

DRIVEWAY SUBSUMMARY												
SHEET NO.	REFERENCE NO.	STATION	SIDE	EXISTING TYPE	LEFT DRIVE FLARE	RIGHT DRIVE FLARE	DRIVE	TOTAL DRIVE AREA	203		204	304
									EXCAVATION	EMBANKMENT, AS PER PLAN	SUBGRADE COMPACTION	AGGREGATE BASE
					SF	SF	SF	SF	CY	CY	SY	CY
50	DW-1	30+99.48	RT	FIELD	108.07	165.40	1243.10	1516.57	0.55	129.44	168.51	28.08
SUBTOTALS									0.55	129.44	168.51	28.08
TOTALS CARRIED TO GENERAL SUMMARY									1	130	169	29

ADDITIONAL EARTHWORK - CR 180 SUBSUMMARY				
STATION		203		
FROM	TO	EXCAVATION CY	EMBANKMENT CY	EMBANKMENT, AS PER PLAN CY
11+50.00	12+00.00	5	5	
12+00.00	12+50.00	17	17	
12+50.00	13+00.00	24		24
13+00.00	13+50.00	24		24
13+50.00	14+00.00	24		24
14+00.00	14+50.00	24		24
14+50.00	15+00.00	24	24	
15+00.00	15+50.00	24	24	
15+50.00	16+00.00	24	24	
16+00.00	16+50.00	24	24	
16+50.00	17+00.00	24	24	
17+00.00	17+50.00	24	24	
17+50.00	18+00.00	24	24	
18+00.00	18+50.00	24	24	
18+50.00	19+00.00	24	24	
19+00.00	19+50.00	24	24	
19+50.00	20+00.00	24	24	
20+00.00	20+50.00	25		25
20+50.00	20+81.82	18		18
20+81.82	20+88.28	4		4
22+48.36	22+54.82	4		4
22+54.82	23+00.00	27		27
23+00.00	23+50.00	26		26
23+50.00	24+00.00	24	24	
24+00.00	24+50.00	24	24	
24+50.00	25+00.00	24	24	
25+00.00	25+50.00	24	24	
25+50.00	26+00.00	24	24	
26+00.00	26+50.00	24	24	
26+50.00	27+00.00	24	24	
27+00.00	27+50.00	24	24	
27+50.00	28+00.00	24	24	
28+00.00	28+50.00	24	24	
28+50.00	29+00.00	24	24	
29+00.00	29+50.00	24		24
29+50.00	30+00.00	24		24
30+00.00	30+50.00	24		24
30+50.00	31+00.00	24		24
31+00.00	31+50.00	18	18	
31+50.00	32+00.00	6	6	
SUBTOTALS		870	574	296
TOTALS CARRIED TO GENERAL SUMMARY		870	574	296

NOTE:
 SEE CROSS SECTIONS FOR LOCATIONS. THE ADDITIONAL EARTHWORK IS FOR REMOVAL OF EXISTING PAVEMENT (3" ASPHALT) AND 4" CRUSHED STONE

ESTIMATED QUANTITIES

CALCULATED RWC DATED 09-2021
 CHECKED dht DATED 09-2021


ITEM	ITEM EXT.	TOTAL (01/NHS/08)	UNIT	DESCRIPTION	SUPERSTR.	ABUTS.	PIER	MSE WALL	GEN'L	SEE SHEET
203	20001	2,689	CY	EMBANKMENT, AS PER PLAN					2,689	2/23
203	35110	331	CY	GRANULAR MATERIAL, TYPE B				331		5
503	21300	LS		UNCLASSIFIED EXCAVATION					LS	
507	00101	700	FT	STEEL PILES HP10X42, FURNISHED, AS PER PLAN		700				2/23
507	92201	195	FT	PREBORED HOLES, AS PER PLAN		195				2/23
509	10000	77,940	LB	EPOXY COATED REINFORCING STEEL	64,890	7,131	5,919			4
509	30020	5,280	FT	NO. 4 GFRP DEFORMED BARS	5,280					
511	33500	2	EACH	SEMI-INTEGRAL DIAPHRAGM GUIDE		2				
511	34446	213	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK	213					
511	34450	51	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)	51					
511	41010	24	CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS			24			
511	43510	85	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING		85				
512	10101	1,053	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN	392	57	79	525		2/23
513	20001	2,484	EACH	WELDED STUD SHEAR CONNECTORS, AS PER PLAN	2,484					3/23
516	10010	66	FT	ARMORLESS PREFORMED JOINT SEAL					66	
516	13600	61	SF	1" PREFORMED EXPANSION JOINT FILLER		61				
516	13900	62	SF	2" PREFORMED EXPANSION JOINT FILLER		62				2
516	14020	113	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL		113				
516	44100	6	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (2.483" x 12" x 20" PAD AND 2" x 13" x 21" PLATE)	6					
516	44100	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (2.483" x 10" x 15" PAD, 2-1.5" x 11" x 17" STEEL PLATES AND HP10 x 42 SECTION)	12					
518	21200	36	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC		36				
518	40000	81	FT	6" PERFORATED CORRUGATED PLASTIC PIPE		81				
518	40010	139	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		139				
524	94704	14	FT	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK			14			
524	94802	33	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK			33			
526	30000	220	SY	REINFORCED CONCRETE APPROACH SLABS (T=17")					220	
526	90030	66	FT	TYPE C INSTALLATION					66	
607	39900	270	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC	270					
840	20000	6,042	SF	MECHANICALLY STABILIZED EARTH WALL				6,042		
840	21000	797	CY	WALL EXCAVATION				797		
840	22000	645	SY	FOUNDATION PREPARATION				645		
840	23000	3,996	CY	SELECT GRANULAR BACKFILL				3,996		
840	25010	660	FT	6" DRAINAGE PIPE, PERFORATED				660		
840	25020	195	FT	6" DRAINAGE PIPE, NON-PERFORATED				195		
840	26000	371	FT	CONCRETE COPING				371		
840	27000	5	DAY	ON-SITE ASSISTANCE				5		
840	28000	LS		SGB INSPECTION AND COMPACTION TESTING				LS		
513	10241	281,000	LB	GALVANIZED STEEL OPTION A STRUCTURAL STEEL MEMBERS, AS PER PLAN (SHOP GALVANIZING)	281,000					2/23 & 3/23
513	10241	281,000	LB	METALIZED STEEL OPTION B STRUCTURAL STEEL MEMBERS, AS PER PLAN (SHOP METALIZING)	281,000					3/23

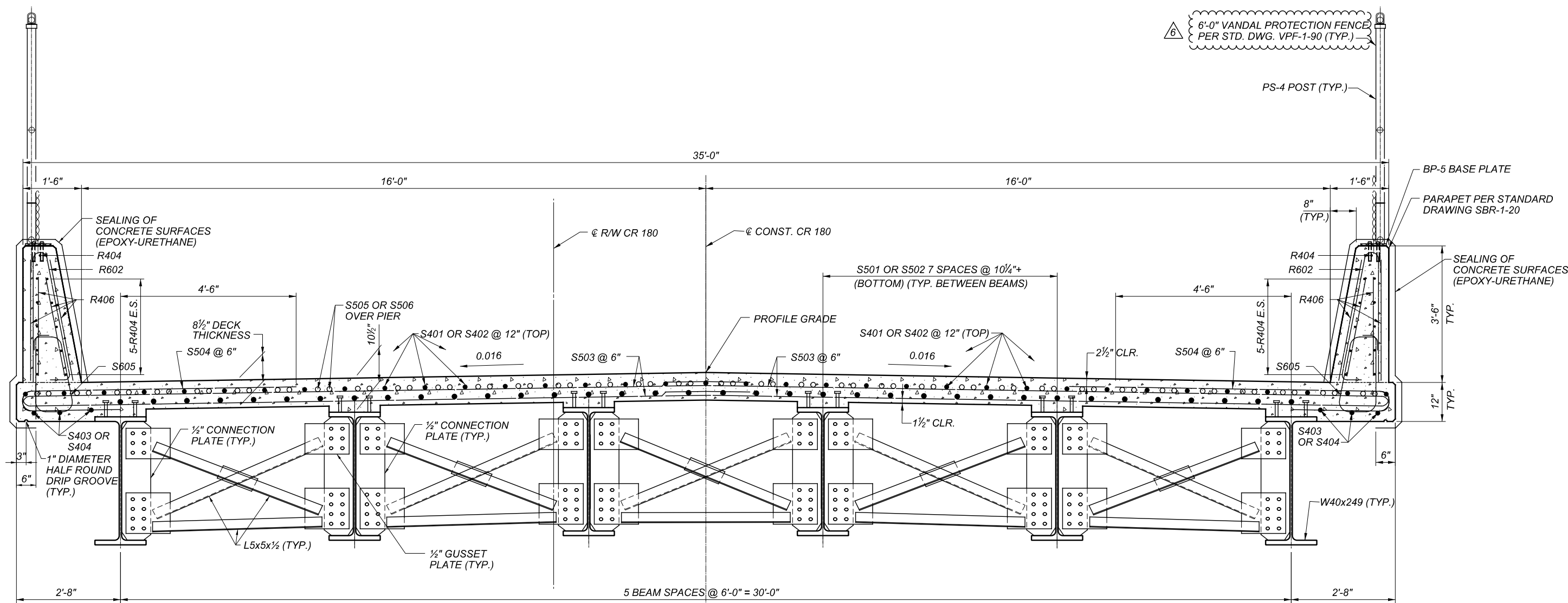
2	1/04/23	ADDED ITEM 516 QUANTITY
3	1/09/23	ADDED METALIZING & SPLIT CODE
4	1/13/23	UPDATED PIER REINFORCING WEIGHT

5	1/23/23	REMOVED GRANULAR MATERIAL, TYPE C
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HAN-SR15/CR180-19.56/00.21

ESTIMATED QUANTITIES
 BRIDGE NO. HAN-CR180-00.21
 OVER STATE ROUTE 15

SFN 3200845
 DESIGN AGENCY

 DESIGNER CHECKER
 BLN dht
 REVIEWER
 DLR
 PROJECT ID
 111379
 SUBSET TOTAL
 4 23
 SHEET TOTAL
 98 149



TRANSVERSE SECTION

NOTES

HIGH STRENGTH CROSS FRAME BOLTS: SHALL BE 1" DIAMETER GRADE A325 ASTM F3125, TYPE 1

DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS PLUS THE DECK OVERHANG AND THE SEMI-INTEGRAL BLOCK BELOW THE DECK ELEVATION, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM/GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 3.42 INCHES AND A HAUNCH WIDTH EQUAL TO THE TOP FLANGE WIDTH. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE PROPOSED FINISHED GRADE. THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM/GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.13

GALVANIZED STEEL: ALL STEEL BEAMS, DIAPHRAGMS AND BOLTS SHALL BE GALVANIZED AFTER CUTTING, BENDING, AND WELDING ACCORDING TO 711.02 AND ASTM A123. INCREASE STANDARD DRAWING DIAPHRAGM AND CONNECTION PLATE HOLE DIAMETERS BY 1/16" TO ACCOUNT FOR THE GALVANIZING. AT THE DISCRETION OF THE ENGINEER, REPLACE, RE-GALVANIZE, OR REPAIR DAMAGED GALVANIZED MATERIAL. IF A REPAIR IS AUTHORIZED, PERFORM WORK ACCORDING TO THE ASTM A780 EXCEPT THE DEPARTMENT WILL NOT ALLOW AEROSOL SPRAY APPLICATIONS OF PAINTS CONTAINING ZINC.

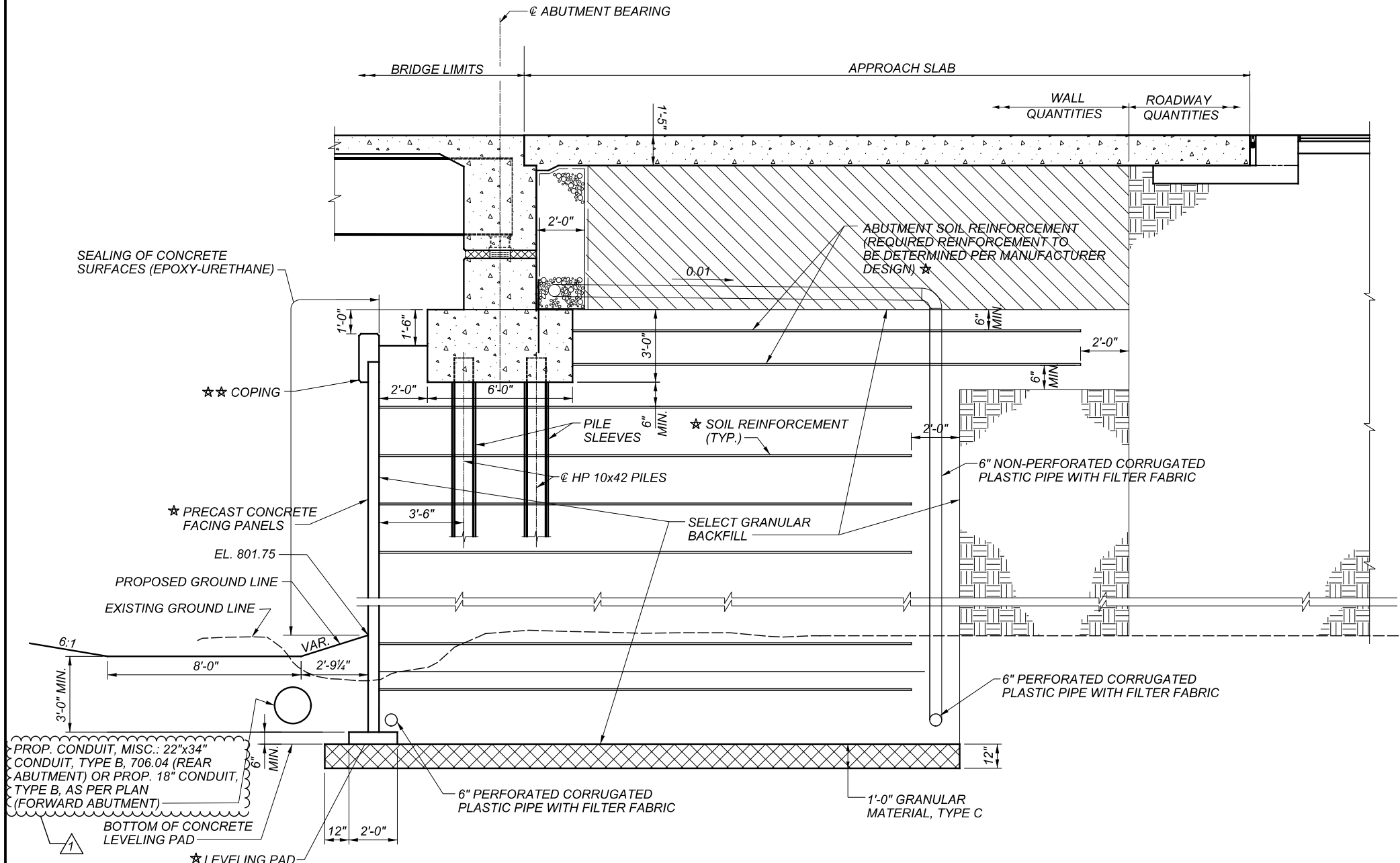
METALIZED STEEL: ALL STEEL SHALL BE METALIZED AFTER CUTTING, BENDING AND WELDING PER SS845. NO INCREASE IN BOLT HOLE SIZE IS REQUIRED FOR METALIZING.

REINFORCING STEEL SPLICE LENGTHS: SHALL BE 1'-10" FOR #4 BARS AND 2'-3" FOR #5 BARS.

SEE STANDARD DRAWING GSD-1-19: FOR CROSS FRAME DETAILS NOT SHOWN.




3	1/09/23	ADDED METALIZED STEEL NOTE - EDIT HOLE SIZE
6	1/23/23	REMOVED (BLACK COLOR) CALLOUT





SECTION A-A
(ALL DIMENSIONS ARE PERPENDICULAR TO MSE WALL)

LEGEND

-  INDICATES LIMITS OF CMS 203 GRANULAR MATERIAL, TYPE B - INCLUDED WITH ITEM 203 - GRANULAR MATERIAL, TYPE B FOR PAYMENT.
-  INDICATES LIMITS OF CMS 203 GRANULAR MATERIAL, TYPE C INCLUDED WITH ITEM 840 - FOUNDATION PREPARATION.
-  - INDICATES LIMITS OF CMS 203 EMBANKMENT INCLUDED WITH ITEM 203 - EMBANKMENT FOR PAYMENT.
- ★ INCLUDED WITH ITEM 840 - MECHANICALLY STABILIZED EARTH WALL FOR PAYMENT.
- ★★ INCLUDED WITH ITEM 840 - CONCRETE COPING FOR PAYMENT.

PROPRIETARY RETAINING WALL DATA

THE PROPRIETARY WALL SUPPLIER SHALL DESIGN THE INTERNAL STABILITY OF A MECHANICALLY STABILIZED EARTH (MSE) WALL IN ACCORDANCE WITH SS 840 TO SUPPORT THE ABUTMENT. THE DESIGN FOR INTERNAL STABILITY SHALL INCLUDE A NOMINAL (I.E. UNFACTORED) HORIZONTAL STRIP LOAD DUE TO FRICTION (FR) FROM THE SUPERSTRUCTURE OF 1.7 KIPS/FT APPLIED PERPENDICULAR TO THE FACE OF THE WALL AT THE BASE OF THE CONCRETE FOOTING. THIS STRIP LOAD DOES NOT INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL. HOWEVER, THE PROPRIETARY WALL SUPPLIER SHALL INCLUDE EARTH PRESSURE LOADS FROM THE ABUTMENT BACKFILL IN THE DESIGN CALCULATIONS.

FOUNDATION BEARING RESISTANCE

THE REAR ABUTMENT REINFORCED SOIL MASS, AS DEFINED, PRODUCES A MAXIMUM SERVICE LIMIT STATE BEARING PRESSURE OF 4.0 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LIMIT STATE BEARING PRESSURE OF 5.6 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 10.1 KIPS PER SQUARE FOOT CONSIDERING STAGED CONSTRUCTION AND DRAINED SOIL CONDITIONS.

THE FORWARD ABUTMENT REINFORCED SOIL MASS, AS DEFINED, PRODUCES A MAXIMUM SERVICE LIMIT STATE BEARING PRESSURE OF 4.0 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LIMIT STATE BEARING PRESSURE OF 5.6 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 15.3 KIPS PER SQUARE FOOT CONSIDERING STAGED CONSTRUCTION AND DRAINED SOIL CONDITIONS.


ITEM 840 - DRAINAGE PIPE

PROVIDE A MINIMUM SLOPE OF 1.00% ON ALL MSE WALL DRAINS UNLESS NOTED OTHERWISE.



LOCATE PIPES AS CLOSE AS POSSIBLE TO THE TOP OF THE LEVELING PAD. IT MAY BE LOCATED ABOVE THE BOTTOM ROW OF REINFORCING STRAPS, HOWEVER, AT NO TIME SHALL THE PIPE BE LOCATED WITHIN 1 FOOT OF THE PROPOSED GROUND LINE.

ITEM 840 - CONCRETE COPING

PROVIDE EPOXY COATED REINFORCING AND CLASS QC1 CONCRETE AS SHOWN IN THE PLANS. CONCRETE AND REINFORCING STEEL IN THE COPING, AND EXPANSION JOINTS SHALL BE INCLUDED IN THE QUANTITY FOR THIS ITEM.

MINIMUM RECOMMENDED REINFORCEMENT LENGTHS		
ABUTMENT	REAR	FORWARD
EFFECTIVE WALL HEIGHT (FEET)	26.7	26.36
REINFORCEMENT LENGTH (FEET) 	22.5	22.0
LENGTH TO HEIGHT RATIO	0.84	0.83
UNDERCUT OF COHESIVE BEARING SOILS AND REPLACEMENT WITH NEW GRANULAR ENGINEERED FILL?	NO	NO

 MINIMUM SOIL REINFORCEMENT LENGTH EXCEEDS 70% OF THE HEIGHT REQUIRED BY SUPPLEMENTAL SPECIFICATION 840.

	11/4/22	REVISE DESCRIPTION
	1/23/23/	UPDATED PAY ITEM

NOTES

SECTION A-A: FOR LOCATION SEE SHEETS [20/23](#) AND [21/23](#).

ADDITIONAL DETAILS: SEE STANDARD DRAWING SICD-1-21 AND STANDARD DRAWING DM-1.1.

CONCRETE COPING: FOR DETAILS SEE SHEET [23/23](#).

ADDITIONAL NOTES: SEE SHEETS [20/23](#) AND [21/23](#).