY
20	Insert Steel Bars	50		EA
21	8" Concrete Fillet Section	1782		SF
22	6" Approach P.C.C. Pavement	1009		SF
23	6" Concrete Sidewalk	200		SF
24	Concrete Curb and Gutter (B68)	42		LF
25	6" Aggregate Base Course (See Note on Sheet 5)	6730		SY
	Storm Sewer and Sanitary Sewer			
26	F&I 18" RCP CL 3 (round)	84		LF
27	3'x5' Type S inlet	2		EA
28	4'X4' Junction Box	1		EA
29	Remove & Reset Safety End Section	2		EA
30	Storm Sewer Pipe Bedding Material	84		LF
31	Adjust Sanitary Sewer MH Frame & Lid	2		EA

TABLE OF 6" CONCRETE APPROACH / DRIVEWAY PAVEMENT

LOCATION	REMOVAL QUANTITY EXISTING SURFACE (SY)	REPLACE (6" CONC.) QUANTITY (SF)
3+83.9 TO 4+13.8 LT.	16.9 (CONC.)	167
6+70.8 TO 7+00.2 LT.	20.1 (CONC.)	227
12+46.5 TO 12+89.5 LT.	26.4 (CONC.)	315
MISCELLANEOUS		300
TOTAL	63.4 (SY)	1009 (SF)

TABLE OF REMOVE ASPHALT PAVEMENT

LOCATION	QUANTITY (SY)
MAINLINE (WCLR)	6747
ST. BENEDICT DR.	205
AUGUSTINE DR.	100
GOLF VIEW LANE	53
TOTAL	7105 (SY)

TABLE OF REMOVE CONCRETE PAVEMENT

LOCATION	QUANTITY (SY)
FILLETS	111.7
DRIVEWAYS	63.4
MISC.	50
TOTAL	225 (SY)

TABLE OF CONCRETE FILLET SECTION

LOCATION	QUANTITY (SF)	RADIUS
SW QUAD WCLR & AUGUSTINE DR.	271	25'
NW QUAD WCLR & AUGUSTINE DR.	272	25'
SE QUAD WCLR & AUGUSTINE DR.	289	25'
NE QUAD WCLR & AUGUSTINE DR.	220	25'
SW QUAD WCLR & ST. BENEDICT DR.	365	30'
NW QUAD WCLR & ST. BENEDICT DR.	365	30'
TOTAL	1782 (SF)	

TABLE OF 8" PCC PAVEMENT

STATION TO STATION	QUANTITY (SY)
0+91 TO 14+40.4 - 20' LT. TO 20' RT.	5998
AUGUSTINE DR.	110
GOLF VIEW LN	53
ST. BENEDICT DR.	143
TOTAL	6304 (SY)

UNCLASSIFIED EXCAVATION WCLR

CUT 1875 Cubic Yds

See Note on sheet 4 (Unclassified Excavation)

TABLE OF ADJUST SANITARY MH FRAME & LID

LOCATION	QUANTITY (EA)
1+45 - 31' LT.	1
9+03 - 52' LT.	1
TOTAL	2 (EA)

TABLE OF 6" SIDEWALK PLACEMENT

LOCATION	QUANTITY (SF)
MISC.	200
TOTAL	200 (SF)

TABLE OF CONCRETE CURB & GUTTER REMOVAL

LOCATION	REMOVE QUANTITY (LF)
1+26.6 - 50' LT. TO 1+26.5 - 45' LT.	5'
9+20.7 - 64' LT. TO 9+20.6 - 61' LT.	3'
MISC.	12'
TOTAL	20'

TABLE OF B68 CONCRETE CURB & GUTTER

LOCATION	INSTALL QUANTITY (LF)
1+26.6 - 50' LT. TO 1+26.5 - 42' LT.	8'
1+63.6 - 51' LT. TO 1+63.6 - 48' LT.	3'
8+84.7 - 61' LT. TO 8+84.7 - 52' LT.	9'
9+20.7 - 64' LT. TO 9+20.6 - 52' LT.	12'
MISC.	10'
TOTAL	42'

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	3	33
Notes	2/8/2017	

SPECIFICATIONS TO BE USED

City of Yankton Standard Specifications and the Standard Specifications for Roads and Bridges 2004 Edition and Required Provisions, Supplemental Specifications, and/or Special Provisions as included in the Proposal.

UTILITIES

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

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

SEQUENCE OF OPERATIONS

The Contractor shall use the following sequence of operations that are listed on the traffic control sheets unless an alternate is approved by the Engineer. An alternate sequence must be submitted in writing a minimum of one week prior to the preconstruction meeting.

The Contractor will need to get an approved Phasing & Traffic Control Plan that coordinates the traffic from Saint Benedict Drive, Augustine Drive and all other properties to allow access at all times.

All trenches are to be backfilled, compacted and covered with service gravel on the same day the pipe is layed. Aggregate Base Course will be used in lieu of Service Gravel as directed by the engineer to temporarily re-open portions of streets after the pavement is removed.

REMOVAL OF EXISTING CONCRETE PAVEMENT

Payment for concrete removal is included in the contract unit price per square yard for "Removal of Concrete Pavement". Payment shall be at the contract unit price per square yard, regardless of variations in thickness. Joints shall be sawed wherever existing concrete is to be connected to new construction.

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

REMOVAL OF EXISTING ASPHALT PAVEMENT

Payment for asphalt mat removal is included in the contract unit price per square yard for "Removal of Asphalt Concrete". Payment shall be at the contract unit price per square yard, regardless of variations in thickness.

6" CONCRETE SIDEWALK

Concrete sidewalk shall be constructed in accordance with Section 651 of Standard Specifications. Base Course material, two (2) inches thick, shall be placed beneath the sidewalk.

GENERAL MAINTENANCE OF TRAFFIC

1. Storage of vehicles and equipment shall be as near the right-of-way as possible. 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. 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 shall be repaired and/or restored by the Contractor, at no expense to the City, and to the satisfaction of the Engineer.

2. The Contractor shall designate an employee whose responsibility is the maintenance of traffic, 24 hours a day and 7 days a week. The person so designated must have training and experience in the field of construction traffic control and be knowledgeable about the Manual on Uniform Traffic Control Devices (MUTCD). The cost of the traffic control person shall be incidental to the contract lump sum price for Traffic Control Miscellaneous. The employee selected must be approved by the Engineer. The name, phone number, and location of person(s) shall be provided to the county sheriff's department and the local police department. Road closure and barricading shall immediately be reported to the local police department by the Contractor. Local police department phone number 605-668-5210

3. Work activities during non-daylight hours are subject to prior approval.

4. The contractor shall maintain traffic control every day. The contractor shall have $200.00 per day deducted from the contract for each day that traffic control is not maintained. If traffic control is not in place when the contractor begins work which requires traffic control, payment for bid item "Traffic Control" will be reduced by 50%.

5. The Contractor shall notify the City of Yankton Street Department prior to construction to enable the city forces to remove and salvage existing traffic control signs. City of Yankton Street Dept. number 605-668-5211

WASTE DISPOSAL SITE

Contractor shall dispose of broken concrete and asphalt generated by this project at the city stockpile site located at 23rd and Kellen Gross Drive. No tipping fee will be assessed to Contractor for broken concrete and asphalt disposed of at this site. Concrete and asphalt is to be kept separate from earth material during the removal process. Concrete and asphalt may be mixed.

Asphalt contaminated with soil during the removal process or concrete containing reinforcing steel or contaminated with soil must be disposed of at the Yankton rubble site, 23rd and Kellen Gross Drive. Disposal fees shall be the Contractors responsibility, and considered incidental to other pay items.

The Contractor will be required to use a state permitted solid waste disposal facility. The Contractor can obtain a list of permitted solid waste disposal facilities in the Yankton area or discuss proper disposal of construction and demolition debris by contacting Waste Management Program at 1-(605)-773-3153.

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

UNCLASSIFIED EXCAVATION

Unclassified Excavation will be paid for on a lump sum basis. The bid item for "Unclassified Excavation" shall include removing the existing material to a depth of 14 inches below the new road surface shown on the typical sections. Estimated quantities in cubic yards are shown below. These estimates are based on the assumption of 6 inches of existing Asphalt Pavement being removed separately.

Estimate of 1875 cu yds. of removal on WCLR. Excess material is to be hauled to City property located at 33rd and Douglas Ave.

GENERAL NOTES

The Contractor will be required to raze, remove and dispose of all buildings and foundations, structures, fences, advertising signs, and other obstructions of which any portion are on the right-of-way or Temporary Easements except Utilities and those for which other provisions have been made for removal, in accordance with Section 110 of the Standard Specifications.

The removal and disposal of all buildings, foundations and other obstructions not removed under Incidental Work or on a unit basis shall be considered as subsidiary work to the other Contract Items and no separate payment will be made for their removal and disposal.

"8" NONREINFORCED CONCRETE PAVEMENT

The Coarse Aggregate shall be Crushed Ledge Rock.

The fine aggregates may require screening as determined by the Engineer.

The concrete mix shall be Class A40 concrete paving mix when slip form construction is used and Class A45 when formed construction is used.

Portland Cement Concrete Pavement shall have a minimum cement content of 600 pounds per cubic yard and Class C Fly Ash will be excluded.

In lieu of an automatic subgrader operating from a preset line, a motor grader or other suitable equipment may be used to bring the base course to final grade prior to placement of the concrete.

A construction joint shall be sawed whenever new concrete pavement is placed adjacent to existing concrete pavement.

There will be no direct payment for trimming of the Base Course for PCC pavement. The trimming will be considered incidental to the related items required for PCC pavement. Trimming shall be performed as required by Section 380.3c of the Standard Specifications.

An automated paving machine such as a Bidwell, or equivalent, shall be required for main line paving. An air or vibratory screed will not be allowed for main line paving.

PEDESTRIAN TRAFFIC

The Contractor will be required to maintain pedestrian access during construction. Pedestrian access shall be ADA accessible and shall conform to the Manual on Uniform Traffic Control Devices 2009 edition. Access can either be maintained on concrete sidewalk or on a temporary boardwalk. This work may include but is not limited to sawing existing sidewalk to leave half in place, staging sidewalk removal and construction to maintain access, installing safety fence around work areas, and construction and removal of temporary boardwalk. The Contractor shall determine the actual location of temporary access during construction and shall be approved by the Engineer. Payment for all work and associated materials shall be incidental to the contract lump sum price for "Traffic Control Miscellaneous".

ACCEPTANCE TESTING

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

CONCRETE JOINT SEALER

Concrete Joint Sealer shall be hot poured elastic joint sealer and shall conform to section 870 of the Standard Specifications. Payment for concrete joint sealer shall be incidental to PCC Pavement and no separate payment shall be made.

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	4	33
Notes	2/8/2017	

NOTES

SURFACING THICKNESS DIMENSIONS

Except as hereinafter set forth, plans square yards will be applied even though the thickness may vary from that shown on the plans.

At those locations where material must be placed to achieve a required elevation, plans square yards will not be varied to achieve the required elevation.

CURING OF CONCRETE

Portland Cement Concrete Pavement, Concrete Curb & Gutter, Sidewalks, Valley Gutters, and Fillets shall be cured. All concrete shall be cured in accordance with section 380.3.P2 of the 2004 SDDOT Standard Specifications for Roads and Bridges except as modified in this note. All concrete shall be cured with a White Pigmented Linseed Oil Base Emulsion Compound when cured using the Impervious Membrane Method. Curing compound material shall be in accordance with section 821.1.D.

GEOTEXTILE FABRIC FOR SUBGRADE STABILIZATION

Geotextile fabric shall be installed at locations designated by the engineer underneath the granular base course. The bid item GEOTEXTILE FABRIC has been established to pay for all labor, equipment and material to install the fabric.

Pay quantities for the geotextiles will be paid for at the contract price per square yard in place. Measurement for payment excludes the geotextile used for overlapping as well as seam overlaps. Installation shall be in accordance with the manufacturer's recommendations. Overlap shall be a minimum of 24". The end of the roll shall overlaps shall be 3' min.

The contractor shall not drive equipment directly on top of the geotextile. Should the geotextile be torn or punctured, the damaged area shall be repaired or replaced by the contractor at no expense to the owner. The repair shall consist of a patch of the same type of geotextile a minimum of 3' from the edge of any part of the damaged area. Geotextile fabric shall conform to the requirements listed below. The contractor shall provide a certificate of compliance verifying that the material meets the specification prior to the installation of the fabric.

1. Wide Width Tensile Strength (ASTM D-4595) 3600lb/ft min.
2. Wide Width Tensile Strength at 5% Strain(ASTM D-4595) 1350 lb/ft min.
3. Permittivity (ASTM D-4491) 0.25 sec-1 min.
4. UV Resistance at 500 hours (ASTM D-4355) 70% min.

The City has verified that the following products meet these specifications.

1. Mirafi HP370
2. Propex Getotex 3x3
3. Lumite GTF465

AGGREGATE BASE COURSE

Aggregate Base Course will be supplied by the City of Yankton. Material can be obtained at City stockpile site located at 23rd and Kellen Gross Dr. This material is to be weighed before leaving landfill. The Contractor is to supply his own personnel and equipment to load trucks. Landfill hours are from 8am to 3:45pm. This material to be used under all newly placed concrete /asphalt and to maintain access to intersecting streets and driveways as needed. Unit price shall constitute full compensation for personnel and equipment to load, haul, and place material. Aggregate Base Course shall be compacted to 95% of standard proctor density.

OCCUPYING STATE ROW

Contractor shall comply to Traffic Control Standards under SD DOT Standard Specifications for Roads and Bridges, and as per the manual on Uniform Traffic Control Devices.

INCIDENTAL WORK

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

Salvable materials will be picked up by the City.

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

EROSION CONTROL - VEHICLE TRACKING CONTROL

1. CONSTRUCTION

The work covered by this section consists of furnishing all labor and equipment and the performance of all operations in connection with the construction of temporary vehicle tracking control on the project, complete and in accordance with the plans and standard plates. The Contractor shall be responsible for accomplishing the required construction work on this project in such a manner as to effectively minimize and control water pollution which might be caused by vehicular tracking of soil. It is intended that these features be maintained in appropriate functional condition whenever vehicles come or go from the construction site where there is dirt exposed.

In addition to the details shown in the plans, other provisions for controlling erosion may be incorporated.

2. MATERIALS

Aggregate base course shall be used for the temporary vehicular tracking control surface. If necessary 11/2" to 3" rock shall be used for stabilization underneath of the service gravel.

3. LABOR AND EQUIPMENT

All necessary labor and equipment shall be supplied to clean up any dirt or gravel off of the paved roadway surfaces at the end of each day. The contractor shall also remove any service gravel that has dirt mixed in with it from the project site when the tracking control is no longer necessary. Clean service gravel can be incorporated into the base material for the roadbed.

4. PAYMENT

Service gravel shall be paid for at the unit price bid in the contract for service gravel. Unit price for "Temporary Vehicle Tracking Control" shall be the amout paid for each site where the engineer requires the use of the temporary vehicle tracking control for however long it is needed. The Contractor will be charged $50.00 for each day that dirt is not cleaned off of the street after it is placed or tracked onto the pavement.

INLET SEDIMENT CONTROL

Refer to Standard Plates 734.21 AND 734.16 - Drop inlet sediment filters.

SEDIMENT CONTROL WATTLE

Refer to Standard Plates 734.29 – Sediment control wattle.

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	5	33
Notes	2/8/2017	

NOTES

DEWATERING AND EROSION CONTROL

Pumping required for the removal of surface water from the work area and/or depressions will be considered incidental to other pay items and not paid for separately. The Contractor shall be responsible for obtaining the required erosion control permits from the South Dakota Department of Environment and Natural Resources.

SITE MAINTENANCE

The Contractor is to keep the project site properly maintained and graded to drain storm water. No standing water is permitted on site. A penalty of $500/day will be assessed each day standing water is not removed from site. All regulations pertaining to Storm Water Pollution Prevention will be enforced. Direct discharge of storm water into the storm sewer system is not acceptable.

MANHOLE EXTERNAL FRAME SEAL

The furnishing and installing of the manhole frame seal shall be paid for under replace and adjust manhole rim and cover bid item. Full compensation for furnishing and installing of the complete manhole frame seal and all appurtenances necessary for the proper installation of the manhole frame seal for the manhole.(See section 210 of the City of Yankton standard specifications for sanitary sewer mains, service lines and appurtenances for approved products list.)

MANHOLE ADJUSTMENT

All costs for adjustment of the sewer manhole frame and lid to finished grade including removal and repair upper courses of brick or concrete, grouting, water-proofing and adjustment rings shall be incidental to the contract unit price per each for "Adjust Manhole".

All existing rims & covers will be replaced with Neenah R1733 frame and lid. The lids shall contain concealed pick holes and be equipped with a gasketed self-sealing type covers.

SEEDING

All grass areas disturbed by construction are to be hydromulched. Lump sum price will be for all areas disturbed by Contractor. Price shall also include the cost for fertilizer and fiber mulch, refer to SD-DOT Standard Specs 2004 Edition section 730 and 731. The following will be provided, by the Contractor, for use on the project unless an alternate is approved by the Engineer.

The estimated amount of area to be seeded: 17960 ft sq

SEED MIXTURE	PURE LIVE SEED/ 1000 FT. SQ.
Kentucky Bluegrass	1 pound
Perennial Rye Grass	1 pound
Park Kentucky Bluegrass	1 pound

FERTILIZER AND MULCHING

Fertilizer shall be a guaranteed analysis of 12-24-6. Rate applied shall be 3.2 lbs. per 1000 S.F. All areas shall be wood fiber mulched at a rate of 50 lbs./1000 S.F. with tackifier at a rate of 1.5lbs./1000 S.F. Method of payment will be incidental to the seeding lump sum bid price. Refer to SD-DOT Specs. 2004 Edition-section731 and 732 for additional requirement for fertilizer and fiber mulch.

SALVAGING, STOCKPILING, AND PLACING TOPSOIL

Existing vegetation shall be salvaged, incorporated and placed with the topsoil as far as practicable.

The areas to be covered with topsoil to a depth of +/- 3 inches comprise all newly graded areas. Material shall be free of rock and debris.

The estimated amounts of salvaged topsoil required to cover the designated areas to the specified depth are as follows:

Table of Topsoil	Cu Yd.
WCLR	160

STEEL BAR INSTALLATION

The Contractor shall install Steel No. 5x24" epoxy coated deformed tie bars into drilled holes in the existing concrete pavement. An epoxy resin adhesive must be used to anchor steel bars in the drilled holes.

The steel bars shall be cut at the specified length by sawing and shall be free from burring or other deformations. Shearing will not be permitted.

Epoxy resin adhesive shall be of the type intended for horizontal applications, and shall conform to the requirements of ASTM C 881, Type 1, Grade 3 (equivalent to AASHTO M235, Type 1, Grade 3).

The diameter of the drilled holes in the existing concrete pavement for the steel bars shall not be less than 1/8 inch nor more than 3/8 inch greater than the overall diameter of the steel bar. Holes drilled into the existing concrete pavement shall be located at mid-depth of the slab and true and normal. The drilled holes shall be blown out with compressed air using a device that will reach to the back of the hole to ensure that all debris or loose material has been removed prior to epoxy injection.

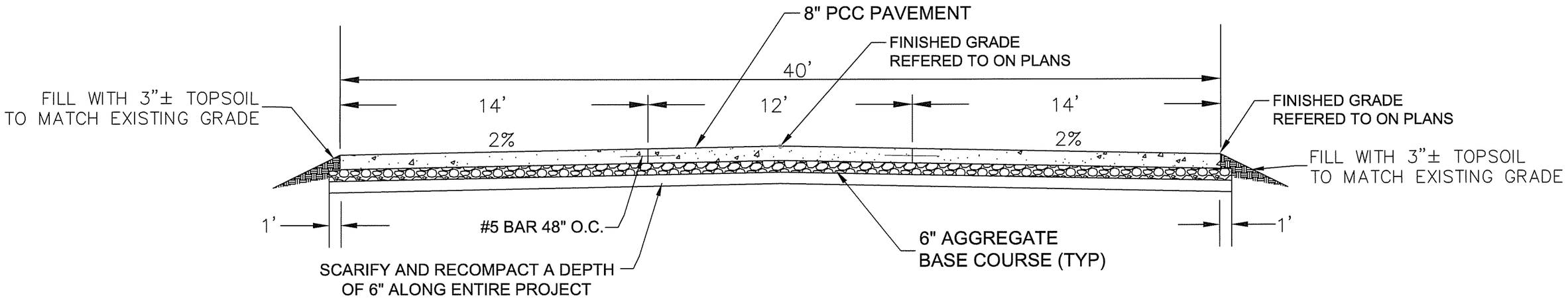
Mix the epoxy resin as recommended by the manufacturer and apply by an injection method approved by the Engineer. If an epoxy pump is utilized, it shall be capable of metering the components at the manufacturers designated rate and be equipped with an automatic shut-off. The pump shall shut off when any of the components are not being metered at the designated rate. Fill the drilled holes 1/3 to 1/2 full of epoxy, or as recommended by the manufacturer, prior to insertion of the steel bar. Care shall be taken to prevent epoxy form running out of the horizontal holes prior to steel bar insertion. Rotate the steel bar during installation to eliminate voids and ensure complete bonding of the bar. Insertion of the bars by the dipping method will not be allowed.

Cost for the epoxy resin adhesive, steel bars, drilling of holes, applying the adhesives, installing the steel bars into the drilled holes and all other items incidental to the installation of the steel bars shall be included in the contract unit price per each for "Install Steel Bar in Concrete Pavement".

Steel bars shall be installed at the following locations:

LOCATION	#5 BARS EACH
Misc.	50
Total	50

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	6	33
TYPICAL SECTION	1/31/2017	



TYPICAL ROAD SECTION

WEST CITY LIMITS ROAD

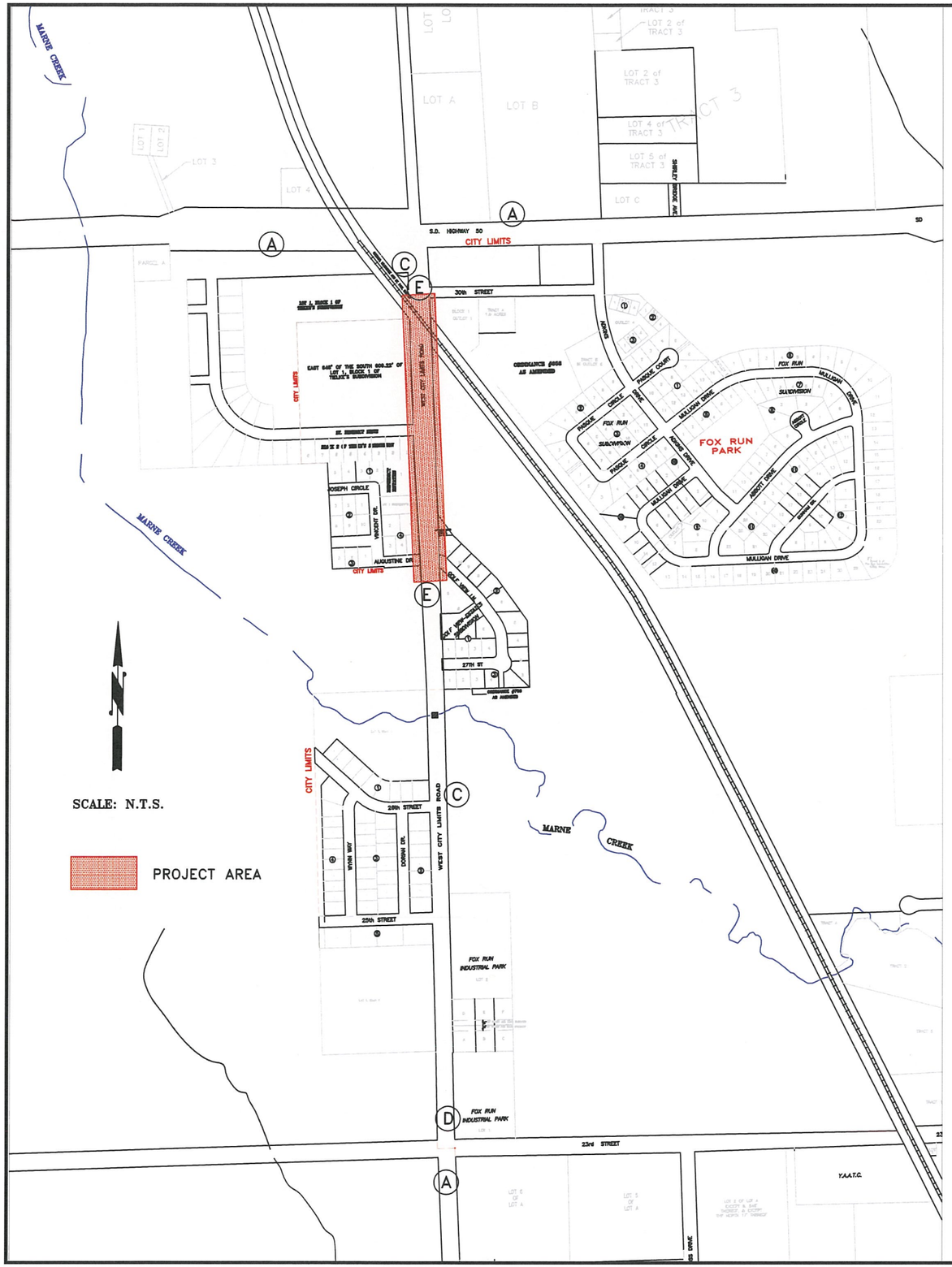
STA. 1+01 TO 14+68

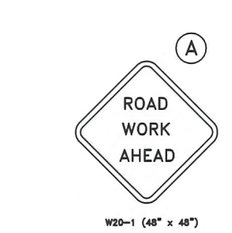
TYPICAL 2% SECTION

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	7	33
TRAFFIC CONTROL	2/15/2017	

TRAFFIC CONTROL

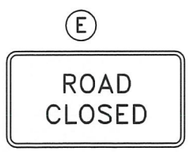
LAYOUT FOR REMOVALS & PAVING OPERATIONS



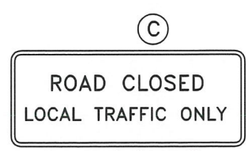


W20-1 (48" x 48")

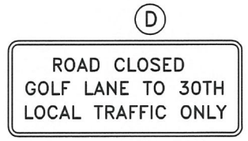
W20-3 (48" x 48")



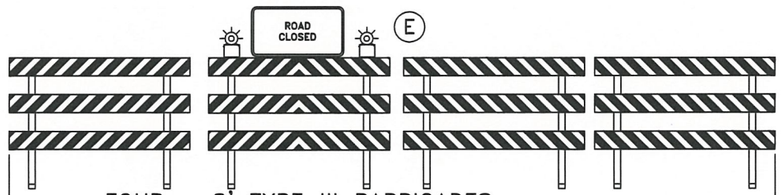
R11-2 (48"x 30")



R11-4 (60" x 30")



R11-3a (60" x 30")



FOUR – 8' TYPE III BARRICADES
FULL ROADWAY CLOSURE

ALL FIXED LOCATION SIGNS REMAIN IN PLACE UNTIL PERMANENT PAVEMENT MARKING IS COMPLETE.

PEDESTRIAN TRAFFIC CONTROL

TRAFFIC CONTROL DEVICES FOR SIDEWALK CLOSURES AND PEDESTRIAN DETOURS SHALL BE PAID FOR UNDER TRAFFIC CONTROL MISC. (SDDOT STANDARD PLATE #634.33 MAY BE USED AS A GUIDE FOR THESE SITUATIONS, SHOWN ON SHEET 66)

Advanced Warning Sign Minimum Spacing
Table 6C-1 in part of the MUTCD, 2009 Edition

Road Type	Distance Between Signs** (Feet)		
	A	B	C
Urban (low speed*)	100	100	100
Urban (high speed*)	350	350	350
Rural	500	500	500
Expressway/Freeway	1000	1500	2640

* Speed category to be determined by the highway agency.
A – distance between traffic control zone and first sign.
B&C – distance between signage.

ITEMIZED LIST FOR TRAFFIC CONTROL BID ITEM

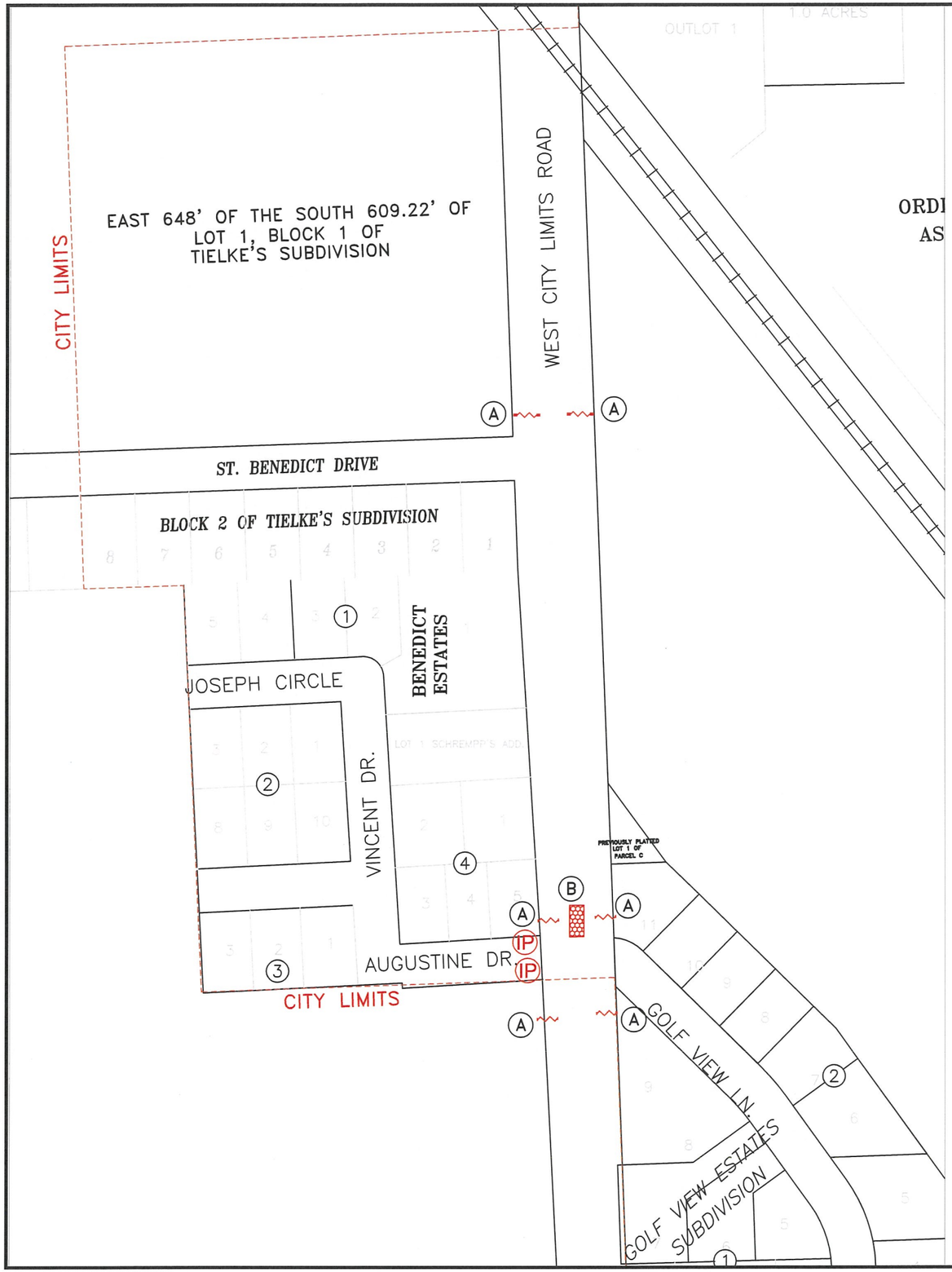
SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	SUB TOTAL
R11-2	48" x 30"	ROAD CLOSED	2	27	54
R11-3a	60" x 30"	ROAD CLOSED GOLF LANE TO 30TH STREET LOCAL TRAFFIC ONLY	1	30	30
R11-4	60" x 30"	ROAD CLOSED LOCAL TRAFFIC ONLY	2	30	60
W20-1	48" x 48"	ROAD WORK AHEAD	3	34	102
---	---	TYPE III BARRICADES	88 L.F.	5 UNITS/L.F.	440
				TOTAL	686

LIST OF OTHER TRAFFIC CONTROLS FOR ROAD CONSTRUCTION

BID ITEM	DESCRIPTION	QUANTITY
TRAFFIC CONTROL MISC.	TYPE I & II BARRICADES, CONES, VERTICAL PANELS, DRUMS, BARRICADE WARNING LIGHTS, DELINEATORS. WATCHMAN, TUBULAR MARKERS, AND INSTALLATION OF CITY SIGNS.	LUMP SUM

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	8	33
EROSION CONTROL	2/21/2017	

EROSION CONTROL



LEGEND

(B) VEHICLE TRACKING CONTROL (TYPICAL) -SEE DETAIL SHEET 27
LOCATION TO BE DETERMINED BY ENGINEER

(A) SEDIMENT CONTROL WATTLE AS SHOWN ON PLANS - SEE DETAIL 734.29. ADDITIONAL WATTLES ARE INCLUDED IN QUANTITIES FOR USE AT THE DISCRETION OF THE ENGINEER.

(IP) INLET PROTECTION (TYPICAL) -SEE DETAIL SHEET 28

INSTALL 20 LF OF SEDIMENT CONTROL WATTLES AT THE FOLLOWING LOCATIONS

STA. 0+65 - 28' to 48' LT.
STA. 0+65 - 28' to 48' RT.
STA. 2+00 - 28' to 48' LT.
STA. 2+00 - 28' to 48' RT.
STA. 9+75 - 28' to 48' LT.
STA. 9+75 - 28' to 48' RT.

SCALE: N.T.S.

NOTE:
ALL EROSION CONTROL ITEMS SHALL BE MAINTAINED DAILY AND BE KEPT IN FULL FUNCTIONAL CONDITION TO MINIMIZE AND CONTROL SOIL RUNOFF THAT COULD OCCUR DURING THE PROJECT CONSTRUCTION.
EROSION CONTROL ITEMS SHALL BE KEPT IN PLACE UNTIL PROJECT COMPLETION.

PROJECT	SHEET NO.	TOTAL SHEETS
2017–008	9	33
SWPPP	1/27/2017	

STORM WATER POLLUTION PREVENTION PLAN

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

❖ SITE DESCRIPTION (4.2 1)

- **Project Limits: See Title Sheet (4.2 1.b)**
- **Project Description: See Title Sheet (4.2 1.a.)**
- **Site Map(s): See Title Sheet and Plans (4.2 1.f. (1)-(6))**
- **Major Soil Disturbing Activities** (check all that apply)
  - ☐ Clearing and grubbing
  - ☒ Excavation/borrow
  - ☒ Grading and shaping
  - ☐ Filling
  - ☒ Cutting and filling
  - ☐ Other (describe):
- **Total Project Area** 3.3 acres **(4.2 1.b.)**
- **Total Area To Be Disturbed** 1.8 acres **(4.2 1.b.)**
- **Existing Vegetative Cover (%)**
- **Soil Properties:** AASHTO Soil Classification **(4.2 1. d.)**
- **Name of Receiving Water Body/Bodies** Missouri River **(4.2 1.e.)**

❖ ORDER OF CONSTRUCTION ACTIVITIES (4.2 1.c.)

(Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Initiation of final or temporary stabilization may exceed the 14-day limit if earth disturbing activities will be resumed within 21 days.)

- **Special sequencing requirements** (see sheet).
- **Install stabilized construction entrance(s).**
- **Install perimeter protection where runoff sheets from the site.**
- **Install channel and ditch bottom protection.**
- **Clearing and grubbing.**
- **Remove and store topsoil.**
- **Stabilize disturbed areas.**
- **Install utilities, storm sewers, curb and gutter.**
- **Install inlet and culvert protection after completing storm drainage and other utility installations.**
- **Complete final grading.**
- **Complete final paving and sealing of concrete.**
- **Complete traffic control installation and protection devices.**
- **Reseed areas disturbed by removal activities**.

❖ EROSION AND SEDIMENT CONTROLS (4.2 2.a.(1)(a)-(f))

(Check all that apply)

- **Stabilization Practices (See Detail Plan Sheets)**
  - ☒ Temporary or Permanent Seeding
  - ☐ Sodding
  - ☐ Planting
  - ☐ Mulching (Straw or Cellulose Fiber)
  - ☐ Erosion Control Blankets or Mats
  - ☐ Vegetation Buffer Strips
  - ☐ Roughened Surface (e.g. tracking)
  - ☐ Gabions-Gabion Mattress
  - ☐ Other
- **Structural Temporary Erosion and Sediment Controls**
  - ☐ Silt Fence
  - ☐ Straw Bale Check
  - ☐ Temporary Berm
  - ☐ Temporary Slope Drain
  - ☒ Straw Wattles or Rolls
  - ☐ Diversion Channels/Swales
  - ☐ Channel Liners (TRM)
  - ☐ Stone Rip Rap Sheet
  - ☐ Rock Check Dams
  - ☐ Sediment Traps/Basins
  - ☒ Inlet Protection
  - ☐ Outlet Protection
  - ☐ Surface Inlet Protection
  - ☐ Curb Inlet Protection
  - ☐ Stabilized Construction Entrances
  - ☐ 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.
- **Storm Water Management (4.2 2.b., (1) and (2))**

  Storm water management will be handled by temporary controls outlined in Section 3 above, and any permanent controls needed to meet permanent storm water management needs in the post construction period. Permanent controls will be shown on the plans and noted as permanent.
- **Other Storm Water Controls (4.2 2.c., (1) and (2))**
  - **Waste Disposal**

    All liquid waste materials will be collected and stored in sealed metal containers approved by the project engineer. 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 in the field office. The general contractor's representative responsible for the conduct of work on the site will be responsible for seeing 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 individual designated as the contractor's on-site representative 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 in a timely manner by a licensed waste management contractor or as required by any local regulations.

❖ Maintenance and Inspection (4.2 3. and 4.2 4.)

- **Maintenance and Inspection Practices**
  - Inspections will be conducted at least one time per week and after a storm event of 0.50 inches or greater.
  - All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- **Maintenance and Inspection Practices(Continued)**
  - Silt fence will be inspected for depth of sediment and for tears in order 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 SDDOT Project Engineer and contractor's site superintendent are responsible for inspections. Maintenance, repair activities are the responsibility of the contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

❖ Non-Storm Water Discharges (3.0)

The following non-storm water 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.

❖ Materials Inventory (4.2. 2.c.(2))

The 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 headings "EROSION AND SEDIMENT CONTROLS" and "SPILL PREVENTION" (check all that apply).

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

SWPPP

❖ **(4.2 2.c.(2))**

➢ **Material Management Spill Prevention**

- 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 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.
  - Vegetation areas not essential to the construction project will be preserved and maintained as noted on the plans.

- Hazardous Materials
  - Products will be kept in original containers unless the container is not resealable.
  - 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, 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 storm water system or storm water treatment system.
  - Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, and mixer washout waters will be collected on site and managed to prevent contamination of storm water runoff.

➢ **Product Specific Practices (6.8)**

- 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 storm water. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

➢ **Product Specific Practices (6.8) (Continued)**

- 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 areas on the site. These areas must be self contained and not connected to any storm water outlet of the site. Upon completion of construction washout areas will be properly stabilized.

➢ **Spill Control Practices (4.2 2 c.(2))**

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 clean up 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 booms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for clean up 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. The contractor is responsible for ensuring that the site superintendent has had appropriate training for hazardous materials handling, spill management, and cleanup.

➢ **Spill Response (4.2 2 c.(2))**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into storm water runoff and conveyance systems. If the release has impacted on-site storm water, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens storm water 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 Response (4.2 2 c.(2)) (Continued)**

- 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 SD DENR.
- Personnel with primary responsibility for spill response and clean up 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.

❖ **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 reportable spill is a quantity of 25 gallons or more or any spill of oil which: 1) violates water quality standards, 2) produces a "sheen" on a surface water, or 3) causes a sludge or emulsion must be reported immediately to the National Response Center .

➢ Any spill of oil or hazardous substance to waters of the state must be reported immediately by telephone to the SD DENR.

❖ **Construction Changes (4.4)**

When changes are made to the construction project that will require alterations in the temporary erosion controls of the site, the Storm Water Pollution Prevention Plan (SWPPP) will be amended to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP plan (DOT 298) and drawings to reflect the needed changes. Copies of changes will be routed per DOT 298. Copies of forms and the SWPPP will be retained in a designated place for review over the course of the project.

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	11	33
SWPPP	1/27/2017	

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 Yankton**

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 6.7.1.C.)

➢ **Prime Contractor**

This section is to be executed by the General Contractor after the award of the contract and at least 15 days prior to the beginning of construction. 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 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 6.7.1.a .or b.)

❖ CONTACT INFORMATION

➢ **Contractor Information**:

- Prime Contractor Name:
- Contractor Contact Name:
- Address:
- Address:
- City: State: Zip:
- Office Phone: Field: Cell: Fax:

➢ **City Engineer**

- Name: Brad Moser
- Business Address: 416 Walnut
- Job Office Location
- City: Yankton State: SD Zip: 57078
- Office Phone: 605-668-5255 Field: Cell: Fax:

➢ **SD DENR Contact Spill Reporting**

- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➢ **SD DENR Contact for Hazardous Materials.**

- (605) 773-3153

➢ **National Response Center Hotline**

- (800) 424-8802.

PROJECT	SHEET NO.	TOTAL SHEETS
2017–008	12	33
EXISTING & REMOVALS	2/21/2017	

1. **STA. 1+25-25 LT.**
REMOVE 273 SF OF
CONC. FILLET SECTION

3. **STA. 1+65-25 LT.**
REMOVE 254 SF OF
CONC. FILLET SECTION

5. **STA. 4+00-25 LT.**
REMOVE 152 SF OF
CONC. DRIVEWAY APPROACH

STA. 0+91 TO 4+00
REMOVE 1545 SY OF
EXISTING 6" ASPHALT PAVING

BENEDICT ESTATES

SCHREMPP'S ADDITION

AUGUSTINE DR.
(ASPHALT SURFACE)

2809 WCLR

R\W LINE

EXISTING SIDEWALK

EXISTING CONCRETE DRIVEWAY

BP: 0+00.000

0+00

1+00

2+00

3+00

4+00

WCLR
(ASPHALT SURFACE)

EXISTING SIDEWALK

GOLF VIEW LN.
(ASPHALT SURFACE)

1329 GOLF VIEW LANE

GOLF VIEW ESTATES
SUBDIVISION

REMOVAL AREA

SCALE: 1"= 40'

2. **STA. 1+25-25 RT.**
REMOVE 291 SF OF
CONC. FILLET SECTION

4. **STA. 1+65-25 RT.**
REMOVE 188 SF OF
CONC. FILLET SECTION

NOTE: QUANTITIES AND STATIONING FOR REMOVALS FOUND ON "TABLES OF QUANTITIES" SHEET 2

PROJECT	SHEET NO.	TOTAL SHEETS
2017–008	13	33
EXISTING & REMOVALS	2/21/2017	

BENEDICT ESTATES

TIELKE'S SUBDIVISION

2803 WCLR

2809 WCLR

2811 WCLR

GARAGE

1401 ST. BENEDICT DR

ST. BENEDICT RD. (ASPHALT SURFACE)

R\W LINE

EXISTING CONCRETE DRIVEWAY

EXISTING CONCRETE DRIVEWAY

4+00

5+00

6+00

7+00

8+00

9+00

WCLR

R\W LINE

R\W LINE

STA. 4+00 TO 9+50
REMOVE 2750 SY OF
EXISTING 6" ASPHALT PAVING

6. **STA. 6+85-25 LT.**
REMOVE 181 SF OF
CONC. DRIVEWAY APPROACH

7. **STA. 9+20.5-61' LT. TO 9+20.5-64' LT.**
REMOVE 3 LF OF EXISTING CURB

NOTE: QUANTITIES AND STATIONING FOR REMOVALS FOUND ON "TABLES OF QUANTITIES" SHEET 2

REMOVAL AREA

SCALE: 1"= 40

FOX RUN GOLF COURSE

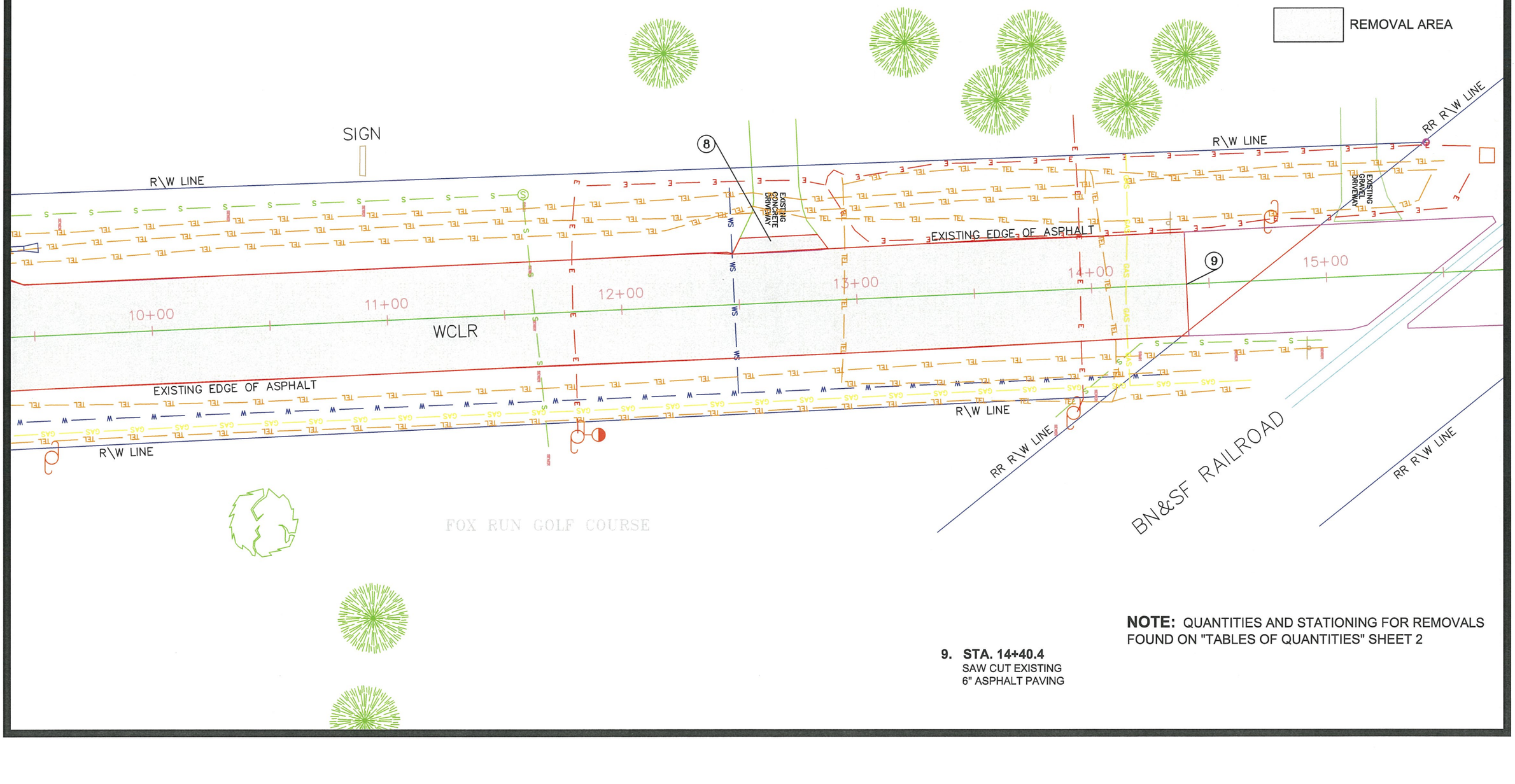
PROJECT	SHEET NO.	TOTAL SHEETS
2017–008	14	33
EXISTING & REMOVALS	2/8/2017	

8. STA. 12+65-25 LT.
REMOVE 238 SF OF
CONC. DRIVEWAY APPROACH

STA. 9+50 TO 14+40.4
REMOVE 2452 SY OF
EXISTING 6" ASPHALT PAVING

SCALE: 1"= 40'

REMOVAL AREA



9. STA. 14+40.4
SAW CUT EXISTING
6" ASPHALT PAVING

NOTE: QUANTITIES AND STATIONING FOR REMOVALS FOUND ON "TABLES OF QUANTITIES" SHEET 2

PROJECT	SHEET NO.	TOTAL SHEETS
2017–008	15	33
PAVING LAYOUT	2/13/2017	

1. **STA. 1+26.6 - 50' LT. TO 1+26.5 - 42' LT.**
   INSTALL 8' OF B68 CURB

2. **STA. 1+63.6 - 51' LT. TO 1+63.6 - 48' LT.**
   INSTALL 3' OF B68 CURB

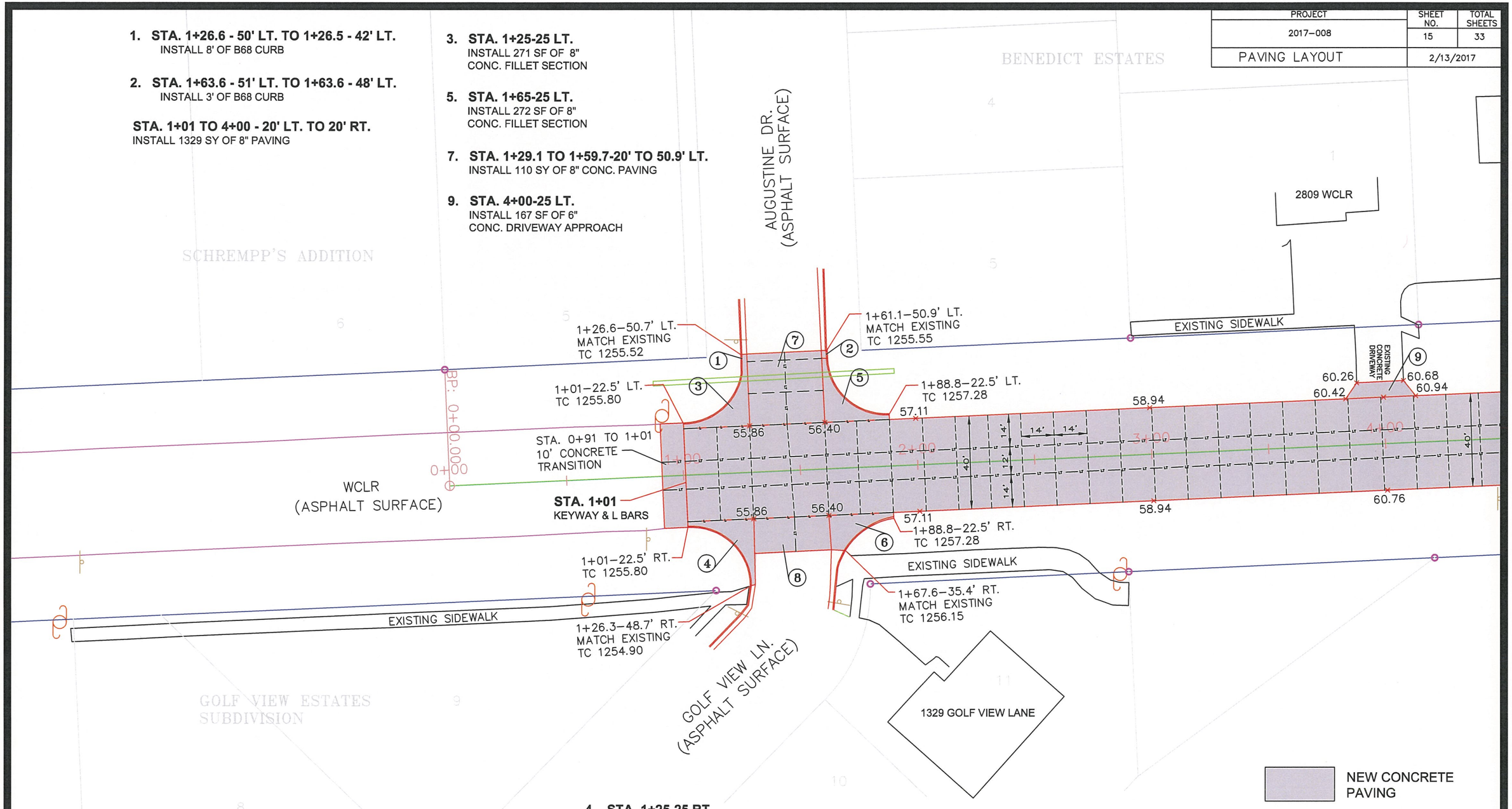
STA. 1+01 TO 4+00 - 20' LT. TO 20' RT.
INSTALL 1329 SY OF 8" PAVING

3. **STA. 1+25-25 LT.**
   INSTALL 271 SF OF 8"
   CONC. FILLET SECTION

5. **STA. 1+65-25 LT.**
   INSTALL 272 SF OF 8"
   CONC. FILLET SECTION

7. **STA. 1+29.1 TO 1+59.7-20' TO 50.9' LT.**
   INSTALL 110 SY OF 8" CONC. PAVING

9. **STA. 4+00-25 LT.**
   INSTALL 167 SF OF 6"
   CONC. DRIVEWAY APPROACH



4. **STA. 1+25-25 RT.**
   INSTALL 289 SF OF 8"
   CONC. FILLET SECTION

6. **STA. 1+65-25 RT.**
   INSTALL 220 SF OF 8"
   CONC. FILLET SECTION

8. **STA. 1+29.1 TO 1+59.7-20' TO 35' LT.**
   INSTALL 53 SY OF 8" CONC. PAVING

NOTE
TYPICAL JOINT SPACING IS 14' AND 12' LONGITUDINAL AND 14' TRANSVERSE. JOINTS LENGTHS WILL NEED TO BE ADJUSTED AT FILLET CORNERS AND AS DIRECTED BY THE ENGINEER.

LEGEND

LT —— LT —— LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
SEE DETAIL SHEET (PLATE #380.10 & 380.11)

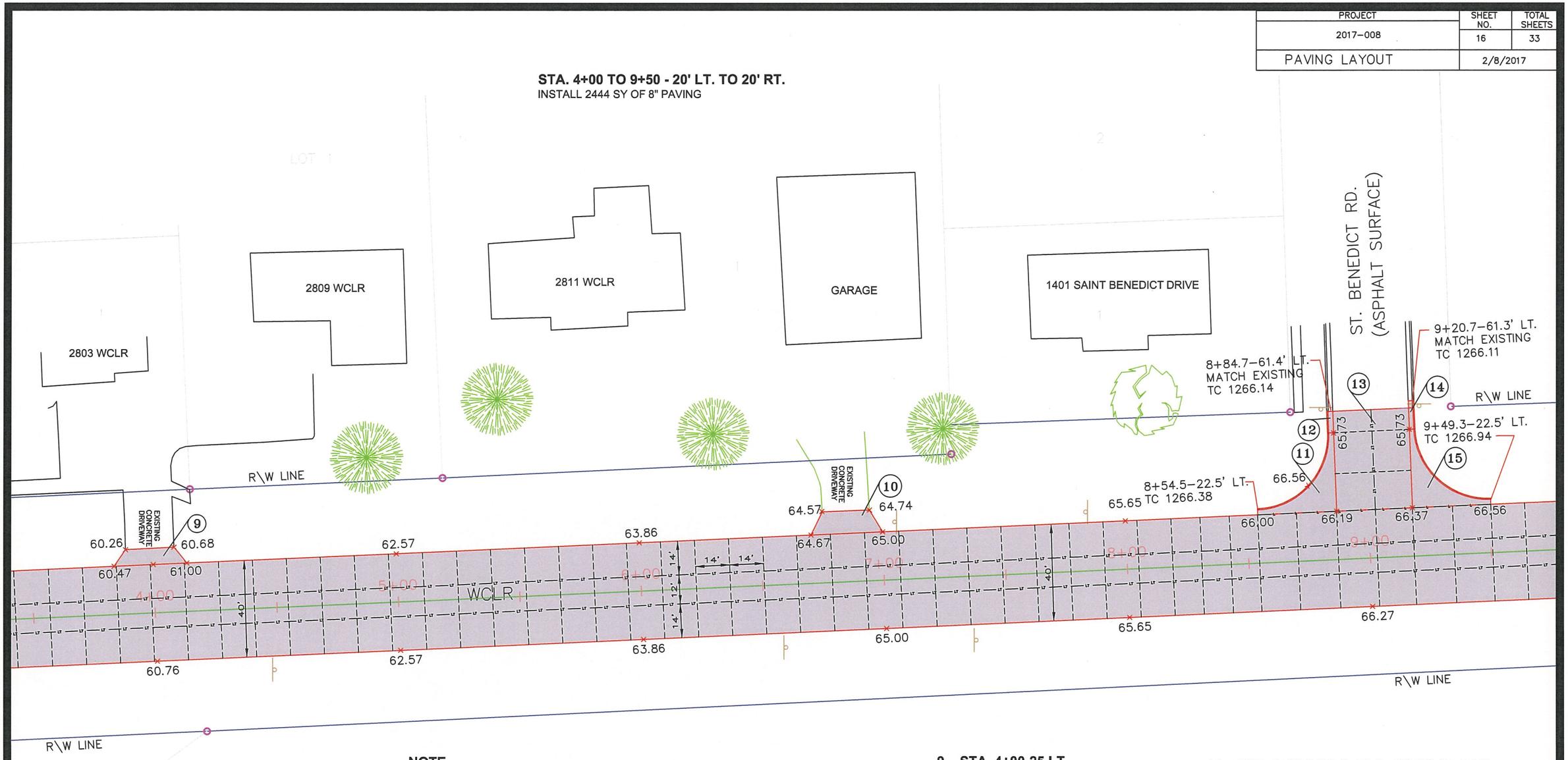
L —— L —— LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS
SEE DETAIL SHEET (PLATE #380.12)

- - - - - - - - - - - - - - - TRANSVERSE CONTRACTION JOINT
SEE DETAIL (PLATE #380.03)

SCALE: 1"= 40'

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	16	33
PAVING LAYOUT	2/8/2017	

STA. 4+00 TO 9+50 - 20' LT. TO 20' RT.
INSTALL 2444 SY OF 8" PAVING



NOTE
TYPICAL JOINT SPACING IS 14' AND 12' LONGITUDINAL AND 14' TRANSVERSE. JOINTS LENGTHS WILL NEED TO BE ADJUSTED AT FILLET CORNERS AND AS DIRECTED BY THE ENGINEER.

NEW CONCRETE PAVING

SCALE: 1"= 40

LEGEND

LT —— LT —— LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
SEE DETAIL SHEET (PLATE #380.10 & 380.11)

L —— L —— LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS
SEE DETAIL SHEET (PLATE #380.12)

- - - - - - - - - - - - - - - - TRANSVERSE CONTRACTION JOINT
SEE DETAIL (PLATE #380.03)

9. **STA. 4+00-25 LT.**
INSTALL 167 SF OF 6"
CONC. DRIVEWAY APPROACH

10. **STA. 6+90-25 LT.**
INSTALL 227 SF OF 6"
CONC. DRIVEWAY APPROACH

11. **STA. 8+65-25 LT.**
INSTALL 365 SF OF 8"
CONC. FILLET SECTION

12. **STA. 8+85.2 - 52.5' LT. TO 8+84.7 - 61.5' LT.**
INSTALL 9' OF B68 CURB

13. **STA. 8+87.0 TO 9+18.2 - 20' TO 61.4' LT.**
INSTALL 143 SY OF 8" CONC. PAVING

14. **STA. 9+20.7 - 64.5' LT. TO 9+20.6 - 52.5' LT.**
INSTALL 12' OF B68 CURB

15. **STA. 9+35-25 LT.**
INSTALL 365 SF OF 8"
CONC. FILLET SECTION

PROJECT	SHEET NO.	TOTAL SHEETS
2017–008	17	33
PAVING LAYOUT	2/8/2017	

LEGEND

LT —— LT — LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
SEE DETAIL SHEET (PLATE #380.10 & 380.11)

L —— L — LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS
SEE DETAIL SHEET (PLATE #380.12)

- - - - - - - - - - - - - - - TRANSVERSE CONTRACTION JOINT
SEE DETAIL (PLATE #380.03)

NOTE

TYPICAL JOINT SPACING IS 14' AND 12' LONGITUDINAL AND 14' TRANSVERSE.
JOINTS LENGTHS WILL NEED TO BE ADJUSTED AT FILLET CORNERS
AND AS DIRECTED BY THE ENGINEER.

NEW CONCRETE PAVING

SCALE: 1"= 40'

ST. BENEDICT CATHOLIC CHURCH

SIGN

R\W LINE

RR R\W LINE

EXISTING CONCRETE DRIVEWAY

EXISTING GRAVEL DRIVEWAY

16

17

66.85 67.44 68.03 68.14 68.26 68.30 68.55 68.62 69.20 69.44 69.84

14' 14' 14' 14' 40'

10+00 11+00 12+00 13+00 14+00 15+00 16+00

WCLR

FOX RUN GOLF COURSE

BN&SF RAILROAD

16. STA. 12+60-25 LT.
INSTALL 315 SF OF 6"
CONC. DRIVEWAY APPROACH

17. STA. 14+40.4
END OF 8" PAVING
INSTALL KEYWAY & L BARS

STA. 9+50 TO 14+40.4 - 20' LT. TO 20' RT.
INSTALL 2180 SY OF 8" PAVING

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	18	33
STORM SEWER LAYOUT	2/15/2017	

1. **STA. 8+46-39 LT. TO 8+62-37' LT.**
   INSTALL 16 L.F. OF 18" RCP
   RE-INSTALL SAFETY END SECTION

2. **STA. 8+64-37 LT.**
   REMOVE SAFETY END SECTION
   INSTALL 4'X4' JUNCTION BOX
   RIM ELEV. = 1266.25
   INV. IN = 1261.60
   INV. OUT = 1261.50 (FIELD VERIFY)

3. **STA. 8+64-37 LT. TO 8+83.2-55' LT.**
   INSTALL 24 L.F. OF 18" RCP

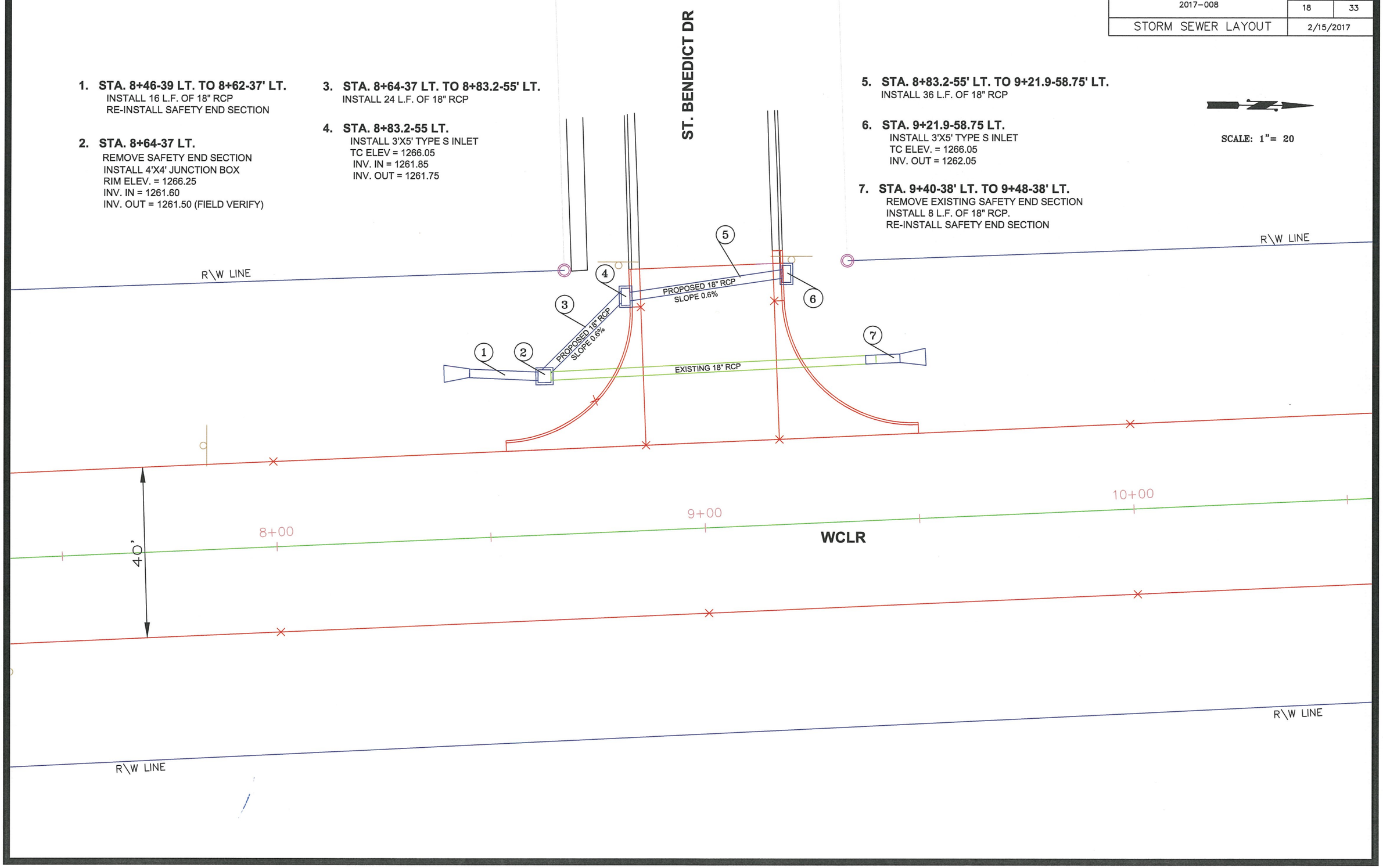
4. **STA. 8+83.2-55 LT.**
   INSTALL 3'X5' TYPE S INLET
   TC ELEV = 1266.05
   INV. IN = 1261.85
   INV. OUT = 1261.75

5. **STA. 8+83.2-55' LT. TO 9+21.9-58.75' LT.**
   INSTALL 36 L.F. OF 18" RCP

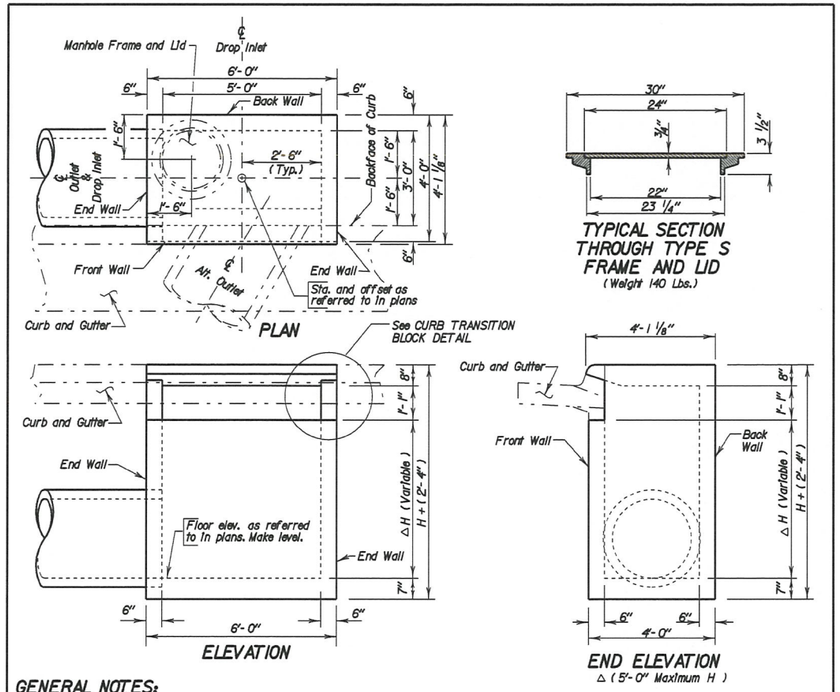
6. **STA. 9+21.9-58.75 LT.**
   INSTALL 3'X5' TYPE S INLET
   TC ELEV. = 1266.05
   INV. OUT = 1262.05

7. **STA. 9+40-38' LT. TO 9+48-38' LT.**
   REMOVE EXISTING SAFETY END SECTION
   INSTALL 8 L.F. OF 18" RCP.
   RE-INSTALL SAFETY END SECTION

SCALE: 1"= 20



PROJECT	SHEET NO.	TOTAL SHEETS
2017–008	19	33
DETAIL	1/27/2017	



TYPICAL SECTION THROUGH TYPE S FRAME AND LID
(Weight 140 Lbs.)

GENERAL NOTES:

The inlets shall be constructed in conformance with Section 670, Drop Inlets.

Design Loading: HS 20 – 44 and Alternate Loading.

Unit Stresses: Concrete fc = 1600 p.s.i.
Reinforcing Steel fs = 24000 p.s.i.

All reinforcing steel shall be Grade 60.

Structural steel shall conform to ASTM A36.

The 3/4" dia. Headed Type A Steel Studs shall conform to Section 7 of the current edition of the AWS D1.1 Structural Steel Welding Code.

After welding is complete, galvanize the angle and steel studs in accordance with AASHTO M111 (ASTM A123).

Use 1" clear cover on all reinforcing steel except as shown.

Cut and bend reinforcing steel in field as necessary to fit pipe and manhole openings; such openings are not shown in these details. The number, size, and location of pipe entering the drop inlet are shown elsewhere in the plans.

All costs for the angle, headed studs, welding, and galvanizing shall be incidental to the contract unit price per cubic yard for "Class M6 Concrete".

Cast iron frame and lid shall conform to AASHTO M105, Class 30.

The dimension of H is in feet.

SPECIFICATION NOTES:

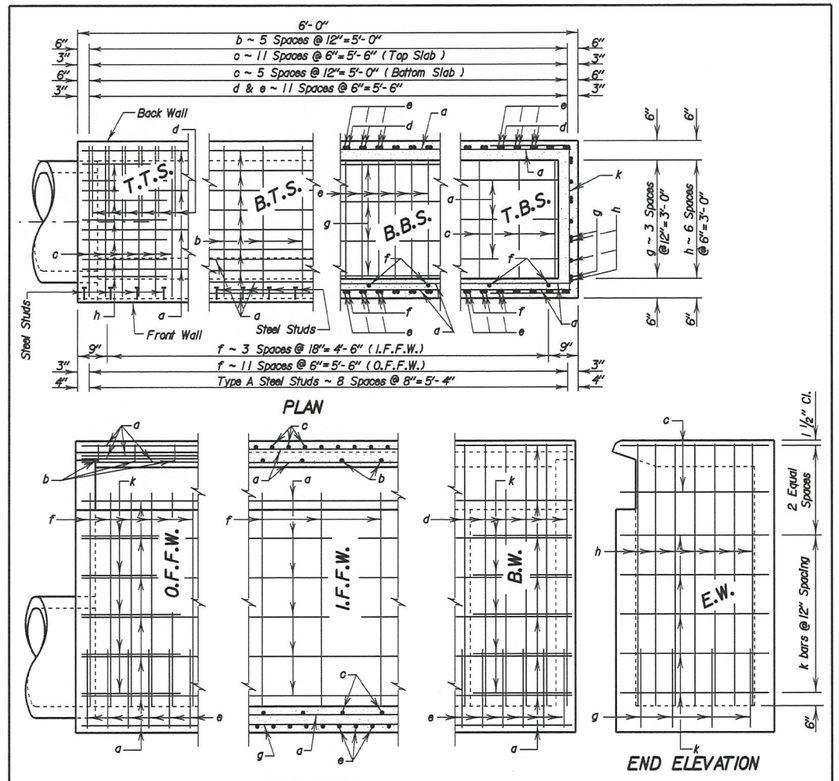
Design Specifications: A.A.S.H.T.O. Standard Specifications for Highway Bridges, 1996 Edition. (Service Load)

Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, Current Edition.

DROP INLETS FOR 18" TO 30" DIAMETER PIPE

September 14, 2005

Published Date: 4th Qtr. 2009	SDDOT	3'X 5' TYPE S REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.30
			Sheet 1 of 3



LEGEND FOR PLACING RE-STEEL

T.T.S. - Top of Top Slab	
B.T.S. - Bottom of Top Slab	
T.B.S. - Top of Bottom Slab	
B.B.S. - Bottom of Bottom Slab	
O.F.F.W. - Outside Face of Front Wall	
I.F.F.W. - Inside Face of Front Wall	
B.W. - Back Wall	
E.W. - End Wall	

PIPE DISPLACEMENT REDUCTIONS

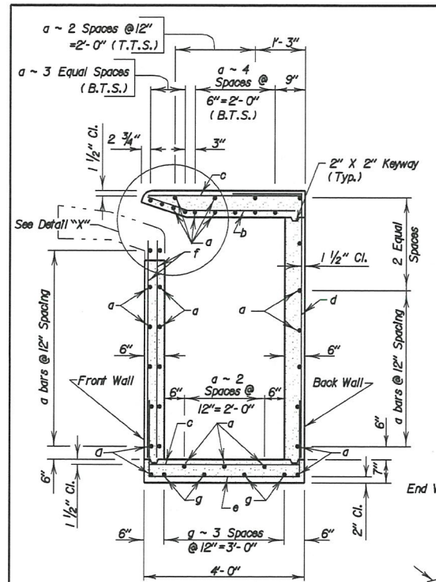
For pipes perpendicular to wall.

Pipe Size Inches		T Inches	Class M6 Concrete Cu'd
R.C. Pipe	18	2 1/2	0.05
	21	2 3/4	0.07
	24	3	0.09
	27	3 1/4	0.11
	30	3 1/2	0.14
R.C. Arch Pipe	24	3 1/2	0.09
Manhole			0.12

September 14, 2005

Published Date: 4th Qtr. 2009	SDDOT	3'X 5' TYPE S REINFORCED CONCRETE DROP INLET	PLATE NUMBER 670.30
			Sheet 2 of 3

PROJECT	SHEET NO.	TOTAL SHEETS
2017–008	20	33
DETAIL	1/27/2017	



TYPICAL SECTION

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
a	21+3H	4	5'-6"	Str.
b	6	4	3'-9"	19A
c	20	4	3'-9"	Str.
d	12	4	H+3'-3"	17A
e	12	4	7'-9"	17
f	16	4	H+6"	Str.
g	4	4	9'-9"	17
h	14	4	H+3'-6"	17A
k	2H	4	7'-9"	17

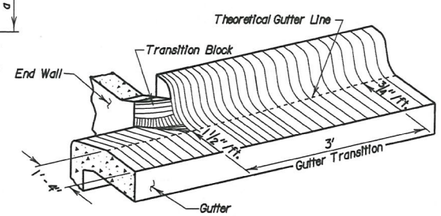
Bending Details

Type 17

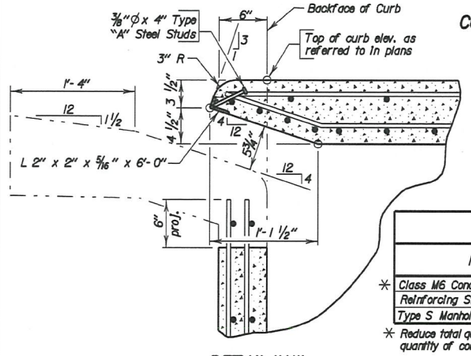
Type 17A

Type 19A

NOTE:
All dimensions are out to out of bars.



GUTTER TRANSITION AND CURB TRANSITION BLOCK DETAIL
(Top Slab not shown)



DETAIL "X"

ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT QUANTITY	VARIABLE QUANTITY
* Class M6 Concrete	CuYd	1.36	0.33H
Reinforcing Steel	Lb	295	49.32H
Type S Manhole Frame and Lid	Each	1	———

* Reduce total quantities of concrete by the volume displaced by the pipe. Total quantity of concrete shall be computed to the nearest hundredth of a cubic yard.

September 14, 2005

Published Date: 4th Qtr. 2009

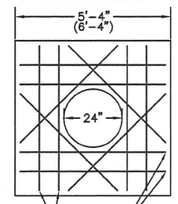
SDDOT

3'X 5' TYPE S
REINFORCED CONCRETE DROP INLET

PLATE NUMBER 670.30

Sheet 3 of 3

TOP VIEW



GENERAL NOTES

USE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION ,AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL.

ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615, GRADE 60.

ALL REINFORCING STEEL SHALL BE CUT AND/OR BENT IN THE FIELD TO

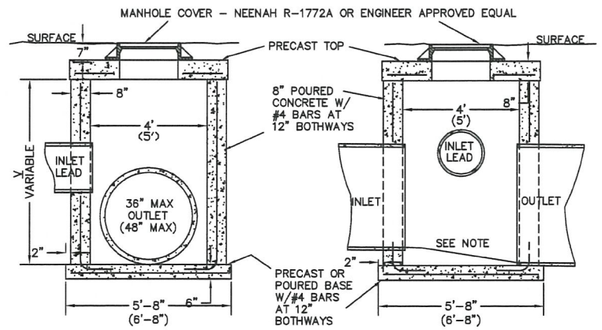
MAINTAIN A MINIMUM OF 2" COVER ON ALL REINFORCING STEEL.

NO VERTICAL CONSTRUCTION JOINTS ARE ALLOWED.

ALL CONC. SHALL BE CLASSED M–6.

UNIT STRESSES: CONCRETE Fc = 1600 P.S.I.
REINFORCING STEEL Fc = 20,000 P.S.I.

TOP OF MANHOLE COVER TO BE SET FLUSH WITH FINISHED SURFACE ELEVATION.



SIDE VIEWS

ESTIMATED QUANTITIES

ITEM	UNIT	4' X 4' JCT. BOX		5' X 5' JCT. BOX	
		CONSTANT	VARIABLE	CONSTANT	VARIABLE
* CLASS M6 CONCRETE	CUYDS	1.29	0.46V	1.93	0.56V
REINFORCEMENT–CONC. MASONRY	LBS	103	23V	131	35V
MANHOLE RIM & COVER–AS SPECIFIED	EACH	1	----	1	----

* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS;
12" DIA.=–0.03 C.Y., 15" DIA=–0.04 C.Y., 18" DIA.=–0.05 C.Y., 21" DIA.=–0.07 C.Y., 24" DIA.=–0.09 C.Y., 27" DIA.=–0.11 C.Y., 30" DIA=–0.14 C.Y., 33" DIA.=–0.17 C.Y., 36" DIA.=–0.20 C.Y., 42" DIA.=–0.26 C.Y., 48" DIA.=–0.34 C.Y.

NOTES:

COVER REINFORCEMENT REQUIRES 12–#5 BARS 5'(6') LONG TO BE PLACED AS SHOWN.
2" FROM CIRCULAR OPENING AND 8" CENTER TO CENTER AT A DEPTH OF 6" W/MIN. COVER THICKNESS OF 8".

FLOOR OF JCT. BOX TO BE FINISHED IN SUCH A MANNER TO INSURE UNINTERRUPTED FLOW THRU THE BOX.

WHEN PIPE SIZES DIFFER THRU JCT. BOX, TOP OF PIPE TO MATCH WHEN POSSIBLE.

( ) INDICATES SPECIFICATIONS FOR A 5' X 5' JCT. BOX. MAXIMUM PIPE SIZE ALLOWED FOR 4' X 4' JCT. BOX IS 36" R.C.P. A 5' X 5' JCT. IS 48" R.C.P.
VARIABLE DEPTH UP TO 8'

REVISED: DECEMBER 1995

SPECIFICATION REFERENCE NO. 460

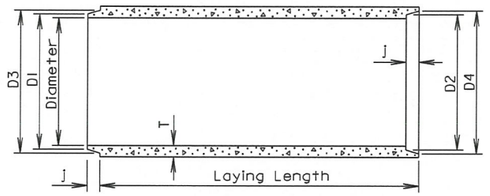
CITY OF SIOUX FALLS
ENGINEERING DIVISION
STANDARD STORM SEWER
JUNCTION BOX TYPE I

PLATE NUMBER 460.05

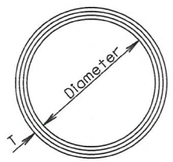
PROJECT	SHEET NO.	TOTAL SHEETS
2017–008	21	33
Details	1/27/2017	

TOLERANCES IN DIMENSIONS

Diameter: ±1.5% for 24" Dia. or less and ±1% or 3/8" whichever is more for 27" Dia. or greater.
Diameters at Joints: ±3/16" for 30" Dia. or less and ±1/4" for 36" or greater.
Length of Joint (J): ±1/4".
Wall thickness (T): not less than design T by more than 5% or 3/16", whichever is greater.
Laying length: shall not underrun by more than 1/2".



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

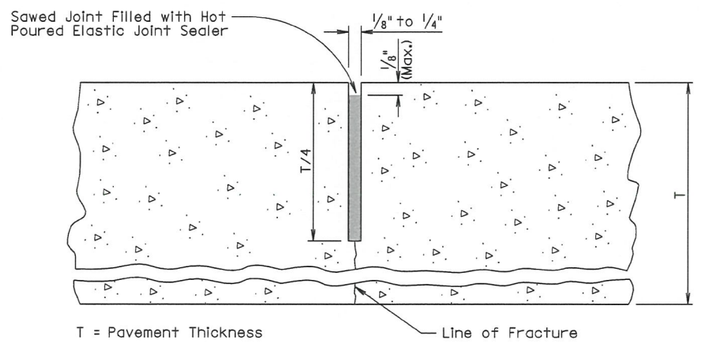
Construction of R.C.P. shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges.

Not more than 2 four foot sections shall be permitted near the ends of any culvert. Four foot lengths shall be used only to secure the required length of culvert.

Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	3 1/4	3	29 1/4	29 5/8	30 1/4	30 5/8
30	384	3 1/2	3 1/4	32 3/8	32 3/4	33 1/2	33 7/8
36	524	4	3 3/4	38 3/4	39 1/4	40	40 1/2
42	685	4 1/2	4	45 1/8	45 5/8	46 1/2	47
48	867	5	4 1/2	51 1/2	52	53	53 1/2
54	1070	5 1/2	4 1/2	57 7/8	58 3/8	59 3/8	59 7/8
60	1296	6	5	64 1/4	64 3/4	66	66 1/2
66	1542	6 1/2	5 1/2	70 5/8	71 1/8	72 1/2	73
72	1810	7	6	77	77 1/2	79	79 1/2
78	2098	7 1/2	6 1/2	83 3/8	83 7/8	85 5/8	86 1/8
84	2410	8	7	89 3/4	90 1/4	92 1/8	92 5/8
90	2740	8 1/2	7	95 3/4	96 1/4	98 1/8	98 5/8
96	2950	9	7	102 1/8	102 5/8	104 1/2	105
102	3075	9 1/2	7 1/2	109	109 1/2	111 1/2	112
108	3870	10	7 1/2	115 1/2	116	118	118 1/2

March 31, 2000

Published Date: 1st Qtr. 2012	SDDOT	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1



GENERAL NOTES:

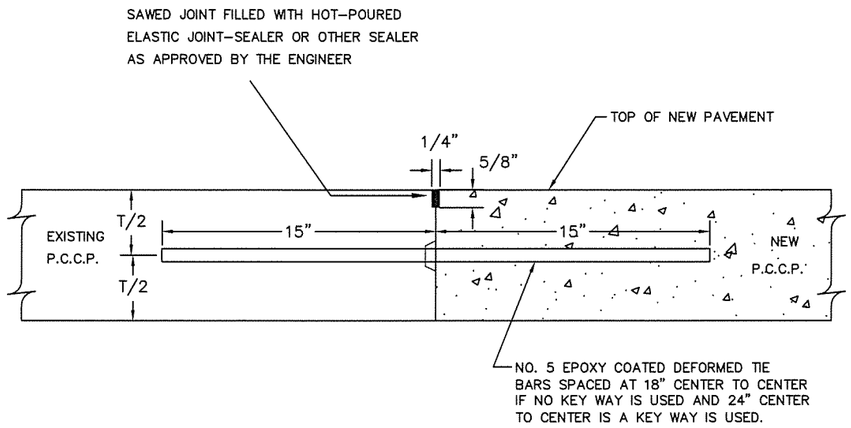
The saw cut to control cracking shall be a minimum of 1/4 the thickness of the pavement.

All hot poured elastic joint sealer material spilled on the surface of the concrete pavement shall be removed as soon as the material has cooled. The extent of removal of material shall be to the satisfaction of the Engineer. All costs for removal of the spilled joint sealer material shall be borne by the Contractor.

December 23, 2007

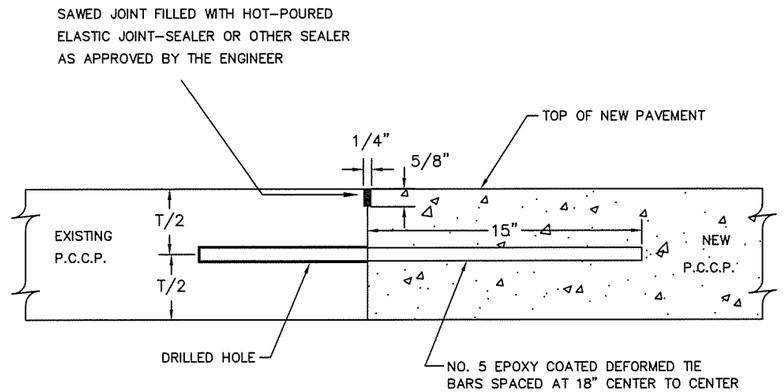
Published Date: 4th Qtr. 2009	SDDOT	PCC PAVEMENT TRANSVERSE CONTRACTION JOINT WITH OR WITHOUT DOWEL BAR ASSEMBLY	PLATE NUMBER 380.03
			Sheet 1 of 1

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	22	33
Details	1/27/2017	



T = PAVEMENT THICKNESS

PCC PAVEMENT TRANSVERSE
JOINTS WITH TIE BARS



T = PAVEMENT THICKNESS

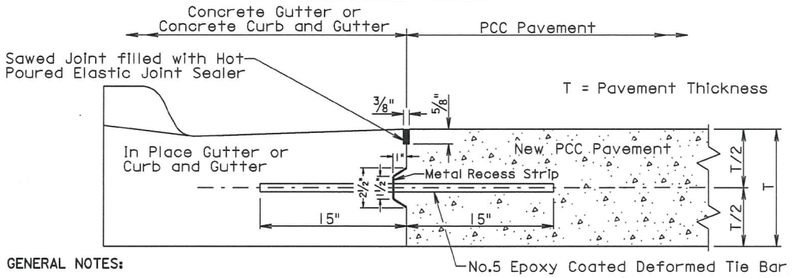
GENERAL NOTES

THE TIE BAR IS TO BE EMBEDDED A MINIMUM DEPTH OF 9 INCHES INTO THE EXISTING PAVEMENT BY UTILIZING AN EPOXY RESIN ADHESIVE.

PCC PAVEMENT TRANSVERSE
JOINTS WITH TIE BARS

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	23	33
Details	1/27/2017	

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(INDIVIDUALLY FORMED)



GENERAL NOTES:

No.5 epoxy coated deformed tie bars shall be spaced 48" center to center. The keyway shown above is a female keyway.

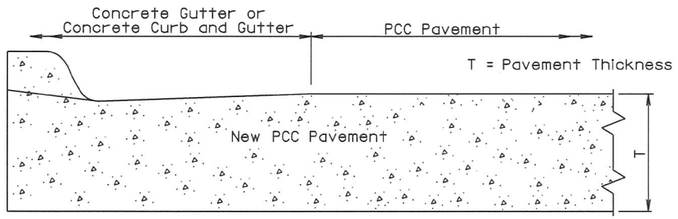
The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The transverse contraction joints in the concrete gutter or concrete curb and gutter shall be placed at each mainline PCC pavement transverse contraction joint. The transverse contraction joints in the concrete gutter or the concrete curb and gutter shall be 1½" deep if formed in fresh concrete using a suitable grooving tool. If a saw is used to cut the transverse contraction joints, then the depth of the joint shall be at least ¼ the thickness of the concrete gutter or concrete curb and gutter.

The term "In Place Gutter or Curb and Gutter" in the above drawing indicates that the in place concrete gutter and concrete curb and gutter was placed on the current project.

POURED MONOLITHICALLY



GENERAL NOTES:

The mainline curb and gutter may be placed monolithically with the PCC pavement. If this method of construction is used, the tie bars and the sawed joint between the curb and gutter and the PCC pavement shall be eliminated.

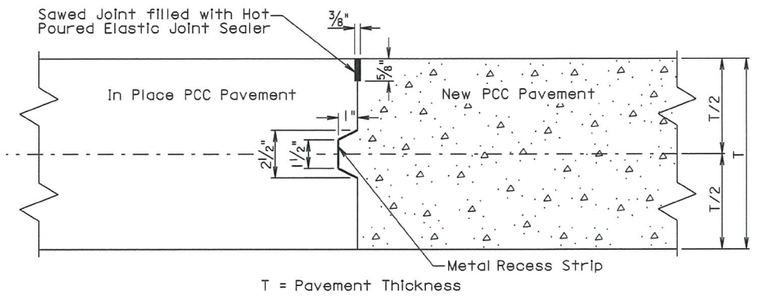
The gutter or curb and gutter shall be sawed transversely at each mainline transverse contraction joint. The transverse contraction joints in the gutter or curb and gutter shall be sawed and sealed same as the transverse contraction joints in the PCC pavement.

The slope of the gutter shall be the slope designated for the type of gutter or curb and gutter to be constructed. The bottom slope of the gutter or curb and gutter shall be constructed at the same slope as the mainline concrete pavement.

September 14, 2005

Published Date: 4th Qtr. 2007	SDDOT	**PCC PAVEMENT LONGITUDINAL CONSTRUCTION JOINTS WITH CONCRETE GUTTER OR CONCRETE CURB AND GUTTER**	PLATE NUMBER 380.11 Sheet 1 of 1

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS



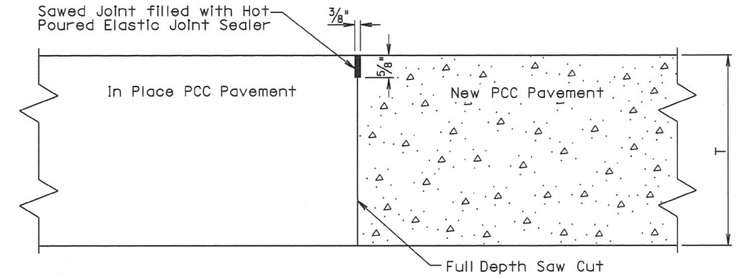
T = Pavement Thickness

GENERAL NOTES:

When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

LONGITUDINAL CONSTRUCTION JOINT WITHOUT TIE BARS



T = Pavement Thickness

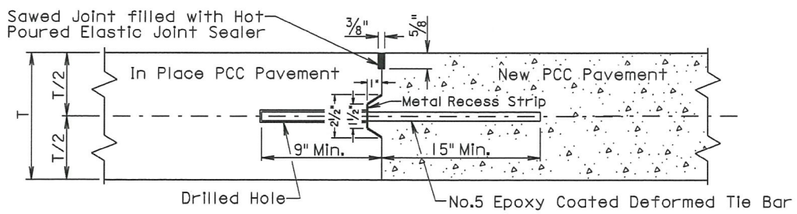
GENERAL NOTE:

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project.

September 14, 2001

Published Date: 4th Qtr. 2007	SDDOT	**PCC PAVEMENT LONGITUDINAL JOINTS WITHOUT TIE BARS**	PLATE NUMBER 380.12 Sheet 1 of 2

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(DRILLED IN BARS)



T = Pavement Thickness

GENERAL NOTES:

The tie bars shall be embedded a minimum depth of 9 inches into the in place PCC pavement and anchored with an epoxy resin adhesive.

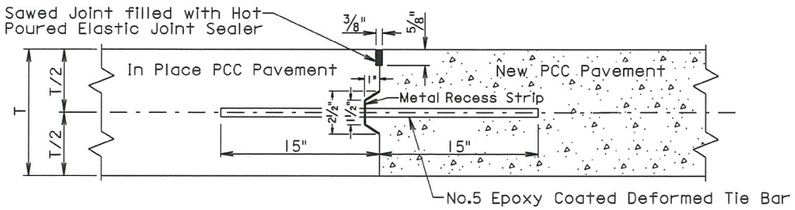
No.5 epoxy coated deformed tie bars shall be spaced 48" center to center for a female keyway or 30" center to center for a vertical face and male keyway. The keyway shown above is a female keyway.

The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on a previous project or current project.

LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(INSERTED OR FORMED IN BARS)



T = Pavement Thickness

GENERAL NOTES:

No.5 epoxy coated deformed tie bars shall be spaced 48" center to center for a female keyway or 30" center to center for a vertical face and male keyway. The keyway shown above is a female keyway.

The tie bars shall be placed a minimum of 15 inches from existing transverse contraction joints.

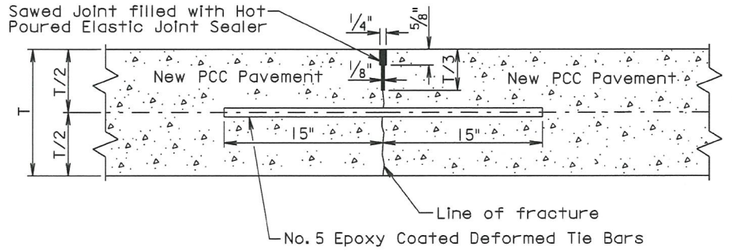
The keyway is optional and is not required. When concrete pavement is formed and a keyway is provided, a metal recess strip shall be used. When concrete pavement is slip formed, a metal recess strip is not required.

The term "In Place PCC Pavement" in the above drawing indicates that the in place PCC pavement was placed on the current project.

September 14, 2001

Published Date: 4th Qtr. 2007	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10 Sheet 1 of 2

SAWED LONGITUDINAL JOINT WITH TIE BARS
(POURED MONOLITHICALLY)



T = Pavement Thickness

GENERAL NOTES:

No. 5 epoxy coated deformed tie bars shall be spaced 48 inches center to center.

The tie bars shall be placed a minimum of 15 inches from the existing transverse contraction joints.

The first saw cut to control cracking shall be a minimum of 1/3 the thickness of the pavement. Additional sawing for widening the saw cut to provide the width for the installation of the hot poured elastic joint sealer will be necessary.

September 14, 2001

Published Date: 4th Qtr. 2007	SDDOT	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10 Sheet 2 of 2

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	25	33
Details	1/27/2017	

30" CONCRETE CURB AND GUTTER
N.T.S

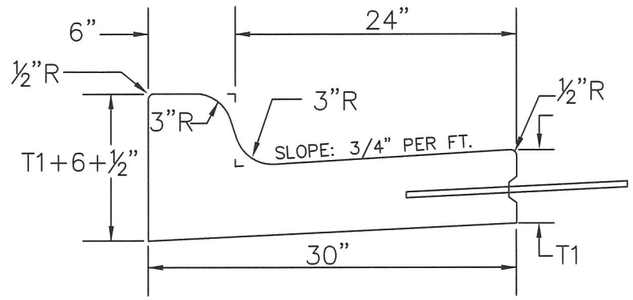
1/2" Preformed Expansion Joint Fillers shall be placed, Tranversely in the Curb & Gutter as follows:

(1) At each junction of Radius return Curb & Gutter and the Curb & Gutter which is parallel to the project centerline.
(2) At each junction with existing Concrete Curb or Concrete Curb & Gutter
(3) At each junction with existing sidewalk, to the depth of the sidewalk.
(4) At a maximum of 195 L.F. appart, measured along the face of the Curb & Gutter.

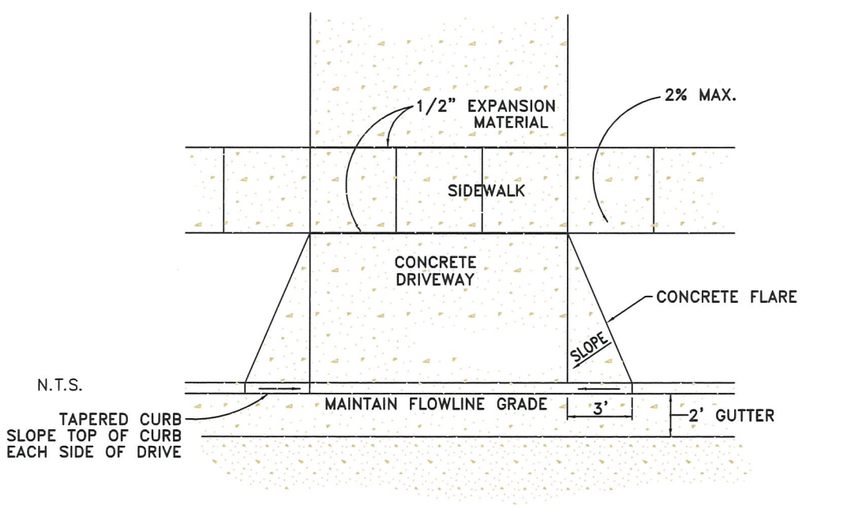
1/2" Preformed Expansion Joint Filler shall be placed, Longitudinally, along the backface of the Curb, to the depth of the sidewalk, where such backface of Curb is adjacent to an existing Concrete Sidewalk.

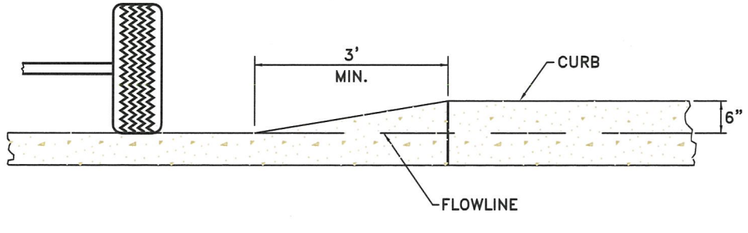
Weakened Plane Joints shall be constructed at Approx. 10' intervals. The joints shall be constructed to a minimum depth of one inch by scoring with a tool which coincide with pavement joints leave the corners rounded and insure a free movement of the Concrete at the joint.

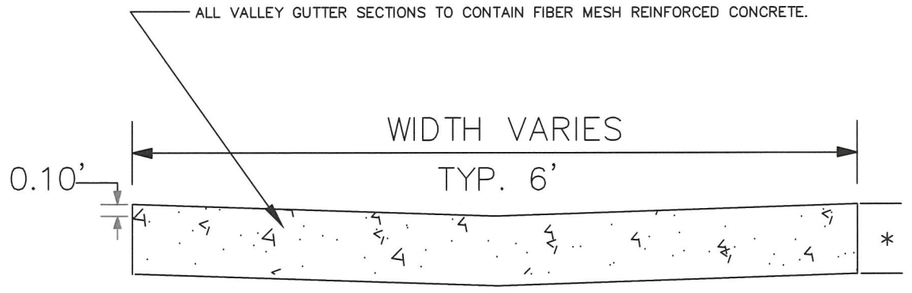
TYPE	T1 INCHES	CU. YD PER LIN. FT.
B66	6"	0.055
B67	7"	0.063
B68	8"	0.071
B68.5	8.5"	0.074
B69	9"	0.078
B69.5	9.5"	0.082
B610	10"	0.086
B610.5	10.5"	0.090
B611	11"	0.094
B611.5	11.5"	0.098
B612	12.0"	0.102



DETAIL FOR CONCRETE FLARES AND TAPERED CURB AT DRIVEWAYS
N.T.S.

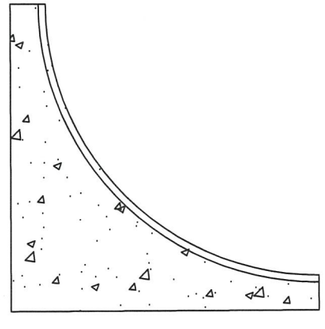






TYPICAL VALLEY GUTTER DETAIL
N.T.S.

* ALL VALLEY GUTTER SECTIONS TO A MINIMUM OF 6" OR THE SAME THICKNESS AS THE ADJOINING CONCRETE PAVING.

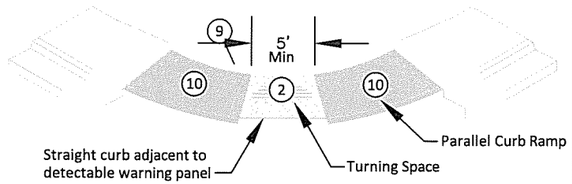


TYPICAL FILLET SECTION
N.T.S.

All Fillet sections to contain fiber mesh reinforced concrete.

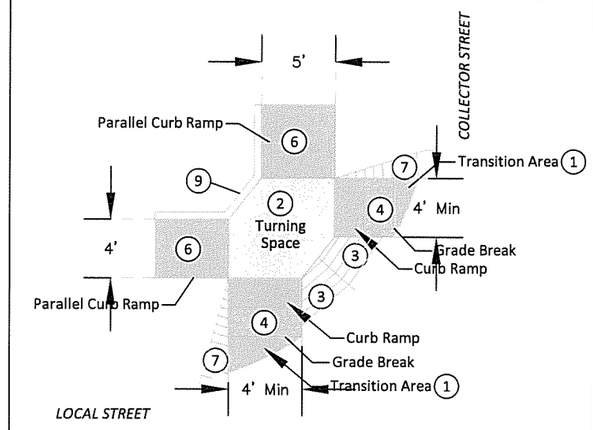
PROJECT	SHEET NO.	TOTAL SHEETS
2017–008	26	33
Details	1/27/2017	

PARALLEL CURB RAMP EXAMPLE

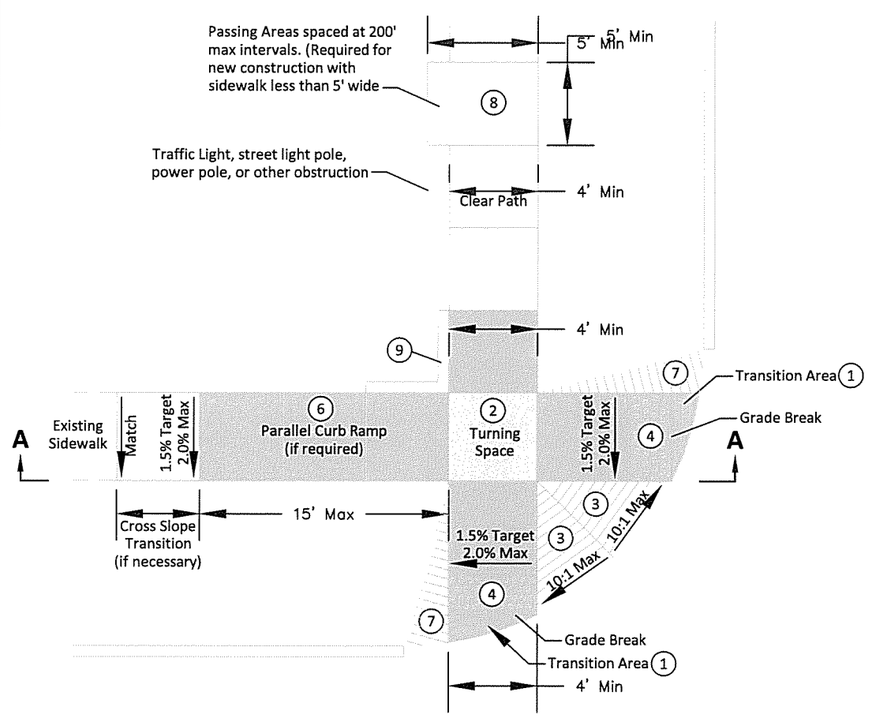


DIRECTIONAL SIDEWALK RAMP EXAMPLE

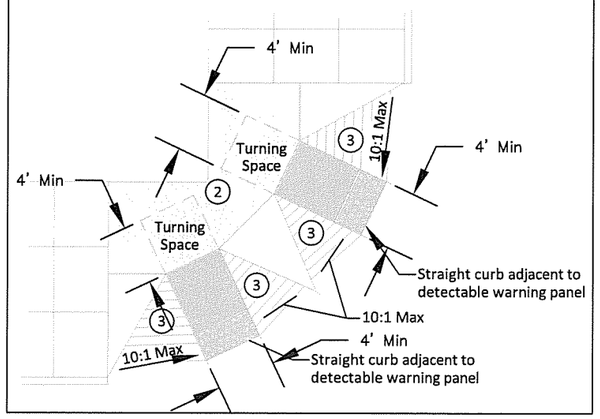
(Typical of a local/collector intersection with a 20' radius)



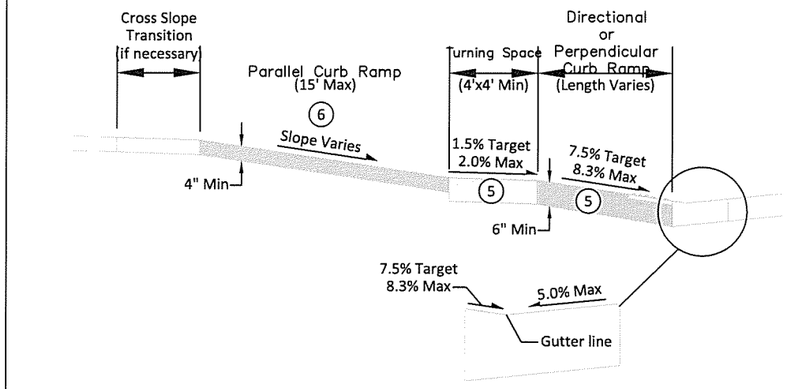
DIRECTIONAL SIDEWALK RAMP EXAMPLE



PERPENDICULAR CURB RAMP EXAMPLE



SECTION A-A



NOTES:

1. Transition from the the 2% maximum cross slope on the ramp and the pedestrian street crossing grade in this area. The maximum cross slope on the pedestrian street crossing (including the fillet or curb and gutter) is 2% on stop or yield controlled legs and 5% on uncontrolled or signalized legs.
2. Minimum 4 feet by 4 feet. Target cross slope of 1.5% with a maximum cross slope of 2.0% in any direction. Where the turning space is confined at the back of sidewalk (example: 6" curb or building), the turning space shall be 4 foot by 5 foot minimum. The 5 foot dimension shall be in the direction of the ramp run. The grade change between the turning space and the curb ramp must be perpendicular to the direction of travel.
3. Areas where the pedestrian circulation path crosses a curb ramp are considered flare sides. The maximum slope of the flare sides is 10%. Full curb height may not be able to be reestablished on flare slopes but as much curb height as possible should be reestablished.
4. Provide a minimum 2 foot width of detectable warning surfaces in the direction of pedestrian travel across the full width of the curb ramp or turning space, exclusive of curbs or flares. Orient domes in the direction of pedestrian travel unless otherwise stated in plans.
5. The concrete in the turning space, curb ramp, and flare slope areas shall be a minimum thickness of 6 inches.
6. If normal sidewalk elevation cannot be achieved with the perpendicular ramp between the street and turning space due to limited ramp length, provide a parallel ramp to make up the elevation difference between the turning space and the standard sidewalk. This parallel ramp shall not exceed 8.3% slope. However, the length of the ramp is not required to exceed 15 feet, regardless of slope. The minimum sidewalk thickness for the parallel ramp in this area is 4 inches.
7. Install a 2 foot taper when additional sidewalk will not be located adjacent to the curb ramp.
8. To accommodate the passing area requirement, sidewalks must be a minimum of 5 foot wide through the driveway approach. See plate 651.01 for additional information.
9. Depending on the conditions, a curb up to 6 inches high may need to be installed on the back of the turning space or adjoining sidewalk.
10. The slope of curb ramp and adjacent curb is designed at 7.5% or less but shall not be steeper than 8.3% unless otherwise specified in the plans. The curb ramp is not required to exceed 15 feet, regardless of slope. The cross slope target is 1.5% with a maximum cross slope of 2.0%.

GENERAL NOTES:

The turning space, curb ramp, and detectable warning panel area will be paid for at the contact unit price for the corresponding concrete sidewalk bid item.

The detectable warning panel shall be measured and paid for to the nearest square foot. Payment shall include all costs for materials, labor, and equipment necessary for the installation of the detectable warning panels.

Revised: December 2016

CITY OF SIOUX FALLS
ENGINEERING DIVISION

ACCESSIBLE CURB RAMPS

SPECIFICATION REFERENCE	PLATE NUMBER
NO. 650	651.02

PROJECT	SHEET NO.	TOTAL SHEETS
2017–008	27	33
Details	1/27/2017	

VTC

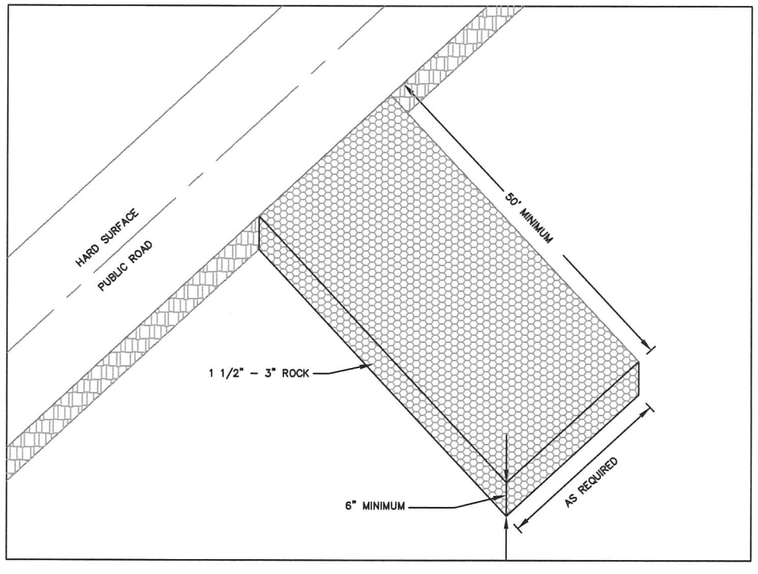
VEHICLE TRACKING CONTROL

DEFINITION:

A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE.

PURPOSES:

TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF.

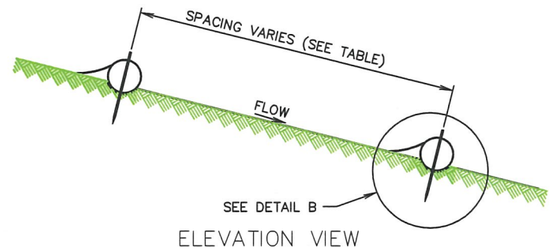


REVISED: MAY 2003

SPECIFICATION REFERENCE NO. 734	CITY OF SIOUX FALLS ENGINEERING DIVISION TEMPORARY VEHICLE TRACKING CONTROL	PLATE NUMBER 734.02

SEDIMENT CONTROL WATTLE

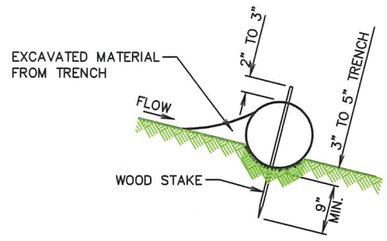
W



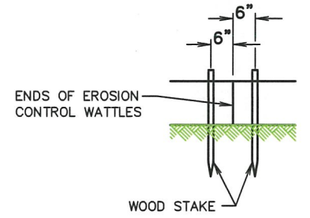
ELEVATION VIEW
CUT OR FILL SLOPE INSTALLATION

CUT OR FILL SLOPE INSTALLATION	
SLOPE	SPACING (FT)
1:1	10
2:1	20
3:1	30
4:1	40

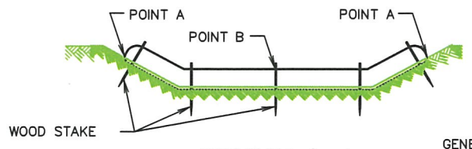
NOTE: IF ONLY ONE WATTLE IS REQUIRED, THE SLOPE SHALL NOT EXCEED 20:1.



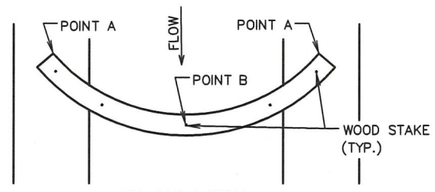
DETAIL B
(TYPICAL OF ALL INSTALLATIONS)



DETAIL C



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'.

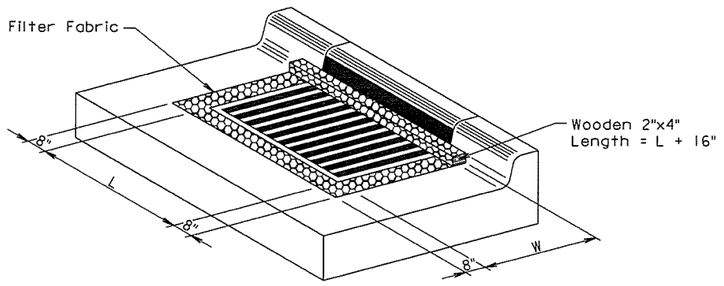
WHERE INSTALLING RUNNING LENGTHS OF WATTLES, THE CONTRACTOR SHALL BUTT THE SECOND WATTLE TIGHTLY AGAINST THE FIRST AND SHALL NOT OVERLAP THE ENDS. SEE DETAIL C.

ISSUED: OCTOBER 2005

SPECIFICATION REFERENCE NO. 734	CITY OF SIOUX FALLS ENGINEERING DIVISION SEDIMENT CONTROL WATTLE	PLATE NUMBER 734.29

PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	28	33
Details	2/15/2017	

L = Length of Grate
W = Width of Grate



ISOMETRIC VIEW

GENERAL NOTES:

The grate and curb and gutter shown are for illustrative purposes only.

The sediment control at inlet with frame and grate shall be placed at locations stated in the plans or at locations determined by the Engineer.

The filter fabric shall be the type specified in the plans.

The filter fabric shall be placed in the inlet opening prior to placing the grate. Approximately 18 inches of excess filter fabric shall be wrapped around the 2"x4" and stapled securely to the 2"x4" after the grate has been placed.

The Contractor shall inspect and maintain the sediment control device once every week and within 24 hours after every rainfall event. The Contractor shall maintain the sediment control device by removing accumulated sediment and replacing torn filter fabric with new filter fabric.

The removed sediment shall be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.

All costs for furnishing, installing, inspecting, maintaining, removing, and replacing the sediment control device at the inlet including labor, equipment, and materials shall be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

September 14, 2005

Published Date: 1st Qtr. 2012	SDDOT	*SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES*	*PLATE NUMBER 734.10* *Sheet 1 of 1*

INLET PROTECTION

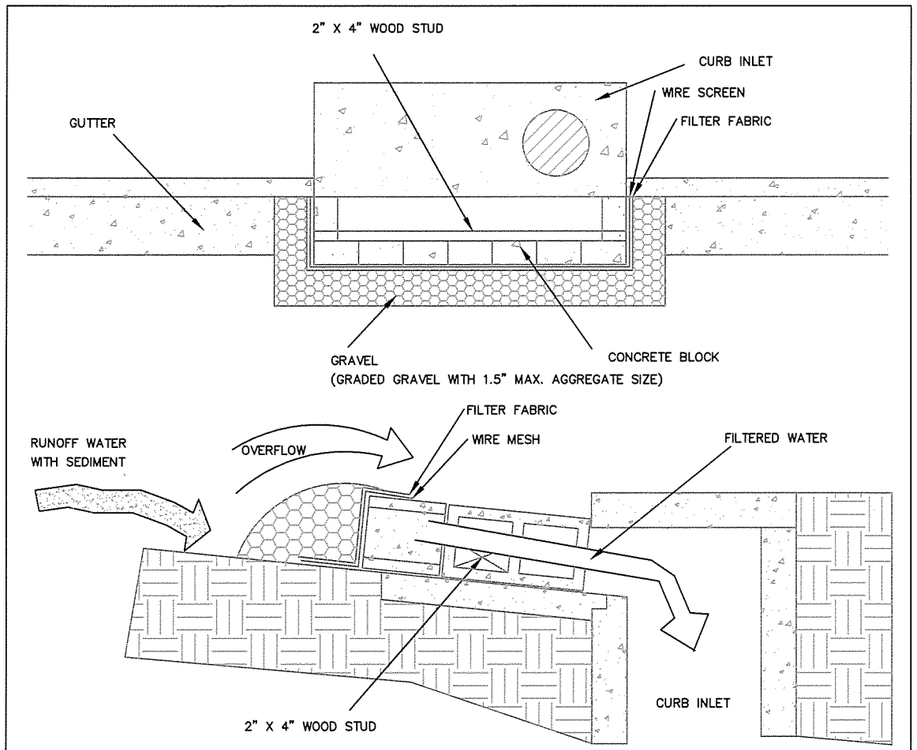
IP

DEFINITION:

A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET.

PURPOSES:

TO REDUCE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF DISTURBED AREAS.



SPECIFIC APPLICATION:
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

NOTE: ALTERNATE DESIGN COULD UTILIZE GRAVEL FILLED BAGS.

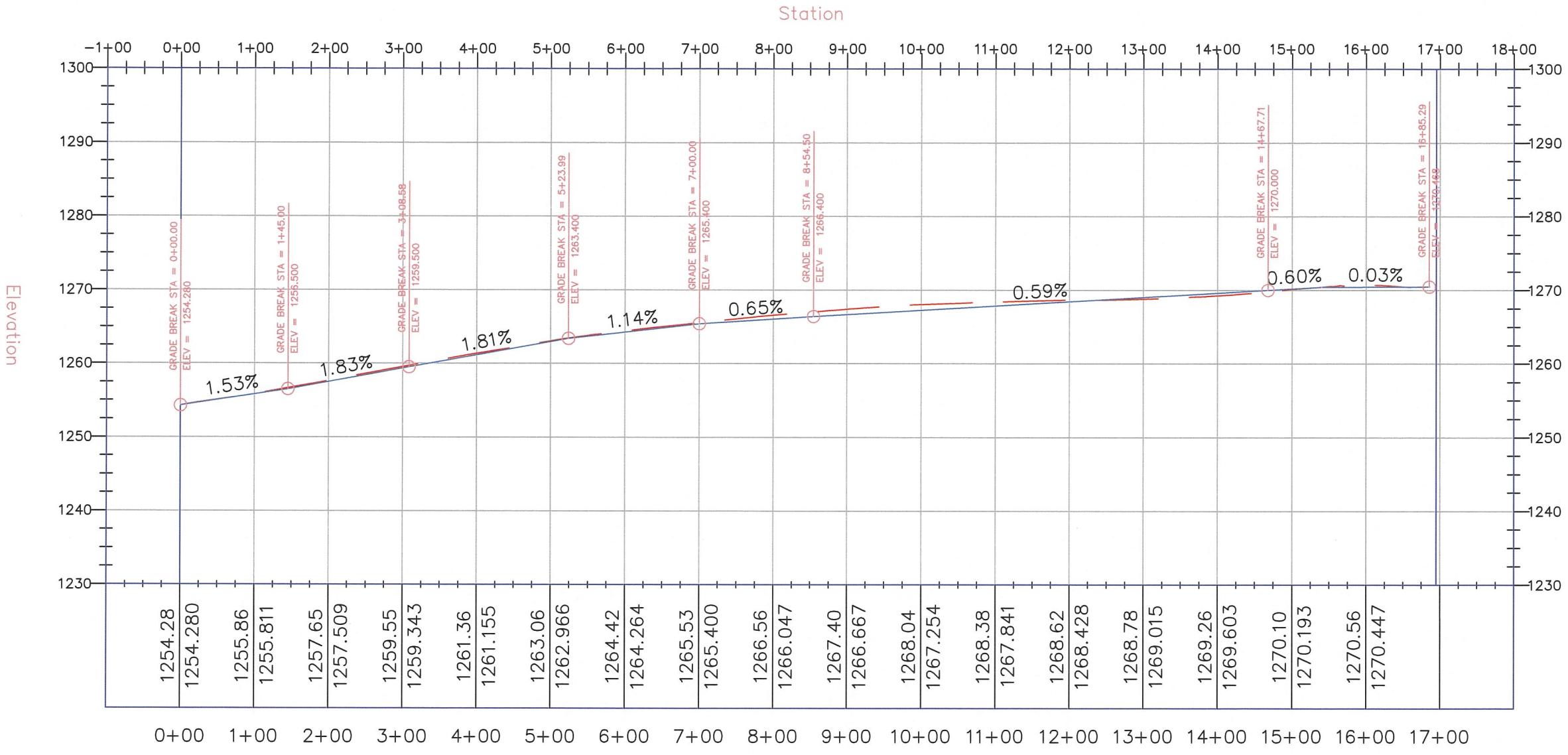
FILTER FABRIC SHALL CONFORM TO SECTION 831 OF SDDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION.

REVISED: JUNE 2000

SPECIFICATION REFERENCE NO.	CITY OF SIOUX FALLS ENGINEERING DIVISION GRAVEL/CONCRETE BLOCK	PLATE NUMBER 734.19

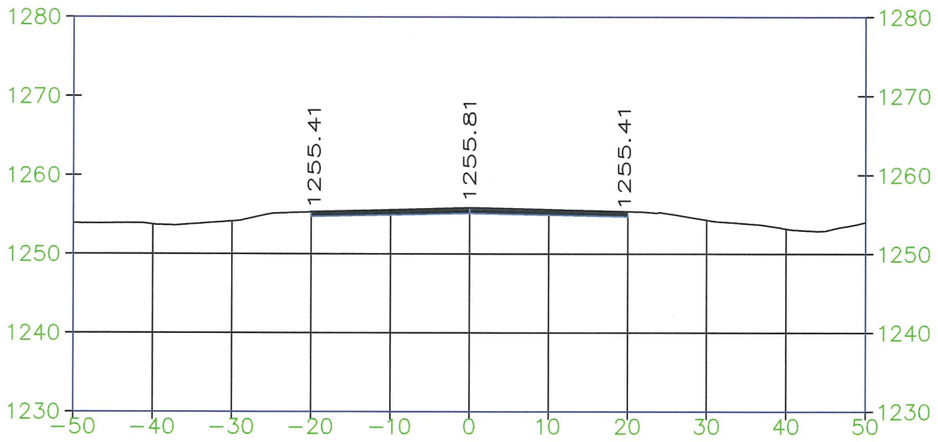
PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	29	33
PROFILE	2/21/2017	

WCLR PROFILE



PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	30	33
CROSS SECTIONS	1/27/2017	

1+00.00



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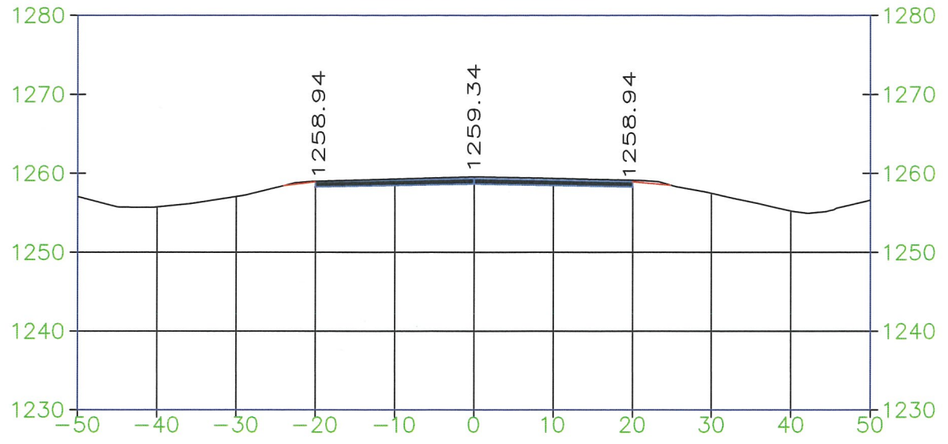

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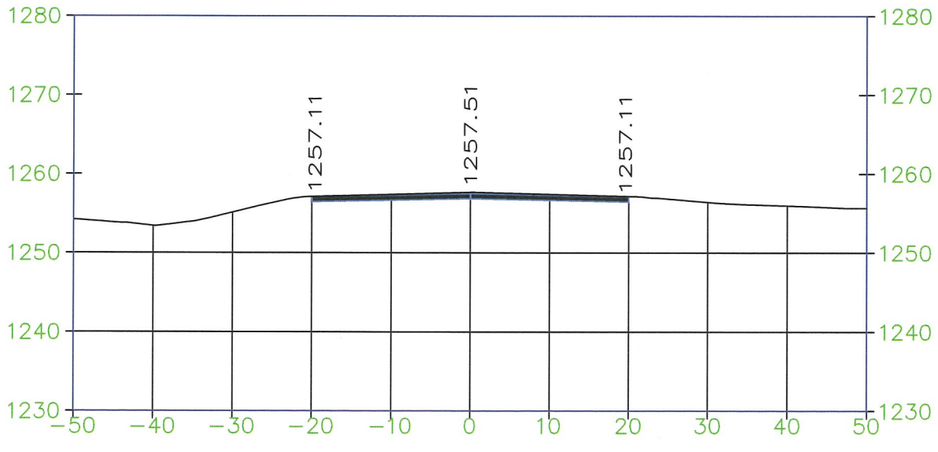

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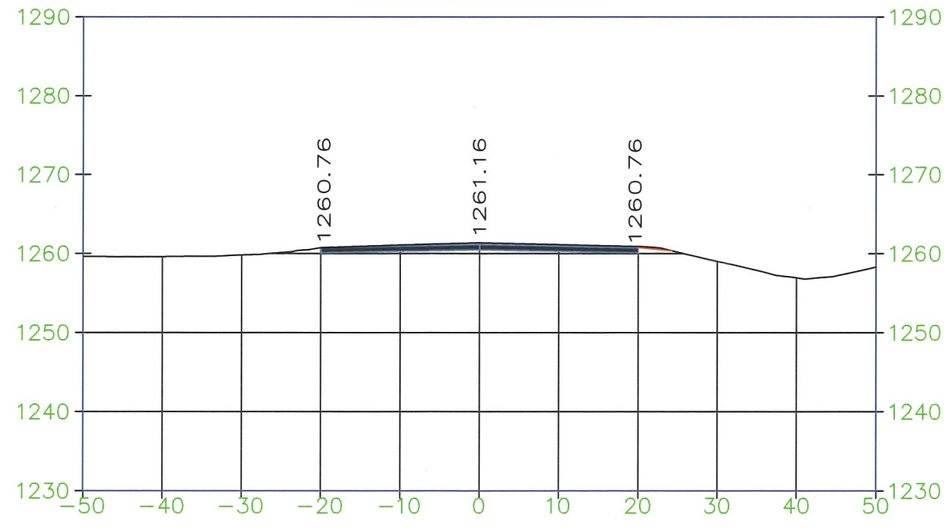
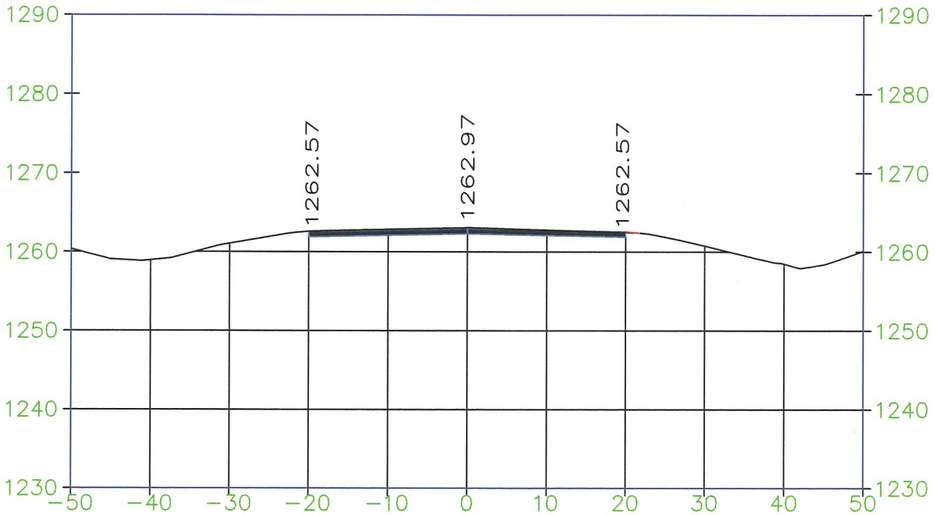


PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	31	33
CROSS SECTIONS	1/27/2017	

5+00.00



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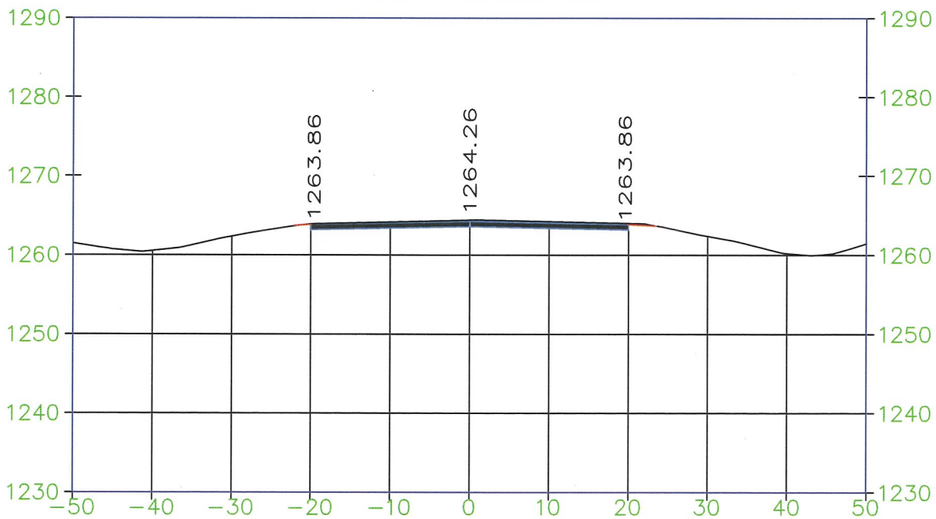

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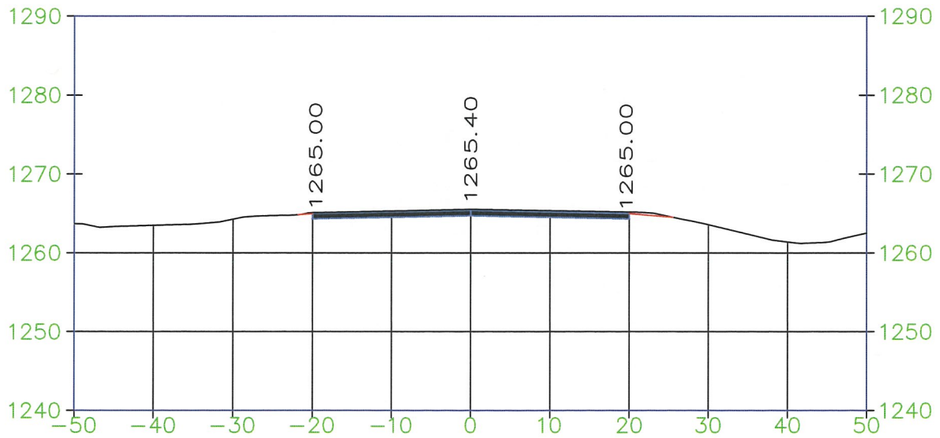

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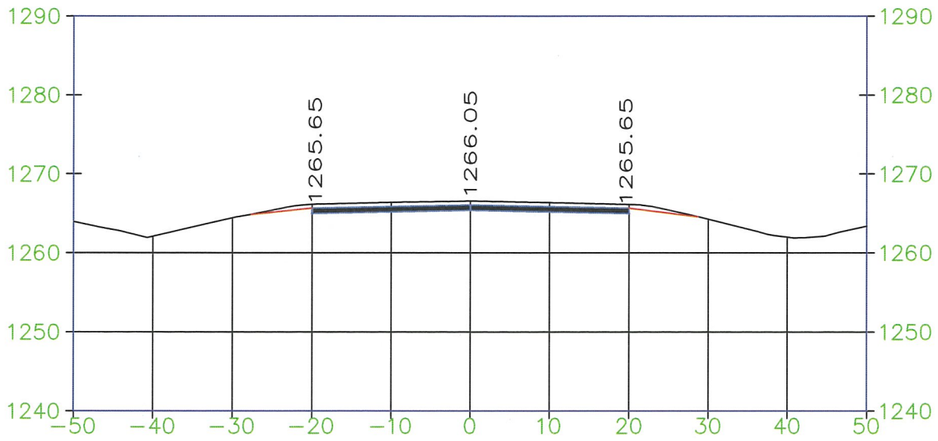
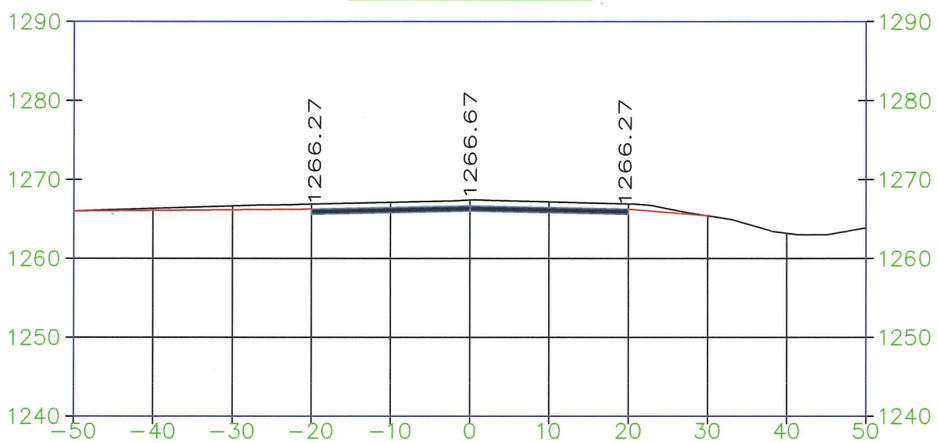


PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	32	33
CROSS SECTIONS	1/27/2017	

9+00.00



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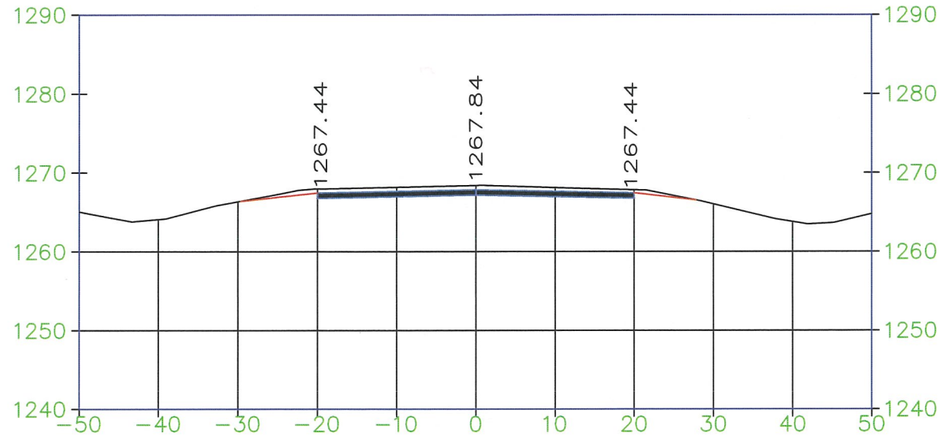

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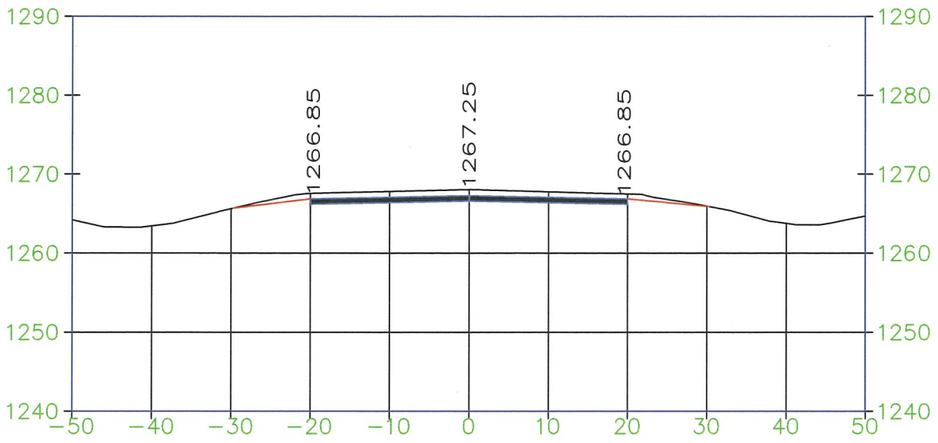

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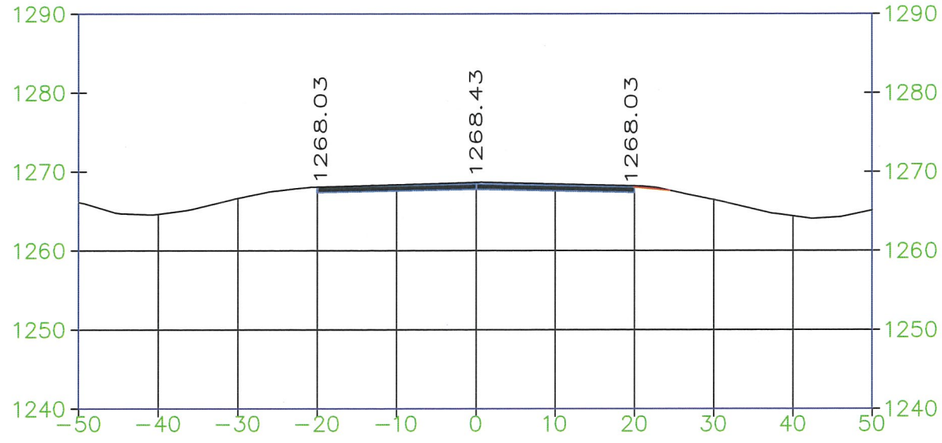
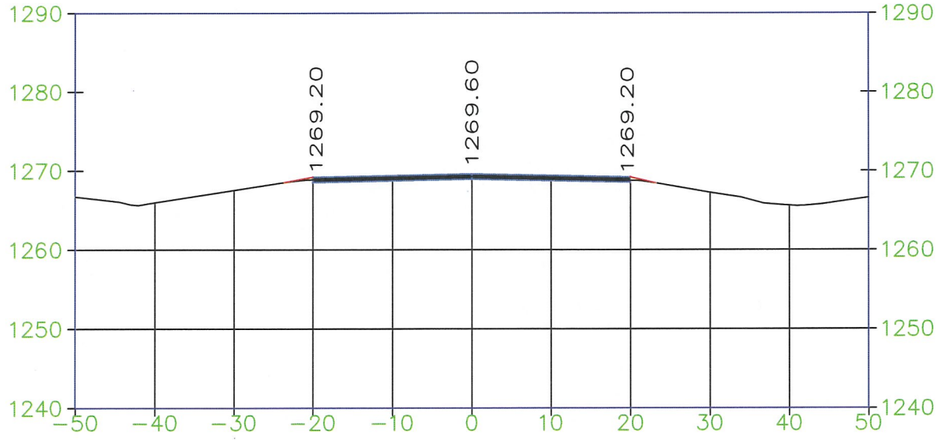


PROJECT	SHEET NO.	TOTAL SHEETS
2017-008	33	33
CROSS SECTIONS	1/27/2017	

13+00.00

14+00.00



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