

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 THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1800 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- a) THE R-1-1 (STOP) SIGN AND THE STREET NAME SIGN (S/N) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
b) THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC CONTROL DIVISION (410-313-5752) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
c) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUNUTCD).
d) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED SQUARE TUBE POST (1.4 GAUGE) INSCRIBED INTO A 2-1/2" GALVANIZED STEEL PERFORATED SQUARE TUBE SLEEVE (1.2 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- BOUNDARY INFORMATION SHOWN HEREON IS BASED ON A RECORD PLAT RECORDED AS PLAT NO. 9419, FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS AND CARTER INC. DATED AUGUST 2006. FIELD RUN SURVEY WITH TWO FOOT INTERVALS PREPARED BY KCI TECHNOLOGIES, INC. DATED FEBRUARY 2011.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM. HOWARD COUNTY HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON HOWARD COUNTY GEODETIC CONTROL STATIONS.

CONTROL	NORTHING	EASTING	ELEV.
18G1	589985.015	136750.237	407.740
24C2	589648.373	136608.139	354.028

- WATER IS PUBLIC.
- SEWER IS PUBLIC.
- IN ACCORDANCE WITH THE "STORMWATER MANAGEMENT ACT OF 2007", ENVIRONMENTAL SITE DESIGN TECHNIQUES SUCH AS PERMEABLE PAVEMENT AND MICRO-BIORETENTION HAVE BEEN APPLIED TO THE SITE. ADDITIONALLY, A SURFACE SAND FILTER WILL PROVIDE WATER QUALITY TREATMENT AND QUANTITY MANAGEMENT FACILITIES WILL PROVIDE 10 AND 100 YEAR MANAGEMENT FOR THE HUSKON BRANCH WATERSHED ALL STORMWATER MANAGEMENT FACILITIES SHOWN ON THESE PLANS WILL BE PRIVATELY OWNED MAINTAINED.
- EXISTING UTILITIES ARE BASED ON CURRENT HOWARD COUNTY DRAWINGS:
a. EXISTING WATER CONTRACT NO. 14-1156-D, 14-3453-D & 14-3272-D
b. EXISTING SEWER CONTRACT NO. 517-5
- NO 100-YEAR FLOODPLAIN EXISTS ON THIS PROPERTY PER FEMA F.I.R.M. MAP NO. 24-0044-0017B DATED DECEMBER 4, 1986. THE MAP INDICATES THAT THE PROPERTY SHOWN HEREON LIES WITHIN ZONE "C", AREAS OF MINIMAL FLOODING.
- THERE ARE NO WETLANDS ON THIS SITE BASED ON A REPORT FROM ECO-SCIENCE PROFESSIONALS INC. DATED MARCH 15, 2007.
- A TRAFFIC IMPACT ANALYSIS WAS PREPARED BY LEE CUNNINGHAM, LTD. DATED MAY 2003 AND APPROVED WITH 503-16 ON MARCH 15, 2004.
- THIS PLAN IS SUBJECT TO ADMINISTRATIVE ADJUSTMENT AA-11-002 APPROVED MARCH 14, 2011 TO ADJUST THE FOLLOWING ZONING REGULATIONS:
SECTION 11.2.D(4)(i)(ii): TO ALLOW A FRONT SETBACK FROM A COLLECTOR PUBLIC ROW OF 27 FEET.
SECTION 11.2.D(6)(a): TO ALLOW FOR REAR TO REAR SETBACK DISTANCE OF 50 FEET.
THIS PLAN IS ALSO SUBJECT TO ALTERNATIVE COMPLIANCE REQUEST FOR HOWARD COUNTY DESIGN MANUAL VOLUME III SECTION 2.9.B.
- ZONING:
EXISTING USE: R-A-15
PROPOSED USE: VACANT
RESIDENTIAL
AREA OF SITE: 421,102.07 S.F. OR 9.67 ACRES
- FOREST CONSERVATION OBLIGATIONS OF 1.45 AC. OF AFFORESTATION FOR THIS PROJECT WILL BE MET BY A PAYMENT OF \$47,371.50 TO THE HO. CO. FOREST CONSERVATION FUND.
- THIS PLAN IS SUBJECT TO WAIVER PETITION WP-08-023 APPROVED ON NOVEMBER 2, 2007 TO WAIVE SUBDIVISION SECTION 16.134(a)(1), TO NOT BE REQUIRED TO PROVIDE SIDEWALKS ALONG BOTH SIDES OF ALL ROADS. CONDITIONS OF THIS APPROVAL ARE TO ADD SIX ADDITIONAL SMALL SECTIONS OF SIDEWALK AS SHOWN ON "MARKED UP" SHEET 2 OF THE WP-08-023 EXHIBIT PLAN.
- THE REQUIRED LANDSCAPING FOR PARCELS D-1, D-2 AND D-3 SHALL BE PROVIDED BY SDP-11-052.
- FOUR PRIVATE RANGE OF ADDRESS SIGN ASSEMBLIES SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS / OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430 FOR DETAILS AND COST ESTIMATES.
- THIS PLAN IS SUBJECT TO WAIVER PETITION WP-09-093 APPROVED ON JULY 22, 2009 TO WAIVE SUBDIVISION SECTION 16.144(b)(3)(ii), REQUEST TO BE GRANTED A NINE (9) MONTH EXTENSION (BASED ON THE PROPOSED 122 UNITS AND SUBDIVISION SECTION 16.106(a)) FROM THE PLAN PROCESSING EXTENSION PROVISION DATE 06/30/2010 OF "HD 921" TO SUBMIT THE REQUIRED FINAL RESUBDIVISION PLAT PLAN (ON OR BEFORE 03/31/11), SUBJECT TO COMPLIANCE WITH THE FOLLOWING CONDITION OF APPROVAL:
A. THE REQUIRED FINAL PLAT PLAN FOR P-07-019 SHALL BE SUBMITTED FOR REVIEW PROCESSING ON OR BEFORE THE EXTENDED DEADLINE DATE OF 03/31/2011. OR 9-07-019 (AND 5-05-019) SHALL BECOME NULL AND VOID, AND THIS PROJECT SHALL LOOSE ITS TENTATIVE HOUSING UNIT ALLOCATIONS, IN ACCORDANCE WITH SUBDIVISION SECTION 16.144(b)(3)(ii).
- THIS PLAN IS SUBJECT TO WAIVER PETITION WP-11-126 APPROVED ON MARCH 2, 2011 TO WAIVE SUBDIVISION SECTION 16.144(b)(3)(ii), AND GRANTED A 180 DAY EXTENSION FROM PREVIOUS MILESTONE DATE OF 3/30/2011 (PER THE RECONSIDERATION OF WP-09-093 (MARCH 29/2011) TO SUBMIT THE REQUIRED FINAL RESUBDIVISION PLAT PLAN. THE APPROVAL OF THIS WAIVER PETITION IS SUBJECT TO COMPLIANCE WITH THE FOLLOWING CONDITIONS OF APPROVAL:
1. THE REQUIRED FINAL RESUBDIVISION PLAT PLAN SHALL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING BY THE EXTENDED MILESTONE DATE OF 09/26/2011, OR PRELIMINARY PLAN P-07-019, SHALL BECOME NULL AND VOID, ALL PREVIOUS APPROVALS WILL BE RESCINDED, AND THIS PROJECT WILL LOSE ITS TENTATIVE ALLOCATIONS IN ACCORDANCE WITH SUBDIVISION SECTION 16.144.
2. INDICATE THIS WAIVER PETITION FILE NUMBER, SECTION OF THE REGULATIONS, REQUEST, ACTION, CONDITION OF APPROVALS, AND APPROVAL DATE IN A DETAILED NOTE ADDED TO SHEET 1 OF ALL FUTURE PLAN AND PLAT SUBMISSIONS FOR THIS PROJECT.

SITE ANALYSIS DATA CHART

GENERAL SITE DATA	
1.) PRESENT ZONING.....	R-A-15
2.) APPLICABLE DPZ FILE REFERENCES.....	F-90-030, 5-03-016, P-07-019, WP-08-023, WP-09-093, WP-11-126, ECP-11-035, AA-11-002, SDP-11-052.
3.) PROPOSED USE OF SITE.....	RESIDENTIAL
4.) PROPOSED WATER AND SEWER SYSTEMS.....	PUBLIC

AREA TABULATIONS	
1.) TOTAL NUMBER OF BUILDABLE LOTS AND/OR PARCELS TO BE RECORDED.....	3 LOTS
2.) TOTAL NUMBER OF OPEN SPACE LOTS TO BE RECORDED.....	0 LOTS
3.) TOTAL NUMBER OF LOTS TO BE RECORDED.....	3 LOTS
4.) TOTAL AREA OF BUILDABLE LOTS TO BE RECORDED.....	7.7534 AC.
5.) PARCEL D1: GROSS LOT AREA.....	2.9995 AC.
a. 100 YEAR FLOOD PLAIN AREA.....	0.0000 AC.
b. NET LOT AREA.....	2.9995 AC.
6.) PARCEL D2: GROSS LOT AREA.....	1.7376 AC.
a. 100 YEAR FLOOD PLAIN AREA.....	0.0000 AC.
b. NET LOT AREA.....	1.7376 AC.
7.) PARCEL D3: GROSS LOT AREA.....	3.0163 AC.
a. 100 YEAR FLOOD PLAIN AREA.....	0.0000 AC.
b. NET LOT AREA.....	3.0163 AC.
8.) TOTAL AREA OF OPEN SPACE LOTS TO BE RECORDED.....	0.0000 AC.
9.) TOTAL AREA OF RECREATION OPEN SPACE TO BE RECORDED.....	0.0000 AC.
10.) TOTAL AREA OF 100 YEAR FLOODPLAIN TO BE RECORDED.....	0.0000 AC.
11.) TOTAL AREA OF ROADWAYS TO BE RECORDED INCLUDING WIDENING STRIPS.....	1.9137 AC.
12.) TOTAL AREA OF RE-SUBDIVISION TO BE RECORDED.....	9.6672 AC.

APPROVED: DEPARTMENT OF PUBLIC WORKS

Diane Schwab, Acting 11/22/11
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kat Sculley 11/23/11
CHIEF-DIVISION OF LAND DEVELOPMENT

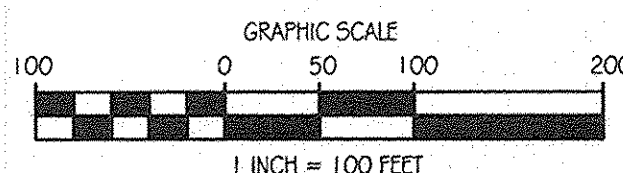
William 11/22/11
CHIEF-DEVELOPMENT ENGINEERING DIVISION

LEGEND

- EX. SANITARY MANHOLE
- EX. STORM DRAIN MANHOLE
- EX. WATER METER
- EX. SIGN
- EX. UTILITY POLE
- EX. WATER VALVE
- EX. FIRE HYDRANT
- EX. CLEANOUT
- EX. SANITARY PIPE
- EX. STORM PIPE
- PROPERTY LINE
- PROP. RIGHT OF WAY
- PROP. SETBACK LINE
- PROP. BUILDING
- PROP. EDGE OF PAVEMENT
- PROP. SIDEWALK
- PROP. STORM DRAIN
- PROP. INLET / GRATE
- PROP. STORM MANHOLE

LOCATION MAP

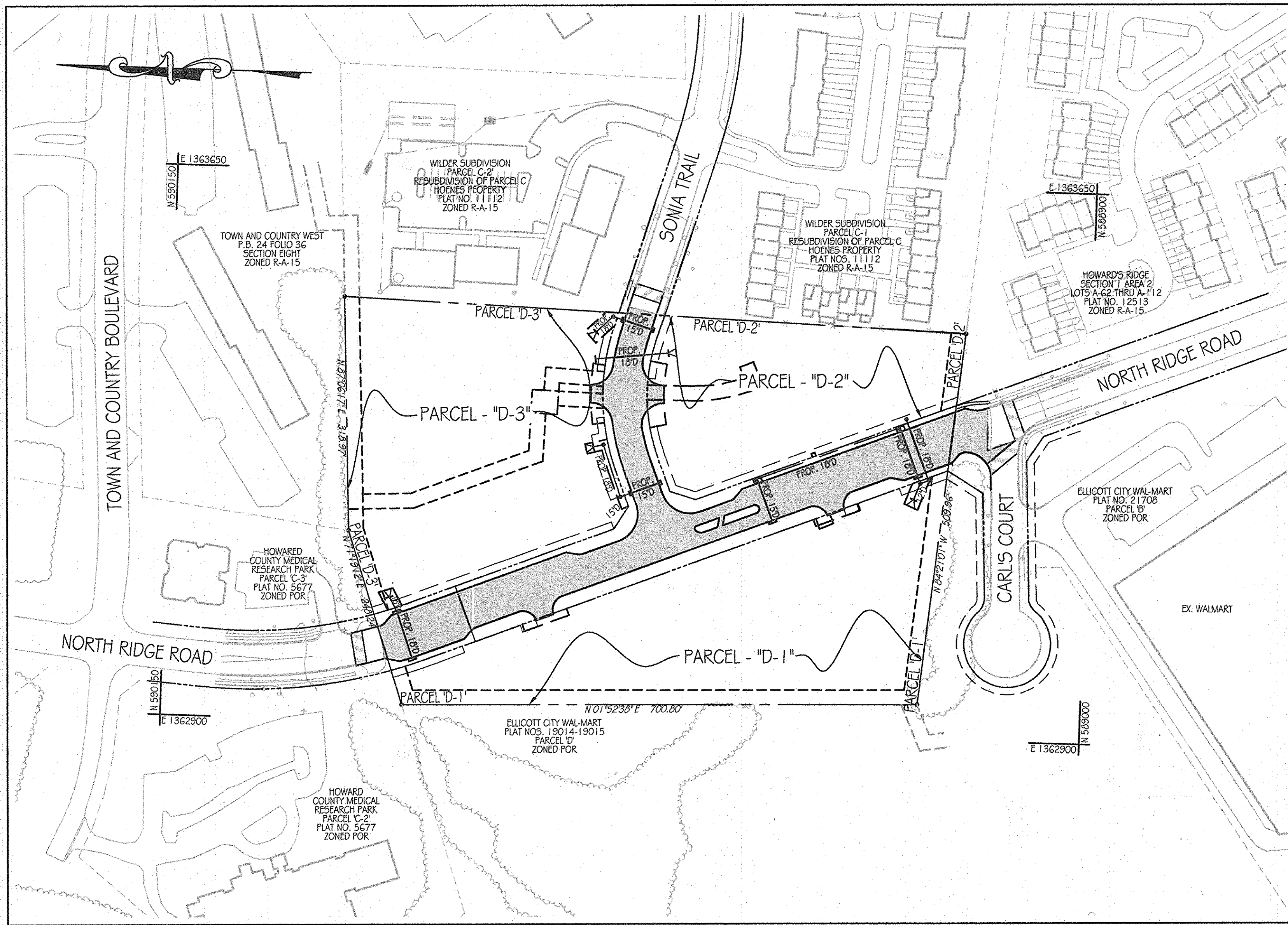
SCALE: 1" = 100'



FINAL CONSTRUCTION PLANS

ORCHARD MEADOWS

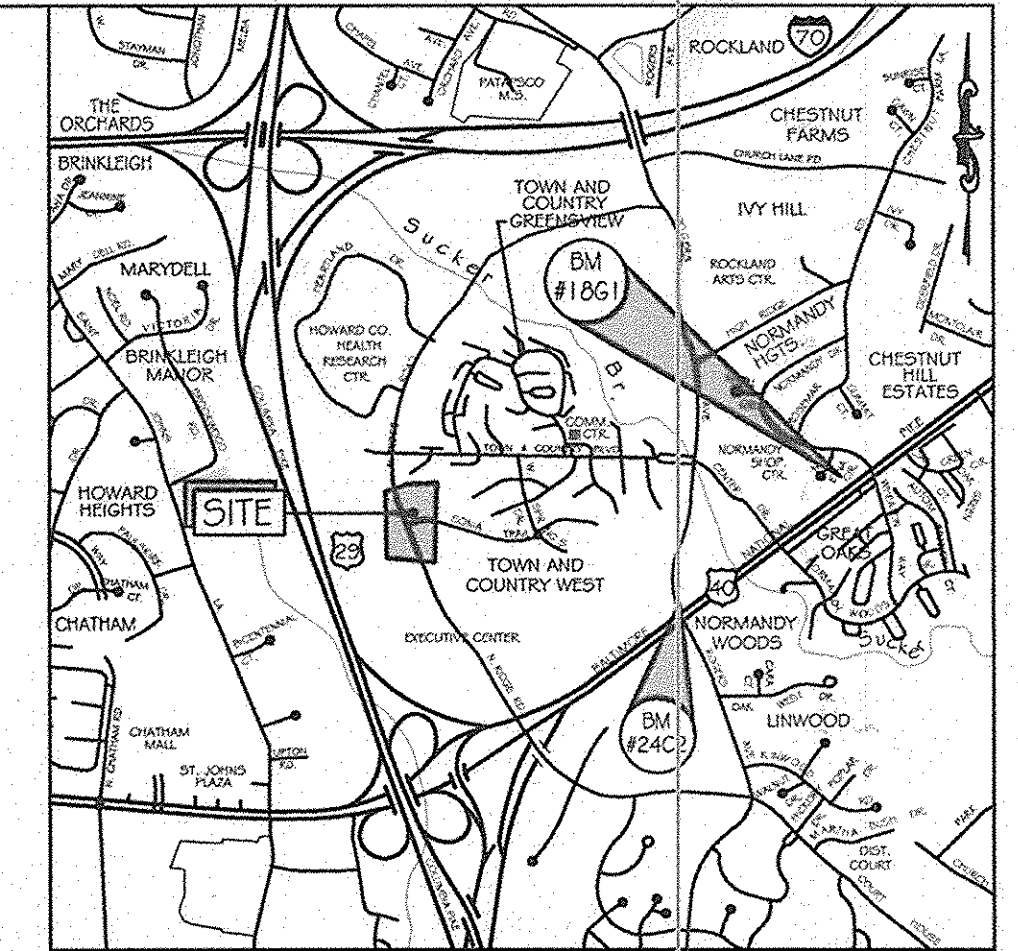
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND



BENCHMARK DATA

THE HORIZONTAL AND VERTICAL DATUMS ARE BASED ON THE FOLLOWING HOWARD COUNTY GEODETIC SURVEY CONTROL POINTS
HORIZONTAL: NAD 83/07 VERTICAL: NAVD 29

CONTROL	NORTHING	EASTING	ELEV.
18G1	589985.015	136750.237	407.740
24C2	589648.373	136608.139	354.028

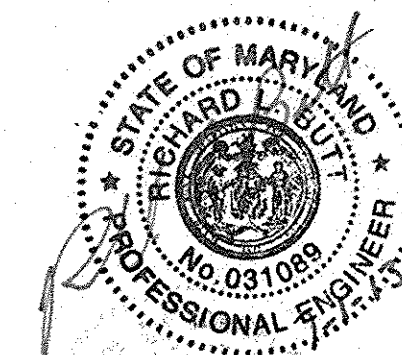


LOCATION MAP

SCALE: 1" = 2000'
ADC MAP COORDINATES: 12-7C

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- FC-20 - STORMWATER MANAGEMENT PLAN - FACILITY #2
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- FC-25 - STORMWATER MANAGEMENT - FACILITY #6 PROFILES
- FC-26 - STORMWATER MANAGEMENT - FACILITY #6 DETAILS
- FC-27 - STORMWATER MANAGEMENT NOTES
- FC-28 - SOIL BORING LOGS
- FC-29 - SOIL BORING LOGS



AS-BUILT CERTIFICATION

I HEREBY CERTIFY BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
Richard G. Galt, P.E. 31089 DATE 7-1-13

DATE	NUMBER	REVISION DESCRIPTIONS

KCI TECHNOLOGIES
8161 Maple Lawn Boulevard
Suite 150
Fusion, MD 20759
Telephone: (910) 92-8085
Fax: (910) 792-7419

STATE OF MARYLAND
PROFESSIONAL ENGINEER
RICHARD G. GALT
No. 091089
11-2-11

ORCHARD MEADOWS PARCEL D-1, D-2 & D-3		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.: 31089 EXPIRATION DATE: 11/12/12
TAX MAP: 17 GRD 23 PARCEL: 711 ZONED: R-A-15 ELECTION DISTRICT: NO. 2 HOWARD COUNTY, MD		
TITLE: COVER SHEET		PROJECT NO.: 2710105
DESIGN BY: B.E.S.	SCALE: 1" = 100'	SHEET 01 OF 29
DRAWN BY: C.T.B.	DATE: 11-02-2011	DRAWING NUMBER
CHECKED BY:	APPROVED:	FC-1

OrchardDevelopment Corporation
CONTRACT PURCHASER/DEVELOPER:
ORCHARD DEVELOPMENT CORPORATION
5032 DORSEY HALL DRIVE
ELLCOTT CITY, MD 21042
(410) 394-2334

OWNER:
WILDER BUILDING CORPORATION
2300 SONIA TRAIL
ELLCOTT CITY, MD 21043
(410) 461-2522

CRP Opportunity Fund, L.P.

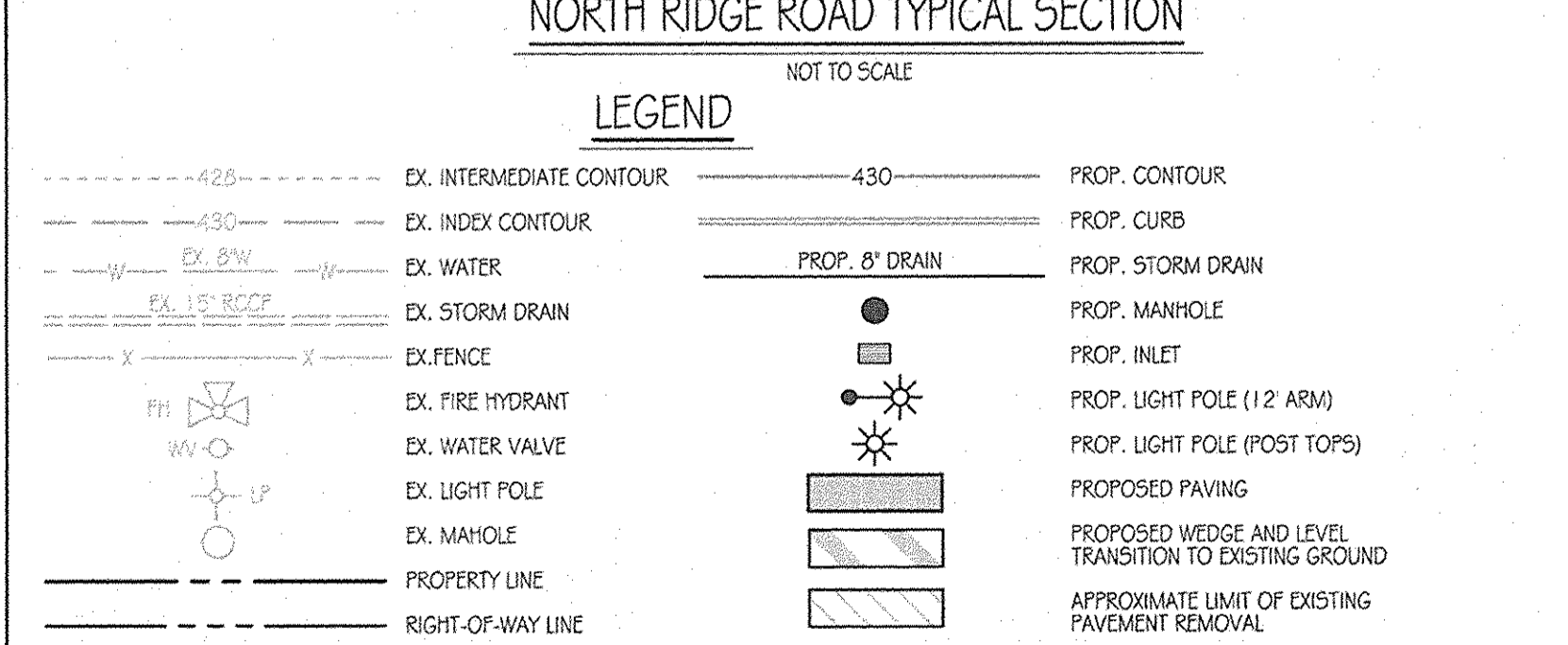
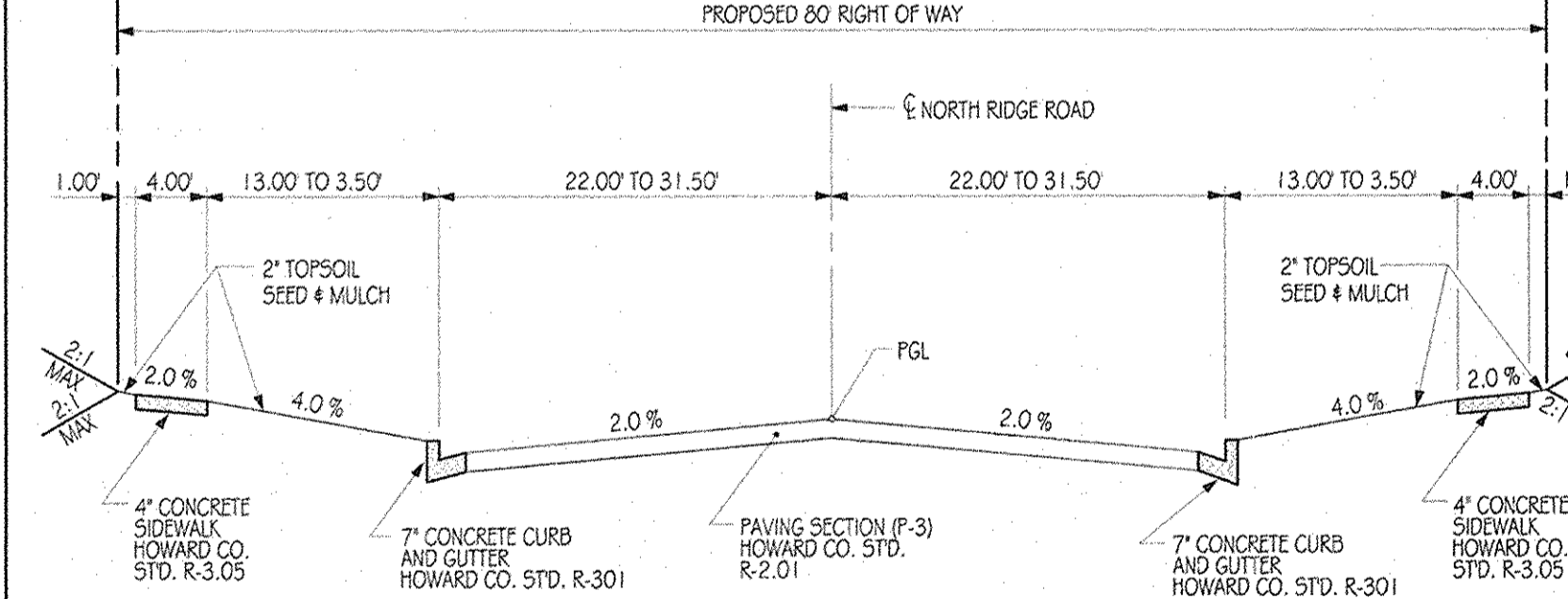
NORTH RIDGE ROAD CURB LINE DATA					
NO.	STATION	NORTHING	EASTING	ELEVATION B.C.	LENGTH
1*					
2	18+23.31	589,048.2291	1,363,350.4068	427.27	22.31' RT
3	18+30.00	589,053.1739	1,363,349.7756	427.29	24.29' RT
4	18+41.30	589,069.4354	1,363,351.8479	427.79	31.50' RT
5*					
6	18+60.92	589,065.7612	1,363,292.8575	428.85	24.66' LT
7	18+74.15	589,077.7316	1,363,287.1485	429.22	25.53' LT
8	18+84.49	589,085.1284	1,363,277.7112	429.50	31.50' LT
9	19+53.49	589,149.2236	1,363,232.2212	432.42	31.50' LT
10	19+66.47	589,164.0480	1,363,234.3751	433.12	24.01' LT
11	19+73.97	589,171.7590	1,363,233.4647	434.47	22.00' LT
12	20+23.64	589,217.9031	1,363,235.0708	435.57	22.00' LT
13	20+87.64	589,277.3536	1,363,211.1322	436.26	22.00' LT
14	21+51.56	589,344.6750	1,363,208.1400	441.24	0.00' LT
15	21+57.56	589,349.2268	1,363,203.3448	441.32	6.00' LT
16	21+57.56	589,352.6703	1,363,211.4916	441.32	6.00' RT
17	21+64.48	589,358.5464	1,363,232.6145	440.99	31.50' RT
18	21+77.46	589,377.6543	1,363,220.8525	441.52	24.01' RT
19	21+84.96	589,384.0470	1,363,216.2086	441.92	22.00' RT
20	21+92.29	589,391.8101	1,363,212.8996	442.63	6.00' RT
21	22+06.22	589,393.8024	1,363,182.1772	442.82	6.00' LT
22	22+06.22	589,399.3126	1,363,183.2976	442.82	6.00' RT
23	22+13.62	589,400.3048	1,363,179.5932	443.01	6.00' LT
24	22+33.17	589,418.4659	1,363,172.3457	443.49	6.00' LT
25	22+29.03	589,424.9864	1,363,199.8991	443.01	22.00' RT
26	22+40.10	589,429.3451	1,363,180.9272	443.65	6.00' RT
27	22+43.56	589,430.3412	1,363,174.0710	443.85	0.00' LT
28	23+47.03	589,534.5995	1,363,156.1849	444.86	22.00' RT
29	23+99.42	589,562.3357	1,363,137.1656	445.19	22.00' RT
30	24+05.92	589,590.0467	1,363,136.2392	445.13	24.01' RT
31	24+10.89	589,604.6716	1,363,138.4091	444.94	31.50' RT
32	24+44.64	589,608.9769	1,363,079.1787	444.83	22.00' LT
33	25+06.64	589,668.4274	1,363,055.4602	444.32	22.00' LT
34	25+23.25	589,692.0078	1,363,030.0267	443.21	22.00' LT

NORTH RIDGE ROAD BASELINE DATA					
NO.	STATION	NORTHING	EASTING	ELEVATION	LENGTH
35	25+76.76	589,750.9607	1,363,028.3984	443.06	24.01' LT
36	25+89.73	589,740.2396	1,363,016.6274	442.62	31.50' LT
37	26+73.04	589,840.0616	1,363,045.1800	440.10	31.57' RT
38	26+80.42	589,826.1679	1,362,983.3092	440.69	31.40' LT
39	26+84.57	589,848.1919	1,363,034.5654	440.64	24.59' RT
40	26+93.25	589,855.5721	1,363,030.0133	440.72	22.13' RT
41	26+95.63	589,843.8832	1,362,986.3522	440.67	22.95' LT
42	26+99.99	589,848.5105	1,362,985.0547	440.60	21.85' LT
43*					
44*					

NORTH RIDGE ROAD BASELINE CURVE DATA					
POINT #	FROM	TO	RADIUS	LENGTH	CHORD BEARING
C-1	26+49.31	27+49.31	650.00	100.00	N 17°19'34" W

PUBLIC STORM DRAIN STRUCTURE SCHEDULE									
NO.	DESCRIPTION	WIDTH	TOP ELEV.	INV. IN	INV. OUT	REMARKS	COORDINATES		
							NORTHING	EASTING	
M-4	STD. 4" MANHOLE		432.43	427.83	426.83	HOWARD CO. STD. DETAIL G-5.12	589,115.7896	1,363,252.5502	
M-5	STD. 4" MANHOLE		433.06	428.53	426.75	SEE DETAIL SHEET FC-16	589,127.0495	1,363,247.9164	
M-6	STD. 4" MANHOLE		434.01	427.76	427.49	HOWARD CO. STD. DETAIL G-5.12	589,148.7135	1,363,234.9962	
DW-3	TYPE C ENDWALL				432.50	HOWARD CO. STD. DETAIL D-5.21	589,135.3478	1,363,225.6147	
DW-7	TYPE C ENDWALL				432.30	HOWARD CO. STD. DETAIL D-5.21	589,843.5575	1,363,070.5892	
I-1	TYPE A-10 INLET	2.5'	432.49	428.26	427.50	HOWARD CO. STD. DETAIL D-4.03	589,131.3841	1,363,239.3353	
I-2	TYPE A-10 INLET	6.0'	432.35	428.91	428.60	HOWARD CO. STD. DETAIL D-4.04	589,154.7556	1,363,317.8209	
I-3	TYPE A-10 INLET	6.0'	440.89	436.01	435.99	HOWARD CO. STD. DETAIL D-4.04	589,346.5280	1,363,241.3916	
I-4	TYPE A-10 INLET	2.5'	441.24	436.71	436.90	HOWARD CO. STD. DETAIL D-4.03	589,326.7175	1,363,191.6946	
I-4	TYPE A-10 INLET	2.5'	441.02	436.71	436.45	HOWARD CO. STD. DETAIL D-4.03	589,831.6098	1,363,048.2358	
I-5	TYPE A-10 INLET	2.5'	441.02		437.10	HOWARD CO. STD. DETAIL D-4.03	589,810.2242	1,362,986.9747	

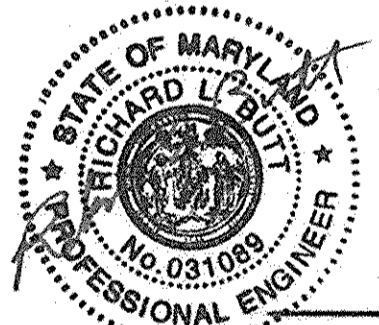
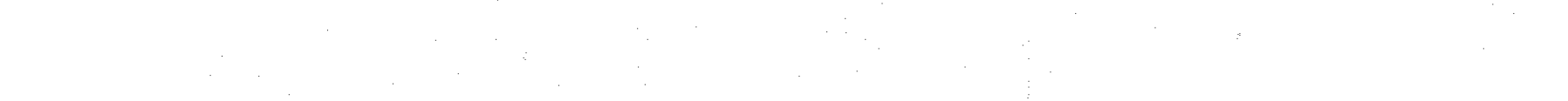
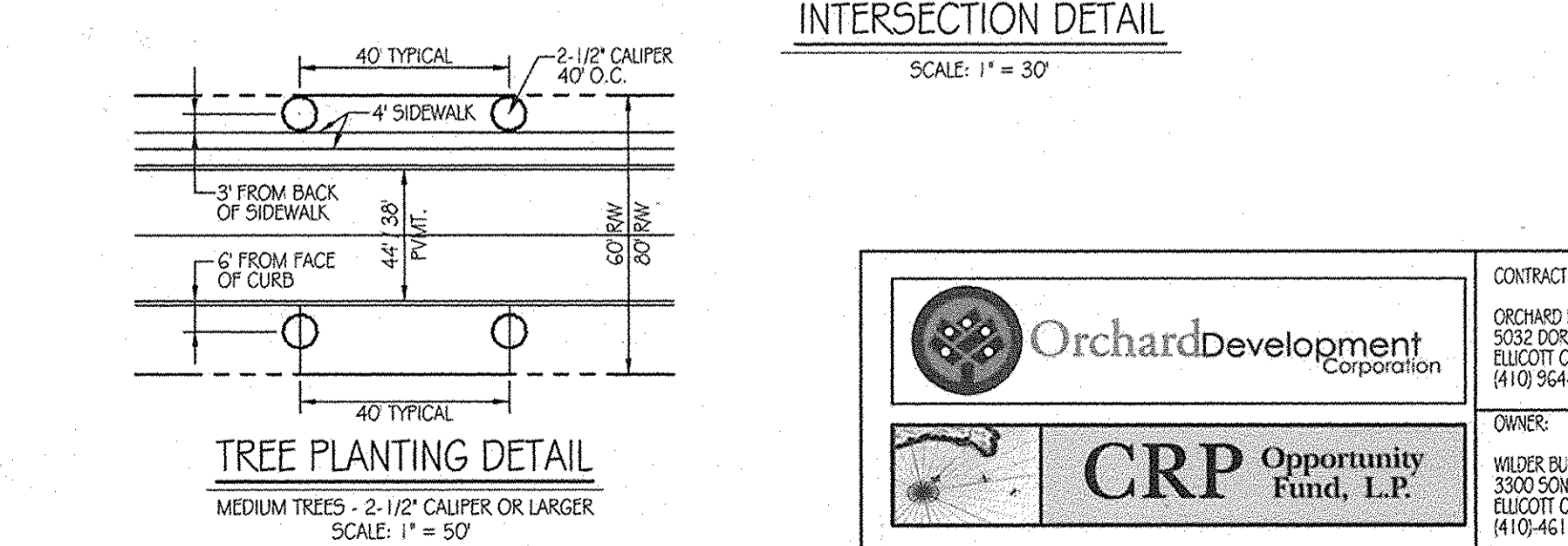
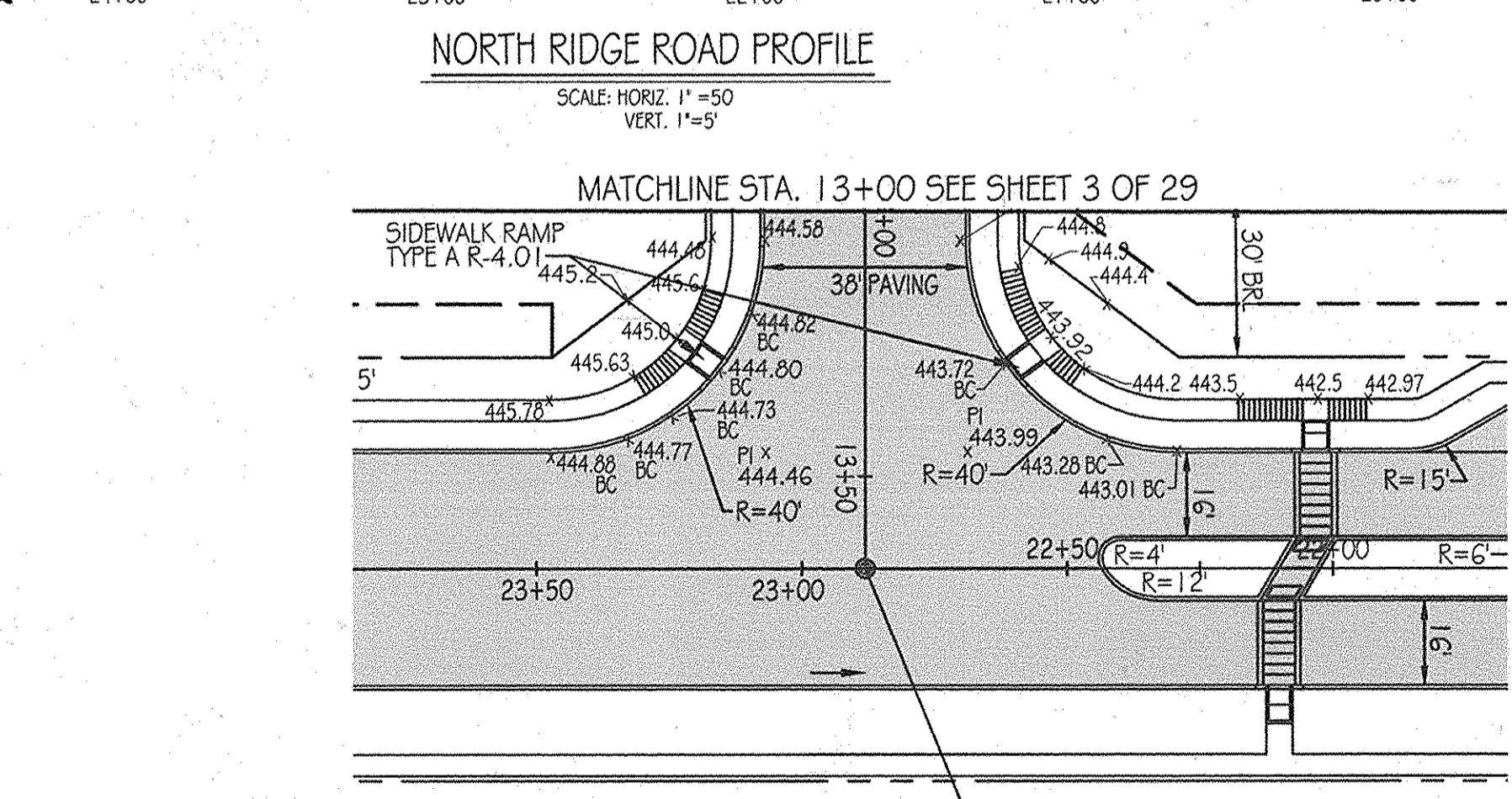
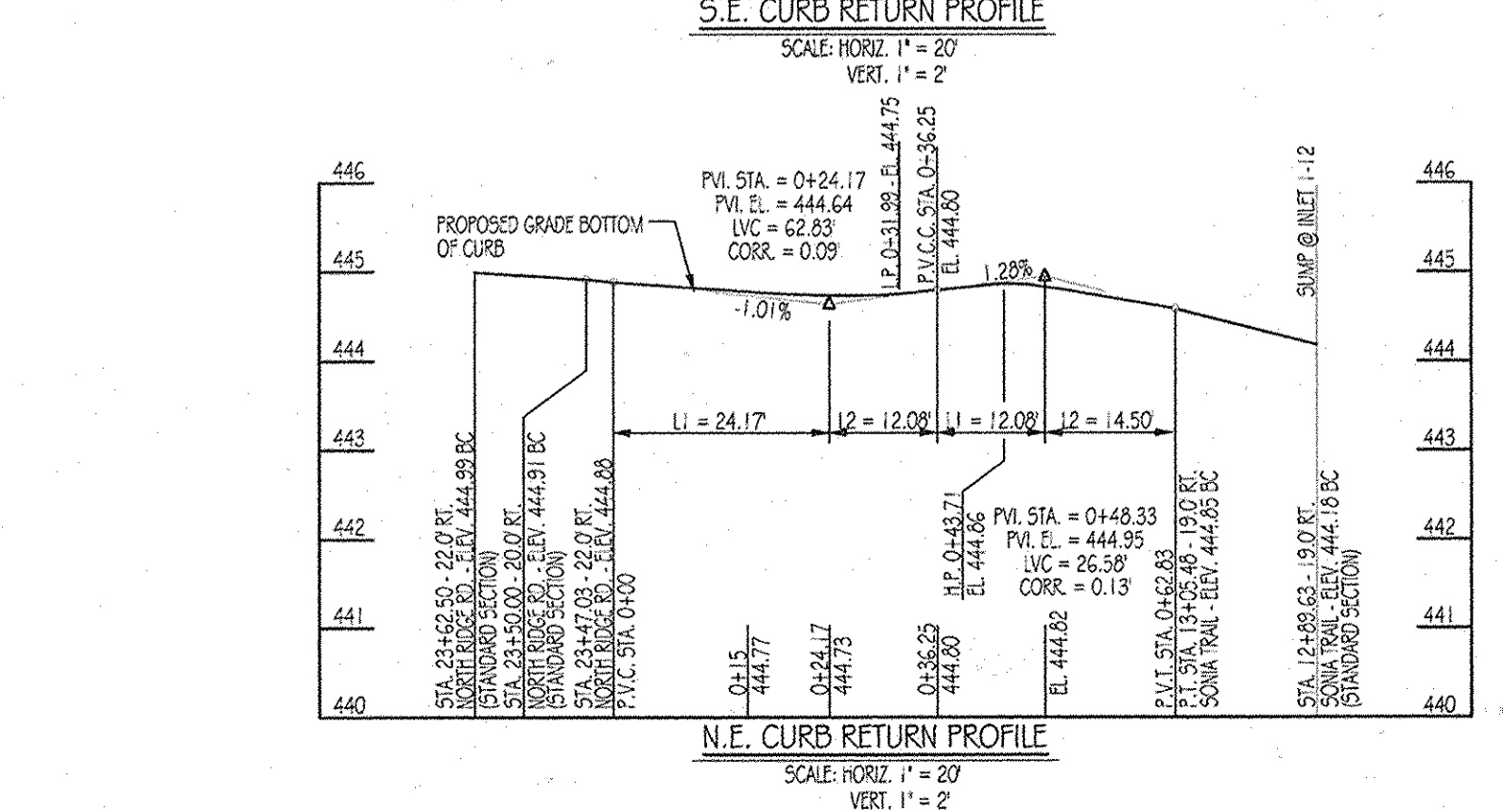
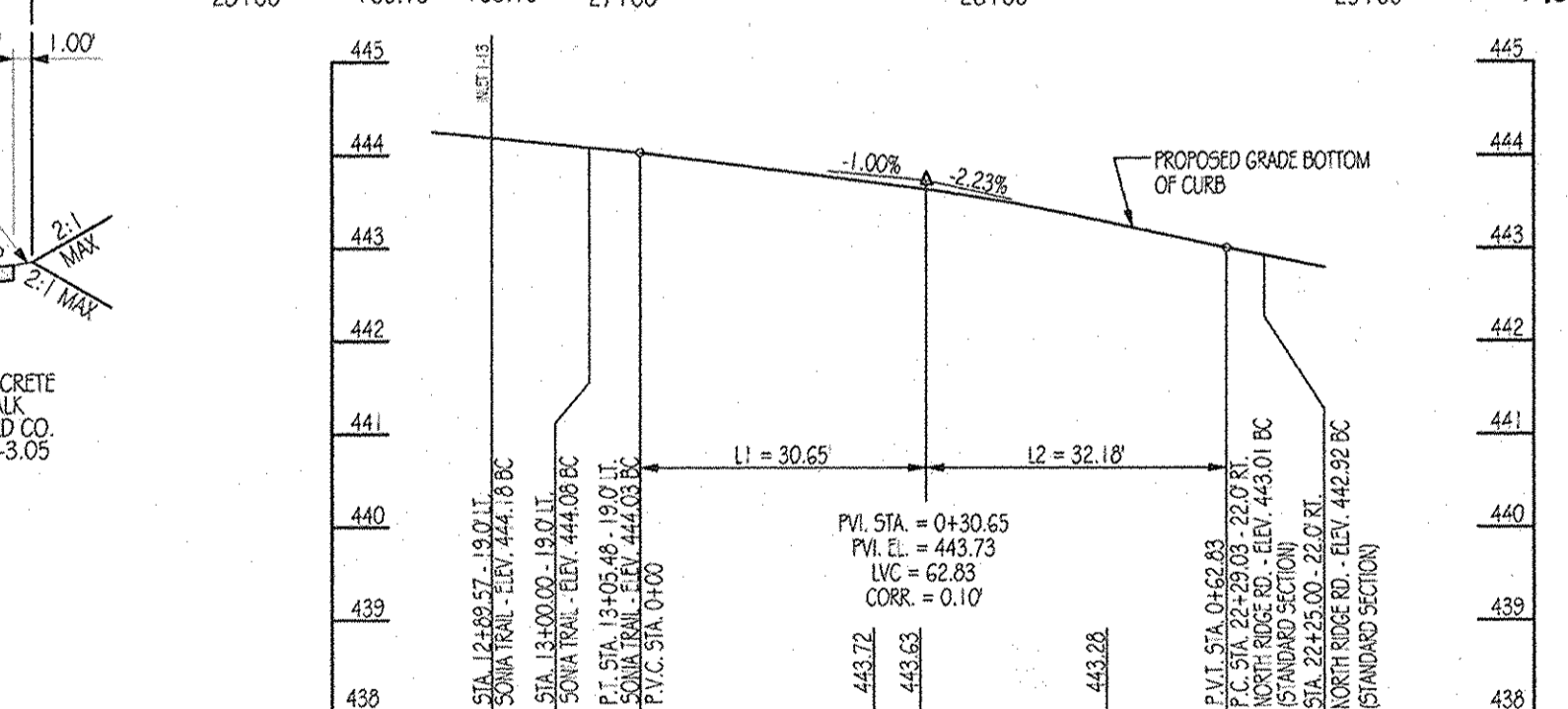
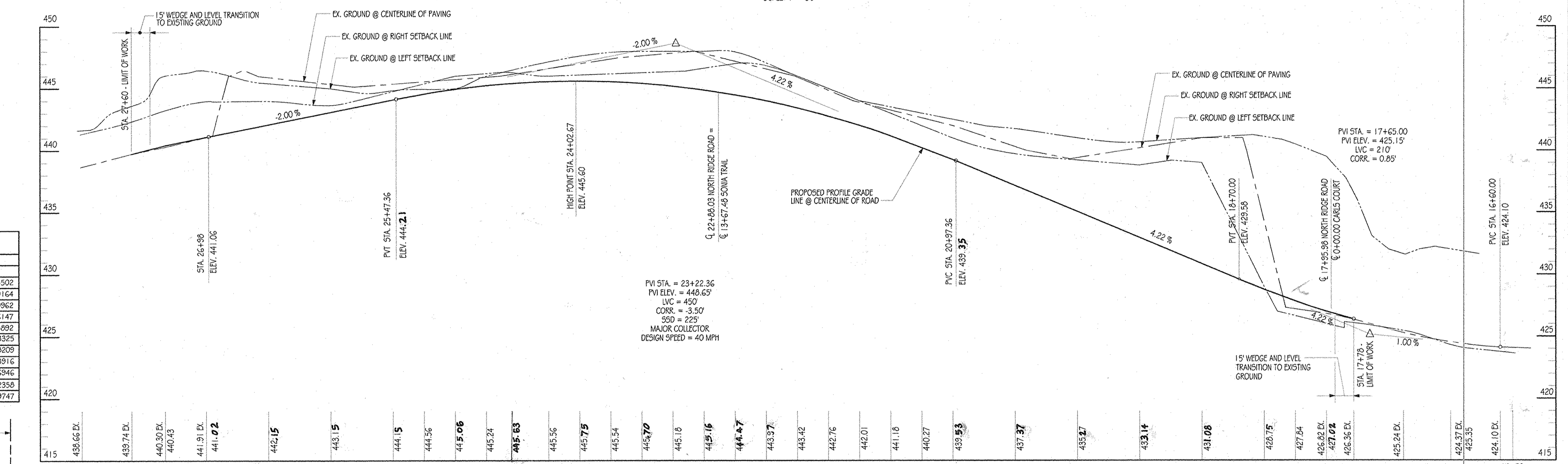
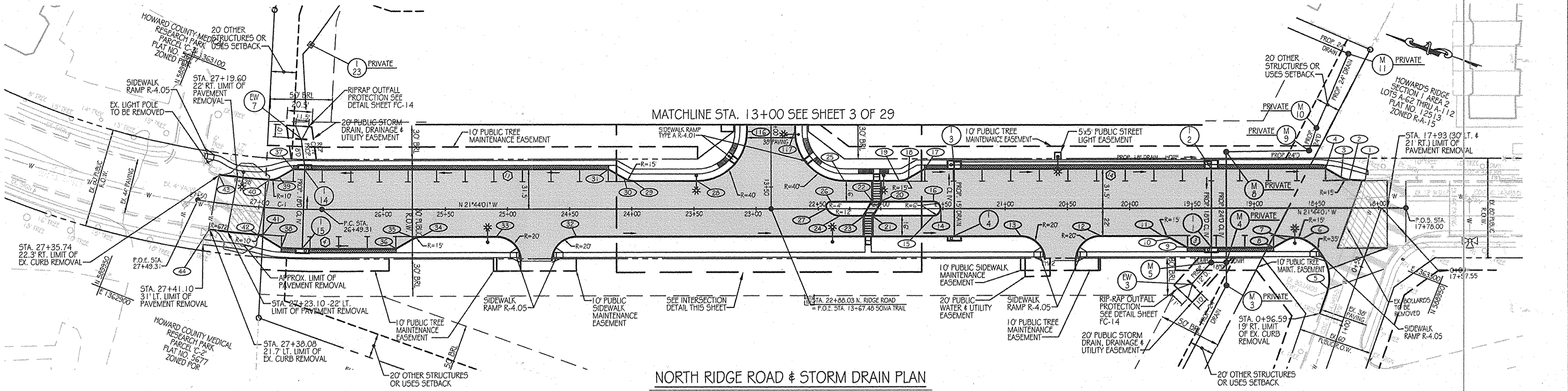
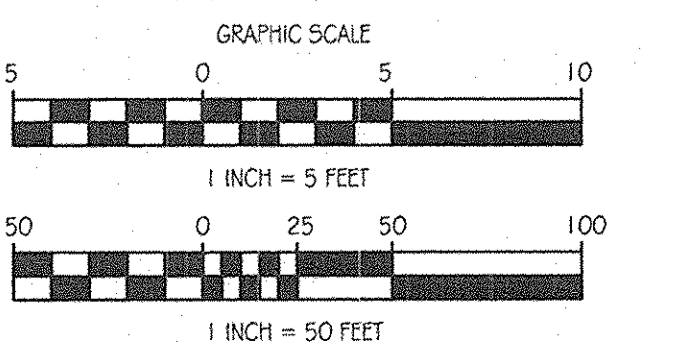
*SEE SHEET FC-5 FOR PRIVATE STORM DRAIN STRUCTURE SCHEDULE



APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Johnson, Acting 11/22/11
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Robert S. Johnson 11/23/11
 CHIEF-DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING
William Johnson 11/23/11
 CHIEF-DEVELOPMENT ENGINEERING DIVISION



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 Richard D. Pez 31089 DATE 1-1-13

DATE	NUMBER	REVISION DESCRIPTIONS

KCI TECHNOLOGIES
 ENGINEERS, PLANNERS, SCIENTISTS, CONSTRUCTION MANAGERS
 861 MARIE LANE, SUITE 150
 FULFORD, MD 20759
 TELEPHONE: (410) 924-8886
 FAX: (410) 924-7419

ORCHARD MEADOWS
 PARCEL D-1, D-2 & D-3
 TAX MAP: 17 GRD: 23 PARCEL: 711
 ZONED: RA-15
 ELECTION DISTRICT: NO. 2
 HOWARD COUNTY, MD

NORTH RIDGE ROAD PLAN, STORM DRAIN AND ROAD PROFILE

DESIGN BY: D.E.S. SCALE: AS SHOWN
 DRAWN BY: C.T.B. DATE: 11-02-2011
 CHECKED BY: APPROVED: _____

PROJECT NO.: 27101105
 SHEET 02 OF 29
 DRAWING NUMBER: FC-2

LEGEND

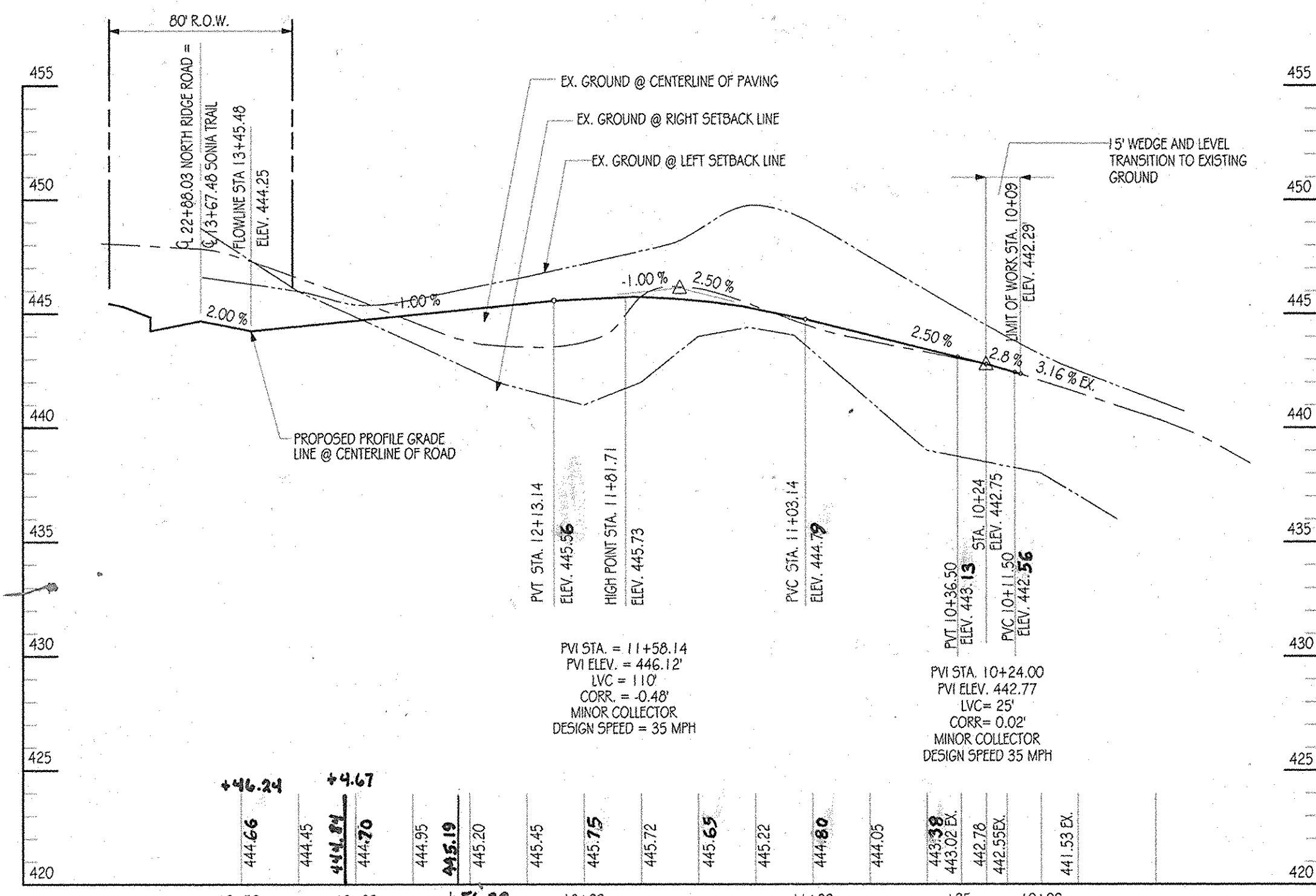
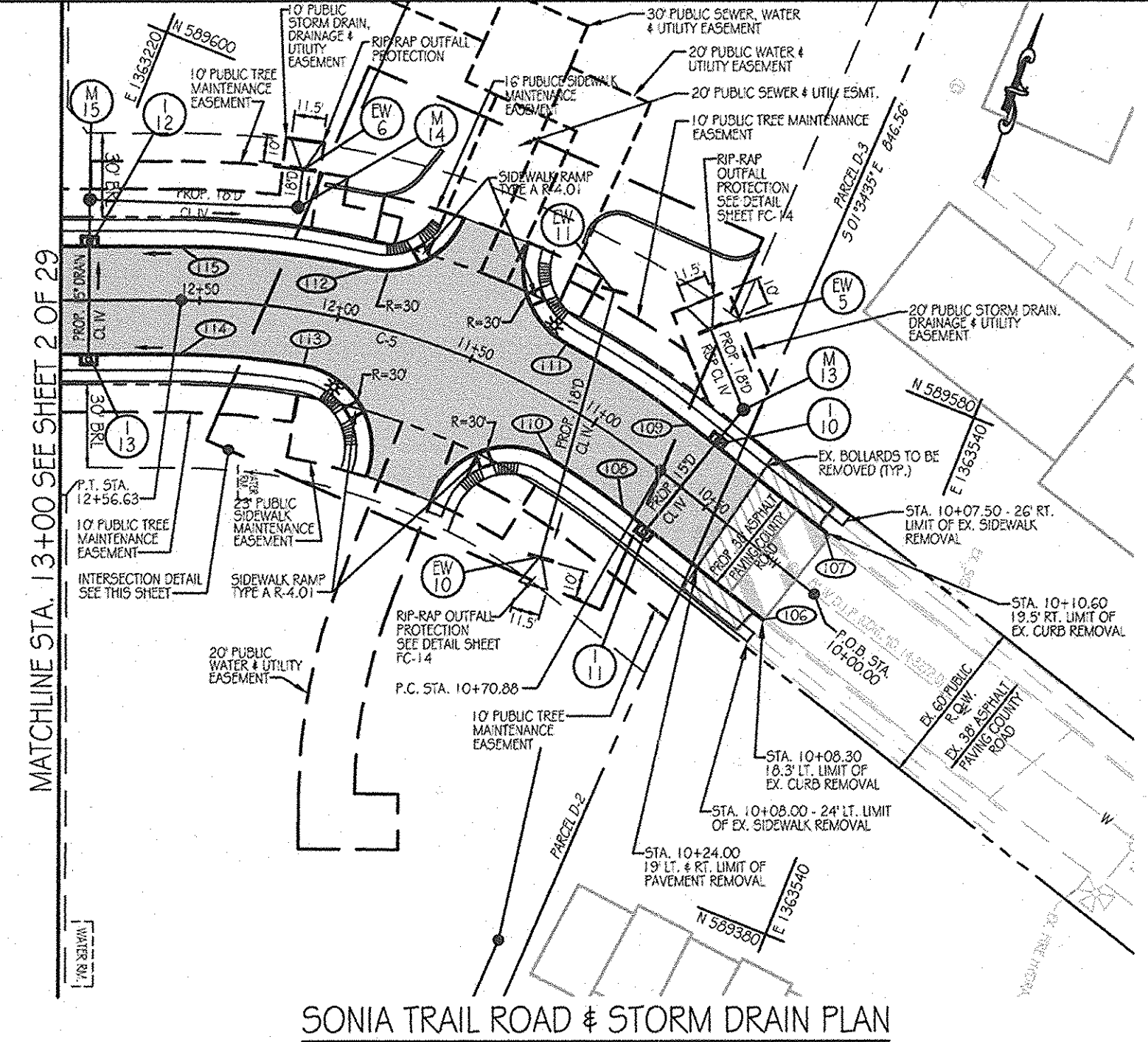
EX. INTERMEDIATE CONTOUR	430	PROP. CONTOUR
EX. INDEX CONTOUR		PROP. CURB
EX. WATER	PROP. 8" DRAIN	PROP. STORM DRAIN
EX. STORM DRAIN		PROP. MANHOLE
EX. SANITARY		PROP. INLET
EX. FENCE		PROP. LIGHT POLE (1 1/2" ARM)
EX. FIRE HYDRANT		PROP. LIGHT POLE (POST TOPS)
EX. WATER VALVE		PROPOSED PAVING
EX. GAS VALVE		PROPOSED PAVING AND LEVEL TRANSITION TO EXISTING GROUND
EX. LIGHT POLE		APPROXIMATE LIMIT OF EXISTING PAVEMENT REMOVAL
EX. MAHOLE		
PROPERTY LINE		
RIGHT-OF-WAY LINE		

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 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 CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- a) THE R-1 (POST) SIGN AND THE STREET NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
b) THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC CONTROL DIVISION (410) 313-5752 PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
c) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)".
d) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (1 1/4 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (1 1/2 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- BOUNDARY INFORMATION SHOWN HEREON IS BASED ON A FIELD PLAT RECORDED AS PLAT NO. 9419, FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS AND CARTER INC. DATED AUGUST 2006, RECORD RUN SURVEY WITH TWO FOOT INTERVALS PREPARED BY KCI TECHNOLOGIES, INC. DATED FEBRUARY 2011.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM. HOWARD COUNTY HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON HOWARD COUNTY GEODETIC CONTROL STATIONS.

CONTROL	NORTHING	EASTING	ELEV.
18G1	589905.015	1367750.237	407.740
24C2	586646.373	1366036.139	354.028
- WATER IS PUBLIC.
- SEWER IS PUBLIC.
- STORMWATER MANAGEMENT WILL BE PROVIDED FOR IN ACCORDANCE WITH THE STORMWATER MANAGEMENT ACT OF 2007.
- EXISTING UTILITIES ARE BASED ON CURRENT HOWARD COUNTY DRAWINGS:
a. EXISTING WATER CONTRACT NO. 14-1153-D, 14-3453-D & 14-3272-D
b. EXISTING SEWER CONTRACT NO. 14-1153-D, 14-3453-D & 14-3272-D
- NO 100-YEAR FLOODPLAIN EXISTS ON THIS PROPERTY PER FEMA F.I.M. MAP NO. 24-0044-0017B DATED DECEMBER 4, 1986. THE MAP INDICATES THAT THE PROPERTY SHOWN HEREON LIES WITHIN ZONE C, AREAS OF MINIMAL FLOODING.
- THERE ARE NO WETLANDS ON THIS SITE BASED ON A REPORT FROM ECO-SCIENCE PROFESSIONALS INC. DATED MARCH 15, 2007.
- A TRAFFIC IMPACT ANALYSIS WAS PREPARED BY LEE CUNNINGHAM, LTD. DATED MAY 2003 AND APPROVED WITH 503-16 ON MARCH 15, 2004.
- THIS PLAN IS SUBJECT TO ADMINISTRATIVE ADJUSTMENT AA-11- TO ADJUST THE FOLLOWING ZONING REGULATIONS: SECTION 112.2(4)(i)(a); TO ALLOW A FRONT SETBACK FROM A COLLECTOR PUBLIC ROW OF 27 FEET. SECTION 112.2(6)(a); TO ALLOW FOR REAR TO REAR SETBACK DISTANCE OF 50 FEET.
THIS PLAN IS ALSO SUBJECT TO ALTERNATIVE COMPLIANCE REQUEST FOR HOWARD COUNTY DESIGN MANUAL VOLUME III SECTION 2.9.B.

ZONING:	R-A-15
EXISTING USE:	VACANT
PROPOSED USE:	APARTMENTS
AREA OF SITE:	421,102.07 S.F. OR 9.67 ACRES



SONIA TRAIL BASELINE DATA

NO.	STATION	NORTHING	EASTING	ELEVATION D.C.	LENGTH
106				MATCH EX. GRADE	
107				MATCH EX. GRADE	
108	10+70.88	589,502.0946	1,363,437.118	444.32	19.00 LT
109	10+70.88	589,538.4406	1,363,446.2016	443.32	19.00 RT
110	11+06.33	589,509.6671	1,363,405.0170	444.20	19.00 LT
111	11+22.25	589,549.4833	1,363,394.4833	444.54	19.00 RT
112	11+93.75	589,547.9090	1,363,318.2713	445.08	19.00 RT
113	12+09.14	589,507.7843	1,363,329.8845	444.99	19.00 LT
114	12+56.63	589,495.1346	1,363,267.8406	444.52	19.00 LT
115	12+56.63	589,530.4334	1,363,253.7636	444.52	19.00 RT
116**	13+10.48	589,510.4020	1,363,203.5186	444.80*	19.00 RT
117**	13+10.48	589,475.1032	1,363,217.5895	444.00	19.00 LT

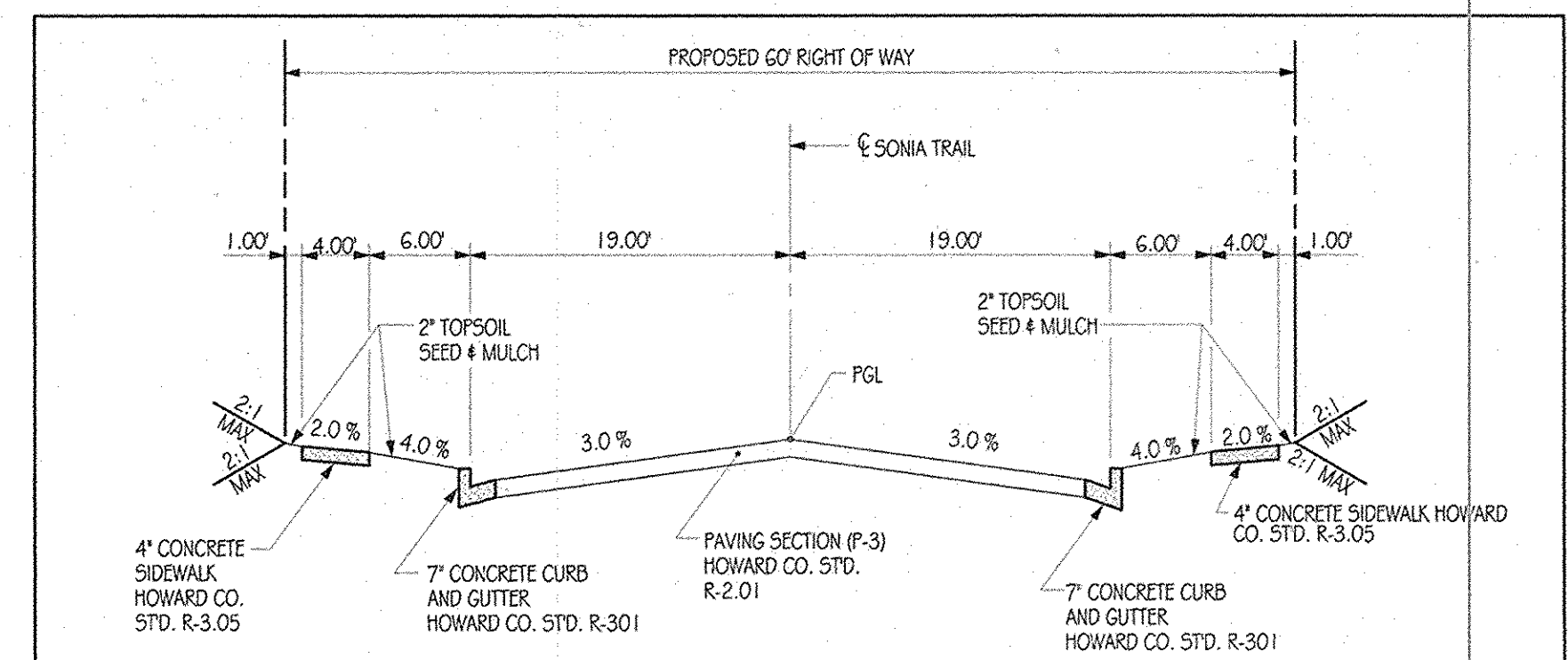
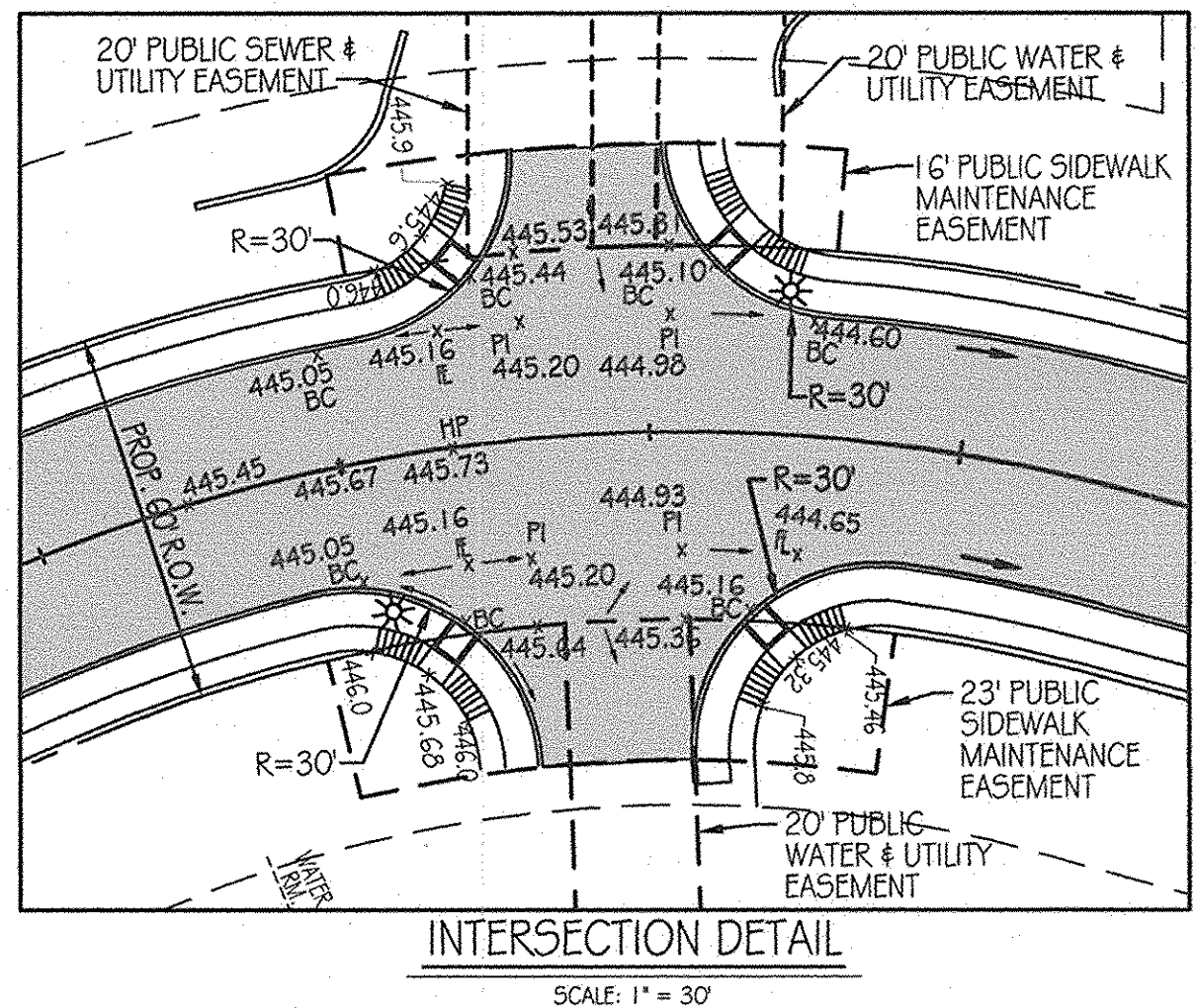
* MODIFIED ELEV. FOR CURB RETURN
** POINTS 116 & 117 ARE SHOWN ON SHEET 2 OF 29 NORTH RIDGE ROAD PLAN.

SONIA TRAIL CURVE DATA

POINT #	FROM	TO	RADIUS	LENGTH	CHORD BEARING
C-5	10+70.88	12+56.63	275.00	185.75'	5 87°3'02" W

PUBLIC DRAIN PIPE SCHEDULE

PIPE SIZE	TYPE	LINEAR FEET OF PIPE
15" DRAIN	RCP CL IV	82.10
18" DRAIN	RCP CL IV	150.60

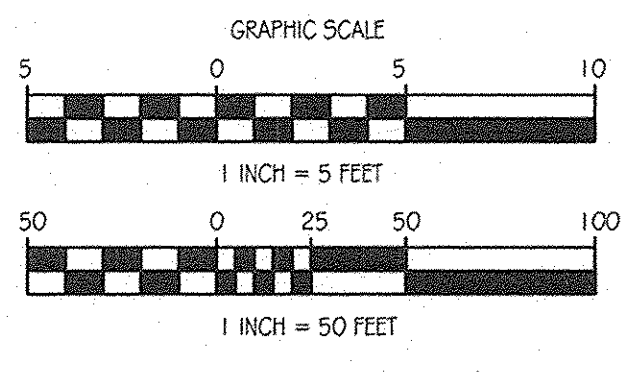
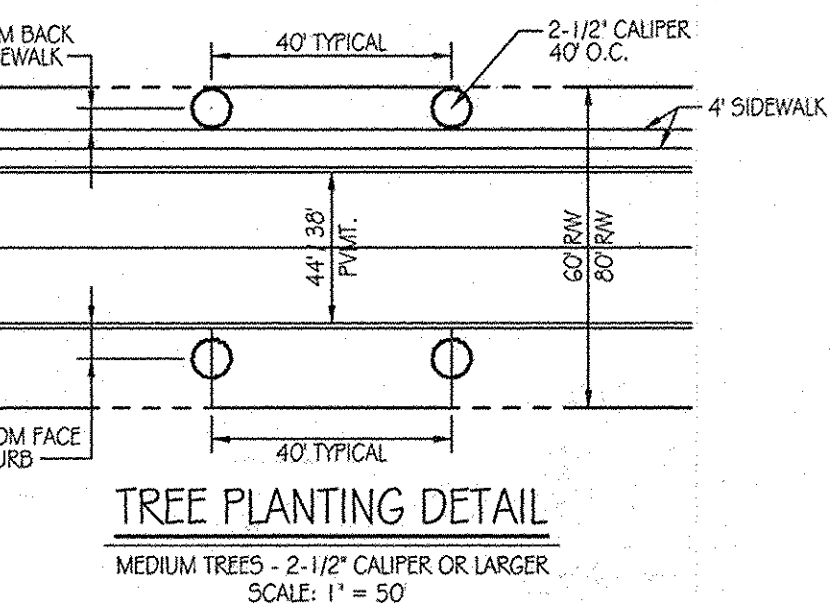
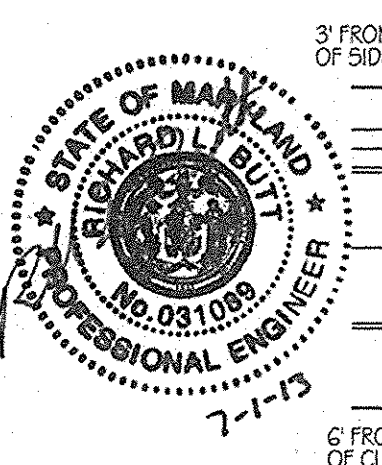


PUBLIC STORM DRAIN STRUCTURE SCHEDULE

NO.	DESCRIPTION	WIDTH	TOP ELEV.	INV. IN	INV. OUT	REMARKS	COORDINATES	
							NORTHING	EASTING
M-13	STD. 4" MANHOLE		443.90	441.03	439.93	HOWARD CO. STD. DETAIL 5-2-22	589,551,751.4	1,363,462,135.8
M-14	STD. 4" MANHOLE		444.59	439.27	439.19	HOWARD CO. STD. DETAIL 5-2-22	589,559,355.8	1,363,286,926.1
M-15	STD. 4" MANHOLE		444.80	439.91	439.81	HOWARD CO. STD. DETAIL 5-2-22	589,534,148.5	1,363,216,708.6
EW-5	TYPE 'C' ENDWALL				438.98	HOWARD CO. STD. DETAIL D-5-21	589,574,529.7	1,363,440,255.0
EW-6	TYPE 'C' ENDWALL				439.22	HOWARD CO. STD. DETAIL D-5-21	589,573,140.2	1,363,283,406.7
EW-10	TYPE 'C' ENDWALL				438.46	HOWARD CO. STD. DETAIL D-5-21	589,474,719.5	1,363,414,712.8
EW-11	TYPE 'C' ENDWALL				439.54	HOWARD CO. STD. DETAIL D-5-21	589,574,350.3	1,363,403,346.0
I-10	TYPE A-5 INLET	2.5'	T.C. 443.82	439.82	439.82	HOWARD CO. STD. DETAIL D-4-01	589,535,713.4	1,363,457,141.3
I-11	TYPE A-5 INLET	2.5'	T.C. 443.68		440.82	HOWARD CO. STD. DETAIL D-4-01	589,499,349.9	1,363,446,131.0
I-12	TYPE A-5 INLET	3.0'	T.C. 445.83	441.08	440.82	HOWARD CO. STD. DETAIL D-4-02	589,518,165.2	1,363,222,993.5
I-13	TYPE A-5 INLET	2.5'	T.C. 444.85		441.81	HOWARD CO. STD. DETAIL D-4-01	589,482,822.4	1,363,236,954.1

* SEE SHEET FC-5 FOR PRIVATE STORM DRAIN STRUCTURE SCHEDULE

AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
Richard G. Pitt, PE # 31081
DATE 7-1-13



Orchard Development Corporation
CRP Opportunity Fund, L.P.

CONTRACT PURCHASER/DEVELOPER:
ORCHARD DEVELOPMENT CORPORATION
5032 DORSEY HALL DRIVE
ELICOTT CITY, MD 21042
(410) 964-2334
OWNER:
WALDER BUILDING CORPORATION
3300 SONIA TRAIL
ELICOTT CITY, MD 21043
(410) 461-2522

DATE	NUMBER	REVISION DESCRIPTIONS

KCI TECHNOLOGIES
8101 MAKE LANE BOULEVARD
SUITE 150
FULTON, MD 20759
TELEPHONE: (410) 92-8086
FAX: (410) 92-7919

ORCHARD MEADOWS
PARCEL D-1, D-2 & D-3
TAX MAP: 17 GRID: 23 PARCEL: 711
ZONED: R-A-15
ELECTION DISTRICT: NO. 2
HOWARD COUNTY, MD

SONIA TRAIL ROAD PLAN, STORM DRAIN AND ROAD PROFILE

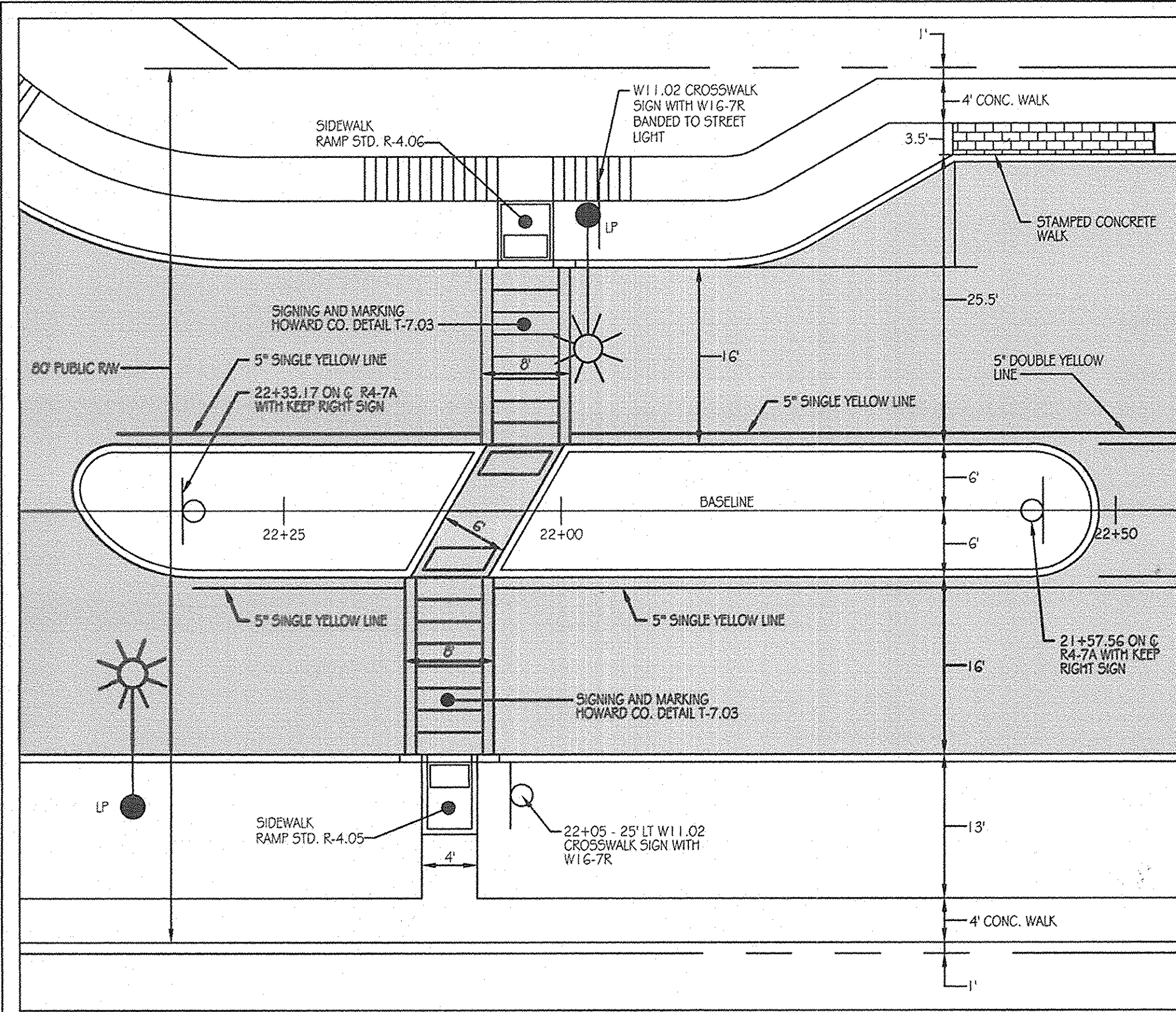
DESIGN BY: B.E.S. SCALE: AS SHOWN
DRAWN BY: C.T.B. DATE: 11-02-2011
CHECKED BY: APPROVED:

PROJECT NO.: 27101105
SHEET 03 OF 29
DRAWING NUMBER
FC-3

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwan, Acting 11/24/11
CHIEF, BUREAU OF HIGHWAYS DATE

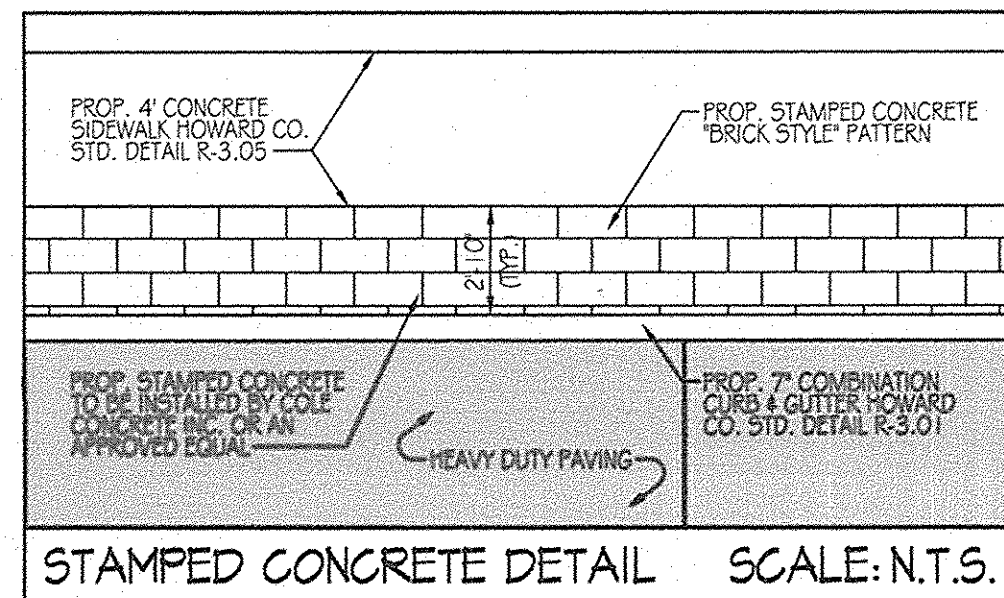
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Patricia L. ... 11/23/11
CHIEF-DIVISION OF LAND DEVELOPMENT DATE

... 11/23/11
CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE

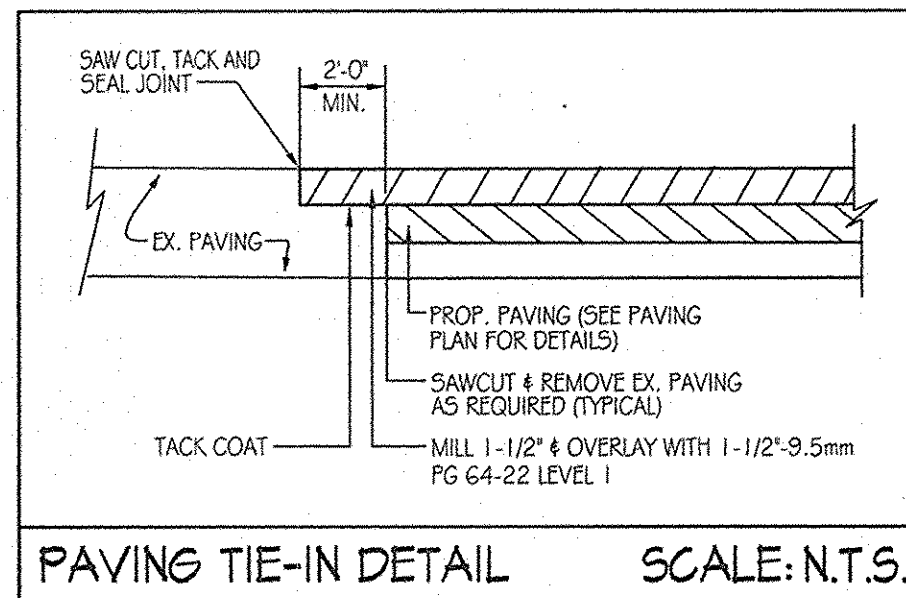


MEDIAN & CROSSWALK DETAIL

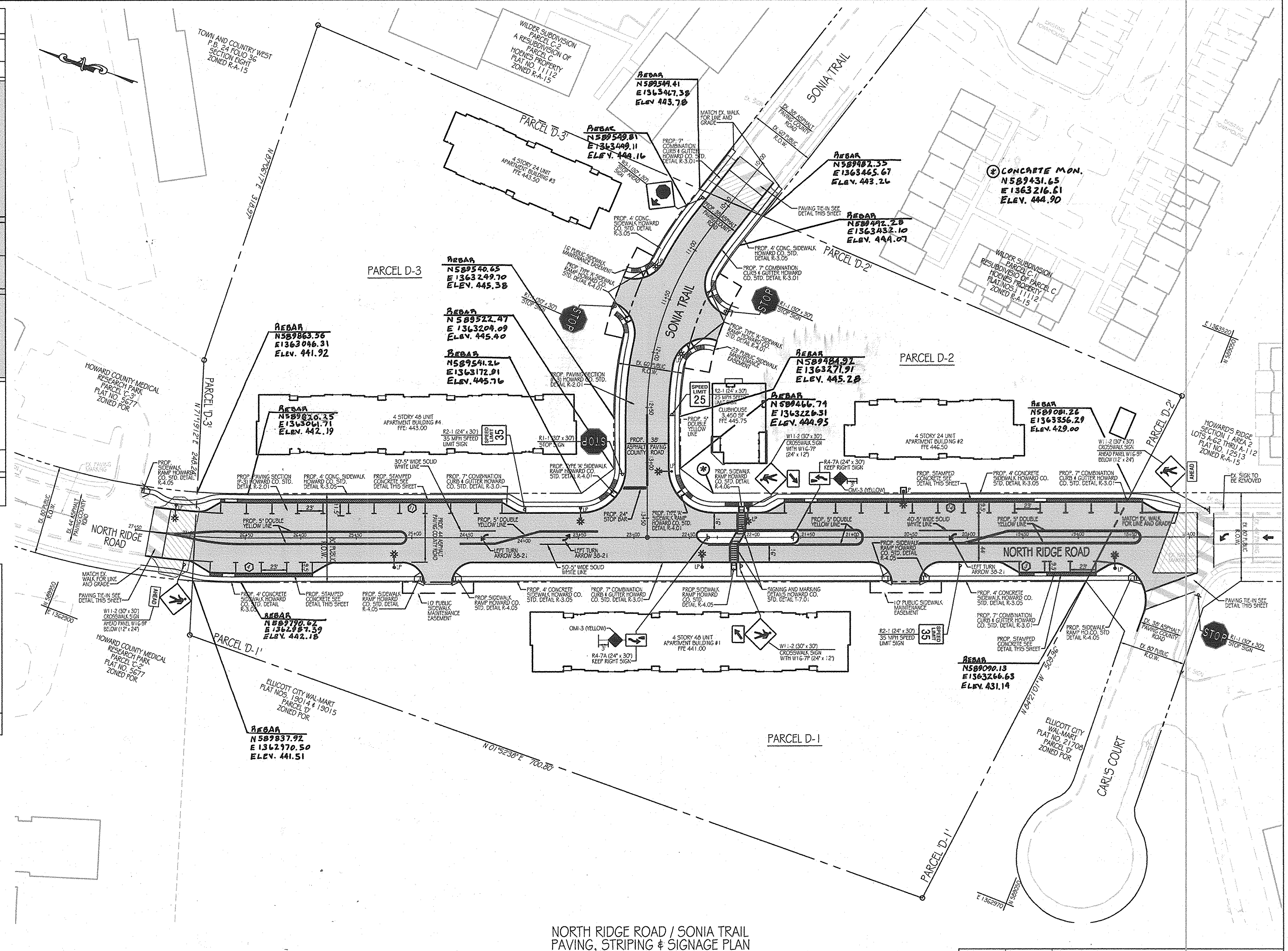
SCALE: 1" = 10'



STAMPED CONCRETE DETAIL SCALE: N.T.S.



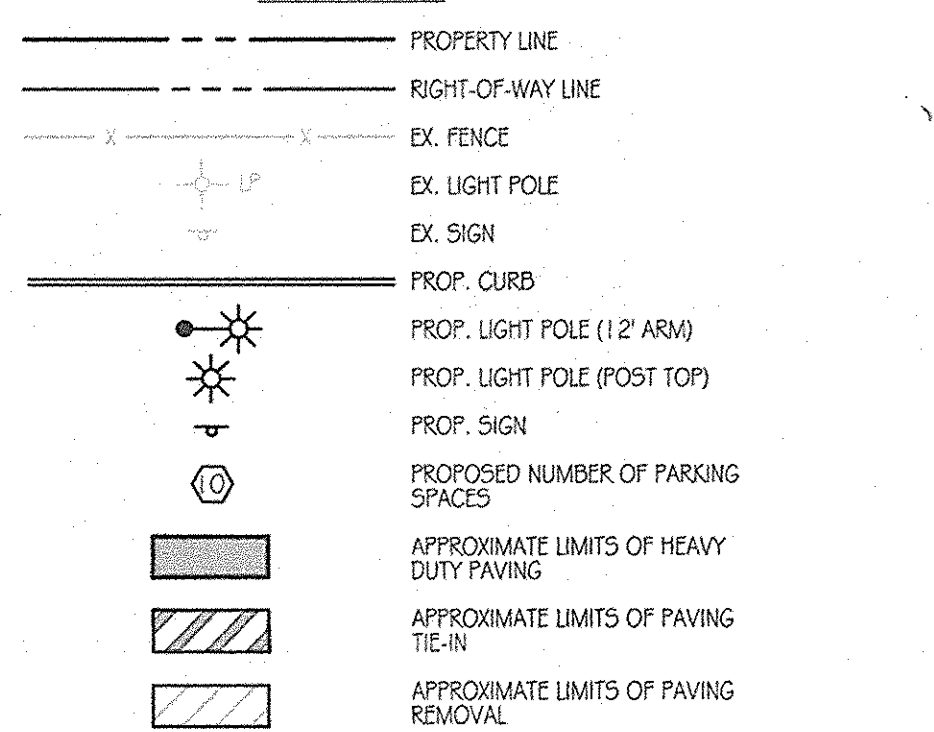
PAVING TIE-IN DETAIL SCALE: N.T.S.



NORTH RIDGE ROAD / SONIA TRAIL PAVING, STRIPING & SIGNAGE PLAN

SCALE: 1" = 50'

LEGEND



STREET LIGHT DATA

Location	Light Pole	Fixture	Mounting	Pole Material
NORTH RIDGE ROAD CL STA. 18+67.33 OS 28.30 LT.	250 WATT HPS VAPOR COBRA	STYLE BRONZE FIXTURE (CUT OFF)	MOUNTED AT 30' ON A BRONZE	FIBERGLASS POLE USING A 1 1/2" ARM.
NORTH RIDGE ROAD CL STA. 20+57.54 OS 41.50 RT.	250 WATT HPS VAPOR COBRA	STYLE BRONZE FIXTURE (CUT OFF)	MOUNTED AT 30' ON A BRONZE	FIBERGLASS POLE USING A 1 1/2" ARM.
NORTH RIDGE ROAD CL STA. 21+57.56 OS 26.70 RT.	250 WATT HPS VAPOR COBRA	STYLE BRONZE FIXTURE (CUT OFF)	MOUNTED AT 30' ON A BRONZE	FIBERGLASS POLE USING A 1 1/2" ARM.
NORTH RIDGE ROAD CL STA. 22+38.71 OS 26.70 LT.	250 WATT HPS VAPOR COBRA	STYLE BRONZE FIXTURE (CUT OFF)	MOUNTED AT 30' ON A BRONZE	FIBERGLASS POLE USING A 1 1/2" ARM.
NORTH RIDGE ROAD CL STA. 25+16.00 OS 26.70 LT.	250 WATT HPS VAPOR COBRA	STYLE BRONZE FIXTURE (CUT OFF)	MOUNTED AT 30' ON A BRONZE	FIBERGLASS POLE USING A 1 1/2" ARM.
NORTH RIDGE ROAD CL STA. 27+15 OS 26.90 RT.	250 WATT HPS VAPOR COBRA	STYLE BRONZE FIXTURE (CUT OFF)	MOUNTED AT 30' ON A BRONZE	FIBERGLASS POLE USING A 1 1/2" ARM.
NORTH RIDGE ROAD CL STA. 27+45 OS 26.00 RT.		REMOVE EXISTING LIGHT POLE		
SONIA TRAIL CL STA. 11+28.13 OS 24.73 RT.	150 WATT HPS VAPOR PREMIER	POST TOPS MOUNTED ON 1 1/4" BLACK FIBERGLASS POLES PLACED 3' BACK OF FACE OF CURB		
SONIA TRAIL CL STA. 11+97.47 OS 25.77 LT.	150 WATT HPS VAPOR PREMIER	POST TOPS MOUNTED ON 1 1/4" BLACK FIBERGLASS POLES PLACED 3' BACK OF FACE OF CURB		
SONIA TRAIL CL STA. 13+05.00 OS 23.70 LT.	250 WATT HPS VAPOR COBRA	STYLE BRONZE FIXTURE (CUT OFF)	MOUNTED AT 30' ON A BRONZE	FIBERGLASS POLE USING A 1 1/2" ARM

GENERAL NOTES

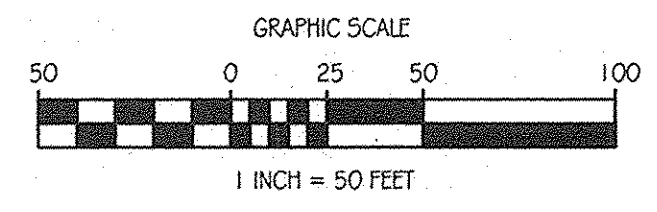
- ALL SIGNS SHALL BE MOUNTED ON A 2" SQUARE GALVANIZED METAL TUBE POSTS (14 GAUGE) INSERTED INTO A 2 1/2" SQUARE GALVANIZED METAL TUBE SLEEVE, 3" LONG (12 GAUGE). A GALVANIZED POLE CAP SHALL BE MOUNTED ON TOP.
- ALL SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS WILL BE FIELD MARKED BY TRAFFIC ENGINEER.
- ALL MARKINGS WILL BE MARKED AND APPROVED BY TRAFFIC ENGINEER, PRIOR TO INSTALLATION.
- SINGLE SIGN ON POST - 5' TO BOTTOM OF SIGN; TWO SIGN/PANELS - 4' TO BOTTOM OF SIGN; HEIGHT MEASURED FROM ROAD SURFACE, EXCEPT WHERE THERE ARE SIDEWALKS.
- FOR REFERENCE REFER TO HOWARD COUNTY DETAILS 1-7.02, 1-7.03, W96-9, AND OM-3C.
- FOUR PRIVATE RANGE OF ADDRESS SIGN ASSEMBLIES SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPER'S OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430 FOR DETAILS AND COST ESTIMATES.

TRAFFIC CONTROL DEVICES

- THE R-1-1 (STOP) SIGNS AND THE STREET NAME SIGN (SNS) ASSEMBLIES FOR THIS DEVELOPMENT INCLUDING PRIVATE SNS ASSEMBLIES AND RANGE OF ADDRESS SNS ASSEMBLIES MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
- THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
- ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- FOUR PRIVATE RANGE OF ADDRESS SIGN ASSEMBLIES SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPER'S OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430 FOR DETAILS AND COST ESTIMATES.



AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
Richard L. Light PE# 31088 DATE 7-1-13



APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwegel, Acting 11/22/11
CHIEF, BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kurt Schuler 11/23/11
CHIEF-DIVISION OF LAND DEVELOPMENT
Michael... 11/23/11
CHIEF-DEVELOPMENT ENGINEERING DIVISION

OrchardDevelopment Corporation
CRP Opportunity Fund, L.P.

DATE	NUMBER	REVISION DESCRIPTIONS

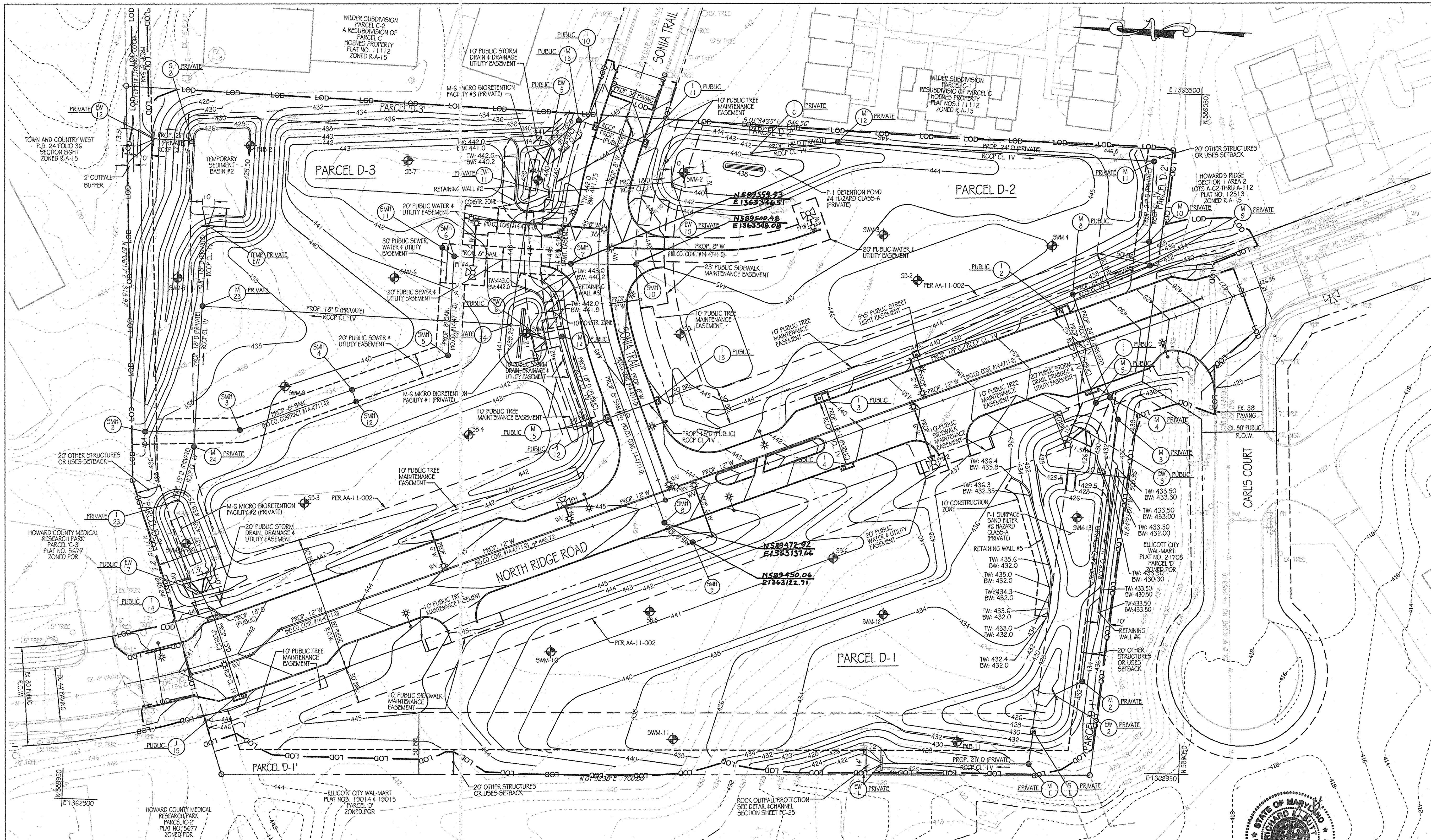
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS
KCI TECHNOLOGIES
8101 Marie Lynn Boulevard Suite 150
Fulton, MD 20759
Telephone: (410) 92-8086
Fax: (410) 792-7419

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.: 31089 EXPIRATION DATE: 11/1/21

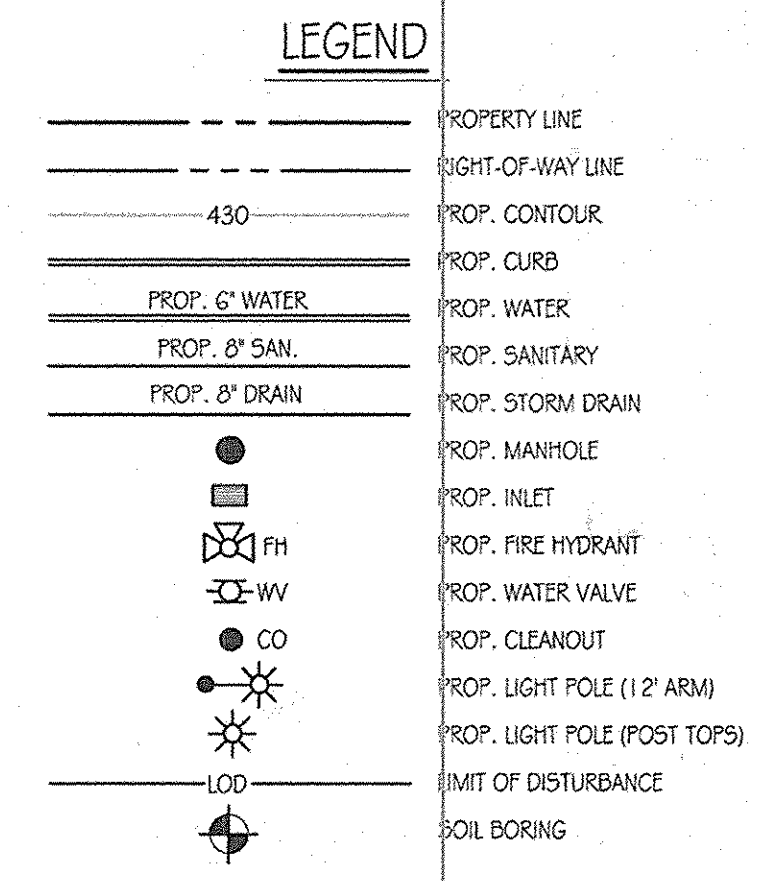
TITLE: NORTH RIDGE ROAD & SONIA TRAIL PAVING, STRIPING AND SIGNAGE PLAN

DESIGN BY: B.E.S. SCALE: 1" = 50'
DRAWN BY: C.T.B. DATE: 11-02-2011
CHECKED BY: APPROVED:

PROJECT NO.: 27101105
SHEET 04 OF 29
DRAWING NUMBER: FC-4



- NOTES:
- FOR MICRO-BIORETENTION FACILITY #1 SEE SHEET FC-19.
 - FOR MICRO-BIORETENTION FACILITY #2 SEE SHEET FC-20.
 - FOR MICRO-BIORETENTION FACILITY #3 SEE SHEET FC-21.
 - FOR DETENTION FACILITY #4 SEE SHEETS FC-22 AND FC-23.
 - FOR SWM FACILITY #6 SEE FC-24, FC-25 FC-26.
 - FOR RIPRAP OUTLET PROTECTION DETAIL SEE SHEET FC-14.
 - FOR SEDIMENT BASIN #2 SEE SHEET FC-8.



PRIVATE DRAIN PIPE SCHEDULE

PIPE SIZE	TYPE	LINEAR FEET OF PIPE
18" DRAIN	RCP CL IV	572.80'
24" DRAIN	RCP CL IV	617.20'

UTILITY NOTES

- CONSTRUCTION OF THE PROPOSED UTILITIES WILL BE IN ACCORDANCE WITH THE HOWARD COUNTY PLUMBING CODE, BY A QUALIFIED CONTRACTOR.
- NO WORK IS TO COMMENCE UNTIL ALL PERMITS HAVE BEEN OBTAINED.
- ALL CONSTRUCTION SHALL FOLLOW LATEST HOWARD COUNTY DEPT. OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS OF CONSTRUCTION OR AS DETAILED IN THE DRAWINGS.
- GRAVEL CRADLE IS REQUIRED UNDER ALL PIPE.
- ALL BACKFILL SHALL BE MECHANICALLY TAMPED.
- THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK SHOWN ON THESE DRAWINGS UNLESS OTHERWISE NOTED.
- ALL CHANNELS IN MANHOLES MUST BE CONSTRUCTED TO CONFORM AS CLOSE AS POSSIBLE TO THE STANDARD CHANNELS CALLED FOR IN THE PROFILES.
- CLEANOUTS LOCATED IN PAVED AREAS SHALL HAVE COUNTERSUNK COVERS.
- ALL SANITARY SEWER CONSTRUCTION SHALL BE DONE UNDER A PERMIT AND PLAN ISSUED BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, WATER AND WASTEWATER ENGINEERING DIVISION.
- FOR UTILITY WORK OUTSIDE THE LOD SHOWN ON THIS PLAN, CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWN SLOPE) THE TRENCH.
- PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
- SEE SHEETS C-9, C-10, G-11, C-12 & C-13 FOR UTILITY PROFILES.
- CONTRACTOR TO COORDINATE WITH VERIZON FOR THE REMOVAL AND RELOCATION OF EXISTING TELEPHONE LINE.
- ALL WATER LINES SHALL HAVE A MINIMUM 3'-0" COVER.

MASS GRADING PLAN
SCALE: 1" = 40'

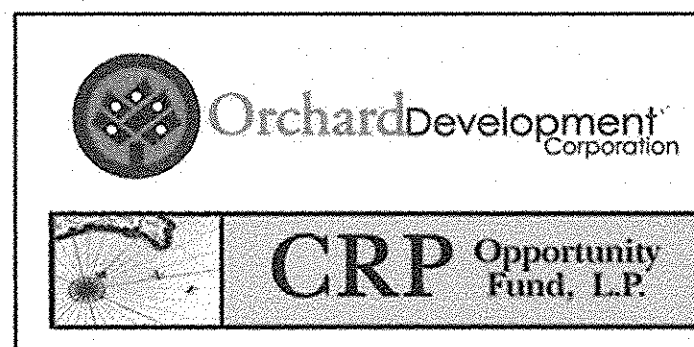
PRIVATE STORM DRAIN STRUCTURE SCHEDULE

NO.	DESCRIPTION	TOP ELEV.	INV. IN	INV. OUT	REMARKS	COORDINATES	
						NORTHING	EASTING
M-1	STD 4 MANHOLE	430.00	422.80	422.70	HOWARD CO. STD. DETAIL G-5.12	589,171.3501	1,362,954.2875
M-2	STD 4 MANHOLE	432.02	424.67	424.57	HOWARD CO. STD. DETAIL G-5.12	589,130.3648	1,363,022.4132
M-3	STD 4 MANHOLE	433.13	426.16	426.08	HOWARD CO. STD. DETAIL G-5.12	589,108.8977	1,363,235.2917
M-4	STD 4 MANHOLE	432.48	427.92 / 426.83	426.70	HOWARD CO. STD. DETAIL G-5.12	589,115.7886	1,363,252.5502
M-8	STD 4 MANHOLE	434.01	427.76	427.61	HOWARD CO. STD. DETAIL G-5.12	589,148.7135	1,363,334.9962
M-9	STD 4 MANHOLE	432.18	428.12	428.02	HOWARD CO. STD. DETAIL G-5.12	589,087.1637	1,363,360.5570
M-10	STD 4 MANHOLE	439.92	432.05	430.82	HOWARD CO. STD. DETAIL G-5.12	589,088.4525	1,363,379.6255
M-11	STD 4 MANHOLE	442.95	438.55	433.35	HOWARD CO. STD. DETAIL G-5.12	589,086.6361	1,363,444.7890
M-12	STD 4 MANHOLE	444.74	436.24	435.84	HOWARD CO. STD. DETAIL G-5.12	589,342.2106	1,363,451.8545
M-23	STD 4 MANHOLE	436.81	431.14 / 438.71	430.52	HOWARD CO. STD. DETAIL G-5.12	589,950.1890	1,363,301.6227
M-24	STD 4 MANHOLE	430.93	431.82	431.82	HOWARD CO. STD. DETAIL G-5.12	589,853.2507	1,363,187.9828
EW-1	TYPE 'C' ENDWALL	-	-	421.86	HOWARD CO. STD. DETAIL D-5.21	589,280.4746	1,362,950.4937
EW-10	TYPE 'C' ENDWALL	-	-	438.46	HOWARD CO. STD. DETAIL D-5.21	589,474.7195	1,363,414.7128
EW-11	TYPE 'C' ENDWALL	-	-	439.54	HOWARD CO. STD. DETAIL D-5.21	589,574.3503	1,363,403.3460
TEMP. EW	TYPE 'C' ENDWALL	-	-	428.42	HOWARD CO. STD. DETAIL D-5.21	589,849.38	1,363,370.83
I-6	TYPE 'D' INLET	441.79	437.25	437.01	HOWARD CO. STD. DETAIL D-4.11	589,411.7818	1,363,440.1888
I-23	TYPE 'D' INLET	438.47	433.42	433.07	HOWARD CO. STD. DETAIL D-4.11	589,864.2195	1,363,143.8221
I-24	TYPE 'D' INLET	440.80	435.50	435.17	HOWARD CO. STD. DETAIL D-4.11	589,600.9615	1,363,294.9203

AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS AS-BUILT PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
Richard G. Hill, P.E. 31039
DATE 7-1-13

STORM DRAIN PRIVATE MAINTENANCE NOTES

- PROPOSED 18" (RCP) STORM DRAIN FROM ENDWALL (EW-11) TO ENDWALL (EW-10) SHALL BE PRIVATELY OWNED AND MAINTAINED BY ORCHARD MEADOWS DEVELOPMENT CORPORATION.
- PROPOSED 24" (RCP) STORM DRAIN FROM MANHOLE (M-8) TO MANHOLE (M-4) SHALL BE PRIVATELY MAINTAINED BY ORCHARD MEADOWS DEVELOPMENT CORPORATION.



CONTRACT PURCHASER/DEVELOPER:
ORCHARD DEVELOPMENT CORPORATION
3032 CONSTITUTION DRIVE
ELICOTT CITY, MD 21042
(410) 964-2334

OWNER:
WILDER BUILDING CORPORATION
3303 SOMA TRAIL
ELICOTT CITY, MD 21043
(410) 461-2522

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwann, Acting 11/23/11
CHIEF - BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Keith Shuler 11/23/11
CHIEF - DIVISION OF LAND DEVELOPMENT
Mark P... .. 11/23/11
CHIEF - DEVELOPMENT ENGINEERING DIVISION

DATE	NUMBER	REVISION DESCRIPTIONS

ORCHARD MEADOWS
PARCEL D-1, D-2 & D-3

TAX MAP: 17 GRID: 23 PARCEL: 711
ZONED: R-A-15
ELECTION DISTRICT: NO. 2
HOWARD COUNTY, MD

MASS GRADING PLAN

DESIGN BY: B.E.S. SCALE: 1" = 40'
DRAWN BY: C.T.B. DATE: 11-02-2011
CHECKED BY: APPROVED: _____

PROJECT NO.: 27101105
SHEET 05 OF 29
DRAWING NUMBER: FC-5

UTILITY NOTES

- CONSTRUCTION OF THE PROPOSED UTILITIES WILL BE IN ACCORDANCE WITH THE HOWARD COUNTY PLUMBING CODE, BY A QUALIFIED CONTRACTOR.
- NO WORK IS TO COMMENCE UNTIL ALL PERMITS HAVE BEEN OBTAINED.
- ALL CONSTRUCTION SHALL FOLLOW LATEST HOWARD COUNTY DEPT. OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS OF CONSTRUCTION OR AS DETAILED ON THE DRAWINGS.
- GRAVEL CRADLE IS REQUIRED UNDER ALL PIPE.
- ALL BACKFILL SHALL BE MECHANICALLY TAMPED.
- THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK SHOWN ON THESE DRAWINGS UNLESS OTHERWISE NOTED.
- ALL CHANNELS IN MANHOLES MUST BE CONSTRUCTED TO CONFORM AS CLOSE AS POSSIBLE TO THE STANDARD CHANNELS CALLED FOR IN THE PROFILES.
- CLEANOUTS LOCATED IN PAVED AREAS SHALL HAVE COUNTERSUNK LIDS.
- ALL SANITARY SEWER CONSTRUCTION SHALL BE DONE UNDER A PERMIT AND PLAN ISSUED BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, WATER AND WASTEWATER ENGINEERING DIVISION.
- FOR UTILITY WORK OUTSIDE THE LOD SHOWN ON THIS PLAN, CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SALT FENCE SHALL BE PLACED BELOW DOWNSLOPE OF THE TRENCH.
- PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
- SEE SHEETS C-9, C-10, C-11, C-12 & C-13 FOR UTILITY PROFILES.
- CONTRACTOR TO COORDINATE WITH VERIZON FOR THE REMOVAL AND/OR RELOCATION OF EXISTING TELEPHONE LINES.
- ALL WATER LINES SHALL HAVE A MINIMUM 3'-0" OF COVER.

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT. CONTACT THE HOWARD COUNTY INSPECTOR AT 410-313-2433. A MINIMUM OF TWO WEEKS PRIOR TO THE START OF ANY WORK TO SCHEDULE A PRE-CONSTRUCTION MEETING. THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF WORK ACTIVITIES TO THE DEPARTMENT OF PUBLIC WORKS PRIOR TO THE BEGINNING OF ANY GRADING ACTIVITIES.
- INSTALL STABILIZED CONSTRUCTION ENTRANCE AT THE NORTH END OF NORTH RIDGE ROAD AND MOUNTABLE BERM AT ENTRANCE FOR SONIA TRAIL. NOTE: ALL CONSTRUCTION ACCESS TO SITE SHALL COME FROM CONSTRUCTION ENTRANCE FOR NORTH RIDGE ROAD.
- INSTALL ALL OTHER PERIMETER SEDIMENT CONTROL DEVICES, SALT AND SUPER SILT FENCES WHICH DO NOT DRAIN TO BASINS.
- BEGIN INSTALLATION OF SEDIMENT BASIN #1. INSTALL SUPER SILT FENCE BELOW BASIN WHERE SHOWN ON PLAN. AS BASIN IS CONSTRUCTED INSTALL PERIMETER SEDIMENT CONTROL SYSTEM FROM RW-1 TO RW-14 AND FROM RW-14 TO RW-10 TO RW-11 AND RW-15 TO RW-11. ALSO INSTALL M-6 MICRO-BIORETENTION FACILITY #3 AND RETAINING WALL #2 FOR SAME. PROVIDE TEMPORARY SANITARY SEWER AND SANITARY SEWER #4, WHERE NOTED ON PLAN, RAISE GRADES ALONG DIVERSION FENCE TO PROVIDE POSITIVE DRAINAGE TO BASIN.
- CONCURRENTLY BEGIN INSTALLATION OF PROPOSED SANITARY SEWER FROM EXISTING SMH-1 NORTH EAST OF SITE TO PROPOSED SMH-5, PROVIDE TEMPORARY CAPS WHERE SHOWN ON PLAN. STABILIZE DAILY PER UTILITY NOTES THIS SHEET.
- INSTALL SEDIMENT BASIN #2. AS BASIN IS CONSTRUCTED INSTALL BERM AND BARREL, INSTALL EARTH DIKE TO BASIN AND GRADES ALONG EARTH DIKE TO PROVIDE POSITIVE DRAINAGE TO BASIN.
- UPON COMPLETION OF SEDIMENT BASINS NOTIFY THE HOWARD COUNTY INSPECTOR OF COMPLETION FOR INSPECTION PRIOR TO STARTING ANY OTHER WORK.
- WITH THE APPROVAL OF THE HOWARD COUNTY INSPECTOR BEGIN ROUGH GRADING OF SITE. INSTALL REMAINDER OF STORM DRAIN SYSTEM FROM 1-23 TO TEMP OUTFALL IN BASIN #2, 1-15 TO RW-7, 1-13 TO RW-6, AND 1-24 TO M-23, AND M-6 MICRO-BIORETENTION FACILITIES 1, 2, 3 AND RETAINING WALL IN M-6 MICRO-BIORETENTION FACILITY #1.
- UPON COMPLETION OF STORM DRAIN INSTALLATION FROM BASIN #1 TO 4-22 ROUGH GRADE THE REMAINDER OF SITE. STOCKPILE EXCESS MATERIAL WHERE SHOWN ON PLAN. CONTRACTOR SHALL MAINTAIN AND RELOCATE DAILY THE EARTH DIKE TO BASIN #2 TO MAINTAIN POSITIVE DRAINAGE TO BASIN AT ALL TIMES.
- WHEN SUBGRADE FOR ROAD HAS BEEN ESTABLISHED PROVIDE TEMPORARY STABILIZATION AND BEGIN INSTALLATION OF CURBS AND GUTTER AND BASE COURSE FOR PAVED AREAS.
- FINAL GRADE, INSTALL WALKS, STREET TREES, AND M-6 MICRO-BIORETENTION FACILITIES 1, 2, AND 3. FLUSH STORM DRAIN AND PERMANENTLY STABILIZE.
- WITH THE HOWARD COUNTY INSPECTOR'S APPROVAL BEGIN SEDIMENT BASIN #2 CONVERSION. EARTH DIKE TO SEDIMENT BASIN #2 SHALL REMAIN UNTIL FINAL GRADING FOR SITE DEVELOPMENT BY OTHERS HAS STARTED. FOR FINAL GRADES IN BASIN #2 SEE M-6 MICRO-BIORETENTION FACILITY #3 ON SHEET C-19/150P PLANS #1-152.
- CONCURRENTLY BEGIN SEDIMENT BASIN #1 CONVERSION. INSTALL RETAINING WALLS. SEE SITE GRADING PLAN FOR FINAL GRADING WITHIN BASIN #1. SEE F-11 SEDIMENT BASIN #1 CONVERSION SHEET C-19/150P PLANS #1-152.
- UPON COMPLETION OF SEDIMENT BASIN CONVERSIONS REMOVE ANY REMAINING SEDIMENT CONTROLS AND STABILIZE ANY AREAS DISTURBED BY REMOVAL.

SEDIMENT EROSION CONTROL PLAN

SCALE: 1" = 40'

BY THE ENGINEER:
 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, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Richard L. Butt 11-2-11
 SIGNATURE OF ENGINEER DATE
 Richard L. Butt
 PRINT NAME

BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

L. Scott Armiger 11-3-11
 SIGNATURE OF DEVELOPER DATE
 L. Scott Armiger
 PRINT NAME

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

J. Robert Howard 11/2/11
 HOWARD S.C.D. DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diase Schwarz, Acting 11/22/11
 CHIEF - BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Karl S. Doolittle 11/23/11
 CHIEF - DIVISION OF LAND DEVELOPMENT DATE

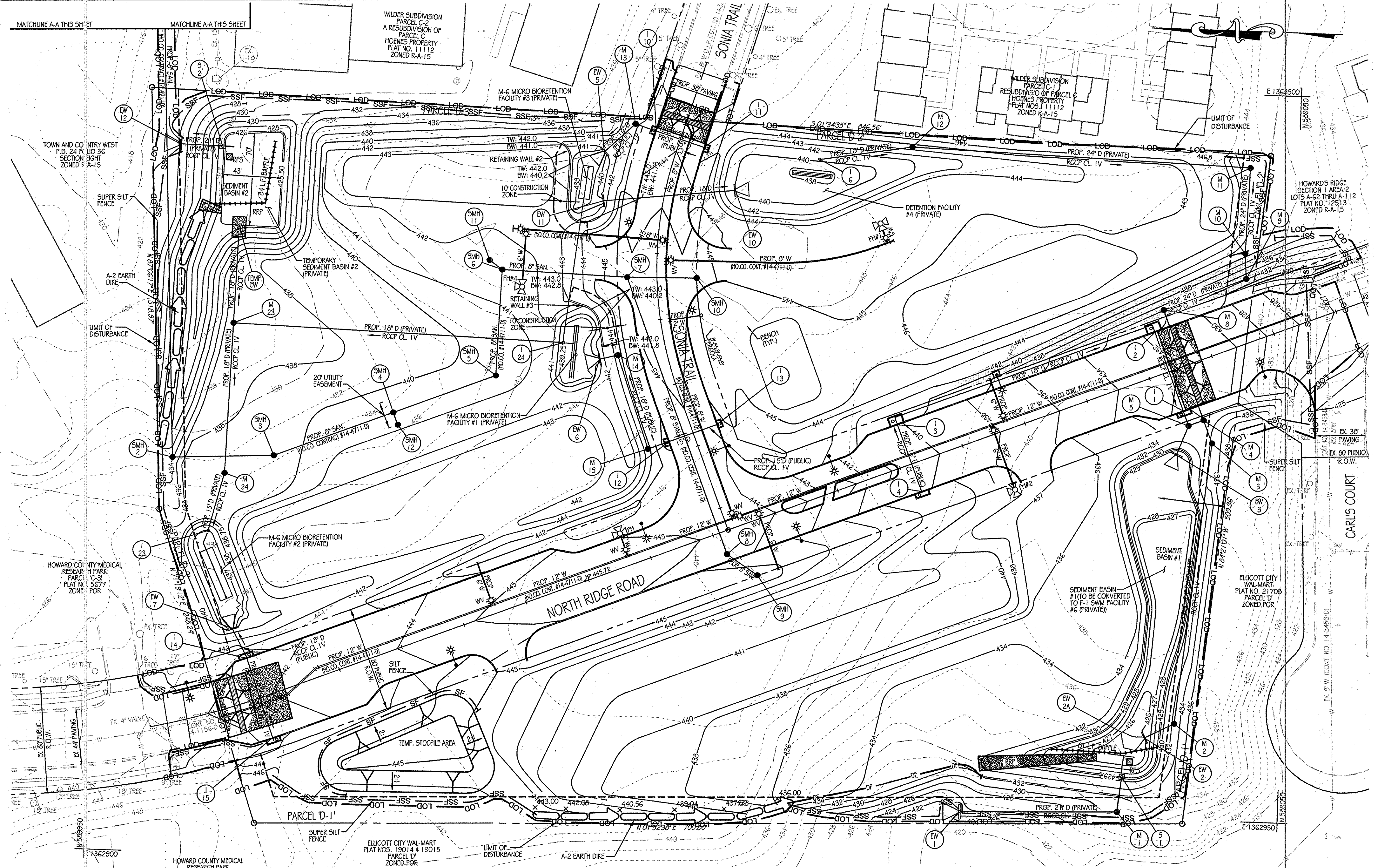
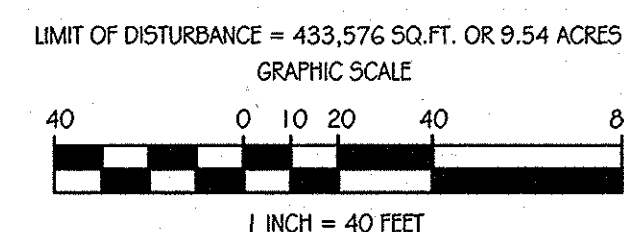
Michael J. ... 11/23/11
 CHIEF - DEVELOPMENT ENGINEERING DIVISION DATE

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- 430' PROP. CONTOUR
- PROP. CURB
- PROP. WATER
- PROP. SANITARY
- PROP. DRAIN
- PROP. MANHOLE
- PH PROP. FIRE HYDRANT
- WV PROP. WATER VALVE
- CO PROP. CLEANOUT
- 12' PROP. LIGHT POLE (12' ARM)
- 12' PROP. LIGHT POLE (POST TOPS)
- SUPER SILT FENCE
- SF SILT FENCE
- DF DIVERSION FENCE
- LOD LIMIT OF DISTURBANCE
- EARTH DIKE
- STABILIZATION MATTING
- RFS REMOVABLE PUMPING STATION

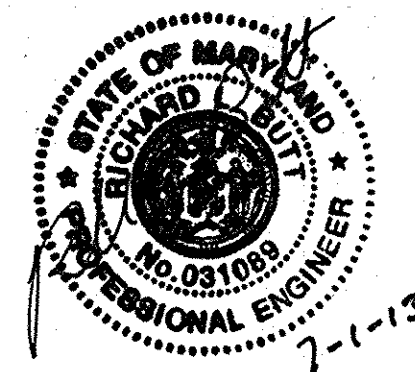
SEDIMENT CONTROL NOTES

- 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.
- 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 SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
 - B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRANSDUCCERS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR FRESHWATER SEDIMENT (SEC. 511.500 SEC. 5-4). TEMPORARY SEEDING (SEC. 501 AND MULCHING (SEC. 521) 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.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING OR OTHER 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 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.
- FOR SEDIMENT BASIN DATA TABLES SEE SHEET FC-9.



SEDIMENT EROSION CONTROL PLAN

SCALE: 1" = 40'



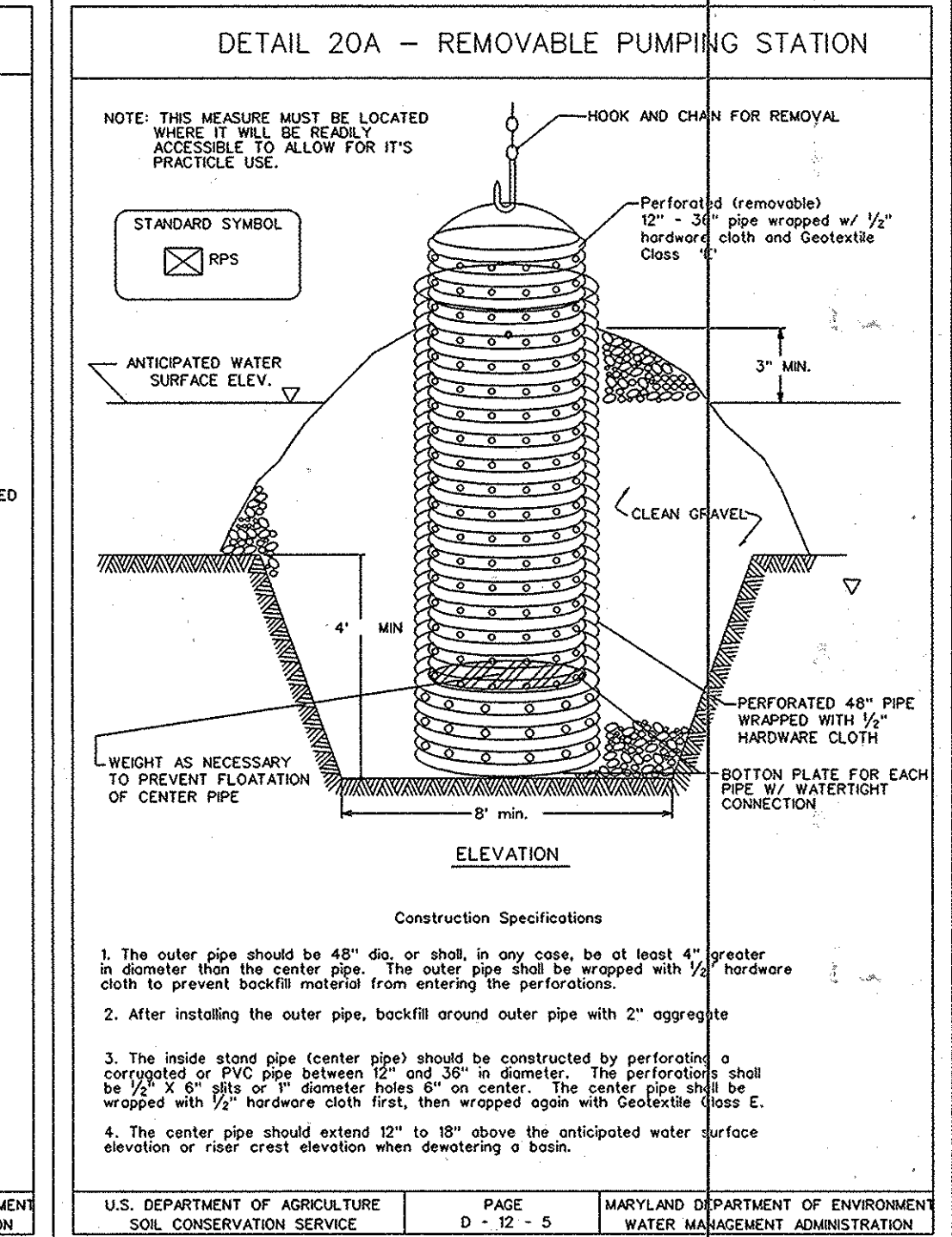
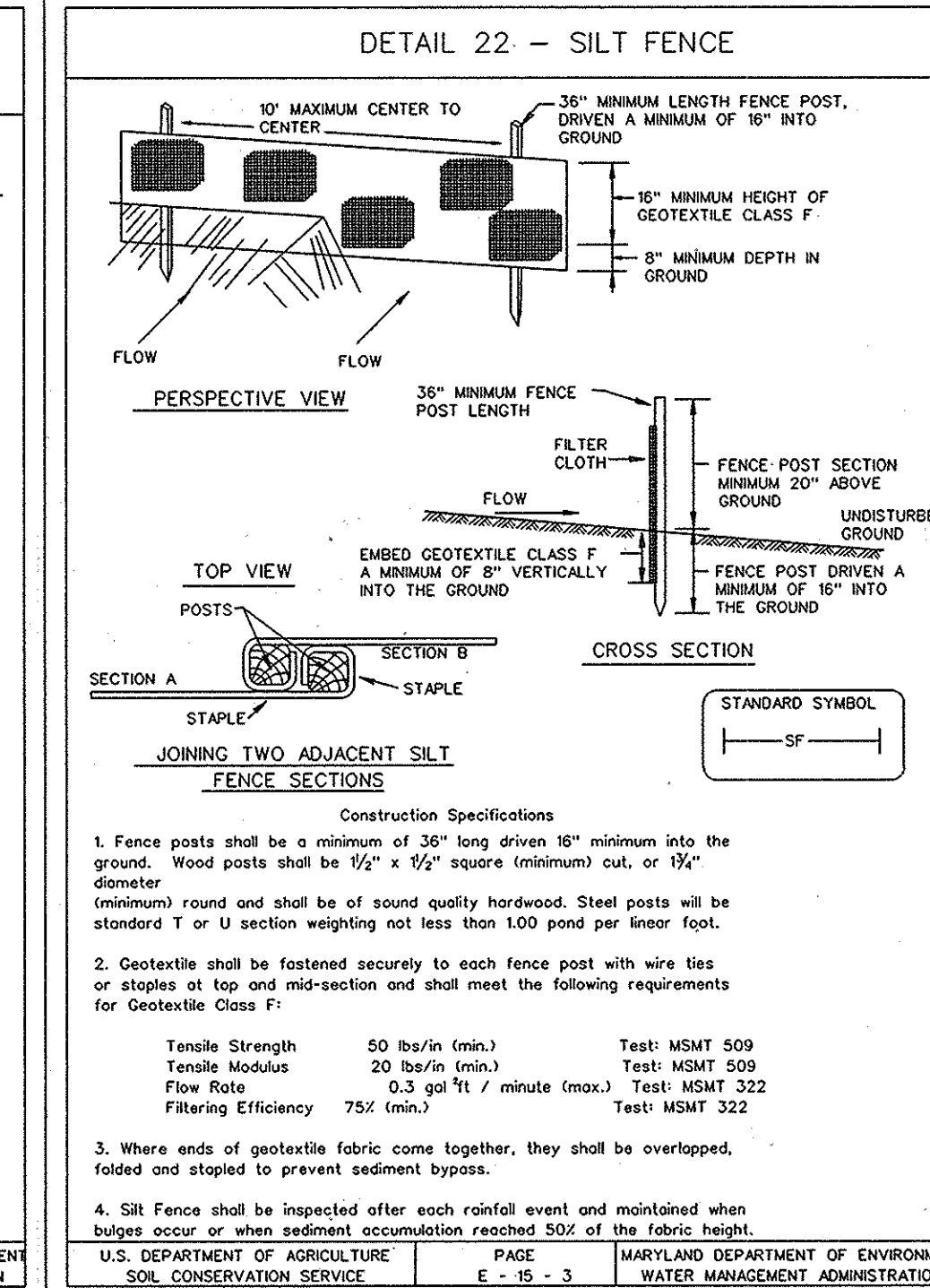
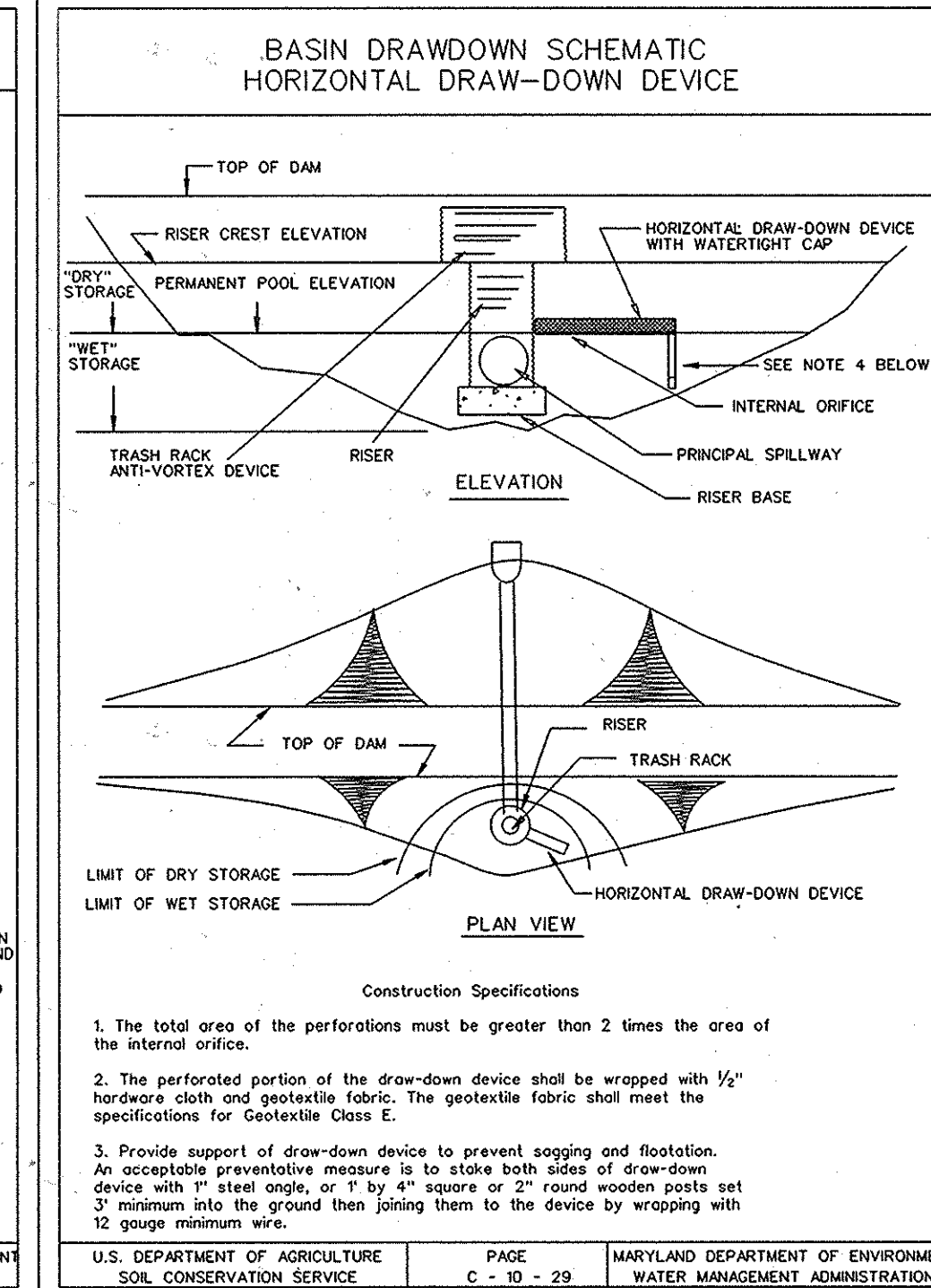
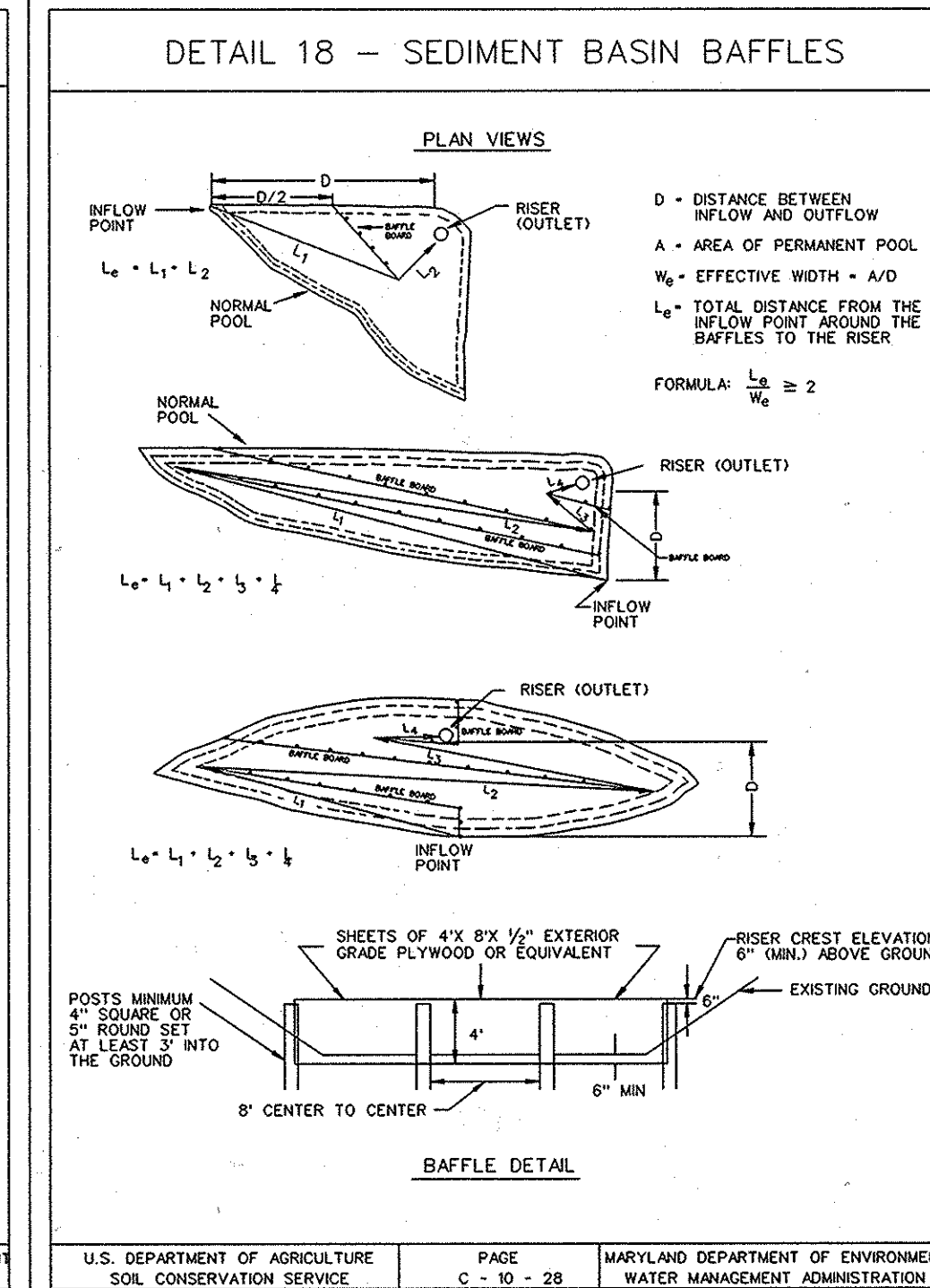
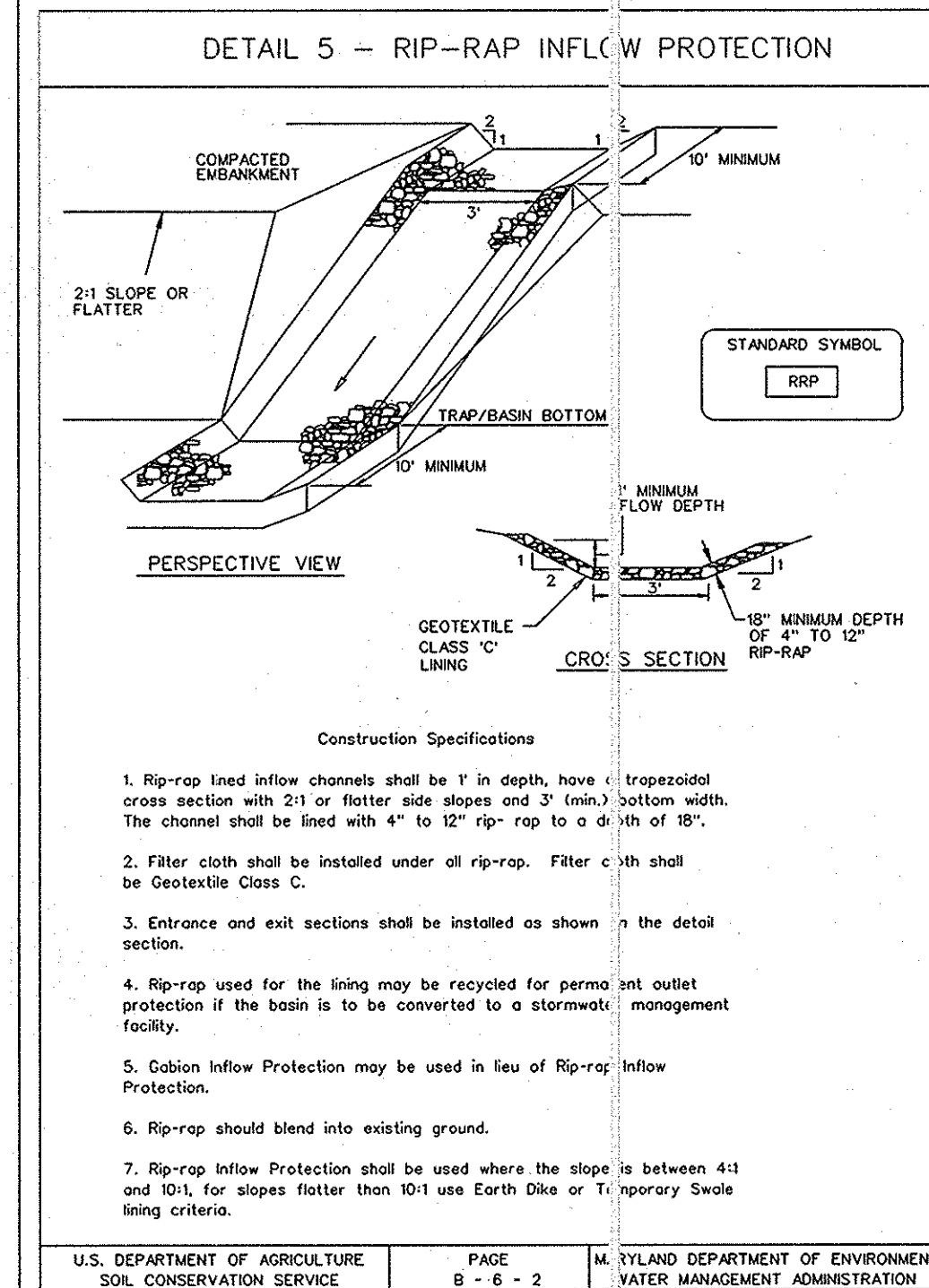
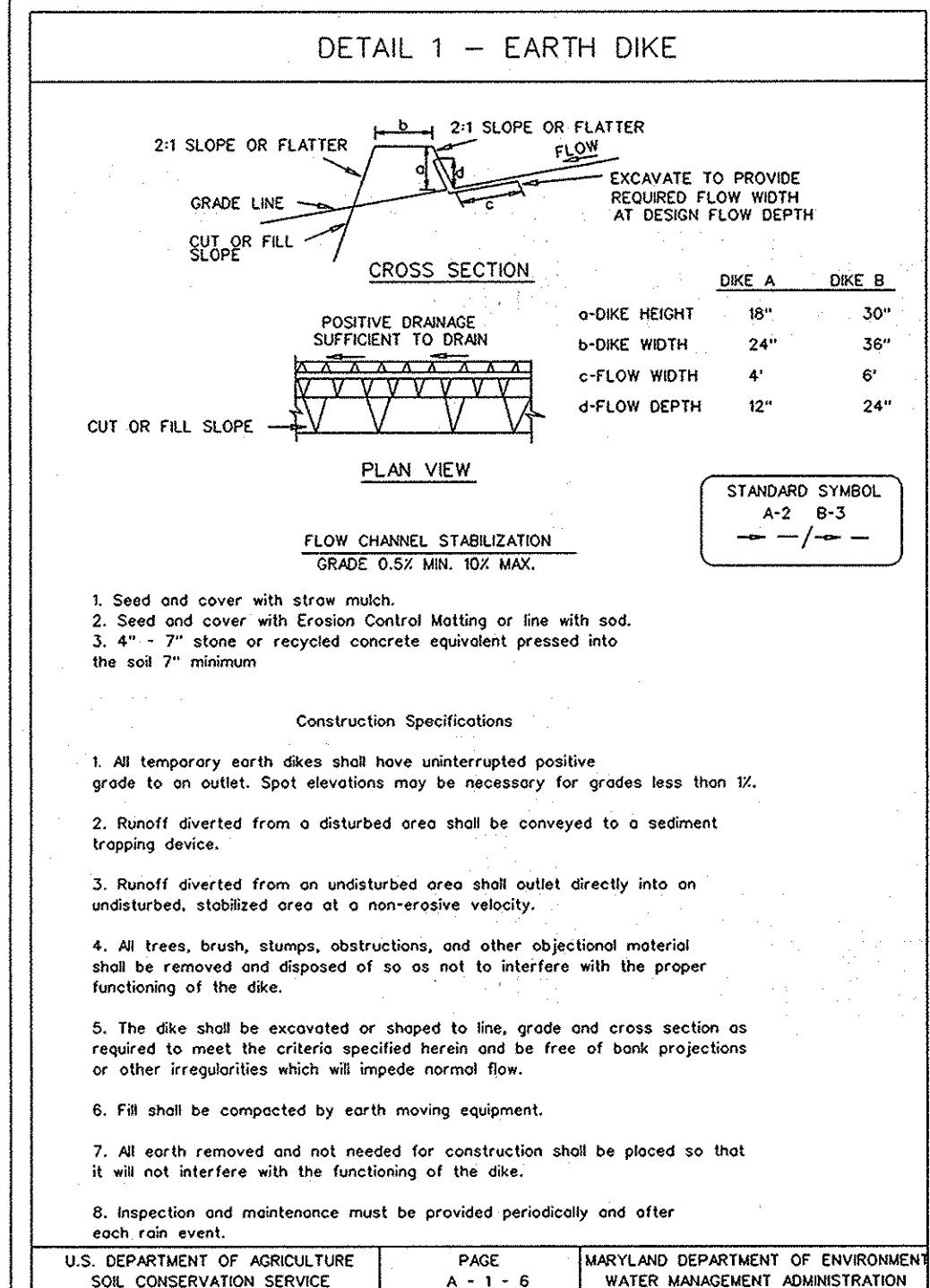
AS-BUILT CERTIFICATION
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. *Richard L. Butt* PE # 31083
 DATE 7-1-13

Orchard Development Corporation
 CRP Opportunity Fund, L.P.

CONTRACT PURCHASER/DEVELOPER:
 ORCHARD DEVELOPMENT CORPORATION
 5322 CONSERVATION DRIVE
 ELICOTT CITY, MD 21042
 (410) 964-2334

OWNER:
 WILDER BUILDING CORPORATION
 3300 SONIA TRAIL
 ELICOTT CITY, MD 21043
 (410) 461-2522

DATE	NUMBER	REVISION DESCRIPTIONS
		ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
		KCI TECHNOLOGIES 8161 MARLE LAWN BOULEVARD SUITE 150 FULTON, MD 20759 TELEPHONE: (410) 92-8086 FAX: (410) 792-7419
		ORCHARD MEADOWS PARCEL D-1, D-2 & D-3
		TAX MAP: 17 GRID: 23 PARCEL: 711 ZONED: R-A-15 ELECTION DISTRICT: NO. 2 HOWARD COUNTY, MD
		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.: 31089 EXPIRATION DATE: 1/1/21/2
TITLE		EROSION AND SEDIMENT CONTROL PLAN
DESIGN BY: B.E.S.	SCALE: 1" = 40'	PROJECT NO.: 27101105
DRAWN BY: C.T.B.	DATE: 11-02-2011	SHEET 06 OF 29
CHECKED BY:	APPROVED:	DRAWING NUMBER FC-6

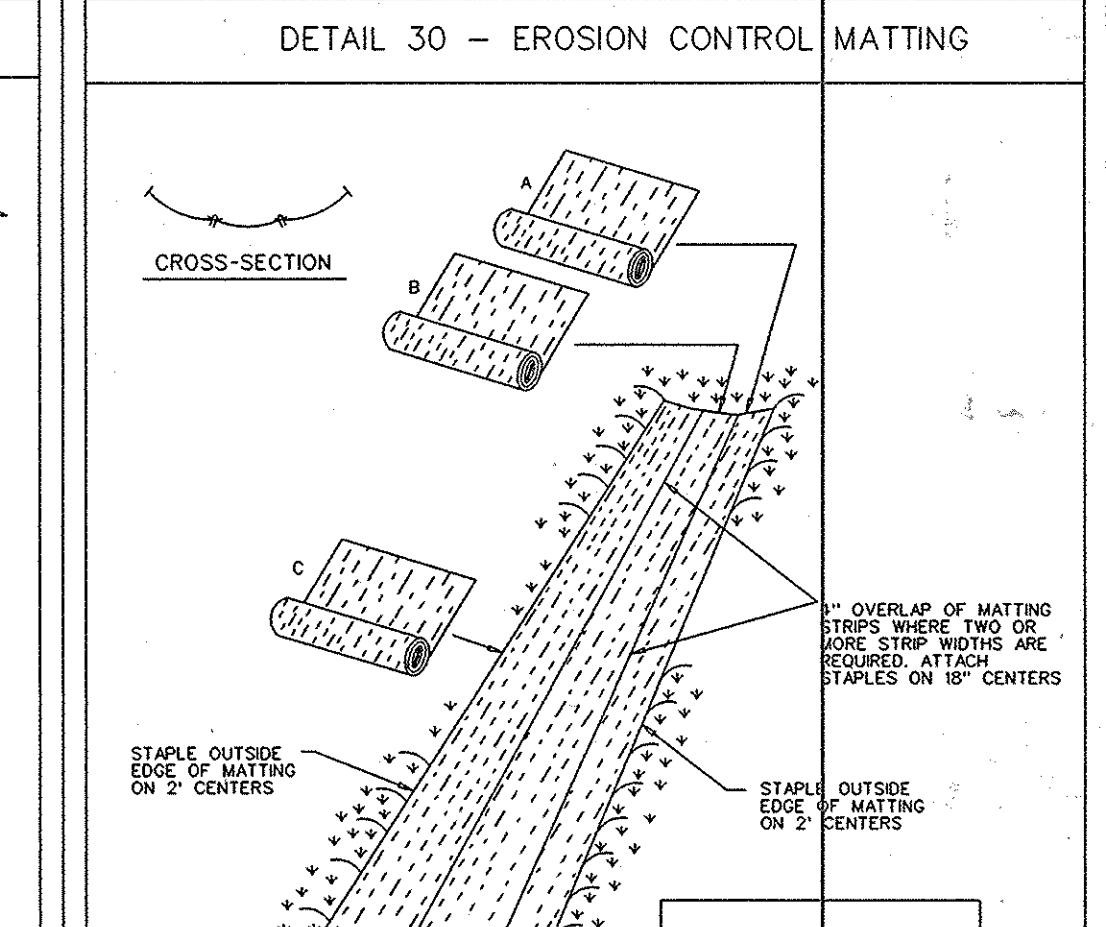
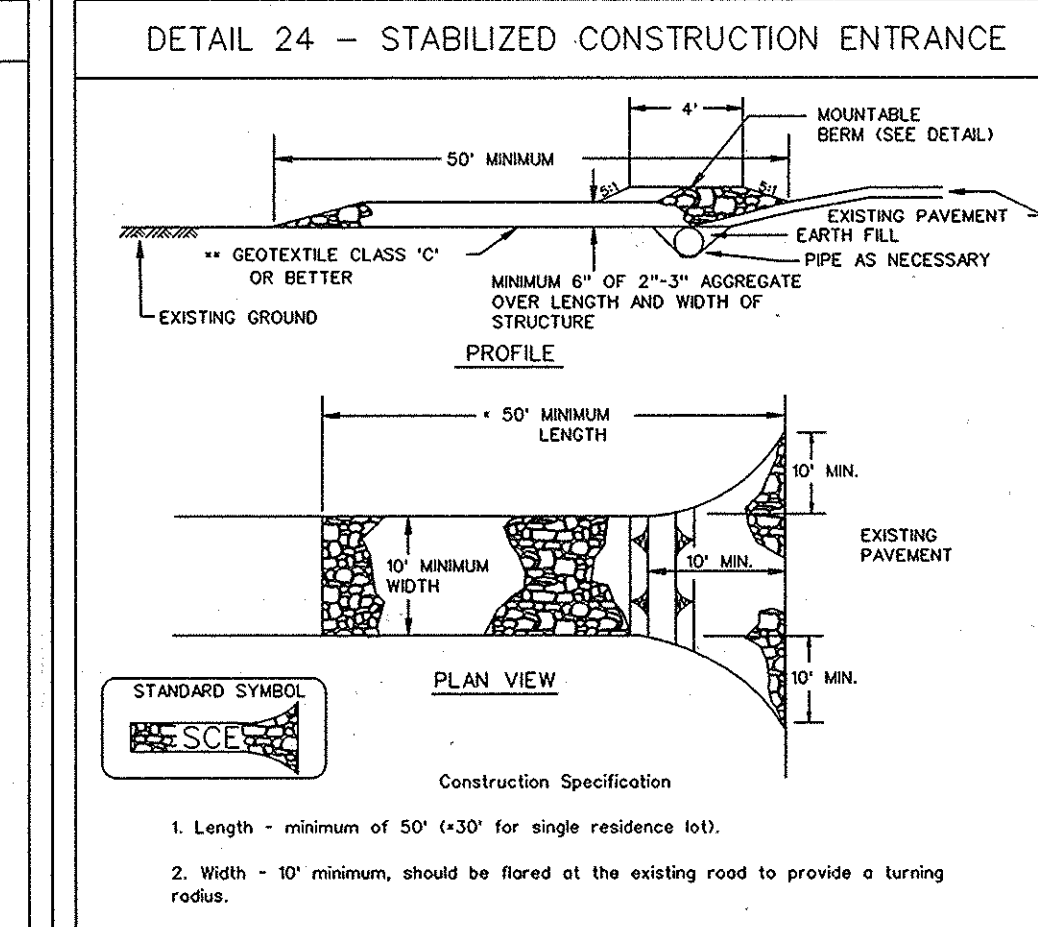
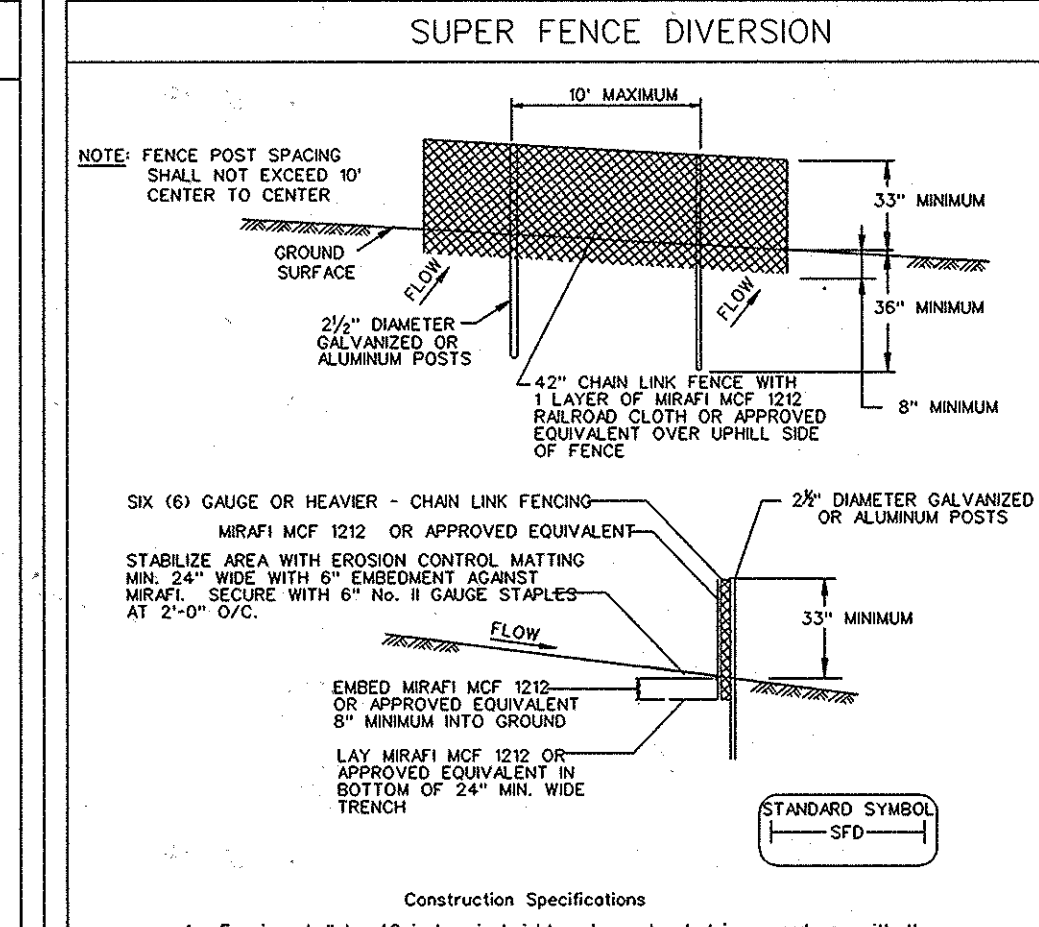
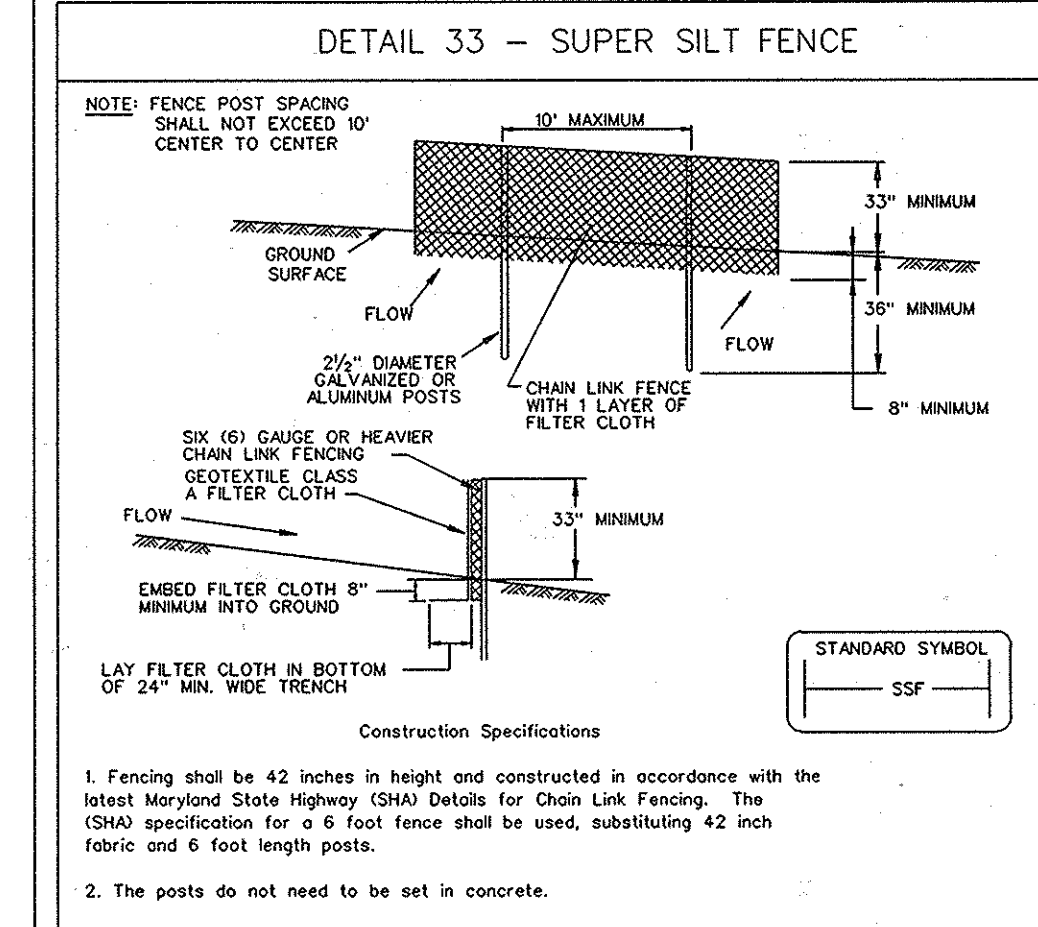


SEDIMENT BASIN #1 DATA TABLE

EXISTING DRAINAGE AREA (AC.)	4.31 AC.
INTERIM DRAINAGE AREA (AC.)	3.98 AC.
PROPOSED DRAINAGE AREA (AC.)	5.52 AC.
STORAGE REQUIRED (C.F.)	9,936 C.F.
STORAGE PROVIDED (C.F.)	11,233 C.F.
TO YR HW	430.65
100 YR HW	431.51
WET STORAGE ELEV. RANGE	424.00 - 428.25
DRY STORAGE ELEV. RANGE	428.25 - 430.50

SEDIMENT BASIN #2 DATA TABLE

EXISTING DRAINAGE AREA (AC.)	3.28 AC.
INTERIM DRAINAGE AREA (AC.)	3.05 AC.
PROPOSED DRAINAGE AREA (AC.)	3.09 AC.
STORAGE REQUIRED (C.F.)	5,904 C.F.
STORAGE PROVIDED (C.F.)	7,826 C.F.
TO YR HW	429.25
100 YR HW	429.95
WET STORAGE ELEV. RANGE	425.50 - 427.25
DRY STORAGE ELEV. RANGE	427.25 - 428.75



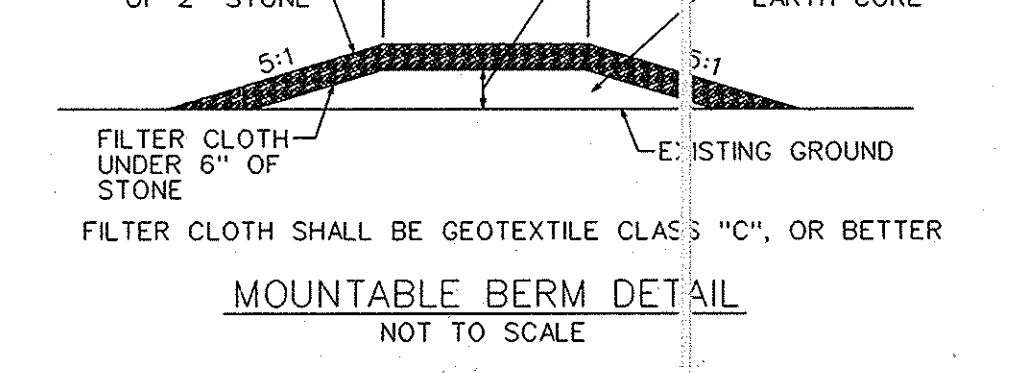
SEDIMENT BASIN #1 COMPUTATION FOR STORAGE TABLE

WET STORAGE	DRY STORAGE
19,572 C.F.	11,233 C.F.
23,135 C.F.	23,135 C.F.
34,368 C.F.	34,368 C.F.

SEDIMENT BASIN #2 COMPUTATION FOR STORAGE TABLE

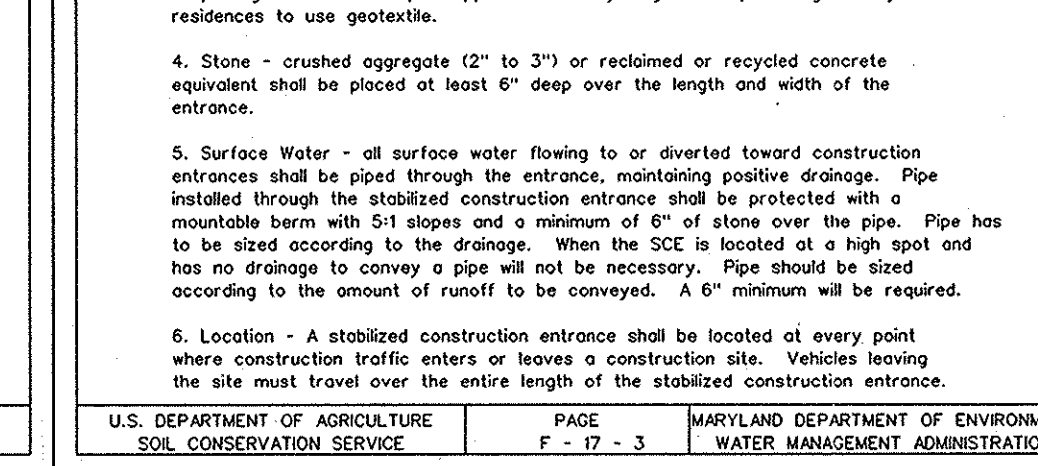
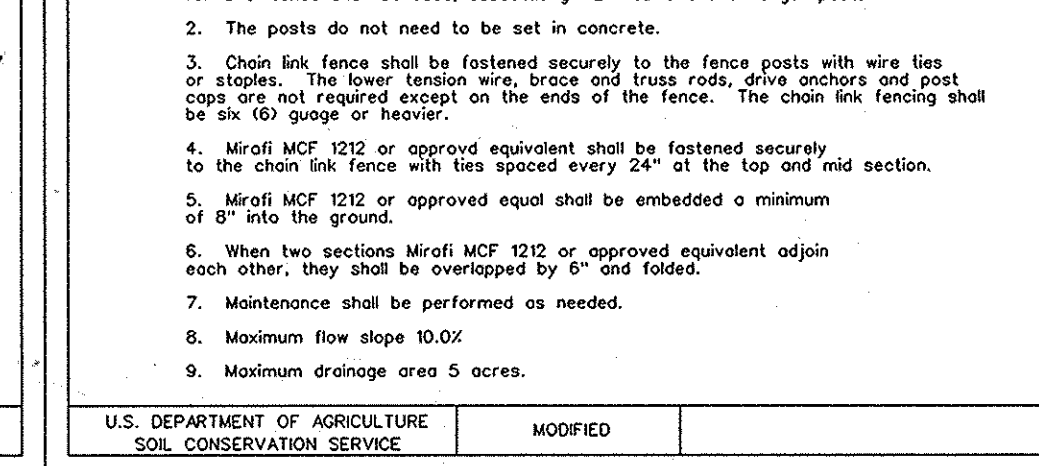
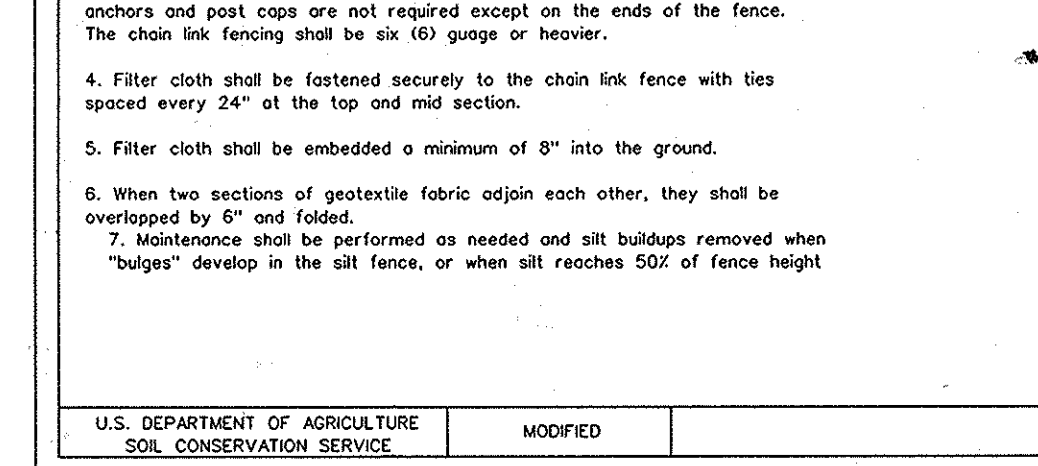
WET STORAGE	DRY STORAGE
7,826 C.F.	7,826 C.F.
8,676 C.F.	8,676 C.F.
16,362 C.F.	16,362 C.F.

BY THE ENGINEER:
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *Richard L. Butt* DATE: 11-2-11
 Signature: *Richard L. Butt* PRINT NAME



BY THE DEVELOPER:
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *L. Scott Armiger* DATE: 11-3-11
 Signature: *L. Scott Armiger* PRINT NAME

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *Howard S.C.D.* DATE: 11/3/11
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 Signature: *Diane Schwarz, Acting* DATE: 11/22/11
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *Kurt DeLorenzo* DATE: 11/23/11
 Signature: *Development Engineering Division* DATE: 11/23/11



DATE	NUMBER	REVISION DESCRIPTIONS

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Signature: *Diane Schwarz, Acting* DATE: 11/22/11
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *Kurt DeLorenzo* DATE: 11/23/11
 Signature: *Development Engineering Division* DATE: 11/23/11

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Signature: *Diane Schwarz, Acting* DATE: 11/22/11
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *Kurt DeLorenzo* DATE: 11/23/11
 Signature: *Development Engineering Division* DATE: 11/23/11

AS-BUILT CERTIFICATION
 THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET. RICHARD L. BUTT, PE # 21081
 DATE: 7-1-13

Orchard Development Corporation
 CRP Opportunity Fund, L.P.

CONTRACT PURCHASER/DEVELOPER:
 ORCHARD DEVELOPMENT CORPORATION
 6322 CONSERVATION DRIVE
 BILLCOTT CITY, MD 21042
 (410) 964-2334
 OWNER:
 MIDER BUILDING CORPORATION
 3300 SONIA TRAIL
 BILLCOTT CITY, MD 21043
 (410) 461-2522

ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION MANAGERS
KCI TECHNOLOGIES
 8861 MARLE LAWN BOULEVARD
 SUITE 150
 FULFORD, MD 20759
 TELEPHONE: (410) 92-8086
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 ORCHARD MEADOWS
 PARCEL D-1, D-2 & D-3
 TAX MAP: 17 GRID: 23 PARCEL: 711
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 ELECTION DISTRICT: NO. 2
 HOWARD COUNTY, MD
 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.: 31089
 EXPIRATION DATE: 11/1/212
 EROSION & SEDIMENT CONTROL DETAIL SHEET
 PROJECT NO.: 21101105
 SHEET 09 OF 29
 DRAWING NUMBER
FC-9

HOWARD COUNTY SOIL CONSERVATION DISTRICT DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS FOR THE SURFACE OF ALL PERIMETER CONTROL BARRIERS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

- PERMANENT SEEDING:**
 - SOIL TESTS:** LIME AND FERTILIZER WILL BE APPLIED PER SOIL TESTS RESULTS FOR SITES GREATER THAN 5 ACRES. SOIL TESTS WILL BE DONE AT COMPLETION OF ROUGH GRADING. SOIL TESTS AND ANALYSES TO BE PROVIDED TO THE GRADING INSPECTOR AS WELL AS THE CONTRACTOR.
 - OCCURRENCE OF ACID SULFATE SOILS (GRAYISH BLACK COLOR) WILL REQUIRE COVERING WITH A MINIMUM OF 12 INCHES OF CLEAN SOIL WITH 6 INCHES MINIMUM CAPPING OF TOP SOIL. NO STOCKPILING OF MATERIAL IS ALLOWED, IF NEEDED, SOIL TESTS SHOULD BE DONE BEFORE AND AFTER A 6 WEEK INCUBATION PERIOD TO ALLOW OXIDATION OF SULFATES.
 - SEEDBED PREPARATION: AREA TO BE SEEDBED SHALL BE LOOSE AND FRAGILE TO A DEPTH OF AT LEAST 3 INCHES. THE TOP LAYER SHALL BE LOOSEENED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. FOR SITES LESS THAN 5 ACRES, APPLY 100 POUNDS OF DOLOMITIC LIMESTONE AND 21 POUNDS OF 10-20-20 FERTILIZER PER 1,000 SQUARE FEET. HOLLOW OR DISK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF AT LEAST 3 INCHES ON SLOPES FLATTER THAN 3:1.
 - SEEDING: APPLY 5-6 POUNDS PER 1,000 SQUARE FEET OF TALL FESCUE BETWEEN FEBRUARY 1 AND APRIL 30 OR BETWEEN AUGUST 15 AND OCTOBER 31. APPLY SEED UNIFORMLY ON A MOIST FIRM SEEDBED WITH A CYCLONE SEEDER DRILL, CULTIPACKER SEEDER OR HYDROSEEDER (MURRY INCLUDES SEEDS AND FERTILIZER, RECOMMENDED ON STEEP SLOPES ONLY). MAXIMUM SEED DEPTH SHOULD BE 1/4 INCH IN SANDY SOILS WHEN USING OTHER THAN CYCLONE SEEDER. OTHER THAN HYDROSEEDER METHOD, IRRIGATE IF SOIL MOISTURE IS DEFICIENT TO SUPPORT ADEQUATE GROWTH UNTIL VEGETATION IS FIRMLY ESTABLISHED. IF OTHER SEED MIXES ARE TO BE USED, SELECT FROM TABLE 25, ENTITLED PERMANENT SEEDING FOR LOW MAINTENANCE AREAS FROM THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. MIXES SUITABLE FOR THIS AREA ARE 1, 3, AND 5-7. MIXES 5-7 ARE SUITABLE IN NON-MOWABLE SITUATIONS.
 - MULCHING: MULCH SHALL BE APPLIED TO ALL SEEDBED AREAS IMMEDIATELY AFTER SEEDING. DURING THE TIME PERIOD WHEN SEEDING IS NOT PERMITTED, MULCH SHALL BE APPLIED IMMEDIATELY AFTER GRADING. MULCH SHALL BE UNROTTED, UNCHOPPED, SMALL GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 POUNDS PER 1,000 SQUARE FEET (2 BALES). IF A MULCH ANCHORING TOOL IS USED, MULCH MATERIAL SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE COMPLETELY FREE OF PROHIBITED NOXIOUS WEEDS. SPREAD MULCH UNIFORMLY, MECHANICALLY OR BY HAND, TO A DEPTH OF 1-2 INCHES.
 - SECURING STRAW MULCH: STRAW MULCH SHALL BE SECURED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE MOVEMENT BY WIND OR WATER. THE FOLLOWING METHODS ARE PERMITTED:
 - USE A MULCH ANCHORING TOOL WHICH IS DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A MINIMUM DEPTH OF 2 INCHES. THIS IS THE MOST EFFECTIVE METHOD FOR SECURING MULCH. HOWEVER, IT IS LIMITED TO RELATIVELY FLAT AREAS WHERE EQUIPMENT CAN OPERATE SAFELY.
 - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. IF MIXED WITH WATER, USE 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - LIQUID BINDERS MAY BE USED AND APPLIED HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF SLOPES. THE REMAINDER OF THE AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. BINDERS LISTED IN THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR APPROVED EQUIV SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURERS.
 - LIGHTWEIGHT PLASTIC NETTING MAY BE USED TO SECURE MULCH. THE NETTING WILL BE STAPLED TO THE GROUND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - TEMPORARY SEEDING:**
 - LIME:** 100 POUNDS OF DOLOMITIC LIMESTONE PER 1,000 SQUARE FEET.
 - FERTILIZER:** 15 POUNDS OF 10-10-10 PER 1,000 SQUARE FEET.
 - SEED:** PERENNIAL RYE - 0.92 POUNDS PER 1,000 SQUARE FEET (FEBRUARY 1 THROUGH APRIL 30 OR AUGUST 15 THROUGH NOVEMBER 1).
MILLET - 0.92 POUNDS PER 1,000 SQUARE FEET (MAY 1 THROUGH AUGUST 15).
 - MULCH:** SAME AS 1 D AND E ABOVE.
 - NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILL TO BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS. EACH LAYER HAVING A LOOSE THICKNESS OF MORE THAN 8 INCHES. ALL FILL IN ROADWAYS AND PARKING AREAS IS TO BE CLASSIFIED TYPE 2 AS PER ANNE ARUNDEL COUNTY CODE - ARTICLE 21, SECTION 2-308, AND COMPACTED TO 90% DENSITY. COMPACTION TO BE DETERMINED BY ASTM D-1557-66T (MODIFIED PROCTOR). ANY FILL WITHIN THE BUILDING AREA TO BE COMPACTED TO A MINIMUM OF 95% AS DETERMINED BY METHODS PREVIOUSLY MENTIONED. FILLS FOR POND EMBANKMENTS SHALL BE COMPACTED AS PER MD-378 CONSTRUCTION SPECIFICATIONS. ALL OTHER FILLS SHALL BE COMPACTED SUFFICIENTLY SO AS TO BE STABLE AND PREVENT EROSION AND SURFACE.**
 - PERMANENT SOD:**
 - INSTALLATION OF SOD SHOULD FOLLOW PERMANENT SEEDING DATES. PERMANENT SOD IS TO BE TALL FESCUE. STATE APPROVED SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE PERMANENT SOD PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ABUTTING. JOINTS ARE TO BE STAGGERED BETWEEN ROWS. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES STEEPER THAN 3:1 AS SHOWN, ARE TO BE PERMANENTLY SODDED OR PROTECTED WITH AN APPROVED EROSION CONTROL NETTING. ADDITIONAL WATERING FOR ESTABLISHMENT MAY BE REQUIRED. SOD IS NOT TO BE APPLIED ON FROZEN GROUND. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (DRY OR WET) AND/OR EXTREME TEMPERATURE MAY ADVERSELY AFFECT ITS SURVIVAL. IN THE ABSENCE OF ADEQUATE RAINFALL, IRRIGATION SHOULD BE PERFORMED TO INSURE ESTABLISHED SOD.
 - MINING OPERATIONS:**
 - SEEDING CONTROL PLANS FOR MINING OPERATIONS MUST INCLUDE THE FOLLOWING SEEDING DATES AND MIXTURES:
 - FOR SEEDING DATES OF:
 - FEBRUARY 1 THROUGH APRIL 30 AND AUGUST 15 THROUGH OCTOBER 31. USE SEED MIXTURE OF TALL FESCUE AT THE RATE OF 2 POUNDS PER 1,000 SQUARE FEET AND SERICHA LESPEDEZA AT THE RATE OF 2 POUNDS PER 1,000 SQUARE FEET.
 - FOR SEEDING DATES OF MAY 1 THROUGH AUGUST 14. USE SEED MIXTURE OF TALL FESCUE AT THE RATE OF 2 POUNDS PER 1,000 SQUARE FEET AND WEEPING LOVEGRASS AT THE RATE OF 0.1 POUND PER 1,000 SQUARE FEET.
 - NOTE: USE OF THIS INFORMATION DOES NOT PRECLUDE MEETING ALL OF THE REQUIREMENTS OF THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

BY THE ENGINEER:

"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, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT."

Richard L. Butt 11-2-11
SIGNATURE OF ENGINEER DATE
RICHARD L. BUTT
PRINT NAME

BY THE DEVELOPER:

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

L. Scott Armiger 11-3-11
SIGNATURE OF DEVELOPER DATE
L. SCOTT ARMIGER
PRINT NAME

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

James Robertson 11/15/11
HOWARD S.C.D. DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

Diane Schwan, Acting 11/22/11
CHIEF - BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kate Schwan 11/23/11
CHIEF-DIVISION OF LAND DEVELOPMENT DATE

Michael D. ... 11/23/11
CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE

2.1.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION: PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE: TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN ARE THOSE WITH LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES: THIS PRACTICE 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.
- FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS. CONSTRUCTION AND MATERIAL SPECIFICATIONS
 - TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT 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 USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
 - TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND, OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF SAND, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1/2" IN DIAMETER.
 - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON, IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. IT SHALL BE DISTURBED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
 - FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 2.0.0 VEGETATIVE STABILIZATION - SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
 - FOR SITE HAVING DISTURBED AREAS OVER 5 ACRES:
 - ON ALL SITES HAVING DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE DEPARTMENT OF INSPECTIONS AND PERMITS SHALL BE REQUIRED ON COMPLETION 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 THE INITIAL APPROVAL BY THE DEPARTMENT OF INSPECTIONS AND PERMITS IS GIVEN.
 - APPROVAL SHALL BE REQUESTED ON FINAL STABILIZATION OF ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES BEFORE REMOVAL OF CONTROLS.

(TYP.) CONTINUED...

- PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.0 OR HIGHER.
- ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
- TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
- NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME AS ELAPSED (14 DAYS MIN) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

NOTE: 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.

(TYP.) TOPSOIL APPLICATION

- WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILL TRENCHES AND SEDIMENT TRAPS AND BASINS.
- GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4"-8" HIGHER IN ELEVATION.
- TOPSOIL SHALL BE UNIFORMLY DISTURBED IN A 4"-8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TIME. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
- TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

(TYP.) ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW.

- COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
 - COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
 - COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON / 1,000 SF.
- COMPOSTED SLUDGE SHALL BE AMENDED WITH POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB. / 1,000 SF. AND 1/3 THE NORMAL LIME APPLICATION RATE.

1. DEVELOPER'S CERTIFICATION:

I (WE) CERTIFY THAT:

- ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS SEDIMENT AND EROSION CONTROL PLAN, AND FURTHER, AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT BOARD OF SUPERVISORS OR THEIR AUTHORIZED AGENTS.
- ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. RESPONSIBLE PERSON ON THE SITE:
- THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS, AND/OR RIGHTS OF WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED IN THIS PLAN. HE IS ALSO RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHTS AND/OR RIGHTS OF WAY THAT MAY BE REQUIRED FOR GRADING AND/OR WORK ON ADJACENT PROPERTIES INCLUDED IN THIS PLAN.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS FOR THE SURFACE OF PERIMETER CONTROL BARRIERS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- THE SEDIMENT CONTROL APPROVALS ON THE PLAN EXTEND ONLY TO AREAS AND PRACTICES IDENTIFIED AS PROPOSED WORK.
- THE APPROVAL OF THIS PLAN FOR SEDIMENT AND EROSION CONTROL DOES NOT RELIEVE THE DEVELOPER/CONSULTANT FROM COMPLYING WITH ANY FEDERAL/STATE/COUNTY REQUIREMENTS PERTAINING TO ENVIRONMENTAL ISSUES.
- THE DEVELOPER MUST REQUEST THAT THE DEPARTMENT OF INSPECTIONS AND PERMITS APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE GRADING OR BUILDING PERMIT AND THE ORDINANCE.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE DEPARTMENT OF INSPECTIONS AND PERMITS SHALL BE REQUIRED ON 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 THE INITIAL APPROVAL BY THE DEPARTMENT OF INSPECTIONS AND PERMITS IS GIVEN.
- APPROVAL SHALL BE REQUESTED ON FINAL STABILIZATION OF ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES BEFORE REMOVAL OF CONTROLS.

L. Scott Armiger 11-4-11
SIGNATURE OF DEVELOPER/APPLICANT DATE
L. SCOTT ARMIGER
PRINT NAME
5032 DOBNEY HALL DR.
ADDRESS: ELLICOTT CITY, MD 21042
410-264-2834
TELEPHONE:

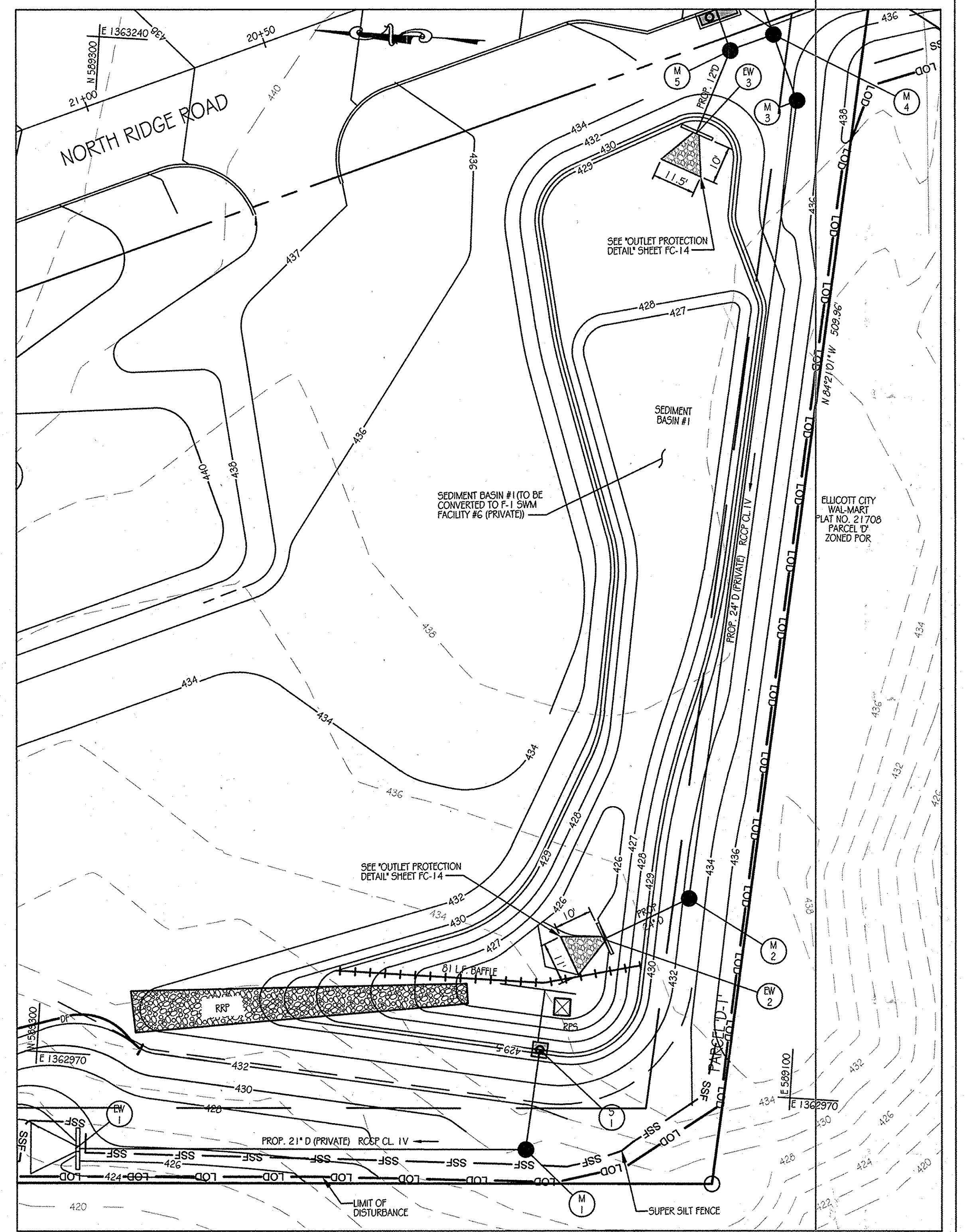
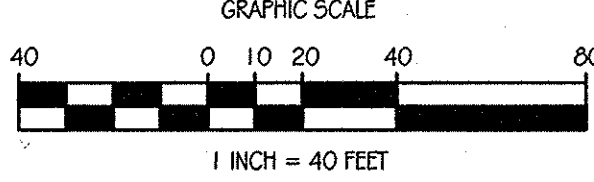
THE DEVELOPER'S PLAN TO CONTROL SILT AND EROSION IS ADEQUATE TO CONTAIN THE SILT AND EROSION PROPERTY COVERED BY THE PLAN. I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THIS SITE, AND WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT PLAN SUBMITTAL GUIDELINES AND THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SEDIMENT AND EROSION CONTROL. I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER.

Richard L. Butt 11-2-11
SIGNATURE: DATE
RICHARD L. BUTT
FRONT NAME: KCI TECHNOLOGIES INC.
8161 MAPLE LAWN BOULEVARD
FULTON, MD 20759
FIRM NAME:
ADDRESS:
(410)792-2066 EXT. 3340
TELEPHONE:

NOTE: 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 SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.



AS-BUILT CERTIFICATION
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. **Richard Butt**, PE # 31087
DATE: 7-1-13

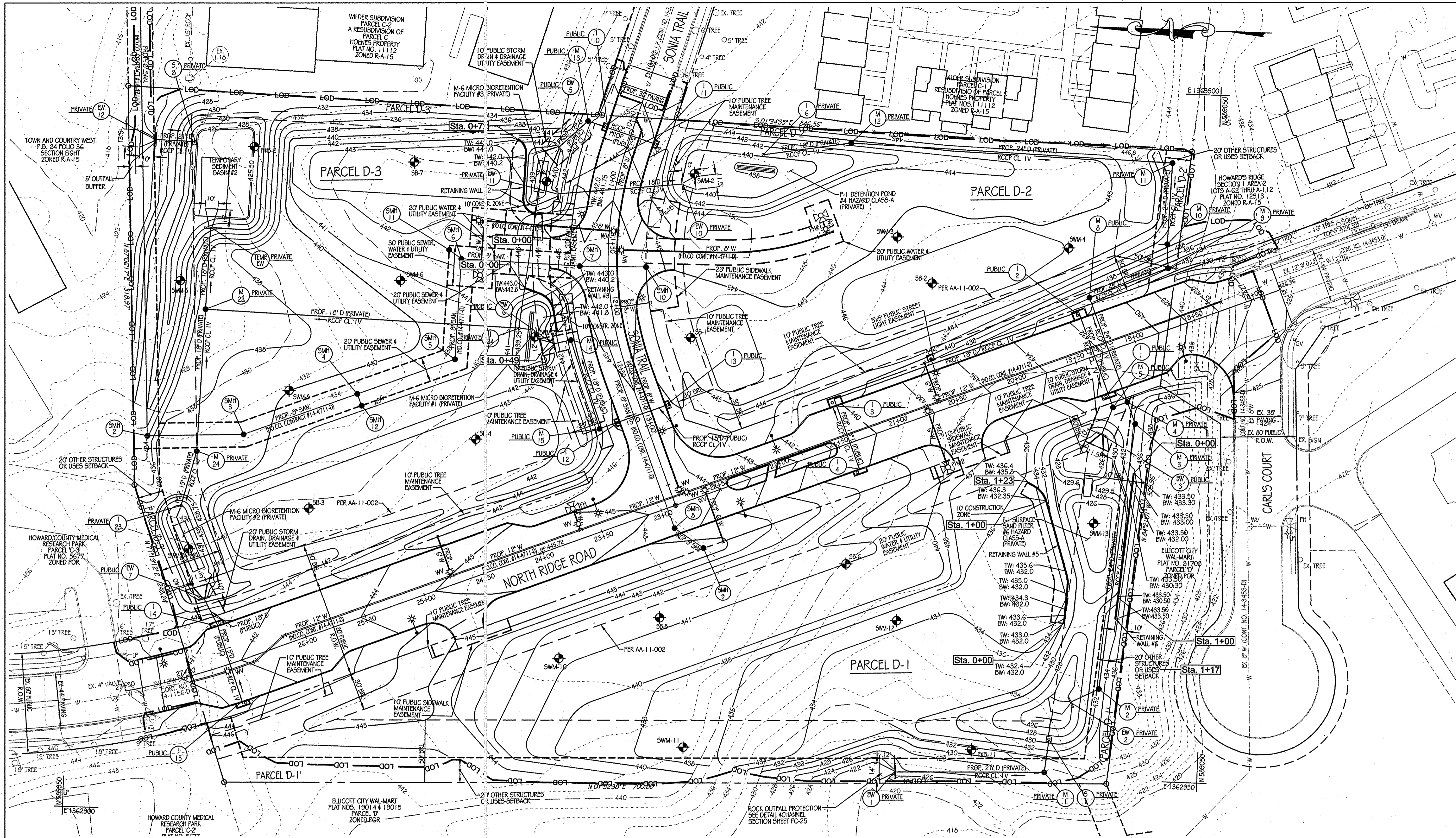


SEDIMENT BASIN #1 PLAN
SCALE: 1" = 20'

LEGEND

- 440 EX. CONTOURS
- 441 PROP. CONTOURS
- 21" RCCP PROP. STORM DRAIN
- RFS REMOVABLE PUMPING STATION
- RIP-RIP RIP-RAP OUTFALL

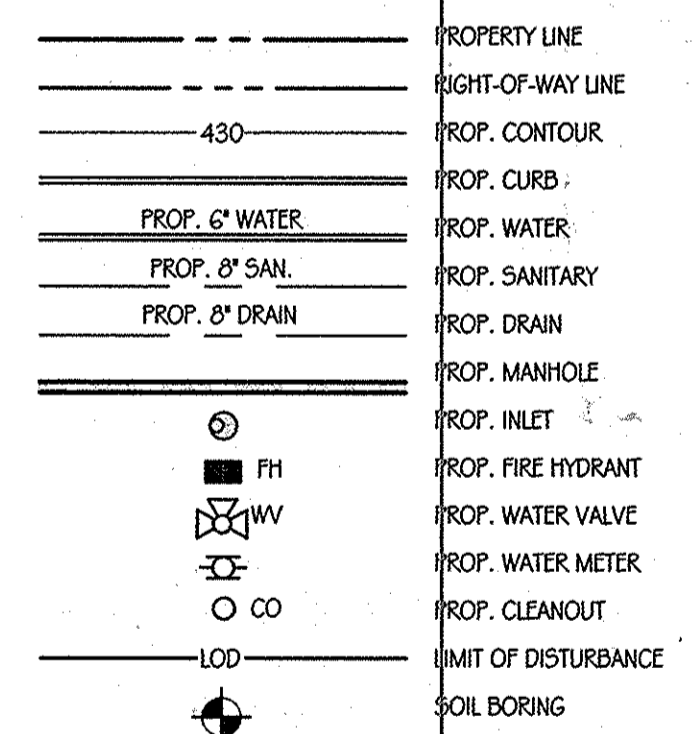
DATE	NUMBER	REVISION DESCRIPTIONS
		ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
		KCI TECHNOLOGIES 8161 MAPLE LAWN BOULEVARD SUITE 150 FULTON, MD 20759 TELEPHONE: (410) 92-8086 FAX: (410) 792-7419
		ORCHARD MEADOWS PARCEL D-1, D-2 & D-3 TAX MAP: 17 GRID: 23 PARCEL: 711 ZONED: R-A-15 ELECTION DISTRICT: NO. 2 HOWARD COUNTY, MD
		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.: 31089 EXPIRATION DATE: 11/12/12
		EROSION & SEDIMENT CONTROL NOTES
		PROJECT NO.: 2101105 SHEET 10 OF 29 DRAWING NUMBER FC-10



MASS GRADING PLAN
SCALE: 1" = 40'

- NOTES:
- FOR MICRO-BIORETENTION FACILITY #1 SEE SHEET FC-19.
 - FOR MICRO-BIORETENTION FACILITY #2 SEE SHEET FC-20.
 - FOR MICRO-BIORETENTION FACILITY #3 SEE SHEET FC-21.
 - FOR DETENTION FACILITY #4 SEE SHEETS FC-22 AND FC-23.
 - FOR SWM FACILITY #6 SEE FC-24, FC-25 FC-26.
 - FOR RIPRAP OUTLET PROTECTION DETAIL SEE SHEET FC-14.
 - FOR SEDIMENT BASIN #2 SEE SHEET FC-8.

LEGEND

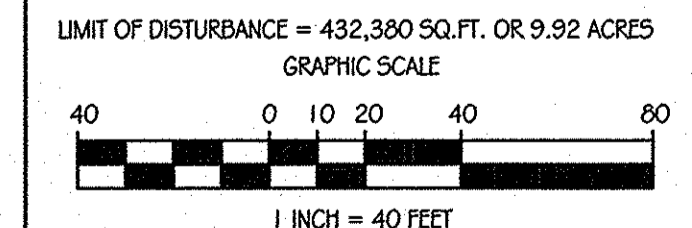


UTILITY NOTES

- CONSTRUCTION OF THE PROPOSED UTILITIES WILL BE IN ACCORDANCE WITH THE HOWARD COUNTY PLUMBING CODE, BY A QUALIFIED CONTRACTOR.
- NO WORK IS TO COMMENCE UNTIL ALL PERMITS HAVE BEEN OBTAINED.
- ALL CONSTRUCTION SHALL FOLLOW LATEST HOWARD COUNTY DEPT. OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS OF CONSTRUCTION OR AS DETAILED ON THE DRAWINGS.
- GRAVEL CRADLE IS REQUIRED UNDER ALL PIPE.
- ALL BACKFILL SHALL BE MECHANICALLY TAMPED.
- THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK SHOWN ON THESE DRAWINGS UNLESS OTHERWISE NOTED.
- ALL CHANNELS IN MANHOLES MUST BE CONSTRUCTED TO CONFORM AS USAS PROBING TO THE STANDARD CHANNELS CALLED FOR IN THE PROFILES.
- CLEANOUTS LOCATED IN PAVED AREAS SHALL HAVE COUNTERSUNK LIDS.
- ALL SANITARY SEWER CONSTRUCTION SHALL BE DONE UNDER A PERMIT AND PLAN ISSUED BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, WATER AND WASTEWATER ENGINEERING DIVISION.
- FOR UTILITY WORK OUTSIDE THE LOD SHOWN ON THIS PLAN, CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW DOWNSLOPE OF TRENCH.
- PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
- SEE SHEETS C-9, C-10, C-11, C-12 & C-13 FOR UTILITY PROFILES.
- CONTRACTOR TO COORDINATE WITH VERIZON FOR THE REMOVAL AND/OR LOCATION OF EXISTING TELEPHONE LINE.
- ALL WATER LINES SHALL HAVE A MINIMUM 3'-6" OF COVER.

PRIVATE STORM DRAIN STRUCTURE SCHEDULE

NO.	DESCRIPTION	TOP ELEV.	INV. IN	INV. OUT	REMARKS	COORDINATES
M-1	STD 4' MANHOLE	430.00	422.70	422.60	HOWARD CO. STD. DETAIL G-5.12	589,171.3581 1,362,954.2875
M-2	STD 4' MANHOLE	432.60	424.65	424.55	HOWARD CO. STD. DETAIL G-5.12	589,130.3648 1,363,022.4132
M-3	STD 4' MANHOLE	434.30	426.25	426.15	HOWARD CO. STD. DETAIL G-5.12	589,108.8977 1,363,235.2917
M-4	STD 4' MANHOLE	432.50	428.00/426.60	426.50	HOWARD CO. STD. DETAIL G-5.12	589,115.7896 1,363,252.5502
M-6	STD 4' MANHOLE	434.00	427.59	427.49	HOWARD CO. STD. DETAIL G-5.12	589,148.7135 1,363,334.9962
M-9	STD 4' MANHOLE	432.10	428.35	428.10	HOWARD CO. STD. DETAIL G-5.12	589,087.1697 1,363,360.5578
M-10	STD 4' MANHOLE	441.10	433.48	431.08	HOWARD CO. STD. DETAIL G-5.12	589,088.4525 1,363,379.6255
M-11	STD 4' MANHOLE	442.85	436.29	433.23	HOWARD CO. STD. DETAIL G-5.12	589,086.6361 1,363,444.7890
M-12	STD 4' MANHOLE	444.59	436.56	436.04	HOWARD CO. STD. DETAIL G-5.12	589,342.2106 1,363,451.8545
M-23	STD 4' MANHOLE	436.56	431.31/431.31/431.36	431.21	HOWARD CO. STD. DETAIL G-5.12	589,850.1890 1,363,301.6227
M-24	STD 4' MANHOLE	438.95	432.70	432.45	HOWARD CO. STD. DETAIL G-5.12	589,853.2507 1,363,187.9828
EW-1	TYPE 'C' ENDWALL	-	-	438.50	HOWARD CO. STD. DETAIL D-5.21	589,290.4746 1,362,950.4937
EW-10	TYPE 'C' ENDWALL	-	-	439.65	HOWARD CO. STD. DETAIL D-5.21	589,474.7195 1,363,414.7128
EW-11	TYPE 'C' ENDWALL	-	-	439.65	HOWARD CO. STD. DETAIL D-5.21	589,574.9503 1,363,403.3460
TEMP. EW	TYPE 'C' ENDWALL	-	-	438.42	HOWARD CO. STD. DETAIL D-5.21	589,848.393 1,363,370.83
I-6	TYPE 'D' INLET	441.00	437.00	437.00	HOWARD CO. STD. DETAIL D-4.11	589,411.7818 1,363,440.1888
I-23	TYPE 'D' INLET	437.75	433.50	433.15	HOWARD CO. STD. DETAIL D-4.11	589,864.2195 1,363,143.8221
I-24	TYPE 'D' INLET	440.00	435.25	435.75	HOWARD CO. STD. DETAIL D-4.11	589,600.9615 1,363,294.9203



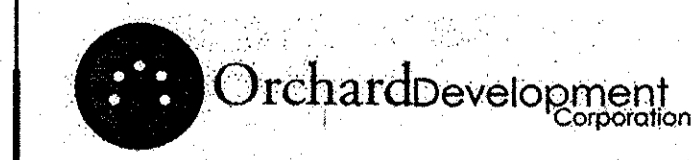
APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schuyler, Acting 11/22/11
CHIEF, BUREAU OF HIGHWAYS
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kat Stroh 11/23/11
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

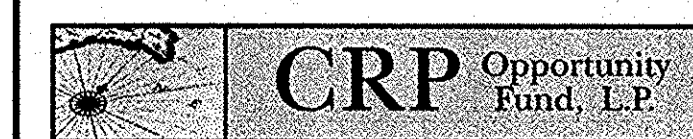
McDermott 11/22/11
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE



AS-BUILT CERTIFICATION
THIS AS-BUILT INFORMATION PROVIDED ON THIS SHEET IS ACCURATE AND TRUE.
DATE 7-1-13



OWNER / DEVELOPER:
ORCHARD DEVELOPMENT CORPORATION
5032 DORSEY HILL DRIVE
ELICOTT CITY, MD 21042
(410) 964-2334



DATE	NUMBER	REVISION DESCRIPTIONS

HILLIS-CARNES ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, MD (410) 880-4788 Fax: (410) 880-4098

ORCHARD MEADOWS
PARCEL D-1, D-2 & D-3

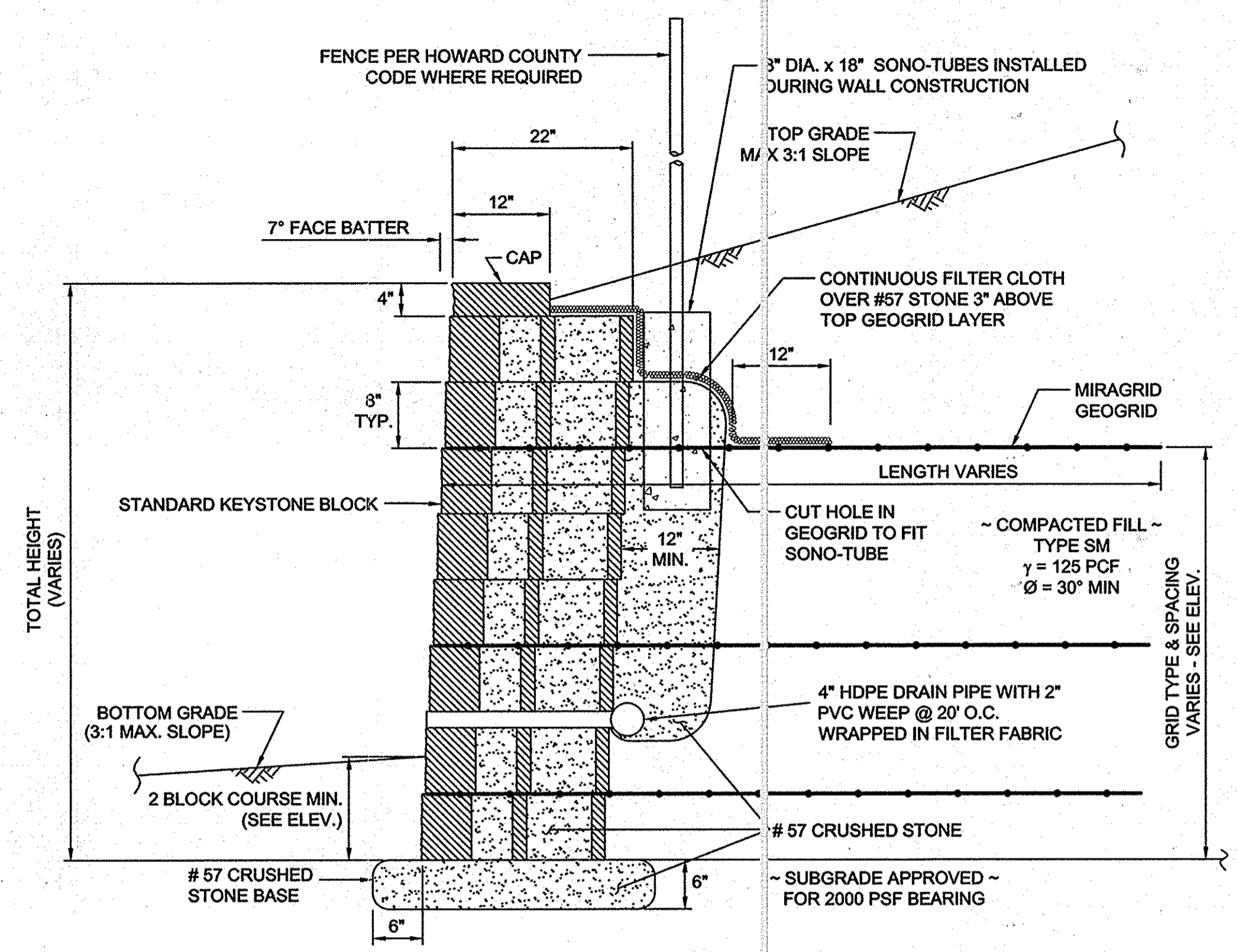
TAX MAP: 17 GRID: 23 PARCEL: 711
ZONED: R-A-15
ELECTION DISTRICT: NO. 2
HOWARD COUNTY, MD

RETAINING WALL LOCATION PLAN

TITLE

DESIGN BY: AM SCALE: 1" = 40'
DRAWN BY: AM DATE: 11-2-2011
CHECKED BY: RWS

PROJECT NO.: 11282-4
SHEET 11 OF 29
DRAWING NUMBER: FC-11



TYPICAL WALL SECTION
N.T.S.

NOTES:

- No trees shall be planted within 10 feet of the top of the retaining wall.
- Retaining walls shall only be constructed under the observation of a registered professional engineer and a (NICET, WACEL, or equiv.) certified soils technician.
- One soil boring shall be required every one hundred feet along the entire length of the wall. Copies of all boring reports shall be provided to the Howard County Inspector Prior to the start of construction.
- The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.
- The suitability of fill material shall be confirmed by the on-site soils technician. Each 8" 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.
- Walls shall not be constructed on unverified fill materials.
- Walls shall not be constructed within a Howard Co. right-of-way or easement.

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwab, Acting 11/22/11
 CHIEF - BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
Neil DeLoach 11/23/11
 CHIEF - DIVISION OF LAND DEVELOPMENT
Chris Danner 4/23/11
 CHIEF - DEVELOPMENT ENGINEERING DIVISION

SPECIFICATIONS
 KEYSTONE MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

- 1.01 Description
 A. Work shall consist of furnishing and construction of a KEYSTONE Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.
 B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.
 C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

- 1.02 Delivery, Storage and Handling
 A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.
 B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

- 2.01 Modular Concrete Retaining Wall Units
 A. Modular concrete units shall conform to the following architectural requirements:
 face color - concrete gray - standard manufacturers' color may be specified by the Owner.
 face finish - sculptured rock face in angular tri-planer configuration. Other face finishes will not be allowed without written approval of Owner.
 bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
 exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.
 B. Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.
 C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:
 compressive strength = 3000 psi minimum;
 absorption = 8 % maximum (6% in northern states) for standard weight aggregates;
 dimensional tolerances = ± 1/8" from nominal unit dimensions not including rough split face, ±1/16" unit height - top and bottom planes;
 unit size - 8" (H) x 18" (W) x 22" (D) minimum;
 unit weight - 100 lbs/unit minimum for standard weight aggregates;
 inter-unit shear strength - 1000 plf minimum at 2 psi normal pressure;
 geogrid/unit peak connection strength - 1000 plf minimum at 2 psi normal force.
 D. Modular concrete units shall conform to the following constructability requirements:
 vertical setback = 1/8"± per course (near vertical) or 1"± per course per the design;
 alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;
 maximum horizontal gap between erected units shall be - 1/2 inch.
- 2.02 Shear Connectors
 A. Shear connectors shall be 1/2 inch diameter thermoset isophthalic polyester resin-protruded fiberglass reinforcement rods or equivalent to provide connection

- between vertically and horizontally adjacent units.
 Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F.
 B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

- 2.03 Base Leveling Pad Material
 A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.

- 2.04 Unit Drainage Fill
 A. Unit drainage fill shall consist of #57 crushed stone

- 2.05 Reinforced Backfill
 A. Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and meet other properties shown on the plan:

Sieve Size	Percent Passing
2 inch	100-75
3/4 inch	100-75
No. 40	0-70
No. 200	0-35

- Plasticity Index (PI) <10 and Liquid Limit <40 per ASTM D-4318.
 B. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.

- 2.06 Geogrid Soil Reinforcement
 A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn.

- 2.07 Drainage Pipe
 A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.

PART 3 EXECUTION

- 3.01 Excavation
 A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.

- 3.02 Base Leveling Pad
 A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the modular wall unit.
 B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

- 3.03 Modular Unit Installation
 A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.
 B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.

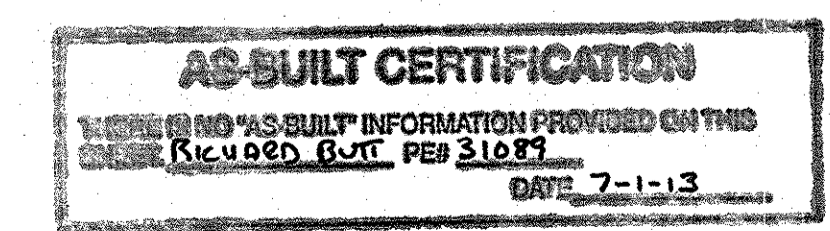
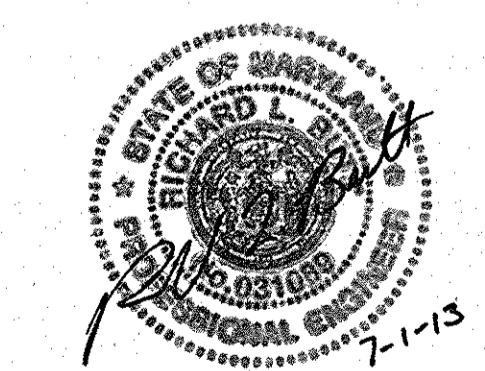
- C. Install shear/connecting devices per manufacturer's recommendations.
 D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.
 E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.

- 3.04 Structural Geogrid Installation
 A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
 B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.
 C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.
 D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

- 3.05 Reinforced Backfill Placement
 A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.
 B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.
 C. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3% to - 3% of optimum.
 D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.
 E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
 F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.
 G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

- 3.06 Cap Installation
 A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.

- 3.07 Field Quality Control
 A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.
 B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.

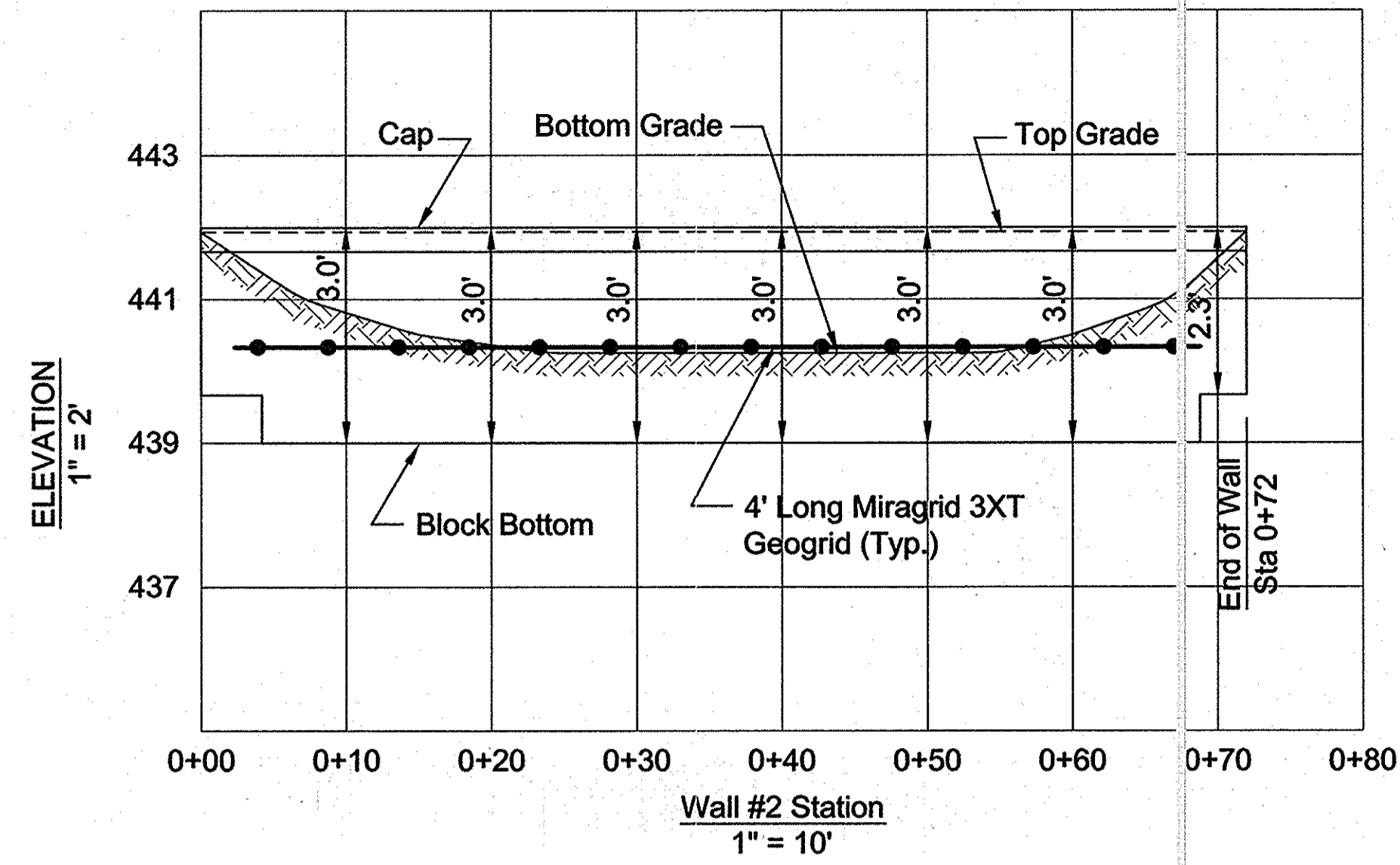


Orchard Development Corporation
 5032 BORSLEY HALL DRIVE
 ELICOTT CITY, MD 21042
 (410) 964-2334

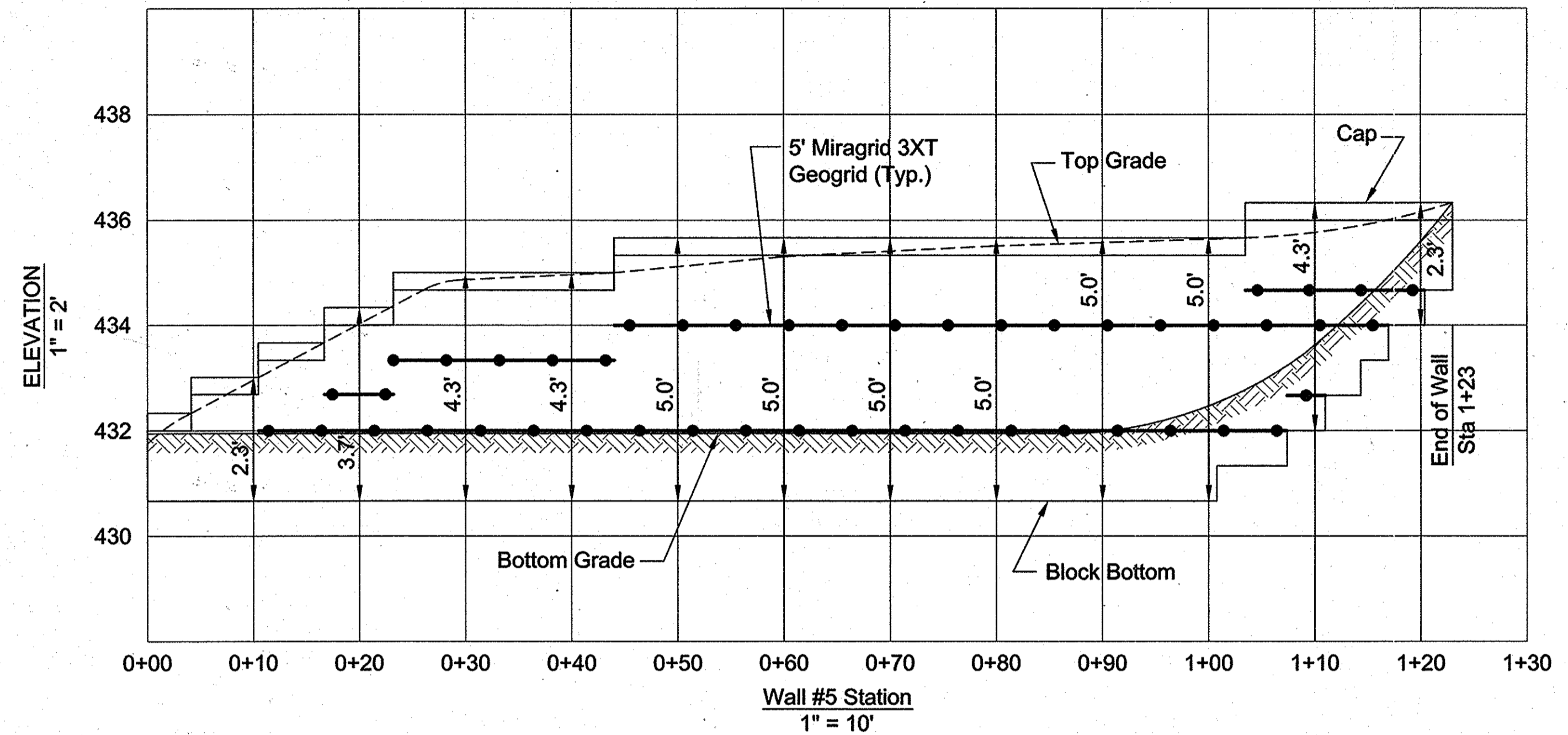
OWNER/DEVELOPER:
 ORCHARD DEVELOPMENT CORPORATION
 5032 BORSLEY HALL DRIVE
 ELICOTT CITY, MD 21042
 (410) 964-2334

CRP Opportunity Fund, L.P.

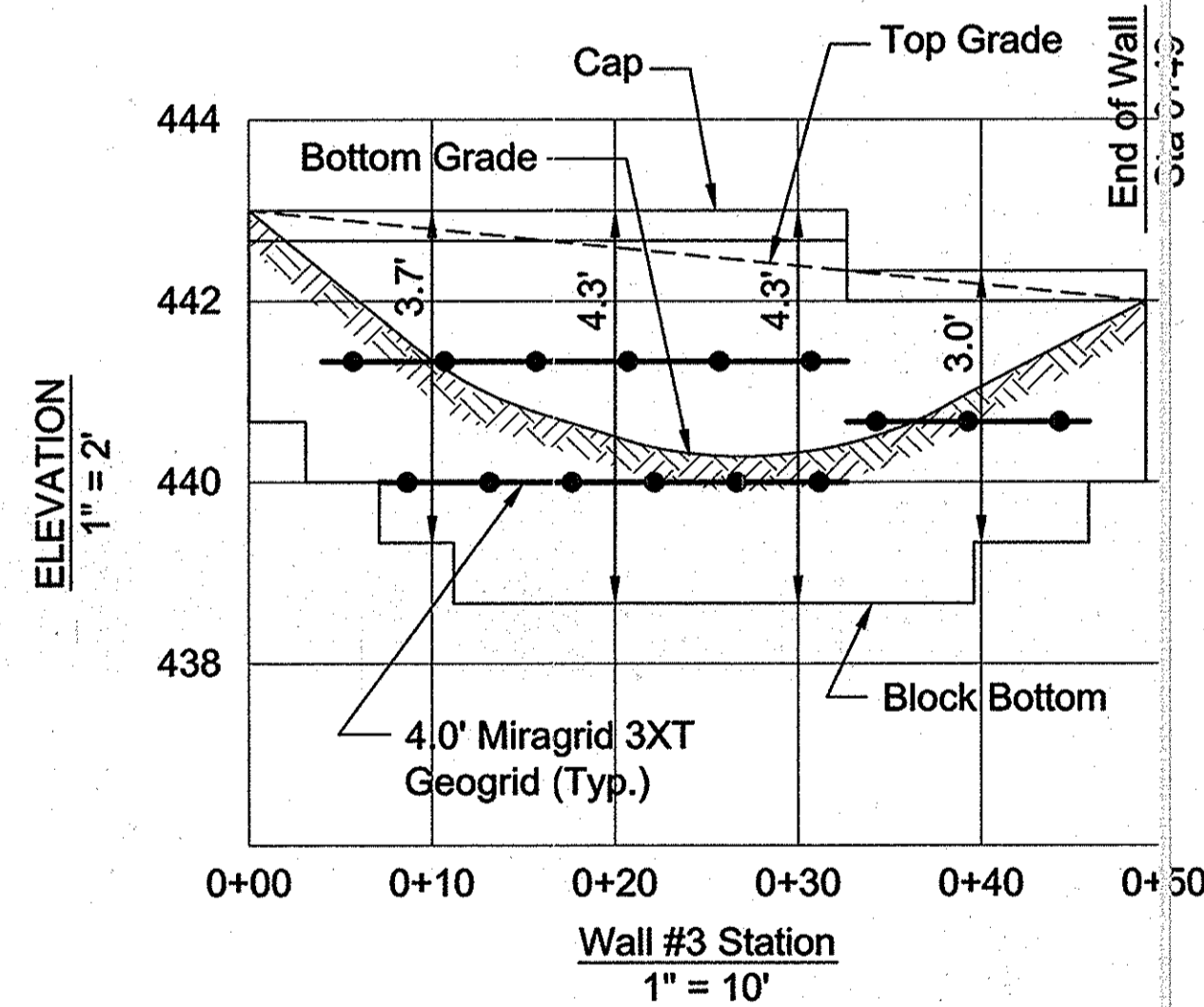
DATE	NUMBER	REVISION DESCRIPTIONS
 10975 Guilford Road, Suite A Annapolis Junction, MD (410) 880-4788 Fax: (410) 880-4098		
ORCHARD MEADOWS PARCEL D-1, D-2 & D-3		PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO.: 14434 EXPIRATION DATE: 05/13/13
TAX MAP: 17 GRID: 23 PARCEL: 711 ZONED: R-A-15 ELECTION DISTRICT: NO. 2 HOWARD COUNTY, MD		
TITLE RETAINING WALL DETAILS		
DESIGN BY: AM	SCALE: AS SHOWN	PROJECT NO.: 11282-A
DRAWN BY: AM	DATE: 11-2-2011	SHEET 12 OF 29
CHECKED BY: RWS		DRAWING NUMBER FC-12



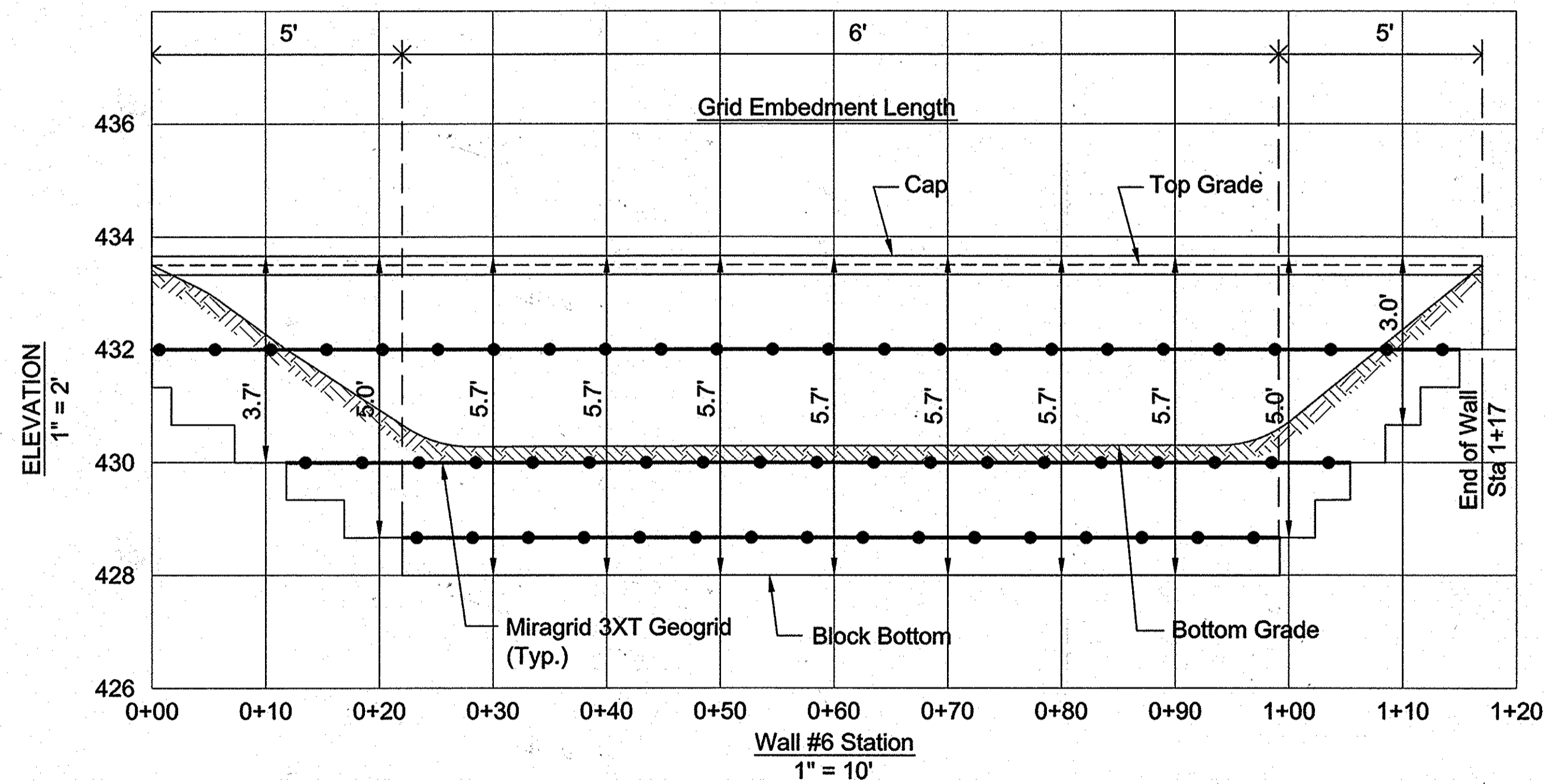
WALL #2 ELEVATION



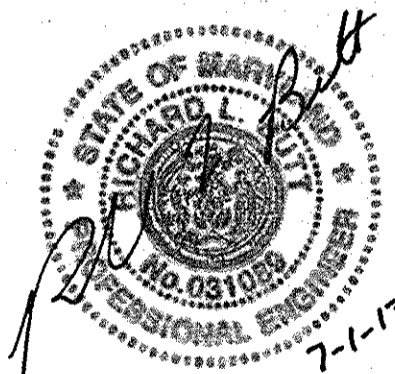
WALL #5 ELEVATION



WALL #3 ELEVATION



WALL #6 ELEVATION



AS-BUILT CERTIFICATION
THIS DRAWING IS AS-BUILT INFORMATION PROVIDED BY THE CLIENT. Richard G. Pitt, P.E. 3/10/13 DATE 7-1-13

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwymer, Acting
CHIEF - BUREAU OF HIGHWAYS
11/22/11
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Karl Shadlock
CHIEF - DIVISION OF LAND DEVELOPMENT
4/23/11
DATE

CHIEF-DEVELOPMENT ENGINEERING DIVISION
4/24/11
DATE

Orchard Development Corporation
5032 DORSEY HALL DRIVE
ELICOTT CITY, MD 21042
(410) 964-2334

OWNER / DEVELOPER:
ORCHARD DEVELOPMENT CORPORATION
5032 DORSEY HALL DRIVE
ELICOTT CITY, MD 21042
(410) 964-2334

CRP Opportunity Fund, L.P.

DATE	NUMBER	REVISION DESCRIPTIONS
HILLIS-CARNES ENGINEERING ASSOCIATES 10975 Guilford Road, Suite A Annapolis Junction, MD (410) 880-4788 Fax: (410) 880-4098		
ORCHARD MEADOWS PARCEL D-1, D-2 & D-3 TAX MAP: 17 GRID: 23 PARCEL: 711 ZONED: R-A-15 ELECTION DISTRICT: NO. 2 HOWARD COUNTY, MD		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.: 14434 EXPIRATION DATE: 09/13/13
RETAINING WALL ELEVATIONS		
DESIGN BY: AM	SCALE: AS SHOWN	PROJECT NO.: 11292-A
DRAWN BY: AM	DATE: 11-2-2011	SHEET 13 OF 29
CHECKED BY: RWS		DRAWING NUMBER FC-13

DRAINAGE AREA DATA

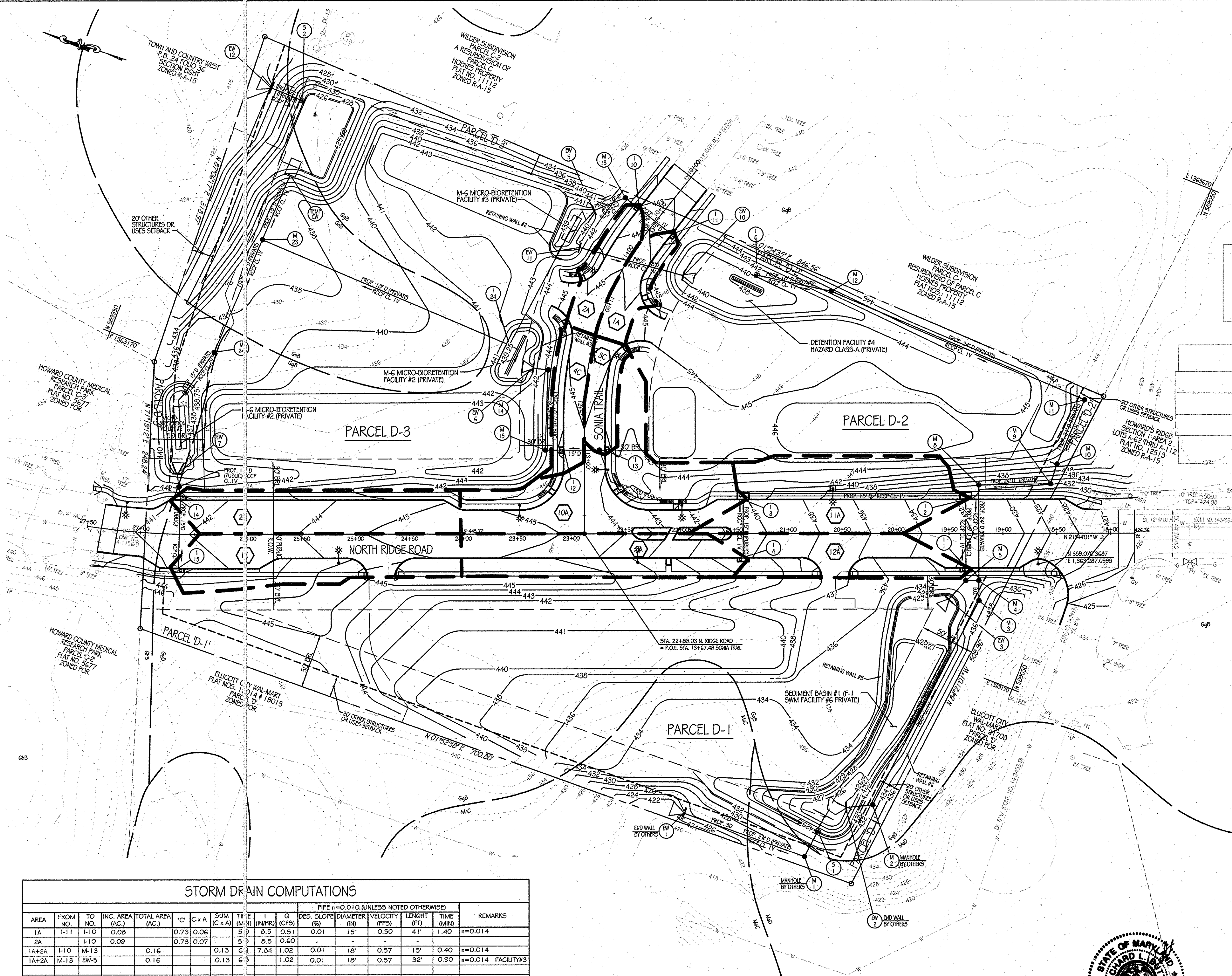
STRUCTURE NO.	AREA (AC)	C	% OF IMPERVIOUS
I-1	0.19	0.67	0.70
I-2	0.33	0.54	0.50
I-3	0.39	0.57	0.54
I-4	0.23	0.63	0.63
I-10	0.09	0.73	0.81
I-11	0.08	0.73	0.79
I-12	0.09	0.71	0.76
I-13	0.07	0.76	0.82
I-14	0.24	0.68	0.85
I-15	0.27	0.78	0.71

SOILS CHART

SOILS SYMBOL	SOILS DESCRIPTION
GgB	GLENELG, 3 TO 8 PERCENT SLOPES
GhB	GLENELA-URBAN LAND COMPLEX, 0 TO 8 PERCENT
GhC	GLENEVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT
MaC	MANOR LOAM, 0 TO 15 PERCENT
MaD	MANOR LOAM, 15 TO 25 PERCENT

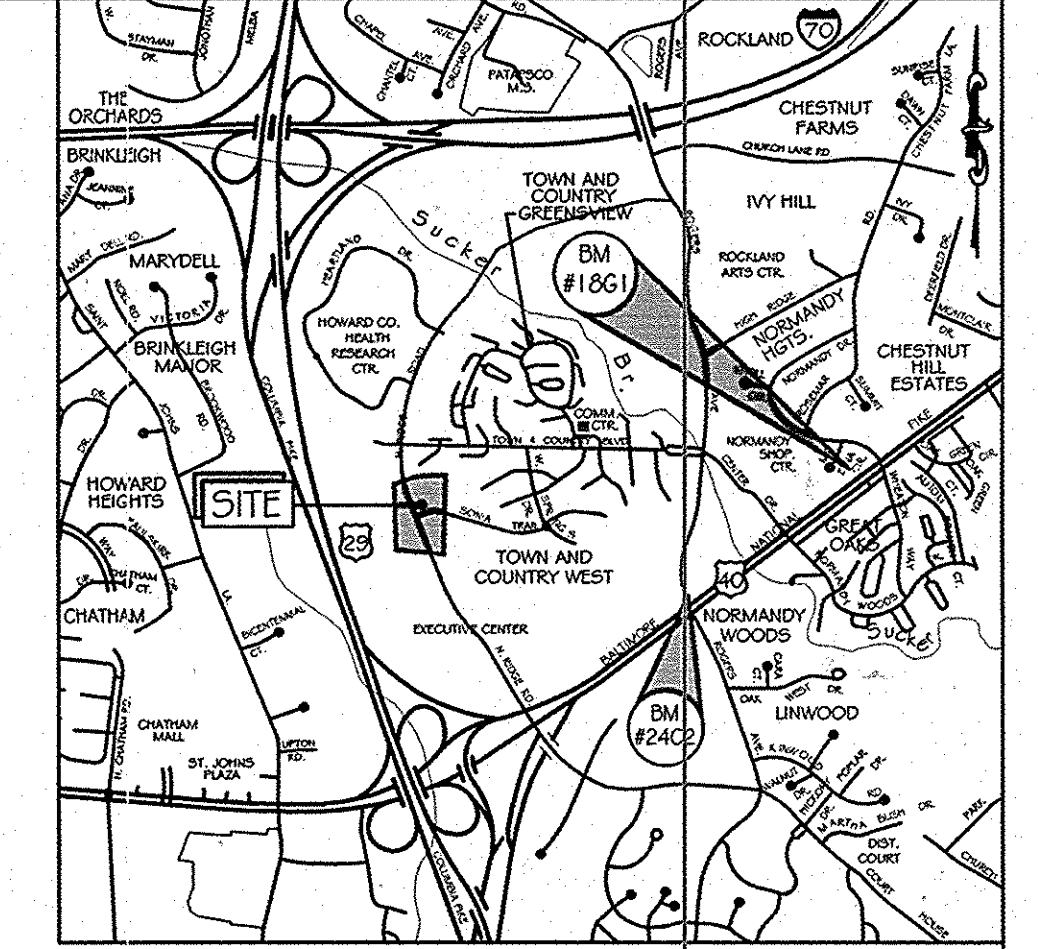
LEGEND

- 420 --- EX. INTERMEDIATE CONTOUR
- 430 --- EX. INDEX CONTOUR
- EX. 6" W --- EX. WATER
- EX. 15" RCCP --- EX. STORM DRAIN
- EX. 8" SAN --- EX. SANITARY
- X --- EX. FENCE
- PH --- EX. FIRE HYDRANT
- WV --- EX. WATER VALVE
- GV --- EX. GAS VALVE
- LP --- EX. LIGHT POLE
- --- EX. MANHOLE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- 430 --- PROP. CONTOUR
- PROP. CURB
- PROP. 6" DRAIN
- --- PROP. MANHOLE
- --- PROP. INLET
- --- PROP. LIGHT POLE (12' ARM)
- --- PROP. LIGHT POLE (POST TOPS)
- DRAINAGE AREA LINE
- GgB --- SOILS LINE
- MaC --- SOILS LINE
- LOD --- LIMIT OF DISTURBANCE

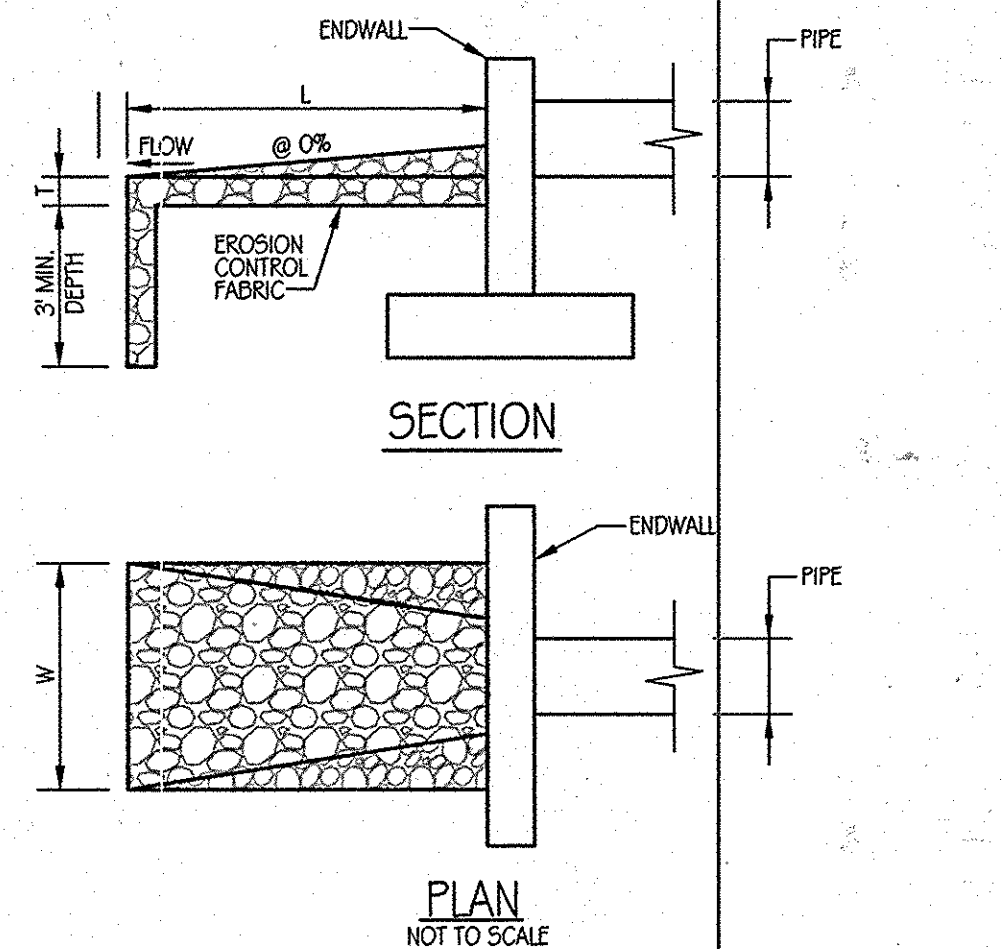


STORM DRAIN COMPUTATIONS

AREA	FROM NO.	TO NO.	INC. AREA (AC)	TOTAL AREA (AC)	C	C x A	SUM (C x A)	TH (IN)	DES. SLOPE (S)	DIAMETER (IN)	VELOCITY (FPS)	LENGTH (FT)	TIME (MIN)	REMARKS	
1A	I-11	I-10	0.08	0.73	0.06	0.37	5	8.5	0.51	15"	0.50	41'	1.40	n=0.014	
2A	I-10	I-10	0.09	0.73	0.07	0.13	6	7.84	1.02	18"	0.57	15'	0.40	n=0.014	
1A+2A	M-13	M-13	0.16	0.16	0.13	0.13	6	1.02	0.01	18"	0.57	32'	0.90	n=0.014 FACILITY#3	
9A	I-4	I-3	0.23	0.63	0.15	5	8.5	1.28	0.04	15"	1.00	56'	0.90	n=0.014	
10A	I-3	I-3	0.39	0.57	0.22	0.37	5	8.5	1.87	0.05	18"	1.62	206'	2.1	n=0.014
9A+10A	I-2	I-2	0.62	0.54	0.18	5	8.5	1.93	0.16	18"	2.20	66'	0.50	n=0.014	
11A	I-2	I-1	0.33	0.55	0.18	5	7.20	3.96	0.16	18"	2.20	66'	0.50	n=0.014	
9A+11A	I-1	I-1	0.95	0.67	0.13	5	8.5	1.11	0.22	18"	2.70	11'	0.10	n=0.014	
12A	M-5	M-5	0.16	0.68	0.5	5	7.05	4.79	0.22	18"	2.70	11'	0.10	n=0.014	
9A+12A	M-5	M-5	1.14	0.68	0.5	5	0.81	0.06	12"	1.00	24'	0.20	n=0.014 FACILITY#6		
1A+12A	M-4	M-4	0.16	0.68	0.5	5	7.02	2.33	0.05	18"	1.30	12'	0.10	n=0.014	
1A+12A	M-4	EW-2	0.27	0.78	0.21	5	6.40	0.09	24"	1.00	250'	0.20	n=0.014 FACILITY#2		
1C	I-15	I-14	0.27	0.78	0.21	5	8.5	1.79	0.05	15"	2.00	66'	0.80	n=0.014	
2C	I-14	I-14	0.24	0.68	0.16	5	8.5	1.36	0.05	15"	2.00	66'	0.80	n=0.014	
1C+2C	I-14	EW-7	0.51	0.37	0.37	5	8.2	3.03	0.05	18"	1.75	24'	0.20	n=0.014 FACILITY#2	
3C	I-13	I-12	0.07	0.76	0.05	5	8.5	0.43	0.01	15"	0.50	41'	1.40	n=0.014	
4C	I-12	I-12	0.09	0.71	0.06	5	9.76	0.59	-	-	-	-	-	SUMP	
1C+4C	M-15	M-15	0.16	0.11	0.11	6	7.84	0.86	0.01	18"	0.50	16'	0.50	n=0.014	
5C	M-15	M-15	0.13	0.28	0.04	5	6.5	0.34	0.01	15"	0.50	30'	1.0	(PRIVATE) FUTURE	
1C+5C	M-15	M-14	0.29	0.15	0.15	7	7.44	1.12	0.01	18"	0.62	75'	2.0	n=0.014	
1C+5C	M-14	EW-6	0.29	0.15	0.15	9	7.70	1.12	0.01	18"	0.62	14'	0.40	n=0.014 FACILITY#1	



LOCATION MAP
SCALE: 1" = 2000'
ADC MAP COORDINATES: 12-7C



STRUCTURE	D-50	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SHA CLASS
EW-5	9.5	10	11.5	1.5'	I
EW-6	9.5	10	11.5	1.5'	I
EW-7	9.5	10	11.5	1.5'	I
EW-10	9.5	10	11.5	1.5'	I
EW-1	9.5	12	14	1.5'	I
EW-12	9.5	12	14	1.5'	I

OUTLET PROTECTION DETAIL

STORM DRAIN DRAINAGE AREA MAP
SCALE: 1" = 50'

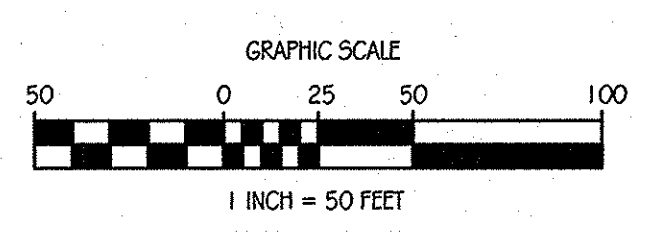


AS-BUILT CERTIFICATION
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. REVISIONS LISTED PER 31081.
DATE: 7-1-13

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diase Schwab, Acting 11/22/11
CHIEF, BUREAU OF HIGHWAYS
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kurt S. Dwin 11/23/11
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

APPROVED: CHIEF-DEVELOPMENT ENGINEERING DIVISION
John P. ... 11/23/11
DATE



OrchardDevelopment Corporation
CRP Opportunity Fund, L.P.

CONTRACT PURCHASER/DEVELOPER:
ORCHARD DEVELOPMENT CORPORATION
5032 DORSEY HALL DRIVE
ELICOTT CITY, MD 21042
(410) 964-2334

OWNER:
WALDER BUILDING CORPORATION
3300 SONIA TRAIL
ELICOTT CITY, MD 21043
(410) 461-2522

DATE	NUMBER	REVISION DESCRIPTIONS

KCI TECHNOLOGIES
8161 MARLE LAWN BOULEVARD
SUITE 150
FULTON, MD 20759
TELEPHONE: (410) 92-8086
FAX: (410) 792-7193

ORCHARD MEADOWS
PARCEL D-1, D-2 & D-3
TAX MAP: 17 GRID: 23 PARCEL: 711
ZONED: R-A-15
ELECTION DISTRICT: NO. 2
HOWARD COUNTY, MD

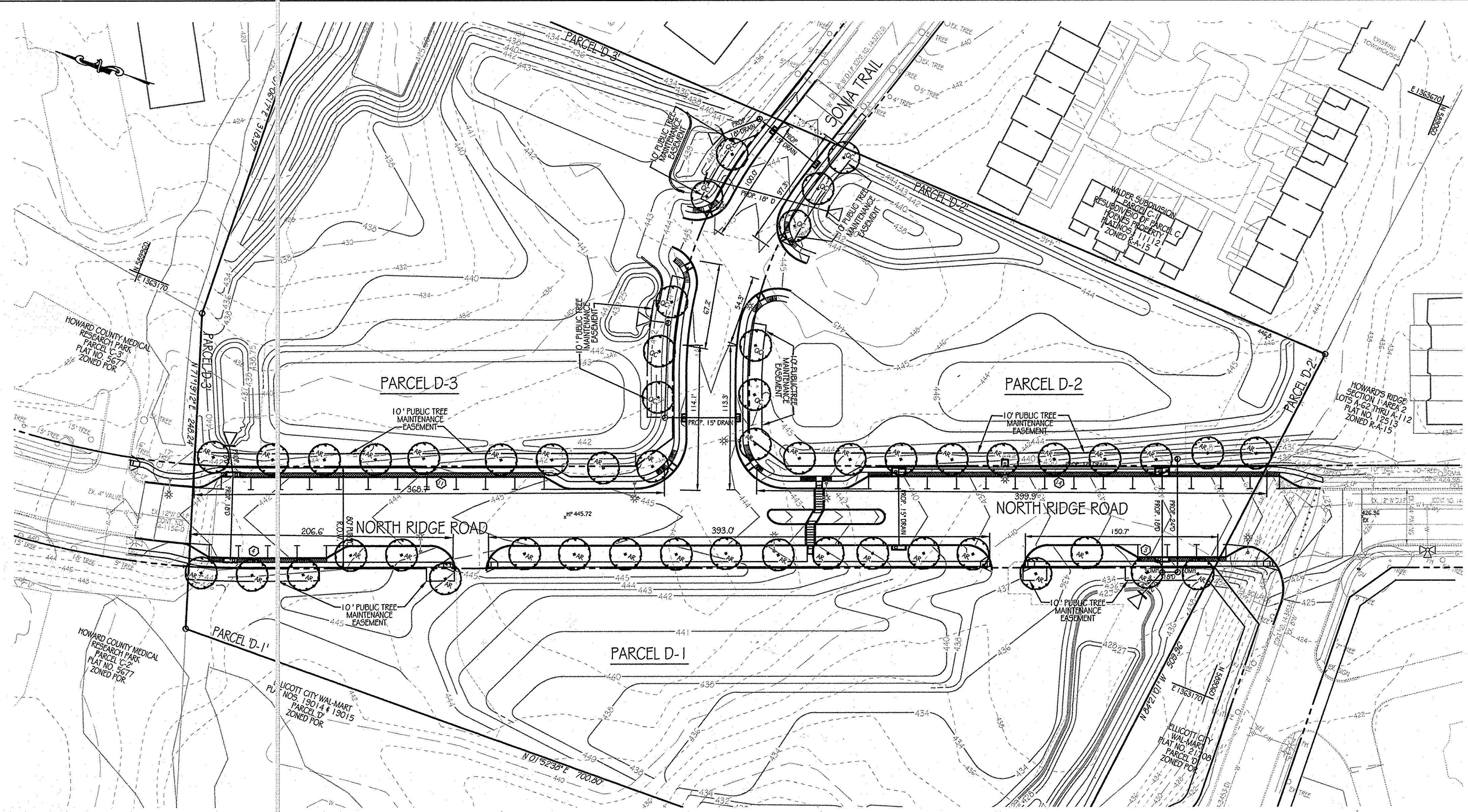
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 31089
EXPIRATION DATE: 1/1/21

TITLE: NORTH RIDGE ROAD & SONIA TRAIL GRADING PLAN AND STORM DRAIN DRAINAGE AREA MAP

DESIGN BY: D.E.S.
DRAWN BY: C.T.B.
CHECKED BY:

SCALE: 1" = 50'
DATE: 11-02-2011
APPROVED:

PROJECT NO.: 27101105
SHEET 14 OF 29
DRAWING NUMBER: FC-14



STREET TREE PLANTING PLAN
SCALE: 1" = 50'

PROPOSED ROADS	LINEAR STREET FOOTAGE OF PROP. ROAD EDGE	STREET TREES REQUIRED (1-40LF)	STREET TREES PROVIDED
NORTH RIDGE ROAD	1544 LF	36	36
SONIA TRAIL	546.2 LF	13	12*

* PLEASE SEE NOTES ON THIS PAGE EXPLAINING STREET TREE PLANTINGS.

NOTES

- THE REQUIRED LANDSCAPING FOR PARCELS D-1, D-2, AND D-3 SHALL BE PROVIDED BY SOP-11-052.
- THERE ARE NO EASEMENTS LOCATED ON-SITE.
- NORTH RIDGE ROAD AND SONIA TRAIL HAVE STORM DRAIN EASEMENTS WITHIN AND ADJACENT TO THE ROAD EDGE. THE PLACEMENT OF SAID EASEMENTS PROHIBITS THE PLACEMENT OF REQUIRED STREET TREE PLANTINGS.
- THE SURROUNDING LOTS D-1, D-2 AND D-3 PLAN ON INSTALLING 4 DRIVEWAY ENTRANCES FOR VEHICULAR ACCESS TO THE SITE. THE DRIVEWAY ENTRANCES WILL BE INSTALLED ALONG THE WEST EDGE NORTH RIDGE ROAD AND THE NORTH AND SOUTH SIDE OF SONIA TRAIL. THE PLACEMENT OF STREET TREES HAS BEEN LIMITED PER THE LOCATION OF THE FUTURE DRIVEWAY ENTRANCES AND PROHIBITS THE REQUIRED PLANTINGS.
- STREET TREES THAT FALL OUTSIDE OF THE RIGHT-OF-WAY HAVE BEEN GIVEN A 10' LANDSCAPE MAINTENANCE EASEMENT.

FOREST CONSERVATION WORKSHEET

NET TRACT AREA:
 A. TOTAL TRACT AREA = 9.67 AC.
 B. AREA WITHIN 100 YEAR FLOODPLAIN = 0.00
 C. AREA TO REMAIN AGRICULTURAL PRODUCTION = 0.00
 D. NET TRACT AREA = 9.67 AC.

LAND USE CATEGORY: (FROM TABLE 3.2.1, PAGE 40, MANUAL)
 INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.

AREA	MOR	IDA	MDR	MFD	CIA

E. AFFORESTATION THRESHOLD 15% X D = 1.45 AC.
 F. CONSERVATION THRESHOLD 20% X D = 1.93 AC.

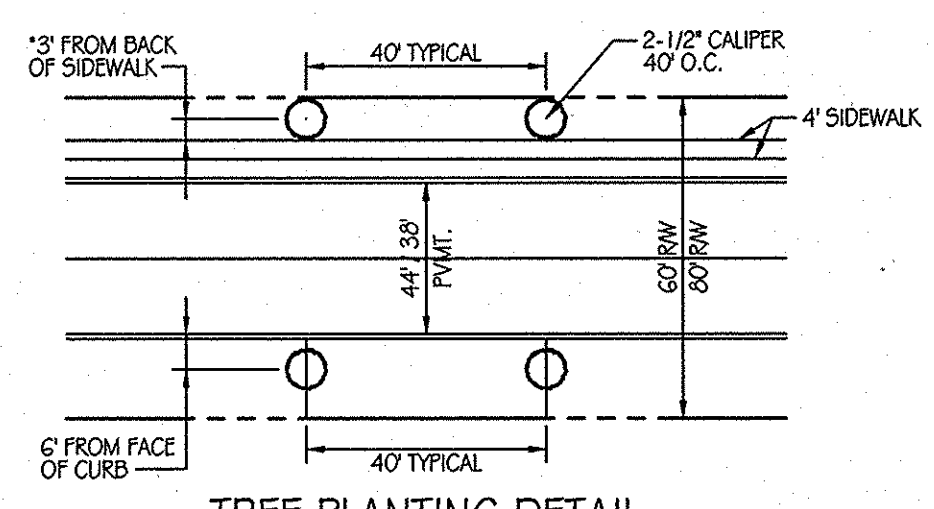
EXISTING FOREST COVER:
 G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN) = 0.00
 H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD = 0.00
 I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 0.00

BREAK EVEN POINT:
 J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION = 0.00
 K. CLEARING PERMITTED WITH OUT MITIGATION = 0.00

PROPOSED FOREST CLEARING:
 L. TOTAL AREA OF FOREST TO BE CLEARED = 0.00
 M. TOTAL AREA OF FOREST TO BE RETAINED = 0.00

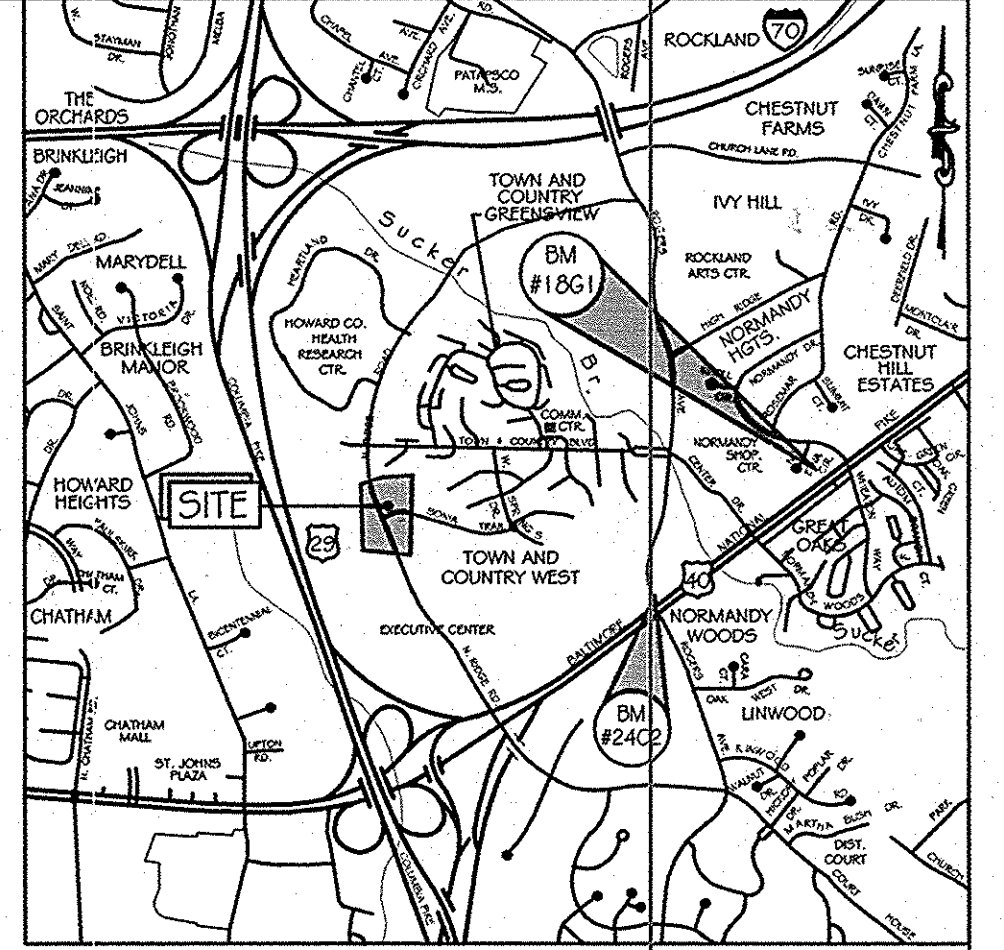
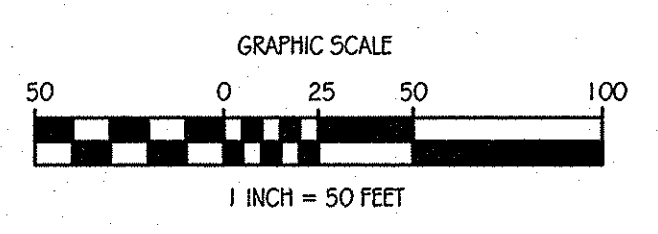
PLANTING REQUIREMENTS
 N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD = 0.00
 O. REFORESTATION FOR CLEARING BELOW THE CONSERVATION THRESHOLD = 0.00
 P. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD = 0.00
 Q. TOTAL REFORESTATION REQUIRED = 0.00
 R. TOTAL AFFORESTATION REQUIRED = 1.45
 S. TOTAL REFORESTATION AND AFFORESTATION REQUIRED = 1.45

NOTE:
 THE FOREST CONSERVATION OBLIGATION OF 1.45 ACRES OF AFFORESTATION FOR THIS PROJECT WILL BE MET BY A PAYMENT OF \$47,371.50 TO THE HOWARD COUNTY FOREST CONSERVATION FUND.



TREE PLANTING DETAIL

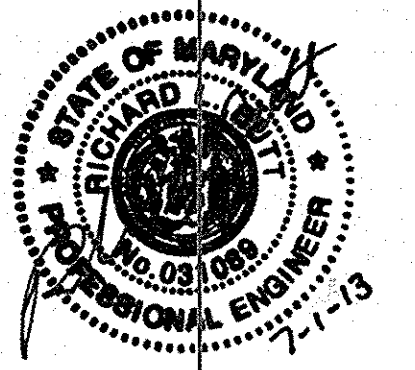
MEDIUM TREES - 2-1/2" CALIPER OR LARGER
 SCALE: 1" = 50'
 * IN A CASE WHERE THE CLEARANCE FROM BACK OF SIDEWALK TO RW IS LESS THAN 3', A TREE EASEMENT WILL BE REQUIRED.



LOCATION MAP
 SCALE: 1" = 2000'
 ADC MAP COORDINATES: 12-7C

LEGEND

- EX. INTERMEDIATE CONTOUR
- EX. INDEX CONTOUR
- EX. WATER
- EX. STORM DRAIN
- EX. SANITARY
- EX. FENCE
- EX. FIRE HYDRANT
- EX. WATER VALVE
- EV GAS VALVE
- EX. LIGHT POLE
- EX. MAHOLE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROP. CONTOUR
- PROP. CURB
- PROP. STORM DRAIN
- PROP. 12" WATER
- PROP. WATER
- PROP. SANITARY
- PROP. MANHOLE
- PROP. INLET
- PROP. FIRE HYDRANT
- PROP. WATER VALVE
- PROP. WATER METER
- PROP. CLEANOUT
- PROP. LIGHT POLE
- MAJOR DECIDUOUS TREE



AS-BUILT CERTIFICATION
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. REWARD OUT PER 31.021
 DATE: 11-1-13

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwab, Acting 11/22/11
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Vet Schulz 11/23/11
 CHIEF-DIVISION OF LAND DEVELOPMENT

[Signature] 11/23/11
 CHIEF DEVELOPMENT ENGINEERING DIVISION

OrchardDevelopment Corporation
 CRP Opportunity Fund, L.P.

CONTRACT PURCHASER/ DEVELOPER:
 ORCHARD DEVELOPMENT CORPORATION
 5032 DORSEY HALL DRIVE
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 (410) 964-2334

OWNER:
 WILDER BUILDING CORPORATION
 3300 SONIA TRAIL
 ELICOTT CITY, MD 21043
 (410) 461-2522

DATE	NUMBER	REVISION DESCRIPTIONS

ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION MANAGERS

KCI TECHNOLOGIES
 8161 Maple Lawn Boulevard
 Suite 150
 Fulham, MD 20759
 Telephone: (410) 92-8086
 Fax: (410) 922-7419

PROFESSIONAL ENGINEER
 STATE OF MARYLAND
 LICENSE NO. 021089
 11-2-11

ORCHARD MEADOWS
 PARCEL D-1, D-2 & D-3

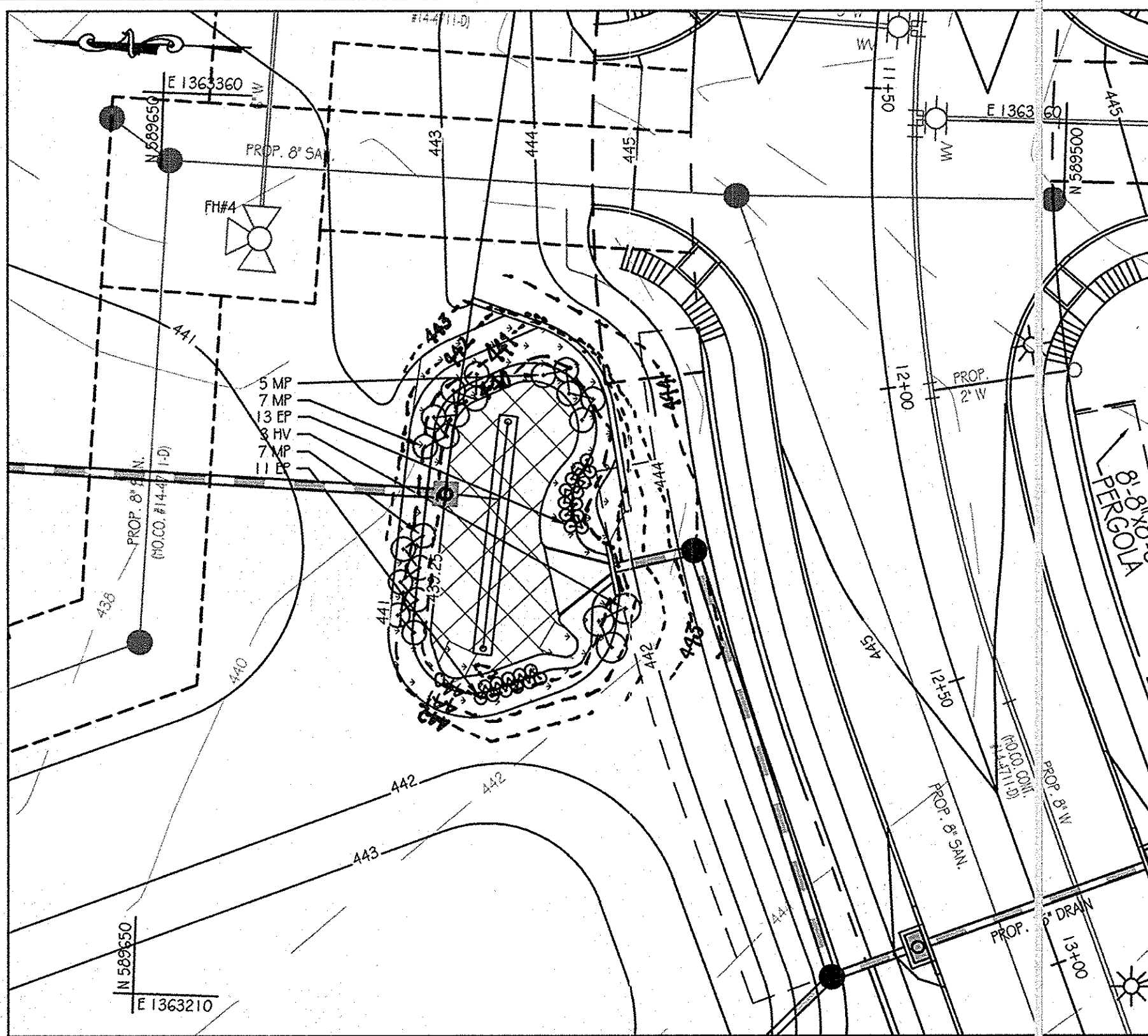
TAX MAP: 17 GRID: 23 PARCEL: 711
 ZONED: R-A-15
 ELECTION DISTRICT: NO. 2
 HOWARD COUNTY, MD

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO.: 654 EXPIRATION DATE: 10-08-2011

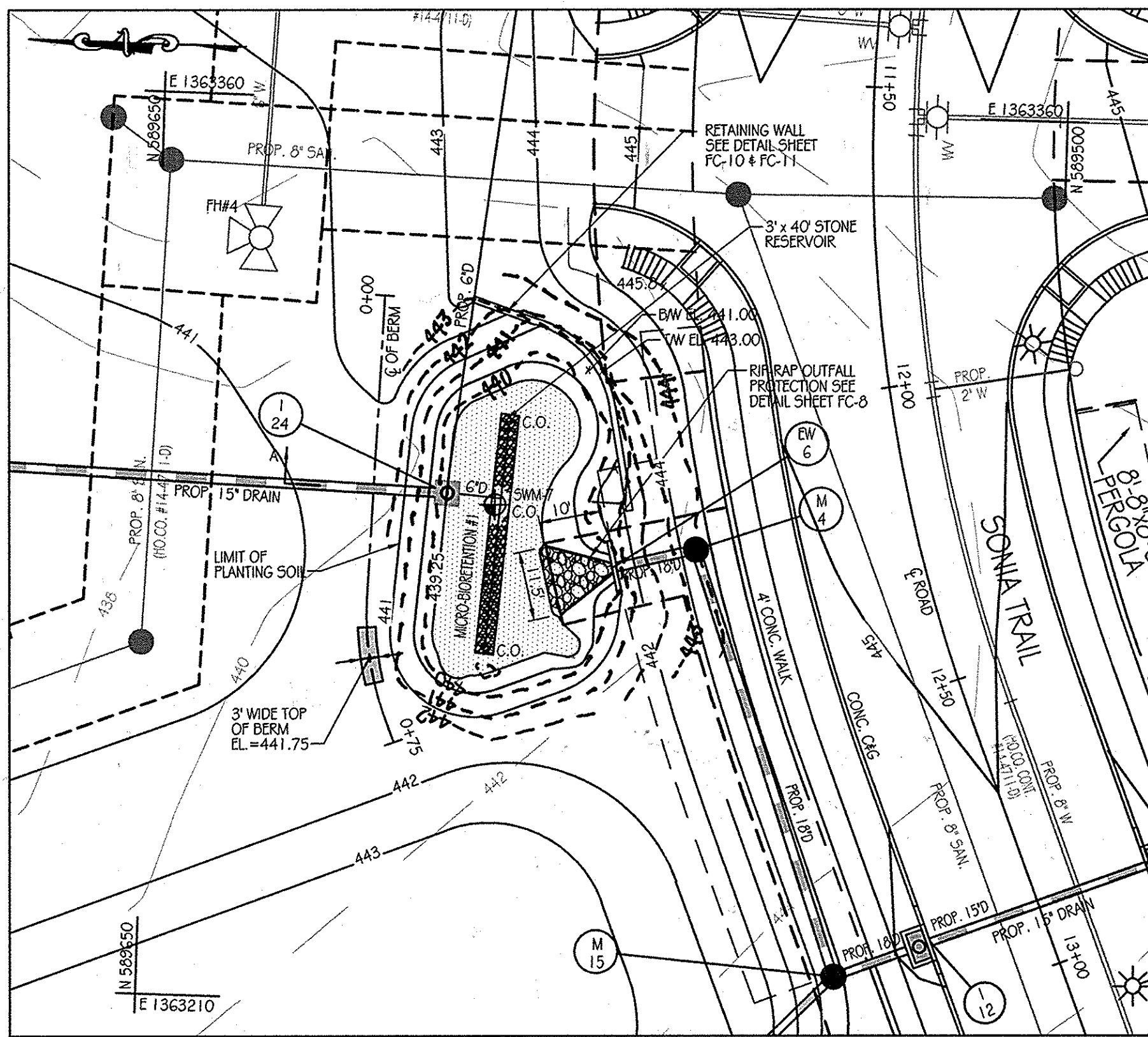
TITLE
 NORTH RIDGE ROAD & SONIA TRAIL TREE PLANTING PLAN

DESIGN BY: N.V.F. SCALE: 1" = 50'
 DRAWN BY: C.T.B. DATE: 11-02-2011
 CHECKED BY: APPROVED: _____

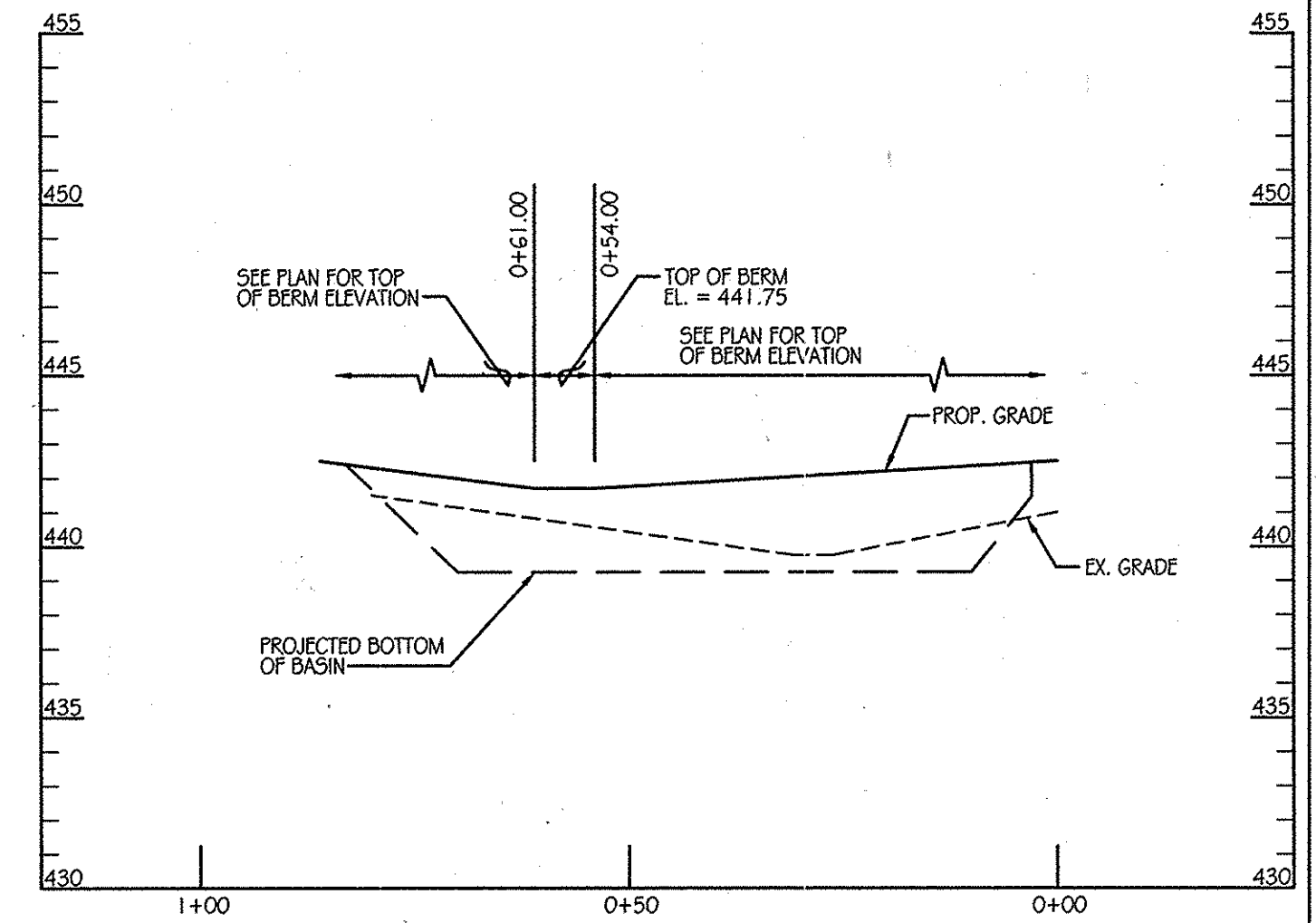
PROJECT NO.: 27101105
 SHEET 17 OF 29
 DRAWING NUMBER
 FC-17



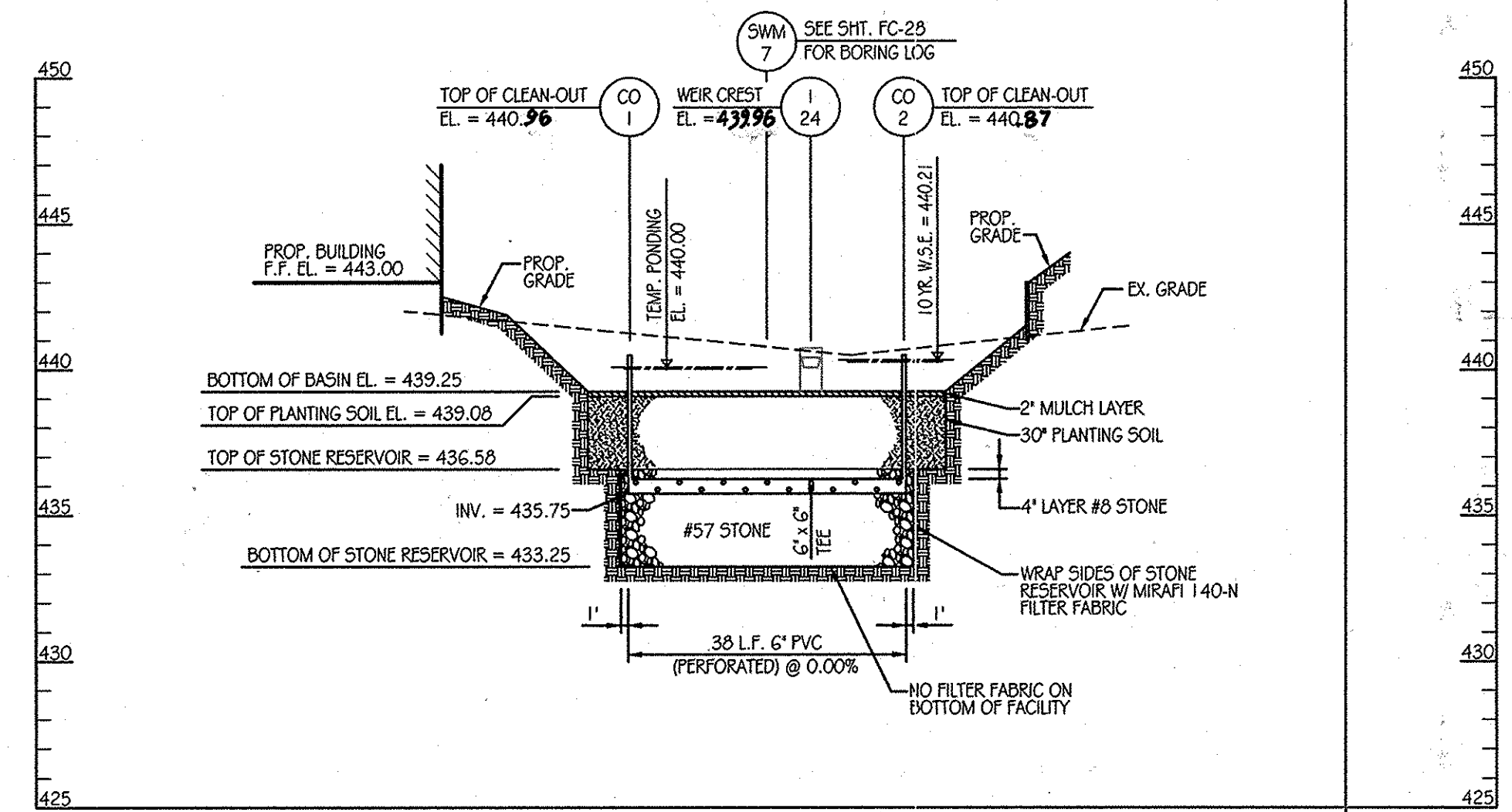
FACILITY #1 LANDSCAPE PLAN
SCALE: 1" = 20'



MICRO-BIORETENATION FACILITY #1 PLAN
SCALE: 1" = 20'



CENTERLINE OF BERM PROFILE
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL



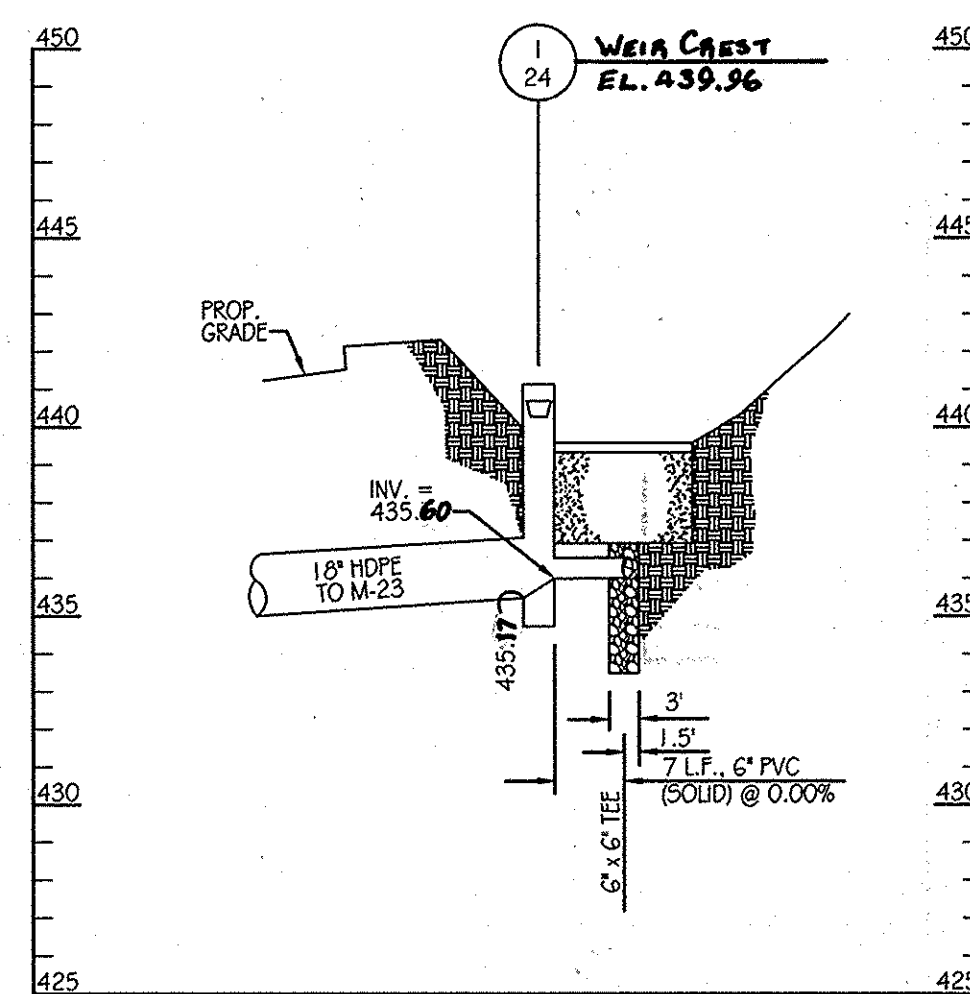
UNDERDRAIN PROFILE
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

Q BERM DATA

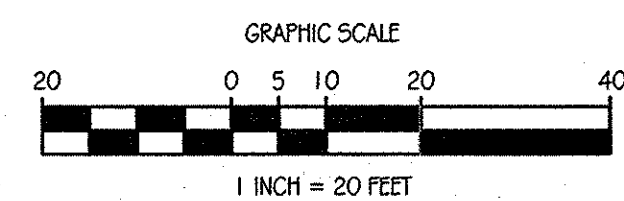
STATION	BEARING/RADIUS	DISTANCE/ARC LENGTH	CHORD
0+00	N86°27'34"W	50.16'	
0+50.16	50.0'	20.34'	57°53'15"W 20.20'
0+70.50	S62°14'44"W	4.50'	
0+75			

LEGEND

- SOIL BORING
- EX. CONTOURS
- PROP. CONTOURS
- PROP. STORM DRAIN
- TOP OF BERM
- LIMIT OF PLANTING SOIL
- RIP-RAP OUTFALL
- STONE RESERVOIR
- SEED MIX #1
- SEED MIX #2
- AS-BUILT CONTOUR



SECTION A-A
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL



INSPECTION SCHEDULE

- THE DEVELOPER SHALL NOTIFY THE COUNTY AT LEAST 48 HOURS BEFORE COMMENCING ANY WORK IN CONJUNCTION WITH THE STORMWATER MANAGEMENT PLAN AND UPON COMPLETION OF A PROJECT WHEN A FINAL INSPECTION WILL BE CONDUCTED.
- AT A MINIMUM, REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED AT THE FOLLOWING SPECIFIED STAGES OF CONSTRUCTION.
 - (A) DURING EXCAVATION TO SUBGRADE;
 - (B) DURING PLACEMENT AND BACKFILL OF UNDERDRAIN SYSTEM;
 - (C) DURING PLACEMENT OF GEOTEXTILES AND ALL FILTER MEDIA;
 - (D) DURING CONSTRUCTION OF APPURTENANT CONVEYANCE SYSTEMS SUCH AS DIVERSION STRUCTURES, PRE-FILTERS, FILTERS, CULLETS AND FLOW DISTRIBUTION STRUCTURES; AND
 - (E) UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.
- INSPECTIONS SHALL BE CONDUCTED BY THE DEPARTMENT OF PUBLIC WORKS OR ITS AUTHORIZED REPRESENTATIVE. WRITTEN INSPECTION REPORTS SHALL BE MADE OF THE PERIODIC INSPECTIONS NECESSARY DURING CONSTRUCTION OF STORMWATER MANAGEMENT SYSTEMS TO ENSURE COMPLIANCE WITH THE APPROVED PLANS.
- WRITTEN INSPECTION REPORTS SHALL INCLUDE:
 - (A) DATE AND LOCATION OF THE INSPECTION;
 - (B) WHETHER CONSTRUCTION WAS IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLAN;
 - (C) ANY VARIATIONS FROM THE APPROVED CONSTRUCTION SPECIFICATIONS; AND
 - (D) ANY VIOLATIONS THAT EXIST.
- ONCE CONSTRUCTION IS COMPLETE, AN AS-BUILT PLAN CERTIFICATION SHALL BE SUBMITTED BY THE APPROPRIATE DESIGN PROFESSIONAL LICENSED IN THE STATE OF MARYLAND TO ENSURE THE CONSTRUCTED STORMWATER MANAGEMENT PRACTICE AND CONVEYANCE SYSTEMS COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE APPROVED PLANS. AT A MINIMUM, AS-BUILT CERTIFICATION SHALL INCLUDE A SET OF DRAWINGS COMPARING THE APPROVED STORMWATER MANAGEMENT PLAN WITH WHAT WAS CONSTRUCTED.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6)

- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN NEEDED BASIS. INSPECTIONS SHALL BE PERFORMED A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

DESIGN SUMMARY

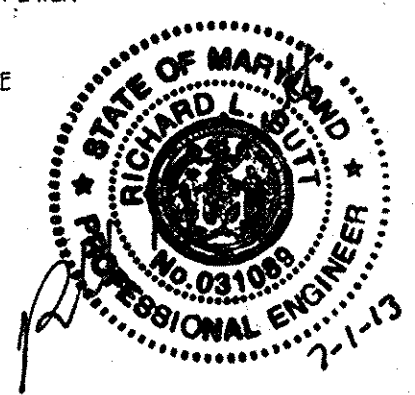
- FACILITY NUMBER: 1
- FACILITY TYPE: MICRO-BIORETENATION (M-6)
- DRAINAGE AREA = 0.61 AC.
- BOTTOM ELEVATION = 439.25
- TOP OF DAM ELEVATION = 441.75
- STORAGE VOLUME PROVIDED: 975 C.F.
- WATER SURFACE ELEV.: 1 YEAR = 440.05
10 YEAR = 440.21
- DISCHARGE: 1 YEAR = 0.14 CFS
10 YEAR = 1.32 CFS
- RISER TYPE: TYPE 'D' INLET
- BARREL TYPE: 15" HDPE
- MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER
- THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGH WATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT.

FACILITY #1 TREATMENT SUMMARY TABLE

DRAINAGE AREA	TARGET		PROVIDED		TREATED ESD,
	R	ESD,	R	ESD,	
0.61 AC.	0.49	557 C.F.	0.66	975 C.F.	1,300 C.F.

PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	ROOT	COMMENTS
EP 24		EUPATORIUM PURPUREUM LITTLE JOE / LITTLE JOE PLYWEED	18" - 24" HT.	CONT.	PLANT 2 O.C.
HV 3		HAMAMELIS VIRGINIANA / WITCHHAZEL	3" - 4" HT.	CONT.	PLANT 5 O.C.
MP 19		MIRICA PENNSYLVANICA / BAYBERRY	30" - 36" HT.	CONT.	PLANT 4 O.C.
SWM-1		ERINAX-122 FACW WETLAND MEADOW SEED MIX	1/3 - 1/2 LB. PER 1000 SF		
SWM-2		ERIN-180 RAIN GARDEN MIX	1/3 - 1/2 LB. PER 1000 SF		



AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
Richard J. Little, PE # 31687 DATE 7-1-13

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwab, Acting 11/22/11
CHIEF, BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kate Schulz 11/23/11
CHIEF-DIVISION OF LAND DEVELOPMENT
John P. ... 11/22/11
CHIEF-DEVELOPMENT ENGINEERING DIVISION

Orchard Development Corporation
CRP Opportunity Fund, L.P.

CONTRACT PURCHASER / DEVELOPER:
ORCHARD DEVELOPMENT CORPORATION
5325 DORSETTAL DRIVE
BILLCOTT CITY, MD 21042
(410) 964-2334

OWNER:
MULDER BUILDING CORPORATION
3300 SONIA TRAIL
BILLCOTT CITY, MD 21043
(410) 461-2522

DATE NUMBER REVISION DESCRIPTIONS

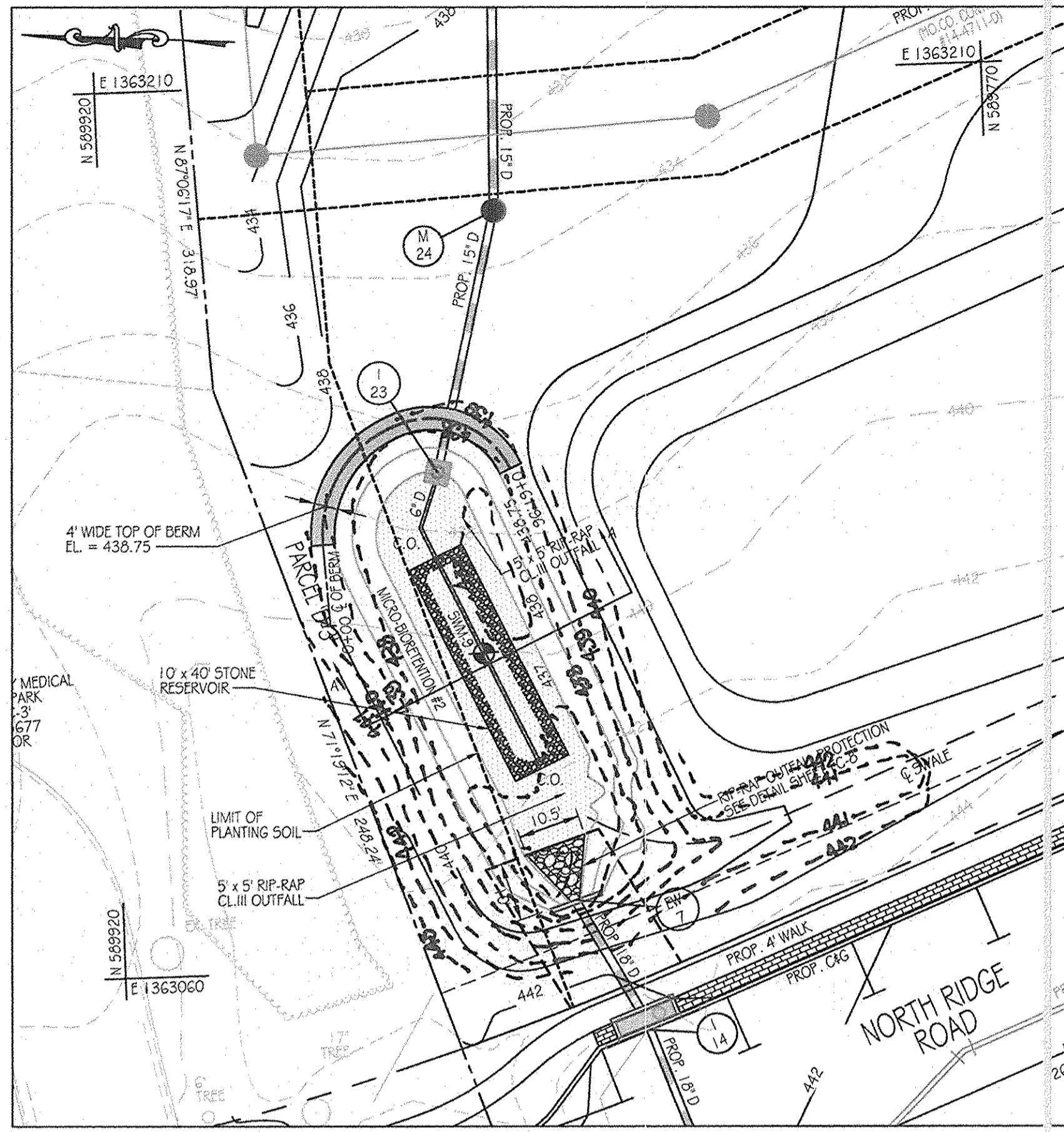
KCI TECHNOLOGIES
8161 MARLE LORRY BOULEVARD SUITE 150
FULTON, MD 20759
TELEPHONE: (410) 92-8086
FAX: (410) 792-7419

ORCHARD MEADOWS
PARCEL D-1, D-2 & D-3
TAX MAP: 17 GRID: 23 PARCEL: 711
ZONED: RA-15
ELECTION DISTRICT: NO. 2
HOWARD COUNTY, MD

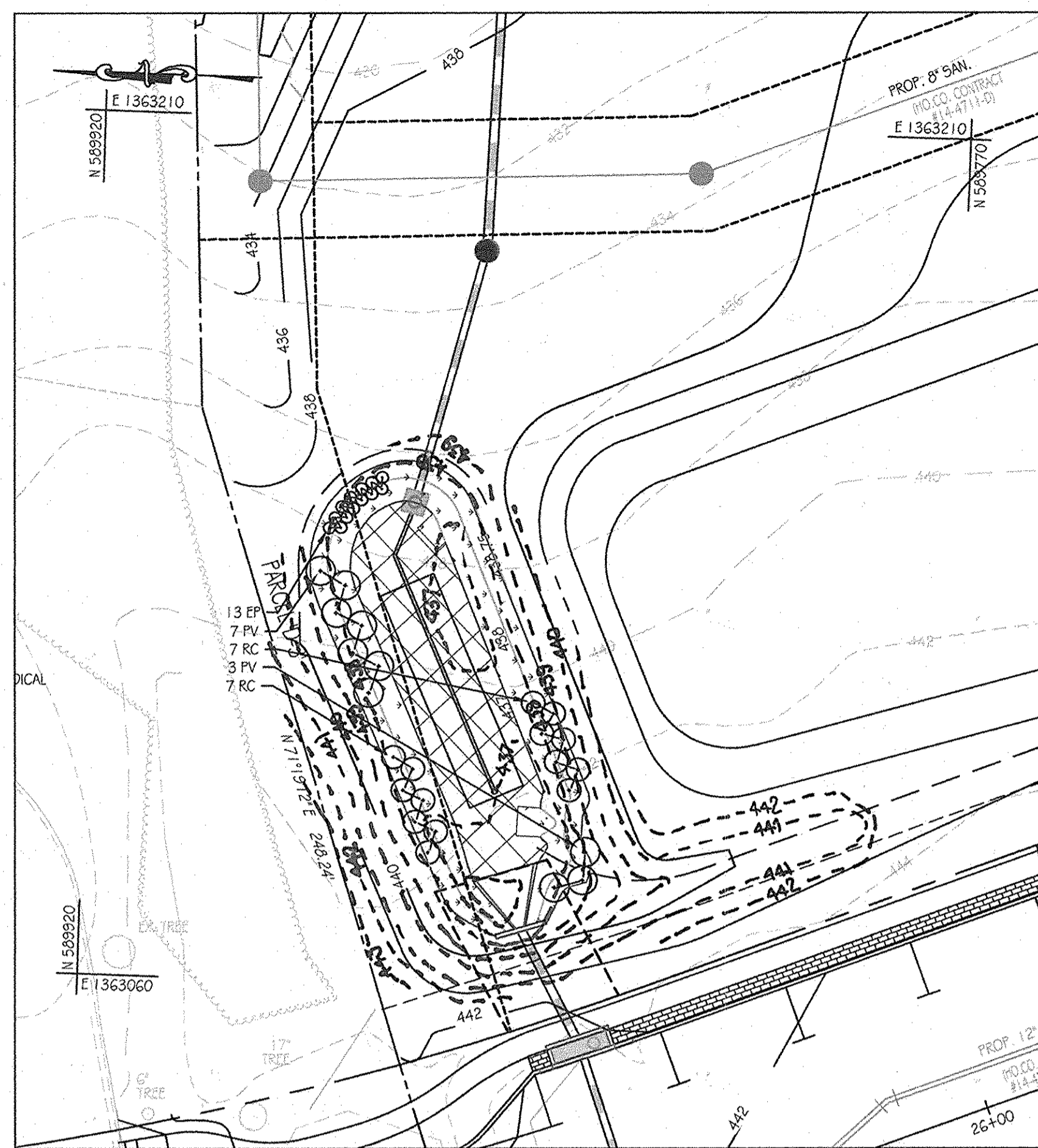
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO.: 31089 EXPIRATION DATE: 11/1/212

TITLE: **STORMWATER MANAGEMENT PLAN - FACILITY #1**

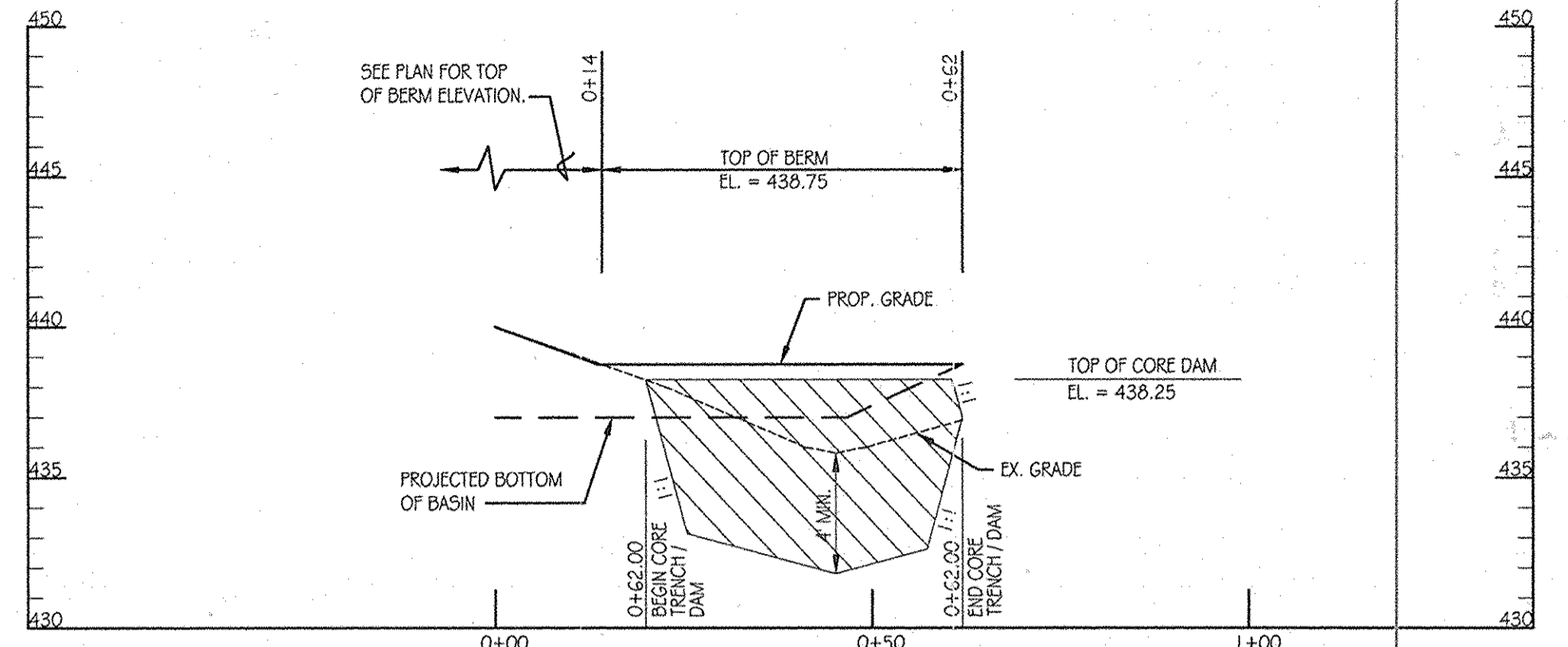
PROJECT NO.: 27101105
DESIGN BY: B.E.S. SCALE: AS SHOWN SHEET 19 OF 29
DRAWN BY: C.T.B. DATE: 11-02-2011 DRAWING NUMBER
CHECKED BY: APPROVED: FC-19



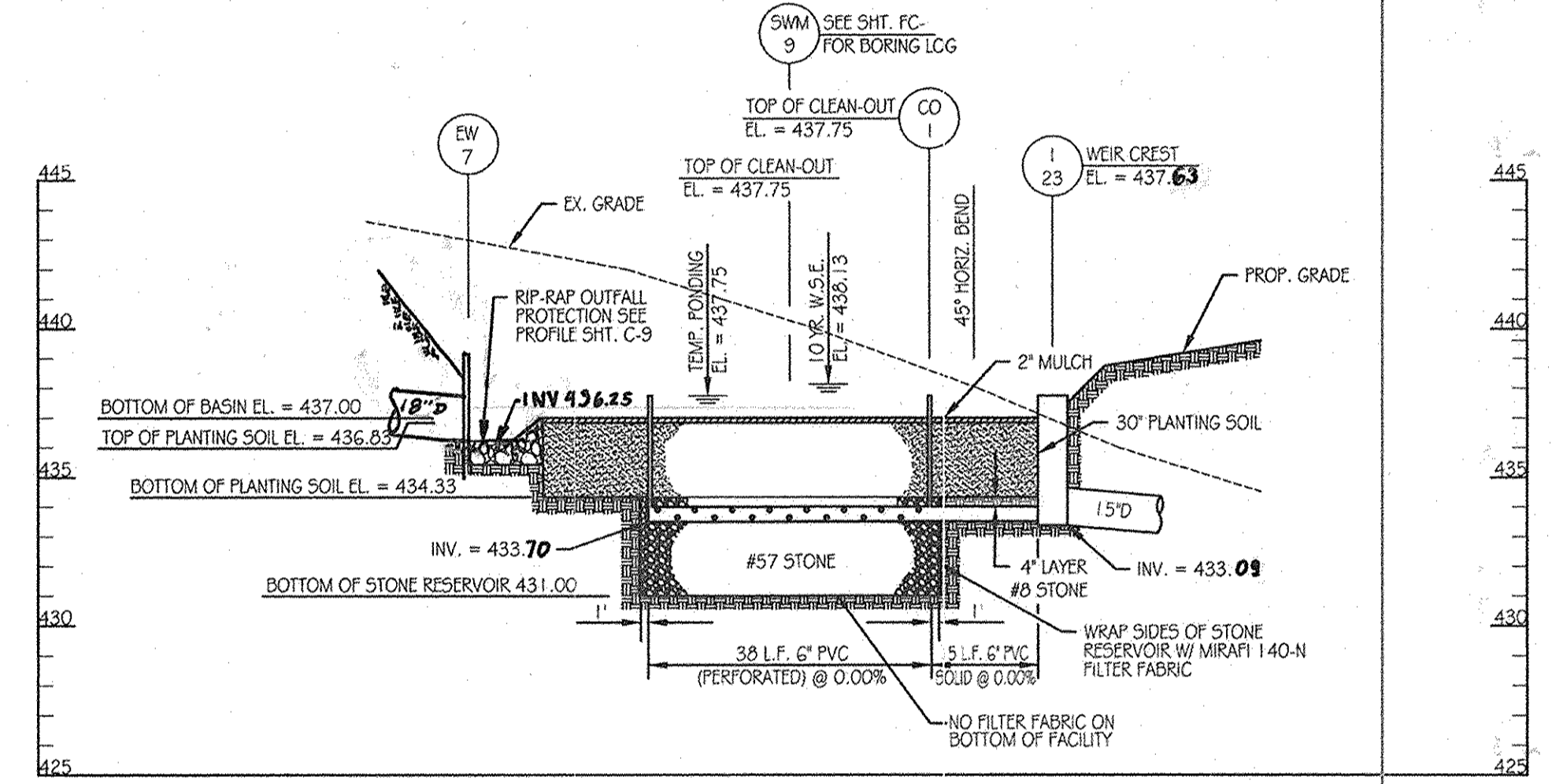
SWM FACILITY #2 PLAN
SCALE: 1" = 20'



FACILITY #2 LANDSCAPE PLAN
SCALE: 1" = 20'



CENTERLINE OF DAM PROFILE
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL



UNDERDRAIN PROFILE
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

LEGEND

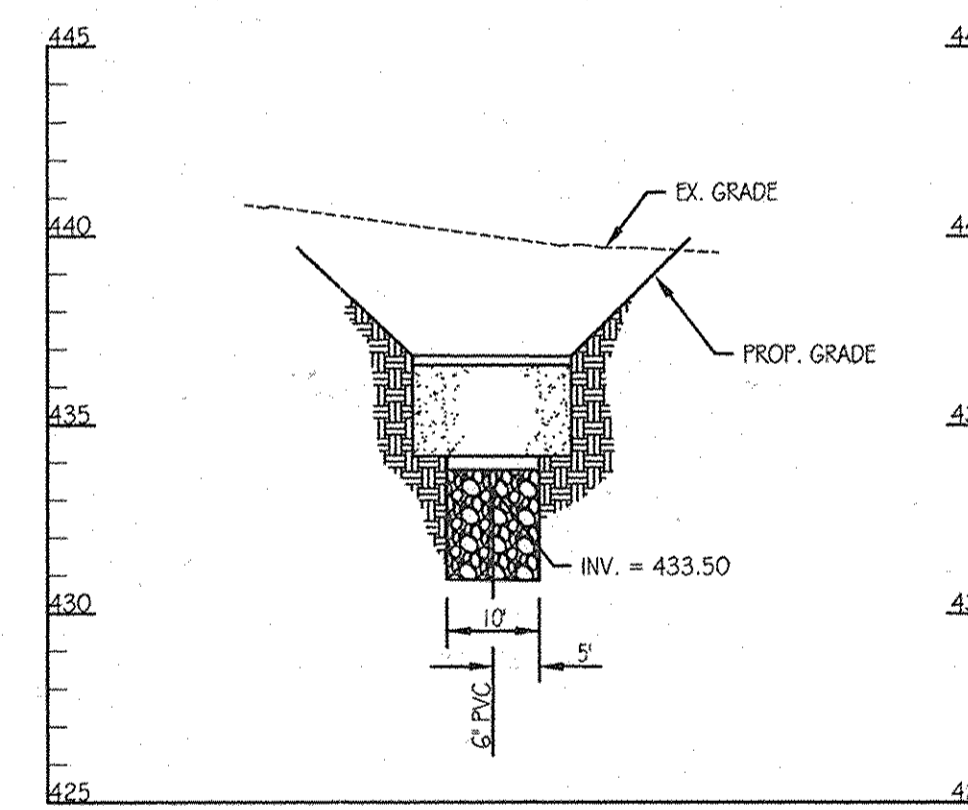
- SOIL BORING
- EX. CONTOURS
- PROP. CONTOURS
- PROP. STORM DRAIN
- TOP OF BERM
- LIMIT OF PLANTING SOIL
- RIP-RAP OUTFALL
- STONE RESERVOIR
- SEED MIX #1
- SEED MIX #2
- AS-BUILT CONTOURS

DESIGN SUMMARY

- FACILITY NUMBER: 2
- FACILITY TYPE: MICRO-BIORETENTION (M-6)
- DRAINAGE AREA = 0.92 AC.
- BOTTOM ELEVATION = 437.00
- TOP OF DAM ELEVATION = 438.75
- STORAGE VOLUME PROVIDED: 1,422 C.F.
- WATER SURFACE ELEV.:
1 YEAR = 437.90
10 YEAR = 438.13
- DISCHARGE:
1 YEAR = 0.77 CFS
10 YEAR = 3.25 CFS
- RISER TYPE: TYPE 'D' INLET
- BARREL TYPE: 15" HDPE
- MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THIS OWNER.
- THIS FACILITY IS EXEMPT FROM MD370 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGH WATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT.

INSPECTION SCHEDULE

- THE DEVELOPER SHALL NOTIFY THE COUNTY AT LEAST 48 HOURS BEFORE COMMENCING ANY WORK IN CONJUNCTION WITH THE STORMWATER MANAGEMENT PLAN AND UPON COMPLETION OF A PROJECT WHEN A FINAL INSPECTION WILL BE CONDUCTED.
- AT A MINIMUM, REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED AT THE FOLLOWING SPECIFIED STAGES OF CONSTRUCTION.
 - DURING EXCAVATION TO SUBGRADE
 - DURING PLACEMENT AND BACKFILL OF UNDERDRAIN SYSTEM.
 - DURING PLACEMENT OF GEOTEXTILE AND ALL FILTER MEDIA.
 - DURING CONSTRUCTION OF APPROPRIATE CONVEYANCE SYSTEMS SUCH AS DIVERSION STRUCTURES, PRE-FILTERS, FILTERS, AND FLOW DISTRIBUTION STRUCTURES, AND
 - UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.
- INSPECTIONS SHALL BE CONDUCTED BY THE DEPARTMENT OF PUBLIC WORKS OR ITS AUTHORIZED REPRESENTATIVE. WRITTEN INSPECTION REPORTS SHALL BE MADE OF THE PERIODIC INSPECTIONS NECESSARY DURING CONSTRUCTION OF STORMWATER MANAGEMENT SYSTEMS TO ENSURE COMPLIANCE WITH THE APPROVED PLANS.
- WRITTEN INSPECTION REPORTS SHALL INCLUDE:
 - DATE AND LOCATION OF THE INSPECTION;
 - WHETHER CONSTRUCTION WAS IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLAN;
 - ANY VARIATIONS FROM THE APPROVED CONSTRUCTION SPECIFICATIONS; AND
 - ANY VIOLATIONS THAT EXIST.



SECTION A-A
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6)

- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN NEEDED BASIS. INSPECTIONS SHALL BE PERFORMED A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

STORMWATER MANAGEMENT FACILITY SEQUENCE OF CONSTRUCTION

- NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORM WATER MANAGEMENT FACILITY CONSTRUCTION.
- NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO DOING ANY WORK.
- CLEAR, GRUB & INSTALL PERIMETER SEDIMENT CONTROL MEASURES AS SHOWN ON THE SEDIMENT CONTROL PLAN.
- STORM DRAIN OUTFALL FROM I-23 TO EW-9 MUST BE INSTALLED PRIOR TO BEGINNING EXCAVATION OF FACILITY BELOW ELEVATION 437.00. ALL NOT OCCUR UNTIL AREA DRAINING TO FACILITY IS PERMANENTLY STABILIZED. (1-DAY)
- UPON STABILIZATION OF DRAINAGE AREA, CAVEAT FOR INSTALLATION OF STONE RESERVOIR AND PLANTING SOIL. (1-DAY)
- INSTALL STONE RESERVOIR, UNDERDRAIN, AND PLANTING SOIL. (2-DAYS)
- FINE GRADE AND PERMANENTLY STABILIZE DISTURBED AREA. (1-DAY)

Ø BERM DATA

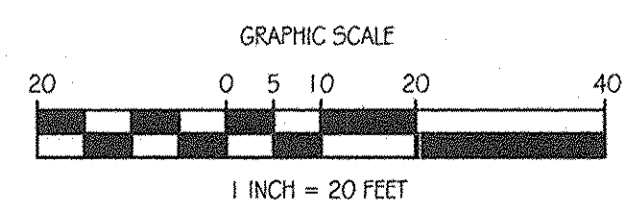
STATION	BEARING/RADIUS	DISTANCE / ARC LENGTH	CHORD
0+00			
0+13.69	N1°6'14"W	13.69'	
0+37.98	20.0'	24.29'	N33°41'9"E 22.82'
0+38.40	NG8°28'33"E	0.42'	
0+61.96	15.0'	23.56'	S66°31'27"E 21.21'

PLANT SCHEDULE

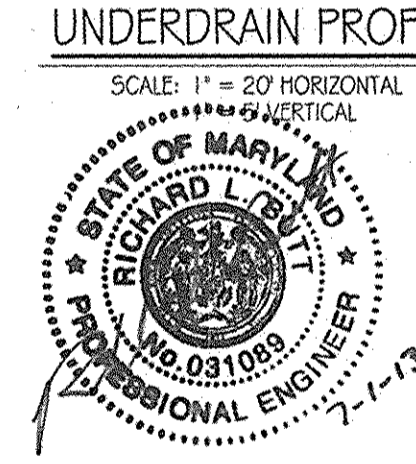
KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	ROOT	COMMENTS
EP	13	EUPATORIUM PURPUREUM LITTLE JOE / LITTLE JOE PYWEED	18" - 24" HT.	CONT.	PLANT 2' O.C.
PV	10	PANICUM VIRGATUM HEAVY METAL / HEAVY METAL SWITCHGRASS	3' - 4' HT.	CONT.	PLANT 5' O.C.
RC	14	RHOODENDRON CATAWBIENSE ROSEUM ELEGANS / ROSEUM ELEGANS RHOODENDRON	30" - 36" HT.	CONT.	PLANT 4' O.C.
SWM-1		ERINX-122 FACW WETLAND MEADOW SEED MIX	1/3 - 1/2 LB. PER 1000 SF		
SWM-2		ERINX-180 RAIN GARDEN MIX	1/3 - 1/2 LB. PER 1000 SF		

FACILITY #2 TREATMENT SUMMARY TABLE

DRAINAGE AREA	TARGET		PROVIDED		TREATED ESDV
	R	ESDv	R	ESDv	
0.92 AC.	0.36	805 C.F.	0.61	1,422 C.F.	1,896 C.F.



AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS AS-BUILT PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
Richard G. Pitt, PE # 31089
DATE 7-1-13



APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwan, Acting 11/22/11
CHIEF, BUREAU OF HIGHWAYS
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
K.A. DeLoach 11/23/11
CHIEF-DIVISION OF LAND DEVELOPMENT
DATE

[Signature] 1/23/12
CHIEF-DEVELOPMENT ENGINEERING DIVISION
DATE

OrchardDevelopment Corporation
CRP Opportunity Fund, L.P.

CONTRACT PURCHASER/DEVELOPER:
ORCHARD DEVELOPMENT CORPORATION
5032 DORSEY HALL DRIVE
ELICOTT CITY, MD 21042
(410) 964-2334

OWNER:
WILDER BUILDING CORPORATION
3300 SONYA TRAIL
ELICOTT CITY, MD 21043
(410) 461-2522

DATE	NUMBER	REVISION DESCRIPTIONS

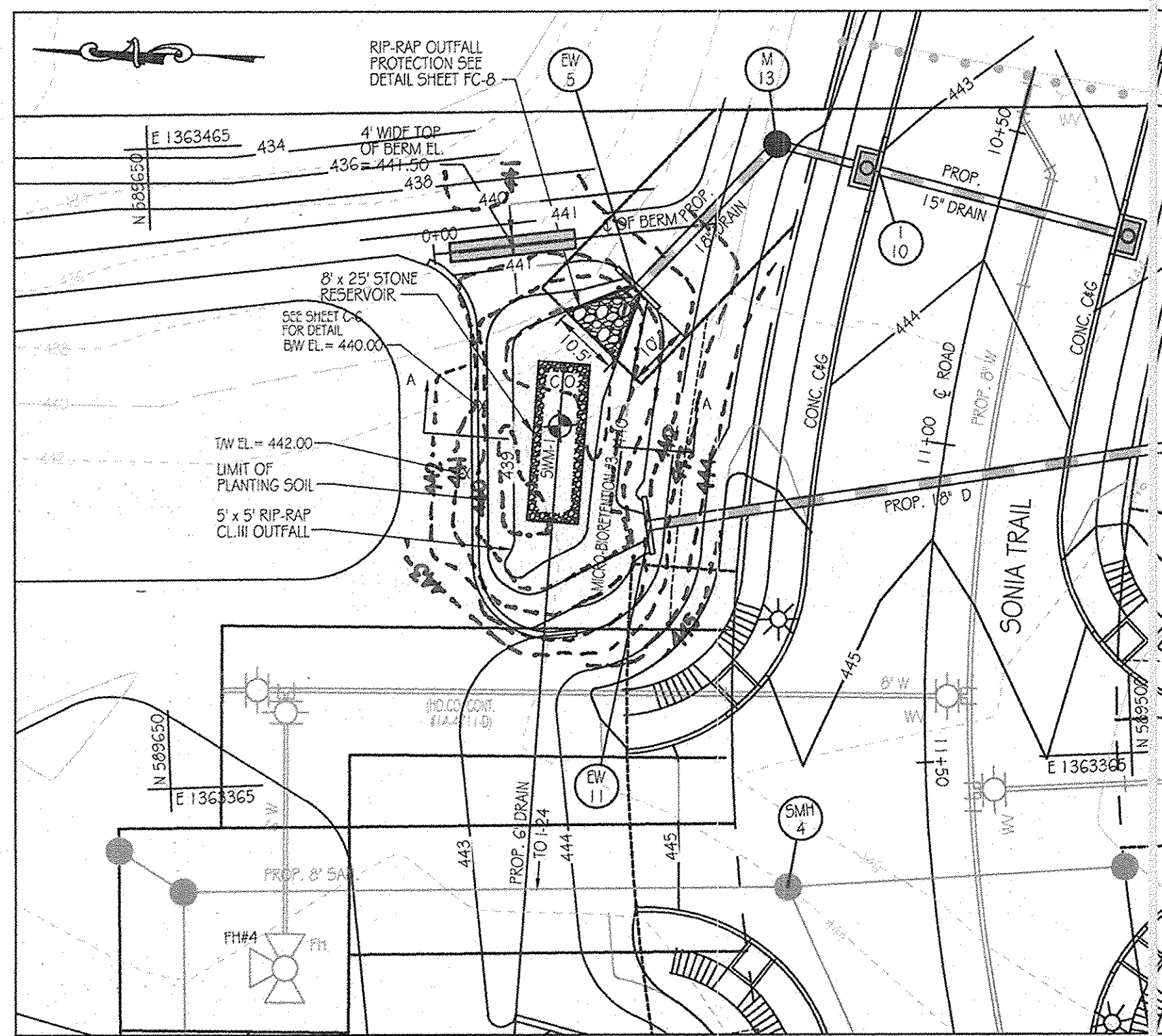
KCI TECHNOLOGIES
8161 Maple Lawn Boulevard Suite 150
FULTON, MD 20759
Telephone: (410) 92-8086
Fax: (410) 922-7419

ORCHARD MEADOWS
PARCEL D-1, D-2 & D-3
TAX MAP: 17 GRID: 23 PARCEL: 711
ZONED: R-A-15
ELECTION DISTRICT: NO. 2
HOWARD COUNTY, MD

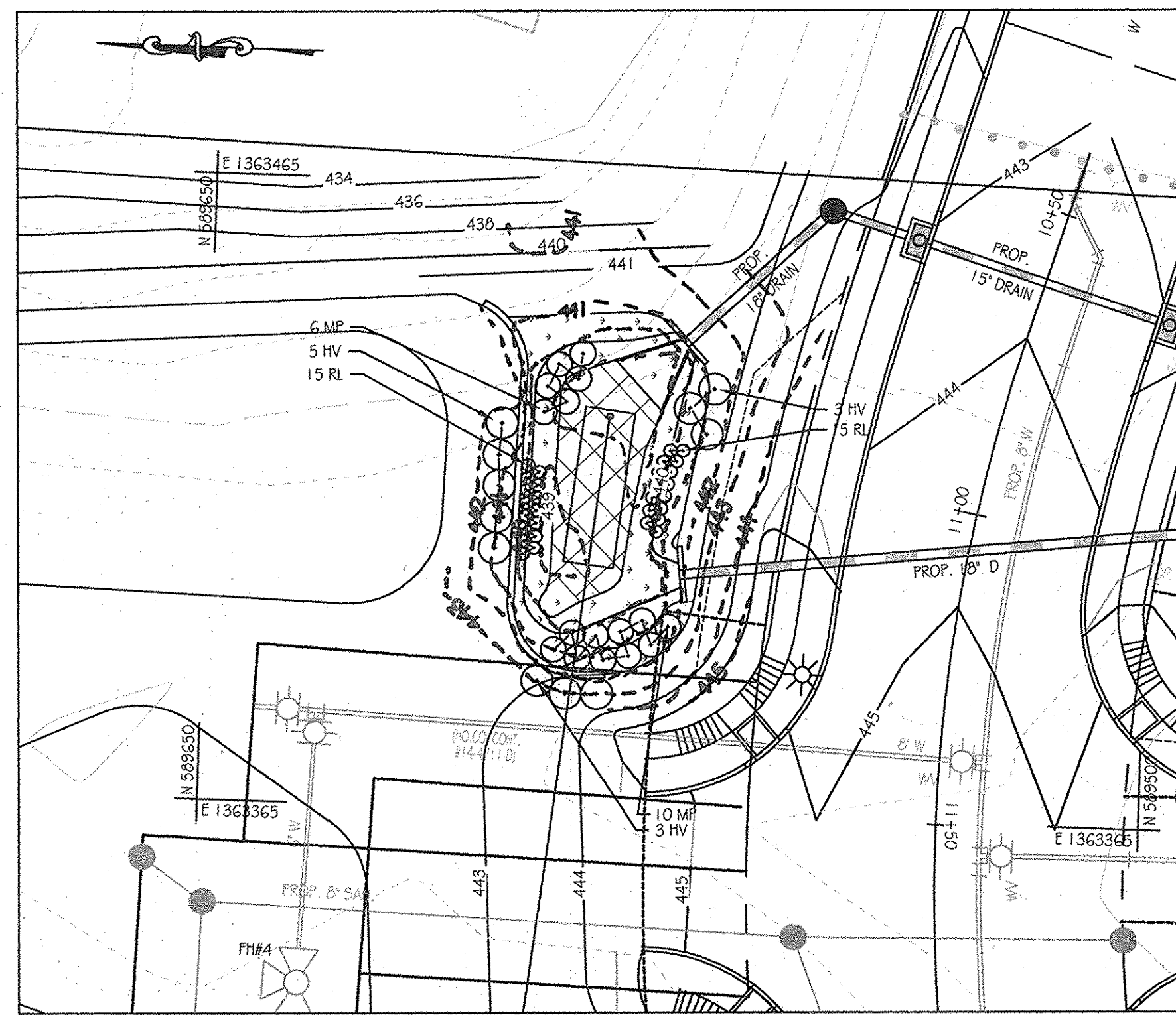
STORMWATER MANAGEMENT PLAN - FACILITY #2

DESIGN BY: B.E.S. SCALE: AS SHOWN
DRAWN BY: C.T.B. DATE: 11-02-2011
CHECKED BY: APPROVED: _____

PROJECT NO.: 121101105
SHEET 20 OF 29
DRAWING NUMBER: FC-20
F-11-087



SWM FACILITY #3 PLAN
SCALE: 1" = 20'

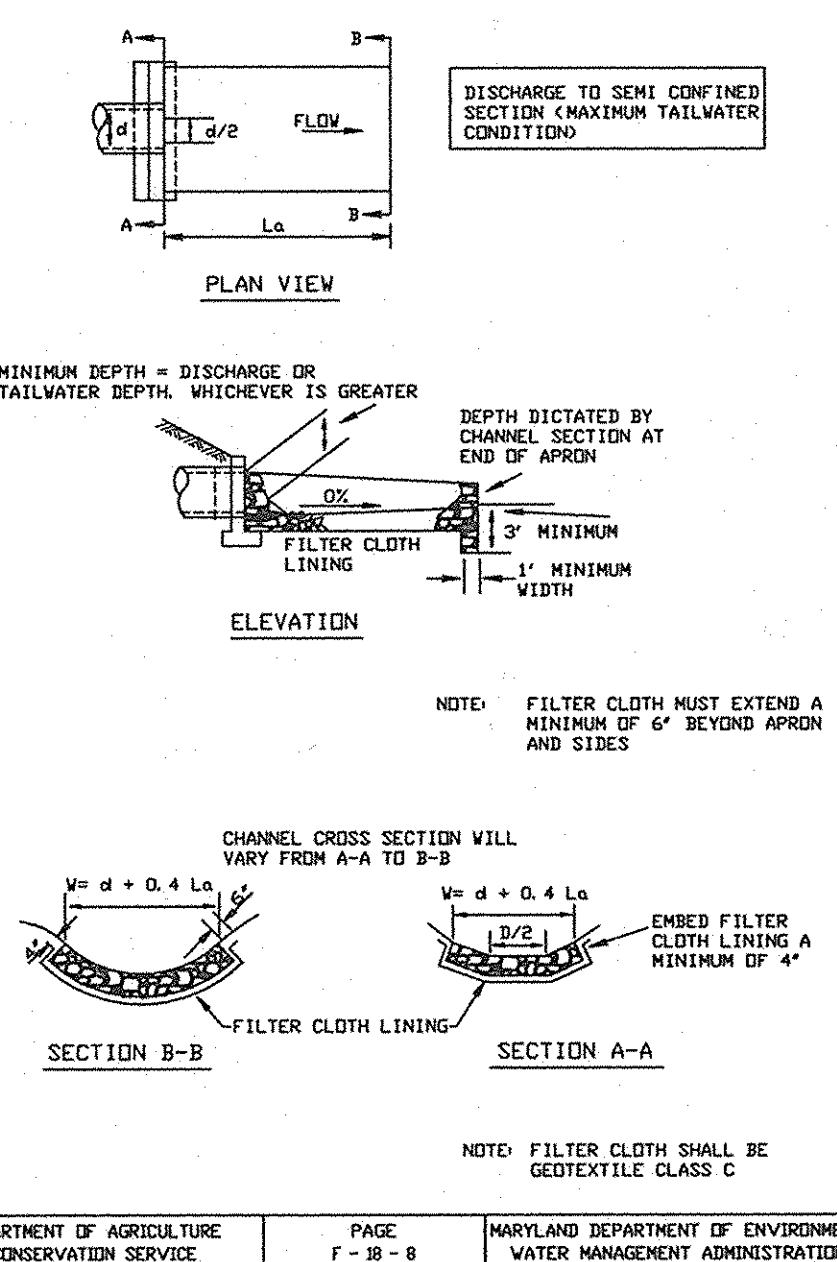


FACILITY #3 LANDSCAPE PLAN
SCALE: 1" = 20'

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-G)

- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN NEEDED BASIS. INSPECTIONS SHALL BE PERFORMED A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

DETAIL 25 - ROCK OUTLET PROTECTION I



ROCK OUTLET PROTECTION I

- Construction Specifications**
- The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
 - The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
 - Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
 - Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
 - The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

DESIGN SUMMARY

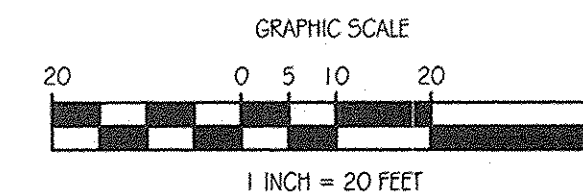
- FACILITY NUMBER: 3
- FACILITY TYPE: MICRO-BIORETENTION (M-G)
- DRAINAGE AREA = 0.40 AC.
- BOTTOM ELEVATION = 439.00
- TOP OF DAM ELEVATION = 441.50
- STORAGE VOLUME PROVIDED: 680 C.F.
- WATER SURFACE ELEV.:
1 YEAR = 439.92
10 YEAR = 440.22
- DISCHARGE: 1 YEAR = 0.77 CFS
10 YEAR = 3.25 CFS
- RISER TYPE: NONE
- BARREL TYPE: 18" ROCP
- MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER.
- THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE IMPOUNDED DESIGN HIGH WATER DEPTH IS LESS THAN 3 FEET AT THE EMBANKMENT.



AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS AS-BUILT PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
RICHARD BELL P.E. 081089 DATE 7-1-13

FACILITY #3 TREATMENT SUMMARY TABLE

DRAINAGE AREA	TARGET		PROVIDED		TREATED ESD _v
	R	ESD _v	R	ESD _v	
0.40 AC.	0.40	416 C.F.	0.65	680 C.F.	507 C.F.



BERM DATA

STATION	BEAR	RADIUS	DISTANCE / ARC LENGTH	CHORD
0+00	S47° 02'	0'	44.31'	
0+44.31				

PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	ROOT	COMMENTS
HV	11	HAMAMELIS VIRGINIANA / WITCHHAZEL	3" - 4 HT.	CONT.	PLANT 5' O.C.
MP	16	MYRICA PENNSYLVANICA / BAYBERRY	30" - 36" HT.	CONT.	PLANT 4' O.C.
TL	30	RUDIBEKIA LACINIATA / TALL CONEFLOWER	18" - 24" HT.	CONT.	PLANT 2' O.C.
SWM-1		ERANIX-122 FACIV WETLAND MEADOW SEED MIX	1/3 - 1/2 LB. PER 1000 SF		
SWM-2		ERANX-180 RAIN GARDEN MIX	1/3 - 1/2 LB. PER 1000 SF		

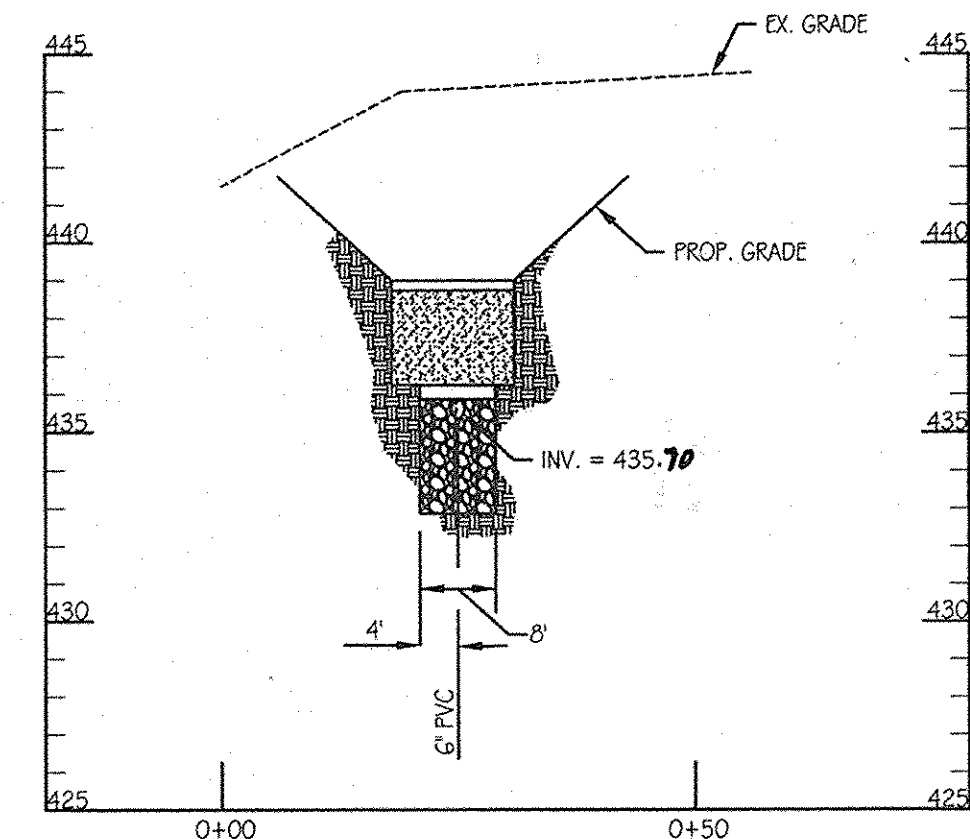
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

John C. Belton 11/23/11
HOWARD S.C.D. DATE

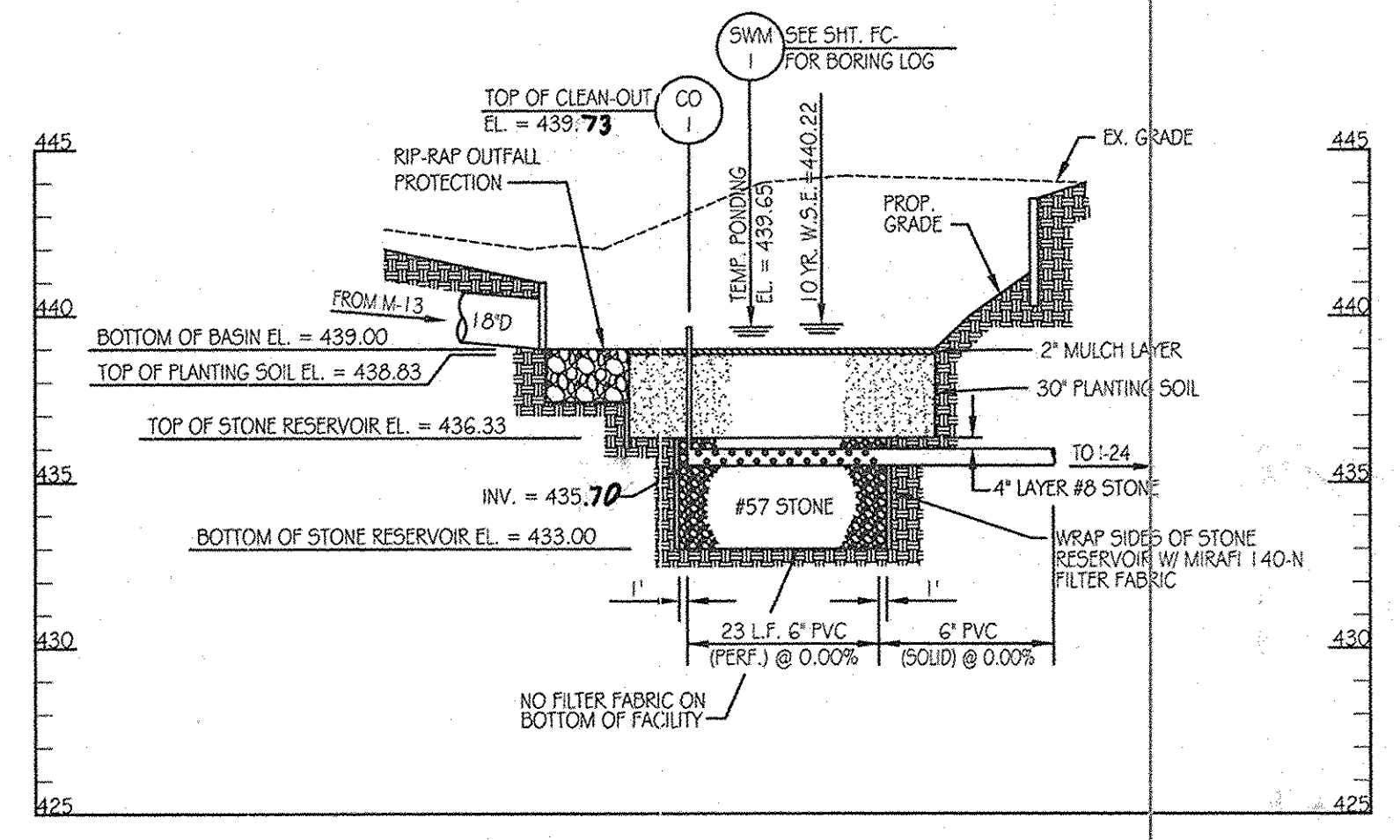
APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Ashum, Acting 11/22/11
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Pat Schuler 11/23/11
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chris Williams 11/23/11
CHIEF-DEVELOPMENT ENGINEERING DIVISION DATE



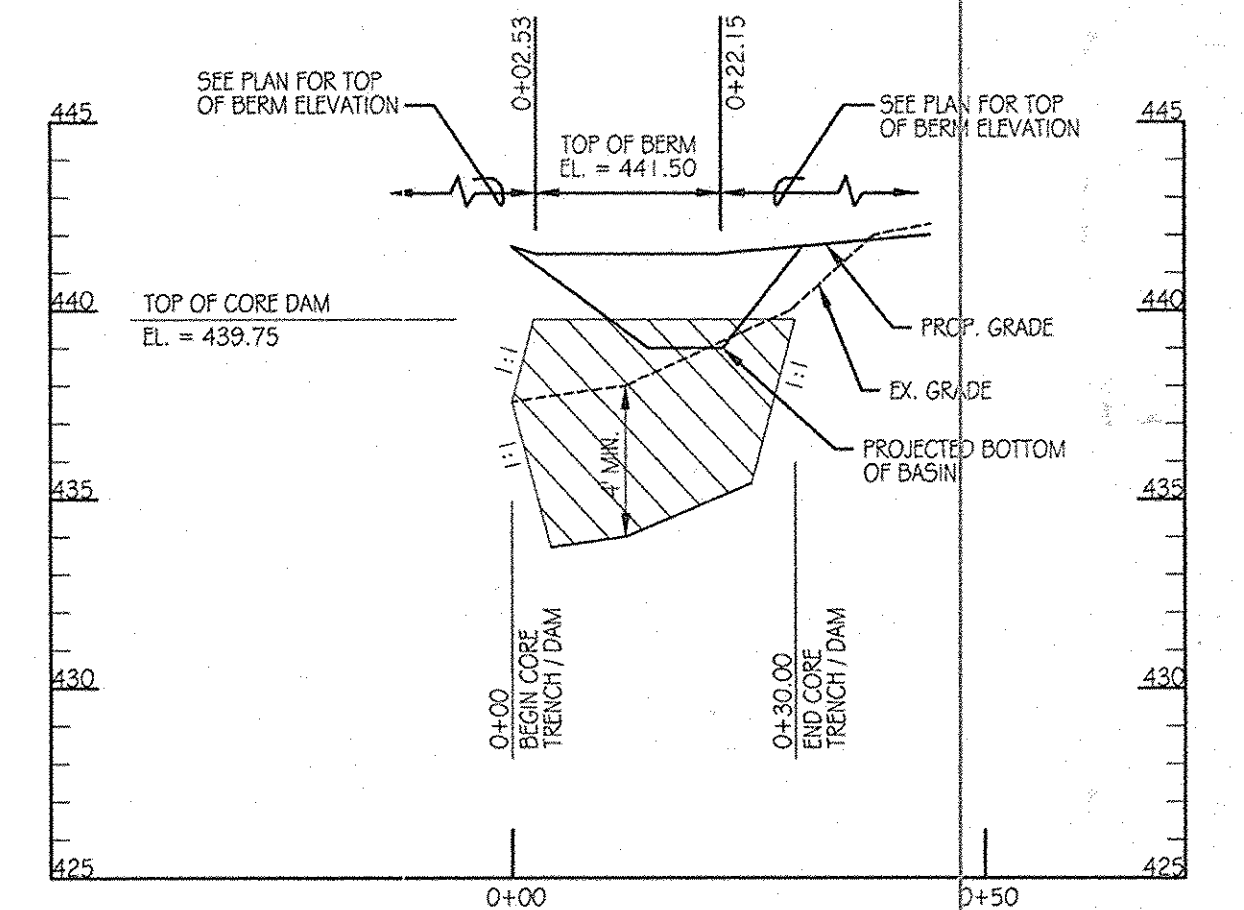
SECTION A-A
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL



UNDERDRAIN PROFILE
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

INSPECTION SCHEDULE

- THE DEVELOPER SHALL NOTIFY THE COUNTRY AT LEAST 48 HOURS BEFORE COMMENCING ANY WORK IN CONJUNCTION WITH THE STORMWATER MANAGEMENT PLAN AND UPON COMPLETION OF A PROJECT WHEN A FINAL INSPECTION WILL BE CONDUCTED.
- AT A MINIMUM, REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED AT THE FOLLOWING SPECIFIED STAGES OF CONSTRUCTION.
 - DURING EXCAVATION TO SUBGRADE;
 - DURING PLACEMENT AND BACKFILL OF UNDERDRAIN SYSTEM;
 - DURING PLACEMENT OF GEOTEXTILES AND ALL FILTER MEDIA;
 - DURING CONSTRUCTION OF APPURTENANCE CONVEYANCE SYSTEMS SUCH AS DIVERSION STRUCTURES, PRE-FILTERS, FILTERS, OUTLETS AND FLOW DISTRIBUTION STRUCTURES; AND
 - UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.
- INSPECTIONS SHALL BE CONDUCTED BY THE DEPARTMENT OF PUBLIC WORKS OR ITS AUTHORIZED REPRESENTATIVE. WRITTEN INSPECTION REPORTS SHALL BE MADE OF THE PERIODIC INSPECTIONS NECESSARY DURING CONSTRUCTION OF STORMWATER MANAGEMENT SYSTEMS TO ENSURE COMPLIANCE WITH THE APPROVED PLANS.
- WRITTEN INSPECTION REPORTS SHALL INCLUDE:
 - DATE AND LOCATION OF THE INSPECTION;
 - WHETHER CONSTRUCTION WAS IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLAN;
 - ANY VARIATIONS FROM THE APPROVED CONSTRUCTION SPECIFICATIONS; AND
 - ANY VIOLATIONS THAT EXIST.
- ONCE CONSTRUCTION IS COMPLETE, AN AS-BUILT PLAN CERTIFICATION SHALL BE SUBMITTED BY THE APPROPRIATE DESIGN PROFESSIONAL LICENSED IN THE STATE OF MARYLAND TO ENSURE THE CONSTRUCTED STORMWATER MANAGEMENT PRACTICE AND CONVEYANCE SYSTEMS COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE APPROVED PLANS. AT A MINIMUM, AS-BUILT CERTIFICATION SHALL INCLUDE A SET OF DRAWINGS COMPARING THE APPROVED STORMWATER MANAGEMENT PLAN WITH WHAT WAS CONSTRUCTED.



CENTERLINE OF DAM PROFILE
SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

LEGEND

- SOIL BORING
- EX. CONTOURS
- PROP. CONTOURS
- PROP. STORM DRAIN
- TOP OF BERM
- LIMIT OF PLANTING SOIL
- RIP-RAP OUTFALL
- STONE RESERVOIR
- SEED MIX #1
- SEED MIX #2
- AS-BUILT CONTOURS

STORMWATER MANAGEMENT FACILITY SEQUENCE OF CONSTRUCTION

- NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORM WATER MANAGEMENT FACILITY CONSTRUCTION.
- NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO DOING ANY WORK.
- CLEAR, GRUB & INSTALL PERIMETER SEDIMENT CONTROL MEASURES AS SHOWN ON THE SEDIMENT CONTROL PLAN.
- STORM DRAIN OUTFALL FROM EW-11 TO EW-10 MUST BE INSTALLED PRIOR TO BEGINNING EXCAVATION OF FACILITY TO ELEVATION 439.00 SHALL NOT OCCUR UNTIL AREA DRAINING TO FACILITY IS PERMANENTLY STABILIZED. (1-DAY)
- UPON STABILIZATION OF DRAINAGE AREA EXCAVATE FOR INSTALLATION OF STONE RESERVOIR AND PLANTING SOIL. STORM DRAIN FROM 1-24 TO EW-8 MUST BE COMPLETED TO ALLOW FOR TIE-IN OF UNDERDRAIN. (1-DAY)
- INSTALL STONE RESERVOIR, UNDERDRAINS AND PLANTING SOIL. (2-DAYS)
- FINE GRADE AND PERMANENTLY STABILIZE DISTURBED AREA. (1-DAY)

DATE	NUMBER	REVISION DESCRIPTIONS

KCI TECHNOLOGIES
8101 MARLE LANE BOULEVARD SUITE 150
FULTON, MD 20759
TELEPHONE: (410) 92-8086
FAX: (410) 92-7419

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.: 31089 EXPIRATION DATE: 11/12/12

ORCHARD MEADOWS
PARCEL D-1, D-2 & D-3

TAX MAP: 17 GRID: 23 PARCEL: 711
ZONED: R-A-15
ELECTION DISTRICT: NO. 2
HOWARD COUNTY, MD

STORMWATER MANAGEMENT PLAN - FACILITY #3

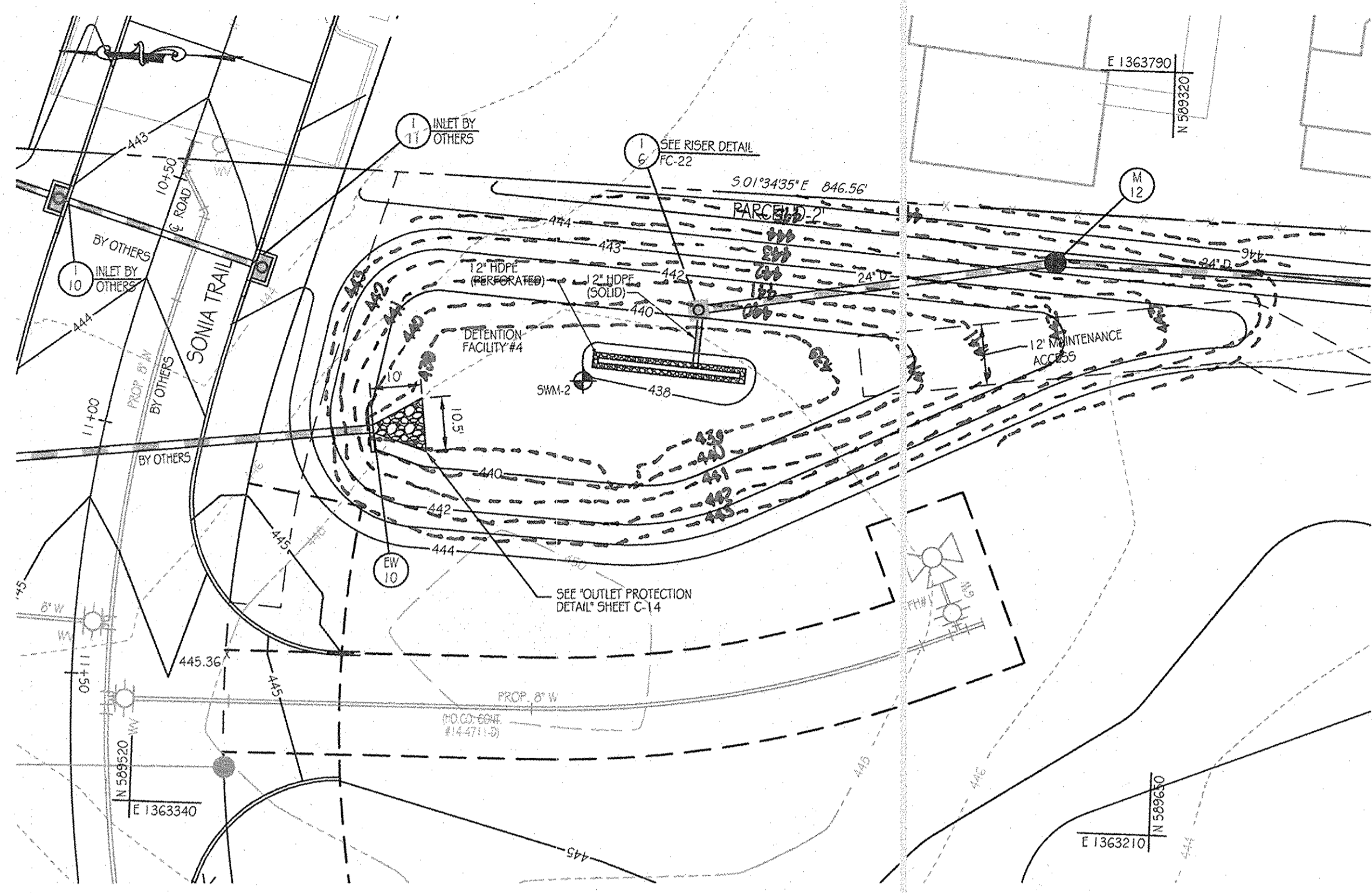
PROJECT NO.: 21101105
SHEET 21 OF 29
DRAWING NUMBER
FC-21

DESIGN SUMMARY

- FACILITY NUMBER: 4
- FACILITY TYPE: DETENTION (QUANTITY MANAGEMENT)
- DRAINAGE AREA = 1.34 AC.
- BOTTOM ELEVATION = 437.80
- TOP OF DAM ELEVATION = 443.40
- STORAGE VOLUME PROVIDED: 0.056 AC. FT.
- WATER SURFACE ELEV.: 10 YEAR = 439.53
100 YEAR = 440.51
- DISCHARGE: 10 YEAR = 1.13 CFS
100 YEAR = 1.47 CFS
- RISER TYPE: TYPE 'D' INLET
- BARREL TYPE: 15' HDPE
- MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED & MAINTAINED BY THE OWNER
- THIS IS AN EXCAVATED FACILITY AND EXEMPT FROM MD376 GUIDELINES. (MD-376 HAZARD CLASS - A)
- WATER QUALITY TREATMENT IS PROVIDED IN DRAINAGE AREAS E, F & G PRIOR TO FLOWS ENTERING FACILITY #4. THEREFORE NO FOREBAY IS BEING PROVIDED.
- THIS IS A QUANTITY MANAGEMENT FACILITY THAT FUNCTIONS IN TANDEM WITH FACILITY NO. 6 TO PROVIDE QUANTITY MANAGEMENT WITHIN THE HUDSON BRANCH WATERSHED. THE FOLLOWING TABLE SHOWS THE DISCHARGE REDUCTIONS THAT WILL BE PROVIDED AS RUNOFF LEAVES THE SITE AT THE HUDSON BRANCH WATERSHED DESIGN POINT.

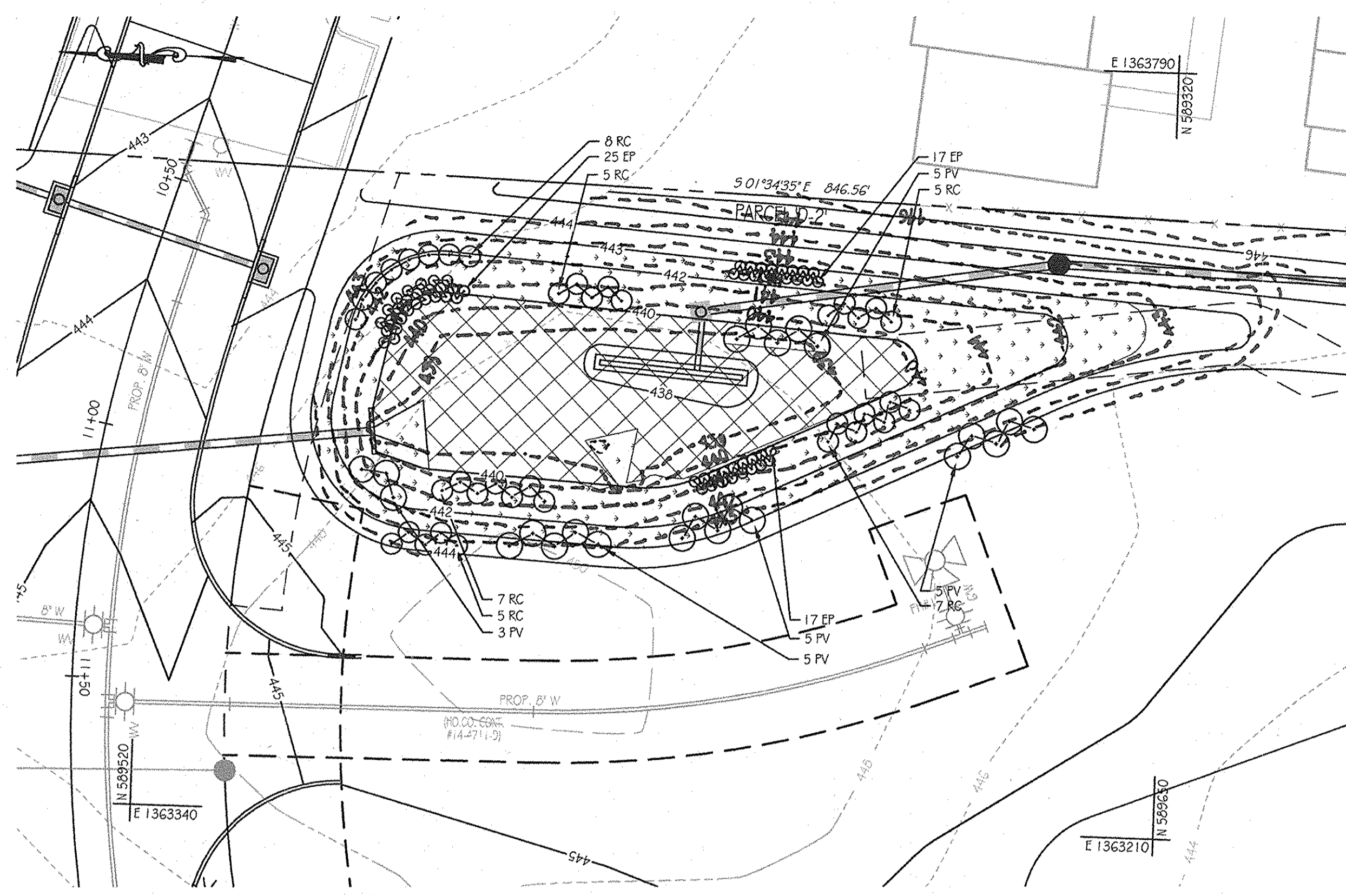
FACILITY #4 QUANTITY MANAGEMENT SUMMARY TABLE

WATERSHED	10 YEAR STORM EVENT			100 YEAR STORM EVENT		
	EXIST. COND.	DEV. COND.	DIFF.	EXIST. COND.	DEV. COND.	DIFF.
HUDSON BRANCH	7.63 CFS	885 C.F.	0.61	16.97 CFS	7.24 CFS	-9.73 CFS



SWM FACILITY #4 PLAN

SCALE: 1" = 20'



SWM FACILITY #4 PLAN

SCALE: 1" = 20'

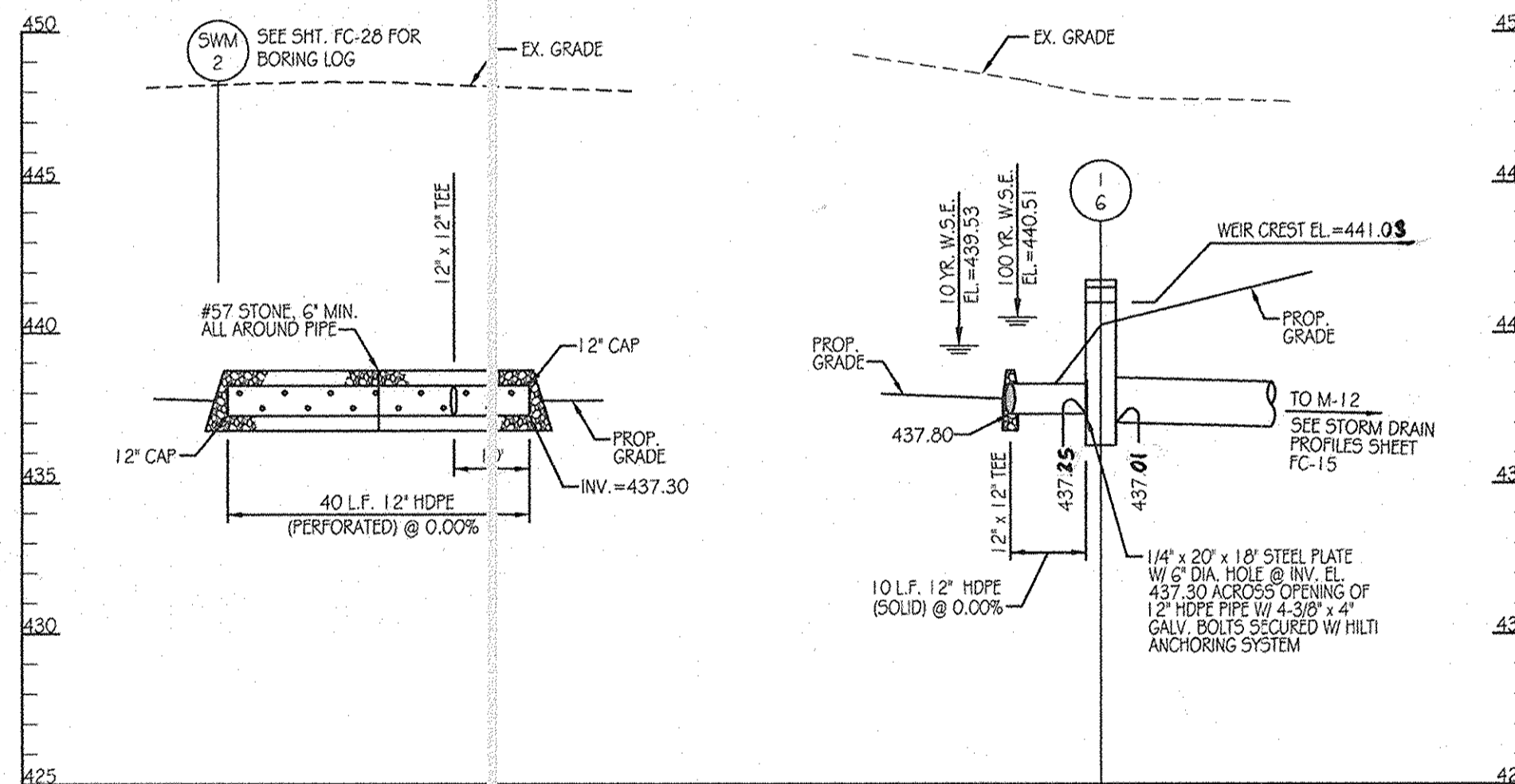
INSPECTION SCHEDULE

- THE DEVELOPER SHALL NOTIFY THE COUNTRY AT LEAST 48 HOURS BEFORE COMMENCING ANY WORK IN CONJUNCTION WITH THE STORMWATER MANAGEMENT PLAN AND UPON COMPLETION OF A PROJECT WHEN A FINAL INSPECTION WILL BE CONDUCTED.
- AT A MINIMUM, REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED AT THE FOLLOWING SPECIFIED STAGES OF CONSTRUCTION:
 - DURING EXCAVATION TO SUBGRADE;
 - DURING INSTALLATION OF DRAIN SYSTEM;
 - DURING CONSTRUCTION OF APPURTENANT CONVEYANCE SYSTEMS SUCH AS DIVERSION STRUCTURES, PRE-FILTERS, FILTERS, OUTLETS AND FLOW DISTRIBUTION STRUCTURES; AND
 - UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.
- INSPECTIONS SHALL BE CONDUCTED BY THE DEPARTMENT OF PUBLIC WORKS OR ITS AUTHORIZED REPRESENTATIVE. WRITTEN INSPECTION REPORTS SHALL BE MADE OF THE PERIODIC INSPECTIONS NECESSARY DURING CONSTRUCTION OF STORMWATER MANAGEMENT SYSTEMS TO ENSURE COMPLIANCE WITH THE APPROVED PLANS.
- WRITTEN INSPECTION REPORTS SHALL INCLUDE:
 - DATE AND LOCATION OF THE INSPECTION;
 - WHETHER CONSTRUCTION WAS IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLAN;
 - ANY VARIATIONS FROM THE APPROVED CONSTRUCTION SPECIFICATIONS; AND
 - ANY VIOLATIONS THAT EXIST.

ONCE CONSTRUCTION IS COMPLETE, AN AS-BUILT PLAN CERTIFICATION SHALL BE SUBMITTED BY THE APPROPRIATE DESIGN PROFESSIONAL LICENSED IN THE STATE OF MARYLAND TO ENSURE THE CONSTRUCTED STORMWATER MANAGEMENT PRACTICE AND CONVEYANCE SYSTEMS COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE APPROVED PLANS. AT A MINIMUM, AS-BUILT CERTIFICATION SHALL INCLUDE A SET OF DRAWINGS COMPARING THE APPROVED STORMWATER MANAGEMENT PLAN WITH WHAT WAS CONSTRUCTED.

LEGEND

- SOIL BORING
- EX. CONTOURS
- PROP. CONTOURS
- PROP. STORM DRAIN
- TOP OF BERM
- LIMIT OF PLANTING SOIL
- RIP-RAP OUTFALL
- STONE RESERVOIR
- SEED MIX #1
- SEED MIX #2
- AS-BUILT CONTOURS



DRAIN PROFILES

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5)

ROUTINE MAINTENANCE:

- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
- TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOVED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOVED AS NEEDED.
- DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
- VISIBLE SIGNS OF EROSION IN THE POND AREA, AS WELL AS THE RIP-RAP OR GABION OUTLET AREA, SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE:

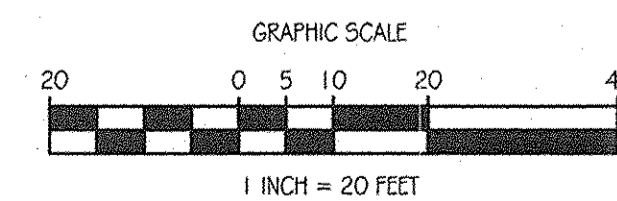
- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DRAINAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
- SEDIMENT SHALL BE REMOVED FROM THE POND, AND FOREBAY, NO LATER THAN WHEN CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR, WHEN DEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

STORMWATER MANAGEMENT FACILITY SEQUENCE OF CONSTRUCTION

- NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORM WATER MANAGEMENT FACILITY CONSTRUCTION.
- NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO DOING ANY WORK.
- CLEAR, GRUB & INSTALL PERIMETER SEDIMENT CONTROL MEASURES AS SHOWN ON THE SEDIMENT CONTROL PLAN.
- STORM DRAIN OUTFALL FROM I-G TO E-V-2 MUST BE INSTALLED PRIOR TO BEGINNING EXCAVATION OF FACILITY TO ELEVATION 437.80 SHALL NOT OCCUR UNTIL AREA DRAINING TO FACILITY IS PERMANENTLY STABILIZED. (1-DAY)
- INSTALL DEWATERING DRAIN. (1-DAY)
- FINE GRADE AND PERMANENTLY STABILIZE DISTURBED AREA. (1-DAY)

PLANT SCHEDULE

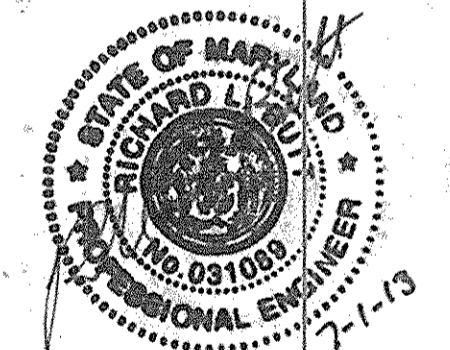
KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	ROOT	COMMENTS
EP	59	EUPATORIUM PURPUREUM LITTLE JOE / LITTLE JOE PINEWED	18" - 24" HT.	CONT.	PLANT 2' O.C.
FV	23	PANICUM VIRGATUM HEAVY METAL / HEAVY METAL SWITCHGRASS	3' - 4' HT.	CONT.	PLANT 5' O.C.
RC	37	RHODODENDRON CATANWENSE ROSEUM ELEGANS / ROSEUM ELEGANS RHODODENDRON	30" - 36" HT.	CONT.	PLANT 4' O.C.
SWM-1		ERNMX-122 FACW WETLAND MEADOW SEED MIX	1/3 - 1/2 LB. PER 1000 SF		
SWM-2		ERNX-180 RAIN GARDEN MIX	1/3 - 1/2 LB. PER 1000 SF		



Orchard Development Corporation
CRP Opportunity Fund, L.P.

CONTRACT PURCHASER / DEVELOPER:
 ORCHARD DEVELOPMENT CORPORATION
 9322 JONESTOWN DRIVE
 BILCOIT CITY, MD 21042
 (410) 964-2334

OWNER:
 WILDER BUILDING CORPORATION
 3300 SONIA TRAIL
 BILCOIT CITY, MD 21043
 (410) 461-2522



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS AS-BUILT PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 RICHARD G. ST. PIERRE DATE 7-1-13

DATE	NUMBER	REVISION DESCRIPTIONS

KCI TECHNOLOGIES
 8161 MARLE LAWN BOULEVARD
 SUITE 150
 FULFORD, MD 20759
 TELEPHONE: (410) 92-8086
 FAX: (410) 792-7419

ORCHARD MEADOWS
 PARCEL D-1, D-2 & D-3
 TAX MAP: 17 GRID: 23 PARCEL: 711
 ZONED: R-A-15
 ELECTION DISTRICT: NO. 2
 HOWARD COUNTY, MD

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.: 31089 EXPIRATION DATE: 1/1/21/2

TITLE: **STORMWATER MANAGEMENT PLAN - FACILITY #4**

PROJECT NO.: 27101105
 SHEET 22 OF 29
 DRAWING NUMBER: **FC-22**

DESIGN BY: D.E.S. SCALE: AS SHOWN
 DRAWN BY: C.T.B. DATE: 11-02-2011
 CHECKED BY: APPROVED: _____

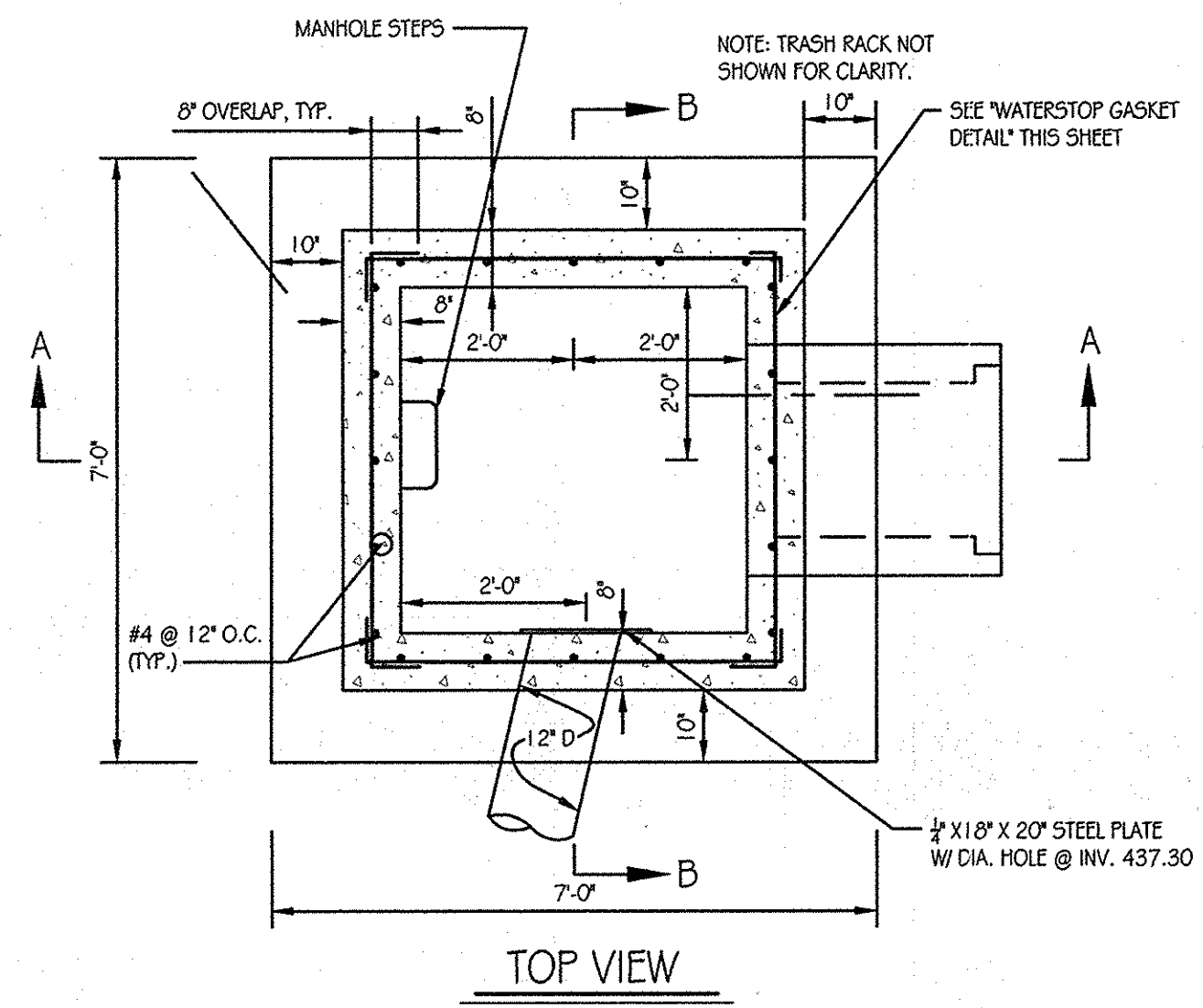
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD S.C.D. DATE _____

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Diane Schwarz, Acting 11/22/11
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 11/23/11
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

1/23/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

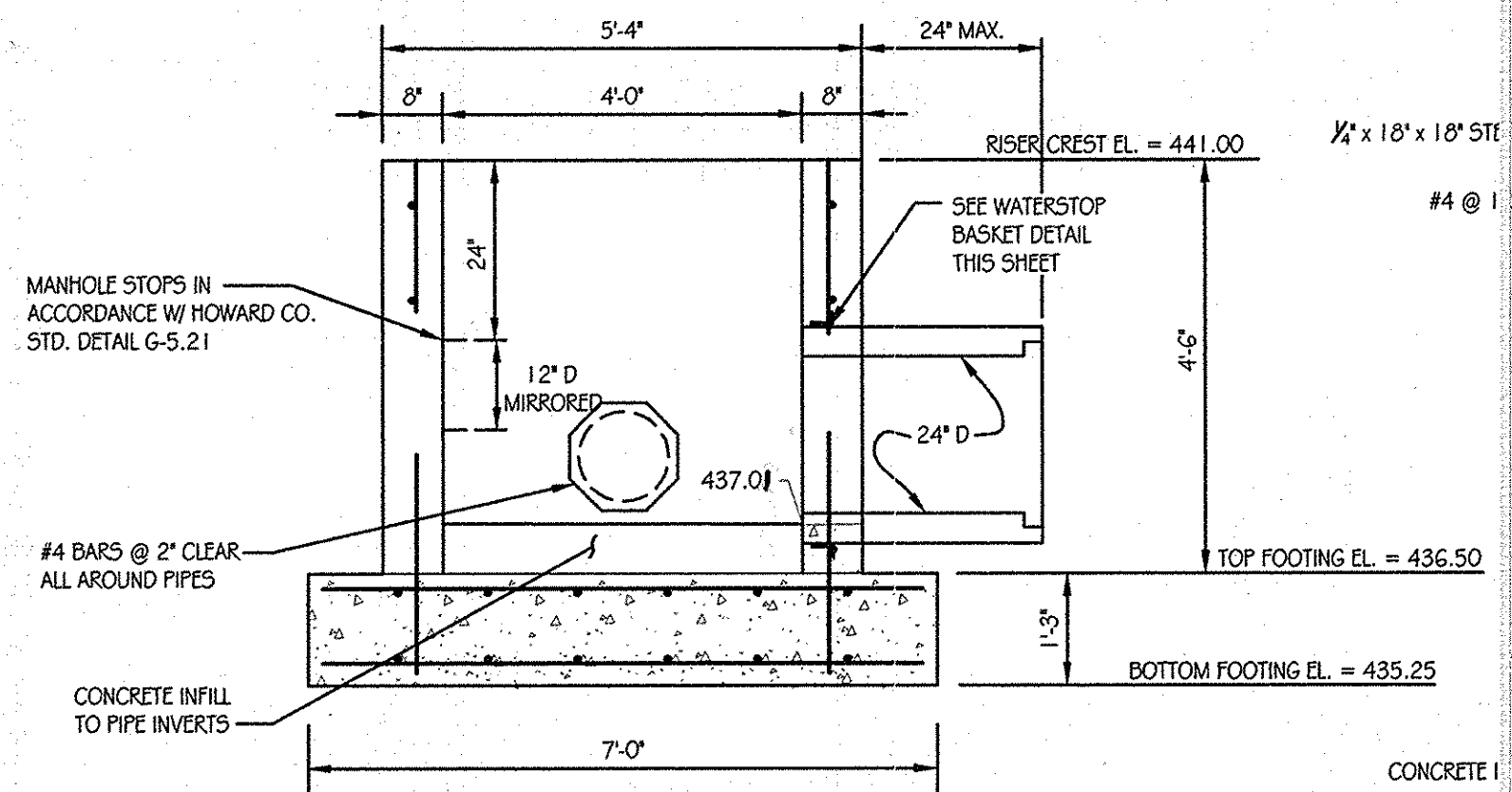


PRE-CAST CONCRETE AND PRE-FABRICATED STEEL STRUCTURE NOTES

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE STRUCTURAL DESIGN COMPUTATIONS FOR FABRICATED CONCRETE AND STEEL COMPONENTS AS REQUIRED TO ENSURE THE STRUCTURAL INTEGRITY OF THE PRE-CAST CONCRETE RISER AND WELDED STEEL TRASH RACK, IN CONFORMANCE WITH THE INFORMATION AND DIMENSIONAL CRITERIA ON THIS SHEET. SHOP DRAWINGS FOR THE TRASH RACK AND THE PRE-CAST STRUCTURES (MEETING ASTM REQUIREMENTS), WITH THE SUPPORTING STRUCTURAL COMPUTATIONS (SIGNED AND SEALED BY A MAJOR REGISTERED PROFESSIONAL ENGINEER), MUST BE SUBMITTED TO THE ENGINEER, AND THE APPROVING AGENCY, FOR APPROVAL, PRIOR TO FABRICATION.

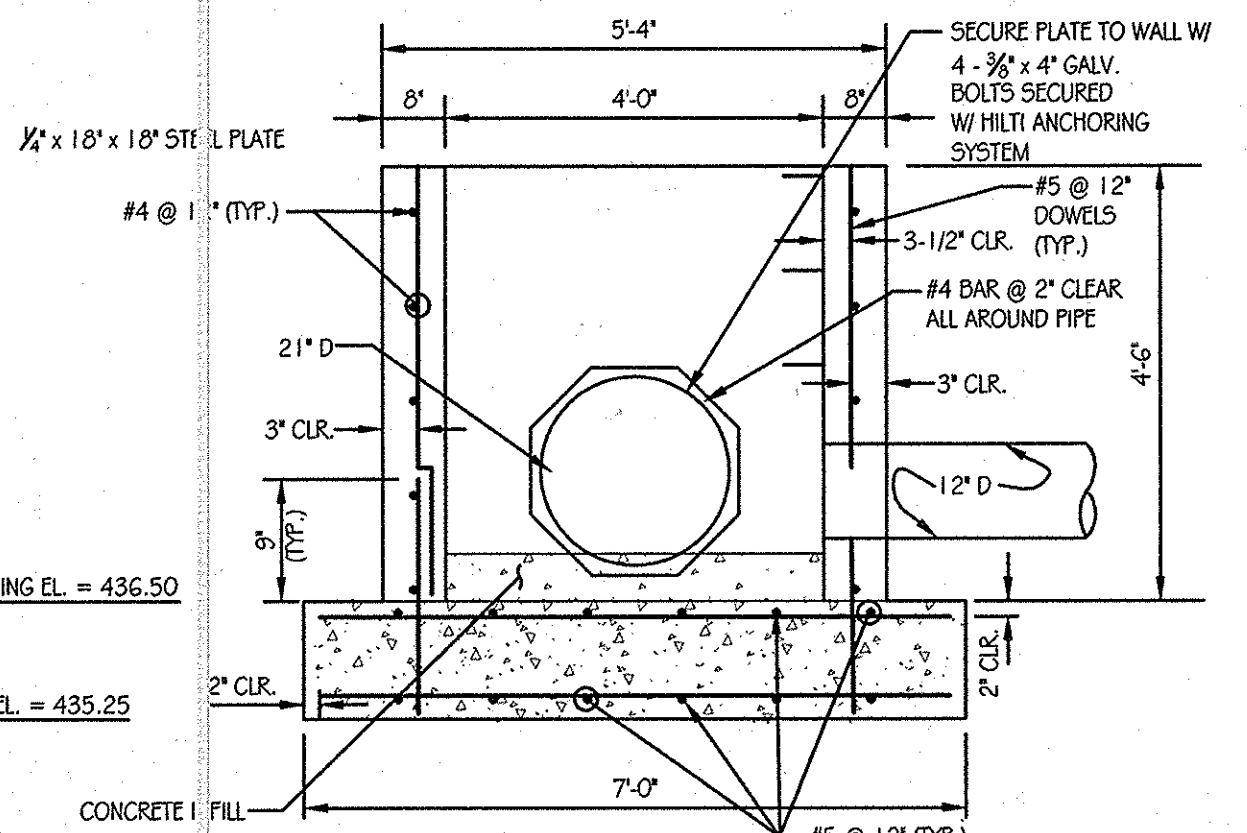
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ALL JOINTS AND CONNECTIONS SHALL BE WATERTIGHT. METHOD OF ACHIEVING A WATERTIGHT SEAL BETWEEN THE RISER STRUCTURE, AND ALL CONDUITS (I.E., BARREL AND LOW FLOW PIPES) SHALL BE APPROVED BY THE ENGINEER IN CHARGE, PRIOR TO FABRICATION.

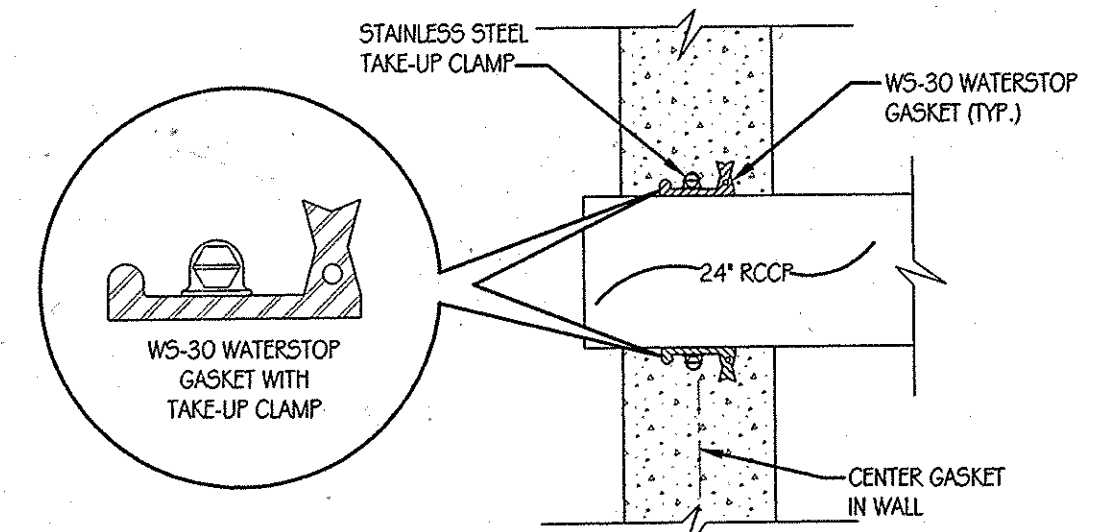


SECTION A-A

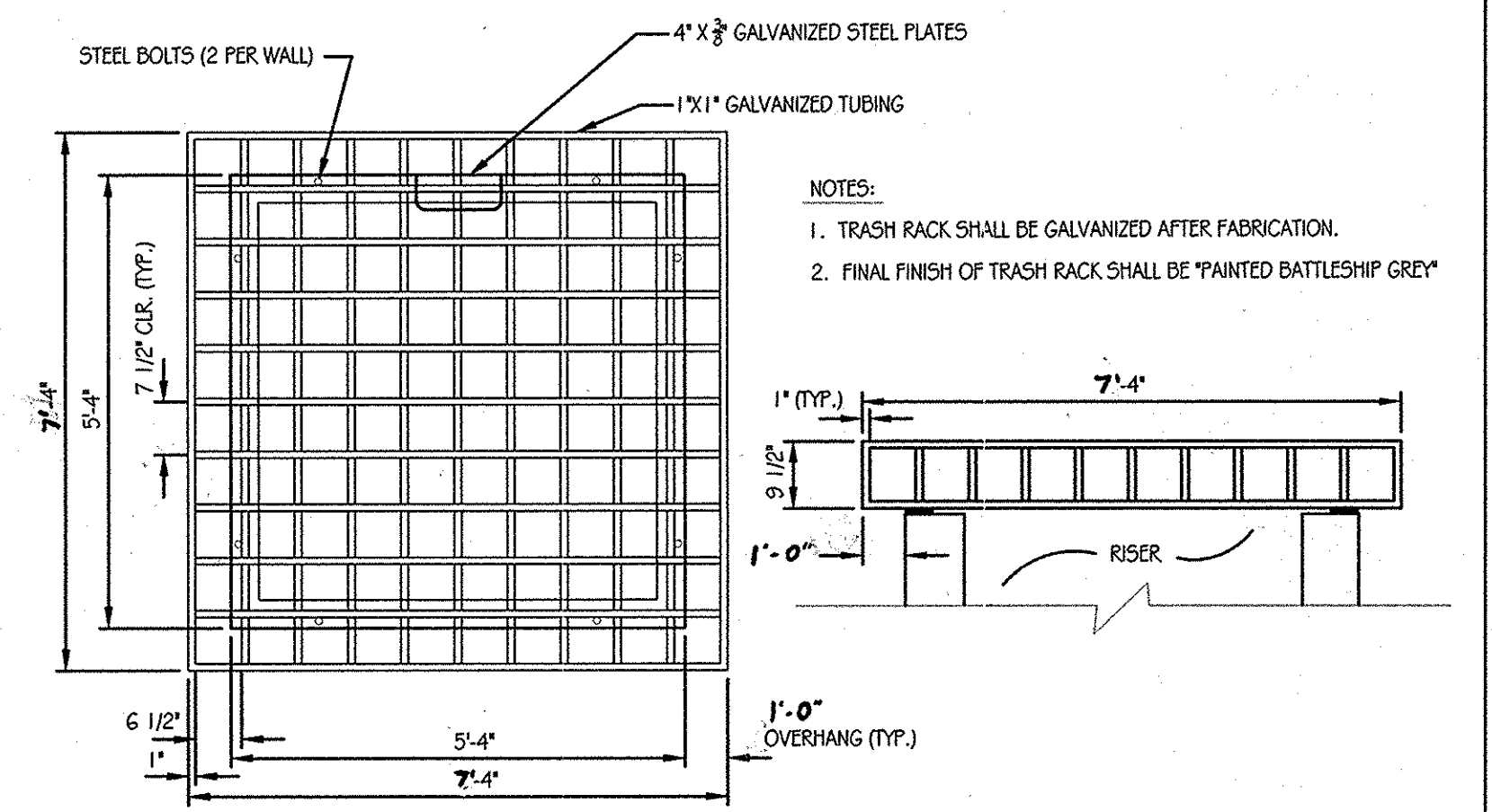
RISER DETAIL (I-6)
SCALE: 1/2" = 1'-0"



SECTION B-B



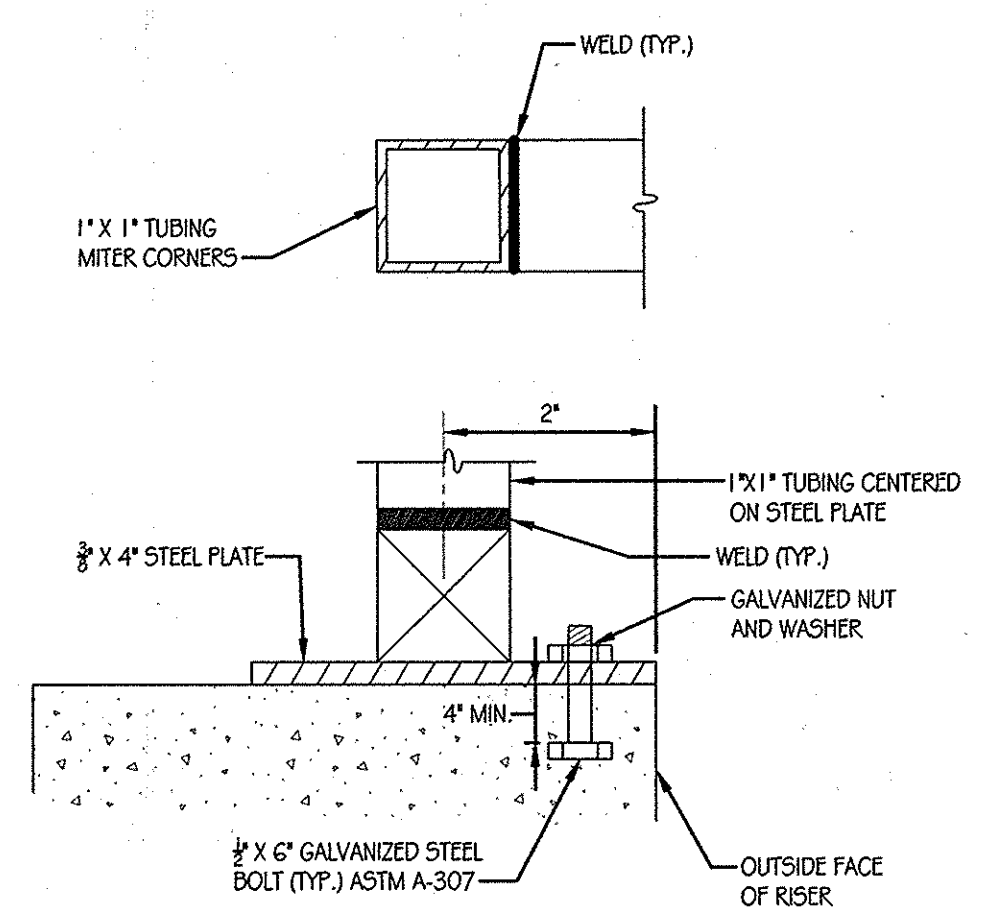
WS-30 WATERSTOP GASKET DETAIL
SCALE: NOT TO SCALE



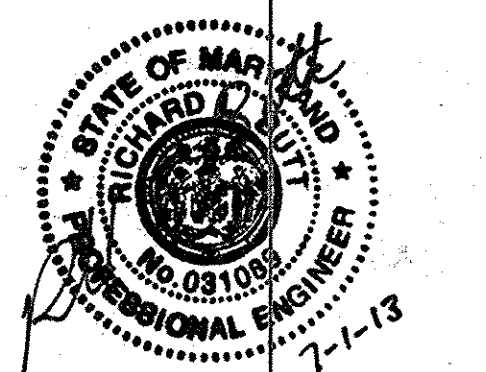
TOP VIEW

ELEVATION

TRASH RACK DETAIL
SCALE: 1/2" = 1'-0"



TRASH RACK WELDING DETAIL
SCALE: NOT TO SCALE



AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS AS-BUILT PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
R. J. SMITH, PE # 31089
DATE 7-1-13

DATE	NUMBER	REVISION DESCRIPTIONS
		ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
		8161 MARLE LANE BOULEVARD SUITE 150 FULTON, MD 20779 TELEPHONE: (410) 92-8086 FAX: (410) 792-7419

KCI TECHNOLOGIES
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.: 31089, EXPIRATION DATE: 1/11/21/2

TITLE STORMWATER MANAGEMENT - FACILITY #4 DETAILS		PROJECT NO.: 21101105
DESIGN BY: B.E.S.	SCALE: AS SHOWN	SHEET 23 OF 29
DRAWN BY: C.T.D.	DATE: 11-02-2011	DRAWING NUMBER FC-23
CHECKED BY:	APPROVED:	

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schuyler, Acting 11/22/11
CHIEF, BUREAU OF HIGHWAYS
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Vest Shelton 11/23/11
CHIEF, DIVISION OF LAND DEVELOPMENT
John P. ... 11/23/11
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Orchard Development Corporation
CONTRACT PURCHASER / DEVELOPER
ORCHARD DEVELOPMENT CORPORATION
5032 DORSEY HALL DRIVE
BILCOTT CITY, MD 21042
(410) 964-2334

CRP Opportunity Fund, L.P.
OWNER
WILCOX BUILDING CORPORATION
3300 EDINA TRAIL
BILCOTT CITY, MD 21043
(410) 461-2522

INSPECTION SCHEDULE

- THE DEVELOPER SHALL NOTIFY THE COUNTY AT LEAST 48 HOURS BEFORE COMMENCING ANY WORK IN CONJUNCTION WITH THE STORMWATER MANAGEMENT PLAN AND UPON COMPLETION OF A PROJECT WHEN A FINAL INSPECTION WILL BE CONDUCTED.
- AT A MINIMUM, REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED AT THE FOLLOWING SPECIFIED STAGES OF CONSTRUCTION:
 - DURING EXCAVATION TO SUBGRADE;
 - DURING PLACEMENT AND BACKFILL OF UNDERDRAIN SYSTEM;
 - DURING PLACEMENT OF GEOTEXTILES AND ALL FILTER MEDIA;
 - DURING CONSTRUCTION OF APPURTENANT CONVEYANCE SYSTEMS SUCH AS DIVERSION STRUCTURES, PRE-FILTERS, FILTERS, OUTLETS, AND FLOW DISTRIBUTION STRUCTURES; AND
 - UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.
- INSPECTIONS SHALL BE CONDUCTED BY THE DEPARTMENT OF PUBLIC WORKS OR ITS AUTHORIZED REPRESENTATIVE. WRITTEN INSPECTION REPORTS SHALL BE MADE OF THE PERIODIC INSPECTIONS NECESSARY DURING CONSTRUCTION OF STORMWATER MANAGEMENT SYSTEMS TO ENSURE COMPLIANCE WITH THE APPROVED PLANS.
- WRITTEN INSPECTION REPORTS SHALL INCLUDE:
 - DATE AND LOCATION OF INSPECTION;
 - WHETHER CONSTRUCTION WAS IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLAN;
 - ANY VARIATIONS FROM THE APPROVED CONSTRUCTION SPECIFICATIONS; AND
 - ANY VIOLATIONS THAT EXIST.
- ONCE CONSTRUCTION IS COMPLETE, AN AS-BUILT PLAN CERTIFICATION SHALL BE SUBMITTED BY THE APPROPRIATE DESIGN PROFESSIONAL LICENSED IN THE STATE OF MARYLAND TO ENSURE THE CONSTRUCTED STORMWATER MANAGEMENT PRACTICE AND CONVEYANCE SYSTEMS COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE APPROVED PLANS. AT A MINIMUM, AS-BUILT CERTIFICATION SHALL INCLUDE A SET OF DRAWINGS COMPARING THE APPROVED STORMWATER MANAGEMENT PLAN WITH WHAT WAS CONSTRUCTED.

STORMWATER MANAGEMENT FACILITY SEQUENCE OF CONSTRUCTION

- NOTIFY CERTIFYING ENGINEER FIVE (5) WORKING DAYS PRIOR TO BEGINNING STORM WATER MANAGEMENT FACILITY CONSTRUCTION.
- NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO DOING ANY WORK.
- CLEAR, GRUB, AND INSTALL PERIMETER SEDIMENT CONTROL MEASURES AS SHOWN ON THE SEDIMENT CONTROL PLAN.
- REFER TO SEDIMENT CONTROL PLAN FOR SEDIMENT BASIN CONSTRUCTION.
- UPON STABILIZATION OF DRAINAGE AREA EXCAVATE FOR INSTALLATION OF SAND FILTER (2-DAYS)
- INSTALL SAND FILTER AND UNDERDRAINS (3-DAYS)
- FINE GRADE AND PERMANENTLY STABILIZE DISTURBED AREA (2-DAYS)

CL BERM 'A' DATA

STATION	BEARING/RADIUS	DISTANCE/ARC LENGTH	CHORD
0+00			
0+27.33	S62°20'32"W	27.33'	
1+32.33	S82°6'39"E	105.00'	
1+88.06	35.0'	55.73'	N52°16'26"E 50.03'

PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME / COMMON NAME	SIZE	ROOT	COMMENTS
EP	72	EUPATORIUM PURPUREUM / LITTLE JOE / PYLEWEE	18" - 24" HT.	CONT.	PLANT 2' O.C.
IG	13	ILEX GLABRA / SHAMROCK / SHAMROCK INKERRY	3' - 4' HT.	CONT.	PLANT 5' O.C.
MP	25	MYRICA PENNSYLVANICA / BAYBERRY	30" - 36" HT.	CONT.	PLANT 4' O.C.
PV	25	PANICUM VIRGATUM / HEAVY METAL / HEAVY METAL SWITCHGRASS	3' - 4' HT.	CONT.	PLANT 5' O.C.

--- 442 --- AS-BUILT CONTOURS

DESIGN SUMMARY

- FACILITY NUMBER: G
- FACILITY TYPE: SURFACE SAND FILTER / DETENTION
- DRAINAGE AREA = 5.12 AC.
- BOTTOM ELEVATION = 424.00
- TOP OF DAM ELEVATION = 432.00
- STORAGE VOLUME PROVIDED = 0.381 AC. FT.
- WATER SURFACE ELEVATION:
 - 10 YEAR = 428.45
 - 100 YEAR = 429.83
- DISCHARGE:
 - 10 YEAR = 3.41 CFS
 - 100 YEAR = 3.94 CFS
- RISER TYPE: SEE DETAILS
- BARREL TYPE: 21" RCCP
- MAINTENANCE RESPONSIBILITY: THIS IS A PRIVATE FACILITY TO BE OWNED AND MAINTAINED BY THE OWNER.
- THIS FACILITY IS EXEMPT FROM MD378 GUIDELINES IN THAT THE STORAGE DESIGN HIGH WATER DOES NOT EXCEED 40,000 C.F. AND THE EMBANKMENT HEIGHT IS LESS THAN 6 FEET. (MD-378 HAZARD CLASS - A)
- THIS FACILITY PROVIDES QUALITY TREATMENT & QUANTITY MANAGEMENT WITHIN THE HUDSON BRANCH WATERSHED. THE FOLLOWING TABLE SHOWS THE MANAGEMENT PROVISIONS FOR THIS FACILITY.

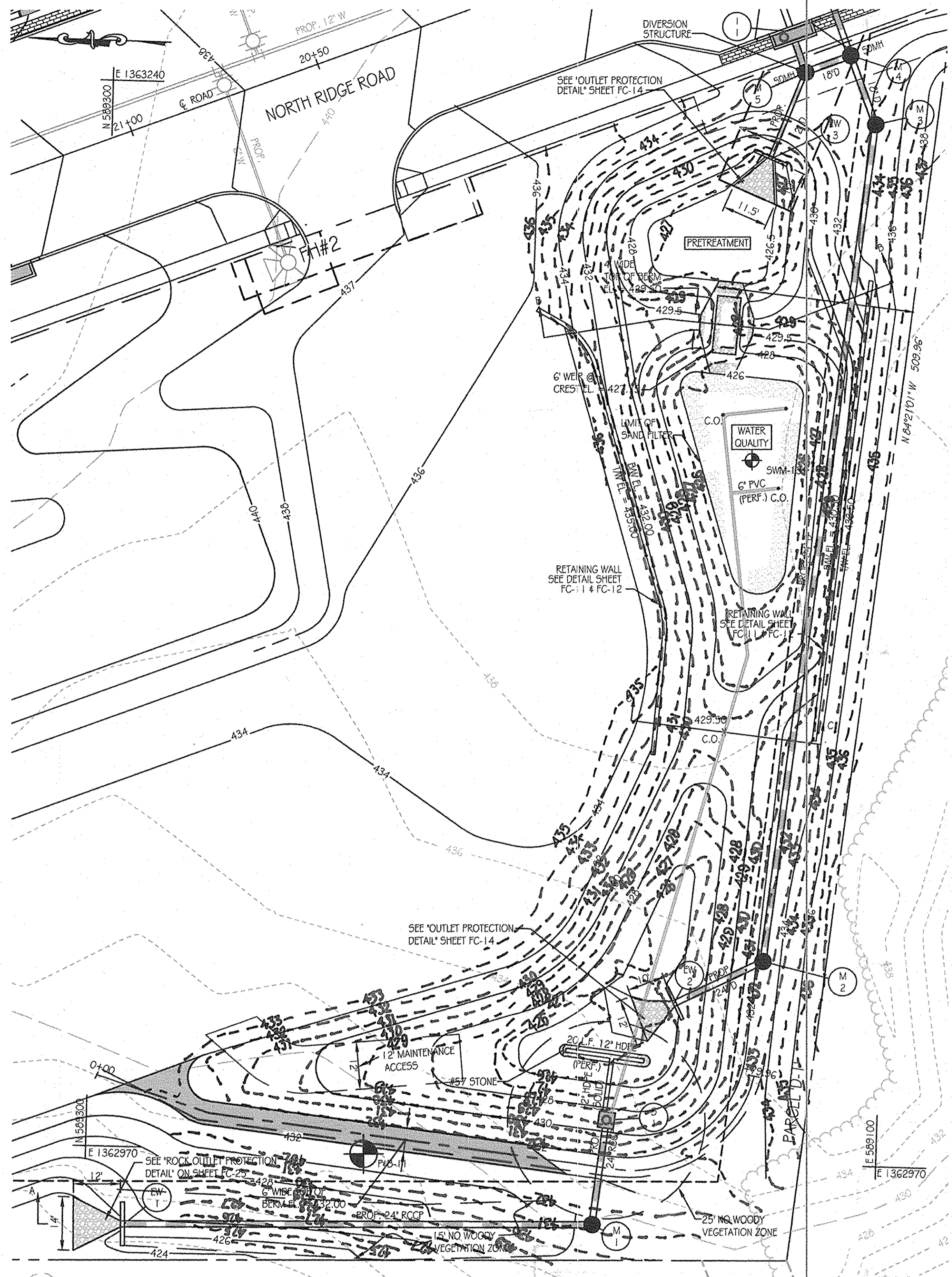
DRAINAGE AREA	QUALITY		QUANTITY (@ HUDSON BRANCH DESIGN POINT)							
	PROVIDED	TREATED ESQ.	10 YEAR STORM EVENT	100 YR. STORM	EXIST.	DI.	DIFF.	EX.	DEV.	DIFF.
1.43 AC.	1.77	5,410 C.F.	7.63 CFS	5.6 CFS	-2.37 CFS	16.97 CFS	7.24 CFS	-9.73 CFS		

OPERATION AND MAINTENANCE SCHEDULE PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1, F-4 & F-5)

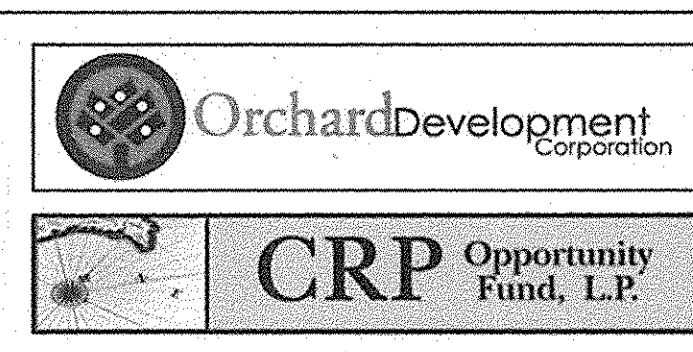
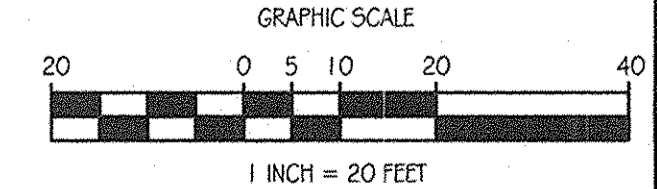
- THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
- THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHED 18" IN HEIGHT OR AS NEEDED.
- FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
- VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED. REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY.
- WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE OWNER.
- A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- ONCE THE PERFORMANCE CHARACTERISTICS OF THE FILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

LEGEND

- SOIL BORING
- EX. CONTOURS
- PROP. CONTOURS
- PROP. STORM DRAIN
- TOP OF BERM
- LIMIT OF SAND FILTER
- RIP-RAP OUTFALL



AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS AS-BUILT PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
RICHARD J. PEZ 31077 DATE 7-1-13



CONTRACT PURCHASER / DEVELOPER:
ORCHARD DEVELOPMENT CORPORATION
5302 DORSET HALL DRIVE
ELICOTT CITY, MD 21042
(410) 964-2334

OWNER:
WILDER BUILDING CORPORATION
3300 SONIA TRAIL
ELICOTT CITY, MD 21043
(410) 461-2522

DATE	NUMBER	REVISION DESCRIPTIONS

KCI TECHNOLOGIES
8161 Maple Lawn Boulevard
Suite 130
Fulton, MD 20759
Telephone: (410) 92-8086
Fax: (410) 792-7919

PROFESSIONAL ENGINEER
11-2-11

ORCHARD MEADOWS
PARCEL D-1, D-2 & D-3

TAX MAP: 17 GRID: 23 PARCEL: 711
ZONED: R-A-1.5
ELECTION DISTRICT: NO. 2
HOWARD COUNTY, MD

STORMWATER MANAGEMENT - FACILITY #6 PLAN

DESIGN BY: B.E.S. SCALE: AS SHOWN SHEET 24 OF 29
DRAWN BY: C.T.D. DATE: 11-02-2011 DRAWING NUMBER
CHECKED BY: APPROVED: FC-24

PROJECT NO.: 27101105

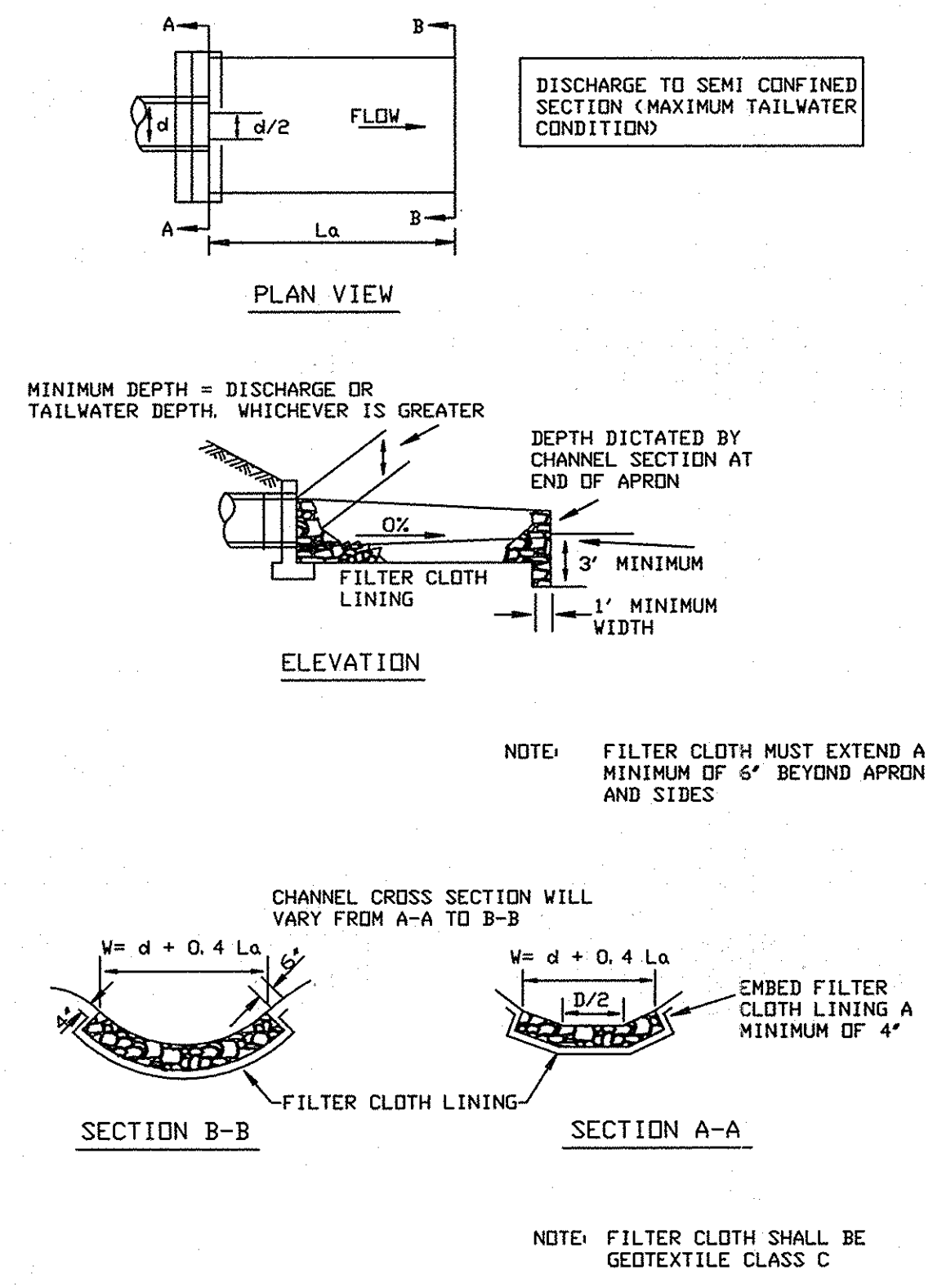
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: DEPARTMENT OF PUBLIC WORKS
Maie Schwegel, Acting 11/22/11
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kurt Rindfleisch 11/23/11
CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF-DEVELOPMENT ENGINEERING DIVISION

DETAIL 25 - ROCK OUTLET PROTECTION I



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-18-8 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

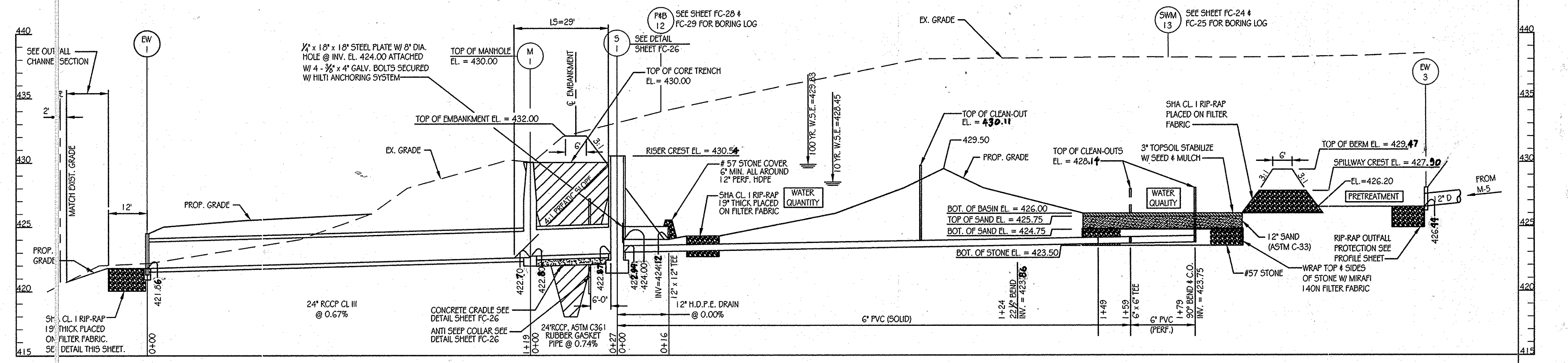
ROCK OUTLET PROTECTION I

Construction Specifications

- The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
- Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
- Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
- The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

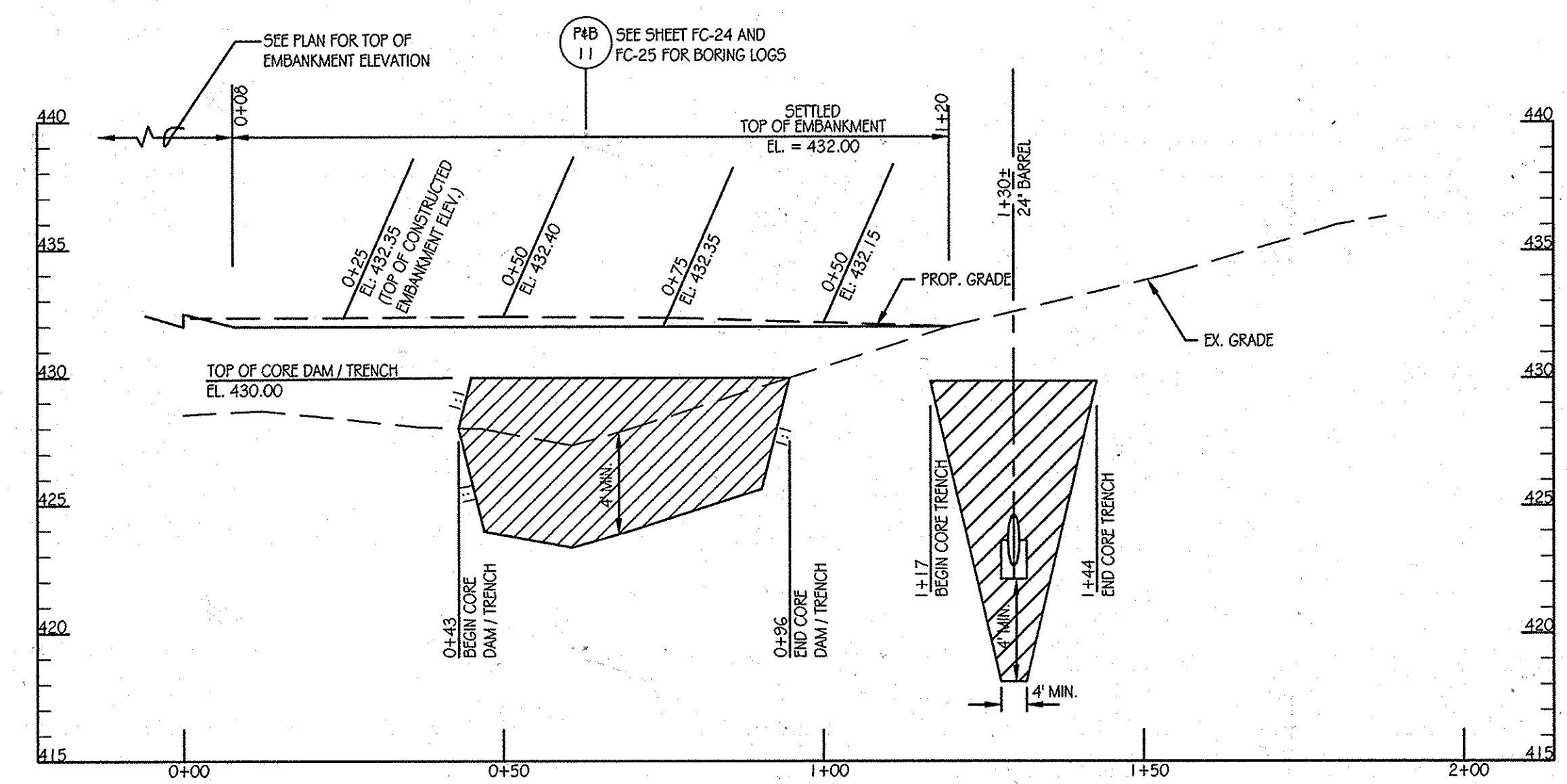
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-18-8A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diase Schwan, Acting 11/22/11
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
Keith Sheehy 11/23/11
 CHIEF, DIVISION OF LAND DEVELOPMENT
John Williams 11/23/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



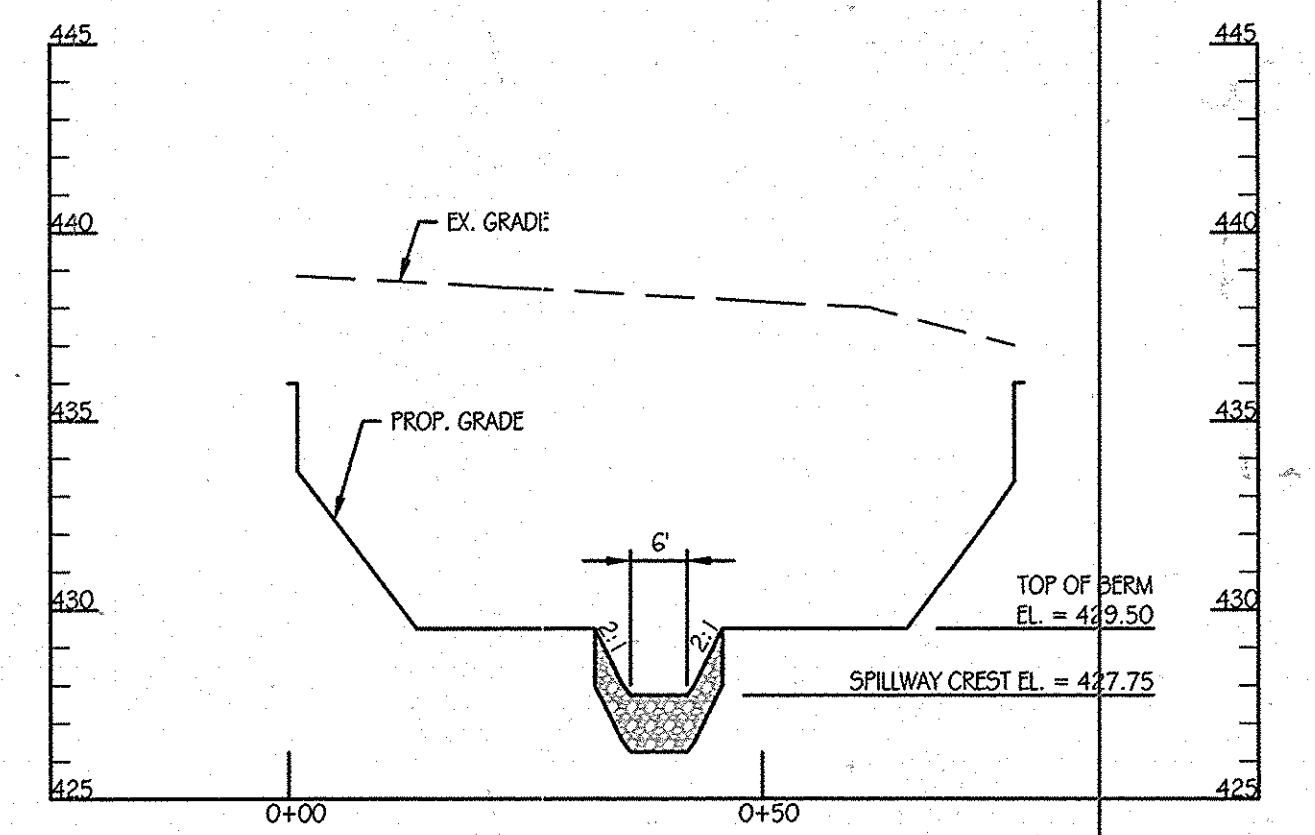
SECTION A-A

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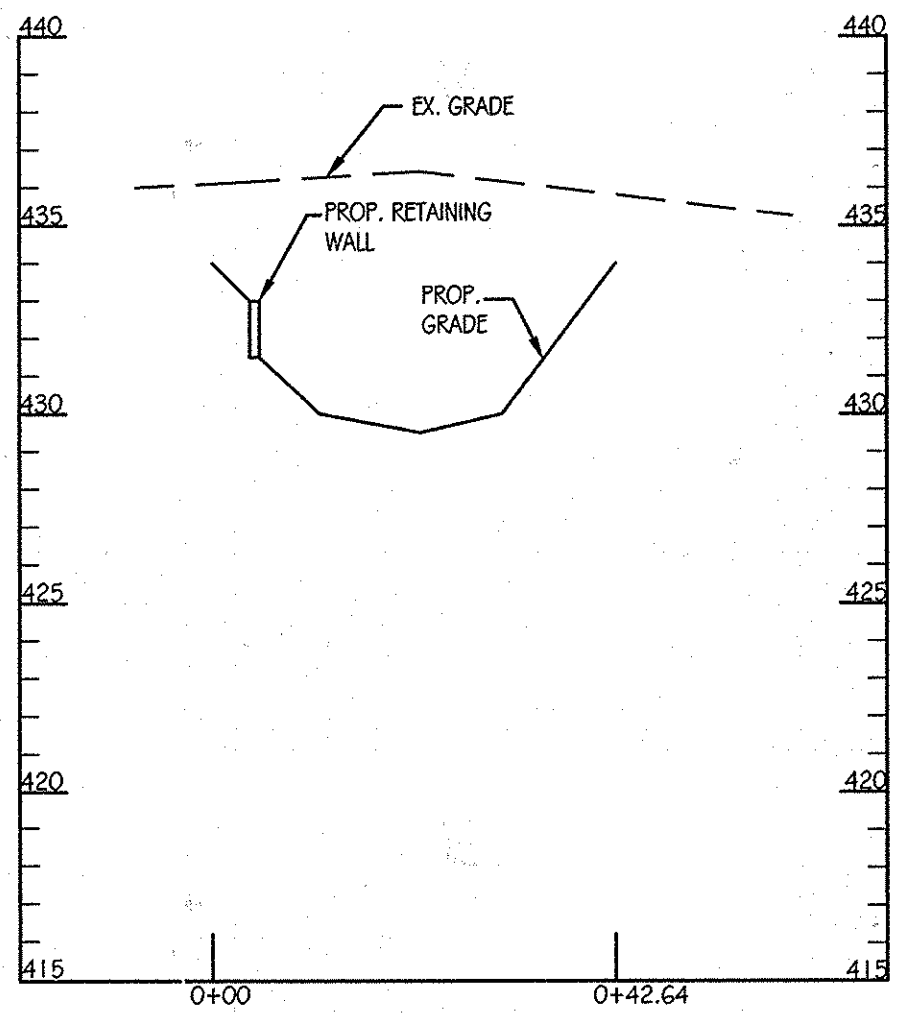
CENTERLINE OF DAM PROFILE

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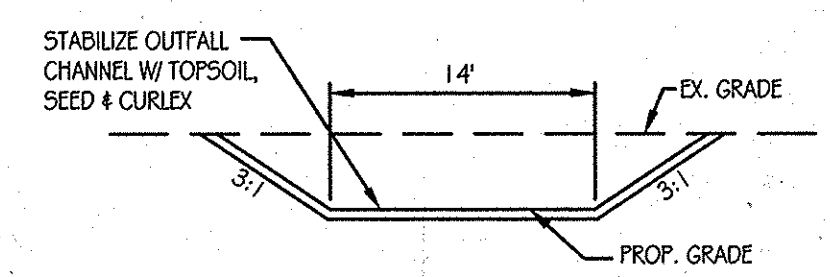
SECTION B-B

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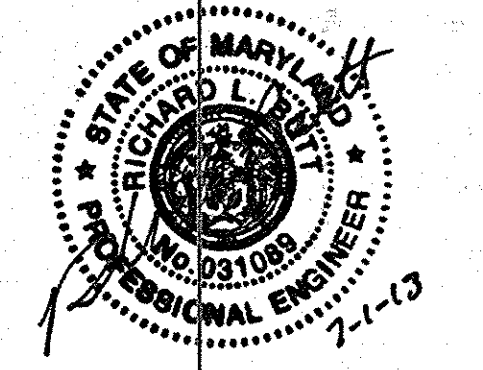
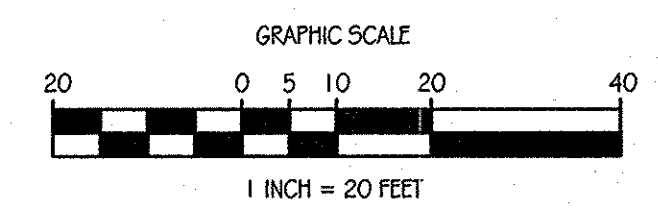
SECTION C-C

SCALE: 1\"/>



OUTFALL CHANNEL SECTION

NOT TO SCALE



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS AS-BUILT PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 RICHARD G. PFEIFFER, PE # 31089 DATE 7-1-13

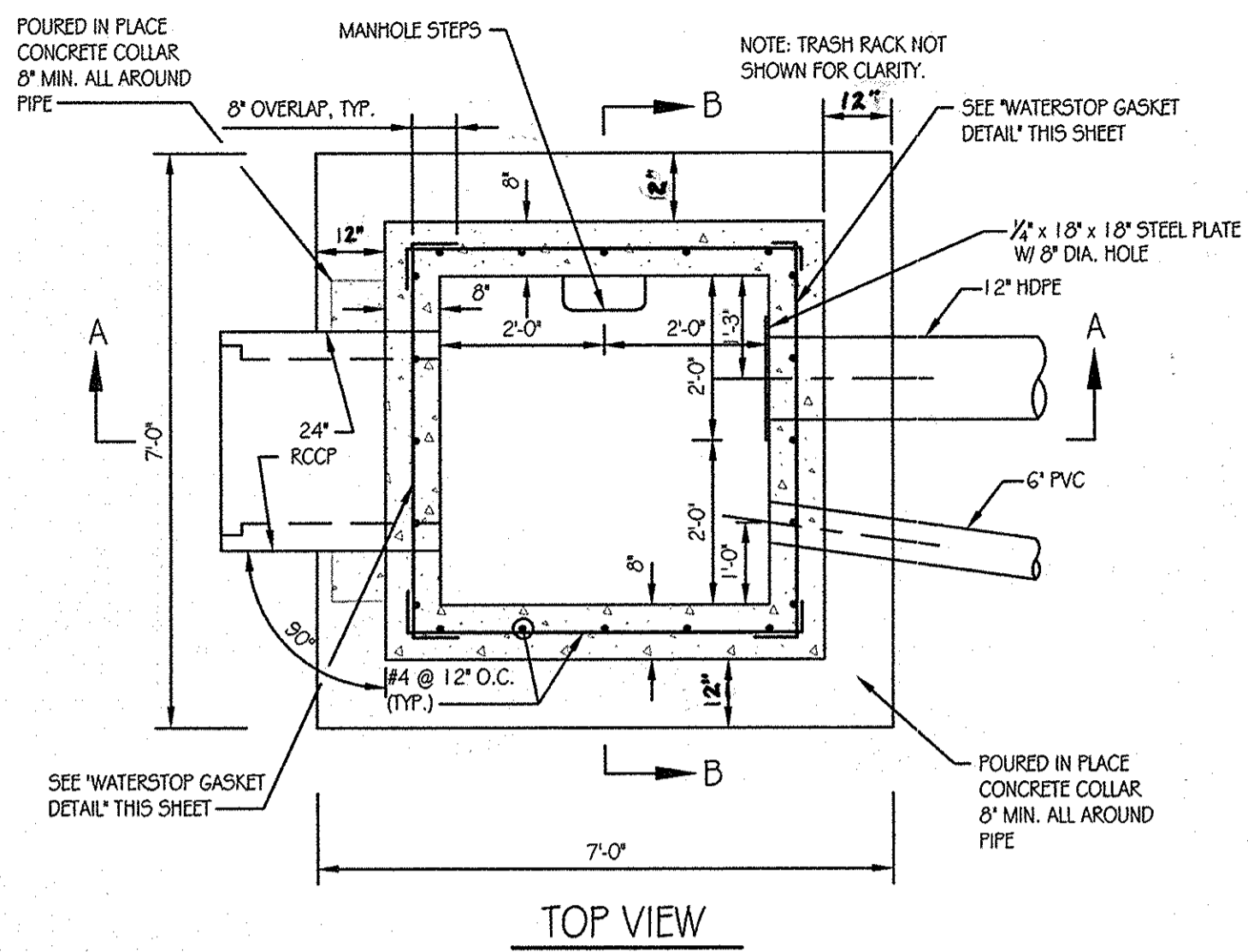
DATE	NUMBER	REVISION DESCRIPTIONS

 KCI TECHNOLOGIES 8101 MARLE LANE BOULEVARD SUITE 150 FULTON, MD 20759 TELEPHONE: (410) 92-8086 FAX: (410) 792-7419	 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.: 31089, EXPIRATION DATE: 11/11/212
ORCHARD MEADOWS PARCEL D-1, D-2 & D-3 TAX MAP: 17 GRID: 23 PARCEL: 711 ZONED: R-A-15 ELECTION DISTRICT: NO. 2 HOWARD COUNTY, MD	TITLE STORMWATER MANAGEMENT - FACILITY #6 PROFILES PROJECT NO.: 27101105 SHEET 25 OF 29 DRAWING NUMBER FC-25

Orchard Development Corporation
 CRP Opportunity Fund, L.P.

CONTRACT PURCHASER/ DEVELOPER:
 ORCHARD DEVELOPMENT CORPORATION
 5323 COOPERIAL DRIVE
 ELICOTT CITY, MD 21042
 (410) 964-2334
 OWNER:
 WILDER BUILDING CORPORATION
 3300 SONIA TRAIL
 ELICOTT CITY, MD 21043
 (410) 461-2522

DESIGN BY: B.E.S. SCALE: AS SHOWN
 DRAWN BY: C.T.B. DATE: 11-02-2011
 CHECKED BY: APPROVED: _____



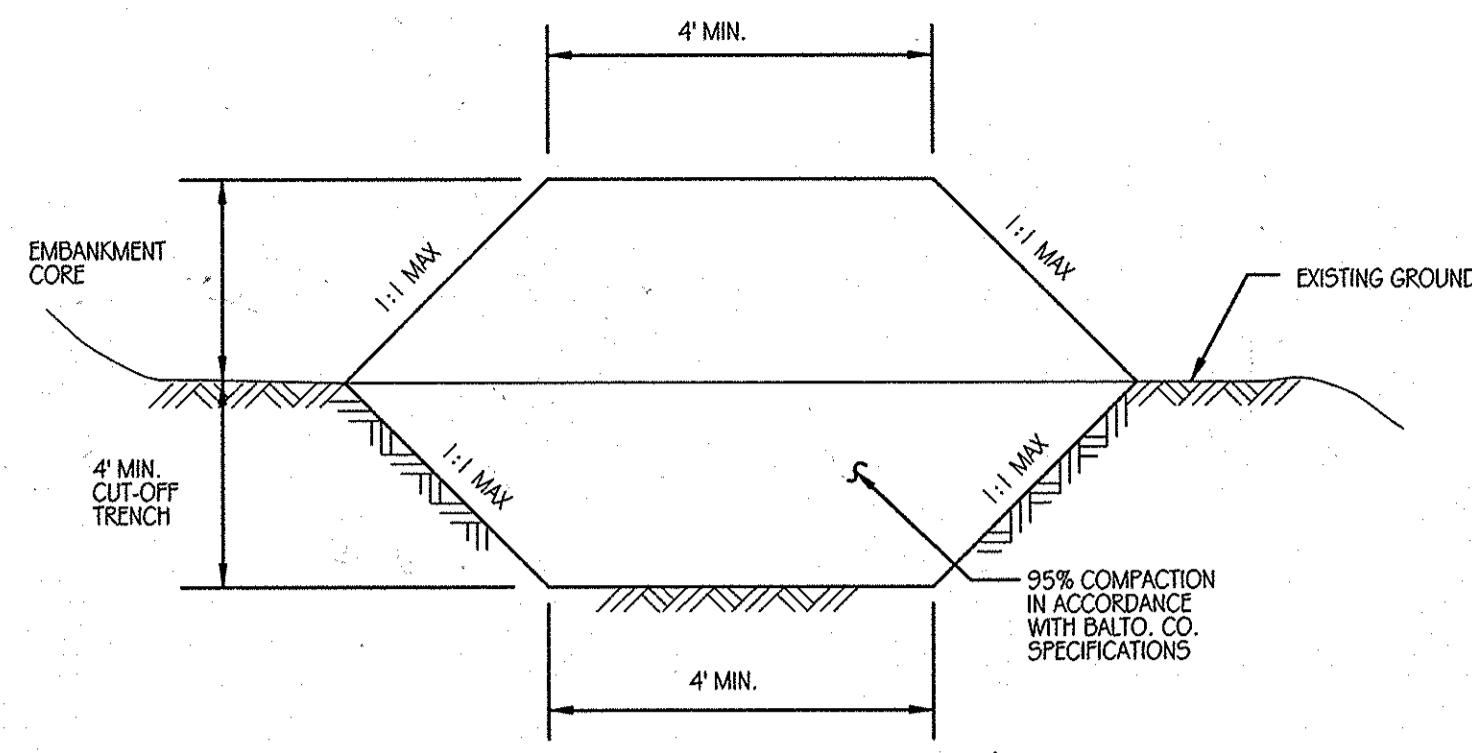
TOP VIEW

PRE-CAST CONCRETE AND PRE-FABRICATED STEEL STRUCTURE NOTES

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE STRUCTURAL DESIGN COMPUTATIONS FOR FABRICATED CONCRETE AND STEEL COMPONENTS AS REQUIRED TO INSURE THE STRUCTURAL INTEGRITY OF THE PRE-CAST CONCRETE RISER AND WELDED STEEL TRASH RACK, IN CONFORMANCE WITH THE INFORMATION AND DIMENSIONAL CRITERIA ON THIS SHEET. SHOP DRAWINGS FOR THE TRASH RACK AND THE PRE-CAST STRUCTURES (MEETING ASTM REQUIREMENTS), WITH THE SUPPORTING STRUCTURAL COMPUTATIONS (SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER), MUST BE SUBMITTED TO THE ENGINEER, AND THE APPROVING AGENCY, FOR APPROVAL, PRIOR TO FABRICATION.

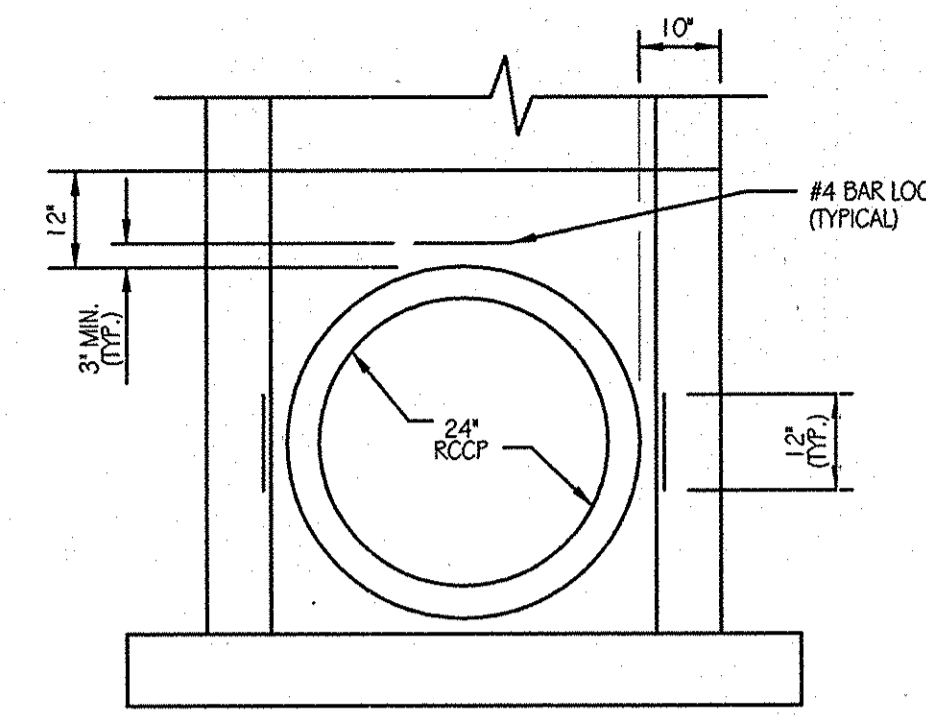
IF ANY STRUCTURE DIMENSIONS VARY FROM THOSE ORIGINALLY REVIEWED/ APPROVED, THE HYDRAULICS, FLOTATION AND STRUCTURAL INTEGRITY WILL HAVE TO BE REANALYZED.

ALL JOINTS AND CONNECTIONS SHALL BE WATERTIGHT. METHOD OF ACHIEVING A WATERTIGHT SEAL BETWEEN THE RISER STRUCTURE, AND ALL CONDUITS (I.E., BARREL AND FLOW PIPES) SHALL BE APPROVED BY THE ENGINEER IN CHARGE, PRIOR TO FABRICATION.



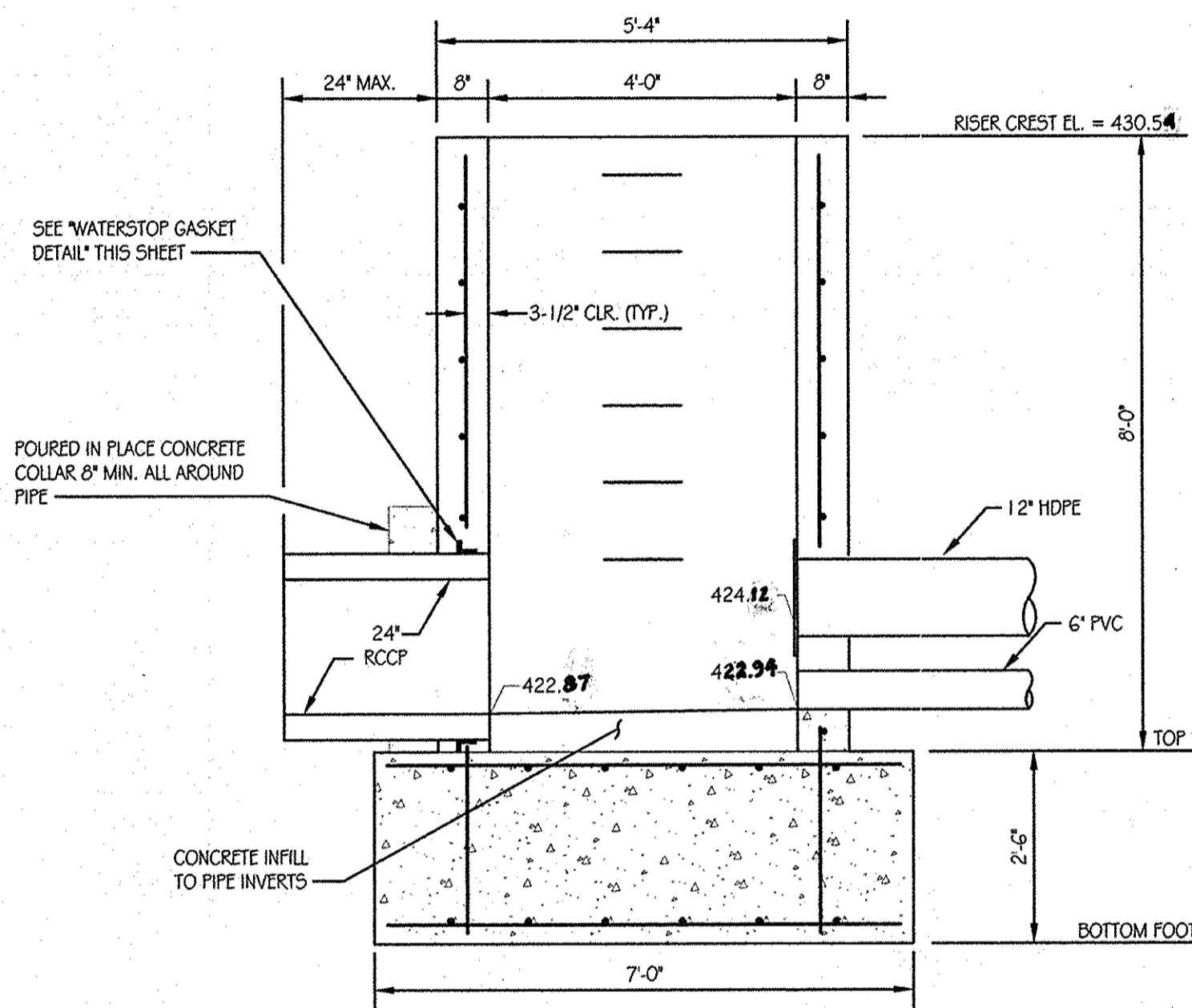
CORE DAM / TRENCH SECTION

SCALE: NOT TO SCALE



CONCRETE COLLAR @ RISER DETAIL

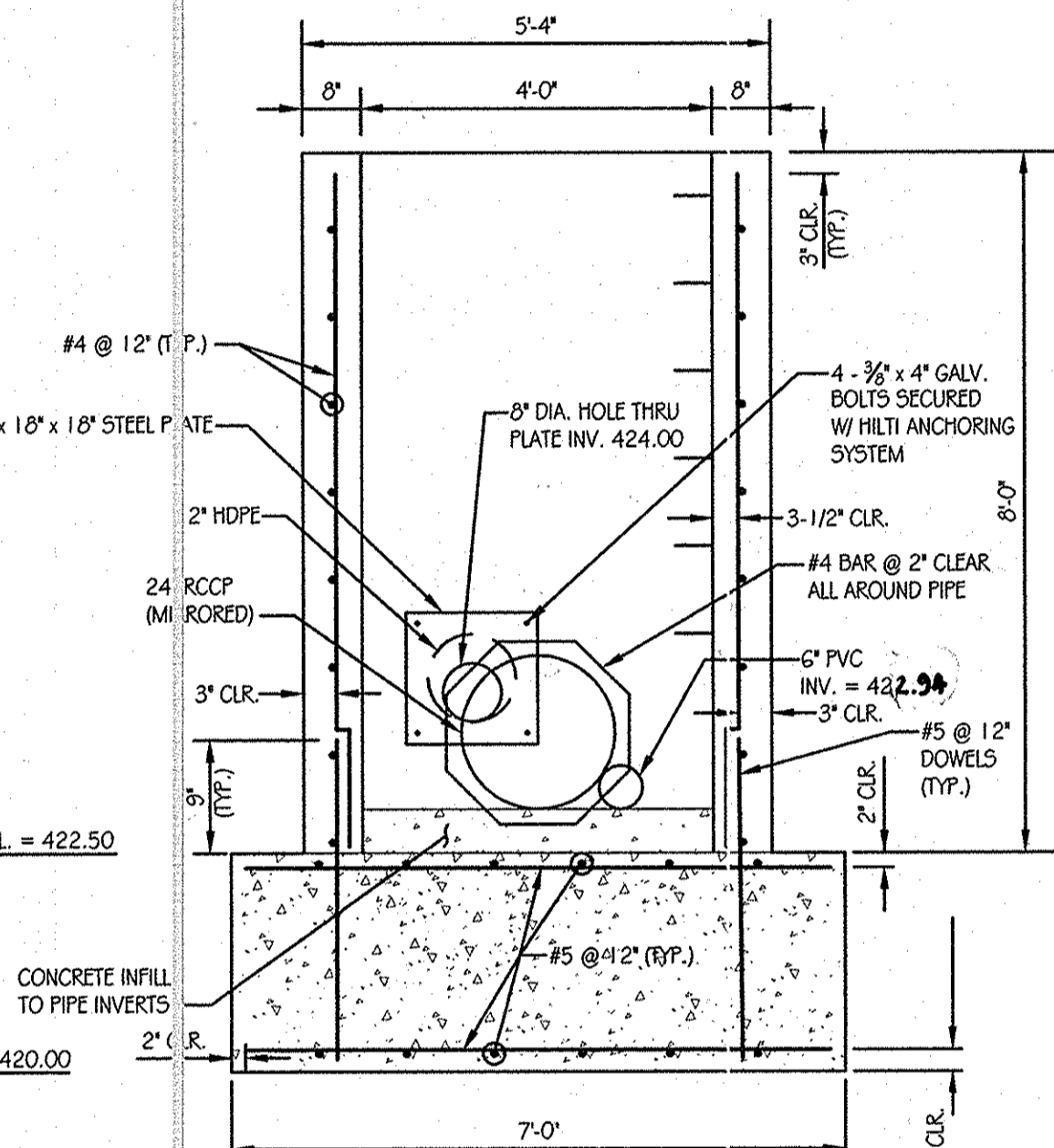
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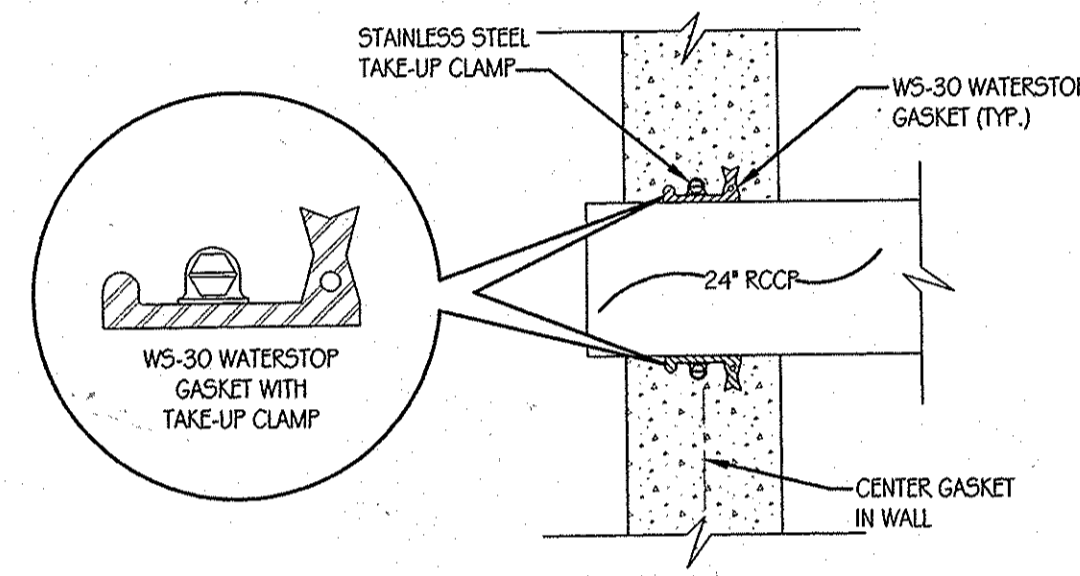
SECTION A-A

WATER QUALITY RISER DETAIL (S-1)

SCALE: 1/2" = 1'-0"

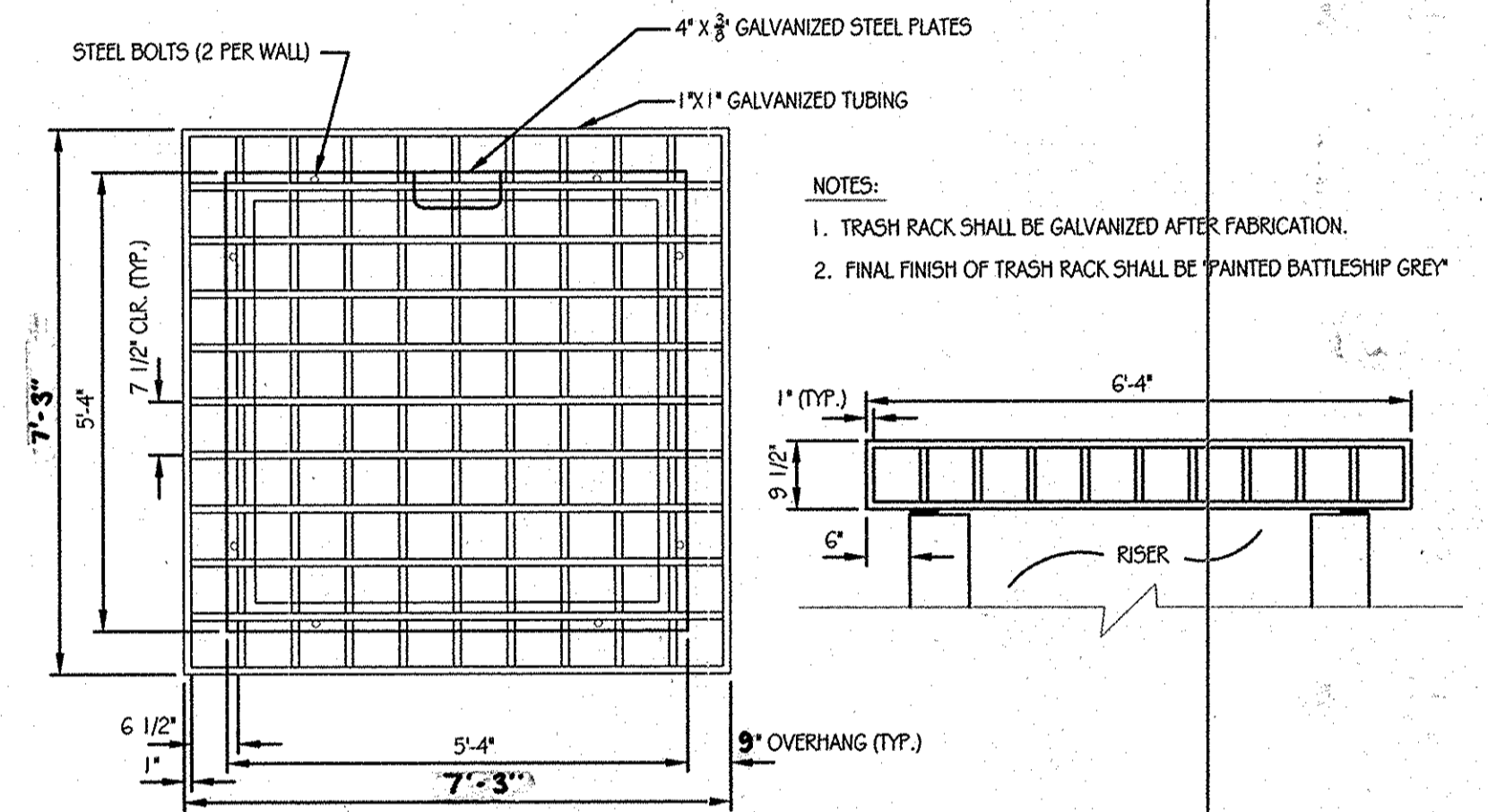


SECTION B-B



WS-30 WATERSTOP GASKET DETAIL

SCALE: NOT TO SCALE



TOP VIEW

ELEVATION

TRASH RACK DETAIL

SCALE: 1/2" = 1'-0"

BY THE ENGINEER:
"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, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Richard L. Butt
SIGNATURE OF ENGINEER
RICHARD L. BUTT
PRINT NAME
11-2-2011
DATE

BY THE DEVELOPER:
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

L. Scott Armiger
SIGNATURE OF DEVELOPER
L. SCOTT ARMIGER
PRINT NAME
11-3-11
DATE

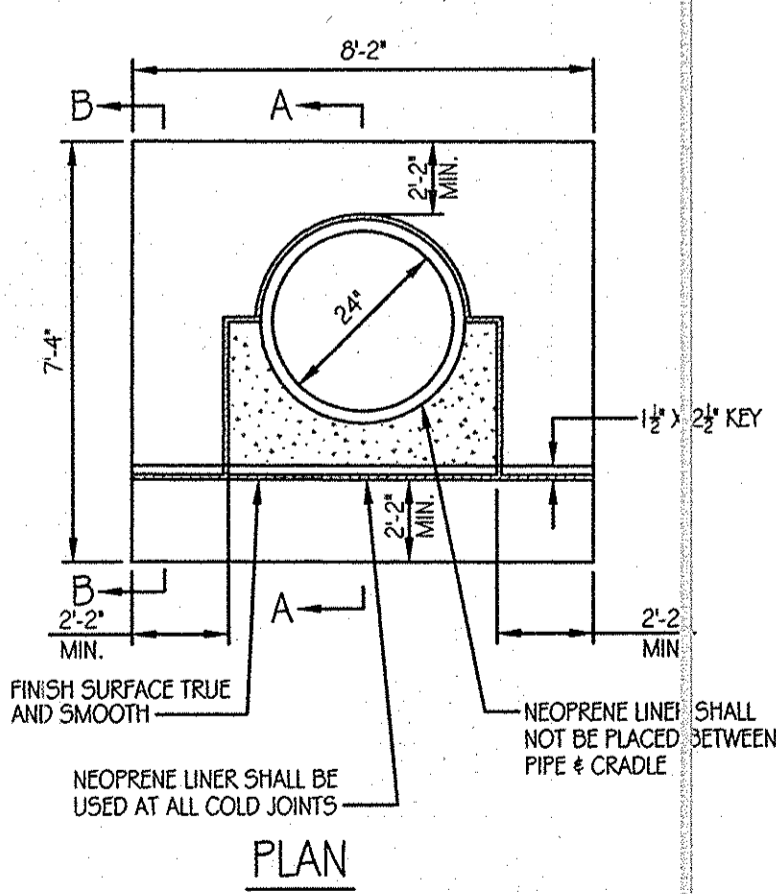
APPROVED: DEPARTMENT OF PUBLIC WORKS

Diane Schwan
CHIEF, BUREAU OF HIGHWAYS
11/22/11
DATE

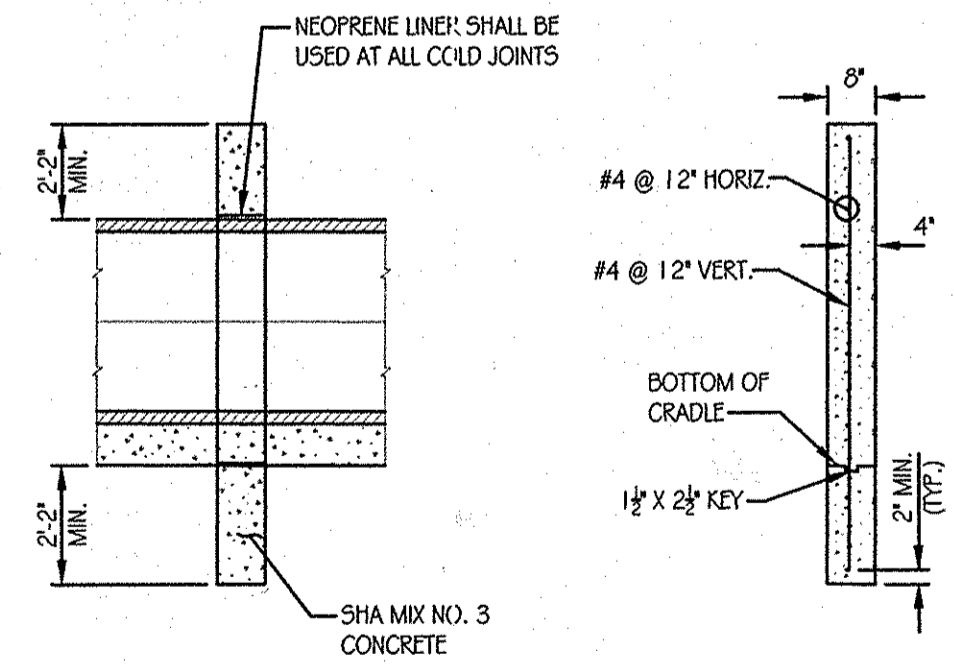
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Keith Sander
CHIEF-DIVISION OF LAND DEVELOPMENT
11/23/11
DATE

John J. ...
CHIEF-DEVELOPMENT ENGINEERING DIVISION
11/23/11
DATE



PLAN

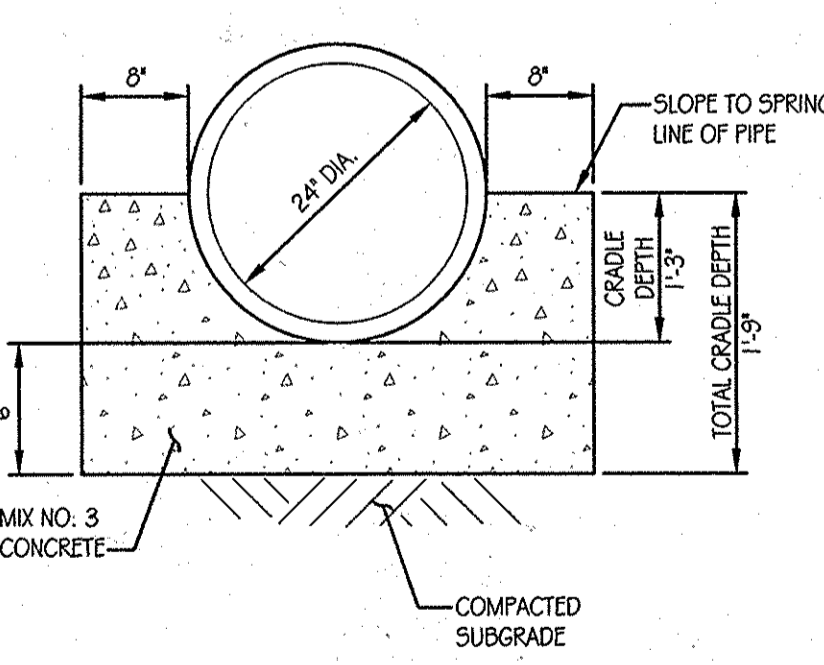


SECTION A-A

SECTION B-B

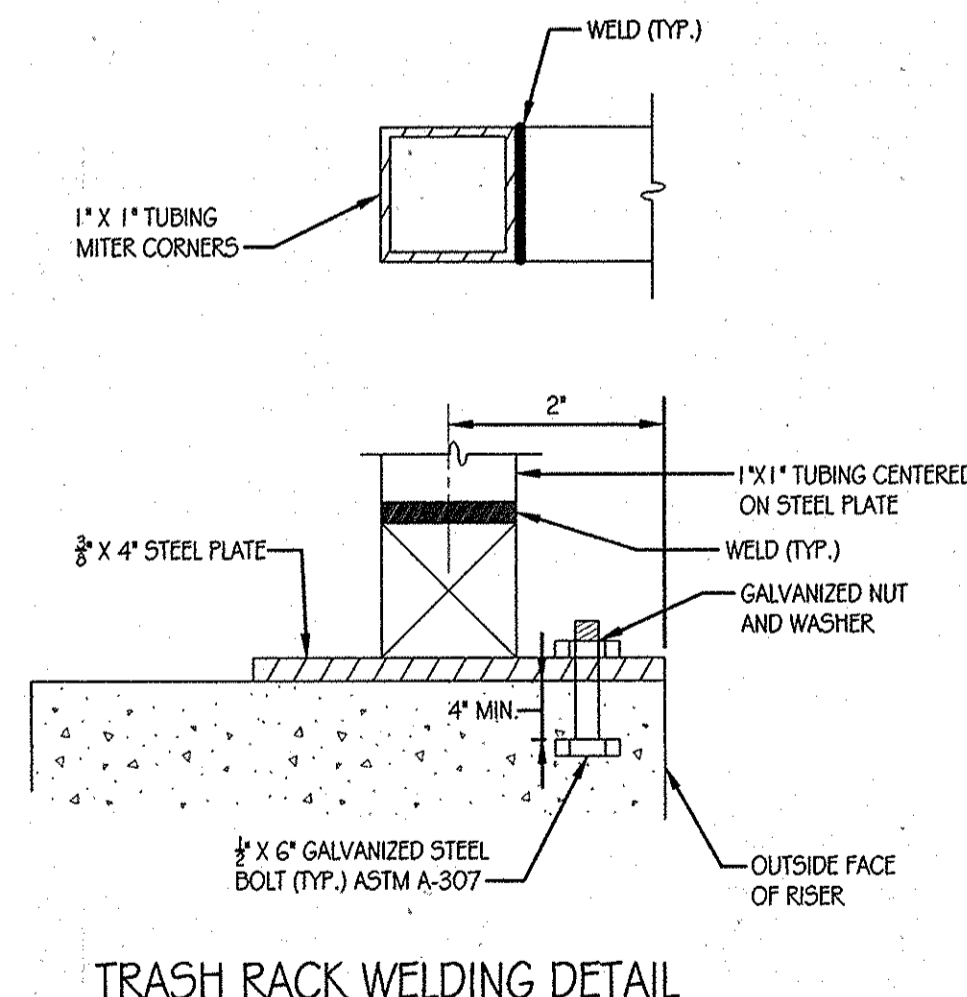
ANTI-SEEP COLLAR DETAIL (CAST-IN-PLACE)

SCALE: NOT TO SCALE



USDA-NRCS, TR-46, A-2 CONCRETE CRADLE DETAIL

SCALE: NOT TO SCALE



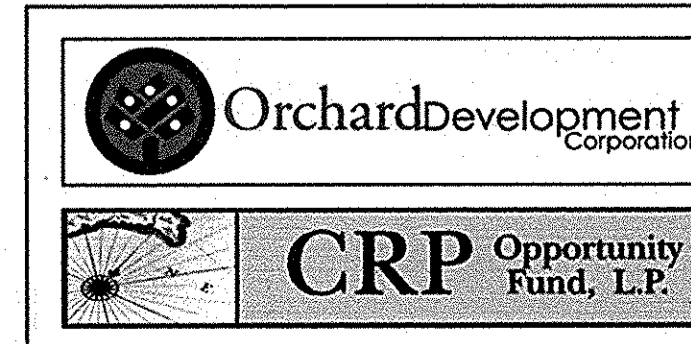
TRASH RACK WELDING DETAIL

SCALE: NOT TO SCALE

AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS AS-BUILT PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
SIGNED: *C.T.B.* PER 31081 DATE 7-1-13

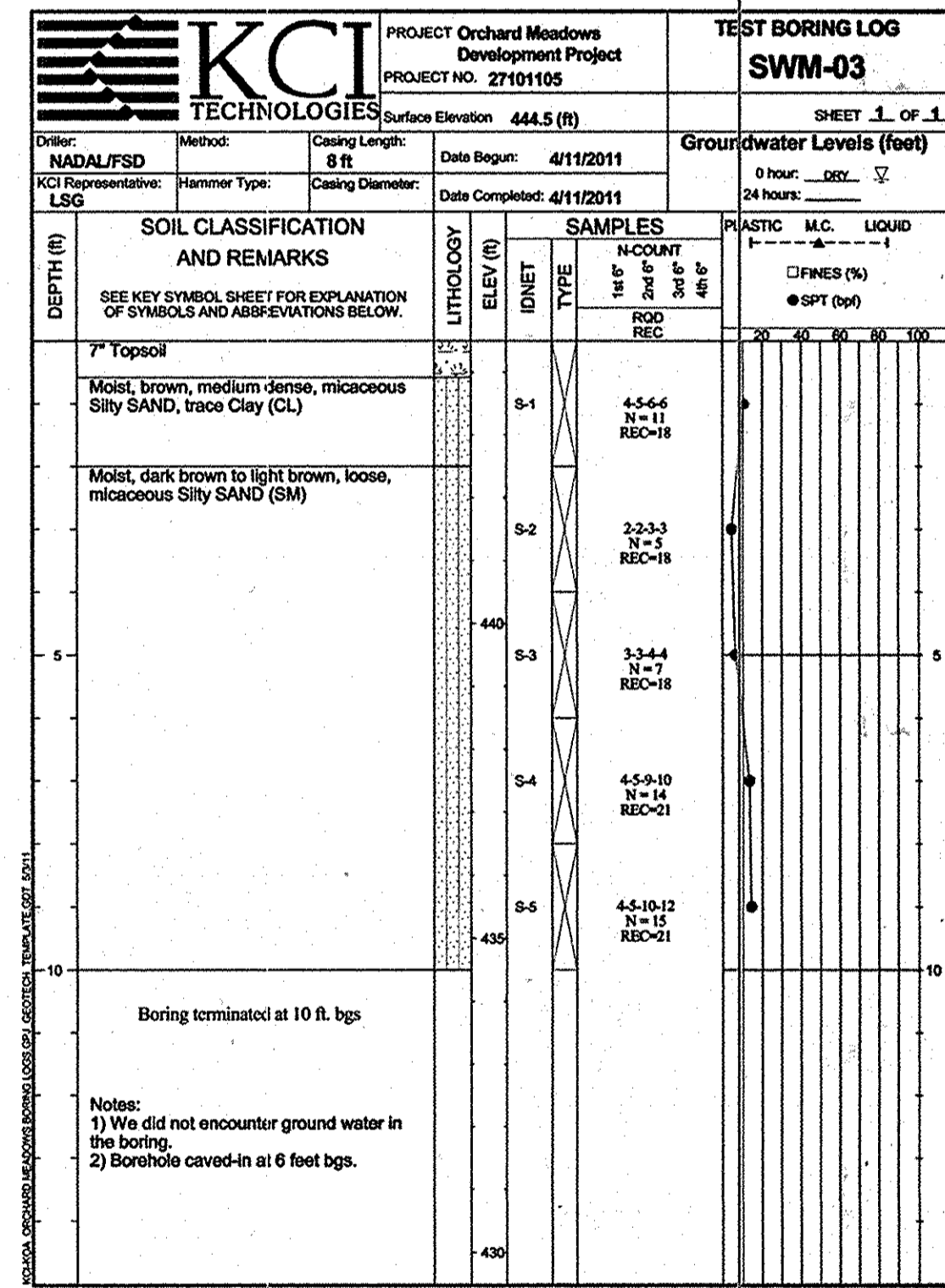
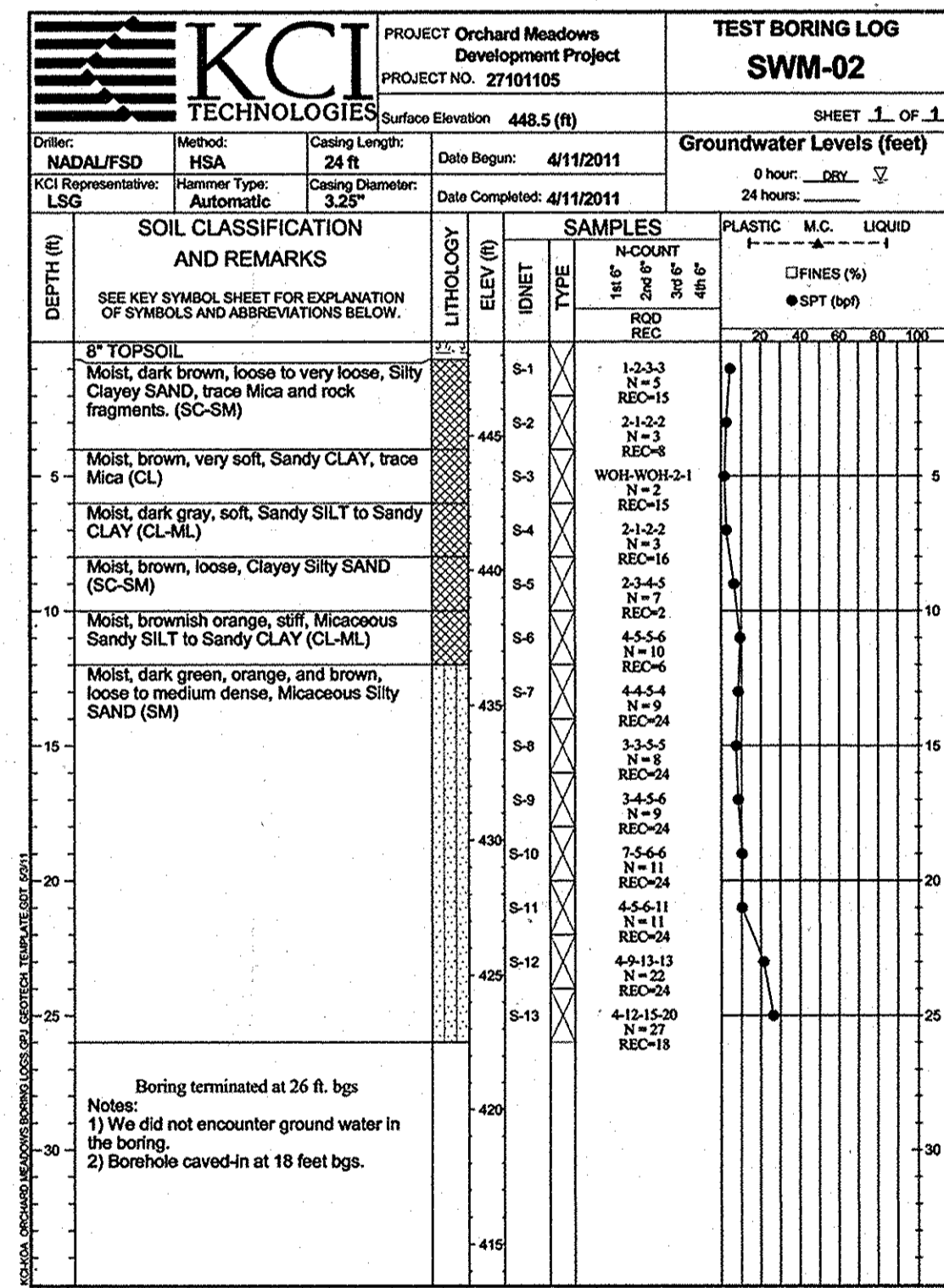
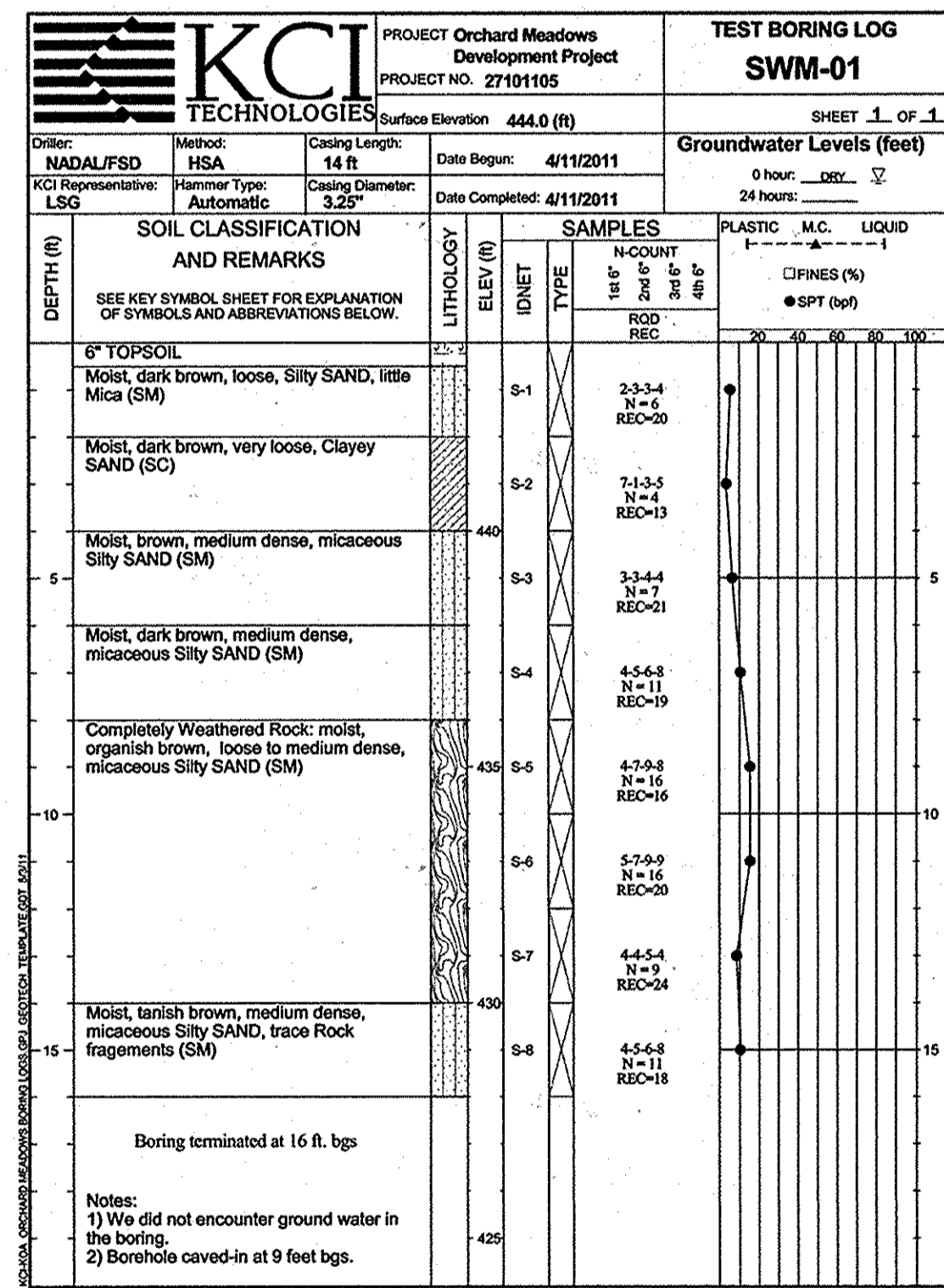
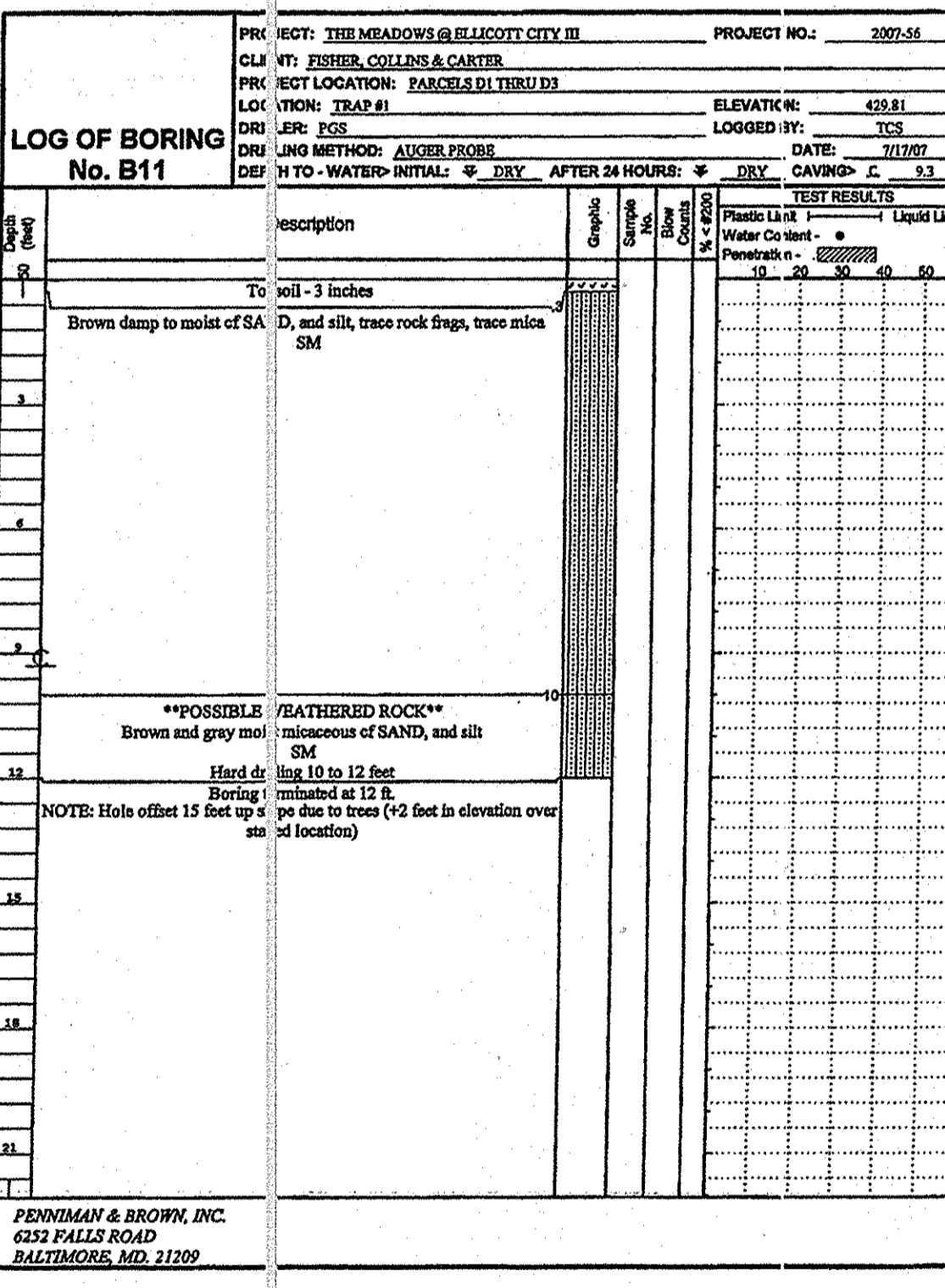
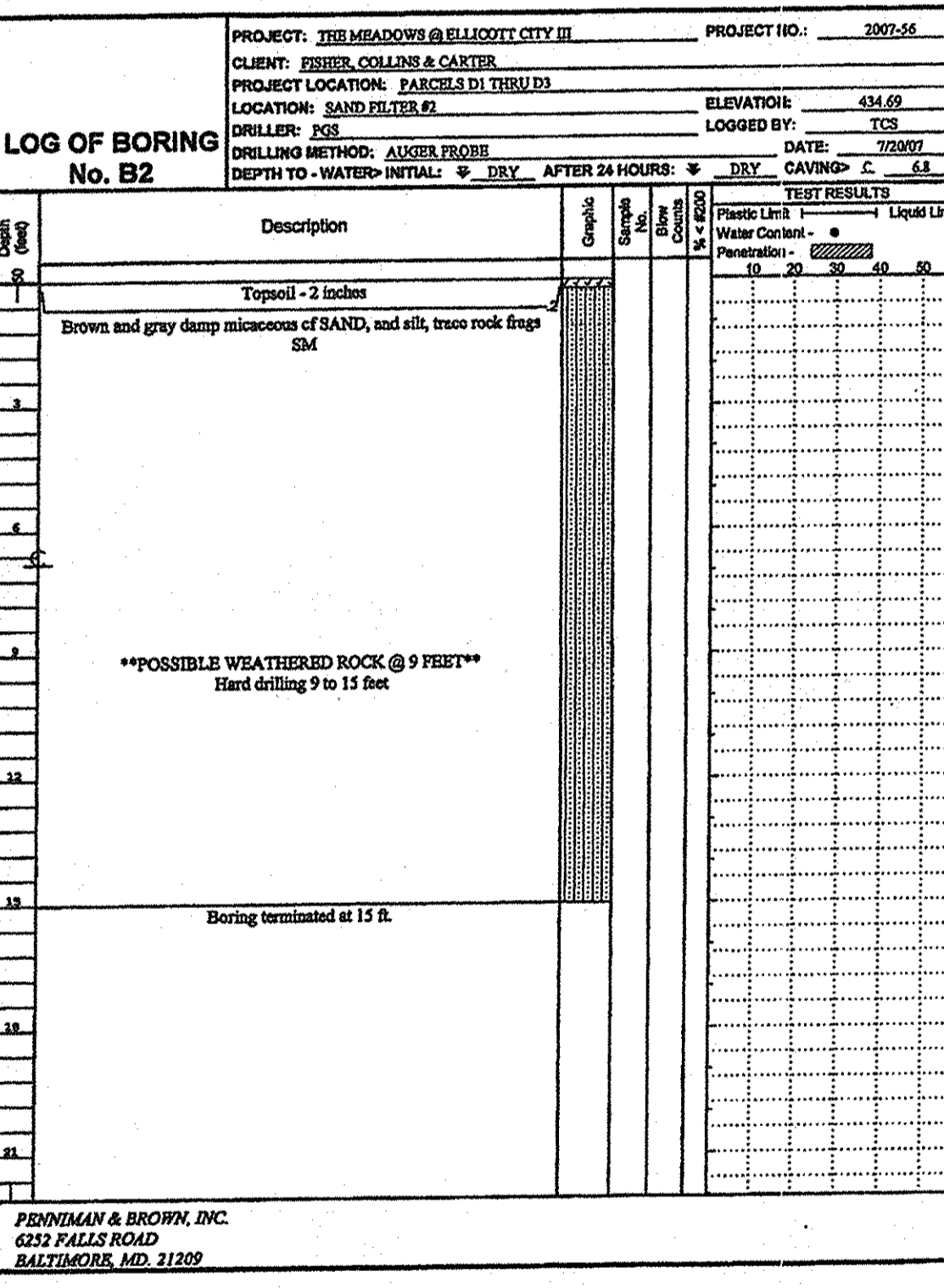
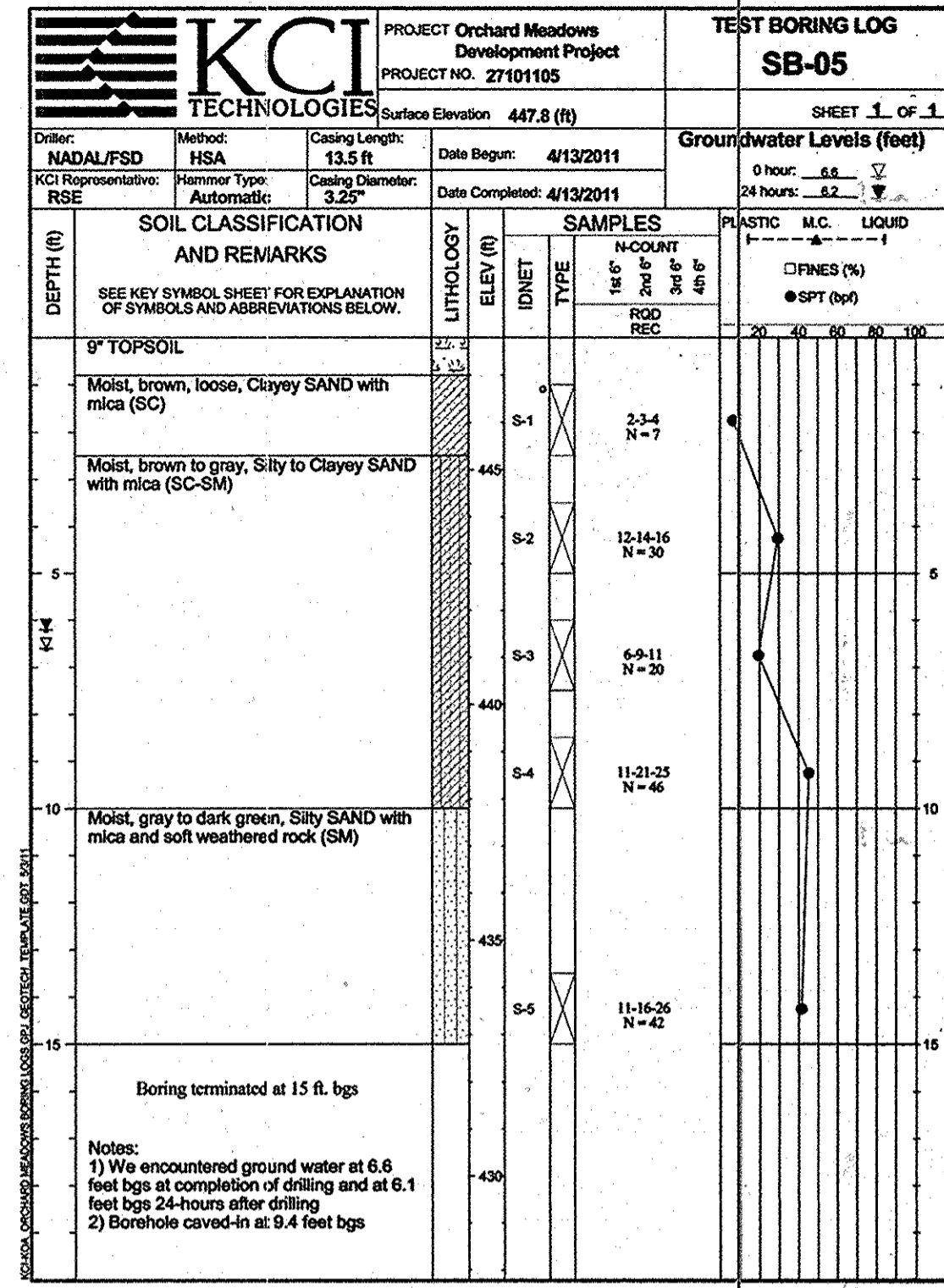
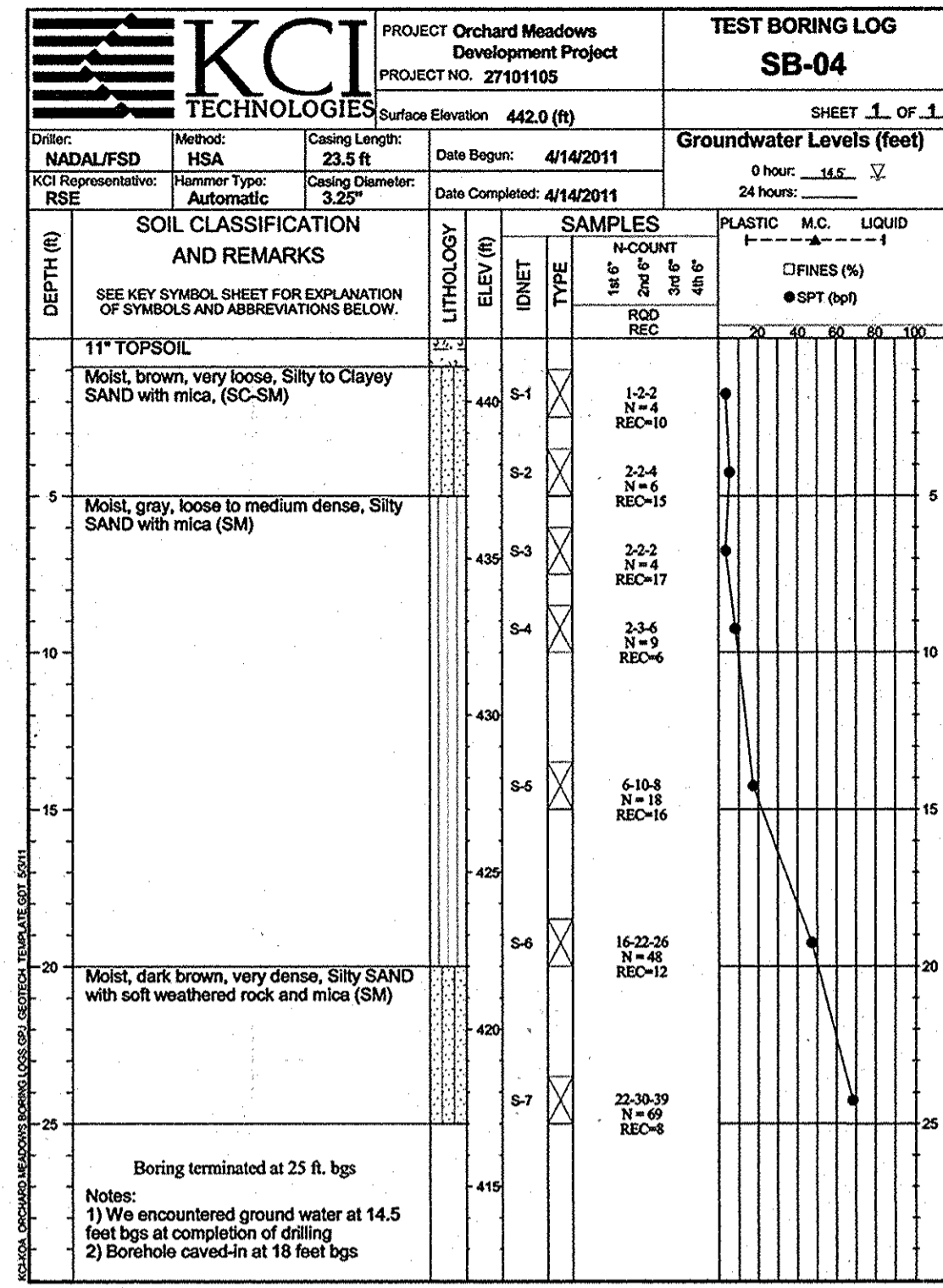
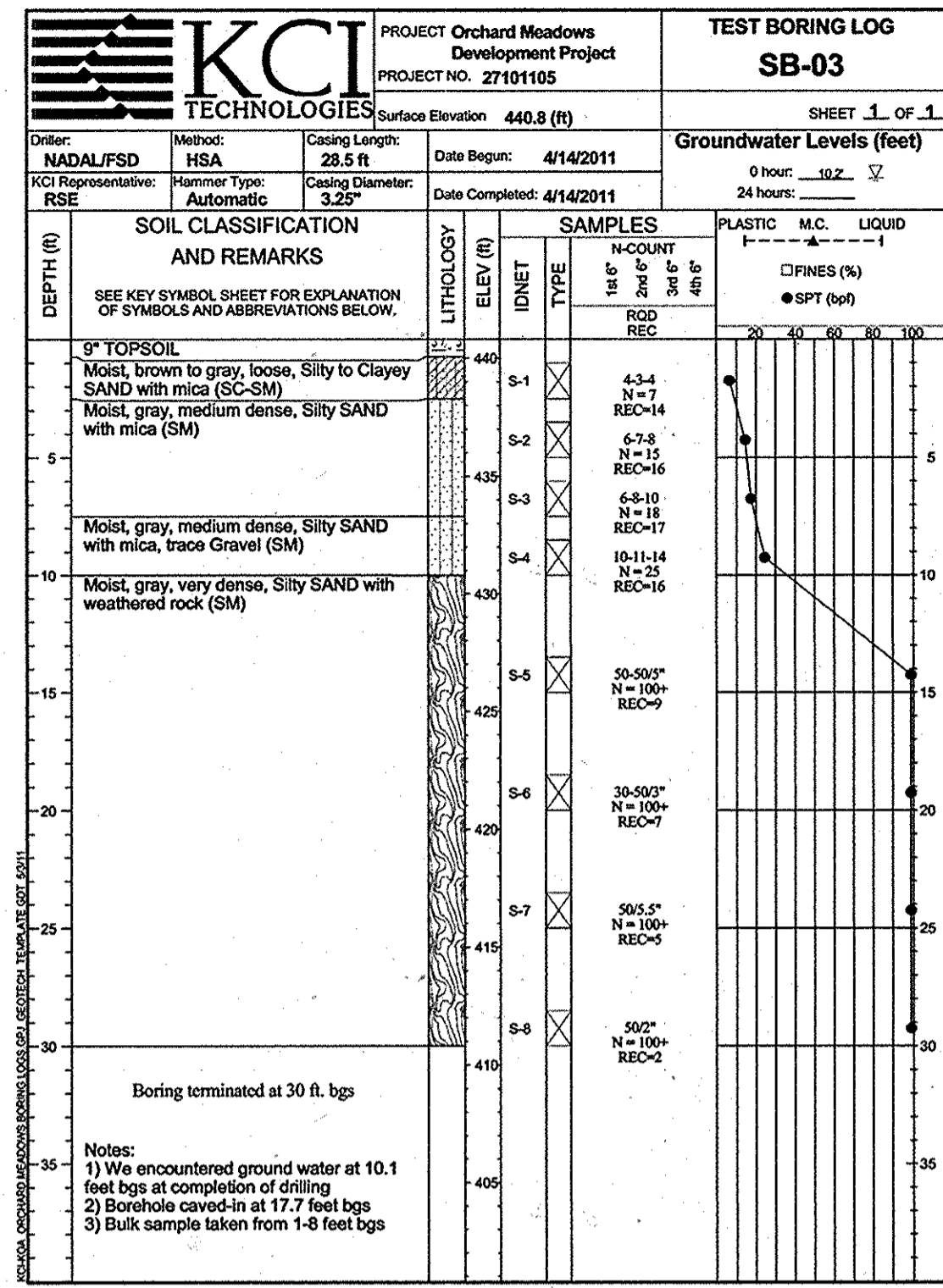
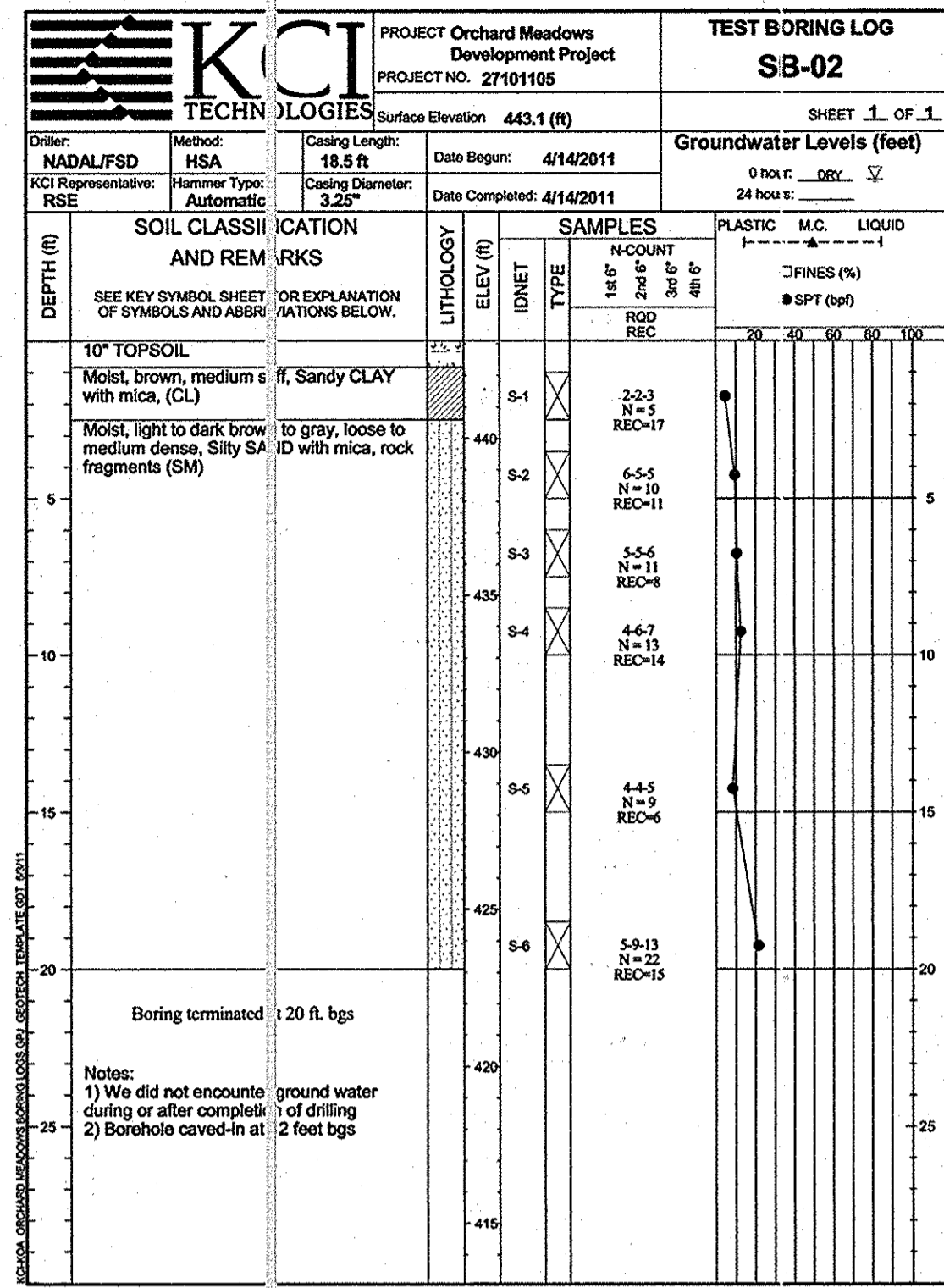
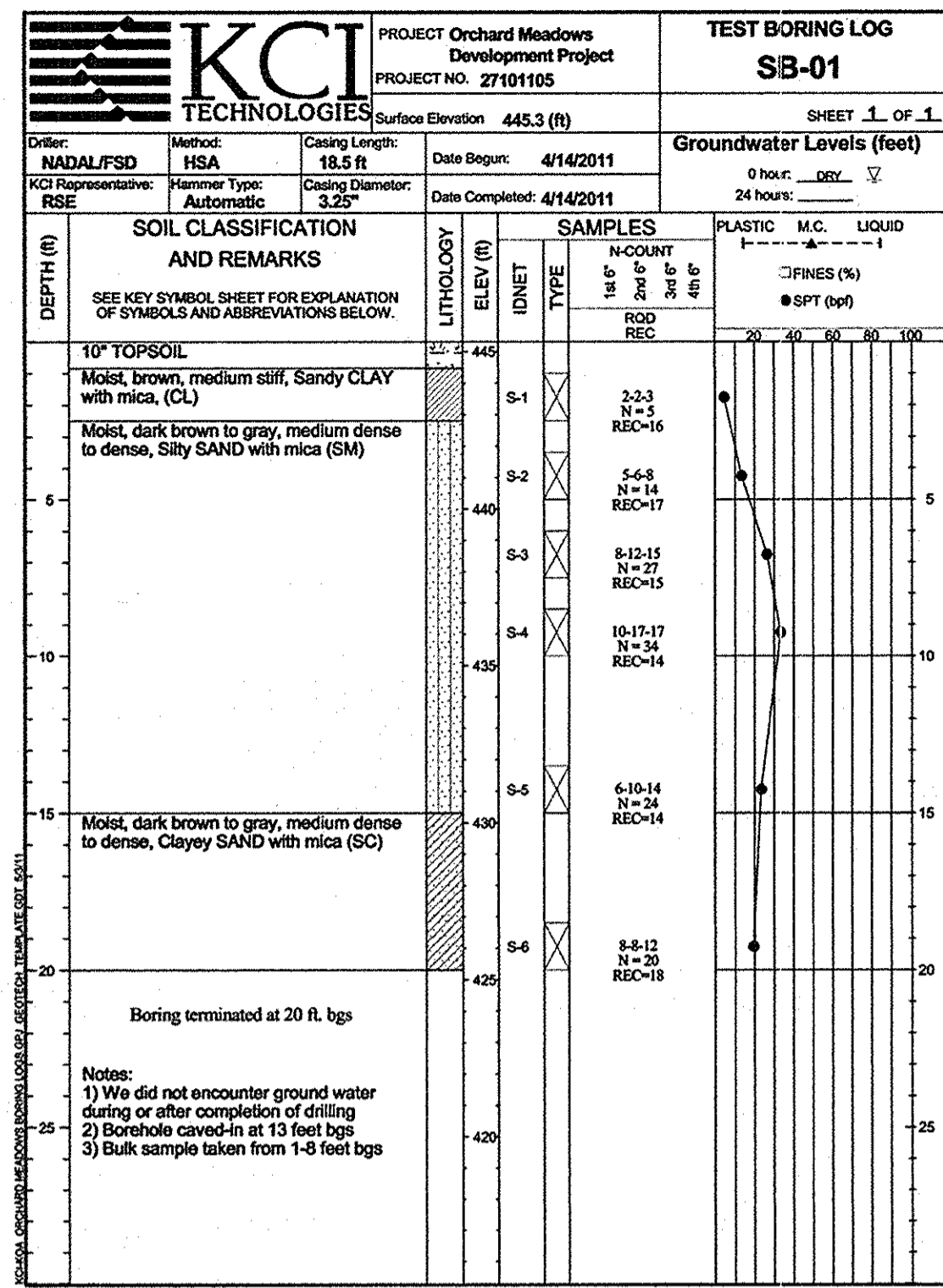


DATE	NUMBER	REVISION DESCRIPTIONS
		ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS
		KCI TECHNOLOGIES 8151 MARLE LAWN BOULEVARD SUITE 150 FULTON, MD 20759 TELEPHONE: (410) 92-8086 EX: (410) 792-7419
		ORCHARD MEADOWS PARCEL D-1, D-2 & D-3
		TAX MAP: 17 GRID: 23 PARCEL: 711 ZONED: R-A-15 ELECTION DISTRICT: NO. 2 HOWARD COUNTY, MD
		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.: 31089 EXPIRATION DATE: 11/12/12
		TITLE STORMWATER MANAGEMENT - FACILITY #6 DETAILS
DESIGN BY: B.E.S.	SCALE: AS SHOWN	PROJECT NO.: 27101105
DRAWN BY: C.T.B.	DATE: 11-02-2011	SHEET 26 OF 29
CHECKED BY:	APPROVED:	DRAWING NUMBER FC-26



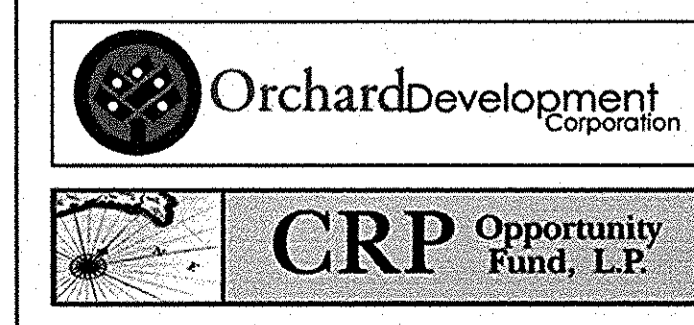
CONTRACT PURCHASER / DEVELOPER:
ORCHARD DEVELOPMENT CORPORATION
5032 DORSEY HALL DRIVE
ELICOTT CITY, MD 21042
(410) 964-2534

OWNER:
WILDER BUILDING CORPORATION
3300 SONA TRAIL
ELICOTT CITY, MD 21043
(410) 461-2522



APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwarz, Acting 11/22/11
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
Keith S. Smith 11/23/11
 CHIEF, DIVISION OF LAND DEVELOPMENT
Michael J. ... 11/23/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

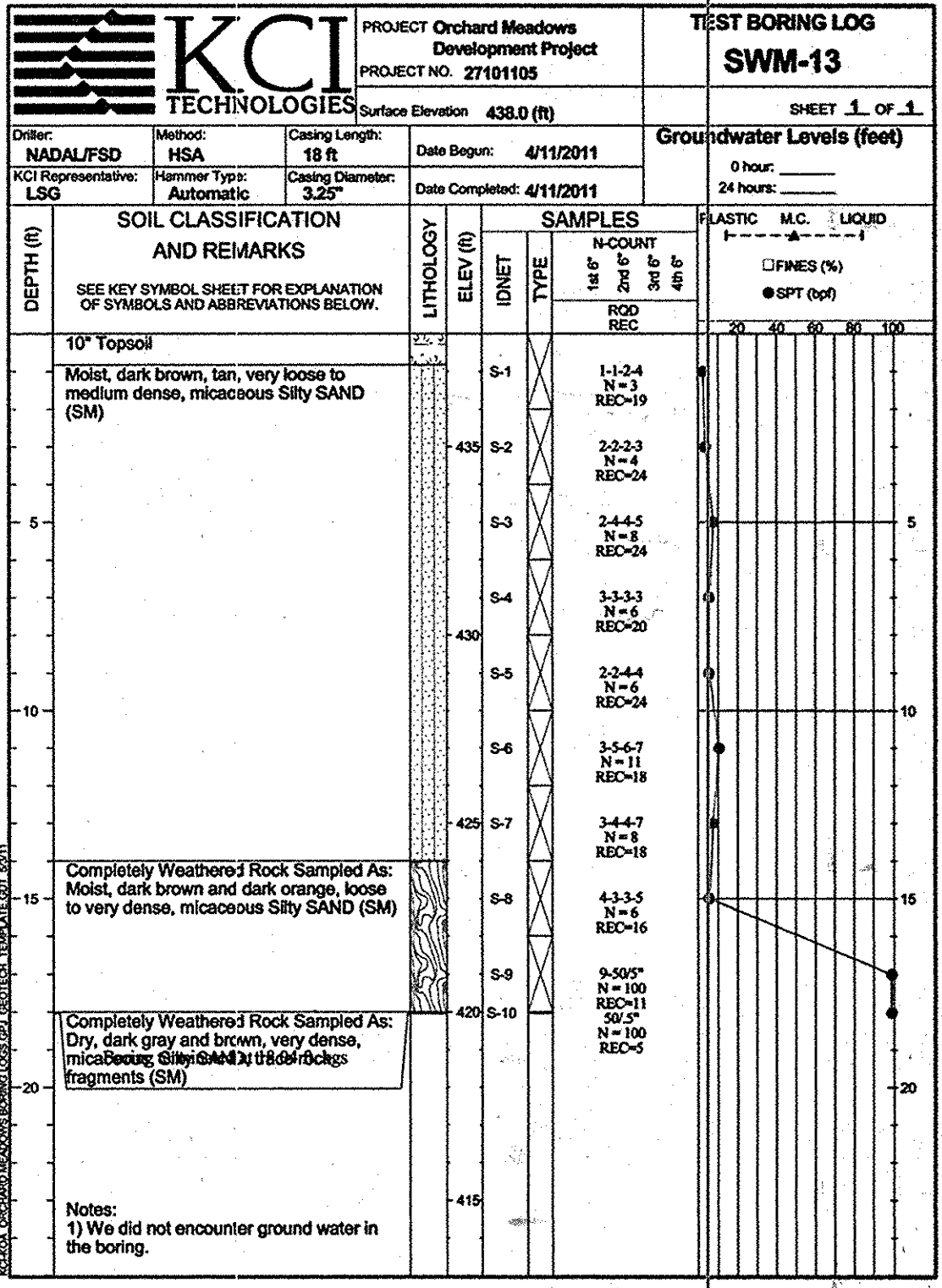
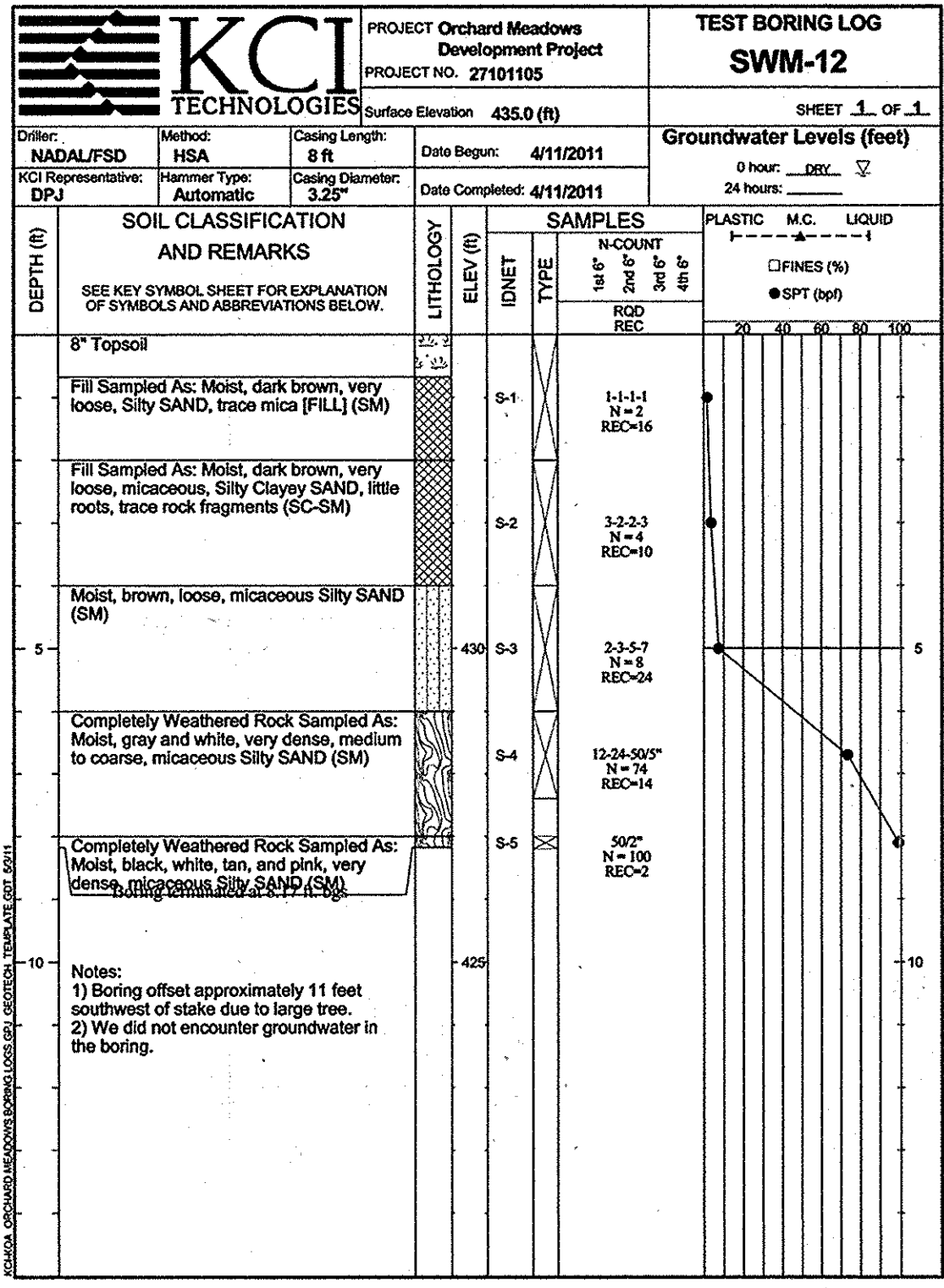
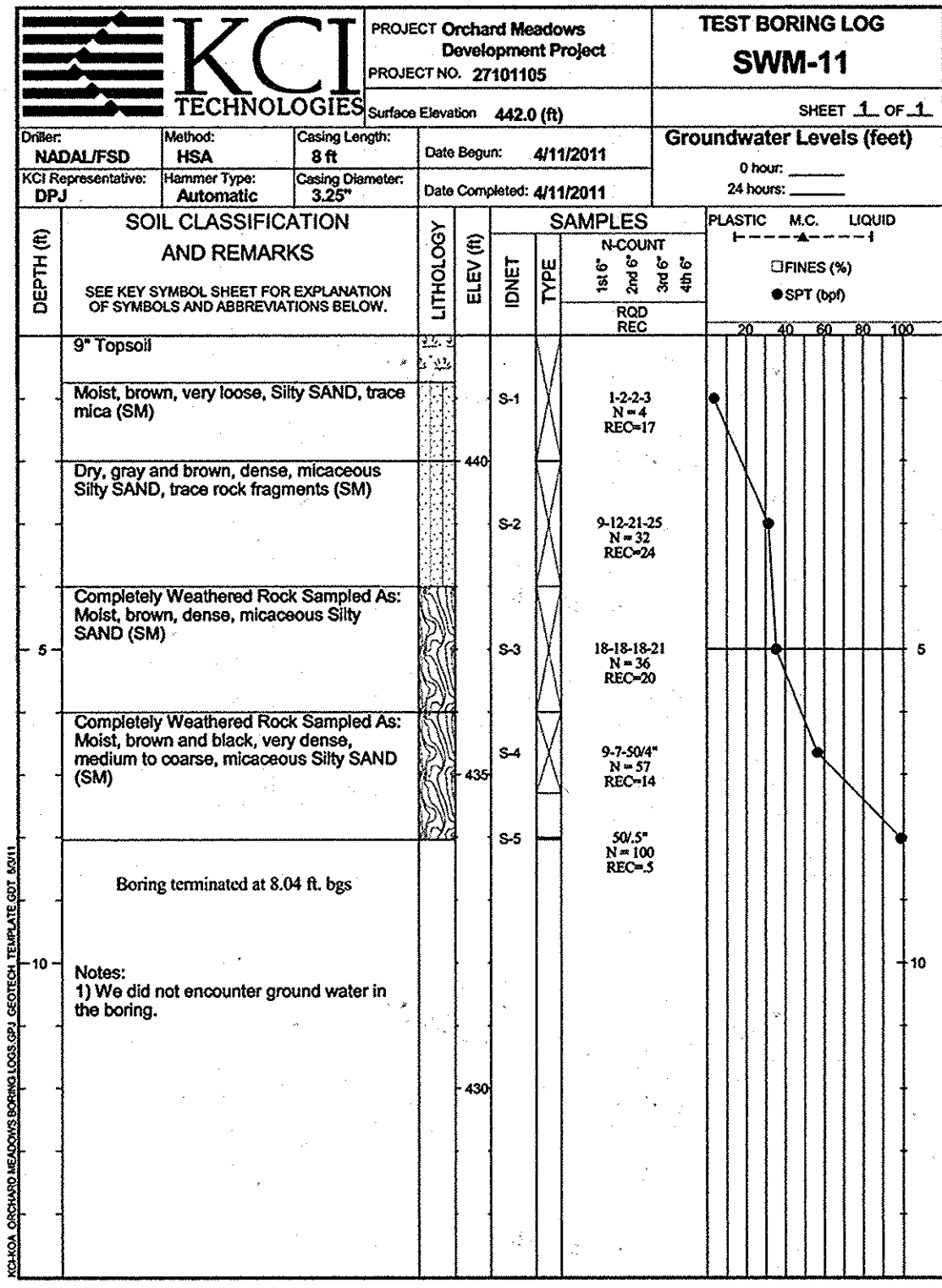
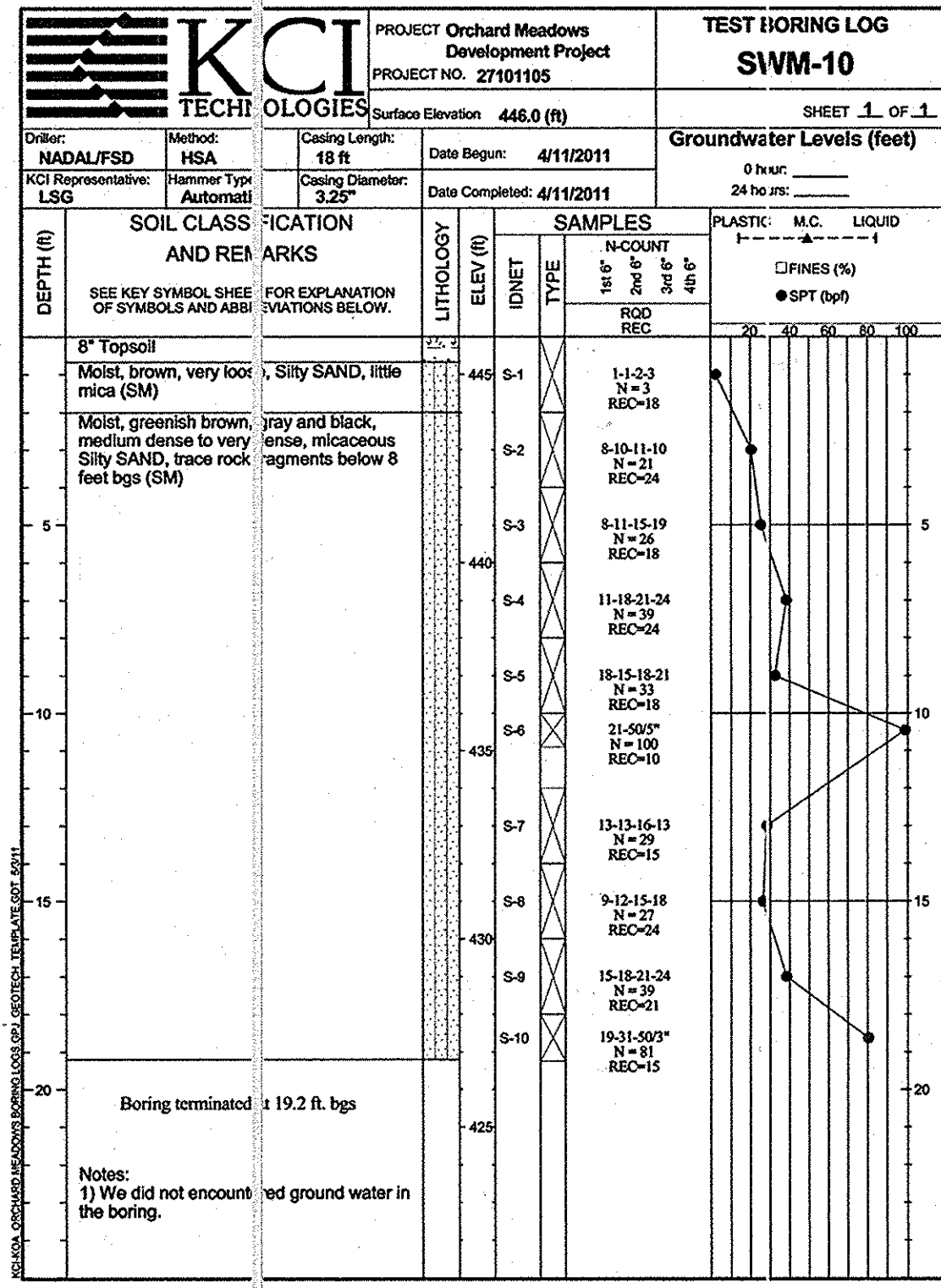
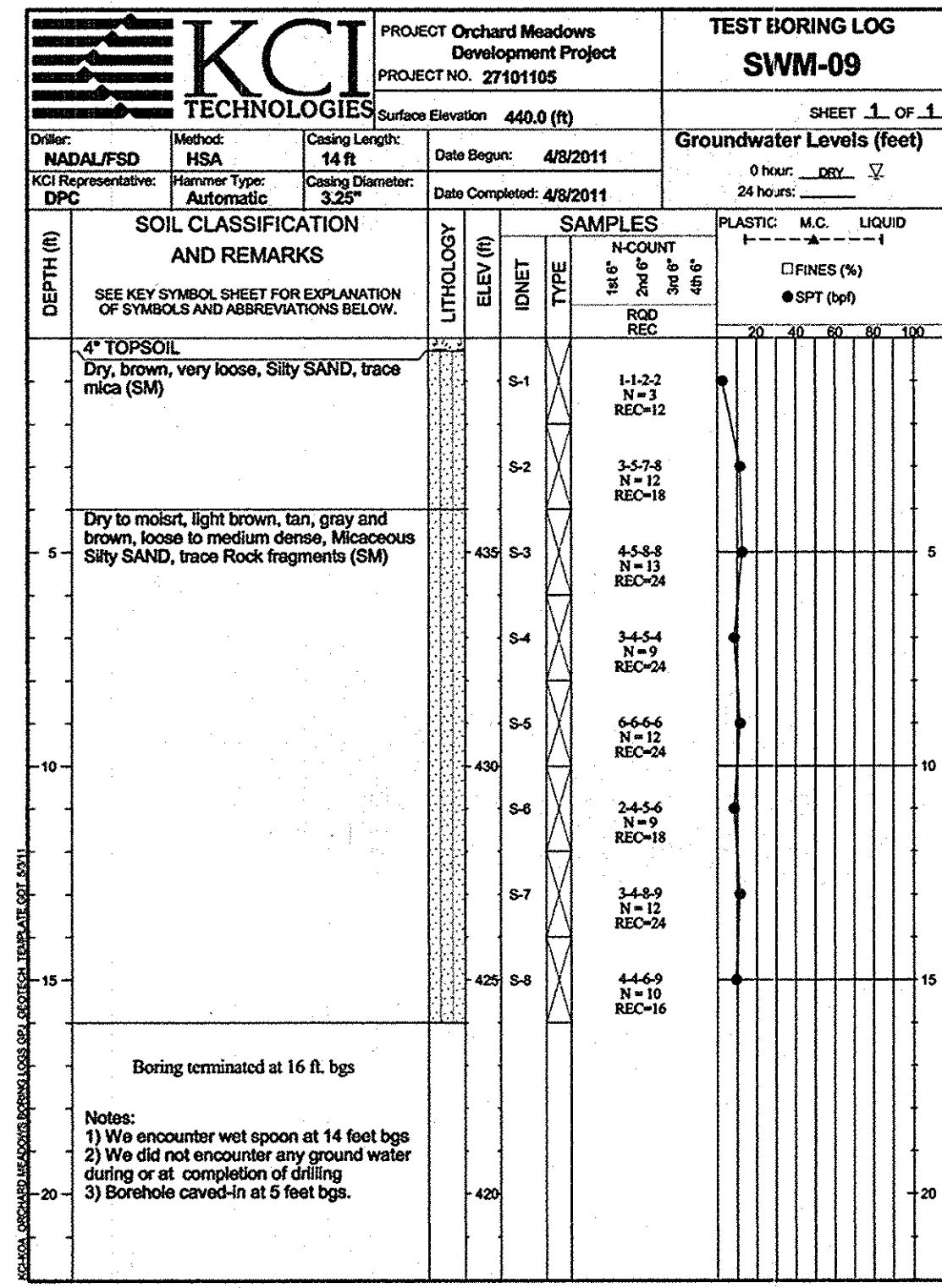
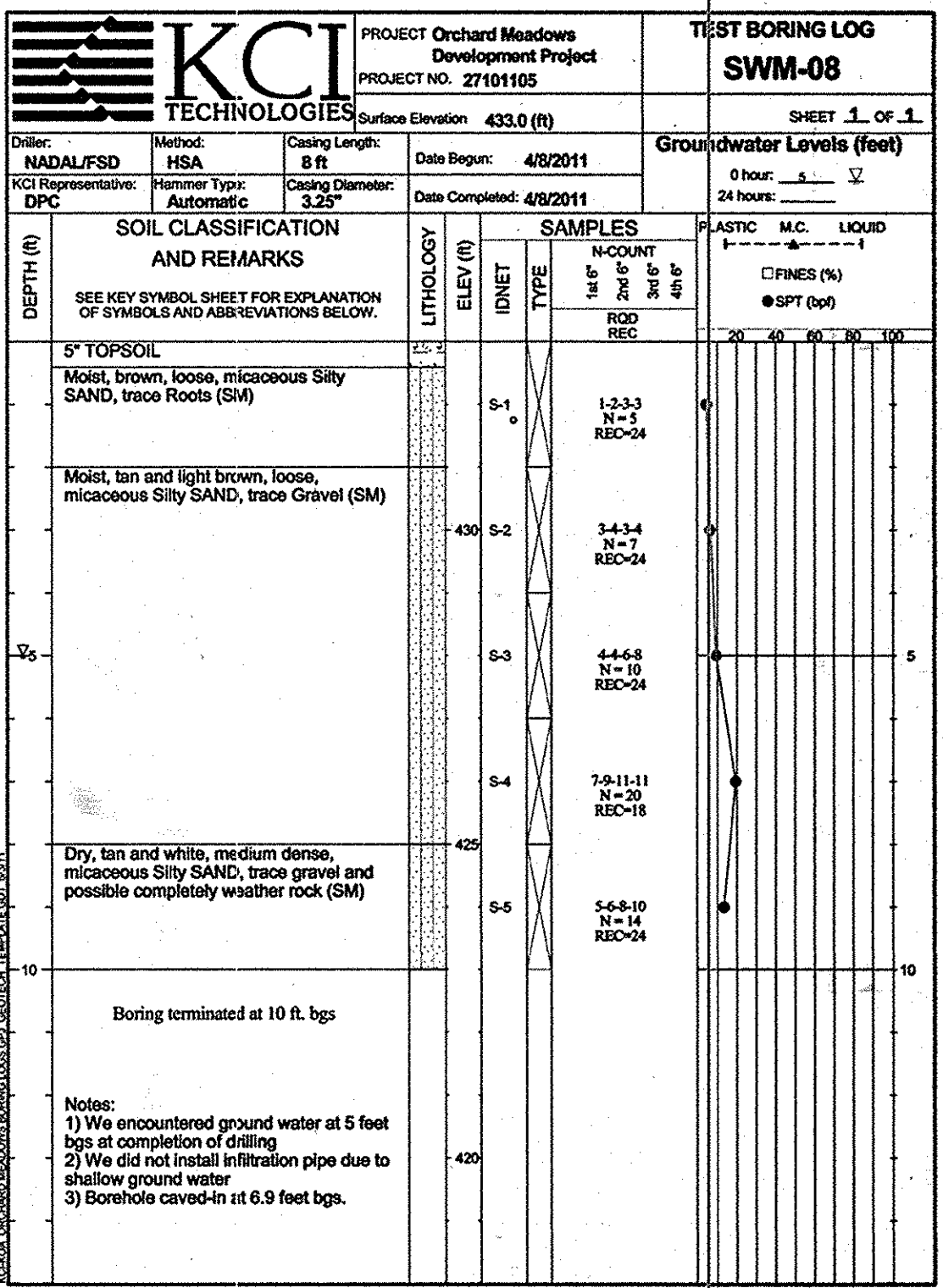
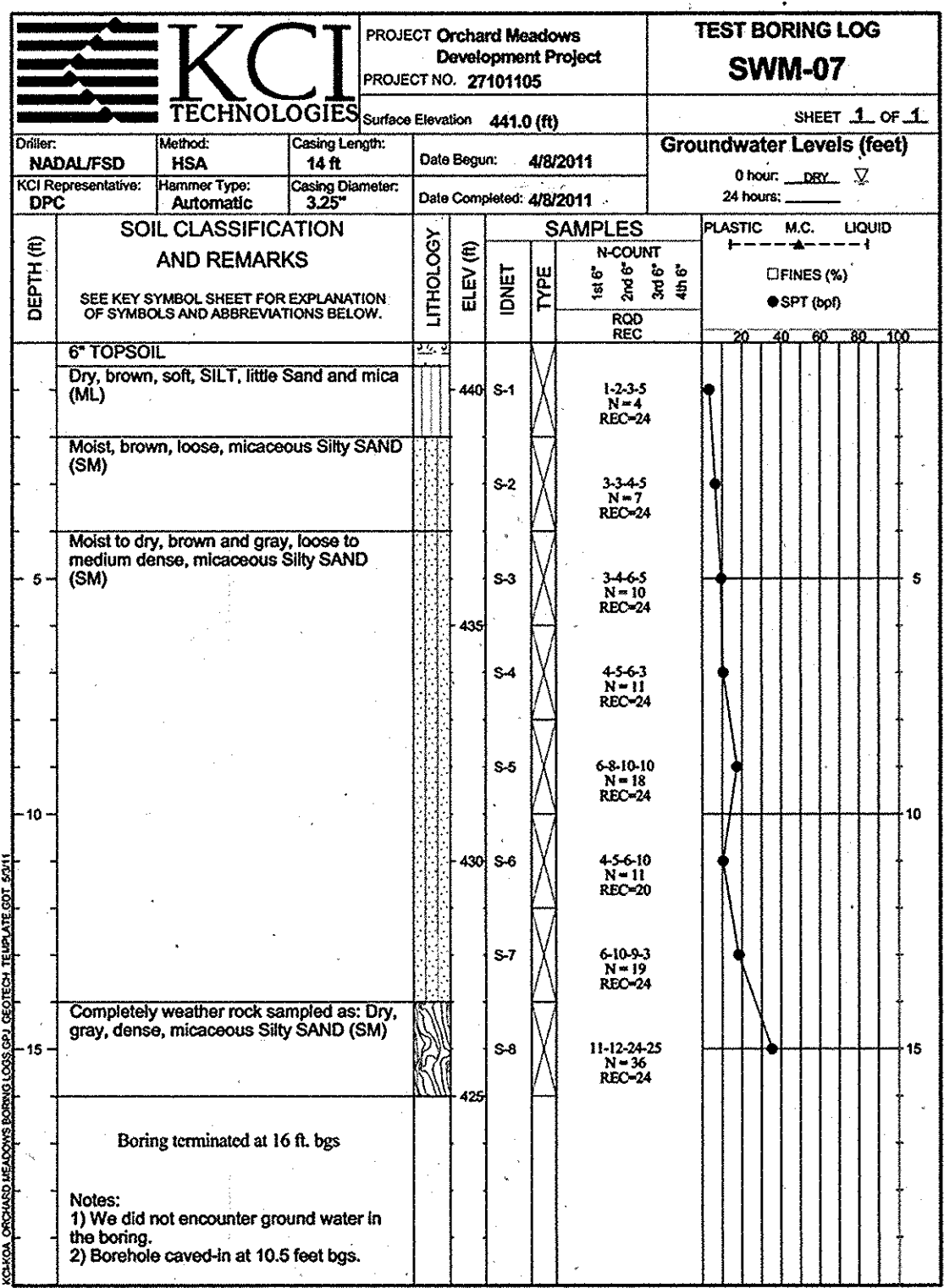
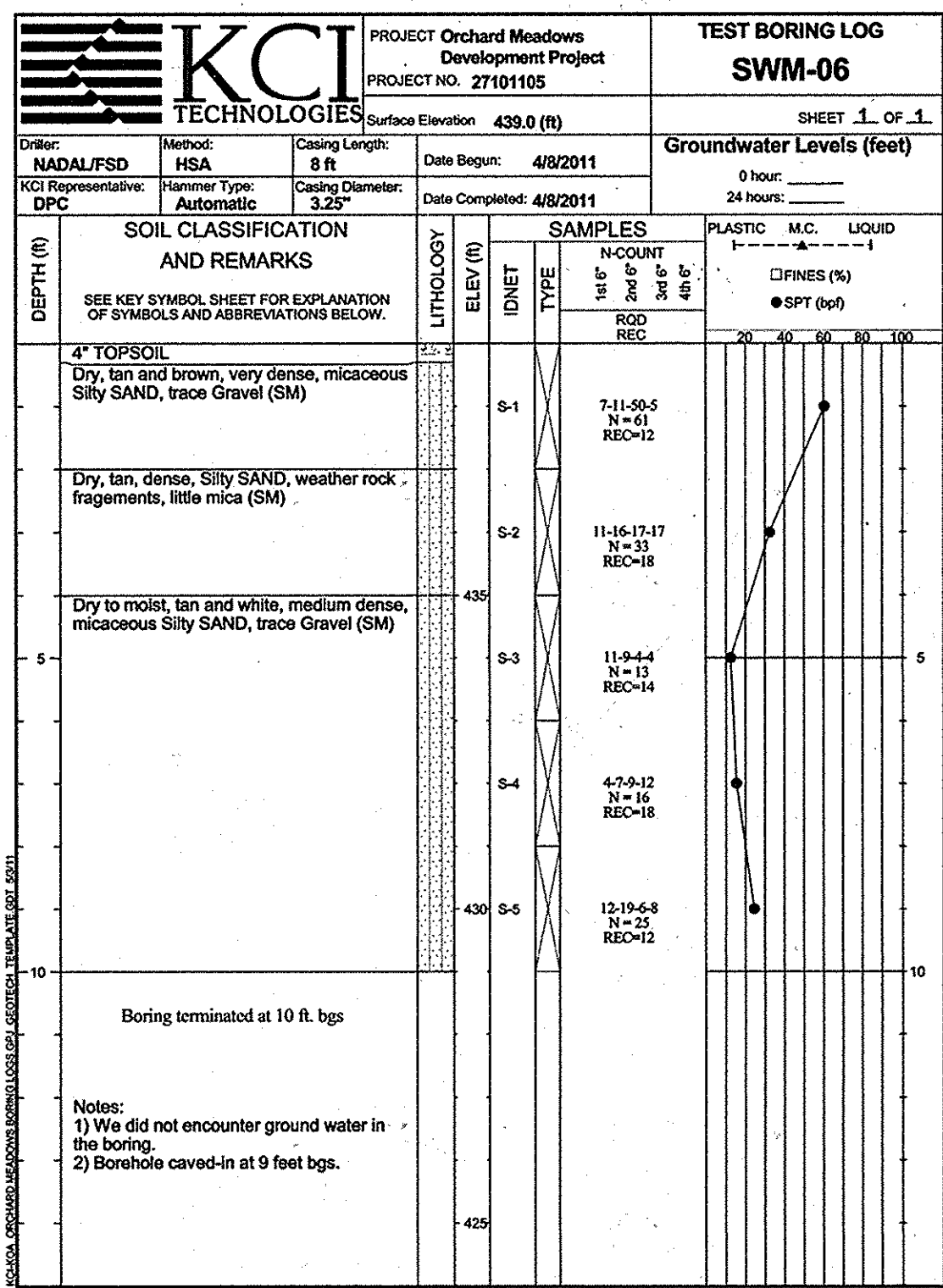
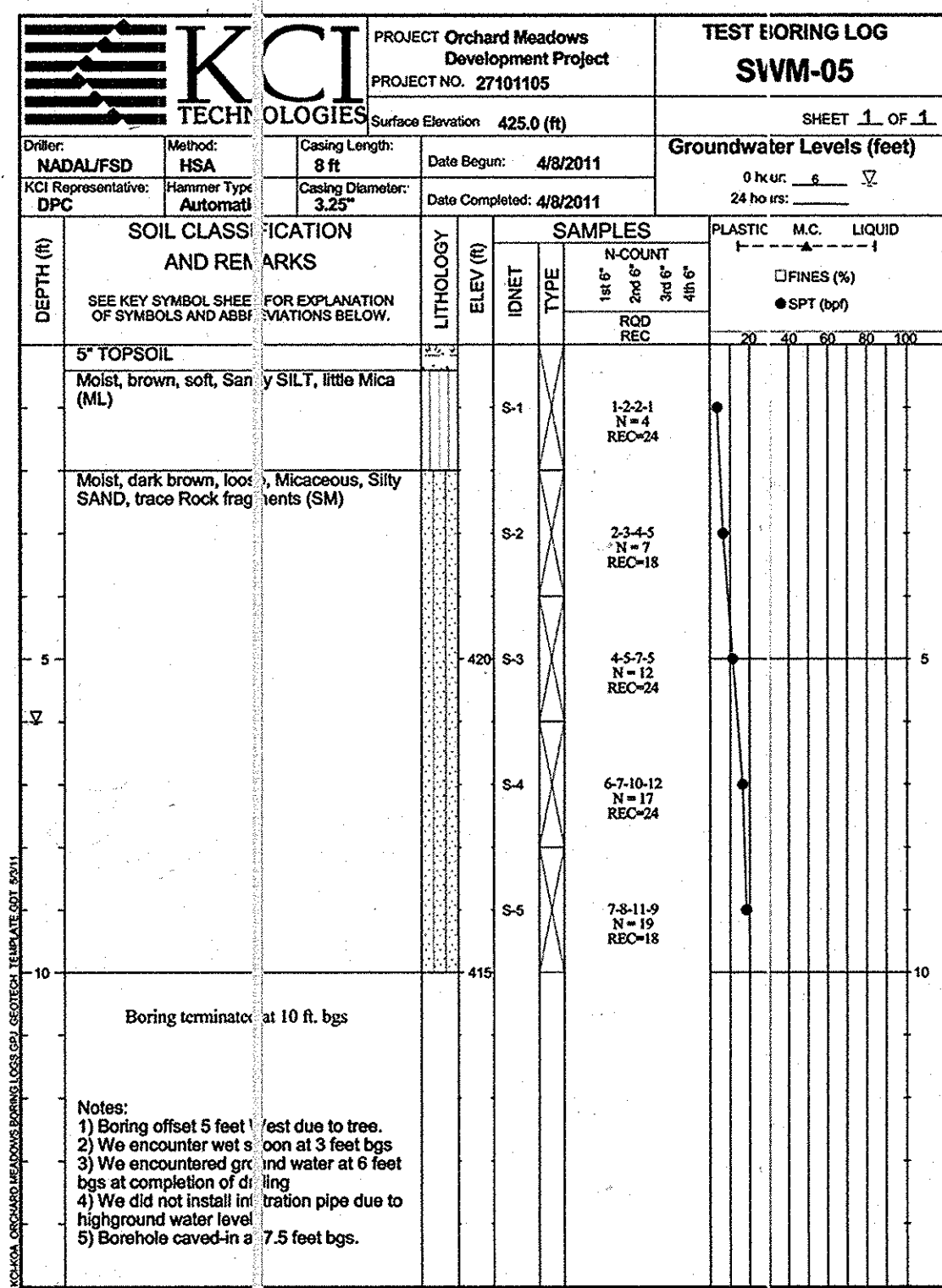
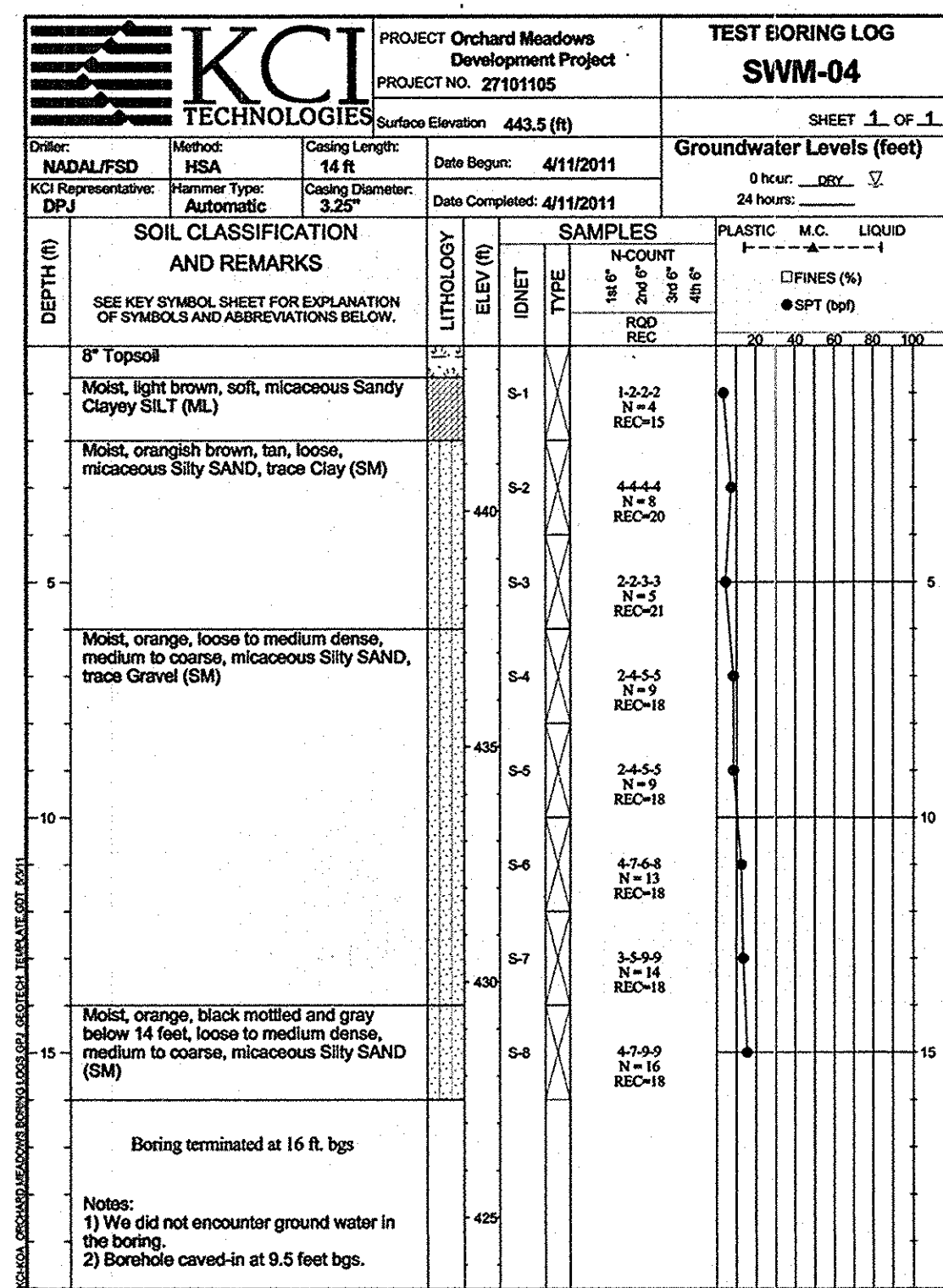
AS-BUILT CERTIFICATION
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 DATE: 7-1-13



CONTRACT PURCHASER/DEVELOPER:
 ORCHARD DEVELOPMENT CORPORATION
 9232 CONSERVATION DRIVE
 ELIJAH CITY, MD 21042
 (410) 964-2334
 OWNER:
 WILDER BUILDING CORPORATION
 3300 SONIA TRAIL
 ELIJAH CITY, MD 21043
 (410) 461-2522

DATE	NUMBER	REVISION DESCRIPTIONS

KCI TECHNOLOGIES
 8161 MARLE LAWN BOULEVARD
 SUITE 150
 FULTON, MD 20759
 TELEPHONE: (410) 92-8086
 FAX: (410) 792-7419
ORCHARD MEADOWS
 PARCEL D-1, D-2, D-3
 TAX MAP: 17 GRID: 23 PARCEL: 711
 ZONED: R-A-15
 ELECTION DISTRICT: NO. 2
 HOWARD COUNTY, MD
 TITLE: BORING LOGS
 PROJECT NO.: 27101105
 SHEET 28 OF 29
 DRAWN BY: C.T.B.
 DATE: 11-02-2011
 CHECKED BY: APPROVED:



APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwan, Acting 11/22/11
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
West Sladman 11/23/11
 CHIEF, DIVISION OF LAND DEVELOPMENT
John P. ... 11/23/11
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

AS-BUILT CERTIFICATION
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 DATE 7-1-13

OrchardDevelopment Corporation
 CRP Opportunity Fund, L.P.

CONTRACT PURCHASER/DEVELOPER:
 ORCHARD DEVELOPMENT CORPORATION
 5032 DORSETT HALL DRIVE
 ELICOTT CITY, MD 21042
 (410) 364-2334
 OWNER:
 MUDER BUILDING CORPORATION
 3300 SOMA TRAIL
 ELICOTT CITY, MD 21043
 (410) 461-2522

DATE	NUMBER	REVISION DESCRIPTIONS

KCI TECHNOLOGIES
 8161 MARLE LANE BOULEVARD
 SUITE 150
 FULFORD, MD 20759
 TELEPHONE: (410) 92-8086
 FAX: (410) 792-7419

ORCHARD MEADOWS
 PARCEL D-1, D-2 & D-3
 TAX MAP: 17 GRID: 23 PARCEL: 711
 ZONED: R.A-15
 ELECTION DISTRICT: NO. 2
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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.: 31089 EXPIRATION DATE: 11/12/12

TITLE: **BORING LOGS**
 DESIGN BY: B.E.S. SCALE: N.T.S.
 DRAWN BY: C.T.B. DATE: 11-02-2011
 CHECKED BY: APPROVED:

PROJECT NO.: 2710105
 SHEET 29 OF 29
 DRAWING NUMBER: **FC-29**
F-11-067