

C:\Users\jPerchinske\OneDrive - bgenggroup.com\BG_Engineering_Group\Transportation\Project Data\LAW\0218\Design\Roadway\Sheets\0218L_G001.dgn 2/23/2021 8:30:56 AM jPerchinske

SHEET NUM.											PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
8	9	17	49	52	62						01/NFA/BR	EXT	TOTAL				
			4								4	630	84900	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
			4								4	630	85100	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
			8								8	630	86002	8	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
			0.61								0.61	642	00104	0.61	MILE	EDGE LINE, 6", TYPE 1	
			0.26								0.26	642	00300	0.26	MILE	CENTER LINE, TYPE 1	
			10								10	642	00500	10	FT	STOP LINE, TYPE 1	
																STRUCTURE OVER 20 FOOT SPAN (LAW-775-1545)	
				LS							LS	202	11002	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN	
				LS							LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
				LS							LS	503	21300	LS		UNCLASSIFIED EXCAVATION	
				LS							LS	505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
											775	507	00100	775	FT	STEEL PILES HP10X42, FURNISHED	
											620	507	00150	620	FT	STEEL PILES HP10X42, DRIVEN	
											31	507	93300	31	EACH	STEEL POINTS OR SHOES	
											10,578	509	10000	10,578	LB	EPOXY COATED REINFORCING STEEL	
											18	511	46010	18	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
											68	511	46510	68	CY	CLASS QC1 CONCRETE, FOOTING	
											2	511	46610	2	CY	CLASS QC1 CONCRETE, HEADWALL	
											87	512	10100	87	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
											117	512	33000	117	SY	TYPE 2 WATERPROOFING	
											233	512	33010	233	SY	TYPE 3 WATERPROOFING	
											35	516	13600	35	SF	1" PREFORMED EXPANSION JOINT FILLER	
											13	518	21200	13	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
											56	611	70000	56	FT	CONDUIT, TYPE A, PRECAST REINFORCED CONCRETE THREE SIDED FLAT TOPPED CULVERT (34'-0" SPAN X 7'-0" RISE)	
																STRUCTURE OVER 20 FOOT SPAN (LAW-775-1570)	
				LS							LS	202	11002	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN	
				LS							LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
				LS							LS	503	21300	LS		UNCLASSIFIED EXCAVATION	
				LS							LS	505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION	
											1,075	507	00100	1,075	FT	STEEL PILES HP10X42, FURNISHED	
											910	507	00150	910	FT	STEEL PILES HP10X42, DRIVEN	
											33	507	93300	33	EACH	STEEL POINTS OR SHOES	
											12,564	509	10000	12,564	LB	EPOXY COATED REINFORCING STEEL	
											24	511	46010	24	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
											78	511	46510	78	CY	CLASS QC1 CONCRETE, FOOTING	
											2	511	46610	2	CY	CLASS QC1 CONCRETE, HEADWALL	
											102	512	10100	102	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
											142	512	33000	142	SY	TYPE 2 WATERPROOFING	
											264	512	33010	264	SY	TYPE 3 WATERPROOFING	
											44	516	13600	44	SF	1" PREFORMED EXPANSION JOINT FILLER	
											25	518	21200	25	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
											63	611	70000	63	FT	CONDUIT, TYPE A, PRECAST REINFORCED CONCRETE THREE SIDED FLAT TOPPED CULVERT (34'-0" SPAN X 8'-0" RISE)	
																MAINTENANCE OF TRAFFIC	
25	75										100	410	10000	100	CY	TRAFFIC COMPACTED SURFACE, TYPE A	
	16										16	614	11110	16	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
	2										2	SPECIAL	61411300	2	EACH	WORK ZONE TRAFFIC SIGNAL	
		5									5	614	12384	5	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (BIDIRECTIONAL)	
LS											LS	614	12420	LS		DETOUR SIGNING	
		21									21	614	13310	21	EACH	BARRIER REFLECTOR, TYPE 1 (BIDIRECTIONAL)	
		21									21	614	13360	21	EACH	OBJECT MARKER, TWO WAY	
		0.32									0.32	614	21000	0.32	MILE	WORK ZONE CENTER LINE, CLASS I	
		0.41									0.41	614	22010	0.41	MILE	WORK ZONE EDGE LINE, CLASS I, 6"	
		36									36	614	26000	36	FT	WORK ZONE STOP LINE, CLASS I	

CALCULATED JEP CHECKED PG
GENERAL SUMMARY
LAW - 775 - (15.45) (15.70)
 15
 83

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GENERAL NOTES:

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 7TH EDITION, WITH 2015 AND 2016 INTERIM REVISIONS, 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 - $F_y = 60,000$ PSI

PRECAST STRUCTURES:
 FOR THREE-SIDED STRUCTURES SEE CULVERT NOTES

PILES TO BEDROCK:

DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING HARD BEDROCK AND THE PILE RECEIVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE TOTAL FACTORED LOAD IS 194 KIPS PER PILE FOR THE REAR AND FORWARD FOOTING PILES. THE FOOTING PILES INCLUDE AN ADDITIONAL 9 KIPS OF FACTORED LOAD PER PILE TO ACCOUNT FOR POSSIBLE DOWNDRAG LOADING. THE CULVERT FOOTING PILES WERE DESIGNED TO ACCOMMODATE 10 FT. OF SCOUR.

REAR FOOTING PILES:
 15 - STEEL HP10X42 PILES 25 FEET LONG, ORDER LENGTH

FORWARD FOOTING PILES:
 16 - STEEL HP10X42 PILES 25 FEET LONG, ORDER LENGTH

STEEL POINTS:

USE STEEL PILE POINTS TO PROTECT THE TIPS OF THE PROPOSED STEEL H-PILES AT THE REAR AND FORWARD FOOTINGS.

STANDARD ABBREVIATIONS:

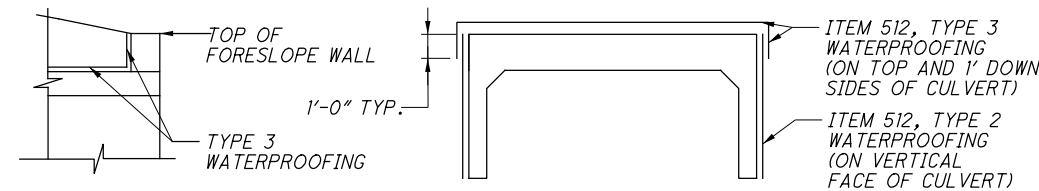
- BRGS. - BEARINGS
- C/C - CENTER TO CENTER
- C.J. - CONSTRUCTION JOINT
- CPP. - CORRUGATED PLASTIC PIPE
- CLR. - CLEAR
- DIA. - DIAMETER
- E.F. - EACH FACE
- EQ. - EQUAL
- EXIST. - EXISTING
- EXP. - EXPANSION
- F.A. - FORWARD ABUTMENT
- F.F. - FAR FACE
- F.S. - FIELD SPLICE
- MIN. - MINIMUM
- N.F. - NEAR FACE
- PEJF - PERFORMED EXPANSION JOINT FILLER
- R.A. - REAR ABUTMENT
- SPA. - SPACING/SPACES
- TYP. - TYPICAL

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.

MADE BY: RG		CHECKED BY: GTB		LAW-775-1545 ESTIMATED QUANTITIES		
DATE 4/8/20		DATE 4/9/20				
ITEM	ITEM EXT.	TOTAL	UNITS	DESCRIPTION	SHT. REF.	
202	11002	LUMP		STRUCTURE REMOVED, OVER 20 FOOT SPAN		
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING		
503	21300	LUMP		UNCLASSIFIED EXCAVATION		
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION		
507	00100	775	FT	STEEL PILES HP 10X42, FURNISHED		
507	00150	620	FT	STEEL PILES HP 10X42, DRIVEN		
507	93300	31	EA	STEEL POINT OR SHOES		
509	10000	10578	LB	EPOXY COATED REINFORCING STEEL		
511	46010	18	CU YD	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING		
511	46510	68	CU YD	CLASS QC1 CONCRETE, FOOTING		
511	46610	2	CU YD	CLASS QC1 CONCRETE, HEADWALL		
512	10100	87	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		
512	33000	117	SQ YD	TYPE 2 WATERPROOFING	2	
512	33010	233	SQ YD	TYPE 3 WATERPROOFING	2	
516	13600	35	SQ FT	1" PREFORMED EXPANSION JOINT FILLER		
518	21200	13	CU YD	POROUS BACKFILL WITH GEOTEXTILE FABRIC		
611	70000	56	FT	CONDUIT, TYPE A, PRECAST REINFORCED CONCRETE THREE SIDED FLAT TOPPED CULVERT (34'-0" SPAN x 7'-0" RISE)		

TOTAL QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY ON SHEET 15.

DESIGN AGENCY

BG

5910 Wilcox Place, Dublin, Ohio 43016

DATE

REVIEWED

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STRUCTURE FILE NUMBER

DRAWN

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