

TRAFFIC DATA

	TOTAL A.D.T.		DESIGN SPEED	POSTED SPEED
	2016	2037		
POSEYVILLE ROAD	2196	2957	60 MPH	55 MPH

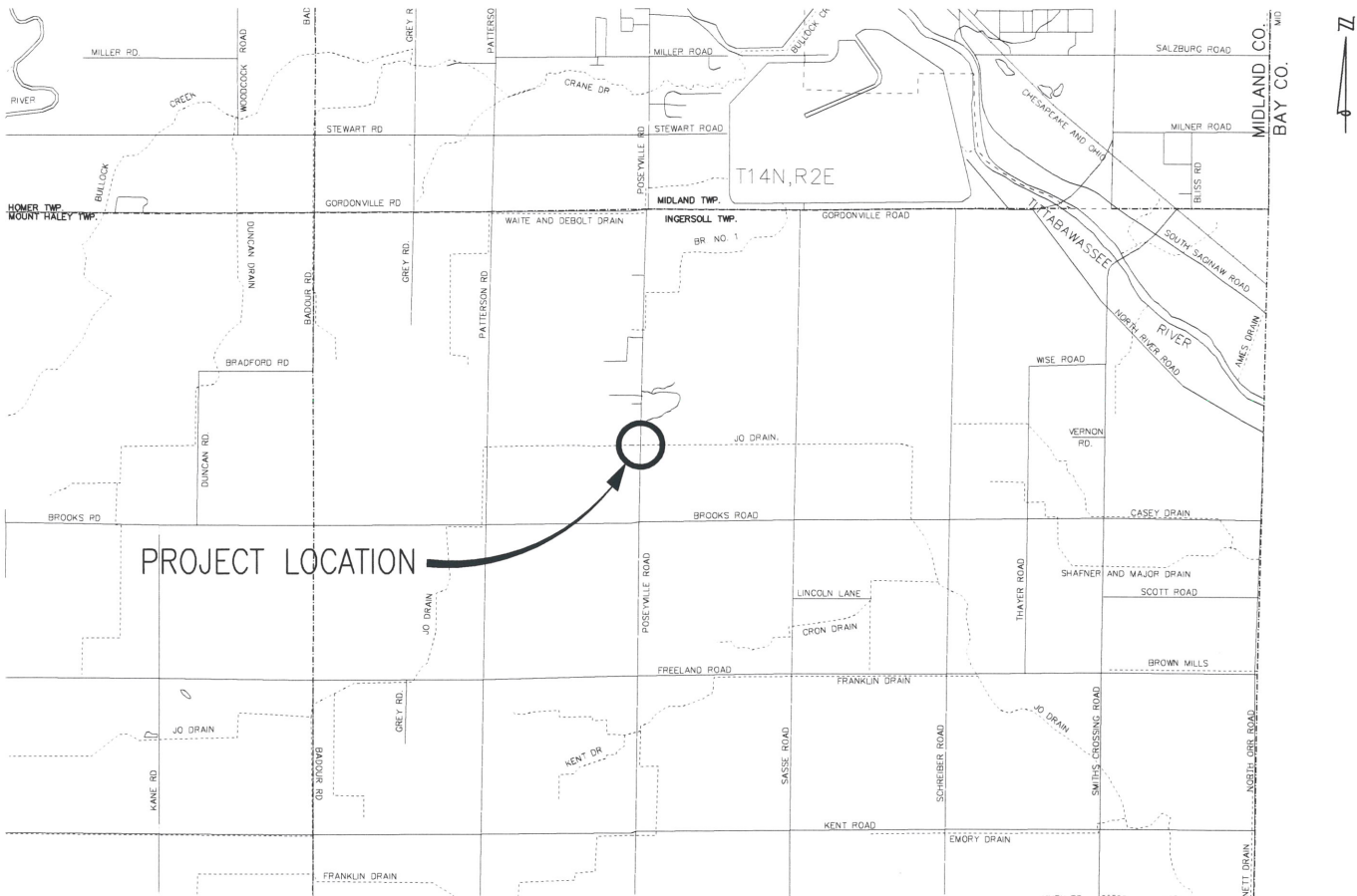
INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	COVER SHEET
2	TYPICAL SHEET
3	LEGEND SHEET
4	REMOVAL SHEET
5	GENERAL PLAN OF SITE
6	GENERAL PLAN OF STRUCTURE
7	ABUTMENTS – GENERAL PLAN OF STRUCTURE
8	DETAIL SHEET
9	DECK PANEL REINFORCEMENT DETAILS
10	MAINTAINING TRAFFIC

M.D.O.T. STANDARD PLANS	
TITLE	PLAN NO.
GUARDRAIL AT BRIDGES AND EMBANKMENTS	R-59-E
GUARDRAIL TYPES A, B, BD, T, TD, MGS-8, MGS-8D, MGS-0 & MGS-0D	R-60-J*
SOIL EROSION & SEDIMENTATION CONTROL MEASURES	R-96-E
SEEDING AND TREE PLANTING	R-100-H
GRADING CROSS-SECTIONS	R-105-D

* SPECIAL DETAILS M.D.O.T WORK ZONE DEVICES	
TITLE	PLAN NO.
GROUND DRIVEN SIGN SUPPORTS FOR TEMP SIGNS	WZD-100-A
TEMPORARY TRAFFIC CONTROL DEVICES	WZD-125-E

MIDLAND COUNTY ROAD COMMISSION
MIDLAND, MICHIGAN
POSEYVILLE ROAD OVER JO DRAIN
RECONSTRUCTION

JN: 201249A CS: 56000
FED ITEM: RT0740 FED. #: ER-1756(015)



NOTES:

THE WORK COVERED BY THESE PLANS INCLUDES ROAD WORK, EARTH EXCAVATION, REMOVAL OF THE CULVERTS, CONSTRUCTION OF THE PROPOSED BRIDGE, GUARDRAIL, MAINTENANCE OF TRAFFIC, HMA PAVING, PLACING GRANULAR MATERIAL, SLOPE PROTECTION, AND RIPRAP TO THE LIMITS SHOWN.

THE 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.

POSEYVILLE ROAD TRAFFIC IS TO BE DETOURED OVER OTHER EXISTING ROADS.

PLAN ELEVATIONS REFER TO NAVD88.

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

MEASURES SHALL BE TAKEN TO PREVENT DEBRIS IN WATERWAY. 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 PREVENTATIVE MEASURES MUST BE EFFECTIVE.

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

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 BY A SINGLE 60 KIP AXLE LOAD BEFORE APPLICATION OF THIS 1.2 FACTOR. THE RESULTING LOAD IS DESIGNATED HL-93 MOD. LIVE LOAD PLUS DYNAMIC LOAD ALLOWANCE DEFLECTION DOES NOT EXCEED 1/800 OF SPAN LENGTH.

THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:
PRECAST CONCRETE $f'_c = 5,000$ psi
STEEL REINFORCEMENT $f_y = 60,000$ psi

THE INITIAL FORCE IN THE TRANSVERSE POST-TENSIONING TENDONS SHALL BE 120,000 LBS. EACH. LOCATE POST TENSIONING DUCTS AT $\frac{1}{3}$ POINTS OF BEAMS.

CONTRACT FOR:
CONSTRUCTION OF NEW BRIDGE USING GEOSYNTHETICALLY REINFORCED SOIL ABUTMENTS AND PRECAST CONCRETE SUPERSTRUCTURE.



415 E Main St | Midland, MI 48640
P (989) 956-2020

PREPARED UNDER THE SUPERVISION OF:

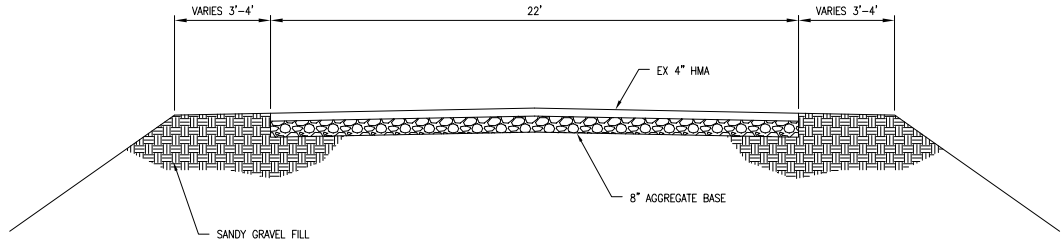
CRAIG D. SCHRIPSEMA
ENGINEER
No. 45096

45096
Registration No.
9/12/17
Date

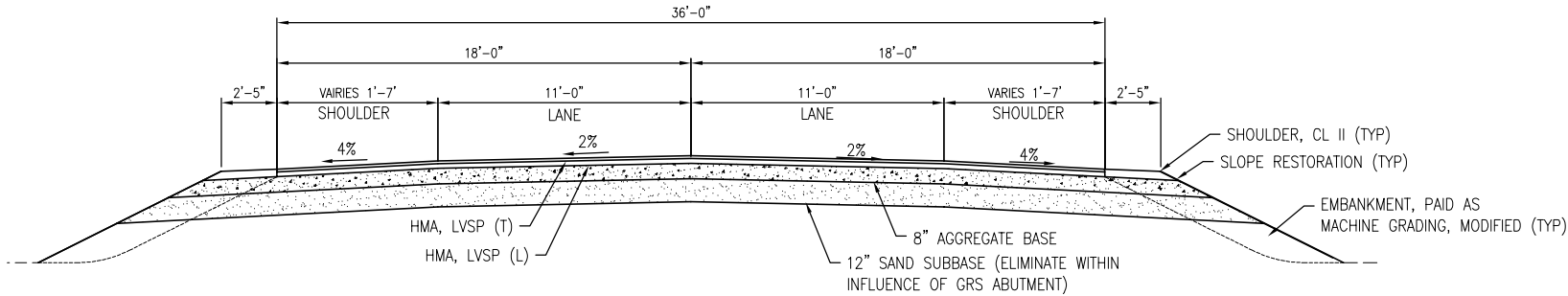
REVISIONS

PROJECT NO.	SHEET NO.
5025-17-0100	1 OF 10

DRAWING PATH: \\ohm\dis\Corporate\Projects\5000_5499\5025\70100_Poseville_Road_over_Jo_Drain\Drawings\Civil\Typicals\70100TYP.dwg Sep 12, 2017 - 11:06am



EXISTING TYPICAL SECTION
STA 1+41.49 (POB) TO STA 3+63.49 (POE)



TYPICAL SECTION
STA 1+41.49 (POB) TO STA 2+37.49
STA 2+67.49 TO STA 3+63.49 (POE)

INFORMATIONAL EARTH QUANTITIES (POB TO POE)

MACHINE GRADING, MODIFIED	
ITEM	VOLUME
EXCAVATION, EARTH	210 CYDS
EMBANKMENT, CIP	75 CYDS

NOTE: QUANTITIES SHOWN FOR INFORMATIONAL PURPOSES ONLY AND ARE INCLUDED WITH PAYMENT FOR MACHINE GRADING, MODIFIED. CONTRACTOR RESPONSIBLE FOR DETERMINING OWN CUT/FILL QUANTITIES.

HMA APPLICATION ESTIMATE				
IDENT NO.	ITEM	RATE (#/SYD)	PERF. GRADE	REMARKS
L	HMA, LVSP	220	58-28	LEVELING COURSE
T	HMA, LVSP	220	58-28	TOP COURSE

NOTES: 1) THE AGGREGATE WEAR INDEX (AWI) FOR THE TOP COURSE SHALL BE 220.
2) RECLAIMED ASPHALT PAVEMENT (RAP) IS LIMITED TO 15% IN THE HMA TOP COURSES
3) PLACE HMA BOND COAT AT 0.05 TO 0.15 GAL/SYD BETWEEN LAYERS AS DIRECTED BY THE ENGINEER (INCLUDED IN PAYMENT FOR HMA PAVING ITEMS)



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












DATE	PROJ NUMBER	ENG	PROJ MGR	CADD	COUNTY	CITY/TOWNSHIP	SCALE	H	V	NTS	VERT DATUM
9/7/17	5025-17-2010	Value	CDS	MCH	MIDLAND	Value				NTS	Value










MIDLAND COUNTY ROAD COMMISSION
POSEVILLE ROAD OVER JO DRAIN
TYPICAL SHEET

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WATER & SEWER UTILITY SYMBOLS

























EXISTING	
	ST STORM MANHOLE
	SQUARE CATCH BASIN
	ROUND CATCH BASIN
	CULVERT
	CULVERT W/O END SECTION
	CULVERT W/END SECTION
	SANITARY MANHOLE
	CLEAN OUT
	GATE VALVE & WELL
	GATE VALVE & BOX
	WATER STOP BOX
	FIRE HYDRANT
	METER PIT
	WATER METER
	SPRINKLER HEAD
	IRRIGATION VALVE

PROPOSED	
	STORM MANHOLE
	INLET/CATCH BASIN
	CULVERT END SECTION
	SANITARY MANHOLE
	GATE VALVE & WELL
	GATE VALVE & BOX
	TAPPING SLEEVE VALVE & WELL
	TAPPING SLEEVE VALVE & BOX
	FIRE HYDRANT




















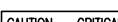
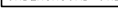






REAL ESTATE SYMBOLS

	CONTIGUOUS PROPERTY SYMBOL
	PARCEL NUMBER BOX
	NO ROW IMPACTS










MISCELLANEOUS UTILITY SYMBOLS

EXISTING	
	GUY WIRE
	GUY POLE
	UTILITY POLE
	UTILITY POLE W/LIGHT
	LIGHT/DECOR LAMP POLE
	FLOOD LIGHT
	GAS VALVE
	GAS VENT
	GAS METER
	GAS RISER
	TRAFFIC SIGNAL
	PEDESTRIAN RISER
	TRANSFORMER PAD
	PRIVATE UTILITY MANHOLE
	RAILROAD CROSSING
	ELECTRIC METER
	PHONE BOOTH
	TRAFFIC SIGNAL CONTROLLER
	HAND HOLE
	ELECTRIC RISER
	TELEPHONE RISER
	CABLE TV RISER
	MONITORING WELL
	UNDERGROUND MARKER




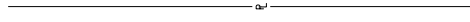
MISCELLANEOUS SYMBOLS

EXISTING	
	RIPRAP
	SIGN
	FLOW DIRECTION
	STUMP
	WETLAND
	CONIFEROUS TREE
	DECIDUOUS TREE
	CONIFEROUS SHRUB
	DECIDUOUS SHRUB
	SOIL BORING
	SECTION CORNER
	MONUMENT
	IRON ROD/PIPE
	PK NAIL
	BENCHMARK
	TRAVERSE POINT
	MAIL/NEWSPAPER BOX
	FLAG POLE
	POST
	USED WITH UNDERGROUND GAS & ELECTRICAL LINES
	USED WITH TELEPHONE & FIBER OPTIC LINES
PROPOSED	
	RIPRAP
	SIGN
	FLOW DIRECTION
	STRUCTURE NUMBER
	WM SAN STM
	ADA SIDEWALK RAMP











UTILITY PATTERN

EXISTING	
	ELECTRICAL *
	GAS\OIL
	CABLE/TELEPHONE *
	FIBER OPTIC *
	WATER
	SANITARY
	STORM
PROPOSED	
	STORM/SANITARY/WATER
	PRIMARY UTILITY WILL HAVE A CONTINUOUS LIFESTYLE, WITH THE SECONDARY UTILITY MATCHING ITS RESPECTIVE EXISTING UTILITY LIFESTYLE
*OH = OVERHEAD , UG = UNDERGROUND	

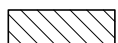
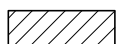
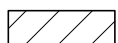

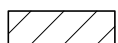
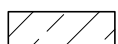







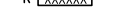

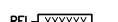


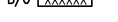
ROW PATTERN

EXISTING	
	ROW
	SECTION
	PROPERTY/PARCEL
PROPOSED	
	ROW










TOPO PATTERN

EXISTING	
	HEDGE/TREE
	FENCE
	GUARDRAIL
	CENTERLINE OF DITCH
	RAILROAD
	WETLAND/EDGE OF WATER
PROPOSED	
	GRADING LIMIT (SLOPE STAKE)
	CENTERLINE OF DITCH
	GUARDRAIL
	FENCE


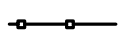
REMOVAL LEGEND

	SIDEWALK REMOVAL
	BRICK REMOVAL
	HMA SURFACE REMOVAL
	PAVEMENT REMOVAL
	COLD MILLING HMA SURFACE
	HMA BASE CRUSHING AND SHAPING
	EXCAVATION, EARTH, MODIFIED
	CURB AND GUTTER, REM
	TREE, REM
	SALVAGE
	BULKHEAD
	ABANDON
	REMOVE
	ADJUST
	RELOCATE
	RECONSTRUCT
	REMOVE BY OTHERS
	ADJUST BY OTHERS
	RELOCATE BY OTHERS

IF NECESSARY FOR CLARITY


	SALVAGE
	BULKHEAD
	ABANDON
	CLEARING
	REMOVE
	RELOCATE
	RECONSTRUCT
	RELOCATE BY OTHERS
	ADJUST BY OTHERS

SPECIAL LEGEND

	HEAVY RIPRAP
	SILT FENCE



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NO.	DATE	DESCRIPTION
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DATE	PROJ NUMBER	ENG	PROJ MGR	CADD	COUNTY	CITY/VILLAGE/TOWNSHIP	SCALE	H	V	NTS	VERT DATUM	Value
9/7/17	5025-17-0100			MCH	MIDLAND					NTS		

MIDLAND COUNTY ROAD COMMISSION
POSEVILLE ROAD OVER JO DRAIN
LEGEND SHEET

3
OF 10

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POSEYVILLE ROAD
JO DRAIN

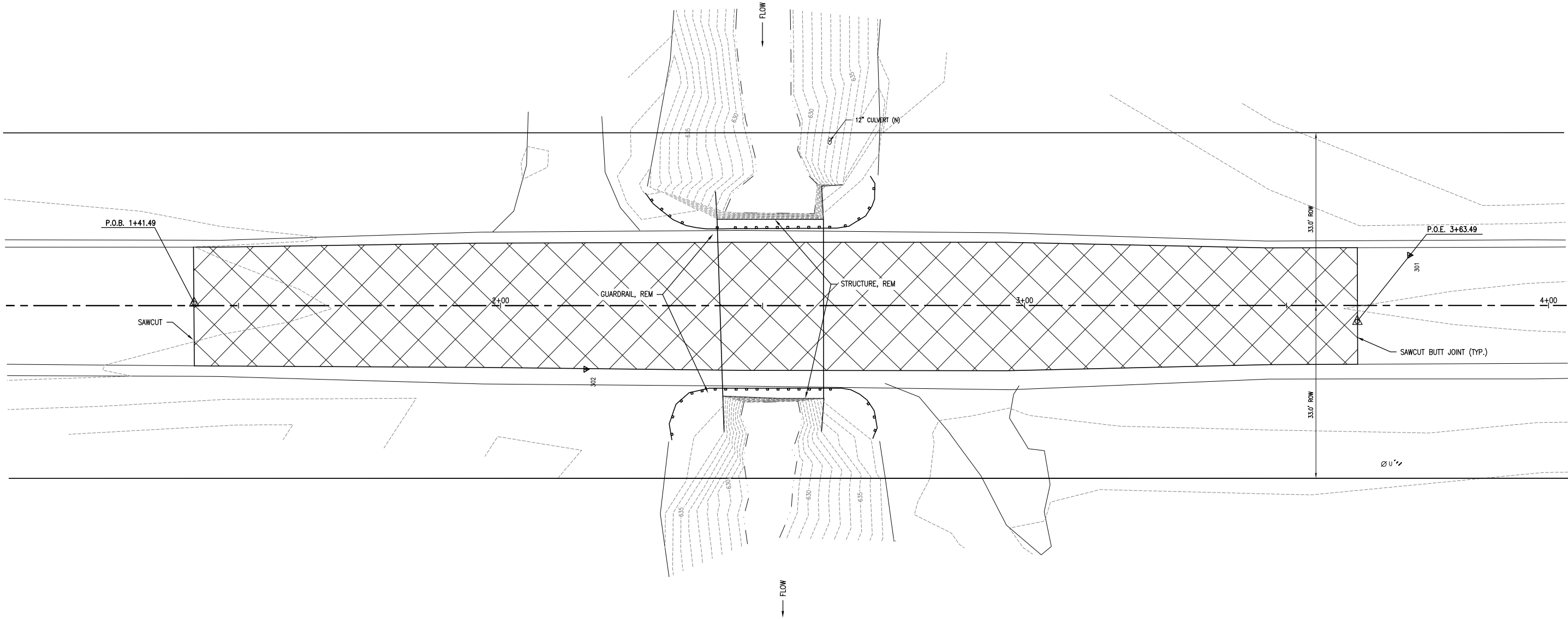




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QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
108	Ft	Guardrail, Rem
1	LSUM	Structure, Rem
50	Cyd	Subgrade Undercutting, Type II
2	Sta	Machine Grading, Modified
2054	Cyd	Excavation, Fdn
585	Syd	HMA Surface, Rem



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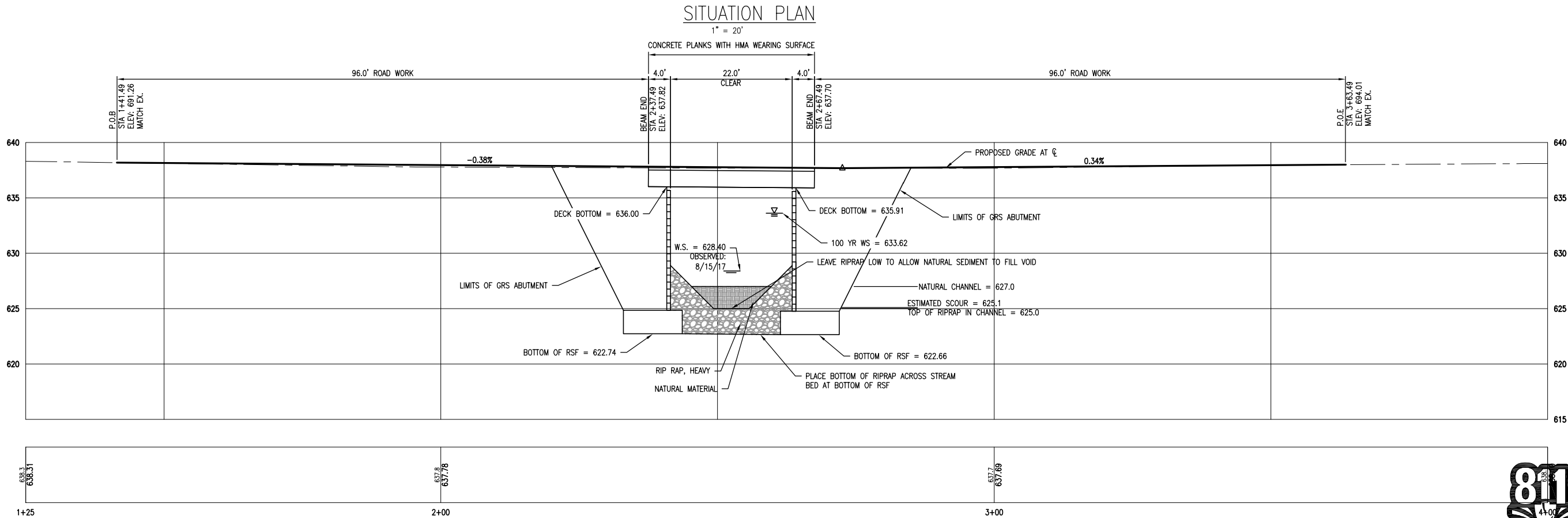
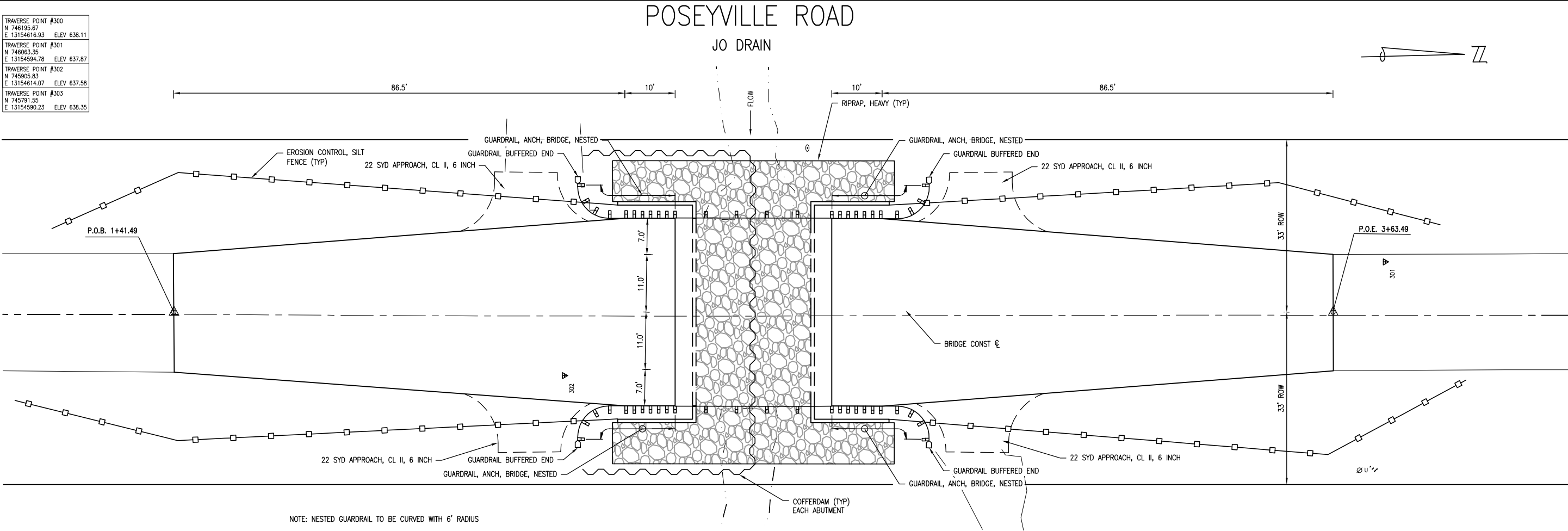
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9/5/17	5025-17-0100	Value	CDS	MCH	MIDLAND	Value	H: 1"=10' V: 1"=10'	Value	Value

MIDLAND COUNTY ROAD COMMISSION
POSEYVILLE ROAD OVER JO DRAIN
REMOVAL SHEET

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E 13154616.93	ELEV 638.11
TRAVERSE POINT #301	
N 746063.35	
E 13154594.78	ELEV 637.87
TRAVERSE POINT #302	
N 745905.83	
E 13154614.07	ELEV 637.58
TRAVERSE POINT #303	
N 745791.55	
E 13154590.23	ELEV 638.35



VERT SCALE: 1" = 10'
HORIZ SCALE: 1" = 20'

RSF = REINFORCED SOIL FOUNDATION
GRS = GEOSYNTHETIC REINFORCED SOIL



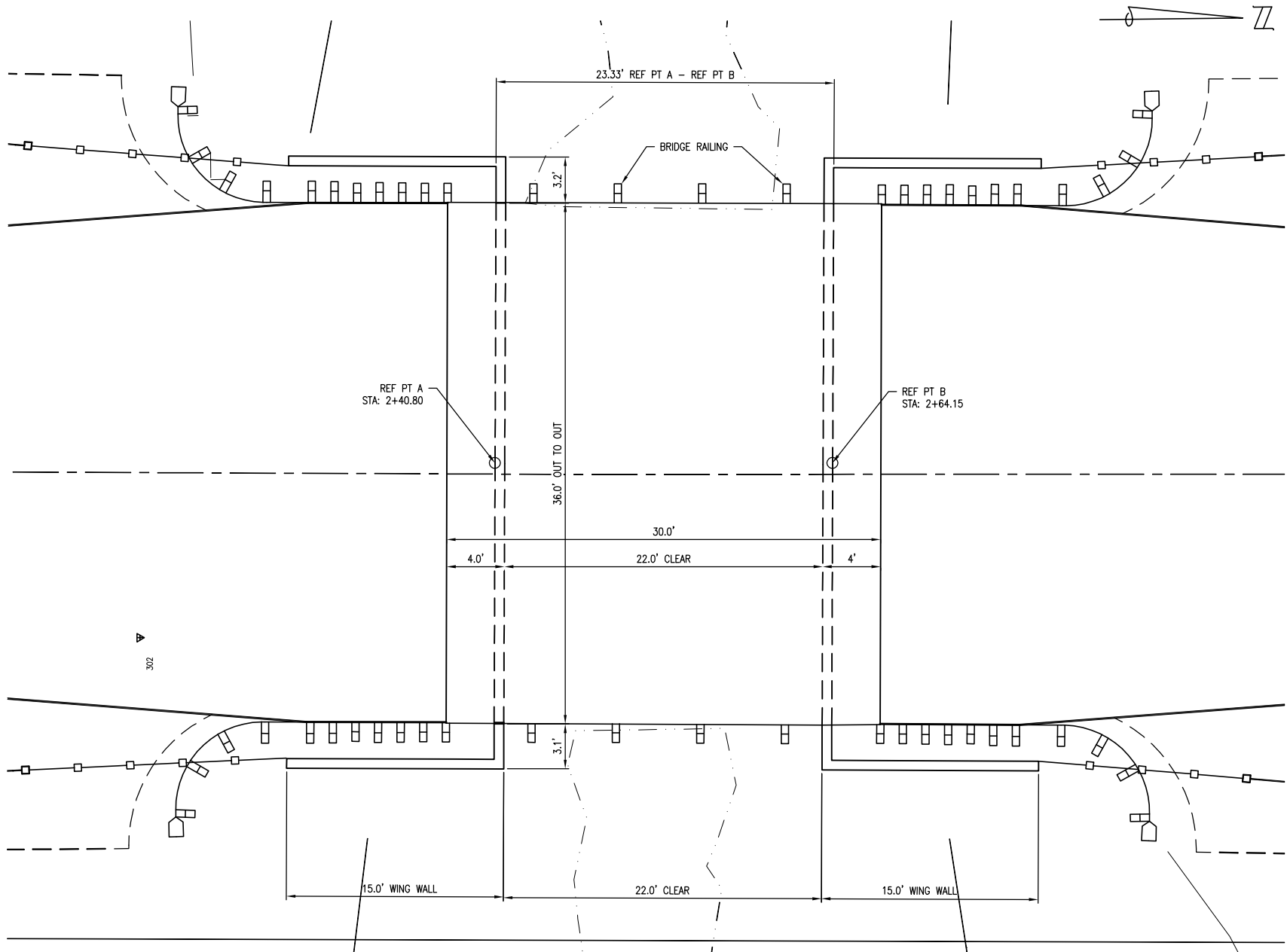
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9/12/17	5025-17-0100	Value	CDS	MCH	MIDLAND	Value	H: 1"=20' V: 1"=10'	Value	Value

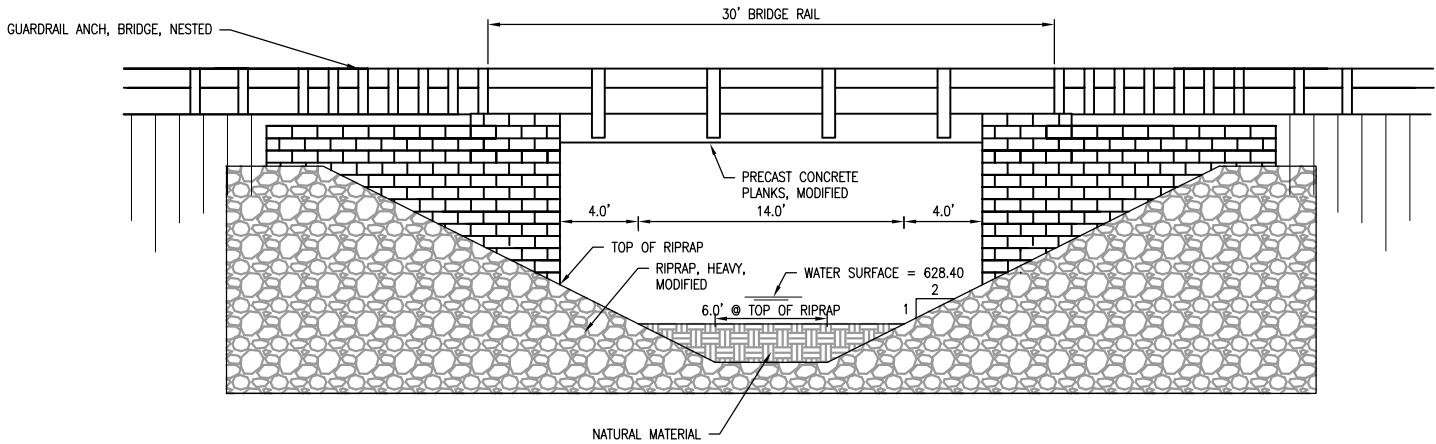
MIDLAND COUNTY ROAD COMMISSION
POSEYVILLE ROAD OVER JO DRAIN
GENERAL PLAN OF SITE

DRAWING PATH: \\ohm\dis\Corporate\Projects\5000_5499\5025170100_Poseyville_Road_over_Jo_Drain\Drawings\Civil\Plans_Const\170100CON.dwg Sep 12, 2017 - 11:06am

POSEYVILLE RD

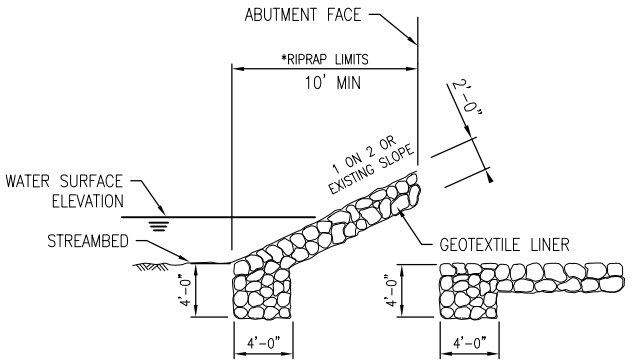


PLAN
1" = 10'



ELEVATION
1" = 10'

SUMMARY OF HYDRAULIC ANALYSIS							
EXISTING				PROPOSED			
FLOOD DATA	DISCHARGE (CFS)	WATER SURFACE ELEV. AT U/S FACE OF STRUCTURE	VELOCITY IN D/S CHANNEL IN (FPS)	WATER SURFACE ELEVATION AT U/S FACE OF STRUCTURE	VELOCITY IN D/S CHANNEL IN (FPS)	WATERWAY AREA (SFT) AT D/S FACE	CHANGE IN WS EL. U/S OF PROPOSED STRUCTURE
50-YEAR	350	632.96	3.12	632.92	2.93	122.99	-0.04
100-YEAR	440	633.67	3.53	633.62	3.29	138.38	-0.05
MAXIMUM BRIDGE AREA BELOW LOW CHORD IS 189.73 SQUARE FT							
JO DRAIN AT POSEYVILLE ROAD, SECTION 8, T13N, RE, INGERSOLL TOWNSHIP, MIDLAND COUNTY, HAS A DRAINAGE AREA OF 6.1 SQUARE MILES. THE 50%, 2%, AND 1% CHANCE PEAK FLOWS ARE ESTIMATED TO BE 90 CUBIC FEET PER SECOND (CFS), 350 CFS, AND 440 CFS, RESPECTIVELY. (WATERSHED BASIN NO. 32C SHIAWASSEE).							



TOE HEADER
SIDE HEADER
RIPRAP HEADER DETAILS

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

AN APPROPRIATE METHOD OF WATER DIVERSION FOR PLACING RIPRAP SHALL BE PROPOSED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. IF WATER IS SHALLOW (LESS THAN TWO FEET), TEMPORARY CONCRETE BARRIERS OR SANDBAGS MAY BE USED TO DIVERT FLOW.

THE RIPRAP SCHEME SHOWN IS A MINIMUM REQUIREMENT FOR SCOUR.

*RIPRAP LIMITS ARE APPROXIMATE. RIPRAP SHALL EXTEND FROM TOP OF BANK TO BOTTOM OF EXISTING CHANNEL AT A 1 ON 2 SLOPE.

TOTAL	UNIT	DESCRIPTION
1	LSUM	Mobilization, Max
400	Ft	Erosion Control, Silt Fence
50	Ft	Erosion Control, Turbidity Curtain, Shallow
173	Cyd	Subbase, CIP
691	Syd	Aggregate Base, 8 inch
168	Ton	HMA, LVSP
1	LSUM	Cofferdams
1	LSUM	Precast Concrete Planks, Modified
60	Ft	Bridge Railing
4	Ea	Guardrail Anch, Bridge, Nested
4	Ea	Guardrail Buffered End
444	Ft	Pavt Mrkg, Waterborne, 6 inch, White
56	Ft	Pavt Mrkg, Waterborne, 6 inch, Yellow
200	Syd	Riprap, Heavy, Modified
445	Syd	Slope Restoration, Modified



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NO.	DATE	DESCRIPTION
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DATE: 9/12/17
PROJ NUMBER: 5025-17-0100
ENG: Value

CITY/VILLAGE/TOWNSHIP: Value
COUNTY: MIDLAND
CADD: MCH
PROJ MGR: CDS
SCALE: H: 1"=10' V: 1"=10'

QTY/VOLUME/TOWNSHIP: Value
CITY/VILLAGE/TOWNSHIP: Value
COUNTY: MIDLAND
CADD: MCH
PROJ MGR: CDS
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SCALE: H: 1"=10' V: 1"=10'

MIDLAND COUNTY ROAD COMMISSION
POSEYVILLE ROAD OVER JO DRAIN
GENERAL PLAN OF STRUCTURE

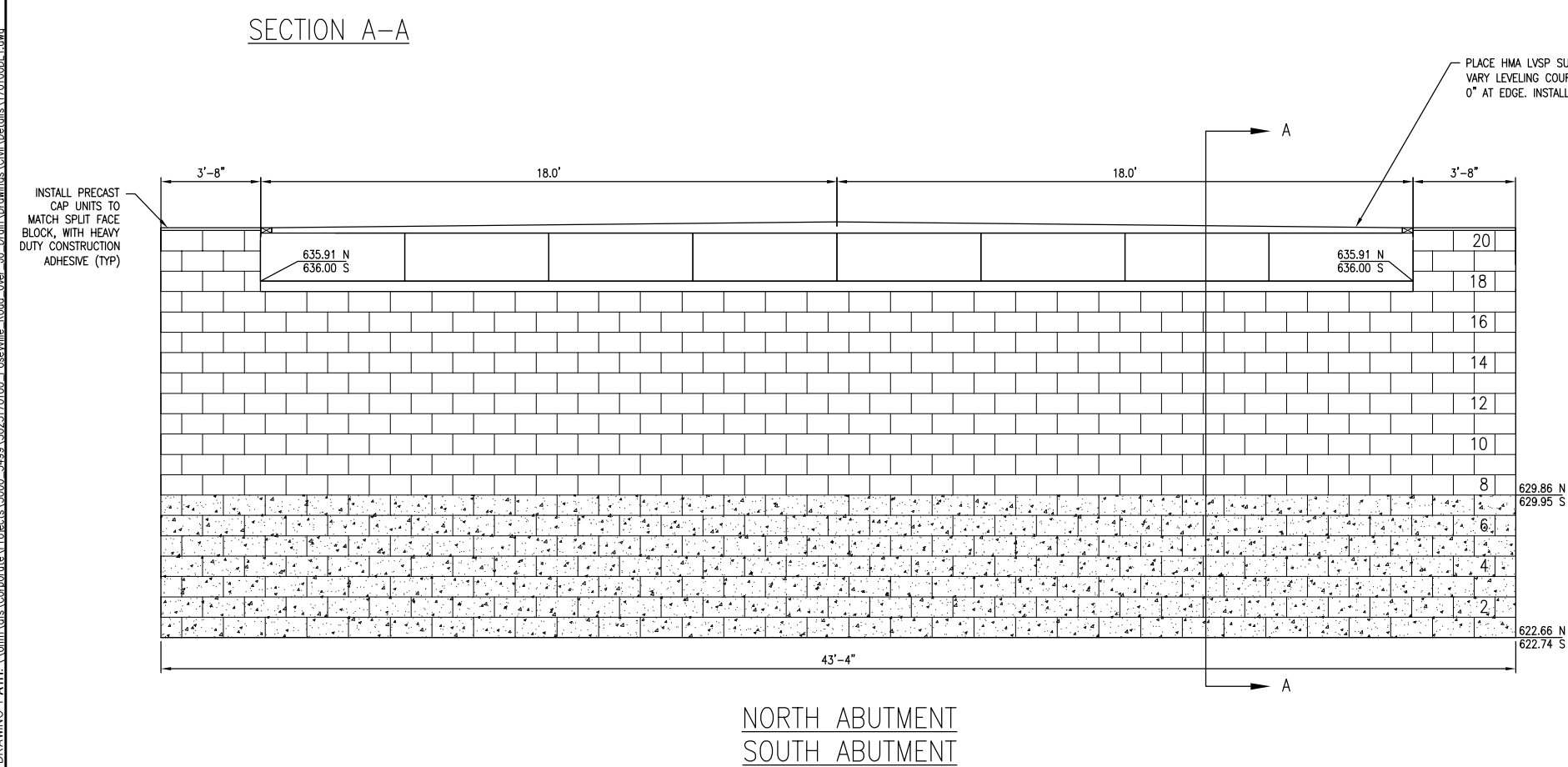
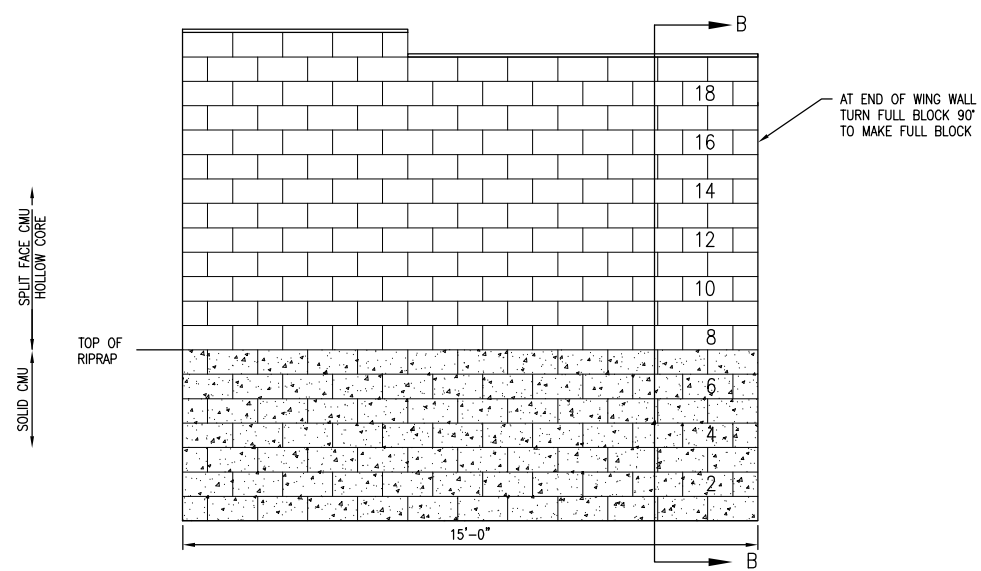
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OF 10

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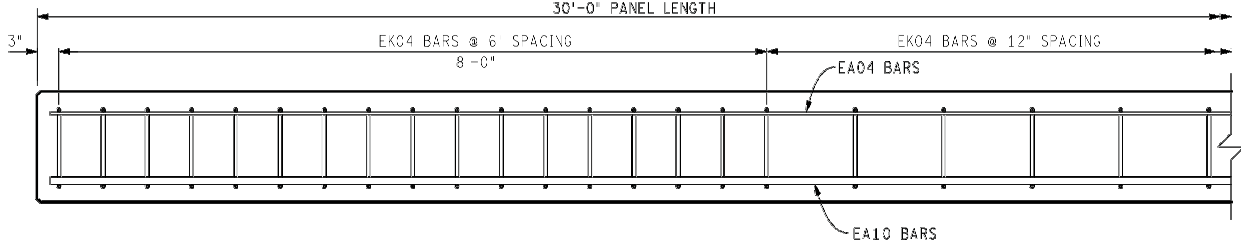
QUANTITIES THIS SHEET		
TOTAL	UNIT	DESCRIPTION
758	Cyd	Granular Embankment, AASHTO #89 Stone
116	Cyd	RSF, MDOT 21AA, CIP, Crushed Limestone
5195	Syd	High Strength Woven Polypropylene Fabric
559	Ft	Reinforcement, Steel, Epoxy Coated Dowel
73	Ft	Concrete Cap
847	Ea	Solid Concrete Masonry Block
1364.0	Ea	Splitface Concrete Masonry Block

SECTION B-B
WINGWALL CONSTRUCTION

WINGWALL

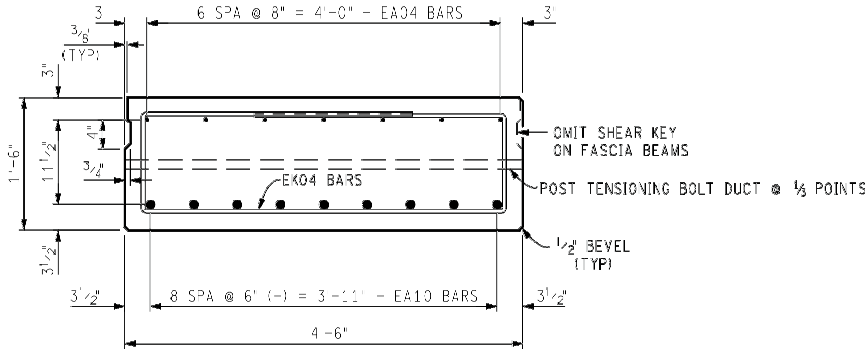
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		Value		MCH		MIDLAND	Value	1"=10'		1"=10'	Value	Value
9/2/17	5025-17-010											
<p>MIDLAND COUNTY ROAD COMMISSION</p> <p>POSEYVILLE ROAD OVER JO DRAIN</p> <p>ABUTMENTS – GENERAL PLAN OF STRUCTURE</p>												

DRAWING PATH: \\ohm\dis\Corporate\Projects\5000_5499\5025\70100_Poseville_Road_over_Jo_Drain\Drawings\Civil\Details\70100001.dwg Sep 12, 2017 11:06am

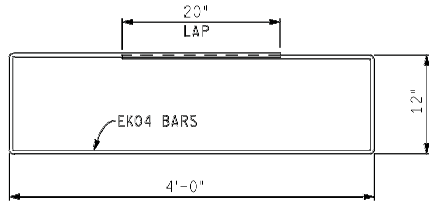


DECK PANEL ELEVATION

(ADJUST EK04 SPACING TO ACCOMMODATE POST-TENSIONING DUCTS)
(EK04 BARS SYMMETRICAL ABOUT DECK PANEL)



DECK PANEL SECTION



K BAR DETAIL

NOTES:

THE INITIAL FORCE IN THE TRANSVERSE POST-TENSIONING TENDONS SHALL BE 120,000 LBS. EACH. LOCATE POST TENSIONING DUCTS AT 1/2 POINTS ON BEAMS

NOTES:

- SPLITFACE CONCRETE MASONRY BLOCK – THIS ITEM SHALL CONSIST OF FURNISHING AND PLACING SPLITFACE HOLLOW CORE CONCRETE MASONRY UNITS (CMU) MEETING ASTM C90 WITH THE MODIFICATIONS THAT THE BLOCK SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AND A MAXIMUM ABSORPTION RATE OF 6.5%. PLACE CMU BLOCKS SIDE BY SIDE FOR THE FULL LENGTH OF EACH COURSE OF THE WALL. CHECK WALL PLUMBNESS A MINIMUM OF EVERY 3 LAYERS AND CORRECT DEVIATIONS GREAT THAN 1/4". CORRECT MISALIGNED, IMPROPERLY SEATED OR OUT OF LEVEL CMU BLOCKS. ASSURE THAT THE TOPS OF ALL CMU BLOCKS ARE FREE OF LOOSE MATERIAL PRIOR TO THE PLACEMENT OF THE NEXT LAYER OF GEOTEXTILE AND CMU BLOCKS.
- SOLID CONCRETE MASONRY BLOCK – THIS ITEM SHALL CONSIST OF FURNISHING AND PLACING SOLID CONCRETE MASONRY UNITS (CMU) MEETING ASTM C90 WITH THE MODIFICATIONS THAT THE BLOCK SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AND A MAXIMUM ABSORPTION RATE OF 6.5%. BEGIN CONSTRUCTION OF THE ABUTMENT BY PLACING ONE FULL LENGTH OF COURSE OF CMU BLOCK AT A TIME. PLACE THE FIRST COURSE OF CMU BLOCK ON TOP AND IN FULL CONTACT WITH THE REINFORCED SOIL FOUNDATION. THE FIRST ROW OF CMU BLOCK MUST BE CAREFULLY LEVELED IN BOTH DIRECTIONS TO ENSURE PROPER ALIGNMENT FOR THE BALANCE OF THE WALL. CHECK WALL PLUMBNESS A MINIMUM OF EVERY 3 LAYERS AND CORRECT DEVIATIONS GREATER THAN 1/4". CORRECTED MISALIGNED, IMPROPERLY SEATED OR OUT OF LEVEL CMU BLOCKS. ASSURE THAT THE TOPS OF ALL CMU BLOCKS ARE FREE OF LOOSE MATERIAL PRIOR TO THE PLACEMENT OF THE NEXT LAYER OF GEOTEXTILE AND CMU BLOCKS.
- HIGH STRENGTH WOVEN POLYPROPYLENE FABRIC – THIS ITEM SHALL HAVE A WIDE WIDTH TENSILE STRENGTH OF 4800/LBS PER FOOT IN BOTH DIRECTIONS AS PER ASTM D-4595. THE GEOSYNTHETIC REINFORCEMENT SHALL BE PLACED AS SHOWN ON SHEET. THE WIDTH AND LENGTH VARY AS SHOWN ON THE DRAWING. GEOSYNTHETIC REINFORCEMENT SHALL EXTEND BETWEEN THE LAYERS OF CMU BLOCK TO PROVIDE A FRICTIONAL CONNECTION. THE GEOSYNTHETIC REINFORCEMENT SHALL NEARLY COMPLETELY COVER THE TOP OF THE CMU BLOCK. PULL THE GEOSYNTHETIC REINFORCEMENT TAUT PRIOR TO BACKFILLING TO REMOVE WRINKLES. THE PRICED BID SHALL INCLUDE FURNISHING AND PLACING THIS MATERIAL. TO LIMIT CONSTRUCTION DAMAGE TO THE GEOTEXTILE REINFORCEMENT, CONSTRUCTION EQUIPMENT SHALL NOT DRIVE DIRECTLY OVER THE GEOTEXTILE. AN AGGREGATE THICKNESS OF 6" IS SUFFICIENT TO PREVENT EQUIPMENT FROM DAMAGING THE GEOTEXTILE. NO LAPPING OF FABRIC SHALL BE PERMITTED ALONG THE FACE. WHERE LAPPED ELSEWHERE A 0.25" THICKNESS OF STONE SHALL BE SPREAD BETWEEN PIECES OF FABRIC.
- THE STONE BACKFILL SHALL BE PLACED BEHIND EACH LAYER OF CMU BLOCK IN A LIFT THICKNESS NOT TO EXCEED THE CMU BLOCK HEIGHT. PLACEMENT OF THE AGGREGATE SHALL BE FROM THE WALL FACE BACKWARD TO PREVENT THE FORMATION OF AND TO REMOVE ANY WRINKLES IN THE GEOTEXTILE. FILL SHALL BE PLACED IN A MANNER TO AVOID WRINKLING OF THE GEOSYNTHETIC REINFORCEMENT. COMPACTION GENERALLY ACHIEVED BY:
 - 1) RODDING THE AGGREGATE FILL BEHIND EACH CMU BLOCK APPROXIMATELY EVERY FOOT WHILE EXERTING DOWNWARD PRESSURE ON THE CMU BLOCK TO PREVENT LATERAL MOVEMENT
 - 2) USING A VIBRATORY PLATE COMPACTOR (> 4 PASSES) DIRECTLY BEHIND THE CMU BLOCK WHILE EXERTING DOWNWARD PRESSURE ON THE CMU BLOCK TO PREVENT LATERAL MOVEMENT
 - 3) LARGER VIBRATORY COMPACTORS MAY BE USED FOR THE BALANCE OF THE AREA MORE THAN 2' BEHIND THE CMU BLOCK. MULTIPLE PASSES OF A VIBRATORY PLATE COMPACTOR CAN ALSO ACHIEVE PROPER DENSITY.
- AT THE END OF A DAY'S OPERATIONS, SLOPE THE LAST LIFT OF BACKFILL AWAY FROM THE WALL FACE TO DIRECT SURFACE RUNOFF AWAY FROM THE WALL. DO NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION AREA.

	NO SCALE		SHAFFER ROAD BRIDGE RECONSTRUCTION	DATE: 02/10/17
		JN: 5025-17-0010	MIDLAND COUNTY ROAD COMMISSION	DRAWING SHEET
			DECK PANEL REINFORCEMENT DETAILS	1

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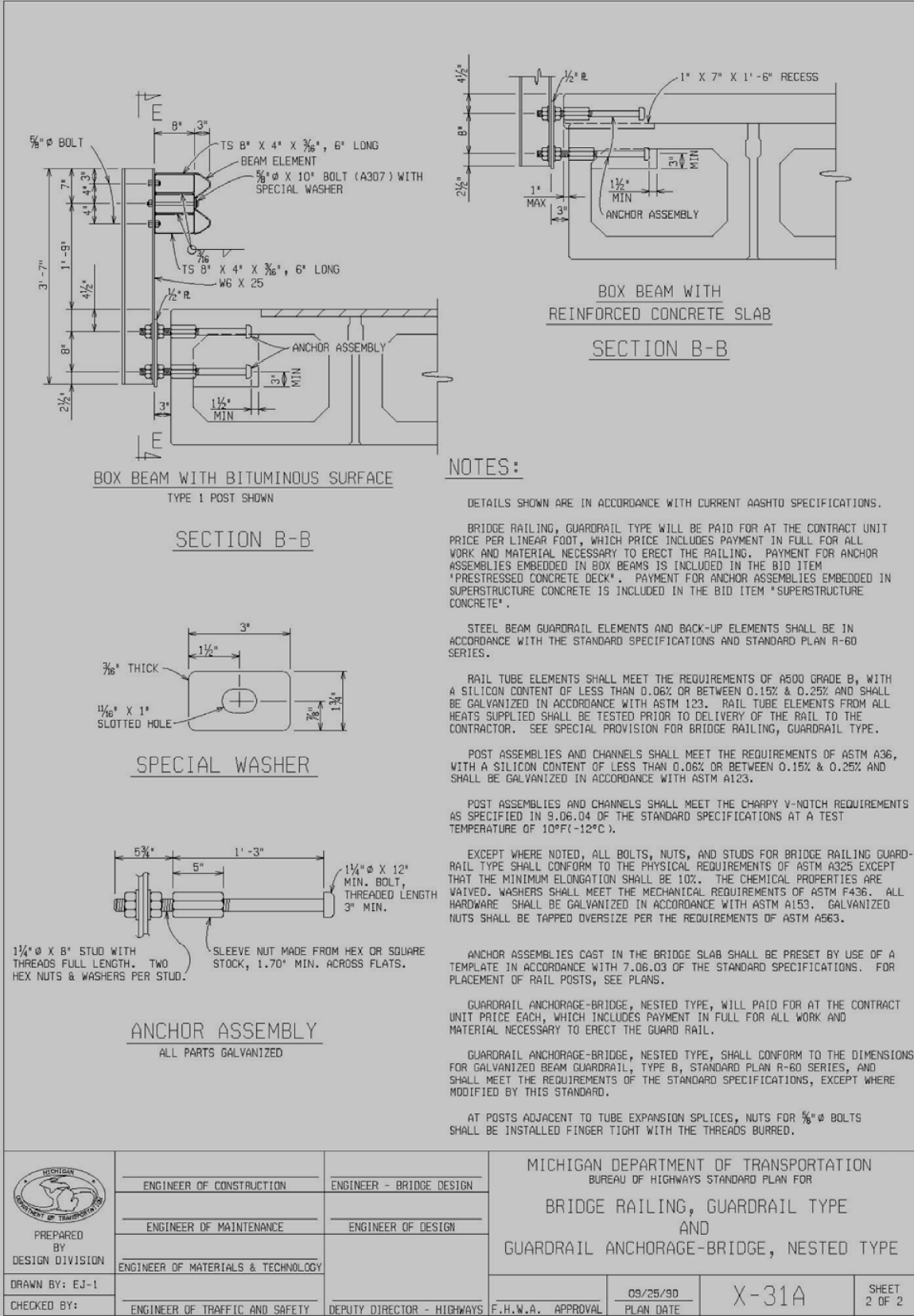
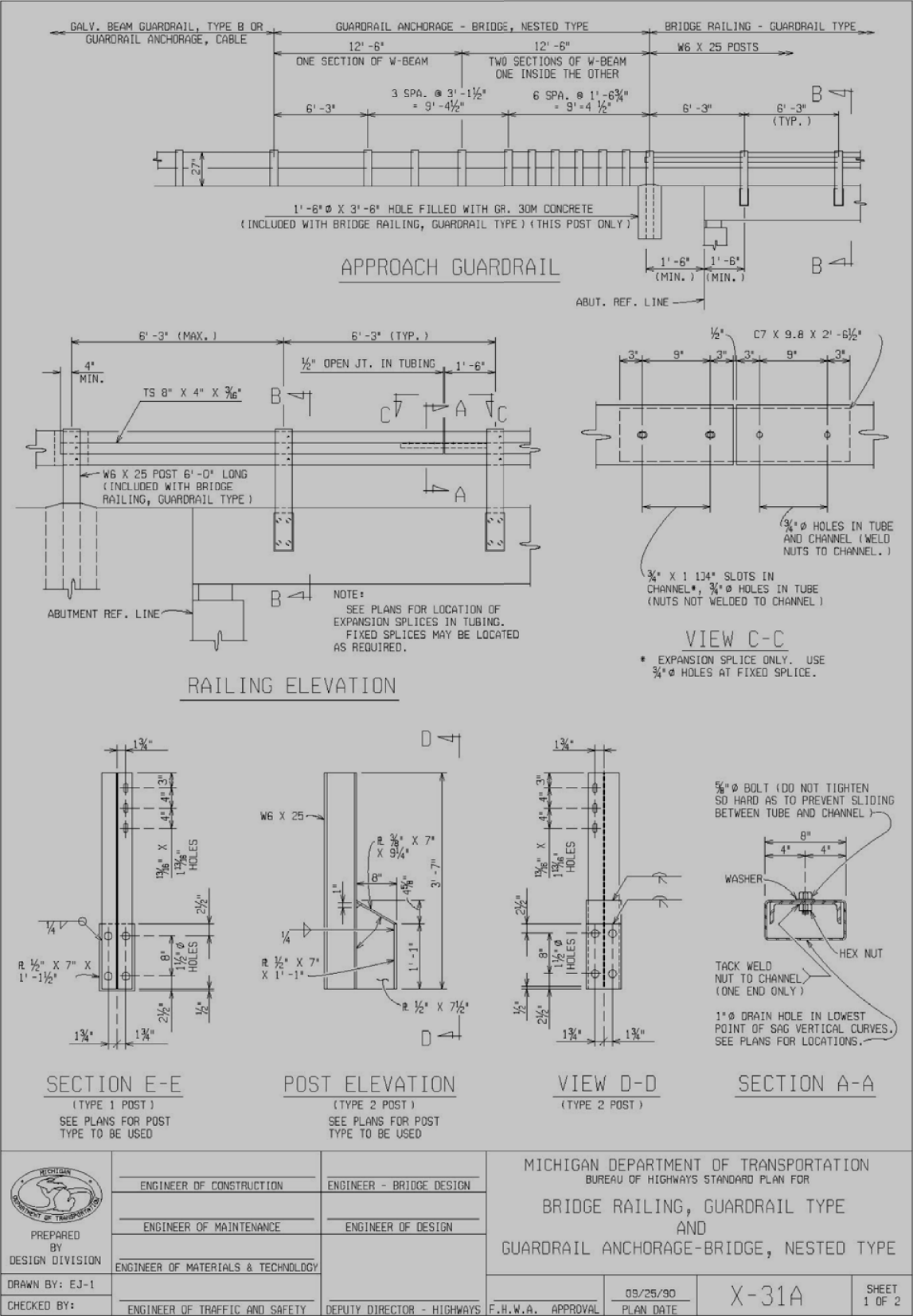
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9/7/17	5025-17-0100	Value	CDS	MCH	MIDLAND	Value	H: 1"=10' V: 1"=10'	Value	Value

MIDLAND COUNTY ROAD COMMISSION
POSEVILLE ROAD OVER JO DRAIN
DECK PANEL REINFORCEMENT DETAILS

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MIDLAND COUNTY ROAD COMMISSION
POSEVILLE ROAD OVER JO DRAIN

DETAIL SHEET

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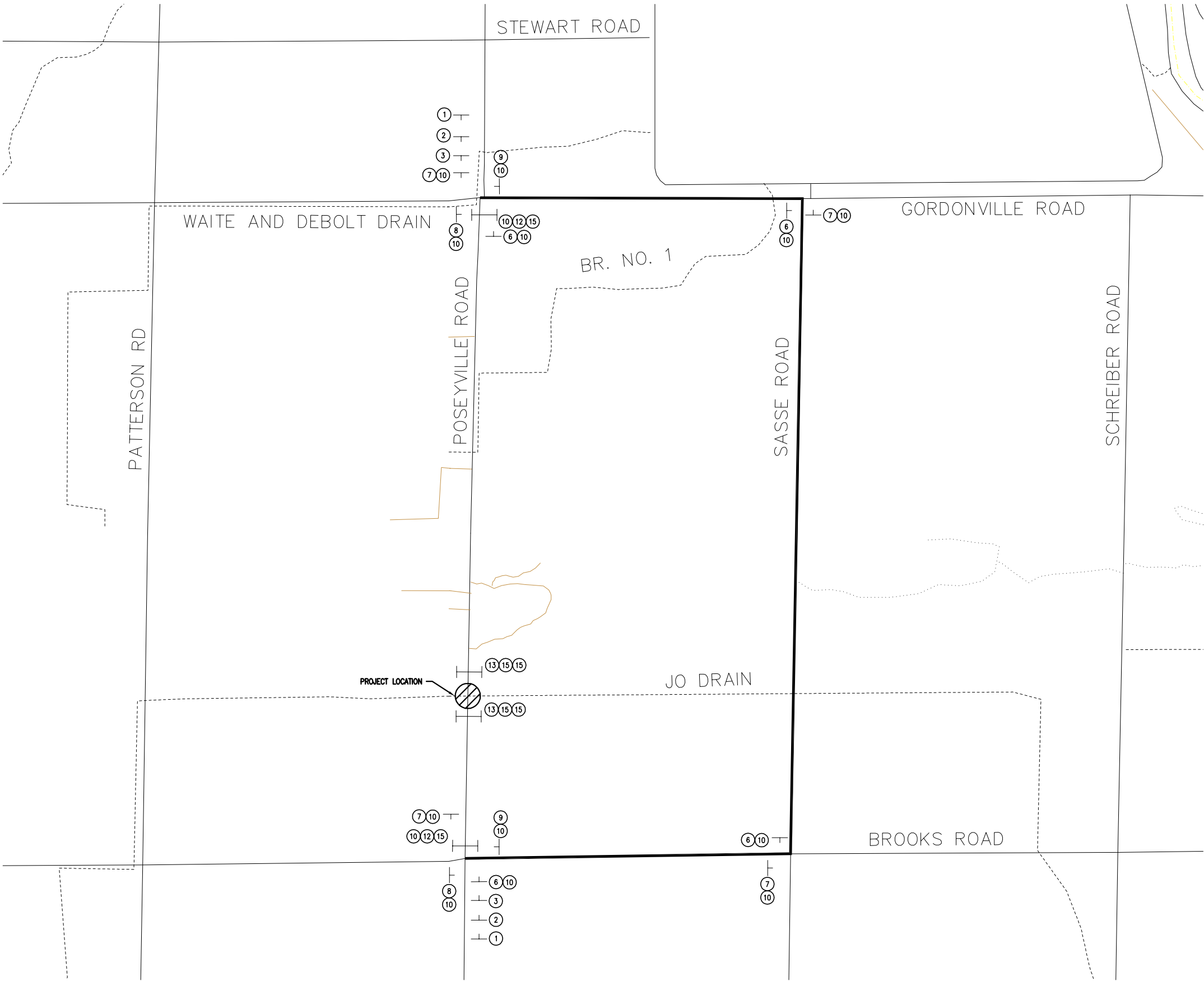
SIGN LEGEND					
NO	SIGN	SIGN DESIGNATION	SIZE	NUMBER REQUIRED (FOR INFORMATION ONLY)	AREA (SQ. FT)
1		W20-1	48"x48"	2	32
2		W20-2	48"x48"	2	32
3		W20-3	48"x48"	2	32
4		R5-18cLA	60"x42"	0	0
5		R5-18bLA	60"x42"	0	0
6		M4-9(R)	30"x24"	4	20
7		M4-9(L)	30"x24"	4	20
8		M4-9(S)	30"x36"	2	15
9		M4-8a	24"x18"	2	6
10		D3-1A	30"x12"	14	35
12		R11-3	30"x48"	2	20
13		R11-2	30"x48"	2	20
14		G20-2	48"x24"	0	0
15		TYPE III* BARRICADE	8'	6	

TRAFFIC NOTES:

- DISTANCES SHOWN ARE APPROXIMATE AND MAY BE ADJUSTED IN THE FIELD BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER TO AVOID CONFLICT OR OBSTRUCTION BY EXISTING TREES, SIGNS, DRIVEWAYS ETC, PRESENT IN THE FIELD BUT NOT SHOWN ON THE PLANS.
- ALL CONSTRUCTION SIGNS SHALL CONFORM WITH THE CURRENT EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- ALL TRAFFIC CONTROL DEVICES INCLUDING SIGNS, BARRICADES, PLASTIC DRUMS AND WARNING LIGHTS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- SIGNS, IF REQUIRED WITH THE TYPE III BARRICADES, SHALL BE MOUNTED ABOVE THE BARRICADES ON SEPARATE SUPPORTS.
- TRAFFIC CONTROL DEVICES ARE TO BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF THE PROJECT. NIGHT PATROLS OF THE CONSTRUCTION AREA AND DETOUR ROUTE SHALL BE CONDUCTED BY THE CONTRACTOR AND WILL NOT BE PAID SEPARATELY, BUT WILL BE INCLUDED IN THE UNIT PRICE BID FOR TEMPORARY TRAFFIC CONTROL ITEMS.
- ALL SIGNS SHALL BE RETRO-REFLECTIVE WITH A MATERIAL THAT HAS A SMOOTH, SEALED OUTER SURFACE.
- ALL SPECIAL SIGNS SHALL BE PLACED ONE (1) WEEK PRIOR TO CONSTRUCTION.

LEGEND

- ┤ TEMP SIGN
┤ TYPE III BARRICADES



DETOUR/ADVANCED SIGNING PLAN
NTS



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9/12/17	5025-17-0100	Value	CDS	MCH	MIDLAND	Value	H: NTS V: NTS	Value	Value
MIDLAND COUNTY ROAD COMMISSION POSEYVILLE ROAD OVER JO DRAIN MAINTAINING TRAFFIC									

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