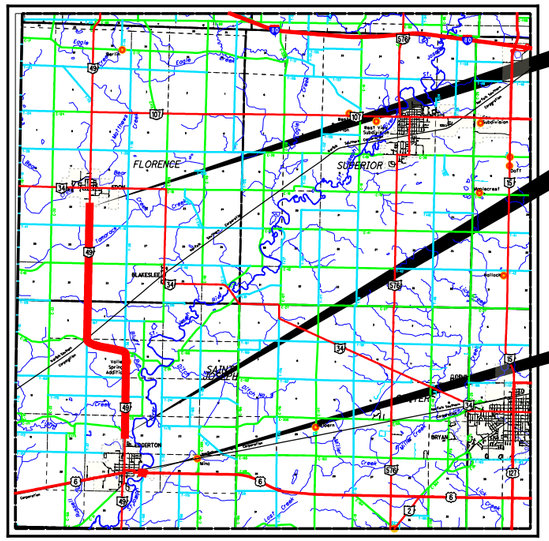


LOCATION MAP

LATITUDE: 41° 29′ 5.5″ N LONGITUDE: 84° 44′ 54.6″ W

SCALE IN MILES

0 1 2 3 4

N

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

DESIGN DESIGNATION	WIL-49-2.62	WIL-6-3.54
CURRENT ADT (2020)	2400	5600
DESIGN YEAR ADT (2032)	2700	6100
DESIGN HOURLY VOLUME (2032)	300	610
DIRECTIONAL DISTRIBUTION	51%	52%
TRUCKS (24 HOUR B&C)	19%	21%
DESIGN SPEED	60 MPH	60 MPH
LEGAL SPEED	55 MPH	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	RURAL MAJOR COLLECTOR	RURAL MAJOR ARTERIAL
NHS PROJECT	NO	YES

DESIGN EXCEPTIONS

NONE

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

WIL-6/49-3.54/2.62

ST. JOSEPH/FLORENCE TOWNSHIPS

WILLIAMS COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

A 2-LANE DISTRICT ALLOCATION FUNDED PROJECT TO RESURFACE SR-49 IN WILLIAMS COUNTY, THE SEALING OF THE CONCRETE BRIDGE DECK OF STRUCTURE WIL-49-2.62, THE REPLACEMENT OF THE CULVERT STRUCTURE WIL-49-4.08, AND PRESSURE RELIEF JOINT INSTALLATION AT STRUCTURE WIL-6-3.54 ; PERFORM NECESSARY RELATED WORK.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.50 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	N/A
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A

UNDERGROUND UTILITIES

OHIO811.org Before You Dig

PLAN PREPARED BY:
ODOT DISTRICT 2
317 E POE RD
BOWLING GREEN, OHIO

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 DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 6.

APPROVED _____
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

ENGINEERS SEAL:	ENGINEERS SEAL:
STATE OF OHIO ★ JOHN L. ERFORD E-84484 ★ PROFESSIONAL ENGINEER ★ REGISTERED	STATE OF OHIO ★ DAVID J. GECKLE E-72729 ★ PROFESSIONAL ENGINEER ★ REGISTERED
SIGNED: _____ DATE: _____	SIGNED: _____ DATE: _____

STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-2.4	7/19/13	MT-105.10	1/17/20					800	1/17/20	WPC
BP-3.1	1/17/20							832	10/19/18	5/10/2019
BP-3.2	1/18/19	TC-65.10	1/17/14					872	7/19/19	
BP-4.1	7/19/13	TC-65.11	7/21/17					874	10/18/19	
HW-1.1	7/20/18	TC-71.10	1/19/18					875	1/18/19	
DM-1.1	7/21/17									
DM-1.2	1/18/13	RM-1.1	7/18/14							
DM-4.3	1/15/16									
DM-4.4	1/15/16									
MGS-1.1	1/19/18									
MGS-2.1	1/19/18									
MT-97.10	4/19/19									
MT-97.12	1/20/17									
MT-99.20	4/19/19									
MT-101.60	1/20/17									

FEDERAL PROJECT NO. E130779

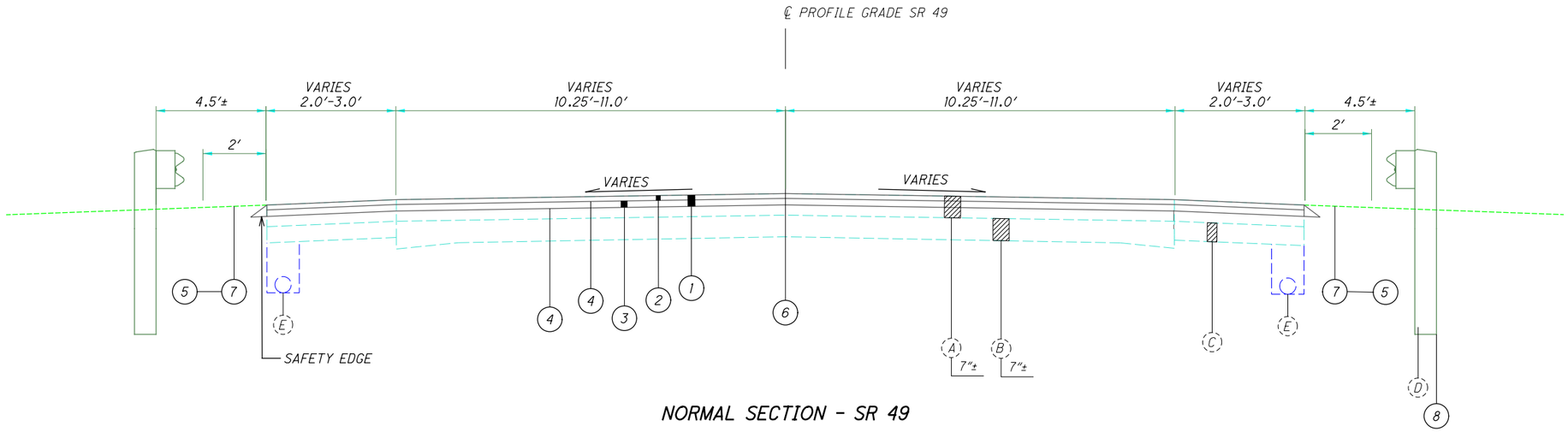
PID NO. 94334

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NORFOLK SOUTHERN

WIL-6/49-3.54/2.62

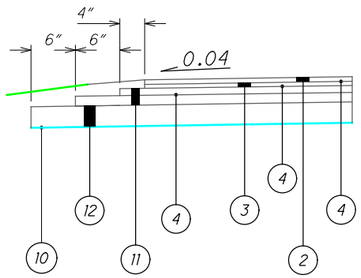
1/36



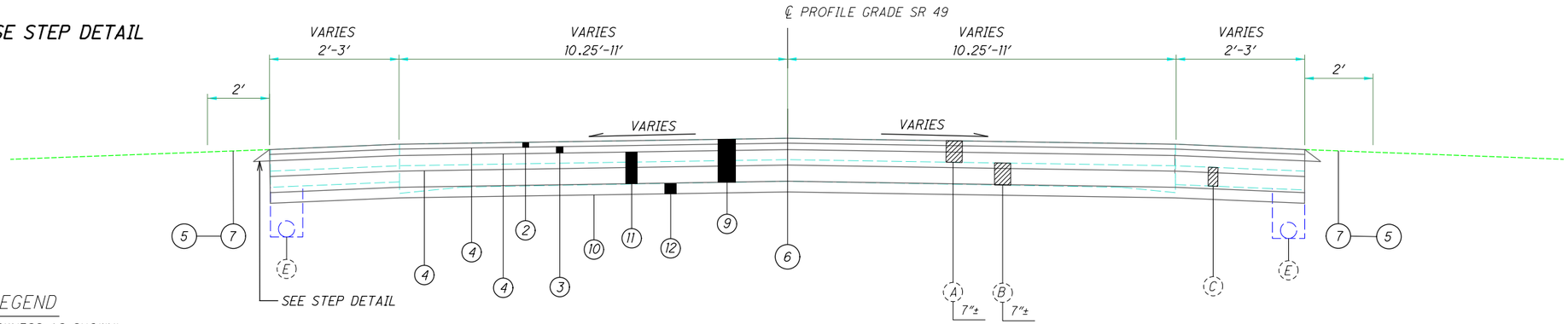
NORMAL SECTION - SR 49

TYPICAL SECTION APPLIES TO:

STA. 140+87.75 TO STA. 214+60.17 = 7372.42 FT
STA. 215+60.17 TO STA. 490+28.79 = 27468.62 FT
34841.04 FT



BASE AND SUBBASE STEP DETAIL



NORMAL SECTION - SR 49

TYPICAL SECTION APPLIES TO:

STA. 214+60.17 TO STA. 215+60.17 = 100 FT

EXISTING LEGEND

- (A) EXISTING ASPHALT (THICKNESS AS SHOWN)
- (B) 9-7-7-9 REINFORCED CONCRETE BASE
- (C) SUBBASE
- (D) GUARDRAIL (TO BE REMOVED)
- (E) EXISTING UNDERDRAIN

PROPOSED LEGEND

1. ITEM 254 - 3.25" PAVEMENT PLANING, ASPHALT CONCRETE
2. ITEM 441 - 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG 64-22
3. ITEM 441 - 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
4. ITEM 407 - NON-TRACKING TACK COAT
5. ITEM 617 - COMPACTED AGGREGATE
6. ITEM 874 - LONGITUDINAL JOINT PREPARATION
7. ITEM 209 - LINEAR GRADING
8. ITEM 606 - GUARDRAIL TYPE MGS
9. ITEM 202 - PAVEMENT REMOVED
10. ITEM 204 - SUBGRADE COMPACTION
11. ITEM 301 - 10.75" ASPHALT CONCRETE BASE
12. ITEM 304 - 6" AGGREGATE BASE

NOTE: ITEM 301-10.75" BITUMINOUS AGGREGATE BASE SHALL BE PLACED IN TWO (2) LIFTS.

CALCULATED JLE
CHECKED JMF

TYPICAL SECTIONS

WIL-6/49-3.54/2.62

UTILITIES

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

WILLIAMS COUNTY ENGINEERS
12953 COUNTY RD G
BRYAN, OH 43506
419-636-2454

OHIO GAS CO.-BRYAN
P.O. BOX 528
BRYAN, OH 43506
800-331-7396

FRONTIER COM
3126 N. McCORD RD
TOLEDO, OH 43617
419-210-8231

TOLEDO EDISON
P.O BOX 507
DEFIANCE, OH 43512
419-782-2015

ANR PIPELINE
6357 SR 66 NORTH
DEFIANCE, OH 43512
419-783-3135

VILLAGE OF EDGERTON
P.O BOX 609
EDGERTON, OH 43517
419-298-2912

KINDER MORGAN COCHIN PIPELINE
7559 SECOR RD
LAMBERTVILLE, MI 48144
734-856-2161

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

PROFILE AND ALIGNMENT

PLACE THE PROPOSED PAVEMENT TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. THE PROPOSED ASPHALT CONCRETE OVERLAY SHALL BE AS SHOWN ON THE TYPICAL SECTIONS.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

PAVEMENT MARKINGS

THE CONTRACTOR SHALL MAKE NOTE OF ALL EXISTING PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS BEFORE PERFORMING ANY WORK. ESTIMATED QUANTITIES HAVE BEEN INCLUDED TO BE USED AS DIRECTED BY THE ENGINEER.

PLANED SURFACES

NO PLANED SURFACES SHALL BE OPEN TO THE PUBLIC FOR MORE THAN 5 DAYS. IF THE PLANED SURFACE IS OPEN FOR MORE THAN 5 DAYS, THEN IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPAIR THE PAVEMENT FAILURES THAT OCCURRED AFTER THE 5 DAYS.

SURVEYING PARAMETERS

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

PROJECT CONTROL

POSITIONING METHOD:	ODOT VRS
MONUMENT TYPE:	TYPE B

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM:	NAVD88 (ODOT VRS DERIVED)
GEOID:	2012A

HORIZONTAL POSITIONING

REFERENCE FRAME:	NAD 83 (2011)
ELLIPSOID:	GRS80
MAP PROJECTION:	LAMBERT CONFORMAL COINC
COORDINATE SYSTEM:	OHIO STATE PLANE NORTH
COMBINED SCALE FACTOR:	GRID=1.0000000
ORIGIN OF COORDINATE SYSTEM:	0,0

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.

ITEM 606 GUARDRAIL, TYPE MGS, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO PLACE NEW TYPE MGS GUARDRAIL AS DIRECTED BY THE ENGINEER AND IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MGS-1.1 AND MGS-2.1.

STEEL POSTS SHALL BE USED IN CONSTRUCTION OF THE GUARDRAIL, TYPE MGS. LENGTH AND SPACING SHALL CONFORM TO ITEM 606 AND 710.15 OF THE CMS.

ITEM 202. ANCHOR ASSEMBLY REMOVED, TYPE A, AS PER PLAN

THIS ITEM 202 SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL W BEAM, POSTS AND CONCRETE ANCHORS OF THE ANCHOR ASSEMBLY. BACKFILL RESULTING VOID. ALL WORK TO BE DONE ACCORDING TO CMS 202.02 AND 202.09.

ITEM 202. ANCHOR ASSEMBLY REMOVED, TYPE B, AS PER PLAN

THIS ITEM 202 SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL W BEAM, POSTS AND CONCRETE ANCHORS OF THE ANCHOR ASSEMBLY. BACKFILL RESULTING VOID. ALL WORK TO BE DONE ACCORDING TO CMS 202.02 AND 202.09.

ITEM 202. BRIDGE TERMINAL ASSEMBLY REMOVED, AS PER PLAN

THIS ITEM 202 SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL W BEAM, POSTS AND CONCRETE ANCHORS OF THE BRIDGE TERMINAL ASSEMBLY. BACKFILL RESULTING VOID. ALL WORK TO BE DONE ACCORDING TO CMS 202.02 AND 202.09.

MONUMENT BOX ADJUST TO GRADE

IF THE CONTRACTOR REMOVES OR DISTURBS ANY MONUMENT BOX ASSEMBLIES DURING CONSTRUCTION, THEN THEY WILL NEED TO HAVE A REGISTERED SURVEYOR CERTIFY THAT THE MONUMENTS HAVE BEEN RESET AT THE PRE-DISTURBED LOCATION AND PER THE OHIO ADMINISTRATIVE CODE CHAPTER 4733-37, "STANDARDS FOR BOUNDARY SURVEYS". THE CONTRACTOR IS TO FORWARD A COPY OF SAID CERTIFICATION TO THE PROJECT ENGINEER, AND THE DISTRICT SURVEY OPERATIONS MANAGER FOR REVIEW. (SEE EXAMPLE)

I, JOHN D. DOE, P.S. HEREBY CERTIFY THAT THE CENTERLINE MONUMENTATION HAS BEEN RESET AT THE PRECONSTRUCTION LOCATIONS DURING PROJECT CTY-RT-SEC, PID 00000. ALL OF MY WORK CONTAINED HEREIN WAS CONDUCTED IN ACCORDANCE WITH OHIO ADMINISTRATIVE CODE 4733-37 COMMONLY KNOWN AS "A MINIMUM STANDARDS FOR BOUNDARY SURVEYS IN THE STATE OF OHIO" UNLESS OTHERWISE NOTED. THE WORDS I AND MY AS USED HEREIN ARE TO MEAN MYSELF OR SOMEONE UNDER MY DIRECT SUPERVISION.

ALL SURVEY MONUMENTS SET AND/OR RESET BY THE CONSTRUCTION CONTRACTOR'S SURVEYOR SHALL BE CONSTRUCTED ACCORDING TO STANDARD CONSTRUCTION DRAWING RM-1.1.

CONTINGENCY QUANTITIES

THE FOLLOWING ITEM HAS BEEN INCLUDED AS A CONTINGENCY QUANTITY TO BE APPROVED BY THE PROJECT ENGINEER AND CARRIED TO THE GENERAL SUMMARY

ITEM 623 - MONUMENT BOX ADJUSTED TO GRADE 1 EACH

ITEM 253, PAVEMENT REPAIR:

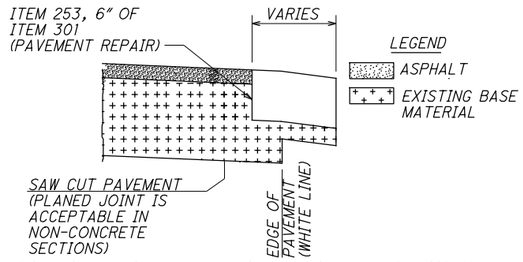
THE FOLLOWING ESTIMATED QUANTITY ARE TO BE USED FOR 6" PAVEMENT REPAIR FOR SR 49 AS DIRECTED BY THE ENGINEER AND BASED ON VARYING WIDTHS ON BOTH SIDES OF THE ROAD.

10% OF TOTAL AREA = (98075 SQ FT * 0.5 FT)/27
SR 49 = 1816 CU YD

TOTAL - 1816 CU YD

THE REPAIR QUANTITY MAY BE USED FOR THE ASPHALT OVER THE CONCRETE JOINTS

DETAIL FOR CALCULATION PURPOSES ONLY.
PLACEMENT IS AT THE CONSTRUCTION ENGINEERS DESCRETION.
QUANTITY CARRIED TO THE GENERAL SUMMARY.



NOTE: THE ENGINEER SHALL FIELD VERIFY ALL LOCATIONS PRIOR TO THE BEGINNING OF WORK. ANY ADJUSTMENTS NECESSARY SHALL BE AS DIRECTED BY THE ENGINEER.

ASPHALT CONCRETE SAFETY EDGE

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED FOR THE CONSTURCTION OF THE SAFETY EDGE. SEE SCD BP-3.2.

ITEM 441, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG 64-22

$$\frac{35030.4 \text{ FT} * 0.045}{27} \times 2 = 116.8 \text{ CU YD}$$

ITEM 441, ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)

$$\frac{35030.4 \text{ FT} * 0.018}{27} \times 2 = 46.7 \text{ CU YD}$$

SAFETY EDGE QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 209 - PREPARING SUBGRADE FOR SHOULDER PAVING

PREPARE THE SHOULDER FOR PAVING A CONSISTENT SAFETY EDGE IN BOTH THICKNESS AND WIDTH.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

WIL-49-(2.62-9.29) 13.6 MILE

ITEM 659 - SEEDING AND MULCHING, AS PER PLAN

ANY DISTURBED AREA LOCATED WITHIN A TEMPORARY RIGHT-OF-WAY TAKE THAT IS INVOLVED IN THE CONSERVATION RESERVE PROGRAM (CRP) SHALL BE REPLACED IN ACCORDANCE WITH THE USDA FSA REQUIREMENTS TO ENSURE THE LAND OWNER IS IN COMPLIANCE WITH THE CRP. THE CONTRACTOR SHALL COORDINATE WITH THE LAND OWNER AND THE USDA FSA BEFORE DISTURBING ANY OF THE LAND BELONGING IN THE CRP TO OBTAIN ALL SPECIFICATIONS AND NECESSARY PROCESSES REQUIRED TO HAVE THE LAND OWNER REMAINS IN THE CRP.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 659 - SEEDING AND MULCHING, AS PER PLAN 970 SY

ASPHALT CONCRETE FOR DRIVEWAYS

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED FOR THE ADJUSTING DRIVEWAYS AS DIRECTED BY THE ENGINEER:

ITEM 441 - ASPHALT CONCRETE
SURFACE COURSE, TYPE 1, (448), PG 64-22 50 CU YD

THE JOB WILL NOT BE CONSIDERED COMPLETE UNTIAL ALL DRIVEWAYS HAVE BEEN TREATED AS DIRECTED BY THE ENGINEER.

ITEM 254, PAVEMENT PLANING ASPHALT CONCRETE, AS PER PLAN

APPROXIMATELY 500 TONS OF PAVEMENT PLANNING GRINDINGS SHALL BE HAULED TO THE VILLAGE OF EDGERTON AT THE FOLLOWING ADDRESS:

383 WEST RAILROAD STREET
EDGERTON, OHIO 43517

THE REMAINDER OF THE PAVEMENT PLANNING GRINDING SHALL BE DISPOSED OF ACCORDING TO ITEM 254 OF THE CMS.

CALCULATED JLE CHECKED JMF

GENERAL NOTES

WIL-6 / 49-3.54 / 2.62

SHEET NUM.										PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
3	4	5	8	9	26	30	31			01/STR/PV	02/STR/CV	03/BRO/BR	04/NHS/PV						
																		ROADWAY	
		950		312						1,262				202	23000	1,262	SY	PAVEMENT REMOVED	
				1,450						1,450				202	38000	1,450	FT	GUARDRAIL REMOVED	
				5						5				202	42001	5	EACH	ANCHOR ASSEMBLY REMOVED, TYPE A, AS PER PLAN	3
				1						1				202	42051	1	EACH	ANCHOR ASSEMBLY REMOVED, TYPE B, AS PER PLAN	3
				2						2				202	47001	2	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED, AS PER PLAN	3
			159							159				203	10000	159	CY	EXCAVATION	
			798							798				203	20000	798	CY	EMBANKMENT	
				356						356				204	10000	356	SY	SUBGRADE COMPACTION	
				17						17				209	15000	17	STA	RESHAPING UNDER GUARDRAIL	
				14						14				209	60500	14	MILE	LINEAR GRADING	
13.6										13.6				209	72051	13.6	MILE	PREPARING SUBGRADE FOR SHOULDER PAVING, AS PER PLAN	3
				437.5						437.5				606	15050	437.5	FT	GUARDRAIL, TYPE MGS	
				825						825				606	15100	825	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS	
				1						1				606	26050	1	EACH	ANCHOR ASSEMBLY, MGS TYPE B	
				5						5				606	26150	5	EACH	ANCHOR ASSEMBLY, MGS TYPE E, MASH 2016	
				2						2				606	35002	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE I	
1										1				623	39500	1	EACH	MONUMENT BOX ADJUSTED TO GRADE	
																		EROSION CONTROL	
			209							209				659	00300	209	CY	TOPSOIL	
			1,880							1,880				659	10000	1,880	SY	SEEDING AND MULCHING	
970										970				659	10001	970	SY	SEEDING AND MULCHING, AS PER PLAN	3
			47							47				659	14000	47	SY	REPAIR SEEDING AND MULCHING	
			0.26							0.26				659	20000	0.26	TON	COMMERCIAL FERTILIZER	
			5.08							5.08				659	35000	5.08	MGAL	WATER	
										1,000				832	30000	1,000	EACH	EROSION CONTROL	
																		DRAINAGE	
			100							100				611	00510	100	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
			4							4				611	99710	4	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																		PAVEMENT	
1,816										1,816				253	02000	1,816	CY	PAVEMENT REPAIR	
		1,900		109,477						111,377				254	01001	111,377	SY	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 3.25"	3
		158		93						251				301	46000	251	CY	ASPHALT CONCRETE BASE, PG64-22	
				52						52				304	20000	52	CY	AGGREGATE BASE	
		162		15,318						15,480				407	20000	15,480	GAL	NON-TRACKING TACK COAT	
116.8				4,575						4,691.8				441	10000	4,691.8	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG64-22	
50		80								130				441	50000	130	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
46.7				5,291						5,337.7				441	50300	5,337.7	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	
							100						100	SPECIAL	45132000	100	FT	PRESSURE RELIEF JOINT, TYPE C	31
				1,404						1,404				617	10100	1,404	CY	COMPACTED AGGREGATE	
				34,982						34,982				874	20000	34,982	FT	LONGITUDINAL JOINT PREPARATION	
																		TRAFFIC CONTROL	
			438							438				621	00100	438	EACH	RPM	
			204							204				621	54000	204	EACH	RAISED PAVEMENT MARKER REMOVED	
				12						12				626	00116	12	EACH	BARRIER REFLECTOR, TYPE 5,BI-DIRECTIONAL	
				4						4				630	84900	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
				1						1				630	85100	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
				4						4				630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
			13.3							13.3				642	00104	13.3	MILE	EDGE LINE, 6", TYPE 1	
			6.7							6.7				642	00300	6.7	MILE	CENTER LINE, TYPE 1	
			2							2				644	01000	2	EACH	RAILROAD SYMBOL MARKING	
																		STRUCTURE REPAIR (WIL-049-0262)	
						700						700		512	73501	700	SY	TREATING CONCRETE BRIDGE DECKS WITH GRAVITY FED RESIN, AS PER PLAN	30
						72						72		516	31000	72	FT	JOINT SEALER, 705.04	
																		STRUCTURE REPAIR (WIL-49-0408)	
					LS						LS			202	11000	LS		STRUCTURE REMOVED	
					200						200			202	34900	200	FT	PIPE REMOVED	

CALCULATED JLE
CHECKED JMF

GENERAL SUMMARY

WIL-6 / 49-3.54 / 2.62

6
36

SHEET NUM.										PART.				ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
3	4	5	8	9	26	30	31			01/STR/PV	02/STR/CV	03/BRO/BR	04/NHS/PV						
					120						120			203	20000	120	CY	EMBANKMENT	
					780						780			204	13000	780	CY	EXCAVATION OF SUBGRADE	
					73						73			204	30010	73	CY	GRANULAR MATERIAL, TYPE B	
					293						293			204	30020	293	CY	GRANULAR MATERIAL, TYPE C	
					293						293			204	30030	293	CY	GRANULAR MATERIAL, TYPE D	
					440						440			204	50000	440	SY	GEOTEXTILE FABRIC	
					440						440			204	51001	440	SY	GEOGRID, AS PER PLAN	26
					LS						LS			503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
					3,920						3,920			503	21100	3,920	CY	UNCLASSIFIED EXCAVATION	
					2,544						2,544			509	10000	2,544	LB	EPOXY COATED REINFORCING STEEL	
					21						21			511	46010	21	CY	CLASS QCI CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
					41						41			511	46510	41	CY	CLASS QCI CONCRETE, FOOTING	
					1						1			511	46610	1	CY	CLASS QCI CONCRETE, HEADWALL	
					61						61			512	10050	61	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
					275						275			512	33000	275	SY	TYPE 2 WATERPROOFING	
					53						53			516	13600	53	SF	1" PREFORMED EXPANSION JOINT FILLER	
					LS						LS			518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
					46						46			601	32200	46	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
					80						80			611	97400	80	FT	CONDUIT, MISC.:8'-0" SPAN X 8'-0" RISE, TYPE A	26
																		MAINTENANCE OF TRAFFIC	
		28								28				614	12460	28	EACH	WORK ZONE MARKING SIGN	
	5									5				614	12500	5	EACH	REPLACEMENT SIGN	
	5									5				614	12600	5	EACH	REPLACEMENT DRUM	
		19.9								19.9				614	21400	19.9	MILE	WORK ZONE CENTER LINE, CLASS II	
		39.8								39.8				614	22000	39.8	MILE	WORK ZONE EDGE LINE, CLASS I, 4"	
		6								6				614	32000	6	EACH	WORK ZONE RAILROAD SYMBOL MARKING, CLASS I	
																		INCIDENTALS	
										LS				614	11000	LS		MAINTAINING TRAFFIC	
										LS				623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
										LS				624	10000	LS		MOBILIZATION	

CALCULATED JLE
CHECKED JMF

GENERAL SUMMARY

WIL-6/49-3.54/2.62

ROADWAY SUBSUMMARY

REF NO.	SIDE	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION EACH	202 GUARDRAIL REMOVED FT	202 ANCHOR ASSEMBLY REMOVED, TYPE A, AS PER PLAN EACH	202 ANCHOR ASSEMBLY REMOVED, TYPE B, AS PER PLAN EACH	202 BRIDGE TERMINAL ASSEMBLY REMOVED, AS PER PLAN EACH	209 RESHAPING UNDER GUARDRAIL STA	606 GUARDRAIL, TYPE MGS FT	606 GUARDRAIL, TYPE MGS WITH LONG POSTS FT	606 ANCHOR ASSEMBLY, MGS TYPE E, MASH 2016 EACH	606 ANCHOR ASSEMBLY, MGS TYPE B EACH	606 MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1 EACH	626 BARRIER REFLECTOR, TYPE 5,BI-DIRECTIONAL EACH
G-1	RT&LT							2						2	
G-2	LT				87.5				2	87.5					3
G-3	LT						1						1		
G-4	RT				862.5				9		825				3
G-5	RT					1						1			
G-6	RT					1						1			
G-7	RT				250				3	175					3
G-8	RT					1						1			
G-9	LT					1						1			
G-10	LT				250				3	175					3
G-11	LT					1						1			
R-1	RT	1	1												
R-2	RT	1	1												
R-3	LT	1	1												
R-4	LT	1	1												
S-1	RT			1											
TOTALS CARRIED TO GENERAL SUMMARY		4	4	1	1450.00	5	1	2	17	437.50	825	5	1	2	12

PAVEMENT SUBSUMMARY

STATION TO STATION			DISTANCE FT	AVERAGE WIDTH FT	209 LINEAR GRADING MILE	202 PAVEMENT REMOVED SY	204 SUBGRADE COMPACTION SY	254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 3.25" SY	301 ASPHALT CONCRETE BASE, PG64-22, 10.75" CY	304 AGGREGATE BASE CY	407 NON-TRACKING TACK COAT(0.085 GAL/SY) GAL	407 NON-TRACKING TACK COATFOR INTERMEDIATE COURSE (0.055 GAL/SY) GAL	441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG64-22 CY	441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) CY	617 COMPACTED AGGREGATE CY	874 LONGITUDINAL JOINT PREPAIRATION FT
139+96.21	TO	187+00.00	4703.8	28	1.8			14634.0			1243.9	804.9	609.8	711.4	188.7	4703.8
187+00.00	TO	240+50.00	5350.0	28	2.0	311.1	356.0	16333.3	92.9	51.9	1414.8	915.4	693.5	809.1	214.7	5350.0
240+50.00	TO	251+50.00	1100.0	28	0.4			3422.2			290.9	188.2	142.6	166.4	44.1	1100.0
251+50.00	TO	289+00.00	3750.0	28	1.4			11666.7			991.7	641.7	486.1	567.1	150.5	3750.0
289+00.00	TO	298+00.00	900.0	28	0.3			2800.0			238.0	154.0	116.7	136.1	36.1	900.0
298+00.00	TO	309+00.00	1050.9	28	0.4			3269.3			277.9	179.8	136.2	158.9	42.2	1050.9
309+00.00	TO	413+00.00	10400.0	28	3.9			32355.6			2750.2	1779.6	1348.1	1572.8	417.3	10400.0
413+00.00	TO	490+26.60	7726.6	28	2.9			24038.3			2043.3	1322.1	1001.6	1168.5	310.0	7726.6
INTERSECTIONS																
CO RD D								24.5			2.1		1.0			
TWP RD D50								27.1			2.3		1.1			
CO RD E								45.5			3.9		1.9			
PRIVATE DR								18.2			1.5		0.8			
CONNECTOR RD								208.5			17.7		8.7			
CO RD 24								145.5			12.4		6.1			
CO RD F								154.3			13.1		6.4			
CO RD 3								106.9			9.1		4.5			
CO RD F50								36.0			3.1		1.5			
CO RD H								115.8			9.8		4.8			
CO RD I								74.4			6.3		3.1			
TOTALS CARRIED TO GENERAL SUMMARY					14	312	356	109477	93	52	15318		4575	5291	1404	34982

CALCULATED JLE
CHECKED JMF

SUB - SUMMARIES

WIL-6/49-3.54/2.62

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GENERAL NOTES

DESIGN SPECIFICATIONS: THIS STANDARD DRAWING CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2014, INCLUDING THE 2015 & 2016 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

DESIGN DATA: THE FOLLOWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION OF BACKFILL SOIL, ϕ_{bf} = 30°
TOTAL UNIT WEIGHT OF BACKFILL SOIL = 120 PCF
INTERNAL ANGLE OF FRICTION (DRAINED), FOUNDATION SOIL, ϕ_f = 28°
UNDRAINED SHEAR STRENGTH (COHESIVE), FOUNDATION SOIL, S_{uf} = 1500 PSF
UNIT WEIGHT OF CONCRETE = 150 PCF
SLOPE OF BACKFILL = 2:1 (TYPE A & B HEADWALLS)
HEIGHT OF LIVE LOAD SURCHARGE = 2 FT (TYPE C HEADWALLS)

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4000 PSI
(FOOTING, WINGWALL AND FORESLOPE WALL)

REINFORCING STEEL - ASTM A615, A616, OR A617
GRADE 60 MINIMUM YIELD STRENGTH
60,000 PSI (ALL REINFORCING SHALL BE EPOXY COATED)

FORESLOPE WALL ANCHOR DOWELS: ANCHOR PER CMS 510 WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO CMS 705.20 AND TO A DEPTH SPECIFIED ON SHEET 6/6. 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.

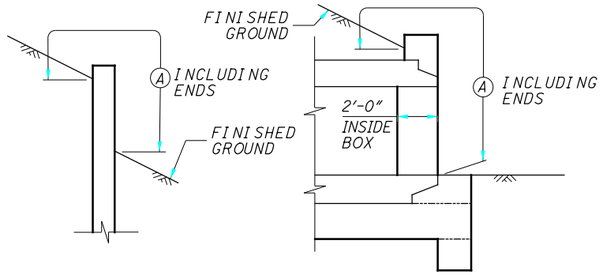
ITEM 204 GEOGRID, AS PER PLAN: SHALL FOLLOW THE SPECIFICATIONS FOR THE 204 ITEM AND THE REQUIREMENTS FOR CMS 712.15 EXCEPT THE MINIMUM AND MAXIMUM OPENING SIZES SHALL BE 1.0 INCHES AND 1.5 INCHES RESPECTFULLY.

POROUS BACKFILL WITH FILTER FABRIC 1'-6" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC TYPE A SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.

WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

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

SEALING OF FORESLOPE WALL AND WINGWALLS: ALL EXPOSED FORESLOPE WALL AND WINGWALL CONCRETE SHALL BE SEALED WITH NON-EPOXY SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS BELOW. PAYMENT FOR THE NON-EPOXY SEALER SHALL BE PER ITEM 512 - SEALING OF CONCRETE SURFACES.



WINGWALL

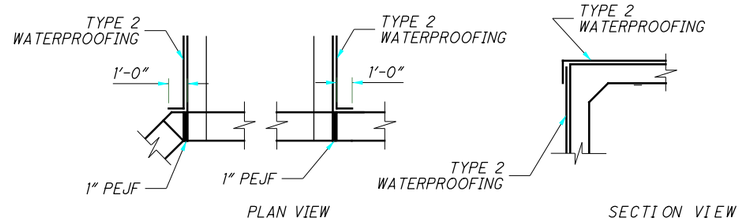
FORESLOPE WALL AND PRECAST BOX
(CULVERT OUTLET BEVEL SHOWN)

LIMITS OF ITEM 512-SEALING CONCRETE SURFACES

(A) - SEAL ENTIRE CONCRETE SURFACE AREA

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. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

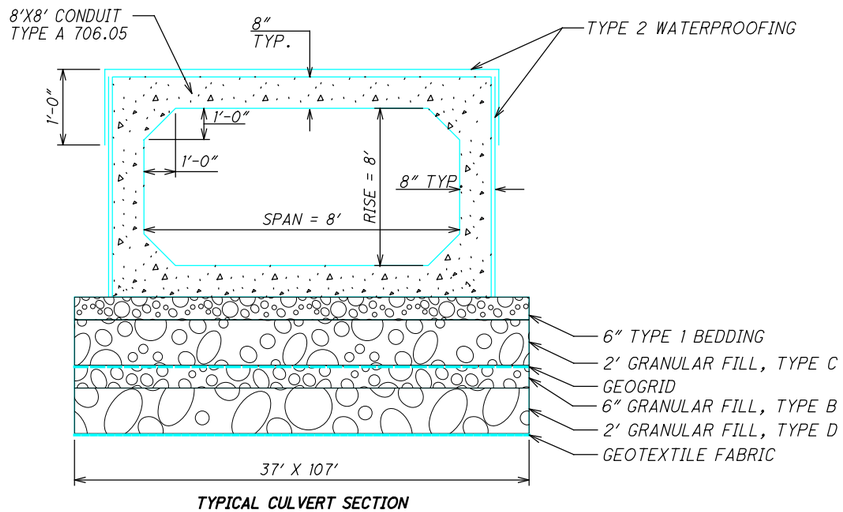
IF PAVEMENT IS NOT PLACED DIRECTLY ON TOP OF THE CULVERT, TYPE 2 WATERPROOFING, PER CMS 512 AND 711.25 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.



PLAN VIEW SECTION VIEW

WATERPROOFING DETAILS

BASIS OF PAYMENT: ALL LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO CONSTRUCT THE FOOTING, CUTOFF WALL, WINGWALLS AND FORESLOPE WALL SHALL BE INCLUDED WITH ITEM 511 - CLASS QC1 CONCRETE, RETAINING/WINGWALL INCLUDING FOOTING. PAYMENT FOR REINFORCING STEEL SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL.



TYPICAL CULVERT SECTION

ESTIMATED QUANTITIES (02/STR/CV)

ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION
202	11000	LUMP		STRUCTURE REMOVED
202	34900	200	LIN. FT.	PIPE REMOVED
203	20000	120	CU. YD.	EMBANKMENT
204	13000	780	CU. YD.	EXCAVATION OF SUBGRADE
204	30010	73	CU. YD.	GRANULAR MATERIAL, TYPE B
204	30020	293	CU. YD.	GRANULAR MATERIAL, TYPE C
204	30030	293	CU. YD.	GRANUALR MATERIAL, TYPE D
204	50000	440	SQ. YD.	GEOTEXTILE FABRIC
204	51001	440	SQ. YD.	GEOGRID, AS PER PLAN
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING
503	21100	3920	CU. YD.	UNCLASSIFIED EXCAVATION
509	10000	2544	LB.	EPOXY COATED REINFORCING STEEL
511	46010	21	CU. YD.	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING
511	46510	41	CU. YD.	CLASS QC1 CONCRETE, FOOTING
511	46610	1	CU. YD.	CLASS QC1 CONCRETE, HEADWALL
512	10100	61	SQ. YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)
512	33000	275	SQ. YD.	TYPE 2 MEMBRANE WATERPROOFING
516	13600	53	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER
518	21230	LUMP		POROUS BACKFILL WITH GEOTEXTILE FABRIC
601	32200	46	CU. YD.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
611	97400	80	LIN. FT.	CONDUIT, MISC.: 8'-0" SPAN X 8'-0" RISE, TYPE A

NOTE: TOTALS CARRIED TO GENERAL SUMMARY SHEET

DESIGN AGENCY

REVIEWED XXX DATE MM/DD/YY
CULVERT FILE NUMBER 1847263

DRAWN MAS REVISED XXX

DESIGNED MAS CHECKED DJG

WILLIAMS COUNTY
STA. 213+10
STA. 217+10

GENERAL NOTES
CULVERT WIL-49-4.08
OVER BRATTON DITCH

WIL-6/49
-3.54/2.62
PID NO. 94334

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