

July 23, 2026

ADDENDUM NO. 5

**RE: Item #1, August 5, 2026 Letting - EM-P 0044(207)290, PCN 05X0, Charles Mix, Gregory
County - Structure (5770'-6" Steel Girder) & Approach Grading**

TO WHOM IT MAY CONCERN:

The following addenda to the plans shall be inserted and made a part of your proposal for the referenced project.

SPECIAL PROVISIONS: Please remove the Index of Special Provisions and replace with the attached Index of Special Provisions revised 7/20/26.

Please remove the "Special Provision for IRI Bridge Smoothness", dated 8/31/21 and replace with the "Special Provision for IRI Bridge Smoothness", dated 7/20/26.

Please add the "Special Provision for Liability Insurance," dated 7/22/26 before the "Special Provision for Price Schedule for Miscellaneous Items," dated 2/18/26.

SDEBS BID PROPOSAL: NO CHANGE

PLANS: Please destroy sheets E3-E7, E11, E41 & E73 and replace with the enclosed sheets, dated 7/16/26 & 7/22/26. Sheet E27A was added.

Sheets E3-E7: Elevation View was revised.

Sheet E11: BRIDGE DECK AND APPROACH PAVEMENT SMOOTHNESS note was added and note spacing was adjusted.

Sheet E27A: Information Only Quantity for Class A45 Concrete, Drilled Shaft were revised.

Sheet E41: SLIPFORMING METHOD OF CONSTRUCTION notes were added.

Sheet E73: Pedestal dimensions on the SIDE ELEVATION- EXP. BENTS WITHOUT EXP. JOINTS
detail were revised.

Sincerely,

Sam Weisgram
Engineering Supervisor

SW/gp

CC: Travis Dressen, Mitchell Region Engineer
Jay Peppel, Mitchell Area Engineer

REV 7/20/26

INDEX OF SPECIAL PROVISIONS

PROJECT NUMBER(S): EM-P 0044(207)290 PCN: 05X0

TYPE OF WORK: STRUCTURE (5770'-6" STEEL GIRDER) & APPROACH GRADING

COUNTIES: CHARLES MIX, GREGORY

The following clauses have been prepared subsequent to the Standard Specifications for Roads and Bridges and refer only to the above described improvement, for which the following Proposal is made.

The Contractor's attention is directed to the need for securing from the Department of Environment & Natural Resources, Foss Building, Pierre, South Dakota, permission to remove water from public sources (lakes, rivers, streams, etc.). The Contractor should make his request as early as possible after receiving his contract, and insofar as possible at least 30 days prior to the date that the water is to be used.

Bobbie Country, Lacey Johnson is the official in charge of the Winner Career Center for Charles Mix, Gregory Counties.

THE FOLLOWING ITEMS ARE INCLUDED IN THIS PROPOSAL FORM:

Special Provision for Contract Time, dated 7/9/26.

Special Provision Regarding Combination Bids, dated 6/1/26.

Special Provision for On-The-Job Training Program, dated 3/10/16.

Special Provision Regarding Section 404 Permit, dated 6/4/26.

Fact Sheet #14

Special Provision for Section 408 Request Number 408-2023-0016, dated 12/20/24.

Special Provision for United States Coast Guard Bridge Permit, dated 4/3/25.

Special Provision for IRI Bridge Smoothness, dated 7/20/26.

Special Provision for Disc Bearing Assembly, dated 9/21/23.

Special Provision for Drilled Shaft Construction, dated 7/9/26.

Special Provision for Modular Expansion Joint Assembly, dated 9/21/23.

Special Provision for Stainless Reinforcing Steel, dated 8/25/25.

Special Provision for Concrete Penetrating Sealer, dated 7/30/24.

Special Provision for Mass Concrete – Protection of Mass Concrete by Controlling Heat of Hydration (Incidental), dated 5/4/26.

Special Provision for Contractor Staking with Machine Control Grading Option, dated 8/25/25.

List of Utilities.

Special Provision for Liability Insurance, dated 7/22/26.

Special Provision for Price Schedule for Miscellaneous Items, dated 2/18/26.

Special Provision for American Security Drone Act, dated 12/15/25.

Special Provision for Steel Beam Guardrail AASHTO M 180 Designation, dated 10/1/25.

Special Provision for Acknowledgment and Certification Regarding Article 3, Section 12 of the South Dakota Constitution, dated 8/24/23.

Fuel Adjustment Affidavit, DOT form 208 dated 11/25.

Standard Title VI Assurance, dated 3/1/16.

Special Provision For EEO Affirmative Action Requirements on Federal and Federal-Aid Construction Contracts, dated 2/5/24.

Special Provision For Required Contract Provisions Federal-Aid Construction Contracts, Form FHWA 1273 (Rev. October 23, 2023), dated 10/18/23.

Required Contract Provisions Federal-Aid Construction Contracts, Form FHWA 1273 (Rev. 10/23/23).

Special Provision Regarding Minimum Wage on Federal-Aid Projects, dated 10/24/19.

Wage and Hour Division US Department of Labor Washington DC. - US Dept. of Labor Decision

Number SD20260001, dated 1/30/26.

Special Provision Regarding Stormwater Discharges to Waters of the State, dated 11/5/25.

General Permit Authorizing Stormwater Discharges Associated with Construction Activities, dated 11/1/23.

<https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/stormwater/StormWaterConstruction.aspx>

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION
FOR
IRI BRIDGE SMOOTHNESS**

**PROJECT EM-P 0044(207)290, PCN 05X0
CHARLES MIX & GREGORY COUNTY**

JULY 20, 2026

At locations designated in the plans, the Department will determine the smoothness of finished surfaces of bridge decks and approach pavement by International Roughness Index (IRI) profile testing in accordance with the following requirements.

The Department will use the FHWA Profile Viewing and Analysis (ProVAL) software to determine IRI and Areas of Localized Roughness (ALR).

A. Exclusions: Expansion joints and areas within approximately 1 foot of expansion joints, as allowed by ProVAL, are excluded from IRI acceptance profile testing under the requirement of this special provision.

At locations designated in the plans to be profiled but excluded from IRI acceptance profile testing, the Engineer will determine the pavement smoothness according to the 10-foot straightedge test requirements in Section 380.3 O.1 of the specifications.

B. Profiler: The Department will furnish and operate a profiler meeting ASTM E-950 Class 1 specifications. The Department will measure and analyze the surface smoothness of the final roadway surface profile using the IRI to the nearest 0.1 inch/mile.

The profiler will have the long and short wavelength filters set to 0 feet.

C. IRI Acceptance Profile Testing: The Department will evaluate the surface smoothness by averaging the IRI on a bridge lane lot basis. A bridge lane lot is defined as a single paved lane, 12 feet wide, and is the entire length of the bridge deck plus the approach slab and approach pavement within 100 feet of each bridge end. the Department will apply the price adjustment (incentive/disincentive in Table 2) to the actual total length of the lot.

The Department will collect the profile data after the Contractor completes all work required for profiling, once all concrete has reached 4,000 psi, prior to the Contractor opening the roadway to traffic.

When the use of a profiler is specified, the Engineer may also check the final surface 10-foot straightedge, according to Section 380.3 O.1 in locations determined by the Engineer.

Prior to the anticipated day of IRI acceptance profile testing described below, the Contractor will perform all work required prior to the Department performing the IRI acceptance profile testing. The Contractor will be allowed to perform grinding prior to the Department performing the IRI acceptance profile testing. Grinding prior to the IRI acceptance profile testing must be accomplished in accordance with the corrective grinding requirements of this special provision. The Contractor may continue sweeping the roadway any time, as needed, prior to profile testing.

1. Scheduling:

The following scheduling requirements will apply to the initial IRI acceptance profile testing and for any re-profile testing following corrective grinding.

For scheduling purposes, the Contractor is responsible to contact the Materials and Surfacing Office at least 7 days prior to the anticipated completion of contract work requiring profile testing or corrective grinding work. In addition, the Contractor will contact the Materials and Surfacing office at least 2 business days prior to the anticipated day of profile testing or anticipated day of corrective grinding work to schedule the agreed upon anticipated day profile testing.

The Department will perform the profile testing within 2 business days of the anticipated day of profile testing or corrective grinding work provided all the following conditions are met:

- The Contractor has completed all work to be profile tested;
- The Contractor has cleaned the surface of debris and other obstructions and has completed necessary sweeping;
- The PCC pavement, approach slab, and bridge deck has reached 4,000 psi;
- The Contractor has placed necessary traffic control devices;
- The ambient air temperature is at least 40°F but not above 90°F; and,
- Rain and other weather conditions determined inclement by the Engineer are not present.

2. Operation:

The Department will measure the profile in the direction of traffic in each wheel path of each lane (one trace approximately 31 inches from centerline of the roadway and the other trace approximately 97 inches from centerline).

The Department will provide the Contractor profile testing results within 2 business days of completing the profile testing.

- a. **Evaluation:** The Department will evaluate the data collected and the data will remain the property of the Department. The Department will determine the average IRI for each bridge lot by averaging the IRI values from the two wheel paths for each pass (lane) to the nearest 0.1 inch/mile.
- b. **Areas of Localized Roughness (ALR):** The Department will identify and mark ALR that require corrective action. The Department will use the ProVAL software's Smoothness Assurance Analysis to calculate the Mean Roughness Index (MRI) with a continuous short interval of 25 feet and a 250 mm filter.

The Engineer will assess ALR in accordance with Table 1 "ALR Monetary Deductions and Corrective Work Requirements." The Contractor will grind ALR that require corrective action to a MRI of less than 250 inches per mile in 25 feet.

Table 1
ALR Monetary Deductions and Corrective Grinding
Requirements

25 ft. Continuous MRI (Inches per mile)	Corrective Grinding or Monetary Deduction
250.0 or less	Acceptable
250.1 or greater	Corrective Grinding. The Engineer may limit the extent of corrective grinding allowed.

3. Corrective Grinding:

The Contractor will complete required corrective grinding in ALR within 21 calendar days of notification from the Department of which ALR require corrective grinding. If the project is constructed in phases, the Department may allow the Contractor to complete corrective grinding with the corrective grinding of a subsequent phase.

The Contractor will accomplish corrective grinding with specially prepared circular diamond blades mounted on a horizontal shaft. The Contractor will day light corrective grinding to the outside edge of the pavement. The Contractor will join grind sections if the distance between grind sections is less than 80 feet.

The Contractor will establish a positive means for removing grinding residue. Solid residue will be removed from the pavement surfaces before being blown by traffic action or wind. The Contractor will conduct this work to control and minimize airborne dust and similar debris that may become a hazard to motor vehicle operation or a nuisance to property owners. Residue from wet grinding will not be permitted to flow across traffic lanes being used by public traffic or into gutter or

drainage facilities. Residue, whether in solid or slurry form, will be disposed of in a manner that will prevent it from reaching any waterway in a concentrated state.

The Contractor will repair and replace joint sealant damaged by corrective grinding as directed by the Engineer and at no additional cost to the Department. The Contractor will not leave ground areas smooth or polished. The Contractor will ensure ground areas have a uniform texture comparable to the surrounding unground concrete.

Where the corrective grinding extends more than 25 feet measured longitudinally along the centerline of the road, limestone is used as the coarse aggregate in the pavement, and the current ADT shown on the plans is greater than 1500; the Contractor will reestablish the tining with a mechanical tining machine.

Following the completion of corrective grinding, the Department will retest ALR and inform the Contractor where additional corrective grinding is required.

The Contractor will flush seal corrective grinding areas on asphalt pavement surfaces at no additional cost to the Department.

- D. Incentive/Disincentive Payment:** The Department will base incentive and disincentive payments on the average IRI determined for each bridge lane lot and will make incentive and disincentive payments based on Table 2:

Table 2 - IRI Pay Scale

IRI	Price Adjustment
Inches per mile	Dollars per Foot of Each Bridge Lane Lot
80.0 or less	\$20
80.1 to 100.0	\$10
100.1 to 130.0	\$0
130.1 to 170.0	-\$10
170.1 or greater	-\$20

The Incentive and disincentive payment schedule is a fixed dollar amount per foot. The Department will determine the average IRI and total length of each bridge lane lot and apply the price adjustment listed in Table 2 to the entire length of the bridge lane lot.

Once the Department performs IRI acceptance profile testing, the Department will not adjust the incentive or disincentive payment for lots containing ALR that require corrective grinding, regardless of the average IRI after profile testing following corrective grinding.

- E. Miscellaneous:** All work required of the Contractor to prepare the roadway for testing including, but not limited to; corrective grinding, containing and removing grinding

residue, sweeping, cleaning, preparing the surface for profiling or reprofiling, moving equipment, and rescheduling of work will not be measured and will be incidental to the contract.

The Contractor will replace all permanent pavement markings damaged, destroyed, or removed during corrective grinding at no additional cost to the Department.

The Department will measure and pay for all traffic control required for conducting the smoothness testing in accordance with Section 634 as part of the overall project.

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**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION
FOR
LIABILITY INSURANCE**

JULY 22, 2026

Section 7.14 – Delete and replace with the following:

7.14 LIABILITY INSURANCE - Provide general liability and automobile insurance policies and provide an occurrence-based, per project aggregate liability insurance policy that covers all ongoing and completed operations under the contract, whether performed by the Contractor or by subcontractors. All insurance policies must be issued by a corporation qualified and authorized to write the policies in the State of South Dakota. These insurance policies will include additional insured endorsements in favor of the State of South Dakota, the Department, and the Department's officers and employees on a primary and non-contributory basis. The endorsements must state:

- liability coverage is limited to claims not barred by sovereign immunity;
- subrogation is waived against the State of South Dakota, the Department, and the Department's officers and employees; and
- the insurance carrier will not deny coverage or deny any of the rights and benefits accruing to the State of South Dakota, the Department and the Department's officers and employees as additional insureds under the policy for reasons of sovereign immunity unless and until a court of competent jurisdiction has ruled in favor of the defense(s) of sovereign immunity asserted.

Provide worker's compensation insurance that meets the requirements of South Dakota's workers' compensation laws.

Secure and maintain insurance in full force and effect before starting the work and until completion of all work required and Final Acceptance is issued by the Department. Before starting the work, furnish certificates of insurance certifying that the policies will not be changed or cancelled until 30 calendar days' written notice has been given to the Department. The certificates of insurance will provide evidence that the Contractor carries sufficient liability insurance to protect the public from injuries sustained by reason of pursuing the work. The Department reserves the right to obtain complete, certified copies of all required insurance documents, policies, or endorsements at any time.

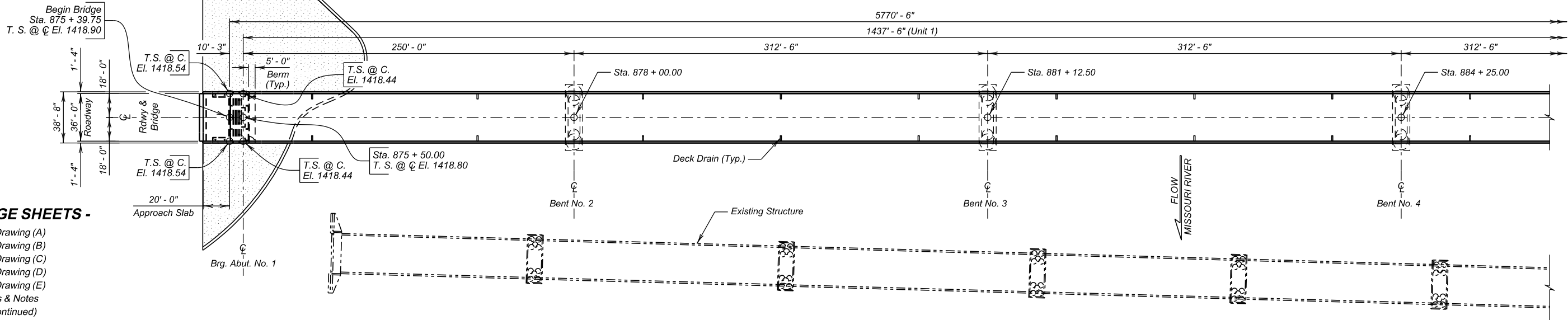
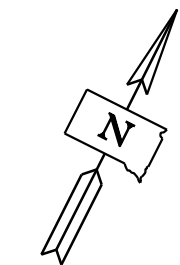
Failure to maintain the insurance as required constitutes a material breach of contract. The Department may, after giving 5 business days' notice to the Contractor to correct the breach, immediately terminate the contract in accordance with Section 8.10 or may procure or renew such insurance and pay all premiums. The Department may demand repayment of premium costs by the Contractor or may offset the premium costs against funds due the Contractor from the Department.

Any right of the State of South Dakota, the Department, and the Department's officers and employees to receive indemnification and insurance will not give rise to a duty on the part of the State to exercise its rights or status for the benefit of the State or any other person or entity.

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The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0044(207)290	E3	E86

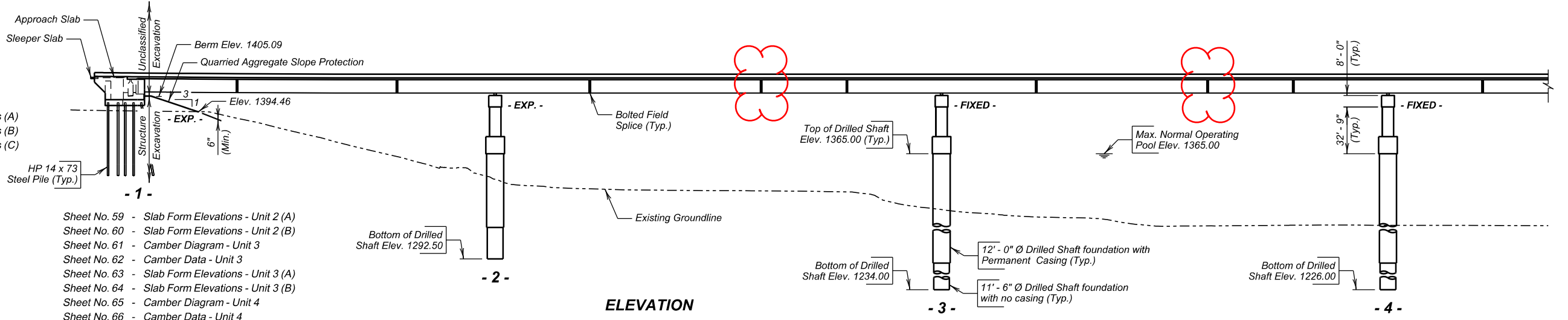


PLAN

NOTES: T.S. @ C. El. = Top of Slab at Centerline Elevation = 1418.00 (Typ. All Bents)
T.S. @ C. El. = Top of Slab at Curb Elevation = 1417.64 (Typ. All Bents)
See Superstructure Details for Deck Drain spacing.

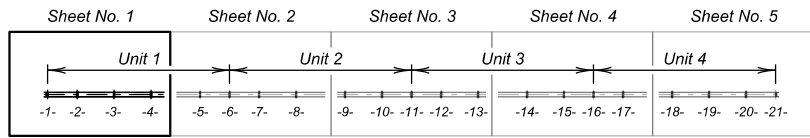
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- Sheet No. 2 - General Drawing (B)
- Sheet No. 3 - General Drawing (C)
- Sheet No. 4 - General Drawing (D)
- Sheet No. 5 - General Drawing (E)
- Sheet No. 6 - Quantities & Notes
- Sheet No. 7 - Notes (Continued)
- Sheet No. 8 - Notes (Continued)
- Sheet No. 9 - Notes (Continued)
- Sheet No. 10 - Subsurface & Foundation Layout (A)
- Sheet No. 11 - Subsurface & Foundation Layout (B)
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ELEVATION

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- Sheet No. 83 - Details of Standard Plate No.'s 460.05 & 510.40
- Sheet No. 84 - Details of Standard Plate No.'s 620.19 & 630.92



LAYOUT

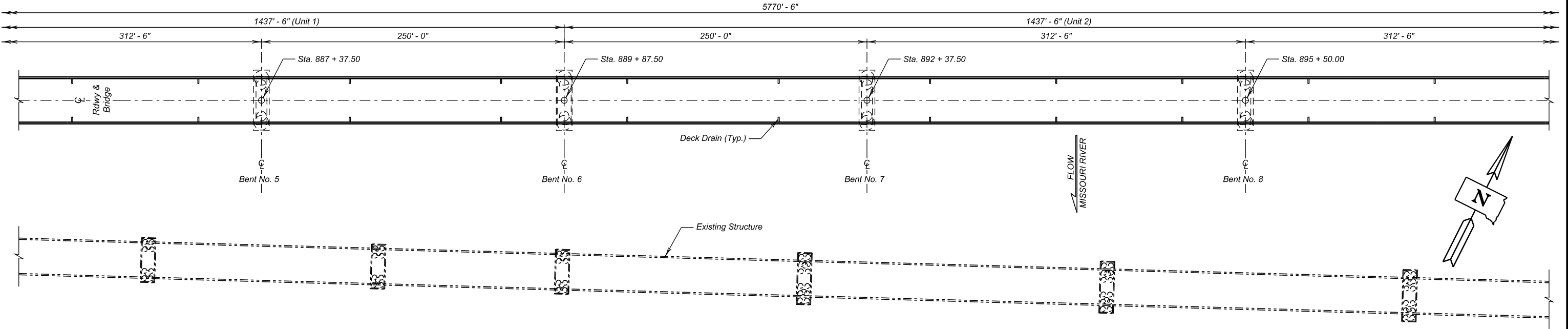


GENERAL DRAWING (A)
FOR
5770' - 6" CONT. COMP. GIRDER BRIDGE
36' - 0" ROADWAY 0° SKEW
OVER MISSOURI RIVER SEC. 16/20/21-T99N-R70W
(LAKE FRANCIS CASE) P 0044(207)290
STA. 875 + 39.75 TO STA. 933 + 10.25 HL-93
STR. NO. 12-089-076
PCN 05X0 GREGORY & CHARLES MIX COUNTIES
S. D. DEPT. OF TRANSPORTATION
DECEMBER 2023 1 OF 84

DESIGNED BY KJB	CK. DES. BY JL	DRAFTED BY EM	BRIDGE ENGINEER
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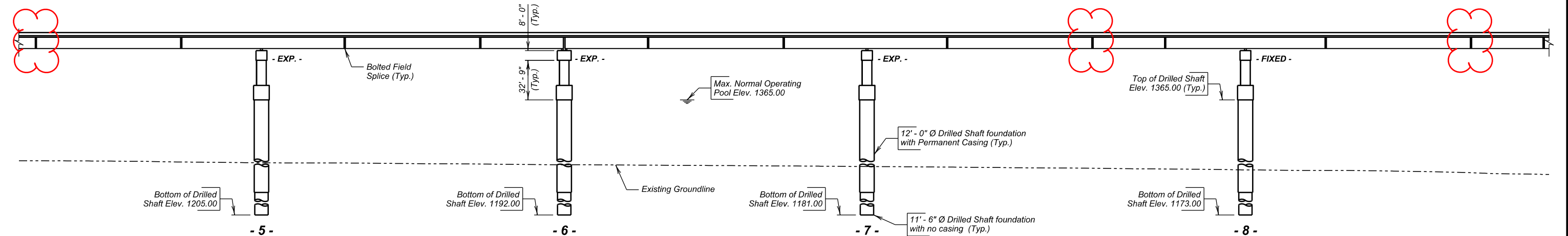
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STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0044(207)290	E4	E86

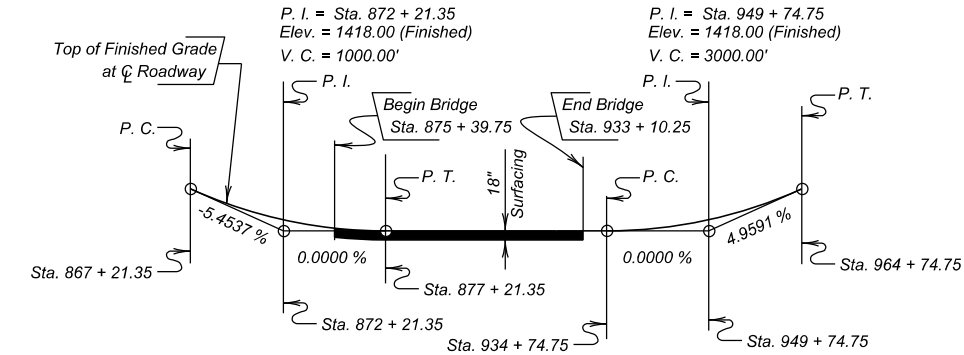


PLAN

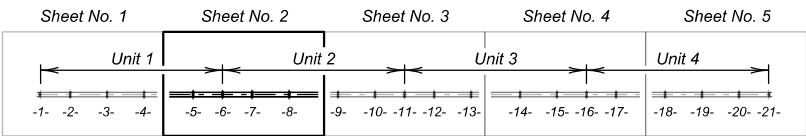
NOTES: T.S. @ C. El. = Top of Slab at Centerline Elevation = 1418.00 (Typ. All Bents)
T.S. @ C. El. = Top of Slab at Curb Elevation = 1417.64 (Typ. All Bents)
See Superstructure Details for Deck Drain spacing.



ELEVATION



VERTICAL CURVE DATA



LAYOUT



PLANS BY: HRGreen

GENERAL DRAWING (B)

FOR

5770' - 6" CONT. COMP. GIRDER BRIDGE

36' - 0" ROADWAY 0° SKEW
OVER MISSOURI RIVER SEC. 16/20/21-T99N-R70W
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DECEMBER 2023

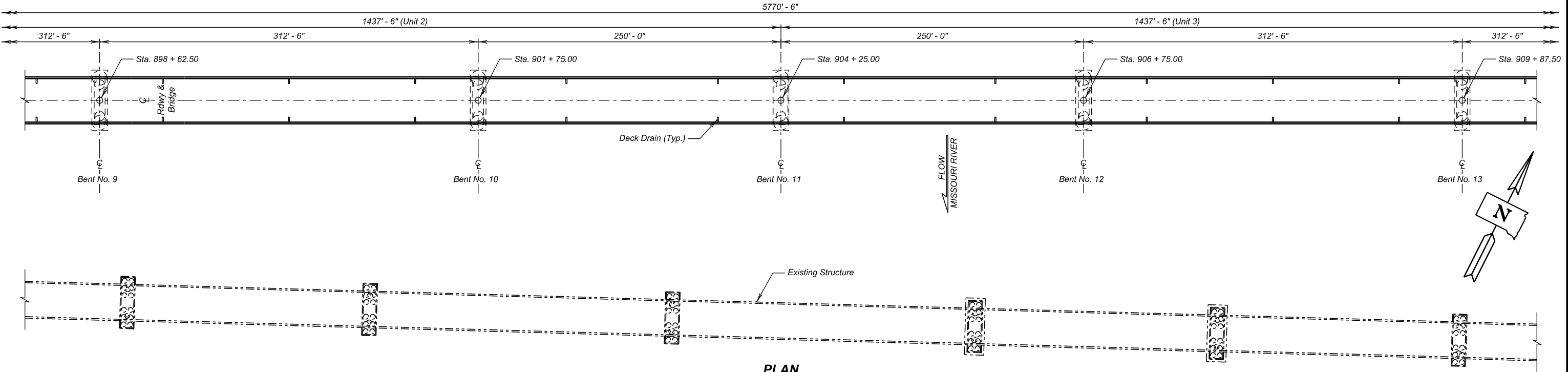
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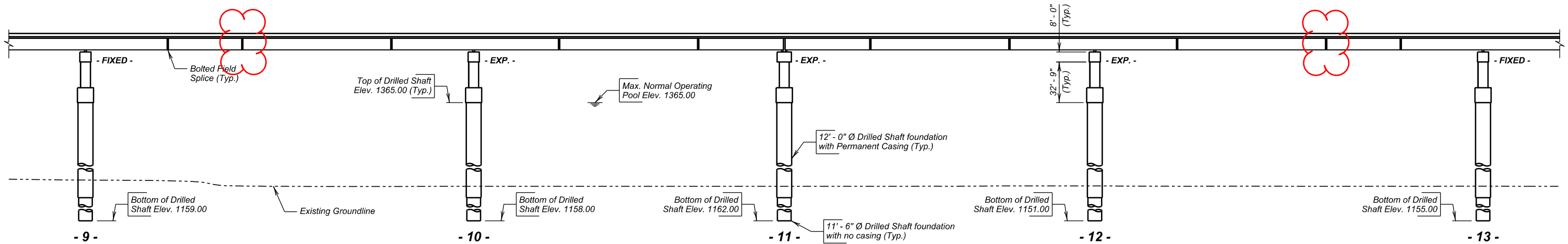
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STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
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PLAN
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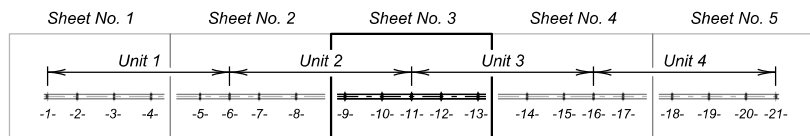


ELEVATION

HYDRAULIC DATA

Q_d	145,700 cfs
A_d	343,166 sq. ft.
V_d	0.42 fps
Q_F	145,700 cfs
Q_{OT}	$> Q_{500}$
V_{max}	0.42 fps

Q_d = Design discharge for the proposed bridge based on 100 year frequency. El. 1375.06.
 Q_{OT} = Overtopping discharge and frequency $> Q_{500}$ year recurrence interval. El. 1418.0. Location: Sta. 933 + 07.08.
 Q_F = Designated peak discharge for the basin approaching proposed project based on 100 year frequency.
 V_{max} = Maximum computed outlet velocity for the proposed bridge, based on a 100 year frequency.



LAYOUT



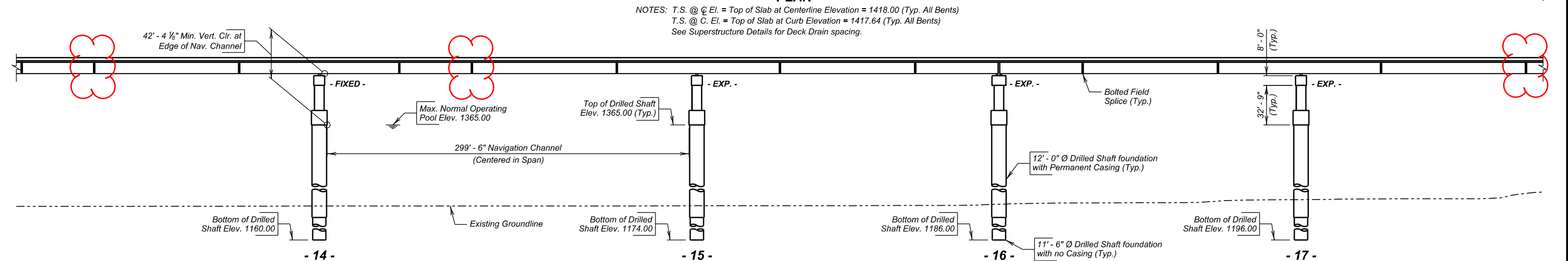
PLANS BY: HRGreen

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STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0044(207)290	E6	E86



GENERAL DRAWING (D)

FOR

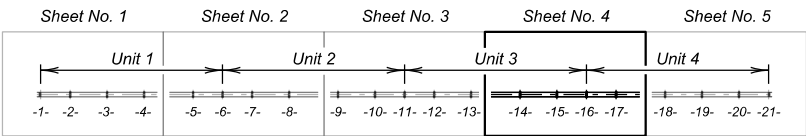
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PCN 05X0 GREGORY & CHARLES MIX COUNTIES

S. D. DEPT. OF TRANSPORTATION

DECEMBER 2023

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LAYOUT

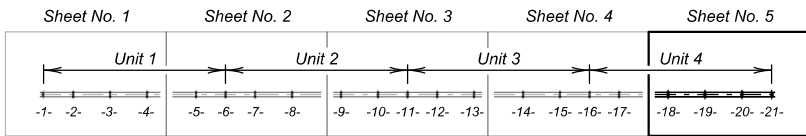
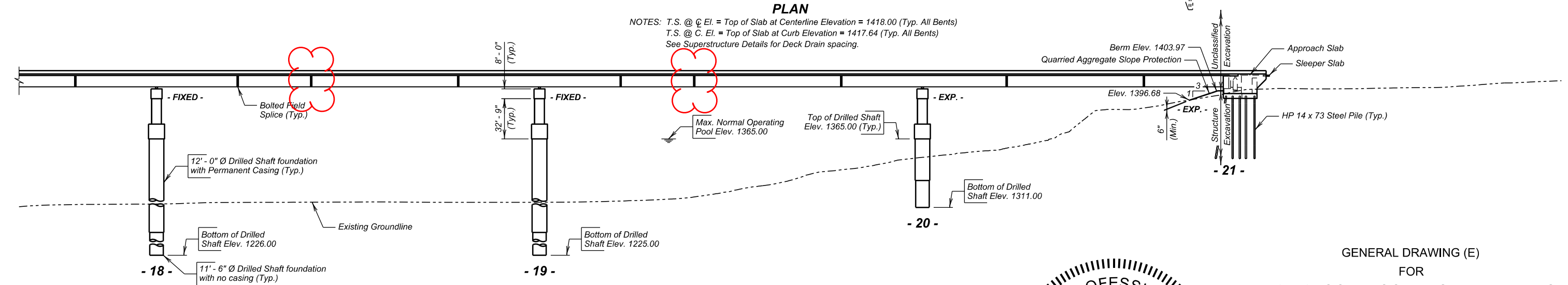
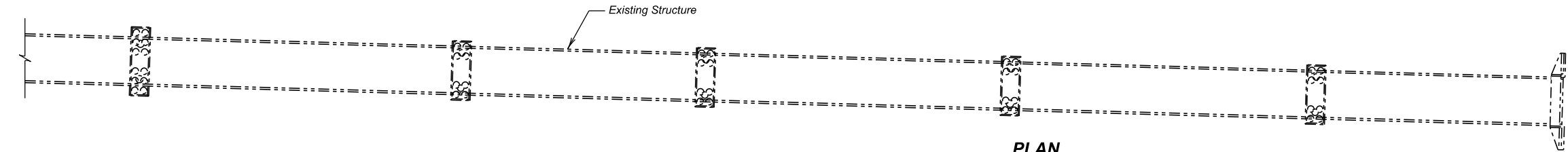
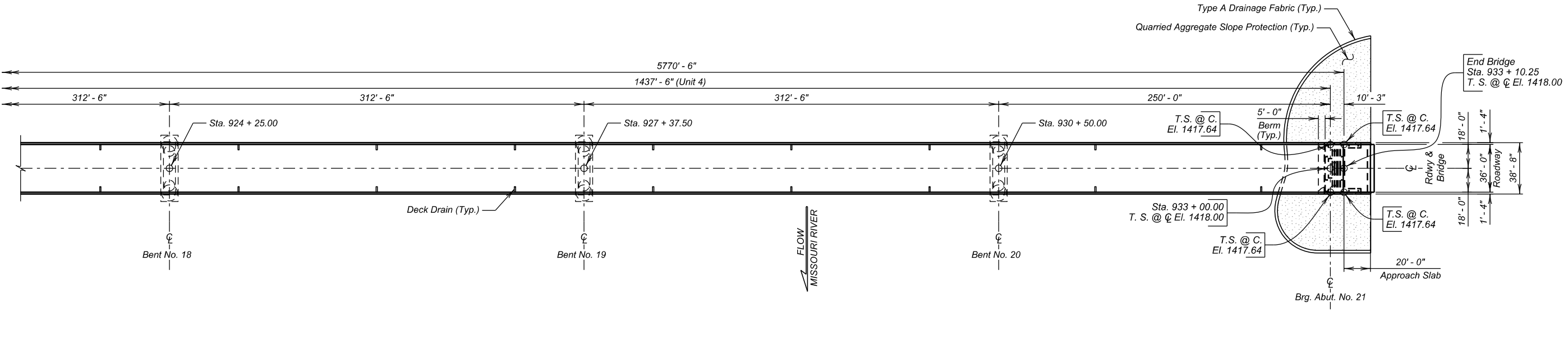


-X071-

DESIGNED BY KJB	CK. DES. BY JL	DRAFTED BY EM	
			BRIDGE ENGINEER

The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).

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GENERAL DRAWING (E)
FOR
5770' - 6" CONT. COMP. GIRDER BRIDGE
36' - 0" ROADWAY 0° SKEW
OVER MISSOURI RIVER SEC. 16/20/21-T99N-R70W
(LAKE FRANCIS CASE) P 0044(207)290
STA. 875 + 39.75 TO STA. 933 + 10.25 HL-93
STR. NO. 12-089-076
PCN 05X0 GREGORY & CHARLES MIX COUNTIES
S. D. DEPT. OF TRANSPORTATION
DECEMBER 2023

DESIGNED BY KJB	CK. DES. BY JL	DRAFTED BY EM	BRIDGE ENGINEER
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SHOP PLANS

Shop plans will be required as specified by the Construction Specifications.

The fabricator will submit shop plans in accordance with the Construction Specifications. Send shop plan submittals to HR Green, Inc., 431 N. Philips Avenue, Sioux Falls, SD 57104 (kbrehm@hrgreen.com). After review, corrections (if necessary), and approval by HR Green, Inc., the Office of Bridge Design will review the submittals, authorize fabrication, arrange for fabrication inspection, and distribute the shop drawings.

SHEAR STUD CONNECTOR

- 1. Prior to the welding of the studs to the girders, the top surface of the girders that are to have studs welded on will be clean of all dirt, rust, and any other foreign matter.
- 2. The shear connector that will be attached to the girder will be 7/8-inch diameter x 5 inches long and will conform to ASTM 108, Gr. 1015, 1018, or 1020. The connector will meet the following minimum mechanical property requirements for Type B studs,

Tensile	60 ksi
Yield Strength	60 ksi
Elongation	20%
Reduction of Area	50%

EXPANSION DEVICES

See Special Provision for Modular Expansion Joint Assembly.

APPROACH SLABS

- 1. The portion of the sleeper slab below the construction joint may be precast. If the bottom portion of the sleeper slab is precast, the Contractor will submit proposed lifting and setting plans to the Bridge Construction Engineer for approval. In addition, if reinforcing or other details differ from those shown in the plans, the Contractor will submit proposed alternate details for approval.
- 2. The use of an approved finishing machine will be required during placement of Class A45 Concrete for the approach slabs. Concrete placement in front of the machine will be kept parallel to the screed.
- 3. Concrete Approach Sleeper Slab for Bridge, whether cast-in-place or precast, will be paid for at the contract unit price per square yard. This payment will be full compensation for all excavation, furnishing, hauling, and placing all materials including concrete and reinforcing steel; for disposal of all surplus materials; and for labor, tools, equipment, and any incidentals necessary to complete this item of work.
- 4. Concrete Approach Slab for Bridge will be paid for at the contract unit price per square yard. This payment will be full compensation for all excavation, furnishing, hauling, and placing all materials including concrete, asphalt paint or 6 mil polyethylene sheeting, elastic joint sealer, and reinforcing steel; for disposal of all excavated material and surplus materials and for labor, tools, equipment and any incidentals necessary to complete this item of work.

APPROACH SLAB UNDERDRAIN SYSTEM

- 1. An underdrain system will be placed underneath the sleeper slabs and behind the abutments as shown in the plans in accordance with Section 435 of the Construction Specifications.

- 2. Perforated PVC Drain Pipe will be PS 46 Solvent Weld PVC Pipe conforming to ASTM F758 or SDR 35 Solvent Weld PVC Pipe conforming to ASTM D3034 with perforations in accordance with ASTM F758. The PVC Outlet Pipe will be Schedule 40 PVC Pipe conforming to ASTM D1785 designated as PVC 1120, PVC 1220, or PVC 2120. Pipe sections will be connected using a PVC Solvent Cement conforming to ASTM D2564. The Drain Sleeve will conform to ASTM D6707.
- 3. Care will be taken to ensure that the 4-inch diameter Perforated PVC Drain Pipe and the 4-inch diameter PVC Outlet Pipe are not damaged during construction. Sufficient cover material will be placed over the pipes before compaction equipment is allowed over the underdrain system. Any damaged pipes will be replaced by the Contractor at no additional cost to the Department.
- 4. All labor, tools, equipment, and any incidentals necessary for the Installation of 4-inch diameter Perforated PVC Drain Pipe, 4-inch diameter PVC Outlet Pipe, SDR Solvent Weld PVC Coupling, and PVC Cement will be incidental to the contract unit price per foot for 4" Underdrain Pipe.

AS - BUILT ELEVATION SURVEY

The Contractor will be responsible for producing an as-built elevation survey soon after construction is completed but before the bridge is opened to traffic. The Contractor will be responsible for recording the as-built elevation shown in the plans. The completed table will be given to the Engineer and copies forwarded to the Office of Bridge Design and the Region Bridge Engineer. The elevations will be based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88). The Engineer will provide the Contractor with a description, elevation, and location of the nearest benchmark that has a NAVD88 established elevation for the Contractor's use. The benchmark shown in the plans has not been tied to the NAVD88. The Contractor will be responsible for establishing a NAVD88 elevation for the benchmark provided in the plans. All cost associated with obtaining the NAVD88 elevations at the locations shown in the table and for the benchmark shown in the plans, including all equipment, labor, and any incidentals required will be incidental to the contractor lump sum price for Bridge Elevation Survey.

QUARRIED AGGREGATE SLOPE PROTECTION

- 1. This work will consist of paving the bridge berm slopes with crushed aggregate slope protection for control and prevention of berm erosion.
- 2. The aggregate used in the crushed aggregate slope protection will be composed of durable fragments of quarried quartzite or an approved alternative. The material will be pink in color, free of dirt, debris, and other foreign material, and well graded with 90 to 100% passing a 6-inch sieve and 0 to 10% passing a 2-inch sieve.
- 3. The Type A Drainage Fabric will be non-woven.
- 4. The surface upon which the slope protection is to be placed will be smooth, uniform, and free from foreign material. The top surface of the slope protection will conform to the dimensions, elevations, and slopes shown in the plans.
- 5. The crushed aggregate will be shaped and compacted to provide a stable, smooth, and uniform surface.
- 6. Payment for crushed aggregate slope protection will be at the contract unit price per square yard for Bridge Berm Slope Protection, Crushed Aggregate and will include furnishing all materials, labor, and equipment necessary or incidental to the satisfactory completion of this work. Payment will be for plans quantity.

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ENGINEERING INSPECTION BOAT

- 1. An engineering inspection boat will be provided for use by SDDOT engineering staff, exclusively.
- 2. The boat shall be a shallow draft, landing craft, maneuverable vessel designed for structural inspection. The inspection boat shall come with an enclosed cabin with seating for a minimum of 4 people. It is to be designed with precision navigation and robust safety systems, suitable for work in rivers, lakes, and near shore waters.
- 3. Engine Type: Outboard or inboard engine(s) with a minimum of 150 HP total.
- 4. Deck: Open deck space for equipment setup.
- 5. The boat provided shall comply with the following minimum requirements:
 - a. All required capacity, maximum horsepower, and identification plates shall be affixed in the manner required by US Coast Guard regulations.
 - b. The motor's horsepower shall meet the rated requirements of the boat and be equipped with a forward, neutral, and reverse. The power train shall be equipped with an interlock so that the engine may not be started in gear. U.S. Coast Guard-approved fuel tanks shall be provided.
 - c. All equipment required by US Coast Guard regulations shall be provided for the boat.
 - d. Ability for accessing work sites.
- 6. Registration, licenses, and other legal requirements for boat operation shall be obtained by the Contractor and kept current by the Contractor for the length of time the boat is in operation.
- 7. Dockage facilities shall be maintained by the Contractor and shall be constructed (if necessary) so that easy access to the boat is provided at all times under all river elevation changes.
- 8. The Contractor shall maintain the boat in good, clean condition at all times as required. Fuel tanks shall be maintained full at all times.
- 9. The costs for providing an Engineering Inspection Boat shall be incidental to various contract bid items.

BRIDGE DECK AND APPROACH PAVEMENT SMOOTHNESS

The following locations will be tested for smoothness in accordance with the Special Provision for IRI Bridge Smoothness:

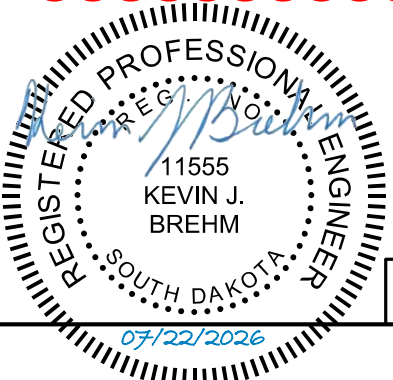
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Sta. 874 + 39.75 to Sta. 934 + 10.25

NOTES (CONTINUED)
FOR

5770' - 6" CONT. COMP. GIRDER BRIDGE

STR. NO. 12-089-076
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REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
D1	36	14	208' - 3"	Str.
Z1	1	5	14059' - 2"	Spiral

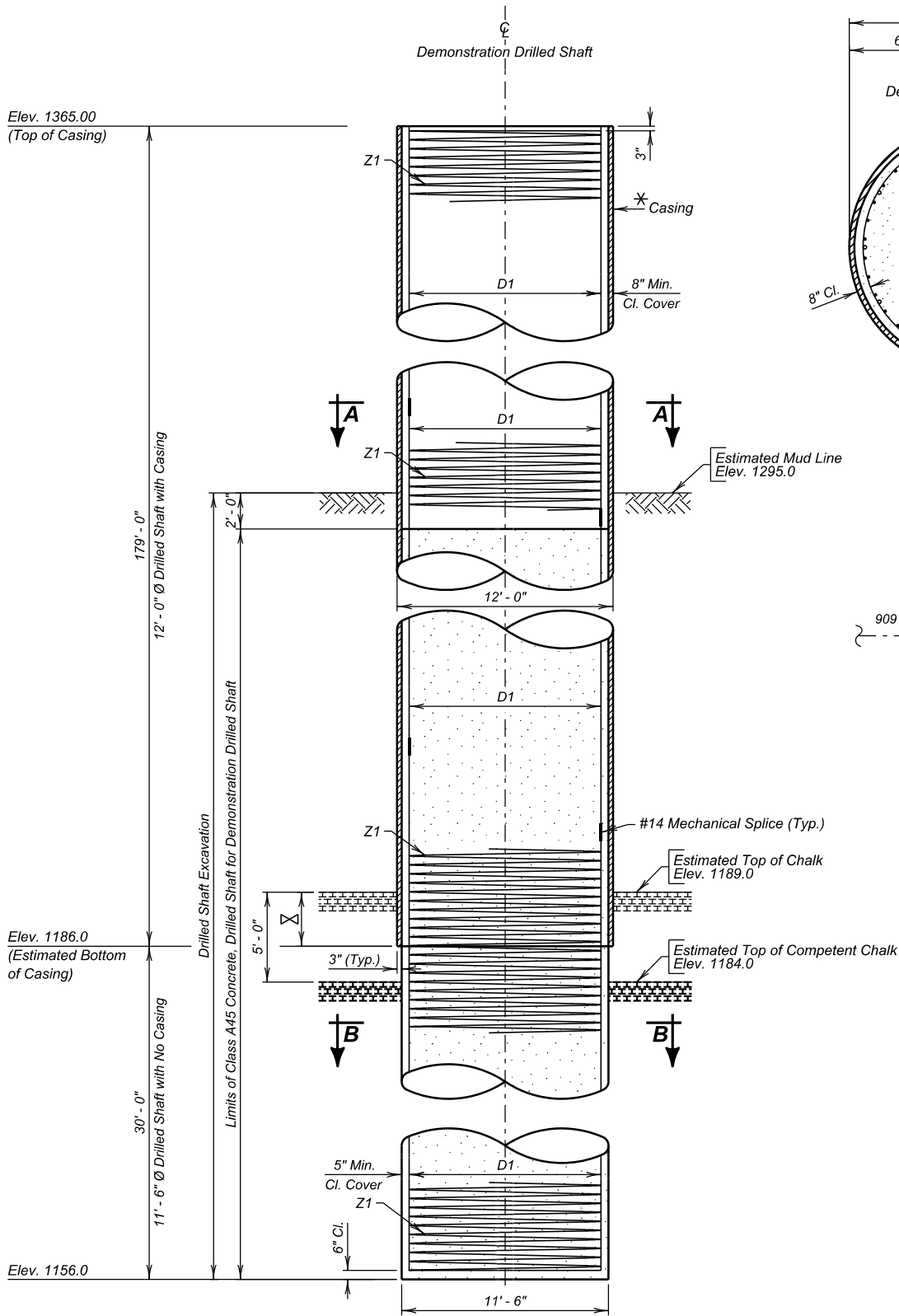
NOTES:

- All dimensions are out to out of bars.
- Spirals - Use 6" pitch and 1½ extra turns at each end. Use 1½ turns for lap at splice as required, or weld as approved by the Engineer of Record. Use 6 vertical spacer bars per column.
- Bar Length does not include Splices.
- The length shown for the D1 bar is the full length required. The Contractor must submit a splice plan for approval. Mechanical splices must be staggered (a minimum of 5' - 0") and not placed side by side.
- Place D1 bars as required to maintain 3" minimum clearance between bars and CSL tubes.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Demonstration Drilled Shaft	Each	1

- 545.1 Cu. Yd. Class A45 Concrete, Drilled Shaft
 - 72016 Lb. Reinforcing Steel
 - 572.0 Cu. Yd. Drilled Shaft Excavation
 - 1 Each Crosshole Sonic Log (CSL) Test
 - 1 Each Thermal Integrity Profiling (TIP) Test
 - 179 Ft. 144" Casing
 - 108 Each No. 14 Rebar Splice
- Items 1 thru 7 are approximate quantities contained in the above bid items and are for information only.



⊗ Penetration into the chalk formation necessary to prevent intrusion of soil or other materials is anticipated to be a minimum of 3'-0". The penetration depth may be modified as required to satisfactorily prevent intrusion of soil or other materials into the excavation. Modifications to the penetration depth may be proposed by the Contractor and accepted by the Engineer, but the penetration into the chalk formation must in no case be less than 1'-0". The Contractor will be responsible for the performance of the modified penetration depth.

DRILLED SHAFT

SEC. A - A

SEC. B - B

DEMONSTRATION DRILLED SHAFT LAYOUT

NOTES:

- The Contractor will demonstrate equipment and methods prior to construction of the first production drilled shaft by installing a non-production drilled shaft (Demonstration Drilled Shaft).
- Additional reinforcing steel required by the Contractor to support the CSL access tubes, TIP testing wires or to facilitate placement of the cage will be shown in the Drilled Shaft Installation Plan and will be incidental to the contract unit price per each for DEMONSTRATION DRILLED SHAFT.
- Construct the demonstration drilled shaft according to the requirements of the Special Provision for Drilled Shaft Construction with special emphasis on seating the casing in the chalk formation to prevent intrusion of soil or other materials into the excavation, slurry control and disposal, method of scouring, air lift pump usage, concrete delivery and coordination with the batch plant, concrete slump at the point of delivery, and concrete placement.
- If the demonstration drilled shaft installation demonstrates the equipment and methods used to construct drilled shafts to the requirements of this specification are inadequate, the demonstration drilled shaft will be considered unsuccessful and the Engineer will require appropriate alterations in equipment or methods, or both, to eliminate the unsatisfactory results. The Contractor may be required to perform additional demonstration drilled shafts at their own expense until an adequate procedure is demonstrated, deemed successful and approved by the Engineer.
- Do not begin constructing production drilled shafts until the Engineer approves the methodology and reviews the CSL and TIP reports. The Engineer will complete the review process within 5 working days.
- The demonstration drilled shaft must be removed to a depth 2' below the mudline of the reservoir. This work can be accomplished at the same time as demolition of the existing bridge.
- A demonstration drilled shaft will be unsuccessful if any of the following occur:
 - Inability to meet the performance criteria defined in 465.4.D;
 - Inability to deliver and place concrete at a rate necessary to meet the specifications;
 - Failure of CSL or TIP testing;
 - Failure of concrete tests;
 - Inability to clean the rock socket in accordance with the Special Provision for Drilled Shaft Construction.
- The accepted successful demonstration drilled shaft will be paid for at the contract unit price per each. Payment will be full compensation for labor, equipment, tools, materials and all incidentals, including all costs for advancing the casing through the alluvium and into the chalk formation, drilled shaft excavation including cleaning of the rock socket, SQUID testing, furnishing and placing reinforcing bars, furnishing and placing concrete, CSL pipe and testing, TIP testing and disposal of all excavated materials and water.



DEMONSTRATION DRILLED SHAFT DETAILS FOR

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OVER MISSOURI RIVER SEC. 16/20/21-T99N-R70W
(LAKE FRANCIS CASE) P 0044(207)290
STA. 875 + 39.75 TO STA. 933 + 10.25 HL-93
STR. NO. 12-089-076

GREGORY & CHARLES MIX COUNTIES
S. D. DEPT. OF TRANSPORTATION

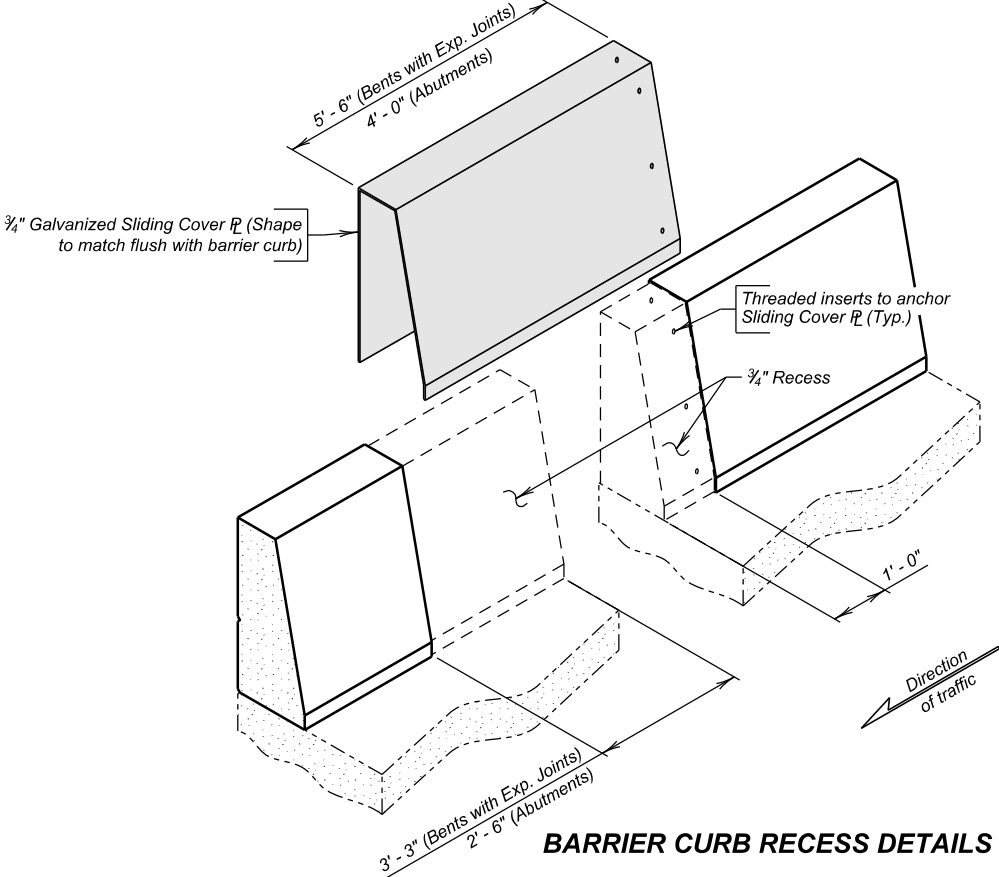
DECEMBER 2023

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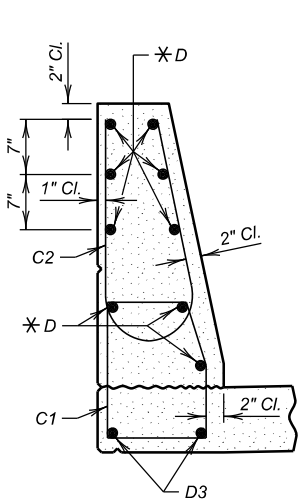
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STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0044(207)290	E41	E86

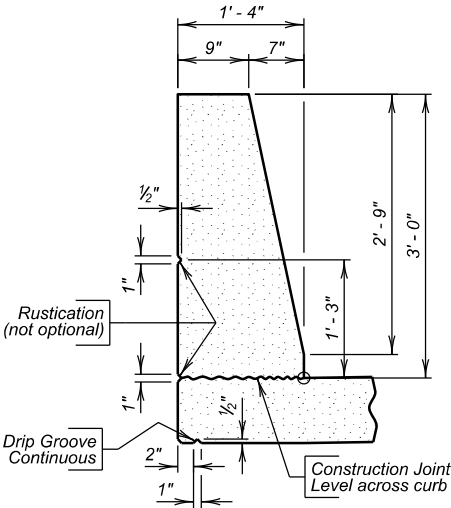
Rev 07/22/2026 KJB



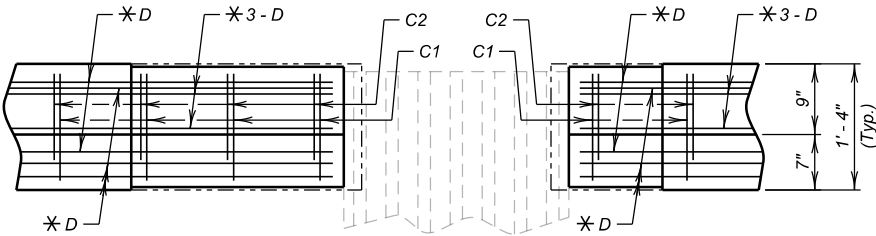
BARRIER CURB RECESS DETAILS



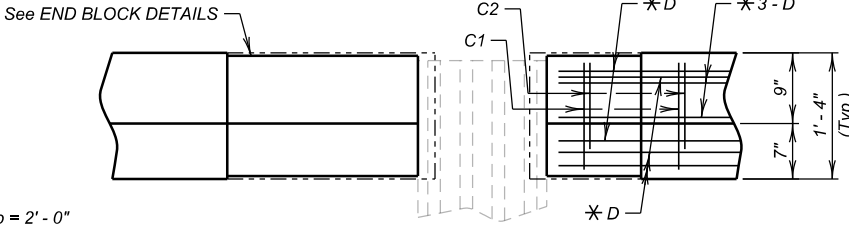
TYPICAL BARRIER CURB SECTION



BARRIER DETAILS

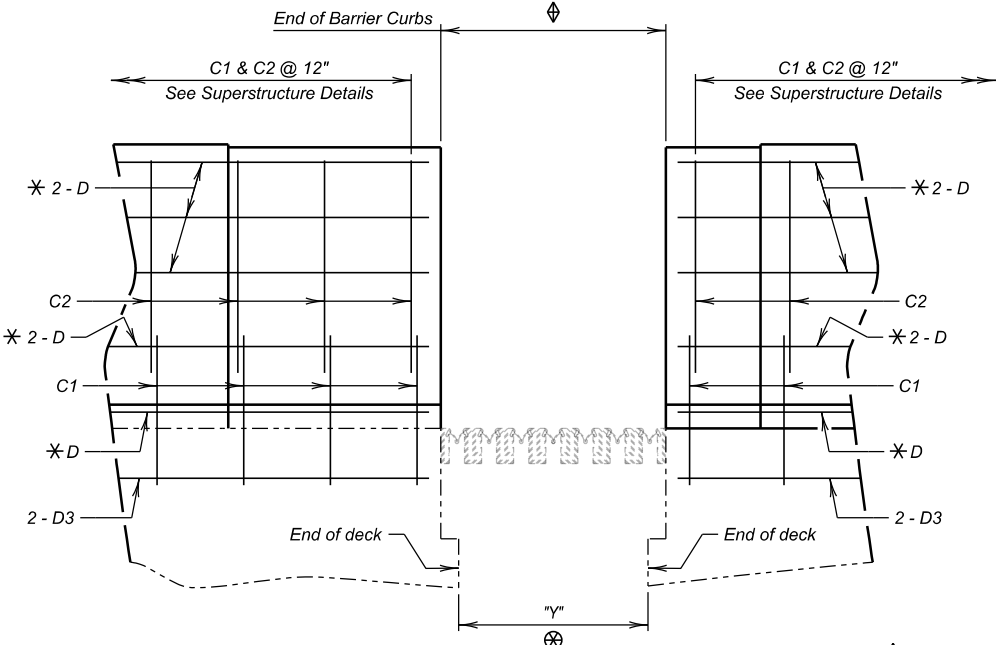
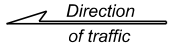


PLAN AT BENTS WITH EXP. JOINTS



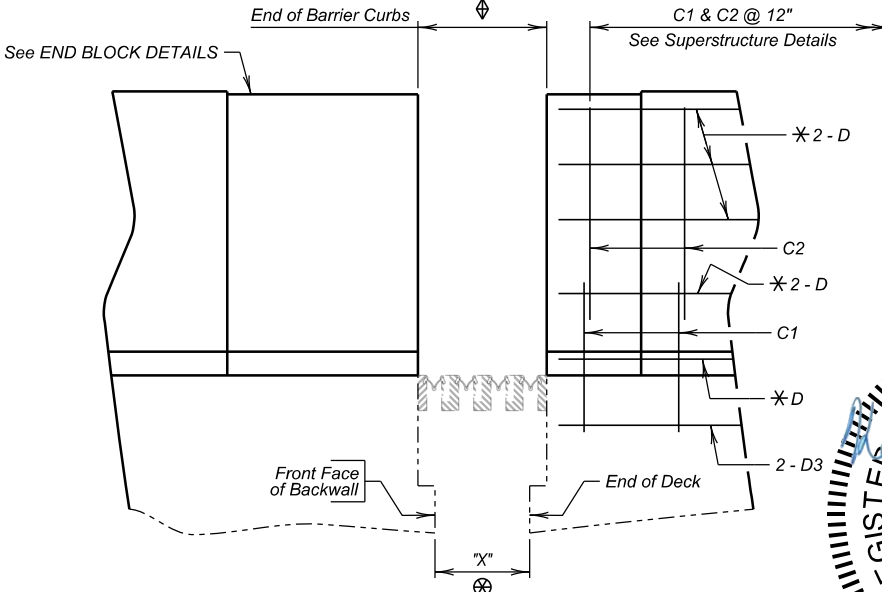
PLAN AT ABUTMENTS

* Min. Lap = 2' - 0"



ELEVATION AT BENTS WITH EXP. JOINTS

⬆ Dimension to be set by Joint manufacturer.
⊗ See EXPANSION JOINT DETAILS sheet.



ELEVATION AT ABUTMENTS

BARRIER CURB COVER PLATE NOTES:

1. Steel used for the barrier cover plates will be ASTM A709, Grade 50. The bolts will meet the requirements of ASTM A307.
2. All plates, bolts, nuts, and cap screws will be galvanized in accordance with the Standard Specifications.
3. Stainless steel reinforcement will not be allowed to be in contact with any part of the galvanized barrier cover plates or their anchorage.
4. Portions of the 3/4" galvanized cover plates to be in contact with the surface of the concrete barrier will be painted with a colorless oil, or some other satisfactory means to prevent concrete from adhering to the plate.

SLIPFORMING METHOD OF CONSTRUCTION:

Concrete barrier curbs may be constructed using a slipform method with approval from the Engineer provided the following requirements are met.

1. Concrete barrier curb on abutment wingwalls will not be slipformed.
2. Concrete mix design proportions will be proposed by the Contractor for review and approval by SDDOT Concrete Engineer.
3. The Engineer, Contractor, and concrete provider will hold a pre-pour meeting.
4. The concrete will be vibrated with built in vibrators until it has been consolidated to the maximum practical density, free of rock pockets, and closes snug against the mold surface. The concrete shall be of such consistency after slipforming that it will maintain the shape of the concrete barrier without support. Prior to beginning operation, the Contractor will ensure that a continuous deposit of concrete can be made at the slipform machine to minimize starting and stopping.
5. The finished concrete barrier will be true to the specified line and grade within a tolerance of +/- 1/4 inch in 10 feet by checking with a straight edge. Failure to meet the specified line and grade tolerances will result in rejection of the barrier and removal and replacement of the barrier due to noncompliance will not be considered a basis for a contract price adjustment or a contract claim or dispute.
6. The concrete barrier will have a smooth, uniform appearance in its final position, and will conform to horizontal and vertical lines shown in the plans or as directed by the Engineer. The surfaces will be free from humps, sags, or other irregularities. Should a section of the concrete barrier prove to be unsatisfactory, in the judgement of the Engineer, that section will be removed and reconstructed at the Contractor's expense.
7. The grade for the top of the concrete barrier wall will be maintained by using stringless technology.
8. The slipform machine will not exceed the speed recommended by the manufacturer.
9. The first section of barrier curb constructed using slipforming method will be limited to a maximum length of 100 feet, until Engineer can confirm that tolerances are met and appearance is satisfactory.
10. All costs associated with slipforming barrier curbs will be incidental to other items.

BARRIER CURB DETAILS FOR

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DESIGNED BY	CK. DES. BY	DRAFTED BY	BRIDGE ENGINEER
KJB	JL	EM	

