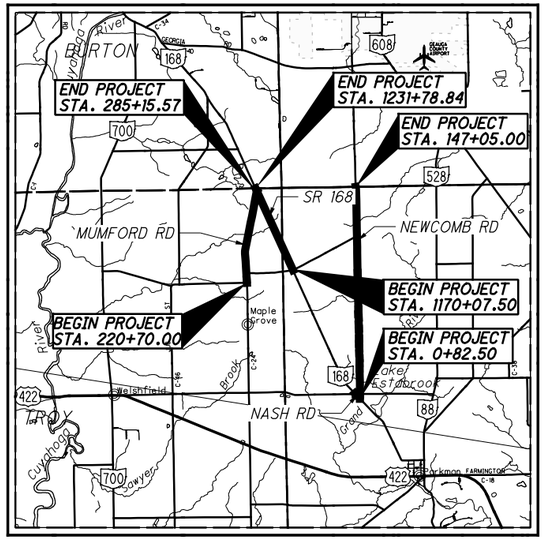
STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

GEA-COUNTY-WIDE SAFETY PROJECTS PART 1

GEAUGA COUNTY, OHIO

FOR PART 2, SEE GEA-87-19.75
FOR PART 3, SEE GEA-608-3.09



LOCATION MAP

LATITUDE: 41°24'37" LONGITUDE: 81°05'48" - MUMFORD RD

SCALE IN MILES
0 1 2 3 4

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

DESIGN DESIGNATION

SEE SCHEMATIC PLANS

DESIGN EXCEPTIONS

LANE WIDTH, SHOULDER WIDTH, HORIZONTAL CURVE RADIUS, SSD (CREST VERTICAL)

APPROVAL DATE - 8/18/2020

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)

PLAN PREPARED BY:

CMT
CRAWFORD, MURPHY & TILLY, INC.
6055 ROCKSIDE WOODS BOULEVARD NORTH
SUITE 321
INDEPENDENCE, OHIO 44131
PH (440)462-4020
www.cmtengr.com

ENGINEERS SEAL:
FOR ALL PART 1 SHEETS EXCEPT THOSE NOTED BELOW
STATE OF OHIO Jacob W. Barbour E-77306 REGISTERED PROFESSIONAL ENGINEER
SIGNED: Jacob W. Barbour
DATE: 7/15/2020

ENGINEERS SEAL:
FOR PART 1 SHEETS: 7-8, 10, 17, 22-23, 43-46, 200-267, 294, 314-316, 318, 320, 323-329
STATE OF OHIO Joseph Robert Espelage E-61783 REGISTERED PROFESSIONAL ENGINEER
SIGNED:
DATE: 7-15-20

INDEX OF SHEETS:

PROJECT DESCRIPTION

CONSTRUCT SAFETY IMPROVEMENTS FOR MOTORIZED VEHICLES, AMISH BUGGIES AND PEDESTRIANS. INCLUDES INCREASED SHOULDER WIDTHS, INSTALLATION OF ADVANCED DETECTION SYSTEMS, CONFLICT WARNING SYSTEMS WITH FLASHING BEACONS, SCHOOL ZONE SIGNS, PEDESTRIAN WARNING SIGNS/BEACONS AND NEW PAVEMENT MARKINGS ALONG VARIOUS ROADWAYS IN GEAUGA COUNTY, INCLUDES RECONSTRUCTION OF NEWCOMB ROAD AND NASH ROAD.

PROJECT EARTH DISTURBED AREA: 29.25 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.63 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 29.88 ACRES

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE PART TIME CLOSING OF THE HIGHWAY TO TRAFFIC, AS NOTED ON SHEETS 16 - 17 . DURING WHICH TIME DETOURS WILL BE PROVIDED AS SHOWN HEREIN. PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED _____
DATE 7/17/20 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

PARTS 1, 2 AND 3

STANDARD CONSTRUCTION DRAWINGS									SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-3.1	01/17/20	DM-4.3	1/15/16	HW-2.1	7/20/18	TC-41.30	10/18/13		800-2020	7/17/20	WATERWAY PERMITS CONDITIONS 10/05/2020
BP-3.2	1/18/19	DM-4.4	1/15/16	HW-2.2	7/20/18	TC-41.40	10/18/13		809	1/17/20	
						TC-42.10	10/18/13		821	4/20/12	
CB-1.1	7/19/19	BP-4.1	7/19/13	MT-97.10	4/19/19	TC-42.20	10/18/13		825	1/17/20	
CB-1.2	1/15/16	BP-5.1	1/18/19	MT-97.11	1/20/17	TC-52.10	10/18/13		832	10/19/18	
CB-2.1	7/20/18			MT-97.12	1/20/17	TC-52.20	7/20/18		836	1/19/18	
CB-2.2	7/20/18	MGS-1.1	1/19/18	MT-99.20	4/19/19	TC-61.30	7/19/19		875	1/18/19	
CB-2.3	1/15/16	MGS-2.1	1/19/18	MT-101.60	1/17/20	TC-65.10	1/17/14		921	4/20/12	
CB-4.2	1/18/13			MT-101.70	1/17/20	TC-65.11	7/21/17				
		MGS-4.2	7/19/13	MT-101.75	1/17/20	TC-71.10	1/19/18				
MH-1.2	1/15/16	MGS-4.3	1/18/13	MT-101.90	7/21/17	TC-81.22	4/17/20				
		MGS-5.3	7/15/16	MT-105.10	1/17/20	TC-85.10	4/17/20				
DM-1.1	7/21/17			MT-120.00	1/19/18						
DM-1.2	1/18/13	RM-1.1	7/18/14			RM-4.1	1/17/20				
DM-3.1	1/18/13	RM-4.2	4/17/20	TC-21.21	4/17/20						
DM-4.2	7/20/12	RM-7.1	7/18/14	TC-41.20	10/18/13						

FEDERAL PROJECT NO. E190506
PID NO. 110164
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
GEA-COUNTY WIDE SAFETY
1 425

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ITEM SPECIAL - PIPE CLEANOUT
THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM DRAINAGE CONDUITS TO REMAIN AT THE DIRECTION OF THE ENGINEER. ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER 105.16 AND 105.17. ALL SEWERS SHALL BE CLEANED OUT TO THE SATISFACTION OF THE ENGINEER.

CLEANOUT OF THE PIPE SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM SPECIAL - PIPE CLEANOUT. THIS PRICE SHALL INCLUDE THE COST FOR MATERIAL, EQUIPMENT, LABOR, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE CLEANOUT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE ABOVE NOTED WORK TO BE USED AT THE DIRECTION OF THE ENGINEER:

SPECIAL, PIPE CLEANOUT, 24" AND UNDER 100 FT.
SPECIAL, PIPE CLEANOUT, 27" TO 48" 100 FT.
SPECIAL, PIPE CLEANOUT, OVER 48" 100 FT.

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

659, SOIL ANALYSIS TEST	2 EACH
659, TOPSOIL	7,502 CU. YD.
659, SEEDING AND MULCHING	67,586 SQ. YD.
659, REPAIR SEEDING AND MULCHING	3,379 SQ. YD.
659, COMMERCIAL FERTILIZER	9.13 TON
659, LIME	13.96 ACRES
659, WATER	365 M. GAL.

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.

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 VEGETATED BIOFILTER(S) 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 PLAN CROSS SECTIONS. PROVIDE ITEM 670 (NEWCOMB ROAD, MUMFORD ROAD) OR ITEM 836 (SR 168) AS SPECIFIED IN THE PLANS.

VEGETATED FILTER STRIP
THIS PLAN UTILIZES VEGETATED FILTER STRIP(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AND ITEM 670, SLOPE EROSION PROTECTION TO ALL DISTURBED AREAS DESIGNATED AS VEGETATED FILTER STRIPS, THE EDGE OF SHOULDER, AND THE FORESLOPE AS SPECIFIED IN THE PLANS.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE WITH VEGETATED FILTER STRIPS.

ITEM 670, SLOPE EROSION PROTECTION MAT, TYPE A 202 SQ YD

GEAUGA COUNTY GENERAL NOTES (APPLICABLE TO MUMFORD ROAD, NEWCOMB ROAD AND NASH ROAD)
ALL WORK ON THIS PROJECT SHALL AT ALL TIMES BE SUBJECT TO THE DIRECT INSPECTION OF THE GEAUGA COUNTY ENGINEER OR AUTHORIZED REPRESENTATIVE OF THE ENGINEER.

ALL CONSTRUCTION AND MATERIALS INCLUDED IN THIS PROJECT SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION AND MATERIAL SPECIFICATIONS UNLESS SUPERCEDED BY THE MODIFICATIONS TO THE OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION AND MATERIAL SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS FOR GEAUGA COUNTY AND THE STANDARD SPECIFICATIONS AND PROCEDURES FOR THE DESIGN AND CONSTRUCTION OF SUBDIVISION ROADS IN GEAUGA COUNTY.

THE STATIONING AND CENTERLINE INFORMATION SHOWN ON THE DRAWINGS ARE FOR CONSTRUCTION PURPOSES ONLY AND ARE NOT TO BE USED FOR RECORD PURPOSES.

ALL QUANTITIES LISTED ARE AN ESTIMATE FOR BIDDING PURPOSES. ACTUAL FINAL QUANTITIES MAY BE MORE OR LESS AS DEEMED NECESSARY BY THE ENGINEER FOR PROPER CONSTRUCTION.

THE BEDDING FOR THE TYPE "A" CULVERTS SHALL BE CLASS "B" AND THE SIZE NO. 57 AGGREGATE SHALL BE INSTALLED TO A DEPTH OF AT LEAST ONE-HALF THE DIAMETER OF THE CULVERT. ON MUMFORD ROAD, BACKFILL FOR THE REMAINING TRENCH SHALL LSM TYPE 100. ON NEWCOMB ROAD, BACKFILL FOR THE REMAINING TRENCH SHALL LSM TYPE 100 OR 304 AGGREGATE TAMPED OR COMPACTED EVERY 6 INCHES. RECYCLED CONCRETE, SLAG, OR SAND IS NOT ALLOWED.

THE ROADWAY SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH O.D.O.T. ITEM 203 - ROADWAY EXCAVATION AND EMBANKMENT. SUBGRADE SHALL BE PROOF ROLLED IN ACCORDANCE WITH ITEM 204

SOIL STABILIZATION PARAMETERS SHALL BE APPROVED BY THE GEAUGA COUNTY ENGINEER PRIOR TO THE STABILIZING OF THE SUBBASE.

A PROFESSIONAL GEOTECHNICAL ENGINEER SHALL BE REQUIRED FOR SOIL BORINGS, SOIL ANALYSIS, AND SOIL COMPACTION WHERE THE GEAUGA COUNTY ENGINEER DEEMS NECESSARY.

GUARDRAIL LOCATIONS MAY BE ADJUSTED IN THE FIELD DURING CONSTRUCTION BY THE GEAUGA COUNTY ENGINEER.

MONUMENT ASSEMBLIES SHALL BE BOXLESS PAVEMENT MONUMENTS PER THE GEAUGA COUNTY ENGINEER'S STANDARD CONSTRUCTION DRAWINGS. BOXLESS MONUMENTS SHALL BE INSTALLED AFTER FINAL SURFACE COURSE OF ASPHALT CONCRETE.

ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) MAY BE PLACED, WITHOUT ITEM 407, IMMEDIATELY AFTER ITEM 301 ASPHALT CONCRETE BASE UNLESS SURFACE OF ITEM 301 IS NOT ACCEPTABLE TO THE ENGINEER.

ITEM 617, COMPACTED AGGREGATE, SHALL BE PLACED AFTER SURFACE COURSE.

EXCELSIOR MATTING SHALL BE USED IN ALL DITCHES. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE IN DITCHES.
ITEM 670, DITCH EROSION PROTECTION MAT, TYPE G
36,000 SQ YD

ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22, AS PER PLAN
IN ADDITION TO THE REQUIREMENTS OF ITEM 441 THE FOLLOWING SHALL APPLY.

PRIOR TO OR AT THE PRE-CONSTRUCTION CONFERENCE, THE CONTRACTOR SHALL SUBMIT A JOB MIX FORMULA IN A FORMAT APPROVED BY THE ENGINEER SHOWING THE DESIGN OF ALL MIXES, SOURCE AND GRADATION OF AGGREGATE AND PROPOSED ASPHALT CONTENT FOR THE ASPHALT COURSE OR COURSES PROPOSED TO BE USED FOR A PROJECT. THE PROPOSED SOURCE (ASPHALT PLANT) OF THE ASPHALT MIX MUST HAVE AN APPROVED QUALITY CONTROL PROGRAM ON FILE WITH THE GEAUGA COUNTY ENGINEER.

GRAVEL SHALL NOT BE PERMITTED IN ANY ODOT ITEM 441 SURFACE COURSES. AGGREGATE GRADATION FOR ALL MIXES SHALL MEET ODOT C&MS REQUIREMENTS.

NO MORE THAN 10% RECLAIMED ASPHALT CONCRETE PAVEMENT (RAP) (MEASURED BY DRY WEIGHT OF MIX) SHALL BE ALLOWED IN THE SURFACE COURSE. RECLAIMED ASPHALT SHINGLES (RAS) ARE NOT PERMITTED.

POLYMER MODIFIED SURFACE COURSES SHALL NOT BE PLACED WHEN THE AIR TEMPERATURE IS LESS THAN 60° F. BITUMINOUS PLANT MIXTURES SHALL NOT BE PLACED WHEN THE AIR TEMPERATURE IS BELOW THE MINIMUM ESTABLISHED AS FOLLOWS:

COURSE THICKNESS	AIR TEMPERATURE
3.0 INCHES AND OVER	40° F
1.5 TO 2.9 INCHES	45° F
1.0 TO 1.4 INCHES	50° F
LESS THAN 1.0 INCHES	60° F

PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, VBL WIDTH, VBL DEPTH
IN ADDITION TO THE REQUIREMENTS OF ITEM 254, THE FOLLOWING REQUIREMENTS APPLY TO THIS WORK.

BUGGY TRAFFIC IS KNOWN TO CAUSE RUTTING NEAR THE EDGE OF PAVEMENT LANES. PRIOR TO CONSTRUCTION, THE CONTRACTOR AND THE ENGINEER SHALL MEET IN THE FIELD TO IDENTIFY LOCATIONS ON MUMFORD ROAD THAT REQUIRE SPOT MILLING. PAVEMENT SHALL BE MILLED WITHIN THE LIMITS IDENTIFIED AND TO SUFFICIENT DEPTH TO PROVIDE A CONSISTENT PAVEMENT CROSS SLOPE. VARIABLE DEPTH ASPHALT SHALL BE PLACED UNDER A SEPARATE PAY ITEM.

ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), AS PER PLAN (VARIABLE DEPTH)
IN ADDITION TO THE REQUIREMENTS OF ITEM 441 THE FOLLOWING SHALL APPLY. CONTRACTOR SHALL PLACE VARIABLE DEPTH INTERMEDIATE COURSE IN THE LOCATIONS IDENTIFIED FOR VARIABLE WIDTH, VARIABLE DEPTH PAVEMENT PLANING AND/OR AT OTHER LOCATIONS IDENTIFIED IN THE FIELD AT THE DIRECTION OF THE ENGINEER. VARIABLE DEPTH INTERMEDIATE COURSE SHALL BE PLACED IN A MANNER TO PROVIDE A CONSISTENT PAVEMENT CROSS SLOPE READY TO RECEIVE A SURFACE COURSE.

REMOVAL, MISC.
IN ADDITION TO THE REQUIREMENTS OF ITEM 202, THE FOLLOWING REQUIREMENTS APPLY. PRIOR TO REMOVAL, THE CONTRACTOR SHALL OFFER TO RETURN THE ITEMS TO THE ADJACENT PROPERTY OWNER. ITEMS NOT ACCEPTED BY THE OWNER SHALL BE REMOVED AND PROPERLY DISPOSED. PAYMENT SHALL BE MADE AT THE UNIT PRICE BID AND SHALL BE CONSIDERED FULL COMPENSATION FOR THE LABOR, MATERIAL, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

ITEM 202, REMOVAL MISC.: 24 INCH ROCK AND OVER, PER EACH
ITEM 202, REMOVAL MISC.: WOOD POST REMOVED, PER EACH

EARTHWORK CALCULATIONS
EXCAVATION AND EMBANKMENT QUANTITIES WERE DETERMINED FROM THE TOP OF EXISTING GROUND SURFACE TO THE BOTTOM OF THE PAVEMENT BASE/TOP OF SUBGRADE OR THE FINISHED GRADE. SOIL STABILIZATION IS NOT INCLUDED IN THE EARTHWORK QUANTITIES AND IS PAID FOR SEPARATELY. ADJUSTMENTS FOR TOPSOIL STRIPPING / PLACEMENT HAVE NOT BEEN MADE. CONTRACTOR MAY ELECT TO STRIP AND STOCKPILE TOPSOIL FOR REUSE. NO ADDITIONAL PAYMENT SHALL BE MADE, BEYOND THAT MADE FOR ITEM 659 TOPSOIL, FOR STRIPPING, STOCKPILING, FURNISHING, SPREADING, PLACING, HAULING AND/OR DISPOSING TOPSOIL. EXCAVATION FOR OTHER MISCELLANEOUS ITEMS (E.G. DRAINAGE STRUCTURES, PIPES, ETC.) IS INCLUDED IN THE COST OF THAT ITEM UNLESS OTHERWISE NOTED IN THE PLANS.

CALCULATED LDW
CHECKED JWB

GENERAL NOTES

GEA-COUNTY WIDE SAFETY

SHEET NUM.																	PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE
GEN NOTES	28	29	30	34	35	36	37	38	39	41	42	43	44	46	294	307	01/ERD/OT		EXT	TOTAL			SHEET NO.
																						ROADWAY	
																	LS	201	11000	LS		CLEARING AND GRUBBING	
																LS	LS	202	11000	LS		STRUCTURE REMOVED	
								1				6					7	202	20010	7	EACH	HEADWALL REMOVED	
															36		36	202	23000	36	SY	PAVEMENT REMOVED	
	255		355				1,407	692							1,165		3,874	202	23010	3,874	SY	PAVEMENT REMOVED, ASPHALT	
100	1,127	1,217	282				1,307	463				1,393	212				6,101	202	35100	6,101	FT	PIPE REMOVED, 24" AND UNDER	
	33	41					120										194	202	35200	194	FT	PIPE REMOVED, OVER 24"	
	206						402										608	202	38000	608	FT	GUARDRAIL REMOVED	
		3					4	2									9	202	58100	9	EACH	CATCH BASIN REMOVED	
100																	100	SPECIAL	20270110	100	FT	PIPE CLEANOUT, 24" AND UNDER	13
100																	100	SPECIAL	20270120	100	FT	PIPE CLEANOUT, 27" TO 48"	13
100																	100	SPECIAL	20270130	100	FT	PIPE CLEANOUT OVER 48"	13
	4	5	4														13	202	98100	13	EACH	REMOVAL MISC.: 24" ROCK AND OVER	13
2																	2	202	98100	2	EACH	REMOVAL MISC.: INSPECTION WELL	12
60																	60	202	98200	60	FT	REMOVAL MISC.: CONDUIT	12
							1										1	202	98100	1	EACH	REMOVAL MISC.: WOOD POST REMOVED	13
											28,405				792		29,197	203	10000	29,197	CY	EXCAVATION	
											7,298				65		7,363	203	20000	7,363	CY	EMBANKMENT	
50																	50	203	20001	50	CY	EMBANKMENT, AS PER PLAN	12
											5,774			8,200			13,974	204	10000	13,974	SY	SUBGRADE COMPACTION	
1,500																	1,500	204	13000	1,500	CY	EXCAVATION OF SUBGRADE	
1,500																	1,500	204	30010	1,500	CY	GRANULAR MATERIAL, TYPE B	
12																	12	204	45000	12	HOUR	PROOF ROLLING	
4,600																	4,600	204	51000	4,600	SY	GEOGRID	
							1,310										1,310	206	10500	1,310	TON	CEMENT	
							50,626										50,626	206	11000	50,626	SY	CURING COAT	
							50,626										50,626	206	15010	50,626	SY	CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	
							25										25	206	20000	25	HOUR	TEST ROLLING	
			612.5														612.5	606	15050	612.5	FT	GUARDRAIL, TYPE MGS	
			6														6	606	26150	6	EACH	ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350)	
			1														1	606	26151	1	EACH	ANCHOR ASSEMBLY, MGS TYPE E, AS PER PLAN (NCHRP 350)	11
			5														5	606	26550	5	EACH	ANCHOR ASSEMBLY, MGS TYPE T	
2																	2	623	38500	2	EACH	MONUMENT ASSEMBLY	
									65				23				88	SPECIAL	69050100	88	EACH	MAILBOX SUPPORT SYSTEM, SINGLE	11
									12				3				15	SPECIAL	69050200	15	EACH	MAILBOX SUPPORT SYSTEM, DOUBLE	11
									1								1	SPECIAL	69050300	1	EACH	MAILBOX SUPPORT SYSTEM, MULTIPLE	11
																						EROSION CONTROL	
					180												180	601	23000	180	SY	ARTICULATING CONCRETE BLOCK REVETMENT SYSTEM, TYPE 1	
5				24.7	8.2					10.9						4	52.8	601	32200	52.8	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
				2.9													2.9	601	32210	2.9	CY	ROCK CHANNEL PROTECTION, TYPE C WITH AGGREGATE FILTER	
2																	2	659	00100	2	EACH	SOIL ANALYSIS TEST	
7,502																	7,502	659	00300	7,502	CY	TOPSOIL	
67,586																	67,586	659	10000	67,586	SY	SEEDING AND MULCHING	
3,379																	3,379	659	14000	3,379	SY	REPAIR SEEDING AND MULCHING	
9.13																	9.13	659	20000	9.13	TON	COMMERCIAL FERTILIZER	
13.96																	13.96	659	31000	13.96	ACRE	LIME	
365																	365	659	35000	365	MGAL	WATER	

CALCULATED LDW
CHECKED JWB

GENERAL SUMMARY

GEA-COUNTY WIDE SAFETY

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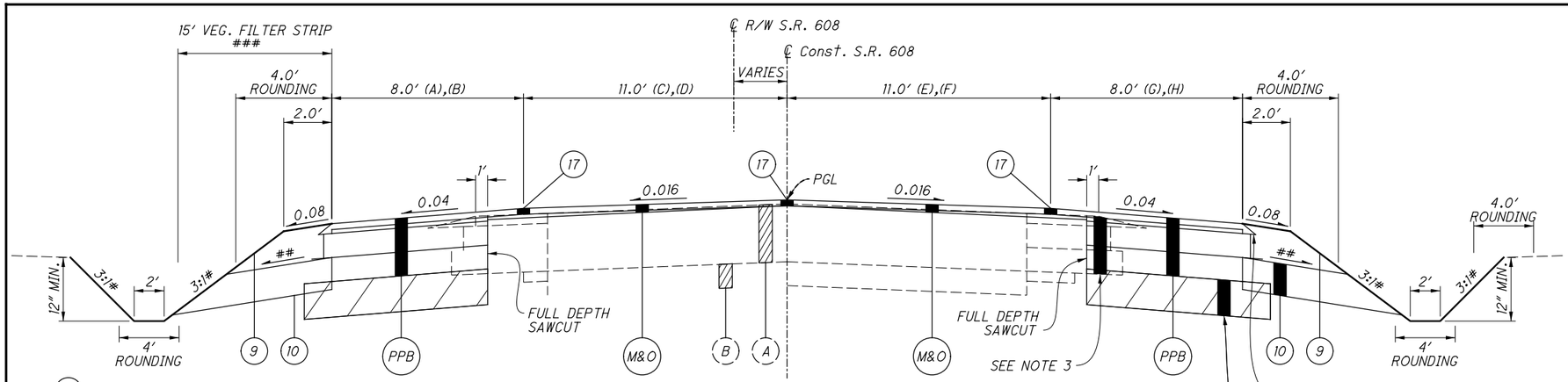
SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
6	7	21B	73	77	78	82	83	85	86	87	OFFICE CALCS	02/SAF/PV							
																		DRAINAGE	
				0.37	0.29		0.49					1.15		602	20000	1.15	CY	CONCRETE MASONRY	
1,410												1,410		605	31100	1,410	FT	AGGREGATE DRAINS	
		132										132		611	00200	132	FT	4" CONDUIT, TYPE C	
100		14										114		611	01100	114	FT	6" CONDUIT, TYPE C	
100												100		611	01400	100	FT	6" CONDUIT, TYPE E	
		715										715		611	04900	715	FT	12" CONDUIT, TYPE D	
		536										536		611	06400	536	FT	15" CONDUIT, TYPE D	
		372										372		611	07900	372	FT	18" CONDUIT, TYPE D	
				65								65		611	08700	65	FT	21" CONDUIT, TYPE A	
		210										210		611	10900	210	FT	24" CONDUIT, TYPE D	
							39					39		611	11700	39	FT	27" CONDUIT, TYPE A	
					62							62		611	52200	62	FT	14" X 23" CONDUIT, TYPE A, 706.04	
						54						54		611	94800	54	FT	8' X 4' CONDUIT, TYPE A, 706.05	
		1										1		611	98510	1	EACH	CATCH BASIN. NO. 2-3	
10		15										25		611	99710	25	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																		PAVEMENT	
											10,159	10,159		254	01000	10,159	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1-1/2"	
											2,187	2,187		301	46000	2,187	CY	ASPHALT CONCRETE BASE, PG64-22	
			501								2,284	2,785		304	20000	2,785	CY	AGGREGATE BASE	
											2,660	2,660		407	20000	2,660	GAL	NON-TRACKING TACK COAT	
			170									170		408	10000	170	GAL	PRIME COAT	
			91									91		441	50000	91	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
											950	950		441	50101	950	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG70-22M	7
			24								621	645		441	50300	645	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	
		11										11		441	50701	11	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL), AS PER PLAN	6
			100									100		452	10010	100	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
			189									189		452	12010	189	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	
											237	237		609	26000	237	FT	CURB, TYPE 6	
	0.96											0.96		618	43000	0.96	MILE	RUMBLE STRIPES, CENTER LINE (ASPHALT CONCRETE)	
	65											65		621	00100	65	EACH	RPM	
	60											60		621	54000	60	EACH	RAISED PAVEMENT MARKER REMOVED	
	5,090											5,090		874	20000	5,090	FT	LONGITUDINAL JOINT PREPARATION	
																		TRAFFIC CONTROL	
		10										10		626	00102	10	EACH	BARRIER REFLECTOR, TYPE 1 (BIDIRECTIONAL)	
									87.5	66.5		154		630	02100	154	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
									65.5	118.5		184		630	03100	184	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
										10.5		10.5		630	08520	10.5	FT	STREET NAME SIGN SUPPORT, NO. 3 POST	
										1		1		630	08600	1	EACH	SIGN POST REFLECTOR	
									51.25	107.5		158.75		630	80100	158.75	SF	SIGN, FLAT SHEET	
										1		1		630	80500	1	EACH	SIGN, DOUBLE FACED, STREET NAME	
									2			2		630	80510	2	EACH	SIGN, STREET NAME	
									15	13		28		630	84900	28	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
									11	16		27		630	85001	27	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, AS PER PLAN	88
									2			2		630	85100	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	
									14	11		25		630	86002	25	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
									11	12		23		630	86007	23	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND STORAGE, AS PER PLAN	88
									2			2		630	86271	2	EACH	REMOVAL OF GROUND MOUNTED PIPE SUPPORT AND STORAGE, AS PER PLAN	88
									7	1		8		630	87511	8	EACH	REMOVAL OF POLE MOUNTED SIGN AND STORAGE, AS PER PLAN	88
									2			2		630	97700	2	EACH	SIGNING, MISC.: REMOVAL OF GROUND MOUNTED SIGN, SOLAR PANEL AND DELIVERY	88
								1.94				1.94		646	10010	1.94	MILE	EDGE LINE, 6"	
								0.96				0.96		646	10200	0.96	MILE	CENTER LINE (SOLID DOUBLE)	

CALCULATED COM
CHECKED ANC

GENERAL SUMMARY

GEA-87-19.75
PART 2

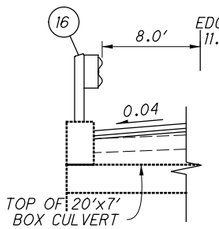


PROPOSED NORMAL SECTION - S.R. 608

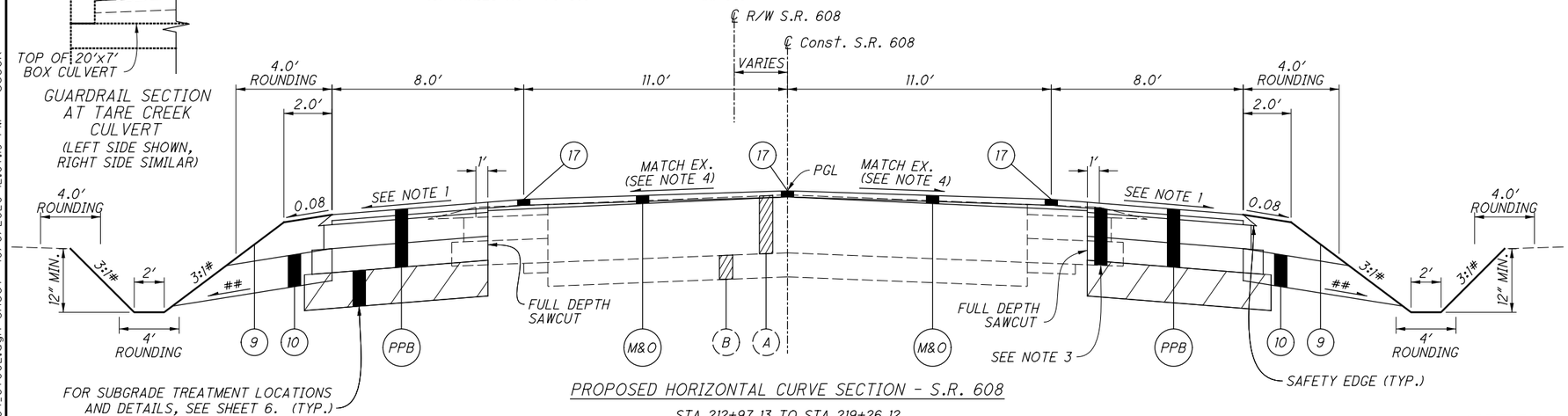
STA 192+50.00 TO STA 193+35.00
(A) VARIES 2.3′± TO 5.6′±
(C) VARIES 13.1′± TO 11.9′±
(E) VARIES 13.4′± TO 11.0′
(G) VARIES 1.0′± TO 8.0′

STA 193+35.00 TO STA 193+95.00
(B) VARIES 5.6′± TO 8.0′
(D) VARIES 11.9′± TO 11.0′
(F) 11.0′
(H) 8.0′

STA 193+95.00 TO STA 212+97.13
STA 219+26.12 TO STA 240+27.74

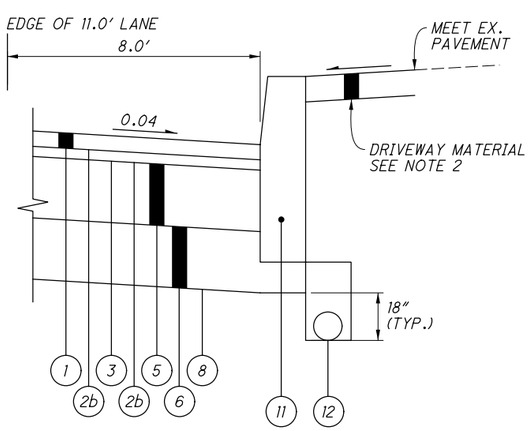


GUARDRAIL SECTION AT TARE CREEK CULVERT
(LEFT SIDE SHOWN, RIGHT SIDE SIMILAR)

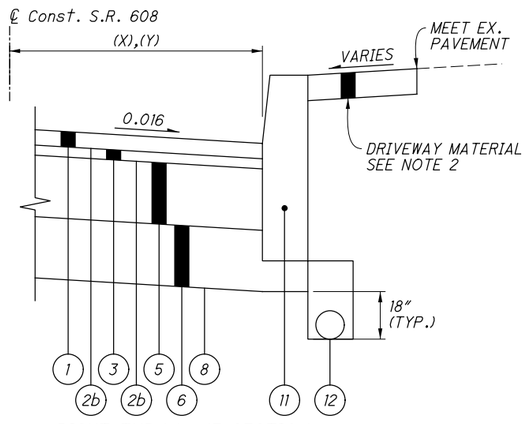


PROPOSED HORIZONTAL CURVE SECTION - S.R. 608

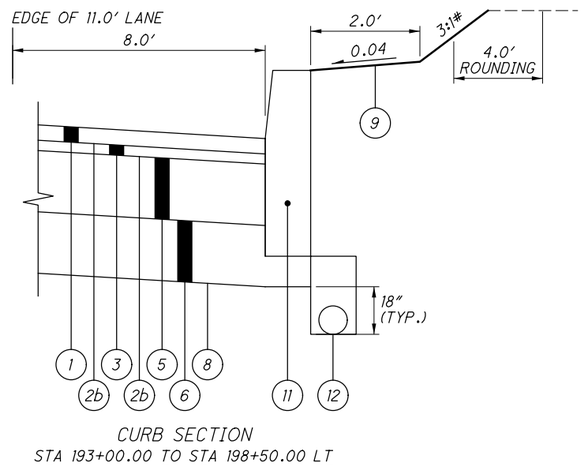
STA 212+97.13 TO STA 219+26.12



CURB SECTION
STA 195+25.00 TO STA 198+11.36 RT



RIGHT TURN LANE SECTION
STA 198+11.36 TO STA 198+25.00 RT
(X) VARIES 19.00′ TO 22.00′
STA 198+25.00 TO STA 199+52.39
(Y) 22.00′



CURB SECTION
STA 193+00.00 TO STA 198+50.00 LT
STA 201+60.00 TO STA 204+10.00 RT
STA 208+88.00 TO STA 216+62.00 RT
STA 211+40.00 TO STA 217+50.00 LT
STA 221+65.00 TO STA 225+60.00 RT
STA 238+38.00 TO STA 240+05.45 LT

LEGEND

SEE SHEET 5 FOR PROPOSED PAVEMENT BUILDUP (PPB) AND PROPOSED PAVEMENT PLANING & LEVELING DETAILS (M&O).

EXISTING LEGEND:

(A) 12″ TO 14″± ASPHALT CONCRETE

(B) 6″± ASPHALT CONCRETE

PROPOSED LEGEND:

(1) ITEM 441 - 1 ½″ ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG70-22M

(2a) ITEM 407 - NON-TRACKING TACK COAT (MILLED ASPHALT SURFACE)

(2b) ITEM 407 - NON-TRACKING TACK COAT (NEW ASPHALT SURFACE)

(3) ITEM 441 - 1″ ASPHALT CONCRETE INTERMEDIATE COURSE TYPE 1, (448), PG64-22

(4) ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), AS PER PLAN (VARIABLE DEPTH, 6.5″ MAX.), PG64-22 (PLACE IN MULTIPLE LIFTS)

(5) ITEM 301 - 6″ ASPHALT CONCRETE BASE, PG64-22

(6) ITEM 304 - 6″ AGGREGATE BASE

(7) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T = ½″)

(8) ITEM 204 - SUBGRADE COMPACTION

(9) ITEM 659 - SEEDING AND MULCHING

(10) ITEM 605 - AGGREGATE DRAINS

(11) ITEM 609 - CURB, TYPE 6

(12) ITEM 605 - 4″ BASE PIPE UNDERDRAINS

(13) ITEM 209 - LINEAR GRADING, AS PER PLAN

(14) ITEM 209 - PREPARE SUBGRADE FOR SHOULDER PAVING, AS PER PLAN

(15) ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN

(16) ITEM 606 - GUARDRAIL, TYPE MGS OR ITEM 606 - GUARDRAIL, TYPE 5

(17) ITEM 875 - LONGITUDINAL JOINT ADHESIVE

NOTES:

1. SHOULDER CROSS SLOPE SHALL MATCH CROSS SLOPE OF ADJACENT TRAVEL LANE OR 0.04, WHICHEVER IS GREATER.
2. SEE DRIVEWAY DETAILS FOR PAVEMENT MATERIAL BEHIND CURB.
3. FULL DEPTH SAWCUT AND EXISTING PAVEMENT TO BE REMOVED SHALL BE INCLUDED IN ITEM 203 EXCAVATION AS PER CMS 203.04E.
4. TRANSITION CROSS SLOPES FROM 0.016 TO MATCH EXISTING AND FROM MATCH EXISTING TO 0.016 OVER 65′ BEFORE AND AFTER THE HORIZONTAL CURVES, RESPECTIVELY.

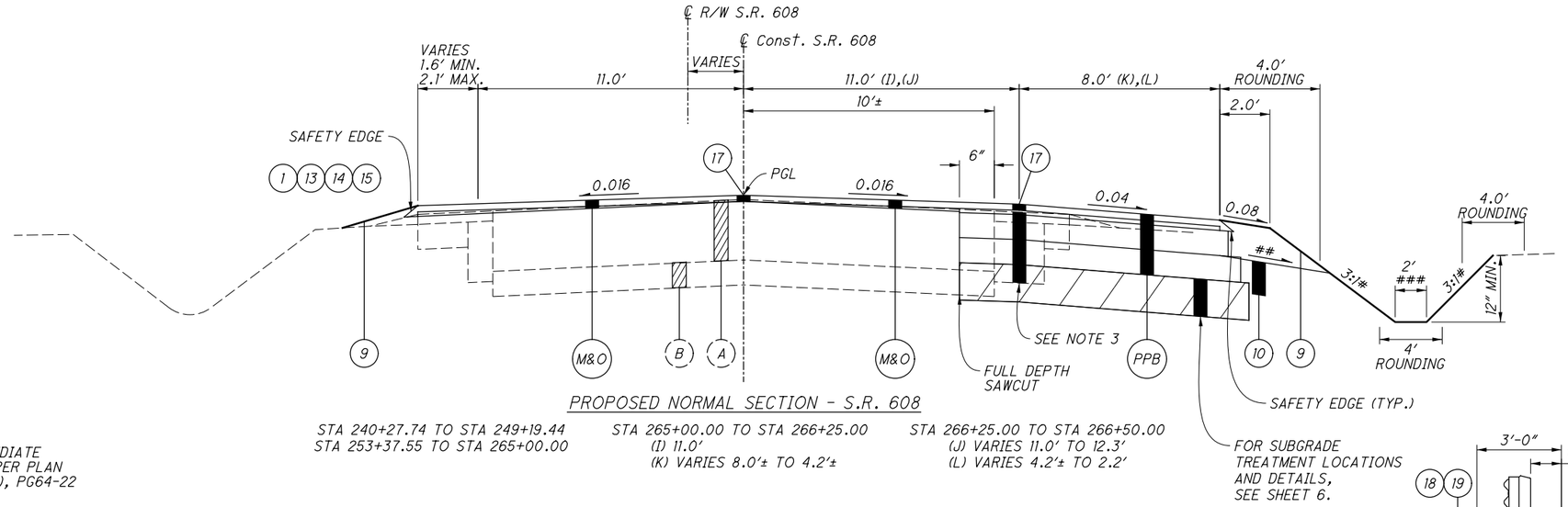
\# SLOPE SHALL BE 3:1 UNLESS SHOWN OTHERWISE ON THE CROSS SECTIONS.

\## 0.08 SLOPE PREFERRED, 0.04 SLOPE MINIMUM.

VEGETATED FILTER STRIP, 15′ WIDTH STA 201+00.00 TO STA 211+40.00

TYPICAL SECTIONS

GEA-608-3.09



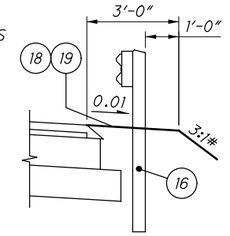
PROPOSED NORMAL SECTION - S.R. 608

STA 240+27.74 TO STA 249+19.44
STA 253+37.55 TO STA 265+00.00

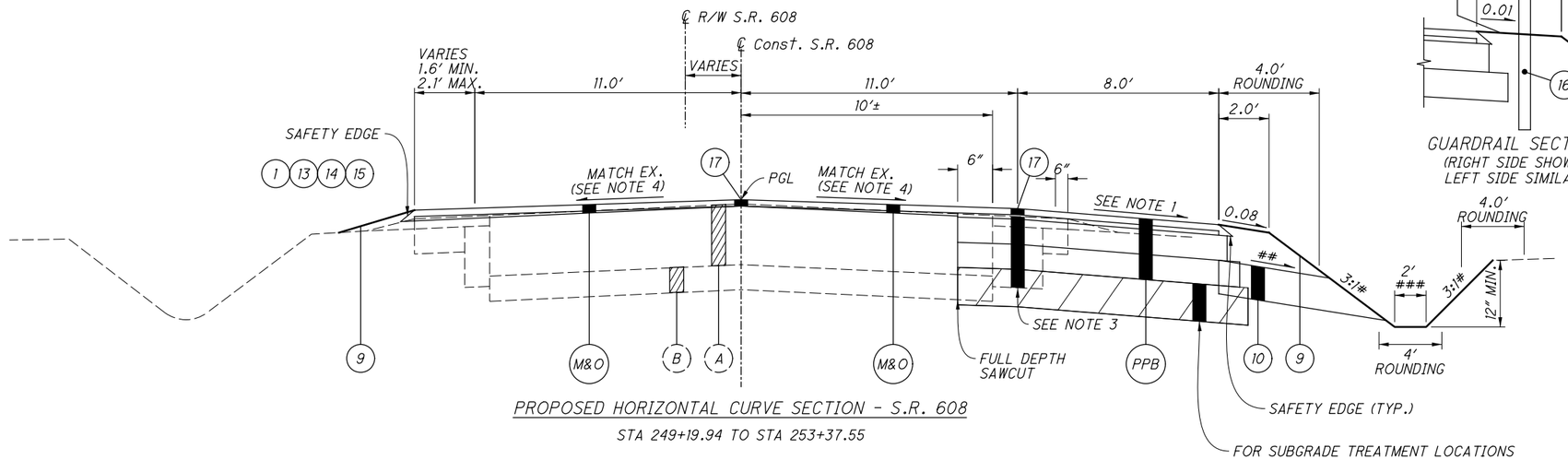
STA 265+00.00 TO STA 266+25.00
(I) 11.0′
(K) VARIES 8.0′± TO 4.2′±

STA 266+25.00 TO STA 266+50.00
(J) VARIES 11.0′ TO 12.3′
(L) VARIES 4.2′± TO 2.2′

RMEDIATE
S PER PLAN
AX.), PG64-22

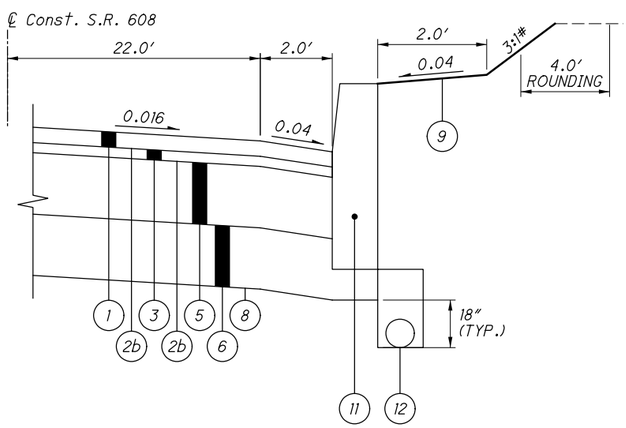


GUARDRAIL SECTION
(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)



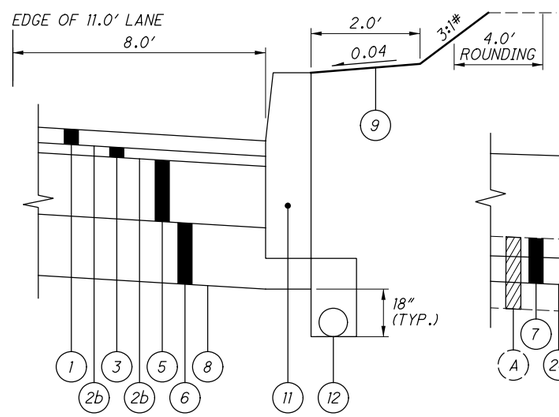
PROPOSED HORIZONTAL CURVE SECTION - S.R. 608

STA 249+19.94 TO STA 253+37.55



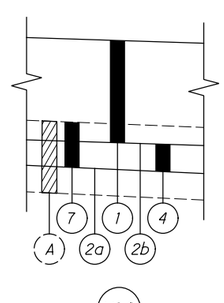
RIGHT TURN LANE SECTION

STA 238+50.00 TO STA 239+79.26 RT

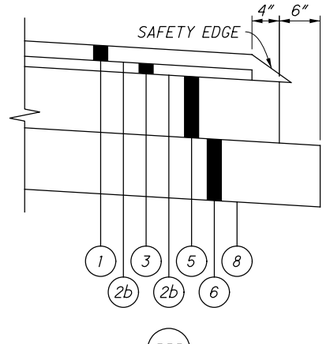


CURB SECTION

STA 240+60.74 TO STA 250+62.00 RT



PROPOSED PAVEMENT PLANING AND LEVELING DETAIL



PROPOSED FULL-DEPTH PAVEMENT BUILDUP DETAIL

LEGEND

SEE BELOW FOR PROPOSED PAVEMENT BUILDUP (PPB)
AND PROPOSED PAVEMENT PLANING & LEVELING DETAILS (M&O).

EXISTING LEGEND:

- (A) 12″ TO 14″± ASPHALT CONCRETE
- (B) 6″± ASPHALT CONCRETE

PROPOSED LEGEND:

- (1) ITEM 441 - 1 ½″ ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG70-22M
- (2a) ITEM 407 - NON-TRACKING TACK COAT (MILLED ASPHALT SURFACE)
- (2b) ITEM 407 - NON-TRACKING TACK COAT (NEW ASPHALT SURFACE)
- (3) ITEM 441 - 1″ ASPHALT CONCRETE INTERMEDIATE COURSE TYPE 1, (448), PG64-22
- (4) ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), AS PER PLAN (VARIABLE DEPTH, 6.5″ MAX.), PG64-22 (PLACE IN MULTIPLE LIFTS)
- (5) ITEM 301 - 6″ ASPHALT CONCRETE BASE, PG64-22
- (6) ITEM 304 - 6″ AGGREGATE BASE
- (7) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T = ½″)
- (8) ITEM 204 - SUBGRADE COMPACTION
- (9) ITEM 659 - SEEDING AND MULCHING
- (10) ITEM 605 - AGGREGATE DRAINS
- (11) ITEM 609 - CURB, TYPE 6
- (12) ITEM 605 - 4″ BASE PIPE UNDERDRAINS
- (13) ITEM 209 - LINEAR GRADING, AS PER PLAN
- (14) ITEM 209 - PREPARE SUBGRADE FOR SHOULDER PAVING, AS PER PLAN
- (15) ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN
- (16) ITEM 606 - GUARDRAIL, TYPE MGS OR ITEM 606 - GUARDRAIL, TYPE 5
- (17) ITEM 875 - LONGITUDINAL JOINT ADHESIVE
- (18) ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL), AS PER PLAN, PG 64-22
- (19) ITEM 209 - RESHAPING UNDER GUARDRAIL, AS PER PLAN

NOTES:

1. SHOULDER CROSS SLOPE SHALL MATCH CROSS SLOPE OF ADJACENT TRAVEL LANE OR 0.04, WHICHEVER IS GREATER.
2. SEE DRIVEWAY DETAILS FOR PAVEMENT MATERIAL BEHIND CURB.
3. FULL DEPTH SAWCUT AND EXISTING PAVEMENT TO BE REMOVED SHALL BE INCLUDED IN ITEM 203 EXCAVATION AS PER CMS 203.04E.
4. TRANSITION CROSS SLOPES FROM 0.016 TO MATCH EXISTING AND FROM MATCH EXISTING TO 0.016 OVER 65′ BEFORE AND AFTER THE HORIZONTAL CURVES, RESPECTIVELY.

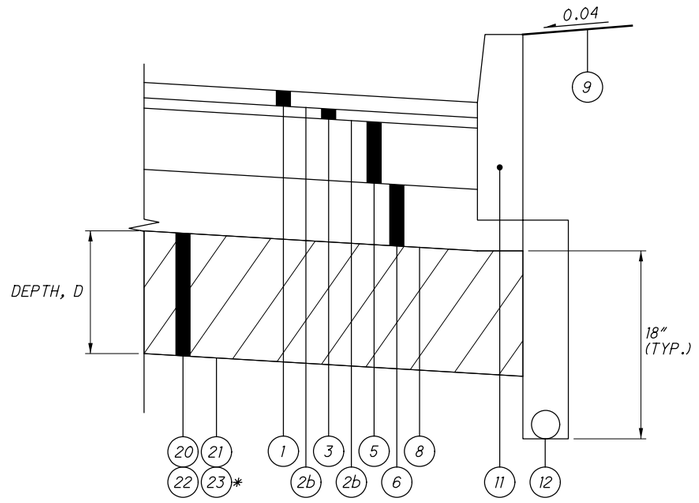
\# SLOPE SHALL BE 3:1 UNLESS SHOWN OTHERWISE ON THE CROSS SECTIONS.

0.08 SLOPE PREFERRED, 0.04 SLOPE MINIMUM.

VEGETATED BIOFILTER, 4′ WIDTH, STA 250+50 TO STA 257+50, RT.

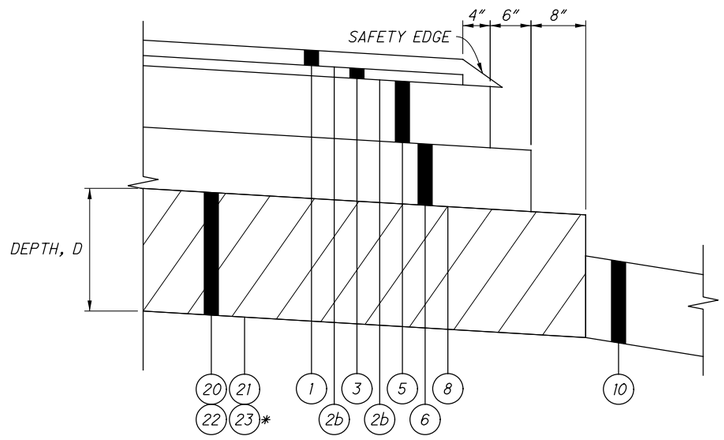
TYPICAL SECTIONS

GEA-608-3.09



CURB SECTION

(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)

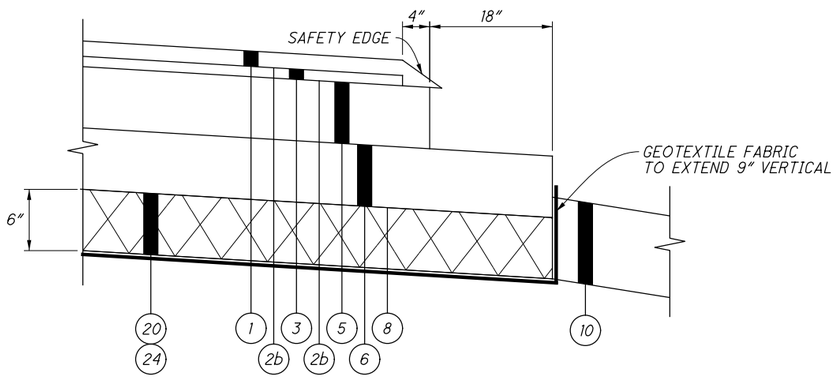


NON-CURB SECTION

(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)

UNDERCUT DETAILS

STA 194+50.00 TO STA 209+75.00, BOTH SIDES, D = 12"
STA 209+75.00 TO STA 218+00.00, BOTH SIDES, D = 12" *(NO GEOGRID REQUIRED)
STA 218+00.00 TO STA 226+50.00, BOTH SIDES, D = 15"
STA 231+25.00 TO STA 237+00.00, BOTH SIDES, D = 12"
STA 242+00.00 TO STA 246+00.00, RIGHT SIDE, D = 12"
STA 253+75.00 TO STA 258+00.00, RIGHT SIDE, D = 12" *(NO GEOGRID REQUIRED)
STA 258+00.00 TO STA 262+50.00, RIGHT SIDE, D = 12"



GEOCELLULAR CONFINEMENT SYSTEM DETAIL

(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR)

STA 226+50.00 TO STA 231+25.00, BOTH SIDES

LEGEND

SEE SHEET 5 FOR PROPOSED PAVEMENT BUILDUP (PPB)
AND PROPOSED PAVEMENT PLANING & LEVELING DETAILS (M&O).

EXISTING LEGEND:

(A) 12" TO 14"± ASPHALT CONCRETE

(B) 6"± ASPHALT CONCRETE

PROPOSED LEGEND:

(1) ITEM 441 - 1 ½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG70-22M

(2a) ITEM 407 - NON-TRACKING TACK COAT (MILLED ASPHALT SURFACE)

(2b) ITEM 407 - NON-TRACKING TACK COAT (NEW ASPHALT SURFACE)

(3) ITEM 441 - 1" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE 1, (448), PG64-22

(4) ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), AS PER PLAN (VARIABLE DEPTH, 6.5" MAX.), PG64-22 (PLACE IN MULTIPLE LIFTS)

(5) ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22

(6) ITEM 304 - 6" AGGREGATE BASE

(7) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T = ½")

(8) ITEM 204 - SUBGRADE COMPACTION

(9) ITEM 659 - SEEDING AND MULCHING

(10) ITEM 605 - AGGREGATE DRAINS

(11) ITEM 609 - CURB, TYPE 6

(12) ITEM 605 - 4" BASE PIPE UNDERDRAINS

(13) ITEM 209 - LINEAR GRADING, AS PER PLAN

(14) ITEM 209 - PREPARE SUBGRADE FOR SHOULDER PAVING, AS PER PLAN

(15) ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN

(16) ITEM 606 - GUARDRAIL, TYPE MGS OR
ITEM 606 - GUARDRAIL, TYPE 5

(17) ITEM 875 - LONGITUDINAL JOINT ADHESIVE

(18) ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL), AS PER PLAN, PG 64-22

(19) ITEM 209 - RESHAPING UNDER GUARDRAIL, AS PER PLAN

(20) ITEM 204 - EXCAVATION OF SUBGRADE

(21) ITEM 204 - GRANULAR MATERIAL, TYPE B

(22) ITEM 204 - GEOTEXTILE FABRIC

(23) ITEM 204 - GEOGRID

(24) ITEM SPECIAL - GEOCELLULAR CONFINEMENT SYSTEM

TYPICAL SECTIONS

GEA-608-3.09

EROSION CONTROL

POST CONSTRUCTION STORM WATER TREATMENT

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

VEGETATED FILTER STRIP

THIS PLAN UTILIZES VEGETATED FILTER STRIP(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AND ITEM 670, SLOPE EROSION PROTECTION TO ALL DISTURBED AREAS DESIGNATED AS VEGETATED FILTER STRIPS, THE EDGE OF SHOULDER, AND THE FORESLOPE AS SPECIFIED IN THE PLANS.

VEGETATED BIOFILTER

THIS PLAN UTILIZES VEGETATED BIOFILTER(S) 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 PLAN CROSS SECTIONS. PROVIDE ITEM 670 AS SPECIFIED IN THE PLANS.

SEEDING AND MULCHING

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

659, TOPSOIL, FURNISHED AND PLACED	1789 CU. YD.
659, SEEDING AND MULCHING	16117 SQ. YD.
659, REPAIR SEEDING AND MULCHING	806 SQ. YD.
659, COMMERCIAL FERTILIZER	2.18 TON
659, LIME	3.33 ACRES
659, WATER	87 M. GAL.

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.

DRAINAGE

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.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

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 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 ITEM 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 B	50 FT.
611 6" CONDUIT, TYPE E	50 FT.
611 6" CONDUIT, TYPE F	50 FT.

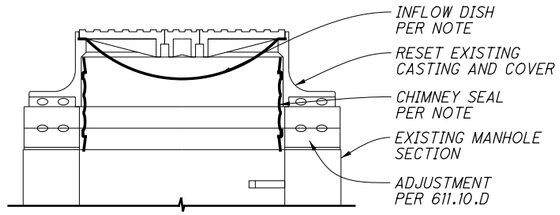
601 ROCK CHANNEL PROTECTION TYPE C WITH FILTER 10 CU. YD.

DRAINAGE

ITEM 611 - MANHOLE ADJUSTED TO GRADE, AS PER PLAN

THIS ITEM SHALL CONSIST OF ADJUSTING SANITARY MANHOLES AND VAULTS TO GRADE PER ITEM 611 WITH THE FOLLOWING MODIFICATIONS:

ONCE ADJUSTMENT HAS BEEN COMPLETED PER ITEM 611, INSTALL CHIMNEY SEAL AND INFLOW DISH PER MANUFACTURER PROCEDURES AND RECOMMENDATIONS. ALL EQUIPMENT MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED IN THIS NOTE, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 611, MANHOLE ADJUSTED TO GRADE, AS PER PLAN.



CHIMNEY SEAL SHALL SPAN THE ENTIRE VERTICAL LENGTH OF THE ADJUSTMENT BY CONNECTING THE BOTTOM OF THE FRAME CASTING AND TOP THE MANHOLE CONE. CHIMNEY SEAL SHALL CONSIST OF A RUBBER SLEEVE AND EXPANSION BANDS TO COMPRESS THE SEAL TO THE MANHOLE.

CHIMNEY SEAL SHALL REMAIN FLEXIBLE THROUGHOUT A 50 YEAR DESIGN LIFE, ALLOWING REPEATED VERTICAL MOVEMENT OF THE FRAME OF NOT LESS THAN 2 INCHES AND/OR REPEATED HORIZONTAL MOVEMENT OF NOT LESS THAN 1/2 INCH. THE SLEEVE PORTION OF THE SEAL SHALL BE DOUBLE, TRIPLE OR QUADRUPLE PLEATED WITH A MINIMUM UNEXPANDED VERTICAL HEIGHT OF 8 INCHES, 10 INCHES OR 13 INCHES RESPECTIVELY. THE SLEEVE AND ANY EXTENSIONS SHALL HAVE A MINIMUM THICKNESS OF 3/16 INCHES AND SHALL BE MADE FROM A HIGH QUALITY RUBBER COMPOUND CONFORMING TO THE APPLICABLE MATERIAL REQUIREMENTS OF ASTM C-923, WITH A MINIMUM 1500 PSI TENSILE STRENGTH, A MAXIMUM 18% COMPRESSION SET AND A HARDNESS (DUROMETER) OF 48*5. THE AREA OF THE SEAL OR EXTENSION THAT COMPRESSES AGAINST THE MANHOLE FRAME CASTING AND THE CHIMNEY/CONE SHALL HAVE A SERIES OF SEALING FINS TO FACILITATE A WATERTIGHT SEAL.

EXPANSION BANDS SHALL BE INTEGRALLY FORMED FROM 16 GAUGE STAINLESS STEEL CONFORMING TO THE APPLICABLE MATERIAL REQUIREMENTS OF ASTM C-923, TYPE 304, WITH NO WELDED ATTACHMENTS. THE EXPANSION BANDS SHALL HAVE A MINIMUM ADJUSTMENT RANGE OF 2-1/2 DIAMETER INCHES AND A POSITIVE LOCKING MECHANISM WHICH SECURES THE BAND IN ITS EXPANDED POSITION AFTER TIGHTENING.

INFLOW DISH SHALL BE MANUFACTURED FROM A DURABLE HIGH DENSITY POLYETHYLENE COPOLYMER MATERIAL THAT MEETS ASTM D-1248 CLASS A, CATEGORY 5, TYPE III SPECIFICATION. THIS MATERIAL SHALL HAVE SUPERIOR STRESS CRACK RESISTANCE, COMBINED WITH A HIGH IMPACT STRENGTH AND SHALL HAVE A MINIMUM IMPACT BRITTLENESS TEMPERATURE OF 105° F IN ACCORDANCE WITH ASTM D 746-70. THE DISH SHALL HAVE A TENSILE STRENGTH OF 3700 PSI AND AN ELONGATION FACTOR OF 800% MEETING ALL REQUIREMENTS OF ASTM D 638-71A. THE THICKNESS OF THE DISH SHALL BE A UNIFORM 1/8".

THE DISH SHALL HAVE TWO 3/26" HOLES INSTALLED 180° APART, APPROXIMATELY 1" FROM THE TOP OF THE INSERT, TO ALLOW FOR CONSTANT VENTILATION. THIS "NO VALVE" METHOD OF VENTILATION SHOULD NOT BE AFFECTED BY GRIT ACCUMULATION, NOR HAVE ANY MOVING PARTS SUBJECT TO CORROSION. THE VENTING SYSTEM SHALL NOT ALLOW WATER TO COMPLETELY FILL THE INSERT, WHICH DURING COLD WEATHER COULD FREEZE AND LIFT THE MANHOLE COVER.

THE INFLOW DISH SHALL HAVE A CORROSION RESISTANT NYLON STRAP INSTALLED INTO THE DISH FOR EASY REMOVAL AND RE-INSTALLATION INTO THE MANHOLE FRAME.

PAVEMENT

PAVEMENT RESTORATION FOR PIPE INSTALLATIONS AND/OR REMOVALS

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION AND/OR REMOVAL OF PIPES.

ITEM 301 - ASPHALT CONCRETE BASE, PG64-22 21 CU. YDS.

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 6 INCHES AND A PAVEMENT RESTORATION WIDTH THAT INCLUDES THE TRENCH WIDTH PLUS TWO FEET ON EACH SIDE OF THE TRENCH.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

PAVEMENT RESTORATION FOR MONUMENT ASSEMBLY INSTALLATIONS

THE FOLLOWING QUANTITY IS PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION OF ITEM 623, MONUMENT ASSEMBLIES.

ITEM 301, ASPHALT CONCRETE BASE, PG64-22 3 CU. YDS.

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 6 INCHES AND A WIDTH OF TWO FEET AROUND THE PERIMETER OF THE MONUMENT ASSEMBLIES.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG70-22M

THE COARSE VIRGIN AGGREGATE FOR THIS ITEM SHALL CONSIST OF A BLEND OF 60% MINIMUM AIR COOLED BLAST FURNACE SLAB (ACBFS) OR TRAP ROCK FROM ONTARIO WITH LIMESTONE COMPRISING THE REMAINING PERCENTAGE.

ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), AS PER PLAN (VARIABLE DEPTH, 6.5" MAX), PG 64-22

THIS MATERIAL SHALL VARY IN LAYER THICKNESS AS INDICATED IN THE TYPICAL SECTIONS. INSTALL IN MULTIPLE LIFTS AS NECESSARY.

CALCULATED SAC CHECKED BJB

GENERAL NOTES

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SHEET NUM.											PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
7-10	22	24	25	112						OFFICE CALCS	03/SAF/PV	04/STR/PV	05/BRO/BR						
																		DRAINAGE	
		4.46									4.46			602	20000	4.46	CY	CONCRETE MASONRY	
			4,066								4,066			605	06000	4,066	FT	4" BASE PIPE UNDERDRAINS	
			821								821			605	31100	821	FT	AGGREGATE DRAINS	9
		58									58			611	00300	58	FT	4" CONDUIT, TYPE D	
			220								220			611	00410	220	FT	4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	
50											50			611	00900	50	FT	6" CONDUIT, TYPE B	9
50											50			611	01400	50	FT	6" CONDUIT, TYPE E	9
50											50			611	01500	50	FT	6" CONDUIT, TYPE F	9
		8									8			611	02000	8	FT	8" CONDUIT, TYPE C	
		1,849									1,849			611	04400	1,849	FT	12" CONDUIT, TYPE B	
		51									51			611	04900	51	FT	12" CONDUIT, TYPE D	
		856									856			611	05900	856	FT	15" CONDUIT, TYPE B	
		149									149			611	06100	149	FT	15" CONDUIT, TYPE C	
		89									89			611	06400	89	FT	15" CONDUIT, TYPE D	
		245									245			611	07400	245	FT	18" CONDUIT, TYPE B	
		82									82			611	07900	82	FT	18" CONDUIT, TYPE D	
		234									234			611	08900	234	FT	21" CONDUIT, TYPE B	
		40									40			611	09400	40	FT	21" CONDUIT, TYPE D	
		108									108			611	10400	108	FT	24" CONDUIT, TYPE B	
		51									51			611	10600	51	FT	24" CONDUIT, TYPE C	
		224									224			611	16400	224	FT	36" CONDUIT, TYPE B	
		2									2			611	98150	2	EACH	CATCH BASIN, NO. 3	
		12									12			611	98180	12	EACH	CATCH BASIN, NO. 3A	
		1									1			611	98370	1	EACH	CATCH BASIN, NO. 6	
		2									2			611	98470	2	EACH	CATCH BASIN, NO. 2-2B	
		2									2			611	98540	2	EACH	CATCH BASIN, NO. 2-4	
		1									1			611	99574	1	EACH	MANHOLE, NO. 3	
		2									2			611	99655	2	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	9
			9								9			611	99710	9	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																		PAVEMENT	
										21,303		21,303		254	01000	21,303	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
24										1,555	1,579			301	46000	1,579	CY	ASPHALT CONCRETE BASE, PG64-22	
				145							145			301	48000	145	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	
				12						1,681	1,693			304	20000	1,693	CY	AGGREGATE BASE	
				79						5,124		5,203		407	20000	5,203	GAL	NON-TRACKING TACK COAT	
										1,281		1,281		441	50101	1,281	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG 70-22M	9
										251		251		441	50200	251	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), PG 64-22	
										611		611		441	50201	611	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), AS PER PLAN	9
																		(VARIABLE DEPTH, 6.5" MAX), PG 64-22	
				60							60			441	50400	60	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), (DRIVEWAYS) , PG 64-22	
	38										38			441	50701	38	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL), AS PER PLAN, PG 64-22	10
				266							266			452	10050	266	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS	
				815							815			452	12050	815	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS	
										4,427	4,427			609	26000	4,427	FT	CURB, TYPE 6	
										16		16		617	10101	16	CY	COMPACTED AGGREGATE, AS PER PLAN	8
										4,794		4,794		875	10000	4,794	LB	LONGITUDINAL JOINT ADHESIVE	10
																		WATER WORK	
			2								2			638	10800	2	EACH	VALVE BOX ADJUSTED TO GRADE	
			1								1			638	10900	1	EACH	SERVICE BOX ADJUSTED TO GRADE	

CALCULATED RMS
CHECKED SAC

GENERAL SUMMARY

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