

ADVERTISEMENT FOR BIDS

EAST DUCK LAKE ROAD OVER MASON CREEK SINGLE SPAN TIMBER BRIDGE

DESIGN, FABRICATION AND DELIVERY OF MATERIALS

GRAND TRAVERSE COUNTY ROAD COMMISSION

Sealed bids for materials for the proposed Single Span Timber Bridge on East Duck Lake Road over Mason Creek are requested and will be received until **2:00 p.m. on January 30, 2019**, at the Grand Traverse County Road Commission Office, 1881 LaFranier Road, Traverse City, MI 49696, at which time they will be opened and read aloud.

Supplying materials for this project will include design, fabrication, and delivery of a timber structure per the Engineer's plans, specifications, section 705 (Foundation Piling) and section 709 (Timber Structures) of the 2012 MDOT Standard Specifications for Construction.

Plans and Specifications will be on file and available from 7:30 a.m. to 4:00 p.m. Monday through Friday starting at the Grand Traverse County Road Commission Office. Persons desiring paper or electronic copies of the plans should contact **Joe Slonecki, PE, at 231-922-4848 or jslonecki@gtcrc.org.**

Each bid proposal shall be submitted on the provided Bid Form. A certified check, cashier's check or an acceptable bid bond for a sum of no less than five percent (5%) of the amount of the bid will be required with each submittal.

No bid may be withdrawn for a period of forty-five (45) calendar days after the scheduled time for the receipt of the bids.

Materials shall be delivered to the bridge site within 12 weeks of design plan approval, **but no later than May 20, 2019.**

All proposals must be in sealed envelopes, plainly marked as to contents and the name of the bidder. Telephone or faxed bids will not be accepted. The Board reserves the right to accept or reject any and all bids, to waive any irregularities in the bids, and to award the bid in a manner deemed in the best interests of the Grand Traverse County Road Commission.

NOTICE TO BIDDERS

The enclosed bid package is for the supply of materials for the Timber Bridge Structure, Piles and Backing for the **East Duck Lake Road over Mason Creek** project. The construction and installation of the bridge will be performed by others.

Design and fabrication shall be done in accordance with all applicable enclosed plans and specifications. These bid documents contain additional information for the project that does not pertain to supplying the materials.

GRAND TRAVERSE COUNTY ROAD COMMISSION

SPECIAL PROVISION FOR STRUCTURE, TIMBER - DELIVER

KPM:PJM

1 of 3

07/18/18

a. Description:

Design, fabricate and deliver a timber bridge as shown on the Engineer's plans. The bridge must have the rise, span, width, skew angle and minimum waterway opening as shown on the plans. Larger spans, widths or other dimensions must be approved by the Engineer.

The fabricator shall be regularly engaged in the design and production of the specified product or item, and be able to furnish independent records or certification of competency upon request of the Engineer. Certification of the fabrication process shall be performed by a third party inspection agency that is accredited by the American Lumber Standards Committee (ALSC), as specified in the ALSC Treatment Wood Program.

b. Design:

The design of this structure shall be based on 1.2 Times the current AASHTO LRFD bridge design specification HL-93 loading with the exception that the design tandem portion of the HL-93 load definition shall be replaced with a single 60K axle load before application of the 1.2 factor. The resulting load is designated HL-93 Modified. Live Load plus dynamic load allowance deflection shall not exceed 1/425 of span length. Certify that the timber bridge was designed according to AASHTO LRFD Bridge Design Specifications and Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction. Include Design calculations for the entire bridge with the certification.

The bridge design shall address loading, substructure configuration, superstructure configuration, railings, connections, etc. Design procedures, analysis and safety factors shall be according to AASHTO LRFD Bridge Design Specifications.

Design a substructure that will be supported on driven timber piles including pile capacity and number and layout of piles. Estimated pile penetrations are shown on the Engineer's plans. Submit design calculations for the pile caps, backing planks and pile stays (if necessary).

Deck width shall be comprised of multiple panels. Glu-laminated panels will not be allowed. Design the deck in accordance with the following criteria

1. Unless otherwise specified, all dead loads, applied loads and live loads shall be as specified in the AASHTO LRFD Bridge Design Specifications.
2. Dead load shall include a sloped HMA wearing surface installed over the top of the deck panels as shown on the plans. The HMA application rate shall average 313 #/syd, with a minimum 1.2% cross slope for drainage.
3. Live Loads shall be HL-93 Modified. The vehicles shall be positioned to produce the maximum load effect.
4. Deflection requirements shall be in accordance with AASHTO.
5. Individual component dimensions shall be determined by the manufacturer.

Design the timber railing as part of the deck panel system. The rail system shall meet the NCHRP TL-2 Test Level. Connect rail components to the superstructure only. No connection of the rail components to the substructure will be permitted.

The design, design calculations, load rating and certification must be sealed by a Licensed Professional Engineer registered in the State of Michigan.

c. Rating:

Prior to manufacturing, perform Load Ratings on the timber bridge according to the AASHTO Manual of Bridge Evaluation, Section 6, Part A, the most recent Michigan Bridge Analysis Guide and the Michigan Structure Inventory and Appraisal Guide. The following ratings should be calculated:

1. The Inventory Rating, National Bridge Inventory (NBI), Item 66
2. The Operating Rating, NBI Item 64
3. The Michigan Operating Rating, MDOT Item 64M
4. The Michigan Overload Class, MDOT Item 193

Perform the above Load Ratings using as-designed conditions, and assuming the wearing surface has been placed. Prior to manufacturing, deliver the following **to the Engineer for review and confirmation that the bridge will be fully open**, in paper or pdf electronic format for each load rating case:

- Assumption Sheet – Any assumptions made in the analysis shall be listed
- Program or calculation Input and Output
- A completed Bridge Analysis Summary Form

After construction, review the load rating for as-constructed conditions. Perform the load ratings using as-constructed condition, with the wearing surface in place. Deliver the following to the Engineer, in paper or pdf electronic format for each load rating case:

- Assumption Sheet – Any assumptions made in the analysis shall be listed
- Program or calculation Input and Output
- A completed Bridge Analysis Summary Form

All load ratings must be sealed by a Licensed Professional Engineer registered in the State of Michigan.

d. Shop Drawings and Bridge Plans:

Furnish the Engineer with shop drawings and details of all deck, pile cap, backing planks and railing components for approval. Include with the shop drawings the Load Ratings used as-designed conditions, the physical dimensions, methods of manufacture, recommended installation procedure, design assumptions, design loads and design calculation. Submit the shop drawings to the Engineer for review at least 21 calendar days prior to fabrication. Do not begin fabrication until written approval of the shop drawings has been received from the Engineer. No extension of time for additional compensation will be granted to the Contractor due to delays in design and/or preparing shop drawings and specifications.

Bridge Plans shall include all details, dimensions, quantities and cross-sections necessary to construct the entire bridge, and shall include but not be limited to the following items:

1. Specifications and construction notes
2. General bridge plan and elevation views
3. Abutment plan and elevation view
4. Section at an abutment
5. Section at a spreader beam
6. Section at a railing post

Show number and spacing of drive spikes on the bridge plans.

The design, shop drawings and bridge plans shall be sealed by a Licensed Professional Engineer registered in the State of Michigan.

The fabricator shall be responsible for design, fabrication and delivery of the entire timber bridge and for assisting the contractor with construction of the structure.

e. Materials:

Use only materials meeting the requirements of the 2012 MDOT Standard Specifications for Construction, Sections 709, 906, 908 and 912. All galvanized hardware shall be domestic.

Inspect all timber prior to treatment. Material shall be accepted after treatment on the basis of its condition prior to treatment, on the basis of inspection of the treatment procedure substantiated by plant records, on the condition of the material after treatment, and on absorption, penetration and visual inspection. So far as practical, do all adzing, boring, chamfering, framing, gaining, mortising, surfacing, general framing, etc., prior to treatment. Coat cut surfaces according to AWP A M4, if cutting or drilling must be done after treatment.

Pressure treat all piling substructure, superstructure and railing components with Copper Naphthenate per current Best Management Practices. All preserved wood shall be certified in compliance with BMPs by an independent third party.

f. Manufacture:

Assemble all deck panels in accordance with AASHTO and the 2012 MDOT Standard Specifications for Construction, Section 709, using 3/8" diameter ring shank dowels. Drive all dowels simultaneously and with equal force using a press the full length of the deck, ensuring all heads are flush with the surface of the timber plank. Do not use multiple impact tools to set dowels because of potential for wood fiber rupture.

Pre-drill all laminate decking for dowels prior to treatment to avoid the possibility of splitting, and to minimize violation of the treatment envelope. Certification of this process shall be performed by a third party inspection agency that is accredited by the ALSC, as specified in the ALSC Treated Wood Timber Program.

g. Measurement and Payment:

The materials will be paid for with the following pay items as summarized on the Bid Form:

<u>Pay Item</u>	<u>Unit</u>
Pile, Treated Timber, Furnish	Feet
Test Pile, Treated Timber, Furnish	Each
Structure, Timber - Deliver	Lump Sum

Payment for these items will be made upon delivery to the project site.

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, OR IN THE SPECIFICATIONS, ALL MATERIALS AND WORKMANSHIP SHALL BE ACCORDING TO THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND SUPPLEMENTAL SPECIFICATIONS, AS AMENDED.

THE DESIGN OF THIS STRUCTURE IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATION HL-93 LOADING WITH THE EXCEPTION THAT THE DESIGN TANDEM PORTION OF THE HL-93 LOAD DEFINITION SHALL BE REPLACED WITH A SINGLE 60K AXLE LOAD BEFORE APPLICATION OF THE 1.2 FACTOR. THE RESULTING LOAD IS DESIGNATED HL-93 MODIFIED. LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE DEFLECTION DOES NOT EXCEED 1/425 OF SPAN LENGTH.

THE PROPOSED IMPROVEMENTS COVERED BY THESE PLANS ARE IN ACCORDANCE WITH AASHTO: A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2011.

A DETOUR SHALL BE USED FOR CONSTRUCTION OF THIS PROJECT. PLACING OF TEMPORARY TRAFFIC CONTROL ITEMS SHALL BE DONE IN ACCORDANCE WITH THE 2011 EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AS REVISED.

THE DESIGN OF THE FOUNDATION PILING IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:

WOOD PILES $F_{co} = 0.900$ ksi

PLAN INDEX

SHEET NUMBER	SHEET DESCRIPTION
1	TITLE SHEET
2	PLAN OF SITE
3	SOIL BORING SHEET
4	PLAN OF STRUCTURE

TRAFFIC DATA

YEAR	2018	2038
A.D.T.....	928	1250
% COMMERCIAL.....	3%	3%
DESIGN SPEED.....	55 MPH	



COUNTY KEY

GRAND TRAVERSE COUNTY ROAD COMMISSION

AND THE

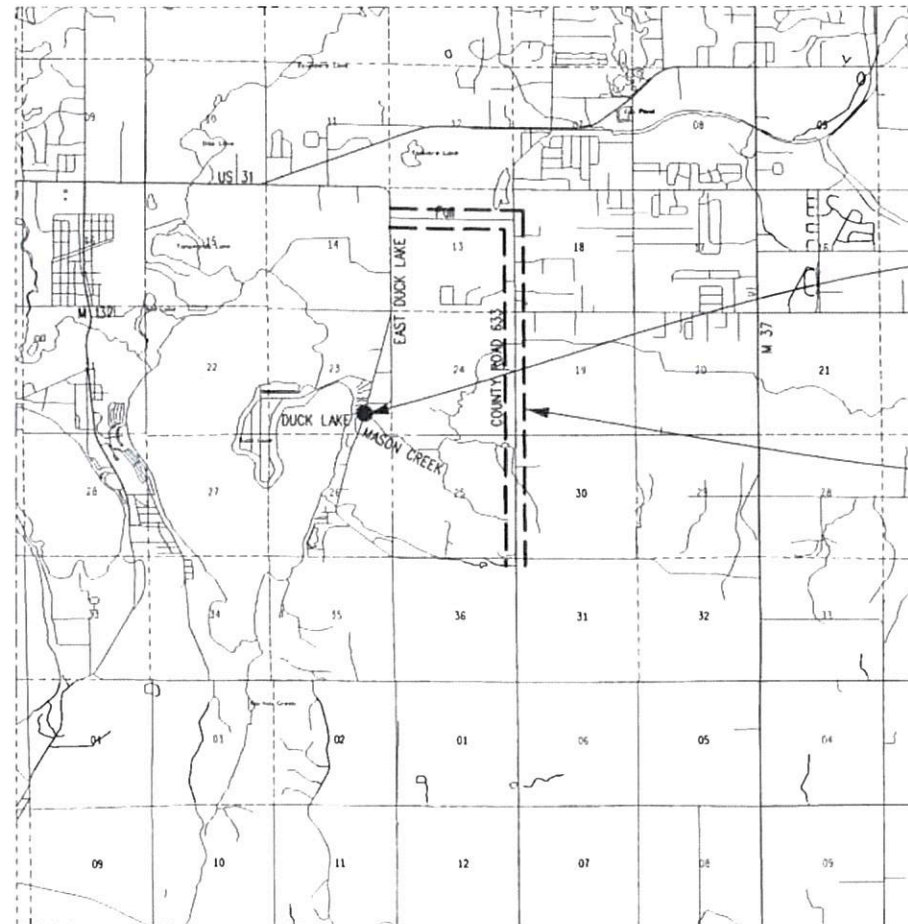
CONSERVATION RESOURCE ALLIANCE

PLANS OF PROPOSED IMPROVEMENTS

BRIDGE CONSTRUCTION

EAST DUCK LAKE ROAD OVER MASON CREEK

GRAND TRAVERSE COUNTY - GREEN LAKE TOWNSHIP



PROJECT LOCATION

DETOUR



3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
OR 811

NATIONAL CONSERVATION PRACTICE STANDARDS
AQUATIC ORGANISM PASSAGE - 396

PLANS FOR: SINGLE SPAN TIMBER BRIDGE CONSTRUCTION INCLUDING EARTHWORK, GUARDRAIL, HMA PAVING & DETOURING TRAFFIC

GRAND TRAVERSE COUNTY ROAD COMMISSION APPROVAL

[Signature]

7-12-18
DATE

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

[Signature]
PATRICK MIDDLETON, PE

7-10-18
DATE

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.

[Signature]
NRCS REPRESENTATIVE

7/18/18
DATE

PREPARED UNDER SUPERVISION OF

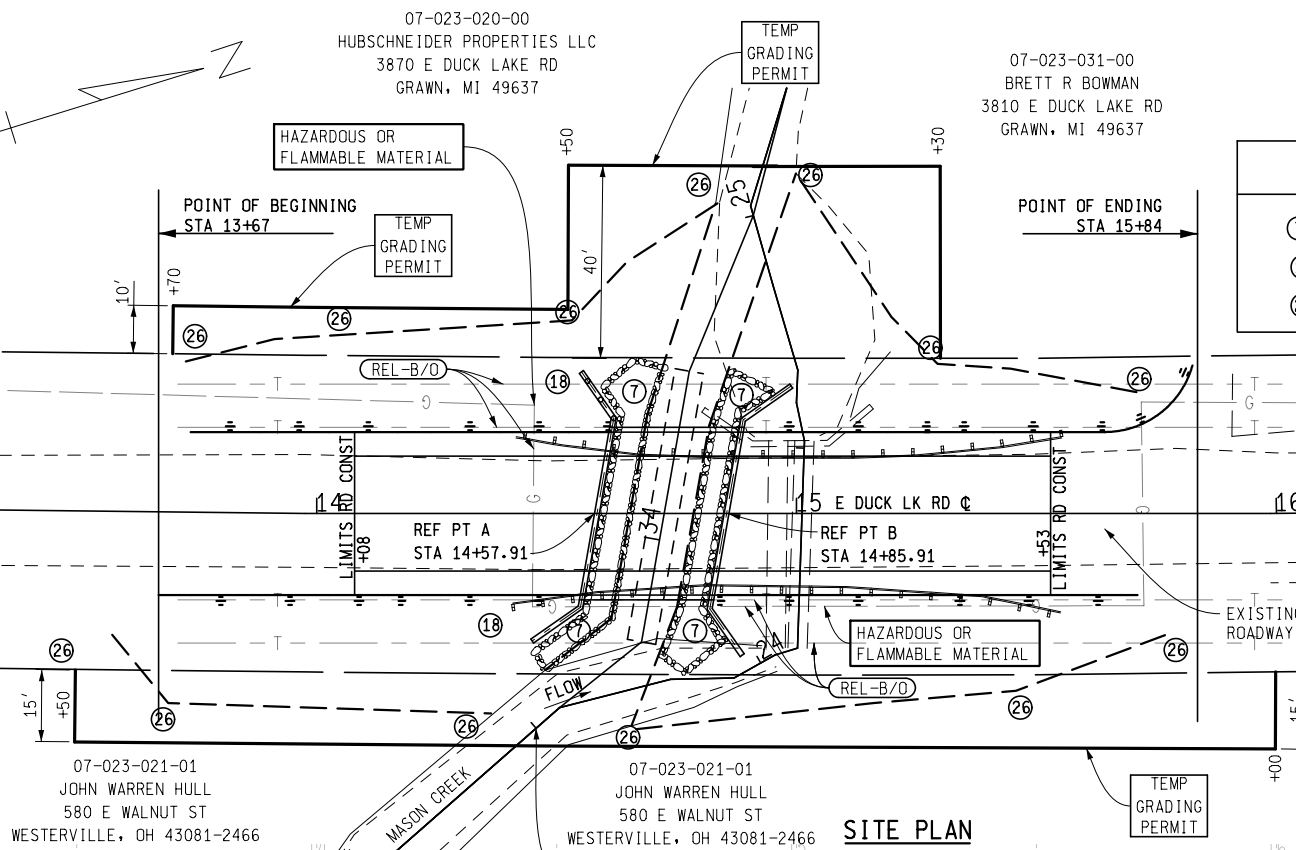
PATRICK J. MIDDLETON, P.E.
REGISTERED PROFESSIONAL ENGINEER

45673
REGISTRATION NUMBER

KPM ENGINEERING
CIVIL ENGINEERING CONSULTANTS

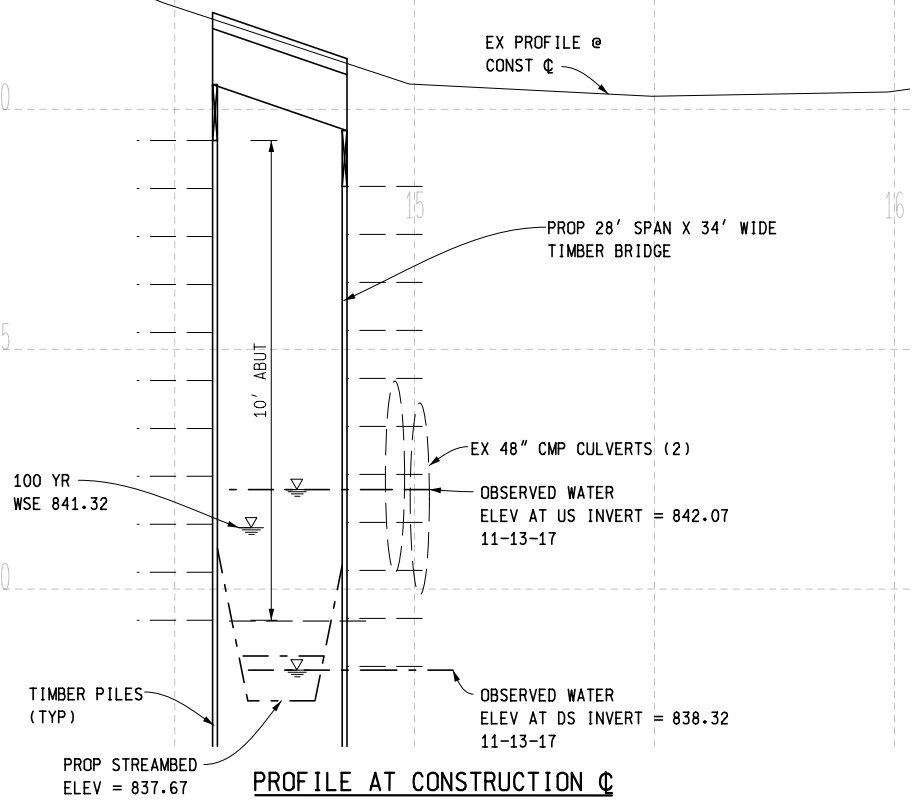


DATE	SHEET NO.	TOTAL SHEETS
6/27/2018	1	4



SITE PLAN

AT STATION 33+50± FOR TEMPORARY GRADE CONTROL
PLACE RIPRAP - SPECIAL (50 TO 75 LBS EACH STONE)
ALONG STREAM BANKS AND BOTTOM ("V" SHAPED
POINTED UPSTREAM) AS DIRECTED BY THE ENGINEER.



PROFILE AT CONSTRUCTION C

ADT
2018 = 928
2038 = 1250

SOIL EROSION AND SEDIMENTATION CONTROL ITEMS
⑦ HEAVY RIPRAP W/GEOTEXTILE LINER
⑱ FILTER BAG
⑳ SILT FENCE

EXISTING STRUCTURE
48" CMP (2)
43' LONG

PROPOSED STRUCTURE
28' SPAN X 34' WIDE
TIMBER BRIDGE

BENCHMARKS
CS S SIDE ELM
STA 13+25, 20' RT
ELEV 857.70

CONTROL POINTS
APPROX STA 10+72, 17' RT
N = 481,853.50
E = 19,332,318.08
Z = 860.30
APPROX STA 17+51, 31' LT
N = 482,515.63
E = 19,332,473.29
Z = 851.02

THE WORK COVERED BY THESE PLANS INCLUDES REMOVAL OF THE EXISTING CULVERT, MAINTAINING TRAFFIC, CONSTRUCTION OF THE PROPOSED BRIDGE AND APPROACHES, SLOPE RESTORATION, RIPRAP SCOUR PROTECTION AND HMA PAVING.

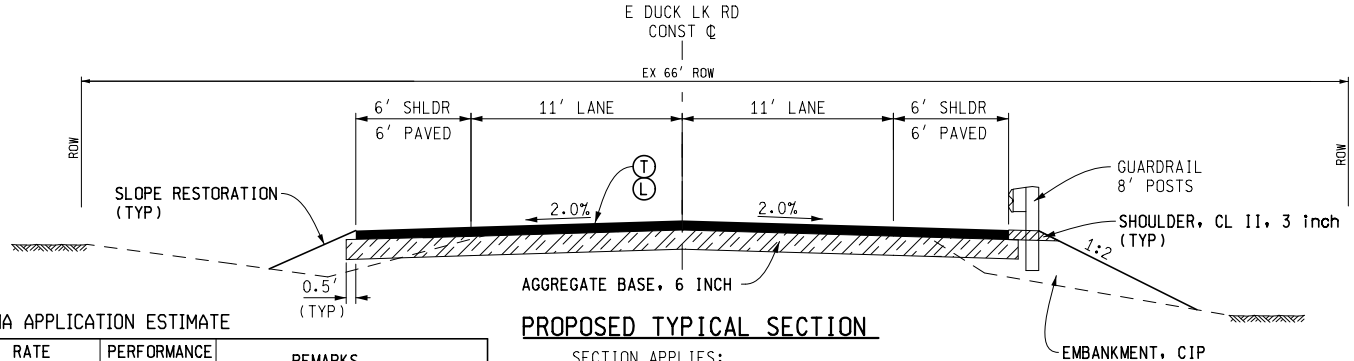
MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE STRUCTURE. IF DEBRIS FALLS INTO THE WATERWAY, IT SHALL BE REMOVED WITHIN 24 HOURS. SINCE DISTURBANCE OF THE WATERWAY BOTTOM MAY BE AS HARMFUL AS THE DEBRIS ITSELF, THE PREVENTIVE MEASURES MUST BE EFFECTIVE.

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

IMMEDIATELY AFTER CONSTRUCTION OF AN ABUTMENT IS COMPLETED, SLOPE PROTECTION AND SEEDING OR SODDING SHALL BE PLACED ON THE ADJACENT SLOPES.

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL DIAL 1-800-482-7171 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.

APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO EARTH-DISTURBING ACTIVITIES. PLACE TURF ESTABLISHMENT ITEMS AS SOON AS POSSIBLE ON POTENTIAL ERODIBLE SLOPES AS DIRECTED BY THE ENGINEER. CRITICAL DITCH GRADES SHALL BE PROTECTED WITH EITHER SOD OR SEED/MULCH OR MULCH BLANKET AS DIRECTED BY THE ENGINEER.

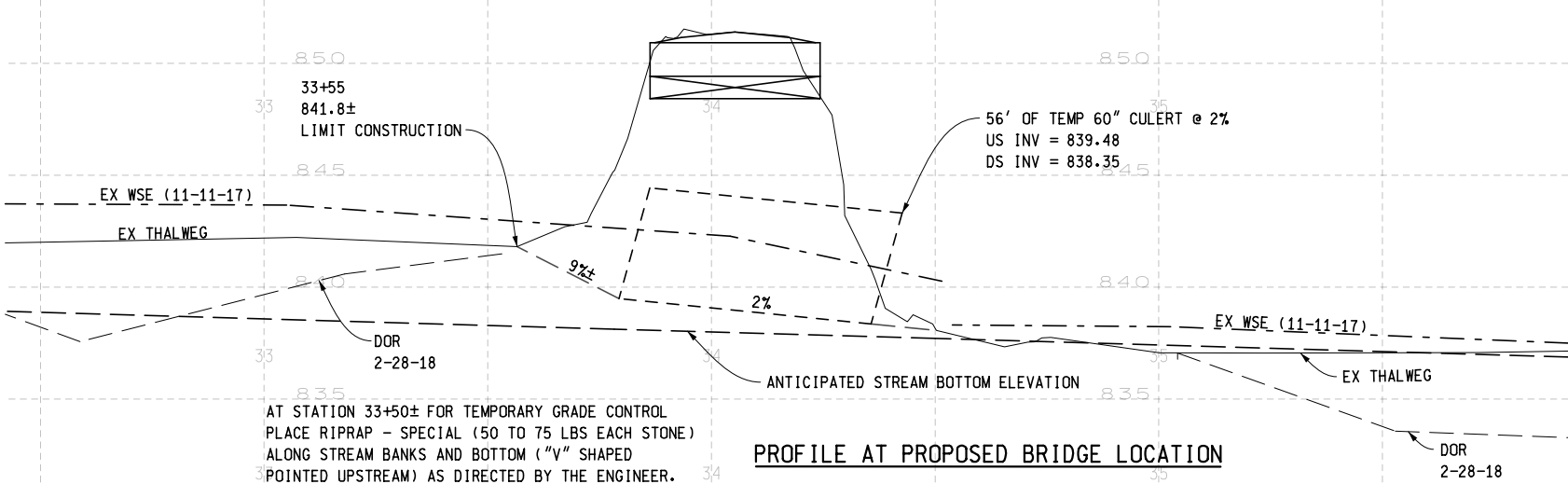


PROPOSED TYPICAL SECTION


SECTION APPLIES:
STA 14+08 TO STA 14+57.91
STA 14+85.91 TO STA 15+53

HMA APPLICATION ESTIMATE				
IDENT NO.	ITEM	RATE PER SYD	PERFORMANCE GRADE	REMARKS
①	HMA, LVSP	220#	PG 58-28	TOP COURSE, AWI = 220
②	HMA, LVSP	220#	PG 58-28	LEVELING COURSE
	* BOND COAT	0.05-0.15 GAL/SYD		

* FOR INFORMATION ONLY



PROFILE AT PROPOSED BRIDGE LOCATION



3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
OR 811



Conservation Resource Alliance



GRAND TRAVERSE
County Road Commission



KPM ENGINEERING
CIVIL ENGINEERING CONSULTANTS

PLAN OF SITE				SHEET NO.
DATE	TOWNSHIP	EAST DUCK LAKE OVER		2
12/11/2018	GREEN LAKE	MASON CREEK		

SB-1 STA 14+85, 5' RT

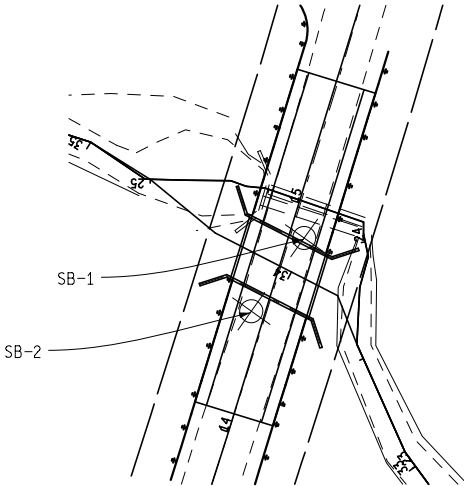
SS=Split Spoon ST=Shelby Tube G=Grab					Site/Surface Conditions:		Driller: J. Birgy Helper: J. Musselman Logged By: J. Musselman Drilling Rig: Acker Rig # 19	
Depth (FT)	Sample Interval	Sample Method	Blow Count per 6"	Penetration Number (N)	Soils Description	Profile	Comments	
SOIL BORING ELEV - 851.02	1-2.5	SS	4-7-10	17	1.5'-13.5' fine to medium brown sand		6" asphalt	
							6" road gravel	
							6" gravel	
PROP STREAMBED ELEV - 837.67	3.5-5	SS	3-3-6	9	13.5'-40' fine to medium tan sand with trace of fine gravel			
	5-6	SS	1-2-2	4				
	6-7.5							
EST SCOUR ELEV - 831.67	8.5-10	SS	1-2-2	4	13.5'-40' fine to medium tan sand with trace of fine gravel			
MIN PILE TIP ELEV - 821±	13.5-15	SS	2-2-3	5	13.5'-40' fine to medium tan sand with trace of fine gravel		11'-13' medium gravel seam	
							13.5' wet sample low recovery	
							13.5' 1" lense of organics	
END BORING ELEV - 811.02	18.5-20	SS	3-2-3	5	EOB @ 40'			
	23.5-25	SS	5-7-16	23	EOB @ 40'			
	28.5-30	SS	4-7-17	24	EOB @ 40'			
	33.5-35	SS	7-8-11	19	EOB @ 40'			
	38.5-40	SS	9-12-11	23	EOB @ 40'			

BORING DATE: 03-01-18
WATER LEVEL DURING DRILLING = 13'
BORING PERFORMED BY PEARSON DRILLING COMPANY

SB-2 STA 14+51, 5' LT

SS=Split Spoon ST=Shelby Tube G=Grab					Site/Surface Conditions:		Driller: J. Birgy Helper: J. Musselman Logged By: J. Musselman Drilling Rig: Acker Rig #19	
Depth (FT)	Sample Interval	Sample Method	Blow Count per 6"	Penetration Number (N)	Soils Description	Profile	Comments	
SOIL BORING ELEV - 852.08	1-2.5	SS	4-8-12	20	13"-9.5' fine to medium brown sand		7" Asphalt	
							6" Gravel	
PROP STREAMBED ELEV - 837.67	3.5-5	SS	6-7-8	15	9.5'-40' tan fine to medium sand with trace of fine gravel			
	5-6	SS	12-13-7	20				
	6-7.5							
EST SCOUR ELEV - 833	8.5-10	SS	6-4-6	10	11'-13' Layer of medium gravel			
MIN PILE TIP ELEV - 823±	13.5-15	SS	1-1-1	2	EOB @ 40'			
END BORING ELEV - 812.08	18.5-20	SS	1-1-2	3	EOB @ 40'			
	23.5-25	SS	7-8-10	18	EOB @ 40'			
	28.5-30	SS	7-8-9	17	EOB @ 40'			
	33.5-35	SS	4-5-7	12	EOB @ 40'			
	38.5-40	SS	2-4-6	10	EOB @ 40'			

BORING DATE: 03-01-18
WATER LEVEL DURING DRILLING = 13'
BORING PERFORMED BY PEARSON DRILLING COMPANY



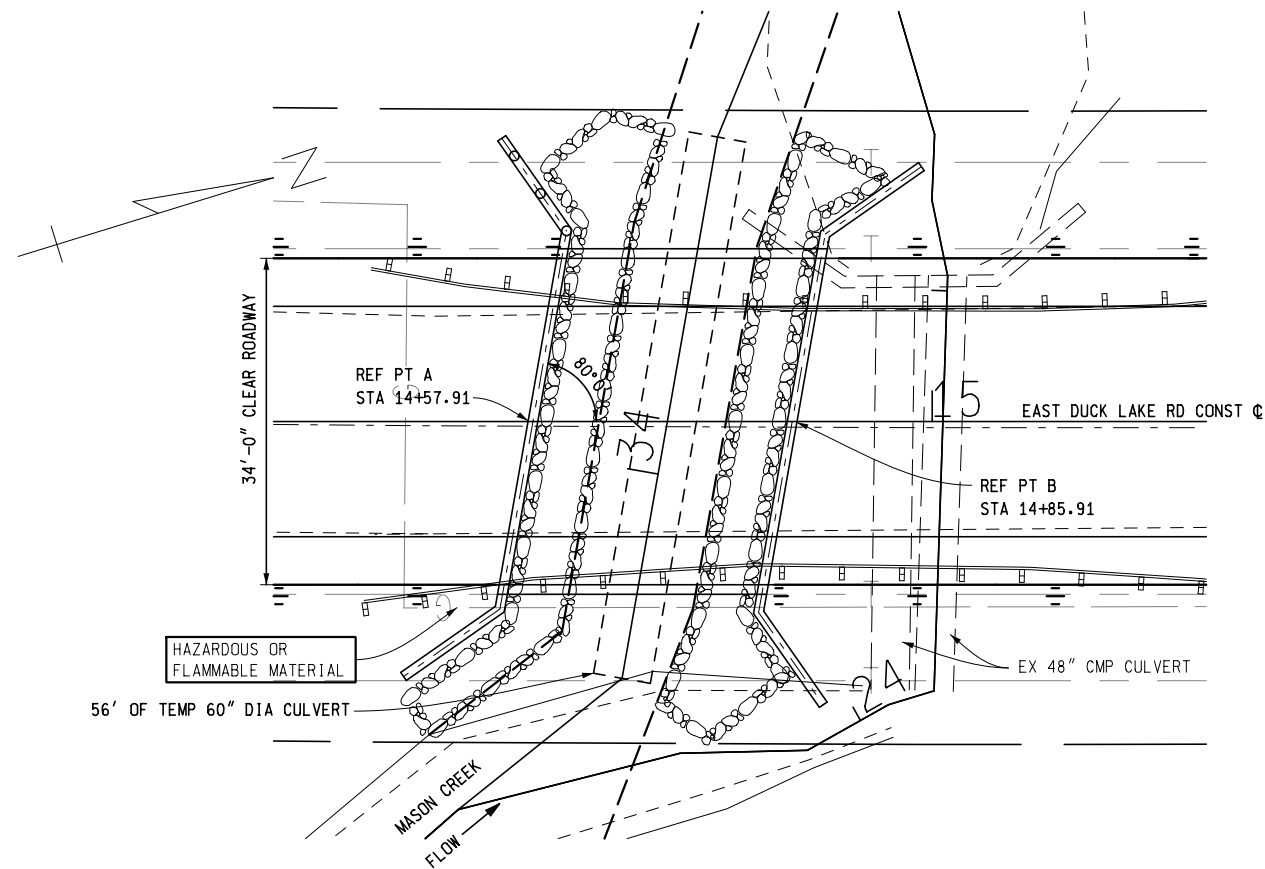
BORING LOCATION PLAN

NOTES:

BLOW COUNT NUMBERS DENOTE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. (1 1/2" I.D.) SPLIT SPOON SAMPLER 3 SUCCESSIVE 6" INCREMENTS USING A 140# HAMMER FALLING 30".

CONSISTENCY WAS DETERMINED BY INSPECTION OF SAMPLES AND SUBSTANTIATED BY SOILS RESISTANCE TO DRILLING TOOLS.

THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE BORING.



CONSTRUCTION QUANTITIES

1	LSUM	Mobilization, Max. (\$15,000)
3	Sta	Clearing - Special
2	Ea	Culv. Rem, 24 inch to 48 inch *
231	Cyd	Embankment, CIP
455	Syd	Aggregate Base, 6 inch
52	Syd	Shoulder, C II, 3 inch
371	Syd	HMA Surface, Rem
95	Ton	HMA, LVSP
38	Ft	Guardrail, Type B
13	Ft	Guardrail, Curved, Type B
4	Ea	Guardrail Anch, Bridge, Det T3
3	Ea	Guardrail Approach Terminal, Type 2B
1	Ea	Guardrail Departing Terminal, Type B
2	Ea	Guardrail Reflector
8	Ea	Barricade, Type III, High Intensity, Double Sided, Lighted Furn
8	Ea	Barricade, Type III, High Intensity, Double Sided, Lighted Oper
1	LSUM	Minor Traf Devices
10	Ea	Plastic Drum, High Intensity, Furn
10	Ea	Plastic Drum, High Intensity, Oper
300	Sft	Sign, Type B, Temp, Prismatic, Furn
300	Sft	Sign, Type B, Temp, Prismatic, Oper
765	Syd	Slope Restoration
404	Cyd	Backfill, Structure, CIP
794	Cyd	Excavation, Fdn
2	Ea	Erosion Control, Filter Bag
300	Ft	Erosion Control, Silt Fence
1	Ea	Culv. Temp
1	LSUM	Pile Driving Equipment, Furn
1100	Ft	Pile, Treated Timber, Driven
2	Ea	Test Pile, Treated Timber
1	LSUM	Structure, Timber - Install
2	Ton	Riprap - Special (50 TO 75 LB STONES)
82	Syd	Riprap, Heavy

* INCLUDES REMOVAL OF CONCRETE HEADWALLS.

SUMMARY OF HYDRAULIC ANALYSIS							
EXISTING				PROPOSED			
FLOOD DATA	DIS-CHARGE (CFS) *	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE	VELOCITY IN D/S CHANNEL (FPS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE	VELOCITY IN D/S CHANNEL (FPS)	WATERWAY AREA PROVIDED (SFT)	CHANGE IN WS EL 300' U/S OF PROPOSED STRUCTURE
2 YEAR	29	842.34	1.26	838.85	1.80	26.58	-1.75
50 YEAR	204	842.67	4.57	840.88	2.99	72.27	-2.48
100 YEAR	274	843.26	5.61	841.32	3.35	82.59	-4.83

THE CONTRIBUTING DRAINAGE AREA TO THIS CROSSING IS 15.4 SQUARE MILES. THE MAXIMUM BRIDGE AREA BELOW LOW CHORD IS 289 SQUARE FEET.

THE WATER SURFACE AND/OR ENERGY GRADE ELEVATIONS SHOWN ON THIS HYDRAULIC TABLE ARE TO BE USED FOR COMPARISON PURPOSES ONLY AND ARE NOT TO BE USED FOR ESTABLISHING A REGULATORY FLOODPLAIN.

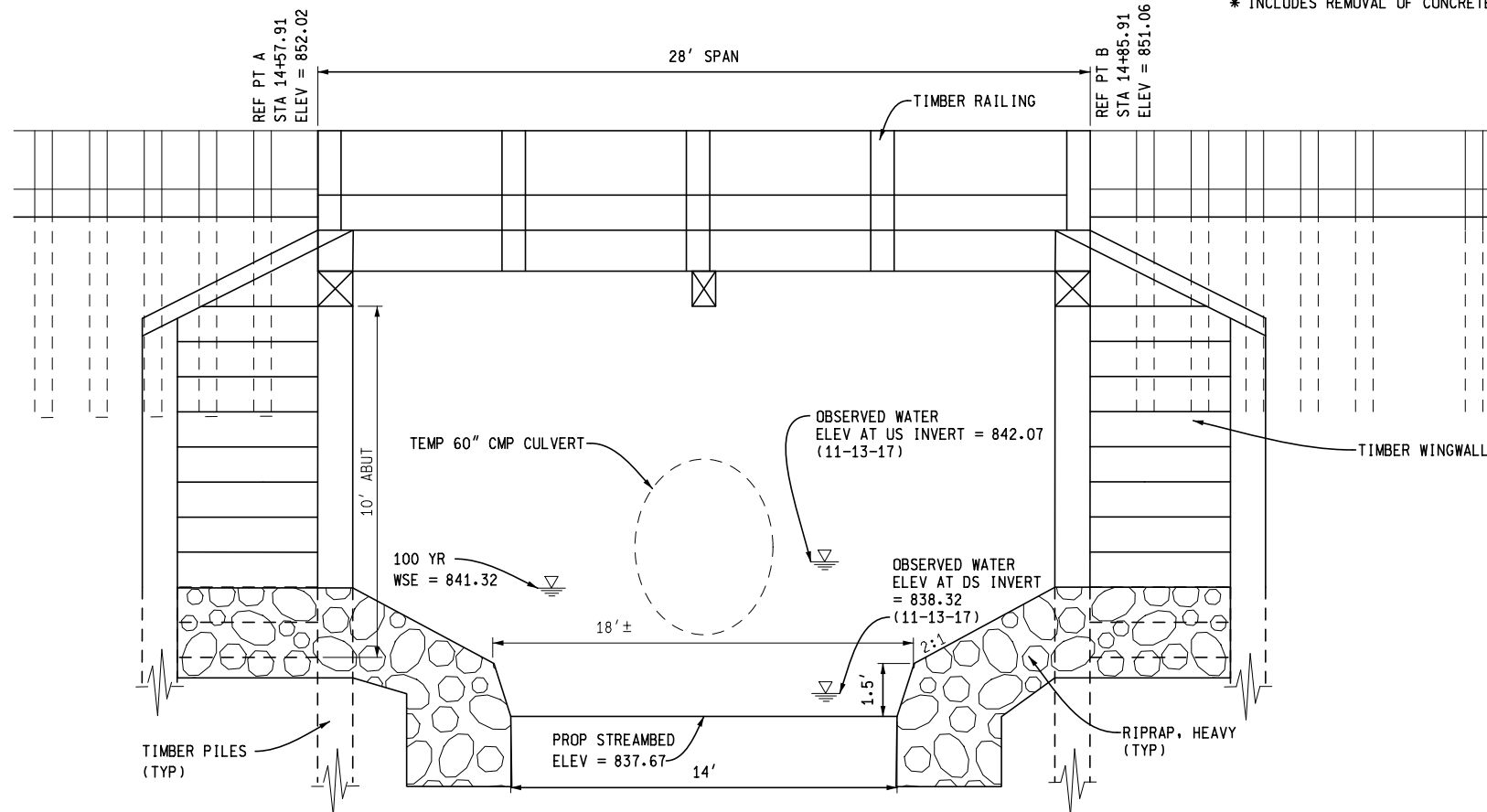
* INCLUDES AN ESTIMATED 14 CFS OF ADDITIONAL BASE FLOW

THE DESIGN OF THIS STRUCTURE IS BASED ON 1.2 TIMES THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATION HL-93 LOADING WITH THE EXCEPTION THAT THE DESIGN TANDEM PORTION OF THE HL-93 LOAD DEFINITION SHALL BE REPLACED WITH A SINGLE 60K AXLE LOAD BEFORE APPLICATION OF THE 1.2 FACTOR. THE RESULTING LOAD IS DESIGNATED HL-93 MODIFIED. LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE DEFLECTION DOES NOT EXCEED 1/425 OF SPAN LENGTH.

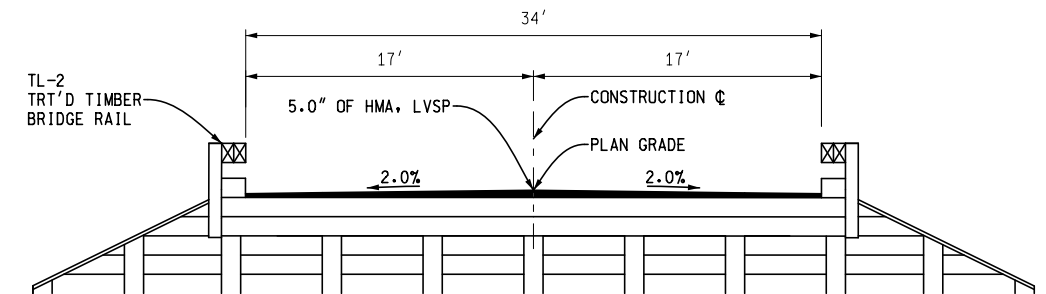
THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION PLAN FOR DEWATERING AND MAINTAINING STREAM FLOW DURING BRIDGE CONSTRUCTION TO THE ENGINEER. THE PLAN MUST BE APPROVED BY THE ENGINEER PRIOR TO PERFORMING ANY CULVERT RELATED WORK.

WITHOUT THE PREVENTATIVE MEASURES SHOWN ON THESE PLANS, THERE IS A POSSIBILITY THAT STREAM BED SCOUR MAY OCCUR. THE ESTIMATED TOTAL SCOUR DEPTH IS CALCULATED TO BE 5.2 FEET AT ABUTMENTS. THESE DEPTHS ARE BASED ON A 100 YEAR RUN OFF EVENT.

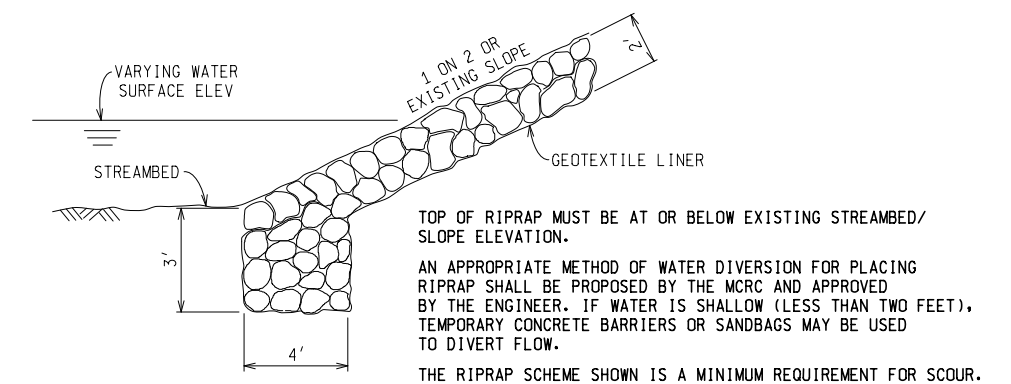
GEOTEXTILE LINER SHALL BE PLACED ON ALL SLOPES PRIOR TO PLACING RIPRAP. PAYMENT FOR GEOTEXTILE LINER SHALL BE INCLUDED IN PAYMENT FOR RIPRAP, HEAVY.



STRUCTURE ELEVATION



TYPICAL DECK SECTION



RIPRAP HEADER DETAIL



3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
OR 811



Conservation Resource Alliance

GRAND TRAVERSE
County Road Commission



PLAN OF STRUCTURE

DATE	TOWNSHIP	EAST DUCK LAKE OVER MASON CREEK	SHEET NO.
12/11/2018	GREEN LAKE		4

10/05/2018 AM 12/11/2018

BID FORM

**TIMBER BRIDGE MATERIAL
EAST DUCK LAKE ROAD OVER MASON CREEK**

GRAND TRAVERSE COUNTY ROAD COMMISSION

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT	NOTES
Structure, Timber - Deliver	1	Lump Sum	\$	\$	
Test Pile, Treated Timber, Furnish	2	Each	\$	\$	
Pile, Treated Timber, Furnish	1100	Feet	\$	\$	
Total Bid Amount				\$	

Bridge Fabricator:_____

Certification of fabrication process shall be performed by a third party inspection agency that is accredited by American Lumber Standards Committee (ALSC), as specified in the ALSC Treatment Wood Program. Inspection will be performed to verify that the bridge was treated and manufactured according to the specification of Grand Traverse County Road Commission (GTCRC).

Inspection Agency Name:_____

Bidder Company Name:_____

Authorized Signature:_____

Failure to complete this bid form in its entirety will be considered an incomplete bid.

Payment: The GTCRC shall pay 100% of the quoted price for furnished materials upon delivery to the project site and acceptance by the GTCRC.

TERMS AND CONDITIONS:

**THE VENDOR, BY RENDERING SERVICE TO THE GRAND TRAVERSE COUNTY ROAD COMMISSION (GTCRC)
HEREBY AGREES TO ALL PROVISIONS LISTED BELOW:**

1. **Non-Discrimination.** The Vendor agrees not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions or privileges of employment, or a matter directly or indirectly related to employment because of race, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability, family status, sexual orientation, or gender identity. A breach of this covenant may be regarded as a material breach of this Service Order.
2. **Assignment.** There shall be no assignment or transfer of this Service Order or any part thereof unless mutually agreed to in writing by both parties.
3. **Venue.** Any and all suits for any and every breach of this Service Order shall be instituted and maintained in any court of competent jurisdiction in the County of Grand Traverse, State of MI.
4. **Dispute Resolution.** Prior to either party instituting any suit, any claim or dispute under the Service Order shall be submitted to non-binding mediation. The Vendor shall include a similar mediation agreement with all subcontractors and subconsultants under direct contract with the Vendor.
5. **Independent Contractor.** The relationship of the Vendor to the GTCRC is that of an Independent Contractor. The Vendor and the personnel employed by the Vendor shall not be deemed to be agents or employees of the GTCRC, shall not hold themselves out as employees of the GTCRC and shall not be entitled to any fringe benefits the GTCRC affords its employees.
6. **Required Insurance.** The Vendor shall provide an insurance certificate evidencing the following selected insurance prior to performing services under this Service Order:

		Yes	No
General Liability - Comprehensive	\$ 2,000,000 per occurrence	_____	_____
Professional Liability -	\$ 2,000,000 per occurrence	_____	_____
Premises and Operations		_____	_____
Independent Contractors		_____	_____
Completed Operations Hazard		_____	_____
Contractual Liability		_____	_____
Explosion, Collapse or Underground Damage		_____	_____
Owners Protective		_____	_____
Environmental Pollution Liability	\$1,000, 000 per occurrence	_____	_____
Automobile Liability	\$500,000 combined single limits	_____	_____
Owned, Non-owned &	\$250,000 each person	_____	_____
Hired	\$100,000 property damage each occurrence	_____	_____
Excess Liability	\$1,000,000	_____	_____
Umbrella Form		_____	_____
Employer's Liability	\$500,000	_____	_____

Additionally, Vendor shall provide the GTCRC with an endorsement to its insurance policy stating that the GTCRC is named as additional insured with the following language appearing either on the certificate or an attachment: *Grand Traverse County Road Commission, its commissioners, officers, employees and agents are named as additional insureds.* A minimum of 10 days advance written notice will be provided in the event of cancellation.

7. **Workers Compensation.** The parties agree to maintain at all times while work is being performed under this Service Order, suitable workers compensation insurance pursuant to Michigan law and will, upon receipt of this Service Order, provide a certificate of insurance or copy of state approval for self insurance to the GTCRC Manager.
8. **Interpretation.** This Service Order shall be governed by the laws of the State of Michigan both as to interpretation and performance.
9. **Indemnification.** To the fullest extent permitted by law, the Vendor shall defend, indemnify and hold the GTCRC, its agents, officials and employees harmless from and against all claims, damages, losses and expenses, including reasonable attorney fees and defense costs, arising out of or connected in any way with the performance of this Service Order which is caused in whole or in part by the Vendor's negligent, careless or intentional acts or omissions, or that of any agent, employee, or subcontractor of the Vendor, excluding only those damages, liabilities or costs attributable to the sole negligence of the GTCRC. The Vendor expressly acknowledges and agrees that this indemnification provision is intended to be as broad and inclusive as is permitted by law and that if any portion thereof is held invalid, it is agreed that the balance shall, notwithstanding, continue in full legal force and effect. This provision shall survive the termination of this Service Order and is not intended to waive the defense of governmental immunity that may be asserted by the GTCRC in an action against it.

10. Time. Time is of the essence in rendering the services described in this Service Order.
11. Pollution Indemnification. The Vendor's obligation to defend, indemnify and save harmless the GTCRC shall include any and all claims, liabilities, losses, damages, actual attorney fees and settlement expenses arising from any pollution liability, damage, or loss resulting or arising out of or in connection with the Vendor's performance of any work relating to this contract based upon any act, omission, or negligence of the Vendor or its employees, agents, servants, subcontractors or any other person or persons, including but not limited to the GTCRC, its agents, officers or employees. The obligations to defend, indemnify and hold harmless contained herein shall exclude only those matters in which the claim arises out of allegation of the sole negligence of the GTCRC, its offers, agents or employees. This indemnification agreement shall not be limited by reason of insurance coverage of any type. This provision is not intended to waive the defense of governmental immunity that may be asserted by the GTCRC in an action against it. **CHECK HERE IF APPLICABLE: ____.**
12. Third Party Beneficiaries. This Service Order confers no rights or remedies on any third party, other than the parties to this Service Order and their respective successors and permitted assigns.
13. Freedom of Information Act. The Vendor acknowledges that the GTCRC may be required from time to time to release records in its possession by law. The Vendor hereby gives permission to the GTCRC to release any records or materials received by the GTCRC as it may be requested to do so as permitted by the Freedom of Information Act, MCL 15.231 *et seq.*
14. Standard of Conduct. The Vendor shall render all services under this Service Order according to generally accepted professional practices.
15. Termination.
- A. For Fault. If the GTCRC Manager determines that the Vendor has failed to perform or will fail to perform all or any part of the services, obligations, or duties required by this Service Order, the GTCRC Manager may terminate or suspend this Service Order in whole or in part upon written notice to the Vendor specifying the default and in the case of suspension shall specify a reasonable period not more than thirty (30) days nor less than fifteen (15) days from receipt of the notice, during which time the Vendor shall correct the violations referred to in the notice. If the Vendor does not correct the violations during the period provided for in the notice, this Service Order shall be terminated upon expiration of such time. Upon termination, any payment due the Vendor at time of termination may be adjusted to cover any additional costs occasioned the GTCRC by reason of the termination. This provision for termination shall not limit or modify any other right to the GTCRC to proceed against the Vendor at law or under the terms of this Service Order.
- B. Not for Fault. Whenever the GTCRC Manager determines that termination of this Service Order in whole or in part is in the best interest of the GTCRC or in the event that termination is required by any state or federal agency, the GTCRC Manager may terminate this Service Order by written notice to the Vendor specifying the services terminated and the effective date of such termination. Upon termination, the Vendor shall be entitled to and the GTCRC shall pay the costs actually incurred in compliance with this Service Order until the date of such termination.
16. Ownership of Documents. All documents produced by Vendor under this Service Order shall remain the property of GTCRC and may not be used by Vendor for any other endeavor without the written consent of GTCRC. Any reuse of documents without the written consent of GTCRC shall be at Vendor's sole risk, without liability or legal exposure to GTCRC, its officers, directors, employees, agents, or volunteers.
17. Billing/Payments. Invoices for Vendor's services shall be submitted, at GTCRC's option, either upon completion of such services or on a monthly basis whichever is shorter. Invoices shall be payable within 30 days after the invoice date. Retainer/deposits fee shall be credited on the final invoice.

VENDOR:	Grand Traverse County Road Commission 1881 LaFranier Road Traverse City MI 49696
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(Signature)

(Signature)

(Printed Name)

(Printed Name)