STATE OF MONTANA
DEPARTMENT OF TRANSPORTATION
BID PACKAGE

Sealed bids for construction of this project will be received by the Montana Department of Transportation, Construction Contracting Section, Room 101, 2701 Prospect, Helena, Montana until 11:00 a.m. on December 3, 2025. All bids will then be publicly opened, reviewed for correctness, and then publicly read.

Federal Aid Project(s):

SSS-NH-NHPB 5-2(160)37 US 93 N – Post Creek Hill

Bid proposals, Plans, Standard Specifications, Detail Drawings, and Standard Contract Forms are on file for examination and may be obtained from the Construction Contracting Bureau of the Montana Department of Transportation, 2701 Prospect Avenue, P.O. Box 201001, Helena, Montana 59620-1001.

Prime bidders use the Electronic Bid System or bid on-line through Bid Express to produce a bid containing Proposal Forms, Schedule of Items, and Disadvantaged Business Enterprises (DBE) Requirements (if applicable).

CONTRACT #CMA25
AWARDED ON: DECEMBER 16, 2025
TO: KIEWIT INFRASTRUCTURE CO

MONTANA DEPARTMENT OF TRANSPORTATION

Loran Frazier, Chairperson
Montana Transportation Commission

Christopher Dorrington
Director of Transportation

Contract No.CMA25
GL:ST:8008000AWD

MONTANA DEPARTMENT OF TRANSPORTATION
SCHEDULE OF ITEMS

CONTRACT ID: CMA25

PROJECT: SSS-NH-NHPB 5-2(160)37 8008160000 US 93 N - POST CREEK HILL

SECTION: 0001 - RECONSTRUCTION

PROP LINE NO.	ITEM NUMBER	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY
0010	103500005	ESCROW OF BID DOCUMENTS	LS	1.00
0020	104030010	MISCELLANEOUS WORK	UNIT	50,000.00
0030	104030025	MISCELLANEOUS ITEMS-INSTALL	EACH	2.00
0040	104030045	MISCELLANEOUS ITEMS-EACH	EACH	3.00
0050	104030085	MISCELLANEOUS ITEMS-UNIT	UNIT	550,020.00
0060	105070000	CONTRACTOR SURVEY AND LAYOUT	LS	1.00
0070	107000060	NOXIOUS WEED CONTROL	UNIT	500.00
0080	108000000	CRITICAL PATH SCHEDULE	LS	1.00
0090	108000010	STRUCTURE ANALYSIS	LS	1.00
0100	109200005	MOBILIZATION	LS	1.00
0110	208010150	TEMPORARY EROSION CONTROL-LS	LS	1.00
0120	208010200	TEMPORARY EROSION CONTROL-FIXED	UNIT	500.00
0130	559040025	STATIC LOAD TEST	EACH	2.00
0140	601000100	WELL-DEVELOP PUMP AND TEST	EACH	4.00
0150	603017029	DEWATERING	HOUR	1,416.00
0160	618030015	TRAFFIC CONTROL-FIXED	UNIT	500.00
0170	618030075	TRAFFIC CONTROL-DAY	DAY	30.00
0180	618030230	TRAFFIC CONTROL PLAN	LS	1.00
0190	618040030	FLAGGER-SHIFT	EACH	30.00
0200	618040040	PILOT CAR-SHIFT	EACH	30.00
0210	618100005	PORTABLE VARIABLE MESSAGE SIGN	EACH	3.00
0220	618100007	TRAFFIC ACTUATED TEMPORARY SIGNALS	DAY	60.00
0230	618110010	INSTALL, REMOVE CAMERA SYSTEM	EACH	1.00

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FEDERAL AID PROJECT NO(S). SSS-NH-NHPB 5-2(160)37

(REVISED 11-13-25)

The following special provisions are hereby made part of the contract and supplement and/or supersede any sections of the Standard Specifications of Road and Bridge Construction, adopted by the Montana Department of Transportation and the Montana Transportation Commission and all supplements thereto in conflict therewith.

The following documents are hereby incorporated by reference into this contract:

- "Standard Specifications for Road and Bridge construction": Standard Specifications June 2025
- The most recent version of the Detailed Drawings: Detailed Drawings
- Materials Manual of Test Procedures: Materials Manual November 13, 2025

The latest version of the Standard Specifications, Biannual updates, and revision summaries can be found at the following website: Standard Specifications

The U.S. Department of Transportation (DOT) operates a toll-free number at 1-800-424-9071, 24 hours a day - 7 days a week. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use this number to report such activities. All information will be treated confidentially, and callers may remain anonymous.

The Department attempts to provide reasonable accommodations for any known disability that may interfere with a person participating in any service, program, or activity of the Department. Alternate accessible formats of this document will be provided upon request. If reasonable accommodation is needed to participate in Department bid lettings, call the Civil Rights Bureau at 444-6331 or TTY 406-444-7696 [TTY 1-800-335-7592 (toll free)].

1. PROJECT DESCRIPTION [102]

The US 93 N – Post Creek Hill project is a comprehensive reconstruction project, including grading, plant mix bituminous surfacing, drainage improvements, major bridge replacement, and signing and marking improvements. The project is located in western Montana on US 93 from RP 37.6 to 39.1 in Lake County, between St. Ignatius and Ronan.

2. CONTRACT TIME – COMPLETION DATE [108] (REVISED 1-21-16)

This contract is a completion date contract. The work begins on the effective date stated in the Notice to Proceed (NTP) and all work is to be completed no later than December 1, 2026. Unusually severe weather is not considered as a delay cause. The NTP will be issued with an effective date of January 3, 2026.

3. DEPARTMENT CONSTRUCTION TRAINING [108] (REVISED 1-21-16)

Do not work during the Department's statewide construction training which will be held March 2, 2026 through March 6, 2026. No time will be charged for Contracts with active construction during this period.

4. CONTRACT DOCUMENTS [102] (REVISED 6-5-25)

The following documents are now available within the Contractors Reference Material on the Department's Contracting and Bidding webpage https://www.mdt.mt.gov/business/contracting/ :

1) Table of Contractor's Submittals. (Revised 6-5-25)
2) Traffic Control Rate Schedule (Revised 3-9-23)
3) Erosion Control Rates (Revised 1-09-25)

5. SEQUENCE OF OPERATIONS

A. General. To allow time for stabilization of vibrating wire piezometers, construction of test shafts during a period of lower artesian pressures, and testing of shafts during a period of higher artesian pressures, complete work during the following periods:

1) Complete geotechnical borings and monitoring wells in January 2026. Operate existing pumping wells, as required, prior to and during completion of borings and wells to reduce artesian pressures.

2) Complete pumping tests as determined by Contractor's hydrogeologist.

3) Complete test shaft construction after monitoring wells, groundwater monitoring and pumping tests have been completed in accordance with the Contractor's hydrogeologist's requirements. Continue operation of existing and additional pumping wells, prior to and during test shaft construction to reduce artesian pressures.

4) Complete biaxial directional load tests when artesian pressures have sufficiently moderated, as determined by the Project Manager, but not later than August 2026. Mobilize and begin load tests within two weeks of notification by the Project Manager that the load tests can proceed.

6. DBE-SBE BIDDING REQUIREMENTS [102] (ADDED 6-05-25)

A. Rescind Standard Specification 103.10 Subcontractor Report.

B. Rescind Standard Specification 102.07B and replace it with the following:

Ensure bids submitted using the EBS format contain a Proposal guarantee, an EBS generated Proposal, Schedule of Items, and DBE requirements when applicable.

Written changes to the Schedule of Items, or a bidder's non-submission of every page from the AASHTOWare Project BidsTM EBS file, (including all Schedule of Items pages, Bidders List page, and all DBE pages), automatically renders the bid non-responsive, and the bid will not be read or considered.

Acknowledge addenda using the amended EBS project file to generate the Proposal, Schedule of Items and DBE requirements. It is the bidder's responsibility to ensure that they acquire and apply addenda files when applicable.

C. Standard Specification 102.07C Determination of Bid Responsiveness, is modified to include the following:

1) Bidders List. The bidders list file must be attached and include the required information for the prime contractor and subcontractors that provided a quote for this project.

D. Standard Specification 102.08 Rejection of Bid Proposals, is modified to include the following:

1) Failure to provide a complete Bidders List.

7. LABOR REQUIREMENTS [102] (REVISED 9-19-24)

Pay the minimum wage rates contained elsewhere in the bid package. Comply with the required contract provisions contained in the form FHWA 1273 included with this contract. To obtain more information, contact the Department's Construction Engineering Services Bureau at 2701 Prospect, Helena, MT (406)475-2258, (800)335-7592 (TTY) or (406)444-7297 (Fax).

Executive Orders 13658 and 13706 do not apply to this contract.

8. SMALL BUSINESS ENTERPRISES REQUIREMENTS [102] (ADDED 5-16-24)

Rescind "DBE requirements" and replace with "DBE and SBE requirements" within the following subsections:

1) 102.02 Contents of Bid Package.

2) 102.07 Bidding Requirements.

3) 102.08J Rejection of Bid Proposal.

9. EARLY WORK PACKAGE (TEST DRILLED SHAFTS) AND SUBSEQUENT CHANGE ORDER FOR ROAD AND BRIDGE RECONSTRUCTION WORK

A. Description. The Department will deliver this project using the Construction Manager / General Contractor (CM/GC) method. The Department will award the construction contract in stages, beginning with an Early Work Package (EWP) for construction and load testing of demonstration drilled shafts.

1) Early Work Package – Test Drilled Shafts. The Department will award the construction contract based on final pricing submitted for the Test Drilled Shaft Early Work Package. The contract award process will follow the CM/GC project delivery guidelines. The minimum threshold for agreement with the Contractor is that the negotiated Bid Price must be:

(1) Less than 105 percent of the ICE estimate.

(2) If the Bid Price is between 105 and 110 percent of the ICE estimate, award is discretionary.

(3) If the Bid Price exceeds 110 percent of the ICE estimate, MDT will discontinue price negotiations and terminate the preconstruction contract.

b) The contractor will perform only the work included in the Test Drilled Shaft Early Work Package under the initial contract.

2) Plan Development for Final Plans. After the Test Drilled Shaft Early Work Package contract is awarded, the Department will continue development of the final plans for the roadway and bridge reconstruction project in coordination with the CM for the remainder of the preconstruction phase.

3) Change Order for Final Plans Work. After completing the final plans, the Department may negotiate a change order with the Contractor to add the remainder of the work associated with the US 93 N – Post Creek Hill reconstruction project.

a) The Contractor will not begin any construction work beyond the Test Drilled Shaft Early Work Package without a change order incorporating additional work.

b) The Department and the Contractor will use the same pricing methodology that applied to the initial contract award, including meeting the minimum threshold for agreement with comparison against the independent cost estimating consultant (ICE). The minimum threshold for agreement with the Contractor is that the negotiated Bid Price must be:

(1) Less than 105 percent of the ICE estimate

(2) If the Bid Price is between 105 and 110 percent of the ICE estimate, award is discretionary

(3) If the Bid Price exceeds 110 percent of the ICE estimate, MDT will discontinue price negotiations and terminate the preconstruction contract

c) The Department will present final bid price information and award recommendations to the Transportation Commission for review and approval. The Change Order cannot be executed without Commission approval.

d) The Contractor will not begin any work associated with the change order until the Department and the Contractor agree on the price, the Transportation Commission reviews and accepts, and the change order is executed, or another EWP is developed.

e) In the event MDT and the Contractor fail to agree upon a change order bid price, or the cost for the remaining construction exceeds available funding, then MDT may terminate, in part or in full, the CM/GC process and procure the remaining elements of the project by any other lawful procurement method. The Contractor will lose the right to construct the work related to the failed bid price and will be ineligible to rebid the work through a different delivery method.

B. General Provisions

1) All contract requirements, specifications, and federal/state compliance provisions apply to both the Early Work Package and the subsequent change order.

2) MDT reserves the right to include additional contract requirements at the time of change order execution. Additional contract requirements applicable to the reconstruction

project include, but are not limited to: a training program pursuant to Standard Specifications section 109.12 and the PSA, and domestic material requirements consistent with the applicable federal regulations at the time of change order execution.

3) If the Department and the Contractor cannot reach agreement on the change order price under this provision the Department may terminate the CM/GC contract for convenience.

4) The Department and the Contractor may negotiate other Early Work Packages that are wholly severable from the Final Plans Package as determined by MDT.

10. ESCROW OF BID DOCUMENTS [103] (REVISED 4-28-22)

Escrow of bid documents under 103.09 is required for this contract.

11. CONTRACTOR SURVEYING AND LAYOUT [105] (REVISED 7-10-14)

Furnish Contractor Survey and Layout in accordance with Subsection 105.08.2.

12. PARTNERING [105] (ADDED 1-11-24 M)

In accordance with Subsection 105.05.1, this contract requires Level I facilitation.

13. BUILD AMERICA, BUY AMERICA (BABA) [106] (REVISED 1-11-24)

Furnish construction materials manufactured in the United States. Construction materials include articles, materials, or supplies that are or consist primarily of:

- Non-ferrous metals.
- Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables).
- Glass (including optic glass).
- Fiber optic cable (including drop cable).
- Optical fiber.
- Lumber.
- Drywall, and
- Engineered wood.

Construction materials exclude cement and cementitious materials, aggregates including stone, sand, or gravel, or aggregate binding agents (e.g., asphalt binder) or additives (e.g., polymer modifiers and admixtures).

Manufacturing processes for the construction material must occur in the United States. Manufacturing processes for each of the bulleted construction materials above are defined in 2 CFR 184.6 and are summarized below.

a) Non-ferrous metals: Initial smelting or melting through final shaping, coating, and assembly.

b) Plastics: Initial combination of plastic, polymer based, or composite materials until item is in its final form.

c) Glass: Initial batching and melting, annealing, cooling, and cutting.

d) Fiber Optic Cable: Initial ribboning, buffering, and fiber stranding and jacketing.

e) Optical Fiber: Initial preform fabrication through completion of draw.

f) Lumber: Initial debarking, treatment, and planing.

g) Drywall: Initial blending of gypsum, cutting, and drying of sandwiched panels.

h) Engineered Wood: Initial combination of constituents until item is in its final form.

BABA preference applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to a project. It does not apply to tools, equipment, and supplies brought to the construction site and removed at or before the completion of the project (e.g., temporary aluminum scaffolding). Buy America preference does not apply to equipment and furnishings that are used at or within the finished infrastructure project but are not permanently

affixed to the structure (e.g., movable chairs, desks, or computer equipment used at or within the project but are not integral or permanently affixed to a structure).

2 CFR 184 applies to all construction materials on projects receiving federal financial assistance funds. Submit Form MDT-MAT-407 “Manufacturer’s Certificate of Compliance” for every material identified as a construction material in the Department’s Materials Manual Section MT 601 furnished to the project. For all other materials, documentation will be required upon request. Do not incorporate construction materials into the project until all required documentation is submitted to the Department. Ensure that suppliers and manufacturers understand the BABA and contract requirements to supply the required documentation.

The Department will not accept items installed until all supporting documentation has been reviewed and is found to be in accordance with the contract requirements. Insufficient or unavailable documentation or documentation showing products containing construction materials of foreign origin are grounds for removal and replacement at the contractor’s expense.

The Department has designated contract materials as “construction materials” by their respective 9-digit material codes in section MT 601 of the Montana Materials Manual. However, the Department recognizes there will be situations where a product or material may not fit the designation indicated in section MT 601. In these cases, submit documentation demonstrating or justifying the supplier or manufacturer’s position that their specific item has been misclassified to the Project Manager at least 10 business days in advance of installation. the Department, in conjunction with FHWA, will review the submitted documentation and decide as to how that specific product or material will be classified. These determinations will be final and will require the appropriate necessary documentation as defined above.

The US DOT has found that it is in the public interest to issue a waiver of BABA’s domestic preferences in certain situations. For Construction Materials, the domestic preference may be waived if the total value of non-compliant material is under $1,000,000 or 5% of the total applicable project costs, whichever is less. Submit actual individual material costs, minus manufacturing costs outside the defined manufacturing processes outlined above, along with justification in the form of invoices, bills of lading, or other appropriate documents to the Department if requesting the waiver.

The above waiver does not apply to iron and steel and the existing de minimis standard for iron and steel under 23 CFR 635.410(b)(4) continues to apply.

Projects with a total contract value of $500,000 or less are exempt from all domestic preference regulations including steel and iron.

14. INDIAN RESERVATION WORK [107] (REVISED 8-11-22 M)

Because all or part of this project is located within the external boundaries of an Indian Reservation, the following requirements apply:

1) Read, fully understand, and agree to the provisions here included.

2) Inquire with the designated Tribal official and become familiar with the Tribal requirements, written or not, for work on the Reservation, and submit bid with full knowledge, understanding and acceptance of them. Understand and accept that:

a) the Tribal laws, ordinances, regulations, and requirements have been established by the Tribe as a sovereign entity on the Reservation.

b) The Department has no authority or ability to affect those requirements, and

c) Neither the Tribal government nor any Tribal official or employee is acting in any way as an agent of the Department or the Transportation Commission. The Department and Commission have no control over the actions, inaction, requirements or comments of any Tribal government or employee, and are not bound by them.

3) If Tribal requirements will in any way increase the costs of performing the project, consider those and include all increased costs in bid prices.

4) Ensure that all proposed subcontractors are also fully aware of the Tribal requirements and accepted them when they gave quotes.

5) Understand and agree that employees, and all subcontractors and their employees, are responsible to the Tribe to adhere to and abide by all Tribal laws, ordinances and regulations on work performed on the Reservation, specifically including all Indian hiring and contract fee requirements.

6) Dealings with the Tribe and its requirements, other than those related to the Clean Water Act, aquatic resources permitting, and/or cultural resources, are solely between the Contractor and the Tribe, and must be addressed in the appropriate forum between them alone.

7) By submitting a bid, agree to defend, protect, indemnify, and save harmless the Department and State from any cost or delay caused or allegedly caused by or due to the failure of bidder or any subcontractor to fully comply with Tribal law, ordinance or regulation, or by claimed interference by the Tribe. Claims from such failure or claimed interference will not be considered extra work or compensable delay, but actual, documented and verified interference by Tribal government may be grounds for a contract time extension. Understand that any requests must fully comply with the Contract's claims procedure.

8) By submitting a bid, do so with full understanding and acceptance of all provisions of the Bid Package.

9) For bidder inquiries to the Tribe, or for more information about Tribal requirements other than those related to the Clean Water Act, aquatic resources permitting, and/or cultural resources, it is required to contact the Tribe directly. The point of contact designated by the Tribe for bidders to contact is the liaison listed in the attached Memorandum of Understanding, the main tribal phone number is: 406-675-2700

10) If a Pre-Bid Conference for the project is provided for in the Contract, a designated, authorized agent of the Bidder attends the Conference.

15. RESERVATION REQUIREMENTS [107]

The work on this project is being performed on the FLATHEAD Indian Reservation. Included in this proposal package are a Memorandum of Understanding (MOU) and a Project Specific Agreement (PSA). These documents detail agreements between the State and the Confederated Salish and Kootenai Tribes that are made a part of this contract. The Contractor must adhere to all requirements contained in these documents. Questions regarding the MOU and PSA will be addressed at the pre-bid conference or if there is no pre-bid for the project, submit the question to the Department’s Project Manager.

16. CONSTRUCTION EQUIPMENT ON STRUCTURES [107] (REVISED 9-21-23)

A. Description: Requirements associated with the operation of equipment on structures.

B. Definition. The following definition applies to this special provision:

1) Equipment. Any vehicle or machine weighing more than 5000 pounds.

C. Construction Requirements. Do not use bridges as work platforms, work bridges, or to support or move equipment without the Project Manager's written approval.

1) For bridges having no posted load restrictions and no removal of deck concrete (not milled), provide a full engineering submittal for approval for all equipment utilizing outriggers on the structure and for any equipment not already approved under one of the following conditions:

a) Legal Loads. A vehicle that is a legal load as defined by Section 61-10 MCA.

b) Pre-Approved Equipment. The equipment is currently listed on MDT’s Approved Construction Equipment List (ACEL) and will be operated according to any conditions stated in the ACEL.

2) For bridges with a posted load restriction or if bridge deck concrete is partially milled or removed, submit a full engineering submittal for approval for any of the following cases:

a) Equipment weight exceeds 25 tons.

b) Vehicle weight and configuration does not satisfy the posted load restriction.

c) More than one piece of equipment will be simultaneously located on a span.

d) Concrete removal results in significant debonding of the top mat of deck reinforcing steel. The Project Manager, in conjunction with the Bridge Bureau, will determine if significant debonding is present.

e) Repairs to bridge beams or truss members are specified in the contract and repairs are not complete.

f) Equipment outriggers will be used.

3) Full engineering submittal requirements. Submit an engineering analysis and report performed by a Professional Engineer registered in Montana.

a) Engineering analysis. Clearly describe loading conditions and assumptions and provide calculations. Investigate an envelope within which the equipment may function without damaging the structure or endangering workers or the public. MDT proposes the following topics, at a minimum. Provide additional information when necessary.

(1) Load Cases.

(a) Minimum suggested live load vehicles are Type 3 and Type 3S2 trucks in live load combinations from AASHTO "Manual for Condition Evaluation of Bridges."

(b) Consider all loads on the bridge including axle loads, outriggers, equipment dynamic forces, and wind forces on the load, the boom, and the equipment. Consider deflection and secondary force effects. Include traffic live load if the structure will carry traffic during equipment operations.

(c) Investigate different loading combinations for all configurations. Include the distribution of dead load and changing center-of-gravity of the equipment with and without load at different boom extensions, rotations, and elevations.

(2) Structural Effects. Identify critical members. Determine any conditions under which the equipment cannot safely operate.

b) Written Report. Provide a report containing a narrative summarizing the results of the analysis. Describe special measures necessary to protect the structure through all phases of the equipment's positioning and use. Include drawings as necessary and indicate any minimum equipment clearances to relevant portions of the structure and to traffic flow. Estimate the work's duration.

D. Method of Measurement. Work associated with this provision is not measured for payment.

E. Basis of Payment. Include all costs associated with the requirements of this provision in the lump sum bid for Structure Analysis. Exception: If a full engineering analysis is required as a result of top mat debonding alone (none of the other criteria listed under C.2 are met) then it will be considered extra work and considered for time extension under 108.07.5.

17. STATUS OF UTILITIES [108] (ADDED 1-1-03)

Utility relocation work is not complete and will not be complete as of the letting date and contract award date. Project work must be coordinated with the utility company relocation activities until the utility relocation work is complete. Under no circumstances will a delay in relocating utility facilities be considered as justification for additional compensation.

Should unforeseen conditions arise which substantially delay the utility relocation work, and the delay results directly in a delay to the project work, make a written request to the department for a time extension, see Subsection 108.07.4.

18. SUBCONTRACTING CONSULTANTS [108] (REVISED 2-27-14 M)

The following consultants performed work on the project.

- Morrison-Maierle
- Big Sky Acoustics, LLC
- Cultural Resources Consulting Services (CRCS)

- Dan Brown and Associates
- HDR Engineering, Inc.
- Kadrmas, Lee & Jackson (KLJ)
- Newlands & Company, Inc. (nc3d)
- RESPEC Consulting & Services
- SK Geotechnical Corporation
- SWCA
- Utility Mapping Services, Inc. (UMS)
- Water Source, LLC

19. SPECIALTY ITEMS [108] (ADDED 4-15-08)

The project has work items that are specialty items as defined in 23 CFR 635.102. Specialty items are listed in the following table.

TABLE 108-2 SPECIALTY ITEMS	
BID ITEM# 104 030 025	MISCELLANEOUS ITEMS-INSTALL (Test Drilled Shafts)
BID ITEM# 104 030 045	MISCELLANEOUS ITEMS-EACH (Geotechnical Borings)
BID ITEM# 559 040 025	STATIC LOAD TEST
BID ITEM# 601 000 100	WELL-DEVELOP PUMP AND TEST

20. NOTICE TO BIDDERS [108] (ADDED 11-21-08)

This project is funded in whole or in part by funds received from the Federal Highway Administration (FHWA), and its construction is wholly contingent on the state's continued receipt of those federal funds. If the federal funds are reduced or not received, the Department may choose to terminate the contract for convenience under the provisions of Subsection 108.10. Any bidder on this project, by submitting its bid, understands and accepts the possibility of the contract being terminated in the event federal funds are reduced or not available and by submitting a bid, each bidder waives any claims for costs or damages other than as specifically allowed by Subsection 108.10.2. In particular, bidders understand and accept that no payment will be allowed for any claimed anticipated profit for work not performed.

21. SOIL BORING INFORMATION

The Department routinely conducts subsurface investigations and laboratory testing to collect soil, rock and groundwater information (“geotechnical information”) within the anticipated limits of upcoming projects and maintains a comprehensive set of this information in its geotechnical file. For this contract, geotechnical information has been collected by the Department and logs of boring summarizing this information have been included in the Special Provisions and Plans. “Logs of Borings” in the Special Provisions and Plans are based on an interpretation of the field investigation and laboratory testing data, and do not include all the geotechnical information that may be available. The geotechnical information contained in the “Logs of Borings” has been edited or abridged and may not reveal all the geotechnical information which might be useful or of interest to the bidder.

The comprehensive set of geotechnical information is considered too voluminous to include in the bidding package. The geotechnical information that the Department has is available for review or copying upon request. Rock core samples are regularly retained as well. All bidders are expected to fully review all of the geotechnical information prior to

submitting their bid. The prime bidder is responsible for ensuring that a firm submitting a subcontractor quote for the prime's use is aware of all available geotechnical information.

Submission of a bid without fully reviewing the Department's comprehensive set of geotechnical information or accepting a quote from a subcontractor without verifying that the subcontractor reviewed all available geotechnical information is a business decision by the bidder. Failing to fully review all available geotechnical information waives the contractor from making any claim, whether termed "superior knowledge", "justifiable reliance", "differing site condition", or otherwise, against the Department for any information that may be included in the comprehensive geotechnical information file and not shown, or not fully shown, in the “Logs of Borings” contained in the contract documents.

Soil, rock, and groundwater conditions shown on the logs of boring apply only at the specific boring locations and at the time the borings were made. They are not warranted to be representative of subsurface conditions at other locations or times. Groundwater conditions commonly vary seasonally and from that encountered during drilling. Determination of a material's classification is based in part on judgment and opinion. The Department assumes no responsibility for any variation or misinterpretation of the classification of materials.

To review all available geotechnical information, submit a request in writing to the Department’s Geotechnical Section to schedule a time to review the available geotechnical information. Requests for access should be made a minimum of 10 business days prior to the bid opening.

22. DEWATERING

A. Description. Groundwater and artesian conditions will be encountered during geotechnical drilling, well installation, and drilled shaft excavation activities on the project. Review the Geotechnical Investigation Reports, soil boring logs, piezometer measurements and existing well pressure gauges to assess site-specific groundwater conditions and plan accordingly. Boring logs, piezometers and existing depressurization wells indicate groundwater and artesian pressures are present at shallow depths and generally increase with depth. Water pressures are variable and will fluctuate with location, depth, seasonal changes, precipitation events, and other environmental factors.

B. Submittals. Submit a depressurization and dewatering plan a minimum of 10 working days prior to any drilling or excavation activity. The plan must include:

1) The number, size, depth and location of wells and pumps that will be used to depressurize the aquifer for each activity.

2) The method of monitoring depressurization efforts.

3) The method of determining when adequate dewatering has been completed to allow safe completion of the proposed activity without uncontrolled flows.

4) Method of treating and disposing of water in accordance with all applicable regulations.

5) Copies of applicable permits required for dewatering operations.

C. Construction.

1) Dewater aquifer to allow depressurization of the aquifer prior to any soil borings, new well installations, or drilled shaft excavations to prevent uncontrolled flows. Excavations other than specified soil borings, drilled shaft excavations, or additional authorized dewatering wells are not allowed unless authorized by Project Manager.

2) Conduct pumping of dewatering wells until aquifer has been sufficiently depressurized as determined by the Contractor’s hydrogeologist.

3) Continue pumping until proposed activities have been completed and adequately sealed.

4) Complete well pumping tests as determined by the Contractor’s hydrogeologist.

D. Method of Measurement and Basis of Payment. All work associated dewatering is measured for payment by the hour per dewatering pump. Include all costs associated with

dewatering in the hourly bid price under bid item DEWATERING. Payment at the contract unit price is full compensation for all necessary resources to complete the item of work under the contract.

23. BI-DIRECTIONAL LOAD TEST

A. Description. This work consists of furnishing all materials, equipment and labor necessary for conducting Bi-Directional Static Load Tests (BDSLTs) and reporting the results. The test shafts are to be constructed at the location shown in the plans and in accordance with the requirements of these special provisions and as outlined elsewhere in the plans and contract. The Load Testing Contractor will provide the drilled shaft cage, oversee the drilled shaft installation, instrument, conduct the load test on the drilled shafts, and prepare a report for the load tests. The Drilled Shaft Contractor is to provide auxiliary equipment and services and coordinate with the Load Testing Contractor, as outlined in the Drilled Shaft Construction Special Provision.

B. Qualifications. The work described in this provision must be performed by a specialty contractor/consultant, herein termed “Load Test Contractor”, meeting the following qualifications. Submit qualifications for review. MDT will have 20 working days to review.

1) A minimum of 5 years of documented experience in performing BDSLTs on drilled shafts using embedded hydraulic jack assemblies (e.g., Osterberg Cells or equivalent).

2) The firm must have successfully completed at least three (3) BDSLTs on drilled shafts of similar diameter, depth, and geotechnical conditions within the past five years.

3) The firm must employ a licensed professional engineer with geotechnical and structural specialization who will be responsible for the design, execution, interpretation, and reporting of the load testing.

C. Materials.

1) Furnish Bi-Directional cells and associated equipment and materials as required for each load test. Provide Bi-Directional cells having a minimum combined bi-directional capacity of 5,000 kips and equipped with all necessary hydraulic lines, fittings, pressure source, pressure gage and telltale devices.

D. Construction Requirements.

1) Drilled Shaft Test Cage. Provide minimum specified reinforcing as shown in Plans. Provide additional reinforcing as determined necessary by Contractor to provide required rigidity for installation and to support the bi-directional jacking apparatus, and CSL tubes. Provide clear spacing between bars or steel members of at least 5 inches or 5 times the maximum aggregate size, whichever is larger.

2) Submittals. Provide submittals in PDF format. Submit for approval a testing plan with working drawings which detail the drilled shaft test cage, the test setup, including details of all system elements, reinforcement, instrumentation, materials, concrete compressive strength testing narrative including the number of test cylinders the Contractor will make and minimum concrete strength required before jacking, welding procedure certifications, welder qualifications and continuity records, data collection system and testing procedures, a minimum of 30 days prior to starting the excavation for the test shaft. Develop the testing submittal in coordination with and submitted concurrently with the Drilled Shaft Installation Plan submittal as required in related specifications elsewhere in the contract. Include the procedures and sequencing that will be used to place concrete below and above the load cell, including any seating concrete if needed. The Department has 20 working days to review the submittals. Do not start excavation on the test shaft until the submittals have been approved by the Project Manager in writing.

3) Preconstruction meeting. The following must attend the Preconstruction meeting:

a) MDT Project Manager

b) A representative from the Load Testing Contractor.

c) A representative from the Drilled Shaft Contractor.

d) MDT’s Geotechnical Representative

4) The Drilled Shaft Contractor will coordinate with the Load Testing Contractor to ensure the drilled shaft installation methods are compatible with the Bi-Directional test, and to facilitate installation and performance of the Bi-Directional Load Test. The Load Testing Contractor representative is required to be on-site during shaft installation and during all aspects of instrument installation at a minimum.

5) Installation and Removal of Load Testing Apparatus.

a) Notify the Project Manager and Geotechnical Representative a minimum of 5 working days prior to the beginning of the load test so they can observe the load test.

b) Assemble and make ready for installation the Bi-Directional load cell, hydraulic supply lines and other instruments under the direction of Load Testing Contractor in a suitable area, adjacent to the test shaft.

c) When a steel reinforcing cage is required for the shaft, the Bi-Directional load cell assembly is to be welded to the bottom of the cage in conjunction with the construction of the cage. The plane of the bottom plate of the Bi-Directional load cell is to be set at right angles to the long axis of the cage.

d) When the test shaft excavation has been completed, inspected and accepted by the MDT Geotechnical Representative in accordance with the SID inspection requirements found elsewhere in the contract, install reinforcing and the Bi-Directional load cell assembly.

e) Do not begin load testing until date indicated in sequence of operations special provision and until cylinder break testing has confirmed that the drilled shaft concrete has obtained the compressive strength specified in the approved load testing submittal.

f) Protect test shafts, instrumentation and associated test equipment from damage until load test is completed as outlined in sequence of operation special provision. Repair any damage at no additional cost to the Department.

g) After the completion of the load test, grout the interior of the Bi-Directional load cell and annular space around the outside of the Bi-Directional load cell using grouting techniques approved by Load Testing Contractor and as described in the Drilled Shaft Construction Special Provision.

6) Testing and Reporting.

a) The load testing and reporting must be performed by the Load Testing Contractor. Perform the load testing in compliance with ASTM D1143 Standard Test Method for Piles Under Static Axial Load using the Quick Load Test Method for Individual Piles. Initially, apply loads in increments equaling 5% to 8% of the anticipated ultimate capacity of the test shaft. The magnitude of the load increments may be increased or decreased depending on the project requirements but should not be changed during the test.

b) Direct movement indicator measurements must be made of the following: Bi-Directional expansion either directly or with telltales (minimum of 4 indicators required) at the soil layer boundaries, upward top-of-shaft displacement (minimum of 2 indicators required) and shaft compression above Bi-Directional load cell (minimum of 2 indicators required). Additional sensors, or strain gauges are required at any changes in shaft diameter allowed for construction.

c) Apply loads at the prescribed intervals until the maximum capacity or maximum stroke of the Bi-Directional load cell is reached, unless otherwise directed by the Project Manager. At each load increment, or decrement, read movement indicators at 1, 2, 4 and 8-minute intervals while the load is held constant.

During unloading cycles, acquire at least 4 data points of the load decrement for the load versus movement curve. Additional cycles of loading and unloading using similar procedures may be required by the Project Manager following the completion of the initial test cycle.

d) Digital dial gages, LVDTs, or LVWDTs used to measure Bi-Directional expansion and top-of-shaft displacement must have minimum travel of 4 inches (102 mm) and be capable of being read to the nearest 0.001 inch division. Measure Bi-Directional expansion using LVWDTs capable of measuring the full stroke of the Bi-Directional load cell. Digital dial gages,

LVDTs, or LVWDTs used to measure shaft compression must have a minimum travel of 1 inch (25 mm) and be capable of being read to the nearest 0.001 inch division.

e) Provide an initial data report containing the load-movement curves and data tables to the Project Manager within 4 working days of the completion of load testing. Submit a final report on the load testing to the Project Manager within 7 working days after completion of the load testing. As a minimum, include in the final report the following:

(1) As-installed location of the test shafts.
(2) Logs of the test borings conducted at the test shaft locations.
(3) Installation records of test shafts showing locations of all instrumentation.
(4) Summary of the load test procedure and data collected during load testing.
(5) Analysis of unit side adhesion in the test shaft and unit end-bearing pressure.
(6) Plots of axial load versus displacement at the base of the shaft, and axial load versus displacement and/or strain along the test socket

E. Method of Measurement. BI-DIRECTIONAL LOAD TEST OF DRILLED SHAFT completed and accepted are measured per each. Include any resources necessary for performing the work described in this provision. Construction of the drilled shafts is measured and paid for as described in the Drilled Shaft Construction Special Provision.

F. Basis of Payment. Payment for the completed and accepted quantities is made under the following:

Pay Item	Pay Unit
STATIC LOAD TEST (Bi-directional Drilled Shaft Static Load Test)	Each

Payment at the contract unit price is full compensation for all resources necessary to complete the items of work under the contract.

24. ENVIRONMENTAL SPECIFICATIONS [208] (ADDED 9-9-21M)

The Contractor is required to review and meet the specifications of the following subsections:

1. Water Pollution Control	Subsection 208.03.1
2. Aquatic Resource Protection	Subsection 208.03.2
3. Migratory Bird Treaty Act	Subsection 208.03.4A
4. Bear Habitat	Subsection 208.03.4E

25. GRIZZLY BEAR – ENDANGERED SPECIES ACT

A. Description. This project is located within designated grizzly bear habitat. To protect this federally listed species under the Endangered Species Act (ESA), all activities must comply with the requirements outlined in this special provision. Failure to adhere to these conditions may result in a violation of the ESA.

B. Requirements.

1) Follow the requirements of Subsection 208.03.4 for all project activities.

2) Do not perform work within 0.25-miles of the Post Creek Bridge between 9:00 pm and 6:00 am, from April 1 through June 30. Nighttime traffic control is not subject to this restriction.

3) All employees, contractors, subcontractors, and partners must review the “Bear Aware” link on the Montana Fish, Wildlife and Parks website: Bears In Montana | Montana FWP to learn bear-country safety, including the use of bear spray and measures to avoid providing attractants and minimizing potential for conflicts and disturbance to bears.

4) No seeding or planting of species palatable for grizzly bears (i.e., clovers) will occur. Projects that involve seeding or planting of grasses, forbs, or shrubs must do so in a manner that will tend not to attract bears into areas where increased mortality risk or interaction between bears and people is likely, such as adjacent to roads.

5) Notify the Project Manager of any animal carcasses found in the area. The Project Manager will contact MDT Maintenance to promptly remove and dispose of carcasses.

6) Notify the Project Manager of any bears observed in the vicinity of the project. The Project Manager will promptly inform the MDT Biologist at 406-444-7258 and the CSKT Wildlife Management Office at 406-675-2700 of bear observations.

7) Conduct project-related activities outside of construction limits in accordance with the requirements above and Subsection 208.03.4(E).

C. Measurement and Basis of Payment. Requirements in this provision are not measured for payment.

26. STORM WATER PERMITTING REQUIREMENTS UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) [208] (REVISED 6-8-23)

A. Description. The EPA regulates storm water discharges under the NPDES program. If the bid package contains blank erosion control plans, a construction storm water discharge permit authorization will be required. If not, a storm water discharge permit authorization may be required for this project depending on Contractor's operations. Sum the disturbance area (as defined by EPA) identified in the contract with the area of disturbance caused by contractor operations to determine if the permit acreage threshold is exceeded. Contractor operations can include, but are not limited to, the following support activities: staging areas, access roads, material storage areas, temporary concrete, or asphalt batch plants, borrow areas, areas used for fill placement, etc. If the summed disturbance area is one acre or more, use the EPA authorization to discharge under the NPDES General Permit for Discharges from Construction Activities (General Permit) for this project. In order to facilitate permit transfer, separate NOI packages are required for areas within the right-of-way and areas outside of the right-of-way. A NOI package includes a Notice of Intent, with a topographic map, a SWPPP, the erosion control plans, and supporting documentation.

Blank Erosion Control Plans, and a topographic map, are provided with the plans if the plans include greater than 1 acre of disturbance. The blank erosion control plans supplied by the Department do not include Contractor furnished material sources, staging areas, plant sites, or any other site that is not within the project limits. Permit these sites separately. Although permitted separately, the areas of disturbance are considered cumulative with the project disturbance area when determining the requirement for permit coverage. A SWPPP partially completed with "MDT sections" filled in will be provided if permit coverage is sought.

B. Materials. Follow the requirements described in the Department's *Erosion and Sediment Control Best Management Practices Manual (December 2016).* Rescind Section 208 detailed drawings. Submit to the Project Manager for review and acceptance BMPs proposed for use that are not included in the Manual.

C. Construction Requirements.

1) NPDES Permit Required. Submit one NOI package for ground disturbance areas shown in the plans or within the right-of-way. Complete the erosion control plans as required by the general permit. Complete the "Contractor sections" of the SWPPP. Ensure the "Contractor sections" do not conflict with the information the Department provided. Do not modify the SWPPP or the Department's responses. Notify the Project Manager when returning the SWPPP to the Environmental Services Bureau. Return the completed signed SWPPP to the Department at the following address:

Environmental Services Bureau
Attention: Environmental Services Bureau Chief
Montana Department of Transportation

2701 Prospect Ave
PO Box 201001
Helena, MT 59620-1001

Within 7 business days of receiving the completed signed SWPPP, the Department will review the SWPPP. If the Contractor's portions of the SWPPP are not complete, the SWPPP will be returned to the Contractor for completion. If the Contractor's portion of the SWPPP is complete, the Department's Environmental Services Bureau Chief will sign and certify the SWPPP and send the executed SWPPP to the Project Manager. The SWPPP is not executed until it is signed and certified by both parties. The Department's review of the Contractors' portion of the SWPPP is limited to the completeness of responses. The Contractor is responsible for the accuracy.

Notify tribes as specified in Section 9.5 of the general permit. Obtain any necessary tribal reviews and approvals as specified. If the EPA or applicable tribes require revised or additional information, submit updated copies of this information to the Project Manager and Environmental Services Bureau within 5 business days of the correspondence.

After execution of the SWPPP, submit a certified NOI to EPA at least 14 calendar days prior to commencing earth-disturbing activities and any applicable tribal authorities as specified in the general permit. Submit electronic NOI to EPA through EPA's Electronic NPDES eReporting Tool (NeT) Home Page at: https://www.epa.gov/npdes/stormwater-discharges-construction-activities-2017-cgp#accessing.

The Department is not responsible for delays caused by incomplete or inaccurate submittals by the Contractor.

Email copies of the certified NOI, EPA's confirmation letters, and applicable tribal approval letters to the Project Manager and to the Environmental Services Bureau at mdtenoi@mt.gov prior to conducting any ground disturbance activities. Include copies of these documents in the executed SWPPP.

Comply with the requirements of the General Permit and implement the SWPPP. Do not begin ground disturbing activities until the above referenced documents are received by the Project Manager and the Environmental Services Bureau and confirmation from EPA is provided to the Project Manager stating coverage under EPA's CGP is now active for both the contractor and the Department.

Furnish and install public signage as required by the EPA Construction General Permit. Payment for sign(s) is included in the Temporary Erosion Control-Lump Sum bid item.

Submit a separate NOI package to EPA for ground disturbance and support activity areas outside the right-of-way and not shown in the plans. Contractor furnished material sources, staging areas, plant sites, or any other Contractor caused ground disturbance outside the right-of-way and not shown in the plans, are the Contractor's responsibility and must be submitted under a separate NOI package from the ground disturbance within the right-of-way. The Contractor is the sole permittee until stabilization is complete and the general permit authorization is terminated or transferred to another entity. The Department is not responsible for delays caused by incomplete or inaccurate submittals to EPA by the Contractor.

Provide a copy of the NOI Package submitted to EPA and confirmation for receipt of a complete NOI Package from EPA to the Project Manager prior to conducting any ground disturbance activities. Be responsible for all temporary erosion, sediment, and pollution prevention controls for Contractor furnished material sources, staging areas, plant sites, or any other Contractor caused ground disturbance outside the right-of-way and not shown in the plans.

Complete and document all inspections in accordance with the requirements of the General Permit. Use the Department's most current inspection form or other form that conforms to the requirements of the permit. Provide a copy of all inspection reports to the Project Manager within 7 calendar days of the inspection.

Report potential noncompliance in accordance with applicable regulations, guidance, and permit conditions. Submit to the Project Manager within 7 calendar days of sending or receiving all correspondence to or from regulatory agencies regarding potential noncompliance or violations.

The temporary erosion and sediment control measures and devices to prevent pollution and control sediment transport and soil erosion will be inspected as part of the final inspection to ensure they are maintained and functioning properly. Do not transfer or terminate the general permit coverage until the BMPs are inspected and accepted and all records required under the permit, including inspection and monitoring reports, are furnished to the Project Manager. The Department may require that certain BMPs be replaced by another type of BMP as a condition of permit transfer. Ensure permit conditions and responsibilities are met until permit coverage is assumed by the Department. The Department will notify the Contractor in writing when permit coverage has been assumed. Defend and hold the Department harmless from any violations, claims, enforcement actions, penalties or fines issued for Contractor activities or recordkeeping that occurred prior to the transfer of the General Permit authorization.

2) NPDES Permit not Required. The BMP-Administration item is included in contracts that may not meet criteria for a NPDES permit but include ground disturbing activities. Complete BMP inspections and install BMPs, if necessary, in accordance with Section 208, if no storm water permit is required. Utilize form MDT-ENV-014, Water Pollution Control Inspection Report. A certified SWPPP Administrator is not required to conduct the inspections if no permit is required.

D. Method of Measurement. Fees and monitoring costs associated with obtaining and maintaining the NPDES general permit coverage for ground disturbance areas within and outside the right-of-way are not measured separately for payment.

If no permit is necessary, include the cost of all erosion control, devices, and inspections in the BMP-Administration bid item.

E. Basis of Payment. No additional payment will be made for monitoring costs associated with the General Permit. Include these costs in the Temporary Erosion Control-Lump Sum bid item.

For project including the BMP-Administration item, include the cost of all erosion control, devices, and inspections in the BMP-Administration bid item. Partial payment for the BMP-Administration will be monthly based on the lump sum contract price in accordance with Table 208-2 in Subsection 208.05.1.

Payment for BMPs required by an event or extra work, and approved by the Project Manager, will be measured and paid for in accordance with the Erosion Control Rate Schedule contained in the contract at a unit price of $1.00 per unit.

27. NOISE IMPACT [208] (REVISED 5-24-12)

To minimize construction noise impacts on the local residents, no construction activities will be allowed between the hours of 10 p.m. and 6 a.m. without express written approval from the Project Manager.

28. DRILLED SHAFT CONSTRUCTION

A. Description. This Special Provision applies to drilled shaft foundations constructed and load tested at the US 93 N – Post Creek Hill Bridge and are supplementary to the MDT Standard Specifications for Road and Bridge Construction, 2025 Edition, Section 558 DRILLED SHAFTS.

B. Load Testing Support. Coordinate with Load Testing Contractor to have a Load Testing Contractor representative on-site during shaft installation and all aspects of instrument installation at a minimum.

1) During the load test, no casings may be vibrated into place at this construction site.

2) Excavation of second test shaft cannot begin until compressive strength test cylinders indicate concrete in first shaft has obtained a minimum compressive strength of 2,000 pounds per square inch.

3) Drilling may not continue within a 100-foot radius of the test shaft. If test apparatus shows any interference due to construction activities outside of this perimeter, cease work immediately at the direction of Load Testing Contractor or the Project Manager.

4) Supply equipment, materials, and labor necessary to install the Bi-Directional equipment, support load testing operations, and remove remaining load test apparatus. This includes but is not limited to:

a) Fresh, clean, potable water from an approved source to be used as hydraulic fluid to pressurize the Bi-Directional load cell(s).

b) Two automatic survey levels (Dini's) to monitor top of drilled shaft movement.

c) Provide a protected work area (including provisions such as a tent or shed for protection from inclement weather for the load test equipment and personnel) of size and type required by Load Testing Contractor. Where heaters are used in enclosed areas, the heaters must be designed for enclosed areas and vented as necessary. Do not use an open-flame heat source for heating. Maintain an ambient air temperature of at least 40°F (4°C) during the Bi-Directional testing.

d) Stable electric power source, as required for lights, welding, instruments, etc.

e) Materials for steel bearing plates and/or other devices needed to attach Bi-Directional load cell to rebar cage.

f) Welding equipment, certified welding personnel and labor, as required, to assemble the test equipment under the supervision of Load Testing Contractor, attach instrumentation to the Bi-Directional load cell, and prepare the work area.

g) Equipment and labor to construct the steel reinforcing including any steel bearing plates required for the shaft.

h) Equipment and operators for handling the Bi-Directional load cell, instrumentation and placement of steel reinforcing cage during the installation of the Bi-Directional load cell, and during the test, including but not limited to a crane or other lifting device, manual labor, and hand tools as required by Load Testing Contractor.

i) Install reference beam system according to the approved load testing submittal and as required by the Load Testing Contractor.

j) Air compressor (minimum 185cfm, 100 psi) for pump operation during the load test.

C. Drilled Shaft Concrete

1) 28-day compressive strength meeting the requirements of the class of concrete specified or established in the contract (e.g., Class Drilled Shaft = 4000 psi).

2) Required target slump-flow equals 19 inches. Provide a slump-flow within ± 2 inches of the target value. Test in accordance with AASHTO T 347. Include in the design hourly slump-flow retention testing up to the anticipated placement time of the shaft as defined by Contractor in the approved Drilled Shaft Installation Plan.

3) Provide a maximum visual stability index (VSI) of 1 in accordance with AASHTO T 351.

4) Provide a maximum J-ring value of 2 inches in accordance with AASHTO T 345. When used for a drilled shaft, include hourly J-ring testing up to the desired placement time of the shaft. Include the above test results in the mix design submittal.

D. Reinforcing Cage. Use care in handling the test assembly so as not to damage the instrumentation during installation. Limit the deflection of the cage to 2 feet (610 mm) between pick points while lifting the cage from the horizontal position to vertical. The maximum spacing between pick points is 25 feet (7.6 m). Provide support bracing, strong backs, etc. to maintain the deflection within the specified tolerance. The Bi-Directional load cell assembly must

remain perpendicular to the long axis of the reinforcing cage throughout the lifting and installation process.

E. Polymer Slurry

1) If used, provide polymer slurries, in conformance with the manufacturer's recommendations and conforming to the quality control plan provided in the approved Drilled Shaft Installation Plan. Follow the manufacturer's recommendations of required values for the following properties: density, viscosity, pH, and sand content.

2) The sand content of polymer slurry prior to final cleaning and immediately prior to placing concrete must be less than or equal to 1.0 percent in accordance with American Petroleum Institute API 13B-1, Section 5. Slurry temperature must be at least 40oF when tested.

3) The above provisions apply to polymer slurry used for the purpose of maintaining borehole stability and to facilitate concrete placement. If the Contractor intends to use polymer slurry for other purposes (e.g., casing lubrication) the Drilled Shaft Installation Plan shall include a narrative description of the purpose, procedures, properties, and quality assurance/quality control measures associated with the planned use of polymer slurry.

F. Submittals - Drilled Shaft Installation Plan.

1) The Load Testing Contractor has the authority to modify the Contractor's drilled shaft installation methods if deemed necessary to facilitate installation and performance of the Bi-Directional Load Test.

2) At least four weeks prior to the start of drilled shaft construction, submit a Drilled Shaft Installation Plan narrative for approval. In preparing the narrative, reference the available subsurface geotechnical data, including groundwater conditions, provided in the Contract boring logs and any geotechnical report(s) prepared for this project. This narrative must provide at a minimum the following information:

a) Description of overall construction operation sequence and the sequence of drilled shaft construction.

b) A list, description and capacities of proposed equipment, including but not limited to cranes, drills, augers, bailing buckets, final cleaning equipment and drilling unit. As appropriate, the narrative shall describe why the equipment was selected and describe equipment suitability to the anticipated site and subsurface conditions. The narrative shall include a project history of the drilling equipment demonstrating the successful use of the equipment on shafts of equal or greater size in similar subsurface geotechnical conditions.

c) Details of drilled shaft excavation methods, including proposed drilling methods, methods for cleanout of the bottom of the excavation hole, and a disposal plan for excavated material and drilling slurry, and regulated/hazardous waste (if applicable). If appropriate this shall include a review of method suitability to the anticipated site and subsurface geotechnical conditions, including boulder and obstruction removal techniques if such are indicated in the Contract subsurface geotechnical information or Contract Documents.

d) Details of the proposed working platform(s) (if applicable) including elevation relative to current and final proposed grades.

e) Details of the method(s) to be used to ensure drilled shaft hole stability (i.e., prevention of caving, bottom heave, negative head pressure, etc. using temporary casing, slurry, and/or other means) during excavation and concrete placement. Include with the details a review of method suitability to the anticipated site and subsurface geotechnical conditions.

f) Describe how the drilled shaft installation procedures will account for the effects of artesian groundwater conditions while maintaining stability of the excavation and while maintaining positive head pressure at all times during shaft excavation and construction. Provide specific reference to artesian pressure head values reported by the contract documents.

g) Provide detailed procedures for mixing, using, maintaining, and disposing of the slurry. Include a detailed mix design (including all additives and their specific purpose in the

slurry mix), and a discussion of its suitability to the anticipated subsurface geotechnical conditions.

h) Include a detailed plan for quality control of the selected slurry, including tests to be performed, test methods to be used, and minimum and/or maximum property requirements which must be met to ensure that the slurry functions as intended, considering the anticipated subsurface conditions and shaft construction methods, in accordance with the slurry manufacturer's recommendations and the Specifications and Special Provisions.

i) As a minimum, include the following tests in the slurry quality control plan:

Property	Test Method
Density (lb/ft3)	Mud Weight (Density), API 13B-1, Section 1
Viscosity (seconds/quart)	Marsh Funnel and Cup, API 13B-1, Section 2.2
pH	Glass Electrode, pH Meter, or pH Paper
Sand Content (%)	Sand API 13B-1, Section 5

j) Reinforcing steel shop drawings, details of reinforcement placement including type and location of all splices, reinforcement cage support and centralization methods, type and location of all spacers, cross-hole sonic logging tubes and other instrumentation, and procedures for lifting and setting the reinforcement cage.

k) Temporary casing dimensions and detailed procedures for temporary casing installation and removal, and methods of advancing the casing, along with the means to be utilized for excavating the drilled shaft hole.

l) Details of the method to extract the temporary casing and maintaining shaft reinforcement in proper alignment and location and maintaining the concrete slump flow to keep concrete workable during casing extraction.

m) Details of concrete placement, including a time schedule, proposed equipment and procedures for delivering concrete to the drilled shaft, placement of the concrete into the shaft, operational procedures for pumping, and a sample uniform yield form to be used by the Contractor for plotting the volume of concrete placed versus the depth of shaft for all shaft concrete placement.

n) Procedures for tremie methods used, including initial placement and the raising of the tremie or pump line during placement, and size of tremie and pump lines.

o) Where applicable, a description of the material to be used to temporarily backfill a drilled shaft excavation hole during a stoppage of the excavation operation, as well as the method used to place and remove the material.

p) Details of procedures to prevent loss of slurry or concrete into waterways, sewers and other areas to be protected.

q) A description of the method and materials that will be used to control groundwater leakage or flow around the outer perimeter of casing.

r) Methods of removal and disposal of contaminated concrete.

s) Details and procedures for protecting existing structures, utilities, roadways and other facilities during drilled shaft installation.

t) Other information required by the Plans or specified herein.

3) A Shaft Installation Plan Submittal Meeting will be scheduled following review of the Contractor’s initial submittal of the Plan. Those attending the Shaft Installation Plan Submittal Meeting include the following:

a) The superintendent, on-site supervisors, and other Contractor personnel involved in the preparation and execution of the drilled shaft installation plan and load testing plan.

b) The Project Engineer and MDT’s personnel involved with the structural, geotechnical, and construction review of the drilled shaft installation plan together with MDT

personnel who will provide inspection and oversight during the drilled shaft construction phase of project.

4) Submit any significant updates or modifications to the drilled shaft installation plan to the Project Manager for approval.

G. Slurry Technical Assistance

1) If slurry is used to construct the drilled shafts, the Contractor must provide, or arrange for, technical assistance from the slurry manufacturer. Submit the following to the Engineer:

a) The name and current phone number of the slurry manufacturer's technical representative assigned to the project.

b) The name(s) of the Contractor’s personnel assigned to the project and trained by the slurry manufacturer’s technical representative in the proper use of the slurry. The submittal must include a signed training certification letter from the slurry manufacturer for each individual, including the date of the training.

H. Approvals. Do not begin work until all the required submittals have been accepted in writing by the Project Manager. All procedural acceptances given by the Project Manager will be subject to trial in the field and do not relieve the Contractor of the responsibility to satisfactorily complete the work.

I. Drilled Shaft Preconstruction Conference

1) Hold a shaft preconstruction conference at least five working days prior to the Contractor beginning any shaft construction work at the site to discuss investigative boring information, construction procedures, personnel, and equipment to be used, and other elements of the accepted Drilled Shaft Installation Plan. If slurry is used to construct the shafts, discuss the frequency of scheduled site visits to the project site by the slurry manufacturer’s representative. Those attending must include:

a) The superintendent, on site supervisors, and other key personnel identified by the Contractor as being in charge of excavating the shaft, placing the casing and slurry as applicable, placing the steel reinforcing bars, and placing the concrete.

b) If slurry is used to construct the shafts, the slurry manufacturer's representative and a Contractor’s employee trained in the use of the slurry.

c) The Project Manager, key inspection personnel, and appropriate representatives of MDT.

2) If the Contractor’s key personnel change, or if the Contractor proposes a significant revision of the approved drilled shaft installation plan, an additional conference may be held at the request of the Project Manager before any additional shaft construction operations are performed.

J. Logs of Shaft Construction

1) Prepare inspection logs documenting each shaft construction activity, including casing installation, excavation, shaft bottom inspection, reinforcement installation and concrete placement. The logs shall fully document the work performed with frequent reference to the date, time and casing/excavation elevation. In addition, prepare and submit the logs documenting any subsurface investigation borings or rock core holes performed for the Contract at drilled shaft foundation locations.

2) Include at least the following information for temporary and permanent casing: identification number and location of the shaft; diameter and wall thickness of the casing; dimensions of any casing reinforcement; top and bottom elevations of the casing; method and equipment used for casing installation; any problems encountered during casing installation; and the name of the inspector.

3) Include at least the following information in the shaft excavation log: identification number, location and surface elevation of the shaft; description and approximate top and bottom elevation of each soil or rock material encountered; seepage or groundwater conditions; type and dimensions of tools and equipment used, and any changes to the tools and equipment; type

of drilling fluid used, if any, and the results of slurry tests; drilling fluid levels (elevations) throughout construction; any problems encountered; elevation of any changes in the shaft diameter; method used for bottom cleaning; final bottom elevation of the shaft; and the name of the inspector and the date, time and name of any changes in the inspector.

4) Include at least the following information in concrete placement records: concrete mix used; time of start and end of concrete placement; volume and start/end time for each truck load placed; concrete test results; concrete surface elevation and corresponding tremie tip elevation periodically during concrete placement; concrete yield curve (volume versus concrete elevation, actual and theoretical); and the name of the inspector.

5) Submit the logs for each shaft construction activity to the Project Manager within 24 hours of the completion of that activity. Submit a full set of shaft inspection logs for an individual drilled shaft to the Project Manager within 48 hours of the completion of concrete placement at the shaft

K. Excavation Stability and Groundwater Management

1) Maintain fluid head in the shaft excavation at least 10 ft (plus allowance for surge and fluctuations, including due to extraction of drill tooling) above that of the artesian hydraulic head level at all times during construction until the concrete level exceeds artesian head level or until concrete has reached initial set.

2) Where the artesian ground water level is higher than the top of shaft, either add a watertight extension to the top of the shaft to permit a full static head of drilling fluid to develop in the extension, or use drains and/or a wellpoint system around the shaft to lower the groundwater pressure head to a level sufficient to maintain borehole stability and to maintain a positive head of not less than 10 ft, before proceeding with excavation. A combination of a watertight extension and groundwater wellpoint de-pressurization is allowed, provided a positive head sufficient to prevent borehole instability and not less than 10 ft, is maintained.

3) If the case-ahead method combined with drilling fluid is used to provide borehole stability, limit the depth of excavation from inside the casing to no more than 10 feet above the casing tip, i.e., maintain a minimum soil plug of 10 ft inside the casing. Upon advancing the casing to tip elevation advance the excavation to design tip elevation while maintaining a fluid pressure head in the casing sufficient to maintain borehole stability but no less 10 ft of positive head.

4) During casing extraction, maintain a sufficient level of fluid in the casing to counteract external hydrostatic pressures but no less than 5 feet (1.5 m) of positive head. Maintain an adequate level of concrete within the casing to ensure that fluid trapped behind the casing is displaced upward and discharged at the ground surface without contaminating or displacing the shaft concrete.

L. Base Cleanliness

1) Complete final shaft excavation, cleaning, testing and concrete placement in one continuous operation. Remove all loose material shall be removed from the shafts by using a clean-out bucket, hydraulic pump, or other approved methods. Clean the base of the shaft to meet the requirements specified below. If the reinforcing cage and tremie concrete are not placed within eight hours after the MDT Geotechnical Representative’s approval, re-test the base of the shaft.

2) Inspect the base of drilled shafts constructed in the wet with video inspection utilizing a Shaft Inspection Device (SID) of type MiniSID, produced by GPE, Inc. of Gainesville, Florida, or approved equal and provided results for approval by the MDT Geotechnical Representative. Provide video inspection utilizing a remotely operated camera capable of observing bottom conditions and measuring sediment under water and slurry.

a) Conduct SID tests with the SID camera pointing down, aligned parallel to the axis of the drilled shaft. Place SID on the bottom of the drilled shaft excavation in a way that the bell of the SID can be purged of water enough that the bottom of the shaft is fully visible. Place a minimum of three measuring devices at the bottom of the inside of the bell to measure sediment

depth, spaced equally around the bell perimeter and with gradations at ½ in and 1 ½ inch from the bottom of the bell which are easily visible to the camera.

b) Inspect the shaft at center, north, east, south, and west locations within the drilled shaft excavation with the MDT Geotechnical Representative present for all inspections.

c) Sediment thickness at the bottom of the shaft will be estimated by the Geotechnical Representative in terms of percent of view with sediment thicknesses greater than ½ inch and percent of view with sediment thickness greater than 1 ½ inch at each location. If the average percent of view of sediment thickness greater than ½ inch between all five locations is greater than 50%, or if the sediment thickness at any point is greater than 1 ½ inch, the SID test is considered failed and the shaft base must be re-cleaned as required by this Special Provision. After the Contractor has completed the cleaning, repeat the SID test.

d) Record all SID tests on DVD with audio commentary by the operator, identifying the shaft being tested, the test location within the shaft, and the percent of view with sediment thickness greater than ½ inch and 1 ½ inch. Provide recordings to MDT upon completion of drilled shaft installation.

M. Integrity Testing. Refer to Section 558.

N. Post-Test Grouting Procedures. During the Bi-Directional test, the shaft breaks on a horizontal plane separating the upper section above the Bi-Directional (upper side shear) from the lower section below (combined end bearing and lower side shear). This creates an annular space, the size of which depends on the shaft/Bi-Directional geometry and the expansion of the Bi-Directional load cell. Grout the Bi-Directional load cell and the annular space around the Bi-Directional load cell. Depressurize aquifer as necessary to allow grouting to be completed.

1) Material. Use an approved prepackaged cementitious grout that is designed for underwater pumped grouting applications, with a minimum 28-day compressive strength of 4000 psi.

a) Grouting of Bi-Directional load cell.

(1) Mix thoroughly according to manufacturer's instructions. Ensure that there are no lumps and pass the grout through a No. 4 screen mesh, or smaller, before pumping.

(2) Connect the grout pump outlet to one hydraulic line of the Bi-Directional. Open the other line and establish a flow of water through the system.

(3) Pump the grout through the Bi-Directional hydraulic line while collecting the effluent from the bleed line. Monitor characteristics of effluent material and when it becomes equivalent to the grout being pumped, stop pumping.

(4) MDT will take three (3) samples of the grout for compression testing at 28 days.

Recommended pre-mixed amount of grout for grouting of Bi-Directional:				
Bi-Directional Diameter Inches(mm)	13 (330.2)	21 (533.4)	26 (660.4)	34 (863.6)
Grout Volume Cubic Feet (m^3)	4 (0.11)	7 (0.20)	9 (0.25)	13 (0.37)

b) Grouting of Annular Space Around Bi-Directional load cell.

(1) Mix grout thoroughly according to manufacturer's instructions.

(2) Pump water and establish a flow through the grout pipes (two per shaft). Pump the fluid grout through one of the grout pipes until grout is observed flowing from the second grout pipe or until 1.5 times the theoretical volume has been pumped.

(3) MDT will take three (3) samples of each type of grout for compression testing at 28 days.

Recommended pre-mix amount of grout for grouting of annular space:								
Shaft Diameter Feet (m)	2 (0.6)	3 (0.9)	4 (1.2)	5 (1.5)	6 (1.8)	7 (2.1)	8 (2.4)	9 (2.7)
Grout Volume Cubic Feet (m^3)	25 (0.71)	30 (0.85)	40 (1.13)	50 (1.42)	65 (1.84)	80 (2.27)	100 (2.83)	125 (3.54)

O. Removal. After receiving approval from the Project Manager, remove any equipment, material, waste, etc. and remove and the drilled shaft down to ground level.

P. Measurement. CONSTRUCT DRILLED SHAFT will be measured per each and will include excavation, groundwater management, SID inspection, steel reinforcing, CSL tubes, temporary casings, concrete, any other material, labor and equipment necessary to complete all work described in this provision.

Q. Basis of Payment. Payment for the completed and accepted quantities is made under the following:

Pay Item	Pay Unit
MISCELLANEOUS ITEMS-INSTALL (Test Drilled Shafts)	Each

Payment at the contract unit price is full compensation for all resources necessary to complete the item of work under the contract.

29. GEOTECHNICAL BORINGS AND WELLS

A. Description. Furnish all materials, labor, and equipment necessary to complete geotechnical borings, install monitoring/pumping wells, and install groundwater monitoring instrumentation to assist in design and construction of test drilled shafts in accordance with the specifications, plans, approved Contractor design and working drawings, as specified in the Contract. The Contractor is responsible for furnishing all designs, working drawings, materials, products, tools, equipment, labor, supervision, and manufacturing techniques required for completion and installation of geotechnical borings, monitoring/pumping wells, and monitoring instrumentation.

B. Well Design and Contractor Experience Requirements.

1) Well Design. Monitoring/pumping well will be designed by Contractor's hydrogeologist experienced in design of wells installed in artesian environments.

2) Drilling Contractor. Use a Drilling Contractor with experience in the completion of geotechnical drilling and well installation in artesian conditions and that has constructed at least 5 similar projects in the last 10 years. Drilling Contractor must familiarize themselves with the available information especially in regard to the artesian pressures and flows onsite.

3) Drilling Supervisor. Designate a Drilling Supervisor to supervise the work. The Drilling Supervisor must have experience on a minimum 5 projects of similar scope to this project completed within the past 10 years and be on-site during all drilling operations.

C. Available Information. Available information developed by the Department includes the following items:

- Activity 130 Geotechnical Report
- Boring/Well/Test Shaft Layout (See Plans)
- Groundwater Monitoring Information.

D. Construction Site Survey. Comply with the requirements of Subsection 102.06. The Prime Contractor is responsible for field locating and verifying the location of all utilities

shown on the plans prior to starting the work. Maintain uninterrupted service for those utilities designated to remain in service throughout the project.

E. Aquifer Depressurization. Complete aquifer depressurization as determined necessary by the Contractor prior to any drilling.

F. Well Design Requirements. Provide construction drawings outlining well details, outlining borehole diameter, depth, casing diameter and depth, screen slot size and location, backfill and sealing requirements, pumping requirements and testing requirements.

G. Geotechnical Boring Requirements. Provide sonic drill rig capable of advancing borings to specified depths shown in the plans and complete standard penetration test sampling at specified intervals. Geotechnical sampling to be completed in general accordance with ASTM Method of Test D1586 and D1587. Provide three Geokon vibrating wire piezometers (VWP) capable of being installed within the borehole at the anticipated depths specified below. Final depths will be determined by the Contractor's hydrogeologist (Wells) or MDT's Geotechnical Representative (Geotechnical Borings). Include approximately 30 feet of extra cord lead to facilitate connection to the existing onsite dataloggers. Grout completed borehole annulus with a water-cement-bentonite slurry. Place grout from the bottom of the borehole upward using a tremie method.

Boring ID	Anticipated VWP Installation Depth
ST-125	130 feet
	150 feet
	170 feet
Monitoring Pumping Wells	As determined by Contractor

H. Flowing Artesian Requirements. Develop a contingency plan to mitigate and stop flowing artesian conditions that could occur during well and boring operations.

I. Submittal. At the Preconstruction Conference submit an electronic copy (PDF format) of the proposed Drilling Contractor and personnel planned for completion of the monitoring/pumping wells and geotechnical borings to the Project Manager. Include a brief project description with the owner's name and current phone number. Identify the Design Engineer, Drilling Supervisor, project hydrogeologist, drill rig operators, and on-site foremen to be assigned to the project. Provide a summary of each individual's experience with a brief description of each project completed.

J. Design Submittal. Prior to the planned start of well installation, submit working drawings to the Project Manager for review in accordance with Subsection 105.02. Include all details, dimensions, quantities, ground profiles, and cross-sections necessary to install the wells.

1) Working Drawings. Include all information required for the construction and quality control of the wells. Provide working drawings including, but not limited to, the following:

a) A Plan View and Detail View of the well locations identifying:

- The borehole diameter.
- Casing material type and diameter.
- Screen length and perforation.
- Instrumentation locations and type.
- Borehole sealing requirements.
- Surface completion.
- General notes for installing wells, including well construction sequence, instrumentation requirements and borehole sealing procedures.

K. Flowing Artesian Contingency Plan. Prior to the planned start of work, submit flowing artesian contingency plan for review by the Project Manager. Include all details, onsite

materials, and techniques that may be used to prevent and stop, if necessary, a flowing artesian outside a borehole.

L. As-Built Submittals. Within 14 days after completion of the work, submit well as-built drawings to the Project Manager. Provide well logs to governmental agencies as required by law.

M. Materials. Furnish materials that are new and without defects (dent, cracks, or tears). Remove defective materials from the jobsite at no additional cost to the Department. Provide materials for the geotechnical borings, wells, and instrumentation as specified below:

1) Monitoring/Pumping Wells. Provide materials as specified and approved in the submitted working drawings.

2) Geotechnical Boring. Provide geotechnical instrumentation as specified in Table below.

3) Cement. Provide Portland cement for grout meeting the requirements of Subsection 551.02.1 and the approved Working Drawings.

N. Construction.

1) Site Drainage Control. Control and properly dispose of drill flush and construction related waste, including excess grout, in accordance with the specifications, special provisions, and all applicable local, state, and Federal codes and regulations. Provide positive control and discharge of all surface water. Maintain all pipes or conduits used to control surface water during construction. Repair damage caused by surface water at no additional cost to the Department. Upon substantial completion of the work, remove surface water control pipes or conduits from the site.

2) Drilling. Provide drilling equipment and methods suitable for drilling through the conditions to be encountered, without causing damage to any overlying or adjacent structures or services.

a) The drillhole must be open along its full length to at least the design minimum drillhole diameter prior installing the wells and instrumentation equipment.

3) Grouting. Grout wells and geotechnical borings the same day as completed to reduce the chances of an artesian flow. Continue aquifer depressurization until grout has met requirements of well installation plan provided by Contractor.

O. Well Pump Tests. Perform well pump tests as required by the Contractor's hydrogeologist.

P. Method of Measurement. The Geotechnical Borings and Wells will be measured per each completed and accepted, and include any material, labor and equipment necessary for the Geotechnical Borings and Wells.

Q. Basis of Payment. Payment for the completed and accepted quantities is made under the following:

Pay Item	Pay Unit
MISCELLANEOUS ITEMS-EACH (Geotechnical Borings)	Each
WELL-DEVELOP PUMP AND TEST	Each

Payment at the contract unit price is full compensation for all resources necessary to complete the items of work under the contract.

30. TRAFFIC CONTROL PLAN

A. Provide a traffic control plan and written narrative meeting the requirements of the contract and 618. Submit detailed traffic control plans on aerial overlays. Specifically, address any contract-specific sequence of operations.

B. Method of Measurement. Traffic control plans are measured by Lump Sum. All work associated with creating, submitting, correcting, updating and meeting the contract's requirements is considered incidental to the item.

C. Basis of Payment. Partial payments for the Traffic Control Plan will be based on the lump sum contract price at the rates listed below

Progress estimate payment	Percent of lump sum item
First partial payment after start of contract work	80
Estimate paying 60% of original contract amount	20

31. TRAFFIC CONTROL – DAY

A. Traffic Control – Day. Traffic Control – Day is defined as any day in which traffic control is installed, maintained, or removed.

B. Traffic control will be measured on a per-day basis. Unless otherwise specified, the bid item includes full compensation for all labor, equipment, materials, and incidentals required to implement and maintain traffic control.

C. Correct traffic control deficiencies that affect the safety of the travelling public immediately. Correct all other traffic control deficiencies within 24 hours of receiving written or verbal notification. The Project Manager may apply a deduct of $250 per day due to traffic control operations not meeting the requirements set forth in Section 618.

D. No payment will be made for traffic control which does not meet the approved traffic control plan. Maintenance of traffic control devices on a no workday as directed by the Project Manager will be paid as a day.

32. PILOT CAR – SHIFT

A. Description: This work is defining, measuring and paying for pilot cars by the day.

B. Definitions.

1) Dayshift – Any shift that begins and primarily occurs between 5:00 a.m. and 7:00 p.m.

2) Night Shift – Any shift that begins and primarily occurs between 7:00 p.m. and 5:00 a.m.

C. Method of Measurement. Pilot cars will be measured by the number of pilot cars necessary to complete a shift.

D. Items not authorized for separate payment:

1) Replacing one pilot car with another during a shift.

2) Relocating a pilot car within project limits during the same shift.

3) Pilot cars operating in multiple locations during the same shift.

4) A supervisor providing breaks for a pilot car.

E. Basis of Payment. Pilot Car – Shift is paid for under the unit bid price for Traffic Control-Pilot Car Shift.

33. FLAGGING – SHIFT

A. Description. Provide flaggers as shown on the accepted traffic control plan and as required by the contract.

B. Definitions.

1) Dayshift – Any shift that begins and primarily occurs between 5:00 a.m. and 7:00 p.m.

2) Night Shift – Any shift that begins and primarily occurs between 7:00 p.m. and 5:00 a.m.

C. Construction. Provide flaggers at the locations shown on the Traffic Control Plan.

D. Method of Measurement. Flaggers will be measured by the number of authorized flaggers necessary to complete a shift.

E. Items not authorized for separate payment:

1) Replacing one flagger with another during a shift.

2) Relocating a flagger within the project limits during the same shift.

3) Flaggers operating in multiple locations during the same shift.

4) Supervisors providing breaks for flaggers.

F. Basis of Payment. Flagger-Shift is paid for under the unit bid price for Traffic Control-Flagging Shift.

34. SPEED FEEDBACK SIGN SIZE [618] (ADDED 8-28-25)

Rescind Subsection 618.03.10 (A) and replace it with the following:

Furnish a Speed Feedback Sign (SFS) with a static sign measuring a minimum size of 36” x 48”.

35. LONG TERM VARIABLE MESSAGE BOARDS [618] (ADDED 3-09-23 M)

A. Description. Furnish, install, maintain, and remove three (3) portable variable message boards (VMS).

B. General.

1) Install VMS at the following locations or as approved by the Project Manager.

Location	Description
Southbound Message Board 1	Intersection of US93 and Kicking Horse Road
Southbound Message Board 2	Intersection of US93 and Methodist Church Approach
Northbound Message Board	US93 at Ravalli

2) Install VMS 7 working days prior to the start of initial traffic control setup and construction operations. Provide traffic a warning message as approved by the Project Manager and shown in the Contractor’s Traffic Control Plan. This message will alert traffic to the upcoming project limits and suggest alternate route(s).

3) At the start of construction operations, provide a message warning traffic of the anticipated project delays and suggest alternate route(s) as approved by the Project Manager.

4) Remove VMS as directed by the Project Manager. VMS not removed within 12 hours of notification will be subject to a 15% deduction in the unit bid price for each instance.

5) Furnish VMS that meet MUTCD requirements.

6) VMS must be capable of providing 2 phases with 3 lines and 8 characters per line. Characters must be a minimum of 18 inch in height.

7) If a safe and visible installation location cannot be found, construct a pad that provides a safe, level location to install the message board adjacent to traffic.

C. Method of Measurement. Portable variable message boards will be measured by each.

D. Construction of pad(s) will be measured and paid for in accordance with Subsection 109.04.

E. Basis of Payment. Portable variable message sign will be paid by each and includes all costs associated with installing, maintaining, and removing the boards. This item will be paid under bid item 618 100 005 Portable Variable Message Sign.

36. TRAFFIC ACTUATED TEMPORARY SIGNALS [618] (REVISED 8-10-23M)

A. General. This project requires type 1 level of service.

1) Type I. Furnish computer controlled, traffic actuated temporary signals that utilize motion detection and video to optimize traffic operations during construction. Utilize multiple signals as necessary that work as a system to control traffic.

2) Type II. Include a remote operator that watches the live video streaming from the signal to determine signal phasing and adjusts timing to respond to variations in traffic.

Optimize signal timing at each location.

B. Maintenance of Traffic. One traffic signal for each direction of traffic on Hwy 93 to control traffic through the work zone.

If the use of temporary signals is proposed or becomes necessary at other intersections throughout the project, utilize signals meeting the requirements of this provision.

C. Method of Measurement. Traffic actuated temporary signals will be measured per each individual signal per day.

D. Basis of Payment. Traffic actuated temporary signals will be paid under the bid item of traffic actuated temporary signals for each day per each individual signal used.

The use of pilot car(s) and/or flagger(s) used in conjunction with the signals is at the Project Manager's discretion and will be measured and paid for in accordance with Section 618.

37. RISK REGISTER ITEMS

A. Description. This work consists of addressing and compensating for project-specific risks identified and agreed upon in the Risk Register.

B. Measurement and Payment. When encountered, MDT-owned risks are measured and paid for in accordance with Subsection 104.04 of the Standard Specifications. Compensation will be made under the 104030085 MISCELLANEOUS ITEMS-UNIT pay item.

END OF SECTION I

MDT NONDISCRIMINATION AND DISABILITY ACCOMMODATION NOTICE

Montana Department of Transportation ("MDT") is committed to conducting all of its business in an environment free from discrimination, harassment, and retaliation. In accordance with Federal law, MDT prohibits any and all discrimination and protections are all inclusive (hereafter "protected classes") by its employees or anyone with whom MDT does business:

Federal protected classes

Race, color, religion, national origin, sex, age, disability, and genetic information.

For the duration of this contract/agreement, the PARTY agrees as follows:

(1) Compliance with Regulations: The PARTY (hereinafter includes consultant) will comply with all Acts and Regulations of the United States relative to Non-Discrimination in Federally and State-assisted programs of the U.S. Department of Transportation and the State of Montana, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

(2) Non-discrimination:

a. The PARTY, with regard to the work performed by it during the contract, will not discriminate, directly or indirectly, on the grounds of any of the protected classes in the selection and retention of subcontractors, including procurements of materials and leases of equipment, employment, and all other activities being performed under this contract/agreement.
b. The PARTY will provide notice to its employees and the members of the public that it serves that will include the following:
    i. A statement that the PARTY does not discriminate on the grounds of any protected classes.
    ii. A statement that the PARTY will provide employees and members of the public that it serves with reasonable accommodations for any known disability, upon request, pursuant to the Americans with Disabilities Act as Amended (ADA).
    iii. Contact information for the PARTY's representative tasked with handling non-discrimination complaints and providing reasonable accommodations under the ADA.
    iv. Information on how to request information in alternative accessible formats.

(3) Participation by Disadvantaged Business Enterprises (DBEs):

a. If the PARTY receives federal financial assistance as part of this contract/agreement, the PARTY must comply with applicable federal and state laws regarding the DBEs, including but not limited to 49 CFR Part 26.

b. By signing this agreement, the PARTY assures MDT that:
The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

c. The PARTY must include the above assurance in each contract/agreement the PARTY enters.

(4) Solicitation for Subcontracts, Including Procurement of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation, made by the PARTY for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the PARTY of the PARTY's obligation under this contract/agreement and all Acts and Regulations of the United States related to Non-Discrimination.

(5) Information and Reports: The PARTY will provide all information and reports required by the Acts, Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information and its facilities as may be determined by MDT or relevant US DOT Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the PARTY will so certify to MDT or relevant US DOT Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

(6) Sanctions for Noncompliance: In the event of a PARTY's noncompliance with the Non-discrimination provisions of this contract/agreement, MDT will impose such sanctions as it or the relevant US DOT Administration may determine to be appropriate, including, but not limited to:
a. Withholding payments to the PARTY under the contract/agreement until the PARTY complies; and/or
b. Cancelling, terminating, or suspending the contract/agreement, in whole or in part.

(7) Pertinent Non-discrimination Authorities: During the performance of this contract/agreement, the PARTY, for itself, its assignees, and successor in interest, agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;

- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601 *et seq.*), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);

- Sections 162 and 301(g) of the Federal-Aid Highway Act of 1973, (Public Law No. 93-87, 87 Stat. 250, codified at 23 U.S.C. § 324), (prohibits discrimination on the basis of sex);

- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), (prohibits discrimination on the basis of disability); and 49 CFR Part 27;

- The Age Discrimination Act of 1975, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);

- Section 520 of the Airport and Airways Improvement Act of 1982, (49 U.S.C. § 47123), (prohibits discrimination based on race, creed, color, national origin, or sex);

- The Civil Rights Restoration Act of 1987, (Public Law No. 100-259), (broadened the scope, coverage, and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975, and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients, and contractors, whether such programs or activities are Federally funded or not);

- Titles II and III of the Americans with Disabilities Act, (42 U.S.C. §§ 12131 through 12189), which prohibits discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities , as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;

- Title IX of the Education Amendments of 1972, as amended, which prohibits discrimination on the basis of sex in education programs or activities (20 U.S.C. § 1681 *et seq.*).

(8) Incorporation of Provisions: The PARTY will include the provisions of paragraphs one through seven in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and/or directives cited therein. The PARTY will take action with respect to any subcontract or procurement as MDT or the relevant US DOT Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the PARTY becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the PARTY may request MDT to enter into any litigation to protect the interests of MDT. In addition, the PARTY may request the United States to enter into the litigation to protect the interests of the United States.

RECEIVED
MONTANA DEPARTMENT
JUN - 1 2020
OF TRANSPORTATION
LEGAL SERVICES

MEMORANDUM OF UNDERSTANDING

BETWEEN

THE MONTANA DEPARTMENT OF TRANSPORTATION

AND

THE CONFEDERATED SALISH AND KOOTENAI TRIBES OF THE FLATHEAD RESERVATION

This Agreement is entered into by and between the Montana Department of Transportation ("MDT") and the Confederated Salish and Kootenai Tribes of the Flathead Reservation ("Tribes") (collectively referred to herein as the ("Parties")).

I. Parties

MDT is an executive state agency with responsibility for federal-aid and state highways located within the State of Montana.

The Tribes are a federally-recognized Indian tribal government residing on the Flathead Indian Reservation ("Reservation").

II. Statement of Intent

The intent of this Agreement is to continue the cooperative relationship existing between MDT and the Tribes, carrying forward and building upon the principles and commitments set forth in the 2000 Memorandum of Agreement between the Tribes, MDT, and the Federal Highway Administration. This Agreement is intended to govern all MDT construction, maintenance, facilities, and architectural and engineering projects on the Reservation.

The Parties intend to negotiate and execute Project Specific Agreements ("PSA") to govern specific requirements of individual projects, provided, however, that anything contained in a PSA that is inconsistent with or in conflict with this MOU will be interpreted so as to be consistent with this MOU. The Tribes agree to promptly review the proposed PSAs and sign all approved PSAs within thirty days from receipt.

III. Government to Government Relationship

The Tribes recognize the State of Montana as a sovereign power. Out of deference and respect for the State of Montana, the Tribes will honor and give effect to those laws of the

state that are consistent with federal law and that are respectful of the rights of the Tribes and Tribal members.

The Tribes recognize that MDT is the custodian of the federal-aid and state highways with a duty to plan, develop, operate, maintain and protect these highways and appurtenant structures for present as well as future use. The Tribes further recognize that adequate and integrated systems of highways, roads, and streets are essential to the general welfare of the state and are necessary for the preservation of the public peace, health, and safety and as a contribution to the national defense.

MDT, as a state executive agency, recognizes the Tribes as a sovereign power. Out of deference and respect for the Tribes, MDT will honor and give effect to those laws of the Tribes that are consistent with federal law and that are respectful of the rights of the State, its citizens, and other persons who are under the protection of its laws.

MDT recognizes that the Reservation is a perpetual homeland that the Tribes reserved for themselves pursuant to the terms of the Hellgate Treaty, with the objective of securing for themselves and future generations the health, well-being, and cultural survival of the Salish, Pend d'Oreille, and Kootenai people. MDT also recognizes that the Tribes reserved the right in common with the citizens of the United States to travel upon all public highways pursuant to the terms of the Hellgate Treaty. MDT further recognizes and will honor the unique culture of the Tribes.

MDT and the Tribes will work in a government-to-government relationship and hereby pledge to work diligently and cooperatively, to the extent their governmental resources allow, to facilitate the planning, development, operations, maintenance and protection of federal-aid and state highway projects on the Reservation. Additionally, MDT and the Tribes recognize the trust responsibility to the tribes of the U.S. Department of Transportation and the Federal Highway Administration, and these agencies' legal requirement to protect the well-being of the Tribes.

MDT and the Tribes recognize that a wide range of options are available in transportation design that will provide safe roadways, efficient traffic flow, and that will have minimal environmental impacts, and that differing designs may have disparate impacts on the communities, environment, and cultural resources of the Flathead Reservation, as well as the long-term sovereignty of the Tribes. MDT and the Tribes therefore commit to continuing to seek innovative approaches to transportation that will best meet and protect all of these concerns.

MDT will consult and coordinate with the Tribal Council on all MDT projects being planned, developed, and/or constructed on the Reservation.

The Tribes will diligently review and respond to MDT proposals for MDT projects being planned, developed, and/or constructed on the Reservation.

MDT and the Tribes will each make diligent inquiry toward identifying potential conflicts

between the laws of the State of Montana and of the Tribes that are relevant to this Agreement, and in the event that such conflicts are identified, MDT and the Tribes pledge to work together toward resolving them. Tribal Ordinances in effect at the time of the execution of a PSA for a particular project and shown at that project's pre-bid conference will apply to that project until its completion.

IV. Specific Issues

A. Scoping I Project Nomination

MDT will notify the Tribes of all projects contemplated for implementation on the Reservation and invite the Tribes' comment and/or participation in determining whether or not to nominate a contemplated project for placement on MDT's five-year schedule of projects. MDT will periodically, but not less than once every six months, provide to the Tribes an updated five- year schedule and status report for MDT's projects on the Reservation.

B. Survey / Data Gathering / Environmental / Design

1. In order to clearly define the location and scope of a project, the Parties agree to cooperate in providing MDT with access to Tribal parcels for purposes of preliminary inspection and survey in conformance with the requirements of 25 CFR § 169.101. The Tribes hereby waive the requirement that MDT submit a damage deposit and MDT agrees to indemnify the Tribes, as is allowed under 25 CFR§ 169.103. MDT hereby agrees to pay damages promptly when they are sustained as a result of MDT's inspection and survey actions.

2. In an effort to keep one another fully informed, each party, upon request of the other party, will provide the public record information in their respective possession that is pertinent to a proposed project to the requesting party, to the extent administrative resources allow.

3. MDT and the Tribes will establish a Technical Design Committee ("TDC"). The TDC will consist of one permanent representative each from MDT, the Tribes, and the U.S. Department of Transportation/Federal Highway Administration (FHWA)(invited). The TDC may invite additional duly authorized representatives of other government agencies to join the TDC temporarily for oversight of an individual MDT project when that MDT project will have direct physical impacts on the jurisdictional property of a temporary representative' s agency.

The TDC's purpose is to oversee all preconstruction activities for all MDT Reservation projects, including maintenance and safety projects, so as to develop alternatives for environmental review, select a preferred alternative for design, and to facilitate the production by MDT of technical plans for construction of the selected preferred alternative. The TDC will meet on an as-needed basis and will render decisions by consensus. In the event that the TDC cannot reach consensus on a design issue, then within ten days of

impasse: (a) the MDT representative will report the issue to the MDT Director; (b) the Tribal representative will report the issue to the Tribal Council; and (c) each other governmental representative will report the issue to her/his respective agency's decision-maker with authority over the issue. The MDT Director, the Tribal Council, and the decision-maker for any other represented governmental agency, or their respective delegees, will then arrange to meet as soon as reasonably possible to review the issue and seek resolution. MDT and Tribes may mutually identify a third party to arrange and chair meetings, and to provide meeting documentation.

4. MDT and the Tribes will work cooperatively toward analyzing the environmental impacts related to a project as required by the National Environmental Policy Act ("NEPA") and by the Montana Environmental Policy Act ("MEPA"). In achieving such cooperative analysis, the Tribes will provide a representative to participate on NEPA\MEPA interdisciplinary teams who will represent the Tribes in all NEPA/MEPA related meetings and processes.

5. Within the NEPA/MEPA process, the Parties will exercise due diligence to develop one mutually acceptable preferred alternative for a project.

6. Within the NEPA/MEPA process, the Parties will jointly consult with the lead Federal Agency, plus U.S. Fish and Wildlife Service regarding issues related to the Endangered Species Act, and with the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency regarding issues related to the Clean Water Act.

C. Permitting

1. Construction Water Use

a. For any project that MDT is constructing on the Reservation, MDT and the Tribes will consult to identify and select the source and location for temporary withdrawal of water for construction purposes.

b. When selecting potential sources and locations for temporary withdrawal of water for construction purposes, the Parties will identify multiple sites and consider:

i. whether water is available;

ii. whether there is access to the withdrawal site;

iii. the impact that the project's proposed withdrawal and use will have on other water users;

iv. the impact that the project's proposed withdrawal and use will have on the environment; and

v. the practicality and cost effectiveness of using that withdrawal source and location for fulfilling the project's construction purposes.

c. When selecting a source and location for temporary withdrawal of water for construction purposes, the Parties will favor sources and locations which:

i. avoid and minimize impacts to other water users and to the environment;

ii. are most practical and cost effective for fulfilling MDT's construction purposes; and

iii. to the extent known by Parties, are not objected to by local water users.

d. The Parties will establish the multiple sources and locations for temporary withdrawal of water for construction purposes for any MDT project on the Reservation, and any related terms, conditions or limitations on such withdrawal, in the PSA for that project.

2. Cultural/Historic Resource Protection

a. MDT will enter into one or more contracts for purposes of identifying, documenting, protecting, and preserving historic and cultural resources that may be impacted by an MDT Reservation project. Such agreement(s) will be in the form of one or more contracts for services by and between MDT and its selected consultant. MDT' s Missoula District Administrator, or her/his designee, will provide notice and an opportunity to bid on any such contracts to the Tribal Preservation Department.

b. MDT will act in accordance with the Tribes' Cultural Resource Protection Ordinance ("CRPO"), Ordinance No. 95, which, among other obligations, requires a written application to the Tribes' Cultural Preservation Office for any undertaking that may affect cultural resources on lands within the exterior boundaries of the Flathead Reservation.

3. Water Quality: The Tribes will complete review and certification actions required pursuant to § 401 of the Clean Water Act for Reservation portions of MDT construction projects.

4. Aquatic Land Protection: MDT will apply for a permit pursuant to:

a. the Tribal Aquatic Lands Protection Ordinance 87-A for any MDT project that may cause physical alteration of aquatic lands, wetlands, or Reservation waters; and

b. the Tribal Shoreline Protection Ordinance 64A for any MDT project that will require construction or maintenance, on the bed and banks of a Reservation navigable water body below high water mark, of a wharf, dock, pier, breakwater, jetty, groin, bulkhead, marina or other structure.

5. Wetlands: MDT will inventory, delineate and perform functional assessments of wetlands in advance of proposed projects in accordance with current U.S. Army Corps of Engineers' ("COE") manual and functional assessment methods approved by the COE and the Tribes. MDT will disclose the results of the inventory in advance of proposed projects. MDT will work in cooperation with the Tribes to, in order of priority, avoid, minimize, rectify, reduce and compensate for impacts to wetland resources that are directly or indirectly attributable to MOT's Reservation projects. There will be no net loss of wetlands functions and values within the Reservation attributable to MDT's projects. Wetland mitigation projects to compensate for unavoidable impacts to wetlands attributable to MDT's projects will take place on the Reservation, and will be jointly designed by MDT and the Tribes. MDT will strive to mitigate for unavoidable impacts to wetlands in advance of the impact. MDT will notify the Tribes in advance of all meetings of the Interagency Wetlands Review Team where MDT will present information regarding wetlands impacts or wetlands mitigation on the Reservation. Wetland mitigation locations, types, methods and standards will be selected and applied pursuant to the Wetlands

Conservation Plan for the Flathead Indian Reservation, Montana, December 1999; Chapter 7 Wetland Mitigation Guidelines for the Flathead Indian Reservation. The specific wetland mitigation requirements for a project will be established by the Parties in that project's PSA.

D. Right of Way Acquisition / Negotiation Process for Indian/Tribal Trust Lands

1. Conveyance of interests in real property and grants of rights of way between MDT and the Tribes will be done in accordance with:

a. 23 CFR Part 710 (Right of Way and Real Estate)
b. 25 CFR Part 169 (Rights of Way over Indian Land);
c. 49 CFR part 24 (Uniform Relocation Assistance and Real Property Acquisition Regulations for Federally Assisted Programs); and
d. MDT Right of Way Operations Manual.

2. It is the agreed policy of the Parties that the acquisition of any interest or use right in Tribal property by MDT for highway purposes will not result in a significant loss in acreage or a net loss in value by the Tribes. To effectuate this policy, the Parties further agree that the preferred method for compensating the Tribes for acquisition of Tribal property by MDT for highway purposes will be by exchange.

3. Property exchanged will be equal in value and, as closely as reasonably possible, equal in area.

4. Property for exchange will be valued at fair market value. Fair market value will be determined by mutual agreement of the Parties. In the event that the Parties cannot agree on fair market value, then the Parties will agree to have fair market value determined by an appraisal conducted by a licensed professional appraiser that is hired jointly and paid for equally by the Parties.

5. Any individual exchange transaction will be completed within a ten-year period of time, unless such period is extended by mutual written agreement of the Parties.

6. MDT will provide to the Tribes an annually updated list of all properties owned by MDT that are located on the Reservation that are in excess of MDT's present and foreseeable future highway needs and that are available for exchange.

7. The Tribes will provide MDT with a periodically updated statement regarding the Tribes' determination of acceptability and priority of properties on MDT' s excess property list. In the event that there are properties not listed on MDT's excess property list that the Tribes want to acquire and that maybe available for acquisition by MDT, the Tribes will advise MDT of their perception of availability and their relative desire for acquisition.

8. Property will be conveyed by individual exchange agreements or other conveyance

mutually acceptable to the Parties.

E. Construction and Maintenance Projects

1. MDT and the Tribes will enter into a PSA for each MDT construction and maintenance project to be performed on the Reservation. The PSA will be negotiated and executed after completion of final design/scope of work but before completion of final contract for bid. The PSA will address issues and duties specific to that project. Projects performed on the Reservation directly by MDT personnel will be exempt from the requirements of Sections IV (F), (G), (H) and of this MOU.

2. Unless the Parties agree in a PSA that a Pre-Bid Conference is not required, MDT will host a Pre-Bid Conference on the Reservation for each Reservation project. MDT will make attendance at the Pre-Bid Conference a mandatory prerequisite for submission of a bid by a prospective contractor. The Tribes will send representatives to the Pre-Bid Conference, including the Indian Preference Coordinator. At the Pre-Bid Conference:

a. the Tribes' Indian Preference Coordinator will inform MDT and all prospective contractors in attendance of the Tribes' laws, rules and regulations directly related to the administration and performance of an MDT prime contract and any related subcontracts and employment; and

b. MDT and the Tribes will jointly lead a discussion of the unique nature of the project and the specific methods and/or measures for constructing the project that differ from MDT' s usual construction methods and/or measures.

3. MDT may fund Tribal staff positions, with construction engineering funds, when necessary to provide for adequate Tribal participation in construction oversight activities. In the event that the Parties want to provide for such funding, then the Parties will agree to the amount and scope of use of such funding on a project-by-project basis and memorialize that agreement in the PSA for each particular project. Tribal oversight does not relieve MDT of its inspection responsibilities.

4. MDT will host a Pre-Construction Conference on the Reservation for each of its Reservation projects. MDT will make attendance at the Pre-Construction Conference mandatory for the prime contractor and for each major subcontractor. MDT and the Tribes will send representatives to the Pre-Construction Conference, including all of those staff members who are to be identified to the contractor on MDT' s project organizational chart. At the Pre-Construction Conference:

a. MDT will lead a discussion regarding the project and sequence of operations;

b. MDT will have its prime contractor lead a discussion of its intended construction methods, schedule, and other prominent project-related topics; and

c. the Tribes will lead a discussion regarding avoidance and minimization of project-related economic, cultural and environmental impacts.

5. The Tribes will be party to weekly or agreed upon frequency of construction meetings with MDT and its contractors. These construction meetings will identify and discuss future

and ongoing construction related projects and issues.

6. Construction Borrow Materials:

a. MDT and the Tribes will cooperate in identifying highway construction borrow and surface materials sources on the Reservation, particularly those sources that may have potential for long term use by both Parties.

b. MDT will encourage the use of highway construction borrow materials from Tribal and/or Indian allottee sources for a construction project on the Reservation when such materials are:

i. available in a quantity sufficient for the project;

ii. available in a quality that conforms with state and federal specifications for use as highway construction material;

iii. competitively priced relative to other local sources (When determining whether materials are "competitively priced," the Parties will consider all relevant factors, including: availability, quality, quantity, royalty, haul, stripping, production, access, and reclamation.); and

iv. located in borrow sites that are readily accessible by road and are relatively close in proximity to the construction project

c. The specific actions which MDT will undertake to encourage use of Tribal and/or Indian allottee highway construction borrow materials will be established in the project's PSA.

d. Reclamation of impacts attributable to MDT's project at a borrow or mine site will be performed as required by applicable Tribal, federal, and/or state laws and regulations. Upon request by the Tribes, MDT will review a site identified by the Tribes as a potential construction borrow materials source to determine if it is in the public interest to require MDT's construction contractor to use borrow materials from that site as provided pursuant to 23 C.F.R. § 635.407. If MDT, in consultation with FHWA, finds that it is in the public interest to use such a site, then MDT will:

i. require its contractor to use materials from that site; and

ii. jointly, with the Tribes, develop the mining and reclamation plan for the site.

7. To ensure that all projects are finalized in a way that is satisfactory to both parties upon the completion of a construction or maintenance project (including but not limited to site reclamation), a final walk-through will be performed. Within 30 days of the completion of the work, MDT and the Tribe will perform a joint review of the site, documenting any deficiencies on form MDT-CON-105_17_1F.

F. Indian Preference Employment

1. Policy: MDT and the Tribes, by this Section IV(G), jointly seek to facilitate full employment of Indian people on the Reservation by promoting Indian economic self-

sufficiency through the granting of preference to qualified Indian employees whenever consistent with Federal law.

2. TERO Fee:

a. The Tribes will assess an Indian Preference Contracting fee ("TERO fee") against MDT for all MDT highway construction contracts performed on the Reservation in an amount equal to 3% of the contract' s total value. The contract' s total value amount will be calculated to include the 3% Indian preference increment in its sum. For projects that are located only partly on the Reservation, the TERO fee assessment will be pro-rated to be equivalent to the ratio of miles of project within the Reservation to total miles of project. The TERO fee will be assessed and administered by the Tribes in a manner that is consistent with:

i. applicable Tribal law, rules and practices as applied to all other entities; and

ii. applicable Federal regulations and policy.

b. MDT will collect the TERO fee for the Tribes by withholding the fee from each progress and final payment made to its contractor in an incremental amount equal to 3% of each such progress and final payment. MDT will then submit each incremental payment to the Tribes within ten (10) days of payment to the contractor.

3. Indian Preference Employment: MDT and the Tribes will provide for Indian preference employment on MDT projects on the Reservation pursuant to the terms of this MOU.

4. Indian Preference Coordinator: The Tribes will establish and maintain the position of Indian Preference Coordinator whose duties include but are not limited to the following:

a. establish and administer an Indian Preference Hiring Hall;

b. negotiate, administer and enforce employment compliance plans with MDT contractors cooperatively with MDT;

c. monitor employer compliance;

d. recruit, identify and select trainee candidates; and

e. liaison between the Tribal Council, MDT, and MDT contractors on all issues related to Indian preference employment.

5. Hiring Hall: The Indian Preference Coordinator will establish and administer an Indian Preference Hiring Hall as a resource providing referral services for qualified Indian applicants, without regard or restriction to affiliation or membership in a particular tribe, seeking work and contractors/subcontractors seeking qualified Indian employees.

a. Applicants will be recruited, identified and selected by the Indian Preference Coordinator in a manner consistent with this MOU and with Indian preference law, rules, and standard practices. Such law, rules, and practices, for purposes of this MOU, will allow employers to maintain a "core crew" of employees who are exempt from Indian preference employment requirements. For purposes of this MOU "core crew" is defined to include a person who is either in a supervisory position or who has an ownership interest in the firm or another key position such that the employer would risk likely financial damage or loss if the position is not filled with a

demonstrably qualified employee.

b. When qualified Indian applicants are not available, the project contractor and subcontractors may utilize other recruitment sources.

c. Upon receipt of a request for an applicant, the Indian Preference Coordinator will have two working days to locate a qualified Indian applicant and one additional working day to have the selected applicant report to the job site. If the Indian Preference Coordinator determines that no qualified Indian applicants are available prior to the expiration of the two working day search period, then she/he will immediately notify the contractor of such unavailability so that the contractor can utilize other recruitment sources.

d. Employers may not use job qualification criteria or personnel requirements which bar Indians from employment, unless such criteria or requirements are justified by business necessity. Such criteria must be justified in writing to the Indian Preference Coordinator prior to implementation. The Indian Preference Coordinator and the employer will jointly determine whether an employee is qualified for a job craft or skill. The burden of proof will be on the employer in all disputes of minimum qualification standards and on termination of Indian preference employees when the employer determines that the employee is not qualified.

e. Indian preference employees will be given the same schedule opportunities and number of work hours as similarly situated non-Indian employees.

f. In all lay-offs and reductions in force, no Indian preference employee will be terminated when a non-Indian employee in the same job classification is still employed.

6. Compliance Plan: MDT will direct each of its contractors for construction and maintenance projects to be performed on the Reservation to negotiate an Indian Preference Employment Compliance Plan ("Compliance Plan") with the Indian Preference Coordinator. MDT will not authorize any contractor to commence work on a project until the Compliance Plan has been approved by the Indian Preference Coordinator. The Compliance Plan will:

a. be on a form provided by the Indian Preference Coordinator;

b. be submitted by the contractor to the Indian Preference Coordinator for approval not less than ten days before work begins;

c. provide for prime contractor responsibility for compliance in the prime contract and at every tier in associated subcontracts;

d. provide the Indian Preference Coordinator with authority to access the job site for purposes of performing on-site inspections as necessary to determine compliance;

e. identify the reporting protocol that the contractor will follow to document compliance; and

f. stipulate to possible sanctions for non-compliance including:

i. changes in contractor procedures and policies as necessary to become compliant;

ii. suspension of contractor operations until an identified violation is cured; and

iii. other actions as are reasonable and necessary for the purpose of enforcing

the Compliance Plan.

7. Reports: Every contractor and subcontractor having a contract with a value in excess of $25,000 will submit to the Indian Preference Coordinator:

a. project payroll reports (i.e. wages and hours) within one week of payroll disbursement, but whether such reports include any individual's social security number is entirely at the discretion of the contractor;

b. disciplinary action reports regarding Indian preference employees within two working days of taking disciplinary action;

c. promotion reports within two working days of giving any promotion;

d. layoff/RIF notice 24 hours prior to making any layoffs or reductions in force; and

e. trainee reports for Indian trainees on the Project

f. The Indian Preference Coordinator will submit to MDT a report of findings if there are any anomalies, discrepancies, or issues of non-compliance in any of these reports.

8. Non-compliance:

a. When the Indian Preference Coordinator has reason to believe that an employer is out of compliance with the Compliance Plan, then the Indian Preference Coordinator will issue notice of noncompliance to the alleged violator, with a copy to MDT. Such notice will be served on the alleged violator either personally or by registered mail. The notice will state the nature of the alleged violation, identify the type of sanction that the Indian Preference Coordinator may seek for each alleged violation, notify the alleged violator of her/his right to answer, and the potential consequences for failing to answer. The notice will, when possible, suggest measures for cure of the alleged acts of non-compliance including suggested methods and time. The notice will specify the actions to be taken by the Indian Preference Coordinator if the alleged violation is not cured.

b. A contractor who is served a notice of non-compliance will be provided 15 days to answer. The answer may be in either written form or personal contact. The answer will either admit or deny the alleged violations, raise all affirmative defenses, and state whether the contractor will undertake curative measures. If an answer states that a contractor will undertake curative measures specified in the notice, then the contractor will be granted a reasonable amount of time to implement such measures. If curative measures are implemented within a reasonable time and to the satisfaction of the Indian Preference Coordinator, then no further action will be taken.

G. Indian Training

MDT and the Tribes will provide for training opportunities for Indian trainees on MDT projects on the Flathead Reservation. Such opportunities will consist of placement of trainees by MDT with a contractor when such opportunities can be implemented within an MDT contract without creating undue difficulty or unreasonable risk for the contractor. The number and type of such trainee opportunities for a project will be determined pursuant to

negotiations between MDT and the Tribes' Indian Preference Coordinator and specified in that project' s PSA. MDT and the Tribes will identify said training opportunities no less than six (6) months prior to signing of the PSA by both parties.

H. Indian Contracting

MDT will select prime contractors and subcontractors based on applicable federal and state law and not pursuant to Tribal Indian preference rules. MDT and the Indian Preference Coordinator will work together to promote Disadvantaged Business Enterprises ("DBE") contractors for work on or near the Reservation. MDT will utilize DBE contractors on federal-aid construction contracts on or near the Reservation. DBE goals will be established on federal-aid projects on or near the Reservation to reflect the construction capabilities of DBE firms.

I. Access Management

1. MDT will form an exceptions committee to review all requests regarding access to federal-aid and state highways on the Reservation. The exceptions committee will function according to committee bylaws attached hereto as Appendix #1, and at a minimum will:

a. meet as necessary;

b. include three permanent representatives, one each from MDT, the Tribes, and the county in which the access in question is located and may also include duly authorized representatives of other government agencies who are invited by the permanent representatives to join the exceptions committee temporarily for oversight of an individual MDT project when that MDT project will have direct impacts on the jurisdictional property of a temporary representative' s agency; and

c. render recommendations to MDT based on the consensus of the representatives regarding grant of new access or change in existing access.

2. MDT will follow the recommendations of the exceptions committee regarding grant/denial of new access or change in existing access whenever possible and consistent with its authorities and duties for managing and controlling highway access pursuant to state law.

J. Tribal Law & Order / Accident Reports

For purposes of gathering comprehensive safety data, the Tribal Law and Order Department will provide copies of Tribal officers' investigative reports regarding traffic accidents which are under the jurisdiction of the Tribes to the Montana Highway Patrol. These reports may be submitted in forms and at times agreed upon by Tribal Law and Order and the Montana Highway Patrol.

V. Duration / Termination / Renewal

A. This MOU will become effective upon the signature of both of the Parties and will continue in effect for a term of five years unless earlier terminated by the Parties.

B. Either party upon sixty days written notice to the other may terminate this MOU.

C. Approximately six months prior to the expiration of this MOU, the Parties will meet to review this MOU and identify issues of concern. The Parties will then seek to resolve these concerns by good faith negotiation so that mutually acceptable terms and conditions are available to the Parties in the event the Parties want to renew the MOU for an additional five-year term.

VI. Amendments / Severability

A. Any amendment or variance affecting this MOU will only be made in writing with the concurrence of both parties.

B. The Parties agree that if any portion of this MOU is declared invalid or is otherwise determined to be without force or effect, the remainder of this MOU will remain in full force and effect.

VII. Party Contacts

Michael T. Tooley, Director, MDT, or his designee or successor, will be the liaison for MDT. All notices and communications between the Parties with respect to this MOU will be directed to him at the following address:

Michael T. Tooley, Director
Montana Department of Transportation
2701Prospect Avenue
P.O. Box 201001
Helena, Montana 59620-1001

B. Shelly R. Fyant, Chairman, Tribal Council, or his designee or successor, will be the liaison for the Tribes. All notices and communications between the Parties with respect to this MOU will be directed to him at the following address:

Shelly R. Fyant, Chairman
Confederated Salish and Kootenai Tribes
42487 Complex Boulevard P.O. Box 278
Pablo, Montana 59855

VIII. Negative Declaration

Nothing in this MOU or in any conduct undertaken pursuant to it will be deemed as enlarging or diminishing the jurisdiction of either of the respective Parties, or as a waiver of sovereign immunity, or as an admission or liability of any kind.

IX. Signatures

In Witness Whereof, this Memorandum of Understanding is hereby approved and executed on the latest date shown below.

For MDT:

6/1/2020

Michael T. Tooley, Director Date

For the Tribes:

18 May 2020

Shelly R. Fyant, Chairwoman Date

Approved for Legal Content:

Tim Fox, Montana Attorney General Date

Project Specific Agreement
between the
Confederated Salish and Kootenai Tribes
and the
Montana Department of Transportation

Project Name: US-93 Post Creek Hill, NHG 5-2(159)37, UPN 8008000

Project Type: Roadway and Bridge Construction

Project Route: US Highway 93 (N-5)

Letting Date: July 2025.

This Project Specific Agreement ("PSA") is entered into as specified in the Memorandum of Understanding ("MOU") dated June 1, 2020, between the Confederated Salish and Kootenai Tribes ("Tribes") and the Montana Department of Transportation ("MDT").

The purpose of this PSA is to describe the specific cooperative efforts the parties will perform and have agreed to in conjunction with this Project. Nothing contained in this PSA shall be inconsistent or in conflict with the MOU. If anything is inconsistent, the MOU shall control. In the event the above-specified Project is not awarded, this PSA is null and void, and a new PSA will be drafted.

Specific Issues:

A. A description of the project scope is provided in the Nationally Significant Federal Lands and Tribal Projects Program (NSFLTPP) grant application and related grant agreement (Funding Opportunity: 693JJ3-NSFLTP-FY22).

B. MDT hosted a mandatory virtual Pre-proposal Meeting for all firms proposing on the project on 12/21/2023. CSKT was invited to attend the Pre-proposal meeting. The purpose of this meeting was to provide a forum for all parties to discuss the proposed project and answer questions related to the Request for Proposals. An additional Pre-proposal meeting will not be held.

C. The prime contractor and its subcontractors may obtain construction borrow materials for the Project from any lawful source.

D. An Indian Preference Contracting fee ("IPC fee") of three percent (3.0%) will be assessed against the total consultant contract cost for work performed on the Flathead Reservation. MDT will collect the IPC fee for the Tribes by withholding the fee from each payment made to its consultant in an incremental amount

equal to 3% of each payment. MDT will then submit each incremental payment to the Tribes within ten (10) days after having made payment to the consultant.

E. Indian Hiring Requirements:

1. Before beginning work on the Flathead Reservation, MDT will require its prime consultant and all subcontractors to each negotiate an Indian Preference Employment Compliance Plan with the Tribal Indian Preference Coordinator in accordance with the MOU and will direct its consultants and subconsultants to abide by the Indian Preference laws, rules and procedures required by the MOU.
2. MDT and the Tribes understand and agree that the prime consultant and/or its subconsultants will employ four (4) trainees on the Project.

F. Water to be used by the contractor for the Project may be obtained by the prime contractor from any lawful source desired by it. There will be no Tribal charges to the contractor for Project water unless the prime contractor negotiates and obtains water from a Tribally-Owned source.

G. The prime contractor will procure all permits required by Tribal regulations before commencing work on the project.

H. The Tribes are aware of the Project's scheduling and support it.

I. The contractor will assist and cooperate with the Tribes and MDT in fulfilling and enforcing the Montana State Weed Law (MCA 7-22). The objectives are to prevent, control and restrict the spread of noxious weeds during construction of this project.

1. Seed rights-of-way or portions thereof devoid of competing vegetation as soon as practical pursuant to the seeding provisions of Project design specifications. All seed used for this purpose must be certified noxious weed seed free, and records of sources, lots, or bathes of evidence of certifications must be provided to the Weed Board on demand.
2. All fill, borrow or gravel sources must be noxious weed free.
3. Obtain organic materials used for surface mulch, erosion control, water barriers, or frost and weather protection of green concrete from noxious weed seed free sources.
4. Clean equipment and trucks before moving from noxious weed infested areas to areas free of noxious weeds.

Michael Dobson

Michael Dolson, Chairman
Confederated Salish & Kootenai Tribes

Date: 1/28/25

Christopher Dorrington, Director
Montana Department of Transportation

Date: 1/30/2025

Approved for Legal Content

Legal Services
Confederated Salish & Kootenai Tribes

Date: 1/14/2025

Approved for Legal Content

Legal Services
Montana Department of Transportation

Date: 1/30/25

SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-MW-1

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1184754.0 ft **Coordinates** E: 831515.5 ft	**Station:** 103 + 22 **Offset:** 116 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2838.3 ft
Date Started: 9/25/14	**Date Finished:** 9/25/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Completed as a Monitoring Well	**Township, Range, and Section:** 19N 20W 14 - ADA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					2 - 4 - 6		TOPSOIL, brown, moist. (Topsoil and Root Zone).	0.5 / 2837.8	12					
					3 - 4 - 4		Sandy Lean CLAY with gravel (CL), stiff, brown, moist, [A-6]. (Alluvium).	1.5 / 2836.8	11					
							Sandy SILT with gravel (ML), stiff, light brown, moist, [A-4]. (Glacial Lake).	4.0 / 2834.3	21					
5 / 2833.3					3 - 6 - 5		Silty, Clayey SAND (SC-SM), loose to medium dense, light brown, moist, fine grained, subangular, [A-2-4]. (Glacial Lake). 1" lenses of silt every 4' to 6'.		26		NP	17		
					2 - 3 - 5									
10 / 2828.3					3 - 3 - 4				13					
					3 - 4 - 10				16					
15 / 2823.3					4 - 4 - 4				14					
							Silty GRAVEL (GM), medium dense, light brown, moist to wet, fine to coarse grained, subangular, [A-1-b]. (Glacial Lake). ▼	17.0 / 2821.3	5					
20 / 2818.3					10 - 12 - 15									
									9					
25 / 2813.3					5 - 6 - 12			25.5 / 2812.8						

Boring Depth: 25.5 ft, *Elevation: 2812.8 ft*

Water Level Observations	
▽ After Drilling: **Not Encountered, Augers In**	▽ During Drilling: **Not Encountered**
	▼ After Drilling: **19.2 ft *(2819.1 ft), Augers Out***

Remarks: Maximum recorded water level during monitoring period measured on 10/16/2015.

(2) MDT LOG OF BORING - MDT_REVISED_2009+(CPT_IMPORT).GDT - 5/27/25 18:23 - Z:\GINTGINT\PROJECTS\3101-3200\3128.GPJ

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LOG OF BORING

Boring 8008000-MW-2

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1185053.1 ft **Coordinates** E: 831534.1 ft	**Station:** 106 + 21 **Offset:** 138 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2852.0 ft
Date Started: 9/25/14	**Date Finished:** 9/25/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Completed as a Monitoring Well	**Township, Range, and Section:** 19N 20W 14 - ADA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					2 - 1 - 3		TOPSOIL, black, moist. (Topsoil and Root Zone).	0.3 / 2851.7	18					
					2 - 4 - 4		FILL, Sandy Lean CLAY with gravel (CL), medium stiff, brown, moist, [A-6]. [A-4]. trace cobbles.	1.5 / 2850.5	27					
							SILT (ML), medium stiff, reddish brown, moist, [A-4]. (Glacial Lake).		30					
5 / 2847.0					3 - 3 - 2									
								6.0 / 2846.0	14					
					4 - 7 - 13		Sandy, Silty CLAY (CL-ML), stiff, reddish brown, moist, [A-4]. (Glacial Lake).		13	24	18	54		
10 / 2842.0					4 - 7 - 7				13					
					2 - 4 - 10									
								13.5 / 2838.5	21					
15 / 2837.0					2 - 14 - 14		Silty, Clayey SAND (SC-SM), medium dense, brown, moist, fine grained, subangular, [A-2-4]. (Glacial Lake).							
							2" lense of silt.		14					
20 / 2832.0					5 - 12 - 11			20.0 / 2832.0						
							Silty GRAVEL with sand (GM), medium dense, brown, moist, fine to coarse grained, subangular, [A-1-b]. (Glacial Lake).	21.0 / 2831.0						
							Silty SAND (SM), medium dense, brown, moist, fine grained, subangular, [A-2-4]. (Glacial Lake).		6					
25 / 2827.0					4 - 6 - 6									
								25.5 / 2826.5						

Boring Depth: 25.5 ft, *Elevation: 2826.5 ft*

Water Level Observations	
After Drilling: Not Encountered, Augers In	During Drilling: Not Encountered
	After Drilling: Not Encountered, Augers Out

Remarks: Groundwater not encountered during monitoring period.

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SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-MW-3

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1185519.7 ft **Coordinates** E: 831568.2 ft	**Station:** 110 + 93 **Offset:** 158 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2875.7 ft
Date Started: 9/26/14	**Date Finished:** 9/26/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Completed as a Monitoring Well	**Township, Range, and Section:** 19N 20W 14 - AAD	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					1 - 3 - 2		TOPSOIL, brown, moist. (Topsoil and Root Zone).	0.7	12					
							Sandy SILT with gravel (ML), stiff to very stiff, light brown, moist, [A-4]. (Glacial Lake).	2875.0	14					
					5 - 6 - 9									
									12					
5					5 - 10 - 10		Trace gravel.							
2870.7														
								6.0						
							Silty, Clayey SAND (SC-SM), medium dense, light brown, moist, fine to coarse grained, subrounded, [A-4]. (Glacial Lake).	2869.7	12					
					6 - 7 - 13									
									9	22	17	45		
10					5 - 9 - 13									
2865.7														
									8					
					8 - 11 - 10									
									13					
15					3 - 11 - 13									
2860.7														
								17.0						
							Silty SAND (SM), medium dense, brown, wet, fine grained, rounded, [A-2-4]. (Glacial Lake).	2858.7						
									27					
20					1 - 4 - 8									
2855.7														
									14					
25					5 - 3 - 9									
2850.7								25.5						
							Boring Depth: 25.5 ft, *Elevation: 2850.2 ft*	2850.2						

Water Level Observations		Remarks
▽ After Drilling: 17.0 ft *(2858.7 ft), Augers In*	▽ During Drilling: 17.0 ft *(2858.7 ft)* ▼ After Drilling: 17.6 ft *(2858.1 ft), Augers Out*	Remarks: Maximum recorded water level during monitoring period measured on 10/16/2015.

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LOG OF BORING

Boring 8008000-MW-4

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1184508.7 ft **Coordinates** E: 831498.4 ft	**Station:** 100 + 76 **Offset:** 100 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2827.9 ft
Date Started: 9/26/14	**Date Finished:** 9/26/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Completed as a Monitoring Well	**Township, Range, and Section:** 19N 20W 14 - ADD	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					3 - 10 - 11		TOPSOIL, black, moist. (Topsoil and Root Zone).	0.3 / 2827.6	5					
					45 - 16 - 8		FILL, Poorly-Graded GRAVEL with sand (GP), medium dense to dense, brown, moist, fine to coarse grained, angular, [A-1-a].		5					
5 / 2822.9					4 - 6 - 7		Fat CLAY (CH), very soft to very stiff, reddish brown, moist to wet, [A-7-6]. (Glacial Lake).	4.0 / 2823.9	22					
					2 - 3 - 5				30	56	25	92		
10 / 2817.9					2 - 2 - 4				30					
					5 - 6 - 7				24					
15 / 2812.9					7 - 10 - 11									
20 / 2807.9					WH - WH - 1				20					
25 / 2802.9					3 - 8 - 13			25.5 / 2802.4	11					

Boring Depth: 25.5 ft, *Elevation: 2802.4 ft*

Water Level Observations		Remarks: Maximum recorded water level during monitoring period measured on 3/20/2025.
After Drilling: Not Encountered, Augers In	During Drilling: Not Encountered	
	After Drilling: 8.8 ft *(2819.1 ft), Augers Out*	

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LOG OF BORING

Boring 8008000-MW-5

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1185612.8 ft **Coordinates** E: 831679.5 ft	**Station:** 111 + 97 **Offset:** 57 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2872.9 ft
Date Started: 9/27/14	**Date Finished:** 9/27/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Completed as a Monitoring Well	**Township, Range, and Section:** 19N 20W 14 - AAD	

Depth (ft) Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					3 - 4 - 7		TOPSOIL, brown, moist. (Topsoil and Root Zone).	0.3 2872.6	22					
					5 - 6 - 8		Sandy Lean CLAY (CL), stiff, brown, moist, [A-6]. (Glacial Lake).		22					
5 2867.9					3 - 4 - 5				19					
					2 - 5 - 6		Sandy Lean CLAY with gravel (CL), stiff to very stiff, reddish brown, moist to wet, [A-4]. (Glacial Lake).	6.0 2866.9	18	27	18	50		
10 2862.9					8 - 9 - 11				11					
					6 - 8 - 9				13					
15 2857.9					6 - 10 - 10				11					
					4 - 8 - 9				18					
25 2847.9					6 - 7 - 11				11					
							Boring Depth: 25.5 ft, *Elevation: 2847.4 ft*	25.5 2847.4						

Water Level Observations	
▽ During Drilling: **Not Encountered**	Remarks: Maximum recorded water level during monitoring period measured on 3/20/2025.
▼ After Drilling: **Not Encountered, Augers In**	▼ After Drilling: **8.2 ft *(2864.7 ft), Augers Out***

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LOG OF BORING

Boring 8008000-MW-6

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1188308.4 ft **Coordinates** E: 831807.8 ft	**Station:** 139 + 00 **Offset:** 7 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2986.3 ft
Date Started: 9/27/14	**Date Finished:** 9/27/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Completed as a Monitoring Well	**Township, Range, and Section:** 19N 20W 11 - DAD	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					2 - 6 - 10		TOPSOIL, dark brown, rather dry. (Topsoil and Root Zone).	0.5 *2985.8*	10					
					5 - 11 - 12		Sandy SILT (ML), very stiff, reddish brown, moist, [A-4]. (Glacial Lake).		7					
5 *2981.3*					4 - 8 - 13		Silty SAND with gravel (SM), medium dense, brown, wet, fine to coarse grained, subangular, [A-2-4]. (Glacial Lake).	4.0 *2982.3*	18					
					4 - 4 - 5		Silty CLAY with sand and gravel (CL-ML), medium stiff to stiff, light brown, wet, [A-4]. (Glacial Lake).	6.0 *2980.3*	16					
									16	24	18	71		
10 *2976.3*					1 - 3 - 4									
					1 - 2 - 4				15					
									21					
15 *2971.3*					1 - 5 - 5									
									16					
20 *2966.3*					WH - 2 - 3									
									16					
25 *2961.3*					2 - 4 - 8			25.5 *2960.8*						

Boring Depth: 25.5 ft, *Elevation: 2960.8 ft*

Water Level Observations		Remarks
▼ After Drilling: **14.0 ft** ***(2972.3 ft), Augers In***	▽ During Drilling: **16.0 ft** ***(2970.3 ft)***	Remarks: Maximum recorded water level during monitoring period measured on 3/20/2025.
	▼ After Drilling: **5.8 ft** ***(2980.5 ft), Augers Out***	

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LOG OF BORING

Boring 8008000-MW-7

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1189167.0 ft **Coordinates** E: 831858.5 ft	**Station:** 147 + 60 **Offset:** 40 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 3009.6 ft
Date Started: 9/27/14	**Date Finished:** 9/27/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Completed as a Monitoring Well	**Township, Range, and Section:** 19N 20W 11 - DAA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					1 - 4 - 9		TOPSOIL, black, moist. (Topsoil and Root Zone).	0.3 / 3009.3	11					
					7 - 8 - 8		Sandy Lean CLAY with gravel (CL), stiff to very stiff, reddish brown, moist, [A-7-6]. (Glacial Lake).		16					
5 / 3004.6					5 - 6 - 9				21	44	9	52		
					7 - 10 - 9		Silty GRAVEL with sand (GM), medium dense, brown, moist to wet, fine to coarse grained, subangular, [A-1-b]. (Glacial Lake).	6.0 / 3003.6	10					
10 / 2999.6					6 - 9 - 11				12					
					6 - 6 - 9		Poorly-Graded SAND (SP), medium dense, brown, wet, fine to coarse grained, subangular, [A-3]. (Glacial Lake).	11.0 / 2998.6	21					
15 / 2994.6					12 - 13 - 13		Poorly-Graded GRAVEL with sand (GP), medium dense, light brown, wet, fine to coarse grained, subangular, [A-1-a]. (Glacial Lake).	15.0 / 2994.6	7					
20 / 2989.6					7 - 8 - 12				7					
25 / 2984.6					10 - 12 - 10			25.5 / 2984.1	4					

Boring Depth: 25.5 ft, *Elevation: 2984.1 ft*

Water Level Observations		Remarks
▼ After Drilling: 13.0 ft *(2996.6 ft), Augers In*	▽ During Drilling: 13.0 ft *(2996.6 ft)*	Remarks: Maximum recorded water level during monitoring period measured on 10/16/2015.
	▼ After Drilling: 8.8 ft *(3000.9 ft), Augers Out*	

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LOG OF BORING

Boring 8008000-MW-8

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1190498.4 ft **Coordinates** E: 831943.2 ft	**Station:** 160 + 96 **Offset:** 52 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 3024.9 ft
Date Started: 9/27/14	**Date Finished:** 9/27/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Completed as a Monitoring Well	**Township, Range, and Section:** 19N 20W 11 - ADA	

Depth (ft) Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					2 - 3 - 4		TOPSOIL, black, moist. (Topsoil and Root Zone).	0.3 *3024.6*	14					
					6 - 5 - 8		Sandy Lean CLAY with gravel (CL), medium stiff to very stiff, reddish brown, moist to wet, [A-4]. (Glacial Lake).		21	42	19	79		
5 *3019.9*					6 - 15 - 10									
					7 - 11 - 11				14					
10 *3014.9*					5 - 7 - 10				16					
					3 - 7 - 8				17					
15 *3009.9*					3 - 5 - 7				19					
20 *3004.9*					3 - 4 - 5				18					
25 *2999.9*					2 - 3 - 6			25.5 *2999.4*	15					

Boring Depth: 25.5 ft, *Elevation: 2999.4 ft*

Water Level Observations	
After Drilling: 8.0 ft *(3016.9 ft), Augers In*	During Drilling: 8.3 ft *(3016.6 ft)*
	After Drilling: 3.9 ft *(3021.0 ft), Augers Out*

Remarks: Maximum recorded water level during monitoring period measured on 10/16/2015.

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LOG OF BORING

Boring 8008000-MW-9

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1191364.8 ft **Coordinates** E: 831981.1 ft	**Station:** 169 + 63 **Offset:** 28 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 3028.5 ft
Date Started: 9/29/14	**Date Finished:** 9/29/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Completed as a Monitoring Well	**Township, Range, and Section:** 19N 20W 11 - AAA	

Depth (ft) Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					1 - 9 - 11		TOPSOIL, brown, moist. (Topsoil and Root Zone).	0.3 *3028.2*	6					
					8 - 1 - 1		Sandy, Silty CLAY with gravel (CL-ML), soft to stiff, light brown, moist, [A-4]. (Glacial Lake).		17					
									14	23	16	67		
5 *3023.5*					2 - 6 - 5				14					
					2 - 4 - 4				20					
10 *3018.5*					2 - 5 - 6				16					
					4 - 5 - 5									
15 *3013.5*					3 - 4 - 7				16					
20 *3008.5*					3 - 5 - 9				15					
25 *3003.5*					3 - 6 - 9			25.5 *3003.0*						

Boring Depth: 25.5 ft, *Elevation: 3003.0 ft*

Water Level Observations	
After Drilling: **Not Encountered, Augers In**	During Drilling: **Not Encountered**
	After Drilling: **3.9 ft *(3024.6 ft), Augers Out***

Remarks: Maximum recorded water level during monitoring period measured on 10/16/2015.

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LOG OF BORING

Boring 8008000-ST-1

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1176436.3 ft **Coordinates** E: 831058.6 ft	**Station:** 20 + 66 **Offset:** 14 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2768.5 ft
Date Started: 9/29/14	**Date Finished:** 9/29/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 23 - DDD	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					4 - 13 - 13		Asphalt.	0.6	4					
							FILL, Poorly-Graded GRAVEL with sand (GP), loose to medium dense, brown, moist, fine to coarse grained, subangular, [A-1-a]. (Base/Subbase Course).	2767.9	25					
					3 - 3 - 4			3.0	3	50	21	75		Subgrade bag sample 2'-6'
							Lean CLAY with sand (CL), medium stiff, reddish brown, moist to wet, [A-7-6]. (Glacial Lake). Lenses of waterbearing sandy silt.	2765.5	30					
5 / 2763.5					3 - 4 - 3									
									37					
					1 - 3 - 2									
									39					
10 / 2758.5					1 - 2 - 3			10.5						
							Boring Depth: 10.5 ft, *Elevation: 2758.0 ft*	2758.0						

Water Level Observations		Remarks
After Drilling: Not Encountered, Augers In	During Drilling: Not Encountered After Drilling: Not Encountered, Augers Out	Water not observed to dry cave-in depth of 4½' immediately after withdrawal of auger.

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LOG OF BORING

Boring 8008000-ST-2

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1177369.3 ft **Coordinates** E: 831141.0 ft	**Station:** 30 + 03 **Offset:** 14 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2760.8 ft
Date Started: 9/29/14	**Date Finished:** 9/29/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 23 - DDA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					7 - 20		Asphalt.	0.5 2760.3	4					
					9 - 5 - 9		FILL, Poorly-Graded GRAVEL with sand (GP), medium dense, brown, moist, fine to coarse grained, subangular, [A-1-a]. (Base/Subbase Course).	2.5 2758.3	14					
							Clayey GRAVEL with sand (GC), medium dense, brown, moist, [A-1-b]. (Alluvium).	3.5 2757.3	8	50	21	75		Subgrade bag sample 3½'-9' MDD: 111 pcf OMC: 16.2%
5 2755.8					WH - 1 - 2		Fat CLAY with sand (CH), soft, reddish brown, wet, [A-7-6]. (Glacial Lake).		45					
					WH - 1 - 1				44					
									42					
10 2750.8					WH - 1 - 2									
							Boring Depth: 10.5 ft, *Elevation: 2750.3 ft*	10.5 2750.3						

Water Level Observations		Remarks: Water not observed to dry cave-in depth of 4½' immediately after withdrawal of auger.
After Drilling: **Not Encountered, Augers In**	During Drilling: **Not Encountered** After Drilling: **Not Encountered, Augers Out**	

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LOG OF BORING

Boring 8008000-ST-3

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1178873.8 ft **Coordinates** E: 831206.1 ft	**Station:** 45 + 08 **Offset:** 9 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2749.6 ft
Date Started: 9/29/14	**Date Finished:** 9/29/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 23 - ADD	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Asphalt.	0.8	2					
					6 - 24		FILL, Poorly-Graded GRAVEL with silty clay and sand (GP-GC), medium dense, brown, dry to moist, fine to coarse grained, subangular, [A-1-a]. (Base/Subbase Course).	2748.8	1	22	16	12		Subgrade bag sample 1'-3' MDD: 142.9 pcf OMC: 4.7%
					15 - 13 - 14				3					
							SILT with organic soil (ML), medium stiff, black, wet, [A-7-5]. trace roots. (Alluvium).	3.5 2746.1	41	44	28			
5 2744.6					1 - 2 - 3									
									23					
					WH - 4 - 7			7.5						
							Poorly-Graded GRAVEL with clay and sand (GP-GC), loose to medium dense, reddish brown, wet, fine to coarse grained, angular, [A-1-b]. (Alluvium).	2742.1	17			8	
10 2739.6					4 - 5 - 6									
									24			1		
					4 - 3 - 3									
									14					
15 2734.6					WH - 2 - 3									
									24					
20 2729.6					2 - 3 - 2							62		
							SILT (ML), very soft, reddish brown, wet, [A-4]. (Glacial Lake).	20.0 2729.6						
							Poorly-Graded SAND with gravel (SP), very loose, brown, wet, fine to coarse grained, angular, [A-1-b]. (Glacial Lake).	23.0 2726.6	24			4		
25 2724.6					WH - WH - WH			25.5 2724.1						

Boring Depth: 25.5 ft, *Elevation: 2724.1 ft*

Water Level Observations	
▽ During Drilling: **10.6 ft** ***(2739.0 ft)***	Remarks: Water not observed to dry cave-in depth of 7' immediately after withdrawal of auger.
▼ After Drilling: **10.6 ft** ***(2739.0 ft), Augers In***	▼ After Drilling: **5.0 ft** ***(2744.6 ft), Augers Out***

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LOG OF BORING

Boring 8008000-ST-4

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1179526.7 ft **Coordinates** E: 831245.8 ft	**Station:** 51 + 63 **Offset:** 8 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2747.4 ft
Date Started: 9/30/14	**Date Finished:** 9/30/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 23 - ADA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Asphalt.	0.7	1					
					13 - 25		FILL, Poorly-Graded GRAVEL with sand (GP), dense, brown, moist, fine to coarse grained, angular, [A-1-a]. (Base/Subbase Course).	2746.7	24	64	46	61		Bulk bag sample 1'-3' MDD: 73.0 pcf OMC: 40.0%
					13 - 15 - 13				2					
							Sandy Elastic SILT with organic soil (ML), soft to medium stiff, black, moist to wet, [A-7-6]. (Alluvium).	3.8	18		NP			Subgrade bag sample 3'-6'
5					3 - 3 - 3			2743.7						
2742.4									61					
					1 - 1 - 1									
							Silty SAND with gravel (SM), loose, brown, wet, fine to coarse grained, subangular, [A-2-4]. (Alluvium).	8.0	36			20		
10					WH - 1 - 3			2739.4						
2737.4							Fat CLAY (CH), soft, reddish brown, wet, [A-7-6]. (Glacial Lake).	11.0	30					
					WH - 1 - 1			2736.4						
									29					
15					1 - 1 - 3									
2732.4									39	55	24	95	84	See consolidation test
							Sandy Lean CLAY (CL), soft, reddish brown, wet, [A-7-6]. (Glacial Lake).	18.0	27	43	22	63		
20					WH - 1 - 1			2729.4						
2727.4														
									15			63		
25					1 - 1 - 2									
2722.4														
							Boring Depth: 25.5 ft, *Elevation: 2721.9 ft*	25.5						
								2721.9						

Water Level Observations	
▼ After Drilling: **24.5 ft *(2722.9 ft), Augers In***	▽ During Drilling: **8.0 ft *(2739.4 ft)***
	▼ After Drilling: **Not Encountered, Augers Out**

Remarks: Water not observed to dry cave-in depth of 4½' immediately after withdrawal of auger.

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LOG OF BORING

Boring 8008000-ST-5

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1180230.1 ft **Coordinates** E: 831265.9 ft	**Station:** 58 + 66 **Offset:** 29 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2747.5 ft
Date Started: 9/25/14	**Date Finished:** 9/25/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 23 - AAD	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					WH - WH - WH		Lean CLAY with organic soil (OL), very soft, gray, wet, [A-6]. (Alluvium).	0.7 / 2746.8	60					
					WH - WH - WH		SILT with gravel (ML), very soft, gray, wet, [A-4]. (Alluvium).		20					Subgrade bag sample 1'-3'
5 / 2742.5					WH - WH - 1		Fat CLAY (CH), very soft to soft, dark gray, wet, [A-7-6]. (Glacial Lake).	4.0 / 2743.5	39					
					3 - 2 - 1		Lenses of silt.		40 30	50 34	28 28	93	92	See consolidation test
10 / 2737.5					WH - 1 - WH									
									50			96		
15 / 2732.5					WH - WH - WH									
							Lean CLAY (CL), very soft, dark gray, wet, [A-7-6]. (Glacial Lake).	17.0 / 2730.5	31 12	43	23	94	92	See consolidation test
20 / 2727.5					WH - WH - 3									
									16					
25 / 2722.5					WH - WH - WH									
							Boring Depth: 25.5 ft, *Elevation: 2722.0 ft*	25.5 / 2722.0						

Water Level Observations		Remarks: Groundwater at surface.
After Drilling: 0.0 ft *(2747.5 ft), Augers In*	During Drilling: 0.0 ft *(2747.5 ft)* After Drilling: 0.0 ft *(2747.5 ft), Augers Out*	

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Boring 8008000-ST-6

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1181516.3 ft **Coordinates** E: 831375.8 ft	**Station:** 71 + 57 **Offset:** 52 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2778.0 ft
Date Started: 9/30/14	**Date Finished:** 9/30/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 14 - DDD	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Asphalt.		3	24	15	30		Subgrade bag sample 1'-4' MDD: 135.9 pcf OMC: 7.3%
					13		FILL, Clayey SAND with gravel (SC), medium dense, brown, moist, fine to coarse grained, subangular, [A-2-4]. (Base/Subbase Course).	1.1 *2776.9*	1					
					8 - 10 - 13				14					
5 *2773.0*					7 - 9 - 15		Lean CLAY with organic soil (OL), very stiff, black, moist, [A-6]. (Alluvium).	4.0 *2774.0*	44					
					2 - 5 - 8		Sandy Lean CLAY (CL), medium stiff, brown, moist, [A-6]. (Alluvium).	6.0 *2772.0*	20					
10 *2768.0*					2 - 2 - 4				28					
							Boring Depth: 10.5 ft, *Elevation: 2767.5 ft*	10.5 *2767.5*						

Water Level Observations		Remarks: Water not observed to dry cave-in depth of 5¼' immediately after withdrawal of auger.
▽ During Drilling: **Not Encountered**	▼ After Drilling: **Not Encountered, Augers Out**	
▼ After Drilling: **Not Encountered, Augers In**		

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Boring 8008000-ST-7

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1182749.5 ft **Coordinates** E: 831415.5 ft	**Station:** 83 + 91 **Offset:** 12 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2791.9 ft
Date Started: 9/25/14	**Date Finished:** 9/25/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 14 - DDA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					2 - 7 - 11		TOPSOIL, brown, dry. (Topsoil and Root Zone).	0.3 / 2791.6	2					
					5 - 5 - 5		FILL, Poorly-Graded GRAVEL with sand (GP), medium dense, brown, dry, fine to coarse grained, subangular, [A-1-a]. (Embankment Fill).	1.5 / 2790.4	13 5	44	21	86		Subgrade bag sample 2'-6' MDD: 105.1 pcf OMC: 19.6%
							FILL, Gravelly Lean CLAY (CL), stiff, brown, moist to wet, [A-7-5]. (Embankment Fill).	3.5 / 2788.4	24					
5 / 2786.9					2 - 4 - 6		Sandy Lean CLAY (CL), stiff, reddish gray, wet, [A-7-6]. (Glacial Lake).							
					2 - 3 - 4		Fat CLAY (CH), medium stiff to soft, reddish gray, wet, [A-7-6]. (Glacial Lake).	6.0 / 2785.9	29					
10 / 2781.9					WH - 1 - 2				1					
					WH - 1 - 2				40	55	26			
15 / 2776.9					WH - WH - WH				46					
							Boring Depth: 15.5 ft, *Elevation: 2776.4 ft*	15.5 / 2776.4						

Water Level Observations		
After Drilling: Not Encountered, Augers In	During Drilling: Not Encountered	Remarks: Water not observed to dry cave-in depth of 11½' immediately after withdrawal of auger.
	After Drilling: Not Encountered, Augers Out	

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LOG OF BORING

Boring 8008000-ST-8

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1184005.3 ft **Coordinates** E: 831520.1 ft	**Station:** 96 + 52 **Offset:** 4 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2816.9 ft
Date Started: 9/30/14	**Date Finished:** 9/30/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 14 - DAA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Asphalt.		1					
					10		FILL, Clayey SAND with gravel (SC), medium dense, brown, moist, fine to coarse grained, subangular, [A-2-6]. (Base/Subbase Course).	1.0 2815.9	2 20	29	17	33		Subgrade bag sample 1'-3' MDD: 112.1 pcf OMC: 14.8%
					13 - 10 - 6									
							Lean CLAY with organic soil (OL), soft, black, moist, [A-6]. (Alluvium).	3.5 2813.4	26					
5 2811.9					1 - 4 - 5		Lean CLAY (CL), soft, dark brown, moist, [A-6]. (Alluvium).	4.0 2812.9						
							Fat CLAY (CH), medium stiff to stiff, reddish brown, moist, [A-7-6]. (Glacial Lake).	4.5 2812.4	31 31	51	26	91		
					1 - 3 - 4				27					
10 2806.9					1 - 4 - 4									
								10.5 2806.4						

Boring Depth: 10.5 ft, *Elevation: 2806.4 ft*

Water Level Observations		
After Drilling: **Not Encountered, Augers In**	During Drilling: **Not Encountered**	Remarks: Water not observed to dry cave-in depth of 6' immediately after withdrawal of auger.
	After Drilling: **Not Encountered, Augers Out**	

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LOG OF BORING

Boring 8008000-ST-9

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location Coordinates** N: 1185052.2 ft E: 831672.4 ft	**Station:** 107 + 08 **Offset:** 58 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2849.1 ft
Date Started: 9/30/14	**Date Finished:** 9/30/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 14 - ADA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					2 - 5 - 11		TOPSOIL, black, moist. (Topsoil and Root Zone).	1.0 / 2848.1	19					
					7 - 6 - 7		Lean CLAY with sand (CL), stiff to very stiff, reddish brown, moist, [A-7-6]. (Glacial Lake).		20 4	45	19	81		Subgrade bag sample 2'-5' MDD: 104.7 pcf OMC: 19.1%
5 / 2844.1					9 - 22 - 22				5					
					6 - 10 - 9		Silty GRAVEL (GM), medium dense, gray, moist, fine to coarse grained, subangular, [A-1-b]. (Glacial Lake).	7.0 / 2842.1	12					
10 / 2839.1					5 - 12 - 14				8					
							Boring Depth: 10.5 ft, *Elevation: 2838.6 ft*	10.5 / 2838.6						

Water Level Observations		Remarks
▽ During Drilling: Not Encountered	▽ After Drilling: Not Encountered, Augers In	Remarks: Water not observed to dry cave-in depth of 4' 8" immediately after withdrawal of auger.
▼ After Drilling: Not Encountered, Augers Out		

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Boring 8008000-ST-10

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1185459.4 ft **Coordinates** E: 831738.0 ft	**Station:** 111 + 18 **Offset:** 90 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2869.5 ft
Date Started: 9/26/14	**Date Finished:** 9/26/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 14 - AAD	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					3 - 6 - 10		TOPSOIL, black, moist. (Topsoil and Root Zone).	0.5 / 2869.0	19					
					9 - 9 - 12		Fat CLAY (CH), stiff to very stiff, reddish brown, moist, [A-7-6]. (Glacial Lake).		17 7	55	22	91		Subgrade bag sample 2'-5' MDD: 97.0 pcf OMC: 24.1%
5 / 2864.5					5 - 5 - 5				21					
					1 - 2 - 15				26					
									29					
10 / 2859.5					4 - 4 - 5			10.5 / 2859.0						

Boring Depth: 10.5 ft, *Elevation: 2859.0 ft*

Water Level Observations		Remarks: Water not observed to dry cave-in depth of 5½' immediately after withdrawal of auger.
After Drilling: Not Encountered, Augers In	During Drilling: Not Encountered	
	After Drilling: Not Encountered, Augers Out	

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Boring 8008000-ST-11

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1186861.4 ft **Coordinates** E: 831852.0 ft	**Station:** 125 + 22 **Offset:** 113 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2925.0 ft
Date Started: 9/27/14	**Date Finished:** 9/27/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 19 - DDD	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					2 - 3 - 8		TOPSOIL, black, moist. (Topsoil and Root Zone).	0.8	9					
							Sandy Lean CLAY with gravel (CL), stiff to very stiff, reddish brown, moist, [A-6]. (Glacial Lake).	2924.2	7					
					7 - 7 - 11				2	31	18	51		Subgrade bag sample 2'-5' MDD: 115.3 pcf OMC: 15.9%
									11					
5 2920.0					9 - 11 - 42			5.0 2920.0						
							Silty GRAVEL (GM), medium dense to dense, reddish brown, moist, fine to coarse grained, subangular, [A-1-b]. (Glacial Lake).		9					
					8 - 13 - 19									
									13					
10 2915.0					7 - 10 - 10			10.5 2914.5						

Boring Depth: 10.5 ft, *Elevation: 2914.5 ft*

Water Level Observations		
After Drilling: **Not Encountered, Augers In**	During Drilling: **Not Encountered**	Remarks: Water not observed to dry cave-in depth of 4½' immediately after withdrawal of auger.
	After Drilling: **Not Encountered, Augers Out**	

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LOG OF BORING

Boring 8008000-ST-12

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1187796.8 ft **Coordinates** E: 831814.5 ft	**Station:** 133 + 91 **Offset:** 3 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2966.4 ft
Date Started: 9/27/14	**Date Finished:** 9/27/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 11 - DDA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					4 - 6 - 5		TOPSOIL, dark brown, moist. (Topsoil and Root Zone).	1.0 / 2965.4	16					
					5 - 5 - 6		Lean CLAY with sand (CL), stiff, brown, moist, [A-6]. (Glacial Lake).		19 6	36	18	85		Subgrade bag sample 2'-5' MDD: 116.1 pcf OMC: 15.5%
5 / 2961.4					3 - 5 - 7				19					
					2 - 5 - 8		Sandy Lean CLAY with gravel (CL), stiff to hard, brown, moist, [A-6]. (Glacial Lake).	6.0 / 2960.4	20					
10 / 2956.4					5 - 35 - 50/0.2ft		Trace cobbles.		10					
							Boring Depth: 10.5 ft, *Elevation: 2955.9 ft*	10.5 / 2955.9						

Water Level Observations		Remarks: Water not observed to dry cave-in depth of 5' immediately after withdrawal of auger.
During Drilling: **Not Encountered**		
After Drilling: **Not Encountered, Augers In**	After Drilling: **Not Encountered, Augers Out**	

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LOG OF BORING

Boring 8008000-ST-13

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1189308.8 ft **Coordinates** E: 831827.3 ft	**Station:** 149 + 03 **Offset:** 6 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 3014.1 ft
Date Started: 9/30/14	**Date Finished:** 9/30/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 11 - DAA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Asphalt.	0.5 *3013.6*	1					
					27 - 33		FILL, Poorly-Graded GRAVEL with sand (GP), dense, brown, moist, fine to coarse grained, subangular, [A-1-a]. (Base Course).	1.0 *3013.1*	2 18	30	16	30		Subgrade bag sample 1'-3' MDD: 127.3 pcf OMC: 10.0%
					8 - 16 - 8		FILL, Clayey SAND with gravel (SC), dense, brown, moist, fine to coarse grained, subangular, [A-2-6]. (Subbase Course).	2.5 *3011.6*						
5 *3009.1*					2 - 3 - 5		FILL, Sandy SILT with gravel (ML), medium stiff, brown, moist, [A-4]. (Embankment Fill).	5.5 *3008.6*	26					
					5 - 7 - 10		Sandy Lean CLAY (CL), dark brown, moist, [A-6]. (Alluvium).	6.0 *3008.1*	20					
							Fat CLAY (CH), very stiff, reddish brown, moist, [A-7-5]. (Glacial Lake).		29	54	25			
10 *3004.1*					5 - 6 - 10									
							Boring Depth: 10.5 ft, *Elevation: 3003.6 ft*	10.5 *3003.6*						

Water Level Observations		Remarks
▽ After Drilling: Not Encountered, Augers In	▽ During Drilling: Not Encountered ▼ After Drilling: Not Encountered, Augers Out	Remarks: Water not observed to dry cave-in depth of 4.3' immediately after withdrawal of auger.

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LOG OF BORING

Boring 8008000-ST-14

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1190627.7 ft **Coordinates** E: 831885.3 ft	**Station:** 162 + 86 **Offset:** 15 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 3032.4 ft
Date Started: 9/30/14	**Date Finished:** 9/30/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 11 - ADA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Asphalt.	0.8	4					
					13		FILL, Clayey SAND with gravel (SC), medium dense, brown, moist, fine to coarse grained, subangular, [A-2-6]. (Base/Subbase Course).	3031.6	2	26	14	32		Subgrade bag sample 1'-3' MDD: 124.0 pcf OMC: 12.0%
					10 - 8 - 7			2.5	14					
							Sandy SILT with gravel (ML), reddish brown, moist, [A-4]. (Glacial Lake).	3029.9						
									8					
5					3 - 9 - 14		Silty SAND (SM), medium dense, reddish brown, moist to wet, fine to coarse grained, subangular, [A-2-4]. (Glacial Lake).	4.5						
3027.4								3027.9						
					2 - 12 - 13				14					
									18					
10					9 - 10 - 10									
3022.4								10.5						
							Boring Depth: 10.5 ft, *Elevation: 3021.9 ft*	3021.9						

Water Level Observations	
After Drilling: 6.5 ft *(3025.9 ft), Augers In*	During Drilling: 6.5 ft *(3025.9 ft)* After Drilling: Not Encountered, Augers Out

Remarks: Water not observed to dry cave-in depth of 4½' immediately after withdrawal of auger.

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LOG OF BORING

Boring 8008000-ST-15

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 550 **Hammer:** Auto	**Boring Location** N: 1191808.1 ft **Coordinates** E: 831961.4 ft	**Station:** 174 + 69 **Offset:** 21 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 3030.9 ft
Date Started: 9/30/14	**Date Finished:** 9/30/14	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** B. Warren		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 11 - AAA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Asphalt.	0.8	2					
					13		FILL, Silty, Clayey GRAVEL with sand (GC-GM), medium dense, brown, moist, fine to coarse grained, subangular, [A-1-b]. (Base/Subbase Course).	*3030.1*	1	20	14	25		OMC: 6.3% Subgrade bag sample 1'-3' MDD: 142.9 pcf
					11 - 10 - 11			2.0	12					
								3028.9						
							FILL, Sandy SILT with gravel (ML), medium stiff to very stiff, brown, moist, [A-4]. (Embankment Fill).						
5					3 - 3 - 4									
3025.9														
					1 - 4 - 5			7.0						
							Sandy Lean CLAY (CL), stiff, dark brown, moist, [A-6]. (Alluvium).	*3023.9*						
								8.5						
							Sandy SILT (ML), stiff, reddish brown, moist, [A-4]. (Glacial Lake).	*3022.4*						
10					3 - 5 - 5									
3020.9														
							Boring Depth: 10.5 ft, *Elevation: 3020.4 ft*	10.5						
								3020.4						

Water Level Observations		Remarks: Water not observed to dry cave-in depth of 5' immediately after withdrawal of auger.
During Drilling: **Not Encountered**		
After Drilling: **Not Encountered, Augers In**	After Drilling: **Not Encountered, Augers Out**	

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LOG OF BORING

Boring 8008000-ST-104

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1179627.2 ft **Coordinates** E: 831145.9 ft	**Station:** 52 + 57 **Offset:** 113 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 10½"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2741.3 ft
Date Started: 3/2/16	**Date Finished:** 3/2/16	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** B. Warren		**Abandonment Method:** Grout	**Township, Range, and Section:** 19N 20W 23	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					1 - 1 - 3		TOPSOIL, black, moist.		40					
					1 - 1 - 1		Silty SAND (SM), very loose, brown, wet, medium grained, subangular, [A-2]. (Alluvium). ▼	1.5 / 2739.8	28					
5 / 2736.3					7 - 5 - 4		Poorly-Graded GRAVEL with silt and sand (GP-GM), loose, brown, wet, fine to coarse grained, subangular, [A-1]. (Alluvium).	3.5 / 2737.8	33					
					1 - 2 - 2				14					
10 / 2731.3					2 - 2 - 2		Silty CLAY with sand (CL-ML), soft to very soft, light brown, wet, [A-4]. (Glacial Lake).	8.0 / 2733.3	29					
					WH - 2 - 2				14					
									15	22	18	61	105	See consolidation test See triaxial test
15 / 2726.3					WH - WH - 2				17					
									16					
20 / 2721.3					WH - WH - 2			20.5 / 2720.8						

Boring Depth: 20.5 ft, *Elevation: 2720.8 ft*

Water Level Observations		Remarks:
▼ After Drilling: 2.9 ft *(2738.4 ft), Augers In*	▽ During Drilling: 2.9 ft *(2738.4 ft)*	
	▼ After Drilling: Not Encountered, Augers Out	

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Boring 8008000-ST-105

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1179743.2 ft **Coordinates** E: 831149.7 ft	**Station:** 53 + 73 **Offset:** 116 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 10½"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2743.0 ft
Date Started: 3/3/16	**Date Finished:** 3/3/16	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** B. Warren		**Abandonment Method:** Grout	**Township, Range, and Section:** 19N 20W 23	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					1 - 2 - 2		Lean CLAY with organic soil (OL), soft to medium stiff, black, moist to wet. (Topsoil and Root Zone).		40					
					4 - 5 - 2				8					
								2.5 *2740.5*						
5 *2738.0*					WH - WH - WH		Poorly-Graded GRAVEL with silt and sand (GP-GM), very loose to loose, brown, wet, fine to coarse grained, subrounded, [A-1]. (Alluvium).							
					2 - 5 - 5				13					
								8.5 *2734.5*						
10 *2733.0*					WH - WH - 5		Silty CLAY (CL-ML), medium stiff to very soft, tan, wet, [A-4]. (Glacial Lake).		53					
					WH - WH - 1				36					
									31	26	22	97	109	See triaxial test
15 *2728.0*					WH - WH - 2				16					
									16					
20 *2723.0*					WH - WH - 1									
							Boring Depth: 20.5 ft, *Elevation: 2722.5 ft*	20.5 *2722.5*						

Water Level Observations		Remarks:
▽ After Drilling: 2.4 ft *(2740.6 ft), Augers In*	▽ During Drilling: 2.4 ft *(2740.6 ft)* ▼ After Drilling: Not Encountered, Augers Out	

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LOG OF BORING

Boring 8008000-ST-106

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1179868.8 ft **Coordinates** E: 831177.0 ft	**Station:** 55 + 00 **Offset:** 96 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 10½"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2741.8 ft
Date Started: 3/3/16	**Date Finished:** 3/3/16	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** B. Warren		**Abandonment Method:** Grout	**Township, Range, and Section:** 19N 20W 23	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					WH - WH - WH		Lean CLAY with organic soil (OL), very soft, black, wet. (Topsoil and Root Zone). ▽		87 52					
					1 - 1 - 1			2.5 *2739.3*						
5 *2736.8*					WH - 2 - WH		Poorly-Graded GRAVEL with sand (GP), very loose, brown, wet, fine to coarse grained, subangular, [A-1]. (Alluvium).		16					
								6.0 *2735.8*	50					
					WH - WH - WH		Silty CLAY with sand (CL-ML), very soft to stiff, tan, wet, [A-4]. (Glacial Lake).		22	23	18	84	97	See triaxial test
10 *2731.8*					WH - WH - 2				33					
					2 - 2 - 3				33					
15 *2726.8*					2 - 5 - 6									
									17					
20 *2721.8*					1 - 3 - 5			20.5 *2721.3*						

Boring Depth: 20.5 ft, *Elevation: 2721.3 ft*

Water Level Observations		Remarks:
▽ After Drilling: 1.0 ft *(2740.8 ft), Augers In*	▽ During Drilling: 1.0 ft *(2740.8 ft)* ▽ After Drilling: Not Encountered, Augers Out	

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LOG OF BORING

Boring 8008000-ST-107

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1180006.4 ft **Coordinates** E: 831170.0 ft	**Station:** 56 + 37 **Offset:** 111 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 10½"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2744.8 ft
Date Started: 3/4/16	**Date Finished:** 3/5/16	**Drilling Fluid:** Water	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** B. Warren		**Abandonment Method:** Grout Attempted	**Township, Range, and Section:** 19N 20W 23	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					WH - 3 - 3		Lean CLAY with organic soil (OL), soft to medium stiff, black, wet. (Topsoil and Root Zone).		52					
					WH - 1 - 3				40					
								3.5 / 2741.3						
5 / 2739.8					WH - 3 - 5		Poorly-Graded GRAVEL with silt and sand (GP-GM), loose, brown, wet, fine to coarse grained, subrounded, [A-1]. (Alluvium).		12					
								6.0 / 2738.8						
					WH - 2 - 4		Sandy, Silty CLAY (CL-ML), soft to medium stiff, light brown, wet, [A-4]. (Glacial Lake).		31					
									32					
10 / 2734.8					WH - 1 - 2									
									33					
					WH - WH - 2									
									33					
15 / 2729.8					WH - 1 - 2									
									16	23	17	68	108	See consolidation test See triaxial test
									17					
20 / 2724.8					WH - WH - 2									
							Boring Depth: 20.5 ft, *Elevation: 2724.3 ft*	20.5 / 2724.3						

Water Level Observations	
After Drilling: Not Encountered, Augers In	During Drilling: Not Encountered
	After Drilling: Not Encountered, Augers Out

Remarks: Artesian flow developed and hole could not be backfilled. Artesian flow persists.

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LOG OF BORING

Boring 8008000-ST-111

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location Coordinates** N: 1184671.0 ft E: 831601.6 ft	**Station:** 103 + 22 **Offset:** 21 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 7¼"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2837.0 ft
Date Started: 3/16/16	**Date Finished:** 3/16/16	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** D. Forrest		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 13	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					5 - 6 - 5		Lean CLAY with organic soil (OL), soft, black, moist. (Topsoil and Root Zone).	0.3 / 2836.7						
					3 - 7 - 10		Lean CLAY (CL), stiff, black, moist, [A-6]. (Glacial Till).	2.0 / 2835.0	19	35	17	79	106	See consolidation test
			40				Lean CLAY with sand and gravel (CL), very stiff, brown, moist, [A-6]. (Glacial Till).							
5 / 2832.0					6 - 12 - 12									
					7 - 10 - 10		Sandy Lean CLAY (CL), stiff to very stiff, brown, moist, [A-4]. (Glacial Till).	7.0 / 2830.0						
			40											
					5 - 6 - 7		Clayey SAND (SC), stiff, brown, moist, medium grained, subangular, [A-4]. (Glacial Till).	9.0 / 2828.0						
10 / 2827.0														
					3 - 6 - 7									
					3 - 5 - 7									
15 / 2822.0							Poorly-Graded GRAVEL with sand (GP), medium dense, brown, dry, medium grained, subangular, [A-1]. (Glacial Till).	15.0 / 2822.0						
							Poorly-Graded GRAVEL with sand (GP), medium dense to very dense, brown, wet, medium grained, subangular, [A-1]. (Glacial Till).	18.0 / 2819.0						
20 / 2817.0					14 - 9 - 8									
					50/0.3ft			24.3 / 2812.7						

Boring Depth: 24.3 ft, *Elevation: 2812.7 ft*

Water Level Observations		Remarks
After Drilling: **20.7 ft** ***(2816.3 ft), Augers In***	During Drilling: **18.2 ft** ***(2818.8 ft)***	Remarks: Water not observed to dry cave-in depth of 15' immediately after withdrawal of auger.
	After Drilling: **Not Encountered, Augers Out**	

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LOG OF BORING

Boring 8008000-ST-112

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1184599.9 ft **Coordinates** E: 831712.3 ft	**Station:** 102 + 61 **Offset:** 137 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 7¼"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2827.7 ft
Date Started: 3/16/16	**Date Finished:** 3/16/16	**Drilling Fluid:**	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** D. Forrest		**Abandonment Method:** Backfilled with Cuttings & Bentonite	**Township, Range, and Section:** 19N 20W 13	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					2 - 3 - 4		Lean CLAY with organic soil (OL), black, moist. (Topsoil and Rootzone).	0.5 / 2827.2						
					1 - 8 - 12		Lean CLAY (CL), medium stiff, brown, moist, [A-7]. (Glacial Till).	2.0 / 2825.7	19	48	18	87	98	See consolidation test
			80				Lean CLAY with sand and gravel (CL), very stiff, brown, moist, [A-7-6]. (Glacial Till).							
5 / 2822.7					11 - 9 - 10									
					9 - 8 - 9		Poorly-Graded GRAVEL with sand (GP), medium dense to loose, brown, moist to wet, fine to coarse grained, subangular, [A-1]. (Glacial Till).	7.0 / 2820.7						
10 / 2817.7					12 - 9 - 8									
					5 - 7 - 15									
15 / 2812.7					3 - 6 - 5									
20 / 2807.7					6 - 5 - 4									
25 / 2802.7					9 - 4 - 4									
							Lean CLAY with sand and gravel (CL), stiff, brown, wet, [A-6]. (Glacial Till).	27.5 / 2800.2						
30 / 2797.7					3 - 7 - 7									
							Boring Depth: 30.5 ft, *Elevation: 2797.2 ft*	30.5 / 2797.2						

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Water Level Observations	
▼ After Drilling: **10.8 ft** ***(2816.9 ft), Augers In***	▽ During Drilling: **10.0 ft** ***(2817.7 ft)***
	▼ After Drilling: **Not Encountered, Augers Out**

Remarks: Water not observed to dry cave-in depth of 9.9' immediately after withdrawal of auger.

SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-ST-113

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1184915.7 ft **Coordinates** E: 831704.7 ft	**Station:** 105 + 75 **Offset:** 102 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 3¼"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2843.4 ft
Date Started: 3/15/16	**Date Finished:** 3/15/16	**Drilling Fluid:**	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** D. Forrest		**Abandonment Method:** Backfilled with Cuttings & Bentonite	**Township, Range, and Section:** 19N 20W 13	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					2 - 3 - 4		Lean CLAY with organic soil (OL), black, moist. (Topsoil and Root Zone).	0.3 / 2843.2	30					
					2 - 5 - 9		Lean CLAY with gravel (CL), medium stiff to stiff, brown to red, moist, fine to coarse grained, subangular, [A-7-6]. (Glacial Till).		24					
			80						22	46	21	71	99	See consolidation test
5 / 2838.4					3 - 5 - 6		Lean CLAY (CL), stiff, brown, moist, [A-7]. (Glacial Till).	4.0 / 2839.4	27					
			70				Lean CLAY with sand and gravel (CL), stiff to very stiff, brown, moist, fine to coarse grained, subangular, [A-6]. (Glacial Till).	5.5 / 2837.9						
					2 - 12 - 8				19					
10 / 2833.4					4 - 6 - 7				14					
					4 - 6 - 20				13					
									11					
15 / 2828.4					5 - 9 - 10			15.0 / 2828.4						
							Clayey SAND (SC), brown, moist, fine grained, [A-4]. (Glacial Till).							
							Poorly-Graded SAND with clay (SP-SC), medium dense, brown, moist to wet, fine grained, [A-3]. (Glacial Till).	17.5 / 2825.9	5					
20 / 2823.4					4 - 6 - 8									
									8					
25 / 2818.4					9 - 11 - 9			25.5 / 2817.9						

Boring Depth: 25.5 ft, *Elevation: 2817.9 ft*

Water Level Observations	
▽ After Drilling: **25.0 ft *(2818.4 ft), Augers In***	▽ During Drilling: **25.0 ft *(2818.4 ft)***
	▼ After Drilling: **Not Encountered, Augers Out**

Remarks: Water not observed to dry cave-in depth of 13.4' immediately after withdrawal of auger.

(2) MDT LOG OF BORING - MDT_REVISED_2009+(CPT_IMPORT).GDT - 5/27/25 18:25 - Z:\GINTGINT\PROJECTS\3101-3200\3128.GPJ

SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-ST-114

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1184929.6 ft **Coordinates** E: 831606.6 ft	**Station:** 105 + 80 **Offset:** 3 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 7¼"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2846.3 ft
Date Started: 3/15/16	**Date Finished:** 3/15/16	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** D. Forrest		**Abandonment Method:** Backfilled with Cuttings & Bentonite	**Township, Range, and Section:** 19N 20W 13	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					1 - 2 - 4		Lean CLAY with organic soil (OL), brown, moist. (Topsoil and Root zone).	0.5 / 2845.8	19					
					3 - 6 - 7		Lean CLAY with gravel (CL), stiff, brown, moist, [A-6]. (Glacial Till).		11					
5 / 2841.3					3 - 6 - 7				14					
			80											
					4 - 8 - 7				14					
			90				Lean CLAY with sand (CL), stiff, brown, moist, [A-4]. (Glacial Till).	8.0 / 2838.3	18	26	18	81	108	See consolidation test
10 / 2836.3					4 - 8 - 7				13					
					4 - 6 - 6				15					
							Clayey SAND (SC), medium dense, brown, moist, fine grained, subangular, [A-4]. (Glacial Till).	13.5 / 2832.8	22					
15 / 2831.3					7 - 8 - 10									
									18					
20 / 2826.3					3 - 5 - 6									
									4					
25 / 2821.3					15 - 24 - 25		Poorly-Graded GRAVEL with sand (GP), dense, gray, dry, coarse grained, angular, [A-1]. (Glacial Till).	24.5 / 2821.8 25.5 / 2820.8						

Boring Depth: 25.5 ft, *Elevation: 2820.8 ft*

Water Level Observations	
After Drilling: Not Encountered, Augers In	During Drilling: Not Encountered
	After Drilling: Not Encountered, Augers Out

Remarks: Water not observed to dry cave-in depth of 14½' immediately after withdrawal of auger.

(2) MDT LOG OF BORING - MDT_REVISED_2009+(CPT_IMPORT).GDT - 5/27/25 18:25 - Z:\GINTGINT\PROJECTS\3101-3200\3128.GPJ

SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-ST-116

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1191419.9 ft **Coordinates** E: 831889.7 ft	**Station:** 120 + 37 **Offset:** 72 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 3¼"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2889.4 ft
Date Started: 3/18/16	**Date Finished:** 3/18/16	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** D. Forrest		**Abandonment Method:** Backfilled with Cuttings & Bentonite	**Township, Range, and Section:** 19N 20W 11	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					1 - 3 - 4		Lean CLAY with organic soil (OL), black, moist. (Topsoil and Root Zone).	0.3 / 2889.1						
					3 - 4 - 3		Gravelly Lean CLAY with sand (CL), medium stiff, black, moist, [A-7-6]. (Glacial Till).		21	47	22	73	101	See consolidation test
			100					3.5 / 2885.9						
5 / 2884.4					3 - 8 - 7		Gravelly Lean CLAY with sand (CL), stiff to very stiff, brown, moist to wet, [A-6]. (Glacial Till).							
					4 - 7 - 8									
10 / 2879.4					3 - 5 - 8									
					4 - 7 - 8									
			70											
15 / 2874.4					7 - 8 - 10									
20 / 2869.4					5 - 6 - 9									
25 / 2864.4					3 - 5 - 10			27.0 / 2862.4						
							Gravelly Lean CLAY with sand (CL), stiff, brown, wet, [A-6]. (Glacial Till).							
30 / 2859.4					1 - 3 - 9			30.5 / 2858.9						

Boring Depth: 30.5 ft, *Elevation: 2858.9 ft*

Water Level Observations

- ▽ During Drilling: **27.0 ft** ***(2862.4 ft)***
- ▽ After Drilling: **6.0 ft** ***(2883.4 ft), Augers In***
- ▼ After Drilling: **9.6 ft** ***(2879.8 ft), Augers Out***

Remarks: Water not observed to wet cave-in depth of 23½' immediately after withdrawal of auger.

(2) MDT LOG OF BORING - MDT_REVISED_2009+(CPT_IMPORT).GDT - 5/29/25 14:20 - Z:\GINT\GINT\PROJECTS\3101-3200\3128.GPJ

SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-ST-118

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1192143.3 ft **Coordinates** E: 832009.6 ft	**Station:** 178 + 06 **Offset:** 9 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 7¼"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 3024.4 ft
Date Started: 3/17/16	**Date Finished:** 3/17/16	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** D. Forrest		**Abandonment Method:** Backfilled with Cuttings & Bentonite	**Township, Range, and Section:** 19N 20W 1	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					2 - 6 - 6		Lean CLAY with organic soil (OL), black, moist. (Topsoil and Root Zone).	0.4 / *3024.0*						
					2 - 4 - 8		Gravelly Lean CLAY with sand (CL), stiff to very stiff, brown, moist, [A-7]. (Glacial Till).							
5 / *3019.4*			15		6 - 8 - 9									
					2 - 4 - 5									
							Silty CLAY with sand (CL-ML), stiff to very stiff, brown, moist, [A-4]. (Glacial Till).	8.5 / *3015.9*						
10 / *3014.4*					3 - 5 - 9									
					8 - 8 - 9				16	23	18	78	101	See consolidation test
			80											
15 / *3009.4*					3 - 5 - 7									
20 / *3004.4*					2 - 4 - 7									
25 / *2999.4*					3 - 6 - 9									
							Boring Depth: 25.5 ft, *Elevation: 2998.9 ft*	25.5 / *2998.9*						

Water Level Observations		Remarks
▽ After Drilling: Not Encountered, Augers In	▽ During Drilling: Not Encountered ▼ After Drilling: Not Encountered, Augers Out	Remarks: Water not observed to dry cave-in depth of 18' immediately after withdrawal of auger.

(2) MDT LOG OF BORING - MDT_REVISED_2009+(CPT_IMPORT).GDT - 5/27/25 18:25 - Z:\GINT\GINT\PROJECTS\3101-3200\3128.GPJ

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LOG OF BORING

Boring 8008000-ST-119

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1192495.1 ft **Coordinates** E: 832025.3 ft	**Station:** 181 + 58 **Offset:** 11 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 7¼"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 3022.0 ft
Date Started: 3/17/16	**Date Finished:** 3/17/16	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** D. Forrest		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 1	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					1 - 14 - 8		Lean CLAY with organic soil (OL), black, moist. (Topsoil and Root Zone).	0.3 / 3021.7						
					5 - 12 - 15		Lean CLAY with gravel and sand (CL), very stiff to hard, brown, moist, [A-7]. (Glacial Till).							
5 / 3017.0					11 - 16 - 15									
					5 - 11 - 13		Silty CLAY with sand (CL-ML), very stiff, brown, moist, [A-4]. (Glacial Till).	6.0 / 3016.0	14	24	17	84		
			80											
10 / 3012.0					6 - 11 - 17									
					5 - 11 - 14									
15 / 3007.0					7 - 12 - 16									
20 / 3002.0					4 - 8 - 12									
25 / 2997.0					3 - 9 - 13			25.5 / 2996.5						

Boring Depth: 25.5 ft, *Elevation: 2996.5 ft*

Water Level Observations	
After Drilling: Not Encountered, Augers In	During Drilling: Not Encountered
	After Drilling: Not Encountered, Augers Out

Remarks: Water not observed to dry cave-in depth of 14' immediately after withdrawal of auger.

(2) MDT LOG OF BORING - MDT_REVISED_2009+(CPT_IMPORT).GDT - 5/27/25 18:25 - Z:\GINT\GINT\PROJECTS\3101-3200\3128.GPJ

SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-ST-120

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1192528.5 ft **Coordinates** E: 831948.3 ft	**Station:** 181 + 89 **Offset:** 67 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 7¼"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 3021.8 ft
Date Started: 3/17/16	**Date Finished:** 3/17/16	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** D. Forrest		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 2	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					1 - 4 - 8		Lean CLAY with organic soil (OL), black, moist. (Topsoil and Root Zone).	0.4 / 3021.4						
					5 - 8 - 12		Sandy, Silty CLAY with gravel (CL-ML), very stiff to hard, brown, moist to wet, [A-4]. (Glacial Till).							
5 / 3016.8					13 - 13 - 11				13	24	17	70	118	See consolidation test
			100		5 - 8 - 11									
10 / 3011.8					7 - 14 - 18									
					6 - 9 - 11									
15 / 3006.8					4 - 8 - 10									
20 / 3001.8					4 - 7 - 9									
25 / 2996.8					3 - 7 - 10			25.5 / 2996.3						

Boring Depth: 25.5 ft, *Elevation: 2996.3 ft*

Water Level Observations		Remarks: Water not observed to dry cave-in depth of 12' immediately after withdrawal of auger.
▽ During Drilling: **Not Encountered**		
▼ After Drilling: **22.5 ft *(2999.3 ft), Augers In***	▼ After Drilling: **Not Encountered, Augers Out**	

(2) MDT LOG OF BORING - MDT_REVISED_2009+(CPT_IMPORT).GDT - 5/27/25 18:25 - Z:\GINT\GINT\PROJECTS\3101-3200\3128.GPJ

SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-ST-121

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** CME 1050 **Hammer:** Auto	**Boring Location** N: 1193705.7 ft **Coordinates** E: 832055.5 ft	**Station:** 193 + 69 **Offset:** 6 ft R
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 7¼"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 3020.7 ft
Date Started: 3/18/16	**Date Finished:** 3/18/16	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Larsen **Logger:** D. Forrest		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 2	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
					32 - 33 - 22		Asphalt.	0.7						
							FILL, Poorly-Graded GRAVEL with sand (GP), very dense, brown, dry, medium grained, angular, [A-1].	*3020.0*						
					14 - 7 - 6			2.5						
			100				Lean CLAY with sand and gravel (CL), medium stiff to stiff, brown, moist, medium grained, [A-6]. (Glacial Till).	*3018.2*						
5 *3015.7*					3 - 3 - 3									
					3 - 4 - 7									
10 *3010.7*					5 - 7 - 6			10.5 *3010.2*						

Boring Depth: 10.5 ft, *Elevation: 3010.2 ft*

Water Level Observations		Remarks: Water not observed to dry cave-in depth of 6' immediately after withdrawal of auger.
After Drilling: Not Encountered, Augers In	During Drilling: Not Encountered	
	After Drilling: Not Encountered, Augers Out	

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LOG OF BORING

Boring 8008000-ST-124P

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** Mobile B57 **Hammer:** Auto	**Boring Location** N: 1185950.7 ft **Coordinates** E: 831662.3 ft	**Station:** 116 + 02 **Offset:** 21 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2895.2 ft
Date Started: 11/11/24	**Date Finished:** 11/11/24	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** C. Rice		**Abandonment Method:** Completed as a Piezometer	**Township, Range, and Section:** 19N 20W 13 - BBC	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							TOPSOIL.	0.2 2895.0	5					
			17		3 - 8 - 11		Lean CLAY with gravel (CL), very stiff to stiff, pale brown, moist, [A-4]. Trace gravel. (Till).		12					Pen: 4½ tsf
			89		6 - 9 - 10									
									14	26	17	78		Pen: 4 tsf
5 2890.2			89		5 - 7 - 8									
							Clayey SAND with gravel (SC), medium dense, pale brown, moist, fine to coarse grained, subangular, [A-6]. (Till).	5.5 2889.7	12					
			100		3 - 8 - 14									
									14					Pen: 4½+ tsf
10 2885.2			94		4 - 8 - 7									
							Sandy Lean CLAY (CL), very stiff, pale brown, moist, [A-6]. (Till).	11.0 2884.2	13					Pen: 4½+ tsf
			89		10 - 11 - 12									
									12					Pen: 4½+ tsf
15 2880.2			56		4 - 6 - 11									
							Boring Depth: 15.5 ft, *Elevation: 2879.7 ft*	15.5 2879.7						

Water Level Observations	
After Drilling: **Not Encountered, Augers In**	During Drilling: **Not Encountered** After Drilling: **4.7 ft *(2890.5 ft), Augers Out***

Remarks: Standpipe piezometer and data logger installed near 13.7' below ground surface. See Groundwater Monitoring Figure.

(2) MDT LOG OF BORING - MDT_REVISED_2009+(CPT_IMPORT).GDT - 5/27/25 18:34 - Z:\GINT\GINT\PROJECTS\3101-3200\3128.GPJ

SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-ST-125P

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** Mobile B57 **Hammer:** Auto	**Boring Location** N: 1187335.3 ft **Coordinates** E: 831743.5 ft	**Station:** 129 + 90 **Offset:** 19 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2950.2 ft
Date Started: 11/11/24	**Date Finished:** 11/11/24	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** C. Rice		**Abandonment Method:** Completed as a Piezometer	**Township, Range, and Section:** 19N 20W 13 - CCB	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
			72		2 - 4 - 5		TOPSOIL.	0.4 / 2949.8	13					
							Lean CLAY with sand (CL), stiff, dark gray, moist, [A-6]. (Alluvium).	1.5 / 2948.7	20					Pen: 4½+ tsf
			83		5 - 8 - 11		Lean CLAY with sand (CL), very stiff to stiff, pale brown, moist, [A-6]. Some gravel. (Till).		15	27	16	83		Pen: 4½+ tsf
5 / 2945.2			83		4 - 7 - 5									
									17					Pen: 3½ tsf
			100		3 - 8 - 8									
								9.0 / 2941.2	14					Pen: 4¼ tsf
10 / 2940.2			83		2 - 6 - 7		Lean CLAY with sand (CL), stiff, pale brown, moist, [A-6]. (Till).							
									26					Pen: 1¾ tsf
			78		2 - 5 - 9		Silty Lean CLAY with sand (CL-ML), stiff, pale brown, moist to wet, [A-6]. (Till).	12.0 / 2938.2						
							Lean CLAY (CL), soft, pale brown, wet, [A-6]. (Till).	13.5 / 2936.7	27	38	17	87		Pen: ¾ tsf
15 / 2935.2			100		WH - WH - 2									
								15.5 / 2934.7						

Boring Depth: 15.5 ft, *Elevation: 2934.7 ft*

Water Level Observations	
After Drilling: Not Encountered, Augers In	During Drilling: 12.6 ft *(2937.6 ft)*
	After Drilling: Not Encountered, Augers Out

Remarks: Standpipe piezometer and data logger installed near 12.5' below ground surface. See Groundwater Monitoring Figure.

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SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-ST-132

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** Mobile B57 **Hammer:** Auto	**Boring Location** N: 1191822.1 ft **Coordinates** E: 831947.7 ft	**Station:** 174 + 82 **Offset:** 36 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 9"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 3030.8 ft
Date Started: 11/12/24	**Date Finished:** 11/12/24	**Drilling Fluid:** None	**Location Source:** MMI Survey	**Elevation Source:** MMI Survey
Driller: C. Binstock **Logger:** C. Rice		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 11 - AAA	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Asphalt.	0.5	1					
			44		21 - 50/0.5ft		FILL, Poorly-Graded GRAVEL with sand (GP-GM), medium dense, brown to gray, moist, [A-1].	3030.3 2.0	13					Pen: 4½+ tsf
			89		10 - 8 - 8		FILL, Sandy Lean CLAY (CL), very stiff to soft, pale brown to dark brown, moist, [A-6]. Trace gravel.	3028.8						
5 3025.8			100		3 - 2 - 3				16	35	18	72		
			44		1 - 2 - 2				24					Pen: 1¼ tsf
									22	43	19	87		Pen: 3½ tsf
10 3020.8			83		1 - 2 - 5		ORGANIC SOIL (OL), soft, black, moist, [A-7]. (Alluvium).	9.5 3021.3	22					Pen: 4¼ tsf
			100				Lean CLAY (CL), medium stiff, pale brown, moist, [A-6]. (Till).	10.5 3020.3	22					UCS: 3.1 ksf Pen: 4½+ tsf
			89		WH - 6 - 9		Lean to Fat CLAY (CL-CH), stiff, pale brown, moist, [A-7-6]. Trace gravel. (Till).	11.0 3019.8						
									22	57	17	84		Pen: 3¼ tsf
15 3015.8			67		2 - 5 - 6									
							Sandy Lean CLAY (CL), stiff to very stiff, pale brown, moist, [A-6]. Some gravel. (Till).	15.5 3015.3						
									13					Softer drilling at 18' Pen: 4½ tsf
20 3010.8			100		3 - 5 - 14									
									16					Pen: 3 tsf
25 3005.8			100		3 - 5 - 8									
							Boring Depth: 25.5 ft, *Elevation: 3005.3 ft*	25.5 3005.3						

Water Level Observations		Remarks
After Drilling: Not Encountered, Augers In	During Drilling: Not Encountered After Drilling: Not Encountered, Augers Out	Remarks: Dry cave-in depth of 10.0' immediatley after withdrawal of auger.

(2) MDT LOG OF BORING - MDT_REVISED_2009+(CPT_IMPORT).GDT - 5/27/25 18:34 - Z:\GINT\GINT\PROJECTS\3101-3200\3128.GPJ

SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-ST-133

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** Mobile B57 **Hammer:** Auto	**Boring Location** N: 1186473.5 ft **Coordinates** E: 831665.7 ft	**Station:** 121 + 25 **Offset:** 51 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 3 ¼"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2912.1 ft
Date Started: 4/16/25	**Date Finished:** 4/16/25	**Drilling Fluid:** None	**Location Source:** SK Geo	**Elevation Source:** SK Geo
Driller: C. Binstock **Logger:** J. Wells		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 13 - BBB	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Existing Asphalt Pavement: (10 7/8").		2					
							Silty GRAVEL with sand (GM), medium dense, brown, moist, fine to coarse grained, subangular to subrounded, [A-1]. (Base Course).	0.9 *2911.2*	20					
			78		5 - 14 - 7		FILL, Clayey GRAVEL with sand (GC), medium dense, brown, moist, fine to coarse grained, subangular to subrounded, [A-2].	2.4 *2909.7*						
			44		4 - 5 - 17				22					Pen: 2¼ tsf
5 *2907.1*			89		6 - 4 - 5		FILL, Lean CLAY (CL), stiff to medium stiff, light gray to brown, moist to wet, [A-6]. Little sand and gravel.	5.0 *2907.1*						
									21					Pen: 2¾ tsf
			56		2 - 3 - 3									
							FILL, Lean CLAY (CL), medium stiff, dark gray to black, moist, [A-6]. Little sand and gravel.	8.5 *2903.6*	24					Pen: ¾ tsf
10 *2902.1*			83		2 - 3 - 4									
									21					
			11		4 - 2 - 3									
									27	32	21	76		Pen: <¼ tsf
15 *2897.1*			67		15 - 4 - 2									
							SILT (ML), very stiff, light brown, wet, [A-4]. Some sand and gravel. (Glacial Lake).	17.0 *2895.1*						
									21					
20 *2892.1*			67		40 - 17 - 5									
			83											
									23					Pen: ¾ tsf
25 *2887.1*			89		4 - 7 - 9				27		NP	99	95	See consolidation test
			75											
							Silty GRAVEL with sand (GM), medium dense, light brown, wet, [A-4]. (Glacial Till).	28.0 *2884.1*	11					
30 *2882.1*			83		4 - 8 - 8									

Water Level Observations

- During Drilling: **19.3 ft** ***(2892.8 ft)***
- After Drilling: **Not Encountered, Augers In**
- After Drilling: **Not Encountered, Augers Out**

Remarks: Dry cave-in depth of 20.2' immediately after withdrawal of auger.

(2) MDT LOG OF BORING - MDT_REVISED_2009+(CPT_IMPORT).GDT - 5/27/25 18:38 - Z:\GINT\GINT\PROJECTS\3101-3200\3128.GPJ

SK GEOTECHNICAL

LOG OF BORING

Boring 8008000-ST-133

Project: US 93 North - Post Creek Hill, Lake County, Montana		**Rig:** Mobile B57 **Hammer:** Auto	**Boring Location** N: 1186473.5 ft **Coordinates** E: 831665.7 ft	**Station:** 121 + 25 **Offset:** 51 ft L
Project Number: NH 5-2(159)37	**UPN:** 8008000	**Boring Diameter:** 3 ¼"	**System:** MT S.P. (E) **Datum:** NAD83	**Top of Boring Elevation:** 2912.1 ft
Date Started: 4/16/25	**Date Finished:** 4/16/25	**Drilling Fluid:** None	**Location Source:** SK Geo	**Elevation Source:** SK Geo
Driller: C. Binstock **Logger:** J. Wells		**Abandonment Method:** Backfilled with Cuttings	**Township, Range, and Section:** 19N 20W 13 - BBB	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD (pcf)	Remarks and Other Tests
							Silty Gravel with Sand Continued...							
35 2877.1			94		5 - 6 - 7				16					
40 2872.1			72		5 - 10 - 14				13					
							Boring Depth: 40.5 ft, *Elevation: 2871.6 ft*	40.5 2871.6						

Water Level Observations		
After Drilling: Not Encountered, Augers In	During Drilling: 19.3 ft *(2892.8 ft)*	Remarks: Dry cave-in depth of 20.2' immediately after withdrawal of auger.
	After Drilling: Not Encountered, Augers Out	

(2) MDT LOG OF BORING - MDT_REVISED_2009+(CPT_IMPORT).GDT - 5/27/25 18:38 - Z:\GINT\GINT\PROJECTS\3101-3200\3128.GPJ

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LOG OF BORING

MONTANA DEPARTMENT OF TRANSPORTATION

Geotechnical Section

County: Lake

Project Name: Turn Bays - Ninepipes (3598m)			Project Number: STPHS 5-2(89)37
Borehole Location: Sta. 605+43, 25.6 m Lt Proj. CL		Borehole Number: 4-41-03	Sheet 1 of 2
Drilling Equipment: CME 850	Hammer Type: Automatic	Driller: J. Winfield	Logger: B. Collins
Drilling Fluid:	Borehole Diameter (mm): 203	Date Started: 05/12/03	Date Finished: 05/12/03

Elevation and Datum: Ground: 839.91 m 2755.6 Casing:

Notes: Legal Description: 19N20W23DDD. N= 358734.0, E= 253294.4 (NAD 1983). State Plane Coordinates were determined with a GPS unit. Station, offset, and elevation were determined using State Plane Coordinates.

PL

DEPTH (m)	DRILL: OPERATION	DRILL: PRESSURE (MPa)	DRILL: RATE (mph)	CORE PERCENT RECOVERY	ROCK QUALITY DESIGNATION (RQD)	SAMPLE	RECOVERY (%)	STANDARD PENETRATION TEST: SPT	DRY DENSITY (kN/m³)	MOISTURE CONTENT (%)	LIQUID LIMIT: LL	PLASTIC LIMIT: PL	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (m)	REMARKS
						X	95	3-3-6		25				Silty CLAY, some organics, wet, dark brown to black, stiff, medium to high plasticity. (A-7-6)	0.5	Hollow stem augers with finger bit.
														Interbedded varves of Silty CLAY and Clayey SILT, moist, light gray to brown, soft, non-plastic to medium plasticity. (A7/A-6/A-4)		1.6
2						■	75		18.7	32	49	23		qu = 20.9 kPa, @ 1.8m.		
						X	100	0-0-0		42 33				Wet.		
4						■	100		17.0	54	44	23		qu = 4.6 kPa, @ 4.7m.		
6						X	100	0-0-0		17 38	37	21				
8						■	100		15.2	51	47	23		qu = 6.1 kPa, @ 7.8m.		
10						X	100	1-4-5		13 25				Occasional sand and gravel.		

RECEIVED
OCT 31 2003
M.B.M.G.

Operation Types: Auger; Casing Advancer; Core Barrel; Drive Casing

Sampler Types: Split Spoon; Shelby; Bulk Sample; Grab Sample; Penetrometer; Vane Shear; Special Samplers; Testpit

WATER LEVEL OBSERVATIONS

While Drilling ▽ 8.4 m Upon Completion of Drilling ▽ 1.8 m

Time After Drilling

Depth To Water (m)

Remarks: Water was probably higher during drilling, but sides were sealed up during drilling.

LOG_OF_BORING 3598M.GPJ MTDOT.GDT 10/27/03

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LOG OF BORING

MONTANA DEPARTMENT OF TRANSPORTATION
Geotechnical Section

Project Name: Turn Bays - Ninepipes (3598m)			Project Number: STPHS 5-2(89)37
Borehole Location: Sta. 605+43, 25.6 m Lt Proj. CL		Borehole Number: 4-41-03	Sheet 2 of 2
Drilling Equipment: CME 850	Hammer Type: Automatic	Driller: J. Winfield	Logger: B. Collins
Drilling Fluid:	Borehole Diameter (mm): 203	Date Started: 05/12/03	Date Finished: 05/12/03

Elevation and Datum: Ground: 839.91 m Casing:

Notes: Legal Description: 19N20W23DDD. N= 358734.0, E= 253294.4 (NAD 1983). State Plane Coordinates were determined with a GPS unit. Station, offset, and elevation were determined using State Plane Coordinates.

DEPTH (m)	DRILL OPERATION	DRILL PRESSURE (MPa)	DRILL RATE (mph)	CORE PERCENT RECOVERY	ROCK QUALITY DESIGNATION (RQD)	SAMPLE	RECOVERY (%)	STANDARD PENETRATION TEST SPT	DRY DENSITY (kN/m³)	MOISTURE CONTENT (%)	LIQUID LIMIT LL	PLASTIC LIMIT PL	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (m)	REMARKS
12							100	1-1-1		44	37	22		Interbedded varves of Silty CLAY and Clayey SILT, cont'd.		
							100	0-0-1		28 43					13.1	43.0
14							100	50(0.15m)		10				Sandy GRAVEL, some silt, fine to medium, subangular, wet, mixed lithologies, very dense. (A-1)		0.5 meters of heaving sand @ 13.7m.
							100	23-33-41		8	NP	NP			15.7	57.5

Bottom of Hole Elev. = 824.2 m
qu = unconfined compressive strength
SPT blow of 0 = weight of hammer

RECEIVED
OCT 31 2003
M.B.M.G.

Operation Types: Auger; Casing Advancer; Core Barrel; Drive Casing

Sampler Types: Split Spoon; Shelby; Bulk Sample; Grab Sample; Penetrometer; Vane Shear; Special Samplers; Testpit

WATER LEVEL OBSERVATIONS

While Drilling ▽ 8.4 m Upon Completion of Drilling ▼ 1.8 m
Time After Drilling
Depth To Water (m)
Remarks: Water was probably higher during drilling, but sides were sealed up during drilling.

LOG_OF_BORING 3598M.GPJ MTDOT.GDT 10/27/03

207768

2511 Holman Avenue
P. O. Box 80190
Billings, Montana 59108-0190
p: 406.652.3930; f: 406.652.3944
www.skgeotechnical.com

November 21, 2025 Project 13-3128S

Mr. Scott Fanning, PE
Morrison-Maierle, Inc.
One Engineering Place
Helena, Montana 59602

Dear Mr. Fanning:

Re: Groundwater Monitoring Data, US 93 North – Post Creek Hill, Lake County, Montana, NH 5-2(159)37, UPN 8008000

As you requested, we are pleased to provide updated groundwater monitoring data collected from the 35 Vibrating Wire Piezometers (VWPs) installed near the Bridge over Post Creek. We understand this data will be included in the Demonstration Drilled Shaft Load Test Program contract documents.

Groundwater Monitoring

As you are aware, high artesian groundwater pressures have been documented in the Post Creek drainage which greatly impacts the design and construction of the drilled shaft bridge foundations. To monitor subsurface artesian groundwater conditions, 35 VWPs were installed in 9 sonic boreholes completed in March 2025. The VWPs were connected to automated dataloggers to provide relatively continuous groundwater measurements and this data has been collected periodically by onsite personnel.

The most recent (November 21, 2025) groundwater monitoring data indicates artesian pressures up to 90 feet above ground surface in the deeper soil layers around 100 to 110 feet in depth. A questionable VWP installed in Boring PZ-1 at elevation 2626 indicates artesian pressures on the order of 124 feet above the ground surface, however this data has not been validated. Artesian pressures recorded from VWPs located 45 to 60 feet in depth generally range from 15 to 40 feet above the ground surface, this roughly correlates with the pressure gauge on Pumping Well 1, which generally indicates a head pressure of 20 feet above the existing ground surface.

The artesian groundwater monitoring period (March to November 2025) generally indicates artesian pressures have peaked around September to October and we assume pressures will decrease through the winter months. Additional monitoring will need to be performed to validate this assumption. The results of the groundwater monitoring to date are shown in the three attached figures.

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General

We appreciate the opportunity to provide these services. If you have any questions or would like to discuss our results and conclusions, please contact us at (406) 652-3930.

Sincerely,

Treven Hembree

Treven S. Hembree, PE
Geotechnical Engineer

Cory G. Rice, PE
Reviewing Engineer

Attachments:
Groundwater Monitoring Figures

Figure 1: Groundwater Monitoring - Artesian Zone

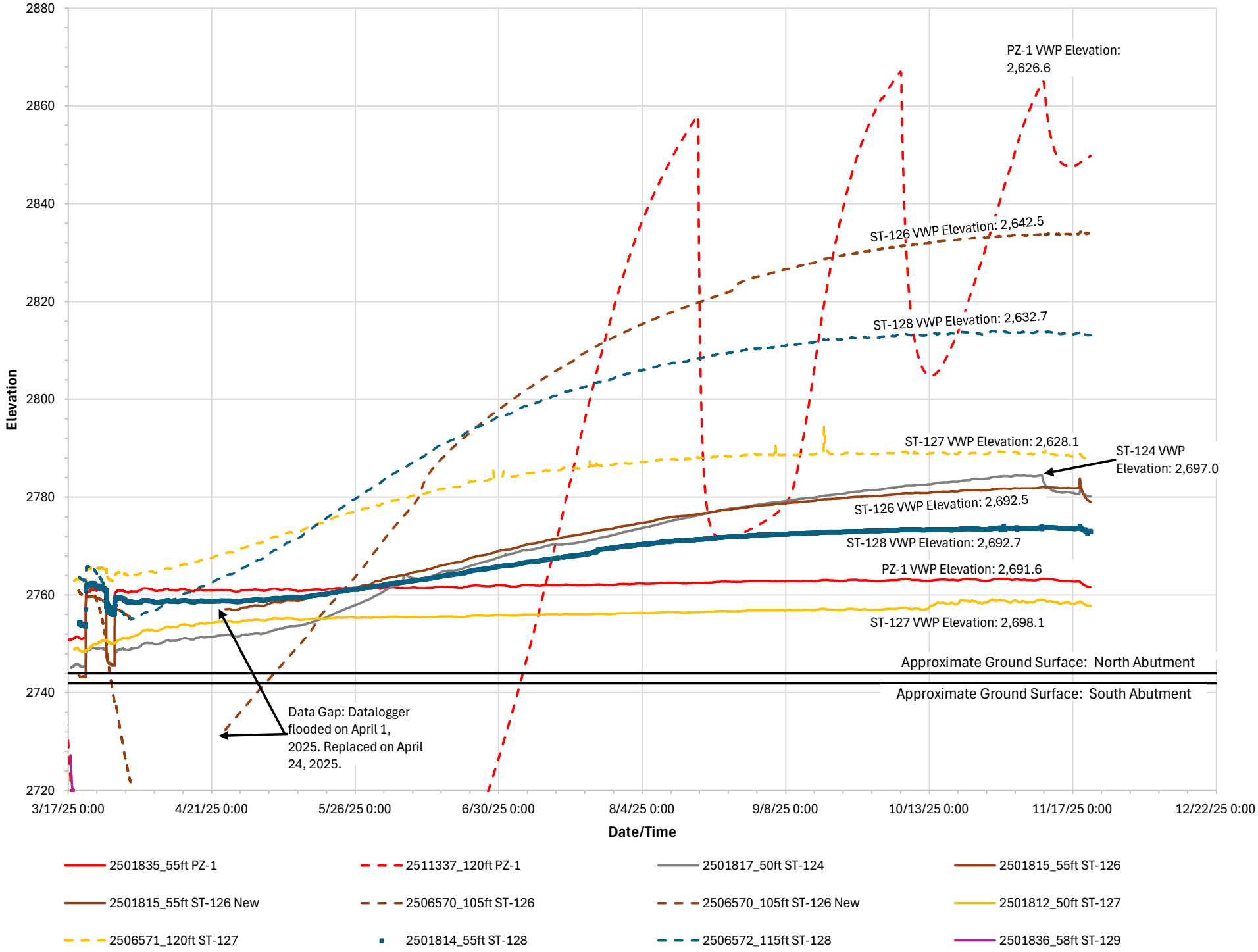


Figure 2: Groundwater Monitoring - 25 to 35 ft bgs VWPs

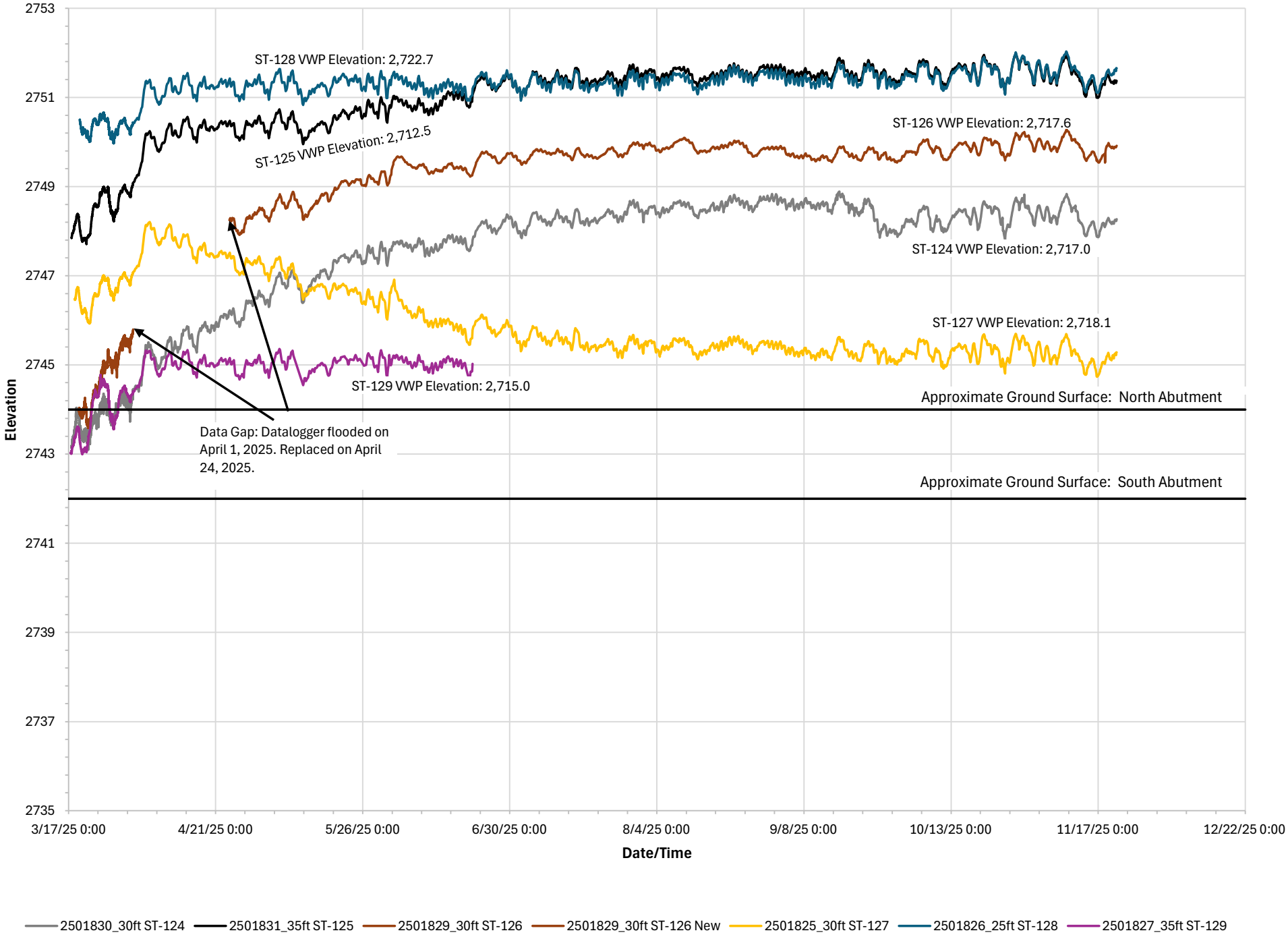
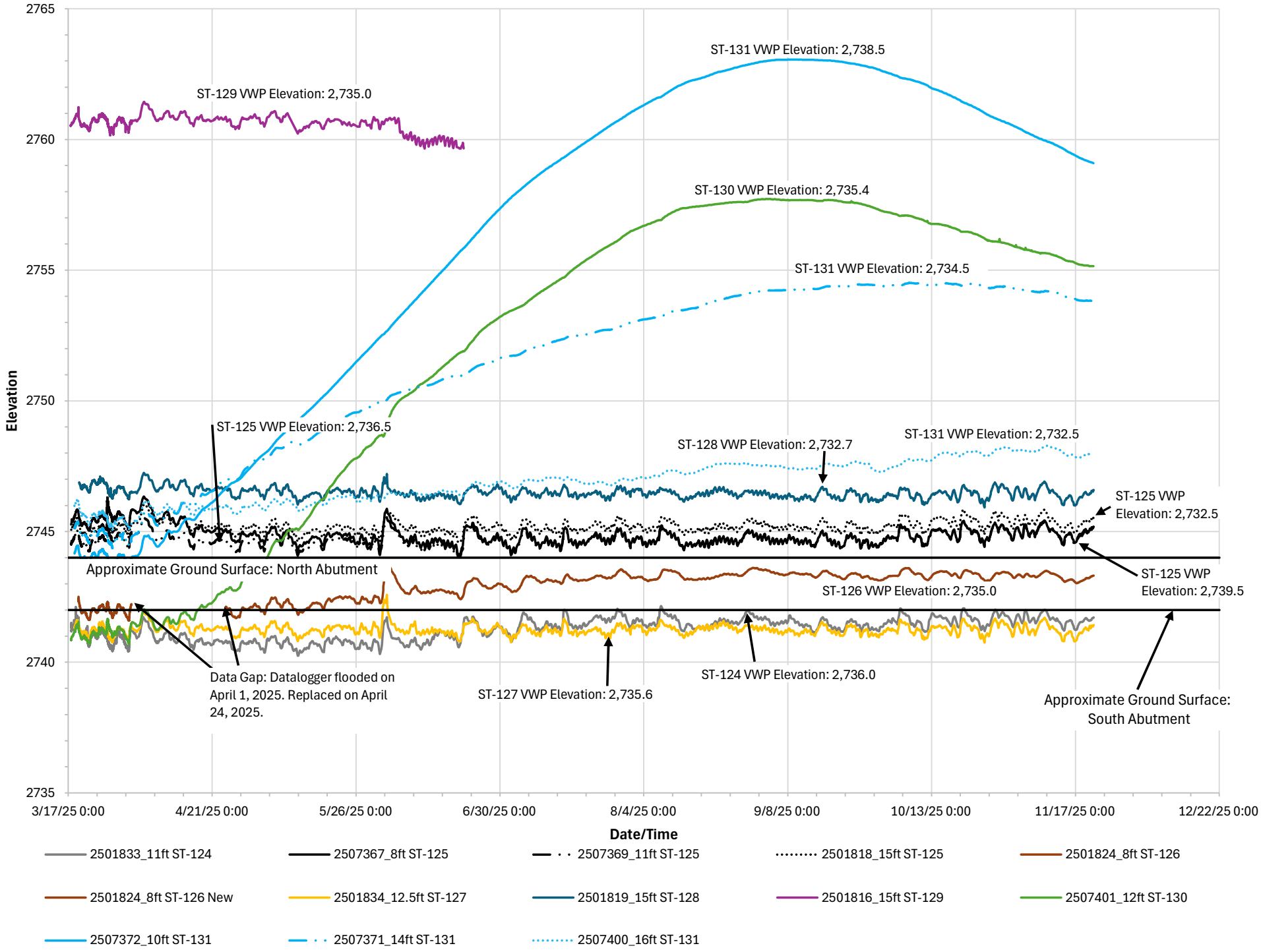


Figure 3: Groundwater Monitoring - Shallow Grouted VWP's



STANDARD PROVISIONS INDEX

FEDERAL AID PROJECTS **CONTAINS**

Federal Wage Rates (Rev. 1-03-2025)..... 5 Pages

Requirements & Acknowledgement for Working on Railroad R/W ..... 1 Page

Required Contract Provisions Federal-Aid Const. Contracts (FORM FHWA-1273) [Rev.10-23-2023] ..... 14 Pages

Supplemental Revisions for Required Contract Provisions Federal-Aid Const. Contracts (FORM FHWA-1273) [Added 2-4-2016] ..... 1 Page

EEO Affirmative Action Req. on Federal-Aid Construction ..... 1 Page

General Decision Number: MT20250079 01/03/2025

Superseded General Decision Number: MT20240079

State: Montana

Construction Type: Highway

Counties: Montana Statewide

HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30,2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022.	Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022.	Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at https://www.dol.gov/agencies/whd/government-contracts

Modification Number	Publication Date
0	01/03/2025

SUMT2023-001 04/01/2022

	Rates	Fringes
CARPENTER		
Carpenter/Piledriverman	$ 36.05	14.23
Millwright	$ 40.87	14.70
CEMENT MASON/CONCRETE FINISHER	$ 33.41	16.51
DIVER		
Diver Tender	$ 45.30	18.38
Diving	$ 92.66	18.38
Stand-By	$ 46.33	18.38

The tender shall receive 2 hours at the straight time pay rate per shift for dressing and/or undressing when work is done under hyperbaric conditions.

Depth Pay (Surface Diving):
0-20 ft.: Free zone
>20-100 ft.: $2.00 per ft.
>100-150 ft.: $3.00 per ft.
>150-220 ft.: $4 00 per ft.
>220 ft.: $5.00 per ft.

Diving in Enclosures (Diver Only):
0-25 ft.: Free zone
>25-300 ft.: $1.00 per ft.

ELECTRICIAN (LINE CONSTRUCTION)		
Equipment Operator	$ 38.38	18.60
Groundman	$ 29.96	17.64
Lineman	$ 50.11	19.88
ELECTRICIAN		
All Areas	$ 39.08	20.00
IRONWORKER	$ 30.43	25.22
LABORER		
Group 1	$ 27.71	12.36
Group 2	$ 30.87	12.36
Group 3	$ 31.10	12.36
Group 4	$ 32.12	12.36

GROUP 1: Flag Person

GROUP 2: All General Labor work; Burning Bar; Bucket Man; Carpenter Tender; Caisson Worker; Cement Mason Tender; Cement Handler (dry); Chuck Tender; Choker Setter; Concrete Worker; Curb Machine-Lay Down; Crusher and Batch Plant Worker; Fence Erector; Form Setter; Form Stripper; Heater Tender; Landscaper; Pipe Wrapper; Pot Tender; Powderman Tender; Rail and Truck Loaders and Unloaders; Riprapper; Sealants for Concrete and other materials; Sign Erection, Guard Rail and Jersey Rail; Stake Jumper; Spike Driver; Signalman; Tail Hoseman; Tool Checker and Houseman; Traffic Control Worker

GROUP 3: Concrete Vibrator; Dumpman (Grademan); Equipment Handler; Geotextile and Liners; High-Pressure Nozzleman; Jackhammer (Pavement Breaker); Laser Equipment; Non-riding Rollers; Pipelayer; Posthole Digger (power); Power Driven Wheelbarrow; Rigger; Sandblaster; Sod- Cutter-power; Tampers

GROUP 4: Asphalt Raker; Cutting Torch; Grade Setter; High- Scaler; Power Saws (Faller & Concrete); Powderman ($1.00 per hour above Group 4 rate); Rock & Core Drill; Track or Truck Mounted Wagon Drill; Welder including Air Arc

PAINTER	$ 36.00	12.84

POWER EQUIPMENT OPERATOR:		
Group 1	$ 32.47	12.77
Group 2	$ 34.55	12.77
Group 3	$ 35.70	12.77
Group 4	$ 36.67	12.77
Group 5	$ 38.05	12.77
Group 6	$ 39.27	12.77
Group 7	$ 41.95	12.77

GROUP 1: Air Compressor; Auto Fine Graders; Belt Finishing Machine; Boring Machine (small); Cement Silo; Crane, A-Frame Truck Crane; Crusher Conveyor; DW-10, 15, and 20 Tractor Roller; Farm Tractor; Forklift; Form Grader; Front End Loader Under 1 CU Yard; Heavy Duty Drills; Herman Nelson Heater; Mulching Machine; Oiler, All Except Cranes & Shovels; Pumpman

GROUP 2: Air Doctor; Backhoe/Excavator/Shovel to and including 3 CU Yard; Bit Grinder; Bituminous Paving Travel Plant; Boring Machine Large; Broom, Self-Propelled; Concrete Travel Batcher; Concrete Float & Spreader; Concrete Bucket Dispatcher; Concrete Finish Machine; Concrete Conveyor; Distributor; Dozer; Rubber-Tired, Push & Side Boom; Elevating Grader/Gradall; Field Equipment Serviceman; Front End Loader 1 CU Yard to including 5 CU Yard; Grade Setter; Heavy Duty Drills, All Types; Hoist/Tugger, All; Hydralift & Similar; Industrial Locomotive; Motor Patrol, Except Finish; Mountain Skidder; Oiler - Cranes & Shovels; Pavement Breaker, EMSCO; Power Saw, Self-Propelled; Pugmill; Pumpcrete/Grout Machine; Punch Truck; Roller, Other Than Asphalt; Roller, Sheepsfoot, Self-Propelled; Roller, 25 Tons and Over; Ross Carrier; Rotomill Under 6 Ft; Trenching Machine; Washing/Screening Plant

GROUP 3: Asphalt Paving Machine; Asphalt Screed; Backhoe/Excavator/Shovel Over 3 CU Yard; Cableway Highline; Concrete Batch Plant; Concrete Curing Machine; Concrete Pump; Cranes; Creter; Cranes, Electric Overhead; Cranes 24 Tons and Under; Curb Machine/Slip Form Paver; Finish Dozer; Front End Loader Over 5 CU Yard; Mechanic/Welder; Pioneer Dozer; Roller Asphalt (Breakdown & Finish); Rotomill, Over 6 FT; Scraper, Single, Twin or Pulling Belly Dump; Yo-Yo Cat

GROUP 4: Asphalt/Hot Plant Operator, Cranes, 25 Tons to 44 Tons; Crusher Operator; Finish Motor Patrol; Finish Scraper

GROUP 5: Cranes, 45 Tons To Including 74 Tons

GROUP 6: Cranes, 75 Tons To Including 149 Tons; Crane, Whirley (All)

GROUP 7: Cranes, 150 Tons To Including 250 Tons (Add $ 1.00 For Every 100 Tons Over 250 Tons; Crane, Tower (All)

TRUCK DRIVER

Group 1	$ 28.21	12.57
Group 2	$ 35.74	12.57

GROUP 1: Pilot Car

GROUP 2: Combination Truck and Concrete Mixer and Transit Mixer; Dry Batch Trucks; Distributor Driver; Dumpman; Dump Trucks and Similar Equipment; Dumpster; Flat Trucks; Lumber Carriers; Lowboys; Pickup; Powder Truck Driver; Power Boom; Serviceman; Service Truck/Fuel Truck/ Tireperson; Truck Mechanic; Trucks With Power Equipment; Warehouseman, Partsman, Cardex and Warehouse Expeditor; Water Trucks

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at

https://www.dol.gov/agencies/whd/government-contracts

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", “”SA””, or “”SC”” denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers.0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

“”SU”” wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA

reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the “”SA”” identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

Has there been an initial decision in the matter? This can be:

*a survey underlying a wage determination
*an existing published wage determination
*an initial WHD letter setting forth a position on a wage determination matter
*an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION

"CONTRACTOR REQUIREMENTS AND ACKNOWLEDGMENT FOR WORKING ON RAILROAD RIGHT-OF-WAY"

This document must be dated and signed by the Contractor and submitted to the State before occupying or working on Railroad right-of-way.

1) No change, which has a direct effect on the Railroad, will be made to construction plans without submitting revised plans and receiving approval from the Railroad. Work covered by the plans, that requires flagging, will be covered by the Railroad/Highway Agreement. For work that is a result of the contractor's discretion, flagging protection will be required when equipment crosses or is working within 25 feet (7.62 meters) of center of any live track. When deemed necessary by local Railroad officers, a flagman may be required at all times while working on Railroad right-of-way in high density rail traffic area.

2) Crossing of any Railroad tracks must be done at approved locations and must be full depth timber, rubber, etc. Any equipment with steel wheels, lugs or tracks must not cross steel rails without the use of rubber tires or other approved protection. This shall apply specifically to, but not be limited to, access for Contractor furnished gravel, borrow or waste sites. The Contractor will be required to obtain a permit from the Railroad, and comply with any provisions thereof, before using any private Railroad crossings. All track crossing locations must be covered by a Private Roadway and Crossing Agreement. This does not apply to any public crossing.

3) Costs of flagging or planking protection of the tracks, which are a direct result of the planned construction, will be paid for by the State. Costs of flagging, planking for protection of the tracks, installation of new crossings or other work caused by the Contractor's discretion, will be paid by the Contractor.

4) When work to be performed by the Contractor is not covered in the Railroad/Highway agreement, the Contractor must furnish a plan to the Railroad for approval showing details as to how any work that may affect the Railroad will be accomplished.

5) Storing of construction materials or any other material, including dirt, sand, etc., within the Railroad right-of-way, will not be allowed unless covered by an easement, construction permit, or Contractor's permit/lease.

6) Construction within 25 feet (7.62 meters) of the center of any track not covered by the Railroad/Highway agreement will require plan approval and authorization by the Railroad Superintendent Maintenance and Engineering. This includes, but is not limited to, any excavation, slope work and driving of sheet piling.

7) No vehicles, equipment or machines shall be parked or stored unattended within 25 feet (7.62 meters) of any track, on railroad right-of-way, without specific written approval of the Railroad.

8) When any work is to be performed on Railroad property by the Contractor that is not shown in the construction plans, the Contractor must submit a detailed plan of the work to the Railroad for their approval.

CONTRACTOR'S ACKNOWLEDGMENT:

_____
Company

By: _____
Name

_____
Title

_____
Date

WORK SITE LOCATION:

_____
Town

_____
State

_____
Project #

Rev. 01/01/04

FHWA-1273 – Revised October 23, 2023

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Non-segregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
XI. Certification Regarding Use of Contract Funds for Lobbying
XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to *DBAconformance@dol.gov*. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to *DBAconformance@dol.gov*, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the “Statement of Compliance” required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

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3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B) This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Supplemental Revisions for FHWA Form-1273 (Dated May 1, 2012)
Required Contract Provisions
Federal-Aid Construction Contracts

The following are supplementary or amendatory to the May 1, 2012, FHWA Form-1273 insofar as they apply to this contract:

Add the following provisions in accordance with the FHWA memo dated December 11, 2015:

Utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

Furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in above paragraph to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

SPECIAL PROVISIONS

EEO AFFIRMATIVE ACTION REQUIREMENTS ON FEDERAL & FEDERAL-AID CONSTRUCTION CONTRACTS

Federal-aid contractors are hereby notified they are subject to the OFCCP goals and economic areas for minority and female participation expressed below. Compliance with the goals and OFCCP affirmative action efforts for contracts and subcontracts consisting of $10,000 or more will be determined by OFCCP officials.

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. The Offeror's or Bidder's attention is called to the Equal Opportunity Clause and "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

GOALS FOR FEMALE PARTICIPATION (statewide) 6.9%

GOALS FOR MINORITY PARTICIPATION IN EACH TRADE
Economic Areas:

152
Non-SMSA (Standard Metropolitan Statistical Area) Counties 4.4%
Daniels, Richland, Roosevelt, Sheridan

153 Great Falls, MT
SMSA Counties
3040 Great Falls, MT 3.2%
Cascade

Non-SMSA Counties 4.1%
Blaine, Broadwater, Chouteau, Fergus, Glacier, Hill, Jefferson, Judith Basin, Lewis & Clark, Liberty, Meagher, Petroleum, Phillips, Pondera, Teton, Toole, Valley, Wheatland

154 Missoula, MT
Non-SMSA Counties 2.7%
Beaverhead, Deer Lodge, Flathead, Granite, Lake, Lincoln, Madison, Mineral, Missoula, Powell, Ravalli, Sanders, Silver Bow

155 Billings, MT
SMSA Counties
0880 Billings, MT 3.3%
Yellowstone

Non-SMSA Counties 3.3%
Big Horn, Carbon, Carter, Custer, Dawson, Fallon, Gallatin, Garfield, Golden Valley, McCone, Musselshell, Park, Powder River, Prairie, Rosebud, Stillwater, Sweet Grass, Treasure, Wibaux, Yellowstone Nat'l Park

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.