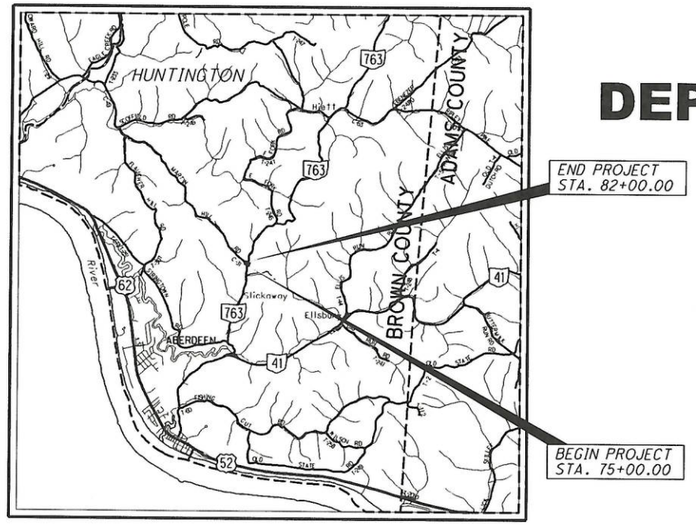
BRO - SR 763-01.51
220156 PID - 100896
Dist 9 3/10/2022

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRO-763-1.51

HUNTINGTON TOWNSHIP

BROWN COUNTY



LOCATION MAP

LATITUDE: 38°41'27" LONGITUDE: -83°44'43"

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

DESIGN DESIGNATION

CURRENT ADT (2021)	250
DESIGN YEAR ADT (2041)	350
DESIGN HOURLY VOLUME (2041)	42
DIRECTIONAL DISTRIBUTION	70%
TRUCKS (24 HOUR B&C)	2%
DESIGN SPEED	55 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION: 06 MINOR COLLECTOR (RURAL)	
NHS PROJECT	NO

DESIGN EXCEPTIONS:

DESIGN FEATURE	APPROVAL DATES	SHEET NUMBER
HORIZONTAL ALIGNMENT:		
CURVE RADIUS	01/21/2021	15-16
SUPERELEVATION RATE	01/21/2021	3-4, 37

ADA DESIGN WAIVER: NONE

PLAN PREPARED BY:
BG ENGINEERING GROUP, LLC
5910 WILCOX PLACE, SUITE C
DUBLIN, OHIO 43016

ENGINEER'S SEAL:

STATE OF OHIO · RAVINDER GUPTA E-70880 · REGISTERED PROFESSIONAL ENGINEER

SIGNED: Ravinder Gupta
DATE: 11/10/2021

INDEX OF SHEETS:

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)

STANDARD CONSTRUCTION DRAWINGS

BP-3.1	1-17-20	MGS-1.1	7-16-21	TC-41.20	10-18-13		
BP-5.1	7-16-21	MGS-2.1	1-19-18	TC-41.30	10-18-13		
		MGS-2.3	7-18-14	TC-41.40	10-18-13		
CB-3A	7-16-21	MGS-2.4	7-19-19	TC-42.20	10-18-13		
		MGS-4.1	1-20-17	TC-52.10	10-18-13		
DM-1.1	7-17-20	MGS-4.2	7-19-13	TC-52.20	1-15-21		
DM-1.2	7-16-21	MGS-4.3	1-18-13	TC-61.30	7-19-19		
DM-4.3	1-15-16	MGS-5.3	7-15-16	TC-65.10	1-17-14		
DM-4.4	1-15-16			TC-65.11	7-21-17		
		MT-97.10	4-19-19				
F-2.1	7-20-18	MT-101.60	1-17-20				
		MT-101.90	7-17-20				
HW-1.1	7-20-18	MT-105.10	1-17-20				
HW-2.1	7-20-18						
HW-2.2	7-20-18	RM-1.1	1-15-21				

SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
800	10/15/21	WATERWAY PERMIT CONDITIONS DATED 1/14/2022
832	10-19-18	
878	4-16-21	
902	7-19-19	

FEDERAL PROJECT NUMBER

NON-FEDERAL

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

IMPROVEMENT OF 0.13 MILES OF S.R. 763 AND THE ADDITION OF A PROPOSED CULVERT AND RETAINING WALLS.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	1.11 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.28 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	1.39 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 REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT THE DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 8.

APPROVED Michael B. Colafella
DATE 11-23-2021 DISTRICT DEPUTY DIRECTOR

APPROVED Jack Marchbanks
DATE 11/29/2021 DIRECTOR, DEPARTMENT OF TRANSPORTATION

TITLE SHEET

DESIGN AGENCY
BG
www.bgengroup.com
5910 WILCOX PLACE, SUITE C
DUBLIN, OHIO 43016

DESIGNER	JEP
REVIEWER	RG 10-01-21
PROJECT ID	100896
SHEET	1
TOTAL	70

Contract Proposal available @ www.contracts.dot.state.oh.us

BRO-763-1.51

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ROUNDING

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

UTILITIES

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

BROWN COUNTY RURAL WATER ASSOCIATION
3818 US 52
RIPLEY, OH 45167
CONTACT: MR. GARY MCKENZIE
937-375-4106, EXT. 231

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

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SCHEMATIC PLAN FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

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

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS
MONUMENT TYPE: TYPE B, REBAR AND CAP

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD 88
GEOID: GEOID18

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83 (2011) EPOCH 2010
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE, SOUTH ZONE
COMBINED SCALE FACTOR: 1.00001950 (GROUND COORDINATES)
ORIGIN OF COORDINATE
SYSTEM: 0,0

FOR BENCHMARK INFORMATION, SEE SHEET 2

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

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.

MONUMENT ASSEMBLIES

CONSTRUCT MONUMENT ASSEMBLIES IN ACCORDANCE WITH THE DETAILS SHOWN ON THE STANDARD CONSTRUCTION DRAWINGS AND AT THE LOCATIONS SHOWN ON SHEET NO. 60.

CLEARING AND GRUBBING

ALL TREES WITHIN THE WORK LIMITS HAVE BEEN DROPPED UNDER A SEPARATE CONTRACT. THE TREES WERE CUT TO ±4'-0" ABOVE EXISTING GROUND. ALL THE STUMPS AND FALLEN TRUNKS THAT REMAIN ARE TO BE REMOVED UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF DROPPED TREES AND STUMPS THAT WILL NEED TO BE REMOVED:

SIZE	NO. TRESS	NO. STUMPS	TOTAL
18"	26	26	52
30"	1	1	2
48"	0	0	0

SEEDING AND MULCHING

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

659, SEEDING AND MULCHING	2005 SQ YD
659, COMMERCIAL FERTILIZER	0.27 TON
659, LIME	0.41 ACRES
659, WATER	11 MGAL

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.

ITEM 204 - PROOF ROLLING

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

ITEM 204 - PROOF ROLLING	2 HOUR

POST CONSTRUCTION STORM WATER TREATMENT

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

VEGETATED BIOFILTER

THIS PLAN UTILIZES A VEGETATED BIOFILTER FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AS SHOWN IN THE PLANS TO ANY DISTURBED AREA ON THE SHOULDER AND FORESLOPE DRAINING TO A VEGETATED BIOFILTER. THE DITCH FOR EACH VEGETATED BIOFILTER SHALL BE TRAPEZOIDAL, AS SHOWN IN THE PLANS.

OFF-SITE MITIGATION

THIS PLAN UTILIZES OFF-SITE MITIGATION IN ADDITION TO THE PROPOSED VEGETATED BIOFILTER TO MEET THE STORM WATER TREATMENT REQUIREMENTS. A VEGETATED FILTER STRIP HAS BEEN IMPLEMENTED BY THE DISTRICT AT THE LOCATION SHOWN IN TABLE ON SHEET 14. NO WORK BY THE CONTRACTOR IS REQUIRED.

FARM DRAINS

ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS, AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE (RIGHT OF WAY) (CONSTRUCTION) LIMITS BY ITEM 611 CONDUIT, TYPE B, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF ROADWAY DITCHES, SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 611 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL FIELD TILES WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 611, TYPE E CONDUIT, AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

EROSION CONTROL PADS SHALL BE PROVIDED AT THE OUTLET END OF ALL FARM DRAINS AS PER STANDARD CONSTRUCTION DRAWING DM-1.1, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. PAYMENT FOR THE EROSION CONTROL PADS AND ANY NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEMS.

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

611 6" CONDUIT, TYPE E	30 FT
611 6" CONDUIT, TYPE F	30 FT

ITEM 605 - AGGREGATE DRAINS

AGGREGATE DRAINS SHALL BE PLACED AT 50 FOOT INTERVALS ON EACH SIDE OF NORMAL CROWNED SECTIONS, STAGGERED SO THAT EACH DRAIN IS 25 FEET FROM THE ADJACENT DRAIN ON THE OPPOSITE SIDE, AND AT 25 FOOT INTERVALS ON THE LOW SIDE ONLY OF SUPERELEVATED SECTIONS. AN AGGREGATE DRAIN SHALL BE PLACED AT THE LOW POINT OF EACH SAG VERTICAL CURVE.

S.R. 763	C.R. 31
STA. 77+75 RT- 6'	STA. 53+75, LT- 4'
STA. 78+00, RT- 6'	STA. 54+00, LT- 10'
STA. 78+25, RT- 6'	STA. 54+25, LT- 15'
STA. 78+50, RT- 6'	STA. 54+50, LT- 21'
STA. 78+75, RT- 6'	STA. 54+65.97, LT- 29'
STA. 79+00, RT- 7'	
STA. 79+25, RT- 7'	
STA. 79+50, RT- 7'	
STA. 79+75, RT- 7'	
STA. 80+00, RT- 8'	
STA. 80+25, RT- 7'	
STA. 80+50, RT- 7'	
STA. 80+75, RT- 7'	
STA. 81+00, RT- 7'	
STA. 81+25, RT- 7'	
STA. 81+50, RT- 8'	
STA. 81+75, RT- 7'	
STA. 82+0, RT- 6'	

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS FOR AGGREGATE DRAINS:

605, AGGREGATE DRAINS	201 FT

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.

ENDANGERED BAT HABITAT REMOVAL

THIS PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT, AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT (ESA). FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS: A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK 3 INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

GENERAL NOTES

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 2/22/2022 TIME: 12:38:53 PM USER: JPerchinske
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DESIGN AGENCY
BG
www.bgenggroup.com
5910 WILCOX PLACE, SUITE C
DUBLIN, OHIO 43016

DESIGNER
JEP

REVIEWER
RG 10-01-21

PROJECT ID
100896

SHEET NUM.											PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
7		40		41			49				01/NFA/BR						
																TRAFFIC CONTROL	
		24									24	621	00100	24	EACH	RPM	
		18									18	621	54000	18	EACH	RAISED PAVEMENT MARKER REMOVED	
		11									11	626	00112	11	EACH	BARRIER REFLECTOR, TYPE 3 (BIDIRECTIONAL)	
		74.5									74.5	630	03100	74.5	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
		3									3	630	08600	3	EACH	SIGN POST REFLECTOR	
		22.6									22.6	630	80100	22.6	SF	SIGN, FLAT SHEET	
		8									8	630	85100	8	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
		4									4	630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
		0.31									0.31	642	00104	0.31	MILE	EDGE LINE, 6", TYPE 1	
		0.14									0.14	642	00300	0.14	MILE	CENTER LINE, TYPE 1	
		10									10	642	00500	10	FT	STOP LINE, TYPE 1	
																RETAINING WALLS	
				LS							LS	202	11200	LS		PORTIONS OF STRUCTURE REMOVED	
				LS							LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
				LS							LS	503	21300	LS		UNCLASSIFIED EXCAVATION	
				72							72	503	31100	72	CY	ROCK EXCAVATION	
				706							706	507	00400	706	FT	STEEL PILES, MISC.: W18X76 STEEL BEAM, FURNISHED	41
				141							141	507	00400	141	FT	STEEL PILES, MISC.: W16X31 STEEL BEAM, FURNISHED	41
				87							87	511	53010	87	CY	CLASS QC1 CONCRETE, MISC.: LEVELING PAD	41
				2,601							2,601	511	71200	2,601	SF	CONCRETE, MISC.: PRECAST REINFORCED CONCRETE LAGGING PANEL	41
				340							340	512	10100	340	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
				142							142	518	21200	142	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
				208							208	518	40000	208	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
				12							12	518	40012	12	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE	
				54							54	524	94602	54	FT	DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK	
				384							384	524	94605	384	FT	DRILLED SHAFTS, 30" DIAMETER INTO BEDROCK, AS PER PLAN	41
				28							28	613	41200	28	CY	LOW STRENGTH MORTAR BACKFILL	
																STRUCTURE 20 FOOT SPAN AND UNDER (BRO-763-0151)	
							LS				LS	202	11000	LS		STRUCTURE REMOVED	
							LS				LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
							LS				LS	503	21300	LS		UNCLASSIFIED EXCAVATION	
							177				177	503	31100	177	CY	ROCK EXCAVATION	
							11,853				11,853	509	10000	11,853	LB	EPOXY COATED REINFORCING STEEL	
							37				37	511	46010	37	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
							81				81	511	46510	81	CY	CLASS QC1 CONCRETE, FOOTING	
							3				3	511	46610	3	CY	CLASS QC1 CONCRETE, HEADWALL	
							114				114	512	10100	114	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
							90				90	512	33000	90	SY	TYPE 2 WATERPROOFING	
							63				63	512	33010	63	SY	TYPE 3 WATERPROOFING	
							65				65	516	13600	65	SF	1" PREFORMED EXPANSION JOINT FILLER	
							31				31	518	21200	31	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
							38				38	611	70000	38	FT	CONDUIT, TYPE A, PRECAST REINFORCED CONCRETE THREE SIDED FLAT TOPPED CULVERT (15'-0" SPAN X 10'-0" RISE)	
																MAINTENANCE OF TRAFFIC	
100											100	253	02000	100	CY	PAVEMENT REPAIR	
48											48	614	11110	48	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
LS											LS	614	12420	LS		DETOUR SIGNING	
5											5	616	10000	5	MGAL	WATER	
																INCIDENTALS	
											LS	614	11000	LS		MAINTAINING TRAFFIC	
											3	619	16000	3	MNTH	FIELD OFFICE, TYPE A	
											LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
											LS	624	10000	LS		MOBILIZATION	

GENERAL SUMMARY

DESIGN AGENCY
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5910 MILCOY PLACE, SUITE C
DUBLIN, OHIO 43016

DESIGNER
JEP

REVIEWER
RG 10-01-21

PROJECT ID
100896

SHEET 12 TOTAL 70

BRO-763-1.51

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 3/4/2022 TIME: 2:31:49 PM USER: zguo
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ITEM 511 - CONCRETE, MISC.: PRECAST REINFORCED CONCRETE LAGGING PANEL

THIS WORK CONSISTS OF FURNISHING AND PLACING PRECAST REINFORCED CONCRETE PANELS BETWEEN THE SOLDIER PILES TO FUNCTION AS LAGGING FOR THE RETAINING WALL. PROVIDE PRECAST CONCRETE LAGGING FROM A PRECAST CONCRETE MANUFACTURER CERTIFIED UNDER SUPPLEMENT 1073. PROVIDE CLASS QC 1 CONCRETE ACCORDING TO CMS 499. PROVIDE EPOXY COATED REINFORCING STEEL ACCORDING TO CMS 709.00. IN LIEU OF EPOXY COATING, A CORROSION INHIBITING CONCRETE ADMIXTURE MAY BE USED AT THE SPECIFIED DOSAGE RATE. A QUALIFIED PRODUCT LIST OF CORROSION INHIBITING ADMIXTURES IS ON FILE AT THE LABORATORY. MANUFACTURERS SHOULD RECOGNIZE THAT THE CORROSION INHIBITOR MAY AFFECT THE STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE MANUFACTURER'S CHOICE TO USE ONE OF THESE CORROSION INHIBITORS DOES NOT ALLEVIATE MEETING ALL DESIGN REQUIREMENTS. DO NOT ALLOW THE DIMENSIONS OF THE REINFORCING STEEL TO VARY BY MORE THAN 1/4". THREADED INSERTS SHALL BE CAST INTO THE TOP OF THE SECTIONS FOR LIFTING AND PLACING.

THE FRONT FACE AND SIDES OF THE CONCRETE PANEL SHALL BE SEALED WITH ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) THE COLOR OF THE URETHANE SHALL BE FEDERAL COLOR NUMBER 17778 (LIGHT NEUTRAL)

REJECT PANELS HAVING ANY OF THE FOLLOWING:

* DEFECTS THAT INDICATE IMPERFECT MOLDING
* DEFECTS THAT INDICATE HONEYCOMBED OR OPEN TEXTURE CONCRETE
* DEFECTS IN THE PHYSICAL CHARACTERISTICS OF THE CONCRETE, OR DAMAGE TO THE SEALING OF CONCRETE SURFACE TREATMENT
* CONCRETE CHIPS OR SPALLS THAT EXCEED 4 INCHES WIDE AND 2 INCHES DEEP. (**REPAIR ALL CHIPS AND SPALLS OF ANY DIMENSION)
* STAINED FORM FACE, DUE TO FORM OIL, CURING OR OTHER CONTAMINANTS
* SIGNS OF AGGREGATE SEGREGATION
* CRACKS WIDER THAN 0.01 INCHES, PENETRATING MORE THAN AN INCH OR LONGER THAN 12 INCHES. (UREPAIR ALL CRACKS OF ANY DIMENSION.
* FACE PANELS THAT DO NOT MEET SPECIFIED TOLERANCES
* EXPOSED REINFORCING STEEL
* INSUFFICIENT CONCRETE COMPRESSIVE STRENGTH.

NOTE: **THE MANUFACTURER SHALL SUBMIT REPAIR METHODS TO THE ENGINEER

PERMANENTLY MARK EACH PANEL TO INDICATE THE FACE TO BE PLACED AGAINST THE SOIL. PLACE THE PANEL BETWEEN THE FLANGES OF THE SOLDIER PILES AND BEARING AGAINST THE FLANGES ON THE EXPOSED SIDE OF THE WALL.

DO NOT SHIP PANELS UNTIL CONCRETE HAS ATTAINED A 3000 PSI COMPRESSIVE STRENGTH.

SUBMIT SHIPPING DOCUMENTATION TO THE ENGINEER AS THE FACING PANELS ARE DELIVERED TO THE PROJECT. REQUIRED DOCUMENTATION SHALL INCLUDE THE PRECASTER'S RECORD OF FINAL INSPECTION OF ALL PRECAST COMPONENTS, THE MEASUREMENTS OF TOLERANCES, STRENGTH, DIMENSIONS, AND THE TE-24 SHIPPING DOCUMENT.

PANELS DAMAGED BY IMPROPER HANDLING, STORING, TRANSPORTATION OR ERECTION SHALL BE REPAIRED OR REPLACED AT THE DISCRETION OF THE ENGINEER

WHEN INSTALLING THE PRECAST CONCRETE LAGGING PANELS, PLACE HARDWOOD WEDGES NEAR THE TOP AND BOTTOM ON EACH SIDE TO HOLD THE LAGGING PANELS AGAINST THE FRONT INSIDE FLANGE OF THE STEEL PILES.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIAL REQUIRED TO FABRICATE TRANSPORT AND INSTALL THE PRECAST CONCRETE LAGGING SECTIONS SHALL BE MADE UNDER ITEM 511 - CONCRETE, MISC.: PRECAST REINFORCED CONCRETE LAGGING PANEL.

ITEM 511 - CLASS QC1 CONCRETE, MISC.: LEVELING PAD

LEVELING PAD CONCRETE SHALL BE CLASS QC1 PER SECTION 511 OF THE CMS.

CONSTRUCT THE CONCRETE LEVELING PAD USING NON-REINFORCED, CAST-IN-PLACE CONCRETE. THE LEVELING PAD SHALL BE 24 INCHES DEEP AS SHOWN IN DRAWING. CURE THE CONCRETE FOR AT LEAST 12 HOURS. UNLESS THE SPECIMEN BEAMS HAVE ATTAINED A MODULUS OF RUPTURE OF 400 POUNDS PER SQUARE INCH DO NOT START WALL ERECTION.

CONSTRUCT ALL LEVELING PADS SO THE TOP OF THE PAD IS WITHIN 1/8 INCH OF THE ELEVATION SHOWN ON THE WORKING DRAWINGS. CONSTRUCT THE PADS SO THAT THE SURFACE DOES NOT VARY MORE THAN 1/8 INCH IN 5 FEET. CHECK THE LEVELING PAD CONSTRUCTION BEFORE WALL ERECTION AND REPORT THE ELEVATIONS AND SURFACE VARIATION TO THE ENGINEER.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN THE CUBIC YARD CONTRACT PRICE FOR ITEM 511, CLASS QC1 CONCRETE, MISC.: LEVELING PAD.

ITEM 507 - STEEL PILES, MISC.: W18X76 STEEL BEAM, FURNISHED

THIS WORK SHALL CONSIST OF FURNISHING STRUCTURAL STEEL MEMBERS THAT CONFORM TO ASTM A572, GRADE 50 AND CMS 711.01. DO NOT FIELD WELD OR SPLICE THOSE PARTS OF THE STRUCTURAL STEEL MEMBERS THAT WILL BE ABOVE GROUND.

THE DEPARTMENT WILL MEASURE STEEL BEAMS ALONG THE AXIS OF THE STEEL BEAM FROM THE TOP OF THE WALL TO THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER. THE DEPARTMENT WILL PAY FOR STEEL BEAMS AT THE CONTRACT UNIT PRICE PER FOOT ITEM 507, STEEL PILE, MISC.: W18X76 STEEL BEAM, FURNISHED.

ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK, AS PER PLAN

SEQUENCE OF INSTALLATION: THE INSTALLATION SEQUENCE SHALL BE SUCH THAT NO DRILLED SHAFT IS INSTALLED ADJACENT TO EITHER AN OPEN DRILLED SHAFT EXCAVATION OR A DRILLED SHAFT IN WHICH THE CONCRETE HAS LESS THAN A 48-HOUR CURE. INSTALLING THE SHAFTS IN AN ALTERNATING SEQUENCE OR ANY SEQUENCE THAT MEETS THIS CRITERION IS PERMISSIBLE.

PROTECTION OF UNATTENDED OPEN SHAFTS: CARE SHALL BE EXERCISED AS TO COVER UNATTENDED OPEN SHAFTS. TEMPORARY COVERS SHALL BE OF ADEQUATE STRENGTH TO PROTECT A PERSON OR ANIMAL FROM FALLING IN.

LOADING OF PILES: THE PILES SHALL NOT BE LOADED NOR ANY EXCAVATION PERFORMED IN FRONT OF THE WALL FOR 14 DAYS AFTER THE PLACING OF CONCRETE.

ANY TEMPORARY GRADING/EMBANKMENT, AGGREGATE, DRAINAGE, SHEETING, ETC., NEEDED FOR ACCESS TO THE WORK AREA SHALL BE INCLUDED IN THE BID PRICE FOR DRILLED SHAFTS.

THIS WORK CONSISTS OF INSTALLING DRILLED SHAFTS FOR SLOPE STABILIZATION. THE INSTALLATION SHALL BE PER ITEM 524 EXCEPT THE DRILLED SHAFTS ARE TO BE REINFORCED WITH STRUCTURAL STEEL MEMBERS INSTEAD OF REINFORCING CAGES.

PLACE THE STRUCTURAL MEMBERS IN THE PRE-BORED SHAFTS. ORIENTATE THE STRUCTURAL MEMBER SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF ROADWAY. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES. PLUMB THE STRUCTURAL MEMBERS SO THEY ARE VERTICAL AND NOT INCLINED MORE THAN 1/8 INCH PER FOOT FROM VERTICAL. EACH STRUCTURAL MEMBER SHALL BE CENTERED WITHIN THE SHAFT. SUPPORT THE STRUCTURAL MEMBER SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT.

PLACE ITEM 511 CLASS QC1 CONCRETE IN EACH HOLE AS BACKFILL MATERIAL.

CHECK THE POSITION, THE VERTICAL ALIGNMENT AND ORIENTATION OF THE STRUCTURAL MEMBER IMMEDIATELY AFTER CONCRETE PLACEMENT. MAKE CORRECTIONS AS NECESSARY TO MEET ABOVE TOLERANCES.

PAYMENT FOR LABOR, EQUIPMENT AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN THE FOOT CONTRACT PRICE FOR ITEM 524, DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK, AS PER PLAN

ITEM 507 - STEEL PILES, MISC.: W16X31 STEEL BEAM, FURNISHED

THIS WORK SHALL CONSIST OF FURNISHING STRUCTURAL STEEL MEMBERS THAT CONFORM TO ASTM A572, GRADE 50 AND CMS 711.01. DO NOT FIELD WELD OR SPLICE THOSE PARTS OF THE STRUCTURAL STEEL MEMBERS THAT WILL BE ABOVE GROUND.

SAWCUT EXISTING STEEL BEAM AS SHOWN ON SHEET 45.

FIELD WELD PROPOSED W16X31 BEAM AS SHOWN ON SHEET 45.

PAYMENT FOR LABOR, EQUIPMENT AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN EACH CONTRACT PRICE FOR ITEM 507, STEEL PILE, MISC.: W16X31 STEEL BEAM, FURNISHED.

RETAINING WALL ESTIMATED QUANTITIES

DESIGNED:	RG	CHECKED:	CCJ
DATE:	9/22/2021	DATE:	9/29/2021

ITEM	ITEM EXT.	UNIT	TOTAL	EXISTING RETAINING WALL 2 & WALL 4	RETAINING WALL 3	RETAINING WALL 5	DESCRIPTION
202	11200		LUMP		LUMP		PORTIONS OF STRUCTURE REMOVED
503	11100		LUMP		LUMP	LUMP	COFFERDAMS AND EXCAVATION BRACING
503	21300		LUMP	LUMP	LUMP	LUMP	UNCLASSIFIED EXCAVATION
503	31100	CU. YD.	72		10	62	ROCK EXCAVATION
507	00400	FT.	706		110	596	STEEL PILE, MISC.: W18X76 STEEL BEAM, FURNISHED
507	00400	FT.	141	141			STEEL PILE, MISC.: W16X31 STEEL BEAM, FURNISHED
511	53010	CU. YD.	87	16	9	62	CLASS QC1 CONCRETE, MISC.: LEVELING PAD
511	71200	SQ. FT.	2601	1066	251	1285	CONCRETE, MISC.: PRECAST REINFORCED CONCRETE LAGGING PANEL
512	10100	SQ. YD	340	142	32	166	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
518	21200	CU. YD.	142	43	17	82	POROUS BACKFILL WITH GEOTEXTILE FABRIC
518	40000	FT.	208		32	208	6" PERFORATED CORRUGATED PLASTIC PIPE
518	40012	FT.	12		6	6	6" NON-PERFORATED CORRUGATED PLASTIC PIPE
524	94602	FT.	54			54	DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK
524	94605	FT.	384		60	324	DRILLED SHAFTS, 30" DIAMETER, INTO BEDROCK, AS PER PLAN
613	41200	CU. YD.	28	28			LOW STRENGTH MORTAR BACKFILL

TOTAL QUANTITIES ARE CARRIED TO GENERAL SUMMARY ON SHEET 12

GENERAL NOTES - RETAINING WALLS

DESIGN AGENCY
BG
www.bgenggroup.com
6910 WILCOX PLACE, SUITE C
DUBLIN, OHIO 43016

DESIGNER JEP

REVIEWER RG 10-01-21

PROJECT ID 100896

SHEET 41 TOTAL 70

BRO-763-1.51

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 2/28/2022 TIME: 8:28:11 AM USER: JPerchinske
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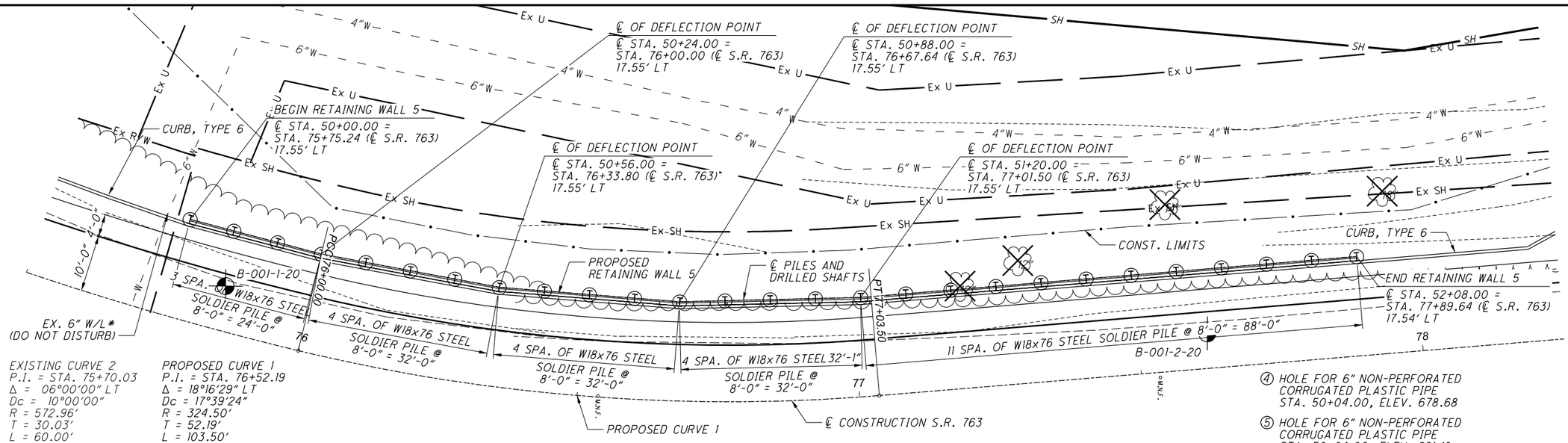


EXISTING CURVE 2
P.I. = STA. 75+70.03
Δ = 06°00'00" LT
Dc = 10°00'00"
R = 572.96'
T = 30.03'
L = 60.00'
E = 0.79'
C = 59.97'
C.B. = N16°02'02"E
eMAX = 0.077 (40 MPH)

PROPOSED CURVE 1
P.I. = STA. 76+52.19
Δ = 18°16'29" LT
Dc = 17°39'24"
R = 324.50'
T = 52.19'
L = 103.50'
E = 4.17'
C = 103.06'
C.B. = N03°53'48"E
eMAX = 0.057 (35 MPH)

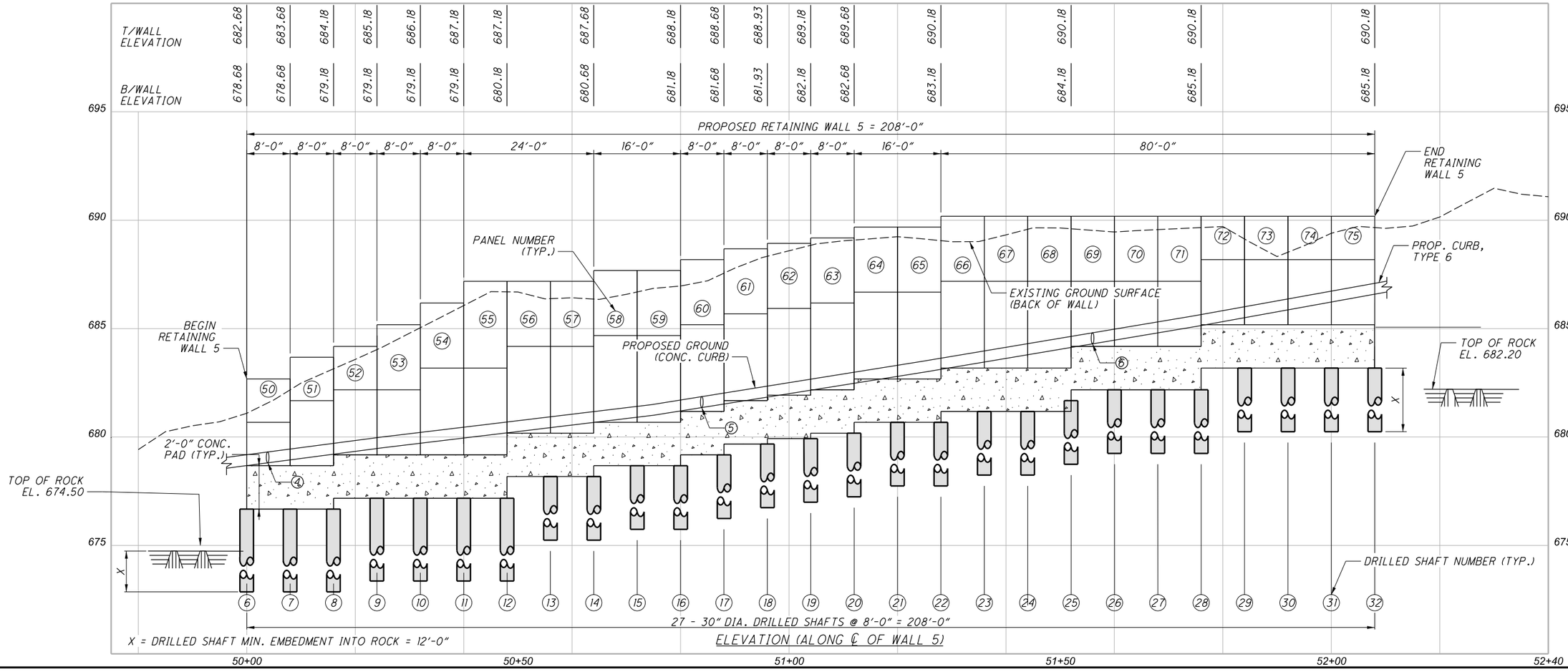
* = CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF THE EXISTING 6" WATERLINE PRIOR TO BEGINNING RETAINING WALL WORK.

EXISTING 20.0' WATERLINE EASEMENT:
UTILITY EASEMENT LOCATION IS APPROXIMATE USING THE EXHIBITS PROVIDED BY BROWN COUNTY RURAL WATER ASSOCIATION.

④ HOLE FOR 6" NON-PERFORATED CORRUGATED PLASTIC PIPE STA. 50+04.00, ELEV. 678.68

⑤ HOLE FOR 6" NON-PERFORATED CORRUGATED PLASTIC PIPE STA. 50+84.00, ELEV. 681.18

⑥ HOLE FOR 6" NON-PERFORATED CORRUGATED PLASTIC PIPE STA. 51+56.00, ELEV. 684.18



X = DRILLED SHAFT MIN. EMBEDMENT INTO ROCK = 12'-0"

ELEVATION (ALONG ℄ OF WALL 5)

HORIZONTAL SCALE IN FEET
0 5 10 20

SITE PLAN
RETAINING WALL 5

BRO-763-1.51

MODEL: Sheet PAPERSIZE: 17x11(in.) DATE: 3/3/2022 TIME: 8:30:27 AM USER: JPerchinske
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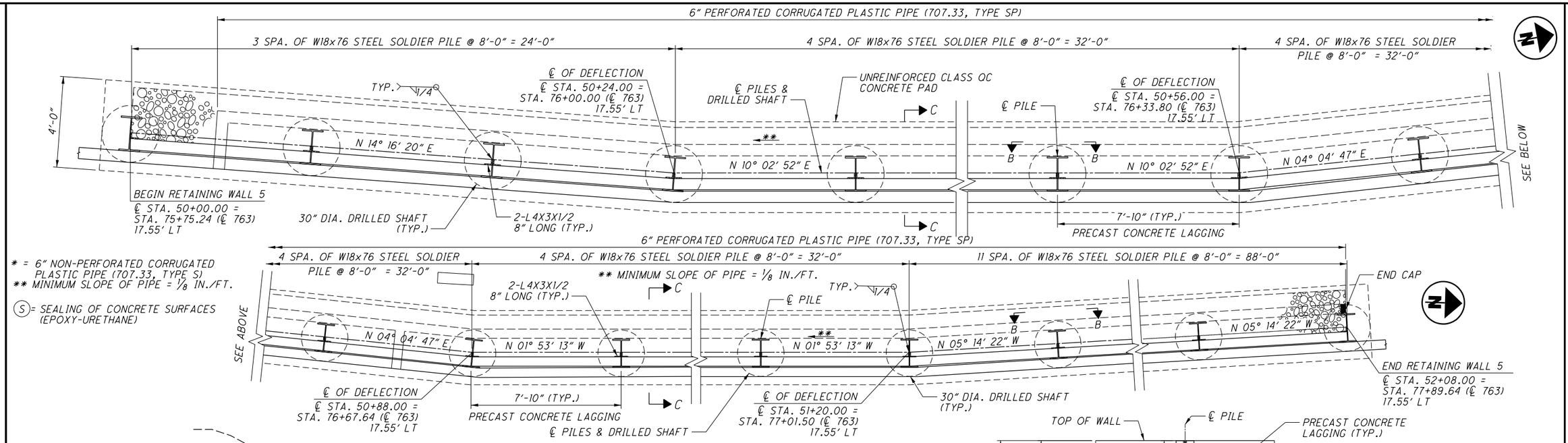
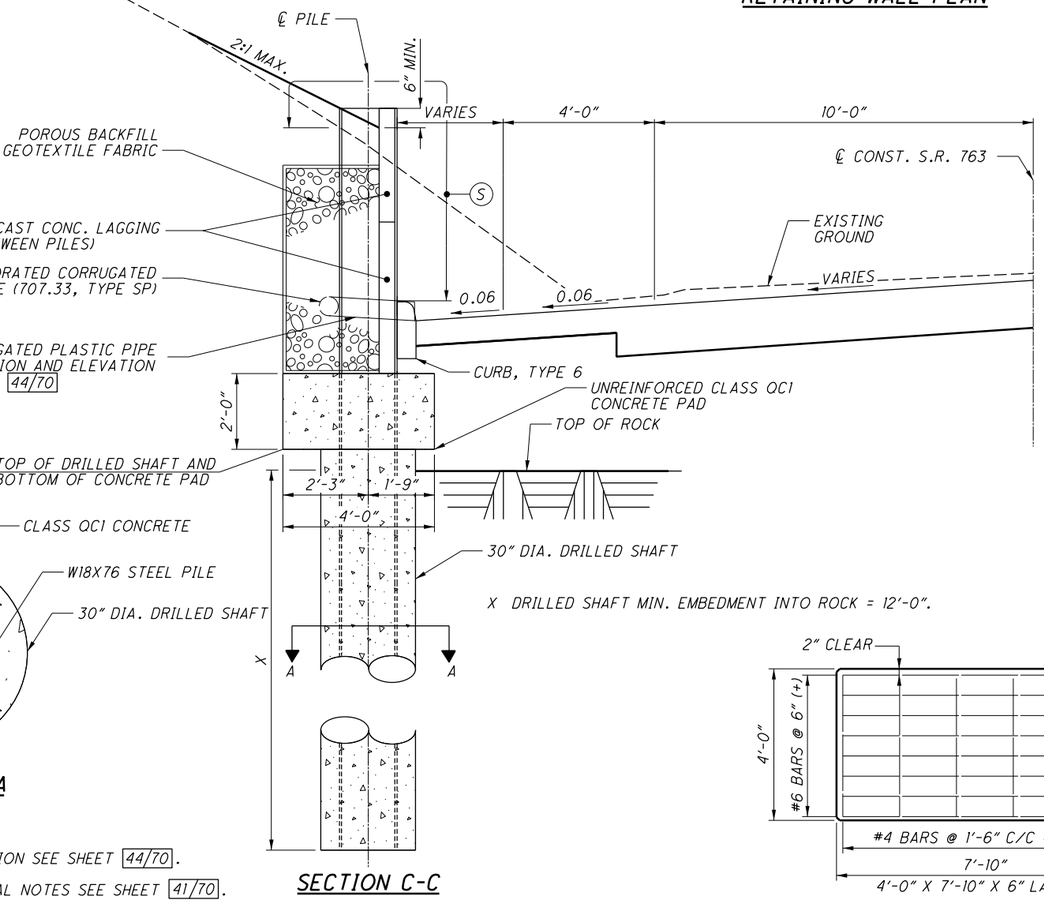
DESIGN AGENCY
BG
www.bgenggroup.com
5910 MILCOX PLACE, SUITE C
DUBLIN, OHIO 43016

DESIGNER JEP
REVIEWER RG 10-01-21
PROJECT ID 100896
SHEET 44 TOTAL 70

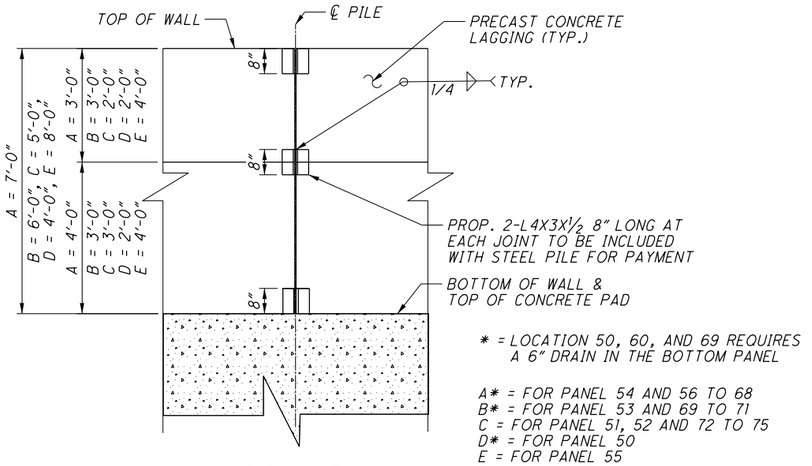


RETAINING WALL PLAN

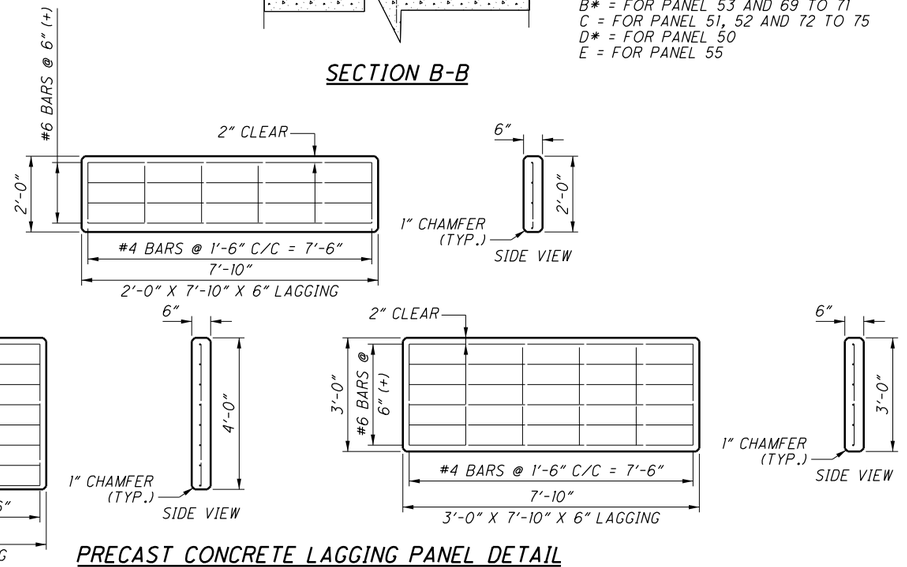


SECTION A-A

SECTION C-C



SECTION B-B



PRECAST CONCRETE LAGGING PANEL DETAIL

NOTES:

1. FOR RETAINING WALL LOCATION SEE SHEET 44/70.
2. FOR RETAINING WALL GENERAL NOTES SEE SHEET 41/70.

RETAINING WALL 5 DETAILS

BRO-763-1.51

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 3/3/2022 TIME: 8:30:47 AM USER: JPerchinske
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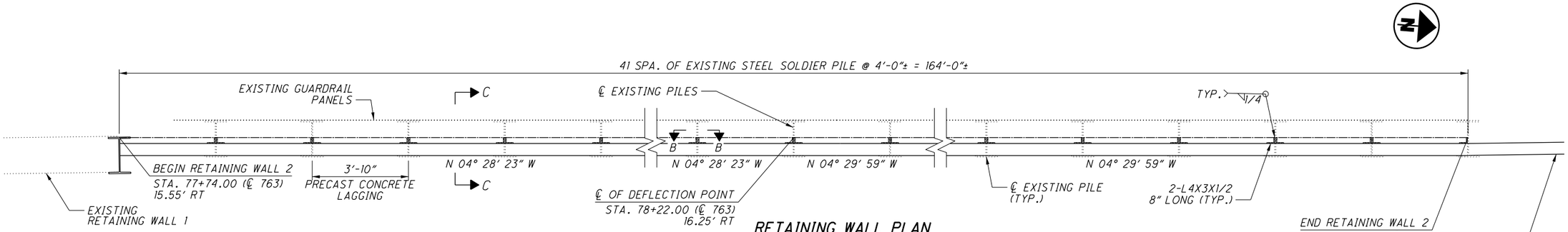
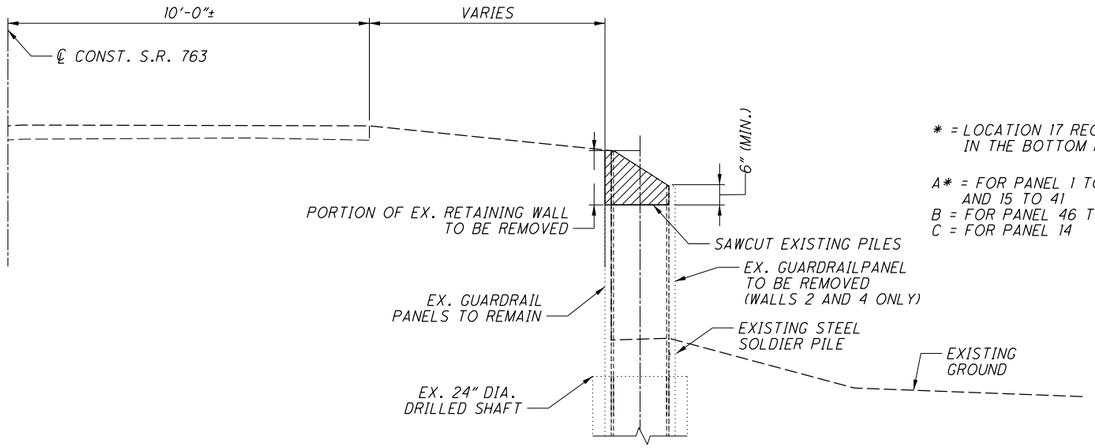
5910 MILCOX PLACE, SUITE C
DUBLIN, OHIO 43016

DESIGNER JEP
REVIEWER RG 10-01-21
PROJECT ID 100896
SHEET 47 TOTAL 70



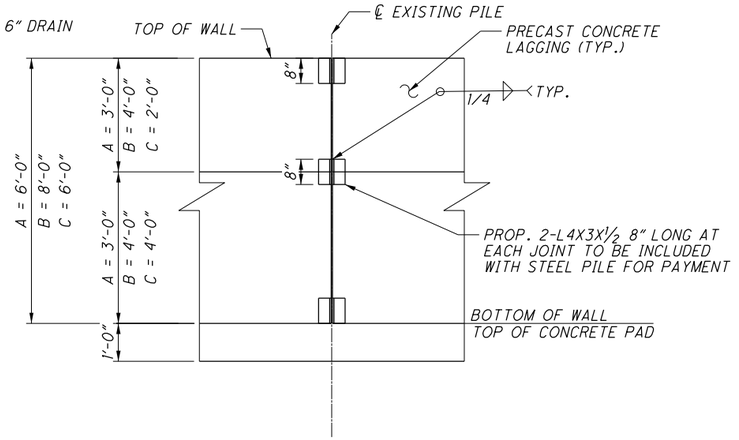
RETAINING WALL PLAN



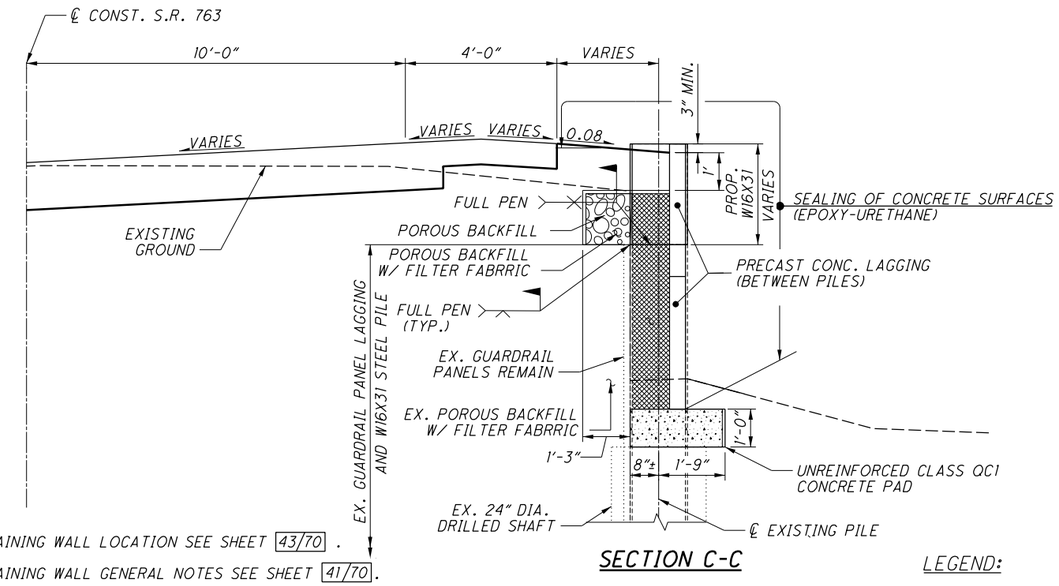
TYPICAL SECTION OF EXISTING RETAINING WALL

* = LOCATION 17 REQUIRES A 6" DRAIN IN THE BOTTOM PANEL

A* = FOR PANEL 1 TO 13 AND 15 TO 41
B = FOR PANEL 46 TO 49
C = FOR PANEL 14



SECTION B-B



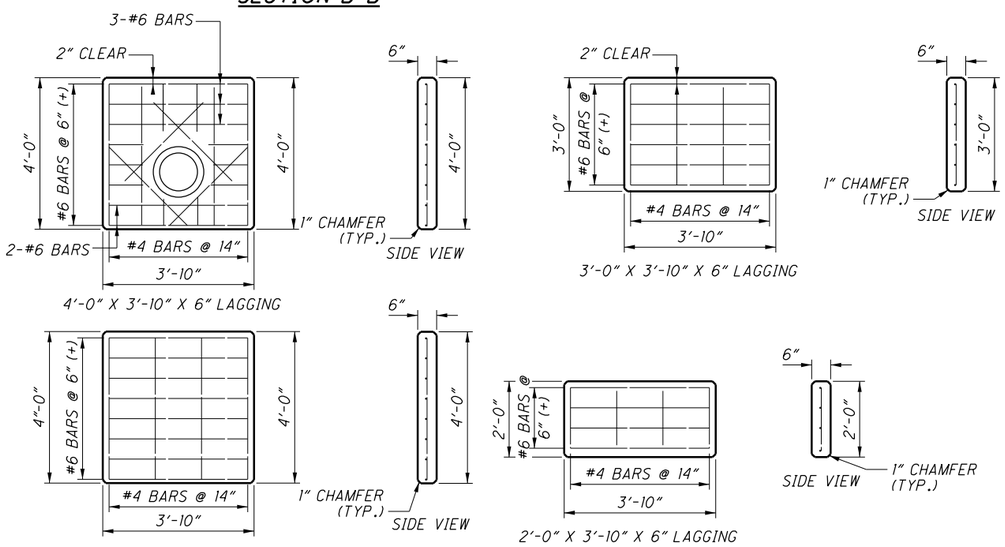
SECTION C-C

NOTES:

1. FOR RETAINING WALL LOCATION SEE SHEET 43/70 .
2. FOR RETAINING WALL GENERAL NOTES SEE SHEET 41/70.
3. FOR LAGGING PANELS THAT HAVE 6" CONDUIT, ADJUST REINFORCING AS NECESSARY TO FIT 6" CONDUIT IN PANEL.

LEGEND:

ITEM 613 - LOW STRENGTH MORTAR



PRECAST CONCRETE LAGGING PANEL DETAIL

EXISTING RETAINING WALL DETAILS

BRO-763-1.51

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DESIGN AGENCY
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5910 WILCOX PLACE, SUITE C
DUBLIN, OHIO 43016

DESIGNER JEP
REVIEWER RG 10-01-21
PROJECT ID 100896
SHEET 45 TOTAL 70

GENERAL NOTES:

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 9th EDITION, 2020, SUPPLEMENTAL SPECIFICATIONS 800, 832, AND 902, AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:
800 REVISED 7/17/2020
832 REVISED 10/19/2018
902 REVISED 7/19/2019

DESIGN LOADING:

HL93 AND THE ALTERNATE MILITARY LOADING.
FUTURE WEARING SURFACE (FWS) OF 60 POUNDS PER SQUARE FOOT.

DESIGN STRESSES:

CAST-IN-PLACE STRUCTURES:
CONCRETE CLASS "QC1" - f'c = 4,000 PSI SUBSTRUCTURE
REINFORCING STEEL - ASTM A615 OR A996 - Fy = 60,000 PSI

STANDARD ABBREVIATIONS:

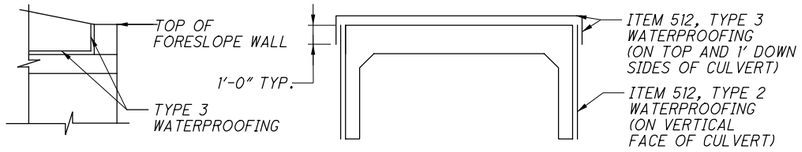
BRGS.	-	BEARINGS
C/C	-	CENTER TO CENTER
C.J.	-	CONSTRUCTION JOINT
CPP.	-	CORRUGATED PLASTIC PIPE
CLR.	-	CLEAR
DIA.	-	DIAMETER
E.F.	-	EACH FACE
EQ.	-	EQUAL
EXIST.	-	EXISTING
EXP.	-	EXPANSION
F.A.	-	FORWARD ABUTMENT
F.F.	-	FAR FACE
F.S.	-	FIELD SPLICE
MIN.	-	MINIMUM
N.F.	-	NEAR FACE
PEJF	-	PERFORMED EXPANSION JOINT FILLER
R.A.	-	REAR ABUTMENT
SPA.	-	SPACING/SPACES
TYP.	-	TYPICAL
MAX.	-	MAXIMUM
SER.	-	SERIES
STR.	-	STRAIGHT
(T).	-	TOP
(B).	-	BOTTOM
(T&B).	-	TOP AND BOTTOM
INC.	-	INCREMENT

THREE-SIDED CULVERT WALL AND TOP SLAB THICKNESS:

THE WALL AND TOP THICKNESSES SHOWN ON THE PLANS WERE OBTAINED FROM THE MANUFACTURERS AT THE TIME PLANS WERE PREPARED. IF THE WALL AND/OR TOP THICKNESS OF THE CULVERT PROPOSED ARE DIFFERENT FROM WHAT IS SHOWN IN THE PLANS, A MARKED COPY OF THE PROJECT PLANS, INCLUDING ALL PLAN NOTES AND DETAILS SHOWING ALL ITEMS AFFECTED BY THE DIFFERENT CULVERT DIMENSIONS, SHALL BE SUBMITTED FOR APPROVAL WITH THE SHOP DRAWINGS. ALL WORK REQUIRED TO ACCOMMODATE ANY REVISED DIMENSIONS SHALL BE AT NO EXTRA COST TO THE STATE.

ITEM 512, TYPE 2 WATERPROOFING:

MEMBRANE WATERPROOFING (SHEET TYPE 2) SHALL EXTEND VERTICALLY DOWN ALL SIDES OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. THE EXTERIOR JOINT GAP ON THE TOP AND SIDES BETWEEN THE PRECAST CULVERT SECTIONS SHALL BE FILLED WITH PORTLAND CEMENT MORTAR PRIOR TO INSTALLING THE MEMBRANE WATERPROOFING. JOINT WRAP AS SPECIFIED IN 611.08 AND CONCRETE SEALING AS SPECIFIED IN 611.09 ARE NOT REQUIRED UNDER THE LIMITS OF THE MEMBRANE WATERPROOFING. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE AND BID PER SQUARE YARD FOR ITEM 512, TYPE 2 WATERPROOFING.



ITEM 512, TYPE 3 WATERPROOFING:

MEMBRANE WATERPROOFING (SHEET TYPE 3) SHALL BE APPLIED TO THE TOP SURFACE OF THE PRECAST CULVERT SECTIONS. THE EXTERIOR JOINT GAP ON THE TOP AND SIDES BETWEEN THE PRECAST CULVERT SECTIONS SHALL BE FILLED WITH PORTLAND CEMENT MORTAR PRIOR TO INSTALLING THE MEMBRANE WATERPROOFING. JOINT WRAP AS SPECIFIED IN 611.08 AND CONCRETE SEALING AS SPECIFIED IN 611.09 ARE NOT REQUIRED UNDER THE LIMITS OF THE MEMBRANE WATERPROOFING. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE AND BID PER SQUARE YARD FOR ITEM 512, TYPE 3 WATERPROOFING.

ESTIMATED QUANTITIES

DESIGNED: RG | CHECKED: CCJ | DATE: 9/22/2021 | DATE: 9/29/2021

202	11000	LUMP		STRUCTURE REMOVED
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING
503	21300	LUMP		UNCLASSIFIED EXCAVATION
503	31100	177	CY	ROCK EXCAVATION
509	10000	11853	LB	EPOXY COATED REINFORCING STEEL
511	46010	37	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING
511	46510	81	CY	CLASS QC1 CONCRETE, FOOTING
511	46610	3	CY	CLASS QC1 CONCRETE, HEADWALL
512	10100	114	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
512	33000	90	SY	TYPE 2 WATERPROOFING
512	33010	63	SY	TYPE 3 WATERPROOFING
516	13600	65	SF	1" PREFORMED EXPANSION JOINT FILLER
518	21200	31	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC
611	70000	38	FT	CONDUIT, TYPE A, PRECAST REINFORCED CONCRETE THREE SIDED FLAT TOPPED CULVERT (15'-0" SPAN X 10'-0" RISE)

TOTAL QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY ON SHEET 12.

GENERAL NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. BRO-763-0151
S.R. 763 OVER A TRIBUTARY OF SLICKAWAY RUN

SFN 0803902

DESIGN AGENCY
BG
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5910 WILCOX PLACE, SUITE C
DUBLIN, OHIO 43016

DESIGNER JEP | CHECKER RG
REVIEWER GTB 10-01-21
PROJECT ID 100896
SUBSET 2 | TOTAL 11
SHEET 49 | TOTAL 70

BRO-763-1.51

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 3/4/2022 TIME: 2:13:03 PM USER: gboye
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