

G:\Project\TOH0017.PE\Drawing\00826\Design\Roadway\Sheets\00826\_G002.dgn 10/29/2020 4:37:33 PM MHebebrand

SHEET NUM.											PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
5	6	7	9	16	17	18	35	38	43	73	01/NHS/BR							
									154,711		154,711	509	10000	154,711	LB	EPOXY COATED REINFORCING STEEL		
									293		293	510	10000	293	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT		
									2		2	511	33501	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN	51, 54	
									545		545	511	53014	545	CY	CLASS QC3 CONCRETE, MISC.: WITH QA/QC SUPERSTRUCTURE, AS PER PLAN	42	
									29		29	511	53014	29	CY	CLASS QC3 CONCRETE, MISC.: SUBSTRUCTURE		
									84		84	512	10101	84	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN	41	
									6		6	512	33000	6	SY	TYPE 2 WATERPROOFING		
									10		10	515	12071	10	EACH	PRESTRESSED CONCRETE COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL 1, CB27-48, AS PER PLAN (BEAM LENGTH = 54'-5 3/8")	41, 61	
									25		25	515	12071	25	EACH	PRESTRESSED CONCRETE COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL 1, CB27-48, AS PER PLAN (BEAM LENGTH = 52'-5 1/4")	41, 61	
									28		28	515	20001	28	EACH	INTERMEDIATE DIAPHRAGMS, AS PER PLAN	62, 70	
									114		114	516	10010	114	FT	ARMORLESS PREFORMED JOINT SEAL		
									114		114	516	13900	114	SF	2" PREFORMED EXPANSION JOINT FILLER		
									403		403	516	25000	403	SF	NYLON REINFORCED NEOPRENE SHEETING		
									120		120	516	43300	120	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE) (1.924"x8"x16")		
									10		10	516	44201	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (3.074"x8"x28")	58	
									775		775	517	70000	775	FT	RAILING (TWIN STEEL TUBE)		
									34		34	518	21200	34	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC		
									950		950	SPECIAL	51822300	950	FT	STEEL DRIP STRIP		
									73		73	519	11101	73	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	41	
									223		223	526	25000	223	SY	REINFORCED CONCRETE APPROACH SLABS (T=15")		
									114		114	526	90030	114	FT	TYPE C INSTALLATION		
									2,011		2,011	845	60000	2,011	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL		
									35		35	845	61000	35	MNHR	GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL		
									2,011		2,011	845	62000	2,011	SF	FIELD METALLIZING OF EXISTING STRUCTURAL STEEL		
																STRUCTURE 20 FOOT SPAN AND UNDER (GRE-235-11.10)		
									LS		LS	202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	75	
									1,513		1,513	202	23500	1,513	SY	WEARING COURSE REMOVED		
									500		500	256	10200	500	SF	BONDED PATCHING OF PORTLAND CEMENT CONCRETE PAVEMENT, TYPE C		
									61		61	441	50000	61	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22		
									682		682	509	10000	682	LB	EPOXY COATED REINFORCING STEEL		
									1,000		1,000	509	20001	1,000	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	72	
									6		6	511	34445	6	CY	CLASS QC2 CONCRETE, BRIDGE DECK, AS PER PLAN	72	
									10		10	511	50210	10	CY	CLASS QC1 CONCRETE, SUBSTRUCTURE		
									LS		LS	513	10001	LS		STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN	72	
									19,145		19,145	514	00050	19,145	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL		
									19,145		19,145	514	00056	19,145	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT		
									19,357		19,357	514	00060	19,357	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT		
									19,357		19,357	514	00067	19,357	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN	72	
									35		35	514	00504	35	MNHR	GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL		
									20		20	514	10000	20	EACH	FINAL INSPECTION REPAIR		
									83		83	516	11211	83	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN	78	
									14		14	516	44201	14	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN(1.924"x12"x12")	77	
									LS		LS	516	47001	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	72	
									575		575	517	75600	575	FT	DEEP BEAM BRIDGE RETROFIT RAILING		
									6		6	SPECIAL	51822300	6	FT	STEEL DRIP STRIP		
																MAINTENANCE OF TRAFFIC		
		772									772	614	11630	772	FT	INCREASED BARRIER DELINEATION		
					8						8	614	12336	8	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)		
		5									5	614	13000	5	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC		
		64									64	614	13310	64	EACH	BARRIER REFLECTOR, TYPE 1, BI-DIRECTIONAL		
		46									46	614	13318	46	EACH	BARRIER REFLECTOR, TYPE 5, TWO-WAY		
		110									110	614	13360	110	EACH	OBJECT MARKER, TWO WAY		
			15								15	614	18601	15	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	9	
		0.42			0.42						0.84	614	21100	0.84	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT		
		1.57			1.57						3.14	614	22110	3.14	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT		
		50			50						100	614	26200	100	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT		
		LS									LS	615	10000	LS		ROADS FOR MAINTAINING TRAFFIC		
					2,177						2,177	615	25000	2,177	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B		
		55									55	616	10000	55	MGAL	WATER		
					2,800						2,800	622	41100	2,800	FT	PORTABLE BARRIER, UNANCHORED		
					380						380	622	41110	380	FT	PORTABLE BARRIER, ANCHORED		
																INCIDENTALS		
											LS	103	05000	LS		PREMIUM FOR CONTRACT PERFORMANCE BOND AND FOR PAYMENT BOND		
											LS	614	11000	LS		MAINTAINING TRAFFIC		
											LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING		
											LS	624	10000	LS		MOBILIZATION		

GENERAL SUMMARY

GRE - 235 - 10.75 / 11.10

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REFERENCE NO.	SHEET NO.	STATION TO STATION		SIDE	614				615	622	622												
		FROM	TO		WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B	PORTABLE BARRIER, UNANCHORED	PORTABLE BARRIER, ANCHORED	EACH	MI	MI	FT	SY	FT	FT					
		S.R. 235																					
WCL-1	10	31+23.00	36+23.00	LT&RT		0.09																	
WSL-1	10	36+23.00		RT			12																
WEW-2	10	36+23.00	49+20.00	RT								0.25											
WEW-1	10	36+73.00	48+70.00	LT&RT								0.23											
WIA-1	10	38+01.00		LT	1																		
PB-1	10	38+01.00	47+39.00	LT&RT						560	380												
TP-1	10	36+73.00	40+49.00	RT				426															
TP-2	10	44+31.00	49+20.00	RT				486															
WIA-2	10	47+39.00		LT	1																		
WSL-2	10	49+20.00		RT			13																
WCL-2	10	49+20.00	54+20.00	LT&RT		0.09																	
WEW-1	11	36+23.00	49+20.00	LT&RT								0.25											
WEW-2	11	37+14.00	48+26.00	LT&RT								0.21											
WIA-1	11	37+81.00		RT	1																		
PB-1	11	37+81.00	47+60.00	LT&RT						980													
TP-1	11	36+23.00	39+40.00	LT				226															
TP-2	11	46+00.00	49+20.00	LT				224															
WIA-2	11	47+60.00		RT	1																		
WCL-1	12	15+15.00	20+15.00	LT&RT		0.15																	
WSL-1	12	20+15.00		RT			13																
WEW-2	12	20+15.00	28+88.00	RT								0.17											
WEW-1	12	20+65.00	28+38.00	LT&RT								0.15											
WIA-1	12	21+34.00		LT	1																		
PB-1	12	21+34.00	27+66.00	LT&RT						640													
TP-1	12	20+15.00	23+11.00	RT				240															
TP-2	12	25+92.00	28+88.00	RT				267															
WIA-2	12	27+66.00		LT	1																		
WSL-2	12	28+88.00		LT			12																
WCL-2	12	28+88.00	33+88.00	LT&RT		0.09																	
WEW-1	13	20+15.00	28+88.00	LT								0.17											
WEW-2	13	20+76.00	28+18.00	LT&RT								0.14											
WIA-1	13	21+40.00		RT	1																		
PB-1	13	21+40.00	27+60.00	LT&RT						620													
TP-1	13	20+15.00	22+78.00	LT				165															
TP-2	13	26+88.00	28+88.00	LT				143															
WIA-2	13	27+60.00		RT	1																		
<b>TOTALS CARRIED TO GENERAL SUMMARY</b>					8	0.42	1.57	50	2177	2800	380												

CALCULATED
MJB
CHECKED
DRJ

**MOT SUBSUMMARY**

**GRE - 235 - 10.75 / 11.10**

17  
79

**GRADING LIMITS - WEST BANK**

#	STATION	OFFSET
1	STA. 23+09.30	37.01' LT.
2	STA. 23+04.76	58.97' LT.
3	STA. 23+07.75	83.92' LT.
4	STA. 23+16.95	110.64' LT.
5	STA. 23+23.10	108.59' LT.
6	STA. 23+56.91	132.70' LT.
7	STA. 23+14.97	37.02' LT.

**GRADING LIMITS - EAST BANK**

#	STATION	OFFSET
8	STA. 24+39.60	39.44' LT.
9	STA. 24+31.21	66.85' LT.
10	STA. 24+27.57	87.14' LT.
11	STA. 24+33.48	146.23' LT.
12	STA. 24+44.08	193.00' LT.
13	STA. 24+68.82	235.42' LT.
14	STA. 24+77.11	235.43' LT.
15	STA. 24+48.24	88.40' LT.
16	STA. 24+60.50	39.44' LT.

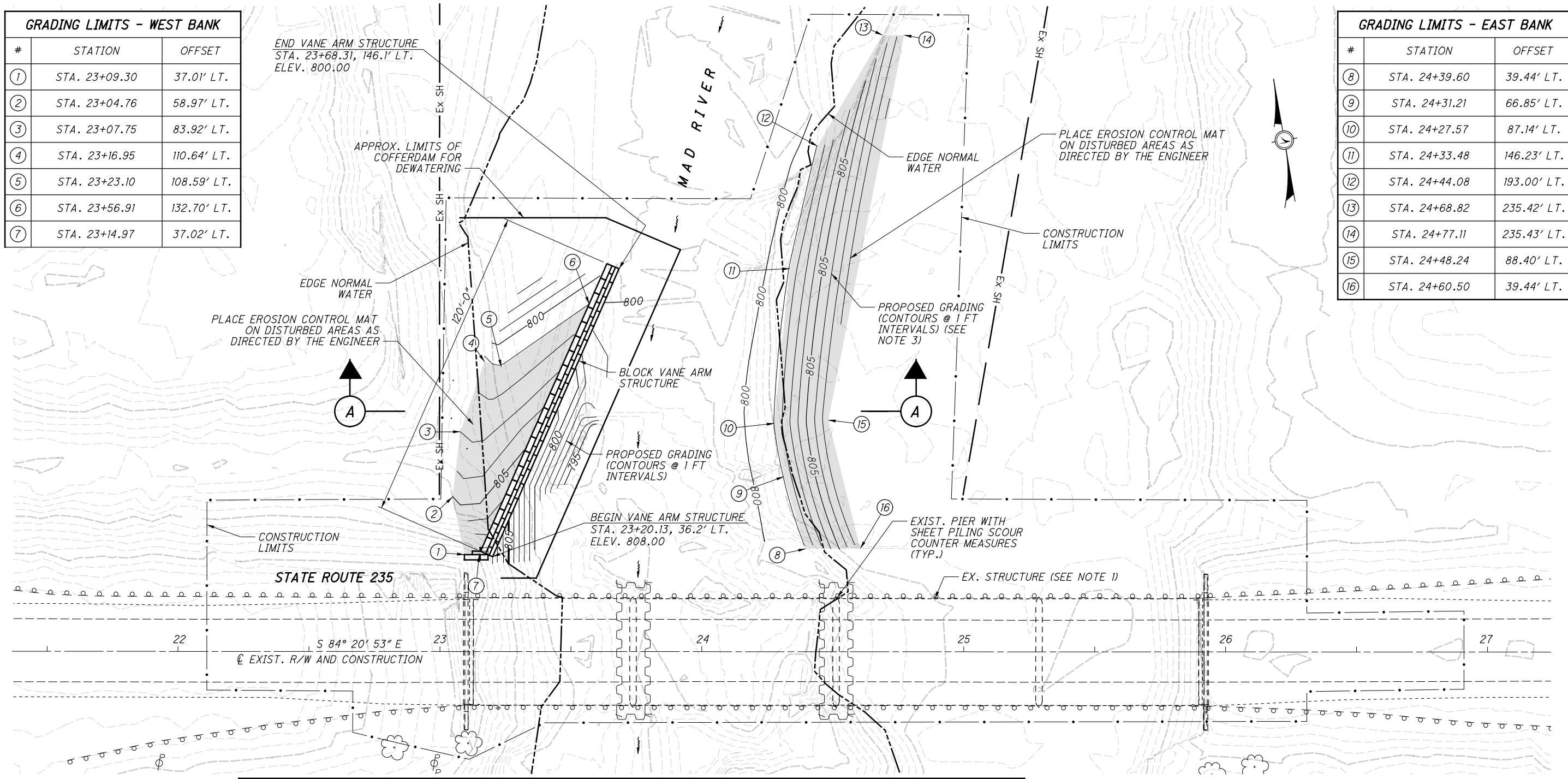
END VANE ARM STRUCTURE  
STA. 23+68.31, 146.1' LT.  
ELEV. 800.00

BEGIN VANE ARM STRUCTURE  
STA. 23+20.13, 36.2' LT.  
ELEV. 808.00

EXIST. PIER WITH  
SHEET PILING SCOUR  
COUNTER MEASURES  
(TYP.)

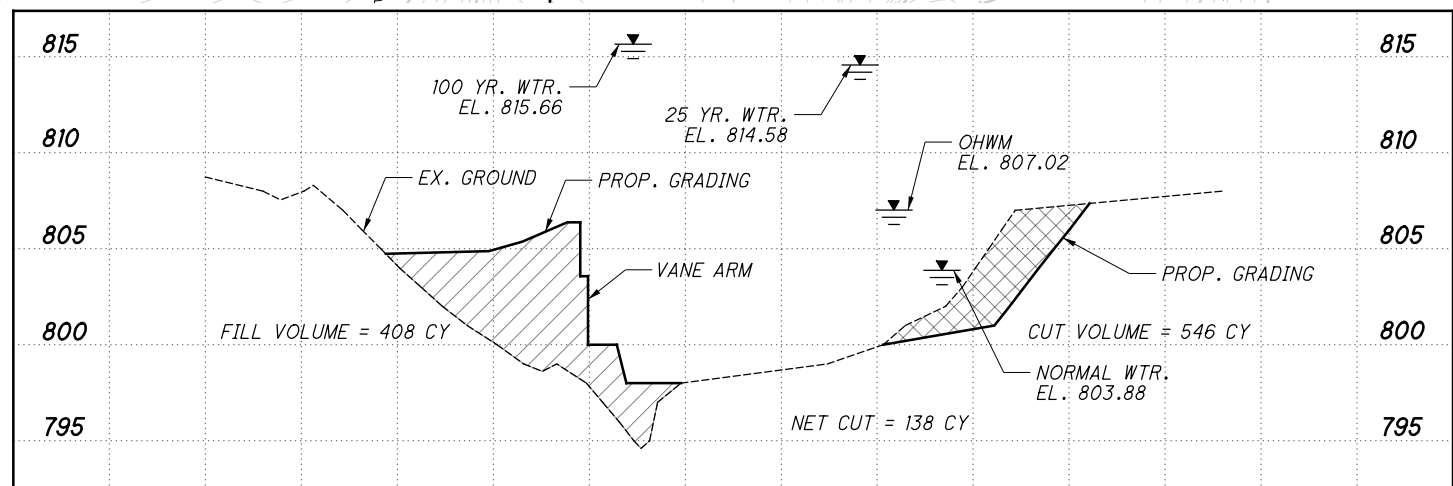
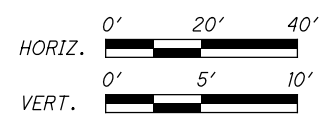
PLACE EROSION CONTROL MAT  
ON DISTURBED AREAS AS  
DIRECTED BY THE ENGINEER

PLACE EROSION CONTROL MAT  
ON DISTURBED AREAS AS  
DIRECTED BY THE ENGINEER



**LEGEND**

- FILL MATERIAL
- CUT AREA
- SEEDING AND MULCHING AREA



**A CROSS SECTION**

**NOTES:**

1. FOR BRIDGE REHABILITATION, SEE SHEETS 39 THRU 79.
2. FOR VANE ARM DETAILS SEE SHEETS 37 AND 38.
3. EAST BANK GRADING SHALL BE AS SHOWN. FELL TREE AS REQUIRED, LEAVING ROOTS INTACT BELOW GROUND SURFACE.

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DESIGN AGENCY: **ARCADIS**  
 ARCADIS U.S., Inc.  
 222 South Main Street, Suite 200 Akron, Ohio 44308  
 Tel: 330-434-1995 Fax: 330-434-1995 www.arcadis.com

DESIGNER: RBB  
 CHECKED: RBB  
 DRAWN: CAF  
 REVISIONS:

REVIEWED: JDH/MRD 3/06/20  
 DATE: 2902222  
 STRUCTURE FILE NUMBER:

**VANE ARM - GRADING PLAN**  
 BRIDGE NO. GRE-235-1110 (STATE ROUTE 235)  
 OVER MAD RIVER

**GRE-235-10.75 / 11.10**  
 PID No. 100826

1 / 3  
 36 / 79

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ESTIMATED QUANTITIES					CALC. BY:	MPB	DATE:	3/02/20	AS PER PLAN	
					CHK'D BY:	RBB	DATE:	3/05/20		
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT'S	PIERS	GENERAL	STR. SHT. NO.	
202	11203		LS	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					3, 21	
202	22900	224	SY	APPROACH SLAB REMOVED				224		
202	23500	1,927	SY	WEARING COURSE REMOVED	1703			224		
503	11101		LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN					3	
503	21301		LS	UNCLASSIFIED EXCAVATION, AS PER PLAN					3	
509	10000	154,711	LB	EPOXY COATED REINFORCING STEEL	137540	4445	12726			
510	10000	293	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT		293				
511	33501	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN		2			13, 16	
511	53014	545	CY	CLASS QC3 CONCRETE WITH QC/QA SUPERSTRUCTURE, AS PER PLAN	545				4	
511	53014	29	CY	CLASS QC3 CONCRETE, MISC.: SUBSTRUCTURE		29				
512	10101	84	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN		84			3	
512	33000	6	SY	TYPE 2 WATERPROOFING		6				
515	12071	10	EACH	PRESTRESSED CONCRETE COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL 1, CB27-48, AS PER PLAN (BEAM LENGTH = 54'-5 3/8")	10				3, 23	
515	12071	25	EACH	PRESTRESSED CONCRETE COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL 1, CB27-48, AS PER PLAN (BEAM LENGTH = 52'-5 1/4")	25				3, 23	
515	20001	28	EACH	INTERMEDIATE DIAPHRAGMS, AS PER PLAN	28				24, 32	
516	10010	114	FT	ARMORLESS PREFORMED JOINT SEAL				114		
516	13900	114	SF	2" PREFORMED EXPANSION JOINT FILLER	114					
516	25000	403	SF	NYLON REINFORCED NEOPRENE SHEETING	403					
516	43300	120	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE) (1.924"x8"x16")	120					
516	44201	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (3.074"x8"x28")	10				20	
517	70000	775	FT	RAILING (TWIN STEEL TUBE)	775					
518	21200	34	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC		34				
518	22300	950	FT	SPECIAL - STEEL DRIP STRIP	950					
519	11101	73	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN		34	14	25	3	
526	25000	223	SY	REINFORCED CONCRETE APPROACH SLABS (T=15")				223		
526	90030	114	FT	TYPE C INSTALLATION				114		
845	60000	2,011	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL			2011			
845	61000	35	MNHR	GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			35			
845	62000	2,011	SF	FIELD METALLIZING OF EXISTING STRUCTURAL STEEL			2011			

DESIGN AGENCY  
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DESIGNED BY: RJB  
 CHECKED BY: CMD  
 DRAWN BY: MPB  
 REVISED BY:  
 REVIEWED BY: FJG  
 DATE: 3/06/20  
 STRUCTURE FILE NUMBER: 2902184

**ESTIMATED QUANTITIES**  
 BRIDGE NO. GRE-235-1075 (STATE ROUTE 235)  
 OVER MUD RUN

**GRE-235-10.75 / 11.10**  
 PID No. 100826