

Project Manual

Lewis and Clark County

Head Lane Bridge Prestressed Concrete Beam Supply

- Bid Sheets and Notarized Signature Page
- Acknowledgement of Addenda
- Bid Bond

November 2024

Prepared by:



Set No.: _____
Project # 1-17277 TO20

PROJECT MANUAL

Head Lane Bridge Prestressed Concrete Beam Supply

Lewis and Clark County, Montana

November 2024

Prepared by:

Jordan Coddington, EI

QAQC by:

Karl Yakawich, PE



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MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS

The Montana Public Works Standard Specifications, Seventh Edition, April 2021 is incorporated herein by reference and shall be subject to the modifications and additions provided in the following Specifications.

STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

The Montana Department of Transportation Standard Specifications for Road and Bridge Construction, current edition, are incorporated herein by reference and shall be subject to the modifications and additions provided in the following Specifications.

The AASHTO Standard Specifications for Highway Bridges, current edition, are incorporated herein by reference and shall be subject to the modifications and additions provided in the following Specifications.

DIVISION 0 – BIDDING AND CONTRACTING REQUIREMENTS

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INVITATION TO BID

SECTION 00100

INVITATION TO BID

The Board of County Commissioners of Lewis and Clark County is soliciting competitive bids for the purchase of prestressed concrete Trideck beams for the Head Lane Bridge. The project consists of the replacement of the Head Lane Bridge in Lewis and Clark County. The new structure will utilize precast prestressed concrete trideck beams. The structure spans 54' with a total width of 31'-4" and a usable width of 28'-0". This bid is only for the fabrication and shipping of the prestressed concrete beams.

All Bids must be in accordance with the contract documents. Complete details of the solicitation may be examined or obtained online at <https://www.lccountymt.gov/Government/Grants-and-Purchasing/Bids-and-Proposals-Current> or by contacting the designated point of contact in accordance with Article 2.01 of Instructions to Bidders. Contractors are encouraged to check for any addenda issued prior to submitting a bid. The designated point of contact for all communication regarding this solicitation is Karl Yakawich, kyakawich@greatwesteng.com or by calling (406) 449-8627. A cone of silence is established for this solicitation which prohibits any bidder, or entity with financial interest in the bid award, from communicating regarding the solicitation with any Lewis and Clark County elected official, employee, or agent other than the designated point of contact.

Sealed bids must be delivered to the Office of the Board of County Commissioners, in the City County Building, Room 345, 316 North Park Avenue, Helena, MT, 59623 before 4:00 p.m. local time on Wednesday, December 11, 2024. The envelope containing the sealed bid will be labeled "Head Lane Bridge Beam Supply, Bid Enclosed". Responsive bids will be publicly opened and read aloud on Thursday, December 12, 2024 at 9:00 a.m. in Room 330 in the City County Building, 316 N. Park Avenue, Helena, MT.

Each bid or proposal must be accompanied by a Certified Check, Cashier's Check, or Bid Bond payable to Lewis & Clark County, in an amount not less than ten percent (10%) of the total amount of the bid.

Lewis and Clark County reserves the right to reject any or all bids, to waive irregularities or to accept any bid deemed to be for the public good.

Legal Ad: Independent Record

Publish: Saturday, November 23, 2024
Saturday, November 30, 2024

END OF SECTION

BID FORM

**SECTION 00400
BID FORM**

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

***Lewis and Clark County
Board of County Commissioners
316 N. Park Avenue, Room 345
Helena, MT 59623***

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

- A. Bid bond, bank draft, money order, or certified check, in the amount of not less than ten (10) percent of the total bid
- B. Proposed Delivery Date of the Prestressed Concrete Trideck Beams. _____
- C. Base Bid:

BID FORM

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Amount
BASE BID					
101	Prestressed Concrete Trideck Beams	1	LS	\$	\$

TOTAL BID PRICE \$ _____
(Figures)

TOTAL BID PRICE \$ _____
(Words)

ARTICLE 3—BIDDER’S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

3.01 *Bid Acceptance Period*

- A. This Bid will remain subject to acceptance for 30 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

3.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the bid documents.
- B. Lewis and Clark County reserves the right to accept or reject any or all bids, wholly or in part, to make awards in any manner deemed in the best interest of the County.

C. The basis of the award will be dependent on the most responsible bid submitted with consideration given to the following criteria: purchase price and delivery date.

3.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

BIDDER hereby submits this Bid as set forth above:

Bidder Name:

(typed or printed name of organization)

Contact Person:

(typed or printed)

Address:

(typed or printed)

Phone and Fax

(typed or printed)

Email:

(typed or printed)

Signature of authorized company official approving the bid and as submitted:

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

Signature:

(Authorized Company Official Signature)

Notary:

State of Montana

County of _____

This instrument was acknowledged before me on _____ [date] by _____
_____ [printed name of authorized company official] as _____ [title] of
_____ [printed company name].

Notary Signature [Seal]

[Seal]

END OF SECTION

Section 00400 - Bid Form

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GENERAL REQUIREMENTS

GENERAL REQUIREMENTS

1. PROJECT DESCRIPTION

- A. The project consists of the replacement of Head Lane Bridge in Lewis and Clark County, Montana. The new structure will utilize precast prestressed concrete trideck beams. The structure will span 54' with a 31'-4" total width and a 28'-0" useable width. This bid is only for the supply, fabrication, and shipping of the precast prestressed concrete beams.

2. INCORPORATION OF THE MPWSS

- A. All provisions of the Montana Public Works Standard Specifications, Seventh Edition, April 2021, hereafter collectively referred to as the MPWSS, apply to the project, except where portions of the MPWSS are modified or replaced by the Contract Documents.
- B. Delete Part 4: MEASUREMENT AND PAYMENT in all sections of the MPWSS. Payment for an item will only be made if that item is listed as a Bid Item in the Proposal form. If an item is listed as a Bid Item, administrative and procedural requirements will be listed in below. If an item is not listed as a Bid Item, the item is not required or is considered an incidental cost to other Bid Items.

3. DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

4. LEGAL REQUIREMENTS

- A. All laborers and mechanics employed by Contractor or Subcontractors in performance of the construction work shall be paid wages at rates as required by Davis Bacon Wage Act or Montana State Prevailing Wages, whichever is higher.
- B. Buy America or AIS requirements do not apply to this project.

5. INSURANCE

- A. The low bidder shall submit proof of liability insurance before the County will enter into an agreement. The low bidder shall maintain general liability insurance from an insurance carrier licensed to do business in the State of Montana in the amount of one million dollars (\$1,000,000) for each occurrence (minimum) and two million dollars (\$2,000,000) aggregate. The County must be listed as an additional insured on the liability insurance certificate
- B. The low bidder shall submit proof of workers' compensation insurance before the County will enter into an agreement. The low bidder shall maintain workers compensation insurance from an insurance carrier licensed to do business in the State of Montana or provide a Workers Compensation Exemption Certificate.
- C. Builder's Risk Insurance is not required.

6. DELIVERY/SHIPPING

- A. Beams shall be shipped to the project site. Supplier shall coordinate with the selected bridge contractor for delivery location and logistics. The County will designate a delivery coordination liaison after award of the construction contract.

7. PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.
- B. Work Required: The Work Required section does not necessarily name all incidental items required to complete the work. The cost of all such incidentals shall be included in the various related items of work. All estimated quantities stipulated in the Bid Forms or other Contract Documents are approximate and are to be used only as a basis for estimating the probable cost of the work and for the purpose of comparing the proposals submitted for the work. It is understood and agreed that the actual amounts of work performed and materials furnished under unit price items may differ from such estimated quantities and the payment for such work and materials shall be based on the actual amount of work done and materials furnished in each case.

8. WORK REQUIRED

- A. Bid Item No. 101 – PRESTRESSED CONCRETE TRIDECK BEAMS:
 - 1. Description: This item consists of furnishing all plant, labor, materials, and equipment for the design, manufacture, transportation, storage, and erection of beams fabricated from precast, prestressed concrete in accordance with the Plans and this Specification. Prestressed voided slab members may also be provided in lieu of the trideck girders assuming the girder depth is equivalent or less and the overall bridge width is maintained or increased. This item consists of the precast prestressed girders, elastomeric bearing pads, anchor dowels, shims, and all inserts and connector plates for making the connections between the beams.
 - 2. Work required under this section shall include, but not be limited to the following:
 - a. Submittal of concrete mix design and shop drawings;
 - b. Furnish and install reinforcing and prestressing steel;
 - c. Furnish, place, and finish concrete beams with curbs and inserts for W830 Bridge Rail and Utilities;
 - d. Furnish bearing system;
 - e. Furnish steel shims;
 - f. Coordination with selected Contractor for shipping the beams;
 - g. Transporting beams;
 - h. Providing necessary quality control testing;
 - i. All labor, tools, equipment, materials, royalties and incidentals required to complete the work as specified.
 - 3. Unit of Measurement: Shall be measured per LUMP SUM
 - 4. Measurement: PRESTRESSED CONCRETE TRIDECK BEAMS shall be measured per LUMP SUM.
 - 5. Payment: Payment shall be the unit price bid per LUMP SUM for PRESTRESSED CONCRETE TRIDECK BEAMS, in place and approved.

END OF SECTION

STANDARD TERMS & CONDITIONS

LEWIS AND CLARK COUNTY INVITATION FOR BIDS STANDARD TERMS AND CONDITIONS

By submitting a bid to this Invitation for Bids, the Bidder agrees to acceptance of the following Standard Terms and Conditions and any other provisions that are specific to this solicitation.

1. **Competition.** Lewis and Clark County encourages free and open competition among bidders. Whenever possible, specifications, bid invitations, and conditions are designed to accomplish this objective, consistent with the necessity to satisfy the County's needs and accomplishment of a sound economical operation.

The bidder's signature on this proposal guarantees that the prices quoted have been established without collusion with other eligible bidders and without effort to preclude Lewis and Clark County from obtaining the lowest possible competitive price.

Prior to the award of the contract, bids may be held by Lewis and Clark County for a period not to exceed 30 days from the date of the opening of bids for the purpose of reviewing bids and investigating the qualifications of the bidders.

2. **Preparation of Bids.** Bids will be written in ink and/or typewritten on the bid forms furnished herewith. Erasures and alterations must be initialed by the bidder in ink. No verbal bids shall be accepted. The bidder agrees that the bid shall be good and may not be withdrawn during the 30-day review period.
3. **Bid Items.** The bidder warrants articles offered to conform to the specifications herein requested, to be fit and sufficient for the purpose manufactured, of good material and workmanship, and free from defect.
4. **Special Brands.** Brand name items or descriptions used in this proposal are specified solely for the purpose of indicating standards of quality, performance, and/or use desired. Any bid offering goods or sources which deviate from the specifications must be clearly indicated by the bidder. Substitutions must be identified by the manufacturer and stock number and complete descriptive literature must be included with the bid. Goods delivered which do not conform to the contract terms, conditions, or specifications may be rejected and returned at the vendors' expense. Any bid for foreign produced products shall be so indicated and the source of supply noted for each item.
5. **Packaging.** Unless otherwise stipulated, no charges will be allowed for packing, wrapping, bags, containers, reels, etcetera. All items shall be packed in accordance with prevailing commercial practices and in such a manner as to ensure delivery in good condition and as specified herein.

6. **Delivery/Shipping.** Goods shall be prepaid, Free on Board (FOB) destination. In the event the contract terms specify FOB shipping point, shipping charges will be prepaid and itemized as a separate item on invoicing. Such shipments shall be via the least expensive common carrier unless otherwise stipulated. Lewis and Clark County reserves the right to reject Cash on Delivery (COD).
7. **Warranty.** Bidders agree to provide a warranty for product on offer and perform all warranty and maintenance services in a professional and timely manner and acknowledge that they will be liable for any breach of this warranty.
8. **Cash Discount.** Bidders may quote a cash discount, provided it is based on a period of 30 days or more. A shorter period will not be considered in determination of a low bid. Any cash discount as part of this contract will be computed from the date of receipt of a properly executed claim or the date of completion of delivery of all items in satisfactory condition, whichever is later.
9. **Excise Taxes.** Lewis and Clark County is exempt from federal excise taxes (FET). Exemption certificates will be furnished upon request.
10. **Acceptance/Rejection of Bids.** Lewis and Clark County reserves the right to accept or reject any or all bids, wholly or in part, and to make awards in any manner deemed in the best interest of the County.
11. **All-or-None Proposals.** Bidders may submit alternate proposals on an all-or-none basis but are required to submit a primary quotation on an item-by-item basis to be considered for either type of award.
12. **Bid Determination.** The basis of the award will be dependent on the most responsible bid submitted with consideration given to the following criteria:
 - a. Purchase price; and
 - b. Delivery date;
13. **Tabulation.** In the event that a quotation is entered in which the unit price and extension do not agree, the unit price shall prevail.
14. **Bid Proposal Worksheet.** Bidders are required to complete all Bid Proposal Worksheets and must provide a detailed proposed specification packet with the bid. Any variance to specifications the bidder wishes to seek consideration for must be clearly stated in the section provided on the Bid Proposal Worksheet.
15. **Nondiscrimination.** In accordance with federal and state laws, the bidder agrees not to discriminate against any client, employee, or applicant for employment or for services because of race, creed, color, national origin, sex, or age with regard to, but not limited to, the following:
 - a. Employment upgrading;
 - b. Demotion or transfer;
 - c. Recruitment or recruitment advertising;

- d. Lay-offs or terminations;
 - i. Rates of pay or other forms of compensation;
 - ii. Selection for training; or
 - iii. Rendition of services.

Bidders and the awardee shall comply with all federal, state, and local laws, rules and regulations. Bidders and the awardee and any of the Bidders' and the awardee's sub-grantees, contractors, subcontractors, successors, transferees, and assignees shall comply with Title VI of the Civil Rights Act of 1964, which prohibits recipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. § 2000d et seq.), as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, which are herein incorporated by reference and made a part of this contract (or agreement). Title VI also includes protection to persons with "Limited English Proficiency" in any program or activity receiving federal financial assistance, 42 U.S.C. § 2000d et seq., as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, which are herein incorporated by reference and made a part of this contract or agreement.

It is further understood that any vendor who is in violation of this clause shall be barred forthwith from receiving awards of any purchase from Lewis and Clark County unless a satisfactory showing is made that discriminatory practices have ceased, and the recurrence of such acts is unlikely.

- 16. OSHA and EPA Requirements.** The equipment shall meet OSHA and EPA requirements and specifications on the date of the bid opening.
- 17. Bid Consideration.** No bid will be considered unless accompanied by a bid bond, bank draft, money order, or certified check in the amount of not less than ten (10) percent of the total bid.
- 18. Trade Secrets.** In order for a bidder to request that material be kept confidential, a notarized Affidavit for Trade Secret Confidentiality shall be provided by the bidder's attorney acknowledging that material included in a bid is open to public inspection except for information that meets the provisions of Montana's Uniform Trade Secrets Act. Trade secrets contained in the bid must be clearly marked and separate from materials that are open for public inspection. Bidders must be prepared to pay all legal costs and fees associated with defending a claim for confidentiality in the event of a records request from another party.
- 19. Cone of Silence.** A cone of silence shall be established on all Lewis and Clark County formal solicitation processes. The cone of silence prohibits any communication regarding a formal solicitation between any bidder (or its agents or representatives) or other entity with the potential for a financial interest in the award (or their respective agents or representatives) and any Lewis and Clark County elected official, employee, or agent other than the designated point of contact for the solicitation.

The cone of silence shall be in effect from the time of posting the formal solicitation on the County's website and until the County issues a Notice of Intent to Award, cancels the solicitation, or otherwise takes action to end the selection process.

Violations of the cone of silence may be grounds for disqualification from the selection process. The cone of silence shall not apply to communications at any public proceeding or meeting.

20. Advanced Payments. Except as provided in law, provisions requiring payment by the County, fully or in part, for goods or services before receipt of such shall not be authorized.

21. Protest Procedure. A bidder aggrieved in connection with the solicitation or bid award may protest in accordance with the procedure outlined in the Lewis and Clark County purchasing policy.

TECHNICAL SPECIFICATION

SECTION 03410

PRESTRESSED CONCRETE BEAMS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section covers the precast, prestressed, concrete Trideck beams, Bulb Tee beams or deck panels. Except as otherwise indicated herein, all work shall conform to the requirements of Section 553 of the MDT Standard Specifications.

The work shall consist of furnishing all plant, labor, materials, and equipment for the design, manufacture, transportation, storage, and erection of beams fabricated from precast, prestressed concrete in accordance with the Plans and this Specification.

This item shall consist of the precast prestressed Trideck beams, Bulb Tee beams or deck panels complete, elastomeric bearing pads, bearing plates, anchor bolts/rods, shims, and all inserts and connector plates for making the connections between the beams.

Variations in deck width or span lengths from those shown on the drawings shall not be permitted. Alternate beam sections will be allowed provided they meet the requirements of the plans and specifications and are approved by the Engineer. The overall depth of the beams shall not be greater than shown on the plans.

1.2 FABRICATION DRAWINGS

- A. The beam supplier shall be responsible for designing the precast, prestressed beams and/or deck panels. Prior to casting any members to be prestressed, the Contractor shall submit to the Engineer for approval fabrication drawings and thorough design calculations which show complete details of the design method, materials, and equipment he proposes to use in the prestressing operation. Such details shall outline the method and sequence of stressing, complete specifications and details of the prestressing steel, reinforcing steel, and all other information and data regarding the details of fabrication and erection of the prestressed concrete members.

The Contractor shall furnish prints of the fabrication drawings in quadruplicate for approval. After approval, he shall furnish three or more prints, as required, of the approved drawings. Fabrication shall not begin until the working drawings have been approved as directed above and the plant inspector has received approved prints thereof. No deviation from the approved plans shall be permitted without a written order from the Engineer.

PART 2 - MATERIALS

2.1 CONCRETE

- A. Cement, Air entraining Agents, and Admixtures: These materials shall meet the requirements of the MDT Standard Specification, Section 553.02

- 1) Class Pre Concrete, Air Entrainment. Ensure that the Class Pre concrete used in the deck sections includes from 4% to 6% entrained air. Maintain all other properties for Class Pre Concrete shown on Table 551-2.

2.2 REINFORCING STEEL

- A. Bar reinforcing shall conform to the applicable requirements of the MDT Standard Specification Section 555.711.01. Reinforcing steel for prestressed members shall be of the deformed type conforming to the requirements of ASTM Specification A-615, Grade 60.

2.3 PRESTRESSING STEEL

- A. All prestressing steel shall be protected against physical damage and shall be protected from rust and corrosion from time of manufacture until encasement in concrete. The use of strands with kinks, bends, nicks, broken wire, or other defects including loose rust shall not be permitted. All strands shall be carefully and thoroughly cleaned when necessary prior to being enclosed in the forms.

The prestressing steel tendons shall be seven-wire 0.5" or 0.6" dia. round stress-relieved strands. Ultimate strength of prestressing steel $f_s = 270,000$ psi.

Typical stress-strain curves shall be furnished by the manufacturer of the strand for each individual shipment of prestressing to the fabrication plant. One certified copy of the stress-strain curve shall be delivered to the plant inspector.

2.4 PRECAST PRESTRESSED BEAMS AND DECK PANELS

- A. Fabrication and construction of precast units shall conform to AASHTO, LRFD Bridge Design Specification (Current Edition). Fabrication of metal inserts for connection of precast units shall conform to the requirements of AWS D12.1, "Recommended Practices for Welding Reinforcing Steel, Metal Inserts and Connections in Reinforced Concrete Construction".

Prestressing shall be performed by the pretension method.

2.5 STRUCTURAL STEEL:

- A. Structural steel shall conform to the applicable requirements of the MDT Standard Specification, Section 711.02.

2.6 BEARING PADS

- A. Elastomeric bearing pads, fiber reinforced, and/or steel reinforced bearing pads shall be plain bearing of nominal 60 ± 5 durometer hardness, Grade 4 which may be molded individually, cut from previously molded strips or slabs, or extruded and cut to length. the bearing pads shall meet the requirements of Section 14.7.6.2, "Material Properties", AASHTO LRFD (Current Edition) and the elastomer portion of the elastomeric compound shall be 100 percent virgin chlorophene (neoprene).

Preparation of the concrete bearing surface on which elastomeric bearing pads are to be installed shall be furnished according to the MDT Standard Specifications, Section 552.03.12.

Bearing Assembly Anchor Bolts or Rods: Bearing assembly anchor bolts shall be of the size and grade designated on the plans. Imbedded anchor pins or bolts shall be constructed in accordance with the plans.

2.7 NONSHRINK GROUT:

- A. An approved non-shrink grout shall be used for filling the joints between adjacent precast deck units. The type of grout shall be as recommended by the supplier of the precast beams. Prior to application, the joints between deck and end wall units shall be thoroughly cleaned out, and all loose material, dirt, debris, dust, etc, shall be removed from surfaces with which the grout will be in contact by washing with water. The grout shall then be applied while the deck joints are still damp or as otherwise recommended by the manufacturer of the material used. Grout placed during cold weather shall follow applicable sections of the cold weather concrete specifications.

2.8 DECK SEALER

- A. All exposed deck surfaces of the prestressed beams shall be coated with a high performance clear silane penetrating sealer after installation is complete per manufacturer's recommendations. Use Hydrozo 100, Baracade Silane 40 IPA, Protectosil CHEM-TRETE 40 VOC, Hydrozo Silane 40 VOC sealer or other approved silane.

2.9 ACCEPTANCE REQUIREMENTS

- A. Workmanship and Tolerances
All tolerances shall be applied with respect to the theoretical positions and dimensions shown on the plans and approved fabrication drawings.

The tolerances listed below represent the total allowable tolerance that will be accepted in the finished product. Tolerances allowed in other manufacturing sequences shall not be accumulated to supersede any individual tolerance. Members having dimensions outside of the tolerance limits shall be subject to rejection. Any acceptance of an individual dimension in excess of the tolerance shall not constitute a waiver of the requirement that the remainder of the work be within the tolerances specified.

Length of beam end to end measured at centerline of beam, top or bottom flange	$\pm \frac{3}{4}$ "
Centerline to centerline at end bearing plates	1/8" per 10' but not greater than 1/2"
Depth of flanges, fillets and web	$\pm \frac{1}{4}$ "
Beam and panel ends, deviation from square horizontal or designated skew vertical	$\pm \frac{1}{4}$ " 1/8" per foot of beam height or 1/2", whichever is less

Side insert, center to center and center to beam end	$\pm 1/2"$
Horizontal alignment (deviation from a parallel to centerline of the member measured on the bed, immediately after release of prestress)	1/8" per 10 ft. of beam length, but not greater than 1/2"
Camber differential between adjacent beams	1/4" per 10 ft. of span to a maximum of 3/4" on adjoining top surfaces
Tendon position	$\pm 1/4"$ in center of gravity of strand group and individual tendons
Position of deflection points for deflected strands	$\pm 6"$
Centerline of bearing plates to end of beam	$\pm 1/4"$
Bearing plates (deviation from a plane perpendicular to the vertical axis of beam)	$\pm 1/16"$
Stirrup bars (longitudinal spacing)	$\pm 1"$

PART 3 - CONSTRUCTION METHODS

3.1 STORAGE AND TRANSPORTATION

- A. Extreme care shall be exercised in handling and moving precast prestressed concrete members. Precast girders and slabs shall be transported in an upright position and the points of support and directions of the reactions with respect to the member shall be approximately the same during transportation and storage as when the member is in its final planned position. If the Contractor deems it expedient to transport or store precast units in other than this position, it shall be done at his own risk after notifying the inspector in writing of his intention to do so.

Care shall be taken during storage, hoisting, and handling of the precast units to prevent cracking or damage.

Lifting of beams and panels shall be done only by use of the lifting eyes. During lifting of the members, spreaders shall be used between slings to eliminate the horizontal component of the lifting force applied to the member, except that when the angle between the sling and the top of the member exceeds 45 degrees, a spreader will not be required.

Prestressed members shall not be moved from the casting yard until the specified ultimate compressive strength (28-day strength) of the concrete has been attained and the plant inspector has been notified of the intent to transport the member.

Units damaged by improper storage or handling shall be replaced by the Contractor at his expense.

3.2 INSTALLATION

- A. The Contractor shall determine the surface condition and camber of each prestressed member and submit a schedule indicating the order and location that each member will be placed to provide the most regular surface condition to the Engineer. Shims equal in dimension to the bearing plate with a new thickness 1/8 inch or greater may be utilized to level and adjust the members such that adjoining top surfaces match within the tolerances specified. All shims shall be galvanized, stainless steel, or equivalent. Methods of loading and jacking adjacent members to meet the tolerances shall be used only with approval of the Engineer.

3.3 WELDING

- A. Unless otherwise specified, welding shall conform to the requirements of the current edition of the AASHTO specifications, American Welding Society specifications, and the plans. Welding electrodes shall conform to the requirements for mild steel, ASTM A-233, AWS A 5.1.

Fabrication of metal units for connection of precast units shall conform to the requirements of AWS D 12.1.

3.4 FINISH

- A. Finishing shall be in accordance with the Plans and MDT Standard Specifications, Section 552.03.12.

END OF SECTION

APPENDIX A

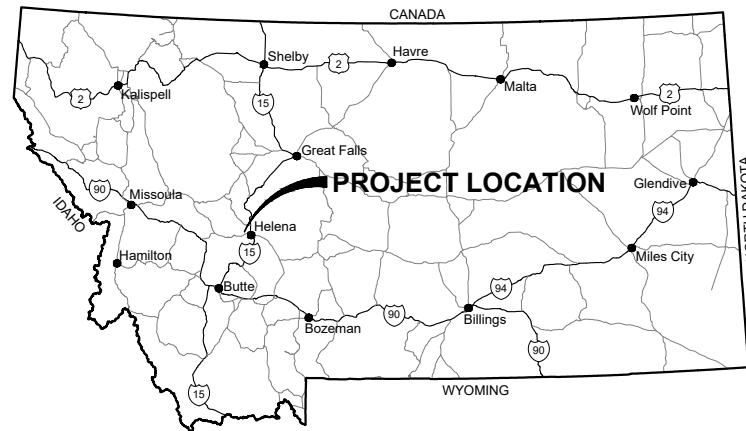
PRELIMINARY PLANS

SHEET INDEX

PROJECT: 1-17277
DATE: OCTOBER 22, 2024

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MDT STANDARD DRAWINGS
SBR-W830 STANDARD BRIDGE RAIL TYPE W830

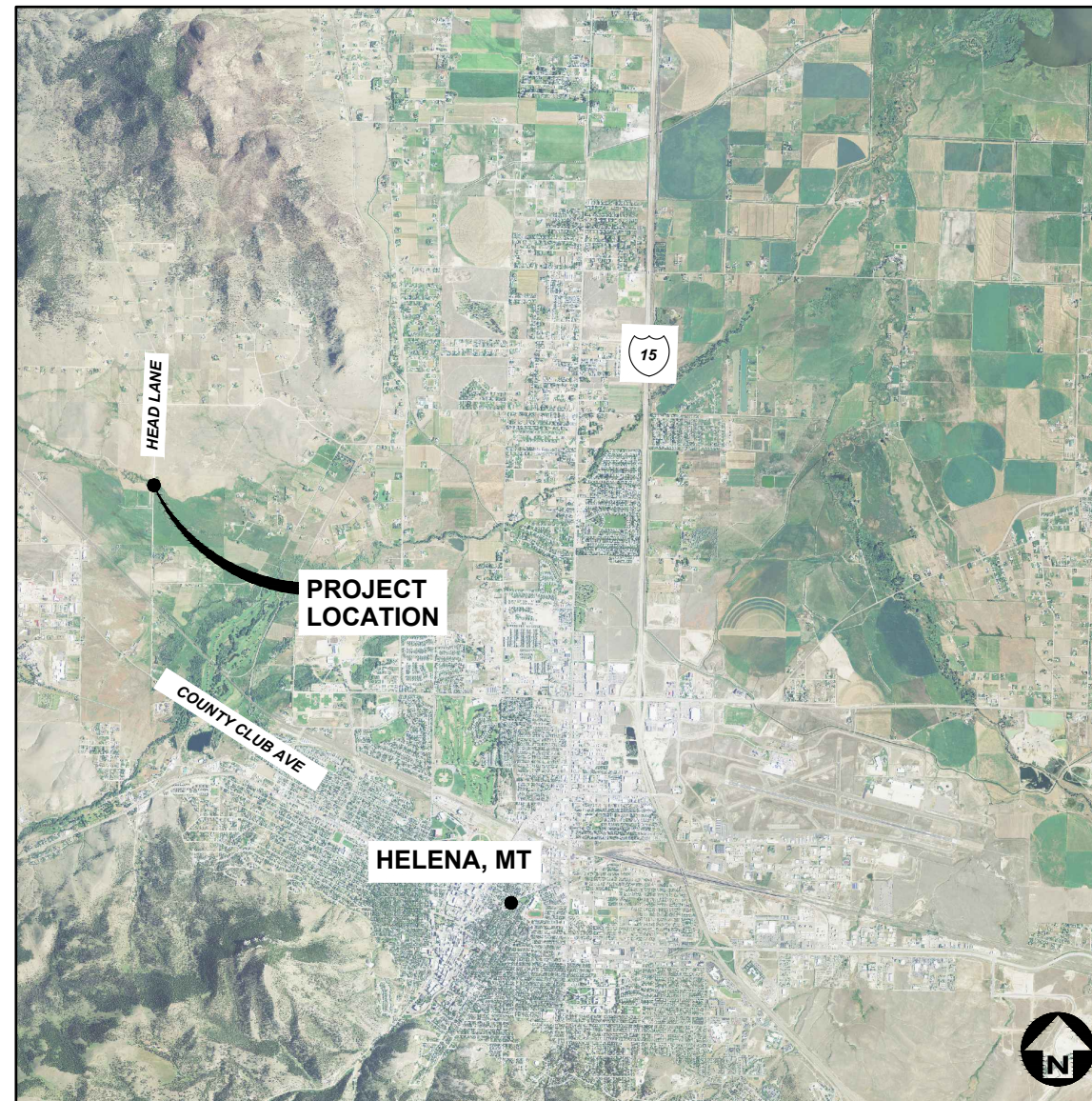


LEWIS AND CLARK COUNTY HEAD LANE BRIDGE REPLACEMENT

MDT BRIDGE ID: 03440

CONSTRUCTION PLANS

LATITUDE: 46°38'12.43" NORTH, LONGITUDE: 112°5'4.11" WEST



NOT TO SCALE

PLANS PREPARED FOR:

LEWIS & CLARK COUNTY



APPROVED BY:

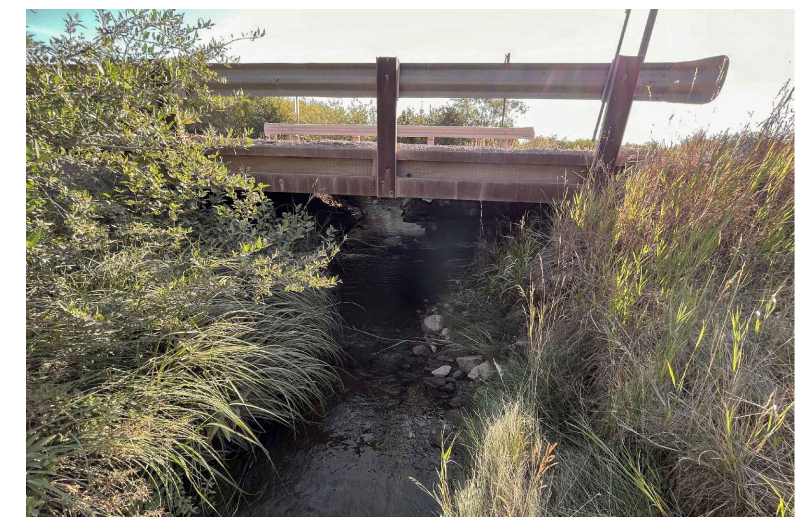
KARL YAKAWICH, P.E.
GREAT WEST ENGINEERING

QA/QC BY:

RYAN ELLIOTT, P.E.
GREAT WEST ENGINEERING

PLANS PREPARED BY:

JORDAN CODDINGTON, E.I.



EXISTING HEAD LANE BRIDGE PROFILE



EXISTING HEAD LANE BRIDGE ROAD

MCEP PROJECT #: MT-MCEP-CG-25-043

NO.	REVISION DESCRIPTION	BY	DATE	SET NO.
△				SHEET NO. 1
△				
△				
△				
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ABBREVIATIONS

⊙	AT	LPG	LIQUID PROPANE GAS
Δ	ANGLE OF DEFLECTION, DELTA ANGLE	LT	LEFT
<PT	ANGLE POINT	MAX	MAXIMUM
AB	ANCHOR BOLT	MD	MEASURE DOWN
ABDN	ABANDON	MFD	MANUFACTURED
AC	ASBESTOS CONCRETE	MFR	MANUFACTURE, MANUFACTURER
ADDN	ADDITIONAL	MH	MANHOLE
ADJ	ADJACENT	MIN	MINIMUM
AFF	ABOVE FINISHED FLOOR	MISC	MISCELLANEOUS
ALT	ALTERNATE	MJ	MECHANICAL JOINT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MOV	MOTOR OPERATED VALVE
APPROX	APPROXIMATE	MPWSS	MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS
APVD	APPROVED	N	NORTH
ARCH	ARCHITECTURE, ARCHITECTURAL	NE	NORTHEAST
ASPH	ASPHALT	NG	NATURAL GAS
AVE	AVENUE	NIC	NOT IN CONTRACT
AVG	AVERAGE	NO	NUMBER
BFV	BUTTERFLY VALVE	NOM	NOMINAL
BLDG	BUILDING	NTS	NOT TO SCALE
BLK	BLOCK	NW	NORTHWEST
BLVD	BOULEVARD	OC	ON CENTER
BM	BEAM, BENCHMARK	OD	OUTSIDE DIAMETER
BOT	BOTTOM	OF	OVERFLOW
BRG	BEARING	OH	OVERHEAD
BRKT	BRACKET	OHP	OVERHEAD POWER
BVC	BEGIN VERTICAL CURVE	OHT	OVERHEAD TELEPHONE
C-C	CENTER TO CENTER	OPNG	OPENING
CHAN	CHANNEL	PC	POINT OF CURVATURE
CHK	CHECK	PCC	POINT OF COMPOUND CURVATURE
CI	CAST IRON	PE	PLAIN END, POLYETHYLENE
CIPC	CAST-IN-PLACE CONCRETE	PERP	PERPENDICULAR
CIRC	CIRCULAR	PI	POINT OF INTERSECTION
CJ	CONSTRUCTION JOINT, CONTROL JOINT	PL	PROPERTY LINE
CL	CENTER LINE	PNL	PANEL
CLR	CLEAR, CLEARANCE	PRC	POINT OF REVERSE CURVATURE
CMP	CORRUGATED METAL PIPE	PREFAB	PREFABRICATED
CMU	CONCRETE MASONRY UNITS	PRELIM	PRELIMINARY
CO	CLEANOUT	PREP	PREPARE, PREPARATION
COL	COLUMN	PROP	PROPERTY
CONC	CONCRETE	PRV	PRESSURE REDUCING VALVE
CONSTR	CONSTRUCTION	PSF	POUNDS PER SQUARE FOOT
CONT	CONTINUE, CONTINUED, CONTINUOUS	PSI	POUNDS PER SQUARE INCH
CONTR	CONTRACTOR	PT	POINT, POINT OF TANGENCY
COORD	COORDINATE	PVC	POLYVINYL CHLORIDE
CP	CONTROL PANEL, CONTROL POINT	PVI	POINT OF VERTICAL INTERSECTION
CPLG	COUPLING	PVMT	PAVEMENT
CTR	CENTER	R, RAD	RADIUS
CTV	CABLE TELEVISION	RC	REINFORCED CONCRETE
CU	CUBIC, COPPER	RCP	REINFORCED CONCRETE PIPE
CF	CUBIC FEET	RD	ROAD
CULV	CULVERT	RDCR	REDUCER
CY	CUBIC YARD	REBAR	REINFORCEMENT BAR
DET	DETAIL	REF	REFERENCE
D	DUCTILE IRON, DRAIN INLET	REINF	REINFORCE
DIA, ∅	DIAMETER	REQD	REQUIRED
DIAG	DIAGONAL	RR	RAILROAD
DIM	DIMENSION	RST	REINFORCING STEEL
DR	DRIVE	RT	RIGHT
DWG	DRAWING	R/W	RIGHT-OF-WAY
E	EAST	S	SOUTH, SANITARY SEWER
EA	EACH	SAN	SANITARY
EL, ELEV	ELEVATION	SCH	SCHEDULE
ELB	ELBOW	SD	STORM DRAIN
ELEC	ELECTRIC, ELECTRICAL	SDWK	SIDEWALK
ENCL	ENCLOSE	SE	SOUTHEAST
ENGR	ENGINEER	SECT	SECTION
EOP	EDGE OF PAVEMENT	SF	SQUARE FOOT
EQ	EQUAL, EQUALLY	SHT	SHEET
EQ SP	EQUALLY SPACED	SIM	SIMILAR
EQUIP	EQUIPMENT	SLP	SLOPE
EQUIV	EQUIVALENT	SPEC	SPECIFICATION
EVC	END VERTICAL CURVE	SQ	SQUARE
EW	EACH WAY	SSTL	STAINLESS STEEL
EXC	EXCAVATE	STA	STATION
EXP	EXPANSION	SS	SANITARY SEWER SERVICE
EXP JT	EXPANSION JOINT	STD	STANDARD
EXST	EXISTING	ST	STREET
FCV	FLOW CONTROL VALVE	STL	STEEL
FD	FLOOR DRAIN	STRUCT	STRUCTURE
FDN	FOUNDATION	SW	SOUTHWEST
FES	FLARED END SECTION	SYM	SYMMETRICAL
FET	FLARED END TERMINAL	TB	THRUST BLOCK
FF	FINISHED FLOOR	TBC	TOP BACK OF CURB
FG	FINISH GRADE	TBM	TEMPORARY BENCH MARK
FHYD	FIRE HYDRANT	TEL	TELEPHONE
FJ	FLANGE JOINT	TEMP	TEMPORARY
FL	FLOW LINE	THRU	THROUGH
FLEX	FLEXIBLE	TYP	TYPICAL
FM	FORCEMAIN	UG	UNDERGROUND
FT	FOOT, FEET	UGP	UNDERGROUND POWER
FO	FIBER OPTIC	UGT	UNDERGROUND TELEPHONE
FTG	FOOTING, FITTING	UTIL	UTILITY
G	NATURAL GAS	V	VALVE, VOLT
GA	GAGE, GAUGE	VB	VALVE BOX
GAL	GALLON	VERT	VERTICAL
GALV	GALVANIZED	VOL	VOLUME
GND	GROUND	W	WEST, WATER
GVL	GRAVEL	WTR	WATER
HB	HOSE BIB	WD	WOOD
HDPE	HIGH DENSITY POLYETHYLENE	W/	WITH
HOR, HORIZ	HORIZONTAL	W/O	WITHOUT
HWY	HIGHWAY	WL	WETLAND
HYD	HYDRANT	WM	WIRE MESH, WATER METER
ID	INSIDE DIAMETER	WS	WATERSTOP, WATER SURFACE, WATER SERVICE
IE	INVERT ELEVATION	WT	WEIGHT
IN	INCH	WV	WATER VALVE
INV	INVERT	WWF	WELDED WIRE FABRIC
JB	JUNCTION BOX	WWM	WELDED WIRE MESH
JT	JOINT	XFMR	TRANSFORMER
K	RATE OF VERTICAL CURVATURE	X-ING	CROSSING
LBS	POUNDS	XS	CROSS SECTION
LF	LINEAR FEET	YD	YARD
LN	LANE		

LEGEND

EXISTING	PROPOSED	DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION
---	---	MAJOR CONTOUR	⊙	⊙	STUMP
---	---	MINOR CONTOUR	⊙	⊙	SHRUB/BUSH
---	---	OVERHEAD TELEPHONE	☀	☀	TREE--CONIFER
---	---	UNDERGROUND TELEPHONE	☀	☀	TREE--DECIDUOUS
---	---	CABLE TELEVISION	☀	☀	TREE LINE
---	---	FIBER OPTIC	⊙	⊙	COMMUNICATION MANHOLE
---	---	NATURAL GAS	⊙	⊙	COMMUNICATION VAULT
---	---	OVERHEAD POWER	⊙	⊙	TELEPHONE RISER
---	---	UNDERGROUND POWER	⊙	⊙	CABLE TV RISER
---	---	SANITARY SEWER	⊙	⊙	NATURAL GAS METER
---	---	SANITARY SEWER SERVICE	⊙	⊙	NATURAL GAS RISER
---	---	SANITARY SEWER FORCEMAIN	⊙	⊙	NATURAL GAS VALVE
---	---	STORM DRAIN	⊙	⊙	LIGHT POLE
---	---	STORM CULVERT	⊙	⊙	STREET LIGHT POLE
---	---	WATER	⊙	⊙	POWER RISER
---	---	WATER SERVICE	⊙	⊙	PAD MOUNTED TRANSFORMER
---	---	CHAINLINK FENCE	⊙	⊙	POWER VAULT
---	---	BARBED WIRE FENCE	⊙	⊙	UTILITY POLE
---	---	WOOD FENCE	⊙	⊙	GUY WIRE
---	---	PAVED ROAD	⊙	⊙	SANITARY MANHOLE
---	---	GRAVEL ROAD	⊙	⊙	SANITARY CLEANOUT
---	---	PROPERTY/LOT LINE	⊙	⊙	SANITARY LAMPHOLE
---	---	PROPERTY EASEMENT	⊙	⊙	STORM MANHOLE
---	---	PROPERTY SETBACK	⊙	⊙	STORM ROUND INLET
---	---	RIGHT-OF-WAY	⊙	⊙	STORM SQUARE INLET
---	---	CITY LIMIT/DISTRICT BOUNDARY	⊙	⊙	STORM CATCH BASIN
---	---	RAILROAD	⊙	⊙	11.25' ELBOW
---	---	DITCH	⊙	⊙	22.50' ELBOW
---	---	WATER EDGE	⊙	⊙	45' ELBOW
---	---	WETLAND	⊙	⊙	90' ELBOW
---	---	BUILDING	⊙	⊙	TEE
---	---	BENCHMARK	⊙	⊙	CROSS
---	---	CONTROL POINT	⊙	⊙	CAP
---	---	PROPERTY PIN	⊙	⊙	FIRE HYDRANT
---	---	BORING	⊙	⊙	GATE VALVE
---	---	MONITORING WELL	⊙	⊙	REDUCER
---	---	TEST PIT	⊙	⊙	WATER METER
---	---	BOLLARD	⊙	⊙	WELL
---	---	MAIL BOX	⊙	⊙	CURB STOP
---	---	SIGN	⊙	⊙	FROST FREE HYDRANT

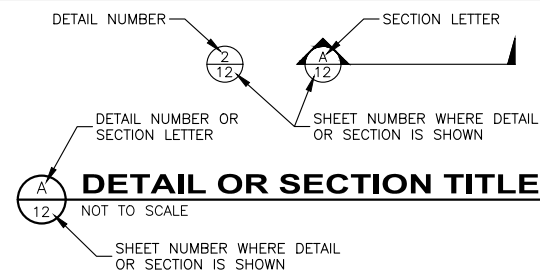
GENERAL NOTES:

1. THIS IS A STANDARD LEGEND AND ABBREVIATION LIST. THEREFORE, NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED ON THIS PROJECT.
2. UNLESS MODIFIED BY THE CONTRACT DOCUMENTS, ALL WORK WILL CONFORM TO THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS, SEVENTH EDITION, APRIL 2021 (REFERRED TO COLLECTIVELY AS MPWSS).
3. EXISTING UNDERGROUND UTILITIES SHOWN ARE FROM THE BEST INFORMATION AVAILABLE. THIS INFORMATION IS APPROXIMATE AND MAY BE INCOMPLETE. FOR ACCURATE LOCATION, THE CONTRACTOR SHALL CONTACT, PRIOR TO EXCAVATION, THE UTILITIES UNDERGROUND LOCATION CENTER AT: 1-800-424-5555.

PROJECT NOTES:

1. THE CONTRACTOR SHALL UTILIZE SUITABLE STRUCTURE EXCAVATION MATERIAL FOR STRUCTURE BACKFILL AT ABUTMENTS (AS APPROVED BY THE ENGINEER). THE WORK TO PLACE, HAUL, AND COMPACT THIS MATERIAL IS PAID UNDER THE STRUCTURE EXCAVATION BID ITEM.
2. NO SUITABLE RIPRAP IS PRESENT ON SITE. ALL RIPRAP MATERIAL SHALL BE COMMERCIALY SOURCED.
3. THE CONTRACTOR SHALL PROVIDE TYPE 3 BARRICADES ON BOTH SIDES OF THE WORK AREA PER MUTCD GUIDELINES. BARRICADES AND SIGNAGE ARE INCIDENTAL TO THE MOBILIZATION BID ITEM. REFER TO SPECIAL PROVISIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF A PROJECT SIGN MEETING MCEP REQUIREMENTS AS SHOWN ON THE MCEP SUPPLEMENTAL GENERAL CONDITIONS IN PROJECT MANUAL (EXHIBIT 8-A).
5. CONTRACTOR SHALL COORDINATE WITH COUNTY DURING ALL PHASES OF PROJECT, REFERENCE SEQUENCING IN SPECIAL PROVISIONS SP-23.

GENERAL DESIGN DESIGNATIONS:



DETAIL OR SECTION TITLE

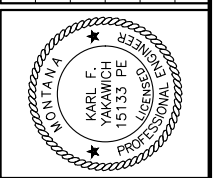
NOT TO SCALE

SHEET NUMBER WHERE DETAIL OR SECTION IS SHOWN

PRELIMINARY DRAWINGS

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-17277
DESIGNED: JRC
DRAWN: JRC
CHECKED: RME
APPROVED: KY
DATE: OCTOBER 22, 2024



LEWIS AND CLARK COUNTY

HEAD LANE BRIDGE REPLACEMENT

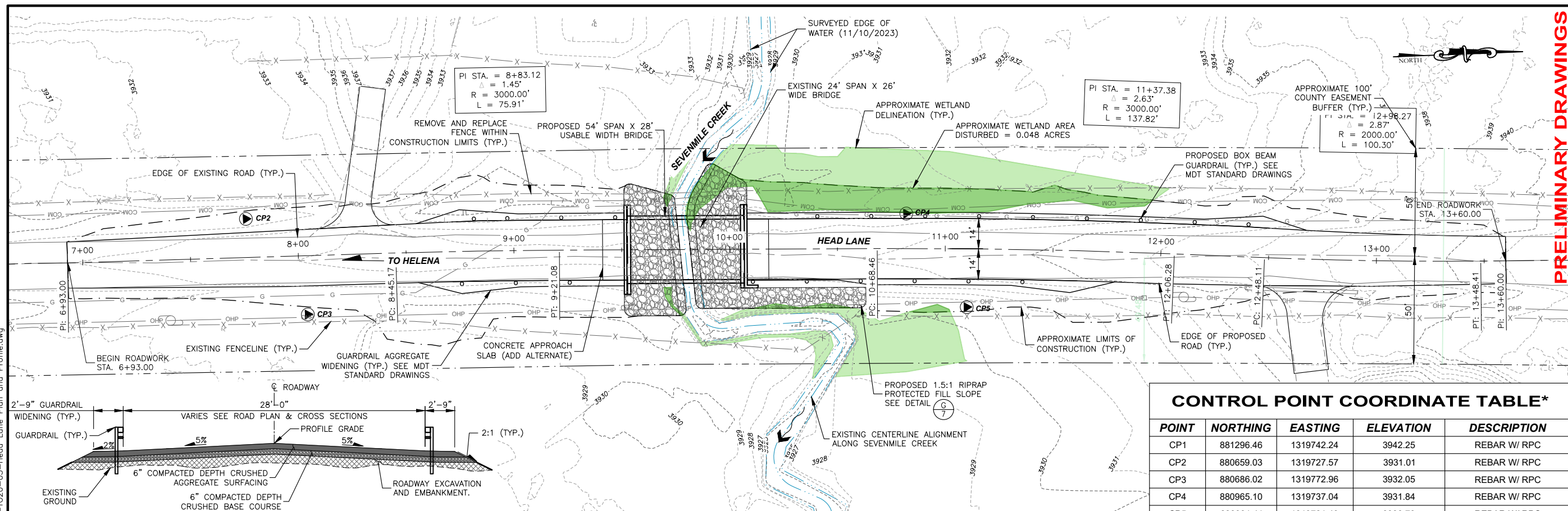
LEGEND & GENERAL NOTES

SHEET NO.

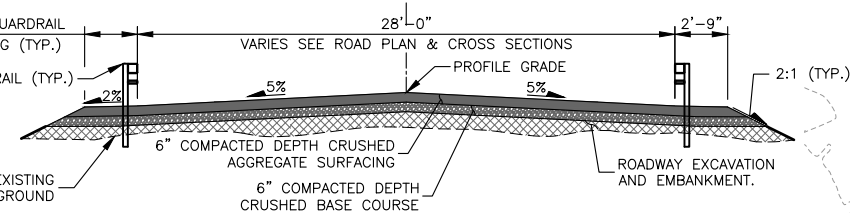
2

OF 13

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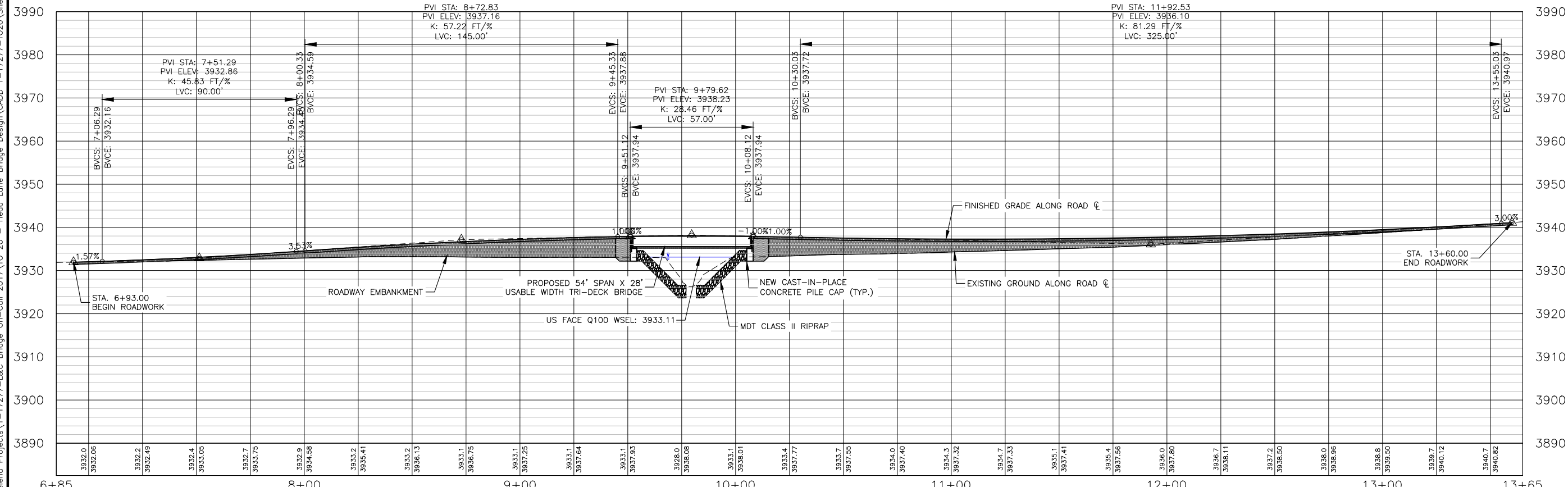
PLAN VIEW OF HEAD LANE - STA. 6+65 TO STA. 13+90



TYPICAL ROADWAY SECTION
NOT TO SCALE
1. OUTSIDE OF GUARDRAIL EXTENTS ROADWAY FILL SLOPE SHALL BE 4:1

CONTROL POINT COORDINATE TABLE*

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	881296.46	1319742.24	3942.25	REBAR W/ RPC
CP2	880659.03	1319727.57	3931.01	REBAR W/ RPC
CP3	880686.02	1319772.96	3932.05	REBAR W/ RPC
CP4	880965.10	1319737.04	3931.84	REBAR W/ RPC
CP5	880991.41	1319781.49	3930.73	REBAR W/ RPC
CP6	883976.52	1319797.30	3998.96	REBAR W/ RPC
CP99	879111.42	1319696.82	3920.13	BRASS CAP IN CONCRETE



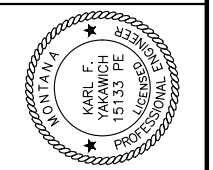
PROFILE VIEW OF HEAD LANE - STA. 6+85 TO STA. 13+65

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 25'

PRELIMINARY DRAWINGS

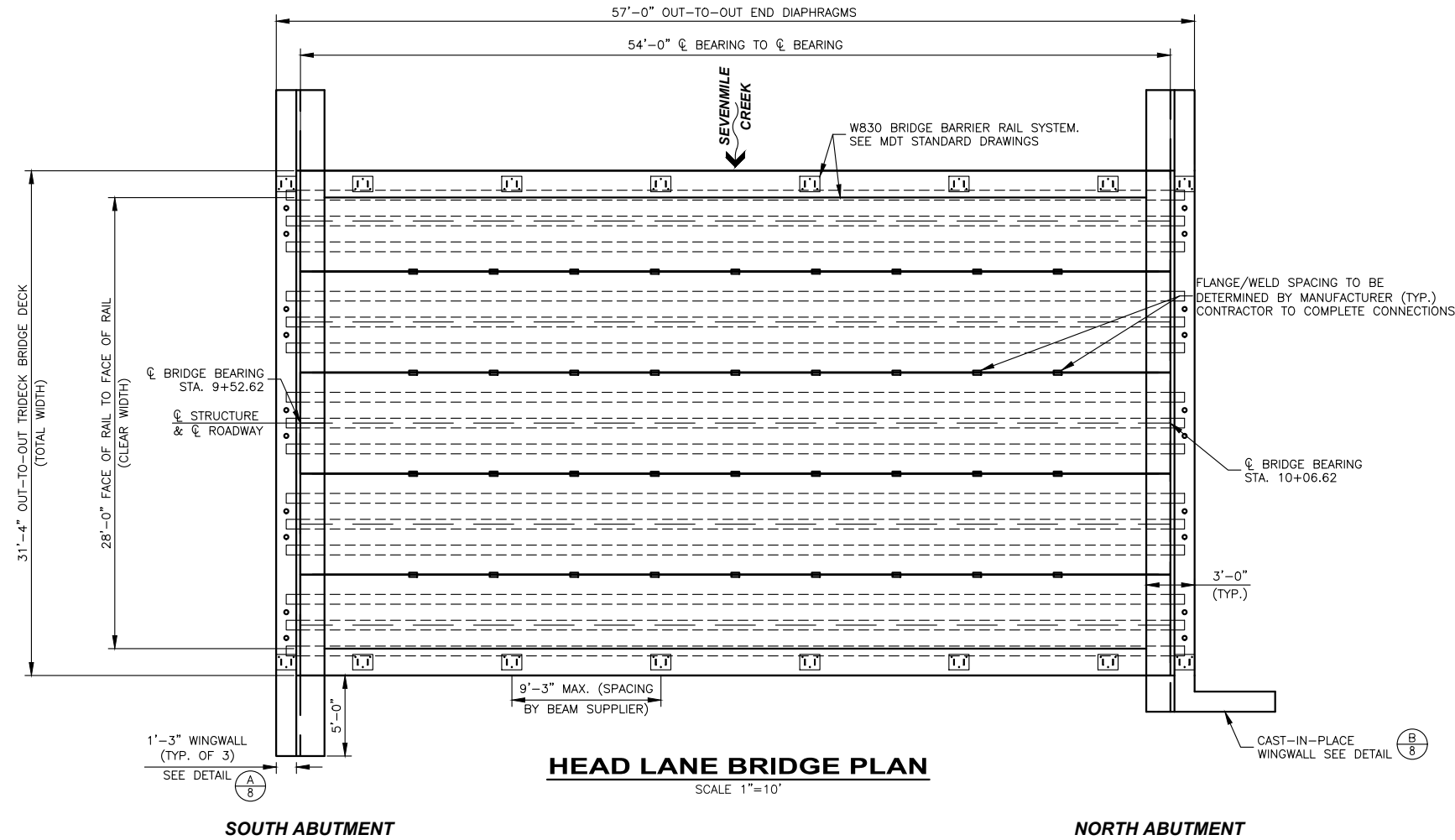
NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-17277
DESIGNED: JRC
DRAWN: JRC
CHECKED: RME
APPROVED: KY
DATE: OCTOBER 22, 2024



LEWIS AND CLARK COUNTY
HEAD LANE BRIDGE REPLACEMENT
HEAD LANE PLAN & PROFILE

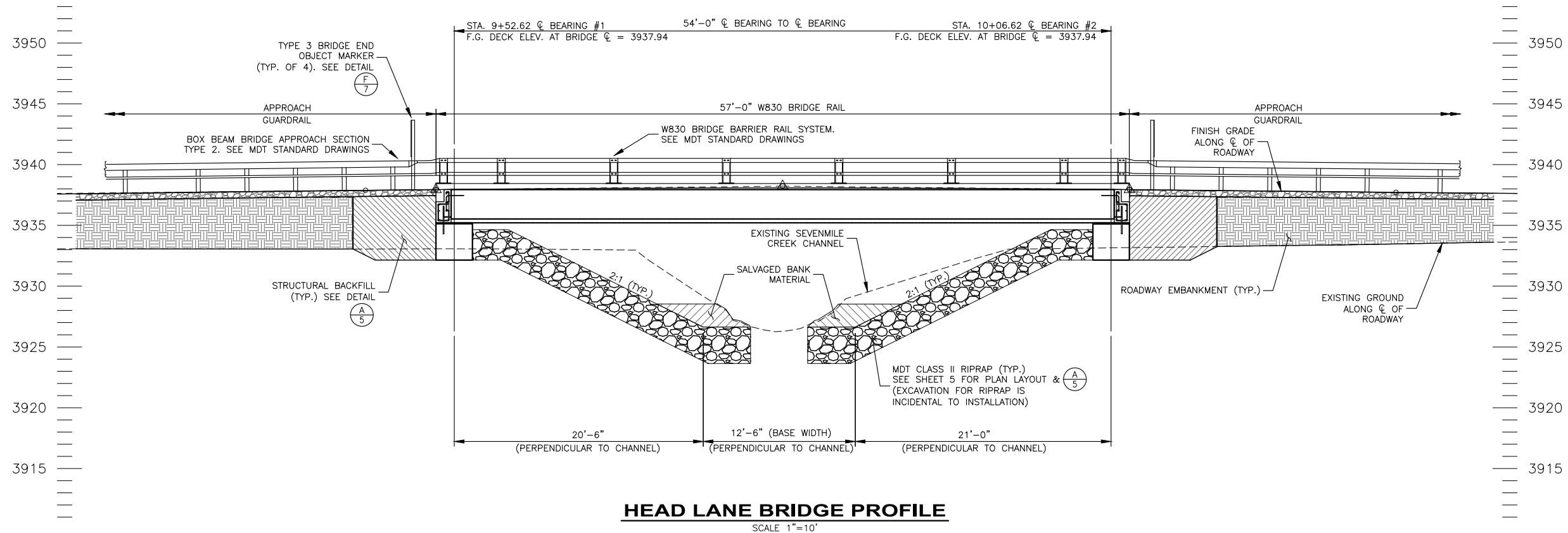
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HEAD LANE BRIDGE PLAN
SCALE 1"=10'

NOTES:

- DESIGN SHALL CONFORM TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CURRENT EDITION. BRIDGE SUPERSTRUCTURE SHALL BE DESIGN BY SUPPLIER FOR HL-93 LOADING WITH A 30 PSF ALLOWANCE FOR FUTURE OVERLAYS, INCLUDING DEFLECTION CRITERIA. DESIGN SHALL BE CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MONTANA.



HEAD LANE BRIDGE PROFILE
SCALE 1"=10'

PRELIMINARY DRAWINGS

NO.	REVISION DESCRIPTION	BY	DATE

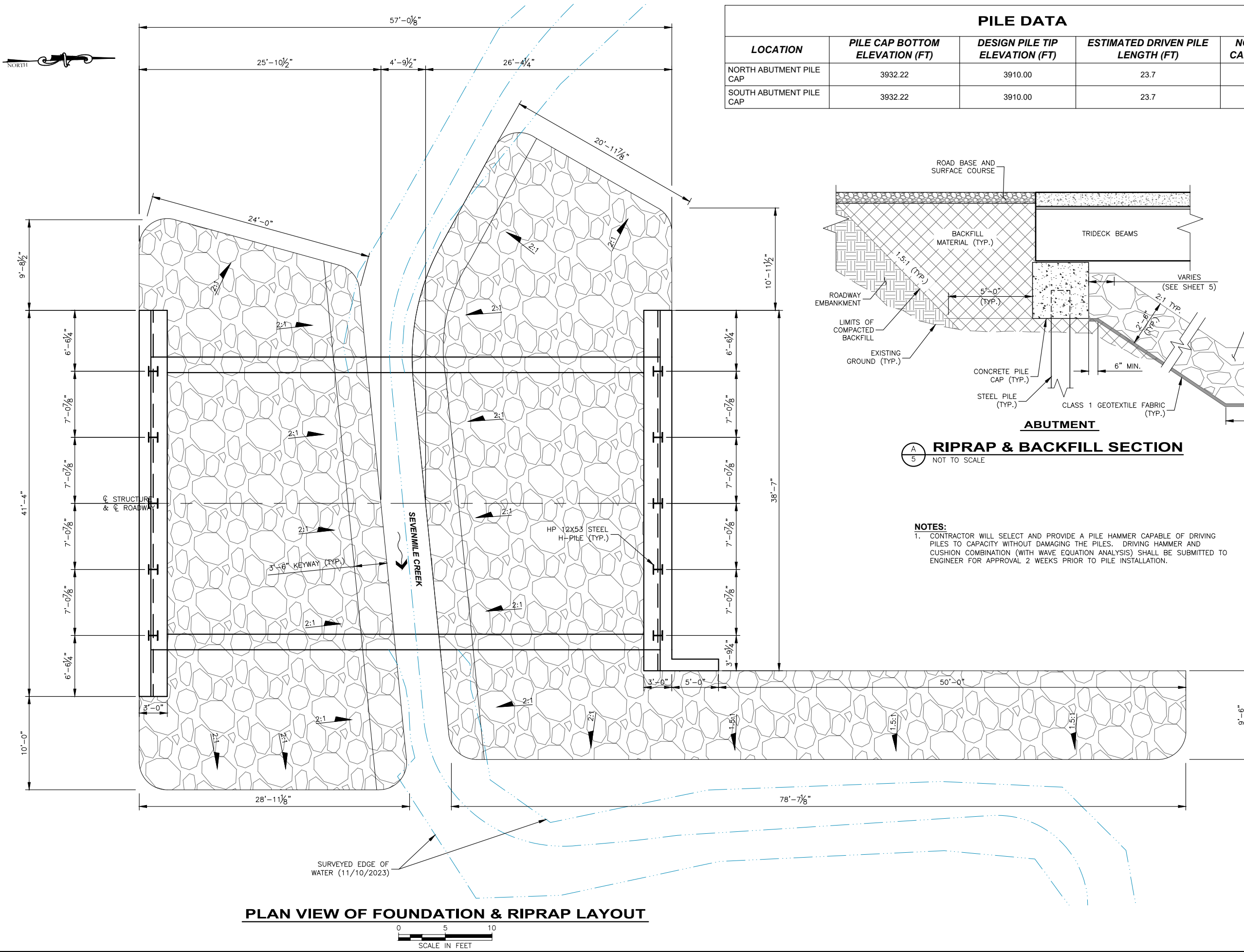
PROJECT: 1-17277
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LEWIS AND CLARK COUNTY
HEAD LANE BRIDGE REPLACEMENT
BRIDGE PLAN & ELEVATION

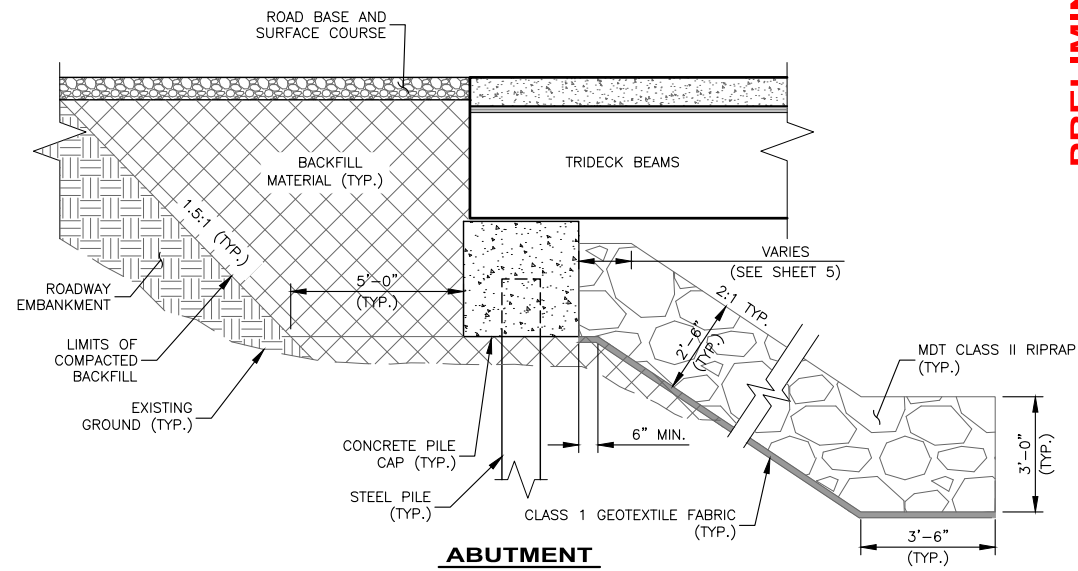
SHEET NO.
4
OF 13

Y:\Shared\Helena Projects\1-17277-L&C Bridge On-Call 2017\TO 20 - Head Lane Bridge Design\CADD\1-17277-TO20\Sheets\1-17277-TO20-05-Riprap Plan.dwg



PLAN VIEW OF FOUNDATION & RIPRAP LAYOUT

PILE DATA			
LOCATION	PILE CAP BOTTOM ELEVATION (FT)	DESIGN PILE TIP ELEVATION (FT)	NOMINAL PILE CAPACITY (KIPS)
NORTH ABUTMENT PILE CAP	3932.22	3910.00	230
SOUTH ABUTMENT PILE CAP	3932.22	3910.00	230



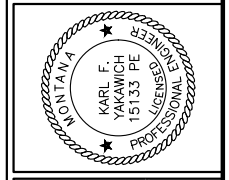
A
5 **RIPRAP & BACKFILL SECTION**
NOT TO SCALE

NOTES:
1. CONTRACTOR WILL SELECT AND PROVIDE A PILE HAMMER CAPABLE OF DRIVING PILES TO CAPACITY WITHOUT DAMAGING THE PILES. DRIVING HAMMER AND CUSHION COMBINATION (WITH WAVE EQUATION ANALYSIS) SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL 2 WEEKS PRIOR TO PILE INSTALLATION.

PRELIMINARY DRAWINGS

NO.	REVISION DESCRIPTION	BY	DATE

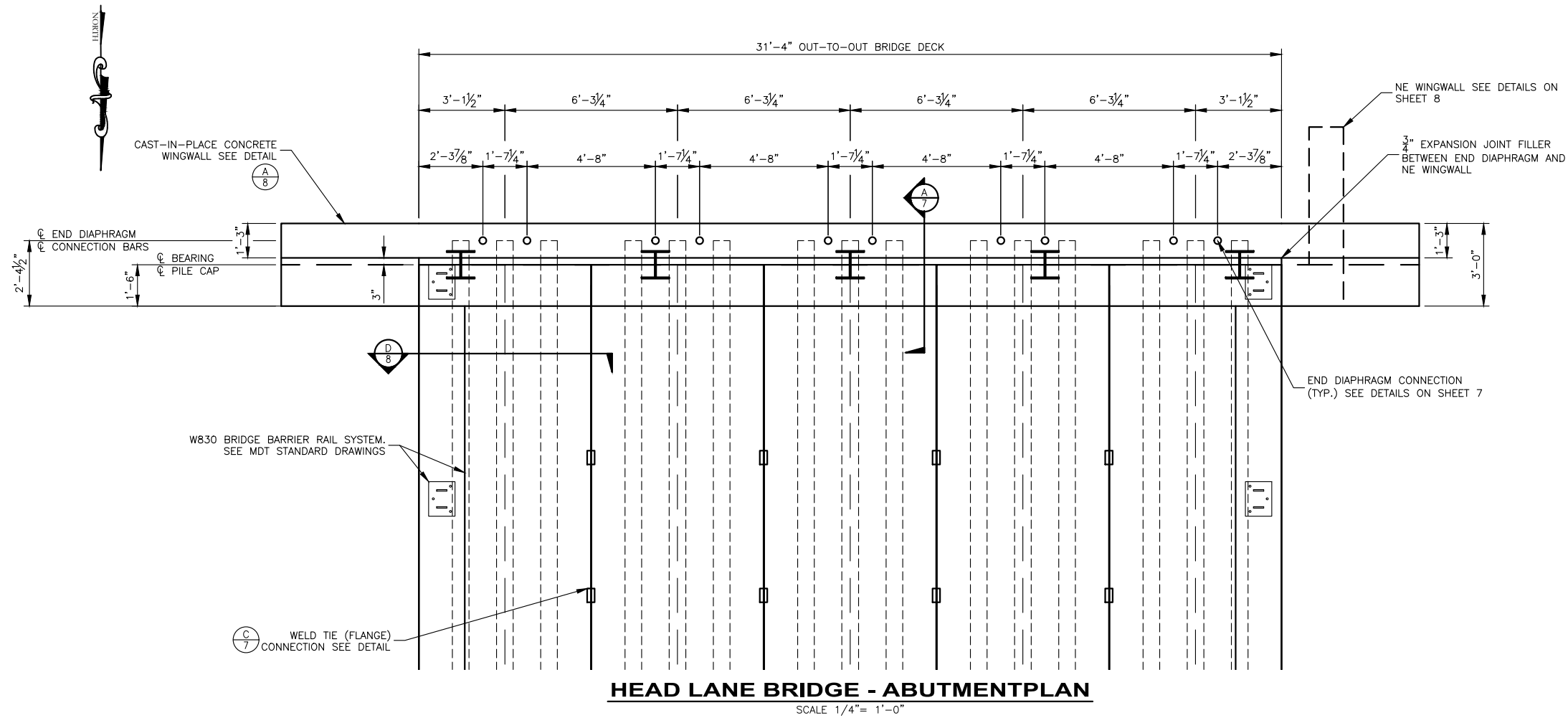
PROJECT: 1-17277
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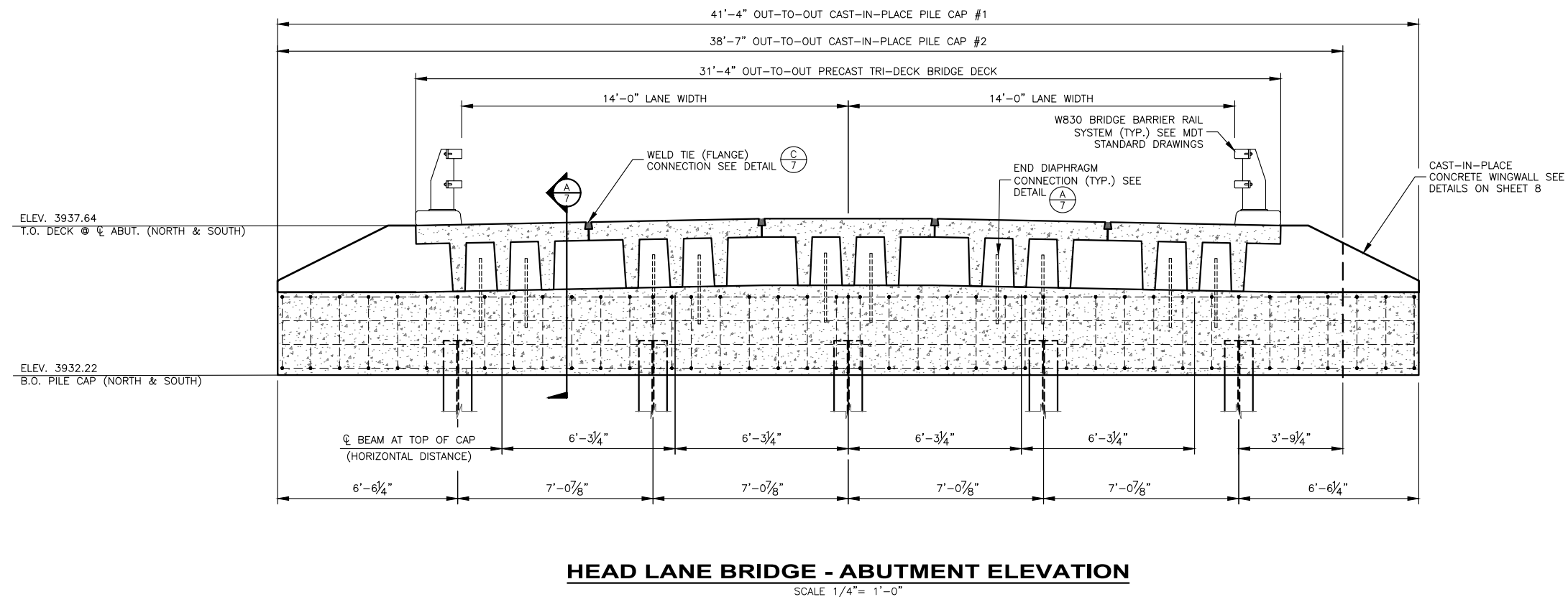
LEWIS AND CLARK COUNTY
HEAD LANE BRIDGE REPLACEMENT
FOUNDATION & RIPRAP LAYOUT

SHEET NO.
5
OF 13

Y:\Shared\Helena Projects\1-17277-L&C Bridge On-Call 2017\TO 20 - Head Lane Bridge Design\CADD 1-17277-TO20-06-Abutment Plan and Elevation.dwg



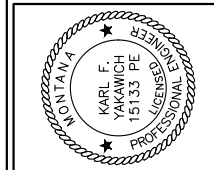
NOTE:
SOUTH ABUTMENT PLAN SHOWN. NORTH ABUTMENT PLAN SIMILAR WITH A SLIGHTLY DIFFERENT WINGWALL CONFIGURATION, SEE DETAILS ON SHEET 8. END DIAPHRAGM CONNECTION SPACING IS IDENTICAL.



PRELIMINARY DRAWINGS

NO.	REVISION DESCRIPTION	BY	DATE

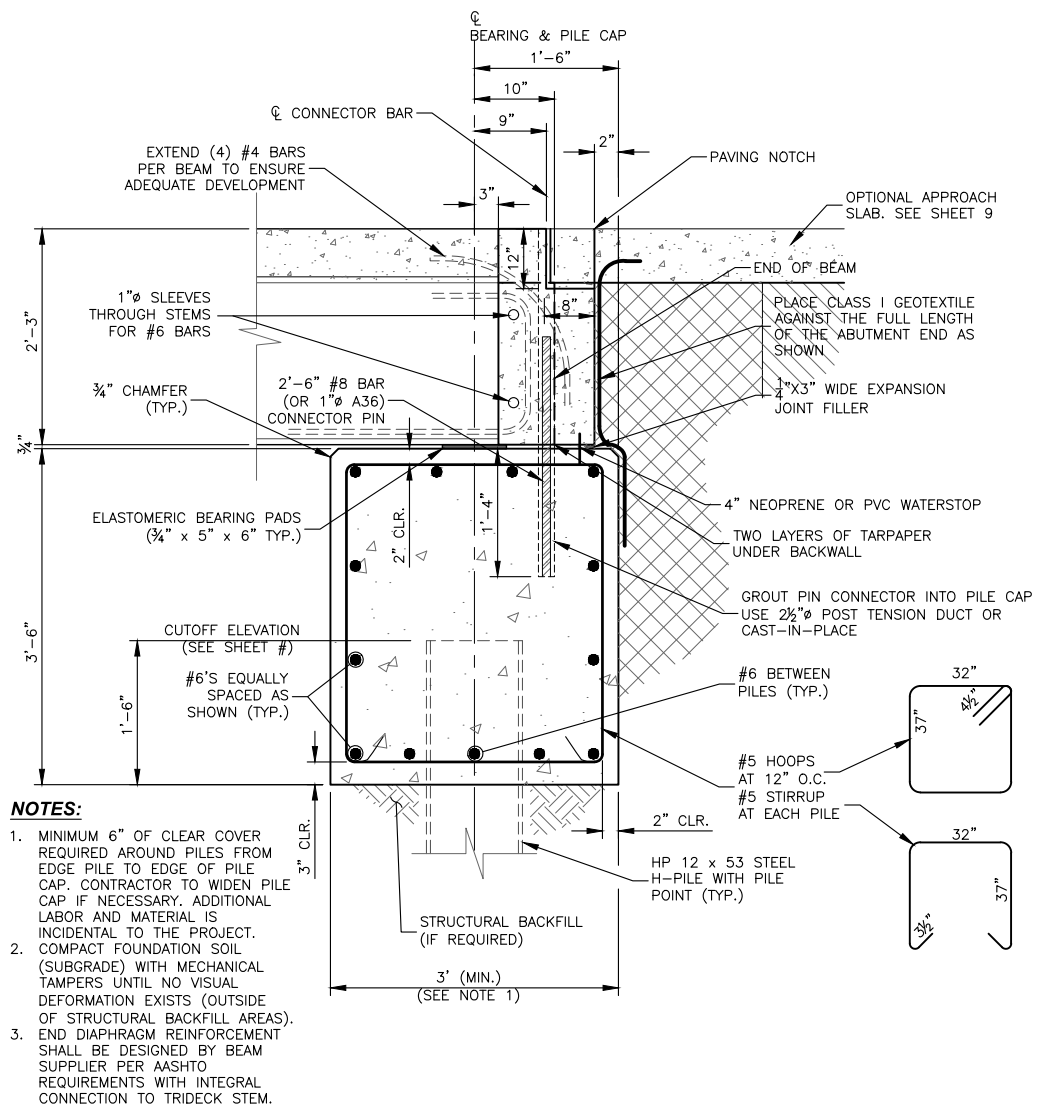
PROJECT: 1-17277
DESIGNED: JRC
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CHECKED: RME
APPROVED: KY
DATE: OCTOBER 22, 2024



LEWIS AND CLARK COUNTY
HEAD LANE BRIDGE REPLACEMENT
ABUTMENT PLAN & ELEVATION

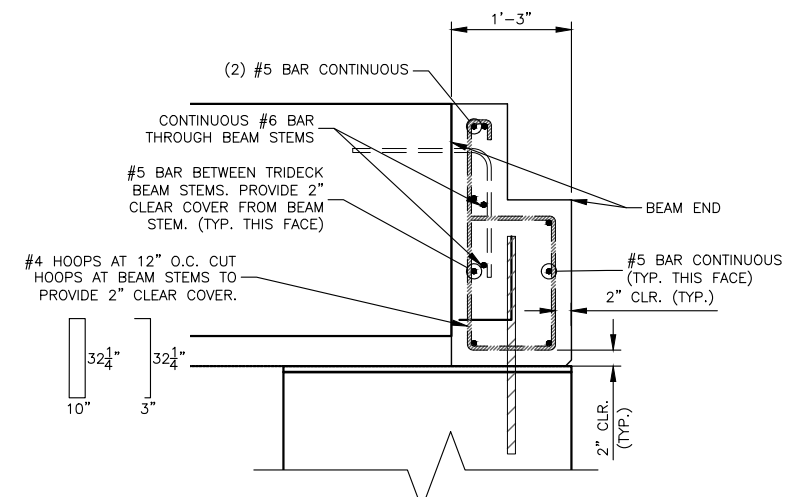
SHEET NO.
6
OF 13

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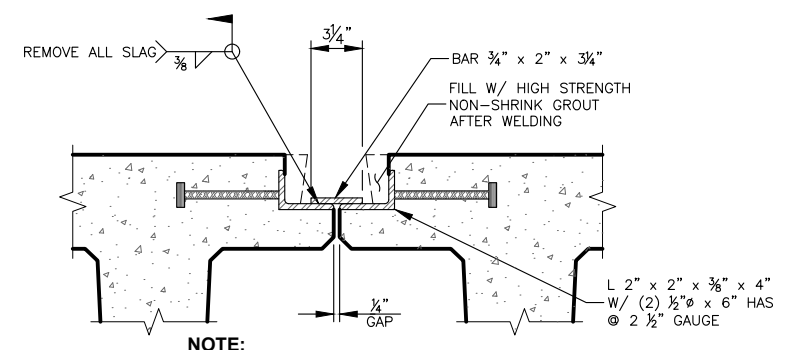


A
7
ABUTMENT/CONCRETE PILE CAP SECTION
1/2" = 1'-0"

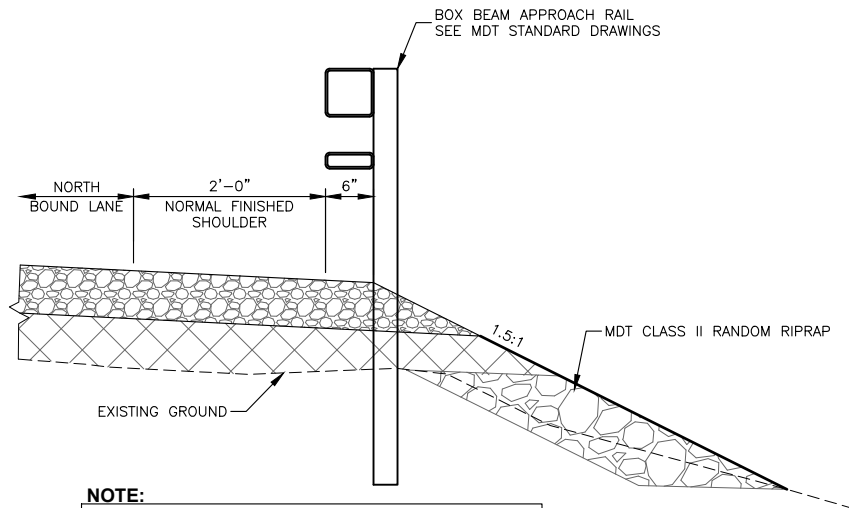
- NOTES:**
1. MINIMUM 6" OF CLEAR COVER REQUIRED AROUND PILES FROM EDGE PILE TO EDGE OF PILE CAP. CONTRACTOR TO WIDEN PILE CAP IF NECESSARY. ADDITIONAL LABOR AND MATERIAL IS INCIDENTAL TO THE PROJECT. COMPACT FOUNDATION SOIL (SUBGRADE) WITH MECHANICAL TAMPERS UNTIL NO VISUAL DEFORMATION EXISTS (OUTSIDE OF STRUCTURAL BACKFILL AREAS).
 2. END DIAPHRAGM REINFORCEMENT SHALL BE DESIGNED BY BEAM SUPPLIER PER AASHTO REQUIREMENTS WITH INTEGRAL CONNECTION TO TRIDECK STEM.



B
7
END DIAPHRAGM REINFORCEMENT
NOT TO SCALE

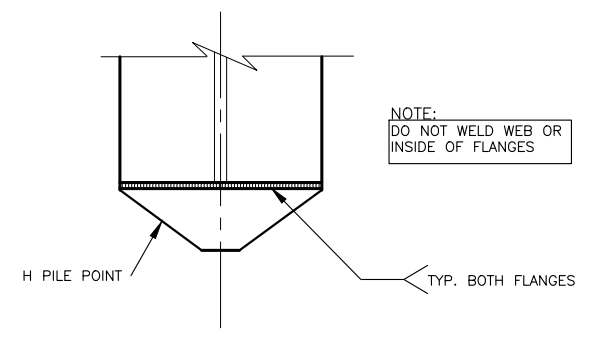


C
7
WELD TIE DETAIL
SCALE 1" = 1'-0"

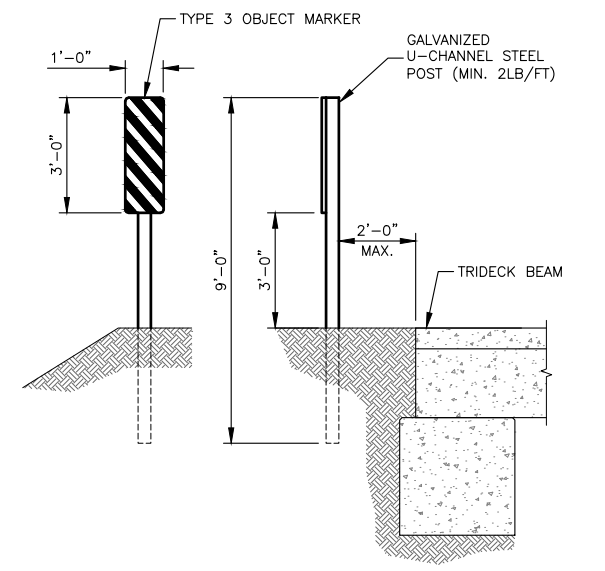


E
7
GUARDRAIL WIDENING (NE CORNER)
NOT TO SCALE

NOTE:
STA. 10+08.12 TO STA. 10+50.00
THEN TRANSITION OVER 15' TO STANDARD 2'-9" GUARDRAIL
AGGREGATE WIDENING PER MDT STANDARD DRAWING 606-55



D
7
PILE POINT DETAIL
NOT TO SCALE



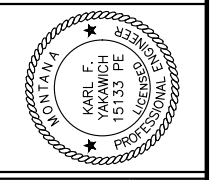
F
7
TYPE 3 OBJECT MARKER DETAIL
NOT TO SCALE

NOTE:
TYPE 3 OBJECT MARKERS SHALL BE 12" x 36" AND COLORED YELLOW AND BLACK. MATERIAL SHALL MEET MUTCD OM-3L OR OM-3R SPECIFICATIONS. FASTEN TO POST W/ (2) 5/16" MACHINE BOLTS W/ WASHERS. INSTALL POSTS SUCH THAT THE INSIDE EDGE OF THE REFLECTORIZED PANEL IS IN LINE WITH THE INSIDE EDGE OF THE RAIL.

PRELIMINARY DRAWINGS

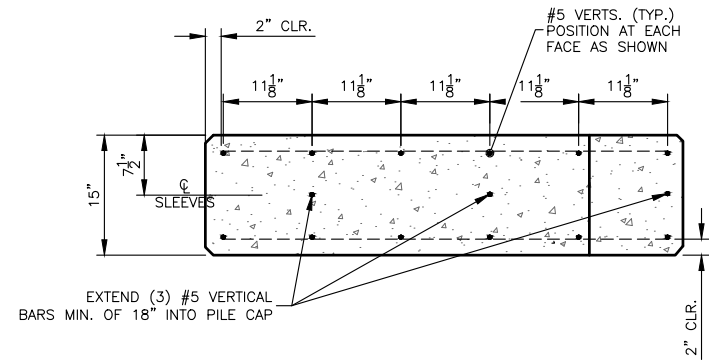
NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-17277
DESIGNED: JRC
DRAWN: JRC
CHECKED: RME
APPROVED: KY
DATE: OCTOBER 22, 2024

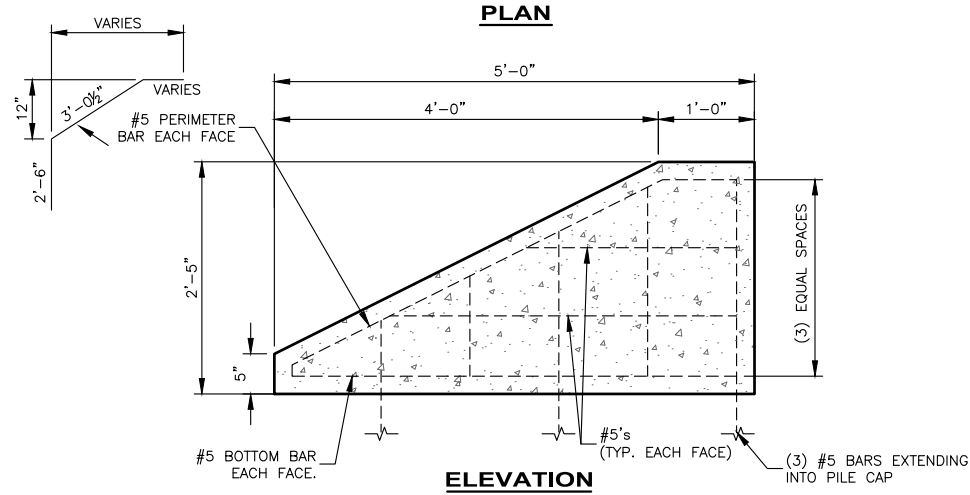


LEWIS AND CLARK COUNTY
HEAD LANE BRIDGE REPLACEMENT
BRIDGE DETAILS

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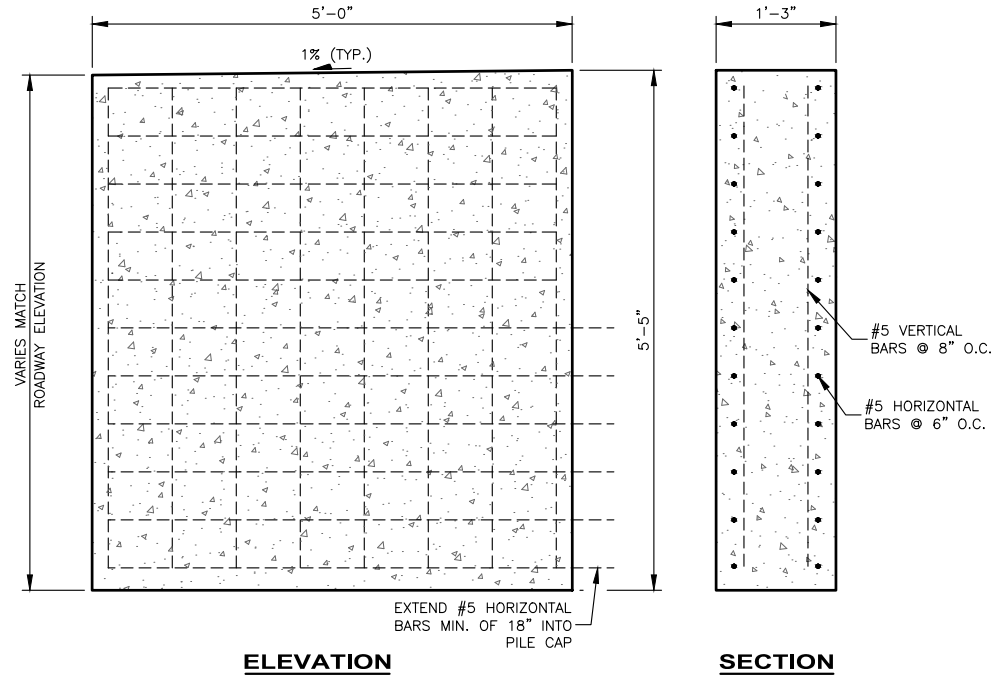
EXTEND (3) #5 VERTICAL BARS MIN. OF 18" INTO PILE CAP



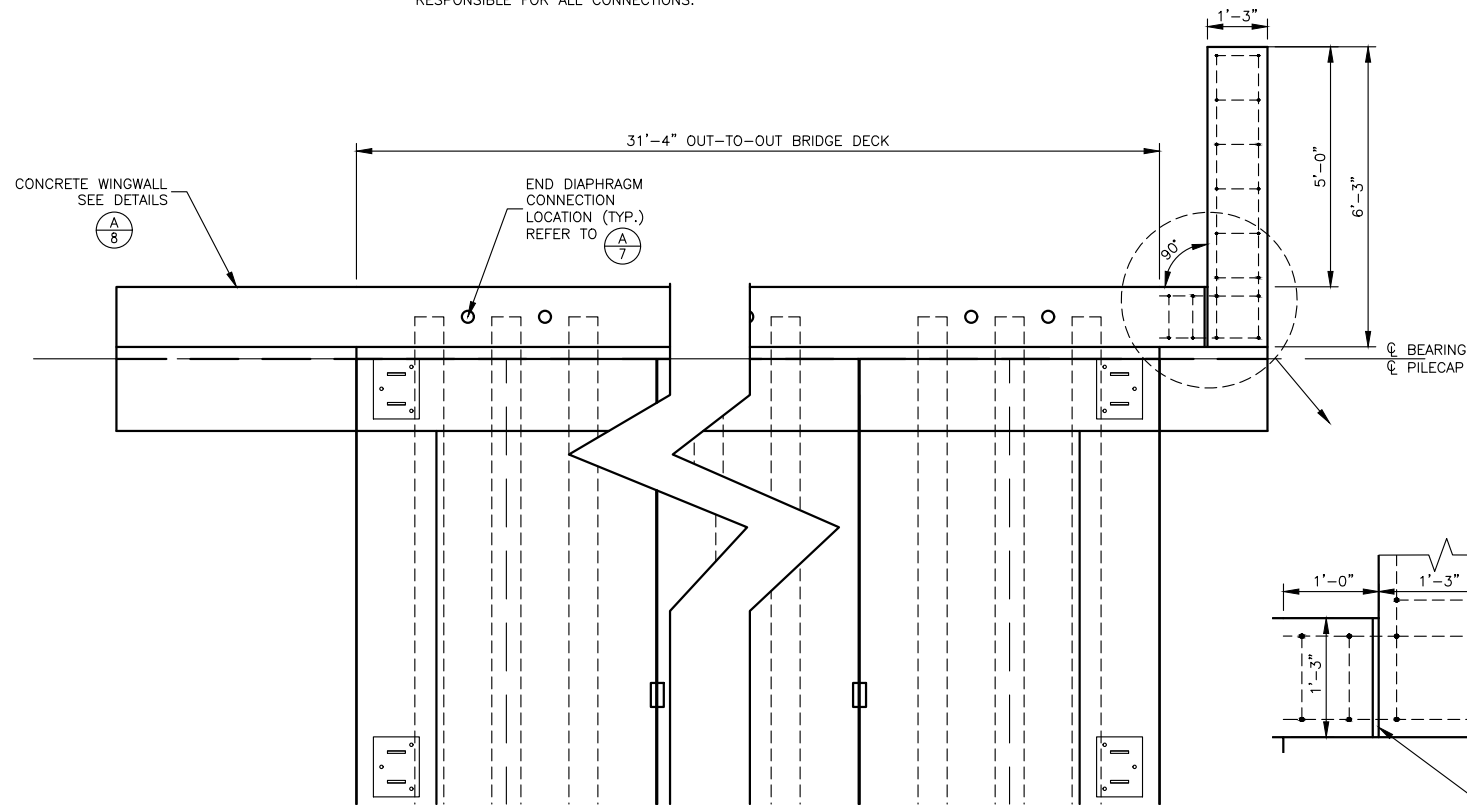
WINGWALL DETAIL (NW, SE, SW)
SCALE: 1/2" = 1'-0"

NOTES:

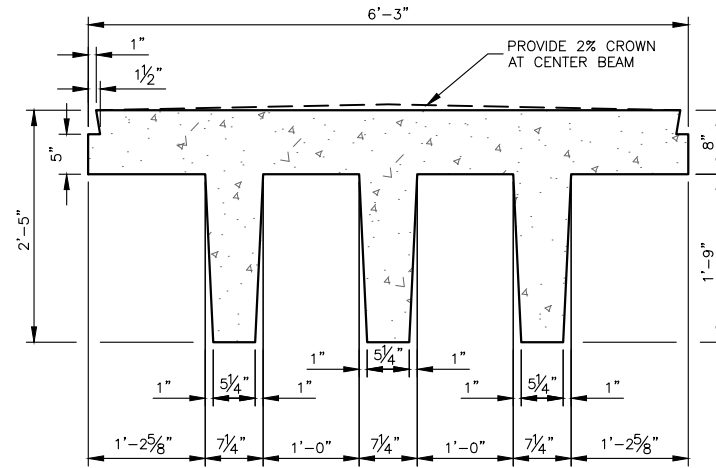
1. CAST-IN-PLACE (CIP) ENDWALL AND WINGWALLS ARE REQUIRED. SUPPLIER RESPONSIBLE FOR ALL CONNECTIONS.



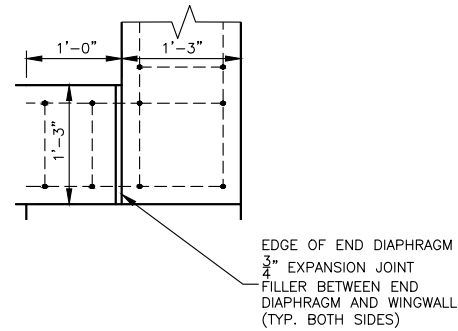
WINGWALL DETAIL NE
SCALE: 1/2" = 1'-0"



NORTHEAST WINGWALL PLAN
SCALE: 1/4" = 1'-0"



TRIDECK BEAM SECTION
SCALE: 1/2" = 1'-0"

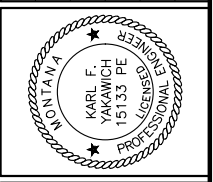


EDGE OF END DIAPHRAGM
3/4" EXPANSION JOINT
FILLER BETWEEN END
DIAPHRAGM AND WINGWALL
(TYP. BOTH SIDES)

PRELIMINARY DRAWINGS

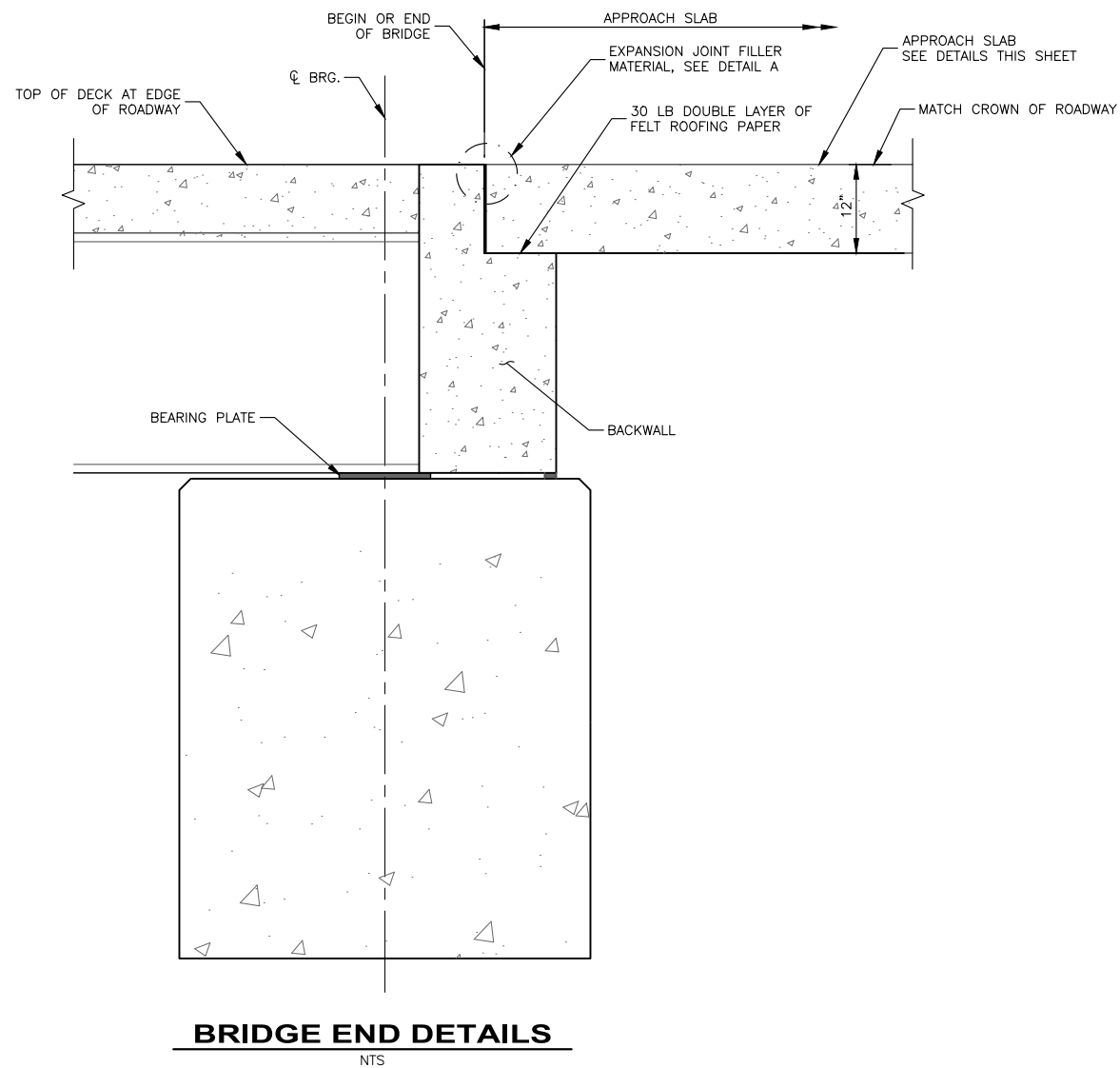
NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-17277
DESIGNED: JRC
DRAWN: JRC
CHECKED: RME
APPROVED: KY
DATE: OCTOBER 22, 2024



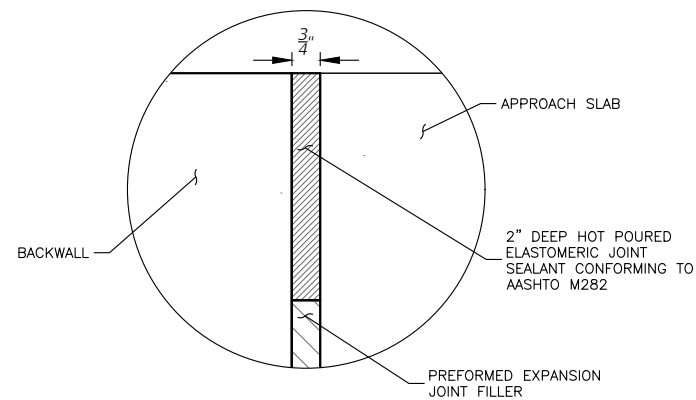
**LEWIS AND CLARK COUNTY
HEAD LANE BRIDGE REPLACEMENT
BRIDGE DETAILS**

Y:\Shared\Helena Projects\1-17277-L&C Bridge On-Call 2017\TO 20 - Head Lane Bridge Design\CADD\1-17277-1020\Sheets\1-17277-1020-07-Bridge Details.dwg



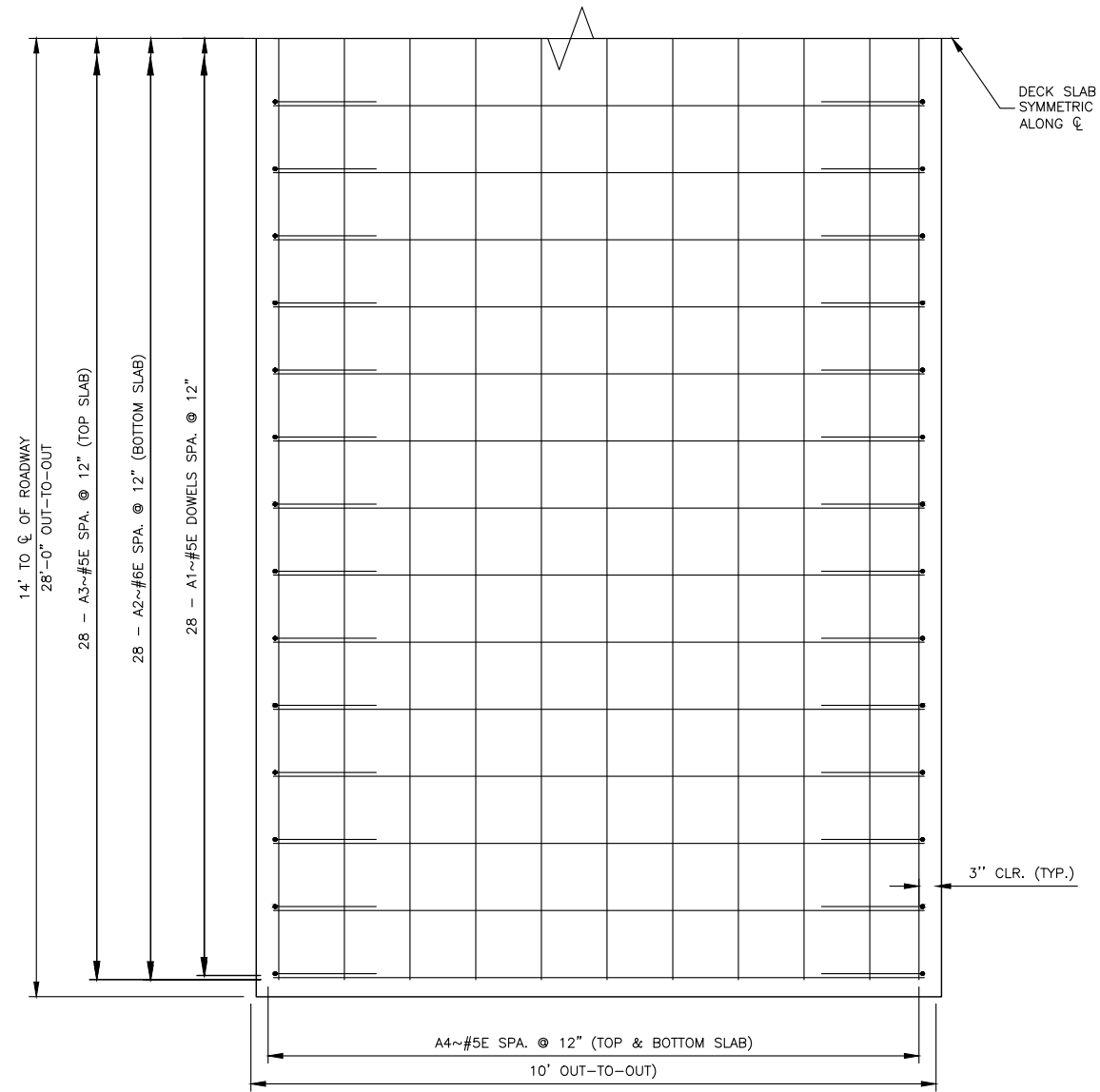
BRIDGE END DETAILS

NTS



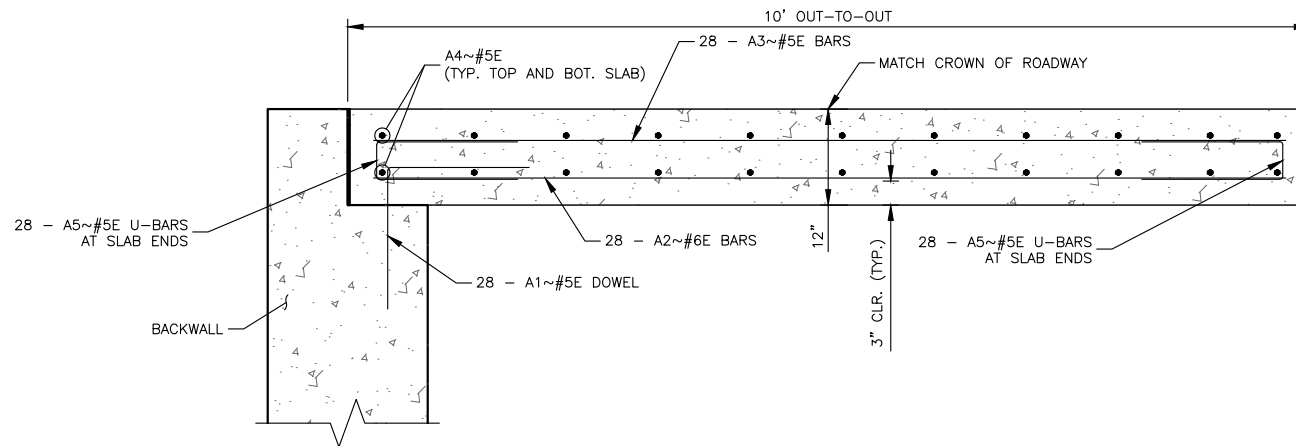
EXPANSION JOINT FILLER

NOT TO SCALE



APPROACH SLAB DETAILS - PLAN

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



APPROACH SLAB DETAILS - ELEVATION

SCALE: 1" = 1'-0"

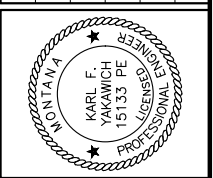
NOTES:

1. APPLIES TO BENT NO. 1 AND BENT NO. 2
2. THE TOTAL DECK THICKNESS AT THE END OF THE SLAB EXTENSION VARIES DUE TO THE ROADWAY CROWN
3. USE CONCRETE - CLASS STRUCTURE LOW SLUMP FOR APPROACH SLABS
4. INCLUDE THE COST OF EXCAVATION NECESSARY FOR PLACING THE APPROACH SLAB, TRANSVERSE DECK GROOVING, ADJOINING JOINT MATERIAL, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE THE ITEM IN THE UNIT PRICE BID PER SQUARE YARD OF APPROACH SLAB - CONCRETE
5. INCLUDE ALL COSTS ASSOCIATED WITH APPROACH SLAB REINFORCING STEEL IN THE UNIT PRICE BID FOR REINFORCING STEEL - EPOXY

PRELIMINARY DRAWINGS

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-17277
DESIGNED: JRC
DRAWN: JRC
CHECKED: RME
APPROVED: KY
DATE: OCTOBER 22, 2024



LEWIS AND CLARK COUNTY
HEAD LANE BRIDGE REPLACEMENT
 APPROACH SLAB DETAILS

SHEET NO.
9
 OF 13

APPENDIX B

STANDARD DRAWINGS

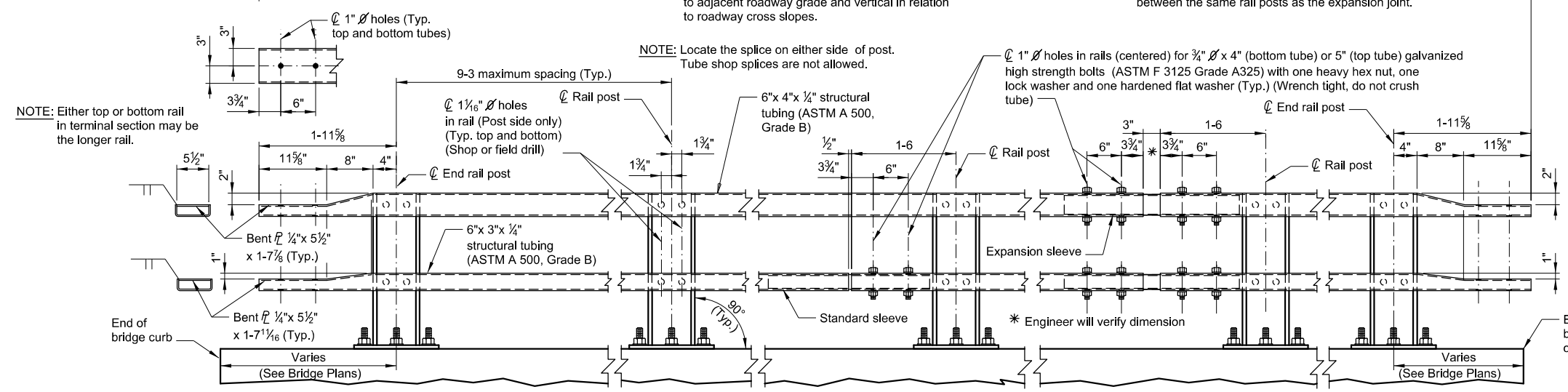
Box Beam - Bridge Approach Section Type 2
(See Road Plans and Detailed Dwg. No. 606-53)

Bridge Rail - W 830

Box Beam - Bridge Approach Section Type 2
(See Road Plans and Detailed Dwg. No. 606-53)

NOTES

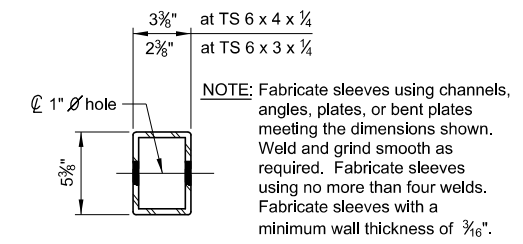
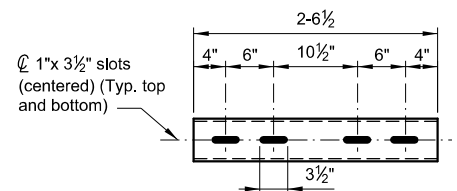
- GALVANIZING:** Galvanize all bolts, nuts, washers and pipe sleeves in accordance with ASTM F 2329.
- REFLECTORS:** Place a white reflector on top of the top tube rail at equal spacing (not to exceed 30 foot spacing) between ends of rail. See Dtl. Dwg. No. 605-00 for reflector detail. Mount the reflector on the tube rail with an approved adhesive. Include the cost of reflector in the unit price bid for Bridge Rail - W830.
- PAYMENT:** Payment for Bridge Rail - W830 per linear foot includes compensation for the cost of Concrete Class Deck in the curb and for all resources necessary to complete the work. See the General Layout for the number of linear feet for payment of Bridge Rail - W830. Use rail post plates and base plates conforming to AASHTO M 270 Grade 36 T3. Use AASHTO M 270 Grade 36 for all other plates.
- ERECTION:** Place rail posts as shown in details, perpendicular to adjacent roadway grade and vertical in relation to roadway cross slopes. Place posts in proper alignment prior to placement of curb.
- PAINTING:** Paint all posts, structural tubing and plates (except as noted) in accordance with the Standard Specifications. Galvanizing the posts, structural tubing and plates in accordance with AASHTO M 111 will be allowed.
- EXCEPTIONS:** Use details shown on this drawing only as they apply to the project. Anchorage details may vary. Refer to other drawings for variations in these details.
- FABRICATION:** For the purposes of fabrication, this rail system is considered an ancillary item. The requirements of subsection 1.3.7 of AASHTO/AWS D1.5 apply.
- RAIL WEIGHT:** For informational purposes only, the rail weight is approximately 123.0 lb/ft for the curb and 50.0 lb/ft for the rail.



ELEVATION AT BOX BEAM GUARDRAIL CONNECTION
NOTE: Do not provide a tube splice in first panel unless it crosses an expansion joint.

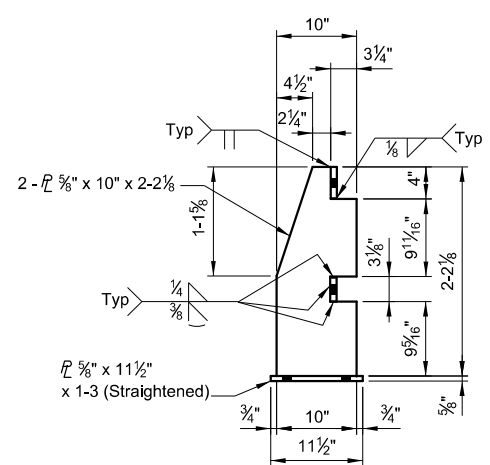
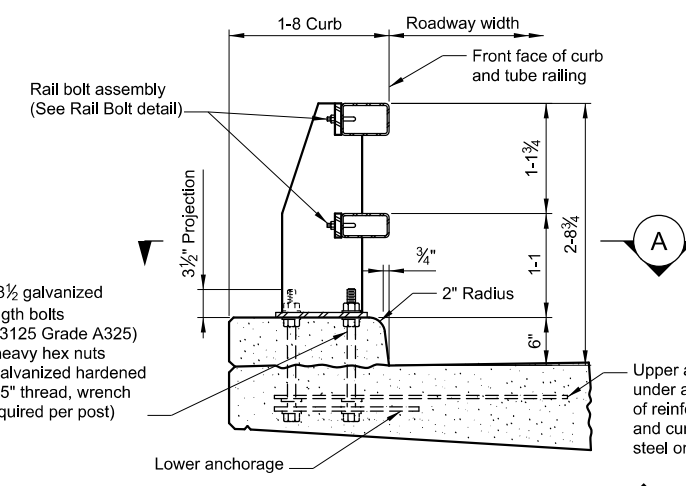
STANDARD SPLICE (Top or bottom rail)
INSIDE ELEVATION OF RAIL

EXPANSION SPLICE (Top and bottom rail)

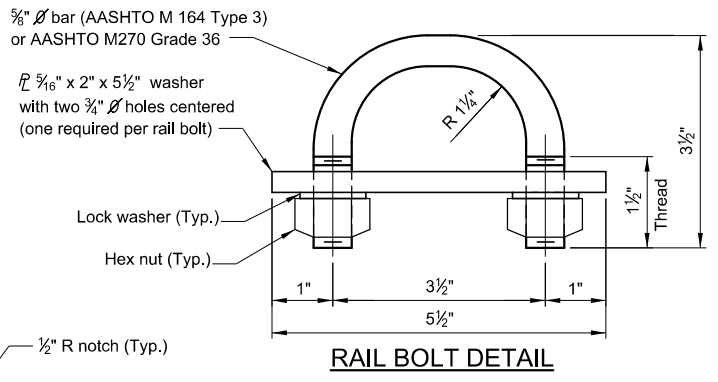


EXPANSION SLEEVE DETAIL

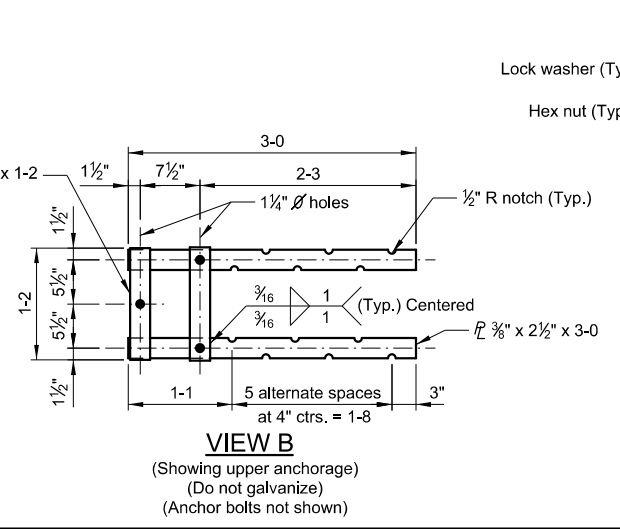
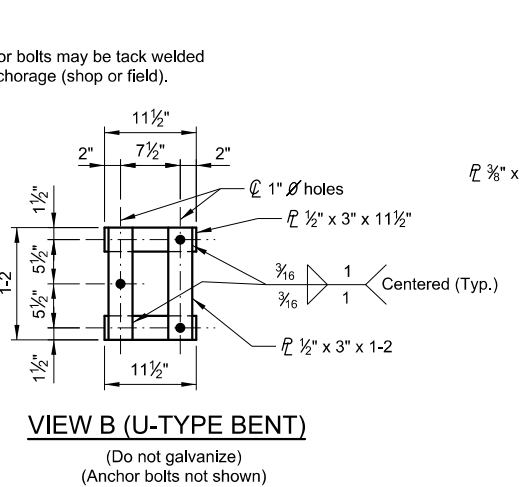
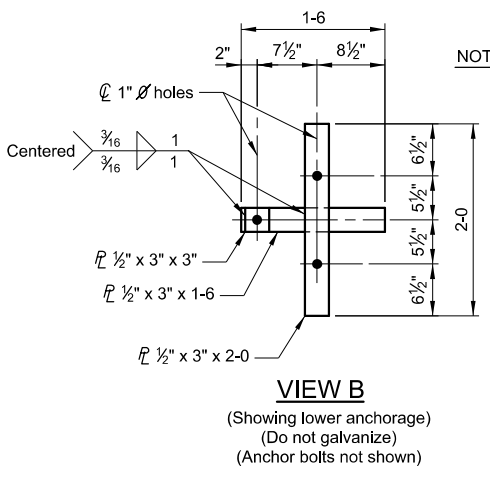
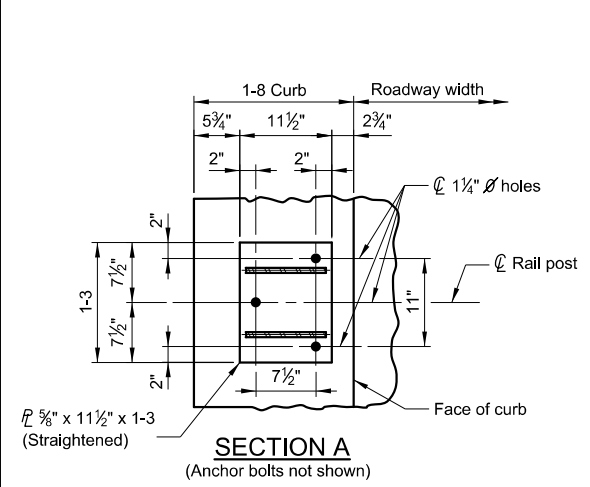
STANDARD SLEEVE DETAIL



POST DETAILS



RAIL BOLT DETAIL



STANDARD BRIDGE RAIL TYPE W830

MDTA MONTANA DEPARTMENT OF TRANSPORTATION BRIDGE BUREAU

REVISED	3-15-17	D.F.J.
REVISED	5-20-14	D.F.J.
REVISED	2-1-11	D.F.J.
APPROVED	3-25-08	D.F.J.
CHECKED	3-20-08	D.J.R.
DRAWN	8-2-06	L.M.S.
DATE	\$TIMES	\$FILE/ABBREVS

DRAWING NO. SBR-W830



**Water/Wastewater ▪ Transportation ▪ Grant Services ▪ Solid Waste ▪
Structural ▪ Bridges ▪ Natural Resources ▪ Planning**

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