

HOWARD COUNTY

Capital Project #D-1165

Ellicott City Parking Lot E

Water Quality Improvement Project

Storm Water Management Division Bureau Of Environmental Services

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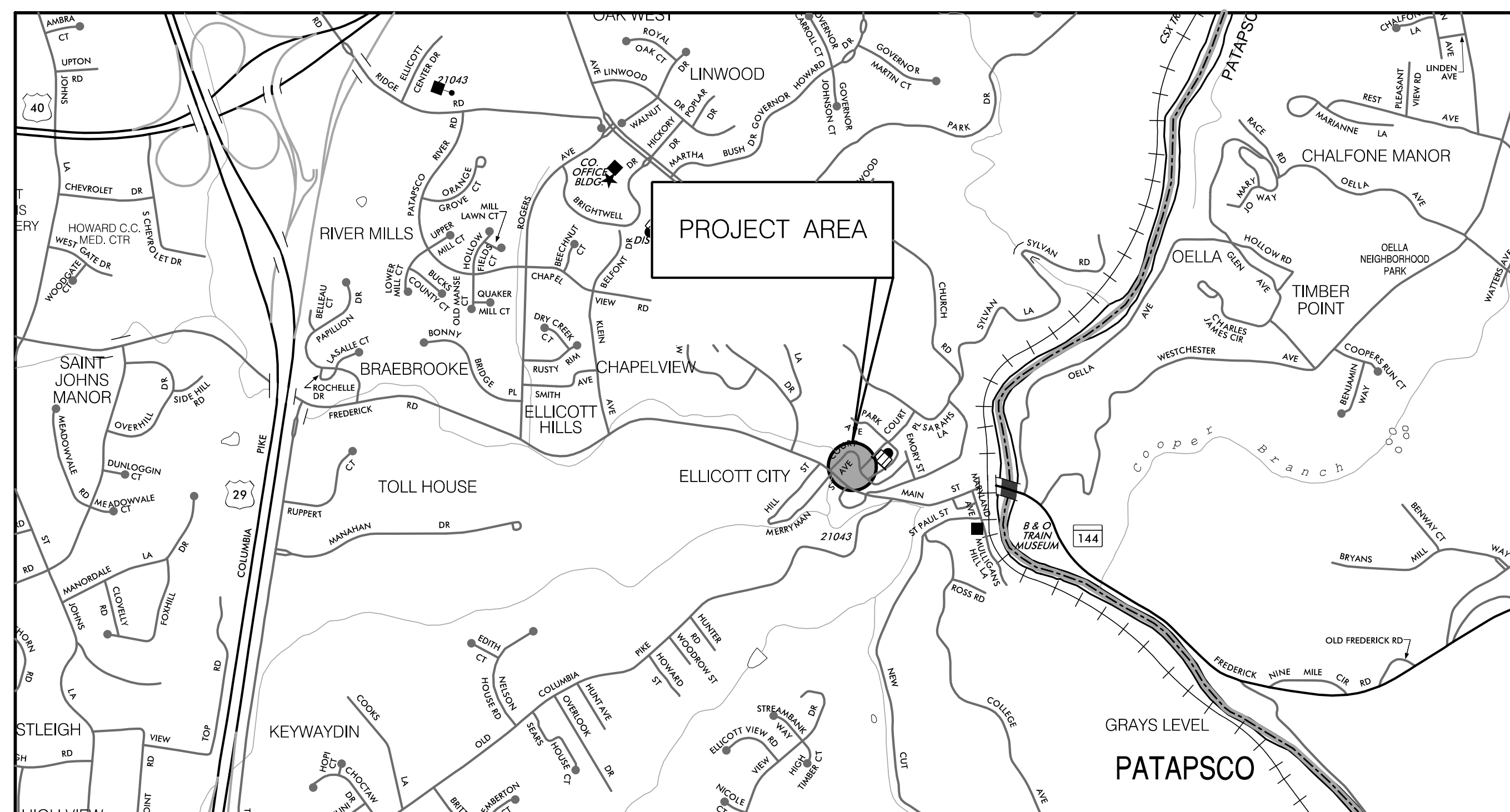
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LEGEND

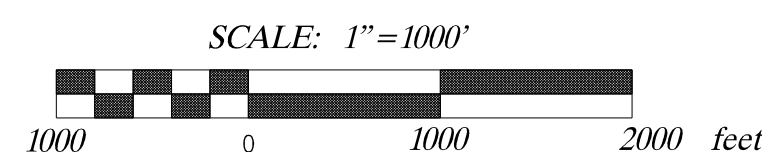
PROPOSED MEDIAN BARRIER	
ELECTRICAL HAND BOX - SIGNALS	
FLOW LINE	
STATE, COUNTY OR CITY LINES	
PROPOSED TRAFFIC BARRIER	
EXISTING TRAFFIC BARRIER	
PROPOSED FENCE LINE	
EXISTING FENCE LINE	
RIGHT OF WAY LINE	
EXISTING ROADWAY	
BASE OR SURVEY LINE	
TRAVERSE POINT	
APPROXIMATE LIMITS OF CUT AND/OR FILL	
PROPOSED MAJOR CONTOUR	
PROPOSED MINOR CONTOUR	
LIMIT OF DISTURBANCE	
EXISTING MAJOR CONTOURS	
EXISTING MINOR CONTOURS	
EXISTING PIPE/CULVERT	
EXISTING DROP INLET	
WETLAND	
HEDGE /TREE LINE	
BUSH /TREE	
CONIFEROUS TREE	
LIGHT POLE	

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY WORK BEING DONE.
- THIS PLAN IS PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS /BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE COORDINATES SHOWN HEREON ARE BASED ON HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. BENCHMARKS SHOWN HEREON WERE PROVIDED BY AB CONSULTANTS INC.
- OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND MCCORMICK TAYLOR DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION.
- THE EXISTING INFORMATION SHOWN ON THESE PLANS WAS TAKEN FROM THE BEST AVAILABLE SOURCES AND SHALL BE VERIFIED BEFORE STARTING CONSTRUCTION. HOWARD COUNTY DOES NOT GUARANTEE THE COMPLETENESS OR THE CORRECTNESS OF THE SHOWN INFORMATION.
- THE CONTRACTORS SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTORS'S OPERATION SHALL BE REPAIRED IMMEDIATELY. ALL UNDERGROUND UTILITIES SHALL HAVE A CLEARANCE BY A MINIMUM OF 6 INCHES VERTICALLY AND A MINIMUM OF 5 FEET HORIZONTALLY.
- EQUIPMENT SHALL ALLOW FOR AT LEAST 10' CLEARANCE FROM ALL LIVE OVERHEAD POWER LINES AS IDENTIFIED IN THE PRECONSTRUCTION MEETING WITH BGE.
- SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY MCCORMICK TAYLOR IMMEDIATELY TO RESOLVE THE SITUATION.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- AS OF JANUARY 17, 2014, THE PLANNING DIRECTOR APPROVED THE REQUEST FOR WAIVERS TO SECTION 16.155(A)(L)(II) REQUIRING SUBMISSION OF A SITE DEVELOPMENT PLAN FOR NON-RESIDENTIAL CONSTRUCTION AND SECTION 16.115(C) PROHIBITING DISTURBANCE IN THE 100 YEAR FLOODPLAIN FOR RECONSTRUCTION OF A RETAINING WALL ALONG THE EASTERN PERIMETER OF AN EXISTING PARKING LOT AND FOR A SERIES OF SIX RETAINING WALLS CONSTRUCTED IN CONJUNCTION WITH A PROPOSED STAIRCASE FROM THE EASTERN PORTION OF ADJOINING PARCEL 188 TO COURT AVENUE. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
 - ACQUISITION OF ADJOINING PARCEL 188 BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/REAL ESTATE SERVICES DIVISION SHALL BE REQUIRED. ALL COMMENTS MUST BE COMPLIED WITH FROM THE REAL ESTATE SERVICES DIVISION AS APPLICABLE. PARCEL 188 SHALL BE MAINTAINED AS A SEPARATE PARCEL FROM LOT NO. 4 (PARCEL 181). MERGER OF PARCEL 188 INTO LOT 4 (PARCEL 181) WILL REQUIRE A PLAT OF RESUBDIVISION FOR PLAT NO. 11559/THE TALBOTT LUMBER COMPANY.
 - THE APPLICANT SHALL OBTAIN APPROVAL FROM THE HISTORIC DISTRICT COMMISSION AND SHALL COMPLY WITH ANY CONDITIONS OF APPROVAL.
 - ALL REQUIRED MARYLAND DEPARTMENT OF THE ENVIRONMENT PERMITS FOR WORK WITHIN THE 100 YEAR FLOODPLAIN SHALL BE OBTAINED AS APPLICABLE BY THE APPLICANT AND REFERENCED ON FUTURE PERMITS.
 - THE APPLICANT SHALL OBTAIN GRADING AND OR BUILDING PERMITS WITH THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS AND SHALL COMPLY WITH ANY COMMENTS FROM THAT REVIEWING AGENCY AS APPLICABLE.
 - SUBJECT TO COMPLIANCE WITH THE COMMENTS DATED JANUARY 13, 2014 FROM THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS (DILP) REGARDING HANDICAPPED ACCESS FOR THE PROJECT THE APPLICANT SHALL ADDRESS THESE COMMENTS DIRECTLY WITH DILP AND PRIOR TO APPLICATION OF THE BUILDING/GRADING PERMITS.



HORIZONTAL DATUM	NAD 83 /91
VERTICAL DATUM	NAVD 88



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 25819, EXPIRATION DATE: 25/2015

DESIGN CERTIFICATION

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

OWNER'S/DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

EP-14-013

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

HOWARD SOIL CONSERVATION DISTRICT

7/6/14
DATE

AS-BUILT CERTIFICATION

I CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE

PE No. 25819
DATE 11-26-15

13

6/18/14
DATE

DESIGNER'S SIGNATURE

MARYLAND REGISTRATION NUMBER 25819

CHRIS J. BROOKS
PRINTED NAME

6/19/14
DATE

OWNER / DEVELOPER SIGNATURE

Mark S. Richmond
PRINTED NAME AND TITLE
Chief Stormwater Mgmt Div.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE 6/19/14

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE 6/19/14

CHIEF, STORMWATER MANAGEMENT DIVISION DATE 6/19/14

509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444



DES:	AM				
DRN:	MR				
CHK:	CB				
DATE:	06/18/14	ADM	13	AS-BUILT SURVEY	09/10/15
BY:				REVISION	DATE

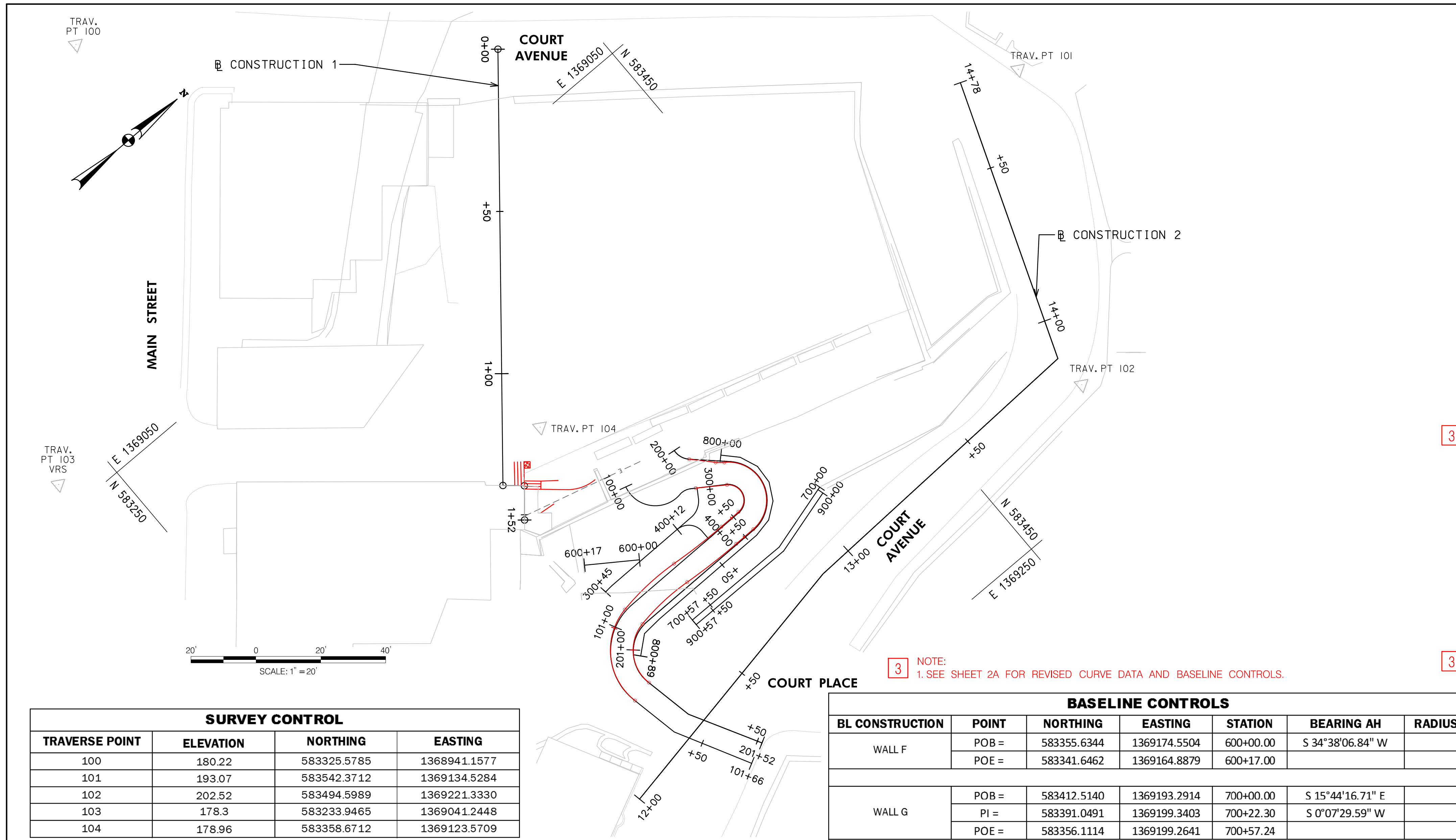
ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

TITLE SHEET

SCALE
AS SHOWN

SHEET

1 OF 44



SURVEY CONTROL			
TRAVERSE POINT	ELEVATION	NORTHING	EASTING
100	180.22	583325.5785	1368941.1577
101	193.07	583542.3712	1369134.5284
102	202.52	583494.5989	1369221.3330
103	178.3	583233.9465	1369041.2448
104	178.96	583358.6712	1369123.5709

CURVE DATA									
BASELINE CONSTRUCTION	CURVE NO.	DELTA	Dc	R	T	L	E	CENTER OF CURVE	
								NORTH	EAST
WALL A	C-1	116°45'57"	572°57'28"	10.0'	16.2'	20.4'	9.1	583376.5841	1369157.3587
	C-2	40°05'20"	1145°54'56"	5.0'	1.8'	3.5'	0.3	583379.0026	1369172.1444
	C-3	144°28'14"	1145°54'56"	5.0'	15.6'	12.6'	11.4	583388.3216	1369178.2482
	C-4	100°43'55"	301°33'24"	19.0'	22.9'	33.4'	10.8	583345.1115	1369202.6455
WALL B	C-5	52°28'14"	954°55'47"	6.0'	3.0'	5.5'	0.7	583391.5241	1369156.4372
	C-6	134°35'30"	477°27'53"	12.0'	28.7'	28.2'	19.1	583388.3216	1369178.2454
	C-7	100°20'03"	477°27'53"	12.0'	14.4'	21.0'	6.7	583345.1115	1369202.6455
WALL C	C-8	56°00'20"	881°28'25"	6.5'	3.5'	6.4'	0.9	583376.2349	1369168.3566
	C-9	6°09'09"	208°20'54"	27.5'	1.5'	3.0'	0	583345.1115	1369202.6455
WALL D	C-10	89°02'58"	1041°44'29"	5.5'	5.4'	8.5'	2.2	583370.5590	1369180.4113

BASELINE CONTROLS						
BL CONSTRUCTION	POINT	NORTHING	EASTING	STATION	BEARING AH	RADIUS
WALL F	POB =	583355.6344	1369174.5504	600+00.00	S 34°38'06.84" W	
	POE =	583341.6462	1369164.8879	600+17.00		
WALL G	POB =	583412.5140	1369193.2914	700+00.00	S 15°44'16.71" E	
	PI =	583391.0491	1369199.3403	700+22.30	S 0°07'29.59" W	
	POE =	583356.1114	1369199.2641	700+57.24		
CAISSON B	POB =	583395.6357	1369166.1080	800+00.00	N 46°34'37.01" E	
	PI =	583399.7600	1369170.4657	800+06.00	N 68°18'14.83" E	
	PI =	583401.9780	1369176.0407	800+12.00	S 86°38'44.15" E	
	PI =	583401.6270	1369182.0304	800+18.00	S 61°35'43.13" E	
	PI =	583398.7728	1369187.3081	800+24.00	S 36°32'42.11" E	
	PI =	583393.9525	1369190.8808	800+30.00	S 11°31'38.25" E	
	PI =	583388.0735	1369192.0798	800+36.00	S 0°32'15.15" E	
	PI =	583381.5138	1369192.1414	800+42.56	S 0°32'18.01" E	
	PI =	583374.9541	1369192.2030	800+49.12	S 0°32'18.01" E	
	PI =	583368.3944	1369192.2646	800+55.68	S 0°32'18.01" E	
CAISSON G	POB =	583412.1053	1369195.3113	900+00.00	S 15°44'16.71" E	
	PI =	583391.3005	1369201.1742	900+21.62	S 0°07'29.59" W	
	PI =	583391.3005	1369201.1742	900+21.62	S 0°07'29.59" W	
	POE =	583356.1074	1369201.0974	900+56.81		

BASELINE CONTROLS						
BL CONSTRUCTION	POINT	NORTHING	EASTING	STATION	BEARING AH	RADIUS
CONSTRUCTION 1	POB =	583423.9252	1369026.215	0+00.00	S 50°26'53.09" E	
	PI =	583338.2995	1369129.895	1+34.47	N 41°01'10.12" E	
	PI =	583343.2803	1369134.228	1+41.07	S 50°09'51.78" E	
	POE =	583336.524	1369142.327	1+51.62		
CONSTRUCTION 2	POB =	583308.0543	1369230.8902	12+00.00	N 10°37'03.93" W	
	PI =	583395.9833	1369214.4065	12+89.46	N 2°18'45.42" W	
	PI =	583494.1578	1369210.4418	13+87.72	N 69°15'23.82" W	
	POE =	583526.1009	1369126.0999	14+77.90		
WALL A	PC =	583366.9478	1369154.6861	100+00.00	S 74°29'55.52" E	
	PI =	583362.6065	1369170.3391	100+16.24	N 11°15'52.40" W	10.0'
	CC =	583376.5841	1369157.3587			
	PRC =	583378.5375	1369167.1661	100+20.38	N 5°20'17.34" W	
	PI =	583380.3538	1369166.9964	100+22.20	N 34°45'02.16" E	
	CC =	583379.0026	1369172.1444			5.0'
	PT =	583381.6570	1369167.9069	100+23.88	N 33°13'13.51" E	
	PC =	583391.0383	1369174.0506	100+35.09	N 32°54'37.39" E	
	PI =	583404.1400	1369182.5299	100+50.70	S 2°37'08.67" E	
	CC =	583388.3216	1369178.2482			5.0'
	PT =	583388.5877	1369183.2412	100+47.70	S 0°32'17.95" E	
	PC =	583344.4984	1369183.6554	100+91.79	S 1°50'57.06" E	
	PI =	583321.5710	1369184.3956	101+14.73	N 77°25'07.89" E	
	CC =	583345.1115	1369202.6455			19.0'
PT =	583326.5677	1369206.7841	101+25.19	N 78°48'11.30" E		
PI =	583329.5772	1369221.9876	101+40.69	N 62°18'20.94" E		
POE =	583341.5433	1369244.7853	101+66.44			
WALL B	PC =	583385.5617	1369155.7666	200+00.00	S 83°34'56.99" E	
	PI =	583385.2311	1369158.7050	200+02.96	N 43°56'48.89" E	
	CC =	583391.5241	1369156.4372			6.0'
	PT =	583387.3601	1369160.7571	200+05.49	N 43°36'26.21" E	
	PC =	583396.6379	1369169.5945	200+18.31	N 43°52'14.05" E	
	PI =	583417.3143	1369189.4713	200+46.99	S 1°32'16.42" E	
	CC =	583388.3216	1369178.2454			12.0'
	PT =	583388.6436	1369190.2411	200+46.50	S 0°32'13.47" E	
	PI =	583381.6525	1369190.3066	200+53.49	S 0°32'17.95" E	
	PC =	583344.6534	1369190.6543	200+90.49	S 2°11'16.11" E	
	PI =	583330.2778	1369191.2034	201+04.87	N 77°28'41.01" E	
	CC =	583345.1115	1369202.6455			12.0'
	PT =	583333.3969	1369205.2473	201+11.50	N 78°48'33.59" E	
	PI =	583336.4391	1369220.6249	201+27.18	S 78°48'33.59" W	
PI =	583333.3969	1369205.2473	201+42.85	N 78°48'33.59" E		
PI =	583336.4391	1369220.6249	201+58.53	N 61°33'31.14" E		
POE =	583348.0390	1369242.0414	201+82.89			
WALL C	POB =	583383.5127	1369169.1331	300+00.00	S 56°32'38.44" E	
	PC =	583381.6579	1369171.9400	300+03.36	S 56°32'38.44" E	
	PI =	583379.7524	1369174.8238	300+06.82	S 0°32'17.95" E	
	CC =	583376.2349	1369168.3566			6.5'
	PT =	583376.2960	1369174.8563	300+09.72	S 0°32'17.95" E	
	PI =	583344.4214	1369175.1558	300+41.59	S 1°11'37.51" E	
WALL D	PC =	583344.2212	1369175.1599	300+41.79	S 1°51'18.42" E	
	PI =	583342.7441	1369175.2078	300+43.27	S 8°00'27.89" E	
	CC =	583345.1115	1369202.6455			27.5'
	POB =	583376.0869	1369183.3591	400+00.00	S 89°27'42.04" W	
PC =	583376.0588	1369180.3596	400+03.00	S 89°27'42.05" W		
PI =	583376.0079	1369174.9503	400+08.41	S 0°24'44.12" W		
CC =	583370.5590	1369180.4113			5.5'	

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. [Signature]
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

DATE: 6/15/14

McCORMICK TAYLOR
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND
Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444



DES: AM				
DRN: MR				
CHK: CB				
DATE: 06/18/14	BSW	3	REVISED WALL ALIGNMENT	12/15/14
	BY	NO.	REVISION	DATE

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY





GEOMETRY SHEET

SCALE: 1" = 20'

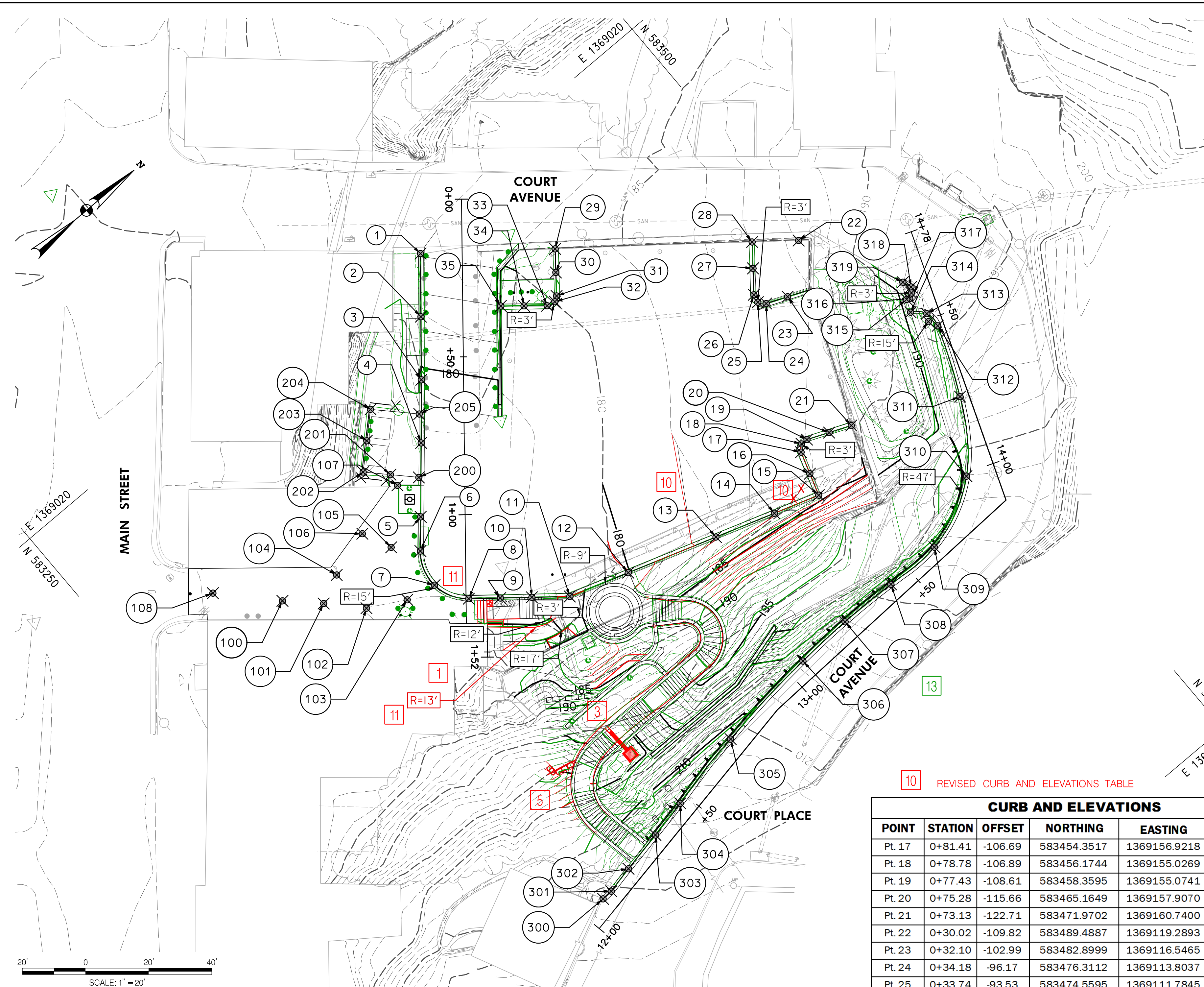
SHEET: 2 OF 44

CURVE DATA									
BASELINE CONSTRUCTION	CURVE NO.	DELTA	Dc	R	T	L	E	CENTER OF CURVE	
								NORTH	EAST
WALL A	C-1.1	116°45'57"	572°57'28"	10.00'	16.24'	20.38'	9.08	583376.5841	1369157.3587
	C-1.2	40°05'20"	1145°54'56"	5.00'	1.82'	3.50'	0.32	583379.0026	1369172.1444
	C-1.3	144°40'32"	1206°13'37"	4.75'	14.92'	11.99'	10.91	583388.4253	1369178.2393
	C-1.4	5°29'58"	29°41'13"	193.00'	9.27'	18.52'	0.22	583379.7232	1368990.0627
	C-1.5	15°29'35"	74°24'36"	77.00'	10.47'	20.82'	0.71	583356.3717	1369259.0510
	C-1.6	91°12'26"	290°06'19"	19.75'	20.17'	31.44'	8.48	583345.9078	1369202.7653
WALL B	C-2.1	52°28'14"	954°55'47"	6.00'	2.96'	5.49'	0.69	583391.5241	1369156.4372
	C-2.2	12°57'08"	477°27'53"	12.00'	1.36'	2.71'	0.08	583401.7195	1369158.5587
	C-2.3	145°25'23"	487°37'25"	11.75'	37.75'	29.82'	27.79	583388.4253	1369178.2393
	C-2.4	5°29'58"	28°38'52"	200.00'	9.61'	19.20'	0.23	583379.7232	1368990.0627
	C-2.5	15°29'35"	81°51'04"	70.00'	9.52'	18.93'	0.64	583356.3717	1369259.0510
	C-2.6	91°12'26"	449°22'43"	12.75'	13.02'	20.30'	5.47	583345.9078	1369202.7653

BASELINE CONTROLS						
BL CONSTRUCTION	POINT	NORTHING	EASTING	STATION	BEARING AH	RADIUS
WALL A	PC	583366.9478	1369154.6861	100+00.00	S 74°29'55.5182" E	
	PI	583362.6065	1369170.3391	100+16.24	N 11°15'52.4047" W	
	CC	583376.5841	1369157.3587			10.00'
	PRC	583378.5375	1369167.1661	100+20.38	N 5°20'17.3447" W	
	PI	583380.3538	1369166.9964	100+22.20	N 34°45'02.1618" E	
	CC	583379.0026	1369172.1444			5.00'
	PT	583381.8527	1369168.0362	100+23.88	N 33°12'56.0008" E	
	PI	583383.1576	1369168.8906	100+25.44	N 34°19'38.6423" E	
	PC	583391.1352	1369174.3382	100+35.10	N 34°47'11.3870" E	
	PI	583403.3869	1369182.8490	100+50.02	S 0°32'16.3230" E	
	CC	583388.4253	1369178.2393			4.75'
	PT	583388.4698	1369182.9891	100+47.09	S 0°32'16.3230" E	
	PC	583381.5349	1369183.0542	100+54.03	S 0°32'16.3230" E	
	PI	583372.2659	1369183.1412	100+63.30	S 4°57'41.5336" W	
	CC	583379.7232	1368990.0627			193.00'
	PRC	583363.0312	1369182.3395	100+72.55	S 4°57'41.5336" W	
	PI	583352.5960	1369181.4336	100+83.03	S 10°31'52.9979" E	
	CC	583356.3717	1369259.0510			77.00'
	PCC	583342.2981	1369183.3480	100+93.37	S 10°31'52.9979" E	
	PI	583322.4672	1369187.0347	101+13.54	N 78°15'40.6938" E	
CC	583345.9078	1369202.7653			19.75'	
PT	583326.5709	1369206.7835	101+24.81	N 78°48'55.1619" E		
PI	583329.5772	1369221.9876	101+40.31	N 62°18'20.9404" E		
POE	583341.5433	1369244.7853	101+66.06			
WALL B	PC	583385.5617	1369155.7666	200+00.00	S 83°34'56.9947" E	
	PI	583385.2311	1369158.7050	200+02.96	N 43°56'48.8856" E	
	CC	583391.5241	1369156.4372			6.00'
	PT	583387.3600	1369160.7572	200+05.49	N 46°59'28.3249" E	
	PC	583392.9445	1369166.7440	200+13.68	N 46°59'28.3249" E	
	PI	583393.8737	1369167.7401	200+15.04	N 34°02'20.7337" E	
	CC	583401.7195	1369158.5587			12.00'
	PRC	583395.0024	1369168.5026	200+16.39	N 34°02'20.7337" E	
	PI	583426.2855	1369189.6344	200+54.15	S 0°32'16.3230" E	
	CC	583388.4253	1369178.2393			11.75'
	PT	583388.5356	1369189.9887	200+46.22	S 0°32'16.3230" E	
	PC	583381.6006	1369190.0539	200+53.15	S 0°32'16.3230" E	
	PI	583371.9954	1369190.1440	200+62.76	S 4°57'41.5336" W	
	CC	583379.7232	1368990.0627			200.00'
	PRC	583362.4258	1369189.3133	200+72.35	S 4°57'41.5336" W	
	PI	583352.9393	1369188.4897	200+81.87	S 10°31'52.9979" E	
	CC	583356.3717	1369259.0510			70.00'
PCC	583343.5775	1369190.2301	200+91.28	S 10°31'52.9979" E		
PI	583330.7753	1369192.6101	201+04.30	N 78°15'40.6938" E		
CC	583345.9078	1369202.7653			12.75'	
PT	583333.4245	1369205.3593	201+11.57	N 78°49'44.2568" E		
PI	583336.4391	1369220.6249	201+27.13	N 61°33'31.1360" E		
POE	583348.0390	1369242.0414	201+51.49			

 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE: 6/19/14	 509 South Exeter Street 4th Floor Baltimore, Maryland 21202 (410) 662-7400	 Storm Water Management Division Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514 Columbia, Maryland 21046-3143 (410) 313-6444		DES: AM					SCALE 1" = 20' SHEET 2A OF 44
				DRN: MR					
				CHK: CB					
				DATE: 06/18/14	BSW	3	ADDED NEW SHEET /REVISED WALL ALIGNMENT	12/15/14	
				BY			REVISION	DATE	

ELLCOTT CITY PARKING LOT E
 CAPITAL PROJECT #D-1165
 HOWARD COUNTY
GEOMETRY SHEET



CONCRETE SOLID WASTE SERVICE PAD ELEVATIONS					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
Pt. 200	0+88.01	14.5	583356.6750	1369084.8130	178.89
Pt. 201	0+87.03	23.5	583350.3529	1369078.3287	178.23
Pt. 202	0+86.11	32.2	583344.2863	1369072.1278	177.63
Pt. 203	0+76.20	30.9	583351.5847	1369065.2916	177.63
Pt. 204	0+66.28	29.6	583358.8831	1369058.4555	177.71
Pt. 205	0+67.92	14.2	583369.7575	1369069.5638	179.09

CURB AND ELEVATIONS					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
Pt. 1	00+17.09	13.19	583402.8778	1369030.9929	183.00
Pt. 2	00+37.09	13.29	583390.0602	1369046.3456	181.98
Pt. 3	00+57.09	13.40	583377.2425	1369061.6984	179.77
Pt. 4	00+77.08	13.67	583364.3021	1369076.9475	178.87
Pt. 5*	00+96.10	14.02	583349.0518	1369094.7346	178.64
Pt. 6	01+11.35	14.31	583341.9895	1369102.9584	178.63
Pt. 7	01+22.19	9.96	583338.4369	1369114.0901	178.82
Pt. 8	01+26.63	-0.85	583343.9489	1369124.3932	178.95
Pt. 9	01+26.52	-10.85	583351.7279	1369130.6770	179.15
Pt. 10	01+26.41	-20.85	583359.5070	1369136.9609	179.34
Pt. 11	01+26.28	-32.88	583368.8668	1369144.5216	179.59
Pt. 12	01+18.96	-51.49	583387.8797	1369150.7272	180.00
Pt. 13	01+07.97	-79.41	583416.3991	1369160.0355	181.86
Pt. 14	01+00.65	-98.02	583435.4120	1369166.2411	182.88
Pt. 15	0+95.10	-112.13	583449.8286	1369170.9449	184.00
Pt. 16	0+88.25	-109.41	583452.0876	1369163.9334	183.00
Pt. 17	0+81.41	-106.69	583454.3517	1369156.9218	182.87
Pt. 18	0+78.78	-106.89	583456.1744	1369155.0269	182.93
Pt. 19	0+77.43	-108.61	583458.3595	1369155.0741	183.03
Pt. 20	0+75.28	-115.66	583465.1649	1369157.9070	183.52
Pt. 21	0+73.13	-122.71	583471.9702	1369160.7400	184.32
Pt. 22	0+30.02	-109.82	583489.4887	1369119.2893	183.37
Pt. 23	0+32.10	-102.99	583482.8999	1369116.5465	182.75
Pt. 24	0+34.18	-96.17	583476.3112	1369113.8037	182.49
Pt. 25	0+33.74	-93.53	583474.5595	1369111.7845	182.40
Pt. 26	0+31.37	-92.29	583475.1140	1369109.1695	182.40
Pt. 27	0+22.99	-92.13	583480.3193	1369102.6085	182.51
Pt. 28	0+14.62	-91.96	583485.5247	1369096.0476	182.65
Pt. 29	0+16.09	-29.48	583436.4110	1369057.3933	181.11
Pt. 30	0+23.55	-29.63	583431.7716	1369063.2410	180.55
Pt. 31	0+31.02	-29.77	583427.1321	1369069.0886	180.15
Pt. 32	0+32.82	-29.21	583425.5495	1369070.1242	180.02
Pt. 33	0+34.07	-26.76	583422.8593	1369069.5270	179.93
Pt. 34	0+34.04	-19.41	583417.2163	1369064.8160	179.77
Pt. 35	0+34.00	-12.06	583411.5733	1369060.1050	179.75

COURT AVENUE CURB AND ELEVATIONS					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
Pt. 300	12+08.05	-5.0	583315.0542	1369224.5155	215.11
Pt. 301	12+11.57	-4.5	583318.5957	1369224.3240	215.00
Pt. 302	12+20.54	-4.8	583327.3625	1369222.4239	214.56
Pt. 303	12+34.23	-4.9	583340.7982	1369219.7625	213.69
Pt. 304	12+46.96	-5.1	583353.2670	1369217.1790	213.00
Pt. 305	12+72.84	-5.6	583378.6059	1369211.9371	211.00
Pt. 306	13+05.79	-5.9	583412.0637	1369207.8429	207.52
Pt. 307	13+24.05	-6.0	583430.3032	1369206.9702	205.85
Pt. 308	13+42.80	-5.0	583449.0769	1369207.2969	204.28
Pt. 309	13+60.90	-4.4	583467.1850	1369207.1769	203.16
Pt. 310	13+99.04	-9.3	583489.4858	1369196.5593	200.97
Pt. 311	14+23.49	-2.8	583504.2042	1369175.9960	197.80
Pt. 312	14+46.99	-2.0	583513.2771	1369154.3010	194.14
Pt. 313	14+51.78	-4.0	583513.1431	1369149.1272	193.17
Pt. 314	14+53.92	-8.7	583509.4914	1369145.4596	191.00
Pt. 315	14+58.14	-8.5	583511.1652	1369141.5762	191.00
Pt. 316	14+58.09	-7.5	583512.0810	1369141.9724	191.75
Pt. 317	14+59.21	-5.6	583514.2435	1369141.5954	192.26
Pt. 318	14+61.39	-5.9	583514.7576	1369139.4614	192.06
Pt. 319	14+63.67	-7.8	583513.7444	1369136.6377	191.43

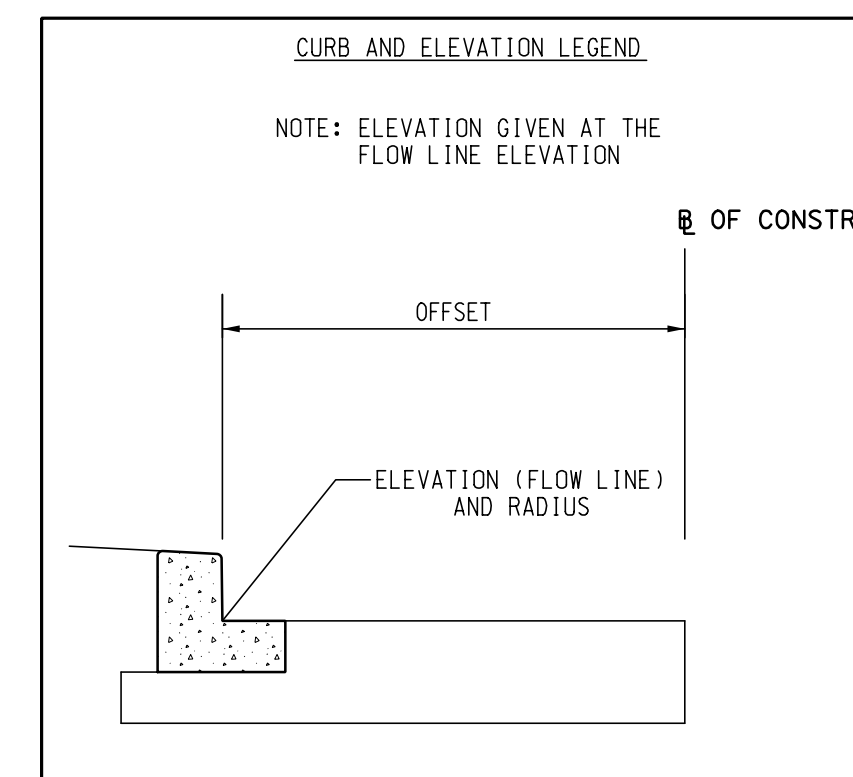
* Location where flowline of depressed tree box gutter pan meets flowline of standard depressed curb. Elevation must be greater than grate elevation of I-4.

10 SEE REVISED CURB AND ELEVATION TABLE THIS SHEET.

13 NOTE: TABLES ON THIS SHEET DO NOT REFLECT AS-BUILT CONDITIONS

10 REVISED CURB AND ELEVATIONS TABLE

CURB AND ELEVATIONS					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
Pt. 17	0+81.41	-106.69	583454.3517	1369156.9218	182.92
Pt. 18	0+78.78	-106.89	583456.1744	1369155.0269	182.95
Pt. 19	0+77.43	-108.61	583458.3595	1369155.0741	182.98
Pt. 20	0+75.28	-115.66	583465.1649	1369157.9070	183.35
Pt. 21	0+73.13	-122.71	583471.9702	1369160.7400	183.75
Pt. 22	0+30.02	-109.82	583489.4887	1369119.2893	183.37
Pt. 23	0+32.10	-102.99	583482.8999	1369116.5465	182.72
Pt. 24	0+34.18	-96.17	583476.3112	1369113.8037	182.46
Pt. 25	0+33.74	-93.53	583474.5595	1369111.7845	182.40
Pt. 26	0+31.37	-92.29	583475.1140	1369109.1695	182.40
Pt. 27	0+22.99	-92.13	583480.3193	1369102.6085	182.43
Pt. 28	0+14.62	-91.96	583485.5247	1369096.0476	182.58
Pt. 29	0+16.09	-29.48	583436.4110	1369057.3933	181.02
Pt. 30	0+23.55	-29.63	583431.7716	1369063.2410	180.55
Pt. 31	0+31.02	-29.77	583427.1321	1369069.0886	180.15
Pt. 32	0+32.82	-29.21	583425.5495	1369070.1242	179.99
Pt. 33	0+34.07	-26.76	583422.8593	1369069.5270	179.93
Pt. 34	0+34.04	-19.41	583417.2163	1369064.8160	179.77
Pt. 35	0+34.00	-12.06	583411.5733	1369060.1050	179.75



BRICK DRIVEWAY ELEVATIONS					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
Pt. 100	1+26.64	58.2	583298.4014	1369086.7899	178.75
Pt. 101	1+27.62	45.2	583307.8358	1369095.8564	178.87
Pt. 102	1+29.25	31.6	583317.2399	1369105.7393	179.00
Pt. 103	1+26.75	18.7	583328.8196	1369112.0522	179.00
Pt. 104	1+18.62	40.9	583316.8192	1369091.6063	178.70
Pt. 105	1+10.07	23.6	583335.6567	1369096.0731	178.70
Pt. 106	1+05.85	33.4	583330.7498	1369086.5498	178.50
Pt. 107	0+90.45	21.4	583349.8670	1369082.3550	178.38
Pt. 108	1+23.93	80.2	583283.1410	1369070.6823	178.13

CURB AND ELEVATIONS					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
Pt. 1	00+17.09	13.19	583402.8778	1369030.9929	183.00
Pt. 2	00+37.09	13.29	583390.0602	1369046.3456	181.38
Pt. 3	00+57.09	13.40	583377.2425	1369061.6984	179.66
Pt. 4	00+77.08	13.67	583364.3021	1369076.9475	178.71
Pt. 5*	00+96.10	14.02	583349.0518	1369094.7346	178.64
Pt. 6	01+11.35	14.31	583341.9895	1369102.9584	178.63
Pt. 7	01+22.19	9.96	583338.4369	1369114.0901	178.82
Pt. 8	01+26.63	-0.85	583343.9489	1369124.3932	178.92

CURB AND ELEVATIONS					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
Pt. 9	01+26.52	-10.85	583351.7279	1369130.6770	178.99
Pt. 10	01+26.41	-20.85	583359.5070	1369136.9609	179.21
Pt. 11	01+26.28	-32.88	583368.8668	1369144.5216	179.48
Pt. 12	01+18.96	-51.49	583387.8797	1369150.7272	179.96
Pt. 13	01+07.97	-79.41	583416.3991	1369160.0355	181.37
Pt. 14	01+00.65	-98.02	583435.4120	1369166.2411	182.24
Pt. 15	0+95.10	-112.13	583449.8286	1369170.9449	182.75
Pt. 16	0+88.25	-109.41	583452.0876	1369163.9334	182.83

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature]
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

DATE

McCORMICK TAYLOR

509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444



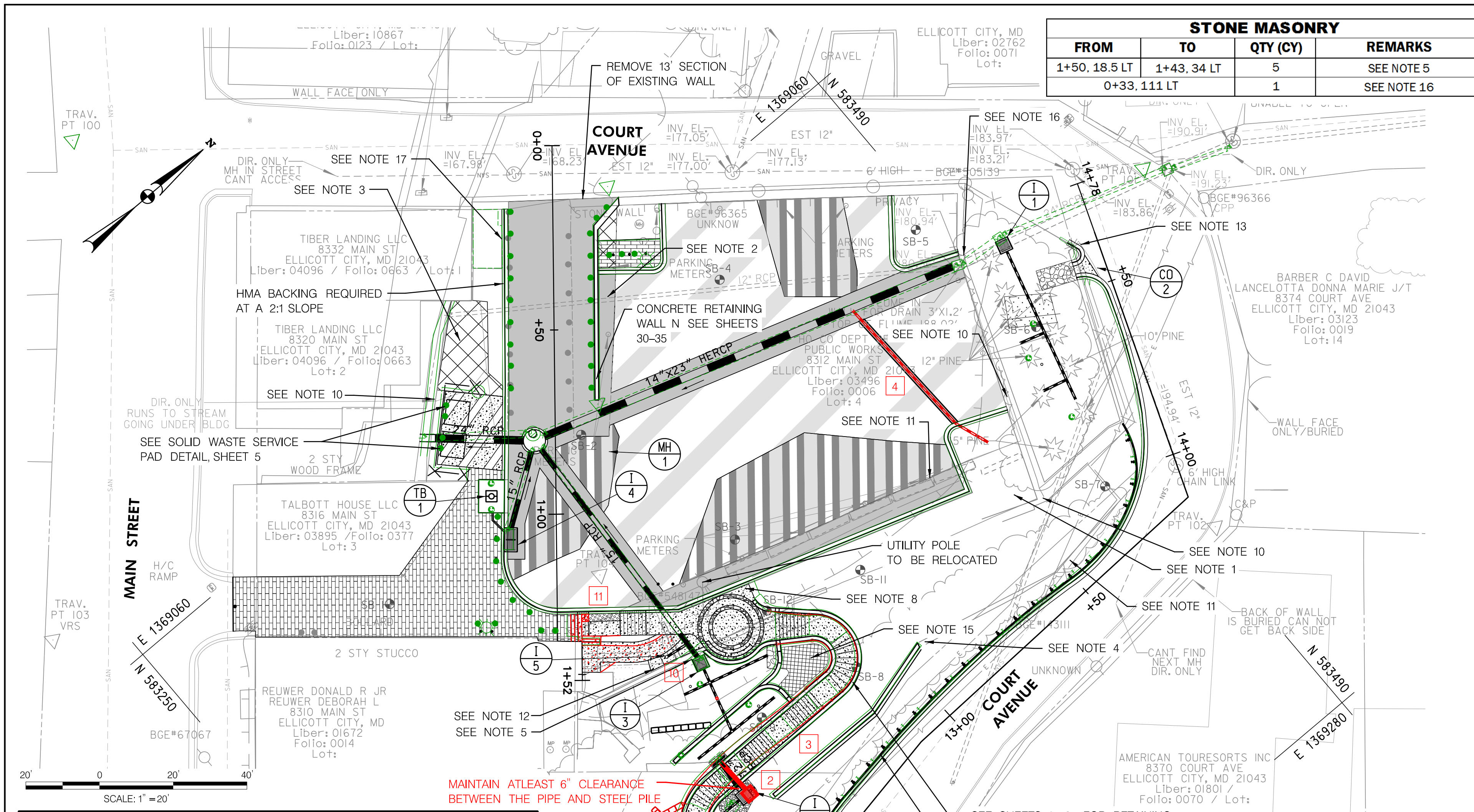
DES: AM	ADM	13	AS-BUILT SURVEY	09/10/15
	DPK	11	REVISED RAMP DESIGN TO INCLUDE STEPS	04/22/15
DRN: MR	ADM	10	REVISED CURB /ELEVATIONS AND GRADING	04/14/15
	ADM	5	REVISED WALL A AND GRADING	01/26/15
CHK: CB	BSW	3	REVISED ALIGNMENT	12/15/14
	ADM	1	GRADING AND UNDERDRAIN REVISION	11/13/14
DATE: 06/18/14	BY	NO.	REVISION	DATE

ELICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

CURB AND ELEVATION PLAN

SCALE
1" = 20'

SHEET
3 OF 44



STONE MASONRY			
FROM	TO	QTY (CY)	REMARKS
1+50.18.5 LT	1+43.34 LT	5	SEE NOTE 5
0+33.111 LT		1	SEE NOTE 16

REMOVE EXISTING BOLLARD		
STATION	EA	REMARKS
00+18.12 RT	1	
00+25.12 RT	1	
00+25.4 LT	1	
00+32.4 LT	1	
00+33.12 RT	1	
00+40.4 LT	1	
00+41.12 RT	1	
00+48.4 LT	1	
00+49.12 RT	1	
00+56.4 LT	1	
00+57.12 RT	1	
00+64.4 LT	1	
00+65.12 RT	1	
00+72.12 RT	1	
00+72.4 LT	1	

HMA SUPERPAVE FINAL SURFACE 9.5MM, PG 64-22, LEVEL 1		
STATION	TONS	REMARKS
00+14. LT TO 01+26. LT	116	117 SEE SHEET 6

HMA SUPERPAVE BASE 9.5MM, PG 64-22, LEVEL 1		
STATION	TONS	REMARKS
00+14. LT TO 01+25. LT	23	24 SEE SHEET 6

HMA SUPERPAVE BASE 19.0MM, PG 64-22, LEVEL 1		
STATION	TONS	REMARKS
00+14. LT TO 01+25. LT	68	70 SEE SHEET 6

6 INCH GRADED AGGREGATE BASE COURSE		
STATION	SY	REMARKS
00+14. LT TO 01+25. LT	393	400 SEE SHEET 6

GRINDING HOT MIX ASPHALT PAVEMENT 0 INCH TO 2 INCH		
STATION	SY	REMARKS
0+14. LT TO 1+25. LT	940	1.5"

HOT MIX ASPHALT SUPERPAVE 4.75MM FOR WEDGE/LEVEL, PG64-22, LEVEL-1		
STATION	TONS	REMARKS
00+15.79 LT TO 00+42.82 LT	1	
0+73.15 LT TO 1+18.12 RT	7	
00+79.68. LT TO 01+19.33 LT	9	

7 INCH COMBINATION CURB AND GUTTER		
STATION	LF	REMARKS
0+15.92. LT TO 0+30.110 LT	37	SEE SHEET 5
0+16.29 LT TO 0+34.12 LT	34	SEE SHEET 5
00+17.13 RT TO 00+69.14 RT	52	SEE SHEET 5
00+69.14 RT TO 1+27.5 LT	72	SEE SHEET 5**
0+73.123 LT TO 1+26.24 LT	129	SEE SHEET 5
12+08.5 LT TO 14+54.9 LT	237	SEE SHEET 5
14+58.8 LT TO 14+65.8 LT	8	SEE SHEET 5

5 INCH CONCRETE SIDEWALK		
STATION	SF	REMARKS
01+19. LT TO 01+43. LT	228	
01+33. LT TO 01+49. LT	155	

DETECTABLE WARNING SURFACES CLAY BRICK PAVERS		
STATION	SF	REMARKS
01+27.13 LT	17	SEE SPECS

BRICK SIDEWALK		
STATION	SF	REMARKS
00+26. LT TO 00+34 LT	129	SEE SPECS
00+87. RT TO 01+35 LT	1859	SEE SPECS

PIPE SCHEDULE				
FROM	TO	QTY (LF)	SIZE (IN)	REMARKS
I-2	SWM-2	10	12	CLASS IV
I-3	MH-1	71	15	CLASS IV
I-4	MH	22	15	CLASS IV
EX+2	MH-1	121	23X14	CLASS IV
MH-1	OUTLET	28	24	CLASS IV

LEGEND	
	PROPERTY LINE
	EXISTING SANITARY SEWER
	LIMIT OF DISTURBANCE
	100 YEAR FLOODPLAIN
	SOIL BORING
	IMBRICATED RIP RAP WALL
	PROPOSED FENCE
	PROPOSED STORM DRAIN
	PROPOSED UNDERDRAIN
	PROPOSED GUARDRAIL
	EXISTING SANITARY SEWER MANHOLE
	NATURAL STONE SURFACE
	STREAM COBBLE MIX
	GRIND AND RESURFACE
	FULL DEPTH
	WEDGE AND LEVEL
	CONCRETE PAD
	12" STONE BAND FLUSH INLAY IN MORTAR
	DETECTABLE WARNING SURFACE
	BRICK PAVERS
	CONCRETE
	CLASS 1 RIPRAP
	PAVEMENT REMOVAL

NOTE: FOR GENERAL CONSTRUCTION NOTES 1-17 AS SHOWN ABOVE SEE SHEET 6

FLOWABLE FILL	
EXISTING 12" PIPE - 4 CY (SEE NOTE 2)	
BULKHEAD OPEN ENDS AS NEEDED.	
PER SHA STD. SPECIFICATION MD 314.03.	

DRAINAGE STRUCTURE SCHEDULE				
NO.	STATION	TC/TG	INV. OUT	REMARKS
I-1	0+29.122.5 LT	188.25	188.35	STD. TYPE 'S' SINGLE GRATE INLET (MD379.01)
I-2	12+48.28.0 LT	204.50	204.05	STD. TYPE 'S' SINGLE GRATE INLET (MD379.01)
I-3	1+48.32.0 LT	183.00	183.28	STD. TYPE 'S' SINGLE GRATE INLET (MD379.01)
I-4	1+07.12.3 RT	178.60	175.40	DOUBLE TYPE 'S' INLET - (D-4.23)
I-5	1+39.30 LT	178.75	178.02	NYLOPLAST 10" INLINE DRAIN - SEE DETAIL SHEET 14
MH-1	00+83.11.3 LT	178.75	174.39	36" INCH DIAMETER PRECAST MANHOLE (MD384.05)
CO-1	12+38.5.7 LT	214.00	213.00	MODIFIED 10" CURB OPENING - SEE DETAIL SHEET 14
CO-2	14+56.5.3 LT		191.00	CURB OPENING - SEE DETAIL SHEET 13
TB-1	0+94.96.16.5 LT	178.82	178.88	8'X6' FILTERRA TREE BOX

12+49.10, 27.2 LT
I-5, 10
TC/TG ELEV. = 179.84

COMMON BORROW	
QTY (CY)	REMARKS
50	FOR GRADED AREAS

BROWN POLYESTER COATED TRAFFIC BARRIER W BEAM 8 FOOT POSTS		
STATION	LF	REMARKS
12+31.6 LT TO 14+12.10 LT	168	*

*DOUBLE STIFFENED 3' 1 1/2" POST SPACING FOR THE ENTIRE RUN

TYPE K END TREATMENT ANY OPTION		
STATION	EA	REMARKS
12+31.6 LT	1	*
14+12.10 LT	1	*

*BROWN POLYESTER COATED

METAL BOLLARD		
STATION	EA	REMARKS
00+70.30 RT	1	BACK OF PAD
00+73.30 RT	1	BACK OF PAD
00+79.31 RT	1	BACK OF PAD
00+82.31 RT	1	BACK OF PAD

DUCTILE CAST IRON BOLLARDS		
STATION	EA	REMARKS
00+17.15 LT	1	FIXED
00+18.12 RT	1	FIXED
00+20.12 LT	1	FIXED
00+24.11 LT	1	FIXED
00+24.12 RT	1	FIXED
00+30.11 LT	1	FIXED
00+30.12 RT	1	FIXED
00+30.16 LT	1	BICYCLE
00+30.21 LT	1	BICYCLE
00+30.25 LT	1	BICYCLE
00+36.11 LT	1	FIXED
00+36.12 RT	1	FIXED
00+42.11 LT	1	FIXED
00+42.12 RT	1	FIXED
00+48.11 LT	1	FIXED
00+48.12 RT	1	FIXED
00+54.11 LT	1	FIXED
00+54.12 RT	1	FIXED
00+60.11 LT	1	FIXED
00+60.12 RT	1	FIXED
00+65.12 RT	1	FIXED
00+66.10 LT	1	FIXED
1+00.16 RT	1	REMOVABLE
1+06.16 RT	1	REMOVABLE
1+12.16 RT	1	REMOVABLE
1+18.15 RT	1	REMOVABLE
1+19.27 LT	1	FIXED
1+19.31 LT	1	FIXED
1+23.12 RT	1	REMOVABLE
1+24.87 RT	1	REMOVABLE
1+27.7 RT	1	BICYCLE
1+32.18 RT	1	FIXED
1+32.21 RT	1	FIXED

SEE LANDSCAPE DETAIL PLANS FOR DETAILS

SOLID WASTE SERVICE PAD		
STATION	CY	REMARKS
00+66. RT TO 00+88. RT	9	SEE SHEET 5

STONE INLAIN IN CONCRETE		
STATION	SF	REMARKS
1+22. LT TO 1+46. LT	996	SEE SHEET 41

WOODEN PANEL FENCE		
STATION	LF	REMARKS
00+65.22 RT TO 00+89.25 RT	40	SEE SHEET 40

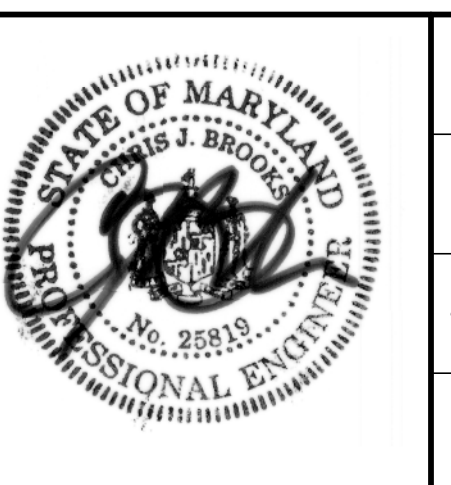
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark DeLuz
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

g/h/ly
DATE

McCORMICK TAYLOR
509 South Exeter Street
Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND
Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444



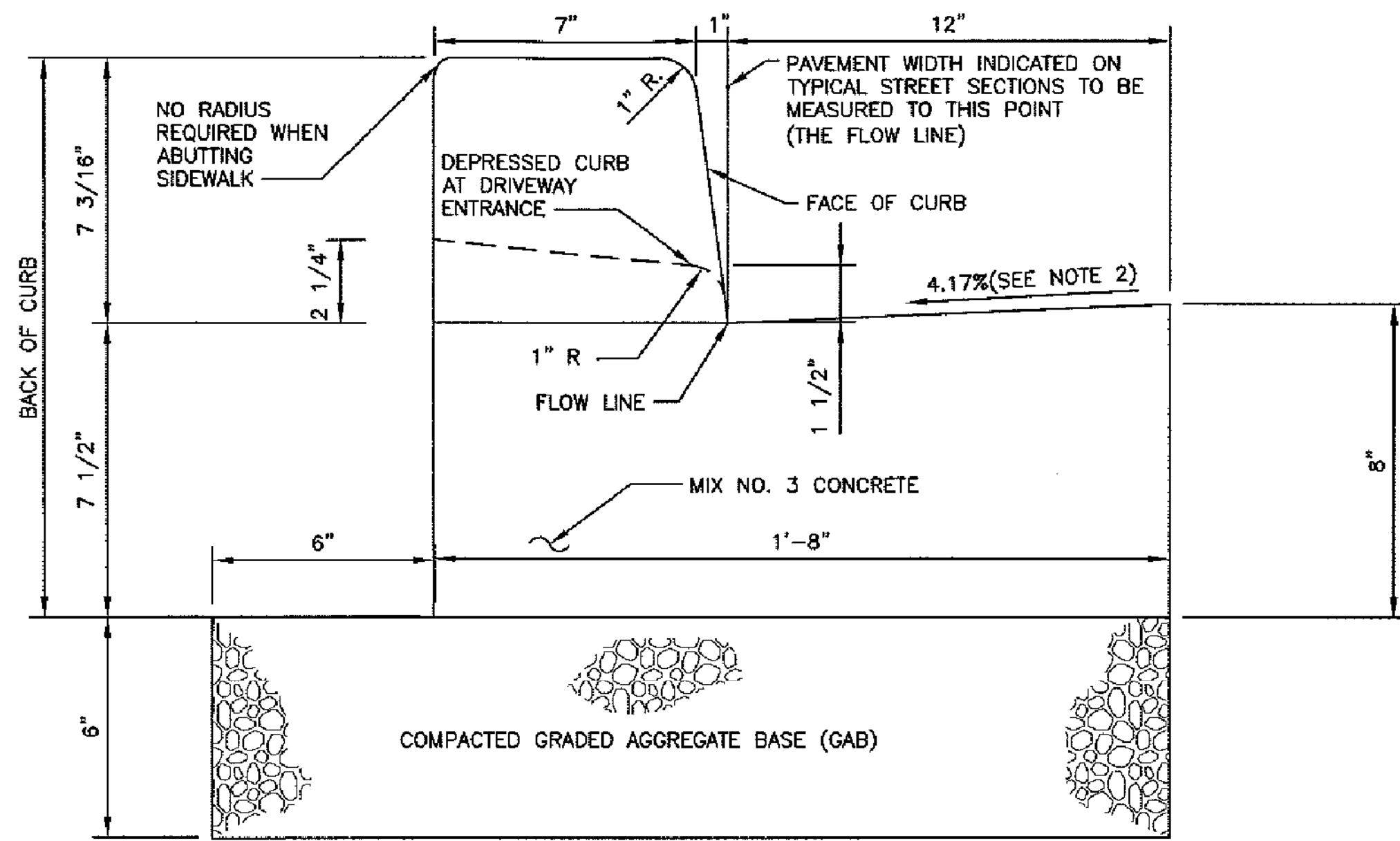
DES:	ADM	NO.	REVISION	DATE
AM	ADM	10	REVISED RAMP DESIGN TO INCLUDE STEPS	04/22/15
MR	ADM	5	REVISED CURB /ELEVATIONS AND GRADING	04/14/15
MR	ADM	4	REVISED WALL A AND GRADING	01/26/15
CB	ADM	4	INSTALL UNDERDRAIN FOR HH#7	01/16/15
CB	BSW	3	REVISED ALIGNMENT	12/15/14
CB	ADM	2	REVISED LOCATION OF INLET I-2	12/08/14
06/18/14	ADM	2	GRADING AND UNDERDRAIN REVISION	11/13/14
	BY	NO.	REVISION	DATE

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

SITE PLAN

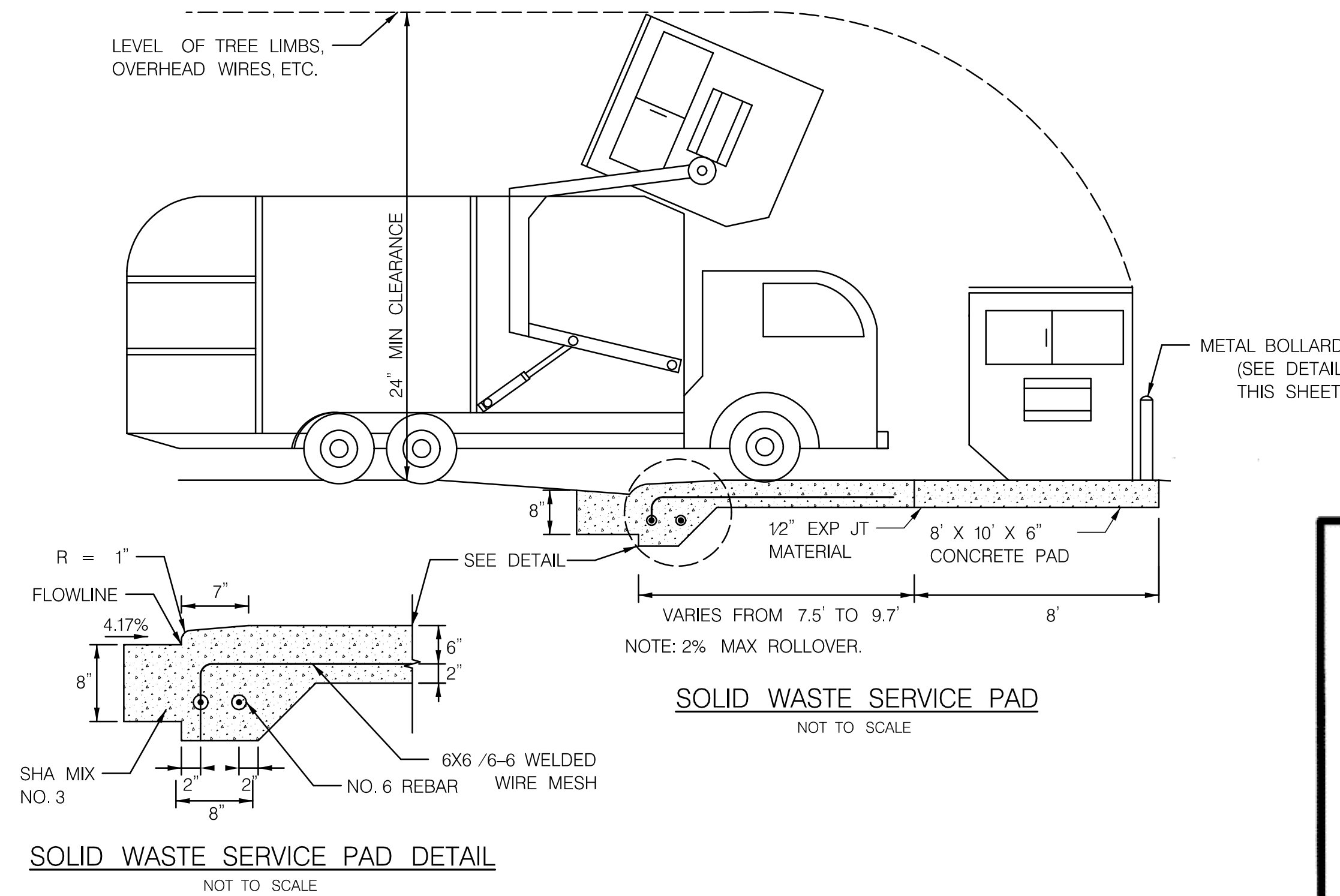
SCALE
1" = 20'

SHEET
4 OF 44



7" COMBINATION CURB AND GUTTER

NOTE: MODIFIED SECTION TO MATCH DEPRESSED CURB (2 1/4" H) AS SHOWN ABOVE.

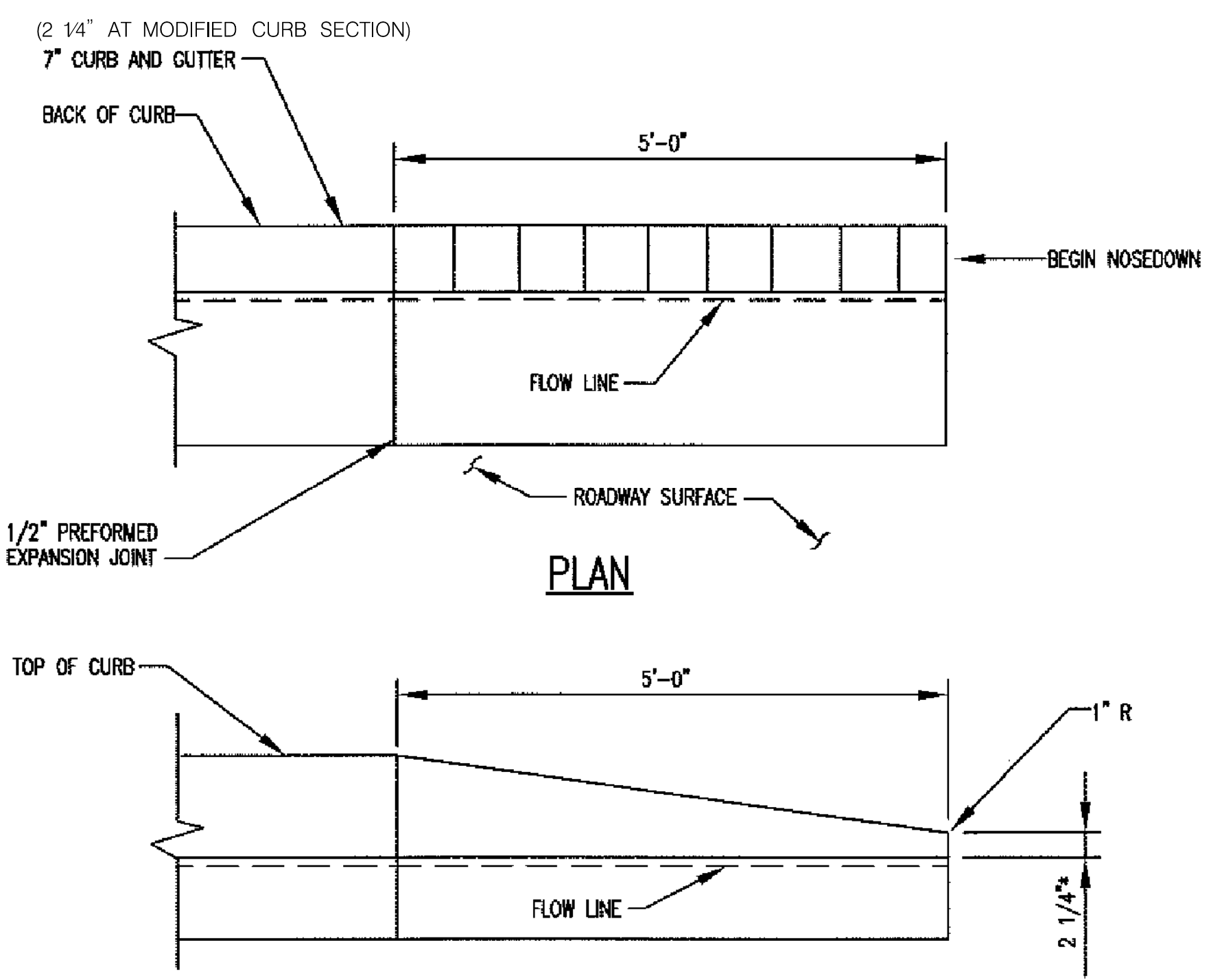


SOLID WASTE SERVICE PAD

NOT TO SCALE

SOLID WASTE SERVICE PAD DETAIL

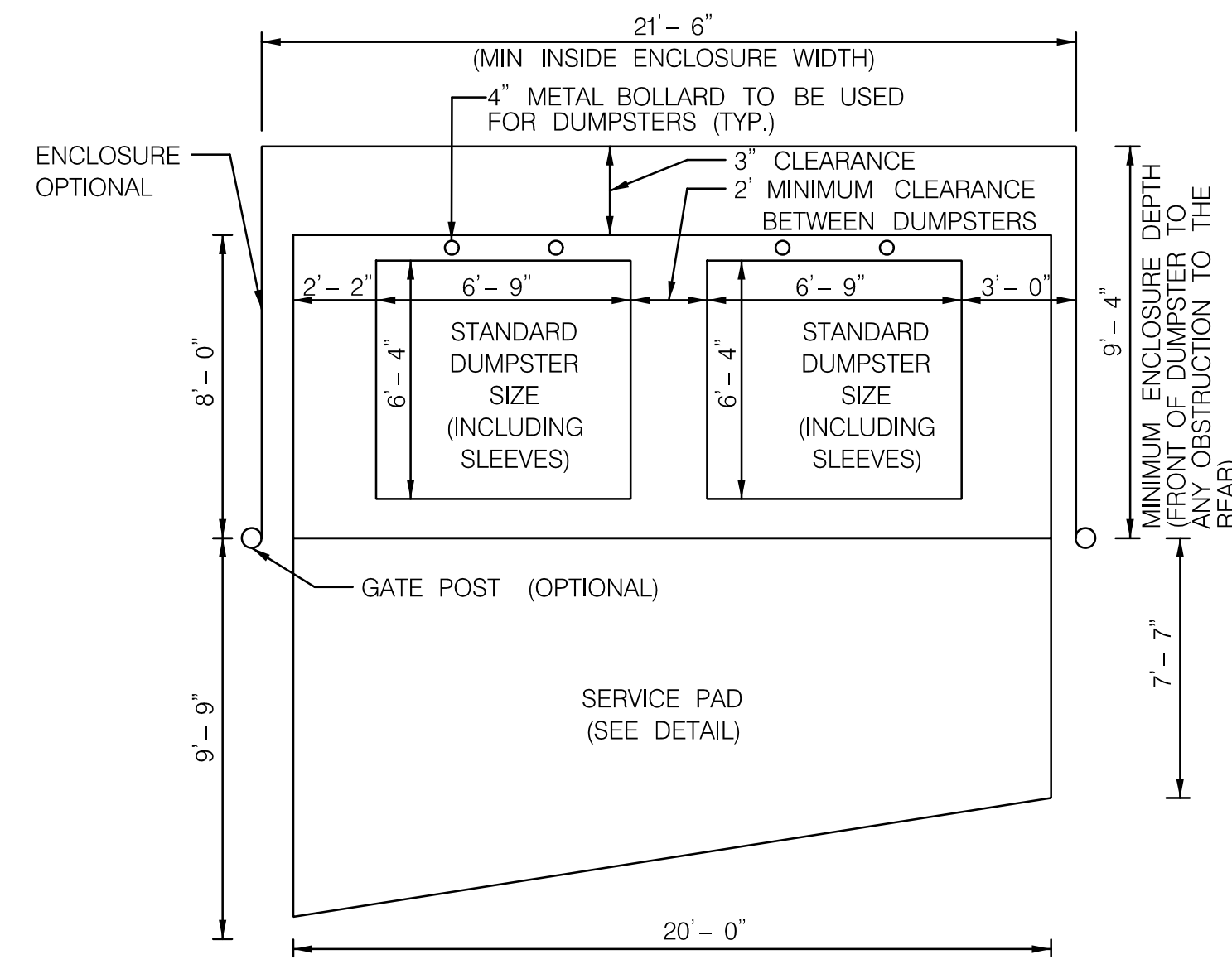
NOT TO SCALE



PLAN

ELEVATION

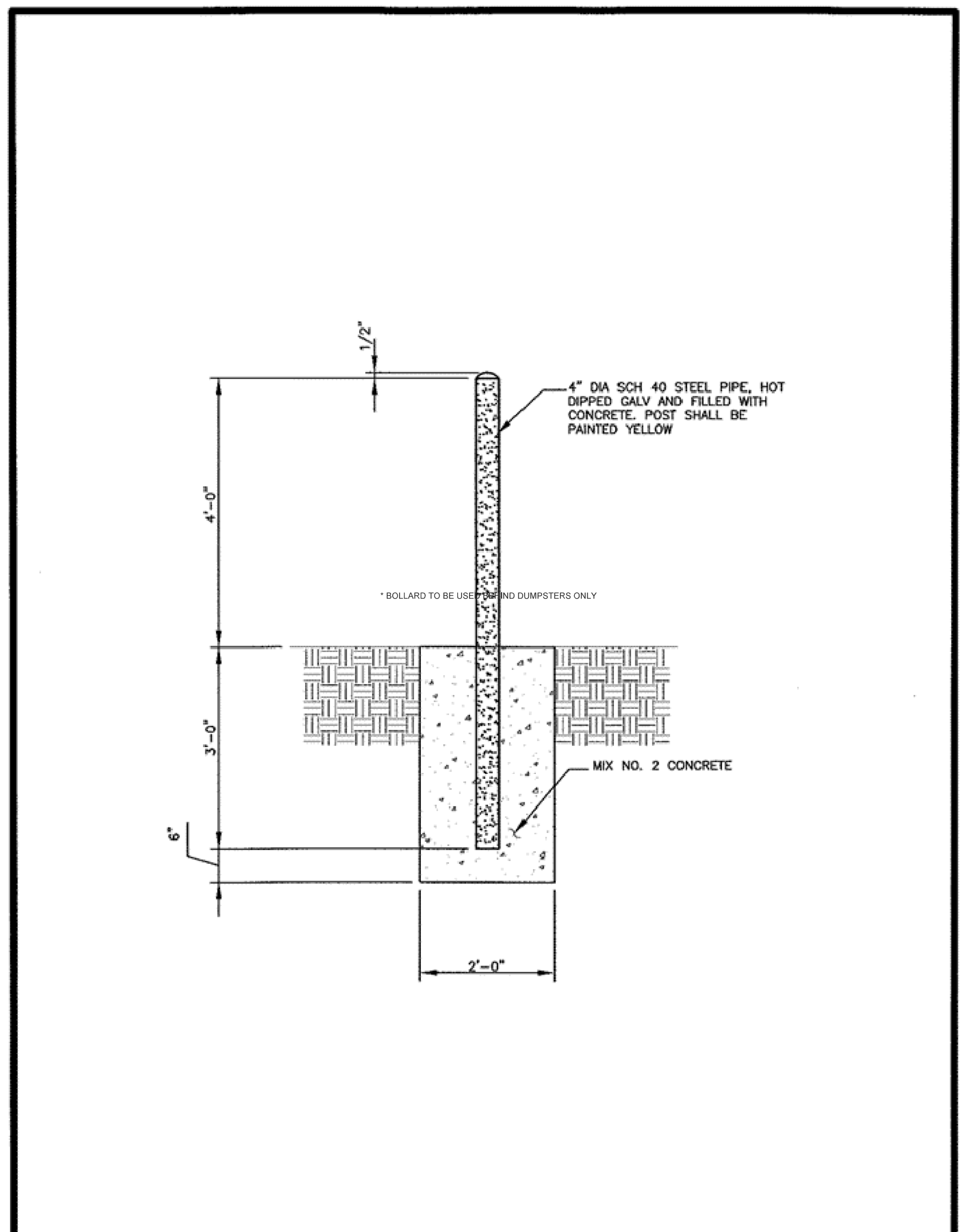
NOSE DOWN DETAIL



- NOTES:
1. ENCLOSURE GATES ARE NOT RECOMMENDED.
 2. IF ENCLOSURE GATES ARE INSTALLED, MINIMUM OPENING OF 21'-6" MUST BE PROVIDED WHEN GATES ARE OPENED.
 3. ONLY 2 GATE SYSTEMS WITH NO CENTER POSTS ARE ALLOWED.

SOLID WASTE DOUBLE CONTAINER ENCLOSURE 2 GATE SYSTEM

NOT TO SCALE



Revised	Howard County, Maryland Department of Public Works	Metal Bollard	Detail
Revised 5/1/2007	Approved: Chief, Bureau of Engineering		G-7.42

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark DeLuz
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

DATE

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MARYLAND

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Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
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DES: AM					
DRN: MR					
CHK: CB					
DATE: 06/18/14	BY	NO.	REVISION	DATE	

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

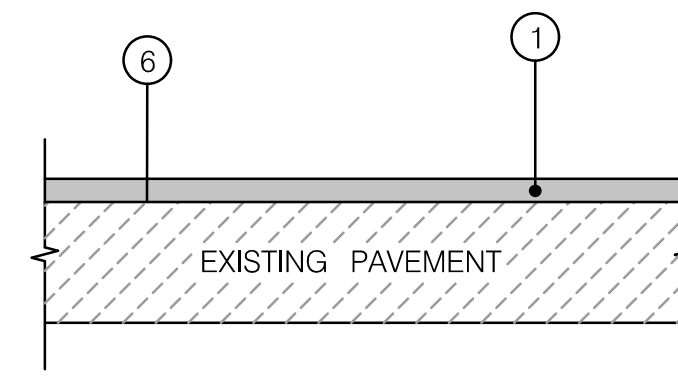
ROADWAY DETAIL SHEET

SCALE
AS SHOWN

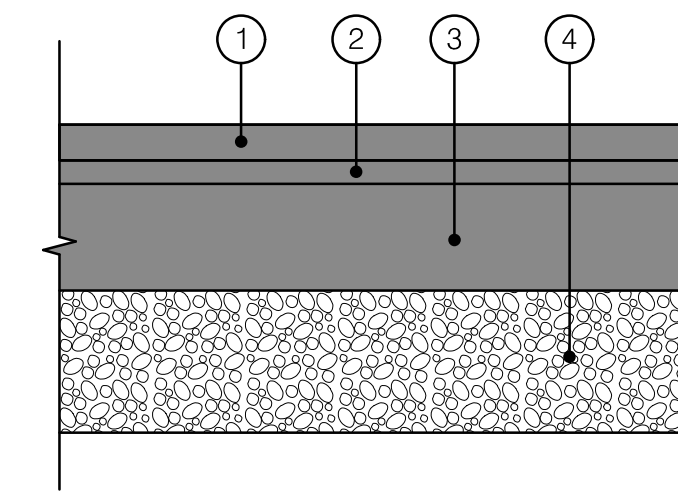
SHEET
5 OF 44

GENERAL CONSTRUCTION NOTES

- EXISTING STONE RUBBLE TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AS DIRECTED. STONE MAY ALSO BE UTILIZED FOR EXISTING WALL RECONSTRUCTION WHERE CALLED FOR BELOW.
- REMOVE SECTIONS OF EXISTING 12" RCP WHERE INCIDENTAL TO EXCAVATION FOR PROPOSED PIPE. BULKHEAD ENDS OF REMAINING 12" RCP WITH CONCRETE MIX NO. 2 AND FILL WITH FLOWABLE BACKFILL PER SHA STD. MD 314.03.
- REMOVE EXISTING ASPHALT BETWEEN STREAM WALL AND EDGE OF HMA BACKING ALONG SOUTH SIDE OF RAMP. SEE SHEET 44 FOR LANDSCAPING PLAN.
- CONTRACTOR TO VERIFY ELEVATION OF EXISTING WALL. RECONSTRUCT EXISTING WALL AT JUNCTION TO MATCH TOP ELEVATION OF EXISTING WALL WITH TOP ELEVATION OF PROPOSED WALL.
- REMOVE LENGTH OF WALL AS NECESSARY TO EXCAVATE STORM DRAIN TRENCH. SALVAGE ALL NATURAL ROCK MATERIAL. REMOVE AND DISPOSE OF THE EXISTING CINDERBLOCK WALL. RECONSTRUCT EXISTING WALL USING MORTAR AND SALVAGED NATURAL STONE. TOP OF RECONSTRUCTED WALL TO MATCH ELEVATION OF PROPOSED WALL (384.00). CONSTRUCT RECTANGULAR NOTCH IN WALL APPROXIMATELY 0.5' DEEP BY 4' WIDE AS SHOWN ON THE PLANS. SEE SPECIFICATION SECTION 400.
- REMOVAL OF EXISTING PARKING SPACE METERS TO BE INCIDENTAL TO ANY WORK DONE WITHIN THE PARKING LOT.
- REMOVAL OF EXISTING BOLLARDS ALONG THE INGRESS/EGRESS RAMP TO BE INCIDENTAL TO FULL DEPTH RECONSTRUCTION OF THE RAMP.
- RELOCATE EXISTING PARKING METER KIOSK AS SHOWN ON THE LIGHTING PLAN.
- INSTALL WOOD PANEL FENCE BEHIND DUMPSTER AS SHOWN ON THE PLANS.
- CONSTRUCTION OF PIPE OUTFALL AND OTHER WORK IN THIS AREA SHALL COORDINATE WITH THE RECONSTRUCTION OF THE STREAM WALL, ADDRESSED IN A SEPARATE PLANSET BY OTHERS.
- CONTRACTOR TO REMOVE AND DISPOSE OF EXISTING CONCRETE BARRIER AND EXISTING FENCE MATERIAL.
- REMOVE EXISTING CONCRETE. INSTALL CONCRETE PAD AS SHOWN ON PLANS. GRADE SURFACE OF CONCRETE PAD TO PROVIDE POSITIVE DRAINAGE TO PROPOSED DRAIN BASIN (I-5).
- REMOVE EXISTING WALL AS NECESSARY TO INSTALL CURB OPENING. SEE CURB OPENING DETAIL
- STANDARD TYPE 'S' INLETS TO USE STEEL FRAME AND GRATE ALTERNATIVE (SEE DETAILS FOR MD-379.06 AND MD-379.07 THIS SHEET). DOUBLE TYPE 'S' INLET (I-4) TO USE TYPE 'S' VANE GRATE (SEE DETAIL D-4.92 SHEET 12).
- EXCAVATE EXISTING GROUND TO NATURAL STONE SURFACE. SURFACE SHOULD HAVE POSITIVE DRAINAGE TOWARDS SWM-3. IF EXISTING BEDROCK IS NOT ENCOUNTERED AT THE PROPOSED ELEVATION, EXCAVATE AN ADDITIONAL 19 INCHES, LINE WITH TYPE SE GEOTEXTILE AND BACKFILL WITH CLASS I RIPRAP OR SALVAGED STONE AS DIRECTED BY THE ENGINEER. RIPRAP BACKFILL SHOULD HAVE A SURFACE ELEVATION THAT MATCHES PROPOSED ELEVATION AND MAINTAINS POSITIVE DRAINAGE TOWARDS SWM-3. BACKFILL ABOVE THE CONCRETE FOOTERS TO BE PAID FOR UNDER CONCRETE WALL CONSTRUCTION.
- RECONSTRUCT EXISTING WEIR TO INCREASE WEIR CREST ELEVATION FROM 188.00 TO A PROPOSED WEIR CREST ELEVATION OF 188.50. SEE SPECIFICATION SECTION 400.
- DAMAGES INCURRED TO THE EXISTING PRIVATELY OWNED DECK AS A RESULT OF RAMP RECONSTRUCTION ARE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR RECONSTRUCT TO THE SATISFACTION OF THE ENGINEER.



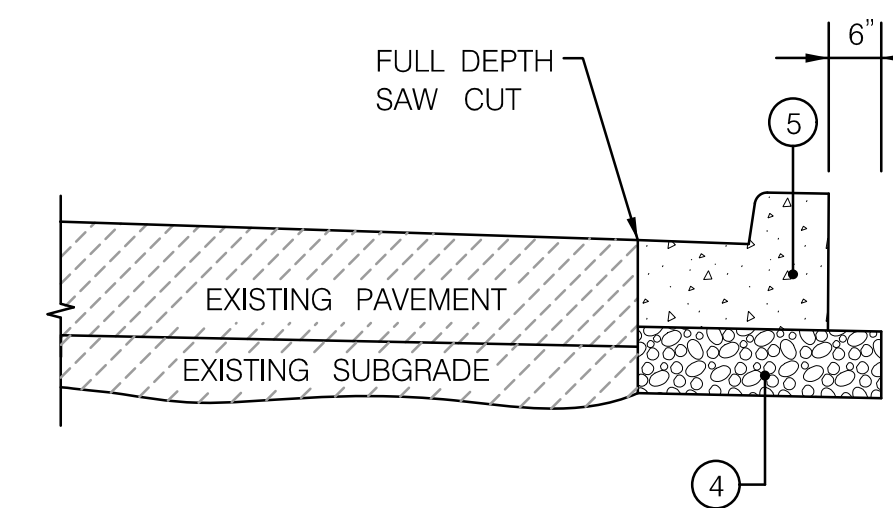
GRINDING AND RESURFACING
NOT TO SCALE



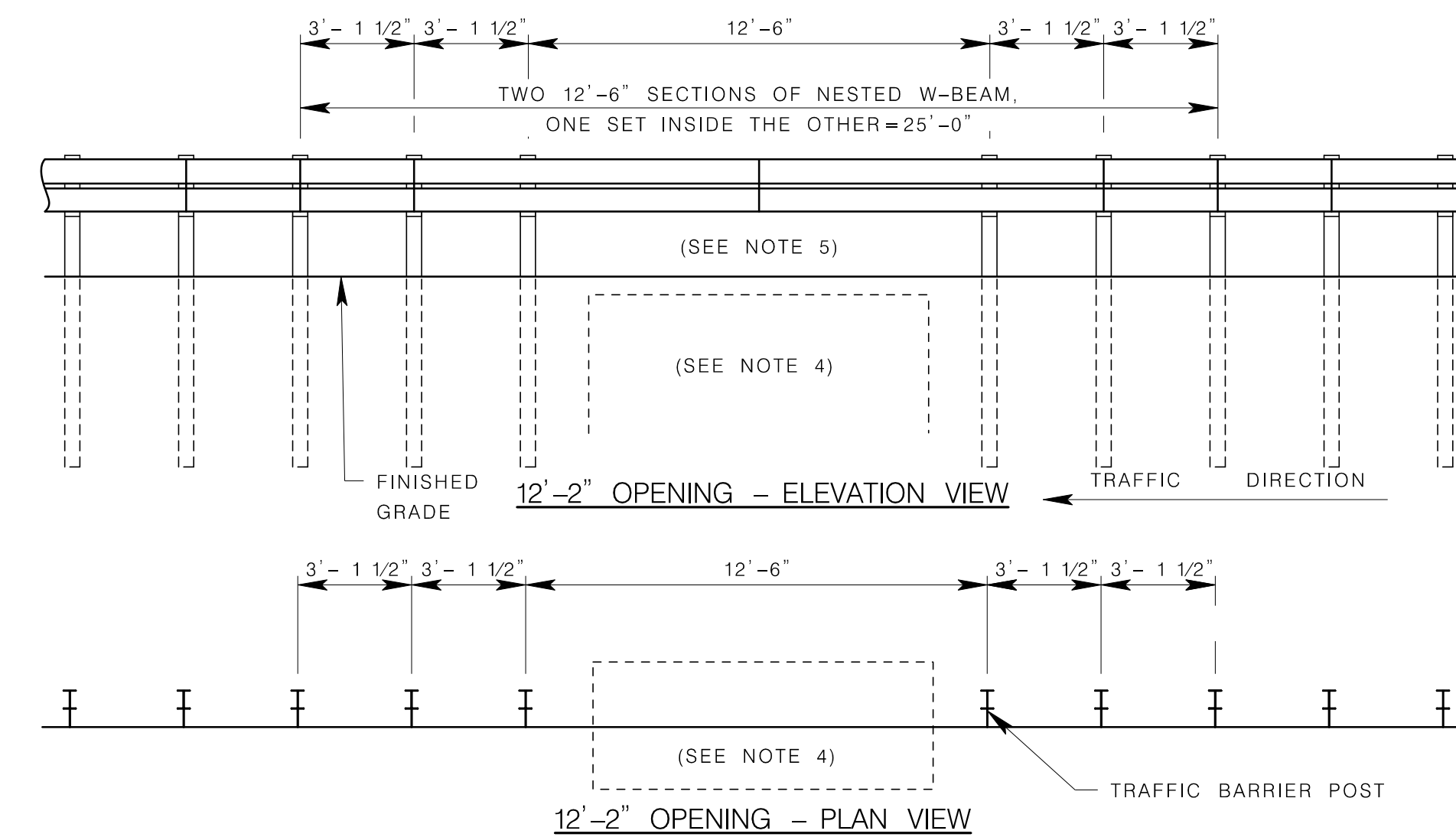
FULL DEPTH PAVING DETAIL
NOT TO SCALE

PAVEMENT LEGEND

- 1.5" HOT MIX ASPHALT SUPERPAVE 9.5MM FOR FINAL SURFACE, PG 64-22, LEVEL 1
- 1.5" HOT MIX ASPHALT SUPERPAVE 9.5MM FOR INTERMEDIATE SURFACE, PG 64-22, LEVEL 1
- 4.0" HOT MIX ASPHALT SUPERPAVE 19.0MM FOR BASE, PG 64-22, LEVEL 1
- 6.0" GRADED AGGREGATE BASE COURSE
- 7 INCH CONCRETE CURB AND GUTTER
- TOP OF EXISTING PAVEMENT SURFACE AFTER 1.5" CARBIDE GRINDING



COURT AVE. - NEW CURB & GUTTER PLACEMENT
NOT TO SCALE



NOTES

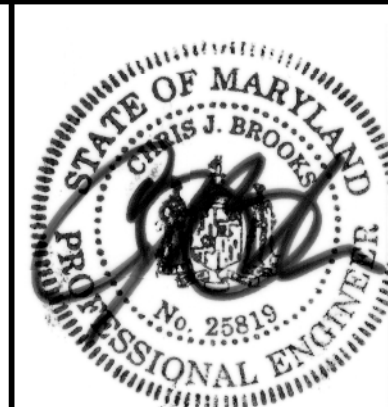
- ALL POSTS SHALL BE W6 X 9 AS SHOWN ON STANDARD MD 605.23.
- WOOD OFFSET BLOCKS SHALL BE AS SHOWN ON STANDARD MD 605.21.
- THE TRAFFIC BARRIER W-BEAM SECTIONS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC.
- MAY SPAN 5', 10' & 15' COG OR COS INLETS, LOW FILL BOX CULVERT OR OTHER OBJECT WHICH INTERFERS WITH NORMAL PLACEMENT OF POST.
- THE SPLICE ON BOTH RAILS MUST BE COINCIDENT.
- USE AT LOCATION OF CO-01, SHEET 4.

**MD 605.26 - TRAFFIC BARRIER W BEAM
POST PLACEMENT DETAILS
FOR SPANNING 12'-2" OPENINGS**
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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DES: AM					
DRN: MR					
CHK: CB					
DATE: 06/18/14	BY	NO.	REVISION	DATE	

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

ROADWAY DETAIL SHEET

SCALE
AS SHOWN
SHEET
6 OF 44

Mark D. L...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES
DATE

THE FOLLOWING TTCTA FROM THE SHA "BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES" PROVIDE GUIDANCE FOR TYPICAL MAINTENANCE OF TRAFFIC APPLICATIONS AS THEY RELATE TO CONSTRUCTION ALONG COURT AVENUE. MODIFICATION OF THESE TTCTA SHALL BE APPROVED BY THE ENGINEER.

- A. MD 104.02-02 - SHOULDER WORK
- B. MD 104.02-04 - LANE SHIFT RIGHT OR LEFT SIDE
- C. MD 104.02-10 - FLAGGING OPERATION
- D. MD 104.02-14 - INTERSECTION FLAGGING OPERATION
- E. MD 104.06-17 - PAVEMENT EDGE DROP-OFF GREATER THAN 2.5 INCHES BUT EQUAL TO OR LESS THAN 5 INCHES

MAINTENANCE OF TRAFFIC GENERAL NOTES

- ALL MAINTENANCE OF TRAFFIC ACTIVITIES SHALL ADHERE TO THE MARYLAND DEPARTMENT OF TRANSPORTATION'S STATE HIGHWAY ADMINISTRATION'S "BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES" AND HOWARD COUNTY'S DESIGN MANUAL VOLUME IV. ALL TEMPORARY SIGNING, PAVEMENT MARKINGS, CHANNELIZING DEVICES, AND OTHER ITEMS USED FOR MAINTENANCE OF TRAFFIC SHALL CONFORM TO THE LATEST MARYLAND STATE HIGHWAY ADMINISTRATION STANDARDS.
- UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER, TEMPORARY TRAFFIC CONTROL SIGNS SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF CONSTRUCTION. SIGNS SHOULD BE MOUNTED ON BREAKAWAY POSTS AND HAVE RETROREFLECTIVE SHEETING AS PER THE CONTRACT SPECIFICATIONS.
- LONGITUDINAL DISTANCES OF ALL ADVANCED WARNING SIGNS AND CHANNELIZING DEVICES MAY BE ADJUSTED DUE TO INTERSECTING STREETS, DRIVEWAYS, AND/OR FIELD CONDITIONS AS APPROVED BY THE ENGINEER. WHERE ADVANCE SIGNING CONFLICTS WITH TEMPORARY SIGNING FOR LANE CLOSURE, LANE SHIFT OR FLAGGING OPERATION, ADJUSTMENTS TO ADVANCE SIGNING SHALL BE MADE PER THE ENGINEER TO AVOID CONFUSING AND/OR CONFLICTING MESSAGES.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ACCESS POINTS LOCATED ADJACENT TO A WORK AREA BY PROVIDING A DIRECT CONNECTION TO AN OPEN TRAVEL LANE.
- ADDITIONAL LANE CLOSURES FOR PLACEMENT OF TRAFFIC CONTROL DEVICES, DELIVERY OF MATERIAL, ETC., MUST BE APPROVED BY AND SCHEDULED IN WRITING WITH THE ENGINEER AND SHALL BE IN ACCORDANCE WITH SHA'S BOOK OF STANDARDS.
- CHANNELIZING DEVICES SHALL BE USED TO DEFINE THE EDGE OF THE TRAVEL LANE AT LOCATIONS WHERE TRAFFIC IS REQUIRED TO BE SHIFTED OUT OF THE EXISTING TRAVEL LANES.
- CONFLICTING, INAPPROPRIATE, OR NOT APPLICABLE SIGNS (INCLUDING WORK ZONE SIGNS) SHALL BE REMOVED, COVERED, OR FOLDED TO PREVAILING CONDITIONS SO THAT THEY ARE NOT READABLE BY ONCOMING TRAFFIC. AT THE CONCLUSION OF WORK, SIGNS REMOVED, MODIFIED, OR DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE REINSTALLED OR REPLACED AT THE CONTRACTORS EXPENSE, AS INDICATED OR DIRECTED BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
- PEDESTRIAN ACCESS ALONG EXISTING SIDEWALKS AND CROSSWALKS SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH APPROVED SHA STANDARDS.
- THESE NOTES AND SPECIFICATIONS ARE THE MINIMUM REQUIREMENTS FOR THE CONDITIONS SET FORTH. THE ENGINEER MAY REQUIRE ADDITIONAL TRAFFIC CONTROL DEVICES AND MAY ALTER THE SEQUENCE OF CONSTRUCTION OR MEANS OF TRAFFIC CONTROL AS NECESSARY.

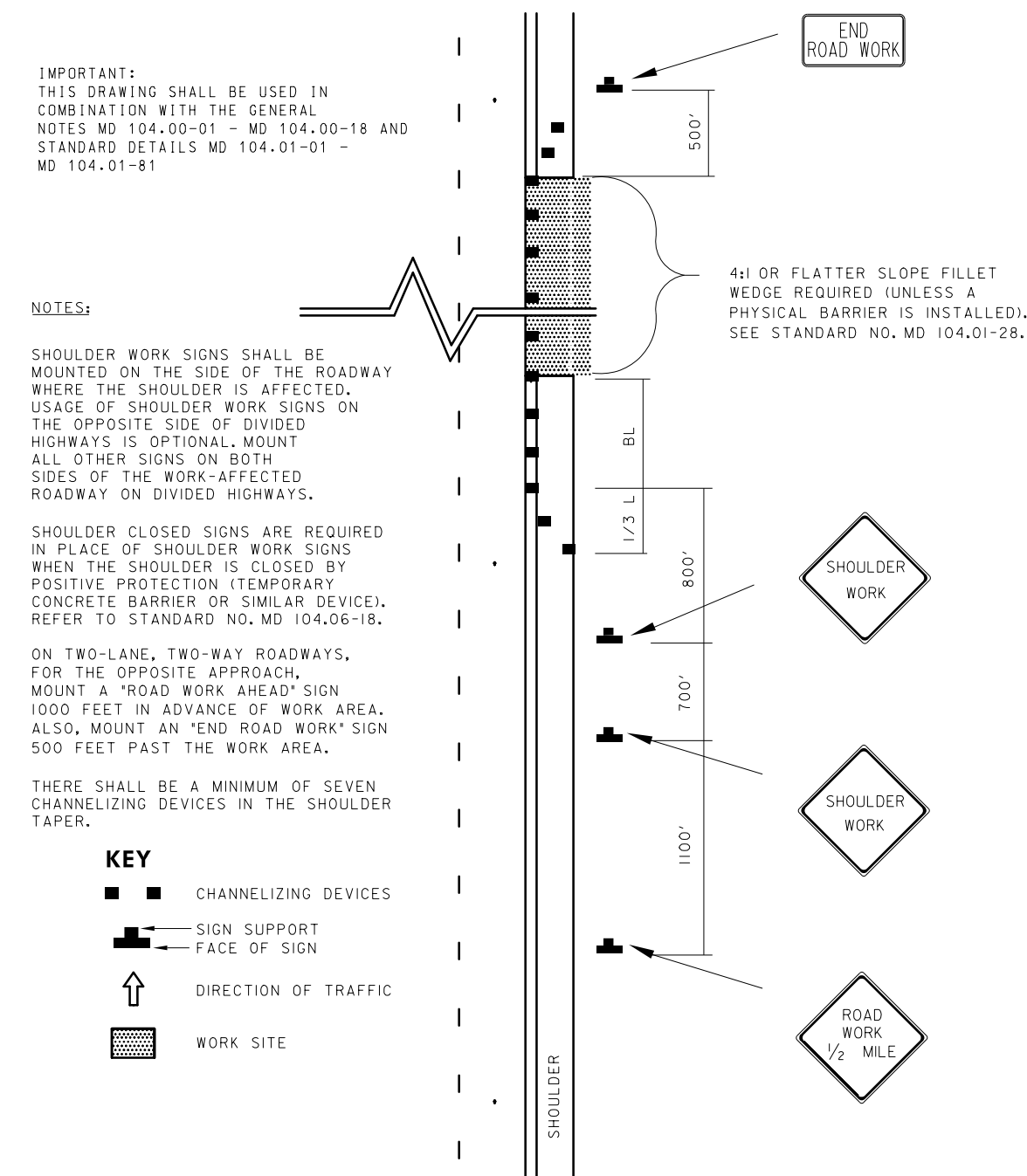
ROADWAY CONSTRUCTION NOTES

- CONSTRUCTION OF THE ROADWAY CONSTRUCTION SHALL PROGRESS FROM NORTH TO SOUTH FOR EAST SIDE IMPROVEMENTS AND FROM SOUTH TO NORTH FOR WEST SIDE IMPROVEMENTS.
- A WORK AREA FOR ROADWAY CONSTRUCTION SHALL BE ESTABLISHED ON COURT AVENUE AS PER THE APPROPRIATE TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION (TTCTA). ONE 10-FOOT MINIMUM TRAVEL LANE IN EACH DIRECTION SHALL BE MAINTAINED THROUGHOUT THE WORK AREA.
- IN LOCATIONS WHERE THE MINIMUM LANE WIDTH OF 10 FEET CANNOT BE MAINTAINED FOR BOTH TRAVEL LANES, A FLAGGING OPERATION SHALL BE UTILIZED IN ADDITION TO THE EXISTING WORK AREA SETUP. FLAGGING OPERATIONS SHALL BE IN ACCORDANCE WITH MD 104.02-10 OR MD 104.02-14.
- UNLESS OTHERWISE INDICATED IN THE PLANS, CONSTRUCTION OF ANY PROPOSED DRAINAGE, TEMPORARY DRAINAGE, OR INSTALLATION OF EROSION CONTROL MEASURES SHALL START AT THE OUTFALL AND PROGRESS UPSTREAM FOR ALL CONSTRUCTION PHASES.
- ALL EXCAVATIONS SHALL BE PAVED TO THE LEVEL OF THE ADJACENT PAVEMENT FOLLOWING THE COMPLETION OF ROADWAY WIDENING. EXCAVATIONS REMAINING AT THE END OF WORKING HOURS SHALL AT A MINIMUM, BE BACKFILLED (PER MD 104.01-28) OR PLATED AND THE ROADWAY RETURNED TO THE FULL CROSS SECTION. A "STEEL PLATES" (WB-8(4)) SIGN SHALL BE PLACED APPROXIMATELY 200 FEET IN ADVANCE OF ANY STEEL PLATES OR AS DIRECTED BY THE ENGINEER.

ACCESSIBLE PEDESTRIAN MAINTENANCE OF TRAFFIC

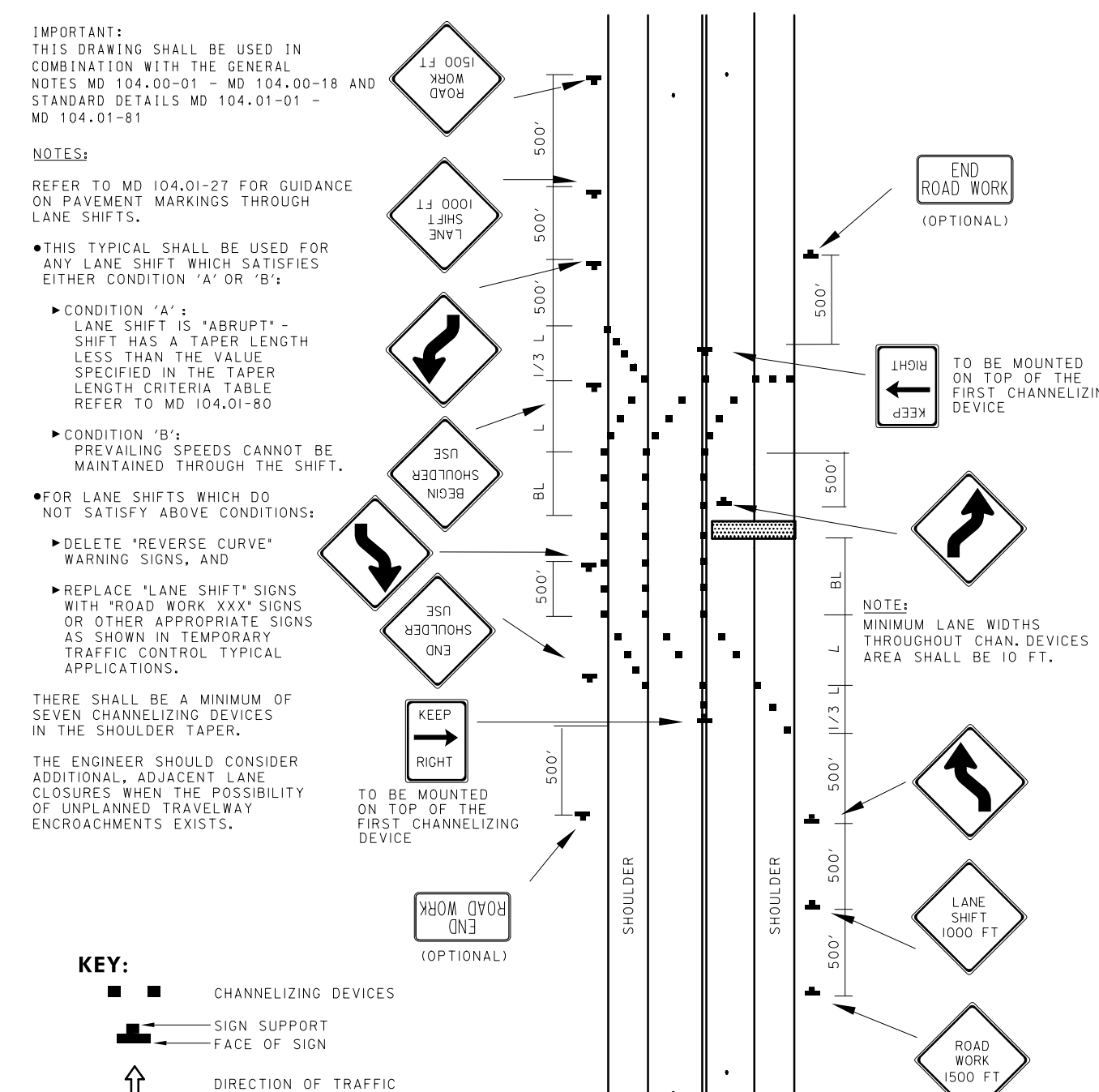
- WHERE PEDESTRIANS ARE DIRECTED TO CROSS TO THE OPPOSITE SIDE OF THE ROADWAY, APPROPRIATE ADVANCED SIGNING SHOULD BE PLACED AT THE INTERSECTIONS RATHER THAN MID-BLOCK CROSSINGS.
- ADVANCED NOTIFICATION OF SIDEWALK CLOSURES SHALL BE PROVIDED. A BARRIER THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE CLOSED SIDEWALK.
- SIGNS AND OTHER DEVICES MOUNTED LOWER THAN 7 FEET ABOVE THE TEMPORARY PEDESTRIAN PATHWAY SHALL NOT PROJECT MORE THAN 4 INCHES INTO THE ACCESSIBLE PEDESTRIAN ROUTE.
- TRAFFIC CONTROL DEVICES AND OTHER CONSTRUCTION MATERIALS AND FEATURES SHALL NOT INTRUDE INTO THE USABLE WIDTH OF THE SIDEWALK, TEMPORARY PATHWAY OR OTHER PEDESTRIAN FACILITY.

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



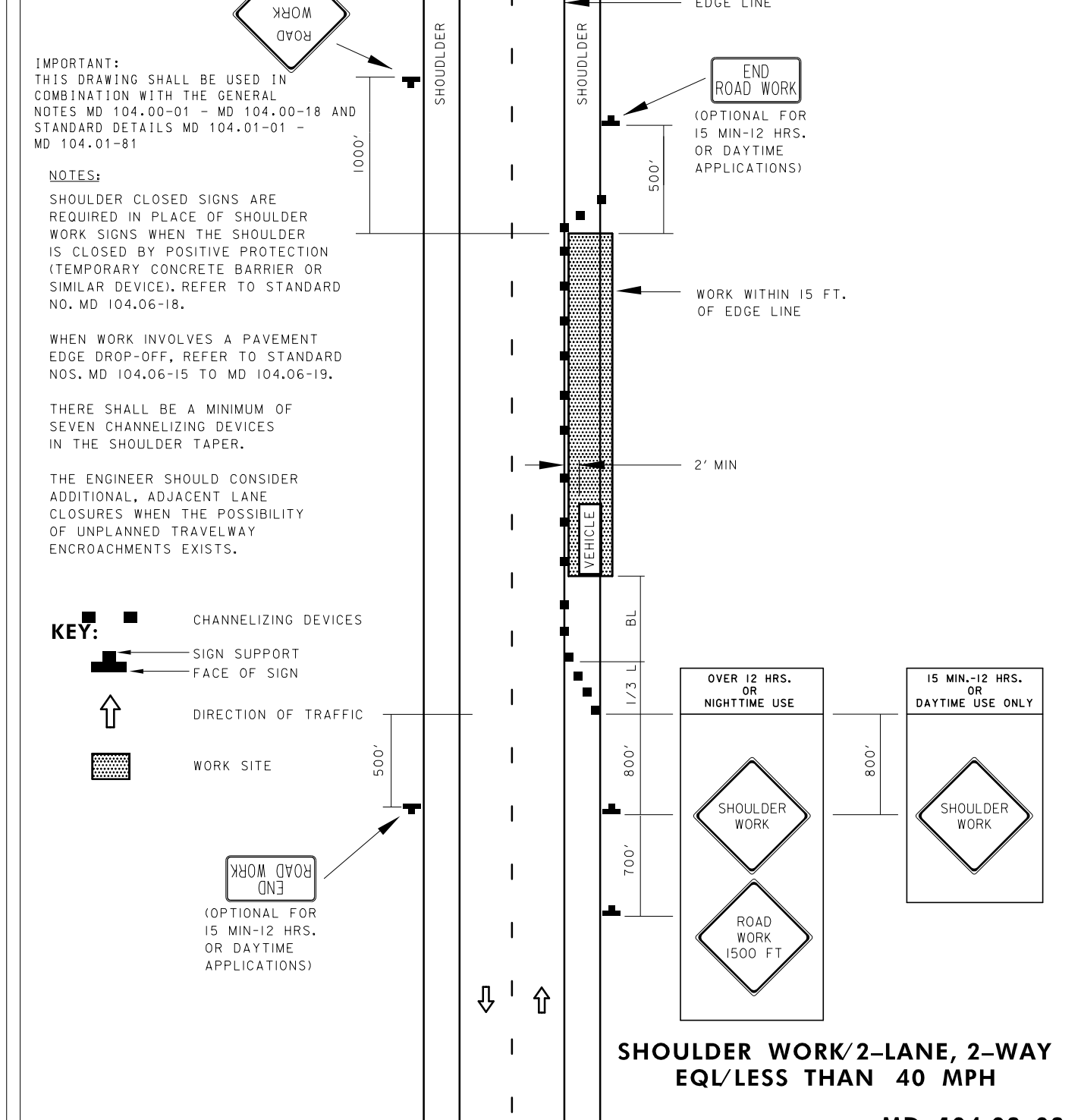
PAVEMENT EDGE DROP-OFF GREATER THAN 2.5 INCHES BUT EQUAL TO OR LESS THAN 5 INCHES (BETWEEN TRAFFIC LANES AND SHOULDER)
MD 104.06-17

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



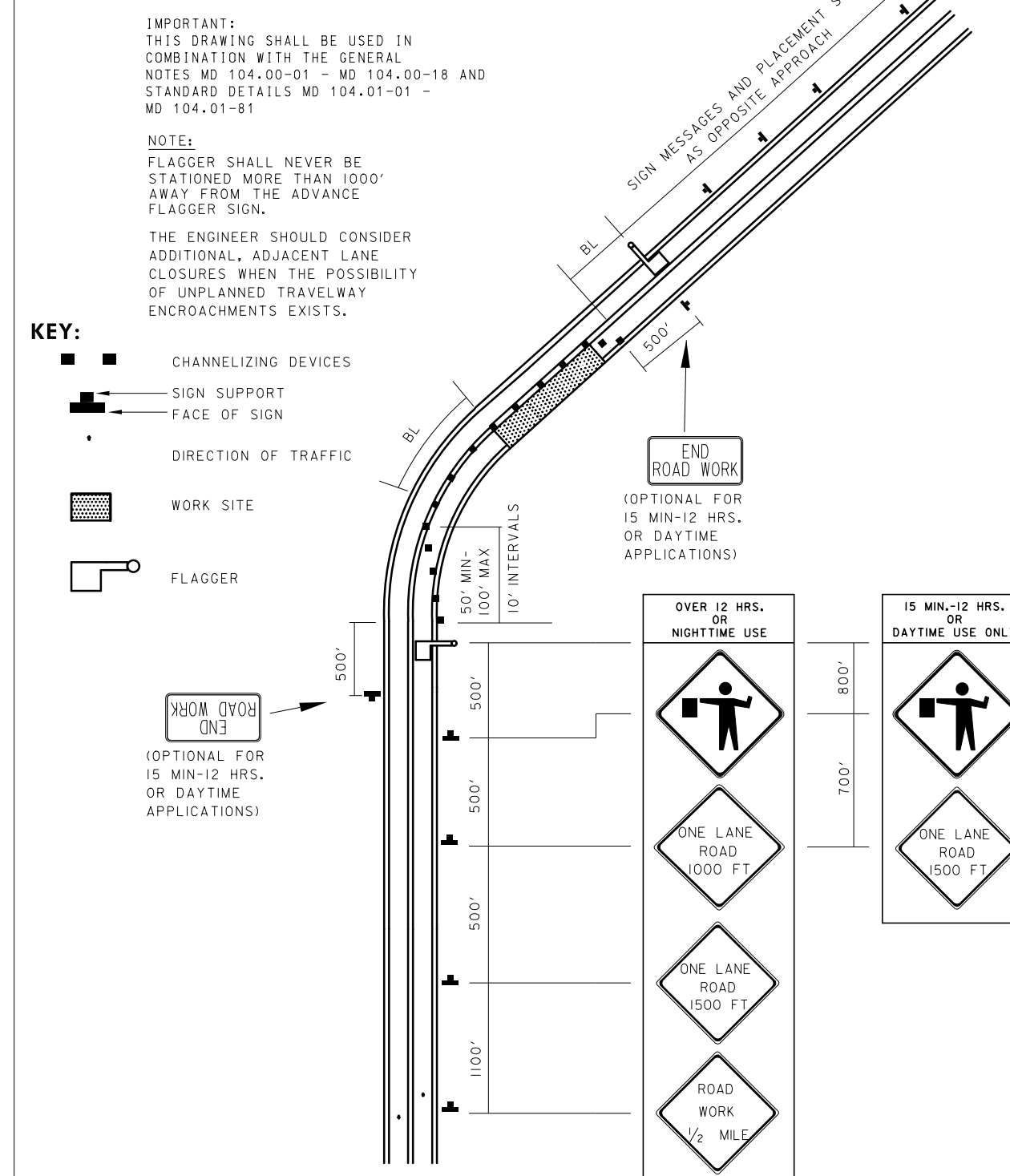
LANE SHIFT RIGHT OR LEFT SIDE/2-LANE, 2-WAY EQ/LESS THAN 40 MPH/15 MIN - 12 HRS. OR DAYTIME ONLY
MD 104.02-04

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



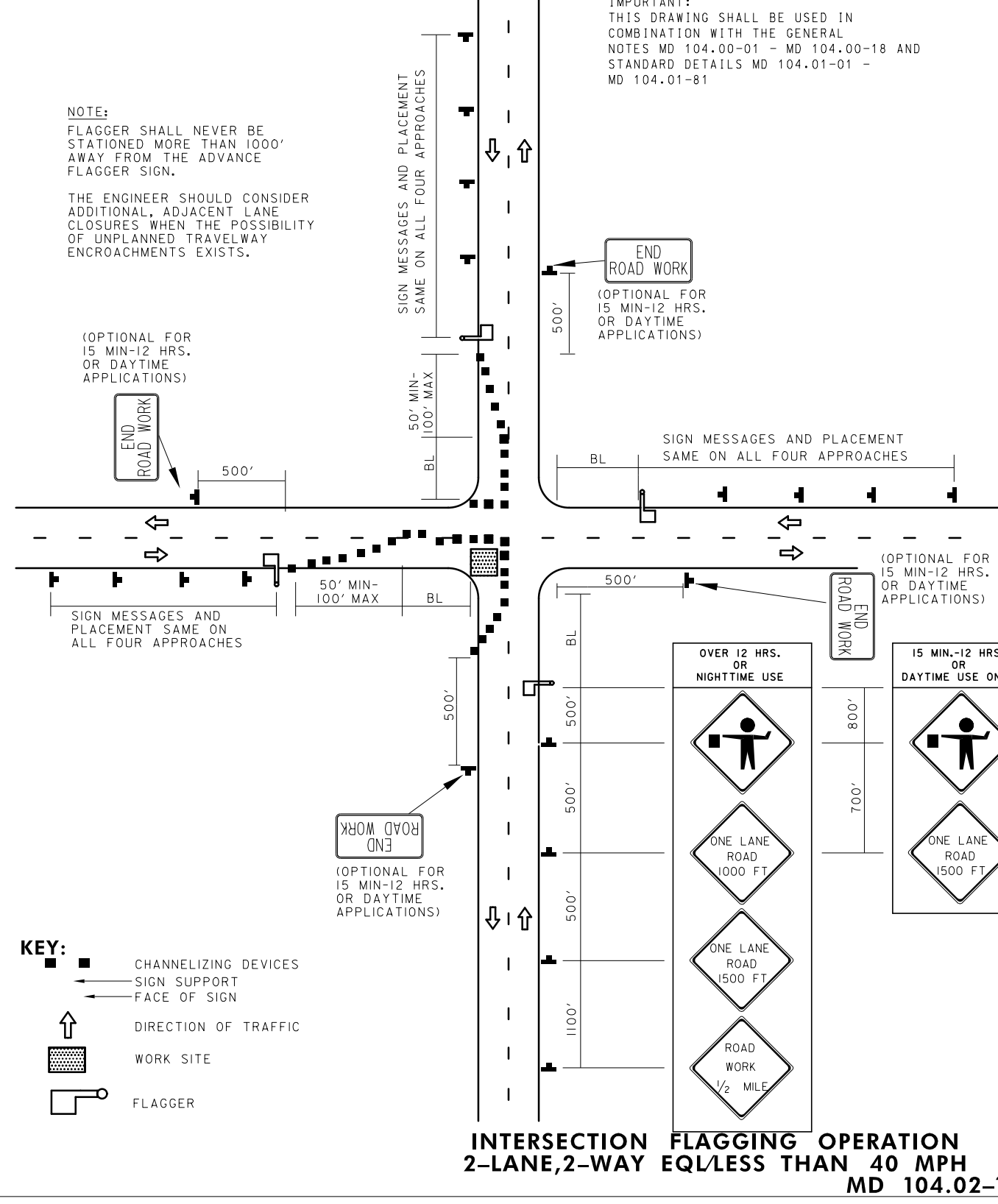
SHOULDER WORK/2-LANE, 2-WAY EQ/LESS THAN 40 MPH
MD 104.02-02

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



FLAGGING OPERATION/2-LANE, 2-WAY EQ/LESS THAN 40 MPH
MD 104.02-10

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION



INTERSECTION FLAGGING OPERATION 2-LANE, 2-WAY EQ/LESS THAN 40 MPH
MD 104.02-14

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HOWARD COUNTY, MARYLAND

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DES: AM
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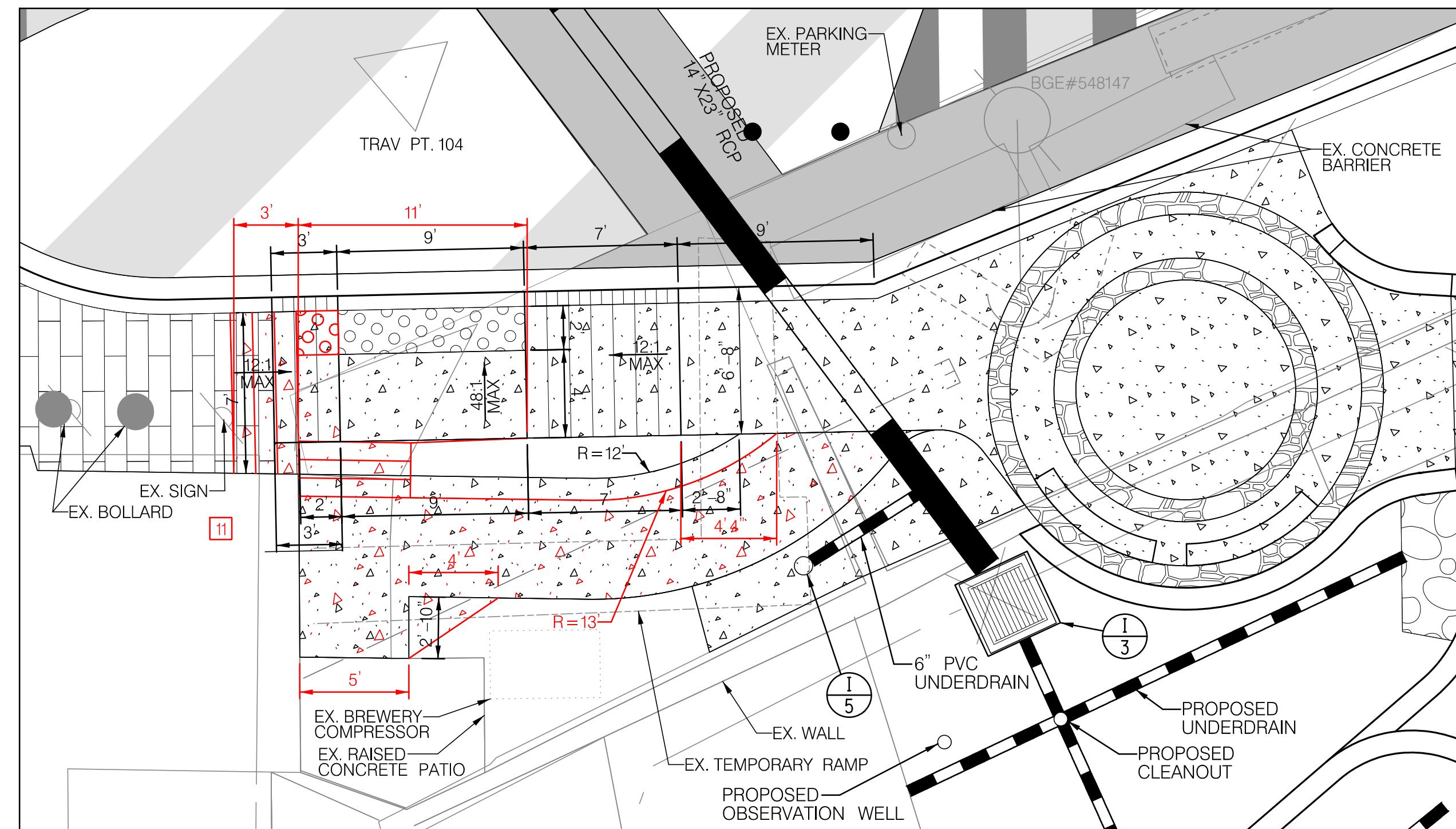
BY	NO.	REVISION	DATE

ELICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

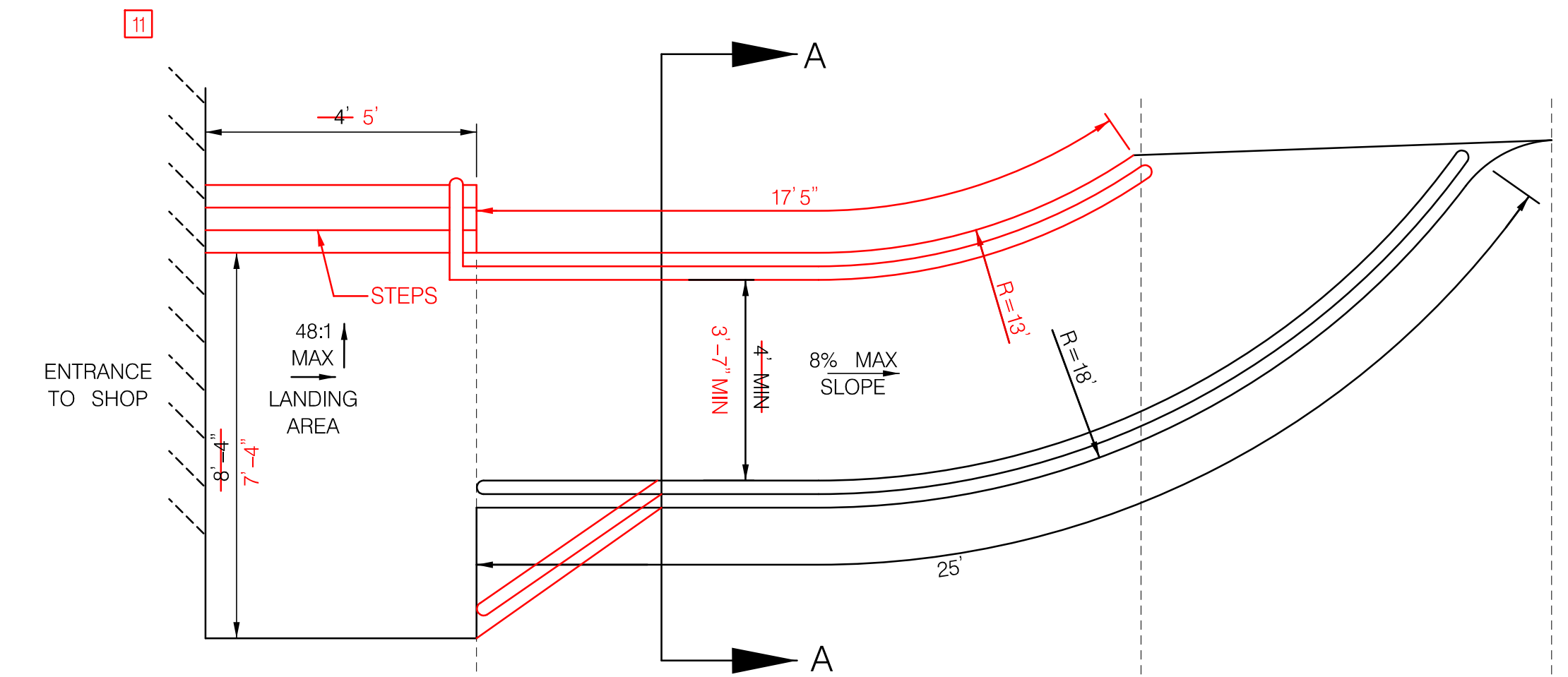
MAINTENANCE OF TRAFFIC NOTES

SCALE: NONE
SHEET: 7 OF 44

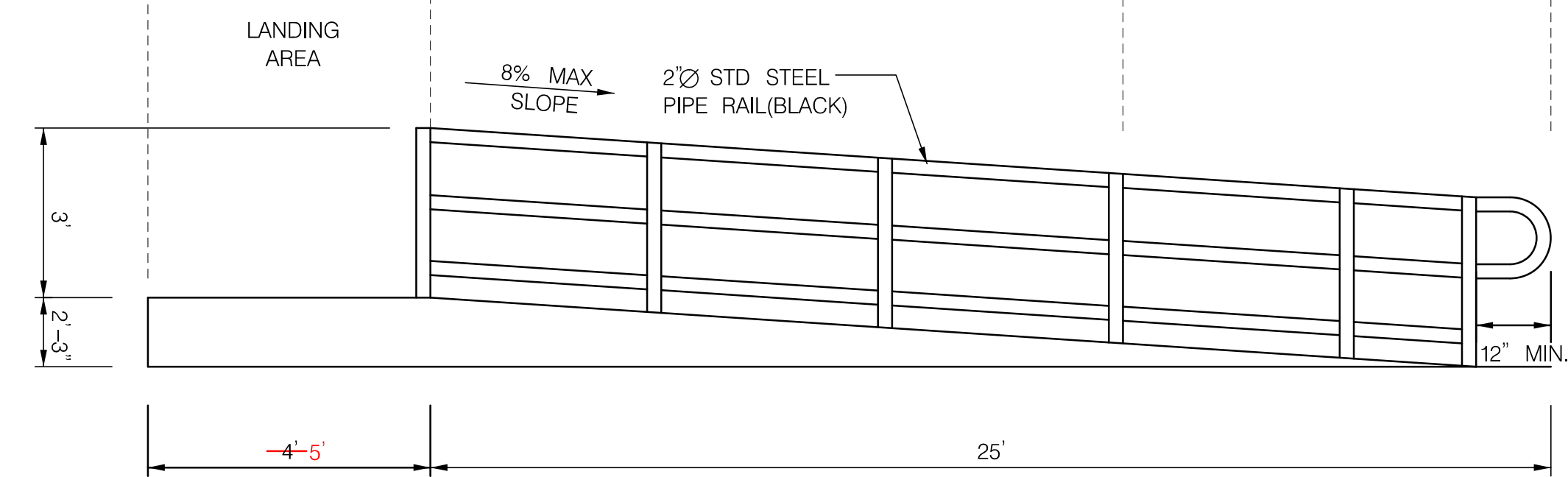
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES
DATE: 6/18/14



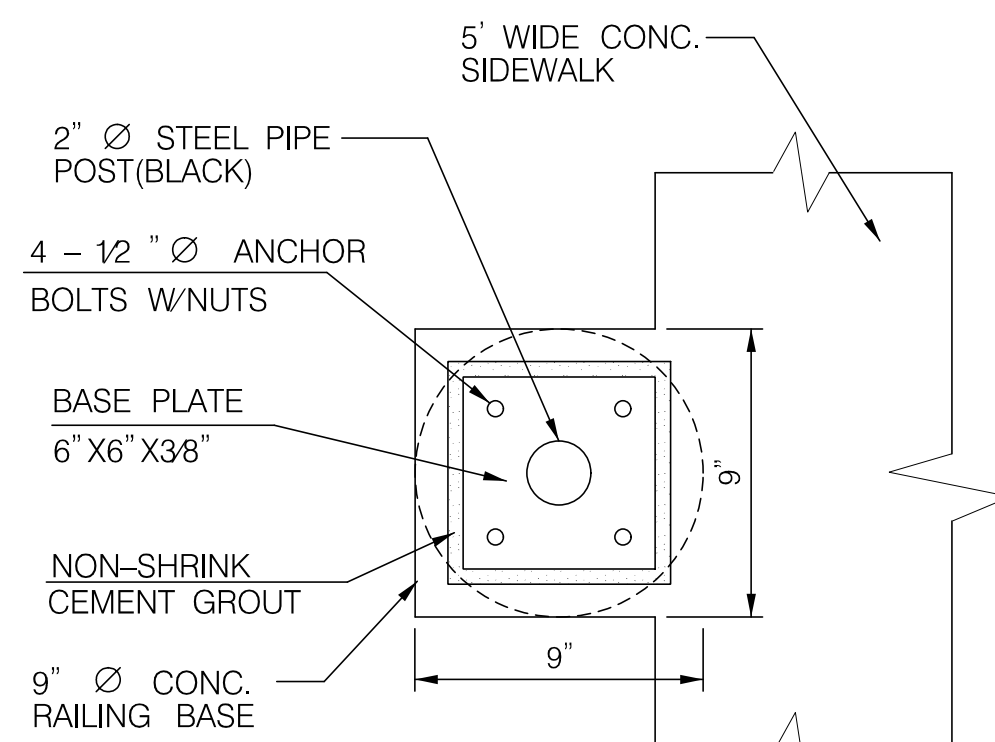
STA. 1+28 LT.



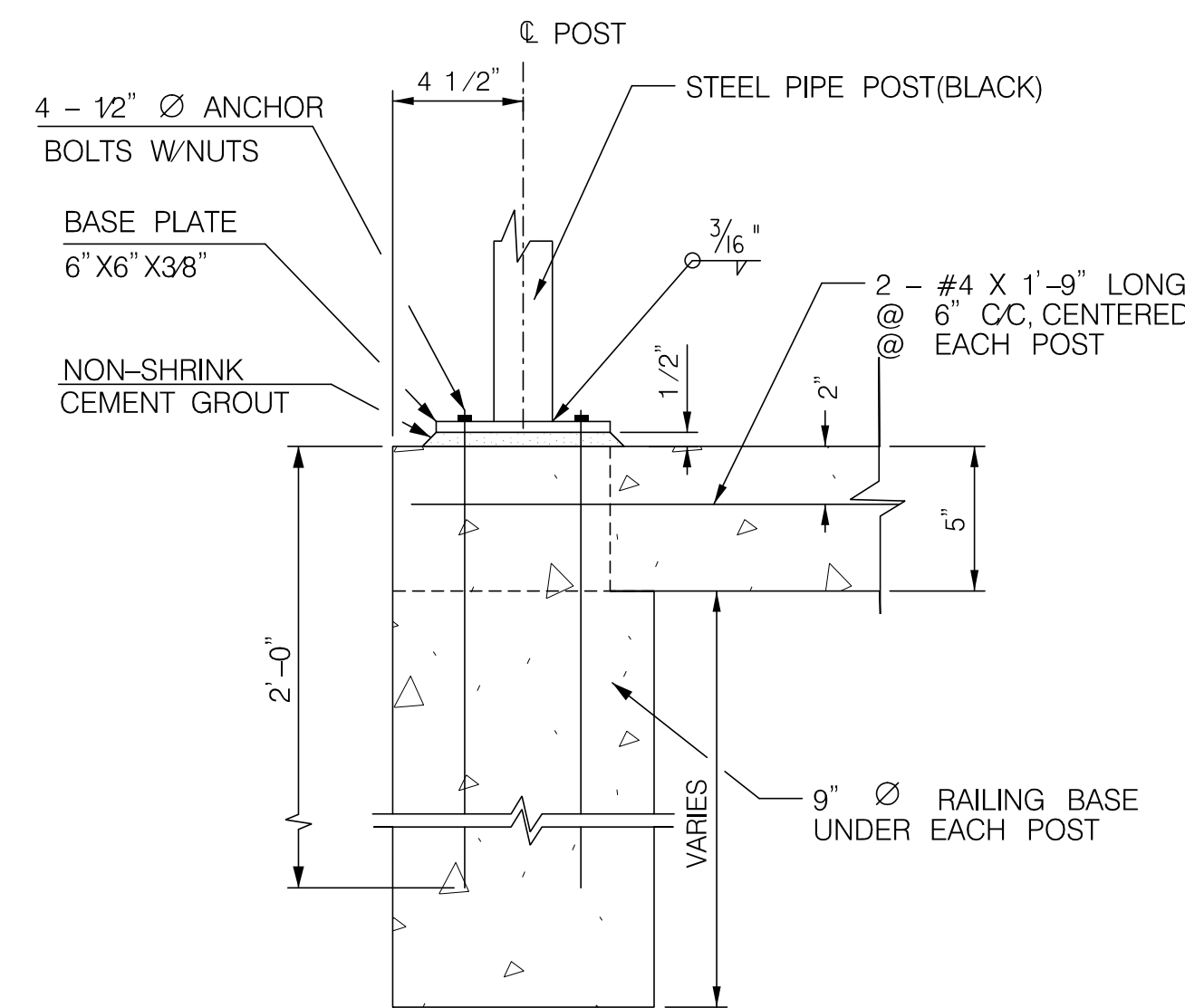
METAL HANDRAIL PLAN VIEW
NOT TO SCALE



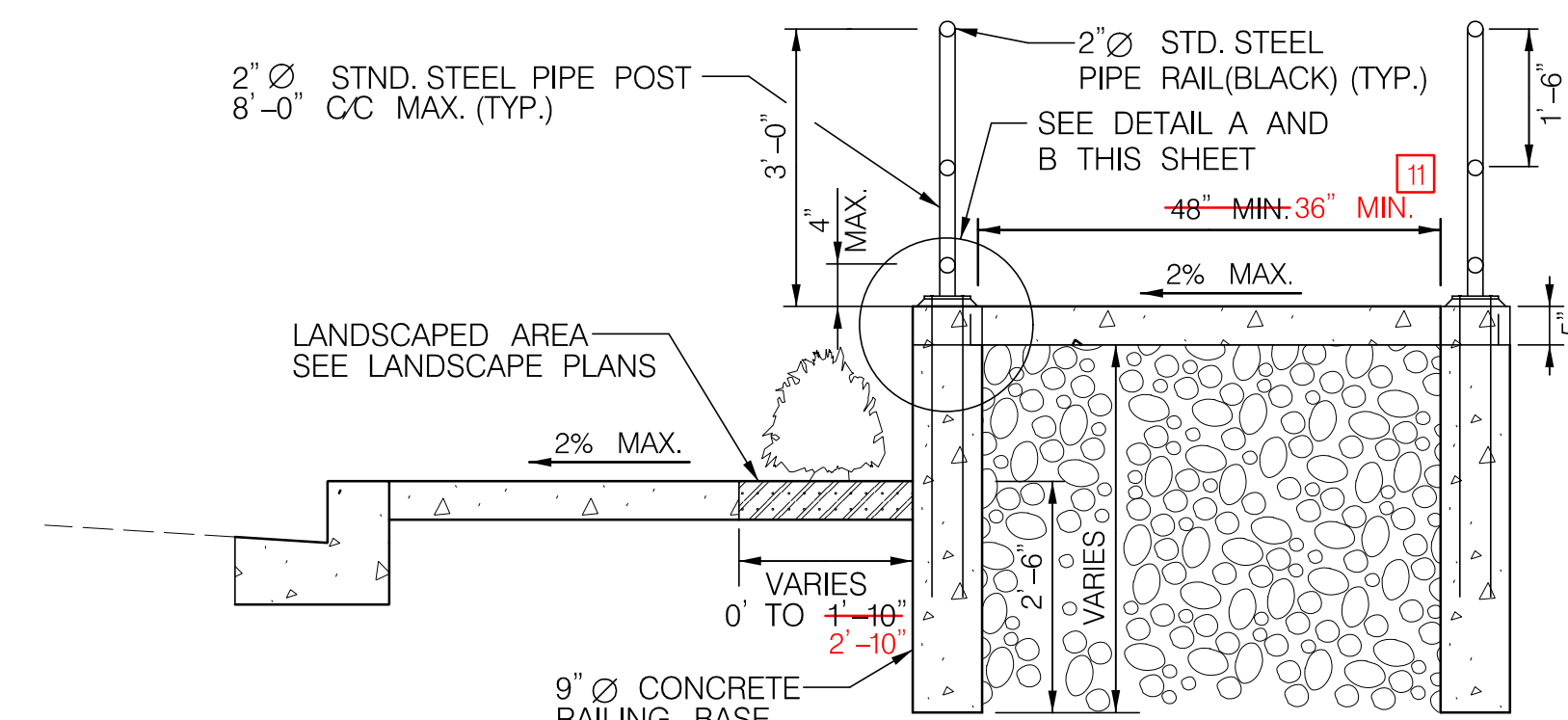
METAL HANDRAIL ELEVATION
NOT TO SCALE



DETAIL A
NOT TO SCALE



DETAIL B - RAILING POST BASE DETAIL
NOT TO SCALE



SECTION A-A METAL HANDRAIL
NOT TO SCALE



LEGEND

- MILL AND RESURFACE
- FULL DEPTH
- BRICK PAVERS
- CONCRETE
- CONCRETE
- DETECTABLE WARNING SURFACE

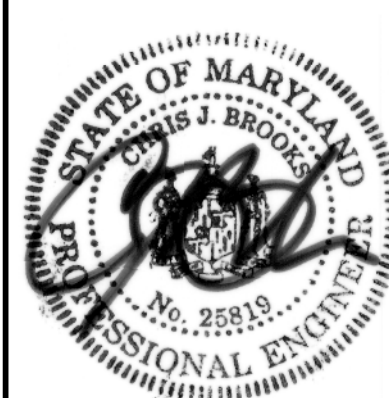
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND



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Storm Water Management Division
Bureau of Environmental Services
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DES: AM

DRN: MR

CHK: CB

DATE: 06/18/14

BY	NO.	REVISION	DATE
DPK	11	REVISED RAMP DESIGN TO INCLUDE STEPS	04/22/15

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

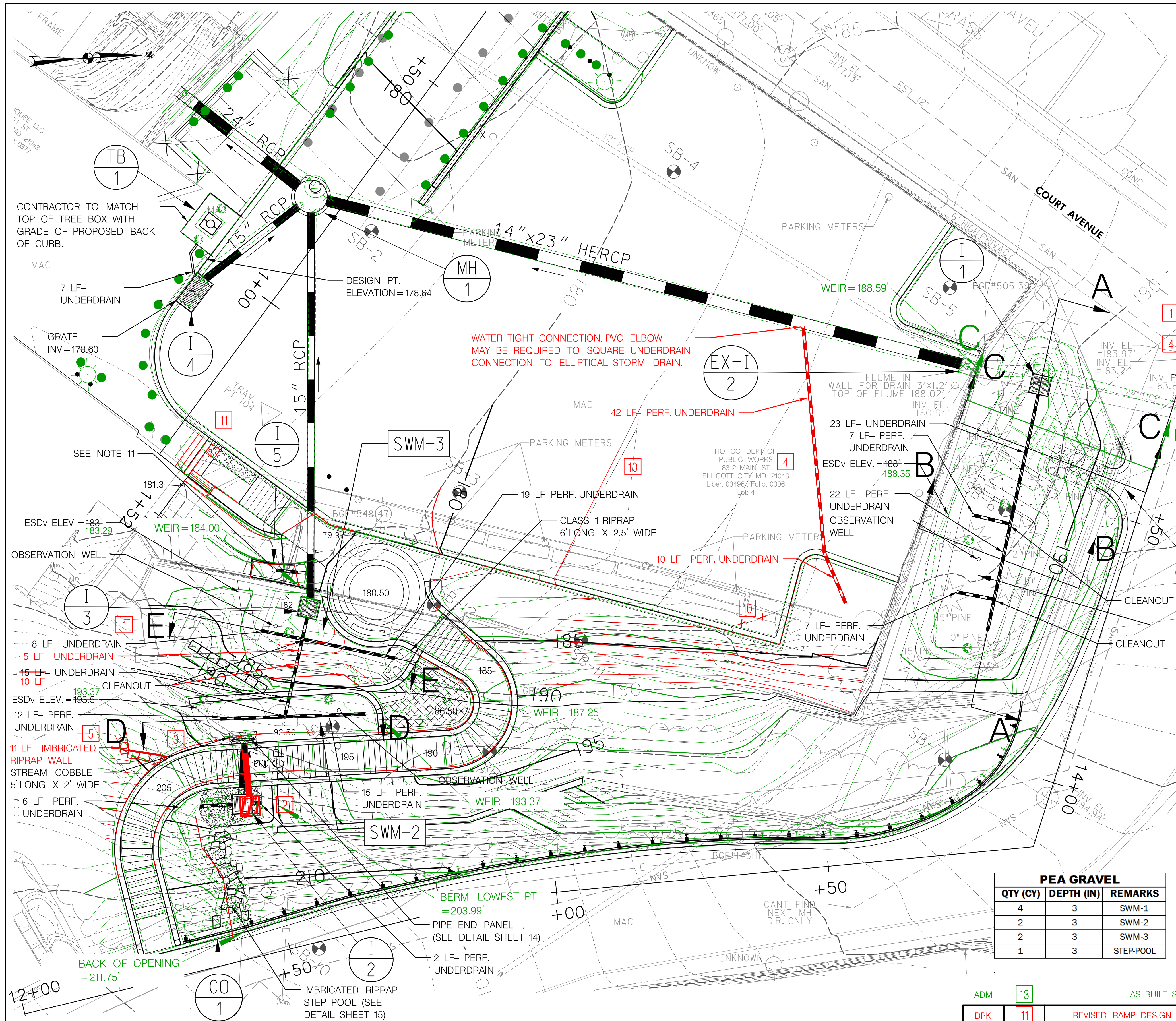
RAMP CONSTRUCTION DETAILS

SCALE

1" = 5'

SHEET

8 OF 44



UNDERDRAIN PIPE SCHEDULE						
FROM	TO	SIZE (IN)	TYPE	INV. IN/INV. OUT	QTY (LF)	REMARKS
12+40.30 LT	12+46.1, 28.2 LT	6	PVC	202.55/202.50	6	PERFORATED UNDERDRAIN
12+51.4, 27.2 LT	12+49.4, 27.6 LT	6	PVC	202.52/202.50	2	PERFORATED UNDERDRAIN
12+47.7, 44 LT	12+59.2, 41.7 LT	6	PVC	189.23/189.18	12	PERFORATED UNDERDRAIN
12.73, 7.38, 6 LT	12+59.2, 41.7 LT	6	PVC	189.25/189.18	15	PERFORATED UNDERDRAIN
12+59.2, 41.7 LT	12+65.7, 54.6 LT	6	PVC	187.08/178.80	15	UNDERDRAIN
12+59.2, 41.7 LT		6	PVC	-	6	CLEANOUT
12+58.8, 57.9 LT	12+65.7, 54.6 LT	6	PVC	178.69/178.65	8	PERFORATED UNDERDRAIN
12+81.3, 47.2 LT	12+65.7, 54.6 LT	6	PVC	178.75/178.65	19	PERFORATED UNDERDRAIN
12+65.7, 54.6 LT		6	PVC	-	4	CLEANOUT
12+65.7, 54.6 LT	I-3	6	PVC	178.65/178.63	4	UNDERDRAIN
I-5	12+70, 66 LT	6	PVC	178.02/177.33	10	UNDERDRAIN
14+22.9, 20 LT	14+45, 22.1 LT	6	PVC	183.75/183.64	22	PERFORATED UNDERDRAIN
14+28, 27.4 LT	14+28.7, 20.5 LT	6	PVC	183.75/183.72	7	PERFORATED UNDERDRAIN
14+28.7, 20.5 LT		6	PVC	-	4	CLEAN OUT
14+42.2, 29 LT	14+42.8, 22 LT	6	PVC	183.70/183.66	7	PERFORATED UNDERDRAIN
14+42.8, 22 LT		6	PVC	-	4	CLEAN OUT
14+45, 22.1 LT	I-1	6	PVC	183.64/183.5	23	UNDERDRAIN
TB-1	I-4	4	PVC	175.32/175.25	7	UNDERDRAIN
12+59.2, 41.7 LT	12+63.6, 50.4 LT	6	PVC	183.50/183.00	10	UNDERDRAIN
12+63.6, 50.4 LT	12+65.7, 54.6 LT	6	PVC	178.95/178.80	5	UNDERDRAIN
0+81.8, 117.3 LT	0+76.7, 108.7 LT	6	PVC	180.75 / 180.55	10	PERFORATED UNDERDRAIN
0+76.7, 108.7 LT	0+45.2, 80.5 LT	6	PVC	180.55 / 179.55	42	PERFORATED UNDERDRAIN

CLASS I RIPRAP	
QTY (CY)	REMARKS
4	SWM-1
2	SWM-3

MULCH		
QTY (CY)	DEPTH (IN)	REMARKS
4	3	SWM-1
2	3	SWM-2
2	3	SWM-3

STREAM COBBLE MIX	
QTY (CY)	REMARKS
6	STEP-POOL
1	SWM-2

BIORETENTION SOIL MIX		
QTY (CY)	DEPTH (IN)	REMARKS
26	24	SWM-1
12	24	SWM-2
15	24	SWM-3

GEOTEXTILE		
QTY (SY)	TYPE	REMARKS
35	PE-TYPE III	SIDES OF SWM-1
29	PE-TYPE III	SIDES OF SWM-2
31	PE-TYPE III	SIDES OF SWM-3
45	SE	STEP-POOL
14	SE	SWM-1
5	SE	SWM-2
5	SE	SWM-3
7	SE	RIPRAP WALL

NO. 57 STONE		
QTY (CY)	DEPTH (IN)	REMARKS
13	12	SWM-1
6	12	SWM-2
8	12	SWM-3
6	12	STEP-POOL
3	12	RIPRAP WALL

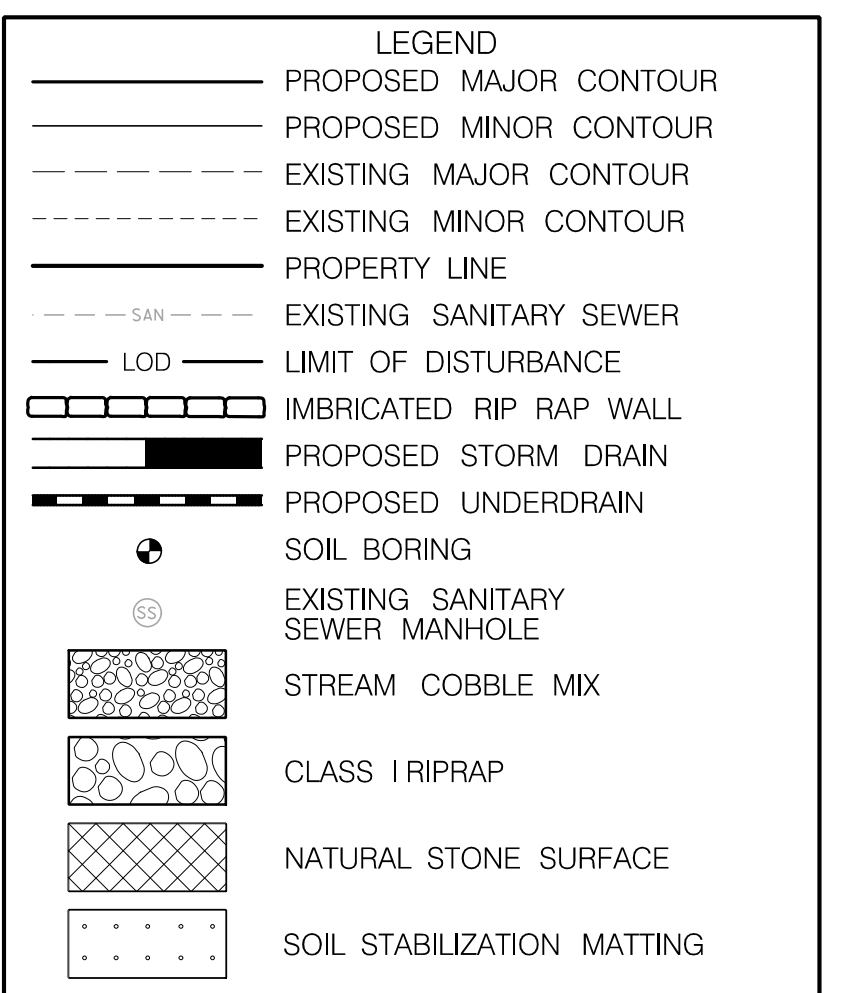
TYPE 'B' SOIL STABILIZATION	
QTY (SY)	REMARKS
12	FOR STABILIZATION OF WEIR (SWM-1)

COARSE SAND FOR SWM FACILITY	
QTY (CY)	REMARKS
2	STEP-POOL

OBSERVATION WELL		
STATION	OFFSET	QTY (EA)
SWM-1	14+26.7, 25.4 LT	1
SWM-2	12+53.3, 58.04 LT	1
SWM-3	12+60.9, 40.34 LT	1

PEA GRAVEL		
QTY (CY)	DEPTH (IN)	REMARKS
4	3	SWM-1
2	3	SWM-2
2	3	SWM-3
1	3	STEP-POOL

IMBRICATED RIPRAP			
FROM	TO	HEIGHT (FT)	QTY (LF)
12+36.70, 58.75 LT	12+48.75, 46.75 LT	4	18
STEP-POOL WALLS		VARIABLES	54
12+29.43, 44.91 LT	12+35.68, 39.25 LT	2	11



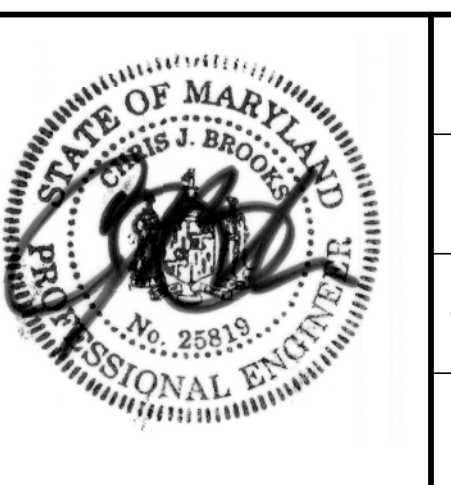
BY	NO.	REVISION	DATE
ADM	13	AS-BUILT SURVEY	09/10/15
DPK	11	REVISED RAMP DESIGN TO INCLUDE STEPS	04/22/15
ADM	10	REVISED CURB /ELEVATIONS AND GRADING	04/14/15
ADM	5	REVISED WALL A AND GRADING	01/26/15
ADM	4	INSTALL UNDERDRAIN FOR HH#7	01/16/15
BSW	3	REVISED ALIGNMENT	12/15/14
ADM	2	REVISED LOCATION OF INLET I-2	12/08/14
ADM	1	GRADING AND UNDERDRAIN REVISION	11/13/14

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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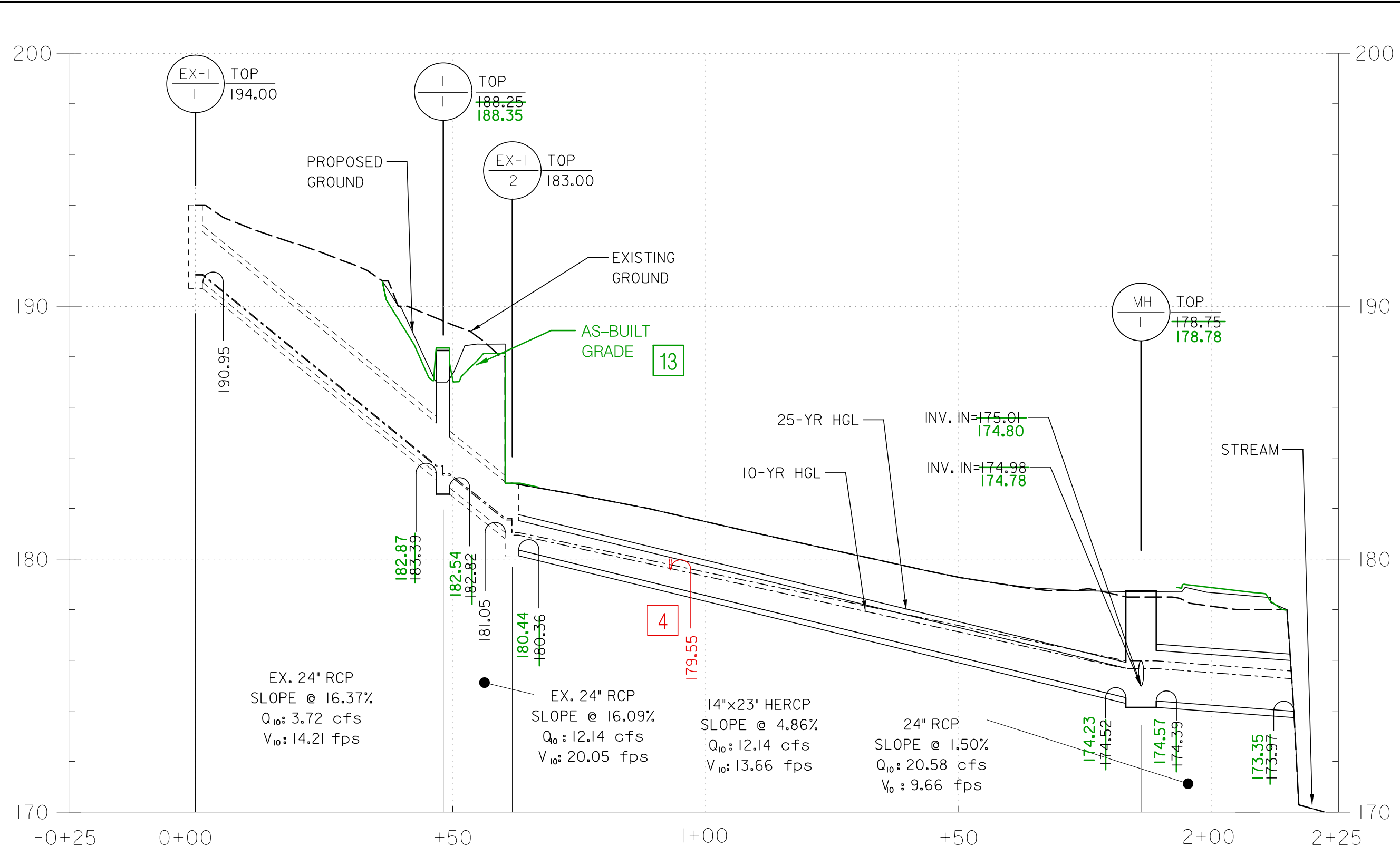
DES: AM
DRN: MR
CHK: CB
DATE: 06/18/14

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

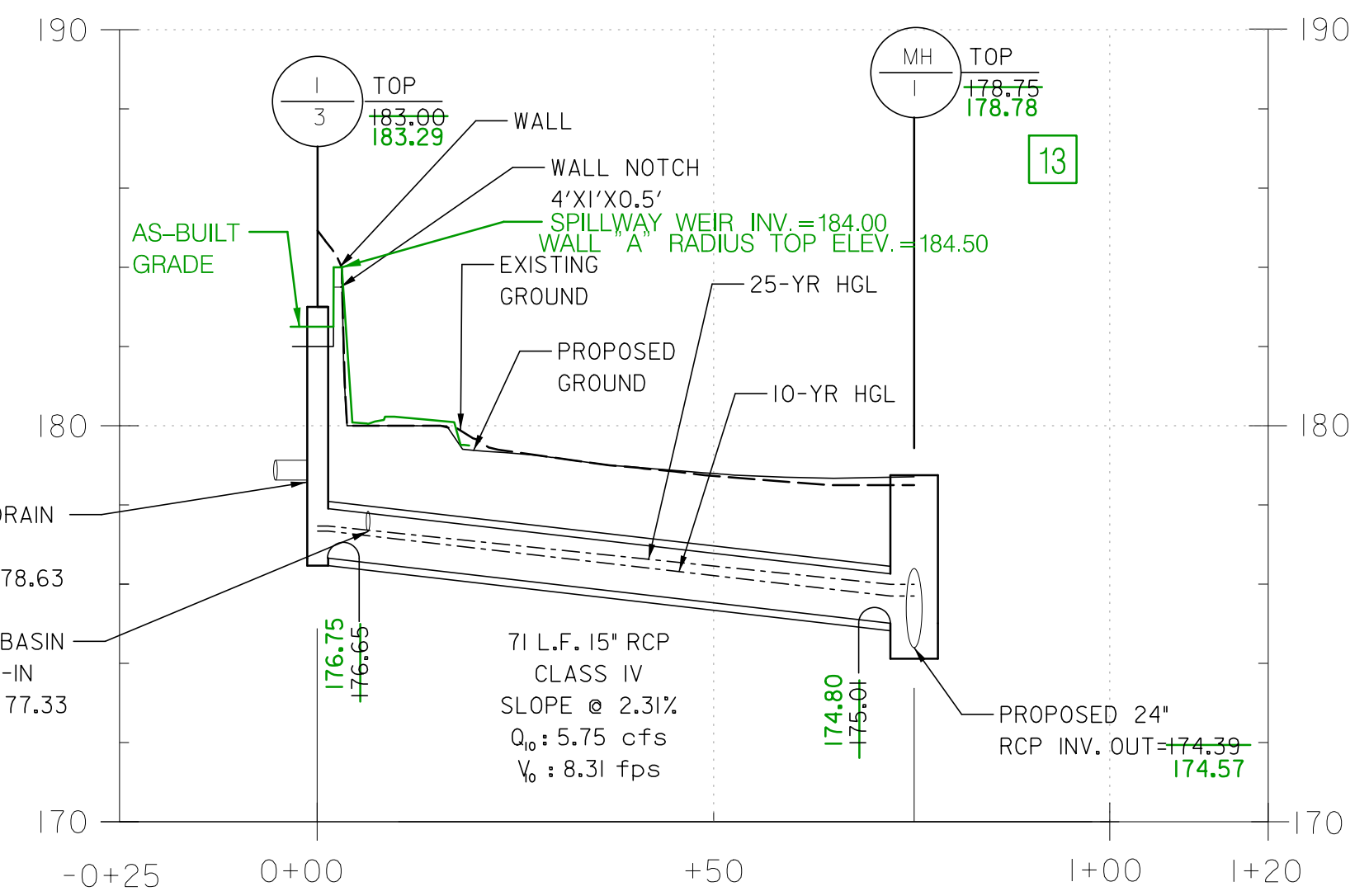
STORM WATER MANAGEMENT PLAN

SCALE: 1" = 10'

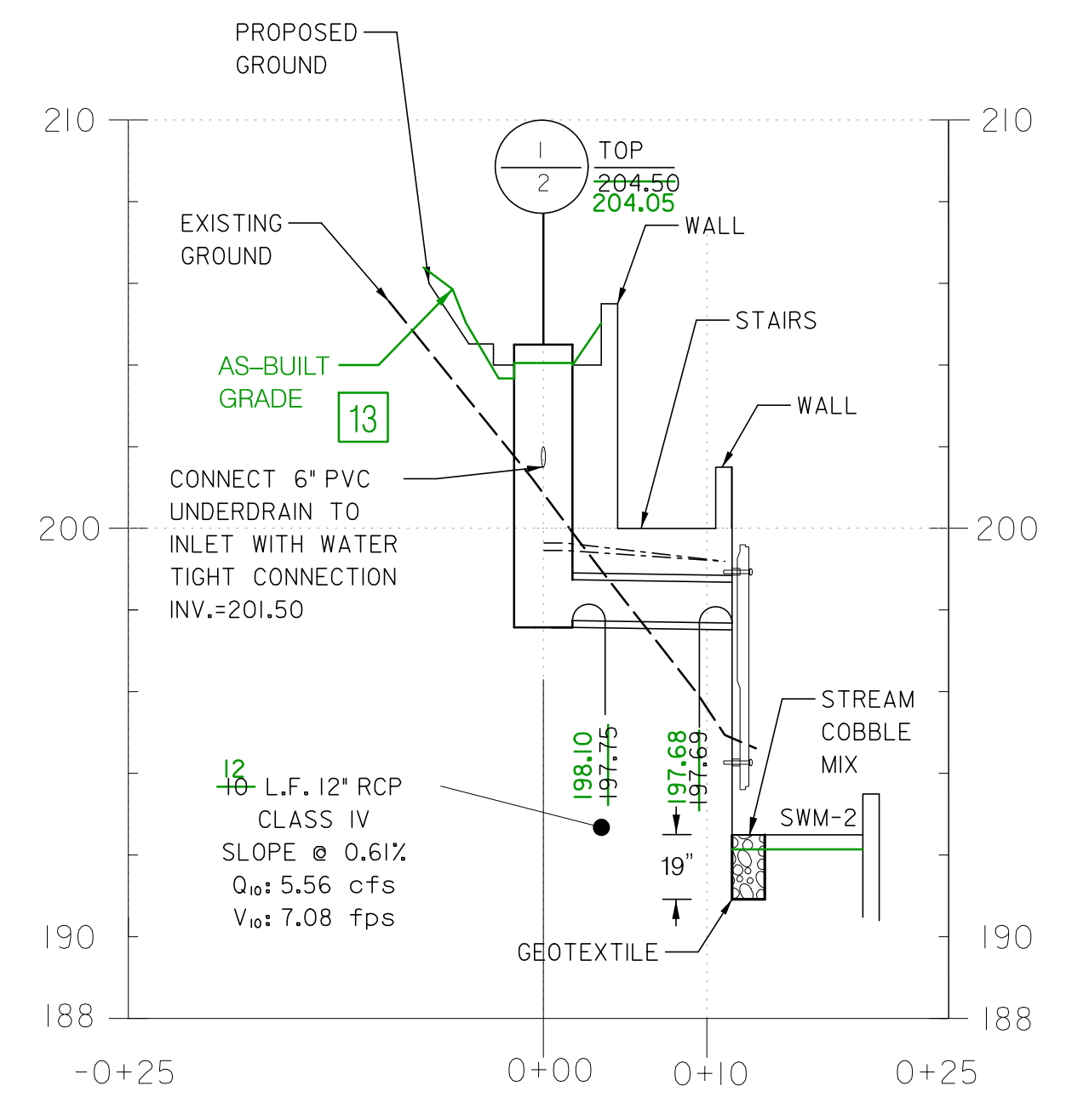
SHEET 9 OF 44



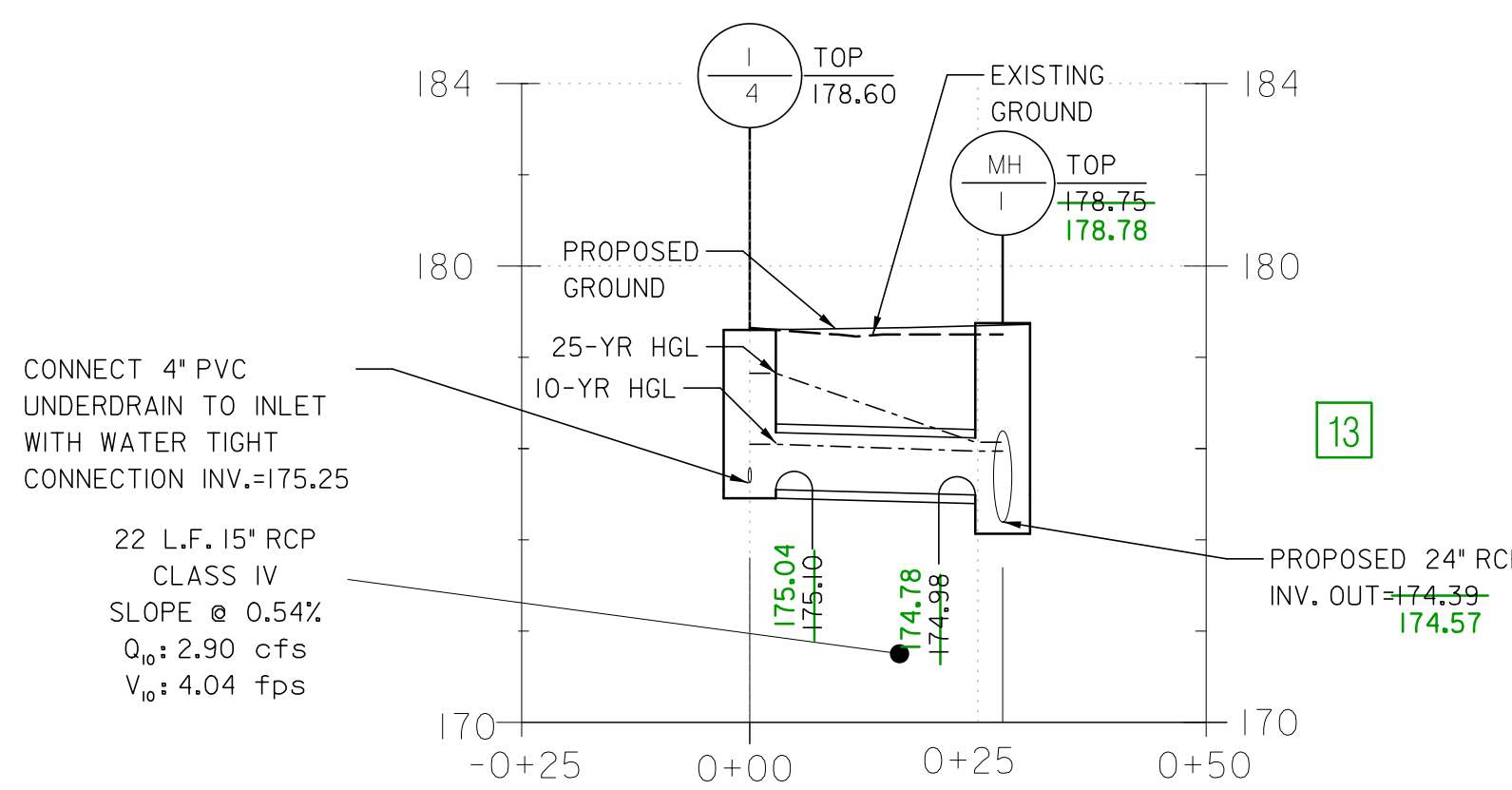
PIPE PROFILE - EX-I-1 TO STREAM OUTFALL
SCALE: HORZ. 1" = 20'
VERT. 1" = 4'



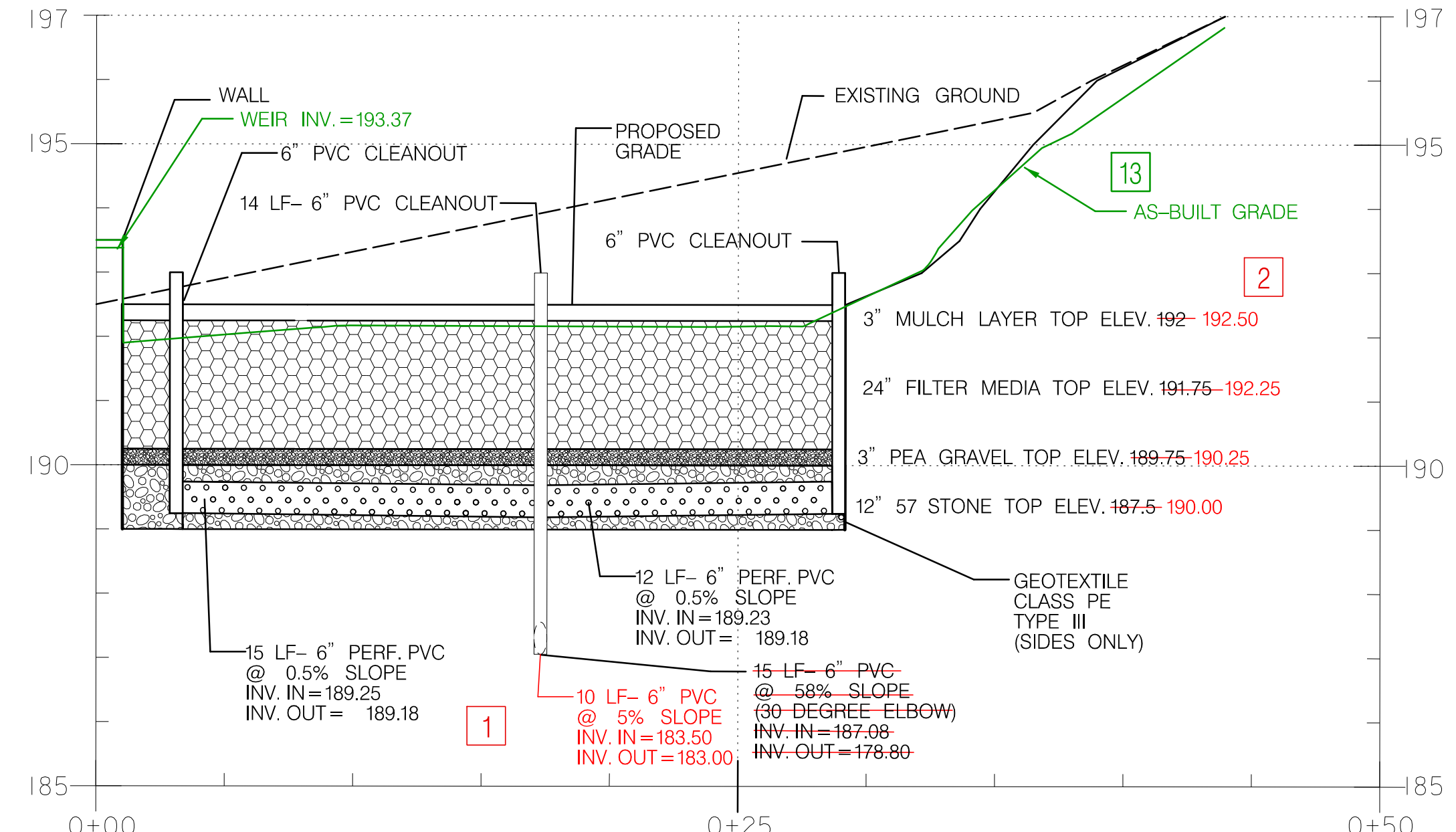
PIPE PROFILE - I-3 TO MH-1
SCALE: HORZ. 1" = 20'
VERT. 1" = 4'



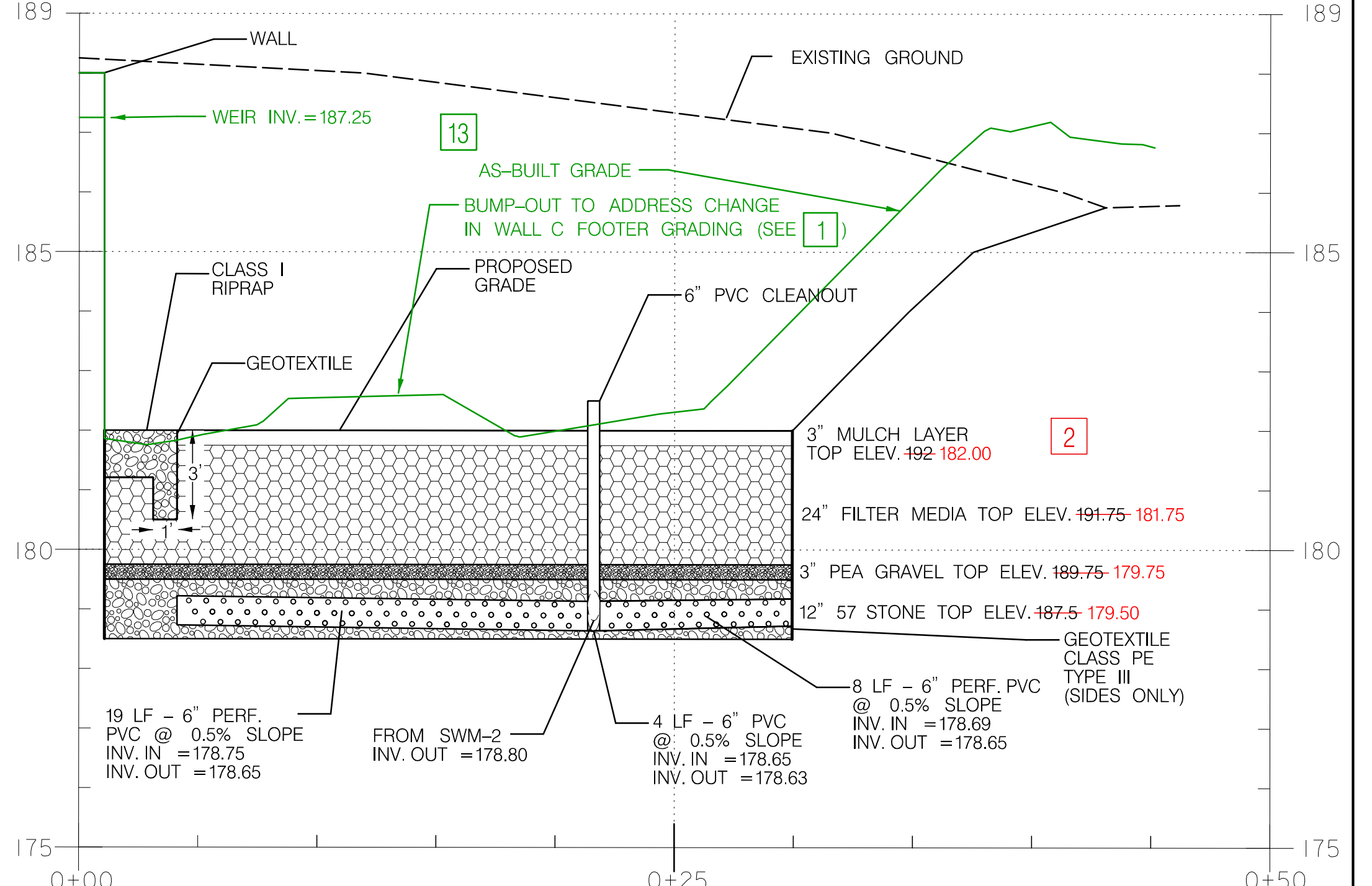
PIPE PROFILE - I-2 TO SWM-3
SCALE: HORZ. 1" = 10'
VERT. 1" = 4'



PIPE PROFILE - I-4 TO MH-1
SCALE: HORZ. 1" = 20'
VERT. 1" = 4'



SECTION D-D - BIORETENTION FACILITY (SWM-2)
SCALE: HORZ. 1" = 5'
VERT. 1" = 2'



SECTION E-E - BIORETENTION FACILITY (SWM-3)
SCALE: HORZ. 1" = 5'
VERT. 1" = 2'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. [Signature]
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

DATE: 6/1/14

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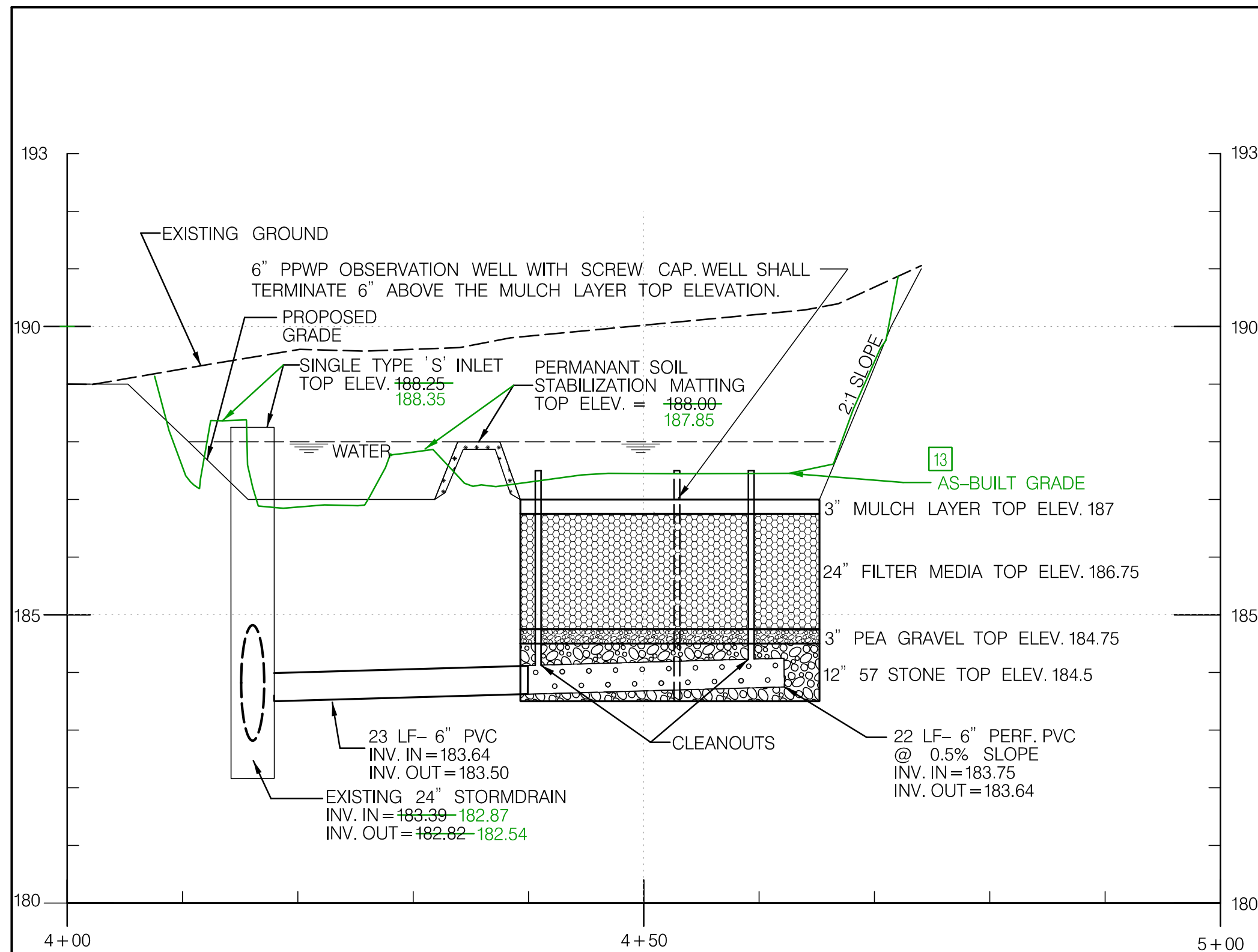
DES:	AM			
DRN:	MR	ADM	13	AS-BUILT SURVEY
CHK:	CB	ADM	4	INSTALL UNDERDRAIN FOR HH#7
		ADM	2	SWM MEDIA ELEVATION REVISIONS
		ADM	1	GRADING AND UNDERDRAIN REVISION
DATE:	06/18/14	BY	NO.	REVISION
				DATE

ELlicott City Parking Lot E
Capital Project #D-1165
Howard County

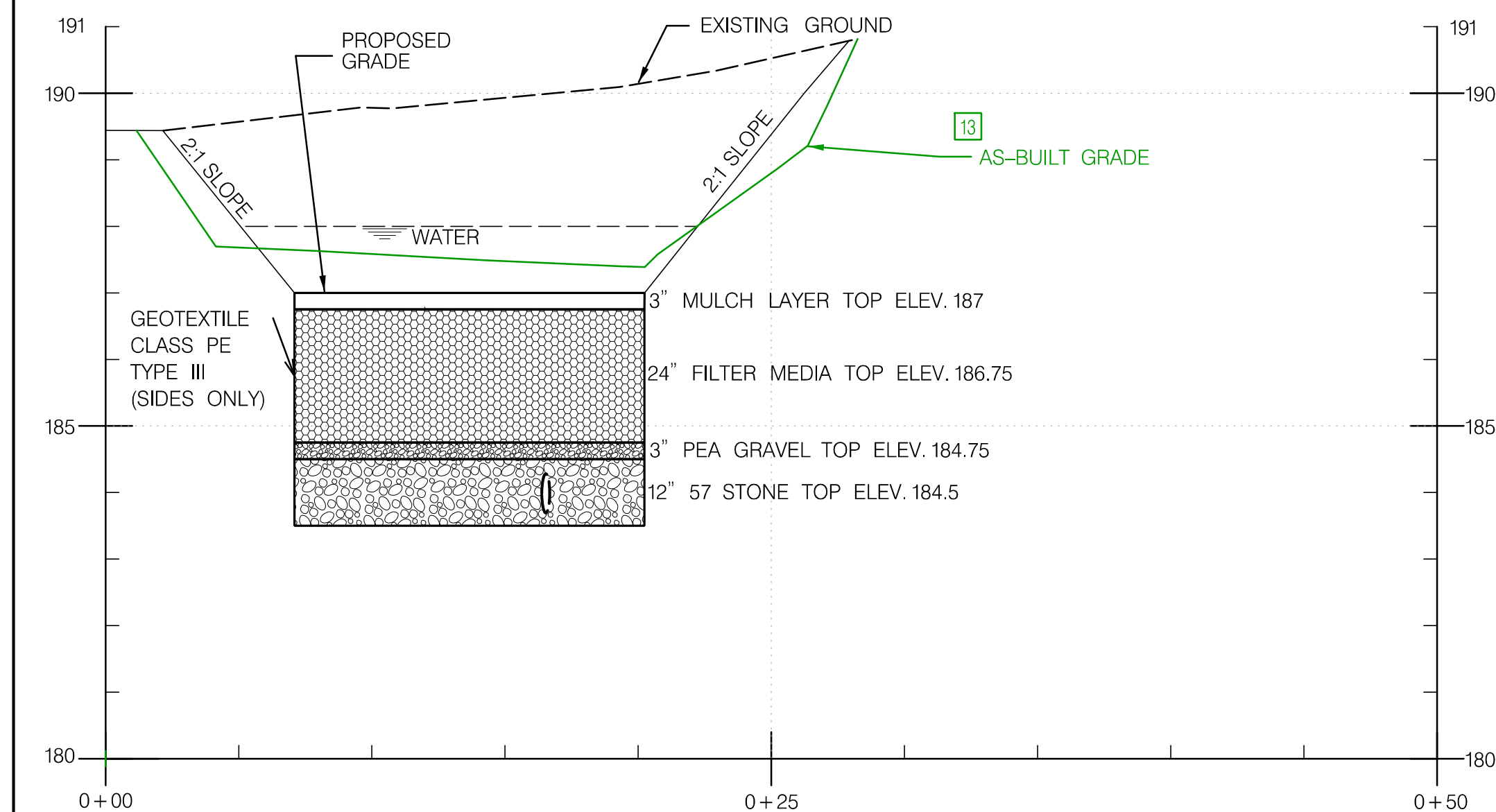
STORM WATER MANAGEMENT PROFILE SHEET

SCALE: AS SHOWN

SHEET 10 OF 44



SWM#1 - SECTION A-A - BIORETENTION FACILITY
SCALE: HORIZ. 1" = 10'
VERT. 1" = 2'



SWM#1 - SECTION B-B - BIORETENTION FACILITY
SCALE: HORIZ. 1" = 5'
VERT. 1" = 2'

BIORETENTION NOTES:

- FACILITY SHALL NOT BE PLACED IN SERVICE UNTIL ALL OF THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED. HEAVY EQUIPMENT AND TRAFFIC SHALL BE RESTRICTED FROM THE PROPOSED BIORETENTION LOCATION TO MINIMIZE COMPACTION OF THE SOIL.
- FOR ALL DISTURBED AREAS, REGARDLESS OF SLOPE, FOUR (4) INCHES OF TOPSOIL SHALL BE INSTALLED TO PROVIDE A BASE FOR TURFGRASS ESTABLISHMENT.
- OBSERVATION WELL SHALL BE MARKED WITH INDELIBLE INK SPECIFYING THE DEPTH TO THE PIPE INVERT.

STANDARD AND SPECIFICATION FOR BIORETENTION SOIL MIXTURE (BSM)

BSM SHALL BE A HOMOGENEOUS MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 2 IN. AND SHALL BE FREE FROM ANY PARTS OF BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE, TEARHUMB, PHRAGMITES, OR OTHER NOXIOUS WEEDS AS SPECIFIED IN COMAR 15.08.01.05.

- BSM SHALL BE A BLENDED MIXTURE OF SAND, MULCH, AND PLANTING SOIL AS FOLLOWS:
- (A) SAND: THE SAND SHALL COMPOSE 50 PERCENT BY VOLUME OF THE BSM. THE SAND SHALL BE FINE AGGREGATE, SECTION 901.
 - (B) MULCH: THE MULCH SHALL COMPOSE 20 PERCENT BY VOLUME OF THE BSM. THE MULCH SHALL BE DOUBLE SHREDDED HARDWOOD BARK CONSISTING OF THE BARK FROM HARDWOOD TREES WHICH HAS BEEN MILLED AND SCREENED TO A MAXIMUM 2 IN. PARTICLE SIZE AND PROVIDE A UNIFORM TEXTURE FREE FROM SAWDUST, TOXIC SUBSTANCES, AND FOREIGN MATERIALS AND SHALL BE AGED AT LEAST 6 MONTHS.
 - (C) PLANTING SOIL: THE PLANTING SOIL SHALL COMPOSE 30 PERCENT BY VOLUME OF THE BSM. THE PLANTING SOIL SHALL BE A NATURAL OR FURNISHED, FRIABLE SOIL, UNIFORM IN COLOR AND TEXTURE.

PLANTING SOIL SHALL BE FROM A STOCKPILE THAT HAS BEEN CONSTRUCTED BY THE PRODUCER AND THE STOCKPILE SHALL BE CONSTRUCTED SO THE PILE IS IDENTIFIABLE. SAMPLING AND TESTING WILL BE COMPLETED IN CONFORMANCE WITH MSMT 356.

PLANTING SOIL SHALL HAVE AN ORGANIC CONTENT BETWEEN 1.5 TO 10 PERCENT BY WEIGHT WHEN TESTED AS SPECIFIED IN T 194.

GRADING ANALYSIS SHALL BE AS FOLLOWS:

SEIVE SIZE	MINIMUM PERCENT PASSING BY WEIGHT
2 IN.	100
NO. 4	90
NO. 10	80

PLANTING SOIL SHALL BE ANALYZED FOR SAND, SILT, AND CLAY AS SPECIFIED IN T 88. THE TEXTURAL ANALYSIS SHALL BE AS FOLLOWS:

SOIL PARTICLE SIZES, MM	PERCENT PASSING BY WEIGHT
SAND (2.0-0.050)	50-85
SILT (0.050-0.002)	5-45
CLAY (LESS THAN 0.002)	5-10

PLANTING SOIL THAT FAILS TO MEET THE MINIMUM REQUIREMENTS SHALL BE REPLACED AT NO ADDITIONAL COST TO THE COUNTY. BSM SHALL BE FROM A STOCKPILE THAT HAS BEEN CONSTRUCTED BY THE PRODUCER AND THE STOCKPILE SHALL BE CONSTRUCTED SO THE PILE IS IDENTIFIABLE. SAMPLING AND TESTING WILL BE COMPLETED IN CONFORMANCE WITH MSMT 356. THE BSM SHALL HAVE A PH VALUE NOT LESS THAN 5.5 AND NOT MORE THAN 7.5 AND SHALL MEET THE FOLLOWING NUTRIENT CRITERIA WHEN TESTED AS SPECIFIED BY THE UNIVERSITY OF DELAWARE COLLEGE OF AGRICULTURE AND NATURAL RESOURCES SOIL TESTING PROGRAM:

NUTRIENT	LIMIT, PPM
MAGNESIUM	MIN. 35
PHOSPHOROUS (PHOSPHATE)	MIN. 75
POTASSIUM	MIN. 85
SULUBLE SALTS	NOT TO EXCEED 300

AMENDMENTS: ANY BSM NOT MEETING THE NUTRIENT REQUIREMENTS SHALL BE AMENDED BY THE PRODUCER AT THE DIRECTION OF THE ADMINISTRATION'S LANDSCAPE OPERATIONS DIVISION. ALL AMENDMENTS SHALL BE MIXED UNIFORMLY INTO THE BSM AS FOLLOWS:

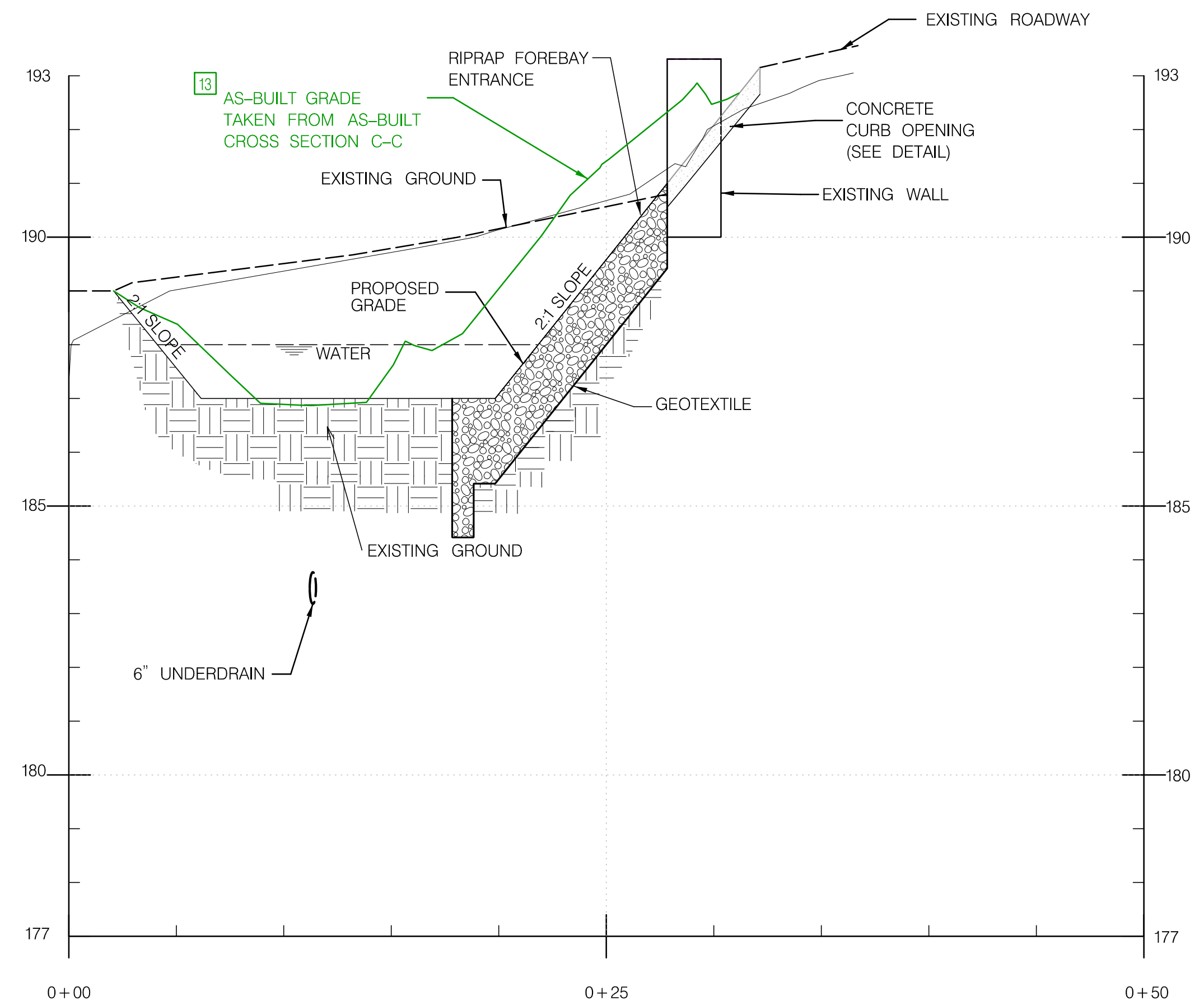
- A) THE PH SHALL BE CORRECTED WITH THE RECOMMENDED AMOUNT OF DOLOMITIC LIMESTONE OR SULFUR (90%).
- B) MAGNESIUM SHALL BE CORRECTED WITH THE RECOMMENDED AMOUNT OF DOLOMITIC LIMESTONE.
- C) PHOSPHOROUS SHALL BE CORRECTED WITH THE RECOMMENDED AMOUNT OF 5-20-20 FERTILIZER.
- D) POTASSIUM SHALL BE CORRECTED WITH THE RECOMMENDED AMOUNT OF 0-0-60 FERTILIZER.

THE USE OF ANY OTHER AMENDMENT MATERIALS IS PROHIBITED. THE ADDITION OF MATERIAL TO CORRECT ANY OTHER NUTRIENT DEFICIENCIES IS PROHIBITED.

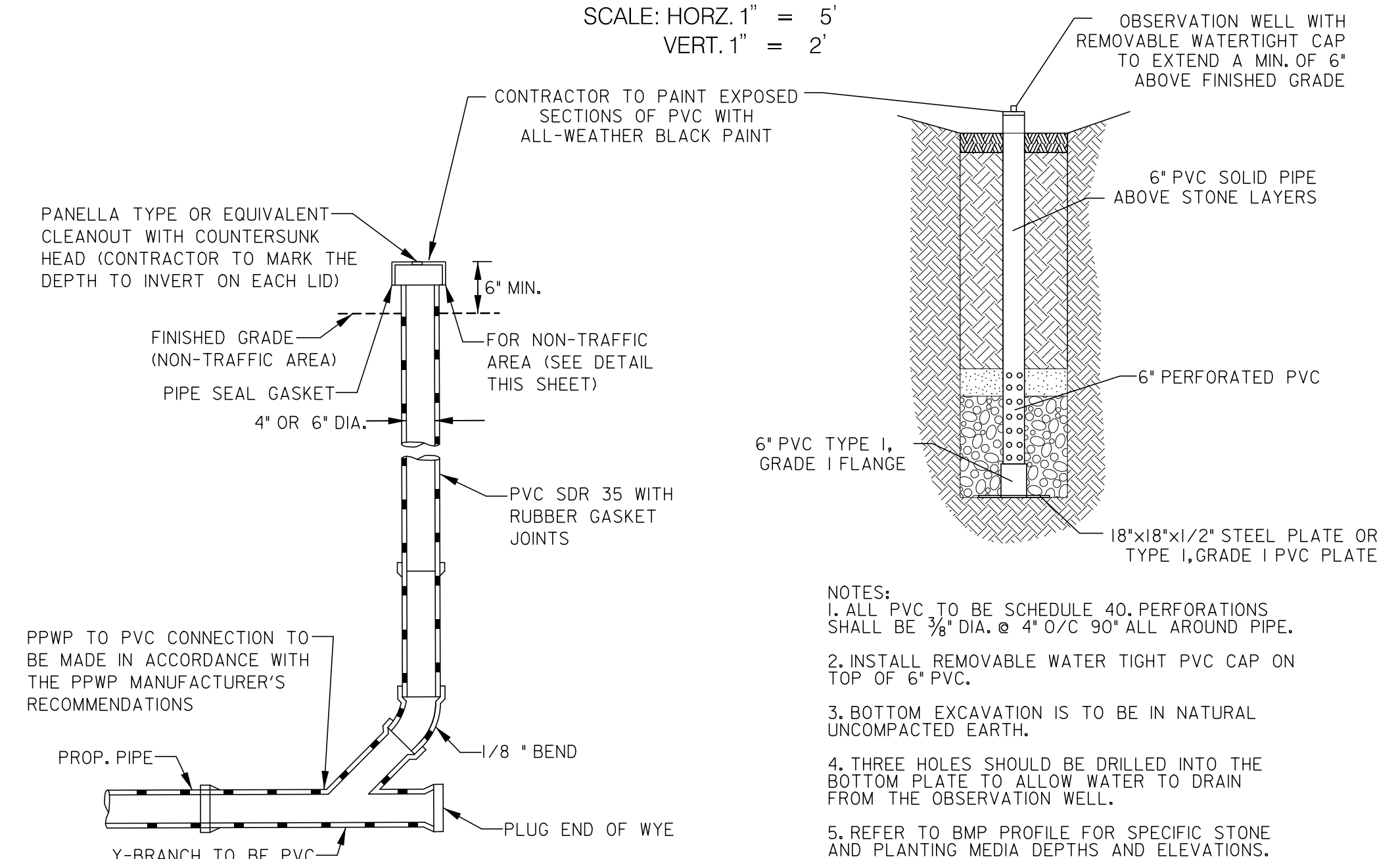
ADDITIONAL REQUIREMENTS: BSM SHALL HAVE A MINIMUM ORGANIC CONTENT NO LESS THAN 1.5 PERCENT BY WEIGHT WHEN TESTED AS SPECIFIED IN T 194. BSM SHALL BE ANALYZED FOR SAND, SILT, AND CLAY AS SPECIFIED IN T 88. THE TEXTURAL ANALYSIS SHALL BE AS FOLLOWS:

SOIL PARTICLE SIZES, MM	PERCENT PASSING BY WEIGHT
SAND (2.0-0.050)	55-85
SILT (0.050-0.002)	0-20
CLAY (LESS THAN 0.002)	1-5

THE ADDITION OF MATERIALS TO THE BSM STOCKPILE TO CORRECT TEXTURAL ANALYSIS DEFICIENCIES IS PROHIBITED. BSM THAT FAILS TO MEET THE MINIMUM REQUIREMENTS SHALL BE REPLACED AT NO ADDITIONAL COST TO THE COUNTY. THE ADDITION OF BSM OR OTHER MATERIAL TO THE APPROVED STOCKPILE IS PROHIBITED. STOCKPILE PROTECTION: BSM STOCKPILES SHALL BE PROTECTED FROM WEATHER.



SWM#1 - SECTION C-C - FOREBAY FACILITY
SCALE: HORIZ. 1" = 5'
VERT. 1" = 2'



STANDARD CLEANOUT DETAIL (NON-TRAFFIC AREAS)
N.T.S.

OBSERVATION WELL DETAIL
N.T.S.

- NOTES:
- ALL PVC TO BE SCHEDULE 40. PERFORATIONS SHALL BE 3/8" DIA. @ 4" O/C 90° ALL AROUND PIPE.
 - INSTALL REMOVABLE WATER TIGHT PVC CAP ON TOP OF 6" PVC.
 - BOTTOM EXCAVATION IS TO BE IN NATURAL UNCOMPACTED EARTH.
 - THREE HOLES SHOULD BE DRILLED INTO THE BOTTOM PLATE TO ALLOW WATER TO DRAIN FROM THE OBSERVATION WELL.
 - REFER TO BMP PROFILE FOR SPECIFIC STONE AND PLANTING MEDIA DEPTHS AND ELEVATIONS.
 - PVC PIPE SHALL BE ATTACHED TO THE FLANGE WITH SOLVENT CEMENT PER THE MANUFACTURER'S SPECIFICATIONS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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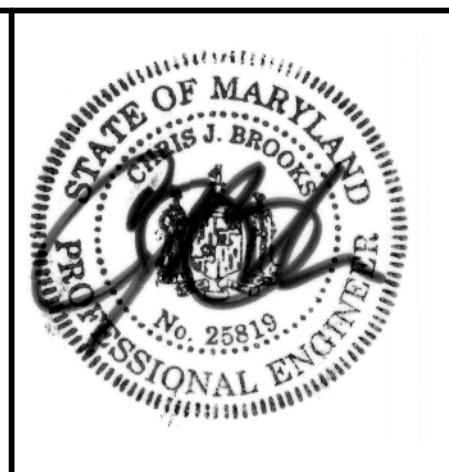
DATE

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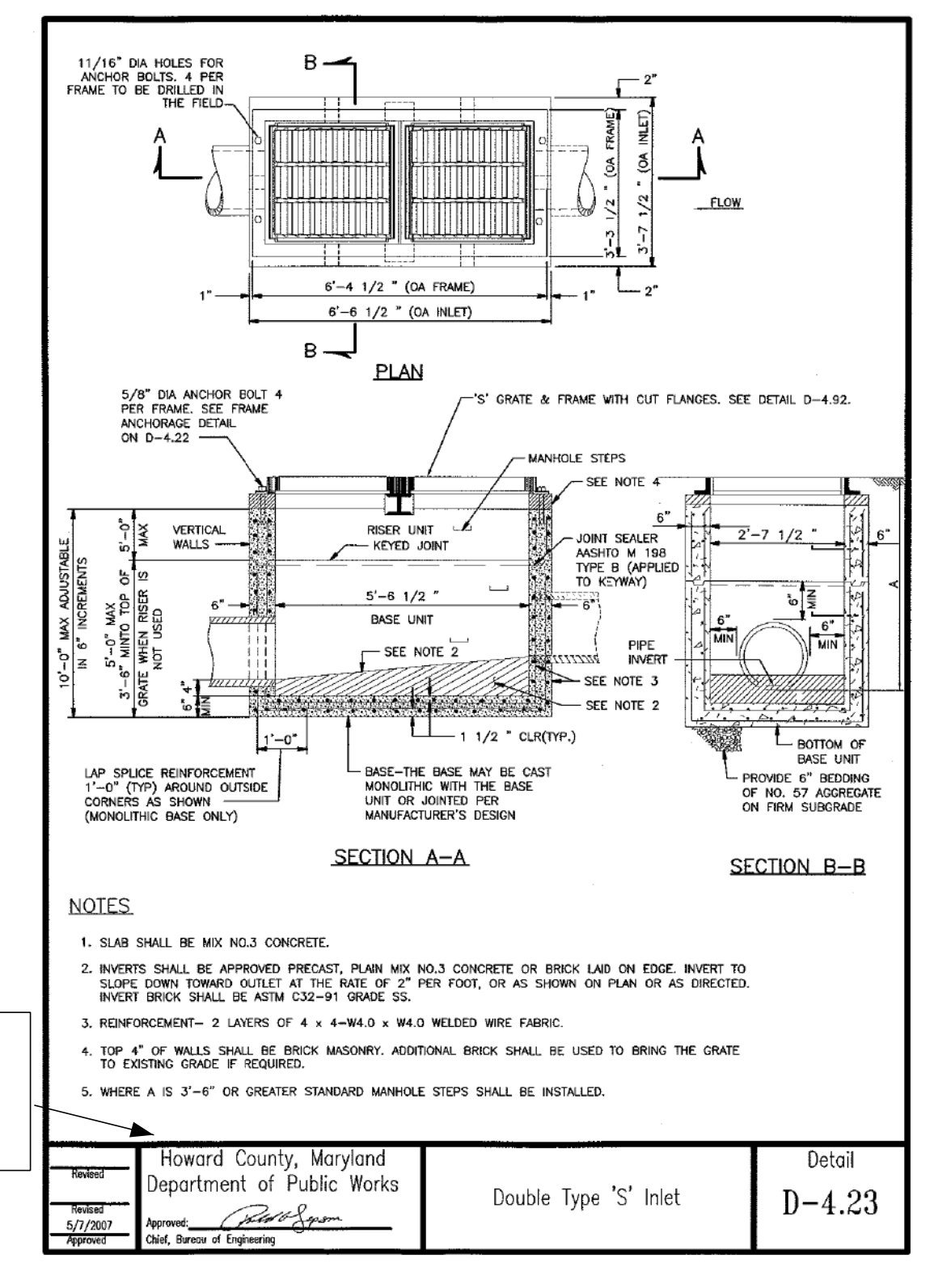
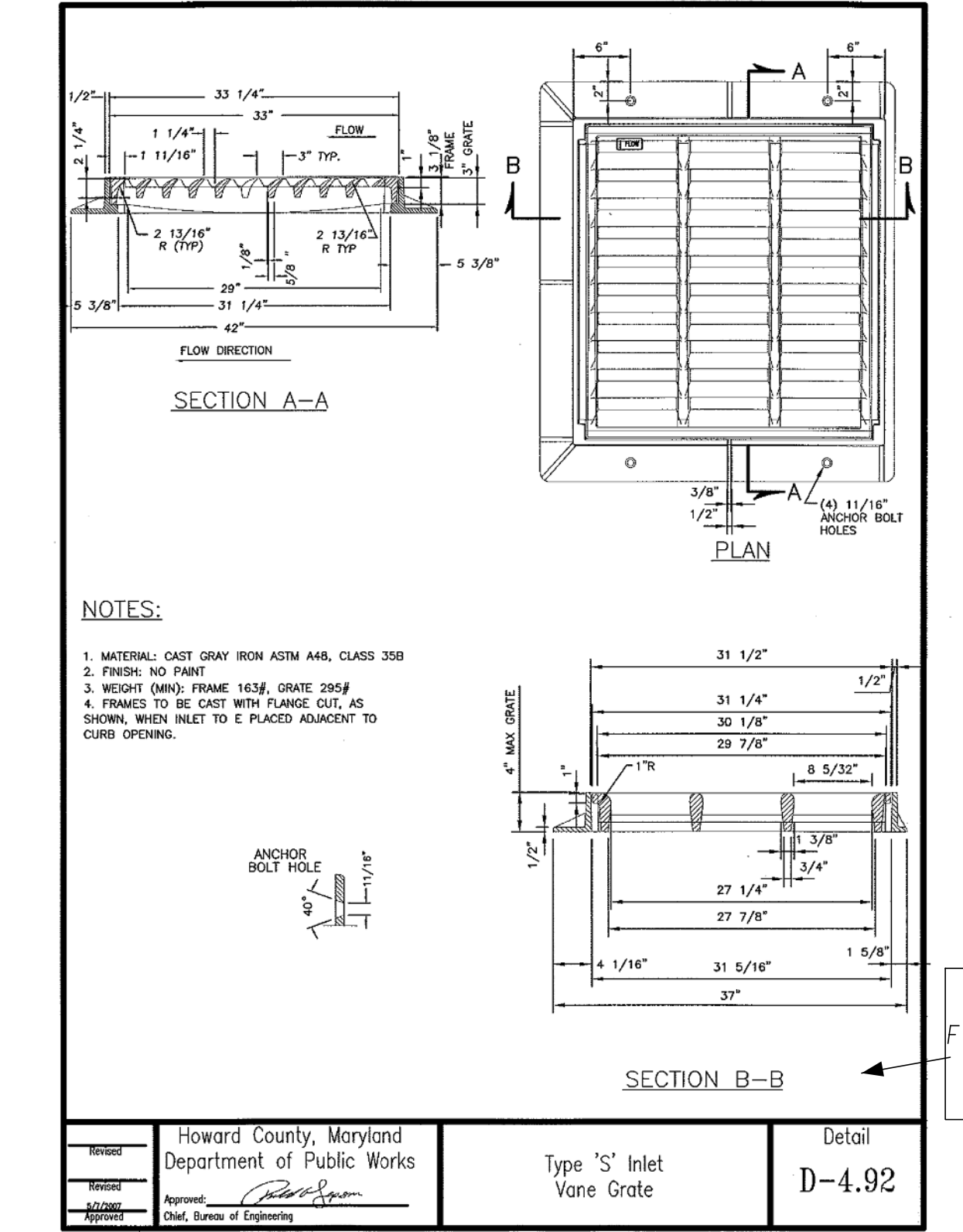
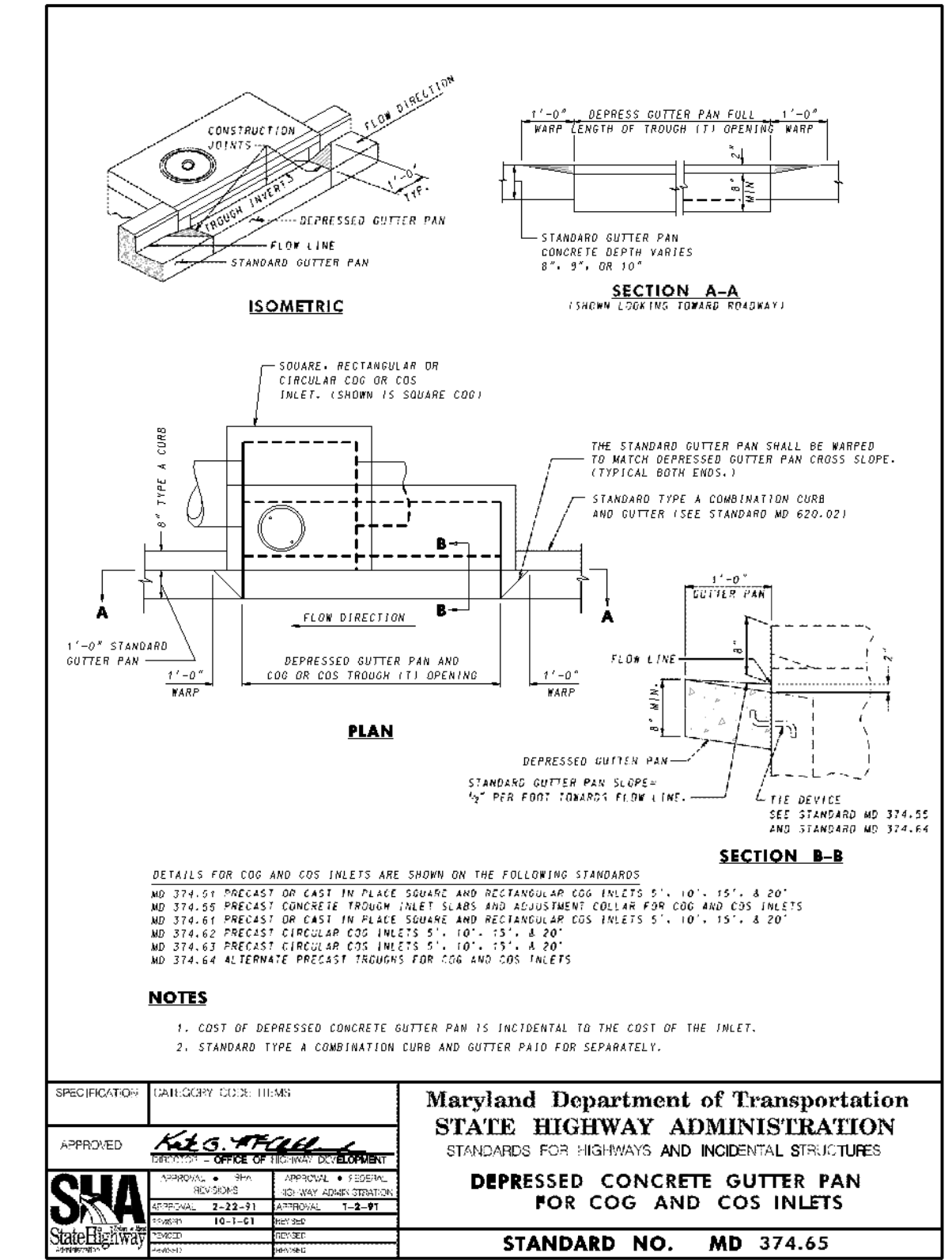
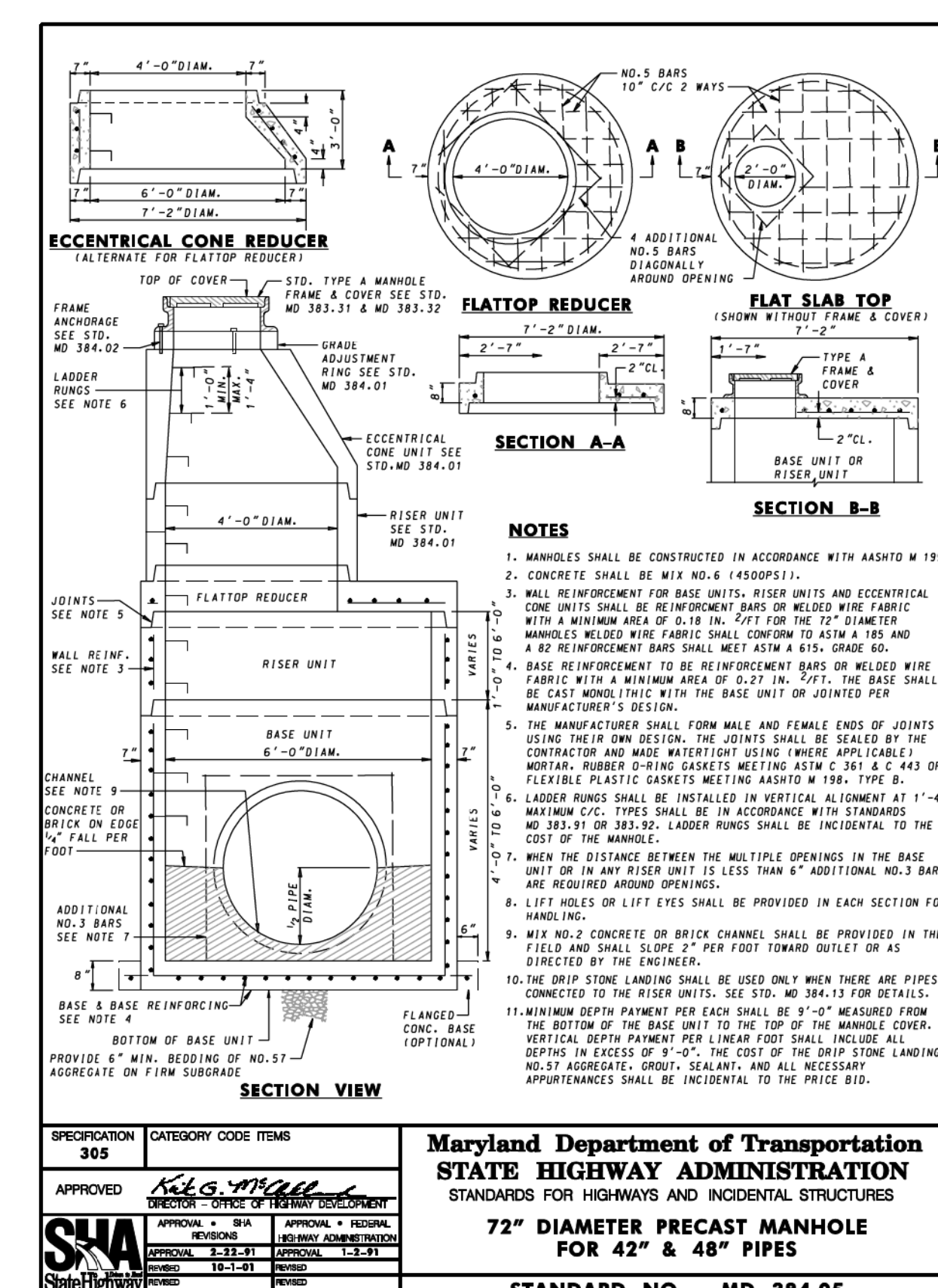
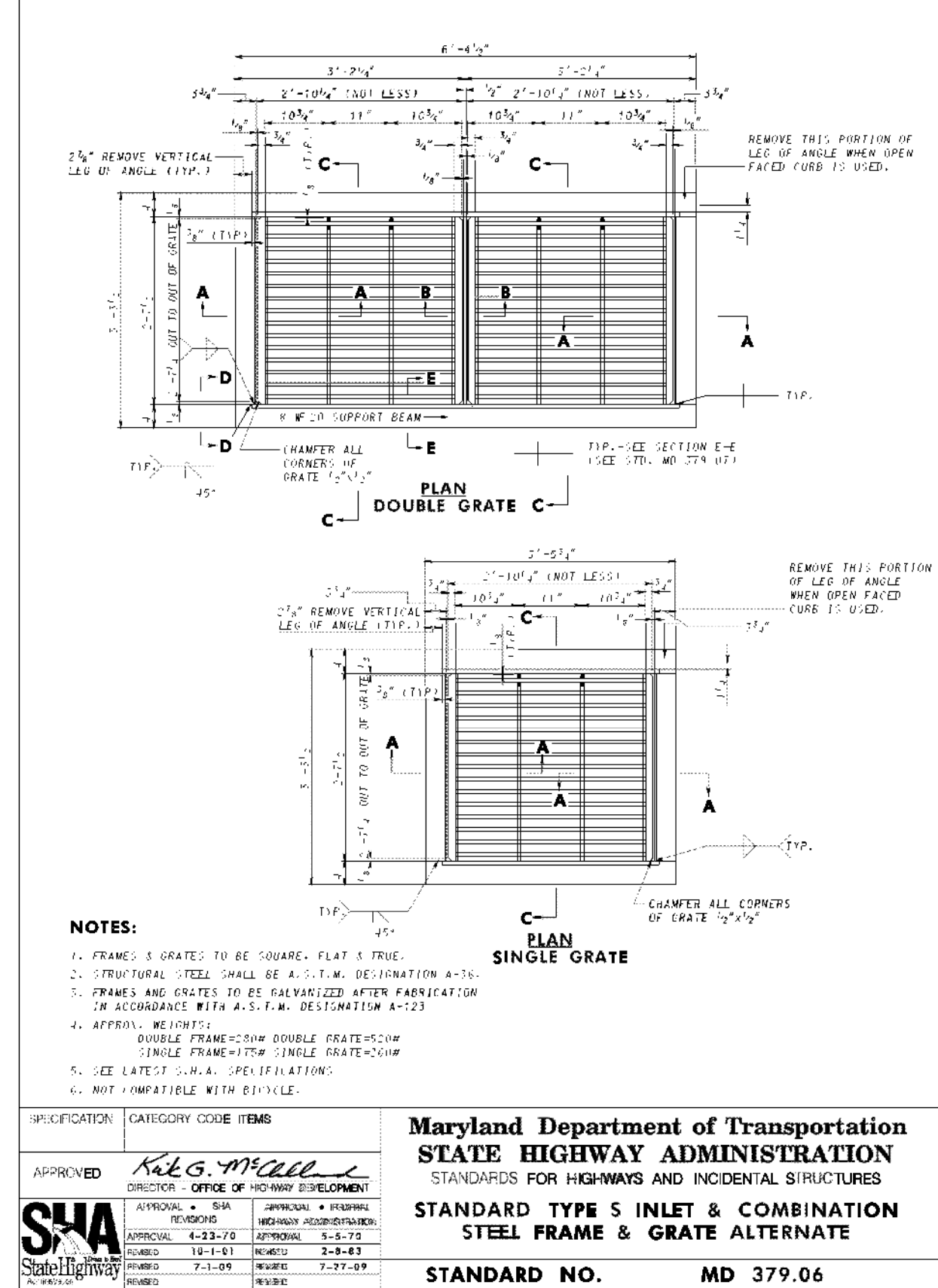
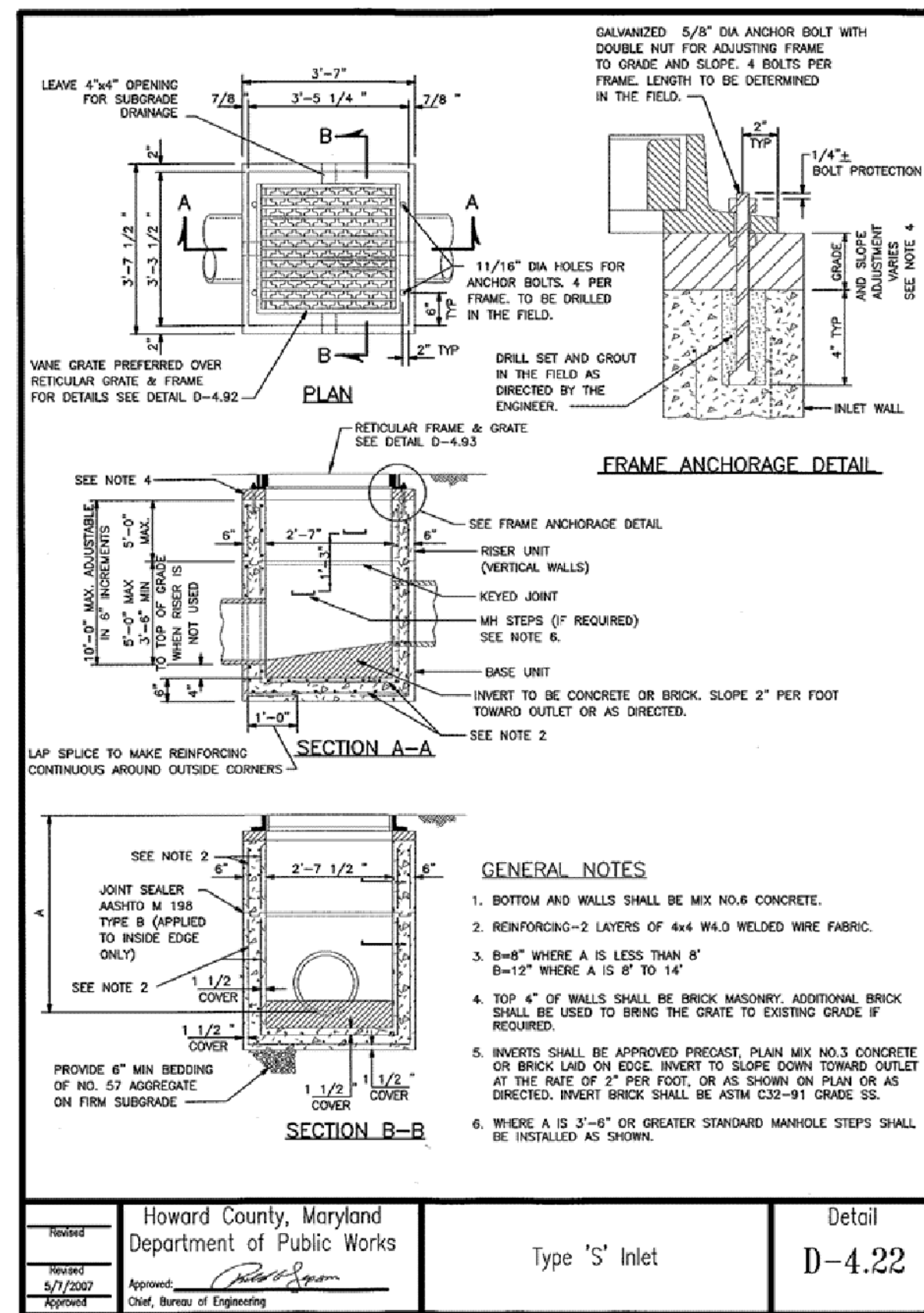
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DRN: MR					
CHK: CB					
DATE: 06/18/14	ADM	13	AS-BUILT SURVEY	09/10/15	
	BY	NO.	REVISION	DATE	

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

STORMWATER MANAGEMENT PROFILE SHEET

SCALE
AS SHOWN

SHEET
11 OF 44



<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p>CHIEF, BUREAU OF ENVIRONMENTAL SERVICES</p>	<p>MCCORMICK TAYLOR</p> <p>509 South Exeter Street 4th Floor Baltimore, Maryland 21202 (410) 662-7400</p>	<p>Howard County MARYLAND</p> <p>Storm Water Management Division Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514 Columbia, Maryland 21046-3143 (410) 313-6444</p>	DES: AM				SCALE AS SHOWN
			DRN: MR				
			CHK: CB				<p>STORMWATER MANAGEMENT DETAIL SHEET</p>
DATE: 06/18/14	BY: NO.	REVISION	DATE				

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

STORMWATER MANAGEMENT DETAIL SHEET

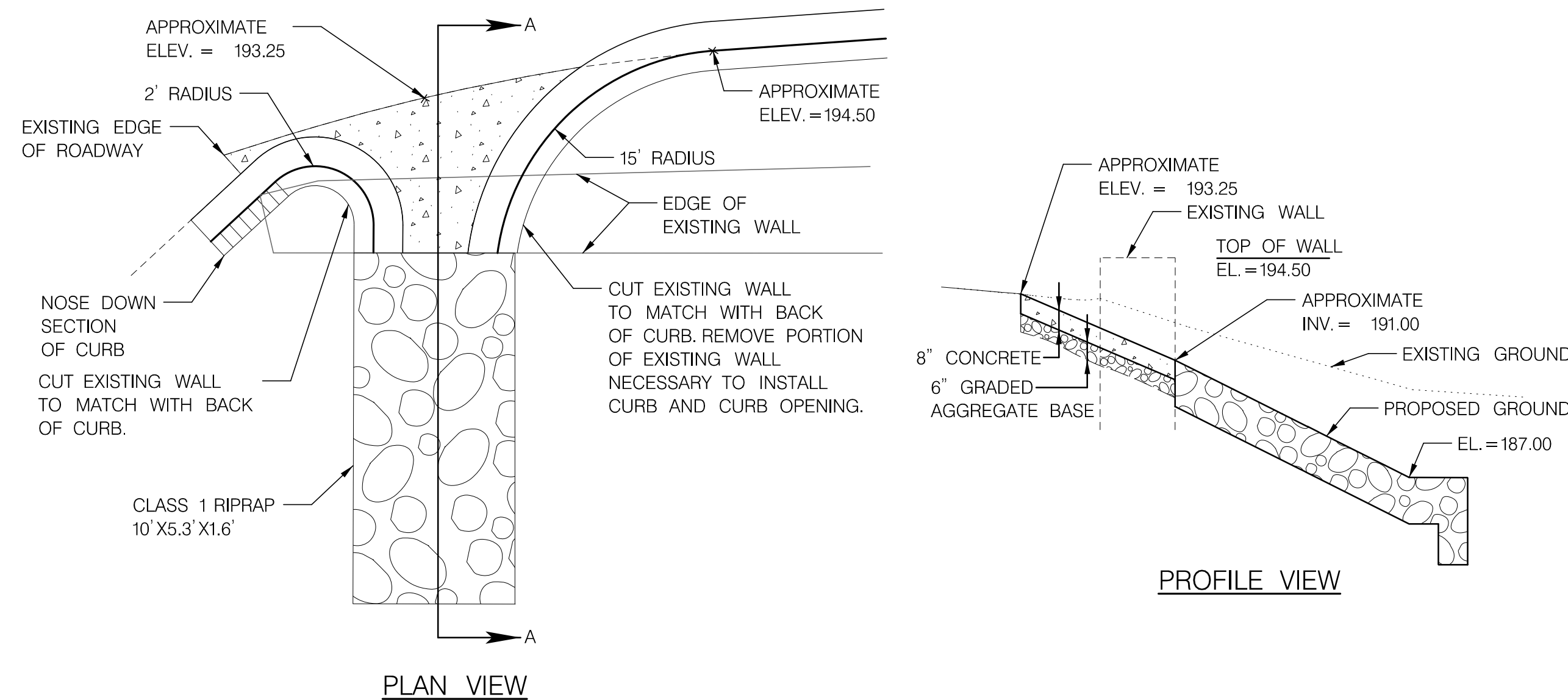
PROJECT NAME: PARKING LOT E WQ IMPROVEMENT		
SWM 1 – BIORETENTION MDE TABULATIONS *TO BE COMPLETED BY THE CERTIFYING ENGINEER		
TYPE OF FACILITY: BIORETENTION		BMP ID: SWM-1
FEATURE	DESIGN ^o	*AS-BUILT ¹³
AS-BUILT SURVEY	N/A	9/10/15
BOTTOM WIDTH	VARIES – SEE PLAN	VARIES – SEE PLAN
FILTER MEDIA THICKNESS	SEE PROFILE	SEE PROFILE
MAXIMUM SLOPE (H:V)	N/A	N/A
LEFT SIDE SLOPE (Z1:1)	2:1	1.5:1
RIGHT SIDE SLOPE (Z2:1)	2:1	2.5:1
LENGTH	58'	58'
FILTER MEDIA COMPOSITION	SEE SPECIFICATIONS ON SHEET 11	SEE SPECIFICATIONS ON SHEET 11
ESD STORAGE ELEVATION	188	188.35
ESD STORAGE VOLUME	939 CF	1,046 CF
2 YR DISCHARGE ELEV.**	188.62	188.72
10 YR DISCHARGE ELEVATION**	188.73	188.83
10 YR FREEBOARD ELEVATION**	189.00	189.00
10 YR FREEBOARD DIMENSION**	0.27	0.17

**DOES NOT INCLUDE DISCHARGE FROM 3 FT WEIR (CREST ELEV. = ~~188.50~~)
^o DISCHARGES ASSUME FULL CAPTURE BY CURB OPENINGS AND NEGLIBLE FLOWRATES THROUGH UNDERDRAIN NETWORK

PROJECT NAME: PARKING LOT E WQ IMPROVEMENT		
SWM 2 – BIORETENTION MDE TABULATIONS *TO BE COMPLETED BY THE CERTIFYING ENGINEER		
TYPE OF FACILITY: RAIN GARDEN		BMP ID: SWM-2
FEATURE	DESIGN ^o	*AS-BUILT ¹³
AS-BUILT SURVEY	N/A	9/10/15
BOTTOM WIDTH	5.8'	6.5'
FILTER MEDIA THICKNESS	24"	24"
MAXIMUM SLOPE (H:V)	N/A	N/A
LEFT SIDE SLOPE (Z1:1)	VARIES – SEE PLAN	VARIES – SEE PLAN
RIGHT SIDE SLOPE (Z2:1)	VARIES – SEE PLAN	VARIES – SEE PLAN
LENGTH	33'	27'
FILTER MEDIA COMPOSITION	SEE SPECIFICATIONS ON SHEET 11	SEE SPECIFICATIONS ON SHEET 11
ESD STORAGE ELEVATION	193.5	193.37
ESD STORAGE VOLUME	323 CF	374 CF
2 YR DISCHARGE ELEV.	N/A	N/A
10 YR DISCHARGE ELEVATION	193.94	194.06
10 YR FREEBOARD ELEVATION	194.00	194.25
10 YR FREEBOARD DIMENSION	0.06	0.19

PROJECT NAME: PARKING LOT E WQ IMPROVEMENT		
SWM 3 – BIORETENTION MDE TABULATIONS *TO BE COMPLETED BY THE CERTIFYING ENGINEER		
TYPE OF FACILITY: BIORETENTION		BMP ID: SWM-3
FEATURE	DESIGN ^o	*AS-BUILT ¹³
AS-BUILT SURVEY	N/A	9/10/15
BOTTOM WIDTH	VARIES – SEE PLAN	VARIES – SEE PLAN
FILTER MEDIA THICKNESS	24"	24"
MAXIMUM SLOPE (H:V)	N/A	N/A
LEFT SIDE SLOPE (Z1:1)	VARIES – SEE PLAN	VARIES – SEE PLAN
RIGHT SIDE SLOPE (Z2:1)	VARIES – SEE PLAN	VARIES – SEE PLAN
LENGTH	33'	27'
FILTER MEDIA COMPOSITION	SEE SPECIFICATIONS ON SHEET 11	SEE SPECIFICATIONS ON SHEET 11
ESD STORAGE ELEVATION	183.0	183.29
ESD STORAGE VOLUME	380 CF	208 CF
2 YR DISCHARGE ELEV.	183.29	183.58
10 YR DISCHARGE ELEVATION	183.37	183.66
10 YR FREEBOARD ELEVATION***	184.00	184.50
10 YR FREEBOARD DIMENSION***	0.63	0.84

***RELIEF WEIR 4' WIDE X 0.5' DEEP (CREST ELEV. 183.50) NOT INCLUDED



CURB OPENING 2 DETAIL
NOT TO SCALE

PROJECT NAME: PARKING LOT E WQ IMPROVEMENT		
TB 1– TREE BOX MDE TABULATIONS *TO BE COMPLETED BY THE CERTIFYING ENGINEER		
TYPE OF FACILITY: TREE BOX		BMP ID: TB-1
FEATURE	DESIGN ^o	*AS-BUILT ¹³
DRAINAGE AREA (AC)	0.22	0.24
TOTAL IMPERVIOUS AREA (AC)	0.21	0.23
FILTER BOX DIMENSIONS (L x W)	8' x 6'	8' x 6'
TOP OF STRUCTURE ELEVATION	178.85	178.85
OUTLET PIPE (UNDERDRAIN) SIZE / INVERT ELEV.	4" / 175.32	4" / 175.32
THICKNESS OF FILTER MEDIA	REFER TO TYP. SECTION – SHEET 16	REFER TO TYP. SECTION – SHEET 16
PLANTINGS	REFER TO LANDSCAPE PLAN – SHEET 44	REFER TO LANDSCAPE PLAN – SHEET 44
COMPOSITION AND DEPTH OF FILTER MEDIA	REFER TO MANUFACTURER SPECIFICATIONS	REFER TO MANUFACTURER SPECIFICATIONS

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark DeLuz
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

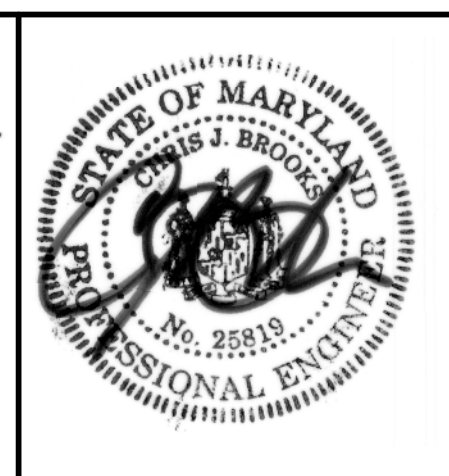
6/10/18
DATE

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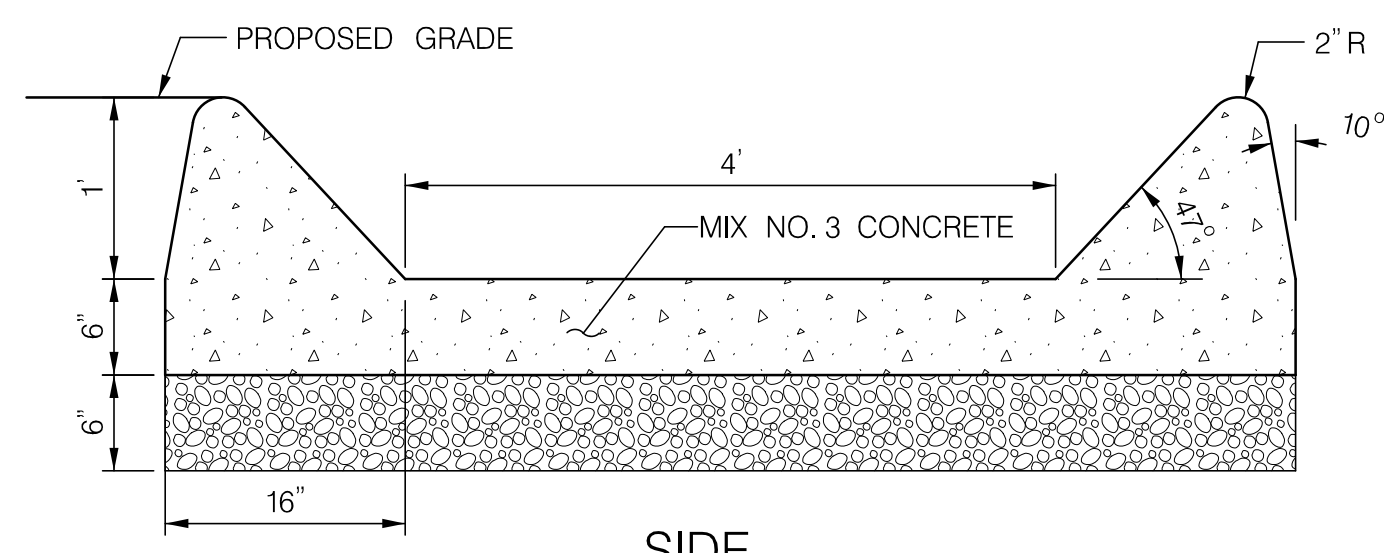


DES: AM					
DRN: MR					
CHK: CB					
DATE: 06/18/14	ADM	¹³	AS-BUILT SURVEY	09/10/15	
	BY	NO.	REVISION	DATE	

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

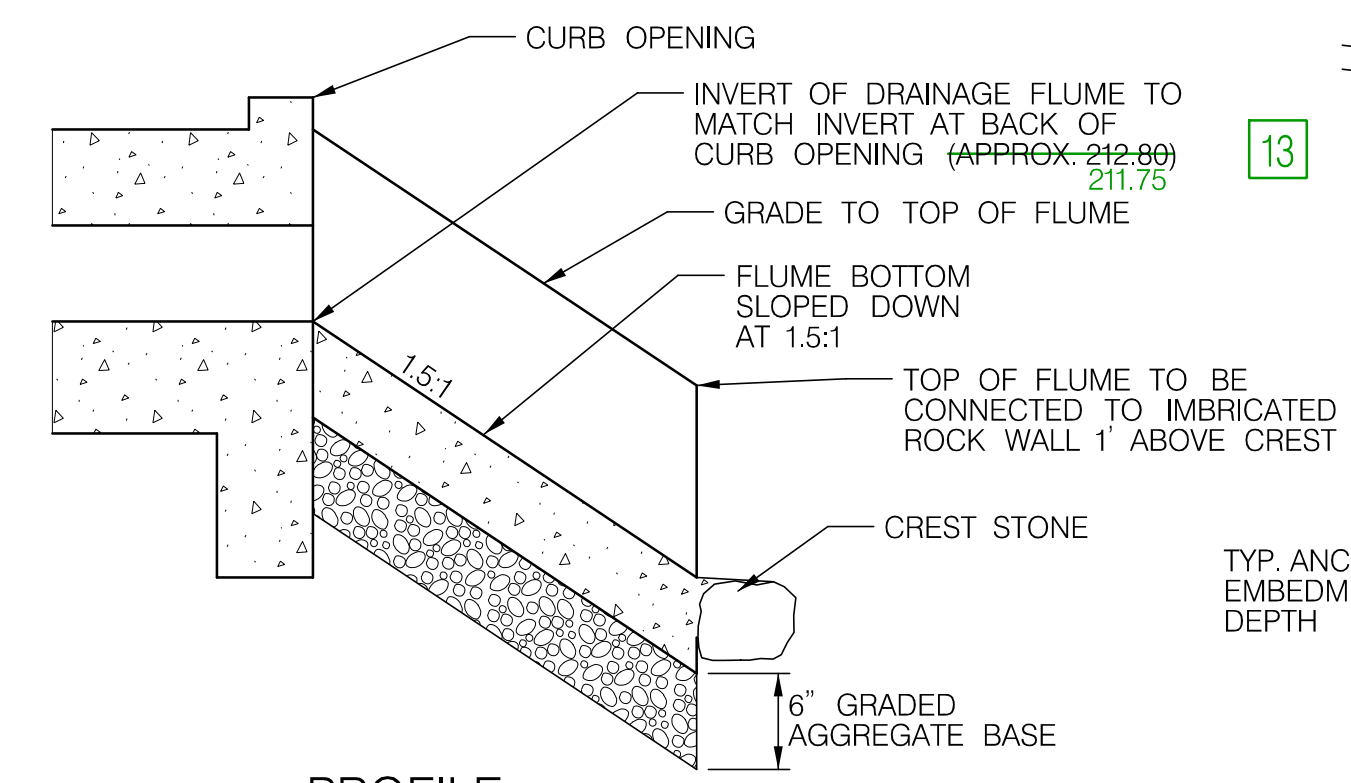
STORMWATER MANAGEMENT DETAIL SHEET

SCALE: AS SHOWN
SHEET: 13 OF 44

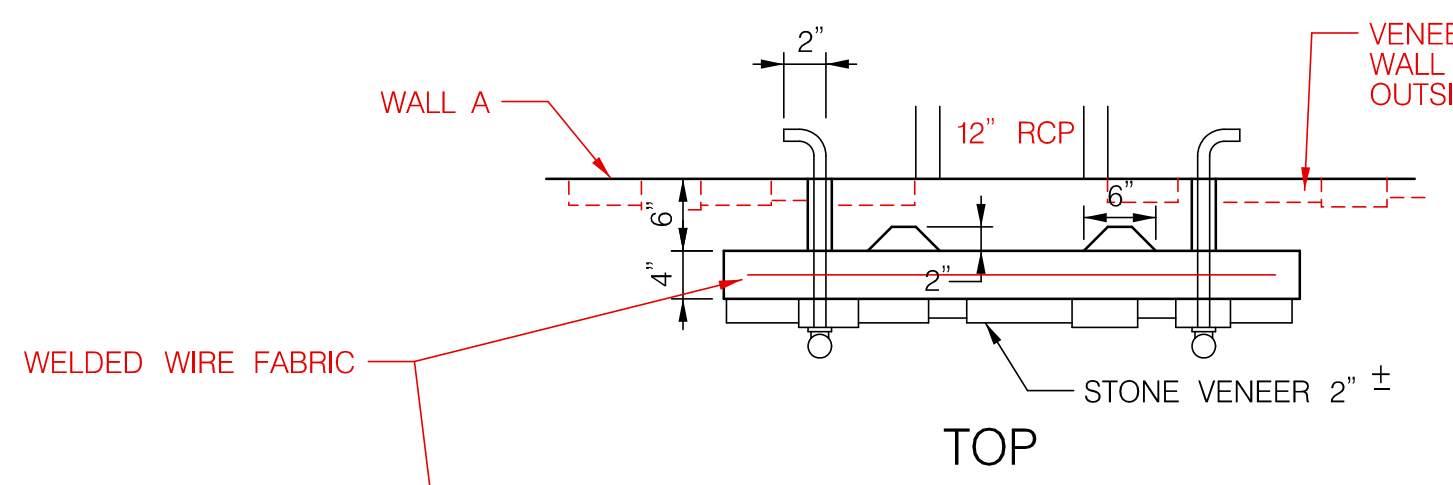


SIDE

DRAINAGE FLUME DETAIL
NOT TO SCALE

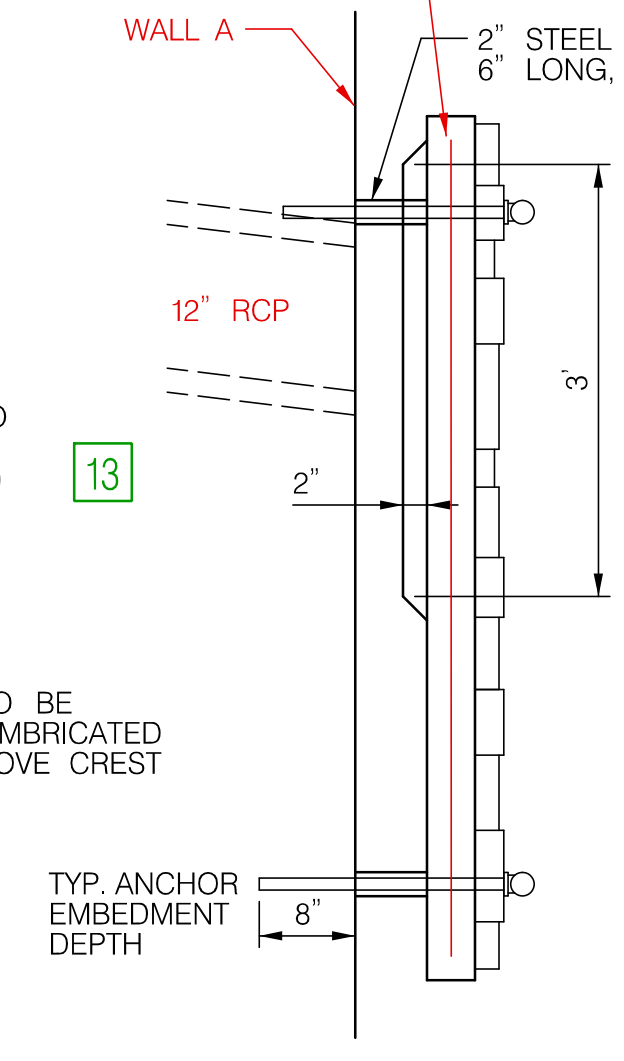


PROFILE

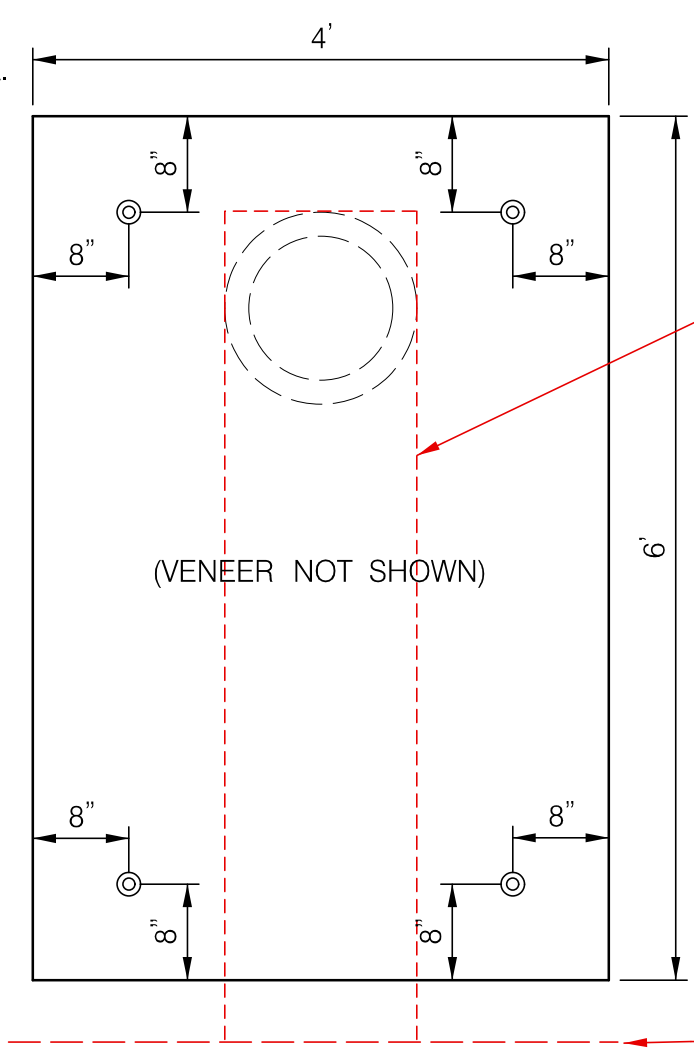


TOP

PIPE END PANEL DETAIL
NOT TO SCALE

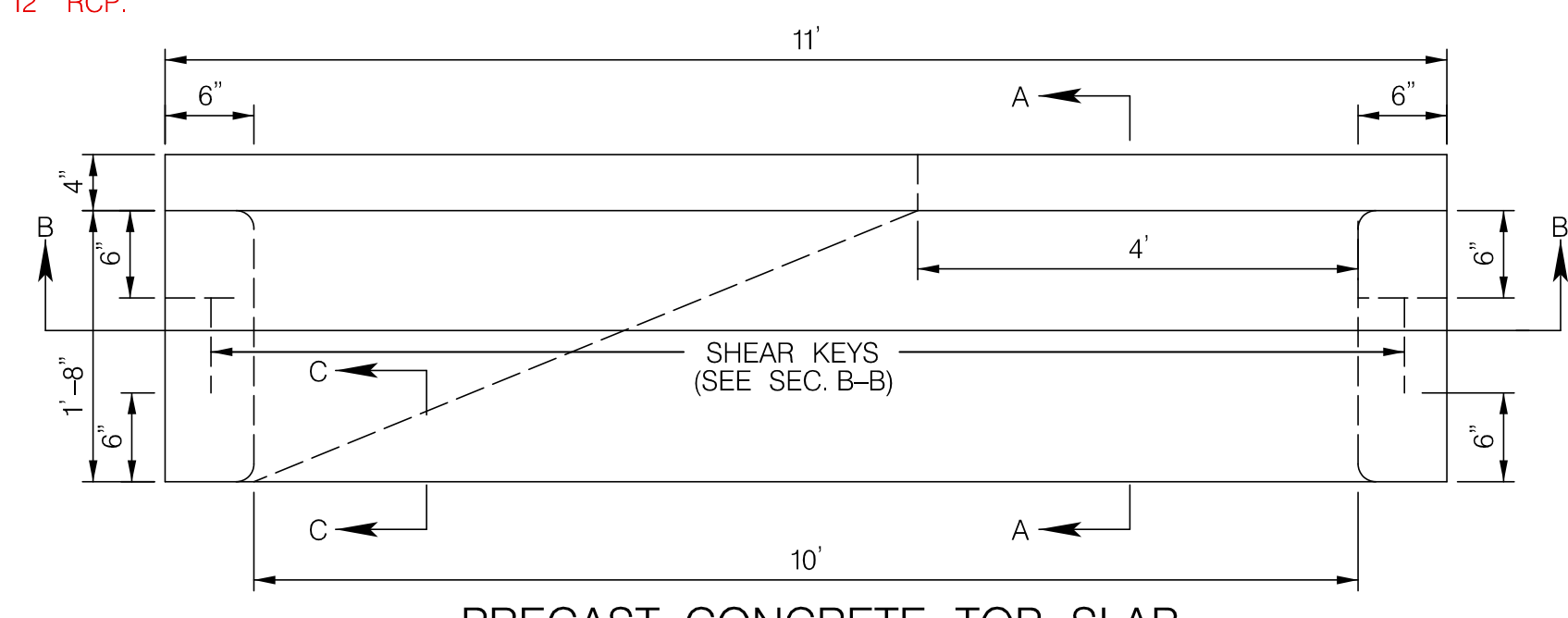


SIDE

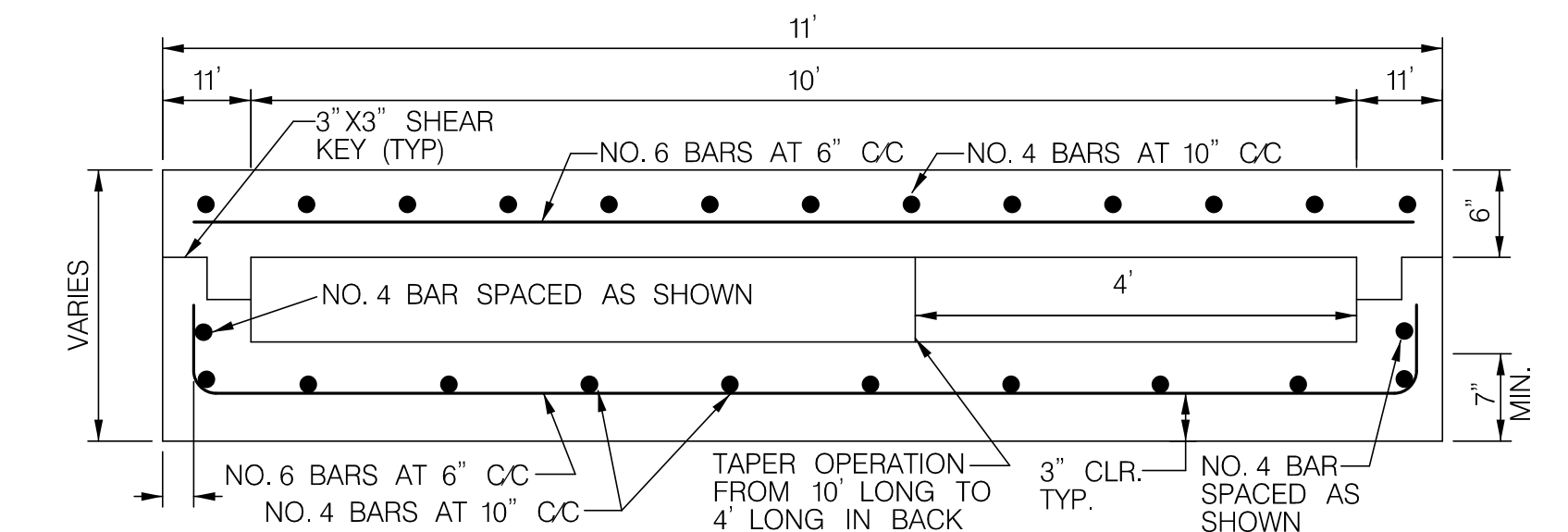


FRONT

* SEE RFI RESPONSE #15 FOR ADDITIONAL DESCRIPTION OF PIPE END PANEL DESIGN.

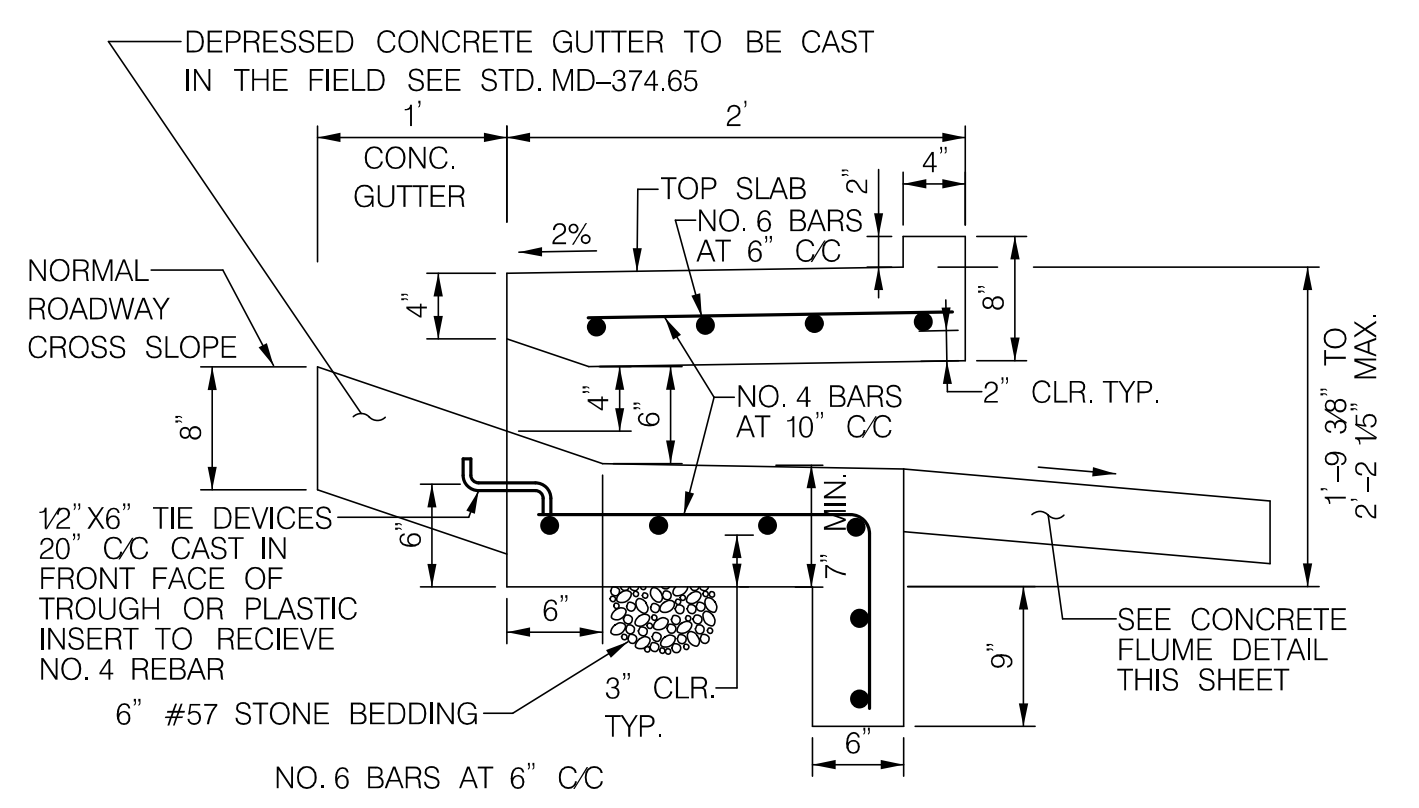


PRECAST CONCRETE TOP SLAB

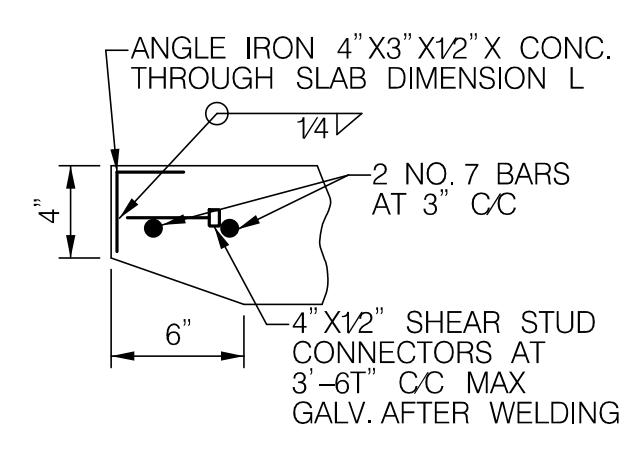


SECTION B-B

MODIFIED 10' CURB OPENING
NOT TO SCALE

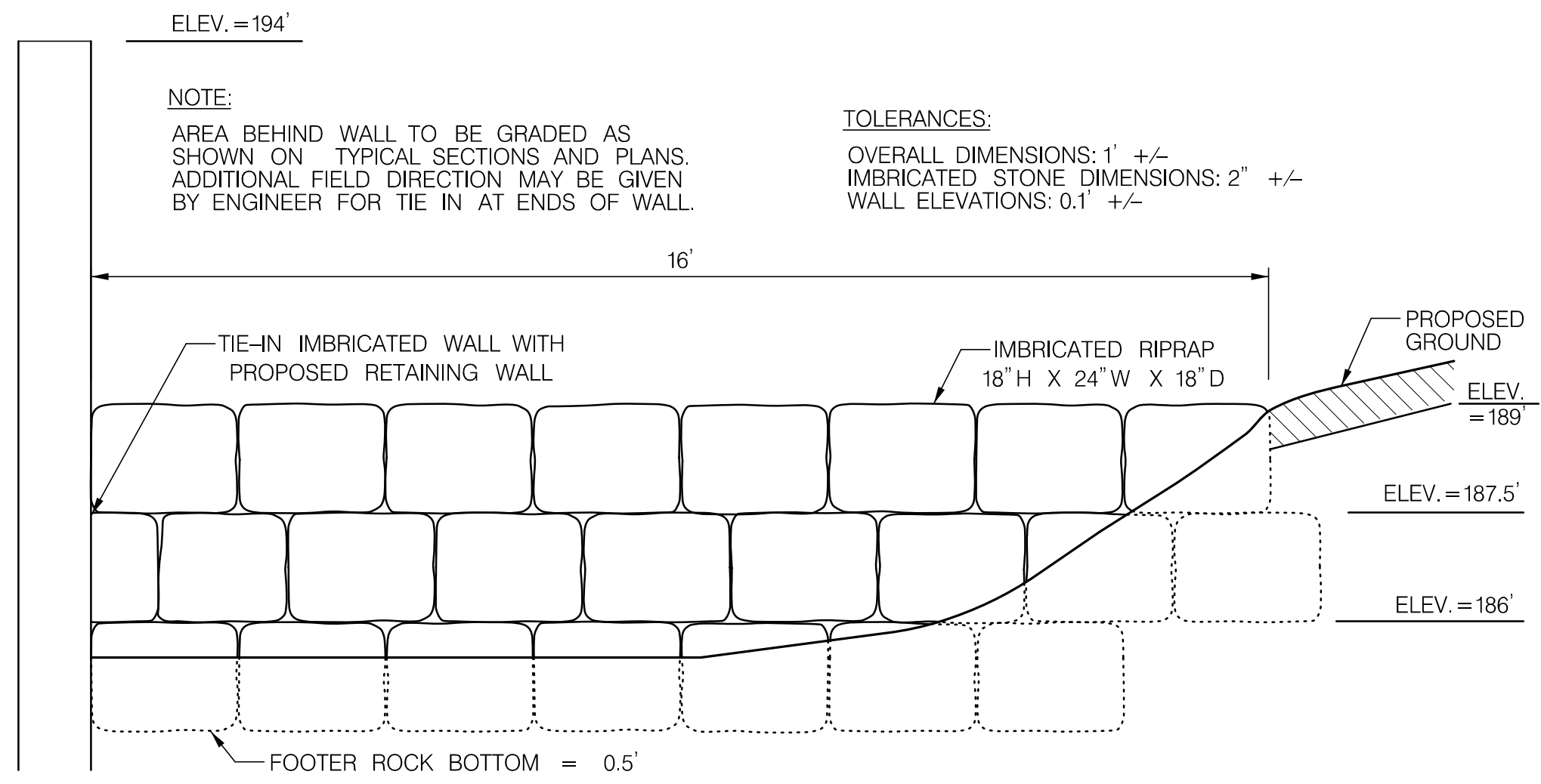


SECTION A-A

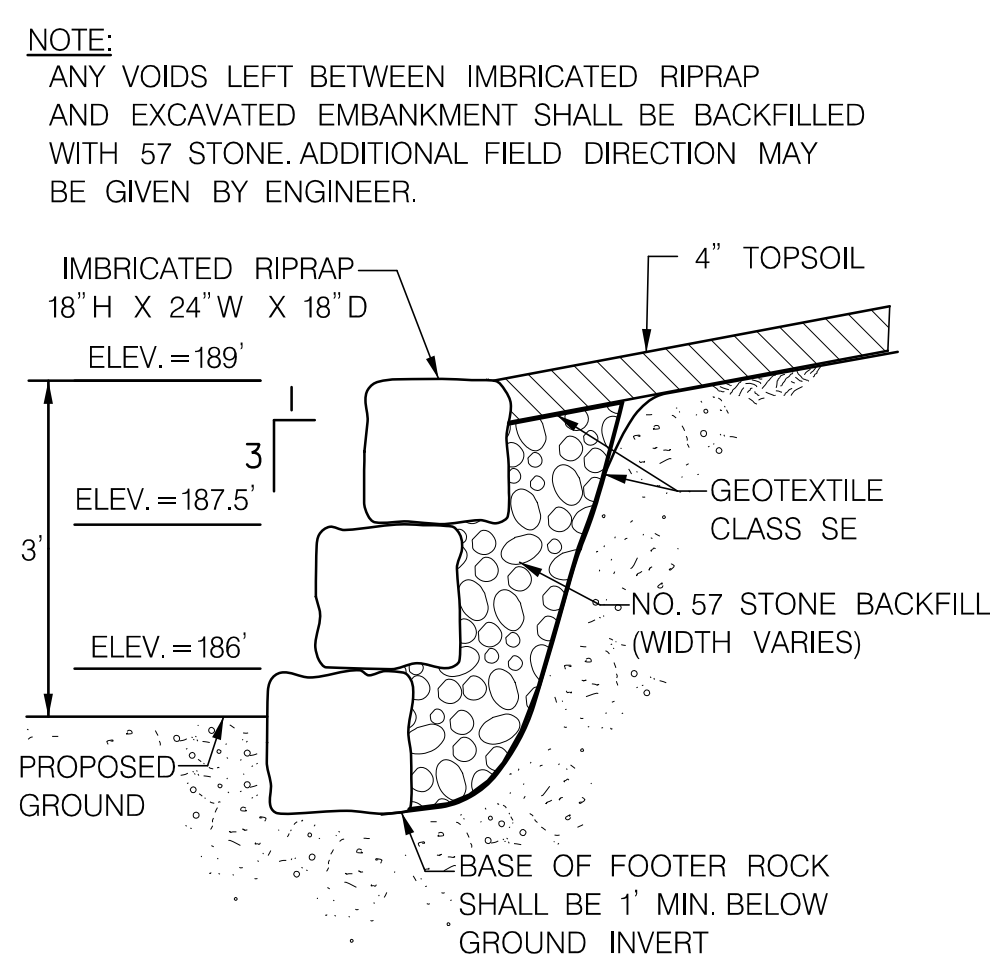


SECTION C-C

- NOTES:
1. CONCRETE SHALL BE MIX #6 (4500 PSI).
 2. REINFORCEMENT STEEL SHALL MEET THE REQUIREMENTS OF ASTM A615, GRADE 60.
 3. ANGLE IRON AND SHEAR STUD CONNECTORS SHALL BE GALVANIZED AFTER WELDING IN ACCORDANCE WITH ASTM A 123.
 4. FOR 6" CURB, REFER TO MD 374.55-01, SECTIONS C-C AND D-D.
 5. EROSION PROTECTION TO BE PAID FOR SEPARATELY.

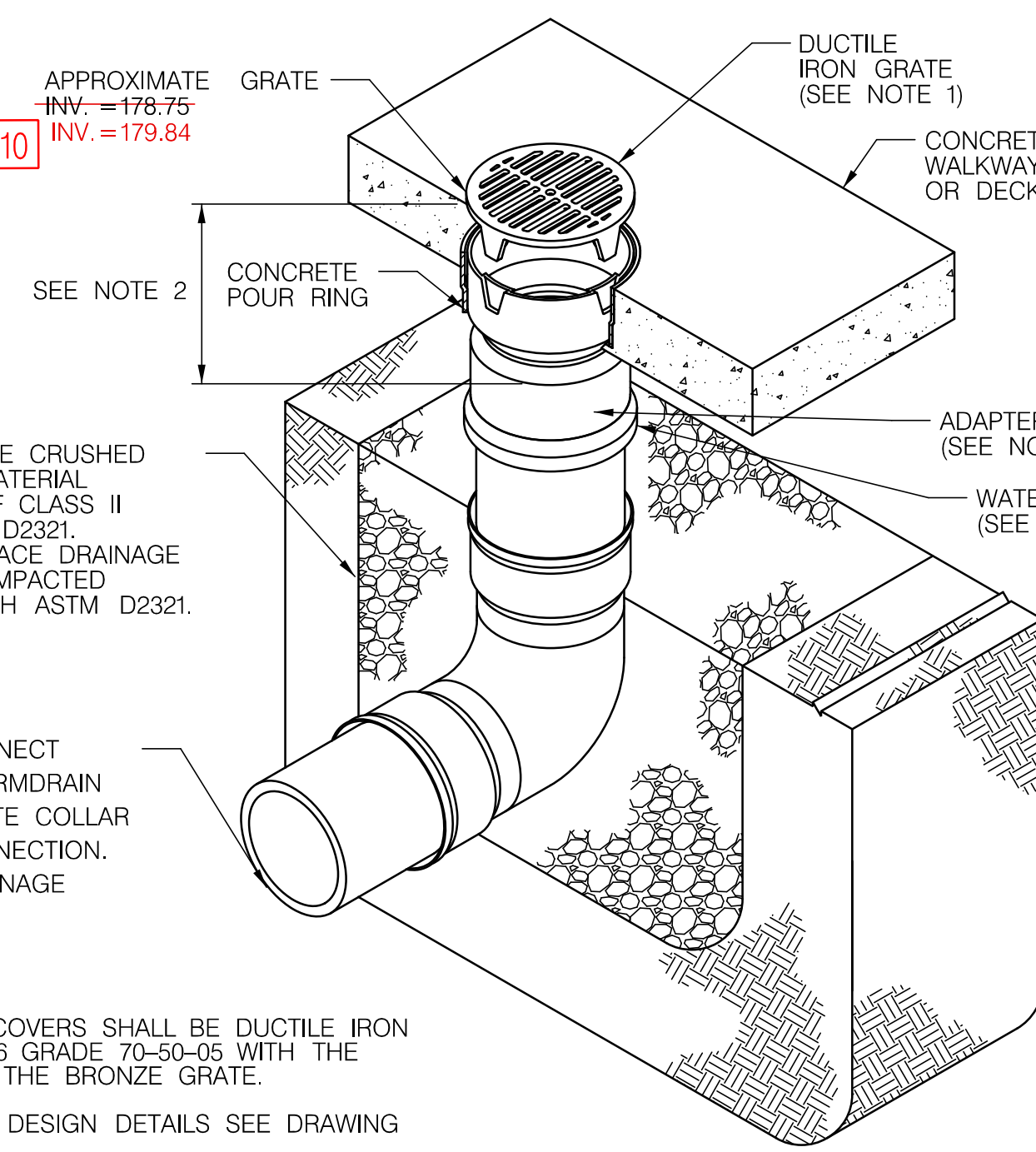


IMBRICATED STONE WALL - ELEVATION VIEW *
NOT TO SCALE

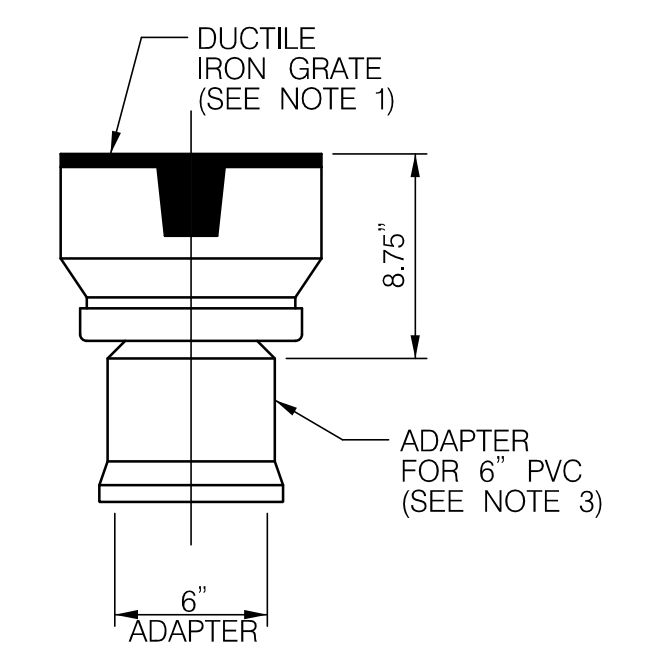


IMBRICATED STONE WALL *
SECTION VIEW
NOT TO SCALE

[5] * FOR WALL ADDED AS PART OF RED-LINE #5, FOLLOW IMBRICATED STONE WALL DETAILS ABOVE FOR TYPICAL MATERIALS AND LAYOUT. TOP OF NEW WALL ELEVATION=200.5'.



NYLOPLAST 10" INLINE DRAIN*
NOT TO SCALE



NYLOPLAST 10" INLINE DRAIN*
ADAPTER TO 6" PVC

THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS II MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

6 LF- 6" PVC TO CONNECT TO PROPOSED 15" STORMDRAIN WITH POURED CONCRETE COLLAR FOR WATER TIGHT CONNECTION. MAINTAIN POSITIVE DRAINAGE TOWARD STORMDRAIN. (APPROX. INV. = 177.33)

- 1- GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05 WITH THE EXCEPTION OF THE BRONZE GRATE.
- 2- FOR COMPLETE DESIGN DETAILS SEE DRAWING NO. 7003-110-001.
- 3- DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), & PVC SEWER.

* OR APPROVED EQUAL

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Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
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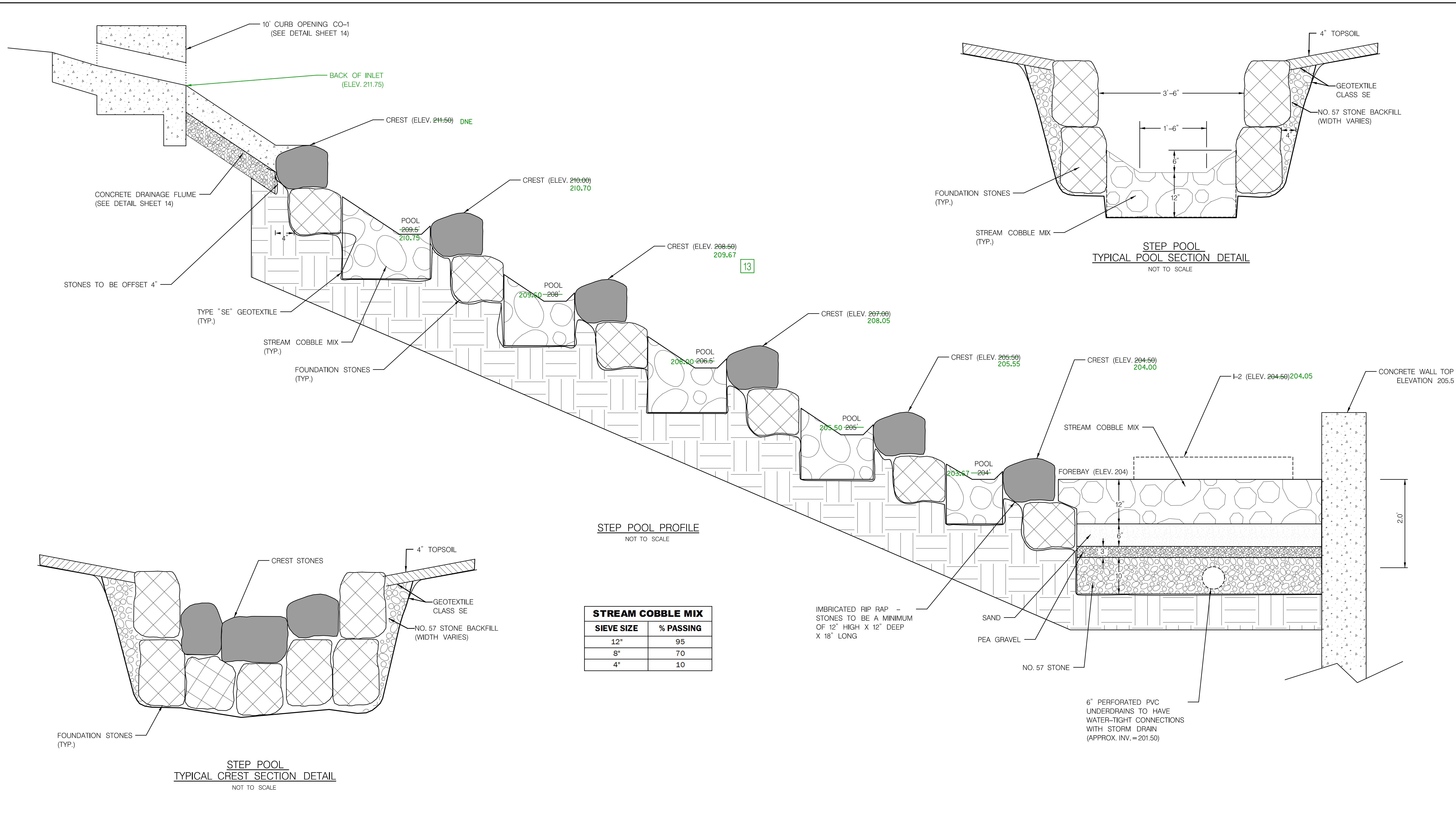


DES:	AM			
DRN:	MR			
CHK:	CB	ADM	[13]	AS-BUILT SURVEY
		ADM	[10]	REVISED CURB /ELEVATIONS AND GRADING
		ADM	[5]	REVISED WALL A AND GRADING
DATE:	06/18/14	BY	NO.	REVISION
				DATE

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

STORMWATER MANAGEMENT DETAIL SHEET

SCALE: AS SHOWN
SHEET: 14 OF 44



STEP POOL PROFILE
NOT TO SCALE

STREAM COBBLE MIX	
SIEVE SIZE	% PASSING
12"	95
8"	70
4"	10

IMBRICATED RIP RAP -
STONES TO BE A MINIMUM
OF 12" HIGH X 12" DEEP
X 18" LONG

6" PERFORATED PVC
UNDERDRAINS TO HAVE
WATER-TIGHT CONNECTIONS
WITH STORM DRAIN
(APPROX. INV. = 201.50)

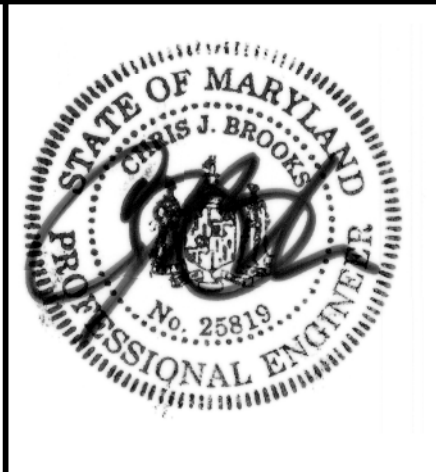
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HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/18/14
DATE

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Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444



DES: AM				
DRN: MR				
CHK: CB				
DATE: 06/18/14	ADM	13	AS-BUILT SURVEY	09/10/15
	BY	NO.	REVISION	DATE

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

STORMWATER MANAGEMENT DETAIL SHEET

SCALE
AS SHOWN

SHEET
15 OF 44

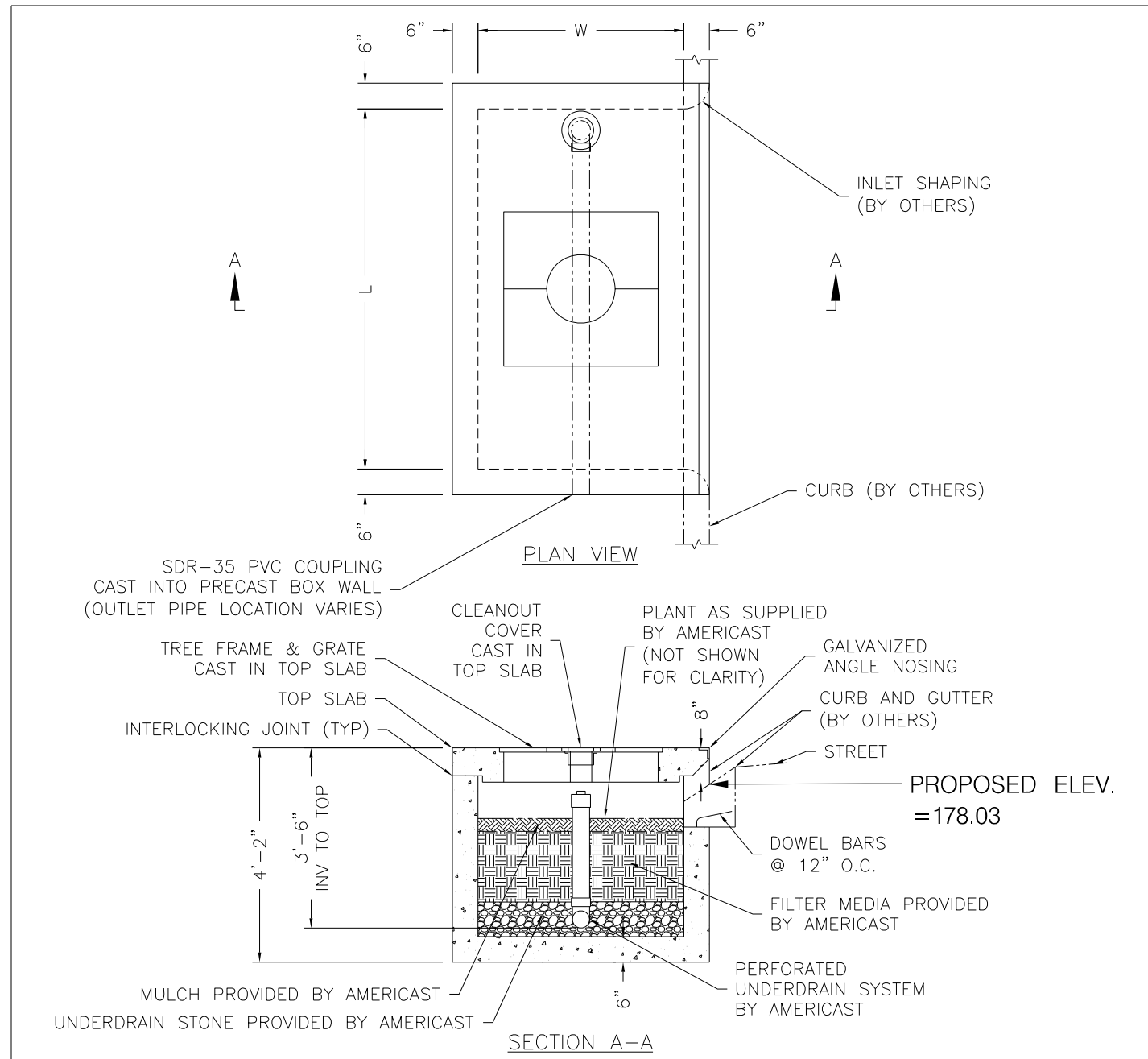
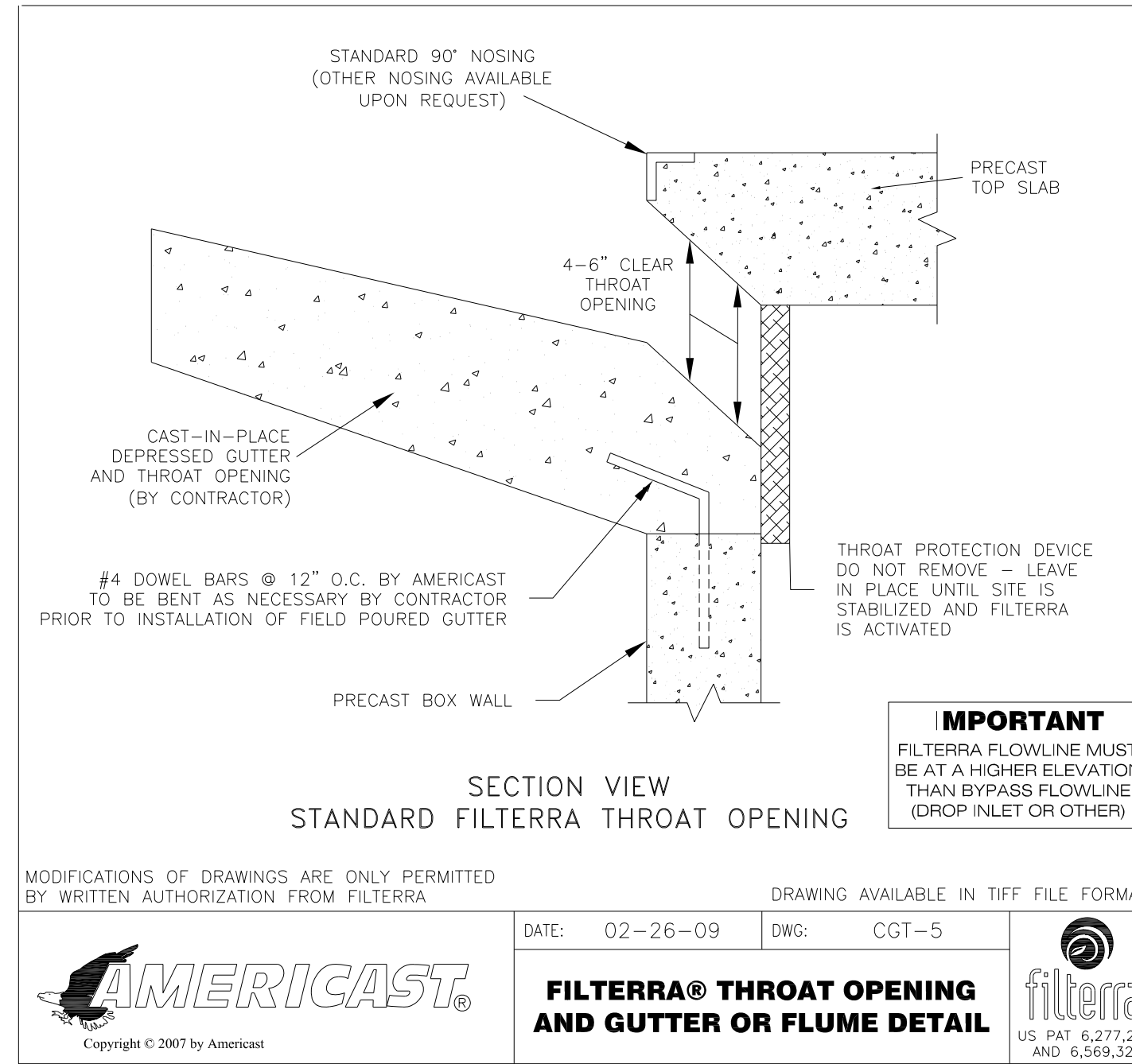
FILTERRA® STANDARD NOTES

CONSTRUCTION AND INSTALLATION

- A. EACH UNIT SHALL BE CONSTRUCTED AT THE LOCATIONS AND ELEVATIONS ACCORDING TO THE SIZES SHOWN ON THE APPROVED DRAWINGS.
- B. IF THE FILTERRA IS STORED BEFORE INSTALLATION, THE TOP SLAB MUST BE PLACED ON THE BOX USING THE 2x4 WOOD PROVIDED, TO PREVENT ANY CONTAMINATION FROM THE SITE. ALL INTERNAL FITTINGS SUPPLIED (IF ANY), MUST BE LEFT IN PLACE AS PER THE DELIVERY.
- C. THE UNIT SHALL BE PLACED ON A COMPACTED SUB-GRADE WITH A MINIMUM OF 6-INCH GRAVEL BASE MATCHING THE FINAL GRADE OF THE CURB LINE IN THE AREA OF THE UNIT. THE UNIT IS TO BE PLACED SUCH THAT THE UNIT AND TOP SLAB MATCH THE GRADE OF THE CURB IN THE AREA OF THE UNIT. COMPACT UNDISTURBED SUB-GRADE MATERIALS TO 95% OF MAXIMUM DENSITY AT +12% OF OPTIMUM MOISTURE. UNSUITABLE MATERIAL BELOW SUB-GRADE SHALL BE REPLACED TO THE SITE ENGINEER'S APPROVAL.
- D. OUTLET CONNECTIONS SHALL BE ALIGNED AND SEALED TO MEET THE APPROVED DRAWINGS WITH MODIFICATIONS NECESSARY TO MEET SITE CONDITIONS AND LOCAL REGULATIONS.
- E. ONCE THE UNIT IS SET, THE INTERNAL WOODEN FORMS AND PROTECTIVE MESH COVER MUST BE LEFT INTACT, REMOVE ONLY THE TEMPORARY WOODEN SHIPPING BLOCKS BETWEEN THE BOX AND TOP SLAB. THE TOP LID SHOULD BE SEALED ONTO THE BOX SECTION BEFORE BACKFILLING, USING A NON-SHRINK GROUT, BUTYL RUBBER OR SIMILAR WATERPROOF SEAL. THE BOARDS ON TOP OF THE LID AND BOARDS SEALED IN THE UNIT'S THROAT MUST NOT BE REMOVED. THE SUPPLIER (AMERICAST OR ITS AUTHORIZED DEALER) WILL REMOVE THESE SECTIONS AT THE TIME OF ACTIVATION. BACKFILLING SHOULD BE PERFORMED IN A CAREFUL MANNER, BRINGING THE APPROPRIATE FILL MATERIAL UP IN 6" LIFTS ON ALL SIDES. PRECAST SECTIONS SHALL BE SET IN A MANNER THAT WILL RESULT IN A WATERTIGHT JOINT. IN ALL INSTANCES, INSTALLATION OF FILTERRA UNIT SHALL CONFORM TO ASTM SPECIFICATION C891 "STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST UTILITY STRUCTURES", UNLESS DIRECTED OTHERWISE IN CONTRACT DOCUMENTS.
- F. THE CONTRACTOR IS RESPONSIBLE FOR INLET PROTECTION/SEDIMENT CONTROL AND CLEANING AROUND EACH FILTERRA UNIT.
- G. CURB AND GUTTER CONSTRUCTION (WHERE PRESENT) SHALL ENSURE THAT THE FLOW-LINE OF THE FILTERRA UNIT IS AT A GREATER ELEVATION THAN THE FLOW LINE OF THE BYPASS STRUCTURE OR RELIEF (DROP INLET, CURB CUT OR SIMILAR). FAILURE TO COMPLY WITH THIS GUIDELINES MAY CAUSE FAILURE AND/OR DAMAGE TO THE FILTERRA ENVIRONMENTAL DEVICE.
- H. EACH FILTERRA UNIT MUST RECEIVE ADEQUATE IRRIGATION TO ENSURE SURVIVAL OF THE LIVING SYSTEM DURING PERIODS OF DRIER WEATHER, THIS MAY BE ACHIEVED THROUGH A PIPED SYSTEM, GUTTER FLOW OR THROUGH THE TREE GRATE.

ACTIVATION

- A. ACTIVATION OF THE FILTERRA UNIT IS PERFORMED ONLY BY THE SUPPLIER. PURCHASER IS RESPONSIBLE FOR FILTERRA INLET PROTECTION AND SUBSEQUENT CLEAN OUT COST. THIS PROCESS CANNOT COMMENCE UNTIL THE PROJECT SITE IS FULLY STABILIZED AND CLEANED (FULL LANDSCAPING, GRASS COVER, FINAL PAVING AND STREET SWEEPING COMPLETED, NEGATING THE CHANGE OF CONSTRUCTION MATERIALS CONTAMINATING THE FILTERRA SYSTEM. CARE SHALL BE TAKEN DURING CONSTRUCTION NOT TO DAMAGE THE PROTECTIVE THROAT AND TOP PLATES.
- B. ACTIVATION INCLUDES INSTALLATION OF PLANT(S) AND MULCH LAYERS AS NECESSARY.
- INCLUDED MAINTENANCE
 - A. EACH CORRECTLY INSTALLED FILTERRA UNIT IS TO BE MAINTAINED BY THE SUPPLIER OR A SUPPLIER APPROVED CONTRACTOR FOR A MINIMUM PERIOD OF 1 YEAR. THE COST OF THIS SERVICE IS TO BE INCLUDED IN THE PRICE OF EACH FILTERRA UNIT.
 - B. ANNUAL INCLUDED MAINTENANCE CONSISTS OF A MAXIMUM OF (2) SCHEDULED VISITS. THE VISITS AREA SCHEDULED SEASONALLY; THE SPRING VISIT AIMS TO CLEAN UP AFTER WINTER LOADS THAT MAY INCLUDE SALTS AND SANDS. THE FALL VISIT HELPS THE SYSTEM BY REMOVING EXCESSIVE LEAF LITTER.
 - C. EACH INCLUDED MAINTENANCE VISIT CONSISTS OF THE FOLLOWING TASKS:
 1. FILTERRA UNIT INSPECTION
 2. FOREIGN DEBRIS, SILT, MULCH AND TRASH REMOVAL
 3. FILTER MEDIA EVALUATION AND RECHARGE AS NECESSARY
 4. PLANT HEALTH EVALUATION AND PRUNING OR REPLACEMENT AS NECESSARY
 5. REPLACEMENT OF MULCH
 6. DISPOSAL OF ALL MAINTENANCE REFUSE ITEMS
 7. MAINTENANCE RECORDS UPDATED AND STORED (REPORTS AVAILABLE UPON REQUEST)



DESIGNATION	L	W	TREE GRATE QTY & SIZE	OUTLET PIPE
6 x 4	6'-0"	4'-0"	(1) 3x3	4" SDR-35 PVC
8 x 4	8'-0"	4'-0"	(1) 3x3	4" SDR-35 PVC
8 x 6	8'-0"	6'-0"	(1) 4x4	4" SDR-35 PVC
10 x 6	10'-0"	6'-0"	(1) 4x4	6" SDR-35 PVC
12 x 4	12'-0"	4'-0"	(2) 3x3	4" SDR-35 PVC
12 x 6	12'-0"	6'-0"	(2) 4x4	6" SDR-35 PVC
13 x 7	13'-0"	7'-0"	(2) 4x4	6" SDR-35 PVC

AMERICAST logo and product name: **PRECAST FILTERRA® UNIT NARROW WIDTH CONFIGURATION**. Includes logos for AMERICAST and filterra.

GENERAL NOTES:
 1. CONTRACTOR TO PERFORM ALL WORK AS SHOWN BY OTHERS.
 2. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT SUPPLIER FULFILLS SPECIFIED RESPONSIBILITIES AND PERFORMS SPECIFIED DUTIES.

APPROX. ELEVATIONS AT A-A
 TOP OF CURB ELEV. = 178.85
 BACK OF SLAB ELEV. = 178.50

DEPARTMENT OF PUBLIC WORKS
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Mark DeLuz
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

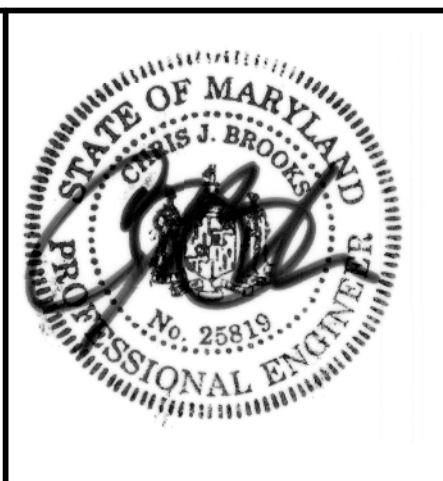
DATE: 6/10/15

McCORMICK TAYLOR

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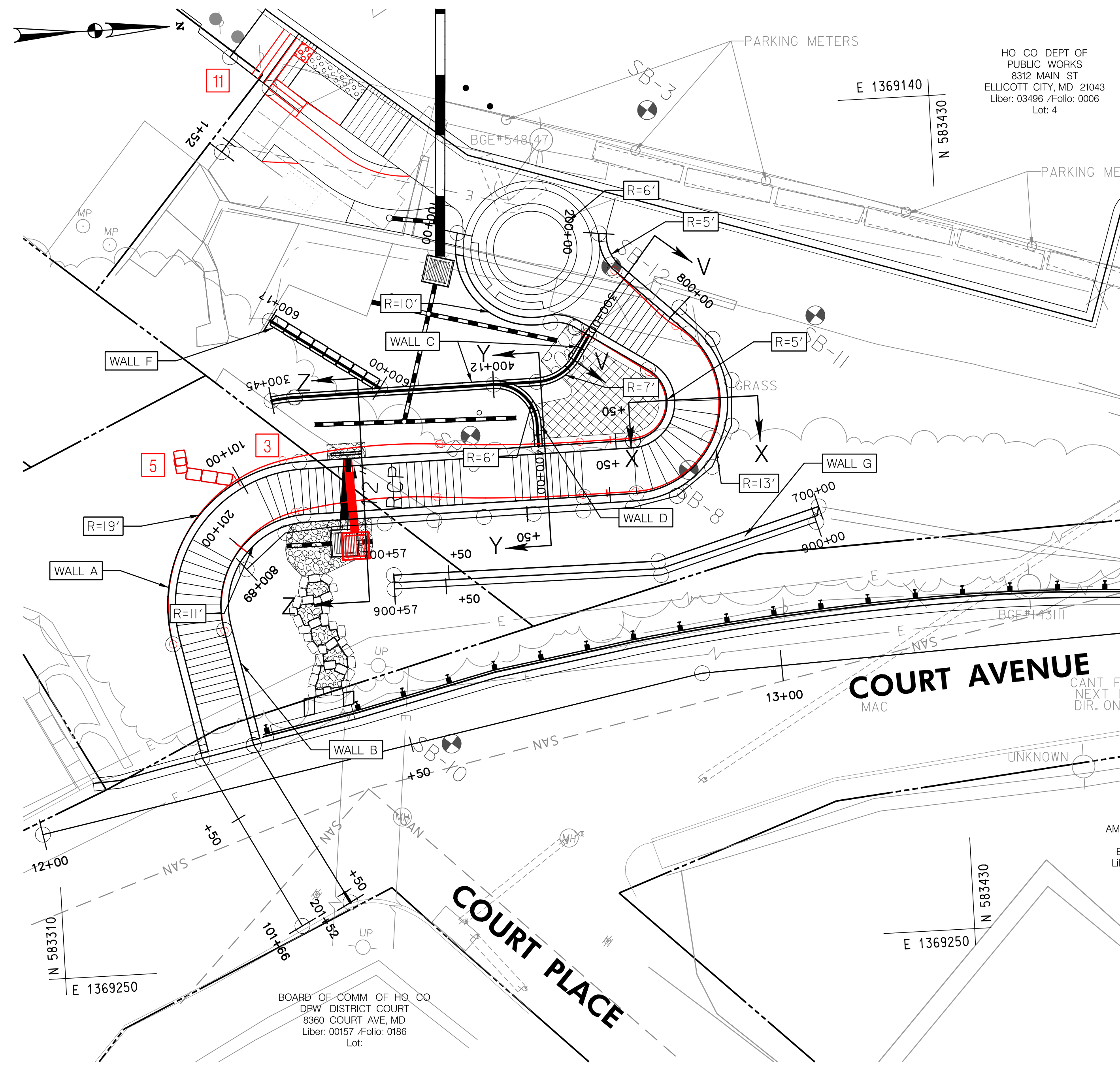


DES: AM					
DRN: MR					
CHK: CB					
DATE: 06/18/14	ADM	13	AS-BUILT SURVEY	09/10/15	
	BY	NO.	REVISION	DATE	

ELLICOTT CITY PARKING LOT E
 CAPITAL PROJECT #D-1165
 HOWARD COUNTY

STORMWATER MANAGEMENT DETAIL SHEET

SCALE
 AS SHOWN
 SHEET
 16 OF 44



PLAN VIEW
SCALE: 1" = 10'

GENERAL NOTES:

SPECIFICATIONS
STATE HIGHWAY ADMINISTRATION'S SPECIFICATION ENTITLED "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS" DATED JULY 2008

DESIGN
AASHTO LRFD BRIDGE DESIGN SPECIFICATION, 5TH EDITION DATED 2010 AND ALL INTERIMS.

FOUNDATION
ALLOWABLE SOIL BEARING PRESSURE = 2.0 KSF

CONCRETE
ALL CAST-IN-PLACE CONCRETE SHALL BE MIX NO. 3 (3500 PSI).

REINFORCING STEEL
REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED, WITH THE EXCEPTION OF BARS AT THE BOTTOM AND SIDES OF ALL FOOTINGS WHICH SHALL HAVE 3" MINIMUM COVER.

FOR TIES AND STIRRUPS; USE STANDARD ACI BENDING TOLERANCES ARE MODIFIED TO PLUS (+) ZERO INCHES, MINUS (-) NORMAL ACI BENDING TOLERANCES.

WELDED WIRE FABRIC SHALL CONFORM TO 908.05.

ONLY GRADE 60 CAN BE USED ON THIS PROJECT.

KEYS:
ALL KEYS ARE NOMINAL SIZE.

EXISTING STRUCTURES
ALL DIMENSIONS AFFECTED BY THE GEOMETRICS, AND/OR LOCATION OF THE EXISTING STRUCTURE SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR, BEFORE ANY CONSTRUCTION IS DONE, AND BEFORE ANY REINFORCING STEEL, ETC., IS ORDERED OR FABRICATED.

CONTRACTOR SHALL BE CAREFUL NOT TO DAMAGE THE EXISTING STONE MASONRY WALLS ON THE PROJECT SITE THAT ARE NOT IDENTIFIED TO BE REMOVED. ANY DAMAGE TO THE EXISTING STONE WALLS NOT IDENTIFIED FOR REMOVAL SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

STABILIZING STRUCTURAL EXCAVATIONS
THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF ALL EXCAVATED SLOPES AND THE DESIGN OF ANY TEMPORARY SHORING OR BRACING THAT MAY BE USED. THE COST OF ANY TEMPORARY SHORING SHALL BE INCIDENTAL TO THE EXCAVATION ITEM.

THE SOLDIER PILE AND LAGGING PORTIONS OF RETAINING WALLS B & G SHALL BE CONSTRUCTED PRIOR TO BEGINNING CONSTRUCTION ON THE REMAINING WALLS.

CONTRACTOR NOTES:

1. THE SOLDIER PILES SHOWN ALONG STATIONS 800 AND STATIONS 900 HAVE ALREADY BEEN INSTALLED BY OTHERS AS PART OF A SEPARATE CONTRACT. THESE SOLDIER PILES SHALL BE USED TO FINISH CONSTRUCTING THE SOLDIER PILE WALLS B & G AS SHOWN IN THESE PLANS. THE CONTRACTOR SHALL CONFIRM THE PLACEMENT OF THE PREVIOUSLY INSTALLED SOLDIER PILE WALLS PRIOR TO COMMENCING ANY WORK ON THE RETAINING WALLS.
2. THE CONTRACTOR SHALL NOTE THAT THIS PROJECT IS LOCATED IN A GEOLOGIC AREA WHERE COBBLES, BOULDERS, AND ROCK WILL BE PRESENT AND MUST TAKE THIS INTO ACCOUNT WHEN ESTABLISHING HIS BID PRICES
3. RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, W ACEL OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN.
4. THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION MUST BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE THE DYNAMIC CONE PENETRATION TEST ASTM STP-399.
5. THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN. EACH EIGHT INCH LIFT MUST BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
6. THE DRILLED SHAFT AND STEEL PILES SHOWN ON THESE PLANS WERE CONSTRUCTED BY OTHERS AS PART OF A SEPARATE CONTRACT.
7. PROPOSED GRADING FOR THE SITE IS SHOWN ON THE EROSION & SEDIMENT CONTROL PLANS.

NOTES:

1. STORMWATER MANAGEMENT FEATURES SHOWN FOR INFORMATIONAL PURPOSES ONLY. SEE STORMWATER MANAGEMENT PLANS FOR DETAILS, (SHEETS 9-15).
2. SEE GEOMETRIC LAYOUT SHEET FOR RETAINING WALL BASELINE INFORMATION, (SHEET 2).
3. FOR REPRESENTATIVE SECTION, V-V, X-X, Y-Y AND Z-Z SEE SHEET 23.
4. FOR WALL F (IMBRICATED STONE WALL) DETAILS, SEE SHEET 14.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. ...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

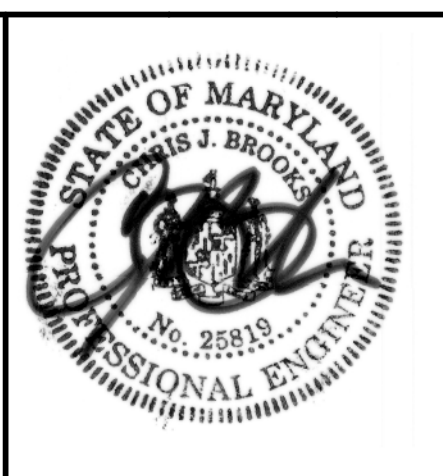
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DATE

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MARYLAND

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DES: BSW				
DRN: MR				
CHK: HUM	DPK	11	REVISED RAMP DESIGN TO INCLUDE STEPS	04/22/15
	ADM	5	REVISED WALL A AND GRADING	01/26/15
DATE: 06/18/14	BSW	3	REVISED ALIGNMENT	12/15/14
	BY	NO.	REVISION	DATE

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

RETAINING WALL PLAN AND
GENERAL NOTES

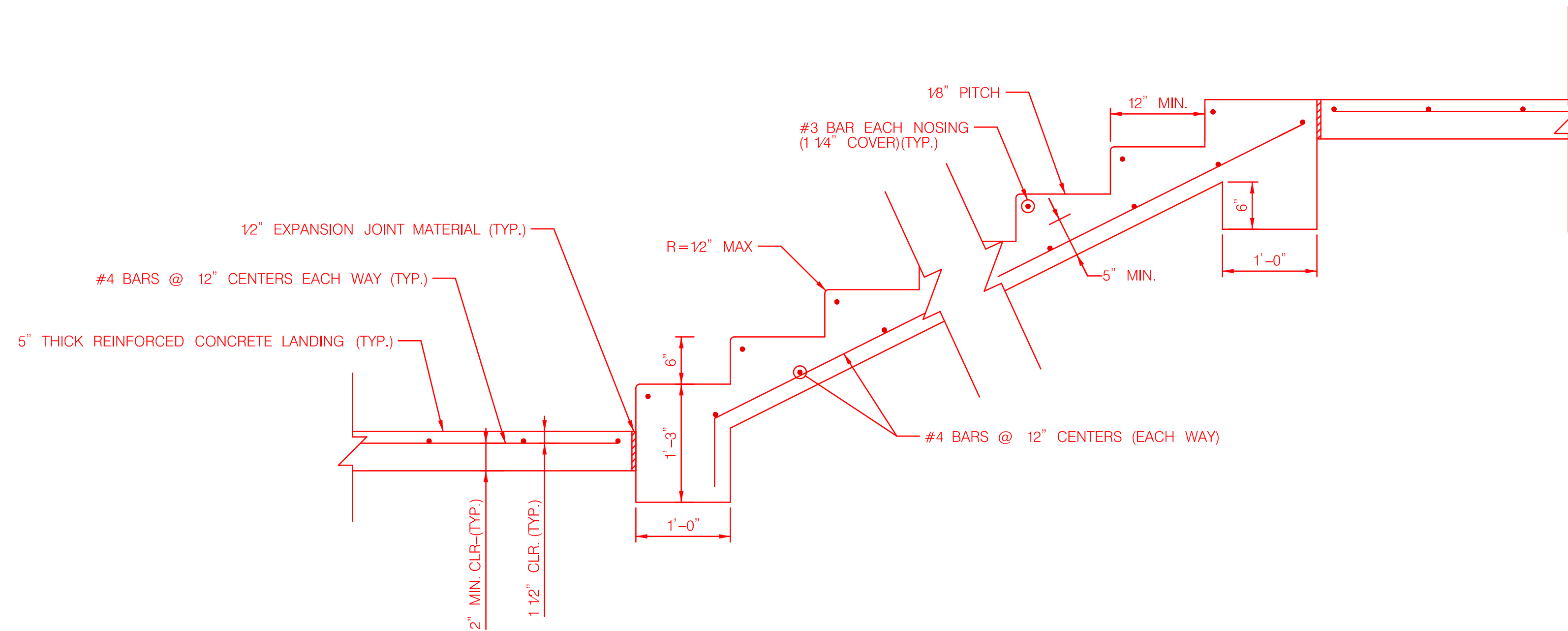
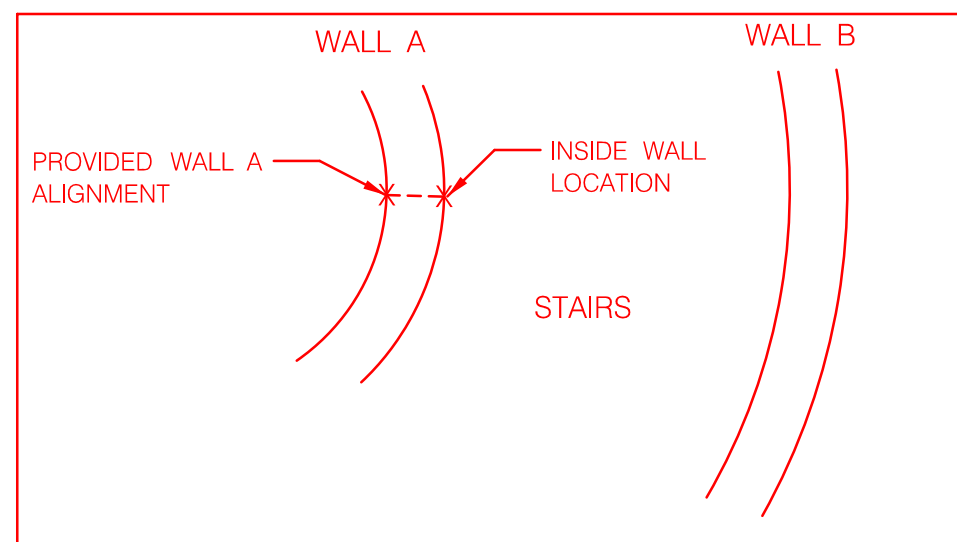
ST-01
SCALE
AS SHOWN
SHEET
17 OF 44

6

STAIRCASE LANDINGS						
WALL A			WALL B			ELEVATION
STATION	NORTHING	EASTING	STATION	NORTHING	EASTING	
100+33.40	583389.73	1369173.38	200+15.22	583394.07	1369167.8	185
100+39.84	583393.17	1369178.4	200+28.32	583400.17	1369178.69	185
100+47.34	583388.22	1369182.99	200+46.47	583388.28	1369189.99	190
100+54.02	583381.54	1369183.06	200+53.14	583381.61	1369190.05	190
100+63.02	583372.55	1369182.93	200+62.47	583372.29	1369189.92	195
100+69.79	583365.79	1369182.56	200+69.49	583365.28	1369189.54	195
100+79.30	583356.29	1369182.05	200+78.49	583356.3	1369189.05	200
100+86.96	583348.65	1369182.44	200+85.48	583349.31	1369189.41	200
100+98.33	583337.58	1369184.86	200+94.48	583340.53	1369191.2	205
101+10.18	583328.93	1369192.69	201+02.16	583334.93	1369196.28	205
101+33.31	583328.21	1369215.12	201+20.14	583335.08	1369213.76	214.5
101+39.64	583329.45	1369221.32	201+26.47	583336.31	1369219.97	214.5


SCHEDULE OF STEP LIGHTS			
LIGHT NUMBER	LUMINAIRE WATTAGE	STATION	STAIR ELEVATION
1	4.5W LED	100+42.66	187
2	4.5W LED	100+58.47	192.5
3	4.5W LED	100+74.37	197.5
4	4.5W LED	100+91.86	202.5
5	4.5W LED	101+21.59	209
6	4.5W LED	200+22.10	185
7	4.5W LED	200+49.57	190
8	4.5W LED	200+65.98	195
9	4.5W LED	200+82	200
10	4.5W LED	200+98.22	205

*WALL A STATIONS INDICATE INSIDE WALL LOCATIONS PERPENDICULAR TO THE REVISED OUTSIDE WALL ALIGNMENT ON SHEET 17. SEE SCHEMATIC BELOW.



CONCRETE STAIRCASE DETAIL 7
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND



CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

g/h/m
DATE

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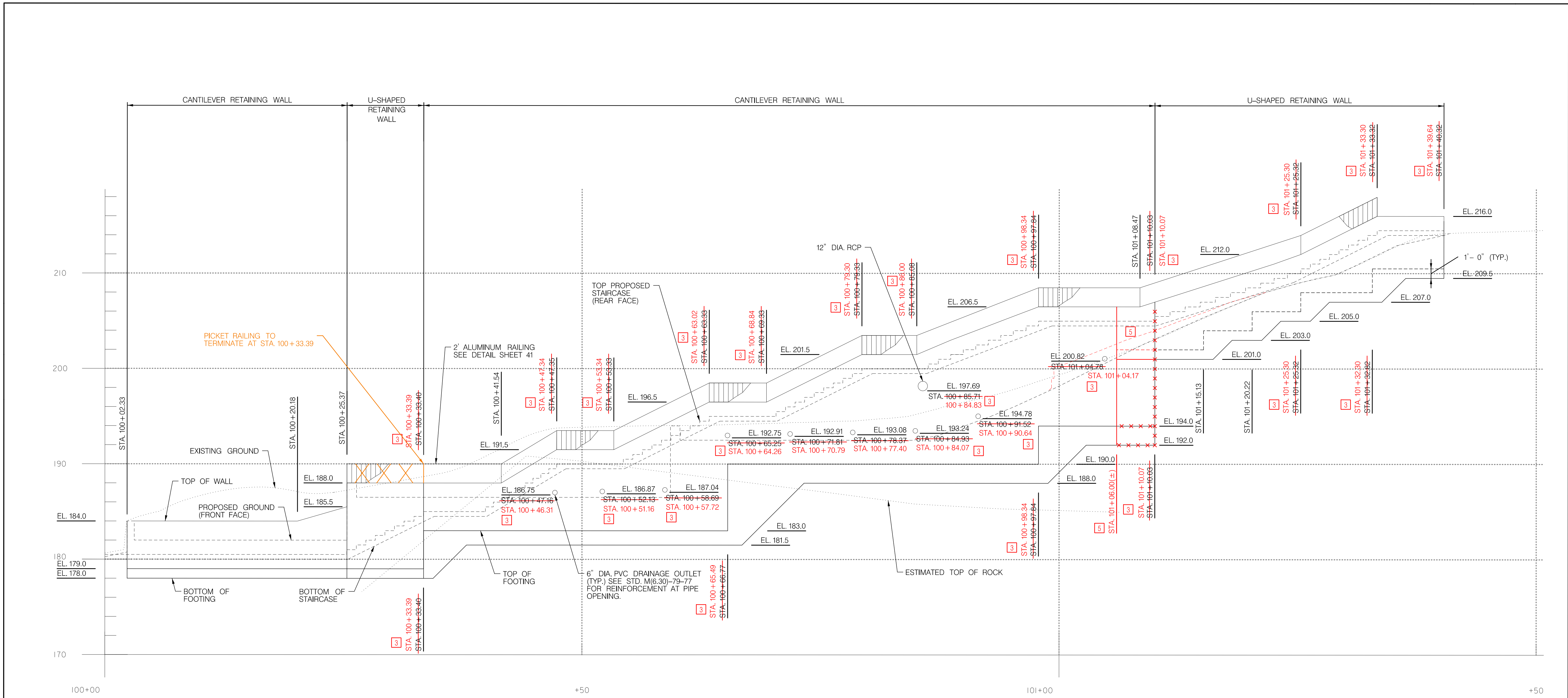


DES:	BSW				
DRN:	MR				
CHK:	HUM	HUM	7	ADDED STAIR DETAIL	
DATE:	06/18/14	ADM	6	REVISED LANDING AND LIGHTING LOCATIONS	02/03/15
		BY	NO.	REVISION	DATE

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

STAIRCASE TABLES AND DETAILS

ST-01A
SCALE
AS SHOWN
SHEET
17 OF 44



ELEVATION - WALL A
SCALE: 1" = 5'

13 RAILINGS AND RAILING NOTES HAVE BEEN COLORED ON THIS SHEET TO ILLUSTRATE THE RESPONSE FOR RFI #21 DATED 05/15/15. NO AS-BUILT INFORMATION IS SHOWN ON THIS SHEET.

- NOTES:
- FOR STEPPED FOOTING DETAIL, SEE SHEET 26.
 - FOR RETAINING WALL TYPICAL SECTIONS, SEE SHEET 21 AND SHEET 22.
 - THE TOP OF WALL SHOWN DOES NOT INCLUDE THE ARCHITECTURAL STONE CAP.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. L...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

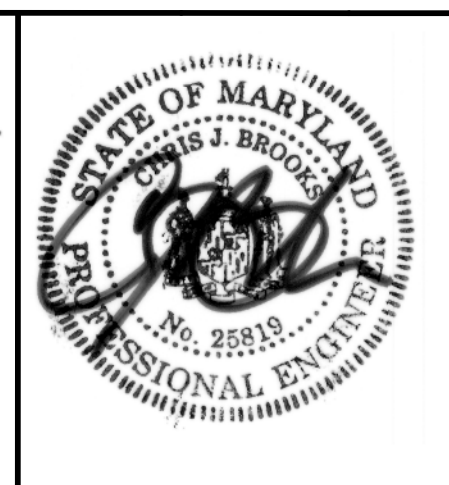
6/19/14
DATE

MCCORMICK TAYLOR

509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444

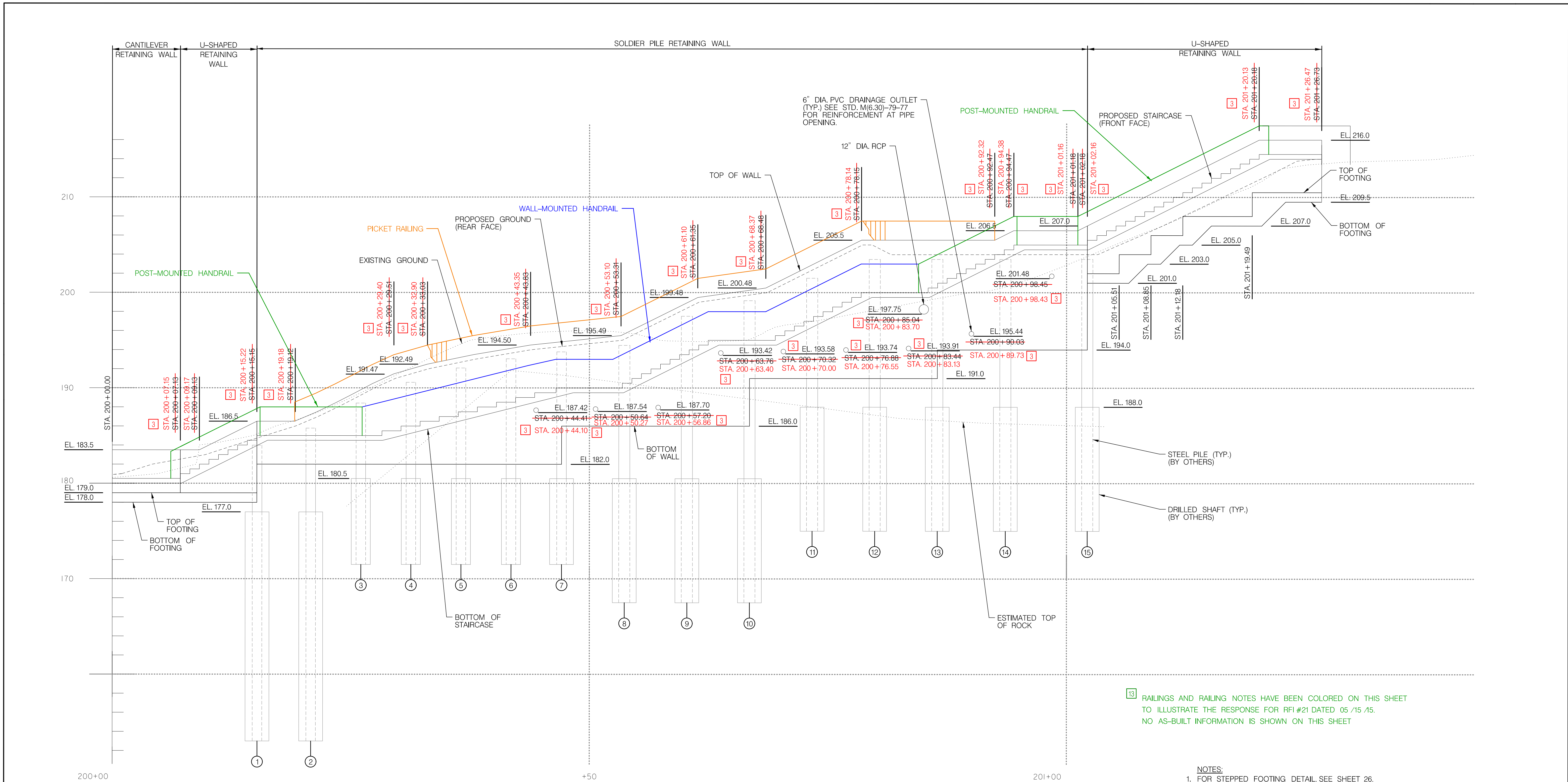


DES:	BSW				
DRN:	MR				
CHK:	HUM	ADM	13	AS-BUILT SURVEY	09/10/15
		BSW	5	REVISED WALL A	01/26/15
		BSW	3	REVISED PROFILE	12/15/14
DATE:	06/18/14	BY	NO.	REVISION	DATE

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

RETAINING WALL A ELEVATION

ST-02
SCALE
AS SHOWN
SHEET
18 OF 44



ELEVATION – WALL B
SCALE: 1" = 5'

13 RAILINGS AND RAILING NOTES HAVE BEEN COLORED ON THIS SHEET TO ILLUSTRATE THE RESPONSE FOR RFI #21 DATED 05 /15 /15. NO AS-BUILT INFORMATION IS SHOWN ON THIS SHEET

- NOTES:**
- FOR STEPPED FOOTING DETAIL, SEE SHEET 26.
 - FOR SOLDIER PILE RETAINING WALL DETAILS SEE SHEET 24 AND SHEET 25.
 - SEE SOLDIER PILE SCHEDULE ON SHEET 20.
 - FOR RETAINING WALL TYPICAL SECTIONS, SEE SHEET 21 AND SHEET 22.
 - THE TOP OF WALL SHOWN DOES NOT INCLUDE THE ARCHITECTURAL STONE CAP.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. [Signature]
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

[Signature]
DATE

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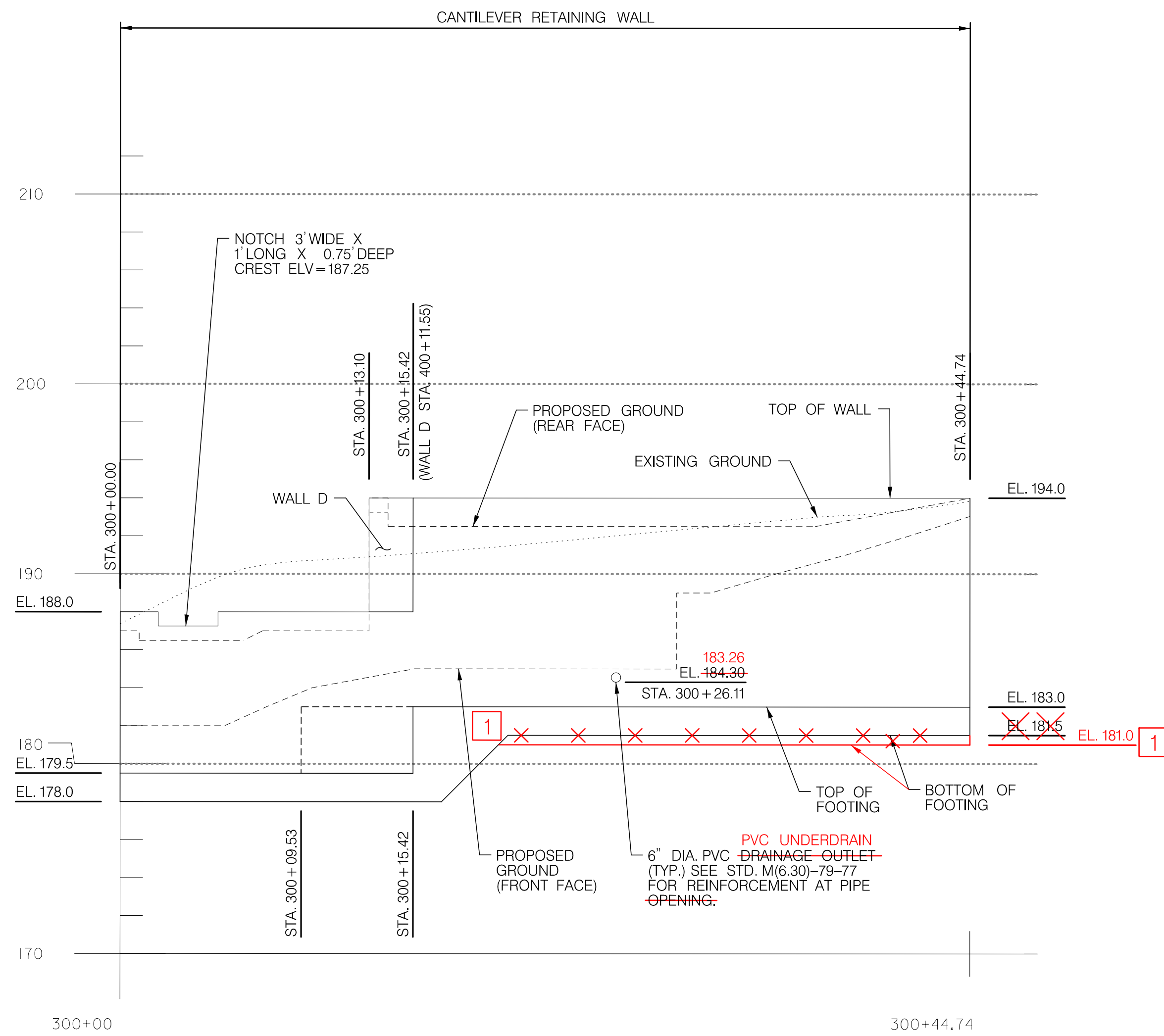


DES:	BSW				
DRN:	MR				
CHK:	HUM	ADM	13	AS-BUILT SURVEY	09/10/15
DATE:	06/18/14	BSW	3	REVISED PROFILE	12/15/14
BY	NO.			REVISION	DATE

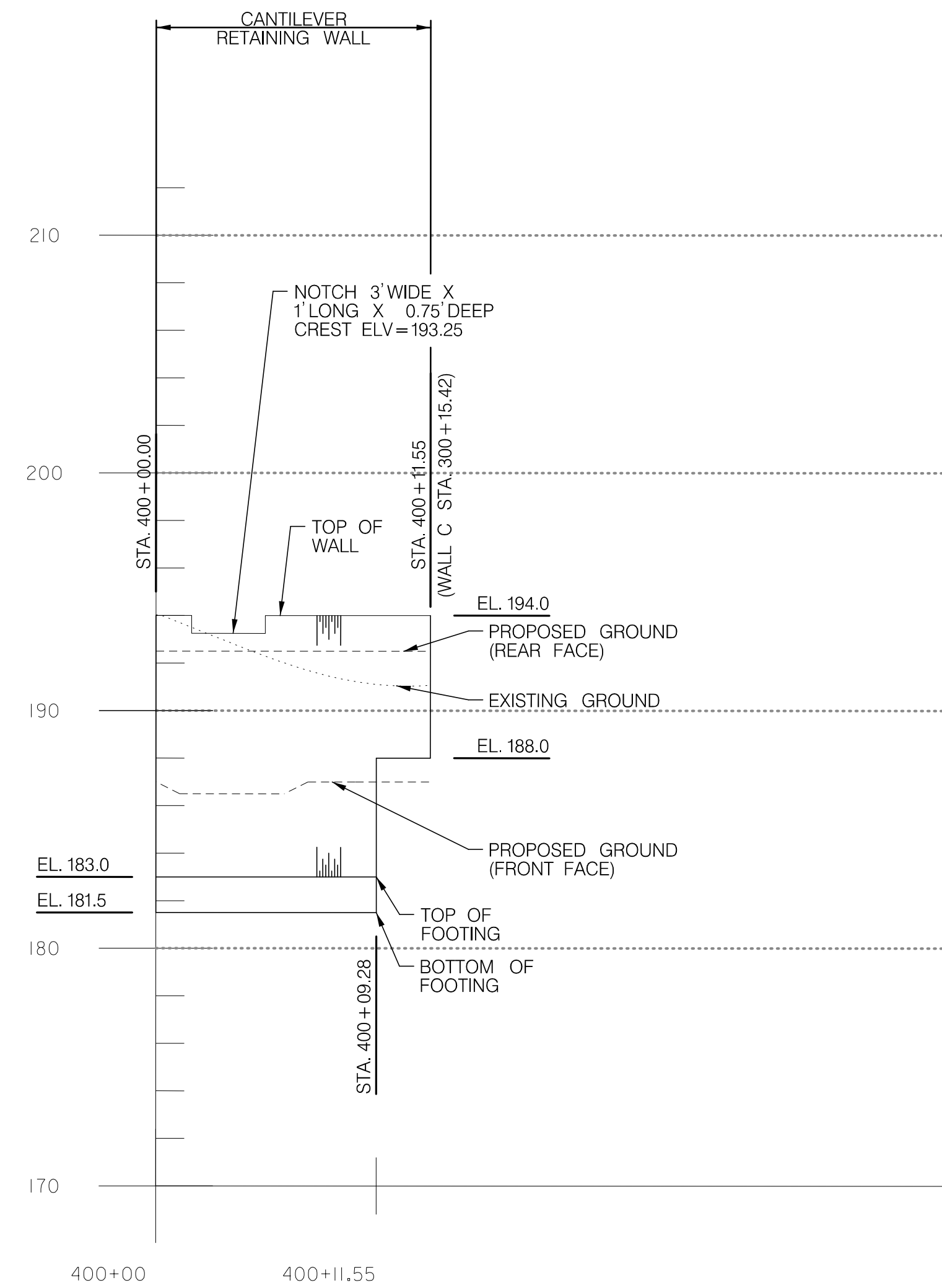
ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

RETAINING WALL B ELEVATION

ST-03
SCALE
AS SHOWN
SHEET
19 OF 44



ELEVATION - WALL C
SCALE: 1" = 5'



ELEVATION - WALL D
SCALE: 1" = 5'

NOTES:

- FOR STEPPED FOOTING DETAIL, SEE SHEET 26.
- FOR RETAINING WALL TYPICAL SECTIONS SEE SHEET 21 AND SHEET 22.
- THE TOP OF WALL SHOWN DOES NOT INCLUDE THE ARCHITECTURAL STONE CAP.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

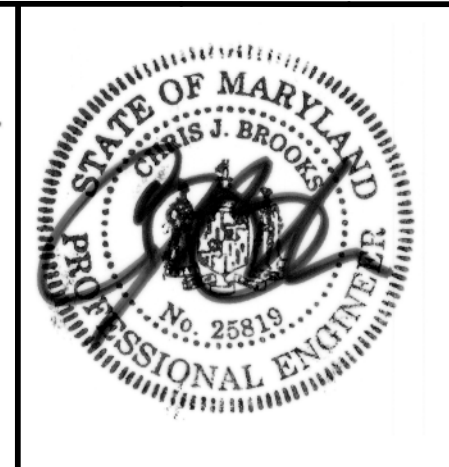
Mark R. L...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/19/14
DATE

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Baltimore, Maryland 21202
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MARYLAND

Storm Water Management Division
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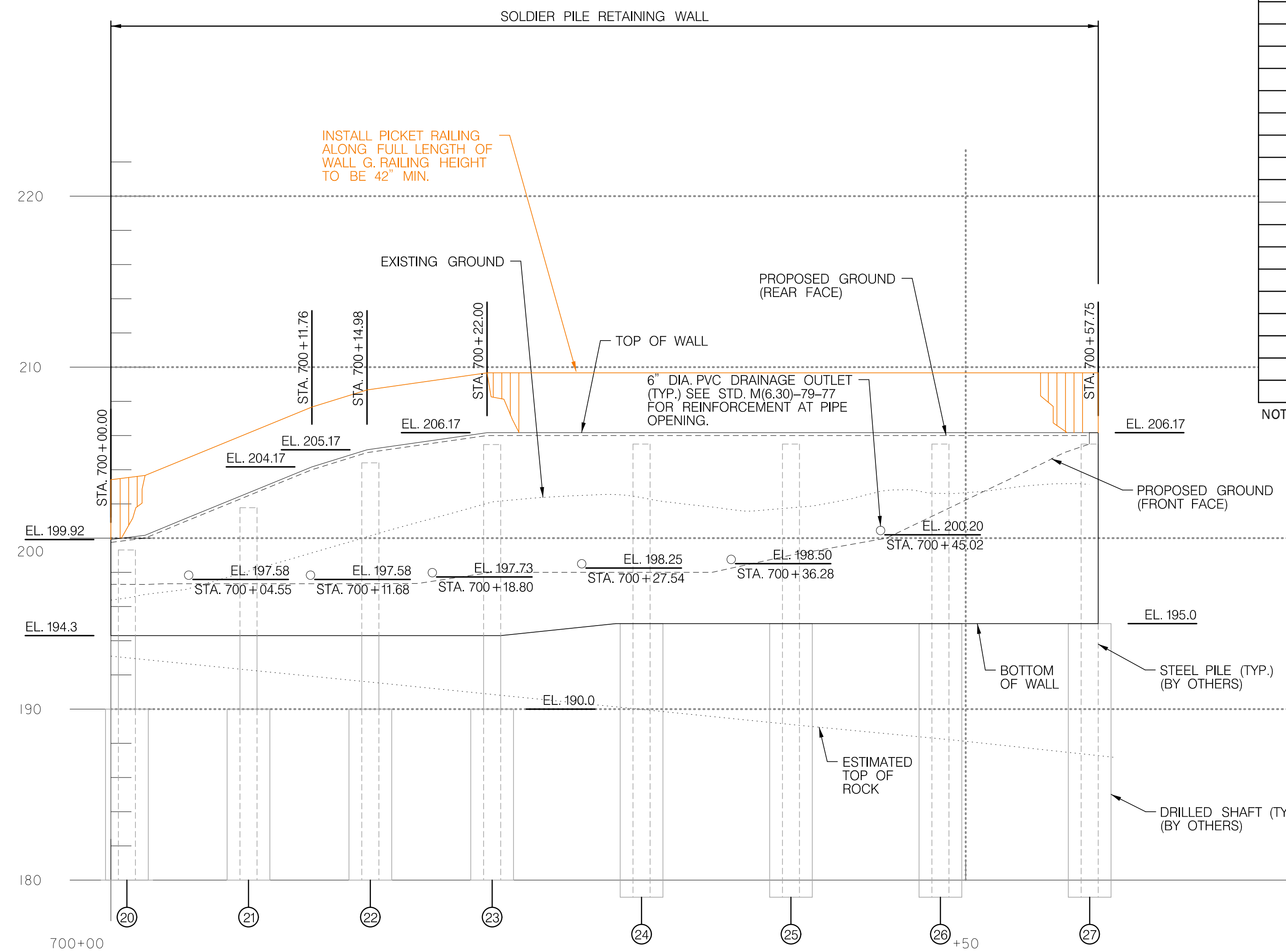


DES: BSW				
DRN: MR				
CHK: HUM				
DATE: 06/18/14	BSW	1	WALL C FOOTING DIMENSION	11/13/14
	BY	NO.	REVISION	DATE

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

RETAINING WALL C AND D ELEVATIONS

ST-04
SCALE
AS SHOWN
SHEET
20 OF 44



ELEVATION - WALL G
SCALE: 1" = 5'


SOLDIER PILE SCHEDULE						
SOLDIER PILE	STATION	TOP OF STEEL POST ELEVATION	TOP OF DRILLED SHAFT ELEVATION	BOTTOM OF STEEL POST & DRILLED SHAFT ELEVATION	STEEL POST	DRILLED SHAFT DIAMETER
1	800+00.00	193.99	177.00	153.00	W14x120	2'-6"
2	800+06.00	185.78	177.00	153.00	W14x120	2'-6"
3	800+12.00	188.41	180.50	171.50	W14x82	2'-0"
4	800+18.00	190.80	180.50	171.50	W14x82	2'-0"
5	800+24.00	192.09	180.50	171.50	W14x82	2'-0"
6	800+30.00	193.05	180.50	171.50	W14x82	2'-0"
7	800+36.00	193.78	180.50	171.50	W14x120	2'-6"
8	800+42.56	194.46	180.50	167.50	W14x257	2'-6"
9	800+49.12	197.52	180.50	167.50	W14x257	2'-6"
10	800+55.68	199.15	180.50	167.50	W14x257	2'-6"
11	800+62.24	201.50	188.00	175.00	W14x257	2'-6"
12	800+68.80	203.50	188.00	175.00	W14x257	2'-6"
13	800+75.36	203.50	188.00	175.00	W14x257	2'-6"
14	800+81.95	203.50	188.00	175.00	W14x257	2'-6"
15	800+88.95	203.50	188.00	175.00	W14x257	2'-6"
20	900+00.00	199.25	190.00	180.00	W14x120	2'-6"
21	900+07.21	201.75	190.00	180.00	W14x120	2'-6"
22	900+14.41	204.25	190.00	180.00	W14x120	2'-6"
23	900+21.62	205.50	190.00	180.00	W14x257	2'-6"
24	900+30.41	205.50	195.00	179.00	W14x257	2'-6"
25	900+39.21	205.50	195.00	179.00	W14x257	2'-6"
26	900+48.01	205.50	195.00	179.00	W14x257	2'-6"
27	900+56.81	205.50	195.00	179.00	W14x257	2'-6"

NOTES: 1. ALL SOLDIER PILES ARE CENTERED ON THE BASELINE AND ARE NOT OFFSET TO THE LEFT OR RIGHT.
2. SOLDIER PILE SCHEDULE IS FOR INFORMATIONAL PURPOSES ONLY.

13 RAILINGS AND RAILING NOTES HAVE BEEN COLORED ON THIS SHEET TO ILLUSTRATE THE RESPONSE FOR RFI #21 DATED 05/15/15. NO AS-BUILT INFORMATION IS SHOWN ON THIS SHEET

- NOTES:
- FOR SOLDIER PILE RETAINING WALL DETAILS SEE SHEET 24 AND SHEET 25.
 - FOR RETAINING WALL TYPICAL SECTIONS SEE SHEET 21 AND SHEET 22.
 - THE TOP OF WALL SHOWN DOES NOT INCLUDE THE ARCHITECTURAL STONE CAP.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND



CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

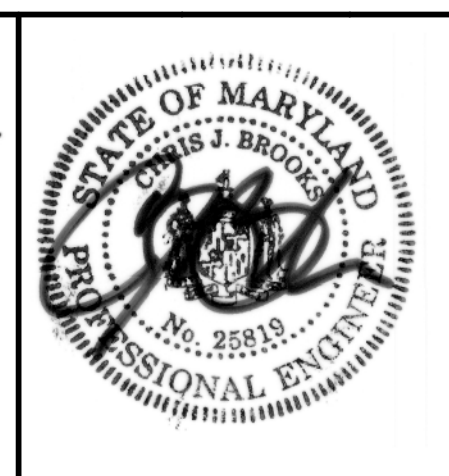
6/19/14
DATE

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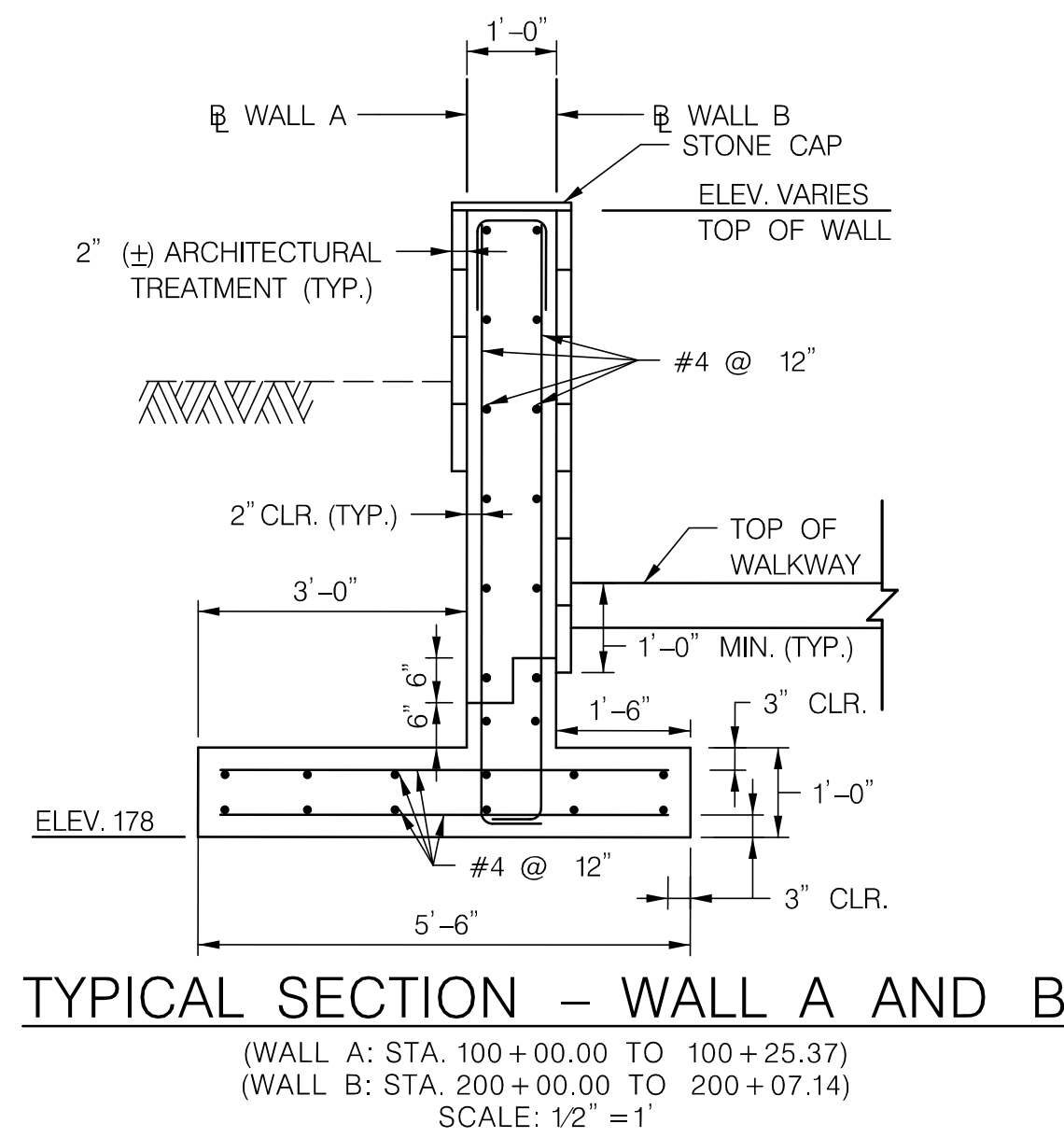


DES: BSW					
DRN: MR					
CHK: HUM					
DATE: 06/18/14	ADM	13	AS-BUILT SURVEY	09/10/15	
	BY	NO.	REVISION	DATE	

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

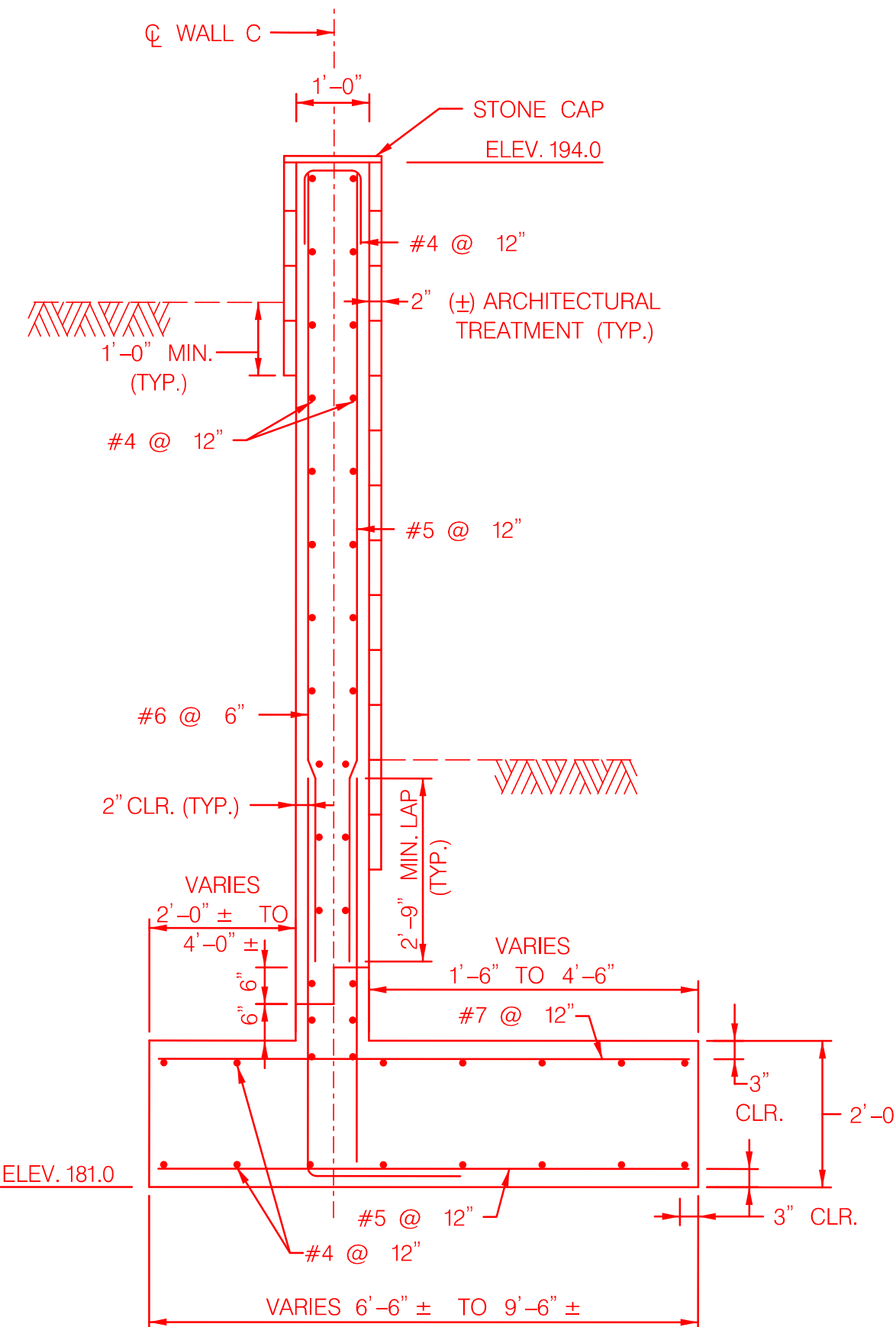
RETAINING WALL G ELEVATION

ST-05
SCALE
AS SHOWN
SHEET
21 OF 44

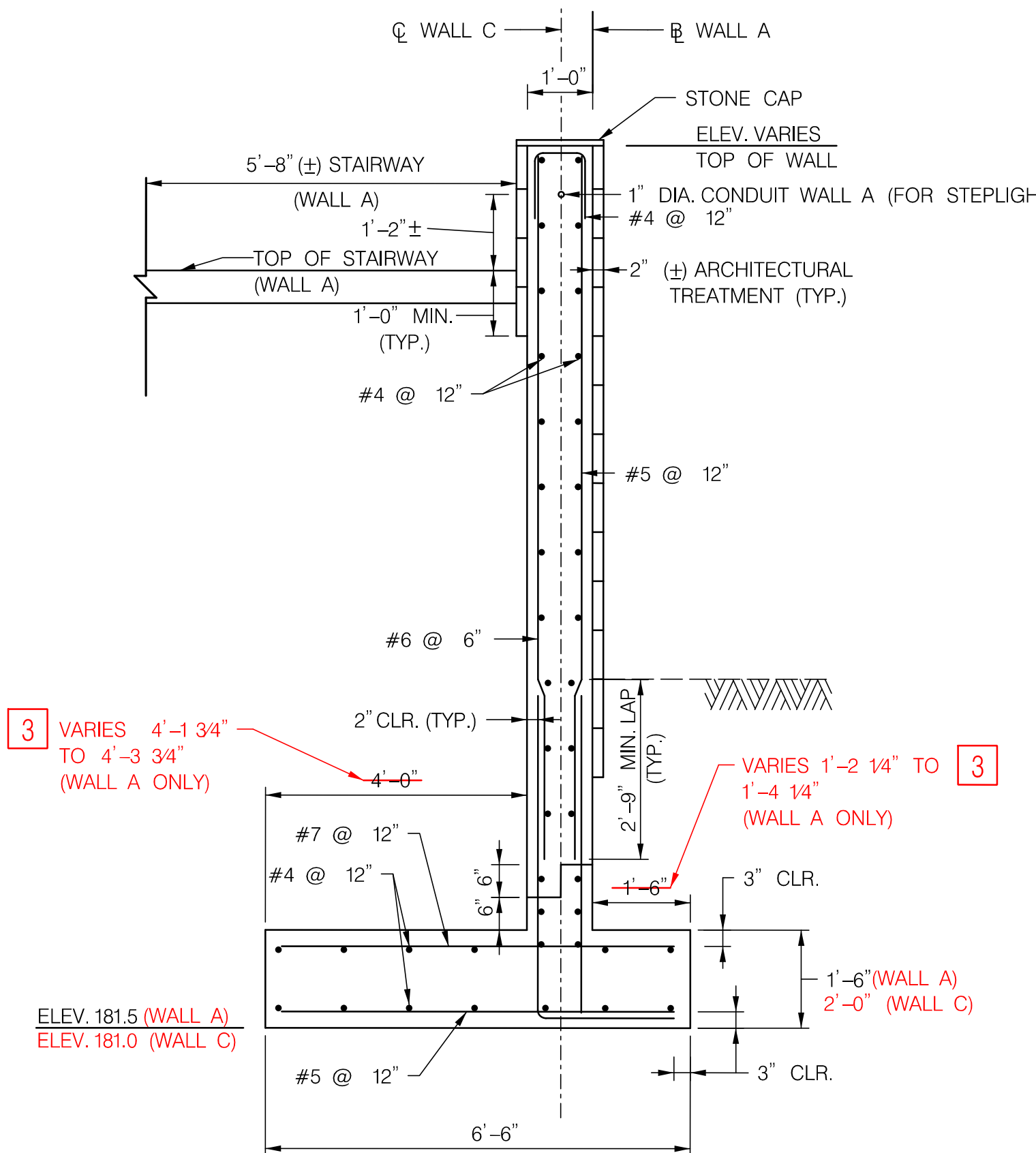


TYPICAL SECTION - WALL A AND B
 (WALL A: STA. 100+00.00 TO 100+25.37)
 (WALL B: STA. 200+00.00 TO 200+07.14)
 SCALE: 1/2" = 1'

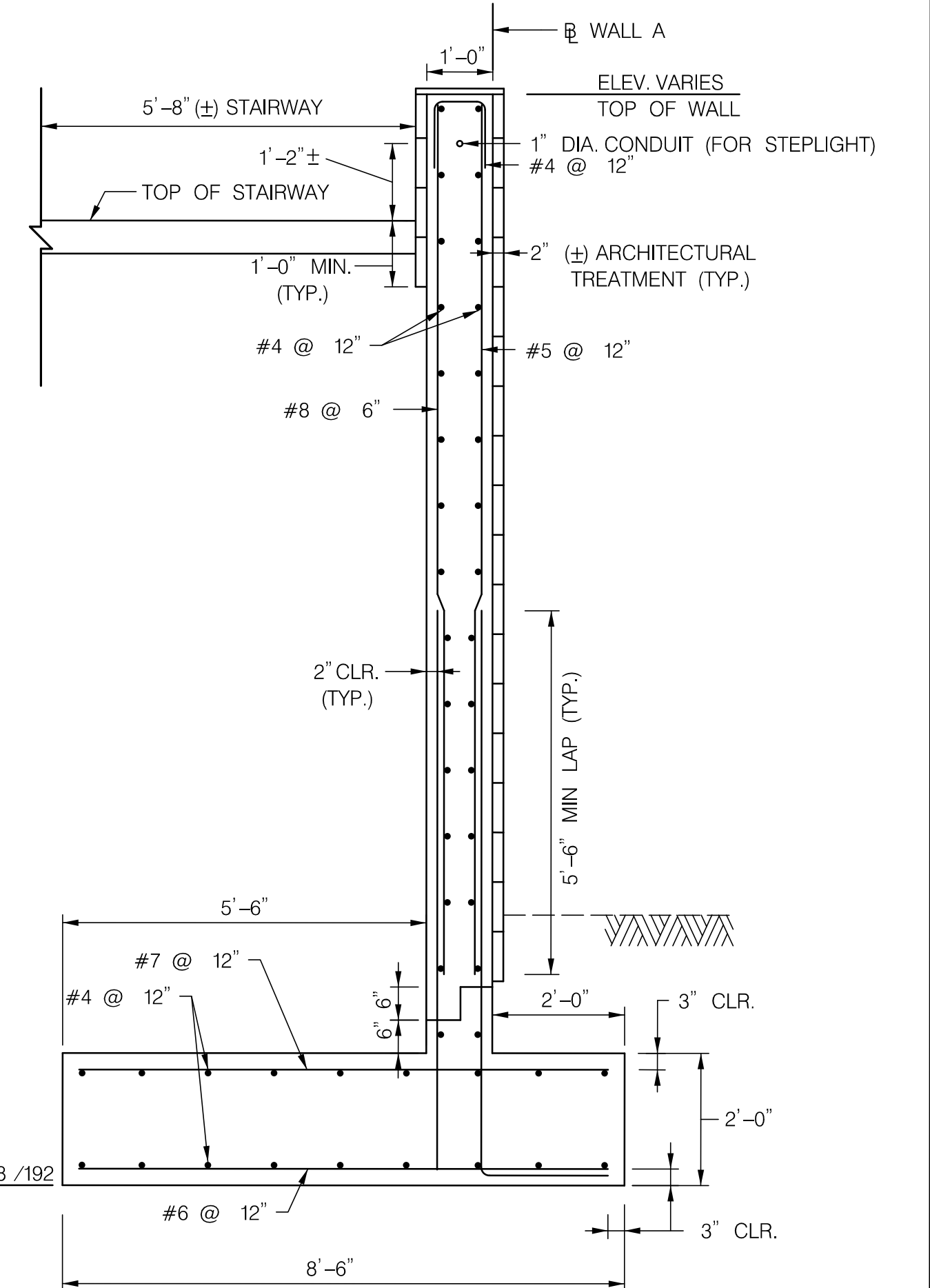
NOTE: WALL B SHOWN. WALL A OPPOSITE HAND.



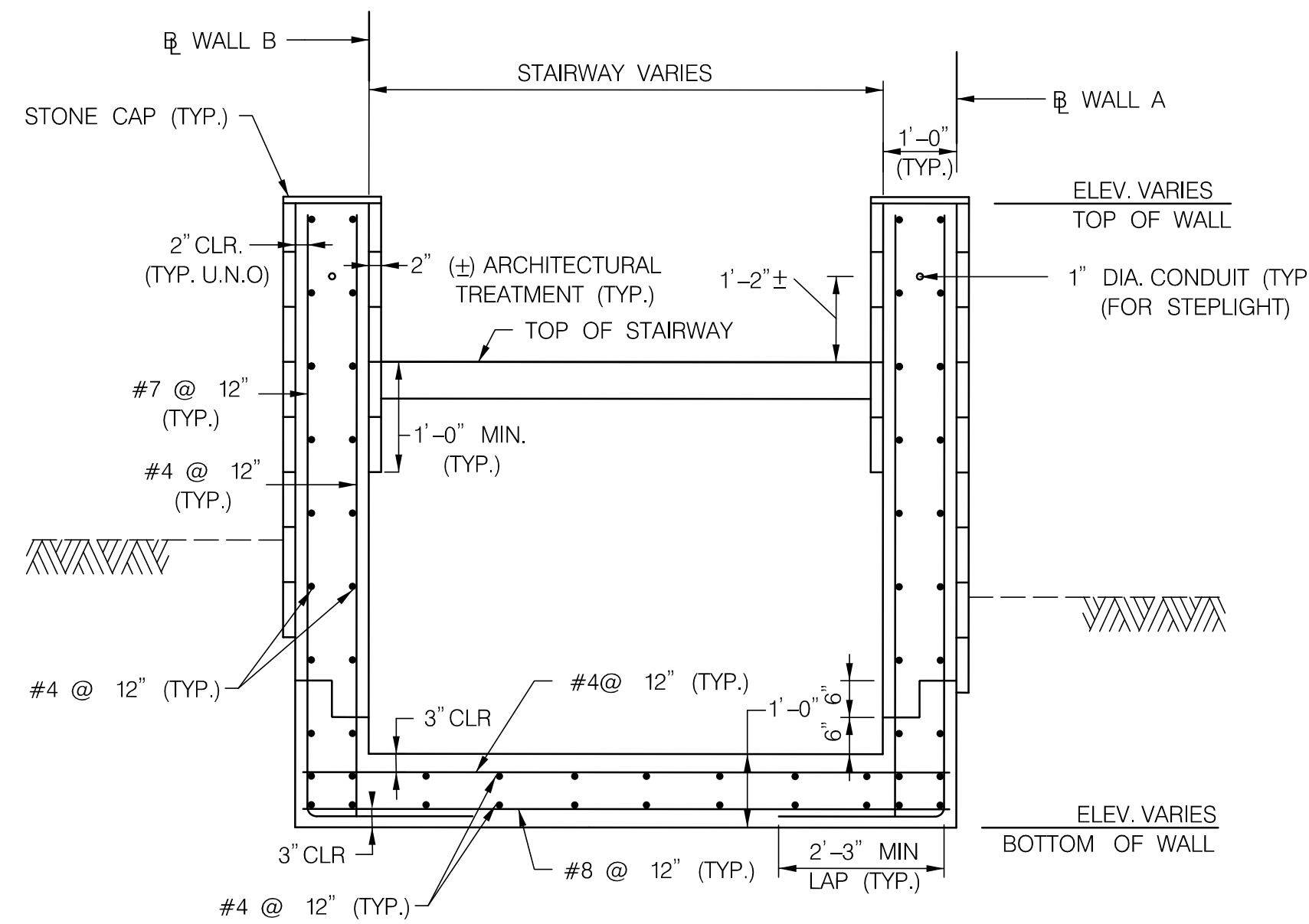
TYPICAL SECTION - WALL C
 (WALL C: STA. 300+15.42 TO 300+39.00)
 SCALE: 1/2" = 1'



TYPICAL SECTION - WALL A AND C
 (WALL A: STA. 100+33.40 TO 100+64.77) STA. 100+33.31 TO 100+65.49
 (WALL C: STA. 300+15.42 TO 300+44.74)
 SCALE: 1/2" = 1'



TYPICAL SECTION - WALL A
 (WALL A STA. 100+64.77 TO 100+97.84) STA. 100+65.49 TO 100+98.34
 (WALL A STA. 100+97.84 TO 100+10.03) STA. 100+98.34 TO 101+10.07
 SCALE: 1/2" = 1'



TYPICAL SECTION U-WALL - WALL A AND B
 (WALL A: STA. 100+25.37 TO 100+33.40 AND 101+10.03 TO 101+40.32) 100+33.31 AND 101+10.07 TO 101+40.31
 (WALL B: STA. 200+07.14 TO 200+15.17 AND 201+01.18 TO 201+26.73) 200+15.22 AND 201+02.16 TO 201+26.47
 SCALE: 1/2" = 1'

- NOTES:
- FOR STEP LIGHT DETAIL SEE LANDSCAPE DETAIL SHEET.
 - FOR STEP LIGHT LOCATIONS SEE LIGHTING PLAN.

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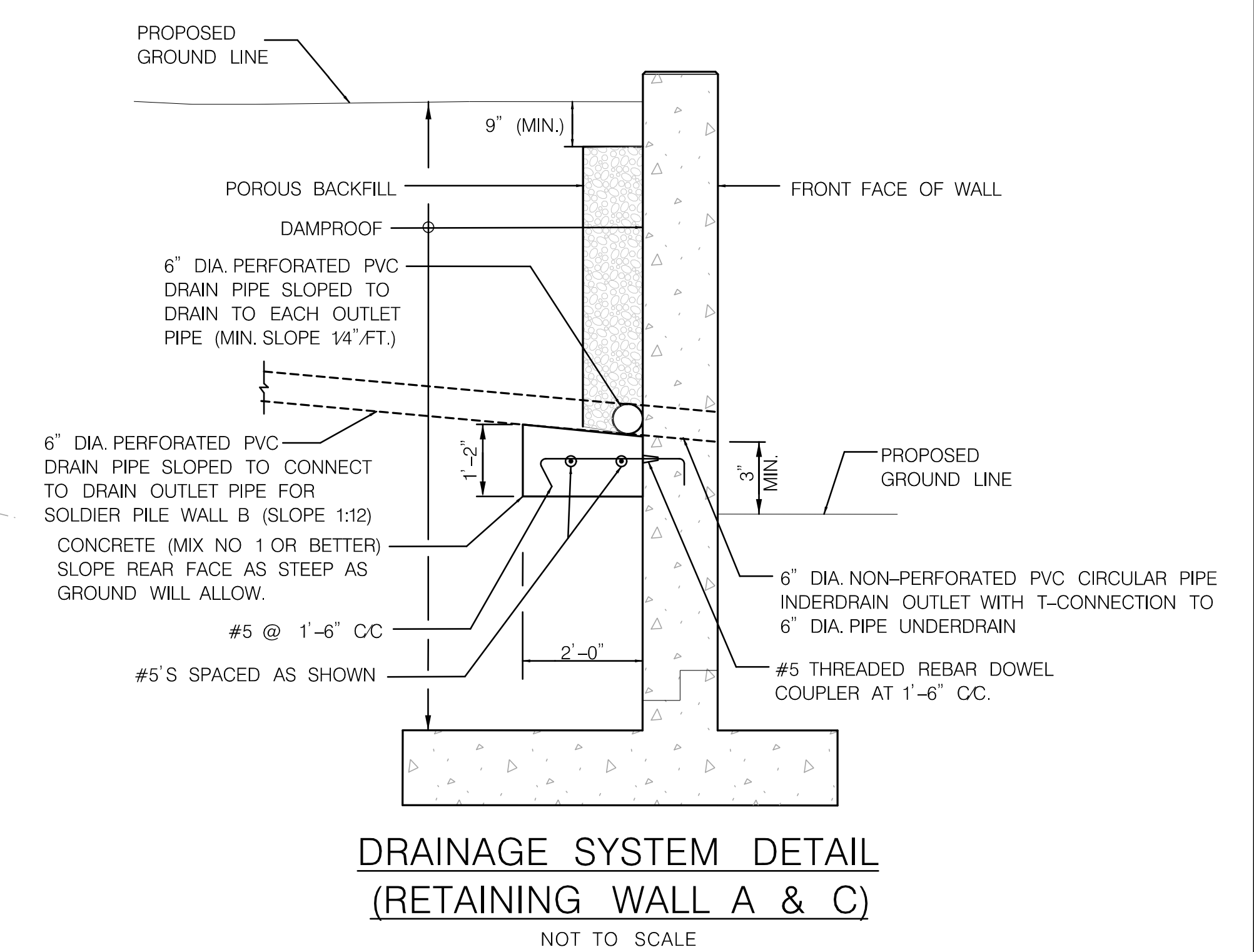
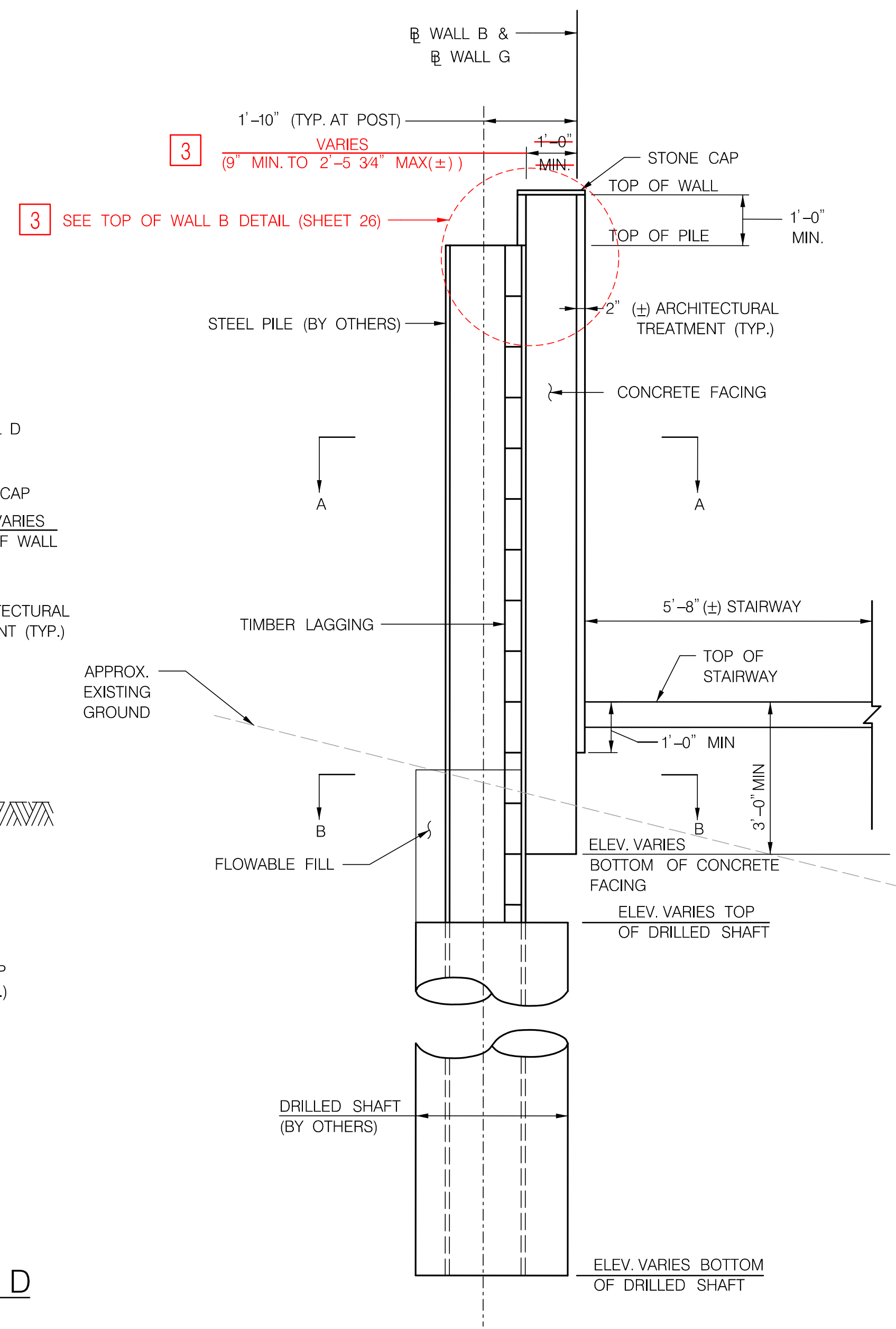
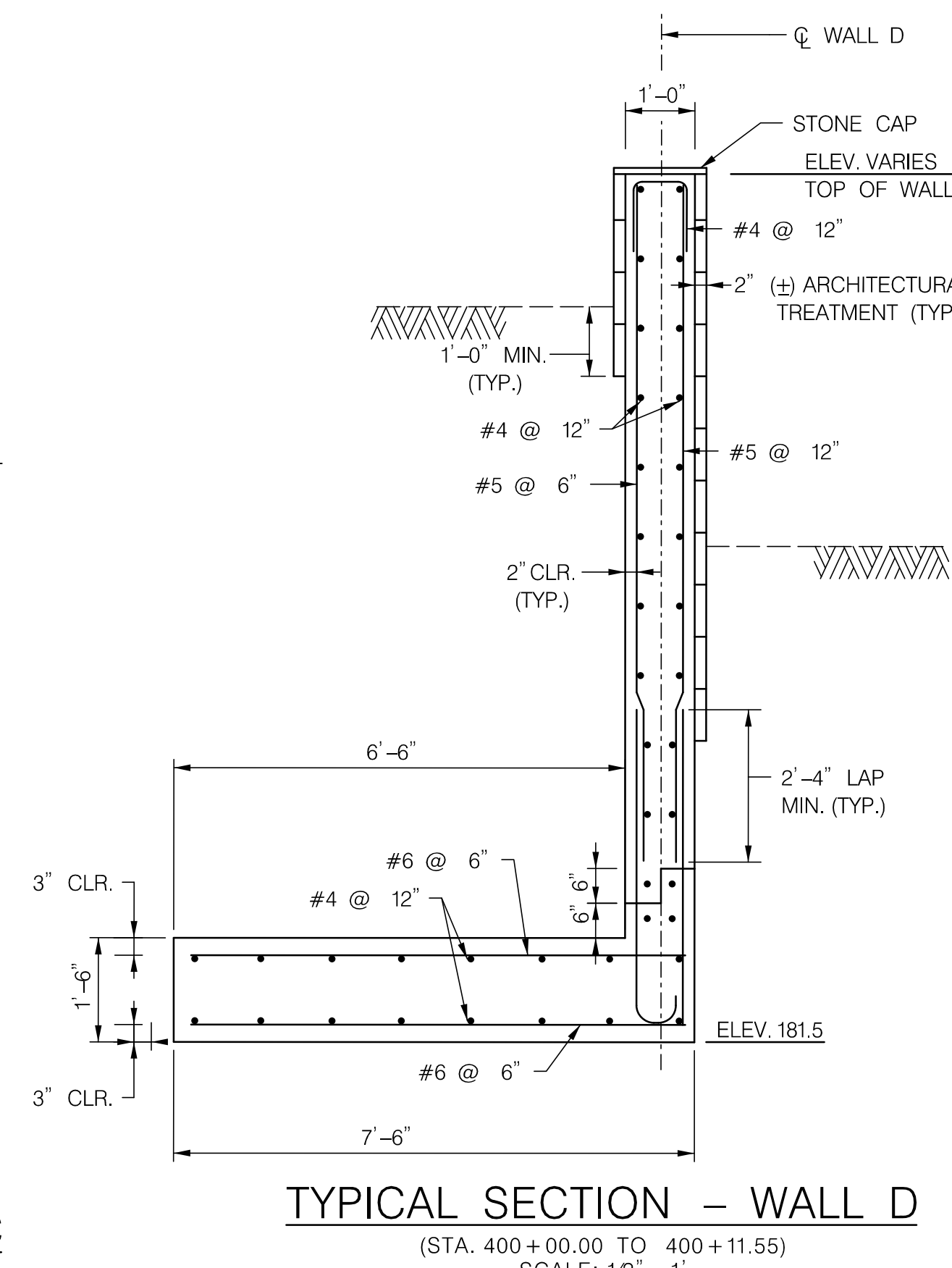
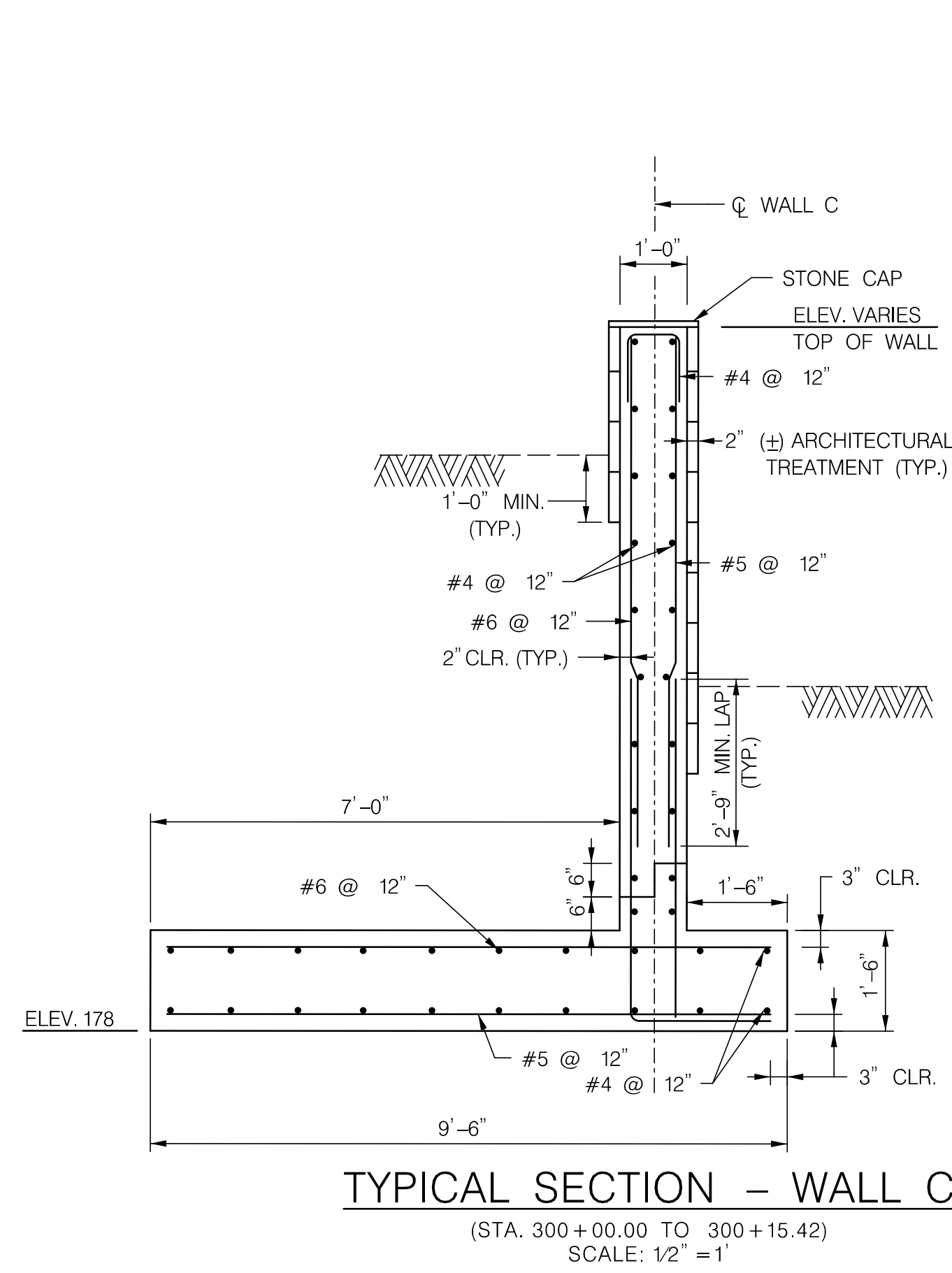


DES:	BSW			
DRN:	MR			
CHK:	HUM	BSW	3	REVISED WALL ALIGNMENT
		BSW	1	WALL C SECTIONS
DATE:	06/18/14	BY	NO.	REVISION
				DATE
				12/15/14
				11/13/14

ELLICOTT CITY PARKING LOT E
 CAPITAL PROJECT #D-1165
 HOWARD COUNTY

TYPICAL SECTIONS I

ST-06
 SCALE
 AS SHOWN
 SHEET
 22 OF 44



- NOTES:
 1. FOR SECTION A-A & B-B, SEE SHEET 24.
 2. FOR WEEP HOLE LOCATIONS SEE RETAINING WALL A & C ELEVATIONS.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Mark R. L...
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

DATE: 6/19/14

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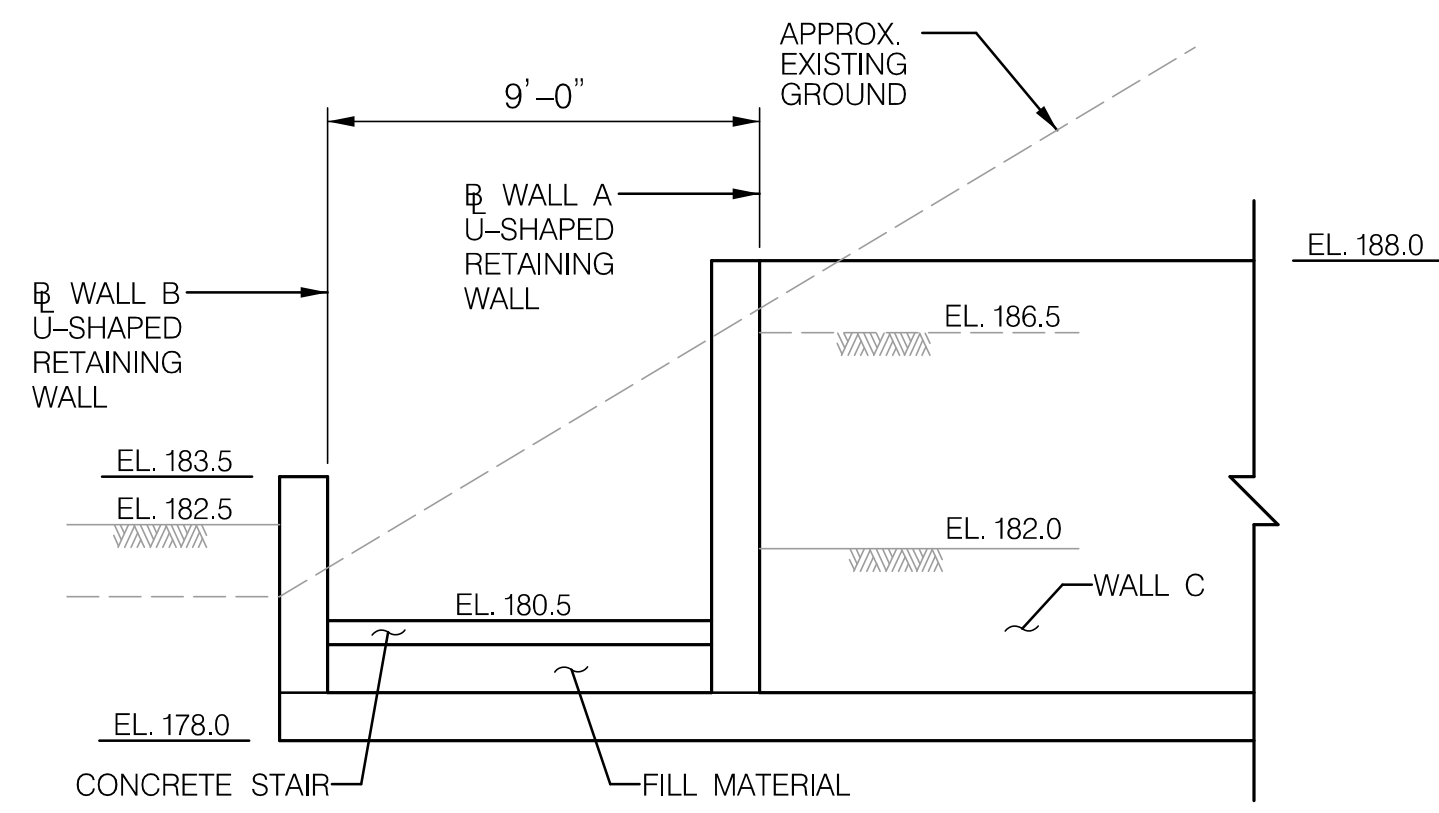


DES:	BSW				
DRN:	MR				
CHK:	HUM				
DATE:	06/18/14				
BY:	BSW	NO.	3	REVISION	12/15/14

**ELLCOTT CITY PARKING LOT E
 CAPITAL PROJECT #D-1165
 HOWARD COUNTY**

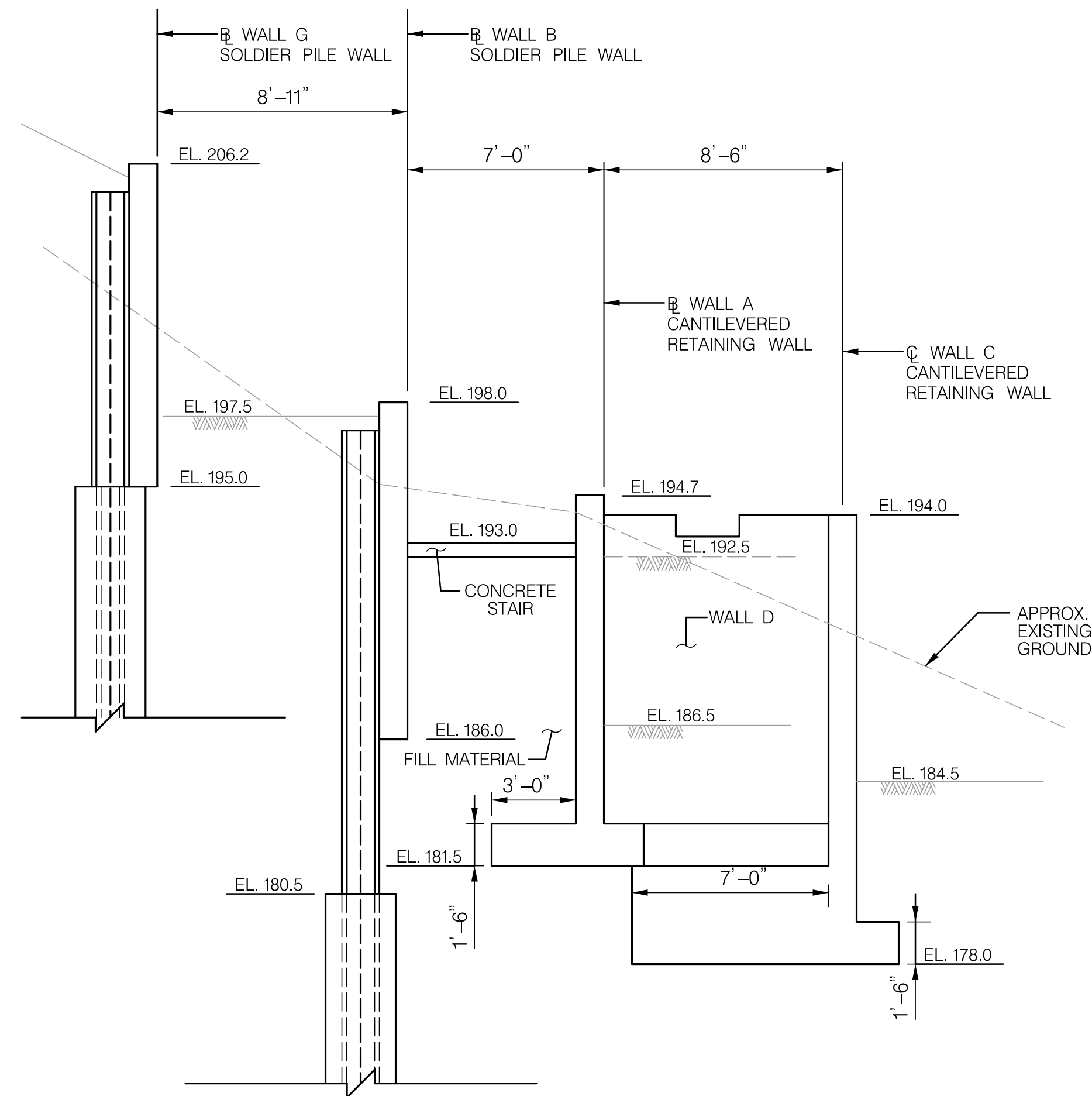
TYPICAL SECTIONS II

ST-07
 SCALE
 AS SHOWN
 SHEET
 23 OF 44



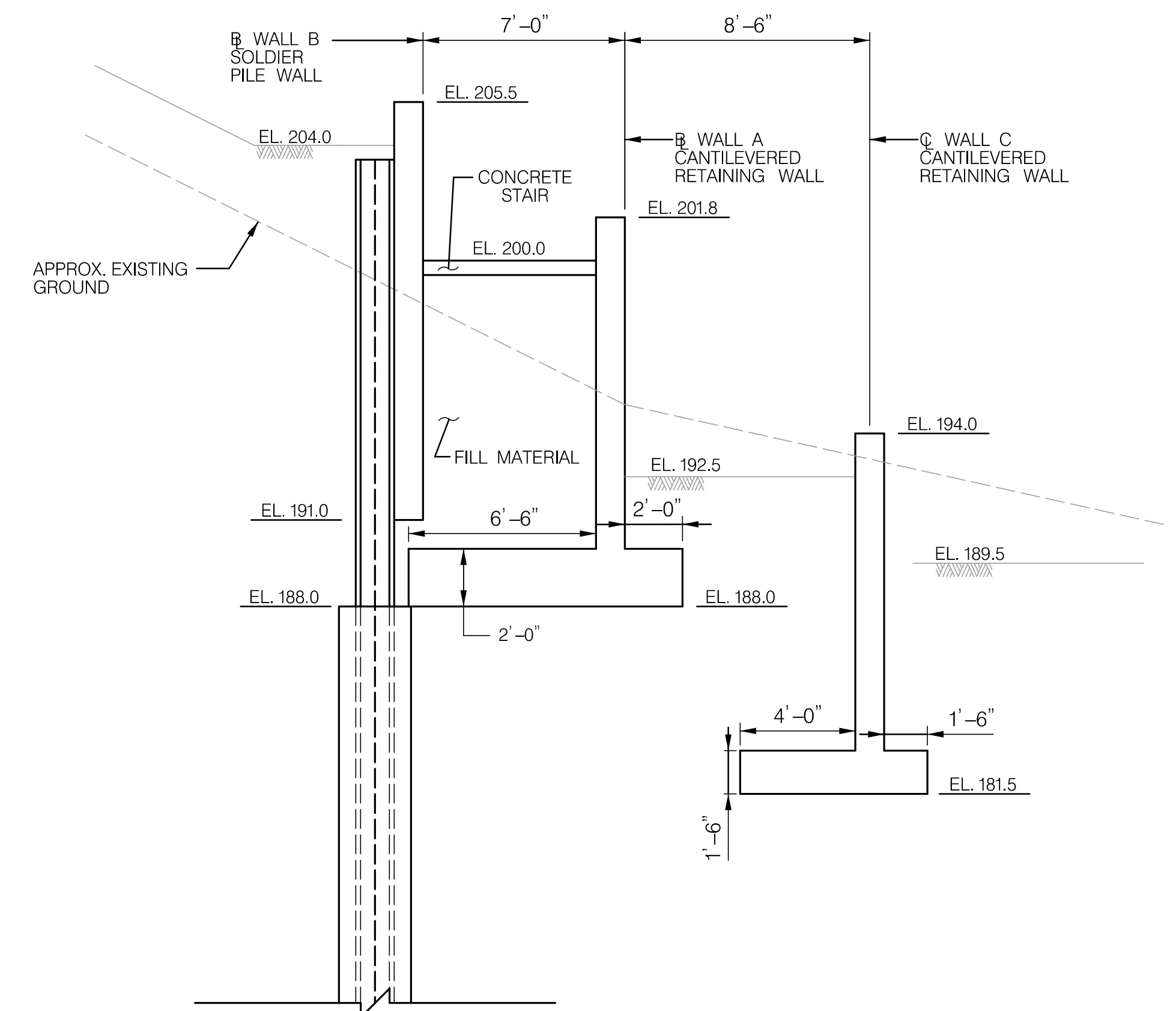
SECTION V-V

SCALE: 1" = 4'
 WALL A - STA. 100+25.87
 WALL B - STA. 200+07.65



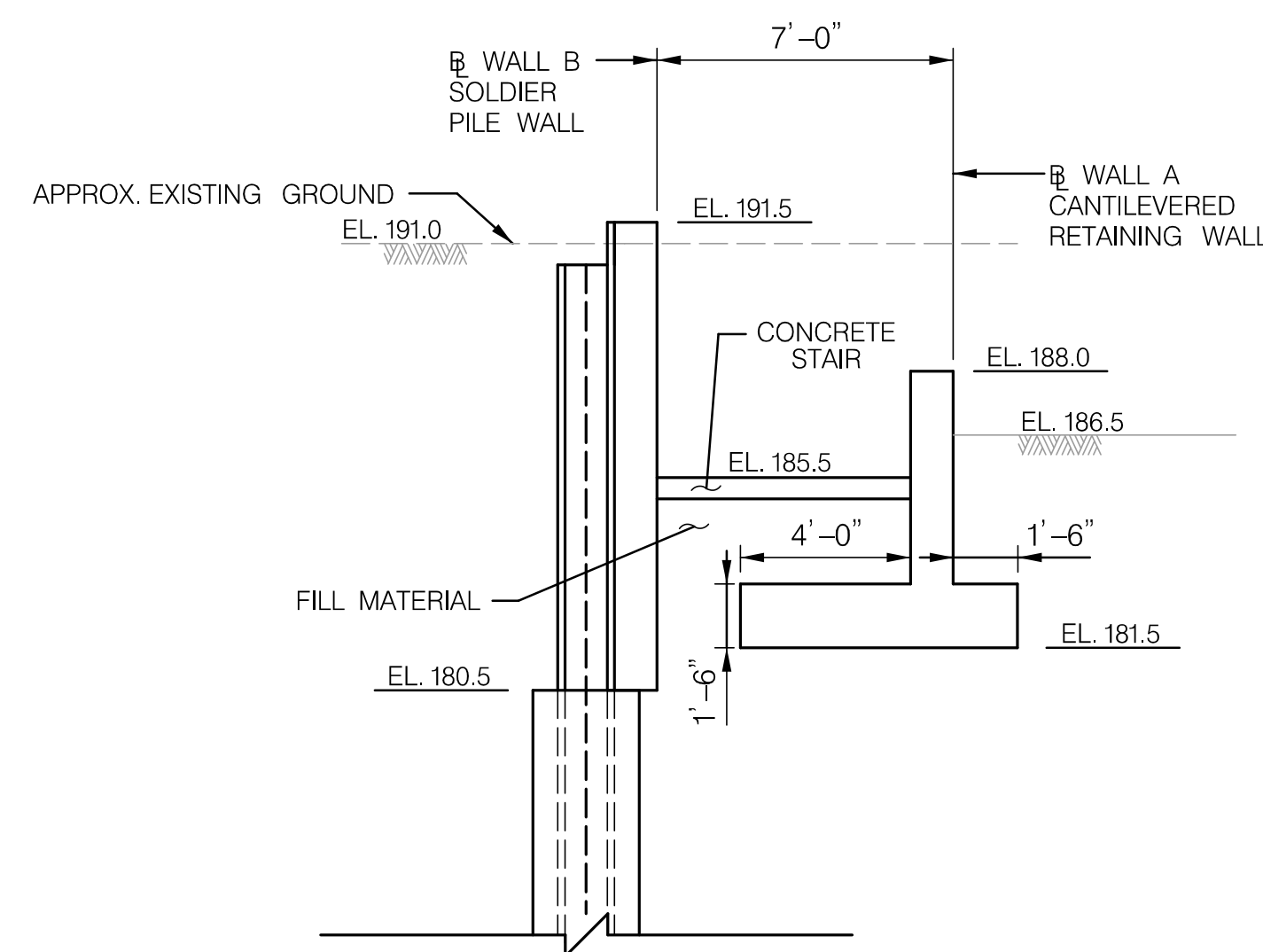
SECTION Y-Y

SCALE: 1" = 4'
 WALL A - STA. 100+60.46
 WALL B - STA. 200+58.99
 WALL C - STA. 300+10.01
 WALL G - STA. 700+37.30



SECTION Z-Z

SCALE: 1" = 4'
 WALL A - STA. 100+85.82
 WALL B - STA. 200+84.23
 WALL C - STA. 300+35.24




SECTION X-X

SCALE: 1" = 4'
 WALL A - STA. 100+40.42
 WALL B - STA. 200+28.26

NOTES:
 1. FOR SECTION LOCATIONS, SEE SHEET 16.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND



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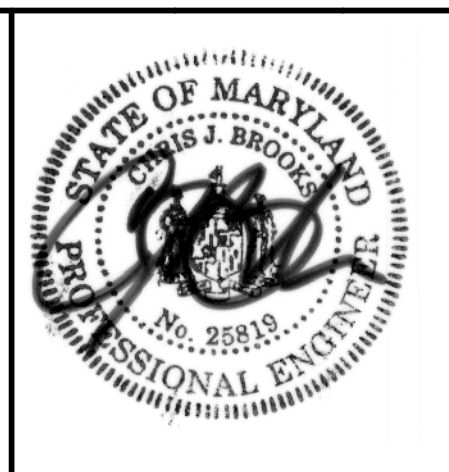
DATE

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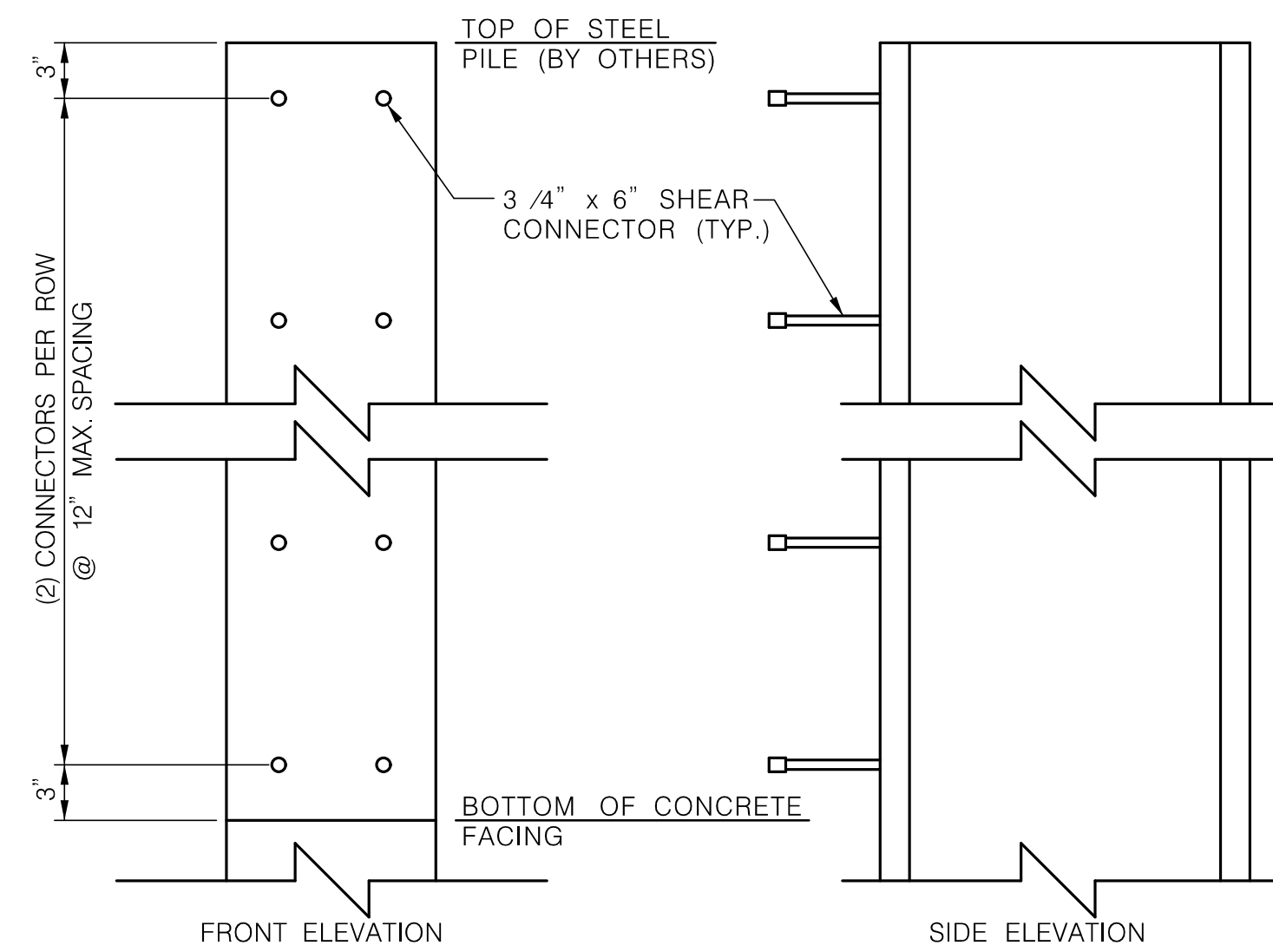


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DRN: MR					
CHK: HUM					
DATE: 06/18/14	BY	NO.	REVISION	DATE	

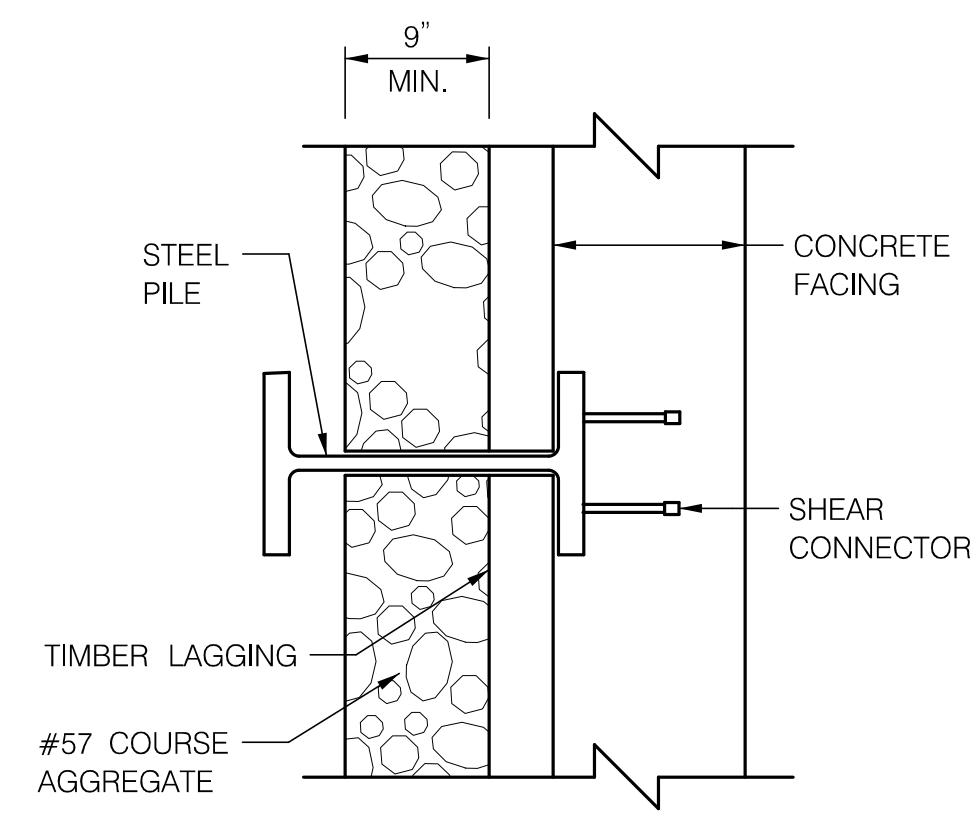
ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

REPRESENTATIVE WALL SECTIONS

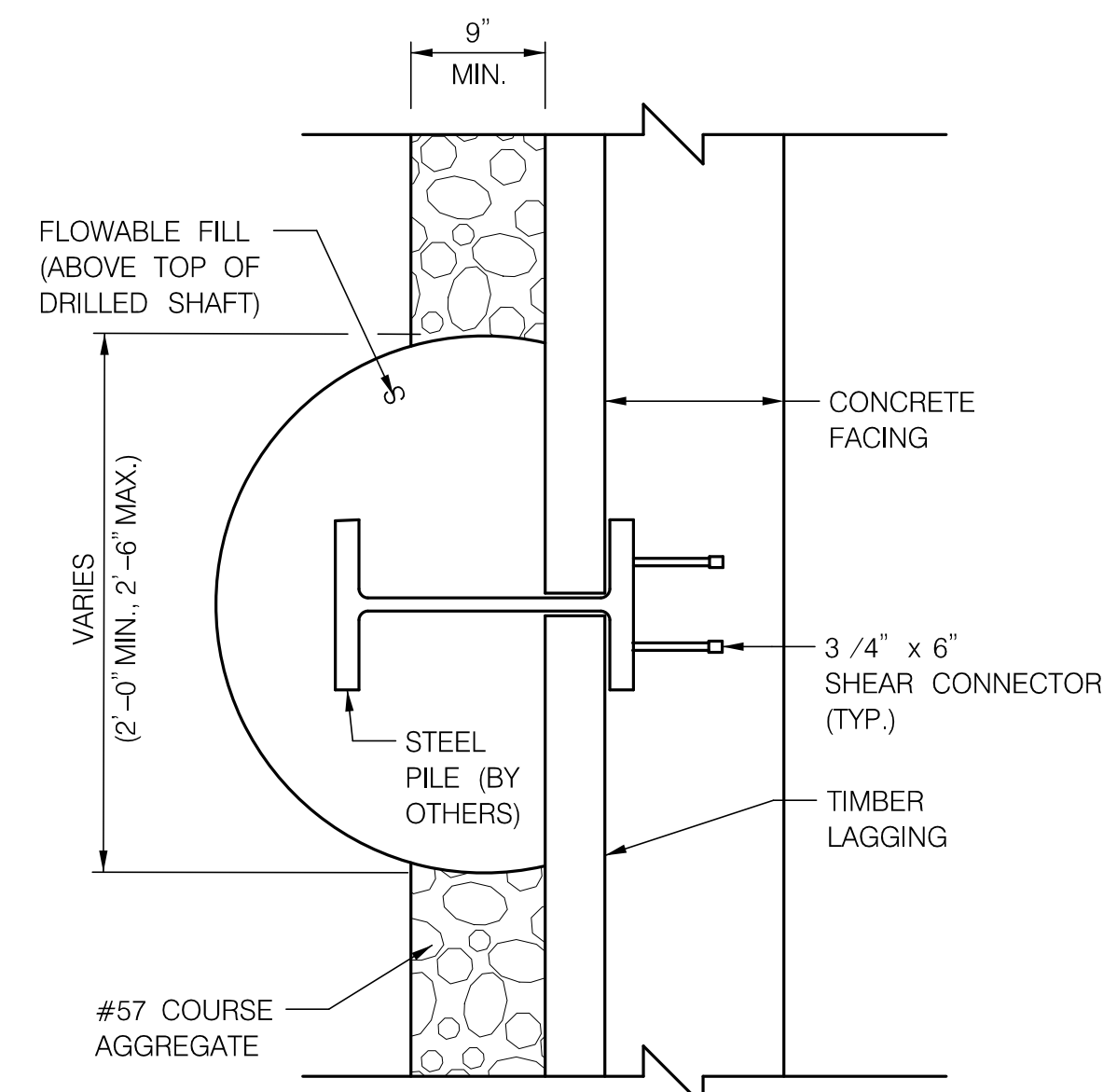
ST-08
SCALE
AS SHOWN
SHEET
24 OF 44



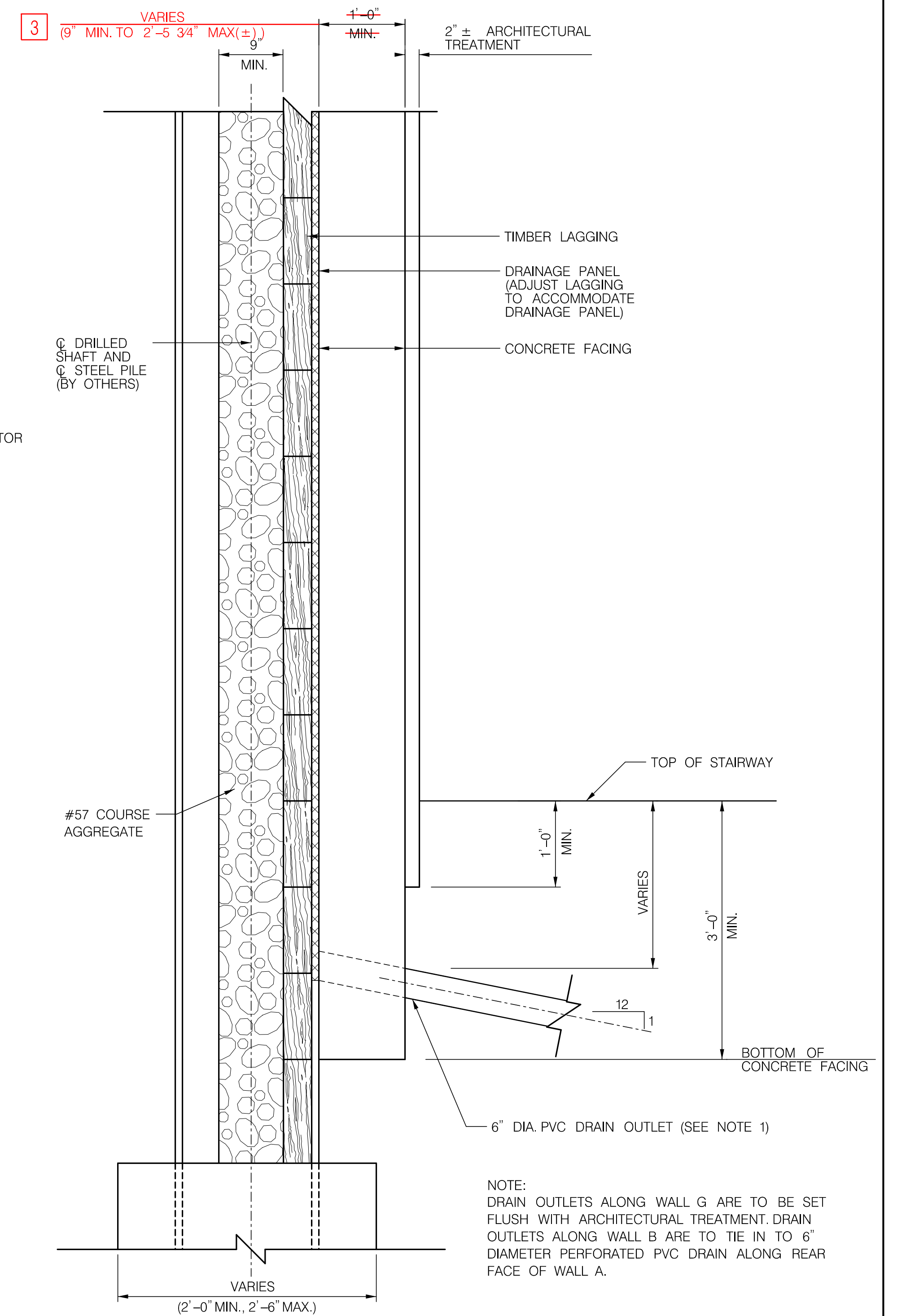
SHEAR CONNECTOR DETAIL
SCALE: 3/4" = 1'-0"



SECTION A-A
SCALE: 1" = 1'-0"



SECTION B-B
SCALE: 1" = 1'-0"




DETAIL A
SCALE: 1" = 1'-0"

NOTE:
DRAIN OUTLETS ALONG WALL G ARE TO BE SET FLUSH WITH ARCHITECTURAL TREATMENT. DRAIN OUTLETS ALONG WALL B ARE TO TIE IN TO 6\"/>

NOTES:
1. FOR LOCATIONS OF SECTION A-A & B-B, SEE SHEET 22.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND



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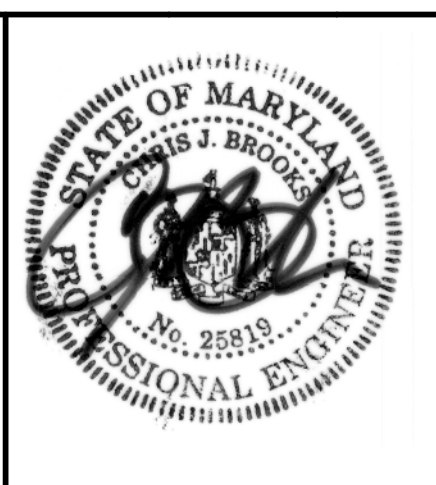
6/19/14
DATE

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MARYLAND

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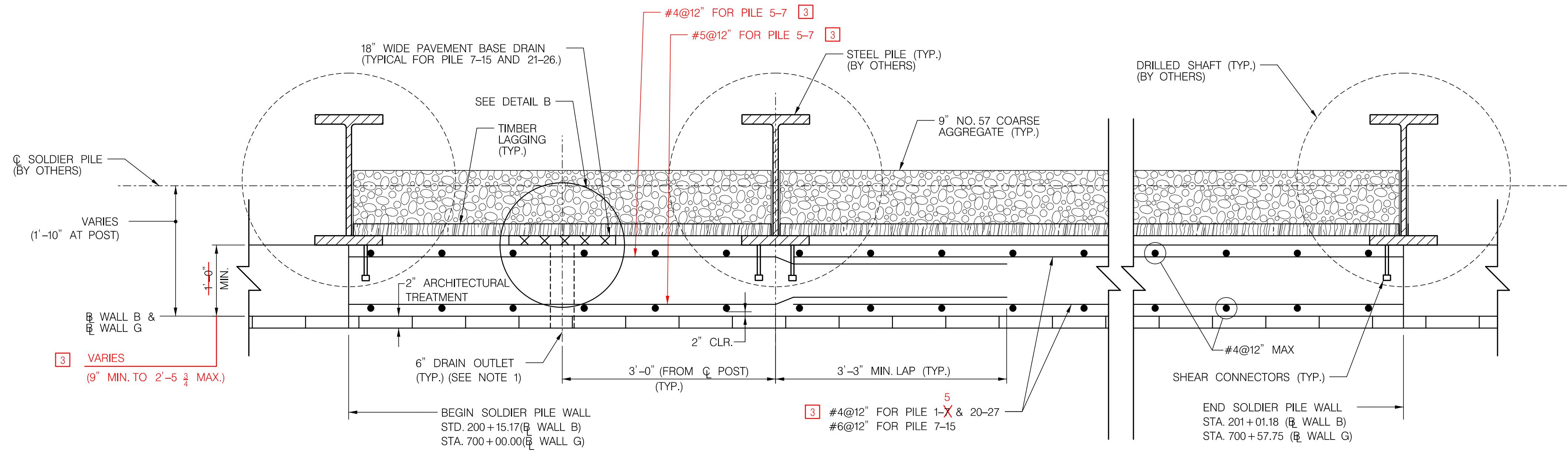


DES: BSW				
DRN: MR				
CHK: HUM				
DATE: 06/18/14	BSW	3	REVISED WALL ALIGNMENT	12/15/14
	BY	NO.	REVISION	DATE

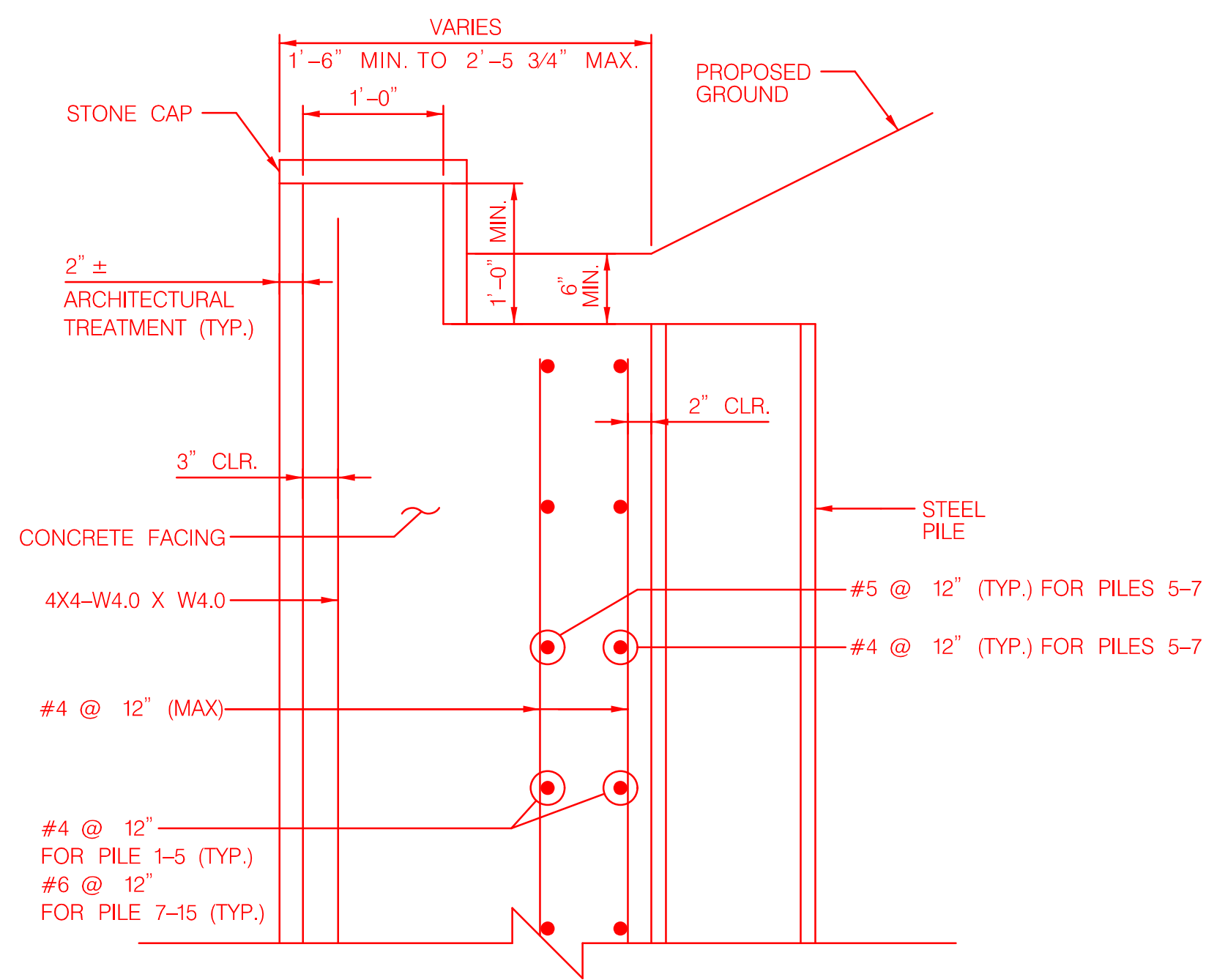
ELICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

SOLDIER PILE RETAINING WALL DETAILS

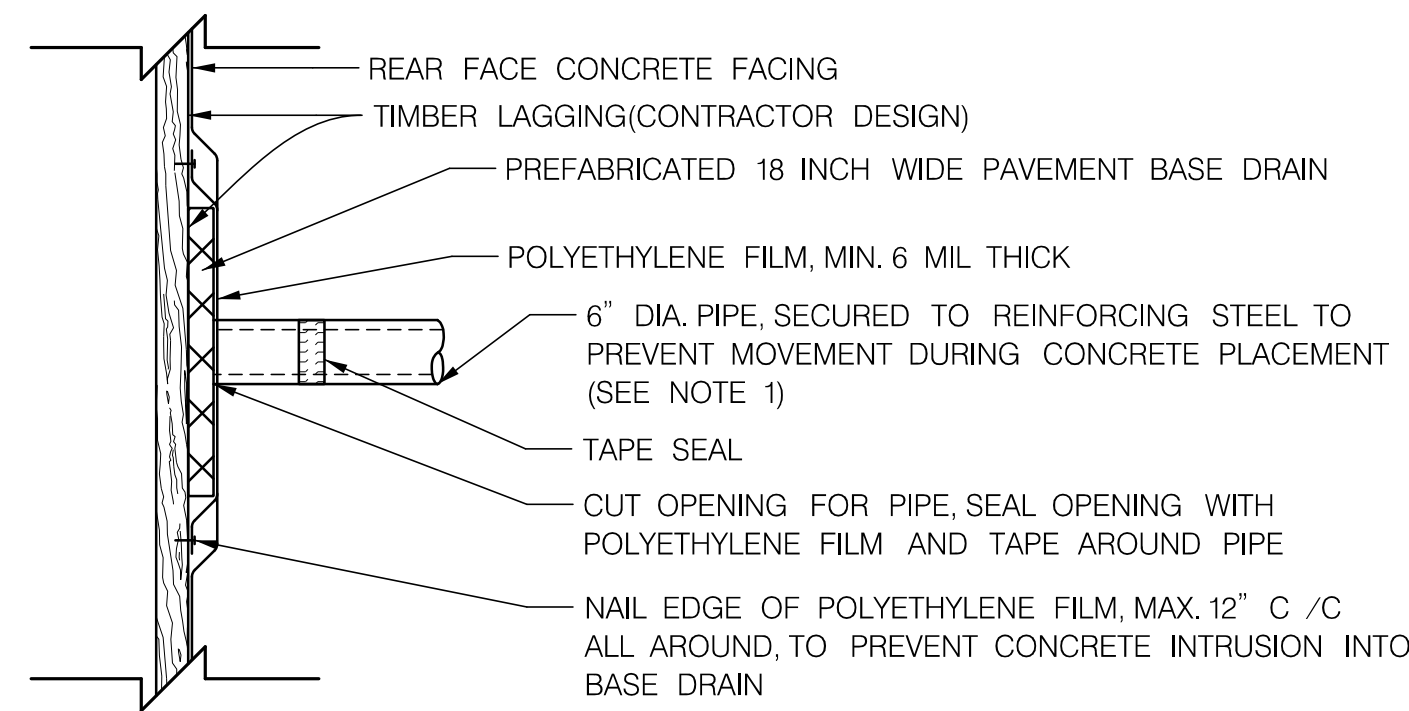
ST-09
SCALE
AS SHOWN
SHEET
25 OF 44



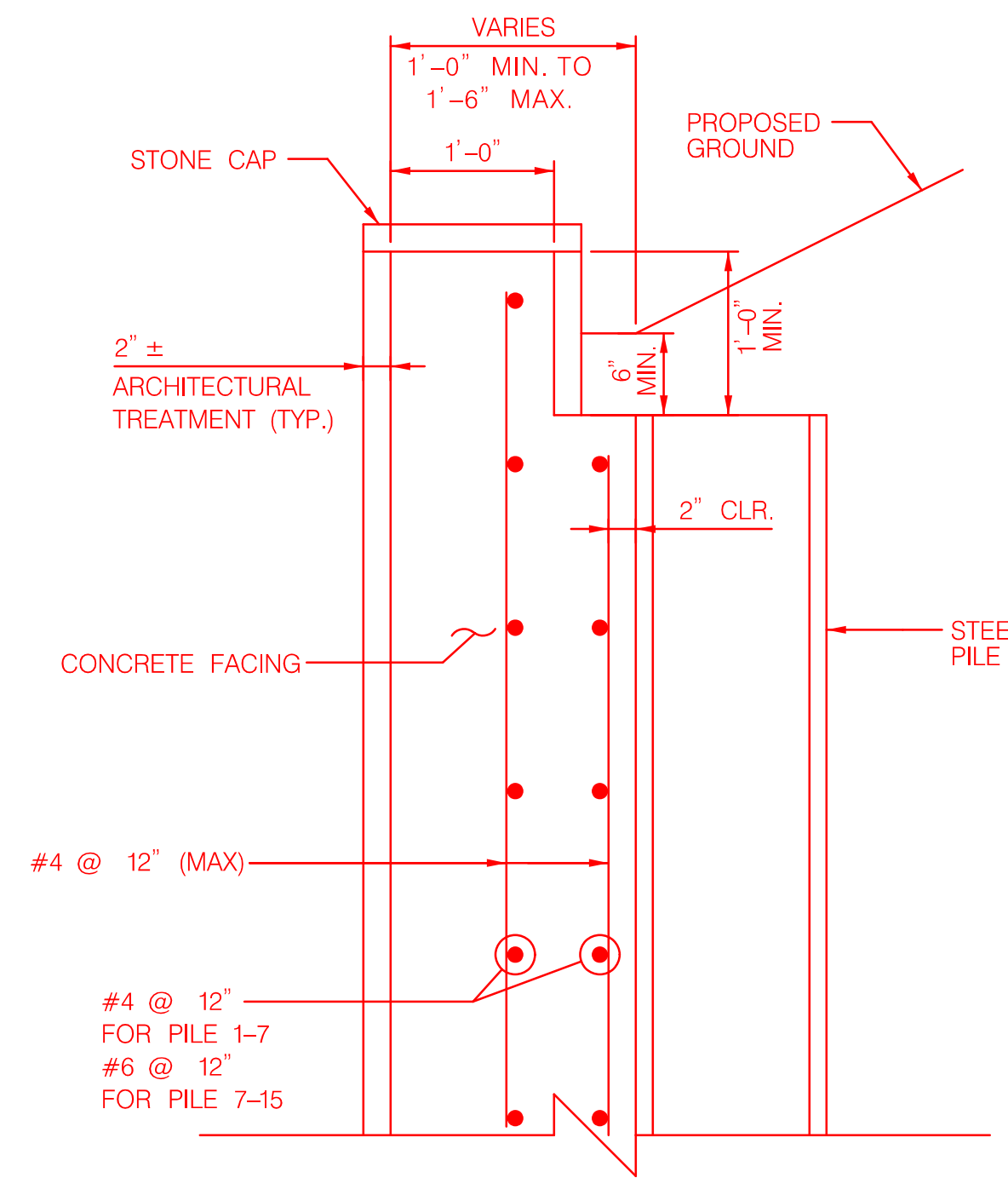
SOLDIER PILE WALL-PARTIAL PLAN
SCALE: 1" = 1'-0"



TOP OF WALL B
FOR WALL THICKNESS > 1'-6"
SCALE: 1" = 1'-0"



DETAIL B (PLAN VIEW)
NOT TO SCALE



TOP OF WALL B
FOR WALL THICKNESS 1'-0" < T < 1'-6"
SCALE: 1" = 1'-0"

NOTE:
1. DRAIN OUTLETS ALONG WALL G ARE TO BE SET FLUSH WITH ARCHITECTURAL TREATMENT. DRAIN OUTLETS ALONG WALL B ARE TO TIE-IN TO 6" DIA PERFORATED PVC DRAIN PIPE ALONG REAR FACE OF WALL A.

CONTRACTOR NOTE:
1. IN CASE OF VARIATIONS IN PILE PLACEMENT DURING CONSTRUCTION, CONCRETE PANEL THICKNESSES MAY VARY BETWEEN 9" AND 2'-5 3/4". WHERE PANEL THICKNESSES ARE GREATER THAN 1'-6", WELDED WIRE FABRIC SHALL BE PLACED ALONG THE OUTER LAYER OF THE CONCRETE PANEL AS SHOWN IN TOP OF WALL B (FOR WALL THICKNESS IS > 1'-6")

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark R. [Signature]
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

DATE

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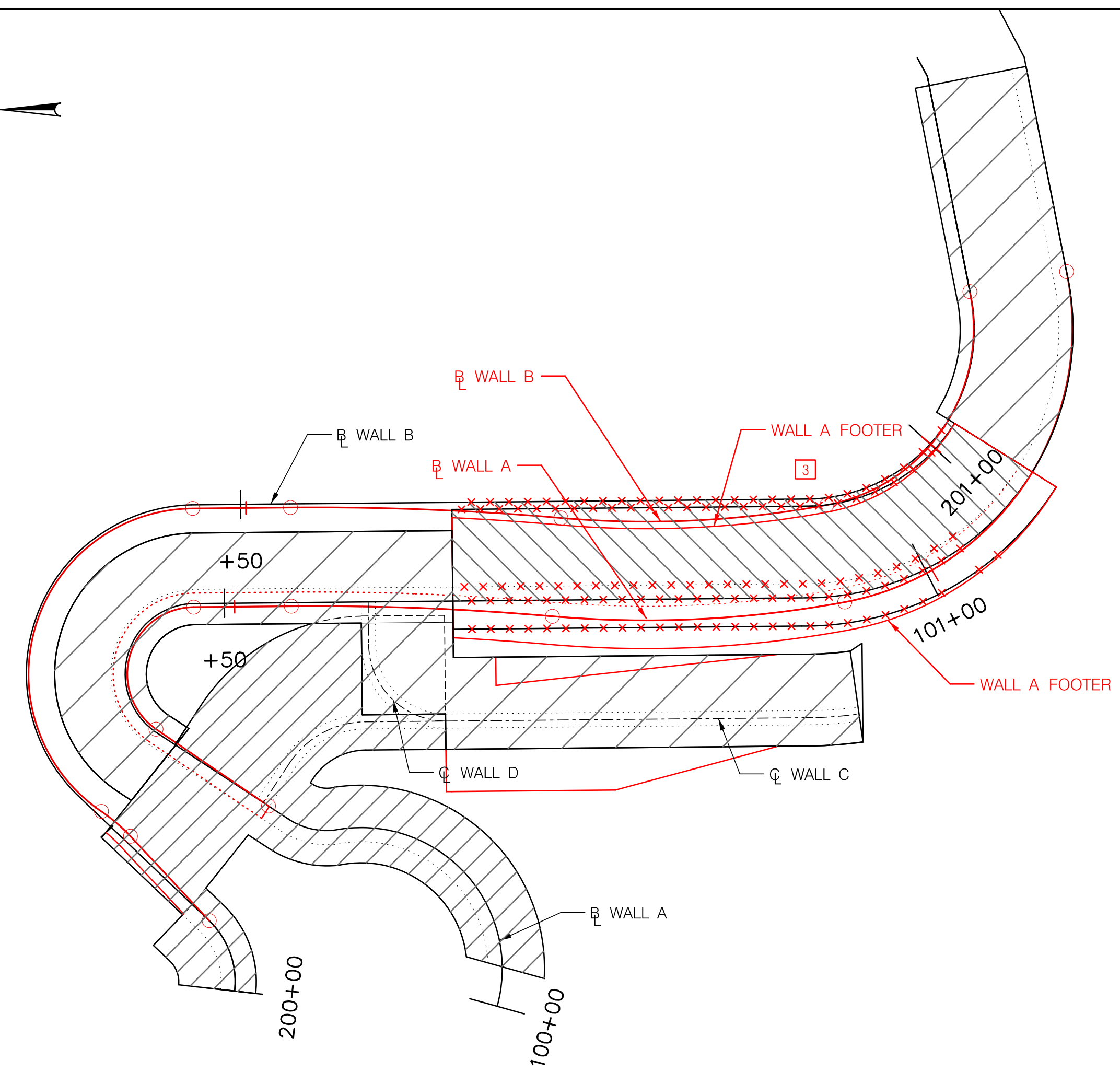
STATE OF MARYLAND
PROFESSIONAL ENGINEER
No. 25819

DES: BSW				
DRN: MR				
CHK: HUM				
DATE: 06/18/14	BSW	3	REVISED WALL DETAIL	12/15/14
	BY	NO.	REVISION	DATE

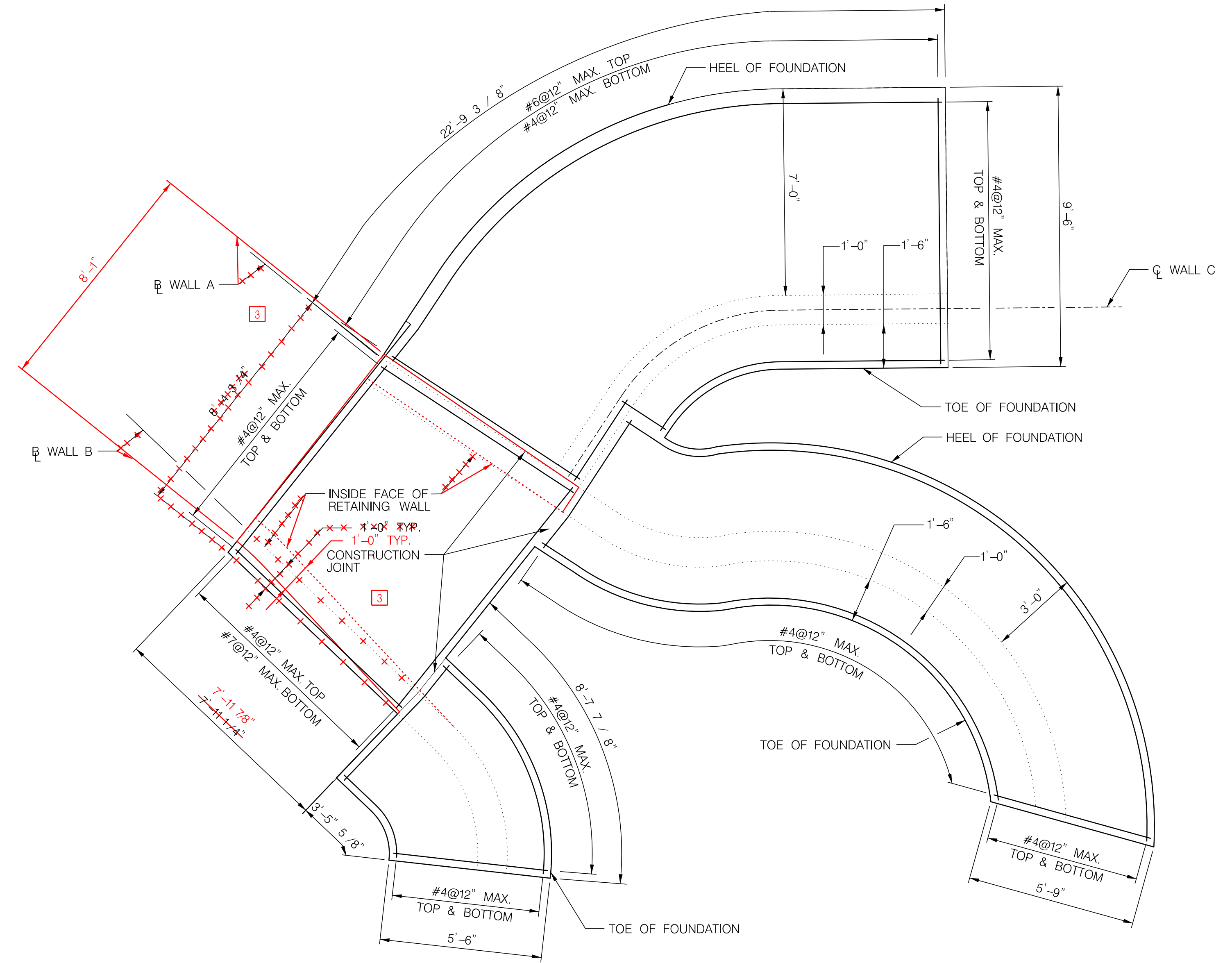
ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

SOLDIER PILE RETAINING WALL DETAILS

ST-10
SCALE
AS SHOWN
SHEET
26 OF 44

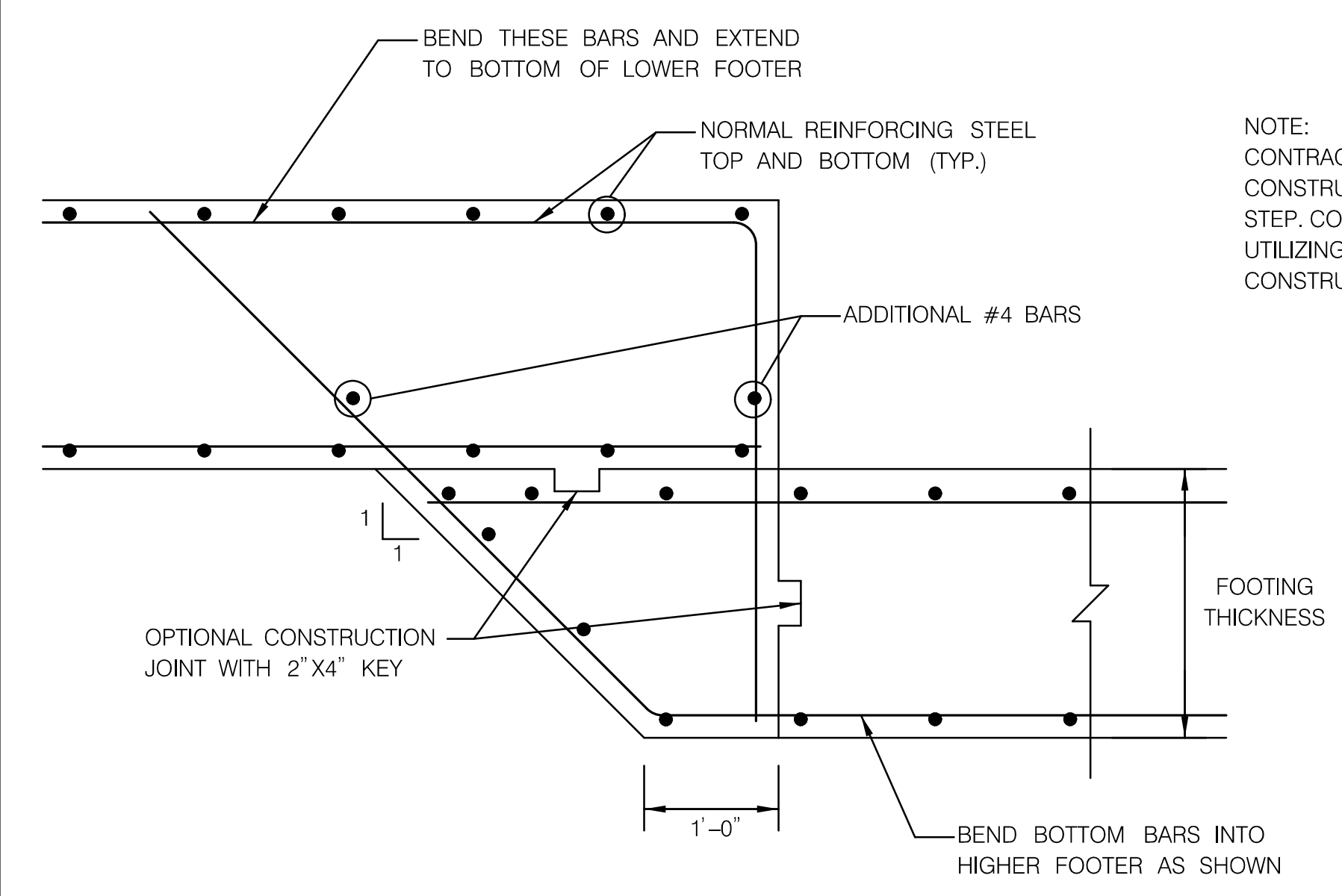


FOOTING LAYOUT KEY MAP
NOT TO SCALE



FOOTING PLAN-WALL A, B & C

WALL A: STA. 100+02.33 TO 100+33.40-39
 WALL B: STA. 200+00.00 TO 200+15.47-22
 WALL C: STA. 300+00.00 TO 300+15.42
 SCALE: 3/8" = 1'-0"



STEPPED FOOTING DETAIL
NOT TO SCALE

NOTE:
 CONTRACTOR SHALL UTILIZE ONLY ONE
 CONSTRUCTION JOINT AT THE FOOTING
 STEP. CONTRACTOR HAS THE OPTION OF
 UTILIZING THE VERTICAL OR HORIZONTAL
 CONSTRUCTION JOINT.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Mark D. ...
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/18/14
 DATE

McCORMICK TAYLOR

509 South Exeter Street
 4th Floor
 Baltimore, Maryland 21202
 (410) 662-7400

Howard County
 MARYLAND

Storm Water Management Division
 Bureau of Environmental Services
 6751 Columbia Gateway Drive, Suite 514
 Columbia, Maryland 21046-3143
 (410) 313-6444

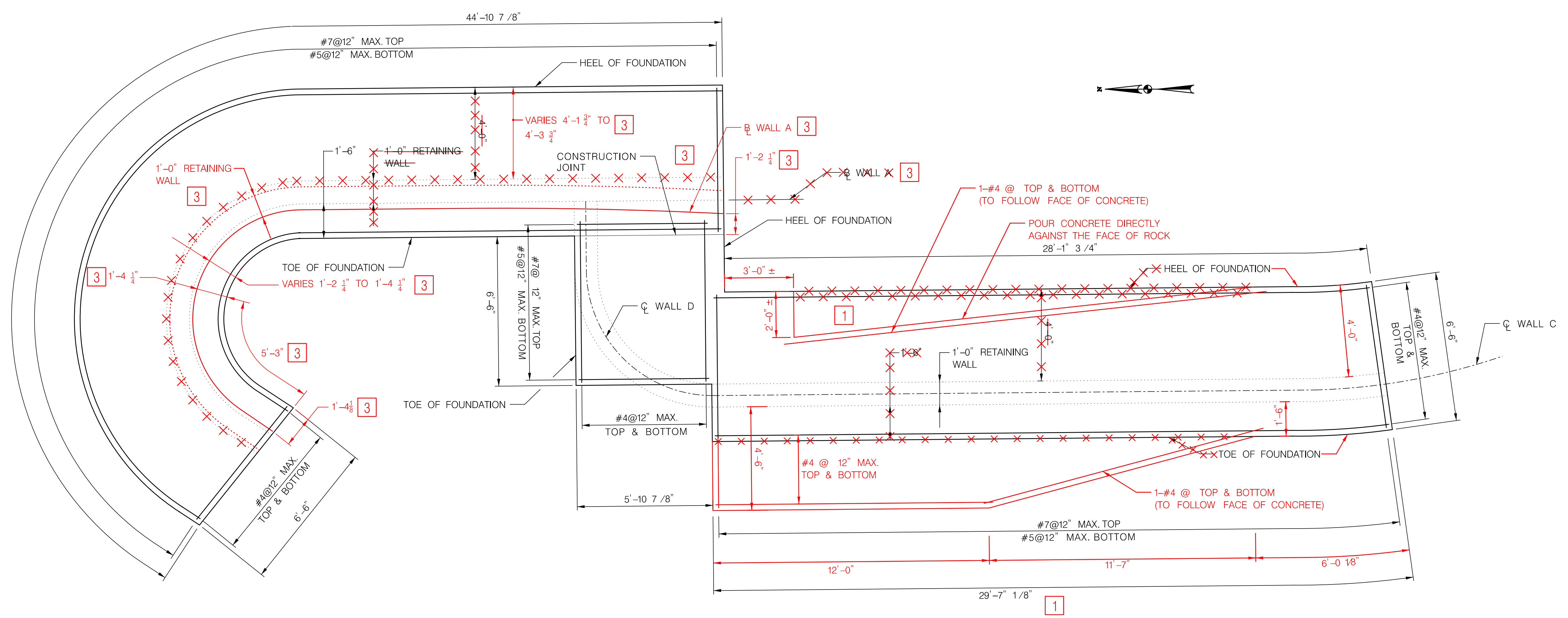


DES:	BSW				
DRN:	MR				
CHK:	HUM				
DATE:	06/18/14				
BY:	BSW	NO.	3	REVISED WALL ALIGNMENT	12/15/14
				REVISION	DATE

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

RETAINING WALL FOOTING LAYOUT

ST-11
 SCALE
 AS SHOWN
 SHEET
 27 OF 44



FOOTING PLAN-WALL A,C, & D

WALL A: STA. 400+33.40 TO 100+64.77 100+33.39 TO 100+65.49
 WALL C: STA. 300+15.42 TO 300+44.74
 WALL D: STA. 400+00.00 TO 400+11.55
 SCALE: 3/8" = 1'-0"

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DES: BSW					
DRN: MR					
CHK: HUM	BSW	3	REVISED WALL ALIGNMENT	12/15/14	
	BSW	1	WALL C FOOTING DIMENSION	11/13/14	
DATE: 06/18/14	BY	NO.	REVISION	DATE	

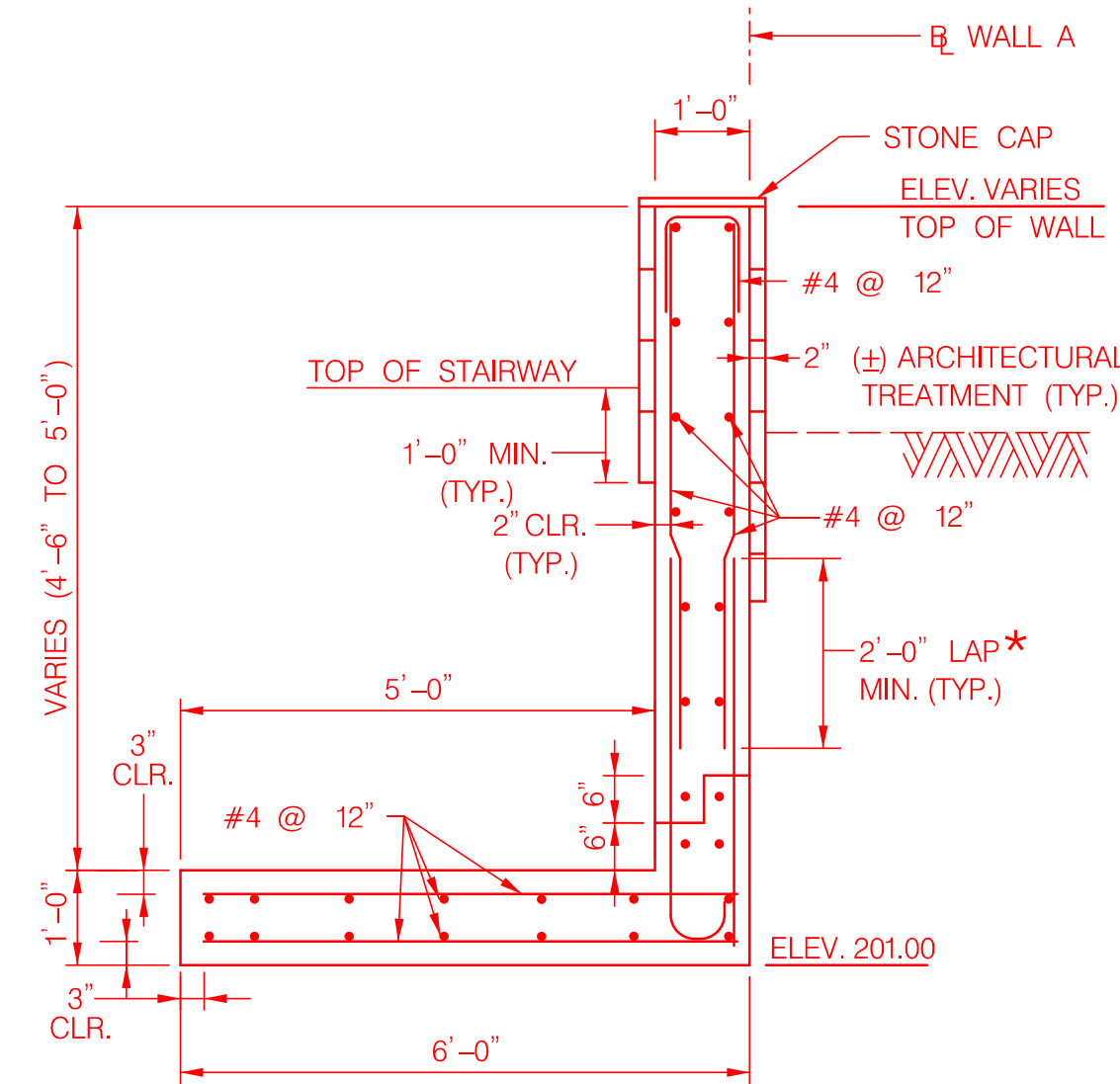
ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

RETAINING WALL FOOTING LAYOUT

ST-12

SCALE
 AS SHOWN

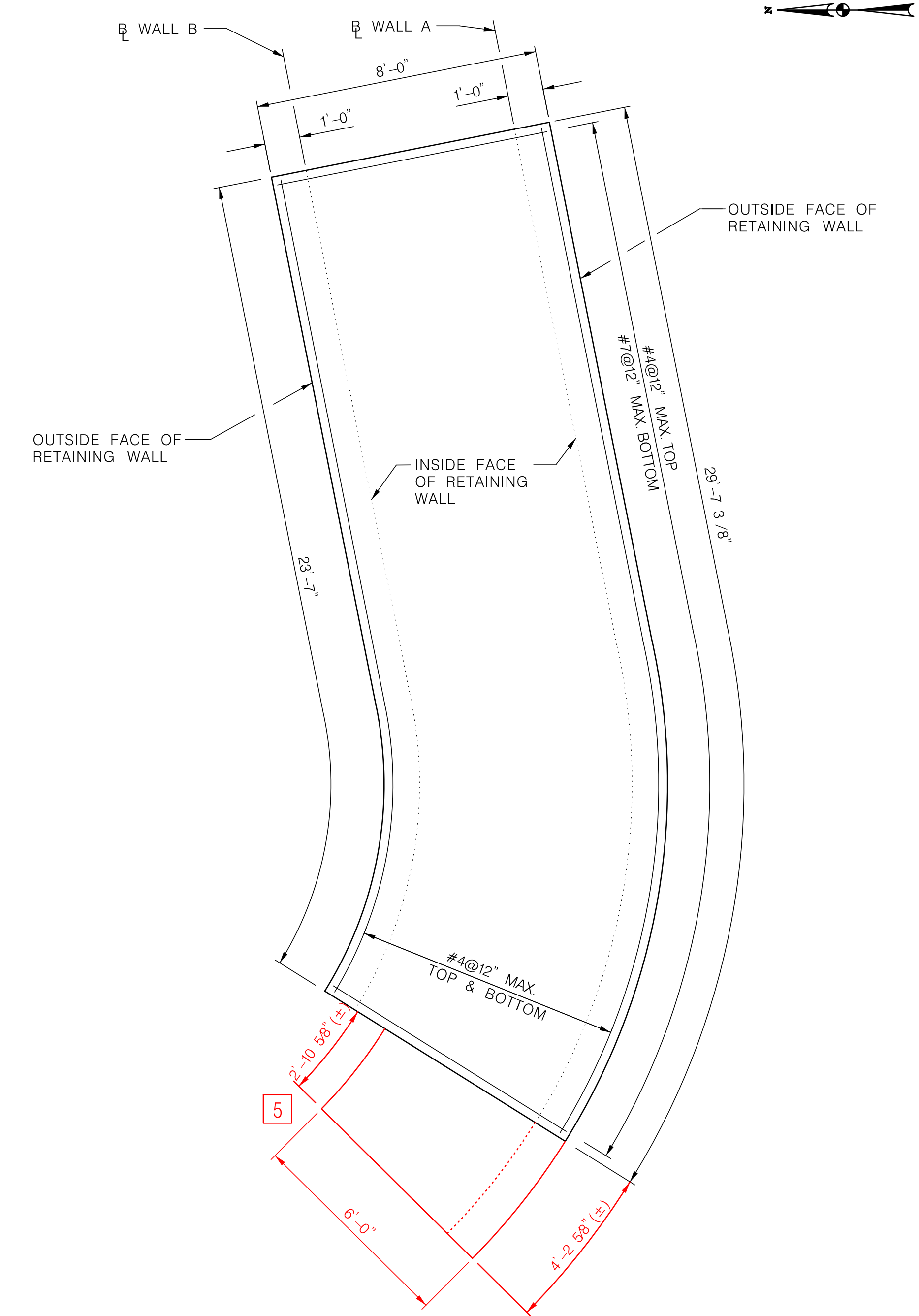
SHEET
 28 OF 44



TYPICAL SECTION - WALL A

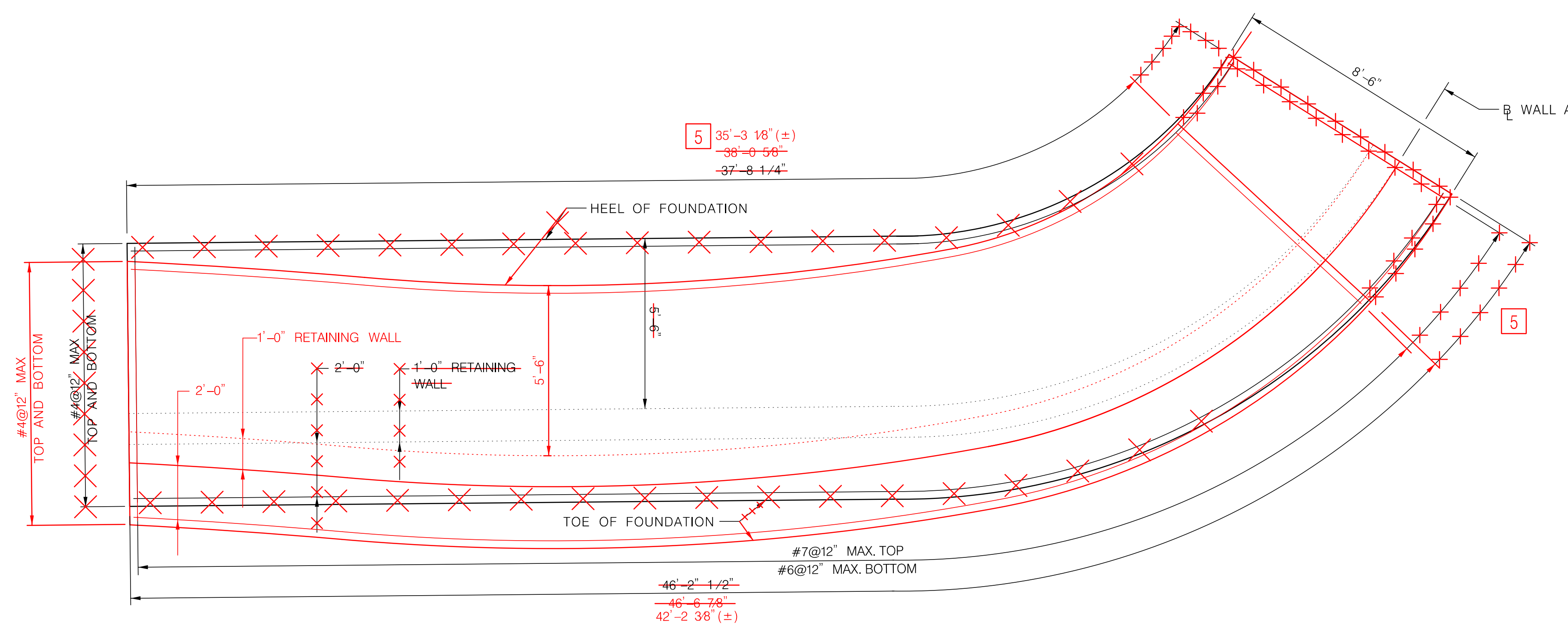
(STA. 101+06.00(±) TO 101+10.07)
SCALE: 1/2" = 1'-0"

*CONTRACTOR MAY SUBSTITUTE FULL-HEIGHT REINFORCEMENT BARS IN PLACE OF LAPPED REINFORCEMENT BARS



FOOTING PLAN-WALL A & WALL B

WALL A: STA. 101+06.00(±) TO 101.40.32
WALL B: STA. 201+01.18 TO 201+26.73
SCALE: 3/8" = 1'-0"



FOOTING PLAN-WALL A

STA. 100+64.77 TO 101+10.03
SCALE: 3/8" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. [Signature]
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

[Signature]
DATE

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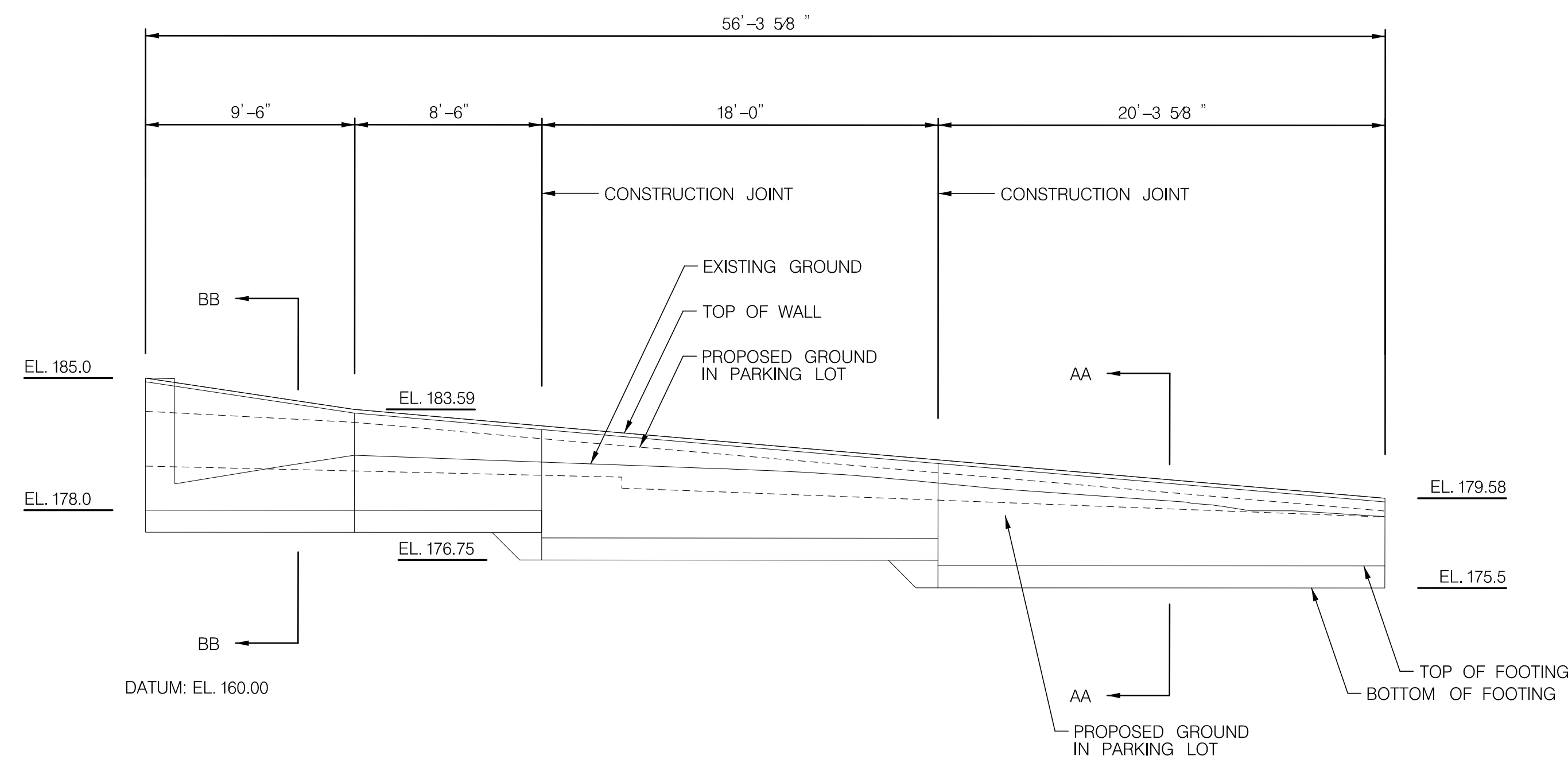


DES:	BSW				
DRN:	MR				
CHK:	HUM	BSW	5	REVISED WALL A	1/26/15
		BSW	3	REVISED WALL ALIGNMENT	12/15/14
DATE:	06/18/14	BY	NO.	REVISION	DATE

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

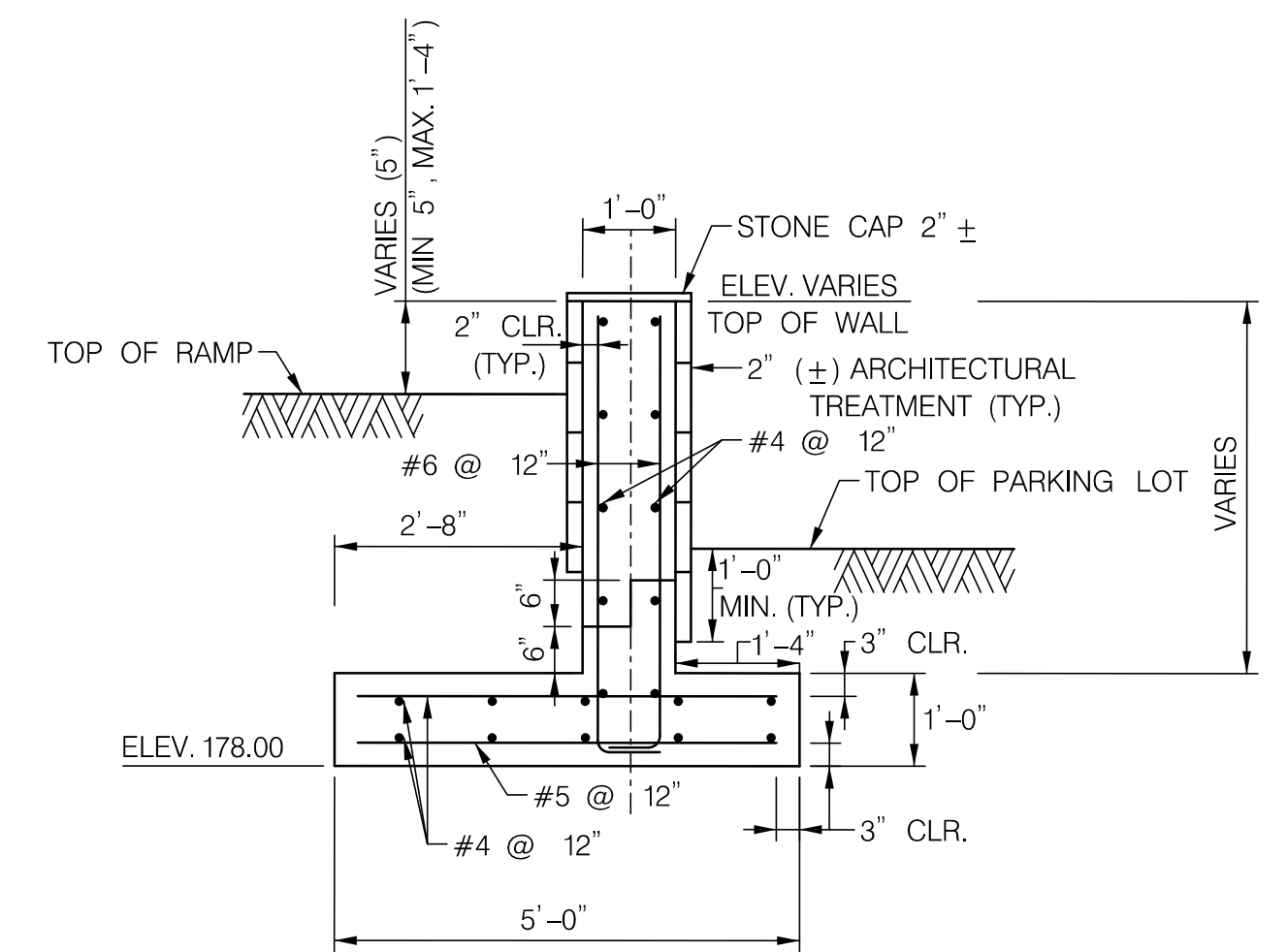
RETAINING WALL FOOTING LAYOUT

ST-13
SCALE
AS SHOWN
SHEET
29 OF 44

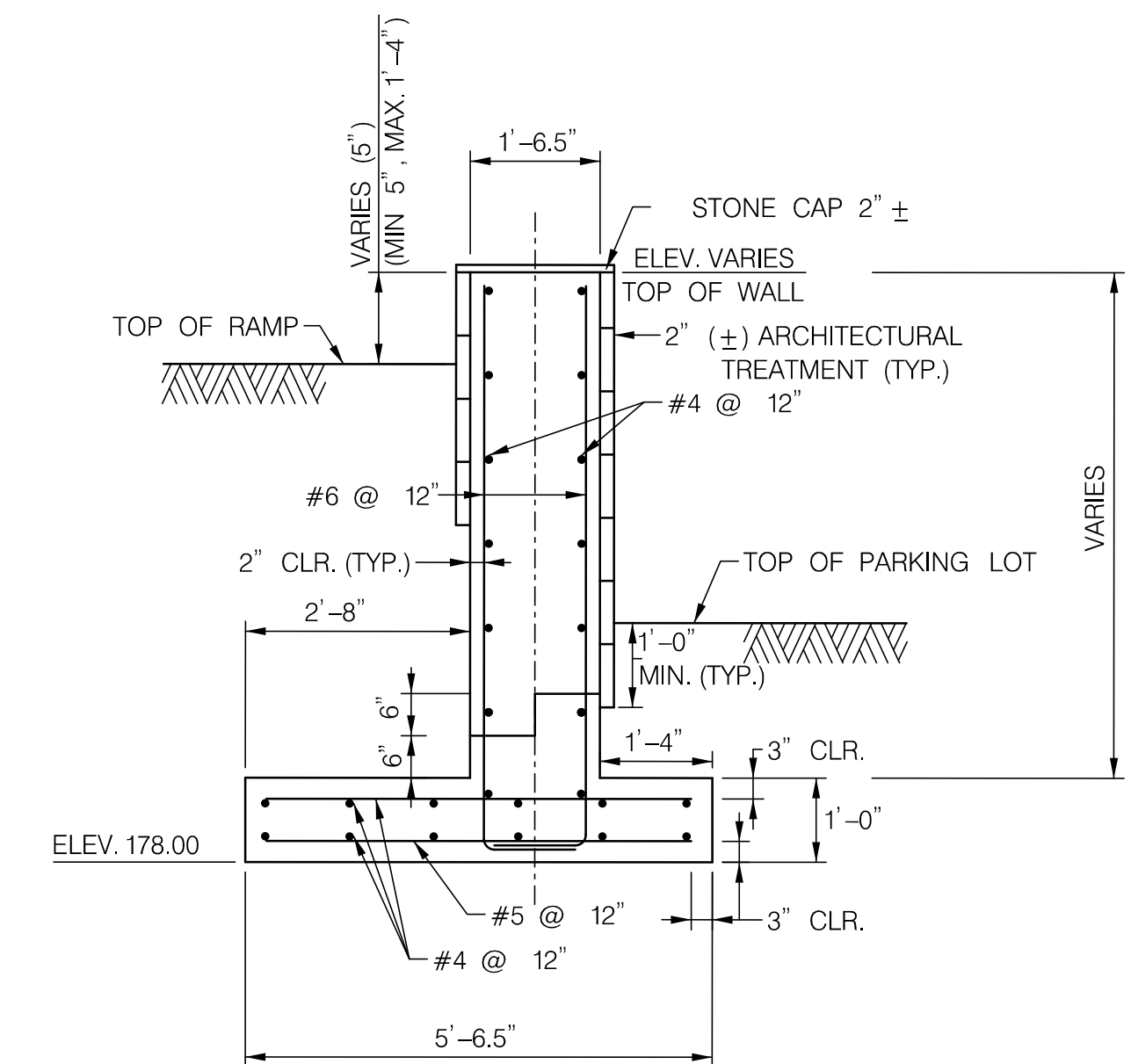


PROFILE - RAMP WALL N
SCALE: 1" = 5'

- NOTES:
 1. FOR STEPPED FOOTING DETAIL, SEE ST-11.
 2. FOR RAMP WALL N LOCATION SEE SITE PLAN.



TYPICAL SECTION AA-AA -WALL N
SCALE: 1/2" = 1'

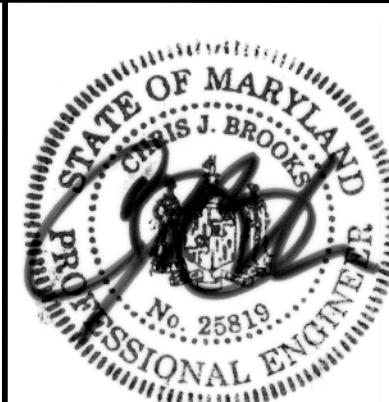


TYPICAL SECTION BB-BB -WALL N
SCALE: 1/2" = 1'

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HOWARD COUNTY, MARYLAND

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DES: BSW
 DRN: MR
 CHK: HUM
 DATE: 06/18/14

BY	NO.	REVISION	DATE

ELLCOTT CITY PARKING LOT E
 CAPITAL PROJECT #D-1165
 HOWARD COUNTY
**RAMP WALL N-PROFILE AND
 TYPICAL SECTION**

ST-14

SCALE

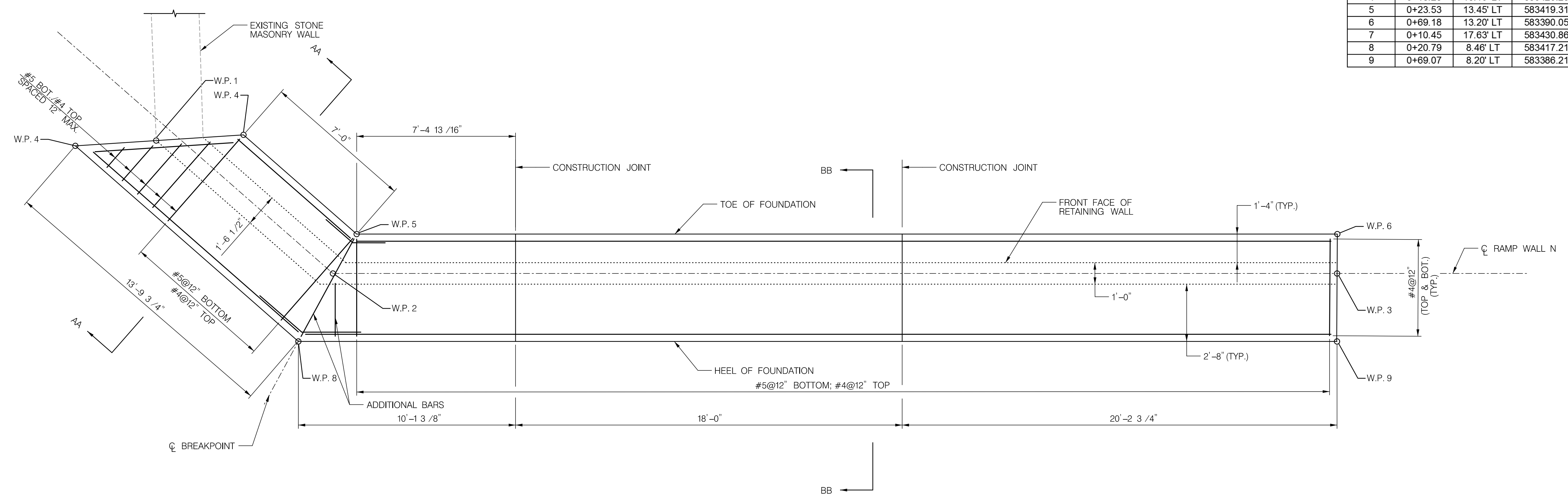
AS SHOWN

SHEET

30 OF 44

Mark R. L...
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES
 DATE: 6/18/14

Working Points - Ramp Wall N				
W.P. No.	Station	Offset	Northing	Easting
1	0+15.31	17.92' LT	583427.9934	1369049.4263
2	0+22.41	11.62' LT	583418.6132	1369050.8922
3	0+69.17	11.37' LT	583388.6474	1369086.7864
4	0+18.28	18.10' LT	583426.2367	1369051.8338
5	0+23.53	13.45' LT	583419.3118	1369052.9159
6	0+69.18	13.20' LT	583390.0527	1369087.9637
7	0+10.45	17.63' LT	583430.8617	1369045.4956
8	0+20.79	8.46' LT	583417.2126	1369047.6285
9	0+69.07	8.20' LT	583386.2184	1369084.7547



FOOTING LAYOUT PLAN
SCALE: 3/8" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. [Signature]
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/19/14
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DES: AM					
DRN: MR					
CHK: CB					
DATE: 06/18/14	BY	NO.	REVISION	DATE	

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

RAMP WALL N-FOOTING LAYOUT

ST-15

SCALE
AS SHOWN

SHEET
31 OF 44

Project No. 12-343		LOG OF BOREHOLE SB-1		Sheet 1 of 1	
CLIENT: McCormick Taylor		PROJECT: Parking Lot E in Elliccott City			
ARCHITECT/ENGINEER:		SITE: Elliccott City Howard County, Maryland			
SURFACE ELEV.: 0.6 7" Asphalt		GRAPHIC LOG			
10.0 End of Boring @ 10 ft		UPON COMPLETION, BOREHOLE WAS BACKFILLED AND PATCHED WITH CONCRETE AND ASPHALT			
WATER LEVEL OBSERVATIONS		AB Consultants, Inc.		STARTED: 3/11/13 FINISHED: 3/11/13	
WL	8 @ Drilling	DRILL CO.:	ABC	DRILL RIG:	B61
WL	Dry, cased in 7.5 ft @ 0 Hrs	DRILLER:	PS	ASST DRILLER:	
LOGGED BY:		APPROVED:			

Project No. 12-343		LOG OF BOREHOLE SB-2		Sheet 1 of 1	
CLIENT: McCormick Taylor		PROJECT: Parking Lot E in Elliccott City			
ARCHITECT/ENGINEER:		SITE: Elliccott City Howard County, Maryland			
SURFACE ELEV.: 0.6 7" Asphalt		GRAPHIC LOG			
10.0 End of Boring @ 10 ft		UPON COMPLETION, BOREHOLE WAS BACKFILLED AND PATCHED WITH CONCRETE AND ASPHALT			
WATER LEVEL OBSERVATIONS		AB Consultants, Inc.		STARTED: 3/11/13 FINISHED: 3/11/13	
WL	8 @ Drilling	DRILL CO.:	ABC	DRILL RIG:	B61
WL	6.5 @ 0 Hrs	DRILLER:	PS	ASST DRILLER:	
WL	6 @ 4 Hrs	LOGGED BY: APPROVED:			

Project No. 12-343		LOG OF BOREHOLE SB-3		Sheet 1 of 1	
CLIENT: McCormick Taylor		PROJECT: Parking Lot E in Elliccott City			
ARCHITECT/ENGINEER:		SITE: Elliccott City Howard County, Maryland			
SURFACE ELEV.: 0.6 7" Asphalt		GRAPHIC LOG			
10.0 End of Boring @ 10 ft		UPON COMPLETION, BOREHOLE WAS BACKFILLED AND PATCHED WITH CONCRETE AND ASPHALT			
WATER LEVEL OBSERVATIONS		AB Consultants, Inc.		STARTED: 3/11/13 FINISHED: 3/11/13	
WL	8 @ Drilling	DRILL CO.:	ABC	DRILL RIG:	B61
WL	7 @ 0 Hrs	DRILLER:	PS	ASST DRILLER:	
WL	4.5 @ 3 Hrs	LOGGED BY: APPROVED:			

Project No. 12-343		LOG OF BOREHOLE SB-4		Sheet 1 of 1	
CLIENT: McCormick Taylor		PROJECT: Parking Lot E in Elliccott City			
ARCHITECT/ENGINEER:		SITE: Elliccott City Howard County, Maryland			
SURFACE ELEV.: 0.6 7" Asphalt		GRAPHIC LOG			
10.0 End of Boring @ 10 ft		UPON COMPLETION, BOREHOLE WAS BACKFILLED AND PATCHED WITH CONCRETE AND ASPHALT			
WATER LEVEL OBSERVATIONS		AB Consultants, Inc.		STARTED: 3/11/13 FINISHED: 3/11/13	
WL	9 @ Drilling	DRILL CO.:	ABC	DRILL RIG:	B61
WL	Dry, cased in 7.5 ft @ 0 Hrs	DRILLER:	PS	ASST DRILLER:	
LOGGED BY:		APPROVED:			

Project No. 12-343		LOG OF BOREHOLE SB-5		Sheet 1 of 1	
CLIENT: McCormick Taylor		PROJECT: Parking Lot E in Elliccott City			
ARCHITECT/ENGINEER:		SITE: Elliccott City Howard County, Maryland			
SURFACE ELEV.: 0.6 7" Asphalt		GRAPHIC LOG			
10.0 End of Boring @ 10 ft		UPON COMPLETION, BOREHOLE WAS BACKFILLED AND PATCHED WITH CONCRETE AND ASPHALT			
WATER LEVEL OBSERVATIONS		AB Consultants, Inc.		STARTED: 3/11/13 FINISHED: 3/11/13	
WL	Dry @ Drilling	DRILL CO.:	ABC	DRILL RIG:	B61
WL	Dry, cased in 7 ft @ 0 Hrs	DRILLER:	PS	ASST DRILLER:	
LOGGED BY:		APPROVED:			

Project No. 12-343		LOG OF BOREHOLE SB-6		Sheet 1 of 1	
CLIENT: McCormick Taylor		PROJECT: Parking Lot E in Elliccott City			
ARCHITECT/ENGINEER:		SITE: Elliccott City Howard County, Maryland			
SURFACE ELEV.: 0.5 5" Topsoil		GRAPHIC LOG			
10.0 End of Boring @ 10 ft		UPON COMPLETION, BOREHOLE WAS BACKFILLED			
WATER LEVEL OBSERVATIONS		AB Consultants, Inc.		STARTED: 3/13/13 FINISHED: 3/13/13	
WL	4.5 @ Drilling	DRILL CO.:	ABC	DRILL RIG:	D-50 Hand Auger
WL	5.5 @ 0 Hrs	DRILLER:	PS	ASST DRILLER:	
LOGGED BY:		APPROVED:			

Project No. 13-055.18		LOG OF BOREHOLE SB-8		Sheet 1 of 1	
CLIENT: McCormick Taylor		PROJECT: Elliccott City Parking Lot E Boring EW1			
ARCHITECT/ENGINEER:		SITE: Elliccott City Howard County, Maryland			
SURFACE ELEV.: 0.3 3" Topsoil		GRAPHIC LOG			
13.0 End of Boring @ 10 ft		UPON COMPLETION, BOREHOLE WAS BACKFILLED			
WATER LEVEL OBSERVATIONS		AB Consultants, Inc.		STARTED: 10/25/13 FINISHED: 10/25/13	
WL	Dry @ Drilling	DRILL CO.:	ABC	DRILL RIG:	D-50 ATV
WL	Dry, cased in 2.5 ft @ 0 Hrs	DRILLER:	GY	ASST DRILLER:	
LOGGED BY:		APPROVED:			

Project No. 13-055.18		LOG OF BOREHOLE SB-9		Sheet 1 of 1	
CLIENT: McCormick Taylor		PROJECT: Elliccott City Parking Lot E Boring EW1			
ARCHITECT/ENGINEER:		SITE: Elliccott City Howard County, Maryland			
SURFACE ELEV.: 0.3 3" Topsoil		GRAPHIC LOG			
13.5 End of Boring @ 10 ft		UPON COMPLETION, BOREHOLE WAS BACKFILLED			
WATER LEVEL OBSERVATIONS		AB Consultants, Inc.		STARTED: 10/24/13 FINISHED: 10/24/13	
WL	Dry @ Drilling	DRILL CO.:	ABC	DRILL RIG:	D-50 ATV
WL	Dry, cased in 8 ft @ 0 Hrs	DRILLER:	GY	ASST DRILLER:	
WL	Dry, cased in 8 ft @ 24 Hrs	LOGGED BY: APPROVED:			

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. ...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

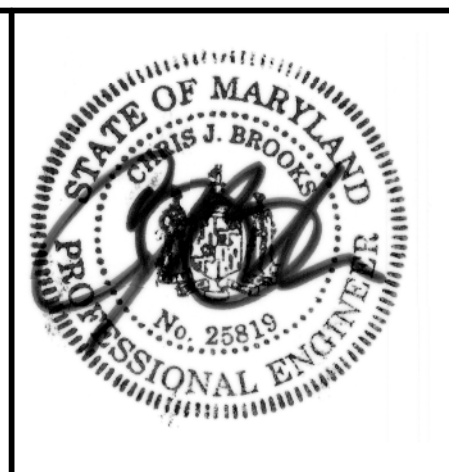
DATE: 6/19/14

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MARYLAND

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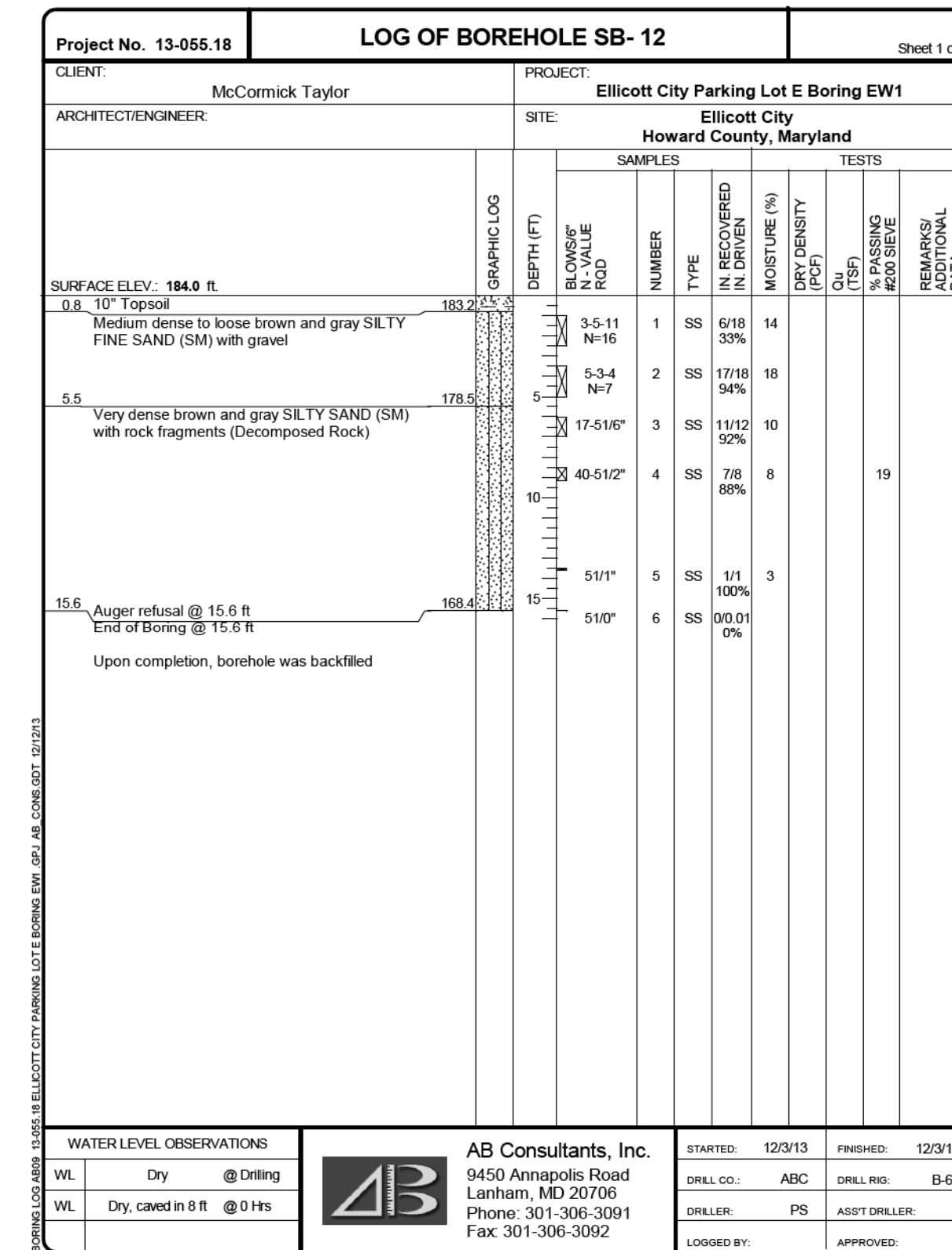
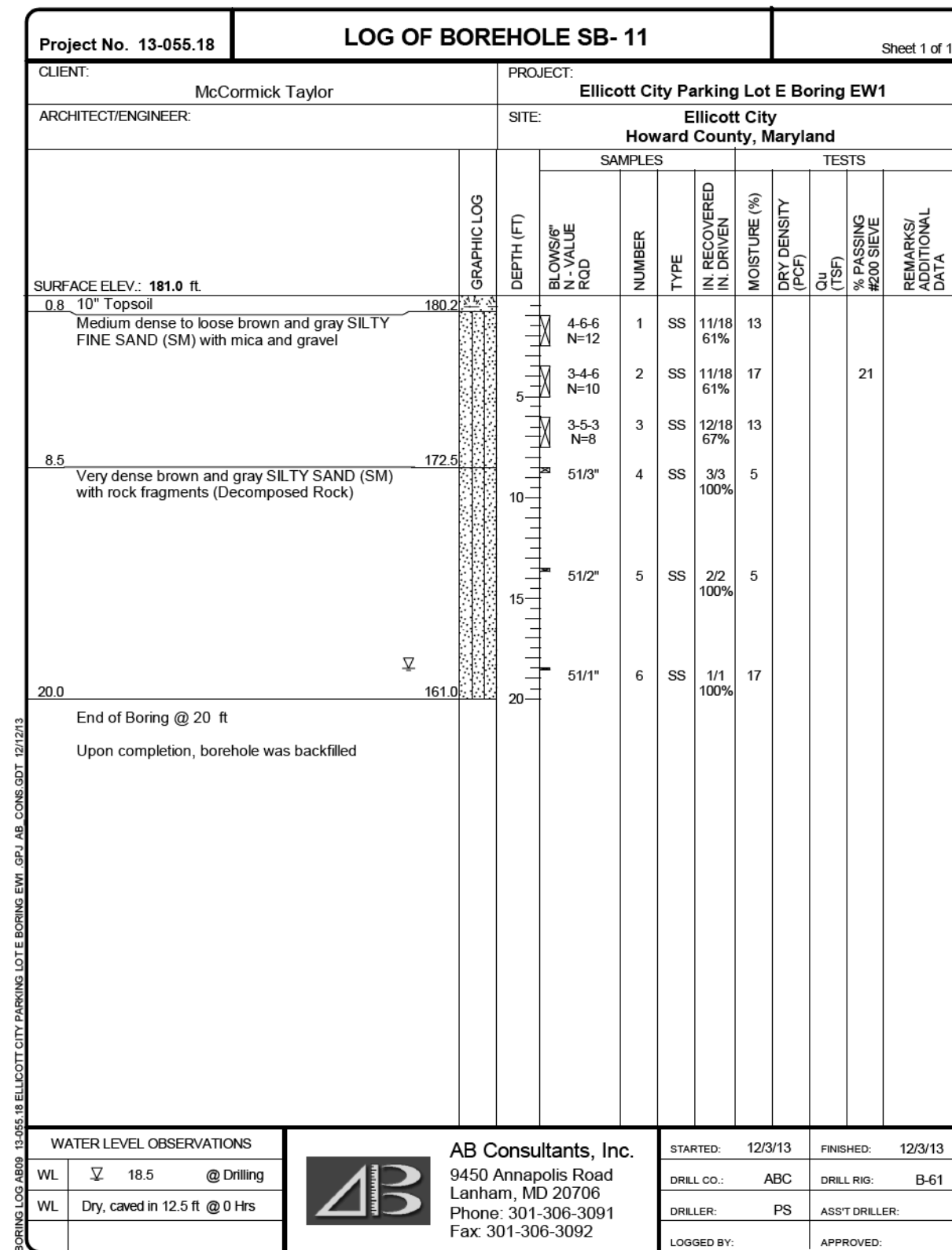
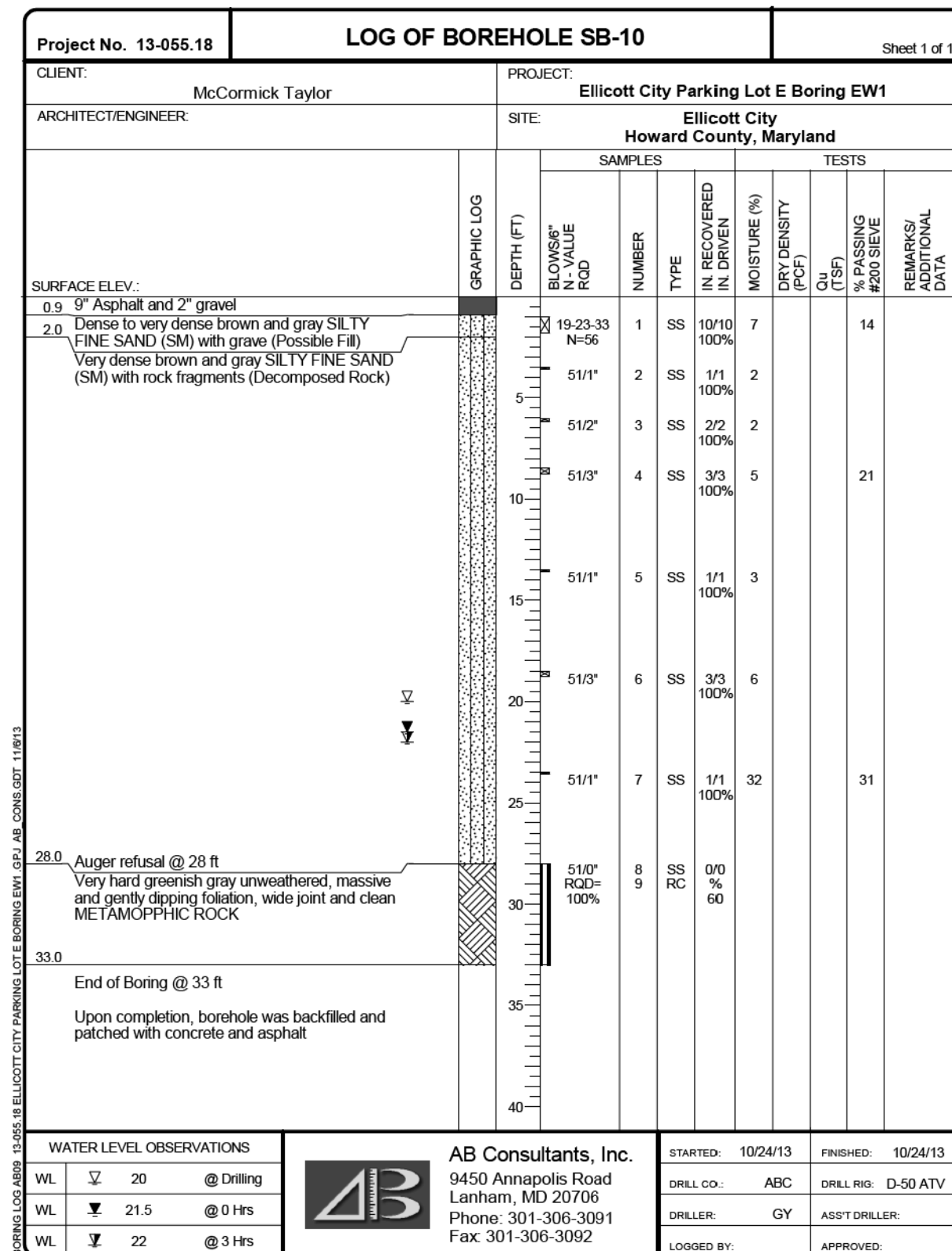
ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

SOIL BORING LOGS

SCALE: NOT TO SCALE

SHEET: 32 OF 44

ST-16



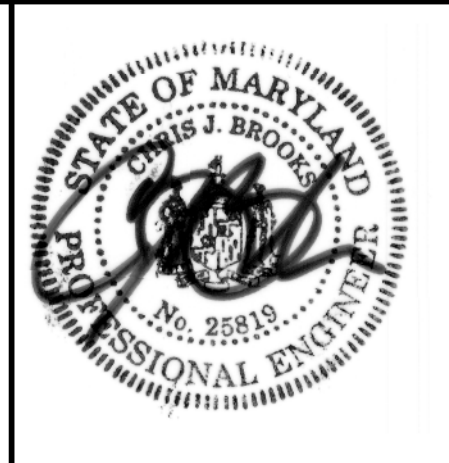
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 HOWARD COUNTY, MARYLAND

Mark DeLuna
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/19/14
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DES: AM					
DRN: MR					
CHK: CB					
DATE: 06/18/14					
BY	NO.		REVISION		DATE

ELICOTT CITY PARKING LOT E
 CAPITAL PROJECT #D-1165
 HOWARD COUNTY

SOIL BORING LOGS

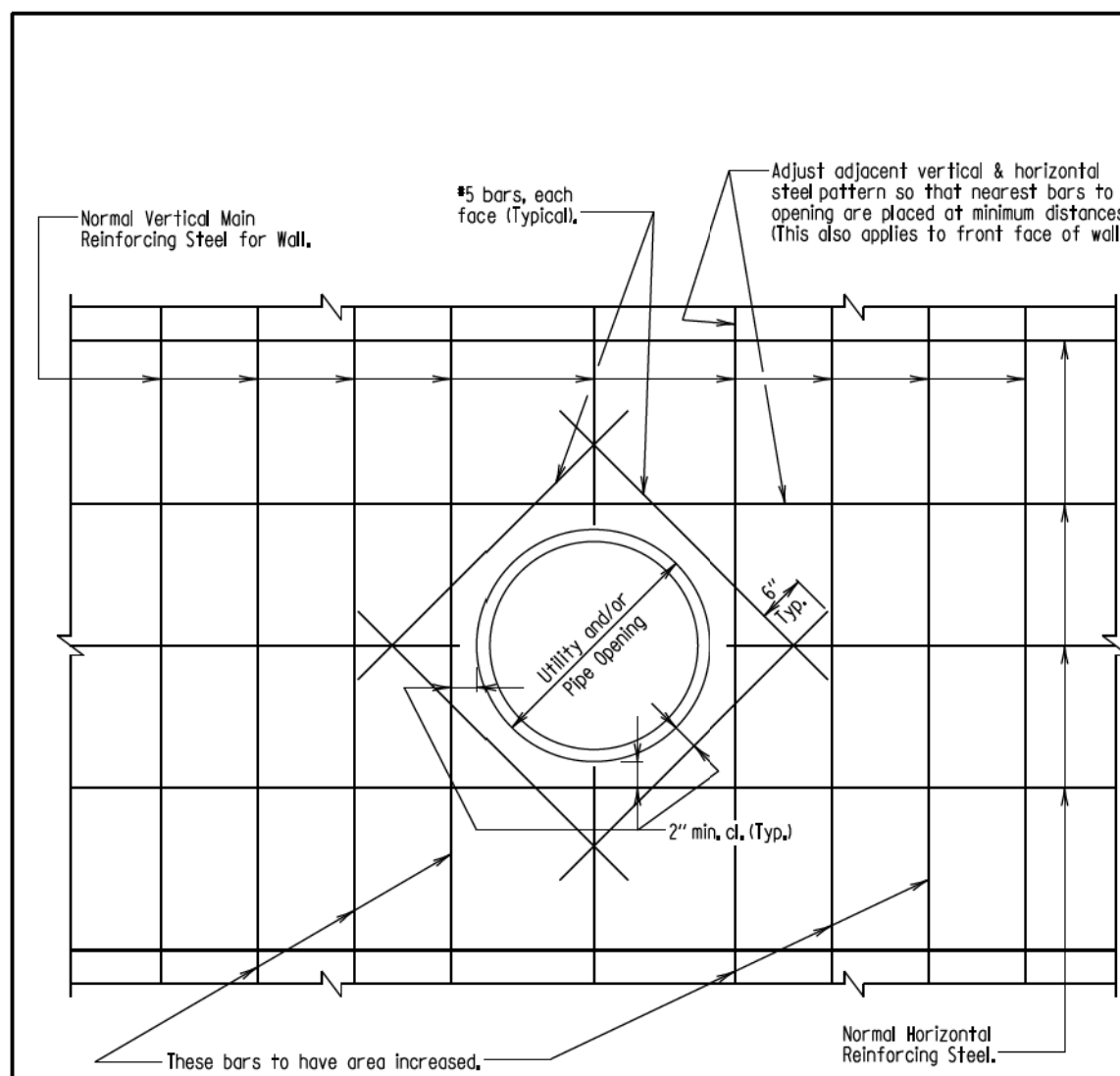
33 OF 44

ST-17

SCALE
 NOT TO SCALE

SHEET

33 OF 44



ELEVATION
Scale: None

Notes:
1. Increase the size of each of the first three normal main vertical reinforcing steel bars, on each side of the wall opening. New bar size shall be such that each increase in bar area shall at least equal 1/2 the total area of the main reinforcing steel that has been cut.
2. When pipe size is over 3'-0", sufficient horizontal bars shall be added over and below opening to transfer load to adjacent full sections of wall.
3. In no case shall concrete cover be less than 2".

FOR OFFICE USE ONLY

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

REINFORCEMENT ADJUSTMENT
AT UTILITY AND/OR PIPE OPENING IN WALL

STANDARD NO. M6.03-79-17 SHEET 1 OF 1

BAR SIZE	* LOCATION CATEGORY		
	A	B	C
#4	2'-5"	1'-9"	1'-5"
#5	3'-0"	2'-2"	1'-9"
#6	3'-7"	2'-7"	2'-1"
#7	4'-0"	3'-5"	2'-10"
#8	6'-5"	4'-7"	3'-8"
#9	8'-4"	5'-9"	4'-8"
#10	10'-3"	7'-4"	5'-11"
#11	12'-7"	9'-0"	7'-3"

* LOCATION CATEGORY
A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in footings, pier caps, etc.
B - All bars not in Category A spaced less than 6' apart.
C - All bars not in Category A spaced 6' or more apart.

Notes:
1. When bar lap is not specified on the Plans, the above dimensions shall be used.
2. These bar laps do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
3. These bar laps only apply where the General Notes indicate "Reinforcing Steel Design, fy = 60 ksi".

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

BAR LAP DIMENSIONS FOR
GRADE 60 REINFORCING STEEL
IN MIX NO. 3 (3500 P.S.I.) CONCRETE
NON-EPOXY COATED REINFORCING

STANDARD NO. M6.07-81-12(1) SHEET 1 OF 1

BAR SIZE	* LOCATION CATEGORY			3 Times Bar Diameter	6 Times Bar Diameter	c/c Spacing
	A	B	C			
#4	2'-11"	2'-7"	2'-1"	1 1/2"	3"	3 1/2"
#5	3'-8"	3'-3"	2'-7"	1 1/4"	3 1/4"	4 1/4"
#6	4'-5"	3'-10"	3'-1"	2 1/4"	4 1/4"	5 1/4"
#7	5'-11"	5'-3"	4'-2"	2 3/4"	5 1/4"	6 1/4"
#8	7'-9"	6'-10"	5'-6"	3"	6"	7"
#9	9'-10"	8'-8"	6'-4"	3 3/4"	6 3/4"	7 3/4"
#10	12'-5"	11'-0"	8'-10"	3 3/4"	7 3/4"	8 3/4"
#11	15'-3"	13'-6"	10'-10"	4 1/4"	8 3/4"	9 3/4"

* LOCATION CATEGORY
A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in footings, pier caps, etc.
B - All bars not in Category A spaced less than 6' apart.
C - All bars not in Category A spaced 6' or more apart.

Notes:
1. When bar lap is not specified on the Plans, the above dimensions shall be used.
2. These bar laps do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
3. These bar laps only apply where the General Notes indicate "Reinforcing Steel Design, fy = 60 ksi".

CASE NO.1 - For bars coated with epoxy with cover less than 3 times the bar diameter or clear spacing between bars less than 6 times the bar diameter.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

BAR LAP DIMENSIONS FOR
GRADE 60 REINFORCING STEEL
IN MIX NO. 3 (3500 P.S.I.) CONCRETE
EPOXY COATED REINFORCING CASE NO.1

STANDARD NO. M6.07-81-12(1) SHEET 2 OF 1

BAR SIZE	* LOCATION CATEGORY		
	A	B	C
#4	2'-11"	2'-1"	1'-8"
#5	3'-7"	2'-7"	2'-4"
#6	4'-4"	3'-4"	2'-6"
#7	5'-9"		3'-4"
#8	7'-7"	Does Not Exist	4'-4"
#9	9'-7"		5'-6"
#10	12'-2"		7'-0"
#11	14'-8"		8'-7"

* LOCATION CATEGORY
A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in footings, pier caps, etc.
B - All bars not in Category A spaced less than 6' apart.
C - All bars not in Category A spaced 6' or more apart.

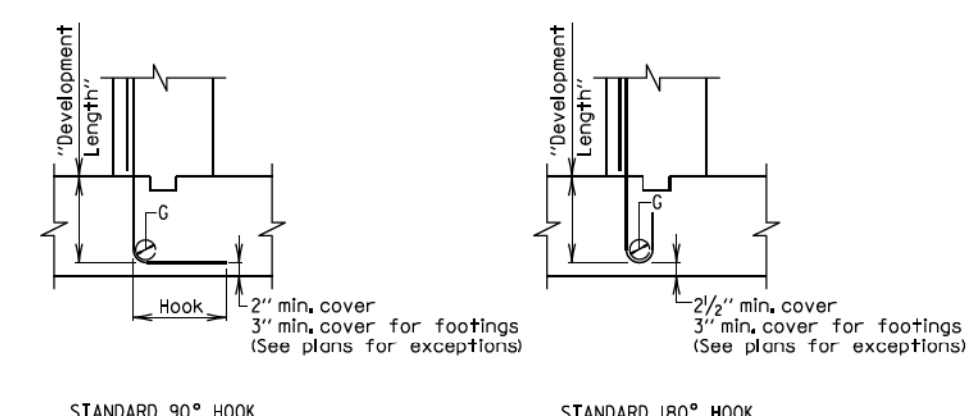
Notes:
1. When bar lap is not specified on the Plans, the above dimensions shall be used.
2. These bar laps do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
3. These bar laps only apply where the General Notes indicate "Reinforcing Steel Design, fy = 60 ksi".

CASE NO.2 - For bars coated with epoxy not in Case No.1.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

BAR LAP DIMENSIONS FOR
GRADE 60 REINFORCING STEEL
IN MIX NO. 3 (3500 P.S.I.) CONCRETE
EPOXY COATED REINFORCING CASE NO.2

STANDARD NO. M6.07-81-12(1) SHEET 3 OF 1



BAR SIZE	* LOCATION CATEGORY		
	D	E	F
#4	8"	11"	9"
#5	9"	14"	11"
#6	11"	14"	14"
#7	14"	14"	14"
#8	14"	14"	14"
#9	14"	14"	14"
#10	14"	14"	14"
#11	14"	14"	14"

BAR SIZE	RECOMMENDED END HOOKS ALL GRADES		
	Finished bend diameter D	180 Degree hooks	90 Degree hooks
#4	3"	6"	8"
#5	3 1/2"	7"	10"
#6	4 1/2"	8"	10"
#7	5 1/2"	10"	12"
#8	6"	11"	14"
#9	6 1/2"	13"	17"
#10	7 1/2"	15"	19"
#11	8 1/2"	17"	21"

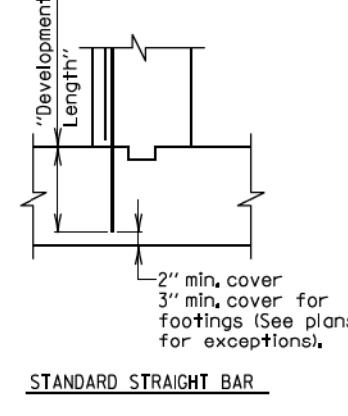
* LOCATION CATEGORY:
D - All bars terminating with a standard 180° hook with side cover normal to plane of hook not less than 2 1/2", and for 90° hook, cover on bar extension beyond hook not less than 2".
E - All bars in Category D.
F - All bars with hook enclosed vertically or horizontally within ties or stirrups, ties spaced along the full development length not greater than 3d where d is the diameter of the hooked bar.

Notes:
1. When development length is not specified on the Plans, the above dimensions shall be used.
2. These development lengths do not apply when bar is in lightweight concrete or any other strength of concrete.
3. These development lengths only apply where the General Notes indicate "Reinforcing Steel Design, fy = 60 ksi".
4. If depth of member does not allow bar development length indicated in Categories A, B, and C, then hook shall be added to all bars not conforming as per D, E, & F.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

DEVELOPMENT LENGTH DIMENSIONS OF HOOKED BARS FOR GRADE 60 REINFORCING STEEL IN MIX NO. 3 (3500 P.S.I.) CONCRETE NON-EPOXY COATED REINFORCING

STANDARD NO. M6.08-86-17(1) SHEET 1 OF 1



BAR SIZE	* LOCATION CATEGORY		
	A	B	C
#4	1'-9"	1'-0"	1'-0"
#5	1'-9"	1'-3"	1'-0"
#6	2'-2"	1'-6"	1'-3"
#7	2'-8"	2'-1"	1'-8"
#8	3'-5"	2'-9"	2'-2"
#9	4'-9"	3'-5"	2'-9"
#10	6'-4"	4'-4"	3'-4"
#11	7'-5"	5'-4"	4'-3"

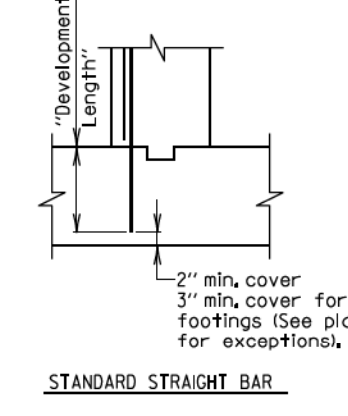
* LOCATION CATEGORY:
A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in footings, pier caps, etc.
B - All bars not in Category A spaced less than 6' apart.
C - All bars not in Category A spaced 6' or more apart.

Notes:
1. When development length is not specified on the Plans, the above dimensions shall be used.
2. These development lengths do not apply when bar is in lightweight concrete or any other strength of concrete.
3. These development lengths only apply where the General Notes indicate "Reinforcing Steel Design, fy = 60 ksi".
4. If depth of member does not allow bar development length indicated in Categories A, B, and C then hook shall be added to all bars not conforming as per D, E, and F per Std. No. M6.08-86-17(1).

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO. 3 (3500 P.S.I.) CONCRETE NON-EPOXY COATED REINFORCING

STANDARD NO. M6.14-90-21(1) SHEET 1 OF 1



BAR SIZE	* LOCATION CATEGORY			3 Times Bar Diameter	6 Times Bar Diameter	c/c Spacing
	A	B	C			
#4	1'-9"	1'-6"	1'-3"	1 1/2"	3"	3 1/2"
#5	2'-2"	1'-11"	1'-6"	1 1/4"	3 1/4"	4 1/4"
#6	2'-7"	2'-3"	1'-10"	2 1/4"	4 1/4"	5 1/4"
#7	3'-6"	3'-1"	2'-6"	2 3/4"	5 1/4"	6 1/4"
#8	4'-7"	4'-1"	3'-3"	3"	6"	7"
#9	5'-9"	5'-1"	4'-1"	3 3/4"	6 3/4"	7 3/4"
#10	7'-4"	6'-4"	5'-2"	3 3/4"	7 3/4"	8 3/4"
#11	9'-0"	7'-11"	6'-4"	4 1/4"	8 3/4"	9 3/4"

* LOCATION CATEGORY:
A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in footings, pier caps, etc.
B - All bars not in Category A spaced less than 6' apart.
C - All bars not in Category A spaced 6' or more apart.

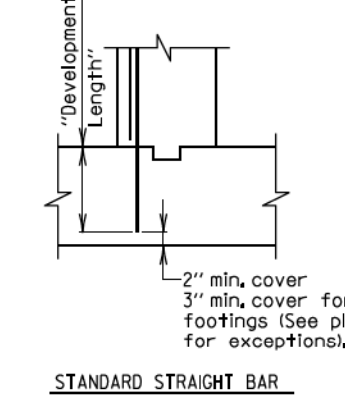
Notes:
1. When development length is not specified on the Plans, the above dimensions shall be used.
2. These development lengths do not apply when bar is in lightweight concrete or any other strength of concrete.
3. These bar laps only apply where the General Notes indicate "Reinforcing Steel Design, fy = 60 ksi".
4. If depth of member does not allow bar development length indicated in Categories A, B, and C then hook shall be added to all bars not conforming as per D, E, and F per Std. No. M6.14-90-21(1).

CASE NO.1 - For bars coated with epoxy with cover less than 3 times the bar diameter or clear spacing between bars less than 6 times the bar diameter.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO. 3 (3500 P.S.I.) CONCRETE EPOXY COATED REINFORCING CASE NO.1

STANDARD NO. M6.14-90-21(1) SHEET 2 OF 1



BAR SIZE	* LOCATION CATEGORY		
	A	B	C
#4	1'-9"	1'-0"	1'-0"
#5	2'-2"	1'-6"	1'-3"
#6	2'-7"	1'-10"	1'-6"
#7	3'-6"	3'-5"	2'-9"
#8	4'-6"	Does Not Exist	2'-7"
#9	5'-7"	Not Exist	3'-3"
#10	7'-2"		4'-4"
#11	8'-10"		5'-4"

* LOCATION CATEGORY:
A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in footings, pier caps, etc.
B - All bars not in Category A spaced less than 6' apart.
C - All bars not in Category A spaced 6' or more apart.

Notes:
1. When development length is not specified on the Plans, the above dimensions shall be used.
2. These development lengths do not apply when bar is in lightweight concrete or any other strength of concrete.
3. These bar laps only apply where the General Notes indicate "Reinforcing Steel Design, fy = 60 ksi".
4. If depth of member does not allow bar development length indicated in Categories A, B, and C then hook shall be added to all bars not conforming as per D, E, and F per Std. No. M6.14-90-21(1).

CASE NO.2 - For bars coated with epoxy not in Case No.1.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO. 3 (3500 P.S.I.) CONCRETE EPOXY COATED REINFORCING CASE NO.2

STANDARD NO. M6.14-90-21(1) SHEET 3 OF 1

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

DATE: 6/18/14

509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

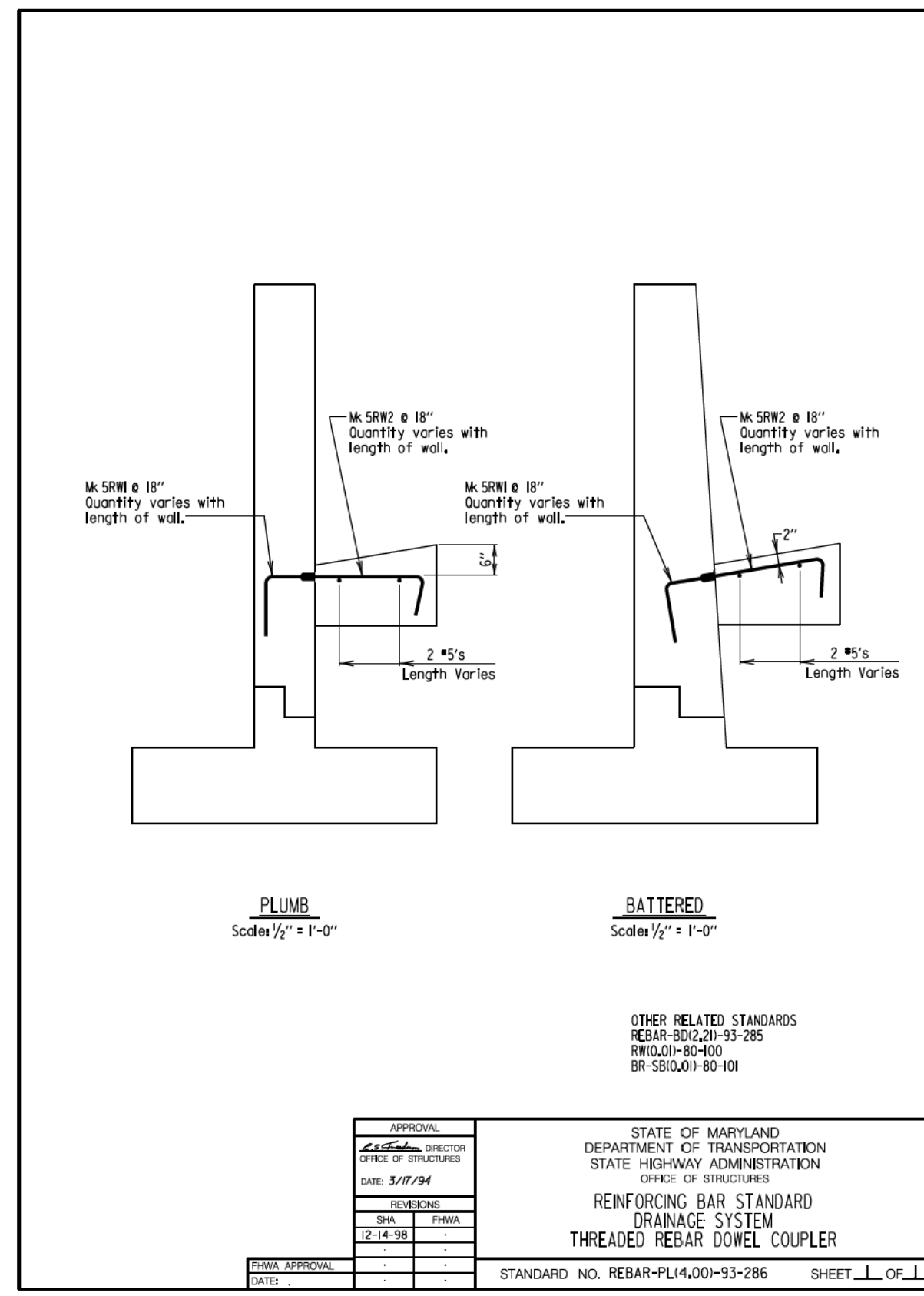
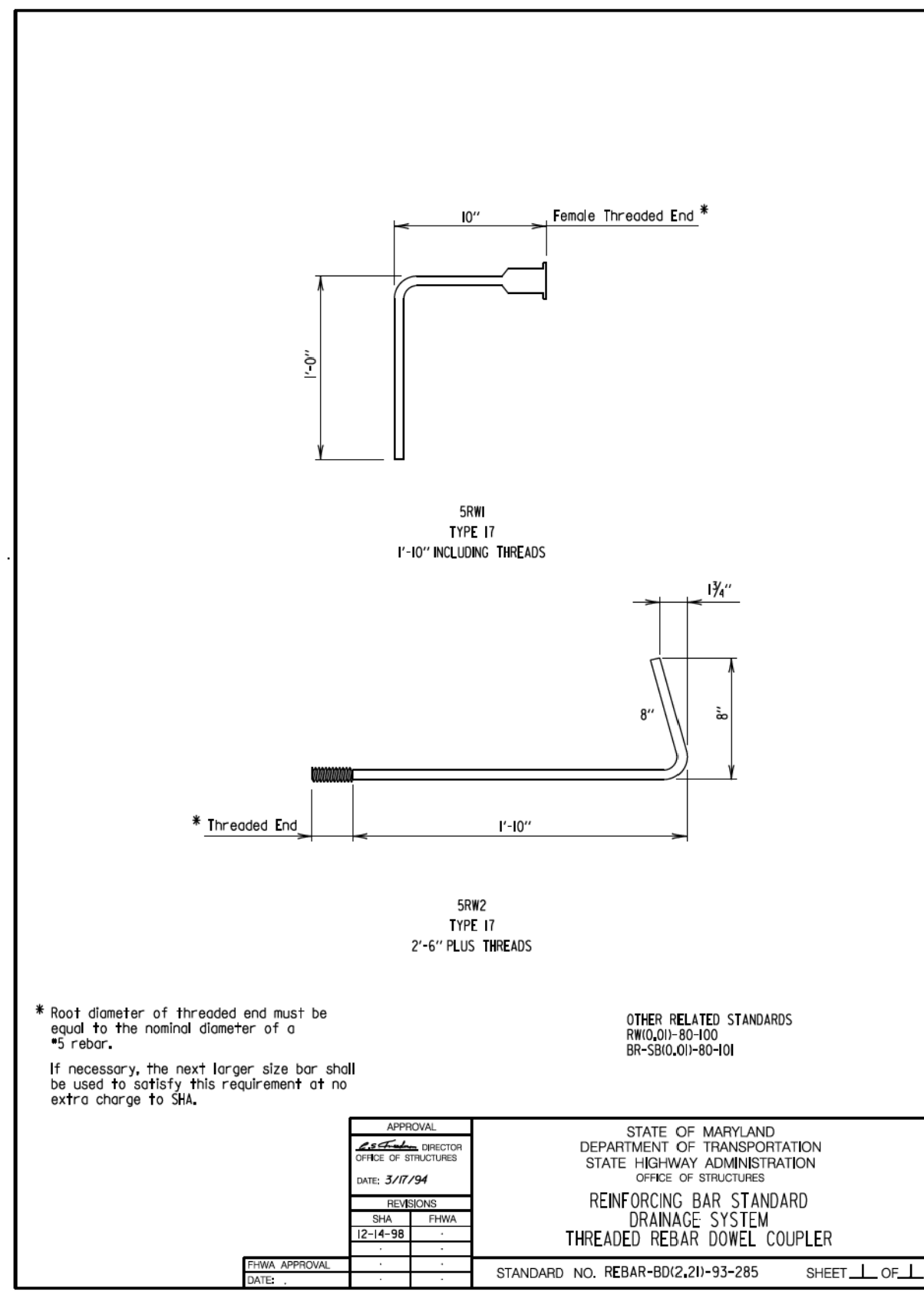
Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444



DES: BSW				
DRN: MR				
CHK: HUM				
DATE: 06/18/14	BY	NO.	REVISION	DATE

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

STANDARD STRUCTURAL DETAILS



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. ...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

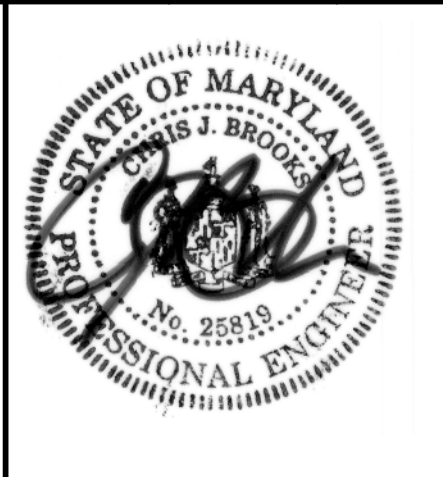
6/19/14
DATE

McCORMICK TAYLOR

509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444



DES: BSW					
DRN: MR					
CHK: HUM					
DATE: 06/18/14	BY	NO.	REVISION	DATE	

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

STANDARD STRUCTURAL DETAILS

ST-19

SCALE
NOT TO SCALE

SHEET
35 OF 44

EROSION AND SEDIMENT CONTROL – GENERAL NOTES

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT AND MDE PERMIT (TRACKING NUMBER 201460091).
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410) 313-1880 A MINIMUM OF 5 DAYS PRIOR TO THE START OF ANY CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, THE COUNTY PROJECT MANAGER, THE ENGINEER, A REPRESENTATIVE FROM HOWARD COUNTY CONSTRUCTION INSPECTION, A BOE REPRESENTATIVE AND THE CONTRACTOR. (1 DAY)
- MOBILIZE EQUIPMENT. INSTALL PERIMETER CONTROLS AROUND THE PROPOSED STAIRCASE AND SWM FACILITY #1. PERIMETER CONTROLS TO INCLUDE ORANGE CONSTRUCTION FENCE, SILT FENCE, AND INLET PROTECTION. (1 DAY)
- REMOVE TREES, RUBBLE, AND DEBRIS AS INDICATED ON THE PLANS. (2 DAYS)
- INSTALL PROPOSED ELECTRICAL CONDUIT, LIGHTING HANDBOXES, AND LIGHTING FOUNDATIONS AS INDICATED ON THE PLANS.
- COMMENCE CONSTRUCTION OF STAIRCASE STRUCTURES, SWM FACILITY #1, HANDICAP RAMP, SIDEWALK, PATIO, AND DRAINAGE STRUCTURES AS INDICATED ON THE PLANS. MOVE SEDIMENT CONTROL STRUCTURES AS NECESSARY TO COMPLETE THE WORK. (30 DAYS)
- INSTALL CONCRETE CURB AND GUTTER ALONG COURT AVENUE AS INDICATED ON THE PLANS. STABILIZE WORK AREA AT THE END OF EACH WORK DAY. UPON COMPLETION OF CURB AND GUTTER, INSTALL SANDBAG DAMS (SB-1 AND SB-2) TO BLOCK FLOW FROM ENTERING THE STAIRCASE AND BIoretention WORK AREAS. (1 DAY)
- COMPLETE CONSTRUCTION AND GRADING OF STAIRCASE BIoretention FACILITIES (SWM-2 AND SWM-3). INSTALL RIPRAP CHANNEL. STABILIZE GRADED AREAS WITH SOIL STABILIZATION MATTING AND VEGETATION AS INDICATED ON THE PLANS. (4 DAYS)
- CONSTRUCT MODIFICATIONS TO THE PARKING LOT, INCLUDING ENTRANCE RAMP, AS INDICATED ON THE PLANS. AREAS OF FULL DEPTH PAVEMENT ARE TO BE STABILIZED AT THE END OF EACH WORKDAY (6 DAYS).
- COMPLETE GRINDING AND RESURFACING OF THE PARKING LOT AND ENTRANCE RAMP. (1 DAY)
- INSTALL PROPOSED PAVEMENT MARKINGS AND SIGNS AS INDICATED ON THE PLANS. (2 DAYS)
- WHEN AREAS ARE FULLY STABILIZED, AND UPON PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SANDBAG DAMS AND THE REMAINING SEDIMENT CONTROL DEVICES. STABILIZE ANY DISTURBED AREAS. (1 DAY)

- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.
- ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
- A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- OFFSITE WASTE / BORROW SITE SHALL HAVE AN APPROVED SEDIMENT CONTROL PLAN AND PERMIT.

B-4-2 SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

- SOIL PREPARATION**
 - TEMPORARY STABILIZATION
 - SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - PERMANENT STABILIZATION
 - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL PH BETWEEN 5.5 AND 7.0.
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE, AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
 - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
- TOPSOILING**
 - TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
 - TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY US NRCS.
 - TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
 - AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
 - TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 INCH IN DIAMETER.
 - TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
 - TOPSOIL APPLICATION
 - EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 - UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
- SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)**
 - SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
 - FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
 - LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
 - LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

- SEEDING SPECIFICATIONS**
 - ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
 - MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
 - INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHREHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
 - SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
- APPLICATION**
 - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 - INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
 - CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 - IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P2O5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
 - LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
 - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
- MULCHING**
 - MULCH MATERIALS (IN ORDER OF PREFERENCE)
 - STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORM SPRAYING AND DISTRIBUTION OF THE MULCH MATERIAL.
 - WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS-TOXIC IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
 - APPLICATION
 - APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 - WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - ANCHORING
 - PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
 - MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
 - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PESTOSET, TERRA TACK II, TERRA TACK AR OR OTHER APPROVED EQUALS MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
 - LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-4 TEMPORARY STABILIZATION

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)			LIME RATE
					N	P ₂ O ₅	K ₂ O	
	ANNUAL RYEGRASS	40	MAR. 1 TO MAY 15; AUG. 1 TO OCT 15	0.5	436 LB/AC (10 LB/ 1000 SF)			2 TON/AC (90 LB/ 1000 SF)
	FOXTAIL MILLET	30	MAY 16 TO JULY 31	0.5				

B-4-5 PERMANENT STABILIZATION

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)				LIME RATE
					N	P ₂ O ₅	K ₂ O		
1	SWITCH GRASS	10	MAR. 1 TO MAY 15; MAY 16 TO JUNE 15	1/4-1/2 IN.	45 LB/AC (1.0 LB/ 1000 SF)	90 LB/AC (2.0 LB/ 1000 SF)	90 LB/AC (2.0 LB/ 1000 SF)		2 TON/AC (90 LB/ 1000 SF)
	CREEPING RED FESCUE	15	MAR. 1 TO MAY 15; MAY 16 TO JUNE 15	1/4-1/2 IN.					
	PARTRIDGE PEA	4	MAR. 1 TO MAY 15; MAY 16 TO JUNE 15	1/4-1/2 IN.					

NOTE: MAY 16 TO JUNE 15 ARE ADDITIONAL PLANTING DATES DURING WHICH SUPPLEMENTAL WATERING MAY BE NEEDED TO ENSURE PLANT ESTABLISHMENT

HOWARD COUNTY CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1885).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A) 5 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE	0.50 ACRES
AREA TO BE REGRADED OR PAVED	0.50 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.05 ACRES
TOTAL CUT	447 CU. YDS.
TOTAL FILL	140 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	SEE NOTE 13

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

John R. Robertson
HOWARD SOIL CONSERVATION DISTRICT

7/6/14
DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

McCORMICK TAYLOR

509 South Exeter Street
4th Floor
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(410) 662-7400

Howard County
MARYLAND

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444



DES: AM

DRN: MR

CHK: CB

DATE: 06/18/14

BY

NO.

REVISION

DATE

ELICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

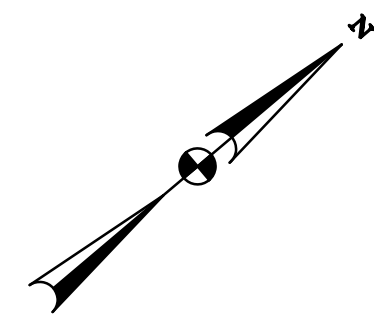
EROSION AND SEDIMENT CONTROL NOTES

SCALE

NOT TO SCALE

SHEET

36 OF 44



SILT FENCE (SF)	
QTY (LF)	REMARKS
100	SF-1
34	SF-2
21	SF-3
66	SF-5

SUPER SILT FENCE (SSF)	
QTY (LF)	REMARKS
111	SF-4

SANDBAG DAM (SB)		
QTY (LF)	REMARKS	HEIGHT
13	SB-1	2'
19	SB-2	2'

STABILIZED CONSTRUCTION ENTRANCE	
QTY (EA)	REMARKS
1	35 TONS

TYPE B SOIL STABILIZATION MATTING	
QTY (SY)	REMARKS
480	FOR VEGETATIVE STABILIZATION OF GRADED AREAS

PLACING FURNISHED TOPSOIL 4 INCH DEPTH	
QTY (SY)	REMARKS
480	FOR GRADED AND DISTURBED AREAS

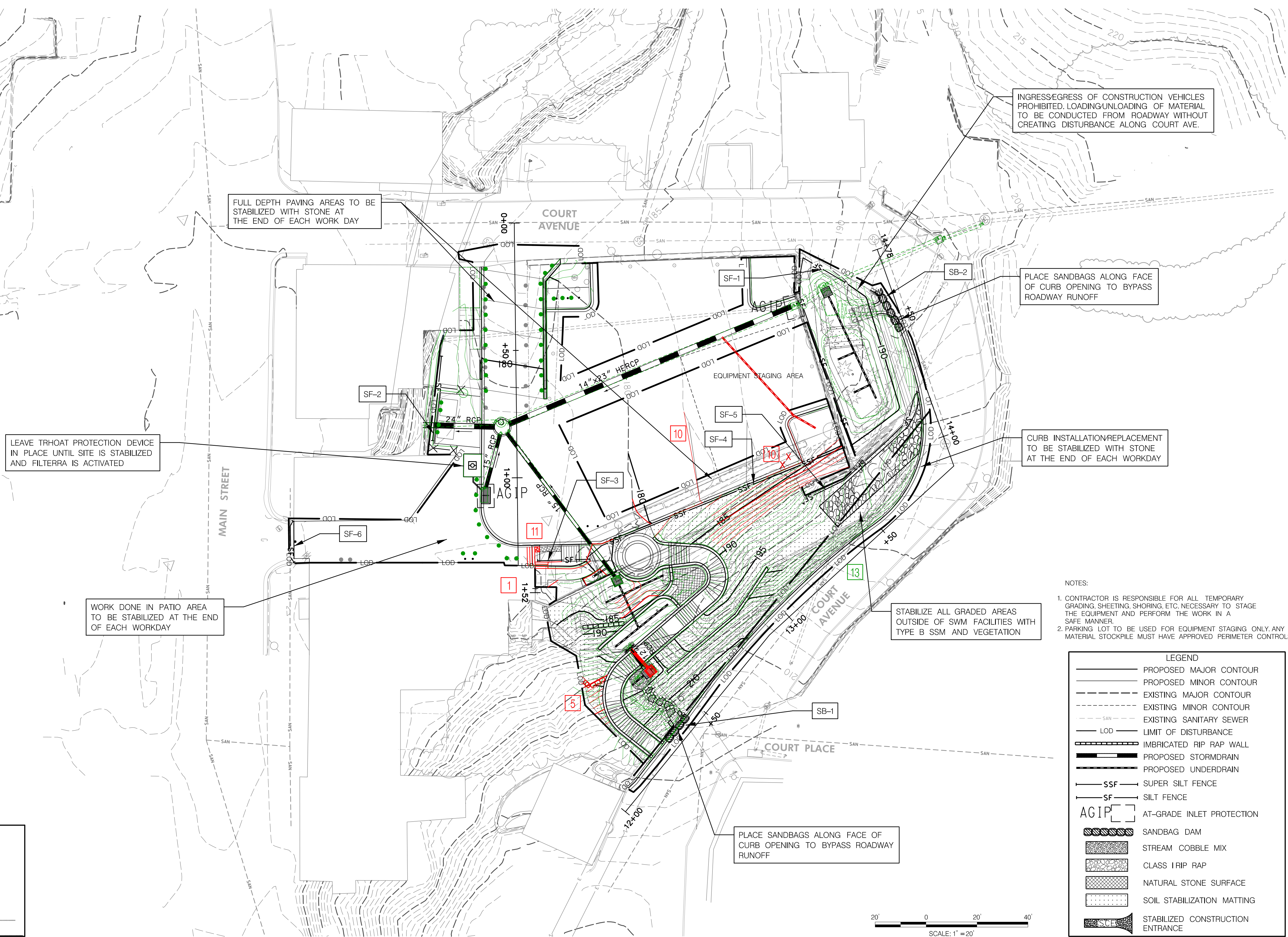
TURFGRASS ESTABLISHMENT	
QTY (SY)	REMARKS
528	FOR GRADED AND DISTURBED AREAS

AT-GRADE INLET PROTECTION		
STATION	QTY (EA)	REMARKS
EX-1	1	SEE DETAIL SHEET 30
I-4	1	SEE DETAIL SHEET 30

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

John R. Robertson
 HOWARD SOIL CONSERVATION DISTRICT

7/6/14
 DATE



- NOTES:
- CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY GRADING, SHEETING, SHORING, ETC. NECESSARY TO STAGE THE EQUIPMENT AND PERFORM THE WORK IN A SAFE MANNER.
 - PARKING LOT TO BE USED FOR EQUIPMENT STAGING ONLY. ANY MATERIAL STOCKPILE MUST HAVE APPROVED PERIMETER CONTROLS.

LEGEND	
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EXISTING SANITARY SEWER
	LIMIT OF DISTURBANCE
	IMBRICATED RIP RAP WALL
	PROPOSED STORMDRAIN
	PROPOSED UNDERDRAIN
	SUPER SILT FENCE
	SILT FENCE
	AT-GRADE INLET PROTECTION
	SANDBAG DAM
	STREAM COBBLE MIX
	CLASS I RIP RAP
	NATURAL STONE SURFACE
	SOIL STABILIZATION MATTING
	STABILIZED CONSTRUCTION ENTRANCE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Mark D. [Signature]
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/19/14
 DATE

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 MARYLAND

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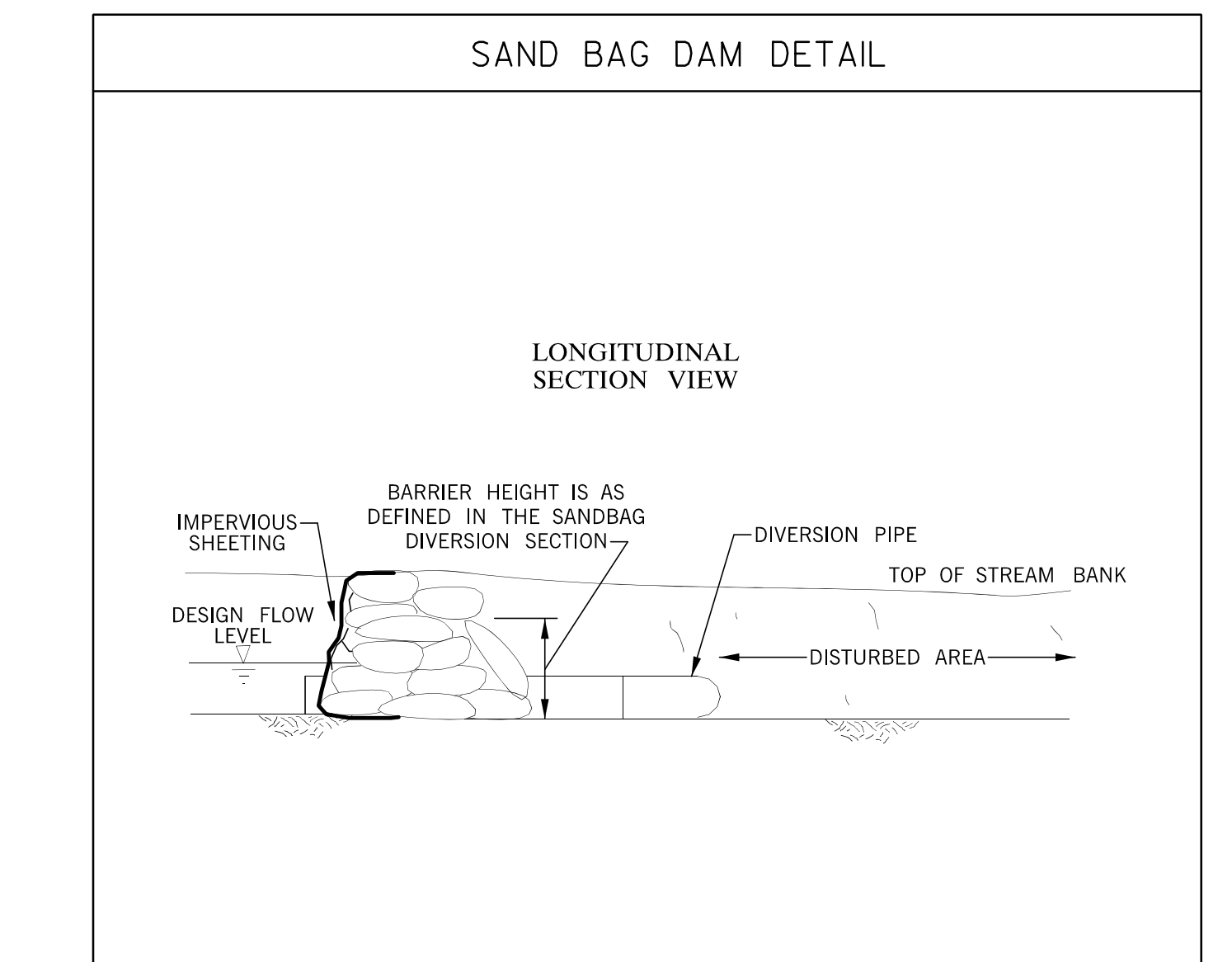
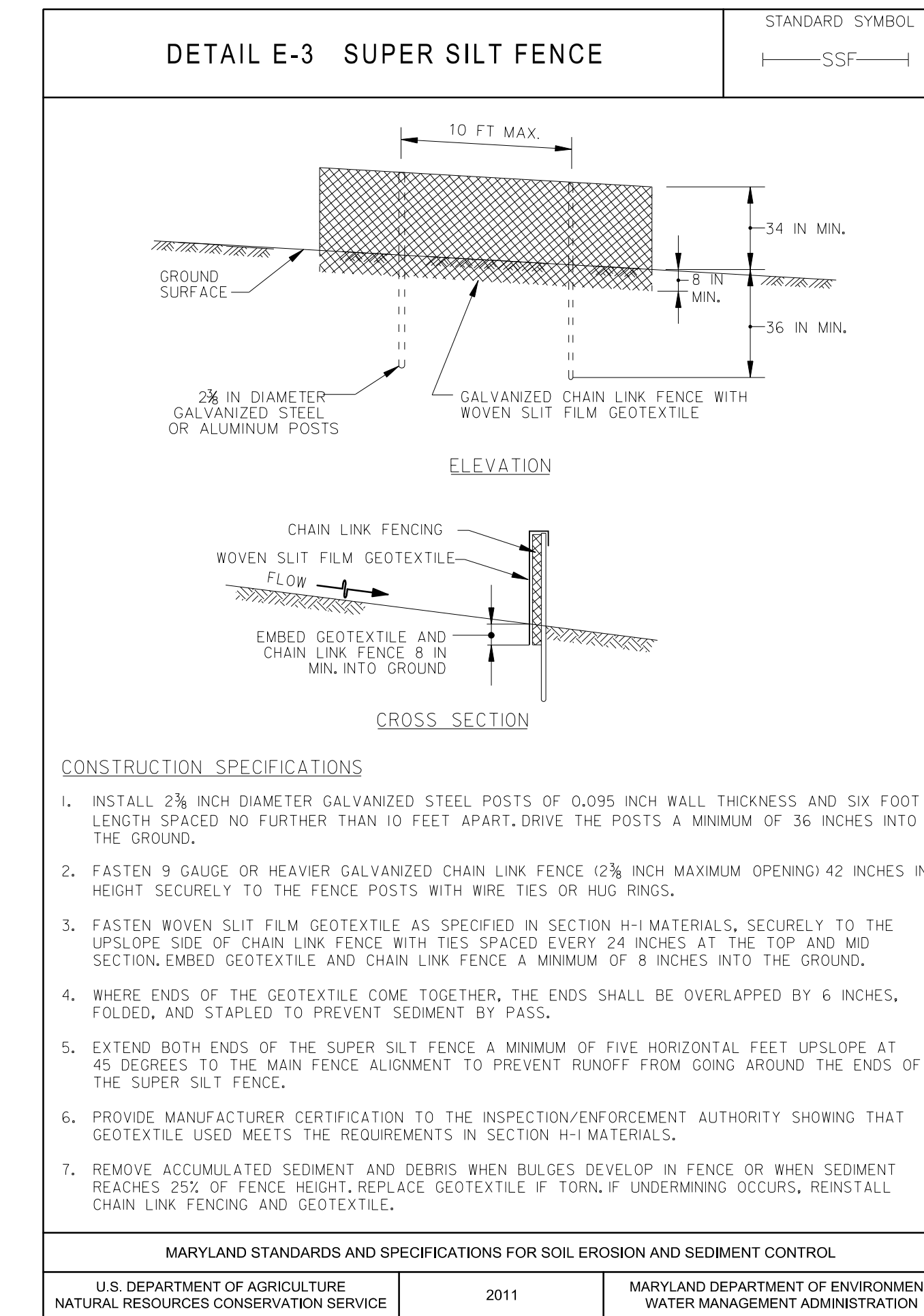
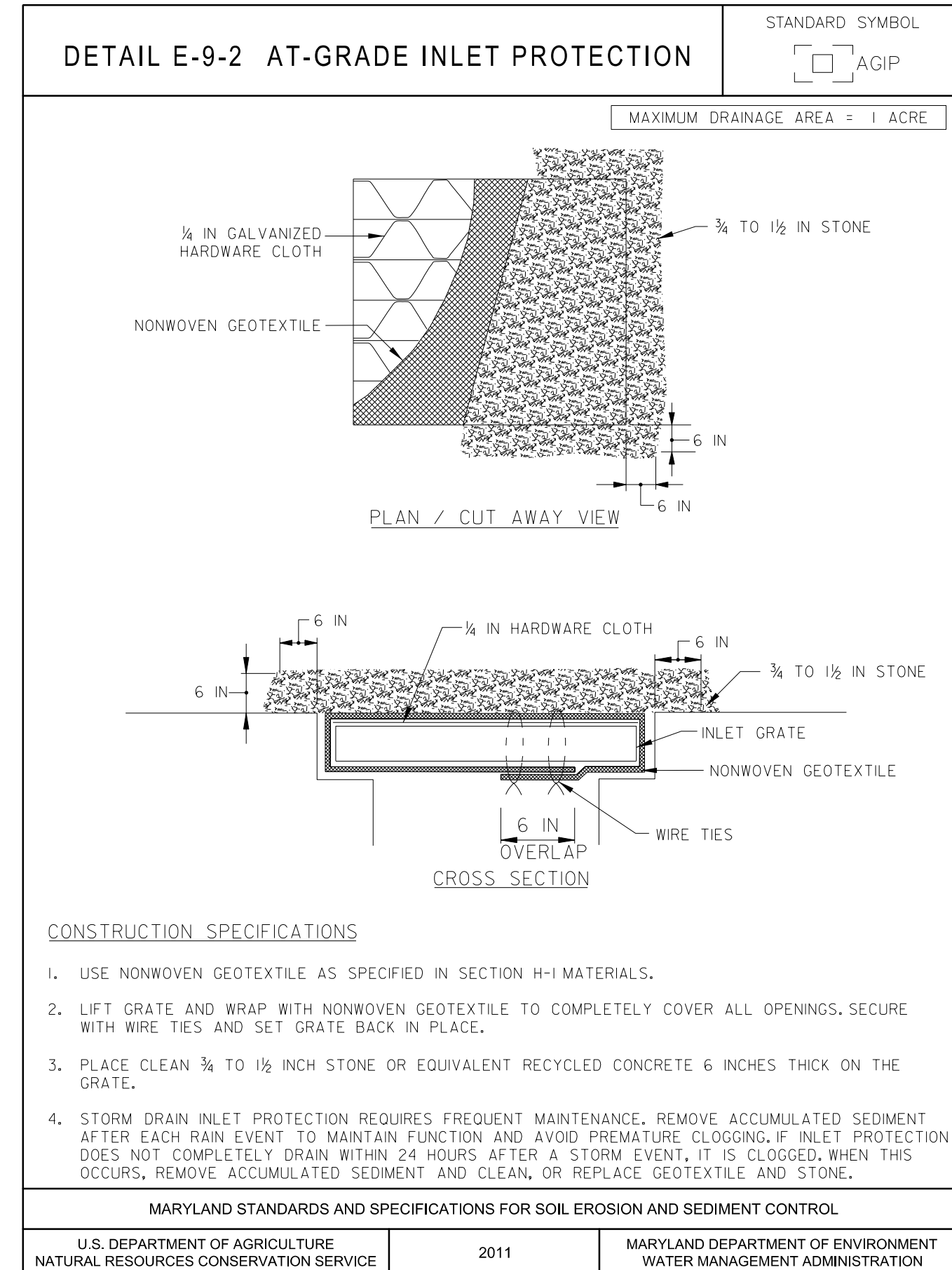
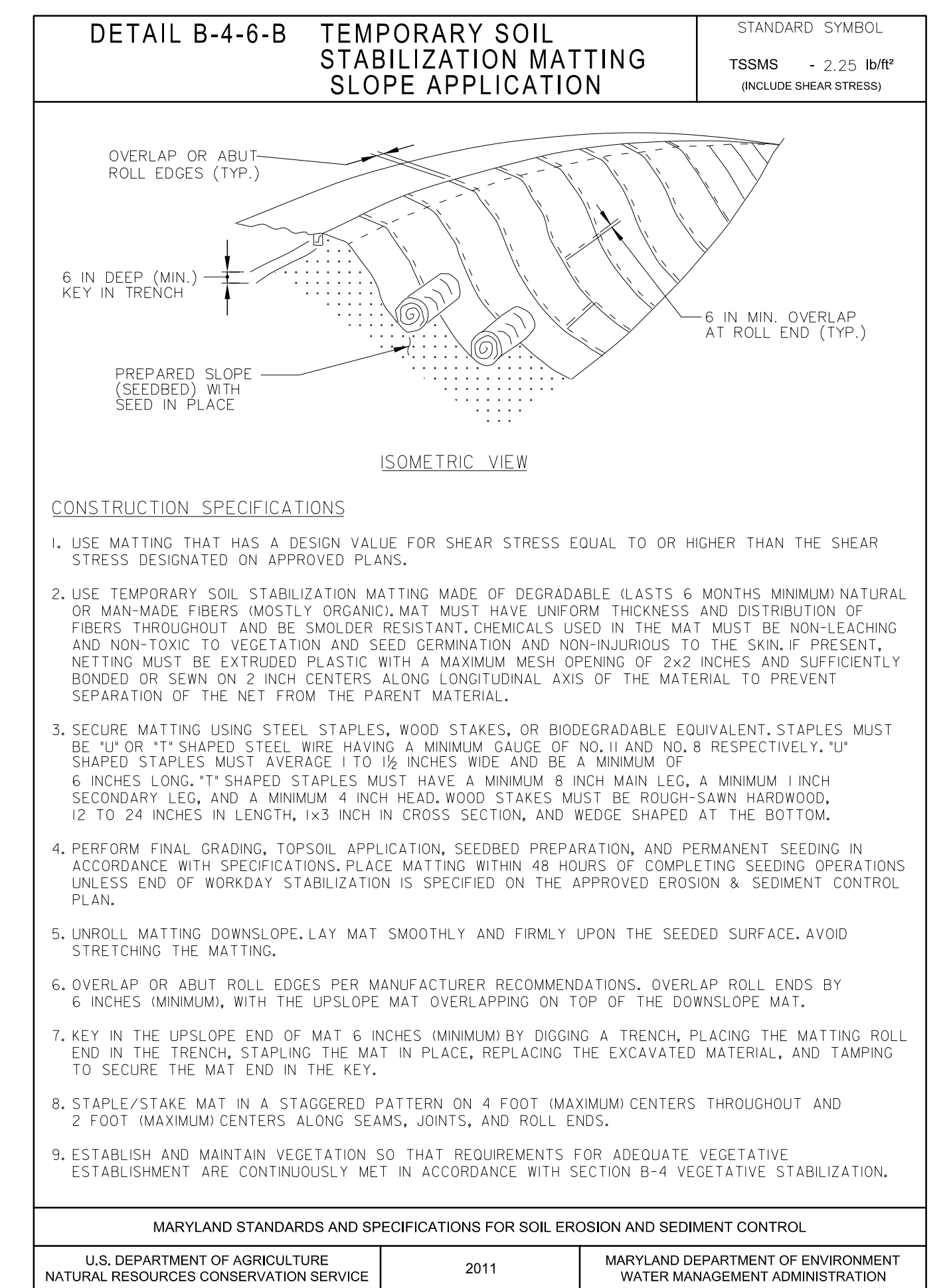
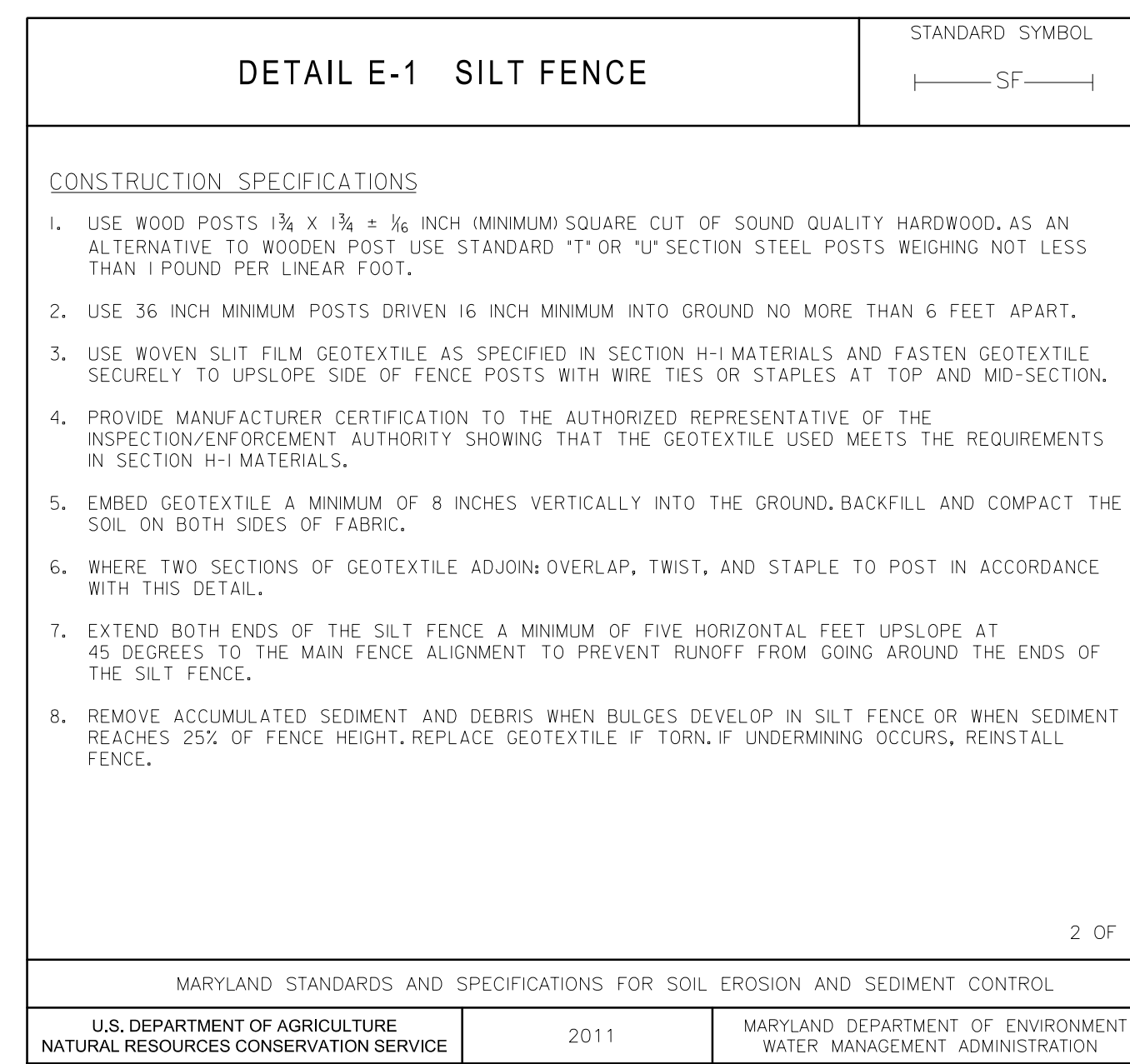
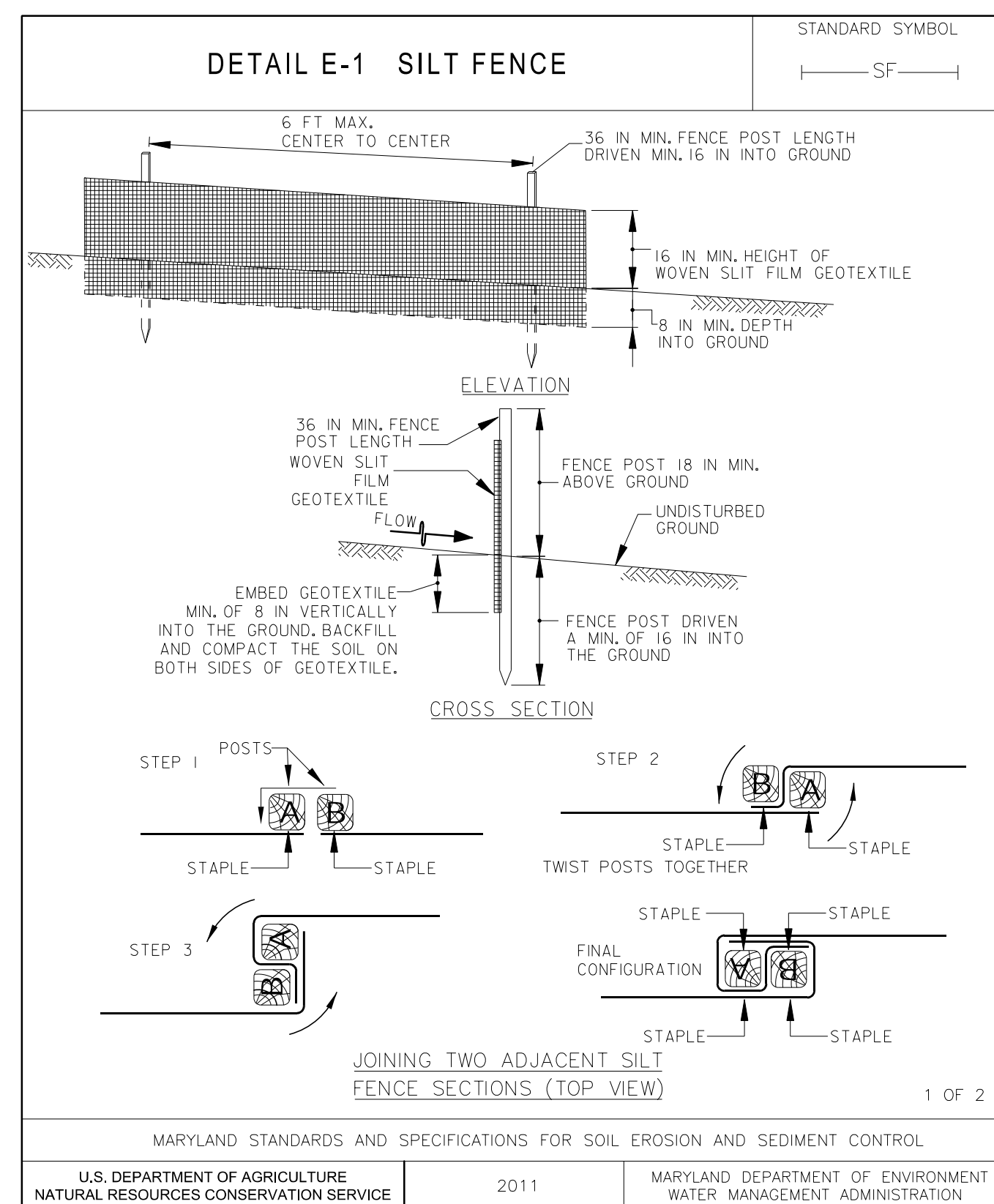
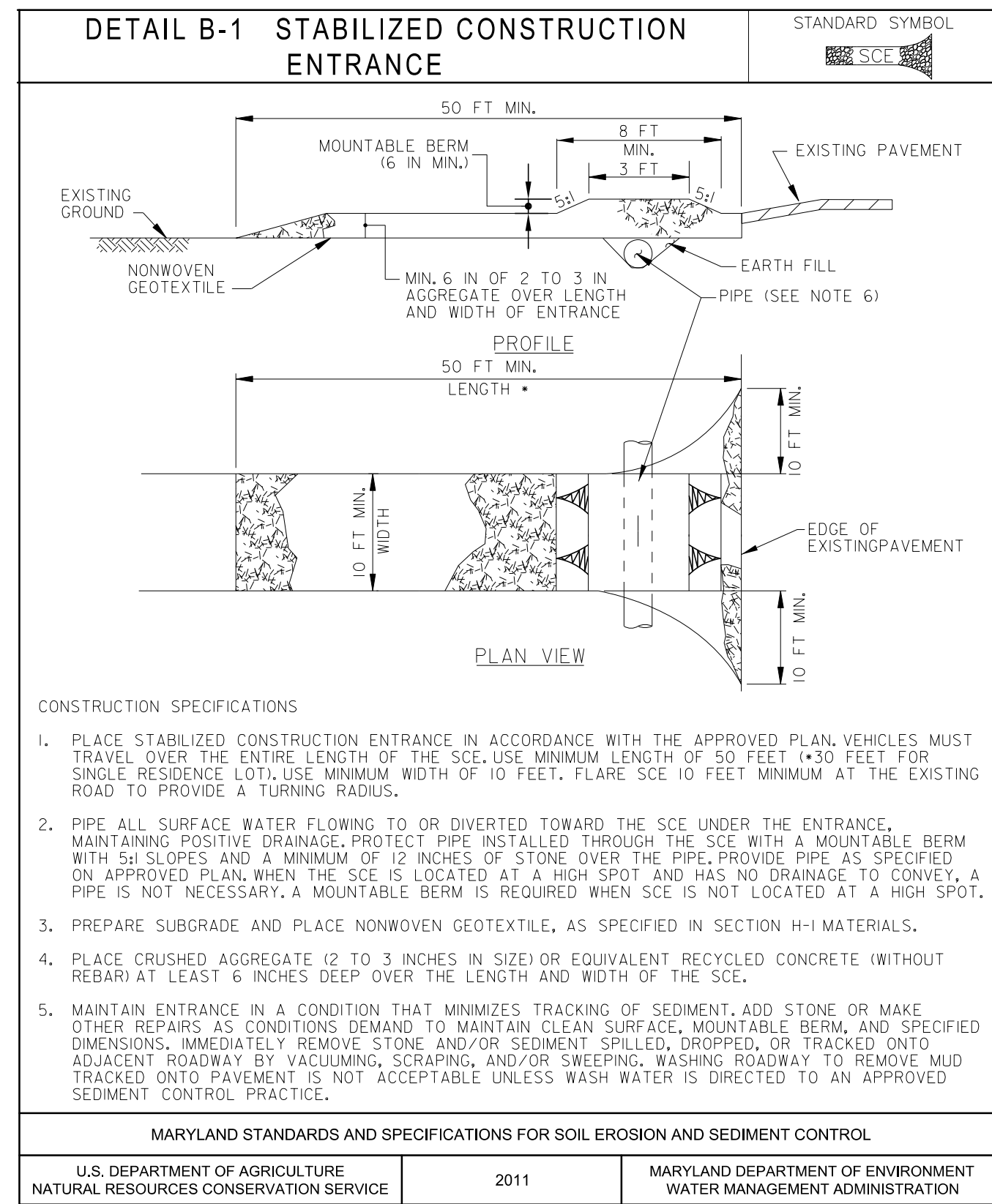
DES: AM	ADM	13	AS-BUILT SURVEY	09/10/15
DRN: MR	DPK	11	REVISED RAMP DESIGN TO INCLUDE STEPS	04/22/15
CHK: CB	ADM	10	REVISED CURB /ELEVATIONS AND GRADING	04/14/15
	ADM	5	REVISED WALL A AND GRADING	01/26/15
DATE: 06/18/14	ADM	1	GRADING AND UNDERDRAIN REVISION	11/13/14
	BY	NO.	REVISION	DATE

ELLICOTT CITY PARKING LOT E
 CAPITAL PROJECT #D-1165
 HOWARD COUNTY

EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1" = 20'

SHEET 37 OF 44



REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

John R. Robertson
HOWARD SOIL CONSERVATION DISTRICT

7/6/14
DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. L...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/19/14
DATE

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Howard County
MARYLAND
Storm Water Management Division
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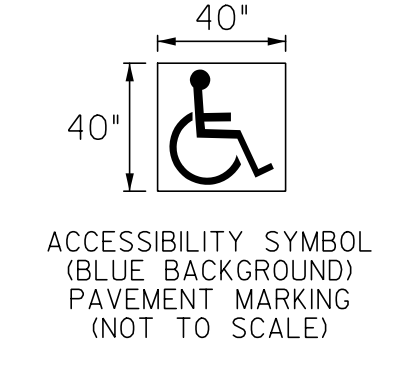
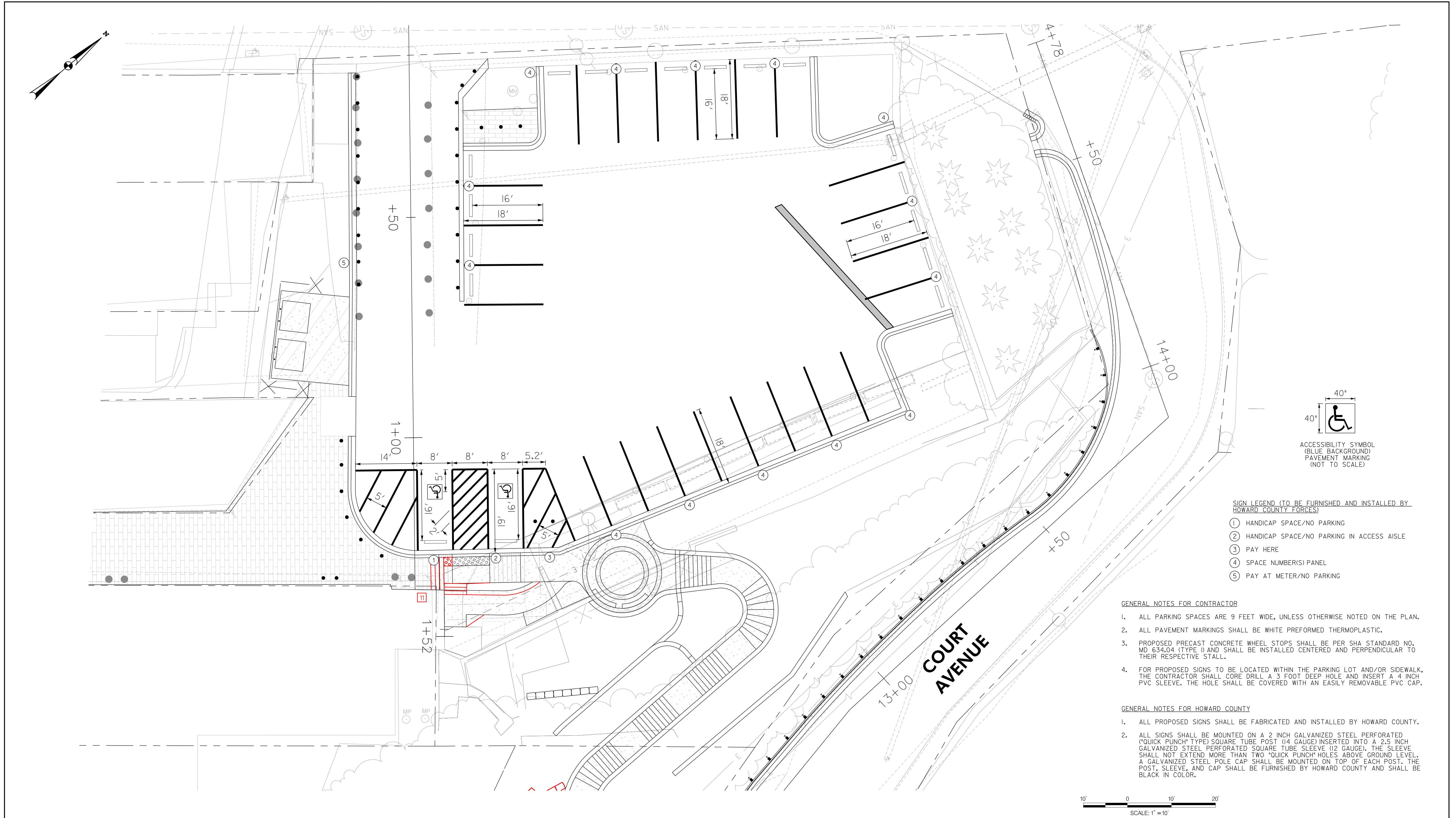


DES:	AM					
DRN:	MR					
CHK:	CB					
DATE:	06/18/14	BY	NO.	REVISION		DATE

ELICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

EROSION AND SEDIMENT CONTROL DETAIL SHEET

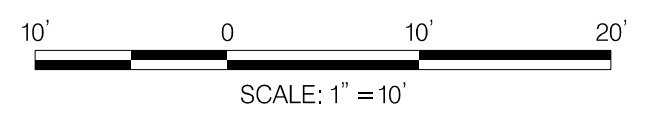
SCALE
NOT TO SCALE
SHEET
38 OF 44



- SIGN LEGEND (TO BE FURNISHED AND INSTALLED BY HOWARD COUNTY FORCES)**
- ① HANDICAP SPACE/NO PARKING
 - ② HANDICAP SPACE/NO PARKING IN ACCESS AISLE
 - ③ PAY HERE
 - ④ SPACE NUMBER(S) PANEL
 - ⑤ PAY AT METER/NO PARKING

- GENERAL NOTES FOR CONTRACTOR**
1. ALL PARKING SPACES ARE 9 FEET WIDE, UNLESS OTHERWISE NOTED ON THE PLAN.
 2. ALL PAVEMENT MARKINGS SHALL BE WHITE PREFORMED THERMOPLASTIC.
 3. PROPOSED PRECAST CONCRETE WHEEL STOPS SHALL BE PER SHA STANDARD NO. MD 634.04 (TYPE D) AND SHALL BE INSTALLED CENTERED AND PERPENDICULAR TO THEIR RESPECTIVE STALL.
 4. FOR PROPOSED SIGNS TO BE LOCATED WITHIN THE PARKING LOT AND/OR SIDEWALK, THE CONTRACTOR SHALL CORE DRILL A 3 FOOT DEEP HOLE AND INSERT A 4 INCH PVC SLEEVE. THE HOLE SHALL BE COVERED WITH AN EASILY REMOVABLE PVC CAP.

- GENERAL NOTES FOR HOWARD COUNTY**
1. ALL PROPOSED SIGNS SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY.
 2. ALL SIGNS SHALL BE MOUNTED ON A 2 INCH GALVANIZED STEEL PERFORATED ('QUICK PUNCH' TYPE) SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2.5 INCH GALVANIZED STEEL PERFORATED SQUARE TUBE SLEEVE (12 GAUGE). THE SLEEVE SHALL NOT EXTEND MORE THAN TWO 'QUICK PUNCH' HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST. THE POST, SLEEVE, AND CAP SHALL BE FURNISHED BY HOWARD COUNTY AND SHALL BE BLACK IN COLOR.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark DeLuz
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/19/14
 DATE

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Howard County
 MARYLAND

Storm Water Management Division
 Bureau of Environmental Services
 6751 Columbia Gateway Drive, Suite 514
 Columbia, Maryland 21046-3143
 (410) 313-6444



DES: AM					
DRN: MR					
CHK: CB					
DATE: 06/18/14	DPK	11	REVISED RAMP DESIGN TO INCLUDE STEPS	04/22/15	
	BY	NO.	REVISION	DATE	

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

PAVEMENT MARKING PLAN

SCALE
 1" = 10'

SHEET
 39 OF 44

GENERAL NOTES

1. THE CONTRACTOR SHALL CONTACT BGE TO ENSURE ALL PROPOSED UNDERGROUND ELECTRICAL SERVICE FEEDS ARE REVIEWED AND APPROVED PRIOR TO INSTALLATION.
2. INSTALLATION OF ALL UNDERGROUND LIGHTING FACILITIES IS SUBJECT TO BGE INSPECTION AND WRITTEN APPROVAL BEFORE CONCEALMENT. FAILURE TO OBTAIN SUCH INSPECTION WILL RESULT IN THE UNCOVERING OF THE FACILITIES AT THE CONTRACTOR'S EXPENSE. INSPECTION SHALL BE ARRANGED WITH BGE A MINIMUM OF TWO WORKING DAYS IN ADVANCE.
3. CONDUITS INSTALLED TO THE BASE OF THE UTILITY POLE TO ENERGIZE THE LIGHTING SYSTEM SHALL STUB UP 2 FEET ABOVE GRADE, MARKED AND CAPPED FOR FUTURE USE BY BGE.
4. ALL PROPOSED LIGHTING EQUIPMENT SHALL BE AS SPECIFIED ON THIS PLAN OR AN APPROVED EQUAL.
5. ALL PROPOSED LUMINAIRES SHALL BE SUPPLIED WITH A PHOTOCCELL.
6. THE CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRIC CODE VERSION ADOPTED BY HOWARD COUNTY DPW.
7. THE CONTRACTOR SHALL VERIFY ALL UTILITIES PRIOR TO INSTALLING ANY LIGHTING EQUIPMENT. IF ANY UTILITY CONFLICTS SHOULD ARISE, THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER IMMEDIATELY FOR RESOLUTION.
8. THE CONTRACTOR SHALL CONFIRM ANCHOR BOLT CONFIGURATION PRIOR TO INSTALLATION OF FOUNDATIONS.
9. ALL SOIL REMOVED FOR HANDBOXES, FOUNDATIONS, ETC. MUST BE COVERED TO PREVENT EROSION. SOIL NOT USED FOR BACKFILL MUST BE DISPOSED OF TO THE ENGINEER'S SATISFACTION ON THE SAME DAY THE BACKFILL IS COMPLETED.
10. CONDUCTORS SHALL NOT BE SPLICED EXCEPT IN STRUCTURES AND HANDHOLES. ALL FIXTURES AND CONDUITS UNDER PAVEMENT, LIGHTING STRUCTURES, ETC. SHALL BE STAKED OUT AND EVERY LOCATION APPROVED BY THE ENGINEER BEFORE ANY WORK IS DONE.
11. ALL CONNECTIONS BETWEEN GROUND RODS AND GROUND CABLE SHALL BE BY EXOTHERMIC CABLE.

SCHEDULE OF STEP LIGHTS

LIGHT NUMBER	LUMINAIRE WATTAGE	STATION*
1	4.5W LED	100+43
2	4.5W LED	100+59
3	4.5W LED	100+75
4	4.5W LED	100+92
5	4.5W LED	101+23
6	4.5W LED	200+22
7	4.5W LED	200+48
8	4.5W LED	200+66
9	4.5W LED	200+82
10	4.5W LED	200+98

6
SEE ST-01A FOR UPDATED TABLE

* STEP LIGHT STATIONS ARE REFERENCED TO THE EXTERIOR STAIRWELL BASE LINES ON SHEET 12

SCHEDULE OF LIGHTING POLES

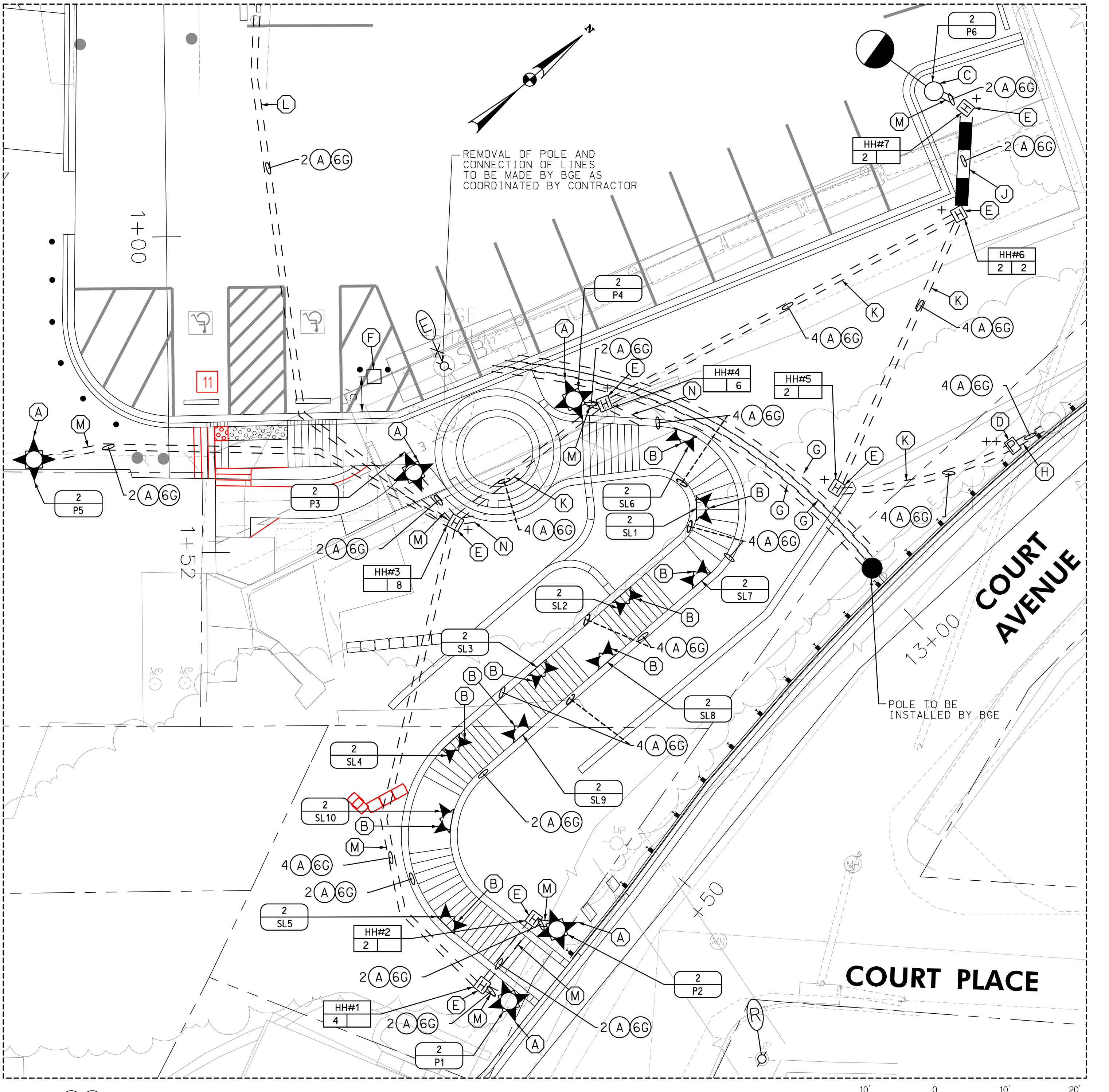
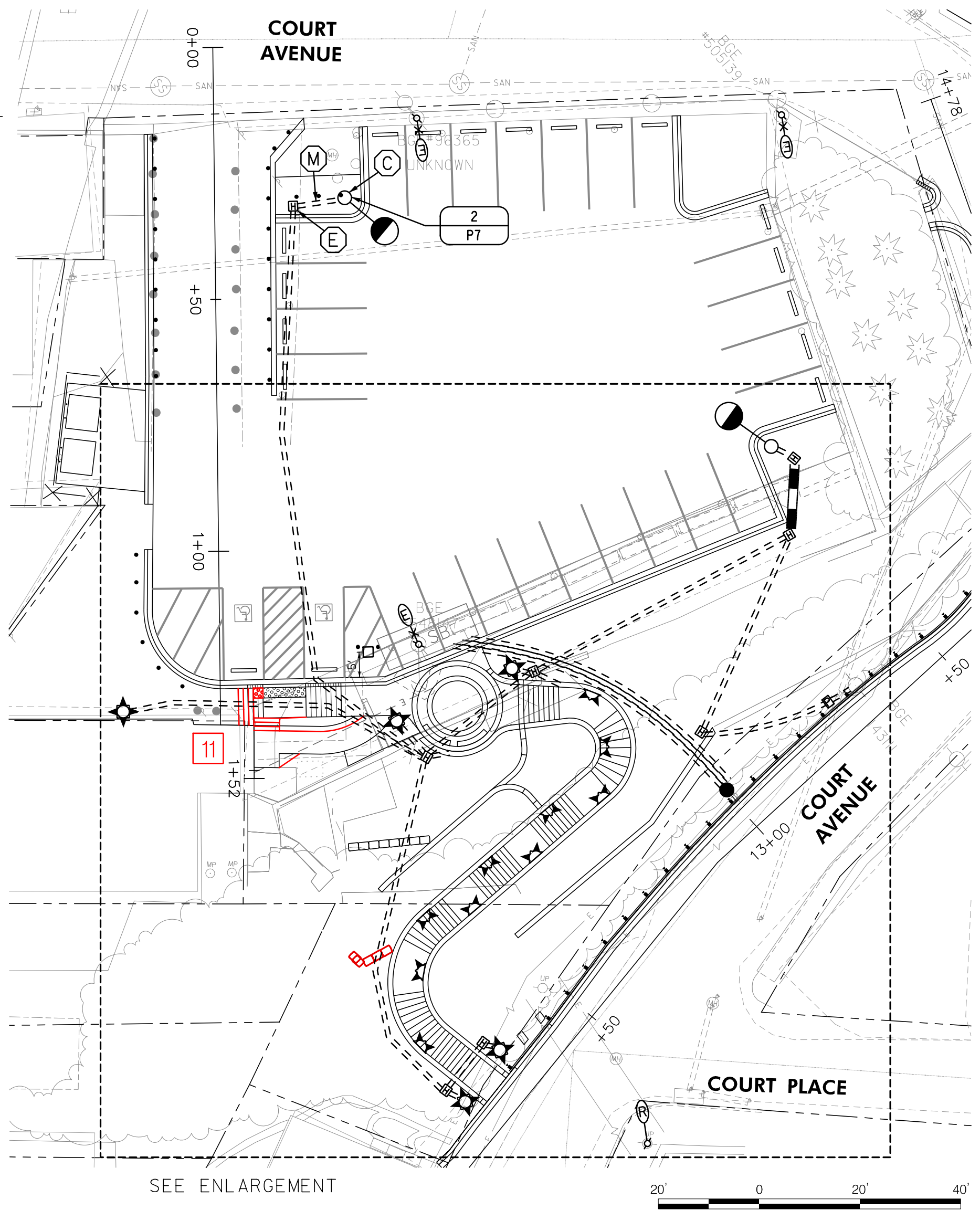
POLE NUMBER	POLE HEIGHT	LUMINAIRE WATTAGE	STATION & OFFSET
1	10'	60W LED	12+21, 9' LT.
2	10'	60W LED	12+33, 10' LT.
3	10'	60W LED	12+71, 67' LT.
4	10'	60W LED	12+75, 49' LT.
5	10'	60W LED	12+38, 110' LT.
6	16'	165W LED	13+53, 54' LT.
7	16'	165W LED	0+30, 26' LT.

SCHEDULE OF SERVICE PEDESTAL

CIRCUIT NUMBER	EQUIPMENT SERVED	LUMINAIRE VOLTAGE 120 VOLTS		PHASE AND VOLTS	200 AMP MAIN BREAKER, NEMA 3R ENCLOSURE BRANCH CIRCUIT BREAKERS		
		KW	AMPS		NUMBER OF POLES	FRAME SIZE	TRIP SIZE
1	P1-P6 SL1-SL10	1.16	4.83	1/240	1	100	20A
	TOTAL	1.16	4.83				

CONSTRUCTION DETAILS

- INSTALL CONCRETE FOUNDATION (SHA STANDARD NO. MD 801.02) WITH 10 FT. HIGH, 4 IN. DIAMETER ROUND SHAFT LIGHTING POLE (KING LUMINAIRE AGILITY #2 KAS2-RE-10) AND 60 WATT LED POLE TOP LUMINAIRE (KING LUMINAIRE BALMORAL K611-BAAR, TYPE II-M DISTRIBUTION) (INSTALL 2-2 IN. SCHEDULE 80, 90 DEGREE PVC ELECTRICAL CONDUIT BENDS). THE POLE AND LUMINAIRE SHALL BE PAINTED BLACK IN COLOR.
- INSTALL 13.25 IN. X 4.5 IN. WALL MOUNTED STEP LIGHT (COLE LIGHTING 2159D) WITH 4.5 WATT LED LAMP (SEE SHEET 14 FOR INSTALLATION DETAILS).
- INSTALL CONCRETE FOUNDATION (SHA STANDARD NO. MD 801.02) WITH 16 FT. HIGH, 4 IN. DIAMETER ROUND SHAFT LIGHTING POLE (KING LUMINAIRE AGILITY #2 KAS2-RE-16) AND 165 WATT LED LUMINAIRE (KING LUMINAIRE K902, T3 MOUNTING, TYPE II-M DISTRIBUTION, SERIES 16000) (INSTALL 2-2 IN. SCHEDULE 80, 90 DEGREE PVC ELECTRICAL CONDUIT BENDS). THE POLE, LIGHTING ARM, AND LUMINAIRE SHALL BE PAINTED BLACK IN COLOR.
- INSTALL 200 AMP EMBEDDED METERED SERVICE PEDESTAL (SHA STANDARD NO. MD 807.07-03 AND MD 807.07-04) (INSTALL 1-4 IN. AND 3-2 IN. SCHEDULE 80, 90 DEGREE PVC ELECTRICAL CONDUIT BENDS).
- INSTALL PRECAST CONCRETE HANDBOX, FRAME, AND COVER (HOWARD COUNTY DETAIL T-3.01 AND T-3.02).
- INSTALL 24 IN. X 24 IN. X 16 IN. PARKING METER PAY STATION FOUNDATION.
- INSTALL 6 IN. SCHEDULE 40 PVC ELECTRICAL CONDUIT (TRENCHED). CAP AND MARK CONDUIT 2 FT. ABOVE GRADE AT PROPOSED BGE UTILITY POLE FOR USE BY OTHERS.
- INSTALL 4 IN. SCHEDULE 80 PVC ELECTRICAL CONDUIT (TRENCHED) FOR PROPOSED ELECTRICAL SERVICE. CAP AND MARK CONDUIT 2 FT. ABOVE GRADE AT BGE UTILITY POLE FOR USE BY OTHERS.
- INSTALL 4 IN. SCHEDULE 80 PVC ELECTRICAL CONDUIT (BORED).
- INSTALL 4 IN. SCHEDULE 80 PVC ELECTRICAL CONDUIT (TRENCHED).
- INSTALL 3 IN. SCHEDULE 80 PVC ELECTRICAL CONDUIT (SLOTTED).
- INSTALL 2 IN. SCHEDULE 80 PVC ELECTRICAL CONDUIT (TRENCHED).
- INSTALL 0.5 IN. SCHEDULE 80 PVC ELECTRICAL CONDUIT (TRENCHED). CONNECT TO CONDUIT IN STEP WALL.



LEGEND

GROUND WIRE DESIGNATION DUCT WIRE DESIGNATION TOTAL NUMBER OF CABLES IN CONDUIT	ELECTRICAL CABLE 1-CONDUCTOR NO. 8 AWG-THHN/THWN	EXISTING PENDANT LUMINAIRE (UTILITY POLE MOUNTED) TO REMAIN
QUANTITY OF TYPE II CONNECTOR KITS	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	EXISTING PENDANT LUMINAIRE (UTILITY POLE MOUNTED) TO BE REMOVED (BY OTHERS)
LUMINAIRE ID	PROPOSED POLE-MOUNTED PEDESTRIAN LIGHT	PROPOSED ELECTRICAL HANDBOX
HANDHOLE ID NO.	PROPOSED WALL-MOUNTED STEP LIGHT	PROPOSED METERED SERVICE PEDESTAL
QUANTITY OF CONNECTOR KITS	PROPOSED POLE-MOUNTED PARKING LOT LIGHT	PROPOSED GROUND ROD

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark DeLuz
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/1/15
DATE

McCORMICK TAYLOR
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND
Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143
(410) 313-6444



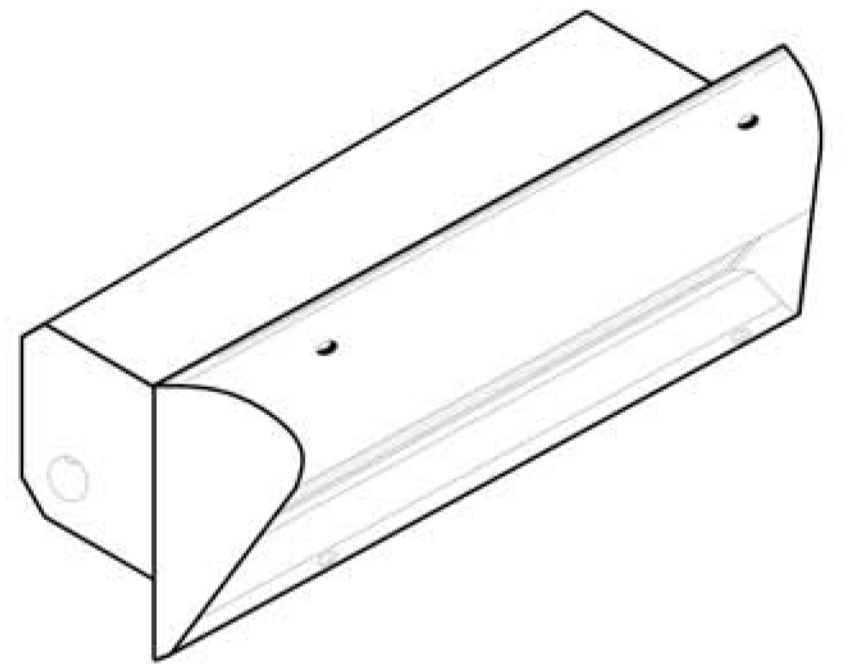
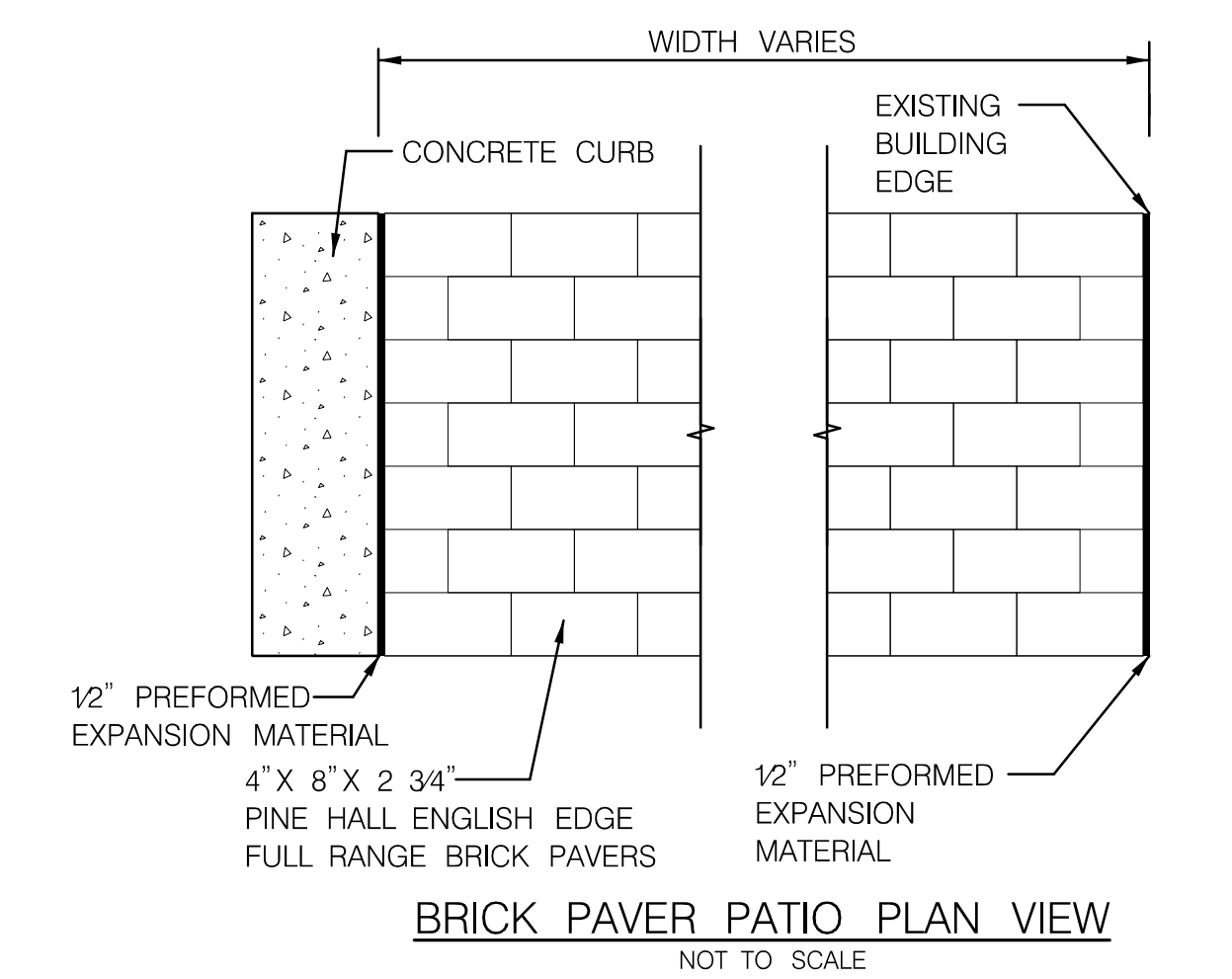
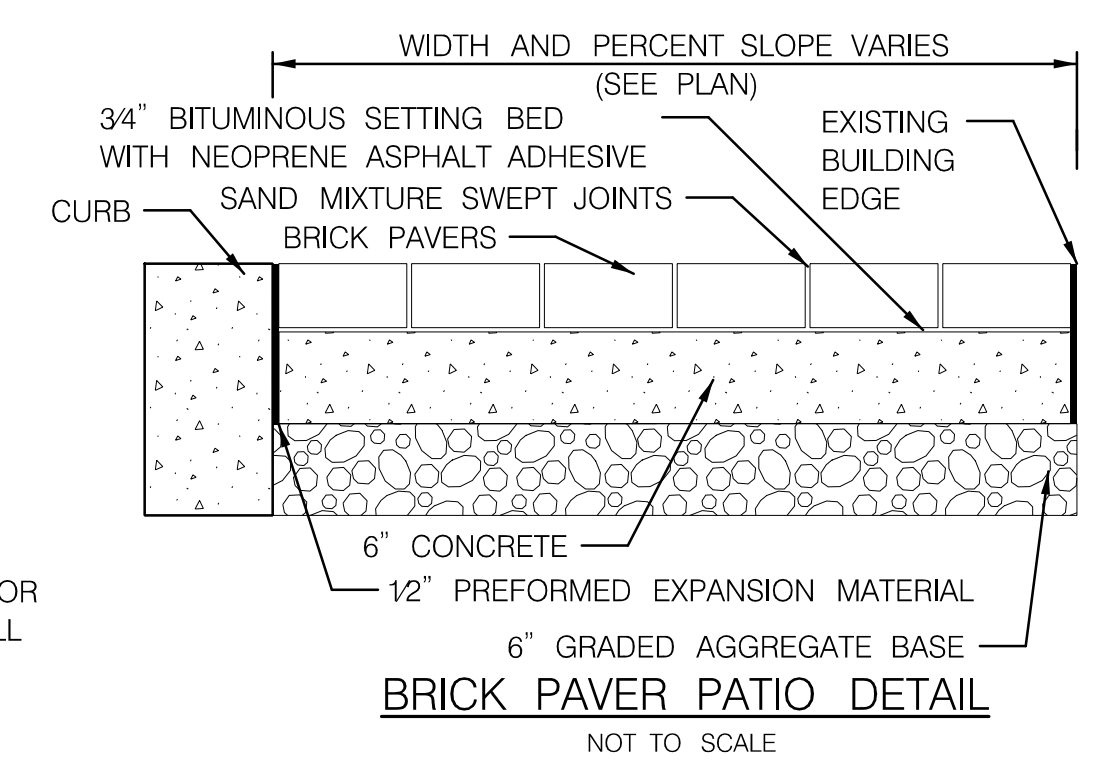
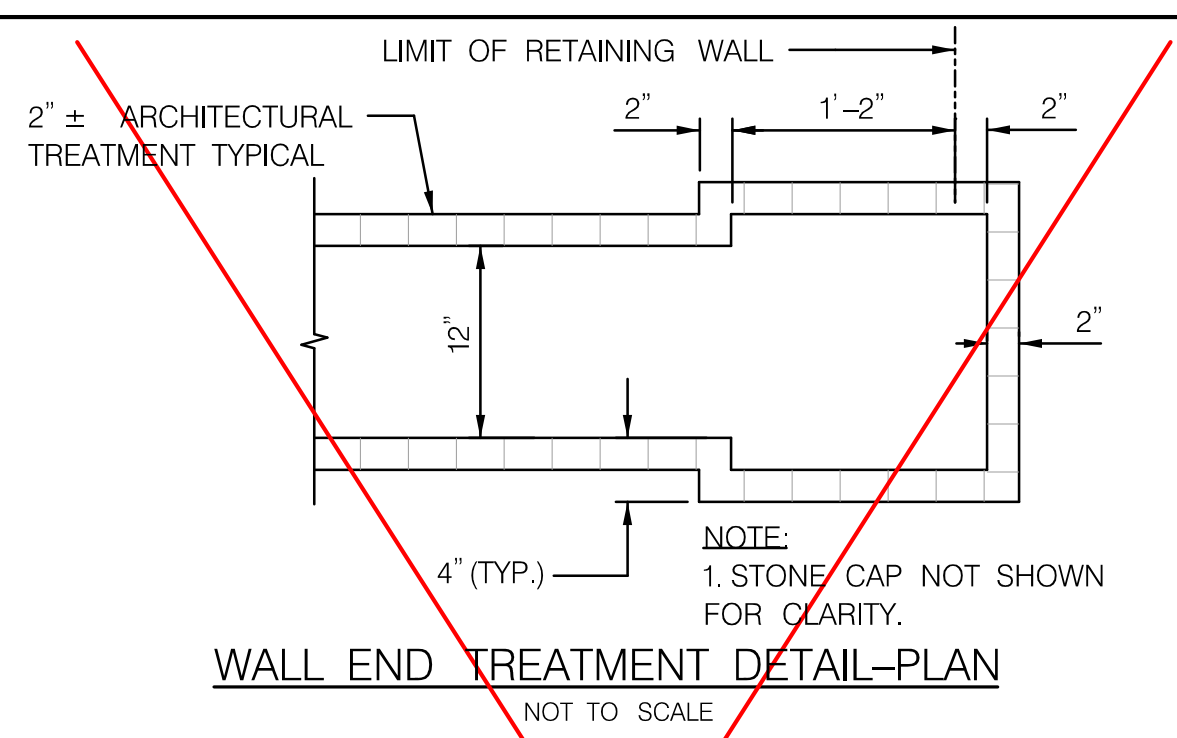
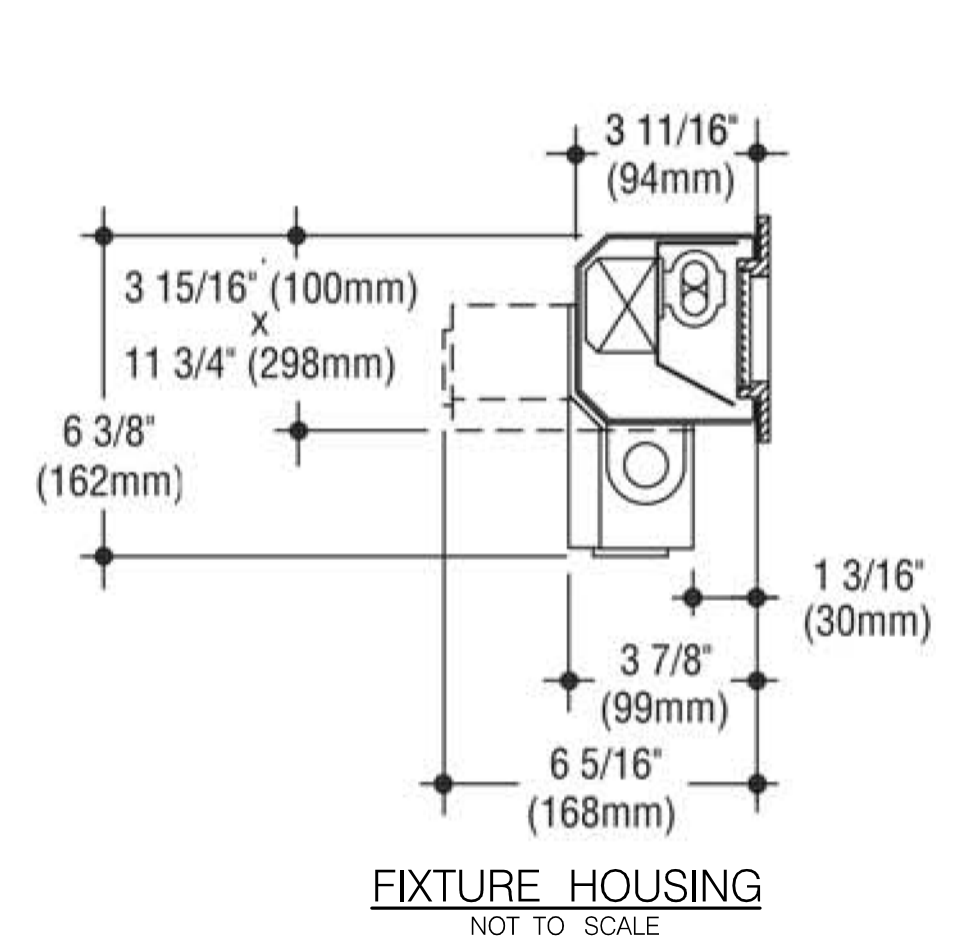
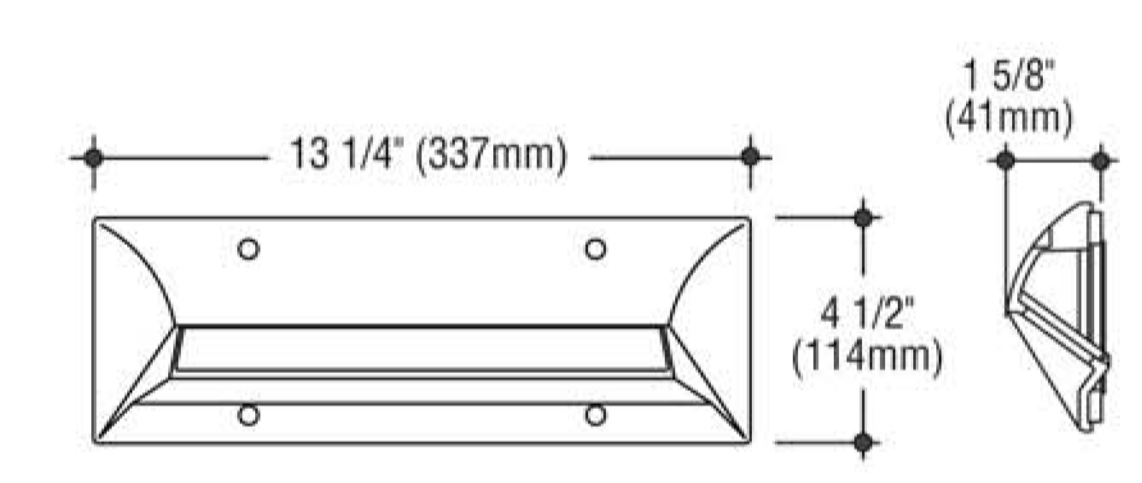
DES:	AM			
DRN:	MR			
CHK:	CB	DPK	11	REVISED RAMP DESIGN TO INCLUDE STEPS
		ADM	6	REVISED LANDING AND LIGHTING LOCATIONS
DATE:	06/18/14	BY	NO.	REVISION
				DATE

ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

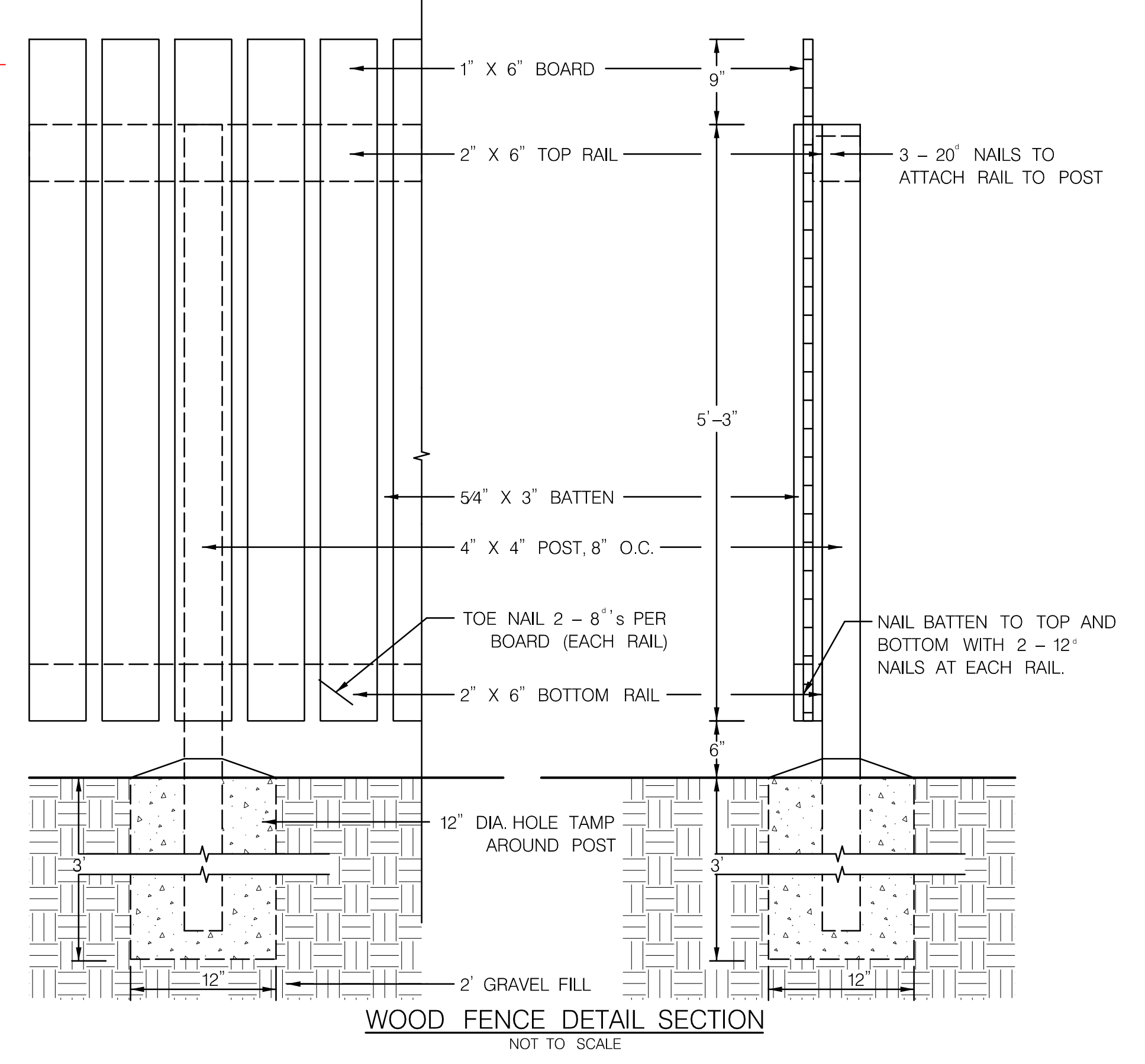
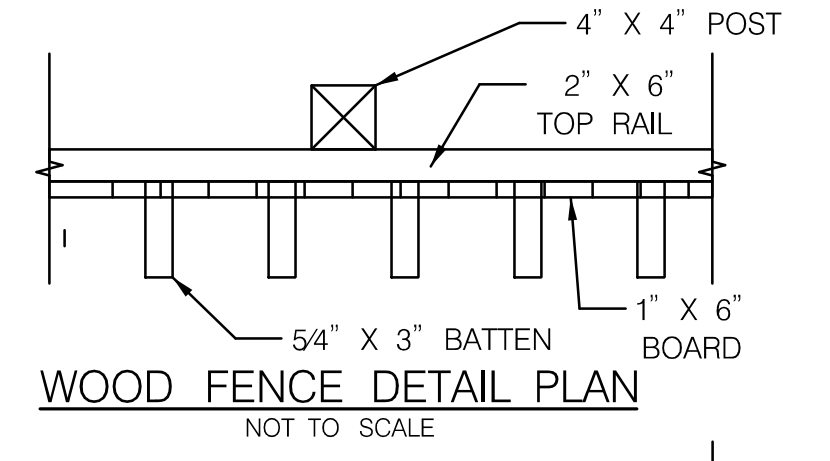
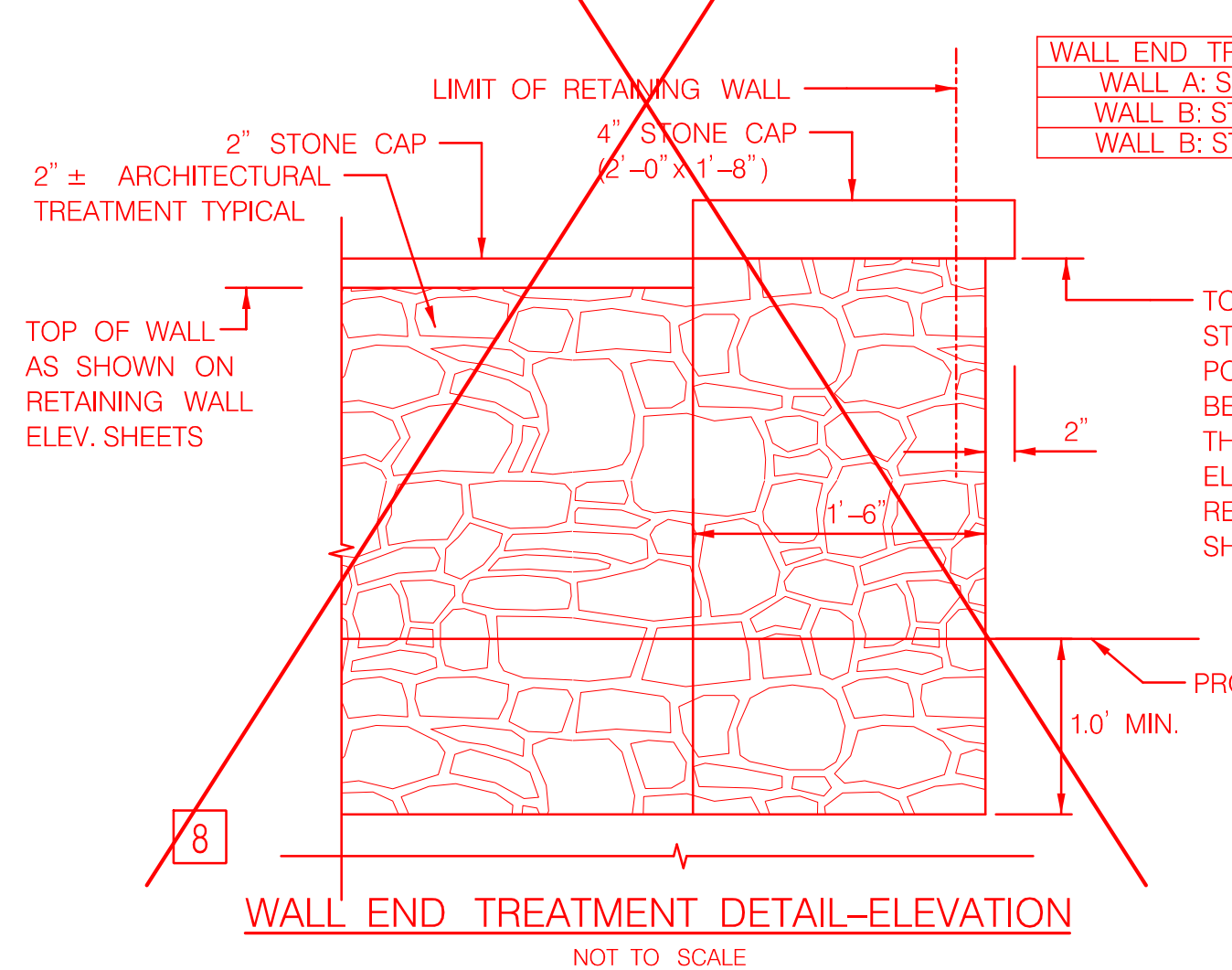
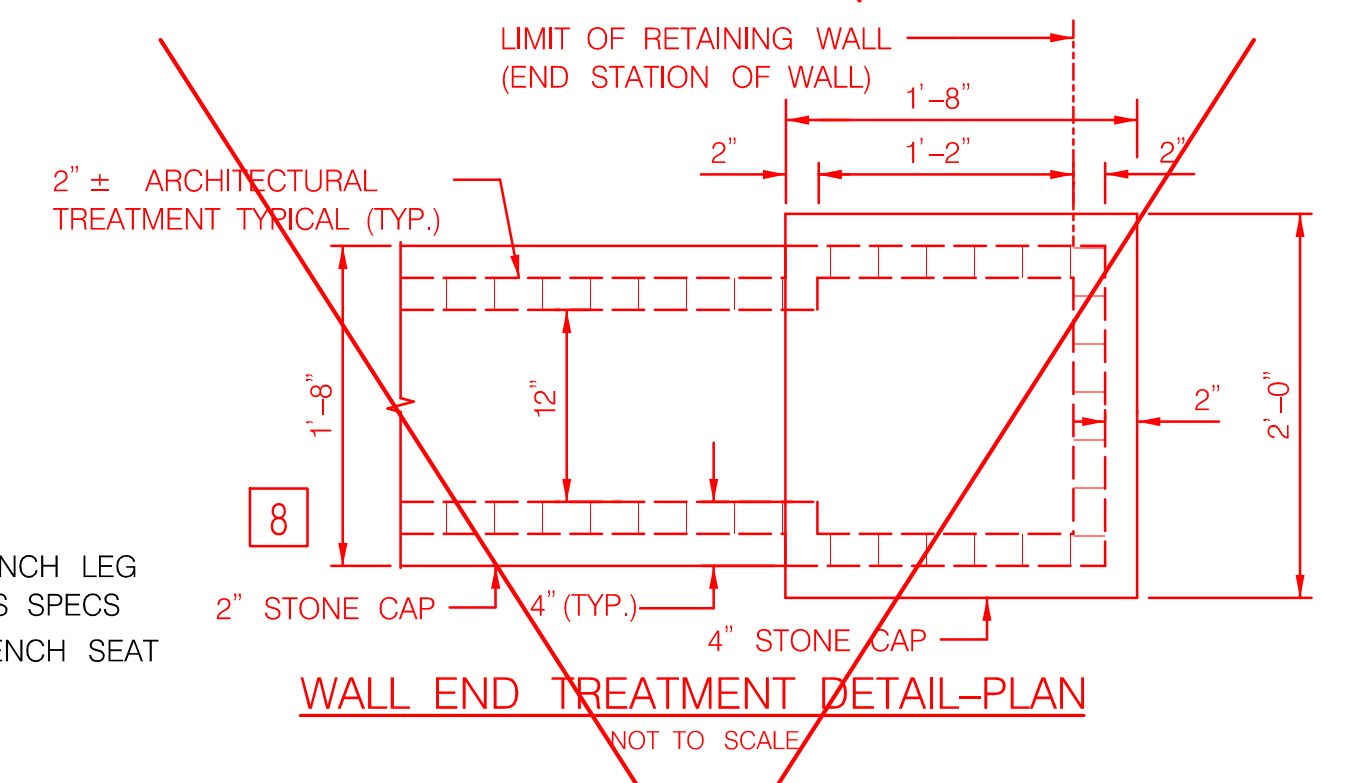
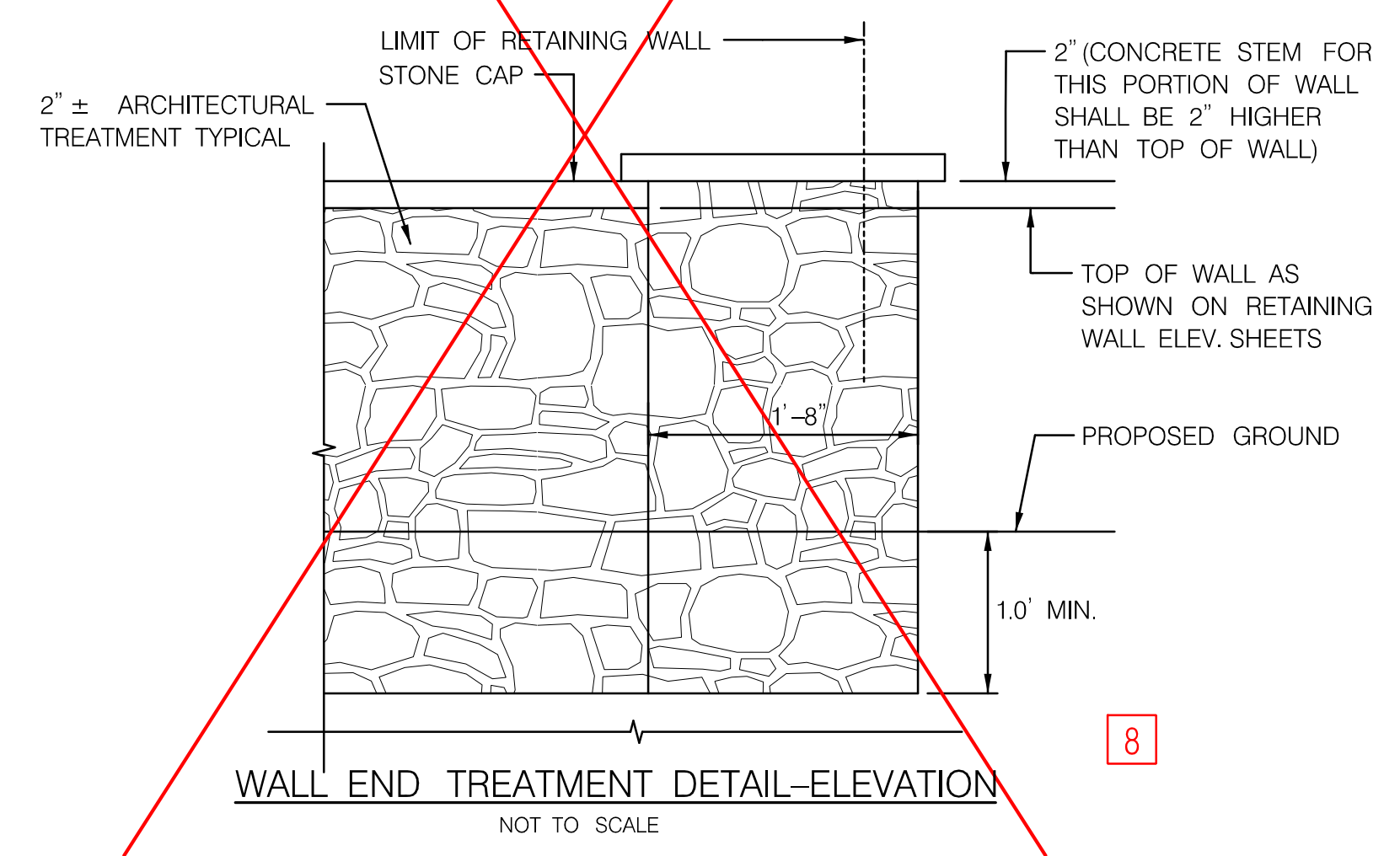
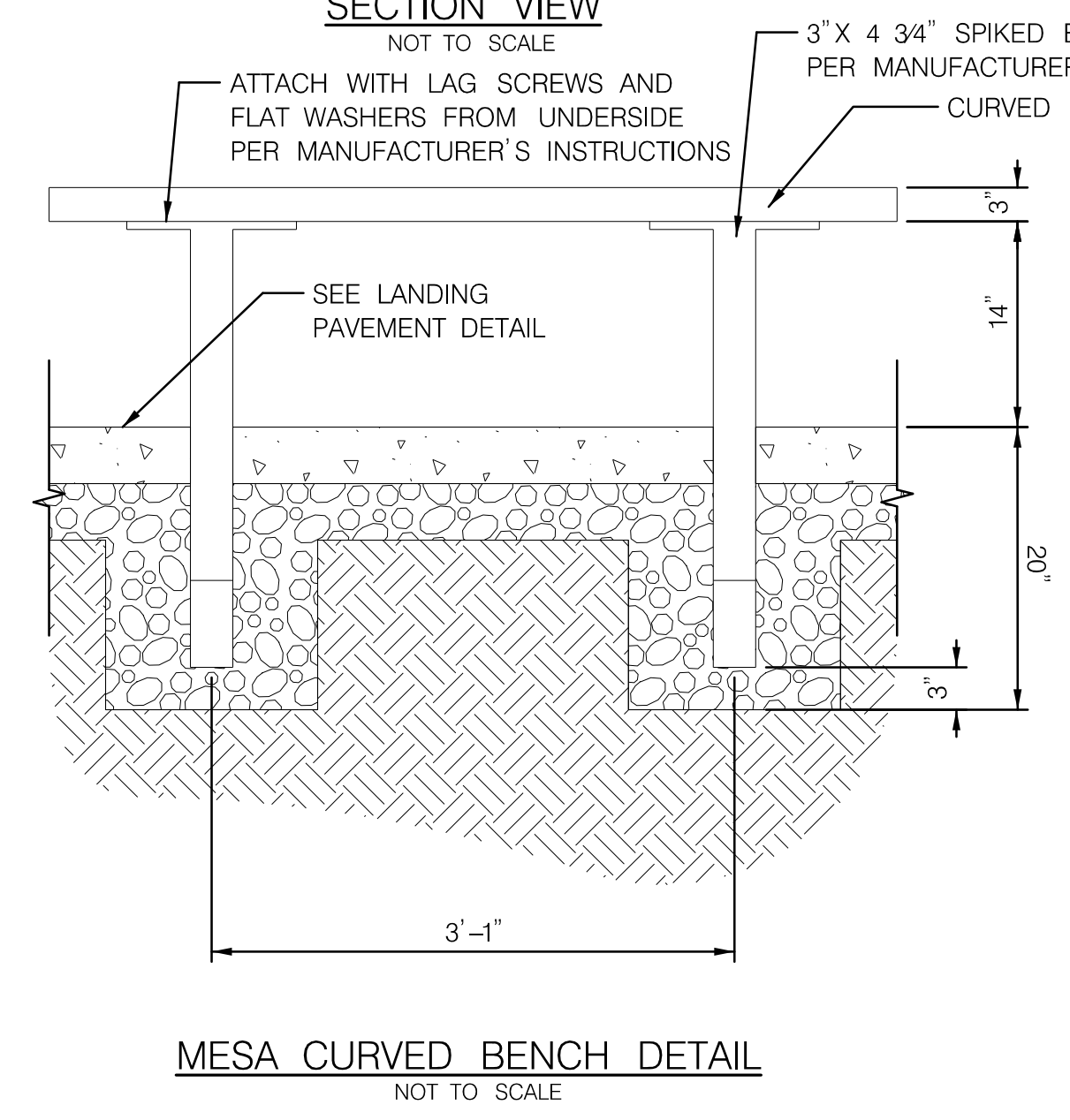
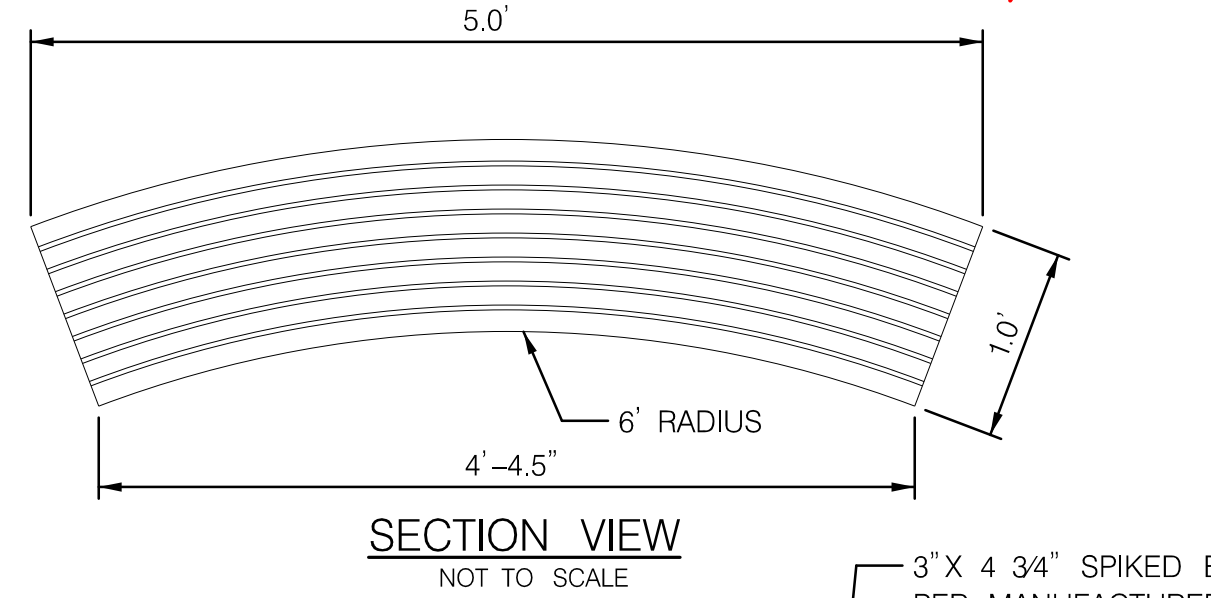
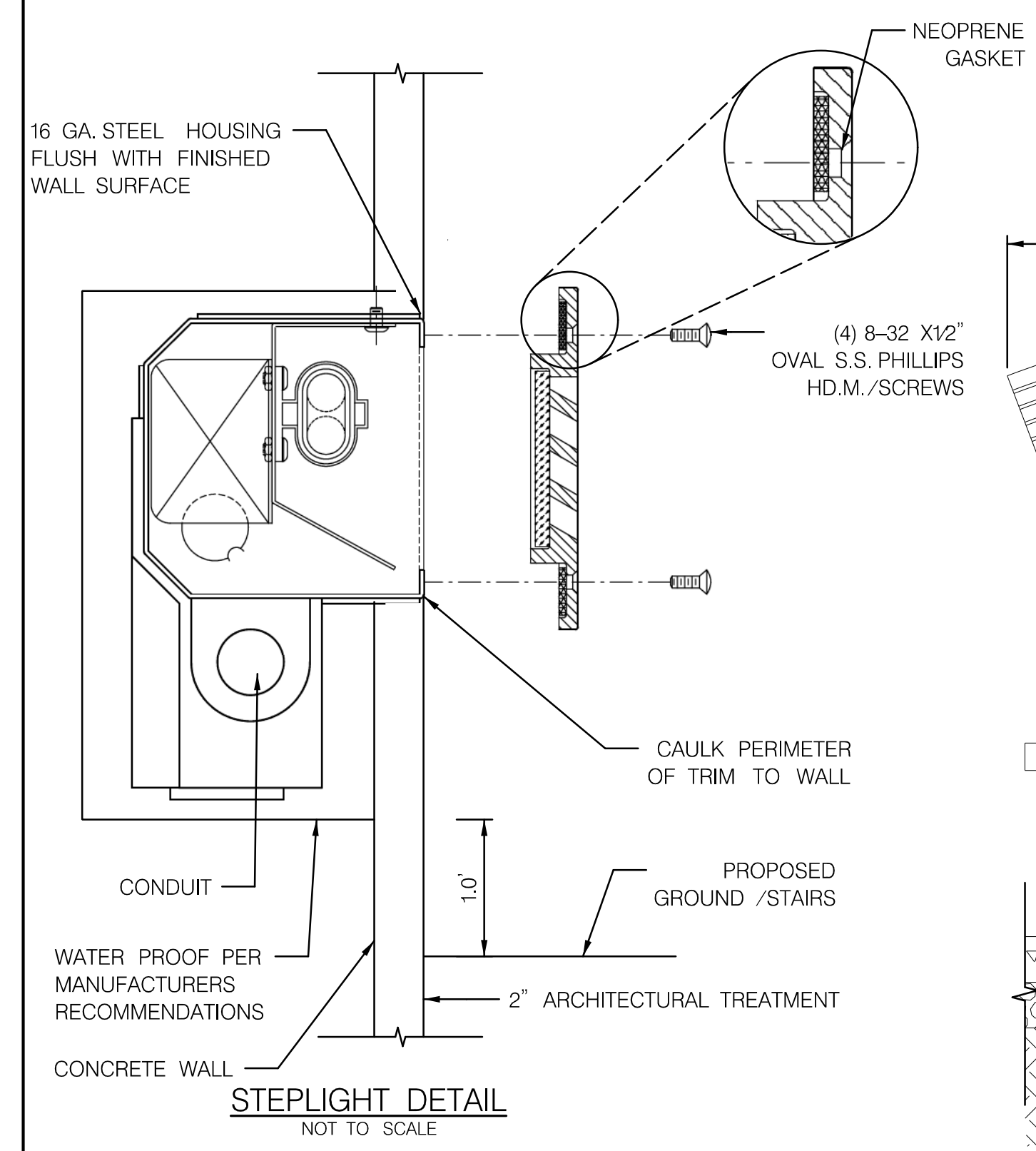
LIGHTING PLAN

SCALE
AS NOTED

SHEET
40 OF 44



F2159D



WALL END TREATMENT LOCATIONS	
WALL A:	STATION 101+39.64
WALL B:	STATION 200+00.00
WALL B:	STATION 201+26.47

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. L...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

DATE: 6/19/15

McCORMICK TAYLOR
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND
Storm Water Management Division
Bureau of Environmental Services
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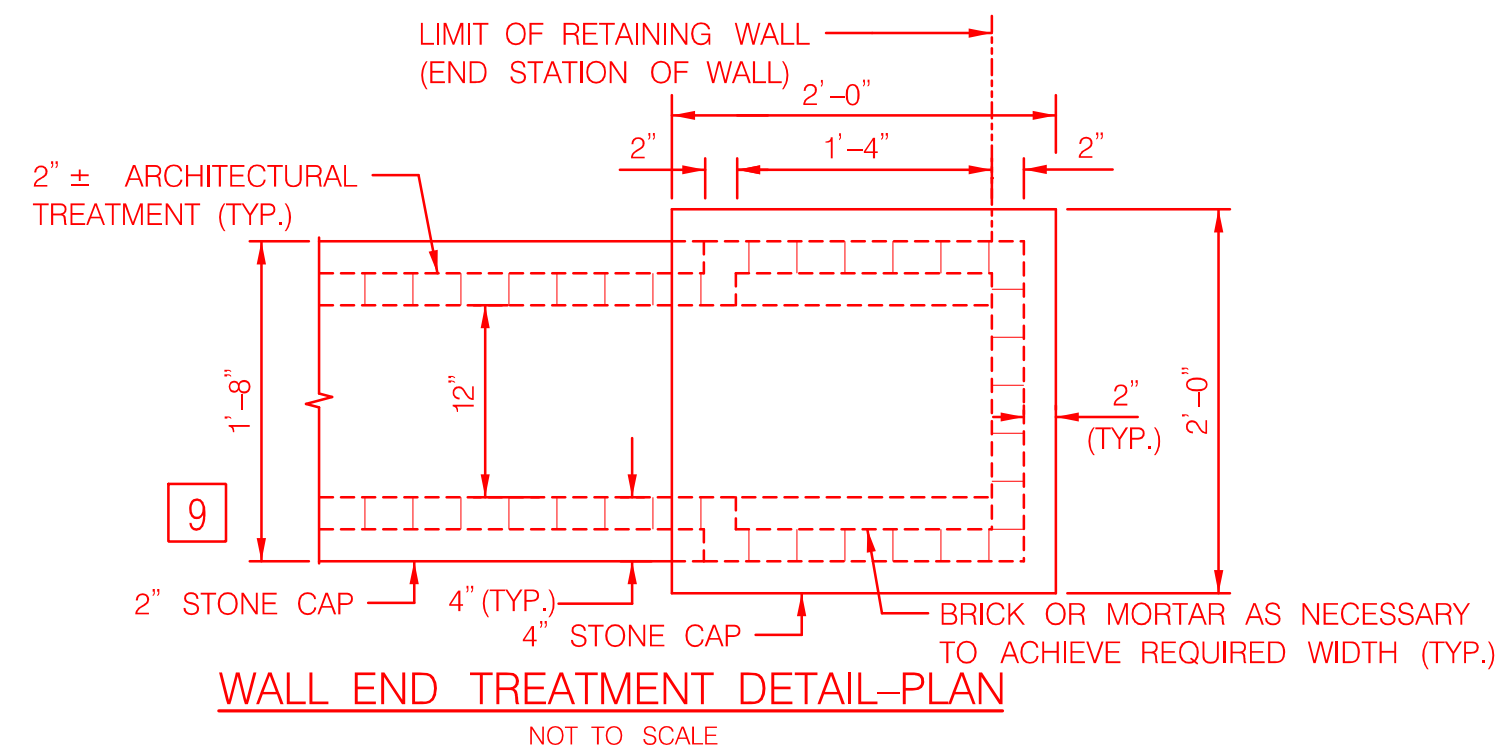


DES:	AM				
DRN:	MR				
CHK:	CB	BSW	9	STONE CAP REVISION	4/6/15
		HUM	8	STONE CAP REVISION	3/2/15
DATE:	06/18/14	BY	NO.	REVISION	DATE

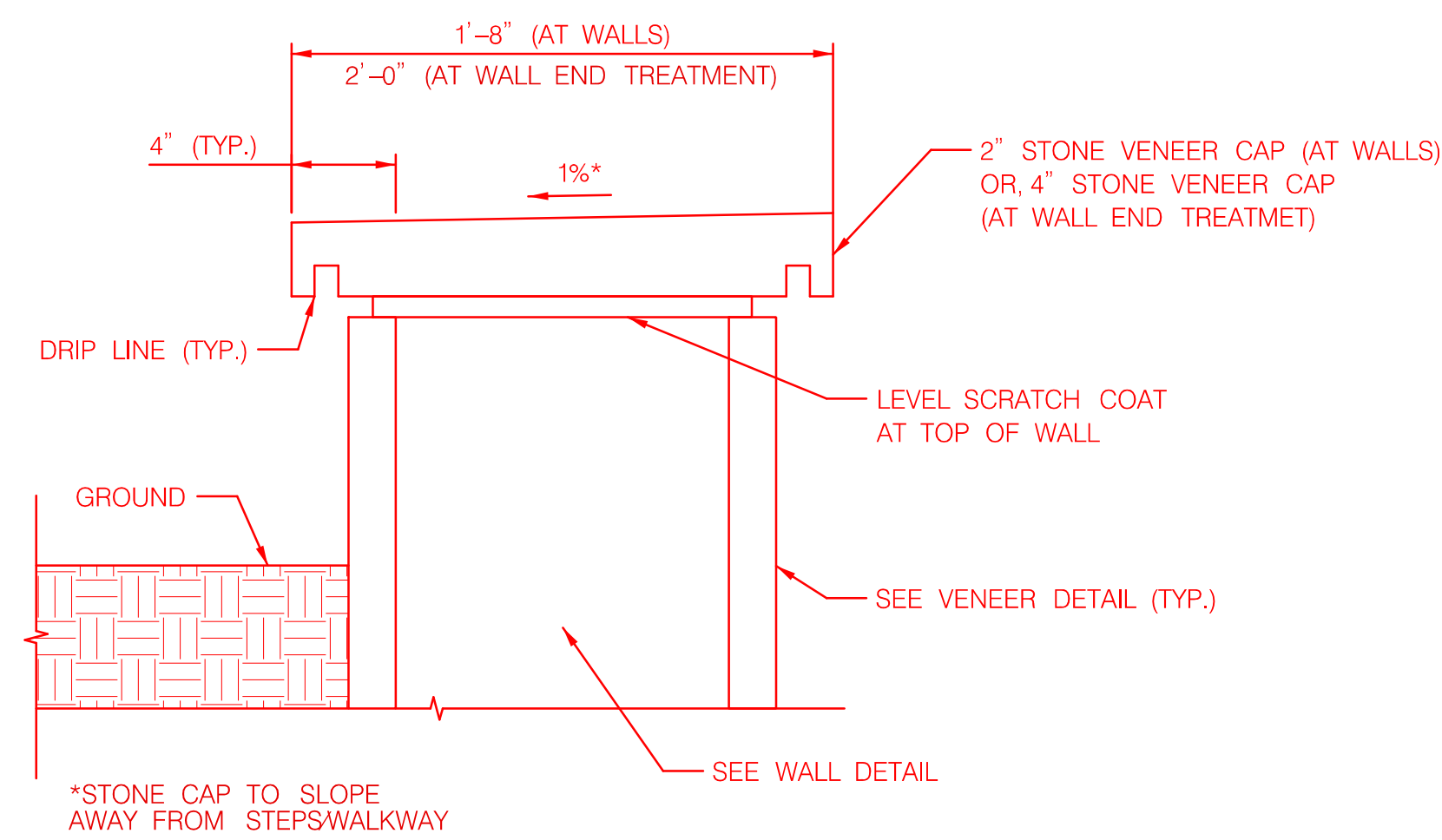
ELLICOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

LANDSCAPING DETAIL SHEET

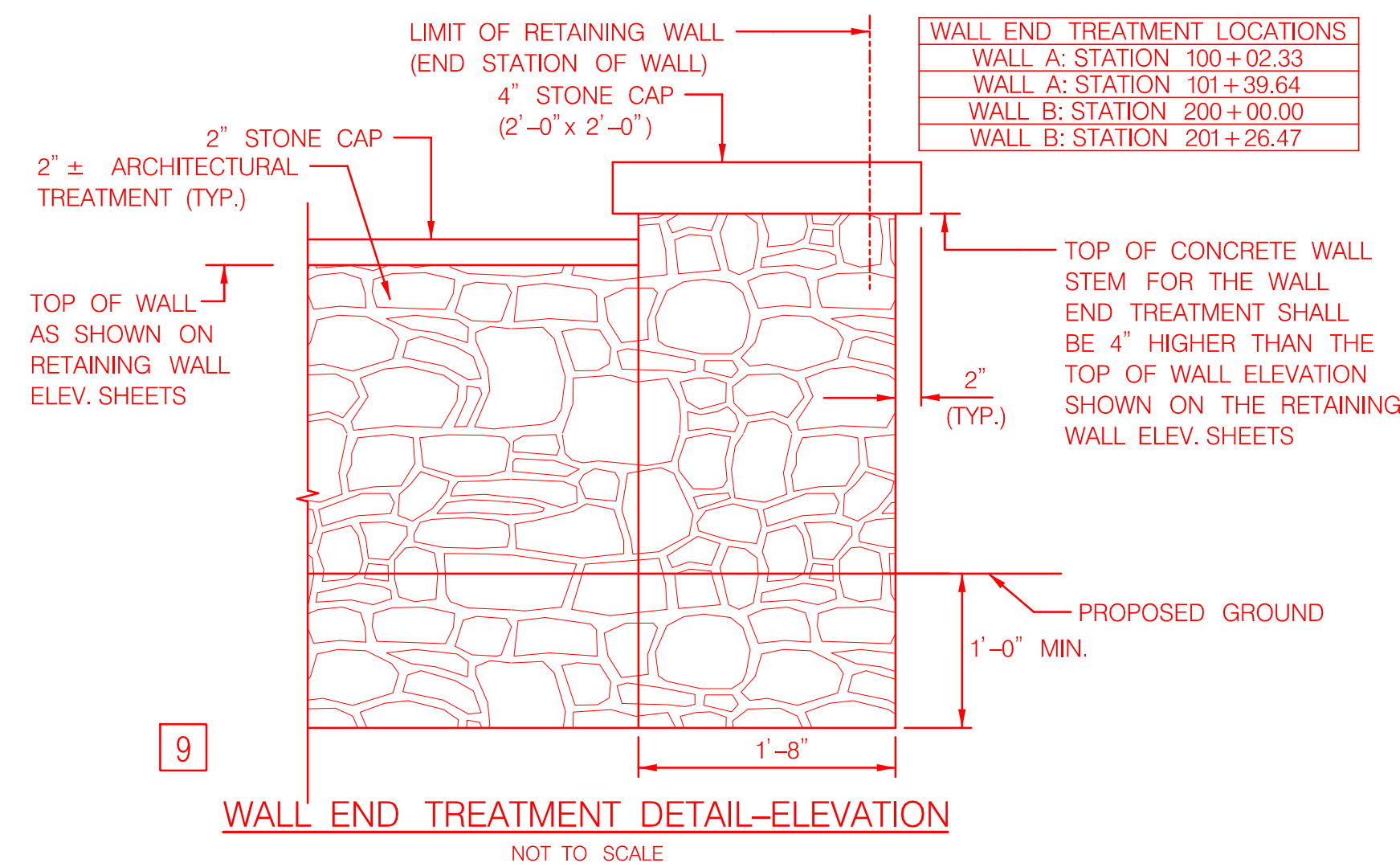
SCALE: AS SHOWN
SHEET: 41 OF 44



WALL END TREATMENT DETAIL-PLAN
NOT TO SCALE



STONE WALL CAP
NOT TO SCALE



WALL END TREATMENT DETAIL-ELEVATION
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. ...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES
DATE: 6/15/15

McCORMICK TAYLOR
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Baltimore, Maryland 21202
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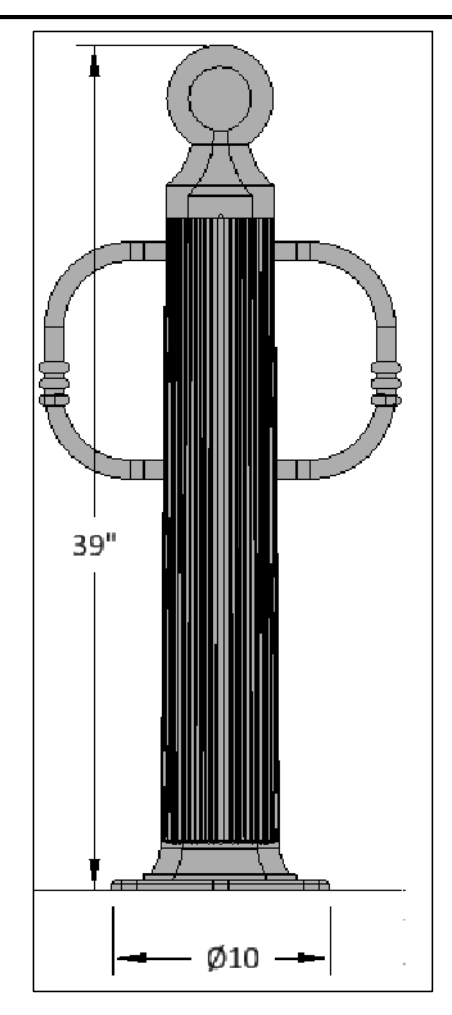
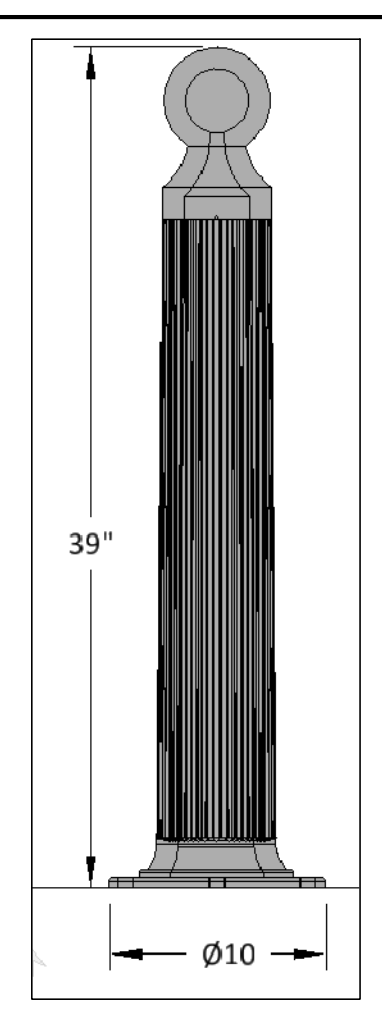
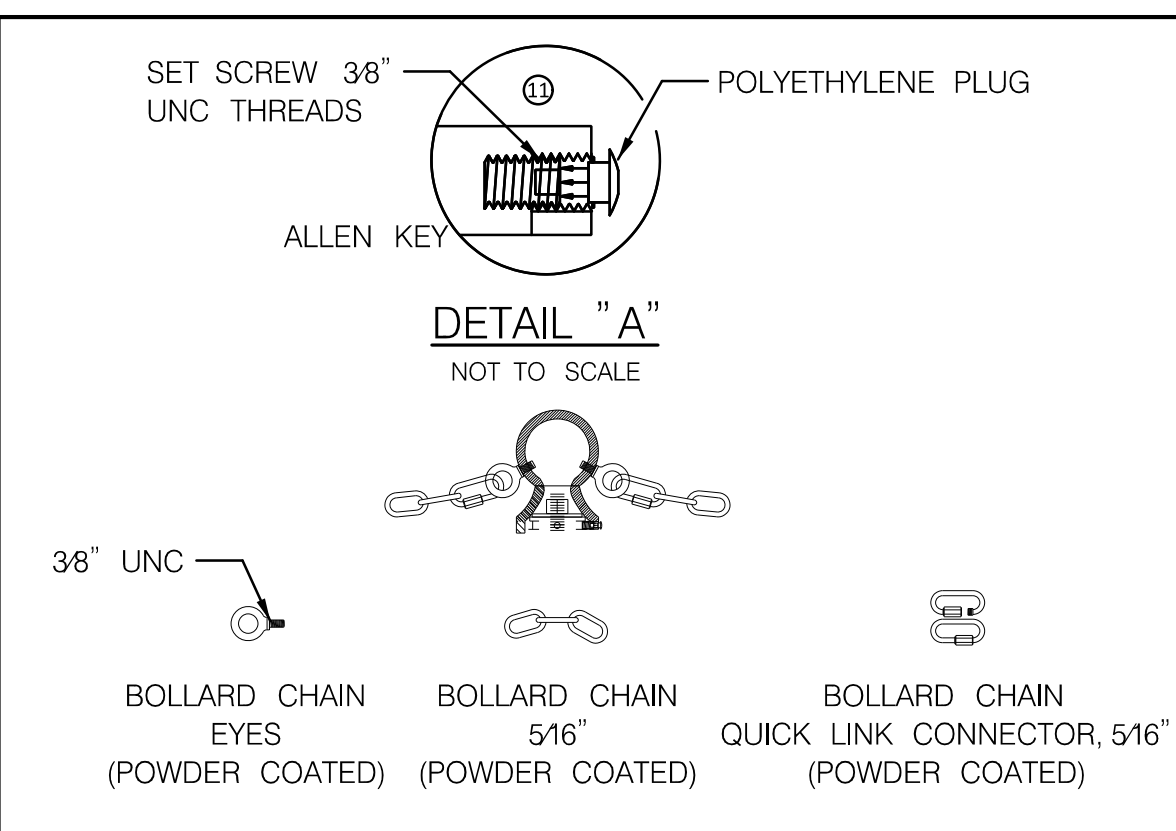
Howard County
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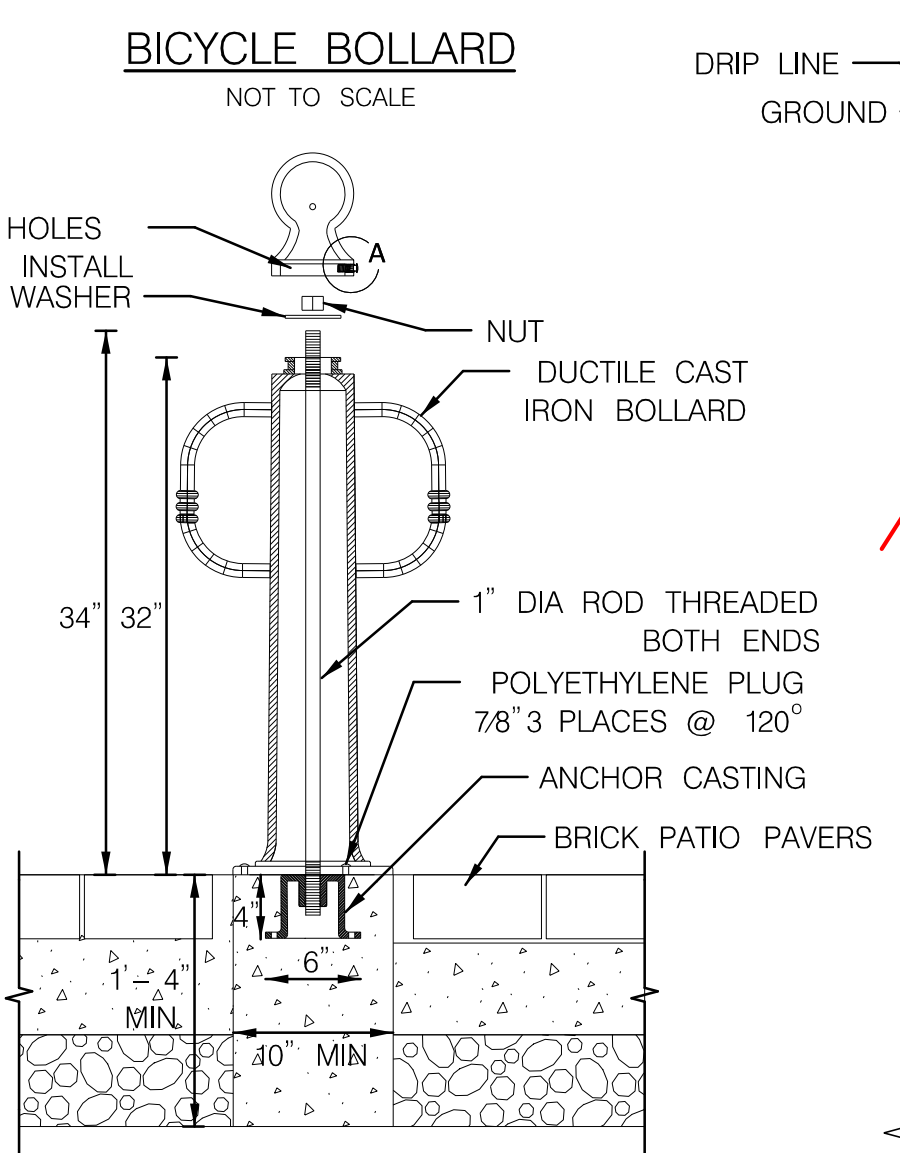
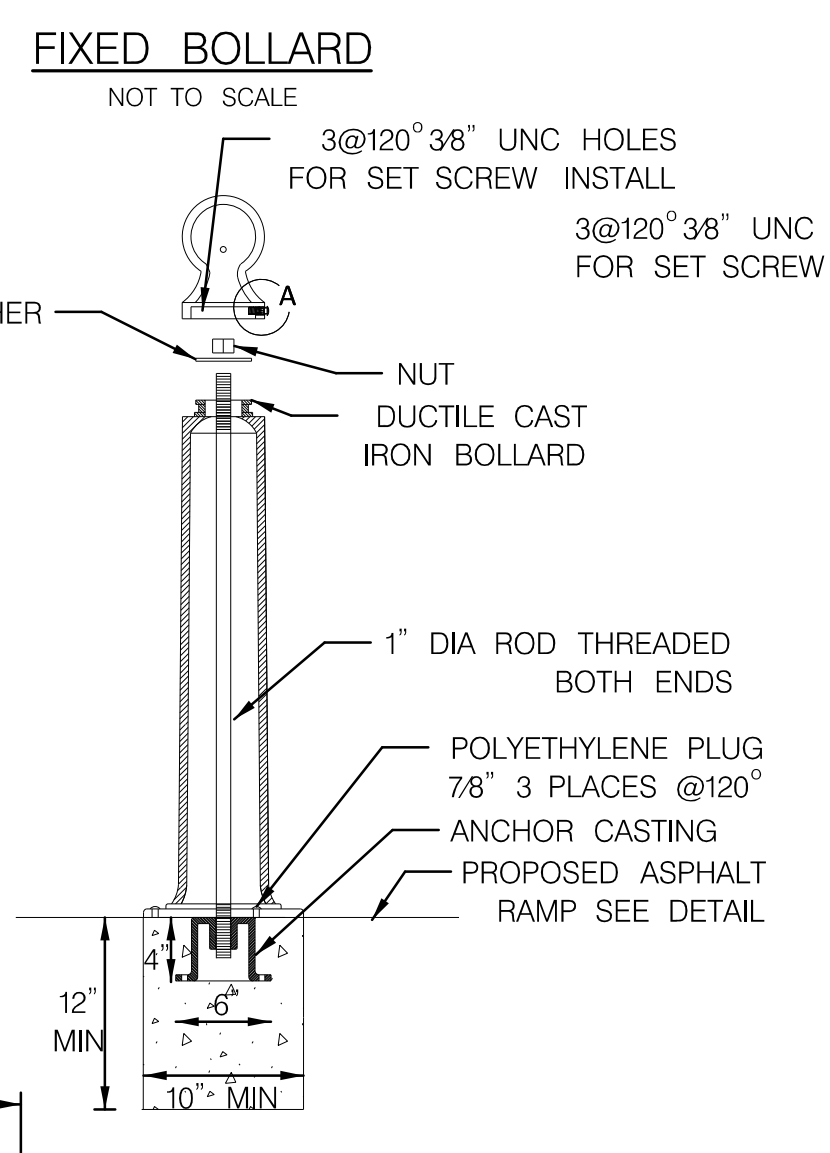
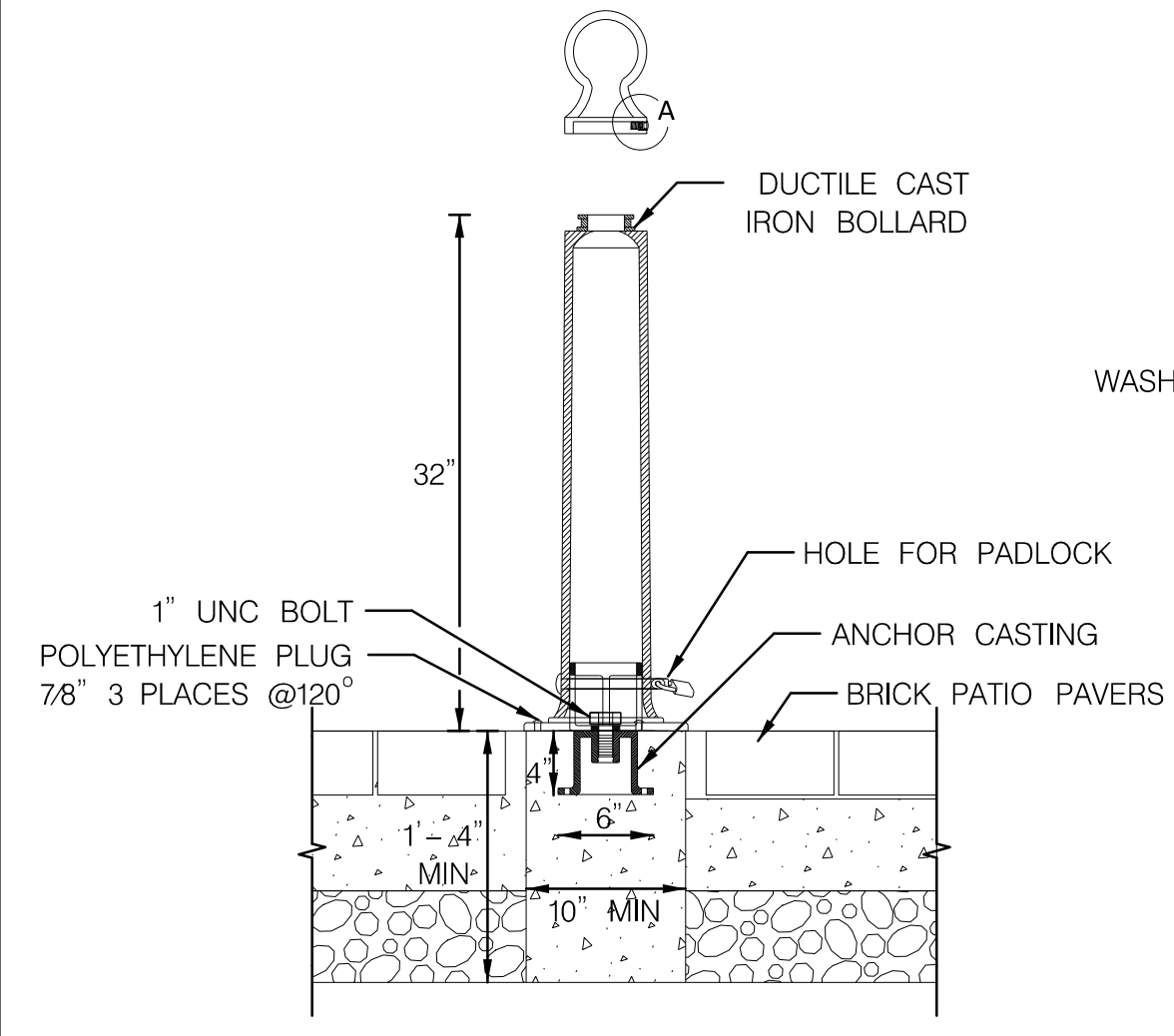
DES: AM					
DRN: MR					
CHK: CB					
DATE: 06/18/14	BSW	9	STONE CAP REVISION /ADD NEW SHEET	4/6/15	
	BY	NO.	REVISION	DATE	

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY
LANDSCAPING DETAIL SHEET

SCALE
AS SHOWN
SHEET
41A OF 44



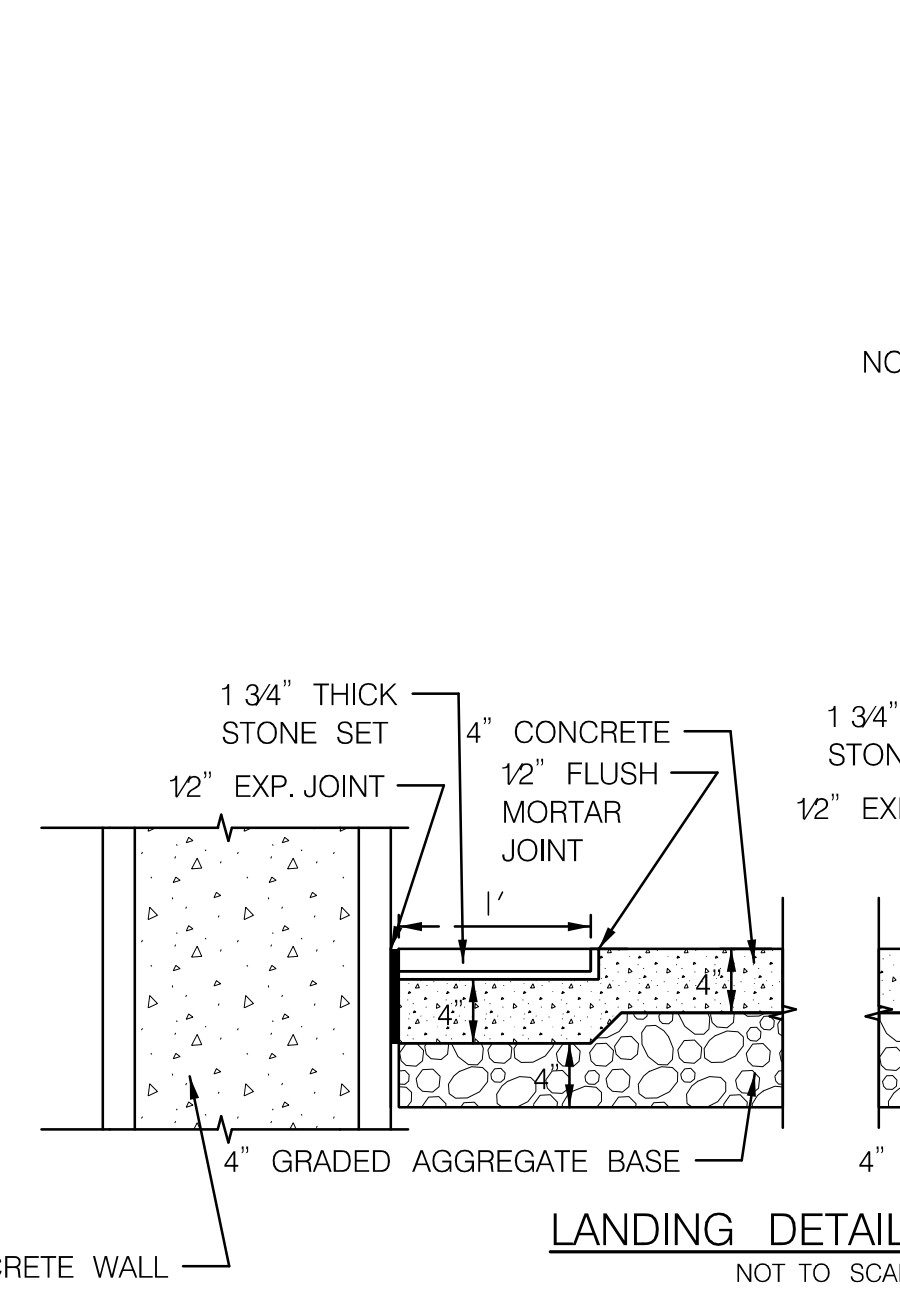
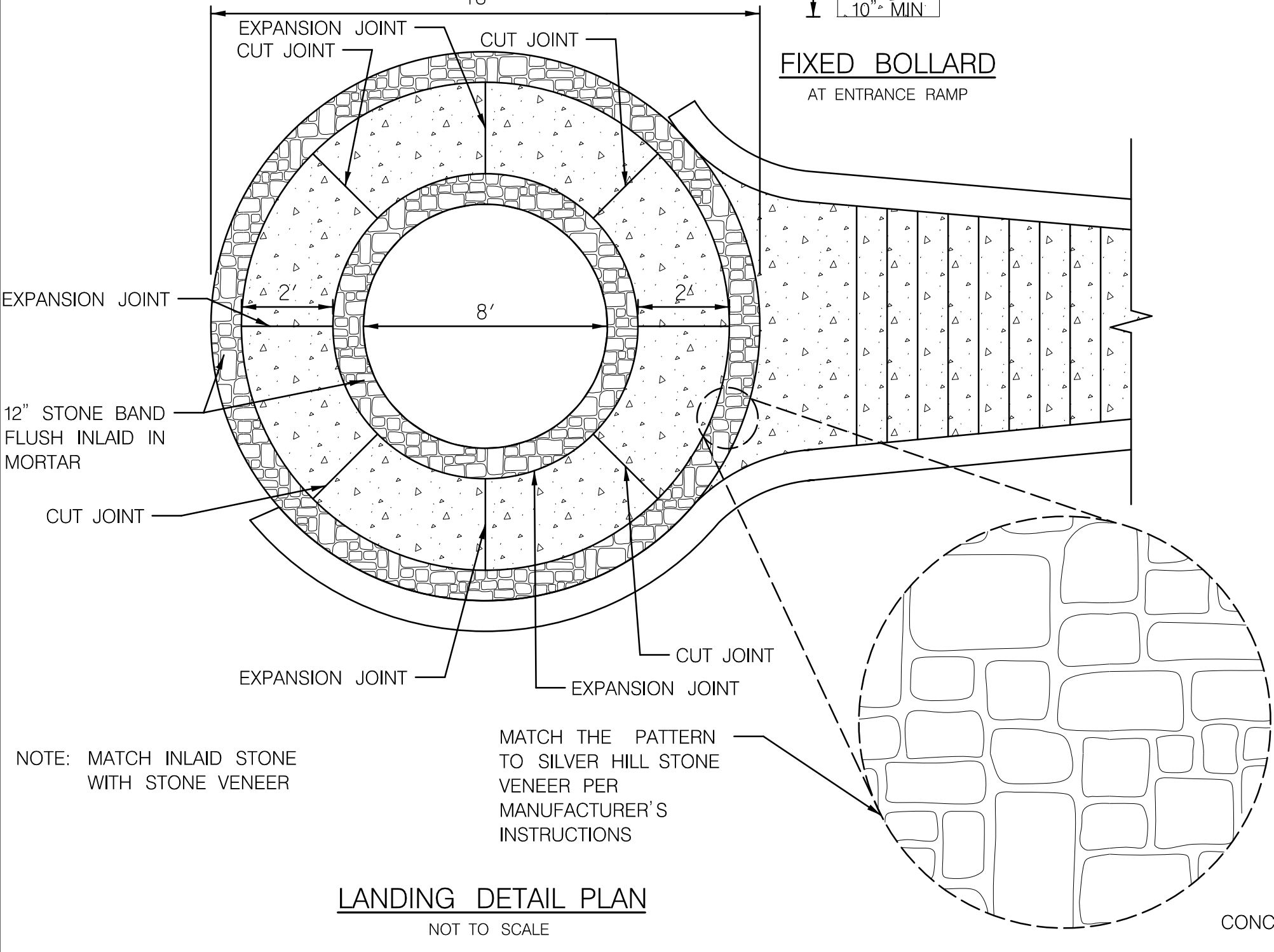
CHAIN INSTALLATION DETAIL
NOT TO SCALE



REMOVABLE BOLLARD
AT PATIO

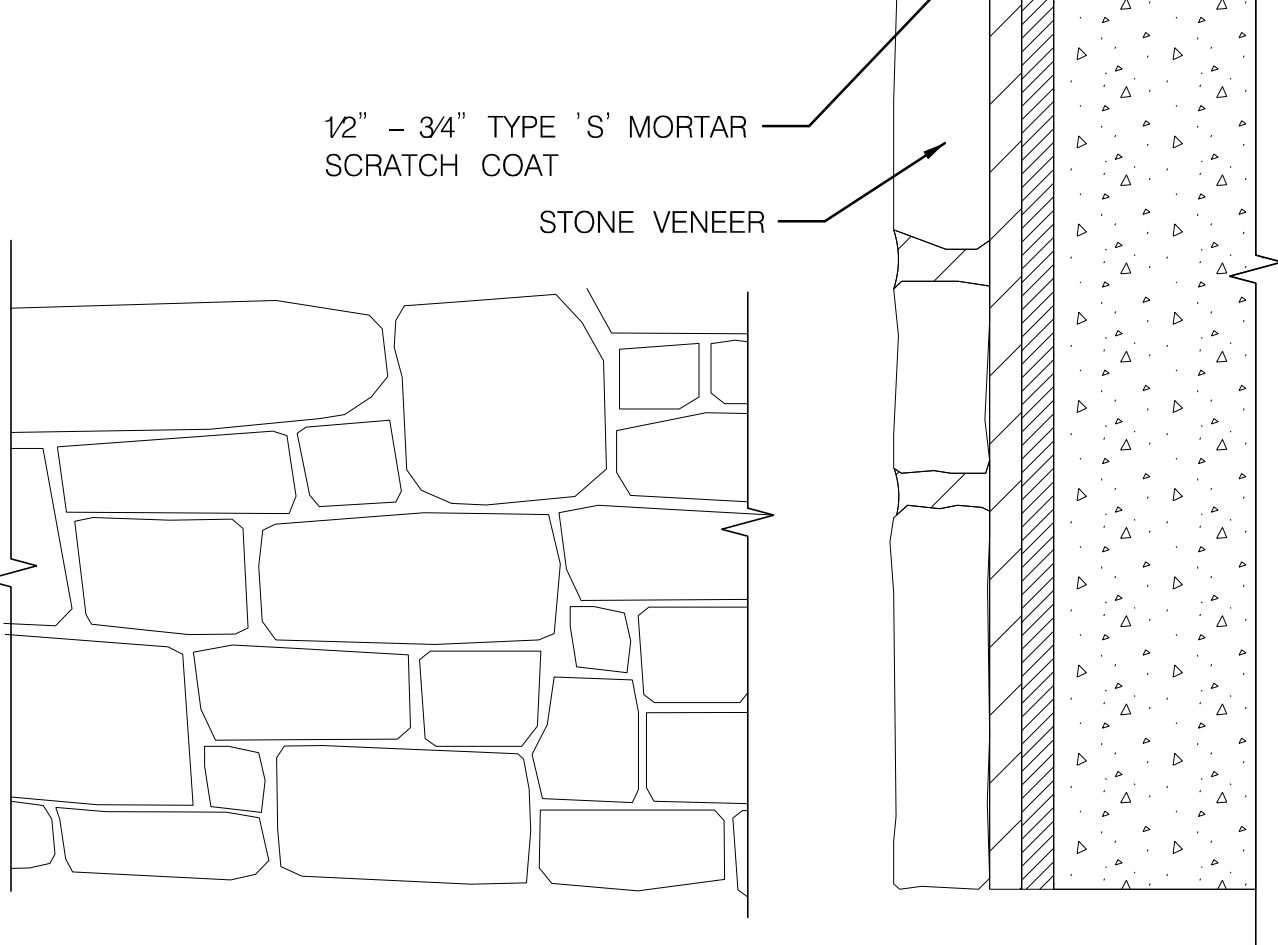
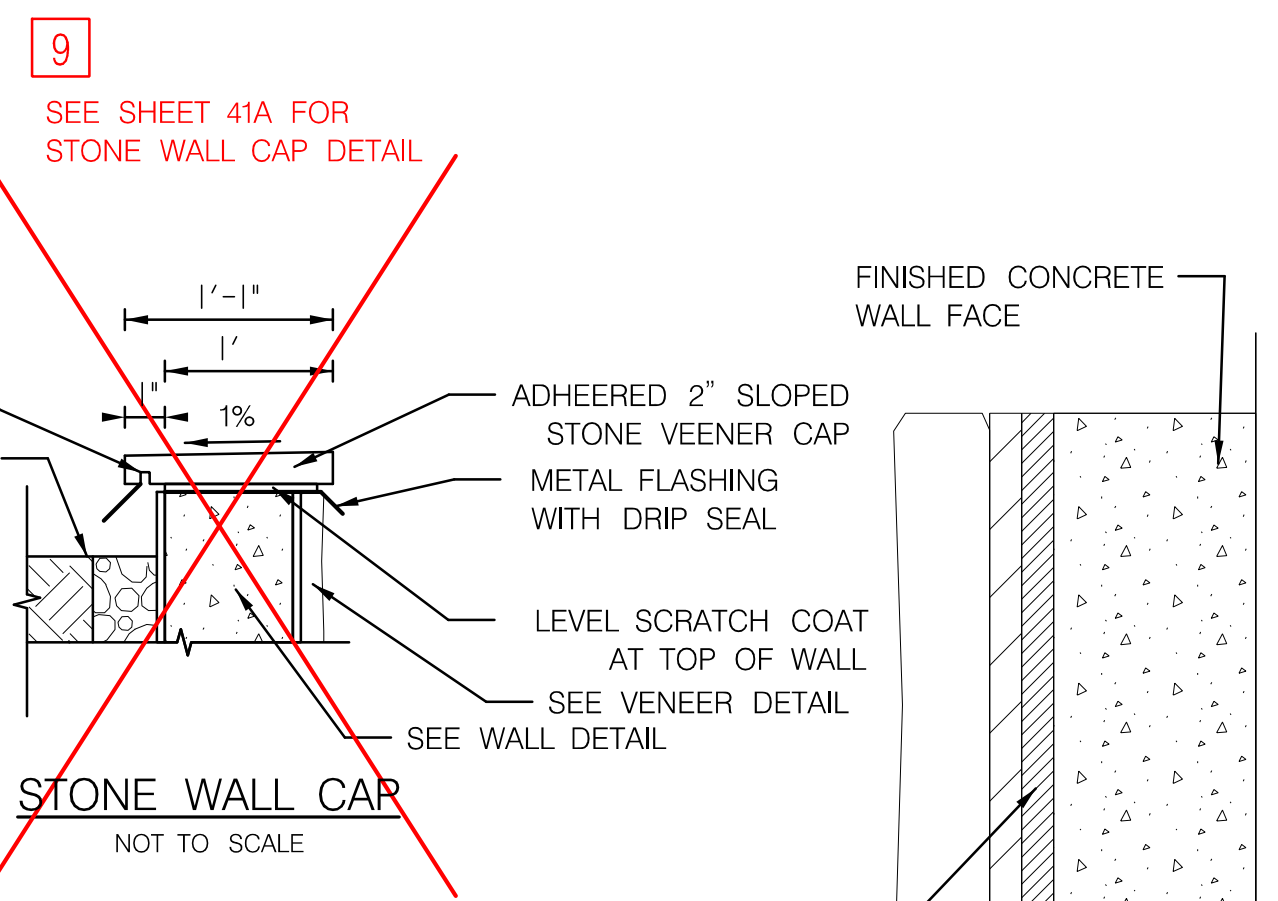
FIXED BOLLARD
AT ENTRANCE RAMP

BICYCLE BOLLARD
AT ENTRANCE RAMP



LANDING DETAIL PLAN
NOT TO SCALE

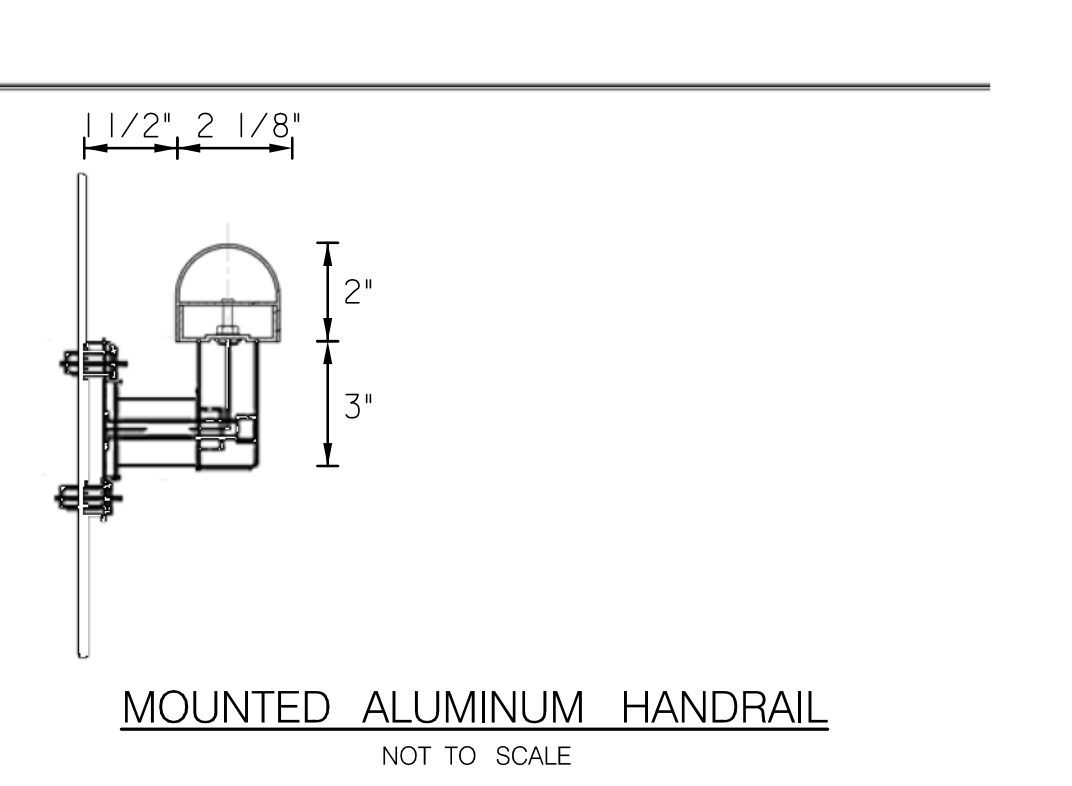
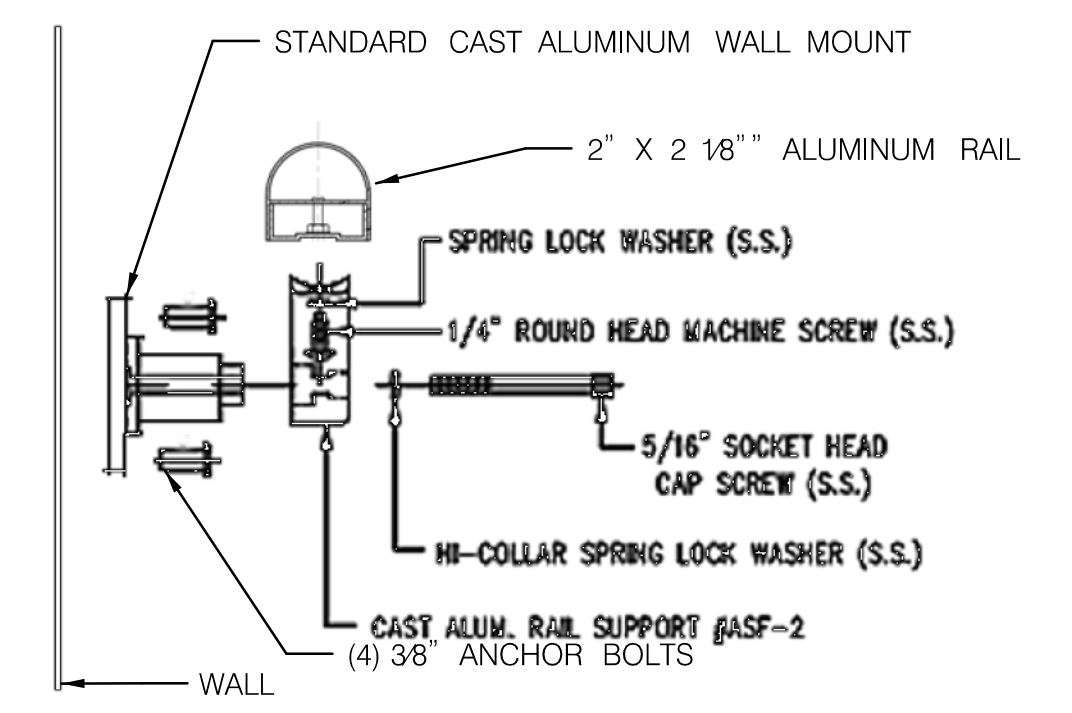
LANDING DETAIL SECTION
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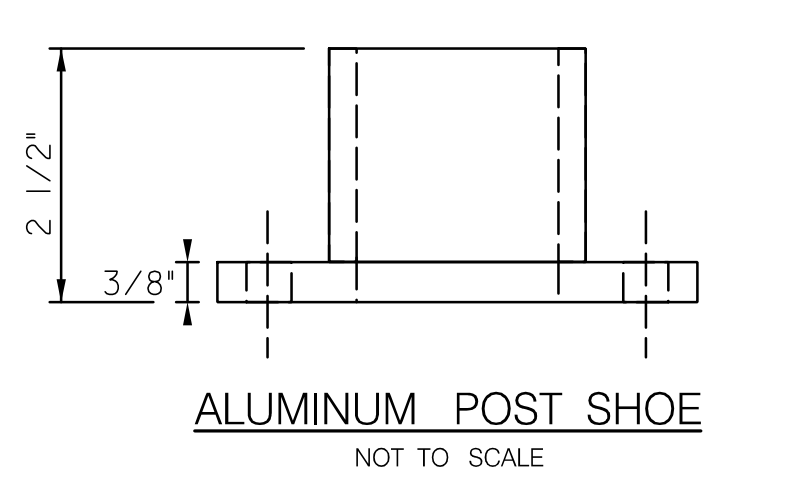
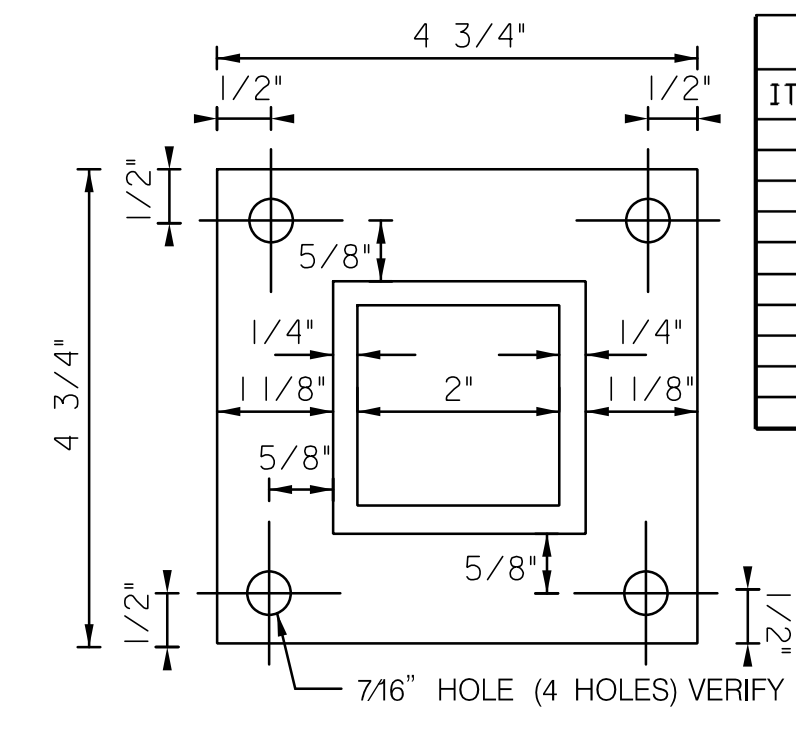
STONE VENEER
NOT TO SCALE

SECTION
NOT TO SCALE

NOTE:
1. ARRANGE PER MANUFACTURER'S INSTRUCTIONS
2. APPLY MORTAR TO BACK OF STONE BEFORE AFFIXING IT TO WALL

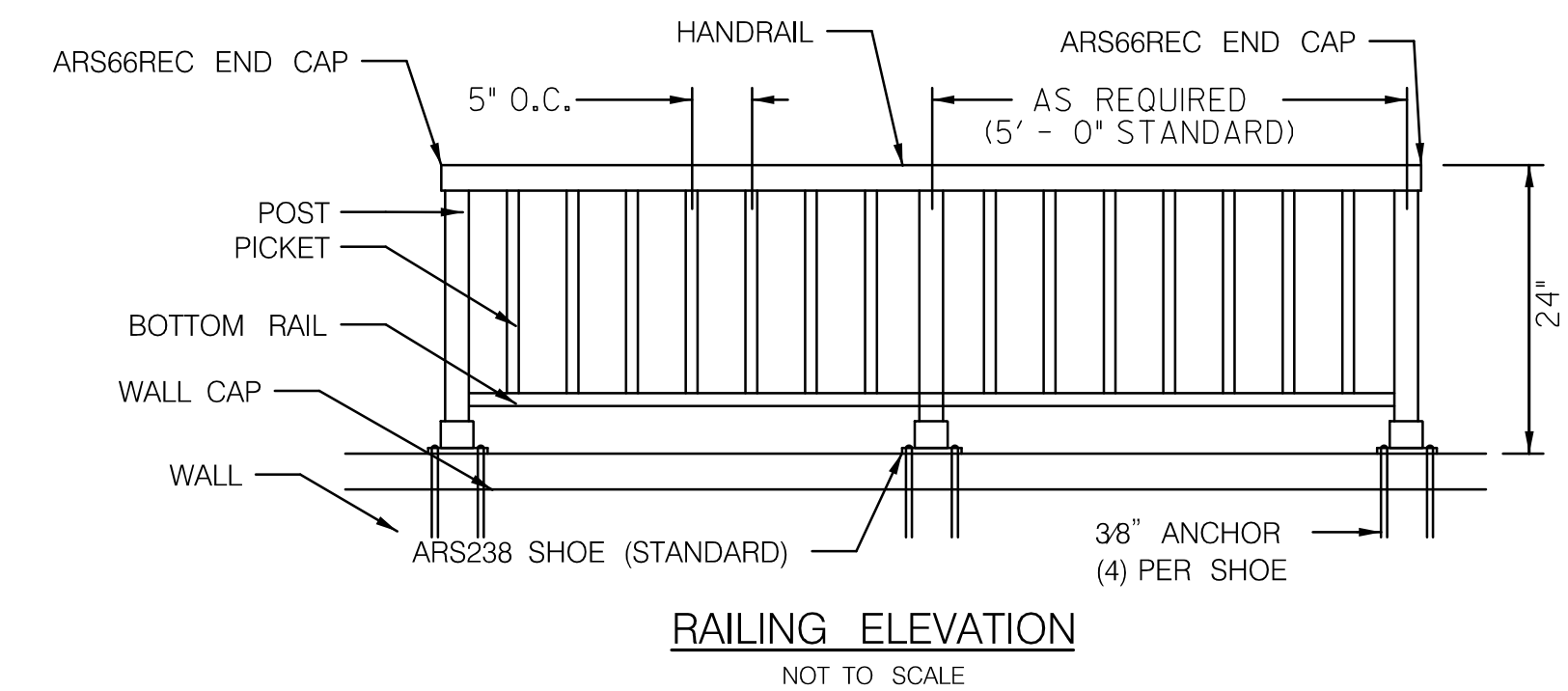
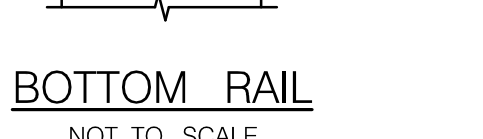
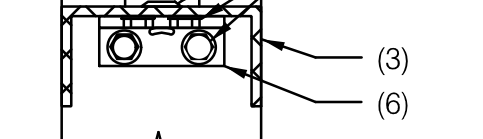
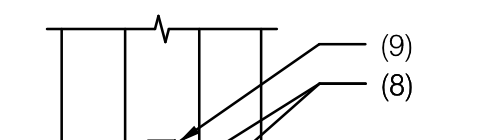
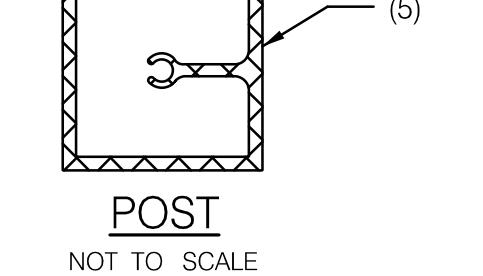
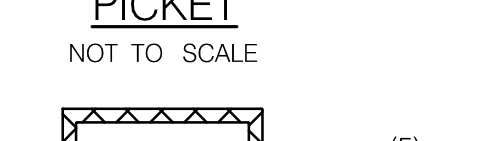
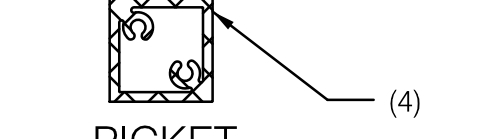
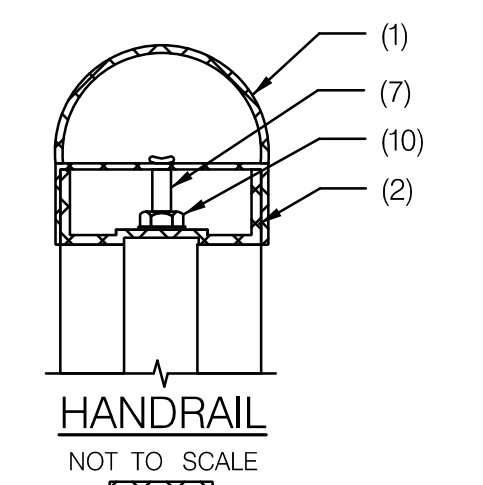


MOUNTED ALUMINUM HANDRAIL
NOT TO SCALE



ALUMINUM POST SHOE
NOT TO SCALE


ARS P2066R ALUMINUM PICKET RAILING			
ITEM NO.	PART NO.	DESCRIPTION	MATERIAL
1	ARS66R	TOP RAIL 2 1/8" x 2"	6063-T6
2	ARS67	CHANNEL 3/4" x 2" x 3/4"	6063-T6
3	ARS68A	CHANNEL 1" x 2" x .080" THK.	6063-T6
4	ARS69	PICKET 1" sq.	6063-T6
5	ARS12P	POST 2" sq.	6063-T6
6	PCI	POST CLIP 1 1/4" x 1/2" x 1/8" THK.	6063-T6
7	AD616 BS	POP RIVET	ALUM.
8	AD64 BS	#8 x 3/4" SELF TAPPING SCREW	S.S.TL.
9	AD64 BS	POP RIVET	ALUM.
10	AD64 BS	#14 x 1" SELF TAPPING SCREW	S.S.TL.



RAILING ELEVATION
NOT TO SCALE

BOTTOM RAIL
NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND



CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

DATE: 6/18/14

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MARYLAND

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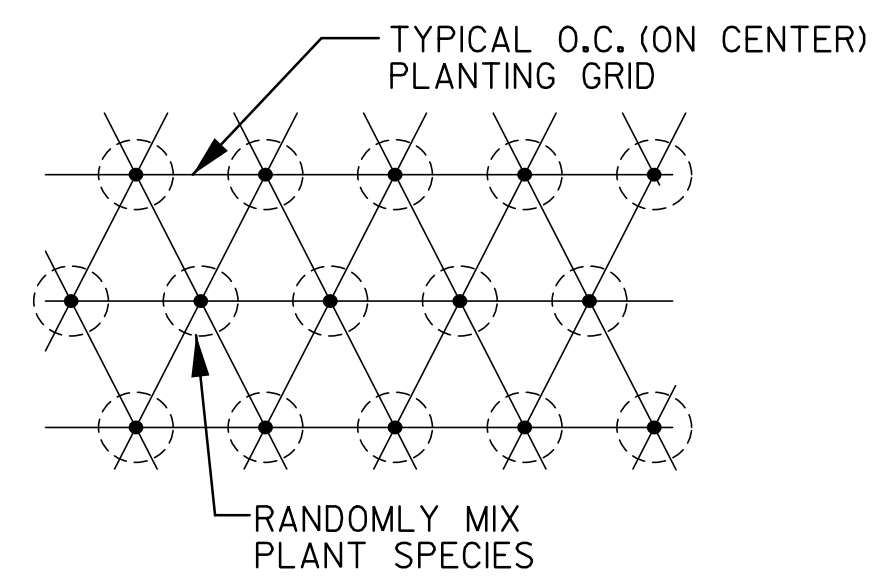


DES:	AM				
DRN:	MR				
CHK:	CB				
DATE:	06/18/14	BSW	9	STONE CAP REVISION	4/6/15
BY:		NO.		REVISION	DATE

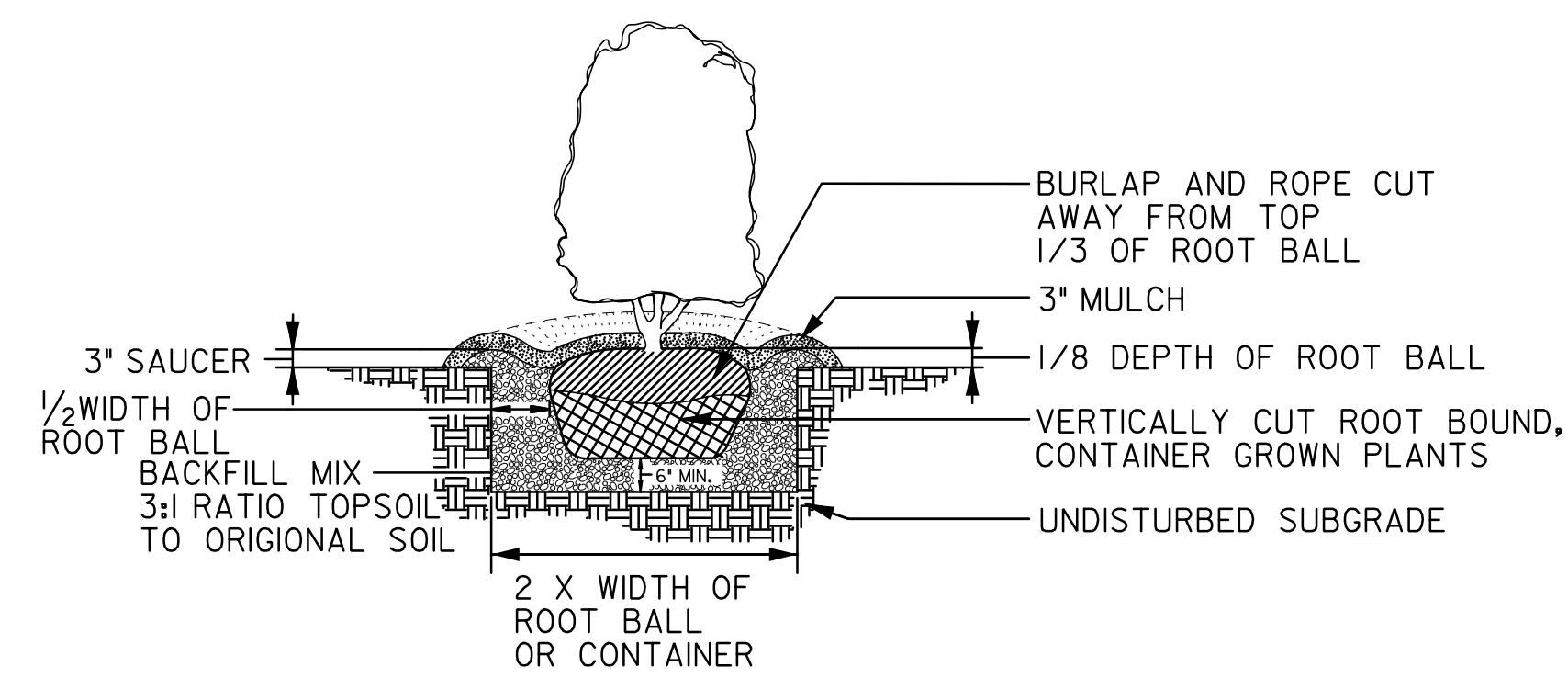
ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

LANDSCAPING DETAIL SHEET

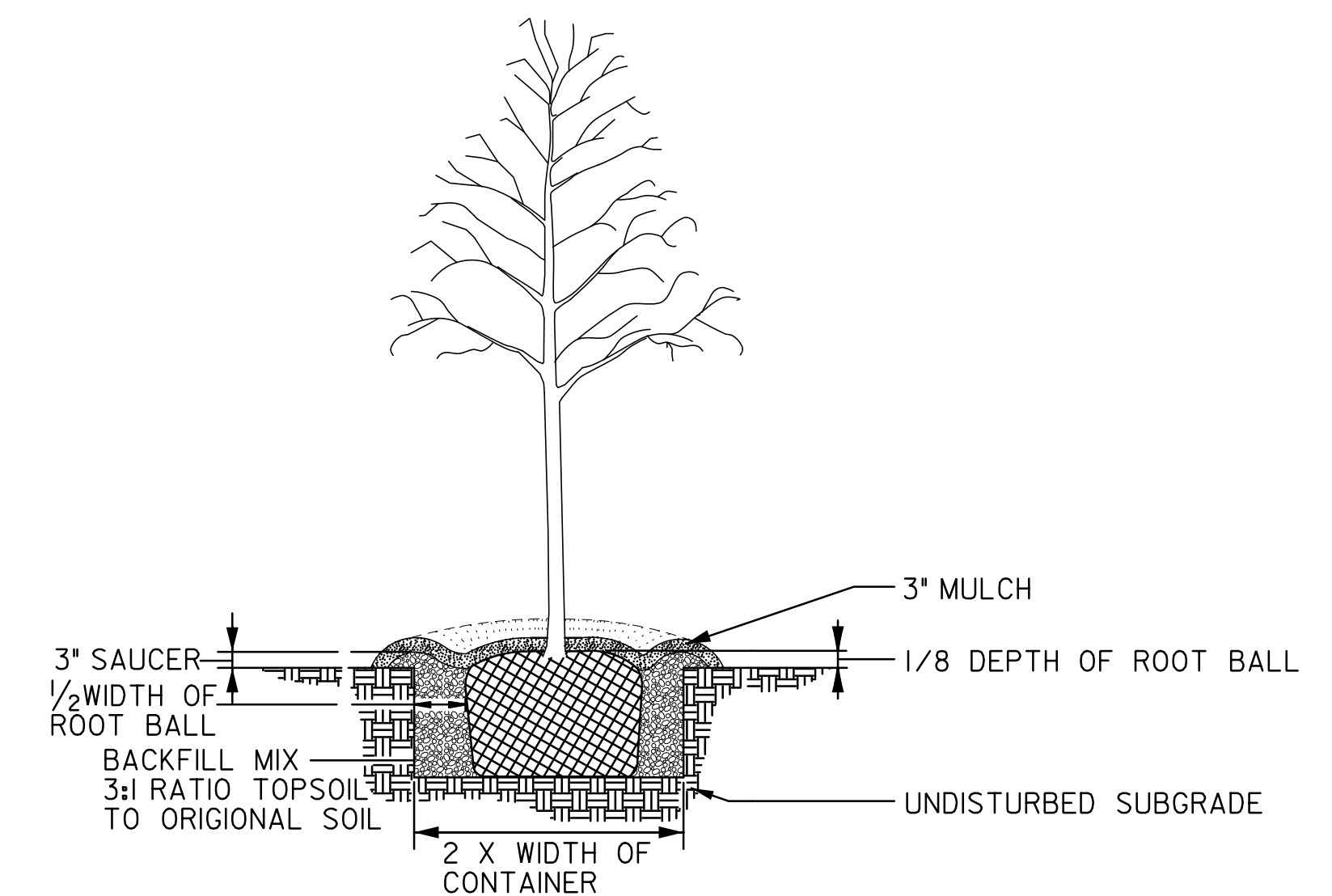
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SHEET: 42 OF 44



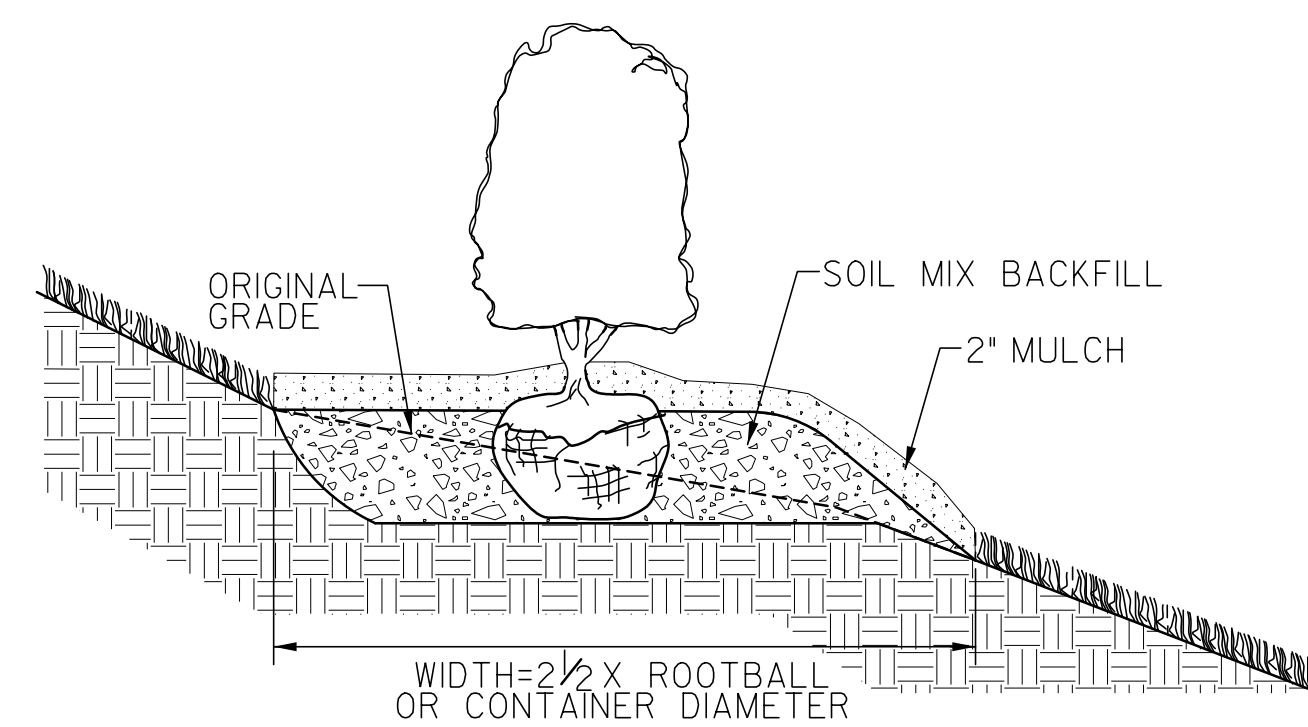
PERENNIAL PLANTING PATTERN
NOT TO SCALE



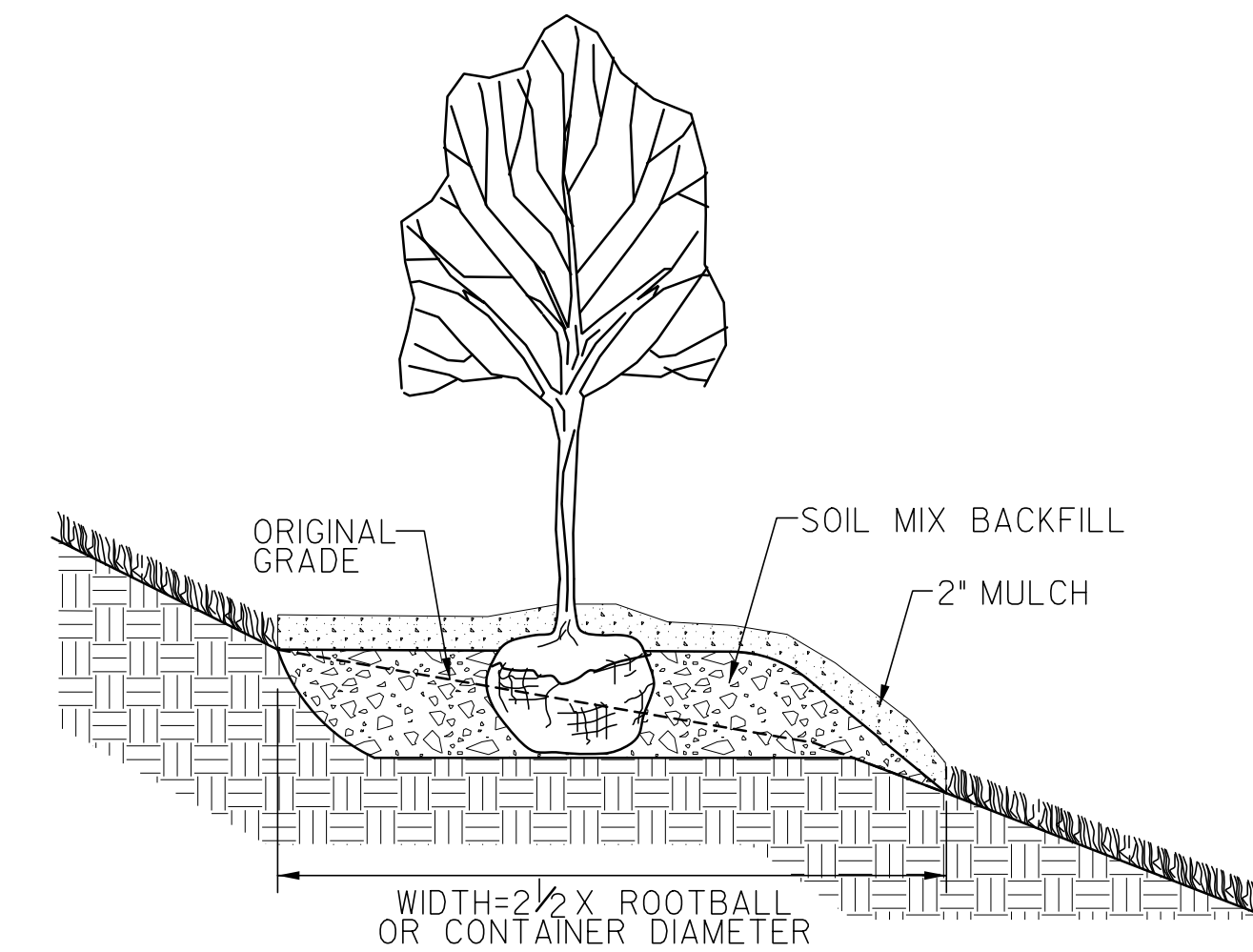
SHRUB PLANTING DETAIL
B & B AND CONTAINER GROWN
NOT TO SCALE



DECIDUOUS TREE PLANTING DETAIL
CONTAINER GROWN
NOT TO SCALE



CONTAINER GROWN AND
B&B PLANTING TECHNIQUES
ON SLOPES
NOT TO SCALE



CONTAINER GROWN AND
B&B PLANTING TECHNIQUES
ON SLOPES
NOT TO SCALE

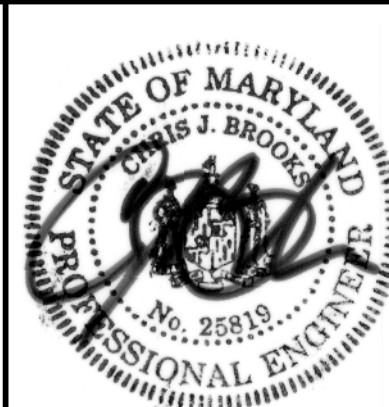
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Mark D. L...
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

6/19/14
DATE

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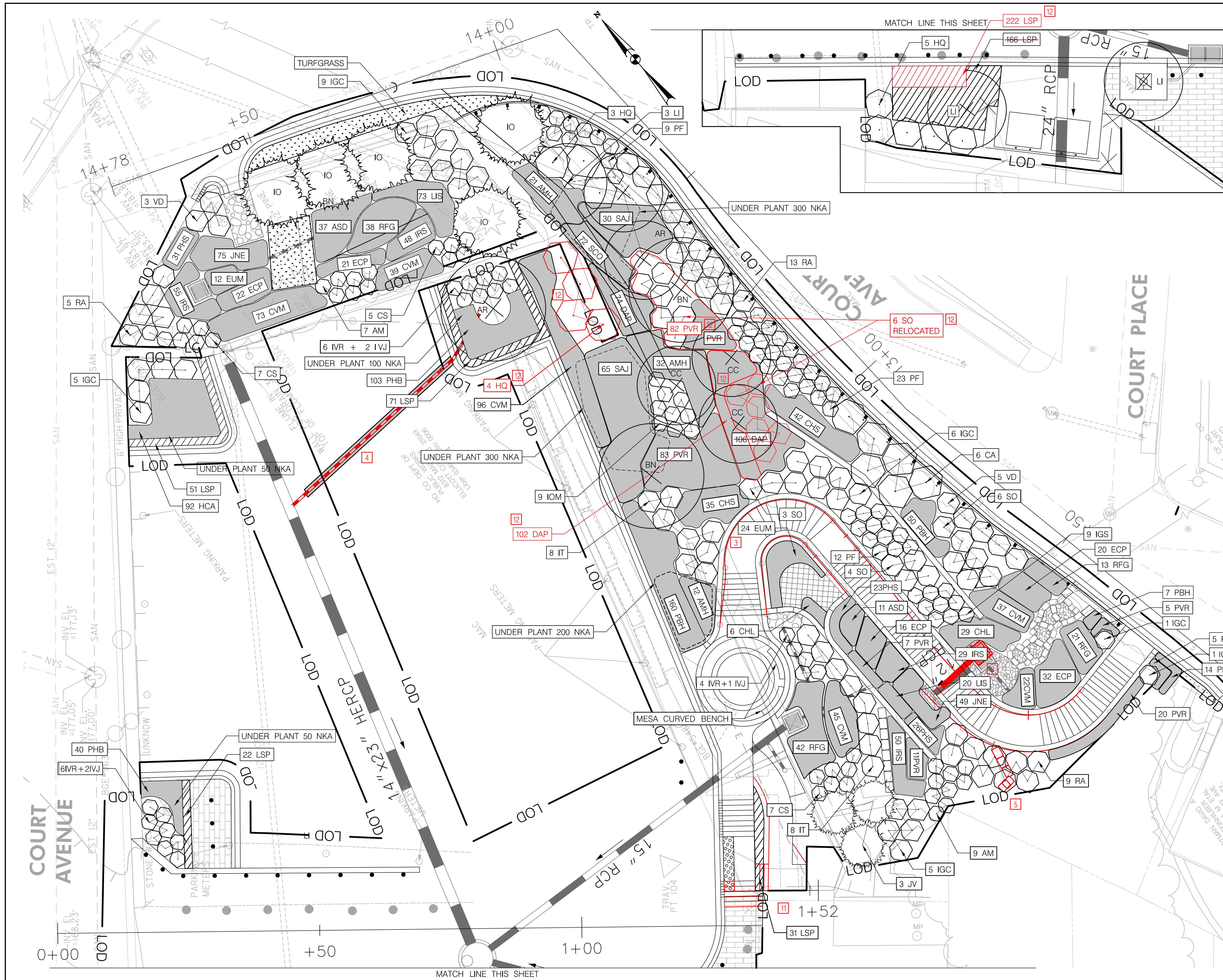


DES: AM					
DRN: MR					
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DATE: 06/18/14	BY	NO.	REVISION	DATE	

ELLCOTT CITY PARKING LOT E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

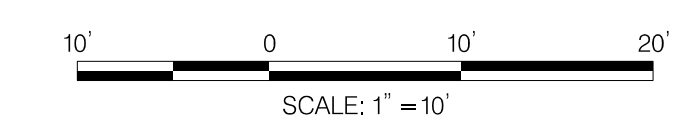
LANDSCAPING DETAIL SHEET

SCALE
AS SHOWN
SHEET
43 OF 44



PLANTING SCHEDULE				
MAJOR DECIDUOUS TREES				
SYMBOL	SPECIES	SPACING	SIZE	QUANTITY
AR	Acer rubrum 'October Glory' / October Glory Red Maple	20' O.C.	2.5" CAL. B&B	1
BN	Betula nigra 'Dura Heat' / Dura Heat River Birch	20' O.C.	2.5" CAL. B&B	2
FLOWERING TREES				
SYMBOL	SPECIES	SPACING	SIZE	QUANTITY
CC	Cercis canadensis 'Oklaoma' / Redbud	15' O.C.	1.5" CAL. B&B	3
LI	Lagerstomia indica 'Acoma' / Acoma Crepe Myrtle	15' O.C.	1.5" CAL. B&B	5
EVERGREEN TREES				
SYMBOL	SPECIES	SPACING	SIZE	QUANTITY
IO	Ilex opaca 'Satyr Hill' / American Holly	15' O.C.	12' HT. B&B	5
JV	Juniperus virginiana 'Hillspire' / Hillspire Red Cedar	8' O.C.	5' HT. B&B	3
SHRUBS				
SYMBOL	SPECIES	SPACING	SIZE	QUANTITY
AM	Aronia melanocarpa 'Inkberry' / Black Chokeberry	3' O.C.	3' HT. CG	16
CA	Clethra alnifolia 'Pink Spire' / Pink Spire Summersweet	6' O.C.	3' HT. CG	6
CS	Cornus sericea 'Arctic Fire' / Arctic Fire Dwarf Red Twig Dogwood	3' O.C.	3' HT. CG	12
HQ	Hydrangea quercifolia 'Snow Queen' / Oakleaf Hydrangea	6' O.C.	3' HT. CG	11
IGC	Ilex glabra 'Compacta' / Compact Inkberry	4' O.C.	3' HT. CG	29
IGS	Ilex glabra 'Shamrock' / Shamrock Inkberry	3' O.C.	3' HT. CG	9
IOM	Ilex opaca 'Maryland Dwarf' / Maryland Dwarf American Holly	3' O.C.	3' HT. CG	9
IVJ	Ilex verticillata 'Jim Dandy' / Jim Dandy Winterberry	3' O.C.	3' HT. CG	5
IVR	Ilex verticillata 'Red Sprite' / Red Sprite Winterberry	3' O.C.	3' HT. CG	16
IT	Itea virginica 'Henry's Garnet' / Virginia Sweetspire	4' O.C.	3' HT. CG	16
PF	Potentilla fruticosa 'Yellow Gem' / Bushy Cinquefoil	3' O.C.	3' HT. CG	32
RA	Rhus aromatica 'Low Grow' / Dwarf Fragrant Sumac	4' O.C.	3' HT. CG	27
SO	Symphoricarpos orbiculatus 'Amethyst' / Coralberry	4' O.C.	3' HT. CG	19
VD	Viburnum dentatum 'Christom' / Arrowwood Viburnum	4' O.C.	3' HT. CG	8
GRASSES				
SYMBOL	SPECIES	SPACING	SIZE	QUANTITY
CHL	Chasmanthium latifolium / River Oats	18" O.C.	1 Qt.	35
JNE	Juncus effusus / Common Rush	12" O.C.	1 Qt.	124
PVR	Panicum virgatum 'Cheyenne Sky' / Dwarf Red Switchgrass	18" O.C.	1 Qt.	131
PERENNIALS				
SYMBOL	SPECIES	SPACING	SIZE	QUANTITY
AMH	Amsonia hubrichtii / Blue Star	24" O.C.	1 Qt.	65
CHS	Chrysanthemum 'Hillside Sheffield Pink' / Hillside Sheffield Pink Mum	18" O.C.	1 Qt.	77
DAP	Dalea purpurea / Purple Prairie Clover	12" O.C.	1 Qt.	180
PHB	Phlox stolonifera 'Blue Ridge' / Creeping Phlox	12" O.C.	1 Qt.	376
SCO	Scutellaria ovata / Heart-Leaved Skullcap	12" O.C.	1 Qt.	72
SAJ	Sedum telphium 'Autumn Joy' / Autumn Joy Stonecrop	24" O.C.	1 Qt.	95
STORMWATER PERENNIALS				
SYMBOL	SPECIES	SPACING	SIZE	QUANTITY
ASD	Aster divaricatus / White Wood Aster	18" O.C.	1 Qt.	48
CVM	Coreopsis verticillata 'Moonbeam' / Moonbeam Tickseed	15" O.C.	1 Qt.	219
ECP	Echinacea purpurea / Purple Coneflower	18" O.C.	1 Qt.	139
EUM	Eupatorium maculatum 'Little Joe' / Dwarf Joe Pye Weed	18" O.C.	1 Qt.	36
IRS	Iris versicolor / Blue Flag Iris	12" O.C.	1 Qt.	182
LIS	Liatris spicata / Blazing Star	12" O.C.	1 Qt.	93
RFG	Rudbeckia fulgida 'Speciosa' / Black Eyed Susan	18" O.C.	1 Qt.	114
PHS	Phlox subulata / Moss Phlox	12" O.C.	1 Qt.	80
GROUND COVER				
SYMBOL	SPECIES	SPACING	SIZE	QUANTITY
HCA	Heuchera americana / Coral Bells	12" O.C.	1 Qt.	92
LSP	Liriope spicata / Creeping Lilyturf	12" O.C.	1 Qt.	249
TURFGRASS SOD				
	Turfgrass			20 SY
BULBS				
SYMBOL	SPECIES	SPACING	SIZE	QUANTITY
NKA	Narcissus 'King Alfred' / King Alfred Daffodil			1000

NOTES:
 1. KING ALFRED DAFFODILS SHALL BE UNDER PLANTED WHERE SHOWN ON PLANS. FIVE (5) BULBS SHALL BE PLACED IN EACH HOLE.
 2. 1 PALETTE OF 2-3' BOULDERS SHALL BE PLACED THROUGHOUT SITE. LANDSCAPE ARCHITECT WILL LOCATE BOULDERS IN THE FIELD AT THE TIME OF INSTALLATION.



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Mark D. ...
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

DATE: 6/10/14

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DES:	AM	KKM	12	LANDSCAPE REVISION	05/15/15
DRN:	MR	DKP	11	REVISED RAMP DESIGN TO INCLUDE STEPS	04/22/15
CHK:	CB	ADM	5	REVISED WALL A AND GRADING	01/26/15
DATE:	06/18/14	ADM	4	INSTALL UNDERDRAIN FOR HH*7	01/16/15
		BSW	3	REVISED ALIGNMENT	12/15/14
		ADM	2	REVISED LOCATION OF INLET I-2	12/08/14
		BY	NO.	REVISION	DATE

ELlicott City Parking Lot E
CAPITAL PROJECT #D-1165
HOWARD COUNTY

LANDSCAPE PLAN

SCALE: 1" = 10'

SHEET: 44 OF 44