

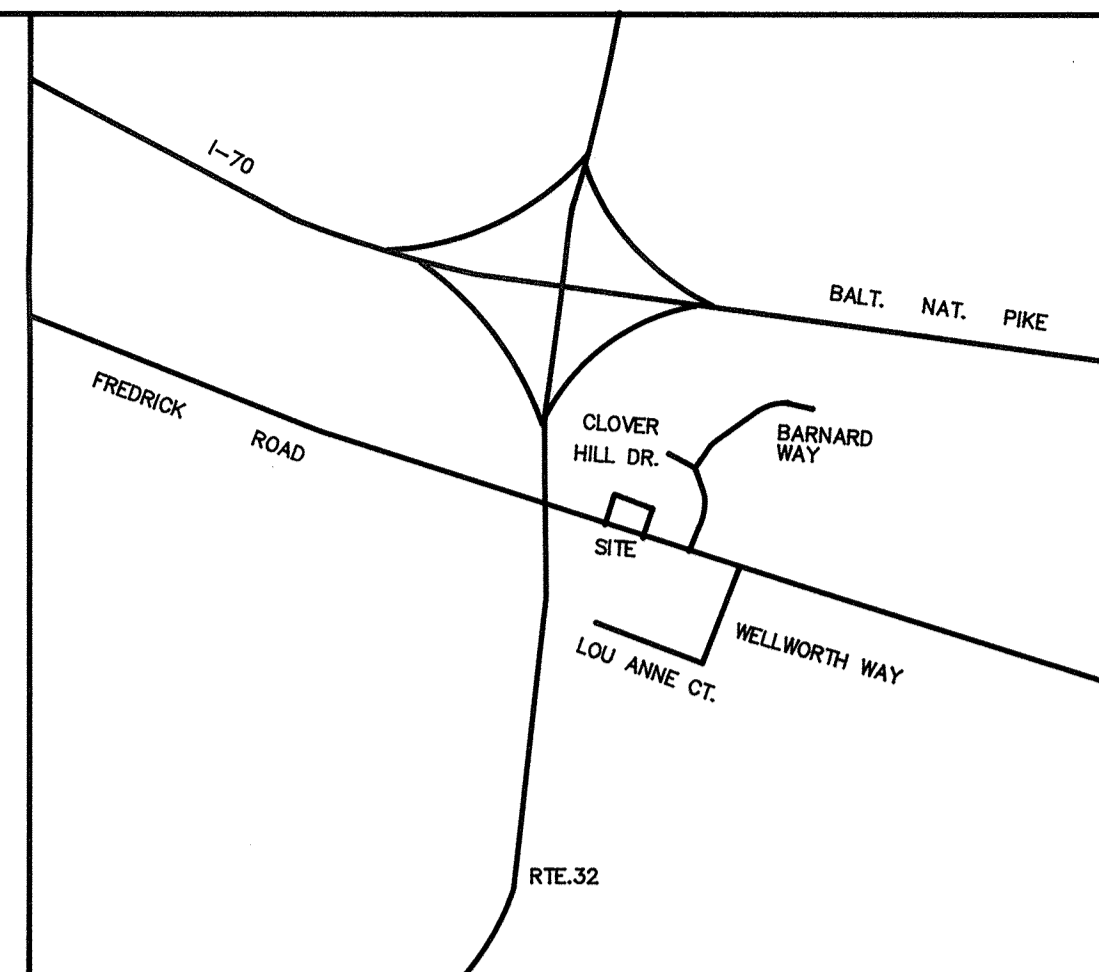
ELEVATION A-A'

Horizontal Scale: 1" = 30'
Vertical Scale: 1" = 10'

FRIENDSHIP MANOR SUBSTATION SITE DEVELOPMENT PLANS

SHEET INDEX

1. Cover Sheet
2. Layout and Grading Plan
3. Sediment and Erosion Control Plan
4. Sediment and Erosion Control Detail Sheet
5. Frontage Improvements Plan and Profile
6. Stormwater Management Plan
7. Stormwater Management Details
8. Landscape Plan
9. CONSTRUCTION AND LANDSCAPE DETAILS
10. CONSTRUCTION DETAILS AND NOTES



LOCATION MAP SCALE 1"=2000'

HOWARD COUNTY BENCHMARK (NAD83)

15FA N595906.9341 E1325627.6500 ELEV.486.869 (NAVD 29)
15CA N598862.6254 E1325913.7240 N/A

VICINITY MAP

SITE ANALYSIS DATA CHART

- a. Total Project Area: 2.72 Acres; 118,483 SF
- b. Area of Plan Submission: 2.72 Acres
- c. Limit of Disturbed Area: 1.91 Ac. +/-
- d. Present Zoning: RR-DEO
- e. Proposed Use for Site and Structures: Electrical Substation
- f. Floor space on each level of buildings per use: N/A
- g. Total number of units allowed for project as shown on final plan: N/A
- h. Total number of units proposed on submission: N/A
- i. Maximum number of employees, tenants on site per use and maximum number of parking spaces: see SPEX BA93-25E. Also see parking label sheet 2 of 8.
- j. Open Space on site: none (N/A)
- k. Area of recreational open space required by Subdivision and Land Development Regulations: none
- l. Building coverage of site: 2290+/- s.f.
- m. Applicable DPZ file references: BA93-25E as extended, WP 97-98, and GP 97-132.
- n. THE PROPOSED SUBSTATION TELECOM POLE HAS BEEN APPROVED SEPARATELY THROUGH THE CONDITIONAL USE PROCESS WITH CASE BOA 18-034C D&O SIGNED ON MAY 29, 2019

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

John B. Roberts 8/14/97
HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE

REVIEWED AND APPROVED: HOWARD COUNTY HEALTH DEPARTMENT (AS APPLICABLE)

HEALTH OFFICER DATE

I 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 AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Monty D'Ambrosio 7/10/97
SIGNATURE OF DEVELOPER DATE

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

SIGNATURE OF LANDSCAPE ARCHITECT DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

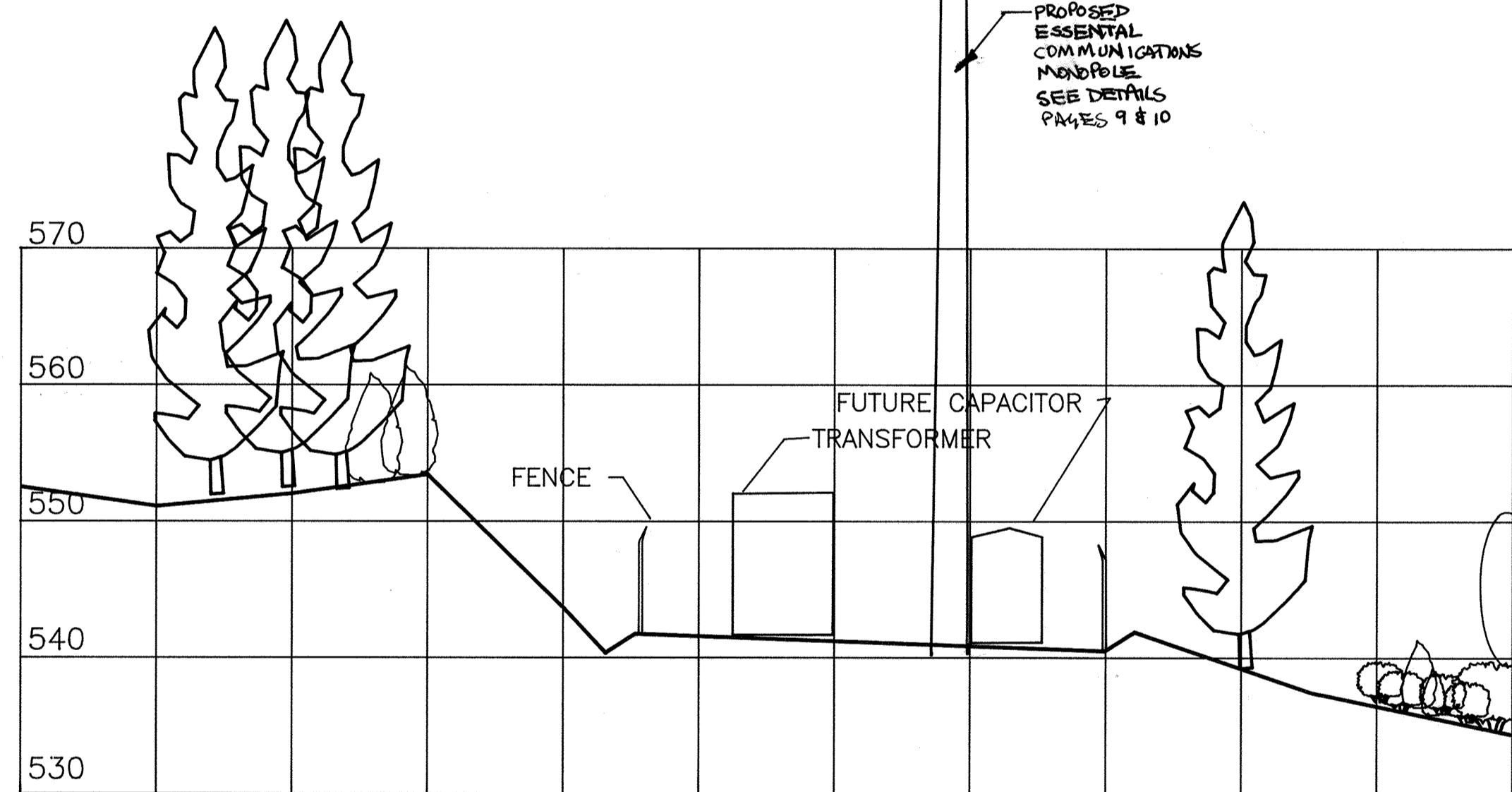
Charles K. Simmons 08/14/97
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chris Dummer 8/21/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cathy Hamilton 8/22/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark J. Zeyer 8/22/97
DIRECTOR DATE



SECTION A-A'

Horizontal Scale: 1" = 30'
Vertical Scale: 1" = 10'

GENERAL NOTES

1. The location of all utilities shown hereon is approximate only. The contractor shall verify the location and depth any existing utilities and shall notify the engineer of any discrepancies prior to beginning work.
2. This site is not proposed for service by public or private water or sewer.
3. This project is in conformance with all applicable Howard County standards.
4. All construction shall be in conformance with all Howard County and MSHA standards as applicable.
5. The contractor shall notify the Department of Public Works/ Bureau of Engineering at (410)313-1880 at least five (5) working days prior to beginning work.
6. The existing topography and boundary is derived from a field survey performed by DS Thaler and Associates dated January, 1997.
7. No clearing, grading, or construction is permitted within wetlands, stream buffers, or Forest Conservation areas.
8. The coordinates shown hereon are based on Howard County benchmark coordinates (NAD83).
9. There are no facilities proposed for public maintenance on site.
10. No title report has been furnished.
11. This site has been approved for Mass Grading under WP 97-98.
12. There is no FEMA designated 100-year floodplain on site. A floodplain study acceptable for approval accompanies this plan.
13. There are no known cemeteries on site.
14. The stormwater management facilities proposed will be wholly maintained in accordance with Howard County criteria by the owner/applicant.
15. There are no contiguous slopes of 25% or greater on site.
16. The road dedication and improvements illustrated have been submitted to MdSHA for approval.
17. Geotechnical studies and borings accompany this submittal.
18. A Forest Stand Delineation and Forest Conservation Plan does not accompany this submittal in accordance with 16.1202(2)(i) of Planning, Zoning and Land Development Regulations. A declaration of intent accompanies this submission.
19. WP 97-98 was approved for sediment and erosion control under 97- 132.
20. No known historic structures exist on-site.
21. There are no known contracts with/between Howard County and other agencies or representatives impacting this property at the time of this application.

THESE PLANS PREPARED FOR BGE IN COOPERATION WITH:

EXPLORATION RESEARCH, INC.
8318 FORREST STREET
HISTORIC ELLICOTT CITY
MARYLAND 21043
(410)750-1150

DS THALER & ASSOCIATES, INC.
7115 AMBASSADOR
BALTIMORE, MARYLAND 221244
(410)844-3647

Oras
7-2-97
REVISION #3 ONLY

ADDRESS CHART	
LOT/PARCEL #	STREET ADDRESS
30	12600 Frederick Road, West Friendship, Md. 21794

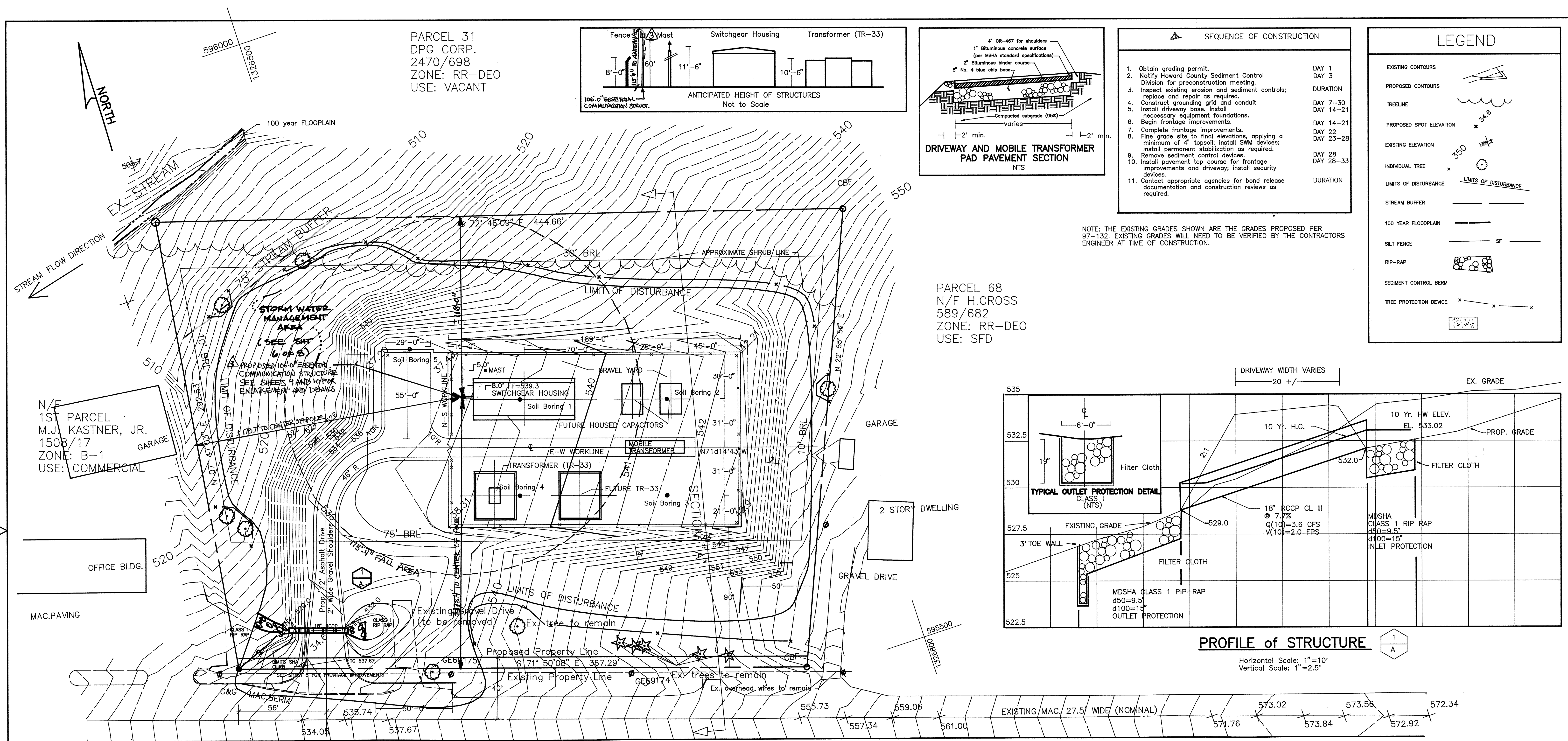
PERMIT INFORMATION CHART					
FRIENDSHIP MANOR SUBSTATION		SECTION AREA: N/A		LOT/PARCEL #: 30	
PLAT: 2470/698	Block 30	RR	TAX MAP 15	ELEC. DIST. No. 3	CENSUS TRACT 6030
WATER CODE: N/A			SEWER CODE: N/A		

ELECTION DISTRICT No. 3
TAX MAP 15, BLOCK 30
CENSUS TRACT NUMBER 6030
PROPOSAL: ELECTRICAL SUBSTATION
WATER CODE: N/A

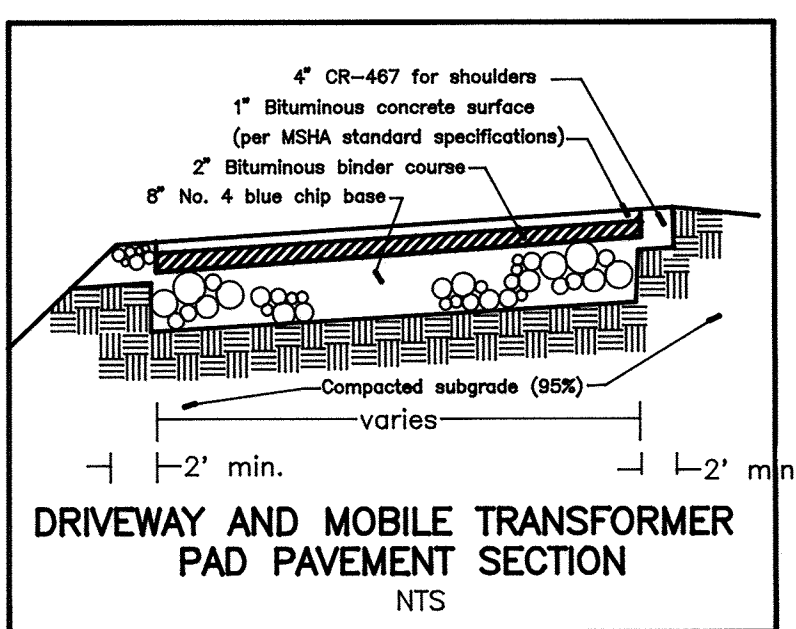
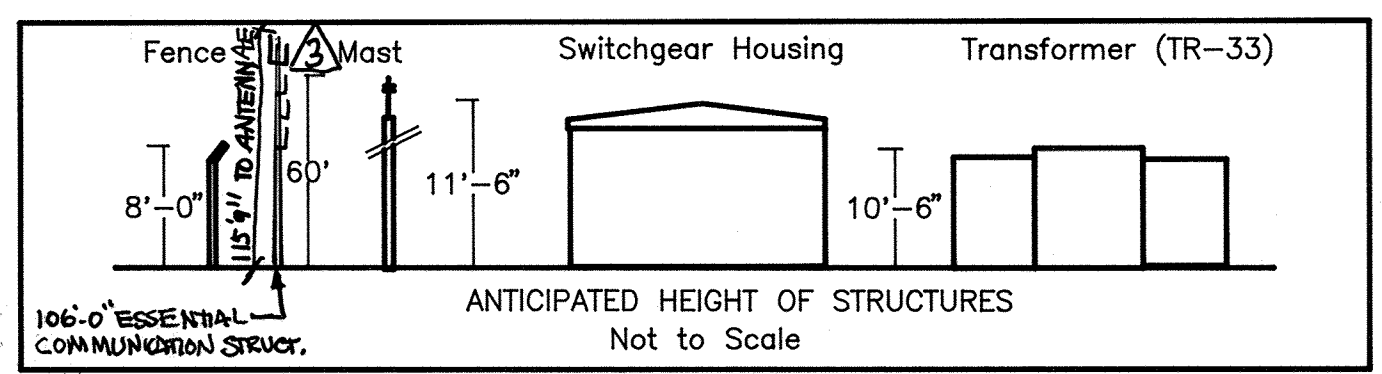
HOWARD COUNTY, MARYLAND
PARCEL 30
OWNER: BALTIMORE GAS AND ELECTRIC
SEWER CODE: N/A

REV.	DATE	JOB ORDER & ESTIMATE NO.	DESCRIPTION	APPROVED	ENGINEERING	BGE-FRIENDSHIP MANOR SUBSTATION COVER SHEET
1	7-97		per county comments		CIVIL _____ ELEC. _____ PROJ. ENR. _____ PRIN. ENR. _____ SUPV. ENR. _____	
2	10/18/99		AS-BUILT CONDITIONS OF INFILTRATION TRENCH NOTED			Developer Contact: Monty D'Ambrosio
3	7-2-2019		REV. SDP PLAN TO ADD TELE COM STRUCTURE AND NEW MONOPOLE DETAIL SHEETS 9 AND 10.			BGE SYSTEM ENGINEERING
DESIGNED _____ CHECKED _____ DRAWN _____ CHECKED _____ APPROVED _____ DATE _____					DESIGN GROUP	SCALE AS SHOWN DWG NO. 1 of 10 REV





PARCEL 31
 DPG CORP.
 2470/698
 ZONE: RR-DEO
 USE: VACANT



SEQUENCE OF CONSTRUCTION

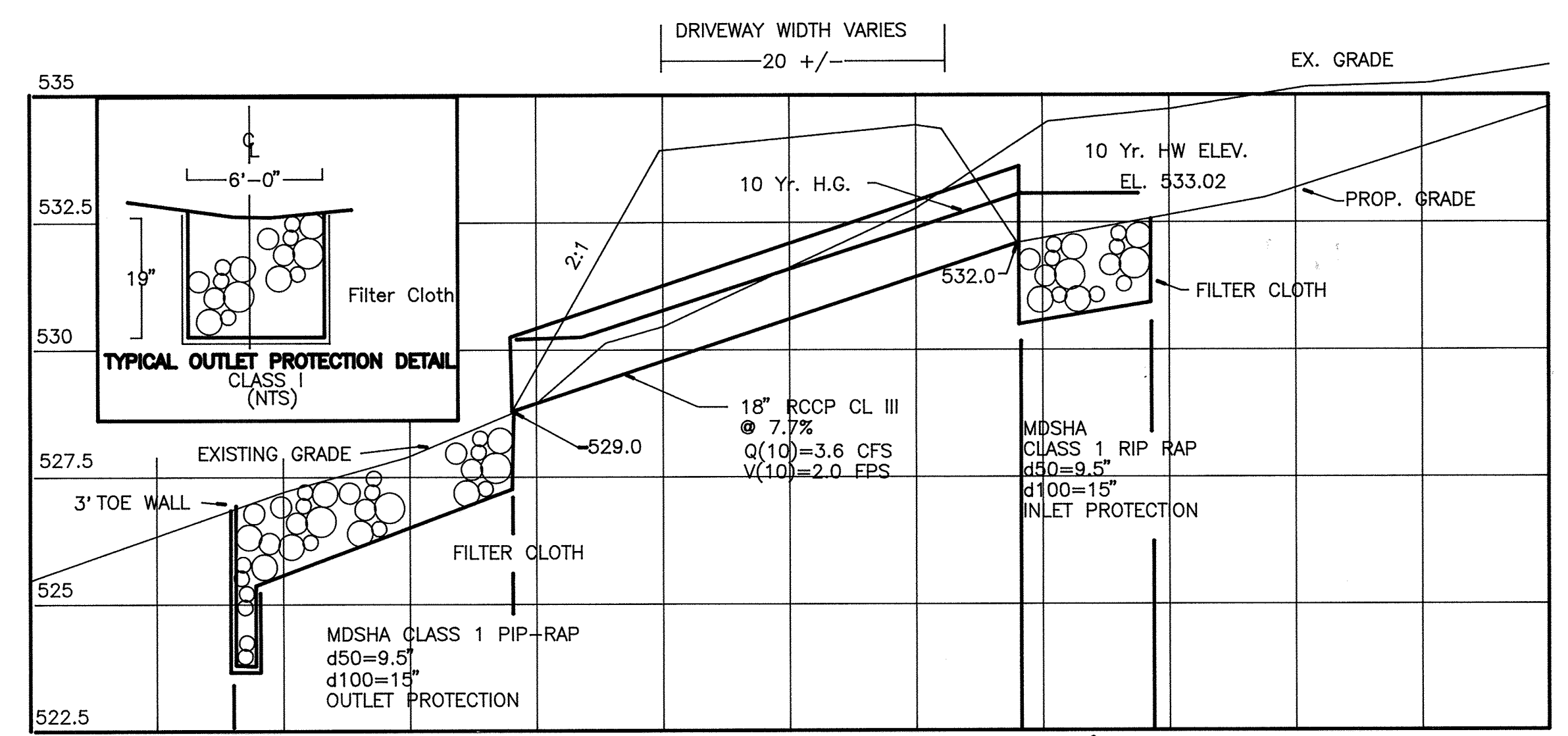
1. Obtain grading permit.	DAY 1
2. Notify Howard County Sediment Control Division for preconstruction meeting.	DAY 3
3. Inspect existing erosion and sediment controls; replace and repair as required.	DURATION
4. Construct grounding grid and conduit.	DAY 7-30
5. Install driveway base. Install necessary equipment foundations.	DAY 14-21
6. Begin frontage improvements.	DAY 22
7. Complete frontage improvements.	DAY 14-21
8. Fine grade site to final elevations, applying a minimum of 4" topsoil; install SWM devices; install permanent stabilization as required.	DAY 23-28
9. Remove sediment control devices.	DAY 28
10. Install pavement top course for frontage improvements and driveway; install security devices.	DAY 28-33
11. Contact appropriate agencies for bond release documentation and construction reviews as required.	DURATION

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- TREELINE
- PROPOSED SPOT ELEVATION
- EXISTING ELEVATION
- INDIVIDUAL TREE
- LIMITS OF DISTURBANCE
- STREAM BUFFER
- 100 YEAR FLOODPLAIN
- SILT FENCE
- RIP-RAP
- SEDIMENT CONTROL BERM
- TREE PROTECTION DEVICE

NOTE: THE EXISTING GRADES SHOWN ARE THE GRADES PROPOSED PER 97-132. EXISTING GRADES WILL NEED TO BE VERIFIED BY THE CONTRACTORS ENGINEER AT TIME OF CONSTRUCTION.

PARCEL 68
 N/F H.CROSS
 589/682
 ZONE: RR-DEO
 USE: SFD



PROFILE of STRUCTURE

Horizontal Scale: 1"=10'
 Vertical Scale: 1"=2.5'

FREDERICK ROAD STATE ROUTE 144
 66' EXISTING R/W; 80' PROPOSED R/W
 Minor Arterial/ Scenic Road

ELEVATION "A"

I 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 AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *Monty D'Amrosio* DATE: 7/10/97

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Signature: *Cheryl K. Johnson* DATE: 08/14/97

REVIEWED AND APPROVED: HOWARD COUNTY HEALTH DEPARTMENT (AS APPLICABLE)

Signature: _____ DATE: _____

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

Signature: _____ DATE: _____

APPROVED: DEPARTMENT OF PLANNING AND ZONING

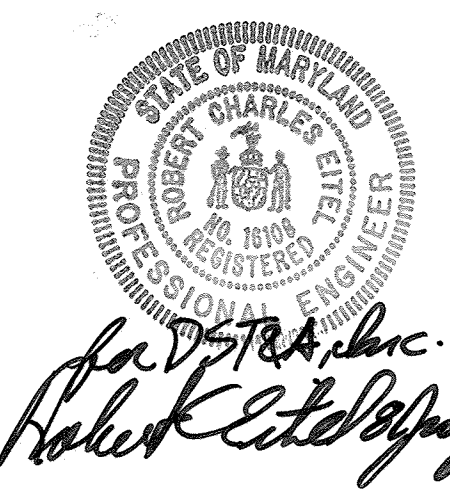
Signature: *John R. Robertson* DATE: 8/21/97

Signature: *Cindy Hamstra* DATE: 8/22/97

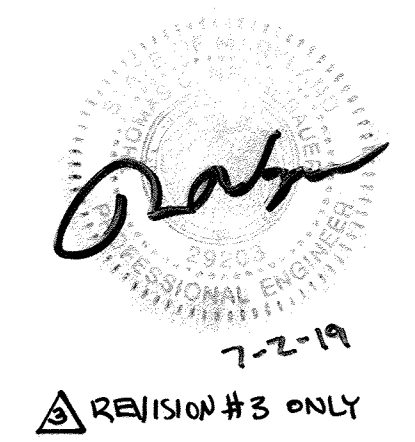
Signature: *Paul J. D'Amrosio* DATE: 8/22/97

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

Signature: *John R. Robertson* DATE: 8/14/97



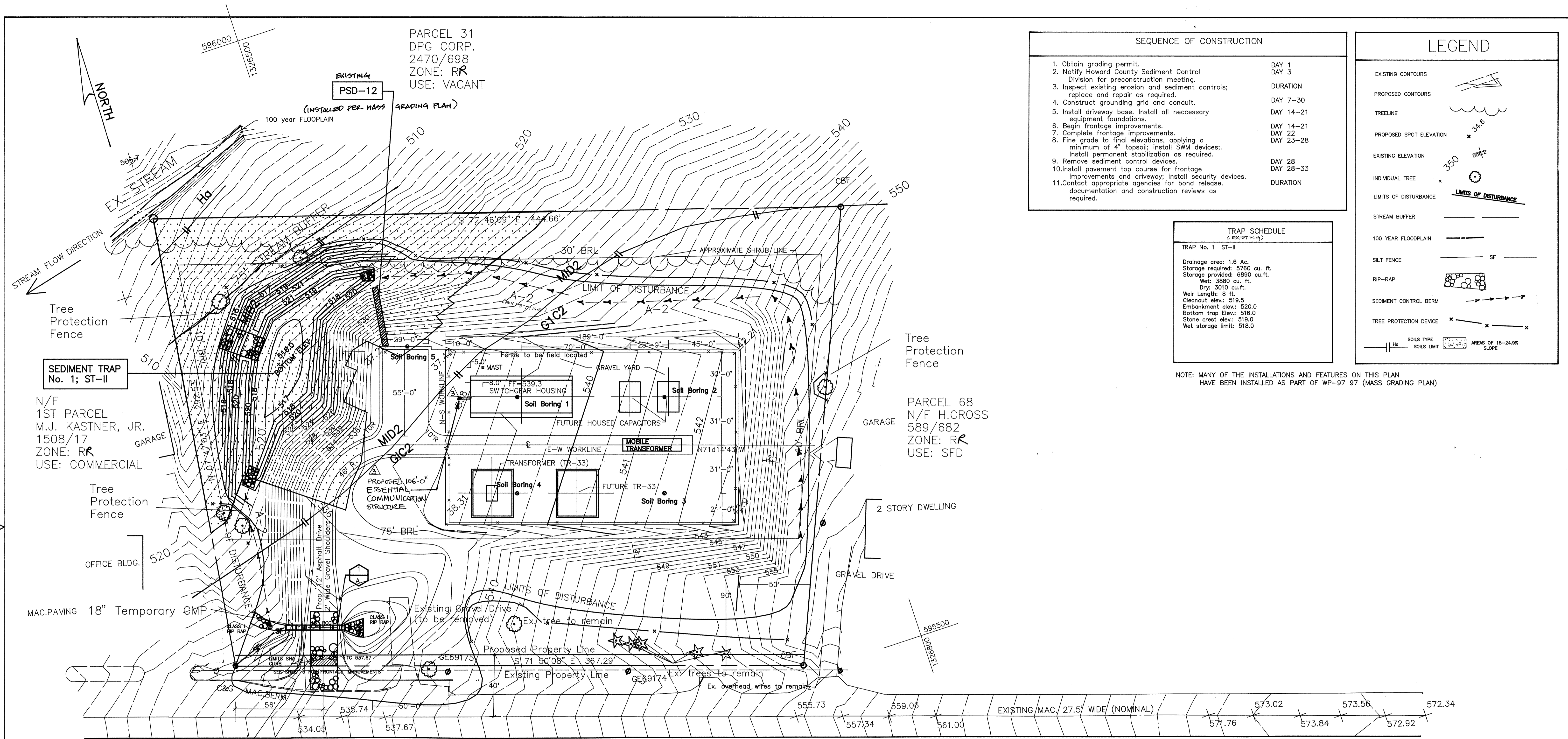
THESE PLANS PREPARED BY BGE IN COOPERATION WITH:
 EXPLORATION RESEARCH, INC.
 6316 FOREST STREET
 HISTORIC ELIJAH CITY
 MARYLAND 21043



ELECTION DISTRICT No. 3
 TAX MAP 15, Block 30
 CENSUS No.:
 PROPOSAL: ELECTRICAL SUBSTATION
 WATER CODE: N/A

HOWARD COUNTY, MARYLAND
 PARCEL 30
 LIBER 2470, FOLIO 698
 OWNER: BALTIMORE GAS AND ELECTRIC
 SEWER CODE: N/A

REV.	DATE	JOB ORDER & ESTIMATE NO.	DESCRIPTION	APPROVED	ENGINEERING	FRIENDSHIP MANOR SUBSTATION LAYOUT AND GRADING PLAN
1	7-3-97		Per county comments		CIVIL: _____ ELEC: _____	Substation Engineering Unit - SE & CD 7152 Windsor Boulevard Baltimore, Maryland 21233-2779 (410) 234-5000
2	7-2-2019		REV. SDP PLAN TO ADD TELE COM STRUCTURE AND NEW MONOPOLE DETAIL SHEETS 9 AND 10.		PROJ. ENG. _____ PROJ. MGR. _____ PRIN. ENG. _____ SUPV. ENG. _____	Developer Contact: Mr. Monty D'Amrosio



SEQUENCE OF CONSTRUCTION

1. Obtain grading permit.	DAY 1
2. Notify Howard County Sediment Control Division for preconstruction meeting.	DAY 3
3. Inspect existing erosion and sediment controls; replace and repair as required.	DURATION
4. Construct grounding grid and conduit.	DAY 7-30
5. Install driveway base. Install all necessary equipment foundations.	DAY 14-21
6. Begin frontage improvements.	DAY 14-21
7. Complete frontage improvements.	DAY 22
8. Fine grade to final elevations, applying a minimum of 4" topsoil; install SWM devices; Install permanent stabilization as required.	DAY 23-28
9. Remove sediment control devices.	DAY 28
10. Install pavement top course for frontage improvements and driveway; install security devices.	DAY 28-33
11. Contact appropriate agencies for bond release, documentation and construction reviews as required.	DURATION

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- TREELINE
- PROPOSED SPOT ELEVATION
- EXISTING ELEVATION
- INDIVIDUAL TREE
- LIMITS OF DISTURBANCE
- STREAM BUFFER
- 100 YEAR FLOODPLAIN
- SILT FENCE
- RIP-RAP
- SEDIMENT CONTROL BERM
- TREE PROTECTION DEVICE
- SOILS TYPE
- SOILS LIMIT
- AREAS OF 15-24.9% SLOPE

TRAP SCHEDULE
(EXCEPTING)

TRAP No. 1 ST-II

Drainage area: 1.6 Ac.
Storage provided: 5760 cu. ft.
Storage required: 6880 cu.ft.
Wet: 3880 cu.ft.
Dry: 3010 cu.ft.
Weir Length: 8 ft.
Cleanout elev.: 519.5
Embankment elev.: 520.0
Bottom trap elev.: 516.0
Stone crest elev.: 519.0
Wet storage limit: 518.0

NOTE: MANY OF THE INSTALLATIONS AND FEATURES ON THIS PLAN HAVE BEEN INSTALLED AS PART OF WP-97 97 (MASS GRADING PLAN)

N/F
1ST PARCEL
M.J. KASTNER, JR.
1508/17
ZONE: RR
USE: COMMERCIAL

PARCEL 68
N/F H.CROSS
589/682
ZONE: RR
USE: SFD

FREDERICK ROAD STATE ROUTE 144
66' EXISTING R/W; 80' PROPOSED R/W
Minor Arterial/ Scenic Road

I 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 AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Monty D'Amrosio 7/10/97
SIGNATURE OF DEVELOPER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Cheryl K. Simmons 08/14/97
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

REVIEWED AND APPROVED: HOWARD COUNTY HEALTH DEPARTMENT (AS APPLICABLE)

HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hanulita 8/21/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Mark J. Layle 8/22/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark J. Layle 8/22/97
DIRECTOR DATE

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

John R. Robertson 8/14/97
HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE

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

[Signature] 7/97
SIGNATURE OF LANDSCAPE ARCHITECT DATE



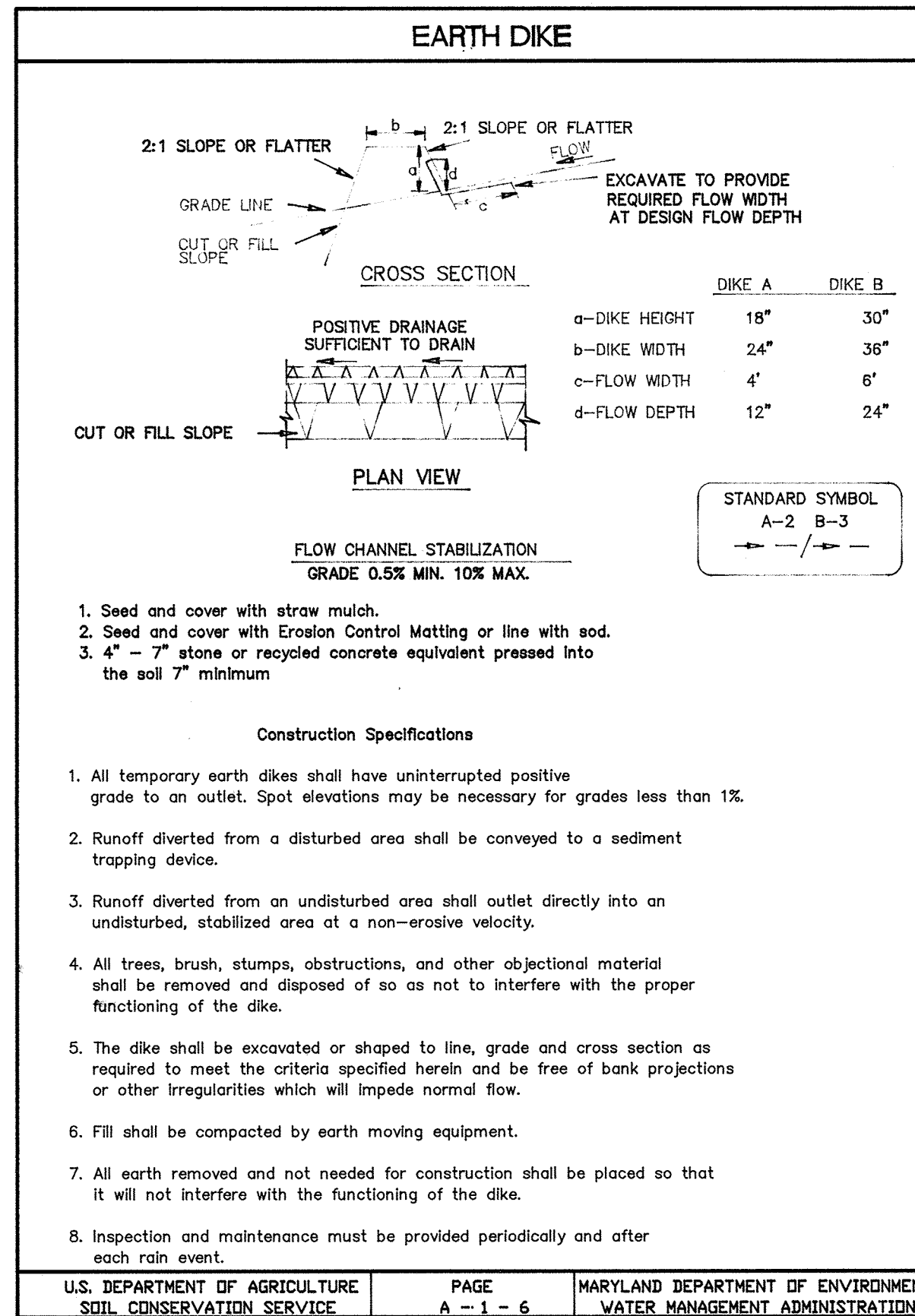
ELECTION DISTRICT No. 3
TAX MAP 15, Block 30
CENSUS No.:
PROPOSAL: ELECTRICAL SUBSTATION
WATER CODE: N/A

HOWARD COUNTY, MARYLAND
PARCEL 30
LIBER 2470, FOLIO 698
OWNER: BALTIMORE GAS AND ELECTRIC
SEWER CODE: N/A

REV.	DATE	JOB ORDER & ESTIMATE NO.	DESCRIPTION	APPROVED
	7-3-97		PER COUNTY COMMENTS	
3	7-2-2019		REV. SDP PLAN TO ADD TELECOM STRUCTURE AND NEW MONOPOLE. DETAIL SHEETS 9 AND 10	

ENGINEERING	CIVIL _____ ELEC. _____ PROJ. MGR. _____ PRIN. ENG. _____ SUPV. ENG. _____	FRIENDSHIP MANOR SUBSTATION SEDIMENT AND EROSION CONTROL PLAN Substation Engineering Unit- SE & CD 7152 Windsor Boulevard Baltimore, Maryland 21233-2779 (410) 234-5000
DESIGN GROUP		
DESIGNED _____		
CHECKED _____		
DRAWN _____		
CHECKED _____	Developer Contact: Mr. Monty D'Amrosio	
APPROVED _____	BCE SYSTEM ENGINEERING	
DATE _____	GDS CAD	
	SCALE 1"=30'	
	DWG NO. 3 of 10	
	REV	

THESE PLANS PREPARED BY BGE IN COOPERATION WITH:
EXPLORATION RESEARCH, INC.
830 FOREST STREET
HISTORIC ELICOTT CITY
MARYLAND 21043
DS THALER & ASSOCIATES, INC.
7115 AMBASSADOR
BALTIMORE, MARYLAND 21244



HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction, (313-1850).
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 SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
3. Following initial soil disturbance or redistribution, 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.
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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), and (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 permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:

Total Area of Site	2.72 Acres
Area Disturbed	1.0 Acres
Area to be Reroofed or Paved	0.62 Acres
Area to be Vegetatively Stabilized	0.62 Acres
Total Cut	700 cu.yd. +/-
Total Fill	300 cu.yd. +/-
8. *SEE 4P-97-192, SITE BROUGHT TO GRADE W/ MASS GRADE.
9. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
10. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
11. 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.
12. 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.

HOWARD SOIL CONSERVATION DISTRICT PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed preparation: -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Seedbed Amendments: In lieu of soil test recommendations, use one of the following schedules:

1. Preferred -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.).
2. Acceptable -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding -- For the periods March 1 -- April 30, and August 1 -- October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 -- July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 -- February 28, protect site by: Option 1 -- Two 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/acre Kentucky 30 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching -- Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Maintenance -- Inspect all seeding areas and make needed repairs, replacements, and reseeding.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

Seedbed preparation: -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

Seeding: -- For periods March 1 -- April 30 and from August 15 -- October 15, seed with 2 1/2 bushel per acre of annual ryegrass (3.2 lbs/1000 sq. ft.). For the period May 1 -- August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 -- February 28, protect site by apply 2 tons/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/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slope 8 ft. or higher, use 348 gal. per acre (8 gal/1000 sq. ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

I 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 AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Monty D'Amrosio 7/10/97
SIGNATURE OF DEVELOPER DATE

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

[Signature] 7/97
SIGNATURE OF LANDSCAPE ARCHITECT DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Cheryl K. Jimenez 08/14/97
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John R. Robertson 8/14/97
HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE

REVIEWED AND APPROVED: HOWARD COUNTY HEALTH DEPARTMENT (AS APPLICABLE)

HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

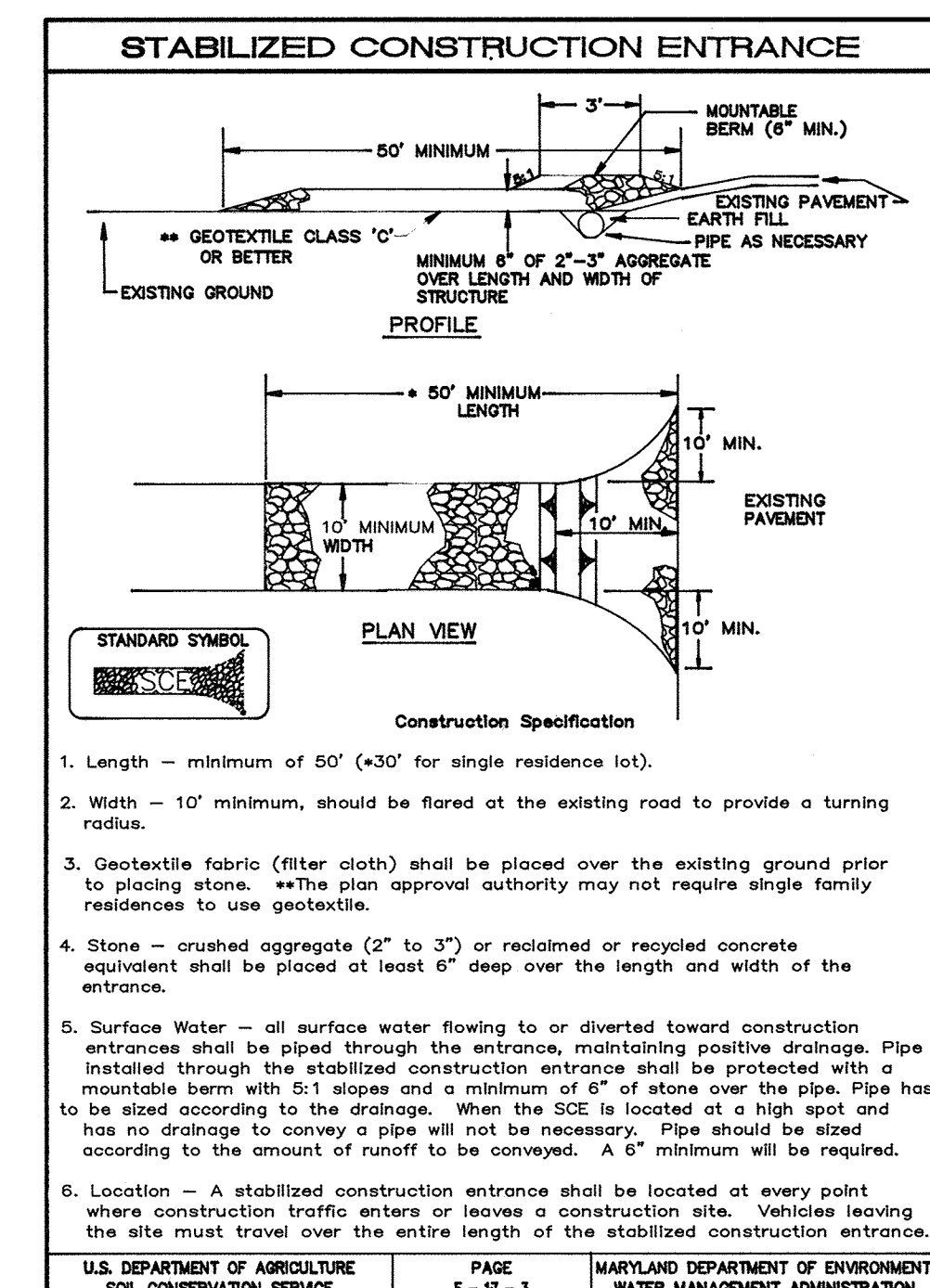
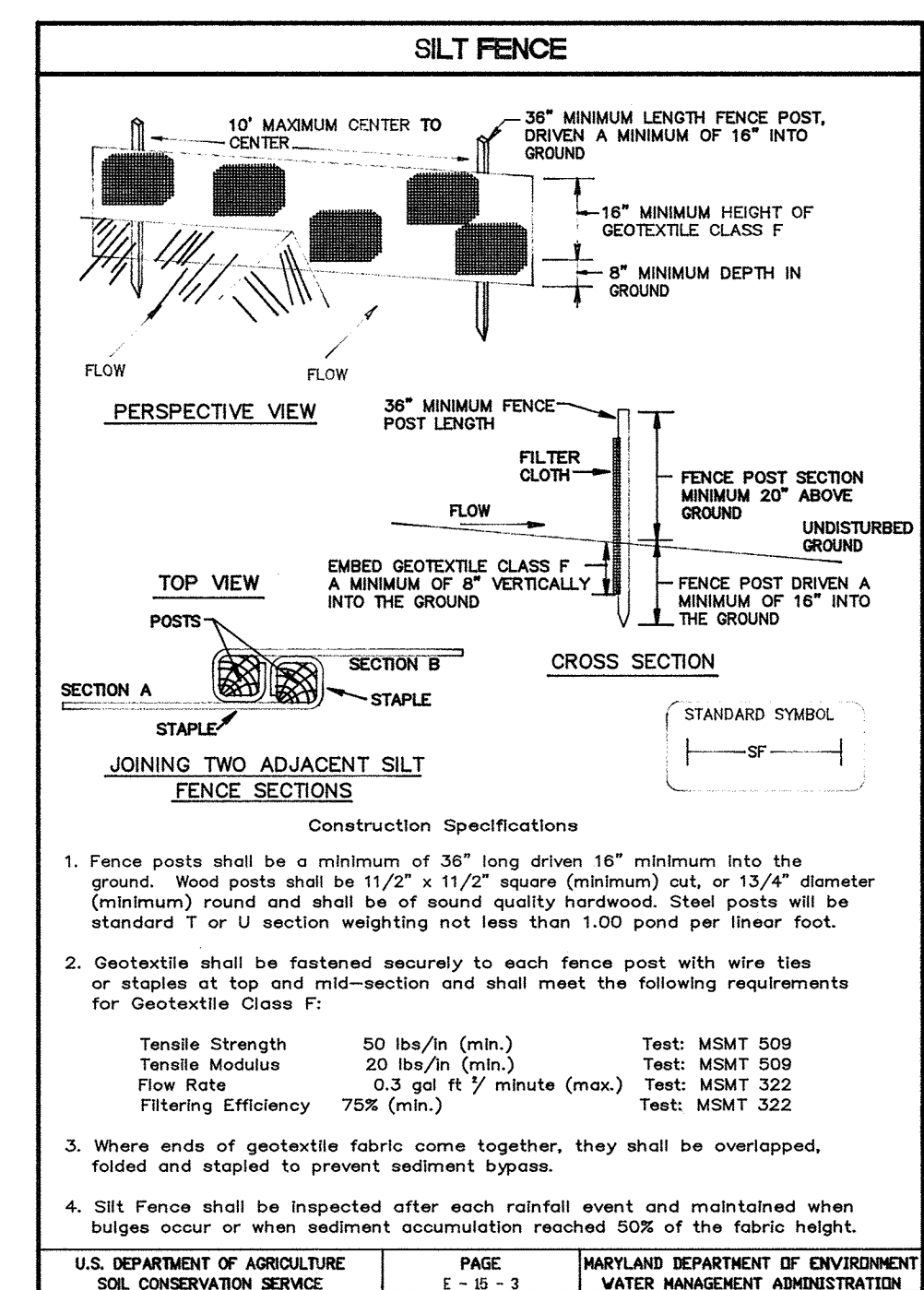
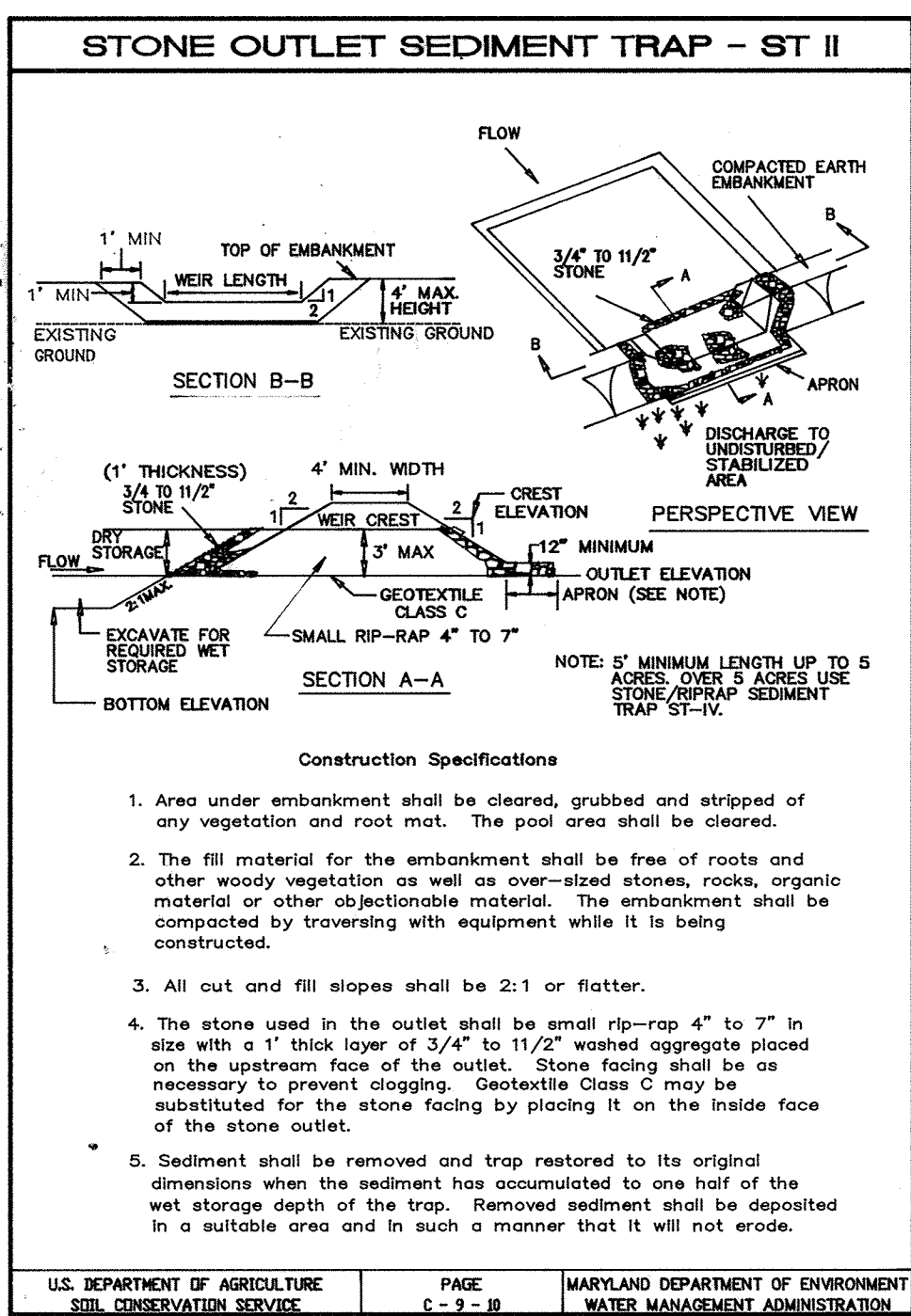
[Signature] 8/21/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 8/22/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 8/22/97
DIRECTOR DATE

THESE PLANS PREPARED FOR BGE IN COOPERATION WITH
EXPLORATION RESEARCH, INC. 8318 FORREST STREET HISTORIC ELLICOTT CITY MARYLAND 21043 (410)750-1150

DS THALER & ASSOCIATES, INC. 7115 AMBASSADOR BALTIMORE, MARYLAND 21244 (410)944-3647

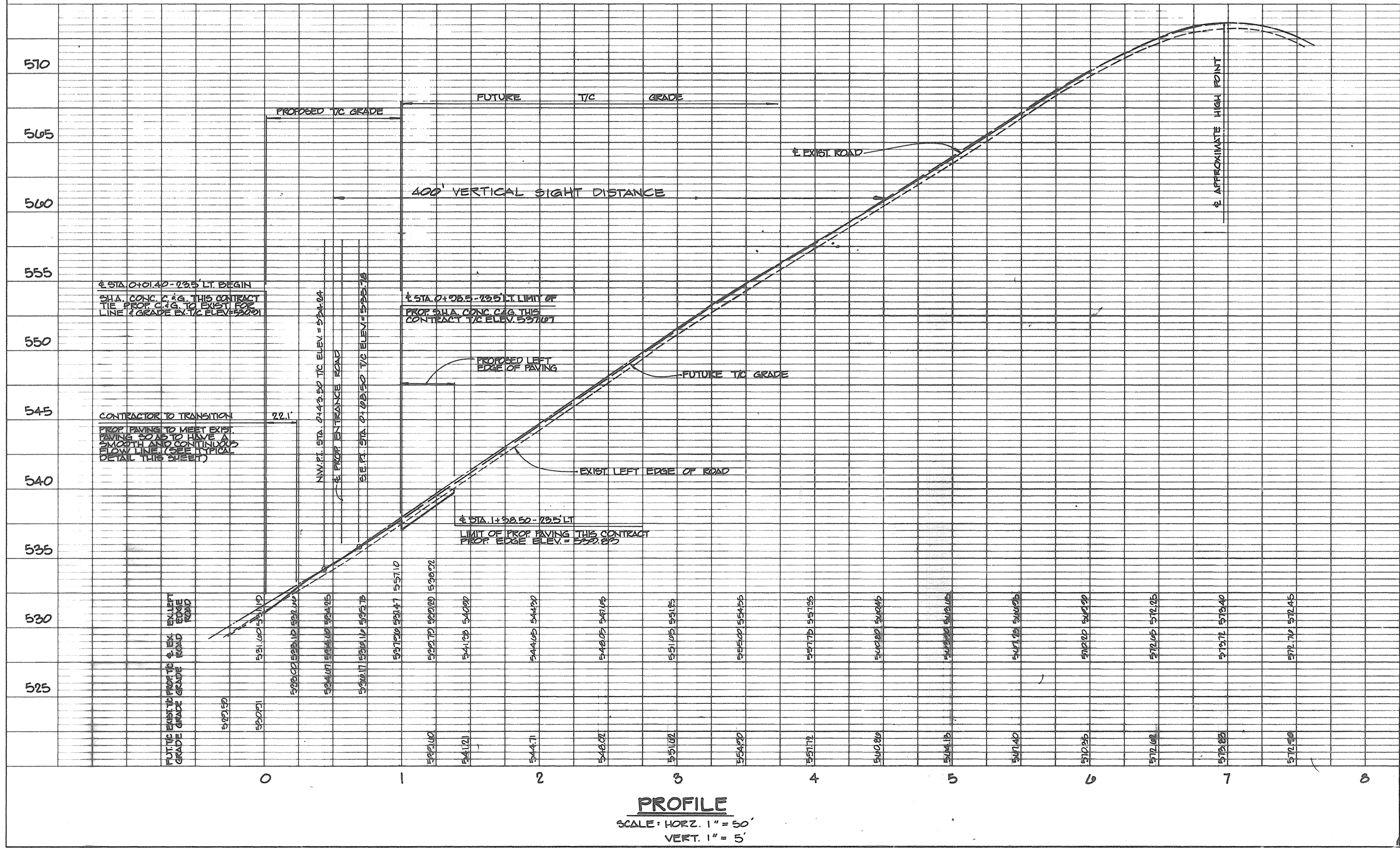
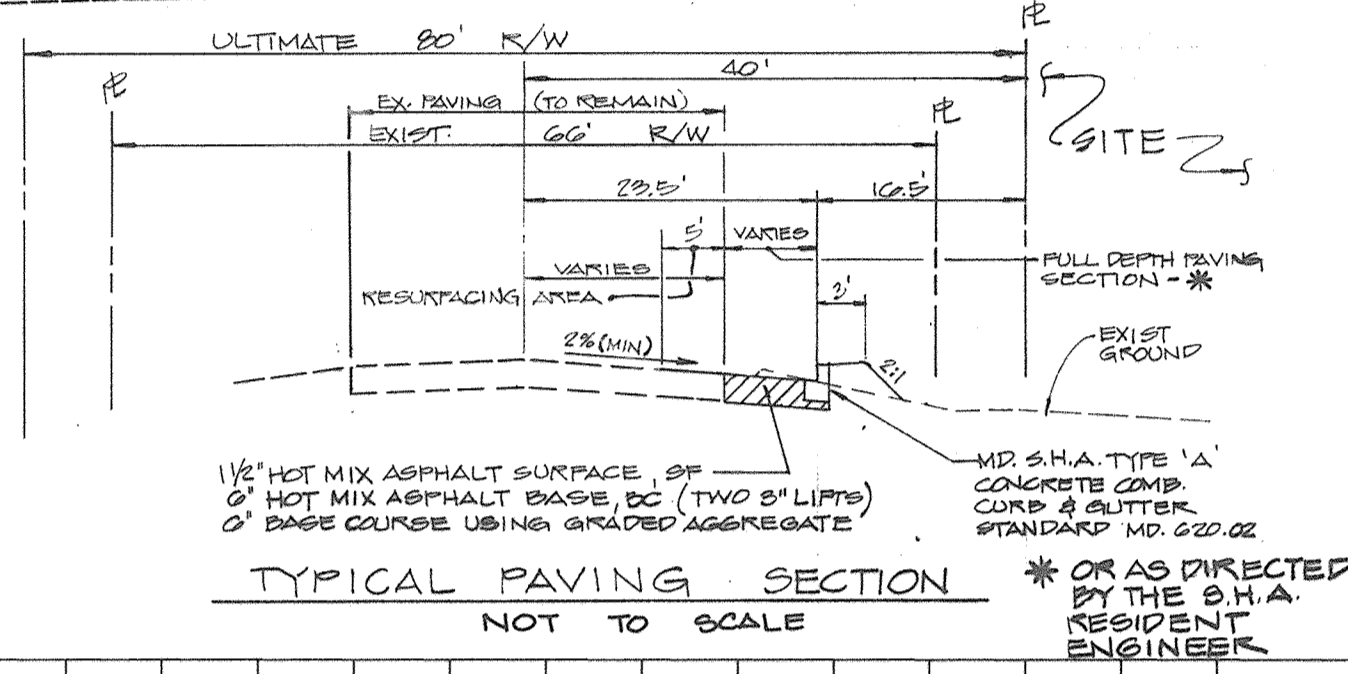
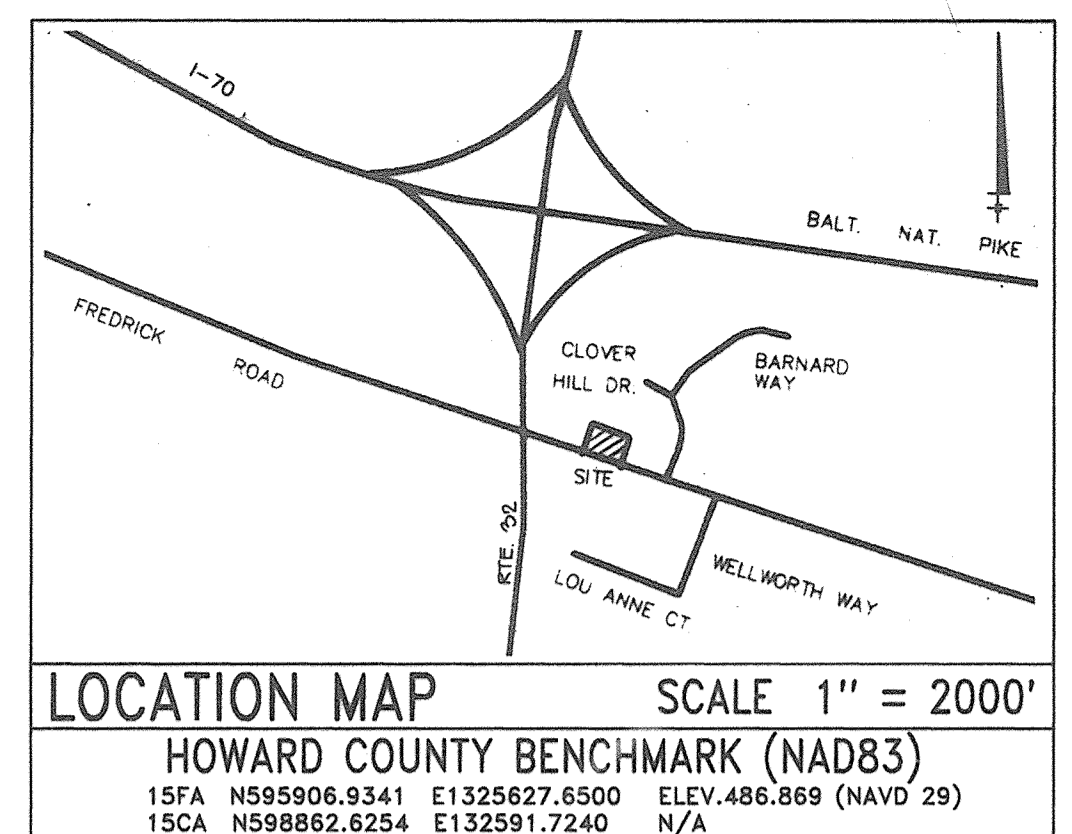
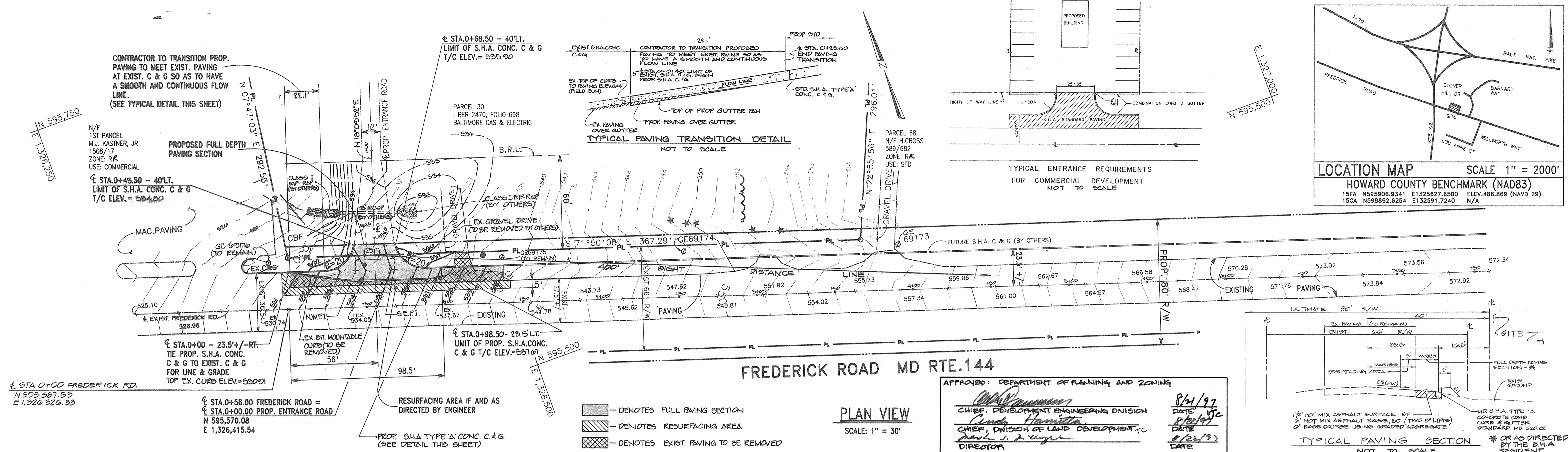


ELECTION DISTRICT No. 3
TAX MAP 15, Block 30
CENSUS No.:
PROPOSAL: ELECTRICAL SUBSTATION
WATER CODE: N/A

HOWARD COUNTY, MARYLAND
PARCEL 30
LIBER 2470, FOLIO 698
OWNER: BALTIMORE GAS AND ELECTRIC
SEWER CODE: N/A

REV.	DATE	JOB ORDER & ESTIMATE NO.	DESCRIPTION	APPROVED	ENGINEERING	
					CIVIL _____ ELEC. _____ PROJ. ENG. _____ PRIN. ENG. _____ SUPV. ENG. _____	FRIENDSHIP MANOR SUBSTATION
					DESIGN GROUP _____ DRAWN _____ CHECKED _____ APPROVED _____ DATE _____	Substation Engineering Unit-- SE & CD 7152 Windsor Boulevard Baltimore, Maryland 21233-2779 (410) 234-5000
						Developer Contact: Mr. Monty D'Amrosio
						BGE SYSTEM ENGINEERING
						SCALE AS SHOWN DWG. NO. 4 of 10

SDP-97-97



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DIRECTOR

DATE: 8/21/97
DATE: 8/22/97
DATE: 8/22/97

PREPARED BY: O&A

REV.	DATE	JOB ORDER & ESTIMATE NO.	DESCRIPTION	APPROVED

ENGINEERING
 CIVIL _____
 ELEC. _____
 PROJ. ENG. _____
 PROJ. MGR. _____
 PRIN. ENG. _____
 SUPV. ENG. _____

DESIGN GROUP
 DESIGNED _____
 CHECKED _____
 ESTIM. _____
 CHECKED _____
 APPROVED _____
 DATE _____

ROAD PLAN
 FREDERICK ROAD (MD. ROUTE 144)
 BGE-FRIENDSHIP MANOR SUBSTATION
 SUBSTATION ENGINEERING UNIT-SE & CD
 7152 WINDSOR BOULEVARD
 BALTIMORE, MARYLAND 21244-2779
 (410)234-5000

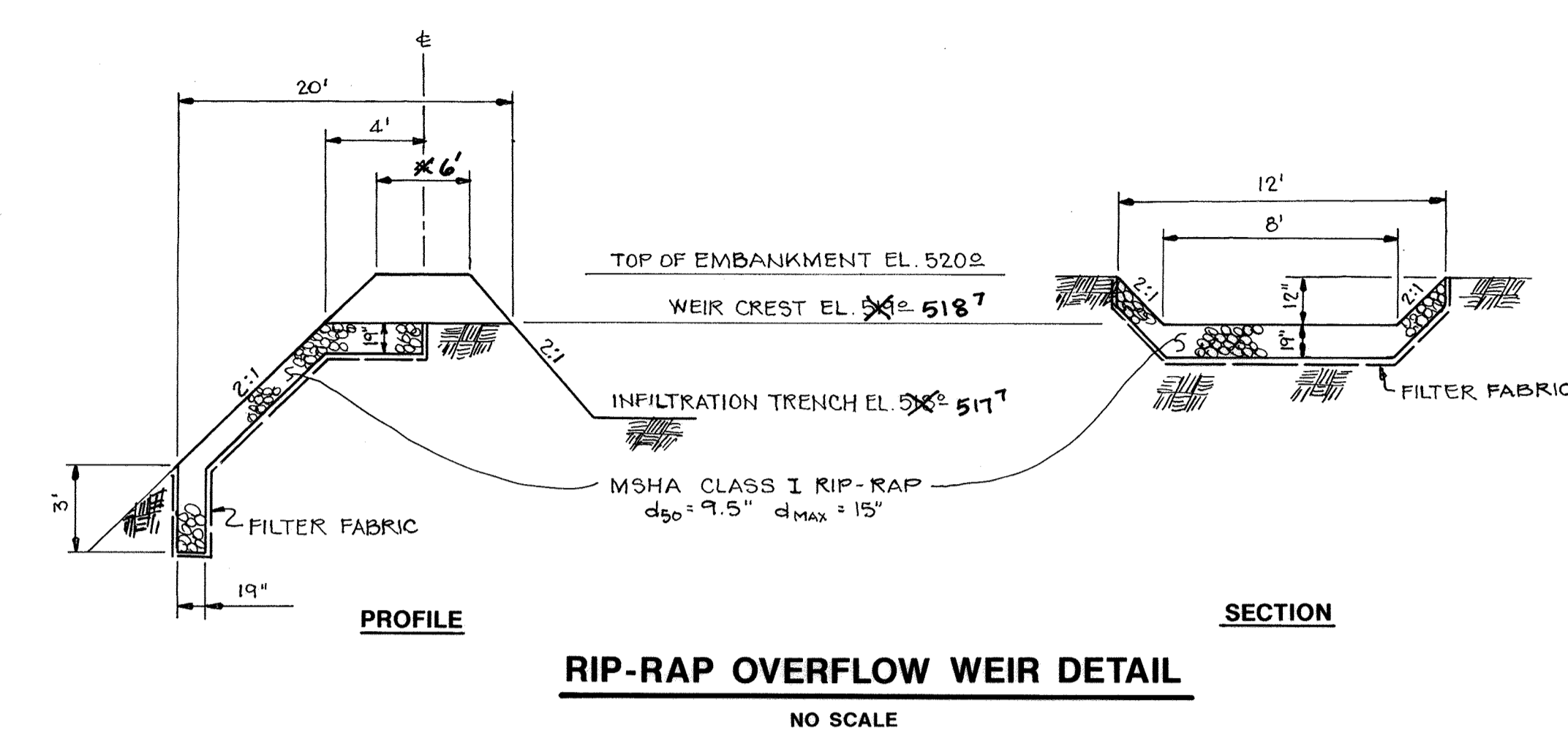
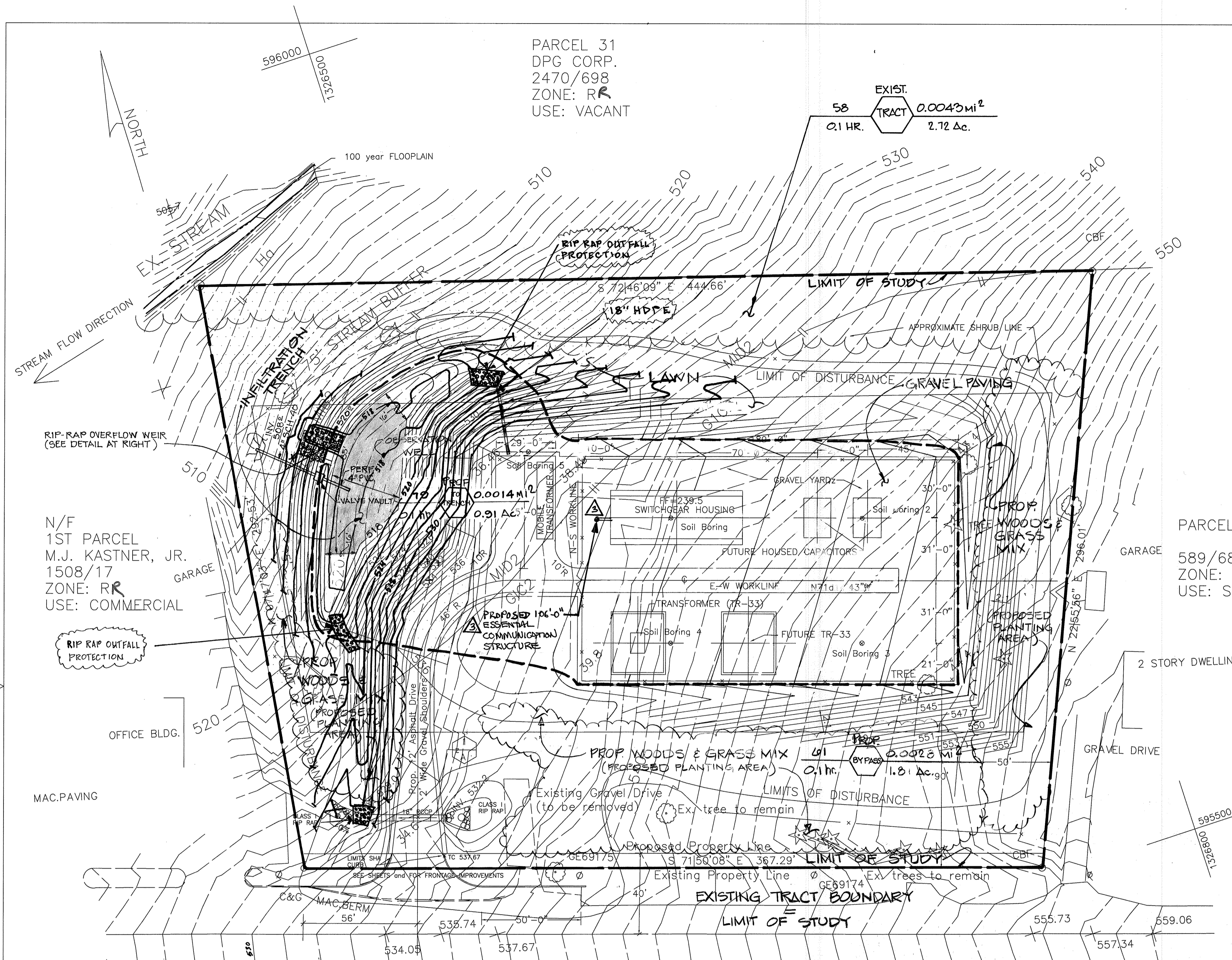
BGE SYSTEM ENGINEERING

608 CAD SCALE AS SHOWN
 5 of 10

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 Robert C. [Signature]

96114 / 50P

SDP-97-97



AS-BUILT CERTIFICATION

I hereby certify that D.S. Thaler & Associates, Inc. has completed a topographic survey of the completed stormwater management facility at BGE Friendship Manor Substation. Based on our review of this topographic survey, I hereby certify that, to the best of my knowledge and belief, the facility was constructed in close agreement with the original design.

This certification is limited to those aspects of construction which are readily visible in the field and easily accessible to surveyors. This certification does not include subsurface appurtenances, including but not limited to: compaction, pipe bedding, seepage control measures, materials and methods of construction.

Note: "Certify" does not mean nor 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 commonly accepted practices.

INFILTRATION FACILITY SUMMARY TABLE

FACILITY	TYPE	DRAINAGE AREA	EXISTING RUNOFF VOLUME	PROPOSED BY-PASS VOLUME	ALLOWABLE RUNOFF VOLUME	STORAGE REQUIRED	STORAGE PROVIDED
#1	INFILTRATION TRENCH	0.33 AC.	3.32 AC.-IN.	2.59 AC.-IN.	0.73 AC.-IN.	2.16 AC.-IN.	2.05 AC.-IN.

I 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 AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Monty D'Ambrosio 2/10/97
SIGNATURE OF DEVELOPER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Cheryl K. Johnson 2/14/97
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

REVIEWED AND APPROVED: HOWARD COUNTY HEALTH DEPARTMENT (AS APPLICABLE)

HEALTH OFFICER DATE

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

John R. Robertson 8/14/97
HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE

I CERTIFY THAT THIS PLAN FOR STORM WATER MANAGEMENT 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 COUNTY DEPARTMENT OF PUBLIC WORKS.

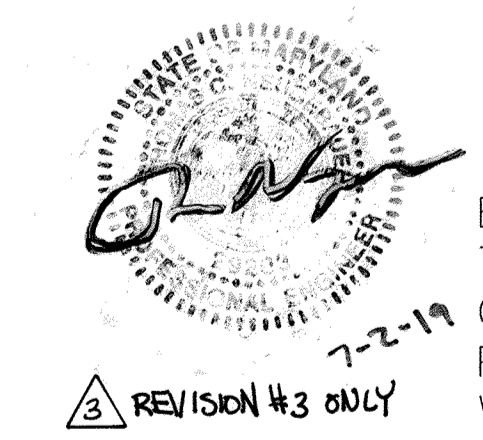
Ernest I. Sheppe, III June 30, 1997
ERNEST I. SHEPPE, III PE#16580 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hanatta 8/14/97
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Marsha J. Drayton 8/22/97
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Marsha J. Drayton 8/22/97
DIRECTOR DATE



Ernest I. Sheppe, III MP.P.E. No. 16580 Oct. 19, 1997
ELECTION DISTRICT No. 3 HOWARD COUNTY, MARYLAND
TAX MAP 15, Block 30 PARCEL 30
CENSUS No.: LIBER 2470, FOLIO 698
PROPOSAL: ELECTRICAL SUBSTATION OWNER: BALTIMORE GAS AND ELECTRIC
WATER CODE: N/A SEWER CODE: N/A

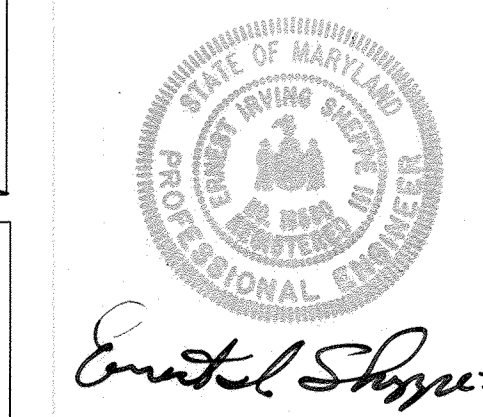
REV.	DATE	JOB ORDER & ESTIMATE NO.	DESCRIPTION	APPROVED	ENGINEERING
1	6/27/97		PER HOWARD CO. COMMENTS	E.I.S.	CIVIL _____ ELEC. _____
2	10/18/99		AS-BUILT CONDITIONS INCLUDING GRADING OF EMBANKMENT LOCATION & ELEVATION OF OVERFLOW WEIR; ADDITIONAL RIP-RAP STABILIZATION	C.F.S.	PROJ. ENG. _____ PRIN. ENG. _____ SUVP. ENG. _____
3	7-2-2009		REV. SDP PLAN TO ADD TELECOM STRUCTURE AND NEW MONODROME DETAIL SHEETS 9 AND 10.		DESIGN GROUP _____ DESIGNED _____ CHECKED _____ APPROVED _____ DATE _____

FRIENDSHIP MANOR SUBSTATION
STORMWATER MANAGEMENT
PLAN AND SECTIONS
Substation Engineering Unit - SE & CD
7152 Windsor Boulevard
Baltimore, Maryland 21233-2779
(410) 234-5000

Developer Contact: Mr. Monty D'Ambrosio

BGE SYSTEM ENGINEERING

GDS CAD DWG NO. 6 of 10 SCALE 1"=30'



26.44 / 508

CONSTRUCTION SPECIFICATIONS

POROUS PAVING

3.5.5. Construction Methods and Specifications
(Adapted from the Construction Specifications of the City of Rockville, MD)

- 3.5.5.1. Stabilization
To preclude premature clogging and/or failure of this practice, porous asphalt paving structures shall not be installed until all of the surface drainage areas contributing to the pavement have been effectively stabilized in accordance with Maryland Standards and Specifications for Soil Erosion and Sediment Control.
- 3.5.5.2. Subgrade Preparation
(1) Alter and refine the grades as necessary to bring subgrade to required grades and sections as shown in the drawings.
(2) The type of equipment used in subgrade preparation construction shall not cause undue subgrade compaction. (Use tracked equipment or oversized rubber tire equipment - DO NOT use standard rubber tired equipment.) Traffic over subgrade shall be kept at a minimum. Where fill is required, it shall be compacted to a density equal to the undisturbed subgrade, and inherent soft spots corrected.
- 3.5.5.3. Aggregate Base Course
(1) All stone used shall be clean, washed, crushed stone, meeting local highway department specifications.
(2) Aggregate shall be of two sizes: the reservoir base course shall be to depth as noted on drawings of aggregate (maximum of 3", minimum of 1 1/2"), and a 2-inch deep top course of 1/2" aggregate (maximum of 5/8", minimum 3/8").
(3) Aggregate base course shall be laid over a dry subgrade covered with engineering filter fabric to a depth shown in drawings, in lifts to lay naturally compacted. The stone base course shall be compacted lightly. Remove base course clean from debris, and sediment.
- 3.5.5.4. Porous Asphalt Surface Course
(1) The surface course shall be laid directly over the 1/2" aggregate base course and shall be laid in one lift.
(2) The laying temperature shall be between 230° and 260°, with minimum air temperature of 50°F, to make sure that the surface does not cool prior to compaction.
(3) Compaction of surface course shall be done while the surface is cool enough to resist a 10-ton roller. One or two passes by the roller is all that is required for proper compaction. More rolling could cause a reduction in the surface course porosity.
(4) Mixing plant shall certify the aggregate mix and abrasion loss factor and the asphalt content in the mix. The asphaltic mix shall be tested for its resistance to stripping by water using ASTM D 1664. If the estimated coating area is not above 95 percent, anti-stripping agents shall be added to the asphalt.
(5) Transporting of mix to site shall be in clean vehicle with smooth dump beds that have been sprayed with a non-petroleum release agent. The mix shall be covered during transportation to control cooling.
(6) Mix of asphalt shall be 5.5 to 6 percent of weight of dry aggregate.
(7) Asphalt grade shall meet AASHTO Specification M-20 for 85 to 100 penetration road asphalt as a binder in the northern United States, 65 to 80 in the middle states (Maryland), and 50 to 65 in the South.
(8) Aggregate grading shall be as specified in Table 3-3.

- 3.5.5.5. Protection
After final rolling, no vehicular traffic of any kind shall be permitted on the pavement until cooling and hardening has taken place, and in no case less than 6 hours (preferably a day or two).
- 3.5.5.6. Workmanship
(1) Work shall be done expertly throughout and without staining or damage to other permanent work.
(2) Make transition between existing and new paving work neat and flush.
(3) Finished paving shall be even, without pockets, and graded to elevations shown.
(4) Iron smoothly to grade, all minor surface projections and edges adjoining other materials.

3.5.5.7. Certification
An appropriate professional, registered in the State of Maryland, shall certify that these specifications were complied with.

3.5.6. Maintenance
The surface of porous asphalt pavement must be cleaned regularly to avoid its becoming clogged by fine material. This cleaning is best accomplished through use of a vacuum cleaning street sweeper. Outside of regular cleaning, porous pavement requires no more maintenance than conventional pavement. In times of heavy snowfall it must be recognized that application of abrasive material should be closely monitored to avoid clogging problems once the snow and ice has melted. No method of maintenance has been satisfactory on fully clogged pavements, and only a superficially clogged section showing a water infiltration rate of 0.1 inches per second compared to a normal water penetration of 0.30 inches per second can be restored to normal operation. The best method for cleaning is brush and vacuum sweeping followed by high pressure water washing of the pavement. Vacuum cleaning alone, once the pavement is clogged, has been found ineffective. The oils in the asphalt bind dirt, and only an abrading and washing technique can be effective in the removal of such dirt. Clogging to a depth of 0.5 inch is sufficient to prevent water penetration.

3.5.6.1. Traffic Control
Experience has shown the need for close control of contractor vehicles on newly installed areas of porous asphalt pavement. Damage to pavement porosity results chiefly from abuse during the early life of the pavement. Normally, paving is done while heavy construction or earth moving is continuing in an area. The pavement is thus subjected to mud and dirt from contractor vehicles for up to several months, and the continual passage of these vehicles compacts the dirt into the pores. Only if caked mud is cleaned from vehicle wheels and the pavement is cleaned daily by sweeping and high-pressure water washing can porosity be retained. Clogging can be further minimized by proper use of curbing to prevent surrounding soils from washing onto the pavement surface.

- 3.5.7. References
1. Diniz, E.V., Porous Pavement: Phase I - Design and Operational Criteria, U.S.E.P.A., EPA-600/2-80-135, Cincinnati, August, 1980.

INFILTRATION TRENCH

3.3.6. Construction Specifications

- 3.3.6.1. Timing
An infiltration trench shall not be constructed or placed in service until all of the contributing drainage area has been stabilized and approved by the responsible inspector.
- 3.3.6.2. Trench Preparation
Excavate the trench to the design dimensions. Excavated materials shall be placed away from the trench sides to enhance trench wall stability. Large tree roots must be trimmed flush with the trench sides in order to prevent fabric puncturing or tearing during subsequent installation procedures. The side walls of the trench shall be roughened where sheared and sealed by heavy equipment.
- 3.3.6.3. Fabric Laydown
The filter fabric roll must be cut to the proper width prior to installation. The cut width must include sufficient material to conform to trench perimeter irregularities and for a 6-inch minimum top overlap. Place the fabric roll over the trench and unroll a sufficient length to allow placement of the fabric down into the trench. Stones or other anchoring objects should be placed on the fabric at the edge of the trench to keep the lined trench open during windy periods. When overlaps are required between rolls, the upstream roll should lap a minimum of 2 feet over the downstream roll in order to provide a shingled effect. The overlap ensures fabric continuity or to ensure that the fabric conforms to the excavation surface during aggregate placement and compaction.
- 3.3.6.4. Stone Aggregate Placement and Compaction
The stone aggregate should be placed in lifts and compacted using plate compactors. As a rule of thumb, a maximum loose lift thickness of 12 inches is recommended. The compaction process ensures fabric conformity to the excavation sides, thereby reducing the potential for soil piping, fabric clogging, and settlement problems.

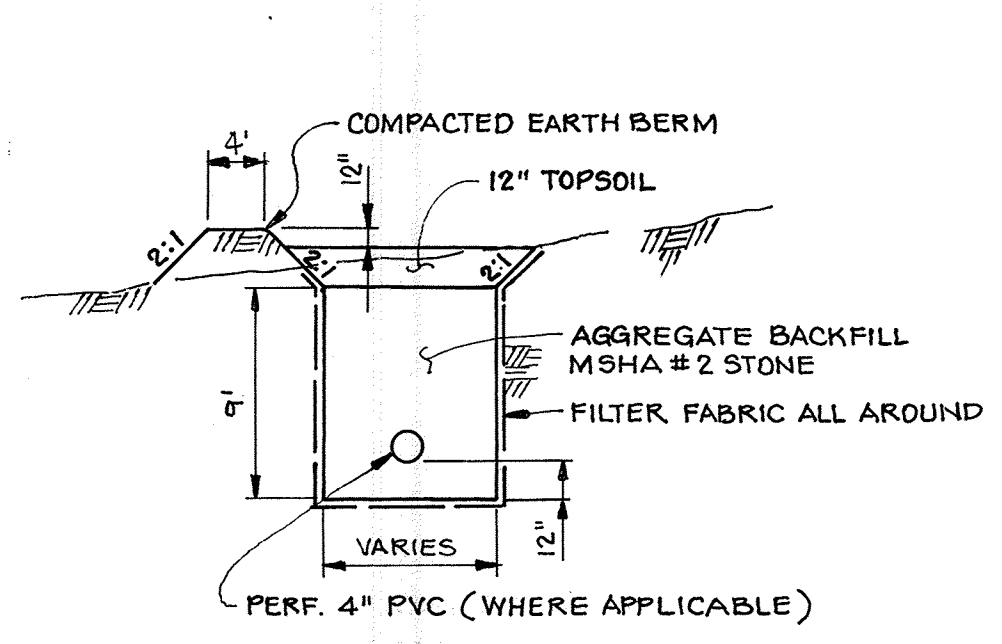
- 3.3.6.5. Overlapping and Covering
Following the stone aggregate placement, the filter fabric shall be folded over the stone aggregate to form a 6" minimum longitudinal lap. The desired fill soil or stone aggregate shall be placed over the lap at sufficient intervals to maintain the lap during subsequent backfilling.
- 3.3.6.6. Contamination
Care shall be exercised to prevent natural or fill soils from intermixing with the stone aggregate. All contaminated stone aggregate shall be removed and replaced with uncontaminated stone aggregate.
- 3.3.6.7. voids Behind Fabric
voids can be created between the fabric and excavation sides and shall be avoided. Removing boulders or other obstacles from the trench walls is one source of such voids. Natural soils should be placed in these voids at the most convenient time during construction to ensure fabric conformity to the excavation sides. Soil piping, fabric clogging, and possible surface subsidence will be avoided by this remedial process.
- 3.3.6.8. Unstable Excavation Sides
Vertically excavated walls may be difficult to maintain in areas where the soil moisture is high or where soft cohesive or cohesionless soils predominate. These conditions may require laying back of the side slopes to maintain stability; trapezoidal rather than rectangular cross sections may result.
- 3.3.6.9. Vegetative Buffer
A vegetative buffer of at least 20 feet (wider, if possible) shall be used to intercept surface runoff from all impervious areas.
- 3.3.6.10. Traffic Control
Heavy equipment and traffic shall be restricted from travelling over the infiltration areas to minimize compaction of the soil.
- 3.3.6.11. Observation Well
An observation well, as described in subsection 3.3.4.8 and Figure 3-5 shall be provided. The depth of the well at the time of installation will be clearly marked on the well cap.

3.3.7. Maintenance
Infiltration trenches shall be designed to minimize maintenance. However, it is recognized that all infiltration facilities are subject to clogging by sediment, oil, grease, grit and other debris. In addition, the performance and longevity of these structures is not well documented. Consequently, a monitoring observation well is required for all infiltration structures.

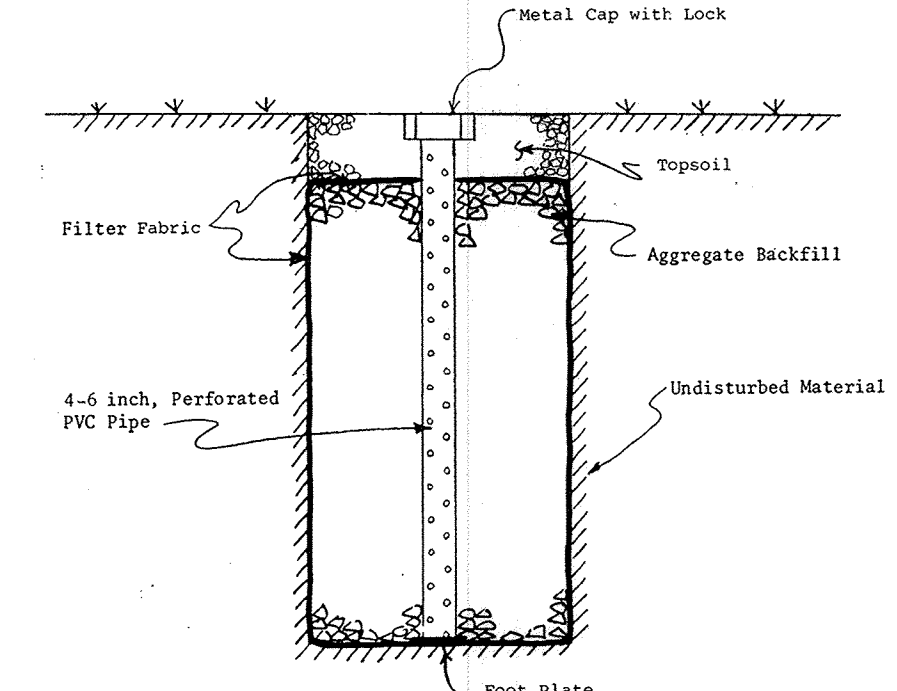
The observation well shall be monitored periodically. For the first year after completion of construction, the well should be monitored on a quarterly basis and after every large storm. It is recommended that a log book be maintained indicating the rate at which the facility dewateres after large storms and the depth of the well for each observation. Once the performance characteristics of the structure have been verified, the monitoring schedule can be reduced to an annual basis, unless the performance data indicate that a more frequent schedule is required.

Sediment build-up in the top foot of stone aggregates or the surface inlet should be monitored on the same schedule as the observation well. A monitoring well in the top foot of stone aggregate will be required when the trench has a stone surface. Sediment deposited shall not be allowed to build up to the point where it will reduce the rate of infiltration into the trench.

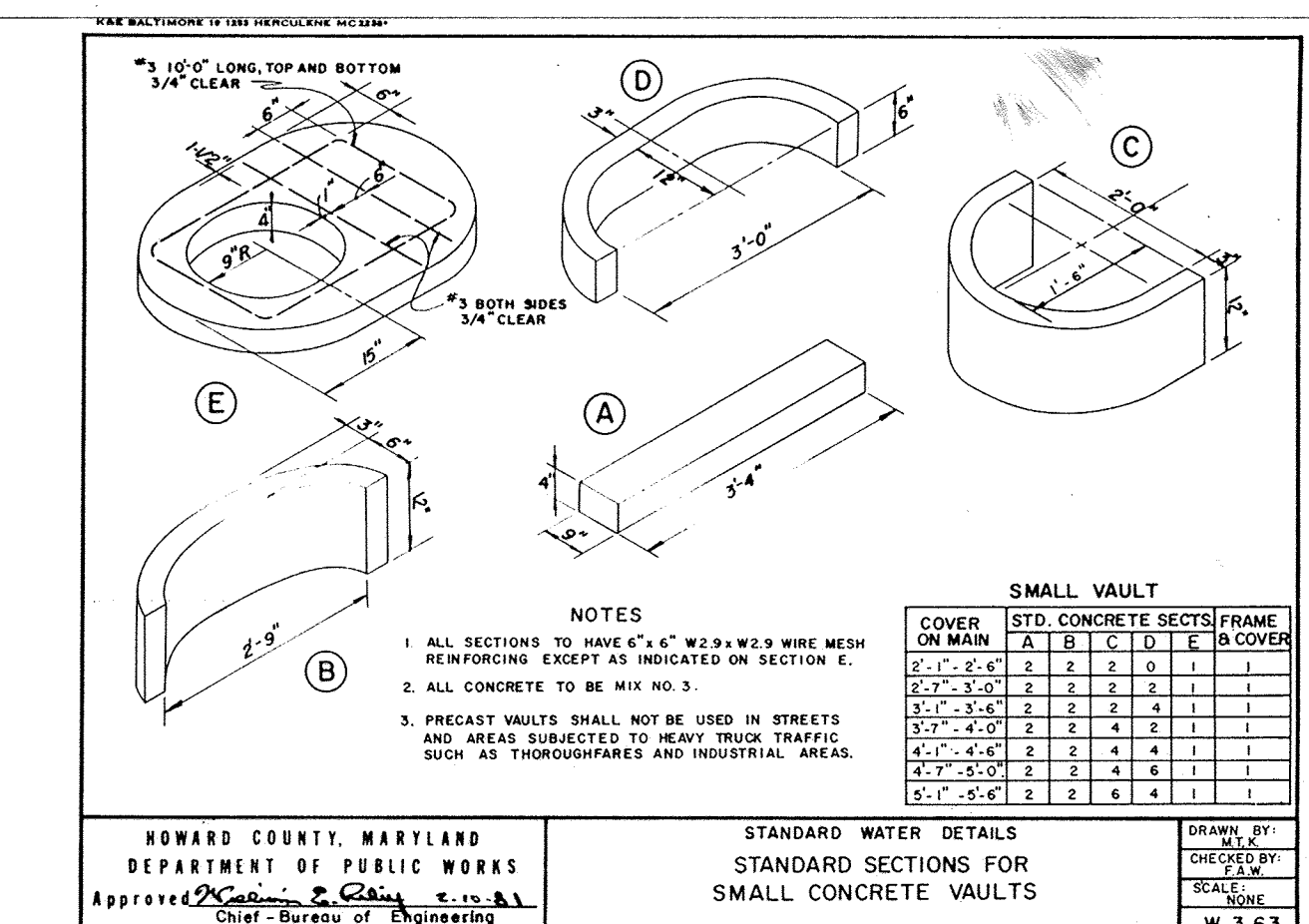
- 3.3.8. References
1. Stormwater Management Design Manual for Frederick Co., Maryland, 1979.
2. Anonymous, Controlling Stormwater Runoff in Developing Areas: Selected Best Management Practices, Metropolitan Washington Council of Governments, July, 1979.
3. Percolation Pits: Their Design, Construction, Use and Maintenance for Stormwater Disposal, Ground Water Recharge, and Surface Water Quality Protection in Adams County, Colorado, Adams County Planning Department.



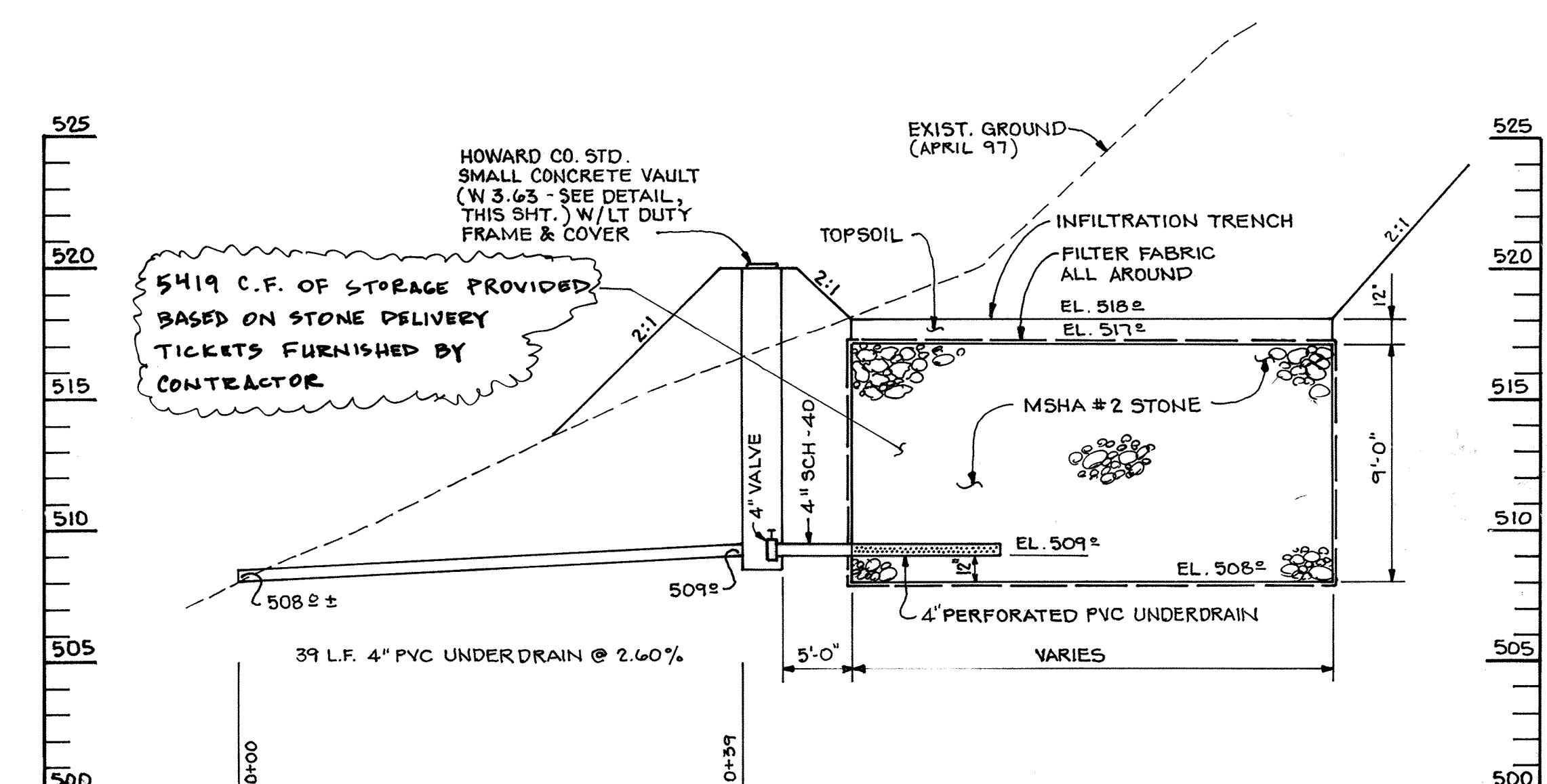
INFILTRATION TRENCH TYPICAL SECTION N.T.S.



OBSERVATION WELL TYPICAL SECTION N.T.S.



HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Approved: [Signature] Chief - Bureau of Engineering



INFILTRATION TRENCH CROSS SECTION SCALE: HORIZ.: 1" = 10' VERT.: 1" = 5'

AS-BUILT CERTIFICATION

I hereby certify that D.S. Thaler & Associates, Inc. has completed a topographic survey of the completed stormwater management facility at BGE Friendship Manor Substation. Based on our review of this topographic survey, I hereby certify that, to the best of my knowledge and belief, the facility was constructed in close agreement with the original design.

This certification is limited to those aspects of construction which are readily visible in the field and readily accessible to our surveyors. This certification does not include subsurface appurtenances, including but not limited to: compaction, pipe bedding, seepage control measures, material and methods of construction.

Note: "Certify" does not mean nor 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 practices.

Ernest I. Sheppe III
ERNEST I. SHEPPE III, PE
MD PE No. 16580
Oct. 19, 1999
DATE

I 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 AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
Monty D'Ambrosio
SIGNATURE OF DEVELOPER DATE 2/10/97

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
Cheryl K. Jaramona
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE 02/14/97

I CERTIFY THAT THIS PLAN FOR STORM WATER MANAGEMENT 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 COUNTY DEPARTMENT OF PUBLIC WORKS.
Ernest I. Sheppe III
ERNEST I. SHEPPE III No. 16580 DATE June 30, 1997

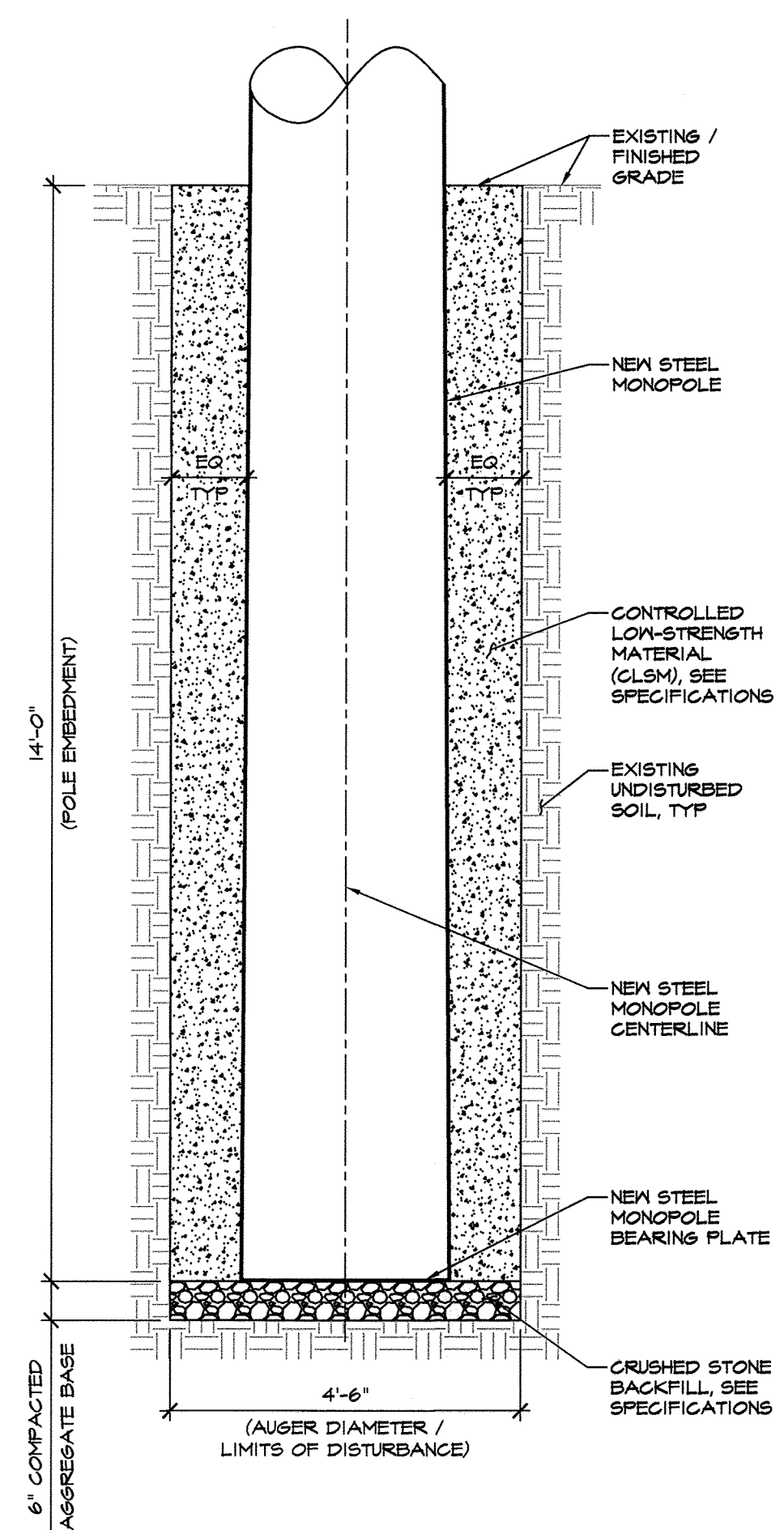
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cheryl K. Jaramona
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 8/21/97
Candy Hamilton
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 5/20/97
Derek L. Taylor
DIRECTOR DATE 8/22/97

REVIEWED AND APPROVED: HOWARD COUNTY HEALTH DEPARTMENT (AS APPLICABLE)
HEALTH OFFICER DATE

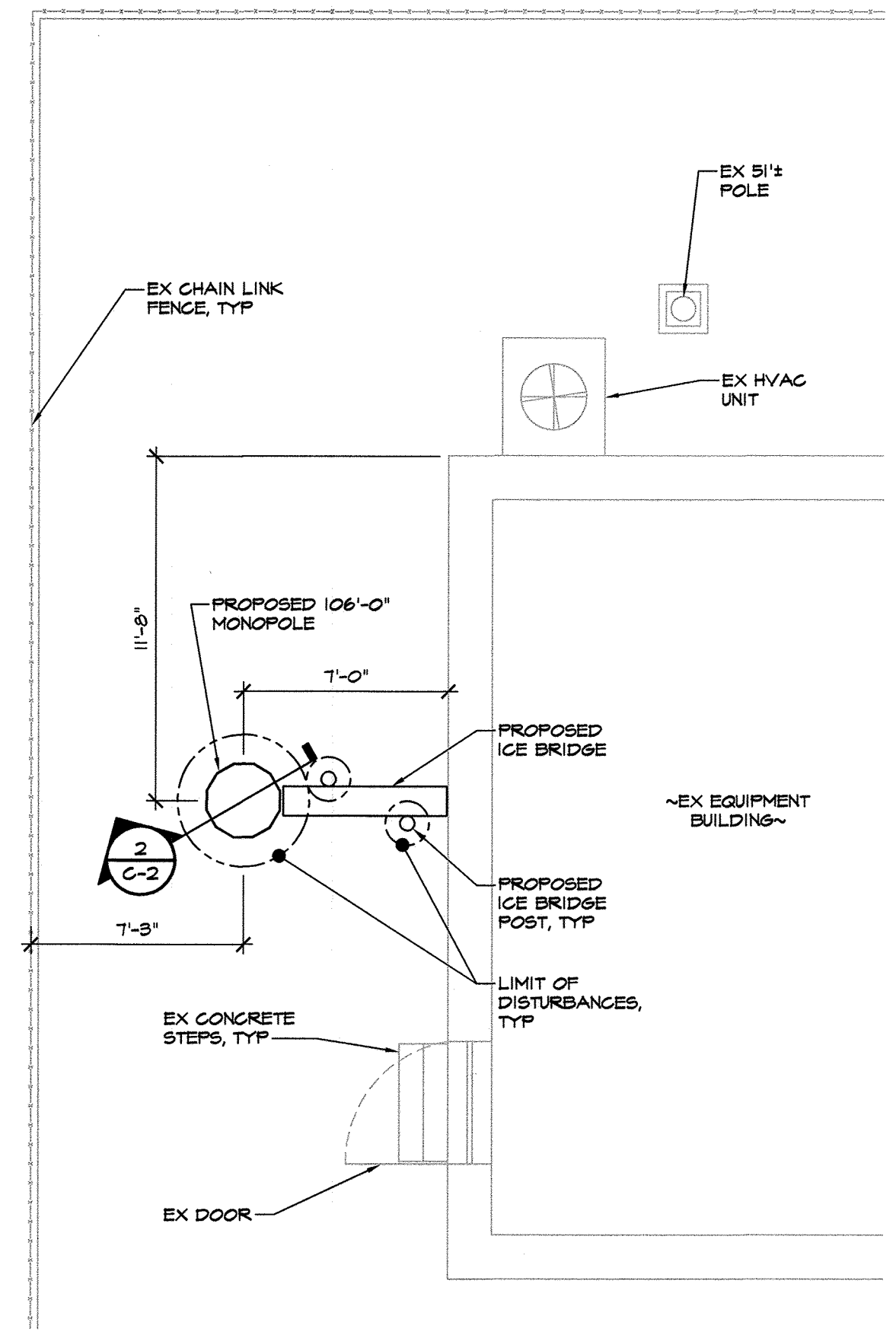
THIS PLAN IS APPROVED FOR EROSION AND SEDIMENTATION CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
John R. Robertson
HOWARD COUNTY SOIL CONSERVATION DISTRICT DATE 8/14/97

REV.	DATE	JOB ORDER & ESTIMATE NO.	DESCRIPTION	APPROVED
1	6/21/97		PER HOWARD CO. COMMENTS	E.I.S.
2	10/18/99		AS-BUILT CONDITIONS OF INFILTRATION TRENCH NOTED	C.P.B.

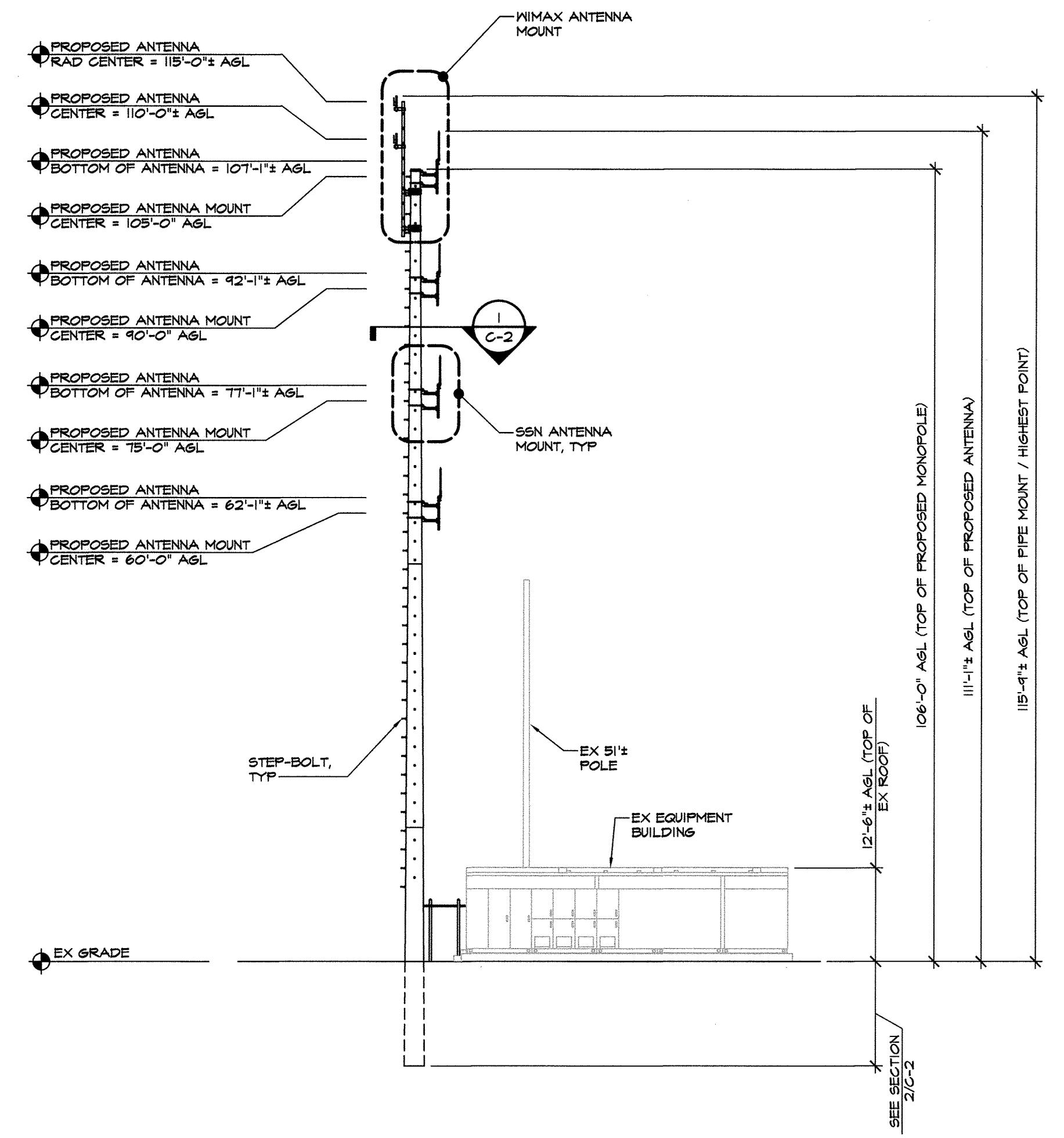
DESIGN GROUP	DESIGNED	CHECKED	DRAWN	CHECKED	APPROVED
Developer Contact: Mr. Monty D'Ambrosio					
BGE SYSTEM ENGINEERING					
GDS CAD	DWC	7	of 10	REV	



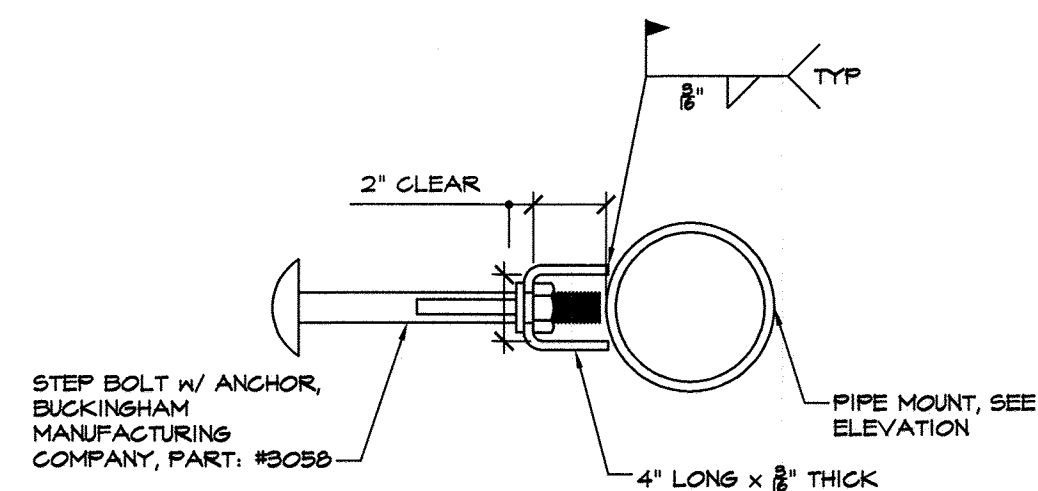
2
C-2
POLE EMBEDMENT SECTION
SCALE: 1/2" = 1'-0"



ENLARGED EQUIPMENT LAYOUT
SCALE: 1" = 5'-0"

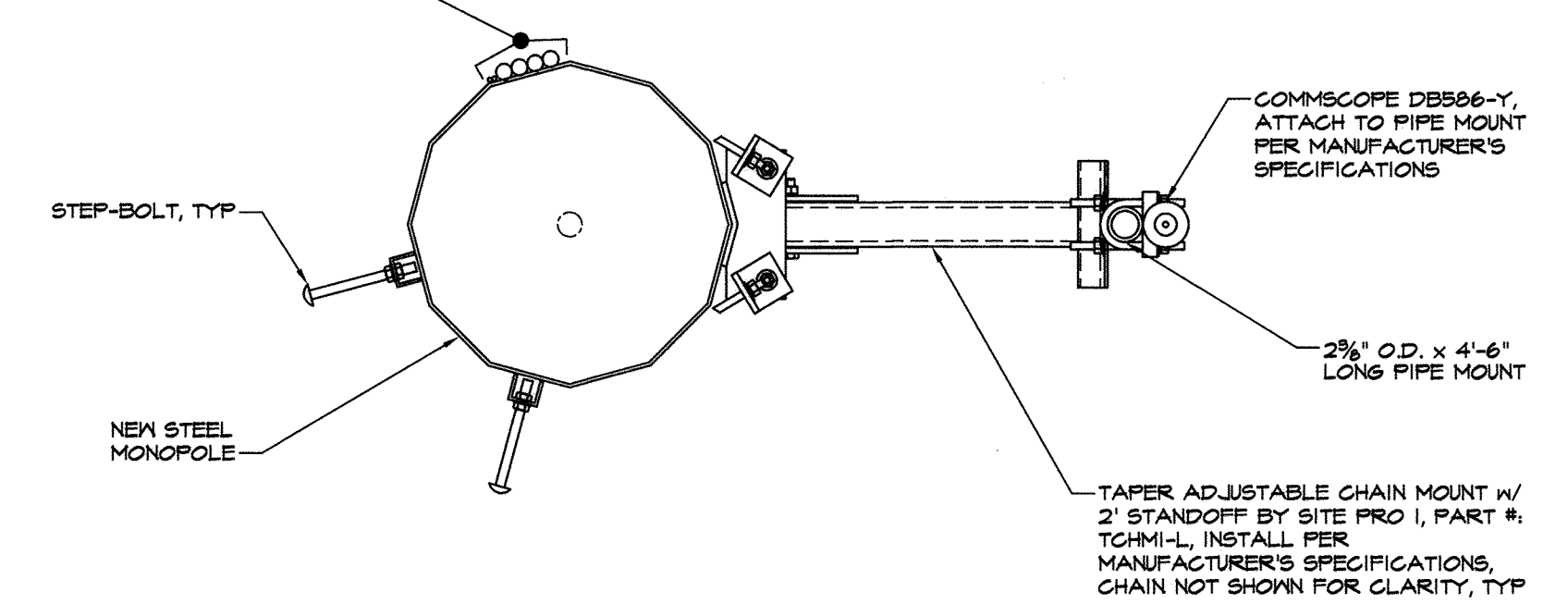


MONOPOLE ELEVATION
SCALE: 1" = 15'-0"

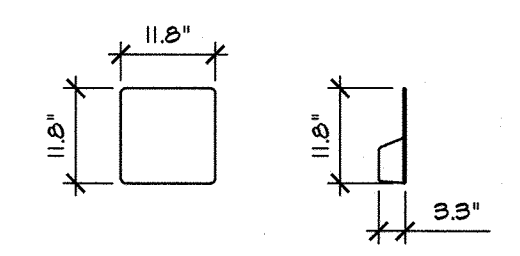


TYP STEP-BOLT ATTACHMENT
SCALE: 3" = 1'-0"

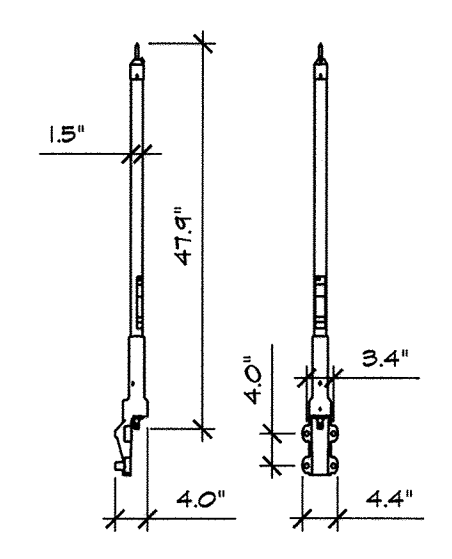
(4) 7/8" DIA COAX & (2) CAT5 CABLES TIGHTLY Banded TO MONOPOLE w/ SITE PRO I BA204 STAINLESS STEEL BANDINGS @ 5'-0" O.C. AND BUSH-25 BUCKLES, IN ONE ROW WITH MINIMAL SPACINGS BETWEEN INDIVIDUAL LINES



1
C-2
MONOPOLE SECTION
SCALE: 1" = 1'-0"



BGE WIMAX ANTENNA DETAILS
NOT TO SCALE

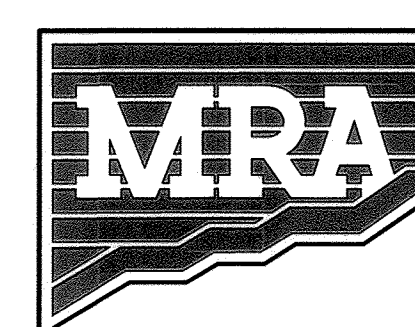


BGE SSN ANTENNA DETAILS
NOT TO SCALE

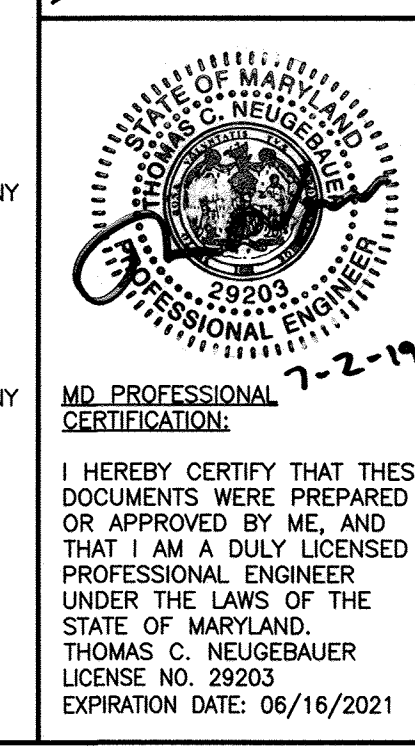
DEVELOPER/APPLICANT
BALTIMORE GAS AND ELECTRIC COMPANY
1088 NORTH FRONT STREET
BALTIMORE, MD 21202
PHONE NUMBER: 410-470-8572
FAX: 410-470-5899

OWNER
BALTIMORE GAS AND ELECTRIC COMPANY
P.O. BOX 1475
BALTIMORE, MD 21203

APPLICANT ATTORNEY
WHITEFORD | TAYLOR | PRESTON
TOWSON COMMONS, SUITE 300
ONE WEST PENNSYLVANIA AVENUE
TOWSON, MD 21204-5025
ATTN: JENNIFER R. BUSSE, PARTNER
PHONE: 410-632-2077
FAX: 410-339-4027



MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
14280 PARK CENTER DRIVE
LAUREL, MD 20707
(410) 792-8792 / (301) 776-1690
FAX: (410) 792-7395
MRAGTA.COM
Copyright 2019 Morris & Ritchie Associates, Inc.



FRIENDSHIP MANOR SUBSTATION - BGE
SDP-97-97
ESSENTIAL TELECOMMUNICATION STRUCTURE

CONSTRUCTION AND LANDSCAPE DETAILS

12600 FREDERICK ROAD, WEST FRIENDSHIP, MD 21794
TAX MAP 15, GRID 11, PARCEL 30, COUNCIL DISTRICT 3
HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:	SCALE:
6-13-2019	ADDED ESSENTIAL COMMUNICATION STRUCT.	16208175	SEE DETAIL
	AND NEW DETAIL SHEETS 9 AND 10	DATE:	7-2-2019
		DRAWN BY:	MAM
		DESIGN BY:	MAM
		REVIEW BY:	TM
		SHEET:	9 OF 10

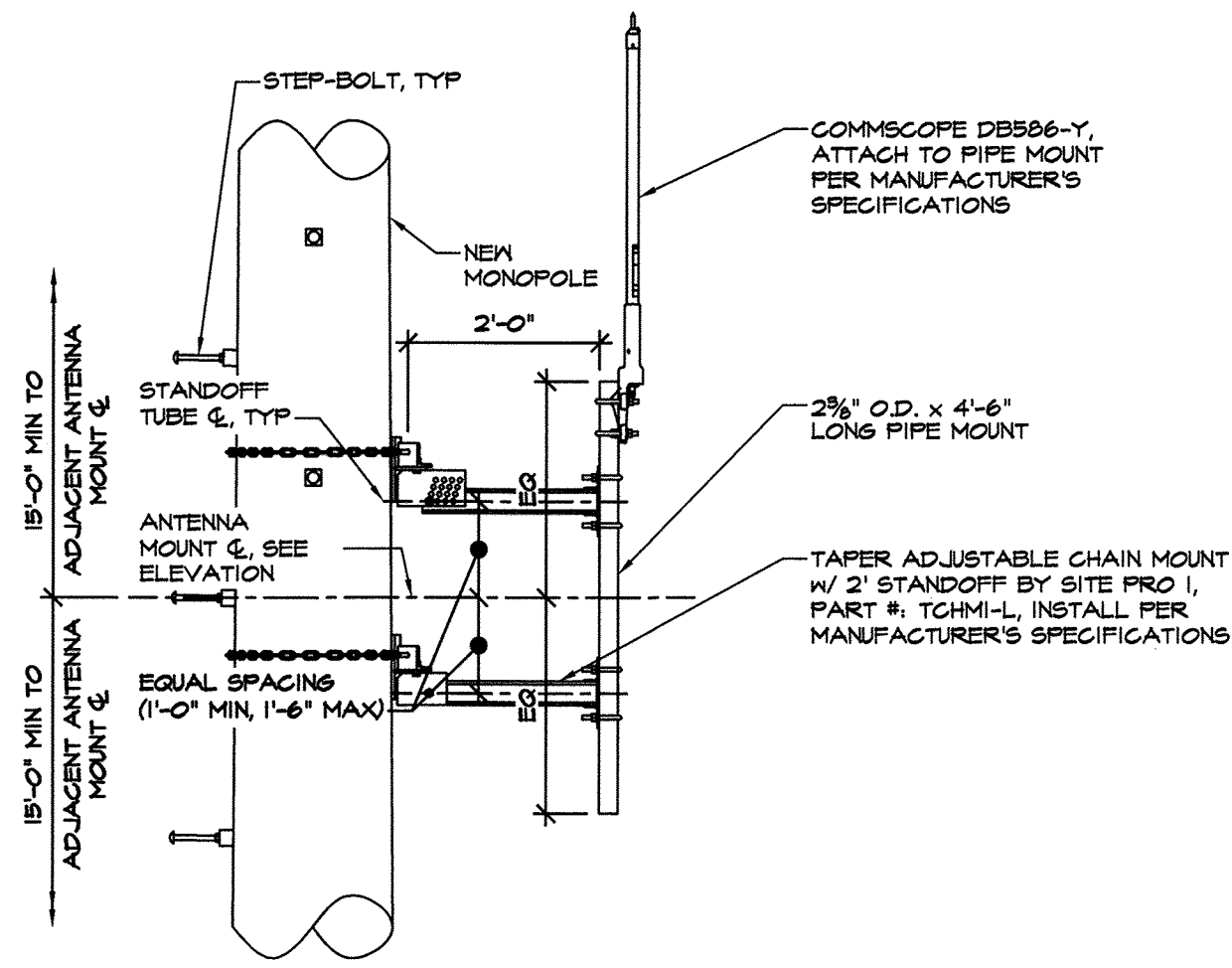


Know what's below.
Call before you dig.

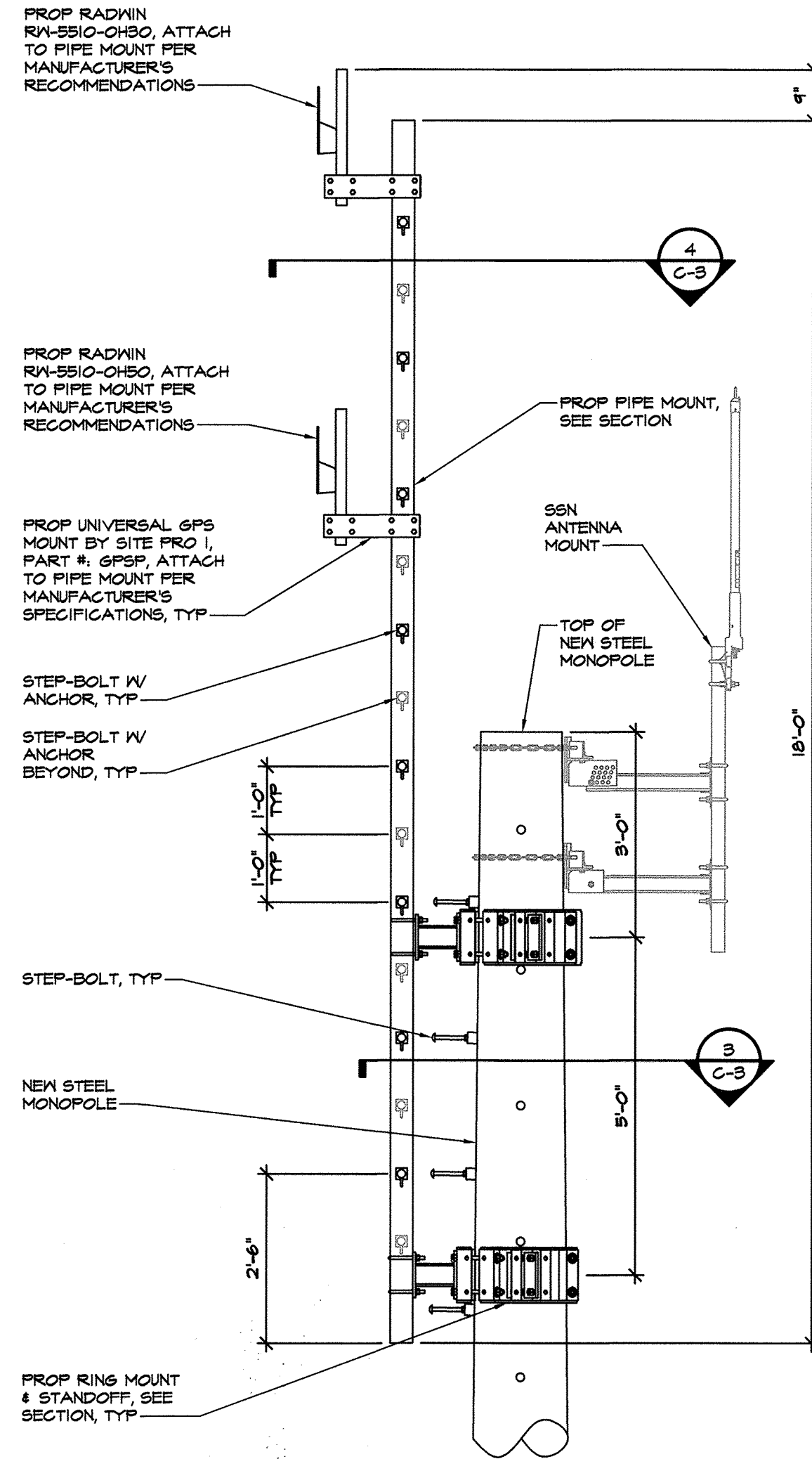
PROTECT YOURSELF. GIVE THREE WORKING DAYS NOTICE
THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERE TO APPURTENANT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DATE: 7-23-19
DATE: 7-25-19
DATE: 7-30-19

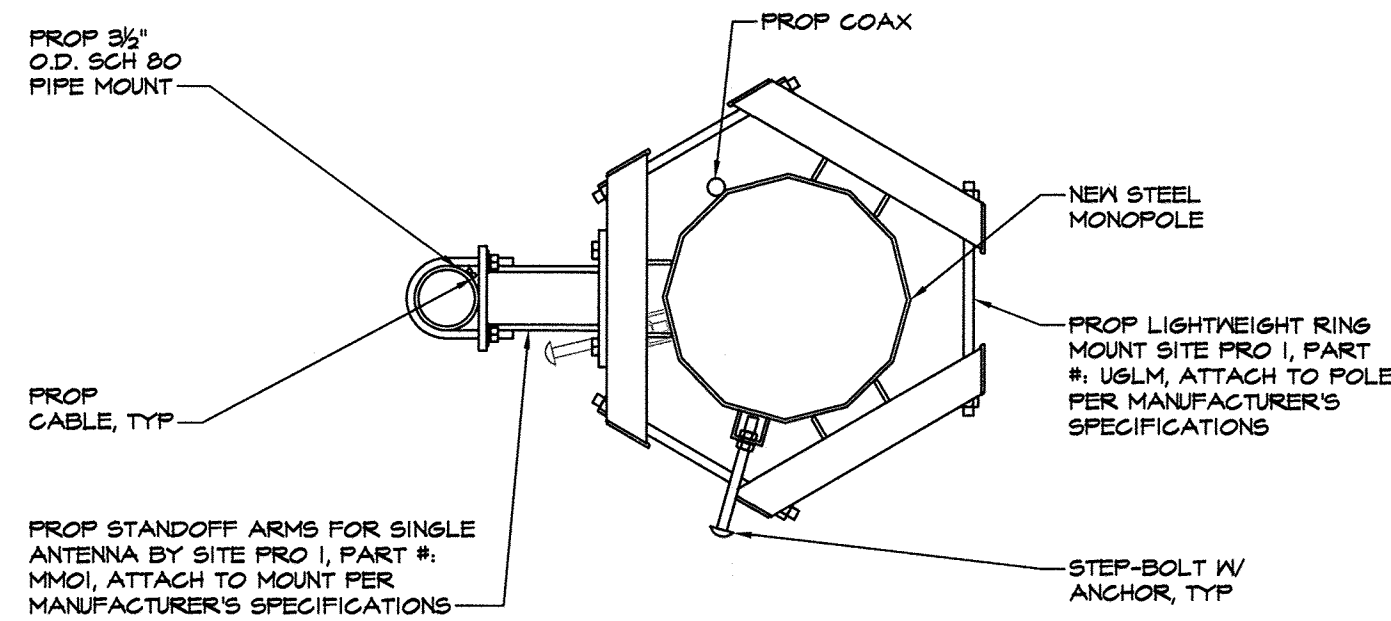
APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE: _____



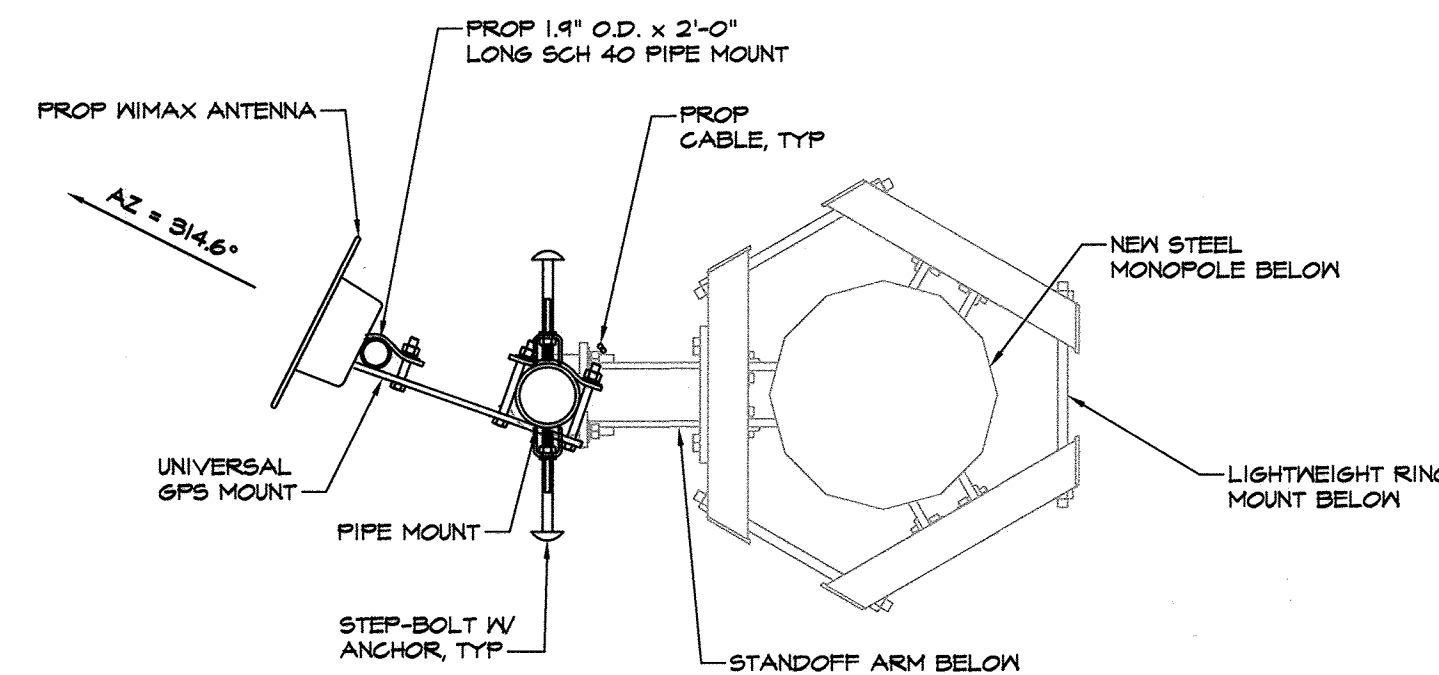
TYP SSN ANTENNA MOUNT
SCALE: 1/2" = 1'-0"



WIMAX ANTENNA MOUNT
SCALE: 1/2" = 1'-0"



MONOPOLE EXTENSION COLLAR
SCALE: 1" = 1'-0"



TYP WIMAX ANTENNA MOUNT
SCALE: 1" = 1'-0"

CODES

- A. ANSI/TIA-222-G-2-2014 'STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS', AND ALL SUBSEQUENT SUPPLEMENTS
- B. INTERNATIONAL BUILDING CODE (IBC-2015)
- C. IN ADDITION, ALL CONSTRUCTION SHALL CONFORM WITH THE GOVERNING LOCAL BUILDING CODE

DESIGN LOADS

- A. THE EMBEDDED STEEL MONOPOLE HAS BEEN DESIGNED TO SUPPORT THE APPURTENANCES LISTED IN THE MONOPOLE ANALYSIS REPORT BY MORRIS & RITCHIE ASSOCIATES, JOB NO. 16208195, DATED AUGUST 6, 2018.
- B. WIND LOAD DESIGN DATA
 ULTIMATE WIND SPEED (NO ICE): V_{ult} = 130 MPH
 BASIC WIND SPEED (WITH ICE): V₁ = 40 MPH
 DESIGN RADIAL ICE THICKNESS: 3/4" (ICE THICKNESS INCREASES WITH HEIGHT)
 RISK CATEGORY: III/IV
 EXPOSURE CATEGORY: C
 TOPOGRAPHIC CATEGORY: I
- C. EARTHQUAKE LOAD DESIGN DATA
 NOT APPLICABLE: S_e < 1.00
- D. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACINGS AS REQUIRED DURING ERECTION AND CONSTRUCTION. DESIGN OF TEMPORARY BRACING IS THE RESPONSIBILITY OF THE CONTRACTOR. SEE CONTROLLED LOW-STRENGTH MATERIAL SECTION OF NOTES FOR ADDITIONAL INFORMATION.

MISCELLANEOUS

- A. THE CONTRACTOR SHALL INSTALL THE EMBEDDED STEEL MONOPOLE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS, IN ADDITION TO THE SPECIFICATIONS ON THESE DRAWINGS.
- B. THE CONTRACTOR SHALL LOCATE ALL UTILITIES IN THE AREA OF CONSTRUCTION AND PREVENT DAMAGE TO THEM. SHOULD DAMAGE OCCUR TO ANY UTILITIES, THE CONTRACTOR IS REQUIRED TO REPAIR THE DAMAGE TO THE SATISFACTION OF THE OWNER AT HIS OWN EXPENSE.
- C. IN CASES OF CONFLICT BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS OR EXISTING CONDITIONS, CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS AND OBTAIN CLARIFICATION PRIOR TO BIDDING AND PROCEEDING WITH WORK.
- D. THE CONTRACTOR SHALL NOT SUBMIT REPRODUCTIONS OF THE STRUCTURAL CONTRACT DOCUMENTS AS SHOP DRAWINGS.
- E. SCALES SHOWN ON THE STRUCTURAL CONTRACT DRAWINGS ARE FOR GENERAL INFORMATION ONLY. DIMENSIONAL INFORMATION SHALL NOT BE OBTAINED BY SCALING THE DRAWINGS.
- F. APPLY DETAILS, SECTIONS AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL, DETAIL TITLE OR NOTE.
- G. PROVIDE SHORINGS AND PROTECTION FOR EXCAVATION AS NECESSARY TO PREVENT CAVING AND COMPLY WITH ALL APPLICABLE OSHA RULES AND REGULATIONS.
- H. SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS MUST BE SUBMITTED BY THE CONTRACTOR OR OWNER FOR REVIEW BY THE ENGINEER. IF THE CONTRACTOR OR OWNER FAILS TO SUBMIT THE SHOP DRAWINGS, THE ENGINEER WILL NOT BE RESPONSIBLE FOR STRUCTURAL CERTIFICATION AND DESIGN OF THE PROJECT. THE SHOP DRAWINGS SHALL INDICATE ANY DEVIATIONS OR OMISSIONS FROM THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMISSION AND MAKE ALL CORRECTIONS DEEMED NECESSARY.

EMBEDDED STEEL MONOPOLE

- A. STEEL MONOPOLE SPECIFICATIONS:
 MANUFACTURER: VALMONT
 DESIGNATION: CLASS H8, RUS S-09.0 (12-SIDED)
 POLE TYPE: THREE-PIECE WITH SLIP JOINTS
 TOTAL POLE LENGTH: SEE DRAWINGS
 TOP SECTION THICKNESS: 0.214 IN
 MIDDLE SECTION THICKNESS: 0.250 IN
 BOTTOM SECTION THICKNESS: 0.281 IN
 BASE DIA @ BEARING PLATE: 32.33 IN
 GROUNDLINE MOMENT CAPACITY: 1064.8 K-FT
 APPROXIMATE POLE WEIGHT: 8,242 LBS
 SEE DRAWINGS
- B. MISCELLANEOUS SPECIFICATIONS:
 STEEL FINISH: GALVANIZED
 CORROSION: 1/4" ABOVE GRADE TO BOTTOM OF POLE
 CLIMBING HARDWARE: STEP-BOLTS 10' ABOVE GRADE TO TOP OF POLE

STRUCTURAL AND MISCELLANEOUS STEEL

- A. ALL STEEL CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL 'SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS' (ANSI/AISC 360) AND THE AISC 'CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES'.
- B. ALL PIPE SHALL CONFORM TO ASTM A53, GRADE B (F_y = 35 KSI).
- C. ALL U-BOLTS SHALL CONFORM TO ASTM A307 (F_v = 60 KSI).
- D. ALL NUTS SHALL CONFORM TO ASTM A563.
- E. ALL WASHERS SHALL CONFORM TO ASTM F436.
- F. FIELD WELDING IS NOT PERMITTED.
- G. THE CONTRACTOR SHALL NOT SPLICED OR CUT OPENINGS IN STEEL MEMBERS NOT SHOWN ON CONTRACT DRAWINGS WITHOUT THE PERMISSION OF THE STRUCTURAL ENGINEER.
- H. ALL STEEL MEMBERS, FABRICATIONS AND ASSEMBLIES SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A125 AFTER FABRICATION. ALL BOLTS, WASHERS & NUTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM F2321.
- I. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
- J. AN INDEPENDENT INSPECTION AGENCY SHALL INSPECT ALL STRUCTURAL STEEL AND VERIFY THAT IT CONFORMS TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. FIELD INSPECTION REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN 5 DAYS OF THE INSPECTION. THE CONTRACTOR SHALL NOTIFY THE INSPECTION AGENCY OF ALL PHASES OF STEEL CONSTRUCTION AND WELDING.

STRUCTURAL BACKFILL

CRUSHED STONE

- A. STONE SHALL BE 1" DIAMETER OR SMALLER MEETING THE GRADATION REQUIREMENTS OF SIZE NO. 57 PER COARSE AGGREGATE OF ASTM C89.
- B. STONE SHALL BE DEPOSITED IN 6 INCH MAXIMUM LOOSE LIFTS AND COMPACTED TO THE SPECIFIED FINISHED GRADE.

CONTROLLED LOW-STRENGTH MATERIAL (CLSM)

- A. ALL CLSM CONSTRUCTION SHALL CONFORM TO THE LATEST STANDARD FOR CONTROLLED LOW-STRENGTH MATERIAL (ACI 224).
- B. CLSM MATERIAL SPECIFICATIONS:
 1. AGGREGATE SHALL CONFORM TO ASTM C89. COARSE AGGREGATE SHALL CONSIST OF A WELL-GRADED MIXTURE OF CRUSHED ROCK OR SAND WITH A MAXIMUM SIZE AGGREGATE OF 3/4". 100% SHALL PASS THE #4 SIEVE. NOT MORE THAN 20% SHALL BE RETAINED BY THE #4 SIEVE AND NOT MORE THAN 12% SHALL PASS THE NUMBER 200 SIEVE. ALL MATERIAL SHALL BE FREE FROM ORGANIC MATTER AND NOT CONTAIN MORE ALKALI, SULFATES, OR SALTS THAN THE NATIVE MATERIAL AT THE SITE.
 2. THE ENTRAINED AIR CONTENT SHALL BE A MINIMUM OF 8% AND A MAXIMUM OF 20%.
 3. AIR ENTRAINING ADMIXTURE AND/OR WATER REDUCING AGENT MAY BE ADDED TO IMPROVE THE WORKABILITY AND SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C260 AND ASTM C494, RESPECTIVELY.
 4. WATER SHALL BE POTABLE, CLEAN AND FREE FROM OBJECTIONABLE QUANTITY OF SILTY ORGANIC MATTER, ALKALI, SALTS, AND OTHER IMPURITIES.
- C. CLSM PERFORMANCE SPECIFICATIONS:
 1. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 500 PSI.
 2. THE MINIMUM UNCONFINED COMPRESSIVE STRENGTH AT 6-HOURS SHALL BE 50 PSI. THE STEEL MONOPOLE SHALL BE TEMPORARILY SUPPORTED DURING THE CLSM 6-HOUR SETTING PERIOD TO ALLOW THE CLSM TO PROPERLY CURE.
 3. THE MINIMUM FLOW (SLUMP) SHALL BE 8 INCHES WHEN TESTED IN ACCORDANCE WITH ASTM D6103.
- D. ALL CLSM MIX DESIGNS, INCLUDING CEMENT CONTENT, WATER CEMENT RATIO, FINE AND COARSE AGGREGATE CONTENT AND ALL ADMIXTURES, SHALL BE REVIEWED BY ENGINEER PRIOR TO PLACING FIRST CLSM.
- E. ALL CLSM SHALL BE SAMPLED AND TESTED BY THE TESTING AGENCY. THE CONTRACTOR SHALL NOTIFY THE TESTING AGENCY 48 HOURS PRIOR TO THE PLACING OF ANY CLSM. TESTING SHALL BE IN ACCORDANCE WITH ASTM C44.
- F. THE CLSM SHALL NOT BE REQUIRED TO SUPPORT WIND LOADING FOR A MINIMUM OF 6 HOURS AND ALL TEMPORARY BRACINGS REQUIRED TO SUPPORT THE MONOPOLE STRUCTURE DURING CONSTRUCTION SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR. SHOP DRAWINGS, SIGNED AND SEALED BY A REGISTERED ENGINEER IN THE STATE OF MARYLAND, SHALL BE SUBMITTED FOR REVIEW. SHOP DRAWINGS SHALL INDICATE THE TYPE, EXTENT, SIZE, AND LOCATION OF ALL TEMPORARY BRACINGS, AS WELL AS THE SEQUENCE OF CONSTRUCTION.



Know what's below. Call before you dig.

PROTECT YOURSELF, GIVE THREE WORKING DAYS NOTICE
 THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERE TO APPURTENANT.

SHEET:
SDP-09

MORRIS & RITCHIE ASSOCIATES, INC.
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
 14280 PARK CENTER DRIVE
 LAUREL, MD 20707
 (410) 792-9792 / (301) 776-1690
 FAX: (410) 792-7395
 MRA@GTA.COM
 Copyright 2019 Morris & Ritchie Associates, Inc.

FRIENDSHIP MANOR SUBSTATION - BGE
SDP-97-97
ESSENTIAL TELECOMMUNICATION STRUCTURE
CONSTRUCTION DETAILS AND NOTES
 12600 FREDERICK ROAD, WEST FRIENDSHIP, MD 21794
 TAX MAP 15, GRID 11, PARCEL 30, COUNCIL DISTRICT 3
 HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
6-13-2019	ADDED ESSENTIAL COMMUNICATION STRUCT.	16208175
	AND NEW DETAIL SHEETS 9 AND 10	
		SCALE: SEE DETAIL
		DATE: 7-2-2019
		DRAWN BY: MAM
		DESIGN BY: MAM
		REVIEW BY: TM
		SHEET: 10 OF 10

DEVELOPER/APPLICANT
 BALTIMORE GAS AND ELECTRIC COMPANY
 1088 NORTH FRONT STREET
 BALTIMORE, MD 21202
 PHONE NUMBER: 410-470-8572
 FAX: 410-470-5899

OWNER
 BALTIMORE GAS AND ELECTRIC COMPANY
 P.O. BOX 1475
 BALTIMORE, MD 21203

APPLICANT ATTORNEY
 WHITEFORD | TAYLOR | PRESTON
 TOWSON COMMONS, SUITE 300
 ONE WEST PENNSYLVANIA AVENUE
 TOWSON, MD 21204-5025
 ATTN: JENNIFER R. BUSSE, PARTNER
 PHONE: 410-832-2077
 FAX: 410-339-4027

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.
 THOMAS C. NEUGEBAUER
 LICENSE NO. 29203
 EXPIRATION DATE: 06/16/2021

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 7-23-19
 DATE: 7-25-19
 DATE: 7-30-19

APPROVED
 PLANNING BOARD OF HOWARD COUNTY
 DATE: _____