



MASON COUNTY ROAD COMMISSION

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

Mary Samuels, 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 Friday, March 31, 2023**, for the following:

2023 JEBAVY DRIVE RECONSTRUCTION – US-10 TO BRYANT ROAD

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

PROPOSAL

2023 JEBAVY DRIVE RECONSTRUCTION – US-10 TO BRYANT ROAD

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 Hansen Road Reconstruction project in Mason County. All unit prices shall be firm for the 2023 Jebavy Drive Reconstruction – US-10 to Bryant Road project, MDOT 2012 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 July 5, 2023, due to utility relocations. Once the Contractor starts the project, the work shall be continuous and shall be completed within 5 consecutive weeks, but no later than September 1, 2023 . 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 pm, Friday, March 31, 2023

JEBAVY DRIVE - US-10 NORTH TO N. OF BRYANT ROAD

Pay Item Code	Description	Units	Quantity	Unit Price	Amount
1500001	Mobilization, Max	LSUM	1		
2030011	Dr Structure, Rem	Ea	2		
2040020	Curb and Gutter, Rem	Ft	600		
2050010	Embankment, CIP	Cyd	600		
2050016	Excavation, Earth	Cyd	350		
2080020	Erosion Control, Inlet Protection, Fabric Drop	Ea	46		
3020001	Aggregate Base	Ton	500		
3020050	Aggregate Base, Conditioning	Syd	27,100		
4020004	Sewer, Cl A, 12 inch, Tr Det A	Ft	40		
4030005	Dr Structure Cover, Adj, Case 1	Ea	40		
4030025	Dr Structure Cover, Type D	Ea	3		
4030200	Dr Structure, 24 inch dia	Ea	2		
5010002	Cold Milling HMA Surface	Syd	27,100		
5010050	HMA, 4E1	Ton	5,300		
5010061	HMA Approach	Ton	100		
8020040	Curb and Gutter, Conc, Det F6	Ft	600		
8110024	Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk	Ft	100		
8110045	Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar	Ft	150		
8110063	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	Ea	12		
8110071	Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	Ea	3		
8110077	Pavt Mrkg, Ovly Cold Plastic, Thru and Rt Turn Arrow Sym	Ea	1		
8110231	Pavt Mrkg, Waterborne, 4 inch, White	Ft	11,350		
8110232	Pavt Mrkg, Waterborne, 4 inch, Yellow	Ft	11,350		
8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	8		
8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	8		
8120170	Minor Traf Devices	LSUM	1		
8120252	Plastic Drum, Fluorescent, Furn	Ea	40		
8120253	Plastic Drum, Fluorescent, Oper	Ea	40		
8120350	Sign, Type B, Temp, Prismatic, Furn	Sft	312		
8120351	Sign, Type B, Temp, Prismatic, Oper	Sft	312		
8160062	Topsoil Surface, Furn, 4 inch	Syd	1,500		
8160100	Slope Restoration, Type A	Syd	1,500		
8230431	Gate Box, Adj, Case 1	Ea	5		

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ALTERNATE BID ITEMS

5017002	Cold Milling HMA Surface - Modified	Syd	27,100		
4037005	Dr Structure Cover, Adj, Case 1 - Modified	Ea	40		
8237431	Gate Box, Adj, Case 1 - Modified	Ea	5		

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Submitted By: _____

Company: _____

Date: _____

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 Jebavy Drive Project and various adjoining 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 "2023 JEBAVY DRIVE RECONSTRUCTION – US-10 TO BRYANT ROAD"

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 2012 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 2012 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 4E1**

Materials:

**Target air voids for this project have been changed to 3%.
RAP will meet MDOT Tier 1 specifications.
Bitumen shall be a minimum of 5.6%.**

The Performance Grade binder range for HMA mixtures shall be 58-28(L) & 64-28(T)

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 2012 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 4E1.

HMA Mixture 4E1 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 4E1 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 JEBAVY DRIVE 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 2012 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 2012 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 "2012 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.

ANTICIPATED STAGING FOR JEBAVY DRIVE PROJECT

1. Anticipated start date is July 5, 2023, due to utility relocations.
 - a. Start date may be adjusted to June 12th +/- **IF** all utilities have been relocated **AND** the LAS Elementary School is on Summer Break. Jebavy Drive from US-10 to Bryant Road **MUST** be open to traffic for the July 1st through 4th Holiday weekend.
2. Set up construction signs and detour route Jebavy Drive between Johnson Road & Bryant Road.
3. Remove Concrete Curb & Gutter as shown in the plans.
4. Install new Dr. Structures & Storm Sewer as shown in the plans.
5. Earth, Excavation, Embankment and prepare sand subbase for new concrete C&G & place aggregate base, 7" thick in turn lanes (widening areas)
6. Pour Concrete Curb & Gutter (F6)
7. Remove existing manhole covers located within the HMA paving limits and place metal plates.
 - a. Contractor is responsible to witness all manhole locations.
 - b. Engineer will also witness all manhole locations.
8. Cold Milling HMA Surface full depth
9. Finish Grade, water & compact existing aggregate base.
 - a. Any areas that the aggregate base fails during finish grading, water, & compact, replace with aggregate base 7" thick.
 - b. Any areas that needs additional aggregate base will be paid by the ton.
10. Place HMA 4E1 Leveling (220#/Syd) mainline & approaches.
11. Topsoil, seed, fertilize & mulch all disturbed areas.
12. Open Jebavy Drive Johnson to Bryant to local traffic only.
13. Set up construction signs and detour route Jebavy Drive between US-10 & Johnson Road.
14. Remove existing manhole covers located within the HMA paving limits and place metal plates.
 - a. Contractor is responsible to witness all manhole locations.
 - b. Engineer will also witness all manhole locations.
15. Cold Milling HMA Surface full depth
16. Finish Grade, water & compact existing aggregate base.
 - a. Any areas that the aggregate base fails during finish grading, water, & compact, replace with aggregate base 7 inch.
17. Place HMA 4E1 Leveling (220#/Syd) mainline & approaches.
 - a. Adjust Manholes in HMA to 1 3/8" above leveling course.
 - b. Patch all manholes with HMA
 - i. **IF utilizing pay item Dr. Structure Cover, Adj. Case 1**
 - ii. **IF utilizing pay item Gate Box, Adj, Case 1**
18. Place HMA 4E1 Surface (165#/Syd) from US-10 to Bryant Road, mainline & approaches.
 - a. **All Flag Control is included in Minor Traffic Devices**
19. Core all Manholes & Water Valve Boxes in HMA Surface and place concrete color per Special Provision.
 - i. **IF utilizing pay item Dr. Structure Cover, Adj. Case 1 – Modified**
 - ii. **IF utilizing pay item Gate Box, Adj, Case 1**
20. Place all waterborne pavement markings, left turn arrows, right turn arrows, etc.
21. Open Jebavy Drive to Traffic no later than September 1, 2023

**SPECIAL PROVISION
FOR
COLD MILLING HMA SURFACE, MODIFIED**

MCRC ERN

(1 OF 1)

03/08/2023

DESCRIPTION

The work of cold milling HMA surface, Modified, shall conform to the requirements of Section 501 of the 2012 Standard Specifications for Construction, except herein modified.

This work of cold milling HMA surface, Modified, will consist of cold milling the entire existing HMA surface for the entire width, regardless of the thickness or uniformity of the existing HMA material as directed by the Engineer on Jebavy Drive. The estimated thickness is 2 ½” to 4 ½ ” according to noted Soil Borings.

This work includes the loading, hauling to the MCRC located at 510 E. State Street, Scottville and is included with the Pay Item of Cold Milling HMA Surface, Modified. The material will be stockpiled at a site by the MCRC loader operated by the MCRC. The material shall remain the property of the Mason County Road Commission.

MEASUREMENT AND PAYMENT

Cold Milling HMA Surface, Modified, will include the cold milling of all HMA material, the loading, weighing and transporting to a location approved by the Engineer.

PAY ITEM

UNIT

Cold Milling HMA Surface, Modified

Syd

MASON COUNTY ROAD COMMISSION

SPECIAL PROVISION
FOR
**DR. STRUCTURE COVER, ADJ. CASE 1, MODIFIED
GATE VALVE, BOX ADJ. CASE 1, MODIFIED**

ERN

1 of 3

03/08/2023

a. Description. This work consists of adjusting drainage structures, including utility manhole covers, in accordance with section 403 of the Standard Specifications for Construction, as shown on the plans, as directed by the Engineer, and as stated herein.

b. Materials. Provide materials in accordance with subsection 403.02 of the Standard Specifications for Construction with the following exceptions:

Provide Concrete, Grade P-NC in accordance with section 603 and provide lane ties in accordance with sections 603 and 914 of the Standard Specifications for Construction.

For concrete, curb; concrete, curb and gutter; or concrete traffic island repairs provide materials in accordance with the standard specifications.

c. Construction. For structures within the pavement area, use a rotary coring head to remove a minimum 4-foot diameter section of pavement around the drainage structure frame and cover. If the frame outside diameter measurement is greater than 36 inches, use a rotary coring head to remove a minimum 4.5-foot diameter section of pavement. For structures within the curb line, saw cut and remove a 4-foot by 6-foot section of pavement around the frame with the 6-foot dimension measured along the curb line. Remove curb and/or curb and gutter associated with the adjustment of structures as directed by the Engineer. For structures located adjacent to concrete traffic control islands, remove concrete island full-width or up to 6 feet wide to facilitate adjustment of the drainage structure cover frame, as directed by the Engineer.

Support the cover frame over the structure matching the adjacent roadway cross slope. Secure the frame in-place to allow for placement on concrete without altering frame position.

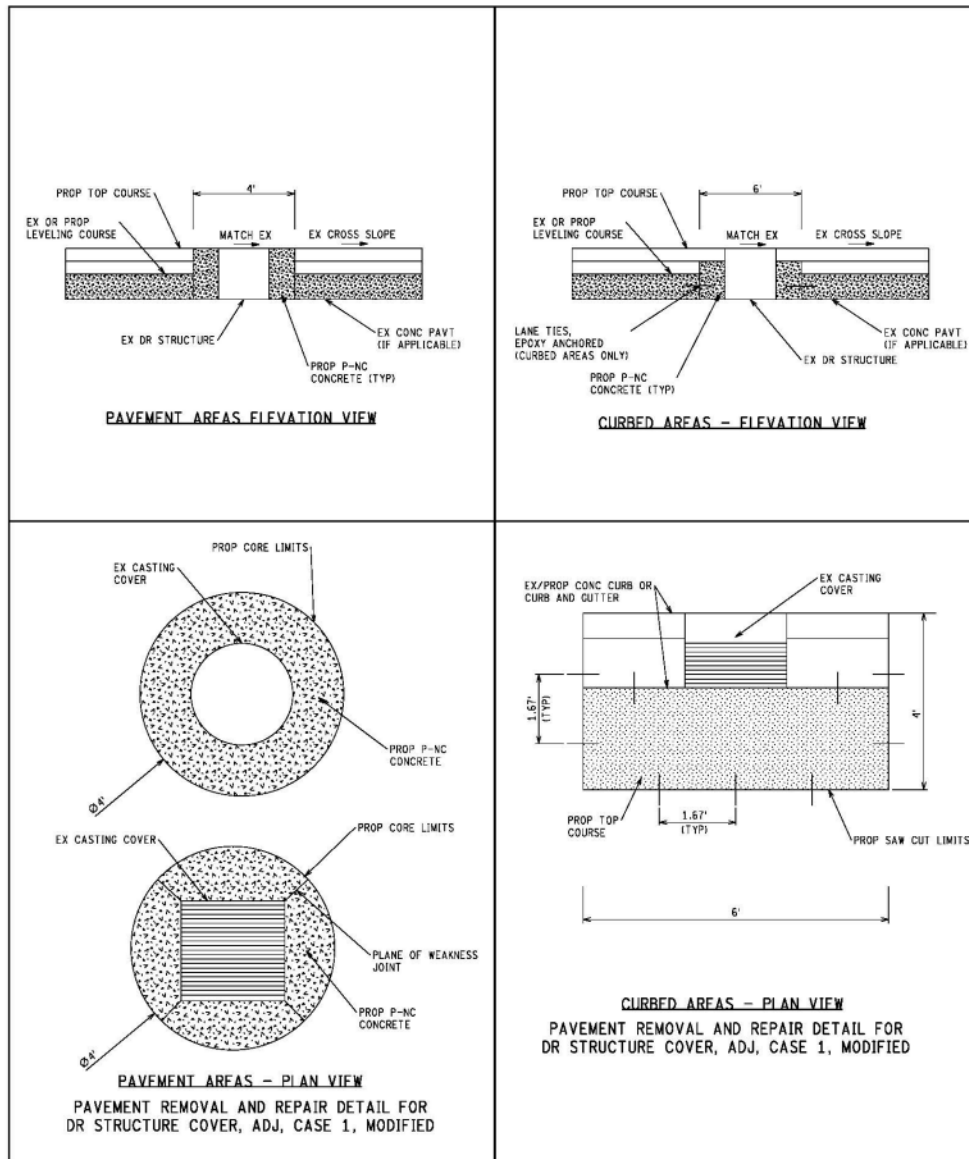
For structures within the pavement area, replace pavement around the frame with Concrete, Grade P-NC matching the finished elevation and cross-slope of the roadway. Construct plane of weakness joint as directed by the Engineer. For structures within the curb line, replace pavement around the frame with Concrete, Grade P-NC and HMA top course as shown in the detail. Install epoxy anchored lane ties to anchor the concrete to adjacent composite pavement for curb drainage structures located in curbed areas. Replace concrete, curb; concrete curb and gutter, or concrete traffic control islands "in-kind" in accordance with the Standard Plan R-30 Series and section 802 of the Standard Specifications for Construction.

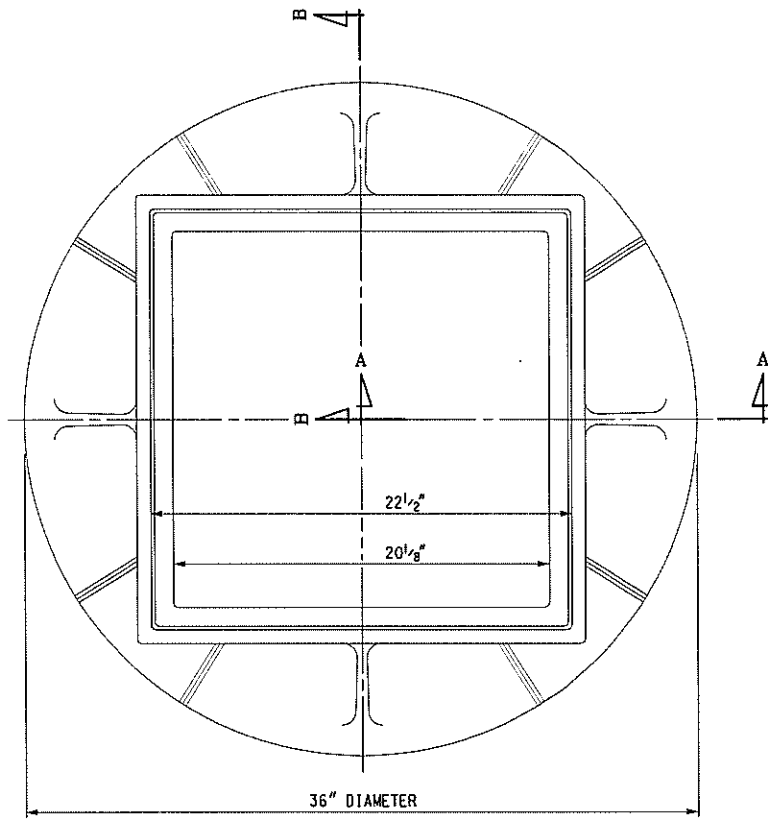
Immediately remove any debris that falls into the drainage structure due to Contractor operations.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

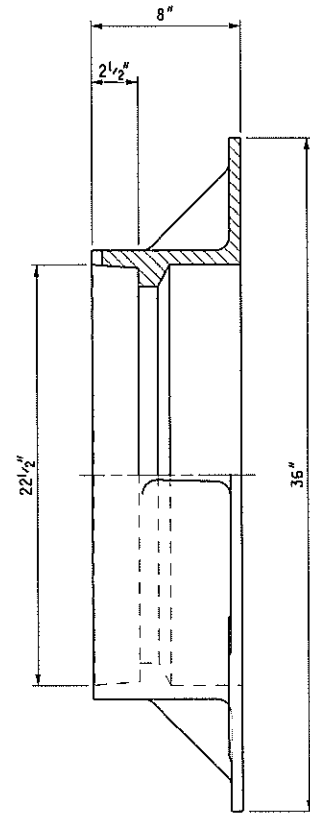
Pay Item	Pay Unit
Dr Structure Cover, Adj., Case 1, Modified	Each
Gate Valve, Box, Adj., Case 1, Modified.....	Each

Dr Structure Cover, Adj, Case 1, Modified & Gate Valve Box, Adj., Case 1, Modified includes furnishing all materials, saw cutting and removal of existing pavement , adjustment of cover to required elevation and cross-slope, placement and finishing of, placement and finishing of new concrete, placement and removal of temporary HMA wedging for maintaining traffic, if required, placement of cover to open structures to prevent accumulation of debris and cleaning existing drainage structure due to Contractor operations.

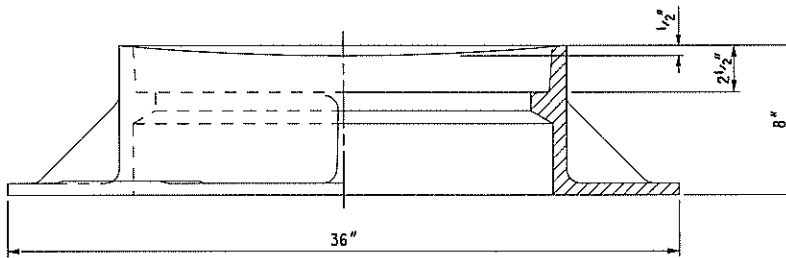




PLAN VIEW OF FRAME



SECTION B - B
HALF FRONT ELEVATION



HALF SIDE ELEVATION

SECTION A - A



PREPARED BY
DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Steudle

APPROVED BY: Randy V. [Signature]
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: Mark A. Van [Signature]
DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

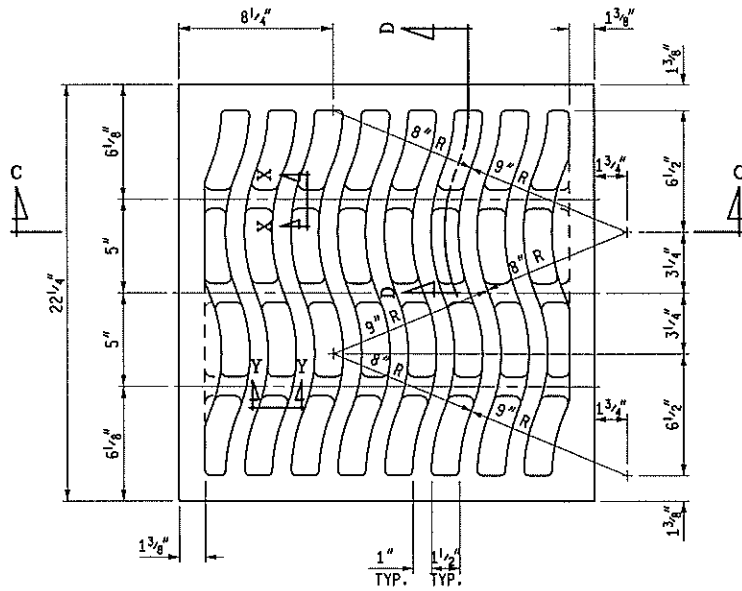
COVER D
FOR USE WITH
STRAIGHT CURB AND CURB & GUTTER

9-30-2014
F.H.W.A. APPROVAL

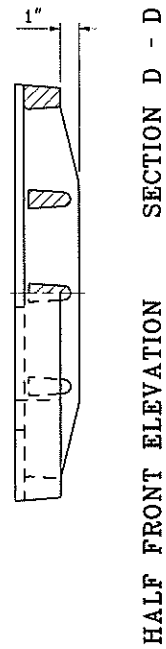
4-29-2014
PLAN DATE

R-9-D

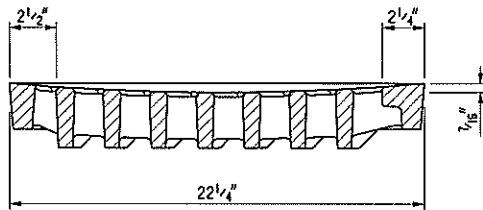
SHEET
1 OF 2



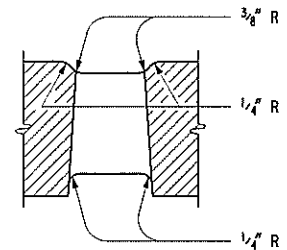
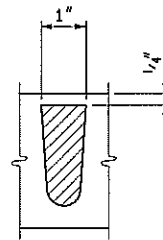
PLAN VIEW OF GRATE



HALF FRONT ELEVATION SECTION D - D



SECTION C - C



SECTION X - X SECTION Y - Y

NOTES:

THE CASTINGS SHALL MEET THE REQUIREMENTS OF THE CURRENT STANDARD SPECIFICATION FOR GRAY IRON CASTINGS.

ALL CASTINGS SHALL BE CLEANED BY CURRENT APPROVED BLASTING METHODS.

THE SEATING FACE OF THE GRATE AND THE SEAT FOR THE SAME ON THE FRAME AND THE CURB BOX SHALL BE GROUND SO THAT THE GRATE WILL HAVE AN EVEN BEARING ON ITS SEAT TO PREVENT ROCKING OR TILTING.

THE CASTINGS SHALL BE FREE OF POURING FAULTS, BLOW HOLES, CRACKS AND OTHER IMPERFECTIONS. THEY SHALL BE SOUND, TRUE TO FORM AND THICKNESS, CLEAN AND NEATLY FINISHED, AND SHALL BE COATED WITH COAL TAR PITCH VARNISH.

THIS COVER IS DESIGNED TO FIT ON ANY INLET, CATCH BASIN OR ON ANY EXISTING SIMILAR STRUCTURE WHEN SO DESIGNATED ON THE PLANS.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

COVER D
FOR USE WITH
STRAIGHT CURB AND CURB & GUTTER

9-30-2014 F.H.W.A. APPROVAL	4-29-2014 PLAN DATE	R-9-D	SHEET 2 OF 2
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TEST BORING LOCATION DIAGRAM

Project Name: 2022 Mason County Road Commission Test Borings -
Jebavy Drive

Location: Pere Marquette Township, Mason County, Michigan
Project Number: 2022.0355 Date: 05.10.2022

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



Not to Scale



TEST BORING LOCATION DIAGRAM

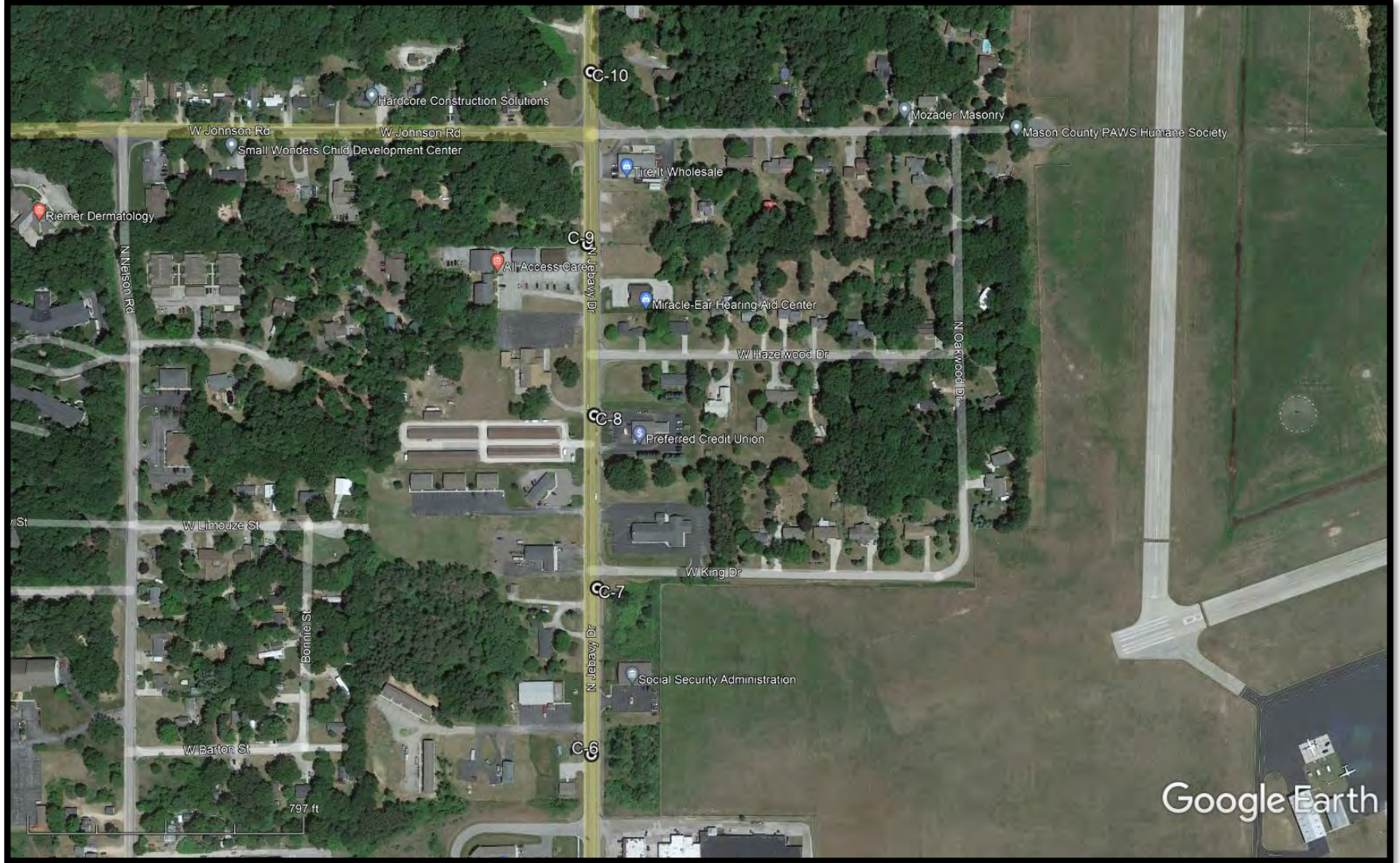
Project Name: 2022 Mason County Road Commission Test Borings -
Jebavy Drive

Location: Pere Marquette Township, Mason County, Michigan
Project Number: 2022.0355 Date: 05.10.2022

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



Not to Scale



TEST BORING LOCATION DIAGRAM

Project Name: 2022 Mason County Road Commission Test Borings -
Jebavy Drive

Location: Pere Marquette Township, Mason County, Michigan
Project Number: 2022.0355 Date: 05.10.2022

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



Not to Scale

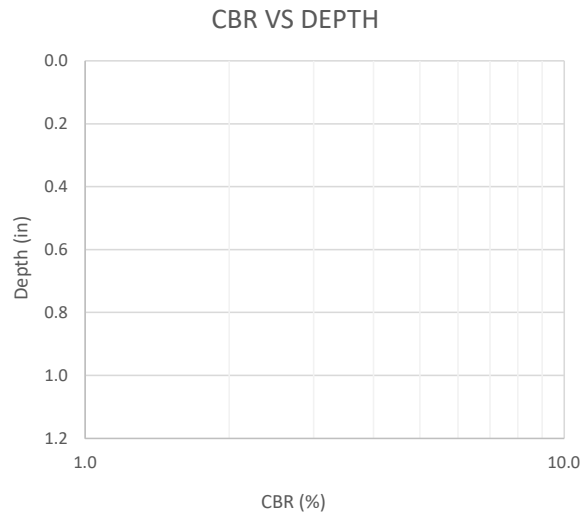




Boring ID _____ C-2

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commison
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	0.75	0.75	ASPHALT WEARING COURSE	
0.75	7	6.25	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and trace Silt, brown	SP
7	18	11	Fine SAND with Silt, brown	SP-SM
18	50	32	Fine Silty SAND, dark brown	SM

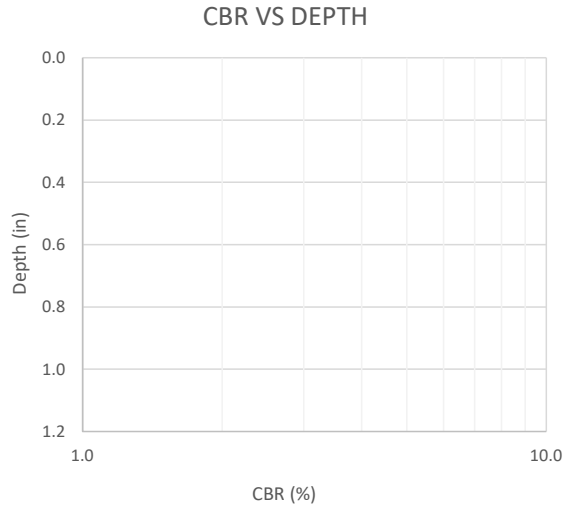
Comments: Groundwater encountered at 48". No DCP data.



Boring ID _____ B-4

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commission
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	1	1	ASPHALT WEARING COURSE - Intact	
1	3.5	2.5	ASPHALT LEVELING COURSE - Intact	
3.5	5.25	1.75	ASPHALT BASE COURSE - Intact	
5.25	10	4.75	AGGREGATE BASE - Fine-to-Coarse Silty SAND with Natural Gravel, brown	SM
10	50	40	Fine Silty SAND with trace Gravel, dark brown	SM

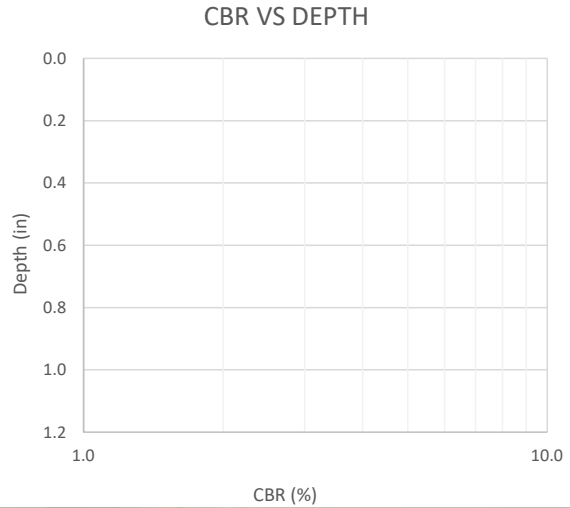
Comments: Groundwater encountered at 40". No DCP data.



Boring ID _____ C-5

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commison
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	0.5	0.5	ASPHALT WEARING COURSE - Intact	
0.5	1.75	1.25	ASPHALT LEVELING COURSE - Intact	
1.75	2.5	0.75	ASPHALT BASE COURSE - Intact	
2.5	7	4.5	AGGREGATE BASE - Fine-to-Coarse SAND with Crushed Gravel, gray	SP
7	11	4	ASPHALT MILLINGS, black	GP
11	50	39	Fine Silty SAND, brown	SM

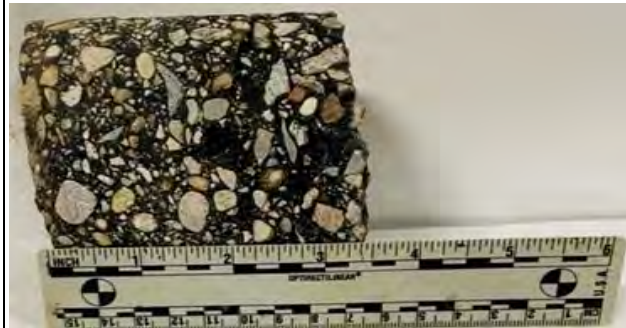
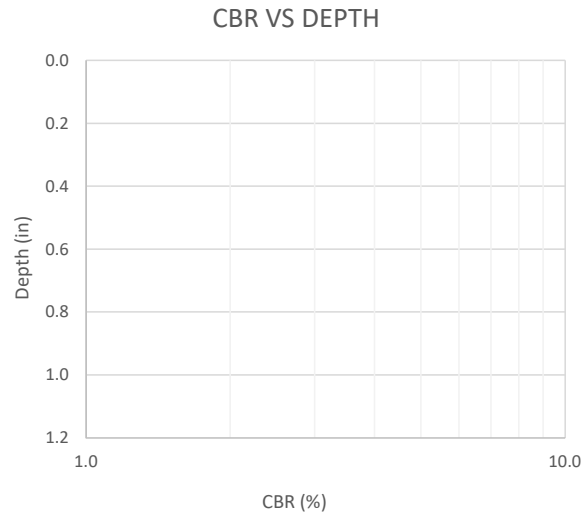
Comments: Groundwater encountered at 49". No DCP data.



Boring ID _____ C-6

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commison
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	0.75	0.75	ASPHALT WEARING COURSE - Intact	
0.75	2	1.25	ASPHALT LEVELING COURSE - Intact	
2	3.5	1.5	ASPHALT BASE COURSE - Intact	
3.5	7	3.5	AGGREGATE BASE - Fine-to-Coarse SAND with Crushed Gravel, gray	SP
7	11	4	Fine-to-Coarse Silty SAND with trace Gravel, brown	SM
11	50	39	Fine Silty SAND with trace Gravel, brown	SM

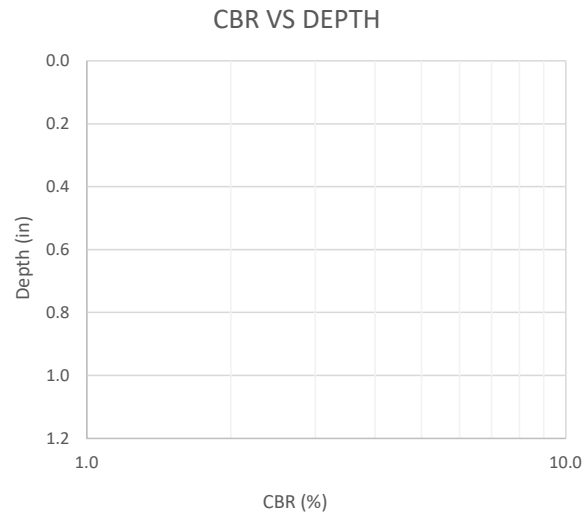
Comments: Groundwater encountered at 33". No DCP data.



Boring ID _____ C-7

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commison
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	0.25	0.25	CHIP SEAL	
0.25	1.75	1.5	ASPHALT WEARING COURSE - Intact	
1.75	3.5	1.75	ASPHALT LEVELING COURSE - Intact	
3.5	13	9.5	AGGREGATE BASE - Fine-to-Coarse SAND with Crushed Gravel, gray	SP
13	19	6	Fine-to-Coarse Silty SAND with Gravel, brown	SM
19	50	31	Fine Silty SAND, brown	SM

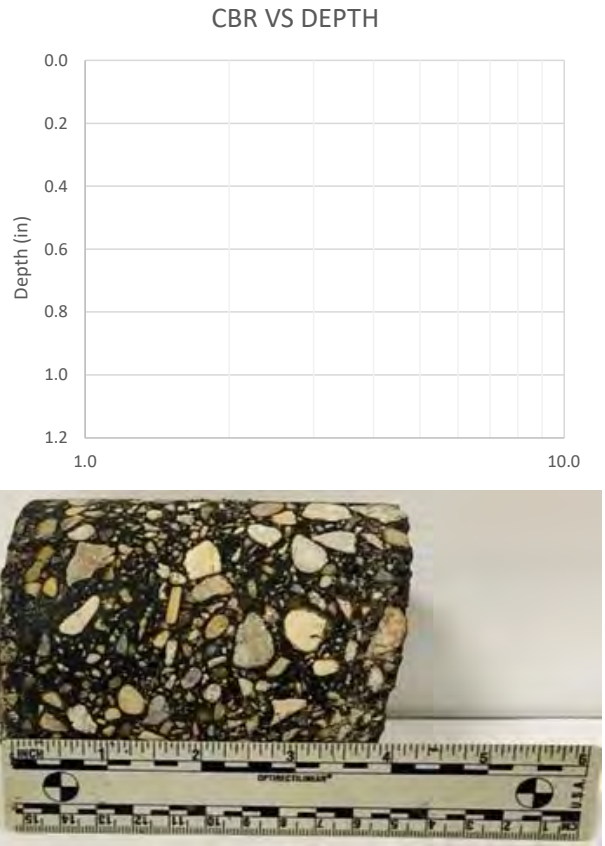
Comments: Groundwater encountered at 40". No DCP data.



Boring ID _____ C-8

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commison
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	0.5	0.5	CHIP SEAL	
0.5	2.5	2	ASPHALT WEARING COURSE - Intact	
2.5	4	2.5	ASPHALT LEVELING COURSE - Intact	
4	12	8	AGGREGATE BASE - Fine-to-Coarse SAND with Crushed Gravel, gray	SP
12	50	38	Fine SAND with Silt and trace Natural Gravel, dark brown	SP-SM

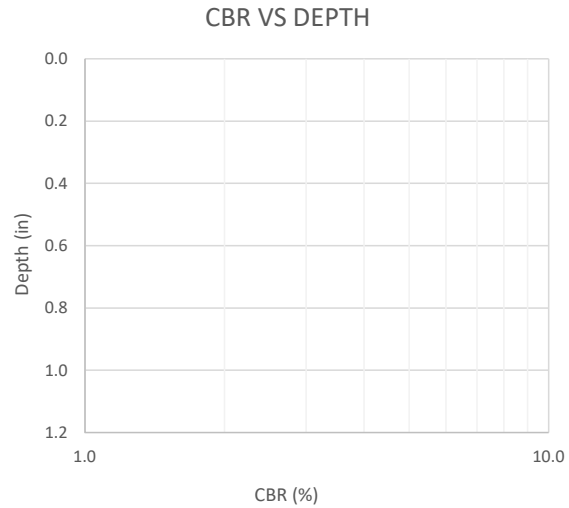
Comments: No groundwater encountered. No DCP data.



Boring ID _____ C-9

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commission
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	0.25	0.25	CHIP SEAL	
0.25	2	1.75	ASPHALT WEARING COURSE - Intact	
2	3.5	1.5	ASPHALT LEVELING COURSE - Intact	
3.5	18	14.5	AGGREGATE BASE - Fine-to-Coarse SAND with Crushed Gravel, gray	SP
18	50	32	Fine-to-Coarse Silty SAND, light brown	SM

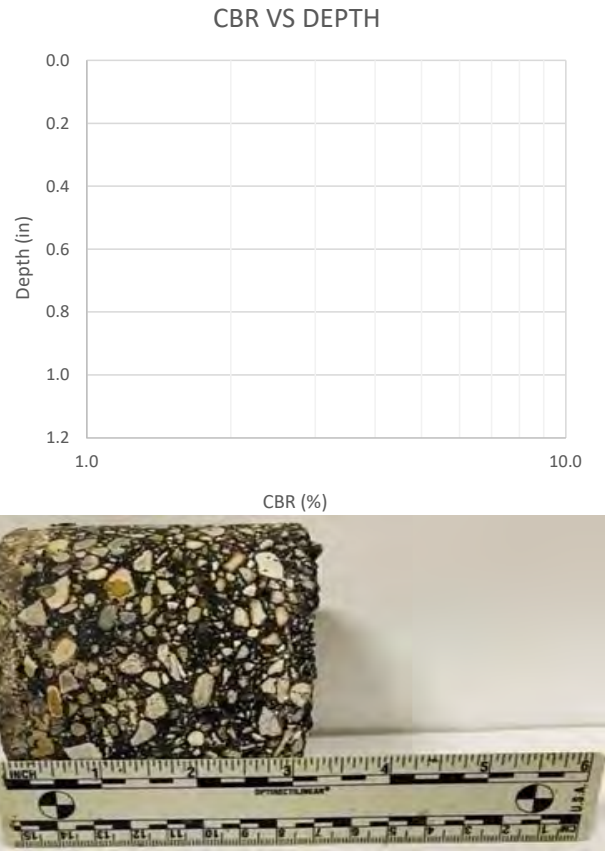
Comments: No groundwater encountered. No DCP data.



Boring ID _____ C-10

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commison
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	0.25	0.25	CHIP SEAL	
0.25	2	1.75	ASPHALT WEARING COURSE - Intact	
2	3.25	1.25	ASPHALT LEVELING COURSE - Intact	
3.25	14.5	11.25	AGGREGATE BASE - Fine-to-Coarse SAND with Crushed Gravel, gray	SP
14.5	33	18.5	Fine-to-Coarse Silty SAND with Gravel, brown	SM
33	50	17	Fine SAND with Silt, light brown	SP-SM

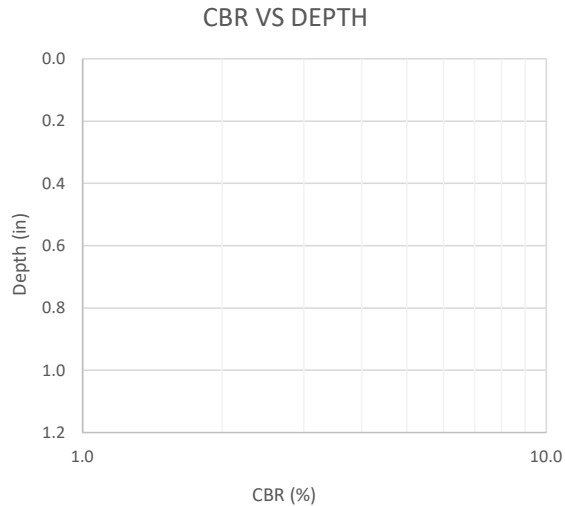
Comments: No groundwater encountered. No DCP data.



Boring ID _____ C-11

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commison
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	0.25	0.25	CHIP SEAL	
0.25	1.75	1.5	ASPHALT WEARING COURSE - Intact	
1.75	3.25	1.5	ASPHALT LEVELING COURSE - Intact	
3.25	11.5	8.25	AGGREGATE BASE - Fine-to-Coarse SAND with Crushed Gravel, gray	SP
11.5	50	38.5	Fine Silty SAND with trace Clay and Natural Gravel, brown	SP-SM

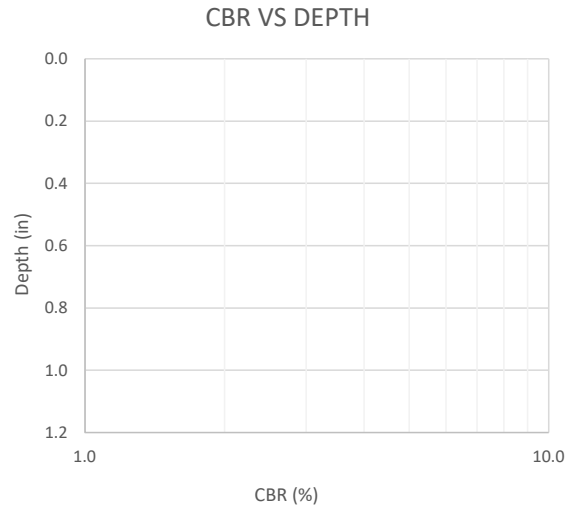
Comments: No groundwater encountered. No DCP data.



Boring ID _____ C-12

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commison
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	0.25	0.25	CHIP SEAL	
0.25	2.5	2.25	ASPHALT WEARING COURSE - Intact	
2.5	4	2.5	ASPHALT LEVELING COURSE - Intact	
4	12.5	8.5	AGGREGATE BASE - Fine-to-Coarse SAND with Crushed Gravel, gray	SP
12.5	21	8.5	Fine-to-Coarse Silty SAND with Gravel, brown	SM
21	50	29	Fine Silty SAND with Clay, brown	SP-SC

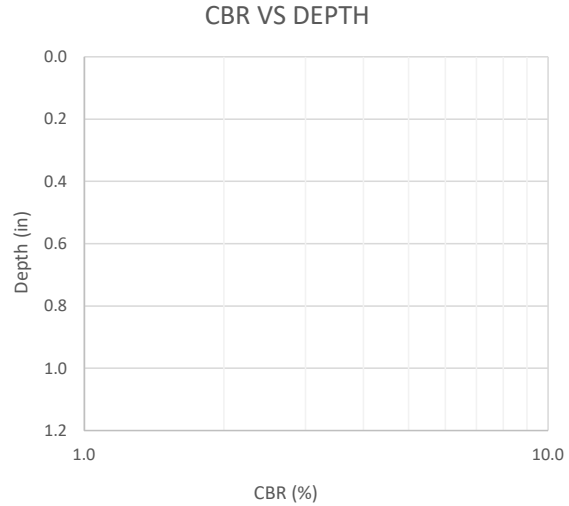
Comments: No groundwater encountered. No DCP data.



Boring ID _____ C-13

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commison
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	0.25	0.25	CHIP SEAL	
0.25	1.5	1.25	ASPHALT WEARING COURSE - Intact	
1.5	3	1.5	ASPHALT LEVELING COURSE - Intact	
3	10	7	AGGREGATE BASE - Fine-to-Coarse SAND with Crushed Gravel, gray	SP
10	50	40	Fine Silty SAND with Gravel, brown	SM

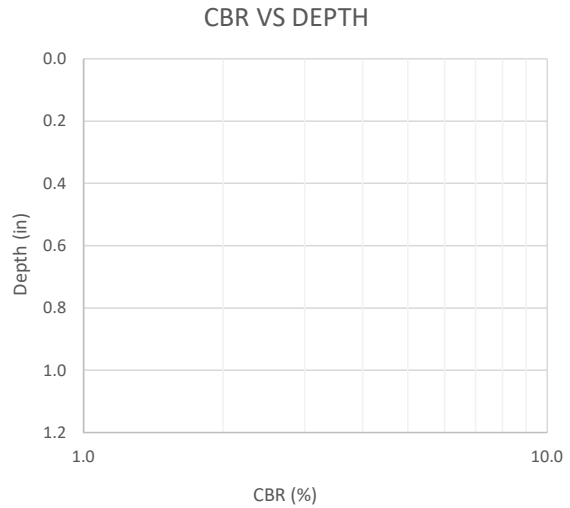
Comments: No grounwater encountered. No DCP data.



Boring ID _____ C-14

Project Name 2022 Mason County Road Commission Test Borings
 Project Number 2022.0355
 Date 5/10/2022
 Client Mason County Road Commison
 Boring Type Geoprobe®
 Location Jebavy Drive - See BLD

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %



From (in.)	To (in.)	Thickness (in.)	Description	Classification
0	0.25	0.25	CHIP SEAL	
0.25	1.75	1.5	ASPHALT WEARING COURSE - Intact	
1.75	3.5	1.75	ASPHALT LEVELING COURSE - Intact	
3.5	13	9.5	AGGREGATE BASE - Fine-to-Coarse SAND with Crushed Gravel, gray	SP
13	34	21	Fine Silty SAND with trace Clay and Natural Gravel, brown	SM
34	36	2	ASPHALT MILLINGS, black	GP
36	50	14	Fine Silty SAND, brown	SM

Comments: No groundwater encountered. No DCP data.