Wade Williams
Mark W. Hoffman
Frank Zulski, Jr.
Brent Shank, PE
Engineer-Manager
Lisa Kleeman
Finance Director



2265 E. Hathaway Road Harbor Springs, MI 49740 Office: (231) 347-8142 Fax: (231) 347-5787 www.emmetcrc.org

PROPOSAL

Project: A460.4124 – Lake Shore Drive over Wycamp Creek Triple Span Bridge Installation

Description: Soil Erosion Preventative Measures, Clearing, HMA Surface Removal, Remove Existing

Culvert, Excavate for Timber Structure Assembly, Construct Timber Structure, Backfill Structure, Subbase, Embankment, Aggregate Base, Fieldstone Riprap, HMA Paving,

Guardrail, Slope Restoration, and Traffic Control

The Emmet County Road Commission will accept Bids until **9:00 a.m.** local time on **February 5, 2024** at: 2265 E. Hathaway Road, Harbor Springs, MI 49740. Bid packages are available at the Emmet County Road Commission Office or on Emmet County Road Commission website at www.emmetcrc.org.

ALL BIDS WILL BE SEALED AND PLAINLY MARKED AS TO THE PROJECT AND PROJECT NUMBER.

The bidder has examined the plans, specification, special provisions and related materials in the proposal, as well as the location of the work described in the proposal for this project, and is fully informed as to the nature of the work and conditions relating to its performance and understands that the quantities shown are approximate only and are subject to either increase or decrease.

The bidder hereby proposes to furnish all necessary machinery, tools, apparatus and other means of construction, do all the work, furnish all the materials except as otherwise specified and, or each unit price, lump sum, or one each named in the itemized bid, to complete the work in strict conformity with the plans therefore and the entire proposal which is incorporated by reference in these pages, and in strict conformity with the requirements of the 2020 Standard Specifications for Construction, Michigan Department of Transportation and such other special provisions and supplemental specifications as may be part of the proposal for this project.

The bidder further proposes to do such extra work as may be authorized by the Emmet County Road Commission, prices for which are not included in the itemized bid. Compensation shall be made on the basis agreed upon before such extra work is begun.

THE BIDDER UNDERSTANDS AND AGREES THAT THE EMMET COUNTY ROAD COMMISSION RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS; TO WAIVE IRREGULARITIES OR INFORMALITIES; AND NO CONTRACTUAL RELATIONSHIP SHALL EXIST BETWEEN THE BIDDER AND THE EMMET COUNTY ROAD COMMISSION FOR THE WORK DESCRIBED HEREIN UNTIL SUCH TIME AS THE CONTRACT HAS BEEN FORMALLY EXECUTED BY BOTH THE BIDDER AND THE EMMET COUNTY ROAD COMMISSION.

Lake Shore Drive over Wycamp Creek Triple Span Bridge Installation

Project Information:

Job Number: A460.4124

Job Location: Lake Shore Drive, 0.15 miles north of Chippewa Drive, or 0.54 miles south of Wycamp Road

Type of Work: Soil Erosion Preventative Measures, Clearing, HMA Surface Removal, Remove Existing Culvert,

Excavate for Timber Structure Assembly, Construct Timber Structure, Backfill Structure, Subbase, Embankment, Aggregate Base, Fieldstone Riprap, HMA Paving, Guardrail, Slope

Restoration, and Traffic Control

Owner: Emmet County Road Commission

Project Dates:

Project Start Date: August 1, 2024

Project Completion Date: October 15, 2024 (All Project Items)

The project shall be completed within sixty (60) days of starting date.

A pre-construction meeting will be scheduled by the Emmet County Road Commission prior to project start. All project submittals are to be submitted for review at this meeting.

Project Coordination:

Contractor shall coordinate all work with adjacent project contractor. This project and work must be scheduled to not cause delays in the Lake Shore Drive project (Federal Aid, MDOT), Cross Village to W. Sturgeon Bay Trail, Summer of 2024. It is anticipated that the Lake Shore Drive project will be completed or near completion by August 1, 2024.

Funding Sources

Project Scope

This project is funded by the Little Traverse Bay Bands of Odawa Indians. All federal-aid project rules are in effect for the project.

Pre-Construction Meeting

A Pre-Construction meeting will be scheduled prior to the start of work at the Road Commission office. The Contractor is expected to attend and provide sub-contractor documentation needed for a typical

federal-aid project.

<u>Additional Instruction</u>

The Contractor must assure prevailing wage rates are in effect. Typical federal-aid submittals are to be sent to Engineer for submittal to the Bureau of Indian Affairs for payroll requirements.

Indian Preference

The Contractor agrees to give preference to American Indians who can perform the work required, and to the extent feasible consistent with training opportunities, regardless of age (subject to existing laws and regulation), sex, religion, or tribal affiliation, for training and employment opportunities under this contract. The Contractor also agrees to give preference to Indian organizations, and Indian-owned economic enterprises in the awarding of any subcontracts consistent with the efficient performance of this contract. The Contractor shall maintain and provide to Bureau's Contracting Officer, such records as are necessary to indicate compliance with this paragraph, if requested.

Contractor Payment

The Contractor shall make bi-weekly payment requests after the project starts. The Road Commission will forward the Contractor payment request to the Little Traverse Bay Bands of Odawa Indians (LTBB) for processing. Once the LTBB has forwarded the payment to the Emmet County Road Commission, the Emmet County Road Commission will reimburse the Contractor after the Board approves the payment at the next Road Commission Board meeting after receiving the funding from the BIA.

The NRCS requires the Contractor to attend a pre-construction meeting. In the pre-construction meeting, the Contractor needs to supply a Stream Diversion plan to satisfy NRCS requirements.

Contractor Payment

Payment will not be authorized until ECRC has been reimbursed by the C.R.A./N.R.C.S./Tribe/etc.

Build America, Buy America Act:

This project is subject to The Build America, Buy America Act requires that all of the iron, steel, manufactured products, and construction materials used in infrastructure projects are produced in the United States.

Project Submittals:

The following shall be submitted to the Road Commission Engineer for approval prior to project start:

- 1. Material Source List (MDOT Form 501)
- 2. Progress Schedule (must be submitted within 5 days of Contract award)
- See the Special Provision for Acceptance of HMA Mixtures on Township Projects for submittal requirements (must be submitted prior to paving)
- 4. Damage Claim Program
- 5. Traffic Control Plan

Upon project completion, the Contractor shall submit a written "Notice of Completion" to the Engineer. After the Engineer receives the Notice of Completion, the Engineer will inspect the project. The Engineer will provide a list of any deficient items (Punch List) to the Contractor. Final acceptance will only be issued when any deficient items are addressed to the satisfaction of the Engineer. Final acceptance will be provided to the Contractor in writing.

Project Coordination:

No work shall start until the Timber Bridge Materials have been delivered to the Road Commission or to the site.

The Timber Bridge Materials will be delivered to the Road Commission Garage at 2265 E. Hathaway Road, Harbor Springs, MI 49740 or to the site (will be determined based on contractor's schedule). It will be the Contractors responsibility to haul and unload timber structure from the Road Commission to the project. ECRC Staff will load the timber structure for Contractor at the Road Commission Garage. This Item of work to paid for as part of **Mobilization**.

Contractor shall coordinate all work with Emmet County Road Commission Project Manager, Travis L. Horrocks. Contractor shall notify the Project Manager a minimum of 14 calendar days prior to mobilizing to project site.

Timber Bridge Installation:

Contractor to install timber piles and construct a Triple Span Timber Bridge in accordance with the Manufacturer's instructions, recommendations, and guidelines.

Construction methods must be in accordance with sections 704 & 709 of the MDOT 2020 Standard Specifications for Construction.

All Labor, Equipment, and materials necessary to excavate, dewatering, install timber piles construct Triple Span Timber Bridge shall be paid for as **Structure**, **Timber (1 LSUM)**.

Aggregate Base:

Aggregate base shall meet MDOT specifications. The Contractor shall provide a scale ticket for each load delivered to the job to the job at the time of delivery or at the end of the day to the owner's representative. All scale tickets shall meet MDOT requirements. The Contractor shall provide current scale certification to the Road Commission prior to hauling material. Loader scales will not be accepted.

Aggregate base material shall be a Dense-Graded Aggregate 21AA.

Aggregate Base Fine Grading:

Unless otherwise approved by the Engineer, The HMA Paving Contractor shall be required to provide fine grading of the Aggregate Base prior to paving.

HMA Paving:

See the attached Special Provision for Acceptance of HMA Mixture for HMA mixture specifications.

See Page 3 of 10 of plan set for HMA Application Estimate.

Driveways:

The Contractor is responsible to ensure positive drainage in all approaches. The Contractor will be responsible for repairing, at the Contractor's expense, standing water or other drainage related issues.

The Contractor shall be responsible to maintain access to driveways after paving. On any driveway that has more than 4 inches of drop off the Contractor shall provide a gravel apron that reduces the drop off to a maximum of 4 inches on the day of paving or the next calendar day. If the Contractor fails to provide such access, the Road Commission will levy liquidated damages of \$200.00 per calendar day that a drop off exceeds 4 inches in any driveway.

Gravel Driveways:

Place Approach, Cl II material in gravel driveway, driveways shall be blended approximately 10.0' from the edge of the roadway to a slope no greater than 10%, or as directed by the Engineer.

Gravel Shoulders:

Contractor shall place ShId, CI II material 2.0 feet wide or as specified by the engineer. When placing shoulder aggregate, material shall be placed directly on the shoulder. Shoulder material may <u>not</u> be placed on the asphalt. Shoulder material shall be flushed to the edge of pavement and match cross slope of road. Shoulders shall be wheel rolled with heavy equipment for density. The Contractor is responsible to ensure positive drainage on gravel shoulders. The Contractor will be responsible for repairing, at the Contractor's expense, standing water or other drainage related issues.

Shld, Cl II material shall be a Dense-Graded Aggregate, 23A or 23AA.

The Contractor shall provide a scale ticket for each load delivered to the job at the time of delivery or at the end of the day to the owner's representative. All scale tickets shall meet MDOT requirements. The Contractor shall provide current scale certification to the Road Commission prior to hauling material. Loader scales will not be accepted. Any exceptions shall be noted on the bid sheet for the project.

The Contractor shall schedule shoulder material placement in a timely manner to reduce the time that an edge drop off exists. The Contractor shall place shoulder material within 7 calendar days of paving completion. If the Contractor fails to place shoulder material, the Road Commission will levy liquidated damages of \$200.00 per calendar day that the edge drop off exists.

Guardrail:

Guardrail post shall be 8' minimum in length. Curved guardrail must be verified by the contractor before installation to insure proper radius.

Restoration Items:

Slope Restoration, Non-Freeway, Type B will be replaced with the attached Special Provision for Slope Restoration.

When placing the topsoil, material shall be placed directly on the shoulder. Topsoil material may <u>not</u> be placed on the asphalt. Shoulder material shall be flushed to the edge of gravel shoulder and blended to the existing shoulder on the outside. Topsoil shall be wheel rolled with heavy equipment for density.

A sample fertilizer bag and seed ticket, from the materials used on the project, must be submitted to the Engineer within 7 days of completion of restoration.

Seed Mixture shall be TDS or equivalent.

Place Mulch and Mulch Anchoring on all topsoil surfaces. Mulch material shall be straw.

Culverts, driveways, spillways and riprap shall be free and clean of straw upon completion of mulching activities.

Traffic Control:

Traffic shall be maintained during the project using a detour, see page 9 of 10 of plan set. The Contractor shall coordinate operations with contractors performing work on other projects within or adjacent to the Construction Influence Area (CIA).

The Construction Influence Area for this project shall consist of the width of the project right of way, and the width of the right of way on intersecting roads, from a point where advance construction warning signing begins to a point where it ends.

At no time may Traffic Control Stop and Hold traffic, including loaded & unloaded asphalt trucks on the new HMA surface.

Advanced Warning signs shall be in place before any work begins.

Traffic will be maintained by the Contractor in accordance with the 2011 Michigan Manual of Uniform Traffic Control Devices.

Utilities:

The following utilities are located in or near the right-of-way for this project:

AT&TDTECHARTER COMMUNICATIONSJeff CollardMatt LoganConstruction Coordinator(231) 347-8010(231) 258-3785(616) 402-2700

GREAT LAKES ENERGYTRUE STREAMWilliam LaTourneauJeff Wilhelm(231) 487-1339(231) 487-1356

The existing utilities listed above and, on the plans, represent the best information available. This information does not relieve the Contractor of the responsibility to be satisfied as to its accuracy and the location of existing utilities.

For protection of underground utilities, and in compliance with Public Act 174, 2013, the Contractor shall call toll free 1-800-482-7171, or 811, a minimum of three (3) full working days, excluding Saturdays, Sundays and Holidays, prior to beginning excavation in areas where public utilities have not been previously located. All "MISS DIG" participating members will be thus routinely notified. This does not relieve the Contractor from notifying utility owners who may be a part of the "MISS DIG" system.

General Note:

All work being performed will be conducted in the safest manner possible and appropriate PPE shall be used at all times. All work shall be done in accordance with the Michigan Department of Transportation 2020 Standard Specification for Construction. Contractor assumes all responsibilities for Quality Control (QC) to assure the plans and specifications are met per the contract and to provide professional craftsmanship in each task being performed. Any errors in plans or discrepancies found in the field shall be brought to the engineer's attention immediately. All materials shall meet the requirements of the Michigan Department of Transportation Materials Source Guide.

Insurance Requirements:

The Contractor shall furnish proof of general liability insurance in amounts not less than \$2,000,000 each occurrence and general aggregate, proof of automobile liability in amounts not less than \$2,000,000 combined single limit for each accident, bodily injury per accident, and property damage per accident, and in amount not less than \$1,000,000 for bodily injury per person. Such proof of insurance shall include a valid certificate of insurance demonstrating that the Emmet County Road Commission is additional insured party on the policy. Such insurance shall cover a period not less than the term of the project and shall provide that it cannot be cancelled without 30 days advanced written notice to the Emmet County Road Commission, by certified mail, first class, return receipt requested. The Contract/Project Agreement will be invalid if insurance expires during the authorized period of work described.

In addition to any liability or obligation by the Contractor that may otherwise exist, Contractor shall, to the fullest extent permitted by law, indemnify and hold harmless the Emmet County Road Commission and its commissioners, officers, agents and employees from and against any and all claims, actions, proceedings, liabilities, losses, and damages thereof, and any and all costs and expenses, including legal fees, associated therewith which the Emmet County Road Commission may sustain by reason of claims for or allegations of negligence or violation of the terms and conditions of the Contract/Project Agreement, arising out of the work which is subject of the Contract.

Bonding Requirements:

Bonding is not required for projects under \$50,000.00

The successful Contractor shall furnish a performance bond equal to the contract price as assurance for faithful contract performance.

The Contractor shall also furnish a separate *surety bond* equal to the contract price as security for payment to all persons performing labor and furnishing materials in connection with this contract. The Contractor shall pay the premium for all bonds.

The bonds must meet requirements of Michigan Law.

Bonds shall be submitted and approved before contract execution.

Liquidated Damages:

Liquidated damages will be assessed for failure to complete this project by the specified date, or by the allowed number of days specified once work begins, due to lack of effort, poor organization or ability to perform on the Contractor's part. Liquidated Damages may be waived by the Project Engineer. Liquidated damages will be assessed according to the table below:

Project Award Amount	Liquidated Damages
\$0 - \$150,000	\$500 per Calendar Day
\$150,001 - \$500,000	\$750 per Calendar Day
Over \$500,000	\$1,000 per Calendar Day

Soil Erosion and Sediment Control (SESC):

The Contractor shall implement and maintain the soil erosion control measures as shown on the plans before and at all times during construction of this project. All SESC measures shall conform to current MDOT standards, manufacture guidelines and established best practices.

Daily inspections shall be made by the Contractor; periodic inspections shall be made by the Engineer to determine the effectiveness of the SESC measures. Any required corrections shall be made without delay.

All permanent erosion control measures shall be permanently maintained by the Emmet County Road Commission.

Bid Sheet

Board of Emmet County Road Commissioners 2265 East Hathaway Road Harbor Springs, MI 49740

Gentlemen:

The undersigned proposes to furnish any and all materials, labor, and equipment necessary for the reconstruction of Lake Shore Drive over the Wycamp Creek Triple Span Timber Bridge Installation as spelled out in the "Invitation to Bid" for the prices below.

The Emmet County Road Commission reserves the right to reject any and/or all bids based on what is in the best interest of Emmet County.

Contractor N	ame:
Project:	
	A460.4124 – Lake Shore Drive over the Wycamp Creek Triple Span Timber Bridge Installation

Item	Quantity	Unit	Unit Price	Total
Mobilization, Max \$55000	1	LSUM		
Clearing	0.5	Acre		
Culv, Rem, Over 48 inch	1	Ea		
Embankment, CIP	1000	Cyd		
Excavation, Channel	1000	Cyd		
Backfill, Structure, CIP	600	Cyd		
Excavation, Fdn	600	Cyd		
Erosion Control, Filter Bag	2	Ea		
Erosion Control, Maintenance, Sediment Removal	10	Cyd		
Erosion Control, Silt Fence	600	Ft		
Erosion Control, Turbidity Curtain, Shallow	35	Ft		
Subbase, CIP	400	Cyd		
Aggregate Base, 6 inch	1400	Syd		
Maintenance Gravel	5	Ton		

Approach, Cl II, 6 inch	50	Syd	
Shld, Cl II, 3 inch	50	Syd	
HMA Surface, Rem	1040	Syd	
Pavt for Butt Joints, Rem	10	Syd	
HMA, 4EL	350	Ton	
Structure, Timber	1	LSUM	
Curb Slp, HMA	260	Ft	
Guardrail, Type MGS-8	300	Ft	
Guardrail, Curved, Type B	12.5	Ft	
Guardrail Anch, Bridge, Det T3	4	Ea	
Guardrail Approach Terminal, Type 2M	3	Ea	
Guardrail Departing Terminal, Type B	1	Ea	
Guardrail Reflector	15	Ea	
Post, Steel, 3 pound	16	Ft	
Sign, Type IIIB	16	Sft	
Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	11	Ea	
Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	11	Ea	
Minor Traf Devices	1	LSUM	
Sign, Type B, Temp, Prismatic, Furn	332	Sft	
Sign, Type B, Temp, Prismatic, Oper	332	Sft	
Sign, Type B, Temp, Prismatic, Spec, Furn	52	Sft	
Sign, Type B, Temp, Prismatic, Spec, Oper	52	Sft	
Traff Regulator Control	1	LSUM	
Riprap, Fieldstone	450	Syd	
Instream Material, Near Structures	125	Ton	
Instream Material, Boulders	150	Ton	
Paved Ditch, HMA	25	Syd	
Slope Restoration	700	Syd	

Hydrant, Rem	1	Ea			
		TOTAL PRO	JECT COST ESTIN	ЛАТЕ =	
Bidder:		Addres	s:		_
Signature:		Phone	No.:		-
Printed Name:		Date:			
Title:		Email:			

Emmet County Road Commission Special Provision For HMA Mixture Acceptance

ECRC: RBS 01/03/22

a) Description

This Special Provision provides acceptance-testing requirements for use on this project. The HMA mixture shall be provided to meet the requirements of the standard specifications for construction except where modified herein. The HMA mixture quality assurance and acceptance shall conform to Section 501 of the 2020 Michigan Department of Transportation Standard Specifications for Construction except where modified herein. The MDOT HMA Production Manual, current edition, applies to this work.

b) Submittals

The contractor shall submit the following:

- 1. Job Mix Formula (MDOT Form 1911 or equivalent) for the project for review and approval by the Engineer. The Contractor shall not place any HMA without an approved JMF. Below are specific values that are required on the JMF (in addition to the normal requirements).
 - a. Fine Aggregate Angularity
 - b. RAP Tiering based on JMF values
 - c. Fines to Asphalt Ratio (based on Effective Asphalt Content)
 - d. Soft Particle Percentage of each JMF Aggregate Type
- 2. Quality Control Plan.
- 3. A copy of all Contractor Quality Control Tests submitted within 7 working days of projection completion.
- 4. A copy of the Bill of Lading or Delivery Ticket for the Asphalt Binder for the project. The Bill of Lading must include the type of material that was previously hauled in the delivery tank.

c) **Materials**

Aggregates, mineral filler (if required), and asphalt binder shall be combined as necessary to produce a mixture proportioned within the master gradation limits and meeting the uniformity tolerances listed Table 1 and the quality assurance testing tolerances in Table 2 of this special provision. The master gradation range is to be used for establishing mix design only. Topsoil, clay or loam shall not be added to aggregates used in plant produced HMA mixtures.

The Maximum Percentage of Soft Particles for any given HMA mixture shall be 5%. The Minimum Fine Aggregate Angularity for any given HMA mixture shall be 40.0. The Minimum Crush Percentage for 4EL and 5EL HMA mixtures shall be 65%.

Table A: HMA Mixture Targets and Parameters

HMA Mix Type	VMA Minimum on any given Test (a,c)	VMA Target (c)	Asphalt Binder Content Minimum on JMF	Asphalt Binder Content Minimum on any given Test (a)	Fines to Asphalt Ratio Maximum on JMF (b)
4EL	14.0	Based on mix design	5.80	5.50	1.10
5EL	15.0	parameter, the contractor shall establish & state their	6.10	5.80	1.10
Ultra- Thin	15.5	VMA Target on their mix design JMF, and shall adhere to the VMA Min. requirements	6.00	5.70	1.20

- a. The HMA parameter minimum is per any given QC/QA test, regardless of Tolerances listed in Table 2 of this Special Provision.
- b. Value based on Pbe (Effective Asphalt Percent) for each given mix and JMF.
- c. VMA values are based on the Gsb (Bulk Specific Gravity) of the given HMA mixture not the Gse (Effective Specific Gravity).

Table B: HMA Mixture Targets and Parameters Cont'd (Ultra-Thin)

incters cont a fort
4.5
35
40.0
50.0
220
Total %
i Otal 70
Passing
10001171
Passing
Passing 100
Passing 100 99-100
Passing 100 99-100 75-95

d) Asphalt Binder

Liquid Asphalt Binder shall be a Performance Graded (PG) binder as specified in the bid HMA Application Table in the bid specifications and/or as included on the plans. If not specified, then the following apply:

Table C: Asphalt Binder Selection

4EL	PG 58-28
5EL	PG 58-28
Ultra-Thin	PG 58-28

e) Air Voids

Design Air Voids shall be 4.0% and shall be regressed to 3.0% in production by the addition of virgin liquid asphalt (4EL and 5EL).

f) Recycled Asphalt Materials

Recycled Asphalt Shingles (RAS) will not be allowed in the HMA Mixtures.

Recycled Asphalt Pavement (RAP) is allowed in the HMA mixtures subject to the following requirements. Binder replacement will be determined by weight. *The use of Reclaimed Asphalt Pavement (RAP) shall be limited to Tier 1 (0% to 17%) RAP binder by weight of the total binder in the mixture, for all mixes (4EL, 5EL, and Ultra-Thin).*

Tier 1 – 0.0% to 17.0% RAP binder by weight of the total binder in the mixture

No binder grade adjustment is required to compensate for the stiffness of the asphalt binder in the RAP.

g) Construction

After the Job Mix Formula is established, the aggregate gradation of the HMA mixture furnished for the work shall be maintained within the Range 1 uniformity tolerance limits permitted for the job-mix-formula specified in Table 1. However, if deviations are predominantly below or above the job-mix-formula, the Engineer may order alterations in the plant to bring the mixture to the job-mix-formula. If two consecutive aggregate gradations on one sieve as determined by the field tests are outside Range 1 but within Range 2 tolerance limits, the Contractor shall suspend all operations. Contract time will continue during these times when the plant is down. Before resuming any production, the Contractor shall propose, for the Engineer's approval, all necessary alterations to the materials or plant so that the job-mix-formula can be maintained. The Engineer, after evaluating for effects on AWI and mix design properties, will approve or disapprove such alterations.

The crushed particle content of the aggregate used in the HMA mixture shall not be more than 10 percentage points below the crushed particle content used in the job-mix-formula nor less than the minimum specified for the aggregate in the project documents.

Random Liquid Asphalt Binder samples will be witnessed by the Engineer or Consulting Firm. The Engineer reserves the right to test any or all samples taken.

Quality Assurance and Acceptance testing will be as follows:

1. Asphalt Mixture Sampling

Acceptance sampling and testing will be performed by the Engineer using the sampling method and testing option agreed upon by the Engineer and Contractor. Each day of production, random samples will be obtained for each mix type. Acceptance testing will be performed at a frequency specified by the Engineer.

For each given day of production, if the daily mix tonnage per HMA mix type is under 500 tons, the Engineer reserves the right to test one sample and obtain a second sample for future testing if necessary. If the daily mix tonnage per HMA mix type is over 500 tons, the Engineer reserves the right to test one sample. If the first sample meets the Range 1 tolerances in Table 1 and Table 2, the Engineer can obtain a second sample and perform any of the following actions:

- a. Perform Full Quality Assurance testing
- b. Perform Volumetric Testing Only (Ignition, Extracted, or Calculated AC/Gmm, Air Voids, VMA)
- c. Retain custody of the sample for future testing if necessary

2. Asphalt Binder Sampling

The Contractor shall obtain the asphalt binder sample, correctly label the sample container and complete a Sample Identification (Bituminous Material Form 1923B). The form must be filled out correctly, completely, and signed before the sample is given to the Engineer. The daily asphalt binder sample must be taken from a sampling spigot located on the pipeline supplying asphalt binder to the plant, in a position between the asphalt binder pump and the point where the asphalt binder is introduced to the aggregate mixture. Personnel safety is critical when collecting the sample from the sampling spigot. Give the binder sample and completed Form 1923B to the Engineer.

Daily Asphalt Binder Sample are to be in 1 pint (16 ounce), slip top, seamless ointment tins. The tin must be at least three quarters full. All containers must be labeled in a legible format with the following information provided:

- a. Project Name
- b. Binder Grade
- c. Binder Supplier Certification Number
- d. Supplier Name, City, and State
- e. Date Sampled
- f. Mixture Type

The Engineer may request to witness the sampling of the asphalt binder upon visit to the HMA Plant. The Engineer will complete the 1923B Form for the witness sample. The witness sample will be recorded as the daily asphalt binder sample. Any other asphalt binder samples from that same day will be discarded.

The Engineer may request a copy of the MDOT Binder Certification Documents. These copies must be presented to the Engineer when the respective daily binder samples and the 1923B Forms are picked up at the plant. The Engineer will review these documents and communicate any problems that may arise.

3. Mixture Testing

Mixture samples will be tested to verify gradation, binder content, and volumetric properties per Table 1 and Table 2 listed below.

If the Engineer elects not to perform Quality Assurance testing on a given day or a given project. The Contractor is required to still perform testing in accordance with Table 1 and Table 2 below. The Contractor's Quality Control test results shall be sent to the Engineer within 2 working days of each day's productions for a given HMA mixture.

Table 1: Quality Assurance/Control Tolerance Limits for HMA Mixtures

Parameter	Action Limits (Range 1)	Suspension Limits (Range 2)
% Passing the #8 and Larger Sieves	+/- 5.0%	+/- 8.0%
% Passing the #30 Sieve	+/- 4.0%	+/- 6.0%
% Passing #200 Sieve	+/- 1.0%	+/- 2.0%

Table 2: Quality Assurance/Control Testing Tolerance (+/-) from JMF or Target Values

Parameter	Action Limits (Range 1)	Suspension Limits (Range 2)
Binder Content (a)	0.30% (a)	0.50% (a)
Maximum Specific Gravity (Gmm)	0.013	0.020
Voids in Mineral Aggregate VMA (a,b)	0.75% (a,b)	0.80% (a,b)
Air Voids (c)	0.60%	0.90%
Fines to Effective Asphalt Ratio	0.65-1.20	0.60-1.25

- a. Refer to minimum parameters in Table A of this special provision.
- b. These given limits are (+/-) from given targets in Table A of this special provision.
- c. Limits are (+/-) from JMF/Target Values listed in Section e. and Table B of this special provision.

4. Density

Pavement density will be measured by the Engineer, with a Nuclear Density Gauge, using the Gmm from the JMF for the density control target. The in-place density of the HMA mixture shall be at least 92.0% of the density control target. In-place density will be calculated by averaging four QA density test locations. Test locations will not be taken within 12 inches of any pavement edges or pavement joints.

h) Rejected Materials

1. Gradation

<u>Action Limits</u> - Range of values established in Table 1 – Quality Assurance/Control Tolerance Limits for HMA Mixtures. If exceeded on two consecutive tests, Contractor is required to take corrective action to bring the mixture produced into conformance with the specifications.

<u>Suspension Limits</u> – Range of values established in Table 1 – Quality Assurance/Control Tolerance Limits for HMA Mixtures. If exceeded on a single test, Contractor is required to suspend operations and determine, document, and correct the cause before resuming production. Prior to resuming production, the Engineer must be notified of the findings and approve correction action prior to resuming production.

2. Asphalt Binder

If a liquid asphalt binder sample does not meet the required specification, the mix produced from the point of the last liquid asphalt binder sample meeting specification to the failed sample shall be considered defective and shall be replaced at the sole expense of the Contractor.

3. Volumetric Properties

The acceptable tolerance for Binder Content, Gmm, VMA, Air Voids, and Fines to Pbe are listed in Table 2 above. Any HMA Mixture produced outside of these tolerances or any HMA Mixture that does not meet the requirements listed in the sub notes of Table 2 above will be subject to a negative adjustment or rejected. The resulting penalty will be a negative adjustment of 10% to 50% or remove/replace, to be determined by the Engineer.

4. Pavement Density

A negative 10% adjustment in the HMA Mixture contract price will be imposed if the pavement density (average of all gauge readings) is less than 92%, but equal to or greater than 91%; or if 2 or more readings are less than 91%.

A negative 25% adjustment in the HMA Mixture contract price will be imposed if the pavement density (average of all gauge readings) is less than 91%, but equal to or greater than 90%; or if 2 or more readings are less than 90%.

If the average density is less than 90% (for all gauge readings), the Contractor shall remove and replace the pavement at no cost to the Owner.

SPECIAL PROVISION FOR SLOPE RESTORATION

ECRC:RBS 1 of 1 01/03/22

- a. **Description.** Work consists of preparing all lawns and slopes on the projects designated for slope restoration on the plans, or as directed by the Engineer, and applying topsoil, fertilizer, seed and mulch with mulch anchor. Turf establishment shall be in accordance with Section 816 of the Michigan Department of Transportation 2020 Standard Specifications for Construction and Standard Plan R-100 Series, except as modified herein or otherwise by the Engineer
- **b. Materials.** The materials and application rates specified in Section 816 and 917 of the 2020 Standard Specification for Construction apply unless modified by this special provision or otherwise by the Engineer. The following material must be used on the project:
 - 1. Seeding Mixture: TDS.
 - 2. Fertilizer, Chemical Nutrient, Class A.
 - 3. Topsoil Surface, Furnished or Salvaged, 3 inch.
 - 4. Mulch: Straw.
 - 5. Mulch Anchoring.
- c. Construction. Construction methods must be in accordance with the 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 MDOT 2020 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 thickness indicated above, to meet the proposed finished grade.

Topsoil must be weed and weed seed free and friable prior to placing seed. Remove any stones greater than ½ inch in diameter or other debris. Apply seed mixture and fertilizer to prepared soil surface. Incorporate seed into top ½ 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 816.03E of the MDOT 2020 Standard Specifications for Construction.

If an area washes out after this work has been properly installed 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

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:
Slope Restoration

Pay Unit: Square Yard

SPECIAL PROVISION FOR TECHNICAL SPECIFICATIONS ORDER OF PREFERENCE

TLH 1 of 1 10-02-2023

The technical specifications for the Lake Shore Drive over Wycamp Creek project shall be in accordance with the 2020 Standard Specifications for Construction of the Michigan Department of Transportation, hereinafter referred to as the "Standard Specifications".

In case of discrepancy, figured dimensions shall govern over scaled dimensions and the parts of the contract will prevail over all other parts in the following order:

- 1. Special Provisions
- 2. MDOT Supplemental Specifications
- 3. Project Plans and Drawings
- 4. MDOT Standard Plans
- 5. ECRC Project Specifications
- 6. MDOT Standard Specifications

The Engineer has the right to increase or decrease quantities based on unit prices bid. Final quantities will be based on the unit price bid per estimated quantities and can be adjusted by the Engineer without adjustment in unit price bid by Contractor.

SPECIAL PROVISION FOR RIPRAP, FIELDSTONE

JDW 1 of 1 01-13-2023

- a. Description. This work consists of installing heavy geotextile liner and furnishing and placing fieldstone riprap on channel bottoms and side slopes. All work must be done in accordance with Section 813 of the 2020 Standard Specifications for Construction except where noted in this special provision and as directed by the Engineer.
- **b. Materials.** Use stone for riprap that is washed, uncrushed, **rounded fieldstone**. Acceptance will be based on visual inspection of riprap in-place by the Engineer. Size requirements shall be as listed in Section 916 of the Standard Specifications for Construction Heavy Riprap. The smallest footprint dimension must be at least 16 inches. The maximum to minimum dimension ratio must be no greater than 3:1.

Heavy geotextile liner must meet the requirements of Section 910 of the Standard Specifications for Construction. Furnish test data certification from the manufacturer on the specific product intended for use prior to installation.

c. 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
Riprap, FieldstoneTon	Pinran Fieldstone	Ton

Riprap, Fieldstone includes furnishing all labor, equipment and materials to furnish and place heavy geotextile liner, and to place the stone, according to this specification.

SPECIAL PROVISION FOR INSTREAM MATERIAL, NEAR STRUCTURES

JDW 1 of 1 01-13-2023

- **a. Description.** This work consists of installing geotextile liner and furnishing and placing instream material / stone on channel bottoms and cross vanes. All work must be done in accordance with Section 813 of the 2020 Standard Specifications for Construction except where noted in this special provision and as directed by the Engineer.
- **b. Materials.** Use stone meeting the gradation noted on the plans meeting **Instream Material, Near Structures**, or Engineer approved equal. Acceptance will be based on visual inspection of material inplace by the Engineer. Size requirements shall be as listed or shown on the plans for Instream Material Near Construction. The smallest footprint dimension must be at least that of the details shown. The maximum dimension should not exceed that shown on detail, unless previously approved by engineer.

Geotextile liner must meet the requirements of Section 910 of the Standard Specifications for Construction. Furnish test data certification from the manufacturer on the specific product intended for use prior to installation.

c. 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
Instream Material. Near Structures	Ton

Instream Material, Near Structures includes furnishing all labor, equipment and materials to furnish and place geotextile liner, and to place the stone, according to this specification.

SPECIAL PROVISION FOR INSTREAM MATERIAL, BOULDERS

JDW 1 of 1 01-13-2023

- **a. Description.** This work consists of installing geotextile liner and furnishing and placing instream material / stone on channel bottoms and cross vanes. All work must be done in accordance with Section 813 of the 2020 Standard Specifications for Construction except where noted in this special provision and as directed by the Engineer.
- b. Materials. Use stone meeting the gradation noted on the plans meeting Instream Material, Boulders, or Engineer approved equal. Acceptance will be based on visual inspection of material in-place by the Engineer. Size requirements shall be as listed or shown on the plans for Instream Boulders. The smallest footprint dimension must be at least that of the details shown. The maximum dimension should not exceed that shown on detail, unless previously approved by engineer.

Geotextile liner must meet the requirements of Section 910 of the Standard Specifications for Construction. Furnish test data certification from the manufacturer on the specific product intended for use prior to installation.

c. 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
Instream Material. Boulders	Ton

Instream Material, Boulders includes furnishing all labor, equipment, and materials to furnish and place geotextile liner, and to place the stone, according to this specification.

VICINITY MAP

COVER SHEET

- **LEGEND & NOTES**
- TYPICAL CROSS SECTIONS
- **REMOVAL & SESC PLAN**
- GENERAL PLAN OF SITE
- **GENERAL PLAN OF STRUCTURE**
- GENERAL PLAN OF STRUCTURE
- STREAM RESTORATION DETAILS
- MAINTENANCE OF TRAFFIC PLAN
- SOIL BORING LOGS

NRCS STANDARDS

AQUATIC ORGANISM PASSAGE

MDOT STANDARD PLANS

GUARDRAIL AT BRIDGES AND EMBANKMENTS	R-59-E
GUARDRAIL TYPES A, B, BD, T, TD, MGS-8, & MGS-8D	R-59-J
GUARDRAIL APPROACH TERMINALS TYPE 2M	R-62-H
GUARDRAIL DEPARTING TERMINAL TYPES B, T & MGS	R-66-E
GUARDRAIL ANCHORAGE, BRIDGE DETAILS	R-67-SD
SOIL EROSION & SEDIMENTATION CONTROL MEASURES	R-96-E
SEEDING AND TREE PLANTING GRADING CROSS—SECTIONS	R-100-H
GRADING CROSS—SECTIONS	R-105-D

WORK ZONE DEVICES / SPECIAL DETAILS

GROUND DRIVEN SIGN SUPPORTS FOR TEMP SIGNS TEMPORARY TRAFFIC CONTROL DEVICES

WZD-100-A WZD-125-E

GENERAL NOTES

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE PROPOSAL AND SUPPLEMENTAL -SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION.

PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AASHTO'S A POLICY ON GEOMETRIC DEIGN OF HIGHWAYS AND STREETS, 2011 EDITION.

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMATION WITH PUBLIC ACT 174, 2013, THE CONTRACTOR SHALL DIAL 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.

PLACE TOPSOIL, SEED, FERTILIZER, AND MULCH AS SOON AS POSSIBLE. CRITICAL GRADES SHOULD BE PROTECTED WITH MULCH BLANKETS OR TURF REINFORCEMENT MATS AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL PRESERVE AND/OR REPLACE ANY EXISTING PARCEL CORNERS ENCOUNTERED DURING THE WORK.

THE SOIL BORINGS REPRESENT POINT INFORMATION, NO INFERENCE SHOULD BE MADE THAT SUBSURFACE CONDITIONS ARE THE SAME AT OTHER LOCATIONS.

PAVEMENT MARKINGS AND THE PLACING OF TRAFFIC CONTROL SIGNS SHALL BE DONE IN ACCORDANCE WITH THE 2011 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAVEMENT MARKINGS ARE TO BE PERFORMED AS A PART OF THIS

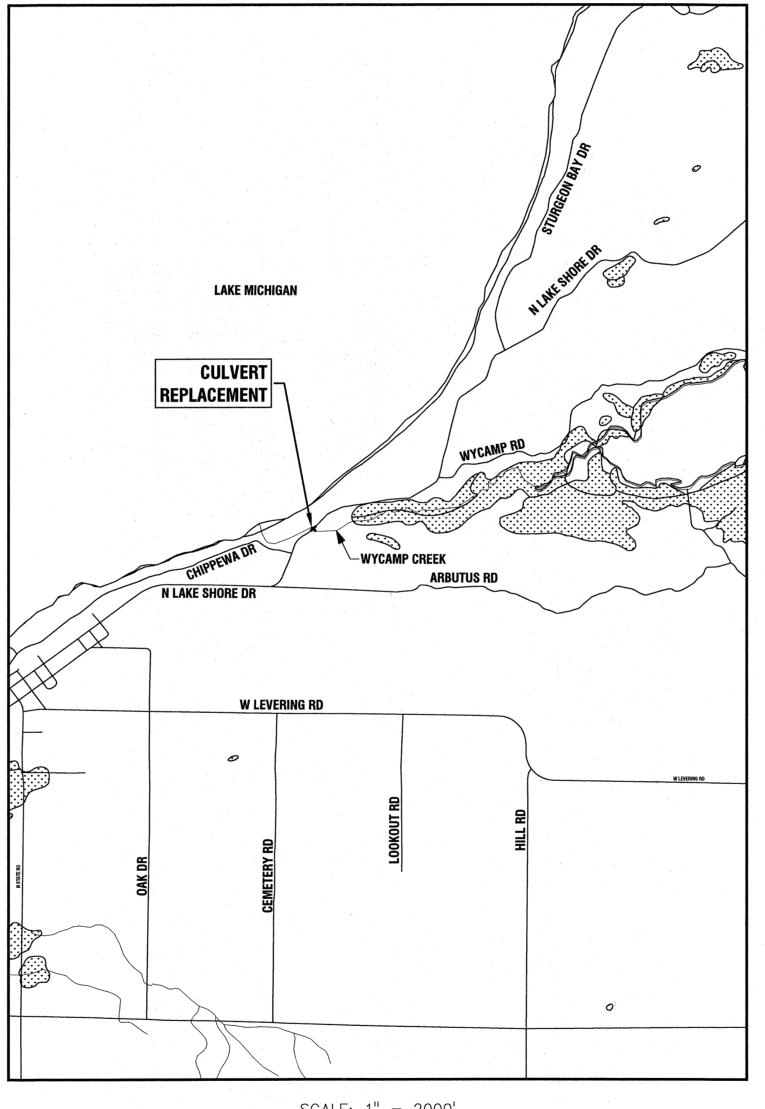
EMMET COUNTY ROAD COMMISSION

Little Traverse Bay Bands of Odawa Indians

USDA Natural Resources Conservation Services PLANS OF PROPOSED CROSSING IMPROVEMENTS

N LAKE SHORE DRIVE OVER WYCAMP CREEK

SECTION 35, TOWN 38 NORTH, RANGE 6 WEST CROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN



SCALE: 1'' = 2000'



FOR CONSTRUCTION

Contract For:

Prepared under Supervision of:

GOURDIE FRASER REGISTERED PROFESSIONAL ENGINEER No. 69873

NRCS IS ACCEPTING THESE CONSTRUCTION DRAWINGS AND SPECIFICATIONS ON THE BASIS THAT THEY HAVE BEEN SIGNED AND SEALED BY A REGISTERED PROFESSIONAL FNGINEER, BASED ON THE INFORMATION PROVIDED BY THE PROFESSIONAL ENGINEER, THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS APPEAR TO MEET APPLICABLE NRCS STANDARDS AND SPECIFICATIONS. ANY DEFICIENCIES IN THE DESIGN, CONSTRUCTION DRAWINGS OR SPECIFICATIONS ARE THE RESPONSIBILITY OF THE

PROFESSIONAL ENGINEER WHOSE SEAL APPEARS ON THE CONSTRUCTION DRAWINGS.

NRCS REPRESENTATIVE.

8-11-23

TO THE BEST OF MY KNOWLEDGE, JUDGEMENT AND BELIEF, THE DESIGN, CONSTRUCTION DRAWINGS AND SPECIFICATIONS MEET APPLICABLE NRCS STANDARDS AND

8/3/2023 DATE

Emmet County Road Commission

8/3/2023

8/3/2023

JOB NO. 22084

GPF NO.

SHEET NO.



Easement Benchmark

Found Iron

Set Iron

Set GPS Point

Found Monument

Monument Box

Section Corner

Quarter Corner

Lead

Top of Water

Paving Legend

Existing	Proposed	
		Concrete Asphalt Gravel Brick
		Wood Railroad Pavement Marking Curb Sidewalk
		Two-track / Trai
		Asphalt
		Gravel
		Brick

Sanitary Legend

Existing	Proposed	
	—— <	Sanitary Sewer
		Sanitary Sewer
•	•	Cleanout
S	•	Sanitary Manhol

Storm Water and Grading Legend

Existing	Proposed	
	<<	Storm Sewer / Culvert
100	100	Major Contour
100	100	Minor Contour
		Silt Fence
	•	Round Catch Basin
		Square Catch Basin
(D)	(D)	Storm Manhole
\smile	\smile	End Section
•		Soil Boring
	**************************************	Clearing & Grubbing Limits

Watermain Legend

Existing	Proposed	
		Watermain
		Water Service
₩N D	@	Water Meter
\otimes	⊗	Curb Stop
\otimes	(©)	Gate Well
⋄	♦∂ Ξ	Hydrant
®	•	Well
⊗⊷	⊗ •	Spigot
87	⇔	Blowoff

Miscellaneous Legend

Existing	Proposed	
_		Building
-×××	xxxx	Minor Building Structure Fence Rip—Rap
		Guardrail
		Sign Sheet Pile Trees / Brush
		Landscaping Edge of Water Ditch Wetlands
		Building
PM MB P TC	• • • • • • • • • • • • • • • • • • •	Sign Parking Meter Stump Mailbox Post Tank Cover
の人業をのの	象の本業の象	Trees (As Noted)

	Grading Legend
•xxx.xx	Existing Grade
XXX.XX BC XXX.XX G	Proposed Back of Curb Elev. Proposed Gutter Elev.
XXX.XX TA	Proposed Top of Asphalt Elev.
XXX.XX TW	Proposed Top of Concrete Elev.
XXX.XX FF	Proposed Finish Floor Elev.
XXX.XX TG	Proposed Top of Gravel Elev.
XXX.XX I.E.	Proposed Culvert Invert
XXX.XX D.I.	Proposed Ditch Invert
XXX.XX	Proposed Ground Elev.
XXX.XX HP	Proposed High Point
XXX.XX LP	Proposed Low Point
·· ~	Proposed Drainage Arrow

Electric & Gas Legend

---- Proposed High Point Breakline

Existing	Proposed	
GAS		Gas Main
		Pipeline
OHE		Overhead Electric
UGE	UGE	Underground Electric
——————————————————————————————————————	——— — ОНТ ———	Overhead Telephone
UGT	UGT	Underground Telephone
CATV	CATV	Cable Television
FOPT	FOPT	Fiber Optic
⟨GM⟩	•	Gas Meter
€M)	€₩	Electric Meter
(O)	O	Utility Pole
((Guy Wire
<i>\range</i>	∳	Satellite Dish
	*	Light
A	Æ	Fiber Optic Marker
© -\$	O -¢	Light Pole
—	o —	Guy Pole
E	(E)	Electric Manhole
T	lacktriangle	Telephone Manhole
&	©	Monitor Well
7	₹¶	Miss Dig Flag

GENERAL NOTES

- 1. CONTRACTOR SHALL CALL MISS DIG (1-800-482-7171) A MINIMUM OF 3 WORKING DAYS PRIOR TO CONSTRUCTION.
- 2. CONTRACTOR SHALL CONFORM TO SOIL EROSION AND SEDIMENTATION CONTROL ACT, PART 91 OF ACT 451 OF 1994.
- 3. DEBRIS CONSIDERED TO BE WASTE SHALL BE DISPOSED OF BY THE CONTRACTOR.
- 4. THE CONTRACTOR SHALL REMOVE, REPLACE, AND MAINTAIN ALL EXISTING MAIL BOXES, FENCES AND SIGNS. MAILBOX POSTS SHALL BE REPLACED AS DIRECTED BY THE ENGINEER. ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICE BID LUMP SUMP PRICE FOR THE TIMBER BRIDGE CONSTRUCTION.
- 5. THE CONTRACTOR SHALL MAINTAIN LOCAL TRAFFIC AT ALL TIMES ON THE PROJECT.
- 6. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING ANY WORK.
- 7. CONSTRUCT CENTERLINE OF PROPOSED CREEK AT CENTERLINE OF EXISTING CREEK UNLESS OTHERWISE INDICATED.
- 8. CONTRACTOR SHALL SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS DAILY. LAWN AREAS SHALL RECEIVE 4" OF TOPSOIL AND BE RESTORED AS STATED IN THE SPECIFICATIONS AND SHOWN ON THE PLANS.
- 9. COORDINATE RIPRAP INSTALLATIONS WITH THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.
- 10. INSTALL EROSION CONTROL BLANKETS AND FABRICS ACCORDING TO MANUFACTURERS SPECIFICATIONS.
- 11. ALL ELEVATIONS ARE BASED ON NAVD88 DATUM.
- 12. SPECIAL CARE SHALL BE TAKEN IN EXCAVATING IN THE PROXIMITY OF ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL SECURE ASSISTANCE FROM THE APPROPRIATE UTILITY COMPANY IN LOCATING ITS LINES. THE CONTRACTOR SHALL ALSO: PROVIDE SUPPORT FOR ANY UTILITY WITHIN THE EXCAVATION, PROVIDE PROPER COMPACTION UNDER ANY UNDERMINED UTILITY STRUCTURE AND, IF NECESSARY, INSTALL TEMPORARY SHEETING OR USE A TRENCH BOX TO MINIMIZE THE EXCAVATION. THE CONTRACTOR SHALL PROTECT AND SAVE HARMLESS FROM DAMAGE ALL UTILITIES, WHETHER PRIVATELY OR PUBLICLY OWNED, ABOVE OR BELOW GROUND SURFACE, WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER.
- 13. THE LOCATION OF EXISTING PUBLIC UTILITIES AND UNDERGROUND STRUCTURES SUCH AS PIPE LINES, ELECTRIC CONDUITS, SEWERS AND WATER LINES. OF RECORD ARE SHOWN ON THE PLANS. THE INFORMATION SHOWN IS BELIEVED TO BE REASONABLY CORRECT AND COMPLETE. HOWEVER, NEITHER THE CORRECTNESS NOR THE COMPLETENESS OF SUCH INFORMATION IS GUARANTEED. PRIOR TO THE START OF ANY OPERATIONS IN THE VICINITY OF ANY UTILITIES, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES AND MISS DIG AND REQUEST THAT THEY STAKE OUT THE LOCATIONS OF THE UTILITIES IN QUESTION. THE CONTRACTOR SHALL COORDINATE THE RELOCATION OF ANY UTILITIES WITH THE UTILITY PROVIDER. COST OF REPAIR FOR ANY DAMAGED UTILITY LINES THAT IS PROPERLY STAKED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 14. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS GOVERNING THE FURNISHING AND USE OF SAFEGUARDS, SAFETY DEVICES AND PROTECTION EQUIPMENT. THE CONTRACTOR SHALL TAKE ANY NECESSARY PRECAUTIONS TO PROTECT THE LIFE AND HEALTH OF EMPLOYEES AND THE PUBLIC IN THE PERFORMANCE OF THE WORK

SOIL EROSION & SEDIMENTATION CONTROL NOTES

- 1. TEMPORARY SEEDING SHALL BE CONDUCTED ON ALL DISTURBED AREAS THAT WILL BE FINISH GRADED AT A LATER DATE. TEMPORARY SEEDING SHALL BE LIMITED TO DATES BETWEEN APRIL 1ST AND NOVEMBER 1ST.
- 2. FINAL SEEDING SHALL BE COMPLETED WITHIN 24 HOURS OF FINAL GRADING. WEEKLY INSPECTIONS OF SEEDED AREAS SHALL BE COMPLETED TO VERIFY GRASS GROWTH. ANY AREAS NOT ESTABLISHED SHALL BE FERTILIZED, SOILS AMENDED AND RE-SEEDED AS NECESSARY.
- 3. CONTRACTOR TO INSTALL AND MAINTAIN ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THE APPROVED PLANS PRIOR TO COMMENCEMENT OF CONSTRUCTION OR MASS GRADING.
- 4. ALL MUD, DIRT, AND DEBRIS TRACKED ONTO EXISTING ROADWAYS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR NO LESS THAN ON A DAILY BASIS BY SCRAPING AND SWEEPING.
- 5. ALL PERMANENT SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE WITHIN 24 HOURS OF FINAL GRADE (GRADE LISTED ON PLANS), THIS INCLUDES ALL VEGETATIVE STABILIZATION. REMOVAL OF TEMPORARY MEASURES, FOLLOWING ACCEPTANCE OF THE PROJECT, IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 6. SHOULD ADDITIONAL SOIL EROSION CONTROL MEASURES BE DETERMINED TO BE NECESSARY BY EITHER THE SOIL EROSION CONTROL OFFICER OR THE OWNER'S ENGINEER THEY SHALL BE IN PLACE NO LATER THAN 24 HOURS FROM THE TIME OF NOTIFICATION TO THE GENERAL CONTRACTOR FOR THE PROJECT. IF NOT PLACED IN 24 HOURS OR LESS ALL ON SITE CONSTRUCTION WILL BE HALTED UNTIL SUCH MEASURES ARE INSTALLED AND APPROVED BY EITHER THE SOIL EROSION CONTROL OFFICER OR THE OWNER'S ENGINEER.
- 7. ALL SOIL EROSION CONTROL MEASURES SHALL BE INSPECTED DAILY BY THE CONTRACTOR, AND INSPECTED AFTER EACH RAIN EVENT TO ENSURE PROPER MAINTENANCE OF THE SOIL EROSION CONTROL MEASURES. ANY DEFICIENCIES OR REPAIRS TO SOIL EROSION CONTROL MEASURES ARE TO BE CORRECTED IMMEDIATELY
- 8. INSTALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES BEFORE OR UPON COMMENCEMENT OF THE EARTH CHANGE ACTIVITY AND MAINTAIN MEASURES ON A DAILY BASIS. REMOVE TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AFTER PERMANENT SOIL EROSION MEASURES ARE IN PLACE AND THE AREA IS STABILIZED ("STABILIZED" MEANS THE ESTABLISHMENT OF VEGETATION OR THE PROPER PLACEMENT, GRADING, OR COVERING OF SOIL TO ENSURE ITS RESISTANCE TO SOIL EROSION, SLIDING, OR OTHER EARTH MOVEMENT).
- 9. CONTRACTOR IS RESPONSIBLE TO ENSURE THAT MEASURES ARE INSTALLED IN COMPLIANCE WITH THE APA MANUAL AND THAT THE SESC MEASURES ARE MONITORED AND MAINTAINED UNTIL ALL DISTURBED AREAS ARE STABILIZED ("STABILIZED" MEANS THE ESTABLISHMENT OF VEGETATION OR THE PROPER PLACEMENT, GRADING, OR COVERING OF SOIL TO ENSURE ITS RESISTANCE TO SOIL EROSION, SLIDING, OR OTHER EARTH MOVEMENT) AND TEMPORARY MEASURES ARE REMOVED. CONTRACTOR ACKNOWLEDGES THAT SESC MEASURES MAY NEED TO BE ADAPTED, ADJUSTED, OR ADDED BASED ON SITE CONDITIONS IN ORDER TO REMAIN IN COMPLIANCE WITH PART 91 REQUIREMENTS.
- 10. RESTORE DISTURBED AREAS WITH 4" TOPSOIL SURFACE, MDOT CLASS A SEED MIXTURE, 300#/ACRE CHEMICAL FERTILIZER NUTRIENTS AND 2 TONS/ACRE MULCH. PLACE TOPSOIL/SEED/FERTILIZER PRIOR TO PLACING MULCH BLANKET. WORK TO BE INCLUDED IN PAYMENT FOR "SLOPE RESTORATION, NON-FREEWAY".
- 11. CONTRACTOR IS RESPONSIBLE FOR CLEANUP & RESTORATION INCLUDING PROGRESS CLEANING. PROGRESS CLEANING INCLUDES BUT IS NOT LIMITED TO REMOVAL OF WASTE MATERIALS, DEBRIS, RUBBISH, AND EXCESS SPOILS, COMPLETE LEVELING AND RESTORE DAMAGE NOT MORE THAN 1000 FEET BEHIND CONSTRUCTION. ALSO INCLUDES DAILY CLEANING OF ALL ROAD SURFACES.
- 12. CONTRACTOR SHALL OBTAIN AND PAY ALL FEES FOR SOIL EROSION CONTROL PERMIT.

PUBLIC UTILITIES

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AS OBTAINED ON OUR SURVEYS. THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO BE SATISFIED AS TO ITS ACCURACY AND THE LOCATION OF EXISTING UTILITIES.

Charter Communications 231-463-1941 rick.rousseau@charter.com

Attention: Jeffrey Collard 586-764-8260

DTE Energy Larry Bourke 231-592-3244

jc7632@att.com **Emmet County Road Commission** Brent Shank 231-347-8142 bshank@emmetcrc.org



GENERAL MAINTENANCE PROCEDURES

- PERFORM MAINTENANCE ACTIVITIES DURING LOW FLOW PERIODS
- START MAINTENANCE AT DOWNSTREAM END OF PROJECT. REMOVE SEDIMENT WITH LIMITED DISTURBED BANK AREA.
- APPLY SEED AND MULCH DAILY TO DISTURBED AREAS. 5. MAINTAIN VEGETATIVE BUFFER BY PLACING SEDIMENT SPOILS AS CLOSE TO
- EASEMENT BOUNDARY AS POSSIBLE 6. APPLY SEED AND MULCH IMMEDIATELY AFTER LEVELING SPOILS.

CONSTRUCTION NOTES

- . REMOVE AND PROPERLY DISPOSE OF EXISTING TILE & STRUCTURES LOCATED WITHIN PROPOSED CULVERT TRENCH. REMOVED STRUCTURES & TILE OR DEBRIS SHALL BECOME PROPERTY OF THE CONTRACTOR. REMOVAL TO BE INCLUDED IN THE COST PER LINEAR FOOT OF BOX CULVERT. EXISTING TILE LOCATED OUTSIDE THE INFLUENCE OF THE PROPOSED TRENCH SHALL BE TIED INTO THE PROPOSED STORM SEWER AT THE DOWNSTREAM END WITH ENGINEER APPROVED
- DURING REMOVAL OF THE EXISTING OF THE EXISTING STRUCTURE, EVERY PRECAUTION SHALL BE TAKEN TO PREVENT DEBRIS FROM ENTERING WATERCOURSE,. ANY DEBRIS REACHING WATERCOURSE DURING THE REMOVAL OF THE STRUCTURE SHALL BE IMMEDIATELY REMOVED FROM WATER. ALL MATERIAL SHALL BE DISPOSED OF IN AN ACCEPTABLE MANNER CONSISTENT WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
- 3. ALL SPRINKLER SYSTEMS DAMAGED SHALL BE REPAIRED BY CONTRACTOR. COST TO BE INCLUDED IN THE LUMP SUM BID PRICE FOR Slope Restoration, Non-Freeway, Type B.
- 4. ANY UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE SUPPORTED, PER THE SPECIFICATIONS OF THE INDIVIDUAL UTILITY COMPANY CLAIMING OWNERSHIP OF THE UTILITY. COST TO BE INCLUDED WITH THE PAY ITEM BEING INSTALLED. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- 5. CONTRACTOR SHALL MAINTAIN ACCESS FOR MAIL DELIVERY AND GARBAGE PICKUP AT ALL PARCEL AFFECTED BY CONSTRUCTION. IF THESE SERVICES CANNOT BE PERFORMED CONTRACTOR IS RESPONSIBLE FOR TAKING THE NECESSARY MEASURES TO CARRY THEM OUT.
- 6. ALL WORK SHALL BE WITHIN ROAD RIGHT-OF-WAY. WORK OUTSIDE RIGHT-OF-WAY MUST BE AGREED UPON BY LANDOWNER AND ENGINEER WITH A SIGNED LANDOWNER AGREEMENT PRIOR TO WORK ON THAT PROPERTY.
- 7. GROUNDWATER SEEPAGE IS ANTICIPATED TO BE A FACTOR DURING CONSTRUCTION. DEWATERING METHODS MAY BE NECESSARY. ALL DEWATERING REQUIRED IS THE CONTRACTOR'S RESPONSIBILITY AND COST SHALL BE INCLUDED IN THE PAY ITEM BEING INSTALLED. THE METHOD FOR DEWATERING SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
- 8. ALL PAVEMENT JOINTS BETWEEN EXISTING AND NEW PAVEMENT SHALL BE SAW CUT WITH BUTT-JOINTS.
- 9. STRIP AND SALVAGE TOPSOIL PRIOR TO INSTALLING BOX CULVERT. REPLACE TOPSOIL TO AFTER INSTALLATION.
- 10. CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL DEVICES AS REQUIRED BY THE COUNTY ROAD COMMISSION AND THE TRAFFIC CONTROL PLAN.
- 11. CONTRACTOR IS RESPONSIBLE TO FIELD LOCATE AND USE CARE WHEN WORKING AROUND UTILITIES AND TO NOT DISRUPT SERVICE. ANY DAMAGE TO UTILITIES SHALL BE REPAIRED AND/OR REPLACED AT NO ADDITIONAL
- 12. THE ENGINEER SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO BITUMINOUS PAVING.
- 13. THE PREPARED SUBBASE MUST BE TESTED AND APPROVED PRIOR TO PLACEMENT OF BASE.
- 14. Embankment, CIP, Backfill, Structure, CIP, Excavation, Fdn, Excavation, Channel AND Subbase, CIP ARE TO BE PAID AT PLAN QUANTITY UNLESS OTHERWISE KNOWN CHANGES. EARTHWORK FOR DRIVES, APPROACHES, AND INTERSECTIONS ARE INCLUDED IN PLAN QUANTITIES. ALL NECESSARY EMBANKMENT FOR ROADWAY, APPROACHES, AND DRIVEWAYS SHALL MEET GRANULAR MATERIAL CLASS II REQUIREMENTS UNLESS OTHERWISE
- 15. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE GRAVEL TO BE USED ON THIS PROJECT IS APPROVED PRIOR TO PLACEMENT.
- 16. THE PREPARED GRAVEL WIDTH, DEPTH, AND COMPACTION MUST BE REVIEWED AND APPROVED BY THE OWNERS ENGINEER PRIOR TO BITUMINOUS PAVING.
- 17. ALL CONSTRUCTION SIGNING SHALL MEET MMUTCD STANDARDS.
- 18. ALL PAVEMENT CUTS ARE TO BE MADE WITH SAW, IMMEDIATELY PRIOR TO PAVING.
- 19. THE CONTRACTOR SHALL NOTIFY RESIDENTS 24 HOURS (EXCLUDING SATURDAYS AND SUNDAYS) IN ADVANCE OF DISRUPTION TO SERVICE, SUCH AS DRIVEWAY CLOSING.
- 20. PAVEMENT MARKINGS SHALL MEET MDOT SPECIFICATIONS AND STANDARDS.

ESTIMATED PROJECT QUANTITIES

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT. SEVERAL ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN AND PROFILE SHEETS:

```
LSUM
                  Mobilization, Max 10%
0.5 Acre
                 Clearing
                 Culv Rem Over 48 inch
1000 Cyd
                   Embankment, CIP
1000 Cyd
                   Excavation, Channel
                  Backfill, Structure, CIP
600
                  Excavation. Fdn
      Ea
                  Erosion Control, Filter Bag
                   Erosion Control, Maintenance, Sediment Removal
600
                  Erosion Control, Silt Fence
                  Erosion Control, Turbidity Curtain, Shallow
400
                  Subbase, CIP
1400 Syd
                  Aggregate Base, 6 inch
                   Maintenance Gravel
                  Approach, Cl II, 6 inch
                  Shld. Cl II. 3 inch
                  HMA Surface, Rem
                  Pavt for Butt Joints, Rem
                  HMA, 4EL
        LSUM
                  Pile Driving Equipment, Furn
1500
                  Pile, Treated Timber, Furn
1500
                  Pile, Treated Timber, Driven
                   Test Pile, Treated Timber
                  Curb Sloped, HMA
300
                  Guardrail, Type MGS-8
12.5
                  Guardrail, Curved, Type B
                  Guardrail Anch, Bridge, Det T3
                  Guardrail Approach Terminal, Type 2M
      Ea
                  Guardrail Departing Terminal, Type B
                  Guardrail Reflector
                  Post, Steel, 3 pound
                   Sign, Type IIIB
                  Pavt Mrkg, Waterborne, 4 inch, White
                  Pavt Mrkg, Waterborne, 4 inch, Yellow
                   Barricade, Type III, High Intensity, Double Sided, Lighted, Furn
                  Barricade, Type III, High Intensity, Double Sided, Lighted, Oper
                  Minor Traf Devices
                   Sign, Type B, Temp, Prismatic, Furn
                   Sign, Type B, Temp, Prismatic, Oper
                   Sign, Type B, Temp, Prismatic, Spec, Furn
                  Sign, Type B, Temp, Prismatic, Spec, Oper
450
                  Riprap, Fieldstone
```

Instream Material, Near Structures Instream Material, Boulders

Slope Restoration, Non-Freeway, Type B

Paved Ditch, HMA

Timber Structure, Modified

Hydrant, Rem

LSUM

88





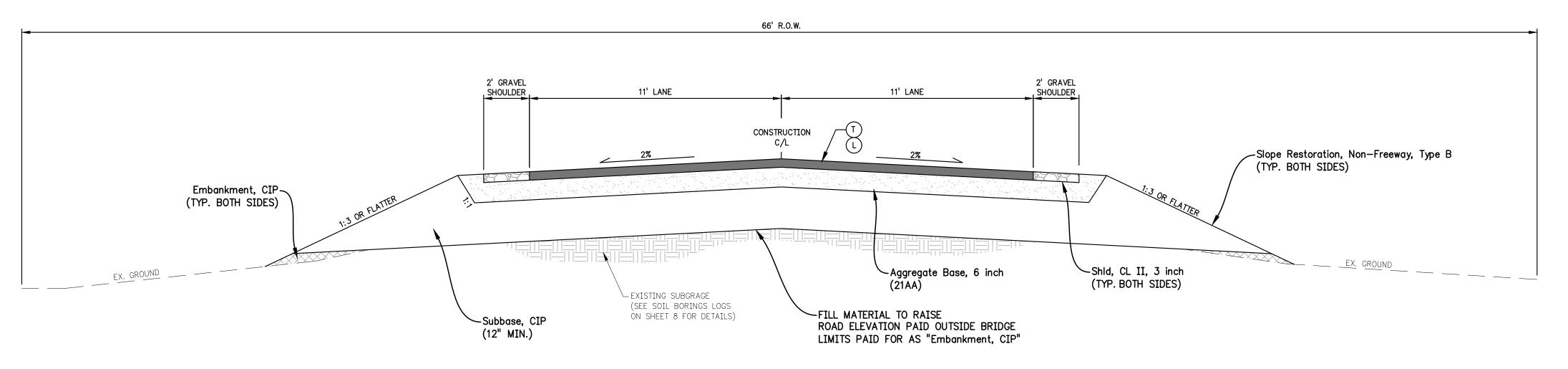
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CRI

EMMET CO SHORE

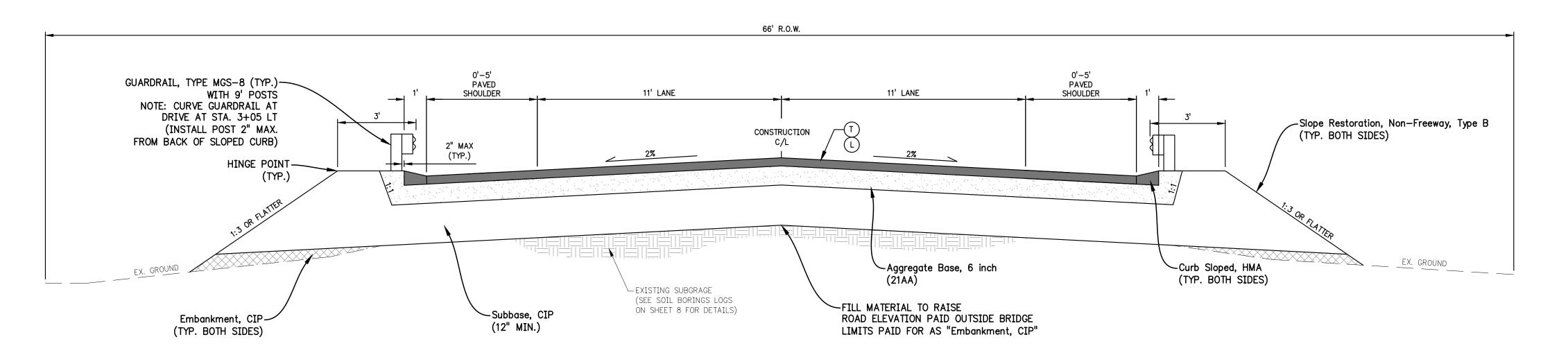
N. LAKE SHORE DRIVE EXISTING TYPICAL CROSS SECTION

TO APPLY: P.O.B. TO P.O.E. SCALE: 1'' = 3'



N. LAKE SHORE DRIVE PROPOSED TYPICAL CROSS SECTION

TO APPLY: P.O.B. TO STA 0+81.43 & STA 2+92.86 TO P.O.E. SCALE: 1" = 3'

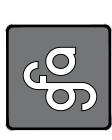


N. LAKE SHORE DRIVE PROPOSED TYPICAL CROSS SECTION

TO APPLY: STA 0+81.43 TO STA 2+92.86 SCALE: 1" = 3'

	HMA APPLICATION ESTIMATE						
IDENT.	ITEM	RATE LBS/SYD	PERFORMAN CE GRADE	AGGREGATE WEAR INDEX	REMARKS		
Т	HMA, 4EL	220	58-28	220 MIN	TOP COURSE		
L	HMA, 4EL	220	58-28	-	LEVELING COURSE		
	*BITUMINUOUS BOND COAT	0.05 TO 0.15 GAL/SYD					

http://gfa.tc231.946.5874 (p)231.946.3703 (f)



VEYING	nt Street Al 49684
SURVEYING SURVEYING TESTING & OPERATIONS	123 West Front Street Traverse City, MI 49684

7-25-22 SJG FOR PERMITS	SJG REVISED PER NRCS COMMENTS	7-21-23 JDW NRCS FINAL REVIEW			
SJG	SJG	MQC			
7-25-22	1-6-23	7-21-23			
А	В	O			

KE SHORE DRIVE OVER WYCAMP CREEK
TYPICAL CROSS SECTIONS
SECTION 35, TOWN 38 NORTH, RANGE 6 WEST
CROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN
These documents are pi

LAKE

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2.M.:

JOE WILLIAMS, PE

DR.:

SJG

OB NO.:

22084

SHT 3 OF 10

BENCHMARKS BM-C BENCH TIE IN N. SIDE OF 10" SPRUCE TREE ELEV. = 602.28 (NAVD88)

EXISTING ROADS.

OF THE CONTRACTOR.

BEGINNING WORK.

APPROVAL.

MAY EXISTING DURING CONSTRUCTION.

4. ALL REMOVED CULVERT MATERIALS AND DEBRIS, UNLESS OTHERWISE NOTED, SHALL BE REMOVED FROM SITE AND ARE THE RESPONSIBILITY

5. NO DEBRIS SHALL ENTER WYCAMP CREEK DURING THE REMOVAL OF THE EXISTING CULVERT AND ASSOCIATED EXCAVATION.
6. WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS

7. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO

8. CONTRACTOR SHALL SUBMIT SCHEDULE TO ENGINEER FOR REVIEW AND

RESPONSIBLE FOR MAKING A DETERMINATION OF WATER LEVELS THAT

BENCH TIE IN S.W. SIDE OF 18" CEDAR TREE ELEV. = 605.66 (NAVD88)

GENERAL REMOVAL NOTES: 1. THE WORK COVERED BY THESE PLANS INCLUDES THE REMOVAL OF THE EXISTING UNDERSIZED CULVERT, RAIL, ASSOCIATED STRUCTURE, HMA REMOVAL, VERTICAL CURVE IMPROVEMENTS, MAINTAINING TRAFFIC, CONSTRUCTION OF THE PROPOSED TIMBER BRIDGE AND PLACEMENT OF SLOPE PROTECTION/RESTORATION.
2. CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED. 3. LAKE SHORE DRIVE TRAFFIC IS TO BE DETOURED OVER OTHER

WYCAMP CREEK EXISTING PROFILE

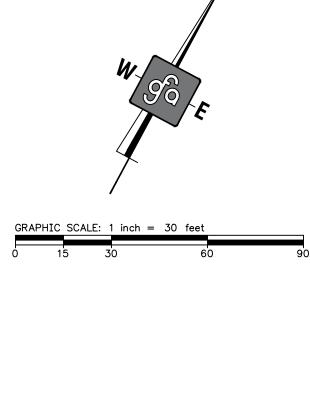
SCALE:

HORIZONTAL: 1"=30'

VERTICAL: 1"='10

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	1.76	97.1	96.5	95.3	10.0	98.9	0.66	Z 66 66	7. CO	0.000	
585							LXISTING	CILLER BOTTOWI LLEV.			585
590	, _						FYISTING	CREEK BOTTOM ELEV.		_	590
	1-		NO WORK		CULVERT REMOVAL			NO WORK			
595				\hat{\hat{\hat{\hat{\hat{\hat{\hat{	597.93 I.E.	598.67 I.E.	<u></u>	EXISTING BOTTO	OM OF WYCAMP CREEK		595
600					EX. 72" CMP CULVERT @ 1.30%						600
605		-2.06					2; (4)	14/2022)			605
610					±57'	+	ībTOF	P OF WATER /14/2022)			610
					N. LAKE	SHORE DRIVE					
615											615
620											620

Erosion Control, Turbidity Curtain, Shallow (35 Ft) PARCEL ID: 05-04-26-351-005 PARCEL ID: 05-04-26-351-006 PARCEL ID: 05-04-26-351-004 WYCAMP CREEK #6949 PARCEL ID: 05-04-35-101-001 —HMA Surface, Rem (1,040 Syd) OVERHEAD WIRES Hydrant, Rem, N57°24'37"E 29.33'— STA 4+02.12 P.O.B. – STA 0+00.00 R=750.00' -=013°44'54" 2' WIDE BUTT JOINT, PAID FOR AS— "Pavt for Butt Joints, Rem" CHD=N50°32'10"E 2' WIDE BUTT JOINT, PAID FOR AS— "Pavt for Butt Joints, Rem" 179.53' (5 Syd) Erosion Control, Silt Fence (TYP. WHERE SHOWN) PARCEL ID: 05-04-35-100-001 PARCEL ID: 05-04-26-300-003 PARCEL ID: 05-04-35-100-001 REMOVE EX. 72" CULVERT AND CONSTRUCT A— PRE-FABRICATED TIMBER BRIDGE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS Culv Rem, Over 48 Inch (1 Ea)—



PROPOSED STRUCTURE CROSSING THREE SPAN (18', 26', 18') x 34' (CLR) TIMBER BRIDGE

Estimated Quantities This Sheet

Pay Item

Clearing

Culv, Rem, Over 48 Inch

Erosion Control, Filter Bag

Erosion Control, Silt Fence Erosion Control, Turbidity Curtain, Shallow

HMA Surface, Rem

Pavt for Butt Joints, Rem

Hydrant, Rem

Erosion Control, Maintenance, Sediment Removal

Quantity Unit

0.5 Acre

1 Ea

2 Ea

10 Cyd

600 Ft

35 Ft

1,040 | Syd

10 Syd

1 Ea

EXIS	TING	STRUC	TURE	CROSSING	_
ONE	72"	DIA.	CMP	CULVERT	

90		J J
	ENGINEERING SURVEYING & OPERATIONS	Vest Front Street

(O)	

EMMET COUNTY ROAD COMMISSION

E SHORE DRIVE OVER WYCAMP CREEK

REMOVAL & SESC PLAN

SECTION 35, TOWN 38 NORTH, RANGE 6 WEST

ROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN

JOE WILLIAMS. PE

22084

Thub://gra.rc	(C) 231.946.5874 (p)	

Tub://dia.ic	(C) 231.946.5874 (p)	

231,946,5874

BM-C BENCH TIE IN N. SIDE OF 10" SPRUCE TREE ELEV. = 602.28 (NAVD88)

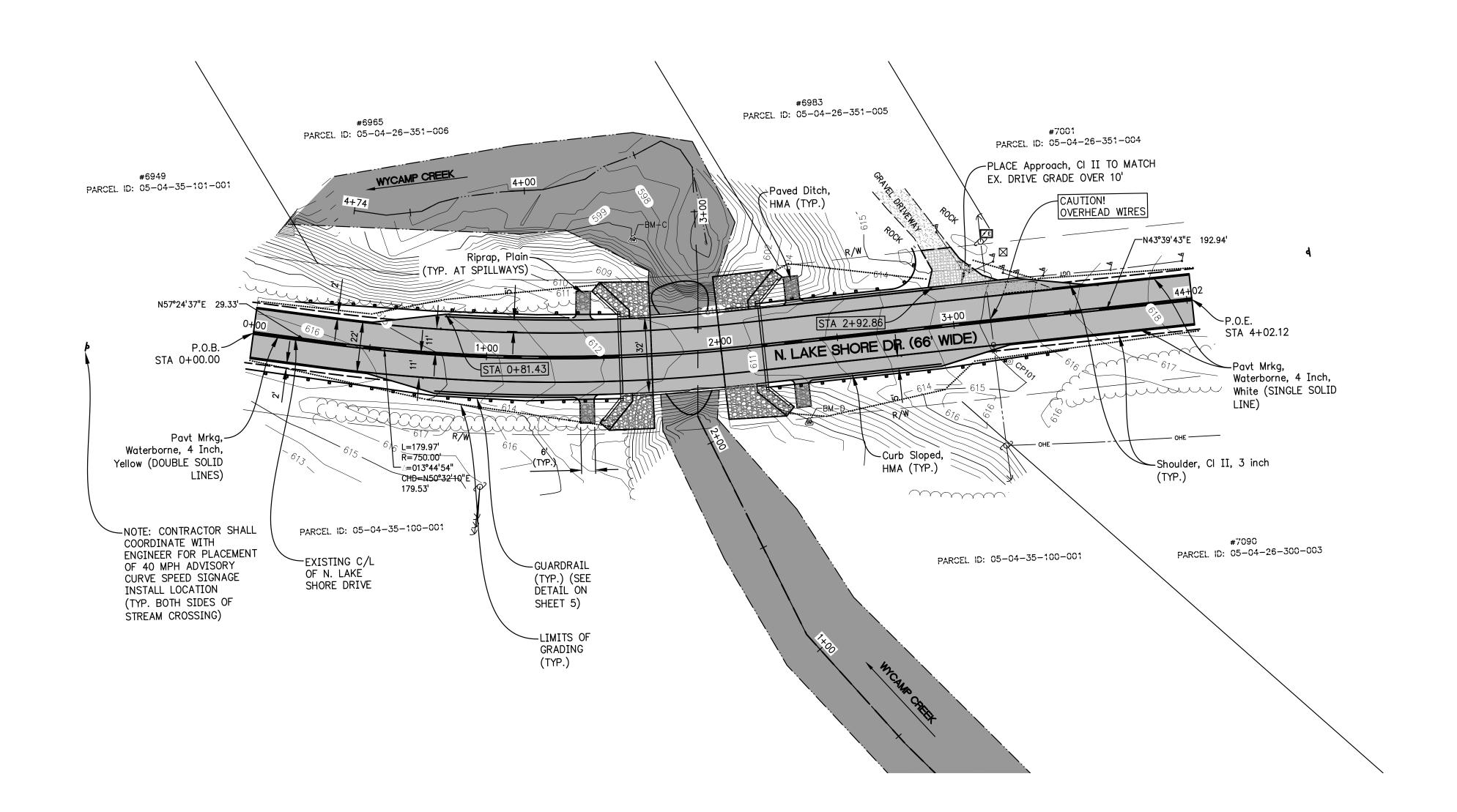
BM-D BENCH TIE IN S.W. SIDE OF 18" CEDAR TREE ELEV. = 605.66 (NAVD88)

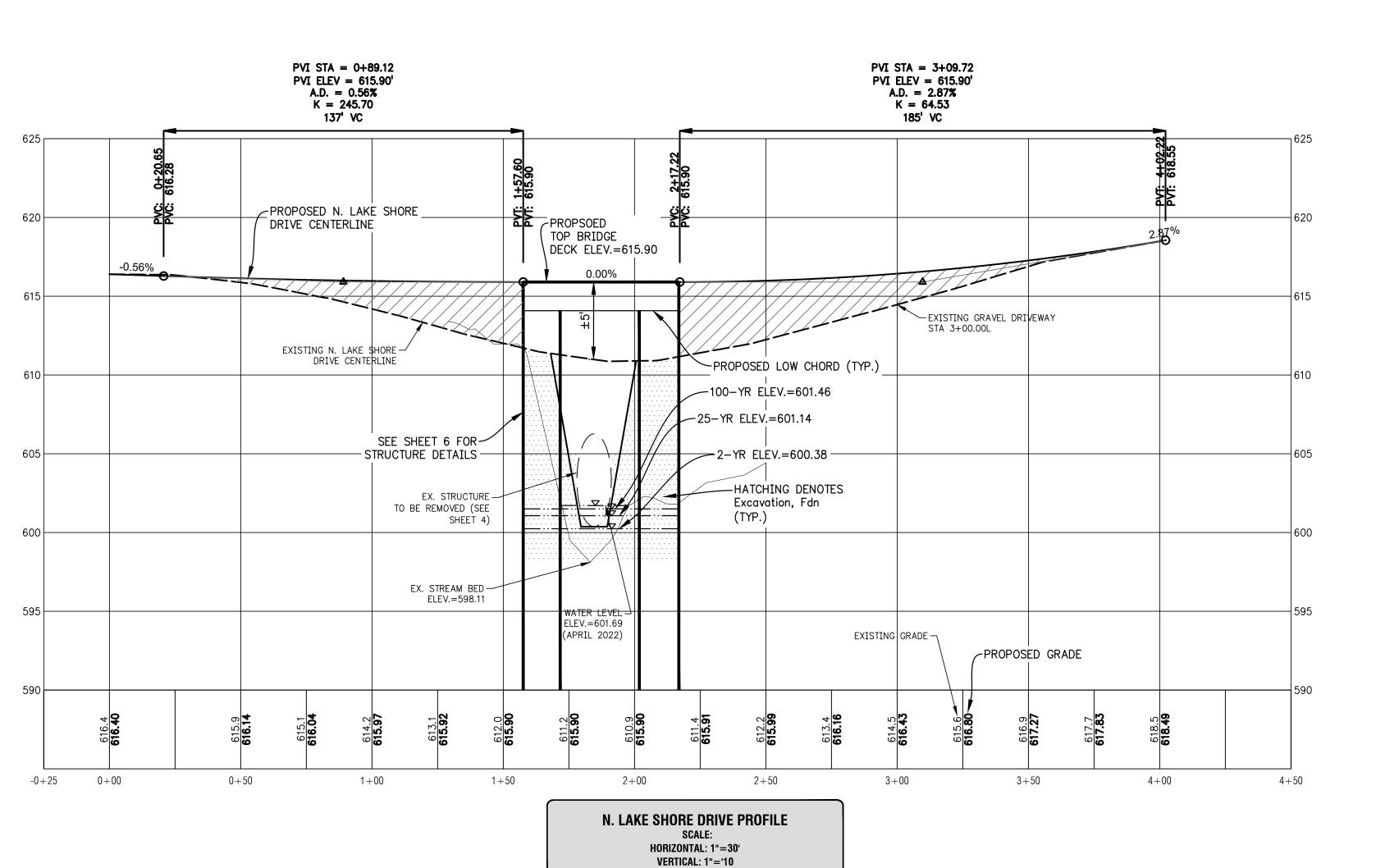
Estimated Quantities This Sheet						
Pay Item	Quantity	Unit				
Embankment, CIP	1000	Cyd				
Subbase, CIP	400	Cyd				
Aggregate Base, 6 Inch	1400	Syd				
Approach, Cl II, 6 inch	50	Syd				
Shld, Cl II, 3 Inch	50	25				
HMA, 4EL	350	Ton				
Curb Sloped, HMA	260	Ft				
Paved Ditch, HMA	25	Syd				
Post, Steel, 3 pound	16	Ft				
Sign, Type IIIB	16	Sft				
Pavt Mrkg, Waterborne, 4 Inch, White	850	Ft				
Pavt Mrkg, Waterborne, 4 Inch, Yellow	850	Ft				
Slope Restoration, Non-Freeway, Type B	700	Syd				

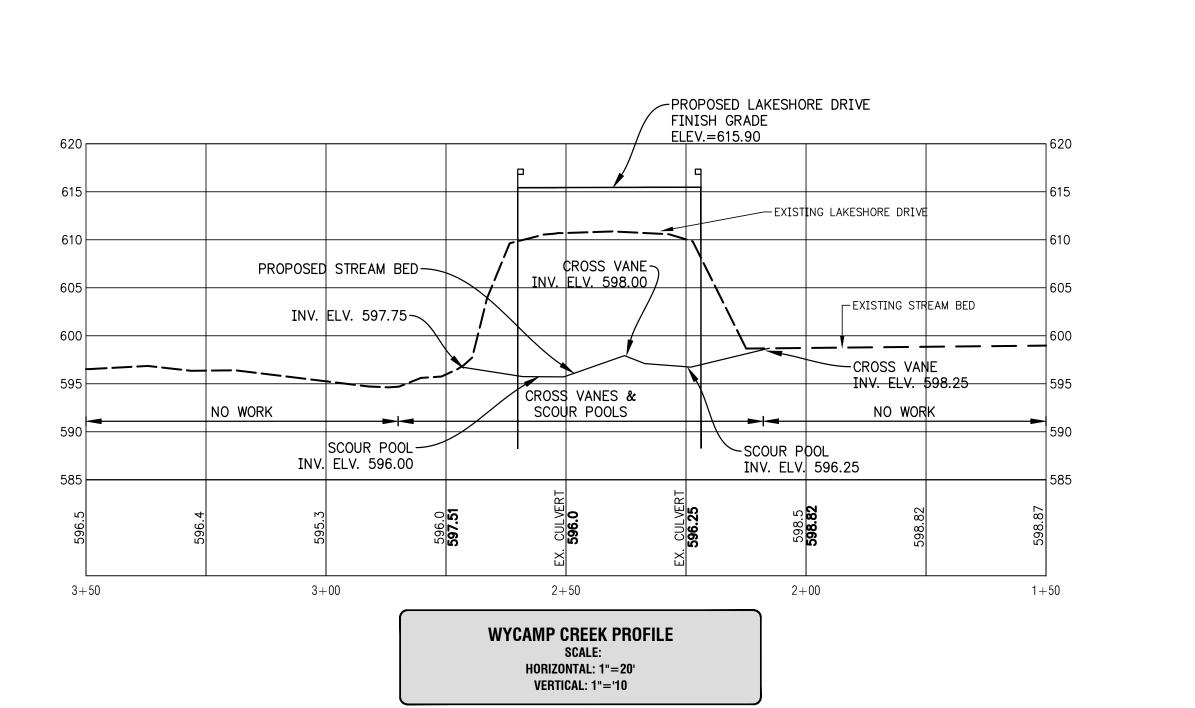
TEMPORARY STORED MATERIAL SHALL NOT BE ALLOWED TO ERODE

- INTO THE WATERCOURSE.

 2. THE DESIGN OF THE STRUCTURE IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN, HL—93 LOADING. THE DESIGN TANDEM PORTION SHALL BE REPLACED BY A SINGLE KIP AXLE LOAD PER APPLICATION OF THE 1.2 FACTOR. THE RESULTING LOAD IS DESIGNATED HL-93 MOD. LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE DEFLECTION DOES NOT EXCEED L/425 OF THE SPAN LENGTH.
- 3. IMMEDIATELY AFTER THE CONSTRUCTION OF AN ABUTMENT IS COMPLETED, TOPSOIL, SEEDING, FERTILIZER, STRAW MULCH BLANKETS AND SLOPE PROTECTION SHALL BE PLACED ON THE ADJACENT EMBANKMENT SLOPES.
- 4. THE CONTRIBUTING AREA TO THIS CROSSING IS 22.5 SQUARE MILES. THE 50%, 0.5% AND 0.2% CHANCE FLOODS ARE ESTIMATED TO BE 140 CUBIC FEET PER SECOND (CFS), 380 CFS, AND 430 CFS RESPECTIVELY, AS DETERMINED BY THE MICHIGAN EGLE.







GRAPHIC SCALE: 1 inch = 30 feet

23.

EMMET COUNTY ROAD COMMISSION

E SHORE DRIVE OVER WYCAMP CREEK

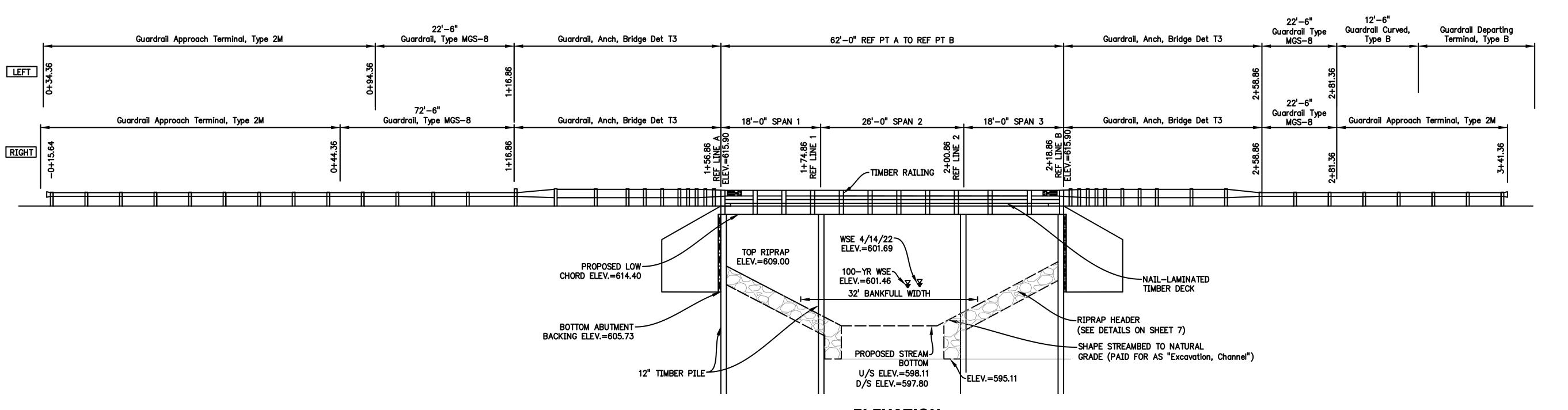
GENERAL PLAN OF SITE

SECTION 35, TOWN 38 NORTH, RANGE 6 WEST

ROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN

JOE WILLIAMS PE 22084 SHT **5** OF **10**

Z



ELEVATION

SCALE: 1"=10'

Estimated Quantities This	Sheet	
Pay Item	Quantity	Unit
Excavation, Channel	1000	Cyd
Backfill, Structure, CIP	600	Cyd
Excavation, Fdn	600	Cyd
Pile Driving Equipment, Furn	1	LS
Pile, Treated Timber, Furn	1500	FT
Pile, Treated Timber, Driven	1500	Ft
Test Pile, Treated Timber	4	Ea
Guardrail, Type MGS-8	300	Ft
Guardrail, Curved, Type B	12.5	Ft
Guardrail Anch, Bridge, Det T3	4	Ea
Guardrail Approach Terminal, Type 2M	3	Ea
Guardrail Departing Terminal, Type B	1	Ea
Guardrail Reflector	15	Ea
Riprap, Fieldstone	450	Syd
Timber Structure, Modified	1	LS
Instream Material, Near Structures	125	Ton
Instream MateriaL, Boulders	150	Ton

1. THE CONTRACTOR MUST PROPERTY CONTAIN THE EXISTING STRUCTURE DURING REMOVAL AND PROPOSED ABUTMENTS DURING CONSTRUCTION. PAYMENT WILL BE INCLUDED IN THE

2. THE DESIGN OF THIS STRUCTURE IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN, HL—93 LOADING. THE DESIGN TANDEM PORTION SHALL BE REPLACED BY A SINGLE 60 KIP AXLE BEFORE APPLICATION OF THE 1.2 FACTOR. THE RESULTING LOAD

3. "Culv, Rem, Over 48 inch" SHALL INCLUDE THE REMOVAL OF THE EXISTING STRUCTURE, END TREATMENT(S), SURROUNDING STRUCTURE AND ANY EXCAVATION OR BACKFILL REQUIRED TO SHAPE THE STREAM BOTTOM TO A NATURAL CONDITION NOT ALREADY

4. PILE LAYOUT SHOWN IS APPROXIMATE. THE FABRICATOR SHALL DESIGN THE FOUNDATION PILING AND SHOW LAYOUT IN THE SHOP DRAWINGS, INCLUDED IN PAY ITEM "Timber

5. BURY A MINIMUM OF TWO BACKING PLANK AS SHOWN.
6. GEOTEXTILE LINER SHALL BE PLACED ON ALL SLOPES PRIOR TO PLACING RIPRAP. PAYMENT FOR GEOTEXTILE LINER SHALL BE INCLUDED IN PAYMENT FOR RIPRAP. 7. THE RIPRAP QUANTITY IS BASED ON THE LATERAL DIMENSIONS OF THE AREA TO BE

PROTECTED, REGARDLESS OF THE NUMBER OF LAYERS REQUIRED.

IS DESIGNED HL-93 MOD. LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE DEFLECTION DOES

ITEM "Timber Structure, Modified".

NOT EXCEED L/425 OF THE SPAN LENGTH.

INCLUDED IN "Excavation, Channel".

8. RIPRAP SHALL BE NATURAL FIELD STONE.

Structure, Modified".

			SUMMARY (OF HYDRAULIC ANAL	YSIS			
	E>	KISTING		PROPOSED				
FLOOD DATA	DISCHARGE (CFS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE (FT)	VELOCITY IN D/S CHANNEL (FPS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE (CFS)	VELOCITY IN D/S CHANNEL (FPS)	WATERWAY AREA (SFT) AT D/S FACE	CHANGE IN W/S ELEV. 10 FT U/S O PROPOSED STRCUTURE (FT)	
2-YEAR	140	603.70	11.79	600.36	4.72	29.69	-3.38	
25-YEAR	280	606.41	9.55	601.14	5.08	55.30	-5.27	
50-YEAR	310	607.16	9.98	601.28	5.18	60.31	-5.88	
100-YEAR	350	608.42	10.39	601.46	5.30	66.84	-6.96	

1. THE DRAINAGE AREA CONTRIBUTORY TO THIS CROSSING IS 22.5 SQUARE MILES.

€ €

CREEK ROAD COMMISSION

OVER WYCAMP (

OF STRUCTURE

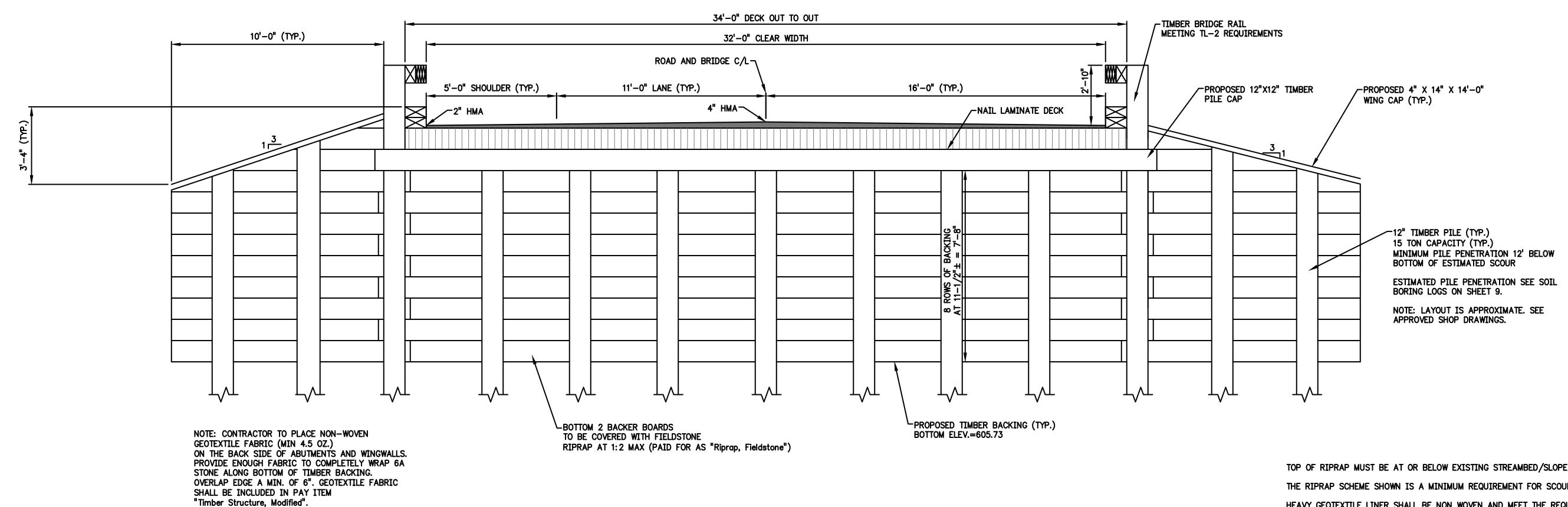
NOF STRUCTURE

NORTH, RANGE 6 WEST

P, EMMET COUNTY. MICHIGAN EMMET COUNTY RC
SHORE DRIVE (
GENERAL PLAN (
SECTION 35, TOWN 38 N
OSS VILLAGE TOWNSHIP, E

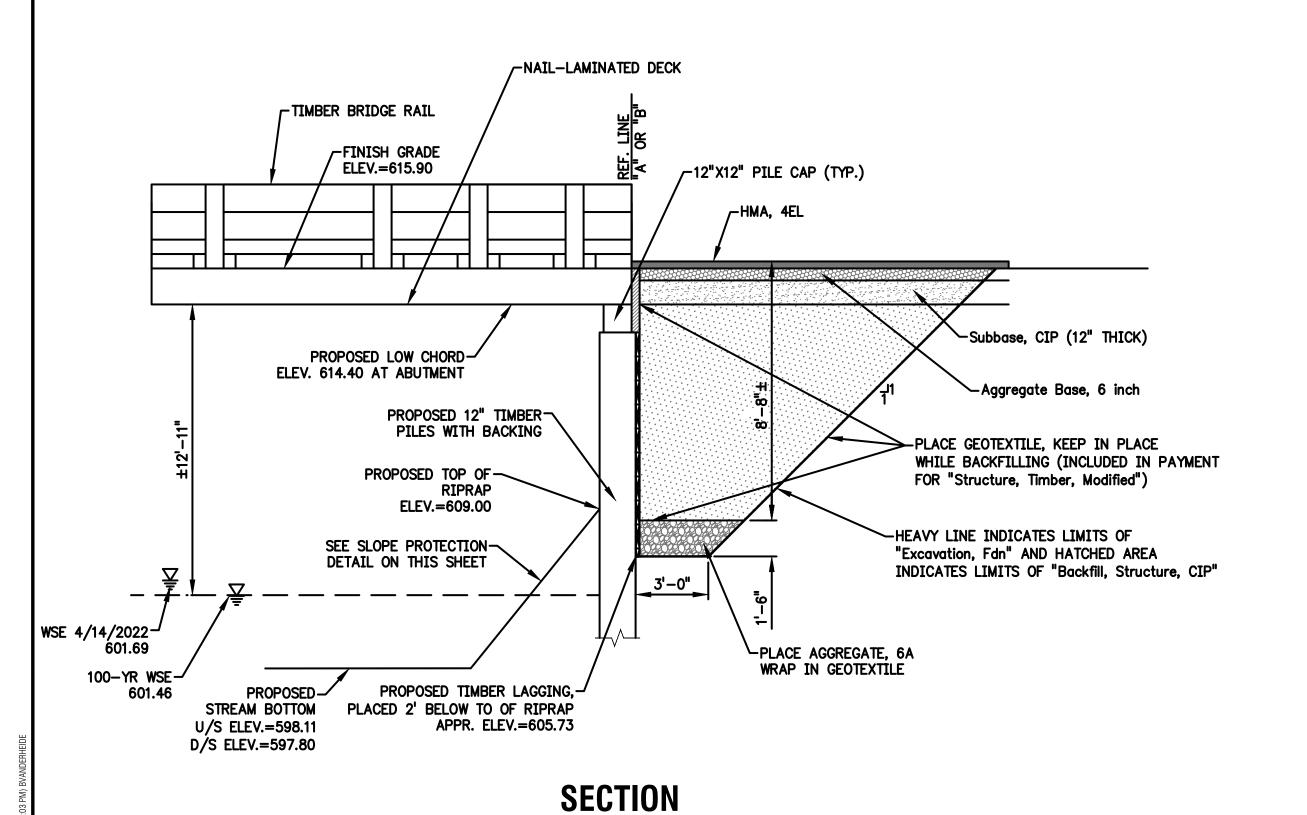
JOE WILLIAMS. PE 22084 SHT 6 OF 10

^{2.} THE WATER SURFACE AND/OR ENERGY GRADE LINE SHOWN ON THE ABOVE HYDRAULIC TABLE ARE TO BE USED FOR COMPARISON PURPOSES ONLY AND ARE NOT TO BE USED FOR ESTABLISHING A REGULATORY FLOODPLAIN.

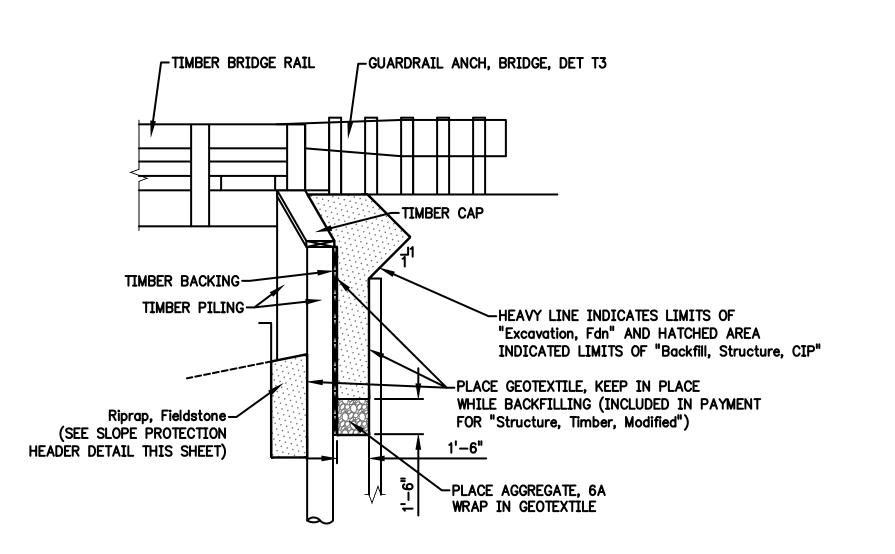


SECTION

NOT TO SCALE



NOT TO SCALE



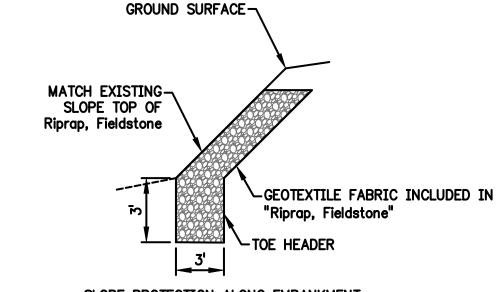
SECTION A-A WINGWALL

NOT TO SCALE

TOP OF RIPRAP MUST BE AT OR BELOW EXISTING STREAMBED/SLOPE ELEVATION.

THE RIPRAP SCHEME SHOWN IS A MINIMUM REQUIREMENT FOR SCOUR.

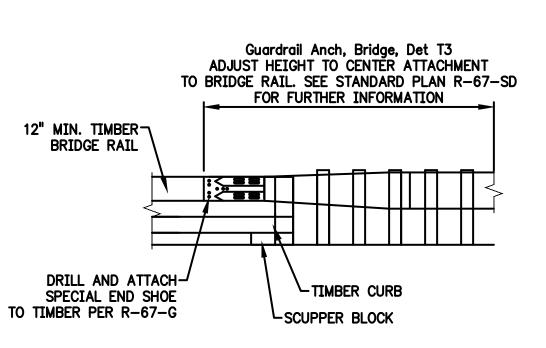
HEAVY GEOTEXTILE LINER SHALL BE NON WOVEN AND MEET THE REQUIREMENTS LISTED IN TABLE 910-1 OF THE CURRENT MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.



SLOPE PROTECTION ALONG EMBANKMENT

SLOPE PROTECTION HEADER DETAILS

NOT TO SCALE



GUARDRAIL ATTACHMENT

NOT TO SCALE

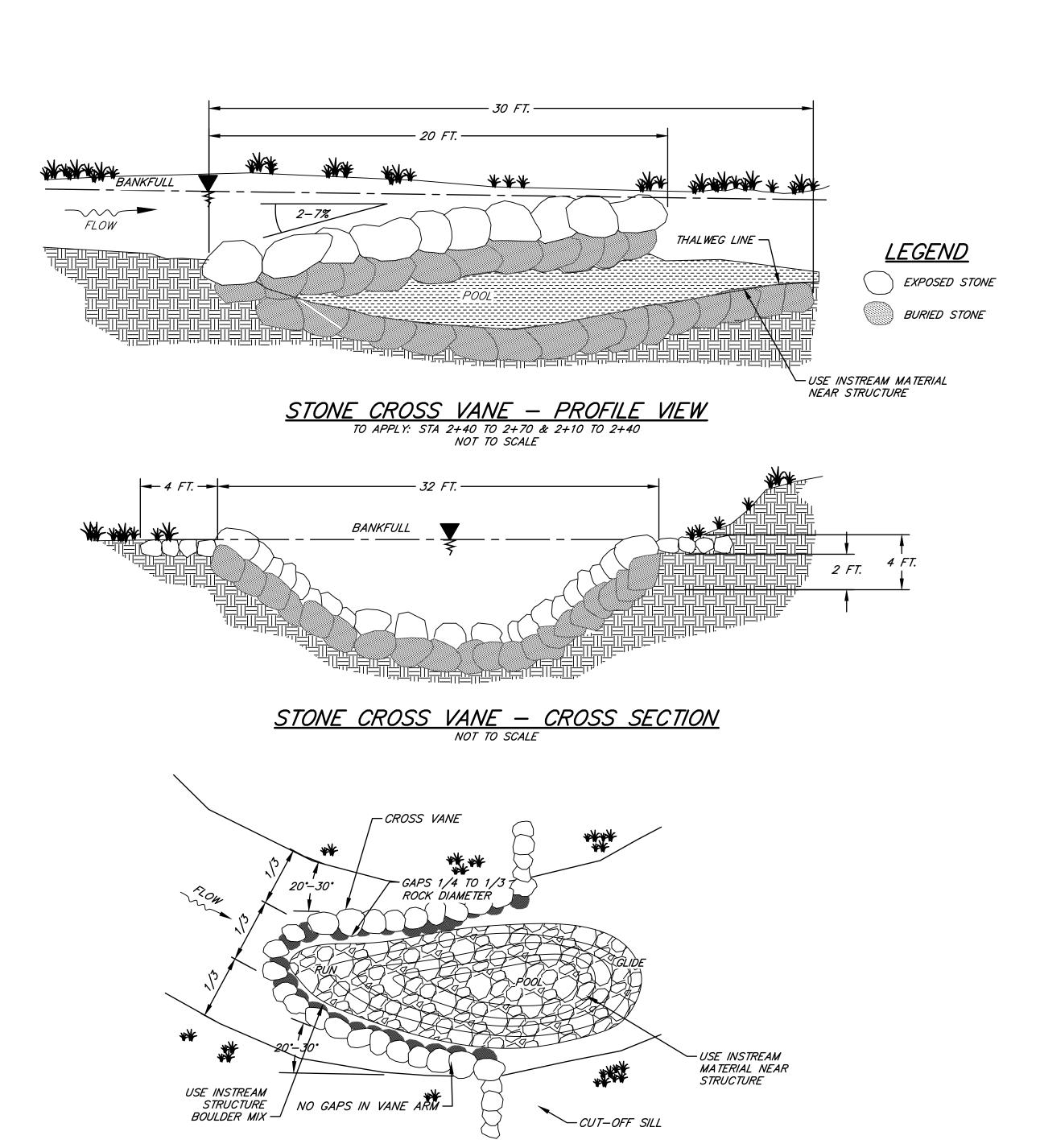
EMMET COUNTY ROAD COMMISSION

E SHORE DRIVE OVER WYCAMP CREEK

GENERAL PLAN OF STRUCTURE

SECTION 35, TOWN 38 NORTH, RANGE 6 WEST

SROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN LAKE Ż JOE WILLIAMS PE 22084 SHT **7** OF **10**



STONE CROSS VANE — PLAN VIEW

BOULDER GRADATION
PARTICLE DIAMETER (INCHES)
24.0
19.0
16.0
13.0
6.0
NEAR STRUCTURE
PARTICLE DIAMETER (INCHES)
13.0
10.5
9.0
7.5
3.5

A 7-25-22 SJG FOR PERMITS
B 1-6-23 SJG REVISED PER NRCS COMMENTS

KE SHORE DRIVE OVER WYCAMP CREEK
STREAM RESTORATION DETAILS
SECTION 35, TOWN 38 NORTH, RANGE 6 WEST

P.M.:

JOE WILLIAMS, PE

DR.:

SJG | CKD.:

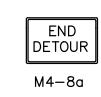
JDW

JOB NO.:

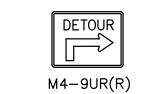
22084

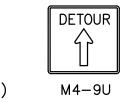
SHT 8 OF 10

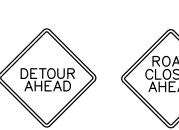
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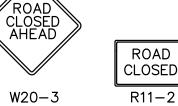


M4-9UR(L)





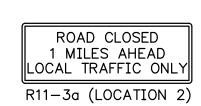




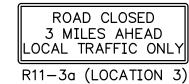
SPEC-1

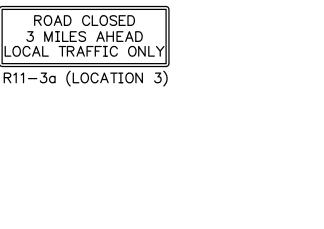
LOWER SHORE DR

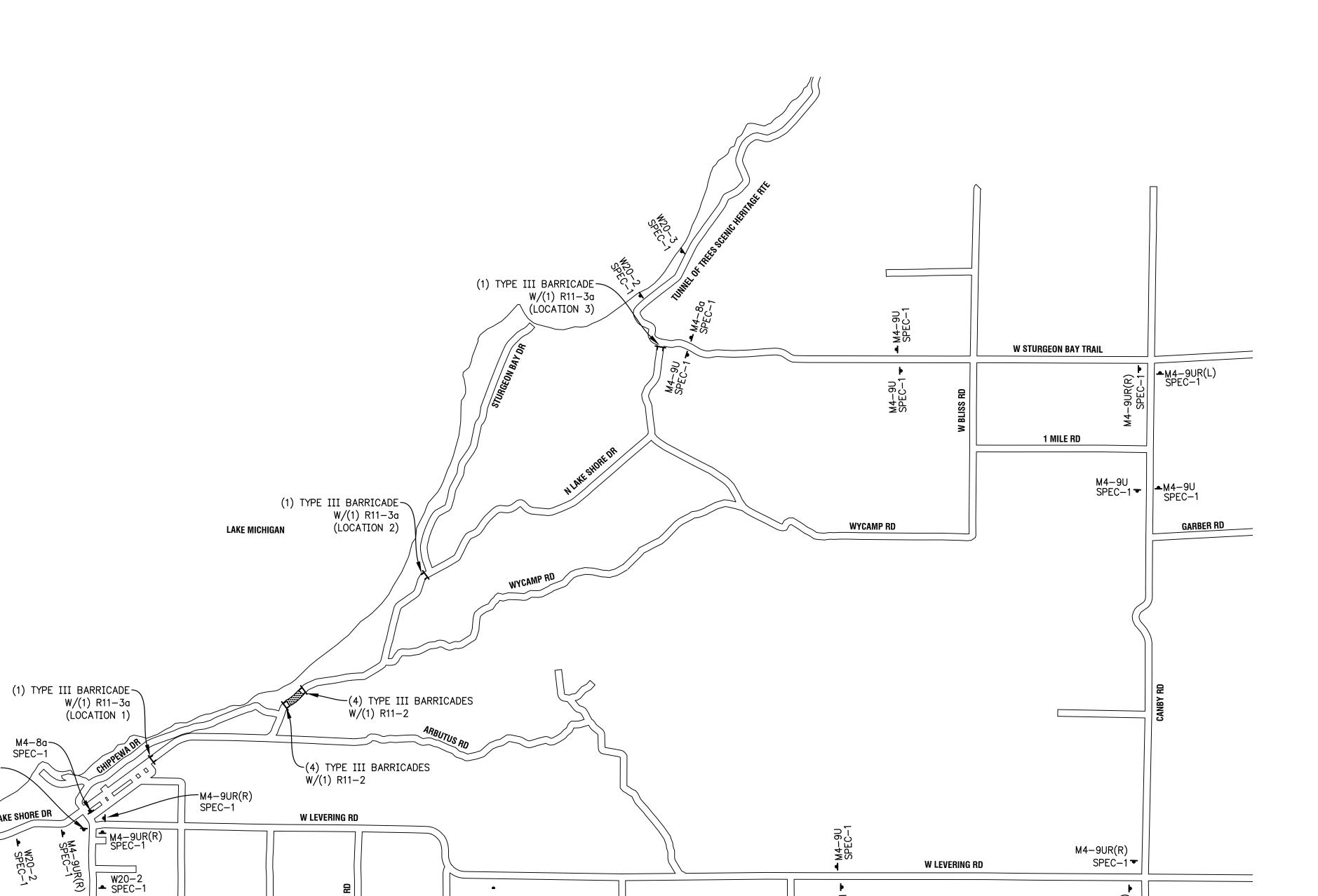
ROAD CLOSED 0.8 MILES AHEAD LOCAL TRAFFIC ONLY R11-3a (LOCATION 1)



R11-2







LEGEND

TEMPORARY SIGN TYPE III BARRICADE

WORK ZONE

TEMPORARY SIGN DETAILS								
MMTUCD#	SIZE	SFT/SIGN						
W20-2	ROAD WORK AHEAD	48" X 48"	16					
W20-3	DETOUR AHEAD	48" X 48"	16					
SPEC-1	ROAD NAME	9" X 36"	2.25					
R11-2	ROAD CLOSED	30" X 48"	30					
R11-3a	ROAD CLOSED AHEAD	30" X 60"	30					
M4-8a	END DETOUR	18" X 24"	3					
M4-9	DETOUR	24" X 30"	5					
M4-9UR(L)	DETOUR LEFT TURN	30" X 30"	6.25					
M4-9UR(R)	DETOUR RIGHT TURN	30" X 30"	6.25					

M4-8a-SPEC-1

W20-3
SPEC-1

M4-9UR(L)-SPEC-1

1.	CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES FOR LOCAL
	TRAFFIC TO PROPERTIES AND DRIVEWAYS LOCATED WITHIN THE
	CONSTRUCTION INFLUENCE AREA UTILIZING "Maintenance Gravel", A
	DIRECTED BY THE ENGINEER.
2.	TEMPORARY SIGNS SHALL BE PAID FOR AS "Sign, Type B, Temp,
	Prismatic" AND "Sign, Type B, Temp, Prismatic, Spec".
	BARRICADES SHALL BE PAID FOR AS "Barricade, Type III, High
	The state of the s

Estimated Quantities This Sheet		
Pay Item	Quantity	Unit
Maintenace Gravel	5	Ton
Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	11	Ea
Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	11	Ea
Minor Traf Devices	1	LS
Sign, Type B, Temp, Prismatic, Furn	332	Sft
Sign, Type B, Temp, Prismatic, Oper	332	Sft
Sign, Type B, Temp, Prismatic, Special, Furn	52	Sft
Sign, Type B, Temp, Prismatic, Special, Oper	52	Sft
Traf Regulator Control	1	LS

KE SHORE DRIVE OVER WYCAMP CREEK
MAINTENANCE OF TRAFFIC
SECTION 35, TOWN 38 NORTH, RANGE 6 WEST
CROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN

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22084 SHT **9** OF **10**

S	OILS &							Bor	ehol	e ID: '	Wyca	mp T Sheet	
S lame:	TRUCTURES Wycamp Creek and 5 Mile Creek Watershed Crossing		Project N	umber:	2022.	0502							
ocation:			Logged By		arton		R	eviewe	d By:	H.Bart	on		
Gourdi	e-Fraser, Inc.		Survey Da	tum:	NAD 1983 S	StatePla	ne Michi	gan Ce	ntral	Hole D	epth:	50	.00
ted:	Apr 25 2022 Completed: Apr 25 2022		Northing:	85	1724.6	Easti	ng: 1	951962	21.7	Eleva	tion:	610).49
/lethod:	4.25" Hollow Stem Auger		Ground W	/ater Le	vels								
nt:	Acker Renegade		At	Time of	Drilling	14.75	on Apr 2!	5 2022	- Grou	ndwate	r Encou	untered	
Туре:	Automatic Hammer			nd of D	rilling	12.00	on Apr 2!	5 2022	- Statio	Water	Level		
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hic		Туре	ber	۶ کا م	۸ its	en	Pen (rengtl	ure t (%)	`	Limits		Ų
Graphic	Material Description	Sample Type	Number	Recovery RQD	Blow Counts	N-Value	Pocket Pen (tsf)	Shear Strength (tsf)	Moisture Content (%)	Liquid	Plastic Limit	Plasticity Index	37311
	ASPHALT - (4.0") GRAVEL - dark brown fine to coarse sandy with silt (6.0")	lacksquare	CDT A	67	105	_			2.7				
	SAND - slightly compact dark brown to brown fine to coarse gravelly with silt		SPT-A	67	1-2-5	7			3.7				SI
	SAND - slightly compact brown fine to medium clayey with lenses of gravel SAND - loose brown fine to medium with a seam of	X	SPT-B	87	3-2-2	4			12.0				SI
	marl and a trace of gravel SAND - slightly compact to compact light brown fine to medium with a trace of silt	Y	SPT-C	47	3-3-2	5			-				S
		\											
	SAND - slightly compact to compact dark brown to light brown fine to medium with a seam of peat and trace of cobbles	À	SPT-D	47	3-4-4	8							S
		Y	SPT-E	87	2-2-3	5			17.4				S
	Z SAND - slightly compact light brown fine silty												
	CLAY - soft light brown with sand and a trace of silt												
		X	SPT-F	150	0-1-1/0'	2			16.0				
	SAND - very compact light brown fine silty with lenses of clay	X	SPT-G	67	4-2-22	24			11.3				S
	SAND - very compact light brown fine to medium with lenses of cobbles and a trace of silt	X	SPT-H	100	1-20-18	38							S
	Ann Arbor •		uskegon	•	Tra	verse	City		1		1	1	
	ls.) 933-395	0									

Name: Location Gourd Gourd arted: Method ent: er Type:	die-Fraser, Inc. Apr 25 2022		Northing: Ground V	/: H.B atum: 85 Vater Le	arton NAD 1983 S 1700.1 vels Drilling	tatePla Eastir 12.00	ne Michi	951958 5 2022	ntral 34.8 - Grour	Hole D Elevat	epth: tion:	55. 616 ntered	
Graphic	Material Description	Sample Type	Number	Recovery % RQD	Blow Counts	N-Value	Pocket Pen (tsf)	Shear Strength (tsf)	Moisture Content (%)	l	Plastic Limit Limit	٠ ا	nscs
	SAND - very compact light brown fine to medium with lenses of gravel and a trace of silt												
	SAND - extremely compact to very compact light brown fine to medium with lenses of silt		SPT-I	73	13-24-30	54			19.8			•	SP
		X	SPT-J	87	8-20-28	48			17.7				SP
		X	SPT-K	53	6-19-19	38						-	SP
	SAND - compact to very compact light brown fine	X	SPT-L	67	5-9-10	19							SP
	to medium	X	SPT-M	100	3-8-21	29			14.3				SP
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roject l		Wycamp Creek and 5 Mile Creek Watershed Crossing		Project N			502							
-	ocation			Logged By					eviewe	-				
Client: Date Sta		ie-Fraser, Inc. Apr 25 2022 Completed: Apr 25 2022				NAD 1983 S 1724.6			gan Cer 951962		Hole [-		.00
	rtea: Method:			Northing: Ground W			Eastir	ig:	951962	11.7	Eleva	tion:	- 610).49
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Graphic	Material Description	Sample Type	Number	Recovery % RQD	Blow	N-Value	Pocket Pen (tsf)	Shear Strength (tsf)	Moisture Content (%)	Liquid Limit	Plastic Limit	-	USCS
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http://gfa.tc
 231.946.5874 (p)
 231.946.3703 (f)



ENGINEERING SURVEYING SURVEYING TESTING & OPERATIONS 123 West Front Street Traverse City, MI 49684

N. LAKE SHORE DRIVE OVER WYCAMP CREEK
CONSTRUCTION DETAILS
SECTION 35, TOWN 38 NORTH, RANGE 6 WEST
CROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN
These documents are pre Ż

22084 SHT 10 OF 10



NOTICE OF AUTHORIZATION

Permit Number: WRP035386 v. 1 Date Issued: October 13, 2022
Site Name: 24 - Lakeshore Drive at Wycamp Creek Expiration Date: October 13, 2027

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division, P.O. Box 30458, Lansing, Michigan 48909-7958, under provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended; specifically:

Part 31, Floodplain Regulatory Authority of the Water Resources Protection.
☑ Part 301, Inland Lakes and Streams.
☐ Part 303, Wetlands Protection.
☐ Part 315, Dam Safety.
☐ Part 323, Shorelands Protection and Management.
☐ Part 325, Great Lakes Submerged Lands.
☐ Part 353, Sand Dunes Protection and Management.

Authorized activity:

Remove the existing 57-foot long by 6-foot span by 6-foot rise corrugated metal pipe culvert and construct a 34-foot long by 62-foot span by 16-foot rise timber bridge (three span). Install 28-cubic yards of material for instream riffle construction, install 20-cubic yards of material for cross vane construction, install 22-cubic yards of riprap along abutments

To be conducted at property located in: Emmet County, Waterbody: Wycamp Creek Section 35, Town 38N, Range 06W, Cross Village Township

Permittee:

Brent Shank Emmet County Road Commission 2265 East Hathaway Road Harbor Springs, Michigan 49740

Luke Golden

Cadillac District Office Water Resources Division

989-370-1569

This notice must be displayed at the site of work.

Laminating this notice or utilizing sheet protectors is recommended.

Please refer to the above permit number with any questions or concerns.



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY WATER RESOURCES DIVISION PERMIT

Issued To:									
Brent Shank, Emmet County Road Commission 2265 East Hathaway Road Harbor Springs, Michigan 49740									
Permit No: Submission No.: Site Name: Issued: Revised:	WRP035386 v.1 HPM-GXFY-3AAAJ 24 - Lakeshore Drive at October 13, 2022	Wycamp Creek							
Expires:	October 13, 2027								
(EGLE), Water Re	sources Division (WRD),	Department of Environment, Great Lakes, and Energy under the provisions of the Natural Resources and , as amended (NREPA); specifically:							
☐ Part 303, Wetla ☐ Part 315, Dam	Safety	☐ Part 323, Shorelands Protection and Management ☐ Part 325, Great Lakes Submerged Lands ☐ Part 353, Sand Dunes Protection and Management codplain Regulatory Authority)							
EGLE certifies that the activities authorized under this permit are in compliance with the State Coastal Zone Management Program and certifies without conditions under the Federal Clean Water Act, Section 401 that the discharge from the activities authorized under this permit will comply with Michigan's water quality requirements in Part 31, Water Resources Protection, of the NREPA and associated administrative rules, where applicable.									
	eby granted, based on per permit conditions, to:	mittee assurance of adherence to State of Michigan							
Authorized Activ	itv:								

Remove the existing 57-foot long by 6-foot span by 6-foot rise corrugated metal pipe culvert and construct a 34-foot long by 62-foot span by 16-foot rise timber bridge (three span). Install 28-cubic yards of material for instream riffle construction, install 20-cubic yards of material for cross vane construction, install 22-cubic yards of riprap along abutments.

Waterbody Affected: Wycamp Creek

Emmet County, Cross Village Township, Town/Range/Section 38N06W35, Property Location:

Property Tax No.

Authority granted by this permit is subject to the following limitations:

- A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.
- B. The permittee, in exercising the authority granted by this permit, shall not cause unlawful pollution as defined by Part 31 of the NREPA.
- C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.
- D. All work shall be completed in accordance with the approved plans and specifications submitted with the application and/or plans and specifications attached to this permit.
- E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved.
- F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with 2013 PA 174 (Act 174) and comply with each of the requirements of Act 174.
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits, or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
- I. Permittee shall notify EGLE within one week after the completion of the activity authorized by this permit.
- J. This permit shall not be assigned or transferred without the written approval of EGLE.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific state act, federal act, and/or rule under which this permit is granted.
- L. All dredged or excavated materials shall be disposed of in an upland site (outside of floodplains, unless exempt under Part 31 of the NREPA, and wetlands).
- M. In issuing this permit, EGLE has relied on the information and data that the permittee has provided in connection with the submitted application for permit. If, subsequent to the issuance of a permit, such information and data prove to be false, incomplete, or inaccurate, EGLE may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
- N. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents, and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representative of the permittee, undertaken in connection with this permit. The permittee's obligation to indemnify the State of Michigan applies only if the state: (1) provides the permittee or its designated representative written notice of the claim or cause of action within 30 days after it is received by the state, and (2) consents to the permittee's participation in the proceeding on the claim or cause of action. It does not apply to contested case proceedings under the Administrative Procedures Act, 1969 PA 306, as amended, challenging the permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.
- O. Noncompliance with these terms and conditions and/or the initiation of other regulated activities not specifically authorized shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, EGLE may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.

- P. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity from EGLE. Such revision request shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by EGLE prior to being implemented.
- Q. This permit may be transferred to another person upon written approval of EGLE. The permittee must submit a written request to EGLE to transfer the permit to the new owner. The new owner must also submit a written request to EGLE to accept transfer. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties that includes all the above information may be provided to EGLE. EGLE will review the request and, if approved, will provide written notification to the new owner.
- R. Prior to initiating permitted construction, the permittee is required to provide a copy of the permit to the contractor(s) for review. The property owner, contractor(s), and any agent involved in exercising the permit are held responsible to ensure that the project is constructed in accordance with all drawings and specifications. The contractor is required to provide a copy of the permit to all subcontractors doing work authorized by the permit.
- S. Construction must be undertaken and completed during the dry period of the wetland. If the area does not dry out, construction shall be done on equipment mats to prevent compaction of the soil.
- T. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent (CEA).
- U. Authority granted by this permit does not waive permit requirements under the authority of Part 305, Natural Rivers, of the NREPA. A Natural Rivers Zoning Permit may be required for construction, land alteration, streambank stabilization, or vegetation removal along or near a natural river.
- V. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.
- W. Unless specifically stated in this permit, construction pads, haul roads, temporary structures, or other structural appurtenances to be placed in a wetland or on bottomland of the water body are not authorized and shall not be constructed unless authorized by a separate permit or permit revision granted in accordance with the applicable law.
- X. For projects with potential impacts to fish spawning or migration, no work shall occur within fish spawning or migration timelines (i.e., windows) unless otherwise approved in writing by the Michigan Department of Natural Resources, Fisheries Division.
- Y. Work to be done under authority of this permit is further subject to the following special instructions and specifications:
 - 1. All work shall be completed in accordance with plans attached; kept on file at EGLE's, WRD, Transportation Review Unit.
 - 2. Authority granted by this permit does not waive compliance requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA. Any discharge of sediment into waters of the state and/or off the road right-of-way is a violation of this permit, Part 91, and Part 31, Water Resources Protection, of the NREPA. A violation of these parts subjects the permittee to potential fines and penalties.

- 3. This permit does not authorize or sanction work that has been completed in violation of applicable federal, state, or local statutes.
- 4. The permittee is responsible for acquiring all necessary easements or rights-of-way before commencing any work authorized by this permit. All construction operations relating to, or part of this project shall be confined to the existing right-of-way limits or other acquired easements.
- 5. Temporary soil erosion and sedimentation control measures shall be installed before or upon commencement of the earth change and shall be maintained daily. Temporary soil erosion and sedimentation control measures shall be maintained until permanent soil erosion and sedimentation control measures are in place and the area is stabilized. Permanent soil erosion and sedimentation control measures for all slopes, channels, ditches, or any disturbed area shall be installed within five (5) calendar days after final grading, or the final earth change has been completed.
- 6. All raw areas in uplands resulting from the permitted construction activity shall be effectively stabilized with sod and/or seed and mulch (or other technology specified by this permit or project plans) in a sufficient quantity and manner to prevent erosion and any potential siltation to surface waters or wetlands. Temporary stabilization measures shall be installed before or upon commencement of the permitted activity, and shall be maintained until permanent measures are in place. Permanent measures shall be in place within five (5) days of achieving final grade.
- 7. All raw earth within 100 feet of a lake, stream, or wetland that is not brought to final stabilization by the end of the active growing season shall be temporarily stabilized with mulch blankets in accordance with the following dates: September 20th for the Upper Peninsula, October 1st for the Lower Peninsula north of US-10, and October 10th for the Lower Peninsula south of US-10.
- 8. This permit placard shall be kept posted at the work site, in a prominent location at all times for the duration of the project, or until permit expiration.
- 9. This permit is being issued for the maximum time allowed and no extensions of this permit will be granted. Initiation of the construction work authorized by this permit indicates the permittee's acceptance of this condition. The permit, when signed by EGLE, will be for a five-year period beginning at the date of issuance. If the project is not completed by the expiration date, a new permit must be sought.
- 10. All dredge/excavated spoils including organic and inorganic soils, vegetation, and other material removed shall be placed on upland (non-wetland, non-floodplain or non-bottomland), prepared for stabilization, revegetated and reseeded with native Michigan species appropriate to the site, and mulched in such a manner so as to prevent and ensure against erosion of any material into any waterbody, wetland, or floodplain.

- 11. During removal or repair of the existing structure, every precaution shall be taken to prevent debris from entering any watercourse. Any debris reaching the watercourse during the removal and/or reconstruction of the structure shall be immediately retrieved from the water. All material shall be disposed of in an acceptable manner consistent with local, state, and federal regulations.
- 12. Prior to the removal of the existing structures, cofferdams of steel sheet piling, gravel bags, clean stone, coarse aggregate, concrete or other acceptable barriers shall be installed to isolate all construction activity from the water. The barriers shall be maintained in good working order throughout the duration of the project. Upon project completion, the accumulated materials shall be removed and disposed of at an upland site.
- 13. All cofferdam and temporary steel sheet pile shall then be removed in its entirety, unless specifically shown to be left in plan on the accepted plans. Cofferdam and sheet pile that is left in place shall be cut off at the elevation shown on the plans and shall be a minimum of one foot below the stream bottom.
- 14. The existing structure shall be kept open to pass the stream flow during removal of the existing road fill.
- 15. The placement of the new culvert and the initial placement of fill in the stream shall be done immediately after removal of the existing culvert. The placement shall be conducted in such a manner that all flow is immediately passed through the new culverts, allowing the major placement of fill to be done in the dry or in still water where erosion and sedimentation will be minimized. The fill material used in this initial placement shall be washed gravel, coarse aggregate, or rock and shall be placed at both ends of the culvert to a level above normal water level before backfill material is placed.
- 16. The culvert shall be installed to align with the center line of the existing stream at both the inlet and outlet ends, and must be **recessed into the stream bed** to provide a natural channel substrate throughout the structure, as shown on the approved plans.
- 17. Road fill side slopes shall not be steeper than 1-on-2 (1 vertical to 2 horizontal) except where headwalls of reinforced concrete, mortar masonry, dry masonry, or other acceptable methods are used.
- 18. Areas to be protected by riprap shall be cleared of brush and debris. All grades shall be shaped and compacted to the required cross section. Geotextile liner shall be placed on the prepared grades. The riprap installation shall not damage the geotextile liner.
- 19. Any fill shall consist of clean inert material.
- 20. Any alterations to the existing road grade elevations other than that shown on the plans will require prior approval from the WRD.

- 21. Road fill side slopes terminating in the stream and any raw streambanks resulting from the construction shall be stabilized with temporary measures in accordance with appropriate Best Management Practices based on site conditions, and if necessary, may be riprapped extending above the ordinary high water mark, before or upon commencement of the permitted activity. Temporary stabilization measures shall be maintained until permanent measures are in place.
- 22. All other road fill slopes, ditches, and other raw areas draining directly to the stream may be protected with riprap, sod and/or seed and mulch as may be necessary to provide effective erosion protection. The placement of riprap shall be limited to the minimum necessary to ensure proper stabilization of the side slopes and fill in the immediate vicinity of the structure.
- 23. All ripraps shall be properly sized and graded based on wave action and velocity, and shall consist of natural field stone or rock (free of paint, soil or other fines, asphalt, soluble chemicals, or organic material). Broken concrete is allowed.
- 24. If the project, or any portion of the project, is stopped and lies incomplete for any length of time other than that encountered in a normal work week, every precaution shall be taken to protect the incomplete work from erosion, including the placement of temporary gravel bag riprap, temporary seed and mulch, or other acceptable temporary protection.
- 25. No work shall be done in the stream during periods of above-normal flows except as necessary to prevent erosion.
- 26. No work or dredging within the water authorized by this permit is allowed from October 1 through March 31st due to critical spawning, migration, and/or recreational use periods.
- 27. Stormwater shall not directly outlet to the stream.

Issued By:

Luke Golden

Cadillac District Office Water Resources Division

989-370-1569

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I hereby assure that I have read, am familiar with, and agree to adhere to the terms and conditions of this permit.

Permittee Signature

Date

cc: Cross Village Township Clerk Emmet County Drain Commissioner – SENT VIA USPS Emmet County CEA USACE IN COOPERATION WITH THE

Little Traverse Bay Bands of Odawa Indians

USDA Natural Resources Conservation Services
PLANS OF PROPOSED CROSSING IMPROVEMENTS

N LAKE SHORE DRIVE OVER WYCAMP CREEK

SECTION 35, TOWN 38 NORTH, RANGE 6 WEST CROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN

W- ga -E

SHEET INDEX

- 1 COVER SHEET
- LEGEND & NOTES
- 3 TYPICAL CROSS SECTIONS
- REMOVAL & SESC PLAN
- 5 GENERAL PLAN OF SITE
- 6 GENERAL PLAN OF STRUCTURE
- 7 GENERAL PLAN OF STRUCTURE
- 8 STREAM RESTORATION DETAILS
- 9 MAINTENANCE OF TRAFFIC PLAN
- 10 SOIL BORING LOGS

NRCS STANDARDS

AQUATIC ORGANISM PASSAGE

(396)

MDOT STANDARD PLANS

GUARDRAIL AT BRIDGES AND EMBANKMENTS GUARDRAIL TYPES A, B, BD, T, TD, MGS-8, & MGS-8D GUARDRAIL APPROACH TERMINALS TYPE 2M GUARDRAIL DEPARTING TERMINAL TYPES B, T & MGS GUARDRAIL ANCHORAGE, BRIDGE DETAILS SOIL EROSION & SEDIMENTATION CONTROL MEASURES SEEDING AND TREE PLANTING	R-59-E R-59-J R-62-H R-66-E R-67-SD R-96-E R-100-H
SEEDING AND TREE PLANTING GRADING CROSS—SECTIONS	R-100-H R-105-D

WORK ZONE DEVICES / SPECIAL DETAILS

GROUND DRIVEN SIGN SUPPORTS FOR TEMP SIGNS WZD-100-A
TEMPORARY TRAFFIC CONTROL DEVICES WZD-125-E

GENERAL NOTES

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION.

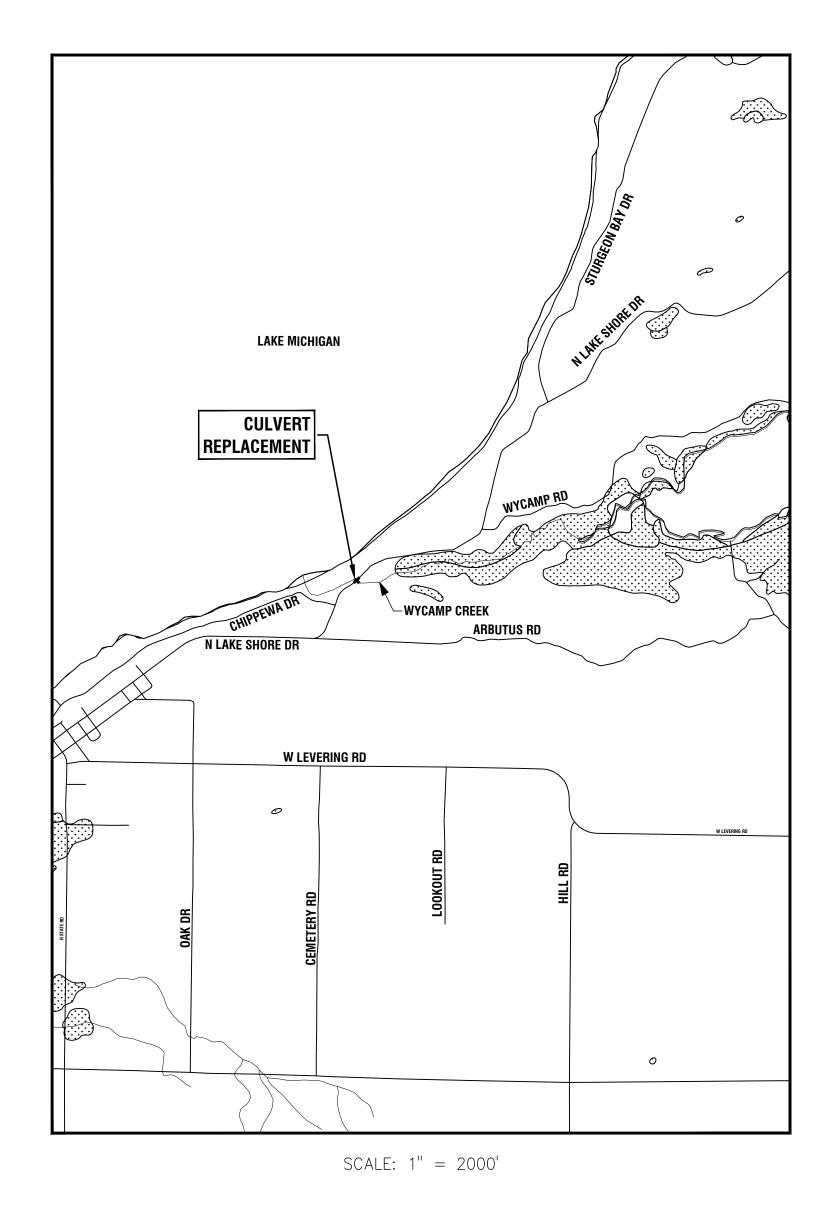
FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMATION WITH PUBLIC ACT 174, 2013, THE CONTRACTOR SHALL DIAL 811 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS 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.

PLACE TOPSOIL, SEED, FERTILIZER, AND MULCH AS SOON AS POSSIBLE. CRITICAL GRADES SHOULD BE PROTECTED WITH MULCH BLANKETS OR TURF REINFORCEMENT MATS AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL PRESERVE AND/OR REPLACE ANY EXISTING PARCEL CORNERS ENCOUNTERED DURING THE WORK.

THE SOIL BORINGS REPRESENT POINT INFORMATION, NO INFERENCE SHOULD BE MADE THAT SUBSURFACE CONDITIONS ARE THE SAME AT OTHER LOCATIONS.

PAVEMENT MARKINGS AND THE PLACING OF TRAFFIC CONTROL SIGNS SHALL BE DONE IN ACCORDANCE WITH THE 2011 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAVEMENT MARKINGS ARE TO BE PERFORMED AS A PART OF THIS CONTRACT.



ISSUED DATE: 8-26-2022

FOR PERMITS

Traffic Information:

N LAKE SHORE DR

Present ADT
Future ADT
% Commercial
Design Speed
5

737 (2041) 5.0% 55 mi/hr (40 mi/hr VC)

Posted Speed (40 mi/hr VC)
Posted Speed Prima Fascia

Contract For:

CULVERT REMOVAL, VERTICAL CURVE IMPROVEMENTS, PRE-FABRICATED TIMBER BRIDGE, GUARDRAIL INSTALLATION, AGGREGATE BASE, HMA SURFACING, AND SLOPE RESTORATION.

Prepared under Supervision of:

Joseph Williams, P.E. GOURDIE FRASER REGISTERED PROFESSIONAL ENGINEER No. 69873



PH 231.946.58
FAX 231.946.37
WWW. gourdiefraser.c



NRCS IS ACCEPTING THESE CONSTRUCTION DRAWINGS AND SPECIFICATIONS ON THE BASIS THAT THEY HAVE BEEN SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. BASED ON THE INFORMATION PROVIDED BY THE PROFESSIONAL ENGINEER, THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS APPEAR TO MEET APPLICABLE NRCS STANDARDS AND SPECIFICATIONS. ANY DEFICIENCIES IN THE DESIGN, CONSTRUCTION DRAWINGS OR SPECIFICATIONS ARE THE RESPONSIBILITY OF THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS ON THE CONSTRUCTION DRAWINGS.

NRCS REPRESENTATIVE.

DATE

TO THE BEST OF MY KNOWLEDGE, JUDGEMENT AND BELIEF, THE DESIGN, CONSTRUCTION DRAWINGS AND SPECIFICATIONS MEET APPLICABLE NRCS STANDARDS AND SPECIFICATIONS.

JOSEPH D. WILLIAMS, P.E.

DATE

Emmet County Road Commission

FRANK ZULSKI, CHAIRMAN

WADE WILLIAMS, VICE PRESIDENT

BRENT SHANK, PE, MANAGER

DATE

DATE

DATE

DATE

DATE

LISA KLEEMAN, CLERK

JOB NO. GPF NO.

22084

SHEET NO.



Quarter Corner

Top of Water

Survey Legend

Existing	Proposed	
		Lot Line
		Property Line
		Right—Of—Way Line
<u> </u>		Right—Of—Way Centerline
		Physical Centerline
		Easement
BM		Benchmark
©		Set GPS Point
•		Found Iron
0		Set Iron
\odot		Found Monument
		Monument Box
lacktriangle		Section Corner

Paving Legend

Existing	Proposed	
		Concrete
		Asphalt Gravel
		Brick
		Wood
		Railroad
		Pavement Markings Curb
		Sidewalk
		Two-track / Trail
	, A , A , A , A , A , A , A , A , A , A	Concrete
		Asphalt
		Gravel
		Brick

Sanitary Legend

Existing	Proposed	
	— < — < —	Sanitary Sewer
		Sanitary Sewer Lead
•	•	Cleanout
S	•	Sanitary Manhole

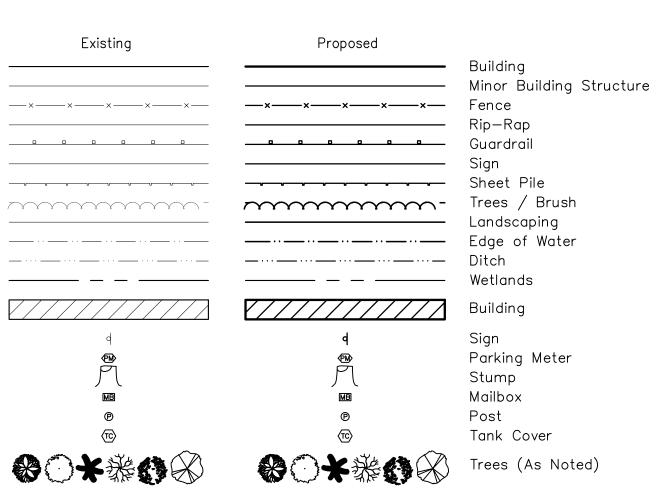
Storm Water and Grading Legend

Existing	Proposed	
		Storm Sewer / Culvert
100	100	Major Contour
100	100	Minor Contour
		Silt Fence
	•	Round Catch Basin
		Square Catch Basin
(D)	(D)	Storm Manhole
\smile	\smile	End Section
*		Soil Boring
	±unununununununu± ∓ununununununununununununununununununun	Clearing & Grubbing Limits

Watermain Legend

Existing	Proposed	
		Watermain
		Water Service
₩ ₩	(A)	Water Meter
\otimes	⊗	Curb Stop
\otimes	(S)	Gate Well
$\diamond \diamond$	♦≎ =	Hydrant
®	⊕	Well
⊗⊖	⊗ •	Spigot
₹	O ⊘ I	Blowoff

Miscellaneous Legend



G	rading Legend
•xxx.xx	Existing Grade
XXX.XX BC XXX.XX G	Proposed Back of Curb Elev. Proposed Gutter Elev.
XXX.XX TA	Proposed Top of Asphalt Elev.
XXX.XX TW	Proposed Top of Concrete Elev.
XXX.XX FF	Proposed Finish Floor Elev.
XXX.XX TG	Proposed Top of Gravel Elev.
XXX.XX I.E.	Proposed Culvert Invert
XXX.XX D.I.	Proposed Ditch Invert
XXX.XX	Proposed Ground Elev.
XXX.XX HP	Proposed High Point
XXX.XX LP	Proposed Low Point
··~>	Proposed Drainage Arrow

Electric & Gas Legend

Existing	Proposed	
GAS		Gas Main
		Pipeline
OHE		Overhead Electric
UGE	UGE	Underground Electric
——————————————————————————————————————	——— — ОНТ ———	Overhead Telephone
ugt	UGT	Underground Telephone
CATV	CATV	Cable Television
FOPT	FOPT	Fiber Optic
⟨GM⟩	•	Gas Meter
€M>	€₩>	Electric Meter
\mathcal{O}	O	Utility Pole
((Guy Wire
<i>\range</i>	\$	Satellite Dish
	*	Light
A	Æ	Fiber Optic Marker
© -\$	○ ◆	Light Pole
—	o —	Guy Pole
E	(E)	Electric Manhole
T	①	Telephone Manhole
	&	Monitor Well
7	7	Miss Dig Flag

GENERAL NOTES

- 1. CONTRACTOR SHALL CALL MISS DIG (1-800-482-7171) A MINIMUM OF 3 WORKING DAYS PRIOR TO CONSTRUCTION.
- 2. CONTRACTOR SHALL CONFORM TO SOIL EROSION AND SEDIMENTATION CONTROL ACT, PART 91 OF ACT 451 OF 1994.
- 3. DEBRIS CONSIDERED TO BE WASTE SHALL BE DISPOSED OF BY THE CONTRACTOR.
- 4. THE CONTRACTOR SHALL REMOVE, REPLACE, AND MAINTAIN ALL EXISTING MAIL BOXES, FENCES AND SIGNS. MAILBOX POSTS SHALL BE REPLACED AS DIRECTED BY THE ENGINEER. ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICE BID LUMP SUMP PRICE FOR THE TIMBER BRIDGE CONSTRUCTION.
- 5. THE CONTRACTOR SHALL MAINTAIN LOCAL TRAFFIC AT ALL TIMES ON THE PROJECT.
- 6. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING ANY WORK.
- 7. CONSTRUCT CENTERLINE OF PROPOSED CREEK AT CENTERLINE OF EXISTING CREEK UNLESS OTHERWISE INDICATED.
- 8. CONTRACTOR SHALL SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS DAILY. LAWN AREAS SHALL RECEIVE 4" OF TOPSOIL AND BE RESTORED AS STATED IN THE SPECIFICATIONS AND SHOWN ON THE PLANS.
- 9. COORDINATE RIPRAP INSTALLATIONS WITH THE ENGINEER PRIOR TO CONSTRUCTION.
- 10. INSTALL EROSION CONTROL BLANKETS AND FABRICS ACCORDING TO MANUFACTURERS SPECIFICATIONS.
- 11. ALL ELEVATIONS ARE BASED ON NAVD88 DATUM.
- 12. SPECIAL CARE SHALL BE TAKEN IN EXCAVATING IN THE PROXIMITY OF ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL SECURE ASSISTANCE FROM THE APPROPRIATE UTILITY COMPANY IN LOCATING ITS LINES. THE CONTRACTOR SHALL ALSO: PROVIDE SUPPORT FOR ANY UTILITY WITHIN THE EXCAVATION, PROVIDE PROPER COMPACTION UNDER ANY UNDERMINED UTILITY STRUCTURE AND, IF NECESSARY, INSTALL TEMPORARY SHEETING OR USE A TRENCH BOX TO MINIMIZE THE EXCAVATION. THE CONTRACTOR SHALL PROTECT AND SAVE HARMLESS FROM DAMAGE ALL UTILITIES, WHETHER PRIVATELY OR PUBLICLY OWNED, ABOVE OR BELOW GROUND SURFACE, WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER.
- 13. THE LOCATION OF EXISTING PUBLIC UTILITIES AND UNDERGROUND STRUCTURES SUCH AS PIPE LINES, ELECTRIC CONDUITS, SEWERS AND WATER LINES, OF RECORD ARE SHOWN ON THE PLANS. THE INFORMATION SHOWN IS BELIEVED TO BE REASONABLY CORRECT AND COMPLETE. HOWEVER, NEITHER THE CORRECTNESS NOR THE COMPLETENESS OF SUCH INFORMATION IS GUARANTEED. PRIOR TO THE START OF ANY OPERATIONS IN THE VICINITY OF ANY UTILITIES, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES AND MISS DIG AND REQUEST THAT THEY STAKE OUT THE LOCATIONS OF THE UTILITIES IN QUESTION. THE CONTRACTOR SHALL COORDINATE THE RELOCATION OF ANY UTILITIES WITH THE UTILITY PROVIDER. COST OF REPAIR FOR ANY DAMAGED UTILITY LINES THAT IS PROPERLY STAKED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 14. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS GOVERNING THE FURNISHING AND USE OF SAFEGUARDS, SAFETY DEVICES AND PROTECTION EQUIPMENT. THE CONTRACTOR SHALL TAKE ANY NECESSARY PRECAUTIONS TO PROTECT THE LIFE AND HEALTH OF EMPLOYEES AND THE PUBLIC IN THE PERFORMANCE OF THE WORK

SOIL EROSION & SEDIMENTATION CONTROL NOTES

ACCEPTANCE OF THE PROJECT, IS THE RESPONSIBILITY OF THE CONTRACTOR.

- 1. TEMPORARY SEEDING SHALL BE CONDUCTED ON ALL DISTURBED AREAS THAT WILL BE FINISH GRADED AT A LATER DATE. TEMPORARY SEEDING SHALL BE LIMITED TO DATES BETWEEN APRIL 1ST AND NOVEMBER 1ST.
- 2. FINAL SEEDING SHALL BE COMPLETED WITHIN 24 HOURS OF FINAL GRADING. WEEKLY INSPECTIONS OF SEEDED AREAS SHALL BE COMPLETED TO VERIFY GRASS GROWTH. ANY AREAS NOT ESTABLISHED SHALL BE FERTILIZED, SOILS AMENDED AND RE-SEEDED AS NECESSARY.
- 3. CONTRACTOR TO INSTALL AND MAINTAIN ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THE APPROVED PLANS PRIOR TO COMMENCEMENT OF CONSTRUCTION OR MASS GRADING.
- 4. ALL MUD, DIRT, AND DEBRIS TRACKED ONTO EXISTING ROADWAYS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR NO LESS THAN ON A DAILY BASIS BY SCRAPING AND SWEEPING.
- 5. ALL PERMANENT SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE WITHIN 24 HOURS OF FINAL GRADE (GRADE LISTED ON PLANS), THIS INCLUDES ALL VEGETATIVE STABILIZATION. REMOVAL OF TEMPORARY MEASURES, FOLLOWING
- 6. SHOULD ADDITIONAL SOIL EROSION CONTROL MEASURES BE DETERMINED TO BE NECESSARY BY EITHER THE SOIL EROSION CONTROL OFFICER OR THE OWNER'S ENGINEER THEY SHALL BE IN PLACE NO LATER THAN 24 HOURS FROM THE TIME OF NOTIFICATION TO THE GENERAL CONTRACTOR FOR THE PROJECT. IF NOT PLACED IN 24 HOURS OR LESS ALL ON SITE CONSTRUCTION WILL BE HALTED UNTIL SUCH MEASURES ARE INSTALLED AND APPROVED BY EITHER THE SOIL EROSION CONTROL OFFICER OR THE OWNER'S ENGINEER.
- 7. ALL SOIL EROSION CONTROL MEASURES SHALL BE INSPECTED DAILY BY THE CONTRACTOR, AND INSPECTED AFTER EACH RAIN EVENT TO ENSURE PROPER MAINTENANCE OF THE SOIL EROSION CONTROL MEASURES. ANY DEFICIENCIES OR REPAIRS TO SOIL EROSION CONTROL MEASURES ARE TO BE CORRECTED IMMEDIATELY.
- 8. INSTALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES BEFORE OR UPON COMMENCEMENT OF THE EARTH CHANGE ACTIVITY AND MAINTAIN MEASURES ON A DAILY BASIS. REMOVE TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AFTER PERMANENT SOIL EROSION MEASURES ARE IN PLACE AND THE AREA IS STABILIZED ("STABILIZED" MEANS THE ESTABLISHMENT OF VEGETATION OR THE PROPER PLACEMENT, GRADING, OR COVERING OF SOIL TO ENSURE ITS RESISTANCE TO SOIL EROSION, SLIDING, OR OTHER EARTH MOVEMENT).
- 9. CONTRACTOR IS RESPONSIBLE TO ENSURE THAT MEASURES ARE INSTALLED IN COMPLIANCE WITH THE APA MANUAL AND THAT THE SESC MEASURES ARE MONITORED AND MAINTAINED UNTIL ALL DISTURBED AREAS ARE STABILIZED ("STABILIZED" MEANS THE ESTABLISHMENT OF VEGETATION OR THE PROPER PLACEMENT, GRADING, OR COVERING OF SOIL TO ENSURE ITS RESISTANCE TO SOIL EROSION, SLIDING, OR OTHER EARTH MOVEMENT) AND TEMPORARY MEASURES ARE REMOVED. CONTRACTOR ACKNOWLEDGES THAT SESC MEASURES MAY NEED TO BE ADAPTED, ADJUSTED, OR ADDED BASED ON SITE CONDITIONS IN ORDER TO REMAIN IN COMPLIANCE WITH PART 91 REQUIREMENTS.
- 10. RESTORE DISTURBED AREAS WITH 4" TOPSOIL SURFACE, MDOT CLASS A SEED MIXTURE, 300#/ACRE CHEMICAL FERTILIZER NUTRIENTS AND 2 TONS/ACRE MULCH. PLACE TOPSOIL/SEED/FERTILIZER PRIOR TO PLACING MULCH BLANKET. WORK TO BE INCLUDED IN PAYMENT FOR "SLOPE RESTORATION, NON-FREEWAY".
- 11. CONTRACTOR IS RESPONSIBLE FOR CLEANUP & RESTORATION INCLUDING PROGRESS CLEANING. PROGRESS CLEANING INCLUDES BUT IS NOT LIMITED TO REMOVAL OF WASTE MATERIALS, DEBRIS, RUBBISH, AND EXCESS SPOILS, COMPLETE LEVELING AND RESTORE DAMAGE NOT MORE THAN 1000 FEET BEHIND CONSTRUCTION. ALSO INCLUDES DAILY CLEANING OF ALL ROAD SURFACES.
- 12. CONTRACTOR SHALL OBTAIN AND PAY ALL FEES FOR SOIL EROSION CONTROL PERMIT.

PUBLIC UTILITIES

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AS OBTAINED ON OUR SURVEYS. THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO BE SATISFIED AS TO ITS ACCURACY AND THE LOCATION OF EXISTING UTILITIES.

Charter Communications 231-463-1941 rick.rousseau@charter.com

Attention: Jeffrey Collard 586-764-8260 jc7632@att.com

DTE Energy Larry Bourke 231-592-3244

Emmet County Road Commission Brent Shank 231-347-8142 bshank@emmetcrc.org



GENERAL MAINTENANCE PROCEDURES

- PERFORM MAINTENANCE ACTIVITIES DURING LOW FLOW PERIODS.
- START MAINTENANCE AT DOWNSTREAM END OF PROJECT. REMOVE SEDIMENT WITH LIMITED DISTURBED BANK AREA.
- APPLY SEED AND MULCH DAILY TO DISTURBED AREAS. 5. MAINTAIN VEGETATIVE BUFFER BY PLACING SEDIMENT SPOILS AS CLOSE TO
- EASEMENT BOUNDARY AS POSSIBLE. 6. APPLY SEED AND MULCH IMMEDIATELY AFTER LEVELING SPOILS.

CONSTRUCTION NOTES

- . REMOVE AND PROPERLY DISPOSE OF EXISTING TILE & STRUCTURES LOCATED WITHIN PROPOSED CULVERT TRENCH. REMOVED STRUCTURES & TILE OR DEBRIS SHALL BECOME PROPERTY OF THE CONTRACTOR, REMOVAL TO BE INCLUDED IN THE COST PER LINEAR FOOT OF BOX CULVERT. EXISTING TILE LOCATED OUTSIDE THE INFLUENCE OF THE PROPOSED TRENCH SHALL BE TIED INTO THE PROPOSED STORM SEWER AT THE DOWNSTREAM END WITH ENGINEER APPROVED
- DURING REMOVAL OF THE EXISTING OF THE EXISTING STRUCTURE, EVERY PRECAUTION SHALL BE TAKEN TO PREVENT DEBRIS FROM ENTERING WATERCOURSE,. ANY DEBRIS REACHING WATERCOURSE DURING THE REMOVAL OF THE STRUCTURE SHALL BE IMMEDIATELY REMOVED FROM WATER. ALL MATERIAL SHALL BE DISPOSED OF IN AN ACCEPTABLE MANNER CONSISTENT WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
- 3. ALL SPRINKLER SYSTEMS DAMAGED SHALL BE REPAIRED BY CONTRACTOR. COST TO BE INCLUDED IN THE LUMP SUM BID PRICE FOR Slope Restoration, Non-Freeway, Type B.
- 4. ANY UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE SUPPORTED, PER THE SPECIFICATIONS OF THE INDIVIDUAL UTILITY COMPANY CLAIMING OWNERSHIP OF THE UTILITY. COST TO BE INCLUDED WITH THE PAY ITEM BEING INSTALLED. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- 5. CONTRACTOR SHALL MAINTAIN ACCESS FOR MAIL DELIVERY AND GARBAGE PICKUP AT ALL PARCEL AFFECTED BY CONSTRUCTION. IF THESE SERVICES CANNOT BE PERFORMED CONTRACTOR IS RESPONSIBLE FOR TAKING THE NECESSARY MEASURES TO CARRY THEM OUT.
- 6. ALL WORK SHALL BE WITHIN ROAD RIGHT-OF-WAY. WORK OUTSIDE RIGHT-OF-WAY MUST BE AGREED UPON BY LANDOWNER AND ENGINEER WITH A SIGNED LANDOWNER AGREEMENT PRIOR TO WORK ON THAT PROPERTY.
- 7. GROUNDWATER SEEPAGE IS ANTICIPATED TO BE A FACTOR DURING CONSTRUCTION. DEWATERING METHODS MAY BE NECESSARY. ALL DEWATERING REQUIRED IS THE CONTRACTOR'S RESPONSIBILITY AND COST SHALL BE INCLUDED IN THE PAY ITEM BEING INSTALLED. THE METHOD FOR DEWATERING SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
- 8. ALL PAVEMENT JOINTS BETWEEN EXISTING AND NEW PAVEMENT SHALL BE SAW CUT WITH BUTT-JOINTS.
- 9. STRIP AND SALVAGE TOPSOIL PRIOR TO INSTALLING BOX CULVERT. REPLACE TOPSOIL TO AFTER INSTALLATION.
- 10. CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL DEVICES AS REQUIRED BY THE COUNTY ROAD COMMISSION AND THE TRAFFIC CONTROL PLAN.
- 11. CONTRACTOR IS RESPONSIBLE TO FIELD LOCATE AND USE CARE WHEN WORKING AROUND UTILITIES AND TO NOT DISRUPT SERVICE. ANY DAMAGE TO UTILITIES SHALL BE REPAIRED AND/OR REPLACED AT NO ADDITIONAL
- 12. THE ENGINEER SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO BITUMINOUS PAVING.
- 13. THE PREPARED SUBBASE MUST BE TESTED AND APPROVED PRIOR TO PLACEMENT OF BASE.
- 14. Embankment, CIP, Backfill, Structure, CIP, Excavation, Fdn, Excavation, Channel AND Subbase, CIP ARE TO BE PAID AT PLAN QUANTITY UNLESS OTHERWISE KNOWN CHANGES. EARTHWORK FOR DRIVES, APPROACHES, AND INTERSECTIONS ARE INCLUDED IN PLAN QUANTITIES. ALL NECESSARY EMBANKMENT FOR ROADWAY, APPROACHES, AND DRIVEWAYS SHALL MEET GRANULAR MATERIAL CLASS II REQUIREMENTS UNLESS OTHERWISE
- 15. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE GRAVEL TO BE USED ON THIS PROJECT IS APPROVED PRIOR TO PLACEMENT.
- 16. THE PREPARED GRAVEL WIDTH, DEPTH, AND COMPACTION MUST BE REVIEWED AND APPROVED BY THE OWNERS ENGINEER PRIOR TO BITUMINOUS PAVING.
- 17. ALL CONSTRUCTION SIGNING SHALL MEET MMUTCD STANDARDS.
- 18. ALL PAVEMENT CUTS ARE TO BE MADE WITH SAW, IMMEDIATELY PRIOR TO PAVING.
- 19. THE CONTRACTOR SHALL NOTIFY RESIDENTS 24 HOURS (EXCLUDING SATURDAYS AND SUNDAYS) IN ADVANCE OF DISRUPTION TO SERVICE, SUCH AS DRIVEWAY CLOSING.
- 20. PAVEMENT MARKINGS SHALL MEET MDOT SPECIFICATIONS AND STANDARDS.

MISCELLANEOUS QUANTITIES

THE FOLLOWING ITEMS OF WORK SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT. THESE ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN AND PROFILE

Mobilization, Max

2 Ea Erosion Control, Filter Bag Erosion Control, Maintenance, Sediment Removal



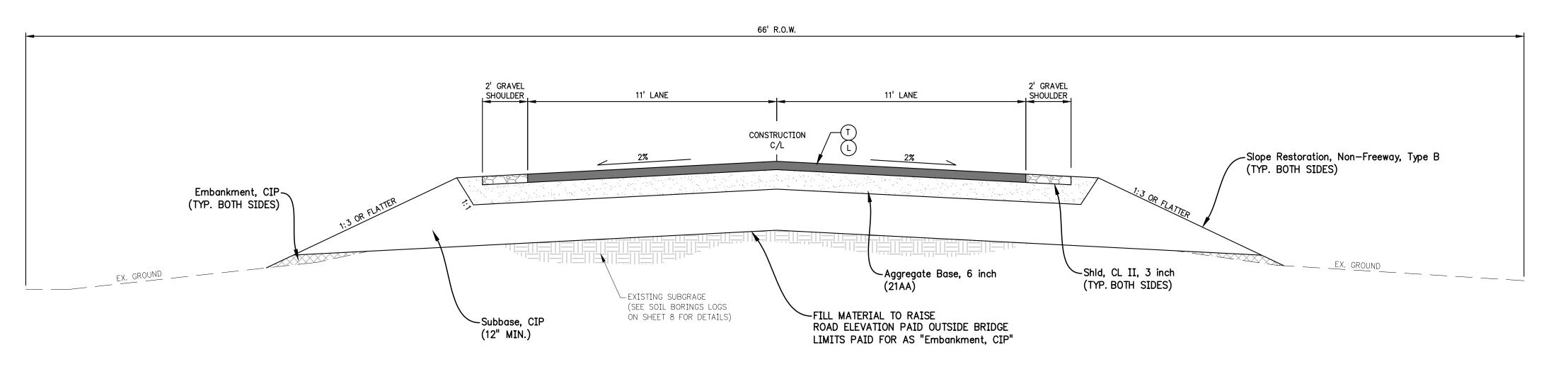


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EMMET CO SHORE

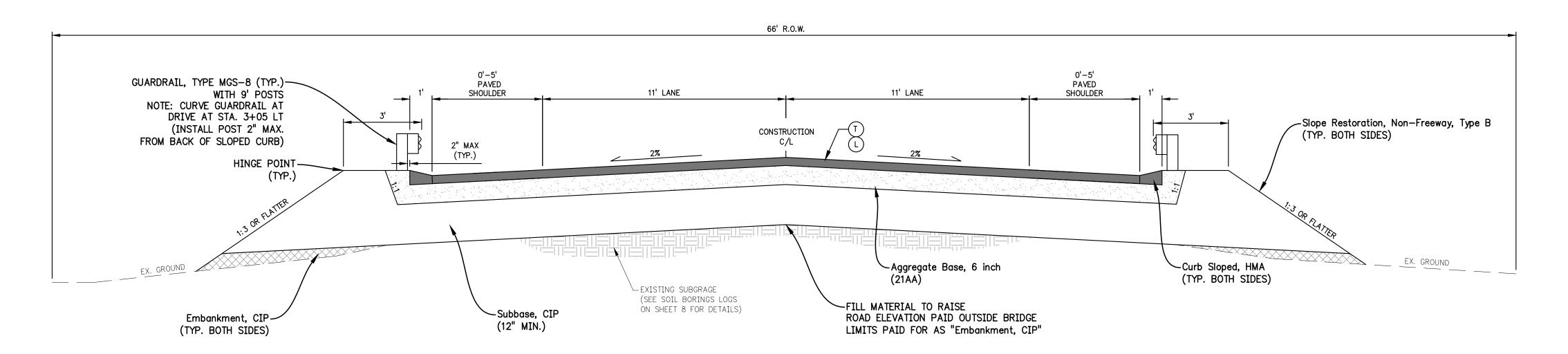
N. LAKE SHORE DRIVE EXISTING TYPICAL CROSS SECTION

TO APPLY: P.O.B. TO P.O.E. SCALE: 1'' = 3'



N. LAKE SHORE DRIVE PROPOSED TYPICAL CROSS SECTION

TO APPLY: P.O.B. TO STA 0+81.43 & STA 2+92.86 TO P.O.E. SCALE: 1'' = 3'



N. LAKE SHORE DRIVE PROPOSED TYPICAL CROSS SECTION

TO APPLY: STA 0+81.43 TO STA 2+92.86 SCALE: 1'' = 3'

	HMA APPLICATION ESTIMATE					
IDENT.	ITEM	RATE LBS/SYD	PERFORMAN CE GRADE	AGGREGATE WEAR INDEX	REMARKS	
Т	HMA, 4EL	220	58-28	220 MIN	TOP COURSE	
L	HMA, 4EL	220	58-28	_	LEVELING COURSE	
	*BITUMINUOUS BOND COAT	0.05 TO 0.15 GAL/SYD				

Estimated Quantities This Sheet		
Pay Item	Quantity	Unit
Maintenance Gravel	5	Ton
Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	11	Ea
Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	11	Ea
Minor Traf Devices	1	LS
Sign, Type B, Temp, Prismatic, Furn	332	Sft
Sign, Type B, Temp, Prismatic, Oper	332	Sft
Sign, Type B, Temp, Prismatic, Special, Furn	52	Sft
Sign, Type B, Temp, Prismatic, Special, Oper	52	Sft
Traf Regulator Control	1	LS

*FOR INFORMATION ONLY

EMMET COUNTY ROAD COMMISSION

E SHORE DRIVE OVER WYCAMP CREEK

TYPICAL CROSS SECTIONS

SECTION 35, TOWN 38 NORTH, RANGE 6 WEST

ROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN

Ż

22084 SHT 3 OFGIOW

BENCHMARKS BM-C BENCH TIE IN N. SIDE OF 10" SPRUCE TREE ELEV. = 602.28 (NAVD88)

5 + 50

GENERAL REMOVAL NOTES:

1. THE WORK COVERED BY THESE PLANS INCLUDES THE REMOVAL OF AN EXISTING UNDERSIZED CULVERT, HMA REMOVAL, VERTICAL CURVE IMPROVEMENTS, MAINTAINING TRAFFIC, CONSTRUCTION OF THE PROPOSED TIMBER BRIDGE AND PLACE SLOPE

PROTECTION/RESTORATION.

2. ALL REMOVED CULVERT MATERIALS AND DEBRIS, UNLESS OTHERWISE NOTED, SHALL BE REMOVED FROM SITE AND ARE THE RESPONSIBILITY OF THE CONTRACTOR.

3. NO DEBRIS SHALL ENTER WYCAMP CREEK DURING THE REMOVAL OF THE EXISTING CULVERT AND ASSOCIATED EXCAVATION.

4. WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING A DETERMINATION OF WATER LEVELS THAT MAY EXISTING DURING CONSTRUCTION.

5. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING WORK

BEGINNING WORK.

6. CONTRACTOR SHALL SUBMIT SCHEDULE TO ENGINEER FOR REVIEW AND

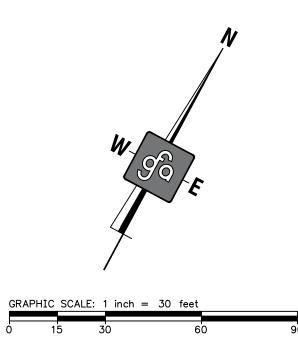
APPROVAL.

BM-D BENCH TIE IN S.W. SIDE OF 18" CEDAR TREE ELEV. = 605.66 (NAVD88)

WYCAMP CREEK EXISTING PROFILE SCALE: HORIZONTAL: 1"=30' VERTICAL: 1"='10

Estimated Quantities This Sheet	I I	11
Pay Item	Quantity	Unit
Clearing	0.5	Acre
Culv, Rem, Over 48 Inch	1	Ea
Erosion Control, Filter Bag	2	Ea
Erosion Control, Maintenance, Sediment Removal	10	Cyd
Erosion Control, Silt Fence	600	Ft
Erosion Control, Turbidity Curtain, Shallow	35	Ft
HMA Surface, Rem	1,040	Syd
Pavt for Butt Joints, Rem	10	Syd
Hydrant, Rem	1	Ea

#6949 PARCEL ID: 05-04-35-101-001 WYCAMP CREEK 4+00 CAUTION! OVERHEAD WIRES PM OVERHEAD WIRES	
HMA Surface, Rem (1, OVERHEAD WIRES) N43°39'43"E 192.94')40 Syd)
Hydrant, Rem, (1 Ea) 610 611 144 02 N57°24'37"E 29.33'	
P.O.B. STA 0+00.00 P.O.B. STA 0+00.00 P.O.B. STA 4+02.12	
614 617 618 618 619 610 610 610 610 610 610 610 610	
2' WIDE BUTT JOINT, PAID FOR AS "Pavt for Butt Joints, Rem" (5 Syd) PARCEL ID: 05-04-35-100-001 "Pavt for Butt Joints, Rem" (5 Syd) "Pavt for Butt Joints, Rem" (5 Syd) PARCEL ID: 05-04-35-100-001 #7090 PARCEL ID: 05-04-35-100-001	-003
PRE—FABRICATED TIMBER BRIDGE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS Culv Rem, Over 48 Inch (1 Ea)	
Letter Land Canal	
	620
N. LAKE SHORE DRIVE	615
±57'	610
EX. 72" CMP CULVERT @ 1.30%	600
597.93 I.E. 598.67 I.E. EXISTING BOTTOM OF WYCAMP CREEK	595
	590
FEXISTING CREEK BOTTOM ELEV.	585
599.5 599.5 599.5 599.6 4 599.5 599.6 4 599.5 599.6 59	
	-0+50



EMMET COUNTY ROAD COMMISSION

(E SHORE DRIVE OVER WYCAMP CREEK

REMOVAL & SESC PLAN

SECTION 35, TOWN 38 NORTH, RANGE 6 WEST

SROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN

These documents are pi

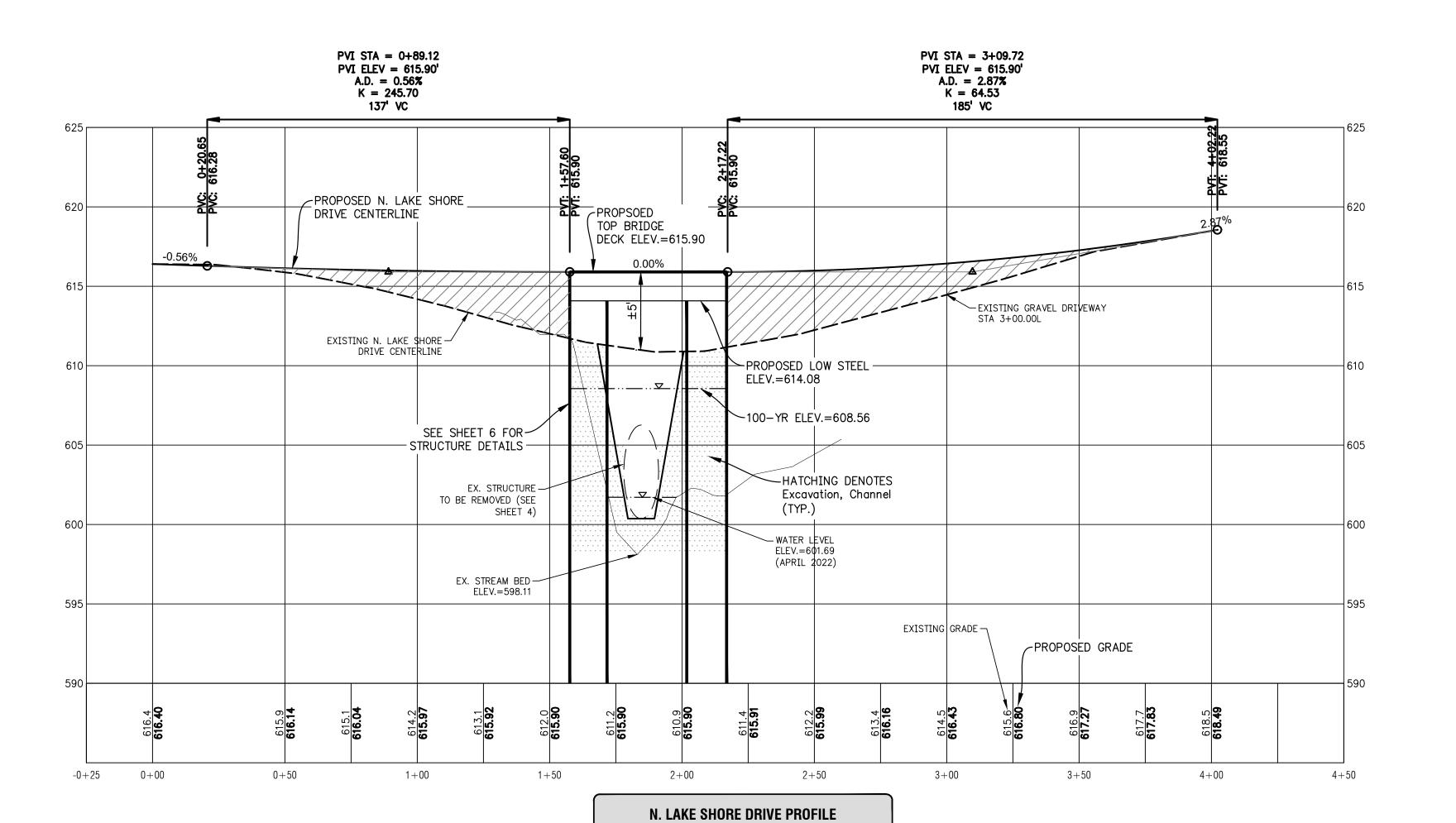
JOE WILLIAMS. PE 22084

SHT **4** OFG 10 W Approved
Issued On:10/13/202
Expires On:10/13/202 BENCHMARKS

BM-C BENCH TIE IN N. SIDE OF 10" SPRUCE TREE ELEV. = 602.28 (NAVD88)

BM-D BENCH TIE IN S.W. SIDE OF 18" CEDAR TREE ELEV. = 605.66 (NAVD88)

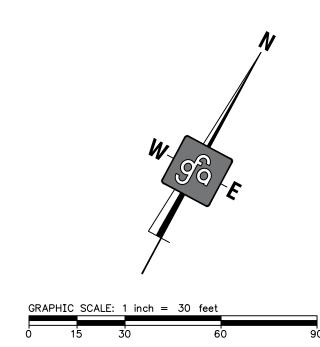
PARCEL ID: 05-04-26-351-005 PARCEL ID: 05-04-26-351-006 #7001 PARCEL ID: 05-04-26-351-004 ✓PLACE Approach, CI II TO MATCH EX. DRIVE GRADE OVER 10' PARCEL ID: 05-04-35-101-001 CAUTION! OVERHEAD WIRES /--N43°39'43"E 192.94' Riprap, Plain= (TYP. AT SPILLWAYS) N57°24'37"E 29.33' STA 2+92.86 ∼P.O.E. STA 4+02.12 N. LAKE SHORE DR. (66' WIDE) P.O.B. ~ STA 0+00.00 —Pavt Mrkg, STA 0+81.43 Waterborne, 4 Inch, White (SINGLE SOLID LINE) Pavt Mrkg,-L=179.97 Waterborne, 4 Inch, Curb Sloped, R=750.00 Shoulder, Cl II, 3 inch Yellow (DOUBLE SOLID HMA (TYP.) -∆=013°44'54" LINES) (TYP.) CHD=N50°32'10"E 179.53' PARCEL ID: 05-04-35-100-001 NOTE: CONTRACTOR
SHALL COORDINATE
WITH ENGINEER FOR #7090 PARCEL ID: 05-04-26-300-003 PARCEL ID: 05-04-35-100-001 -EXISTING C/L -GUARDRAIL PLACEMENT OF 40 OF N. LAKE MPH ADVISORY CURVE (TYP.) (SEE SHORE DRIVE SPEED SIGNAGE ĎETAÍL ON INSTALLATION SHEET 5) LOCATION (TYP. BOTH SIDES OF STREAM -LIMITS OF CROSSING) GRADING (TYP.)



SCALE:

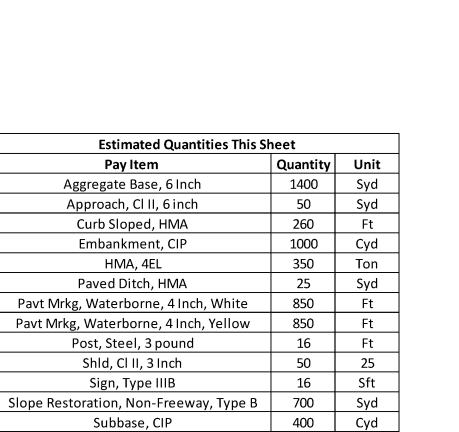
HORIZONTAL: 1"=30'

VERTICAL: 1"='10



3 E

231.946.5874 (231.946.3703 (



CREEK EMMET COUNTY ROAD COMMISSION
E SHORE DRIVE OVER WYCAMP C
GENERAL PLAN OF SITE
SECTION 35, TOWN 38 NORTH, RANGE 6 WEST
ROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN

4. THE CONTRIBUTING AREA TO THIS CROSSING IS 22.5 SQUARE MILES. THE 50%, 0.5% AND 0.2% CHANCE FLOODS ARE ESTIMATED TO BE 140 CUBIC FEET PER SECOND (CFS), 380 CFS, AND 430 CFS RESPECTIVELY, AS DETERMINED BY THE MICHIGAN EGLE.

1. TEMPORARY STORED MATERIAL SHALL NOT BE ALLOWED TO ERODE

DEFLECTION DOES NOT EXCEED L/425 OF THE SPAN LENGTH.

IMMEDIATELY AFTER THE CONSTRUCTION OF AN ABUTMENT IS

AND SLOPE PROTECTION SHALL BE PLACED ON THE ADJACENT

2. THE DESIGN OF THE STRUCTURE IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN, HL-93 LOADING. THE DESIGN

TANDEM PORTION SHALL BE REPLACED BY A SINGLE KIP AXLE LOAD

PER APPLICATION OF THE 1.2 FACTOR. THE RESULTING LOAD IS DESIGNATED HL-93 MOD. LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE

COMPLETED, TOPSOIL, SEEDING, FERTILIZER, STRAW MULCH BLANKETS

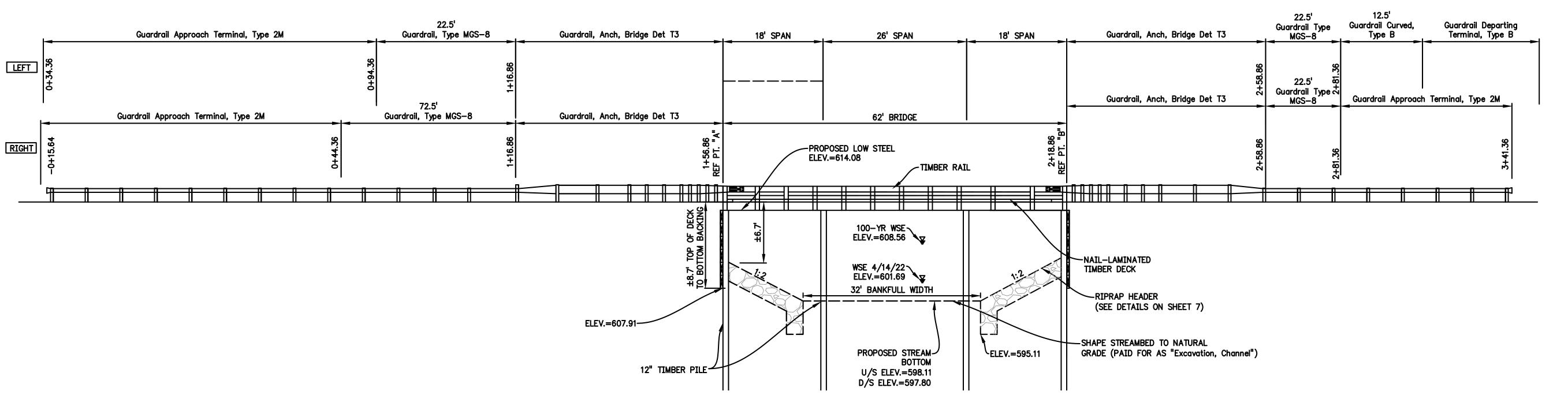
INTO THE WATERCOURSE.

EMBANKMENT SLOPES.

SHT 5 OFGTO Issued On:10/13/20

JOE WILLIAMS. PE

22084



ELEVATION SCALE: 1"=10'

Estimated Quantities This Sheet									
Pay Item	Quantity	Unit							
Excavation, Channel	200	Cyd							
Backfill, Structure, CIP	600	Cyd							
Excavation, Fdn	600	Cyd							
Pile Driving Equipment, Furn	1	LS							
Pile, Treated Timber, Furn	2000	FT							
Pile, Treated Timber, Driven	2000	Ft							
Test Pile, Treated Timber	2	Ea							
False Decking	2000	Sft							
Guardrail, Type MGS-8	300	Ft							
Guardrail, Curved, Type B	12.5	Ft							
Guardrail Anch, Bridge, Det T3	4	Ea							
Guardrail Approach Terminal, Type 2M	3	Ea							
Guardrail Departing Terminal, Type B	1	Ea							
Guardrail Reflector	15	Ea							
Riprap, Heavy	450	Syd							
Riprap, Plain	25	Syd							
Stream Restoration	150	Ton							
Root Wad	9	Ea							
Structure, Timber, Modified	1	LS							

			SUMMARY	OF HYDRAULIC ANAL	YSIS		
	EX	(ISTING			PROF	OSED	
FLOOD DATA	DISCHARGE (CFS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE (FT)	VELOCITY IN D/S CHANNEL (FPS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE (CFS)	VELOCITY IN D/S CHANNEL (FPS)	WATERWAY AREA (SFT) AT D/S FACE	CHANGE IN W/S ELEV. 10 FT U/S OI PROPOSED STRCUTURE (FT)
50-YEAR	310	607.16	10.01	601.33	5.18	59.88	5.83
100-YEAR	350	608.42	10.38	601.52	5.15	67.63	6.90

1. THE DRAINAGE AREA CONTRIBUTORY TO THIS CROSSING IS 22.5 SQUARE MILES.

1. THE CONTRACTOR MUST PROPERTY CONTAIN THE EXISTING STRUCTURE DURING REMOVAL AND PROPOSED ABUTMENTS DURING CONSTRUCTION. PAYMENT WILL BE INCLUDED IN THE ITEM "Structure, Timber, Modified".

2. THE DESIGN OF THIS STRUCTURE IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN, HL-93 LOADING. THE DESIGN TANDEM PORTION SHALL BE REPLACED BY A SINGLE 60 KIP AXLE BEFORE APPLICATION OF THE 1.2 FACTOR. THE RESULTING LOAD IS DESIGNED HL-93 MOD. LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE DEFLECTION DOES NOT EXCEED L/425 OF THE SPAN LENGTH.

3. "Structures, Rem" INCLUDE THE REMOVAL OF THE EXISTING STRUCTURE AND ANY EXCAVATION OR BACKFILL REQUIRED TO SHAPE THE STREAM BOTTOM TO A NATURAL 4. PILE LAYOUT SHOWN IS APPROXIMATE. THE FABRICATOR SHALL DESIGN THE FOUNDATION PILING AND SHOW LAYOUT IN THE SHOP DRAWINGS, INCLUDED IN PAY ITEM "Structure, Timber, Modified".

5. "False Decking" SHALL BE PLACED IN THE AREA BONDED BY REFERENCE LINES A AND B AND THE OUTSIDE OF THE FACIE BEAMS.

Issued On:10/13/202

EMMET COUNTY RO

SHORE DRIVE (
GENERAL PLAN (
SECTION 35, TOWN 38 N
OSS VILLAGE TOWNSHIP, E LAKE

ROAD COMMISSION

E OVER WYCAMP CREEK

N OF STRUCTURE

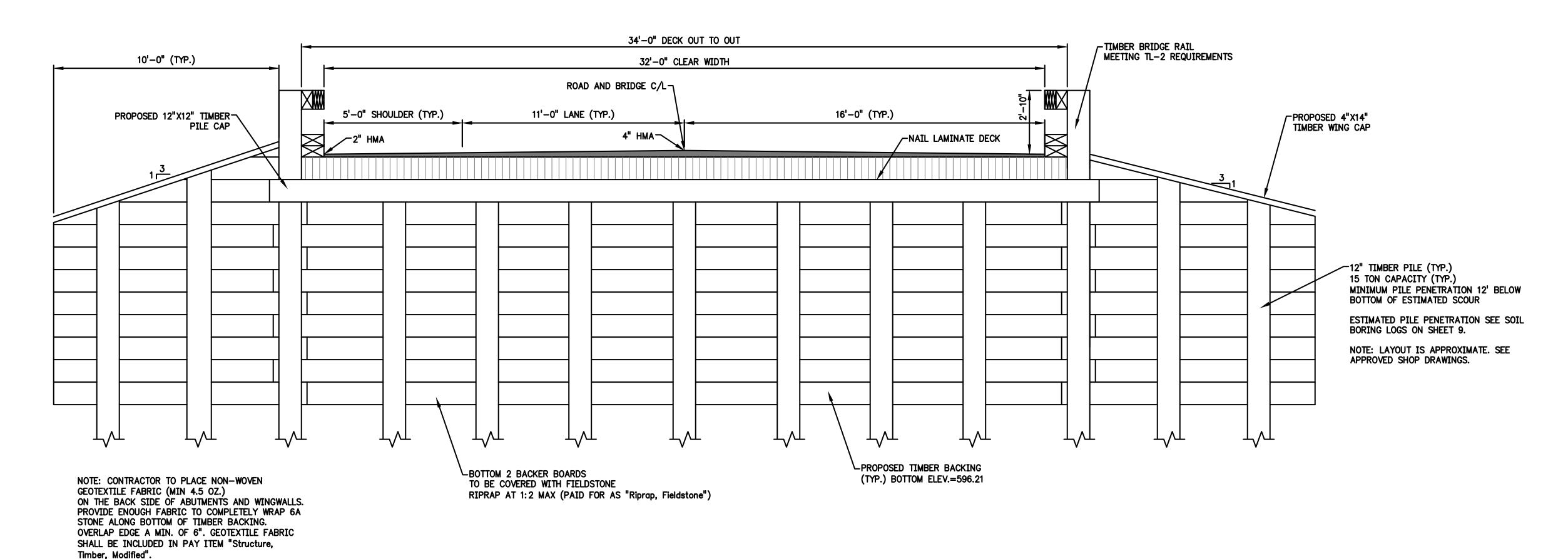
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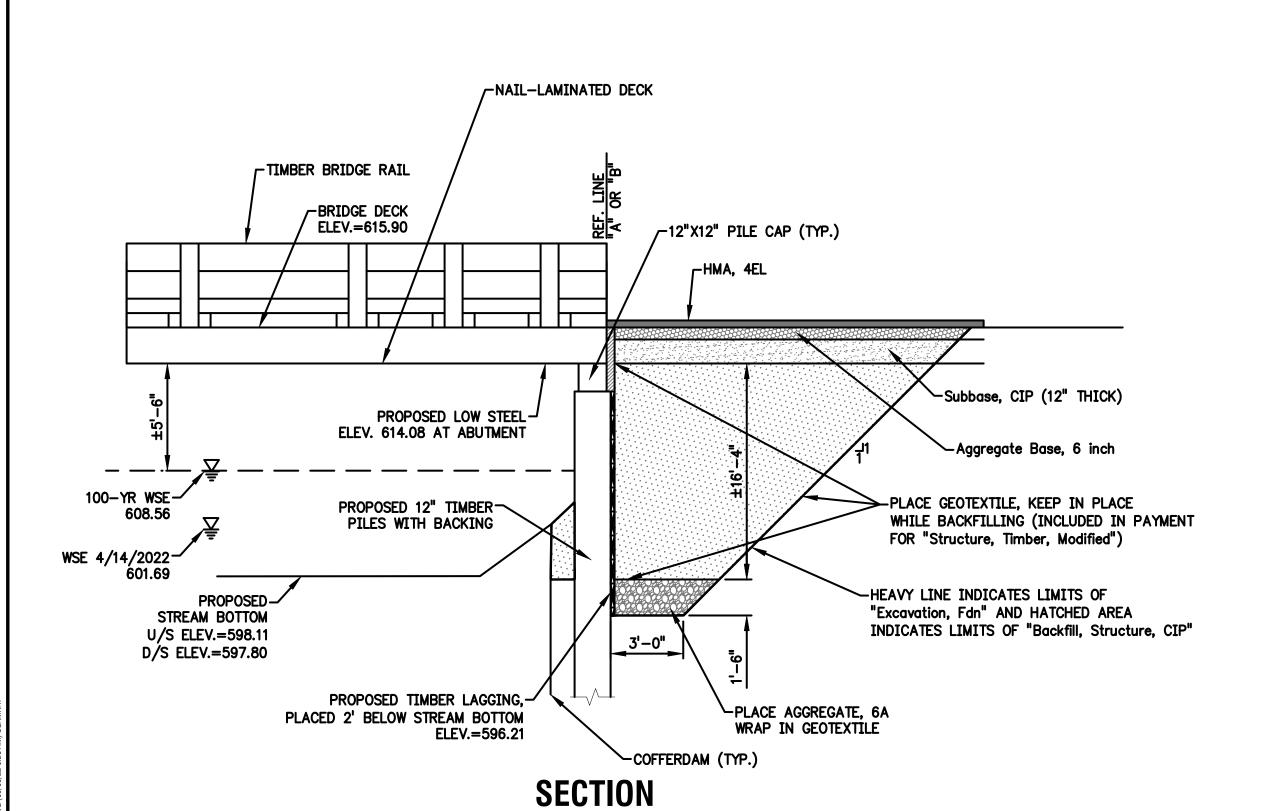
JOE WILLIAMS. PE 22084

SHT 6 OFGIOV

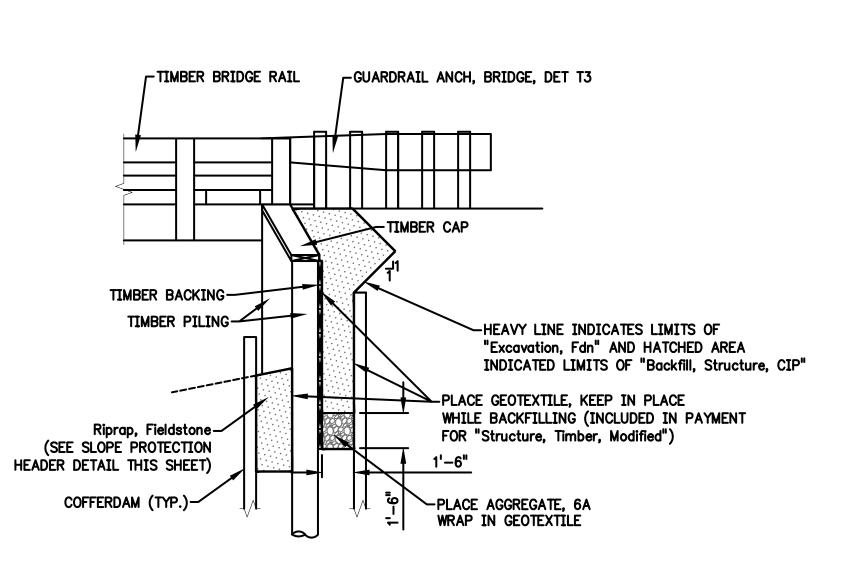
^{2.} THE WATER SURFACE AND/OR ENERGY GRADE LINE SHOWN ON THE ABOVE HYDRAULIC TABLE ARE TO BE USED FOR COMPARISON PURPOSES ONLY AND ARE NOT TO BE USED FOR ESTABLISHING A REGULATORY FLOODPLAIN.



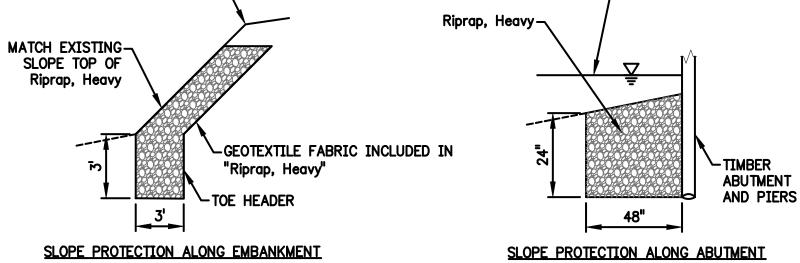
SECTION NOT TO SCALE



NOT TO SCALE





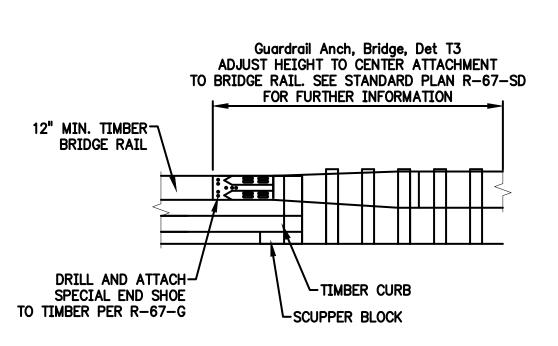


GROUND SURFACE

SLOPE PROTECTION HEADER DETAILS

NOT TO SCALE

WATER SURFACE



GUARDRAIL ATTACHMENT

NOT TO SCALE

EMMET COUNTY ROAD COMMISSION

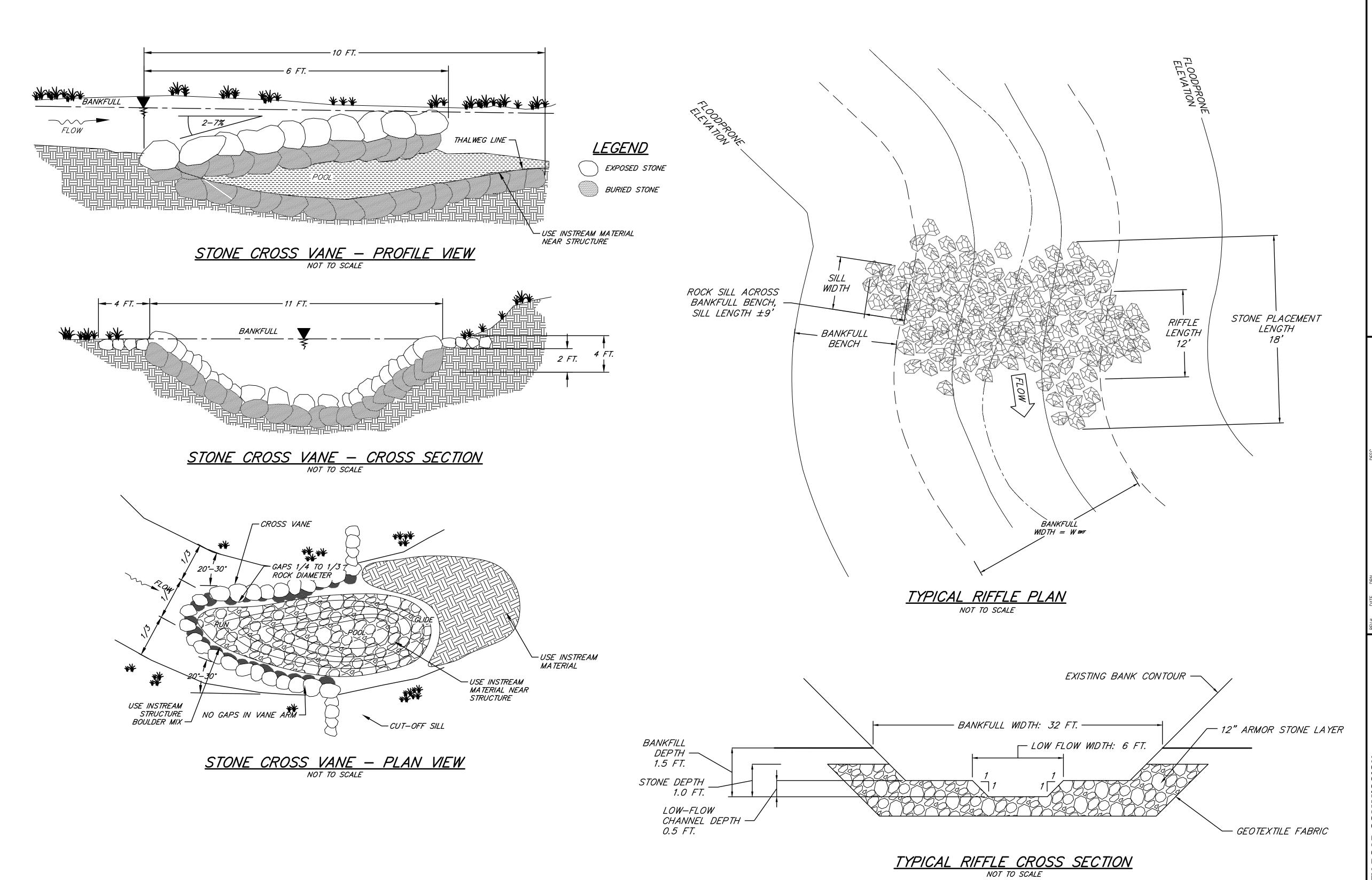
E SHORE DRIVE OVER WYCAMP CREEK

GENERAL PLAN OF STRUCTURE

SECTION 35, TOWN 38 NORTH, RANGE 6 WEST

ROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN LAKE Ż JOE WILLIAMS. PE 22084 SHT **7 OFG110**V

Issued On:10/13/20



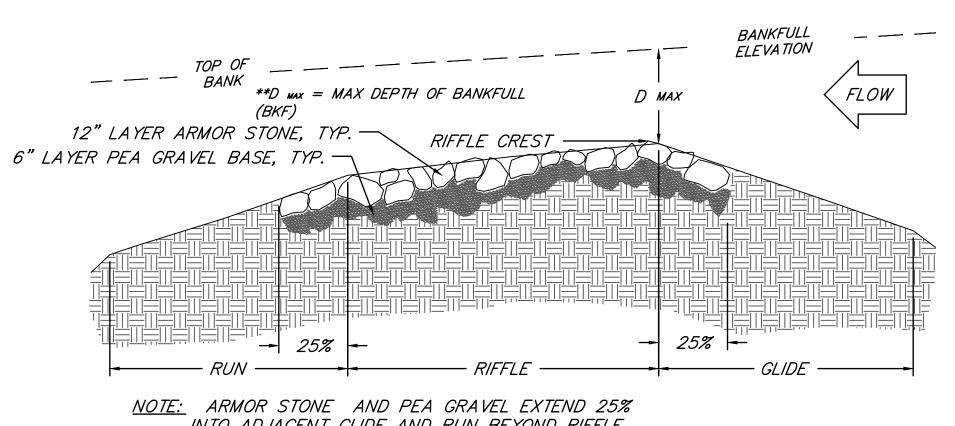
PERCENT GRADATION SMALLER THAN	PARTICLE DIAMETER (INCHES)						
D100	24.0						
D85	19.0						
D50	16.0						
D30 13.0							
D10	6.0						
INSTREAM MATERIAL N IN RAILROAD CUL							
PERCENT GRADATION SMALLER THAN	PARTICLE DIAMETER (INCHES)						
D100	13.0						
D85	10.5						
D50	9.0						
D30 7.5							
D10 3.5							
INSTREAM N	MATERIAL						

INSTREAM STRUCTURE BOULDER GRADATION

D50	9.0
D30	7.5
D10	3.5
INSTREAM M	IA TERIAL
PERCENT GRADATION SMALLER THAN	PARTICLE DIAMETER (INCHES)
D100	4.0
D85	3.0
D50	2.5
D30	2.0
D10	1.0

FLE MATERIAL
PARTICLE DIAMETER (INCHES)
10.7
8.5
7.1
6.0
2.8

- 1. TOP OF SILL STONE SET AT GRADE ACROSS SILL LENGTH.
- 2. FINAL PLACEMENT & DIMENSIONS OF RIFFLES SHALL BE DETERMINED BY ENGINEER IN THE FIELD AND SHALL MATCH EXISTING GRADES AS MUCH AS POSSIBLE.



<u>NOTE:</u> ARMOR STONE AND PEA GRAVEL EXTEND 25% INTO ADJACENT GLIDE AND RUN BEYOND RIFFLE FOOTPRINT.

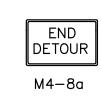
TYPICAL RIFFLE PROFILE

NOT TO SCALE

CREEK EMMET COUNTY PURCE OVER VENDER DRIVE OVER VETREAM RESTORATION DESCRION 35, TOWN 38 NORTH, RANGOSS VILLAGE TOWNSHIP, EMMET COL

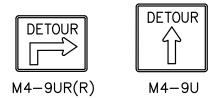
LAKE Ż

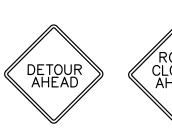
22084 SHT **8** OFG10



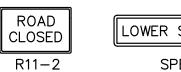






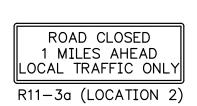


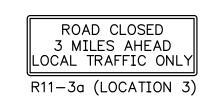


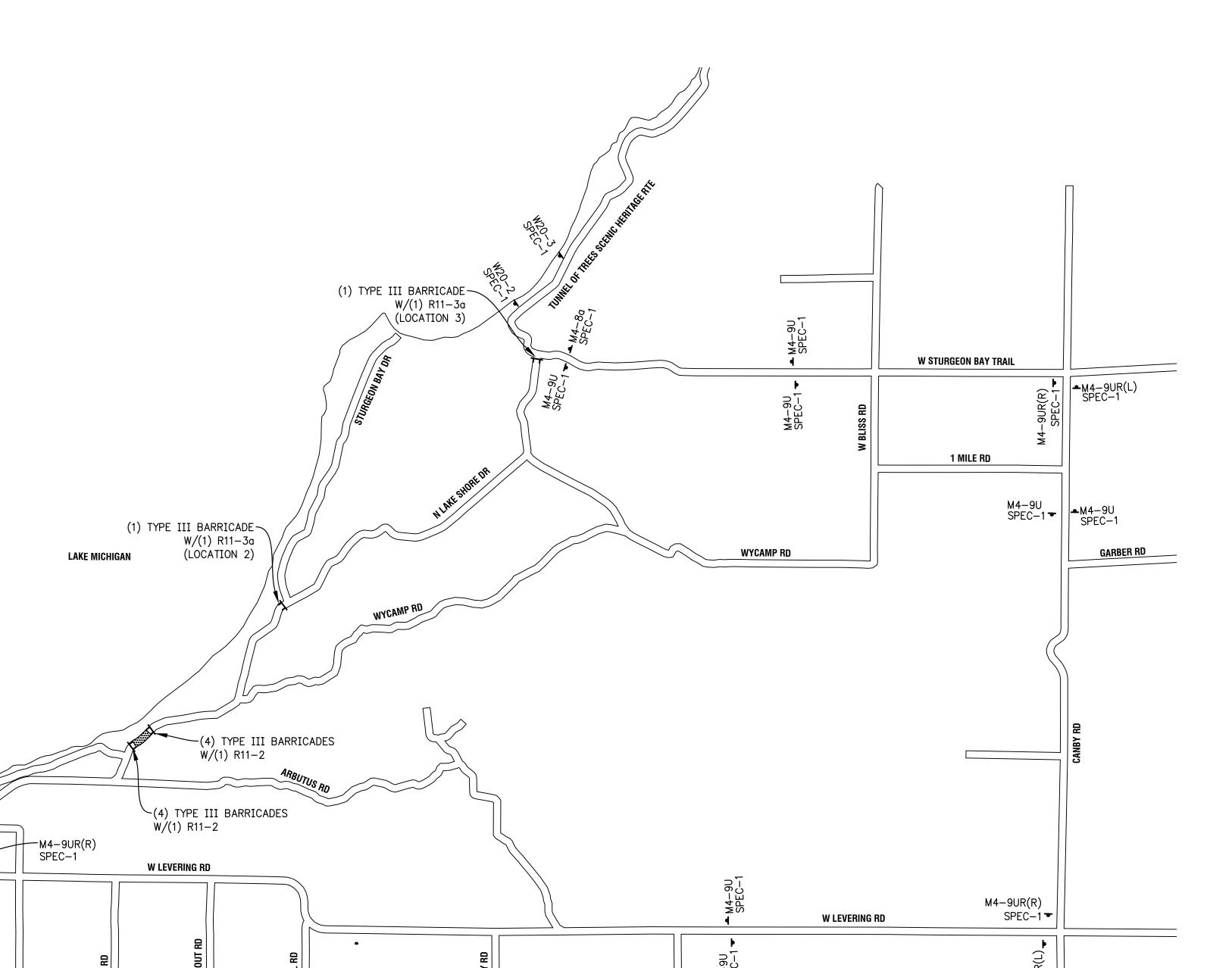


LOWER SHORE DR SPEC-1

ROAD CLOSED
0.8 MILES AHEAD
LOCAL TRAFFIC ONLY R11-3a (LOCATION 1)







LEGEND

TEMPORARY SIGN TYPE III BARRICADE

WORK ZONE

	TEMPORARY SIGN DETAILS										
MMTUCD#	DESCRIPTION	SIZE	SFT/SIG								
W20-2	ROAD WORK AHEAD	48" X 48"	16								
W20-3	DETOUR AHEAD	48" X 48"	16								
SPEC-1	ROAD NAME	9" X 36"	2.25								
R11-2	ROAD CLOSED	30" X 48"	30								
R11-3a	ROAD CLOSED AHEAD	30" X 60"	30								
M4-8a	END DETOUR	18" X 24"	3								
M4-9	DETOUR	24" X 30"	5								
M4-9UR(L)	DETOUR LEFT TURN	30" X 30"	6.25								

M4-9UR(R) DETOUR RIGHT TURN 30" X 30" 6.25

NOTE	ZS:
1.	CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES FOR LOCAL
	TRAFFIC TO PROPERTIES AND DRIVEWAYS LOCATED WITHIN THE
	CONSTRUCTION INFLUENCE AREA UTILIZING "Maintenance Gravel",
	DIRECTED BY THE ENGINEER.
2.	TEMPORARY SIGNS SHALL BE PAID FOR AS "Sign, Type B, Temp,
	Prismatic" AND "Sign, Type B, Temp, Prismatic, Spec".

(1) TYPE III BARRICADE W/(1) R11-3a (LOCATION 1)

₩20-2 SPEC-1

₩20-3 SPEC-1

M4-8a-SPEC-1

	DIRECTED BY THE ENGINEER.
2.	TEMPORARY SIGNS SHALL BE PAID FOR AS "Sign, Type B, Temp,
	Prismatic" AND "Sign, Type B, Temp, Prismatic, Spec".
	BARRICADES SHALL BE PAID FOR AS "Barricade, Type III, High
	Intensity, Double Sided, Lighted".

Estimated Quantities This Sheet

Maintenace Gravel Barricade, Type III, High Intensity, Double Sided, Lighted, Furn Barricade, Type III, High Intensity, Double Sided, Lighted, Oper

> Sign, Type B, Temp, Prismatic, Furn Sign, Type B, Temp, Prismatic, Oper Sign, Type B, Temp, Prismatic, Special, Furn

Sign, Type B, Temp, Prismatic, Special, Oper Traf Regulator Control

EMMET COUNTY ROAD COMMISSION

(E SHORE DRIVE OVER WYCAMP CREEK

MAINTENANCE OF TRAFFIC

SECTION 35, TOWN 38 NORTH, RANGE 6 WEST

SROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN

 Guantity
 Unit

 5
 Ton

 11
 Ea

 11
 Ea

 1
 LS

 332
 Sft

 332
 Sft

 52
 Sft

 52
 Sft

 1
 LS

22084 SHT **9 OFG110W**

		SOILS & STRUCTURES						DUT	EHUIE	: יטו	rv yca	mp T Sheet	
oject N		Wycamp Creek and 5 Mile Creek Watershed Crossing Cross Village & Harbor Springs, Michigan	_ Project N Logged B			0502	В	eviewe	d Du	H.Barto	on		
nt:		die-Fraser, Inc.			NAD 1983 S	StatePla			-	Hole D		50	.00
te Star		Apr 25 2022 Completed: Apr 25 2022	_ Survey D		51724.6	Eastir		951962		Elevat	•		0.49
lling N			Ground V			Lastii	'e. <u> </u>	331302	1.7	Lieva			7.43
ıipmeı		Acker Renegade			f Drilling	14.75	on Apr 2!	5 2022 -	- Grour	ndwater	r Encou	ıntered	
mmer		Automatic Hammer		End of D			on Apr 2						
tes:	71		<u> </u>										
		9	<u> </u>	%			5	gth	a %	Atterberg Limits			
Depth	Graphic	Material Description	Number	Recovery RQD	Blow Counts	N-Value	Pocket Pen (tsf)	Shear Strength (tsf)	Moisture Content (%)		Plastic Limit	_	nscs
1	S.O.	ASPHALT - (4.0") GRAVEL - dark brown fine to coarse sandy with silt	,										
2 3	////	(6.0") SAND - slightly compact dark brown to brown fine to coarse gravelly with silt	SPT-A	67	1-2-5	7			3.7				SP- SM
4		SAND - slightly compact brown fine to medium clayey with lenses of gravel	SPT-B	87	3-2-2	4			12.0				SM
5 <u> </u>		SAND - loose brown fine to medium with a seam of marl and a trace of gravel SAND - slightly compact to compact light brown	CDT C	47	222	_							CD.
7 8		fine to medium with a trace of silt	SPT-C	47	3-3-2	5							SP
ro 📲		SAND - slightly compact to compact dark brown to light brown fine to medium with a seam of peat and trace of cobbles	SPT-D	47	3-4-4	8							SP
12		•											
.4		SAND all this course to light house for all the	SPT-E	87	2-2-3	5			17.4				SP
.6		SAND - slightly compact light brown fine silty											
L7		CLAY - soft light brown with sand and a trace of silt	,										
.9 1			SPT-F	150	0-1-1/0'	2			16.0				CL
9 10 11 11 12 12 12 12 12 12 12 12 12 12 12													
23 1													
25 15 16 17 17 17 17 17 17 17		SAND - very compact light brown fine silty with lenses of clay	SPT-G	67	4-2-22	24			11.3				SM
ا وا		SAND - very compact light brown fine to medium with lenses of cobbles and a trace of silt	SPT-H	100	1-20-18	38							SP
30 📑		Ann Arbor • N	_ ∕luskegon	•	Tra	verse (Citv						
			0) 933-39!										

	5	OILS & STRUCTURES									e ID: \	•	Sheet	
Na	ame:	Wycamp Creek and 5 Mile Creek Watershed Crossing		Project N	umber:	2022.0	0502							
	catio			Logged By						•	H.Bart			
		die-Fraser, Inc.				NAD 1983 S					Hole D	-		.00
	ted: lethod	Apr 25 2022 Completed: Apr 25 2022 !: 4.25" Hollow Stem Auger		Northing: Ground W		1700.1	Eastir	1g:	951958	4.8	Elevat	ion:	- 616	.48
	nt:	Acker Renegade				Drilling	12.00	on Apr 2	5 2022 -	- Groui	ndwatei	Encou	intered	
r	Туре:	Automatic Hammer			End of D	rilling	12.00	on Apr 2	5 2022 -	- Static	Water	Level		
			ě		%			_	gth	(6	1	tterbe Limits	_	
	Graphic	Material Description	Sample Type	Number	Recovery % RQD	Blow	N-Value	Pocket Pen (tsf)	Shear Strength (tsf)	Moisture Content (%)	Liquid			nscs
		SAND - very compact light brown fine to medium with lenses of gravel and a trace of silt												
-		SAND - extremely compact to very compact light	┧	SPT-I	73	13-24-30	54			19.8				SP
		brown fine to medium with lenses of silt			1									
					1									
				SPT-J	87	8-20-28	48			17.7				SP
					1									
					1									
				SPT-K	53	6-19-19	38							SP
					1									
		SAND - compact to very compact light brown fine	┪	SPT-L	67	5-9-10	19							SP
		to medium												
				CDT NA	1,,,	2021	20			142				C.D.
:				SPT-M	100	3-8-21	29			14.3				SP
			Ш											
-		Ann Arbor •		ıskegon	•		verse (1				1	

Project N		Wycamp Creek and 5 Mile Creek Watershed Crossing		Project N)502							
Project L				Logged B					eviewe					
Client:		lie-Fraser, Inc.				NAD 1983 S	tatePla	ne Michi	gan Cei	ntral		epth:		.00
Date Sta	rted:	Apr 25 2022 Completed: Apr 25 2022		Northing	:85	51724.6	Eastir	ng: <u>1</u>	951962	21.7	Eleva	ition:	610).49
Drilling I	Method	4.25" Hollow Stem Auger		Ground V	Vater Le	evels								
Equipme	ent:	Acker Renegade		✓ At	Time o	f Drilling	14.75	on Apr 2	5 2022	- Groui	ndwate	er Enco	untered	
Hammer	Type:	Automatic Hammer			End of [Orilling	12.00	on Apr 2	5 2022	- Static	Water	Level		
Notes:			,			_		-						
			a					_	£			Atterb		
ا ۔ ا	<u>.</u>		Sample Type	-	Recovery % RQD	<u>ر</u>	<u>a</u>	Pocket Pen (tsf)	Shear Strength (tsf)	Moisture Content (%)		Limit	s	1
Depth	Graphic	Material Description	e T	Number	Sovery	Blow	N-Value	cket P (tsf)	Stre (tsf)	Moisture ontent (%	_		₹	
გ	<u> </u>	material Description	du	3	8 €	ॼ 返	-	ᇂᆂ	, E	할	Liquid	Plastic	Plasticity	}
	_		Sar	_	æ		_	<u>م</u>	ř	− ც	흔별	문	i <u>as</u> i	
									S				♣	
		SAND - very compact light brown fine to medium												
31		with lenses of cobbles and a trace of silt												
32 🚪														
33 🖥												1		
1					1							1		
34 🖥			Y	SPT-I	67	4-8-18	26			13.0				S
35												1		
. ∃												1		
36 🖥														
37														
37 🖥														
38 🖥														
l 1			lacksquare		1									
39 🖥		SAND - extremely compact light brown fine to	X	SPT-J	47	18-38-26	64							S
40 🖥		medium with lenses of cobbles and a trace of silt			-									
1 3														
41														
42 🖥		CAND	_											
∃		SAND - extremely compact light brown fine to												
43 🖥		medium with a trace of silt												
43			▮	CDT I		40.04.06	70							_
=				SPT-K	53	10-34-36	70							S
45 🖥			_		1									
46														
│ [™]														
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48														
│ ⁴° ∄			_		-									
49 🖥			Y	SPT-L	100	8-30-34	64			14.5				s
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50 🖥			7									1		
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45 46 47 48 49 50 51 52 53 55 56 57 58 59 59 60 60 60 60 60 60 60 60 60 60 60 60 60						l								l

oject Name: Wycamp Creek and 5 Mile Creek Watershed Crossing oject Location: Cross Village & Harbor Springs, Michigan ient: Gourdie-Fraser, Inc. ate Started: Apr 25 2022 Completed: Apr 25 2022 iilling Method: 4.25" Hollow Stem Auger uipment: Acker Renegade ammer Type: Automatic Hammer		Lo Su	roject No ogged By urvey Da orthing:	/: <u>H.B</u> ntum:	2022. arton NAD 1983 1700.1			H.Barton Hole Depth: Elevation:		55.00 616.48			
		Z	round W		vels Drilling	12.00	on Apr 25	- Grour	undwater Encour c Water Level				
	Material Description		. %		· ·		ua,	ngth	e. (%)	Atterbei Limits		-	
Graphic		Sample Type	Number	Recovery RQD	Blow Counts	N-Value	Pocket Pen (tsf)	Shear Strength (tsf)	Moisture Content (%)	Liquid	Plastic Limit	Plasticity Index	NSCS
	ASPHALT - (4.0") GRAVEL - dark brown fine to coarse sandy with silt (6.0") SAND - slightly compact to loose dark brown to brown fine to medium with a trace of silt	X	SPT-A	53	5-4-3	7			3.7				SP
	SAND - loose to slightly compact light brown fine to coarse	J ▲ I	SPT-B	80	1-2-2	4							SP
7	Coarse	X	SPT-C	53	2-1-1	2			4.7				SP
	SAND - slightly compact to compact light brown fine to medium with silt and lenses of gravel	X	SPT-D	67	4-3-3	6			8.6				SP
			SPT-E	67	6-5-6	11							SP- SM
	CLAY - soft light brown sandy	X	SPT-F	100	3-1-1	2			20.3				CL
	SAND - compact light brown fine to medium with a trace of silt	X	SPT-G	47	4-5-3	8							SP
	SAND - very compact light brown fine to medium with lenses of gravel and a trace of silt	Y	SPT-H	53	3-9-12	21							SP

http://gfa.tc231.946.5874 (p)231.946.3703 (f)



ENGINEERING SURVEYING TESTING & OPERATIONS 123 West Front Street Traverse City, MI 49684

N. LAKE SHORE DRIVE OVER WYCAMP CREEK
CONSTRUCTION DETAILS
SECTION 35, TOWN 38 NORTH, RANGE 6 WEST
CROSS VILLAGE TOWNSHIP, EMMET COUNTY, MICHIGAN
These documents are pre Ż

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