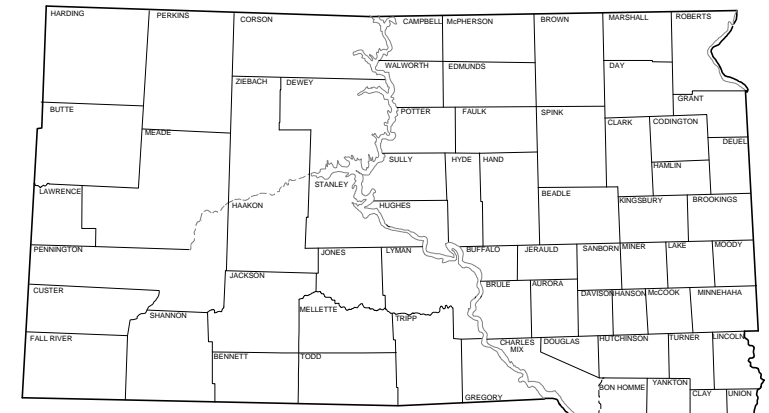


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
 PLANS FOR PROPOSED
PROJECT EM 8068(10) PCN 0109
AULD-BROKAW TRAIL RAILROAD CROSSING
YANKTON COUNTY AND YANKTON, SOUTH DAKOTA
 10' WIDE CONCRETE SHARED USE TRAIL, GRADING & SURFACING
 NW 1/4, Sec 13, T92N, R52W
 E/A Project No. Y11167.D01



YANKTON
SOUTH DAKOTA

INDEX OF SHEETS

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Sheet	2-4	Quantities and Environmental Commitments
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Sheet	13	Horizontal Alignment Data/Control Data & Legend
Sheet	14-15	Plan & Profile Sheets
Sheet	16-19	Special Details
Sheet	20-25	Standard Plates
Sheet	26-28	Cross Sections

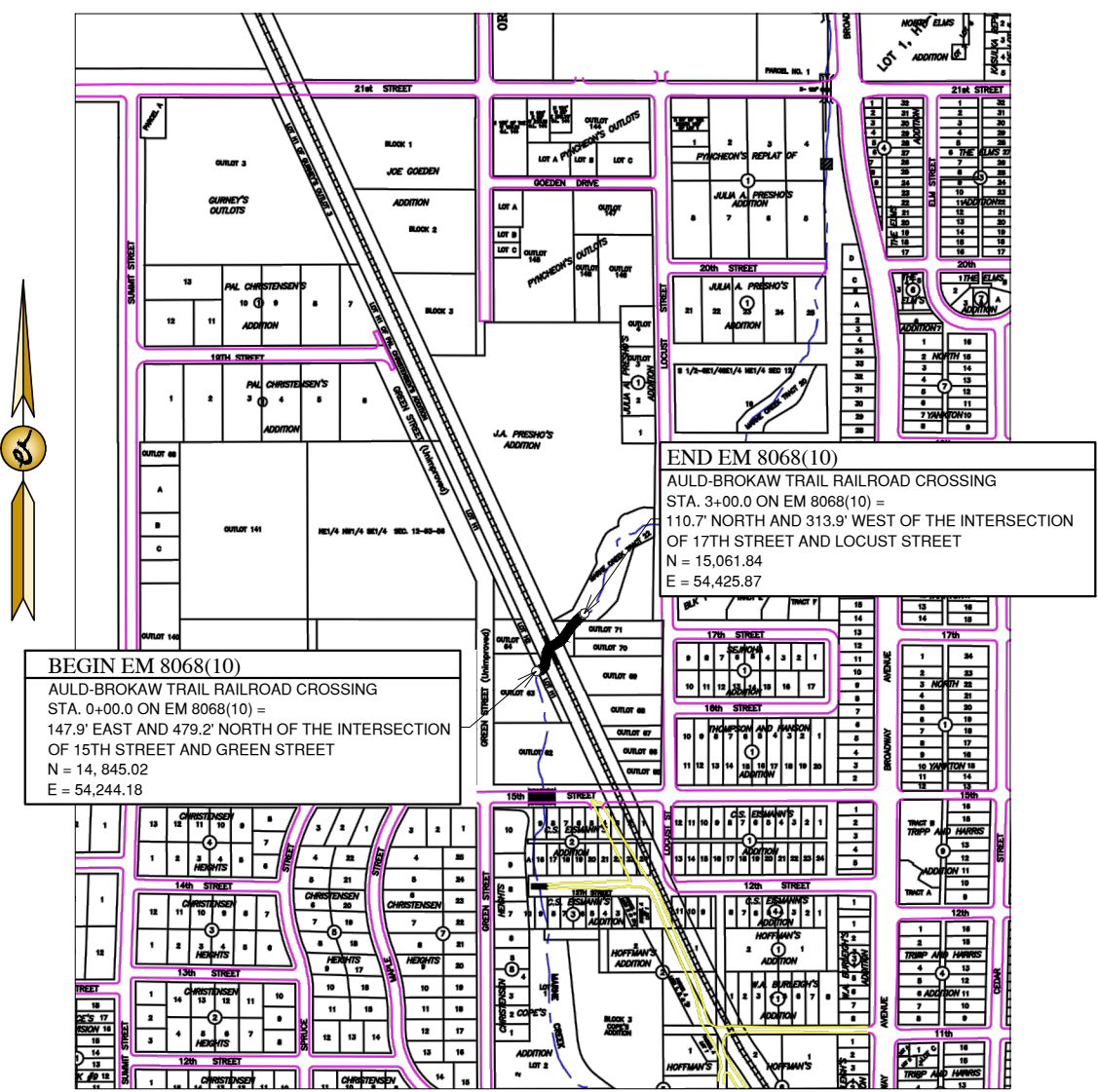
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Yankton, South Dakota 57078

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FAX 605-665-0523
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BEGIN EM 8068(10)
 AULD-BROKAW TRAIL RAILROAD CROSSING
 STA. 0+00.0 ON EM 8068(10) =
 147.9' EAST AND 479.2' NORTH OF THE INTERSECTION
 OF 15TH STREET AND GREEN STREET
 N = 14, 845.02
 E = 54,244.18

END EM 8068(10)
 AULD-BROKAW TRAIL RAILROAD CROSSING
 STA. 3+00.0 ON EM 8068(10) =
 110.7' NORTH AND 313.9' WEST OF THE INTERSECTION
 OF 17TH STREET AND LOCUST STREET
 N = 15,061.84
 E = 54,425.87

CITY OF YANKTON
PROJECT LOCATION MAP
 NOT TO SCALE

DESIGN DESIGNATION

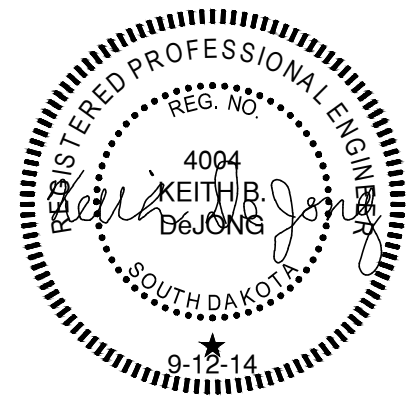
GROSS LENGTH	300 FEET	0.06 MILES
LENGTH OF EXCEPTIONS	0 FEET	0 MILES
NET LENGTH	300 FEET	0.06 MILES
LENGTH OF GRADING	300 FEET	0.06 MILES
LENGTH OF BRIDGES	0 FEET	0 MILES

STORM WATER PERMIT

Major Stream: Marne Creek
 Area Disturbed: 0.27 Acres, more or less
 Total Project Area : 0.50 Acres, more or less
 Approx. Begin Lat/Long: 42.8847/-97.4018

SCALES

LAYOUT		NO SCALE
PLAN SHEETS	HORIZONTAL	1" = 20 FT
	VERTICAL	1" = 5 FT
CROSS SECTIONS	HORIZONTAL	1" = 20 FT
	VERTICAL	1" = 5 FT
DETAIL SHEETS		NO SCALE



ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E1700	Remove Silt Fence	33	Ft
110E1140	Remove Concrete Sidewalk	55.6	SqYd
120E0010	Unclassified Excavation	172	CuYd
120E0800	Rubble and Buried Debris Excavation	154	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
380E1000	6" Miscellaneous PCC Pavement	52.8	SqYd
450E0103	12" RCP Class 3, Furnish	14	Ft
450E0110	12" RCP, Install	14	Ft
450E2000	12" RCP Flared End, Furnish	2	Each
450E2001	12" RCP Flared End, Install	2	Each
621E0260	Special 6' High Chain Link Fence	122	Ft
621E0320	Chain Link Fence Enclosure	66	Ft
634E0100	Traffic Control	230	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
651E0060	6" Concrete Sidewalk	2,826	SqFt
700E0110	Class A Riprap	9.5	Ton
730E0100	Cover Crop Seeding	0.2	Bu
730E0251	Special Permanent Seed Mixture 1	6.9	Lb
734E0102	Type 2 Erosion Control Blanket	343	SqYd
734E0602	Low Flow Silt Fence	132	Ft
734E0610	Mucking Silt Fence	9.2	CuYd
734E0620	Repair Silt Fence	33	Ft
831E0110	Type B Drainage Fabric	102.5	SqYd
900E5147	Articulated Concrete Mattress	92.5	SqYd
900E7200	Low Water Crossing	Lump Sum	LS
998E0100	Railroad Protective Insurance	Lump Sum	LS

SPECIFICATIONS

Standard Specifications for Roads & Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the proposal.

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS
ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT A: WETLANDS

Approximately 0.09 acres of wetlands will be impacted by the project. Refer to the plans for location and boundaries of the impacted wetlands. These unavoidable impacts to wetlands are less than 0.1 acres and the "Statewide Wetland Finding for South Dakota Federal-Aid Highway Projects" will apply.

Action Taken/Required:

Replacement of these 0.09 acres of wetland impacts will be completed through another wetland mitigation opportunity in a manner which considers FHWA's program-wide goal of 'net gain' of wetlands through enhancement, creation, and preservation.

Temporary impacts will not be mitigated as original grades will be re-established.

A mitigation plan has been provided by the SDDOT Environmental Office. A monitoring plan has been included and responsibilities are accounted for. The contact person is the Environmental Project Scientist of the SDDOT Environmental Office at 605-773-3268.

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

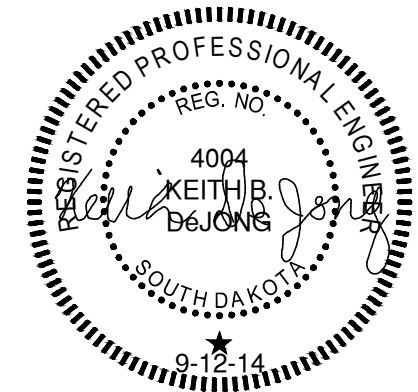
COMMITMENT C: WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment before entering South Dakota to reduce the risk of invasive species introduction into the project vicinity.

Action Taken/Required:

The Contractor shall obtain the necessary permits from the regulatory agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE) prior to executing water extraction activities.

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ENVIRONMENTAL COMMITMENTS CONTINUED

COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

Marne Creek is classified as fish and wildlife propagation, recreation, irrigation, and stock watering waters. Because of these beneficial uses, special construction measures may have to be taken to ensure that this water body is not impacted.

Action Taken/Required:

The Contractor is advised the South Dakota Surface Water Quality Standards, administered by the Department of Environment and Natural Resources (DENR), apply to this project. Special construction measures shall be taken to ensure the above standard(s) of the surface waters are maintained and protected.

COMMITMENT D2: SURFACE WATER DISCHARGE

Marne Creek is classified as fish and wildlife propagation, recreation, irrigation and stock watering waters. Because of these beneficial uses, special construction measures may have to be taken to ensure that this water body is not impacted.

Action Taken/Required:

If construction dewatering is required, the Contractor shall obtain a Temporary Discharge Permit from the DENR and provide a copy to the Project Engineer. Contact the DENR Surface Water Program at 605-773-3351 to apply for a permit.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance, but project undertaking includes work directly within Marne Creek.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

The Contractor shall adhere to the "Special Provision Regarding Storm Water Discharges to Waters of the State".

A major component of the storm water construction permits is development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which is a joint effort and responsibility of the SDDOT and the Contractor. Erosion control measures and best management practices will be implemented in accordance with the SWPPP. The SWPPP is a dynamic document and is to be available on-site at all times.

Information on storm water permits and SWPPPs are available on the following websites:

SDDOT: <http://sddot.com/transportation/highways/environmental/stormwater/Default.aspx>

DENR: <http://www.denr.sd.gov/des/sw/stormwater.aspx>

EPA: http://cfpub.epa.gov/npdes/home.cfm?program_id=6

Contractor Certification Form:

The "Department of Environmental and Natural Resources - Contractor Certification Form" (SD EForm - 2110LDV1-ContractorCertification.pdf) shall be completed by the Contractor or their certified Erosion Control Supervisor after the award of the contract. Work may not begin on the project until this form is signed.

The form certifies under penalty of law that the Contractor understands and will comply with the terms and conditions of the Surface Water Discharge General Permit for Storm Water Discharges Associated with Construction Activities for the Project.

The online form can be found at:
<http://denr.sd.gov/des/sw/eforms/E2110LDV1-ContractorCertification.pdf>

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

Construction and/or demolition debris may be disposed of within the State ROW.

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

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

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

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

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

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

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

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

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all designated option borrow sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: staging areas, borrow sites, waste disposal sites, and all material processing sites.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming,

mining, or construction activities with a landowner statement that artifacts have not been found on the site.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

COMMITMENT J: CONSTRUCTION PRACTICES FOR TEMPORARY WORKS IN WATERWAYS OF THE U.S.

The Contractor is advised that special construction measures have to be taken to ensure that the waterways of the U.S. are not impacted.

Action Taken/Required:

No excavation shall be made below the ordinary high water elevation in waterways outside of caissons, cribs, cofferdams, steel piling, or sheeting; and the natural streambed shall not be disturbed unless specified by the plans and under the observation of the Project Engineer. Refer to the Table of U.S. Waterways to Protect for ordinary high water elevations.

All dredged or excavated materials shall be placed at a site above the ordinary high water elevation in a confined area (not classified as a wetland) that is a minimum of 50 feet away from concentrated flows of storm water, drainage courses, and inlets to prevent return of such material to the waterway.

The construction of temporary work platforms, crossings, or berms below the ordinary high water elevation will be allowed provided that all material placed below the ordinary high water elevation consists of Class B or larger riprap.

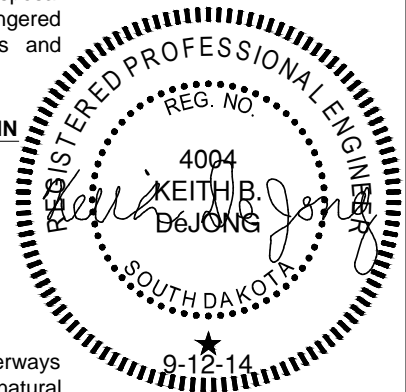
All temporary caissons, cribs, cofferdams, steel piling, sheeting, work platforms, crossings, and berms shall be removed with minimal disturbance to the streambed. Proper construction practices shall be used to minimize increases in suspended solids and turbidity in the waterway.

Bridge berms, wing dams, traffic diversions, channel reconstruction, grading, etc. shall be constructed in close conformity with the plans to ensure that the hydraulic capacity of the waterway is not changed.

Temporary waterway crossings required for the Contractors construction operations shall be constructed with an adequate drainage structure size and minimum fill height to reduce the potential for upstream flooding. The Contractor will be responsible for sizing the temporary drainage structure for these crossings.

Table of U.S. Waterways to Protect

Station	Waterway	Ordinary High Water Elevation
1+25	Marne Creek	1200.95



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ENVIRONMENTAL COMMITMENTS CONTINUED

NOTES

COMMITMENT N: SECTION 404 PERMIT

The SDDOT has obtained a Section 404 Permit from the US Army Corps of Engineers for the permanent actions associated with this project.

Action Taken/Required:

The Contractor shall comply with all requirements contained in the Section 404 permit.

The Contractor shall also be responsible for obtaining a Section 404 permit for any dredge, excavation, or fill activities associated with staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands or waters of the United States.

ROAD AND DRAINAGE EXCAVATION AND EMBANKMENT CONSTRUCTION

Unclassified excavation shall include the removal of in-place embankment and vegetation. Acceptable excavated material shall be used on the project. Payment shall be based on plan quantity bank yardage. Unacceptable and excess material shall be disposed of off site.

Payment of unclassified excavation of the soil shall be based on plans quantities.

Acceptable embankment material from the unclassified excavation shall be used for embankment construction. Earth embankment shall be compacted to 95% of maximum dry density as determined by SD 104.

SHRINKAGE FACTOR: Embankment + 30%

TABLE OF UNCLASSIFIED EXCAVATION

Excavation	172 Cu. Yd.
------------	-------------

TABLE OF 6" CONCRETE SIDEWALK

Station	to	Station	L/R	Quantity (SqFt)
0+00		1+04.2	5' Lt to 5' Rt	1046.0
1+22		1+50	5' Lt to 5' Rt	280.0
1+50		3+00	5' Lt to 5' Rt	1500.0
Total:				2826.0

TABLE OF 6" MISCELLANEOUS PCC PAVEMENT

Station	to	Station	L/R	Quantity (SqYd)
1+22		1+50	5' Lt to 7' Lt	6.2
1+22		1+42	5' Rt to 7' Rt	4.4
1+42		1+50	5' Rt to 11' Rt	5.3
1+50		2+08	5' Lt to 7' Lt	12.9
1+50		1+60	5' Rt to 11' Rt	6.7
1+60		2+38	5' Rt to 7' Rt	17.3
Total:				52.8

PIPE CULVERTS

All reinforced concrete pipe (RCP) shall be Class III

Class B bedding shall be utilized in the embankment installation of storm sewer piping. The depth of the granular bedding below the pipe shall be a minimum of six inches (6"). The initial embankment shall be densely compacted up to a height of twelve inches (12") over the top of the pipe. The cost of backfill material shall be considered incidental to the linear foot bid price and / or unit price for the storm sewer.

Payment for the storm sewer piping shall be by the linear foot as illustrated in the plan sheets and shall include bedding. Pipe for the low water crossing is included in the bid item for 'Low Water Crossing' and will not be paid for separately.

TABLE OF 12" RCP CLASS 3

Station	to	Station	L/R	Quantity (Ft)
2+96.0		2+96.0	7.0' Lt to 7.0' Rt	14.0
Total:				14.0

TABLE OF 12" RCP FLARED END

Station	to	Station	L/R	Quantity (Each)
2+96.0		2+96.0	7.0' Rt	1 Outlet
2+96.0		2+96.0	7.0' Lt	1 Inlet
Total:				2

RUBBLE AND BURIED DEBRIS EXCAVATION

Some of the existing creek banks that will be dug out or sloped in the trail area, may have been stabilized with rubble over the years. Where this material is encountered, it shall be removed to six inches below the finished surface and disposed of as required in the waste disposal note. Acceptable material from the excavated material can be used where fill is required.

RAILROAD COORDINATION

The contractor shall coordinate work with the BNSF Railway Company. See "Special Provision Regarding Working on Railroad Property" and "Special Provision Regarding Railroad Insurance Requirements."

GENERAL MAINTENANCE OF TRAFFIC

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the CONTRACTOR. Cost for maintenance of traffic shall be incidental to the contract lump sum price for Traffic Control Miscellaneous. Any delineators and signs damaged or lost shall be replaced by the CONTRACTOR at no cost to the State.

Storage of vehicles and equipment shall be outside 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.

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.

All breakaway sign supports shall comply with FHWA NCHRP 350 or MASH crash-worthy requirements. The CONTRACTOR shall provide post installation details at the preconstruction meeting for all steel post breakaway sign support assemblies.



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NOTES CONTINUED

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UNDERGROUND LOCATES

Location and protection of all underground utilities is the CONTRACTOR's responsibility. The CONTRACTOR will be required to coordinate work with the utility companies listed below:

- *Utility locations are coordinated by calling 1-800-781-7474 (One Call).
- MidAmerican Energy Company - 1-800-781-7474
- Northwestern Energy & Communications Solutions 1-800-245-6977
- Qwest - 1-800-244-7078
- City of Yankton - 605-668-5251
- Knology - 605-260-7400
- Mediacom - 605-665-8030
- Kaneb - 605-665-7477

WATERING

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

DEWATERING

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 is responsible for obtaining the required permits from the South Dakota Department of Environment and Natural Resources.

CONSTRUCTION SEQUENCING

The CONTRACTOR shall use the following construction sequencing. Traffic control, erosion control, clearing and grubbing, grading, pipe installation, low water crossing and trail construction, concrete mattress installation, fencing, guardrail, seeding and removal of traffic control.

ELEVATIONS

Benchmark elevations are based upon "NAVD 88".

CLASS A RIPRAP

Riprap is to be furnished and installed by the CONTRACTOR meeting the requirements of Section 830 for Class A Riprap. Certification of riprap source shall be approved by the ENGINEER prior to any placement. Drainage Fabric to be used under the riprap shall conform to Section 831 - Type B.

Payment for Riprap shall be based on plans quantities per cubic yard unless changes are approved by the ENGINEER.

TABLE OF RIPRAP

Station	to	Station	L/R	Quantity (Ton)
2+88		2+99	8' Rt to 19' Rt	9.5
			Total	9.5

CLEARING

Before clearing activities begin, the CONTRACTOR shall contact the ENGINEER to determine the limits of clearing for the project. The ENGINEER will indicate which trees and shrubs that will remain within the limits of work. If the trees or shrubs that are supposed to remain within the limits of work are damaged or destroyed by the CONTRACTOR, the CONTRACTOR shall replace them with the same size and type at the CONTRACTOR'S expense.

Trees and brush shall be cleared and grubbed as shown on the plans, marked Limits of Construction. Prior to bidding, the CONTRACTOR shall familiarize himself with the project site in order to determine the effort required for clearing and grubbing.

Payment for clearing and disposal of timber including labor and equipment are incidental to the contract lump sum price for clearing.

TABLE OF SIDEWALK REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
2+50		3+00	5' Lt to 5' Rt	55.6
			Total:	55.6

TYPE 2 EROSION CONTROL BLANKET

Erosion control blanket shall be installed in all locations with a slope of 3:1 or more and in

locations determined by the Engineer during construction.

The erosion control blanket provided shall be from the approved product list. The approved product list for erosion control blanket may be viewed at the following internet site:

<<http://sddot.com/business/certification/products/defaults.aspx>>

The Contractor shall install erosion control blanket according to the manufacturer's installation instructions.

DECORATIVE LIGHT POLES

Decorative light poles will be placed or relocated by others.

SITE ACCESS

The Contractor will be allowed to use the existing concrete trails from 15th Street and from Locust Street for access to the construction site. When the project is complete, the Contractor shall clean all dirt and debris off of the new and existing trails. Any portions of concrete damaged by the Contractor shall be replaced at the Contractor's expense.

CHAIN LINK FENCE

Fencing shall consist of 6' high and 8' high chain link fence. The 6' high fencing shall have 3' high fabric and the 8' high fencing shall have 5' high fabric. Fence fabric shall begin 3' above the trail surface as shown in the fencing details. Posts, rails and fittings shall be green polyvinyl chloride or polyester coated. Fabric shall have a Class 2B green polyvinyl chloride coating.

Middle and bottom rails shall be 1-5/8". Tension bands and tension bars shall be used on all perimeter sides of roof panel. Cross member braces shall be tied. Overhead framework and end rails shall be 2" OD. Spacing for vertical and overhead rails shall not exceed 10'. A knuckle-knuckle finish shall be used.

Chain link fence shall conform to Section 930.

Payment for Special 6' High Chain Link Fence shall be per linear foot and shall include all material, labor and incidentals needed for the chain link fence construction.

Payment for the 8' high chain link fence with the overhead framework and mesh shall be included in the bid item "Chain Link Fence Enclosure" per lineal foot. This cost shall include all of the material, labor and incidentals needed to construct fence where indicated on the plans.

RAILROAD INSURANCE REQUIREMENTS

See Special Provision



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NOTES CONTINUED

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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REMOVE AND REPLACE TOPSOIL

Topsoil shall be salvaged and stockpiled prior to constructing the project. Limits of this work, depth of salvage, and stockpile location will be directed by the Engineer. Following completion of construction, topsoil shall be spread evenly over the disturbed areas.

The estimated amount of topsoil to be removed and replaced is 74 CuYd.

All cost associated with removing and replacing the topsoil along areas to be resurfaced shall be incidental to the lump sum price for "Remove and Replace Topsoil".

FERTILIZING

Application of fertilizer will not be required on this project.

PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits except for paved areas.

All permanent seed shall be planted in the topsoil at a depth of 1/4" to 1/2".

All seed broadcast must be raked or dragged in (incorporated) within the top 1/4" to 1/2" of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

The varieties listed for seed mixtures are preferred varieties.

Native harvest seed will be allowed.

Special Permanent Seed Mixture 1 shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Switchgrass		30
Big Bluestem		30
Prairie Chordgrass		30
Fowl Managrass		10
Total:		100

COVER CROP SEEDING

Oats or spring wheat seed shall be used April through July and winter wheat seed shall be used August through November.

Cover crop seeding may be used on this project as a temporary erosion control measure. The quantity of cover crop seeding was estimated at 25% of the disturbed earthen areas. The actual limits and use of cover crop seeding shall be determined by the Engineer during construction.

LOW FLOW SILT FENCE

The low flow silt fence fabric provided shall be from the approved product list. The approved product list for low flow silt fence may be viewed at the following internet site:

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

Low flow silt fence shall be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.04 for details.

TABLE OF LOW FLOW SILT FENCE

Station	L/R	Quantity (Ft)
0+41.4 to 0+91.9	RT	55
1+59.2 to 2+24.2	RT	77
Total:		132

MUCKING SILT FENCE

Mucking silt fence shall consist of removing muck trapped by the silt fence and spreading the material evenly over the adjacent area to conform to the existing grade.

REMOVE SILT FENCE

Silt fence shall be removed when vegetation is established. Some or all of the silt fence may be left on the project until vegetation is established.

ARTICULATED CONCRETE MATTRESS

Articulated concrete mattress shall be installed at locations noted in the table and at locations determined by the Engineer during construction.

Installation of the articulated concrete mattress shall be according to the manufacturer's installation instructions.

All costs for furnishing and installing the articulated concrete mattress including hauling, materials, equipment, labor, and incidentals necessary shall be paid for at the contract unit price per square yard for "Articulated Concrete Mattress".

The articulated concrete mattress on this project shall be one from the list below or an approved equal:

Product	Manufacturer
Cable Concrete	Royal Erosion Control Systems, LLC Stacy, MN Phone: 1-800-817-3240 www.royalenterprises.net

TABLE OF ARTICULATED CONCRETE MATTRESS

Station	L/R	Quantity (SqYd)
1+30.8 to 2+35.1	RT	92.5
Total:		92.5



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STORM WATER POLLUTION PREVENTION PLAN CHECKLIST
(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 ±0.5 AC (4.2 1.b.)**
- **Total Area To Be Disturbed ±0.5 AC (4.2 1.b.)**
- **Existing Vegetative Cover** 100% Grass
- **Soil Properties:** Roxbury Silt Loam (4.2 1. d.)
- **Name of Receiving Water Body/Bodies** Marne Creek (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** NA
 - **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 (rip-rap)
 - **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: Cabled Concrete Erosion Control Revetment

➤ **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 "EROSION AND SEDIMENT CONTROLS" 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.
 - 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 1/2 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 site superintendent are responsible for inspections. Maintenance, 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.

• **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

• **Spill Prevention (4.2 2.c.(2))**

- **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 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.



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➤ **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.
- 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 brooms, 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 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.

❖ **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.

➤ **Engineer**

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.

Tom Leibel

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. 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**

➤ **Contractor Information :**

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

➤ **Consulting Engineer**

- Name: Eisenbraun & Associates
- Business Address: 215 Walnut Street
- Job Office Location
- City: Yankton State: SD Zip: 57078
- Office Phone: 605-665-8092 Field: Cell: Fax:605-665-0523

➤ **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



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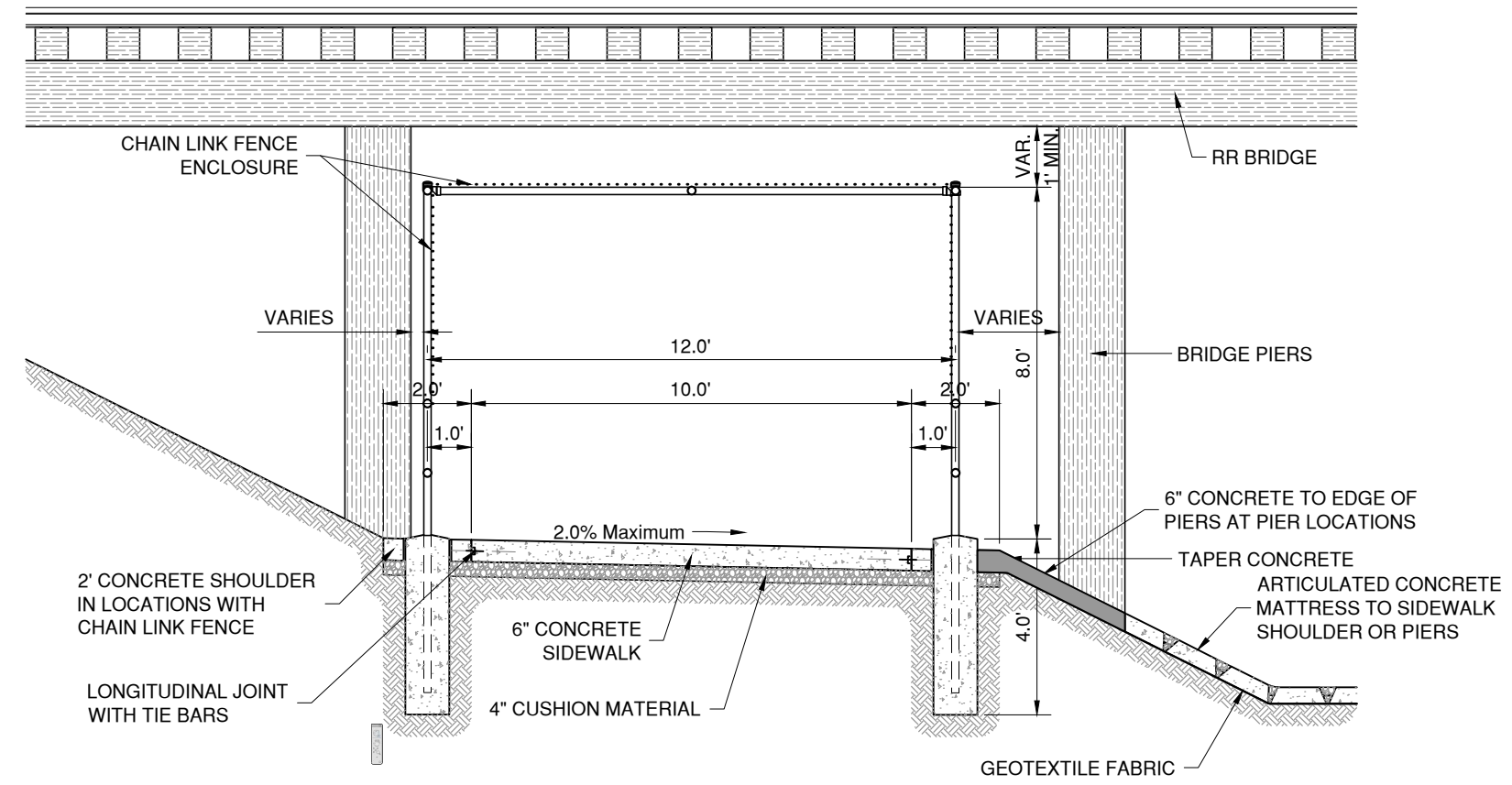
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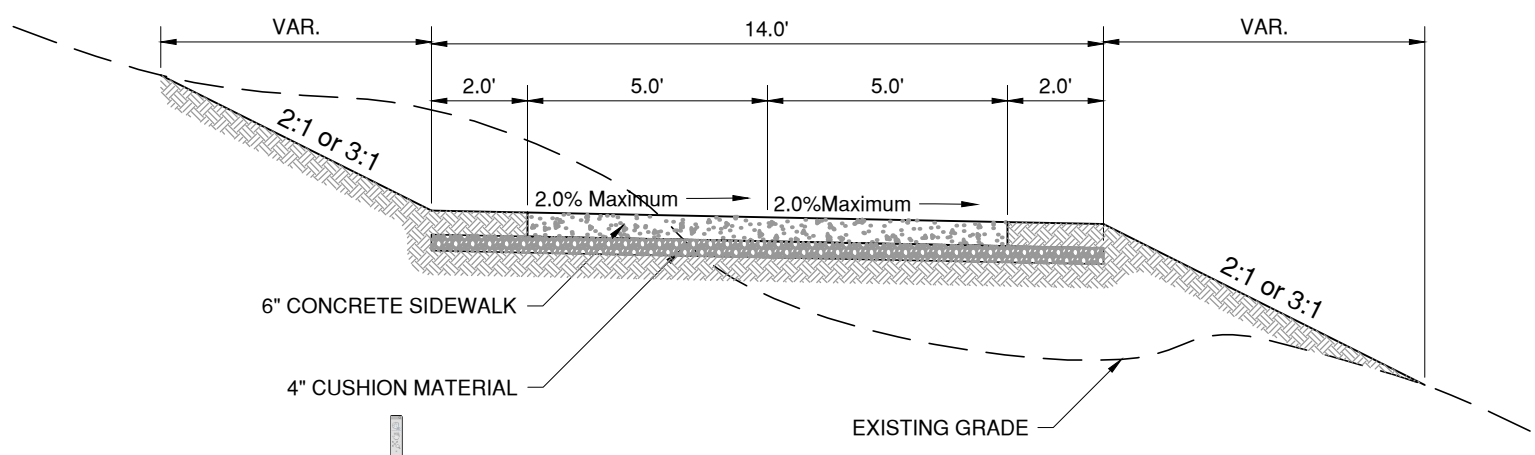
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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	EM 8068 (10)	9	28



TYPICAL TRAIL SECTION BENEATH RAILROAD BRIDGE

NOT TO SCALE
STA 1+02 TO 1+86



TYPICAL TRAIL SECTION

NOT TO SCALE
STA 0+00 TO 1+02
STA 1+86 TO 3+00

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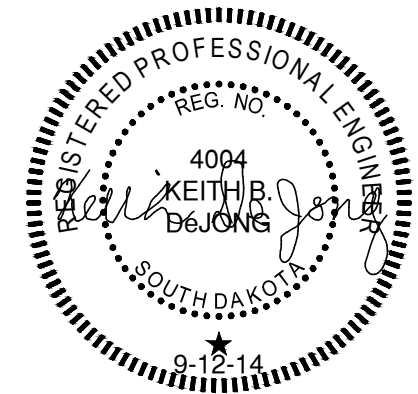
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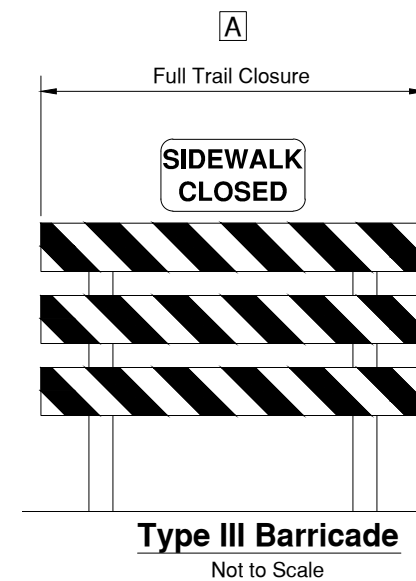
TRAFFIC CONTROL

ITEMIZED LIST FOR TRAFFIC CONTROL BID ITEM					
SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
R9-9	24" X 12"	SIDEWALK CLOSED	5	6	30
*****	*****	TYPE III BARRICADE - 8 FT. SINGLE SIDED	5	40	200
TOTAL UNITS					230

NOTE
Permanent trail signage will be furnished and installed by the CITY.

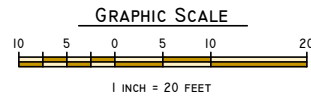
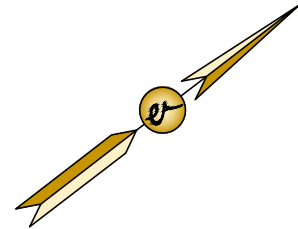


City of Yankton - Project Location Map
Not to Scale



EROSION CONTROL

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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- | | | |
|---|--|--|
| <p>0+00 TO 3+00.
172 CuYd UNCLASSIFIED
EXCAVATION</p> | <p>0+20 TO 0+85 - 7' TO 21' LT.
FURNISH & INSTALL
51 SqYd TYPE 2 EROSION CONTROL BLANKET</p> <p>0+20 TO 0+85 - 7' TO 21' LT.
FURNISH & INSTALL
1.1 LB SPECIAL PERMANENT SEED MIXTURE 1</p> | <p>1+21 TO 1+50 - 7' TO 17' LT.
FURNISH & INSTALL
22 SqYd TYPE 2 EROSION CONTROL BLANKET</p> <p>1+21 TO 1+50 - 7' TO 17' LT.
FURNISH & INSTALL
0.5 LB SPECIAL PERMANENT SEED MIXTURE 1</p> |
|---|--|--|

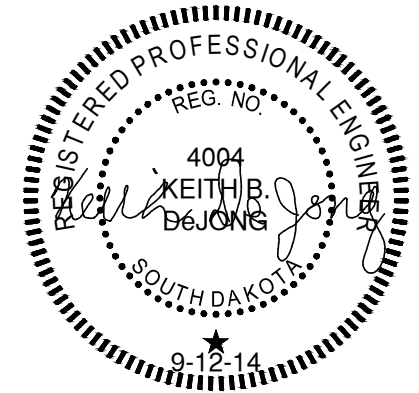
BEGIN WORK
 STA. 0+00.00
 N = 14,845.02
 E = 54,244.18



- | | |
|--|--|
| <p>0+40 TO 0+98 - 7' TO 16' RT.
FURNISH & INSTALL
47 SqYd TYPE 2 EROSION CONTROL BLANKET</p> <p>0+40 TO 0+98 - 7' TO 16' RT.
FURNISH & INSTALL
1.0 LB SPECIAL PERMANENT SEED MIXTURE 1</p> | <p>0+41.4 TO 0+91.9 - 12.5' TO 19.2' RT.
FURNISH & INSTALL
55 Ft SILT FENCE</p> <p>1+26 TO 1+42 - 7' TO 15' RT.
FURNISH & INSTALL
14.2 SqYd ARTICULATED CONCRETE MATTRESS
14.2 SqYd TYPE B DRAINAGE FABRIC</p> <p>1+42 TO 1+50 - 10' TO 14' RT.
FURNISH & INSTALL
3.6 SqYd ARTICULATED CONCRETE MATTRESS
3.6 SqYd TYPE B DRAINAGE FABRIC</p> |
|--|--|



NOTE REGARDING EROSION CONTROL
 TYPE II EROSION CONTROL BLANKETS
 SHALL BE PLACED ON ALL SLOPES
 STEEPER THAN 3:1 AND AS DIRECTED
 BY THE ENGINEER.



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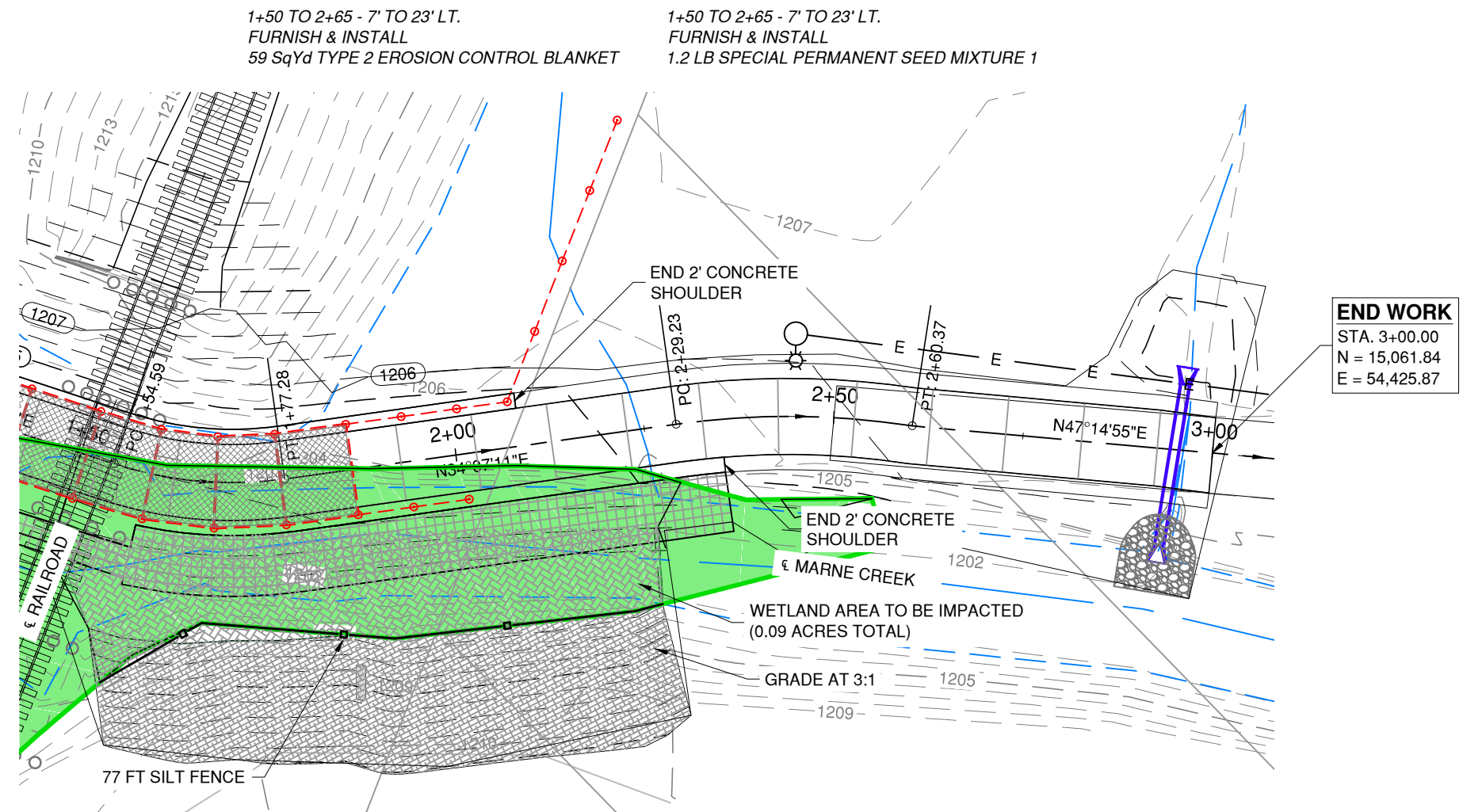
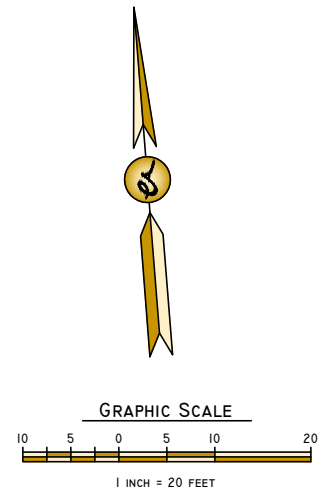
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EROSION CONTROL

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1+50 TO 2+65 - 7' TO 23' LT.
FURNISH & INSTALL
59 SqYd TYPE 2 EROSION CONTROL BLANKET

1+50 TO 2+65 - 7' TO 23' LT.
FURNISH & INSTALL
1.2 LB SPECIAL PERMANENT SEED MIXTURE 1

END WORK
STA. 3+00.00
N = 15,061.84
E = 54,425.87



1+50 TO 1+58 - 10' TO 14' RT.
FURNISH & INSTALL
3.6 SqYd ARTICULATED CONCRETE MATTRESS
3.6 SqYd TYPE B DRAINAGE FABRIC

1+57 TO 2+26 - 21' TO 41' RT.
FURNISH & INSTALL
144 SqYd TYPE 2 EROSION CONTROL BLANKET

2+40 TO 2+60 - 7' TO 14' RT.
FURNISH & INSTALL
10 SqYd TYPE 2 EROSION CONTROL BLANKET

2+88 TO 2+99 - 8' TO 19' RT.
FURNISH & INSTALL
10 SqYd TYPE B DRAINAGE FABRIC
9.5 Ton CLASS A RIP-RAP 2' DEEP
10 SqYd TYPE 2 EROSION CONTROL BLANKET

1+58 TO 2+38 - 7' TO 15' RT.
FURNISH & INSTALL
71.1 SqYd ARTICULATED CONCRETE MATTRESS
71.1 SqYd TYPE B DRAINAGE FABRIC

1+57 TO 2+26 - 21' TO 41' RT.
FURNISH & INSTALL
2.9 LB SPECIAL PERMANENT SEED MIXTURE 1

2+40 TO 2+60 - 7' TO 14' RT.
FURNISH & INSTALL
0.2 LB SPECIAL PERMANENT SEED MIXTURE 1



1+57 TO 2+26 - 21' TO 41' RT.
FURNISH & INSTALL
154 CuYd RUBBLE & BURIED
DEBRIS EXCAVATION

1+59.2 TO 2+24.2 - 28.2' TO 23.2' RT.
FURNISH & INSTALL
77 Ft SILT FENCE

NOTE REGARDING EROSION CONTROL
TYPE 2 EROSION CONTROL BLANKETS
SHALL BE PLACED ON ALL SLOPES
STEEPER THAN 3:1 AND AS DIRECTED
BY THE ENGINEER.

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HORIZONTAL ALIGNMENT DATA									
NO.	BEARING	DELTA	TANGENT	EXTERNAL	LENGTH	RADIUS	P.C.	P.I.	P.T.
1	S 83°37'30" E								
2		88°44'25" LT.	29.35'	11.97'	46.46'	30.00'	0+01.15	0+24.38	0+47.61
5	N 07°38'05" E								0+91.40
6		52°37'31" RT.	14.84'	3.47'	27.55'	30.00'	0+91.14	1+04.91	1+18.69
8	N 60°13'16" E								1+54.59
9		26°12'05" LT	11.55'	1.33'	22.69'	49.62'	1+54.59	1+65.89	1+77.28
11	N 34°07'11" E								2+29.23
12		16°44'14" LT.	15.68'	1.15'	31.14'	106.60'	2+29.23	2+40.52	2+60.37
15	N 47°14'55" E								3+00.00

CONTROL POINT DATA				
POINT	NORTHING	EASTING	ELEVATION	DESC.
SUMMIT 14	13942.38	52811.19	1283.12	BM
SUMMIT 21 RESET	16943.10	52623.17	1221.45	BM

HORIZONTAL DATUM: CITY OF YANKTON VERTICAL DATUM: NAVD 88

Legend

- Existing Power Pole
- Existing Light Pole
- Existing Contour
- Proposed Contour
- Proposed Concrete
- Proposed Articulated Concrete Mattress
- Proposed Chain Link Enclosure
- Proposed Enhanced Wetland
- Disturbed Wetland Area
- Wetland Area
- Proposed Class A Riprap

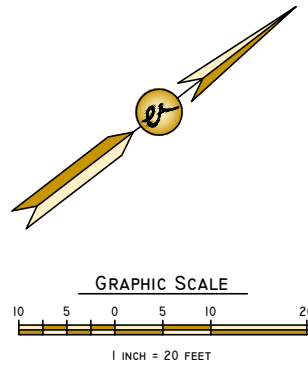
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	EM 8068 (10)	14	28

0+00 TO 1+04.2 - €
FURNISH & INSTALL
1046.0 SqFt 6" CONCRETE SIDEWALK

1+12.9 - €
FURNISH & INSTALL
(1) LOW WATER CROSSING
(SEE DETAIL SHEETS 16, 17 and 18)

1+05 TO 1+22 - LT.
FURNISH & INSTALL
28 Ft SPECIAL 6' HIGH CHAIN LINK FENCE
(SEE DETAIL SHEET 19)

1+22.0 TO 1+50 - €
FURNISH & INSTALL
280.0 SqFt 6" CONCRETE SIDEWALK



BEGIN WORK
STA. 0+00.00
N = 14,845.02
E = 54,244.18

TYPICAL CONTRACTION JOINT AT 10' INTERVALS



€ CURVE DATA
Δ = 88°44'25" LT.
T = 29.35'
E = 11.97'
L = 46.46'
R = 30.00'
PC = 0+01.15
PI = 0+30.50
PT = 0+47.61

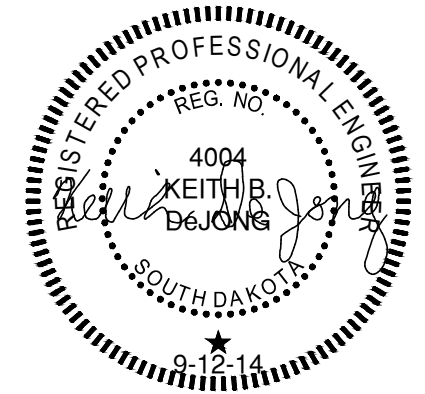
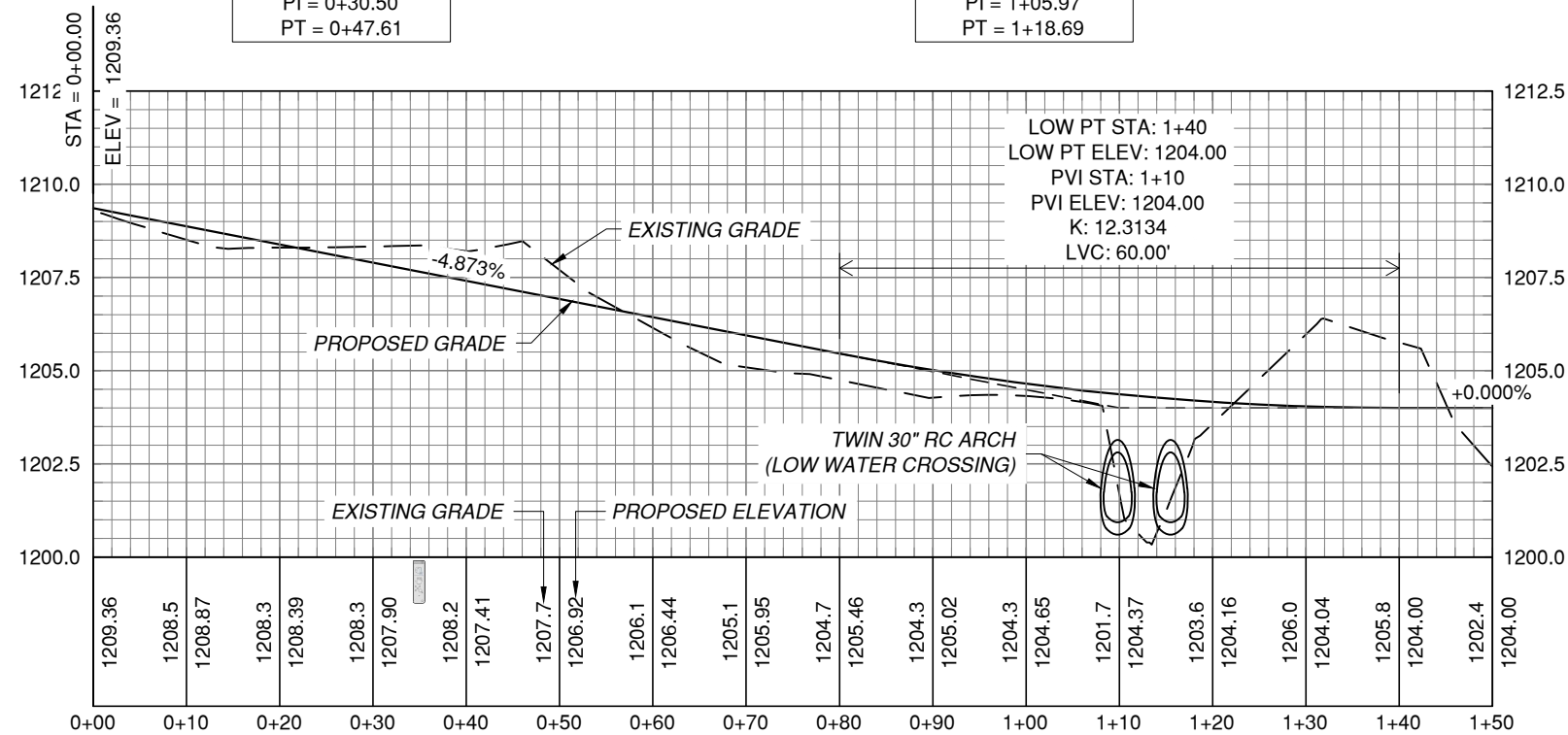
0+99 TO 1+22 - RT.
FURNISH & INSTALL
18 Ft SPECIAL 6' HIGH CHAIN LINK FENCE
(SEE DETAIL SHEET 19)

€ CURVE DATA
Δ = 52°37'31" RT.
T = 14.84'
E = 3.47'
L = 27.55'
R = 30.00'
PC = 0+91.14
PI = 1+05.97
PT = 1+18.69

1+22 TO 1+50 - €
FURNISH & INSTALL
28 Ft CHAIN LINK FENCE ENCLOSURE
(SEE DETAIL SHEET 19)
ADJUST FENCE POST FOOTINGS AS NECESSARY TO NOT INTERFERE WITH BRIDGE SUBSTRUCTURE.

LOW WATER CROSSING FLOWS
DESIGN Q 75.8 CFS WSE 1202.97
100 YR Q 1,900 CFS WSE 1212.20

Wetland Area



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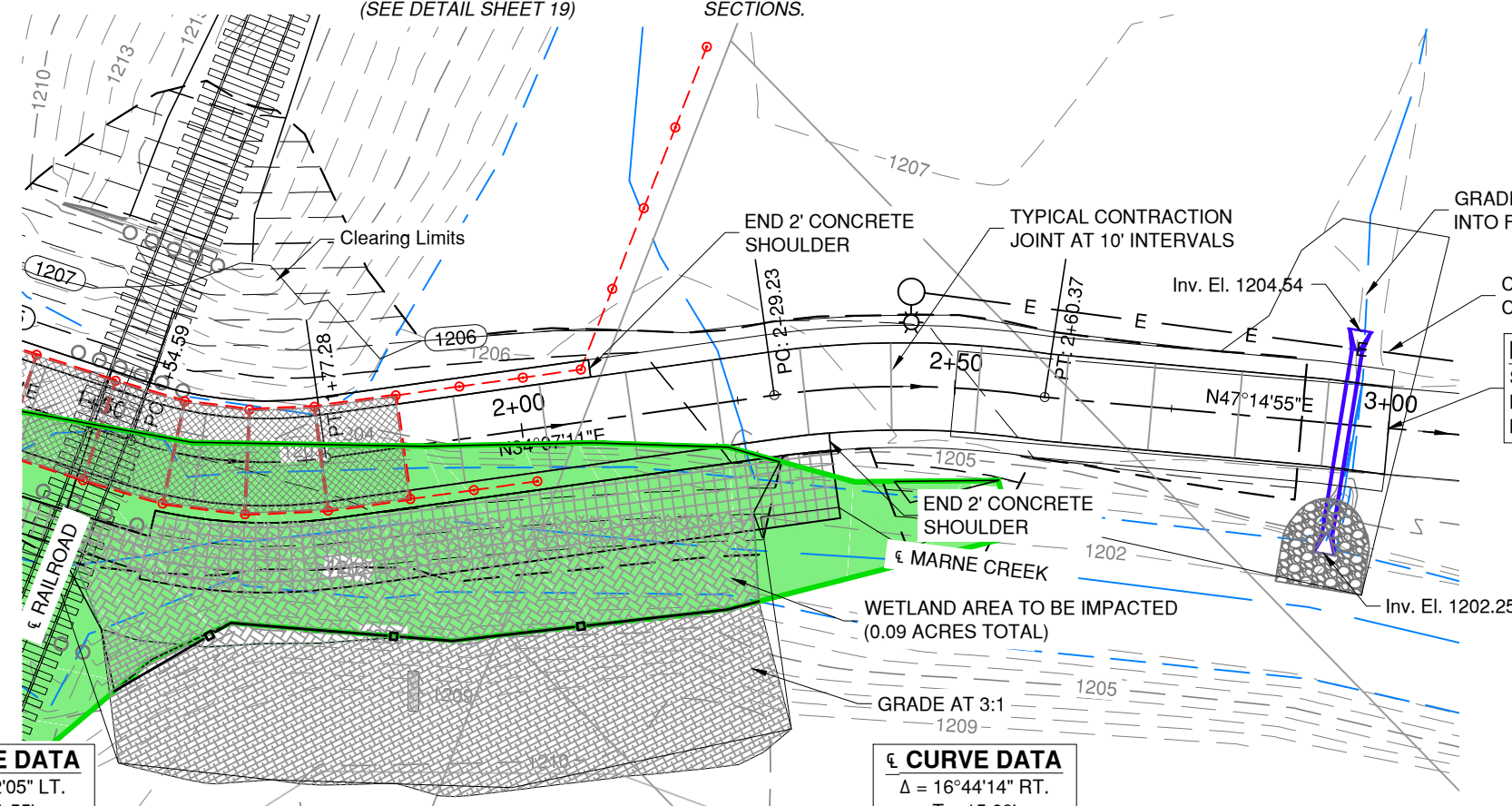
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	EM 8068 (10)	15	28

1+50 TO 3+00 - ϵ
FURNISH & INSTALL
1500.0 SqFt 6" CONCRETE SIDEWALK

1+86 TO 2+28 - LT.
FURNISH & INSTALL
61 Ft SPECIAL 6' HIGH CHAIN LINK FENCE
(SEE DETAIL SHEET 19)

2+96.0 - 7.0' LT. TO 7.0' RT.
FURNISH & INSTALL
14 Ft 12" RCP, CLASS 3 CULVERT W/
(2) FLARED ENDS. TIE ALL PIPE SECTIONS.

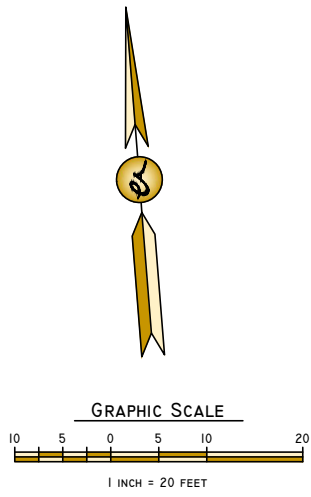
2+50 TO 3+00 - ϵ
REMOVE
55.6 SqYd CONCRETE SIDEWALK



GRADE AREA TO DRAIN INTO FLARED END
CITY WILL COORDINATE ELECTRIC CABLE RELOCATION IF NECESSARY.

END WORK
STA. 3+00.00
N = 15,061.84
E = 54,425.87

1+50 TO 2+08 - 5' TO 7' LT.
FURNISH & INSTALL
12.9 SqYd 6" MISCELLANEOUS PCC PAVEMENT
1+50 TO 1+60 - 5' TO 11' RT.
FURNISH & INSTALL
6.7 SqYd 6" MISCELLANEOUS PCC PAVEMENT
1+60 TO 2+38 - 5' TO 7' RT.
FURNISH & INSTALL
17.3 SqYd 6" MISCELLANEOUS PCC PAVEMENT



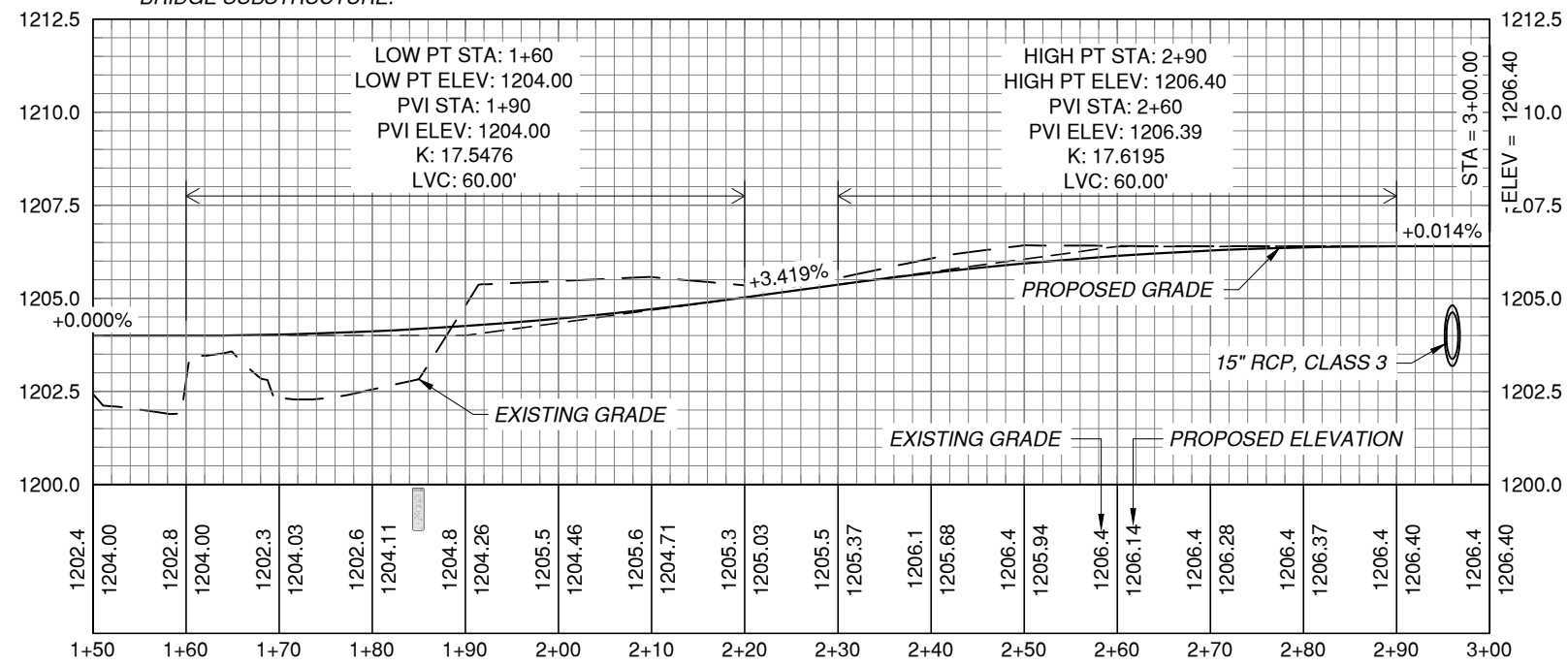
ϵ CURVE DATA
 $\Delta = 26^\circ 12' 05''$ LT.
T = 11.55'
E = 1.33'
L = 22.69'
R = 49.62'
PC = 1+54.59
PI = 1+66.13
PT = 1+77.27

1+50 TO 1+86 - ϵ
FURNISH & INSTALL
38 Ft CHAIN LINK FENCE ENCLOSURE
(SEE DETAIL SHEET 19)
ADJUST FENCE POST FOOTINGS AS NECESSARY TO NOT INTERFERE WITH BRIDGE SUBSTRUCTURE.

1+86 - TO 2+00 - RT.
FURNISH & INSTALL
15 Ft SPECIAL 6' HIGH CHAIN LINK FENCE
(SEE DETAIL SHEET 19)

ϵ CURVE DATA
 $\Delta = 16^\circ 44' 14''$ RT.
T = 15.68'
E = 1.15'
L = 31.14'
R = 106.60'
PC = 2+29.23
PI = 2+44.91
PT = 2+60.37

Wetland Area



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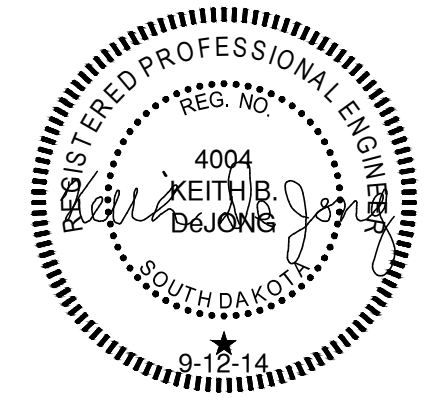
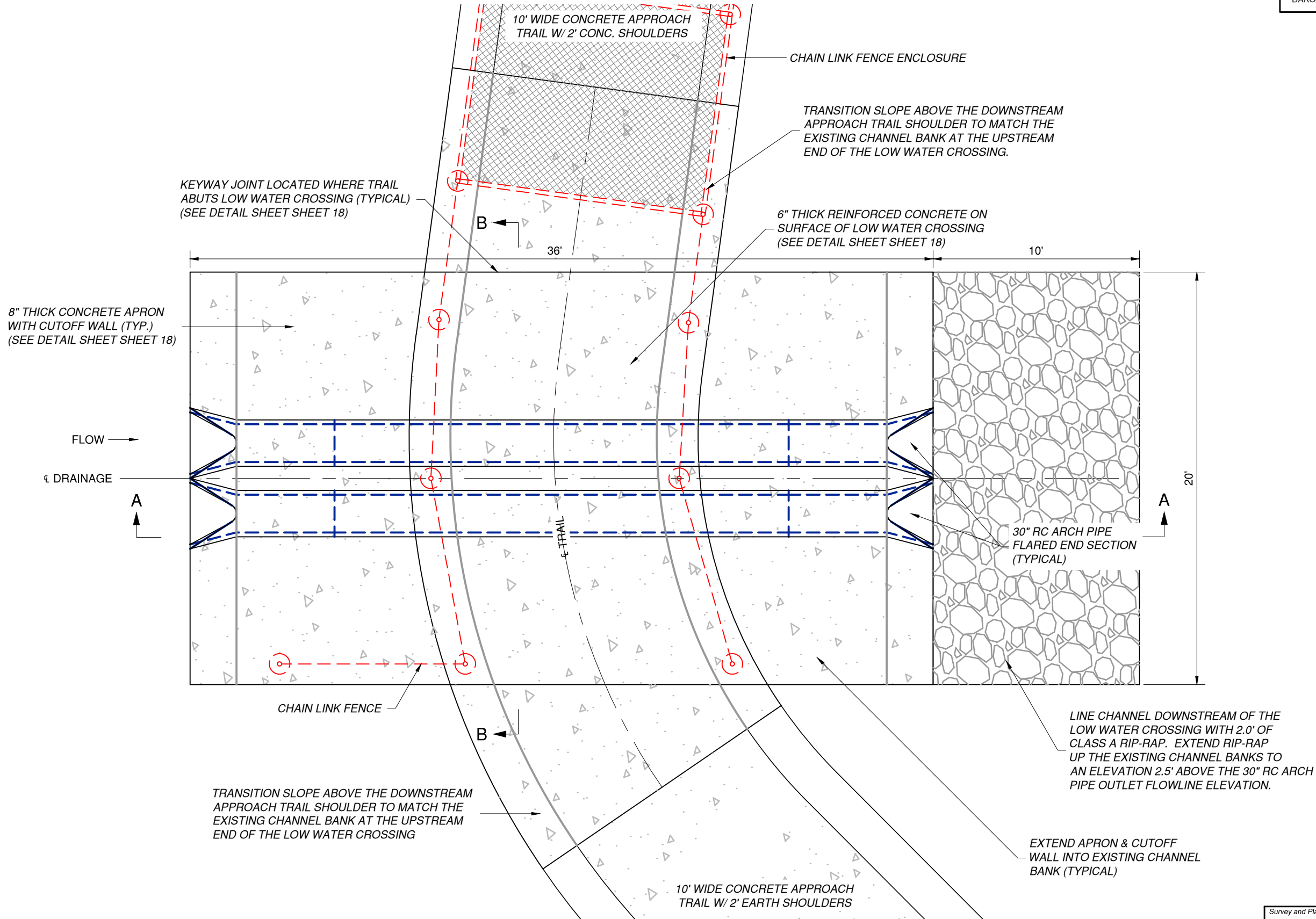
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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	EM 8068 (10)	16	28

LOW WATER CROSSING DETAIL



LOW WATER CROSSING DETAIL
NOT TO SCALE

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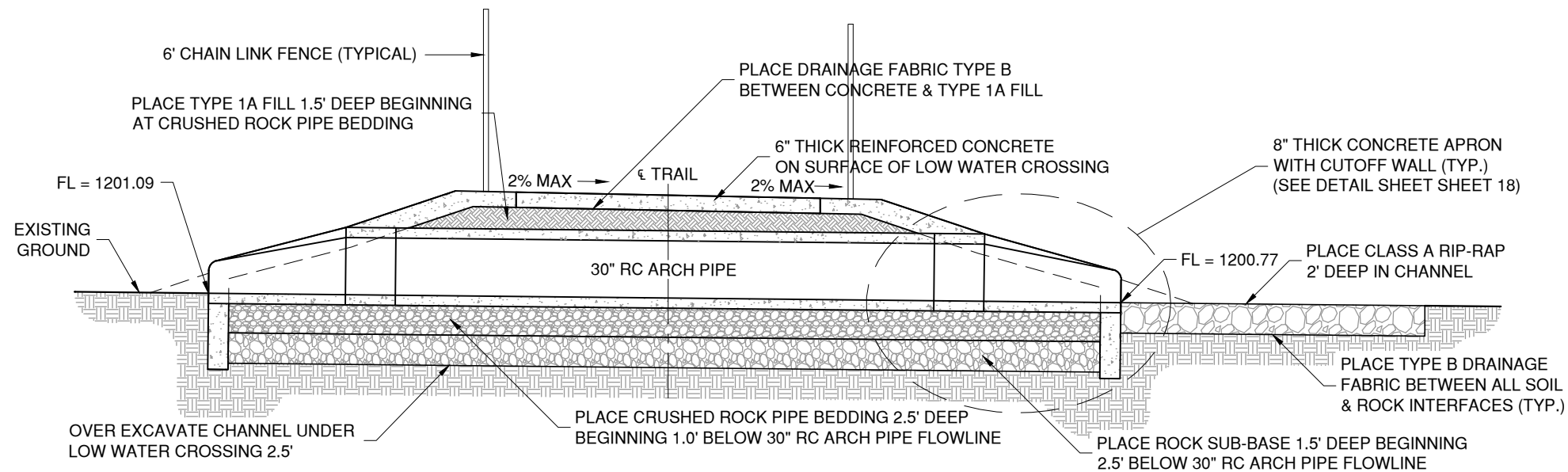
LOW WATER CROSSING DETAIL

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	EM 8068 (10)	17	28

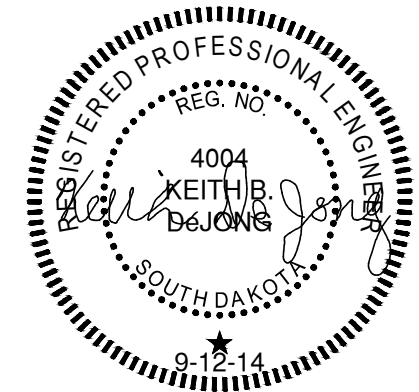
LOW WATER CROSSING NOTES

1. CHAMFER ALL EXPOSED EDGES 3/4".
2. RADIUS OF BENDS EQUALS 1 1/2".
3. THERE SHALL BE AT LEAST 2" OF COVER OVER ALL BARS.
4. SHAPE CONCRETE AS NECESSARY TO MATCH DIMENSIONS OF THE 30" RC ARCH PIPE FLARED END SECTIONS.
5. FIELD CUT OR ADJUST BARS TO ALLOW FOR 30" RC ARCH PIPE FLARED END SECTIONS.
6. TYPE 1 A FILL MUST MEET THE REQUIREMENTS OF SPECIFICATION 840.
7. CRUSHED ROCK PIPE BEDDING SHALL MEET THE REQUIREMENTS OF SPECIFICATION 421.2A.
8. ROCK SUB-BASE MATERIAL SHALL BE 6" AND SMALLER RIP-RAP SPALLS OR BROKEN CONCRETE.
9. THE BID ITEM FOR "LOW WATER CROSSING" SHALL INCLUDE ALL MATERIAL, EQUIPMENT AND LABOR NECESSARY TO CONSTRUCT THE LOW WATER CROSSING AS SHOWN ON THE PLANS AND IN THE LOW WATER CROSSING DETAIL SHEETS. THE ESTIMATED QUANTITIES OF MATERIALS NEEDED FOR THE LOW WATER CROSSING ARE INDICATED IN THE "TABLE OF ESTIMATED QUANTITIES, LOW WATER CROSSING #1."

TABLE OF ESTIMATED QUANTITIES LOW WATER CROSSING #1		
TYPE	QUANTITY	UNITS
30" RC ARCH PIPE	40	LF
30" RC ARCH PIPE FLARED END SECTIONS	4	EA
TYPE 1A FILL	16	CY
MUCK EXCAVATION	46	CY
CRUSHED ROCK PIPE BEDDING	42	CY
REINFORCED CONCRETE	17	CY
CLASS A RIPRAP	20	TON
ROCK SUB-BASE	19	CY
TYPE B DRAINAGE FABRIC	294	SY
REINFORCING STEEL	1854	LB



SECTION A-A
NOT TO SCALE



TYPICAL WSE AT OUTLET = 1200.8

100 YR Q WSE = 1212.2

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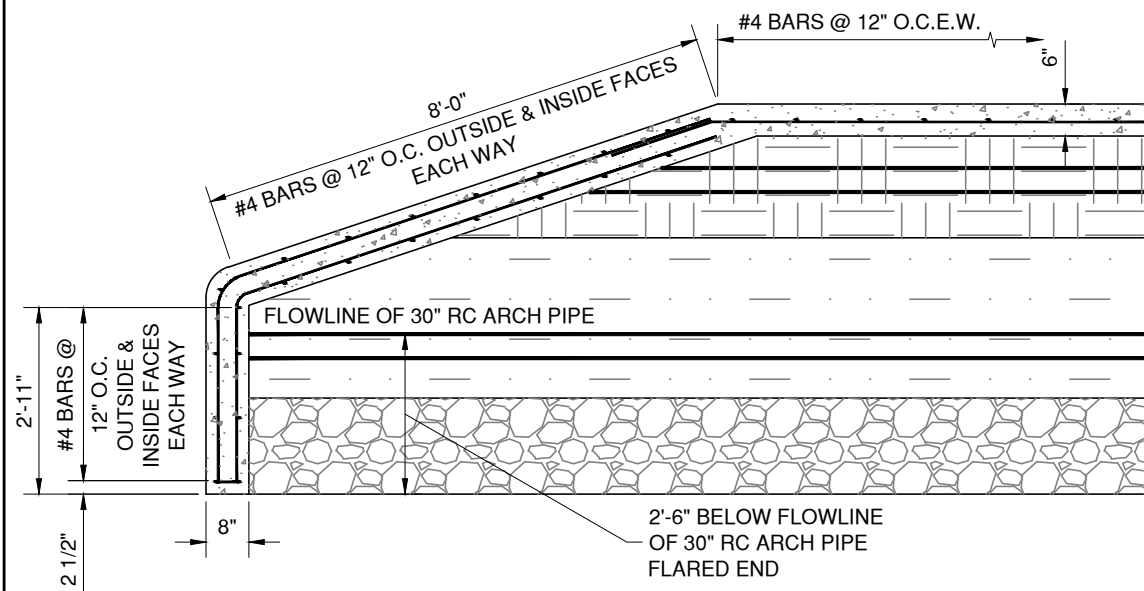
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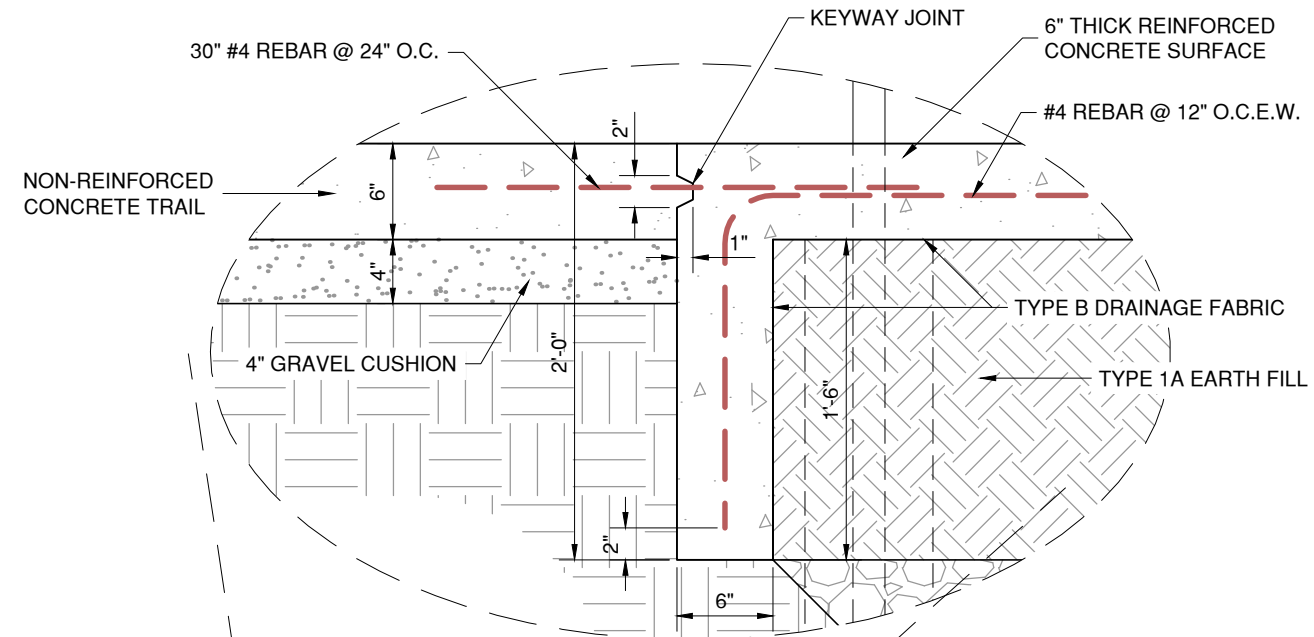
LOW WATER CROSSING DETAIL

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	EM 8068 (10)	18	28



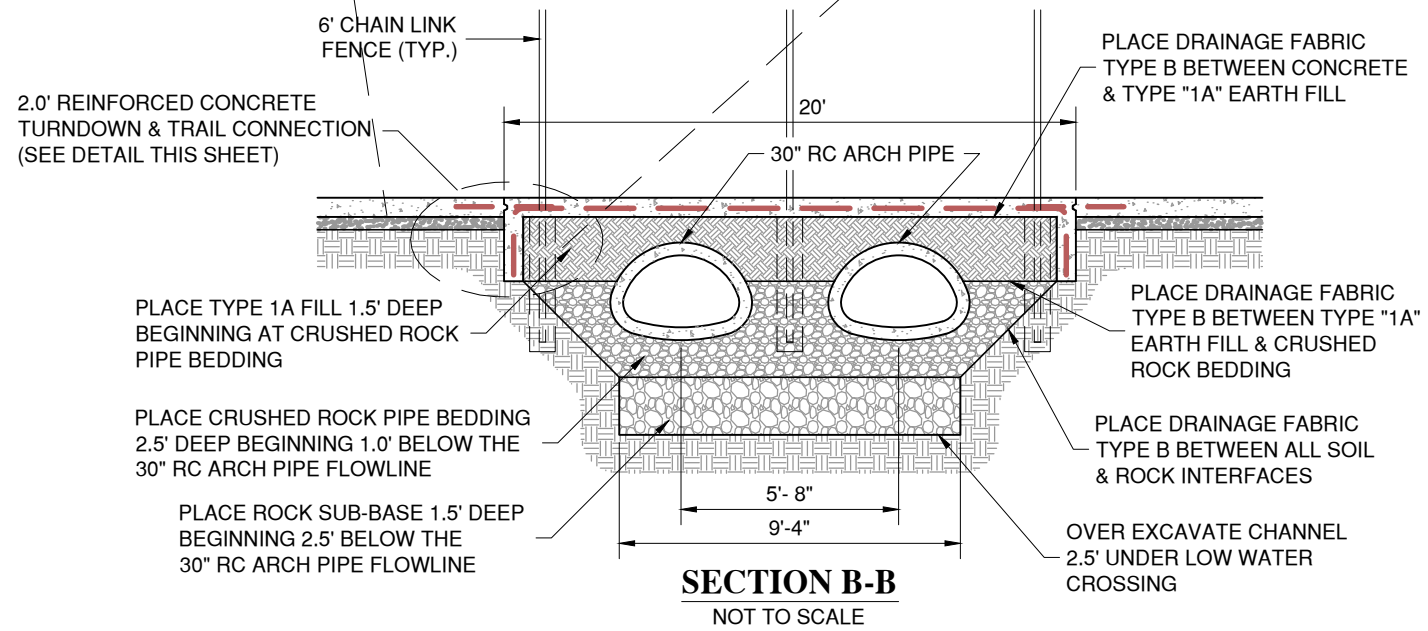
CONCRETE APRON & CUTOFF WALL DETAIL

SCALE: 1 INCH = 3 FEET



TURNDOWN & SIDEWALK CONNECTION DETAIL

NOT TO SCALE



SECTION B-B

NOT TO SCALE



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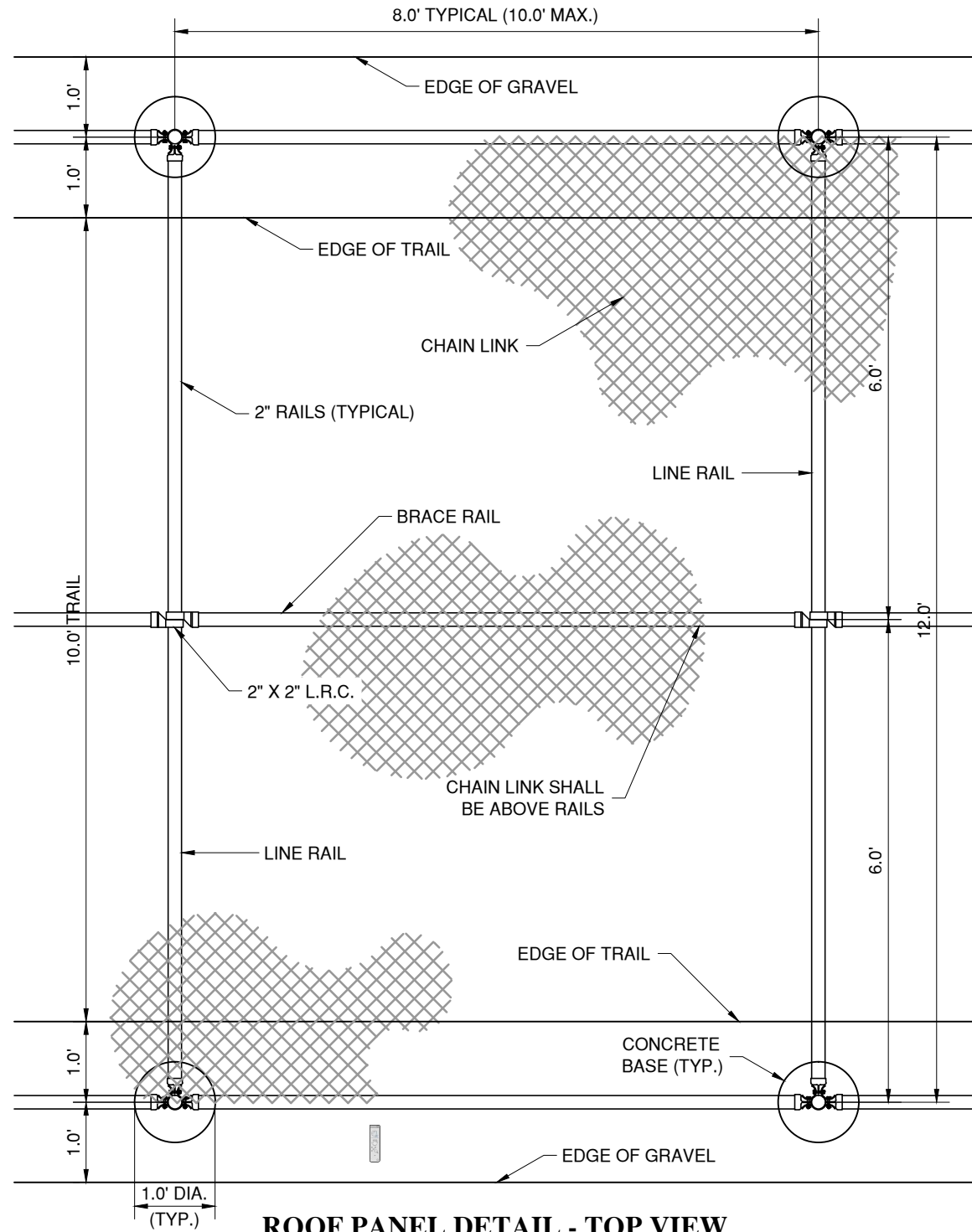
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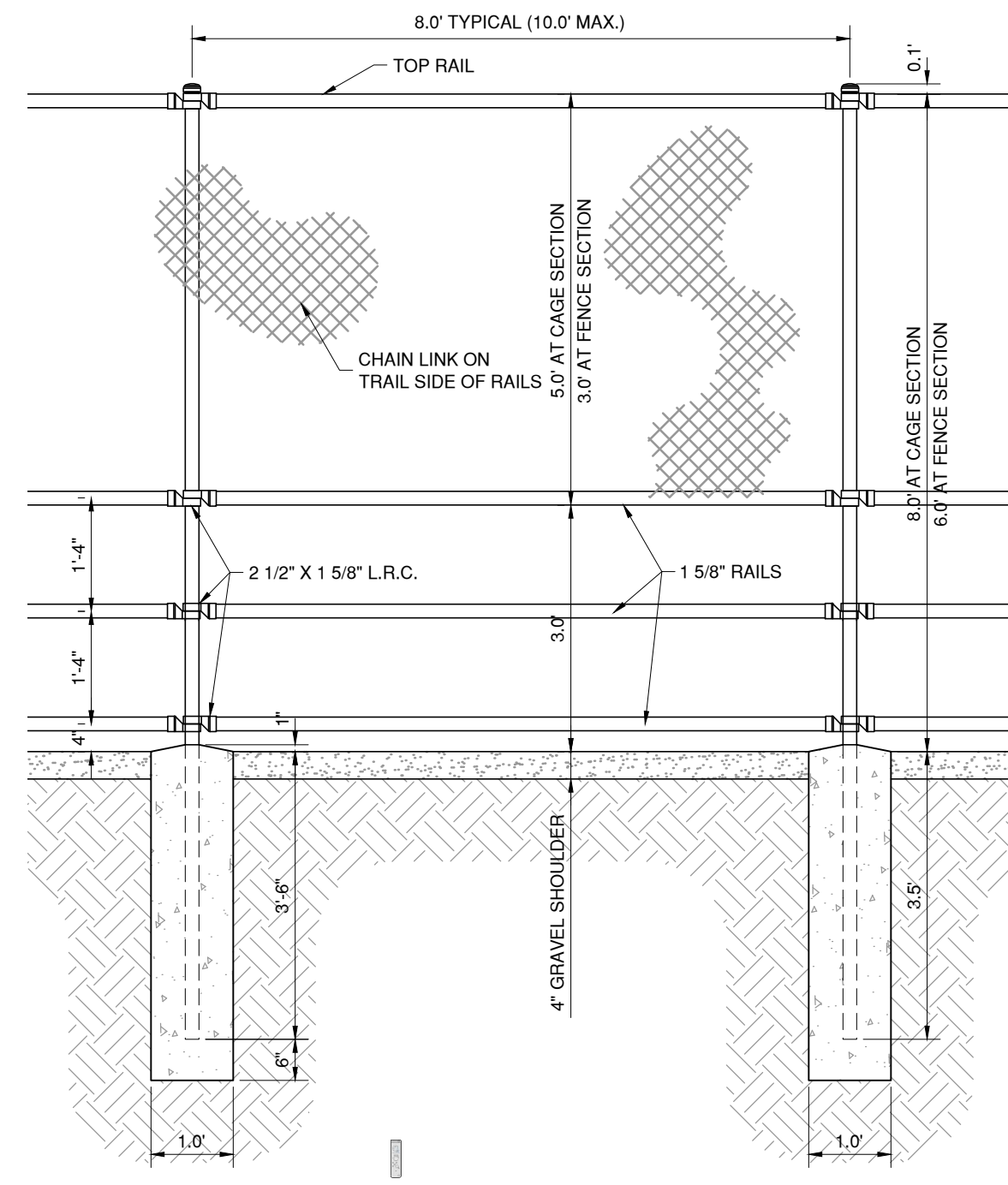
CHAIN LINK FENCE ENCLOSURE DETAIL

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	EM 8068 (10)	19	28

NOTE
TOP RAIL SHALL BE 1 5/8" FOR 6' FENCE & 2" FOR 8' FENCE.



ROOF PANEL DETAIL - TOP VIEW
NOT TO SCALE



CAGE / FENCE SECTION - SIDE VIEW
NOT TO SCALE

NOTE
WHERE DETAILS ON THIS SHEET CONTRADICT SD DOT PLATE NUMBER 621.01, THE DETAILS ON THIS SHEET WILL APPLY.

Survey and Plans by

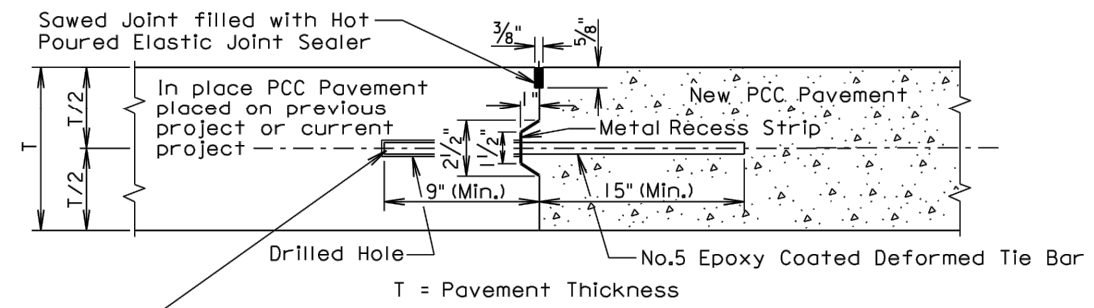
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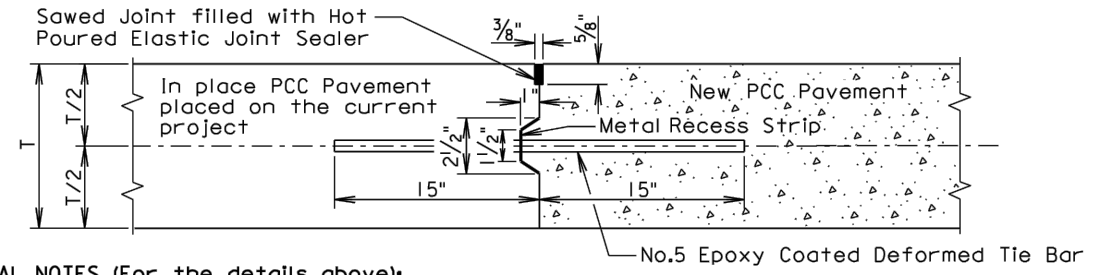
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**LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS
(DRILLED IN BARS)**



T = Pavement Thickness
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.

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



GENERAL NOTES (For the details above):

The epoxy coated deformed tie bars shall be spaced in accordance with the following tables:

Tie Bar Spacing 48" Maximum	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

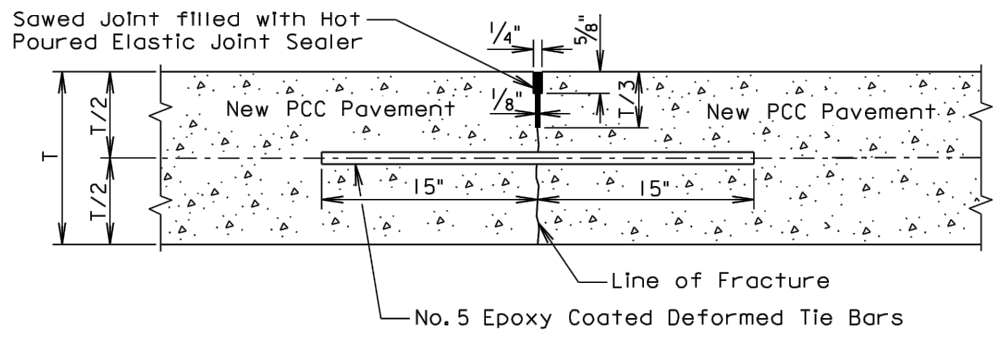
Tie Bar Spacing 30" Maximum	
Transverse Contraction Joint Spacing	Number of Tie Bars
5' to 7'	2
7.5' to 9.5'	3
10' to 12'	4
12.5' to 14.5'	5
15' to 17'	6
17.5' to 19.5'	7
20' to 22'	8

The tie bars shall be placed a minimum of 15 inches from transverse contraction joints.
The required number of tie bars as shown in the table shall be uniformly spaced within each panel. The uniformly spaced tie bars shall be spaced a maximum of 48 inches center to center for a female keyway and shall be spaced a maximum of 30 inches center to center for a vertical face and male keyway. The maximum tie bar spacing shall apply to tie bars within each panel.
The keyway illustrated in the above details depict a female keyway.
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.

August 31, 2013

Published Date: 3rd Qtr. 2014	S D D O T	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 (For the detail above):

The epoxy coated deformed tie bars shall be spaced in accordance with the following table:

Tie Bar Spacing 48" Maximum	
Transverse Contraction Joint Spacing	Number of Tie Bars
6.5' to 10'	2
10.5' to 14'	3
14.5' to 18'	4
18.5' to 22'	5

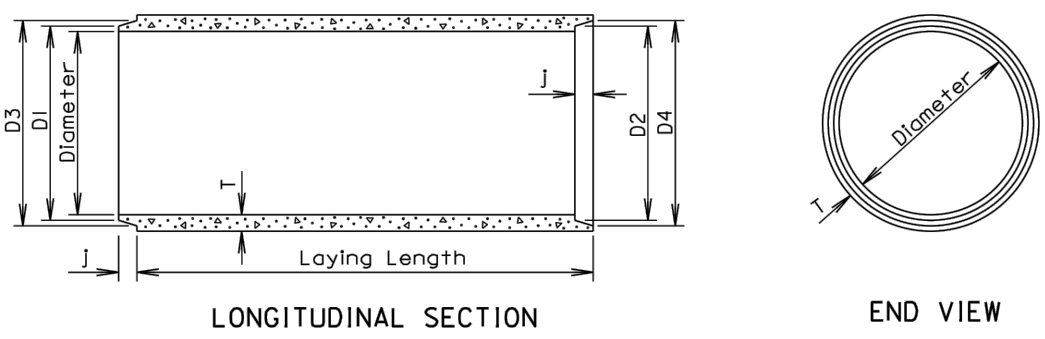
The tie bars shall be placed a minimum of 15 inches from the transverse contraction joints.
The required number of tie bars as shown in the table shall be uniformly spaced within each panel with a maximum space of 48 inches center to center. The maximum tie bar spacing shall apply to tie bars within each panel.
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 is necessary.

August 31, 2013

Published Date: 3rd Qtr. 2014	S D D O T	PCC PAVEMENT LONGITUDINAL JOINTS WITH TIE BARS	PLATE NUMBER 380.10
			Sheet 2 of 2

TOLERANCES IN DIMENSIONS

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



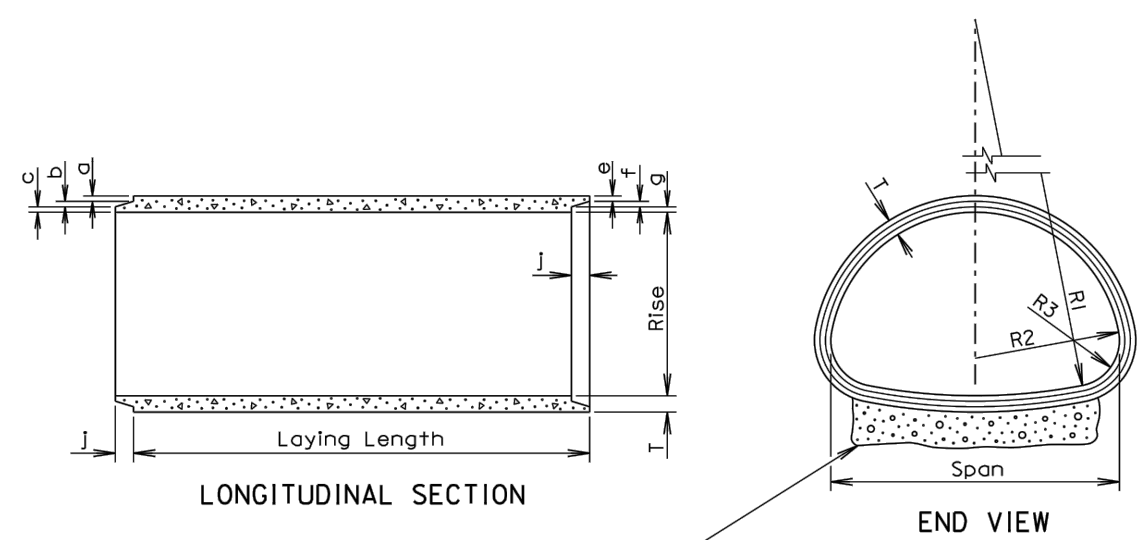
GENERAL NOTES:

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 3/8
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 3/8	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: 3rd Qtr. 2014	S D D O T	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
			Sheet 1 of 1



TOLERANCES IN DIMENSIONS

Radial dimensions at joints: $\pm 1/8$ " for 65" span or less and $\pm 1/4$ " for longer spans.
 Rise and Span: $\pm 2\%$ of tabular values.
 Length of Joint (J): $\pm 1/4$ ".
 Wall thickness (T): not less than design T by more than 5% or $\frac{3}{16}$ ", whichever is greater.
 Laying length: shall not underrun by more than $\frac{1}{2}$ ".
 Gravel Bedding Material shall be supplied for 102" to 169" spans. It shall be placed to a thickness of 6" (min.) x 85% of the Span x Length of culvert and shall conform to the gradation requirements for gravel surfacing except material may be screened or may be plan provided material.

* Size (in.)	Approx. Wt./Ft. (lb.)	Rise (in.)	Span (in.)	T (in.)	a (in.)	b (in.)	c (in.)	J (in.)	e (in.)	f (in.)	g (in.)	R1 (in.)	R2 (in.)	R3 (in.)
18	170	13 1/2	22	2 1/2	1 3/8	3/8	3/4	2	1 1/8	3/8	1	27 1/2	13 3/4	5 1/4
24	320	18	28 1/2	3 1/2	1 5/8	1/2	1 3/8	3	1 3/8	1/2	1 5/8	40 1/16	14 3/4	4 5/8
30	450	22 1/2	36 1/4	4	1 13/16	5/8	1 9/16	3 1/2	1 9/16	5/8	1 13/16	51	18 3/4	6 1/8
36	600	26 5/8	43 3/4	4 1/2	2	3/4	1 3/4	4	1 3/4	3/4	2	62	22 1/2	6 1/2
42	740	31 5/16	51 1/8	4 1/2	2	3/4	1 3/4	4	1 3/4	3/4	2	73	26 1/4	7 3/4
48	890	36	58 1/2	5	2 1/4	3/4	2	5	2	3/4	2 1/4	84	30	8 1/8
54	1100	40	65	5 1/2	2 1/2	3/4	2 1/4	5	2 1/4	3/4	2 1/2	92 1/2	33 3/8	10
60	1400	45	73 1/2	6	3 5/16	3/4	1 15/16	5	2 3/4	3/4	2 1/2	105	37 1/2	11
72	1900	54	88	7	3 13/16	1	2 3/16	6	3 1/4	1	2 3/4	126	45	13 5/16
84	2500	62	102	8	4 1/8	1	2 7/8	6	3 1/2	1	3 1/2	162 1/2	52	14 1/2
96	3300	78	122 3/8	9	4 1/2	1	3 1/2	7	4	1	4	218	62	20
108	4200	88	138 1/2	10	5	1	4	7	4 1/2	1	4 1/2	269	70	22
120	5100	96 7/8	154	11	5 1/2	1	4 1/2	7	5	1	5	301 3/8	78	24
132	5100	106 1/2	168 3/4	10		1	4	7	4 1/2	1	4 1/2	329	85 5/8	26 7/8

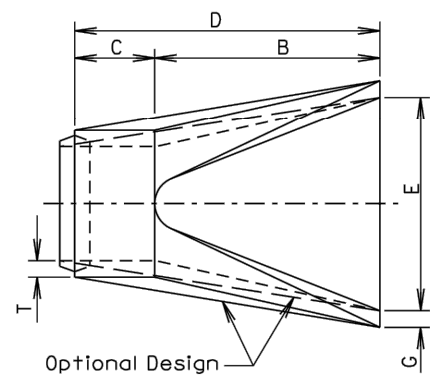
* Equivalent Diameter of Circular R. C. P.

GENERAL NOTES:

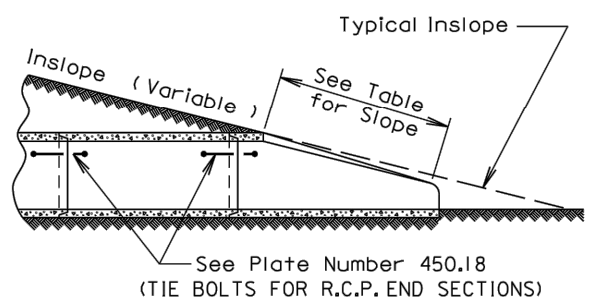
Construction of R.C.P. Arch shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges. Not more than 2 four foot sections shall be permitted near the ends of any culvert. Four foot lengths shall be used only to secure the required length of culvert.

March 31, 2000

Published Date: 3rd Qtr. 2014	S D D O T	REINFORCED CONCRETE PIPE ARCH	PLATE NUMBER 450.02
			Sheet 1 of 1



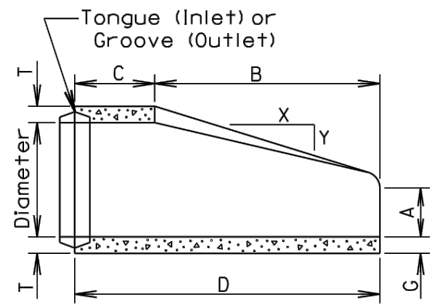
TOP VIEW



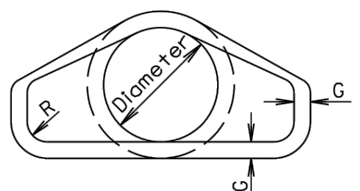
SLOPE DETAIL

GENERAL NOTES:

Lengths of concrete pipe shown on Plan Sheets are between flared Ends only.
Construction of R.C.P. Flared End shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges.



LONGITUDINAL SECTION

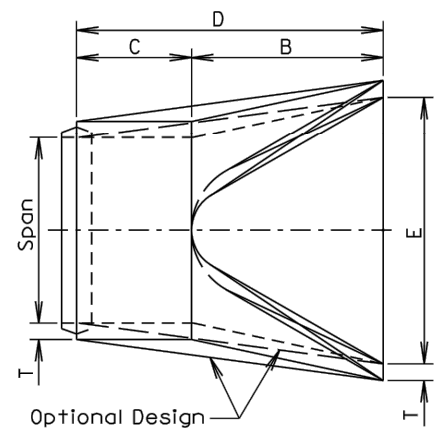


END VIEW

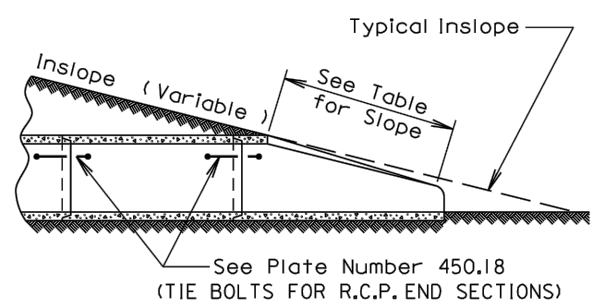
Dia. (in.)	Approx. Wt. of Section (lbs.)	Approx. Slope (X to Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)	R (in.)
12	530	2.4:1	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	1 ¹ / ₂
15	740	2.4:1	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	1 ¹ / ₂
18	990	2.3:1	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	1 ¹ / ₂
21	1280	2.4:1	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	1 ¹ / ₂
24	1520	2.5:1	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	1 ¹ / ₂
27	1930	2.5:1	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	1 ¹ / ₂
30	2190	2.5:1	3 ¹ / ₂	12	54	19 ³ / ₄	73 ³ / ₄	60	3 ¹ / ₂	1 ¹ / ₂
36	4100	2.5:1	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	1 ¹ / ₂
42	5380	2.5:1	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	1 ¹ / ₂
48	6550	2.5:1	5	24	72	26	98	84	5	1 ¹ / ₂
54	8240	2:1	5 ¹ / ₂	27	65	33 ¹ / ₄	98 ¹ / ₄	90	5 ¹ / ₂	1 ¹ / ₂
60	8730	1.9:1	6	35	60	39	99	96	5	1 ¹ / ₂
66	10710	1.7:1	6 ¹ / ₂	30	72	27	99	102	5 ¹ / ₂	1 ¹ / ₂
72	12520	1.8:1	7	36	78	21	99	108	6	1 ¹ / ₂
78	14770	1.8:1	7 ¹ / ₂	36	90	21	111	114	6 ¹ / ₂	1 ¹ / ₂
84	18160	1.6:1	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂
90	20900	1.5:1	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	6

March 31, 2000

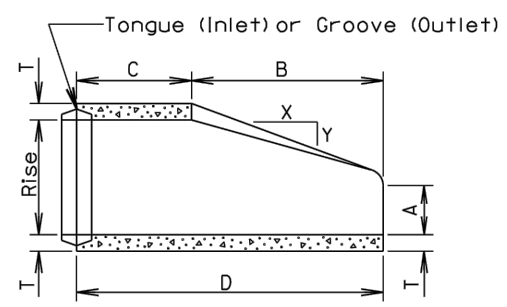
Published Date: 2nd Qtr. 2014	S D D O T	R. C. P. FLARED ENDS	PLATE NUMBER 450.10
			Sheet 1 of 1



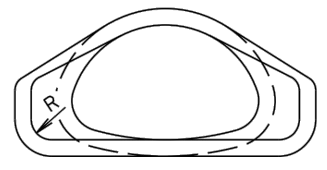
TOP VIEW



SLOPE DETAIL



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

Lengths of concrete pipe shown on Plan Sheets are between Flared Ends only.
Construction of R. C. P. Arch Flared End shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges.

* Size (in.)	Approximate Weight of Section (lbs.)	Rise (in.)	Span (in.)	Slope (X:Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	R (in.)
18	1100	13 ¹ / ₂	22	3:1	2 ¹ / ₂	7	27	45	72	36	2
24	1750	18	28 ¹ / ₂	3:1	3 ¹ / ₂	8 ¹ / ₂	39	33	72	48	3
30	3300	22 ¹ / ₂	36 ¹ / ₄	3:1	4	9 ¹ / ₂	50	46	96	60	3
36	4350	26 ⁵ / ₈	43 ³ / ₄	3:1	4 ¹ / ₂	11 ¹ / ₈	60	36	96	72	6
42	5250	31 ⁵ / ₁₆	51 ¹ / ₈	3:1	4 ¹ / ₂	15 ³ / ₁₆	60	36	96	78	6
48	6400	36	58 ¹ / ₂	3:1	5	21	60	36	96	84	6
54	7850	40	65	3:1	5 ¹ / ₂	25 ¹ / ₂	60	36	96	90	6
60	9500	45	73 ¹ / ₂	3:1	6	31	60	36	96	96	6
72	13550	54	88	2:1	7	31	60	39	99	120	6
84	17950	62	102	2:1	8	28 ¹ / ₂	83	19	102	144	6

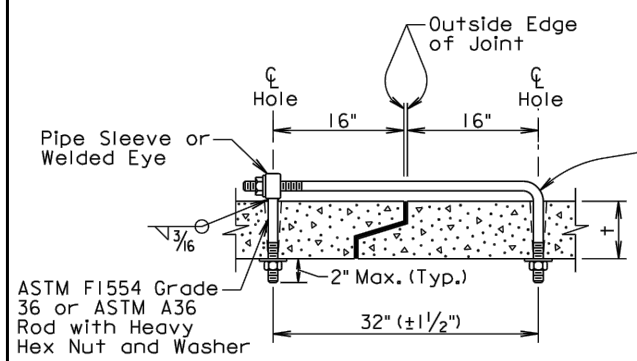
*Equivalent Diameter of Circular R. C. P.

March 31, 2000

Published Date: 3rd Qtr. 2014	S D D O T	R. C. P. ARCH FLARED ENDS	PLATE NUMBER 450.11
			Sheet 1 of 1

Wall "t" (In.)	Rod Dia. (In.)	Pipe Sleeve Dia. (nominal)
≤ 3/4	5/8	3/4
3/2-6/2	3/4	1
≥ 7	1	1 1/4

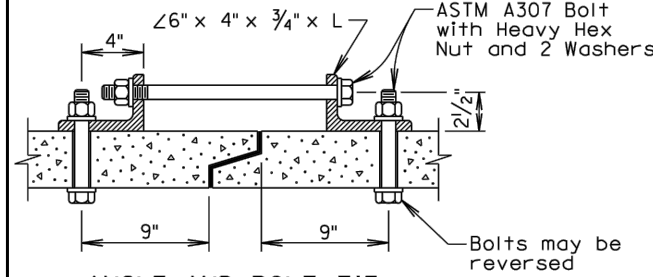
GENERAL NOTES:
 Tie bolts shall conform to ASTM F1554 Grade 36 or ASTM A36. Nuts shall be heavy hex conforming to ASTM A563. Washers shall conform to ASTM F436.
 Pipe Sleeve shall conform to ASTM A500 or A53, Grade B.
 Galvanize adjustable eye bolt tie assembly in accordance with ASTM A153.



ADJUSTABLE EYE BOLT TIE

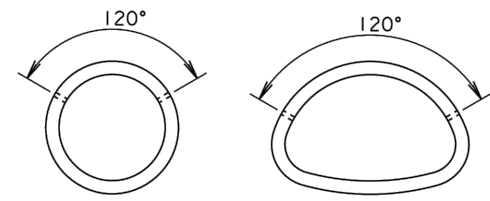
Pipe Dia. (In.)	"L" (In.)	Bolt Dia. (In.)
≤ 48	4	3/4
> 48	6	1

GENERAL NOTES:
 Angles shall conform to ASTM A36.
 Bolts shall conform to ASTM A307. Nuts shall be heavy hex conforming to ASTM A563. Washers shall conform to ASTM F436.
 Galvanize angles, bolts, nuts, and washers in accordance with ASTM A153.



ANGLE AND BOLT TIE

GENERAL NOTES:
 In lieu of the tie bolts detailed above other types of tie bolt connections may be installed as approved by the Office of Bridge Design.

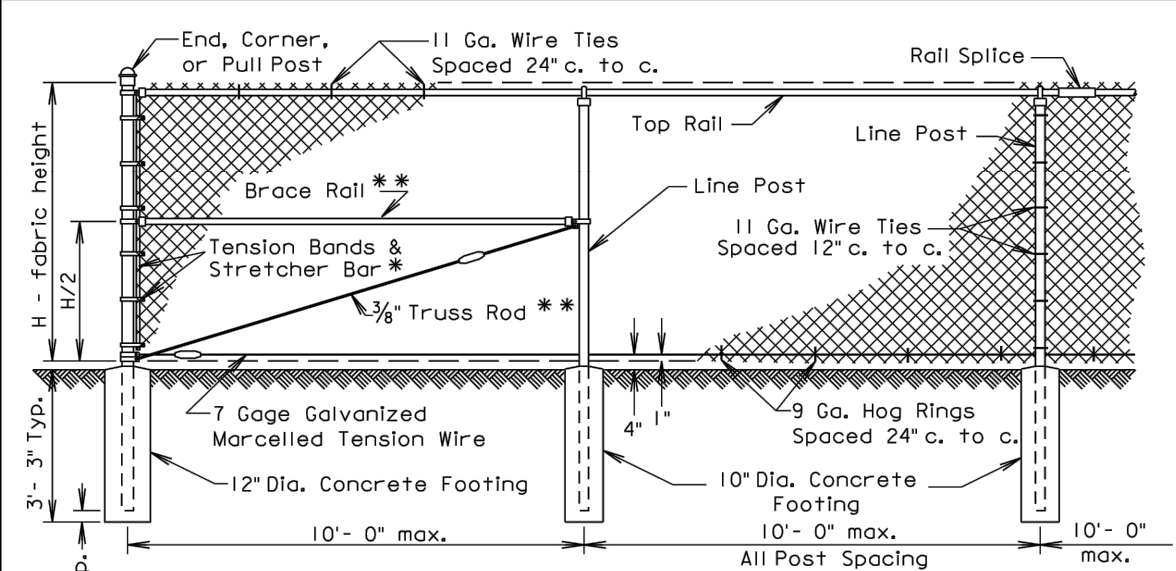


END VIEW "CIRCULAR" END VIEW "ARCH"

All pipe sections of R.C.P. and R.C.P. Arch shall be tied with tie bolts except for pipe located between drop inlets, manholes, and junction boxes. All pipe sections of pipes that only enter or exit drop inlets, manhole, and junction boxes shall be tied with tie bolts.
 There will be no separate measurement or payment for the tie bolts. The cost for furnishing and installing the tie bolts shall be incidental to the contract unit price per foot for the corresponding bid item for R.C.P. or R.C.P. Arch.

February 28, 2013

Published Date: 3rd Qtr. 2014	S D D O T	TIE BOLTS FOR R.C.P. AND R.C.P. ARCH	PLATE NUMBER 450.18
			Sheet 1 of 1



* Tension Bands shall be spaced 12" c. to c.
 ** Are not required for 3' thru 5' fences.
 ⊕ Tightening Device such as shown on Plate No. 621.03

Component	End, Corner & Pull Post		Line Post			Top & Brace Rail	
	Round Pipe Nominal	Roll Formed Steel	Round Pipe Nominal	"C" Section	H-Beam Steel	Round Pipe Nominal	Roll Formed Steel
Type of Fabrication							
Size	3.00" O. D.	3.5" x 3.5"	2.50" O. D.	1.875"x1.625"	2.25"x1.70"	1.625" O. D.	1.625"x1.25"
Weight (lb. / ft.)	5.79 or 4.64	5.14	3.65 or 3.12	2.34	3.43	2.27 or 1.84	1.35

GENERAL NOTES:
 Specific details of manufacture of component parts of the complete fence construction shall be subject to the approval of the Engineer. Commercially available items produced specifically for the use intended shall be used wherever possible in the construction of the fence.
 "H" (Height of Fabric) shall be as shown on the Plans. Fabric is available in the the following heights; 36", 42", 48", 60", 72", 84", 96", 108", 120", & 144". Fabric heights 60 inches and under shall be knuckled at both selvages. Fabric heights 72 inches and over shall be knuckled at one selvage and twisted at the other selvage.

Chain Link Fabric shall be 2" mesh, No. 9 gage galvanized wire securely fastened to Tension Wire, Line Post, Rails, Braces and Stretcher Bars spaced as shown hereon.

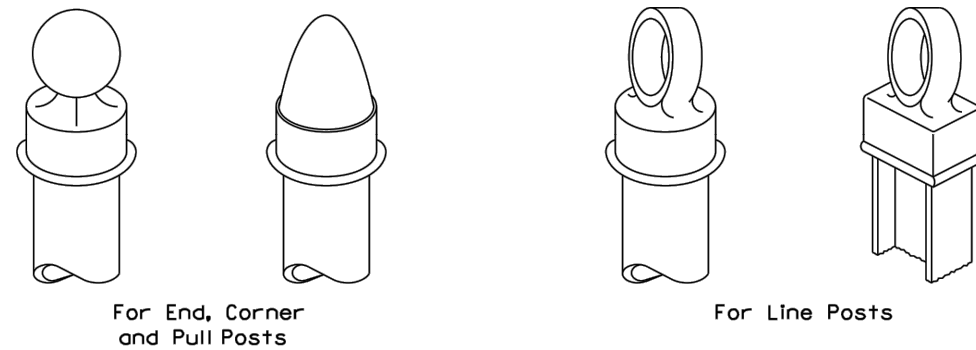
Fence may be constructed with either Round Pipe, "C" Section, "H" Beam, or roll Formed Steel components as shown in the table above. Line post may be Round Pipe, "C" Section, or "H" Beam. The Corner Post and Rails shall be either Round Pipe or Roll Formed Steel. The type of components used shall have prior approval by the Engineer before construction.

Where fence must cross small bodies of water (such as drainage areas or ponds) that could freeze during the winter, use 11 gage Hog Rings. Provide only two ties per Tension Wire and Top Rail between line posts.

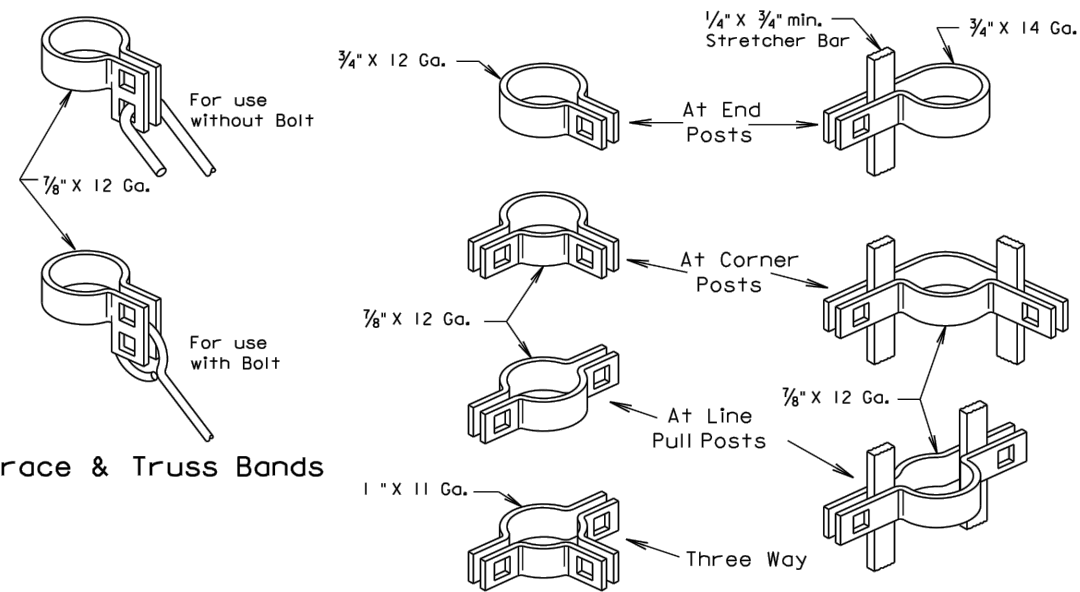
A suitable method of rail splicing shall be used to allow for expansion and contraction while maintaining proper position of the Top Rail.

March 31, 2000

Published Date: 3rd Qtr. 2014	S D D O T	CHAIN LINK FENCE WITH TOP RAIL	PLATE NUMBER 621.01
			Sheet 1 of 1



Typical Post Tops
(Shown for example only)

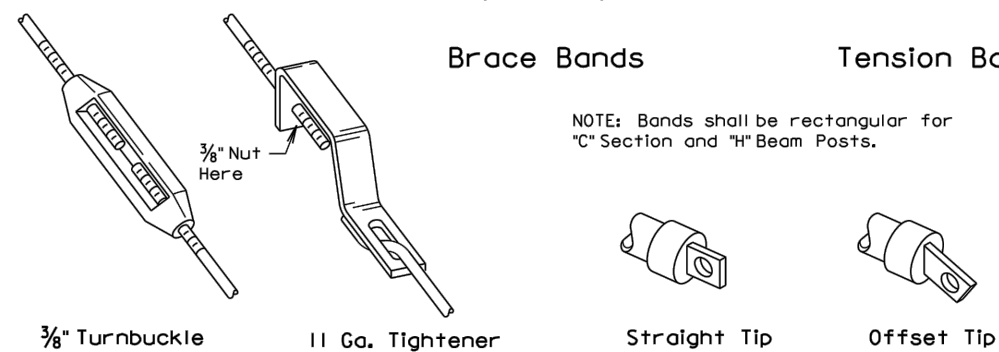


Brace & Truss Bands

Brace Bands

Tension Bands

NOTE: Bands shall be rectangular for "C" Section and "H" Beam Posts.

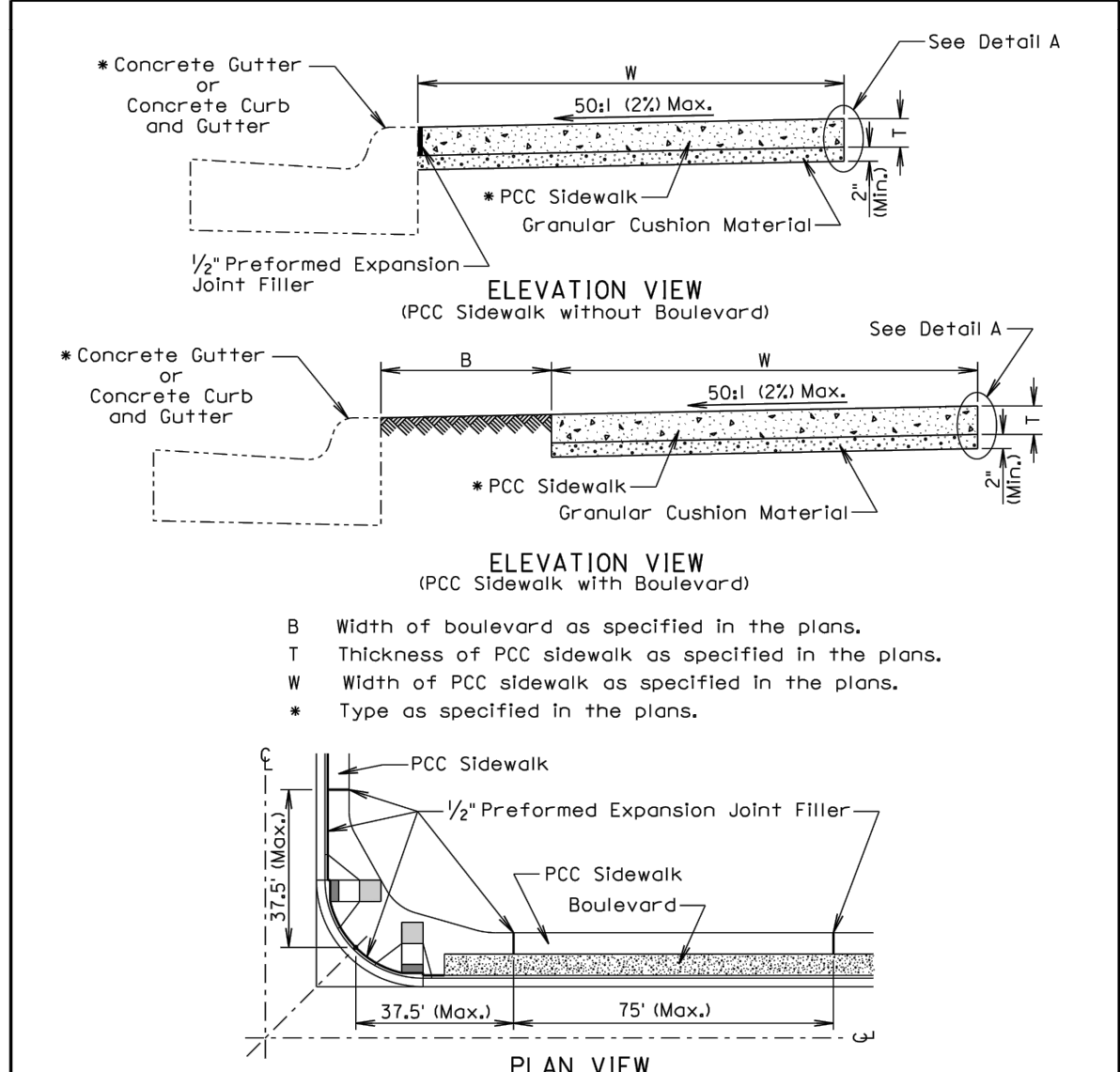


Tightening Devices

Rail Ends

March 31, 2000

Published Date: 3rd Qtr. 2014	S D D O T	HARDWARE FOR CHAIN LINK FENCE	PLATE NUMBER 621.03
			Sheet 1 of 1



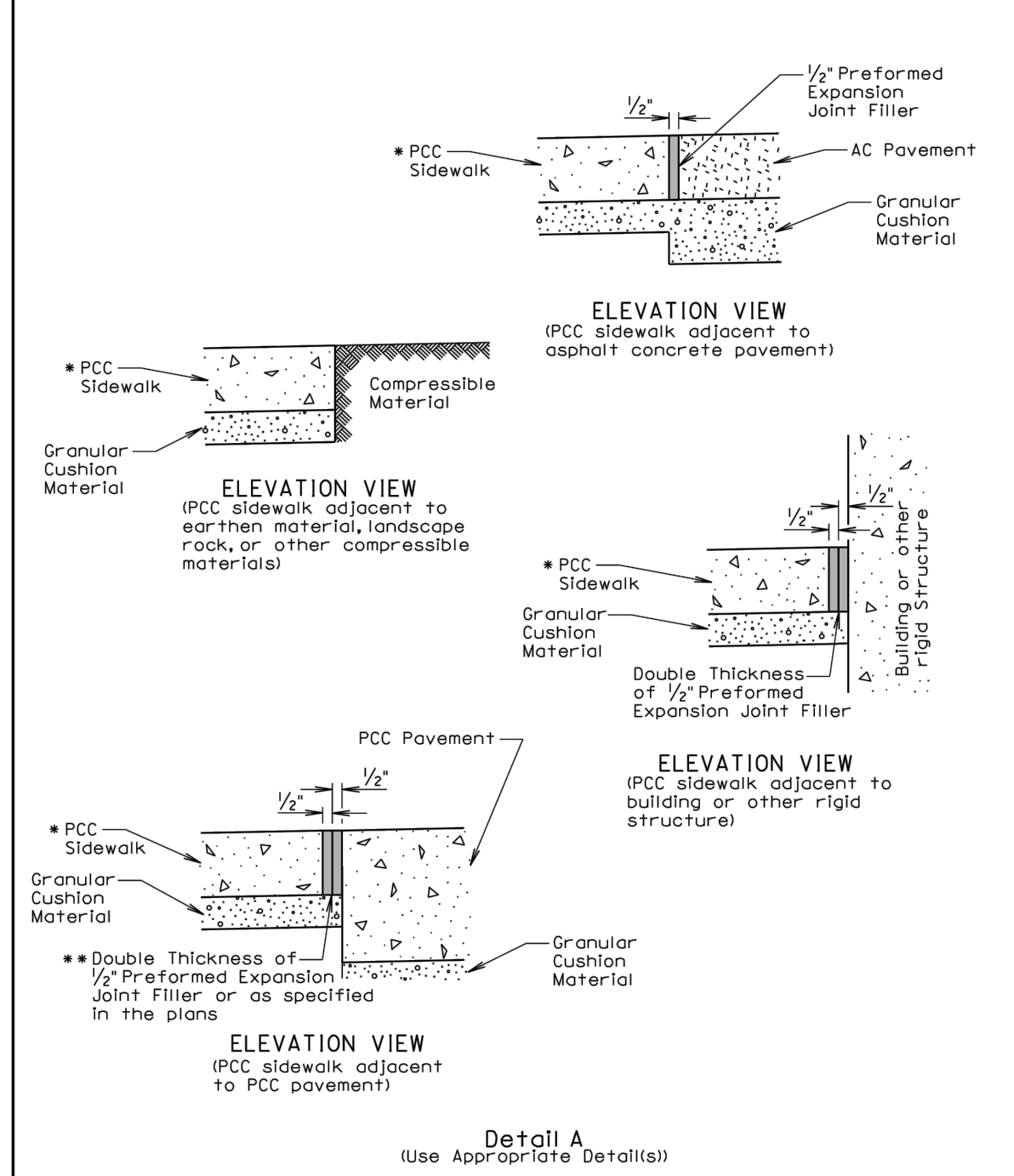
B Width of boulevard as specified in the plans.
T Thickness of PCC sidewalk as specified in the plans.
W Width of PCC sidewalk as specified in the plans.
* Type as specified in the plans.

GENERAL NOTES:
The PCC sidewalk shall be constructed in accordance with Section 651 of the Standard Specifications.
The maximum length between expansion joints in PCC sidewalk is 75 feet.
PCC sidewalk placed adjacent to intersection of roadways shall have an expansion joint placed transversely a maximum of 37.5 feet from the intersection. See PLAN VIEW.
An expansion joint in PCC sidewalk shall consist of a 1/2 inch thick preformed expansion joint filler material placed full depth and width of the PCC sidewalk.
** Large areas of PCC pavement adjacent to PCC sidewalk may require a different joint treatment than shown in the detail. If a different joint detail is necessary, plans will contain the joint detail and the Contractor shall construct the joint treatment in accordance with the plans.

August 31, 2013

S D D O T	PCC SIDEWALK	PLATE NUMBER 651.75
		Sheet 1 of 2

Published Date: 3rd Qtr. 2014



August 31, 2013

S D D O T	PCC SIDEWALK	PLATE NUMBER 651.75
		Sheet 2 of 2

Published Date: 3rd Qtr. 2014

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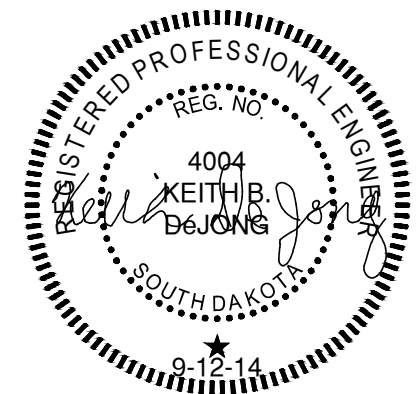
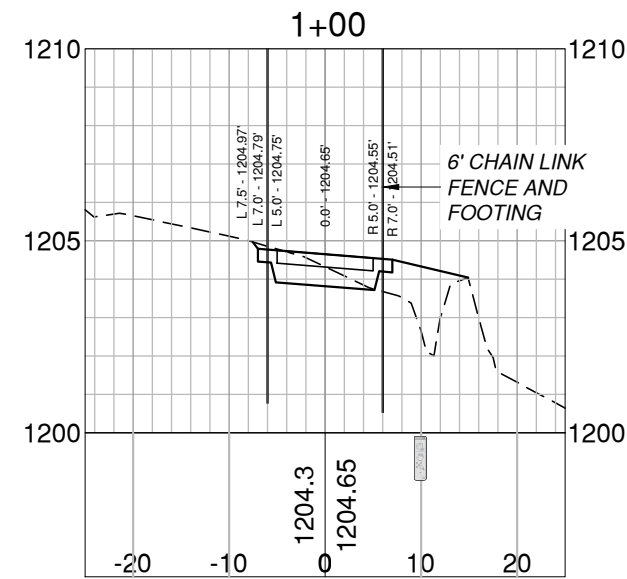
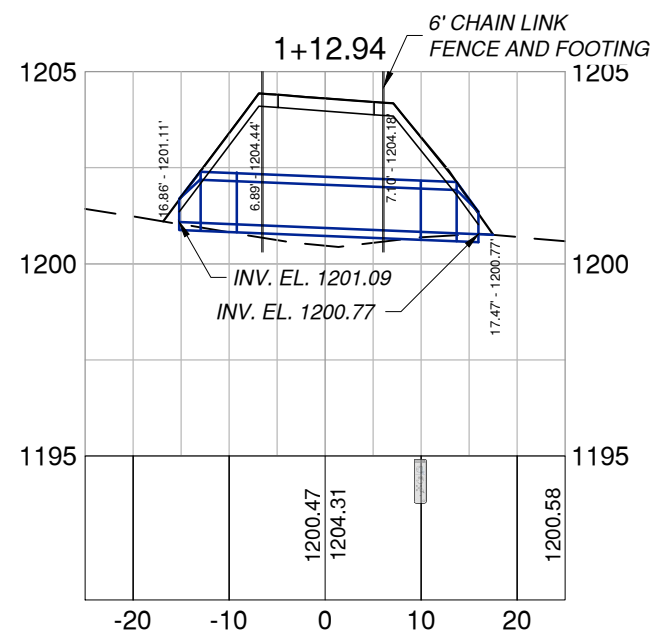
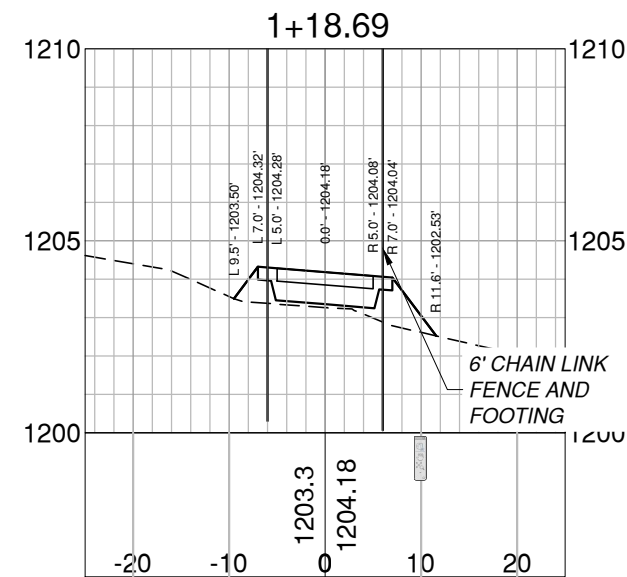
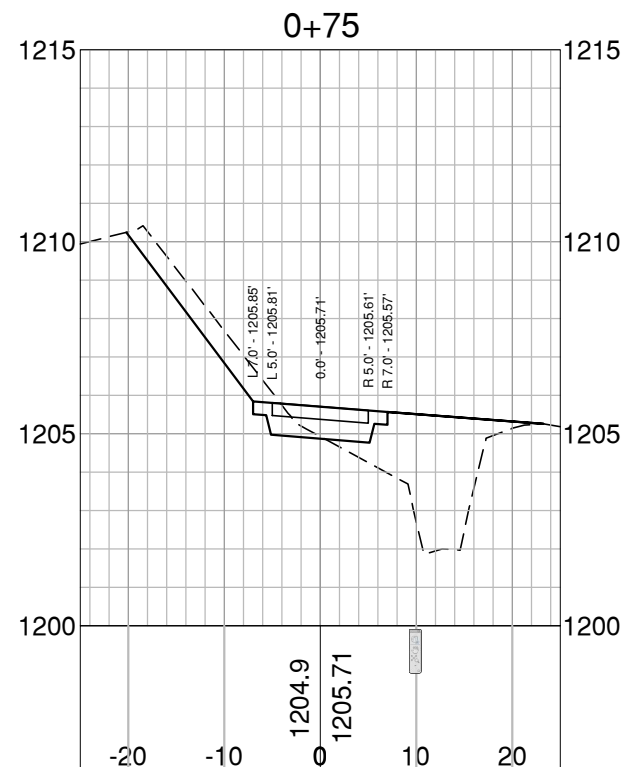
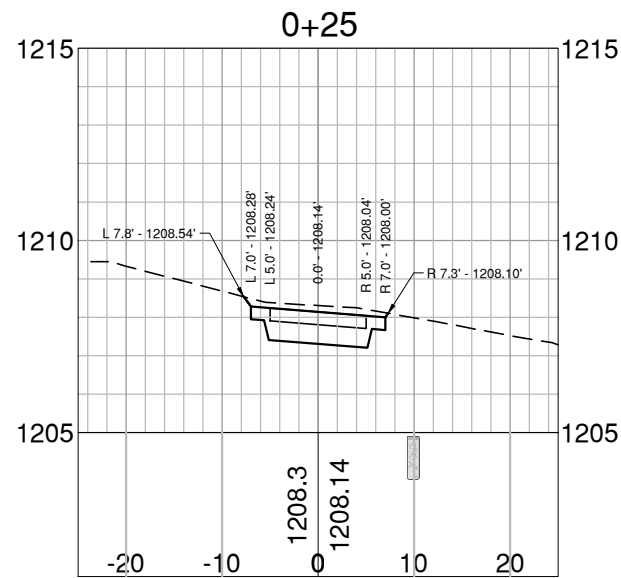
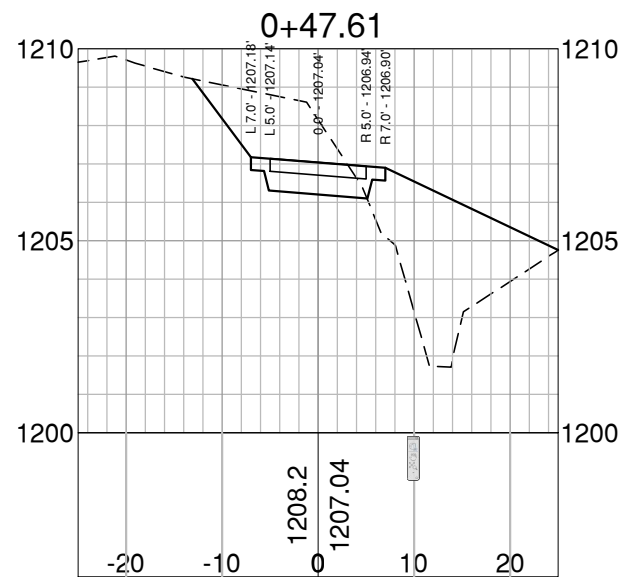
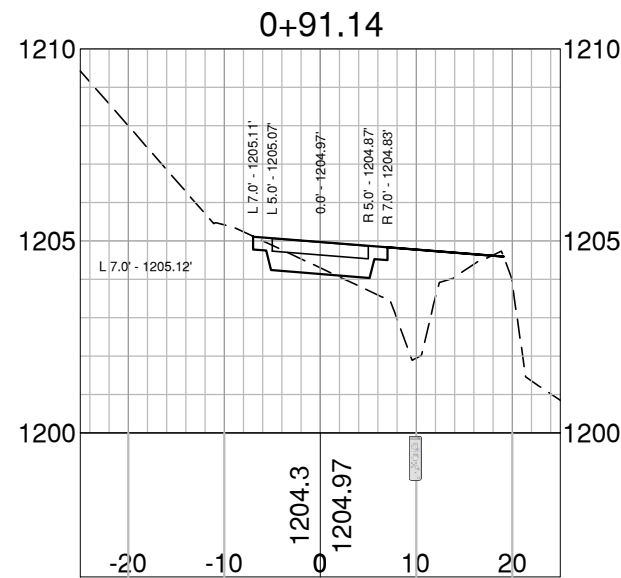
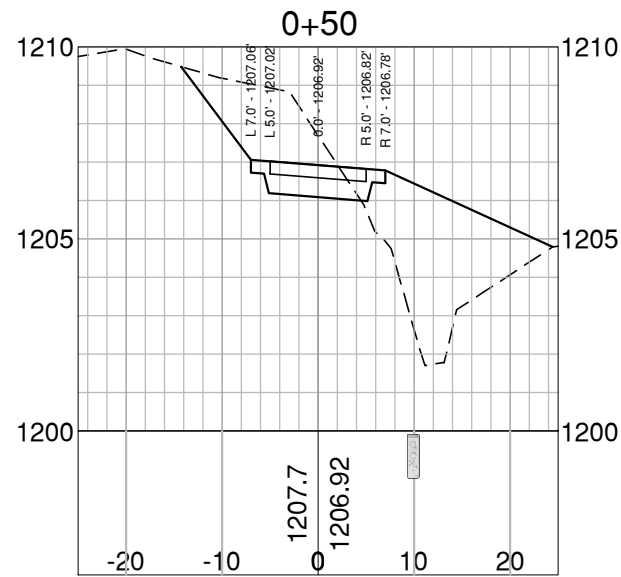
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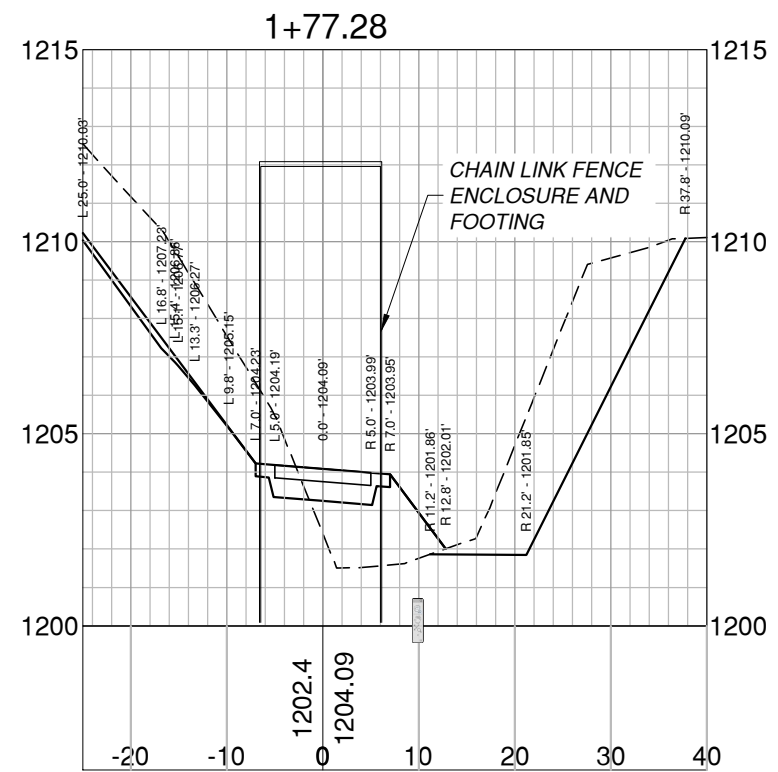
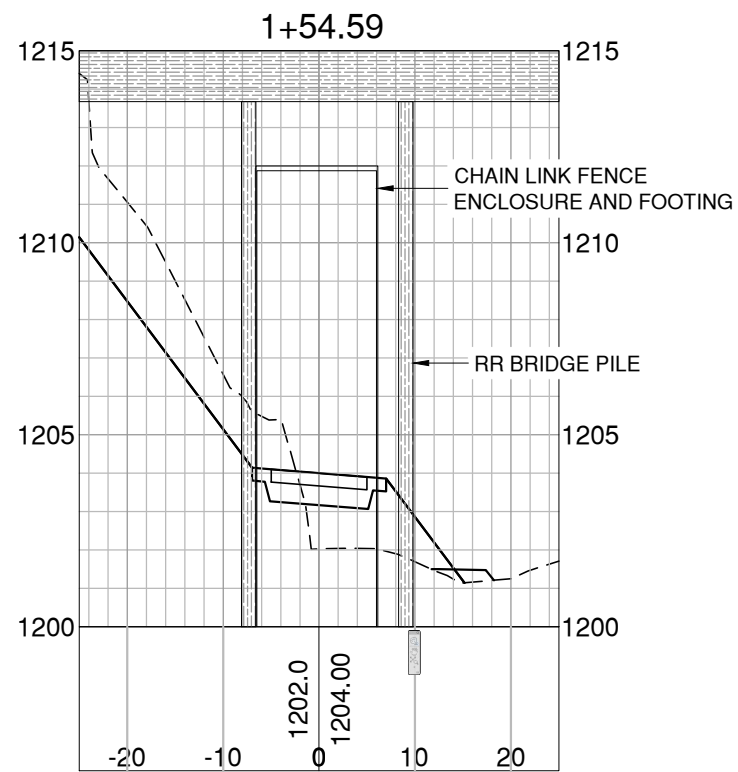
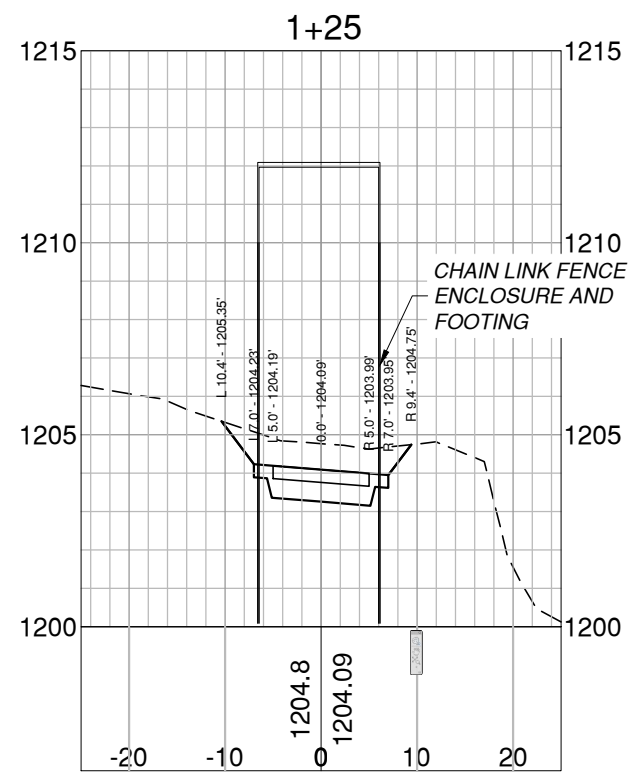
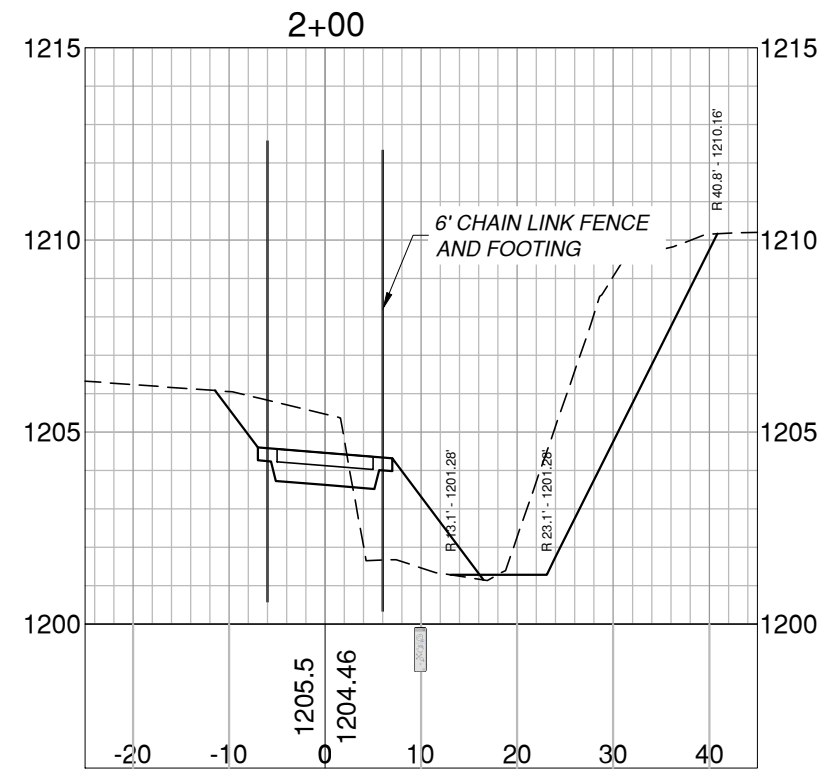
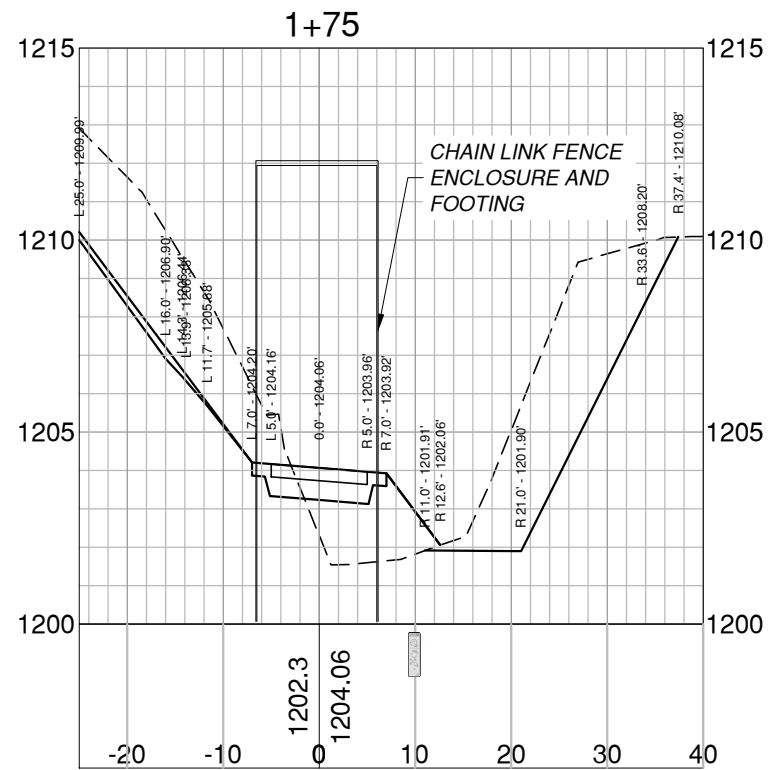
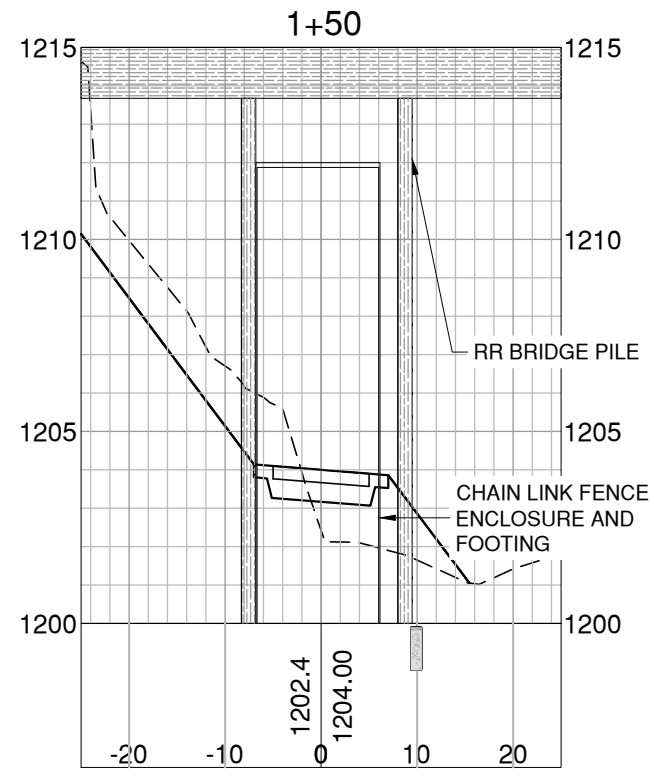
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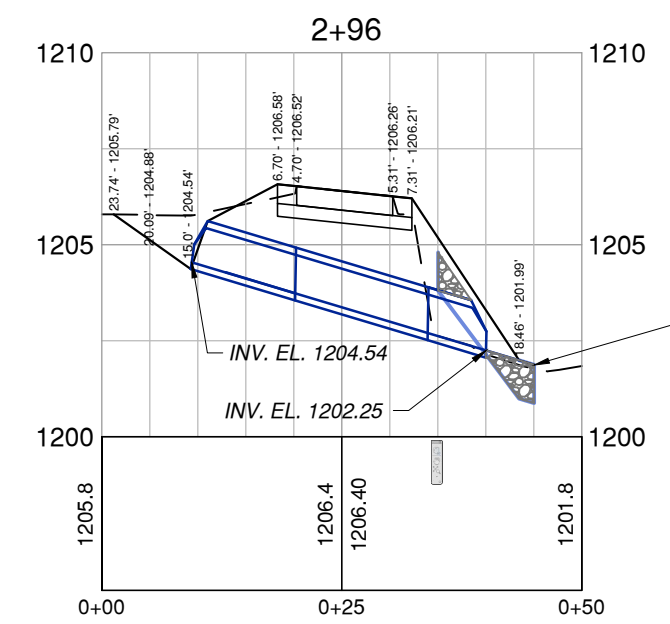
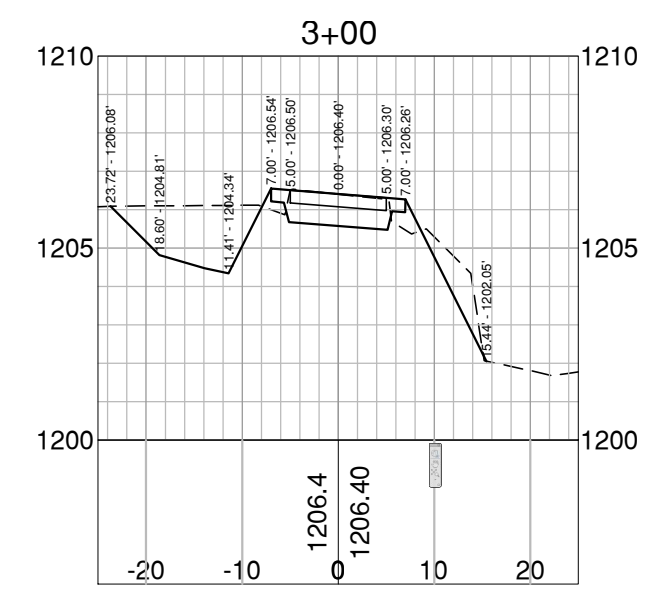
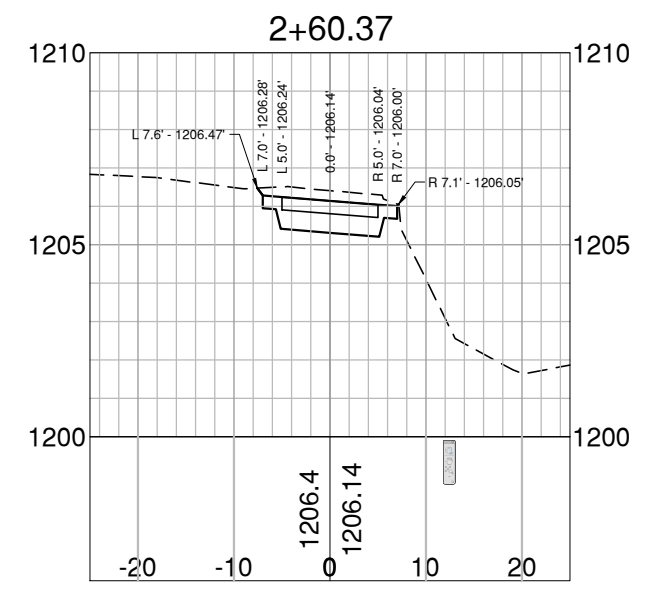
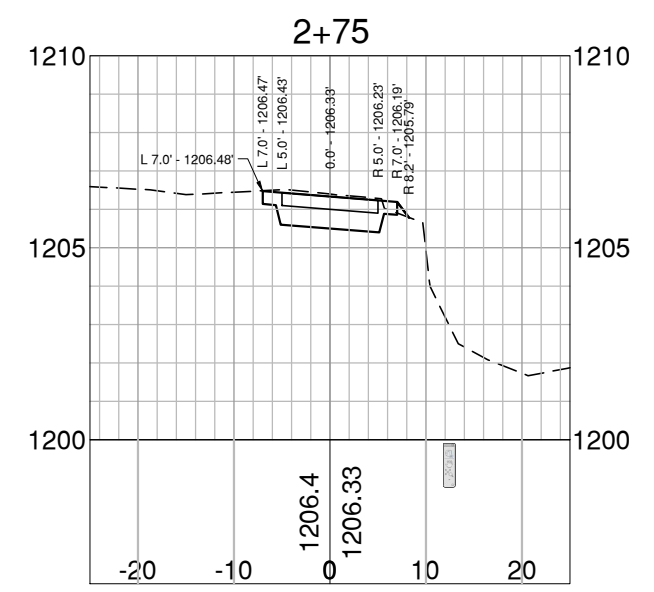
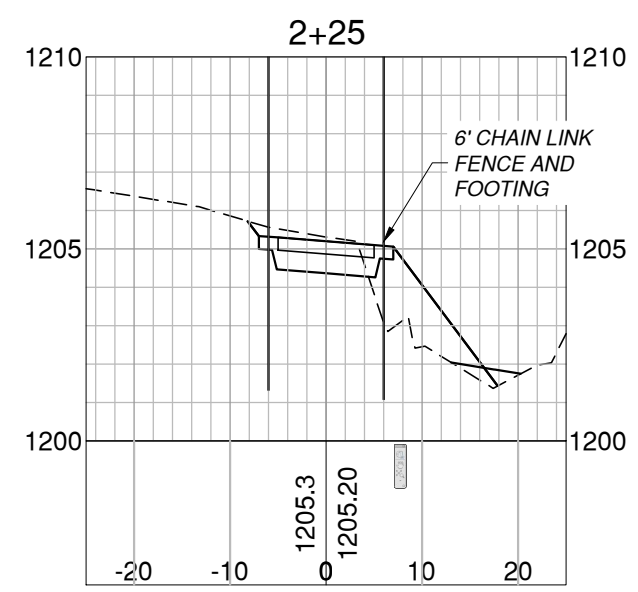
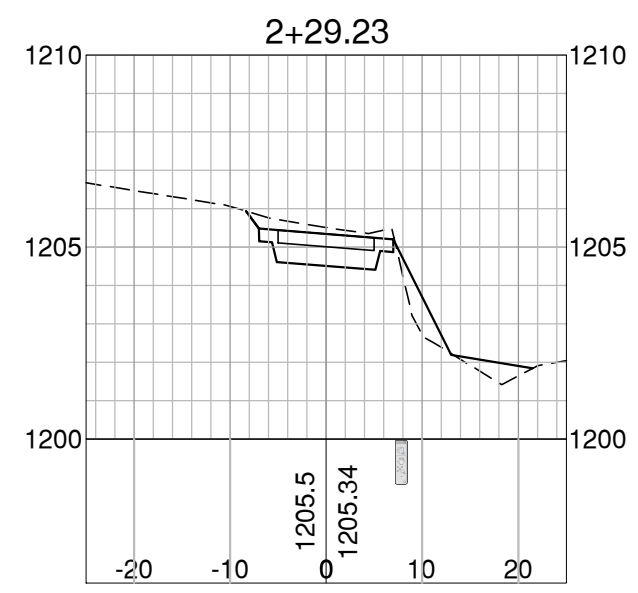
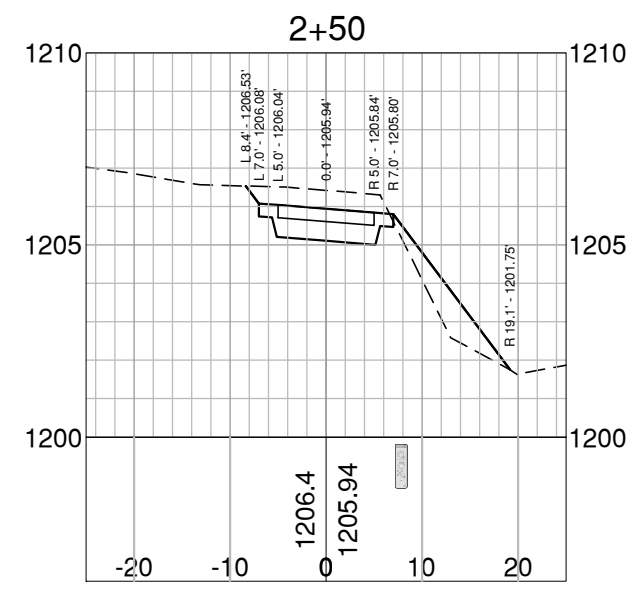
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