

**GENERAL NOTES**

- THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- THE SUBJECT PROPERTY IS ZONED R-ED PER THE 2-2-2004 COMPREHENSIVE ZONING PLAN AND THE "COMP LITE" ZONING AMENDMENTS EFFECTIVE 7-28-2006.
- COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS 31E6 AND 31E7.
- TRACT BOUNDARY IS BASED ON A FIELD RUN BOUNDARY SURVEY PERFORMED ON OR ABOUT MARCH, 2000 BY CENTURY ENGINEERING, INC. AND VERIFIED BY BENCHMARK ENGINEERING, INC. IN OCTOBER, 2010.
- THE EXISTING TOPOGRAPHY SHOWN IS BASED SDP-05-017, SDP-04-122 AND ON A FIELD SURVEY BY BENCHMARK ENGINEERING, INC. IN OCTOBER, 2010.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- WETLAND DELINEATION WAS PROVIDED BY ECO-SCIENCE PROFESSIONALS IN JULY, 2004.
- AN APFO TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT AS IT IS LOCATED MORE THAN 1.5 MILES FROM THE NEAREST INTERSECTION OF TWO MAJOR COLLECTOR ROADWAYS.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- WATER IS PUBLIC. THE CONTRACT NUMBER IS 14-4290-D.
- SEWER IS PUBLIC. THE CONTRACT NUMBER IS 14-4290-D.
- THIS SUBDIVISION IS SUBJECT TO SECTION 18.122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND/OR SEWER SERVICE SHALL BE GRANTED UNDER THE TERMS AND PROVISIONS OF DEVELOPER AGREEMENT #14-1490-D.

- THERE IS NO 100-YEAR FLOODPLAIN OR STEEP SLOPES LOCATED ON THIS SITE.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ON-SITE.
- THERE ARE NO HISTORIC SITES/FEATURES LOCATED ON THIS SITE.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS OR FOREST CONSERVATION RETENTION AREAS.
- THE GEOTECHNICAL REPORT WAS PREPARED BY HILLIS-CARNES ENGINEERING ASSOCIATES, INC. DATED OCTOBER, 2004 AND APRIL, 2005.
- STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE 2000 MARLAND STORMWATER DESIGN MANUAL. THIS PROJECT MEETS THE CRITERIA OUTLINED IN THE MDE GUIDELINES TO GRANT AN ADMINISTRATIVE WAIVER. THIS PLAN RECEIVED PRELIMINARY APPROVAL (SP-05-017) ON 8-11-2006 AND FINAL PLAN APPROVAL (F-11-034) ON 3-30-2011. A GRADING PERMIT SHALL BE APPROVED PRIOR TO MAY 4, 2013. THIS PLAN IS ALSO SUBJECT TO THE EXPIRATION OF THIS WAIVER UNLESS STORMWATER PRACTICES ARE CONSTRUCTED BY MAY 4, 2017.

STORMWATER MANAGEMENT WQV IS PROVIDED BY A P-5 POCKET POND, SHEETFLOW TO BUFFER CREDIT, NON-ROOFTOP DISCONNECTION AND RAINGARDENS. REV SHALL BE PROVIDED BY SHEETFLOW TO BUFFER CREDIT, NON-ROOFTOP DISCONNECTION AND RAINGARDENS. CPV SHALL BE PROVIDED BY THE P-5 POCKET POND. THE P-5 POCKET POND SHALL BE PRIVATELY OWNED AND JOINTLY MAINTAINED. THE RAINGARDENS SHALL BE PRIVATELY OWNED AND PRIVATELY MAINTAINED.

LANDSCAPING IS PROVIDED IN ACCORDANCE WITH A CERTIFIED LANDSCAPE PLAN INCLUDED IN THIS ROAD CONSTRUCTION PLAN SET IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED PERIMETER LANDSCAPING SHALL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$7,050.00 (\$4,800.00 FOR 16 SHADE TREES, \$1,650.00 FOR 11 EVERGREENS AND \$600.00 FOR 20 SHRUBS. FINANCIAL SURETY FOR THE REQUIRED STREET TREES SHALL BE INCLUDED IN THE COST ESTIMATE GENERATED BY HOWARD COUNTY DEVELOPMENT ENGINEERING DIVISION.

FOREST CONSERVATION FOR THIS SITE WAS PREVIOUSLY PROVIDED UNDER SDP-05-017. THE EASEMENTS WERE RECORDED AS PLAT NO. 17426-17427. HOWEVER, UNDER THIS PLAN THERE IS PROPOSED DISTURBANCE WITHIN EXISTING FOREST CONSERVATION EASEMENT #2 ON PARCEL 'A' OF OUR LADY OF PERPETUAL HELP, RECORDED AS PLAT 17427 AND EXISTING FOREST CONSERVATION EASEMENT #2 ON OPEN SPACE LOT 75 OF CASCADE OVERLOOK SECTION ONE, RECORDED AS PLAT 16657-59. THE DISTURBANCE AMOUNTS ARE 11,000 S.F. AND 1,258 S.F., RESPECTIVELY. FINANCIAL SURETY IN THE AMOUNT OF \$6,129.00 FOR THE TOTAL DISTURBANCE AMOUNT OF 12,258 S.F. SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THIS PLAN (F-11-034).

STREET LIGHT PLACEMENT AND TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20 FEET SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT OF WAY LINE AND NOT THE FLAG OR PIPESTEM LOT DRIVEWAY.

DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:

- WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE).
- SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN).
- GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45' TURNING RADIUS.
- STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
- DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
- STRUCTURE CLEARANCES - MINIMUM 12 FEET.
- MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.

WAIVER PETITION (WP-06-007) A REQUEST TO WAIVE SECTION 16.120(b)(4)(v) AND 16.121(e), TO PERMIT STORMWATER MANAGEMENT ACCESS TO BE LOCATED ON RESIDENTIAL LOTS, THE PIPESTEM AREAS OF PROPOSED LOTS 5-9 AND TO PERMIT THE SWMF FOR OUR LADY OF PERPETUAL HELP CHURCH TO BE LOCATED WITHOUT FRONTAGE ON A PUBLIC ROAD WAS APPROVED ON SEPTEMBER 22, 2005 AND NOVEMBER 15, 2005, RESPECTIVELY, SUBJECT TO THE FOLLOWING CONDITION:

1. OUR LADY OF PERPETUAL HELP CHURCH/ARCHDIOCESE OF BALTIMORE ROMAN CATHOLIC CHURCH SHALL BE A PARTY IN THE SHARED ACCESS EASEMENT AND MAINTENANCE AGREEMENT FOR THE SHARED DRIVEWAY FOR LOT 5-9 AND THE CHURCH'S SWMF, AND SHALL ONLY USE THE SHARED DRIVEWAY TO ACCESS THE SWMF FOR MAINTENANCE OR REPAIR PURPOSES.

25. WAIVER PETITION (WP-10-084) A REQUEST TO WAIVE SECTION 16.144(k)(3), WHICH STATES THAT THE FINAL PLAN MUST BE SUBMITTED WITHIN FOUR (4) MONTHS OF THE PRELIMINARY EQUIVALENT PLAN APPROVAL FOR SUBDIVISIONS WITH 50 OR FEWER HOUSING UNITS WAS APPROVED ON JANUARY 27, 2010 SUBJECT TO THE FOLLOWING CONDITIONS:

- COMPLIANCE WITH THE DECISION AND ORDER ISSUED ON MAY 25, 2006 AND ALL SRC AGENCY COMMENTS GENERATED WITH THE REVIEW OF THE PRELIMINARY EQUIVALENT SKETCH PLAN, SP-05-017.
- THE DEVELOPER MUST SUBMIT THE FINAL PLAN IN ASSOCIATION WITH PHASE 1 OF SP-05-017 (CASCADE OVERLOOK, SECTION III) WITHIN ONE (1) YEAR OF FEBRUARY 8, 2010 (ON OR BEFORE FEBRUARY 8, 2011).

26. A DESIGN MANUAL WAIVER, A REQUEST TO WAIVE SECTION 2.4.1 OF DESIGN MANUAL VOLUME III TO ALLOW A DEVIATION FROM THE STANDARD TYPICAL SECTION TO HAVE A 2:1 SLOPE AFTER THE CURB ALONG THE SOUTH SIDE OF MARCH BROWN ROAD IN ORDER TO SAVE TREES WAS APPROVED ON FEBRUARY 22, 2005.

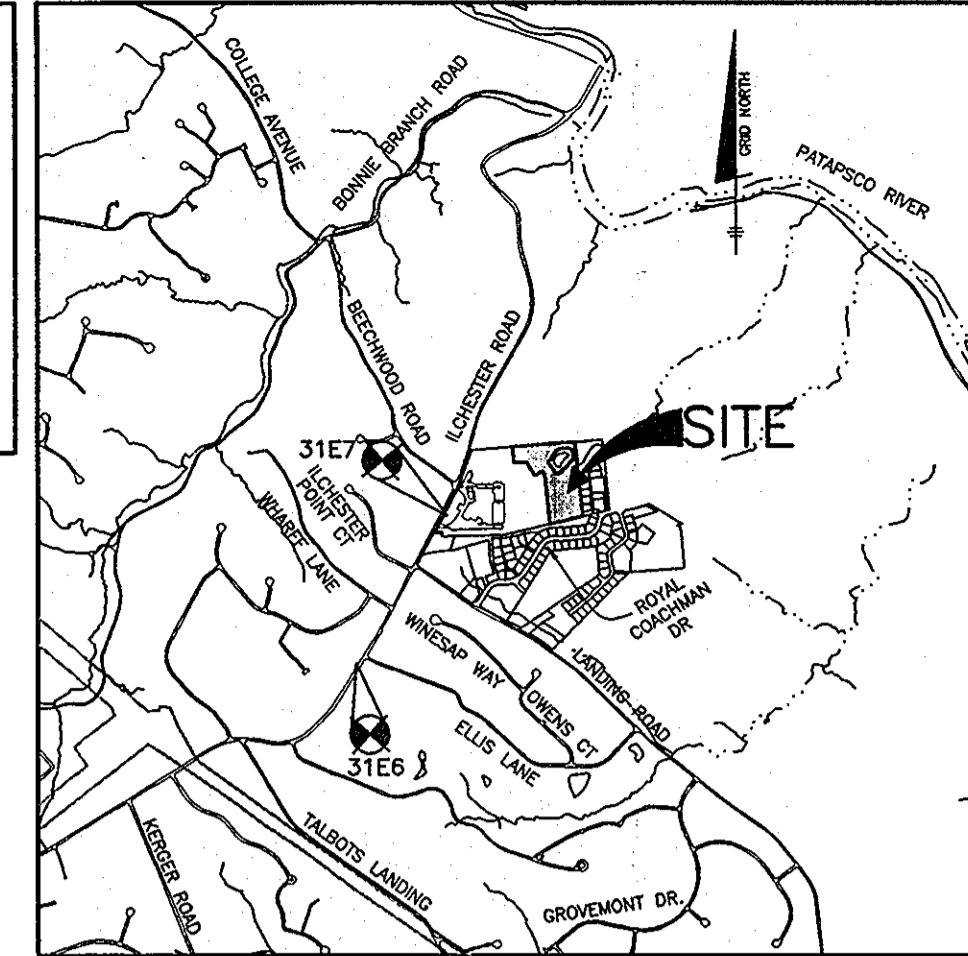
27. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF ANY WORK.

28. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.

# CASCADE OVERLOOK SECTION III

## LOTS 1 thru 14 AND OPEN SPACE LOTS 15 thru 17 ROAD, STORM DRAIN AND STORMWATER MANAGEMENT PLANS

BENCH MARKS NAD'83	
HO. CO. #31E6	
3/4" REBAR 0.5' BELOW SURFACE	
5' SOUTHWEST OF ILCHESTER ROAD PAVING	
500'± WEST OF WHARF LANE.	E 1376700.6467'
N 570852.3717'	
HO. CO. #31E7	
3/4" REBAR 0.5' BELOW SURFACE	
9' SOUTHWEST OF ILCHESTER ROAD PAVING	
250'± WEST OF BEECHWOOD ROAD	
N 572335.3503'	E 1377504.0332'
HO. CO. BM#2745004	ELEV. 364.78'
USED FOR VERTICAL CONTROL.	



VICINITY MAP ADC MAP: 4936  
SCALE: 1"=200' GRID: H2

**SITE DATA ANALYSIS**

- GENERAL SITE DATA
    - PRESENT ZONING: R-ED
    - APPLICABLE DPZ FILE REFERENCES: SP-05-017 F-03-150 PB 372
    - DEED REFERENCES: L 13053 F. 035
    - PROPOSED USE OF SITE: RESIDENTIAL/SFD HOMES
    - PROPOSED WATER AND SEWER SYSTEMS: PUBLIC
  - AREA TABULATION
    - TOTAL AREA OF SITE: 7.31± AC. (INCLUDES 0.10 AC FROM PARCEL 'A' RECORDED UNDER F-03-150)
    - AREA OF 100 YEAR FLOODPLAIN: 0.00± AC.
    - AREA OF STEEP SLOPES ON SITE: 0.00± AC. (25% OR GREATER)
    - NET AREA OF SITE: 7.31± AC
    - AREA OF PROPOSED BUILDABLE LOTS: 2.92± AC
    - AREA OF PROPOSED OPEN SPACE LOTS: 3.70± AC
    - AREA OF PROPOSED PUBLIC ROAD R/W: 0.69± AC TO BE DEDICATED TO HOWARD COUNTY
  - LOT TABULATION
    - TOTAL NUMBER OF RESIDENTIAL LOTS PROPOSED ON THIS SUBMISSION: 14
    - TOTAL NUMBER OF OPEN SPACE LOTS PROPOSED: 3
  - OPEN SPACE DATA
    - MINIMUM RESIDENTIAL LOT SIZE SELECTED: 6,000 S.F.
    - OPEN SPACE REQUIRED (50% OF 7.21 AC): 3.61± AC
    - OPEN SPACE PROVIDED (51.2% OF 7.21 AC): 3.69± AC NON-CREDITED (LESS THAN 35' IN WIDTH) NA CREDITED (51.2% OF 7.21 AC): 3.69± AC
    - AREA OF RECREATION OPEN SPACE REQUIRED: 4,200 S.F. (300 S.F. PER UNIT x 14 UNITS)
    - AREA OF RECREATION OPEN SPACE PROVIDED: 4,200 S.F.
- \* OPEN SPACE FOR PARCEL 'A' (0.10 AC), PREVIOUSLY RECORDED UNDER CASCADE OVERLOOK SECTION II, PLAT NO. 16644, WAS PROVIDED UNDER CASCADE OVERLOOK SECTION II, F-03-150.

- THE DECISION AND ORDER FOR PB372 (SP-05-017) WAS SIGNED MAY 25, 2006 FOR 14 RESIDENTIAL LOTS IN AN R-ED DISTRICT.
- BOARD OF APPEALS REFERENCES: BA CASE 83-39E, BA CASE 90-24E AND BA CASE 01-51C. THE CONDITION OF 01-51C INDICATED THAT THE CONDITIONAL USE APPLIES ONLY TO THE PROPOSED MULTI-PURPOSE BUILDING AND SITE IMPROVEMENTS.
- A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY FOR THE FLAG LOT DRIVEWAY IN THE CUL-DE-SAC SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE WHERE NEEDED. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLES 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.
- THE PURPOSE OF OPEN SPACE LOT 15 IS FOR STORMWATER MANAGEMENT AND THE PORTION OF THE LOTS NOT CONTAINING ANY STORMWATER MANAGEMENT EASEMENTS SHALL BE USED FOR RECREATIONAL OPEN SPACE. LOT 15 IS PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- THE PURPOSE OF OPEN SPACE LOTS 16 IS TO PRESERVE THE FOREST CONSERVATION EASEMENT AREAS. IT IS DEDICATED TO HOWARD COUNTY, MARYLAND.
- THE PURPOSE OF OPEN SPACE LOT 17 IS FOR STORMWATER MANAGEMENT AND ACCESS TO THE EXISTING SWMF SERVING OUR LADY OF PERPETUAL HELP CREATED UNDER SDP-05-017. IT IS PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- UNINTERRUPTED ACCESS TO THE EXISTING DRIVE ALONG THE SOUTH SIDE OF LOT 1 MUST BE AVAILABLE AT ALL TIMES DURING CONSTRUCTION OF MARCH BROWN ROAD.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) 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" (M&MUTCD).
  - 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 (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- EXISTING UTILITIES ARE BASED ON FIELD SURVEY LOCATION BY BENCHMARK ENGINEERING, INC. AND PER F-03-150.
- THE SETBACK REQUIREMENT FOR THE REAR PORTIONS OF LOTS 1-6 AND LOT 9 IS THE STANDARD STRUCTURE SETBACK IN THE R-ED DISTRICT OF 25 FEET FROM THE REAR LOT LINE AS DETERMINED BY THE DEPARTMENT OF PLANNING AND ZONING ON MARCH 6, 2011.



PLAN VIEW SCALE: 1" = 100'

SHEET INDEX	
SHEET	TITLE
1	TITLE SHEET
2	ROAD PLAN & PROFILE
3	GRADINGS, SEDIMENT & EROSION CONTROL PLAN
4	GRADINGS, SEDIMENT & EROSION CONTROL PLAN
5	SEDIMENT & EROSION CONTROL NOTES AND DETAILS
6	PERIMETER LANDSCAPE & STREET TREE PLAN
7	STORM DRAIN DRAINAGE AREA MAP
8	STORM DRAIN PROFILES & DETAILS
9	STORMWATER MANAGEMENT DETAILS
10	STORMWATER MANAGEMENT DETAILS
11	STORMWATER MANAGEMENT NOTES & SOIL BORING LOGS

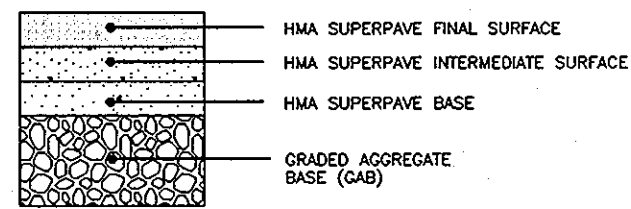
ADDRESS CHART	
LOT	STREET ADDRESS
1	4915 MARCH BROWN ROAD
2	4919 MARCH BROWN ROAD
3	4923 MARCH BROWN ROAD
4	4927 MARCH BROWN ROAD
5	4945 MARCH BROWN ROAD
6	4949 MARCH BROWN ROAD
7	4948 MARCH BROWN ROAD
8	4944 MARCH BROWN ROAD
9	4940 MARCH BROWN ROAD
10	4926 MARCH BROWN ROAD
11	4922 MARCH BROWN ROAD
12	4918 MARCH BROWN ROAD
13	4914 MARCH BROWN ROAD
14	4910 MARCH BROWN ROAD

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] 6-27-2011 DATE  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 7/6/11 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 7/1/11 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

STORMWATER MANAGEMENT PRACTICES (F-11-034 Cascade Overlook, Section 3)																
LOT NUMBER	ADDRESS	GREEN ROOFS			DISCONNECTION OF ROOFTOP RUNOFF (NUMBER)	DISCONNECTION OF NON-ROOFTOP RUNOFF (Y/N)	SHEETFLOW TO CONSERVATION AREAS (Y/N)	RAINWATER HARVESTING (NUMBER)	SUBMERGED GRAVEL WETLANDS (NUMBER)	INFILTRATION (NUMBER)	INFILTRATION BERMS (NUMBER)	DRY WELLS (NUMBER)	MICRO-BIORETENTION (NUMBER)	RAIN GARDENS (NUMBER)	SWALES (NUMBER)	ENHANCED FILTERS (NUMBER)
		A-1 (Y/N)	A-2 (Y/N)	A-3 (Y/N)												
10	4926 March Brown Road	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
11	4922 March Brown Road	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
12	4918 March Brown Road	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
13	4914 March Brown Road	N	N	N	N	Y	N	N	N	N	N	N	N	Y(2)	N	N
14	4910 March Brown Road	N	N	N	N	N	N	N	N	N	N	N	N	Y(2)	N	N

NO. DATE		REVISION	
<b>BENCHMARK ENGINEERING, INC.</b> ENGINEERS & LAND SURVEYORS PLANNERS 8490 BALTIMORE NATIONAL PIKE & SUITE 418 & ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 60 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702 (P) 301-371-3505 (F) 301-371-3505 WWW.BE-CVLENDENGINEERING.COM			
OWNER:		SECURITY DEVELOPMENT LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244	
DEVELOPER:		SECURITY DEVELOPMENT LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244	
<b>CASCADE OVERLOOK SECTION III</b> LOTS 1 thru 14 AND OPEN SPACE LOTS 15 thru 17 TAX MAP: 31 GRID: 10 PARCEL: p/o 260 ZONED: R-ED ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND			
TITLE SHEET			
DATE:	MAY, 2011	BEI PROJECT NO:	1676
DESIGN:	DBT	DRAWN:	DBT
SCALE:	AS SHOWN	SHEET	1 OF 11



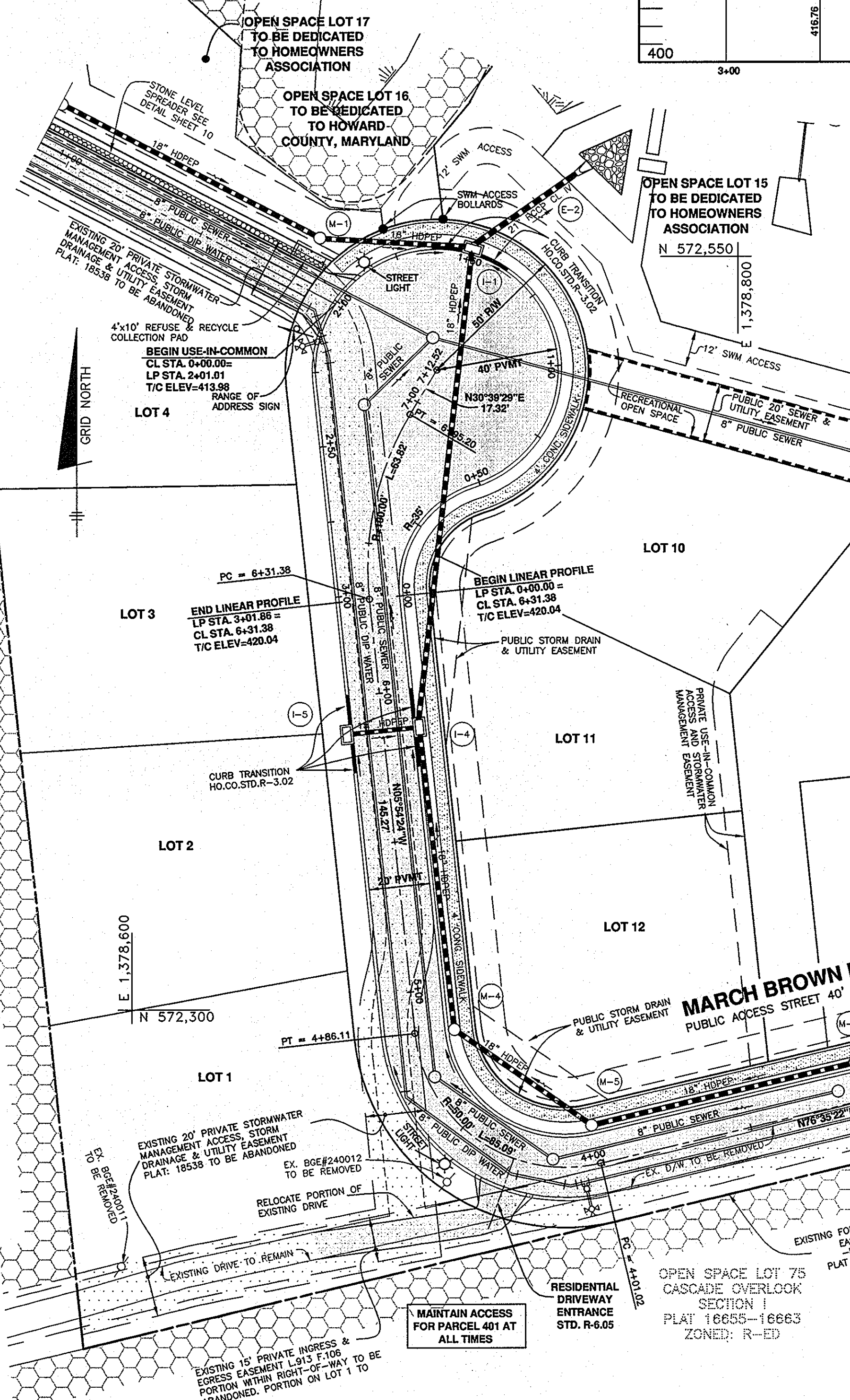
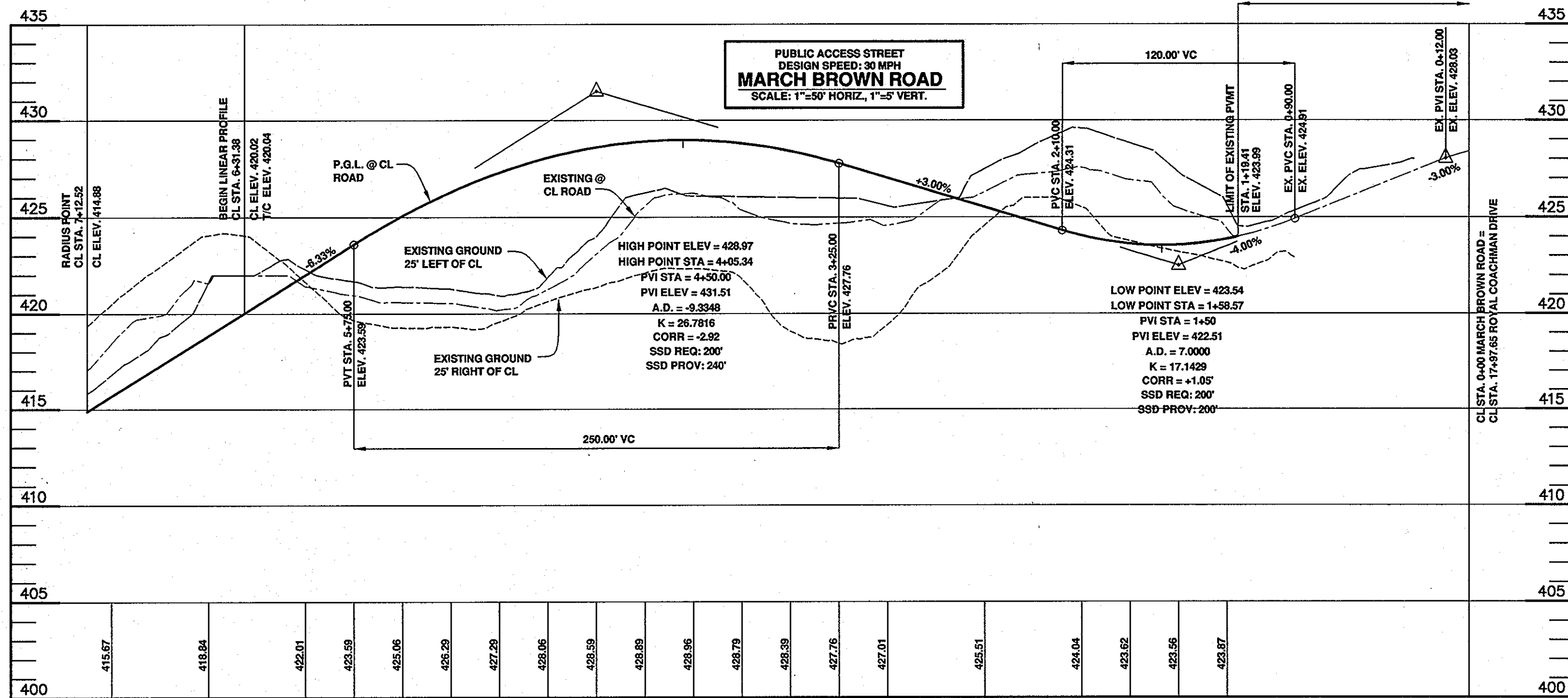
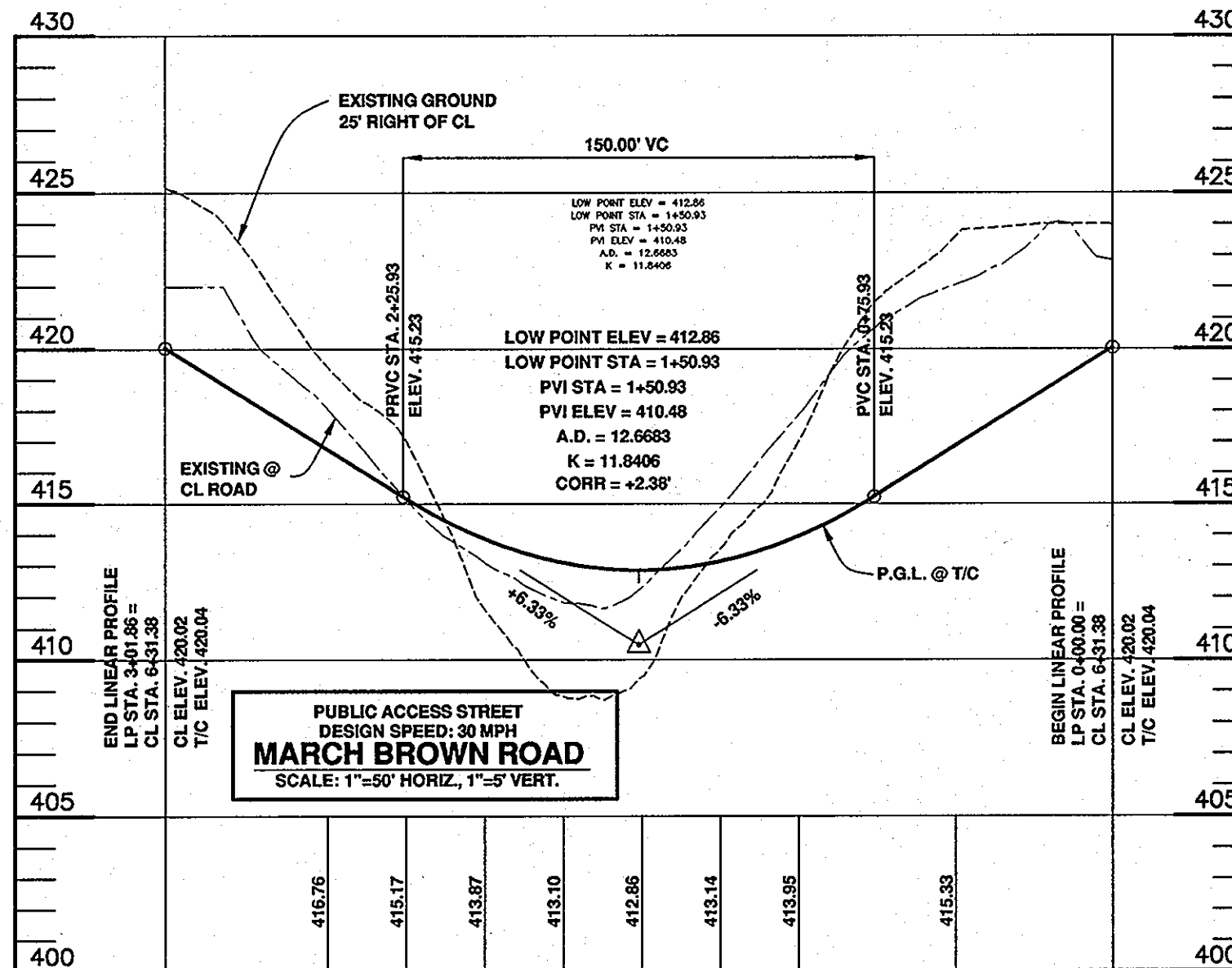


SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)		3 TO <5 TO <7		>7	
		PAVEMENT MATERIAL (INCHES)	MIN	HMA WITH GAB	HMA WITH CONSTANT GAB	MIN	HMA WITH GAB
P-2	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SAC: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE	1.5	1.5	1.5	1.5	1.5
		9.5 MM PG 64-22, LEVEL 1 (LOW ESAL)	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE INTERMEDIATE SURFACE	2.0	2.0	2.0	3.5	2.0
		HMA SUPERPAVE BASE	2.0	2.0	2.0	3.5	2.0
		19.0 MM PG 64-22, LEVEL 1 (LOW ESAL)	2.0	2.0	2.0	3.5	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0

P-2 PAVING DETAIL

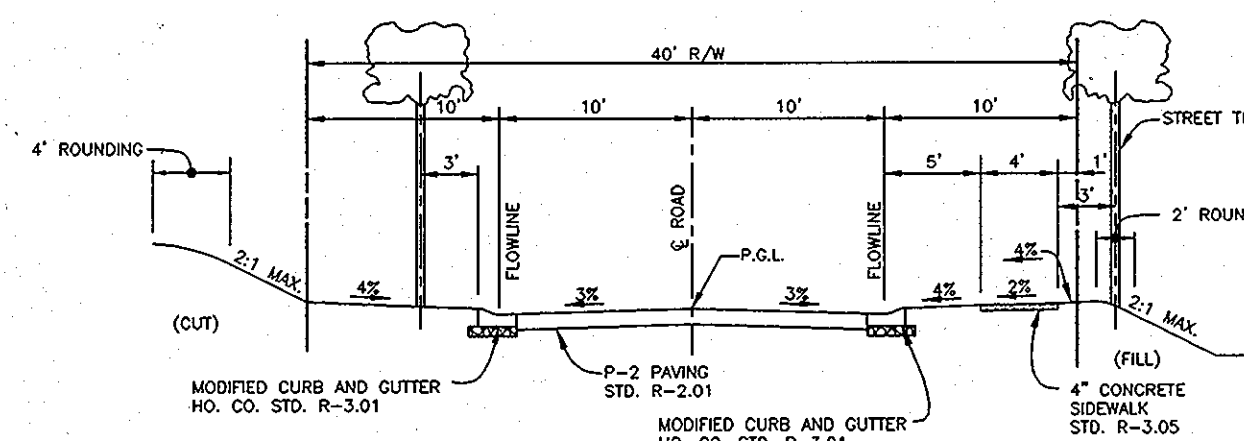
CENTER LINE CURVE DATA							
STREET NAME	STATION	RADIUS	ARC	TANGENT	CHORD		
MARCH BROWN ROAD	4+01.02 TO 4+86.11	50.00'	85.09'	97'30"14"	57.02'	N54°39'31"W 75.19'	
	6+31.38 TO 6+95.20	100.00'	63.82'	36'33"53"	33.04'	N12°22'33"E 62.74'	

CENTERLINE CONTROL DATA			
STREET NAME	STATION	NORTH	EAST
MARCH BROWN ROAD	2+25.29	572289.0692	1378925.6327
	4+01.02	572248.3121	1378754.6919
	4+86.11	572291.8034	1378693.3610
	6+31.38	572436.3038	1378678.4113
	6+95.20	572497.5861	1378691.8578
	7+12.52	572512.4856	1378700.6898

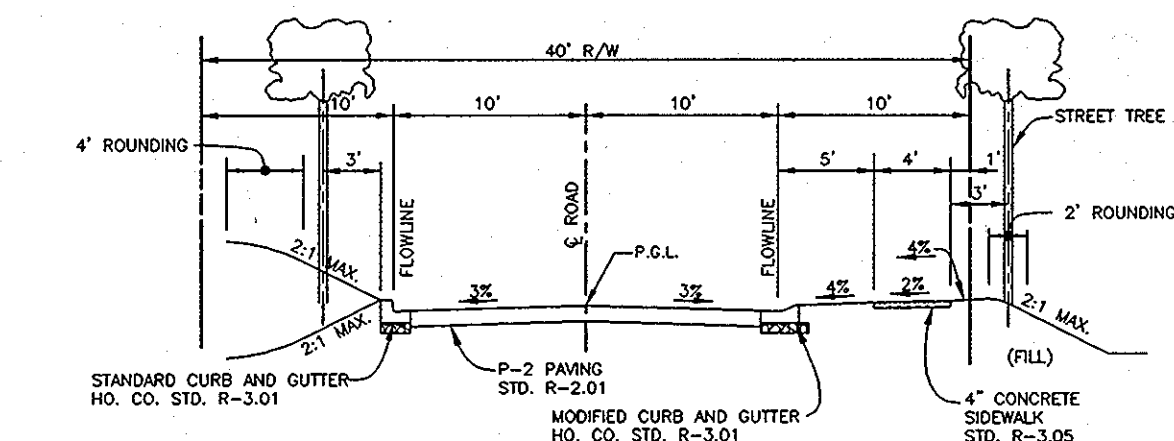


STREET LIGHT SCHEDULE		
SYMBOL	LOCATION	DESCRIPTION
☼	CL STATION 1+23, OFFSET 13.1' RIGHT	100 WATT HPS VAPOR PREMIER POST-TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE
☼	CL STATION 4+47, OFFSET 13.1' LEFT	100 WATT HPS VAPOR PREMIER POST-TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE
☼	LP STATION 1+85, OFFSET 3.1' RIGHT	100 WATT HPS VAPOR PREMIER POST-TOP MOUNTED ON A 14' BLACK FIBERGLASS POLE

**SIGN POSTS:**  
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 (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.



MARCH BROWN ROAD TYPICAL ROADWAY SECTION STA. 4+01.02 TO 6+31.38 (PUBLIC ACCESS STREET - LESS THEN 1,000 ADT) DESIGN SPEED: 30 MPH SCALE: 1"=10'



MARCH BROWN ROAD TYPICAL ROADWAY SECTION STA. 1+19.41 TO 4+01.02 (PUBLIC ACCESS STREET - LESS THEN 1,000 ADT) DESIGN SPEED: 30 MPH SCALE: 1"=10'

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Will R. ...* 6-27-2011  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Vest ...* 7/6/11  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*...* 7/1/11  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO.	DATE	REVISION

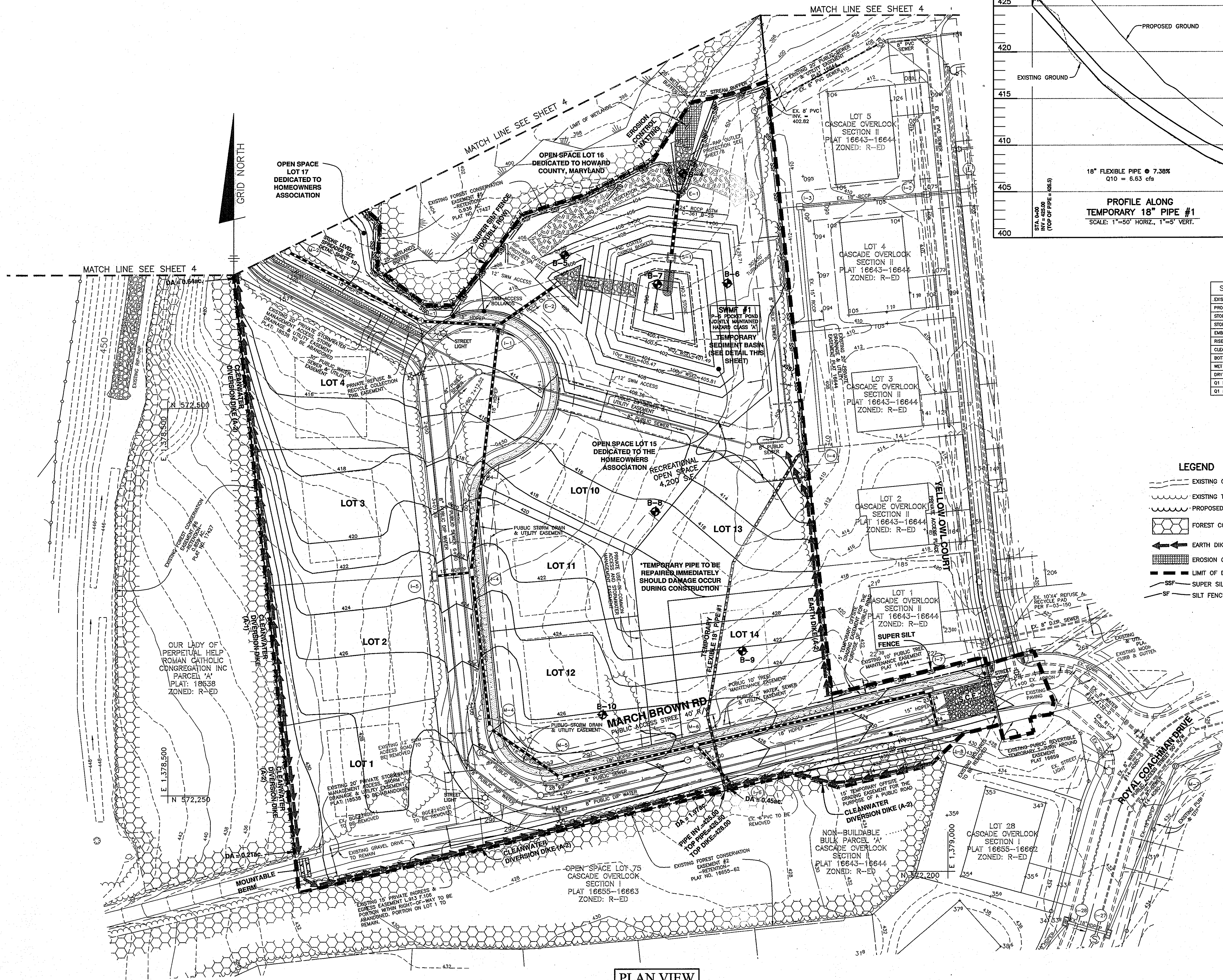
**BENCHMARK ENGINEERING, INC.**  
 8450 BALTIMORE NATIONAL PIKE SUITE 418 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
 60 THOMAS JOHNSON DRIVE A FREDERICK, MARYLAND 21702  
 (P) 301-371-3505 (F) 301-371-3506  
 WWW.BM-CALEDONENGINEERING.COM

**CASCADE OVERLOOK SECTION III**  
 LOTS 1 thru 14 AND OPEN SPACE LOTS 15 thru 17  
 TAX MAP: 31 GRID: 10 PARCEL: p/o 260  
 ZONED: R-ED ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

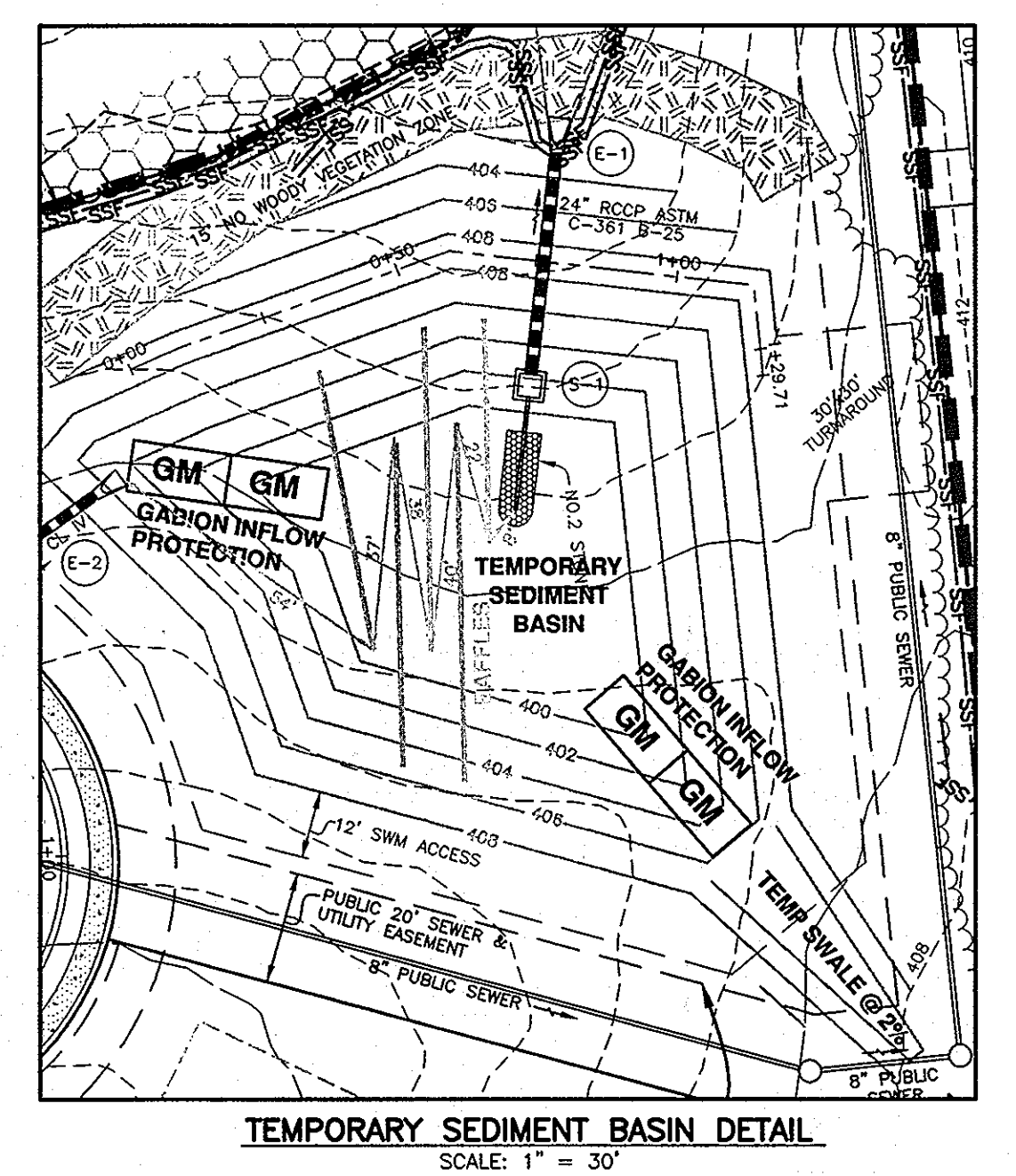
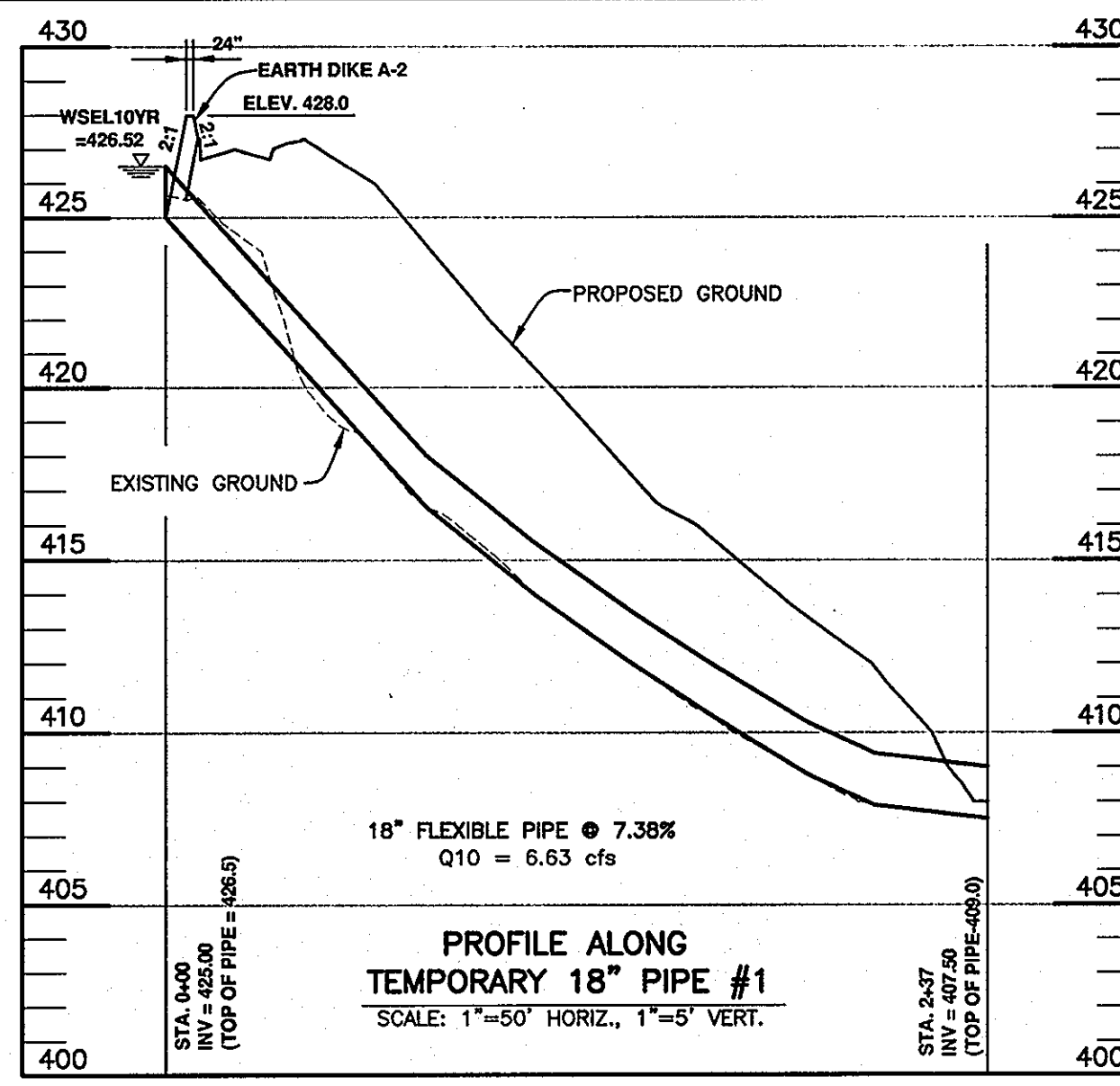
**ROAD PLAN, PROFILE & DETAILS**

OWNER: SECURITY DEVELOPMENT LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244  
 DEVELOPER: SECURITY DEVELOPMENT LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244  
 DESIGN: DBT DRAWN: DBT  
 DATE: MAY, 2011 BEI PROJECT NO: 1676  
 SCALE: AS SHOWN SHEET 2 OF 11





**PLAN VIEW**  
SCALE: 1" = 30'



**SEDIMENT BASIN DATA**

EXISTING D.A.	0.50 ac.
PROPOSED D.A.	2.81 ac.
STORAGE REQUIRED	2505 CF
STORAGE PROVIDED	2505 CF
EMBANKMENT ELEVATION	408.00
RISER CREST ELEVATION	405.50
CLEANOUT ELEVATION	400.85
BOTTOM ELEVATION	400.00
DRY STORAGE ELEVATION	401.58
DRY STORAGE ELEVATION	402.77
Q1 PRE-DEVELOPMENT	0.02 cfs
Q1 NEWLY GRADED	0.05 cfs

- LEGEND**
- - - - - EXISTING CONTOURS
  - - - - - EXISTING TREELINE
  - - - - - PROPOSED TREELINE
  - [Hatched Box] FOREST CONSERVATION EASEMENT
  - [Double Line] EARTH DIKE
  - [Cross-hatched Box] EROSION CONTROL MATTING
  - [Dashed Line] LIMIT OF DISTURBANCE
  - [Dotted Line] SUPER SILT FENCE
  - [Solid Line] SILT FENCE

**AS-BUILT CERTIFICATION**

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

ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_

PE NO. \_\_\_\_\_

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER. DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

**BY THE DEVELOPER:**

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER: *Steven P. ...* DATE: 5/25/11

**BY THE ENGINEER:**

I/WE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER: *John R. ...* DATE: 5/23/2011

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

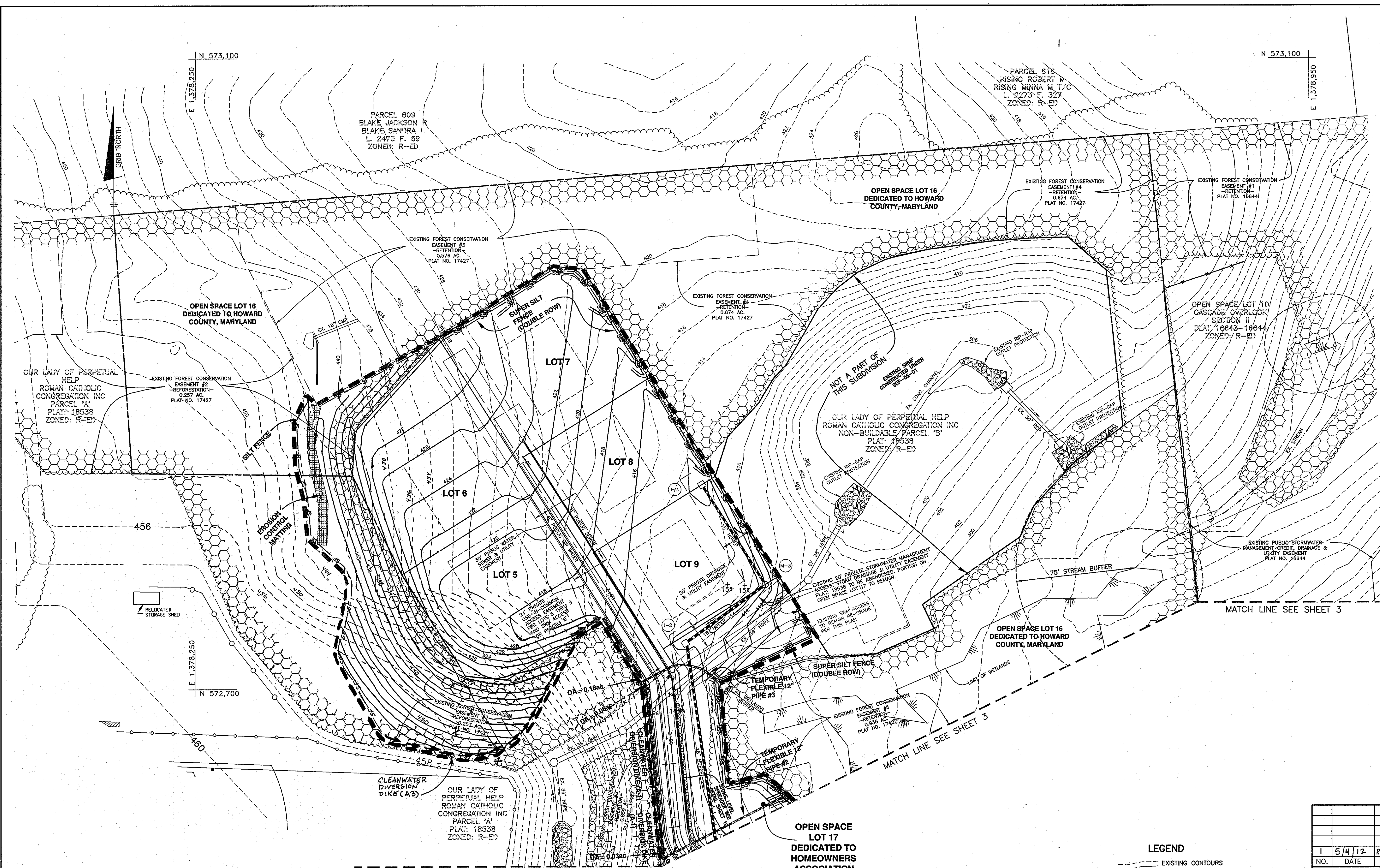
APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Will R. Mast...* DATE: 6-27-2011

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Keith ...* DATE: 7/6/11

*...* DATE: 7/1/11

NO.	DATE	REVISION
<b>BENCHMARK</b> <b>ENGINEERS, LAND SURVEYORS &amp; PLANNERS</b> <b>ENGINEERING, INC.</b> 8400 BALTIMORE NATIONAL PIKE SUITE 418 ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-8644 60 THOMAS JOHNSON DRIVE FREDERICK, MARYLAND 21702 (P) 301-371-3205 (F) 301-371-3506 WWW.BEI-ONLINEENGINEERING.COM		
OWNER:	<b>CASCADE OVERLOOK</b> SECTION III LOTS 1 thru 14 AND OPEN SPACE LOTS 15 thru 17	
DEVELOPER:	SECURITY DEVELOPMENT LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244	
DESIGN:	DBT	DRAWN: DBT
DATE:	MAY, 2011	BEI PROJECT NO: 1676
SCALE:	AS SHOWN	SHEET 3 OF 11





**AS-BUILT CERTIFICATION**

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

ENGINEER: \_\_\_\_\_ FE NO. \_\_\_\_\_  
 DATE: \_\_\_\_\_

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:  
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."  
 DEVELOPER: STEVEN K. BREEDON MEMBER 5/23/11 DATE

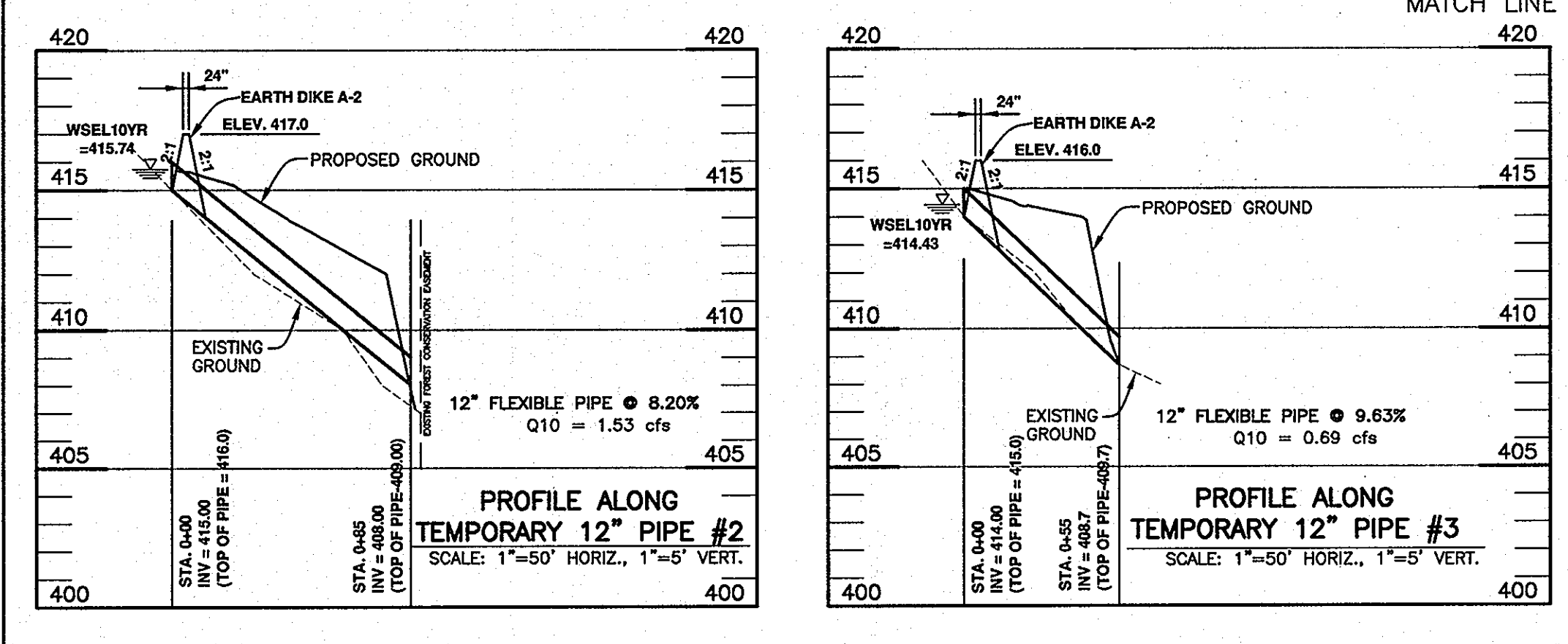
BY THE ENGINEER:  
 "I/WE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL, REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."  
 ENGINEER: [Signature] 5/23/2011 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
[Signature] 6/2/11 DATE  
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS  
[Signature] 6-27-2011 DATE  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
[Signature] 7/06/11 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 7/1/11 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



- LEGEND**
- - - - - EXISTING CONTOURS
  - ~~~~~ EXISTING TREELINE
  - ~~~~~ PROPOSED TREELINE
  - [Hatched Box] FOREST CONSERVATION EASEMENT
  - ←←← EARTH DIKE
  - [Stippled Box] EROSION CONTROL MATTING
  - LIMIT OF DISTURBANCE
  - SSF SUPER SILT FENCE
  - SF SILT FENCE

NO.	DATE	REVISION
1	5/4/12	REVISE EXISTING GRADES PER FIELD SURVEY AUG 2011, REVISE PROP. GRADES ACCORDINGLY

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8480 BALTIMORE NATIONAL PIKE SUITE 418 • ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
 60 THOMAS JOHNSON DRIVE • FREDERICK, MARYLAND 21702  
 (P) 301-371-3505 (F) 301-371-3506  
 WWW.BEI-ONLINEENGINEERING.COM

PROFESSIONAL ENGINEER  
 5/23/2011

**OWNER:**  
 SECURITY DEVELOPMENT LLC  
 P.O. BOX 417  
 ELLICOTT CITY, MARYLAND 21041  
 410-465-4244

**DEVELOPER:**  
 SECURITY DEVELOPMENT LLC  
 P.O. BOX 417  
 ELLICOTT CITY, MARYLAND 21041  
 410-465-4244

**CASCADE OVERLOOK SECTION III**  
 LOTS 1 thru 14 AND  
 OPEN SPACE LOTS 15 thru 17

TAX MAP: 31 GRID: 10 PARCEL: p/o 260  
 ZONED: R-ED  
 ELECTION DISTRICT NO. 1  
 HOWARD COUNTY, MARYLAND

**GRADING, SEDIMENT & EROSION CONTROL PLAN**

DATE: MAY, 2011 BEI PROJECT NO: 1676  
 SCALE: AS SHOWN SHEET 4 OF 11

DESIGN: DBT DRAWN: DBT



SEDIMENT CONTROL NOTES

TOPSOIL SPECIFICATIONS

30.0 DUST CONTROL

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK

PHASE I

- 1. Obtain grading permit. (day 1)
2. Install stabilized construction entrance, silt fences, super silt fences, clean water diversion dikes and temporary pipes. (day 2-7)
3. Construct temporary sediment basin. Once complete, install earth dike along eastern edge of property (day 8-16)
4. Upon approval of the Howard County sediment control inspector, bring road bed to subgrade and commence mass grading. Stabilize slopes in accordance with the temporary seedbed notes. Utilize dust control methods. (day 17-24)
5. Install storm drain, water and sewer mains. (day 25-39)
6. Once storm drain to I-6 is installed, remove temporary pipe #1.
7. Install curb and base paving. (day 40-47)
8. Stabilize all areas in accordance with the temporary seedbed notes. (day 48)
9. Upon approval from the Howard County sediment control inspector, remove sediment control devices and stabilize disturbed areas in accordance with the PERMANENT seedbed notes. (day 49-55)
10. Convert temporary basin to its final pond design. After completion perform as-built. Forward as-built approval letter to inspector. (day 56-60)

- 1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (313-1850).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL, REVISIONS THEREON.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERMETER 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.
4. ALL SEDIMENT TRAPS/BASINS 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.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAVE BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

Table with 2 columns: Description and Value. Includes: TOTAL AREA OF SITE (7.3 ACRES), AREA DISTURBED (5.0 ACRES), AREA TO BE ROOFED OR PAVED (0.6 ACRES), AREA TO BE VEGETATIVELY STABILIZED (4.4 ACRES), TOTAL CUT (15,886 CY), TOTAL FILL (13,475 CY), OFFSITE WASTE AREA LOCATION (A SITE WITH AN ACTIVE GRADING PERMIT).

- 8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TEMPORARY SEEDBED PREPARATIONS

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT).
SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.7 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 15 THROUGH FEBRUARY 29, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.
MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 80 LBS/1000 SQ FT) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 216 GALLONS PER ACRE (6 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES, 8 FT. OR HIGHER, USE 348 GALLONS PER ACRE (6 GAL/1000 SQ FT) FOR ANCHORING.
REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDBED PREPARATIONS

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
SOIL AMENDMENTS: IN LIEU OF SOIL TEST RESULTS, USE ONE OF THE FOLLOWING SCHEDULES:
1. PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL AT TIME OF SEEDING. APPLY 400 LBS PER ACRE 30-0-0-U UREA-FORM FERTILIZER (9 LBS/1000 SQ FT).
2. ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.
SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.5 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 29, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.
MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 80 LBS/1000 SQ FT) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 216 GALLONS PER ACRE (6 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (6 GAL/1000 SQ FT) FOR ANCHORING.
MAINTENANCE: INSPECT ALL SEEDBED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

- I. Topsoil salvaged from the existing site may be used provided that it meets the standards 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 Experiment Station.
II. Topsoil Specifications - Soil to be used as topsoil must meet the following:
1. 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 textures and shall contain less than 5% by volume of cinders, stones, clay, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1-1/2" in diameter.
2. Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutgrass, poison ivy, yucca, or others as specified.
3. 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. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
III. For sites having disturbed areas over 5 acres:
1. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
IV. For sites having disturbed areas over 5 acres:
1. On soil meeting topsoil specifications, obtain test results detailing fertilizer and lime amendments required to bring the soil into compliance with the following:
a. 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 6.5 or higher.
b. Organic content or topsoil shall be not less than 1.5 percent by weight.
2. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
3. No seed or soil shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min) to permit dissipation of phytotoxic 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.
V. Topsoil Application
1. When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fences and sediment traps and basins.
2. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, at least 4" - 6" higher in elevation.
3. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. 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.
4. 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 may otherwise be detrimental to proper grading and seedbed preparation.
VI. Alternative for Permanent Seeding - Instead of applying the full amounts of time and commercial fertilizer, composted sludge and amendments may be applied as specified below:
1. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall conform to the following requirements:
a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of occupation of the property) by the Maryland Department of the Environment under COMAR 26.04.06.
b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus and 0.2 percent potassium on a dry weight basis 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.
c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
2. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet and 1/2 the normal lime application rate.
References: Guidelines Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institute, Revised 1975.

- Definition
Controlling dust blowing and movement on construction sites and roads.
Purpose
To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.
Conditions Where Practice Applies
This practice is applicable to areas subject to dust blowing and movement where on and off-site damage is likely without treatment.
Specifications
1. Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tracked to prevent blowing.
2. Vegetative Cover - See standards for temporary vegetative cover.
3. Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12' apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.
4. Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.
5. Barriers - Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material should be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
6. Calcium Chloride - Apply at rates that will keep surface moist. May need retreatment.
Permanent Methods
1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
2. Topsoiling - Covering with less erosive soil materials. See standards for topsoiling.
3. Stone - Cover surface with crushed stone or coarse gravel.
References
1. Agriculture Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss.
2. Agriculture Information Bulletin 354. How to Control Wind Erosion. USDA-ARS.

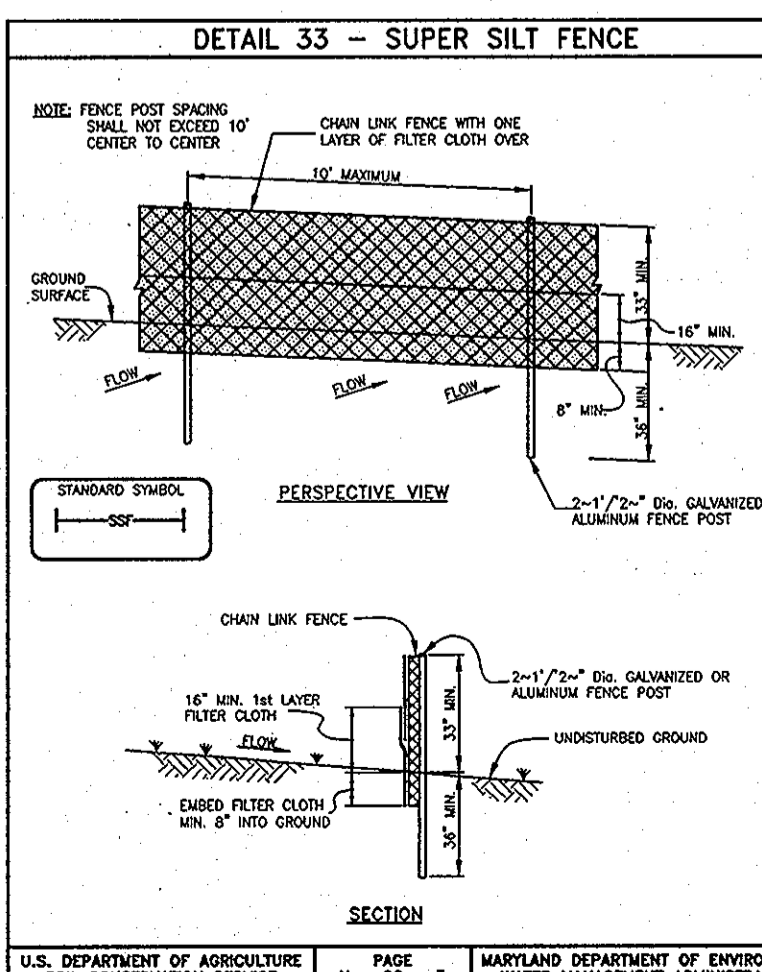
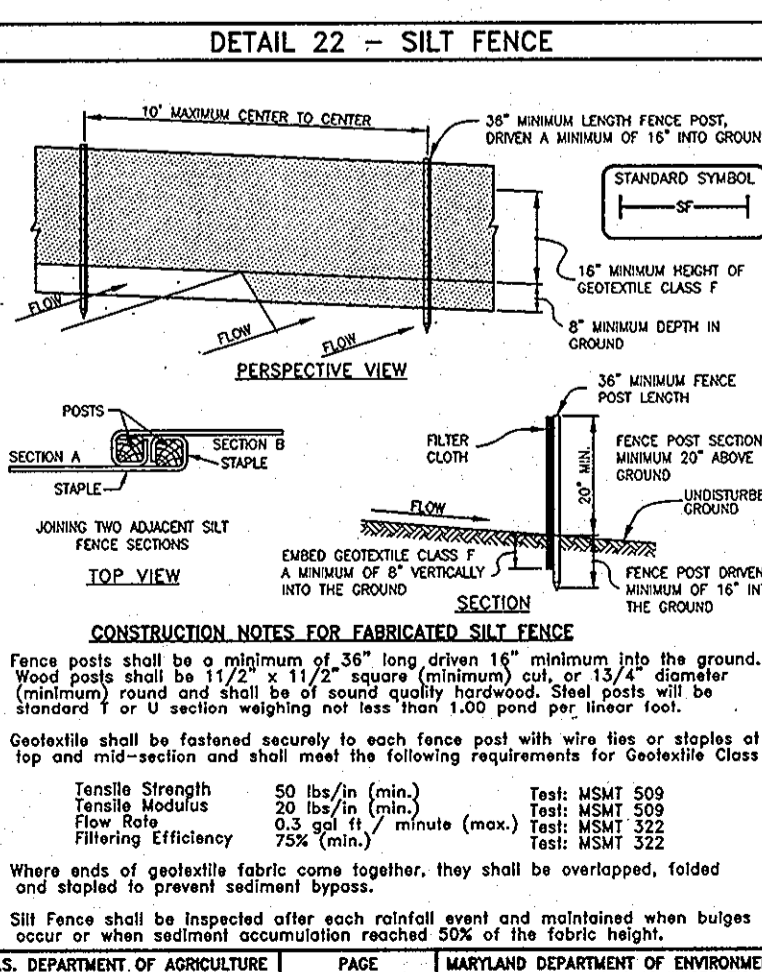
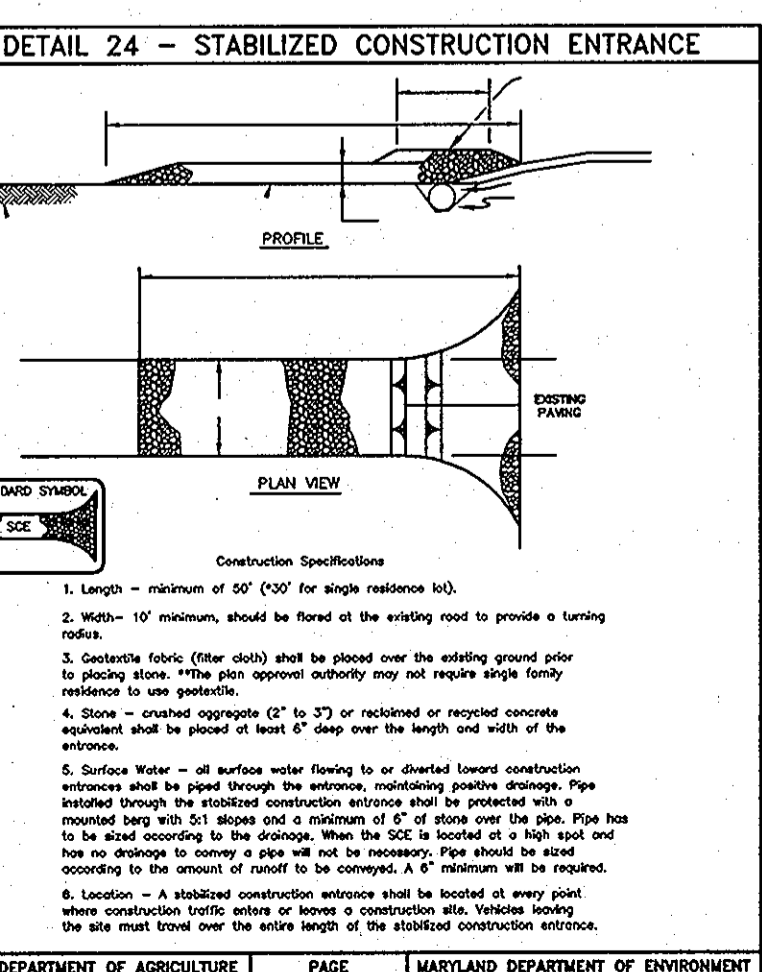
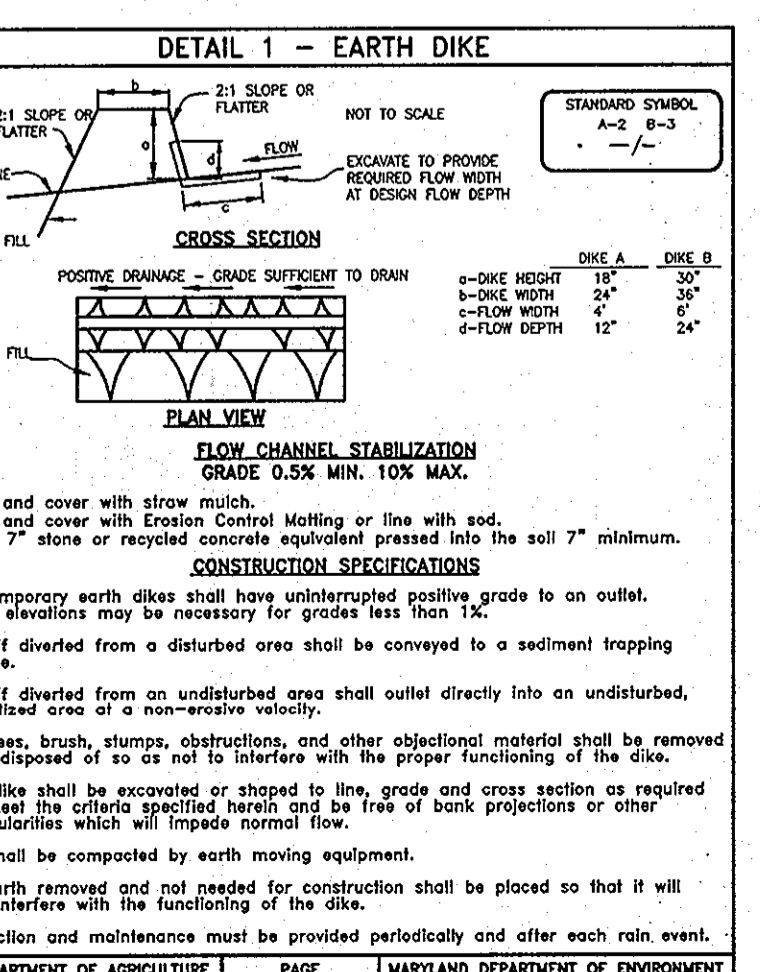
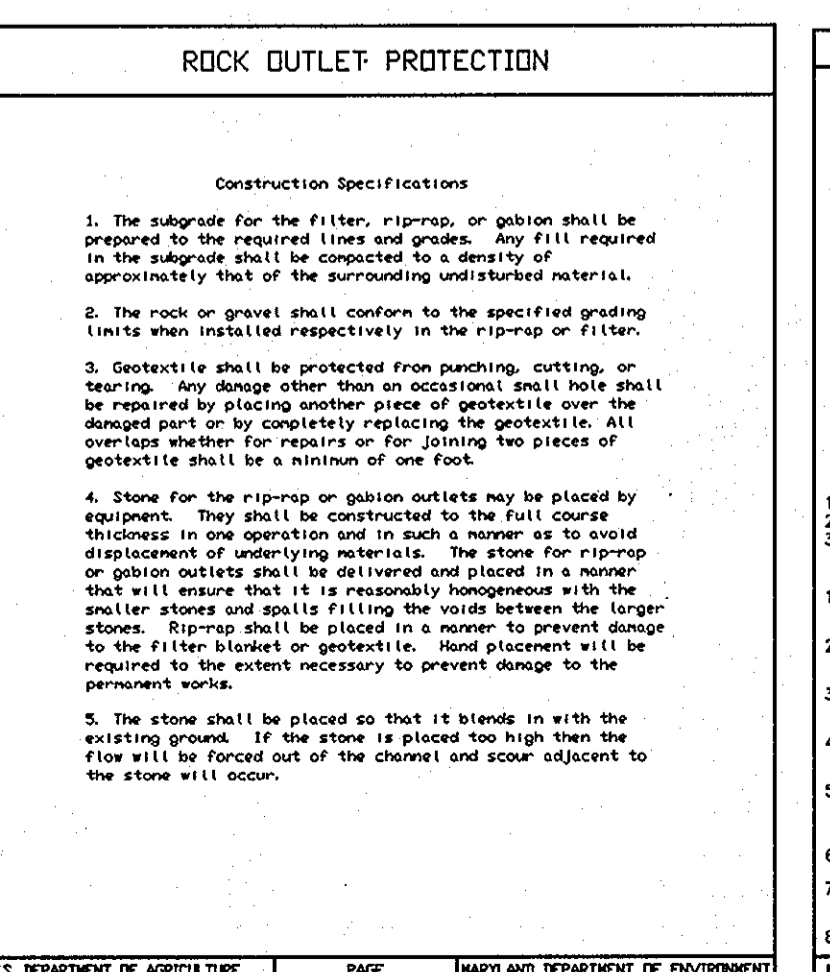
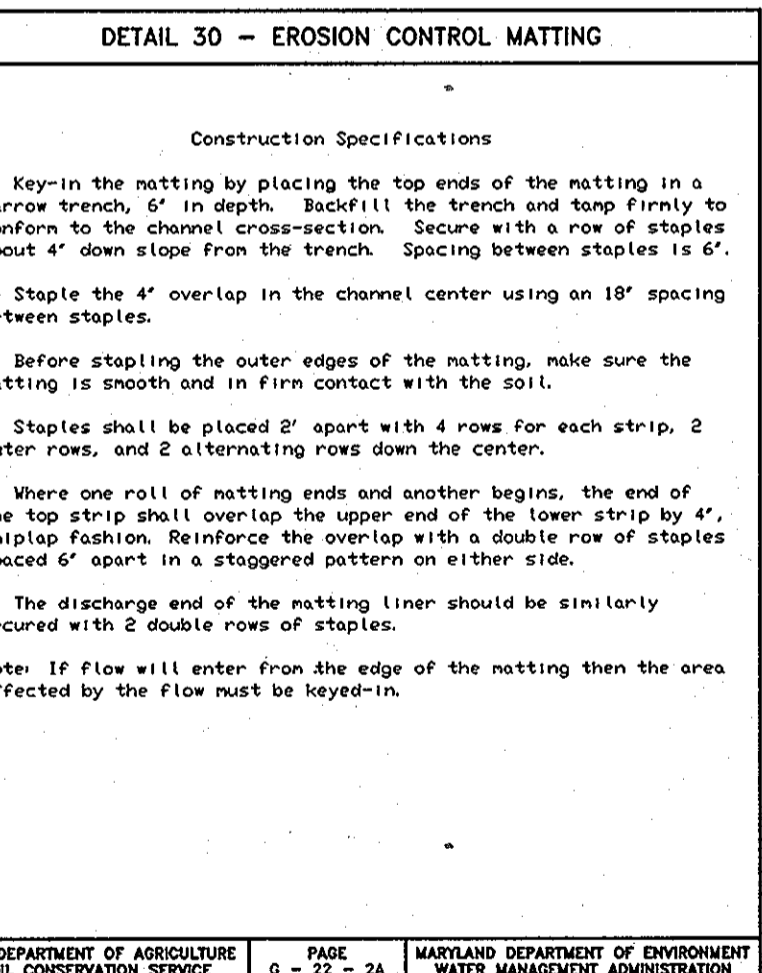
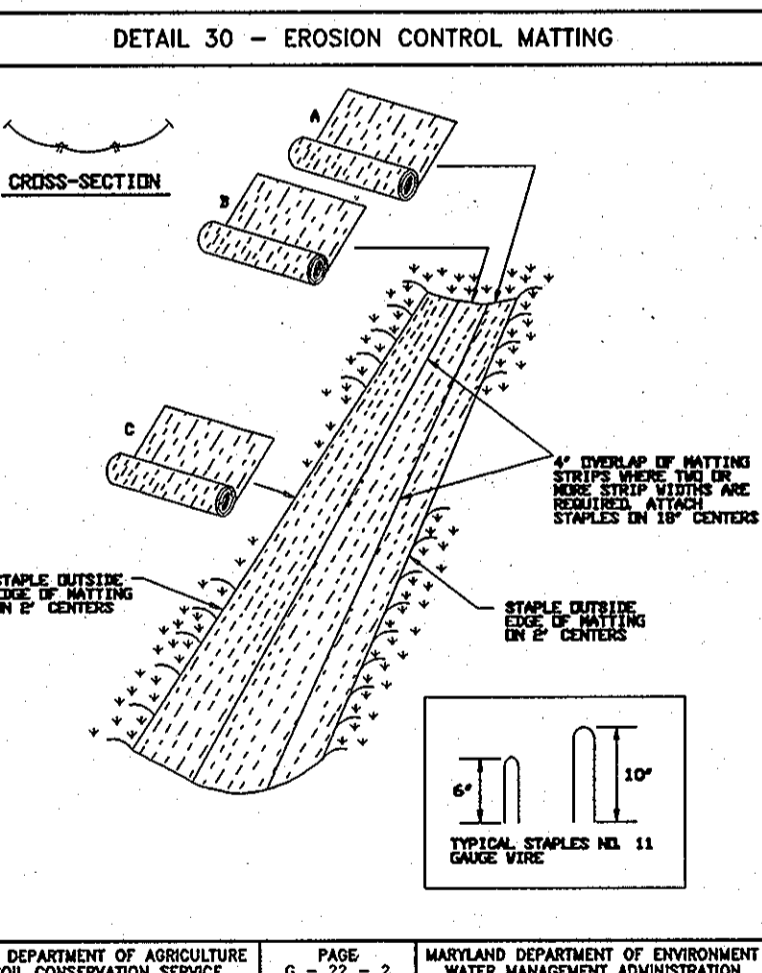
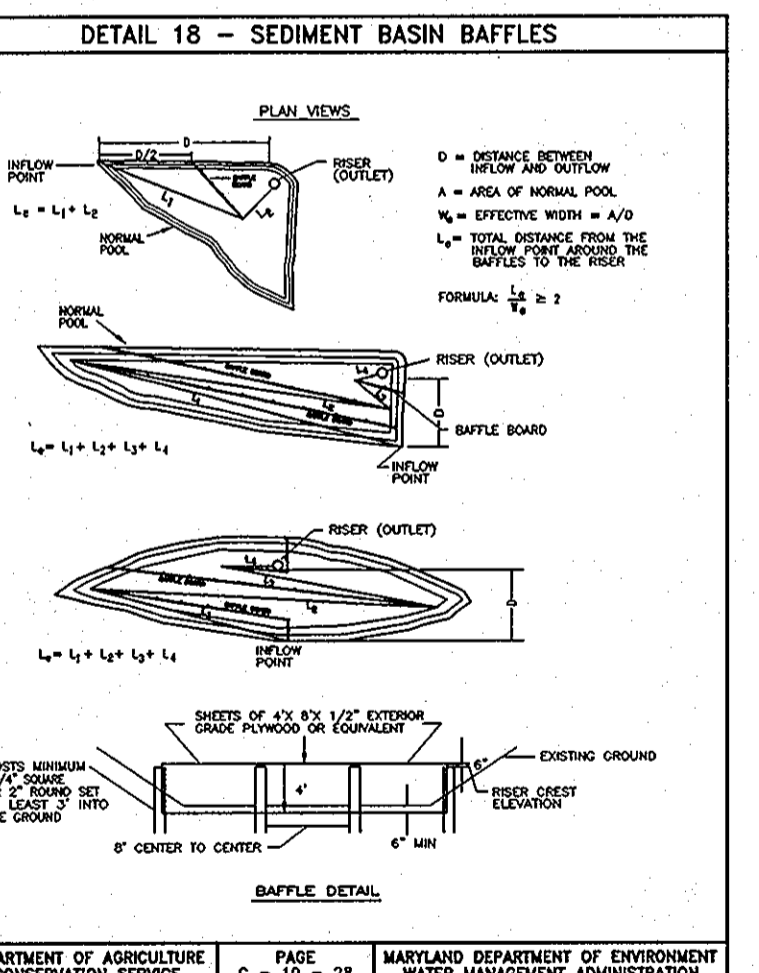
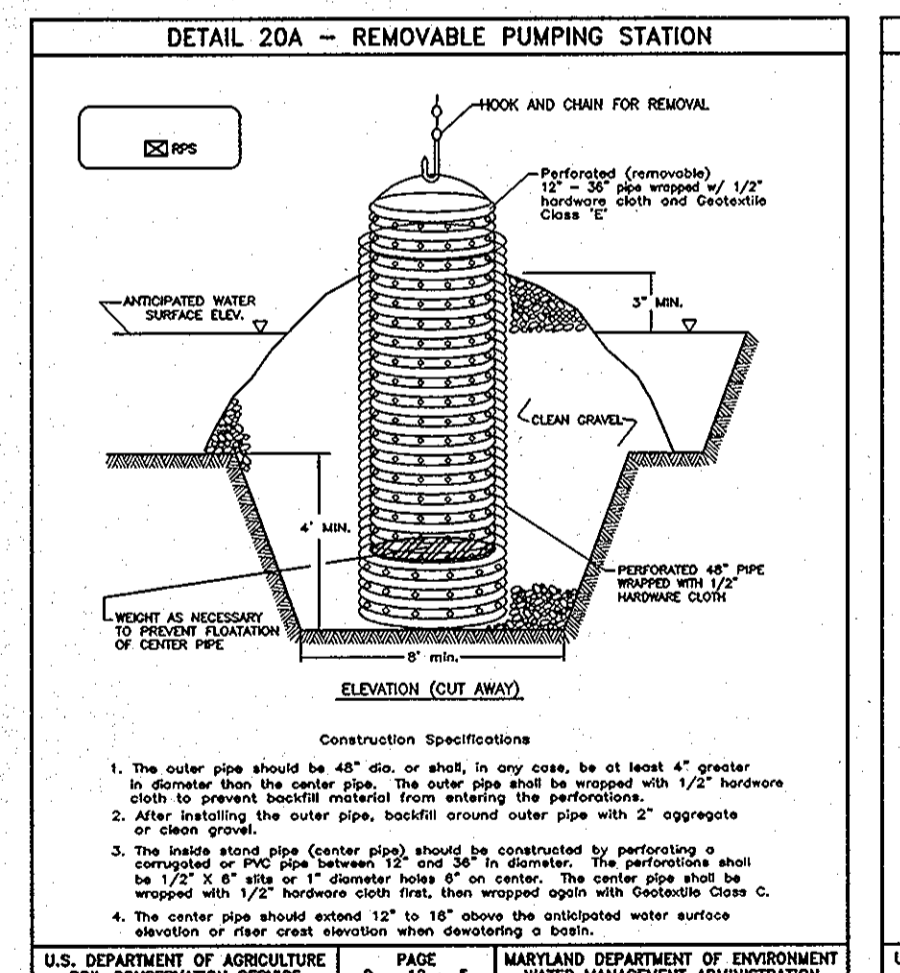
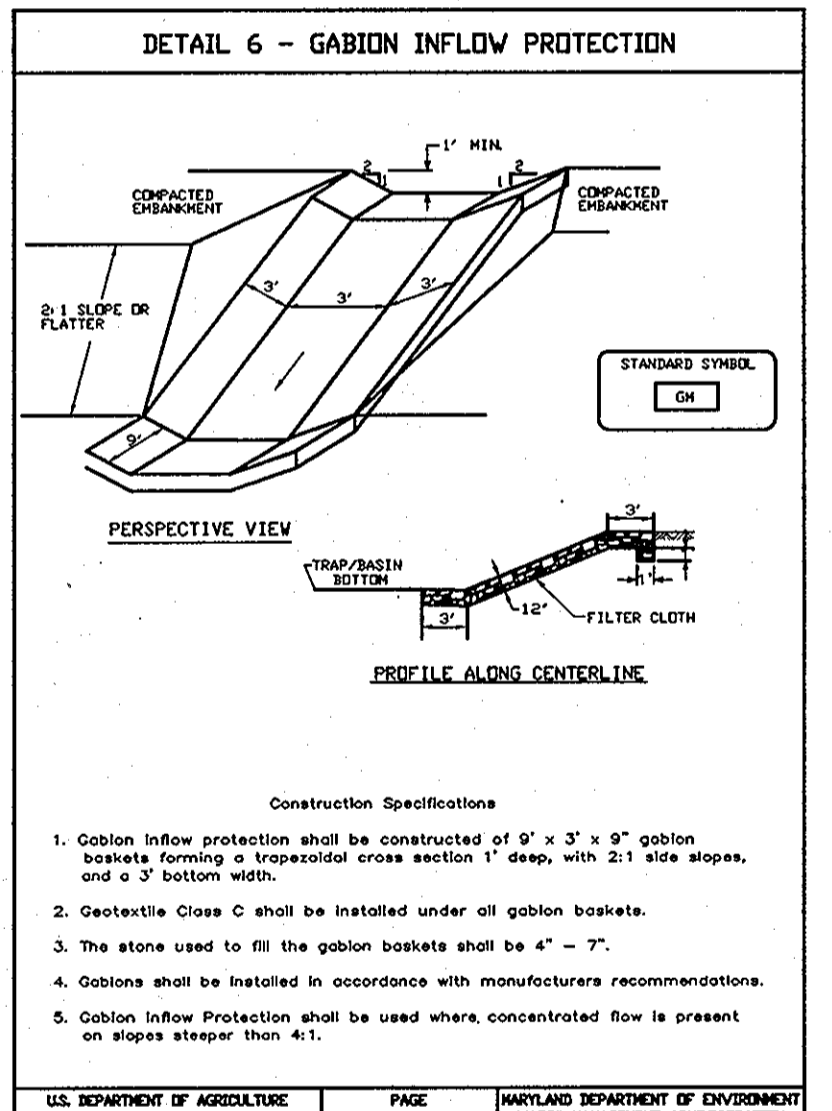
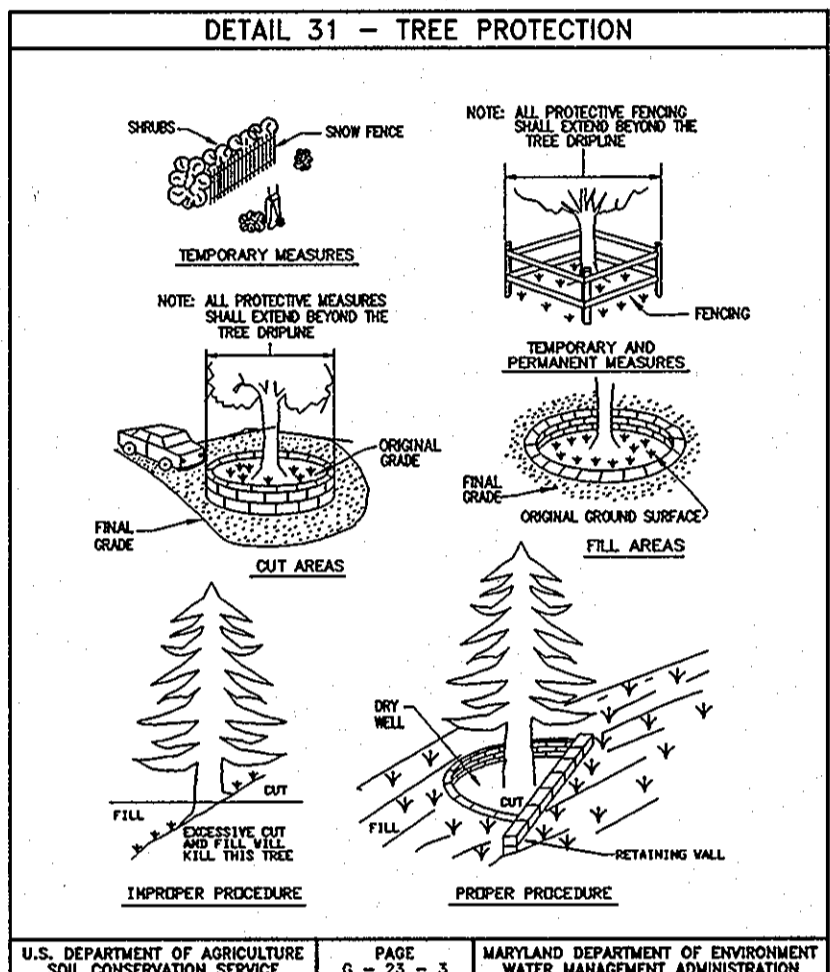
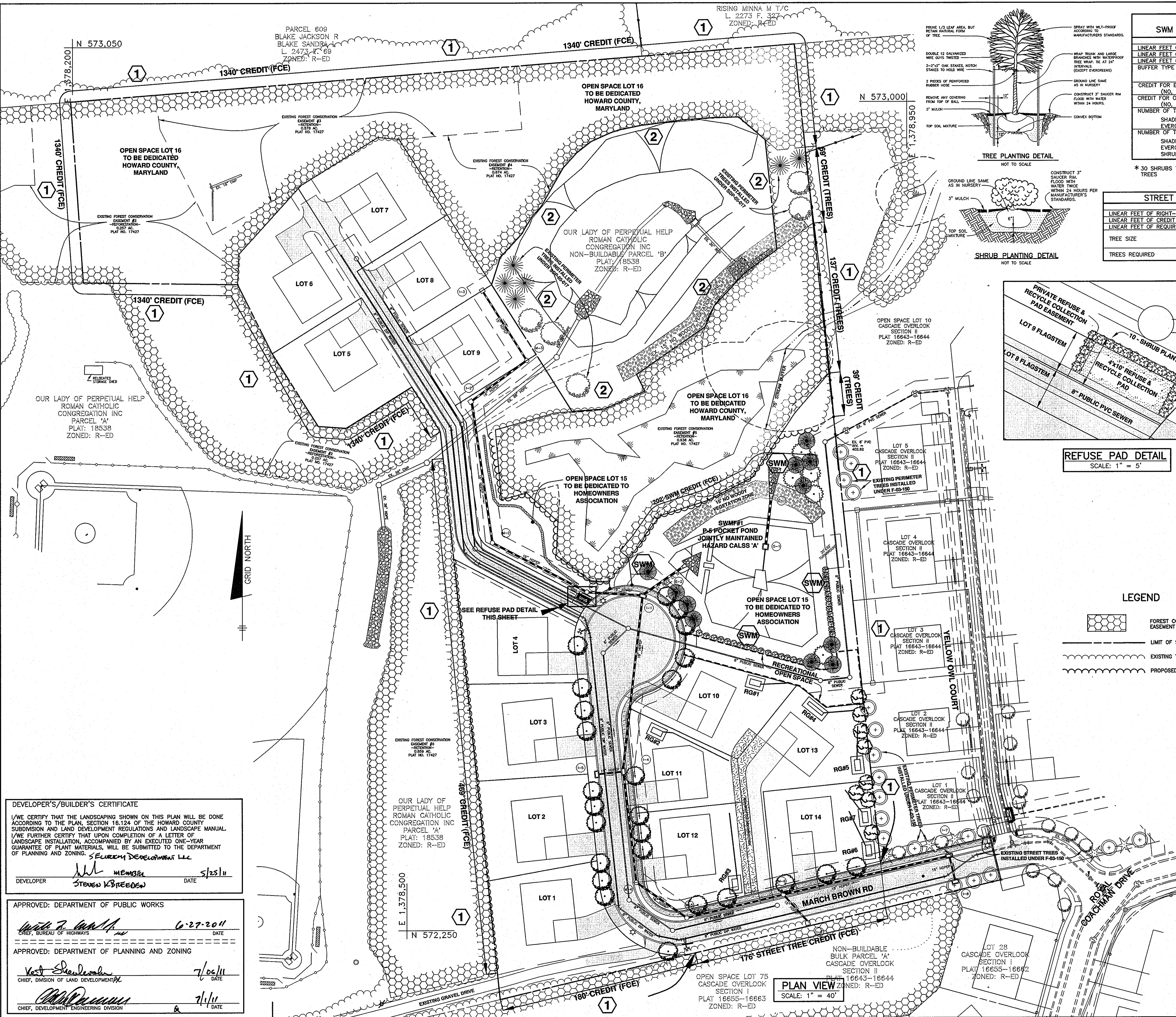


Table with 2 columns: Slope and Specifications. Includes: SUPER SILT FENCE CONSTRUCTION SPECIFICATIONS, SUPER SILT FENCE DESIGN CRITERIA.

BY THE DEVELOPER: STEPHEN BOBROW, MEMBER, 5/23/11
BY THE ENGINEER: JOHN C. ROBERTSON, 6/2/11
APPROVED: DEPARTMENT OF PUBLIC WORKS, WISE P. QUINN, CHIEF, BUREAU OF HIGHWAYS, 6-27-2011
APPROVED: DEPARTMENT OF PLANNING AND ZONING, VET SLODOWICZ, CHIEF, DIVISION OF LAND DEVELOPMENT, 7/16/11

BENCHMARK ENGINEERING, INC. 8450 BALTIMORE NATIONAL PIKE, SUITE 418, ELLICOTT CITY, MARYLAND 21043
SECURITY DEVELOPMENT LLC, 15-4-12 REVISE SITE ANALYSIS DATA #7
CASCADE OVERLOOK SECTION III, 10 PARCEL p/o 260
SEDIMENT & EROSION CONTROL NOTES AND DETAILS
DATE: MAY, 2011 BEI PROJECT NO: 1676
SCALE: AS SHOWN SHEET 5 OF 11





### SCHEDULE D SWM AREA LANDSCAPING

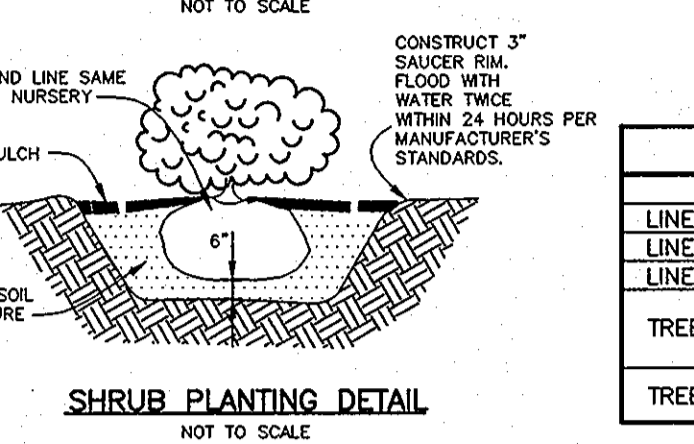
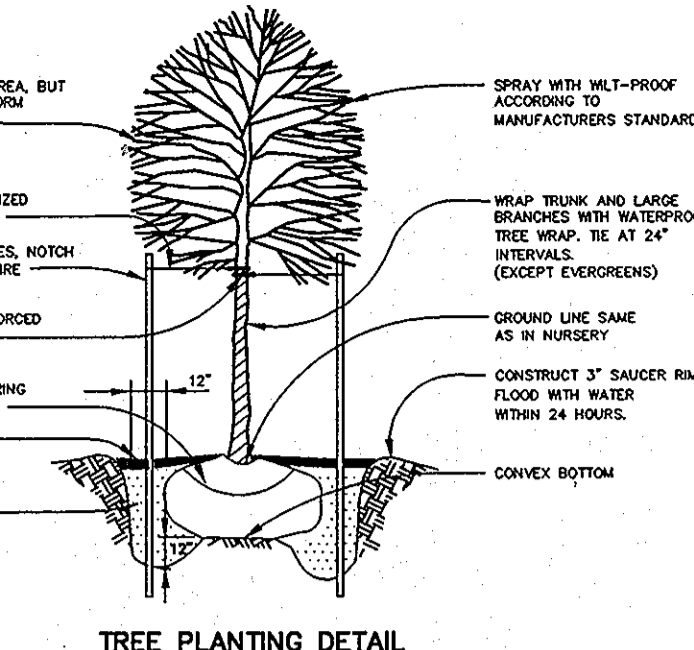
LINEAR FEET OF PERIMETER	622
LINEAR FEET OF EXISTING WOODS LINE	222
LINEAR FEET OF REQUIRED PLANTING	420
BUFFER TYPE	"B"
	1:50 shade 1:40 evergreen
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	32%
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES REQUIRED	
SHADE TREES	8
EVERGREEN TREES	11
NUMBER OF TREES PROVIDED	
SHADE TREES	5
EVERGREEN TREES	11
SHRUBS (10:1 SUBSTITUTE)	30*

\* 30 SHRUBS TO BE SUBSTITUTED FOR 3 SHADE TREES

### SCHEDULE A PERIMETER LANDSCAPE EDGE

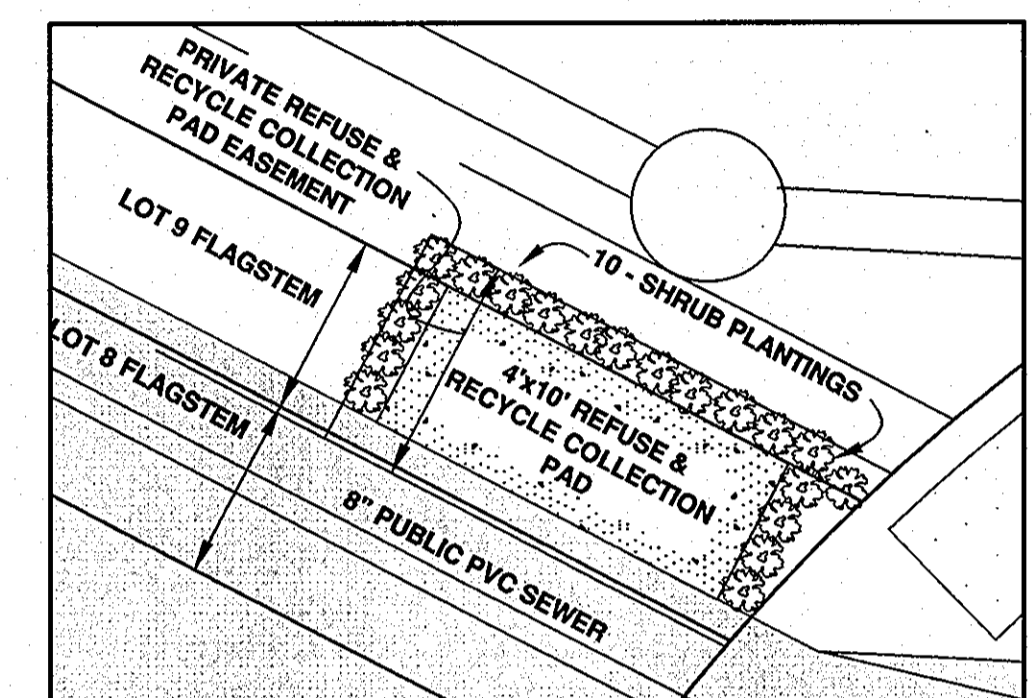
CATEGORY	ADJACENT TO PERIM. PROPERTY				
	①	②	③	④	⑤
LANDSCAPE TYPE	A	B	B	B	B
ADJACENT TO ROAD (LOT 12)	1:60 shade	1:60 shade	1:50 shade	1:50 shade	1:50 shade
ADJACENT TO ROAD (LOT 14)	1:60 shade	1:60 shade	1:40 evergreen	1:40 evergreen	1:40 evergreen
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	2690 LF	821 LF	87 LF	99 LF	28 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET (DESCRIBE BELOW IF NEEDED))	YES 2234 LF	YES 821 LF	NO	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET (DESCRIBE BELOW IF NEEDED))	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED	456 LF	0 LF	87 LF	99 LF	28 LF
SHADE TREES	8	0	2	2	1
EVERGREEN TREES	0	0	3	3	1
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0	0
SHRUBS	0	0	0	0	0
NUMBER OF PLANTS PROVIDED					
SHADE TREES	8	0	2*	2*	0
EVERGREEN TREES	0	0	3*	3*	0
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0	0
SHRUBS (10:1 SUBSTITUTE)	0	0	0	0	20

\* TO BE DEFERRED TO SITE DEVELOPMENT PLAN.  
\*\* CREDITS TAKEN FOR SURROUNDING EXISTING FOREST CONSERVATION EASEMENTS AS WELL AS THE PERIMETER TREES INSTALLED UNDER SOP-05-017.



### STREET TREE SCHEDULE

LINEAR FEET OF RIGHT-OF-WAY	MARCH BROWN RD
LINEAR FEET OF CREDIT	1151
LINEAR FEET OF REQUIRED PLANTING	176
TREE SIZE	LARGE 1:40 LF
TREES REQUIRED	25



- ### LANDSCAPE NOTES:
- STREET TREES TO BE PLANTED 3 FEET BEHIND SIDEWALK DISTANCE BETWEEN SIDEWALK AND CURB IS LESS THAN 6 FEET. STREET TREES TO BE PLANTED 6 FEET BEHIND BACK OF CURB WHERE THERE IS NO SIDEWALK. TREES MAY NOT BE PLANTED WITHIN 5 FEET OF A DRAIN INLET, 5 FEET OF AN OPEN SPACE ACCESS STRIP, OR 10 FEET OF A DRIVEWAY.
  - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
  - AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
  - THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
  - FINANCIAL SURETY FOR THE REQUIRED PERIMETER LANDSCAPING SHALL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$7,050.00 (\$4,800.00 FOR 16 SHADE TREES, \$1,650.00 FOR 11 EVERGREENS AND \$600.00 FOR 20 SHRUBS). FINANCIAL SURETY FOR REQUIRED STREET TREES SHALL BE INCLUDED IN THE COST ESTIMATE GENERATED BY HOWARD COUNTY DEVELOPMENT ENGINEERING DIVISION.

### PUBLIC STREET TREE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	25	TILIA CORDATA 'GREENSPIRE' (Greenspire Littleleaf Linden)	2.5" - 3" col.	TO BE PLANTED ALONG MARCH BROWN ROAD AND PROVIDED BY THE DEVELOPER

### PERIMETER LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	8	PLATANUS X ACERIFOLIA 'BLOODGOOD' (Bloodgood London Plane)	2.5" - 3" col.	SHADE TREES ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER
	20	JUNIPERUS CHINENSIS (Pfitzerana Compacta) Compact Pfitzer Juniper	2' - 2.5' hgt.	NEEDLE EVERGREEN SHRUB PLANTED AROUND REFUSE PAD TO BE PROVIDED BY THE DEVELOPER
	11	ILEX OPACA (American Holly)	5' - 6' ht.	EVERGREEN TREES ALONG SWMF PERIMETER TO BE PROVIDED BY THE DEVELOPER
	5	ACER RUBRUM 'RED SUNSET' (Red Sunset Red Maple)	2 1/2" - 3" col.	SHADE TREES ALONG SWMF PERIMETER TO BE PROVIDED BY THE DEVELOPER
	30	'DELAWARE VALLEY WHITE' (Delaware Valley White Azalea)	18" - 24" sp.	SHRUBS PLANTED ALONG SWMF PERIMETER TO BE PROVIDED BY THE DEVELOPER

\*SEE SHEET 11 FOR INTERNAL SWMF PLANTING\*

**DEVELOPER'S/BUILDER'S CERTIFICATE**

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

STEVEN K BREEDEN  
DEVELOPER  
5/25/11  
DATE

**APPROVED: DEPARTMENT OF PUBLIC WORKS**

6-27-2011  
DATE

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

7/06/11  
DATE

7/11/11  
DATE

NO. DATE REVISION

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
8480 BALTIMORE NATIONAL PIKE & SUITE 418 & ELLICOTT CITY, MARYLAND 21043  
(P) 410-465-6105 (F) 410-465-6644  
60 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702  
(P) 301-371-3505 (F) 301-371-3506  
WWW.BE-CVLENGINEERING.COM

Professional Certification: I hereby certify that these documents were prepared or reviewed by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 35866-0000-0000 Date: 7-22-2011.

STATE OF MARYLAND  
Professional Engineer  
5/23/2011

OWNER: SECURITY DEVELOPMENT LLC  
P.O. BOX 417  
ELLICOTT CITY, MARYLAND 21041  
410-465-4244

DEVELOPER: SECURITY DEVELOPMENT LLC  
P.O. BOX 417  
ELLICOTT CITY, MARYLAND 21041  
410-465-4244

**CASCADE OVERLOOK SECTION III**  
LOTS 1 thru 14 AND  
OPEN SPACE LOTS 15 thru 17

TAX MAP: 31 GRID: 10 PARCEL: p/o 260  
ZONED: R-ED  
ELECTION DISTRICT NO. 1  
HOWARD COUNTY, MARYLAND

**PERIMETER LANDSCAPE & STREET TREE PLAN**

DATE: MAY, 2011 BEI PROJECT NO: 1676  
SCALE: AS SHOWN SHEET 6 OF 11



SOILS CHART				
SYMBOL	HYDRIC	GROUP	NAME	
AdB2	YES	C	ALDINO SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	
AgC2		C	AURA GRAVELLY LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED	
AgE3		C	AURA GRAVELLY LOAM, 10 TO 30 PERCENT SLOPES, SEVERELY ERODED	
BeC3	YES	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED	
Bc3		A	BRANDYWINE LOAM, 8 TO 15 PERCENT SLOPES SEVERELY ERODED	
CnD3		B	CHILLUM-FAIRFAX LOAMS, 5 TO 15 PERCENT SLOPES, SEVERELY ERODED	
IuB	YES	C	IUKA LOAM, LOCAL ALLUVIUM, 1 TO 5 PERCENT SLOPES	
KeB2	YES	D	KELLY CLAY LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	
Lgc3		B	LEGORE SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	
Wab	YES	D	WATCHUNG SILT LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	

**AREA AND "C" FACTOR TABULATION**

PROJECT: Cascade Overlook III      DATE: 5/9/2011      BY: DBT

PHASE	INLET #	ZONING	SUBAREA (B)	AREA (Ac) (A)	"C" FACTOR (C)>25	% IMPERVIOUS (P)>25
	I-1	R-ED		1.20	0.38	50.9
	I-2	R-ED		0.62	0.24	40.9
	I-3	R-ED		0.57	0.30	63.9
	I-4	R-ED		0.18	0.57	84.4
	I-5	R-ED		0.26	0.51	77.1
	I-6	R-ED		2.54	0.26	32.4
	I-7	R-ED		0.13	0.86	100.0
	I-8	R-ED		0.20	0.54	55.0

**LEGEND**

- EXISTING CONTOURS
- PROPOSED TREELINE
- DRAINAGE DIVIDE
- SOILS DELINEATION LINE
- SOILS TYPE

BeC3  
C



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*W. J. ...* 6-27-2011 DATE  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*V. ...* 7/6/11 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*M. ...* 7/16/11 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO.	DATE	REVISION

**BENCHMARK**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
**ENGINEERING, INC.**  
 8480 BALTIMORE NATIONAL PIKE SUITE 418 ELLICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
 60 THOMAS JOHNSON DRIVE FREDERICK, MARYLAND 21702  
 (P) 301-371-3506 (F) 301-371-3506  
 WWW.BE-CALYDENGINEERING.COM

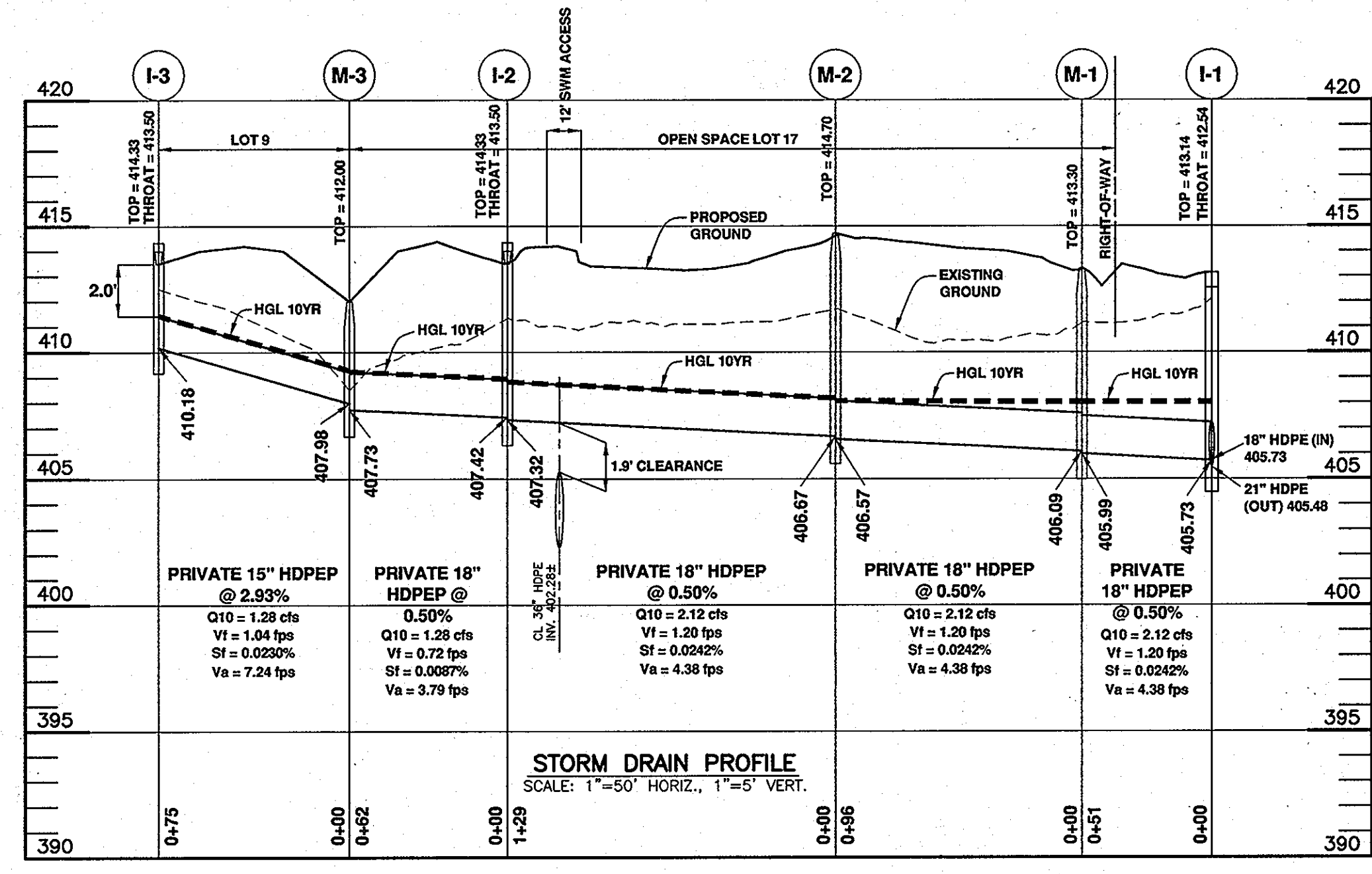
5/23/2011

OWNER: SECURITY DEVELOPMENT LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244	<b>CASCADE OVERLOOK</b> SECTION III LOTS 1 thru 14 AND OPEN SPACE LOTS 15 thru 17 TAX MAP: 31 GRID: 10 PARCEL: p/o 260 ZONED: R-ED ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND
DEVELOPER: SECURITY DEVELOPMENT LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244	<b>STORM DRAIN DRAINAGE AREA MAP</b> DATE: MAY, 2011 BEI PROJECT NO: 1676 SCALE: AS SHOWN SHEET 7 OF 11



STRUCTURE TABLE									
NUMBER	TYPE	LOCATION	INVERT IN	INVERT OUT	TOP ELEV.	THROAT ELEV.	HO. CO.	STD. DETAIL	MAINTENANCE
<b>INLETS</b>									
I-1	A-5	LP STA. +150.00 OFFSET 0.132' LEFT	405.73	405.73	405.48	413.14	412.54	D-4.01 & D-4.02	PUBLIC
I-2	D	N 572728.8521 E 1378557.7931	407.42	NA	407.32	414.33	413.50	D-4.10 & D-4.11	PRIVATE
I-3	D	N 572829.3390 E 1378568.1671	NA	NA	410.18	414.33	413.50	D-4.10 & D-4.11	PRIVATE
I-4	A-5	CL STA. 5+87.39 OFFSET 10.00' RIGHT	414.91 (18")	419.28 (15")	414.71	423.11	422.51	D-4.01 & D-4.02	PUBLIC
I-5	A-5	CL STA. 5+87.39 OFFSET 10.00' LEFT	NA	NA	419.76	423.11	422.51	D-4.01 & D-4.02	PUBLIC
I-6	D	CL STA. 2+98.31 OFFSET 17.00' LEFT	NA	NA	422.75	426.33	425.50	D-4.10 & D-4.11	PUBLIC
I-7	A-5	CL STA. 1+58.57 OFFSET 10.00' RIGHT	419.75	NA	419.50	423.84	423.24	D-4.01 & D-4.02	PUBLIC
I-8	A-5	CL STA. 1+58.57 OFFSET 10.00' LEFT	NA	NA	419.99	423.84	423.24	D-4.01 & D-4.02	PUBLIC
<b>MANHOLES</b>									
M-1	4' DIA	N 572556.3460 E 1378862.0985	406.09	NA	405.99	413.30	NA	G-5.12	PRIVATE
M-2	4' DIA	N 572600.9982 E 1378577.1151	406.67	NA	406.57	414.70	NA	G-5.12	PRIVATE
M-3	4' DIA	N 572765.8251 E 1378608.1044	407.98	NA	407.73	412.00	NA	G-5.12	PRIVATE
M-4	4' DIA	CL STA. 4+86.11 OFFSET 13.05' RIGHT	416.12	NA	415.92	427.86	NA	G-5.12	PUBLIC
M-5	4' DIA	CL STA. 4+01.02 OFFSET 13.05' RIGHT	416.88	NA	416.68	429.06	NA	G-5.12	PUBLIC
M-6	4' DIA	CL STA. 3+11.67 OFFSET 13.05' RIGHT	417.97 (18")	422.41 (15")	417.77	427.46	NA	G-5.12	PUBLIC
<b>END SECTIONS</b>									
E-1	24" CONC.	N 572644.5318 E 1378828.2187	399.57	NA	399.50	NA	NA	D-5.51	PRIVATE
E-2	21" CONC.	N 572580.6035 E 1378751.1204	450.06	NA	450.00	NA	NA	D-5.51	PRIVATE
<b>STRUCTURES</b>									
S-1	SEE SWM	N 572596.8386 E 1378822.8006	401.49	400.00	400.00	408.00	405.00 (WEIR)	SEE SWM DETAILS	PRIVATE

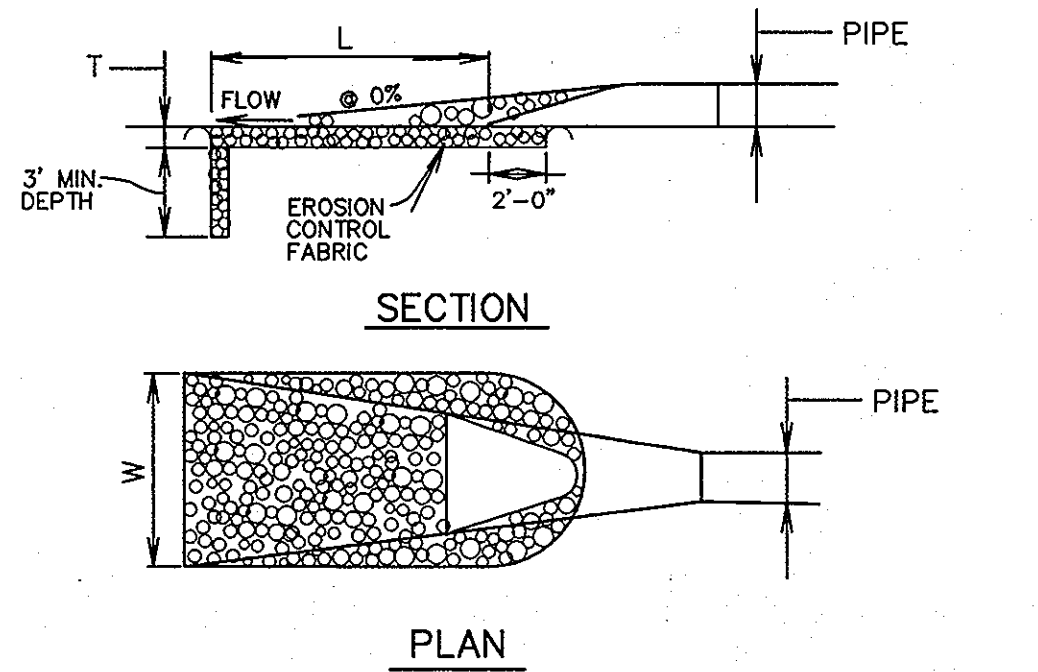
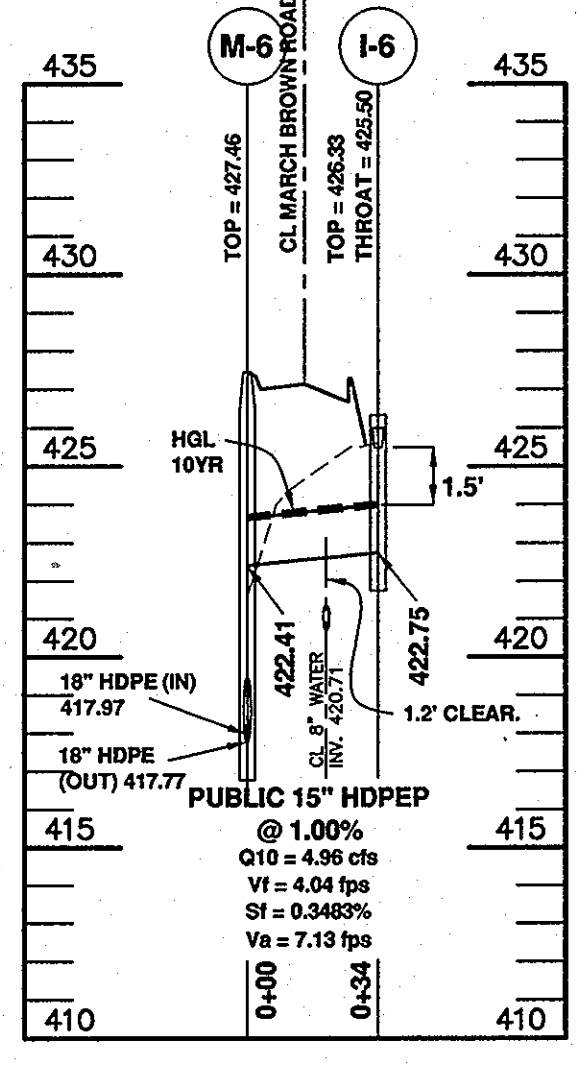
STRUCTURE LOCATION FOR MANHOLES IS AT THE CENTER OF THE MANHOLE RIM.  
STRUCTURE LOCATION FOR INLETS IS AT THE CENTER OF THE INLET FACE.  
STRUCTURE LOCATION FOR THE END SECTIONS IS AT THE MIDPOINT OF THE END OF THE STRUCTURE.  
PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.



PIPE SCHEDULE			
SIZE	TYPE	LENGTH (L.F.)	MAINTENANCE
15"	HDPEP	82	PUBLIC
18"	HDPEP	559	PUBLIC
24"	RCCP CL IV	48	PUBLIC
21"	ASTM C-361 B-25	46	PUBLIC
15"	HDPEP	75	PRIVATE
18"	HDPEP	338	PRIVATE

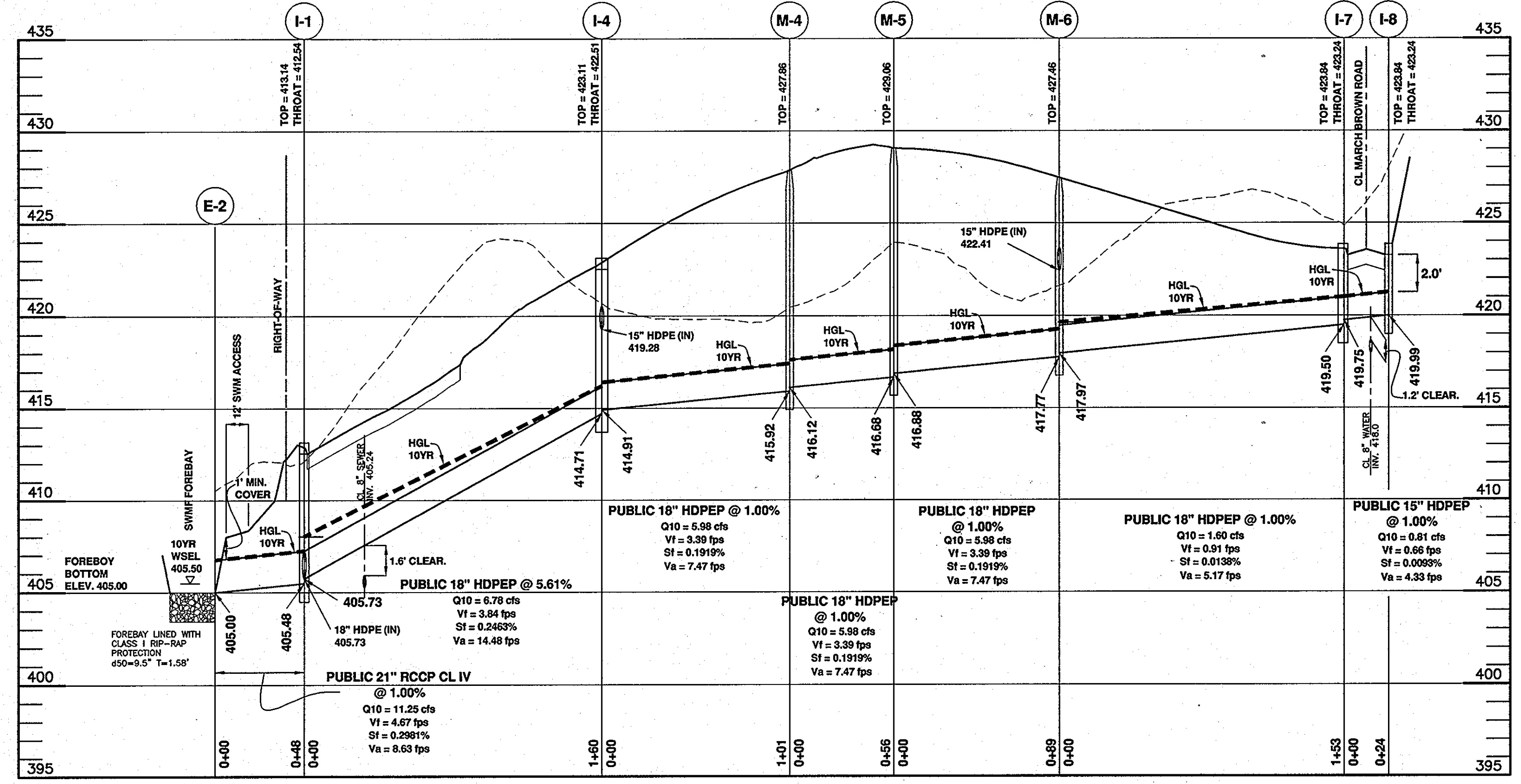
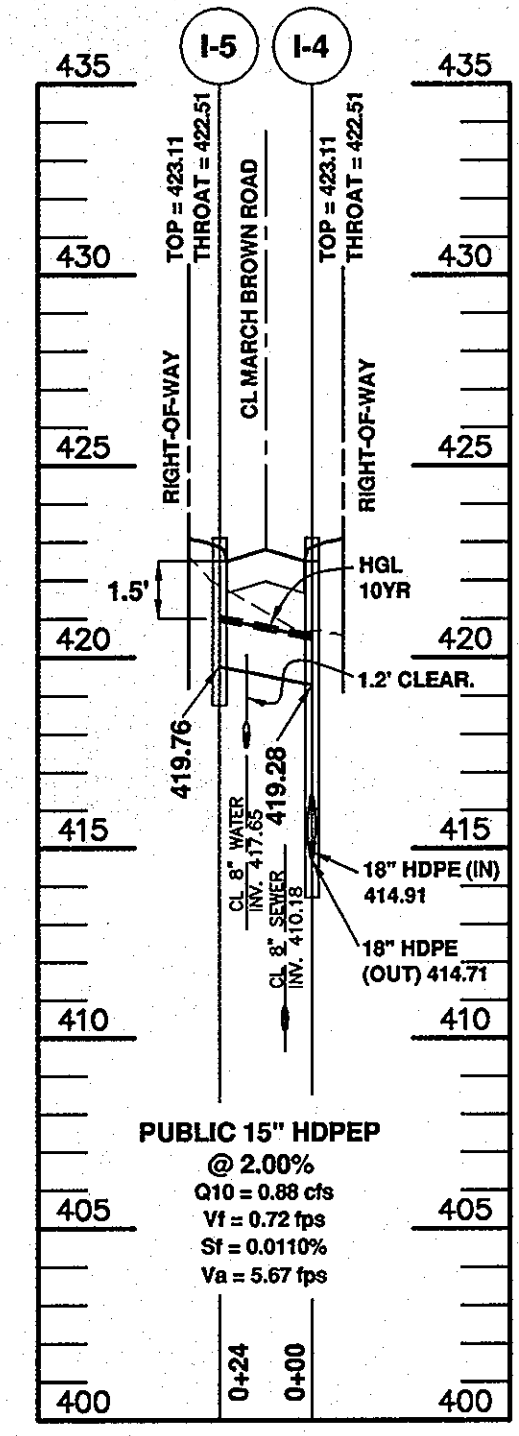
All pipes shall have smooth interior. No interior corrugations.

- 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 CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE PREPARED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC 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 PIPE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID REPLACEMENT 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 UNIFORM 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 FABRIC. 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.



STRUCTURE	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SHA CLASS
E-1	9.0'	24' @ 0%	11.6'	1.58' I
E-2	9.5'	FOREBAY	FOREBAY	1.58' I

**OUTLET PROTECTION DETAIL**  
NOT TO SCALE



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*W. J. ...* 6-27-2011  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*K. ...* 7/6/11  
CHIEF, DIVISION OF LAND DEVELOPMENT

*M. ...* 7/1/11  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO. DATE REVISION

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
8480 BALTIMORE NATIONAL PIKE & SUITE 418 & ELLICOTT CITY, MARYLAND 21043  
(P) 410-465-6105 (F) 410-465-6644  
60 THOMAS JOHNSON DRIVE & FREDERICK, MARYLAND 21702  
(P) 301-371-3505 (F) 301-371-3506  
WWW.BE-COLOREDENGINEERING.COM

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. 24559, Expiration Date: 7-22-2011.

**CASCADE OVERLOOK**  
SECTION III  
LOTS 1 thru 14 AND  
OPEN SPACE LOTS 15 thru 17

TAX MAP: 31 GRID: 10 PARCEL: p/o 260  
ZONED: R-ED  
ELECTION DISTRICT NO. 1  
HOWARD COUNTY, MARYLAND

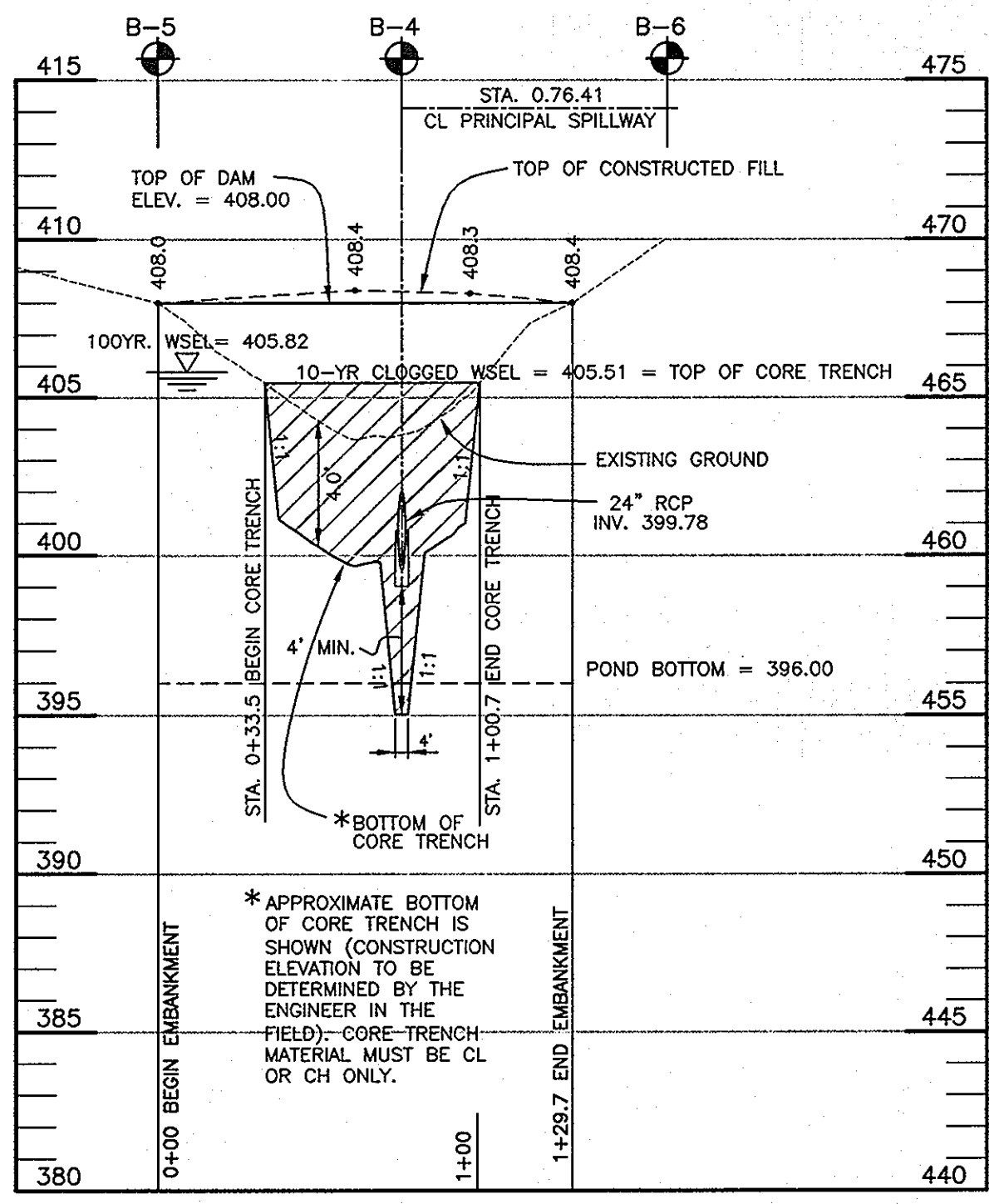
**STORM DRAIN PROFILES**

OWNER: SECURITY DEVELOPMENT LLC  
P.O. BOX 417  
ELLICOTT CITY, MARYLAND 21041  
410-485-4244

DEVELOPER: SECURITY DEVELOPMENT LLC  
P.O. BOX 417  
ELLICOTT CITY, MARYLAND 21041  
410-485-4244

DATE: MAY, 2011 BEI PROJECT NO: 1676  
SCALE: AS SHOWN SHEET 8 OF 11





CROSS-SECTION OF DAM ALONG CENTERLINE  
SCALE: 1"=50' HORIZ., 1"=5' VERT.

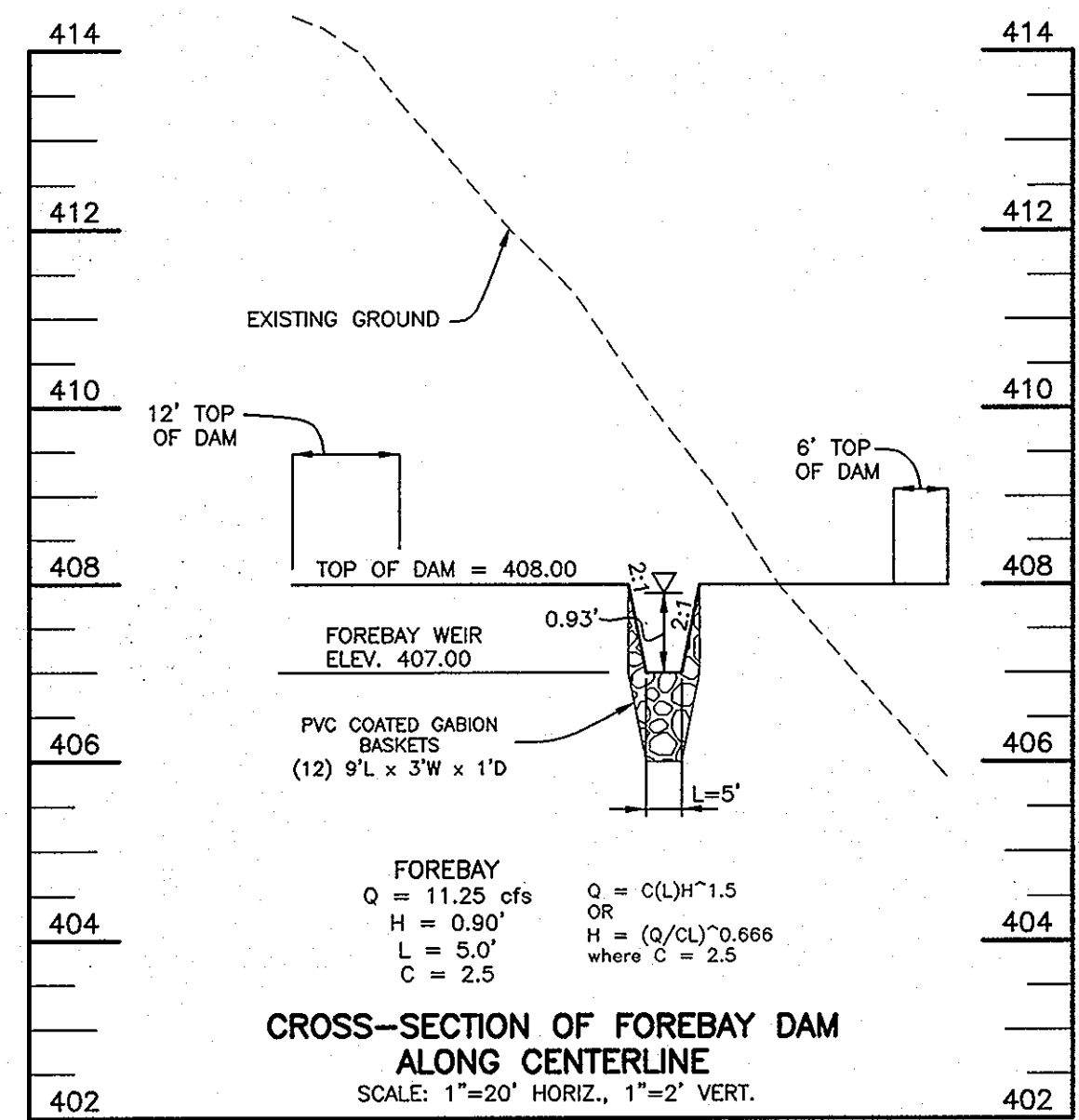
**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND JOINTLY MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5)**

**ROUTINE MAINTENANCE (BY H.O.A.):**

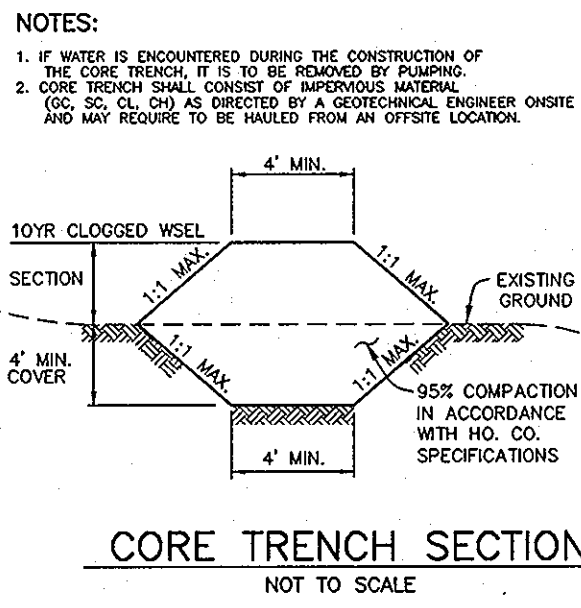
- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
- TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE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

**NON-ROUTINE MAINTENANCE (BY HOWARD COUNTY):**

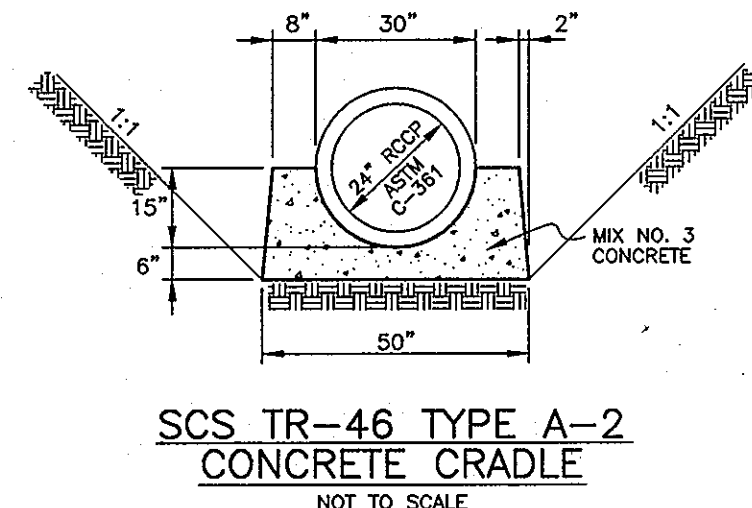
- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
- SEDIMENTS SHALL BE REMOVED FROM THE POND, AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND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



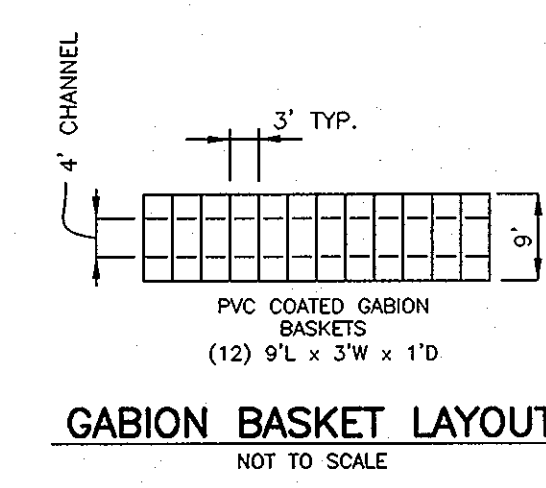
CROSS-SECTION OF FOREBAY DAM ALONG CENTERLINE  
SCALE: 1"=20' HORIZ., 1"=2' VERT.



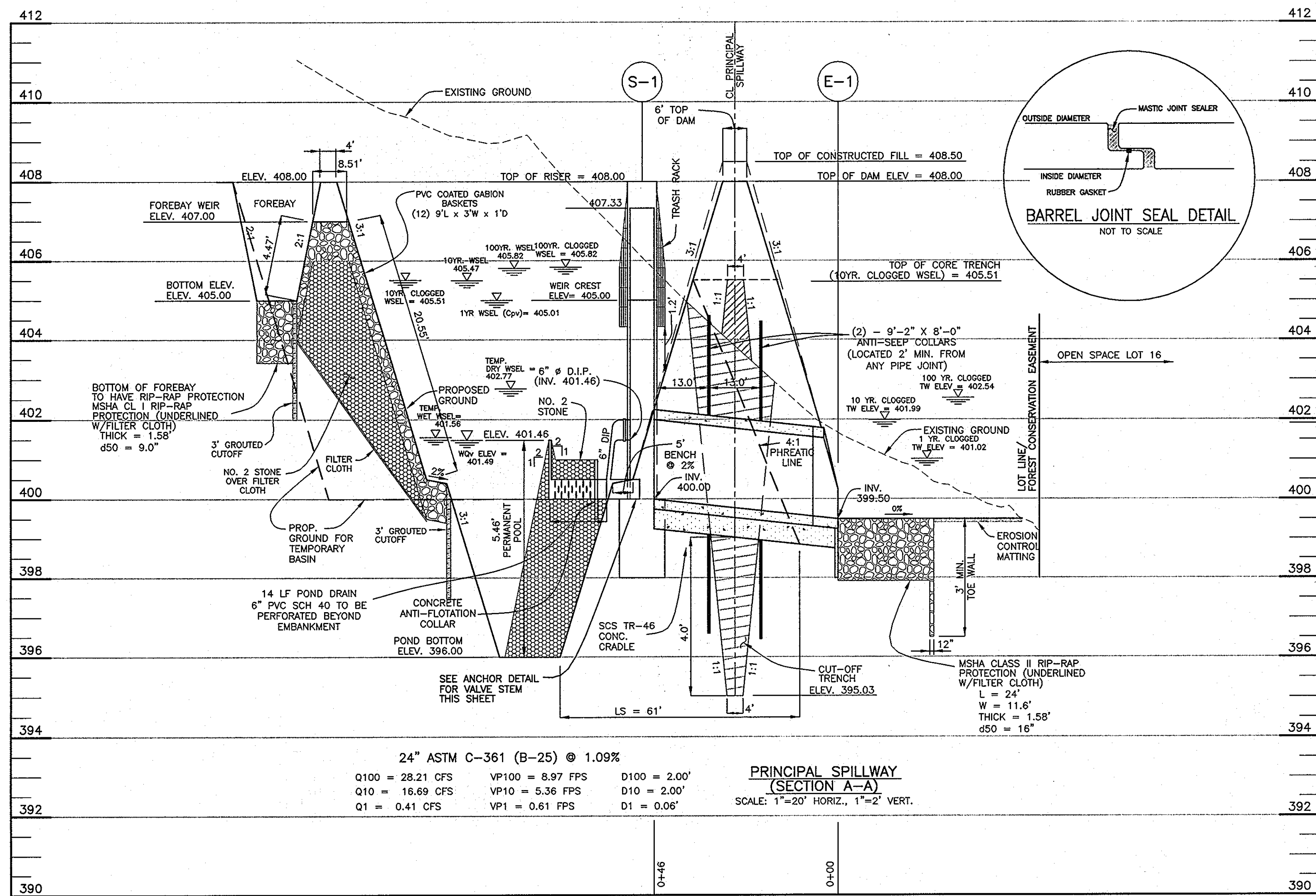
CORE TRENCH SECTION  
NOT TO SCALE



SCS TR-46 TYPE A-2 CONCRETE CRADLE  
NOT TO SCALE

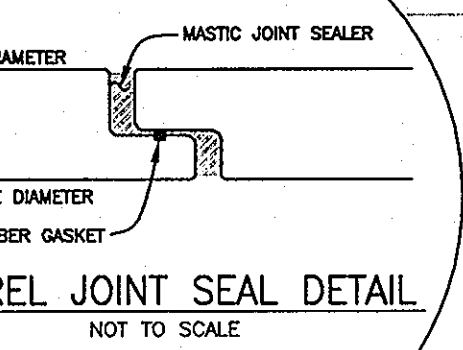


GABION BASKET LAYOUT  
NOT TO SCALE

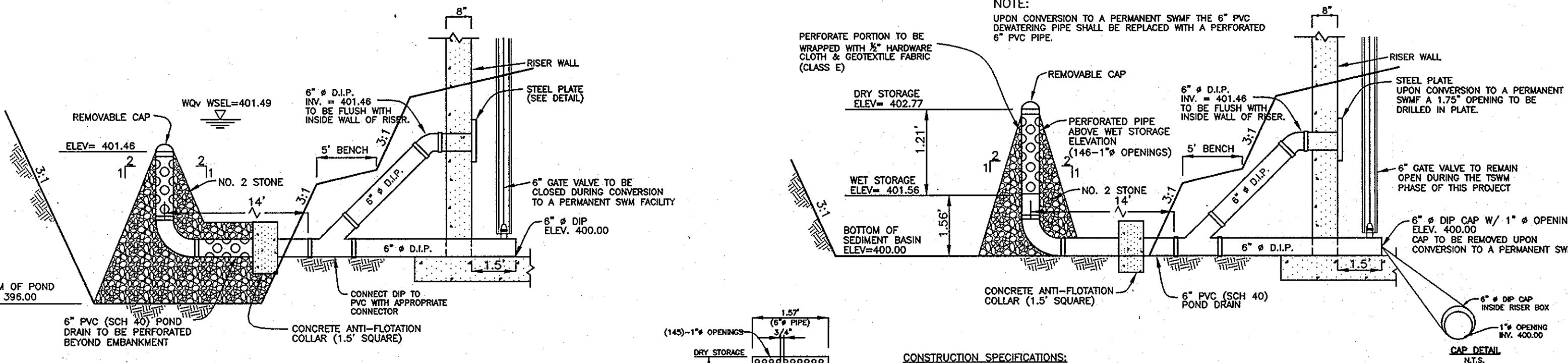


PRINCIPAL SPILLWAY (SECTION A-A)  
SCALE: 1"=20' HORIZ., 1"=2' VERT.

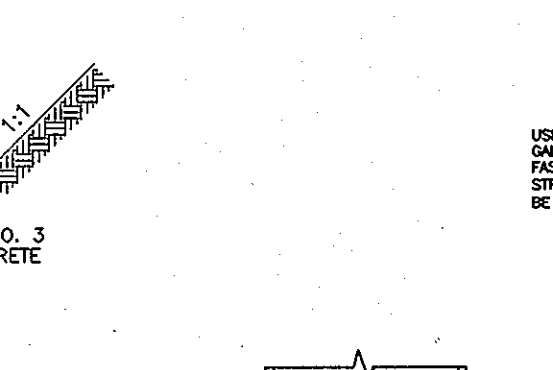
24" ASTM C-361 (B-25) @ 1.09%  
Q100 = 28.21 CFS VP100 = 8.97 FPS D100 = 2.00'  
Q10 = 18.69 CFS VP10 = 5.36 FPS D10 = 2.00'  
Q1 = 0.41 CFS VP1 = 0.61 FPS D1 = 0.06'



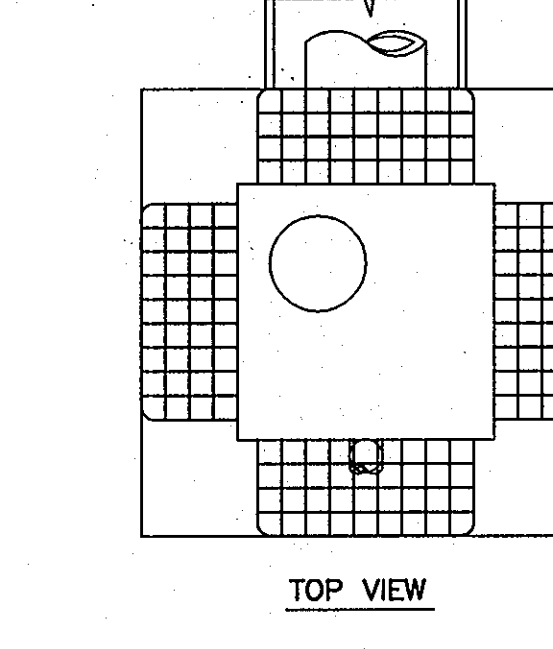
BARREL JOINT SEAL DETAIL  
NOT TO SCALE



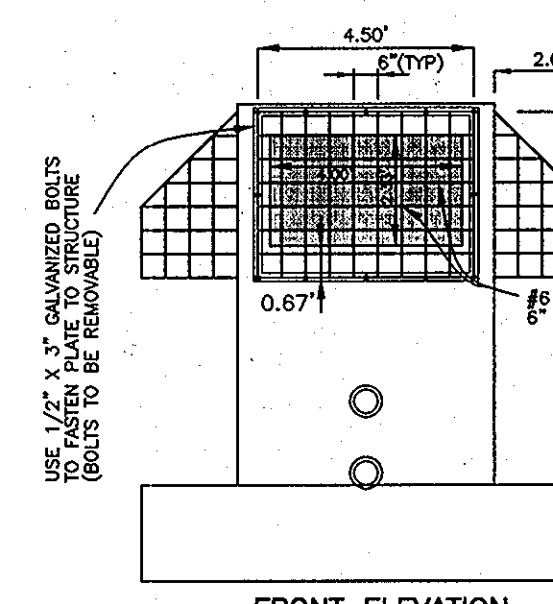
6" DEWATERING PIPE DETAIL AND PERMANENT EXTENDED DETENTION CONTROL ORIFICE  
NOT TO SCALE



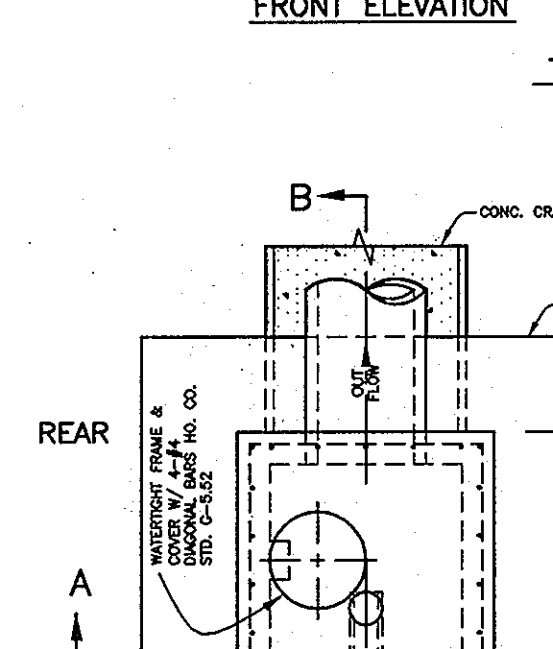
SCS TR-46 TYPE A-2 CONCRETE CRADLE  
NOT TO SCALE



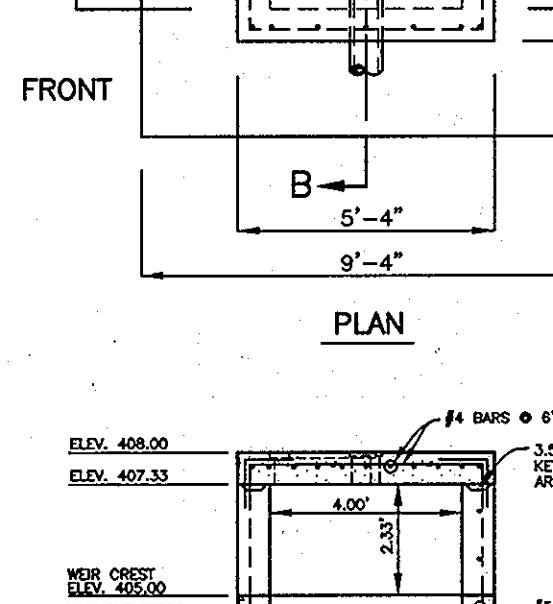
GABION BASKET LAYOUT  
NOT TO SCALE



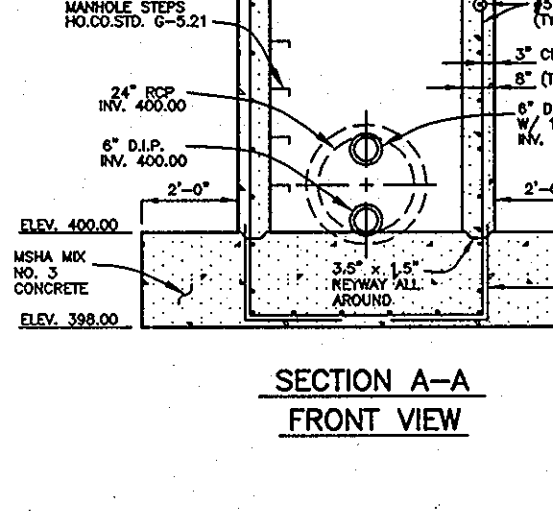
FRONT ELEVATION



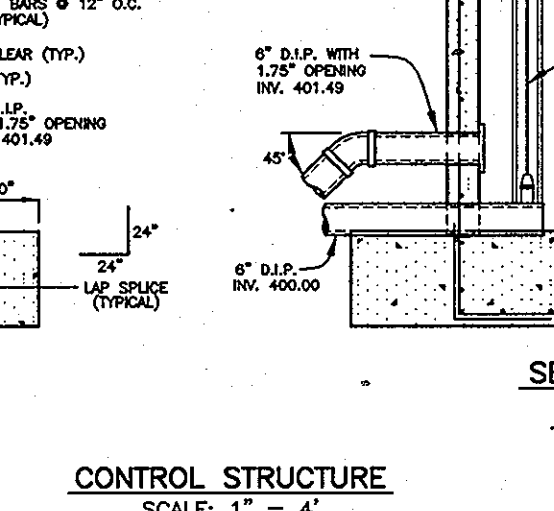
SIDE ELEVATION



TEMPORARY BLOCKING DETAIL  
SCALE: 1"=4'

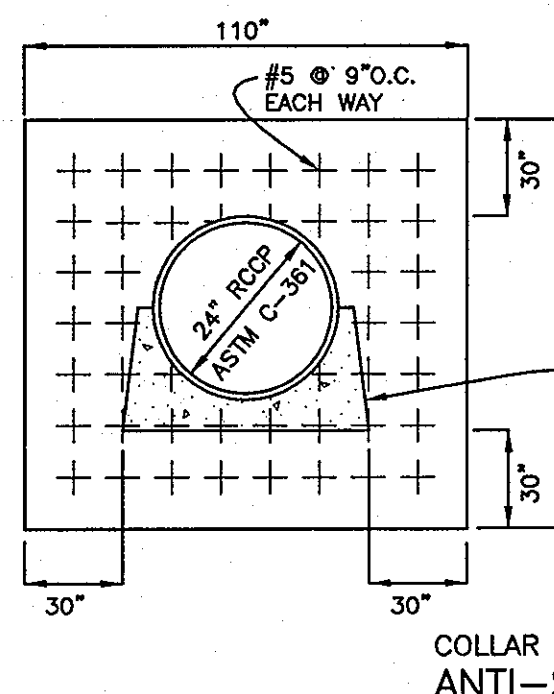


SECTION A-A FRONT VIEW

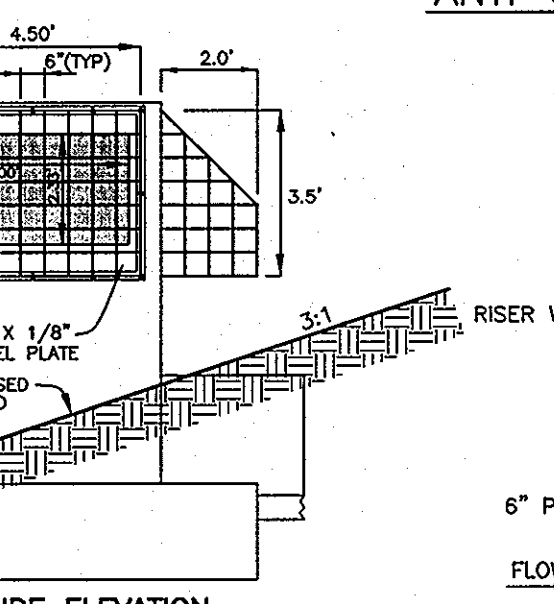


SECTION B-B SIDE VIEW

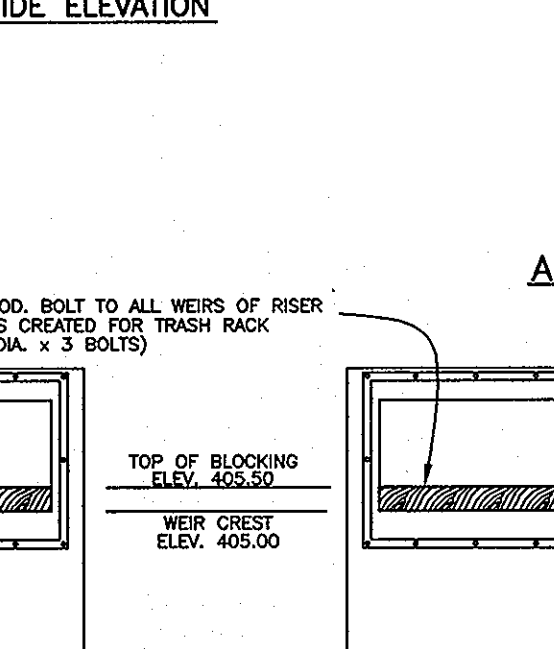
CONTROL STRUCTURE  
SCALE: 1"=4'



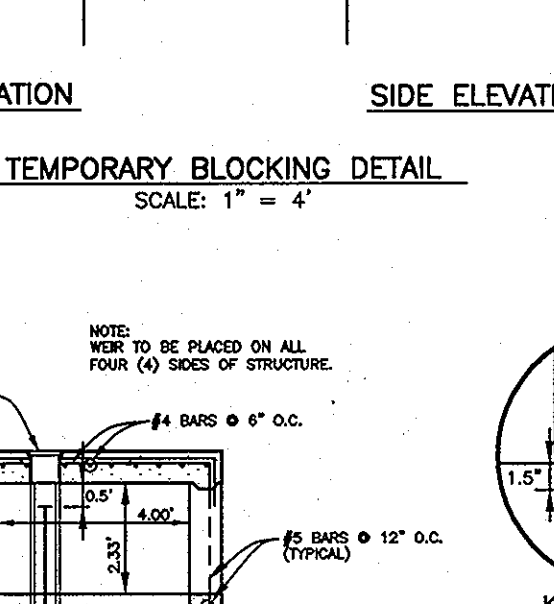
COLLAR SIZE: 110" X 96"  
ANTI-SEEP COLLAR  
NOT TO SCALE



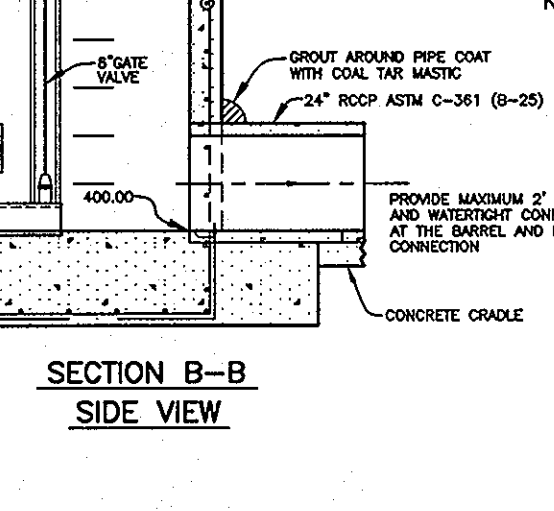
FRONT ELEVATION



SIDE ELEVATION



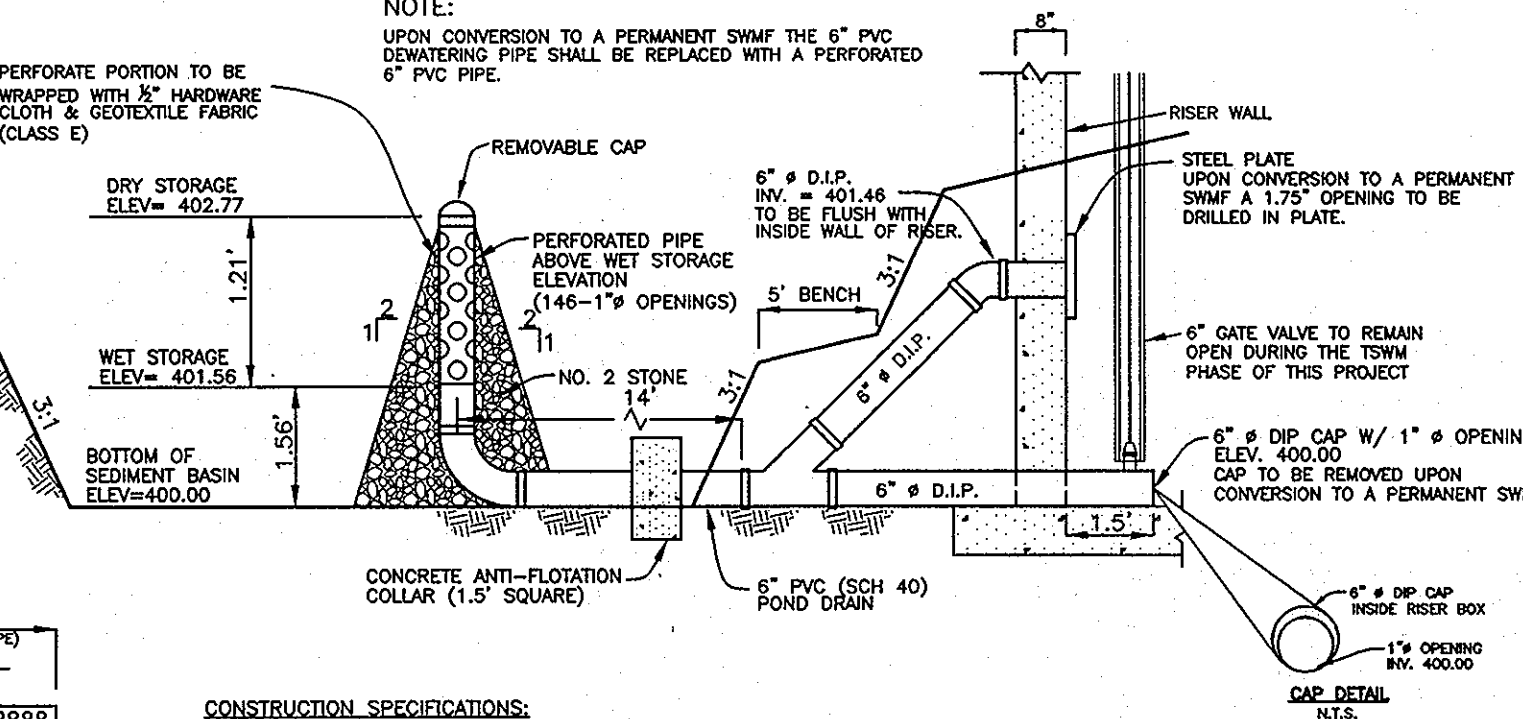
TEMPORARY BLOCKING DETAIL  
SCALE: 1"=4'



SECTION A-A FRONT VIEW

SECTION B-B SIDE VIEW

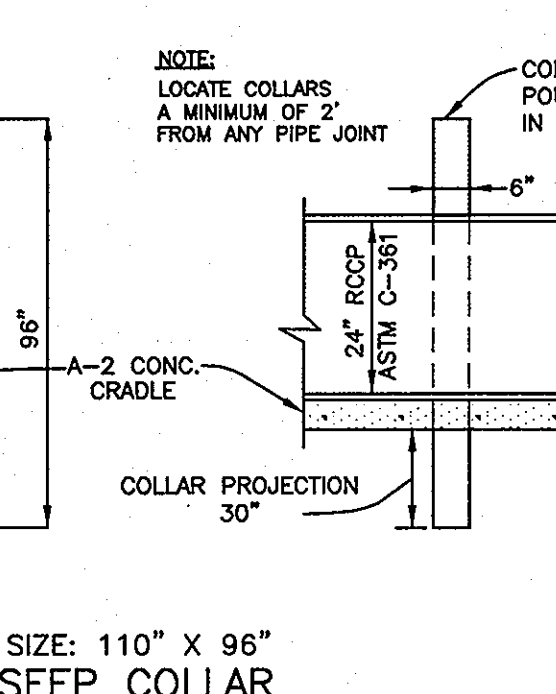
CONTROL STRUCTURE  
SCALE: 1"=4'



CONSTRUCTION SPECIFICATIONS:

- PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
- THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
- THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
- PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOTTATION AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDE OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE OR 1"x4" SQUARE OR 2" ROUND WOODEN POSTS SET 3" MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 1/2" GAUGE MINIMUM WIRE.

6" TEMPORARY SWM VERTICAL DRAW-DOWN DEVICE  
NOT TO SCALE



ANCHOR DETAIL FOR VALVE STEM  
NOT TO SCALE

**AS-BUILT CERTIFICATION**

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

ENGINEER: \_\_\_\_\_ PE NO. \_\_\_\_\_ DATE: \_\_\_\_\_

DEVELOPER: **SECURITY DEVELOPMENT LLC** DATE: **5/25/11**

BY THE ENGINEER: **John R. Blitzer** DATE: **5/23/2011**

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: DEPARTMENT OF PUBLIC WORKS  
**William R. Marshall** DATE: **6/27/2011**  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
**Keith Seidenman** DATE: **7/6/11**  
CHIEF, DIVISION OF LAND DEVELOPMENT

**John R. Blitzer** DATE: **7/1/11**  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO.	DATE	REVISION

**BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS**  
8460 BALTIMORE NATIONAL PIKE SUITE 418 & ELLICOTT CITY, MARYLAND 21043  
(P) 410-465-6105 (F) 410-465-6644  
60 THOMAS JOHNSON DRIVE A FREDERICK, MARYLAND 21702  
(P) 301-371-3905 (F) 301-371-3505  
WWW.BE-CADLENGINEERING.COM

**CASCADE OVERLOOK**  
SECTION III  
LOTS 1 THRU 14 AND  
OPEN SPACE LOTS 15 THRU 17  
TAX MAP: 31 GRID: 10 PARCEL: p/o 260  
ZONED: R-ED  
ELECTION DISTRICT NO. 1  
HOWARD COUNTY, MARYLAND

**STORMWATER MANAGEMENT DETAILS**

OWNER: SECURITY DEVELOPMENT LLC  
P.O. BOX 417  
ELLICOTT CITY, MARYLAND 21041  
410-465-4244

DEVELOPER: SECURITY DEVELOPMENT LLC  
P.O. BOX 417  
ELLICOTT CITY, MARYLAND 21041  
410-465-4244

DATE: MAY, 2011 BEI PROJECT NO: 1676  
SCALE: AS SHOWN SHEET 9 OF 11



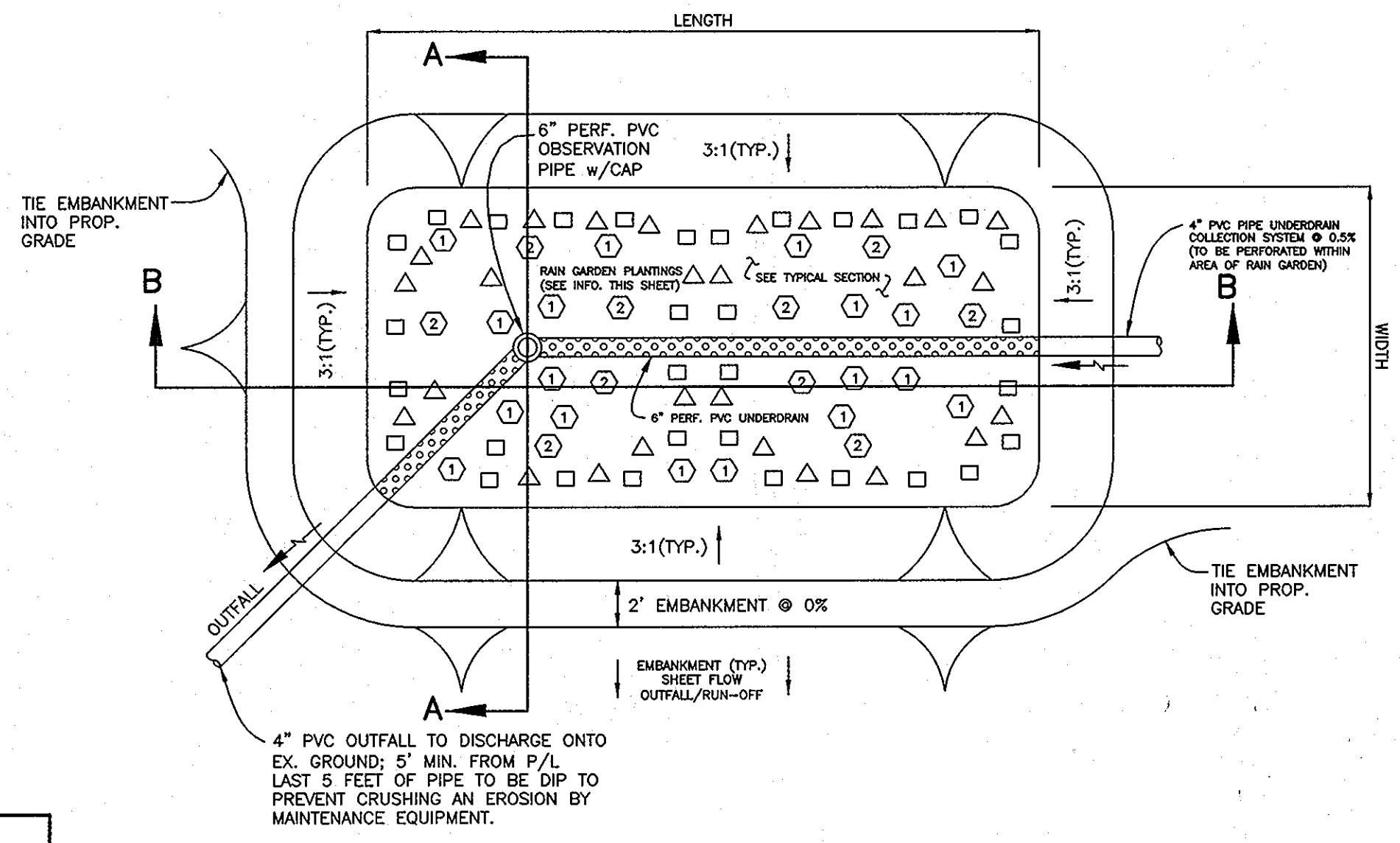
MATERIALS AND SPECIFICATIONS FOR RAIN GARDEN			
MATERIAL	SPECIFICATION	SIZE	NOTES:
PLANTINGS	SEE APPENDIX A: TABLE A.4	N/A	PLANTINGS ARE SITE SPECIFIC
PLANTING SOIL	SANDY 30-50% SILT: 30-55% CLAY: 0-25%	N/A	USDA SOIL TYPES: LOAMY SAND, SANDY LOAM OR LOAM (2.5' TO 4.0' DEEP)
MULCH	SHREDED HARDWOOD	N/A	AGED 6 MONTHS, MINIMUM
GEOTEXTILE (CLASS "C")	APPARENT OPENING SIZE: (ASTM D-4751) GRAB TENSILE STRENGTH: (ASTM D-4832) PUNCTURE RESISTANCE: (ASTM D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY

**RAIN GARDEN - PLANTING DATA**

- PLANTINGS WITHIN THE PONDING AREA OF THE RAIN GARDEN ARE TO BE OF A MEDIUM TO HIGH WATER TOLERANCE  
SUGGESTED SPECIES:  
CREEPING BUGLEWEED (AJUGA REPTANS)  
COMMON PERIWINKLE (VINCA MINOR)  
LILY-TURF (LIRIOPE, SP.)
- PLANTINGS ALONG THE PERIMETER (BERM) AREA OF THE RAIN GARDEN ARE TO BE OF A LOW TO MEDIUM WATER TOLERANCE  
SUGGESTED SPECIES:(PERENNIALS/ANNUALS)  
IRIS (IRIS VERSICOLOR)  
DAVILY (HEMEROCALLIS, SP.)  
WHITE GLORY (ASTILE, SP.)
- AVOID PLANTINGS WITH EXCESSIVE ROOT MASS IN POND AREA OF THE RAIN GARDEN NEAR O.B. PIPE AND UNDERDRAIN.

**RAIN GARDEN - PLANTING SCHEDULE**

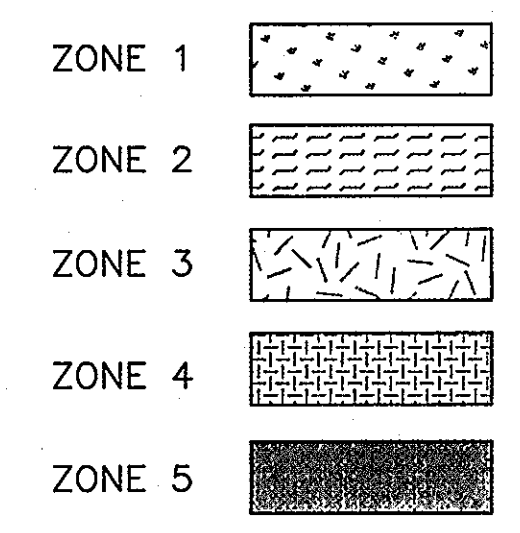
1	Lobelia cardinalis	70
2	Iris pseudacorus	44
3	Andropogon virginicus	44
4	Miscanthus sinensis	17



**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED RAIN GARDENS**

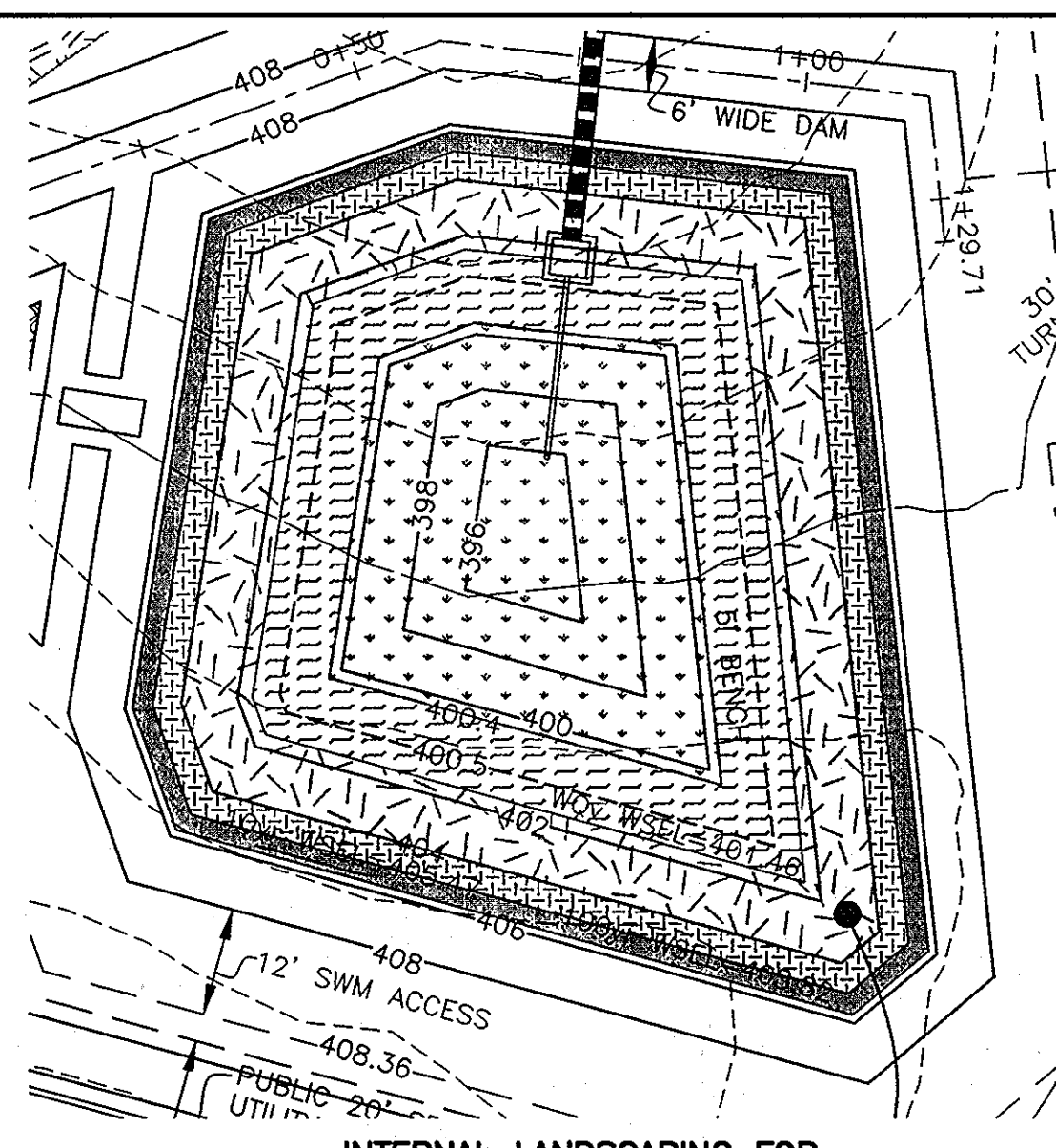
- ANNUAL MAINTENANCE OF PLANT MATERIAL AND MULCH LAYER IS REQUIRED. MAINTENANCE OF MULCH IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH-OUT. ANY REPLACEMENT OF MULCH SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE & INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL & PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN THE SPRING AND FALL. THIS INSPECTION WILL INCLUDE: REMOVAL OF DEAD & DISEASED VEGETATION CONSIDERED BEYOND TREATMENT; TREATMENT OF ALL DISEASED TREES & SHRUBS; AND REPLACEMENT OF ALL DEFICIENT STAMES AND WIPES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE THE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS-NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

**PLANTING LEGEND**



INTERNAL PLANTING SCHEDULE FOR P-5 POCKET POND				
ZONE	AREA (SF)	ELEVATION RANGE	PLANT MIX	QUANTITIES
1	1,821	396.00 - 400.40	100% WATER LILLY 50% BROAD WATER WEED	180 85
2	1,536	400.40 - 401.46	25% BUCK POTATO 25% ARROW ARUM	43 43
3	1,894	401.46 - 404.00	50% CUTGRASS, RICE 50% SWITCHGRASS	105 105
4	873	404.00 - 405.01 (CP)	50% LOVEGRASS-MEADOW 25% VIOLETS, COMMON BLUE	49 24
5	662	405.01 - 405.82 (CP)	25% CONEFLOWER, CUT-LEAF 75% WITCHGRASS, NEEDLE-LEAF	24 55
6	0	N/A	25% CONEFLOWER, SWEET	18

- NOTES:**
- LOOSEN SOIL IN PLANTING ZONES TO A DEPTH OF THREE TO FIVE INCHES BEFORE PLANTING.
  - PLANTING HOLES TO HAVE A DIAMETER 6" GREATER THAN THE ROOT BALL BEING PLANTED IN THEM.
  - NO WOODY VEGETATION IS PERMITTED WITHIN 15' OF THE TOE OF SLOPE OR 25' OF THE SPILLWAY.



**AS-BUILT CERTIFICATION**

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

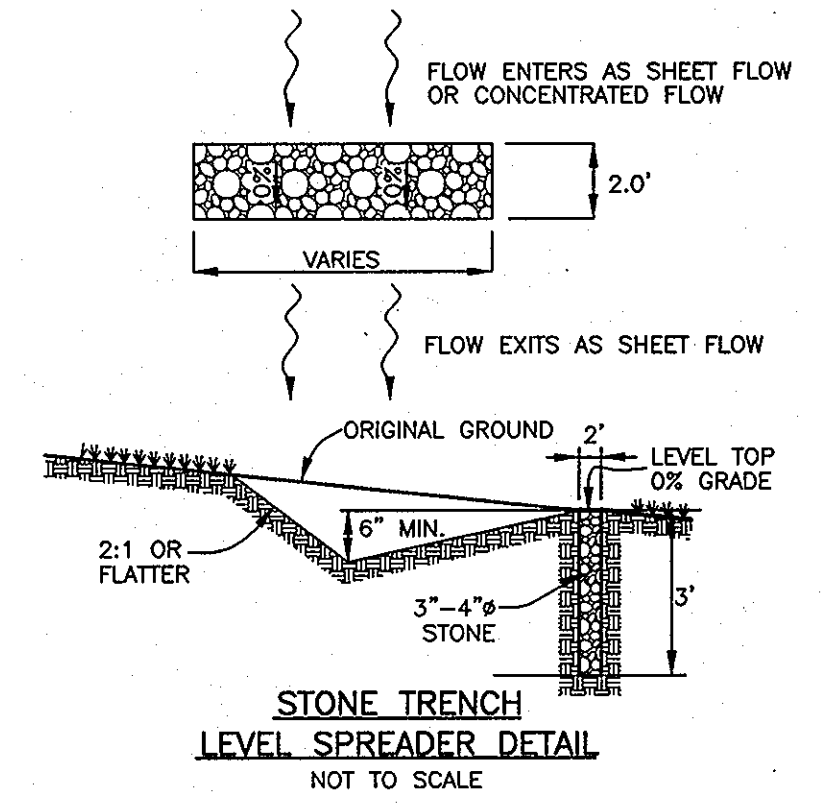
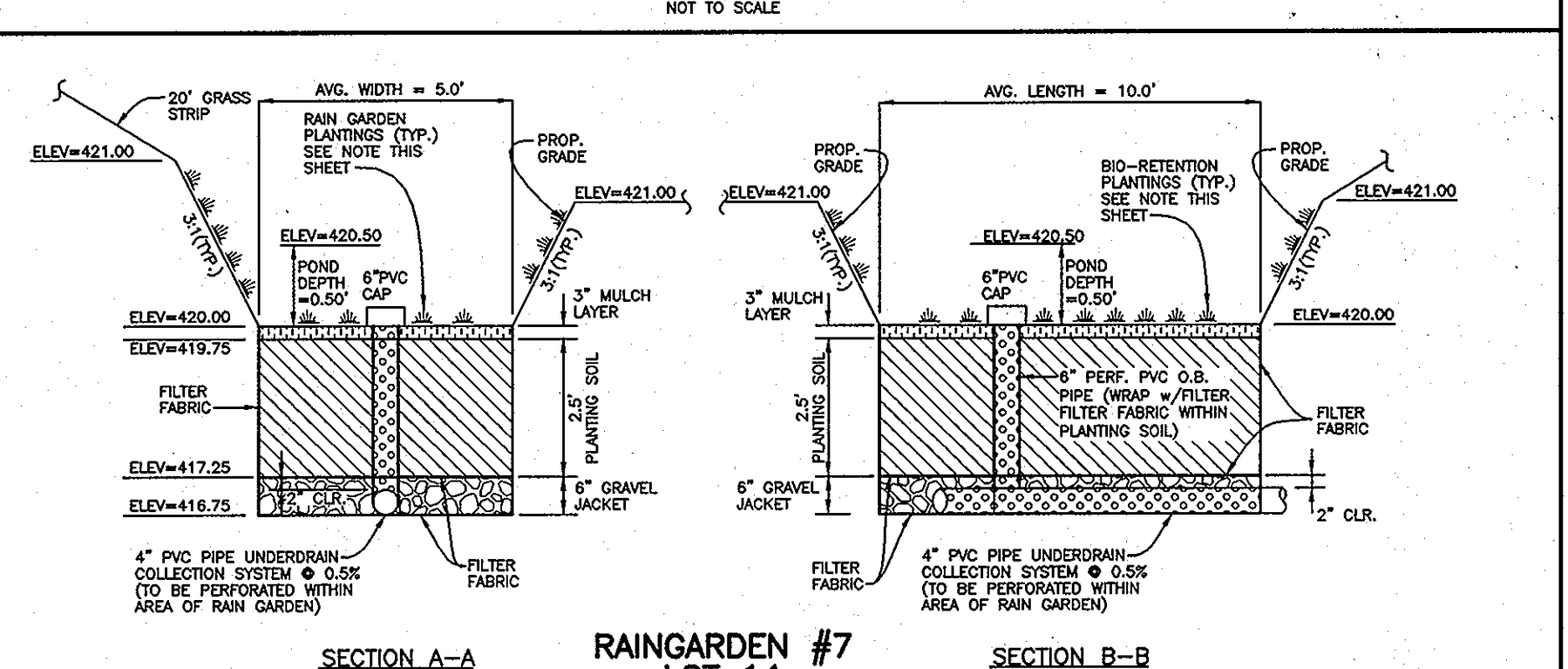
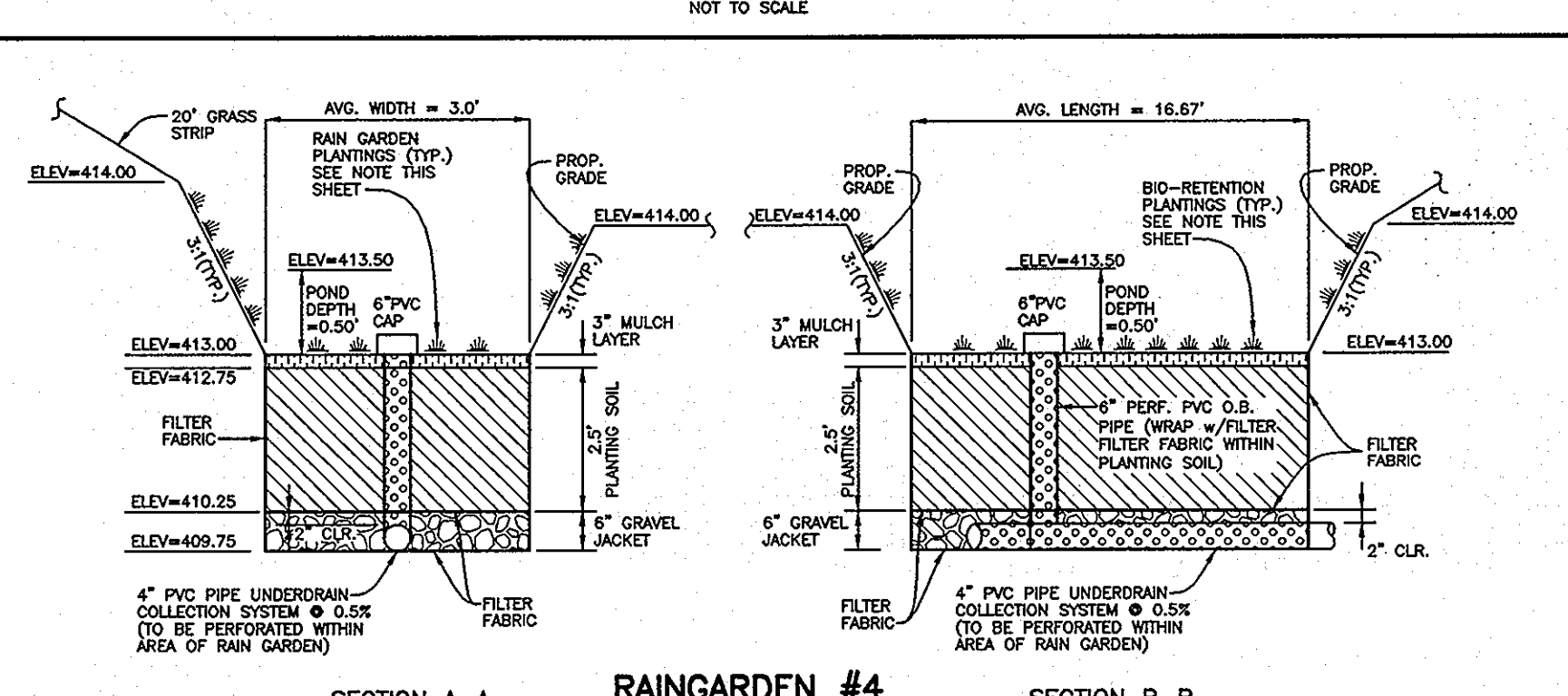
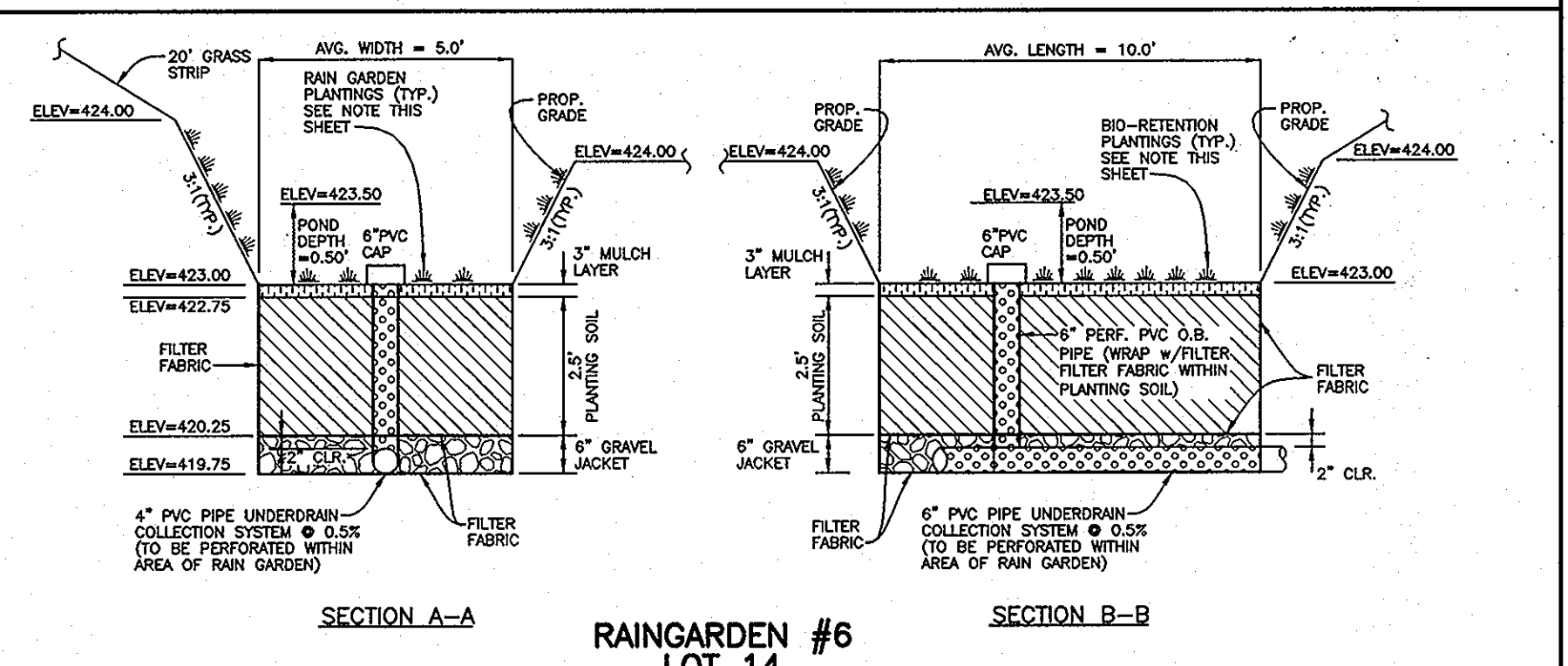
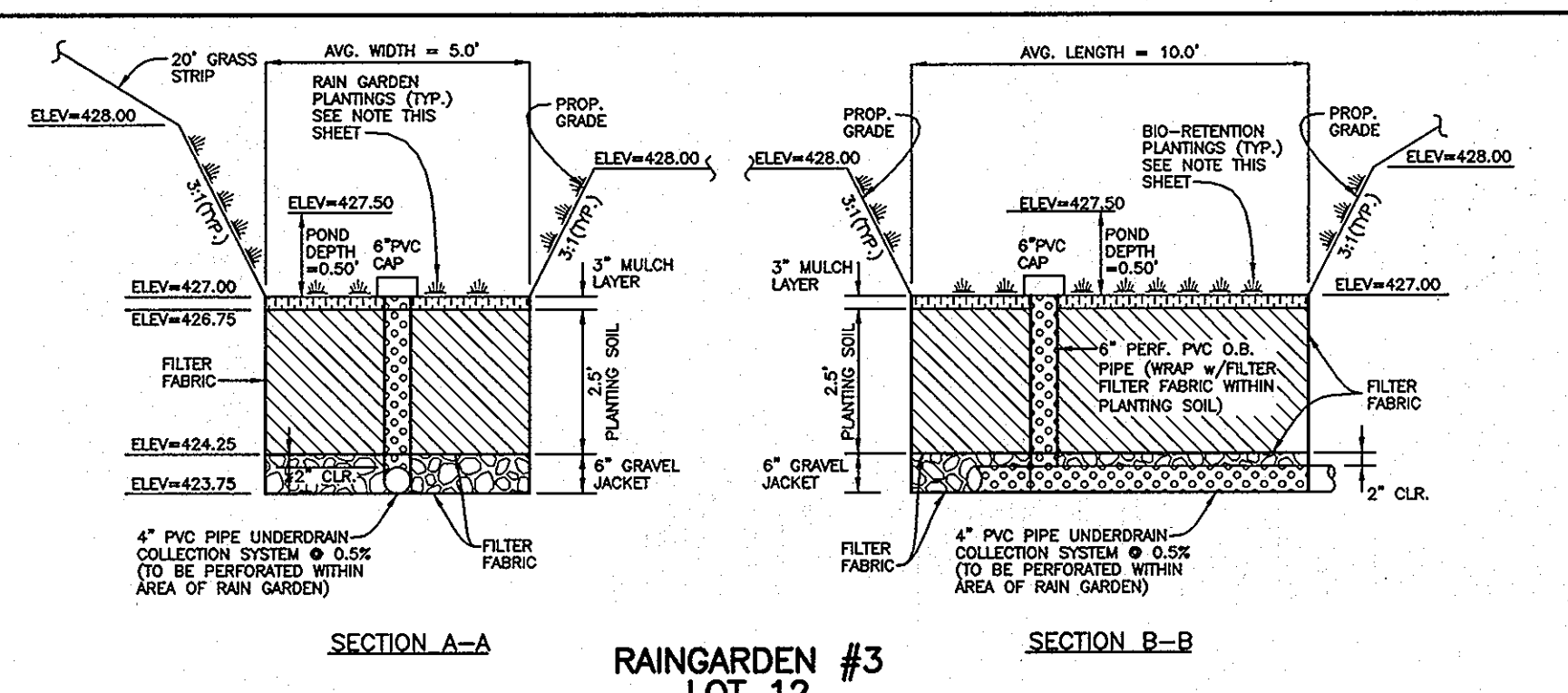
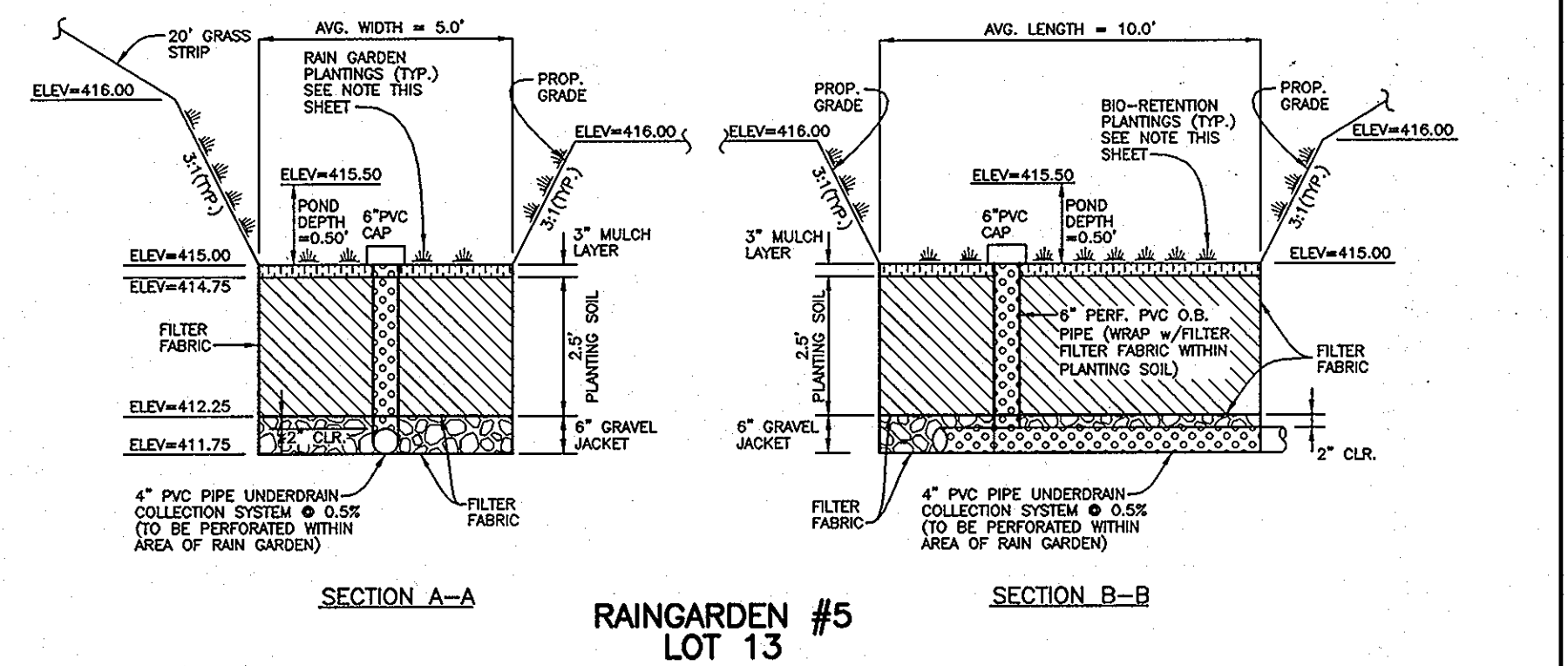
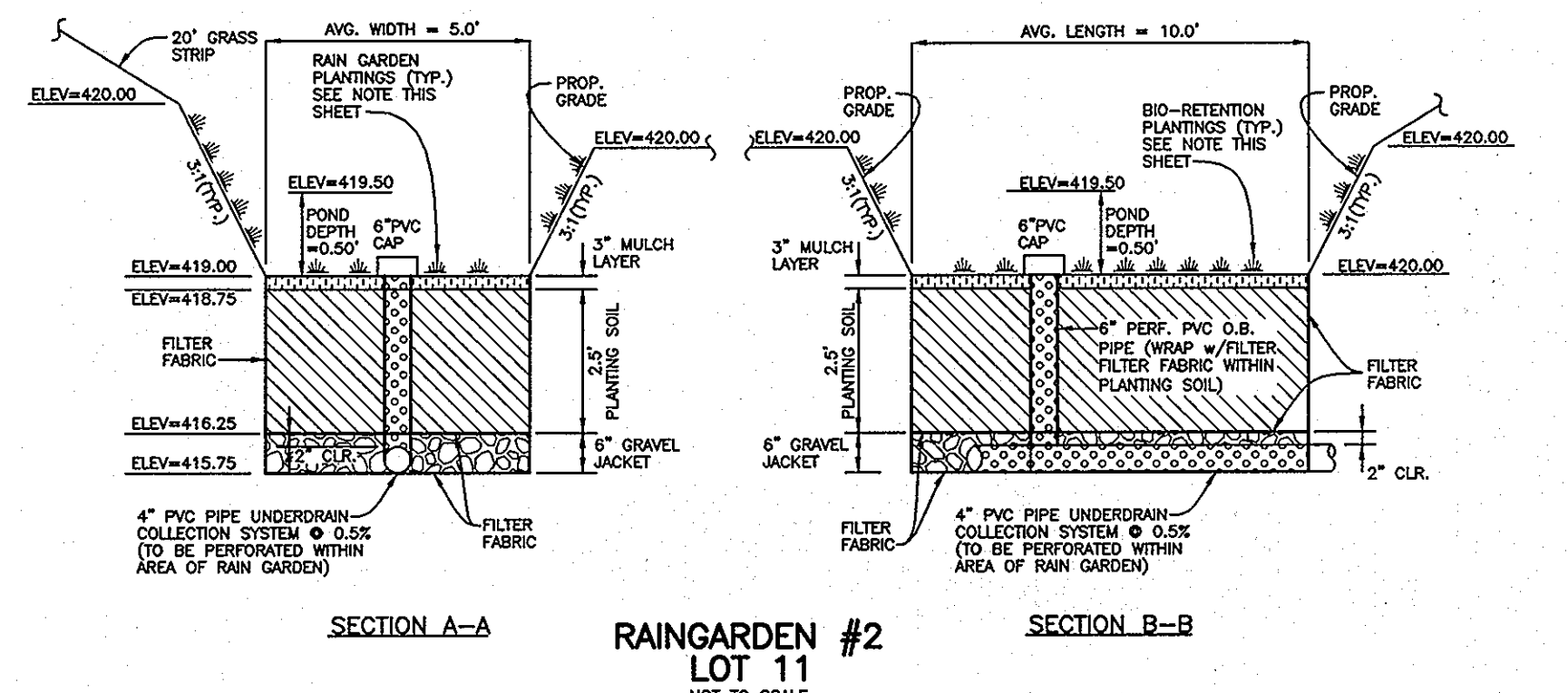
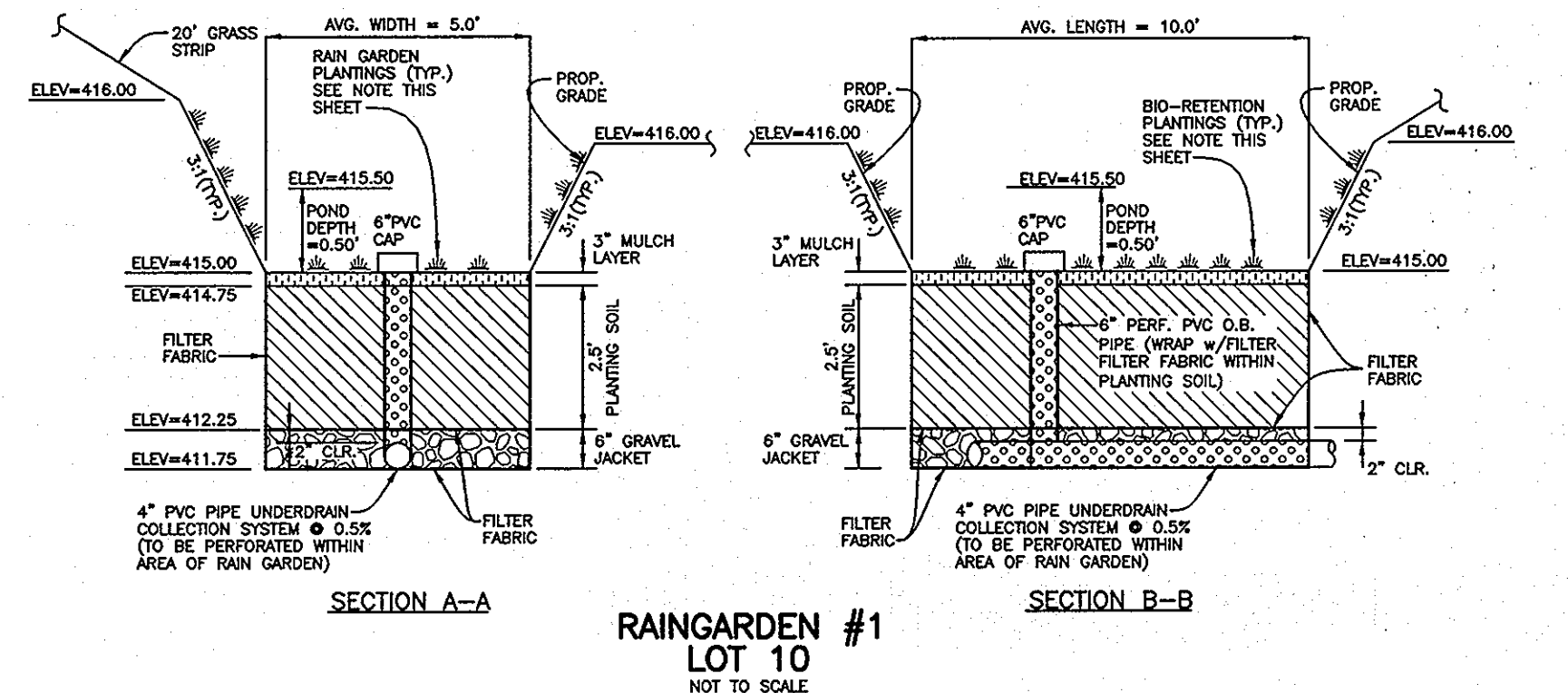
ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_

DEVELOPER: *STEVEN BREEDAN* DATE: *5/25/10*

BY THE ENGINEER: *[Signature]* DATE: *5/23/2010*

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*[Signature]* DATE: *6/2/11*

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* DATE: *7/1/11*



NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
8450 BALTIMORE NATIONAL PIKE A SUITE 418 ELLICOTT CITY, MARYLAND 21043  
(P) 410-465-6105 (F) 410-465-6644  
60 THOMAS JOHNSON DRIVE A FREDERICK, MARYLAND 21702  
(P) 301-371-3505 (F) 301-371-3506  
WWW.BEI-CVLENGINEERING.COM

**CASCADE OVERLOOK SECTION III**  
LOTS 1 thru 14 AND OPEN SPACE LOTS 15 thru 17  
TAX MAP: 31 GRID: 10 PARCEL: p/o 260  
ZONED: R-ED ELECTION DISTRICT NO. 1 HOWARD COUNTY, MARYLAND

**STORMWATER MANAGEMENT DETAILS**

OWNER: SECURITY DEVELOPMENT LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244

DEVELOPER: SECURITY DEVELOPMENT LLC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 410-465-4244

DESIGN: DBT DRAWN: DBT

DATE: MAY, 2011 BEI PROJECT NO: 1676  
SCALE: AS SHOWN SHEET 10 OF 11

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. 28559, Expiration Date: 7-22-2011.

*[Signature]* 5/23/2011



