BAI JOB # 24044-00	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		CIP 2026-032(00)	1	17

FOR BIDDING PURPOSES ONLY

Plotting Date: 08/31/2026

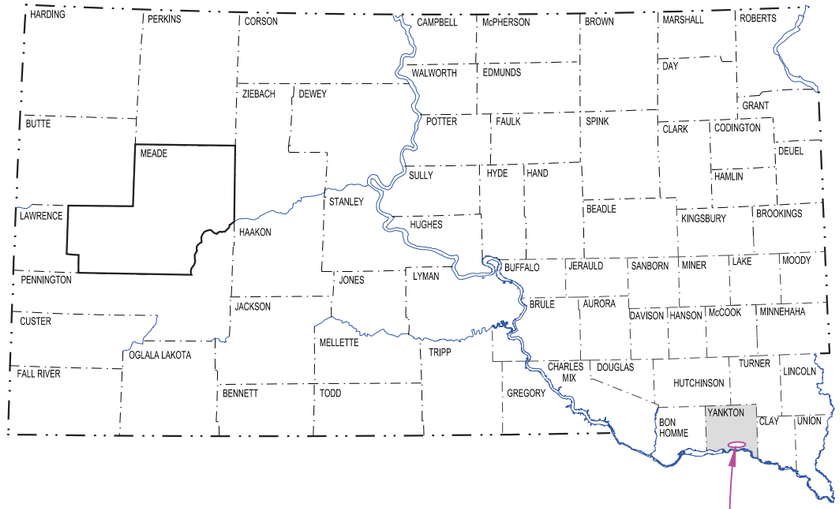
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT CIP 2026-032(00)
YANKTON COUNTY

MARNE CREEK CHANNEL PROTECTION & PEDESTRIAN BRIDGE WING WALL IMPROVEMENTS
PCN X07C

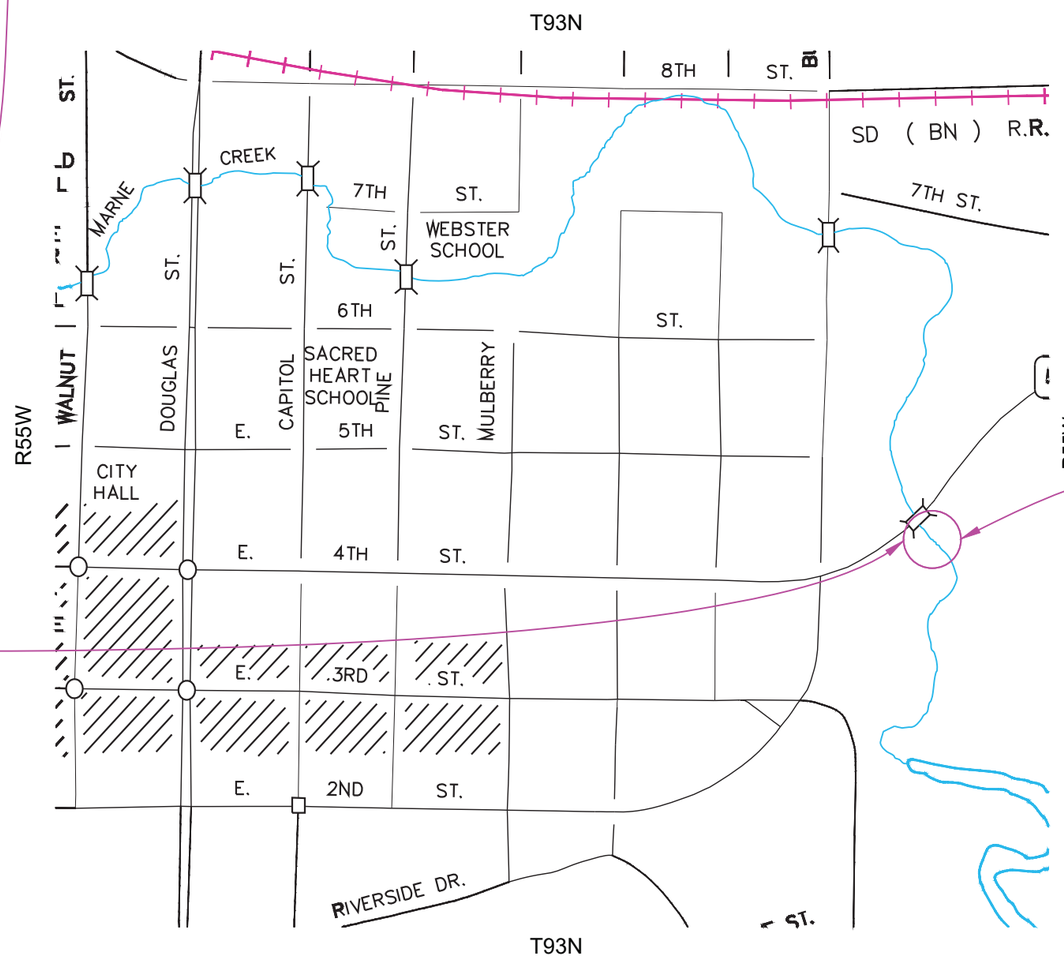
INDEX OF SHEETS

1	Title Sheet
2	Overall Improvements Map
3	Estimate of Quantities
4-5	Environmental Commitments
6-7	General Notes
8	Typical Section
9	Traffic Control Notes
10	Traffic Control Notes
11	Erosion Control Details
12	Fleximat Detail
13	Erosion Control
14	Channel Protection & Grading
15	Existing Conditions & Removals
16	Structural Notes
17	Wingwall Details



BANNER
engineering a better community
409 22nd Ave S
Brookings, SD 57006
1-855-323-6342

PROJECT



END CIP 2026-032(00)
Station 3+21.00
Located in
Section 18 - Township 93 North - Range 55 West

BEGIN CIP 2026-032(00)
Station 0+00.00
Located in
Section 18 - Township 93 North - Range 55 West

N

DESIGN DESIGNATION

AADT (2025)	115
AADT (2045)	156
V	55 mph

STORM WATER PERMIT

Major Receiving Body of Water:	Peg Munky Run
Total Project Area:	#.# Acres
Area Disturbed:	#.# Acres
Approx. Begin Lat/Long:	44.586944° N
	-96.790000° W

REGISTERED PROFESSIONAL ENGINEER
REG NO. 12452
WESTON JAMES BLASIUS
SOUTH DAKOTA
8-31-2026

2

December 2, 2026

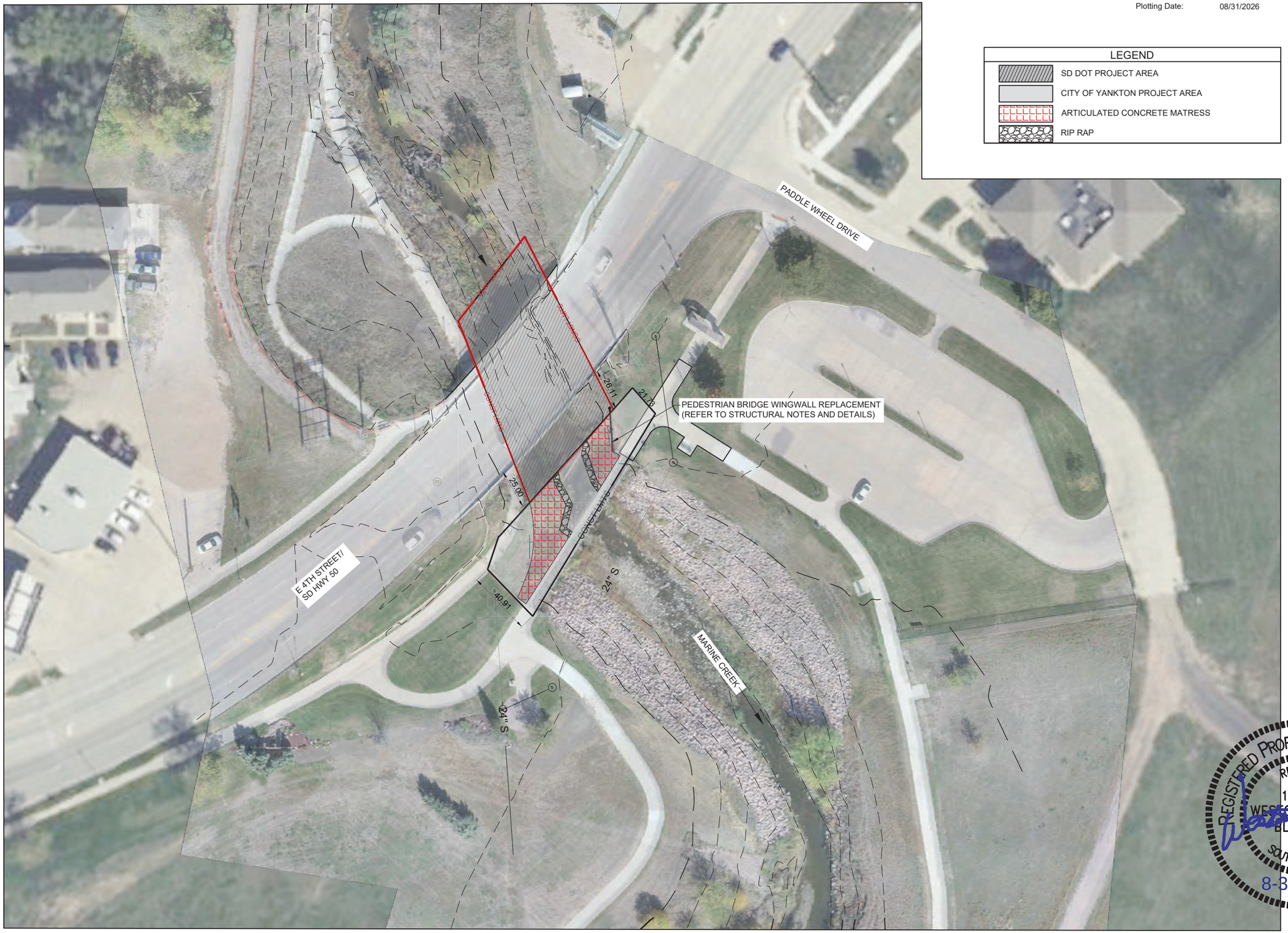
OVERALL IMPROVEMENTS MAP

BAI JOB # 24044-00

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CIP 2026-032(00)	2	17

Plotting Date: 08/31/2026



REGISTERED PROFESSIONAL ENGINEER
REG NO.
12452
WESTON JAMES BLASIUS
SOUTH DAKOTA
8-31-2026

ESTIMATE OF QUANTITIES

CIP 2026-032(00) - PCN X07C

Non-Section Method

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E4100	Construction Schedule, Category I	Lump Sum	LS
110E1305	Remove Timber Retaining Wall	20.0	Ft
120E0010	Unclassified Excavation	64	CuYd
120E6300	Water for Vegetation	17.3	MGal
230E0010	Placing Topsoil	48	CuYd
230E0020	Contractor Furnished Topsoil	48	CuYd
420E0300	Structure Excavation, Retaining Wall	75	CuYd
510E0100	Extract Pile	2	Each
510E1331	Timber Bearing Pile, Furnish and Drive	120	Ft
530E0200	Treated Timber Retaining Wall	140	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
700E0210	Class B Riprap	81.0	Ton
734E0010	Erosion Control	Lump Sum	LS
734E0154	12" Diameter Erosion Control Wattle	100	Ft
831E0110	Type B Drainage Fabric	84	SqYd
900E5147	Articulated Concrete Mattress	150.0	SqYd

REGISTERED PROFESSIONAL ENGINEER
REG NO. 12452
WESTON JAMES BLASIUS
SOUTH DAKOTA
10/14/2026

ENVIRONMENTAL COMMITMENTS

The SDDOT [KDB1]is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified 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. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf>>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT A: AQUATIC RESOURCES

COMMITMENT A1: WETLANDS

All efforts to avoid and minimize wetland impacts from the project have resulted in approximately 0.06 acre of temporary wetland impact. Refer to the plans for location and boundaries of the impacted wetlands.

Table of Impacted Wetlands

Wetland No.	Station	Permanent Impact (Acres)	Temporary Impact (Acres)	Total Impact (Acres)
1	3+10 to 3+40 (L/R)	0.00	0.06	0.06

Action Taken/Required:

Temporary impacts identified in the Table of Impacted Wetlands will not be mitigated as original contours and elevations will be re-established as designated in the plans. Prior to initiating temporary work in wetlands, the Contractor will submit a plan to the Project Engineer in accordance with Section 7.18 of the Specifications.

The Contractor will notify the Project Engineer if additional easement is needed to complete work adjacent to any wetland. The Project Engineer will obtain an appropriate course of action from the Environmental Office before proceeding with construction activities that affect any wetlands beyond the work limits and easements shown in the plans.

COMMITMENT A2: STREAMS

All efforts to avoid and minimize stream impacts from the project have resulted in approximately 0.02 acre of temporary stream impact. Refer to the plans for location and boundaries of the impacted streams.

Table of Impacted Streams

Stream Name	Station	Permanent Impact (Acres)	Temporary Impact (Acres)	Total Impact (Acres)
Marne Creek	3+10 to 3+40 (L/R)	0.00	0.02	0.02

Action Taken/Required:

It has been determined that project impacts do not require mitigation. Temporary impacts identified in the Table of Impacted Streams will not be mitigated as the finished ground under the bridge will be shaped to match the upstream channel and flood plain and the existing low water channel will be maintained as near as practical to the existing location as designated in the plans.

COMMITMENT C: WATER SOURCE

If a Contractor needs access to state waters for extraction, the Contractor must obtain a water right, through the application of a Temporary Permit to Use Public Waters before work begins. [KDB2][KDB3]

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (SDDANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Temporary permit to use public waters for highway construction purposes application can be found on the SDDANR website: https://danr.sd.gov/OfficeOfWater/WaterRights/PermitForms/default.aspx [KDB4][KDB5]

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:
< https://sdleastwanted.sd.gov/maps/default.aspx >

South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species:
< https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04 >

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 that the South Dakota Surface Water Quality Standards, administered by the South Dakota Department of Agriculture and Natural Resources (DANR), apply to this project. Special construction measures will be taken to ensure the above standard(s) of the surface waters are maintained and protected.

COMMITMENT D2: SURFACE WATER DISCHARGE

The DANR General Permit for Temporary Discharge Activities is required for temporary dewatering and discharges to waters of the state. The effluent limit for total suspended solids will be 90 mg/L 30-day average. The effluent limit applies to discharges to all waters of the state except discharges to waters classified as coldwater permanent fish life propagation waters according to the ARSD 74:51:01:45. For discharges to waters of the state classified as coldwater permanent fish life propagation waters, the effluent limit for total suspended solids will be 53 mg/L daily maximum.

The permittee has the option of completing effluent testing or implementing a pollution prevention plan for compliance with this permit. If the permittee develops a pollution prevention plan instead of total suspended solids sampling, the plan must be developed and implemented prior to discontinuing total suspended solids sampling. Refer to Section 4.0 of the permit. If any pollutants are suspected of being discharged, a sample must be taken for those parameters listed in Section 3.4 of the permit.

Refer to Commitment D1: Surface Water Quality for stream classification.

Action Taken/Required:

If construction dewatering is required and this project is not required to be covered under a General Permit for Stormwater Discharges Associated with Construction Activities, the Contractor will obtain the General Permit for Temporary Discharge Activities from the DANR Water Quality Program, 605-773-3351.

<https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_TemporaryDischargeNOI2018Fillable.pdf>

The Contractor will provide a copy of the approved permit or the submitted dewatering information to the Project Engineer prior to proceeding with any dewatering activities. The approved permit or submitted dewatering information must be kept on-site and as part of the project records.



Effluent monitoring, as a result of dewatering activities, will be summarized for each month and recorded on a separate Discharge Monitoring Report (DMR) and submitted to DANR monthly. Additional information can be found at: <https://danr.sd.gov/Conservation/WatershedProtection/TMDL/default.aspx>

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

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.

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

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

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

The waste disposal site(s) will 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 Environmental Office and the Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with 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 not to exceed the duration of the project. Prior to project completion, the waste will 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) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

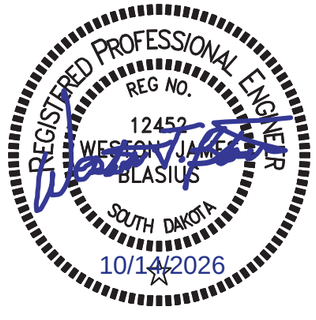
The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources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

The Contractor will provide ARC with the following: a topographical map or aerial view in 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.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. 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.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 150 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

The Contractor is responsible for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.



GENERAL NOTES

PROJECT SCOPE

THIS PROJECT CONSISTS OF CHANNEL GRADING, CHANNEL ARMORING WITH ARTICULATED CONCRETE MATTRESS, EROSION CONTROL AND SEDIMENT CONTROL.

ENGINEER

BANNER ASSOCIATES, INC.
3900 N NORTHVIEW AVE.
SIOUX FALLS, SD 57107

WESTON J. BLASIUS
605-696-9185

OWNER

CITY OF YANKTON
416 WALNUT STREET
YANKTON, SD 57087

KYLE GOODMANSON
605-688-5270

PROJECT LOCATION

CITY OF YANKTON, SD
SECTION 1, TOWNSHIP 33N, RANGE 1W

CONSTRUCTION LIMITS

CONSTRUCTION LIMITS ARE SHOWN IN THE PLANS. ACCESS TO THE PROJECT SITE MUST BE THROUGH THE HIGHWAY 50 RIGHT-OF-WAY OR COORDINATED PRIOR WITH THE CITY OF YANKTON.

THE CONTRACTOR WILL NOT BE ALLOWED TO STORE MATERIALS, EQUIPMENT, ETC. ON STRUCTURES OR USE STRUCTURES AS A STAGING AREA.

CONTRACTOR FURNISHED TOPSOIL

IT IS ANTICIPATED THAT A LARGER VOLUME OF TOPSOIL WILL BE NEEDED FOR THE NEW GRADE THAN CAN BE SALVAGED FROM THE EXISTING GRADE. THE CONTRACTOR WILL BE REQUIRED TO FURNISH AND PLACE 6 INCHES OF TOPSOIL ON THE CHANNEL SLOPES WHERE THE ARTICULATED CONCRETE MATTRESS IS SHOWN TO BE INSTALLED AND ALL OTHER AREAS INDICATED TO RECEIVED SEEDING.

CONTRACTOR FURNISHED TOPSOIL WILL BE FREE FROM CLAY LUMPS, STONES, COARSE GRAVEL, OR SIMILAR OBJECTS LARGER THAN 3/4 INCH IN DIAMETER. BRUSH, STUMPS, ROOTS, WOOD, OBJECTIONABLE WEEDS, LITER, OR ANY OTHER MATERIAL WHICH MAY BE HARMFUL TO PLANT GROWTH WILL NOT BE ALLOWED. ORGANIC MATERIAL WILL BE DECOMPOSED.

MYCORRHIZAL INOCULUM

MYCORRHIZAL INOCULUM WILL CONSIST OF MYCORRHIZAL FUNGI SPORES AND MYCORRHIZAL FUNGI-INFECTED ROOT FRAGMENTS IN A SOLID CARRIER. THE CARRIER MAY INCLUDE ORGANIC MATERIALS, CALCINATED CLAY, OR OTHER MATERIALS CONSISTENT WITH APPLICATION AND GOOD PLANT GROWTH. THE SUPPLIER WILL PROVIDE CERTIFICATION OF THE FUNGAL SPECIES CLAIMED AND THE LIVE PROPAGULE COUNT. THE INOCULUM WILL INCLUDE A MINIMUM 25% THE FUNGAL SPECIES *RHIZOPHAGUS INTRARADICES*. THE REMAINING 75% MAY INCLUDE OTHER ENDOMYCORRHIZAL FUNGAL SPECIES.

ALL SEED WILL BE INOCULATED BY THE SEED SUPPLIER WITH A MINIMUM OF 100,000 LIVE PROPAGULES OF MYCORRHIZAL FUNGI PER ACRE. ALL COSTS OF INOCULATING THE SEED WILL BE INCIDENTAL TO THE CONTRACT UNIT PRICE PER POUND FOR THE CORRESPONDING PERMANENT SEED MIXTURE.

THE MYCORRHIZAL INOCULUM PROVIDED WILL BE FROM THE APPROVED PRODUCT LIST. THE APPROVED PRODUCT LIST MAY BE VIEWED AT THE FOLLOWING INTERNET SITE:

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

FERTILIZING

THE CONTRACTOR WILL APPLY AN ALL-NATURAL SLOW-RELEASE FERTILIZER PRIOR TO SEEDING OR PLACING SOD. THE ALL-NATURAL FERTILIZER WILL HAVE A MINIMUM GUARANTEED ANALYSIS OF 4-4-4 AND BE USDA CERTIFIED BIOBASED. IT SHOULD PROVIDE A MINIMUM OF 4% (N) NITROGEN WITH A MINIMUM WATER INSOLUBLE NITROGEN (WIN) FRACTION OF 2.07%, A MINIMUM OF 4% (P2O5) AVAILABLE PHOSPHATE, A MINIMUM OF 4% (K2O) SOLUBLE POTASH, AND A MAXIMUM CARBON TO NITROGEN RATIO (C:N RATIO) OF 5:1. THE ALL-NATURAL FERTILIZER WILL BE FREE OF WEED-SEED AND PATHOGENS ACCOMPLISHED THROUGH THERMOPHILIC COMPOSTING, AND NOT MECHANICAL OR CHEMICAL STERILIZATION, TO ASSURE PRESENCE OF BENEFICIAL SOIL MICROBIOLOGY. THE FERTILIZER WILL HAVE A NEAR NEUTRAL PH, A LOW SALT INDEX, A LOW BIOLOGICAL OXYGEN DEMAND, CONTAIN ORGANIC HUMIC AND FULVIC ACIDS, AND HAVE HIGH AEROBIC ORGANISM COUNTS. THE FERTILIZER WILL ALSO BE STABLE, FREE OF BAD ODORS, AND BE UNATTRACTIVE AS A FOOD SOURCE FOR ANIMALS. IT SHOULD ALSO BE IN A GRANULAR FORM THAT IS EASILY SPREAD.

THE APPLICATION RATE OF FERTILIZER WILL BE 3 POUNDS PER 1,000 SQUARE FEET.

THE FERTILIZER PROVIDED WILL BE FROM THE APPROVED PRODUCT LIST. THE APPROVED PRODUCT LIST MAY BE VIEWED AT THE FOLLOWING INTERNET SITE:

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

PERMANENT SEEDING

THE AREAS TO BE SEEDED CONSIST OF ALL NEWLY GRADED AREAS WITHIN THE PROJECT LIMITS EXCEPT FOR THE TOP OF ROADWAYS.

TYPE C PERMANENT SEED MIXTURE WILL CONSIST OF THE FOLLOWING:

GRASS SPECIES	VARIETY	PURE LIVE SEED (PLS) (POUNDS/ACRE)
WESTERN WHEATGRASS	ARRIBA, FLINTLOCK, RODAN, ROSANA, WALSH	16
CANADA WILDRYE	MANDAN	2
	TOTAL:	18

EROSION CONTROL

The estimated area requiring erosion control is 2587 square feet. All costs for the erosion control work for furnishing, placing, and maintaining erosion control including equipment, labor, seeding, fertilizing, and mulching will be incidental to the contract lump sum price for “Erosion Control”.

The limits of erosion control work will be determined by the Engineer during construction.

REGISTERED PROFESSIONAL ENGINEER
REG NO. 12452
WESTON JAMES BLASIUS
SOUTH DAKOTA
10/14/2026

WATER FOR VEGETATION

WATER FOR VEGETATION CONSISTS OF APPLYING WATER TO SEEDED AREAS TO ENHANCE GERMINATION AND/OR ROOT GROWTH. WHEN WATERING, USE THE FOLLOWING GUIDELINES:

IMMEDIATELY AFTER SEEDING:

- KEEP THE TOPSOIL MOIST BUT NOT EXCESSIVELY WET UNTIL THE SEED HAS GERMINATED.
- WATER A MINIMUM OF 3 DAYS A WEEK FOR 2 WEEKS PREFERABLY WATERING 2 OR 3 TIMES A DAY IN SMALL QUANTITIES.
- USE FINE SPRAY AND LOW PRESSURE TO AVOID TOPSOIL WASH AND TO PREVENT UNCOVERING BURIED SEEDS.

AFTER EMERGENCE:

- TOPSOIL WILL BE KEPT THOROUGHLY MOISTENED BY SPRINKLING, AS NECESSARY, FOR 6 WEEKS. AFTER THE 6-WEEK PERIOD, AN INSPECTION WILL BE MADE TO DETERMINE IF GRASS IS ESTABLISHED ENOUGH TO SUSPEND WATERING. CONTINUE WATERING UNTIL GRASS HAS BEEN THOROUGHLY ESTABLISHED.
- NEVER APPLY WATER AT A RATE FASTER THAN THE TOPSOIL CAN ABSORB.
- WATER DURING EARLY MORNING HOURS OR EARLY EVENING HOURS.
- DO NOT WATER WHEN RAIN IS FORECAST FOR THE AREA.
- IF RAINFALL OCCURS, SUSPEND WATERING ACCORDING TO RAINFALL AMOUNT.

AN ESTIMATED 60 GALLONS OF WATER PER SQUARE YARD OF SEEDING AREA WAS USED TO COMPUTE THE QUANTITY FOR THE BID ITEM “WATER FOR VEGETATION”.

ALL COSTS FOR FURNISHING AND APPLYING THE WATER INCLUDING HAULING, MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS NECESSARY WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER MGAL FOR “WATER FOR VEGETATION”.

EROSION CONTROL WATTLE

EROSION CONTROL WATTLES FOR RESTRAINING THE FLOW OF RUNOFF AND SEDIMENT WILL BE INSTALLED AT LOCATIONS NOTED IN THE TABLE AND AT LOCATIONS DETERMINED BY THE ENGINEER DURING CONSTRUCTION. REFER TO STANDARD PLATE 734.06 FOR DETAILS.

THE CONTRACTOR WILL PROVIDE CERTIFICATION THAT THE EROSION CONTROL WATTLES DO NOT CONTAIN NOXIOUS WEED SEEDS.

EROSION CONTROL WATTLES WILL REMAIN ON THE PROJECT TO DECOMPOSE.

THE EROSION CONTROL WATTLE PROVIDED WILL BE FROM THE APPROVED PRODUCT LIST. THE APPROVED PRODUCT LIST FOR EROSION CONTROL WATTLE MAY BE VIEWED AT THE FOLLOWING INTERNET SITE:

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

TABLE OF EROSION CONTROL WATTLE

STATION	LOCATION	DIAMETER (INCH)	QUANTITY (FT)
3+16 TO 3+57 R	X	12	40
2+88 TO 3+30 L	X	12	60
		TOTAL:	100

ARTICULATED CONCRETE MATTRESS

ARTICULATED CONCRETE MATTRESS WILL BE INSTALLED AT LOCATIONS NOTED IN THE TABLE AND AT LOCATIONS DETERMINED BY THE ENGINEER DURING CONSTRUCTION.

INSTALLATION OF THE ARTICULATED CONCRETE MATTRESS WILL BE IN ACCORDANCE WITH THE MANUFACTURER’S INSTALLATION INSTRUCTIONS.

MEASUREMENT FOR PAYMENT OF ARTICULATED CONCRETE MATTRESS DOES NOT INCLUDE EXTRA AREA FOR OVERLAP, TIE-INS, OR ANCHORING AS REQUIRED BY THE MANUFACTUER.

ALL COSTS FOR FURNISHING AND INSTALLING THE ARTICULATED CONCRETE MATTRESS INCLUDING HAULING, MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS NECESSARY WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR “ARTICULATED CONCRETE MATTRESS”.

THE FOLLOWING PRODUCTS WERE USED AS THE BASIS OF DEISGN:
FLEXAMAT BY MOTZ ENTERPRISES, CINCINNATI, OH
SHOREBLOCK ___ BY PREMIER CONRETE PRODUCTS INC., DENHAM SPRINGS, LA

THE ARTICULATED CONCRETE MATTRESS PROVIDED WILL BE FROM THE APPROVED PRODUCT LIST. THE APPROVED PRODUCT LIST MAY BE VIEWED AT THE FOLLOWING INTERNET SITE:

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

TABLE OF ARTICULATED CONCRETE MATTRESS

STATION	LOCATION	QUANTITY (SQYD)
3+16 TO 3+57 R	X	58
2+88 TO 3+30 L	X	92
	TOTAL:	150

TYPE B DRAINAGE FABRIC

TYPE B DRAINAGE FABRIC WILL NOT BE INSTALLED AT ALL LOCATIONS WHERE ARTICULATED CONCRETE MATTRESS IS TO BE INSTALLED. TYPE B DRAINAGE FABRIC WILL BE INSTALLED DIRECTLY UNDER THE ARTICULATED CONCRETE MATTRESS.

ALL COSTS ASSOCIATED WITH INSTALLING TYPE B DRAINAGE FABRIC INCLUDING EQUIPMENT, LABOR, AND MATERIALS WILL BE INCIDENTAL TO THE CONTRACT UNIT PRICE PER SQYD FOR “TYPE B DRAINAGE FABRIC.”

GRADING

TABLE OF EARTHWORK QUANTITIES

TOPSOIL STRIPPING	48 CY
UNCLASSIFIED EXCAVATION FOR CHANNEL	16 CY
TOTAL UNCLASSIFIED EXCAVATION	64 CY

THE ESTIMATED QUANTITY OF STRIPPED TOPSOIL HAS BEEN ADDED TO THE UNCLASSIFIED EXCAVATION QUANTITY. THIS WILL BE FULL COMPENSATION FOR EXCAVATION, WHICH INCLUDES NECESSARY UNDERCUTTING TO PROVIDE SPACE FOR PLACEMENT OF TOPSOIL.

UNCLASSIFIED EXCAVATION

EARTHWORK MUST BE PERFORMED AS SHOWN ON APPROPRIATE CROSS SECTIONS.

PLANS QUANITTY WILL BE THE BASIS FOR PAYMENT FOR UNCLASSIFIED EXCAVATION AND THE PLANS QUANTITY OF TOPSOIL ITEMS LISTED IN THE TABLE OF UNCLASSIFIED EXCAVATION WILL NO TBE ADJUSTED ACCORDING TO FIELD MEASUREMENTS.

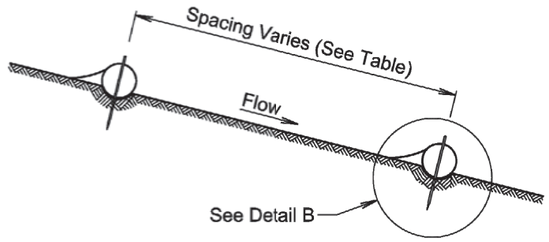
WATER FOR COMPACTION OF SUBGRADE AND EMBANKMENTS MUST BE PROVIDED BY THE CONTRACTOR AND USED TO MAINTAIN SOIL AT OR NEAR OPTIMUM MOISTURE CONTENT TO OBTAIN REQUIRED DENSITY. COMPACTION OF SUBGRADE AND EMBANKMENTS MUST BE GOVERNED BY THE SPECIFIED DENSITY METHOD. COMPACTION OF EMBANKMENT MUST BE NO LESS THAN 95% OF STANDARD PROCTOR DENSITY. NO SEPARATE PAYMENT WILL BE MADE FOR WATER USED FOR COMPACTION OF SUBGRADE.

UTILITIES

THE CONTRACTOR WILL CONTACT THE INVOLVED UTILITY COMPANIES THROUGH SOUTH DAKOTA ONE CALL (1-800-781-7474) PRIOR TO STARTING WORK. IT WIL LBE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WORK WITH THE UTILITY OWNERS TO AVOID DAMAGE TO EXISTING FACILITIES.

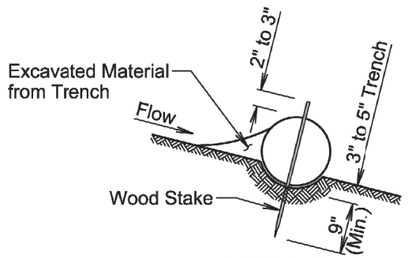
IF UTILITIES ARE IDENTIFIED NEAR THE IMPROVEMENT AREA THROUGH THE SD ONE CALL PROCESS AS REQUIRED BY SOUTH DAKOTA CODIFIED LAW 49-7A AND ADMINISTRATIVE RULE ARTICLE 20:25, THE CONTRACTOR WILL CONTACT THE ENGINEER TO DETERMINE MODIFICAITONS THAT WILL BE NECESSARY TO AVOID UTILITY IMPACTS.

REGISTERED PROFESSIONAL ENGINEER
REG NO. 12452
WESTON JAMES BLASIUS
SOUTH DAKOTA
10/14/2026

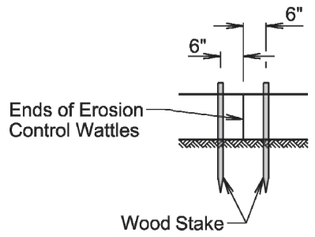


ELEVATION VIEW
(Cut or Fill Slope Installation)

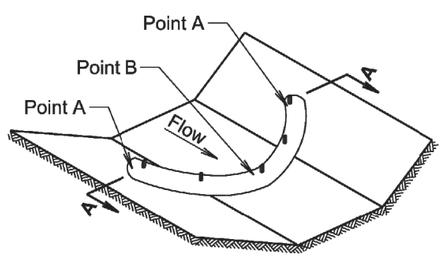
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft.)
1:1	10
2:1	20
3:1	30
4:1	40



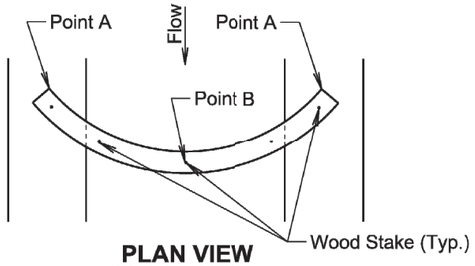
DETAIL B
(Typical of All Installations)



DETAIL C
(See General Notes)

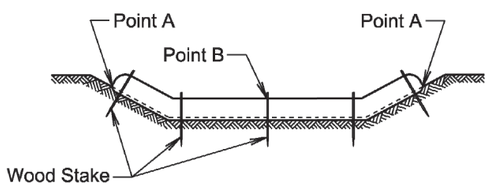


ISOMETRIC VIEW
(Ditch Installation)



PLAN VIEW
(Ditch Installation)

DITCH INSTALLATION	
Grade	Spacing (Ft.)
2%	150
3%	100
4%	75
5%	50



SECTION A-A

February 14, 2020

Published Date: 2025	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

GENERAL NOTES:

At cut or fill slope installations, wattles will 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 will 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 will 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 will be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles will be 3' to 4'.

Where installing running lengths of wattles, the Contractor will butt the second wattle tightly against the first and will not overlap the ends. See Detail C.

The Contractor and Engineer will inspect the erosion control wattles in accordance with the storm water permit. The Contractor will remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping will be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping will be incidental to the contract unit price per cubic yard for "Remove Sediment".

All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials will be incidental to the contract unit price per foot for the corresponding erosion control wattle contract item.

All costs for removing the erosion control wattle from the project including labor, equipment, and materials will be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

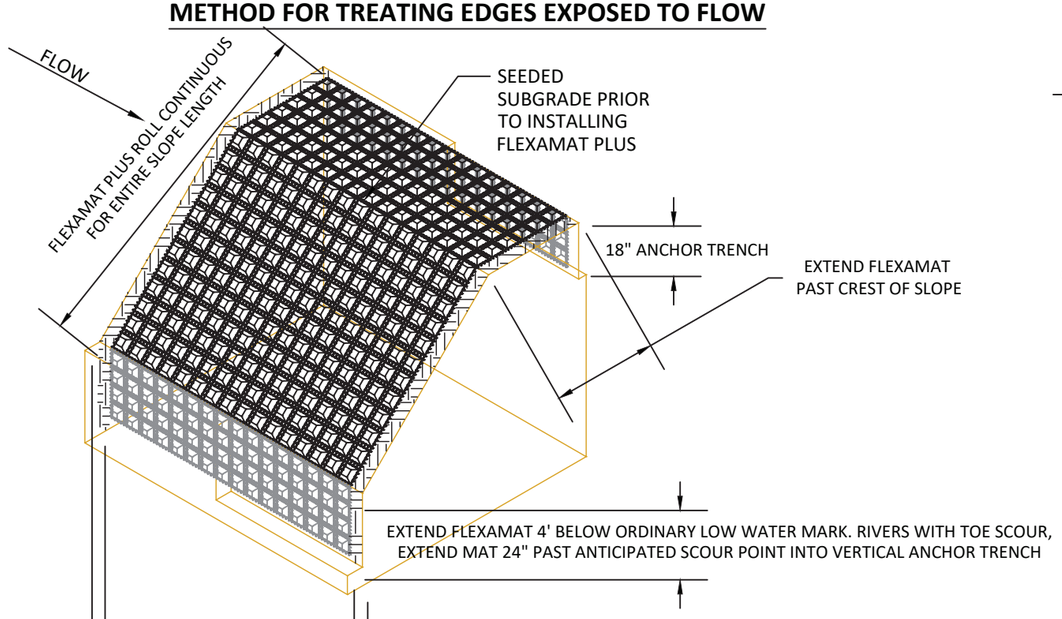
February 14, 2020

Published Date: 2025	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2

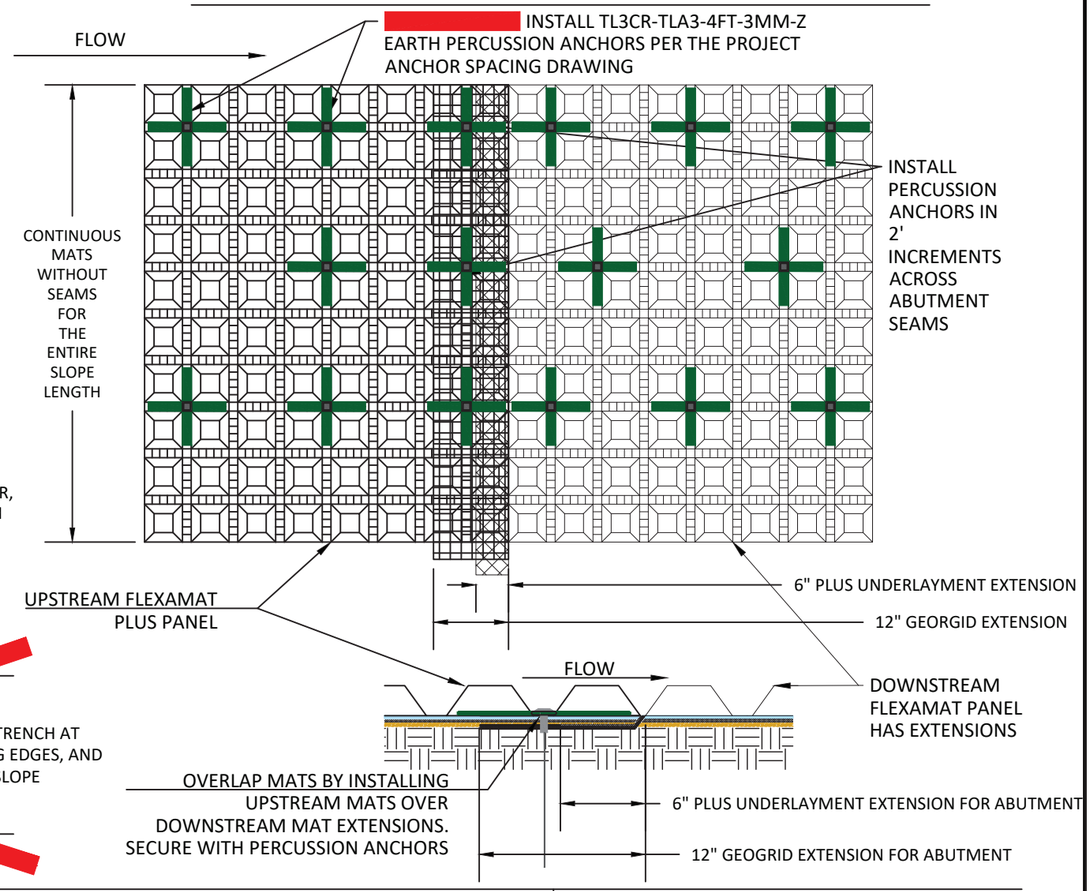
FOR BIDDING PURPOSES ONLY

Plotting Date: 08/31/2026

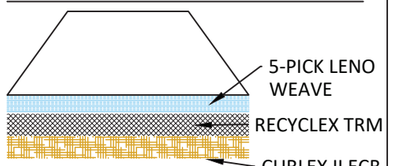
METHOD FOR TREATING EDGES EXPOSED TO FLOW



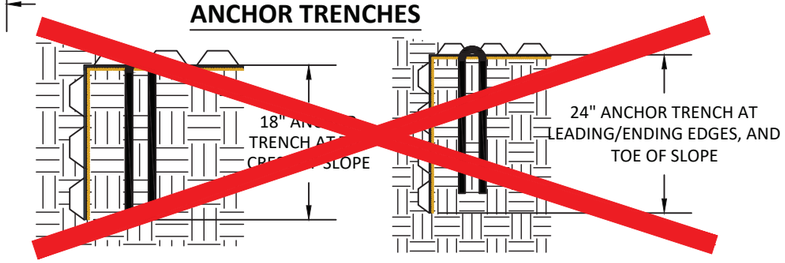
ABUTMENT METHOD FOR SEAMS PERPENDICULAR WITH FLOW



FLEXAMAT PLUS UNDERLAYMENT



ANCHOR TRENCHES



FLEXAMAT PLUS - RIVERBANK STEEP SLOPE ARMORING DETAIL

CONSTRUCTION NOTES:

1. AN ENGINEER OR MANUFACTURER'S REPRESENTATIVE SHALL BE ONSITE FOR THE START OF THE INSTALLATION.
2. ALL SUBGRADE SURFACES PREPARED FOR PLACEMENT OF MATS SHALL BE SMOOTH AND FREE OF ROCKS, STICKS, ROOTS, OTHER PROTRUSIONS, OR DEBRIS OF ANY KIND.
3. PRIOR TO INSTALLING MATS, SEED AND FERTILIZE OVER PREPARED SUBGRADE WITH SITE SPECIFIC MIX.
4. INSTALL FLEXAMAT ROLLS THAT ARE 15.5' WIDE WITH A 12" GEOGRID EXTENSION AND A 6" PLUS UNDERLAYMENT EXTENSION. INSTALLATION WILL START ON THE DOWNSTREAM END OF THE CHANNEL AND WORK TOWARDS THE UPSTREAM END OF THE INSTALLATION.
   - 4.1. THE TOP EDGE OF MAT SHALL EXTEND 3' PAST THE CREST OF SLOPE AND BE EMBEDDED 18".
   - 4.2. PRIOR TO INSTALLING UPSTREAM MATS ENSURE THE GEOGRID AND TRM EXTENSIONS ARE LAYING FLAT ON SUBGRADE. INSTALL UPSTREAM MATS OVER THE GEOGRID-PLUS EXTENSIONS OF DOWNSTREAM MATS.
   - 4.3. WHEN NEEDED, SECURE OVERLAPS USING TL3CR-TLA3-4FT-3MM-Z EARTH PERCUSSION ANCHORS PER THE ANCHOR SPACING DETAIL.
   - 4.4. WHEN NEEDED, INSTALL TL3CR-TLA3-4FT-3MM-Z EARTH PERCUSSION ANCHORS THROUGHOUT THE SLOPE PER THE ANCHOR SPACING DETAIL.
5. EXTEND FLEXAMAT 4' BELOW ORDINARY LOW WATER MARK. RIVERS WITH TOE SCOUR SHALL EMBED THE MAT 24" PAST THE ANTICIPATED SCOUR POINT. FILL AND COMPACT TERMINATION TRENCH WITH SUITABLE FILL.
6. LEADING AND ENDING EDGES OF THE ENTIRE FLEXAMAT SLOPE PROTECTION SHALL HAVE A MINIMUM 24" ANCHOR TRENCH. ANCHOR TRENCH SHALL EXTEND MINIMUM 24" BEYOND THE ANTICIPATED SCOUR POINT.

MOTZ ENTERPRISES, INC.
Flexamat
(513)772-6689
Info@Flexamat.com
Flexamat.com

Flexamat® PERMANENT EROSION CONTROL

ARTICULATED CONCRETE MATTRESS

BANNER engineering a better community

REVISED: AUGUST 2022

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work.

GENERAL TRAFFIC CONTROL

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

All temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports.

Portable sign supports will not be located on sidewalks, bicycle facilities, or other areas designated for pedestrian or bicycle traffic.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

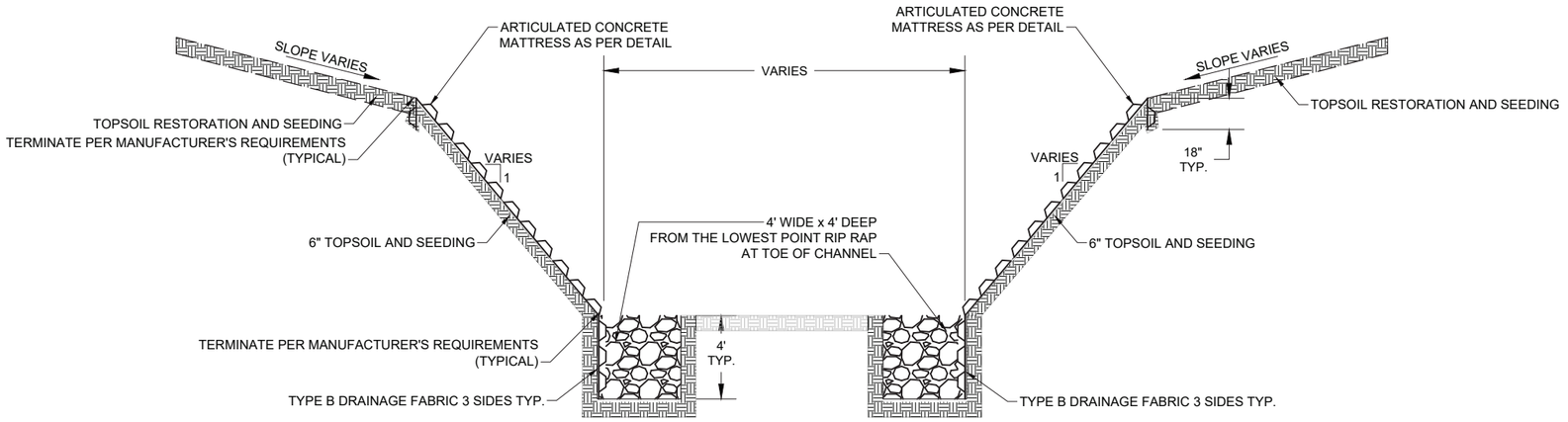
All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

TRAFFIC CONTROL, MISCELLANEOUS

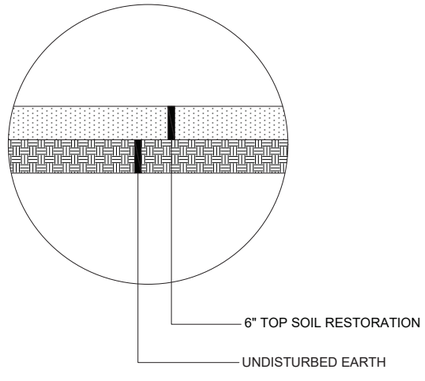
All costs for traffic control, including signs, will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".





(TYPICAL CREEK SECTION)

TYPICAL SECTION - CHANNEL PROTECTION



TOP SOIL RESTORATION

SCALE: NONE

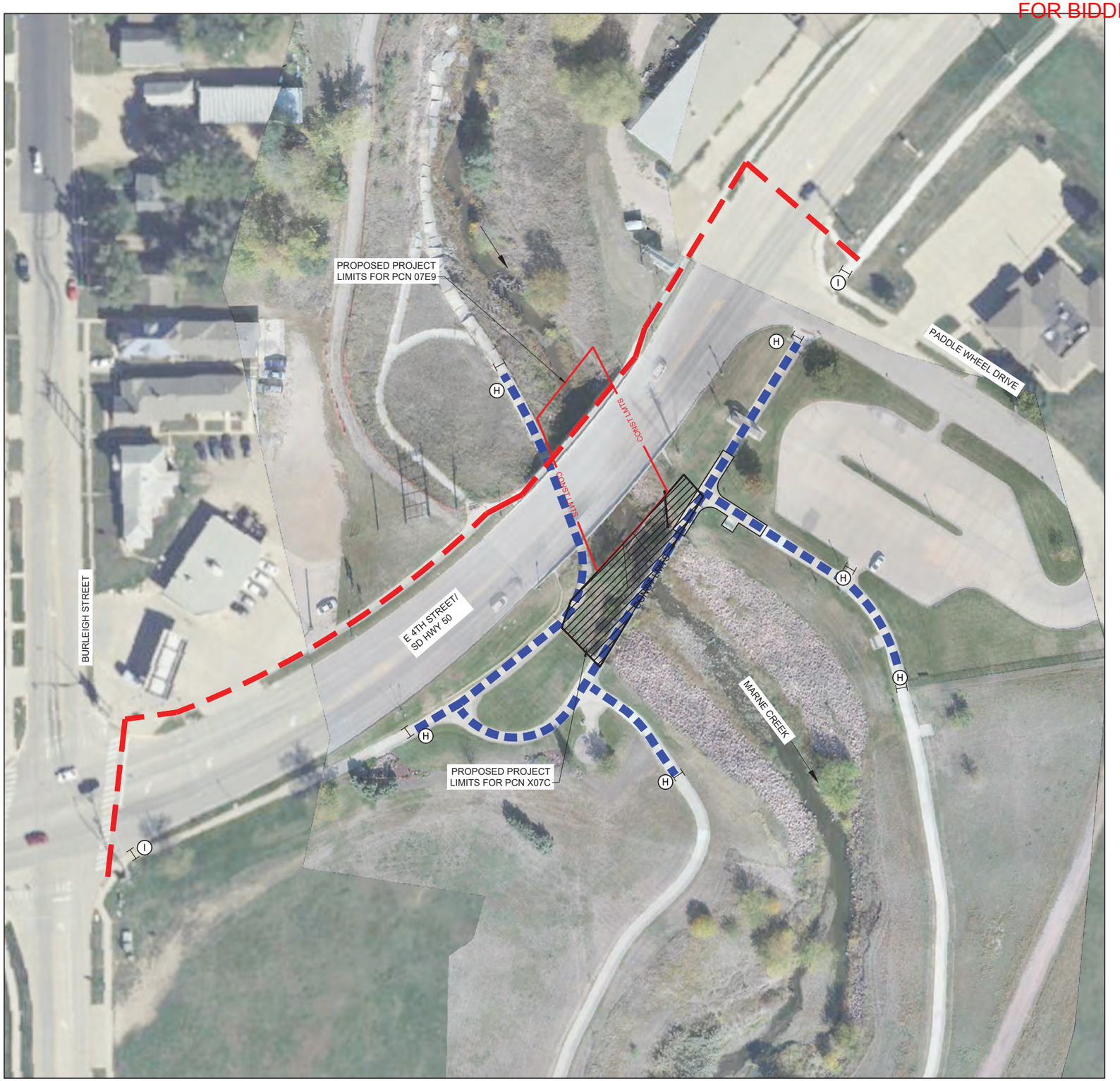
REGISTERED PROFESSIONAL ENGINEER
REG NO. 12452
WESSON JAMES BLASIUS
SOUTH DAKOTA
8-31-2026

BAI JOB # 24044.00

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CIP 2026-032(00)	12	17

Plotting Date: 08/31/2026



TRAFFIC CONTROL LEGEND

- BARRICADE
- SIGN
- WORK ZONE
- PEDESTRIAN PATH CLOSURE
- PEDESTRIAN ALT. ROUTE



R9-9
24"x12"
(H)



R9-11
24"x18"
(I)

NOTE:
CONTRACTOR MUST TAKE NECESSARY STEPS TO ENSURE NO DAMAGE OCCURS TO THE SHARED USE PATH OR ADJACENT FACILITIES DURING THE WORK OCCURRING. IF ANY DAMAGE TO THE SHARED USE PATH OR ADJACENT FACILITIES IS FOUND DURING CONSTRUCTION, THE CONTRACTOR SHALL REMOVE AND REPLACE OR REPAIR THIS DAMAGE TO THE SATISFACTION OF THE ENGINEER.

REGISTERED PROFESSIONAL ENGINEER
REG NO.
12452
WESTON JAMES
BLASIUS
SOUTH DAKOTA
8-31-2026

CHANNEL SLOPE GRADING

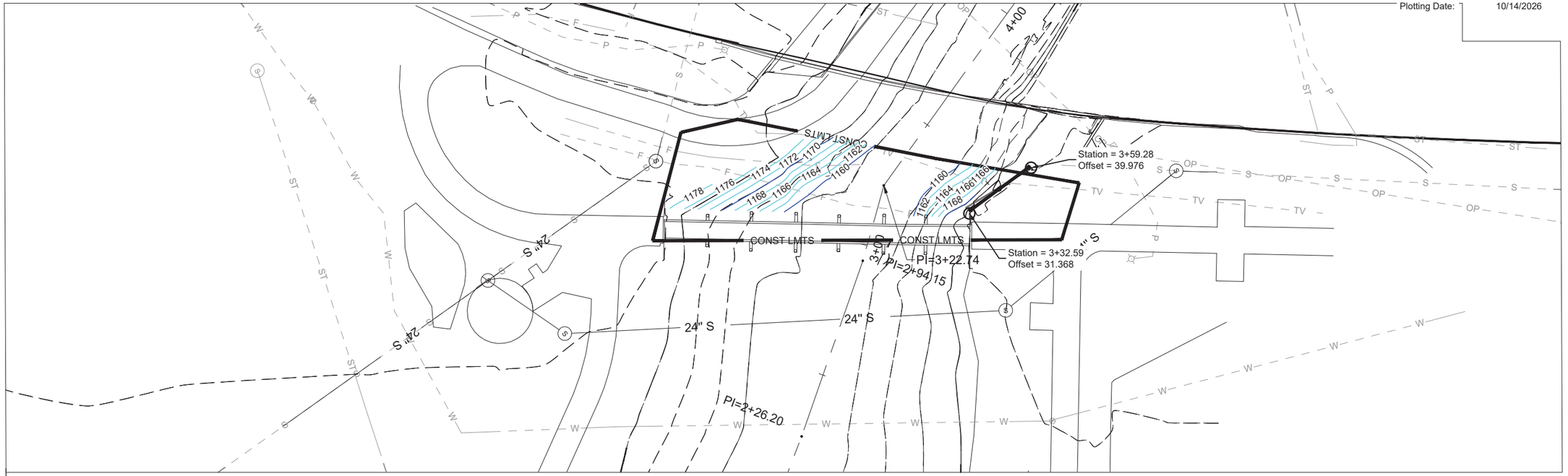
FOR BIDDING PURPOSES ONLY

BAI JOB # 24044-00

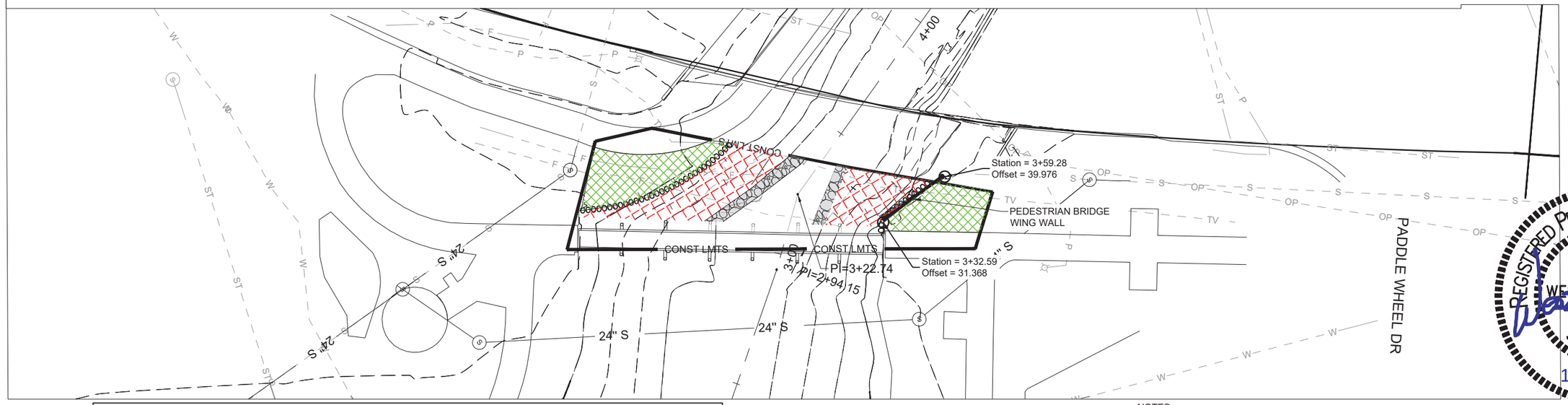
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CIP 2026-032(00)	13	17

Plotting Date: 10/14/2026 Revised Date: 10/14/2026

0 30 60 FT



CHANNEL SEDIMENT/EROSION PROTECTION



REGISTERED PROFESSIONAL ENGINEER
REG NO. 12452
WESTON JAMES BLASIUS
SOUTH DAKOTA
10/14/2026

EROSION CONTROL LEGEND

- 6" TOPSOIL, SEED, FERTILIZE & MULCH
- STRAW WATTLE
- ARTICULATED CONCRETE MATTRESS
- RIPRAP
- SILT FENCE
- CWA — CONCRETE WASHOUT AREA

QUANTITIES

48 CY - PLACING TOPSOIL
100 LF - 12" DIAMETER EROSION CONTROL WATTLE
81 TON - CLASS B RIPRAP
84 SY - TYPE B DRAINAGE FABRIC
150 SY - ARTICULATED CONCRETE MATTRESS

NOTES:
DISTURBED AREAS IN THE RIPRAP SECTION OF THE CHANNEL EMBANKMENT SLOPE TO BE COVERED WITH TYPE B DRAINAGE FABRIC IMMEDIATELY AFTER TRENCHING AND BACKFILL ACTIVITIES.

CONTRACTOR SHALL INCLUDE WITHIN THEIR BID, UNDER THE VARIOUS APPLICABLE BID ITEMS, THE RESTORATION OF AREAS DISTURBED THAT ARE NOT IDENTIFIED ON THE PLANS. THERE WILL BE NO ADDITIONAL PAYMENT FOR RESTORATION INCLUDING GRADING, SUPPLYING TOPSOIL, SEEDING, FERTILIZING AND MULCHING IN AREAS OUTSIDE OF THE LIMITS SHOWN ON THE PLANS.

CHANNEL PROTECTION & GRADING

FOR BIDDING PURPOSES ONLY

BAI JOB # 24044-00

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CIP 2026-032(00)	14	17

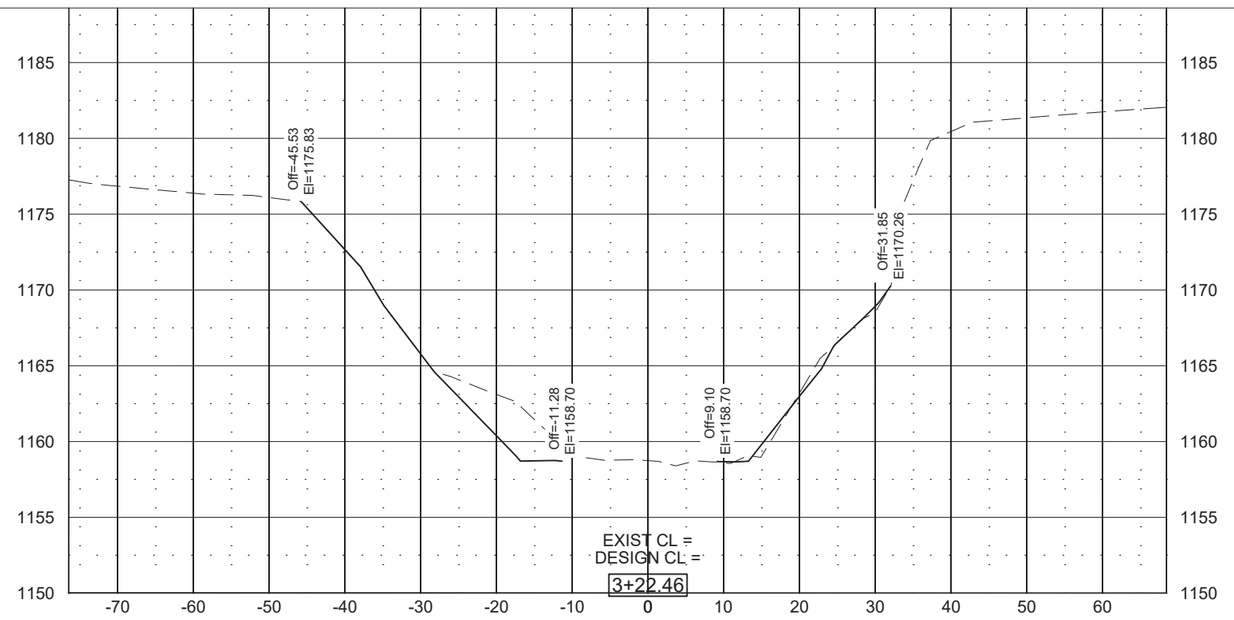
Plotting Date: 08/31/2026 Rev: ---



LEGEND

- RIPRAP
- ARTICULATED CONCRETE MATTRESS
- STRAW WATTLE

CROSS SECTION



REGISTERED PROFESSIONAL ENGINEER
REG NO.
12452
WESTON JAMES
BLASIUS
SOUTH DAKOTA
8-31-2026

EXISTING CONDITIONS & REMOVALS

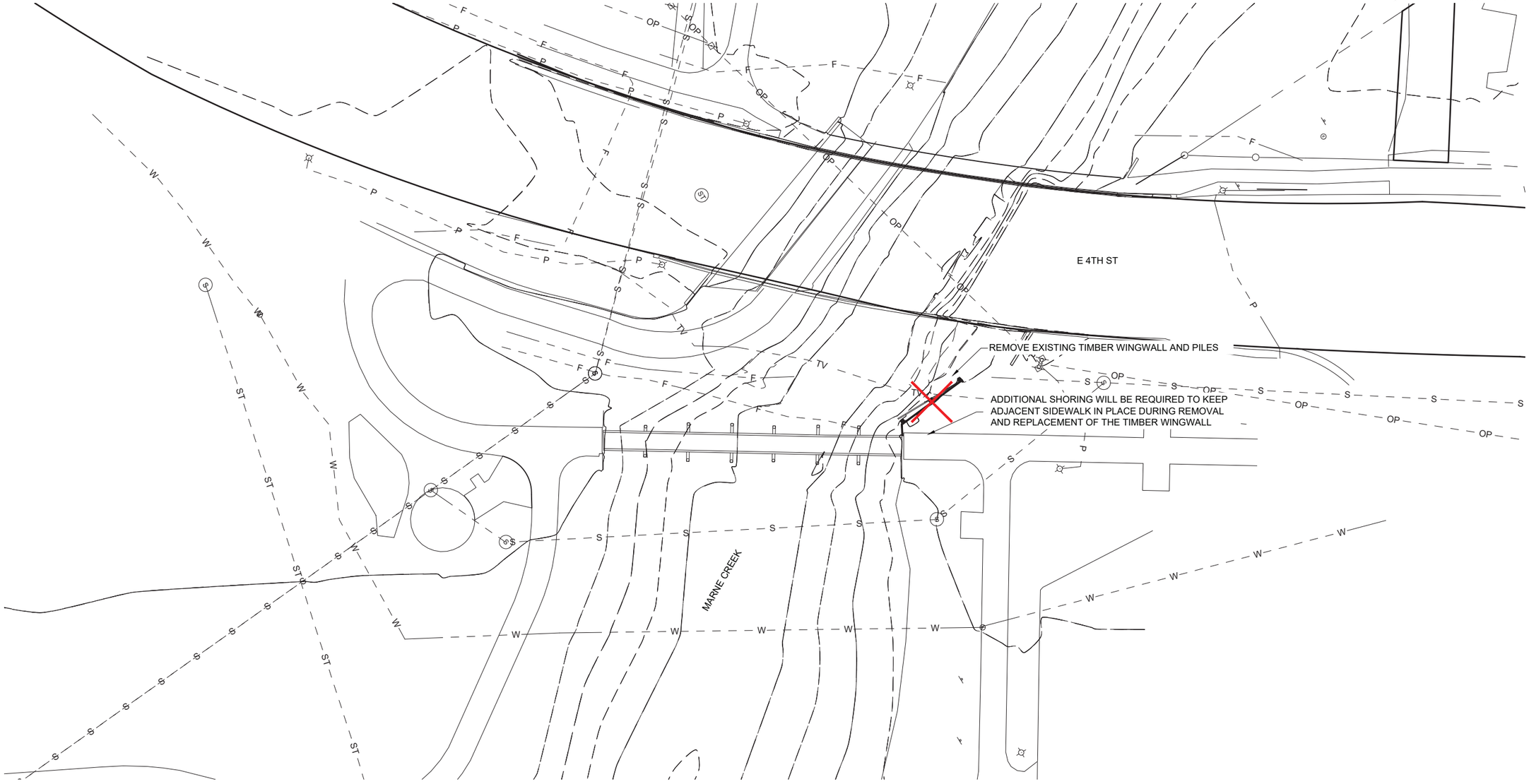
FOR BIDDING PURPOSES ONLY

BAI JOB # 24044-00

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CIP 2026-032(00)	15	17

Plotting Date: 08/31/2026

0 20 40 FT



QUANTITIES

1 EA - REMOVE EXISTING TIMBER WING WALL

REGISTERED PROFESSIONAL ENGINEER
REG NO. 12452
WESSON JAMES BLASIUS
SOUTH DAKOTA
8-31-2026

STRUCTURAL GENERAL NOTES

APPLICABLE SPECIFICATIONS AND CODES

1. CONSTRUCTION AND DESIGN MUST BE IN ACCORDANCE WITH:
   i. THE INTERNATIONAL BUILDING CODE (IBC), 2021 EDITION
   ii. THE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, MOST RECENT EDITION AT TIME OF BIDDING
   iii. THE LATEST ADDITION OF APPLICABLE SPECIFICATIONS AND THE REQUIREMENTS NOTED AS FOLLOWS

DESIGN LOADS

1. DESIGN LOADS AND LOAD APPLICATIONS ARE IN ACCORDANCE WITH IBC.

2. RISK CATEGORY II

3. WIND LOADS
   i. BASIC WIND SPEED ---------- 113 MPH
   ii. EXPOSURE CATEGORY ---------- C

4. SEISMIC LOADS
   i. IMPORTANCE FACTOR ---------- I_e = 1.0
   ii. MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS -------- S_S = 0.11
   ---------- S_1 = 0.04
   iii. SITE CLASS ---------- D (DEFAULT)
   iv. DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS ------ S_{DS} = 0.095
   ---------- S_{D1} = 0.058
   v. SEISMIC DESIGN CATEGORY ---------- A

5. SPECIAL LOADS
   i. LATERAL SOIL PRESSURE ---------- 90 PCF

6. ADDITIONAL LOADS REFERENCED ON THE DRAWINGS.

CONSTRUCTION LOADS

1. STRUCTURES HAVE BEEN DESIGNED FOR DEAD LOADS AND THE DESIGN LOADS NOTED ABOVE. CONTRACTOR MUST PROVIDE TEMPORARY BRACING, SHORING, OR OTHER SUPPLEMENTAL SUPPORT DURING CONSTRUCTION AS NECESSARY TO PROTECT THE STRUCTURES FROM EXCESSIVE CONSTRUCTION LOADS.

2. DURING ERECTION OF THE STRUCTURE, THE CONTRACTOR WILL BE RESPONSIBLE FOR TEMPORARY BRACING TO WITHSTAND ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED, INCLUDING LATERAL LOADS, STOCKPILES OF MATERIALS, AND EQUIPMENT. SUCH BRACING MUST BE LEFT IN PLACE AS LONG AS REQUIRED FOR SAFETY AND UNTIL ALL APPLICABLE WORK IS COMPLETED.

TIMBER RETAINING WALL

1. RETAINING WALL WAS DESIGNED UTILIZING DATA FROM A PREVIOUSLY SUPPLIED SOIL INVESTIGATION MADE BY SOUTH DAKOTA DEPARTMENT OF HIGHWAYS, PROJECT REPORT NUMBER FO12-3, DATED MARCH 25, 1969.
   THE REPORT WAS SOLELY USED TO DEVELOP A GENERAL SOIL PROFILE OF THE WALL LOCATION. CONSERVATIVE ASSUMPTIONS AND SOIL PRESSURES WERE UTILIZED IN THE DESIGN.

2. TREATED TIMBER PILINGS
   i. TREATED TIMBER PILINGS MATERIAL AND TREATMENT MUST CONFORM WITH SOUTH DAKOTA STANDARD SPECIFICATION FOR ROADS AND BRIDGES.
   ii. ALL TREATED TIMBER PILINGS ARE TO BE DRIVEN TO TOP OF WALL ELEVATION.
   iii. ALTERNATIVELY, PILES MUST BE DRIVEN TO A MINIMUM BEARING OF 20 TONS IF FULL DRIVEN LENGTH CANNOT BE ACHIEVED. CUT PILE FLUSH WITH TOP OF WALL ELEVATION.
   iv. PREBORING OF PILINGS WILL NOT BE REQUIRED.

3. STRUCTURAL TIMBER PLANKS
   i. MATERIAL ---------- DOUGLAS FIR
   (a) 6" x 12" PLANKS ---------- #1 STRUCTURAL GRADE
   ii. TREATMENT OF STRUCTURAL TIMBER PLANKS MUST CONFORM WITH SOUTH DAKOTA STANDARD SPECIFICATION FOR ROADS AND BRIDGES.

4. HELICAL TIE BACK ANCHORS
   i. CONTRACTOR MUST PROVIDE HELICAL TIE BACK ANCHOR DESIGN FOR CRITERIA SHOWN IN THE DRAWINGS IN ACCORDANCE WITH ICC-ES AC358.
   ii. CONTRACTOR MUST PERFORM A PROOF TEST OF THE ANCHORS PER ASTM D3689/D1143 MODIFIED. CONTRACTOR MUST EMPLOY AN INDEPENDENT TESTING AGENCY TO RECORD AND ANALYZE RESULTS.
   iii. HELICAL TIE BACK ANCHORS MUST BE HOT-DIP GALVANIZED PER ASTM A153.

5. STEEL CONNECTORS, ANCHORS, AND SPIKES REFERENCED ON DRAWINGS MUST BE HOT-DIP GALVANIZED PER ASTM A153.

6. NON-WOVEN GEOTEXTILE FABRIC PLACED BETWEEN TIMBER PLANKS AND BACKFILL MUST COMPLY WITH AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILES.

7. ALL TOPSOIL, FILL, AND OTHER UNSUITABLE MATERIAL MUST BE REMOVED. THE GENERAL CONTRACTOR MUST ENSURE ALL MATERIALS REQUIRING REMOVAL HAVE BEEN REMOVED AND BACKFILL HAS BEEN COMPACTED TO A MINIMUM OF 95% COMPACTION.

8. CONTRACTOR MUST AVOID EXCESSIVE WETTING OR DRYING OF THE EXCAVATION LIMITS DURING CONSTRUCTION.

9. BACKFILL ON WALLS WITH FILL ON BOTH SIDES MUST BE COMPACTED IN EQUAL LIFTS EACH SIDE OF WALL. WALLS BACKFILLED FROM ONE SIDE ONLY MUST HAVE ALL TEMPORARY BRACING IN PLACE PRIOR TO PLACEMENT OF BACKFILL.

10. CONTRACTOR SUBMITTALS:
    i. MATERIALS AND COMPONENTS
       (a) TIMBER PLANKS AND PILINGS
       (b) TIMBER TREATMENT PRODUCTS
       (c) HELICAL TIE BACK ANCHOR DESIGN AND PRODUCTS
       (d) CONNECTORS AND ANCHORS
       (e) NONWOVEN GEOTEXTILE
    ii. MEANS AND METHODS
       (a) WALL ASSEMBLY PLAN
    iii. QUALITY CONTROL
       (a) HELICAL ANCHOR PROOF TESTING

EXISTING CONSTRUCTION

1. DIMENSIONS, ELEVATIONS AND DETAILS OF EXISTING CONSTRUCTION HAVE BEEN OBTAINED FROM LIMITED FIELD INVESTIGATIONS AND EXISTING DOCUMENTS. THE CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS NECESSARY TO PROPERLY COORDINATE NEW AND EXISTING CONSTRUCTION AND PRIOR TO FABRICATION AND CONSTRUCTION. NOTIFY THE ENGINEER OF ALL VARIATIONS IN THE DETAILS, DIMENSIONS, AND ELEVATIONS OF EXISTING CONSTRUCTION WITH THAT SHOWN ON THE DRAWINGS.

2. CONTRACTOR MUST PROTECT EXISTING MATERIALS AND STRUCTURES FROM DAMAGE DURING CONSTRUCTION.

3. CONTRACTOR MUST FURNISH AND INSTALL TEMPORARY SHORING OR BRACING AS NECESSARY TO PROVIDE SUPPORT AND STABILITY FOR EXISTING STRUCTURES DURING DEMOLITION AND CONSTRUCTION.

STRUCTURAL MODIFICATIONS

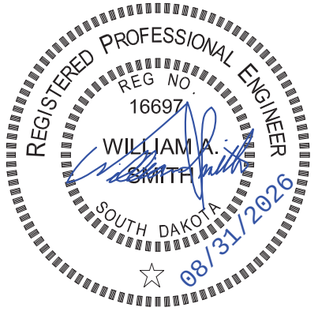
1. CONTRACTOR MUST NOT FIELD MODIFY STRUCTURAL ELEMENTS IN A MANNER THAT COULD CHANGE THEIR LOAD CARRYING CAPACITY OR LOAD DEFLECTION RATIO.

STATEMENT OF SPECIAL INSPECTIONS

SPECIAL INSPECTIONS AND STRUCTURAL TESTING WILL BE PROVIDED BY AN INDEPENDENT AGENCY EMPLOYED BY THE OWNER FOR THE ITEMS IDENTIFIED IN THIS SECTION AND IN OTHER AREAS OF THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS, UNLESS WAIVED BY THE BUILDING OFFICIAL (SEE IBC CHAPTER 17).

REQUIRED SPECIAL INSPECTIONS:

1. SPECIAL INSPECTIONS AND TESTS ARE NOT REQUIRED FOR CONSTRUCTION OF A MINOR NATURE OR AS WARRANTED BY CONDITIONS IN THE JURISDICTION AS APPROVED BY THE BUILDING OFFICIAL (IBC 1704.2).
2. CONTINUOUS SPECIAL INSPECTION OF WORK PERFORMED AT FABRICATORS (IBC 1704.2.5)
   i. IF FABRICATOR IS APPROVED, ON-SITE INSPECTION MAY NOT BE REQUIRED BY THE BUILDING OFFICIAL.
3. SPECIAL INSPECTION OF STEEL CONSTRUCTION PER IBC 1705.2
4. SPECIAL INSPECTION OF CONCRETE CONSTRUCTION PER IBC TABLE 1705.3
5. SPECIAL INSPECTION OF MASONRY CONSTRUCTION PER IBC TABLE 1705.4
6. SPECIAL INSPECTION OF WOOD CONSTRUCTION PER IBC TABLE 1705.5
7. SPECIAL INSPECTION OF SOILS PER IBC TABLE 1705.6
8. STRUCTURAL OBSERVATION BY THE REGISTERED PROFESSIONAL ENGINEER WILL BE REQUIRED UNLESS WAIVED BY THE BUILDING OFFICIAL (SEE IBC CHAPTER 17).

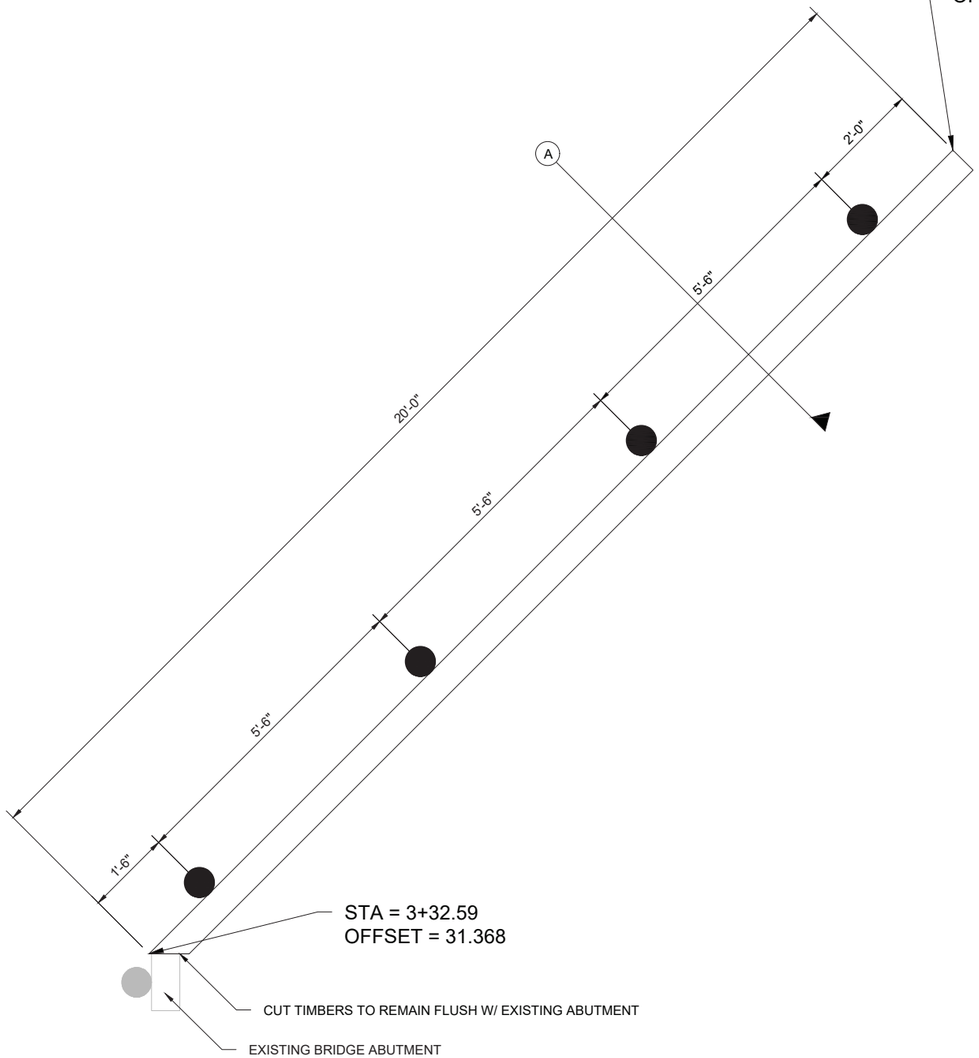


BAI JOB # 24044-00

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	CIP 2026-032(00)	17	17

Plotting Date: 10/14/2026 Revised Date: 10/14/2026

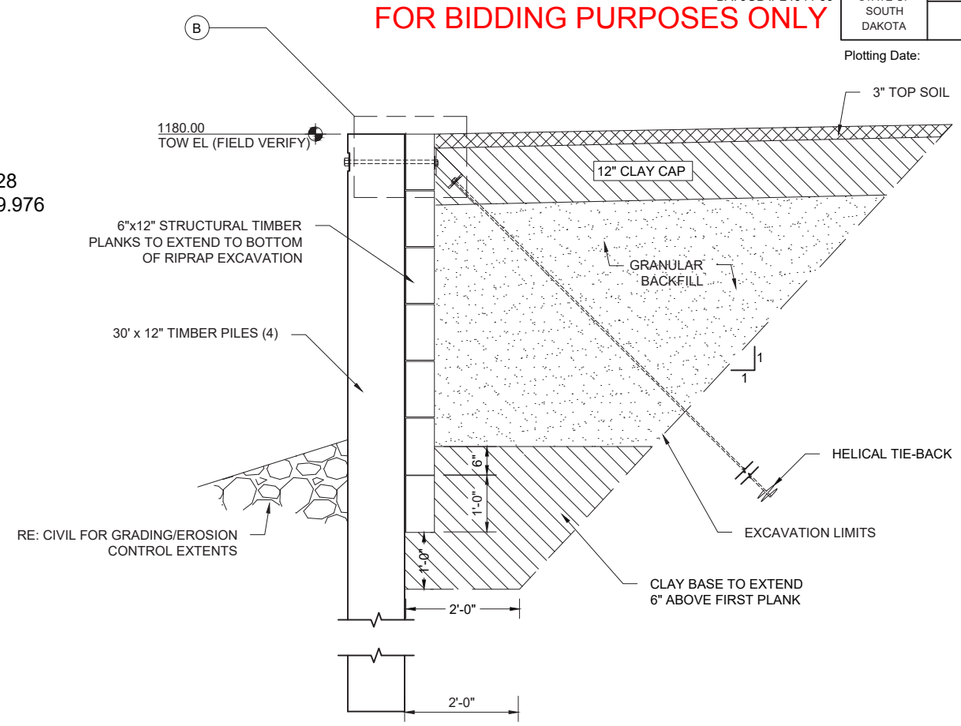


NOTES:

1. WALL TO MATCH ORIGINAL ALIGNMENT OF EXISTING WALL.
2. CONTRACTOR MUST FIELD VERIFY EXISTING WALL LENGTH AND SCALE DIMENSIONS ACCORDINGLY.
3. GEOTEXTILE FABRIC TO OVERLAP A MINIMUM OF 12" ONTO THE EXISTING BRIDGE ABUTMENT PRIOR TO BACKFILLING.

1 / S-4 TIMBER PILE RETAINING WALL

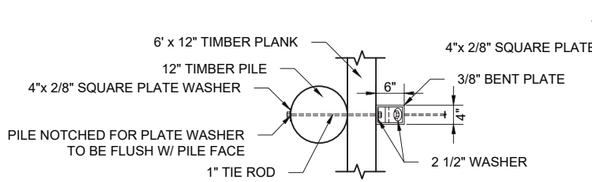
SCALE: 3/8" = 1'-0"



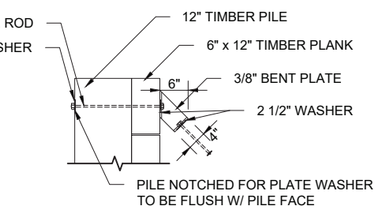
NOTES:

1. INTERCONNECT PLANKS W/ ASTM F1667 TYPE III - 3/8" DIA X 16" SPIRAL SHANK TIMBER SPIKES AT 42" O.C. PRE-DRILL 9/32" PILOT HOLES THROUGH PLANKS TO PREVENT SPLITTING. EMBED SPIKE THROUGH UPPER PLANK AND A MINIMUM OF 4 1/2" INTO THE BOTTOM PLANK. COUNTERSINK PILOT HOLES SO THAT SPIKE HEADS REMAIN FLUSH W/ SURFACE OF PLANK.
2. CONNECT PLANKS TO EACH TIMBER W/ (2) ASTM F1667 TYPE III - 1/2" DIA X 12" DOME HEAD TIMBER SPIKES SPACED 6" O.C. PRE-DRILL 3/8" PILOT HOLES THROUGH PLANKS TO PREVENT SPLITTING. EMBED SPIKE THROUGH PLANK AND A MINIMUM OF 6" INTO THE PILE.
3. ENSURE SURFACES BETWEEN INTER-PLANK CONNECTIONS AND PLANK-PILE CONNECTIONS ARE FLUSH WITH NO GAPS.
4. CONTRACTOR MUST PROVIDE HELICAL TIE-BACK DESIGN. EACH ANCHOR REQUIRED TO RESIST A TENSION FORCE OF 15 KIPS.
5. NON-WOVEN GEOTEXTILE FABRIC MUST BE INSTALLED BETWEEN TIMBER PLANKS AND BACKFILL

SECTION A



TOP VIEW



SIDE VIEW

NOTES:

1. CONTRACTOR MUST COORDINATE ORIENTATION OF BENT PLATE BETWEEN HELICAL TIE-BACK DESIGNER & STEEL FABRICATOR. FIELD TOLERANCES & DISCREPANCIES MUST BE ACCOUNTED FOR.
2. 3/8" FABRICATED BENT PLATE MUST BE ASTM A36 STEEL, SHOP WELDED INTO A CLOSED SHAPE, AND HOT-DIP GALVANIZED.
3. ALL CONNECTIOIN COMPONENTS TO BE ASTM A325 HIGH-STRENGTH STEEL.

