

**B01 and B02 of 72061: US-23 over South and North Branch Devil River
HYDRODEMOLITION**

BID PROPOSAL

PAGE 1 OF 1

**ALL THE WORK HEREIN SPECIFIED WILL BE PAID FOR AS A LUMP SUM.
QUANTITIES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.**

<u>ITEMS OF WORK</u>	<u>QTY</u>	<u>UNIT</u>
Mobilization, Max	1	LSUM
Hydrodemolition pH control plan.....	1	EA
Hydrodemolition	306	SYD

THESE ITEMS AND QUANTITIES ARE BEING PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THESE ITEMS AND QUANTITIES. NO ADDITIONAL COMPENSATION WILL BE PAID FOR INCREASES IN QUANTITIES OR ADDITIONAL INCIDENTAL ITEMS NECESSARY TO PERFORM THE WORK AS DESCRIBED IN THE LOG OF PROJECT. ALL COMPLETED WORK WILL BE PAID FOR AS ONE LUMP SUM.

TOTAL LUMP SUM BID _____

COMPANY NAME: _____

ADDRESS: _____

AUTHORIZED SIGNATURE: _____

DATE: _____

The Michigan Department of Transportation reserves the right to reject any and all bids.

PROJECT LOCATION

The project is located on US-23 over South and North Branch Devil River in Sanborn Township in Alpena County, Michigan. Latitude/Longitude: 44.9184 / -83.4379 and 44.9216 / -83.4368

PROJECT DESCRIPTION

The project includes the hydrodemolition of two bridge decks under part width construction. The work includes preparing a hydrodemolition pH control plan, mobilizing and performing the hydrodemolition, and the removal of all concrete debris and slurry. Perform all work in locations as required by the plans and as directed by the Engineer in accordance with any Special Provisions and the MDOT 2020 Standard Specifications for Construction.

All completed work will be paid for as one lump sum. Estimated quantities to complete the work are included in the bid proposal for information only. The contractor is responsible for verifying these items and quantities. No additional payment will be paid for increases in quantities or additional items necessary to perform the work as described.

PROGRESS CLAUSE

After receiving Notice of Award, start work on the date approved by the Engineer. In no case, shall any work be commenced prior to receipt of formal notice of award.

The work will be complete in conjunction with the MDOT Bridge Maintenance Crew and will require two stages spaced 1-3 weeks apart.

The entire project must be completed by the final completion date of **June 20, 2025**.

MAINTAINING TRAFFIC

Traffic control will be completed and maintained by the MDOT Bridge Maintenance Crew and will be part-width construction using temporary signals and grabber cones.

No work will be performed until after 6:00 AM on Tuesday, 04/28/2025.

OTHER SPECIAL PROVISIONS

Hydrodemolition pH control plan

The hydrodemolition contractor is required to obtain a Certificate of Coverage (COC) under the Groundwater Discharge General Permit for hydrodemolition process water prior to beginning hydrodemolition work. The COC is an annual requirement, regardless of the number and location of hydrodemolition projects a contractor works on.

The hydrodemolition contractor is responsible for submitting the application and paying the fee when invoiced by the Michigan Department of Environment, Great Lakes, and Energy (EGLE). The coverage under the general permit is effective at the time the contractor receives the COC from the EGLE. The COC will indicate the period of coverage. The project engineer should verify that the coverage will be in effect for the entire period of time that hydrodemolition work will take place on a given project. A copy of the COC must be provided by the hydrodemolition contractor and placed in the project file.

The contractor shall submit a hydrodemolition pH control plan for review and acceptance prior to beginning any hydrodemolition work. The following (“a” through “p”) is a sample hydrodemolition pH control plan:

a. Description (Insert company name) staff shall sample, test, monitor, manage, and neutralize, if necessary, the hydrodemolition runoff water prior to discharge from the bridge deck. In areas with enclosed storm drainage systems or in areas where discharging is otherwise not permitted, (Insert company name) will collect, haul, and dispose of the hydrodemolition runoff water.

b. Construction - (Insert company name) will perform this work as specified in the Standard Specifications for Construction and the contract documents. Discharged hydrodemolition runoff water will be filtered with a minimum of three peastone filter dams. The peastone dams will be maintained during the entire hydrodemolition and rinsing operations. Dams will not be constructed from millings of the scarified concrete or removed latex concrete. Remove millings prior to beginning the hydrodemolition process.

(Insert company name) will obtain an EGLE Certificate of Coverage form and conform to the Groundwater Discharge General Permit.

c. pH Control Plan - (Insert company name) staff shall sample, test, monitor, manage, and, if necessary, neutralize the hydrodemolition runoff water prior to discharge and/or disposal. The plan manager will be (Insert name of plan manager).

d. Sampling and Testing - The hydrodemolition runoff water produced by the hydrodemolition equipment will be sampled and tested immediately to determine whether it falls within the nonhazardous range (greater than 2 and less than 12.5) by (Insert tester’s name or names). A daily calibrated (Insert pH meter model and name) will be utilized and calibrated by (Insert tester’s name or names).

On this hydrodemolition project, a minimum of four independent hydrodemolition runoff water samples will be taken per day for each structure and recorded. Additional sampling may be

taken depending on the volume of runoff generated, consistency of pH, and area of the bridge deck. Sampling will be spaced evenly throughout the work day although the frequency may be adjusted depending on change in the hours of operation. The samples will be tested and split into laboratory samples. Four hydrodemolition runoff samples will be tested by a Michigan Department of Environment, Great Lakes, and Energy (EGLE) certified laboratory. The EGLE certified laboratory will be (Insert name of testing laboratory) and the laboratory contact person is (Insert contact name) and can be reached at (Insert testing laboratory phone number). The laboratory will check and verify the pH and provide daily a written report to be forwarded to the resident/delivery engineer. If the laboratory tests are not consistent with the field results, (Insert company name) will (Insert proposed action, options include recalibrating pH meter, changing meters, stoppage of work, neutralizing, etc).

Test results will be recorded on the hydrodemolition log.

e. Monitoring - (Insert company name) will take action to ensure the pH is above 2 and below 12.5 prior to discharge and disposal by (List proposed actions such as pre-treatment, treatment during hydrodemolition, or post treatment options) (Insert company name) will treat the runoff water with (Insert product name or names) in order to keep the runoff water below a pH of 12.5. The (Insert product name or names) will be mixed (Insert location of mixing) prior to discharge and disposal. pH Adjustment - (Insert company name) will treat the runoff water with (Insert product name or names) in order to keep the pH of the hydrodemolition runoff water above 2 and below a pH of 12.5. The (Insert product name or names) will be mixed (Insert location of mixing such as tank, gondola, and tanker truck) prior to discharge and disposal. A copy of the material safety and data sheet (MSDS) and a product data sheet will be furnished to the engineer prior to neutralizing.

f. Managing - (Insert company name) will manage the hydrodemolition waste runoff to prevent release of a hazardous waste and will adjust the pH when necessary as indicated in the pH adjustment

g. Collecting and Hauling - (Insert company name) will collect the hydrodemolition runoff water and the hauling will be based on the following:

h. Hazardous Waste - If the hydrodemolition runoff water is hazardous and isn't neutralized, then the runoff water will be transported by (Insert licensed hazardous waste transport company name) for disposal at (Insert licensed hazardous waste disposal company name).

i. Non-Hazardous Waste - If the hydrodemolition runoff water is nonhazardous, then the runoff water will be transported by (Insert licensed liquid industrial waste transport company name) for disposal at (Insert licensed liquid industrial disposal company name or public owned treatment works). Copies of waste manifests forms will be forwarded to the engineer.

j. Generator and/or Transport Site Identification Number - (Insert company name) will either obtain a generator or site identification number from the EGLE Waste and Hazardous Materials Division or use a licensed liquid industrial waste hauler to transport the hydrodemolition runoff water. List the site identification number for each structure: (Insert Structure Location and Structure Name) is (Insert Site ID Number). (Insert licensed liquid

industrial waste transport company name) will transport the hydrodemolition runoff water. (Insert company name) will contact the engineer to request a site identification number from EGLE

k. Discharge - (Insert company name) will not discharge into any surface waters of the state, storm water drainage systems, or in areas where discharging is not permitted. (Insert company name) will coordinate the collecting, hauling, proper disposal of the hydrodemolition runoff water, and will obtain approval from the engineer for the discharge method and location prior to beginning the hydrodemolition operation. The discharge of the runoff water will only occur on MDOT right of way and will be distributed as evenly as possible. Discharge will be minimized via curb side culverts and downspouts. (Insert company name) will record hours of the hydrodemolition process and the volume of water discharged. Measures will be maintained for managing the runoff water by (Insert company name) in good working order.

l. Disposal of Hydrodemolition Runoff - (Insert company name)

m. Nonhazardous Runoff Water Disposal - (Insert company name) will collect the water. (Insert liquid industrial waste company name) will transport to (Insert disposal location, either a solid waste facility or licensed liquid industrial waste disposal facility). (Insert company name) will forward copies of the manifests to the engineer.

n. Hazardous Runoff Water Disposal - (Insert company name) will collect the water. (Insert hazardous waste transport company name) will transport to (Insert hazardous waste disposal facility). (Insert company name) will forward copies of the manifests to the engineer.

o. Contractor Responsibility for Method of Operations - (Insert company name) will comply with all environmental laws and regulations.

p. Records - (Insert company name) will maintain a copy of all manifests for three years and make them available to EGLE upon request.

Hydrodemolition

Hydrodemolition Equipment

- a) **Equipment Description:** Use equipment that operates at a noise level less than 90 dbA, as measured from a distance of 50 feet. Use potable water in hydrodemolition operations. Use equipment shielding to prevent injury or damage from flying debris in accordance with subsection 104.07.B.
- b) **Equipment Demonstration:** The Engineer will designate two trial areas on the bridge deck for the Contractor to demonstrate that equipment, personnel, and methods of operation produce results satisfactory to the Engineer.

The first trial area consists of 30 square feet of sound concrete, as determined by the Engineer. For shallow overlays, calibrate equipment to remove sound concrete to the depth shown on the plans. For deep overlays, calibrate equipment to remove sound concrete to the depth of the top surface of the top reinforcing bars. Top surface of reinforcing bars must be exposed over 75% of the trial area.

Move the equipment to a second trial area that consists of deteriorated or defective concrete and determine whether the calibration for sound concrete will completely remove the unsound concrete.

If the equipment does not completely remove the unsound concrete, obtain another piece of equipment and perform another demonstration. The project completion date will not be adjusted due to delays in obtaining equipment.

Begin production removal only if the Engineer determines that results are satisfactory. If the Engineer determines that equipment does not adequately remove concrete, the Engineer may require equipment recalibration during production work.

Hydrodemolition

Use hydrodemolition to the limits shown on the plans or as determined by the Engineer.

If the plans show limits of hydrodemolition, make one pass of the hydrodemolisher to remove sound concrete to the depth and limits required. Avoid removing sound concrete beyond the required depth. Remove deteriorated or defective concrete within the limits required. The Engineer will determine and mark areas of unsound concrete remaining after the first pass, as specified in subsection 712.03.E.2. Remove unsound areas with a second pass of the hydrodemolisher, 60-pound pneumatic hammers, or other equipment approved by the Engineer. Make the second pass with the hydrodemolition equipment calibrated the same as for the first pass.

Remove concrete debris by hand or mechanical methods immediately after hydrodemolition. Remove debris that settles on or adheres to the surface of sound concrete, at no additional cost to the Department. Avoid damage to remaining sound concrete or exposed steel reinforcement. Heavy equipment, including concrete trucks and vacuum trucks for removing concrete debris, are not allowed on hydrodemolished surfaces of the deck. Following debris removal and before placing overlay, blast clean the surface with abrasive or water to remove bond-breaking residue or loose material from concrete surfaces and rust from steel reinforcement.

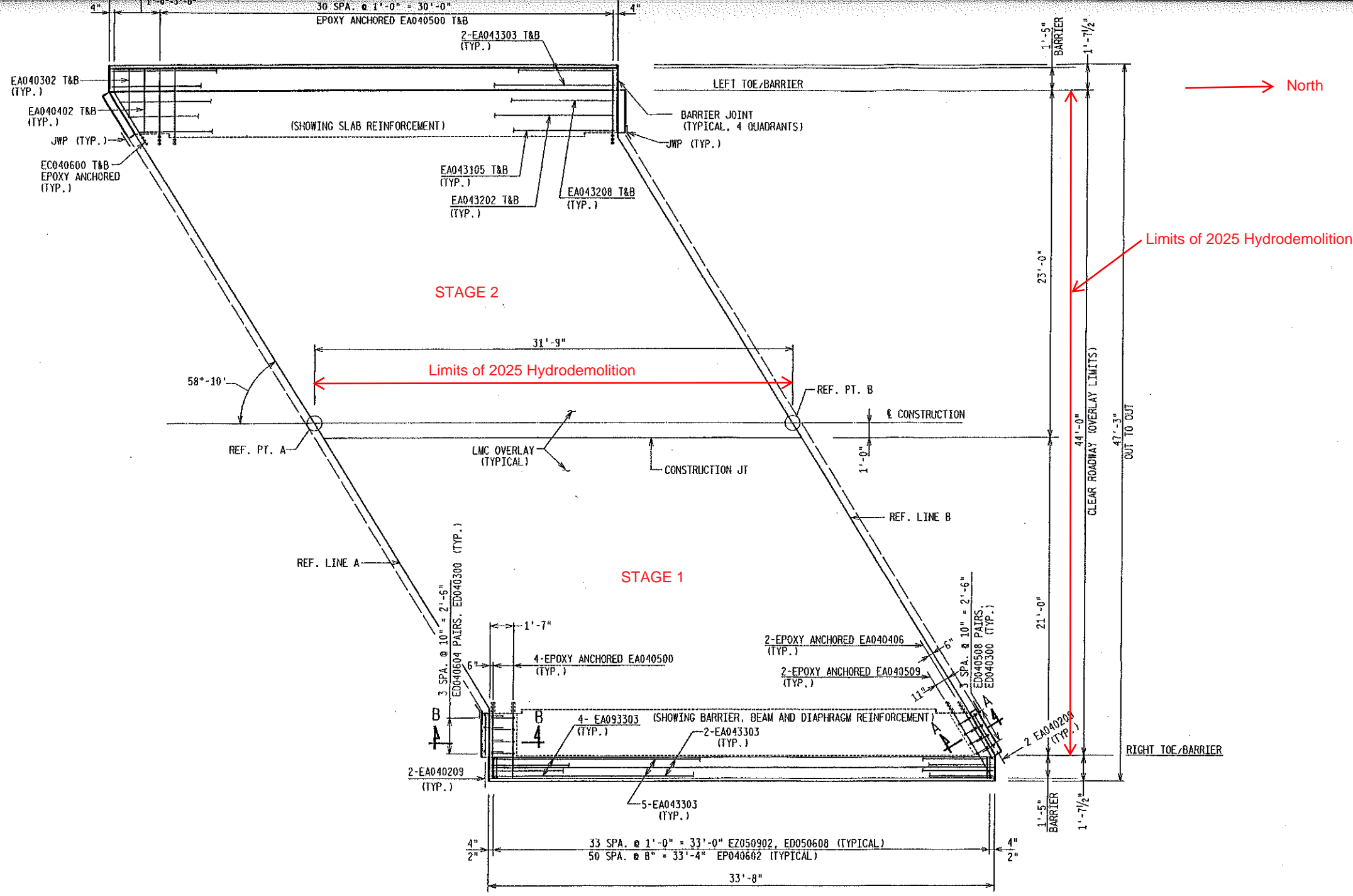
All water needed for the hydrodemolition process is to be provided by the contractor. The contractor is responsible for the removal and properly disposing of the concrete debris and slurry from the work site.

Sample, test, monitor, manage, neutralize, and discharge hydrodemolition runoff water from bridge decks. Collect, filter, and dispose of runoff water generated by hydrodemolition. Obtain the required permits and comply with regulations concerning runoff water disposal. Do not allow runoff water to create a hazard to the adjacent or underlying traveled roadway surfaces. Protect existing berm slopes from scouring by water jet or runoff water. Do not allow runoff water,

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US-23 over South and North Branch Devil River
HYDRODEMOLITION

filtered or unfiltered, to enter storm sewers, bridge drain downspouts, or bridge approach downspouts. Do not discharge runoff water, filtered or unfiltered, into surface water, floodplains, or wetlands.

In areas with enclosed drainage systems or areas where the contract does not allow runoff discharge, collect, haul, and dispose of runoff water as a liquid industrial waste in accordance with section 107.



EXISTING FOR INFORMATION ONLY

MISCELLANEOUS QUANTITIES		
ITEM	UNIT	AMOUNT
SCARIFYING	SYD	156
HAND CHIPPING - SHALLOW	SYD	24
HAND CHIPPING - DEEP	SYD	8
EPOXY ANCHORING OF HORIZONTAL BAR, 1/2 INCH	EACH	144
SUPERSTRUCTURE CONCRETE	CYD	27
FORMING, FINISHING AND CURING SUPERSTRUCTURE CONCRETE (B01 OF 04031)	LSUM	1
BRIDGE BARRIER RAILING, TYPE 5	LFT	68
LM CONCRETE SURFACING MIXTURE	CYD	13
CONSTRUCTING BRIDGE DECK SURFACE	SYD	156
JOINT WATERPROOFING	SFT	27

NOTES:

LMC DENOTES LATEX MODIFIED CONCRETE
 JWP DENOTES JOINT WATERPROOFING
 T&B DENOTES TOP AND BOTTOM

FOR BRIDGE RAILING AND MOLDING AND BEVEL DETAILS, SEE STANDARDS X-20 AND XI-103.

FOR NAME PLATE LOCATION SEE SHEET 3 OF 9.

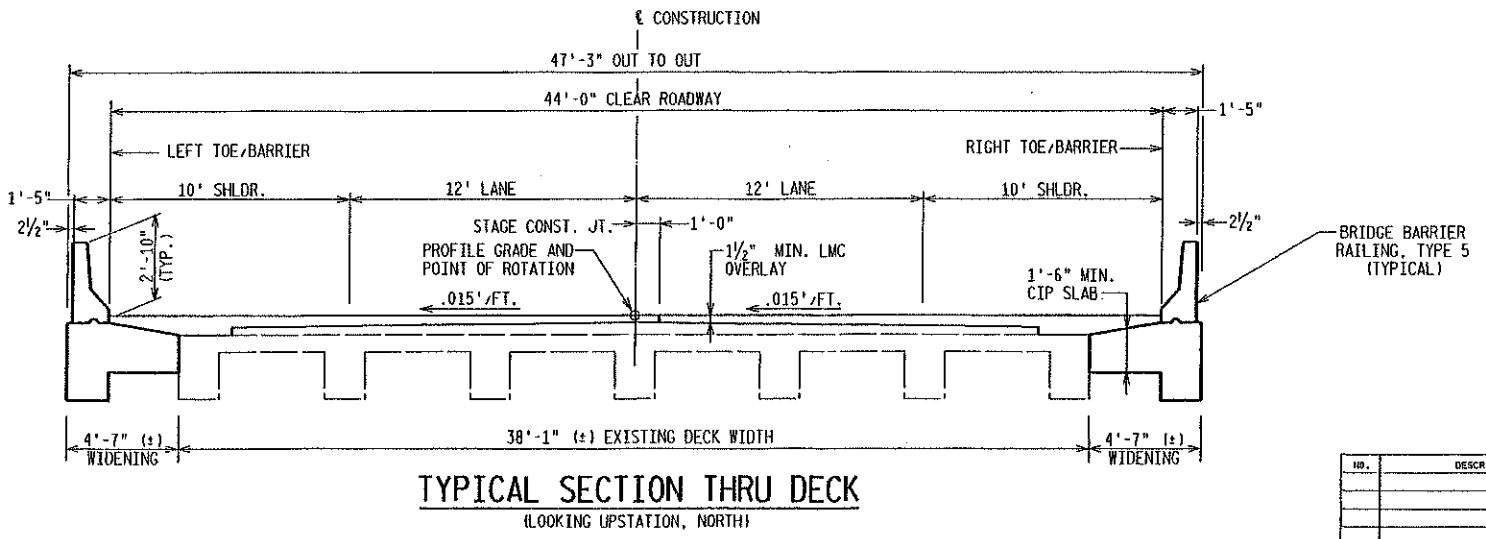
"EDGE" OR "GROOVE" DENOTES EDGING OR GROOVING WITH AN APPROVED TOOL.

SYSTEMS FOR EPOXY ANCHORING HORIZONTAL REINFORCEMENT IN EXISTING CONCRETE SHALL BE EITHER HILTI HVA OR MOLLY PARABOND.

THE VOLUME OF L.M. CONCRETE SURFACING MIXTURE IS BASED ON THE OVERLAY AND THE ESTIMATED QUANTITY TO REPLACE UNSOUND CONCRETE AND TO MAKE GRADE ADJUSTMENTS AS DETERMINED BY THE ENGINEER.

THE ACTUAL QUANTITY OF L.M. CONCRETE SURFACING MIXTURE PLACED ON THE DECK WAS _____ CYD.

"SILICA FUME MODIFIED CONCRETE" (SEE SPECIAL PROVISION) MAY BE SUBSTITUTED FOR CONCRETE SURFACING MIXTURE LM AT THE CONTRACTOR'S OPTION, BUT WILL BE PAID FOR AS "CONCRETE SURFACING MIXTURE LM".



WORK THIS SHEET WITH SHEET 8 OF 9

MICHIGAN DEPARTMENT OF TRANSPORTATION

US-23 OVER SOUTH BRANCH DEVIL RIVER

SUPERSTRUCTURE DETAILS

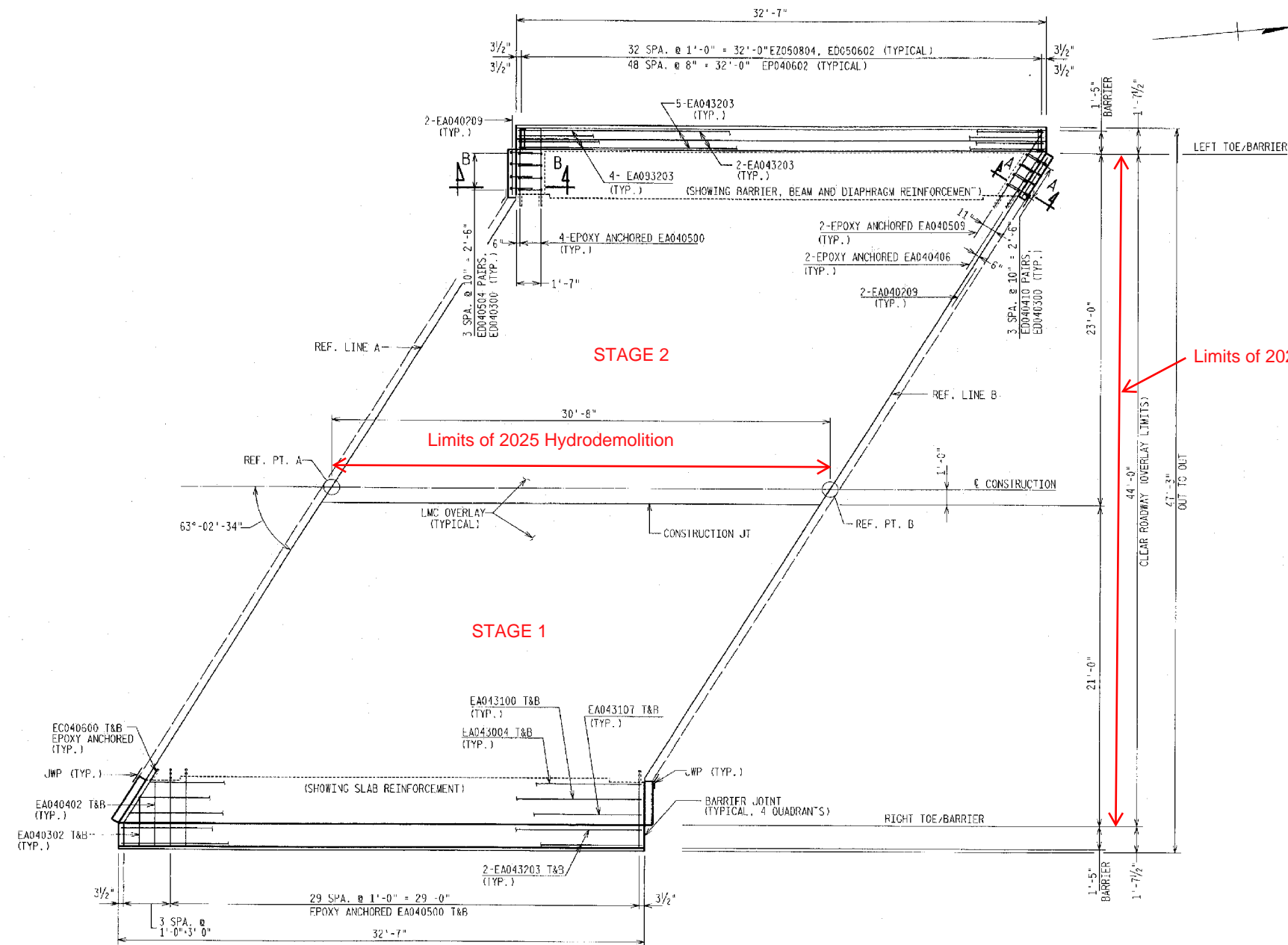
ALPENA CO., MI

PLANS PREPARED BY

AYRES Engineers/Surveyors
 ASSOCIATES Owen Ayres & Associates Inc.
 Midland, Michigan

NO.	DESCRIPTION	DATE	BY

MOOT UNIT	GROENHUIS
CONSULT UNIT L. COOPER	08/11/97
DRAWN BY L. WILFORD	08/11/97
CHECKED BY D. KRULL	08/11/97
SHEET 7 OF 9	
B01 OF 04031	



EXISTING
FOR INFORMATION
ONLY

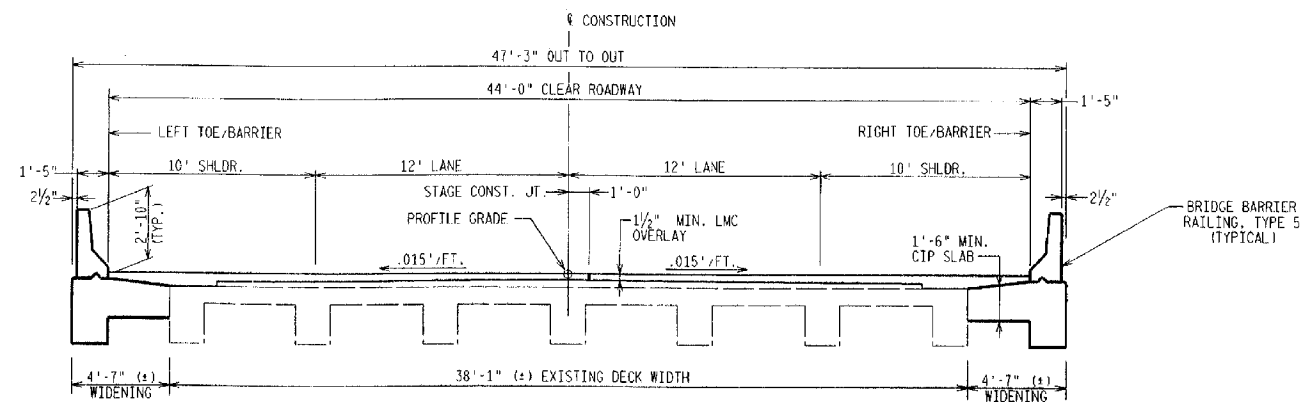
Limits of 2025 Hydrodemolition

MISCELLANEOUS QUANTITIES		
ITEM	UNIT	AMOUNT
SCARIFYING	SYD	151
HAND CHIPPING - SHALLOW	SYD	20
HAND CHIPPING - DEEP	SYD	7
EPOXY ANCHORING OF HORIZONTAL BAR 1/2 INCT	EACH	140
SUPERSTRUCTURE CONCRETE	CYD	25
FORMING, FINISHING AND CURING SUPERSTRUCTURE CONCRETE (B02 OF 04031)	LSUM	1
BRIDGE BARRIER RAILING, TYPE 5	LFT	65
LM CONCRETE SURFACING MIXTURE	CYD	13
CONSTRUCTING BRIDGE DECK SURFACE	SYD	151
JOINT WATERPROOFING	SFT	25

NOTES:

- LMC DENOTES LATEX MODIFIED CONCRETE
- JWP DENOTES JOINT WATERPROOFING
- T&B DENOTES TOP AND BOTTOM
- FOR BRIDGE RAILING AND MOLDING AND BEVEL DETAILS, SEE STANDARDS X-20 AND XI-103.
- FOR NAME PLATE LOCATION SEE SHEET 3 OF 9.
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- SYSTEMS FOR EPOXY ANCHORING HORIZONTAL REINFORCEMENT IN EXISTING CONCRETE SHALL BE EITHER HILTI HVA OR MOLLY PARABOND.
- THE VOLUME OF L.M. CONCRETE SURFACING MIXTURE IS BASED ON THE OVERLAY AND THE ESTIMATED QUANTITY TO REPLACE UNSOUND CONCRETE AND TO MAKE GRADE ADJUSTMENTS AS DETERMINED BY THE ENGINEER.
- THE ACTUAL QUANTITY OF L.M. CONCRETE SURFACING MIXTURE PLACED ON THE DECK WAS CYD.
- "SILICA FUME MODIFIED CONCRETE" (SEE SPECIAL PROVISION) MAY BE SUBSTITUTED FOR CONCRETE SURFACING MIXTURE LM AT THE CONTRACTORS OPTION, BUT WILL BE PAID FOR AS "CONCRETE SURFACING MIXTURE LM".

PLAN OF SLAB



TYPICAL SECTION THRU DECK

WORK THIS SHEET WITH SHEET 8 OF 9

MICHIGAN DEPARTMENT OF TRANSPORTATION
US-23 OVER NORTH BRANCH DEVIL RIVER
SUPERSTRUCTURE DETAILS
ALPENA CO., MI

PLANS PREPARED BY
AYRES Engineers/Surveyors
ASSOCIATES
Owen Ayres & Associates Inc.
Midland, Michigan

NO.	REVISIONS DESCRIPTION	DATE	BY

MOOT UNIT	
CONSULT UNIT	L. COOPER 08/11/97
DRAWN BY	L. WILFORD 08/11/97
CHECKED BY	D. KRULL 08/11/97
SHEET 7 OF 9	

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