SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
4	5		13	14		15	24	29		50	OFFICE CALCS	01/CMQ/04	02/BRF/11						
																		ROADWAY	
LS												LS		201	11000	LS		CLEARING AND GRUBBING	
			4									4		202	20010	4	EACH	HEADWALL REMOVED	
							277				967	1,244		202	23000	1,244	SY	PAVEMENT REMOVED	
			60									60		202	32500	60	FT	CURB AND GUTTER REMOVED	
			56									56		202	32800	56	SY	CONCRETE SLOPE PROTECTION REMOVED	
			42									42		202	35100	42	FT	PIPE REMOVED, 24" AND UNDER	
			21									21		202	35200	21	FT	PIPE REMOVED, OVER 24"	
			180									180		202	38000	180	FT	GUARDRAIL REMOVED	
			1									1		202	42001	1	EACH	ANCHOR ASSEMBLY REMOVED, TYPE A, AS PER PLAN	4
			LS									LS		202	98000	LS		REMOVAL MISC.: FIREPLACE	4
			LS									LS		202	98000	LS		REMOVAL MISC.: DRIVEWAY BOX CULVERT STRUCTURE	4
						127						127		203	10000	127	CY	EXCAVATION	
						109						109		203	10001	109	CY	EXCAVATION, AS PER PLAN	5
						1,205						1,205		203	20000	1,205	CY	EMBANKMENT	
						109						109		203	20001	109	CY	EMBANKMENT, AS PER PLAN	5
25												25		203	98000	25	CY	ROADWAY, MISC.: STRUCTURAL BACKFILL, TYPE 1	4
							300				1,966	2,266		204	10000	2,266	SY	SUBGRADE COMPACTION	
40												40		204	13000	40	CY	EXCAVATION OF SUBGRADE	
40												40		204	20000	40	CY	EMBANKMENT	
1												1		204	45000	1	HOUR	PROOF ROLLING	
60												60		204	50000	60	SY	GEOTEXTILE FABRIC	
			400									400		606	15050	400	FT	GUARDRAIL, TYPE MGS	
			1									1		606	26050	1	EACH	ANCHOR ASSEMBLY, MGS TYPE B	
			3									3		606	26550	3	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
										1		1		623	38500	1	EACH	MONUMENT ASSEMBLY, TYPE C	
			4									4		SPECIAL	69050100	4	EACH	MAILBOX SUPPORT SYSTEM, SINGLE	5
												LS		878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS	
																		EROSION CONTROL	
			6									6		601	11000	6	SY	RIPRAP, TYPE D	
2												2		659	00100	2	EACH	SOIL ANALYSIS TEST	
300												300		659	00300	300	CY	TOPSOIL	
2,695												2,695		659	10000	2,695	SY	SEEDING AND MULCHING	
0.4												0.4		659	20000	0.4	TON	COMMERCIAL FERTILIZER	
0.6												0.6		659	31000	0.6	ACRE	LIME	
15												15		659	35000	15	MGAL	WATER	
			49									49		670	00700	49	SY	DITCH EROSION PROTECTION	
												21,000		832	30000	21,000	EACH	EROSION CONTROL	
																		DRAINAGE	
				1.01								1.01		602	20000	1.01	CY	CONCRETE MASONRY	
109												109		605	31100	109	FT	AGGREGATE DRAINS	
								100				100		611	00400	100	FT	4" CONDUIT, TYPE E	
	250											250		611	00900	250	FT	6" CONDUIT, TYPE B	
	250											250		611	01100	250	FT	6" CONDUIT, TYPE C	
	100											100		611	01500	100	FT	6" CONDUIT, TYPE F	
				5								5		611	04600	5	FT	12" CONDUIT, TYPE C	
				72								72		611 R1	06400	72	FT	15" CONDUIT, TYPE D R1	
				169								169		611	53100	169	FT	43" X 68" CONDUIT, TYPE A, 706.04	
				101								101		611	53200	101	FT	48" X 76" CONDUIT, TYPE A, 706.04	
				15								15		611	97400	15	FT	CONDUIT, MISC.: 3" ROOF DRAIN	4
				1								1		611	98470	1	EACH	CATCH BASIN, NO. 2-2B	
				2								2		611	99574	2	EACH	MANHOLE, NO. 3 (96" DIAM)	

REV.	DATE	DESCRIPTION
R1	2-3-23	UPDATED SIZE OF CONDUIT

CALCULATED EJT
CHECKED SDC

GENERAL SUMMARY

WAR-123-28.55

SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
			13	14			24	27		OFFICE CALCS		01/CMQ/04	02/BRF/11						
										312		312		301	56000	312	CY	ASPHALT CONCRETE BASE, PG64-22, (449)	
							50			319		369		304	20000	369	CY	AGGREGATE BASE	
										111		111		407	20000	111	GAL	NON-TRACKING TACK COAT	
							7			64		71		441	70000	71	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22	
										90		90		441	70300	90	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449)	
							216					216		452	10010	216	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
			10									10		609	12000	10	FT	COMBINATION CURB AND GUTTER, TYPE 2	
																		WATER WORK	
				1								1		202	75610	1	EACH	VALVE BOX REMOVED	
				15								15		638	00700	15	FT	6" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS	
				168								168		638	02500	168	FT	12" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS	
				100								100		638	04800	100	FT	3/4" COPPER SERVICE BRANCH	
				60								60		638	06708	60	FT	24" STEEL PIPE ENCASEMENT, OPEN CUT	
				1								1		638	08620	1	EACH	12" INSERTING VALVE AND VALVE BOX	
				1								1		638	10600	1	EACH	FIRE HYDRANT AND GATE VALVE REMOVED AND RESET	
				2								2		638	10900	2	EACH	SERVICE BOX ADJUSTED TO GRADE	
				1								1		638	11100	1	EACH	METER AND CHAMBER REMOVED AND RESET	
																		TRAFFIC CONTROL	
								2				2		621	00100	2	EACH	RPM	
								2				2		621	54000	2	EACH	RAISED PAVEMENT MARKER REMOVED	
			12									12		626	00110	12	EACH	BARRIER REFLECTOR, TYPE 2 (BIDIRECTIONAL)	
								88				88		630	03100	88	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
								2				2		630	08600	2	EACH	SIGN POST REFLECTOR	
								36				36		630	80100	36	SF	SIGN, FLAT SHEET	
								8				8		630	84900	8	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
								2				2		630	85100	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
								6				6		630	86002	6	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
								2				2		630	86272	2	EACH	REMOVAL OF GROUND MOUNTED PIPE SUPPORT AND DISPOSAL	
							R1 0.15				R1	0.15		644	00100 R1	0.15	MILE	EDGE LINE, 4" (WHITE)	
								0.1				0.1		644	00300	0.1	MILE	CENTER LINE (DOUBLE YELLOW)	
								229				229		644	00400	229	FT	CHANNELIZING LINE, 8"	
								169				169		644	00500	169	FT	STOP LINE	
								160				160		644	00700	160	FT	TRANSVERSE/DIAGONAL LINE (YELLOW)	
								6				6		644	01300	6	EACH	LANE ARROW	
								155				155		644	01510	155	FT	DOTTED LINE, 6"	
								20				20		644	30000	20	FT	REMOVAL OF PAVEMENT MARKING	
								3				3		644	30020	3	EACH	REMOVAL OF PAVEMENT MARKING	

REV.	DATE	DESCRIPTION
R1	2-3-23	UPDATED QUANTITY

CALCULATED EJT
CHECKED SDC

GENERAL SUMMARY

WAR-123-28.55

10
57

H:\208\80554\ODOT\ProjectData\06224_SR123\Design\Roadway\Sheets\06224_GG002.dgn Sheet 2/3/2023 8:51:24 AM troyer

SHEET NUM.								PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
		6	7			41		01/CMQ/04	02/BRF/11						
														STRUCTURE OVER 20 FOOT SPAN (SFN: 8360546)	
						LS			LS	202	11002	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN	
						86			86	202	23500	86	SY	WEARING COURSE REMOVED	
						LS			LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING R1	
						LS			LS	503	21300	LS		UNCLASSIFIED EXCAVATION	
						11,044			11,044	509	10000	11,044	LB	EPOXY COATED STEEL REINFORCEMENT	
						81			81	511	46510	81	CY	CLASS QC1 CONCRETE, FOOTING	
						77			77	511	46610	77	CY	CLASS QC1 CONCRETE, HEADWALL	
						8			8	511	50210	8	CY	CLASS QC1 CONCRETE, SUBSTRUCTURE	
						100			100	512	10100	100	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
						185			185	512	33000	185	SY	TYPE 2 WATERPROOFING	
						285			285	512	33010	285	SY	TYPE 3 WATERPROOFING	
						102			102	516 R1	13600	102	SF	1" PREFORMED EXPANSION JOINT FILLER	
						18			18	518	21201 R1	18	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN	41
						51			51	601	32100	51	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
						55			55	601	34100	55	CY	ROCK CHANNEL PROTECTION, TYPE B WITHOUT FILTER	
						80			80	611	70001	80	FT	CONDUIT, TYPE A, PRECAST REINFORCED CONCRETE THREE SIDED FLAT TOPPED CULVERT, AS PER PLAN (28'-0" SPAN x 8'-0" RISE)	41
														MAINTENANCE OF TRAFFIC	
		20						20		410	12000	20	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	
		60						60		614	11110	60	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
		LS						LS		614	12420	LS		DETOUR SIGNING	
		10						10		614	13000	10	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
		16						16		614	18600	16	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN	
		30						30		616	10000	30	MGAL	WATER	
		180						180		622	41100	180	FT	PORTABLE BARRIER, UNANCHORED	
														INCIDENTALS	
		LS	LS					LS		614	11000	LS		MAINTAINING TRAFFIC	
								LS		623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
								LS		624	10000	LS		MOBILIZATION	

REV.	DATE	DESCRIPTION
R1	2-2-23	ADDED QUANTITY FOR COFFERDAMS AND EXCAVATION BRACING.
		CHANGED UNIT AND ITEM EXTENSION OF POROUS BACKFILL.

CALCULATED EJT
CHECKED SDC

GENERAL SUMMARY

WAR-123-28.55

GENERAL NOTES:

STANDARD BRIDGE DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:
REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:
800 DATED 01-20-23

DESIGN SPECIFICATIONS:
THIS STRUCTURE CONFORMS TO THE 8TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2017 AND THE ODOT BRIDGE DESIGN MANUAL, 2019.

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, 2019.

DESIGN LOADING:
BRIDGE UNITS: HL-93 AND FUTURE WEARING SURFACE (FWS) OF 60 PSF
HEADWALLS: EARTH PRESSURE + LIVE LOAD SURCHARGE

DESIGN DATA:
CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (HEADWALL, CULVERT FOOTING, AND PEDESTAL SUBSTRUCTURE)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI (EPOXY COATED)

PRECAST STRUCTURES - FOR PRECAST REINFORCED THREE SIDED STRUCTURES, SEE CMS SECTION 611

FOUNDATION BEARING RESISTANCE:
CULVERT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LIMIT STATE BEARING PRESSURE OF 1.06 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LIMIT STATE BEARING PRESSURE OF 1.49 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 4.0 KIPS PER SQUARE FOOT.

HEADWALL FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LIMIT STATE BEARING PRESSURE OF 1.68 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LIMIT STATE BEARING PRESSURE OF 2.57 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 4.0 KIPS PER SQUARE FOOT.

THREE SIDED STRUCTURE WALL AND TOP SLAB THICKNESS:
THE WALL AND TOP SLAB THICKNESSES SHOWN IN THE PLANS WERE OBTAINED FROM THE MANUFACTURERS AT THE TIME THE PLANS WERE PREPARED. IF THE WALL AND/OR TOP SLAB THICKNESSES OF THE PROPOSED CULVERT 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 CITY.

ITEM 518 - POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN
1'-6" THICK POROUS BACKFILL SHALL BE PLACED BEHIND THE HEADWALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE OF THE FINISHED GROUND. GEOTEXTILE FABRIC TYPE D SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.

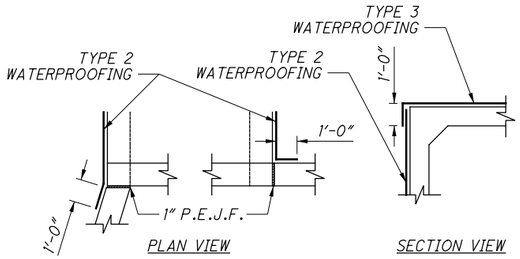
FORESLOPE WALL ANCHOR DOWELS:
ANCHOR PER CMS 510 WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO CMS 705.20 AND TO A DEPTH SPECIFIED IN THE PLANS. PAYMENT FOR DOWEL HOLES, GROUT, AND INSTALLATION SHALL BE INCLUDED WITH ITEM 511.

THREADED INSERTS OR NON-PROTRUDING MECHANICAL CONNECTORS CAPABLE OF DEVELOPING AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCEMENT SHOWN ARE AN ACCEPTABLE ALTERNATIVE TO RESIN BONDING. MAINTAIN A MINIMUM COVER OF 3 INCHES AT THE BOTTOM OF THE CULVERT SLAB. MECHANICAL CONNECTORS SHALL HAVE AN L-SHAPED BAR INSIDE THE CULVERT WITH A MINIMUM HORIZONTAL LENGTH OF 12 INCHES. THE DEPARTMENT WILL CONSIDER PAYMENT FOR INSERTS OR MECHANICAL CONNECTORS AS INCIDENTAL TO ITEM 611.

WATERPROOFING:
TYPE 2 WATERPROOFING, PER CMS 512 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. APPLY TYPE 2 WATERPROOFING TO THE ENTIRE SIDE OF THE PEDESTAL WALL IN CONTACT WITH FILL FROM TOP OF FOOTING TO CULVERT. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

IN ADDITION, TYPE 2 WATERPROOFING SHALL BE APPLIED ALONG THE JOINT BETWEEN THE PRECAST CULVERT UNIT AND THE CAST-IN-PLACE PEDESTAL INCLUDING BETWEEN THE JOINT PERIPHERY OF THE ELLIPTICAL PIPE AND THE PEDESTAL, AS SHOWN ON SHEETS 3 AND 8 OF 9.

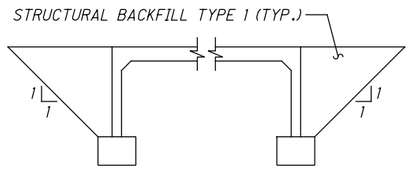
TYPE 3 WATERPROOFING, PER CMS 512 AND 711.29 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 3 WATERPROOFING.

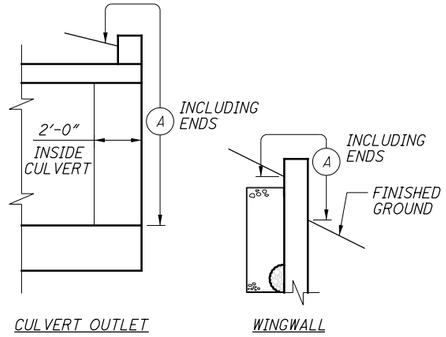


WATERPROOFING DETAILS

ITEM 611 - CONDUIT, TYPE A, PRECAST REINFORCED CONCRETE THREE SIDED FLAT TOPPED CULVERT (28' SPAN X 8' RISE), AS PER PLAN
FOLLOW ALL REQUIREMENTS OF CMS 611 AND 706.051.

STRUCTURAL BACKFILL TYPE 1 THAT MEETS THE GRADATIONS OF ITEM 304 SHALL BE PLACED AS SHOWN IN THE DETAIL BELOW. QUANTITY SHALL BE BASED ON A TRENCH LENGTH CONSISTING OF THE LENGTH OF PAVEMENT PLUS 4 FEET OF ADDITIONAL LENGTH PER SIDE, MEASURED ALONG THE CENTERLINE OF THE CULVERT. PAYMENT FOR STRUCTURAL BACKFILL TYPE 1 AND THE EXCAVATION REQUIRED FOR THE PLACEMENT OF THE STRUCTURAL BACKFILL SHALL BE INCLUDED WITH ITEM 611 FOR PAYMENT.





LIMITS OF 512 - SEALING CONCRETE SURFACES

(A) - SEAL ENTIRE CONCRETE SURFACE AREA

ABBREVIATIONS:
@ - AT
℄ - CENTERLINE
ϕ - DIAMETER
℄ - FLOWLINE
BOT. - BOTTOM
CLR. - CLEAR, CLEARANCE
CONST. - CONSTRUCTION
CU. FT. - CUBIC FEET
CFS - CUBIC FEET PER SECOND
CY - CUBIC YARDS
E.F. - EACH FACE
EMBED. - EMBEDMENT
EL. - ELEVATION
EOP - EDGE OF PAVEMENT
EQ. SPA. - EQUAL SPACES
F.F. - FAR FACE
FT. - FEET
HW - HIGH WATER
IN. - INCH
KSF - KIPS PER SQUARE FOOT
KSI - KIPS PER SQUARE INCH
LB. - POUND
LS - LUMP SUM
LT. - LEFT
MAX. - MAXIMUM
MIN. - MINIMUM
N.F. - NEAR FACE
OHWM - ORDINARY HIGH WATER MARK
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
PRWS - PREFABRICATED RETAINING WALL SYSTEM
RT. - RIGHT
SER. - SERIES
SY - SQUARE YARDS
STA. - STATION
T&B - TOP AND BOTTOM
T/FTG - TOP OF FOOTING
TYP. - TYPICAL
VAR. - VARIES
W/ - WITH

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SHEET REF.
202	11002	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN	
202	23500	86	SY	WEARING COURSE REMOVED	
R1 503	11100	LS		COFFERDAM AND EXCAVATION BRACING	
503	21300	LS		UNCLASSIFIED EXCAVATION	
509	10000	11044	LB	EPOXY COATED STEEL REINFORCEMENT	
511	46510	81	CY	CLASS QC1 CONCRETE, FOOTING	
511	46610	77	CY	CLASS QC1 CONCRETE, HEADWALL	
511	50210	8	CY	CLASS QC1 CONCRETE, SUBSTRUCTURE	
512	10100	100	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	33000	185	SY	TYPE 2 WATERPROOFING	
512	33010	285	SY	TYPE 3 WATERPROOFING	
516	13600	102	SF	1" PREFORMED EXPANSION JOINT FILLER	
518	21201	18	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN	2/9
601	32100	51	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
601	34100	55	CY	ROCK CHANNEL PROTECTION, TYPE B WITHOUT FILTER	
611	70001	80	FT	CONDUIT, TYPE A, PRECAST REINFORCED CONCRETE THREE SIDED FLAT TOPPED CULVERT (28' SPAN X 8' RISE), AS PER PLAN	2/9

ALL QUANTITIES ARE CARRIED TO THE ROADWAY GENERAL SUBSUMMARY.

REV.	DATE	DESCRIPTION
R1	2-2-23	COFFERDAM AND EXCAVATION BRACING ADDED

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DESIGNED MLF | DRAWN MLF | CHECKED SAT | REVIEWED TAB | DATE 1/1/2022 | REVISED - | STRUCTURE FILE NUMBER -

GENERAL NOTES & ESTIMATED QUANTITIES
BRIDGE NO. WAR-BEAL-00.10
BEAL ROAD OVER STREAM 1

WAR-123-28.55
PID No. 106224