SITE DEVELOPMENT PLAN
HIGH RIDGE SUBSTATION
8271 LEISHEAR ROAD
HOWARD COUNTY, MARYLAND

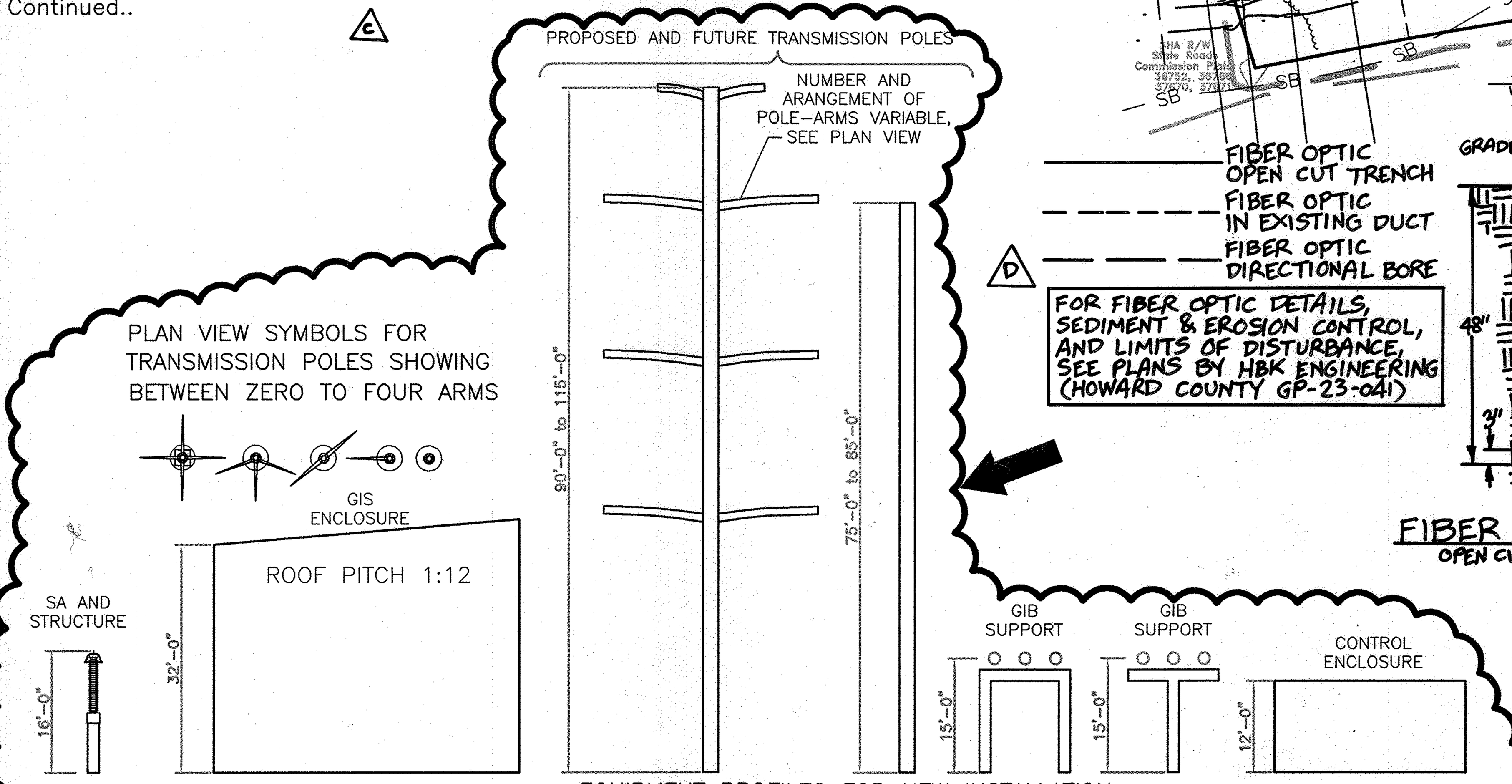
GENERAL NOTES

1. Site Data: Tax Map 46; Grid 12; Parcel 251; 6th Election District
2. Water and sewer will not be used within this site.
3. The Contractor shall notify the following utility companies or agencies at least five(5) working days before starting work shown on these plans:

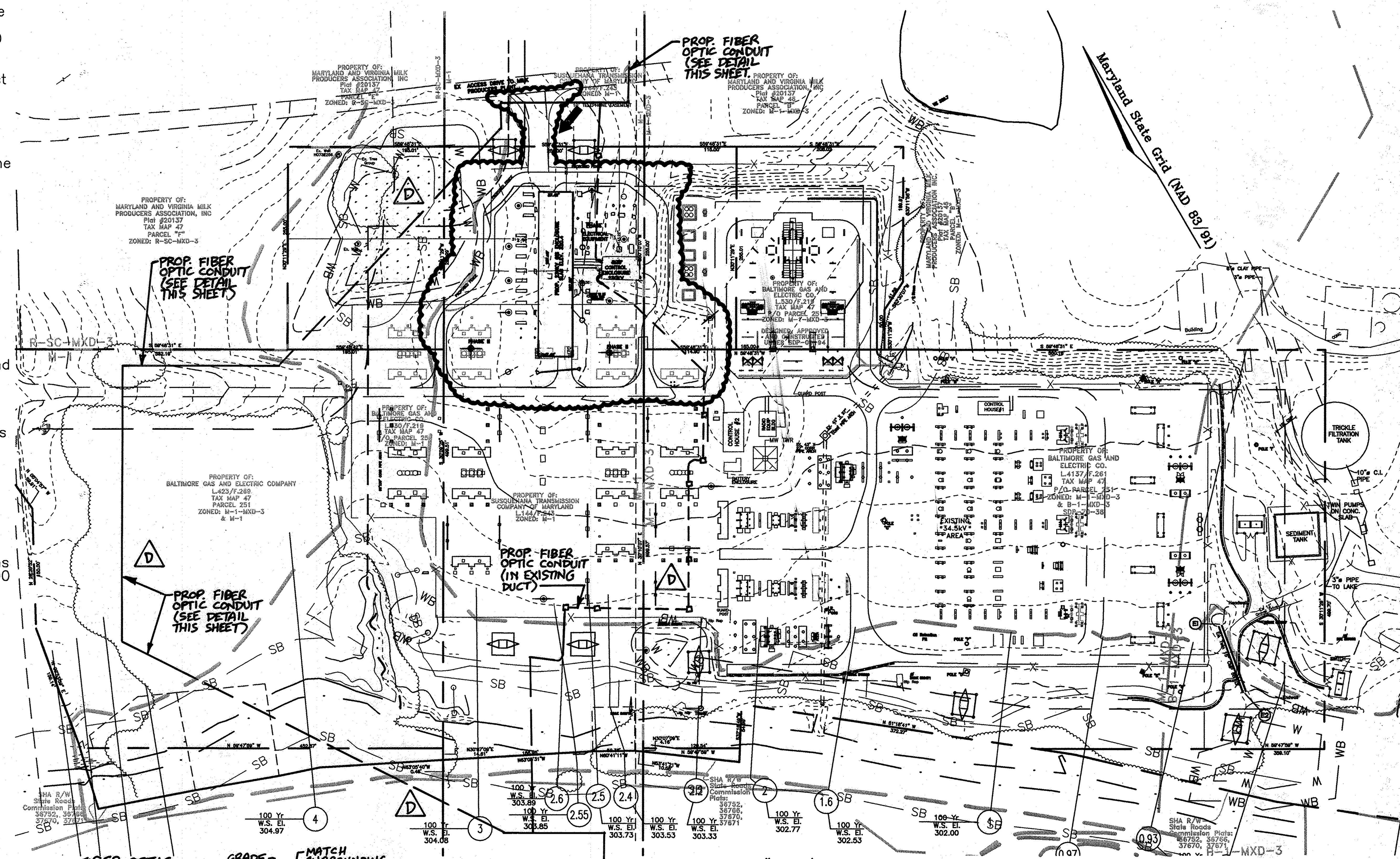
State Highway Administration	410.531.5533
BGE(Contractor Services)	410.850.4620
BGE(Underground Damage Control)	410.787.9068
Miss Utility	1.800.257.7777
Colonial Pipeline Company	410.795.1390
Howard County, Dept. of Public Works, Bureau of Utilities	410.313.4900
Howard County Health Department	410.313.2640
AT&T	1.800.252.1133
Verizon	1.800.743.0033/410.224.9210

4. The contractor shall notify Miss Utility at 1−800−257−7777 at least 48 hours prior to any excavation work being done.
5. 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 the start of work.
6. This project is in conformance with the latest Howard County Standards unless waivers have been approved.
7. This plan has been prepared in accordance with the provisions of section 16.124 of the Howard County Code and Landscape Manual. Financial surety for the required landscaping shall be posted as part of the Grading Permit in the amount of $2,700.00 (9 shade trees @ $300/tree)
8. All paving to be BGE Standard unless otherwise noted. See Detail Sheet 4 of 5.
9. In accordance with section 16.1202 (b) (1) (xi) of the Howard County Code for Forest Conservation this project is exempt from the requirement to provide forest conservation. Additionally the area outside the right−of−way is part of an existing developed area, being re−purposed.
10. All construction shall be in accordance with the latest standards and specifications of Howard County in addition to MSHA standards and specifications if applicable.
11. Any damage to public right−of ways, paving or existing utilities will be corrected at the contractor's expense.
12. Soil compaction specifications, requirements, methods and materials are to be in accordance with the recommendations of the project Geotechnical Engineer. Geotechnical Engineer to confirm acceptability of proposed paving section, based on soil test, prior to construction.
13. Traffic control devices, markings and signage shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any paving.
14. Estimates of Earthwork quantities are provided solely for the purpose of calculating fees.
15. The topography shown hereon is based on an field run survey performed by FSH Associates in May, 2009, and Shanaberger & Lane in July 2004. Aerial Topography flown by Harford Aerial Surveys, Inc. on September 5, 2004. The coordinates shown hereon are based on the Howard County Geodetic Control, which is based upon the Maryland State Plane Coordinate System. Howard County monument numbers 46FA and 47DB were used for this project.
16. A noise study is not required for this project due to Non−Residential use.
17. There are no known cemeteries or burial grounds located on this site.
18. This project is subject to the Amended Fifth Edition of the Subdivision and Land Development Regulations per Council Bill 45−2003 and the Amended Zoning Regulations per Council Bill 75−2003. The builder shall apply for building permits within one year of signature approval of the Site Development Plan.
19. In accordance with Section 128.A.3.(c) of the Zoning Regulations, there is no height limit for the proposed poles and other supporting structures for electric, telephone or cable television transmission or distribution.
20. According to Section 122.B.49.(a) of the Zoning Regulations, in order for utility substations to be permitted as a matter of right all uses must be a minimum of 50 feet from lot lines. This setback supersedes normal fence, parking and use setbacks for the M−1 Zoning District. According to Section 122.D.2.(c) of the Zoning Regulations the minimum required setback from any residential zoning district is 100 feet. The 100 foot setback supersedes the 50 foot setback for this project.
21. Stormwater Management is provided as follows:
    Storage Volume for CPv is not required.
    WQv and Rev is provided utilizing the sheetflow to buffer credit.
22. Disturbance within the floodplain and wetlands buffer has been accepted as necessary in accordance with Sections 16.115(c) and 16.116.(c) of the Subdivision Regulations due to design standards for electrical substations, which inhibit the ability of the developer to shift the equipment away from those resources.
23. Administrative Adjustment, AA−09−020, was approved by Decision and Order on December 4, 2009 to allow a reduction of the 100 foot setback from a residential district to 80 feet to to install fencing and a roadway for mandated BGE equipment upgrades. THE ZONING DIVISION DETERMINED A NEW ADMIN. ADJUSTMENT IS NOT REQUIRED PER 2/16/16 MEETING, SINCE REPLACING THE FENCE DOES NOT ALTER OR ENLARGE THE USE OF THE AREA.

Continued.. C



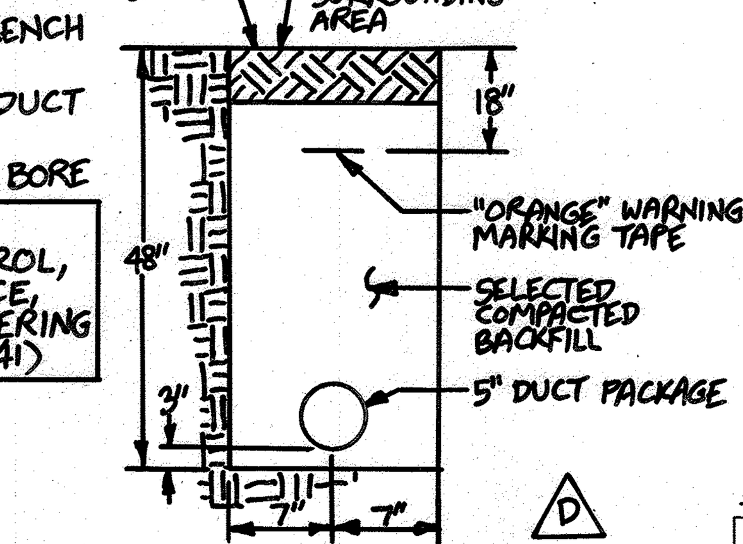
EQUIPMENT PROFILES FOR NEW INSTALLATION
NOT TO SCALE



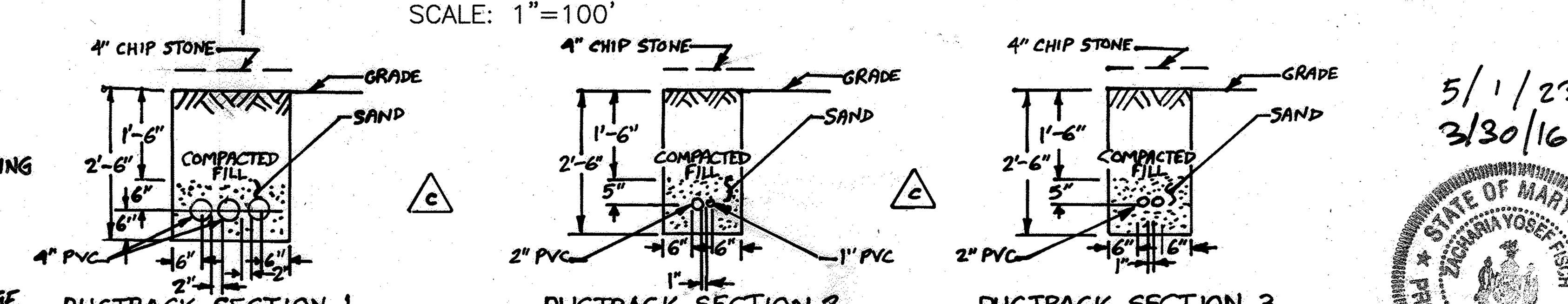
SCALE: 1"=100'

———— FIBER OPTIC OPEN CUT TRENCH
– – – – FIBER OPTIC IN EXISTING DUCT
— — — FIBER OPTIC DIRECTIONAL BORE

D FOR FIBER OPTIC DETAILS, SEDIMENT & EROSION CONTROL, AND LIMITS OF DISTURBANCE, SEE PLANS BY HBK ENGINEERING (HOWARD COUNTY GP-23-041)



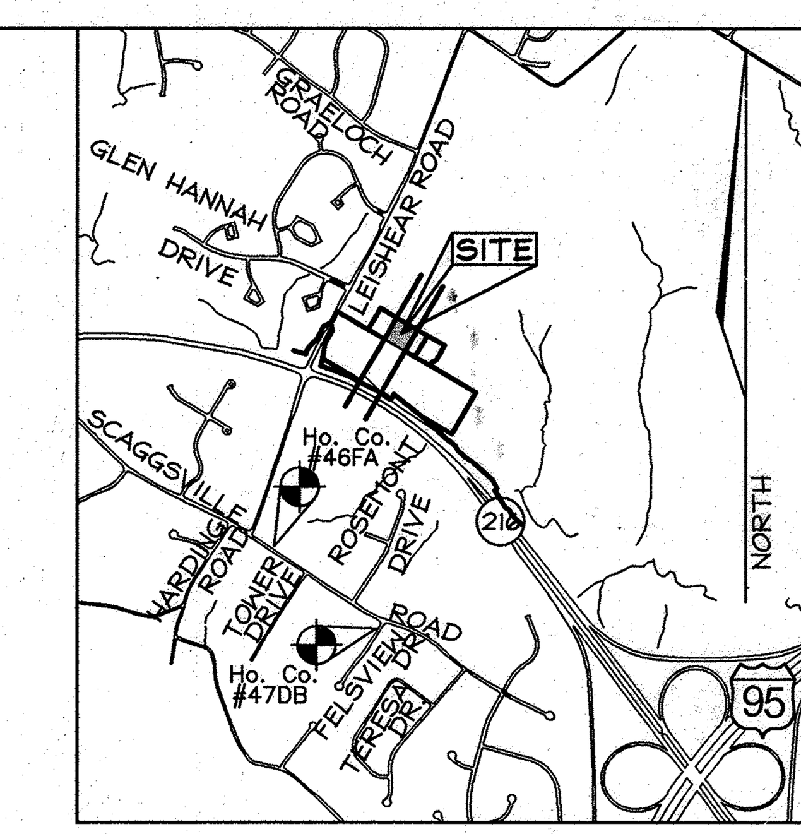
FIBER OPTIC CONDUIT
OPEN CUT TRENCH INSTALLATION
SCALE: NONE



DUCTPACK SECTION 1
4" PVC CONDUITS
N.T.S.

DUCTPACK SECTION 2
1" PVC CONDUITS
N.T.S.

DUCTPACK SECTION 3
1" PVC CONDUITS
N.T.S.



VICINITY MAP
1"=2000'

THE BEARINGS, COORDINATES AND ELEVATIONS USED IN THIS SURVEY ARE BASED ON HOWARD COUNTY CONTROL

POINT NOS.			
46FA	N535140.866	E1346962.69	ELEV.403.65
47DB	N534316.917	E1348131.25	ELEV.398.56

HOWARD COUNTY ADC MAP 5053 − GRID A−8

GENERAL NOTES CONT.

24. The soils shown on this plan are derived from the soil Survey Geographic (SSURGO) database for Howard County, Maryland. The data source for this product is the U.S. Department of Agriculture, Natural Resources Conservation Service.
25. The 100−year floodplain study was performed by FSH Associates in Oct. 2009 for the tributary to the Hammond Branch running along the western portion of the site. Floodplain data for the Hammond Branch was taken from a study by KCI Technologies in August 2006.
26. The subject property is zoned M−1 & M−1−MXD−3 per the 2/2/04 Comprehensive Zoning Plan and the Comp Lite Zoning Amendments adopted July 28, 2006.
27. In accordance with Section 128.A.11 of the Howard County Zoning Regulations there is no required setback from an internal Zoning District boundary for a development showing an integrated design that incorporates more than one zoning district.
28. A wetland and stream investigation study was performed by Exploration Research Inc. in December 2007. All existing wetlands and stream have been delineated. No grading, removal of vegetative cover or trees, paving and new structures shall be permitted within the wetlands and stream(s) or their required buffers without first obtaining required permission from the Department of Planing and Zoning or as determined to be "necessary disturbance" per the letter dated December 10, 2008 from the Department of Planing and Zoning, AND PER MEETING W/ DPZ 2/10/2016 REGARDING FENCE REPLACEMENT & SECURITY CAMERAS INSTALLATION. C
29. Existing utilities are based on field and aerial survey of above−ground facilities, BGE plans and Howard County public records. Site service for water or sewer is not affected or required by this development.
30. The proposed fence will be 8' high with 1' of 3−strand barbed wire atop, to match existing perimeter fence.
31. It has been determined for this specific development in this specific location, that the fence and driveway do not constitute a "use" in violation of the 50' setback requirement in the M−1 zone, per a letter dated December 15, 2009 from the Department of Planning and Zoning.
32. No traffic study is required for this project. There is no regular staff present currently, or as a result of the proposed project.
33. For impacts to the wetland buffer and 100 year floodplain, a Non−tidal Wetlands and Waterways Permit is required and an application has been filed and is under review with a tracking number of 200963071/09−NT−0358.
34. No stockpile area is permitted on−site.

SHEET INDEX

DESCRIPTION	SHEET No.
Cover Sheet	1 of 4
Grading and Station Layout Plan	2 of 4
Sediment & Erosion Control and Landscape Plan	3 of 4
SWM & Sediment & Erosion Control Details & Notes	4 of 4

5/1/23
3/30/16

STATE OF MARYLAND
ZACHARIA YOSEF FISCH
22418
PROFESSIONAL ENGINEER

Zacharia Y. Fisch
2/23/2010

APPLICANT/OWNER/DEVELOPER
BALTIMORE GAS AND ELECTRIC COMPANY
SPRING GARDENS COMPLEX
1699 LEADENHALL STREET
BALTIMORE, MARYLAND 21230
ATTN: GREG KAPPLER (410) 291−4688

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel:410-567-5200 Fax: 410-796-1562
E-mail: info@fsheri.com

SITE ANALYSIS DATA CHART

a. Total project area: 22.845 Acres± per SDP−70−38, SDP−05−94, and area of Right−of−Way contained within the substation boundaries.
b. Area of plan submission: 1.99 Acres±
c. Limit of disturbed area: 1.99 Acres±
d. Present zoning: "M−1" and "M−1−MXD−3" per 2/02/04 Comprehensive Zoning Plan and per the "Comp Lite" Zoning Amendments effective on 07/28/06.
e. Proposed uses for site & structures: Unmanned Electrical Substation
f. DPZ file references: SDP−70−38, SDP−05−94
No regular staff is present (unmanned station)
Periodic maintenance parking may utilize the shown paved parking areas as well as park along the driveway and within existing station area.

ADDRESS CHART

Parcel	Street
251	8271 Leishear Road

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[illegible]	3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
Kent Sheubrooks	3/10/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
Thomas E. Butler	3/10/10
DIRECTOR	DATE

PERMIT INFORMATION CHART

Subdivision Name: None			Section/Area None		Lot/Parcel No. L.144/F.233 & P.251
Plat # None	Grid 12	Zoning M−1 M−1−MXD−3	Tax Map No. 46	Elect. District 6th	Census Tract 606802
Water Code None			Sewer Code None		

REV	DATE	DESCRIPTION	TECH.	ENG.
4	01/11/10	REVISED PER COUNTY COMMENT	FSH	FSH
3	10/14/09	REVISED PER COMMENTS; FOR SUBMISSION	FSH	FSH
2	09/03/09	REVISED CONCEPT FOR REVIEW	FSH	FSH
1	07/22/09	JOB #7819 CONCEPTUAL DESIGN	FSH	FSH

GENERAL ELECTRIC CO.
T&D − POWER DELIVERY

UPDATE YOUR PRINT TO REFLECT "AS BUILT" STATE & RETURN A COPY TO THE APPLICABLE DESIGN UNIT 3

REV.	DATE	ACCOUNT NO.	DESCRIPTION	APPROVED
—	2010	D04107	230kV GIS EXPANSION PROJECT.	
A	10/2010		REVISE PROPOSED ENCLOSURES AND EQUIPMENT FOUNDATIONS FOR FINAL ELECTRICAL DESIGN. REVISE GRADING AND DRIVEWAY TO MATCH.	
C	MAR. 2016		REPLACED FENCE; ADDED CAMERAS & DUCTS.	
D	4-29-23		ADDED FIBER OPTIC LINES.	

AUTOCAD

ENGINEERING
CIVIL GE
ELEC. GE
PROJ. ENG.
PROJ. MGR. AEA/GH
PRIN. ENG. JS
SUPV. ENG.

DESIGN GROUP
DESIGNED GE
DRAWN GE
CHECKED
APPROVED
DATE 11FEB2010

COVER SHEET
Tax Map 46 Grid 12 Parcel 251
6th Election District
Howard County, Maryland
Sheet 1 of 4
230−115,115−34.4 & 115−13kV SUBSTATION

HIGH RIDGE
SUBSTATION & SYSTEM PROTECTION

BGE
SCALE AS SHOWN
DWG NO. 502442D
REV C

SDP−10−031

M:\BGE High Ridge - GE 3605\dwg\SDP\502442_SDP10-31_S1.dwg, 2/9/2010 3:05:59 PM, aberlett, 1:1

LEGEND

FIBER OPTIC OPEN CUT TRENCH	
FIBER OPTIC IN EXISTING DUCT	
FIBER OPTIC DIRECTIONAL BORE	
EX. 10' CONTOUR	EX. B.R.L.
EX. 2' CONTOUR	EX. RIGHT OF WAY
PROPOSED 10' CONTOUR	EX. PHONE EASEMENT
PROPOSED 2' CONTOUR	PROPOSED 8' FENCE
EX. TREE LINE	EXISTING FENCE
EX. SITE BOUNDARY	— SB — SB — 50' STREAM BUFFER
LOD — LIMIT OF DISTURBANCE	— SSF — SSF — SUPER SILT FENCE
— W — W — WETLANDS	— SF — SF — SILT FENCE
— WB — WB — WETLAND BUFFER	100 YEAR FLOODPLAIN
SOILS BOUNDARY	TRANSMISSION POLES
TBR — TO BE REMOVED	SECURITY CAMERA POLE
Ⓔ — EX. ELECTRIC MANHOLE	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[illegible] 3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent Sheubrooks 3/10/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Thomas E. Butler 3/10/10
DIRECTOR DATE

DRIVEWAY ℄ LINE TABLE

LINE	LENGTH	BEARING
D1	72.61	N30°07'09"E
D2	16.05	S89°52'51"E
D3	60.90	N30°09'29"E
D4	46.02	N71°43'13"E
D5	119.24	S59°52'51"E
D6	34.64	S20°49'36"E
D7	106.44	S30°07'09"W
D8	4.91	S75°07'09"W
D9	75.81	S30°07'09"W

DRIVEWAY ℄ CURVE TABLE

CURVE #	STATIONS	DELTA	RADIUS	ARC LENGTH	TANGENT	CHORD
DC1	PC = 0+72.61; PT = 1+19.48	61°48'08"	43.72'	47.16'	26.17	S61°01'13"W 44.91'
DC2	PC = 1+35.53; PT = 1+83.70	60°00'00"	46.00'	48.17'	26.56	N60°07'09"E 46.00'
DC3	PC = 2+44.61; PT = 2+56.21	41°33'43"	16.00'	11.61'	6.07	S50°56'21"W 11.35'
DC4	PC = 3+02.23; PT = 3+15.75	48°23'57"	16.00'	13.52'	7.19	N84°04'49"W 13.12'
DC5	PC = 4+34.99; PT = 4+52.71	39°03'15"	26.00'	17.72'	9.22	N40°21'13"W 17.38'
DC6	PC = 4+87.35; PT = 5+10.47	50°56'45"	26.00'	23.12'	12.39	N04°38'47"E 22.36'
DC7	PC = 6+16.91; PT = 6+37.33	45°00'00"	26.00'	20.42'	10.77	N52°37'09"E 19.90'
DC8	PC = 6+42.24; PT = 6+62.66	45°00'00"	26.00'	20.42'	10.77	S52°37'09"W 19.90'

NOTE: FOR CONSTRUCTION DETAILS OF OIL RETENTION BERM AND FOUNDATION, CONTRACTOR SHALL UTILIZE BGE'S DESIGN PLANS.

FOR FIBER OPTIC DETAILS, SEDIMENT & EROSION CONTROL, AND LIMITS OF DISTURBANCE, SEE PLANS BY HBK ENGINEERING (HOWARD COUNTY GP-23-041)

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. #22418, Expiration Date: 07/29/2011.

NOTES

PROPOSED CONTOURS DENOTE BOTTOM OF GRAVEL. 4" OF AASHTO No.7 STONE WILL BE LAIN WITHIN FENCE LINE ON TOP OF THE FINISH GRADE.

REV	DATE	DESCRIPTION	TECH.	ENG.
4	1/11/10	REVISED PER COUNTY COMMENT	FSH	FSH
3	10/14/09	REVISED PER COMMENTS; FOR SUBMISSION	FSH	FSH
2	09/03/09	REVISED CONCEPT FOR REVIEW	FSH	FSH
1	07/22/09	JOB #7819 CONCEPTUAL DESIGN	FSH	FSH

GENERAL ELECTRIC CO.
T&D - POWER DELIVERY

APPLICANT/OWNER/DEVELOPER
BALTIMORE GAS AND ELECTRIC COMPANY
SPRING GARDENS COMPLEX
1699 LEADENHALL STREET
BALTIMORE, MARYLAND 21230
ATTN: GREG KAPPLER (410) 291-4688

SEE SDP-70-038 FOR PLAN SHOWING ENTIRE SUB-STATION

STATE OF MARYLAND
ZACHARIA YOSEF FISCH
22418
PROFESSIONAL ENGINEER
[illegible]
2/23/2010

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel:410-567-5200 Fax: 410-796-1562
E-mail: info@fsheri.com

UPDATE YOUR PRINT TO REFLECT "AS BUILT" STATE & RETURN A COPY TO THE APPLICABLE DESIGN UNIT 3

REV.	DATE	ACCOUNT NO.	DESCRIPTION	APPROVED
—	2010	D04107	230kV GIS EXPANSION PROJECT.	
A	10/2010		REVISE PROPOSED ENCLOSURES AND EQUIPMENT FOUNDATIONS FOR FINAL ELECTRICAL DESIGN. REVISE GRADING AND DRIVEWAY TO MATCH.	
B	5/2014		ADD A CONCRETE FOUNDATION AND OIL RETENTION BERM FOR A TEMPORARY TRANSFORMER SITE. ADJUST 100-YR FLOODPLAIN PER 2013 FEMA & FIELD SURVEY.	
C	MAR. 2016		REPLACED FENCE; ADDED CAMERAS & DUCTS.	
D	4-29-23		ADDED FIBER OPTIC LINES.	

AUTOCAD

ENGINEERING	
CIVIL	GE
ELEC.	GE
PROJ. ENG.	
PROJ. MGR.	AEA/GH
PRIN. ENG.	JS
SUPV. ENG.	

DESIGN GROUP	
DESIGNED	GE
DRAWN	GE
CHECKED	
APPROVED	
DATE	11FEB2010

GRADING AND STATION LAYOUT PLAN
Tax Map 46 Grid 12 Parcel 251
6th Election District
Howard County, Maryland
Sheet 2 of 4
230-115,115-34.4 & 115-13kV SUBSTATION

HIGH RIDGE

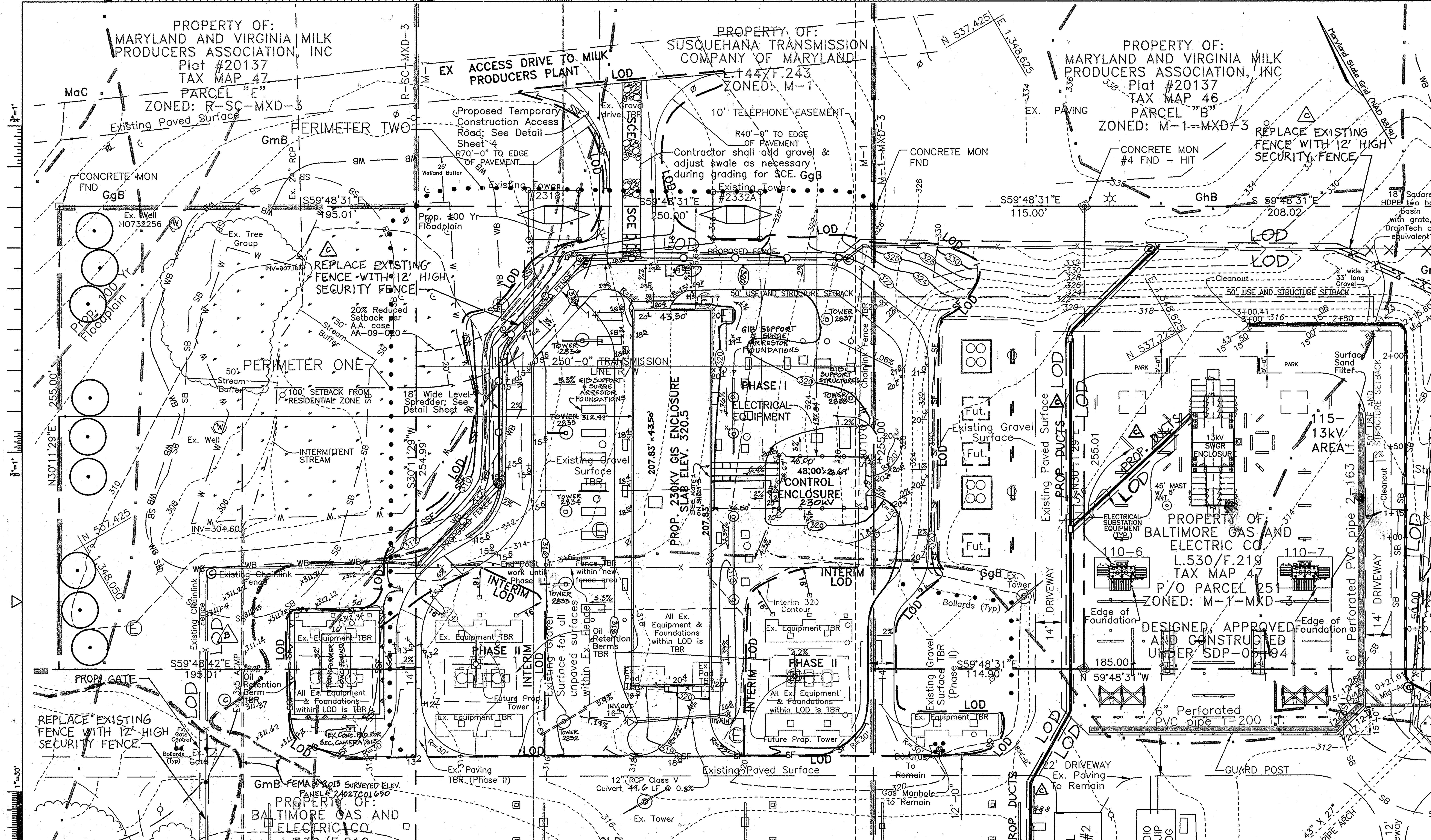
SUBSTATION & SYSTEM PROTECTION

BGE

SCALE 1"=30'
DWG NO. 502443D
REV C

SDP-10-031

M:\BGE High Ridge - GE 3605\dwg\SDP\502443_SDP10-31_S2.dwg, 2/9/2010 3:03:46 PM, aberlett, 1:1



LEGEND

- EX. 10' CONTOUR
- EX. 2' CONTOUR
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- EX. TREE LINE
- EX. SITE BOUNDARY
- LOD — LIMIT OF DISTURBANCE
- W — WETLANDS
- WB — WETLAND BUFFER
- SOILS BOUNDARY
- TBR — TO BE REMOVED
- EX. ELECTRIC MANHOLE
- EX. B.R.L.
- EX. RIGHT OF WAY
- EX. PHONE EASEMENT
- PROPOSED 8' FENCE
- EXISTING FENCE
- SB — 50' STREAM BUFFER
- SSF — SUPER SILT FENCE
- SF — SILT FENCE
- 100 YEAR FLOODPLAIN
- TRANSMISSION POLES
- SECURITY CAMERA POLE

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES		
Perimeter/Frontage Designation Landscape Type	1 A	2 A	
Linear Feet of Roadway Frontage/Perimeter	303'	250'	
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	No	No	
Credit for Wall, Fence, Berm, or Other Planting (Yes, No, Linear Feet Describe below if needed)	No	No	
Number of Plants Required Shade Trees Evergreen Trees Shrubs	 1:60 5 – –	 1:60 4* – –	
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 Substitution) Shrubs (10:1 Substitution) (Describe Plant Substitution Credits Below if needed)	 5 – – –	 4 – – –	

*Alternative Compliance requested. See note, this sheet. Required planting for perimeter 2 shall also be planted along perimeter 1.

Interim LOD shown will be the limits of the work until such time that the new electrical equipment comes on-line, as the existing equipment must remain in-service until then, and no disturbance closer than 16' to operating equipment is permitted for safety reasons.

NOTE 1: THE DUCTS BETWEEN THE ENCLOSURES WILL HAVE A 4' WIDE AREA RECESSED TO THE SUBGRADE LEVEL FOR THE PASSAGE OF WATER, IT IS AT THE TOP OF THE STATION STONE (4" ABOVE THE PROPOSED GRADE) ELSEWHERE.

NOTE:
PER A MEETING WITH CHIEF DIVISION OF LAND DEVELOPMENT, CHIEF DEVELOPMENT ENGINEERING DIVISION AND THE DIVISION OF INSPECTIONS, LICENSE AND PERMITS THAT TOOK PLACE ON 2/9/16. CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE SECURITY ENHANCEMENT AND FENCE REPLACEMENT WITHIN THE 100 YEAR FLOODPLAIN LIMITS IS CONSIDERED A NECESSARY DISTURBANCE AND IS ALLOWED BY THE DEPARTMENT OF PLANNING AND ZONING AND THE DEPARTMENT OF INSPECTION, LICENSE & PERMITS.

NOTE:
PER MEETING ON 2/9/16 WITH CHIEF DEVELOPMENT ENGINEERING DIVISION AND CHIEF OF DIVISION OF LAND DEVELOPMENT, IT WAS DETERMINED THAT THE LOD SHOWN ON THIS REDLINE REVISION IS FOR THE PURPOSE OF DEFINING THE WORK AREA AND NOT FOR CALCULATING OR REQUIRING STORM WATER MANAGEMENT.

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22418 — PROFESSIONAL ENGINEER
3/30/16
Zacharia Y. Fisch
2/23/2010

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
GgB	Glenelg loam, 3 to 8 percent slopes	B
GhB	Glenelg–Urban land complex, 0 to 8 percent slopes	B
GmB	Glenville silt loam, 3 to 8 percent slopes	C
Ha	Hatboro–Codorus silt loams, 0 to 3 percent slopes	D
MaC	Manor loam, 8 to 15 percent slopes	B

LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	NOTE
⊙	9	Acer rubrum– Red Maple	2"–3" cal.	B & B

See Sheet 4 of 4 for planting notes and detail.

This plan has been prepared in accordance with the provisions of section 16.124 of the Howard County Code and Landscape Manual. Financial surety for the required landscaping shall be posted as part of the Grading Permit in the amount of $2,700.00 (9 shade trees @ $300/tree)

Alternative Compliance Request

For Perimeter Two we are requesting Alternative Compliance for Landscaping. The proposed substation expansion is located within a Public Service Commission regulated Transmission Right of Way. The Best Management Practices for Transmission ROW's is for vegetation to be no higher than five (5) feet. The use of small shrubs will do nothing to screen the site, especially due to the elevation change north of this perimeter. We request that the required trees be transferred to Perimeter One.

SEE SDP-70-038 FOR PLAN SHOWING ENTIRE SUB-STATION.

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. #22418, Expiration Date: 07/29/2011.

APPLICANT/OWNER/DEVELOPER
BALTIMORE GAS AND ELECTRIC COMPANY
SPRING GARDENS COMPLEX
1699 LEADENHALL STREET
BALTIMORE, MARYLAND 21230
ATTN: GREG KAPPLER (410) 291-4688

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel:410-567-5200 Fax: 410-796-1562
E-mail: info@fsheri.com

NOTES

PROPOSED CONTOURS DENOTE BOTTOM OF GRAVEL. 4" OF AASHTO No.7 STONE WILL BE LAIN WITHIN FENCE LINE ON TOP OF THE FINISH GRADE.

DEVELOPER'S CERTIFICATE

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

Greg J. Kappler — 2/23/10
SIGNATURE OF DEVELOPER — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Kent Sheubrooks — 3/10/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Marsha S. Butler — 3/10/10
DIRECTOR — DATE

ENGINEERS CERTIFICATE

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

Zacharia Y. Fisch — 2/23/2010
SIGNATURE OF ENGINEER — DATE
ZACHARIA Y. FISCH

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 CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE(1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Greg J. Kappler — 2/23/10
SIGNATURE OF DEVELOPER — DATE

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

John R. Robertson — 3/4/10
HOWARD SCD — DATE

REV	DATE	DESCRIPTION	TECH.	ENG.
4	01/11/10	REVISED PER COUNTY COMMENT	FSH	FSH
3	10/14/09	REVISED PER COMMENTS; FOR SUBMISSION	FSH	FSH
2	09/03/09	REVISED CONCEPT FOR REVIEW	FSH	FSH
1	07/22/09	JOB #7819 CONCEPTUAL DESIGN	FSH	FSH

GENERAL ELECTRIC CO.
T&D - POWER DELIVERY

UPDATE YOUR PRINT TO REFLECT "AS BUILT" STATE & RETURN A COPY TO THE APPLICABLE DESIGN UNIT — 3

REV.	DATE	ACCOUNT NO.	DESCRIPTION	APPROVED
–	2010	D04107	230kV GIS EXPANSION PROJECT.	
A	10/2010		REVISE PROPOSED ENCLOSURES AND EQUIPMENT FOUNDATIONS FOR FINAL ELECTRICAL DESIGN. REVISE GRADING AND DRIVEWAY TO MATCH.	
B	5/2014		ADD A CONCRETE FOUNDATION AND OIL RETENTION BERM FOR A TEMPORARY TRANSFORMER SITE. ADJUST 100 YEAR FLOODPLAIN PER 2013 FEMA & FEILD SURVEY.	
C	MAR. 2016		REPLACED FENCE; ADDED CAMERA & DUCTS.	

AUTOCAD

ENGINEERING
CIVIL: GE
ELEC.: GE
PROJ. ENG.:
PROJ. MGR.: AEA/GH
PRIN. ENG.: JS
SUPV. ENG.:

DESIGN GROUP
DESIGNED: GE
DRAWN: GE
CHECKED:
APPROVED:
DATE: 11FEB2010

SEDIMENT & EROSION CONTROL, & LANDSCAPE PLAN

Tax Map 46 Grid 12 Parcel 251
6th Election District
Howard County, Maryland
Sheet 3 of 4
230-115,115-34.4 & 115-13kV SUBSTATION

HIGH RIDGE

SUBSTATION & SYSTEM PROTECTION

BGE — SCALE 1"=30' — DWG NO. 502444D — REV C

SDP-10-031

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, discing or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS: In lieu of soil test recommendations, use the following schedule: Apply 2 tons per acre dolomitic limestone(92 lbs/1000 s.f.) And 900 lbs. / acre (20.7 lbs./1000s.f.) of 10–20–20 before seeding. Harrow or disc into upper 3 in. Of soil.
SEEDING: Apply a mixture of Turf Type Tall fescue(80%) and Hard Fescue (20%) in accordance with seeding dates and rates shown in the Permanent Seeding Summary shown on this sheet. For stabilization outside of the seeding dates, apply straw mulch at rates and methods specified below and apply permanent seeding when within proper seeding dates.
MULCHING: Immediately following seeding, apply a uniform 1– 2 in. Deep layer of un-rotted small grain straw at a rate of 2 tons/acre. (Apply 2.5 Tons/acre if a mulch anchoring tool is used).Straw may be anchored with wood cellulose fiber at a rate of 750 lbs. / acre mixed at a ratio of 50 lbs. Of wood fibre/ 100 gal. of water. Synthetic liquid binders such as Terra Tax II, Acrylic DLR (Agro– Tack), DCA-70, Petroset and other approved equals may be used at rates recommended by the manufacturers.

Permanent Seeding Summary

Seed Mixture (Hardiness Zone 7a and 6b) From Table 25					Fertilizer Rate (10–20–20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
10	Tall Fescue (80%) Hard Fescue (20%)	120 30	3/1–5/15 8/15–11/15	0.5 in.	901b/ac (2.01b/ 1000sf)	1751b/ac (41b/ 1000sf)	1751b/ac (41b/ 1000sf)	2tons/ac (100lb/ 1000sf)

TEMPORARY SEEDING NOTES

SEEDBED PREPARATION: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

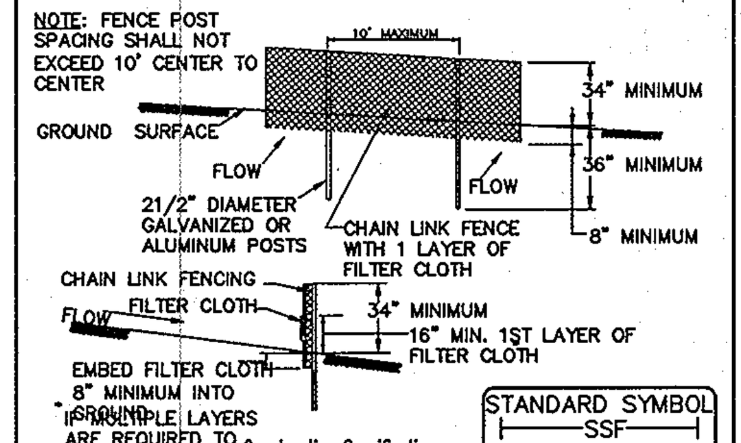
SOIL AMENDMENTS: In lieu of soil test recommendations, use the following schedule: Apply 2 tons per acre dolomitic limestone(92 lbs/1000 s.f.) And 600 lbs. / acre (15 lbs./1000s.f.) of 10–10–10 before seeding. Harrow or disc into upper 3 in. Of soil.
SEEDING: Apply the Maryland State Highway approved seed mixture of Barley or Rye plus Foxtail Millet in accordance with seeding dates and rates shown in the Temporary Seeding Summary shown on this sheet. For stabilization outside of the seeding dates, apply straw mulch at rates and methods specified below.
MULCHING: Immediately following seeding, apply a uniform 1– 2 in. Deep layer of un-rotted small grain straw at a rate of 2 tons/acre. (Apply 2.5 Tons/acre if a mulch anchoring tool is used).Straw may be anchored with wood cellulose fiber at a rate of 750 lbs. / acre mixed at a ratio of 50 lbs. Of wood fibre/ 100 gal. of water. Synthetic liquid binders such as Terra Tax II, Acrylic DLR (Agro– Tack), DCA-70, Petroset and other approved equals may be used at rates recommended by the manufacturers.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

Temporary Seeding Summary

Seed Mixture (Hardiness Zone 6a and 7a) From Table 26					Fertilizer Rate (10–10–10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
2	Barley or Rye plus Foxtail Millet	150 lbs (3.5lbs/1000sqf)	2/1–11/30 (7a) 3/15–10/31 (6a)	1/4 in– 1/2 in	600 1b/ac (151b/1000sf)	2 tons/ac (100lb/1000sf)

DETAIL 33 – SUPER SILT FENCE



Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft^2 /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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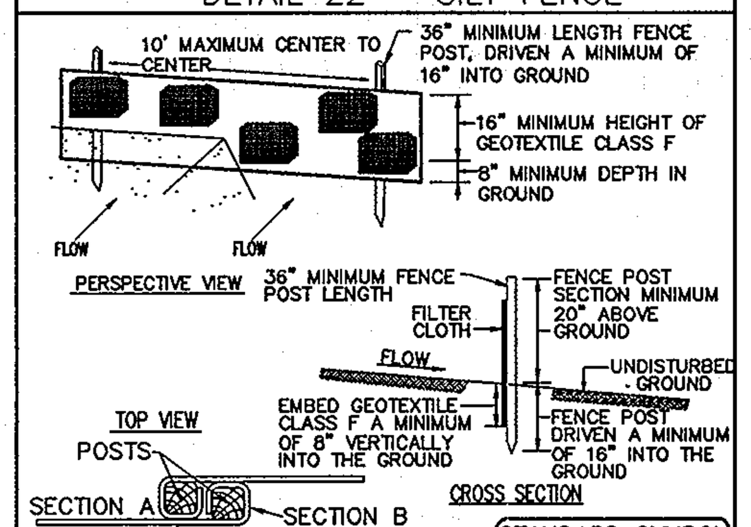
DETAIL 22 – SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long, driven 16" minimum into theground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft^2 /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reaches 50% of the fabric height.

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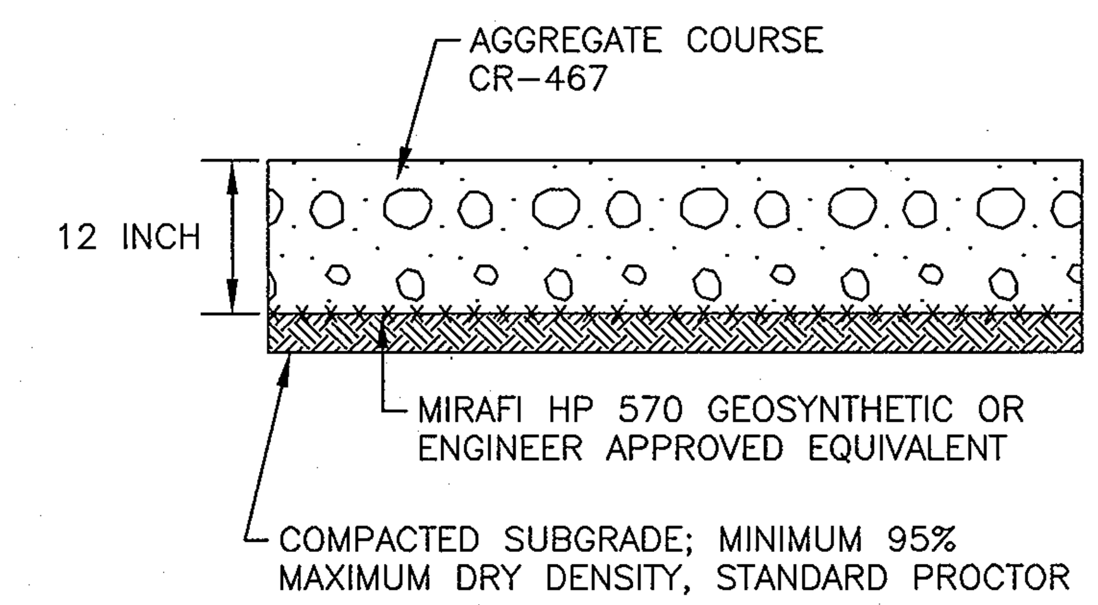
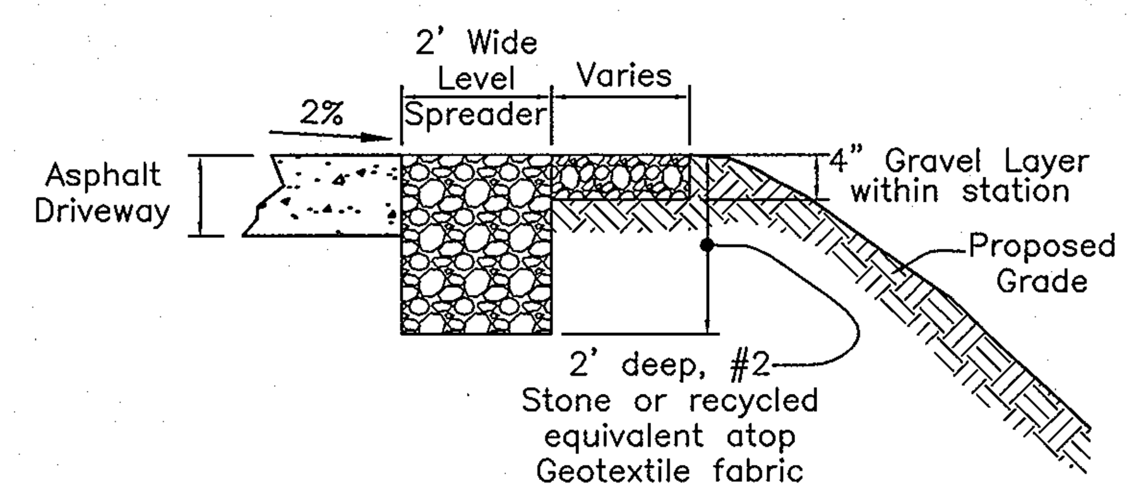


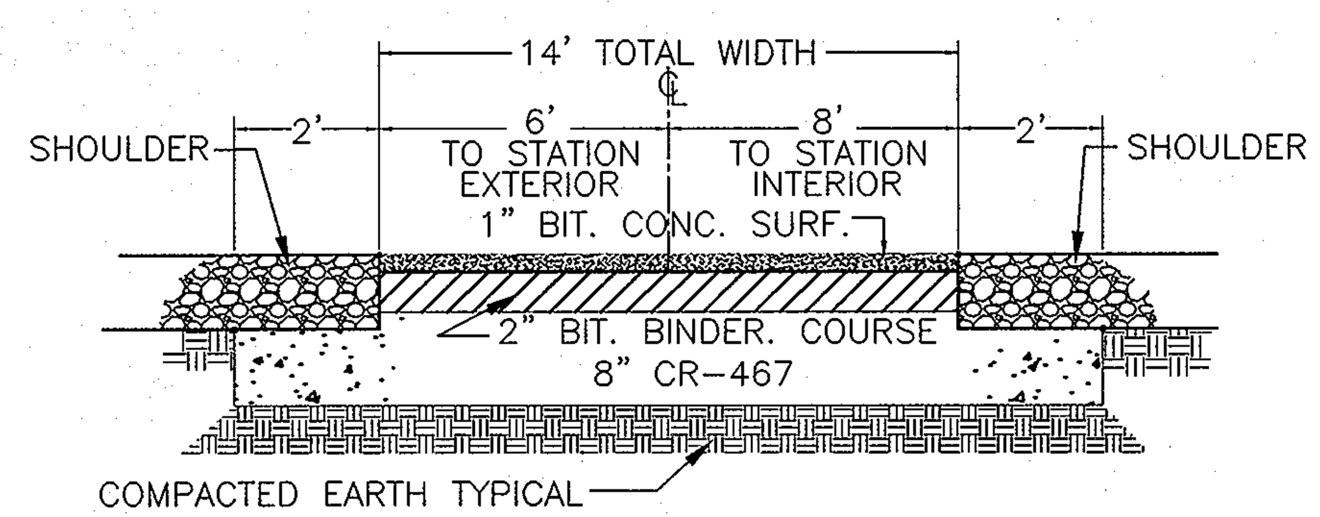
NOTES

1. IF FROZEN SOIL OR UNSUITABLE SOIL IS ENCOUNTERED, REMOVE, REPLACE AND COMPACT WITH SUITABLE FILL AS DIRECTED BY ENGINEER.
2. PERFORM COMPACTION TESTING ON SUBGRADE TO VERIFY A MINIMUM OF 95% OF STANDARD PROCTOR MAXIMUM DRY DENSITY.
3. PROOF ROLL SUBGRADE TO IDENTIFY POTENTIALLY UNSUITABLE SHALLOW SOIL WITH A FULLY LOADED TANDEM AXLE TRUCK WITH A MINIMUM GROSS WEIGHT OF 25 TONS AND AXLE WEIGHT OF 10–TONS. WHERE PUMPING OR RUTTING GREATER THAN 2–INCHES OCCURS, SCARIFY, MOISTURE–CONDITION, RECOMPACT, AND RETEST OR REMOVE SUBSOIL AND REPLACE WITH SUITABLE FILL.
4. IF SUBGRADE APPROVED, PLACE GEOSYNTHETIC PER MANUFACTURER'S RECOMMENDATION.
5. PLACE AGGREGATE IN MAXIMUM 9" LOOSE LIFT THICKNESS AND COMPACT TO A MINIMUM 98% STANDARD PROCTOR MAXIMUM DRY DENSITY.
6. MAINTAIN ROADWAY SURFACE AS NECESSARY. ENSURE ROADWAY IS IN GOOD CONDITION, HAS POSITIVE DRAINAGE, AND IS SUITABLE FOR CONSTRUCTION TRAFFIC. RUTS ARE NOT TO BE BLADED OUT. ADDITIONAL AGGREGATE TO BE ADDED TO FILL RUTS.
7. DEPENDING ON ACTUAL SUBGRADE CONDITIONS ENCOUNTERED, ADDITIONAL GRAVEL THICKNESS MAY BE REQUIRED AS DIRECTED BY ENGINEER.

TEMPORARY CONSTRUCTION ACCESS ROAD DETAIL



Level Spreader
Not to Scale



ACCESS ROAD MINIMUM PAVING SECTION

N.T.S.

NOTE: SEE PLAN FOR CROSS SLOPE OF PROPOSED DRIVEWAY.

SEQUENCE OF CONSTRUCTION

1. Obtain Grading permit.
2. Notify Howard County Department of Inspections, License and Permits at (410) 313–1880 at least 24 hours before starting any work.
3. Install super silt fence and silt fence. (1 week)
4. Clear, grub, and rough grade Phase 1 area. Replace stone construction entrance as necessary during construction. (4 weeks)
5. Construct substation site, access drive, level spreader, equipment foundations, control structures and GIS enclosure. (104 weeks)
6. Fine grade Phase 1 area and install station stone. (1 week)
7. Clear, grub and rough grade Phase 2 area. (4 weeks)
8. Complete loop access road. (1 week)
9. Fine grade Phase 2 area and install station stone. (1 week)
10. Install landscaping buffer plantings. (1 week)
11. During grading and after each rainfall, contractor will inspect and provide necessary maintenance to the sediment control within: measures on this plan.
12. Following initial soil disturbance or any redisturbances, permanent or temporary stabilization shall be completed
    A. 7 calendar days for all perimeter sediment control structures, dikes, swales and all slopes greater than 3:1.
    B. 14 calendar days for all other disturbed areas.
13. Upon stabilization of all disturbed areas and with the permission of the sediment control inspector, remove all sediment control measures and stabilize any remaining disturbed area. The stone construction entrance shall remain in place, repair as necessary. (1 week)

BEST MANAGEMENT PRACTICES

FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NON-TIDAL WETLAND BUFFERS, WATERWAYS, OR 100 YEAR FLOODPLAIN.
2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES:

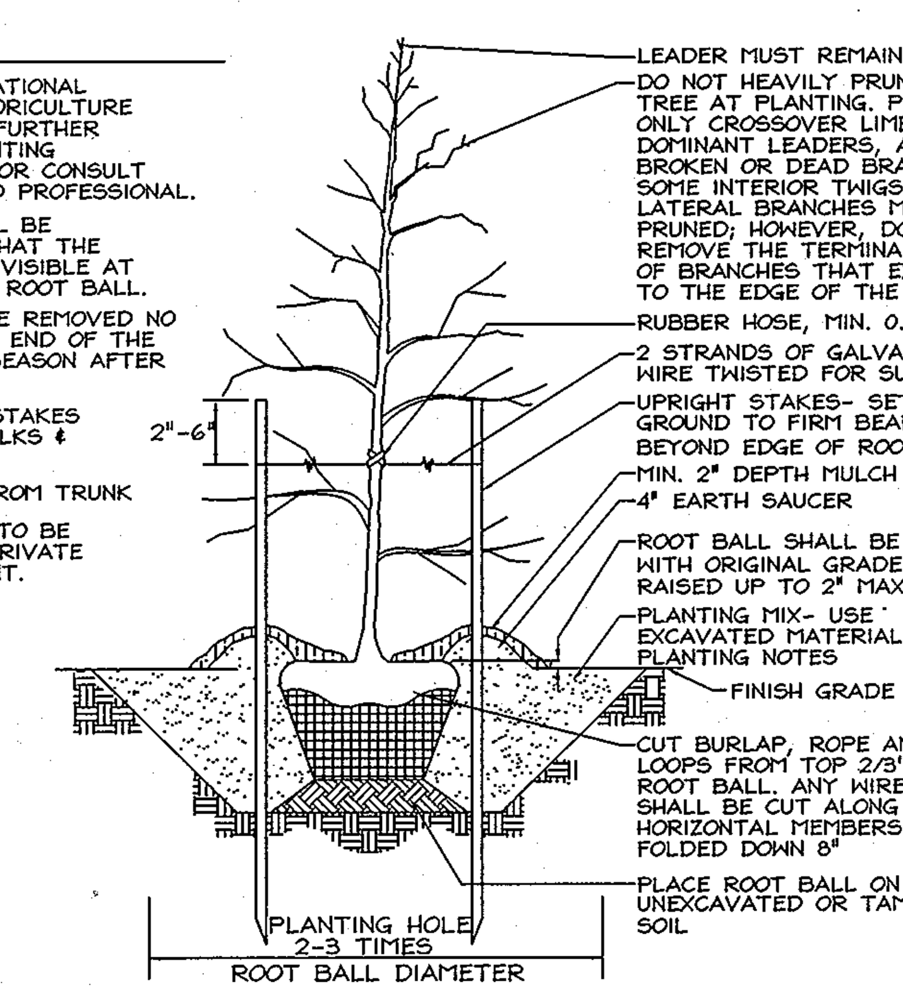
   ANNUAL RYE GRASS (*Lolium multiflorum*)
   MILLET (*Setoria italica*)
   BARLEY (*Hordeum sp.*)
   OATS (*Uniola sp.*)
   RYE (*Secale cereale*)

   THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:

   USE I WATERS: IN STREAM WORK SHALL BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

NOTES

1. CONSULT INTERNATIONAL SOCIETY OF ARBORICULTURE GUIDELINES FOR FURTHER DETAILS OF PLANTING SPECIFICATIONS, OR CONSULT WITH A QUALIFIED PROFESSIONAL.
2. EACH TREE SHALL BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL.
3. STAKES SHALL BE REMOVED NO LATER THAN THE END OF THE FIRST GROWING SEASON AFTER PLANTING.
4. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
5. KEEP MULCH 1" FROM TRUNK
6. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



TYPICAL TREE PLANTING AND STAKING

ALL TREES UP TO 3" CALIPER — NOT TO SCALE

SEDIMENT CONTROL NOTES

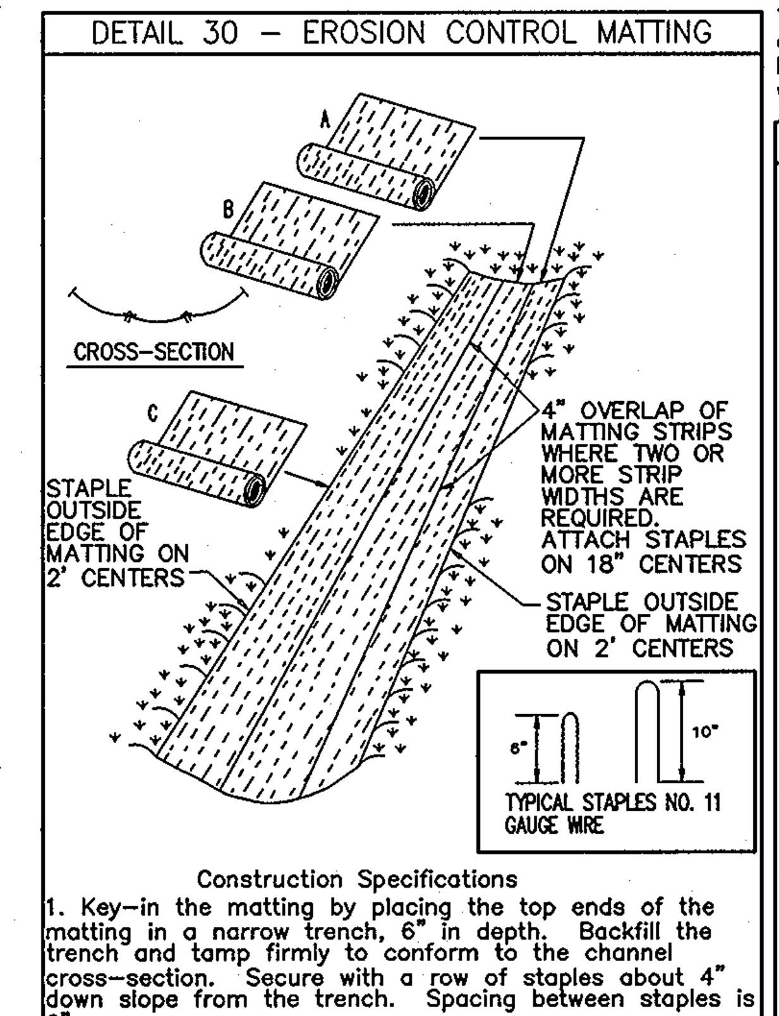
1. A minimum of 48 hours notice must be given to the Howard County Department of Inspection, License and Permits Sediment Control Division prior to the start of any construction (410–313–1855).
2. All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL; and revisions thereto.
3. Following initial soil disturbance or redisturbance, 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 7, 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 seeding, sod, temporary seeding, and mulching (Sec. G). Temporary stabilization with mulch alone shall 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	22.845 Acres +/–
Area Disturbed	1.99 Acres +/–
Area to be roofed or paved	1.713 Acres +/–
Area to be vegetatively stabilized	0.277 Acres +/–
Total Cut	3400 CY*
Total Fill	3400 CY*
Offsite waste/borrow area location	

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 controls 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 shall be back–filled and stabilized within one working day, whichever is shorter.

* Earthwork quantities are solely for the purpose of calculating fees. Contractor to verify all quantities prior to the start of construction.
** To be determined by contractor, with pre–approval of the Sediment Control Inspector with an approved and active grading permit.

DETAIL 30 – EROSION CONTROL MATTING



Construction Specifications

1. Key–in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross–section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
2. Staple the 4" overlap in the channel center using an 18" spacing between staples.
3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed–in.

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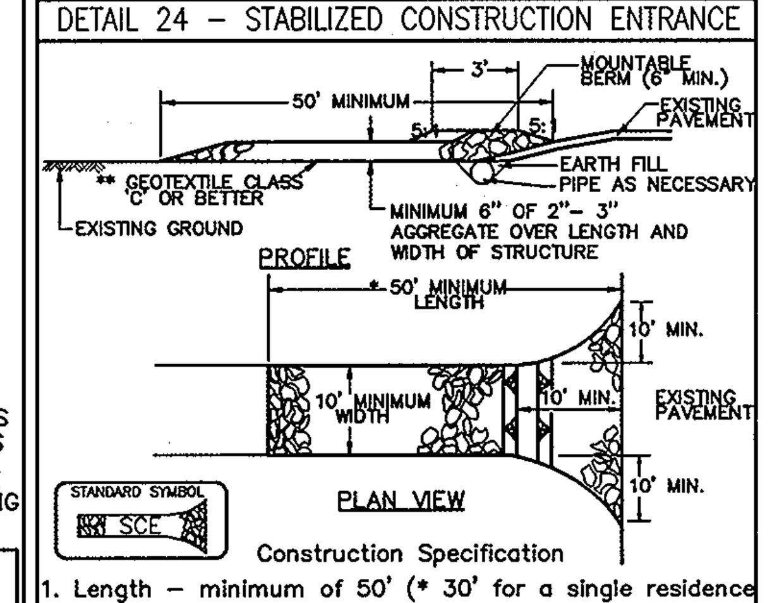
LANDSCAPE PLANTING NOTES

1. Plants and plant material shall meet the detailed description as given on the plans and as described herein. 2. All plant material, unless otherwise specified, shall be nursery grown, of good average, uniformly branched and have a vigorous root system. They shall be healthy, vigorous plants free from defects, decay, disfiguring roots sunscald injuries, abrasions of the bark, plant disease, insect pest eggs, boxers and all forms of infestations or objectionable disfigurements. Plant materials that are weak or which have been cut back from larger grades to meet certain specified requirements will be rejected. All plants shall be freshly dug: no heeled in plants or plants from cold storage will be accepted.
3. All plant characteristics including, but not limited to; ball diameter, caliper and height measurements, shall be in accordance with the current edition of the "U.S.A". Standard for Nursery Stock", as recommended by the American Assoc.of Nurserymen, Inc.
4. All trees shall be symmetrically balanced according to their normal habit of growth. No forked leader stock will be accepted.
5. All plants shall be planted within the planting season, which shall be defined as beginning September 15 and ending May 30.
6. All planting furnished under this contract shall be guaranteed to remain viable and to thrive in a healthy condition for a period of one (1) year. Trees that are not thriving satisfactorily, as determined by the Landscape Architect, within said one year period shall be replaced by the Contractor at his sole expense. All plant materials shall be planted in accordance with the plans and specifications for the original plantings. Replacement shall include the cost of tearing up and replacing that portion of sidewalk or paving, if any, required for tree replacement, all at the Contractor's sole expense. All replacement plants shall be guaranteed for a minimum period of one (1) year.
7. Plant materials will be planted in accordance with the Planting Details and Plant Schedule.
8. Plant material shall be nursery grown and inspected prior to planting. Plants not conforming to the American Standard for Nursery Stock specifications for size, form, vigor, or roots, or due to trunk wounds, breakage, desiccation, insect or disease must be replaced.
9. Planting stock must be protected from desiccation at all times prior to planting. Materials held for planting shall be moistened and placed in cool shaded areas until ready for placement.
10. Newly planted trees may require watering at least once per week during the first growing season depending on rainfall in order to get established. The initial planting operation should allow for watering during installation to completely soak backfill material.
11. Planting holes should be excavated to a minimum diameter of 2.5 to 3 times the diameter of the root ball or container. Mechanical angering is preferred with scarification of the sides of each hole.
12. Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.
13. The Contractor shall notify all utility companies five (5) days prior to beginning work
14. Any damage to the existing utilities, buildings, paving, curb, walls and vegetation (not so designated for removal on these plans) shall be repaired to previous condition or replaced by the Contractor at his expense.
15. Topsoil shall be free from brush, weeds and other litter; and shall be free from clay lumps, stones, or other objects larger than one inch in diameter, and any other substance which may be harmful to plant growth.

DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length – minimum of 50' (* 30' for a single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. ** The plan approval authority may not require single family residences to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage.Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey, a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

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21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose
To provide a suitable soil medium for vegetable growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies
I. This practice is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications
I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA–SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications – Soil to be used as topsoil must meet the following:
   i. 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 a soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger that 1 and 1/2" in diameter.
   ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
   iii. 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.

II. For sites having disturbed areas under 5 acres:
   i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:
   i. On soil meeting topsoil specifications, obtain test results dictating 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 of topsoil shall be not less than 1.5 percent by weight.
      c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
      d. No sod or seed shall be placed on soil soil which has been
         treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to
         permit dissipation of phyto–toxic materials.

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.
ii. Place topsoil (if required) and apply soil amendments specified in 20.0 Vegetative Stabilization–Section I–Vegetative Stabilization Methods and Materials.

V. Topsoil Application
   i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
   ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" – 8" higher in elevation.
   iii. 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 sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
   iv. Topsoil shall not be place 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.

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22418 — PROFESSIONAL ENGINEER
Zacharia Y. Fisch 2/23/2010

DEVELOPER'S CERTIFICATE

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

[signature] 2/23/10
SIGNATURE OF DEVELOPER — DATE

ENGINEERS CERTIFICATE

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

Zacharia Y. Fisch 2/23/2010
SIGNATURE OF ENGINEER — DATE
ZACHARIA Y. FISCH

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Kent Sheubrooks 3/10/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Marsha S. Butler 3/10/10
DIRECTOR — DATE

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

John K. Robertson 3/4/10
HOWARD SCD — DATE

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. #22418, Expiration Date: 07/29/2011.

REV	DATE	DESCRIPTION	TECH.	ENG.
4	01/11/10	REVISED PER COUNTY COMMENT	FSH	FSH
3	10/14/09	REVISED PER COMMENTS; FOR SUBMISSION	FSH	FSH
2	09/03/09	REVISED CONCEPT FOR REVIEW	FSH	FSH
1	07/22/09	JOB #7819 CONCEPTUAL DESIGN	FSH	FSH

GENERAL ELECTRIC CO.
T&D – POWER DELIVERY

APPLICANT/OWNER/DEVELOPER
BALTIMORE GAS AND ELECTRIC COMPANY
SPRING GARDENS COMPLEX
1699 LEADENHALL STREET
BALTIMORE, MARYLAND 21230
ATTN: GREG KAPPLER (410) 291–4688

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel:410-567-5200 Fax: 410-796-1562
E-mail: info@fsheri.com

UPDATE YOUR PRINT TO REFLECT "AS BUILT" STATE & RETURN A COPY TO THE APPLICABLE DESIGN UNIT — 3

REV.	DATE	ACCOUNT NO.	DESCRIPTION	APPROVED
–	2010	D04107	230kV GIS EXPANSION PROJECT.	

AUTOCAD

ENGINEERING: CIVIL GE; ELEC. GE; PROJ. ENG.; PROJ. MGR. AEA/GH; PRIN. ENG. JS; SUPV. ENG.

DESIGN GROUP: DESIGNED GE; DRAWN GE; CHECKED; APPROVED; DATE 11FEB2010

SWM & SEDIMENT & EROSION CONTROL DETAILS & NOTES
Tax Map 46 Grid 12 Parcel 251
6th Election District
Howard County, Maryland
Sheet 4 of 4
230–115,115–34.4 & 115–13kV SUBSTATION

HIGH RIDGE

SUBSTATION & SYSTEM PROTECTION

BGE — SCALE As Shown — DWG NO. 502445D — REV

SDP-10-031

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