



MASON COUNTY ROAD COMMISSION

Michael Ingison, Chairman
Jeff Conklin, Vice-Chairman
Deb Del Zoppo, Member

Steve Wessels, Manager/Director
Eric Nelson P.E., County Highway Engineer

NOTICE TO BIDDERS

The Board of County Road Commissioners of Mason County will receive e-mailed and/or sealed bids at their office at 510 E. State St., Scottville MI 49454, until **2:00 P.M. on Tuesday, March 12, 2024**, for the following:

2024 IRIS ROAD RECONSTRUCTION – PM Highway to S. Lakeshore

Specifications and bid forms may be obtained at the Road Commission offices during regular business hours or by visiting our website at www.masoncountyroads.com or request bid documents from enelson@masoncountyroads.com.

If you plan to submit a bid, please e-mail enelson@masoncountyroads.com to be placed on the bidders list. Any communications or addendums will be sent via email to all perspective bidders.

All proposals must be submitted on Road Commission furnished bid forms. Said forms must be e-mailed to enelson@masoncountyroads.com, or in sealed envelopes, plainly marked as to item bid and shall bear the name of the bidder. E-mailed bids must be received prior to the date and time listed above. It is highly recommended to use a read and delivery receipt when e-mailing the bid. E-mailed bids will be acknowledge with an e-mail confirmation acknowledging the receipt of the e-mail bid.

The Mason County Road Commission hereby notifies all bidders that it will affirmatively insure that in any contract entered pursuant to this advertisement, disadvantaged business enterprise will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of sex, race, color or national origin in consideration for an award.

The Board reserves the right to accept or reject any or all bids, to waive any irregularities in the bids and to make award in any manner they deem to be in the best interest of Mason County.

BOARD OF COUNTY ROAD COMMISSIONERS

Mike Ingison, Chairman
Jeff Conklin, Vice-Chairman
Deb Del Zoppo, Member

2024 Iris Road Reconstruction – PM Highway to S. Lakeshore

Project Summary

DTE is planning to install a gas main and gas services on Iris Road in the 2024 construction season. The Contractor will coordinate with DTE crews if the work is completed concurrently. The Contractor shall not begin the project prior to April 15, 2024. Once the Contractor starts the project, the work shall be continuous and shall be completed within 8 consecutive weeks, but no later than November 1, 2024. The existing HMA roadway varies from about 21' wide to 30' wide. The proposed roadway will be 28' of HMA (11' HMA lanes + 3' HMA shoulders) and 1' wide limestone shoulders. Ditches will be constructed at 24' left and right of centerline approximately 2' below finish grade centerline. Driveway culverts will be installed at the ditch line to provide drainage. The proposed roadway in HMA valley gutter (LG) areas will be 30' to the back of the valley gutter (each lane 15' from centerline). The face of guardrail will be located at the back of the HMA valley gutter (15' Lt & RT of centerline). The Contractor will have 8 consecutive weeks to construct the project between April 15, 2024, and November 1, 2024. The project is funded 100% by the MCRC.

Construct ditches & ditch cleanout approximately 24' left & right of centerline. Trench along the edge of the existing HMA variable width x 6" deep (9" in existing HMA LG areas) in preparation for HMA crushing & shaping. Trenched material can be used to flatten slopes within the road ROW and within grading easements. Excess trenched material shall become the property of the Contractor and can hauled to the Pere Marquette Township disposal site off Iris Road or disposed of offsite. Install cross culverts and driveway culverts. Add 6" of 22A aggregate in trenches as directed by the Engineer. Add 3" of 22A aggregate to the existing HMA before pulverizing. Pulverize the overlying gravel, existing HMA and underlying gravel to mix thoroughly. If clay is encountered in the subbase, salvage the pulverized aggregate material, undercut the clay to place 18" of sand subbase. Install the salvaged aggregate for the aggregate base. Add additional 22A gravel as required to provide the minimum of 6" thick aggregate base. Grade and compact the pulverized aggregate in preparation for HMA paving. Place HMA leveling and surface courses. Install guardrail and complete final restoration, install monument boxes (MCRC), and pavement markings.

The above is intended to be a summary of the anticipated work. It is not intended to be a means and methods of construction. The Contractor shall construct the project based on his methods.

PROGRESS CLAUSE

MCRC: ERN

1 of 1

02/20/2024

Start work within ten (10) days after receiving Notice of Award of Contract, or on the date agreed upon with the Engineer. In no case shall any work be commenced prior to receipt of formal notice of award by the MCRC Engineering Department. The project shall not begin before April 15, 2024.

Completion Dates:

The project shall not begin before April 15, 2024. Once the Contractor begins work the Contractor will have 8 consecutive weeks to complete the work to final completion. All the work shall be completed in its entirety including final site restoration and clean-up on or before Friday November 1, 2024.

The Low Bidder for the work covered by this proposal will be required to prepare and submit Form 1130, Progress Schedule to the Engineer within seven (7) calendar days of confirmation by the MCRC, of the low bid. The progress schedule must be approved by the Project Engineer and submitted to MCRC, for the contractor to receive contract award. Lack of timely submittal by the contractor will delay contract award per subsection 102.15 of the Standard Specifications for Construction.

The Progress Schedule shall include, as a minimum, the controlling work items for the completion of the project and the planned dates that these work items will be controlling operations. When specified in the bidding Proposal, the date the project is to be opened to traffic, as well as the final project completion date, shall also be included in the Project Schedule.

If the bidding Proposal specifies other controlling dates, these shall also be included in the Progress Schedule.

The Project Engineer will arrange the date and time for the preconstruction meeting at the MCRC after contract award.

The named subcontractor(s) for Designated and/or Specialty Items, as shown in the Proposal, is recommended to be at the preconstruction meeting if such items materially affect the work schedule.

Liquidated Damages shall be assessed in accordance with Section 108.10 of the 2020 Standard Specifications for Construction.

PROPOSAL

2024 IRIS ROAD RECONSTRUCTION – PM Highway to S. Lakeshore

To: Board of Mason County Road Commission
510 East State Street
P.O. Box 247
Scottville, Michigan 49454-0247

Gentlemen:

The undersigned Contractor submits the following unit prices for the Iris Road Reconstruction project in Mason County. All unit prices shall be firm for the 2024 Iris Road Reconstruction – PM Highway to S. Lakeshore project, MDOT 2020 Standard Specifications shall apply, as modified herein and by the attached special provisions.

A. BID ITEMS

Refer to the Bid Item Sheet, which shall be included as part of this bidding document.

B. PAYMENT TERMS:

Payments will be made on a bi-weekly basis. Final payment will be within 30 days of the final acceptance of the work and the Contractor and Project Engineer agreeing on final quantities. The Contractor shall provide all certifications of materials to the Project Engineer prior to final payment.

C. Completion Date: The project shall not start before April 15, 2024. Once the Contractor starts the project, the work shall be continuous and shall be completed within 8 consecutive weeks, but no later than November 1, 2024. This gives the Contractor flexibility as to the starting date of this project. The Mason County Road Commission reserves the right to add or delete bid quantities. Adjustment in unit prices shall be in accordance with MDOT Specifications Section 103.

Submitted by: _____

Address: _____

Email: _____

Office Phone: _____ Cell: _____

Signature: _____ Date: _____

Bids shall be e-mailed to enelson@masoncountyroads.com or submitted in a sealed envelope, plainly marked as to contents. The right is reserved by the Mason County Road Commission, to reject any and all bids, and to accept the bid that is in the best interest of the County.

Closing Date 2:00 P.M., Tuesday, March 12, 2024

INSTRUCTIONS TO BIDDERS

1. CONTRACT DOCUMENTS

It is the intent of these contract documents to be as clear, complete, and consistent as possible.

2. BIDDER INVESTIGATION

The Bidder will be responsible for inspecting Iris Road, the Quarterline Road pit, and various roads for delivery of materials to determine all conditions under which he will be obligated to work.

3. PROPOSAL PREPARATION

The name and legal status of the bidder, corporation, partnership, or an individual shall be stated in the proposal. A corporation bidder shall name the state in which its Articles of Incorporation are held and must give the Title of the officer having authority, under the by-laws, to sign contracts. A partnership bidder shall give the full names and addresses of all partners. Anyone signing a proposal as an agent of another, or others, must submit with this proposal legal evidence of his authority to do so. The place of residence of each bidder, or the office address in case of a firm or company, with county and state, must be given after a signature.

The proposal shall be carefully prepared in strict accordance with these instructions, otherwise the bid may be rejected. The proposal for the work is on a unit price basis. All unit prices shall be completed in ink and the proposal legally signed in ink.

The unit prices stated in the proposal shall be plainly written. Illegibility of any work or figure in the proposal may be sufficient cause for rejection of the proposal.

Hard copy proposals must be enclosed in a sealed envelope, addressed to the Mason County Road Commission, and labeled "2024 IRIS ROAD RECONSTRUCTION – PM HIGHWAY TO S. LAKESHORE"

The bids will be compared on the basis of comparison of the totals for the extensions of the stated unit prices. In case of an error in the preparation of the bid form, the unit prices shall be used.

4. BID SURETY

A Bid Bond or Certified Check must accompany this bid in an amount not less than five percent (5%) of the amount of the total bid, as based on quantities appearing on the form of the Proposal or other bid security as shall be outlined in the Proposal and/or the Special Provisions section of the Specifications. The bid bond or other security of the successful bidder will be held until the Contract has been duly executed.

5. PERFORMANCE BONDS AND INSURANCE

The successful bidder shall furnish performance and payment bonds in amounts equal to the contract bid price in such form and with such sureties licensed to conduct business in the State of Michigan. The successful bidder shall purchase and maintain such public insurance that will protect him from claims under Workmen Compensation laws and Public Liability Insurance. The Contractor shall provide for and on behalf of the County, the Mason Board of County Road Commissioners, The Mason County Road Commission, and its employees Owners Protective Public Liability Insurance. A copy of all insurance coverage shall be submitted for approval prior to the award of a contract.

6. CHAPTER 11 PROCEEDINGS

The Commission reserves the right to waive consideration of any bid submitted by a bidder who either has or has pending the filing of a Chapter 11 proceedings.

7. TESTING

All materials shall be obtained from MDOT/MCRC approved sources. Testing for compliance with 2020 MDOT Standards and Specifications shall be the responsibility of the Contractor, who shall provide copies of all tests done.

MCRC shall have performed Independent Assurance Tests (IAT) and split samples, at the cost of the MCRC. The MCRC will perform testing on sand, aggregate (imported), HMA and other materials incorporated in the work. Density testing and material verification testing will be completed by the MCRC.

In the event the IAT shows the material to be out of specification the split sample shall be sent to an independent lab for testing. The split sample result shall govern, if it agrees with the IAT the penalty shall be in accordance with MDOT Standard Specifications; if the split sample agrees with Contractors, no penalty.

The MCRC reserves the right to add or delete quantities as it deems necessary. Adjustments in unit prices shall be in accordance with MDOT Specification 103.

8. STANDARD SPECIFICATIONS

The 2020 Standard Specifications for Construction adopted by the Michigan Department of Transportation are hereby incorporated into these contract documents and shall apply unless otherwise noted. A copy of the "Standard Specifications" are available at the office of the Mason County Road Commission.

Specific References made in the contract documents will be shown as MDOT 0.0.00.

9. INSURANCE COVERAGE

The Contractor shall have a minimum insurance policy as described below:

General Liability	
Each Occurrence	\$1,000,000
Aggregate	\$2,000,000
Automotive Liability (minimum)	
Body Injury	\$ 500,000 per Person
	\$1,000,000 per
	Occurrence
Property Damage	\$1,000,000 per
	Occurrence
Workers Compensation	

The Contractor shall procure and maintain during the life of this contract, Worker's Compensation Insurance, including Employer Liability Coverage, in accordance with all applicable statutes of the State of Michigan. Additional Insured -- Commercial General Liability and Motor Vehicle Liability Insurance, as described above, shall include an endorsement stating the following shall be **Additional Insured**. The Mason County Road Commission, its Board and all employees...

The Contractor agrees to hold the MCRC harmless and indemnify the MCRC from all claims or liability arising out of or pursuant to the contract provisions, including, but not limited to, the cost of defense, court costs, and any Judgment or settlement arising out of such claims.

The Contractor shall not commence work under this contract until they have obtained the insurance and bond required. All coverages shall be with insurance companies licensed and admitted doing business in the State of Michigan. All coverages shall be with insurance companies acceptable to the Mason County Road Commission.

**SPECIAL PROVISION
FOR
HMA MIXTURE 13A**

Materials:

**Target air voids for this project have been changed to 3%.
RAP maximum for this project will be 15%.
Target bitumen shall be 5.6% with a minimum of 5.4%.**

The Performance Grade binder range for HMA mixtures shall be 58-28.

The Aggregate Wear Index (AWI) for the top course shall be 260, minimum.

The Bond Coat Material shall be as per Section 501.02. The uniform rate of application between courses shall be 0.05 to 0.15 gallons per square yard, or as directed by the Engineer.

The Aggregate shall conform to the applicable requirements of Section 902 or Supplemental Specifications, except that the grading shall be such that when blended, the grading will conform to that specified for the mixture.

Construction Methods:

HMA Construction practices shall be in accordance with section 501 of the 2020 MDOT Standard Specifications for Construction except as hereby modified.

Surfaces shall be cleaned of all dust, dirt, or other loose material before the Bond coat is applied. Bond Coat shall be placed incidental to Bituminous Mixture LVSP.

HMA Mixture LVSP shall be the material used for the top, leveling courses and approaches.

The HMA Mixture shall be placed at the application rate directed by the Engineer in pounds per square yard.

Rolling:

The Nuclear Gage Method for Testing compaction, as specified in the MDOT Specifications, is hereby waived for this project. Number of Roller Method shall apply. The Number of Rollers required is based on placement rate.

Average Laydown Rate, Square Yards/Hour	Number of Rollers Required	
	Compaction Rollers	Finish Rollers
Less than 800	1	*1
800 – 1800	1	1
1801 – 4000	2	1
4001 - 7200	3	1

*The compaction roller may be used as the finish roller also.

Method of Measurement and Basis of Payment

The Completed work as measured for HMA Mixture 13A will be paid for at the contract unit price for the contract pay items and includes all material, equipment, and labor to complete this item.

SUPPLEMENTAL SPECIFICATIONS FOR THE IRIS ROAD RECONSTRUCTION PROJECT

1. Bond Coat will be required on all existing asphalt surfaces to be paved and between courses on all two-course construction. Bond coat and sweeping of surfaces shall be the responsibility of the contractor and shall be included with other items of work.
2. The contractor shall provide flag control with approved signage in accordance with the Michigan manual of Uniform Traffic Control Devices or, at the discretion of the Engineer, shall be furnished, erected, and maintained by the contractor. Flag Control shall be included with other items of work.
3. The contractor will maintain local traffic on these projects at all times. Some roads may be closed to thru traffic with the prior approval of the Engineer. Provisions shall be made so that each place of business within any of the Project limits will have at least one driveway entrance open at all times.
4. Bid price shall include the cost for furnishing all materials, equipment, and labor to complete the work as specified. Legal load limitations will be enforced on all hauling equipment.
5. The contractor is responsible for furnishing a mix design for approval prior to doing any work. Any change in the approved mix design must be submitted five (5) working days prior to the change for review and action.
6. Prior to award of the contract, the contractor shall furnish a detailed Progress Schedule to the County for approval. Any variation from the Progress Schedule must have prior approval of the Engineer. The Mason County Road Commission's Engineer/Manager and Inspector will meet with the successful bidder's Superintendent and/or Foreman, after the award of the project.
8. Any request for a change in the contract must be made in writing to the Engineer at least 5 working days prior to the change being made.
9. All equipment is to be off the road at least one-half hour before dark.
10. Temperature restrictions and weather limitations shall be in accordance with the MDOT 2020 Standard Specifications for Construction and will be strictly enforced.
11. There will be no Sunday work. All construction equipment shall be equipped with working lights in accordance with the MDOT 2020 Standard Specifications for Construction.
12. The MCRC will stake the ROW at 100' intervals from the POB to POE with a distance to the centerline of the proposed road. Benchmarks will be placed between the POB and POE for the Contractors use. The MCRC will stake all easement areas as shown on the plans. Any other

staking requests by the Contractor will be in writing at a minimum of 48 hours before the staking will be completed by the MCRC. Any construction staking that is carelessly damaged by the Contractor will be replaced by the MCRC and paid for by the Contractor at \$100 per hour for a one-man crew or \$150 for a two-man crew.

13. All bids must be submitted on the Board's bid form that was provided. The bid shall be legibly prepared in ink or typed out. Erasures or alterations must be initialed by the respondent.
14. Specifications and plans should not be returned with bid, unless otherwise stated herein.
15. Proposals shall be sent to MCRC by email to enelson@masoncountyroads.com. If the email is not applicable for the respondent to submit their bid, a hard copy may be mailed, or hand delivered to the MCRC office.
16. Proposals will not be accepted after the time designated for the opening of the bids. The respondent shall assume full responsibility for delivery of proposals prior to the appointed time for opening same and shall assume the risk of late delivery or non-delivery regardless of the manner he/she employs for the transmission thereof.
17. No responsibility shall attach to the Road Commission or their representatives for premature opening or non-receipt of any proposal which is not properly addressed, delivered, or identified. A confirmation of receipt of emailed proposals received will be sent.
18. It is understood the Board is a governmental unit, and as such, is exempt from the payment of all state and federal taxes, except as allowed by the regulatory agencies to be included in the cost of materials and services.
19. The respondent, by submission of a proposal, declares the proposal is made without collusion with any other person or entity, and agrees to furnish all items and services in strict adherence with all applicable federal, state and local laws, regulations, codes, and ordinances.
20. The Board reserves the right to reject any and all proposals, to waive any irregularities therein, and to accept any proposal which, in the opinion of the Board, may be most advantageous and to the best interest of the Mason County Road Commission. In case of error, in the extension of prices in the proposal or other arithmetical error, the unit prices will govern.
21. Contractor shall maintain current up-to-date insurance coverage during the term of the contract and failure to do so shall result in termination of said contract.
22. The Contractor shall comply with the intent of the General Requirements and Covenants, Section 107 of the Michigan Department of Transportation "2020 Standard Specifications for Construction" where applicable.
23. Submission of bid will be construed as a conclusive presumption that the Contractor is thoroughly familiar with the bid requirements and specifications and that he understands and agrees to abide by each and all of the stipulations and requirements contained therein.

CONTRACTORS BID - IRIS ROAD - PM HIGHWAY TO S. LAKESHORE DRIVE

Pay Item Code	Description	Units	Quantity	Unit Price	Amount
1100001	Mobilization, Max	LSUM	1		
2030001	Culv, Rem, Less than 24 inch	Ea	2		
2040035	Guardrail, Rem	Ft	1,500		
2050006	Ditch Cleanout	Sta	35		
2050011	Embankment, LM	Cyd	500		
2050016	Excavation, Earth	Cyd	500		
2050041	Subgrade Undercutting, Type II	Cyd	300		
2057002	Ditching	Sta	45		
2080036	Erosion Control, Silt Fence	Ft	500		
3020001	Aggregate Base	Ton	4,700		
3050002	HMA Base Crushing and Shaping	Syd	28,000		
3050015	Salv Crushed Material, LM	Cyds	200		
3057011	HMA Base Crushing and Shaping, Special	Syd	1,250		
3070001	Approach, CI I	Ton	200		
3070021	Approach, CI II	Ton	400		
3070121	Shoulder, CI I - Limestone	Ton	150		
3070200	Trenching	Sta	150		
4010607	Culv. Class F, 12 inch	Ft	870		
4010132	Culv, CI A, 15 inch (ALT2)	Ft	228		
4040063	Underdrain, Subbase, 6 inch	Ft	500		
4040113	Underdrain, Outlet Ending, 6 inch	Ea	4		
5010005	HMA Surface, Rem	Syd	1,100		
5010033	HMA, 13A	Ton	5,700		
5010061	HMA Approach	Ton	220		
8070004	Guardrail, Type MGS-8	Ft	1,842		
8070012	Guardrail, Curved (12.5' Radius)	Ft	37.5		
8070044	Guardrail Approach Terminal, Type 2M	Ea	8		
8070080	Guardrail Reflector	Ea	76		
8070095	Post, Mailbox	Ea	30		
8110231	Pavt Mrkg, Waterborne, 4 inch, White	Ft	15,900		
8110232	Pavt Mrkg, Waterborne, 4 inch, Yellow	Ft	14,000		
8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	7		
8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	7		
8120170	Minor Traf Devices	LSUM	1		
8120252	Plastic Drum, Fluorescent, Furn	Ea	100		
8120253	Plastic Drum, Fluorescent, Oper	Ea	100		
8120350	Sign, Type B, Temp, Prismatic, Furn	Sft	308		
8120351	Sign, Type B, Temp, Prismatic, Oper	Sft	308		
8130010	Riprap, Plain	Syd	120		
8162001	Slope Restoration, Non-Freeway, Type A	Syd	8,000		
8162002	Slope Restoration, Non-Freeway, Type B	Syd	6,000		
TOTAL					

Authorized Signature

Date

Company Name & Address

**AGGREGATE BASE – MCRC MAC ROAD PIT
ALTERNATE BID PRICE**

The Mason County Road Commission has sufficient 22A-Modified at our Mac Road Pit, located on Mac Road approximately 0.8 miles south of West 8 Mile Road in Irons. The gravel pit is approximately 37 miles away from the center of the project. The MCRC will provide the 22A-modified gravel and load it into the Contractors trucks at no cost to the Contractor. The Contractor is responsible for trucking the gravel from the MCRC Mac Road pit to the project, spreading, watering, rolling & compacting the gravel. The alternate bid price is for trucking, spreading, watering, rolling & compacting the gravel that is furnished and loaded into the Contractors trucks by the MCRC. The gravel must be hauled to the project between the hours of 6:30AM to 4:00PM Monday through Friday, excluding weekends and holidays. The Aggregate materials must be weighed on a certified scale. Acres Co-op 709 W. US-10, Scottville, Michigan and Rieth-Riley Construction 5565 W. First Street have certified scales. The Contractor is responsible for any scale's fees.

22A-Modified Aggregate furnished & loaded by the MCRC at the Mac Road Pit in Irons

Description	Quantity	Unit \$	Amount
Aggregate Base	4,700 Tons	\$_____	\$_____

Company Name Authorized Signature Date

A N Mac Rd & W Lone Trail Rd, Irons, MI 49644
B 6189 Iris Rd, Ludington, MI 49431, United States

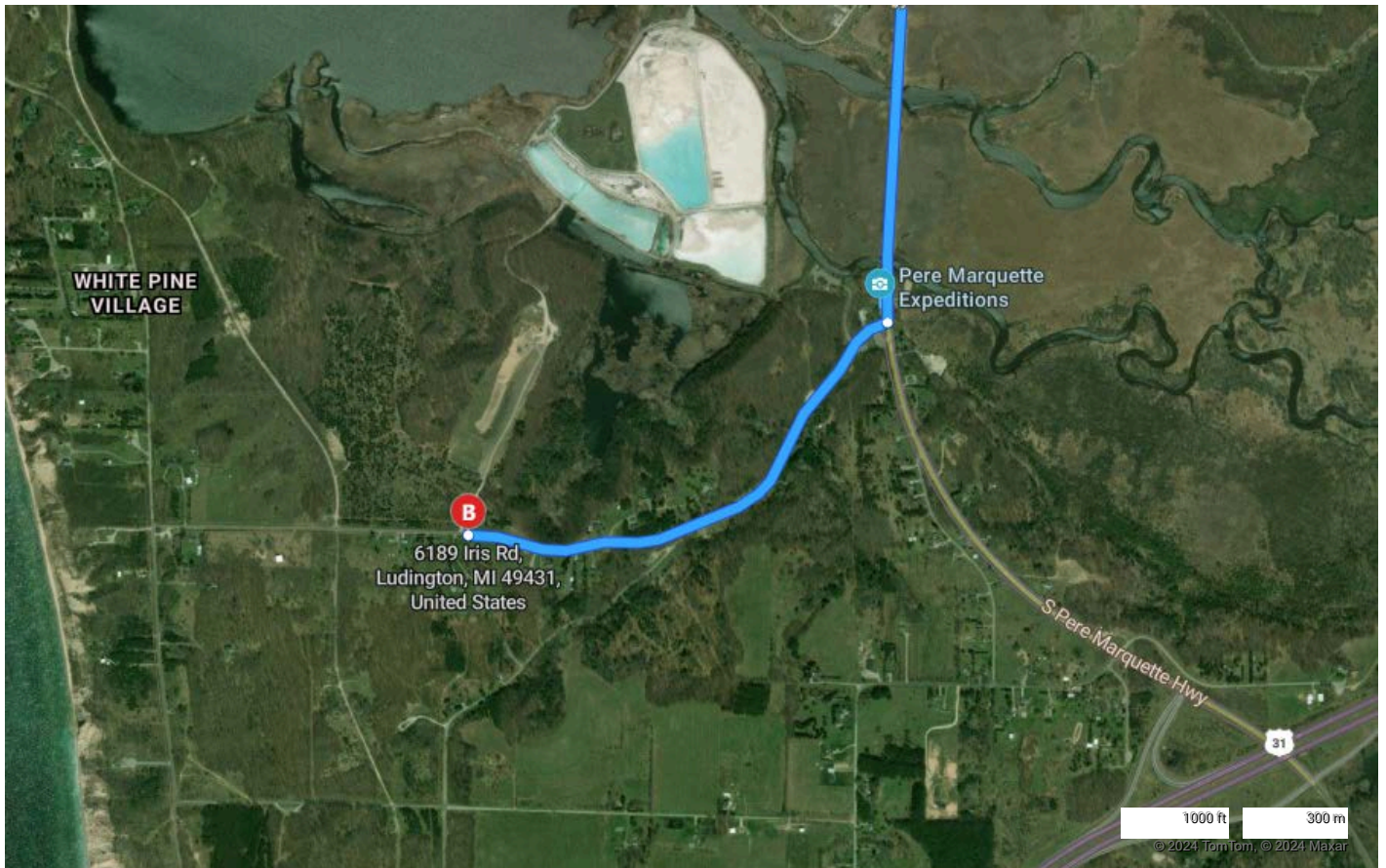
47 min , 36.5 miles
 Light traffic (4 min delay)
 Via E Free Soil Rd, US-31 S



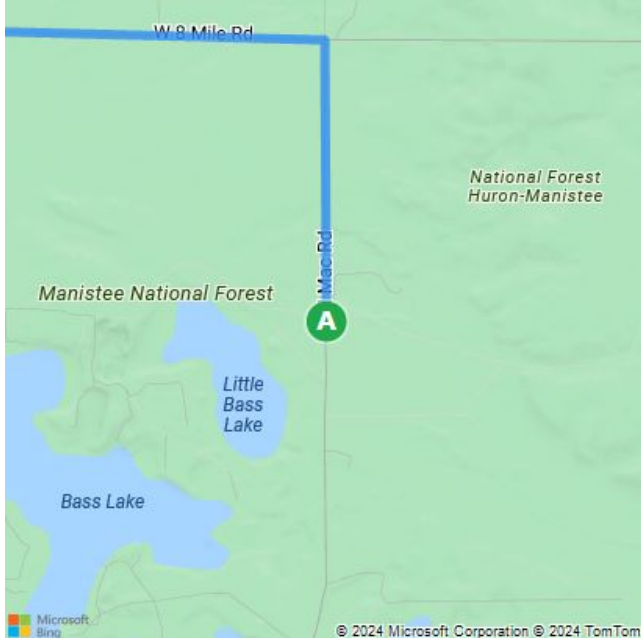
A N Mac Rd & W Lone Trail Rd, Irons, MI 49644

↑	1.	Head north on N Mac Rd toward W 8 Mile Rd	0.8 mi
↶	2.	Turn left onto W 8 Mile Rd	3.9 mi
↑	3.	Road name changes to E Free Soil Rd	7.9 mi
↑	4.	Road name changes to E Michigan St	1.0 mi
↑	5.	Keep straight to get onto E Free Soil Rd	2.9 mi
↶	6.	Turn left onto US-31 S / N US Highway 31	10.8 mi, 14 min
↷	7.	Turn right onto US-10 W / US-31 S / W US Highway 10 31 ▲ <i>Minor congestion</i>	6.1 mi
↶	8.	Turn left onto S Pere Marquette Hwy Shell on the corner	2.0 mi
↷	9.	Turn right onto Iris Rd	1.0 mi
	10.	Arrive at Iris Rd The last intersection before your destination is Inman Rd If you reach Haul Rd, you've gone too far	

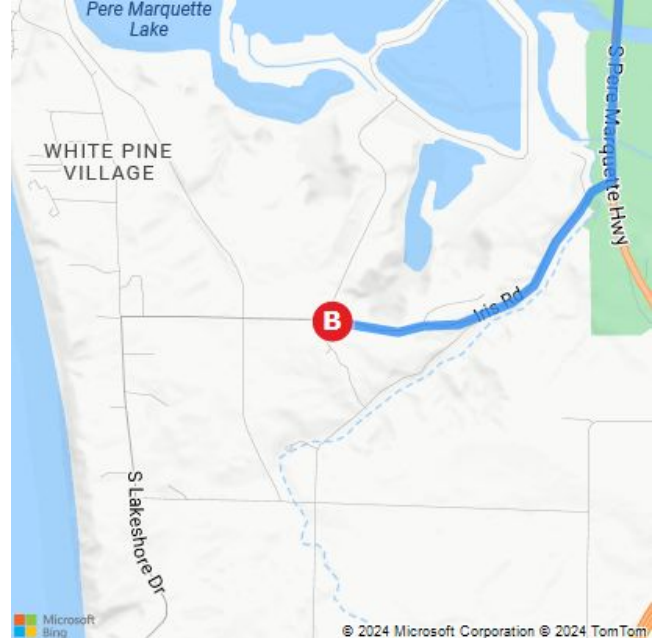
B 6189 Iris Rd, Ludington, MI 49431, United States



A N Mac Rd & W Lone Trail Rd, Irons, MI 49...



B 6189 Iris Rd, Ludington, MI 49431, United...



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**MASON COUNTY ROAD COMMISSION
SPECIAL PROVISION
FOR
HMA CRUSHING AND SHAPING, MODIFIED**

MCRC: ERN

1 OF 1

01/31/2024

DESCRIPTION

The work of HMA Crushing and Shaping, Modified, shall conform to the requirements of Section 501 of the 2020 Standard Specifications for Construction, except herein modified.

Approximately 3” of aggregate will be added to the existing HMA surface (excluding Stations 10+10 to 11+50 & 84+00 to 90+40), paid as aggregate base (ton) and sufficient gravel added in the trenches before crushing the existing HMA surface. The work of HMA Crushing and Shaping, Modified, will consist of pulverizing the existing HMA surface and underlying aggregate for the entire width, regardless of the thickness or uniformity of the existing HMA material as directed by the Engineer to an estimated depth of 9” according to Soil Borings.

This work includes pulverizing the overlying aggregate, existing HMA and underlying aggregate. All excess pulverized material will be used as aggregate base and/or maintenance gravel as directed by the Engineer. Pulverized material used as maintenance gravel as directed by the Engineer will be paid as Salvaged Crushed Material, LM (Cyd). Additional gravel may be required to construct the aggregate base and shall be paid as Aggregate Base (Ton). The Contractor shall be careful not to contaminate the pulverized materials. The Engineer reserves the right to reject the pulverized material if contaminated. The contaminated material shall then become the property of the Contractor and shall be removed and disposed of and replaced with 22A aggregate at the Contractors expense.

MEASUREMENT AND PAYMENT

HMA Crushing and Shaping, Modified, will include pulverizing the existing HMA and underlying aggregate, watering, grading, fine grading, and compacting to 98% density.

<u>PAY ITEM</u>	UNIT
HMA Crushing and Shaping, Modified	Syd
Salvaged Crushed Material, LM	Cyd

MASON COUNTY ROAD COMMISSION
SPECIAL PROVISION
FOR
SALVAGED CRUSHED MATERIAL, LM

MCRC/ERN

1 OF 1

02/02/2024

DESCRIPTION

This work shall consist of salvaging the pulverized aggregate base, following the HMA Crushing as directed by the Engineer and used in other locations of the project as approved by the Engineer. The Salvaged Crushed Material, LM can be used for maintaining local traffic within the project limits.

CONSTRUCTION METHODS

Construction shall be in accordance with Section 205 and 306 of the Michigan Department of Transportation 2020 Standard Specifications for Construction.

MEASUREMENT AND PAYMENT

This work shall be measured in cubic yards loose measure at the point of delivery and paid for as Salvaged Crushed Material, LM. The pay item includes the cost of loading, hauling, unloading, spreading, and compacting the salvaged pulverized aggregate. It is intended to use all the pulverized aggregate that is salvaged for Aggregate Base and/or Salvaged Crushed Material, LM. Any salvaged aggregate not carefully salvaged by the Contractor will be replaced with 22A aggregate at the Contractors expense.

PAY ITEMS

PAY UNIT

Salvaged Crushed Material, LM

Cyd

MASON COUNTY ROAD COMMISSION

**NOTICE TO BIDDERS
UTILITY COORDINATION**

MCRC/ERN

1 of 1

02-20-2024

The contractor shall cooperate and coordinate construction activities with the owners of utilities as stated in Section 104.08 of the 2020 MDOT Standard Specifications for Construction. In addition, for the protection of underground utilities, the contractor shall follow the requirements in Section 107.12 of the 2020 MDOT Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 108.09 and 109.05 of the 2020 MDOT Standard Specifications for Construction.

For protection of underground utilities and in conformance with Public Acts 174 of 2013, the contractor shall dial 1-800-482-7171 or 811 a minimum of three full working days, excluding Saturdays, Sundays, and holidays prior to beginning each excavation in areas where public utilities have not been previously located. Members will thus be routinely notified. This does not relieve the contractor of the responsibility of notifying utility owners who may not be a part of the MISS DIG alert system.

Public Utilities:

The following Public Utilities have facilities located within the Right-of-Way:

Charter Communications (800) 778-9140	Fiber Optic	DTE Energy 609 Bjornson St Big Rapids, MI 49307 Contact: Larry Bourke (231) 592-3244 Aaron Seiter 231-590-3871	Proposed Gas
Charter Communications 590 S. Pere Marquette Hwy Ludington, MI 49431 Contact: Hayley Seinder Cell # 906-771-3116 AJ Johnson (231) 463-1951	Cable TV	Consumers Energy (248) 877-7744	Electric
Frontier Communications 860 Terrace Street Muskegon, MI 49440 Cindy Whiteman or Candy Taphouse 800-242-8511 810-724-3127 (o) 231-726-0290 (c)	Phone	Oxy Chemical South Madison Holly Gould 231-794-8491 Merit Network 734-527-5729	Brine Line Fiber Optics

The owners of existing service facilities that are within grading or structure limits and in conflict will move them to locations designated by the Engineer or will remove them entirely from the highway Right-of-Way, when feasible. Owners of Public Utilities will not be required by the County to move additional poles or structures in order to facilitate the operation of construction equipment unless it is determined by the Engineer that such poles or structures constitute a hazard to the public or are dangerous to the Contractor's operations.

**MASON COUNTY ROAD COMMISSION
SPECIAL PROVISION
FOR
DITCHING & DITCH CLEANOUT**

MCRC: ERN

1 OF 1

02/28/2024

DESCRIPTION

The work of Ditching & Ditch Cleanout shall conform to the requirements of Section 202 and 208 of the 2020 Standard Specifications for Construction, except herein modified.

Ditching shall consist of constructing a 2' wide round bottom ditch approximately 24' left and right of centerline approximately 2.5' below FG centerline. The front slope shall be a 3:1 and the back slope will vary from a 3:1 to 2:1. Excess material from ditching shall be used on the project to flatten slopes to build the required cross section.

Ditch Cleanout shall consist of constructing a 2' wide round bottom ditch approximately 1.5' deep. Ditch Cleanout will be used behind the HMA valley gutter to provide positive drainage for HMA spillways and creating a drainage swale between the HMA valley gutter and the backslope. Excess material from ditching shall be used on the project to flatten slopes to build the required cross section.

Any excess earthen materials from trenching, ditching or ditch cleanout not used on the project can be disposed of at the property owned by PM Township. The Contractor shall obtain a property disposal and release agreement from PM Township. There is no cost for this agreement or cost for disposal of excess earthen materials.

MEASUREMENT AND PAYMENT


Ditching & Ditch Cleanout will include constructing ditches as described above to provide positive drainage.

<u>PAY ITEM</u>	UNIT
Ditching	Sta
Ditch Cleanout	Sta

Pere Marquette TWSP

Excess Earthen Materials

Legend

-  Buttersands Cottage
-  Historic White Pine Village
-  Pere Marquette Conservation Park
-  Pere Marquette Winery

X Excess Ditching & Trenching Material - Disposal Site

Pere Marquette Conservation Park

Historic White Pine Village

Pere Marquette Winery

Google Earth

Image © 2024 Airbus

2000 ft



**MASON COUNTY ROAD COMMISSION
SPECIAL PROVISION FOR
MAINTAINING TRAFFIC**

MCRC: ERN

1 of 1

01-31-2024

a. Description:

This work shall consist of all labor, materials, and equipment required to maintain traffic as specified herein.

b. General:

Traffic will be maintained in accordance with the 2020 Edition of the MDOT Standard Specifications for Construction, including any supplemental specifications, and as herein specified. All traffic control devices and their usage shall comply with the 2011 edition of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), as revised.

c. Construction Influence Area (CIA):

The CIA limits shall include the area within the right-of-way for Iris Road between Pere Marquette Highway and S. Lakeshore Drive in Pere Marquette Township for a distance of 500' along each leg of the intersections, plus a distance in advance as required for the advanced construction signing and traffic control devices. It shall also include the detour route roadways: Pere Marquette Highway, Chauvez Road, S. Lakeshore Drive

d. Traffic Restrictions:

All work shall be confined to daylight hours. No work shall be permitted on Sundays or Holidays; Memorial Day on Monday May 27, 2024, Independence Day on Thursday July 4th, 2024, Labor Day on Monday September 2, 2024. Memorial Day & Labor Day Holidays will start at 3:00PM on Thursday preceding the Holiday(s) until 7:00AM the following Tuesday after the Holiday(s). The July 4th Holiday will start at 3:00PM on Wednesday July 3rd, 2024, until 7:00AM on Monday July 8th, 2024. During the reconstruction, Iris Road shall be closed to through traffic from Pere Marquette Highway to S. Lakeshore Drive and traffic will be detoured in accordance with the detour signing plan. A minimum of one 10' wide lane of traffic shall always be maintained on Iris Road for local traffic, deliveries, waste removal and emergency vehicles.

Iris Road at the intersection(s) of Pere Marquette Highway, Inman Road & S. Lakeshore shall be maintained and controlled with Flag Control when work is being performed in those intersections, included in Minor Traffic Devices.

Commercial and residential driveways shall remain accessible at all times.

e. Traffic Control Devices:

All warning signs shall be 48" x 48" mounted at 5 ft minimum bottom height in uncurbed areas and 7 ft minimum bottom height in curbed or pedestrian areas. All construction signs left in place for a duration exceeding 14 days, including detour signing, will be on driven posts as per WZD-100-A. Temporary Traffic Control Devices shall conform to WZD-125-E.

Quantities for traffic control devices have been estimated based on the detour signing and maintaining traffic plan.

Waterborne Pavement Markings 4" White & Yellow will be paid for separately.

**MASON COUNTY ROAD COMMISSION
SPECIAL PROVISION
FOR
POST, MAILBOX**

MCRC: ERN

1 OF 1

01/31/2024

DESCRIPTION

This work shall conform to the requirements of Section 807.04 of the 2020 MDOT Standard Specifications for Construction, except as herein modified.

MATERIALS

The mailbox posts shall conform the requirements of Section 912. The posts for all the paper tubes shall be reused, unless otherwise directed by the Engineer.

CONSTRUCTION

The work shall consist of relocating the existing mailboxes and posts and the existing paper tubes and posts within the project limits to a central location or more than one location as directed by the Engineer prior to the start of construction. It is the Contractor's responsibility to contact the respective property owner(s) and let them know the location of their mailbox and paper tube prior to relocation. Upon completion of the project, the mailboxes will be reinstalled with a new post in accordance with Standard Plan R-74 series at the location approved by the Postmaster. The paper tubes will be reinstalled with the existing post at the location approved by the Engineer.

MEASUREMENT AND PAYMENT

This work will be paid for under the pay item of Post, Mailbox.

PAY ITEM

Post, Mailbox

PAY UNIT

Each

MASON COUNTY ROAD COMMISSION

SPECIAL PROVISION
FOR
SLOPE RESTORATION

MCRC

1 of 2

1-31-2024

a. Description. This work shall consist of all labor, equipment, and materials required to provide turf establishment items (topsoil, fertilizer, seed, and mulch) on disturbed areas and newlygraded surfaces of the project.

b. Construction Methods. Slope restoration shall include, but is not limited to, the following work: preparing foundation soils, furnishing, placing and grading topsoil, fertilizing, seeding, and placing mulch anchoring.

Unless otherwise specified herein or otherwise directed by the Engineer, all work shall be in accordance with Section 816 and 917 of the 2020 Michigan Department of Transportation Standard Specifications for Construction and Standard Plan R-100 Series.

Application rates for the various materials shall be as follows:

Topsoil Surface, salvaged or furnished	4 inches min,
Seeding Mixture, TDS	220 lbs / acre
CR	35 lbs / acre
Fertilizer, Chemical Nutrient, CI A	176 lbs / acre
Mulch (Type A)	2 ton / acre
Mulch Blanket (Type B)	High Velocity

The supplier's certification that the above items meet the specifications will be required.

Hay Mulch will not be permitted unless otherwise directed by the Engineer.

All generated waste shall be disposed of in accordance with Subsection 205.03 of the 2020 Michigan Department of Transportation Standard Specifications for Construction at the Contractor's expense.

Construction methods must be in accordance with subsection 816.03 of the Standard Specifications for Construction. Begin this work as soon as possible after final grading of the areas designated for slope restoration but no later than the maximum time frames stated in subsection 208.03 of the Standard Specifications for Construction. It may be necessary, as directed by the Engineer, to place materials by hand.

Shape, compact and assure all areas to be seeded are weed free prior to placing topsoil. Place topsoil to the minimum depth indicated above, to meet proposed finished grade. If the area being restored requires more than the minimum depth of topsoil to meet finished grade, this additional depth must be filled using topsoil or, at the Contractor's option, embankment. Furnishing and placing this additional material is included in this item of work.

Topsoil must be weed and weed seed free and friable prior to placing seed. Remove any stones greater than 1/2 inch in diameter or other debris. Apply seed mixture and fertilizer to prepared soil surface. Incorporate seed into top 1/2 inch of topsoil.

Apply mulch at a rate of 2 tons per acre. Place Mulch Anchoring over the mulch at a rate specified in subsection 816.03.F of the Standard Specifications for Construction.

Mulch blanket must be placed along ditch bottoms and 1:2 slopes in accordance with subsection 816.03.H of the Standard Specifications for Construction and as shown on Standard Plan R-100 Series. Mulch blanket will be paid for separately.

If an area washes out after this work has been properly completed and approved by the Engineer, make the required corrections to prevent future washouts and replace the topsoil, fertilizer, seed and mulch. This replacement will be paid for as additional work using the applicable contract items.

If an area washes out for reasons attributable to the Contractor's activity or failure to take proper precautions, replacement will be at the Contractor's expense.

The Engineer will inspect the seeded turf to ensure the end product is well established, weed free, in a vigorous growing condition, and contains the species called for in the seeding mixture.

If the seeded turf is not well established at the time of final project acceptance, the Contractor is responsible to re-seed until the turf is well established and approved by the Engineer.

If weeds are determined by the Engineer to cover more than 10 percent of the total area of slope restoration, the Contractor must provide weed control in accordance with subsection 816.03.J of the Standard Specifications for Construction. Weed control will be at the Contractor's expense with no additional charges to the project.

c. Measurement and Payment. The completed work as measured for Slope Restoration will be paid for at the contract unit price for the following contract pay item:

<u>Contract Item (Pay Item)</u>	<u>Pay Unit</u>
Slope Restoration, Modified (Type A)	Square Yard
Slope Restoration, Modified (Type B)	Square Yard

Payment for Slope Restoration, Modified shall be made to restore disturbed areas to 3' beyond slope stake line only and includes all labor, materials, and equipment necessary.

The Contractor is responsible to restore any other disturbed areas due to construction operations, at no additional cost to the project.

MASON COUNTY ROAD COMMISSION

SPECIAL PROVISION
FOR
MONUMENT BOX ADJUST - SPECIAL

MCRC/ERN

1 of 1

February 2, 2024

a. Description. The MCRC will be providing all labor, equipment and materials (Monument Box provided by the MCRC) necessary to the subbase as shown on the plans or as directed by the Engineer as Monument Box Adjust - Special. The work includes coring the HMA placing the Monument Box to finish HMA and grouting with non-shrink grout per 821.03 of the 2020 MDOT Standard Specifications for Construction.

b. Materials. Provide additional material in accordance with section 821 of the Standard Specifications for Construction to meet required plan thickness, width and elevation.

c. Construction. Conduct the work in accordance with section 821 of the 2020 MDOT Standard Specifications for Construction. The MCRC Surveyor will locate the survey markers before construction begins. The Contractor is to contact the MCRC to verify that all survey markers have been witnessed before starting the project. The MCRC Surveyor will locate and install the Monument Boxes on the surface course of the HMA. The MCRC will be responsible for coring the HMA, placing the Monument Box to grade and grouting the monument box in place using non-shrink grout to the full depth, as approved by the Engineer. The MCRC Surveyor will take care of all required measurements and documentation required for the Land Corner Recordation Certificate.

d. Measurement and Payment. NA – Work will be completed by the MCRC.

Pay Item	Pay Unit
Monument Box Adjust - Special.....	NA

SOIL BORING LOGS - SUMMARY

Iris Road - S. Lakeshore Drive (10+00) to PM Highway (90+40)

Boring #	Station	Offset	HMA (Inches)	Gravel (Inches)	Sand (Inches)	Clay (Inches)	Total Depth (In)
B-27	13+50	Rt	5.5		44.5		50
B-28	15+75	Cl	4		46		50
B-29	23+00	Rt	4		46		50
B-30	29+50	Cl	7.25		42.75		50
B-31	33+00	Rt	3		47		50
B-32	38+75	Rt	6		38	6	50
B-33	41+75	Rt	4.75		45.25		50
B-34	46+75	Cl	4.25	6.75	39		50
B-35	53+25	Rt	3.75	5.5	40.75		50
B-36	59+75	Cl	5		17	28	50
B-37	64+50	Rt	4	7	10	29	50
B-38	68+75	Rt	5		45		50
B-39	75+00	Cl	5.5	5	37.5	2	50
B-40	79+75	Rt	6	3.5	40.5		50
B-41	85+00	Cl	8		42		50

TEST BORING LOCATION DIAGRAM

Project Name: Mason County Road Commission – Pavement
Investigation and Slope Rehabilitation
Location: Mason County, Michigan
Project Number: 2021.1635 Date: 09.30.2021

Note: The background image is an aerial
photograph of the site.



Not to Scale



IRIS ROAD
B-27 THROUGH B-34

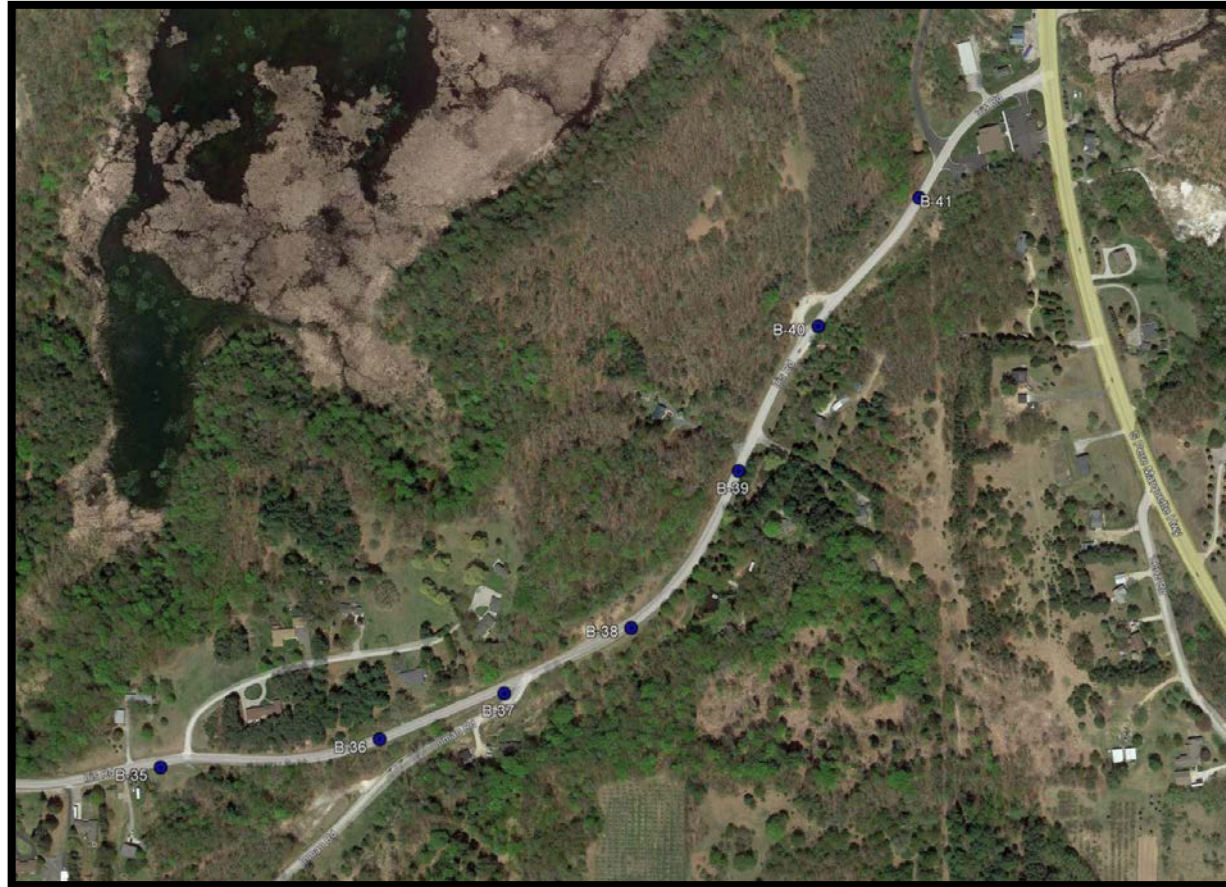
TEST BORING LOCATION DIAGRAM

Project Name: Mason County Road Commission – Pavement
Investigation and Slope Rehabilitation
Location: Mason County, Michigan
Project Number: 2021.1635 Date: 09.30.2021

Note: The background image is an aerial
photograph of the site.



Not to Scale



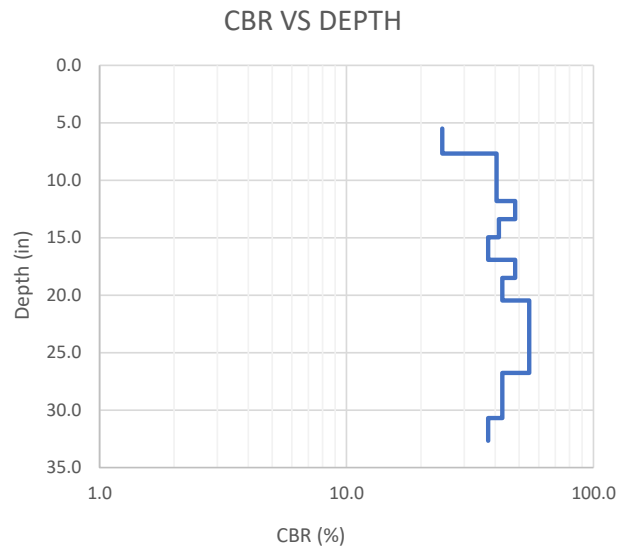
IRIS ROAD
B-34 THROUGH B-41



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-27
 DCP Starting Depth (in) 5.5

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	310	1	SP	
6	365	1	SP	24.4
6	400	1	SP	40.5
6	435	1	SP	40.5
6	470	1	SP	40.5
8	510	1	SP	48.1
7	550	1	SP	41.5
8	600	1	SP	37.5
8	640	1	SP	48.1
9	690	1	SP	42.8
9	730	1	SP	54.9
9	770	1	SP	54.9
9	810	1	SP	54.9
9	850	1	SP	54.9
9	900	1	SP	42.8
9	950	1	SP	42.8
8	1000	1	SP	37.5



From	To	Thickness	Description	Classification
0	2	2	Asphalt Wearing Course - Intact	
2	3.5	1.5	Asphalt Leveling Course - Deteriorated	
3.5	5.5	2	Asphalt Leveling Course - Deteriorated, not pictured	
5.5	50	44.5	Fine SAND, brown	SP

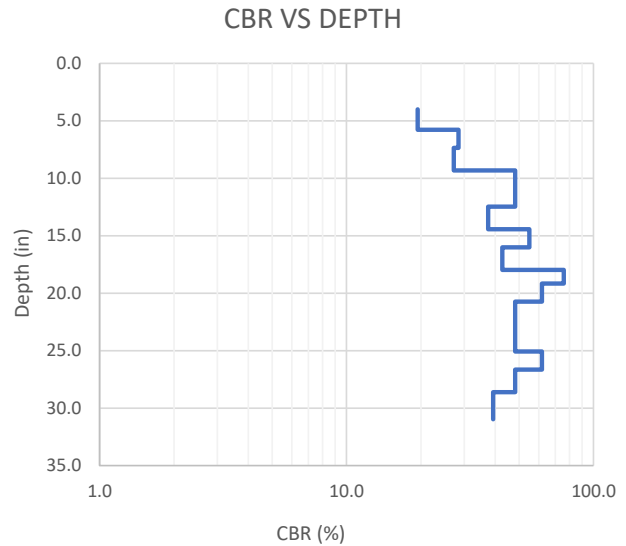
Comments: No groundwater encountered. Offset: 7 feet right of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-28
 DCP Starting Depth (in) 4

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	315	1	SP	
4	360	1	SP	19.4
5	400	1	SP	28.4
6	450	1	SP	27.2
8	490	1	SP	48.1
8	530	1	SP	48.1
8	580	1	SP	37.5
9	620	1	SP	54.9
9	670	1	SP	42.8
9	700	1	SP	75.8
10	740	1	SP	61.8
10	790	1	SP	48.1
12	850	1	SP	48.1
10	890	1	SP	61.8
10	940	1	SP	48.1
10	1000	1	SP	39.3



From	To	Thickness	Description	Classification
0	1.5	1.5	Asphalt Wearing Course - Intact, voids	
1.5	4	2.5	Asphalt Leveling Course - Intact, voids	
4	50	46	Fine SAND, brown	SP

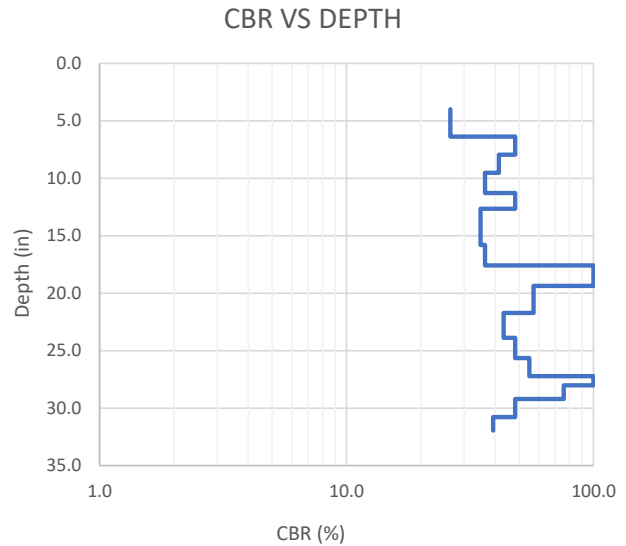
Comments: No groundwater encountered. Offset: 4.5 feet left of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-29
 DCP Starting Depth (in) 4

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	290	1	SP	
7	350	1	SP	26.3
8	390	1	SP	48.1
7	430	1	SP	41.5
7	475	1	SP	36.3
7	510	1	SP	48.1
6	550	1	SP	34.9
6	590	1	SP	34.9
7	635	1	SP	36.3
10	655	1	SP	100.0
12	680	1	SP	100.0
14	740	1	SP	57.2
10	795	1	SP	43.3
9	840	1	SP	48.1
9	880	1	SP	54.9
10	900	1	SP	100.0
9	930	1	SP	75.8
8	970	1	SP	48.1
5	1000	1	SP	39.3



From	To	Thickness	Description	Classification
0	2.25	2.25	Asphalt Wearing Course - Intact	
2.25	4	1.75	Asphalt Leveling Course - Deteriorated	
4	50	46	Fine SAND, brown	SP

Comments: No groundwater encountered. Offset: 9 feet right of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation

Project Number 2021.1635

Date 9/27/2021

Client Mason County Road Commission

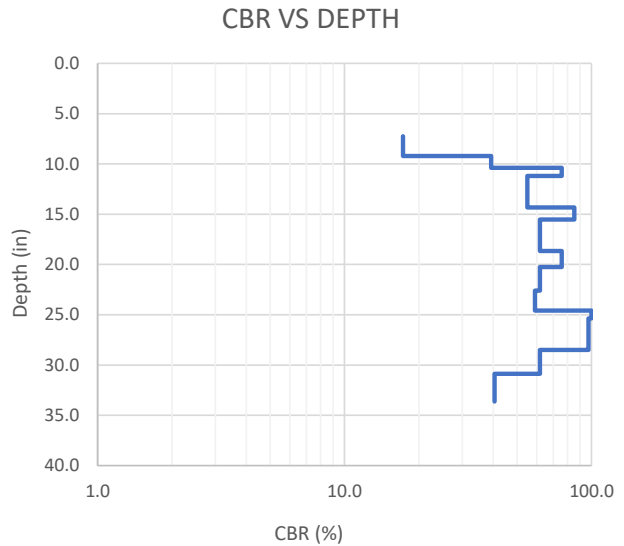
Boring Type Hand Auger

Location See BLD

Boring ID B-30

DCP Starting Depth (in) 7.25

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	340	1	SP	
4	390	1	SP	17.3
5	420	1	SP	39.3
6	440	1	SP	75.8
9	480	1	SP	54.9
9	520	1	SP	54.9
10	550	1	SP	85.3
10	590	1	SP	61.8
10	630	1	SP	61.8
12	670	1	SP	75.8
15	730	1	SP	61.8
12	780	1	SP	59.0
12	800	1	SP	100.0
15	840	1	SP	97.3
15	880	1	SP	97.3
15	940	1	SP	61.8
12	1010	1	SP	40.5



From	To	Thickness	Description	Classification
0	2	2	Asphalt Wearing Course - Intact	
2	4.25	2.25	Asphalt Leveling Course - Intact	
4.25	7.25	3	Asphalt Leveling Course - Deteriorated, not pictured	
7.25	50	42.75	Fine SAND, brown	SP

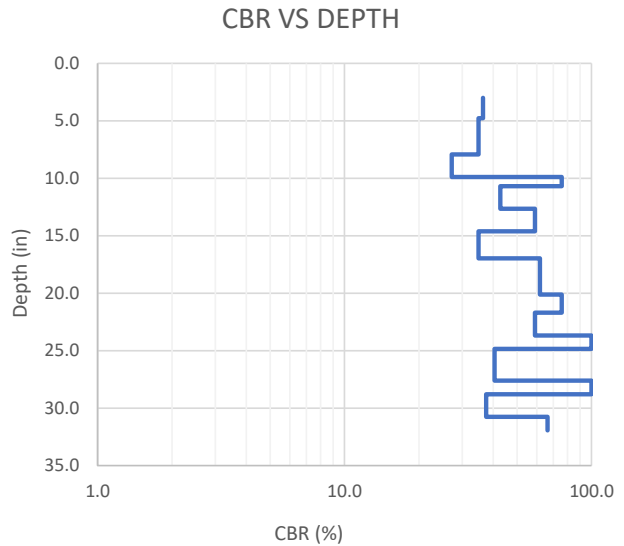
Comments: No groundwater encountered. Offset: 5 feet left of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-31
 DCP Starting Depth (in) 3

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	265	1	SP	
7	310	1	SP	36.3
6	350	1	SP	34.9
6	390	1	SP	34.9
6	440	1	SP	27.2
6	460	1	SP	75.8
9	510	1	SP	42.8
12	560	1	SP	59.0
9	620	1	SP	34.9
10	660	1	SP	61.8
10	700	1	SP	61.8
12	740	1	SP	75.8
12	790	1	SP	59.0
12	820	1	SP	100.0
12	890	1	SP	40.5
10	910	1	SP	100.0
9	920	1	SP	100.0
8	970	1	SP	37.5
8	1000	1	SP	66.4



From	To	Thickness	Description	Classification
0	2	2	Asphalt Wearing Course - Intact, voids	
2	3	1	Asphalt Leveling Course - Deteriorated	
3	50	47	Fine SAND, brown	SP

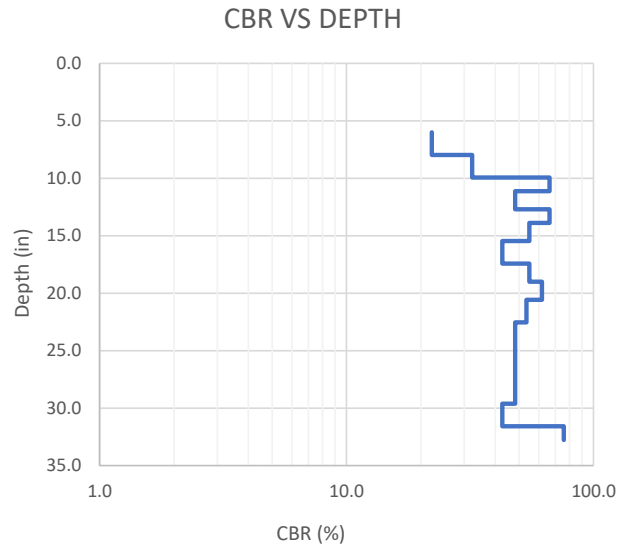
Comments: No groundwater encountered. Offset: 6 feet right of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-32
 DCP Starting Depth (in) 6

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	320	1	SP	
5	370	1	SP	22.2
7	420	1	SP	32.3
8	450	1	SP	66.4
8	490	1	SP	48.1
8	520	1	SP	66.4
9	560	1	SP	54.9
9	610	1	SP	42.8
9	650	1	SP	54.9
10	690	1	SP	61.8
11	740	1	SP	53.6
10	790	1	SP	48.1
10	840	1	SP	48.1
8	880	1	SP	48.1
8	920	1	SP	48.1
9	970	1	SP	42.8
9	1000	1	SP	75.8



From	To	Thickness	Description	Classification
0	2.75	2.75	Asphalt Wearing Course - Intact	
2.75	6	3.25	Asphalt Leveling Course - Intact, voids	
6	44	38	Fine SAND, brown	SP
44	50	6	Lean CLAY, brown	CL

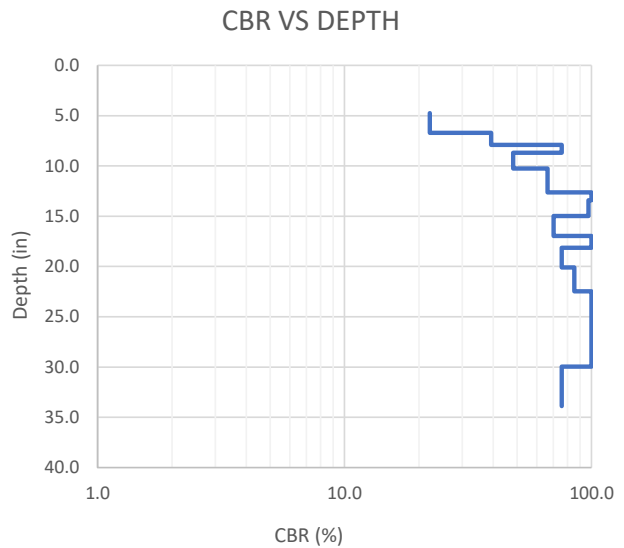
Comments: No groundwater encountered. Offset: 5 feet left of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-33
 DCP Starting Depth (in) 4.75

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	280	1	SP	
5	330	1	SP	22.2
5	360	1	SP	39.3
6	380	1	SP	75.8
8	420	1	SP	48.1
8	450	1	SP	66.4
8	480	1	SP	66.4
8	500	1	SP	100.0
15	540	1	SP	97.3
14	590	1	SP	70.2
12	620	1	SP	100.0
15	670	1	SP	75.8
20	730	1	SP	85.3
20	780	1	SP	100.0
20	830	1	SP	100.0
20	870	1	SP	100.0
20	920	1	SP	100.0
15	970	1	SP	75.8
15	1020	1	SP	75.8



From	To	Thickness	Description	Classification
0	1.75	1.75	Asphalt Wearing Course - Horizontal cracks, voids	
1.75	4.75	3	Asphalt Leveling Course - Intact, voids	
4.75	50	45.25	Fine SAND, brown	SP

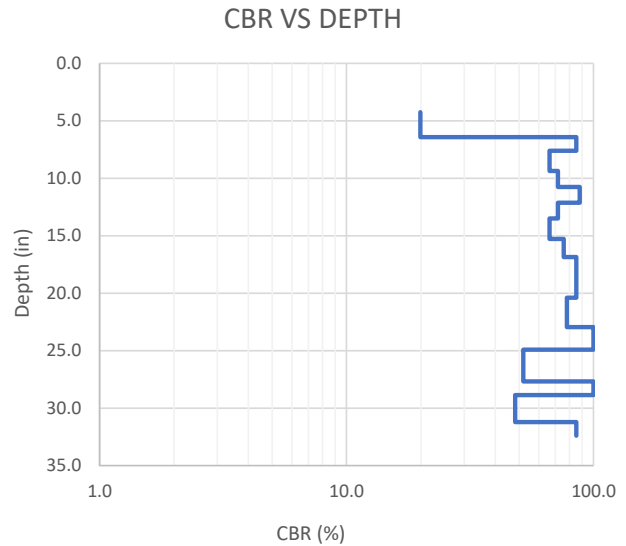
Comments: Groundwater encountered at a depth of 46 inches. Offset: 6 feet right of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-34
 DCP Starting Depth (in) 4.25

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	285	1	GP	
5	340	1	GP	19.9
10	370	1	GP	85.3
12	415	1	GP	66.4
10	450	1	GP	71.8
12	485	1	SP	88.0
10	520	1	SP	71.8
12	565	1	SP	66.4
12	605	1	SP	75.8
15	650	1	SP	85.3
15	695	1	SP	85.3
20	760	1	SP	78.0
20	810	1	SP	100.0
15	880	1	SP	52.0
12	910	1	SP	100.0
12	970	1	SP	48.1
10	1000	1	SP	85.3



From	To	Thickness	Description	Classification
0	2	2	Asphalt Wearing Course - Intact	
2	4.25	2.25	Asphalt Leveling Course - Intact, voids	
4.25	11	6.75	AGGREGATE BASE - Fine-to-Coarse natural GRAVEL with sand, brown	GP
11	50	39	Fine SAND, brown	SP

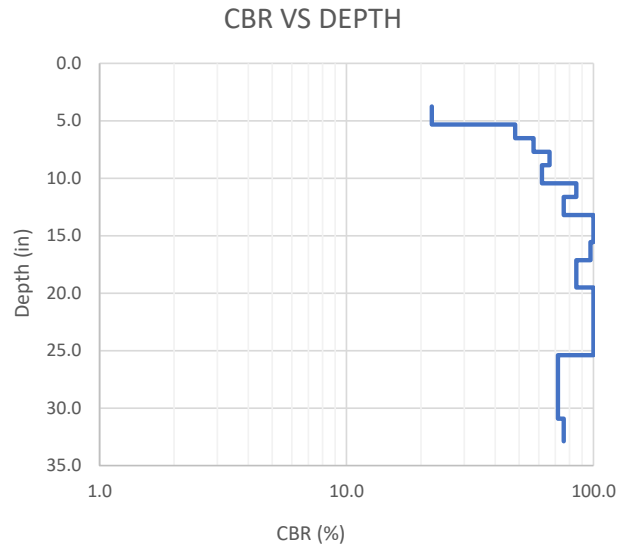
Comments: Groundwater encountered at a depth of 24 inches. Offset: 5 feet right of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-35
 DCP Starting Depth (in) 3.75

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	270	1	GP	
4	310	1	GP	22.2
6	340	1	GP	48.1
7	370	1	GP	57.2
8	400	1	GP	66.4
10	440	1	SP	61.8
10	470	1	SP	85.3
12	510	1	SP	75.8
12	540	1	SP	100.0
12	570	1	SP	100.0
15	610	1	SP	97.3
20	670	1	SP	85.3
20	720	1	SP	100.0
20	770	1	SP	100.0
20	820	1	SP	100.0
20	890	1	SP	71.8
20	960	1	SP	71.8
15	1010	1	SP	75.8



From	To	Thickness	Description	Classification
0	1	1	Asphalt Wearing Course - Intact	
1	2	1	Asphalt Leveling Course - Intact	
2	3.75	1.75	Asphalt Leveling Course - Intact	
3.75	9.25	5.5	AGGREGATE BASE - Fine-to-Coarse natural GRAVEL with sand, brown	GP
9.25	50	40.75	Fine SAND, brown	SP

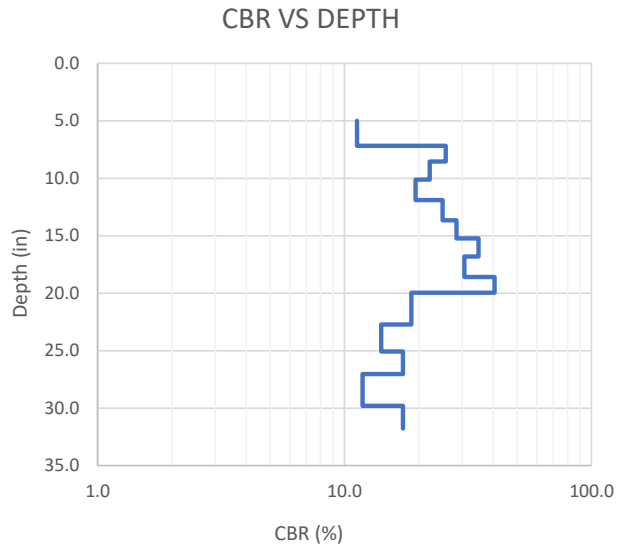
Comments: No groundwater encountered. Offset: 6 feet left of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-36
 DCP Starting Depth (in) 5

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	320	1	SP	
3	375	1	SP	11.2
4	410	1	SP	25.7
4	450	1	SP	22.2
4	495	1	SP	19.4
5	540	1	SP	24.9
5	580	1	SP	28.4
6	620	1	SP	34.9
6	665	1	SP	30.6
6	700	1	SP	40.5
6	770	1	CL	18.6
4	830	1	CL	14.1
4	880	1	CL	17.3
4	950	1	CL	11.8
4	1000	1	CL	17.3



From	To	Thickness	Description	Classification
0	3	3	Asphalt Wearing Course - Cracked	
3	5	2	Asphalt Leveling Course - Cracked	
5	22	17	Fine SAND, brown	SP
22	50	28	Lean CLAY, brown	CL

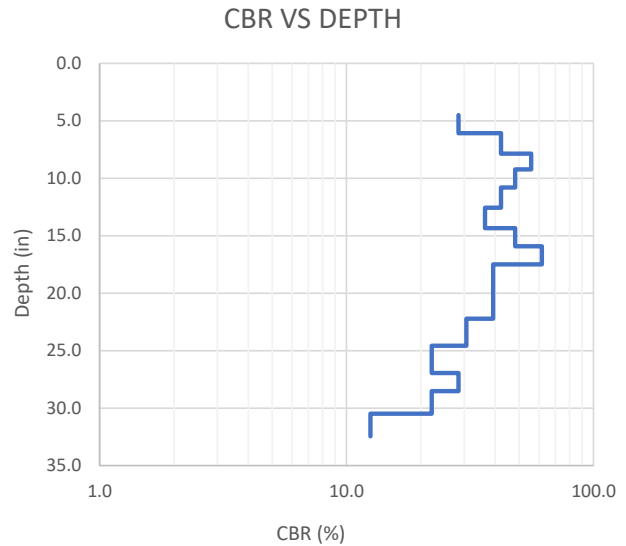
Comments: No groundwater encountered. Offset: 9 feet left of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-37
 DCP Starting Depth (in) 4.5

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	330	1	GP	
5	370	1	GP	28.4
8	415	1	GP	42.2
8	450	1	GP	55.9
8	490	1	GP	48.1
8	535	1	SP	42.2
7	580	1	SP	36.3
8	620	1	SP	48.1
10	660	1	SP	61.8
10	720	1	SP	39.3
10	780	1	CL	39.3
8	840	1	CL	30.6
6	900	1	CL	22.2
5	940	1	CL	28.4
5	990	1	CL	22.2
3	1040	1	CL	12.5



From	To	Thickness	Description	Classification
0	1	1	Asphalt Wearing Course - Intact	
1	2.25	1.25	Asphalt Leveling Course - Intact, voids	
2.25	3	0.75	Asphalt Leveling Course - Intact, voids	
3	3.25	0.25	Asphalt Leveling Course - Chip seal, voids	
3.25	4	0.75	Asphalt Leveling Course - Intact, voids	
4	11	7	AGGREGATE BASE - Fine-to-Coarse natural GRAVEL with sand, brown	GP
11	21	10	Fine SAND, brown	SP
21	50	29	Lean CLAY, grey	CL

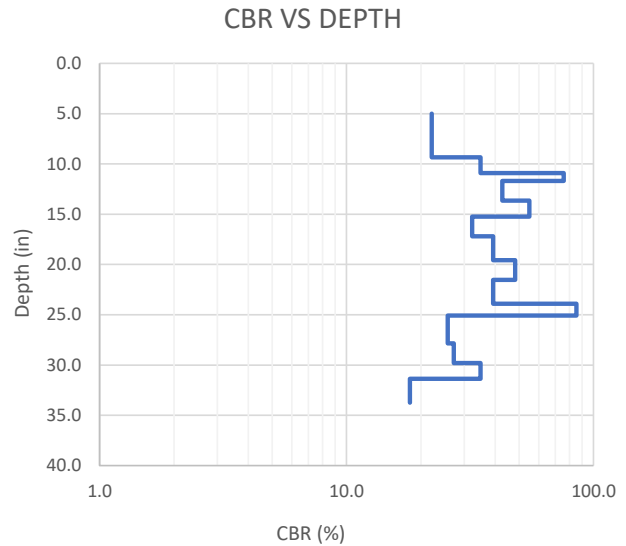
Comments: Groundwater encountered at a depth of 50 inches. Offset: 6 feet right of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-38
 DCP Starting Depth (in) 5

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	310	1	SP	
5	360	1	SP	22.2
6	420	1	SP	22.2
6	460	1	SP	34.9
6	480	1	SP	75.8
9	530	1	SP	42.8
9	570	1	SP	54.9
7	620	1	SP	32.3
10	680	1	SP	39.3
10	730	1	SP	48.1
10	790	1	SP	39.3
10	820	1	SP	85.3
8	890	1	SP	25.7
6	940	1	SP	27.2
6	980	1	SP	34.9
5	1040	1	SP	18.1



From	To	Thickness	Description	Classification
0	2	2	Asphalt Wearing Course - Intact	
2	5	3	Asphalt Leveling Course - Intact, voids	
5	50	45	Fine SAND, brown	SP

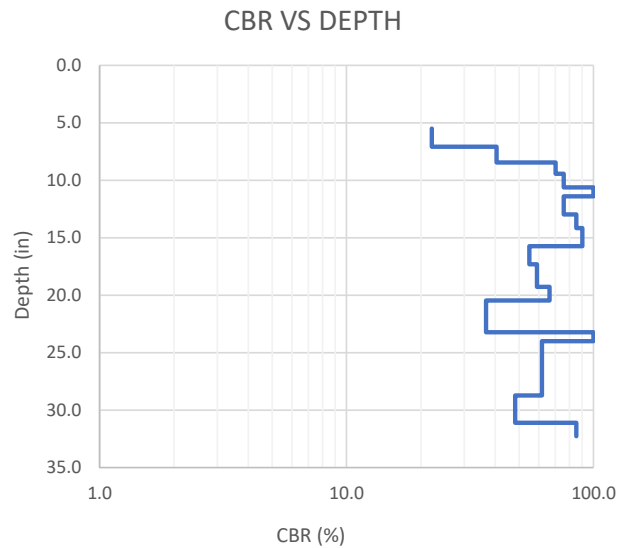
Comments: No groundwater encountered. Offset: 10 feet left of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-39
 DCP Starting Depth (in) 5.5

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	330	1	GP	
4	370	1	GP	22.2
6	405	1	GP	40.5
7	430	1	GP	70.2
9	460	1	SP	75.8
10	480	1	SP	100.0
12	520	1	SP	75.8
10	550	1	SP	85.3
14	590	1	SP	90.1
9	630	1	SP	54.9
12	680	1	SP	59.0
8	710	1	SP	66.4
11	780	1	SP	36.7
9	800	1	SP	100.0
15	860	1	SP	61.8
15	920	1	SP	61.8
12	980	1	SP	48.1
10	1010	1	SP	85.3



From	To	Thickness	Description	Classification
0	1	1	Asphalt Wearing Course - Intact	
1	3	2	Asphalt Leveling Course - Cracked	
3	5.5	2.5	Asphalt Leveling Course - Intact	
5.5	10.5	5	AGGREGATE BASE - Fine-to-Coarse natural GRAVEL with sand, brown	GP
10.5	48	37.5	Fine SAND, brown	SP
48	50	2	Lean CLAY, brown	CL

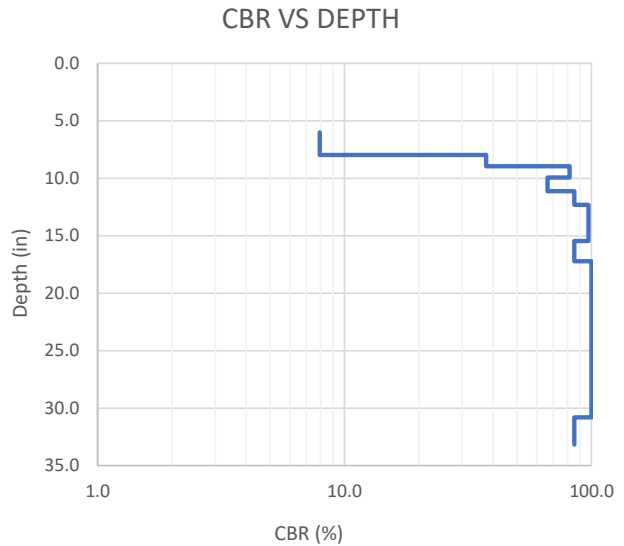
Comments: No groundwater encountered. Offset: 6 feet right of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-40
 DCP Starting Depth (in) 6

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	320	1	GP	
2	370	1	GP	7.9
4	395	1	GP	37.5
8	420	1	SP	81.5
8	450	1	SP	66.4
10	480	1	SP	85.3
15	520	1	SP	97.3
15	560	1	SP	97.3
15	605	1	SP	85.3
20	640	1	SP	100.0
15	670	1	SP	100.0
20	710	1	SP	100.0
20	750	1	SP	100.0
25	800	1	SP	100.0
25	860	1	SP	100.0
20	900	1	SP	100.0
20	950	1	SP	100.0
20	1010	1	SP	85.3



From	To	Thickness	Description	Classification
0	1	1	Asphalt Wearing Course - Intact	
1	1.5	0.5	Asphalt Leveling Course - Intact	
1.5	3	1.5	Asphalt Leveling Course - Intact, voids	
3	4	1	Asphalt Leveling Course - Intact, voids	
4	6	2	Asphalt Leveling Course - Deteriorated, not pictured	
6	9.5	3.5	AGGREGATE BASE - Fine-to-Coarse natural GRAVEL with sand, brown	GP
9.5	50	40.5	Fine SAND, brown	SP

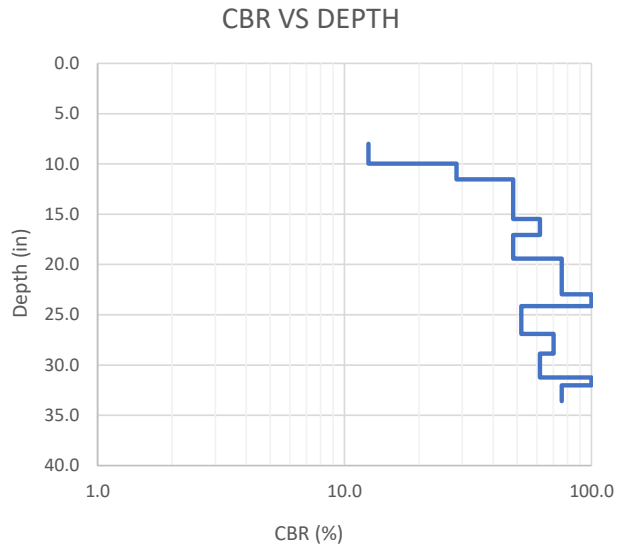
Comments: No groundwater encountered. Offset: 4.5 feet right of centerline.



Project Name Mason County Road Commission - Pavement Investigation & Slope Rehabilitation
 Project Number 2021.1635
 Date 9/27/2021
 Client Mason County Road Commission
 Boring Type Hand Auger
 Location See BLD

Boring ID B-41
 DCP Starting Depth (in) 8

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	360	1	SP	
3	410	1	SP	12.5
5	450	1	SP	28.4
6	480	1	SP	48.1
6	510	1	SP	48.1
8	550	1	SP	48.1
10	590	1	SP	61.8
12	650	1	SP	48.1
12	690	1	SP	75.8
15	740	1	SP	75.8
12	770	1	SP	100.0
15	840	1	SP	52.0
14	890	1	SP	70.2
15	950	1	SP	61.8
15	970	1	SP	100.0
12	1010	1	SP	75.8



From	To	Thickness	Description	Classification
0	1	1	Asphalt Wearing Course - Intact	
1	3.5	2.5	Asphalt Leveling Course - Intact, voids	
3.5	8	4.5	Asphalt Leveling Course - Deteriorated, not pictured	
8	50	42	Fine SAND, brown	SP

Comments: No groundwater encountered. Offset: 5 feet left of centerline.

DRIVEWAY CHART						Syds HMA, Rem.	Tons Aggregate Approach CI I	Tons Aggregate Approach CI II	Tons HMA Approach	PROPOSED Driveway Class F Culvert	
Station	Direction	Direction	Existing	Sft	Syds						
11+50		Right	Gravel	831	92.33			27.7		40	
13+08	Left		HMA	520	57.78	57.78	11.6		7.7	30	
14+55		Right	HMA	460	51.11	51.11	10.2		6.8	30	
15+50		Right	Gravel	728	80.89			24.3		40	
23+65		Right	Gravel	332	36.89			11.1		30	
24+75		Right	Grass	358	39.78			11.9		30	
27+50		Right	Gravel	595	66.11			19.8		30	
27+60	Left		HMA	1428	158.67	158.67	31.7		21.0	80	
31+84		Right	Gravel	389	43.22			13.0			
33+58		Right	Gravel	510	56.67			17.0			
34+04		Right	Gravel	533	59.22			17.8			
35+21		Right	Gravel	241	26.78			8.0		30	
36+40		Right	HMA	291	32.33	32.33	6.5		4.3	30	
37+00		Right	Grass	368	40.89			12.3		30	
37+38		Right	HMA	447	49.67	49.67	9.9		6.6	30	
39+05		Right	HMA	563	62.56	62.56	12.5		8.3	30	
39+66	Left		Gravel	902	100.22			30.1		60	
47+23		Right	Gravel	743	82.56			24.8			
48+00		Right	HMA	489	54.33	54.33	10.9		7.2		
48+90		Right	HMA	404	44.89	44.89	9.0		5.9		
50+70		Right	HMA	1094	121.56	121.56	24.3		16.1	60	
51+60		Right	Grass	505	56.11			16.8		30	
52+30		Right	HMA	300	33.33	33.33		6.7	4.4	30	
52+60	Left		HMA	338	37.56	37.56	7.5		5.0	30	
54+40	Left		HMA	575	63.89	63.89	12.8		8.5	30	
64+95		INMAN RD	HMA	1740	193.33	193.33	38.7		25.6		
71+53		Right	Gravel	322	35.78			10.7		30	
85+43	Left		Gravel	750	83.33			25.0		40	
75+40		Right	NA							60	Downspout SAVE
75+90		Right	HMA	450	50.00	50.00	10.0		6.6		
76+05		Right	HMA	595	66.11	66.11	13.2		8.8		
79+35		Right	Gravel	1106	122.89			36.9			
79+50	Left		Gravel	723	80.33			24.1		50	
80+73	Left		Gravel	1135	126.11			37.8		50	
81+97		Right	NA							20	Downspout SAVE
						1077	209	376	143	870	

IRIS ROAD - EXISTING CROSS CULVERTS

Station	Off CI		CI Elev.	Off CI		Length (Ft)	Size (Dia)		
	Left (ft)	Lt Inv.		Right (ft)	Rt. Inv.				
49+57	34.75	723.48	729.5			66	15"	Cross Culvert	
49+78			729.5	29	724.76				
73+78	41.7	607.71	612.68			92	15"	Cross Culvert	
74+12			612.68	44.9	603.38				
75+40	Right		609.70	19	608.16	40	12"	Downspout	SAVE
81+97	Right		603.00	17	600.96	20	12"	Downspout	SAVE

IRIS ROAD - PROPOSED CROSS CULVERTS

Station	Off CI		CI Elev.	Off CI		Length (Ft)	Size (Dia)	
	Left (ft)	Lt Inv.		Right (ft)	Rt. Inv.			
44+90	24	737.00	739.8			70	15"	Cross Culvert
45+36				30	736.00			
49+57	34.75	723.48	729.5			66	15"	Cross Culvert
49+78			729.5	29	724.76			
73+78	41.7	607.71	612.68			92	15"	Cross Culvert
74+12			612.68	44.9	603.38			

TOTAL	228	15"
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IRIS ROAD - DITCHING

Left Side Proposed Ditching

	Start	End	Length (Ft)	Length (Sta)
Ditching	1250	1725	475	4.75
Ditching	2275	2850	575	5.75
Ditching	3000	3200	200	2
Ditching	3550	4000	450	4.5
Ditch Cleanout	4950	7650	2700	27
Ditch Cleanout	8100	8600	500	5
			TOTAL LEFT	49

Right Side Proposed Ditching

	Start	End	Length (Ft)	Length (Sta)
Ditching	1050	1825	775	7.75
Ditching	2300	2825	525	5.25
Ditching	3450	3950	500	5
Ditching	4275	4475	200	2
Ditching	4950	5450	500	5
			TOTAL RIGHT	25
			Misc	6
			TOTAL	80

IRIS & INMAN ROAD - EXISTING GUARDRAIL - REMOVE

Left Side Existing Guardrail					
Road	Start	End	Length (Ft)		End Shoe
IRIS	4748	5020	272		2

Right Side Existing Guardrail					
Road	Start	End	Length (Ft)	12.5' Rad.	End Shoe
IRIS	5450	6470	1020		2
INMAN	6350	6550	200		2

TOTAL	1492			6
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IRIS & INMAN ROAD - PROPOSED GUARDRAIL

Left Side Proposed Guardrail					
Road	Start	End	Length (Ft)		Terminal Ending
IRIS	4748	5020	272		2

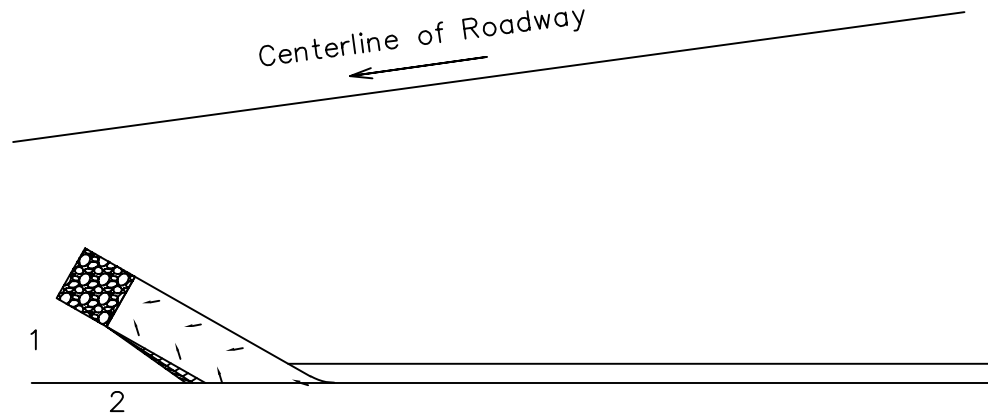
Right Side Proposed Guardrail					
Road	Start	End	Length (Ft)	12.5' Rad.	Terminal Ending
IRIS	5450	6470	1020	25	2
IRIS	7150	7500	350		2
INMAN	6350	6550	200	12.5	2

TOTAL	1842		37.5	8
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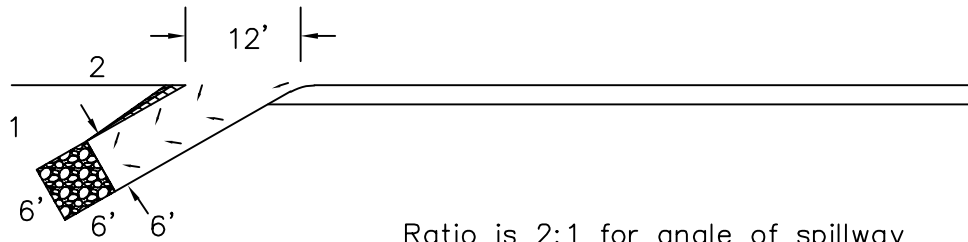
Pavement Marking

				Centerline	Edgeline
Start	Stop	EB	WB	Yellow	White
10+50	16+50	Skip	Skip	100	1000
16+50	26+00	Skip	Soild	1050	1900
26+00	90+00	Solid	Solid	12800	12800
				13950	15700

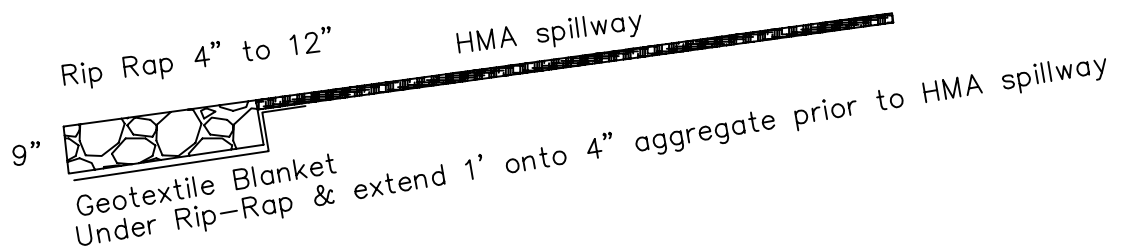
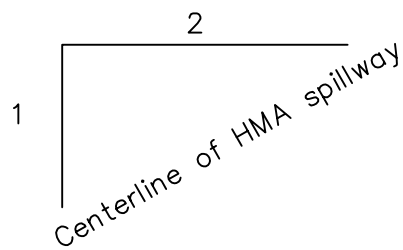
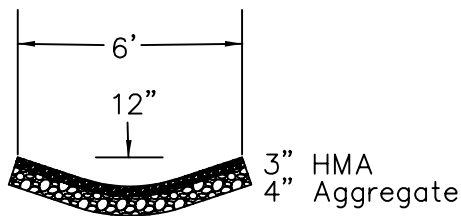
Place HMA spillway every 300' to 400' on long grades outlet locations as directed by the Engineer



Ratio is 2:1 for angle of spillway



Ratio is 2:1 for angle of spillway



HMA
Spillway
Detail

Mason County Road Commission

Drafted By: ERN

Date: November 22, 2019

File Name: S:Engineer/Documents/MCRC Info/MCRC Standards