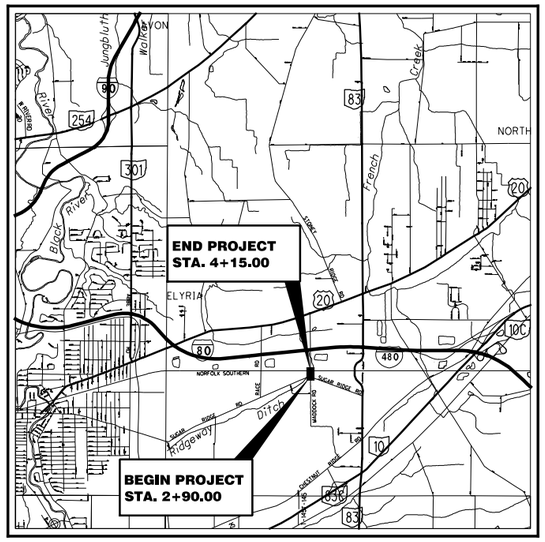

LOCATION MAP

LATITUDE: 41 °22'31" LONGITUDE: 82 °01'55"

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE HIGHWAY
FEDERAL ROUTES
STATE ROUTES
COUNTY & TOWNSHIP ROADS
OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (2021)	DATA NOT AVAILABLE
DESIGN YEAR ADT (2041)	DATA NOT AVAILABLE
DESIGN HOURLY VOLUME (2041)	DATA NOT AVAILABLE
DIRECTIONAL DISTRIBUTION	DATA NOT AVAILABLE
TRUCKS (24 HOUR B&C)	DATA NOT AVAILABLE
DESIGN SPEED	35
LEGAL SPEED	35

DESIGN FUNCTIONAL CLASSIFICATION:
LOCAL

NHS PROJECT ____ NO

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig
OHIO811.org Before You Dig
OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

PLAN PREPARED BY:
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OH 44114

ENGINEERS SEAL:

SIGNED:
DATE:

CITY OF NORTH RIDGEVILLE

LORAIN COUNTY, OHIO

MADDOCK ROAD

BRIDGE REPLACEMENT

OVER RIDGEWAY DITCH

INDEX OF SHEETS:

PROJECT DESCRIPTION

CONSTRUCTION OF A NEW, PRECAST CONCRETE BOX CULVERT WITH RIP RAP AND ROCK CHANNEL PROTECTION IN PLACE OF THE EXISTING CULVERT UNDER MADDOCK ROAD. CHANNEL REALIGNMENT WILL BE PERFORMED FOR APPROXIMATELY 200 LINEAR FEET TO MITIGATE FUTURE EROSION ISSUES AT THE INLET OF THE STRUCTURE. REPLACEMENT OF EXISTING GUARDRAIL OVER THE STRUCTURE AND RESURFACING OF MADDOCK ROAD IS ALSO PROPOSED.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.42 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.25 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	0.67 ACRES

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE ROADWAY EXCEPT AS NOTED ON SHEET 6, AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON THE PLANS.

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
						800	1-15-21	
BP-3.1	1-17-20	TC-61.30	7-19-19			832	10-19-18	
BP-3.2	1-18-19	TC-71.10	1-19-18					
MGS-1.1	1-19-18							
MGS-2.1	1-19-18							
MGS-2.3	7-18-14							
MGS-4.1	1-20-17							
MGS-4.2	7-19-13							
MGS-4.3	1-18-13							
MGS-5.3	7-15-16							
DM-1.1	7-17-20							
DM-1.2	1-18-13							
MT-101.60	1-17-20							

APPROVED _____
DATE _____ COUNCIL, CITY OF NORTH RIDGEVILLE
ORD. NO. _____

APPROVED _____
DATE _____ CITY OF NORTH RIDGEVILLE, DIRECTOR OF ENGINEERING

FEDERAL PROJECT NO. XXX XXX
PID NO. XXXXX
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT °

MADDOCK RD.

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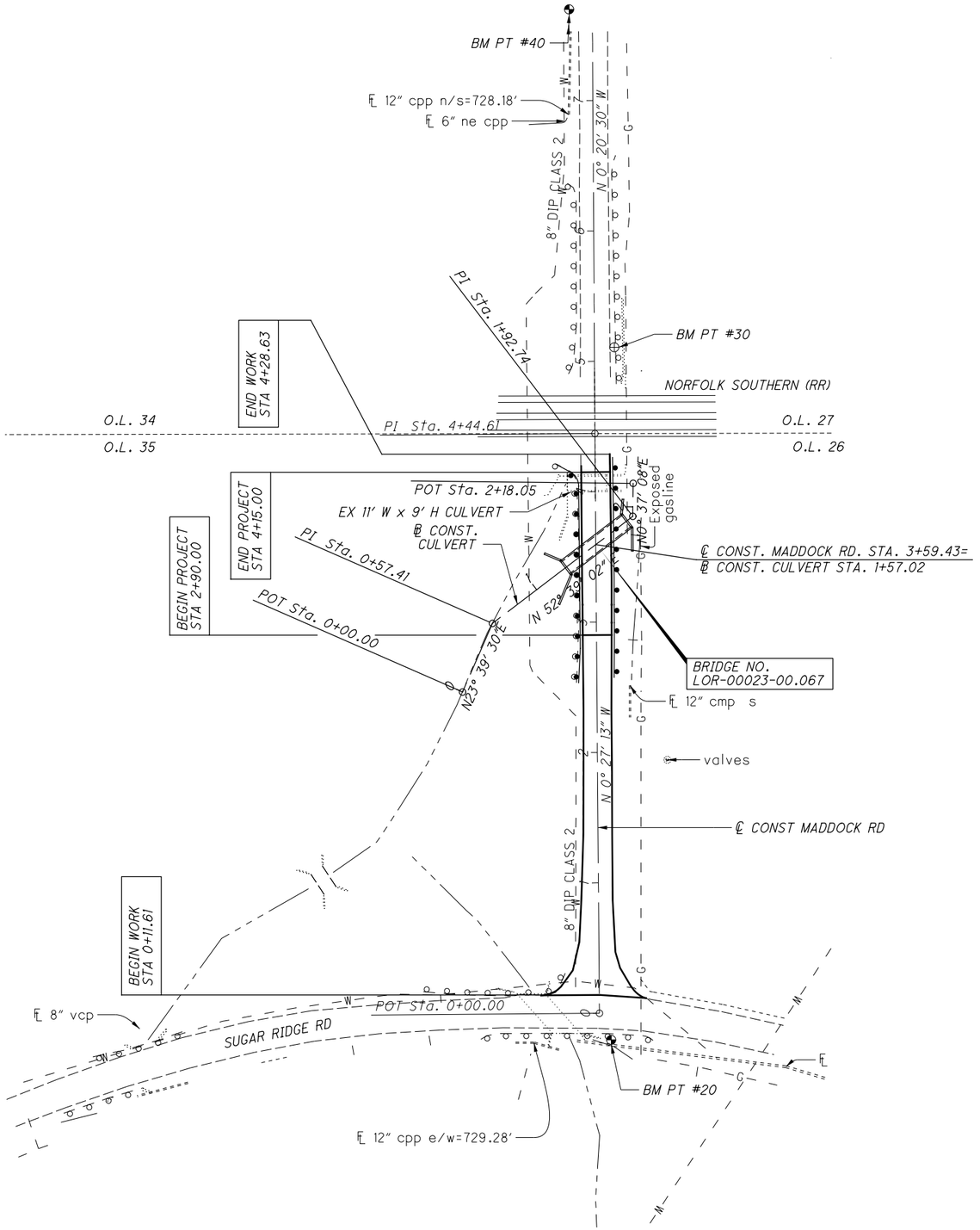


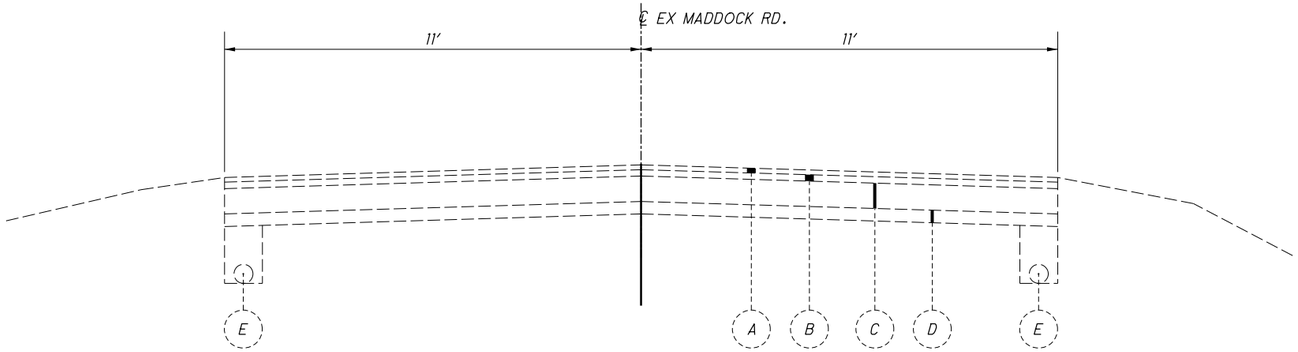
FOR BENCHMARKS INFORMATION SEE SHEET 4.

HORIZONTAL SCALE IN FEET
0 25 50 100

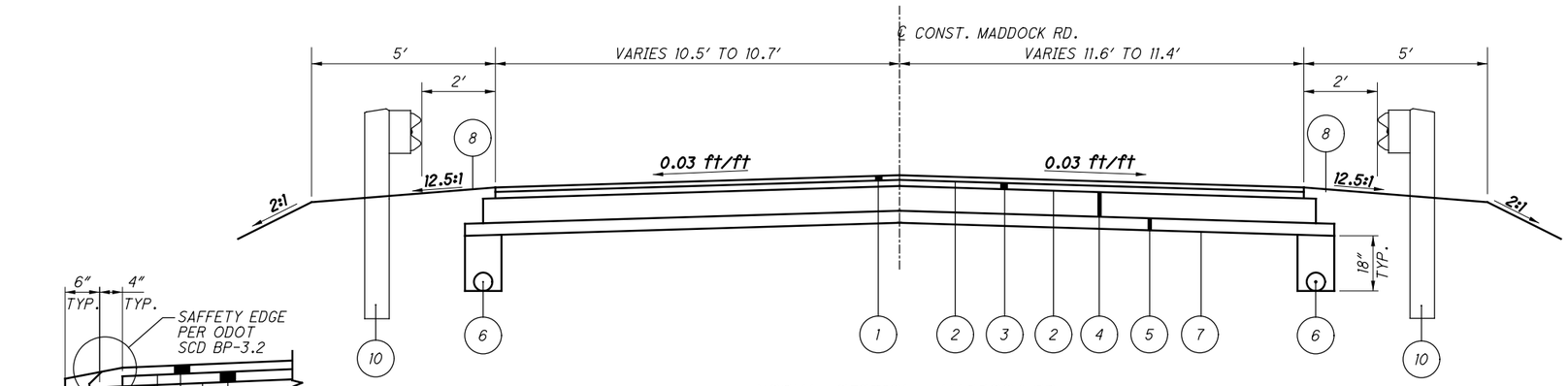
CALCULATED HB
CHECKED SNP

SCHEMATIC PLAN

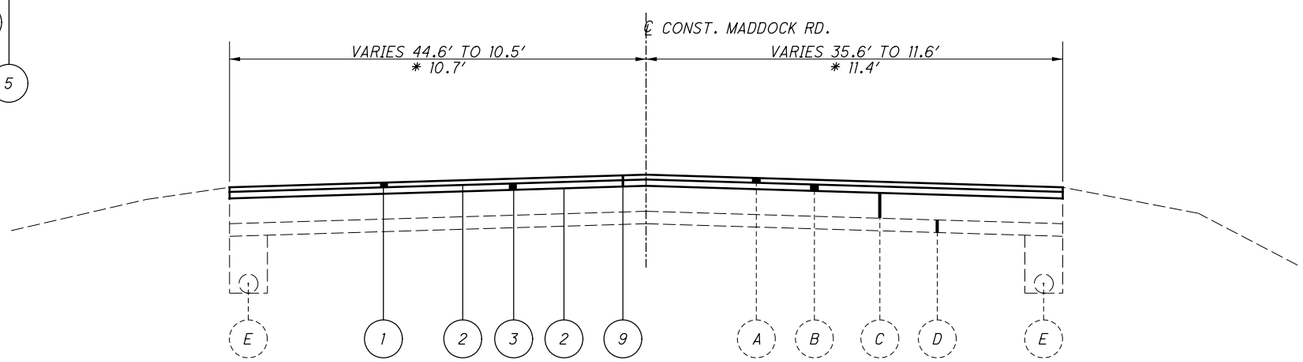
MADDOCK RD.



EXISTING SECTION - MADDOCK RD.



NORMAL SECTION - MADDOCK RD.
STA. 2+90.00 TO STA. 4+15.00



RESURFACING SECTION - MADDOCK RD.
STA. 0+14.00 TO STA. 2+90.00
* STA. 4+15.00 TO STA. 4+28.63

EXISTING LEGEND:

- (A) ITEM 448 - 1.5″ ASPHALT SURFACE COURSE
- (B) ITEM 448 - 2″ ASPHALT INTERMEDIATE COURSE
- (C) ITEM 301 - 8″ BITUMINOUS AGGREGATE BASE
- (D) ITEM 304 - 4″ AGGREGATE BASE
- (E) ITEM 605 - 6″ UNDERDRAIN

PROPOSED LEGEND:

- (1) ITEM 448 - 1½″ ASPHALT SURFACE COURSE, TYPE 1 (448), PG64-22
- (2) ITEM 407 - TACK COAT
- (3) ITEM 448 - 2″ ASPHALT INTERMEDIATE COURSE, TYPE 2 (448)
- (4) ITEM 301 - 8″ ASPHALT CONCRETE BASE, PG64-22
- (5) ITEM 304 - 4″ AGGREGATE BASE
- (6) ITEM 605 - 6″ SHALLOW PIPE UNDERDRAIN
- (7) ITEM 204 - SUBGRADE COMPACTION
- (8) ITEM 659 - SEEDING AND MULCHING
- (9) ITEM 254 - 3½″ PAVEMENT PLANING, ASPHALT CONCRETE
- (10) ITEM 606 - GUARDRAIL, TYPE MGS
- (11) ITEM 617 - COMPACTED AGGREGATE

TYPICAL SECTIONS

MADDOCK RD.

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UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

CENTURYLINK
203 WEST 9TH STREET
LORAIN, OHIO 44052
ATTN: STEVE WALEND
PHONE: 440-244-8423
EMAIL: _____

CITY WATER DEPARTMENT
35010 BAINBRIDGE ROAD
NORTH RIDGEVILLE, OHIO 44039
ATTN: BRIAN O'GRADY
PHONE: _____
EMAIL: bogrady@nridgeville.org

NISOURCE (COLUMBIA GAS)
3101 NORTH RIDGE ROAD E
LORAIN, OHIO 44055
ATTN: ADAM WOODIE, PE
PHONE: 440-240-6144
EMAIL: awoodie@nisource.com

FIRST ENERGY
6326 LAKE AVENUE
ELYRIA, OHIO 44035
ATTN: JEFF HALL
PHONE:440-326-3207
EMAIL: _____

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

SURVEYING PARAMETERS

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

VERTICAL POSITIONING:
ORTHOMETRIC HEIGHT DATUM: NAVD 88
GEOID: GEOID 12A

HORIZONTAL POSITIONING:
REFERENCE FRAME: NAD 83 (CONUS)
ELLIPSOID: GRS 80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: PROJECT GROUND COORDINATES
COMBINED SCALE FACTOR: 1.00007257
ENG./METRIC CONVERSION: 1 METER = 3.28083333 FEET

PROJECT GROUND COORDINATES ARE SCALED FROM OHIO STATE PLANE NORTH ZONE (3401) GRID POINT N: 631675.936 E: 2102889.245 ELEVATION: 708.68. GRID POINT ESTABLISHED USING GPS ODOT VRS RTK NETWORK. ELEVATION OF GRID POINT HELD AS PRIMARY BENCHMARK. BASIS OF BEARINGS ESTABLISHED ON BASIS OF GRID NORTH OF THE STATE PLANE NORTH (3401) COORDINATE SYSTEM.

UNITS ARE IN U.S. SURVEY FEET.

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING.

ITEM 204 - PROOF ROLLING 1 HOUR.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, SOIL ANALYSIS TEST
2 EACH

659, TOPSOIL
137 CU. YD.

659, REPAIR SEEDING AND MULCHING
62 SQ. YD.

659, INTER-SEEDING
62 SQ. YD.

659, COMMERCIAL FERTILIZER
0.28 TON

659, LIME
0.03 ACRES

659, WATER
3.5 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

MAINTENANCE OF POSITIVE DRAINAGE DURING CONSTRUCTION

THE CONSTRUCTION OF THE PROPOSED CULVERT AND THE SURROUNDING EARTHWORK SHALL BE PERFORMED IN A SEQUENCE THAT PRESERVES THE POSITIVE FLOW OF DRAINAGE. FLOW FROM THE EXISTING STREAM CHANNEL SHALL BE ALLOWED TO PASS THROUGH THE EXISTING CULVERT UNDER MADDOCK ROAD UNTIL THE PROPOSED CULVERT IS IN PLACE AND DEEMED READY TO ACCEPT THE FLOW FROM THE STREAM, AT WHICH TIME THE EARTHWORK NECESSARY TO REDIRECT THE EXISTING CHANNEL MAY BE PERFORMED. THE CHANNEL SHALL NOT BE DIRECTED TO THE PROPOSED CULVERT UNTIL AUTHORIZED BY THE ENGINEER. ANY LABOR, MATERIALS, OR EQUIPMENT NECESSARY TO PROVIDE POSITIVE DRAINAGE AND CONTINUED FLOW FROM THE EXISTING CHANNEL THROUGH THE EXISTING CULVERT DURING CONSTRUCTION IS CONSIDERED INCIDENTAL TO THE MAINTENANCE OF TRAFFIC LUMP SUM ITEM.

CHANNEL EMBANKMENTS

FILL AND SLOPE PORTIONS OF THE EXISTING CHANNEL TO DRAIN AS SHOWN IN THESE PLANS. IN CHANNEL EMBANKMENT AREAS WHICH WILL NOT SUPPORT ANY PORTION OF THE NEW ROAD BED OR STRUCTURAL EMBANKMENTS, THE CONTRACTOR MAY UTILIZE EMBANKMENT METHODS MEETING THE FOLLOWING REQUIREMENTS:

CLEAR ALL WEEDS AND BRUSH IN AREAS WHERE CHANNEL EMBANKMENTS ARE TO BE PLACED. THE REQUIREMENTS FOR MOISTURE, DENSITY CONTROL, BENCHING AND SUITABLE MATERIALS IS WAIVED. PLACE THE MATERIAL IN 8-INCH LOOSE LIFTS. THE ENGINEER MAY INCREASE THE LIFT THICKNESS IN ORDER TO BRIDGE THE SOFT OR WET FOUNDATIONS DEPENDING ON THE STABILITY OF THE FOUNDATION. THE ENGINEER MAY INCREASE THE LIFT THICKNESS UP TO 24-INCHES TO OBTAIN STABILITY AT THE TOP OF THE LIFT.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 203, EMBANKMENT.

EXISTING SUBSURFACE DRAINAGE

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS ENCOUNTERED DURING CONSTRUCTION. IF POSSIBLE, PROPOSED UNDERDRAINS SHOULD BE CONNECTED TO THE EXISTING UNDERDRAINS TO THE SOUTH ALONG MADDOCK ROAD. IN THE EVENT THAT THIS IS NOT FEASIBLE, THE UNDERDRAINS SHALL BE OUTLET TO THE ADJACENT SLOPES.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

601, TIED CONCRETE BLOCK MAT, TYPE 1 4 SQ. YD.
605 6" UNCLASSIFIED PIPE UNDERDRAINS 50 FT.
611 6" CONDUIT, TYPE F 50 FT.
611, PRECAST REINFORCED CONCRETE OUTLET 2 EACH

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 620 - DELINEATOR, POST SURFACE MOUNTED, AS PER PLAN

THE REBOUNDABLE TUBULAR PYLON SHALL BE MANUFACTURED BY QWICK KURB, INC. OR ANY APPROVED EQUAL.

ITEM 832 - EROSION CONTROL

THE FOLLOWING QUANTITY IS CARRIED TO THE GENERAL SUMMARY:

ITEM 832 - EROSION CONTROL 6,845 EACH

PROJECT CONTROL INFORMATION - BENCHMARKS

PT. #	STATION	OFFSET	SIDE	NORTHING	EASTING	ELEV	DESCRIPTION
10	*	*		622398.01	2097415.09	734.88	IPINS W/ RED CAP ON THE NORTH SIDE OF SUGAR RIDGE RD., 449.4' EAST OF THE CENTERLINE MONUMENT FOUND AT THE SUGAR RIDGE RD. AND MADDOCK RD. INTERSECTION.
20	*	*		622471.88	2096984.66	732.15	IPINS W/ RED CAP ON THE SOUTH THE SOUTH SIDE OF SUGAR RIDGE RD. AND MADDOCK RD., 8.7' EAST OF A HEADWALL, 3.7' BEHIND THE GUARDRAIL AND 22.1' SSE OF THE CENTERLINE MONUMENT FOUND AT THE SUGAR RIDGE RD. AND MADDOCK RD. INTERSECTION.
30	5+10.66	15.27'	RT	623003.00	2096987.02	738.19	IPINS W/ RED CAP OF THE EAST SIDE OF MADDOCK ROAD BETWEEN THE EDGE OF PAVEMENT AND THE GUARDRAIL, 37.3' NORTH OF THE NORTH RAIL OF THE NORTH RAILROAD LINE.
40	13+39.27	14.41'	LT	623831.41	2096952.40	732.74	IPINS W/ RED CAP SET ON THE WEST SIDE OF MADDOCK ROAD, 829.13' NORTH OF PROJECT CONTROL PT. 30

* OUTSIDE THE PROJECT LIMITS, NO STATION/OFFSET AVAILABLE

CALCULATED HB CHECKED SNP

GENERAL NOTES

MADDOCK RD.

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ITEM 614, MAINTAINING TRAFFIC (NOTICE OF CLOSURE SIGN)

NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. [AT THE APPROVAL OF THE ENGINEER, PORTABLE CHANGEABLE MESSAGE SIGNS MAY BE USED IN LIEU OF THE STANDARD FLATSHEET SIGN FOR CLOSURE DURATIONS OF LESS THAN 1 WEEK.]

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTICE OF CLOSURE SIGN TIME TABLE

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
RAMP &	>=2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
ROAD	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES	<= 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.

ITEM 614, MAINTAINING TRAFFIC (ROAD CLOSED SIGN)

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

MADDOCK ROAD SOUTH OF CENTER RIDGE ROAD INTERSECTION, MADDOCK ROAD NORTH OF SUGAR RIDGE ROAD INTERSECTION, AND NORTH AND SOUTH OF THE PROJECT SITE.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER 1.9 M. GAL.

ITEM 614, REPLACEMENT SIGN

FLATSHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED, BUT GOOD, CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ECT.

AN ESTIMATED QUANTITY OF 2 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ADVANCE WORK ZONE INFORMATION

ADVANCE WORK ZONE INFORMATION SIGNS, AS USED IN THIS NOTE, ARE FIXED MESSAGE TYPES. THE SIGNS ARE TO BE LOCATED AT EXTREME DISTANCE FROM THE WORK AREA, AS SHOWN IN THE PLANS.

THE SIGNS SHALL BE BLACK ON ORANGE (INCLUDING A BLACK BORDER). THE LAYOUT SHALL BE IN CONFORMANCE WITH TEM CHAPTER 211.

WHEN REGULATORY INFORMATION IS PROVIDED, IT SHALL BE DISPLAYED SEPARATELY AS A STANDARD BLACK-ON-WHITE SIGN. MIXING OF BLACK-ON-WHITE REGULATORY INFORMATION ON A BLACK-ON-ORANGE INFORMATION SIGN IS PROHIBITED.

IF THE MOTORIST IS BEING DETOURED OR IF AN ALTERNATE ROUTE IS PROVIDED, THE ROUTE SHOULD BE SIGNED WITH ASSEMBLIES CONSISTING OF THE APPROPRIATE BLACK-ON-ORANGE DETOUR OR ALT MARKER WITH A STANDARD ROUTE MARKER AND ARROW PLATE. IF MORE TARGET VALUE IS DESIRED, THIS TRAIL BLAZER INFORMATION MAY BE SHOWN ON AN ORANGE PANEL (OMUTCD SECTION 2D.32).

ROUTE SIGN ASSEMBLIES SHALL BE SIZED ACCORDING TO THE TYPE OF ROAD ON WHICH THEY ARE LOCATED IN ACCORDANCE WITH THE OMUTCD.

SUPPORTS FOR SIGN INSTALLATIONS SHALL CONFORM TO ALL EXISTING STANDARDS FOR PERMANENT SIGNS. THESE SIGNS SHOULD NOT BE ATTACHED TO EXISTING SUPPORTS.

WHERE THE PLANS CALL FOR AN OVERLAY TO COVER A PORTION OF AN EXISTING SIGN, THE OVERLAY SHALL BE BLACK-ON-ORANGE. LETTER SIZES SHOULD BE THE SAME AS ON THE EXISTING SIGNS. WHEN LANE ARROWS ARE TO BE COVERED, A BLANK OVERLAY SHOULD BE PLACED OVER EACH OF THE AFFECTED ARROWS. WHEN A RAMP IS BEING CLOSED, RATHER THAN USING A BLANK OVERLAY TO COVER THE ENTIRE SIGN, THE LEGEND "EXIT CLOSED" (W20-H15) SHOULD BE USED ON A DIAGONAL OVERLAY (LOWER LEFT TO UPPER RIGHT) ON THE SIGN. THE SIZE OF LETTERING ON OVERLAYS AND THE SIZE OF THE OVERLAY ARE INDICATED IN THE PLANS. THE MINIMUM LETTER SIZE FOR THE DIAGONAL "EXIT CLOSED" (W20-H15) OVERLAY SHALL BE 12" C.

ALL ADVANCE WORK ZONE INFORMATION SIGN INSTALLATIONS LOCATED OUTSIDE OF THE PROJECT WORK LIMITS SHALL BE PAID FOR UNDER APPROPRIATE 630 ITEMS (SIGNS, SUPPORTS, CONCRETE, BREAKAWAY CONNECTION, OVERLAYS, REMOVALS, ETC.).

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

- FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN A NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS (CONTINUE)

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING THE SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 8 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

DETOUR NOTIFICATION

THE CONTRACTOR SHALL ADVISE THE CITY OF NORTH RIDGEVILLE (440) 353-0842 EIGHTEEN (18) DAYS IN ADVANCE OF WHEN THE DETOUR ROUTE SHOULD BE IN EFFECT. ALL WORK ZONE DEVICES REQUIRED SHALL BE FURNISHED, ERECTED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. PAYMENT FOR ALL WORK ASSOCIATED WITH THE DETOUR SHALL BE INCLUDED UNDER THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.

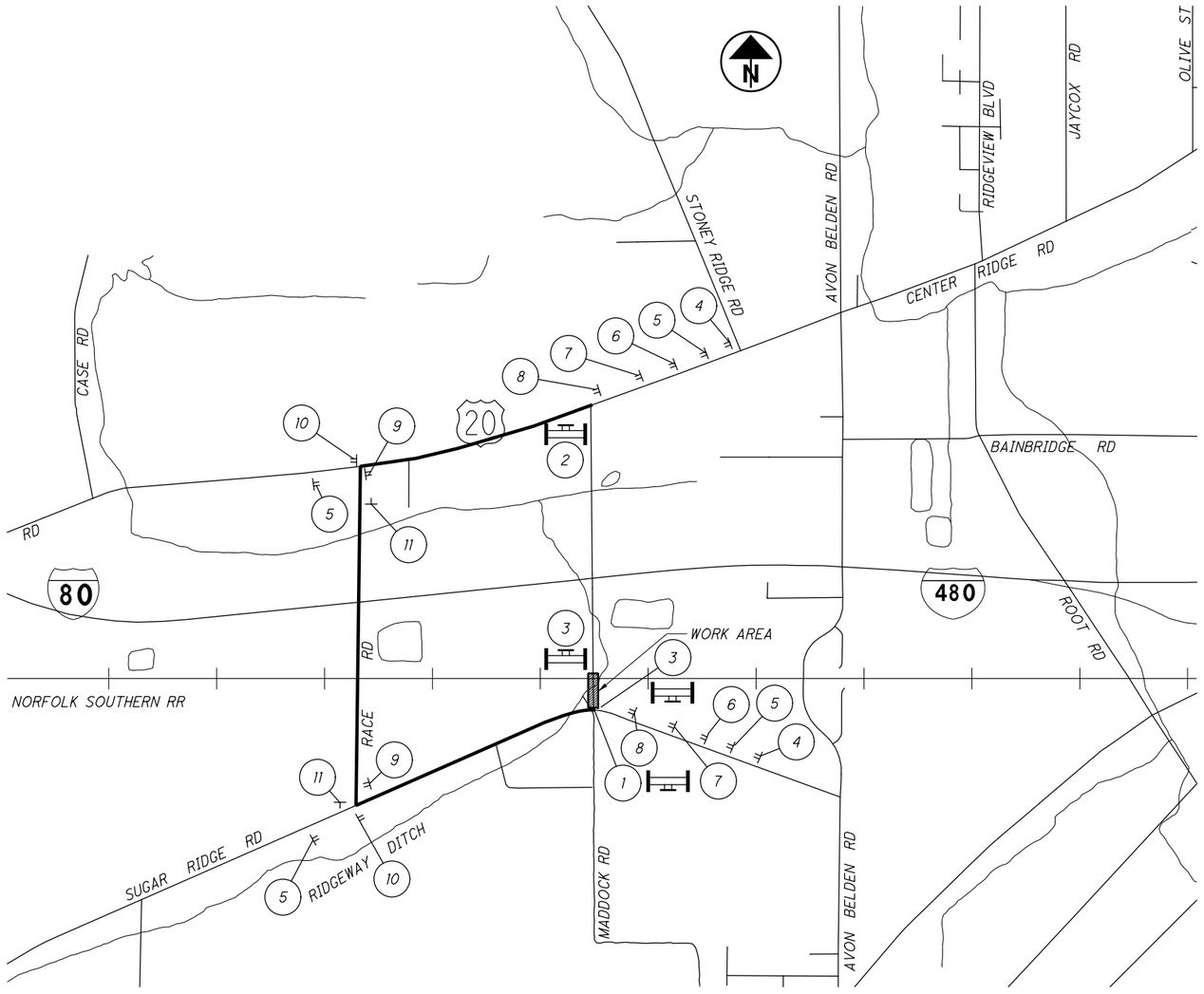
CONSTRUCTION FENCING ALONG RAILROAD PROPERTY

THE CONTRACTOR SHALL ERECT TEMPORARY CONSTRUCTION FENCING ALONG THE RAILROAD PROPERTY LINE TO ENSURE THAT NO CONSTRUCTION ACTIVITY OCCURS WITHIN THE RAILROAD RIGHT OF WAY. THE FENCING USED SHALL BE FOUR FOOT HIGH ORANGE CONSTRUCTION FENCING PRODUCED BY ULINE OR AN APPROVED EQUAL. THE FENCING AND ALL POSTS OTHER EQUIPMENT, MATERIALS, AND LABOR NEEDED TO ERECT AND SUBSEQUENTLY DISMANTLE THE TEMPORARY FENCE SHALL BE CONSIDERED INCIDENTAL TO THE LUMP SUM MAINTENANCE OF TRAFFIC BID ITEM.

CALCULATED HB CHECKED SNP

MAINTENANCE OF TRAFFIC NOTES

MADDOCK RD.



1
R11-3B-60
TYPE III BARRICADE
BRIDGE OUT
0.08 MILES AHEAD
LOCAL TRAFFIC ONLY
DETOUR
M4-10L-48

2
R11-3B-60
TYPE III BARRICADE
BRIDGE OUT
0.75 MILES AHEAD
LOCAL TRAFFIC ONLY
DETOUR
M4-10R-48

3
ROAD
CLOSED
R11-2-48
TYPE III BARRICADE

4
TYPE A
WARNING LIGHT
ROAD
WORK
AHEAD
W20-1-36

5
TYPE A
WARNING LIGHT
DETOUR
AHEAD
W20-2-36

6
TYPE A
WARNING LIGHT
ROAD
CLOSED
1500 FT
W20-3-36

7
TYPE A
WARNING LIGHT
ROAD
CLOSED
1000 FT
W20-3-36

8
TYPE A
WARNING LIGHT
ROAD
CLOSED
500 FT
W20-3-36

9
MADDOCK RD
DETOUR
M4-9R-30

10
MADDOCK RD
DETOUR
M4-9L-30

11
END
DETOUR
M4-8A-24

LEGEND:

DETOUR ROUTE

CALCULATED | CHECKED

DETOUR MAP

MADDOCK RD.

6
25

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SHEET NUM.											PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	4	8	10	13	15	17													
																		ROADWAY	
		344												202	38000	344	FT	GUARDRAIL REMOVED	
				26	156									203	10000	182	CY	EXCAVATION	
				662	119									203	20000	781	CY	EMBANKMENT	
			330											204	10000	330	SY	SUBGRADE COMPACTION	
	1													204	45000	1	HOUR	PROOF ROLLING	
		294												606	15050	294	FT	GUARDRAIL, TYPE MGS	
		1												606	25000	1	EACH	ANCHOR ASSEMBLY, TYPE A	
		2												606	26100	2	EACH	ANCHOR ASSEMBLY, TYPE E	
		2												606	26500	2	EACH	ANCHOR ASSEMBLY, TYPE T	
																		EROSION CONTROL	
	1													601	21050	1	SY	TIED CONCRETE BLOCK MAT, TYPE 1	
														616	10000	1.9	MGAL	WATER	
	2													659	00100	2	EACH	SOIL ANALYSIS TEST	
	137													659	00300	137	CY	TOPSOIL	
				929	308									659	10000	1,237	SY	SEEDING AND MULCHING	
	62													659	14000	62	SY	REPAIR SEEDING AND MULCHING	
	62													659	15000	62	SY	INTER-SEEDING	
	0.28													659	20000	0.28	TON	COMMERCIAL FERTILIZER	
	0.03													659	31000	0.03	ACRE	LIME	
	3.5													659	35000	3.5	MGAL	WATER	
	6,845													832	30000	6,845	EACH	EROSION CONTROL	
																		DRAINAGE	
														605	11100	250	FT	6" SHALLOW PIPE UNDERDRAINS	
	50													605	13300	50	FT	6" UNCLASSIFIED PIPE UNDERDRAINS	
	50													611	01500	50	FT	6" CONDUIT, TYPE F	
	2													611	99710	2	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																		PAVEMENT	
			44											252	01500	44	FT	FULL DEPTH PAVEMENT SAWING	
			812											254	01000	812	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
			71											301	46000	71	CY	ASPHALT CONCRETE BASE, PG64-22	
			36											304	20000	36	CY	AGGREGATE BASE	
			155											407	10000	155	GAL	TACK COAT	
			47											441	50000	47	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
			63											441	50300	63	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	
			53											617	10100	53	CY	COMPACTED AGGREGATE	
																		TRAFFIC CONTROL	
						6								620	40200	6	EACH	REFLECTOR	
						35								620	60001	35	EACH	DELINEATOR, POST SURFACE MOUNTED, AS PER PLAN	4
						0.16								642	00100	0.16	MILE	EDGE LINE, 4", TYPE 1	
						0.07								642	00300	0.07	MILE	CENTER LINE, TYPE 1	
						46								642	00500	46	FT	STOP LINE, TYPE 1	
						1								642	01000	1	EACH	RAILROAD SYMBOL MARKING, TYPE 1	
																		STRUCTURE 20 FOOT SPAN AND UNDER (LOR-00023-00.067))	
																		FOR ESTIMATED QUANTITIES, SEE SHEET 20	
																		MAINTENANCE OF TRAFFIC	
														614	12420	LS		DETOUR SIGNING	
	2													614	12500	2	EACH	REPLACEMENT SIGN	
																		INCIDENTALS	
														614	11000	LS		MAINTAINING TRAFFIC	
	8													614	11110	8	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
														619	16010	9	MNTH	FIELD OFFICE, TYPE B	
														623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
														624	10000	LS		MOBILIZATION	

CALCULATED HB
CHECKED SNP

GENERAL SUMMARY

MADDOCK RD.

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SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	202 GUARDRAIL REMOVED		606 GUARDRAIL, TYPE MGS	606 ANCHOR ASSEMBLY, TYPE A	606 ANCHOR ASSEMBLY, TYPE E	606 ANCHOR ASSEMBLY, TYPE T
			FROM	TO		FT		FT	EACH	EACH	EACH
11	R-1	MADDOCK RD	2+53.49	4+21.45	LT	177					
11	GR-1	MADDOCK RD	2+53.49	4+20.93	LT			137.50	1	1	1
11	GR-2	MADDOCK RD	2+57.44	4+26.19	RT			156.25		1	1
11	R-2	MADDOCK RD	2+59.24	4+26.16	RT	167					
TOTALS CARRIED TO GENERAL SUMMARY						344		293.75	1	2	2

CALCULATED HB
CHECKED SNP

ROADWAY SUBSUMMARY

MADDOCK RD.

8
25

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SHEET NO.	REF NO.	STATION FROM	STATION TO	CHAIN	SIDE	OUTLET ELEVATION		605										
								6" SHALLOW PIPE UNDERDRAINS										
								FT										
11	UD-1	2+90.00	4+15.00	MADDOCK RD	LT			125										
11	UD-2	2+90.00	4+15.00	MADDOCK RD	RT			125										
TOTALS CARRIED TO GENERAL SUBSUMMARY								250										

CALCULATED HB
CHECKED SNP

UNDERDRAIN SUBSUMMARY

MADDOCK RD.

9
25

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LOCATION	STATION TO STATION		SIDE	LENGTH L	AVERAGE WIDTH W	SURFACE AREA A A=LxW	COMPUTER GENERATED AREA		204 SUBGRADE COMPACTION	252 FULL DEPTH PAVEMENT SAWING	254 3 1/2" PAVEMENT PLANING, ASPHALT CONCRETE		301 8" ASPHALT CONCRETE BASE, PG64-22	304 4" AGGREGATE BASE	407 TACK COAT, 0.08 GAL/YD	441 1 1/2"ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	441 2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2 (448)	617 COMPACTED AGGREGATE	
				FT	FT	SQ FT	SQ FT		SY	FT	SY		CY	CY	GAL	CY	CY	CY	
MADDOCK RD	0+14.00	4+28.63	LT&RT				10107.49								89.84	46.79	62.52		
MADDOCK RD	0+14.00	2+90.00	LT&RT				7008.35				778.71				62.30				
MADDOCK RD	2+90.00		LT&RT							22									
MADDOCK RD	2+90.00	4+15.00	LT&RT	125.00	22.77	2846.25							70.63						
MADDOCK RD	2+90.00	4+15.00	LT&RT	125.00	23.77	2971.25			330.14					36.32				53.24	
MADDOCK RD	4+15.00		LT&RT							22									
MADDOCK RD	4+15.00	4+28.63	LT&RT	13.63	22.10	301.22					33.47				2.68				
TOTALS THIS SHEET									330	44	812		71	36	155	47	63	53	

CALCULATED HB
CHECKED SNP

PAVEMENT SUBSUMMARY

MADDOCK RD.

10
25

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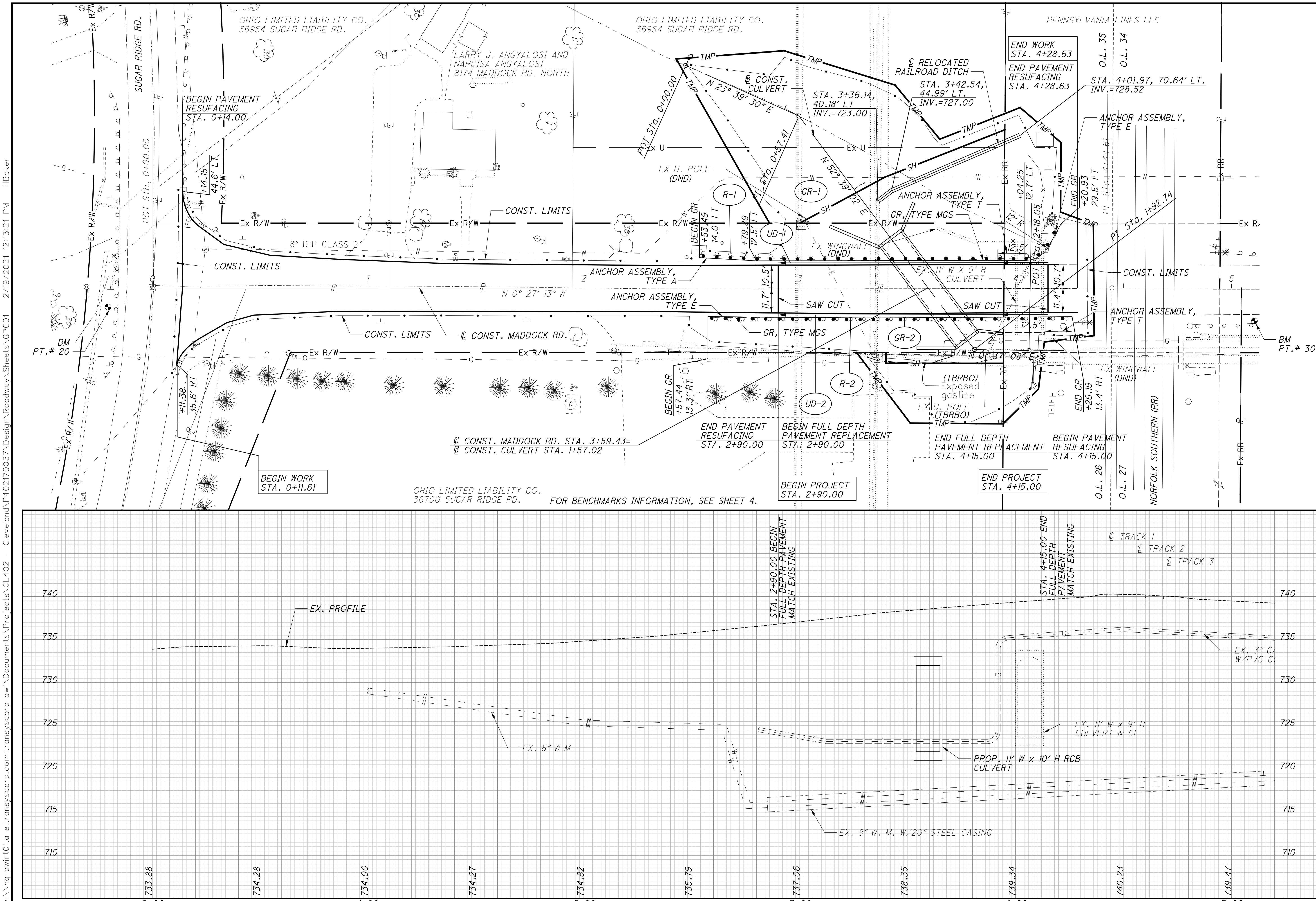
OHIO LIMITED LIABILITY CO.
36954 SUGAR RIDGE RD.
LARRY J. ANGYALOSI AND
NARCISA ANGYALOSI
8174 MADDOCK RD. NORTH
PENNSYLVANIA LINES LLC
SUGAR RIDGE RD.
BEGIN PAVEMENT
RESUFACING
STA. 0+14.00
END WORK
STA. 4+28.63
END PAVEMENT
RESUFACING
STA. 4+28.63
℄ RELOCATED
RAILROAD DITCH
STA. 3+42.54,
44.99' LT.
INV.=727.00
℄ CONST.
CULVERT
STA. 3+36.14,
40.18' LT
INV.=723.00
STA. 4+01.97, 70.64' LT.
INV.=728.52
ANCHOR ASSEMBLY,
TYPE E
POT Sta. 0+00.00
N 23° 39' 30" E
N 52° 39' 02" E
EX U. POLE
(DND)
ANCHOR ASSEMBLY,
TYPE T
GR, TYPE MGS
CONST. LIMITS
8" DIP CLASS 2
EX WINGWALL
(DND)
EX. 11' W X 9' H
CULVERT
ANCHOR ASSEMBLY,
TYPE A
ANCHOR ASSEMBLY,
TYPE E
SAW CUT
N 0° 27' 13" W
℄ CONST. MADDOCK RD.
BM
PT.# 20
BM
PT.# 30
(TBRBO)
Exposed
gasline
EX U. POLE
(TBRBO)
EX WINGWALL
(DND)
℄ CONST. MADDOCK RD. STA. 3+59.43=
℄ CONST. CULVERT STA. 1+57.02
END PAVEMENT
RESURFACING
STA. 2+90.00
BEGIN FULL DEPTH
PAVEMENT REPLACEMENT
STA. 2+90.00
END FULL DEPTH
PAVEMENT REPLACEMENT
STA. 4+15.00
BEGIN PAVEMENT
RESURFACING
STA. 4+15.00
BEGIN WORK
STA. 0+11.61
BEGIN PROJECT
STA. 2+90.00
END PROJECT
STA. 4+15.00
OHIO LIMITED LIABILITY CO.
36700 SUGAR RIDGE RD.
FOR BENCHMARKS INFORMATION, SEE SHEET 4.
NORFOLK SOUTHERN (RR)
O.L. 35
O.L. 34
O.L. 26
O.L. 27
PI Sta. 1+92.74
R-1
R-2
GR-1
GR-2
UD-1
UD-2
STA. 2+90.00 BEGIN
FULL DEPTH PAVEMENT
MATCH EXISTING
STA. 4+15.00 END
FULL DEPTH
PAVEMENT
MATCH EXISTING
℄ TRACK 1
℄ TRACK 2
℄ TRACK 3
EX. PROFILE
EX. 8" W.M.
EX. 8" W. M. W/20" STEEL CASING
PROP. 11' W x 10' H RCB
CULVERT
EX. 11' W x 9' H
CULVERT @ CL
EX. 3" GA
W/PVC C
740
735
730
725
720
715
710
733.88
734.28
734.00
734.27
734.82
735.79
737.06
738.35
739.34
740.23
739.47
0+00
1+00
2+00
3+00
4+00
5+00

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED
CHECKED

PLAN AND PROFILE
STA. 0+00 TO STA. 5+00

MADDOCK RD.

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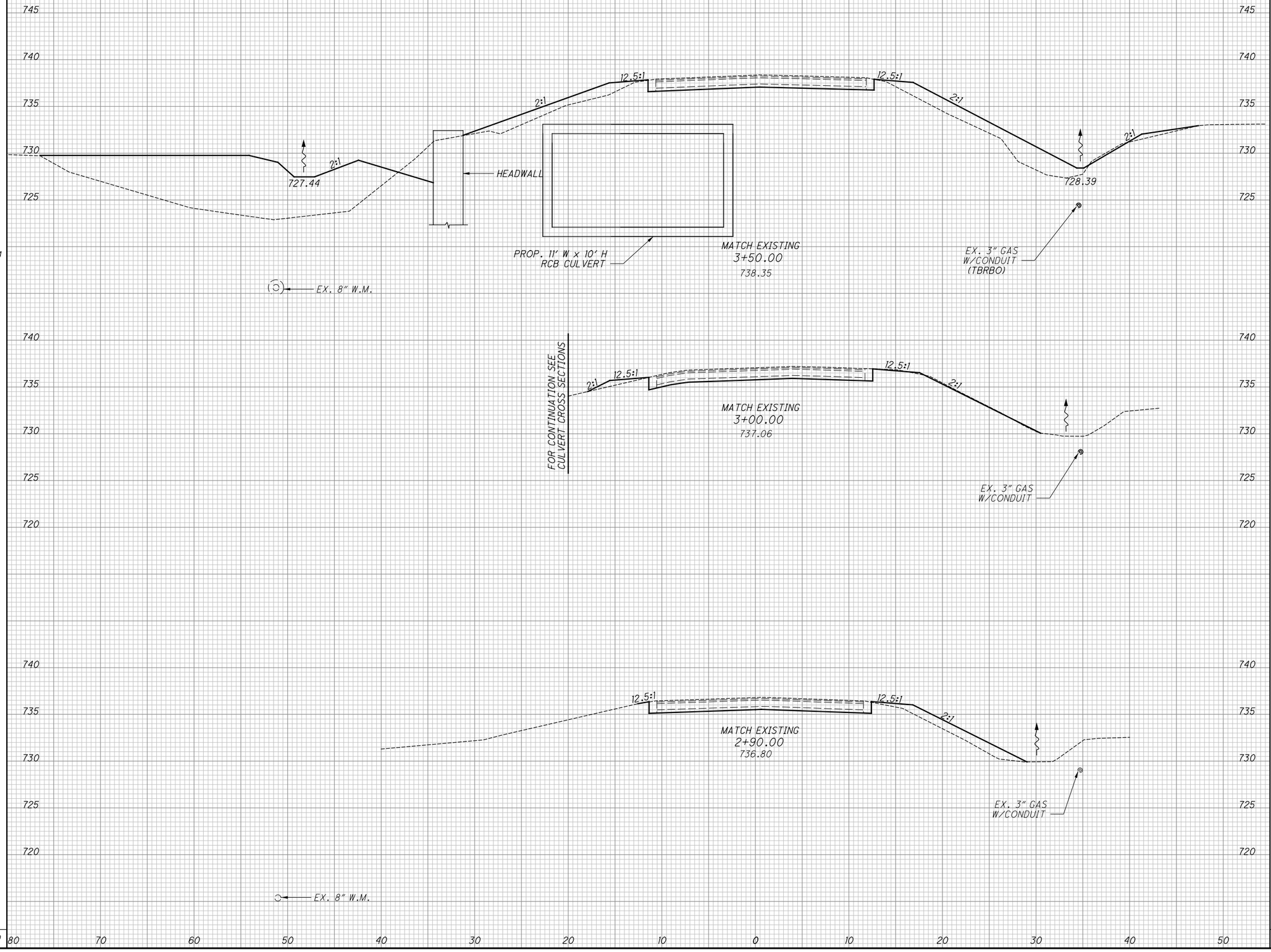
SEEDING END WIDTH	SEEDING SQ. YDS.
105	364
26	25
19	389



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
11	208		
3	2	13	194
2	13		
		1	3
		14	197

CALCULATED HB
CHECKED SNP

CROSS SECTIONS - MADDOCK RD. STA. 2+90 TO STA. 3+50

MADDOCK RD.

12
25

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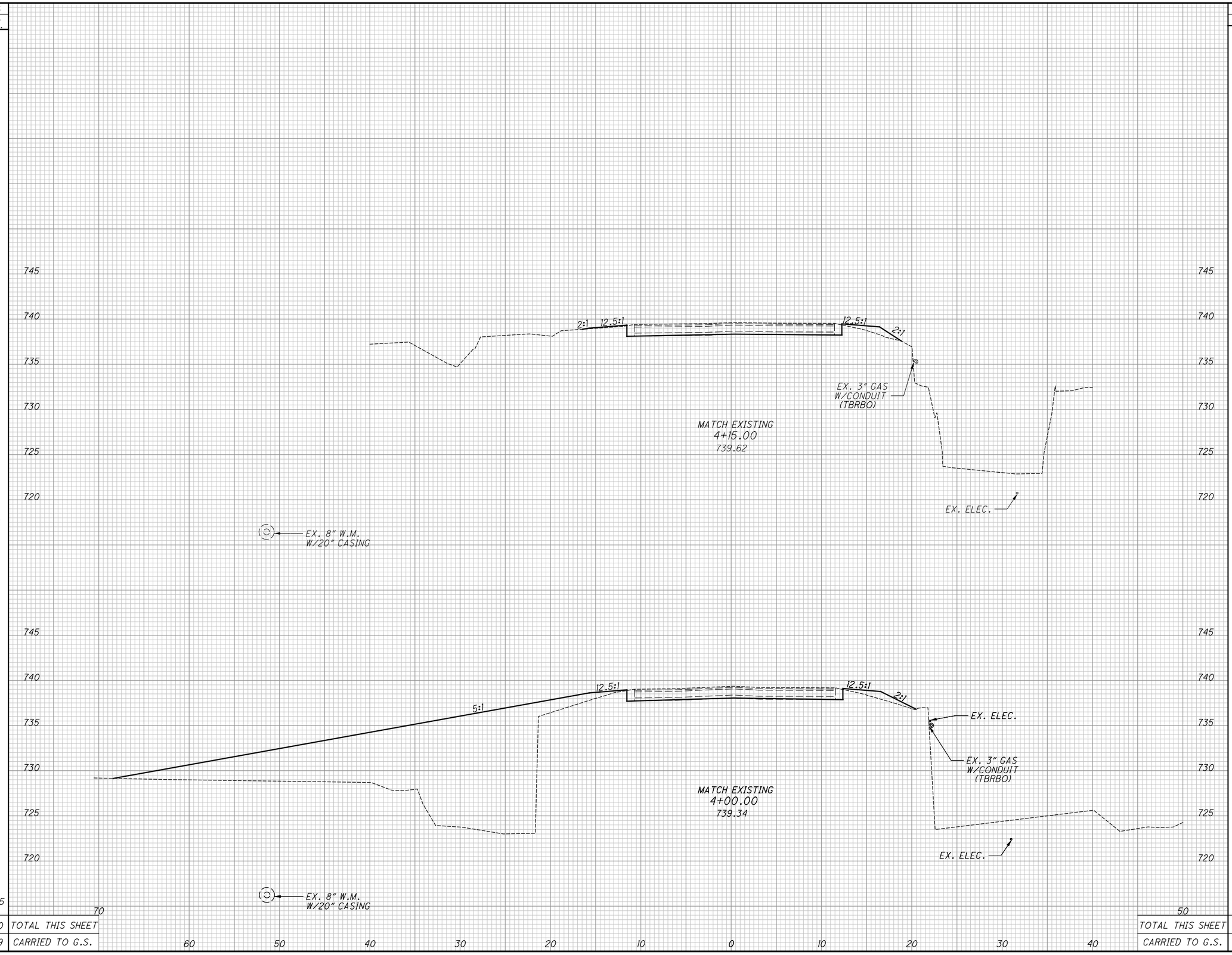
SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
12			2	5		
65					1	83
66			2	294		
475					12	465
	540	TOTAL THIS SHEET			13	548
	929	CARRIED TO G.S.			26	662



CALCULATED HB
CHECKED SNP

CROSS SECTIONS - MADDOCK RD. STA. 4+00 TO STA. 4+15

MADDOCK RD.

13
25

SEEDING END WIDTH	SEEDING SQ. YDS.
35	21
16	39
0	60

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
6	10		
		2	2
7	1		
		6	1
0	0		
		8	3

CALCULATED HB
CHECKED SNP

CROSS SECTIONS - CULVERT
STA. 0+05.31 TO STA. 0+57.41

MADDOCK RD.

14
25

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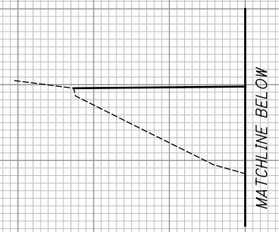
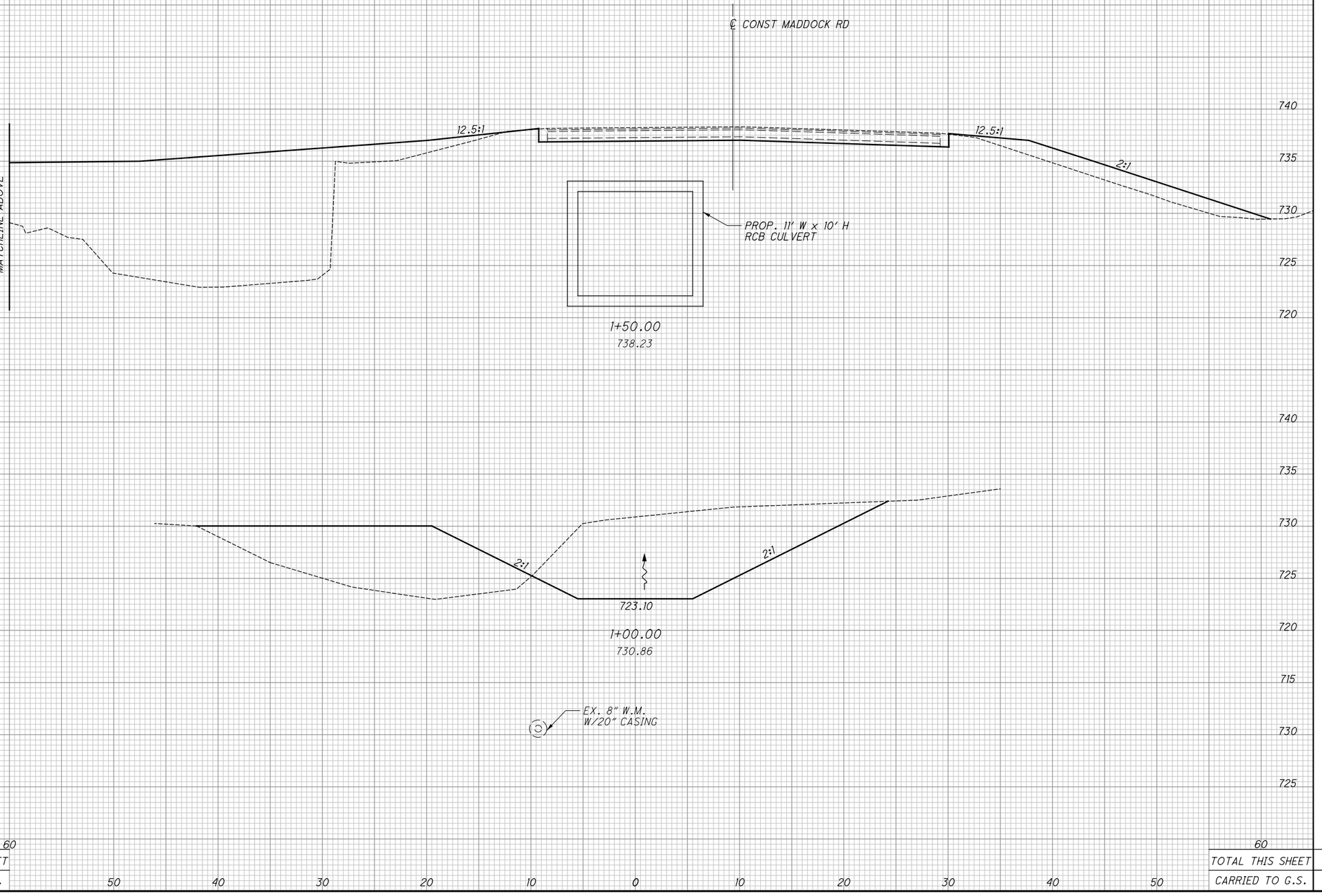
SEEDING	
END WIDTH	SQ. YDS.
70	248
	248
	308

70 60





60 50 40 30 20 10 0 10 20 30 40 50 60

END AREA		VOLUME	
CUT	FILL	CUT	FILL
182	137		
		148	116
TOTAL THIS SHEET		148	116
CARRIED TO G.S.		156	119

CALCULATED HB
CHECKED SNP

CROSS SECTIONS - CULVERT
STA. 1+00 TO STA. 1+50

MADDOCK RD.

15
25

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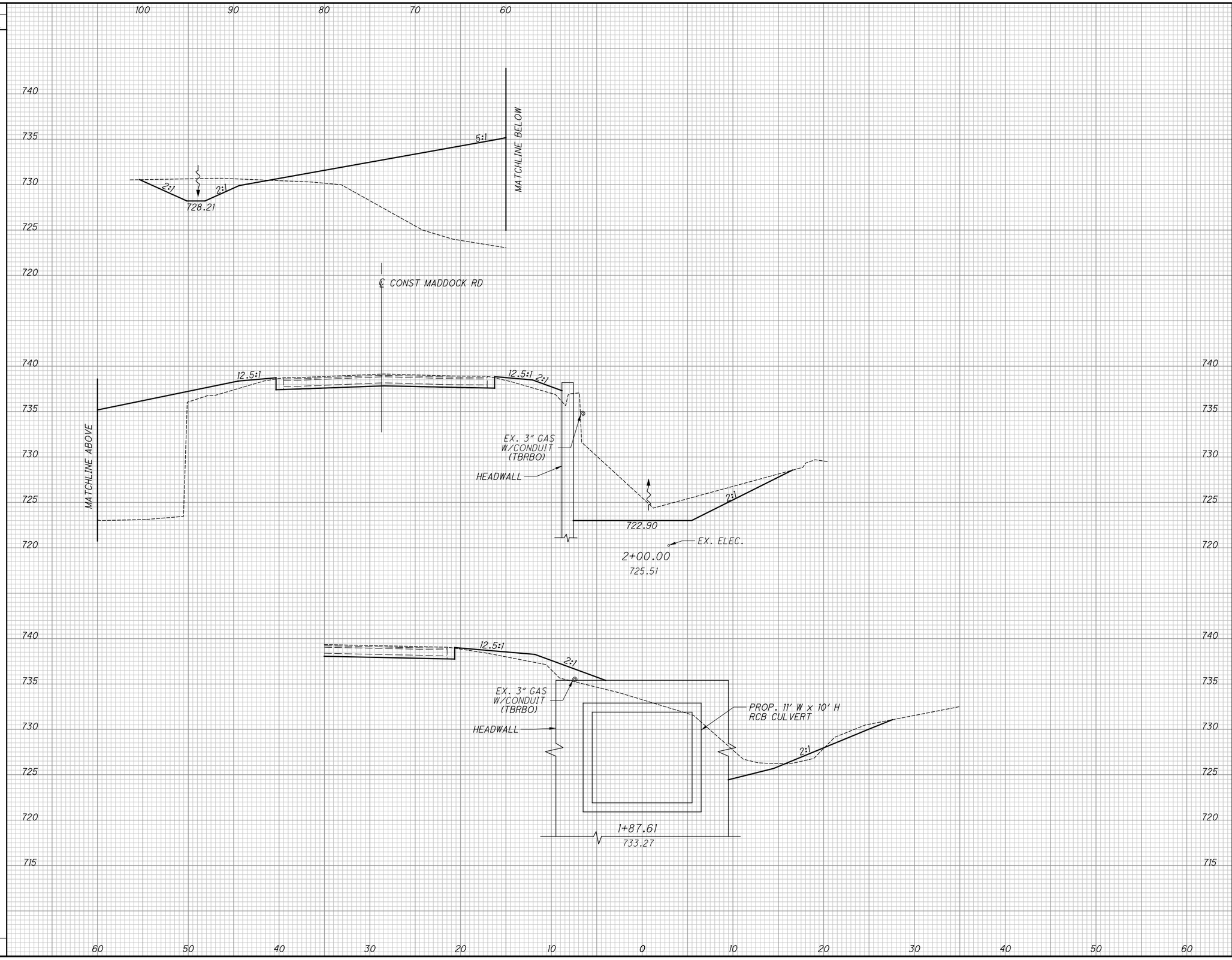
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED HB
CHECKED SNP



CROSS SECTIONS - CULVERT
STA. 1+87.61 TO STA. 2+00

MADDOCK RD.

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SHEET NO.	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	SIDE	620 REFLECTOR	620 DELINEATOR, POST SURFACE MOUNTED, AS PER PLAN	642 EDGE LINE, 4", TYPE 1	642 CENTER LINE, TYPE 1	642 STOP LINE, TYPE 1	642 RAILROAD SYMBOL MARKING, TYPE 1
						EACH	EACH	MILE	MILE	FT	EACH
18	EL-1	MADDOCK RD.	0+12	4+29	RT			0.08			
18	EL-2	MADDOCK RD.	0+14	4+29	LT			0.08			
18	SL-1	MADDOCK RD.	0+42		LT					16	
18	CL-1	MADDOCK RD.	0+42	4+29	CL				0.07		
18	SL-2	MADDOCK RD.	2+00		RT					10	
18	S-1	MADDOCK RD.	2+26		RT						1
18	SL-3	MADDOCK RD.	2+52		RT					10	
18	RE-1	MADDOCK RD.	2+57		RT	1					
18	DP-1	MADDOCK RD.	3+20	4+25	CL		35				
18	SL-4	MADDOCK RD.	3+83		RT					10	
18	RE-2	MADDOCK RD.	4+04	4+21	LT	5					
TOTALS CARRIED TO GENERAL SUMMARY						6	35	0.16	0.07	46	1

CALCULATED HB
CHECKED SNP

SIGNING & PAVEMENT MARKING SUBSUMMARY

MADDOCK RD.

17
25

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LEGEND:

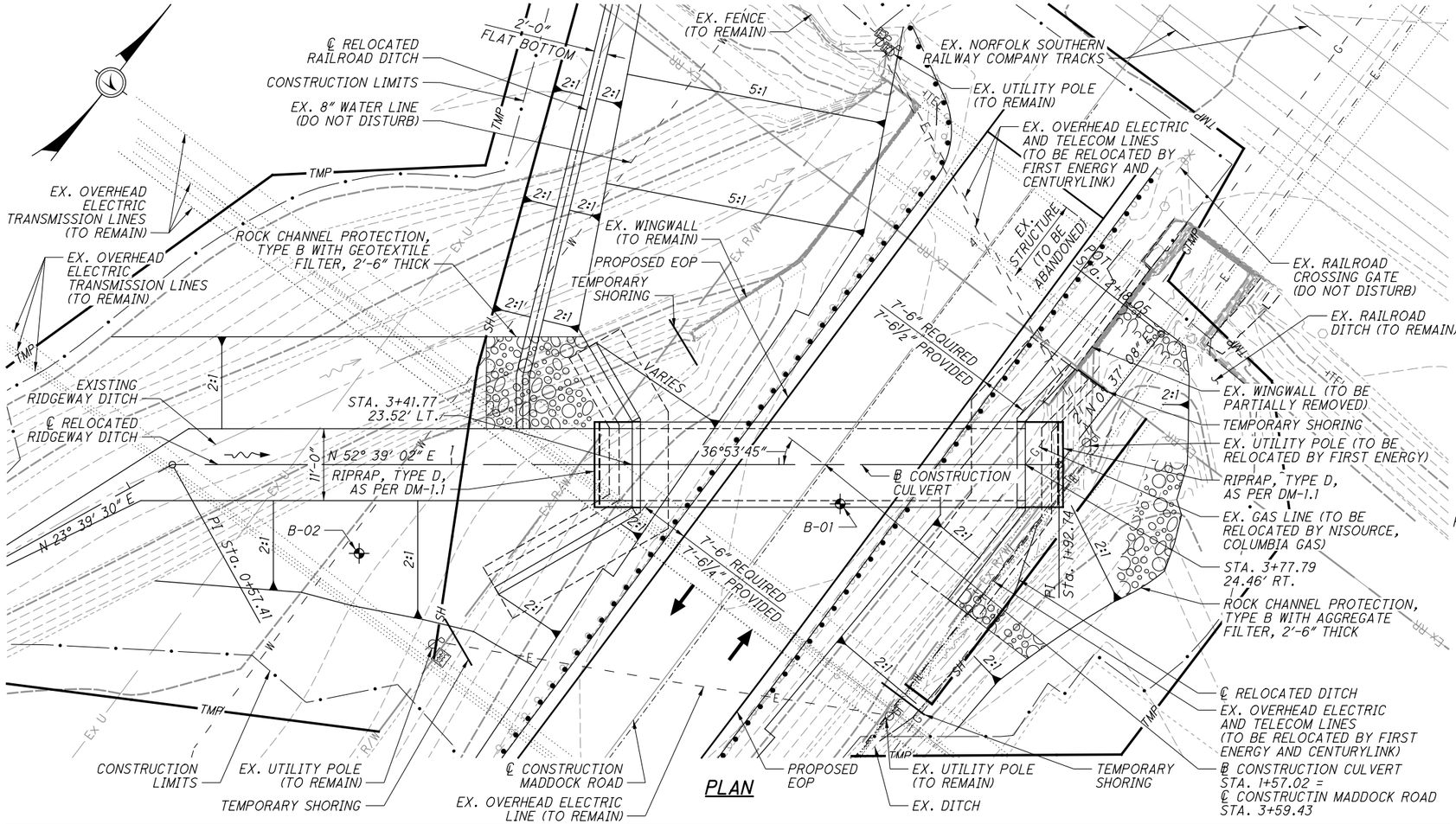
CL-1	CENTER LINE, TYPE 1
EL-1	EDGE LINE, 4", TYPE 1
SL-1	STOP LINE, TYPE 1
S-1	RAILROAD SYMBOL MARKING, TYPE 1
DP-1	DELINEATOR, POST SURFACE MOUNTED, AS PER PLAN
RE-1	REFLECTOR
	EXISTING SIGN
DND	DO NOT DISTURB

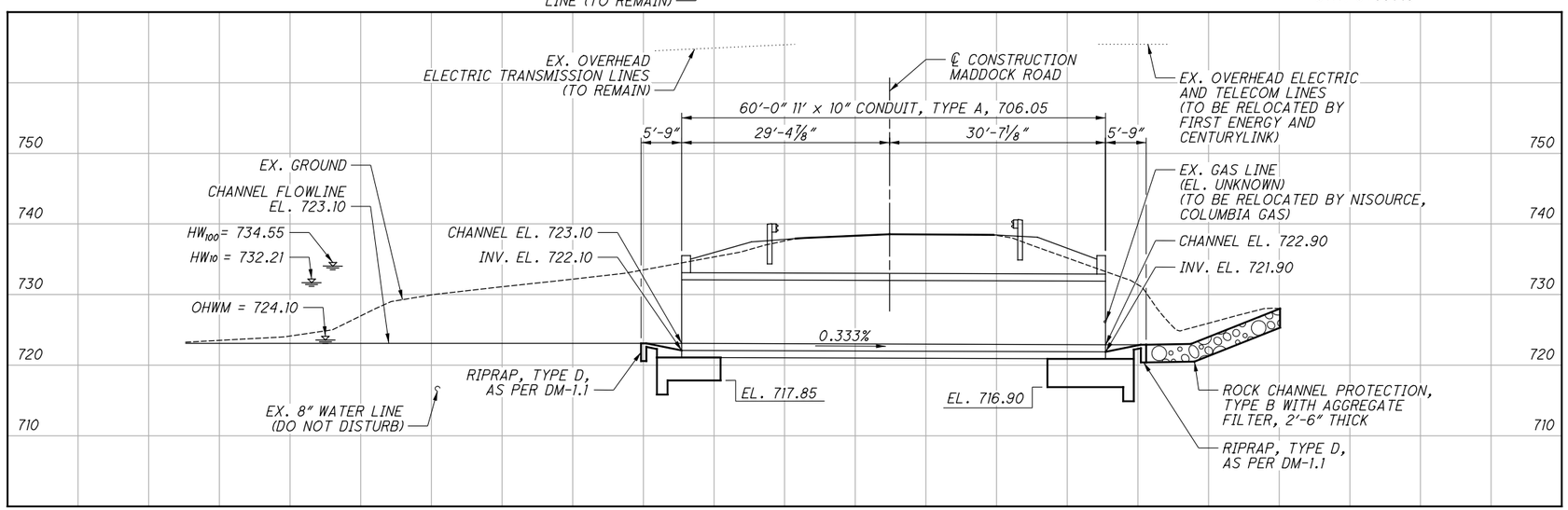
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED | CHECKED

SIGNING AND PAVEMENT MARKING PLAN

MADDOCK RD.





PROFILE ALONG ℄ CONSTRUCTION CULVERT

BENCHMARK DATA

BM #1: STA. 5+10.66, 15.27' RT., EL. = 738.19, RED CAP ON THE EAST SIDE OF MADDOCK ROAD BETWEEN THE EDGE OF PAVEMENT AND THE GUARDRAIL, 37.3' NORTH OF THE NORTH RAIL OF NORTH RAILROAD LINE

BM #2: NORTHING 622471.875, EASTING 2096984.658, EL. = 732.15, RED CAP ON THE SOUTH SIDE OF SUGAR RIDGE ROAD, 8.7' EAST OF HEADWALL, 3.7' BEHIND GUARDRAIL, AND 22.1' SOUTH SOUTHEAST OF SUGAR RIDGE ROAD AND MADDOCK ROAD INTERSECTION

FOR ADDITIONAL BENCHMARK INFORMATION, SEE ROADWAY PLAN SHEET 4/25

NOTES:

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC: N/A

LEGEND:

⌖ BORING LOCATION

EOP = EDGE OF PAVEMENT

HYDRAULIC DATA:

DRAINAGE AREA = 5.10 SQ. MILES

FIS Q (100) =	1075 CFS	V (100) =	8.3 FT/S
Q (10) =	709 CFS	V (10) =	8.3 FT/S

EXISTING STRUCTURE

TYPE: 11'-0" SPAN x 20'-0" LONG STONE MASONRY ARCH WITH A 10'-0" AND 13'-4" LONG CAST-IN-PLACE FOUR-SIDED CULVERT CELL ON EACH END

ROADWAY: 22'-0"± OUT/OUT EDGE OF PAVEMENT

VEHICULAR LIVE LOAD: UNKNOWN

SKEW: NONE

WEARING SURFACE: ASPHALT CONCRETE

APPROACH SLABS: NONE

ALIGNMENT: TANGENT

CROWN: 0.03± FT/FT

STRUCTURE FILE NUMBER: 4774590

DATE BUILT: 07/01/1920

DISPOSITION: TO BE ABANDONED

PROPOSED STRUCTURE

TYPE: 11' SPAN x 10' RISE FOUR-SIDED PRECAST CONCRETE BOX CULVERT

ROADWAY: 22'-0"± OUT/OUT EDGE OF PAVEMENT

VEHICULAR LIVE LOAD: HL-93

FUTURE WEARING SURFACE: 0.060 KSF

SKEW: 36°53'45"

APPROACH SLABS: NONE

ALIGNMENT: TANGENT

CROWN: 0.03± FT/FT

COORDINATES: LATITUDE 41°22'31.06" N
LONGITUDE 82°01'54.79" W

DECK AREA: 359 SF

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	ZTW	RSB	02/08/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
RSB		4774591	

LORAIN COUNTY
STA. 3+59.43

SITE PLAN
BRIDGE NO. LOR-00023-00.067
MADDOCK ROAD OVER RIDGEWAY DITCH

MADDOCK ROAD

1 / 7

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STRUCTURE GENERAL NOTES

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE 9TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020, AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

DESIGN LOADING:

VEHICULAR LIVE LOAD: HL-93
FUTURE WEARING SURFACE (FWS) OF 0.060 FSF

DESIGN DATA:

CONCRETE CLASS QC1 -
COMPRESSIVE STRENGTH 4 KSI (SUBSTRUCTURE)
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

FOUNDATION BEARING RESISTANCE:

INLET FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LIMIT STATE BEARING PRESSURE OF 2.91 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LIMIT STATE BEARING PRESSURE OF 4.35 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 4.40 KIPS PER SQUARE FOOT.
OUTLET FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LIMIT STATE BEARING PRESSURE OF 3.12 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LIMIT STATE BEARING PRESSURE OF 4.48 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 4.51 KIPS PER SQUARE FOOT.

POROUS BACKFILL WITH GEOTEXTILE FABRIC:

POROUS BACKFILL WITH GEOTEXTILE FABRIC 1'-6" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE. WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

PREFORMED EXPANSION JOINT FILLER:

PREFORMED EXPANSION JOINT FILLER (P.E.J.F.) CONFORMING TO ODOT CMS 705.03, 1 INCH THICK, SHALL BE PLACED ABOVE THE FOOTING BETWEEN THE SIDES OF THE BOX CULVERT AND THE ENDS OF THE WINGWALLS. PAYMENT FOR MATERIALS AND INSTALLATION SHALL BE INCLUDED WITH ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER.

WATERPROOFING:

TYPE 2 WATERPROOFING, PER ODOT CMS 512.08 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

TYPE 2 WATERPROOFING, PER ODOT CMS 512.08 AND 711.25 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

SEALING OF FORESLOPE WALL AND WINGWALLS:

ALL EXPOSED FORESLOPE WALL AND WINGWALL CONCRETE SHALL BE SEALED WITH EPOXY-URETHANE SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS ON THIS SHEET. PAYMENT FOR THE EPOXY-URETHANE SEALER SHALL BE PER ITEM 512 - SEALING OF CONCRETE SURFACES.

NORFOLK SOUTHERN COORDINATION:

UNDER NO CIRCUMSTANCES SHALL THERE BE ANY WORK PERFORMED WITHIN THE RAILROAD RIGHT-OF-WAY WITHOUT THE PROPER WRITTEN AUTHORIZATION AND/OR FLAGGING PROTECTION FROM THE RAILROAD.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS THAT ARE NOT LISTED SEPARATELY FOR PAYMENT. THIS ITEM ALSO INCLUDES THE REMOVAL, AS NECESSARY, OF EXISTING STRUCTURE ELEMENTS TO ONE FOOT BELOW THE FINISHED GRADE.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN:

REMOVE IN-SITU SOILS BEHIND THE PROPOSED WINGWALLS AND BACKFILL WITH SUITABLE MATERIALS PER ODOT CMS 503.08. PAYMENT FOR REMOVAL OF IN-SITU SOILS AND REPLACEMENT WITH SUITABLE MATERIALS SHALL BE INCLUDED WITH ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN.

ITEM 511 - CLASS QC1 CONCRETE, MISC.: PLUG WALL

THIS ITEM SHALL CONSIST OF CONSTUCTING THE PLUG WALLS AT EACH END OF THE EXISTING CULVERT. TWO LAYERS OF 3 X 3, W4.5 x W4.5 WELDED WIRE FABRIC, CONFORMING TO ODOT CMS 709.10, SHALL BE PLACED IN EACH FACE OF THE PLUG WALL. THE WELDED WIRE FABRIC SHALL EXTEND TO THE INTERIOR LIMITS OF THE EXISTING CULVERT OPENING. NUMBER 5 REINFORCING BARS SHALL BE LOCATED IN THE EXISTING CULVERT SO THEY WILL BE CENTERED IN THE PLUG WALL. THE DOWEL BARS SHALL BE INSTALLED IN DOWEL HOLES PER ODOT CMS 510 USING NONSHRINK, NONMETALLIC GROUT CONFORMING TO ODOT CMS 705.20.

ALL LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS REQUIRED TO PERFORM THE DESCRIBED WORK SHALL BE INCLUDED WITH ITEM 511 - CLASS QC1 CONCRETE, MISC: PLUG WALL.

ITEM SPECIAL - STRUCTURES (EXISTING WINGWALL FOOTING ELEVATION)

SUFFICIENT INFORMATION WAS NOT AVAILABLE TO DETERMINE THE ELEVATION OF THE EXISTING WINGWALL FOOTING ADJACENT TO THE PROPOSED HEADWALL FOOTING. IT IS ADVISED THE CONTRACTOR FIELD VERIFY THE EXISTING WINGWALL FOOTING ELEVATION PRIOR TO BEGINNING WORK IN THIS AREA. THE CONTRACTOR SHALL VERIFY THE EXISTING WINGWALL FOOTING ELEVATION IN A MANNER THAT WILL NOT COMPROMISE THE INTEGRITY OF THE EXISTING WINGWALL. THE CONTRACTOR SHALL SUBMIT HIS PLAN OF DETERMINING THE EXISTING WINGWALL FOOTING ELEVATION TO THE ENGINEER AT LEAST 24 HOURS PRIOR TO PERFORMING THE WORK, AND SHALL RECEIVE THE ENGINEER'S APPROVAL PRIOR TO BEGINNING THE WORK. IF THE BOTTOM OF THE EXISTING WINGWALL FOOTING IS FOUND TO BE ABOVE THE PROPOSED FINISHED GRADE ELEVATION OF 723, NOTIFY THE ENGINEER IMMEDIATELY.

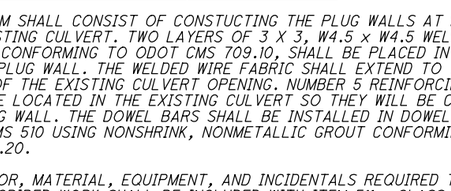
ITEM 613 - LOW STRENGTH MORTAR BACKFILL

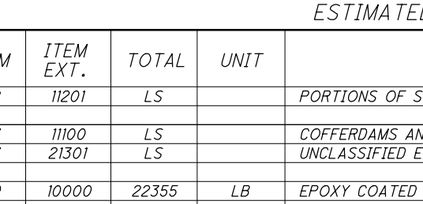
LOW STRENGTH MORTAR BACKFILL CONFORMING TO ODOT CMS 613 SHALL BE PLACED IN THE EXISTING CULVERT. THE LOW STRENGTH MORTAR BACKFILL SHALL NOT BE PLACED UNTIL THE EXISTING CULVERT IS NO LONGER NEEDED TO CARRY WATER AND THE PLUG WALLS HAVE BEEN INSTALLED AT BOTH ENDS. TO ENSURE THE EXISTING CULVERT IS FILLED TO ITS ENTIRITY AND NO VOIDS ARE PRESENT, PLACE THE LOW STRENGTH MORTAR BACKFILL FROM BOTH ENDS OF THE CULVERT. IN ADDITION, AN INJECTION POINT LOCATED IN THE EXISTING STONE MASONRY ARCH CULVERT SECTION, AT THE CONTRACTOR'S CHOSEN LOCATION, SHALL ALSO BE UTILIZED FOR PLACING THE LOW STRENGTH MORTAR BACKFILL.

ALL LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS REQUIRED TO PERFORM THE DESCRIBED WORK, INCLUDING THE COST ASSOCIATED WITH THE INJECTION POINT, SHALL BE INCLUDED WITH ITEM 613 - LOW STRENGTH MORTAR BACKFILL.

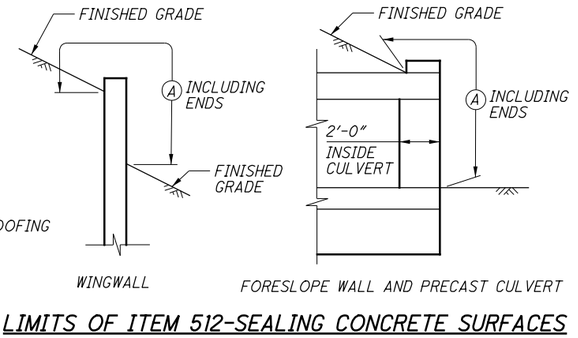
ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	2 / 7
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN	2 / 7
509	10000	22355	LB	EPOXY COATED REINFORCING STEEL	
511	46012	42	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL	
				NOT INCLUDING FOOTING	
511	46512	148	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	
511	46612	4	CY	CLASS QC1 CONCRETE WITH QC/QA, HEADWALL	
511	53010	8	CY	CLASS QC1 CONCRETE, MISC.: PLUG WALL	2 / 7
512	10100	124	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	33000	262	SY	TYPE 2 WATERPROOFING	
516	13600	74	SF	1" PREFORMED EXPANSION JOINT FILLER	
518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
SPECIAL	53000200	LS		STRUCTURES (EXISTING WINGWALL FOOTING ELEVATION)	2 / 7
601	11001	17	SY	RIPRAP, TYPE D, AS PER PLAN	
601	32104	21	CY	ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FILTER	
601	32110	84	CY	ROCK CHANNEL PROTECTION, TYPE B WITH AGGREGATE FILTER	
611	95552	60	FT	11' X 10' CONDUIT, TYPE A, 706.05	
613	41200	160	CY	LOW STRENGTH MORTAR BACKFILL	



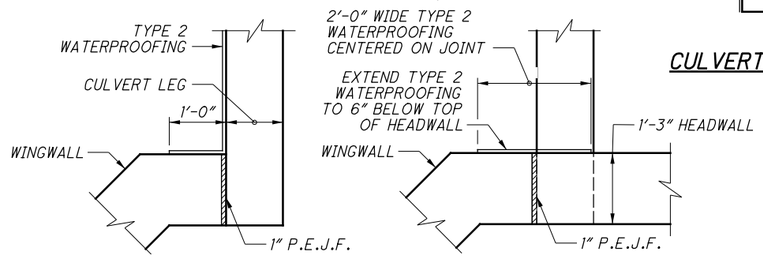


CULVERT WATERPROOFING DETAIL

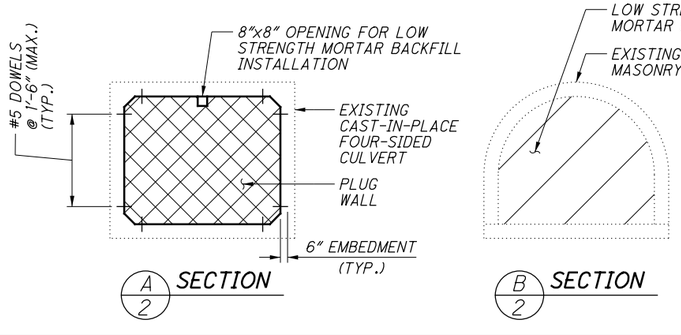


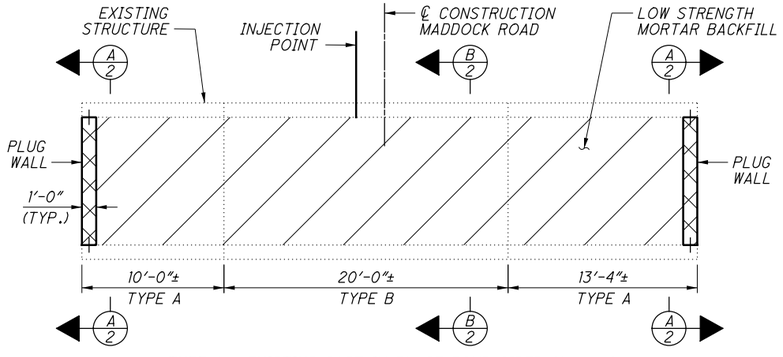
LIMITS OF ITEM 512-SEALING CONCRETE SURFACES

(A) - SEAL ENTIRE CONCRETE SURFACE AREA



HEADWALL WATERPROOFING DETAILS





TYPE A = EXISTING CAST-IN-PLACE FOUR-SIDED CULVERT
TYPE B = EXISTING STONE MASONRY ARCH

EXISTING CULVERT PROFILE

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED GJZ | DRAWN GJZ | REVIEWED RSB | DATE 02/08/21
CHECKED ZTW | REVISED | STRUCTURE FILE NUMBER 4774591

GENERAL NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. LOR-00023-00.067
MADDOCK ROAD OVER RIDGEWAY DITCH

MADDOCK ROAD

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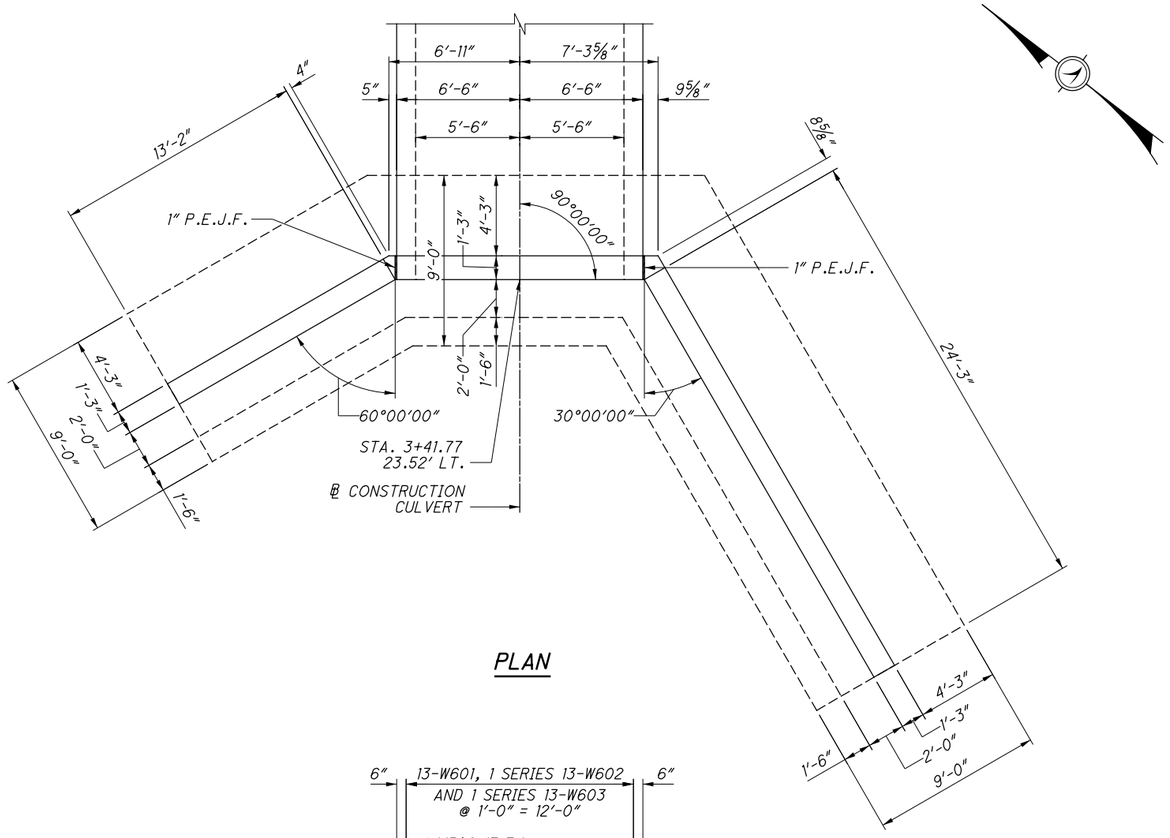
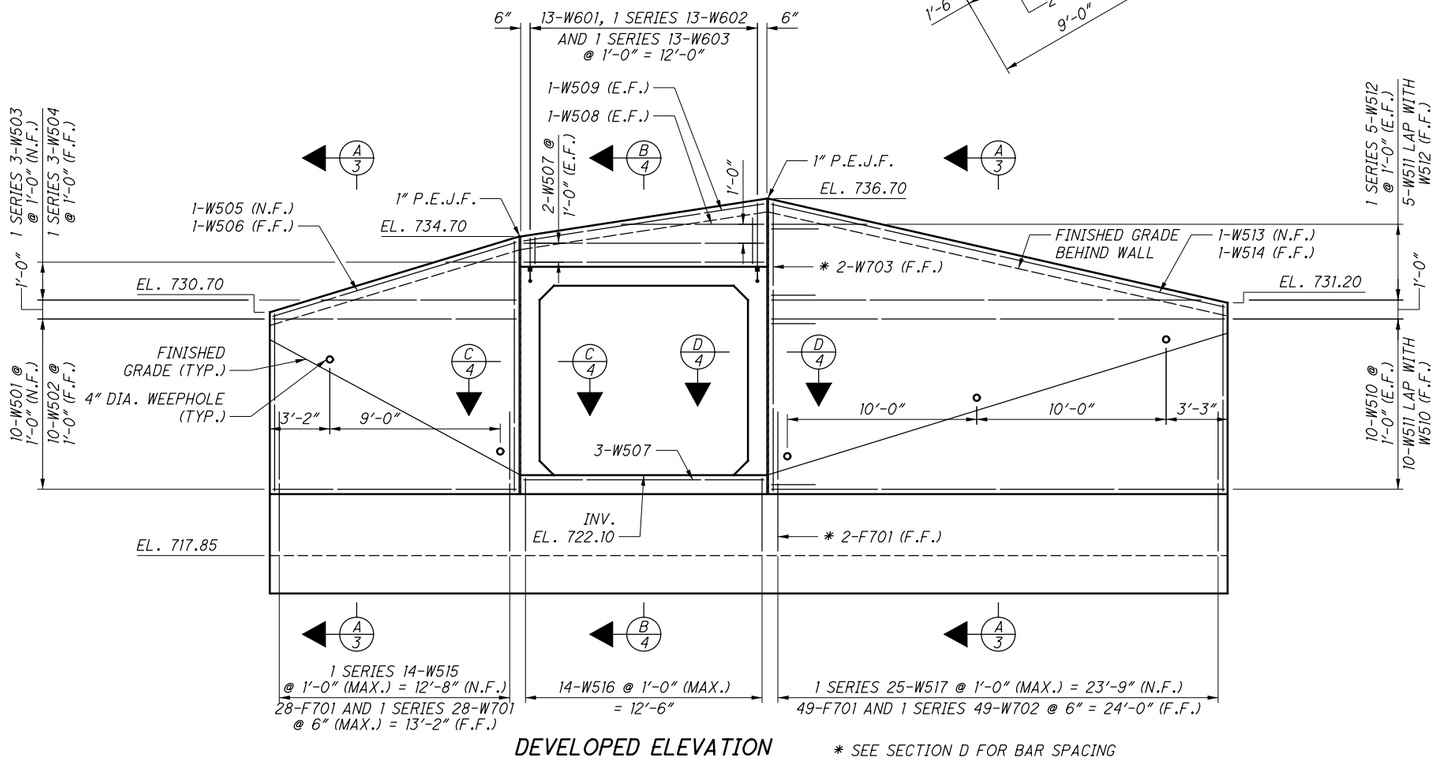
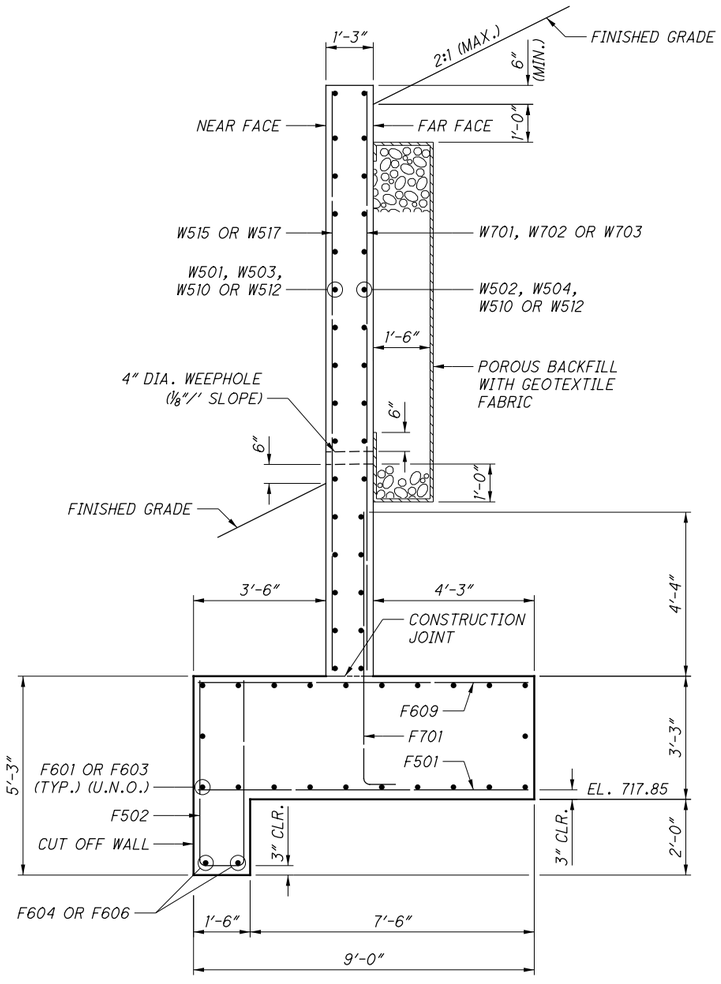


PLAN



DEVELOPED ELEVATION

* SEE SECTION D FOR BAR SPACING



A/3 SECTION

NOTE:

1. ALL STATIONS AND OFFSETS TAKEN WITH REFERENCE TO ℄ CONSTRUCTION MADDOCK ROAD.

(BTM.)	BOTTOM	N.F.	NEAR FACE
CLR.	CLEAR	P.E.J.F.	PREFORMED EXPANSION JOINT FILLER
DIA.	DIAMETER	SER.	SERIES
E.F.	EACH FACE	STR.	STRAIGHT
F.F.	FAR FACE	(TYP.)	TYPICAL
MAX.	MAXIMUM	INC.	INCREMENT
MIN.	MINIMUM	U.N.O.	UNLESS NOTED OTHERWISE

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	RSB	02/08/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
EA		4774591	

INLET HEADWALL PLAN AND ELEVATION DETAILS

BRIDGE NO. LOR-00023-00.067
MADDOCK ROAD OVER RIDGEWAY DITCH

MADDOCK ROAD

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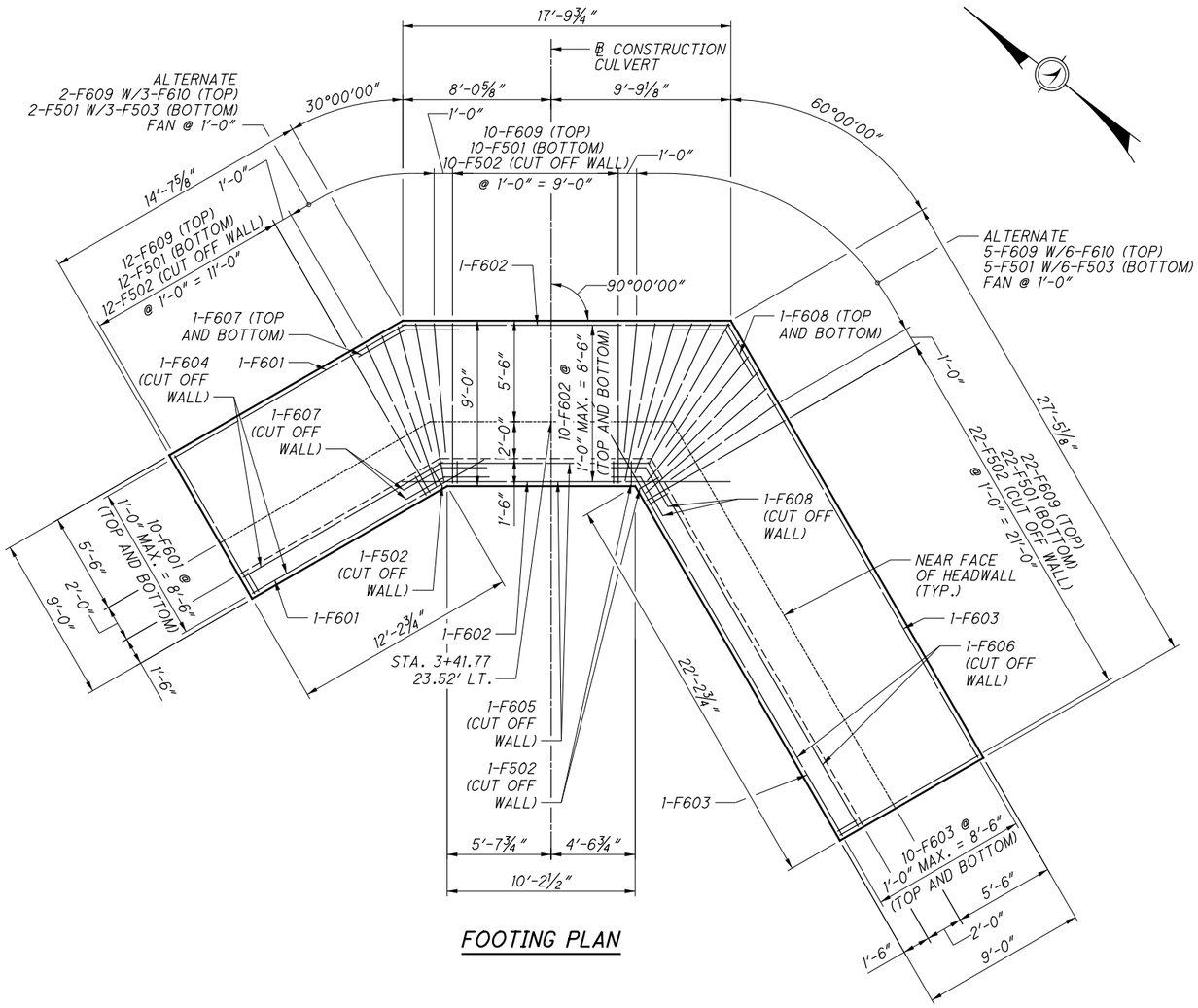
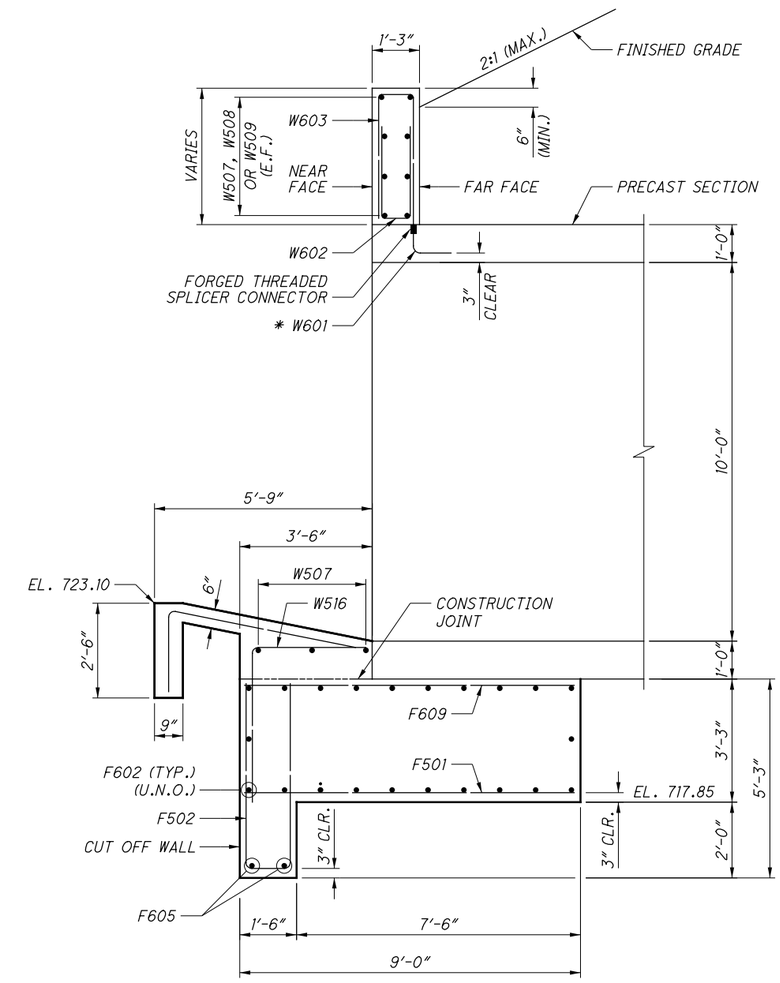
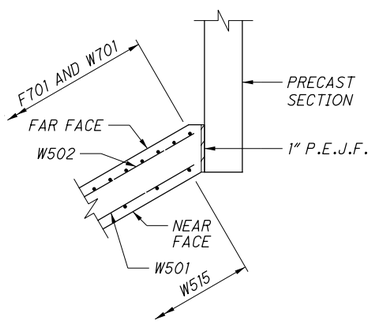


FOOTING PLAN

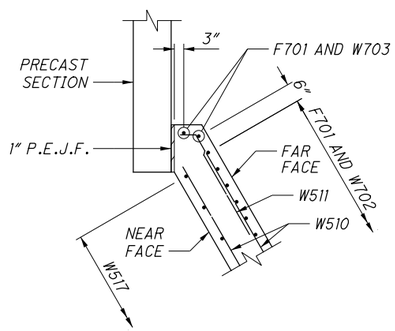


B/3 SECTION

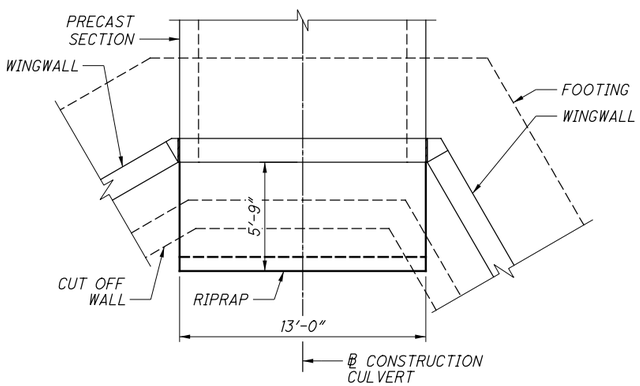
* SEE NOTE 1



C/3 SECTION



D/3 SECTION



INLET RIPRAP PLAN

NOTES:

1. W601 REINFORCING BARS TO BE EMBEDDED IN PRECAST SECTION.
2. ALL STATIONS AND OFFSETS TAKEN WITH REFERENCE TO ℄ CONSTRUCTION MADDOCK ROAD.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	RSB	02/08/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
EA		4774591	

INLET FOOTING PLAN AND DETAILS

BRIDGE NO. LOR-00023-00.067
MADDOCK ROAD OVER RIDGEWAY DITCH

MADDOCK ROAD

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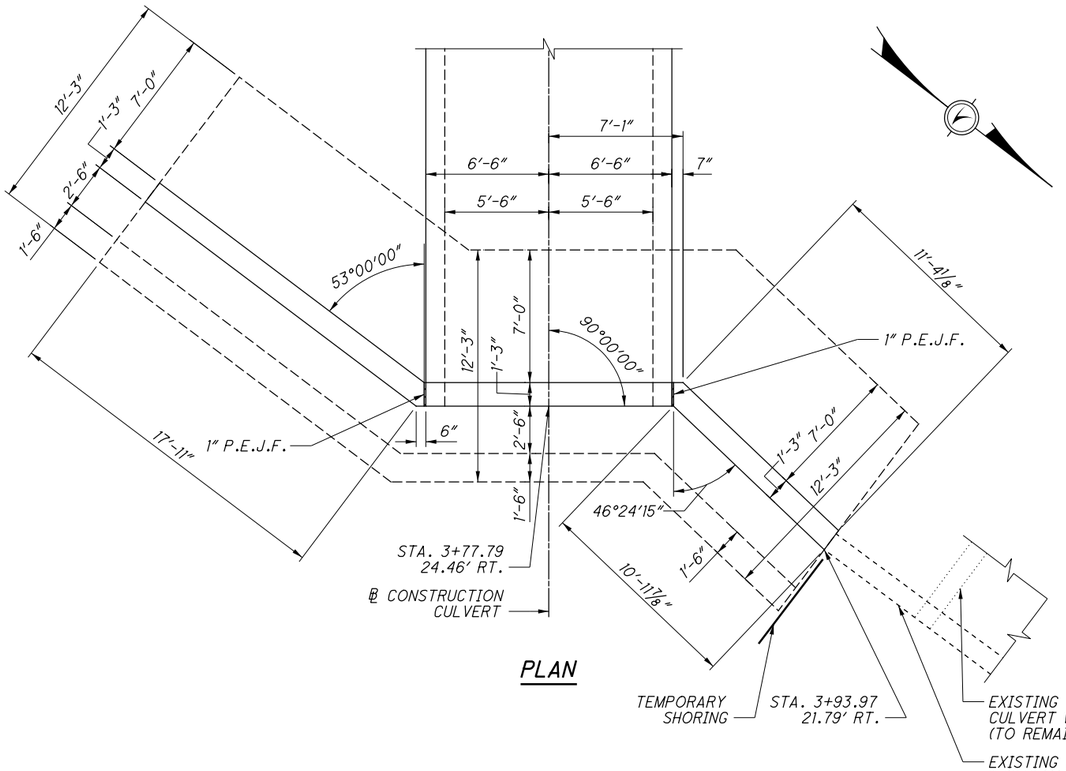
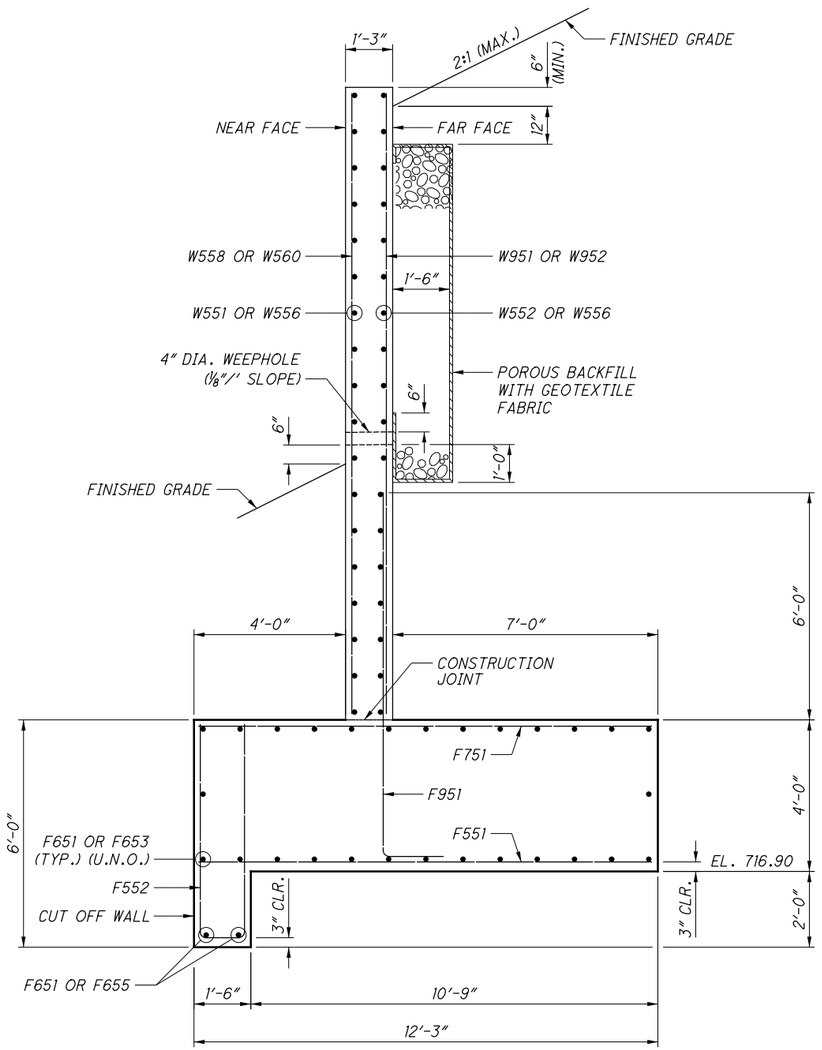
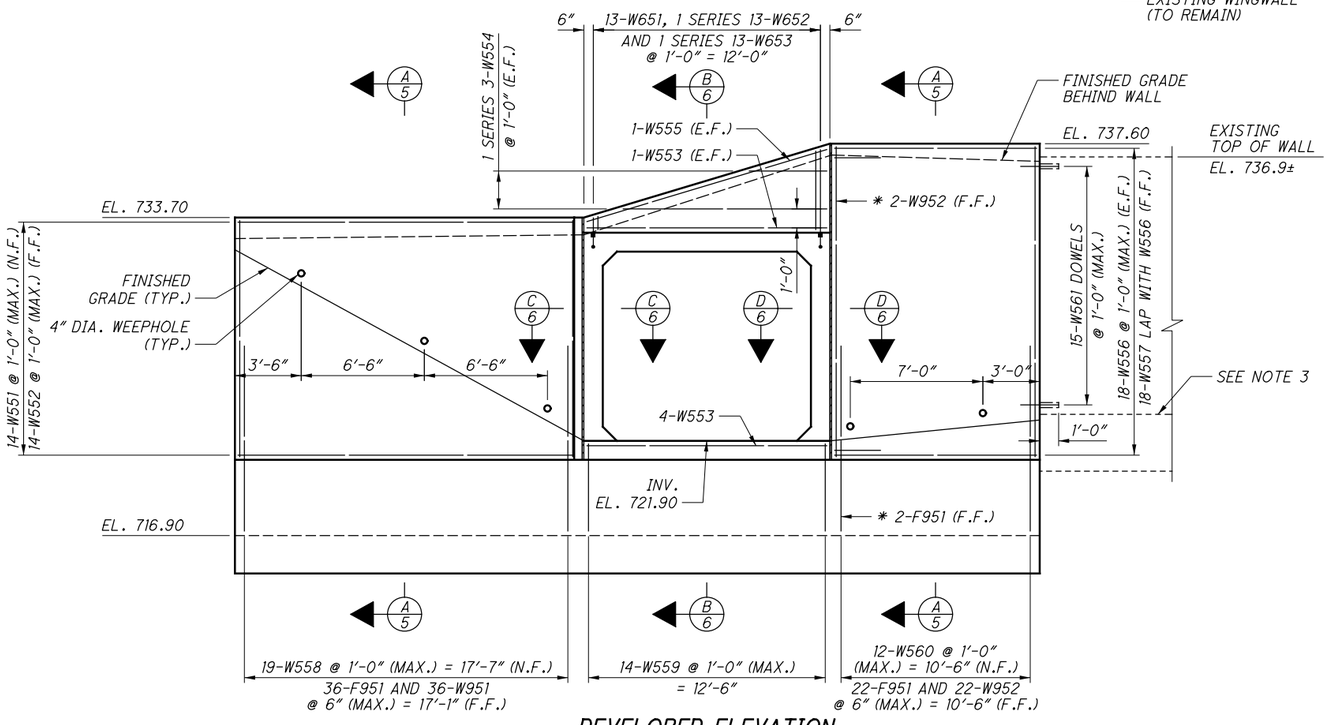


PLAN



A/5 SECTION



DEVELOPED ELEVATION

* SEE SECTION D FOR BAR SPACING

NOTES:

1. ALL STATIONS AND OFFSETS TAKEN WITH REFERENCE TO ℄ CONSTRUCTION MADDOCK ROAD.
2. W561 DOWELS SHALL BE INSTALLED PER ODOT CMS 510 USING NONSHRINK, NONMETALLIC GROUT CONFORMING TO ODOT CMS 705.20.
3. FOR ADDITIONAL INFORMATION CONCERNING EXISTING WINGWALL FOOTING ELEVATION, SEE ITEM SPECIAL - STRUCTURES (EXISTING WINGWALL FOOTING ELEVATION) NOTE ON SHEET 2/7.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	RSB	02/08/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
EA		4774591	

OUTLET HEADWALL PLAN AND ELEVATION DETAILS

BRIDGE NO. LOR-00023-00.067
MADDOCK ROAD OVER RIDGEWAY DITCH

MADDOCK ROAD

5 / 7

23
25

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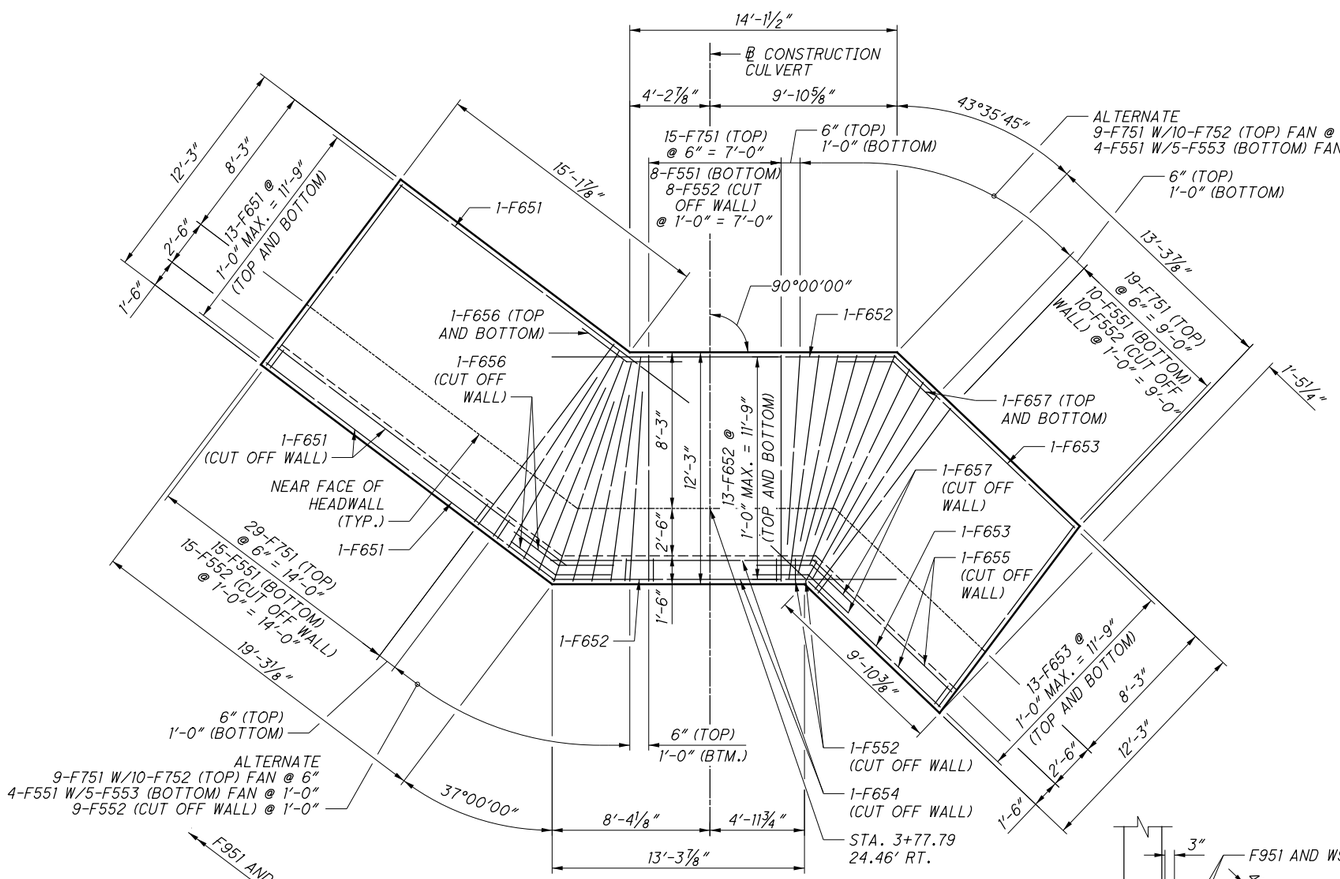
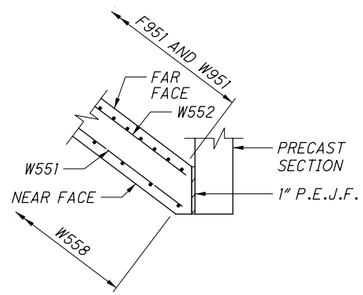
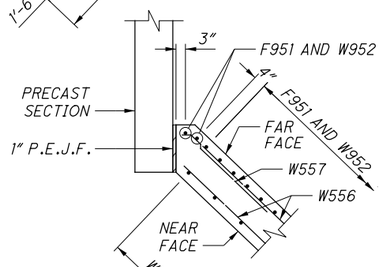


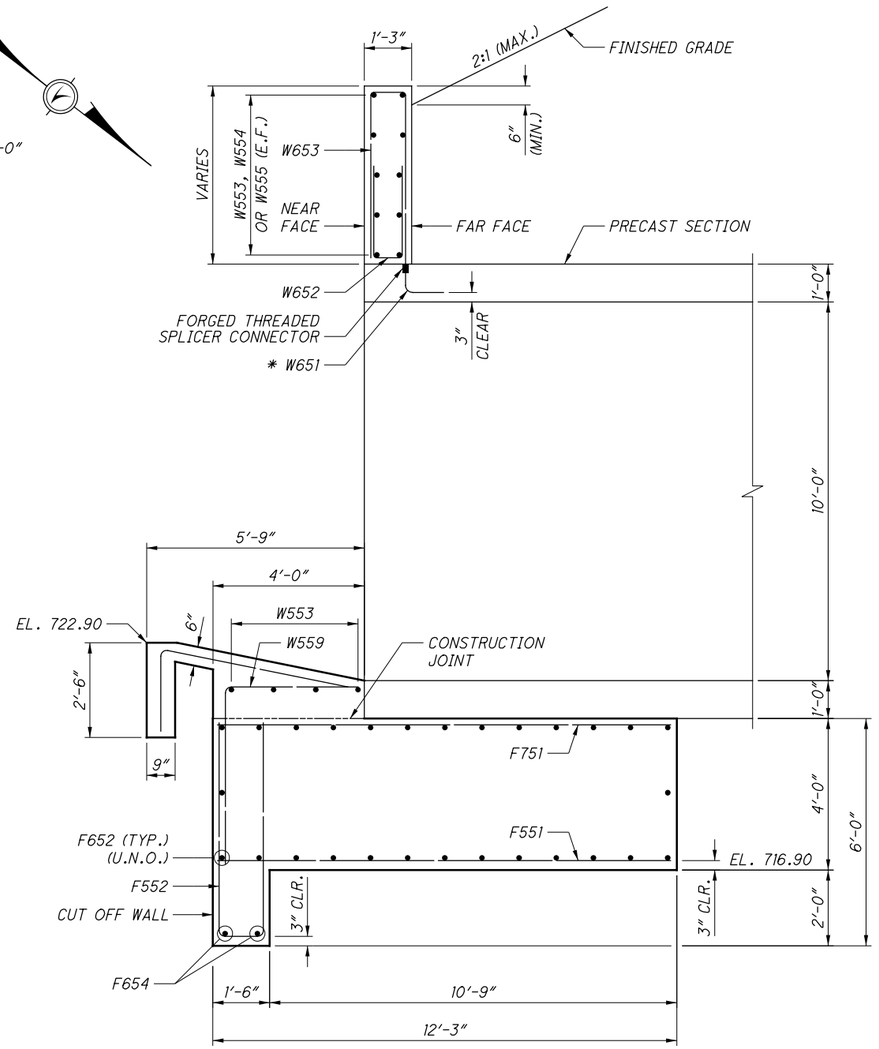
FOOTING PLAN



C/5 SECTION

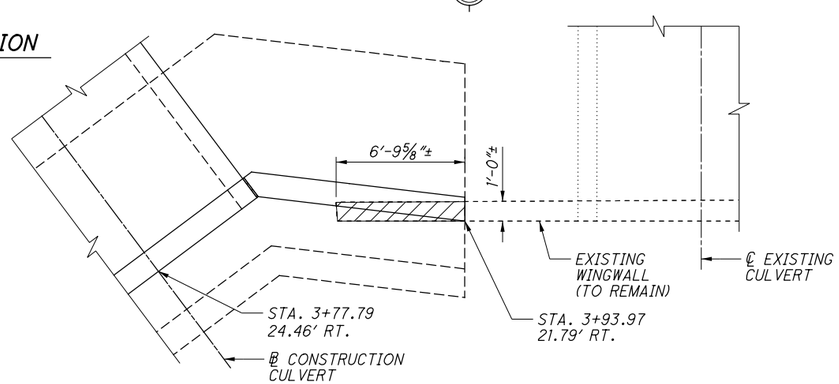


D/5 SECTION

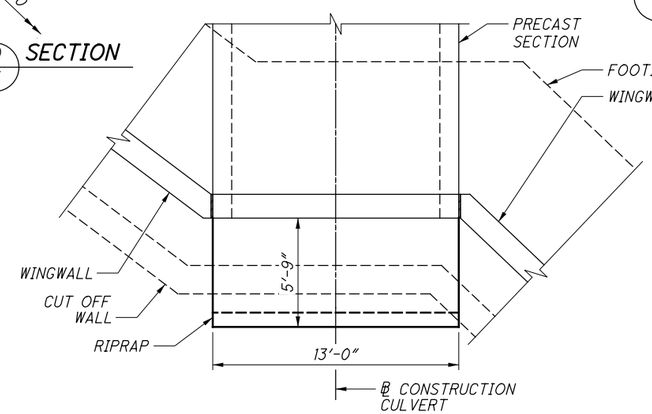


B/5 SECTION

* SEE NOTE 2



EXISTING WINGWALL REMOVAL PLAN



OUTLET RIPRAP PLAN

LEGEND:

INDICATES REMOVAL PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTES:

1. ALL STATIONS AND OFFSETS TAKEN WITH REFERENCE TO ℄ CONSTRUCTION MADDOCK ROAD.
2. W651 REINFORCING BARS TO BE EMBEDDED IN PRECAST SECTION.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
ZTW	GJZ	RSB	02/08/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
EA		4774591	

OUTLET FOOTING PLAN AND DETAILS

BRIDGE NO. LOR-00023-00.067
MADDOCK ROAD OVER RIDGEWAY DITCH

MADDOCK ROAD

6 / 7

24 / 25

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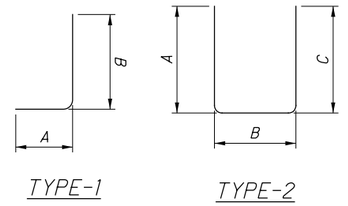
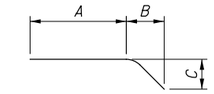
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
INLET REINFORCING STEEL											
F501	51	8′-8″	461	STR							
F502	47	10′-7″	519	2	4′-10″	1′-2″	4′-10″				
F503	9	7′-0″	66	STR							
F601	22	14′-6″	479	STR							
F602	22	17′-10″	589	STR							
F603	22	27′-2″	898	STR							
F604	2	12′-6″	38	STR							
F605	2	11′-6″	35	STR							
F606	2	22′-10″	69	STR							
F607	4	7′-2″	43	19	3′-7″	3′-1″	1′-10″				
F608	4	7′-2″	43	19	3′-7″	1′-10″	3′-1″				
F609	51	8′-8″	664	STR							
F610	9	7′-0″	95	STR							
F701	79	8′-4″	1346	1	1′-2″	7′-4″					
W501	10	12′-11″	135	STR							
W502	10	13′-4″	139	STR							
	1	4′-5″									
W503	SER OF	TO	24	STR							3′-3″
	3	11′-0″									
	1	4′-8″									
W504	SER OF	TO	25	STR							3′-4″
	3	11′-4″									
W505	1	13′-7″	14	STR							
W506	1	14′-0″	15	STR							
W507	7	12′-8″	92	STR							
W508	2	7′-10″	16	STR							
W509	2	12′-10″	27	STR							
W510	20	24′-1″	502	STR							
W511	15	3′-4″	52	19	3′-0″	2″	4″				
	2	5′-2″									
W512	SER OF	TO	146	STR							4′-5″
	5	22′-10″									
W513	1	24′-8″	26	STR							
W514	1	25′-2″	26	19	24′-10″	2″	4″				
	1	9′-4″									
W515	SER OF	TO	165	STR							3⅝″
	14	13′-3″									
W516	14	7′-2″	105	1	3′-2″	4′-1″					
	1	9′-9″									
W517	SER OF	TO	326	STR							2¾″
	25	15′-3″									
W601	13	1′-7″	31	41	1′-0″	9″					
	1	3′-3″			1′-4″		1′-4″				
W602	SER OF	TO	101	2	TO	11″	TO				3⅞″
	13	7′-1″			3′-3″		3′-3″				
	1	3′-5″			1′-6″		1′-4″				
W603	SER OF	TO	104	40	TO	11″	TO				3⅞″
	13	7′-3″			3′-5″		3′-3″				
	1	9′-4″									
W701	SER OF	TO	646	STR							1¾″
	28	13′-3″									
	1	9′-9″									
W702	SER OF	TO	1252	STR							1⅜″
	49	15′-3″									
W703	2	15′-3″	62	STR							
		TOTAL	9376								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
OUTLET REINFORCING STEEL											
F551	41	11′-11″	510	STR							
F552	44	12′-1″	555	2	5′-7″	1′-2″	5′-7″				
F553	10	10′-0″	104	STR							
F651	30	19′-1″	860	STR							
F652	28	18′-2″	764	STR							
F653	28	13′-2″	554	STR							
F654	2	14′-0″	42	STR							
F655	2	10′-1″	30	STR							
F656	4	7′-2″	43	19	3′-7″	2′-11″	2′-2″				
F657	4	7′-2″	43	19	3′-7″	2′-7″	2′-6″				
F751	81	11′-11″	1973	STR							
F752	20	10′-0″	409	STR							
F951	60	11′-1″	2261	1	1′-7″	9′-9″					
W551	14	17′-9″	259	STR							
W552	14	17′-4″	253	STR							
W553	6	12′-8″	79	STR							
	2	4′-1″									
W554	SER OF	TO	46	STR							3′-4″
	3	10′-9″									
W555	2	13′-2″	27	STR							
W556	36	10′-9″	404	STR							
W557	18	3′-0″	56	19	2′-9″	2″	2″				
W558	19	12′-6″	248	STR							
W559	14	8′-2″	119	1	3′-8″	4′-7″					
W560	12	16′-4″	204	STR							
W561	15	2′-0″	31	STR							
W651	13	1′-7″	31	41	1′-0″	9″					
	1	1′-9″			7″		7″				
W652	SER OF	TO	104	2	TO	11″	TO				7⅛″
	13	8′-11″			4′-2″		4′-2″				
	1	1′-11″			9″		7″				
W653	SER OF	TO	107	40	TO	11″	TO				7⅛″
	13	9′-1″			4′-4″		4′-2″				
W951	36	12′-6″	1530	STR							
W952	24	16′-4″	1333	STR							
		TOTAL	12979								

BAR BENDING DIAGRAMS



TYPE-1 TYPE-2



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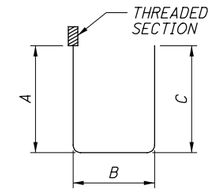
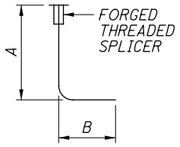


TYPE-40



TYPE-41

NOTES:

1. ALL REINFORCING STEEL TO BE EPOXY COATED.
2. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE NUMBERS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR NUMBERS ARE USED INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE A P1001 IS A NUMBER 10 BAR. P501 IS A NUMBER 5 BAR. BAR DIMENSIONS ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS UNLESS OTHERWISE NOTED.

DESIGN AGENCY
TranSystems
1100 SUPERIOR AVENUE, SUITE 1000
CLEVELAND, OHIO 44114

DESIGNED ZTW | DRAWN GJZ | REVIEWED RSB | DATE 02/08/21
CHECKED EA | REVISED | STRUCTURE FILE NUMBER 4774591

REINFORCING STEEL LIST

BRIDGE NO. LOR-00023-00.067
MADDOCK ROAD OVER RIDGEWAY DITCH

MADDOCK ROAD

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