ROADWAY NOTES

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

EXISTING UTILITIES AND SUBGRADE TREATMENT

THE CONTRACTOR SHALL VERIFY THE DEPTH OF ALL EXISTING UNDERGROUND UTILITIES AND SEWERS WITHIN THE PROPOSED PAVEMENT LIMITS TO ENSURE NO UTILITIES OR SEWERS ARE IMPACTED OR DAMAGED DURING CEMENT STABILIZATION AND/OR UNDERCUT ACTIVITIES. THE CONTRACTOR SHALL LOCATE AND TAKE CARE TO FLAG ALL EXISTING UTILITIES WITHIN THE PROPOSED PAVEMENT LIMITS PRIOR TO PERFORMING CEMENT STABILIZATION OR UNDERCUT, AS DESIGNATED IN THE PLANS. SHOULD THE CONTRACTOR ENCOUNTER A POTENTIAL UTILITY CONFLICT, THE CONTRACTOR SHALL NOTIFY PROJECT ENGINEER AND STOP CEMENT STABILIZATION/UNDERCUT ACTIVITIES AT THE CONFLICT LOCATION IMMEDIATELY.

CLEARING AND GRUBBING

REMOVE ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED, HOWEVER THERE MAY BE ADDITIONAL TREES OF THESE SIZES WITHIN HEAVILY WOODED AREAS. UNLESS SPECIFICALLY MARKED IN THE PLANS AS DO NOT DISTURB OR TO REMAIN, ALL VEGETATION AND TREES WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED AND PAID FOR UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING.

SIZES	NO. TREES
18"	15
30"	12

SOME TREES HAVE BEEN CUT ALREADY WITHIN THE PROJECT AREA. AN OUTLINE OF THE AREA WITHIN THE PROJECT WHERE THE TREES HAVE BEEN CUT IS SHOWN ON SHEET 2. FOR THE TREES THAT HAVE BEEN CUT, ONLY THE TOPS WERE CUT. BOTH THE REMAINING TOPS AND STUMPS SHALL BE REMOVED AND PAID FOR UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING.

UNSUITABLE SUBGRADES

ALTHOUGH GLOBAL LIME STABILIZATION IS PROPOSED FOR THE PROJECT, THERE ARE LOCATIONS THAT MAY FAIL THE PROOF ROLL DUE TO THE LIME NOT BEING COMPATIBLE WITH A-4b (SILT) SOIL, AND THEREFORE NOT PROVIDE ADEQUATE STABILIZATION. THE FOLLOWING AREAS HAVE BEEN IDENTIFIED AS HAVING A HIGHER PROBABILITY OF THIS OCCURRING:

RAMP NE - STA. 612+00 TO STA. 615+00
RAMP SE - STA. 811+00 TO STA. 814+00
HOMAN WAY - STA. 331+00 TO 337+00

IF THE PROOF ROLL DOES FAIL, THE LIMITS OF THE FAILED PROOF ROLL SHALL BE UNDERCUT TO A DEPTH OF 36 INCHES WITH ITEM 204 GEOTEXTILE FABRIC PLACED AT THE BASE OF THE EXCAVATION AND BACK FILLED WITH ITEM 204 GRANULAR MATERIAL TYPE B OR C. THE FAILED PROOF ROLL AND FINAL LIMITS OF UNDERCUT SHALL BE APPROVED BY THE ENGINEER. THE FOLLOWING QUANTITIES ARE PROVIDED AS A CONTINGENCY SHOULD THIS OCCUR:

ITEM 204 - EXCAVATION OF SUBGRADE	2,500 CY
ITEM 204 - GRANULAR EMBANKMENT, AS PER PLAN	2,500 CY
ITEM 204 - GEOTEXTILE FABRIC	3,500 SY

ITEM 203 EMBANKMENT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS SECTION 203, EMBANKMENT AT BRIDGE APPROACHES SHALL BE PLACED AND COMPACTED IN 6" LIFTS. THIS REQUIREMENT PERTAINS TO THE FOLLOWING LIMITS:

BRUCE LUNSFORD WAY STA. 411+87.40 TO STA. 412+33.53
BRUCE LUNSFORD WAY STA. 414+01.93 TO STA. 414+48.07

PAYMENT FOR PLACING THE EMBANKMENT AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR ITEM 203- EMBANKMENT, AS PER PLAN

FENCE LENGTHS

THE LENGTHS OF FENCE SHOWN IN THE PLANS ARE HORIZONTAL DIMENSIONS. MEASUREMENTS OF THE FINAL QUANTITIES WILL BE IN ACCORDANCE WITH ITEM 607.

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 617 - COMPACTED AGGREGATE

THE FOLLOWING ESTIMATED QUANTITY OF ITEM 617 - COMPACTED AGGREGATE HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE TO FILL ANY LOW BERM AREAS AS DESIGNATED BY THE ENGINEER.

ITEM 617 - COMPACTED AGGREGATE	150 CY

ITEM 204 - PROOF ROLLING

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

ITEM 204 - PROOF ROLLING	21 HOURS

SHEETING & BRACING

ANY SHEETING AND BRACING USED BY THE CONTRACTOR AND NOT OTHERWISE CALLED FOR IN THE PLANS SHALL BE FURNISHED, INSTALLED, AND MAINTAINED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. NO SEPARATE PAYMENT SHALL BE MADE FOR SHEETING AND BRACING. AT ALL TIMES THE CONTRACTOR SHALL BE REQUIRED TO EXCAVATE IN A MANNER THAT IS SAFE TO ALL WORKERS AND THE GENERAL TRAVELING PUBLIC. ALL OSHA REQUIREMENTS SHALL BE UPHELD AND SOUND SAFETY PRACTICES SHALL BE EXERCISED AT ALL TIMES. REMOVAL OF SHEETING AND BRACING ITEMS UPON COMPLETION OF WORK WILL BE REQUIRED AS DIRECTED BY ODOT REPRESENTATIVES.

EXISTING STRUCTURE REMOVED

THE EXISTING STRUCTURE TO BE REMOVED ALONG HOMAN WAY NEAR THE PROPOSED 20x4 BOX CULVERT (STA. 308+90 LT) IS A 15-FOOT SPAN x 10-FOOT WIDE CONCRETE SLAB WITH ABUTMENTS. ENTIRE STRUCTURE SHALL BE REMOVED AND DISPOSED OF UNDER THE LUMP SUM BID PRICE OF ITEM 202 - STRUCTURE REMOVED AND INCLUDE ALL MATERIALS, LABOR, AND EQUIPMENT REQUIRED.

ITEM SPECIAL - MAILBOX SUPPORT

THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING MAILBOX SUPPORTS AND ANY ASSOCIATED MOUNTING HARDWARE IN ACCORDANCE WITH PLAN DETAILS, AND ATTACHING AN OWNER-SUPPLIED MAILBOX AT LOCATIONS SPECIFIED IN THE PLAN, OR OTHERWISE ESTABLISHED BY THE ENGINEER.

WOOD POSTS SHALL BE NOMINAL 4 INCHES BY 4 INCHES SQUARE OR 4.5 INCHES DIAMETER ROUND, AND CONFORM TO 710.14.

STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2 INCHES I.D., AND CONFORM TO AASHTO M 181.

ALL HARDWARE INCLUDING BUT NOT LIMITED TO PLATES, SCREWS, BOLTS, AND ETC. SHALL BE COMMERCIAL-GRADE GALVANIZED STEEL.

POSTS SHALL BE SET PER THE FIRST PARAGRAPH OF 606.03, AND SHALL IN NO INSTANCE BE ENCASED IN CONCRETE.

SUPPORT HARDWARE SHALL ACCOMMODATE EITHER A SINGLE OR A DOUBLE MAILBOX INSTALLATION, AND NO MORE THAN TWO BOXES MAY BE MOUNTED ON A SINGLE POST.

THE MAILBOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL FURNISH ALL NECESSARY ATTACHMENT HARDWARE (NUTS, BOLTS, PLATES, SPACERS, AND WASHERS) AS NECESSARY TO ACCOMMODATE THE COMPLETE INSTALLATION.

IN THE ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER, THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX AND PLACE IT ON THE NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY BOX DAMAGED BY IMPROPER HANDLING ON HIS PART, AS JUDGED AND DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE LOCAL POST MASTER REGARDING THE TIMING OF THE MOVEMENT OF ANY MAILBOX TO A NEW LOCATION.

PAYMENT UNDER THIS ITEM SHALL BE LIMITED TO FINAL PERMANENT INSTALLATIONS. TEMPORARY INSTALLATIONS SHALL BE IN ACCORDANCE WITH 107.10. HOWEVER, THE SAME MATERIAL AND SIZE LIMITATIONS AS FOR PERMANENT INSTALLATIONS SHALL APPLY.

MAILBOX SUPPORTS, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, FOR ITEM SPECIAL MAILBOX SUPPORT SYSTEM, (SINGLE) (DOUBLE).

BILLBOARDS

FOUR BILLBOARDS EXIST ON THE NORTH SIDE OF SR 32 FROM APPRXIMATELY STATION 193+00 LT TO STATION 202+00 LT. THE EXISTING BILLBOARD OWNERS WILL BE REMOVING THESE BILLBOARDS AND ALL ACCESSORIES BY MAY 15, 2023. THE FOUNDATIONS WILL BE REMOVED TO THREE FEET BELOW GRADE. ALL WORK TO BE PERFORMED BY OTHERS.

THE CONSTRUCTION PLANS AND ITEMS HAVE BEEN UPDATED TO REFLECT THIS. THE FINAL RIGHT OF WAY PLANS STILL HAVE THE BILLBOARD IN THE SUMMARY OF ADDITIONAL RIGHT OF WAY TABLE AND CALL THEM OUT IN THE PLAN SHEETS AS TO BE REMOVED.

ITEM 202 - REMOVAL MISC.: PRIVATE SIGN REMOVED

THIS ITEM SHALL CONSIST OF THE REMOVAL AND DISPOSAL OF EXISTING PRIVATE SIGNS, ALONG WITH ANY ASSOCIATED ELECTRICAL FACILITIES AND FOUNDATIONS WITHIN THE CONSTRUCTION LIMITS TO A MINIMUM OF 3 FEET BELOW THE EXISTING GROUND.

PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH ITEM 202 REMOVAL MISC.: PRIVATE SIGN REMOVED AND SHALL INCLUDE ALL LABOR, MATERIAL AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM AS NOTED.

BENCHING OF FOUNDATION SLOPES

ALTHOUGH CROSS-SECTIONS DO NOT INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN 203.05. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF 203.05

PAVEMENT NOTES

CONTRACTION AND/OR EXPANSION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN CONTRACTION AND EXPANSION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. IN ALL CASES, THE PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES INCLUDING THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS IS IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2 AND THE SPECIFICATIONS.

CONTRACTION JOINTS IN CONCRETE PAVEMENT OR BASE WIDENING

WHERE NEW CONCRETE IS PLACED ADJACENT TO EXISTING CONCRETE, PROVIDE CONTRACTION JOINTS IN THE NEW CONCRETE TO FORM CONTINUOUS JOINTS WITH THOSE IN THE EXISTING CONCRETE. THE MAXIMUM DISTANCE BETWEEN THE JOINTS IN THE NEW CONCRETE ARE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2, IF NECESSARY, ADDITIONAL JOINTS MAY BE PROVIDED IN THE NEW CONCRETE AT APPROXIMATELY EQUAL INTERVALS BETWEEN EXISTING JOINTS THAT EXCEED THE MAXIMUM SPACING.

BUTT JOINTS

AT THE START OR END OF ALL FULL-DEPTH PAVEMENT SECTIONS SHOWN IN THE PLANS, CONTRACTOR SHALL PROVIDE A BUTT JOINT PER SCD BP-3.1.

UNDERDRAIN CONNECTIONS AT SAWCUTS

AT THE START, END OR WIDENING OF ALL FULL-DEPTH PAVEMENT SECTIONS SHOWN IN THE PLANS, CONTRACTOR SHALL CONNECT PROPOSED UNDERDRAINS TO EXISTING AND ENSURE POSITIVE DRAINAGE IS MAINTAINED.

ITEM 442 - ANTI-SEGREGATION EQUIPMENT

PROVIDE ANTI-SEGREGATION EQUIPMENT FOR ALL COURSES OF UNIFORM THICKNESS IN ACCORDANCE WITH CMS 401.12. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 441 - ANTI-SEGREGATION EQUIPMENT	1,117 CY
ITEM 442 - ANTI-SEGREGATION EQUIPMENT	3,196 CY

ITEM 897 - PATCHING PLANED SURFACE

THE FOLLOWING ESTIMATED QUANTITY OF 20% OF THE PLANED SURFACE HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR PATCHING PLANED SURFACE AS DESIGNATED BY THE ENGINEER.

ITEM 254 - PATCHING PLANED SURFACE	15,000SY

PAVEMENT RESTORATION FOR PIPE INSTALLATIONS AND/OR REMOVALS

THE FOLLOWING QUANTITIES HAVE BEEN PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION AND/OR REMOVAL OF PIPES.

ITEM 302 - ASPHALT CONCRETE BASE, PG64-22	8 CY
ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	1 CY
ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (447)	5 CY

THE ABOVE QUANTITIES ARE BASED ON A 302 THICKNESS OF 6 INCHES FOR LOCAL ROADS AND 9 INCHES FOR SR-32; MATCH THE EXISTING WEARING COURSE DEPTH. PAVEMENT RESTORATION WIDTH SHALL INCLUDE THE MINIMUM REQUIRED TRENCH WIDTH PLUS TWO FEET ON EACH SIDE OF THE TRENCH. PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

CALCULATED GJG CHECKED DSS

GENERAL NOTES

BRO-32-4.16

PAVEMENT NOTES (CONT'D)

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN

ALL CONSTRUCTION REQUIREMENTS OF 2019 CMS 251 SHALL APPLY. THE MINIMUM DIMENSION FOR TRANSVERSE REPAIRS SHALL BE 4.0', THE MINIMUM DIMENSION FOR LONGITUDINAL REPAIRS SHALL BE 2.0'. THIS ITEM SHALL COMMENCE PRIOR TO PLANING AND RESURFACING.

MATERIAL FOR REPAIR AREAS SHALL BE ITEM 442 SURFACE COURSE, 12.5MM, TYPE A (447) FOLLOWING THE APPLICATION OF ITEM 407 TACK COAT. REPLACEMENT MATERIAL SHALL BE PLACED IN ONE LIFT. REMOVE EXISTING SURFACE TO A UNIFORM DEPTH OF 3.25", TRIM AS NEEDED WHERE ROUNDED TO PROVIDE VERTICAL FACES ALONG THE PERIMETER OF THE REPAIR AREA. THOROUGHLY COMPACT ENTIRE AREA.

PAYMENT FOR ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED IN THE SQUARE YARD CONTRACT PRICE FOR ITEM 251, PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN. SEE DETAIL BELOW.

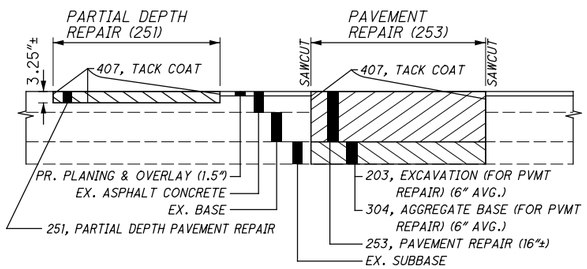
THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DESIGNATED BY THE ENGINEER:

ITEM 251 - PARTIAL DEPTH REPAIR (442),
AS PER PLAN 1500 SY

ITEM 253 - PAVEMENT REPAIR, AS PER PLAN

A QUANTITY OF THIS ITEM SHALL BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER. THIS ITEM SHALL CONSIST OF CUTTING AND REMOVING DETERIORATED PAVEMENT FULL DEPTH AND PLACING 16"± 301 ASPHALT CONCRETE BASE, PG64-22. THE MAXIMUM COMPACTED DEPTH OF ANY ONE LAYER SHALL BE 6 INCHES. THIS ITEM SHALL COMMENCE PRIOR TO PLANING AND RESURFACING. IT IS NOT THE INTENT TO REPAIR EVERY DETERIORATED AREA WITHIN THE PROJECT. THE ENGINEER SHALL DETERMINE WHICH AREAS ARE TO BE REPAIRED. PAYMENT SHALL BE BASED ON THE ACTUAL NUMBER OF SQUARE YARDS OF PAVEMENT REMOVED AND REPLACED TO THE LIMITS DESIGNATED BY THE ENGINEER. SEE DETAIL BELOW. ALL ITEMS SHOWN WITHIN THE LIMITS OF THE PAVEMENT REPAIR DIMENSION SHALL BE INCLUDED IN THE BID PRICE FOR THE 253 PAVEMENT REPAIR ITEM. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DESIGNED BY THE ENGINEER:

ITEM 253, PAVEMENT REPAIR, AS PER PLAN, 500 SY



PAVEMENT REPAIR DETAIL

ITEM 451 - REINFORCED CONCRETE PAVEMENT, MISC.: EXISTING CONCRETE SLAB

REMOVE AND REPLACE EXISTING CONCRETE SLAB AT SPECIFIED ELEVATIONS ON SHEET 104 TO ENSURE POSITIVE DITCH DRAINAGE TO EXISTING 78" CULVERT. USE 6" THICK REINFORCED CONCRETE WITH #3 BARS @ 24" C.C. IN TWO DIRECTIONS AT CENTER OF SLAB. REMOVE AND REPLACE FENCE AS NEEDED TO COMPLETE THIS WORK. ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO COMPLETE THIS WORK, INCLUDING REMOVAL AND REPLACEMENT OF FENCE, SHALL BE PAID FOR AT THE UNIT BID PRICE PER SQUARE YARD OF CONCRETE SLAB REPLACED. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS WORK.

ITEM 451 - REINFORCED CONCRETE PAVEMENT, MISC.:
EXISTING CONCRETE SLAB 6.20SY

ITEM 644 - AIR SPEED ZONE MARKING

AIR SPEED ZONE MARKINGS SHALL BE WHITE AND 24 INCHES WIDE MEASURED IN THE DIRECTION OF TRAVEL AND 4 FEET IN LENGTH. ON TWO-LANE ROADWAYS WITH PAVED SHOULDERS LESS THAN 4 FEET IN WIDTH, THE AIR SPEED ZONE MARKINGS SHALL BE PLACED WITH 2 FEET ON EACH SIDE OF THE CENTER LINE OR EDGE LINE MARKINGS. WHEN PAVED SHOULDERS OF SUFFICIENT WIDTH ARE AVAILABLE, THE AIR SPEED ZONE MARKINGS SHALL BE PLACED ON THE SHOULDERS.

CONTRACTOR SHALL SURVEY EXISTING AIR SPEED ZONE MARKINGS WITHIN THE PROJECT LIMITS PRIOR TO PAVEMENT PLANING OR ANY ACTIVITY THAT MAY DISTURB THE EXISTING MARKINGS. MARKINGS SHALL BE REPLACED IN THE SAME LOCATION, OR AT 0.25 MILE INTERVALS OVER A 1 MILE LENGTH OF ROADWAY. FINAL PLACEMENT SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE MARKINGS LAID OUT BY A REGISTERED SURVEYOR. A RECORD IS TO BE KEPT AND ONE ORIGINAL SIGNED AND SEALED DOCUMENT IS TO BE SENT TO THE DISTRICT TRAFFIC ENGINEER AND ONE COPY IS TO BE SENT TO THE DISTRICT CONSTRUCTION ENGINEER.

MATERIALS, EQUIPMENT AND APPLICATION SHALL BE ACCORDING TO THE TYPE OF PAVEMENT MARKING MATERIAL USED.

PAYMENT SHALL BE ACCORDING TO THE PAVEMENT MARKING MATERIAL USED AND SHALL INCLUDE THE SURVEYING WORK. THE FIVE MARKINGS PLACED IN EACH 1 MILE OF ROADWAY SHALL EQUAL ONE ZONE. ONE ZONE SHALL BE MEASURED AS 1 EACH FOR AIR SPEED ZONE MARKING. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THE WORK AS DESCRIBED IN THIS NOTE.

ITEM 644 - SPEED MEASUREMENT MARKING 1 EACH

DISPOSAL OF ASPHALT GRINDINGS

CONTRACTOR SHALL DELIVER TO THE ODOT BROWN COUNTY GARAGE THE ASPHALT GRINDINGS FROM THE PLANING WORK CONDUCTED ON THE TWO SR32 EASTBOUND LANES AND SHOULDERS. GRINDINGS FROM REPAIR WORK IS NOT TO BE INCLUDED. THE ODOT BROWN COUNTY GARAGE IS LOCATED AT 5124 STATE ROUTE 125, GEORGETOWN, OH 45121. COORDINATE DELIVERY THROUGH THE PROJECT ENGINEER.

ALL OTHER ASPHALT GRINDINGS FROM THIS PROJECT ARE TO BECOME THE PROPERTY OF THE CONTRACTOR.

EROSION CONTROL NOTES

SEEDING AND MULCHING

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

659 - SOIL ANALYSIS TEST	3 EACH
659 - TOPSOIL	21,300 CU. YD.
659 - SEEDING AND MULCHING	(SEE SHEET 169)
659 - REPAIR SEEDING AND MULCHING	9,595 SQ. YD.
659 - INTER-SEEDING	9,595 SQ. YD.
659 - COMMERCIAL FERTILIZER	25.91 TON
659 - LIME	39.64 ACRES
659 - WATER	1,036 M. GAL
659 - MOWING	432 M. SQ. FT.

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.

DRAINAGE NOTES

ITEM SPECIAL - FILL AND PLUG EXISTING CONDUIT

THIS ITEM SHALL CONSIST OF THE CONSTRUCTION OF BULKHEADS IN EXISTING CONDUIT(S) AND FILLING THE AREA THUS SEALED OFF WITH ITEM 613, SAND OR OTHER MATERIAL APPROVED BY THE ENGINEER.

BULKHEADS SHALL BE LOCATED AT THE LIMITS OF THE AREA TO BE FILLED AS INDICATED ON THE PLANS. THE BULKHEADS SHALL CONSIST OF BRICK OR CONCRETE MASONRY WITH A MINIMUM THICKNESS OF 12 INCHES.

THE FILL MATERIAL SHALL BE PUMPED INTO PLACE, OR PLACED BY OTHER MEANS APPROVED BY THE ENGINEER, SO THAT, AFTER SETTLEMENT, AT LEAST 90 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CONDUIT, FOR ITS ENTIRE LENGTH, SHALL BE FILLED. THE LENGTH OF FILLED AND PLUGGED CONDUIT TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF FEET (MEASURED ALONG THE CENTERLINE OF EACH CONDUIT FROM OUTER FACE TO OUTER FACE OF BULKHEADS) FILLED AND PLUGGED AS DESCRIBED ABOVE.

IN LIEU OF FILLING AND PLUGGING THE EXISTING CONDUIT, THE PIPE MAY BE CRUSHED AND BACK FILLED IN ACCORDANCE WITH THE PROVISIONS OF 203, OR IT MAY BE REMOVED. THE LENGTH, MEASURED AS PROVIDED ABOVE, SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR, ITEM SPECIAL, FILL AND PLUG EXISTING CONDUIT.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING ALONG WITH PHOTOS BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

ITEM 611 - CONDUIT BORED OR JACKED

WHERE IT IS SPECIFIED OR DETERMINED IN THE FIELD THAT A CONDUIT BE INSTALLED BY THE METHOD OF BORING OR JACKING, NO TRENCH EXCAVATION SHALL BE CLOSER THAN 5 FEET TO THE EDGE OF PAVEMENT. PROVIDE A STEEL CASING PIPE CONFORMING TO 748.06 HAVING JOINTS WITH A CIRCUMFERENTIAL FULLY PENETRATING B-U4B WELD THAT IS PERFORMED BY AN ODOT APPROVED FIELD WELDER OR MACHINED INTERLOCKING JOINTS ARE PERMITTED. THE INSTALLED CASING PIPE IS THE STORM WATER CONVEYANCE CARRIER UNLESS OTHERWISE SPECIFIED IN THE PLANS. HYDROSTATIC TESTING IS NOT REQUIRED FOR THE CASING PIPE.

ITEM SPECIAL- MISCELLANEOUS METAL

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE FOR REUSE, AS DETERMINED BY THE ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE AND STRENGTH (HEAVY OR LIGHT DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. ALL MATERIAL SHALL MEET ITEM 611 OF THE SPECIFICATIONS AND SHALL HAVE THE PRIOR APPROVAL OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

SPECIAL - MISCELLANEOUS METAL 250 POUNDS

THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE IN THE REMOVAL, STORAGE AND REPLACEMENT OF ALL EXISTING CASTINGS. CASTINGS DAMAGED BY THE NEGLIGENCE OF THE CONTRACTOR, AS DETERMINED BY THE ENGINEER, SHALL BE REPLACED WITH THE PROPER NEW CASTINGS AT THE EXPENSE OF THE CONTRACTOR.

ITEM SPECIAL - PIPE CLEANOUT

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM THE EXISTING DRAINAGE CONDUITS SPECIFIED IN THE PLANS. ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER 105.16 AND 105.17. ALL SEWERS SHALL BE CLEANED OUT TO THE SATISFACTION OF THE ENGINEER. CLEANOUT OF THE PIPE SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM SPECIAL - PIPE CLEANOUT. THIS PRICE SHALL INCLUDE THE COST FOR MATERIAL, EQUIPMENT, LABOR, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE CLEANOUT. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE ABOVE NOTED WORK:

SPECIAL - PIPE CLEANOUT, 24" AND UNDER 50 FT.
SPECIAL - PIPE CLEANOUT, 27" TO 48" 50 FT.

PIPE CONNECTIONS TO CORRUGATED METAL STRUCTURES

CONNECTIONS OF PROPOSED LONGITUDINAL DRAINAGE TO CORRUGATED METAL STRUCTURES SHALL BE MADE BY MEANS OF A SHOP FABRICATED OR FIELD WELDED STUB ON THE STRUCTURE. THE STUB SHALL MEET THE REQUIREMENTS OF 707 AND HAVE A MINIMUM LENGTH OF 2 FEET AND A MINIMUM WALL THICKNESS OF 0.064 INCHES.

THE LOCATION AND ELEVATION OF THE STUB ARE TO BE CONSIDERED APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO AVOID CUTTING THROUGH JOINTS IN THE STRUCTURE.

THE FIELD WELDED JOINT, IF USED, SHALL BE THOROUGHLY CLEANED AND REGALVANIZED OR OTHERWISE SUITABLY REPAIRED. WELDING SHALL MEET THE REQUIREMENTS OF 513.21.

A MASONRY COLLAR, AS PER STANDARD DRAWING DM-1.1, WILL BE REQUIRED TO CONNECT THE LONGITUDINAL DRAINAGE TO THE STUB, WHEN PIPE OTHER THAN CORRUGATED METAL IS PROVIDED FOR THE LONGITUDINAL DRAINAGE.

PAYMENT FOR CUTTING INTO THE STRUCTURE AND PROVIDING THE CONNECTION DESCRIBED, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 611 OR 522.

CALCULATED GJG CHECKED DSS

GENERAL NOTES

BRO-32-4.16

MAINTENANCE OF TRAFFIC SUBSUMMARY

CALCULATED JZM
CHECKED EMW

SHEET NO.	MOT PHASE	SPECIAL	614	614	614	614	614	614	614	614	614	614	614	622
		WORK ZONE TRAFFIC SIGNAL	INCREASED BARRIER DELINEATION	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	DETOUR SIGNING	BARRIER REFLECTOR, TYPE 1, ONE WAY	BARRIER REFLECTOR, TYPE 2, ONE WAY	WORK ZONE EDGE LINE, CLASS 1, 6", 642 PAINT	WORK ZONE CENTER LINE, CLASS 1, 642 PAINT	WORK ZONE EDGE LINE, CLASS 1, 6", 642 PAINT	WORK ZONE CHANNELIZING LINE, CLASS 1, 8", 642 PAINT	WORK ZONE DOTTED LINE, CLASS 1, 6", 642 PAINT	WORK ZONE STOP LINE, CLASS 1, 642 PAINT	PORTABLE BARRIER, UNANCHORED
		EACH	FT	EACH	LUMP	EACH	EACH	EACH	MILE	MILE	FT	FT	FT	FT
27	- 52 PHASE 1	3	1258	6	1	47		47	0.57	2.31		1436	64	2368
53	- 71 PHASE 2		183	1		7	4	11		4.22	2198	5840		348
72	- 82 PHASE 3		187	1		7		7		3.85		1440		335
TOTALS CARRIED TO GENERAL SUMMARY		3	1628	8	1	61	4	65	0.57	10.38	2198	8716	64	3051

BRO-32.4.16

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
16	17	18	88	89	91	93	100	101	169	516			01/SAF/OT						
																		ROADWAY	
LS													LS	201	11000	LS		CLEARING AND GRUBBING	
			LS										LS	202	11000	LS		STRUCTURE REMOVED	16
			16,797										16,797	202	23000	16,797	SY	PAVEMENT REMOVED	
			1,142										1,142	202	23001	1,142	SY	PAVEMENT REMOVED, AS PER PLAN	138
				284									284	202	35100	284	FT	PIPE REMOVED, 24" AND UNDER	
				18									18	202	35200	18	FT	PIPE REMOVED, OVER 24"	
			1										1	202	53100	1	EACH	MAILBOX REMOVED	
				2									2	202	58100	2	EACH	CATCH BASIN REMOVED	
				1									1	202	58500	1	EACH	CATCH BASIN ABANDONED	
	50												50	SPECIAL	20270110	50	FT	PIPE CLEANOUT, 24" AND UNDER	17
	50												50	SPECIAL	20270120	50	FT	PIPE CLEANOUT, 27" TO 48"	17
			7,775										7,775	202	75000	7,775	FT	FENCE REMOVED	
		8											8	202	98100	8	EACH	REMOVAL MISC.: INSPECTION WELL	18
			1										1	202	98100	1	EACH	REMOVAL MISC.: PRIVATE SIGN REMOVED	16
		500											500	202	98200	500	FT	REMOVAL MISC.: CONDUIT	18
									36,581				36,581	203	10000	36,581	CY	EXCAVATION	
					4,565								4,565	203	10001	4,565	CY	EXCAVATION, AS PER PLAN	402
									217,437				217,437	203	20000	217,437	CY	EMBANKMENT	
		40											40	203	20001	40	CY	EMBANKMENT, AS PER PLAN, FOR DRAINAGE	18
							955						955	204	10000	955	SY	SUBGRADE COMPACTION	
2,500													2,500	204	13000	2,500	CY	EXCAVATION OF SUBGRADE	
2,500													2,500	204	21001	2,500	CY	GRANULAR EMBANKMENT, AS PER PLAN	16
21													21	204	45000	21	HOUR	PROOF ROLLING	
3,500													3,500	204	50000	3,500	SY	GEOTEXTILE FABRIC	
							64,083						64,083	206	10020	64,083	SY	LIME STABILIZED SUBGRADE, 14 INCHES DEEP	
							1,935						1,935	206	10300	1,935	TON	LIME	
							64,083						64,083	206	11000	64,083	SY	CURING COAT	
													LS	206	30000	LS		MIXTURE DESIGN FOR CHEMICALLY STABILIZED SOILS	
			5,175										5,175	606	15050	5,175	FT	GUARDRAIL, TYPE MGS	
			10										10	606	26150	10	EACH	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	
			8										8	606	26550	8	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
			2										2	606	35002	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
			2										2	606	35102	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	
			10,188										10,188	607	15000	10,188	FT	FENCE, TYPE 47	
		6,500											6,500	607	98000	6,500	FT	FENCE, MISC.: TEMPORARY CONSTRUCTION FENCE	18
										6			6	623	38500	6	EACH	MONUMENT ASSEMBLY	
			1										1	SPECIAL	69050100	1	EACH	MAILBOX SUPPORT SYSTEM, SINGLE	16
																		EROSION CONTROL	
				47									47	601	11000	47	SY	RIPRAP, TYPE D	
		50											50	601	21050	50	SY	TIED CONCRETE BLOCK MAT, TYPE 1	
					92	32							124	601	21060	124	SY	TIED CONCRETE BLOCK MAT, TYPE 2	
		20		59									79	601	32200	79	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
					4,565								4,565	601	45050	4,565	CY	BIORETENTION CELL	
	3												3	659	00100	3	EACH	SOIL ANALYSIS TEST	
	21,300												21,300	659	00300	21,300	CY	TOPSOIL	
					3,222				191,891				195,113	659	10000	195,113	SY	SEEDING AND MULCHING	
	9,595												9,595	659	14000	9,595	SY	REPAIR SEEDING AND MULCHING	
	9,595												9,595	659	15000	9,595	SY	INTER-SEEDING	
	25.91												25.91	659	20000	25.91	TON	COMMERCIAL FERTILIZER	
	39.64												39.64	659	31000	39.64	ACRE	LIME	
	1,036												1,036	659	35000	1,036	MGAL	WATER	
	432												432	659	40000	432	MSF	MOWING	
				125									125	670	00710	125	SY	DITCH EROSION PROTECTION MAT, TYPE B	
					3,222								3,222	671	15000	3,222	SY	EROSION CONTROL MAT, TYPE A	
								LS					LS	832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
								LS					LS	832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS	
								LS					LS	832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	
								160,000					160,000	832	30000	160,000	EACH	EROSION CONTROL	

CALCULATED DSS
CHECKED BDT

GENERAL SUMMARY

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83
610

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SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
16	17	18	88	89	91	93	94	100				01/SAF/OT	02/NHS/PV						
																		DRAINAGE	
				15								15		602	20000	15	CY	CONCRETE MASONRY	
					1,908							1,908		605	05201	1,908	FT	4" UNCLASSIFIED PIPE UNDERDRAINS, AS PER PLAN	402
		300										300		605	11100	300	FT	6" SHALLOW PIPE UNDERDRAINS	
		300										300		605	13300	300	FT	6" UNCLASSIFIED PIPE UNDERDRAINS	
						26,940						26,940		605	14000	26,940	FT	6" BASE PIPE UNDERDRAINS	
		300					1,555					1,855		605	31100	1,855	FT	AGGREGATE DRAINS	
					65							65		611	00200	65	FT	4" CONDUIT, TYPE C	
		100										100		611	00400	100	FT	4" CONDUIT, TYPE E	
		100										100		611	00410	100	FT	4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
		200				496						696		611	00510	696	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
					116							116		611	01100	116	FT	6" CONDUIT, TYPE C	
		100										100		611	01800	100	FT	8" CONDUIT, TYPE B	
				76								76		611	04200	76	FT	12" CONDUIT, TYPE A, 706.02 (CLASS V)	
				195								195		611	04400	195	FT	12" CONDUIT, TYPE B	
				639								639		611	04600	639	FT	12" CONDUIT, TYPE C	
				69								69		611	05900	69	FT	15" CONDUIT, TYPE B	
				22								22		611	06700	22	FT	15" CONDUIT, TYPE F	
				99								99		611	06700	99	FT	15" CONDUIT, TYPE F, 707.05 TYPE C OR 707.21	
				132								132		611	07400	132	FT	18" CONDUIT, TYPE B, 706.02	
				612								612		611	07600	612	FT	18" CONDUIT, TYPE C	
				90								90		611	10200	90	FT	24" CONDUIT, TYPE A, 706.02, 707.33, OR 30" CONDUIT, TYPE A, 707.01	
				127								127		611	13200	127	FT	30" CONDUIT, TYPE A, 706.02, 707.33, OR 707.01	
				205								205		611	16200	205	FT	36" CONDUIT, TYPE A, 706.02, 707.33, OR 707.01	
				118								118		611	16400	118	FT	36" CONDUIT, TYPE B	
				87								87		611	52202	87	FT	14" X 23" CONDUIT, TYPE B, 706.04	
				65								65		611	52300	65	FT	19" X 30" CONDUIT, TYPE A, 706.04	
				94								94		611	53000	94	FT	38" X 60" CONDUIT, TYPE A, 706.04	
				70								70		611	53300	70	FT	53" X 83" CONDUIT, TYPE A, 706.04	
		200										200		611	97400	200	FT	CONDUIT, MISC.: TYPE B FOR DRAINAGE DISCHARGE CONTINUANCE	18
		200										200		611	97400	200	FT	CONDUIT, MISC.: TYPE C FOR DRAINAGE DISCHARGE CONTINUANCE	18
		200										200		611	97400	200	FT	CONDUIT, MISC.: TYPE E FOR DRAINAGE DISCHARGE CONTINUANCE	18
		200										200		611	97400	200	FT	CONDUIT, MISC.: TYPE F FOR DRAINAGE DISCHARGE CONTINUANCE	18
				4								4		611	98180	4	EACH	CATCH BASIN, NO. 3A	
				1								1		611	98230	1	EACH	CATCH BASIN, NO. 4	
				9								9		611	98470	9	EACH	CATCH BASIN, NO. 2-2B	
				4								4		611	98510	4	EACH	CATCH BASIN, NO. 2-3	
				2								2		611	98540	2	EACH	CATCH BASIN, NO. 2-4	
		10				19						29		611	99710	29	EACH	PRECAST REINFORCED CONCRETE OUTLET	
		8										8		611	99720	8	EACH	INSPECTION WELL	
	250											250		SPECIAL	61199820	250	LB	MISCELLANEOUS METAL	17
																		PAVEMENT	
	1,500												1,500	251	01021	1,500	SY	PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN	17
	500												500	253	01001	500	SY	PAVEMENT REPAIR, AS PER PLAN	17
								85,229				1,853	83,376	254	01000	85,229	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1.5"	
15,000													15,000	254	01600	15,000	SY	PATCHING PLANED SURFACE	
								3,915				3,915		255	20001	3,915	FT	FULL DEPTH PAVEMENT SAWING, AS PER PLAN	8
8								7,450				7,458		302	56000	7,458	CY	ASPHALT CONCRETE BASE, PG64-22, (449)	
								10,431				10,431		304	20000	10,431	CY	AGGREGATE BASE	
								12,939				5,435	7,504	407	20000	12,939	GAL	NON-TRACKING TACK COAT	
1,117												1,117		441	00100	1,117	CY	ANTI-SEGREGATION EQUIPMENT	
1								1,469				1,470		441	50000	1,470	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
								10				10		441	70500	10	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), (DRIVEWAYS)	
								13				13		441	70700	13	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449), (DRIVEWAYS)	
3,196												3,196		442	00100	3,196	CY	ANTI-SEGREGATION EQUIPMENT	
								667				667		442	10100	667	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	
5								4,094				625	3,474	442	10300	4,099	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447)	
	6.2											6.2		451	20000	6.2	SY	REINFORCED CONCRETE PAVEMENT, MISC.: EXISTING CONCRETE SLAB	17
								12,001				12,001		452	12010	12,001	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
			105									105		609	24510	105	FT	CURB, TYPE 4-C	

CALCULATED DSS CHECKED BDT

GENERAL SUMMARY

BRO-32-4.16

SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
19	20	21	22	405	454	467						01/SAF/OT	03/SAF/OT						
				0.8									0.8	807	12010	0.8	MILE	WET REFLECTIVE EPOXY PAVEMENT MARKING, EDGE LINE, 6", WHITE	
				0.84									0.84	807	12010	0.84	MILE	WET REFLECTIVE EPOXY PAVEMENT MARKING, EDGE LINE, 6", YELLOW	
				3.84									3.84	807	14010	3.84	MILE	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6", WHITE	
				4.16									4.16	807	14010	4.16	MILE	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6", YELLOW	
				4.16									4.16	807	14110	4.16	MILE	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, LANE LINE, 6"	
				4,185									4,185	807	14310	4,185	FT	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, CHANNELIZING LINE, 12"	
				2,470									2,470	807	14430	2,470	FT	WET REFLECTIVE THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 12"	
				10.08									10.08	850	10010	10.08	MILE	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	
				2,470									2,470	850	10130	2,470	FT	GROOVING FOR 12" RECESSED PAVEMENT MARKING, (ASPHALT)	
				1.64									1.64	850	20010	1.64	MILE	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (CONCRETE)	
																		TRAFFIC SIGNALS	
					1							1		632	90101	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	454
																		STRUCTURE OVER 20 FOOT SPAN (BRO-HOMAN-00.098)	
						LS						LS		503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
						LS						LS		503	21300	LS		UNCLASSIFIED EXCAVATION	
						4,716						4,716		509	10000	4,716	LB	EPOXY COATED STEEL REINFORCEMENT	
						8						8		511	46011	8	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING, AS PER PLAN	466
						37						37		511	46510	37	CY	CLASS QC1 CONCRETE, FOOTING	
						3						3		511	46610	3	CY	CLASS QC1 CONCRETE, HEADWALL	
						60						60		512	10100	60	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
						259						259		512	33000	259	SY	TYPE 2 WATERPROOFING	
						30						30		516	13600	30	SF	1" PREFORMED EXPANSION JOINT FILLER	
						5						5		518	21200	5	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
						34						34		601	32200	34	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
						64						64		611	96492	64	FT	20' X 4' CONDUIT, TYPE A, 706.05	
																		STRUCTURE OVER 20 FOOT SPAN (BRO-32-0363)	
																		FOR BRIDGE AND WALL QUANTITIES, SEE SHEETS 474&503	
																		MAINTENANCE OF TRAFFIC	
		100										100		614	11110	100	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
			3									3		SPECIAL	614/11300	3	EACH	WORK ZONE TRAFFIC SIGNAL	19
			1,628									1,628		614	11630	1,628	FT	INCREASED BARRIER DELINEATION	
			8									8		614	12380	8	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)	
			LS									LS		614	12420	LS		DETOUR SIGNING	
	4											4		614	12484	4	EACH	WORK ZONE INCREASED PENALTIES SIGN	
50												50		614	12500	50	EACH	REPLACEMENT SIGN	
100												100		614	12600	100	EACH	REPLACEMENT DRUM	
			61									61		614	13310	61	EACH	BARRIER REFLECTOR, TYPE 1, ONE WAY	
			4									4		614	13312	4	EACH	BARRIER REFLECTOR, TYPE 2, ONE WAY	
			65									65		614	13350	65	EACH	OBJECT MARKER, ONE WAY	
	4											4		614	18601	4	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	20
		8.3										8.3		614	20550	8.3	MILE	WORK ZONE LANE LINE, CLASS III, 4", 642 PAINT	
			0.57									0.57		614	21100	0.57	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	
			10.38									10.38		614	22110	10.38	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT	
		14.7										14.7		614	22350	14.7	MILE	WORK ZONE EDGE LINE, CLASS III, 4", 642 PAINT	
			2,198									2,198		614	23200	2,198	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 8", 642 PAINT	
		4,632										4,632		614	23680	4,632	FT	WORK ZONE CHANNELIZING LINE, CLASS III, 8", 642 PAINT	
			8,716									8,716		614	24202	8,716	FT	WORK ZONE DOTTED LINE, CLASS I, 6", 642 PAINT	
		4,952										4,952		614	24610	4,952	FT	WORK ZONE DOTTED LINE, CLASS III, 4", 642 PAINT	
			64									64		614	26200	64	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
1,000												1,000		616	10000	1,000	MGAL	WATER	
			3,051									3,051		622	41100	3,051	FT	PORTABLE BARRIER, UNANCHORED	
52												52		808	18700	52	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY	
																		INCIDENTALS	
LS												LS		614	11000	LS		MAINTAINING TRAFFIC	
												30		619	16010	30	MNTH	FIELD OFFICE, TYPE B	
												LS		623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
												LS		623	11000	LS		PROVIDING ELECTRONIC INSTRUMENTATION	
												LS		623	50000	LS		PRECONSTRUCTION SURVEY MONUMENT VERIFICATION AND REPORT	
												LS		623	51000	LS		POST CONSTRUCTION SURVEY MONUMENT VERIFICATION AND REPORT	
												LS		624	10000	LS		MOBILIZATION	

CALCULATED DSS
CHECKED BDT

GENERAL SUMMARY

BRO-32-4.16

STATION RANGE			REF NO.	SIDE	DISTANCE (D)	AVERAGE WIDTH (W)	SURFACE AREA (A) A=DxW/9	CADD GENERATED AREA	PLAN SPLIT #	204 SUBGRADE COMPACTION	206 LIME STABILIZED SUBGRADE, 14 INCHES DEEP	206 LIME	206 CURING COAT	254 PAVEMENT PLANING, ASPHALT CONCRETE, 1.5"	255 FULL DEPTH PAVEMENT SAWING, AS PER PLAN	302 ASPHALT CONCRETE BASE, PG64-22, (449)	304 AGGREGATE BASE	407 NON-TRACKING TACK COAT	441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), (DRIVEWAYS)	441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449), (DRIVEWAYS)	442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447)	452 8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
					FT	FT	SY	SY		SY	SY	TON	SY	SY	FT	CY	CY	GAL	CY	CY	CY	CY	CY	SY		
Bruce Lunsford Way																										
403+50.00	TO	408+50.00	PV-14	℄	500.00	30.00	1666.67		01/SAF/OT								100.00	69.44							
403+50.00	TO	408+50.00		℄	500.00	30.67	1703.70		01/SAF/OT							189.30									
403+50.00	TO	408+50.00		℄	500.00	31.67	1759.26		01/SAF/OT								293.21								
403+50.00	TO	408+50.00		℄	500.00	33.00	1833.33		01/SAF/OT		1833.33	55.34	1833.33												
408+50.00	TO	411+03.17	PV-15	℄	253.17			1052.05	01/SAF/OT									37.90							
408+50.00	TO	411+03.17		℄	253.17			1065.45	01/SAF/OT							118.38		63.93							
408+50.00	TO	411+03.17		℄	253.17			1085.56	01/SAF/OT								180.93								
408+50.00	TO	411+03.17		℄	253.17			1112.38	01/SAF/OT		1112.38	33.58	1112.38												
411+03.17	TO	411+96.46	PV-16	℄	93.29	30.00	310.97		01/SAF/OT									12.96							
411+03.17	TO	411+96.46		℄	93.29	30.67	317.91		01/SAF/OT							35.32		19.07							
411+03.17	TO	411+96.46		℄	93.29	31.67	328.28		01/SAF/OT								54.71								
411+03.17	TO	411+96.46		℄	93.29	33.00	342.06		01/SAF/OT		342.06	10.33	342.06												
414+39.00	TO	415+32.10	PV-17	℄	93.10	30.00	310.33		01/SAF/OT									12.93							
414+39.00	TO	415+32.10		℄	93.10	30.67	317.26		01/SAF/OT							35.25		19.04							
414+39.00	TO	415+32.10		℄	93.10	31.67	327.61		01/SAF/OT								54.60								
414+39.00	TO	415+32.10		℄	93.10	33.00	341.37		01/SAF/OT		341.37	10.31	341.37												
415+32.10	TO	417+85.22	PV-18	℄	253.12			896.12	01/SAF/OT									37.34							
415+32.10	TO	417+85.22		℄	253.12			909.60	01/SAF/OT							101.07		54.58							
415+32.10	TO	417+85.22		℄	253.12			929.82	01/SAF/OT								154.97								
415+32.10	TO	417+85.22		℄	253.12			956.78	01/SAF/OT		956.78	28.88	956.78												
417+85.22	TO	429+67.00	PV-19	℄	1181.78	30.00	3939.27		01/SAF/OT									164.14							
417+85.22	TO	429+67.00		℄	1181.78	30.67	4027.24		01/SAF/OT							447.47		241.63							
417+85.22	TO	429+67.00		℄	1181.78	31.67	4158.55		01/SAF/OT								693.09								
417+85.22	TO	429+67.00		℄	1181.78	33.00	4333.19		01/SAF/OT		4333.19	130.81	4333.19												
429+67.00	TO	430+11.00	PV-20	℄	44.00	30.00	146.67		01/SAF/OT									6.11							
429+67.00	TO	430+11.00		℄	44.00	30.67	149.94		01/SAF/OT							16.66		9.00							
429+67.00	TO	430+11.00		℄	44.00	31.67	154.83		01/SAF/OT								25.81								
429+67.00	TO	430+11.00		℄	44.00	33.00	161.33		01/SAF/OT		161.33	4.87	161.33												
SUBTOTAL FOR PLAN SPLIT 01/SAF/OT										0.00	9080.45	274.12	9080.45	0.00	0.00	943.46	1457.32	507.24	340.82	0.00	0.00	0.00	0.00	0.00		
SUBTOTAL FOR PLAN SPLIT 02/NHS/PV										0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
TOTALS CARRIED TO SHEET 100										0.00	9080.45	274.12	9080.45	0.00	0.00	943.46	1457.32	507.24	340.82	0.00	0.00	0.00	0.00	0.00		

CALCULATED ARL CHECKED DSS

PAVEMENT QUANTITIES

BRO-32-4.16

STATION RANGE			REF NO.	SIDE	DISTANCE (D)	AVERAGE WIDTH (W)	SURFACE AREA (A) A=DxW/9	CADD GENERATED AREA	PLAN SPLIT #	204 SUBGRADE COMPACTION	206 LIME STABILIZED SUBGRADE, 14 INCHES DEEP	206 LIME	206 CURING COAT	254 PAVEMENT PLANING, ASPHALT CONCRETE, 1.5"	255 FULL DEPTH PAVEMENT SAWING, AS PER PLAN	302 ASPHALT CONCRETE BASE, PG64-22, (449)	304 AGGREGATE BASE	407 NON-TRACKING TACK COAT	441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), (DRIVEWAYS)	441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449), (DRIVEWAYS)	442 ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447)	452 8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
					FT	FT	SY	SY		SY	SY	TON	SY	SY	FT	CY	CY	GAL	CY	CY	CY	CY	CY	SY		
BODMAN ROAD																										
16+50.06	TO	18+75.00	PV-21	LT	186.89			241.53	01/SAF/OT									21.74	67.09			15.10				
16+50.06	TO	18+75.00		LT	186.89			248.45	01/SAF/OT							43.14		22.36								
16+50.06	TO	18+75.00		LT	186.89			258.83	01/SAF/OT	258.83							41.41									
17+91.00			SC-5	℄	22.32				01/SAF/OT						22.32											
24+62.01			SC-6	℄	49.54				01/SAF/OT						49.54											
BROOKS-MALOTT RD																										
13+90.58	TO	14+70.78	PV-11	℄	199.14			310.62	01/SAF/OT									27.96	10.79			19.41				
13+90.58	TO	14+70.78		℄	199.14			318.00	01/SAF/OT							53.00		28.62								
13+90.58	TO	14+70.78		℄	199.14			329.06	01/SAF/OT	329.06							54.84									
20+64.21	TO	27+60.00	PV-13	℄	695.79			1852.13	01/SAF/OT					1852.13				166.69					77.17			
20+65.36	TO	25+30.99	SC-11	℄	465.63				01/SAF/OT						465.63											
25+98.13	TO	27+46.81	SC-13	℄	170.75				01/SAF/OT						170.75											
QUANTITY TOTALS FOR PLAN SPLIT 01/SAF/OT																										
TOTAL FROM THIS SHEET										587.89	0.00	0.00	0.00	1,852.13	708.24	96.14	96.25	267.37	77.88	0.00	0.00	34.51	77.17	0.00		
TOTAL FROM SHEET			95							0.00	27,577.84	832.51	27,577.84	0.00	3,205.93	3,535.29	4,353.09	2,357.46	0.00	0.00	0.00	632.17	541.86	11,919.64		
TOTAL FROM SHEET			96							0.00	9,080.45	274.12	9,080.45	0.00	0.00	943.46	1,457.32	507.24	340.82	0.00	0.00	0.00	0.00	0.00		
TOTAL FROM SHEET			97							366.67	23,279.57	702.75	23,279.57	0.00	0.00	2,446.15	3,785.89	1,939.02	897.69	0.00	0.00	0.00	0.00	0.00		
TOTAL FROM SHEET			98							0.00	4,144.57	125.11	4,144.57	0.00	0.00	428.43	663.30	339.57	151.65	0.00	0.00	0.00	0.00	0.00		
TOTAL FROM SHEET			99							0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.51	23.81	0.00	9.19	12.86	0.00	0.00	81.20		
SUBTOTAL										955	64,083	1,935	64,083	1,853	3,915	7,450	10,431	5,435	1,469	10	13	667	620	12,001		
QUANTITY TOTALS FOR PLAN SPLIT 02/NHS/PV																										
TOTAL FROM THIS SHEET										0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
TOTAL FROM SHEET			95							0.00	0.00	0.00	0.00	83,375.62	0.00	0.00	0.00	7,503.81	0.00	0.00	0.00	0.00	3,473.98	0.00		
SUBTOTAL										0	0	0	0	83,376	0	0	0	7,504	0	0	0	0	3,474	0		
TOTALS CARRIED TO GENERAL SUMMARY										955	64,083	1,935	64,083	85,229	3,915	7,450	10,431	12,939	1,469	10	13	667	4,094	12,001		

CALCULATED ARL
CHECKED DSS

PAVEMENT QUANTITIES

BRO-32-4.16

100
610

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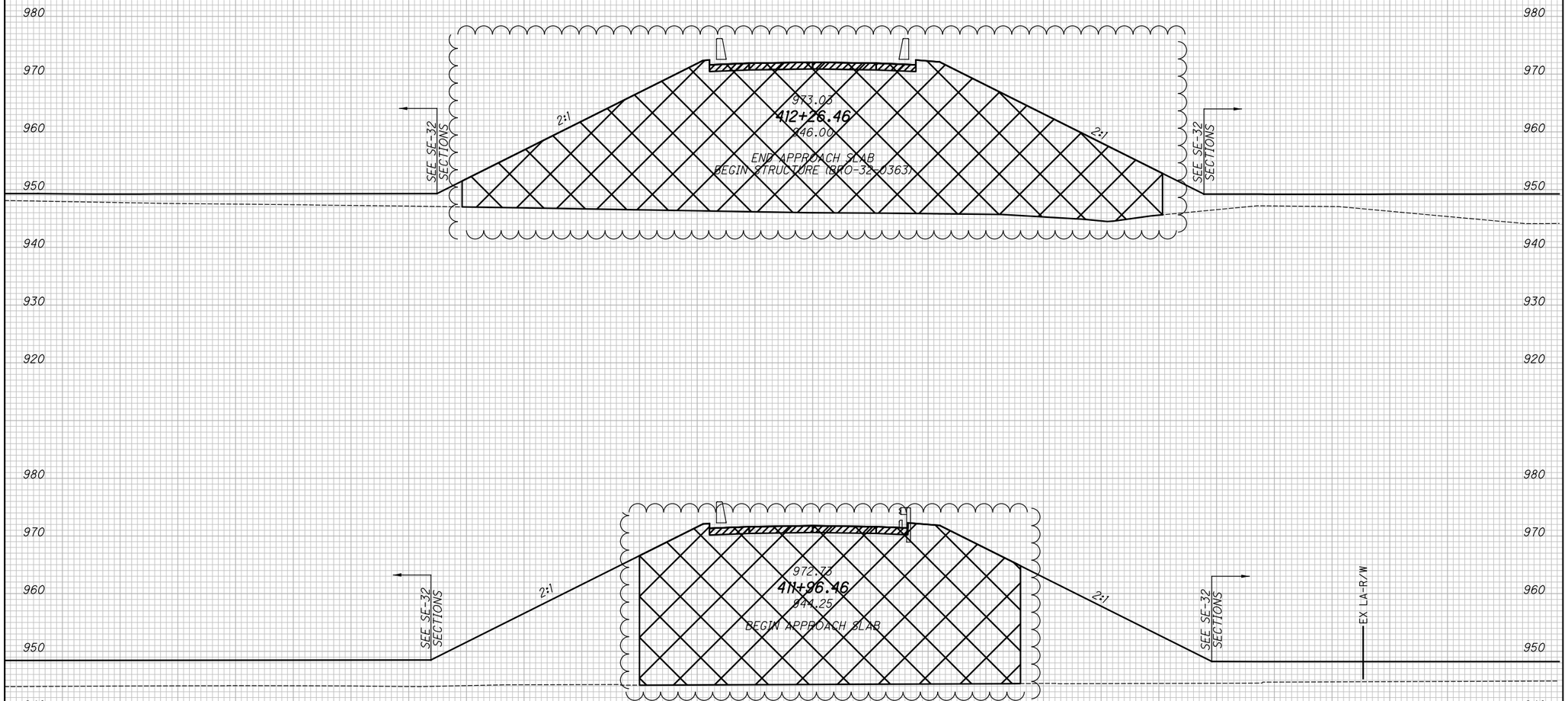
SEEDING	
END WIDTH	SQ. YDS.
114	387
117	620
	1007

ITEM 202 - PAVEMENT REMOVED, ASPHALT

ITEM 206 - LIME STABILIZED SUBGRADE, 14" DEEP

ITEM 203 - EMBANKMENT, AS PER PLAN (COVERED WITH BRIDGE/WALL QUANTITIES)



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	51		
		0	520
0	885		
		0	3016
		0	3536

CALCULATED DSS
CHECKED MAH

CROSS SECTIONS - BRUCE LUNSFORD'S WAY
STA. 411+96.46 TO STA. 412+26.46

BRO-32-4.16

259
610

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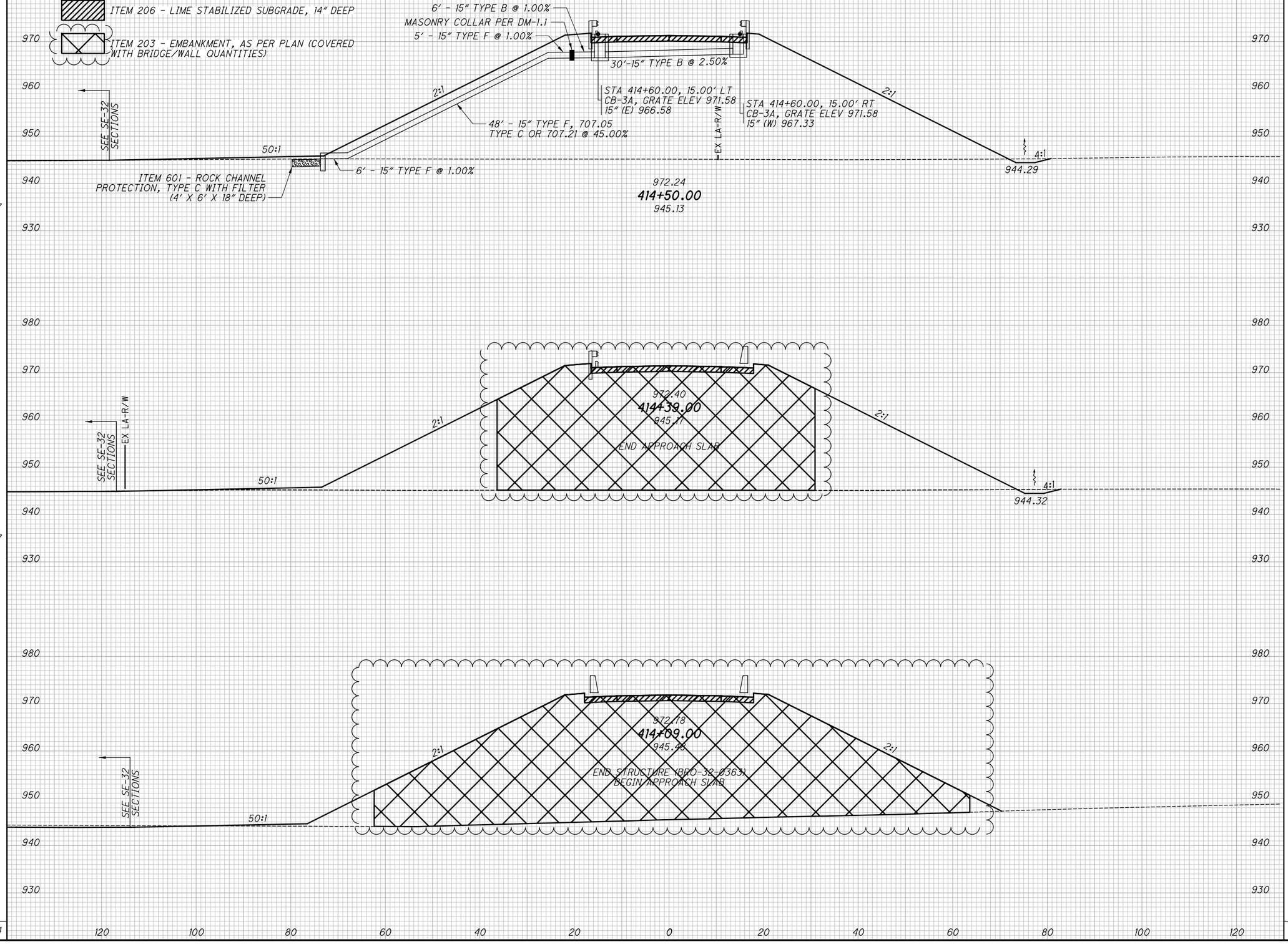
SEEDING	
END WIDTH	SQ. YDS.
185	227
186	597
170	0
	824

ITEM 202 - PAVEMENT REMOVED, ASPHALT

ITEM 206 - LIME STABILIZED SUBGRADE, 14" DEEP

ITEM 203 - EMBANKMENT, AS PER PLAN (COVERED WITH BRIDGE/WALL QUANTITIES)



END AREA		VOLUME	
CUT	FILL	CUT	FILL
5	2471		
		2	1018
6	837		
		5	508
3	76		
		0	0
		7	1526

CALCULATED DSS
CHECKED MAH

CROSS SECTIONS - BRUCE LUNSFORD'S WAY
STA. 414+09.00 TO STA. 414+50.00

BRO-32-4.16

260
610

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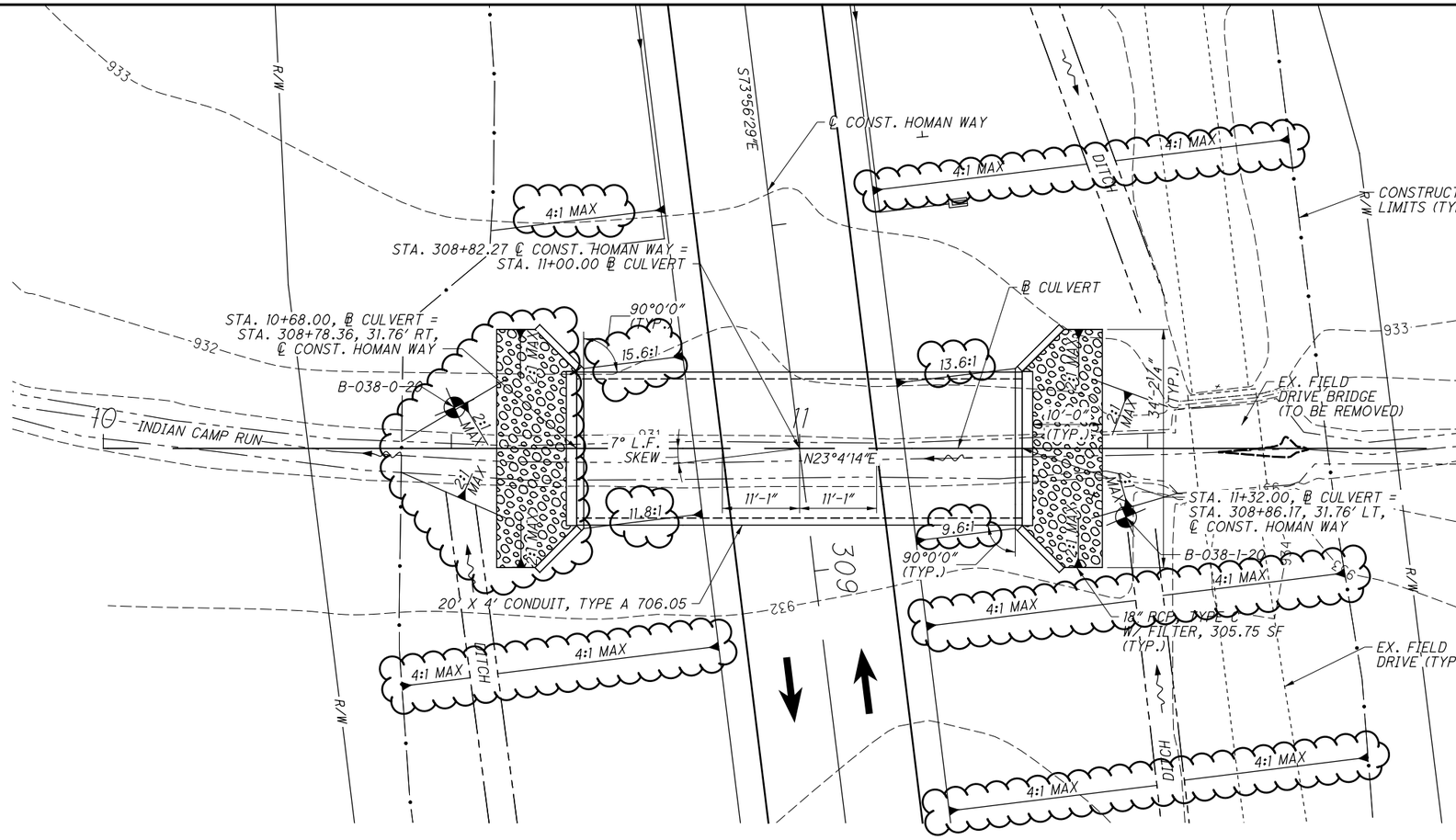
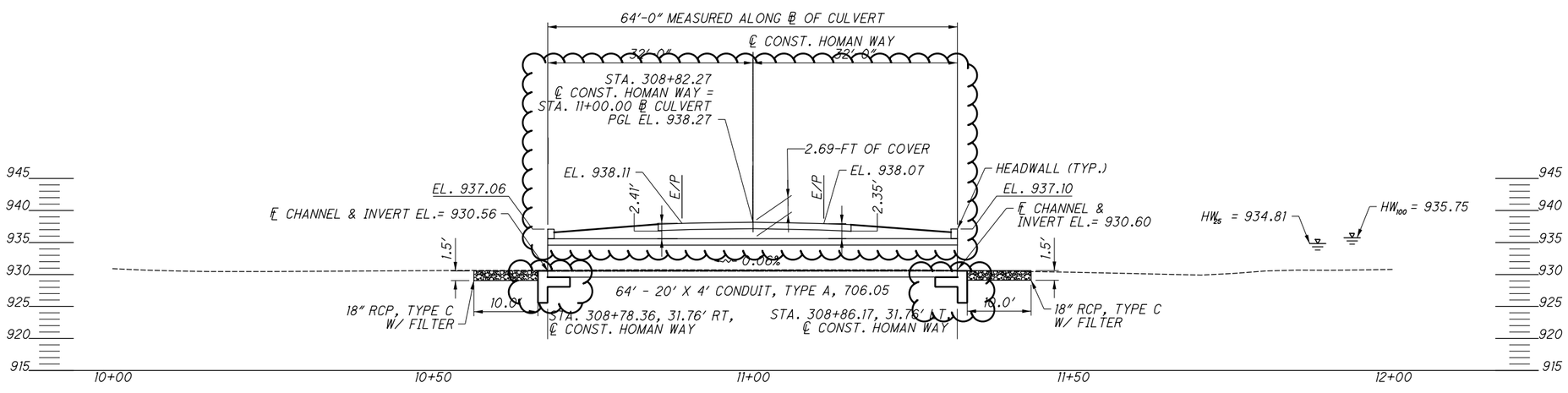


PLAN



PROFILE ALONG ℄ CULVERT

PROPOSED STRUCTURE

TYPE: PRECAST BOX CULVERT
SIZE: 20' X 4'
SKEW: 7° L.F.
ALIGNMENT: TANGENT
LOADING: HL-93
SFN: 0860000
LATITUDE: 39.047626°
LONGITUDE: -83.962985°

HYDRAULIC DESIGN DATA

DRAINAGE AREA = 556 ACRES
Q_{25} = 281.03 CFS V_{25} = 3.74 FPS HW_{25} = 934.81
Q_{100} = 389.79 CFS V_{100} = 3.45 FPS HW_{100} = 935.75
ORDINARY HIGH WATER MARK = 931.8
DESIGN SERVICE LIFE = 75 YEARS
pH = 8.1
ABRASION LEVEL = LEVEL 1

LEGEND

PROJECT BORING

NOTES:

1. SEE SHEET 3/7 FOR ESTIMATED QUANTITIES.

DESIGN AGENCY
2LMN, Inc.
2475 Sugar Grove Rd., SE Lancaster, Ohio 43130
(740) 687-5542 Phone - (740) 687-0086 Fax

DESIGNED JBM | DRAWN JBM | REVIEWED MUR | DATE 3/18/21
CHECKED JAH | REVISED | STRUCTURE FILE NUMBER 0860000

BROWN COUNTY
STA. 308+71.18
STA. 308+93.35

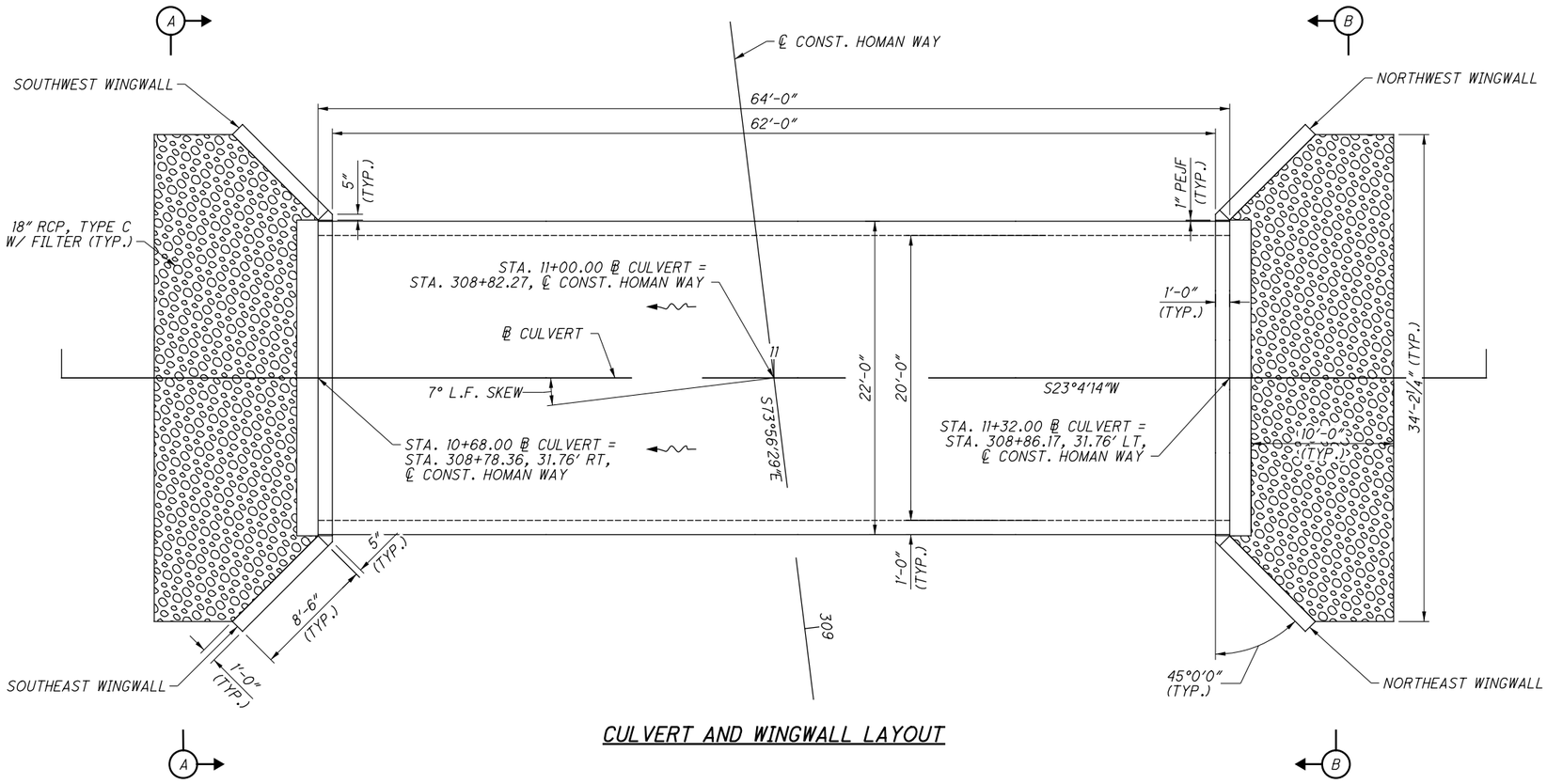
CULVERT DETAIL
BRIDGE NO. BRO-HOMAN-00.098
OVER INDIAN CAMP RUN

BRO-32-4.16
PID No. 110478

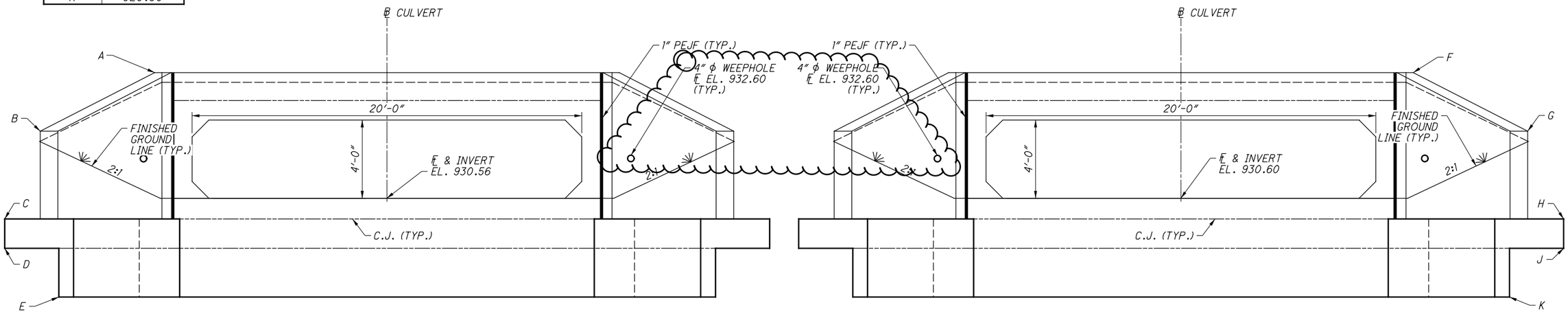
1 / 7

465
610

ELEVATION TABLE	
POINT	ELEVATION
A	937.06
B	934.06
C	929.56
D	928.06
E	925.56
F	937.10
G	934.10
H	929.60
J	928.10
K	925.60



CULVERT AND WINGWALL LAYOUT



VIEW A-A OUTLET ELEVATION

VIEW B-B INLET ELEVATION

DESIGN AGENCY
2LMV, Inc.
2475 Sugar Grove Rd., SE Lancaster, Ohio 43130
(740) 687-5542 Phone - (740) 687-0086 Fax

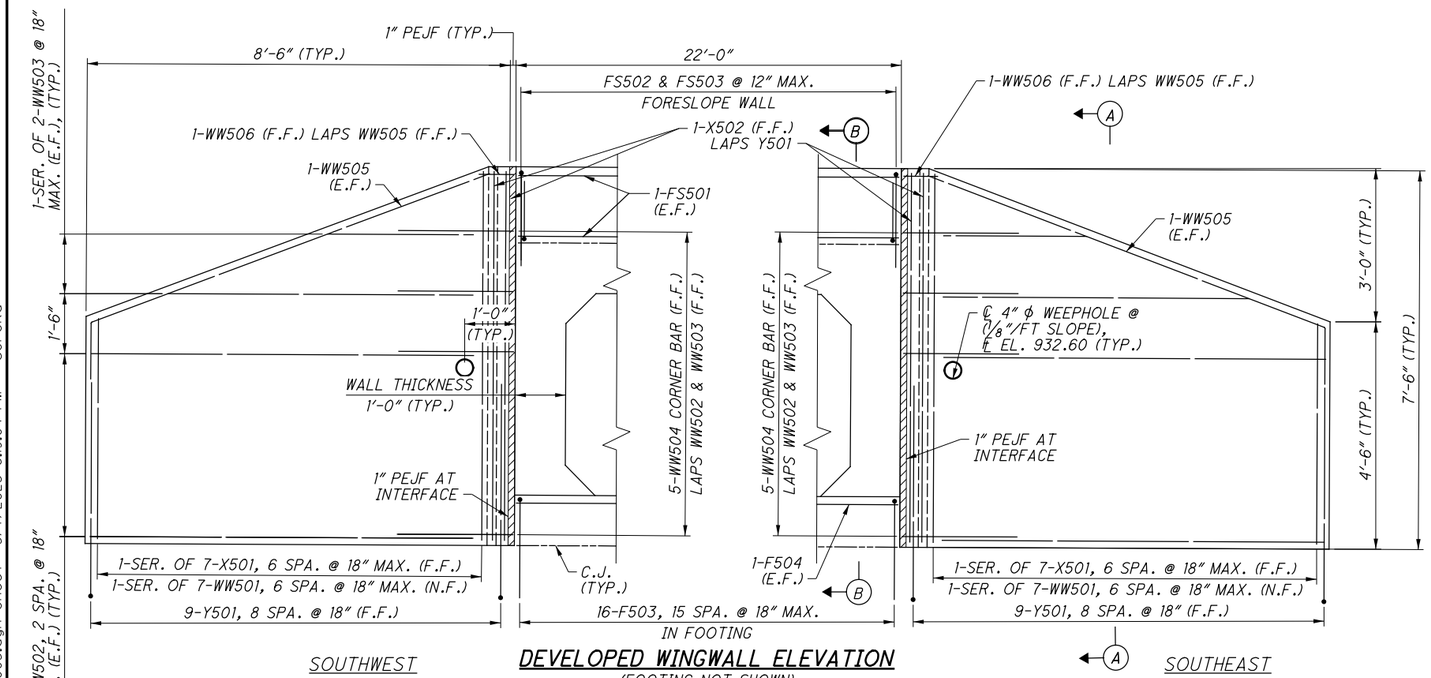
DESIGNED	DRAWN	REVIEWED	DATE
JBM	JBM	MJR	3/18/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JAH		0860000	

CULVERT LAYOUT
BRIDGE NO. BRO-HOMAN-00.098
OVER INDIAN CAMP RUN

BRO-32-4.16
PID No. 110478

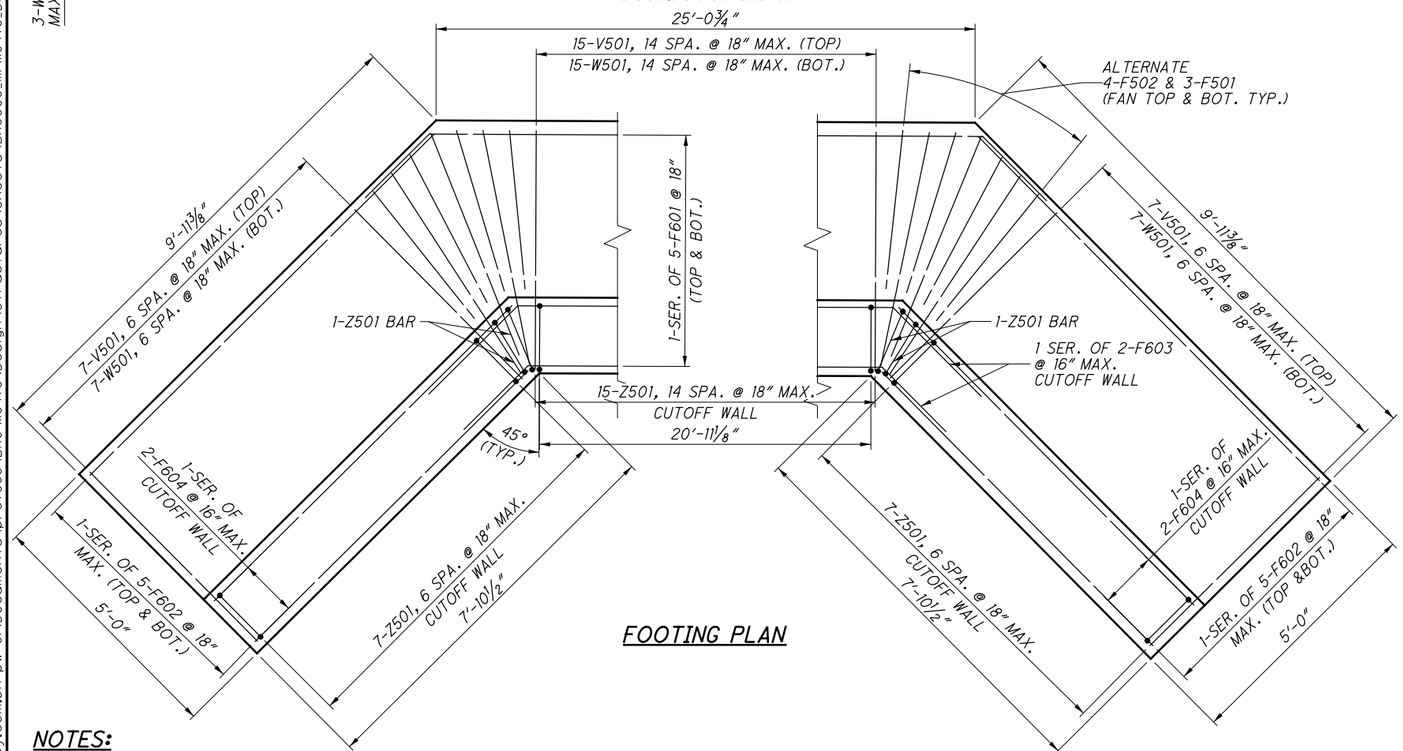
4 / 7

468
610

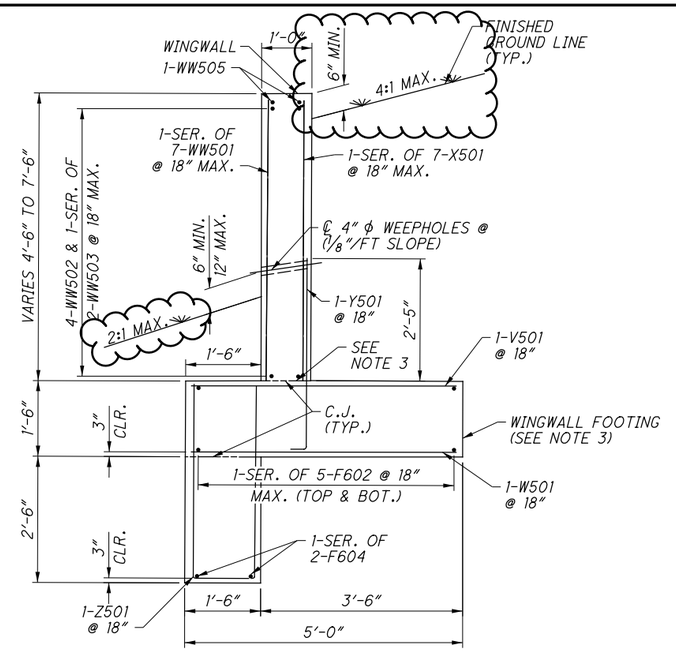


DEVELOPED WINGWALL ELEVATION

(FOOTING NOT SHOWN)

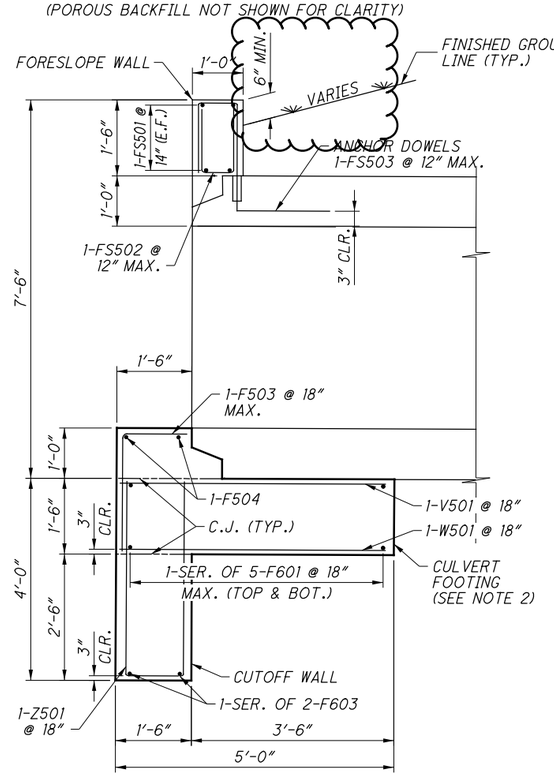


FOOTING PLAN



SECTION A-A

(POROUS BACKFILL NOT SHOWN FOR CLARITY)



SECTION B-B

(CULVERT OUTLET BEVEL SHOWN)

NOTES:

1. FOR CULVERT LOCATION PLAN, SEE SHEET 1 / 7.
2. SLOPE PORTION OF FOOTING UNDER CULVERT TO MATCH CULVERT SLOPE.
3. THE INTERFACE BETWEEN THE TOP OF FOOTING AND WINGWALL STEM IS INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY ¼" BY MEANS OF A SERRATED TROWEL.
4. THE LAP SPLICE LENGTHS USED IN THESE DETAILS ARE AS FOLLOWS: 2'-5" FOR #5 BARS; 2'-11" FOR #6 BARS
5. TYPICAL CLEARANCE FOR REBAR IS 2" UNLESS NOTED OTHERWISE.

DESIGN AGENCY
2LMN, Inc.
2475 Sugar Grove Rd., SE Lancaster, Ohio 43130
(740) 687-5542 Phone - (740) 687-0086 Fax

DESIGNED	DRAWN	REVIEWED	DATE
JBM	JBM	MUR	3/18/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JAH		0860000	

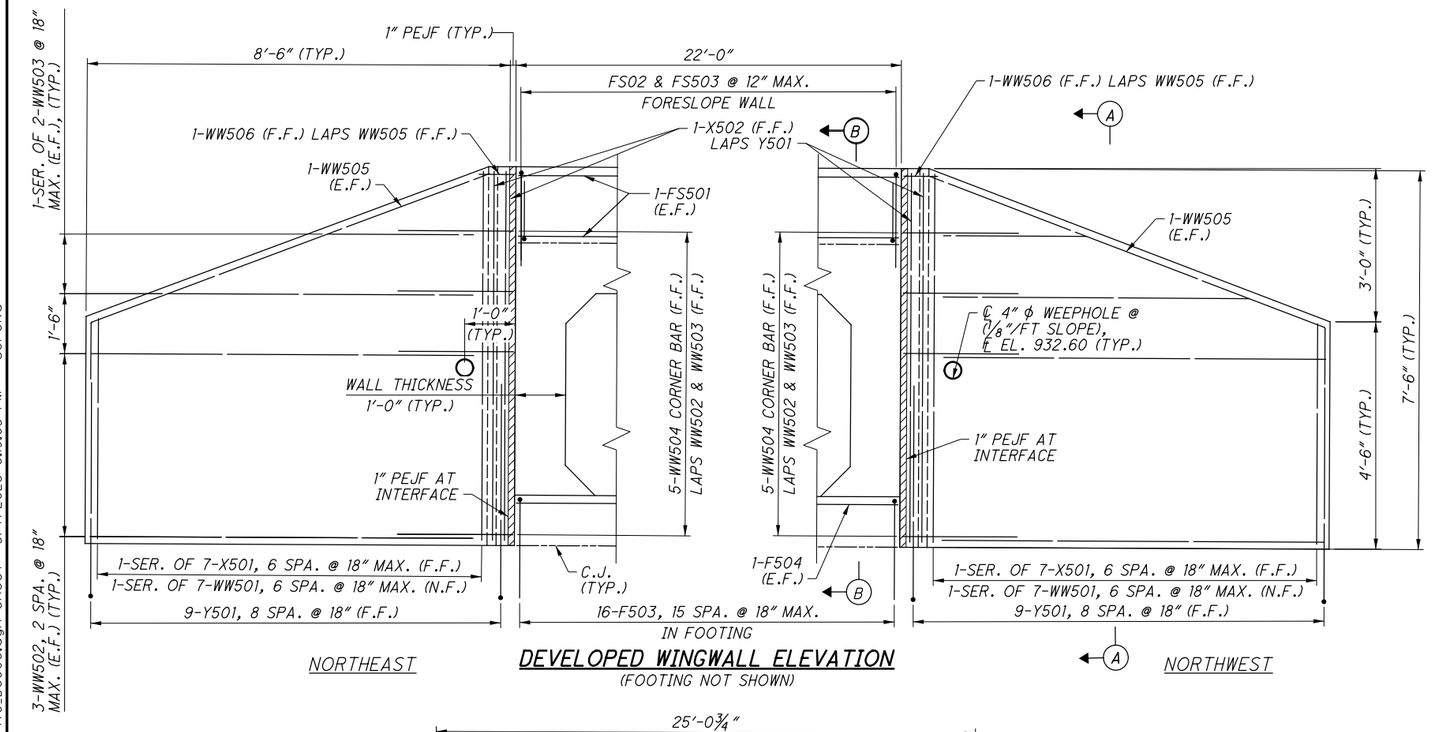
CULVERT OUTLET DETAILS

BRIDGE NO. BRO-HOMAN-00.098
OVER INDIAN CAMP RUN

BRO-32-4.16
PID No. 110478

5 / 7

469
610

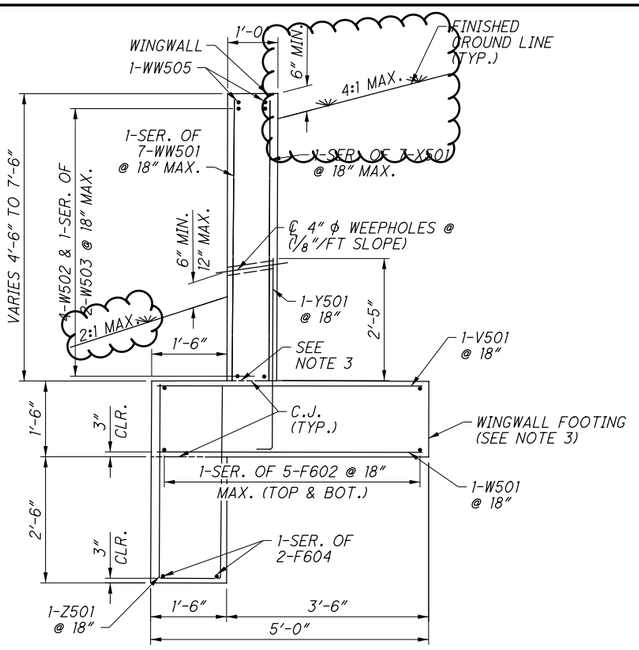


NORTHEAST

DEVELOPED WINGWALL ELEVATION

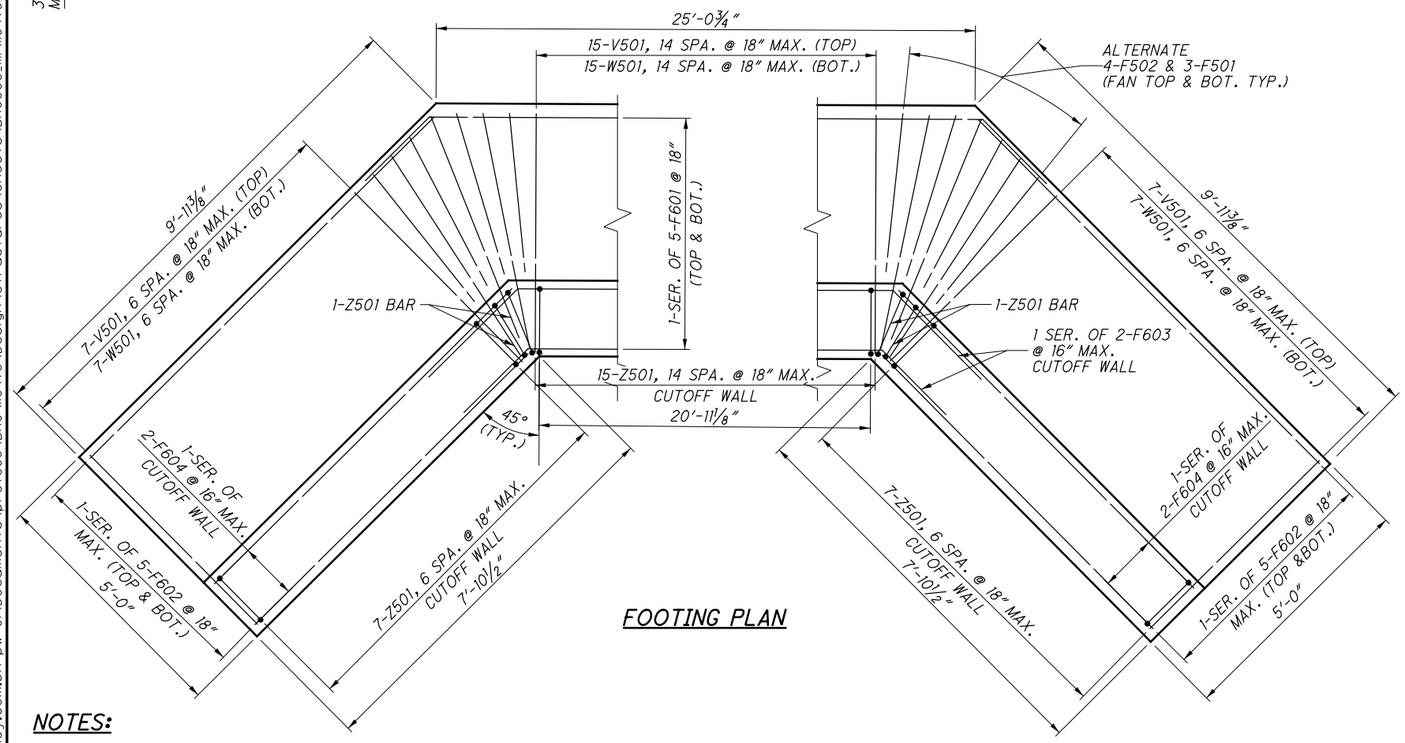
(FOOTING NOT SHOWN)

NORTHWEST

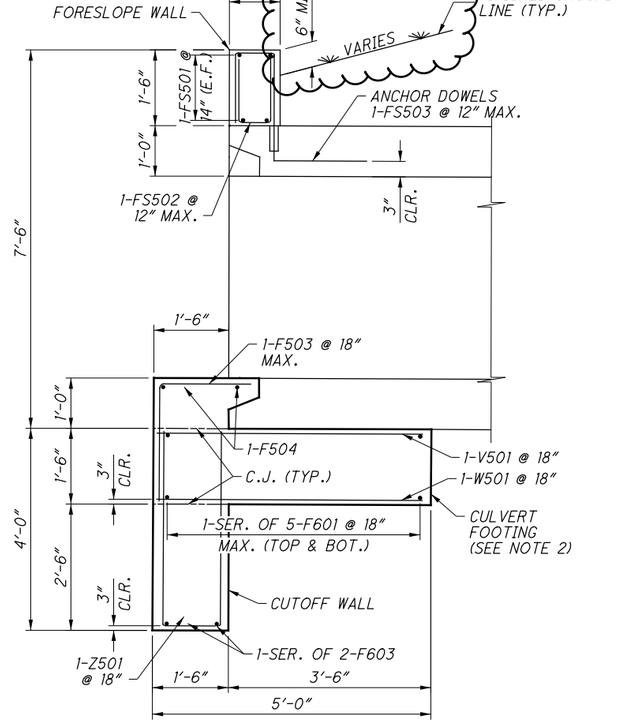


SECTION A-A

(POROUS BACKFILL NOT SHOWN FOR CLARITY)



FOOTING PLAN



SECTION B-B

(CULVERT INLET BEVEL SHOWN)

NOTES:

1. FOR CULVERT LOCATION PLAN, SEE SHEET 1 / 7.
2. SLOPE PORTION OF FOOTING UNDER CULVERT TO MATCH CULVERT SLOPE.
3. THE INTERFACE BETWEEN THE TOP OF FOOTING AND WINGWALL STEM IS INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY ¼" BY MEANS OF A SERRATED TROWEL.
4. THE LAP SPLICE LENGTHS USED IN THESE DETAILS ARE AS FOLLOWS: 2'-5" FOR #5 BARS; 2'-11" FOR #6 BARS
5. TYPICAL CLEARANCE FOR REBAR IS 2" UNLESS NOTED OTHERWISE.

DESIGN AGENCY
2LMN, Inc.
2475 Sugar Grove Rd., SE Lancaster, Ohio 43130
(740) 687-5542 Phone - (740) 687-0086 Fax

DESIGNED	DRAWN	REVIEWED	DATE
JBM	JBM	MUR	3/18/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JAH		0860000	

CULVERT INLET DETAILS

BRIDGE NO. BRO-HOMAN-00.098
OVER INDIAN CAMP RUN

BRO-32-4.16
PID No. 110478

6 / 7

470
610

GENERAL NOTES:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:
AS-1-15 REVISED 07-17-15
AS-2-15 REVISED 01-18-19
PSID-1-13 REVISED 07-20-18
SBR-1-20 REVISED 07-17-20
SICD-2-14 DATED 07-18-14
VPF-1-90 REVISED 7-20-18

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:
840 DATED 1-17-20
846 DATED 4-17-15

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.

OPERATIONAL IMPORTANCE:
A LOAD MODIFIER OF 1.0 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:
HL-93
FUTURE WEARING SURFACE (FWS) OF 60 PSF

DESIGN DATA:
CONCRETE CLASS QC2 WITH QC/QA - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE INCLUDING ABUTMENT, INTERMEDIATE AND PIER DIAPHRAGMS, AND APPROACH SLAB)
CONCRETE CLASS QC1 WITH QC/QA- COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
REINFORCING STEEL - GRADE 60, MINIMUM YIELD STRENGTH 60 KSI
STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI (BEARING HP SECTION AND LOAD PLATE)

CONCRETE FOR PRESTRESSED I-BEAMS:
COMPRESSIVE STRENGTH (FINAL) - 9 KSI
COMPRESSIVE STRENGTH (RELEASE) - 7 KSI
CONCRETE INTERMEDIATE DIAPHRAGMS SHALL BE USED

WELDED WIRE FABRIC:
YIELD STRENGTH - 70 KSI

PRESTRESSING STRAND:
ASTM A416 GRADE 270
ULTIMATE STRENGTH = 270 KSI
STRAND AREA = .217 SQ. IN.
INITIAL STRESS = 202.5 KSI (LOW RELAXATION STRANDS)

DECK PROTECTION METHOD:
EPOXY COATED REINFORCING STEEL
2½ IN CONCRETE COVER

MONOLITHIC WEARING SURFACE:
MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

ITEM 203 - EMBANKMENT, AS PER PLAN
SEE ROADWAY GENERAL NOTES FOR DETAILS

PILE DESIGN LOADS (ULTIMATE BEARING VALUE):
THE ULTIMATE BEARING VALUE IS 267 KIPS PER PILE FOR THE REAR AND FORWARD ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 343 KIPS PER PILE FOR THE PIER PILES.

REAR ABUTMENT PILES: (16)-PILES, 12" ϕ C.I.P., 50 FT LONG (ORDER LENGTH)

FORWARD ABUTMENT PILES: (16)-PILES, 12" ϕ C.I.P., 55 FT LONG (ORDER LENGTH)

PIER PILES: (12)-PILES, 14" ϕ C.I.P., 40 FT LONG (ORDER LENGTH)

3 DYNAMIC LOAD TESTING ITEMS (2 FOR 12" ϕ C.I.P. & 1 FOR 14" ϕ C.I.P.)

PILE DRIVING CONSTRAINTS:
PRIOR TO DRIVING ABUTMENT PILES TO THE ULTIMATE BEARING VALUE (UBV), CONSTRUCT THE MSE WALL AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENT UP TO THE BOTTOM OF THE FOOTING AND THEN ON A 1:1 SLOPE FROM THE BACK OF THE ABUTMENT FOOTING UP TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BEHIND EACH ABUTMENT. THE CONTRACTOR MAY PRE-DRIVE ABUTMENT PILES BEFORE CONSTRUCTING MSE WALLS. PRE-DRIVING CONSISTS OF INSTALLING THE ABUTMENT PILES IN TO THE SOIL ONLY AS FAR AS NECESSARY SO THAT THE PILE WILL REMAIN VERTICAL DURING MSE WALL CONSTRUCTION. IF PRE-DRIVING PILES, INSTALL PILE SLEEVES AROUND PILES BEFORE CONSTRUCTING THE MSE WALL. AT LEAST THREE FEET OF PILE MUST EXTEND ABOVE THE TOP OF THE PILE SLEEVE TO MEET THE REQUIREMENTS OF CMS 507.09 REGARDING SPLICES. DO NOT DRIVE ABUTMENT PILES TO THE EOID UNTIL AFTER THE ABOVE REQUIRED MSE WALL AND EMBANKMENT HAVE BEEN CONSTRUCTED AND A 90 CALENDAR DAY WAITING PERIOD HAS ELAPSED. THE ENGINEER MAY ADJUST THE LENGTH OF THE WAITING PERIOD BASED ON SETTLEMENT PLATFORM READINGS. AFTER THE SPECIFIED WAITING PERIOD HAS ELAPSED, DRIVE ABUTMENT PILES TO THE EOID. IN ORDER TO REMOVE ANY NEGATIVE SKIN FRICTION THAT HAS DEVELOPED DURING THE WAITING PERIOD, DRIVE EACH ABUTMENT PILE A DISTANCE OF AT LEAST 0.5 INCH.

PILE DRIVING CONSTRAINTS CONTINUED:
IF NOT PRE-DRIVING ABUTMENT PILES, INSTALL THE ABUTMENT PILES THROUGH PILE SLEEVES AFTER THE ABOVE REQUIRED MSE WALL AND EMBANKMENT HAVE BEEN CONSTRUCTED AND THE SPECIFIED WAITING PERIOD HAS ELAPSED.

PILES DRIVEN TO INITIAL DRIVE RESISTANCE WITH PILE/SOIL SETUP:
THE ULTIMATE BEARING VALUE (UBV) IS 267 KIPS PER PILE FOR THE 12" ϕ C.I.P. REAR AND FORWARD ABUTMENT PILES. THE UBV IS 343 KIPS PER PILE FOR THE 14" ϕ C.I.P. PIER PILES. PART OF THE UBV WILL BE ACHIEVED THROUGH PILE/SOIL SETUP, WHICH IS A TIME DEPENDENT INCREASE IN RESISTANCE THAT OCCURS IN SOME SOILS.

NOTIFY THE ENGINEER AT LEAST 5 DAYS BEFORE DRIVING PILES SO THAT THE ENGINEER CAN NOTIFY THE DISTRICT GEOTECHNICAL ENGINEER, THE OFFICE OF CONSTRUCTION ADMINISTRATION, AND THE OFFICE OF GEOTECHNICAL ENGINEERING.

DRIVE THE FIRST TWO PILES IN EACH ABUTMENT TO AN END OF INITIAL DRIVE RESISTANCE (EOID) OF 193 KIPS. DRIVE THE FIRST TWO PILES IN THE PIER TO AN EOID OF 244 KIPS. PERFORM DYNAMIC LOAD TESTING ON BOTH PILES WHILE DRIVING. AFTER THE INITIAL DRIVE, CEASE ALL DRIVING OPERATIONS AT THE SUBSTRUCTURE FOR A PERIOD OF 7 DAYS. INCLUDE THE WAITING PERIOD AS A SEPARATE ACTIVITY IN THE PROGRESS SCHEDULE. AFTER THE WAITING PERIOD, PERFORM PILE RESTRIKES ON BOTH PILES IN EACH SUBSTRUCTURE (ONE RESTRIKE AS PER PLAN PAY ITEM PER SUBSTRUCTURE).

SUBMIT ALL TEST RESULTS TO THE ENGINEER. IF THE RESTRIKE TEST RESULTS INDICATE THAT BOTH PILES ACHIEVED THE REQUIRED UBV, USE THE INITIAL DRIVE DYNAMIC LOAD TESTING AND EOID TO ESTABLISH DRIVING CRITERIA FOR INSTALLATION OF THE REMAINING PILES IN THE SUBSTRUCTURE ACCORDING TO C&MS 507.05 AND 523.04.

IF THE RESTRIKE TEST RESULTS INDICATE THAT EITHER OF THE TWO PILES DID NOT ACHIEVE THE REQUIRED UBV, IMMEDIATELY NOTIFY THE ENGINEER SO THAT THE ENGINEER CAN NOTIFY THE DISTRICT GEOTECHNICAL ENGINEER, THE OFFICE OF CONSTRUCTION ADMINISTRATION, AND THE OFFICE OF GEOTECHNICAL ENGINEERING. THE ENGINEER WILL REVIEW THE TEST RESULTS AND ESTABLISH DRIVING CRITERIA FOR THE PILING IN THE SUBSTRUCTURE WITH THE ASSISTANCE OF THE DISTRICT GEOTECHNICAL ENGINEER, THE OFFICE OF CONSTRUCTION ADMINISTRATION, AND THE OFFICE OF GEOTECHNICAL ENGINEERING.

DRIVE ALL PILES IN THE SUBSTRUCTURE TO THE ESTABLISHED DRIVING CRITERIA. THE DEPARTMENT WILL PAY FOR SPLICING OF THE PILES BEYOND THE ESTIMATED LENGTH PROVIDED IN THE PLANS UNDER C&MS 109.05 WITH A NEGOTIATED PRICE PER SPLICE.

THIS PLAN NOTE INCLUDES A QUANTITY OF ONE EACH ITEM 523 DYNAMIC LOAD TESTING, AS PER PLAN AND A QUANTITY OF ONE EACH ITEM 523 RESTRIKE, AS PER PLAN PER EACH SUBSTRUCTURE UNIT.

DECK PLACEMENT DESIGN ASSUMPTIONS:
THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

1) AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.3 KIPS.
2) A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103 IN.
3) A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.
4) A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65 IN.

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK:
THIS ITEM SHALL INCLUDE THE BRIDGE DECK, REAR AND FORWARD ABUTMENT DIAPHRAGMS, PIER DIAPHRAGM, AND THE EXPANDED POLYSTYRENE FILLER USED TO FORM THE BOTTOM OF THE DIAPHRAGMS.

ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY):
BRIDGE ABUTMENTS, WINGWALLS, AND PARAPET SURFACES AS SHOWN IN THE PLANS AND ALL EXPOSED CONCRETE SURFACES OF THE PIER EXCEPT FOR THE TOP OF PIER CAP SHALL BE SEALED WITH NON-EPOXY SEALER PER ITEM 512.

ITEM 507 - 12" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN:
THE STEEL FOR THE CAST-IN-PLACE PILE SHALL HAVE A WALL THICKNESS OF 0.312 INCHES FOR ASTM A 252 GRADE 3 STEEL.

ITEM 507 - 14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN:
THE STEEL FOR THE CAST-IN-PLACE PILE SHALL HAVE A WALL THICKNESS OF 0.400 INCHES FOR ASTM A 252 GRADE 3 STEEL.

PILE DRIVING:
THE MINIMUM RATED ENERGY OF THE HAMMER USED TO INSTALL THE PILES SHALL BE 43.24 FOOT-KIPS. ENSURE THAT THE STRESSES IN THE PILES DURING DRIVING DO NOT EXCEED 45 KIPS PER SQUARE INCH.

EXPLANATION OF THE ALTERNATES:
PYLON ALTERNATE 1 IS FOR ABUTMENT WINGWALLS INCLUDING THE AESTHETIC PYLONS.
PYLON ALTERNATE 2 IS FOR ABUTMENT WINGWALLS WITHOUT THE AESTHETIC PYLONS.

VANDAL PROTECTION FENCE ALTERNATE 1 IS FOR VANDAL PROTECTION FENCE INCLUDING THE AESTHETIC LETTERS.
VANDAL PROTECTION FENCE ALTERNATE 2 IS FOR VANDAL PROTECTION FENCE WITHOUT THE AESTHETIC LETTERS.

PROPRIETARY RETAINING WALL DATA:
THE PROPRIETARY WALL SUPPLIER SHALL DESIGN THE INTERNAL STABILITY OF A MECHANICALLY STABILIZED EARTH (MSE) WALL IN ACCORDANCE WITH SS840 TO SUPPORT THE ABUTMENT. THE DESIGN FOR INTERNAL STABILITY SHALL INCLUDE A NOMINAL (I.E. UNFACTORED) HORIZONTAL STRIP LOAD DUE TO FRICTION (FR) FROM THE SUPERSTRUCTURE OF 1.97 K/FT APPLIED PERPENDICULAR TO THE FACE OF WALL AT THE BASE OF THE CONCRETE FOOTING. THIS STRIP LOAD DOES NOT INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL. HOWEVER, THE PROPRIETARY WALL SUPPLIER SHALL INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL IN THE DESIGN CALCULATIONS.

ITEM 607, FENCE, VANDAL PROTECTION FENCE, 6' STRAIGHT COATED FABRIC, AS PER PLAN

A STEEL FENCE SHALL BE CONSTRUCTED ACROSS THE STRUCTURE AS SHOWN ON THE PLANS. ALL PARTS OF THE FENCE (WITH THE EXCEPTION OF THE COATED FABRIC) SHALL BE GALVANIZED PER CMS 711.02, EXCEPT THAT FENCE ELEMENTS SHALL NOT BE POST TREATED WITH WATER QUENCHING OR CHROMATE CONVERSION COATED.

PRIOR TO GALVANIZING, ALL CORNERS OF THERMALLY CUT OR SHEARED EDGES SHALL HAVE A 1/16 INCH RADIUS OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE. VENT HOLES WHERE REQUIRED FOR GALVANIZING SHALL BE DETAILED BY THE FABRICATOR AND PLACED IN THE UNDERSIDE OF THE MEMBERS.

AFTER GALVANIZATION, ZINC HIGH SPOTS SUCH AS METAL DRIP LINE AND OTHERS THAT WOULD DETRACT FROM THE PAINT APPEARANCE SHALL BE MADE FLUSH WITH THE SURROUNDING SURFACE BY SSPC SP2 OR SP3. CARE SHALL BE TAKEN THAT THE BASE GALVANIZED COATING IS NOT REMOVED. REPAIRED AREAS SHALL BE CHECKED FOR REQUIRED COATING THICKNESS.

GALVANIZED COATINGS DAMAGED IN THE SHOP SHALL BE REPAIRED PER ASTM A780 METHOD A3. GALVANIZED COATINGS DAMAGED IN THE FIELD SHALL BE REPAIRED PER ASTM A780 METHOD A1.

AFTER REMOVING HIGH SPOTS THE GALVANIZED COATING SHALL BE CLEANED PER SSPC SP-1. THE CLEANING SOLUTION SHALL BE AN ALKALINE SOLUTION WITH A PH RANGING FROM A MINIMUM OF 11 TO A MAXIMUM OF 12. THIS SOLUTION CAN BE APPLIED BY IMMERSION, SPRAY OR SOFT NYLON BRUSH. FOLLOW CLEANING WITH A HOT WATER OR HOT PRESSURE WASHER RINSE, INDIVIDUAL PIECES SHALL BE SEPERATED AND POSITIONED TO FACILITATE DRAINAGE AND DRYING. THE PIECES SHALL BE COMPLETELY DRY BEFORE PROCEEDING.

AFTER CLEANING, THE PIECES SHALL BE ABRASIVE BLASTED PER SSPC-SP7 BRUSH-OFF BLAST CLEANING. THE BLASTING OPERATION SHALL ROUGHEN THE GALVANIZED SURFACE TO AN ANGULAR SURFACE PROFILE OF 0.25 TO 0.50 MILS. THE BLASTING EQUIPMENT, TECHNIQUE AND ABRASIVE MATERIAL SHALL BE SELECTED TO PROVIDE FOR THE SPECIFIED SURFACE PROFILE WITHOUT REMOVAL OF ZINC LAYERS. THE FINAL ZINC MILLAGE SHALL NOT BE LESS THAN 3.0 MILS. ALL ABRASIVE RESIDUE SHALL BE REMOVED WITH CLEAN COMPRESSED AIR OR OTHER METHODS ACCEPTABLE TO THE DEPARTMENT. FIELD CONNECTION AREAS SHALL HAVE A UNIFORM GALVANIZED COATING FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT THE FIELD CONNECTIONS FROM MAKING INTIMATE CONTACT.

ALL PARTS OF THE FENCE (EXCLUDING THE COATED FABRIC) SHALL BE SHOP PAINTED AFTER GALVANIZING. AFTER OBTAINING AN ACCEPTABLE SURFACE PROFILE, SHOP APPLY A TWO COAT PAINT SYSTEM CONSISTING OF EPOXY INTERMEDIATE COAT AND A URETHANE FINISH COAT. THE FINISH COAT OF ALL FENCE COMPONENTS SHALL MATCH FEDERAL COLOR STANDARD NO. 595B-27040 (BLACK). EXCEPT THAT THE AESTHETIC LETTERS, IF BEING PROVIDED, OUTSIDE FACE OF LETTERS (THAT SIDE WHICH IS VIEWED FROM SR 32) SHALL MATCH SHERWIN WILLIAMS COLOR CODE SW 6757 (TAME TEAL). THE OPPOSITE FACE OF THE LETTERS SHALL MATCH THE COLOR OF THE FENCE; FEDERAL COLOR STANDARD NO. 595B-27040 (BLACK).

THE EPOXY INTERMEDIATE COATING SHALL BE APPLIED WITHIN 24 HOURS OF THE BRUSH-OFF BLASTING.

THE FENCE FABRIC SHALL BE 1" DIAMOND MESH FABRIC, AND SHALL BE GALVANIZED AND COATED AS DESCRIBED IN STANDARD DRAWING VPF-1-90. EXCEPT THAT THE PVC COATING SHALL CLOSELY APPROACH FEDERAL COLOR STANDARD NO. 595B-27040 (BLACK).

EXPOSED SURFACES OF ALL NUTS, BOLTS, AND ANCHOR BOLTS USED TO ASSEMBLE THE FENCE SHALL BE GALVANIZED AND FIELD PAINTED TO MATCH FENCE COMPONENTS.

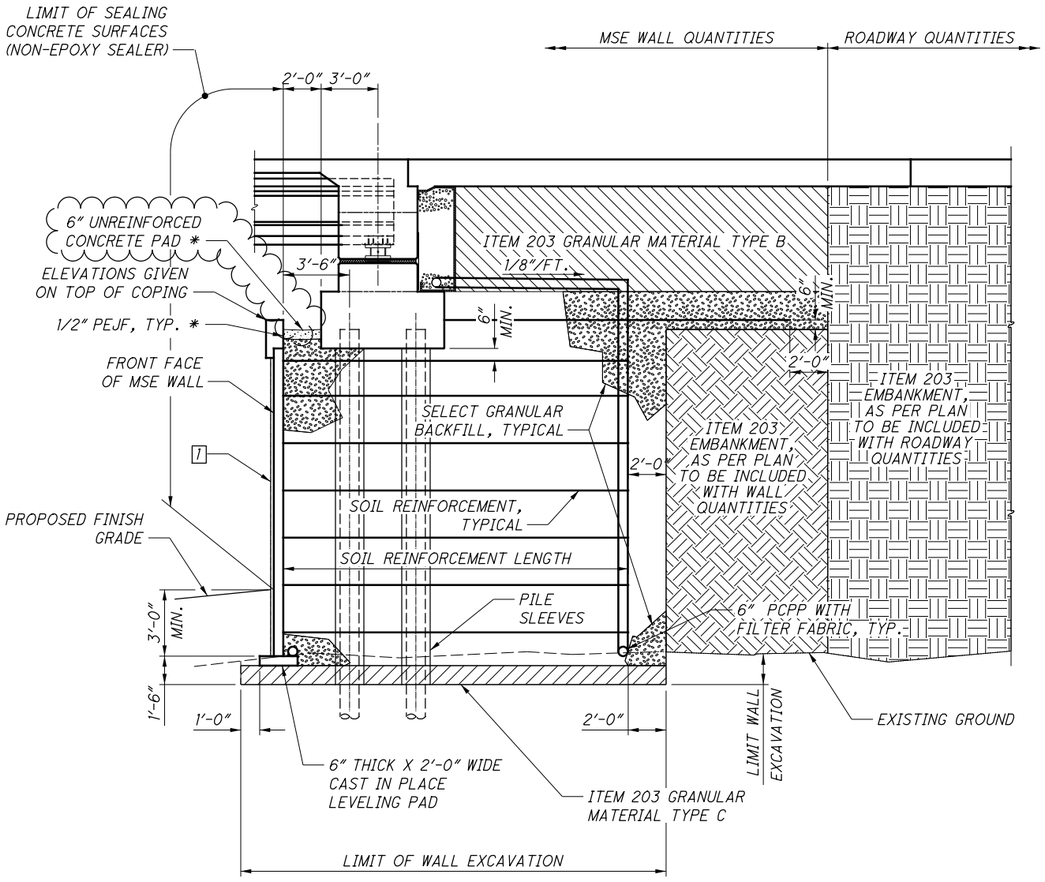
ALL LABOR, EQUIPMENT AND MATERIALS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED WITH ITEM 607, VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN (WITH AESTHETIC LETTERS) (ALTERNATE 1) OR ITEM 607, VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC (WITHOUT AESTHETIC LETTERS) (ALTERNATE 2).

BURGESS & NIPLE
Engineers ■ Architects ■ Planners
5085 REED ROAD, COLUMBUS, OHIO 43220

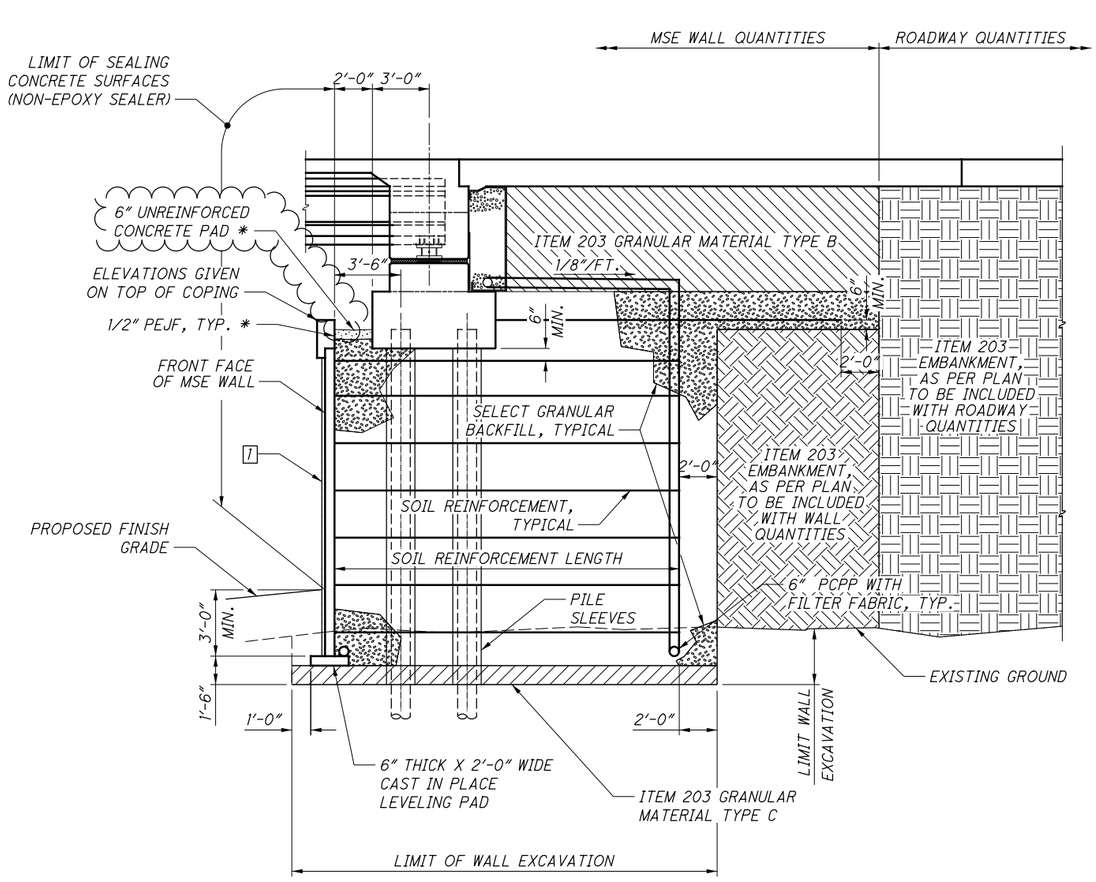
DESIGNED	DRAWN	REVIEWED	DATE
ODW	ODW	JCS	1/11/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JFM		0800084	

GENERAL NOTES
BRO-32-0363
BRUCE LUNSFORD WAY OVER STATE ROUTE 32

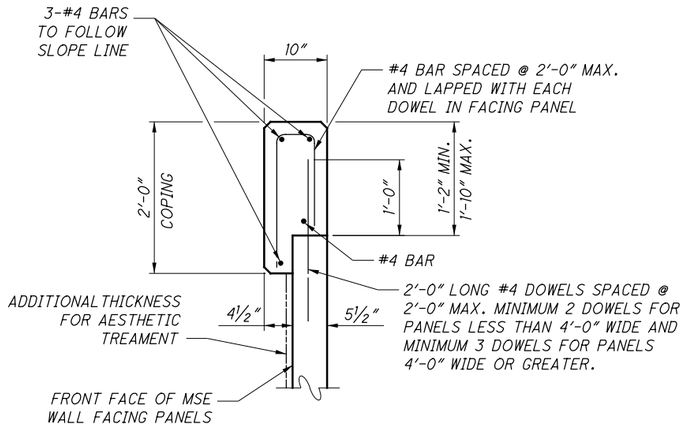
BRO-32-4.16
PID No. 110478



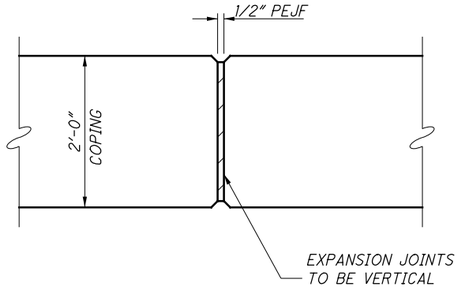
SECTION A-A
(WALL 1)



SECTION B-B
(WALL 2)



MSE WALL COPING
ALL REINFORCING STEEL TO BE EPOXY COATED



COPING EXPANSION JOINTS

[7] *MINIMUM 5 1/2" FACING PANEL THICKNESS, CENTERED ON LEVELING PAD. PROVIDE ADDITIONAL THICKNESS AS REQUIRED FOR AESTHETIC SURFACE TREATMENT.*

FACING PANEL AESTHETIC SURFACE TREATMENT SHALL BE SPLIT FACED RUNNING BLOCK, PATTERN 16971 FROM FITZGERALD FORMLINERS OR APPROVED EQUAL.

** INCLUDE FOR PAYMENT WITH ITEM 601, PAVED GUTTER, TYPE 1-2, AS PER PLAN*

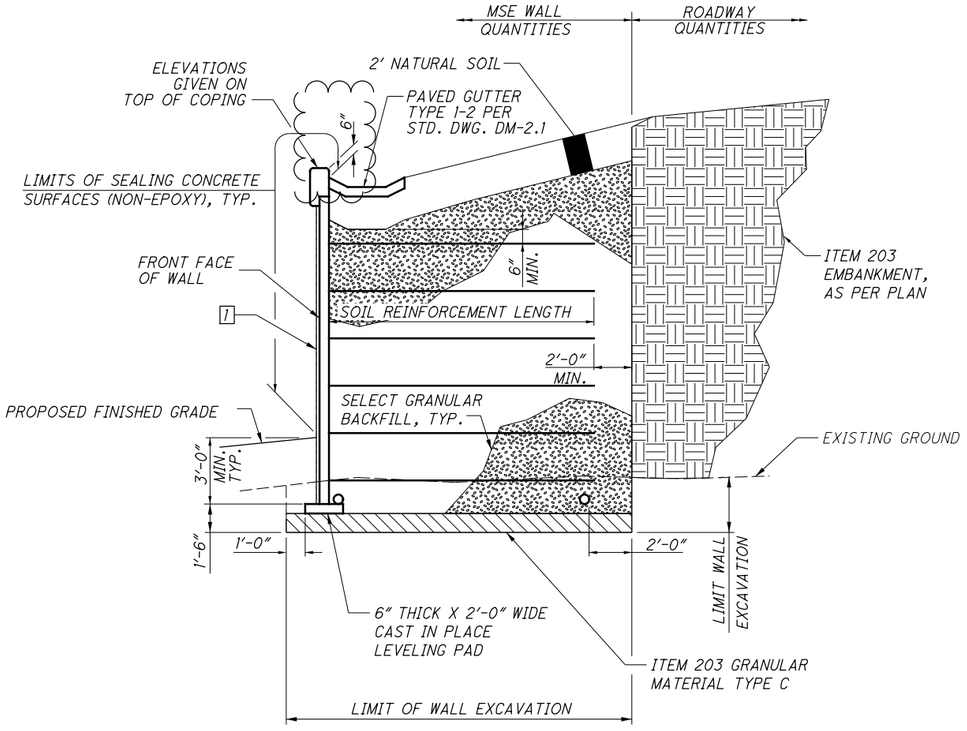
DESIGN AGENCY
Stantec
11687 Lebanon Road
Cincinnati, Ohio 45241
(513) 842-8200

DESIGNED	DRAWN	REVIEWED	DATE
MRS	ALH	BSM	03/05/21
CHECKED	REVISED	STRUCTURE FILE NUMBER	
EDA	XXX	0800084	

WALL SECTIONS
BRO-32-0363
BRUCE LUNSFORD WAY OVER STATE ROUTE 32

BRO-32-4.16
PID No. 110478

501
610



SECTION C-C

[1] MINIMUM 5 1/2" FACING PANEL THICKNESS, CENTERED ON LEVELING PAD. PROVIDE ADDITIONAL THICKNESS AS REQUIRED FOR AESTHETIC SURFACE TREATMENT.

FACING PANEL AESTHETIC SURFACE TREATMENT SHALL BE SPLIT FACED RUNNING BLOCK, PATTERN 16971 FROM FITZGERALD FORMLINERS OR APPROVED EQUAL.

ESTIMATED QUANTITIES - WALL 1

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	SHEET #
203	20001	387	CY	EMBANKMENT, AS PER PLAN	32
203	35110	194	CY	GRANULAR MATERIAL, TYPE B	
203	65000	2	EA	SPECIAL - SETTLEMENT PLATFORM	31
503	11100	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING	
512	10050	164	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
601	37501	129	FT	PAVED GUTTER, TYPE 1-2, AS PER PLAN	30
840	20000	1702	SF	MECHANICALLY STABILIZED EARTH WALL	
840	21000	164	CY	WALL EXCAVATION	
840	22000	394	SY	FOUNDATION PREPARATION	
840	23000	2008	CY	SELECT GRANULAR BACKFILL	
840	23050	135	CY	NATURAL SOIL	
840	25010	309	FT	6" DRAINAGE PIPE, PERFORATED	
840	25020	125	FT	6" DRAINAGE PIPE, NON-PERFORATED	
840	26000	127	FT	CONCRETE COPING	
840	26050	1702	SF	AESTHETIC SURFACE TREATMENT	
840	27000	2.5	DAY	ON-SITE ASSISTANCE	
840	28000	LUMP	LS	SGB INSPECTION AND COMPACTION TESTING	

ESTIMATED QUANTITIES - WALL 2

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	SHEET #
203	20001	382	CY	EMBANKMENT, AS PER PLAN	32
203	35110	194	CY	GRANULAR MATERIAL, TYPE B	
203	65000	2	EA	SPECIAL - SETTLEMENT PLATFORM	31
503	11100	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING	
512	10050	182	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
601	37501	132	FT	PAVED GUTTER, TYPE 1-2, AS PER PLAN	30
840	20000	1890	SF	MECHANICALLY STABILIZED EARTH WALL	
840	21000	393	CY	WALL EXCAVATION	
840	22000	411	SY	FOUNDATION PREPARATION	
840	23000	2204	CY	SELECT GRANULAR BACKFILL	
840	23050	164	CY	NATURAL SOIL	
840	25010	312	FT	6" DRAINAGE PIPE, PERFORATED	
840	25020	128	FT	6" DRAINAGE PIPE, NON-PERFORATED	
840	26000	132	FT	CONCRETE COPING	
840	26050	1890	SF	AESTHETIC SURFACE TREATMENT	
840	27000	2.5	DAY	ON-SITE ASSISTANCE	
840	28000	LUMP	LS	SGB INSPECTION AND COMPACTION TESTING	

MSE WALL NOTES:

1. MSE WALLS SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 840.
2. CONCRETE FACING PANELS SHALL NOT BE INSTALLED UNTIL BACKFILL MATERIAL HAS UNDERGONE THE SPECIFIED WAITING PERIOD TO ACCOMMODATE ANTICIPATED SETTLEMENT (SEE SETTLEMENT PLATFORM NOTES, SHEET 31/32).
3. FOR ITEM 203 - EMBANKMENT, AS PER PLAN, SEE ROADWAY GENERAL NOTES FOR DETAILS.

DESIGN AGENCY
Stantec
11687 Lebanon Road
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DESIGNED MRS | DRAWN ALH | REVIEWED BSM | DATE 03/05/21
CHECKED EDA | REVISED XXX | STRUCTURE FILE NUMBER 0800084

WALL SECTION & ESTIMATED QUANTITIES

BRO-32-0363
BRUCE LUNSFORD WAY OVER STATE ROUTE 32

BRO-32-4.16
PID No. 110478