

# CITY OF OWOSSO

## PLANS OF PROPOSED GOULD STREET OVER SHIAWASSEE RIVER AND OAKWOOD AVENUE OVER SHIAWASSEE RIVER

CITY OF OWOSSO  
SHIAWASSEE COUNTY

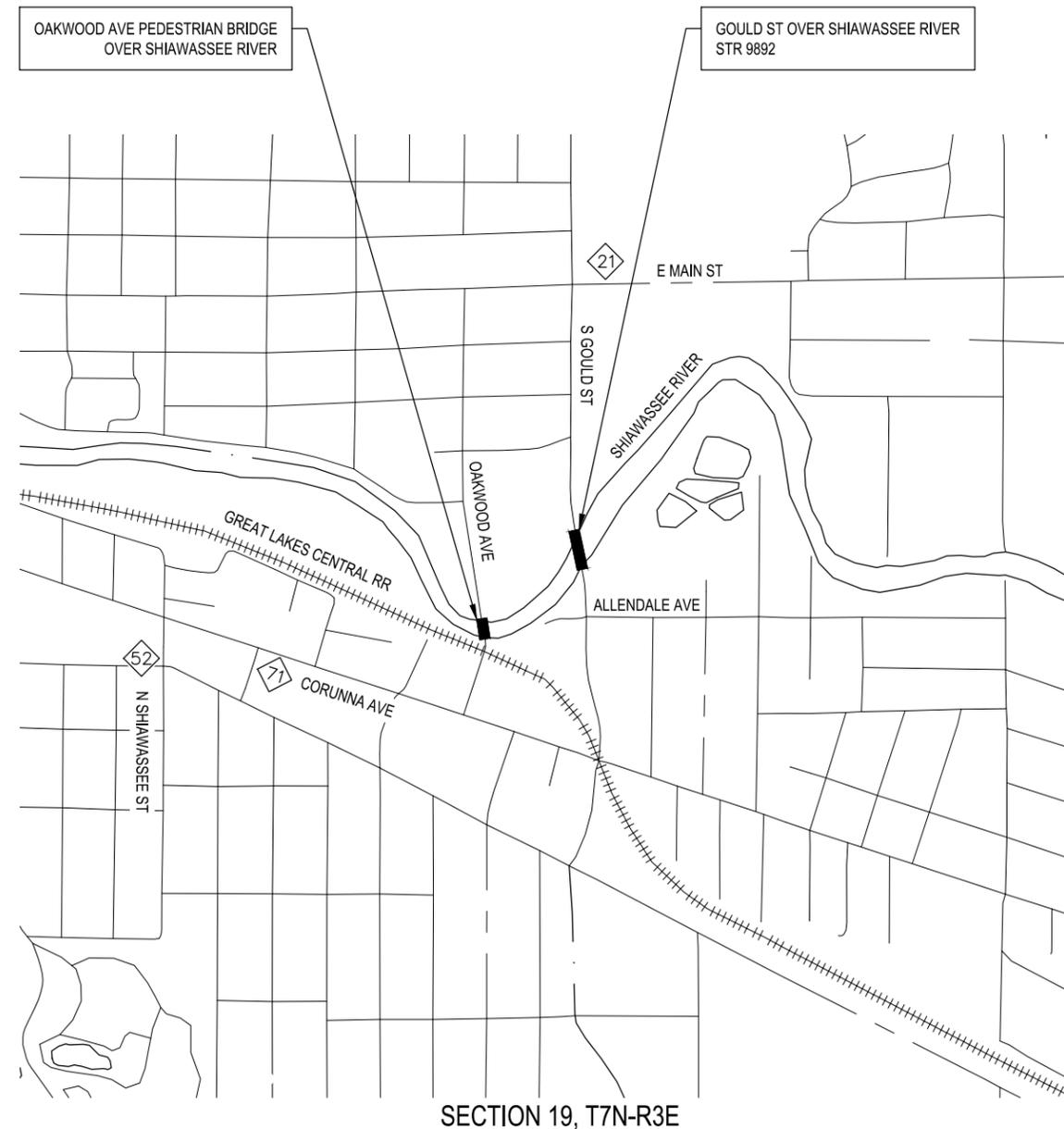
GOULD ST. TRAFFIC DATA	
7,758	PRESENT ADT (2023)
7,400	FUTURE ADT (2043)
35 MPH	POSTED SPEED
4%	COMMERICAL

OAKWOOD AVE. TRAFFIC DATA	
N/A	PED. STRUCTURE



AREA MAP  
NOT TO SCALE

PLANS	SHEET NUMBERS
TITLE	1
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OAKWOOD AVE PED. BRIDGE OVER SHIAWASSEE RIVER	
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STRUCTURAL DETAILS	10-11



SECTION 19, T7N-R3E

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE BASED ON THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2020 EDITION, AND THE AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2018 EDITION, AND THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2011 EDITION.

THE WORK COVERED BY THESE PLANS INCLUDES TIMBER DECK REPLACEMENT, EPOXY OVERLAY REPAIRS, CONCRETE DECK AND RAILING PATCHING, JOINT RESEALING, CONCRETE RAILING SURFACE COATING, AND MAINTAINING TRAFFIC

### CITY OF OWOSSO APPROVAL

CLAYTON WEHNER, DIRECTOR OF ENGINEERING

DATE

THESE PLANS WERE PREPARED FOR THE  
THE CITY OF OWOSSO BY



*Richard D. Kathrens*

RICHARD KATHRENS, P.E.

6201043892

REGISTRATION NO.

1/31/24

DATE



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### MDOT STANDARD PLANS

WHERE THE FOLLOWING ITEMS ARE CALLED FOR ON PLANS, THEY ARE TO BE CONSTRUCTED ACCORDING TO THE MDOT STANDARD PLAN GIVEN BELOW OPPOSITE EACH ITEM UNLESS OTHERWISE INDICATED.

MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS	B-103-E
TRANSVERSE PAVEMENT JOINTS	R-39-K
GROUND DRIVEN SIGN SUPPORTS FOR TEMP SIGNS	WZD-100-A*
TEMPORARY TRAFFIC CONTROL DEVICES	WZD-125-E*

\*SPECIAL DETAILS INCLUDED IN PROPOSAL

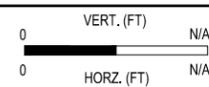
2/2/2024, 10:26 AM lucas.campeau

#### FINAL PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION



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SGI PROJECT NO: 134702SG2023

DATE: FEBRUARY, 2024

FILE: DB-1247-1 TITLE.DWG

CS:

JN:

#### TITLE SHEET

DRAWING SHEET

1

GENERAL NOTES

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

**UNDERGROUND UTILITIES/MISS DIG**

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174, 2013, THE CONTRACTOR SHALL DIAL 1-800-482-7171 OR 811 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

THE EXISTING UTILITIES ON THESE DRAWINGS HAVE BEEN SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND SHALL NOTIFY THE ENGINEER AS TO WHERE POSSIBLE CONFLICT EXISTS.

**EXISTING WATER MAINS AND SEWERS**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PROPERLY IDENTIFIED EXISTING WATER MAINS AND/OR EXISTING SEWERS DURING THE CONSTRUCTION OF THIS PROJECT.

**PAVEMENT MARKINGS AND SIGNS**

ALL PERMANENT PAVEMENT MARKINGS, SHAPES, AND DIMENSIONS SHALL CONFORM WITH MDOT PAVEMENT MARKING TYPICALS PAVE-900 SERIES.

**SOIL EROSION MEASURES**

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 ERODABLE 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.

**SOIL EROSION AND SEDIMENTATION CONTROL MEASURES**

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE AND MAINTAINED UNTIL THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED. MEASURES SHALL ONLY BE PAID FOR ONCE.

**SEED MIXTURE**

THE DESIGNATION FOR THE PERMANENT TURF SEED MIXTURE ON THIS PROJECT SHALL BE THM.

**ELECTRICAL UTILITIES**

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING ELECTRICAL UTILITIES DURING CONSTRUCTION.

GENERAL NOTES

**STRUCTURAL**

THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:

STEEL REINFORCEMENT ----- fy = 60,000 psi  
 STRUCTURAL STEEL:  
 AASHTO M270 Grade 36 ----- fy = 36,000 psi

BRIDGE PAINT MAY CONTAIN LEAD.

UNLESS OTHERWISE SHOWN ON THE PLANS PROVIDE MINIMUM CONCRETE CLEAR COVER FOR REINFORCEMENT ACCORDING TO THE FOLLOWING:

CONCRETE CAST AGAINST EARTH: 3 IN  
 ALL OTHER UNLESS SHOWN ON PLANS: 2 IN

IMPLEMENT MEASURES TO PREVENT DEBRIS FROM FALLING FROM THE STRUCTURE. IF DEBRIS FALLS INTO THE WATERWAY, REMOVE IT WITHIN 24 HOURS. SINCE DISTURBANCE OF THE WATERWAY BOTTOM MAY BE AS HARMFUL AS THE DEBRIS ITSELF, THE PREVENTIVE MEASURES MUST BE EFFECTIVE. REMOVAL OF DEBRIS IS INCLUDED IN RELATED ITEMS OF WORK.

BEVEL ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS WITH 1/2" TRIANGULAR MOLDINGS EXCEPT AS OTHERWISE NOTED.

EXISTING PLANS CAN BE VIEWED AT THE CITY OFFICE BY APPOINTMENT.

TRAFFIC IS TO BE MAINTAINED OVER THE GOULD ST BRIDGE BY PART-WIDTH CONSTRUCTION.

OAKWOOD PEDESTRIAN STRUCTURE WILL BE CLOSED FOR DURATION OF PROJECT PER MAINTAINING TRAFFIC SPECIAL PROVISION

CONTACTS

CITY OF OWOSSO  
 ATTN: CLAYTON WEHNER, P.E.  
 301 WEST MAIN  
 OWOSSO, MI 48867  
 PHONE: (989) 725-0551  
 EMAIL: CLAYTON.WEHNER@CI.OWOSSO.MI.US

CONSUMERS ENERGY (GAS)  
 ATTN: ADAM BERTRAM  
 OFFICE: (517) 374-2375  
 CELL: (517) 614-8570  
 EMAIL: ADAM.BERTRAM@CMSENERGY.COM

CONSUMERS ENERGY (ELECTRIC)  
 ATTN: TRACY MAHAR  
 PHONE: (989) 729-3250  
 EMAIL: TRACY.MAHAR@CMSENERGY.COM

CHARTER COMMUNICATIONS (INTERNET)  
 ATTN: MARK KELLY  
 PHONE: (989) 233-9404  
 EMAIL: MARK.KELLY@CHARTERCOM.COM

MISCELLANEOUS QUANTITIES - GOULD ST BRIDGE (STR 9892)

- 0.5 LSUM Mobilization, Max 10% (STR 9892)
- 1 LSUM Traffic Control

MISCELLANEOUS QUANTITIES - OAKWOOD AVE PED BRIDGE

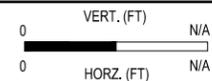
- 0.5 LSUM Mobilization, Max 10% (Oakwood Ave)
- 6 Ea Barricade, Type III, High Intensity, Double Sided, Lighted, Furn
- 6 Ea Barricade, Type III, High Intensity, Double Sided, Lighted, Oper
- 1 LSUM Slope Restoration, Modified

FINAL PLAN REVISIONS

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SGI PROJECT NO: 134702SG2023  
 DATE: FEBRUARY, 2024  
 FILE: DB-1247-2 NOTE.DWG

CS:  
 JN:

NOTE SHEET

DRAWING SHEET



### SITUATION PLAN

NOTES:  
 THE ORIGINAL DESIGN LOADINGS FOR THIS STRUCTURE ARE UNKNOWN. THE CURRENT USE FOR THIS STRUCTURE IS FOR PEDESTRIAN ACCESS.

THE REHABILITATION DESIGN IS BASED ON CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATION PEDESTRIAN LOADING OF 90PSF AND A MAINTENANCE VEHICLE H10 LOADING NOT ACTING CONCURRENTLY. THE CONTRACTOR SHALL NOT EXCEED THESE LIVE LOADS WITHOUT APPROVAL FROM THE ENGINEER.

OAKWOOD PEDESTRIAN STRUCTURE SHALL BE CLOSED TO ALL PEDESTRIANS DURING CONSTRUCTION PER MAINTAINING TRAFFIC SPECIAL PROVISION

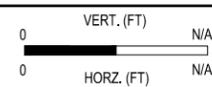
CONTRACTOR RESPONSIBLE TO KEEP STAGING AREA SECURE

2/2/2024 10:27 AM lucas.campeau

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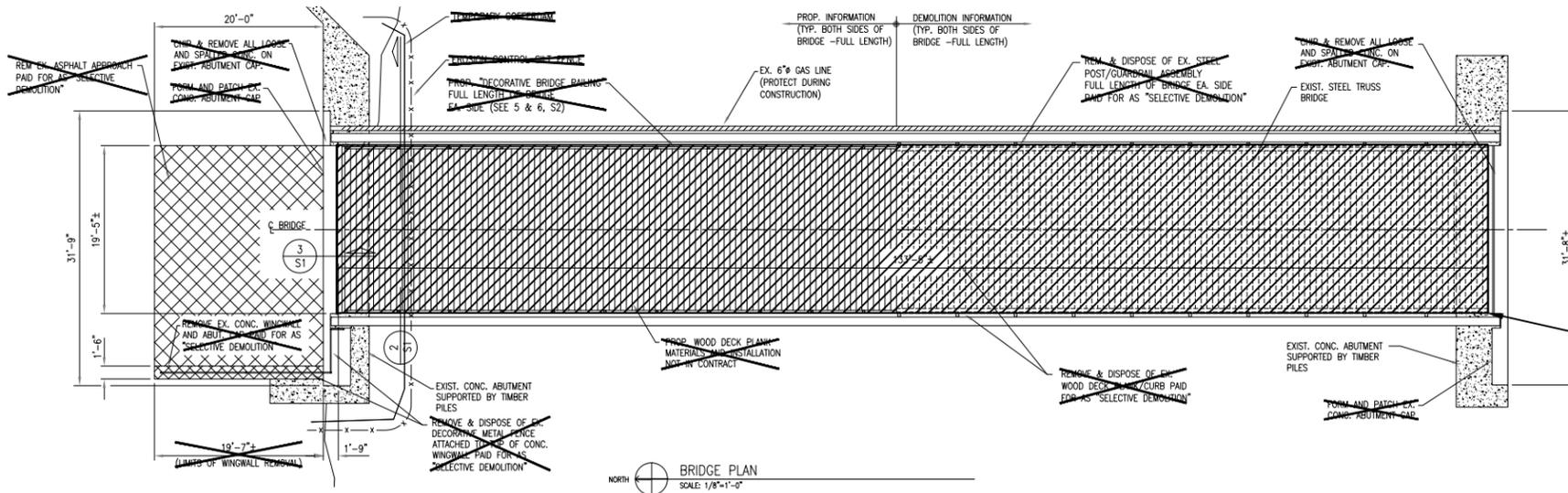


SGI PROJECT NO: 134702SG2023  
 DATE: FEBRUARY, 2024  
 FILE: DB-1247-3 SITUATION PLAN.DWG

CS:  
 JN:

SITUATION PLAN  
 OAKWOOD AVENUE PEDESTRIAN BRIDGE  
 OVER SHIAWASSEE RIVER

DRAWING SHEET  
 3



QTY	UNIT	QUANTITIES THIS SHEET
13	LS	Mobilization, Max 5%
1	Cyd	Excavation, Earth
16	Cyd	Backfill, Structure, CIP
37	Cy	Excavation, Fdn
100	Ft	Erosion Control, Silt Fence
44	Syd	Aggregate Base, 6 inch
4	Syd	Conc. Pavt, Reinf, 6 inch
1	LS	Coffe dams
521	Lb	Reinforcement, Steel
14	Cyd	Substructure, Conc
4000	Lb	Structural Steel, Mixed Erect
4000	Lb	Structural Steel, Mixed, Furn and Fab
90	Cft	Hand Chipping, Less Than Deck
90	Cft	Patching Mortar, Conc
200	Sft	Patch, Forming
14	Ea	Adhesive Anchoring of Horizontal Bar, 1/2 inch
4	Ea	Adhesive Anchoring of Horizontal Bar, 5/8 inch
14	Ea	Adhesive Anchoring of Vertical Bar, 1/2 inch
1	LS	Steel Structure, Cleaning, Type 4
1	LS	Steel Structure, Coating, Type 4
140	Ft	Protective Shield, Utility Pipe
50	Cyd	Riprap, Heavy LM
266	Ft	Decorative Bridge Railing
1	LS	Selective Demolition
26	Ft	Core-Mounted Wood Railing
3	Ea	Concrete Bollards

**2024 PROJECT**

THE ONLY ITEMS OF WORK TO BE DONE FROM THIS SHEET ARE IDENTIFIED BY USING THE LEGEND BELOW, LABELED WITH THIS PROJECT'S JOB NUMBER.

PROPOSED WORK

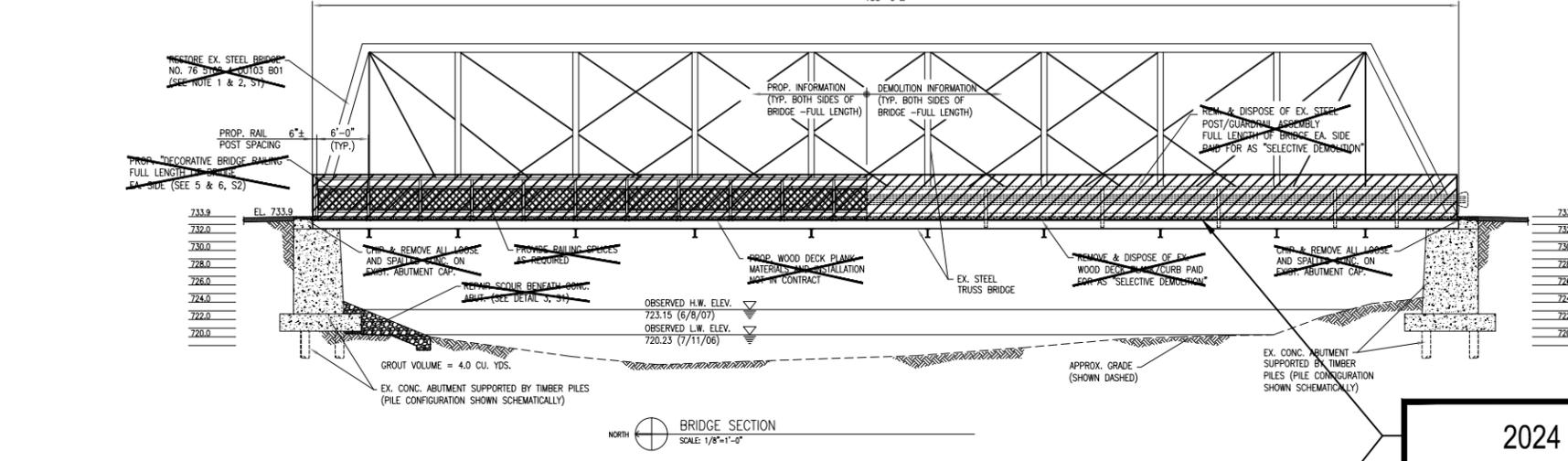
DENOTES REMOVAL PORTION

NOTE: THE BRIDGE PAINT MAY CONTAIN LEAD.

**2024 PROJECT**

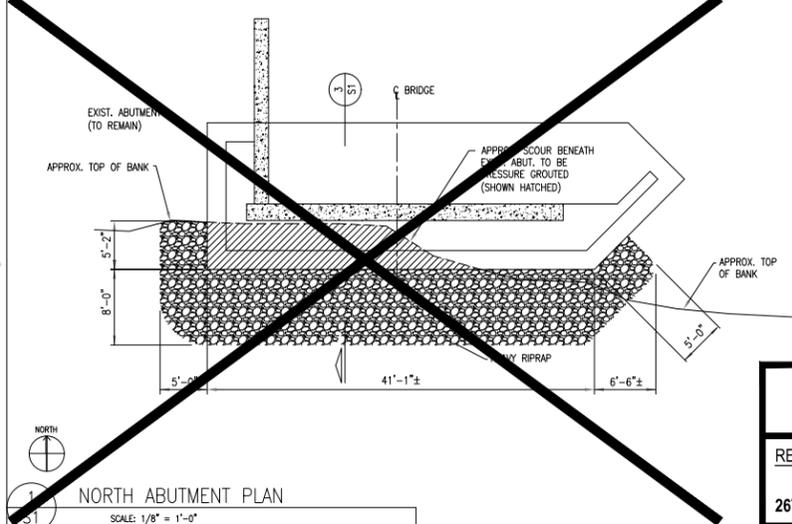
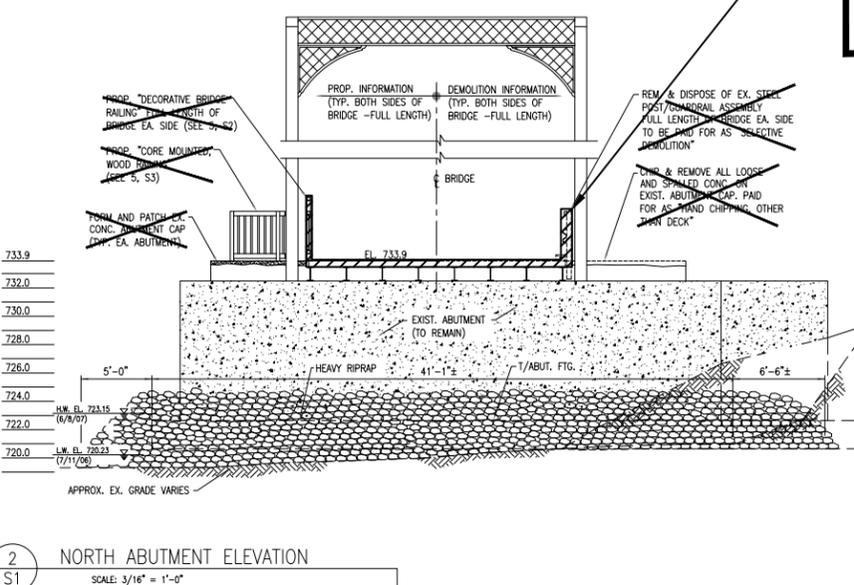
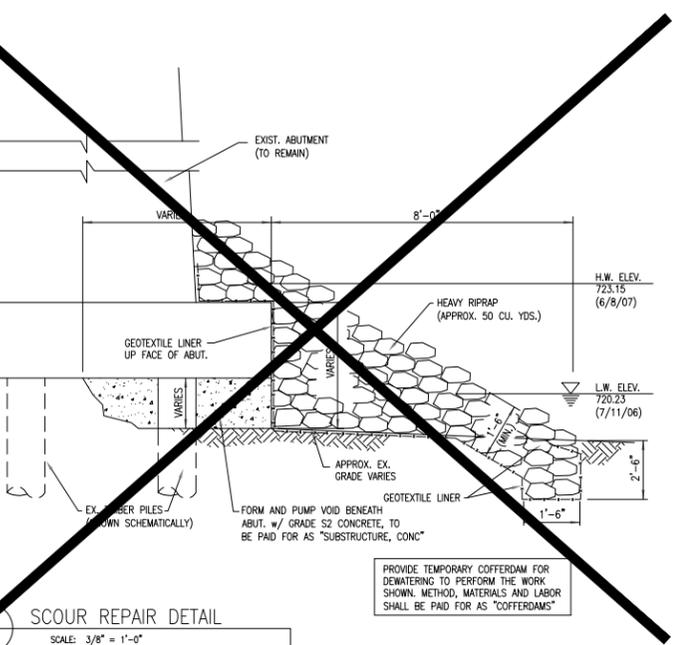
REMOVE EXISTING WOOD DECK. PAID FOR AS "STRUCTURES, REHABILITATION, REM PORTIONS (OAKWOOD AVE)"

- GENERAL NOTES:**
- THE BRIDGE TO RESTORE THE OAKWOOD AVE. BRIDGE SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE ENVIRONMENTAL REGULATIONS AND THE 2003 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION FOR PREPARATION AND PAINTING.
  - STEEL MEMBERS OF THE OAKWOOD AVE. STEEL TRUSS BRIDGE HAVE CORRODED TO A POINT OF CONCERN AND WILL BE TO BE REMOVED AND REPLACED. NOTIFY THE ENGINEER AFTER THE WOOD DECK HAS BEEN REMOVED FROM THE STRUCTURE TO VISUALLY EXAMINE ALL MEMBERS AND DETERMINE WHICH MEMBERS MAY NEED REMOVAL AND REPLACEMENT. CORRODED MEMBERS WILL BE REPLACED WITH SIMILAR SIZE STEEL MEMBERS WITH SIMILAR CONNECTION HARDWARE AS EXISTING. LABOR AND MATERIAL REQUIRED FOR THE REMOVAL AND REPLACEMENT OF THESE MEMBERS SHALL BE INCLUDED IN THE PAY ITEM "STRUCTURAL STEEL MIXED, ERECT" AND "STRUCTURAL STEEL, FURN AND FAB". MEMBERS SHALL BE REPLACED PRIOR TO PRIMING AND PAINTING THE STRUCTURE.
  - THE BRIDGE DECK IS DESIGNED TO SAFELY SUPPORT A LIVE LOAD OF 85 PSF. VEHICULAR TRAFFIC ON THIS STRUCTURE IS NOT PERMITTED.



**2024 PROJECT**

EXISTING RAILING IS TO BE SALVAGED AND REINSTALLED AFTER THE PROPOSED DECK IS PLACED. REMOVAL PAID FOR AS "BRIDGE RAILINGS, REMOVE AND REINSTALL"



**2024 PROJECT**

REMOVAL QUANTITIES - OAKWOOD AVE BRIDGE

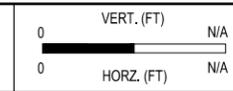
1	LSUM	Structures, Rehabilitation, Rem Portions (Oakwood Ave)
267	Ft	Bridge Railings, Remove and Reinstall

2/2/2024, 10:27 AM lucas.campbeau

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SGI PROJECT NO: 134702SG2023  
DATE: FEBRUARY, 2024  
FILE: DB-1247-4\_01 OAKWOOD EX.DWG

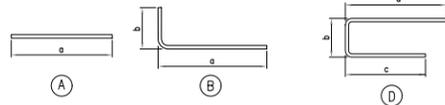
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EX. GEN. PLAN OF STRUCTURE (REMOVALS)  
OAKWOOD AVE PEDESTRIAN BRIDGE  
OVER SHIAWASSEE RIVER

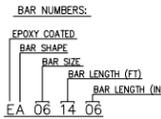
DRAWING SHEET  
4

STEEL REINFORCEMENT									
ITEM	DIMENSIONS					SIZE	TOTAL LENGTH	NO. REQ'D	TOTAL WT.
	a	b	c	d	e				
AD40306	10'-0"					#4	10'-0"	4	33.0
AD41106	11'-6"					#4	11'-6"	4	31.0
AD41302	13'-2"					#4	13'-2"	10	88.0
AD50306	3'-6"					#5	3'-6"	4	15.0
AD51307	13'-7"					#5	13'-7"	4	57.0
B050606	5'-0"	1'-6"				#5	6'-6"	14	95.0
B050705	5'-0"					#5	7'-5"	14	109.0
DD40700	1'-0"	1'-0"	3'-0"			#4	7'-0"	14	66.0
TOTAL NORTH ABUTMENT									521.0
TOTAL STEEL REINFORCEMENT									

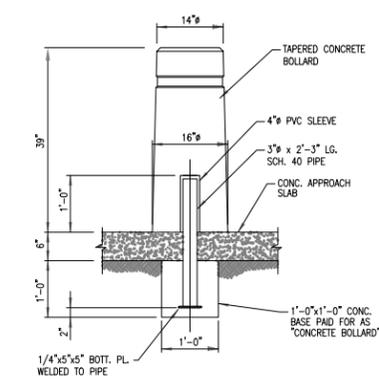
REINFORCING STEEL BENDING DETAILS



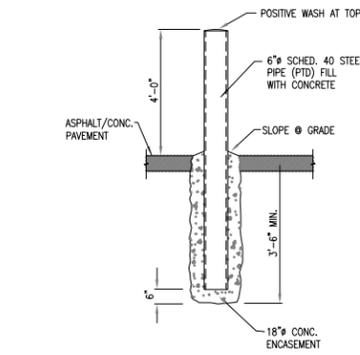
- NOTES:
- ALL RIGHT ANGLE BENDS TO REINFORCING STEEL TO BE MADE OF THE MINIMUM DIAMETER ALLOWED IN THE STANDARD SPECIFICATION.
  - ALL REINFORCING STEEL SHALL BE GRADE 60 DEFORMED BARS UNLESS OTHERWISE NOTED.
  - ALL BARS WITH "E" PREFIX TO BE EPOXY COATED.



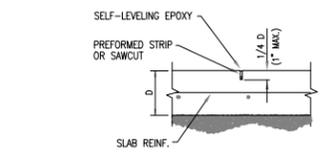
7 DETAIL  
SCALE: 3/8" = 1'-0"



8 CONCRETE BOLLARD DETAIL  
SCALE: 3/8" = 1'-0"

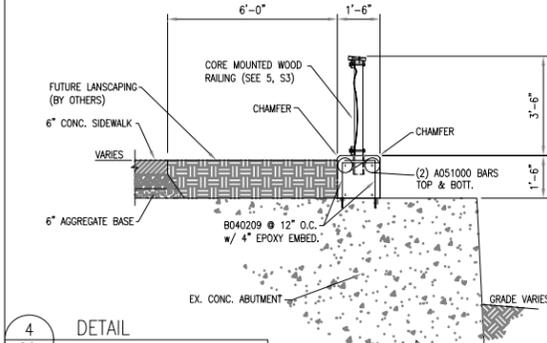


9 STEEL BOLLARD DETAIL  
NOT TO SCALE

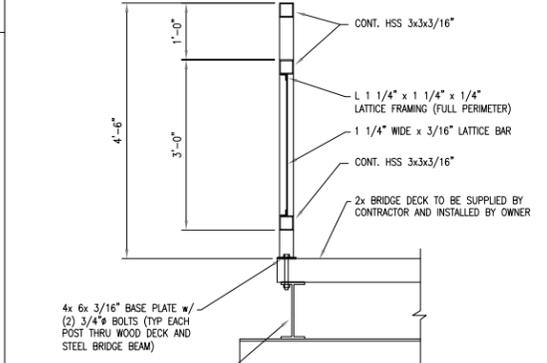


10 CONTROL JOINT DETAIL  
NOT TO SCALE

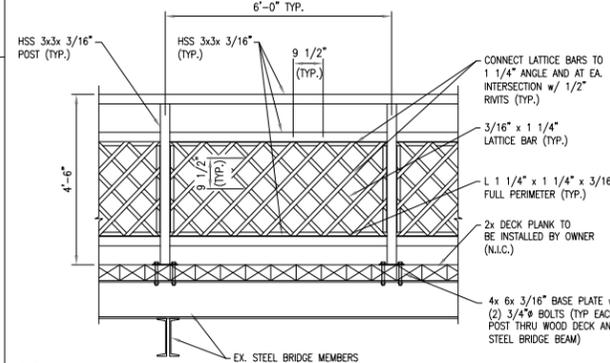
3 DETAIL  
SCALE: 3/8" = 1'-0"



4 DETAIL  
SCALE: 3/8" = 1'-0"

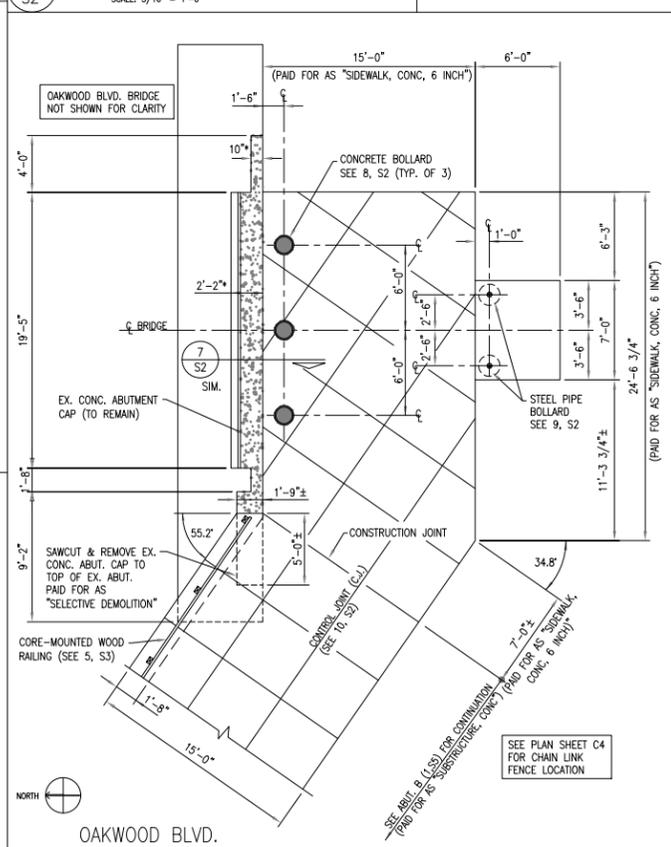


5 DECORATIVE BRIDGE RAILING ATTACHMENT DETAIL  
SCALE: 3/4" = 1'-0"

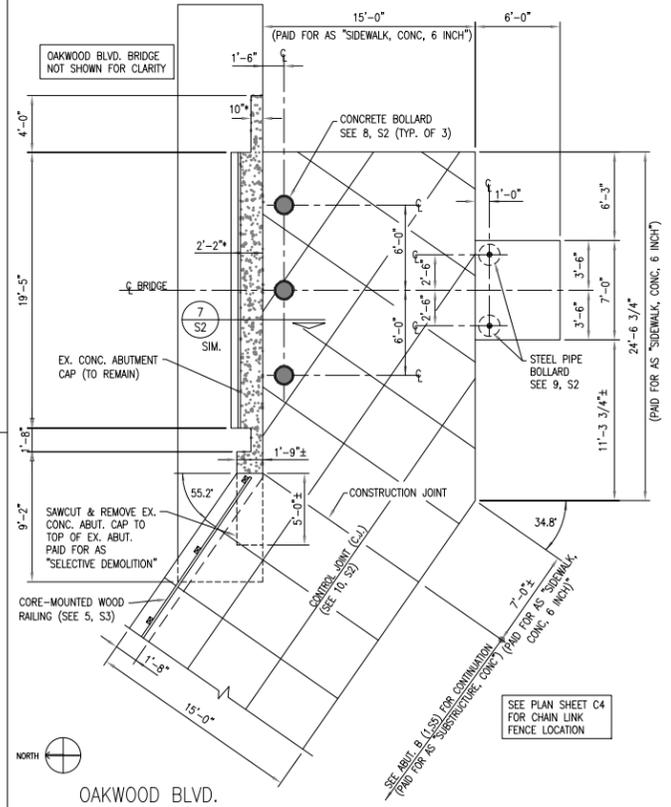


6 DECORATIVE BRIDGE RAILING ELEVATION  
SCALE: 1/2" = 1'-0"

1 OAKWOOD BLVD. NORTH ABUTMENT REPAIR DETAIL  
SCALE: 3/16" = 1'-0"



2 OAKWOOD BLVD. SOUTH ABUTMENT REPAIR DETAIL  
SCALE: 3/16" = 1'-0"



FOR INFORMATION ONLY  
DO NOT WORK FROM THIS SHEET. THE INFORMATION SHOWN HERE IS FOR REFERENCE ONLY. NO PAY ITEMS ARE SHOWN.

NEW JAMES S. MINNER BIKEWAY  
CROSSING SHIAWASSEE RIVER  
OWASSO, MICHIGAN

OAKWOOD AVENUE  
BRIDGE PLANS & SECTIONS  
JAMES S. MINNER BIKEWAY  
CROSSING SHIAWASSEE RIVER  
OWASSO, MICHIGAN

DATE: \_\_\_\_\_  
SCALE: AS SHOWN  
DATE: OCTOBER 2008  
SHEET

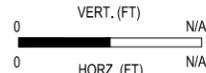
2/2/2024 10:28 AM lucas.campeau

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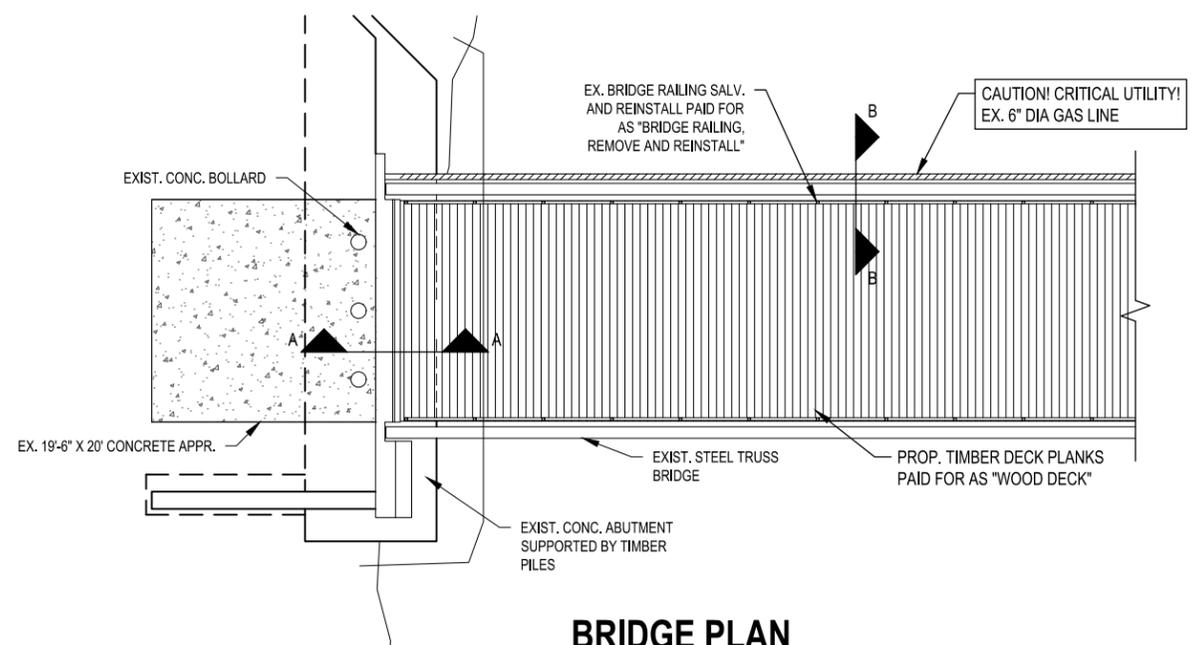
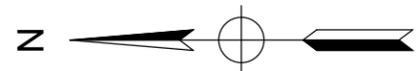
SGI PROJECT NO: 134702SG2023  
DATE: FEBRUARY, 2024  
FILE: DB-1247-4\_OAKWOOD EX.DWG

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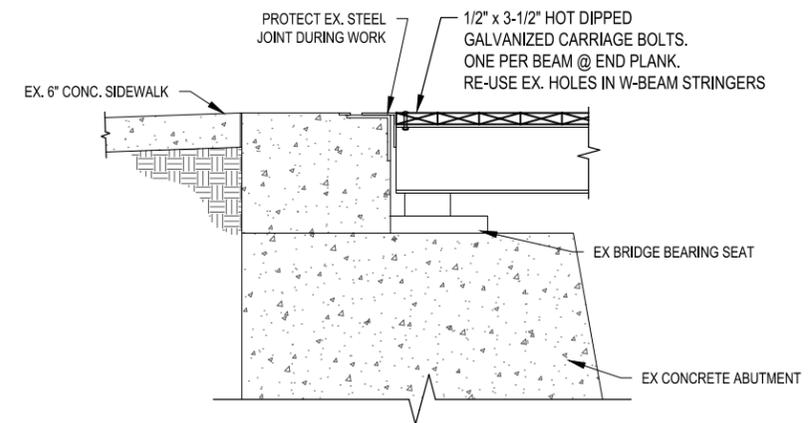
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EXISTING OAKWOOD BRIDGE DETAILS  
OAKWOOD AVE PEDESTRIAN BRIDGE  
OVER SHIAWASSEE RIVER

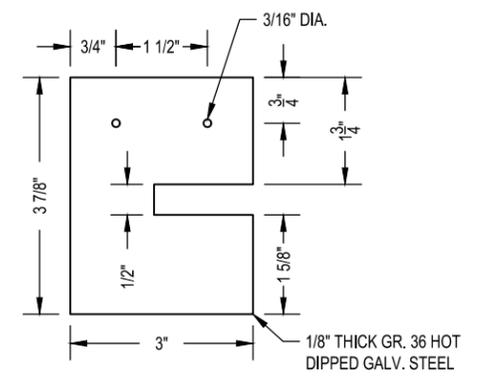
DRAWING SHEET  
5



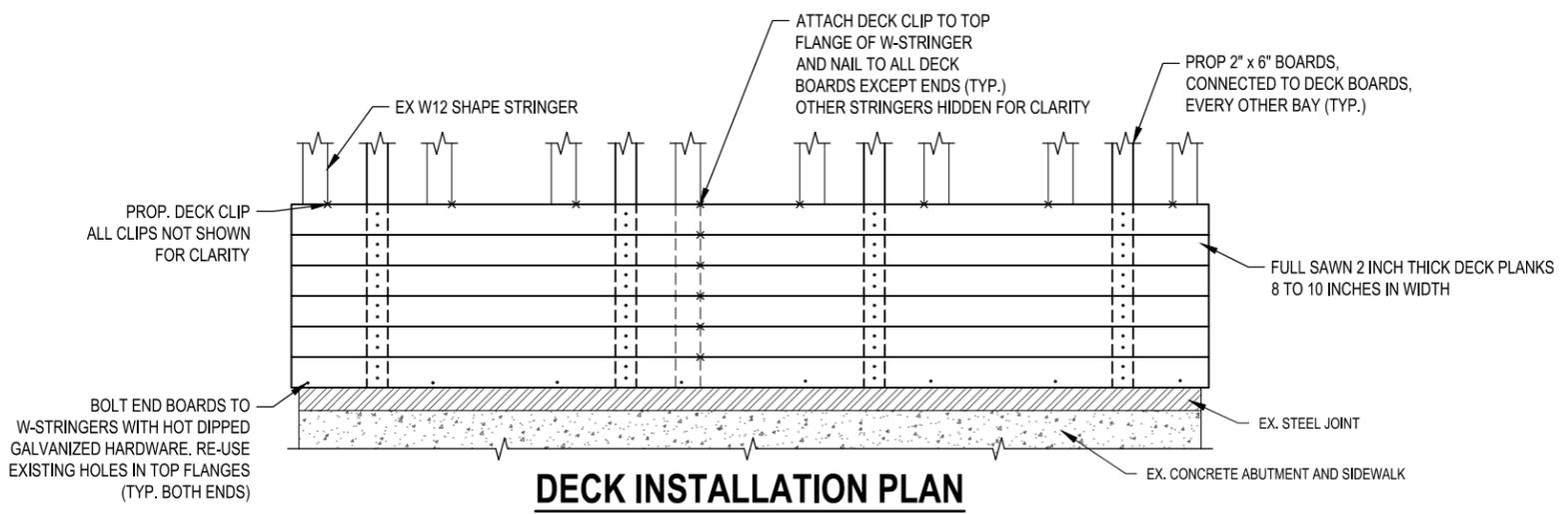
**BRIDGE PLAN**  
SCALE: 1/16" = 1'-0"  
NOTE: ONLY NORTH HALF OF BRIDGE IS SHOWN. SOUTH HALF SIMILAR



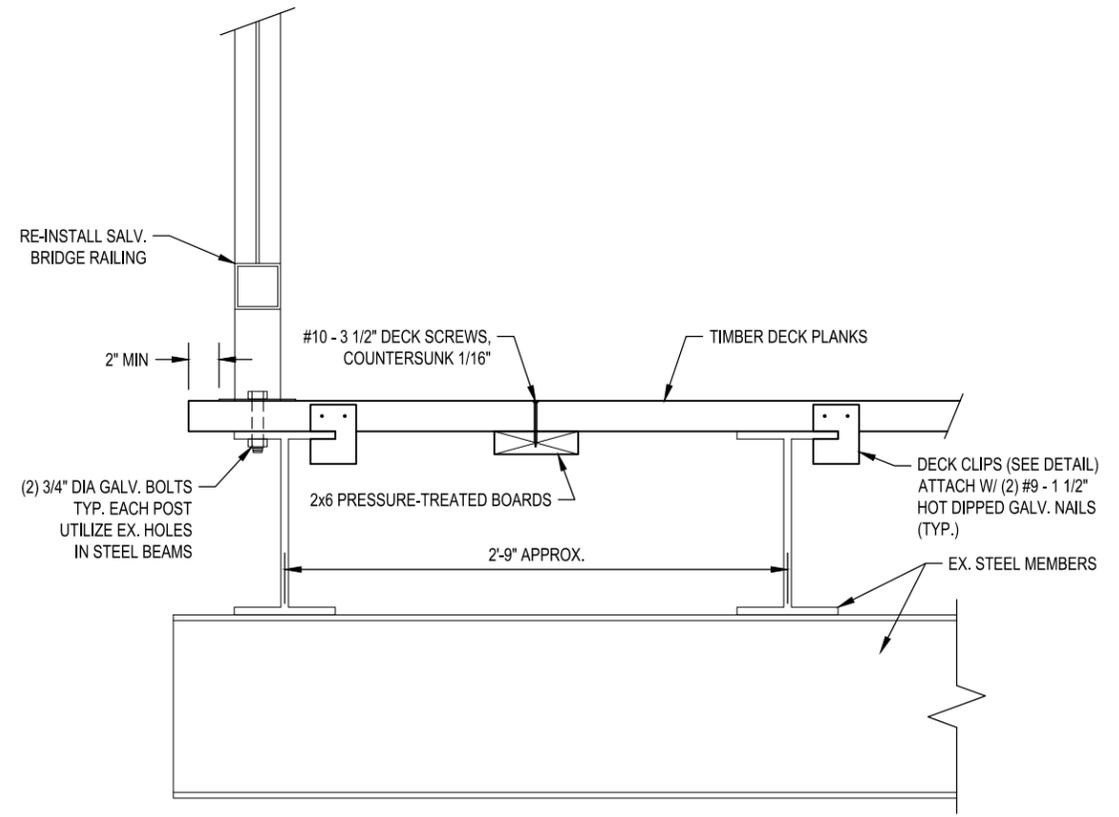
**SECTION A-A**  
SCALE: 3/8" = 1'-0"



**DECK CLIP DETAIL**  
SCALE: 4" = 1'-0"  
NOTES: CLIPS TO BE USED WITH #9 - 1 1/2 IN HOT DIPPED GALVANIZED NAILS



**DECK INSTALLATION PLAN**  
SCALE: 1/4" = 1'-0"



**SECTION B-B**  
SCALE: 1" = 1'-0"

NOTES:  
THE WORK COVERED BY THESE PLANS INCLUDES REMOVAL AND REPLACEMENT OF THE EXISTING TIMBER DECK.

MEASURES SHALL BE TAKEN SO AS TO NOT DAMAGE THE TRUSSES DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR REPAIRING DAMAGED AREAS AND TO PRESERVE HISTORIC SIGNIFICANCE.

DECK CLIPS INCLUDED IN BID ITEM AS "HARDWARE, MISC (OAKWOOD AVE)". ANY OTHER SCREWS, NAILS, BOLTS, ETC WILL BE INCLUDED IN BID ITEM "WOOD DECK".

**CONSTRUCTION QUANTITIES - OAKWOOD AVE BRIDGE**

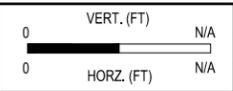
NO.	QTY	UNIT	DESCRIPTION
2603	Sft	Wood Deck	
1	LSUM	Hardware, Misc (Oakwood Ave)	

2/2/2024, 10:27 AM lucas.campeau

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SGI PROJECT NO: 134702SG2023  
DATE: FEBRUARY, 2024  
FILE: DB-1247-6 OAKWOOD DETL.DWG

CS:  
JN:

DRAWING SHEET	
<b>DECKING DETAILS</b>	
<b>OAKWOOD AVENUE PEDESTRIAN BRIDGE</b>	
<b>OVER SHIAWASSEE RIVER</b>	
DRAWING	SHEET
	6

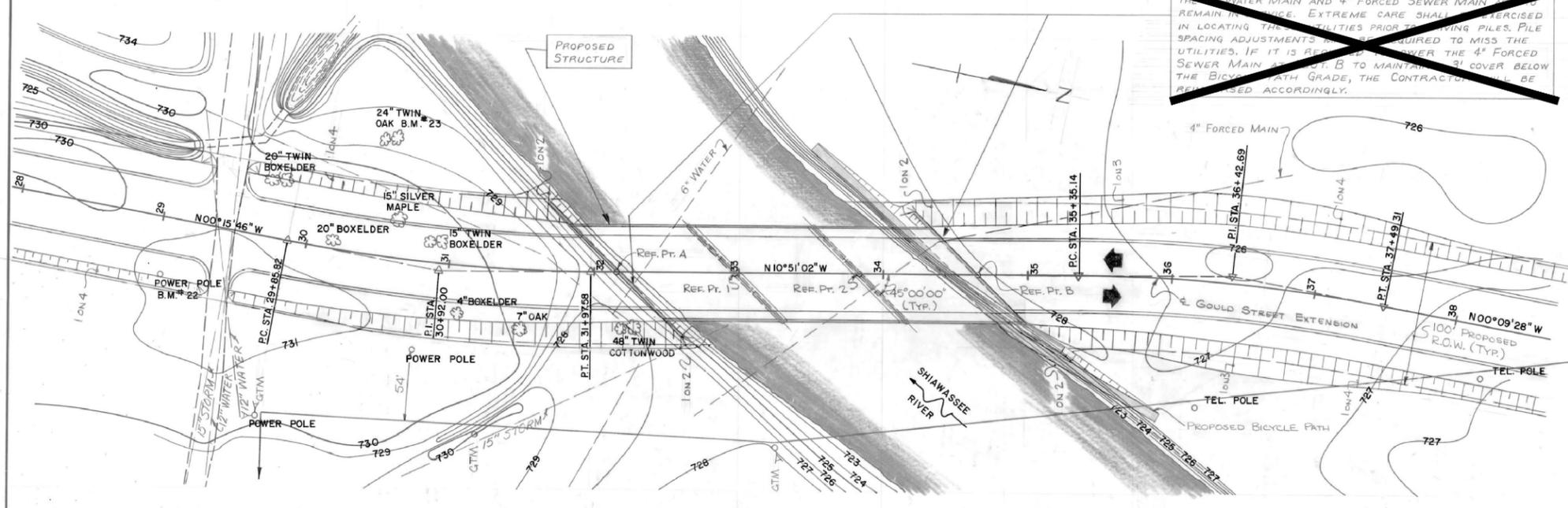
CURVE DATA	
Δ = 10°35'16" LT.	Δ = 10°41'34" RT.
D = 5°00'00"	D = 5°00'00"
R = 1145.92'	R = 1145.92'
T = 106.18'	T = 107.24'
L = 211.76'	L = 213.86'
E = 4.31'	E = 5.01'
P.C. = 29+85.82	P.C. = 36+35.14
P.I. = 30+92.00	P.I. = 36+42.69
P.T. = 31+97.58	P.T. = 37+49.31

BENCH MARKS				
B.M.# 3 TOP OF FENCE POST SOUTH EAST CORNER MRVA BALL PARK. EL. 731.44	B.M.# 20 RR SPIKE IN NORTH SIDE OF POWER POLE. STA. 21+24, 30' RT. EL. 738.49	B.M.# 21 RR SPIKE IN WEST SIDE OF 14" POPLAR. STA. 24+67, 12' RT. EL. 734.67	B.M.# 22 RR SPIKE IN WEST SIDE OF POWER POLE. STA. 29+09 EL. 733.07	B.M.# 23 RR SPIKE IN EAST SIDE OF 24" TWIN OAK. STA. 30+49, 81' LT. EL. 731.24

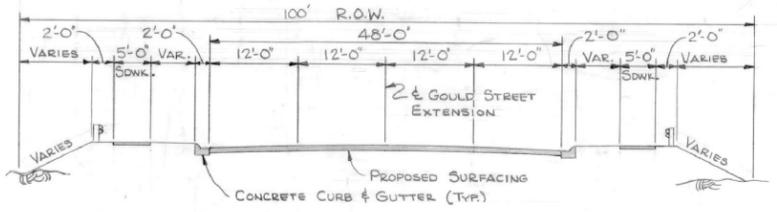
WITNESSES	
WITNESS TO STA. 30+92.00 SET# 4 RE-ROD WEST SOUTH WEST 93.62' NAIL & TAG IN TWIN 24" OAK, EAST 55.63' NAIL & TAG IN POWER POLE.	WITNESS TO POT STA. 36+0496 SET# 4 RE-ROD EAST NORTH EAST 92.83' NAIL & TAG IN POWER POLE, SOUTH EAST 96.88' NAIL & TAG IN 12" POPLAR.

**FOR INFORMATION ONLY**

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PLAN  
SCALE: 1" = 40'



TYPICAL SECTION THRU APPROACH

**GENERAL NOTES**

THE WORK COVERED BY THESE PLANS INCLUDES CLEARING, EARTH EXCAVATION, CONSTRUCTION OF THE PROPOSED BRIDGE AND BICYCLE PATH AND PLACING GRANULAR MATERIAL AND RIPRAP TO THE LIMITS SHOWN. ALL OTHER WORK IS INCLUDED IN THE ROAD PLANS WHICH ARE A PART OF THIS CONTRACT.

THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK, AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO INSURE THAT THESE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

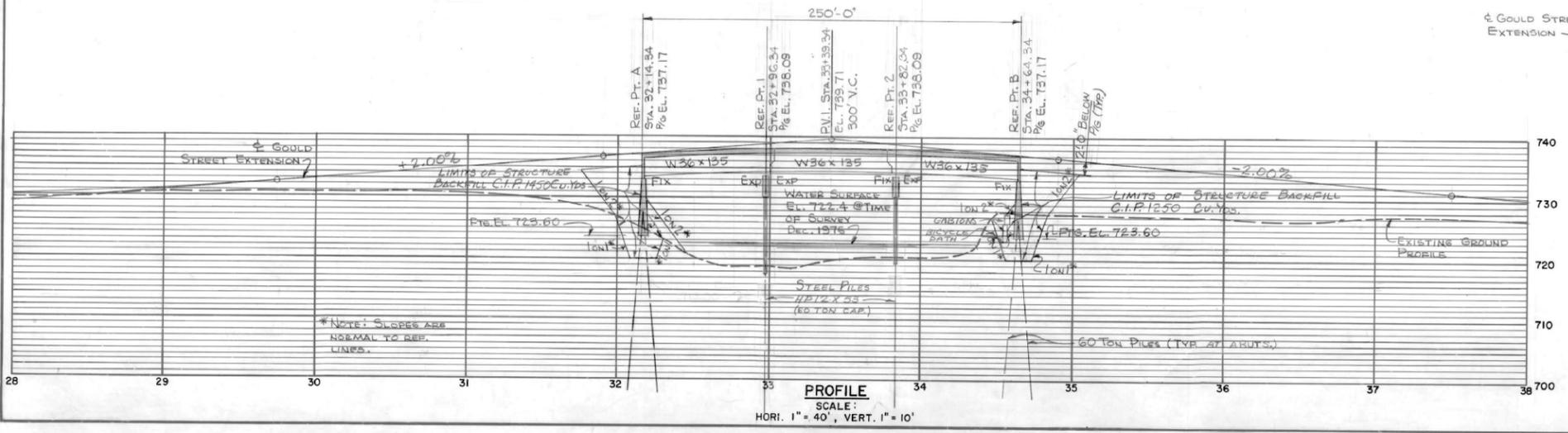
FOR PROTECTION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL DIAL 800-482-7171 A MINIMUM OF 48 HOURS PRIOR TO EXCAVATING IN THE VICINITY OF UTILITY LINES. ALL "MISS DIG" PARTICIPATING MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

DATUM REFERS TO U.S. C.S. DATUM.

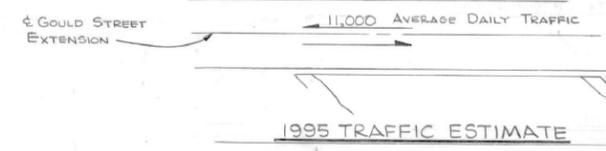
WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF WATER LEVELS THAT WILL EXIST DURING CONSTRUCTION.

TOPSOIL, EXISTING FILL AND SOFT ORGANIC CLAY UNDER ABUTMENTS A & B SHALL BE UNDERCUT AND REPLACED WITH STRUCTURE BACKFILL, COMPACTED TO 100% OF MAXIMUM UNIT WEIGHT. EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON AN ESTIMATED UNDERCUT TO ELEVATION 720. ACTUAL LIMITS OF EXCAVATION WILL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

UTILITIES	
CONSUMERS POWER CO. 180 WEST MAIN OWOSSO, MICHIGAN GAS & POWER LINES	CITY OF OWOSSO OWOSSO, MICHIGAN WATER & SEWER LINES
GENERAL TELEPHONE CO. 1975 WEST M-21 OWOSSO, MICHIGAN 48867	



PROFILE  
SCALE: HORIZ. 1" = 40', VERT. 1" = 10'



1995 TRAFFIC ESTIMATE

**RECORD DRAWINGS**

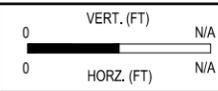
GENERAL PLAN OF SITE		
BRIDGE CARRYING GOULD STREET EXTENSION OVER THE SHIAWASSEE RIVER IN THE CITY OF OWOSSO, SHIAWASSEE COUNTY, MICHIGAN		
CITY OF OWOSSO		
SNELL ENVIRONMENTAL GROUP		
EMERY AND PORTER, INC.		
DRN. BY: J.P.	SCALE: NOTED	JOB NO.: 259-5
DATE: SEB	DATE:	SHEET NO. 25 OF 53

2/2/2024 10:29 AM lucas.campeau

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DATE: FEBRUARY, 2024	JN:
FILE: DB-1247-7_9 GOULD EX.DWG	

EX. GENERAL PLAN OF SITE		DRAWING SHEET
GOULD STREET BRIDGE OVER SHIAWASSEE RIVER		7

FOR INFORMATION ONLY

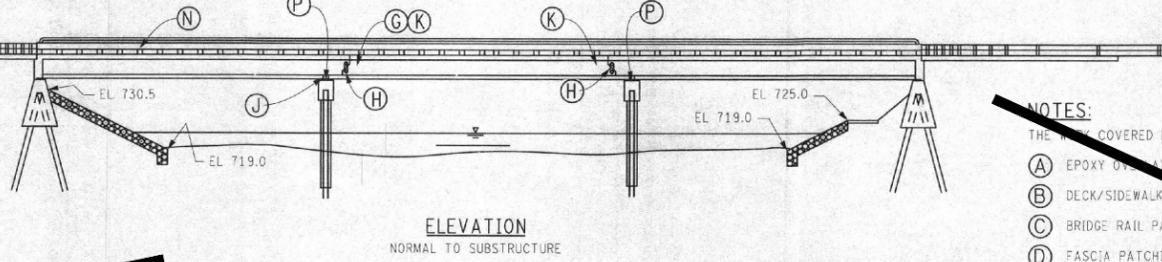
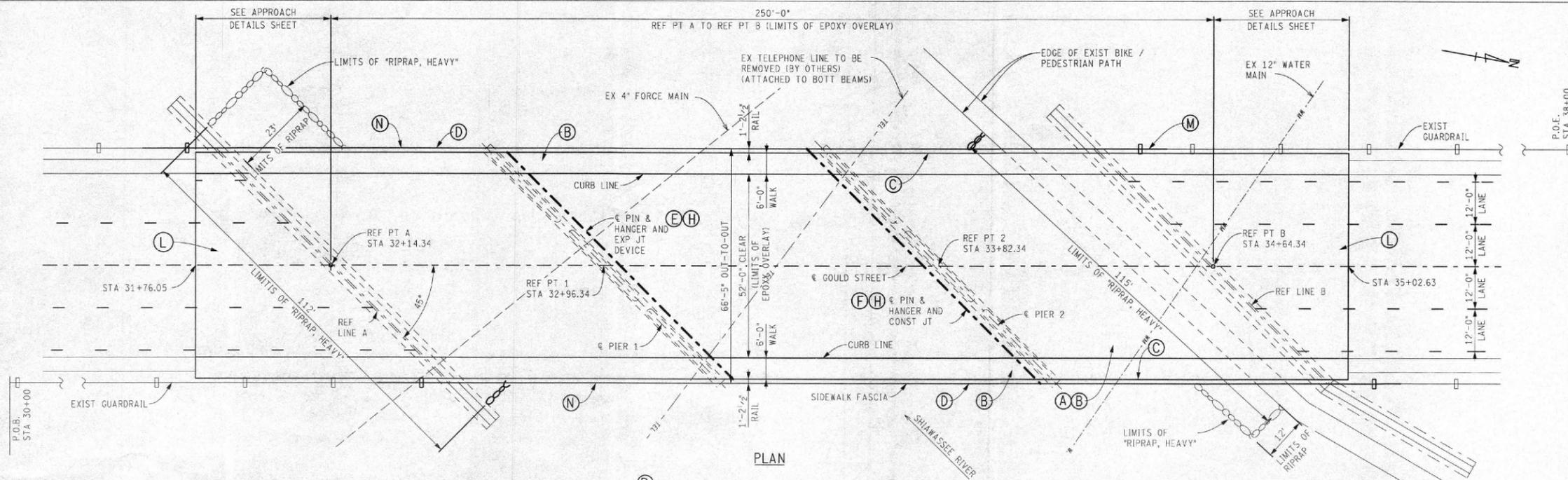
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engineers  
scientists  
architects  
constructors

Hard copy is intended to be 11"x17" when plotted. Scale indicated and graphic quality may be accurate only other sizes.

City of Owosso  
Shiawassee County, Michigan  
Gould Street Bridge over the Shiawassee River

PROJECT NO.  
130562  
SHEET NO.  
11

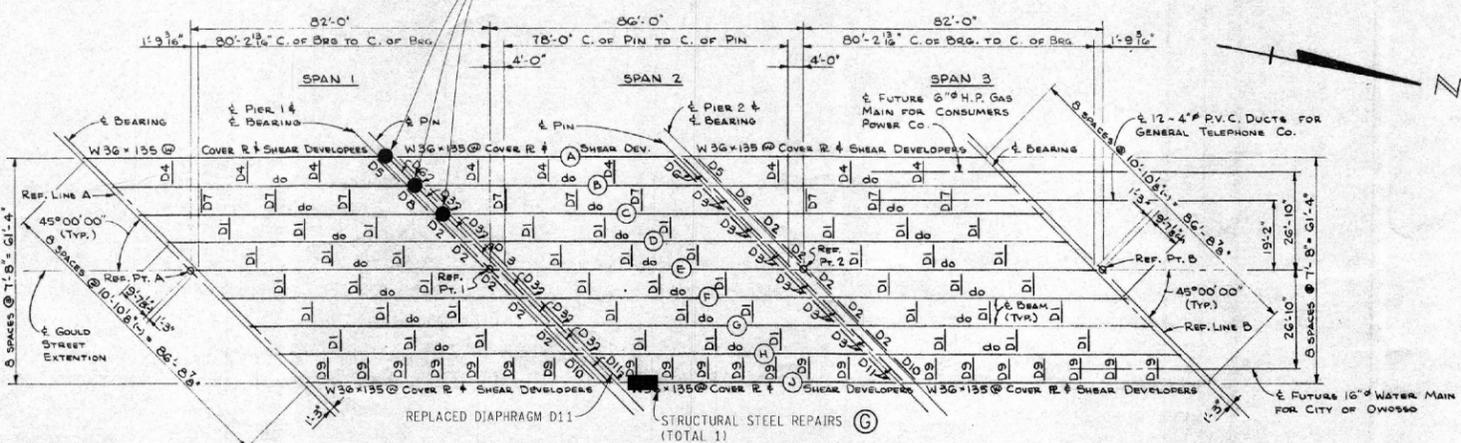


MISCELLANEOUS QUANTITIES

60	Syd	Structure Horizontal Surface Sealer
1445	Syd	Epoxy Overlay
3	Ed	Rocker, Heavy
500	Syd	Riprap, Heavy
3	Ed	Support, Temp*

WHERE "ROCKER, REALIGN" IS NOTED AS DIRECTED BY ENGINEER, THE CONTRACTOR SHALL SUBMIT DESIGN FOR "SUPPORT, TEMP" FOR DRAWING REVIEW.

- NOTES:
- THE WORK COVERED BY THESE PLANS INCLUDE:
- (A) EPOXY OVERLAY
  - (B) DECK/SIDEWALK PATCHING
  - (C) BRIDGE RAIL PATCHING
  - (D) FASCIA PATCHING
  - (E) EXPANSION JOINT REPLACEMENT
  - (F) COMPRESSION JOINT SEAL REPLACEMENT
  - (G) STRUCTURAL STEEL REPAIRS
  - (H) PIN AND HANGER REPLACEMENT
  - (J) BEARING ROCKER BEARINGS
  - (K) ZONE BEAM PAINTING
  - (L) CONCRETE APPROACH SLABS
  - (M) PORTIAL GUARDRAIL REPLACEMENT
  - (N) CONCRETE SURFACE COATING
  - (P) SUBSTRUCTURE HORIZONTAL SURFACE SEALER



- NOTES:
- THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT THEIR OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THESE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
- WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING A DETERMINATION OF WATER LEVELS THAT MAY EXIST DURING CONSTRUCTION.
- GEOTEXTILE LINER SHALL BE PLACED ON ALL SLOPES PRIOR TO PLACING RIPRAP. PAYMENT FOR GEOTEXTILE LINER SHALL BE INCLUDED IN PAYMENT FOR RIPRAP.
- THE RIPRAP QUANTITY IS BASED ON THE LATERAL DIMENSIONS OF THE AREA TO BE PROTECTED REGARDLESS OF THE NUMBER OF PASSES REQUIRED.
- EXPANSION JOINT REPLACEMENT AND CONSTRUCTION JOINT REPLACEMENT SHALL EXTEND ACROSS SIDEWALKS.
- THE CONTRACTOR SHALL REMOVE AND REPLACE ONLY THAT PORTION OF THE SIDEWALK FOR INSTALLATION OF THE BEARING JOINTS.
- FIELD VERIFY DIMENSIONS.
- SUBSTRUCTURE HORIZONTAL SURFACE SEALER SHALL BE APPLIED TO THE ENTIRE EXPOSED TOP SURFACE OF BOTH PIER CAPS NOT INCLUDING BEARING AREAS.

GENERAL PLAN OF STRUCTURE  
NO SCALE

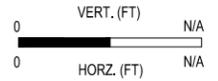
2/2/2024, 10:28 AM lucas.campeau

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SGI PROJECT NO: 134702SG2023  
DATE: FEBRUARY, 2024  
FILE: DB-1247-7\_8\_9 GOULD EX.DWG

CS:  
JN:

EX. GENERAL PLAN OF STRUCTURE	DRAWING	SHEET
GOULD STREET BRIDGE OVER SHIAWASSEE RIVER		8

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~~GENERAL NOTES:~~

THE DESIGN OF THIS STRUCTURE IS BASED ON THE MICHIGAN SPECIFICATIONS FOR THE DESIGN OF HIGHWAY BRIDGES, 1993 EDITION, CURRENT A.A.S.H.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, H520 LOADING. LIVE LOAD PLUS IMPACT PROTECTION EQUALS 1/8 SPAN LENGTH AND 1/375 OF ANTILEVER ARM.

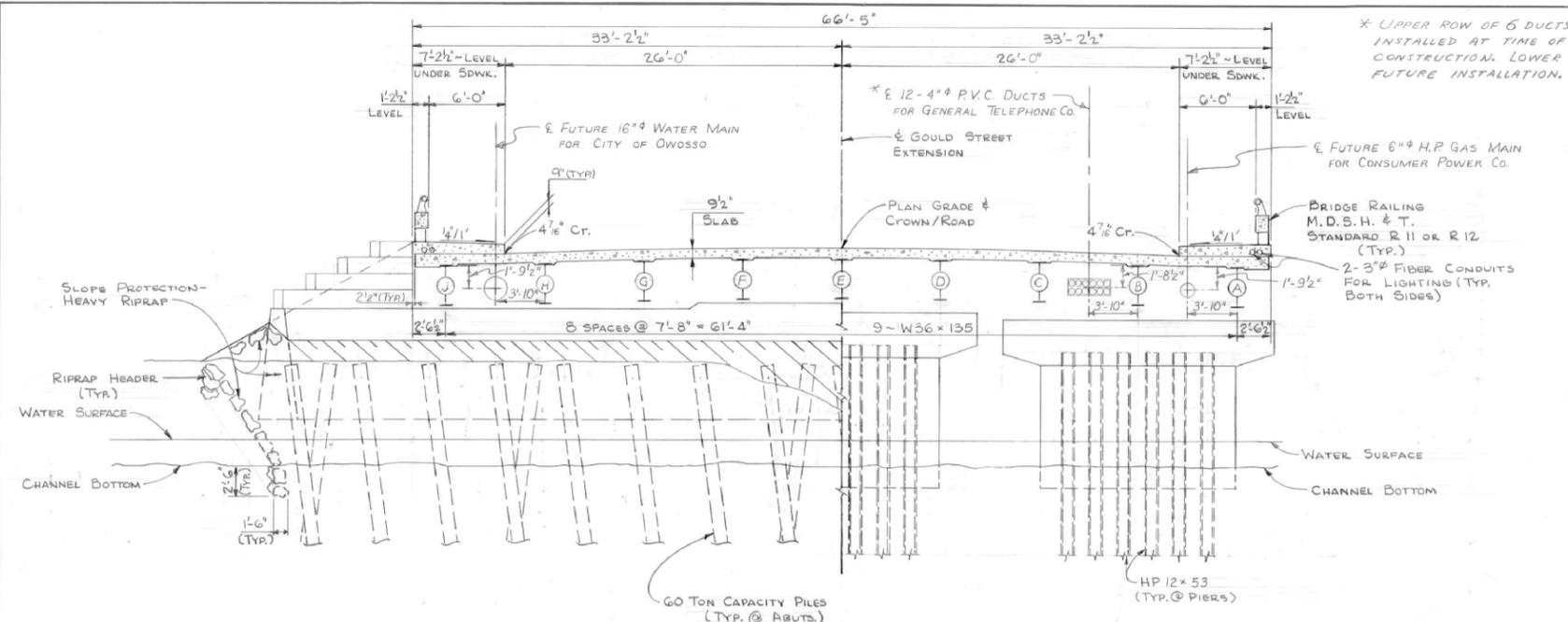
THE DRAINAGE AREA CONTRIBUTING TO THIS CROSSING IS 527 SQUARE MILES.

THE TOP OF ROADWAY AND TOP OF SIDEWALKS ARE PARALLEL TO THE VERTICAL CURVE AND TANGENTS.

THIS STRUCTURE IS PARTLY ON A HORIZONTAL CURVE. THE FASCIA LINES AND CURB LINES ARE PARALLEL TO THE CURVE AND TANGENTS.

J.W.P. DENOTES JOINT WATERPROOFING.

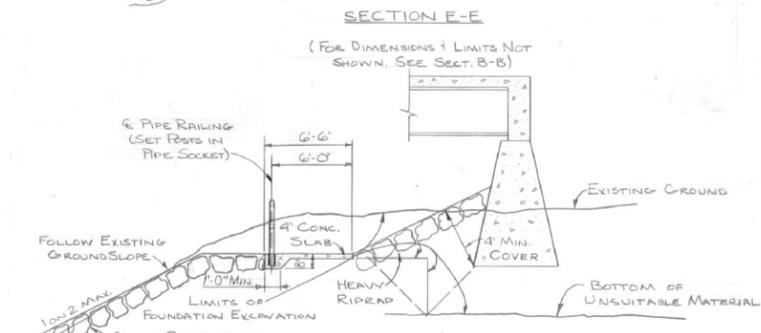
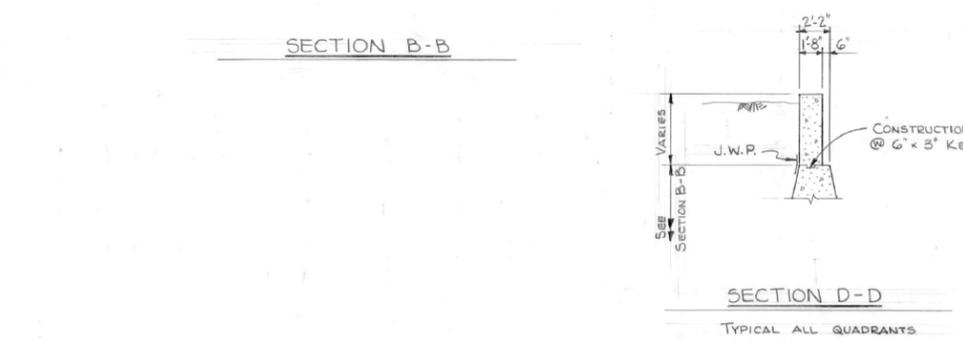
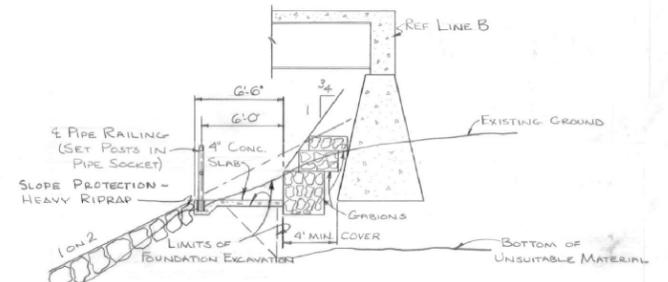
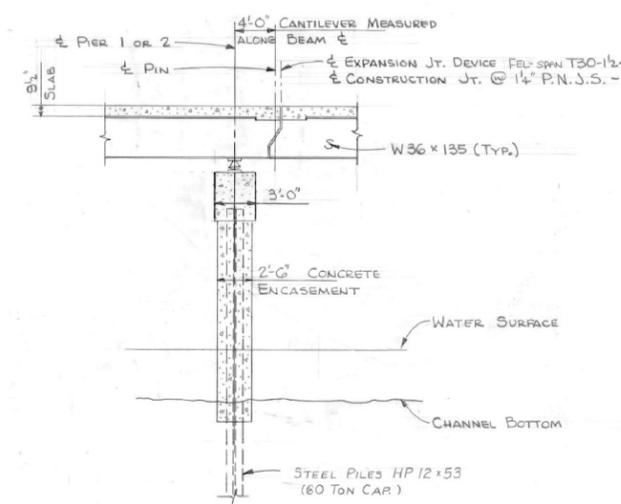
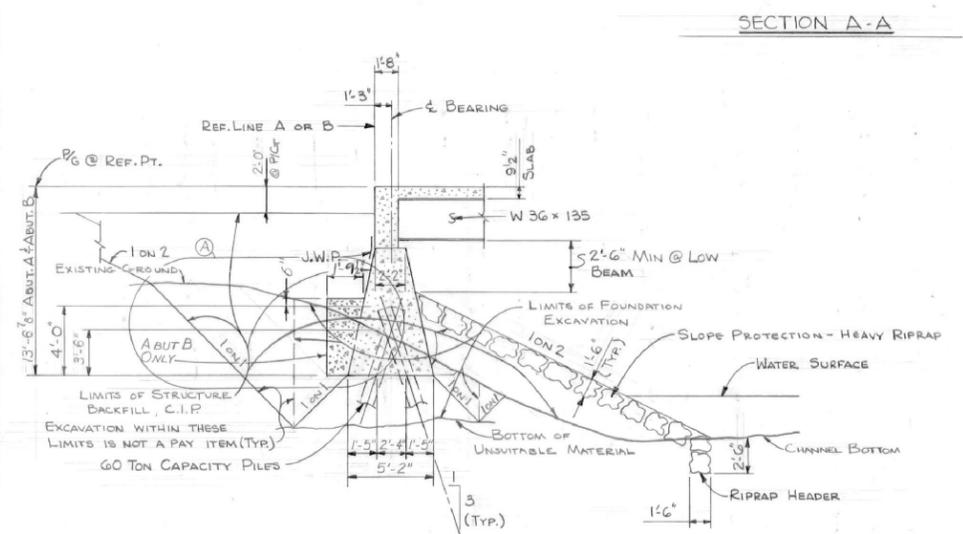
P.N.J.S. DENOTES PREFORMED NEOPRENE JOINT SEALER.



DISCHARGE IN TABLE REPRESENTS THE AMOUNT OF FLOW IN THE CHANNEL. FLOW OVER THE ROAD FOR THE 50 AND 100 YEAR DESIGN FLOODS ARE 1250 AND 1400 CUBIC FEET PER SECOND, RESPECTIVELY.

BASIS OF DESIGN	*WATER SURFACE ELEVATION	† DISCHARGE IN C.F.S.	WATERWAY AREA PROVIDED IN SQ. FT.	**MAXIMUM VELOCITY FT./SEC.	BACKWATER ABOVE DESIGN HIGH WATER IN FEET.
50 YEAR FLOOD	732.49	5150	1940	2.6	0.02
100 YEAR FLOOD	732.63	5600	1940	2.8	0.02

\*WATER SURFACE ELEVATION = TAILWATER ELEVATION = DESIGN HIGH WATER ELEVATION.  
 \*\*MAXIMUM VELOCITY = DISCHARGE ÷ WATERWAY AREA BELOW WATER SURFACE ELEVATION.



MISCELLANEOUS QUANTITIES

ITEM	UNIT	AMOUNT
SLOPE PROTECTION - HEAVY RIPRAP	Sq. Yds.	346
MOBILIZATION	L.S.	LUMP SUM
GABION WALL - TYPE A	L.F.	54
GABION WALL - TYPE B	L.F.	34
GABION WALL - TYPE C	L.F.	46
4" CONCRETE SIDEWALK	Sq. Yds.	1,755
PIPE RAILING	L.F.	870
CONCRETE CURBING	ACEE	0
STRUCTURE BACKFILL, C.I.P.	Cu Yds.	2630

GENERAL PLAN OF STRUCTURE  
 BRIDGE CARRYING GOULD STREET EXTENSION OVER THE SHIAWASSEE RIVER IN THE CITY OF OWOSSO, SHIAWASSEE COUNTY, MICHIGAN

CITY OF OWOSSO  
 SNELL ENVIRONMENTAL GROUP  
 EMERY AND PORTER, INC.

DRN BY: J.W.P.	SCALE: None	JOB NO.: 259-5
DRD BY: SEB	DATE: 10/20/2024	SHEET NO. 29 OF 55

~~RECORD DRAWINGS~~

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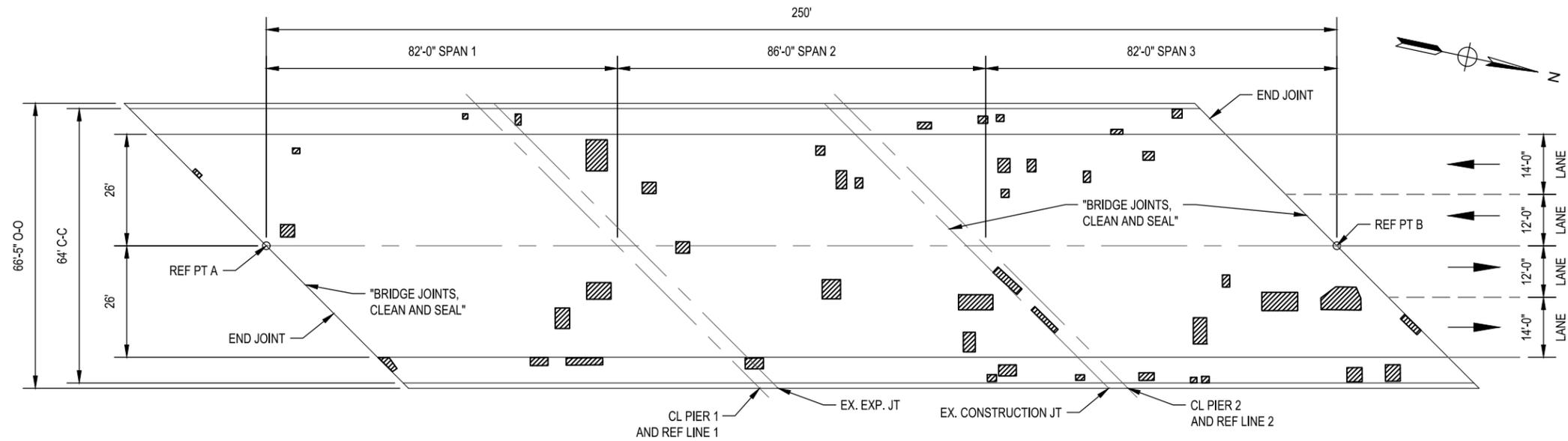


SGI PROJECT NO: 134702SG2023  
 DATE: FEBRUARY, 2024  
 FILE: DB-1247-7\_8\_9 GOULD EX.DWG

CS:  
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EX. GENERAL PLAN OF STRUCTURE  
 GOULD STREET BRIDGE  
 OVER SHIAWASSEE RIVER

DRAWING SHEET  
 9



### DECK PLAN VIEW

INDICATES SPALLED OR DELAMINATED AREAS AS DETERMINED BY FIELD INSPECTION

NOTES:  
 THE WORK COVERED BY THESE PLANS INCLUDES DECK PATCHING, EPOXY OVERLAY REPAIRS, CONCRETE SURFACE COATING, SIDEWALK HEALER/SEALER, AND JOINT RESEALING

APPLY CONCRETE SURFACE COATING TO THE ENTIRE CONCRETE PORTION OF BRIDGE BARRIER, INCLUDING BRUSH BLOCK, DECK AND SIDEWALK FASCIAS. THE ESTIMATED AREA OF COATING IS 475 SYD

IF CONCRETE PATCHING IS NOT REQUIRED AFTER THE EPOXY OVERLAY IS REMOVED, REMOVAL WILL BE PAID FOR BY "EPOXY OVERLAY, REM". AREAS OF EPOXY OVERLAY REMOVAL AND CONCRETE PATCHING TO BE DETERMINED BY THE ENGINEER.

CONCRETE RAIL PATCHING SHALL ONLY BE PERFORMED IF REBAR IS EXPOSED AFTER SCALING HAS BEEN COMPLETED.

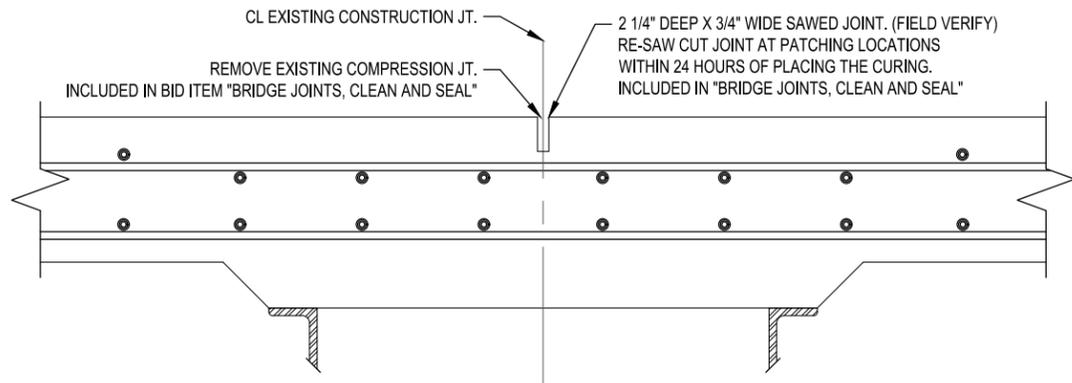
APPLY LOW TEMPERATURE PROTECTION OF CONCRETE ACCORDING TO SECTION 706.03.J OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION IF NECESSARY. LOW TEMPERATURE PROTECTION OF CONCRETE IS INCLUDED IN RELATED ITEMS OF WORK

CONSTRUCTION JOINT RESEALING SHALL EXTEND ACROSS SIDEWALKS

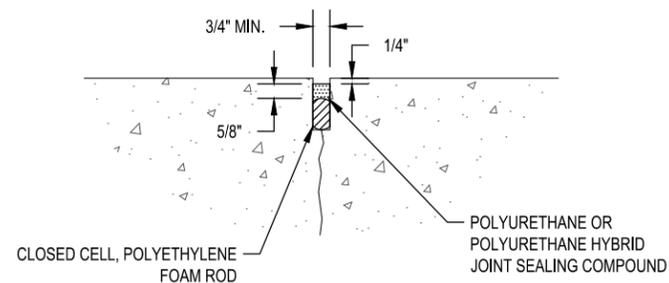
LIMITS OF "PENETRATING HEALER/SEALER, BRIDGE DECK" SHALL BE APPLIED TO BRIDGE SIDEWALK TOP SURFACE FROM REF LINE A TO REF LINE B

#### CONSTRUCTION QUANTITIES - STR 9892

48	Syd	Hand Chipping, Deep
10	Cft	Hand Chipping, Other Than Deck
3	Syd	Epoxy Overlay, Rem
470	Sft	Patching Conc, Modified
26	Syd	Epoxy Overlay
350	Syd	Penetrating Healer/Sealer, Bridge Deck
282	Ft	Bridge Joints, Clean and Seal
475	Syd	Conc Surface Coating
50	Lb	Reinforcement, Steel, Epoxy Coated



### CONSTRUCTION JOINT SECTION



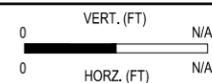
### DECK CON. JOINT AND END JOINT SEAL DETAIL

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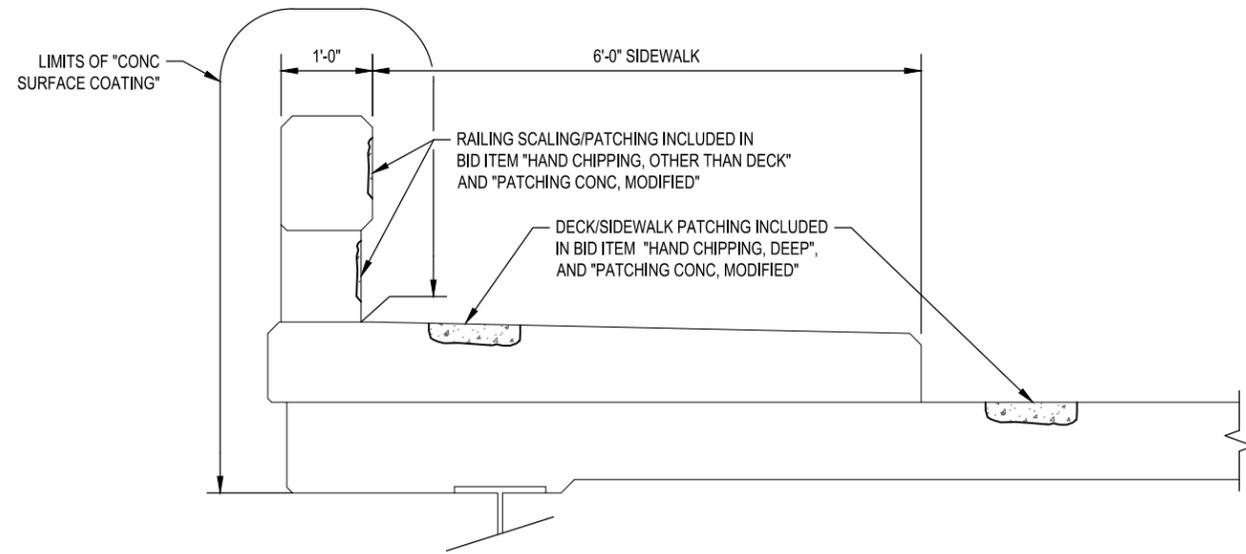
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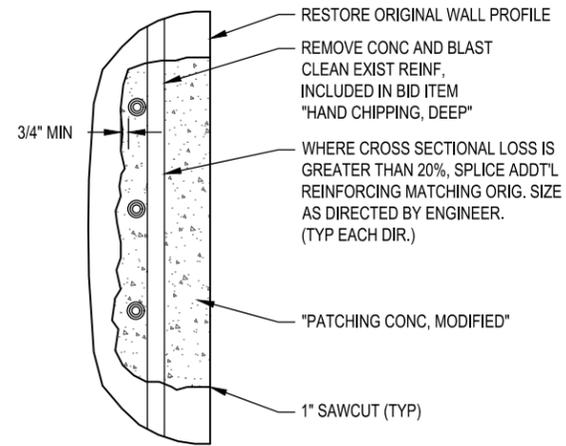
CS:	
JN:	

STRUCTURAL DETAILS		DRAWING	SHEET
GOULD STREET BRIDGE			
OVER SHIAWASSEE RIVER			10

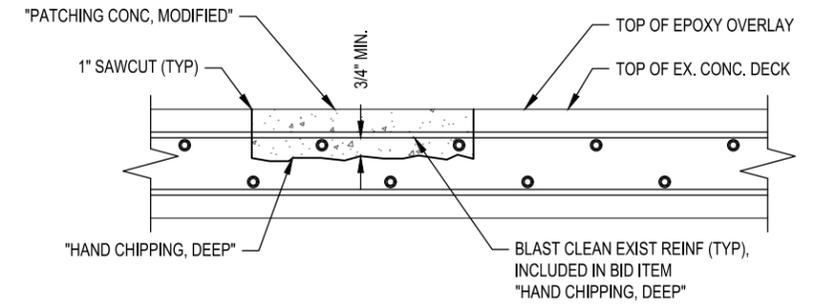


### DECK PATCHING DETAIL

NOTE: SCALE RAILING AND PATCH ONLY AREAS WITH EXPOSED REINFORCEMENT OR AT DIRECTION OF ENGINEER



### VERTICAL PATCHING DETAIL



### DECK PATCHING DETAIL

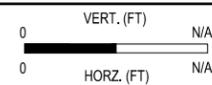
NOTE: PROP. EPOXY OVERLAY TO BE PLACED ATOP PATCHING LOCATIONS. OVERLAP 2" MIN. ONTO EXIST. EPOXY OVERLAY

2/2/2024 10:42 AM lucas.campeau

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STRUCTURAL DETAILS  
GOULD STREET BRIDGE  
OVER SHIAWASSEE RIVER

DRAWING SHEET  
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