### HOWARD COUNTY GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS AS APPLICABLE THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC
- DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777

WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION

AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), ALL STREET AND

REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT

- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE
- THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON HOWARD COUNTY GIS AND FIELD RUN TOPOGRAPHIC SURVEYS PERFORMED BY HIGHLAND SURVEY IN FEBRUARY 2017 AND
- EXISTING UTILITIES ARE BASED ON UTILITY DESIGNATION SURVEYS PERFORMED BY A/I/DATA IN FEBRUARY 2018 AND JULY 2019.
- ALL HORIZONTAL SURVEY DATA SHOWN HEREON IS DERIVED FROM STATIC GPS (OPUS) OBSERVATIONS AND ARE REFERENCED TO THE MARYLAND STATE PLANE COORDINATE SYSTEM, NAD 83 (2011), ALL VERTICAL SURVEY CONTROL DATA SHOWN HEREON IS DERIVED BY DIFFERENTIAL LEVELING FROM HOWARD COUNTY SURVEY CONTROL
- WATER IS PUBLIC. CONTRACT NO. 44-4825
- 0. SEWER IS PUBLIC. CONTRACT NO. 418-S
- STORMWATER MANAGEMENT REQUIREMENTS FOR THE PROPOSED DEVELOPMENT ARE MET BY (2) M-6 MICRO-RIORETENTION FACILITY AND (2) M-2 SUBMERGED GRAVEL WETLANDS. THE PROJECT IS CONSIDERED A REDEVELOPMENT PROJECT WHERE THE EXISTING IMPERVIOUS AREA WITHIN THE DEVELOPMENT AREA IS GREATER THAN 40% THESE ESD PRACTICES WILL BE OWNED AND MAINTAINED
- . THERE ARE MAPPED FLOODPLAINS ON THIS SITE. FEMA FLOODPLAIN MAP PANEL #24027C0160D, EFFECTIVE NOVEMBER 6, 2013, THE PROPOSED DEVELOPMENT IS OUTSIDE OF THE FLOODPLAIN
- 3. IN JANUARY OF 2018, A WETLAND DELINEATION WAS COMPLETED AND PREPARED BY ECO-SCIENCE PROFESSIONALS AND WAS APPROVED WITH THE SITE'S ECP ON AUGUST 16, 2018. NO STREAMS OR WETLANDS WILL BE DIRECTLY IMPACTED BY THIS
- 4. A TRAFFIC STUDY WAS PREPARED BY THE TRAFFIC GROUP ON MARCH 26, 2018. THE CONCLUSION STATES THE PROPOSED DEVELOPMENT WILL NOT GENERATE ADDITIONAL TRAFFIC FROM WHAT IS CURRENTLY GENERATED BY OPERATIONS AT THE SITE. AN APFO STUDY WAS APPROVED ON OCTOBER 1, 2019.
- A PRELIMINARY GEOTECHNICAL REPORT DATED SEPTEMBER 22. 2017 WAS PREPARED BY KIM ENGINEERING. THE GEOTECHNICAL REPORT WAS THEN UPDATED ON JULY 5, 2018 BY KIM ENGINEERING
- THE SUBJECT PROPERTY IS ZONED R-20 IN ACCORDANCE WITH THE OCTOBER 6, 2013 COMPREHENSIVE ZONING REGULATIONS.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE \$16,370 FOR 23 SHADE TREES, 8 SMALL DECIDUOUS TREES, 120 SHRUBS AND 467 LINEAR FEET OF FENCING SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT. THIS SURETY IS FOR THE DEVELOPMENT'S LANDSCAPING REQUIREMENTS FOR PERIMETER AND INTERNAL PARKING LOT PLANTING. REFER TO SHEET L2.01 FOR
- FINANCIAL SURETY IN THE AMOUNT OF \$4,800 FOR 32 SMALL DECIDUOUS TREES SHALL ALSO BE POSTED WITH THE DEVELOPER'S ANDSCAPING REQUIREMENTS FOR STREET TREES ALONG
- ILCHESTER ROAD. REFER TO SHEET L2.01 FOR MORE INFORMATION. ON OCTOBER 3, 2019, AN ALTERNATIVE COMPLIANCE (WP-20-023) WAS APPROVED FOR THE REQUEST TO ALLEVIATE THE REQUIREMENTS TO REMOVE TWO SPECIMEN TREES ALONG THE PROPERTY FRONTAGE TO PROVIDE ROADWAY DEDICATION AND
- SIDEWALK, APPROVAL IS SUBJECT TO THE FOLLOWING: 1. COMPLY WITH ALL SRC AGENCY COMMENTS ON THE SUBMITTED
- 2. PROVIDE FOUR REPLACEMENT TREES OF 2.5-3" CALIPER ON SITE IN PLACE OF THE REMOVED TREES AS MITIGATION 3. INCLUDE THE ALTERNATIVE COMPLIANCE REQUEST NUMBER AND DESCRIPTION IN THE GENERAL NOTES ON SUBSEQUENT

THIS SITE DEVELOPMENT PLAN COMPLIES WITH ALL THREE CONDITIONS LISTED ABOVE. MITIGATION PLANTING IS NOTED ON

MAXIMUM PRIMARY BUILDING HEIGHT PERMITTED IS 34 FEET. MAXIMUM ACCESSORY STRUCTURE PERMITTED IS 15 FEET

- ON FEBRUARY 1, 2019, VARIANCES WERE GRANTED FOR THIS PROJECT TO HAVE ACCESSORY STRUCTURES WITH A MAXIMUM HEIGHT OF 19 FEET AND THE PROPOSED SECURITY FENCING TO BE 20 FEET FROM RIGHT-OF-WAY, IN ADDITION, A CONDITIONAL USE WAS GRANTED UNDER A SPECIAL CONDITION BEING THAT THE SITE'S OPERATION HAS EXISTED FOR DECADES AT THIS LOCATION, AND THERE WILL BE NO DETRIMENTAL EFFECT ON THE NEIGHBORHOOD. (BOA CASE NO.: 18-011C&V)
- NO GRADING, REMOVAL OF VEGETATIVE COVER OF TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S), OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION FASEMENT AREAS, IF APPLICABLE EXCEPT AS NOTED FOR PAVEMENT REMOVAL AND STABILIZATION.
- THE PRE-SUBMISSION COMMUNITY MEETING WAS HELD ON DECEMBER 5, 2017 IN THE CAPLAN ROOM AT THE ROGER CARTER COMMUNITY CENTER LOCATED AT 3000 MILLTOWNE DRIVE, ELLICOTT 34 CITY, MD 21043
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." A MINIMUM CLEARANCE OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE
- ALL SIGNS POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED SOLIARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- THIS SITE DEVELOPMENT PLAN COMPLIES WITH THE REQUIREMENTS OF SECTION 16 1200 OF HOWARD COUNTY CODE OF FOREST CONSERVATION BY ENCUMBERING 5.4 ACRES OF EXISTING FOREST INTO THREE FOREST CONSERVATION EASEMENTS. THESE EASEMENTS SHALL BE RECORDED ON THE FINAL PLAT ASSOCIATED WITH THIS DEVELOPMENT (F-20-021)

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### ADJACENT PROPERTIES

TIMOTHY THOMPSON

**INFORMATION** 

MANMEET SINGH, HARPREET KAUR

MAP 31, GRID 15, PARCEL 368, LOT 1

MAP 31, GRID 15, PARCEL 396, LOT 2

ROGER PARKS. GABRIELE PARKS

JERRY CHAO, SARAH CHAO

MAURICE HILL, DENISE HILL

MARY BROSCIOUS

**CELIA MORRIS** 

MAP 31, GRID 15, PARCEL 332, LOT 3

MAP 31, GRID 15, PARCEL 247, LOT 4

MAP 31, GRID 15, PARCEL 333, LOT 5

MAP 31, GRID 15, PARCEL 331, LOT 6

MAP 31, GRID 15, PARCEL 330, LOT 7

MAP 31, GRID 15, PARCEL 369, LOT 8

MAP 31, GRID 15, PARCEL 202, LOT 14

BRIAN SILVERMAN, LESLIE SILVERMAN

MAP 31, GRID 15, PARCEL 413, LOT 3

MAP 31, GRID 15, PARCEL 413, LOT 4

MAP 31, GRID 15, PARCEL 413, LOT 5

MAP 31, GRID 15, PARCEL 413, LOT 6

MAP 31, GRID 15, PARCEL 413, LOT 7

KEVIN JEWBY, AMY JEWBY

SUNG-JAE CHA

WILLIAM WALLER

MATTHEW WRISK

HOWARD COUNTY MARYLAND

L. 17267 F. 00421, ZONING R-20, RESIDENTIAL

L. 05383 F. 00544, ZONING R-20, RESIDENTIAL

L. 02338 F. 00663, ZONING R-20, RESIDENTIAL

L. 17524 F. 00099, ZONING R-20, RESIDENTIAL

L. 13343 F. 00408, ZONING R-20, RESIDENTIAL KATHLEEN METHRIC, TIMOTHY METHRIC

.. 15660 F. 00376, ZONING R-20, RESIDENTIAL

L. 14582 F. 00290, ZONING R-20, RESIDENTIAL

L. 06968 F. 00517, ZONING R-20, RESIDENTIAL

L. 05288 F. 00010, ZONING R-20, RESIDENTIAL

KRISTOFER SINGLETON, EILEEN SINGLETON

L. 07003 F. 00623, ZONING R-20, RESIDENTIAL

L. 03031 F. 00202, ZONING R-20, RESIDENTIAL

.. 14958 F. 00500, ZONING R-20 RESIDENTIAL

L. 00557 F. 00552, ZONING R-20, RESIDENTIAL

L. 07689 F. 00092, ZONING R-20, RESIDENTIAL

L. 16667 F. 00108, ZONING R-20, RESIDENTIAL

L. 05393 F. 00001, ZONING R-20, RESIDENTIAL

L. 01735 F. 00492, ZONING R-20, RESIDENTIAL

L. 01603 F. 00702, ZONING R-20, RESIDENTIAL

L. 10958 F. 00005, ZONING R-20 RESIDENTIAL

L. 01174 F. 00598, ZONING R-20. RESIDENTIAL

L. 02166 F. 00528, ZONING R-20, RESIDENTIAL

L. 05986 F. 00237, ZONING R-20, RESIDENTIAL

L. 12839 F. 00043, ZONING R-20, NON-RESIDENTIAL

L. 12839 F. 00043, ZONING R-20, NON-RESIDENTIAL

L. 00140 F. 00451, ZONING R-20 NON-RESIDENTIAL

L. 02708 F. 00496, ZONING R-20, RESIDENTIAL

L. 01817 F. 00095, ZONING R-20, RESIDENTIAL

L. 01817 F. 00100, ZONING R-20, RESIDENTIAL

L. 01418 F. 00731, ZONING R-20, RESIDENTIAL

MAP 31, GRID 15, PARCEL 521, LOT 1 L. 03227 F. 00105, ZONING R-20, RESIDENTIAL

L. 02810 F. 00501, ZONING R-20, RESIDENTIAL

L. 14910 F. 00175, ZONING R-20, RESIDENTIAL

L. 00437 F. 00138, ZONING R-20, RESIDENTIAL

L. 00481 F. 00139, ZONING R-20, RESIDENTIAL

L. 02585 F. 00466, ZONING R-20, NON-RESIDENTIAL

ILCHESTER WOODS ASSOCIATION INC

MAP 31, GRID 15, PARCEL 521, LOT 36

WILLIAM E. SHARP, MARY B. SHARP

MAP 31, GRID 15, PARCEL 521, LOT 34

MAP 31, GRID 15, PARCEL 523, LOT 1B

MAP 31, GRID 15, PARCEL 523, LOT 1A

JAMES D. HENNEBERRY, WF

MAP 31, GRID 15, PARCEL 219

TOSHIHIKO KUNIMOTO

YASMIN HOLSEY

**DORIS BROOKS** 

4/1/21

L. 05697 F. 00439, ZONING R-20, NON-RESIDENTIAL

LAWRENCE KATKOW, ANDREA KATKOW

MAP 31, GRID 15, PARCEL 489, LOT 23

MAP 31, GRID 15, PARCEL 489, LOT 22

RICHARD JOLSON, PENNY JOLSON

FORREST HALL, CYNTHIA TIFFT

MAP 31, GRID 15, PARCEL 489, LOT 21

MAP 31, GRID 15, PARCEL 489, LOT 20

ALBERT PETRLIK, BARBARA PETRLIK

MAP 31, GRID 15, PARCEL 489, LOT 19

MAP 31, GRID 15, PARCEL 489, LOT 18

MAP 31, GRID 15, PARCEL 489, LOT 17

ROLAND MILLER, DONNA MILLER

JASON A. WEDDINGTON

MAP 31, GRID 15, PARCEL 245

MAP 31, GRID 15, PARCEL 102

HOWARD COUNTY MARYLAND

HOWARD COUNTY MARYLAND

MAP 31, GRID 20, PARCEL 557

MAP 31, GRID 9, PARCEL 99

CHARLES W. OBRIEN JR.

DAVID ARNOLD, EILEEN ARNOLD

MAP 31, GRID 15, PARCEL 790, LOT 1

MAP 31, GRID 15, PARCEL 790, LOT 2

MAP 31, GRID 15, PARCEL 252, LOT 1

JOHN G. STOCK III, JANET A. STOCK

CRESTWOOD ASSOCIATION INC.

MAP 31, GRID 15, PARCEL 101, LOT 20

MAP 31, GRID 15, PARCEL 252, LOT 19

MAP 31, GRID 15, PARCEL 101, LOT 17

**BALTIMORE GAS & ELECTRIC COMPANY** 

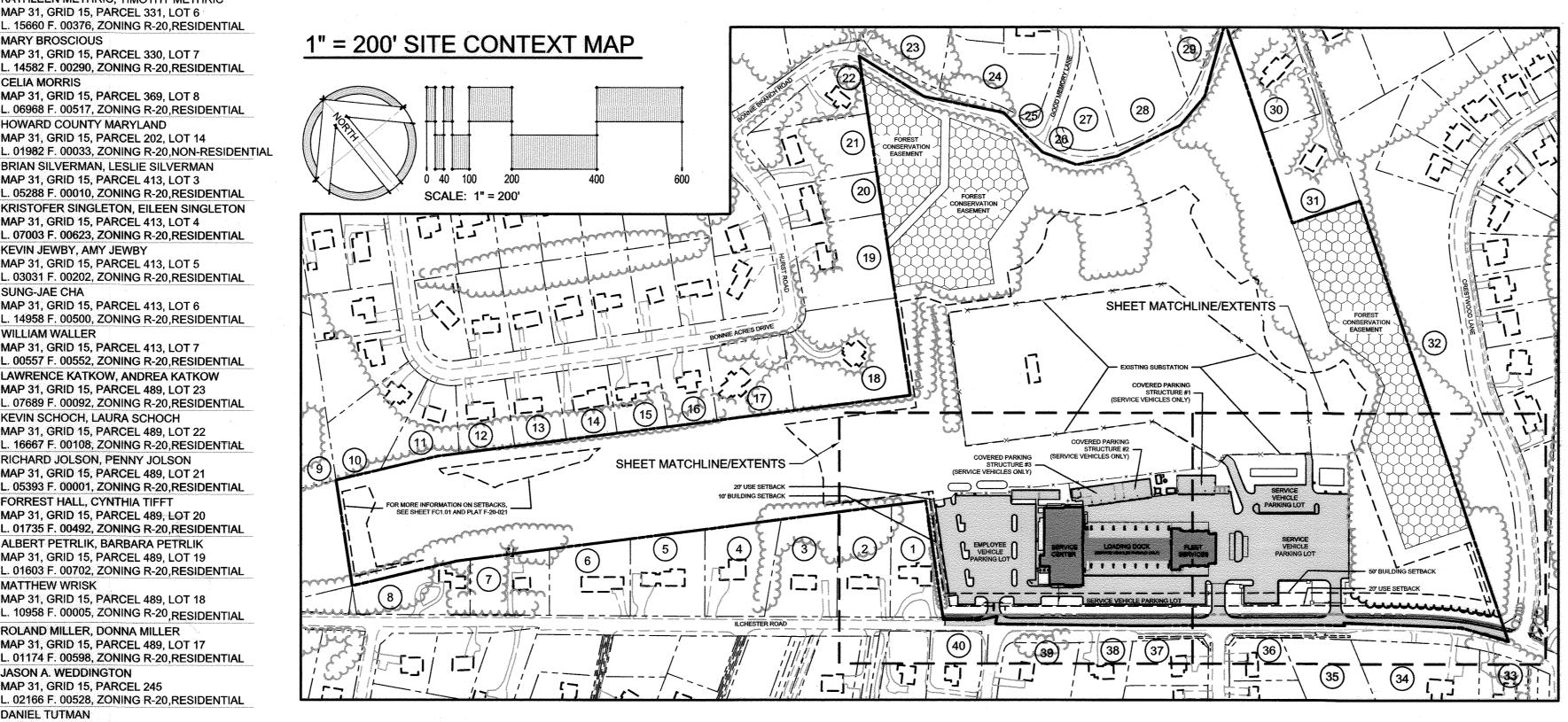
TERRY D. PFAFF, CHRISTINE J. PFAFF

BONNIE BRANCH WOODS HOA INC.

KEVIN SCHOCH, LAURA SCHOCH

## SITE DEVELOPMENT PLAN BALTIMORE GAS & ELECTRIC HOWARD SERVICE CENTER

5130 ILCHESTER ROAD, ELLICOTT CITY, MD 21043 PARCEL 557, L. 00140 F.00451



### PARKING TABULATION

THE FOLLOWING PARKING REQUIREMENTS ARE IN ACCORDANCE WITH SECTION 133.0 (SUBSECTIONS D.3 & D.4) - OFF-STREET PARKING AND LOADING FACILITIES OF THE HOWARD COUNTY ZONING REGULATIONS

L. 12681 F. 00458, ZONING R-20, NON-RESIDENTIAL BUILDING 1 TABULATION: SERVICE CENTER BONNIE BRANCH WOODS HOA INC. 27,994 SF AT 3.3 SPACES PER 1,000 SF FOR OFFICE USE (PER SECTION 133.D.3.a) MAP 31, GRID 15, PARCEL 101, LOT 18 (27,994/1,000) x 3.3 = 92.4 PARKING SPACES REQUIRED (ROUND UP TO 93) L. 12681 F. 00458, ZONING R-20, NON-RESIDENTIAL

**TOTAL PARKING REQUIRED FOR BUILDING 1 = 93 SPACES** 

BUILDING 2 TABULATION: FLEET SERVICES 8.823 SF FOR 6 VEHICLE SERVICE BAYS AND RELATED STORAGE AREAS (FIRST FLOOR) (SECTION 133.D.4.i) 1,998 SF FOR OFFICE USE (SECOND FLOOR) (PER SECTION 133.D.3.a)

6 SERVICE BAYS AT 3.0 SPACES PER + 3 SPACES FOR MOTOR VEHICLE FUELING FACILITIES WITH SERVICE BAY USE (6 x 3) + 3 = 21 PARKING SPACES REQUIRED (PER SECTION 133.D.4.j) (1,998/1,000) x 3.3 = 6.59 PARKING SPACES REQUIRED (ROUND UP TO 7)

TOTAL PARKING REQUIRED FOR BUILDING 2 = 28 PARKING SPACES

TOTAL PARKING REQUIRED FOR BUILDING 1 PLUS BUILDING 2: 93 + 28 = 121 PARKING SPACES TOTAL PARKING PROVIDED FOR BUILDING 1 PLUS BUILDING 2 = 123 PARKING SPACES

### PROPOSED BGE SERVICE VEHICLE PARKING TABULATION LOADING DOCK: 11+14 = 25 SPACES

PARKING SOUTH OF LOADING DOCK: COVERED PARKING #1: **COVERED PARKING #2-3:** 

MAP 31, GRID 15, PARCEL 545, LOT 1 LARGE LOT UNDER TRANSMISSION LINES: 4+4=8 L. 17373 F. 00456, ZONING R-20, RESIDENTIAL SEPARATE LOT UNDER TRANSMISSION LINES: DONALD E.GOWL SR., EMMA S. GOWL TOTAL SERVICE VEHICLE PARKING PROVIDED: MAP 31, GRID 15, PARCEL 545, LOT 4

(THE TOTAL PROVIDED SPACES ALLOW VEHICLES FROM OTHER BGE SERVICE CENTERS TO PARK ON-SITE FOR EMERGENCIES AND OTHER OCCASIONS AS DEEMED NECESSARY BY BGE)

### SITE ANALYSIS DATA

PROPOSED SITE USAGE	UTILITY SERVICE CENTER	· :
TOTAL PROPERTY AREA	39.40 ± AC	
LIMIT OF DISTRUBANCE AREA (LOD)	9.06 ± AC	
	TOTAL WITHIN PROPERTY	TOTAL WITHIN LOD
EXISTING FOREST	11.59 ± AC	0.30 ± AC
EXISTING FLOODPLAINS/BUFFER	0.07 ± AC	0.00 ± AC
EX. WETLANDS/WETLANDS BUFFER	3.55 ± AC	0.00 ± AC
EXISTING IMPERVIOUS AREA	12.24 ± AC	6.48 ± AC
PROPOSED IMPERVIOUS AREA	5.92 ± AC	5.92 ± AC
EXISTING OPEN GREEN AREA	15.57 ± AC	2.58 ± AC
PROPOSED OPEN GREEN AREA	16.31 ± AC	3.14 ± AC
STEEP SLOPES (> 20%)	4.55 ± AC	0.35 ± AC
HIGHLY ERODIBLE SOILS	9.29 ± AC	0.75 ± AC

- A. TOTAL PROJECT AREA: B. AREA OF PLAN SUBMISSION: C. LIMIT OF DISTURBED AREA: D. PRESENT ZONING DESIGNATION:
- F. NUMBER OF PARKING SPACES REQUIRED: G. NUMBER OF PARKING SPACES PROVIDED:
- H. TOTAL NUMBER OF PARKING ON-SITE: J. BUILDING COVERAGE OF SITE

## SITE ANALYSIS DATA CHART

- 39.40 AC+/- / 1,716,264 SF 9.06 AC+/- / 394,654 SF 9.06 AC+/- / 394,654 SF R-20 (SINGLE) E. PROPOSED USE FOR SITE AND STRUCTURES: UTILITY SERVICE CENTER 121 SPACES
  - 214 SPACES 0.58 AC, 1.45% OF GROSS SITE

123 SPACES

STORMWATER MANAGEMENT INFORMATION				
PARCEL NO.	FACILITY NAME & NUMBER	PRACTICE TYPE	ESD VOL	
557	(M-6) MB #1	MICRO-BIORETENTION	1,027 CF	
557	(M-6) MB #2	MICRO-BIORETENTION	1,381 CF	
557	(M-2) SGW #1	SUBMERGED GRAVEL WETLAND	3,608 CF	
557	(M-2) SGW #2	SUBMERGED GRAVEL WETLAND	4,715 CF	

### **LEGEND**

	PROPERTY LINE
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<b>EXISTING TREELINE</b>
	ADJOINING PROPERTY LINE
	EXISTING BUILDING
	EXISTING WALK
Гоном замень мехами возволь учеству святах ожность фактах сановые назына съблека ожность называ мехаму мехами адамы	EXISTING ROAD
	EXISTING CURB
x x x x x	EXISTING FENCE
	PROPOSED BUILDING
	PROPOSED BUILDING OVERHANG
	PROPOSED IMPERVIOUS AREA
	PROPOSED CURB
x x x x x x x x x x	PROPOSED CHAIN LINK FENCE
	PROPOSED ORNAMENTA FENCE
-0-0-0-0-0-0-0-0-0-0-0-	PROPOSED SOLID SCREEN FENCE
	PROPOSED TREELINE

### DATA SOURCES

EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON HOWARD COUNTY GIS, PREVIOUS SITE DEVELOPMENT PLANS, A FIELD RUN TOPOGRAPHIC SURVEY PERFORMED BY HIGHLAND SURVEY DATED 2/14/17 AND SUBSURFACE UTILITY DESIGNATING PERFORMED BY A/I/DATA DATED 3/1/17.

ALL HORIZONTAL SURVEY DATA SHOWN HEREON IS DERIVED FROM STATIC GPS (OPUS) OBSERVATIONS AND ARE REFERENCED TO THE MARYLAND STATE PLANE COORDINATE SYSTEM, NAD 83 (2011) ALL VERTICAL SURVEY CONTROL DATA SHOWN HEREON IS DERIVED BY DIFFERENTIAL LEVELING FROM HOWARD COUNTY SURVEY CONTROL PT. 31EA. ELEV. 468.88' NAVD 88

569641.138 1374816.086 468.877 DISC IN CONCRETE 568730.995 1376273.635 452.657

### ASSOCIATED PROJECT REVIEW FILE NUMBERS

PLANS ASSOCIATED WITH 5130 ILCHESTER ROAD: F-20-021, BA-18-011 C&V, ECP-18-038, BA-09-38C, SDP-91-111, BA-91-03E, BA-570-C, BA-189-C, BA-183-C

### OWNER / DEVELOPER

**BALTIMORE GAS AND ELECTRIC** 5130 ILCHESTER ROAD **ELLICOTT CITY, MD 21043** CHRISTA WILLIAMS, 410-313-7450



### SHEET LIST

SHEET NO.	DRAWING TITLE
1	C0.01 COVER SHEET
2	C0.02 OVERALL GENERAL NOTES
3	C0.03 BUILDING ELEVATIONS
4	C1.01 EXISTING CONDITIONS & DEMOLITION PLAN
5	C1.02 EXISTING CONDITIONS & DEMOLITION PLAN
6	C1.11 LAYOUT & DETAIL REFERENCE PLAN
7	C1.12 LAYOUT & DETAIL REFERENCE PLAN
8	C1.13 ILCHESTER ROAD IMPROVEMENTS
9	C1.14 SIGNING & MARKING PLAN
10	C1.15 MAINTENANCE OF TRAFFIC
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AD IMPROVEMENTS KING PLAN OF TRAFFIC C1.16 ROAD CROSS SECTIONS C1.17 ROAD CROSS SECTIONS

C1.18 ROAD CROSS SECTIONS C1.21 SITE UTILITY PLAN

C1.22 SITE UTILITY PLAN C1.23 STORM DRAIN DRAINAGE AREA MAP C2.01 SITE DETAILS

C2.02 SITE DETAILS C2.03 SITE DETAILS

C2.04 SITE DETAILS C2.05 SITE DETAILS

C2.06 HOWARD COUNTY STANDARD DETAILS

C3.01 STORM DRAIN PROFILES C3.02 STORM DRAIN PROFILES

C3.03 SANITARY PROFILES C3.04 WATER PROFILES

C4.01 GRADING PLAN C4.02 GRADING PLAN

C4.03 PLAN ENLARGEMENTS C4.04 PLAN ENLARGEMENTS

**ESC1.01 EXISTING CONDITIONS EROSION & SEDIMENT** CONTROL PLAN

**ESC1.02 EXISTING CONDITIONS EROSION & SEDIMENT** 

**ESC1.11 PROPOSED CONDITIONS EROSION & SEDIMENT** CONTROL PLAN ESC1.12 PROPOSED CONDITIONS EROSION & SEDIMENT

CONTROL PLAN **ESC2.01 EROSION & SEDIMENT CONTROL NOTES** 

**ESC2.11 EROSION & SEDIMENT CONTROL NOTES ESC2.12 EROSION & SEDIMENT CONTROL NOTES** 

SWM1.01 STORMWATER MANAGEMENT PLAN SWM1.02 STORMWATER MANAGEMENT PLAN

SWM2.01 STORMWATER MANAGEMENT DETAILS & NOTES SWM2.02 STORMWATER MANAGEMENT DETAILS & NOTES

SWM3.01 STORMWATER MANAGEMENT SOIL BORINGS L1.01 LANDSCAPE PLAN

L1.02 LANDSCAPE PLAN

SECTION/AREA

PROPERTY IMPROVEMENT

MAINTENANCE BUILDINGS

**NEW SERVICE CENTER AND FLEET** 

R-20

L2.01 LANDSCAPE DETAILS & NOTES E1.01 PHOTOMETRIC PLAN

**E2.01 LIGHTING DETAILS** RW1.01 RETAINING WALL PLAN, NOTES, & DETAILS

RW2.01 RETAINING WALL SPECIFICATIONS RW2.02 RETAINING WALL SPECIFICATIONS

FC1.01 FOREST CONSERVATION PLAN

FC1.02 FOREST CONSERVATION NOTES

APPROVED: DEPARTMENT OF PLANNING & ZONING 2.26.21 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 3/30/21 CHIEF, DIVISION OF LAND DEVELOPMENT \*\* DATE

**BALTIMORE GAS** & ELECTRIC BGE HOWARD SERVICE CENTER

5130 ILCHESTER ROAD

ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032

SITERESOURCE Creative Design, Successfully Engine 14315 Jarrettsville Pike, Phoenix, MD 21131-0 410,683,3388 www.siteresourcesinc.c

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249	PROFESSIONAL CERTIFICATION //. 26.0
om	I HEREBY CERTIFY THAT THESE DOCUMENTS WERE
	PREPARED OR APPROVED BY ME, AND THAT I AM A
	DULY LICENSED PROFESSIONAL ENGINEER UNDER 1 LAWS OF THE STATE OF MARYLAND, LICENSE NO.
	COACE EXPIDATION DATE OF MARTLAND, LICENSE NO.

OF MONTH	No.	Date	Description		
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22.20			>		-
RTIFICATION THAT THESE DOCUMENTS WERE ROVED BY ME, AND THAT I AM A OFESSIONAL ENGINEER UNDER THE					
E OF MARYLAND, LICENSE NO.	ł	1		1	

ADDRESS CHART PERMIT INFORMATION CHART PROJECT NAME MAP/GRID/PARCEL STREET ADDRESS **BGE HOWARD SERVICE CENTER** MAP 0031/GRID 0020 5130 ILCHESTER RD., ELLICOTT CITY, MD 21043 LAT#ORL/F GRID# ZONING PARCEL 0557 00140/00451 20 WATER CODE SEWER CODE

LOT/PARCEL NO **COVER SHEET** TAX MAP NO. ELECT DISTRICT CENSUS TRACT

601104

C<sub>0.01</sub> SHEET 1 OF 52

### STANDARD GENERAL NOTES (THESE NOTES PERTAIN TO ALL CIVIL DRAWINGS)

ABBREVIA	ATIONS:		
PROP	PROPOSED*	DIP	DUCTILE IRON PIPE
EX	EXISTING	PVC	POLYVINYL CHLORIDE PIPE
BIT	BITUMINOUS	HDPE	HIGH DENSITY POLYETHYLENE PIP
CONC	CONCRETE	CMP	CORRUGATED METAL PIPE
M OR MH	MANHOLE	RCCP	REINFORCED CONCRETE PIPE
SD	STORM DRAIN	C&G	CONCRETE CURB & GUTTER
1	INLET	INV	INVERT ELEVATION
SAN	SANITARY SEWER	FDC	FIRE DEPARTMENT CONNECTION
FF	FINISHED FLOOR ELEV	FH	FIRE HYDRANT
BF	BASEMENT FLOOR ELEV	TC	TOP OF CURB
		BC	BOTTOM OF CURB
TS	TOP OF STEP	BS	BOTTOM OF STEP
TW	TOP OF WALL	BW	BOTTOM OF WALL
PC	POINT OF CURVATURE	PS	PARKING SPACE
PT	POINT OF TANGENCY	HC	HANDICAPPED PARKING SPACE
PI	POINT OF INTERSECTION	TYP	TYPICAL
AGIP	AT-GRADE INLET PROTECTION	CIP	CURB INLET PROTECTION
COIP	COMBINATION INLET PROTECTION	ED	EARTH DIKE
FB	FILTER BAG	IB	INLET BLOCKING
RPS	REMOVABLE PUMPING STATION	SCE	STABILIZED CONSTRUCTION ENTRANC
SFD	SUPER FENCE DIVERSION	SIP	STANDARD INLET PROTECTION
SP	SUMP PIT	SSF	SUPER SILT FENCE
TS	TEMPORARY SWALE	TSOS	TEMPORARY STONE OUTLET STRUCTURE

\*PROPOSED MEANS WORK INCLUDED IN THE BASE CONTRACT UNLESS ACCOMPANIED BY THE PHRASES "N.I.C." OR "BY OTHERS."

- 2. EXISTING INFORMATION AND CONDITIONS NOT GUARANTEED; VERIFY AND TEST PIT EXISTING UTILITIES: THE CORRECTNESS AND COMPLETENESS OF THE INFORMATION SHOWING EXISTING CONDITIONS IS NOT GUARANTEED. BEFORE BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL PERFORM THE **FOLLOWING TASKS:** 
  - (a) NOTIFY MISS UTILITY AT 1-800-257-7777, AND MAKE SURE THEY COMPLETE THE MARKING OF UTILITIES WITHIN THE LIMITS OF CONSTRUCTION AT LEAST 48 HOURS PRIOR TO INSTALLING SEDIMENT CONTROL MEASURES: MAINTAIN ALL MARKINGS THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL ALSO INCLUDE IN HIS BID PRICE MARKING OF ON-SITE UTILITIES THAT MIGHT NOT BE MARKED BY MISS UTILITY; THE CONTRACTOR SHALL EITHER MARK THESE ON-SITE UTILITIES HIMSELF OR BY SUBCONTRACTING WITH A PRIVATE ON-SITE UTILITY LOCATION COMPANY
- (b) VERIFY THE GENERAL ACCURACY OF THE EXISTING CONDITIONS SHOWN ON THE SITE DRAWINGS BY VISUAL INSPECTION OF THE SURFACE OF THE SITE AND ALL EXISTING STRUCTURES, PAVING AND UTILITY APPURTENANCES VISIBLE THEREON:
- (c) WITH REGARD TO THE STRUCTURES & APPURTENANCES OBSERVED AS REQUIRED PER ITEM (b) ABOVE, DETERMINE THE TYPE, SIZE, LOCATION AND ELEVATION OF ALL THOSE EXISTING UTILITIES (INCLUDING BUT NOT LIMITED TO ALL STORM DRAINS, SANITARY LINES, WATER LINES, GAS LINES, STEAM LINES, ELECTRIC LINES, TELEPHONE LINES, AND COMMUNICATION DUCTS, AND ALL MANHOLES, INLETS, CLEAN-OUTS, VALVES, HANDHOLES, ETC. RELATED THERETO) WITHIN THE LIMITS OF CONSTRUCTION IN ORDER TO: (I) AVOID DAMAGING OR DISRUPTING SERVICE, AND (II) TO COORDINATE AND FACILITATE CONSTRUCTION OF PROPOSED UTILITIES AND OTHER IMPROVEMENTS. IN ADDITION TO THE CONTRACTOR'S VISUAL OBSERVATION AND THE UTILITY MARKING (AS REQUIRED ABOVE), THE CONTRACTOR SHALL SCHEDULE AND COMPLETE TEST PITTING OF ALL EXISTING UTILITIES (FOR THE PURPOSES SET FORTH ABOVE) AND SHALL DO SO IN A TIMELY MANNER IN ORDER TO ALLOW TIME FOR ANALYSIS AND REDESIGN BY SITE RESOURCES AND/OR OTHER CONSULTANTS, WITHOUT DELAYING THE
- (d) IMMEDIATELY REPORT TO SITE RESOURCES, INC. THE RESULTS OF STEPS (A), (B) AND (C) WHICH MIGHT INDICATE ANY DISCREPANCY BETWEEN ACTUAL CONDITIONS AND THOSE SHOWN ON THE PLAN, AND ANY POTENTIAL CONFLICTS BETWEEN PROPOSED IMPROVEMENTS AND EXISTING CONDITION.

TEST PITTING DEFINED: FOR THE PURPOSES OF THIS CONTRACT, EXCAVATION OF UTILITY TRENCHES DOES NOT CONSTITUTE TEST PITTING. TEST PITTING IS A SEPARATE OPERATION COMPLETED AT LEAST SEVEN DAYS BEFORE UTILITY INSTALLATION IS SCHEDULED TO BEGIN. TEST PITTING MEANS EXCAVATION TO EXPOSE EXISTING UTILITIES IN TWO SITUATIONS: (I) WHERE PROPOSED IMPROVEMENTS CROSS EXISTING UTILITIES (PIPES, LINES, STRUCTURES, APPURTENANCES) AND; (II) WHERE PROPOSED UTILITIES ARE DESIGNED TO CONNECT TO EXISTING UTILITIES. TEST PITTING INCLUDES RECORDING THE TYPE, SIZE, LOCATION AND ELEVATION OF THE EXPOSED UTILITIES, AND FAXING AND MAILING THE RECORD TO SITE RESOURCES, INC. AND THE **OWNER.** THE RECORD MAY BE A LEGIBLE HAND-WRITTEN FIELD SKETCH.

3. EXISTING AND PROPOSED GAS LINES, ELECTRIC LINES, TELEPHONE LINES, COMMUNICATION LINES AND OTHER UTILITIES: THESE DRAWINGS INCLUDE INFORMATION AND DEPICTIONS OF BALTIMORE GAS & ELECTRIC COMPANY'S (BGE) ELECTRIC AND/OR GAS UTILITIES LOCATED WITHIN THE GENERAL PROJECT AREA. LOCATIONS, DIMENSIONS, DEPTHS, AND OTHER DETAILS OF ANY SUCH UTILITIES MAY NOT BE AS ACTUALLY CONSTRUCTED, AND THE INFORMATION SHALL NOT BE RELIED UPON WITHOUT FIELD VERIFICATION BY TEST PITTING AS DEFINED ABOVE. EXCAVATORS MUST EMPLOY SAFE DIGGING PRACTICES WHEN APPROACHING BGE ELECTRIC AND/OR GAS UTILITIES AND COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS INCLUDING, BUT NOT LIMITED TO, THE LAW GOVERNING NOTIFICATION OF MISS UTILITY. NO REPRESENTATION. GUARANTEES, OR WARRANTIES EXPRESSED OR IMPLIED ARE MADE BY BGE OR SITE RESOURCES, INC. AS TO THE QUALITY, COMPLETENESS, OR ACCURACY OF THE BGE UTILITY INFORMATION, AND IN ACCEPTING THESE DRAWINGS, THE RECIPIENT EXPRESSLY AGREES THAT IT IS NOT RELYING ON THE ACCURACY OF

THE SAME. EXISTING AND PROPOSED GAS LINES, STEAM LINES, ELECTRIC LINES, TELEPHONE LINES, COMMUNICATION DUCTS AND OTHER SUCH UTILITIES ARE NOT PART OF THE SCOPE OF WORK SHOWN ON THESE SITE PLANS AND SITE RESOURCES, INC. HAS NO RESPONSIBILITY FOR DESIGN, SPECIFICATION OR INSTALLATION OF SAID UTILITIES. TO THE EXTENT THAT SOME OR ALL OF SUCH UTILITIES (WHETHER EXISTING OR PROPOSED) APPEAR ON THE SITE DRAWINGS. IT IS PRESENTED ONLY FOR THE CONVENIENCE OF THE CONTRACTOR AND THE CORRECTNESS AND COMPLETENESS OF THE INFORMATION SHOWING THESE UTILITIES IS NOT GUARANTEED.

- COORDINATION BETWEEN PROPOSED ON-SITE UTILITIES: THE CONTRACTOR SHALL ADJUST THE LOCATION AND ELEVATION OF PROPOSED ON-SITE GAS LINES, ELECTRIC LINES, TELEPHONE LINES, COMMUNICATION LINES, AND WATER LINES AS NEEDED TO CONSTRUCT THE PROPOSED ON-SITE STORM DRAINS AND SANITARY SEWER WITH MINIMUM CLEARANCES. COORDINATE WITH THE MECHANICAL/ELECTRICAL DRAWINGS AND SPECIFICATIONS AND APPROPRIATE UTILITY COMPANY.
- 5. RELOCATION OF EXISTING ON-SITE UTILITIES: IN THE EVENT THAT THE LOCATION OR ELEVATION OF EXISTING MINOR UNDERGROUND ELECTRIC LINES AND PHONE LINES CONFLICT WITH PROPOSED STORM DRAINS, SANITARY SEWER LINES OR WATER LINES, THE CONTRACTOR SHALL, WITH THE PERMISSION OF THE OWNER AND WITHOUT AN EXTRA COST TO THE PROJECT, ADJUST THESE LINES TO PERMIT INSTALLATION OF THE NEW UTILITIES. IN THE EVENT THAT ANY OTHER UTILITY IS RELOCATED TO ACCOMMODATE A NEW UTILITY, SAID RELOCATION SHALL BE AN EXTRA COST TO THE PROJECT. SUBJECT TO THE TERMS AND

- CONDITIONS OF THE CONSTRUCTION CONTRACT.
- 6. UTILITIES TO REMAIN OPERATIONAL; ADJUSTMENT FOR FINAL GRADE: ALL EXISTING UTILITIES SHALL BE RETAINED UNLESS MARKED OTHERWISE. EXISTING 19. GRADING: IT IS THE INTENT OF THE GRADING DESIGN TO ACHIEVE POSITIVE UTILITIES NOT TO BE REMOVED ARE TO REMAIN OPERATIONAL AT ALL TIMES. EXISTING UTILITIES TO BE REPLACED OR RELOCATED SHALL REMAIN IN SERVICE UNTIL REPLACED OR RELOCATED UTILITIES ARE OPERATIONAL. ALL EXISTING UTILITY APPURTENANCES SHALL BE ADJUSTED FOR FINAL GRADE.
- 7. UTILITY TRENCHING, BACKFILL AND COMPACTION: ALL TRENCHING FOR SANITARY SEWER. STORM DRAINS AND WATER MAINS SHALL BE DONE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- 8. UTILITY CERTIFICATION: THE CONTRACTOR SHALL HAVE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND CERTIFY, ON A FORM PROVIDED BY THE OWNER, THAT ALL PROPOSED STORM DRAINS, SANITARY SEWERS AND WATER LINES SHOWN HEREON WERE INSTALLED IN ACCORDANCE WITH THESE PLANS AND HOWARD COUNTY SPECIFICATIONS. IF SAID CERTIFICATION IS NOT POSSIBLE BECAUSE THE UTILITIES WERE NOT INSTALLED IN ACCORDANCE WITH THESE PLANS AND HOWARD COUNTY SPECIFICATIONS, THEN THE OWNER HAS THE OPTION OF WAIVING, IN WRITING, THIS CERTIFICATION, IN WHOLE OR PART. IF THE OWNER DOES NOT ELECT TO WAIVE THE CERTIFICATION, THE CONTRACTOR SHALL ADJUST AND, IF NECESSARY, RECONSTRUCT THE UTILITIES TO BRING THEM IN CONFORMANCE WITH THESE PLANS AND HOWARD COUNTY SPECIFICATIONS.
- 9. UTILITY CAPPING AND PROTECTION: ALL BUILDING CONNECTIONS SHALL BE CAPPED AT UPSTREAM END, 5 FEET FROM PROPOSED BUILDINGS, CAISSONS OR COLUMN FOOTINGS OR AS NOTED, AND SHALL BE PROTECTED BY PROVIDING THREE STAKES (THE HEIGHT BEING A MINIMUM OF 18 INCHES ABOVE PROPOSED GRADE) WITH HIGH VISIBILITY FLAGGING AROUND THE CAPPED END OF THE
- 10. PROPOSED WATER LINES: PROPOSED WATER LINES SHALL HAVE A MINIMUM OF 3'-6" COVER FROM FINISHED GRADE, 1'-0" CLEARANCE FROM STORM DRAINS AND 1'-0" CLEARANCE FROM SANITARY SEWERS, UNLESS INDICATED OTHERWISE ON THE PLANS. ALL WATER MAINS 3" OR LARGER SHALL BE PVC C900 AWWA CLASS DR-14 UNLESS INDICATED OTHERWISE. ALL WATER LINES 2" AND SMALLER SHALL BE TYPE K COPPER TUBING MEETING THE MATERIAL, CHEMICAL, AND MECHANICAL REQUIREMENTS OF ASTM B-88 UNLESS INDICATED OTHERWISE.
- 11. PROPOSED STORM DRAINS: UNLESS INDICATED OTHERWISE ON THESE CONSTRUCTION DRAWINGS ALL REINFORCED CONCRETE CULVERT PIPE (RCCP) SHALL BE CLASS IV, ALL PVC SHALL BE SCHEDULE 40, AND ALL HDPE SHALL BE ADS N-12 ST IB OR EQUIVALENT.
- 12. PROPOSED SANITARY SEWERS: UNLESS INDICATED OTHERWISE ON THESE CONSTRUCTION DRAWINGS, ALL PIPE AND FITTINGS FOR SANITARY HOUSE CONNECTION SHALL BE POLYVINYL CHLORIDE (PVC) MEETING MATERIAL REQUIREMENTS OF ASTM D3034 (SDR-35). JOINTS SHALL BE ELASTOMERIC GASKETED.
- 13. SEDIMENT CONTROL: THE CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL UTILITIES TO AVOID CONSTRUCTION PROBLEMS/CONFLICTS WITH SEDIMENT AND EROSION CONTROL MEASURES. ANY DISTURBANCE TO SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REPAIRED AT THE END OF EACH WORKING DAY. CONTRACTOR SHALL, WITHOUT EXTRA COST TO THE PROJECT, REPAIR AND MAINTAIN EXISTING SEDIMENT CONTROL DEVICES UNTIL ALL AREAS WITHIN LIMITS OF CONSTRUCTION ARE STABILIZED. WITH THE APPROVAL OF SEDIMENT CONTROL INSPECTOR, ALL SEDIMENT CONTROL DEVICES SHALL BE REMOVED AND AREAS RESTORED AND STABILIZED. ALL SEDIMENT CONTROL MEASURES REFERRED TO ON THESE PLANS SHALL BE IN ACCORDANCE WITH THE PUBLICATION ENTITLED 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- 14. DISTURBED AREAS: ALL AREAS DISTURBED BY THE CONTRACTOR DURING OR PRIOR TO CONSTRUCTION, NOT DESIGNATED TO RECEIVE PAVING, MULCH OR SOLID SOD SHALL BE FINE GRADED, SEEDED AND MULCHED IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES AND SPECIFICATIONS SHOWN ON THE SEDIMENT CONTROL DRAWINGS.
- 15. REPAIR AND REPLACEMENT OF DAMAGE CAUSED BY CONTRACTOR AND SUBCONTRACTORS: IN THE EVENT THAT THE CONTRACTOR OR ANY OF HIS SUBCONTRACTORS DAMAGE ANY EXISTING CURB, GUTTER, PAVING, UTILITIES. SIDEWALKS, TREES, SHRUBS, LAWNS, OR ANY OTHER EXISTING CONDITIONS (NOT INDICATED TO BE DEMOLISHED), OR ANY NEWLY INSTALLED PROPOSED IMPROVEMENT, THE GENERAL CONTRACTOR SHALL REPAIR AND REPLACE SAID DAMAGE TO OWNER'S SATISFACTION, AT GENERAL CONTRACTOR'S SOLE COST AND EXPENSE.
- 16. BENCHMARKS: SEE SURVEY CONTROL DATA INFORMATION ON THIS SHEET.
- 17. ELEVATION AND LABELING: ALL SPOT GRADE ELEVATIONS IN ROADWAYS AND PARKING LOTS ARE FOR BOTTOM OF CURB UNLESS OTHERWISE NOTED. ELEVATIONS ON HARD SURFACES (ROADS, WALKS, WALLS, STEPS, MANHOLES, INLETS, ETC.) ARE LABELED TO THE HUNDREDTH OF A FOOT (E.G. 245.45). ELEVATIONS ON PROPOSED LAWN AND PLANTING AREAS ARE LABELED TO THE TENTH OF A FOOT (E.G. 245.5).
- 18. DIMENSIONS: UNLESS OTHERWISE NOTED ON THE DRAWING, ALL DIMENSIONS SHOWN ON THE SITE DRAWINGS FOLLOW THESE CONVENTIONS: (a) DIMENSIONS TO A BUILDING OR RETAINING WALL ARE TO THE FACE OF THE
- (b) DIMENSIONS TO A CURB ARE TO THE FACE (NOT THE BACK) OF THE CURB; (c) DIMENSIONS TO A FENCE ARE TO THE CENTERLINE OF THE FENCE; (d) DIMENSIONS FOR SIDEWALKS ABUTTING A CURB ARE FROM THE FACE OF CURB TO THE BACK EDGE OF THE WALK:
- (e) DIMENSIONS FOR OTHER SIDEWALKS OR OPEN PAVING SECTIONS ARE MEASURED TO THE EDGE OF PAVING:
- (f) DIMENSIONS TO A MANHOLE, INLET, CLEANOUT, PIPE BEND, VALVE, FIRE HYDRANT OR OTHER UTILITY APPURTENANCE ARE TO THE CENTER OF THE
- (g) DIMENSIONS FOR STEPS ARE TO THE OUTER EDGE OF THE STAIRCASE AND THE NOSE OF THE TOP OR BOTTOM STEP:

- (h) LAYOUT OF SEDIMENT CONTROL MEASURES AND PLANT MATERIAL SHALL BE SCALED.
- DRAINAGE AND AESTHETICALLY PLEASING VERTICAL CURVES AND LINES. TRANSITIONS BETWEEN EXISTING AND PROPOSED PAVEMENT SHALL BE SMOOTH AND JOINTS FLUSH. UNLESS OTHERWISE EXPRESSLY NOTED ON THE PLAN (BY ARROW WITH THE PERCENT SLOPE LABELED), ALL PROPOSED BITUMINOUS PAVING SHALL HAVE A SLOPE OF AT LEAST 2 PERCENT AND ALL CONCRETE SHALL HAVE A MINIMUM SLOPE OF 1.5 PERCENT IN THE DIRECTION INDICATED BY PROPOSED CONTOURS. UNPAVED AREAS SHALL HAVE A MINIMUM SLOPE OF 2.5 PERCENT (2 PERCENT ALLOWED IN SWALES) AND A MAXIMUM SLOPE OF 3:1. FINAL GRADING SHALL ACHIEVE POSITIVE SURFACE DRAINAGE AWAY FROM BUILDINGS AND TOWARD DRAINAGE FACILITIES (SWALES, GUTTERS, INLETS, ETC.).

ROUND TOP AND CORRECT METHOD INCORRECT METHOD **BOTTOM OF** SLOPES.

- 20. COMPACTION: REFER TO SPECIFICATIONS AND GEOTECHNICAL REPORT FOR COMPACTION REQUIREMENTS SPECIFIC TO SLAB, FOOTINGS, PAVING AND PLANTED AREAS.
- 21. HEADINGS: THE HEADINGS CONTAINED IN THESE GENERAL NOTES ARE FOR THE CONVENIENCE OF THE READER ONLY AND SHALL NOT LIMIT THE RESPONSIBILITY OF THE CONTRACTOR. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR FROM COMPLETING SUCH WORK.
- 22. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES): IT IS THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT ALL THE PROVISIONS AND REQUIREMENTS OF THE NPDES PERMIT. THE PERMIT HAS BEEN APPLIED FOR BY THE OWNER, BUT NO LAND DISTURBANCE IS PERMITTED UNTIL THE NPDES PERMIT HAS BEEN ISSUED.
- 23. ALL SIDEWALKS, PATHS AND OTHER PAVED AREAS SHALL BE FINISH GRADED WITH A MAXIMUM LONGITUDINAL SLOPE OF 5% (1:20) AND A MAXIMUM CROSS SLOPE OF 2% (1:50) UNLESS OTHERWISE NOTED.
- 24. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL SITE ELEMENTS ARE CONSTRUCTED IN ACCORDANCE WITH THE ADA 2010 STANDARDS FOR ACCESSIBLE DESIGN AND CURRENT LOCAL REQUIREMENTS.
- 25. TO THE EXTENT THAT QUANTITIES MAY BE LISTED ON THESE PLANS, THEY ARE FOR PERMITTING PURPOSES ONLY AND NOT FOR BIDDING PURPOSES. CONTRACTOR SHALL FORM HIS OWN CONCLUSIONS ABOUT THE QUANTITIES OF ALL MATERIALS AND OPERATIONS NECESSARY TO COMPLETE THE PROJECT.
- 26. SWM AS-BUILT NOTE: IT IS THE CONTRACTOR'S RESPONSIBILITY, ON BEHALF OF THE OWNER, TO ENGAGE A LICENSED PROFESSIONAL ENGINEER OR PROFESSIONAL LAND SURVEYOR TO CERTIFY THE STORMWATER MANAGEMENT FACILITIES AND TO PREPARE, SUBMIT AND PROCESS AS-BUILT DRAWINGS TO HOWARD COUNTY.
- 27. FIELD VERIFICATION: A PLAN OF NATURAL RESOURCES WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC ON MARCH 13, 2018.
- 28. THE NATURAL RESOURCES INVENTORY WAS PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC. IN AND AROUND THE ILLUSTRATED LIMITS OF DISTURBANCE ON THE PLANS. THE PROPOSED DESIGN WITHIN THE PROPOSED LIMITS OF DISTURBANCE DOES NOT IMPACT ANY OF THE ENVIRONMENTALLY SENSITIVE AREAS ON THE PROPERTY. INCREASING THE DEVELOPMENT SIZE AND INCREASING THE LOD BEYOND WHAT IS PROVIDED ON THE PLANS WITH FUTURE SUBMISSIONS MAY REQUIRE ADDITIONAL EXAMINATION AND SUBMISSION OF NEW PLANS FOR REVIEW TO THE DEPARTMENT OF PLANNING AND ZONING.
- 29. STORMWATER MANAGEMENT REQUIREMENTS FOR THE PROPOSED DEVELOPMENT ARE MET BY (2) MICRO-BIORETENTION FACILITY AND (2) SUBMERGED GRAVEL WETLANDS. THE PROJECT IS CONSIDERED A REDEVELOPMENT PROJECT WHERE THE EXISTING IMPERVIOUS AREA WITHIN THE DEVELOPMENT AREA IS GREATER THAN 40%.

**BALTIMORE GAS** & ELECTRIC BGE HOWARD SERVICE CENTER

5130 ILCHESTER ROAD ELLICOTT CITY, MD 21043 ATTN: CHRISTA WILLIAMS, 410-470-5032





No. Date Description

ADDRESS CHART MAP/GRID/PARCEL STREET ADDRESS 5130 ILCHESTER RD., ELLICOTT CITY, MD 21043

PERMIT INFORMATION CHART ROJECT NAME SECTION/AREA **BGE HOWARD SERVICE CENTER** PLAT # OR L/F GRID # ZONING TAX MAP NO. ELECT DISTRICT CENSUS TRACT 00140/00451 20 R-20 0031 WATER CODE SEWER CODE PROPERTY IMPROVEMENT **NEW SERVICE CENTER AND FLEET** 

550

**OVERALL** SENERAL NOTES

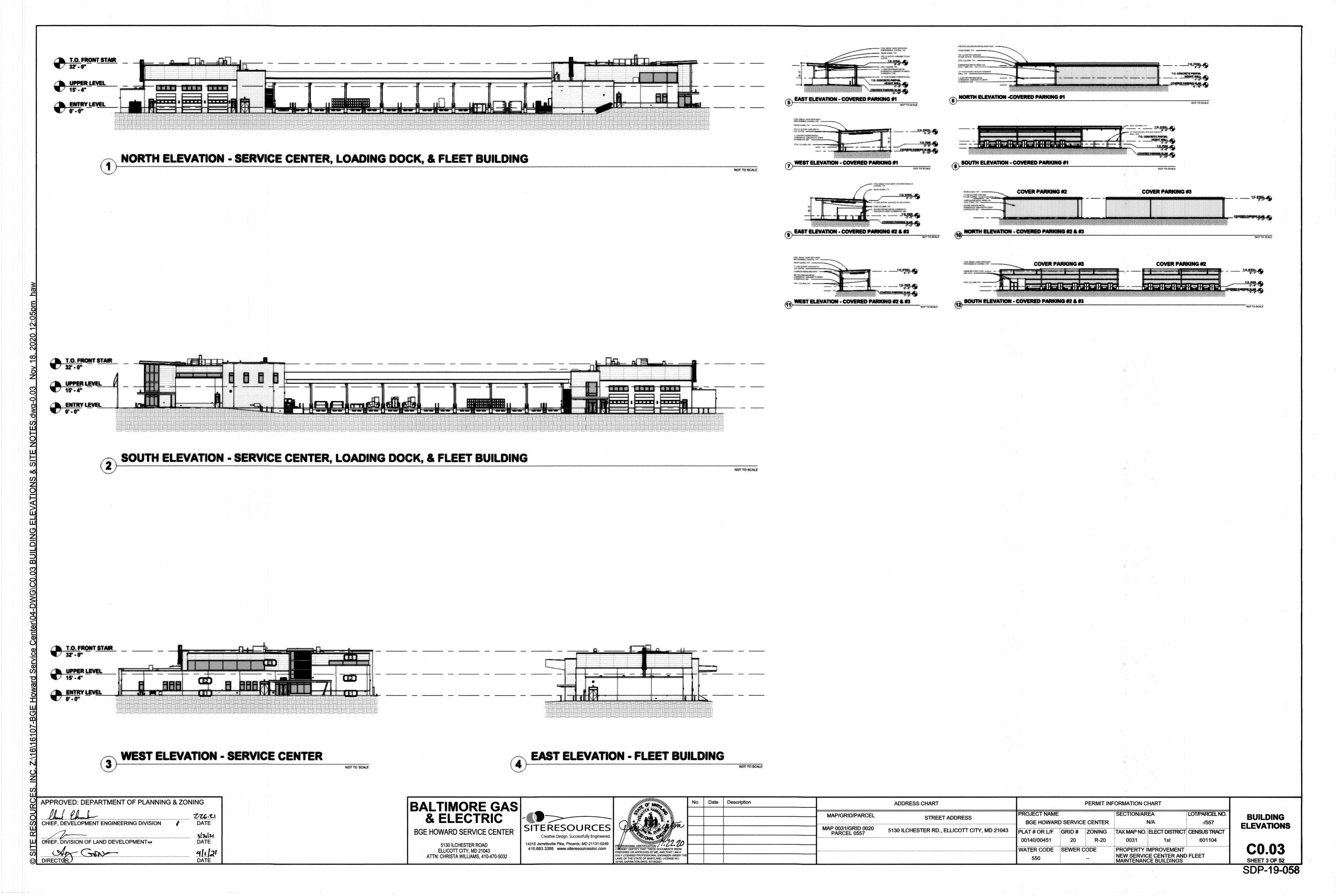
LOT/PARCEL NO

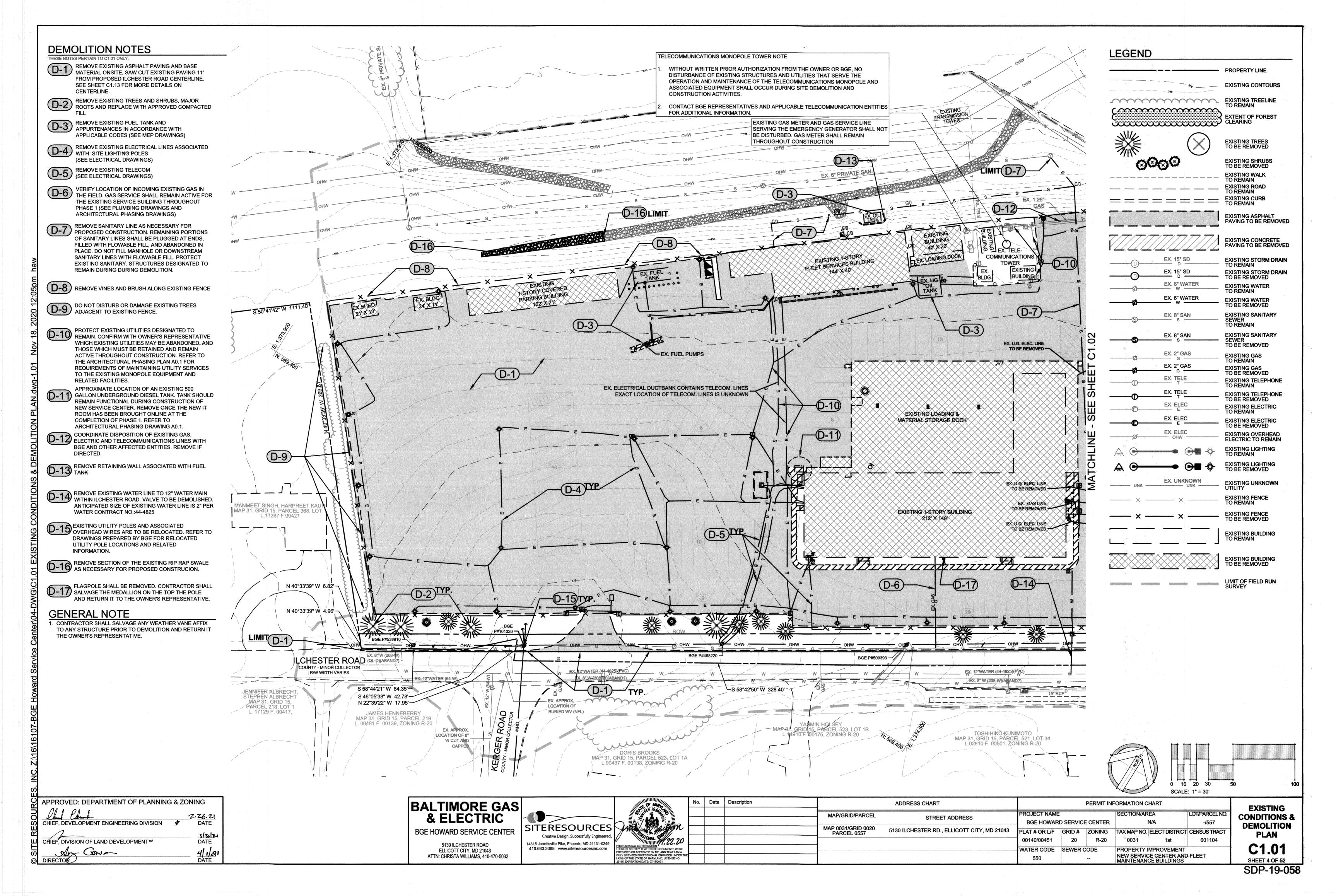
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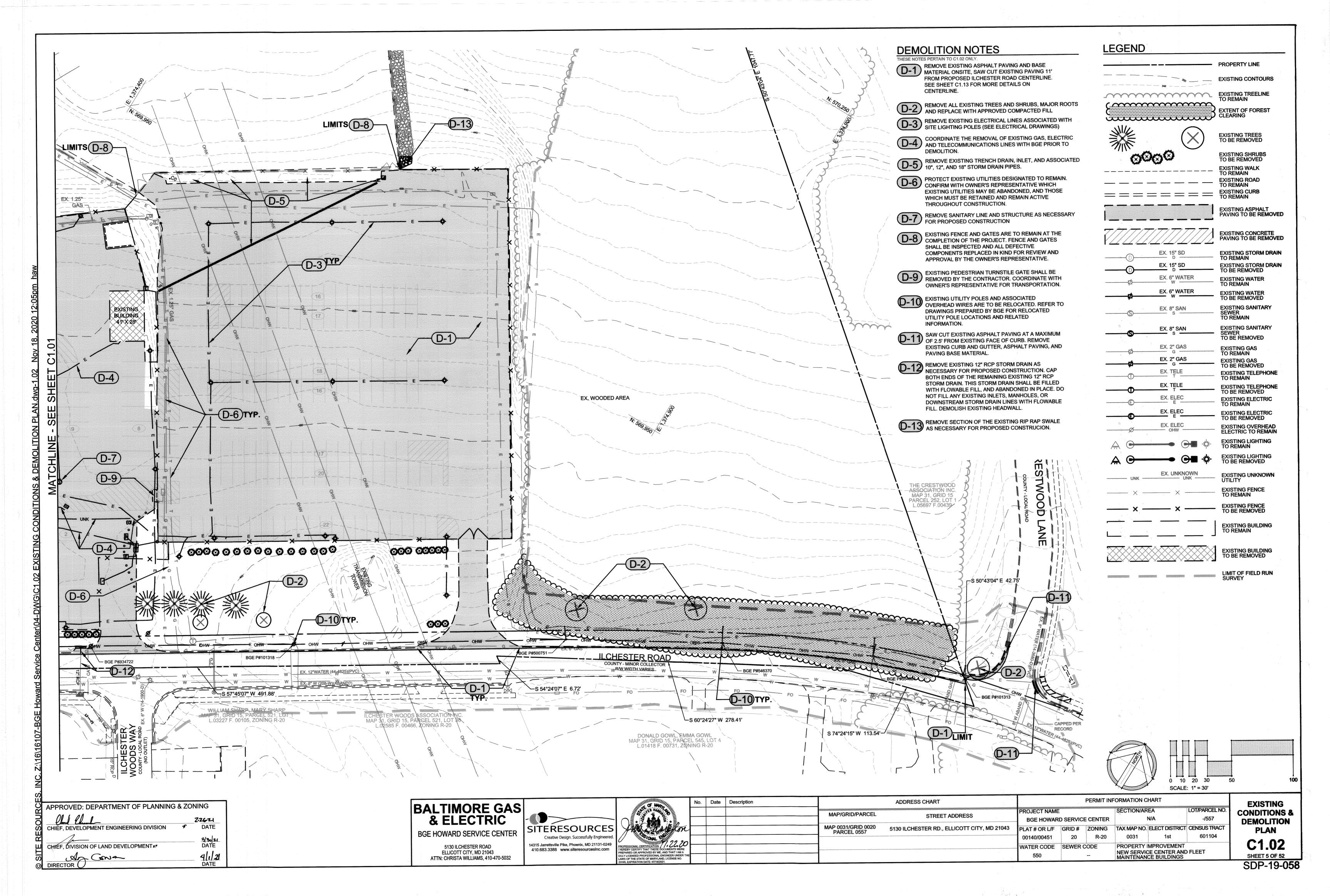
MAINTENANCE BUILDINGS

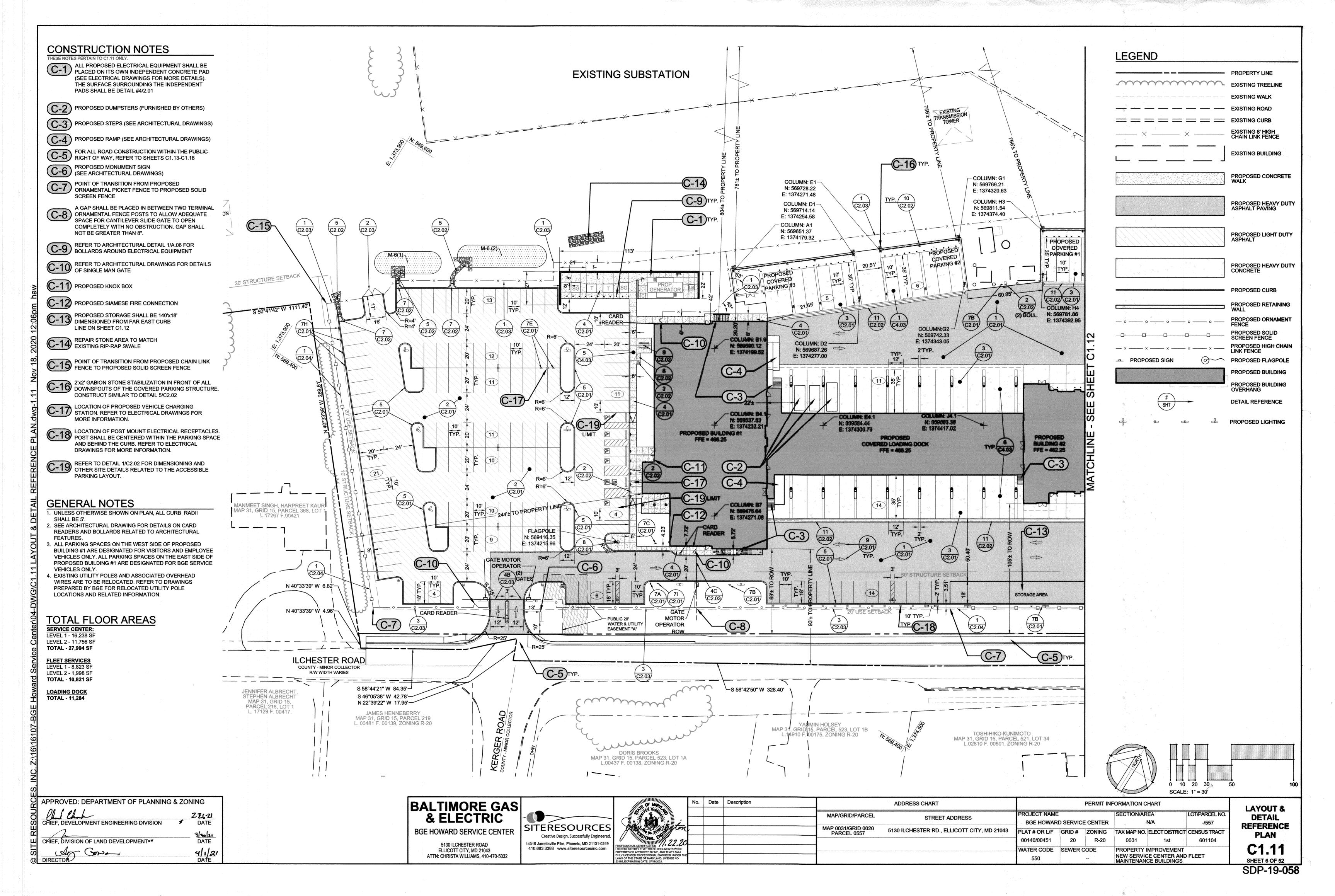
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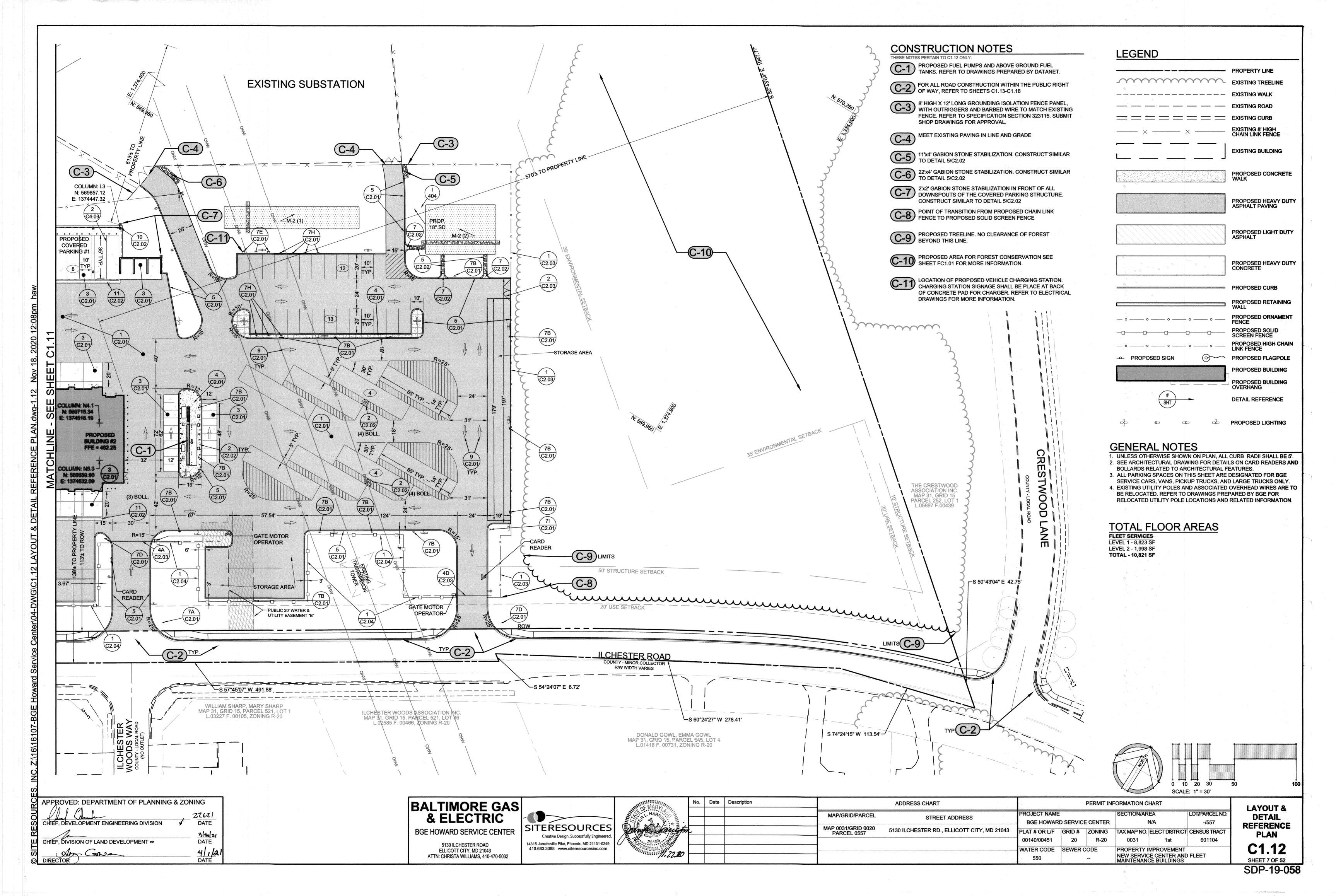
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Ş	APPROVED: DEPARTMENT OF PLANNING & ZONING
3	01/91/
Ŋ	CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Ľ	3/30/21
Ц	CHIEF, DIVISION OF LAND DEVELOPMENT ** DATE
3	An Gon- 4/1/21
$\odot$	DIRECTOR) DATE

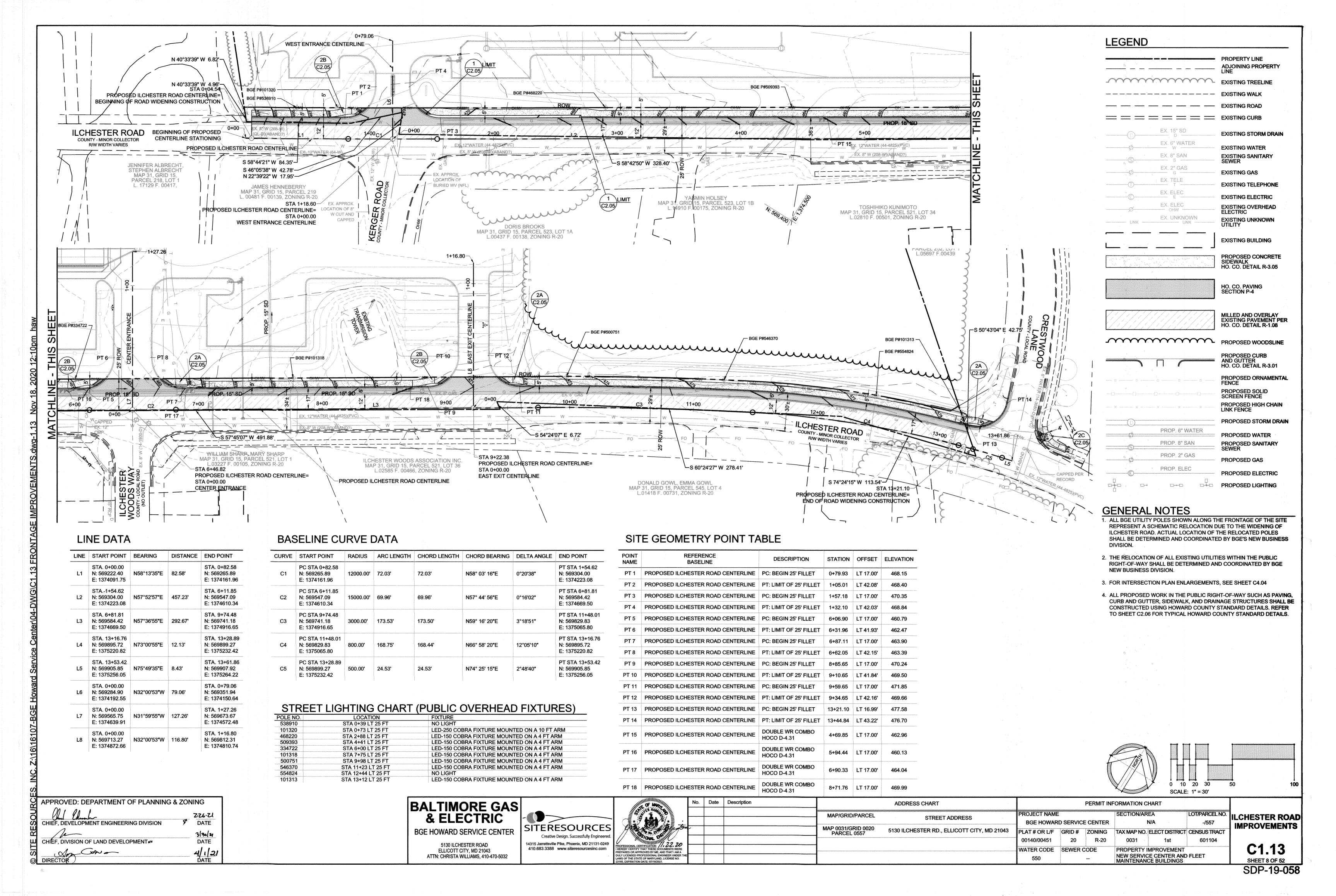








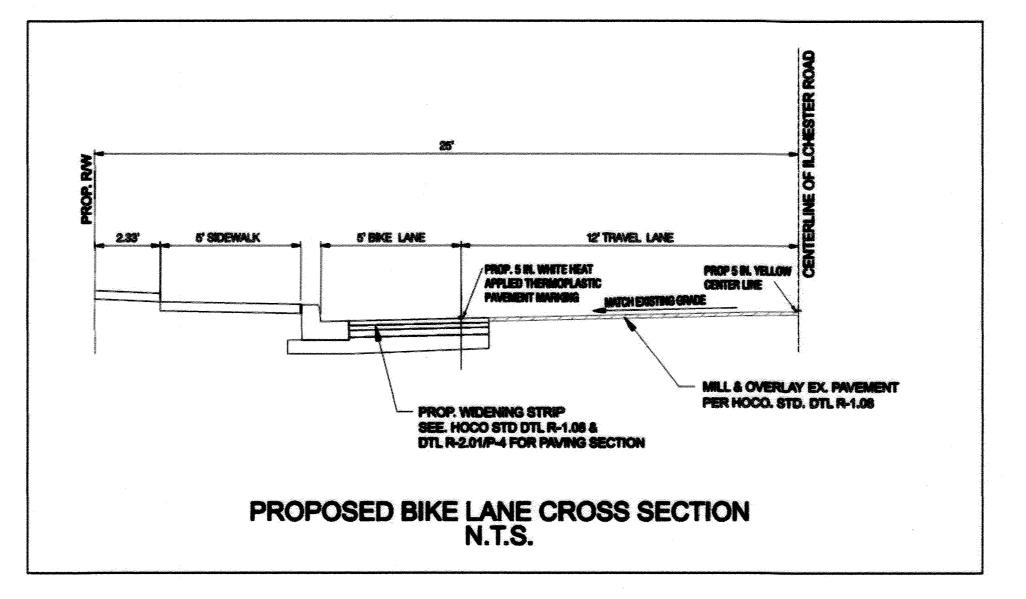




### GENERAL NOTES:

- I. ALL PERMANENT SIGNS SHALL BE FIELD LOCATED BY THE TRAFFIC DIVISION.
- 3. ALL PAVEMENT MARKINGS SHALL BE LAID-OUT BY THE TRAFFIC DIVISION.
- 3 CONTACT HOWARD COUNTY TRAFFIC (410-313-5752) AT LEAST ONE WEEK PRIOR TO SIGNS AND MARKINGS INSTALLATION.
- 4. THE RI-I ("STOP") SIGNS AND OTHER RELOCATED SIGNS FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
- 5. ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2 IN. GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2 IN. GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3" LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

## SIGNING AND MARKING PLAN



### MATERIAL LIST

Equipment to be furnished and installed by the Contractor. All equipment in this list shall have catalog cuts submitted for approval prior to installation.

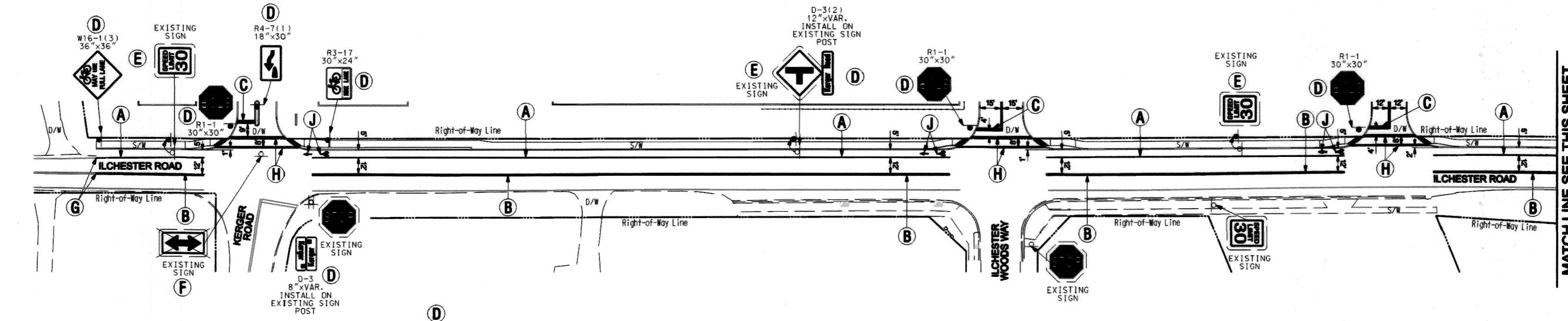
QUANTITY	UNITS	DESCRIPTION
1260	LF	5 IN. WIDE HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING - WHITE.
2820	and a second	5 IN. WIDE HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING - YELLOW.
375		12 IN. WIDE HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING - WHITE.
75	LF	24 IN. WIDE HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING - WHITE.
4	EA	HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING SYMBOL TYPE B (ARROW-HELMETED BICYCLIST) - WHITE.
: <b>1</b>	EA	12 IN. X VARIABLE D-3(2) SIGN FOR GROUND MOUNTING.
4	EA	30 IN. X 30 IN. RI-I SIGN FOR GROUND MOUNTING.
2	EA	30 IN. X 24 IN. R3-17 SIGN FOR GROUND MOUNTING.
(Manager)	EA	30 IN. X 24 IN. R4-7(I) SIGN FOR GROUND MOUNTING.

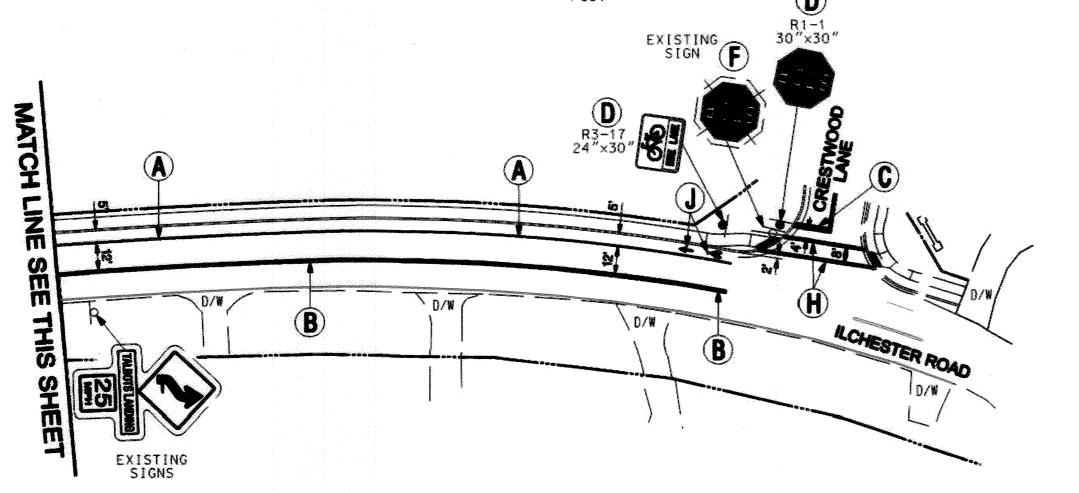
RELOCATE GROUND MOUNTED SIGN.

REMOVE EXISTING GROUND MOUNTED SIGN AND POST.

2 IN. GALVANIZED STEEL PERFORATED SQUARE TUBE POST (14 GAUGE) (SEE GENERAL NOTE FOR INSTALLATION).

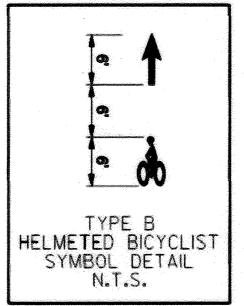
36 IN. X 36 IN. WIG-I(3) SIGN FOR GROUND MOUNTING.

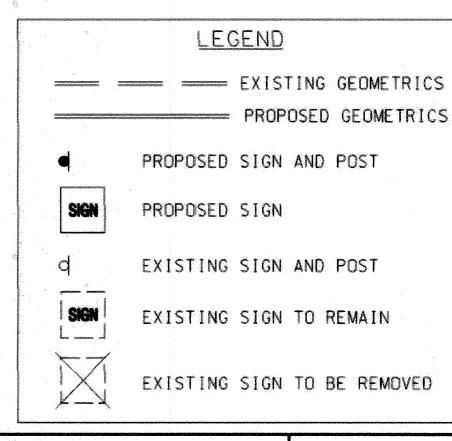




### CONSTRUCTION DETAILS

- A. INSTALL 5 IN. SOLID WHITE THERMOPLASTIC PAVEMENT MARKING FOR LANE LINE.
- B. INSTALL 5 IN. SOLID DOUBLE YELLOW THERMOPLASTIC PAVEMENT MARKING FOR CENTER LINE.
- C. INSTALL 24 IN. SOLID WHITE THERMOPLASTIC PAVEMENT MARKING FOR STOP LINE.
- D. INSTALL GROUND MOUNTED SIGN AND POST.
- E. RELOCATE EXISTING GROUND MOUNTED SIGN.
- F. REMOVE EXISTING GROUND MOUNTED SIGN AND POST.
- G. TIE TO EXISTING PAVEMENT MARKING.
- H. INSTALL 12 IN. SOLID WHITE THERMOPLASTIC PAVEMENT MARKING FOR CROSSWALK LINE.
- J. INSTALL WHITE THERMOPLASTIC PAVEMENT MARKING SYMBOL.





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CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
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(Ayananaya)	ELLICOTT CITY, MD 21043	9
Name of the last	ATTN: CHRISTA WILLIAMS, 410-470-8000	2000

<u> </u>	The Traffic Group, Inc.	occusion of the
	Suite H 9900 Franklin Square Drive Baltimore, Maryland 21236	
	410-931-9900 1-900-553-9411 Fax: 410-931-9901 www.fraffingroup.com	
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MAP/GRID/PARCEL STREET ADDRESS		PROJECT NAME  BGE HOWARD SERVICE CENTER  NA				LOTIPARCELNO. -/557	
MAP 0031/GRID 0020 PARCEL 0657	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F 00140/00451	GRID #	ZONING R-20	TAX MAP NO. 0031	ELECT DISTRICT	CENSUS TRACT 601104
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SIGNING & **MARKING PLAN** 

C1.14

### **Drop Off Policy**

Contractor to maintain less than 2.5 in. of drop-off during periods of non-construction. See Standard MD 104.00-14 General Notes

## MAINTENANCE OF TRAFFIC PLAN FOR ROAD IMPROVEMENT AND UTILITIES

### SEQUENCE OF OPERATION

- 1. INSTALL ADVANCE WARNING SIGNS AND SET TEMPORARY TRAFFIC CONTROL DEVICES.
- 3. INSTALL ROADWAY BASE MATERIAL, CURB AND GUTTER, SIDEWALK AND RAMPS, AND ASPHALT PAVING. MODIFY EXISTING RAMP.

- 5. UPON COMPLETION OF ROADWAY WIDENING THE FINAL PAVEMENT MARKINGS SHALL BE INSTALLED PER THE PAVEMENT MARKING PLAN.

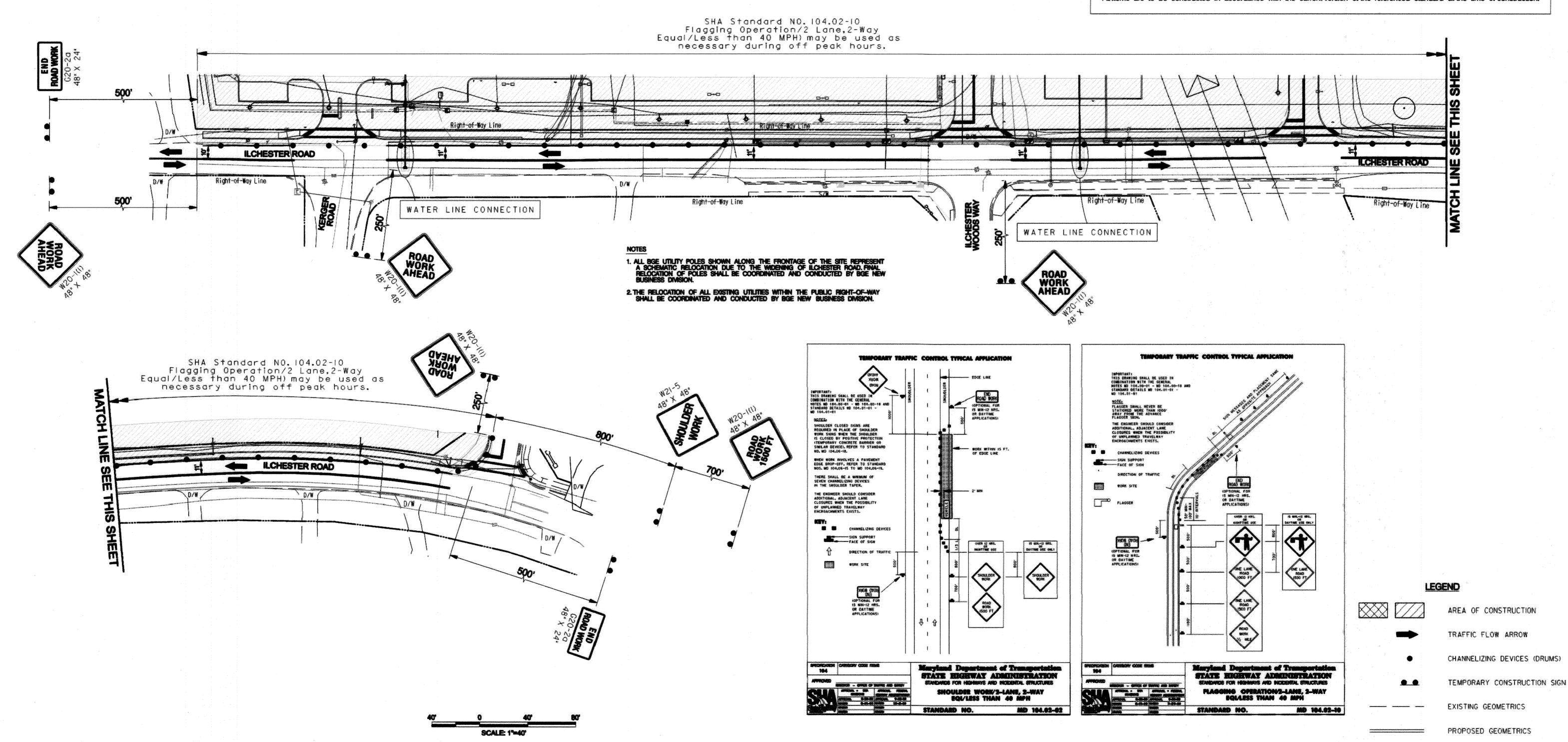
### **GENERAL NOTES:**

- 1. HOWARD COUNTY TRAFFIC DIVISION SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO BEGINNING ANY WORK TO SCHEDULE A FIELD MEETING TO PRE-SPOT LOCATIONS OF TRAFFIC CONTROL DEVICES ALONG COUNTY ROADWAY.
- 2. THE CONTRACTOR SHALL CONTINUOUSLY PROVIDE ACCESS TO ALL EXITS AND INTERSECTING ROADWAYS DURING THE CLOSURE OF THIS PROJECT.
- 3. ANY EXCAVATED AREA NOT BACKFILLED AT THE END OF THE WORK-DAYWORK-NIGHT MUST BE COVERED WITH STEEL PLATE APPROPRIATE SIGNING WILL BE REQUIRED, AND THE PLATES WILL BE PINNED AND
- 4. CONSTRUCTION AND WORKMAN'S VEHICLES SHALL NOT BE PARKED IN A MANNER THAT WILL IMPEDE TRAFFIC OR IMPAIR SIGHT DISTANCE THESE VEHICLES SHALL BE PARKED OFF-STREET ON THE CONSTRUCTION
- 5. ALL TEMPORARY TRAFFIC CONTROL AND DETOUR SIGNS SHALL BE FULL COVERED WITH A NONTRANSPARENT MATERIAL WHEN DETOUR IS NOT IN USE TO TRAFFIC AS APPROVED BY THE ENGINEER.

The following standards are required for this project:

- MD 104.02-02 Shoulder Work 2 Lane,2-Way Æqual/Less than 40 MPH
- MD 104.02-10 Flagging Operation/2 Lane,2-Way /Equal/Less than 40 MPH
- For all standards referred to on the plans the contractor must go to the Book of Standards which will have the most current version. The Book of Standards can be accessed at:

http://apps.roads.maryland.gov/businesswithsha/bizstdsspecs/desmanualstdpub/publicationsonline/bhd/bookstd/index.asp All items are to be constructed in accordance with the current version of the referenced standard at the time of construction.



APPROVED: DEPARTMENT OF PLANNING &	ZONING
Charle Edmb	Z.Z6.Z1
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
/ h	3/30/21
CHIEF, DIVISION OF LAND DEVELOPMENT ***	DATE
No Con-	4/1/21
DIRECTOR	DATE

BALTIMORE GAS The Traffic Group, Inc. & ELECTRIC **BGE HOWARD SERVICE CENTER** ATTN: CHROSTA WILLIAMS, 410-470-6032

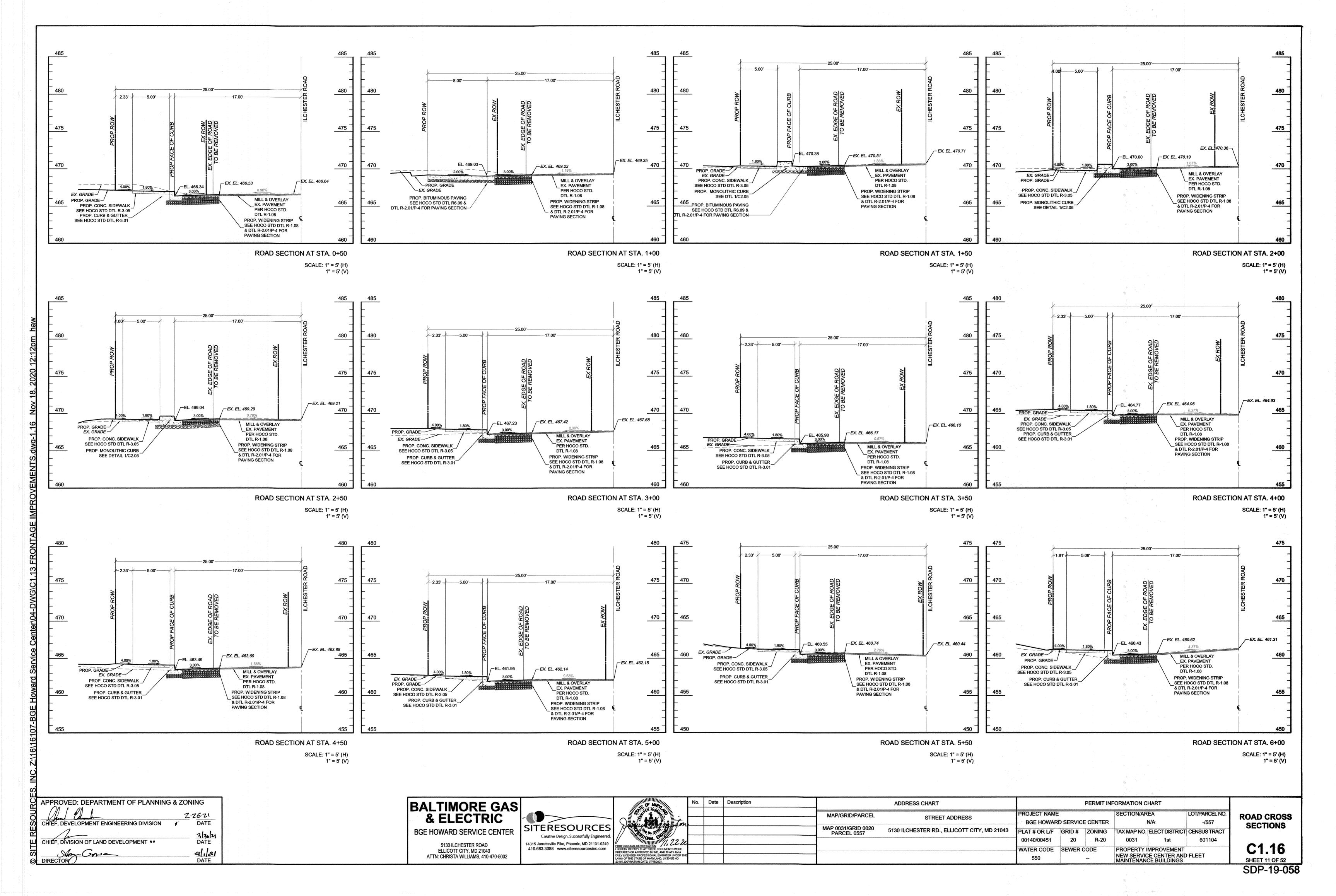
5130 ILCHESTER ROAD ELLICOTT CITY, MD 21043

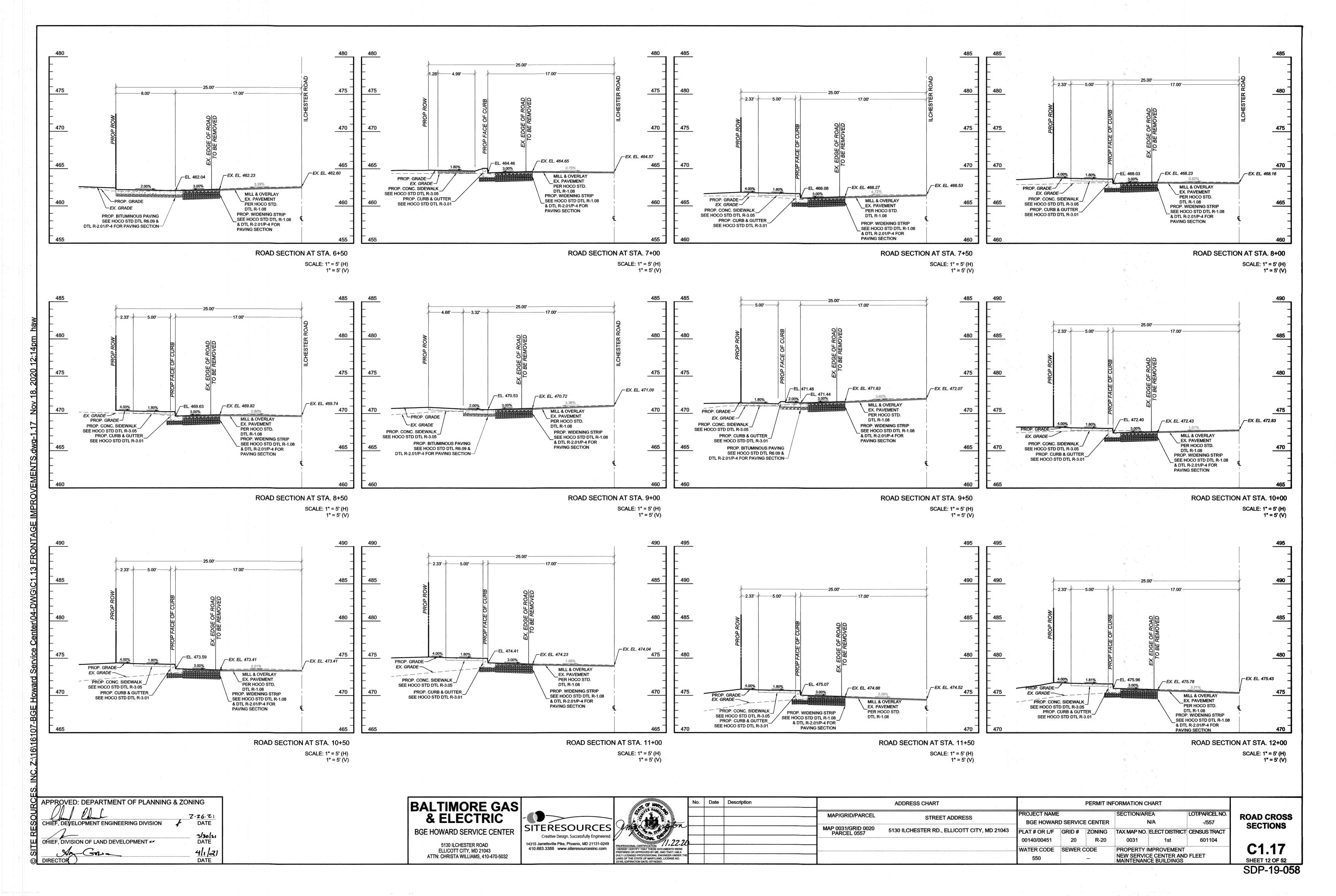


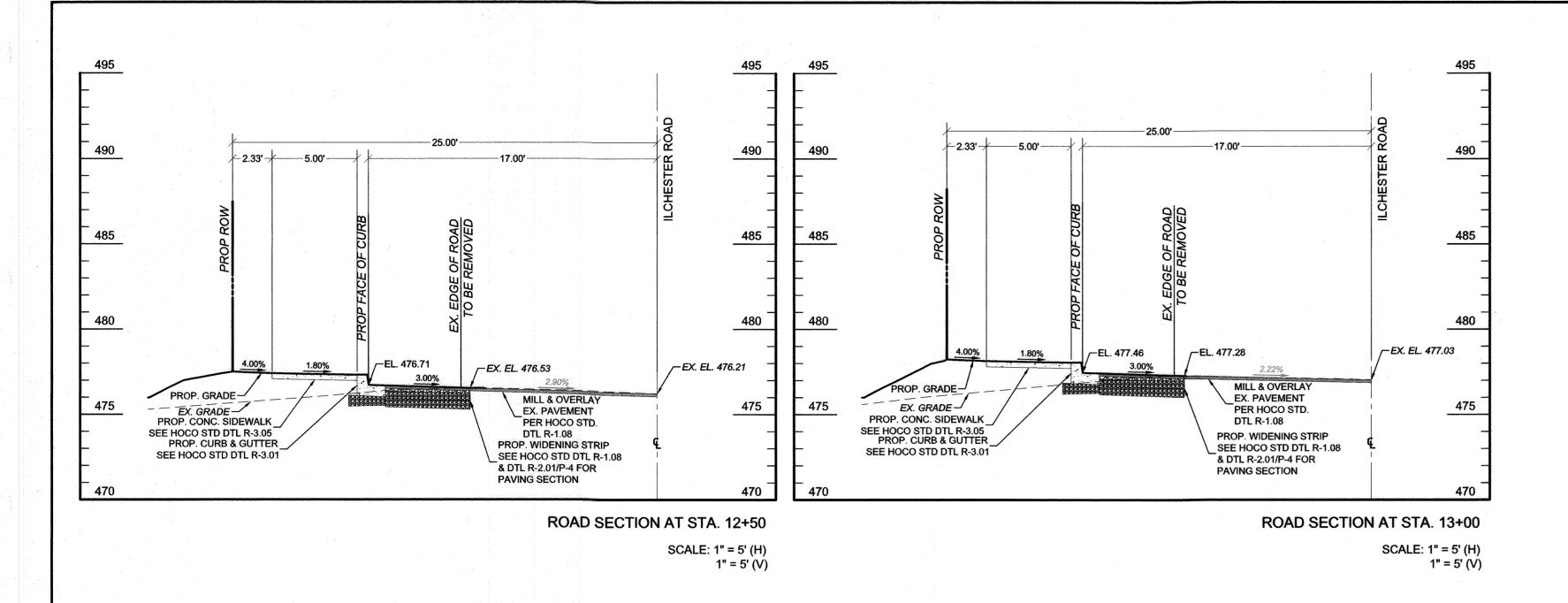
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	MAP 0031/GRID 0020 PARCEL 0557	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F 00140/00451	GRID# 20				CENSUS TRACT
			WATER CODE 550	SEWER			MPROVEMENT E CENTER AND CE BUILDINGS	PLEET

MAINTENANCE OF TRAFFIC

SHEET 10 OF 52







APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

Z-ZZ-Z

O CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/30/21 DATE CHEF, DIVISION OF LAND DEVELOPMENT

BALTIMORE GAS & ELECTRIC BGE HOWARD SERVICE CENTER 5130 ILCHESTER ROAD ELLICOTT CITY, MD 21043 ATTN: CHRISTA WILLIAMS, 410-470-5032

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Creative Design. Successfully Engineered.	
14315 Jarrettsville Pike, Phoenix, MD 21131-0249 410.683.3388 www.siteresourcesinc.com	

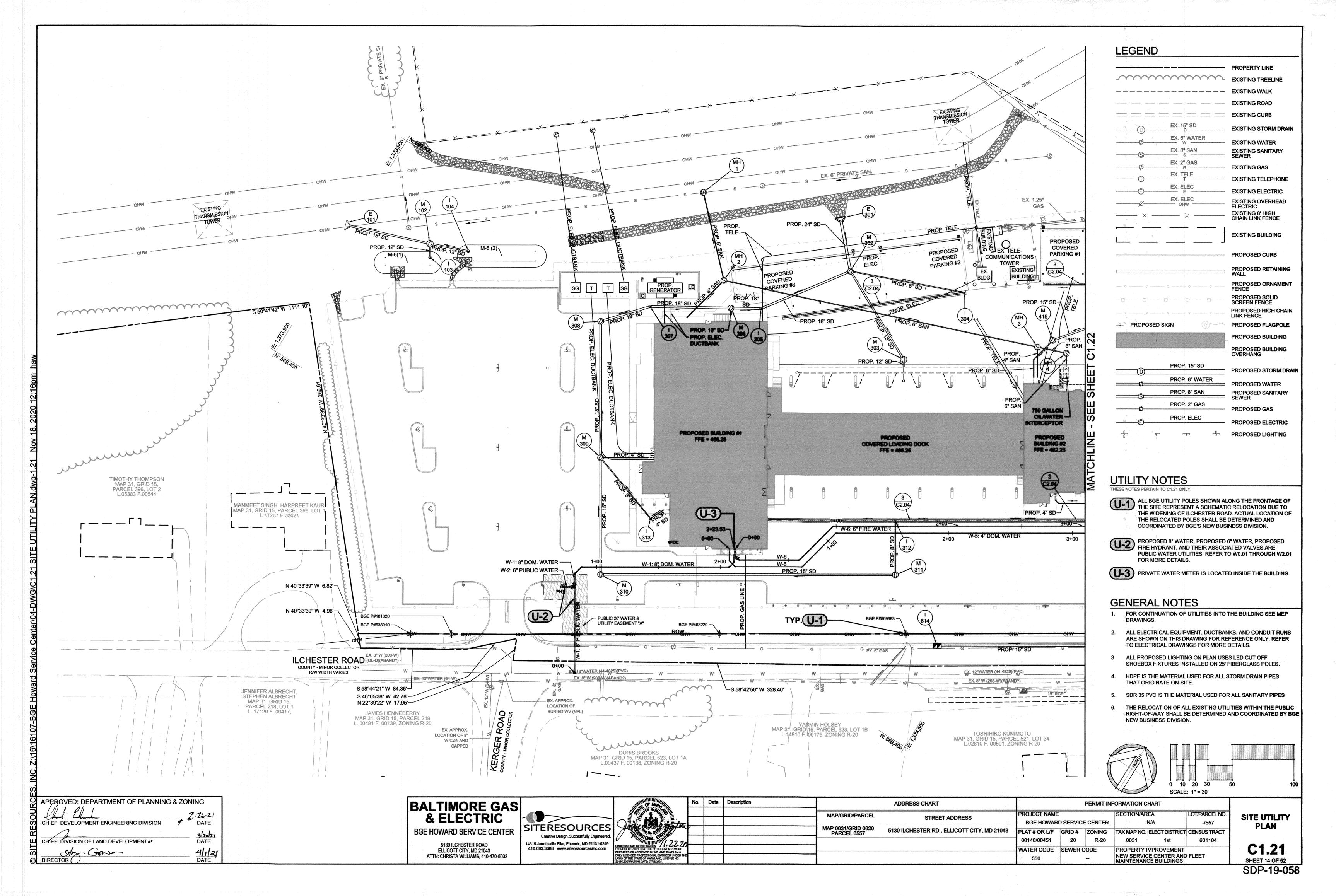
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249	PROFESSIONAL CERTIFICATION 7.22.20			+
m	I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A			
	DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.			

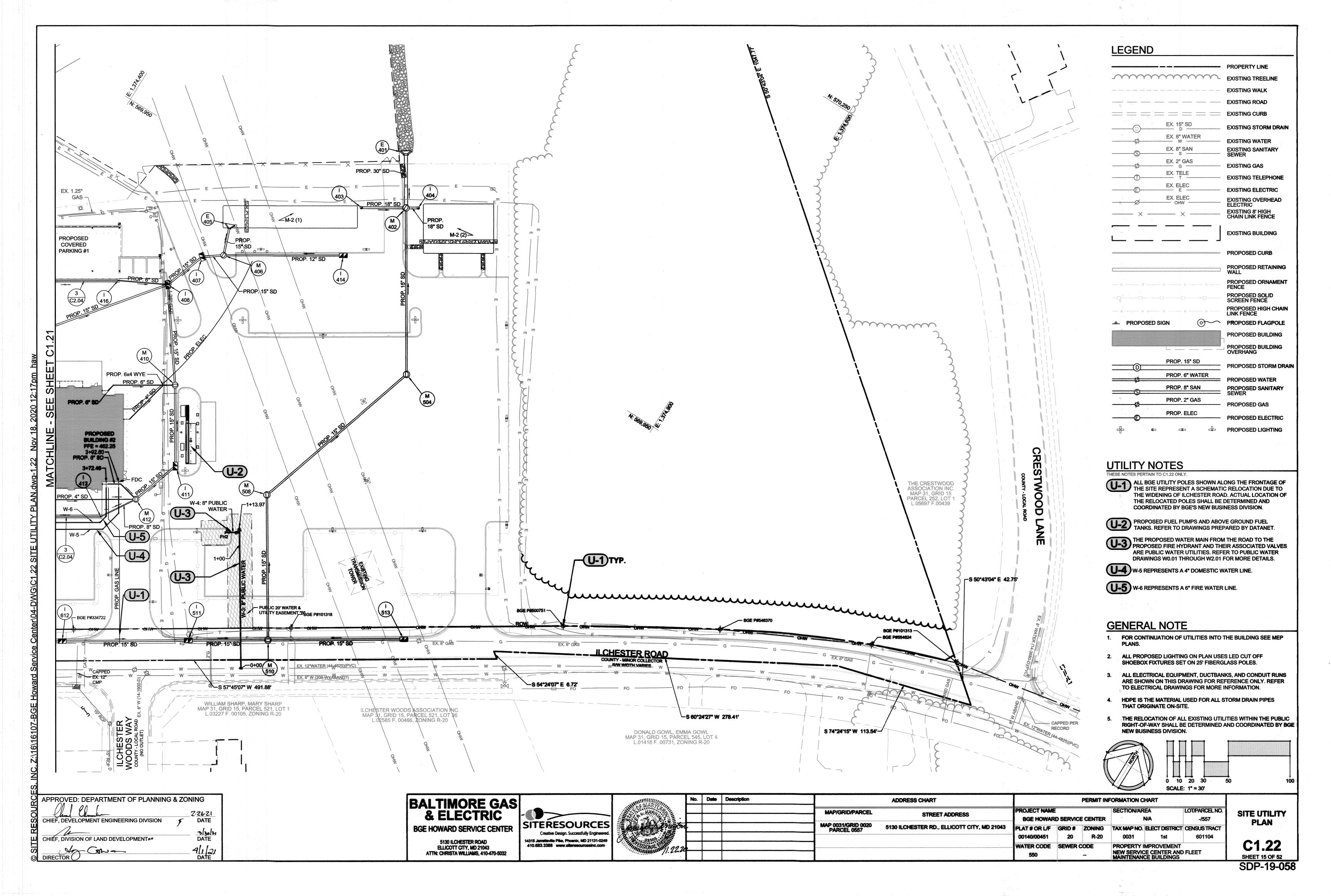
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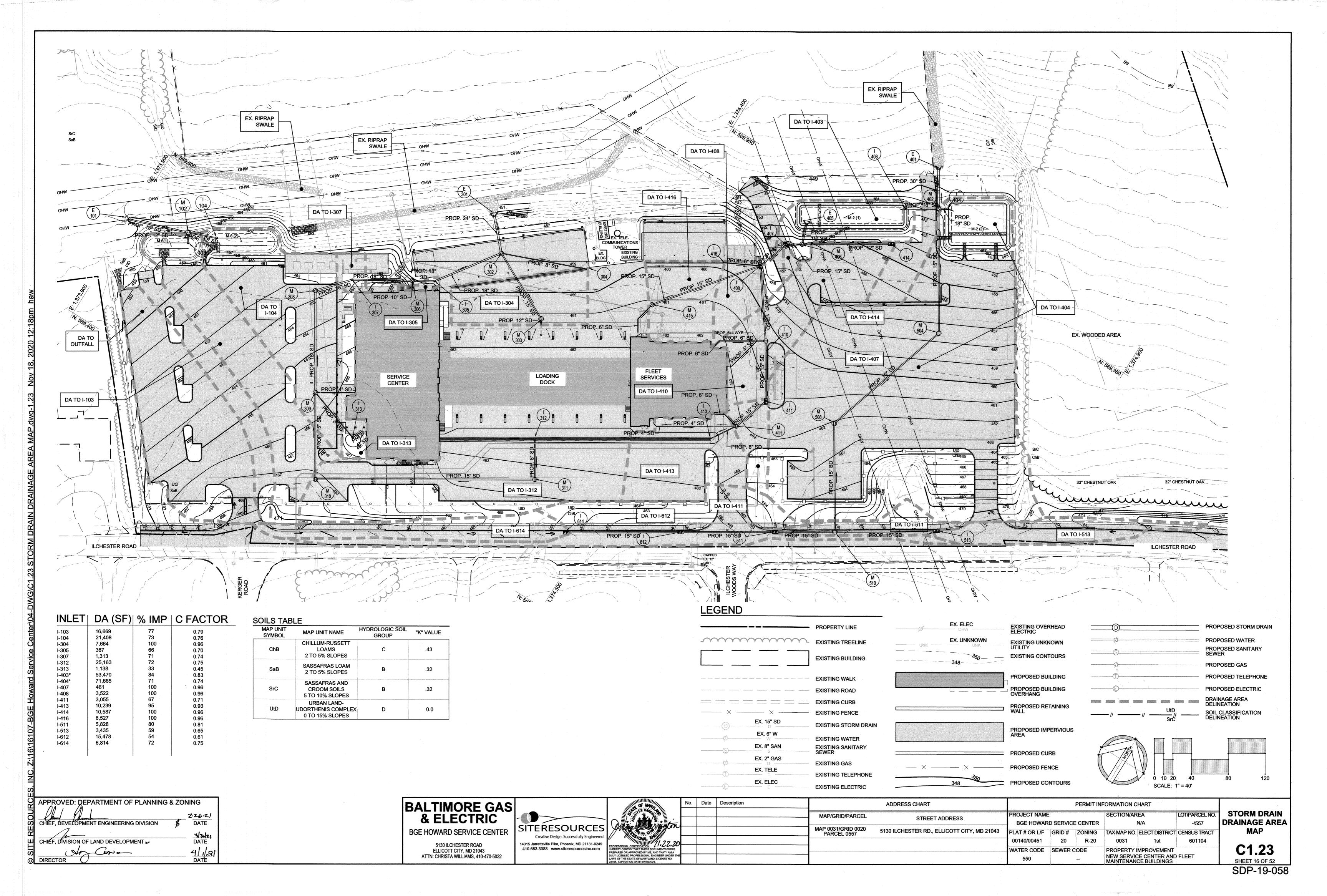
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PROJECT NAME BGE HOWAR		E CENTER	SECTION/AR	REA N/A	LOT/PARCEL NO. -/557
PLAT # OR L/F 00140/00451	GRID # 20	ZONING R-20	TAX MAP NO. 0031	ELECT DISTRICT 1st	CENSUS TRACT 601104
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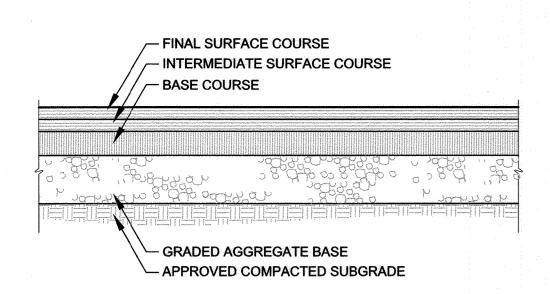
ROAD CROSS SECTIONS

C1.18
SHEET 13 OF 52
SDP-19-058





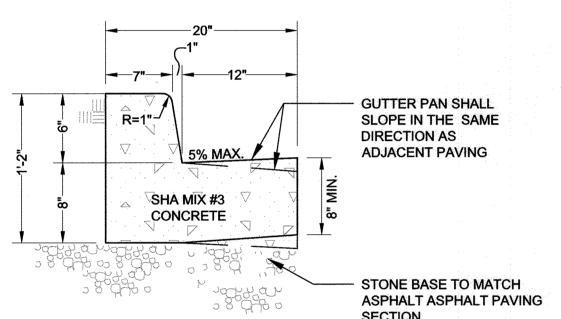




HOWARD COUNTY SECTION NO.	P-4
FINAL SURFACE COURSE	2.0"
INTERMEDIATE SURFACE COURSE	2.0"
BASE COURSE	3.0"
GRADED AGGREGATE BASE	6.0"

1. UNLESS OTHERWISE DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER, USE THE ABOVE LAYERS BASED ON DETAIL R-2.01 OF THE HOWARD COUNTY STANDARD DETAILS FOR CBR = 11.

2. A REPRESENTATIVE FROM THE ON-SITE GEO-TECHNICAL ENGINEER SHALL OBSERVE AND TEST ANY COMPACTED FILL TO BE USED FOR PAVEMENT SUPPORT AND OBSERVE ANY PROOFROLLING OPERATIONS OF PAVEMENT SUBGRADES.



**USE HOWARD COUNTY DETAIL R-3.01 FOR CURB & GUTTER IN PUBLIC RIGHT-OF-WAY** 

PROPOSED SIGN

FASTENERS.

ATTACH WITH STAINLESS STEEL TAMPER PROOF

POST SHALL BE 2" SQUARE NON-PERFORATED GALVANIZED

STEEL TUBE WITH GALVANIZED

BREAKAWAY BASE. ATTACH POST

TO BASE WITH STAINLESS STEEL

TAMPER PROOF FASTENERS.

3500 PSI CONCRETE FOOTING

SET TOP OF FOOTING BELOW

CONCRETE SIDEWALK PAVING

APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT N

An Gon-

**EXPANSION JOINT** 

FINISHED GRADE

12" MIN

7.26.21

DATE

4/1/21 DATE

TRAFFIC SIGNAGE

(IF IN PAVED SURFACE)

NOT TO SCALE

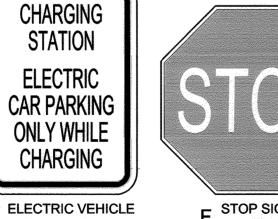


A VEHICLE SIGN MUTCD R-11





EFFICIENT VEHICLE **TEXT & BORDER: GREEN BACKGROUND: WHITE** 



E ELECTRIC VEHICLE PARKING SIGN **TEXT & BORDER: GREEN BACKGROUND: WHITE** 



G NO RIGHT TURN SIGN MMUTCD R3-1

# ONE WAY

ONE WAY SIGN MMUTCD R6-1R

1. SIGNS SHALL COMPLY WITH APPLICABLE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES GUIDELINES.

2. PROVIDE SHOP DRAWINGS OF SIGN LAYOUTS. FINAL SIGN LAYOUT TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO ORDERING AND INSTALLATION. 3. ATTACH SIGNS TO POST AS SHOWN ON THE DIAGRAM #9 TO THE LEFT.

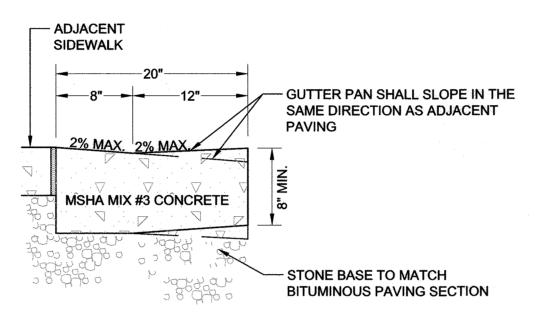
- FINAL SURFACE COURSE - INTERMEDIATE SURFACE COURSE - BASE COURSE - GRADED AGGREGATE BASE APPROVED COMPACTED SUBGRADE

HOWARD COUNTY SECTION NO.	P-3
FINAL SURFACE COURSE	1.5"
INTERMEDIATE SURFACE COURSE	1.0
BASE COURSE	2.0"
GRADED AGGREGATE BASE	6.0"

1. UNLESS OTHERWISE DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER. USE THE ABOVE LAYERS BASED ON DETAIL R-2.01 OF THE HOWARD COUNTY STANDARD DETAILS FOR CBR = 11.

2. A REPRESENTATIVE FROM THE ON-SITE GEO-TECHNICAL ENGINEER SHALL OBSERVE AND TEST ANY COMPACTED FILL TO BE USED FOR PAVEMENT SUPPORT AND OBSERVE ANY PROOFROLLING OPERATIONS OF PAVEMENT SUBGRADES.

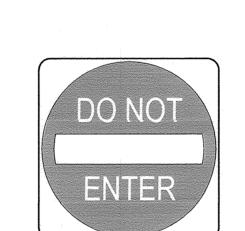




## **FLUSH CURB & GUTTER**

**NO PARKING** 

SHALL ONLY BE USE FOR CURBING ALONG NOT TO SCALE ACCESSIBLE PARKING SPACES, REFER TO PLAN ENLARGEMENT 5/C4.03 FOR LOCATION



D DO NOT ENTER SIGN MMUTCD R5-1



LOW EMISSION AND FUEL



## FLAG POLE DETAIL

EXPOSED HEIGHT A B C D E F G H K MODEL#

30' 3'-0" 6" 18" 10" 14" 6" 3'-6" 30" 24" EC 30

FOUNDATION DIMENSIONS (ELDER FLAGPOLE COMPANY)

┼**┿**|F|┿

**→** K --

COARSE BROOM FINISH

TO 95% OF T-180 MAXIMUM

OR BUILDING.

HEAVY DUTY CONCRETE

TO CONSTRUCTION.

WITH PLASTIC SLEEVE @ 24" O.C.

1/2" WIDE EXPANSION JOINT WITH

CORK JOINT FILLER (RECESSED 1/4")

LAYOUT PRIOR TO CONSTRUCTION.

7" THICK MSHA MIX NO. 8 CONCRETE

12" GRADED AGGREGATE BASE COURSE -COMPACTED TO 95% OF T-180 MAXIMUM

6" COMPACTED SUBGRADE - COMPACTED

1/2" DIA X 8" STAINLESS STEEL SLIP DOWELS

1. PROVIDE EXPANSION JOINTS AS SHOWN ON PLAN AT 40' ON CENTER MAX OR CONTRACTOR TO PROVIDE

2. PROVIDE EXPANSION JOINTS WHERE POUR MEETS

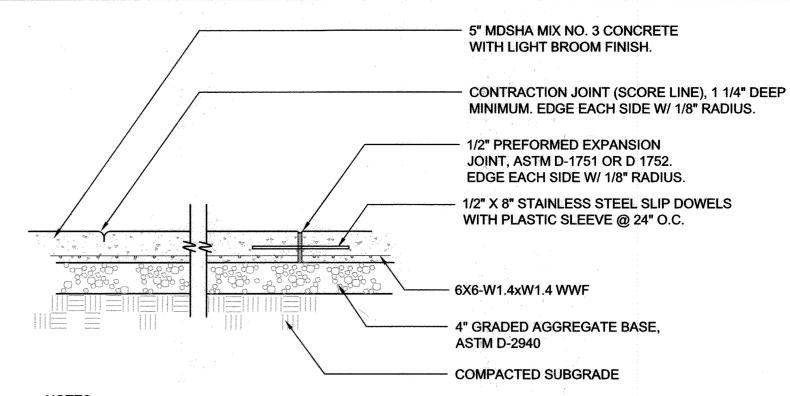
3. PROVIDE CONTRACTION JOINTS (SCORE LINES) AS

SHOWN ON PLAN AT 2" DEPTH AND 20' ON CENTER

MAX OR CONTRACTOR TO PROVIDE LAYOUT PRIOR

NOT TO SCALE

EXISTING CONCRETE PAVING, CURB AND GUTTER,



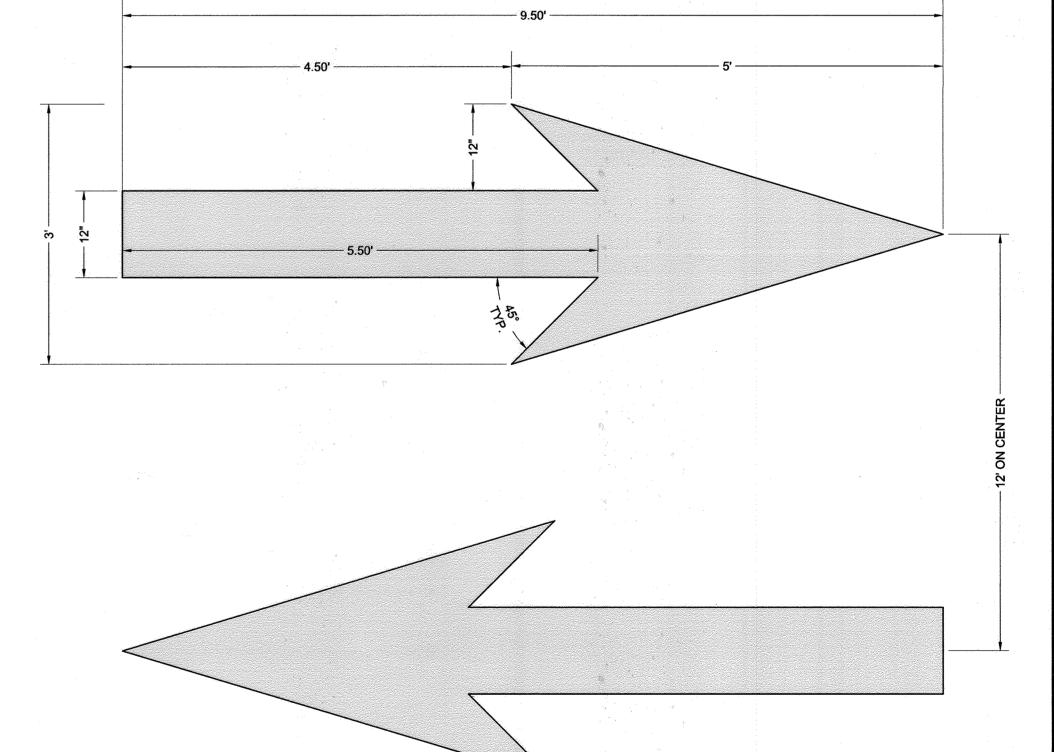
### 1. PLACE EXPANSION JOINTS NOT MORE THAN 20'-25' APART AND AT THE END OF EACH CONTIGUOUS

- 2. PLACE CONTRACTION JOINTS AT INTERVAL MATCHING WIDTH OF SIDEWALK BUT NOT MORE THAN 6'
- 3. PROVIDE EXPANSION JOINTS WHERE POUR MEETS EXISTING CONCRETE PAVING OR CURB.
- 4. EXPANSION JOINTS TO BE RECESSED 1/4" BELOW SURFACE OF SIDEWALK.
- 5. WHEN SIDEWALK ABUTS BACK OF STREET CURB, WALK SHALL BE 1/4" ABOVE TOP OF CURB. WHEN SIDEWALK ABUTS EXISTING CONCRETE WALK, CORE DRILL AND INSTALL DOWELS PER DETAIL.
- MATCH SCORE PATTERN OF ADJACENT SIDEWALK WHERE PRACTICAL
- 8. UNLESS OTHERWISE SHOWN ON PLAN, CONTRACTOR TO SUBMIT LAYOUT OF PROPOSED CONTRACTION EXPANSION JOINTS FOR APPROVAL PRIOR TO POURING CONCRETE.

## **USE HOWARD COUNTY DETAIL R-3.05 FOR**

CONCRETE SIDEWALK

NOT TO SCALE SIDEWALK IN PUBLIC RIGHT-OF-WAY



 REFER TO C1.11 AND C1.12 FOR ALL PROPOSED LOCATIONS OF PAVEMENT ARROWS. 2. ARROWS SHALL BE PAINTED AND FILLED IN WITH PAVEMENT-MARKING PAINT. SEE SPECIFICATION 321216 - ASPHALT PAVING FOR

MORE INFORMATION ON PAVEMENT-MARKING PAINT. 2. WHEN SINGLE ARROWS ARE INDICATED ON LAYOUT PLANS, THE ARROW SHALL BE PLACED IN THE CENTER OF THE DESIGNATED

DRIVE AISLES.

3. IF TWO ARROWS ARE INDICATED ON LAYOUT PLANS, THE ARROWS SHALL BE PLACED 12 FEET ON CENTER AND ALSO CENTERED WITHIN THE DESIGNATED DRIVE AISLE.

## PAVEMENT ARROWS

NOT TO SCALE

# BALTIMORE GAS & ELECTRIC

**BGE HOWARD SERVICE CENTER** 5130 ILCHESTER ROAD

ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032



NOT TO SCALE

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PROFESSIONAL CERTIFICATION  I HEREBY CERTIFY THAT THESE DOCUMENTS WERE  PREPARED OR APPROVED BY ME, AND THAT I AM A				
DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23165. EXPIRATION DATE: 07/18/2021				1

GOLD ANODIZED SPUN -ALUMINUM BALL, FLUSH SEAM FOR U.S. FLAG

DOUBLE SHEAVE TRUCK -CAST ALUMINUM

4 SWIVEL SNAPS

REVOLVING, NON-FOULING

ONE SETS OF HALYARDS

9" CAST ALUMINUM CLEAT

ALUMINUM FLASH COLLAR -

1000 PSI CONCRETE

HARDWOOD WEDGES

DRY SAND TIGHTLY

(SUPPLIED BY

CONTRACTOR)

TAMPED WHILE

**ALIGNING POLE** 

FOUNDATION -

**BLACK ALUMINUM** PAINT ON SURFACE OF POLE BELOW GRADE

SLEEVE HOT DIP,

**GALVANIZED STEEL** 

CENTERING WEDGES

STEEL SUPPORT PLATE

NOTE: INSTALLATION PER

WELDED TO GROUND SPIKE

MANUFACTURER'S

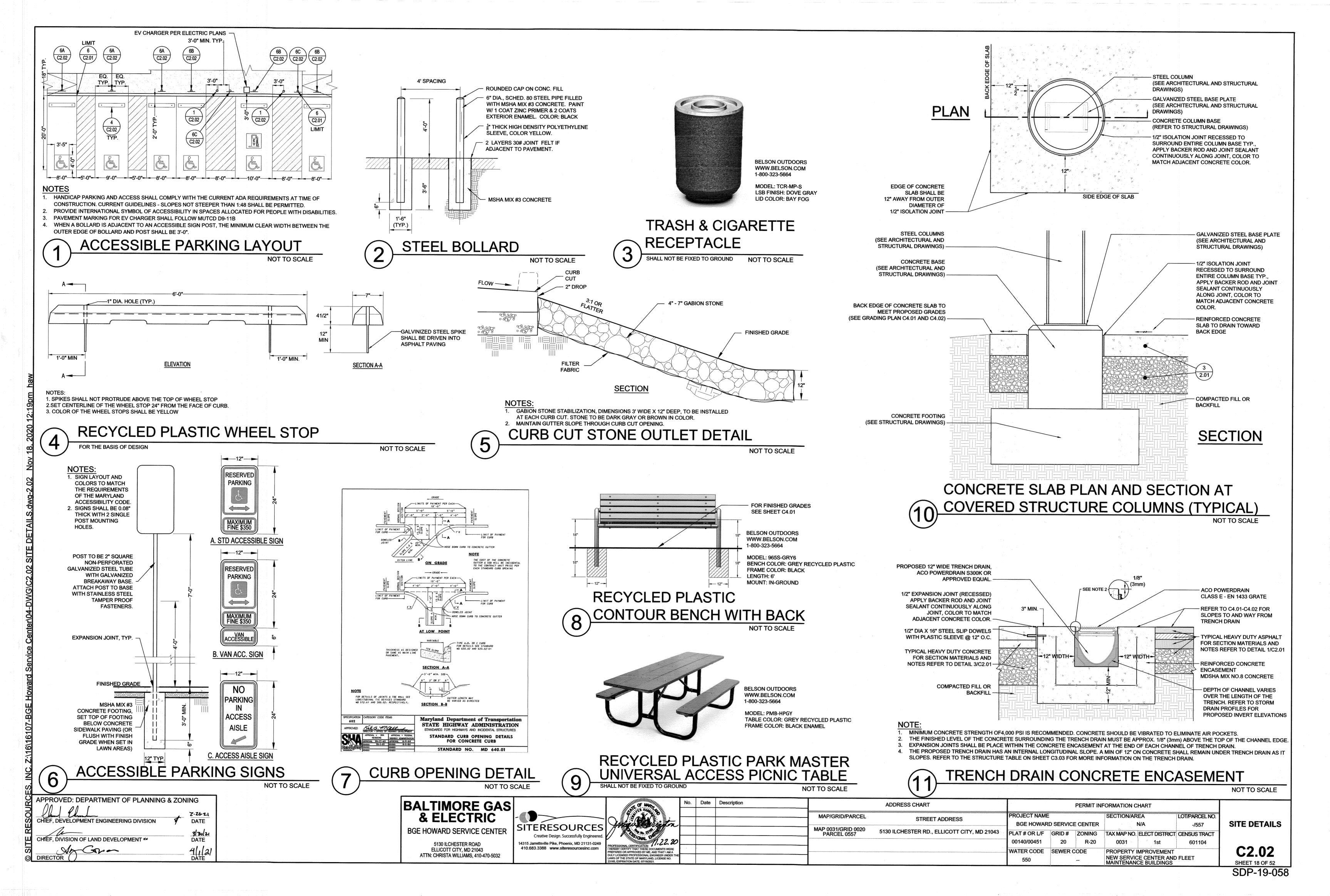
SPECIFICATIONS

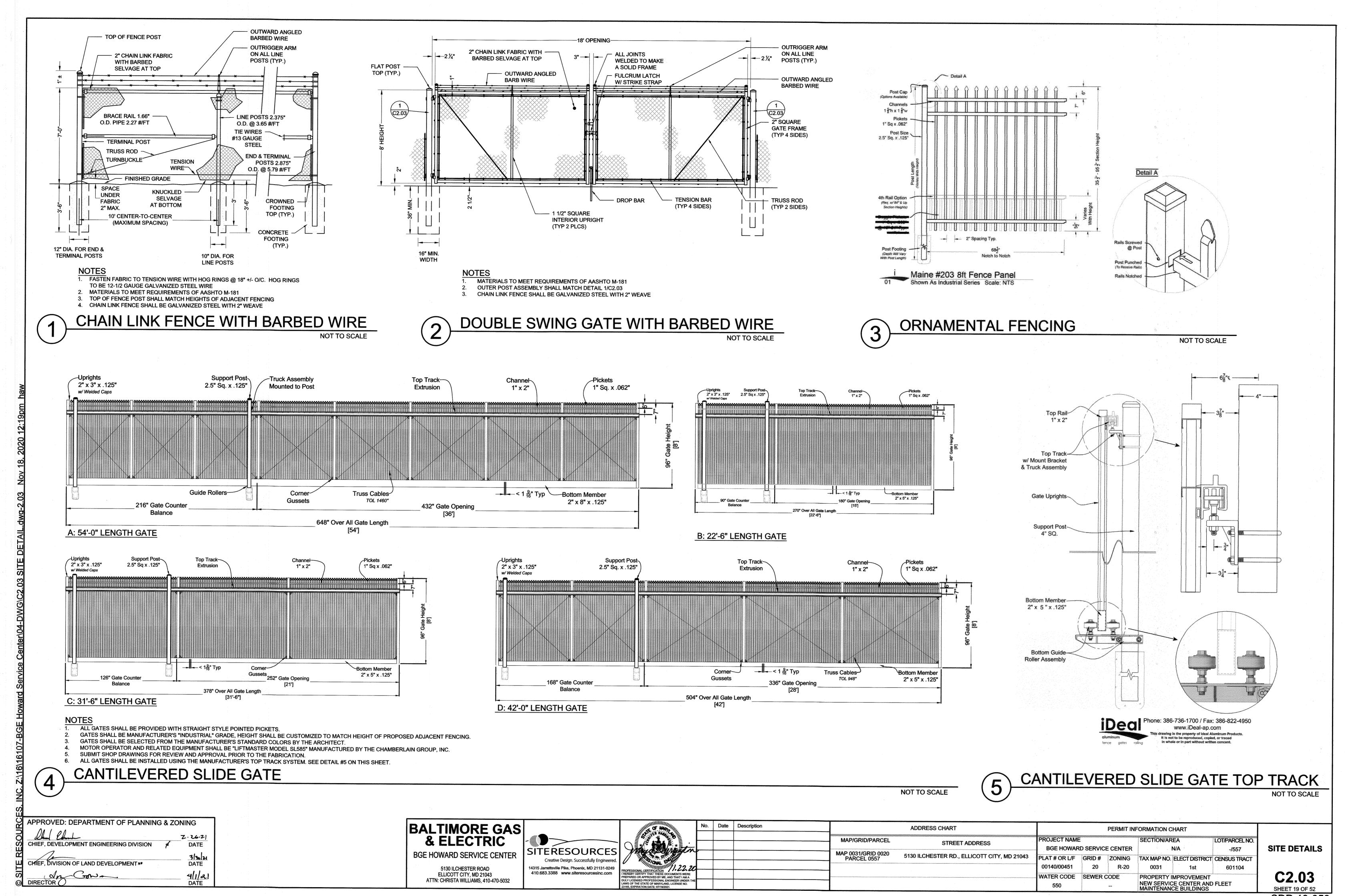
STEEL BASE PLATE

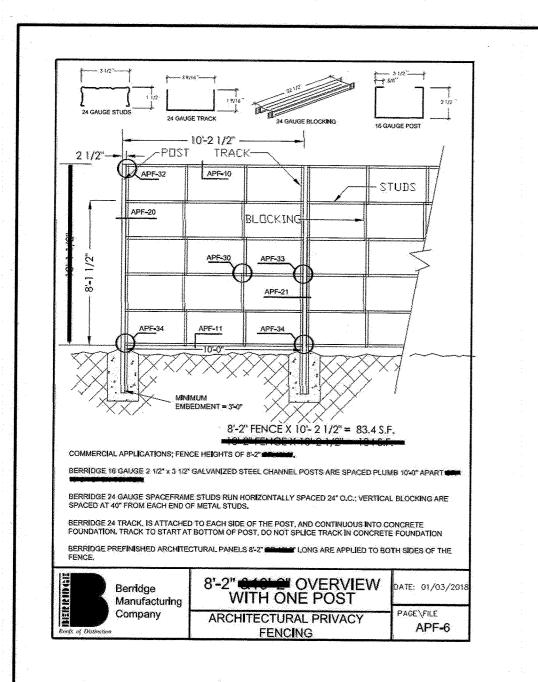
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22.20	<u> </u>			MAP 0031/GRID 0020 PARCEL 0557	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F 00140/00451	GRID # 20	ZONING R-20	TAX MAP NO. 0031	ELECT DISTRICT 1st	CENSUS TRACT 601104					
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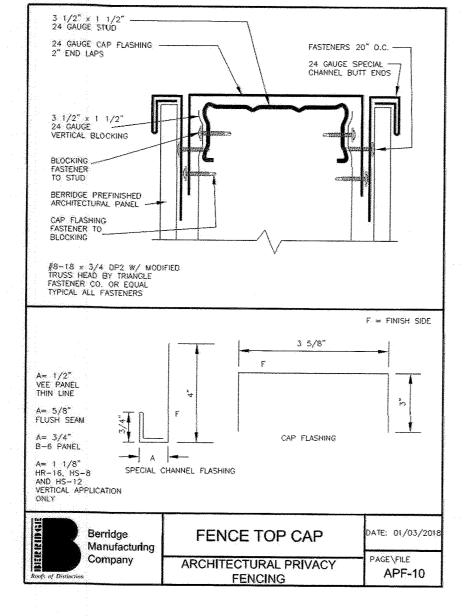
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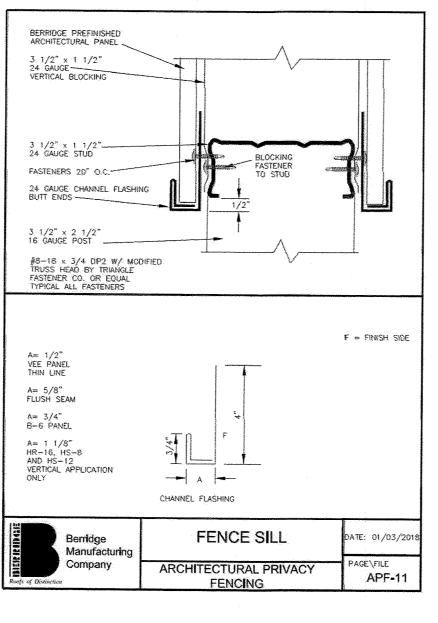
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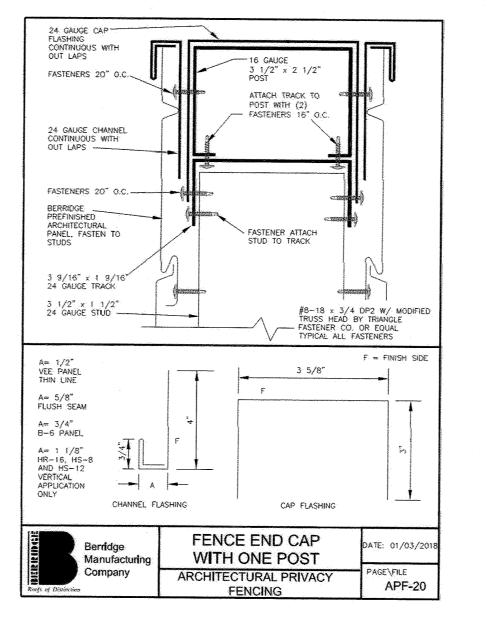


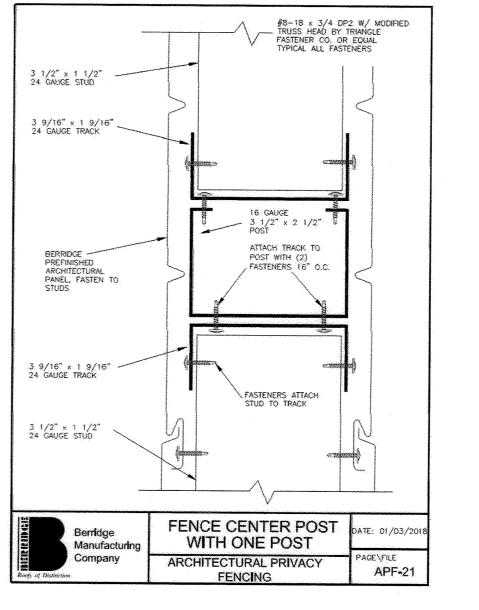


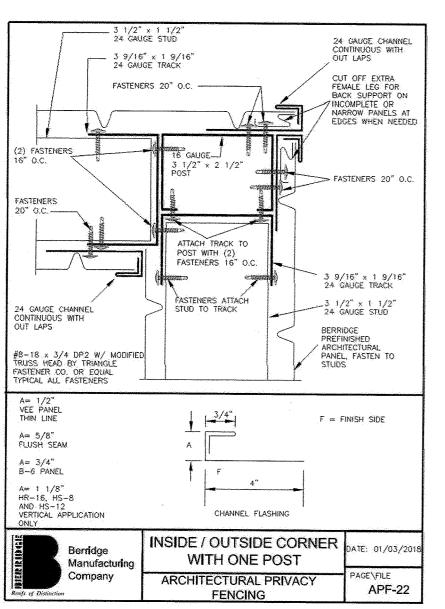


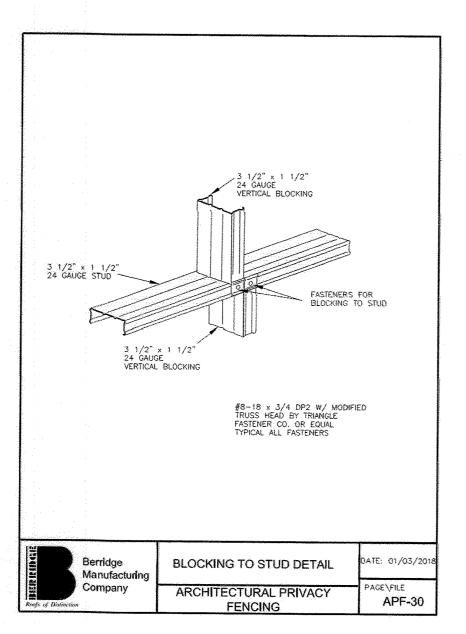


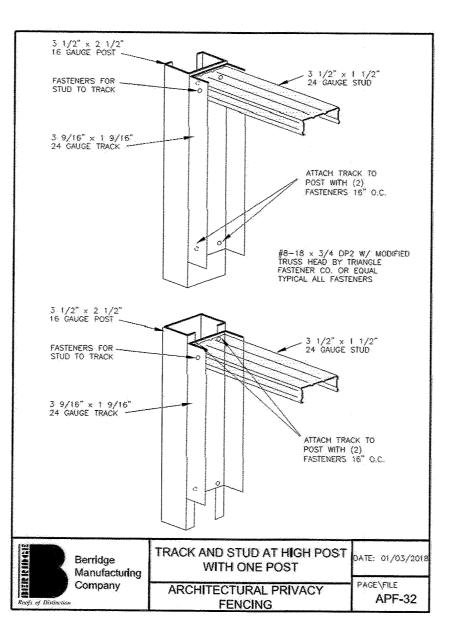


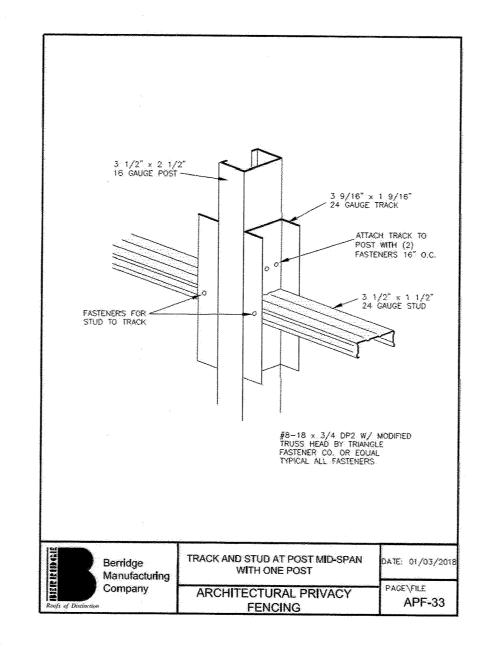


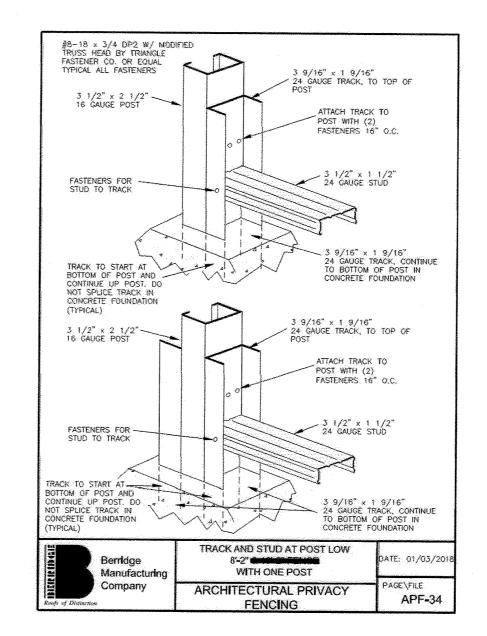




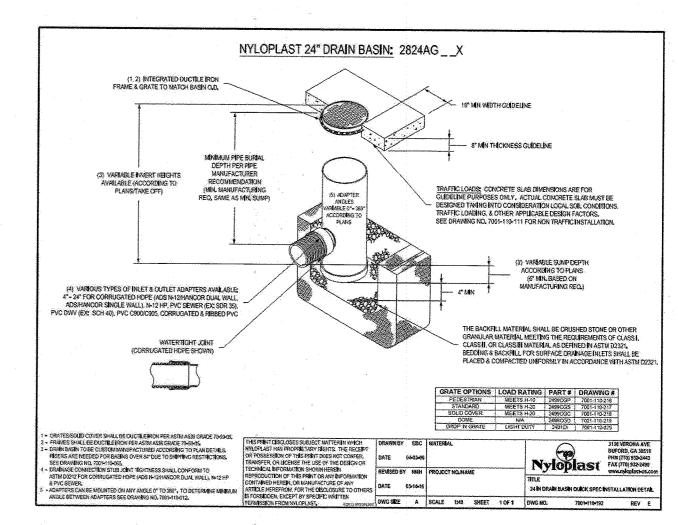


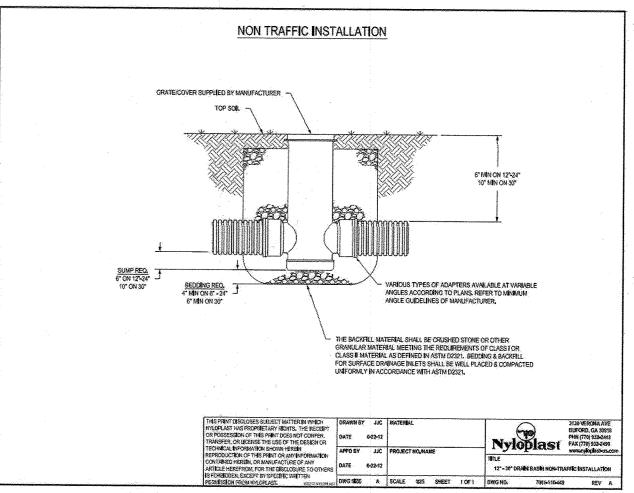






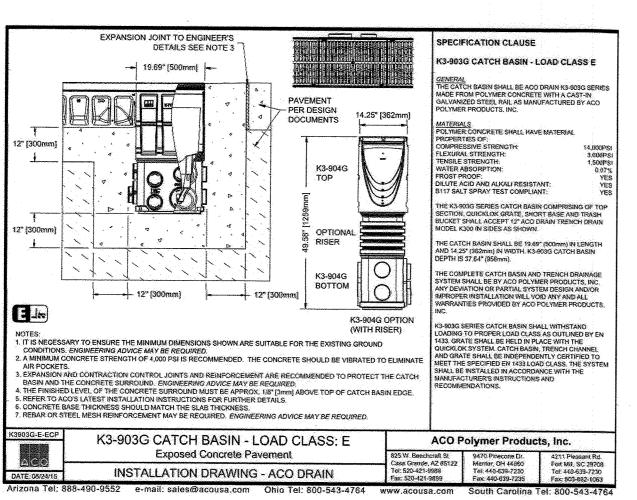
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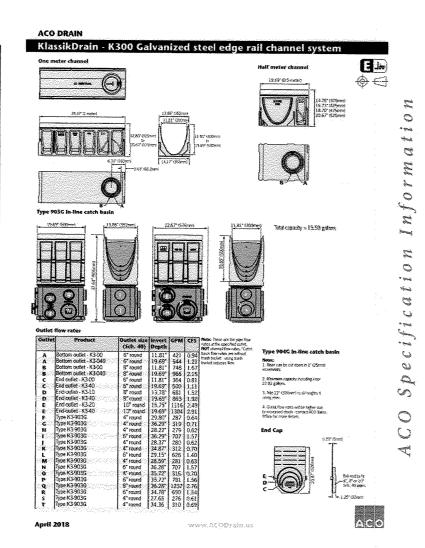


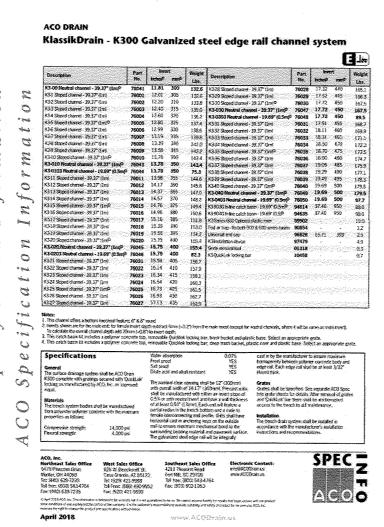




BERRIDGE MANUFACTURING COMPANY. FINSH COLOR SELECTED: DARK BRONZE (CONFIRM COLOR WITH ARCHITECT PRIOR TO FABRICATION AND SUBMIT SHOP DRAWINGS)







NYLOPLAST DRAIN BASIN

ACO TRENCH DRAIN

APPROVED: DEPARTMENT OF PLANNING & ZONING 2.26.21 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 3/30/21 DATE CHIEF, DIVISION OF LAND DEVELOPMENT \*\* An Gove 41/121 DATE

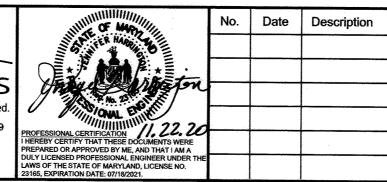
BALTIMORE GAS & ELECTRIC **BGE HOWARD SERVICE CENTER** 

ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032



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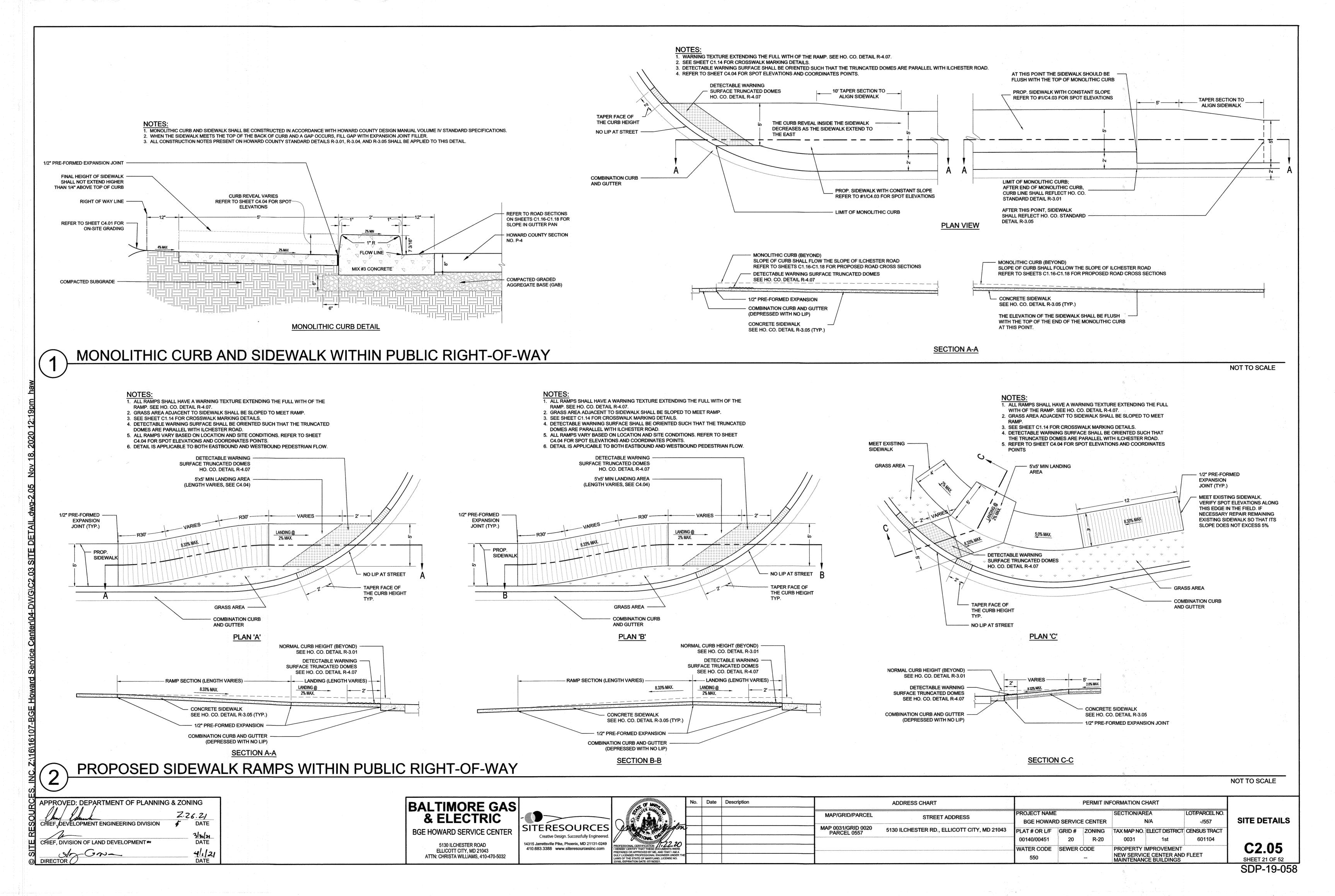


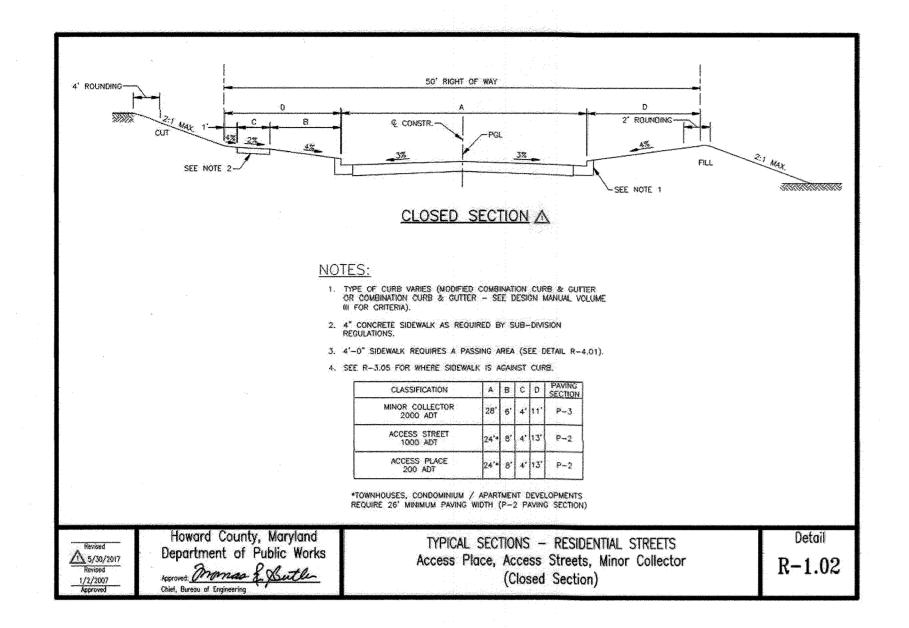
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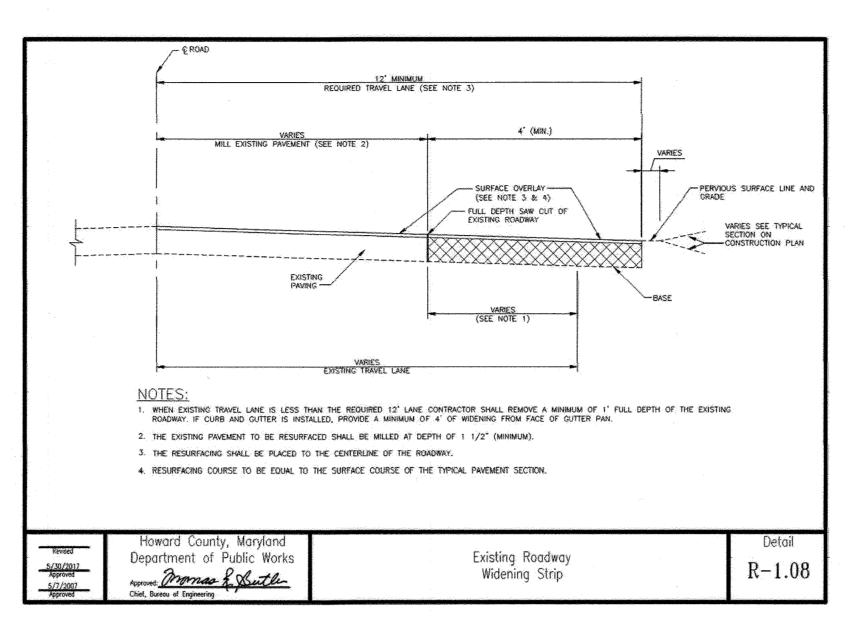
SITE DETAILS C2.04

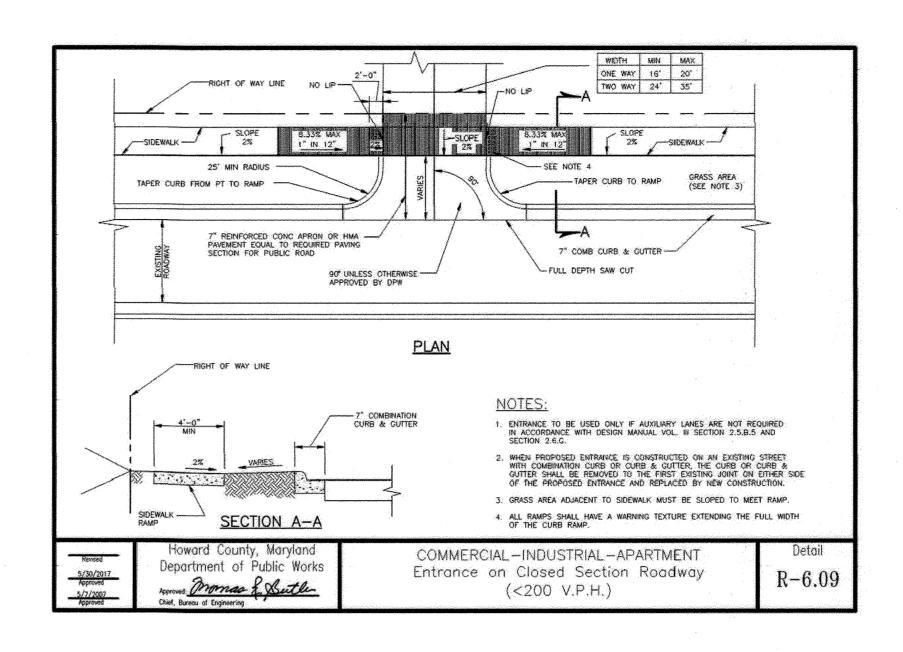
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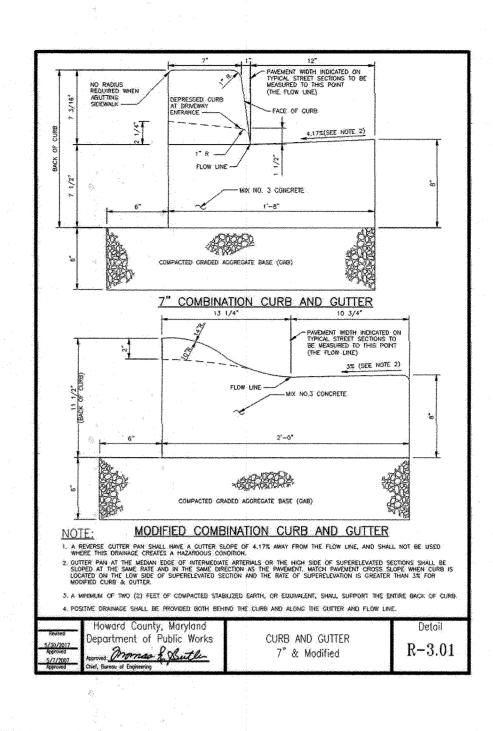
SHEET 20 OF 52 SDP-19-058

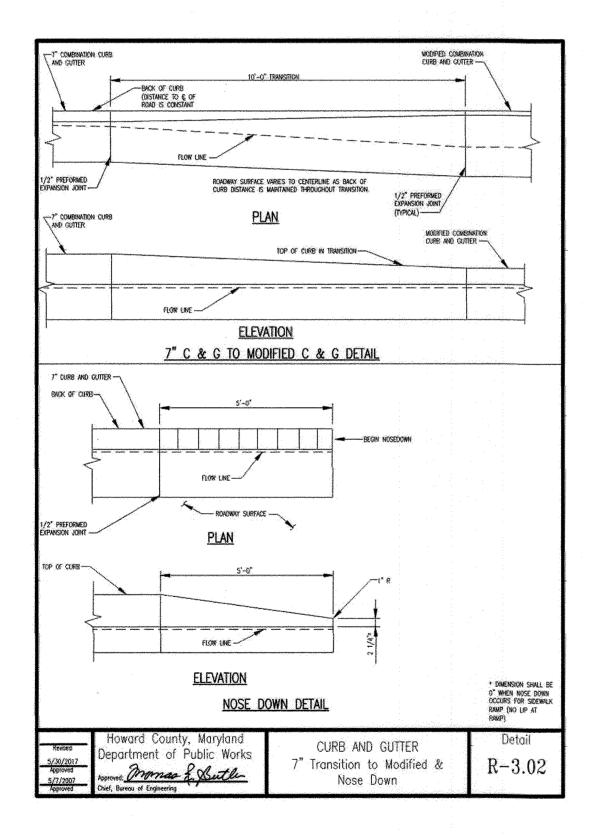




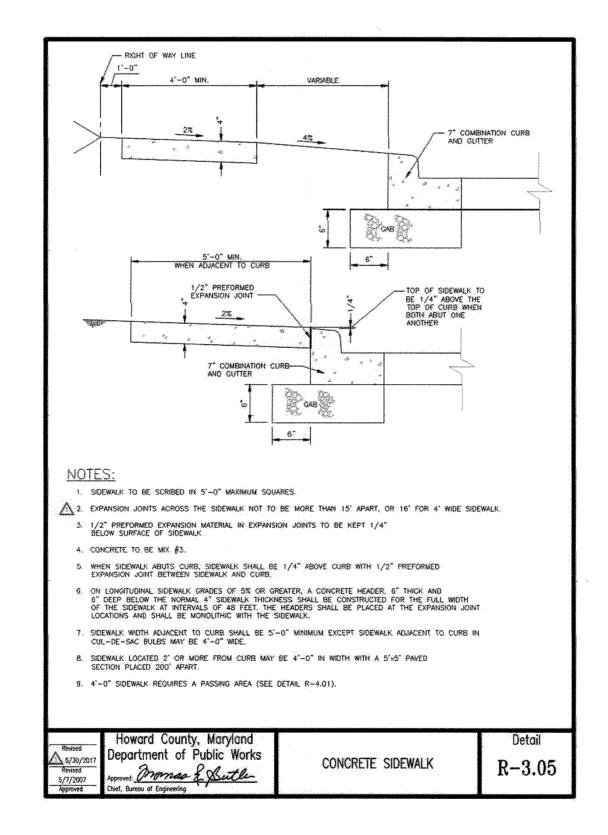


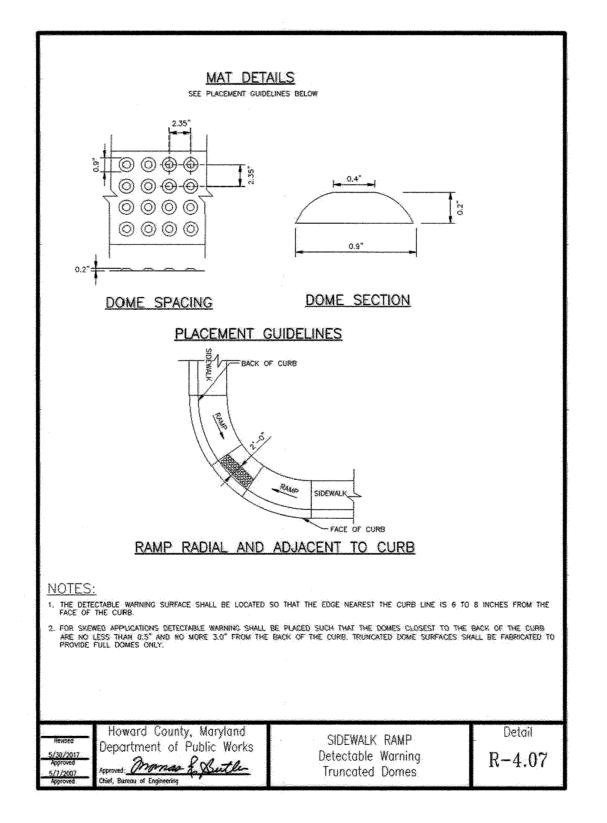


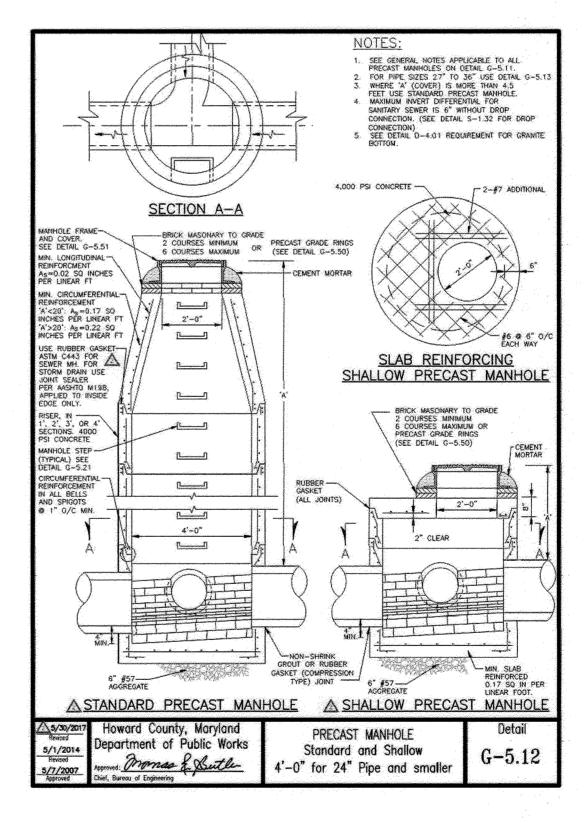


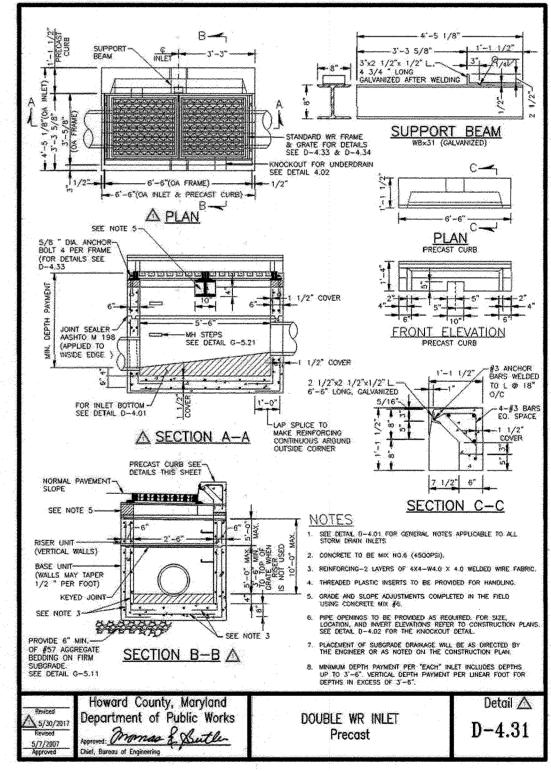


SOURCE: HOWARD COUNTY VOLUME IV DESIGN MANUAL: STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION









## HOWARD COUNTY STANDARD DETAILS FOR ROAD CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY

NOT TO SCALE

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SUR	Shel Ada I		2.26.21
Ø	CHIEF, DEVELOPMENT ENGINEERING DIVISION	1	DATE
RE			3/30/21
Ш	CHIEF, DIVISION OF LAND DEVELOPMENT **		DATE
딠	An Cona		4/1/2/
<b>0</b>	DIRECTÓR )		DATE

BALTIMORE GAS & ELECTRIC

BGE HOWARD SERVICE CENTER

5130 ILCHESTER ROAD
ELLICOTT CITY, MD 21043

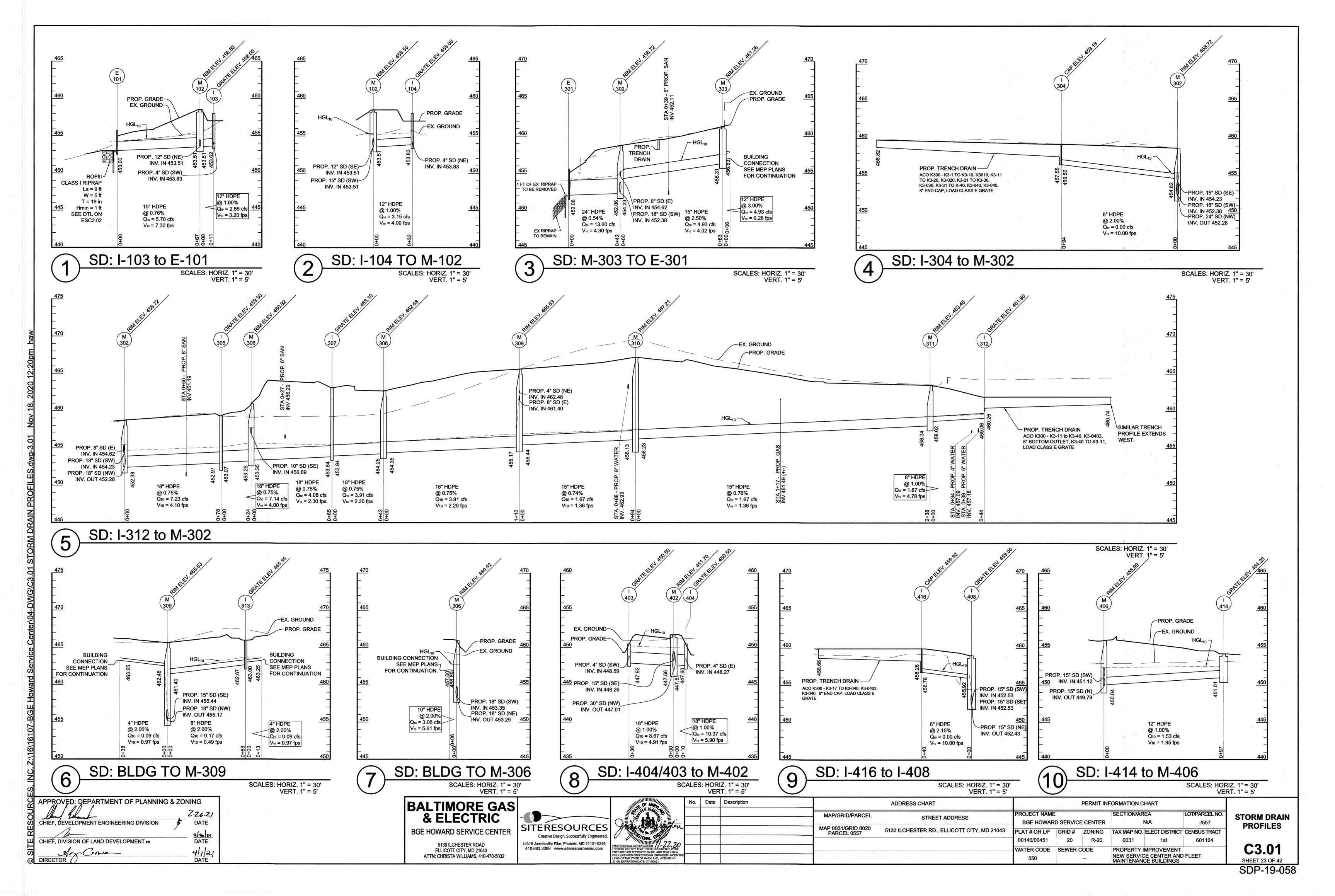
ATTN: CHRISTA WILLIAMS, 410-470-5032

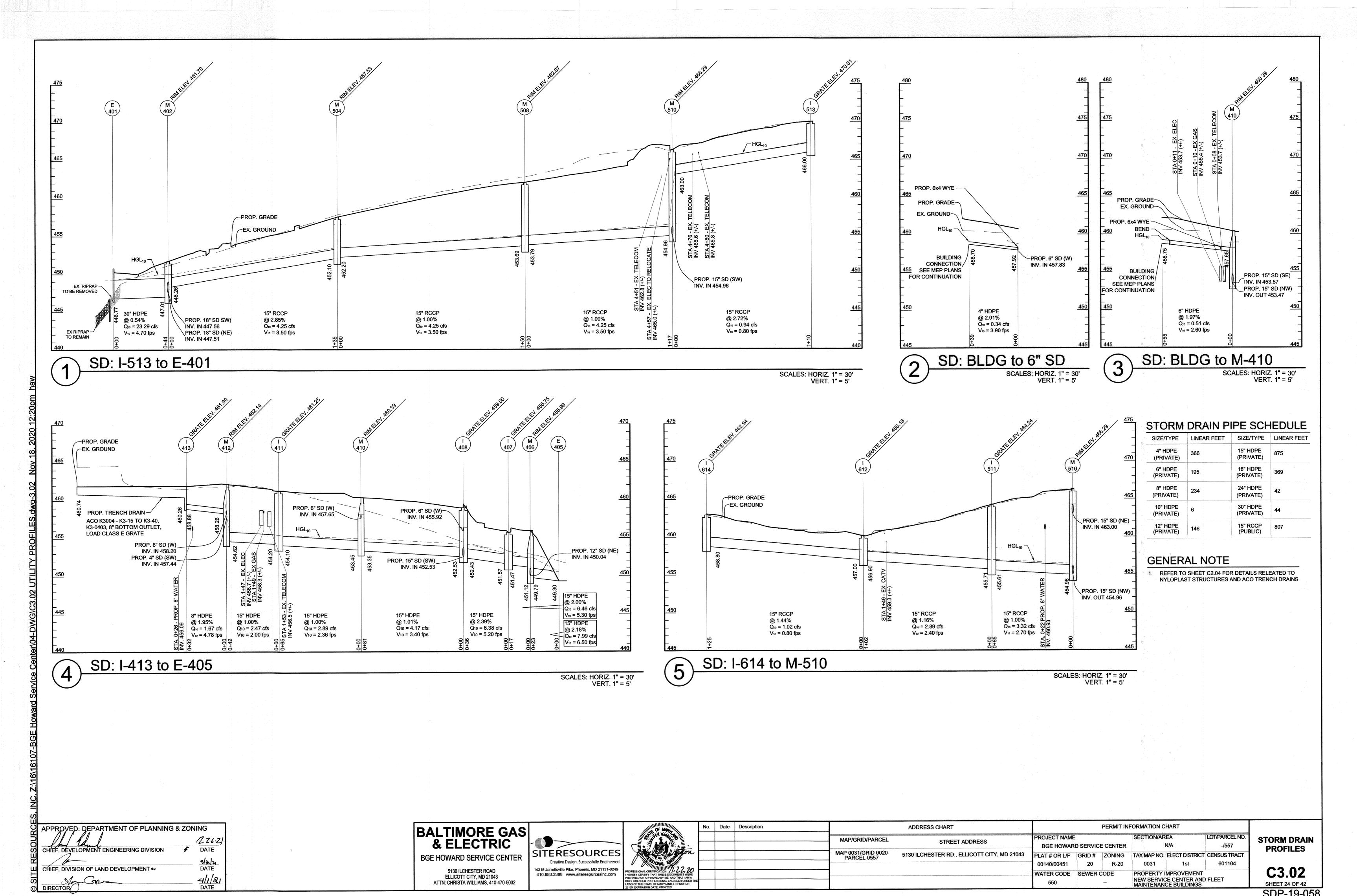


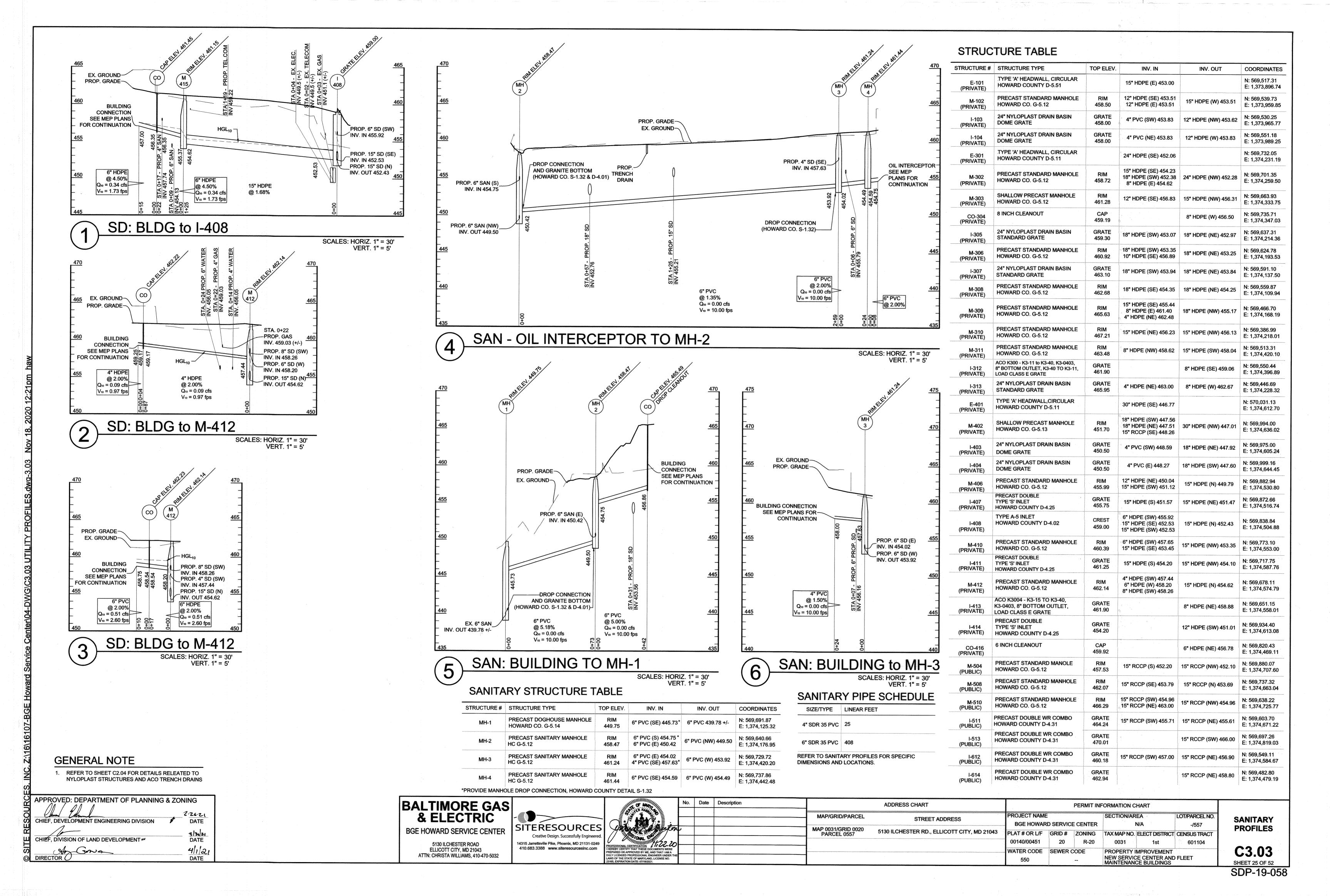
WALL OF MANAGEMENT	No.	Date	Description
G Manager Committee of the Committee of			
A m D			
COME CHILINGS			
PROFESSIONAL CERTIFICATION  I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A			
DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23165. EXPIRATION DATE: 07/18/2021.			

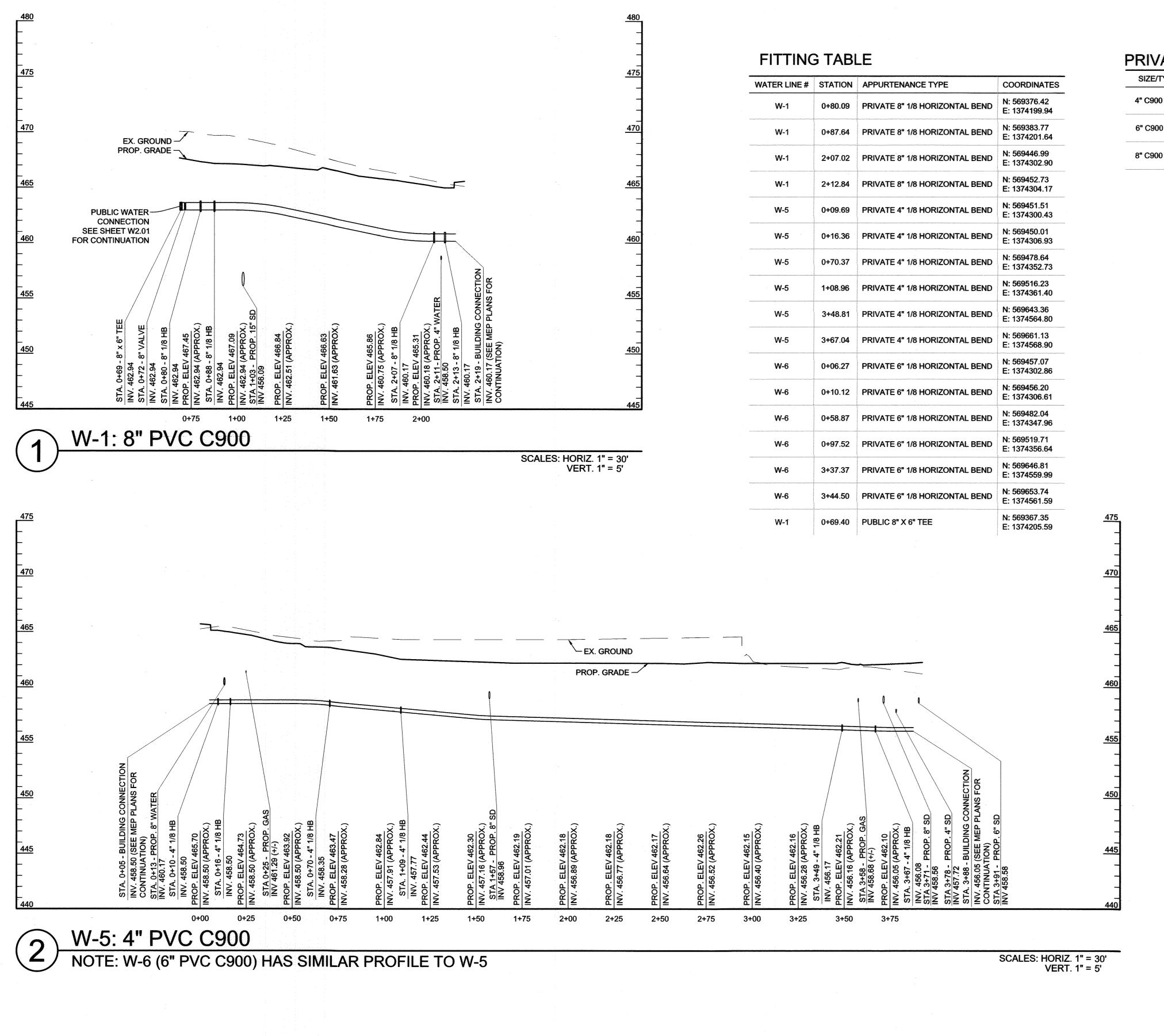
	PERMIT INFORMATION CHART							
MAP/GRID/PARCEL		PROJECT NAME  BGE HOWARD SERVICE CENTER			SECTION/AREA N/A			
MAP 0031/GRID 0020 PARCEL 0557	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F 00140/00451	GRID # 20	ZONING R-20	TAX MAP NO. 0031	ELECT DISTRICT 1st	CENSUS TRACT 601104	
		WATER CODE 550	SEWER CODE		PROPERTY IMPROVEMENT NEW SERVICE CENTER ANI MAINTENANCE BUILDINGS		FLEET	

HOWARD COUNTY STANDARD DETAILS C2.06









PRIVATE WATER PIPE SCHEDULE

SIZE/TYPE	LINEAR FEET
4" C900 PVC	383
6" C900 PVC	363
8" C900 PVC	146

APPROVED: DEPARTMENT OF PLANNING & ZONING

7.24-21

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT\*\*

DATE

DIRECTOR

DIRECTOR

DEPARTMENT OF PLANNING & ZONING

7.24-21

DATE

BALTIMORE GAS & ELECTRIC

BGE HOWARD SERVICE CENTER

5130 ILCHESTER ROAD
ELLICOTT CITY, MD 21043
ATTN: CHRISTA WILLIAMS, 410-470-5032



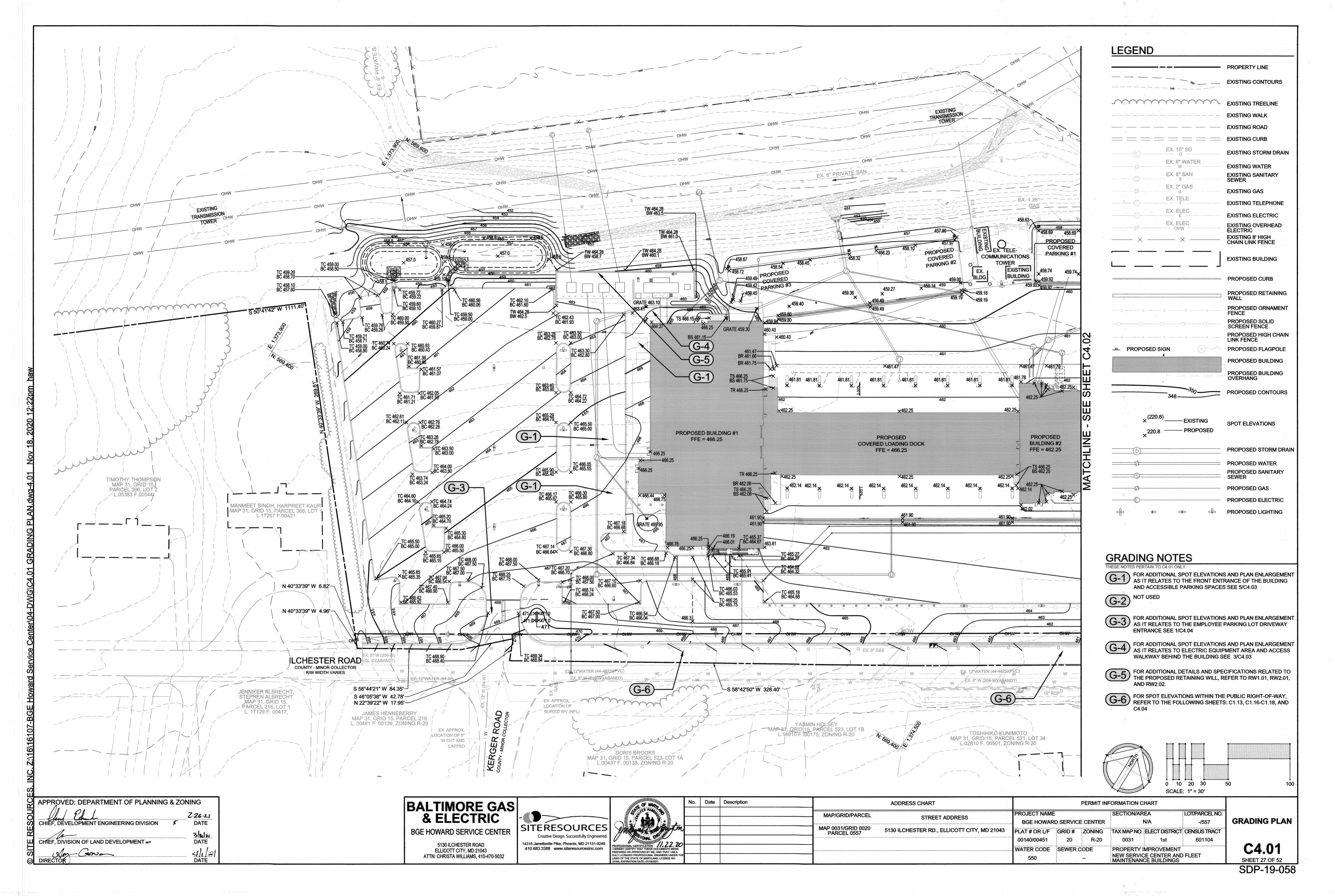
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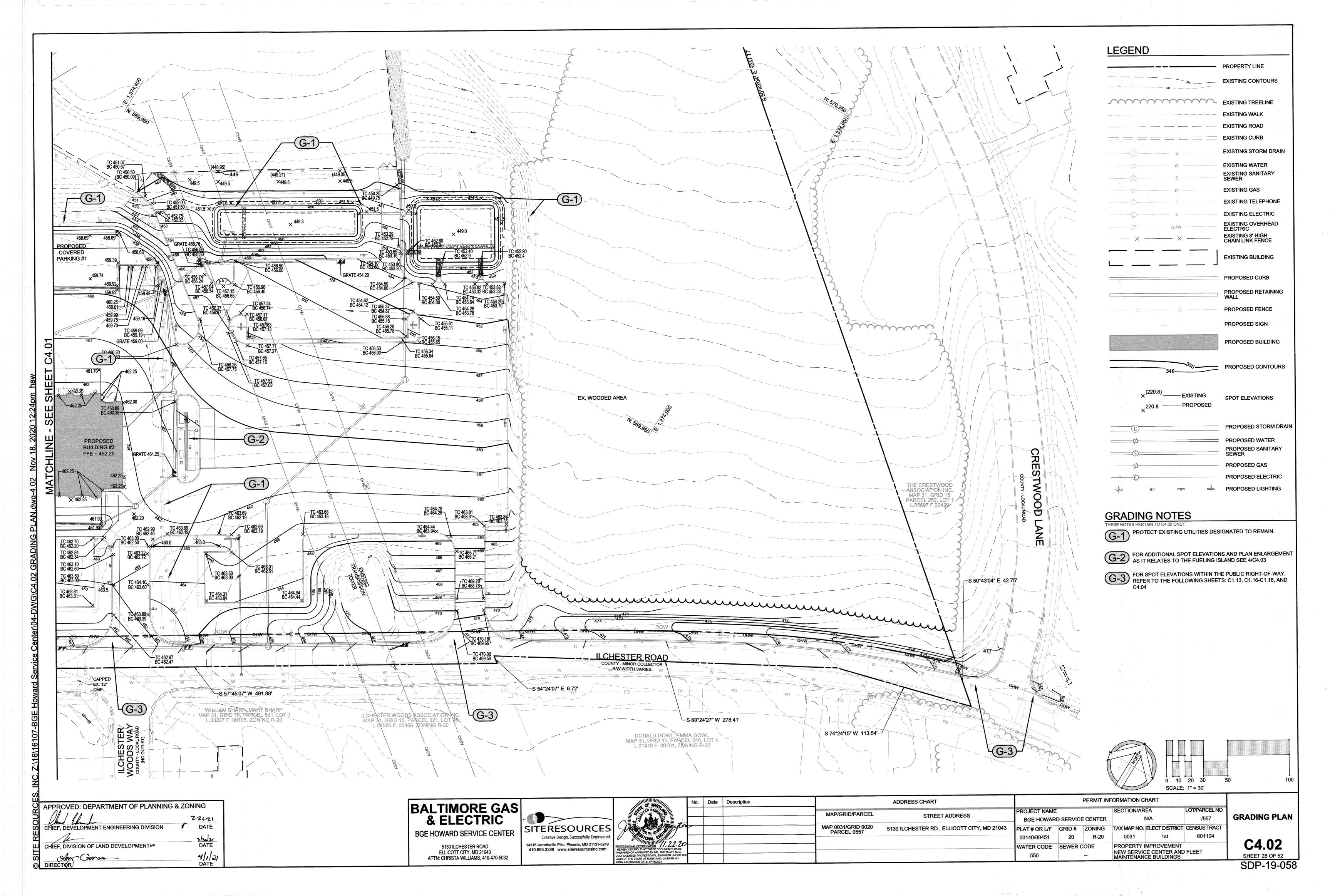
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7	THEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE			
	LAWS OF THE STATE OF MARYLAND, LICENSE NO.			

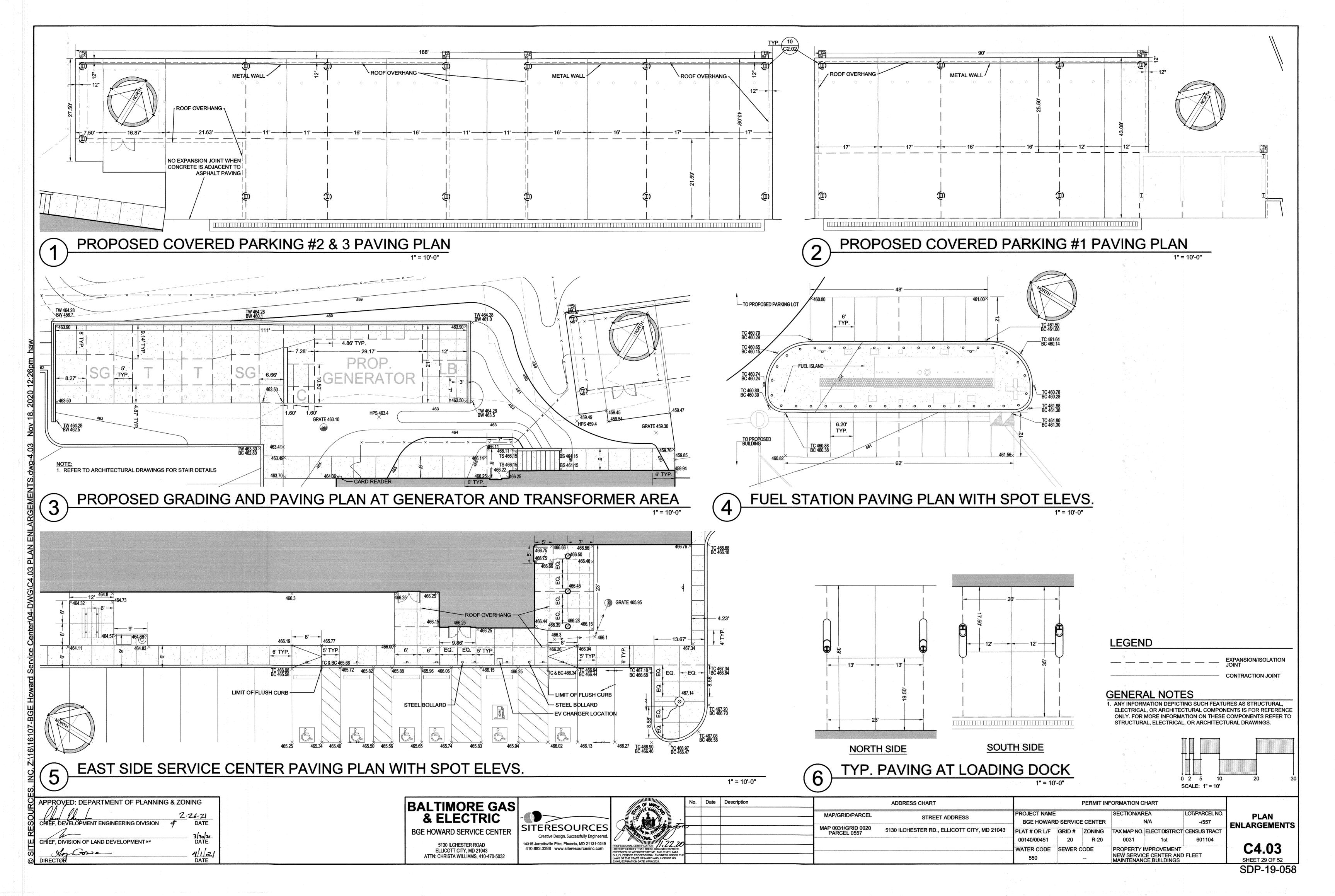
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MAP/GRID/PARCEL	STREET ADDRESS	PROJECT NAME  BGE HOWARD SERVICE CENTER			SECTION/AF	LOT/PARCEL NO. -/557	
P 0031/GRID 0020 PARCEL 0557	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F 00140/00451	GRID # 20	ZONING R-20	TAX MAP NO. 0031	ELECT DISTRICT 1st	CENSUS TRACT 601104
		WATER CODE 550	SEWER CODE		PROPERTY NEW SERVIO	FLEET	

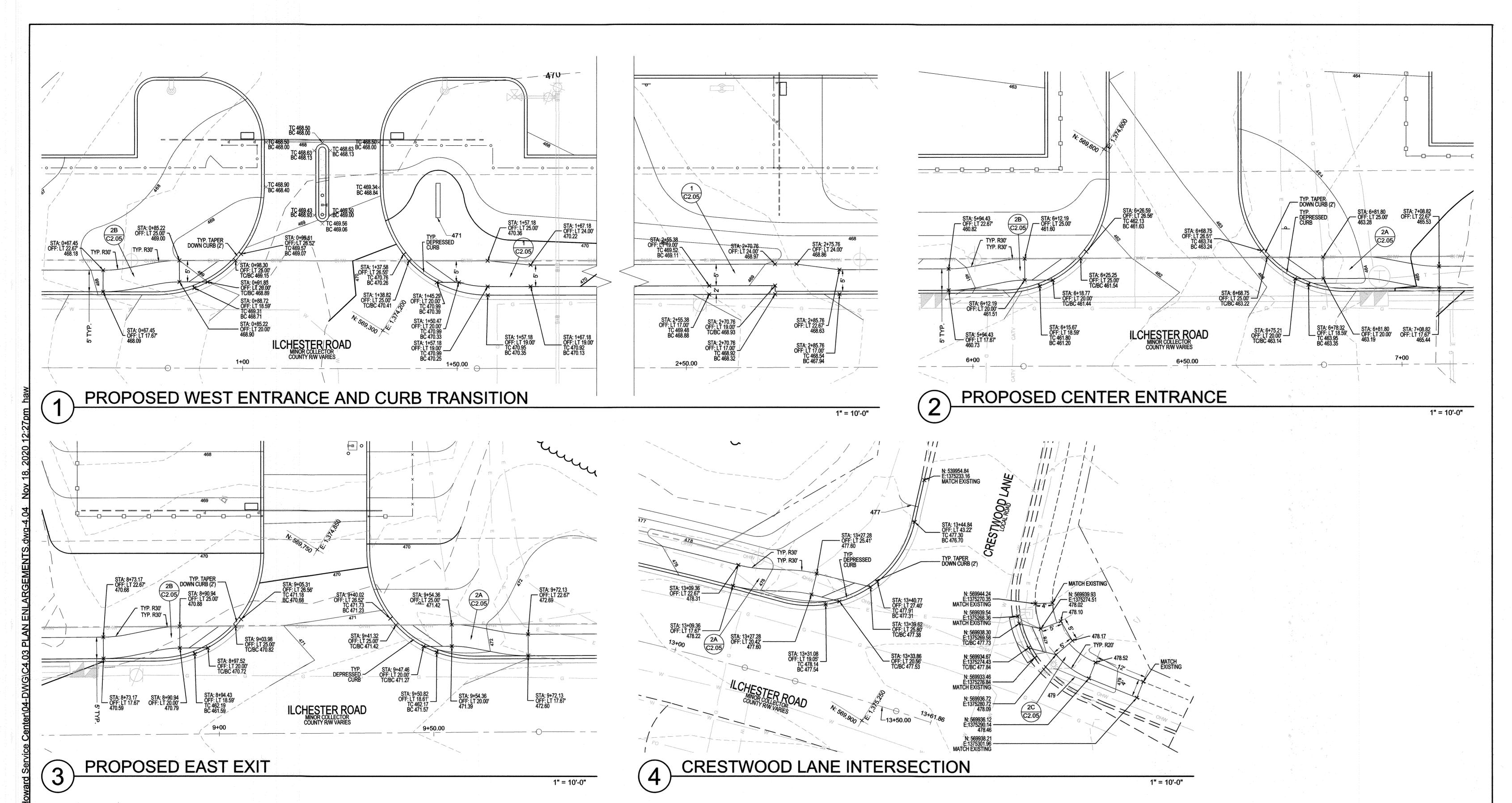
WATER PROFILES

C3.04 SHEET 26 OF 42 SDP-19-058





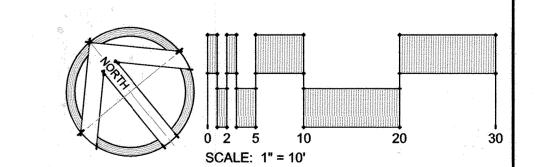




**GENERAL NOTES** 

ALL BGE UTILITY POLES SHOWN ALONG THE FRONTAGE OF THE SITE REPRESENT A SCHEMATIC RELOCATION DUE TO THE WIDENING OF ILCHESTER ROAD. ACTUAL LOCATION OF THE RELOCATED POLES SHALL BE DETERMINED AND COORDINATED BY BGE NEW BUSINESS DIVISION.

- 2. THE RELOCATION OF ALL EXISTING UTILITIES WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE DETERMINED AND COORDINATED BY BGE NEW BUSINESS DIVISION
- 3. ALL STATION AND OFFSET POINTS ARE DERIVED FROM THE PROPOSED ILCHESTER ROAD CENTERLINE. SEE SHEET C1.13 FOR MORE INFORMATION
- 4. ALL PROPOSED WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS AND SPECIFICATIONS.



RC	APPROVED: DEPARTMENT OF PLANNING	G & ZC	NING
귕	Chan Edunch		2.26.21
S I I	CHIEF, DEVELOPMENT ENGINEERING DIVISION	4	DATE
$\alpha$			3/30/21
Ш	CHIÉF, DIVISION OF LAND DEVELOPMENT		DATE
<u>S</u>	My Gru-		4/1/21

BALTIMORE GAS & ELECTRIC BGE HOWARD SERVICE CENTER

5130 ILCHESTER ROAD
ELLICOTT CITY, MD 21043
ATTN: CHRISTA WILLIAMS, 410-470-5032

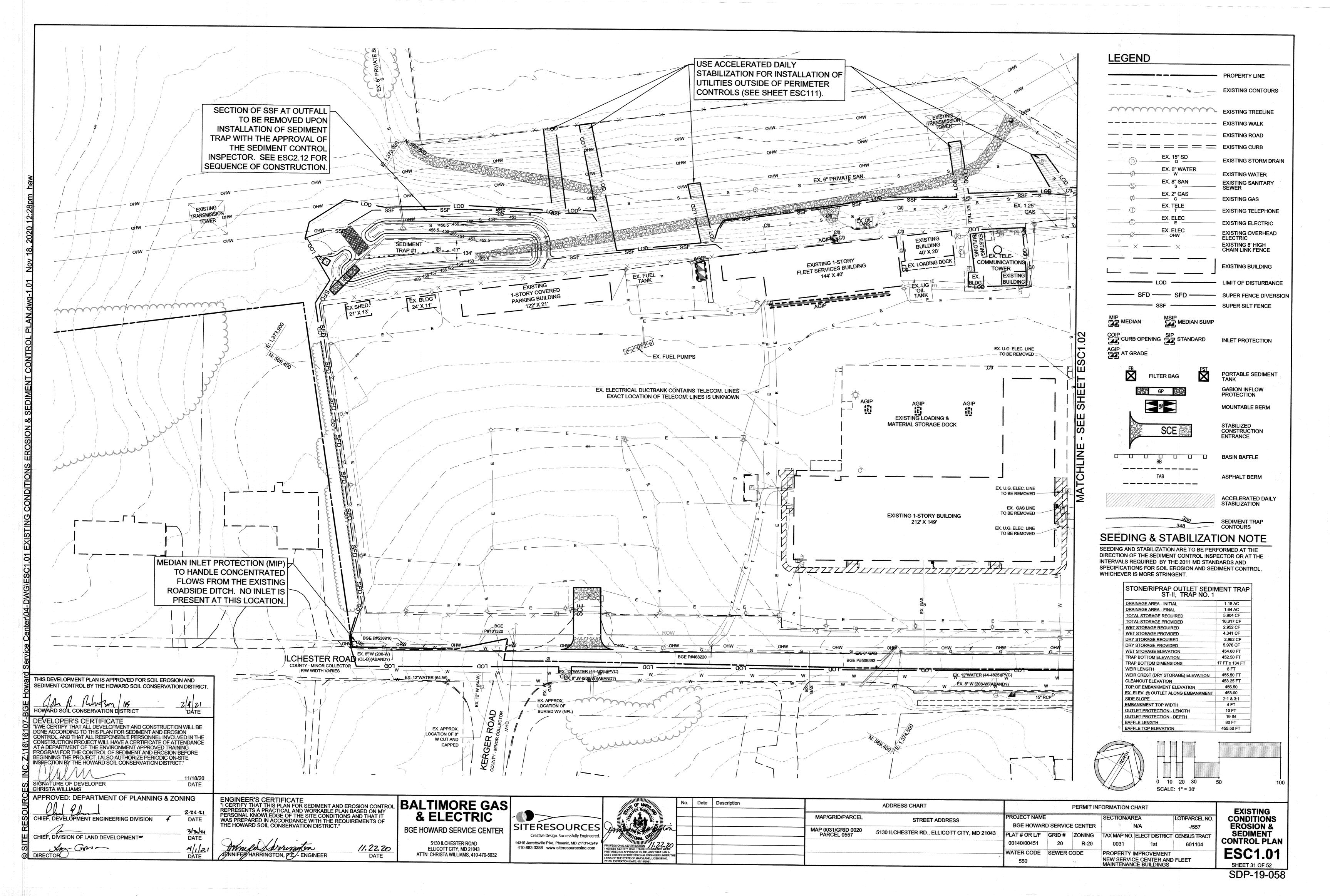


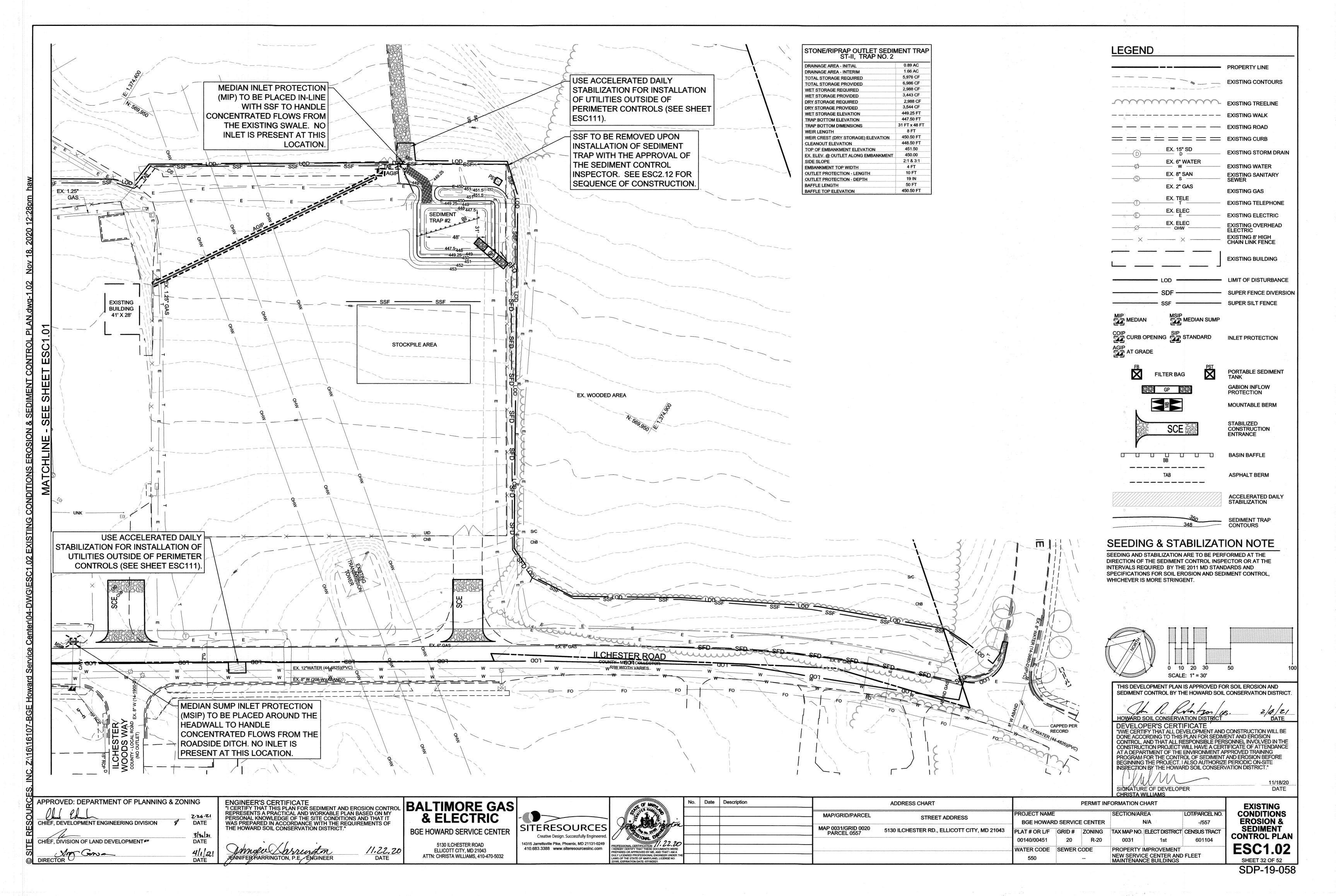
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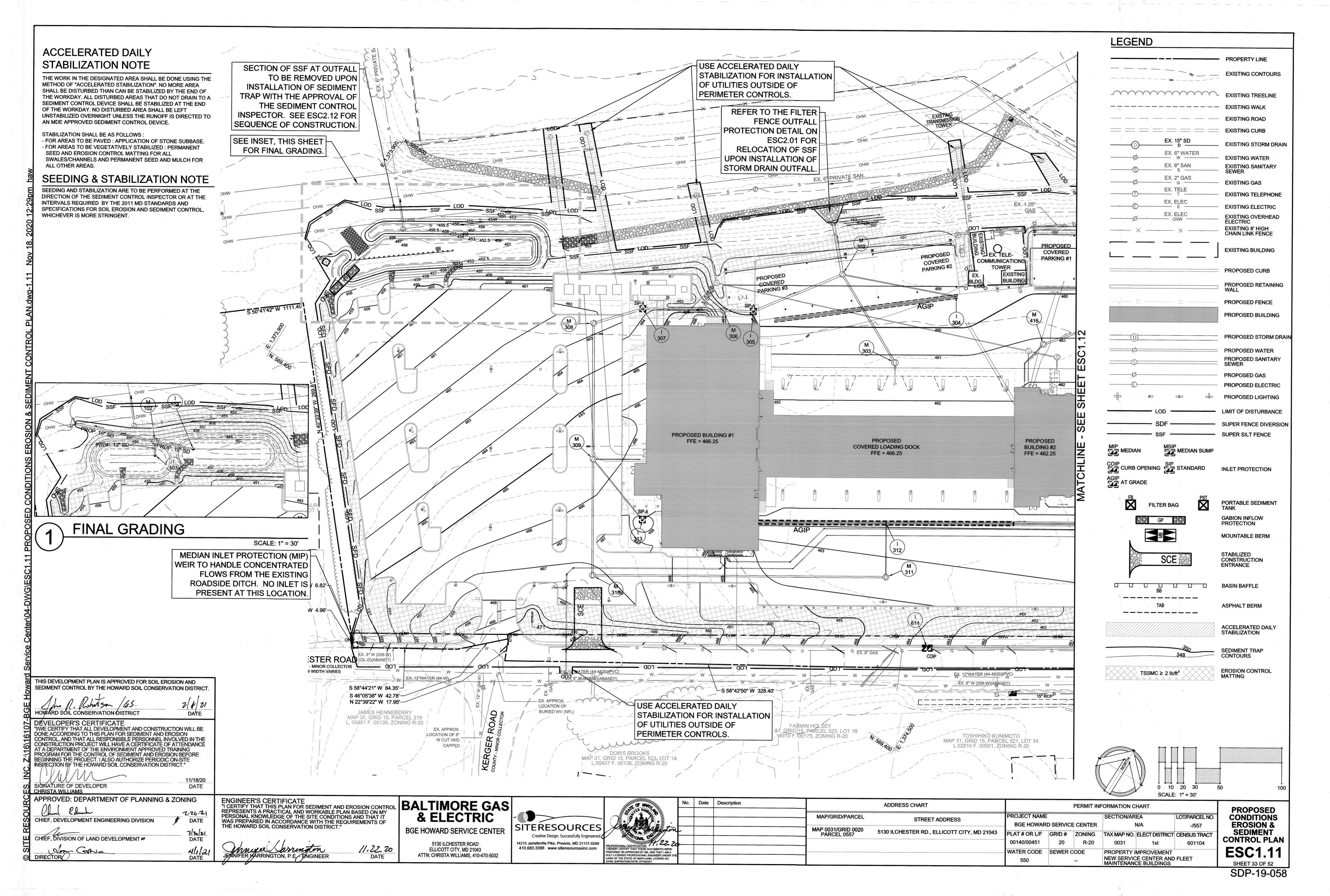
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	MAP/GRID/PARCEL	STREET ADDRESS	PROJECT NAME  BGE HOWARD SERVICE CENTER		SECTION/AREA N/A		LOT/PARCEL NO. -/557		
	MAP 0031/GRID 0020 PARCEL 0557	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F 00140/00451	GRID#	ZONING R-20	TAX MAP NO. 0031	ELECT DISTRICT 1st	CENSUS TRACT 601104	
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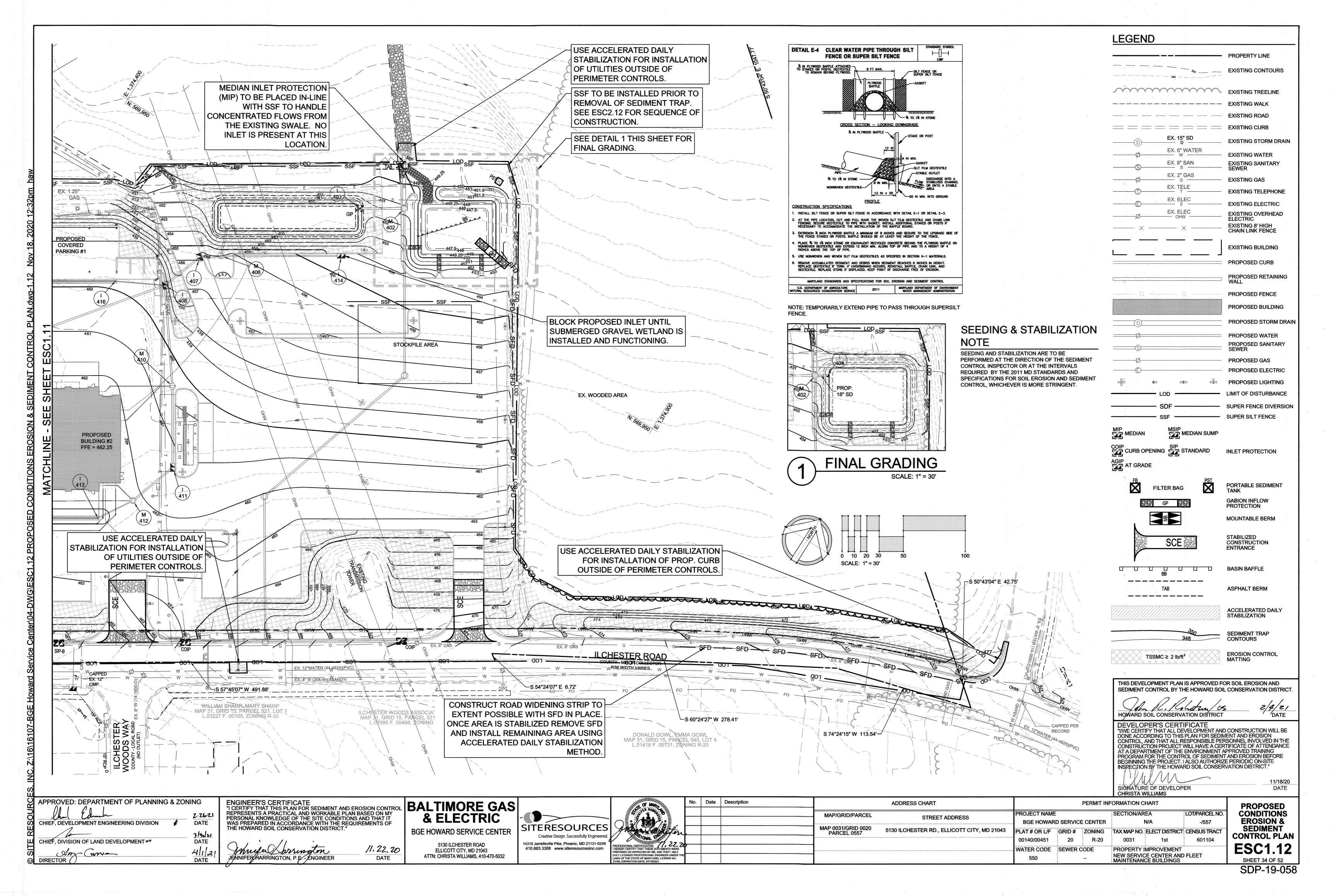
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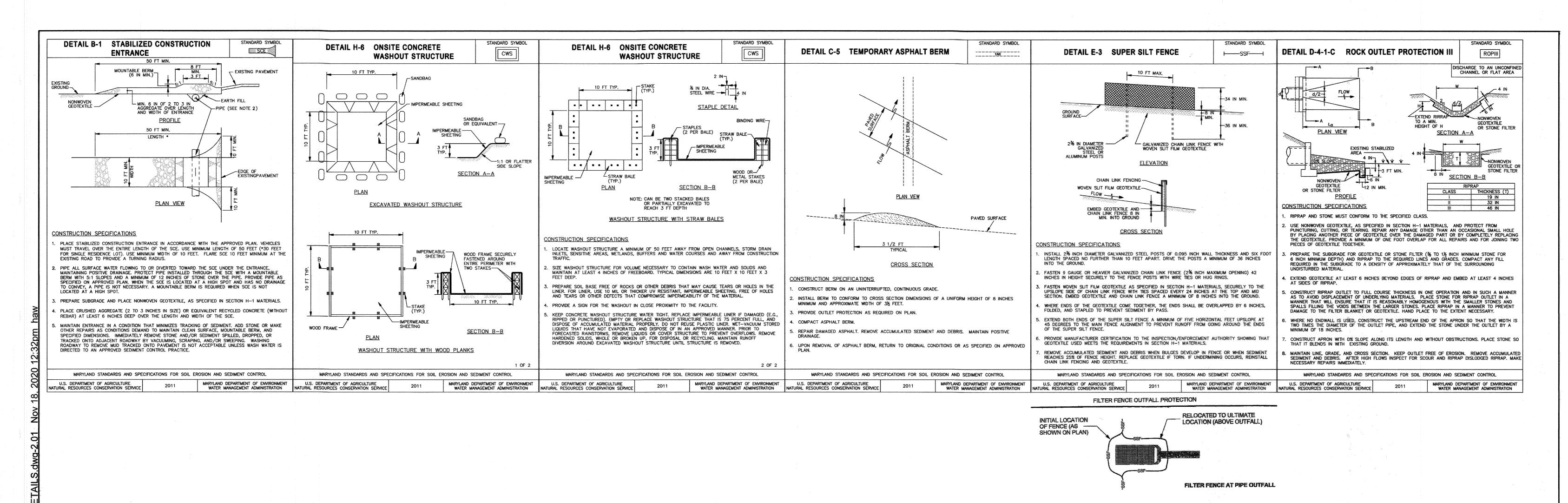
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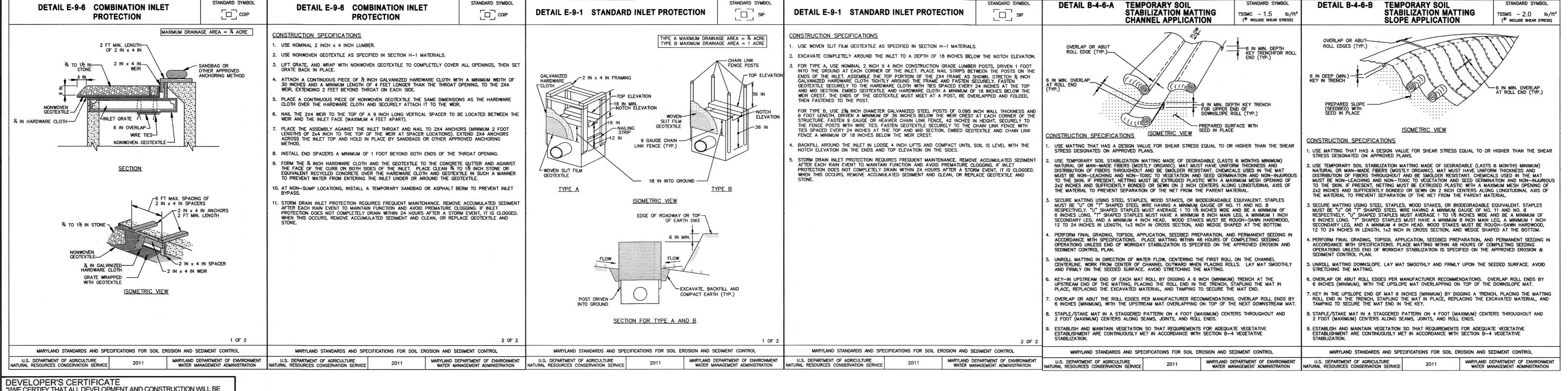


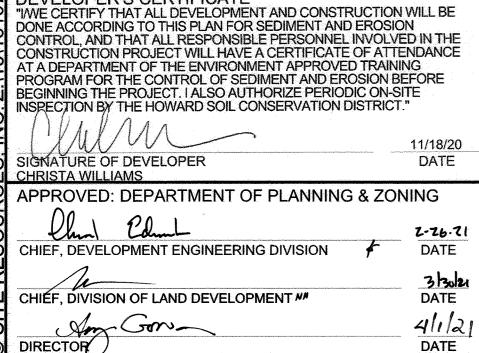












THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. for U. Wohnton / CH. HOWARD SOIL CONSERVATION DISTRICT

ENGINEER'S CERTIFICATE ENGINEER'S CERTIFICATE
"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL BALTIMORE GAS 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."

Annew Sarringon

JENNIFER HARRINGTON, P.E. - ENGINEER

BGE HOWARD SERVICE CENTER 5130 ILCHESTER ROAD 11.22.20 ELLICOTT CITY, MD 21043 ATTN: CHRISTA WILLIAMS, 410-470-5032

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C MARY	No.	Date	Description		ADDRESS CHART			PERMIT INFORMATION CHART					
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the ton	)			MAP 0031/GRID 0020 PARCEL 0557	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F	GRID#	ZONING			CENSUS TRACT		
CRITICATION HAZZ ZO THAT THESE DOCUMENTS WERE						00140/00451	20	R-20	0031	1st	601104		
THAT THESE DOCUMENTS WERE PROVED BY ME, AND THAT I AM A ROFESSIONAL ENGINEER UNDER THE RE OF MARYLAND, LICENSE NO. I DATE: 07/18/2021.						WATER CODE 550	SEWER (	CODE	NEW SERVICE	MPROVEMENT CE CENTER AND CE BUILDINGS	FLEET		

**EROSION &** SEDIMENT **CONTROL NOTES** 

**ESC2.01** 

**SHEET 35 OF 52** 

### **B-4 STANDARDS AND SPECIFICATIONS** FOR VEGETATIVE STABILIZATION

DEFINITION USING VEGETATION AS COVER TO PROTECT EXPOSED SOIL FROM EROSION **PURPOSE** TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL

CONDITIONS WHERE PRACTICE APPLIES ON ALL DISTURBED AREAS NOT STABILIZED BY OTHER METHODS. THIS SPECIFICATION IS DIVIDED INTO SECTIONS ON INCREMENTAL STABILIZATION: SOIL PREPARATION, SOIL AMENDMENTS AND TOPSOILING: SEEDING AND MULCHING; TEMPORARY STABILIZATION; AND PERMANENT STABILIZATION. **EFFECTS ON WATER QUALITY AND QUANTITY** 

STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL. THEREBY REDUCING SEDIMENT LOADS AND RUNOFF TO DOWNSTREAM AREAS.

PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION, EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. OVER TIME, VEGETATION WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH.

VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE ROOT ZONE.

SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

### ADEQUATE VEGETATIVE ESTABLISHMEN

SPECIFIED

INSPECT SEEDED AREAS FOR VEGETATIVE ESTABLISHMENT AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

- ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUNDCOVER.
- . IF AN AREA HAS LESS THAN 40 PERCENT GROUNDCOVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING
- IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUNDCOVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY
- MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

### **B-4-4 STANDARDS AND** SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS, FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED. THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.

FOR SITES HAVING SOIL TESTS PERFORMED. USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING

WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON. APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

### EMPORARY SEEDING SUMMARY

HARDINESS ZONE 6b							
SPECIES	APPLICATION RATE (lbs/ac)	SEEDING DATES	SEEDING DEPTH	FERTILIZER RATE (10-20-20)	LIME RATE		
ANNUAL YEGRASS	40 lbs/ac	3/1 - 5/15 8/1 - 10/15	1/2"	436 lb/ac	2 tons/ac		
FOXTAIL MILLET	30 lbs/ac	5/16 - 7/31	1/2"	(10 lb /1000 sf	(90 lb /1000 sf)		

### THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT HOWARD SOIL CONSERVATION DISTRICT DATE DÉVELOPER'S CERTIFICATE 'INVECERTIFY 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. 11/18/20 SIGNATURE OF DEVELOPER APPROVED: DEPARTMENT OF PLANNING & ZONING

DATE

3/30/21

DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT \*\*

~

### B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS

DEFINITION
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. CONDITIONS WHERE PRACTICE APPLIES
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED. CRITERIA
A. SOIL PREPARATION

TEMPORARY STABILIZATION

a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

 APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

PERMANENT STABILIZATION a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE: SOIL PH BETWEEN 6.0 AND 7.0.

SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM) iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE

**ACCEPTABLE** v. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT

ADEQUATE ROOT PENETRATION. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 **INCHES** 

d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.

 e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOII BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONESC. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS) AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON **NEWLY DISTURBED AREAS.** 

B. TOPSOILING TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR

UNACCEPTABLE SOIL GRADATION. 2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY

SPECIFICATIONS FOR PERMANENT

PURPOSE
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH

CONDITIONS WHERE PRACTICE APPLIES EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN

FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE

RATES, AND SEEDING DATES IN THE PERMANENT SEEDING

SUMMARY, THE SUMMARY IS TO BE PLACED ON THE PLAN.

c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND

SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING

a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS,

b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED

RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL

BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER

SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES

THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN

IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE

KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS

SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR

TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM

FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S). APPLICATION

ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES

MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE,

FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM

FERTILIZER (46-0-0) AT 3 ½ POUNDS PER 1000 SQUARE FEET (150

POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE

SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT

SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.

<u>DEFINITION</u>
TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

SECTION 342 - CRITICAL AREA PLANTING.

PERMANENT GROUND COVER ON DISTURBED SOILS.

**B-4-5 STANDARDS AND** 

**STABILIZATION** 

**GENERAL USE** 

2. TURFGRASS MIXTURES

Mule brungton NIFER HARRINGTON, P.E. ENGINEER

PLACED ON THE PLAN.

A. SEED MIXTURES

### PUBLISHED BY USDA-NRCS.

3. TOPSOILING 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

AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST

MEET THE FOLLOWING CRITERIA a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OF OTHER MATERIALS LARGER THAN 11/2 INCHES IN DIAMETER.

TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

TOPSOIL APPLICATION a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE

MAINTAINED WHEN APPLYING TOPSOIL b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION. WHEN THE SUBSOIL IS **EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE** BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL

ANALYSES. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.

4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

MIXTURE BY WEIGHT

5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL

KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR

CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2

NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE

POUNDS MIXTURE PER 1000 SQUARE FEET, CHOOSE A MINIMUM OF

THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING

iii. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE

IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW

**CULTIVARS 95 TO 100 PERCENT. CERTIFIED KENTUCKY BLUEGRASS** 

AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN

INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40

SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST

CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY

CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST

OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND

MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS

ZONES: 5B. 6A) CENTRAL MD: MARCH 1 TO MAY 15. AUGUST 15 TO

TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED

AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND

METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE

OCTOBER 15 (HARDINESS ZONE: 6B) SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15

SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER

c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES WESTERN

PROTECTION AND ASSURES A PURE GENETIC LINE.

**GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM** 

MEMO #77, TURFGRASS CULTIVAR RECOMMENDATIONS FOR

CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER

1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE.

RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE

iv. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE II

HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE

SEEDING RATE: 11/2 TO 3 POUNDS PER 1000 SQUARE FEET.

PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT.

USE IN FULL SUN AREAS WHERERAPID ESTABLISHMENT IS

MANAGEMENT, CERTIFIED PERENNIAL RYEGRASS

### B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

## DEFINITION THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

<u>PURPOSE</u>
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

### A. SEEDING 1. SPECIFICATIONS

a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW, ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE

MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE **GROUND THAWS** 

INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING, NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS. 2. APPLICATION

 DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES

PRESCRIBED ON TEMPORARY SEEDING TABLE B.1.

PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT. iii. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS

THAT APPLY AND COVER SEED WITH SOIL. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING

v. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. vi. HYDROSEEDING: APPLY SEED UNIFORMLY WITH

HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER) vii. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING. THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P2O5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE. viii. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO

3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

ix. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.

DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED

MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES

ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO

4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY

ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE

MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR

IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH

APPLICATION SEEDING SEEDING

RATE (lb/ac) DATES DEPTHS

### WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO

WILL POSE NO DIFFICULTY

HOT SEASONS, OR ON ADVERSE SITES.

15 lb/ac

PERMANENT SEEDING SUMMARY

HARDINESS ZONE 6b

TALL FESCUE\* 285 lb/ac\*\*

**BLUEGRASS\*** 

FLATTER).

MULCH MATERIALS (IN ORDER OF PREFERENCE) a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE

MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR. TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY

SPREAD SLURRY WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR

**GROWTH INHIBITING FACTORS** iii. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.

WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.

WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

### APPLICATION APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER

SEEDING. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT

EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE

THE APPLICATION RATE TO 2.5 TONS PER ACRE. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

### ANCHORING

a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:

 A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING

STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

iii. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHEF APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.

LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

AFFECT ITS SURVIVAL e. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS

SCIENTIST PRIOR TO ITS INSTALLATION. 2. SOD INSTALLATION a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL

PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL

IMMEDIATELY PRIOR TO LAYING THE SOD. b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER, STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH, ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.

WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS. SOD MAINTENANCE

a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.

b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS **NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT** DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT

OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

- ¾ TO 1½ IN STONE FACING, 12 IN THICK (UP TO WEIR) → CONCENTRATED -4 TO 7 IN STONE - 10 MIL IMPERMEABLE SHEETING WRAPPED OVER THE POSTS AND EMBEDDED INTO THE GROUND 8 IN (MIN.) PLAN VIEW 4 TO 7 IN STONE -EXISTING CHANNEL -2 FT MIN. WIDTH INLET NOTCH — UNDISTURBED / EXISTING GROUND MIN. 6 IN HIGHER THAN WEIR WEIR), 12 IN THICK NWOVEN GEOTEXTILE-UNDER ALL STONE SECTION A-CONSTRUCTION SPECIFICATIONS USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.

STANDARD SYMBOL

MSIP

-NONWOVEN GEOTEXTILE

MAXIMUM DRAINAGE AREA = 1 ACRE PER SIDE

INSTALL EACH STONE STONE STRUCTURE WITH THE WEIR 10 INCHES ABOVE THE INVERT OF THE CHANNEL AND THE WEIR OPENING THE SAME WIDTH AS THE CHANNEL BOTTOM OR 2 FEET MINIMUM. USE CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE NONWOVEN GEOTEXTILE ON THE UPSTREAM FACE AND COVER WITH A 12 INCH THICK LAYER OF CLEAN ¾ TO 1½ INCH STONE

CONSTRUCT "WINGS" IN ACCORDANCE WITH DIVERSION FENCE DETAIL C-9.

**DETAIL E-9-5 MEDIAN SUMP INLET** 

**PROTECTION** 

SILT FENCE

STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE FURAL RESOURCES CONSERVATION SERVICE DETAIL E-9-4 MEDIAN INLET PROTECTION MAXIMUM DRAINAGE AREA = 1 ACRE SHEET - SILT FENCE BETWEEN 4 TO 7 IN STOP AND 34 TO 11/2 IN STONE -¾ TO 1½ IN STONE CONCENTRATED SILT FENCE -4 TO 7 IN STONE -10 MIL IMPERMEABLE EMBEDDED INTO THE GROUND 8 IN (MIN.) -EXISTING CHANNEL PLAN VIEW 4 TO 7 IN STONE---- INLET NOTCH -UNDISTURBED/EXISTING GROUND 10 IN MIN. HEIGHT NONWOVEN GEOTEXTILE – UNDER ALL STONE SECTION A-A CONSTRUCTION SPECIFICATIONS

USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. INSTALL SILT FENCE ON ALL SIDES OF INLET RECEIVING SHEET FLOW. FENCE IS TO BE INSTALLED IN ACCORDANCE WITH SILT FENCE DETAIL E-1, EXCEPT POSTS ARE TO BE SPACED A MAXIMUM OF 5 FEET

INSTALL STONE STRUCTURE WITH THE WEIR 10 INCHES ABOVE THE INVERT OF THE CHANNEL AND THE WEIR OPENING THE SAME WIDTH AS THE CHANNEL BOTTOM OR 2 FEET MINIMUM. USE CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE NONWOVEN GEOTEXTILE ON THE UPSTREAM FACE AND COVER WITH A 12 INCH THICK LAYER OF CLEAN % TO 1% INCH STONE OR EQUIVALENT

CONSTRUCT "WINGS" IN ACCORDANCE WITH DIVERSION FENCE DETAIL C-9.

STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

OF MARYLAND PUBLICATION, "ACRONOMY MEMO #77, "TURFGRASS CULTIVARS IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, "ACRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND."

\*\*FOR TALL FESCUE CHOOSE 3 PROVEN CULTIVARS TO BE USED IN EQUAL PROPORTIONS IN THE SEED MIX.

\*\*\*SEE 2011 MD STANDARDS & SPECIFICATIONS FOR SOIL EROSION & SEDIMENT CONTROL, SECTION B-4-5, PARAGRAPH A.2.B.III FOR TURFGRASS MIXTURE AND RATE AND PARAGRAPH A.2.C FOR TURFGRASS SEEDING DATES. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR

FERTILIZER RATE

(10-20-20)

P<sub>2</sub>0<sub>5</sub>

-(1.0 lb/ (2 lb/ (2 lb/ (90lb/

MAP/GRID/PARCEL

8/15 - 10/15 1/4" - 1/2" 45 lb/ac 90 lb/ac 90 lb/ac 2 tons/ac

8/15 - 10/15 1/4" - 1/2" 1000sf) 1000 sf) 1000 sf) 1000 sf)

RATE

GENÉRAL SPECIFICATIONS CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND

ELECT TURFGRASS VARIETIES FROM THOSE LISTED AS PROVEN CULTIVARS IN THE MOST CURRENT UNIVERSITY

b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH. PLUS OR MINUS 1/4 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE

ACCEPTABLE. c. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY

ADDRESS CHART

PERMIT INFORMATION CHART OT/PARCEL NO PROJECT NAME SECTION/AREA **BGE HOWARD SERVICE CENTER** -/557 TAX MAP NO. ELECT DISTRICT CENSUS TRAC PLAT # OR L/F GRID # ZONING 00140/00451 20 601104

**EROSION &** SEDIMENT CONTROL NOTES

SHEET 36 OF 52

SDP-19-058

THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL ENGINEER'S CERTIFICATE **BALTIMORE GAS** CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY & ELECTRIC PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. **BGE HOWARD SERVICE CENTER** 5130 ILCHESTER ROAD 11.22.20

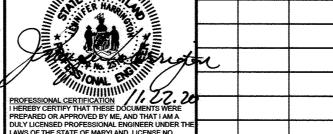
(HARDINESS ZONES: 7A, 7B)

ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032







Date Description

STREET ADDRESS MAP 0031/GRID 0020 PARCEL 0557

5130 ILCHESTER RD., ELLICOTT CITY, MD 21043

WATER CODE SEWER CODE PROPERTY IMPROVEMENT **NEW SERVICE CENTER AND FLEET** MAINTENANCE BUILDINGS

**ESC2.11** 

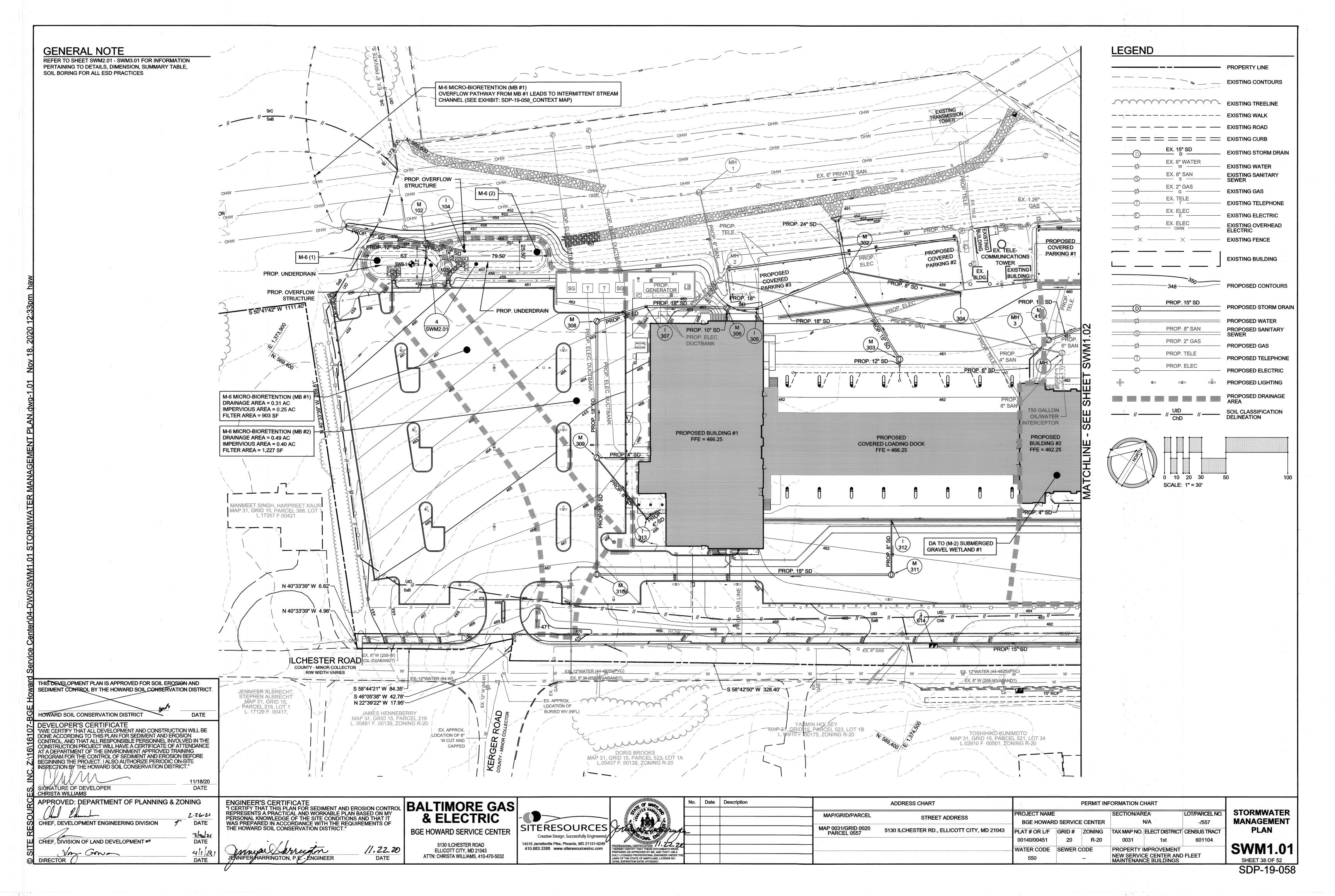
#### SITE ANALYSIS DATA 1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC INSPECTION DATE FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR THE PROPOSED DEVELOPMENT SITE IS THE HOWARD SERVICE INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT) WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND CENTER FOR BALTIMORE GAS & ELECTRIC COMPANY AND IS TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN: PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE NAME AND TITLE OF INSPECTOR 39.40 AC LOCATED AT 5130 ILLCHESTER ROAD. THE DEVELOPMENT TOTAL PROPERTY AREA A.) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED INCI LIDES SERVICE CENTER, LOADING, STORAGE BUILDING, FUEL GIVEN AT THE FOLLOWING STAGES: SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 6.48 AC EXISTING IMPERVIOUS AREA PRECIPITATION) DISPENSING FACILITY AND ASSOCIATED SITE/LANDSCAPE a. PRIOR TO THE START OF EARTH DISTURBANCE, HORIZONTAL TO 1 VERTICAL (3:1); AND BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES b. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT IMPROVEMENTS. THERE ARE NO STEEP SLOPES, WETLANDS EX. WETLANDS / WETLAND BUFFER (LOD) 0.00 AC B.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON EVIDENCE OF SEDIMENT DISCHARGES BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, PERENNIAL AND INTERMITTENT STREAMS, NOR THEIR ASSOCIATED THE PROJECT SITE NOT UNDER ACTIVE GRADING. 0.00 AC c. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING · IDENTIFICATION OF PLAN DEFICIENCIES EX. FLOODPLAINS / BUFFER (LOD) BUFFERS, IMPACTED BY THE DEVELOPMENT. THE SITE LIES STOCKPILE MAINTENANCE IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE OUTSIDE OF THE 100-YEAR FLOODPLAIN. 0.00 AC EX. FORESTS (LOD) · IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS d. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES. THIS PROJECT QUALIFIES AS A REDEVELOPMENT PROJECT WHERE • COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL STEEP SLOPES (15% TO 25%) (LOD) 0.23 +/- AC THE EXISTING IMPERVIOUS AREA WITHIN THE LIMITS OF ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 REQUIREMENTS APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL 0.20 +/- AC STEEP SLOPES (> 25%) (LOD) DISTURBANCE CONSTITUTES 79% EXISTING IMPERVIOUS VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER PHOTOGRAPHS BE REFERENCED. TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN COVERAGE. THE PROPOSED SITE DESIGN WILL REDUCE ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF MONITORING/SAMPLING THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE LOD AREA 9.06 +/- AC IMPERVIOUS COVERAGE. THEREFORE, STORMWATER MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS MANAGEMENT REQUIREMENTS ARE ACHIEVED BY REDUCING THE EXISTING IMPERVIOUS AREA (LOD) 6.48 +/- AC · OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO. 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN **EXISTING IMPERVIOUS COVERAGE AND STORMWATER** FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION WITH CONSTRUCTION ACTIVITIES (NPDES, MDE). PROPOSED IMPERVIOUS AREA (LOD) 5.92 +/- AC ACCORDANCE WITH SECTION B-3 LAND GRADING. MANAGEMENT FACILITIES. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS **EXISTING GREEN OPEN AREA (LOD)** 2.58 +/- AC DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 THE SITE DESIGN MAINTAINS NATURAL FLOW PATTERNS AND DOES VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SHORTER NOT INVOLVE SIGNIFICANT GRADE CHANGES THAT WOULD DIVERT PROPOSED GREEN OPEN AREA (LOD) 3.14 +/- AC 10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING. RUNOFF AWAY FROM ITS EXISTING DRAINAGE AREA. STANDARD FENCING IS TO BE REPLACED WITH SUPER SILT FENCE AT THE AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY **ERODIBLE SOILS (LOD)** 0.75 +/- AC ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR. WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES SERVICE CENTER PROPOSED SITE USAGE DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR STANDARD SYMBOL OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE STANDARD SYMBO STANDARD SYMBOL FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL DETAIL G-1-2 STONE/RIPRAP OUTLET **DETAIL G-1-2 STONE/RIPRAP OUTLET** CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION DISTURBED AT A GIVEN TIME. ST-II **DETAIL C-9 DIVERSION FENCE** ST-II SEDIMENT TRAP ST-II SEDIMENT TRAP ST-II WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN MAXIMUM DRAINAGE AREA = 2 ACRE TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE. MAXIMUM DRAINAGE AREA = 10 ACRES OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID. CONSTRUCTION SPECIFICATIONS ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED SITE ANALYSIS: CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED. 10 FT MAX. AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION. **TOTAL AREA OF SITE: 39.40 ACRES** CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS AREA DISTURBED: 9.06 ACRES AREA TO BE ROOFED OR PAVED: 5.92 ACRES (INCLUSIVE): 3. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT. USE I AND IP MARCH 1 - JUNE 15 AREA TO BE VEGETATIVELY STABILIZED: 3.14 ACRES USE III AND IIIP OCTOBER 1 - APRIL 30 TOTAL CUT: 5,500 CU. YDS. +/-CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WEIR CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. TOTAL FILL: 6,500 CU. YDS. +/-USE IV MARCH 1 - MAY 31 16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND OFFSITE WASTE/BORROW AREA LOCATION: TO BE DETERMINED 5. MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER. SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF 6. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL. ACTIVE. UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HCSCD. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF . USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS I RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE. ELEVATION **EVERY INSPECTION AND SHOULD INCLUDE:** 8. PLACE 1 FOOT OF CLEAN 🕺 TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE SEQUENCE OF CONSTRUCTION ISOMETRIC VIEW UPSTREAM FACE OF THE WEIR. CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR. ONCE THE SITE HAS BEEN COMPLETED, EXCEPT FOR SWM FACILITIES, TO THE EXTENT POSSIBLE WITH THE ASSURE THAT GRADING PERMIT AND ALL OTHER NECESSARY PERMITS ARE OBTAINED BY OWNER SEDIMENT CONTROLS IN PLACE AND HAS BEEN STABILIZED AND WITH THE APPROVAL OF THE SEDIMENT O. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF NOTIFY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS AT LEAST 48 HOURS BEFORE START OF WORK. CONTROL INSPECTOR, REMOVE SEDIMENT TRAPS. STABILIZATION CAN BE ACCOMPLISHED BY INSTALLING CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN CONTACT MISS UTILITY AT 1-800-257-7777 AT LEAST THREE DAYS IN ADVANCE OF STARTING WORK SHOWN ON 1. REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODLY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. 19 IN MIN. THICKNESS OF-STONE BASE ON ALL ADJACENT SURFACES OR PROVIDING VEGETATIVE STABILIZATION CONSISTING OF 95% PLANS. CLASS 1 RIPRAI GROUNDCOVER PER SECTION B-4 OF THE 2011 MD STANDARDS FOR ESC. TO REMOVE SEDIMENT TRAPS: FIRST WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB AS NECESSARY FOR THE INSTALL SSF DOWNSTREAM OF SEDIMENT TRAPS (AS SHOWN ON ESC1.11/ESC1.12), REMOVE FLOW DIVERSION, INSTALLATION OF THE EROSION AND SEDIMENT CONTROL MEASURES INCLUDING STABILIZED CONSTRUCTION DEWATER AND CLEAN OUT TRAPS AND THEN REMOVE SEDIMENT TRAP. GRADE SEDIMENT TRAP AREA TO ENTRANCE (SCE), SEDIMENT TRAPS, SUPER FENCE DIVERSION (SFD), INLET PROTECTION AND SUPER SILT NONWOVEN GEOTEXTILE EXISTING— GROUND FINAL PROPOSED GRADES AS SHOWN ON PLANS AND INSTALL REMAINING INLETS AS DESCRIBED IN PREVIOUS SECTION APRON 10 FT MIN. FENCE (SSF). FOR INSTALLATION OF SEDIMENT TRAPS AS SHOWN ON ESC1.01/ESC1.02: FIRST INSTALL SSF BOTTOM ELEVATION MAINTAIN LINE, GRADE, AND CROSS SECTION. STEP. (2 WEEKS) DOWN HILL OF THE TRAPS, INSTALL SEDIMENT TRAPS (INCLUDING INFLOW PROTECTION, BAFFLES AND CONSTRUCTION SPECIFICATIONS - EXCAVATE FO REQUIRED WE STORAGE WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL CONSTRUCT SWM FACILITIES. (8 WEEKS) 4 TO 7 IN STONE -DEWATERING DEVICE), AND THEN INSTALL FLOW DIVERSIONS (SFD). REMOVE SSF DOWNSTREAM OF USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (23/6 INCH MAXIMUM OPENING). a. NOTIFY AS-BUILT ENGINEER OF WORK STARTING AT LEAST 3 DAY IN ADVANCE OF SWM FACILITY SEDIMENT TRAP. (10 DAYS) 3. UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP USE 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT CONSTRUCTION. SECTION A-A NOTIFY SEDIMENT CONTROL INSPECTOR AND ENGINEER UPON COMPLETION OF THIS INSTALLATION. (1 DAY) LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN b. DURING A 3-DAY DRY WEATHER FORECAST, EXCAVATE SWM FACILITIES TO SHAPE AND BOTTOM WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF THE SITE. (4 **ELEVATION SHOWN ON PLAN.** TOP OF EMBANKMEN 3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES. C. BACKFILL SWM FACILITIES WITH MATERIALS AND TO DIMENSIONS SHOWN ON PLAN, INCLUDING BEGIN DEMOLITION, ROUGH GRADING, INSTALLATION OF UTILITIES, BUILDING CONSTRUCTION. FOR STORM SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE. DRAINS, INSTALL INLET PROTECTION (IP) AS SHOWN ON APPROVED EROSION AND SEDIMENT CONTROL PLANS. UNDERDRAIN PIPE, OBSERVATION WELL / CLEANOUT. d. ONCE SOIL IS INSTALLED AND PRIOR TO LANDSCAPING, FLOOD SWM FACILITY WITH CLEAN WATER UNTIL CONTRACTOR SHALL PRELIMINARY GRADE DEPRESSIONS WHICH ARE TO BECOME SWM FACILITIES SO THAT PONDING DEPTH REACHES 6", THEN TIME DRAW-DOWN TO ENSURE DRAW-DOWN IN COMPLETE WITHIN EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF THE INITIAL GROUND SURFACE IS FLUSH WITH THE RIM ELEVATION OF THE OVERFLOW INLET. EXCEPT FOR 8 INCHES INTO GROUND, SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE. STORM DRAIN TRENCH CROSSINGS WHICH ARE LOWER. DO NOT DISTURB ANY UTILITIES TO REMAIN. ANY 48 HOURS AND DRAINAGE WITH SWM FACILITY IS FUNCTIONING. 19 IN MIN CLASS e. INSTALL MULCH LAYER AND LANDSCAPE IN ACCORDANCE WITH PLANS. WALKS, ROADS, CURBS, ETC. OR ANY EXISTING UTILITY OR STRUCTURE DAMAGED DURING CONSTRUCTION, . WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM PAVE ALL PARKING SURFACES WITH THE FINAL SURFACE COURSE. (2 WEEKS) NOT SCHEDULED FOR DEMOLITION, SHALL BE REPAIRED BY THE CONTRACTOR, IN KIND AT THE NONWOVEN GEOTEXTILE AFTER PERMANENT STABILIZATION OF SITE WITH ESTABLISHED VEGETATION AND WITH PERMISSION OF THE -4 TO 7 IN STONE CONTRACTOR'S EXPENSE. (18 MONTHS) KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMO SECTION B-B FINE GRADE AND INSTALL BASE COURSE FOR ALL PARKING LOTS AND HARDSCAPE. INSTALL CURB AND SEDIMENT CONTROL INSPECTOR, REMOVE EROSION AND SEDIMENT CONTROL MEASURES OR DEVICES, AND ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE 1 OF 3 2 OF 3 SHEETING IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE, STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS. (1 WEEK) **GUTTER. (4 WEEKS)** CONDUCT FINAL AS-BUILT SURVEYS OF THE STORMWATER MANAGEMENT FACILITIES AND SUBMIT AS-BUILT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FINE GRADE THE REMAINING AREAS WITH AT LEAST 4 INCHES OF TOPSOIL AND PERMANENTLY STABILIZE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL PLANS AND COMPUTATIONS TO HOWARD COUNTY WITHIN 30 DAYS OF COMPLETION. THOSE AREAS. (2 WEEKS) U.S. DEPARTMENT OF AGRICULTURE TURAL RESOURCES CONSERVATION SERVICE MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE ATURAL RESOURCES CONSERVATION SERVICE MARYLAND DEPARTMENT OF ENVIRONMENT 2011 TURAL RESOURCES CONSERVATION SERVICE STANDARD SYMBOL STANDARD SYMBOL DETAIL F-3 PORTABLE SEDIMENT TANK DETAIL G-2-4 BAFFLE BOARDS **⊠**PST SOIL TABLE ---**DETAIL E-9-2 AT-GRADE INLET PROTECTION** AGIP DETAIL D-3-2 GABION INFLOW PROTECTION GP G DETAIL E-9-7 GABION INLET PROTECTION BAFFLES ARE REQUIRED TO PROVIDE FLOW LENGTH BETWEEN INFLOW POINT MAXIMUM DRAINAGE AREA = 1½ AC HYDROLOGIC EROSION -LIFT HOLES MAXIMUM DRAINAGE AREA = 1 ACF SOIL NAME SOIL GROUP FACTOR, KW BOARD AND OUTLET EQUAL TO TWICE THE REMOVABLE INFLOW PIPE-EFFECTIVE TRAP/BASIN WIDTH. (OUTLET) --- OUTFLOW ChB - CHILLUM-RUSSETT LOAMS, 2-5% SLOPES 0.43 72 IN PIPE - 14 IN GALVANIZED HARDWARE CLOTH 60 IN PERFORATED PIPE -C/D 0.32 FaaA - FALLSINGTON SANDY LOAMS, 0-2% SLOPES NONWOVEN GEOTEXTILE - ¾ TO 1½ IN STONE 2 FT CLEANOUT DEPTH 0.32 SaB - SASSAFRAS LOAM, 2-5% SLOPES -WATERTIGHT CAP OR 1/4 IN STEEL NISC - SASSAFRAS AND CROOM SOILS, 5-10% SLOPES 0.32 PLATE WELDED ON EACH PIPE IONWOVEN GEOTEXTILE 4 IN OF CLEAN 2 TO 3 IN STON **ELEVATION** UtD - URBAN LAND-URDORTHENTS COMPLEX, 0-15% SLOPES NONWOVEN GEOTEXTILE EROSION FACTOR, Kw., FOR SOIL SURVEY OF HOWARD COUNTY, MD 2003. COMAR DEFINES HIGHLY ERODIBLE SOILS AS THOSE SOILS WITH SLOPES GREATER THAN 15% POOL OR SOILS WITH A K FACTOR GREATER THAN 0.35 AND WITH SLOPES GREATER THAN 5%. SABION BASKETS IONWOVEN GEOTEXTILE PLAN / CUT AWAY VIEW PLAN VIEW Le=L1+L2 -4 IN HARDWARE CLOTH RISER (OUTLET) -¾ TO 1½ IN STONE PLAN VIEW -INLET GRATE NONWOVEN GEOTEXTILE PROVIDE 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP CAPACITY. REQUIRED STORAGE VOLUME MAY BE ATTAINED BY PLACEMENT OF TANKS IN PARALLEL WITH INFLOW EVENLY PROPOSED / EXISTING INLET PROFILE ALONG CENTERLINE CROSS SECTION -BAFFLE BOARD SECTION A-A CONSTRUCTION SPECIFICATIONS OVERLA USE 60 INCH CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES PLAN VIEWS ON CENTER FOR THE INNER PIPE, LINE PIPE WITH NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, SANDWICHED BETWEEN, AND ATTACHED TO, 1/2 INCH HARDWARE CLOTH. USE BASKETS MADE OF 11 GAUGE WIRE OR HEAVIER. THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND CONSTRUCTION SPECIFICATIONS SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT WRAP 3 FEET x 3 FEET GABION BASKETS (LENGTH VARIABLE) WITH NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVERLAPPING AT THE TOP AND FASTEN THE GEOTEXTILE AT THE TOP OF THE BASKET WITH WIRE FASTENERS (HOG RINGS) AT A MAXIMUM OF 1 FOOT INTERVALS SET ELEVATION AT ½ OF THE DRY STORAGE (WET STORAGE ELEVATION + DRY STORAGE CROSS SECTION PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND OVERLAP GEOTEXTILE 8 INCHES MINIMUM AT VERTICAL SEAM AND AT THE BOTTOM PLATE. ALONG SIDES OF ALL GABION BASKETS. ELEVATION / 2) OR 6 IN BELOW WEIR CREST SHEETS OF 4 FT x 8 FT x ½ IN CDX EXTERIOR GRADE PLYWOOD OR EQUIVALENT CONSTRUCTION SPECIFICATIONS ANCHOR GEOTEXTILE AT BOTTOM OF TANK WITH 4 INCHES OF 2 TO 3 INCH CLEAN STONE OR (OUTLET) WHICHEVER IS LOWER USE BASKETS MADE OF MINIMUM 11 GAUGE WIRE Kohunt gor EQUIVALENT RECYCLED CONCRETE. 5. AVOID TEARING OR DAMAGING GEOTEXTILE. CONSTRUCT GABION INFLOW PROTECTION BY ARRANGING 9 X 3 X 1 FOOT GABION BASKETS TO FORM A TRAPEZOIDAL SECTION WITH A 3 FOOT BOTTOM WIDTH, 1 FOOT MINIMUM DEPTH, 3 FOOT SIDE WALLS, AND 2:1 OR FLATTER SIDE SLOPES. FILL GABION BASKETS WITH 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WEIR MESH. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. USE 72 INCH CORRUGATED METAL OR PLASTIC OUTER PIPE WITH PERMANENT OUTFLOW PIPE WITH 4 IN SQUARE OF 5 IN ROUND SET AT LEAST 3 FT . ENTRENCH GABION BASKETS TO A DEPTH OF 6 INCHES. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE. INVERT LOWER THAN INFLOW PIP LEXISTING GROUND VELOPER'S CERTIFICAT . PLACE AND INTERLOCK GABION BASKETS WITH NO GAPS. . INFLOW PIPE MUST DISCHARGE INTO INNER PIPE AND BE REMOVABLE. WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE PLACE CLEAN 3/4 TO 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE. INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE. FILL GABION BASKETS WITH CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT PLACE TANK ON LEVEL SURFACE AND DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE. ONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS ONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN TH STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED A PORTABLE SEDIMENT TANK REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT ONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING FROM INNER PIPE WHEN IT REACHES TWO FEET IN DEPTH. IF SYSTEM CLOGS, PULL OUT INNER PIPE, REMOVE ACCUMULATED SEDIMENT, AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF BLEND GABIONS INTO EXISTING GROUND INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE 4 FT CENTER TO CENTER T A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND BAFFLE DETAIL POINTS OF INFLOW AND OUTFLOW FREE OF EROSION EGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE NSRECTION BY THE HOWARD SOIL CONSERVATION DISTRICT." MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION J.S. DEPARTMENT OF AGRICULTURE VAL RESOURCES CONSERVATION SERVICE MARYLAND DEPARTMENT OF ENVIRONMEN MARYLAND DEPARTMENT OF ENVIRONMEN WATER MANAGEMENT ADMINISTRATION MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION U.S. DEPARTMENT OF AGRICULTURE U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION U.S. DEPARTMENT OF AGRICULTURE 11/18/20 NATURAL RESOURCES CONSERVATION SERVICE DATE SIGNATURE OF DEVELOPER CHRISTA WILLIAMS PERMIT INFORMATION CHART Description ADDRESS CHART APPROVED: DEPARTMENT OF PLANNING & ZONING **ENGINEER'S CERTIFICATE BALTIMORE GAS EROSION &** I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL LOT/PARCEL NO ROJECT NAME SECTION/AREA REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY MAP/GRID/PARCEL & ELECTRIC STREET ADDRESS SEDIMENT 2.26.2 PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT I **BGE HOWARD SERVICE CENTER** DATE WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF CHIEF, DEVELOPMENT ENGINEERING DIVISION SITERESOURCES ONTROL NOTES 5130 ILCHESTER RD., ELLICOTT CITY, MD 21043 TAX MAP NO. ELECT DISTRICT CENSUS TRAC THE HOWARD SOIL CONSERVATION DISTRICT. LAT#ORL/F **BGE HOWARD SERVICE CENTER** PARCEL 0557 Creative Design. Successfully Engineer 20 **ESC2.12** DATE CHIEF, DIVISION OF LAND DEVELOPMENT \*\* 4315 Jarrettsville Pike, Phoenix, MD 21131-0249 5130 ILCHESTER ROAD WATER CODE SEWER CODE 410.683.3388 www.siteresourcesinc.com 11.22.20 **ELLICOTT CITY, MD 21043 NEW SERVICE CENTER AND FLEET** Con ATTN: CHRISTA WILLIAMS, 410-470-5032 **SHEET 37 OF 52** ENNIFER MARRINGTON, P.E. -ÆNGINEER WS OF THE STATE OF MARYLAND, LICENSE NO. MAINTENANCE BUILDINGS DATE

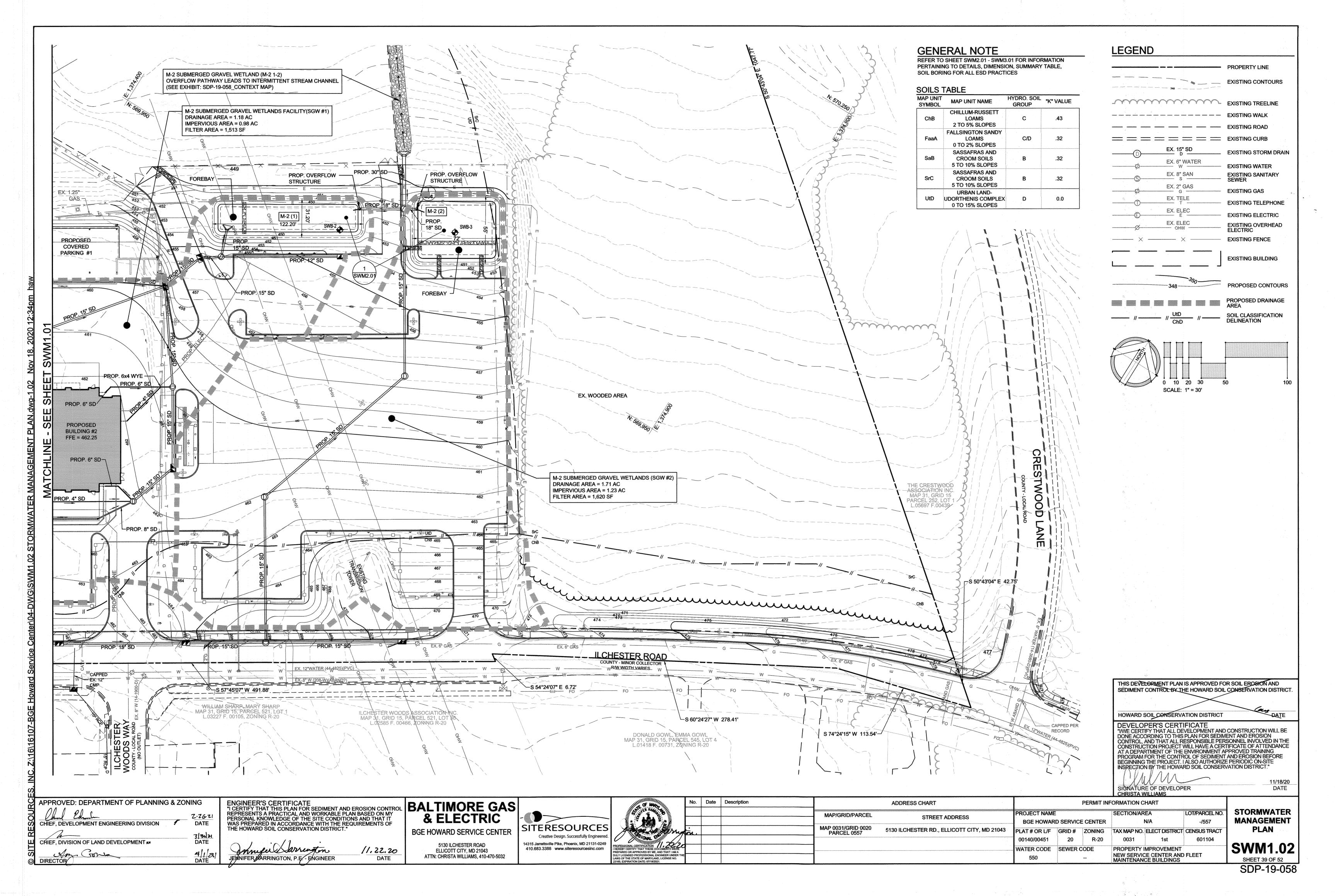
STANDARD STABILIZATION NOTE

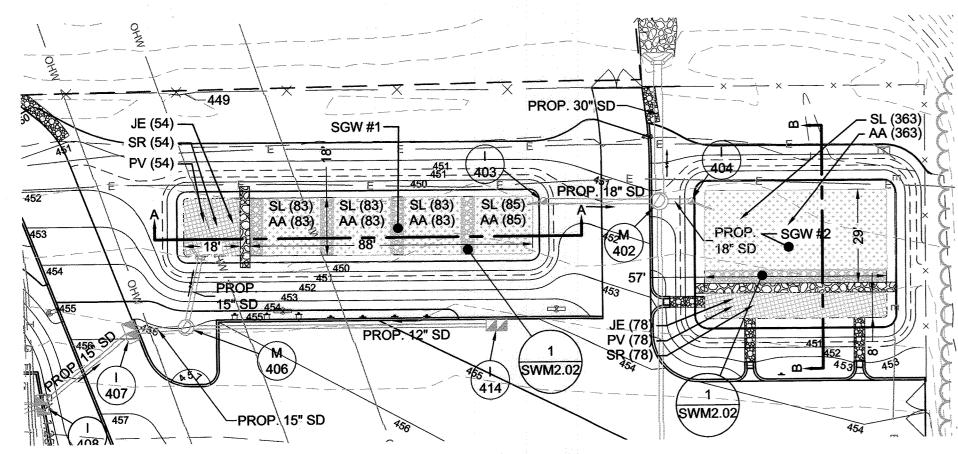
SDP-19-058

**DESIGN NARRATIVE** 

HSCD STANDARD SEDIMENT CONTROL NOTES





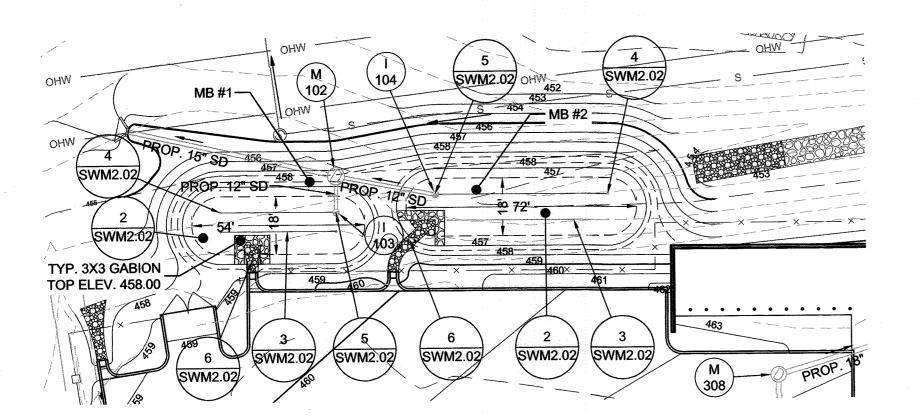


SUBMERGED GRAVEL WETLAND PLAN (M-2)

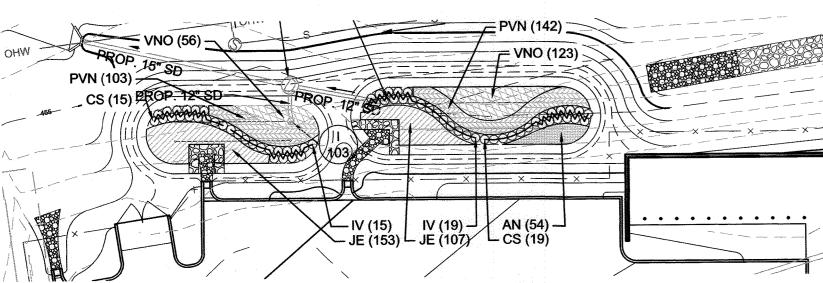
# PLANTING SCHEDULE FOR SUBMERGED GRAVEL WETLANDS

QTY	KEY	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	COMMENTS
PERE	NNIA	LS/ ORNAMENTAL GRASSES				
132	JE	JUNCUS EFFUSUS	COMMON RUSH	18" O.C.	#1	INTERPLANT IN PRE-TREATMENT AREA
132		PANICUM VIRGATUM 'SHENADOAH'	SHENANDOAH SWITCHGRASS	24" O.C.	#1	INTERPLANT IN PRE-TREATMENT AREA
697	AA	PELTANDRA VIRGINICA	ARROW ARUM	18" O.C.	#1	INTERPLANT IN SUBMERGED GRAVEL WETLAN
697		SAGITTARIA LATIFOLIA	BROADLEAF ARROWHEAD	18" O.C.	#1	INTERPLANT IN SUBMERGED GRAVEL WETLAN
132		SOLIDAGO RUGOS 'FIREWORKS'	'FIREWORKS' GOLDENROD	18" O.C.	#1	INTERPLANT IN PRE-TREATMENT AREA
102.	O. C	GOEID/GO KOGGO :E	1		<del></del>	

GENERAL PLANT COMMENT: ALL PLANTS SHALL BE FULLY ROOTED IN THE CONTAINER, AND SIZE OF PLANT SHALL BE FULL AND HEAVY WITH A CONSIST FORM



### MICRO-BIORETENTION PLAN (M-6) SCALE: 1" = 30'



# MICRO-BIORETENTION PLANTING PLAN

		SCHEDULE FOR MICRO-E		SPACING	SIZE	COMMENTS
QTY	KEY	BOTANICAL NAME	COMMON NAME	SEAGING	OIZL	OOMMENTE
SHRUBS	3		<u> </u>			
34	CS	CORNUS SERICEA 'ARCTIC FIRE'	RED TWIG DOGWOOD	36" O.C.	3 GALLON	
34	IV	ITEA VIRGINICA 'LITTLE HENRY'	LITTLE HENRY SWEETSPIRE	36" O.C.	3 GALLON	A COLLEGE OF THE COLL
PERENN	IALS/ OR	NAMENTAL GRASSES				
54	AN	ASTER NOVI-BELGII	NEW YORK ASTER	18" O.C.	#1 CONT.	1000
260	JE	JUNCUS EFFUSUS	COMMON RUSH	18" O.C.	#1 CONT.	THE COLUMN TO SERVICE AND ADDRESS OF THE COLUMN
245	PVN	PANICUM VIRGATUM 'NORTHWIND'	NORTHWIND SWITCHGRASS	18" O.C.	#1 CONT.	with Agent Adaptive
179	VNO	VERNONIA NOVEBORACENSIS	NEW YORK IRONWEED	18" O.C.	#1 CONT.	

## -PROP. GRADE -EX. GROUND -PRETREATMENT -3'x3' GABION BASKET FILTER BED ELEV 449.30 PROP. 12" SD (NE) INV. OUT 447.92 √ → 18' TYP. <del>-</del> @ 1.00% SWM2.02 - IMPERMEABLE LINER

-PRETREATMENT ~3'x3' GABION BASKET FILTER BED ELEV 449.00 INV. OUT 447.60 √-6' TYP. @ 1.00% IMPERMEABLE LINER -

SECTION A-A SCALES: HORIZ. 1" = 30' **VERT. 1" = 5'** 

**SECTION B-B** 

SCALES: HORIZ. 1" = 30' **VERT. 1" = 5'** 

### OPERATION AND MAINTENANCE SCHEDULE

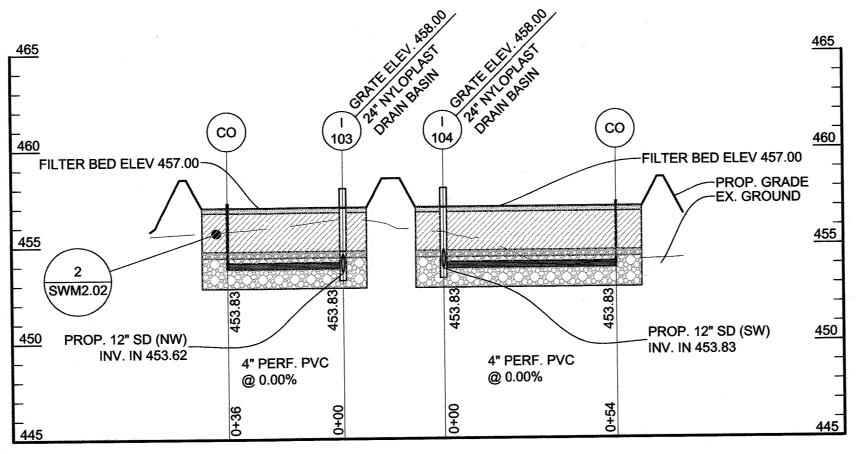
SUBMERGED GRAVEL WETLANDS (SGW #1-2) DURING THE FIRST YEAR OF OPERATION, THE OWNER SHALL INSPECT THE FACILITY AFTER EVERY HEAVY STORM AND REPLACE VEGETATION AS NEEDED. THE OWNER SHALL REMOVE SEDIMENT ACCUMULATED IN THE PRETREATMENT AREAS AS NECESSARY.

SIGNS OF UNEVEN FLOW WITHIN THE WETLAND MAY MEAN THAT THE GRAVEL OR UNDERDRAIN IS CLOGGED. THE GRAVEL OR UNDERDRAIN SHALL BE

REMOVED, CLEANED, AND REPLACED, AS NEEDED. THE OWNER SHALL ENSURE A DENSE STAND OF WETLAND VEGETATION IS MAINTAINED THROUGH THE LIFE OF THE FACILITY AND REPLACE VEGETATION AS

THE OWNER SHALL ENSURE THE INLETS AND OUTLETS TO EACH GRAVEL WETLAND CELL ARE FREE FROM DEBRIS.

THE OWNER SHALL REPAIR EROSION AT INFLOW POINTS AND ENSURE FLOW SPLITTERS ARE FUNCTIONAL TO PREVENT STORM WATER FROM BYPASSING THE FACILITY



PROFILE - CO TO E-262

SCALES: HORIZ. 1" = 30' VERT. 1" = 5'

### OPERATION AND MAINTENANCE SCHEDULE

MICRO-BIORETENTION AREAS (MB #1-2) INSPECTION SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY. VISUAL INSPECTION OF ALL COMPONENTS SHALL BE

COMPLETED BY THE OWNER. ALL DRAINS SHALL BE OPENED BY THE OWNER ONCE A YEAR. THE OWNER SHALL KEEP NOTES OF EACH INSPECTION. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE

WILL ADDRESS DEAD MATERIAL AND PRUNING. DEBRIS AND LITTER SHALL BE REMOVED AS A REGULAR OPERATION AND AS NEEDED. ALL APPURTENANCES SHALL BE KEPT FREE OF TRASH. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED

BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES. WATERING OF PLANT MATERIAL MAY BE REQUIRED DURING PROLONGED DRY PERIODS. MULCH SHALL BE INSPECTED EACH SPRING. REPLACE MULCH ANNUALLY WHERE PRACTICE TREATS AREAS WITH HIGH CONCENTRATIONS OF HEAVY METALS. OTHERWISE,

REPLACE TOP 2-3 INCHES OF MULCH AS NECESSARY. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

REMOVE ACCUMULATED SEDIMENT FROM THE SURFACE OF THE FILTER BED WHEN ACCUMULATION EXCEEDS ONE INCH. WHEN WATER PONDS FOR MORE THAN 48 HOURS, THE TOP FEW INCHES OF FILTER MEDIA SHOULD BE REMOVED AND REPLACED.

9. ALL REQUIRED MAINTENANCE SHALL BE PERFORMED BY THE OWNER OR THE OWNER'S REPRESENTATIVE AT THE OWNER'S EXPENSE.

PROJECT NAME: BGE HOWARD SERVICE CENTER AS-BUILT DATA FOR SUBMERGED GRAVEL WETLAND (SGW #1) \*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER TYPE OF FACILITY: SUBMERGED GRAVEL WETLAND ESDID: M-2 **FEATURE** FILTER BED DIMENSIONS & AREA 450.50 **GRATE ELEVATION** FINISHED GRADE SURFACE ELEVATION TOP ELEVATION 448.1 #57 STONE #57 STONE BOTTOM ELEVATION DATE AS-BUILT

ACCEPTED BY COUNTY:

PROJECT NAM	ME: BGE HOWARD SER	VICE CENTER	<u> </u>
	GRAVEL WETL THE CONTRACTOR'S	AND (SGW #2	2) INEER
TYPE OF FACILITY: SUBMERO	SED GRAVEL WET	LAND ESDID:	M-2
FEATURE	DESIGN	*AS-BU	LT
FILTER BED DIMENSIONS & AREA	57' X 29' (1620 SF)		
GRATE ELEVATION	450.50		~
FINISHED GRADE SURFACE ELEVATION	449.0		
TOP ELEVATION #57 STONE	447.8		·
#57 STONE BOTTOM ELEVATION	445.8		

<u> </u>			(M-6) MB #1	0.3
TOP ELEVATION #57 STONE	(M-6) MB #2	0.4		
#57 STONE BOTTOM ELEVATION	445.8		TOTAL PR	ROVIDE
DATE AS-BUILT ACCEPTED BY COUNTY:	REQUIRE			
	ME: BGE HOWARD SERVICE	·	NOTE: AS-BUILT PLANS AN	ND CEF
AS-BUILT DATA FO	OR MICRO-BIORET	DIENTION (ND #1)	STORMWATER MAN	

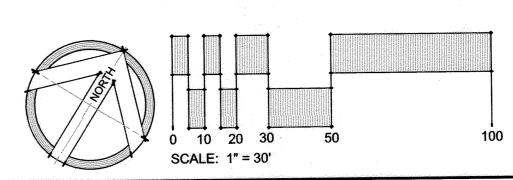
*TO BE COMPLETED BY	THE CONTRACTOR'S CE	RTIFYING ENGI	NEER
TYPE OF FACILITY: MICRO-BIO	DRETENTION	ESD ID:	M-6
FEATURE	DESIGN	*AS-BUIL	т ]
FILTER BED DIMENSIONS & AREA	18' X 54' (903 SF)		
GRATE ELEVATION	458.00		
FINISHED GRADE SURFACE ELEVATION	457.0		
TOP ELEVATION FILTER MEDIA	456.8		
TOP ELEVATION #8 STONE	454.8		
TOP ELEVATION #2 STONE	454.4	an and the second s	
UNDERDRAIN INVERT	453.83		
#2 STONE BOTTOM ELEVATION	453.3		

DATE AS-BUILT ACCEPTED BY COUNTY:

 PROJECT NAME: BGE HOWARD SERVICE CENTER	_
AS-BUILT DATA FOR MICRO-BIORETENTION (MB #2) *TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER	

TYPE OF FACILITY: MICRO-BI	ORETENTION	ESD ID:	M-6	
FEATURE	DESIGN	*AS-BUIL	BUILT	
FILTER BED DIMENSIONS & AREA	18' X 72' (1,227 SF)			
GRATE ELEVATION	458.00		*	
FINISHED GRADE SURFACE ELEVATION	457.0			
TOP ELEVATION FILTER MEDIA	456.8			
TOP ELEVATION #8 STONE	454.8			
TOP ELEVATION #2 STONE	454.4			
UNDERDRAIN INVERT	453.83			
#2 STONE BOTTOM ELEVATION	453.3			

DATE AS-BUILT ACCEPTED BY COUNTY:



SITE AREA TA	\Bl	JLATION
SWM STUDY AREA	=	9.0 Ac
EX. IMPERVIOUS AREA	=	6.48 AC > 40%
PROP. IMPERVIOUS AREA	=	5.92 AC
TARGET PE	=	1.0 inches
IART	=	2.68 AC
ESD VOLUME REQUIRED	=	9,242 CF

THIS REDEVELOPMENT PROJECT IS REQUIRED TO PROVIDE AN IMPERVIOUS AREA REDUCTION AND/OR WQ TREATMENT FOR 50% OF THE

= 50% X 6.48AC = 3.24 AC 50% X EXISTING IMPERVIOUS = 0.56 ACIMPERVIOUS AREA REDUCTION = 2.68 ACIMPERVIOUS AREA REQUIRING TREATMENT

**ESDV REQUIRED** 

TWO SUBMERGED GRAVEL WETLANDS AND TWO MICRO-BIORETENTION

= 9,242 CF

PROVIDE THE REQUIRED SWM TREATMENT FOR THIS REDEVELOPMENT

## TREATMENT SUMMARY TABLE

PRACTICE	DRAINAGE AREA (AC)	IMP. AREA (AC)	ESD VOL. PROV'D (CF)	Pe (IN)
(M-2) SGW #1	1.23	1.03	3,608	1.0
(M-2) SGW #2	1.65	1.17	4,715	1.1
(M-6) MB #1	0.38	0.36	1,027	1.0
(M-6) MB #2	0.49	0.30	1,381	1.1
TOTAL	PROVIDED	2.86	10,731	1.1
4	REQUIRED	2.68	9,242	1.0

ERTIFICATION ARE REQUIRED FOR THIS MENT FACILITIES. THESE MUST BE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. HOWARD COUNTY WILL NOT PERFORM THE INSPECTION OR PREPARE THE AS-BUILT PLANS OR CERTIFICATION. THE STORMWATER MANAGEMENT PERMIT SECURITY WILL NOT BE RELEASED UNTIL THE AS-BUILT PLAN AND CERTIFICATION ARE APPROVED BY HOWARD

IT IS THE CONTRACTOR'S RESPONSIBILITY, ON BEHALF OF THE OWNER, TO ENGAGE A LICENSED PROFESSIONAL ENGINEER TO CERTIFY THE STORMWATER MANAGEMENT FACILITY AND TO PREPARE AND SUBMIT AS-BUILT DRAWINGS. "CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED ON SUFFICIENT AND APPROPRIATE ONSITE OBSERVATIONS AND/OR INSPECTIONS AT CRUCIAL MILESTONES DURING CONSTRUCTION OF THE FACILITY, MATERIAL TESTS CONDUCTED DURING CONSTRUCTION, AND POST-CONSTRUCTION SURVEYING AND VERIFICATION

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

HOWARD SOIL CONSERVATION DISTRICT

DEVELOPER'S CERTIFICATE
"IWE 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 OF DEVELOPER

11/18/20 DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

DATE HIEF, DEVELOPMENT ENGINEERING DIVISION 3/30/21 HIEF, DIVISION OF LAND DEVELOPMENT NA DATE DATE

GENERAL PLANT COMMENT: ALL PLANTS SHALL BE FULLY ROOTED IN THE CONTAINER,

AND SIZE OF PLANT SHALL BE FULL AND HEAVY WITH A CONSIST FORM

ENGINEER'S 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."

BALTIMORE GAS & ELECTRIC

BGE HOWARD SERVICE CENTER

11.22.20

**BGE HOWARD SERVICE CENTER** 

5130 ILCHESTER ROAD

ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032

SITERESOURCES Creative Design. Successfully Engineer 14315 Jarrettsville Pike, Phoenix, MD 21131-0249 410.683.3388 www.siteresourcesinc.com

No. Date Description

ADDRESS CHART MAP/GRID/PARCEL STREET ADDRESS 5130 ILCHESTER RD., ELLICOTT CITY, MD 21043

ROJECT NAME **BGE HOWARD SERVICE CENTER** WATER CODE SEWER CODE

CHRISTA WILLIAMS PERMIT INFORMATION CHART LOT/PARCEL NO SECTION/AREA -/557 TAX MAP NO. ELECT DISTRICT CENSUS TRACT PROPERTY IMPROVEMENT NEW SERVICE CENTER AND FLEET MAINTENANCE BUILDINGS

**STORMWATER MANAGEMENT DETAILS &** NOTES **SWM2.01** 

> **SHEET 40 OF 52** SDP-19-058

### MARYLAND STORMWATER DESIGN MANUAL CONSTRUCTION SPECIFICATIONS FOR MICRO-BIORETENTION

B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDENS, LANDSCAPE INFILTRATION AND INFILTRATION BERMS 1. MATERIAL SPECIFICATIONS - THE ALLOWABLE MATERIALS TO BE USED IN THESE

PRACTICES ARE DETAILED IN TABLE B.4.1. 2. FILTERING MEDIA OR PLANTING SOIL - THE SOIL SHALL BE SHA 920.01.05

#### 3. COMPACTION

**BIORETENTION SOIL MIX (BSM)** 

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.

RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

#### 5. PLANT INSTALLATION

COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.

TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE

GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

- UNDERDRAINS UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA PIPE- SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE
- PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC). PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A ¼" (NO. 4 OR 4X4) GALVANIZED HARDWARE
- GRAVEL THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
- THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
- A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.
- A 4" LAYER OF PEA GRAVEL (1/4" TO 1/4" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED

DATE

### 920.01.05 MDSHA BIORETENTION SOIL MIX

920.01.05 BIORETENTION SOIL MIX (BSM). A HOMOGENEOUS MIXTURE COMPOSED BY LOOSE VOLUME OF 5 PARTS COARSE SAND, 3 PARTS BASE SOIL, AND 2 PARTS FINE BARK. BSM SHALL CONFORM TO THE FOLLOWING:

### (a) COMPONENTS. COMPONENTS OF BSM SHALL BE SAMPLED, TESTED AND

APPROVED BEFORE MIXING AS FOLLOWS (1) COARSE SAND. MSMT 356. COARSE SAND SHALL BE WASHED SILICA SAND OR CRUSHED GLASS THAT CONFORMS TO ASTM FINE AGGREGATE C-33. COARSE

PARTICLES, AND LESS THAN 5% BY WEIGHT OF ANY COMBINATION OF DIABASE, GREYSTONE, CALCAREOUS OR DOLOMITIC SAND. (2) BASE SOIL. BASE SOIL SHALL BE TESTED AND CERTIFIED BY THE PRODUCER TO CONFORM TO THE FOLLOWING REQUIREMENTS:

SAND SHALL INCLUDE LESS THAN 1% BY WEIGHT OF CLAY OR SILT SIZE

TO CONFORM TO THE FOLLOWING REQUIREMENTS.						
		COM	POSITION - BASE SOIL	<del>-</del>		
TEST PROPERTY	TEST METHOD	Т	TEST VALUE AND AMENDMENT			
PROHIBITED WEEDS	-	1	FREE OF SEED AND VIABLE PLANT PARTS OF SPECIES IN 920.06.02(a)(b)(c) WHEN INSPECTE			
DEBRIS	-	NO OBSERVABLE CONTENT OF CEMENT, CONCRETE, ASPHALT, CRUSHED GRAVEL OR CONSTRUCTION DEB WHEN INSPECTED.				
ODADINO			SIEVE SIZE	PASSING BY WEIGHT MINIMUM %		
GRADING ANALYSIS	T 87	2 IN.		100		
ANALISIS		NO. 4		90		
		NO. 10		80		
	T 88	PARTICLE		% PASSING BY WEIGHT		
		SIZE	mm	MINIMUM	MAXIMUM	
TEXTURAL ANALYSIS		SAND	2.0-0.050	50	85	
ANALISIS		SILT	0.050-0.002	5	45	
		CLAY	LESS THAN 0.002	5	10	
SOIL pH	D 4972	pH OF	5.7 TO 6.9			
ORGANIC MATTER	T 194	1.0 TO 10.0% BY WEIGHT				
SOLUBLE SALTS	EC1:2 (V:V)	500 ppm (1.25 mmhos/cm) OR LESS				
HARMFUL MATERIALS	-	920.01.01(a)				

(3) FINE BARK. FINE BARK SHALL BE THE BARK OF HARDWOOD TREES THAT IS MILLED AND SCREENED TO A UNIFORM PARTICLE SIZE OF 2 IN. OR LESS. FINE BARK SHALL BE COMPOSTED AND AGED FOR 6 MONTHS OR LONGER, AND BE FREE FROM SAWDUST AND FOREIGN MATERIALS. A 1 TO 2 LB SAMPLE OF FINE BARK SHALL BE SUBMITTED TO THE LANDSCAPE OPERATIONS DIVISION

(b) COMPOSITION. BSM SHALL BE SAMPLED AND TESTED ACCORDING TO THE REQUIREMENTS OF MSMT 356 AND CONFORM TO THE FOLLOWING:

	COMPO	OSITION	- BIORETE	NTION SC	IL MIX (B	SM)		
TEST PROPERTY	TEST METHOD	TEST VALUE AND AMENDMENT						
WEEDS	-		OF SEED AI ES IN 920.0			PARTS OF INSPECTED	).	
DEBRIS	-	920.01	.05(a)(2)	-				
			PARTICL	.E	% F	PASSING BY	WEIGHT	
TEVTUDAL		SIZE	n	nm	MIN	IMUM	MAXIMUM	
TEXTURAL ANALYSIS	T 88	SAND	2.0-(	0.050	· .	55	85	
MALIOIO		SILT	0.050	-0.002		-	20	
		CLAY LESS TH		IAN 0.002		1	8	
SOIL pH	D 4972	pH OF 5.7 TO 7.1						
ORGANIC MATTER	T 194	MINIM	JM 1.5% BY	WEIGHT				
		CONCENTRATION						
	NT	ELEMENT		MINIM	IUM	MAX	(IMUM	
				ppm	FIV	ppm	FIV	
NUTRIENT		CALCII	UM (Ca)	32	25	NO LIMIT	NO LIMIT	
<b>ANALYSIS</b>	MEHLICH-3	MAGNE	ESIUM (Mg)	15	25	NO LIMIT	NO LIMIT	
AND		PHOSP	HORUS (P)	18	25	92	100	
SOLUBLE		POTAS	SSIUM (K)	22	25	NO LIMIT	NO LIMIT	
SALTS		SULFU	R (SO <sub>4</sub> )	25	N/A	NO LIMIT	NO LIMIT	
EC1:2 (V:V)		SOLUE		40	N/A	500	N/A	
HARMFUL MATERIALS	-	920.01.01(a)						

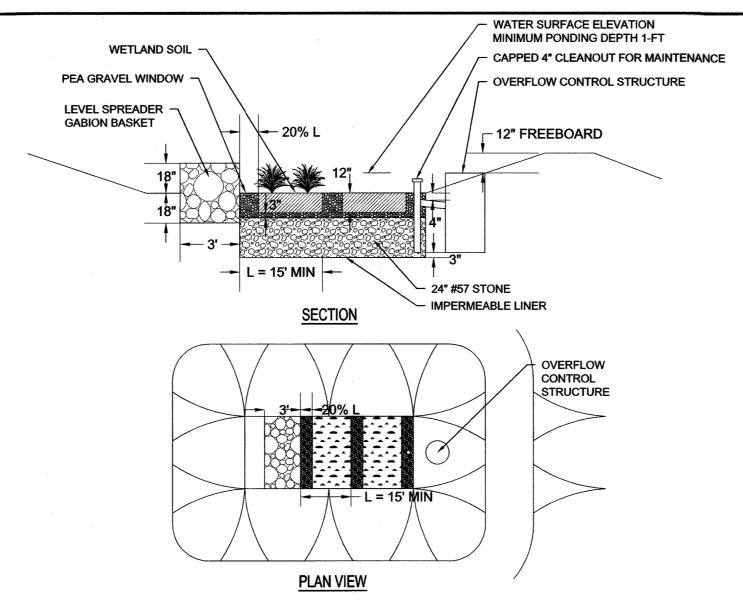
(c) AMENDMENT OR FAILURE. BSM THAT DOES NOT CONFORM TO COMPOSITION REQUIREMENTS FOR PH OR NUTRIENT ANALYSIS SHALL BE AMENDED AS SPECIFIED BY THE NMP. BSM THAT EXCEEDS MAXIMUM PHOSPHORUS CONCENTRATION OR FAILS OTHER COMPOSITION REQUIREMENTS WILL NOT BE ACCEPTED, AND SHALL NOT BE DELIVERED OR USED AS BSM.

(d) STORAGE. 920.01.02(B). BSM SHALL BE STORED IN A STOCKPILE THAT IS PROTECTED FROM WEATHER UNDER TARP OR SHED. BSM STORED FOR 6 MONTHS OR LONGER SHALL BE RESAMPLED, RETESTED, AND REAPPROVED

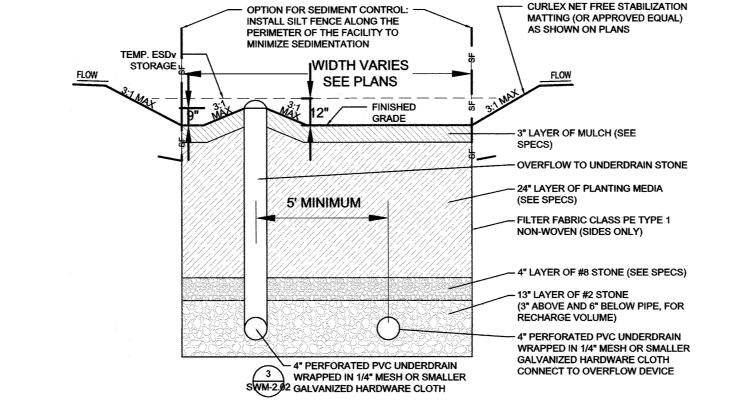
11.22.20

BEFORE USE.

(e) APPROVAL. 920.01.02(C). (f) CERTIFICATION AND DELIVERY. 920.01.02(D).

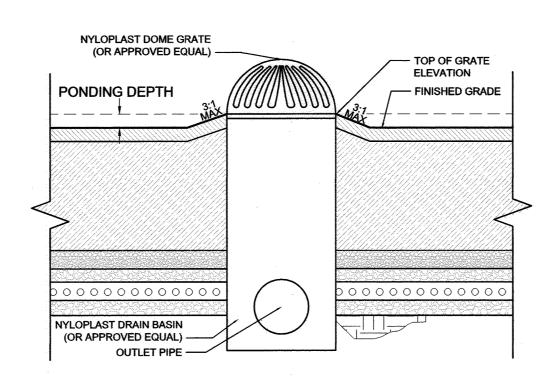


SUBMERGED GRAVEL WETLAND NOT TO SCALE



MICRO-BIORETENTION

NOT TO SCALE

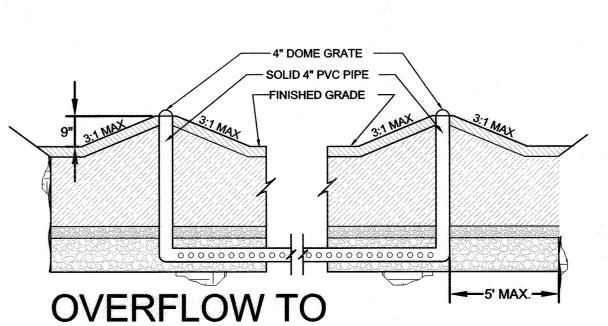


**OVERFLOW DEVICE** APPLIES TO ALL NOT TO SCALE MICRO-BIORETENTION FACILITIES

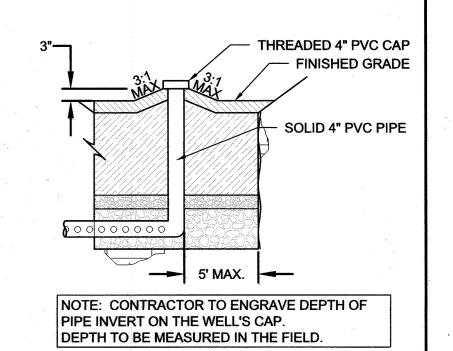
TABLE B.4.1 MATERIAL SPECIFICATIONS FOR MICRO-BIORETENTION, BIO-SWALE RAIN GARDENS & LANDSCAPE INFILTRATION SPECIFICATION NOTES **PLANTINGS** SEE PLANTING PLAN N/A PLANTINGS ARE SITE-SPECIFIC LOAMY SAND (60-65%) & COMPOST (35-40%) USDA SOIL TYPES I CAMT SAND OR SANDY LOAM; CLAY CONTENT < 5% PLANTING SOIL (2' TO 4' DEEP) SANDY LOAM (30%) COARSE SAND (30%) & COMPOST (40%) MIN. 10% BY DRY WEIGHT \* ORGANIC CONTENT (ASTM D 2974) SHREDDED HARDWOOD AGED 6 MONTHS, MINIMUM: NO PINE OR WOOD CHIPS MULCH NO. 8 OR NO. 9 (1/8" TO 3/8") PEA GRAVEL DIAPHRAGM PEA GRAVEL: ASTM-D-448 ORNAMENTAL STONE: WASHED COBBLES STONE: 2" TO 5" **CURTAIN DRAIN GEOTEXTILE** PE TYPE 1 NONWOVEN NO. 57 OR NO. 6 AGGREGATE GRAVEL (UNDERDRAINS AND INFILTRATION BERMS) AASHTO M-43 (%" TO ¾") SLOTTED OR PERFORATED PIPE; 3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4 INCH GALVANIZED HARDWARE F 758, TYPE PS 28 OR AASHTO M-278 SCHEDULE 40 **UNDERDRAIN PIPING** PVC OR SDR 35 ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR MSHA MIX NO. 3; F'c=3500 RE-CAST) *NOT USING PREVIOUSLY APPROVED STATE OR LOCAL* PSI @ 28 DAYS, NORMAL *Standards* requires design drawings sealed and approved by *A* POURED IN PLACE WEIGHT, AIR-ENTRAINED: N/A CONCRETE (IF REQUIRED) PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND REINFORCING TO MEET DESIGN TO INCLUDE MEETING ACI CODE 350.R/89: VERTICAL LOADING (H-10 OR H-20): ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES): AND ANALYSIS OF POTENTIAL CRACKING. ASTM-615-60. SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND AASHTO-M-6 OR ASTM-C-33 0.02" TO 0.04" UBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.

\*SEE MATERIAL SPECIFICATIONS FOR SHA BIORETENTION SOIL MIX (BSM) THIS SHEET FOR SPECIFIC BIORETENTION SOIL MIX

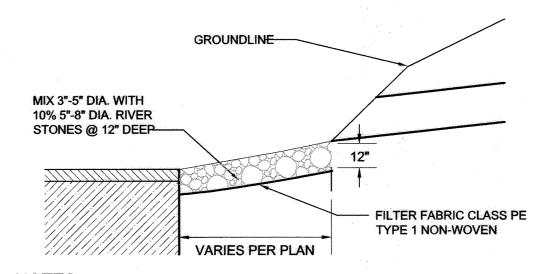
FOR THIS PROJECT



3 UNDERDRAIN STONE NOT TO SCALE



CLEAN-OUT **OBSERVATION WELL** NOT TO SCALE



 FILTER FABRIC FROM SIDES OF MICRO-BIORETENTION THROUGH STONE SHALL BE CONTIGUOUS. WHERE ENDS OF THE FABRIC COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED. 2. CONTRACTOR TO EVENLY WET DOWN FACILITY TO SETTLE PLANTING MEDIA AND REDRESS TOP SURFACE WITH ADDITIONAL PLANTING MEDIA TO SPECIFIED SURFACE ELEVATION PRIOR TO INSTALLING MULCH AND PLANT

MICRO-BIORETENTION RIVER ROCK NOT TO SCALE



APPROVED: DEPARTMENT OF PLANNING & ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT \*\*

Im Gona

**ENGINEER'S 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."

**BALTIMORE GAS** & ELECTRIC **BGE HOWARD SERVICE CENTER** 

5130 ILCHESTER ROAD

ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032



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y Engineered.	SIONAL
21131-0249	PROFESSIONAL CERTIFICATIO
esinc.com	HEREBY CERTIFY THAT THES PREPARED OR APPROVED BY
	DULY LICENSED PROFESSIONAL LAWS OF THE STATE OF MARY

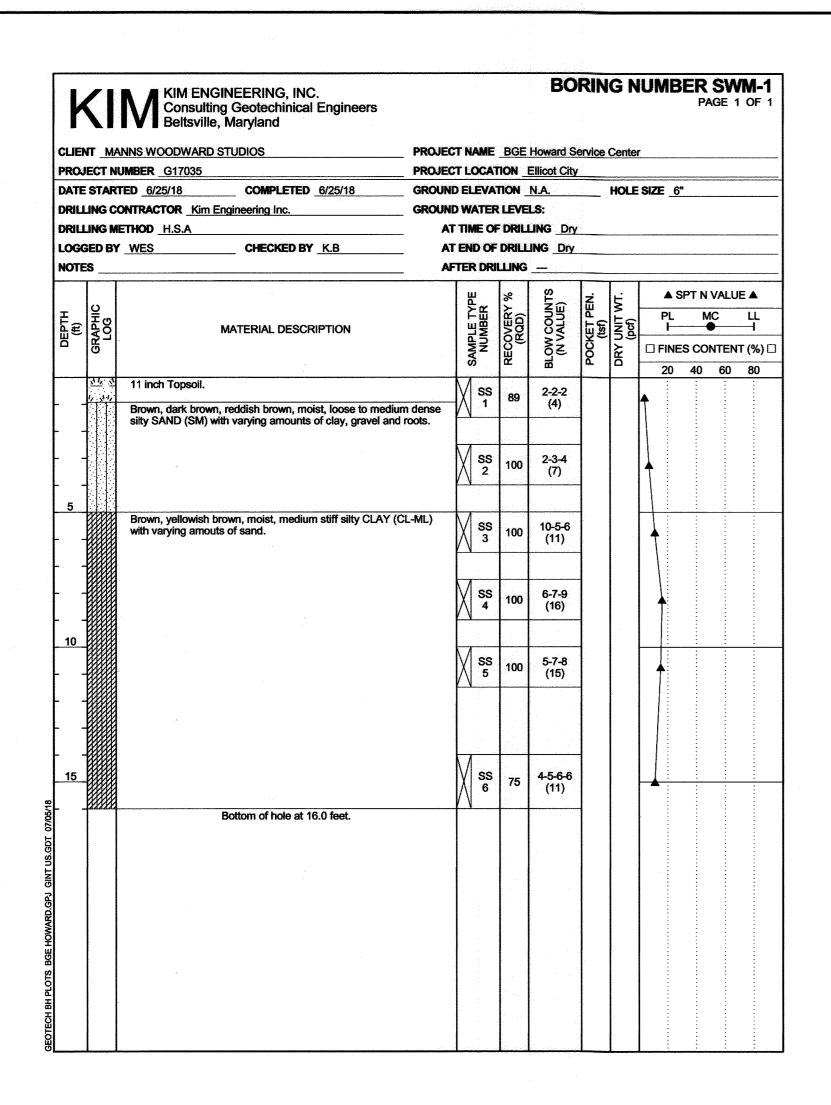
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OF MAP	No.	Date	Description		ADDRESS CHART		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	PERMIT IN	FORMATION (	CHART	
				MAP/GRID/PARCEL	STREET ADDRESS	PROJECT NAMI		E CENTER	SECTION/AI	REA N/A	LOT/PARCEL N -/557
of the state of th				MAP 0031/GRID 0020 PARCEL 0557	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F	GRID#	ZONING		ELECT DISTRICT	
TIFICATION 11. 22.20					·	00140/00451	20	R-20	0031	1st	601104
HAT THESE DOCUMENTS WERE OVED BY ME, AND THAT I AM A PESSIONAL ENGINEER UNDER THE OF MARYLAND, LICENSE NO. NATE: 07(19)7031						WATER CODE 550	SEWER	CODE 	NEW SERVI	IMPROVEMENT CE CENTER ANI ICE BUILDINGS	D FLEET

STORMWATER

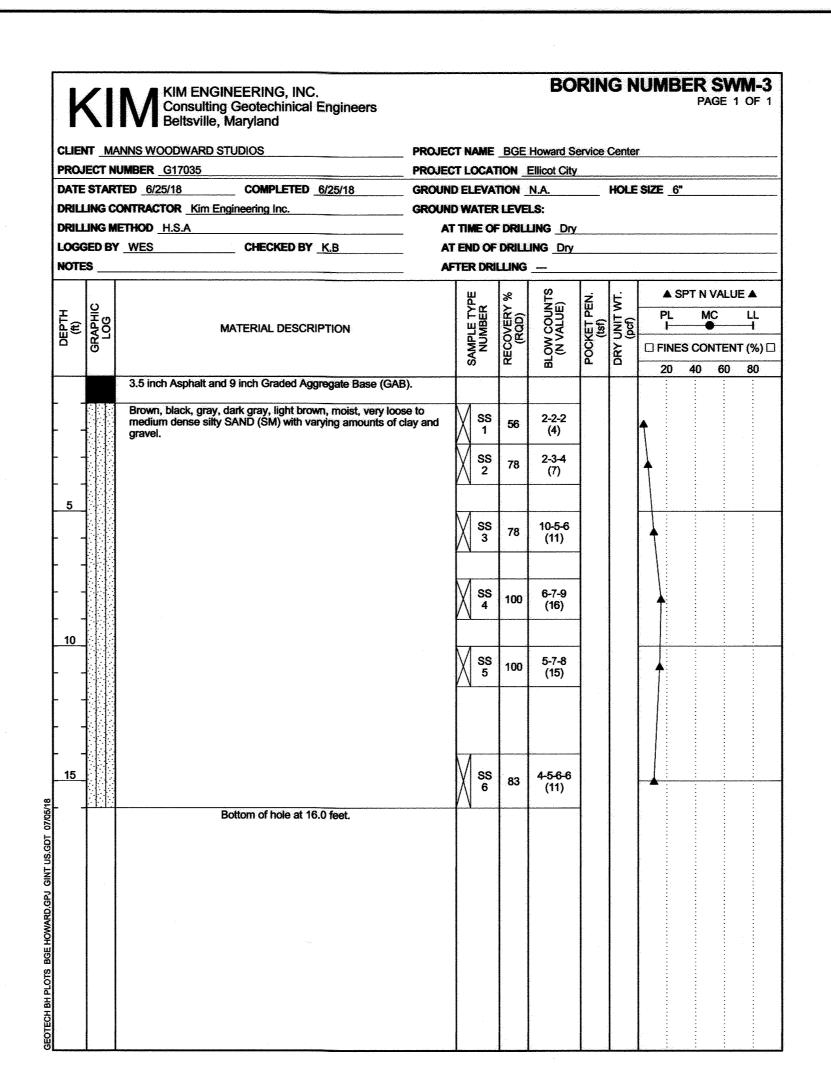
MANAGEMENT

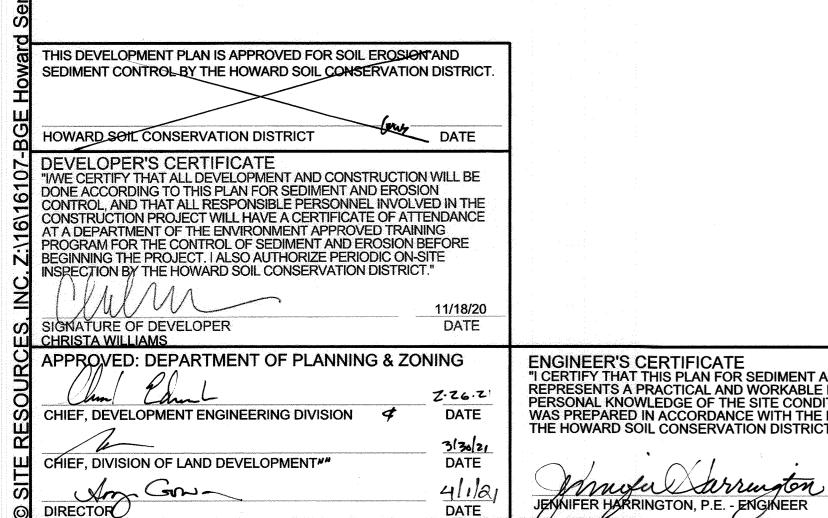
**DETAILS &** 

NOTES



		KIM ENGINEERING, INC. Consulting Geotechinical Engineers Beltsville, Maryland  ANNS WOODWARD STUDIOS	PROJEC	T NAME	BGE	Howard Se	ervice	Cente	r			
		UMBER _G17035				Ellicot City						
DATE	STAR	TED 6/25/18 COMPLETED 6/25/18	GROUN	D ELEVA	TION _	N.A.		HOLE	SIZE 6			
				WATER								
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E_	SEC			SAMPLE TYPE NUMBER	RECOVERY (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	UNIT WT.	PL	M		LL
# (€)	GRAPHIC LOG	MATERIAL DESCRIPTION		PE	Š.	ŏ₹ ≥≥	Α E	58		20.00		<del>-</del>
	ပ			SAN	REC	O E	Š.	DRY	☐ FINE	40	60	80
		3 inch Asphalt and 7 inch Graded Aggregate Base (GAB).	<del></del>	<u> </u>					20	40	:	:
-		Brown, dark brown, yellowish brown, grayish brown, moist, stiff, sandy SILT (ML) with varying amounts of clay.	soft to	SS 1	89	2-2-2 (4)			<b>†</b>			
-				SS 2	89	2-3-4 (7)						
5				V ss ₃	100	4-6-8				:	:	:
_						(14)						
-		Brown, grayish brown, moist, medium dense, silty CLAY (C with varying amounts of sand.	iL-ML)	SS 4	100	4-5-6 (11)			<b>A</b>			
10				SS 5	100	4-6-7 (13)						
- -												
15				SS 6	100	5-6-7-7 (13)				:	:	:
		Bottom of hole at 16.0 feet.				-					:	
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DIRECTOR

DATE

ENGINEER'S 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."

11.22.20

BALTIMORE GAS & ELECTRIC BGE HOWARD SERVICE CENTER

5130 ILCHESTER ROAD ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032



RCES	
ully Engineered. D 21131-0249 cesinc.com	PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOC PREPARED OR APPROVED BY ME, AN DULY LICENSED PROFESSIONAL ENG LAWS OF THE STATE OF MARYLAND.

The second secon				and the second	and the control of th	<u>and also taken a sandara a sandara di sandar</u>	<u> and an anna an an airte an </u>	<u>an ann an aireacht an </u>	<u>a company and a superior and all an arranged in the company of th</u>		<del>aliana, and a second and a second as a se</del>
THE OF MORNING	No.	Date	Description		ADDRESS CHART			PERMIT IN	FORMATION C	HART	
	<del> </del>			MAP/GRID/PARCEL	STREET ADDRESS	PROJECT NAME BGE HOWAR		E CENTER	SECTION/AR	EA N/A	LOT/PARCEL NO. -/557
Million 22.20	Ĩ.			MAP 0031/GRID 0020 PARCEL 0557	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F 00140/00451	GRID # 20	ZONING R-20	TAX MAP NO. 0031	ELECT DISTRICT	CENSUS TRACT 601104
CERTIFICATION  IFY THAIT THESE DOCUMENTS WERE APPROVED BY ME, AND THAT I AM A PROFESSIONAL ENGINEER UNDER THE ITATE OF MARYLAND, LICENSE NO. ION DATE: 0718/2021.						WATER CODE 550	SEWER (	CODE 	NEW SERVICE	MPROVEMENT CE CENTER AND CE BUILDINGS	) FLEET

STORMWATER **MANAGEMENT SOIL BORINGS** 

**SWM3.01 SHEET 42 OF 52** 

### LANDSCAPE NOTES

PROPOSED 8' HIGH CLOSED SECURITY SCREEN FENCE, REFER TO SHEET C2.04 FOR FENCE DETAILS



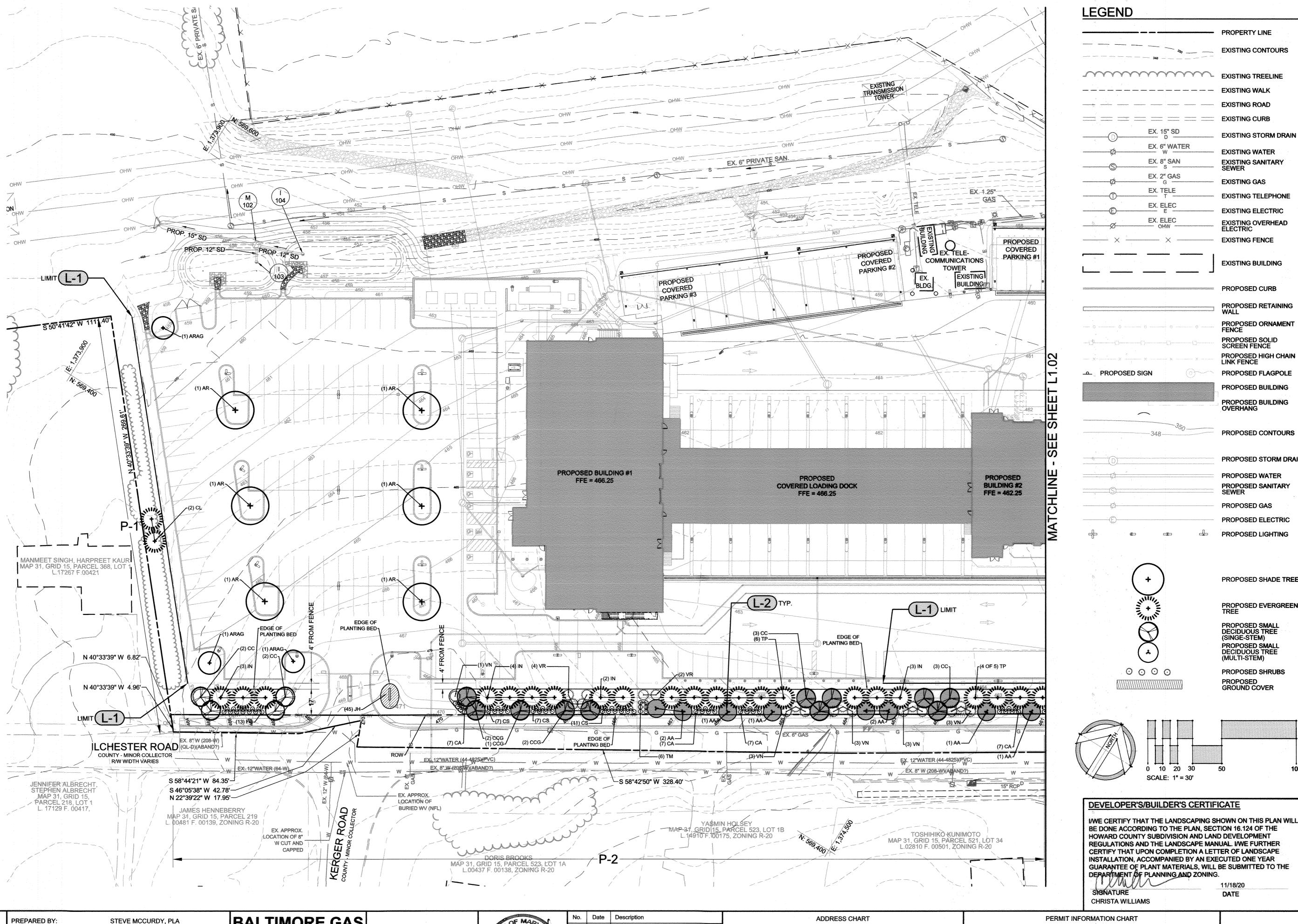
ORNAMENTAL AND MUTI-STEM TREE ALONG ILCHESTER ROAD THAT HAVE A SOLID HATCH WITHIN THE CENTER OF THE TREE INDICATE THAT THEY ARE THE TREES THAT FULFILL THE PROJECT'S STREET TREE REQUIREMENTS. REFER TO THE STREET TREE TABULATION REQUIREMENT ON L2.01 FOR MORE INFORMATION.

### **GENERAL NOTES:**

- FOR PROPOSED LANDSCAPING AND THEIR PROPOSED PLANT SCHEDULE WITHIN SWM FACILITIES, SEE SHEET SWM2.01
- FOR THE PROPOSED PLANT SCHEDULE FOR ALL OTHER PLANTS OUTSIDE OF SWM FACILITIES, SEE SHEET L2.01
- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREE LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.

THE OWNER, TENANTS, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

PLANTING SHOWN BEYOND THE REQUIRED PERIMETER AND PARKING LOT LANDSCAPING IS PROVIDED IN ACCORDANCE WITH THE CONCEPT PLANS PRESENTED TO THE COUNTY DURING DESIGN SELECTION.



APPROVED: DEPARTMENT OF PLANNING & ZONING 2.26.21 CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT NA DATE Any Con-DIRECTOR () DATE STEVE MCCURDY, PLA STATE OF MARYLAND REGISTERED LANDSCAPE ARCHITECT **REGISTRATION NO. 492** 

SIGNATURE

**BALTIMORE GAS** & ELECTRIC **BGE HOWARD SERVICE CENTER** 5130 ILCHESTER ROAD ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032





	ADDRESS CHART	
MAP/GRID/PARCEL	STREET ADDRESS	P
MAP 0031/GRID 0020 PARCEL 0557	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PI
		\[ \begin{align*} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \

PERMIT INFORMATION CHART LOT/PARCEL NO PROJECT NAME SECTION/AREA **BGE HOWARD SERVICE CENTER** TAX MAP NO. ELECT DISTRICT CENSUS TRACT PLAT # OR L/F GRID # ZONING 20 601104 WATER CODE SEWER CODE PROPERTY IMPROVEMENT NEW SERVICE CENTER AND FLEET MAINTENANCE BUILDINGS

LANDSCAPE PLAN

11/18/20

DATE

PROPERTY LINE

**EXISTING ROAD** 

**EXISTING WATER** 

EXISTING SANITARY SEWER

**EXISTING TELEPHONE** 

EXISTING OVERHEAD ELECTRIC

**EXISTING BUILDING** 

PROPOSED CURB

PROPOSED RETAINING

PROPOSED ORNAMENT FENCE

PROPOSED HIGH CHAIN LINK FENCE

PROPOSED FLAGPOLE

PROPOSED BUILDING

PROPOSED BUILDING

PROPOSED CONTOURS

PROPOSED STORM DRAIN

PROPOSED WATER

PROPOSED GAS

PROPOSED SANITARY SEWER

PROPOSED ELECTRIC

PROPOSED LIGHTING

PROPOSED SHADE TREE

PROPOSED EVERGREEN TREE

PROPOSED SMALL DECIDUOUS TREE (SINGE-STEM)

PROPOSED SMALL DECIDUOUS TREE (MULTI-STEM)

PROPOSED SHRUBS

**GROUND COVER** 

**PROPOSED** 

**OVERHANG** 

PROPOSED SOLID SCREEN FENCE

**EXISTING ELECTRIC** 

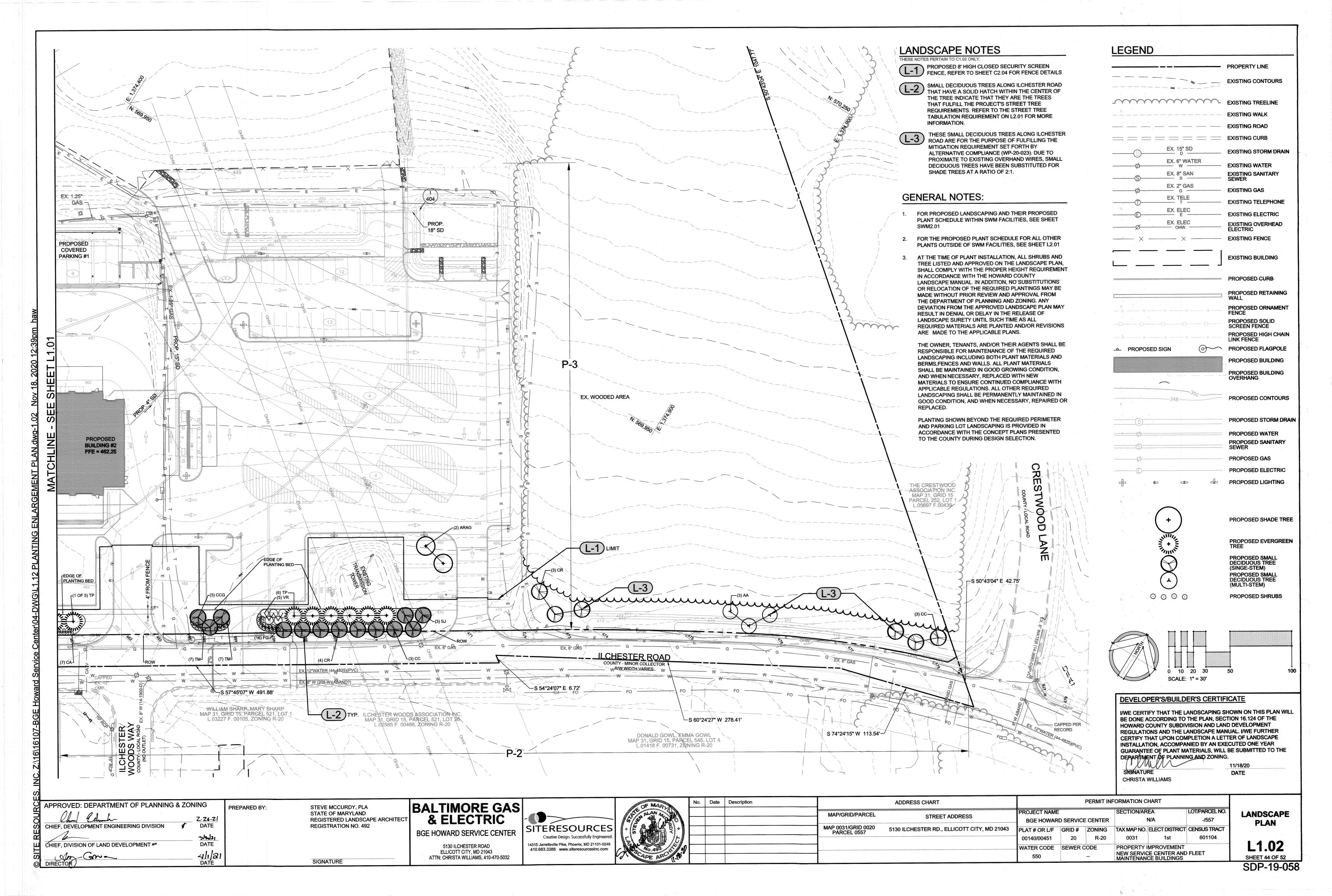
**EXISTING FENCE** 

**EXISTING GAS** 

EXISTING STORM DRAIN

**EXISTING CONTOURS** 

**SHEET 43 OF 52** SDP-19-058



LAN	TING S	CHEDULE				
QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
HAD	E TRE	ES	and the second state of th			
6	AR	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2.5" CAL.	AS SHOWN	CONSISTENT HT. & FORM, CENTRAL LEADER
5	ARAG	ACER RUBRUM 'ARMSTRONG GOLD'	ARMSTRONG GOLD RED MAPLE	2.5" CAL.	AS SHOWN	CONSISTENT HT. & FORM, CENTRAL LEADER
VER	GREE	N TREES				
2	CL	CUPPRESSOCYPARIS LEYLANDI	LEYLAND CYPRESS	8' HT.	AS SHOWN	CONSISTENT HT. & FORM, CENTRAL LEADER
12	IN	ILEX X NELLIE R. STEVENS	NELLIE STEVENS HOLLY	8' HT.	AS SHOWN	CONSISTENT HT. & FORM, CENTRAL LEADER
17	TP	THUJA STANDISHI X PLICATA 'GREEN GIANT'	GREEN GIANT ARBORVITAE	8' HT.	AS SHOWN	CONSISTENT HT. & FORM, CENTRAL LEADER
MAL	L DEC	IDUOUS TREES				
11	AA	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	2.5" CAL.	AS SHOWN	MULTI-STEM, 3-5 STEMS, CONSISTENT FORM
16	CC	CERCIS CANADENSIS	EASTERN REDBUD	2.5" CAL.	AS SHOWN	ONE CENTRAL LEADER, FULL/HEAVY
7	CR	CORNUS X 'RUTGAN' (AURORA®)	AURORA HYBRID DOGWOOD	2.5" CAL.	AS SHOWN	ONE CENTRAL LEADER, FULL/HEAVY
8	CCG	CRATEGUS CRUSGALLI 'INERMIS'	THORNLESS COCKSPUR HAWTHORN	2.5" CAL.	AS SHOWN	ONE CENTRAL LEADER, FULL/HEAVY
3	SJ	STYRAX JAPONICA	JAPANESE SNOWBELL	2.5" CAL.	AS SHOWN	ONE CENTRAL LEADER, FULL/HEAVY
HRL	В					
35	CA	CLETHRA ALNIFOLIA 'RUBY SPICE'	RUBY SPICE CLETHRA	24"-30" HT	AS SHOWN	CONSISTENT FORM, FULL/HEAVY
25	CS	CORNUS SERICEA 'FLAVIRAMEA'	YELLOW TWIG DOGWOOD	24"-30" HT	AS SHOWN	CONSISTENT FORM, FULL/HEAVY
29	FG	FOTHERGILLA GARDENII	DWARF FOTHERGILLA	24"-30" HT	AS SHOWN	CONSISTENT FORM, FULL/HEAVY
20	TM	TAXUS X MEDIA 'DENSIFORMIS'	DENSIFORMIS YEW	<u> </u>	1	CONSISTENT FORM, FULL/HEAVY
13	VN	VIBURNUM NUDUM 'WINTERTHUR'	WINTERTHUR VIBURNUM	4-6' HT	<u></u>	CONSISTENT FORM, FULL/HEAVY
11	VR	VIBURNUM X RHYTIDOPHYLLUM 'ALLEGHANY'	LEATHERLEAF VIBURNUM	4-6' HT	<u> </u>	CONSISTENT FORM, FULL/HEAVY
ROL	ND C	OVER		.1	<del></del>	<del> </del>
45	JH	JUNIPERUS HORIZONTALIS 'WILTONII'	BLUE RUG JUNIPER	#1 CON	24" O.C.	CONSISTENT FORM, FULL/HEAVY

SCHEDULE A -	DULE A - PERIMETER LANDSCAPE EDGE												
PERIMETER	CATEGORY PROPERTIES / ROADWAYS	LANDSCAPE EDGE TYPE	LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	CREDIT FOR PROPOSED 8' HIGH CLOSED SECURITY SCREEN FENCE (YES, NO, LINEAR FEET)*	SHADE TREES REQUIRED C (1:40) E (1:40)	EVERGREEN TREES REQUIRED C (1:20)	SHRUBS REQUIRED TYPE E (1:4)	SHADE TREES PROVIDED**	EVERGREEN TREES PROVIDED TOTAL (2:1 SUB)**	SHRUBS PROVIDED TOTAL(10:1 SUB)		
P-1	NON-RESIDENTIAL TO RESIDENTIAL	С	282 LF	YES, 221 LF	YES, 252 LF	0	0	0	0	2 (1)	0	0	
P-2	PARKING TO ROAD	E	1,325 LF	YES, 380 LF	YES, 467 LF	12	0	120	0	29 (14)	133	4 (2)	
P-3	NON-RESIDENTIAL TO RESIDENTIAL	С	377 LF	YES, 377 LF	NO, 0 LF	0	0	0	0	0	0	0	
*IN REFERENC	E TO HOWARD COUNTY LANDSCAPE MAN	IUAL CHAPTER IV	: OPTIONAL TREATM	MENTS-ERECTING A FENCE	, HEDGE OR WALL.						Le contrata de la contrata del contrata de la contrata del contrata de la contrata del contrata de la contrata de la contrata de la contrata del contrata de la contrata del contrata de la contrata del contrata del contrata del contrata del contrata de la contrata del contr	Antonia de la fina dela fina de la fina de l	

STREET TREES PROVIDED REQUIRED STREET TREES (SHADE TREES) STREET TREES PROVIDED\*\* SPACING "D" ROW "A" PLANTS / S.F. FOR USE ONLY WHEN PLANTS ARE SPACED EQUIDISTANT FROM EACH OTHER AS SHOWN, AND SPECIFIED IN THE PLANT PLANT SPACING CHART

STREET TREE REQUIREMENT

CREDIT FOR EXISTING TREE

LINEAR FEET OF RIGHT-OF-WAY

ROADWAY FRONTAGE REQUIRING

TABULATION

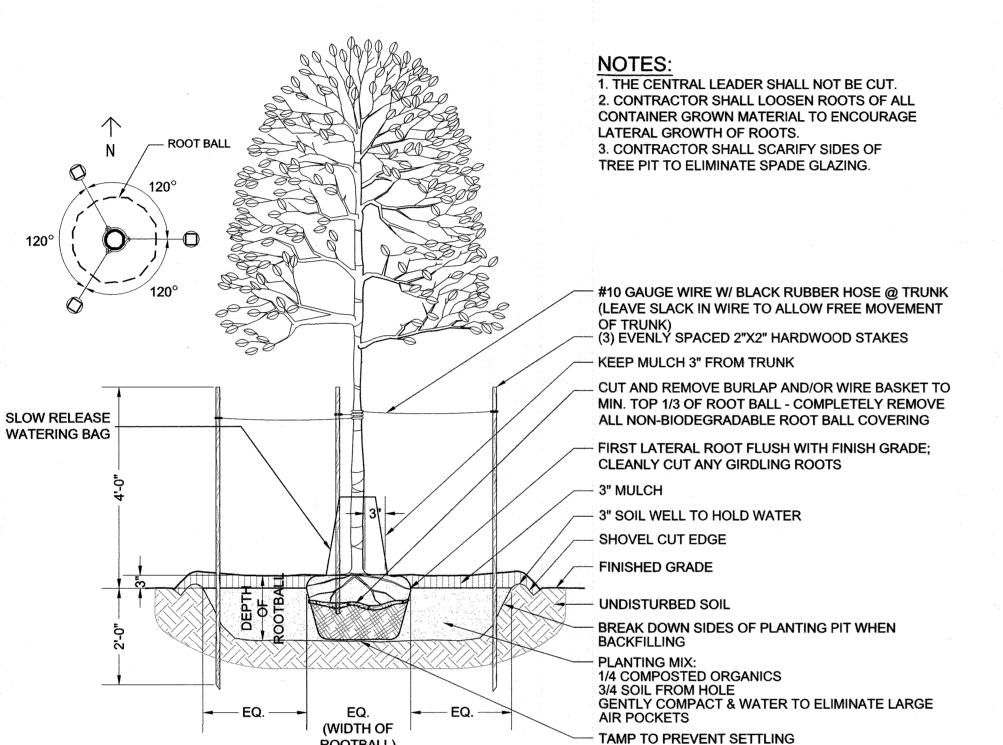
SCHEDULE B - PARKING LOT INTERNAL

LANDSCAPING

REQUIRED

NUMBER OF PARKING

NUMBER OF TREES



1. THE CENTRAL LEADER SHALL NOT BE CUT.

3. CONTRACTOR SHALL SCARIFY SIDES OF

TREE PIT TO ELIMINATE SPADE GLAZING.

FLAGING ON EACH WIRE FOR VISIBILITY.

CUT AND REMOVE BURLAP AND/OR WIRE

BASKET TO MIN. TOP 1/3 OF ROOT BALL -

FIRST LATERAL ROOT FLUSH WITH FINISH

NON-BIODEGRADABLE ROOT BALL COVERING

GRADE; CLEANLY CUT ANY GIRDLING ROOTS

(3) EVENLY SPACED 2"X2" HARDWOOD STAKES

LATERAL GROWTH OF ROOTS.

KEEP MULCH 3" FROM TRUNK

COMPLETELY REMOVE ALL

- 4" MULCH

**EXISTING GRADE** 

PROPOSED GRADE

SHOVEL CUT EDGE

UNDISTURBED SOIL

PLANTING MIX

1/3 SHARP SAND

1/3 SOIL FROM HOLE

3" SOIL WELL TO HOLD WATER

1/3 COMPOSTED ORGANICS

TAMP TO PREVENT SETTLING

2. CONTRACTOR SHALL LOOSEN ROOTS OF ALL

CONTAINER GROWN MATERIAL TO ENCOURAGE

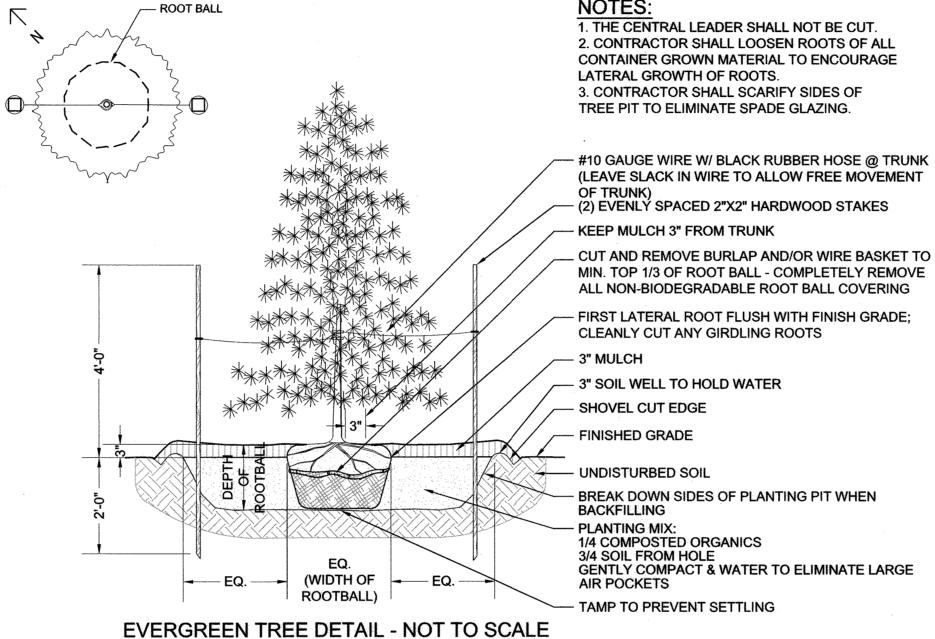
#10 GAUGE WIRE W/ BLACK RUBBER HOSE @ TRUNK

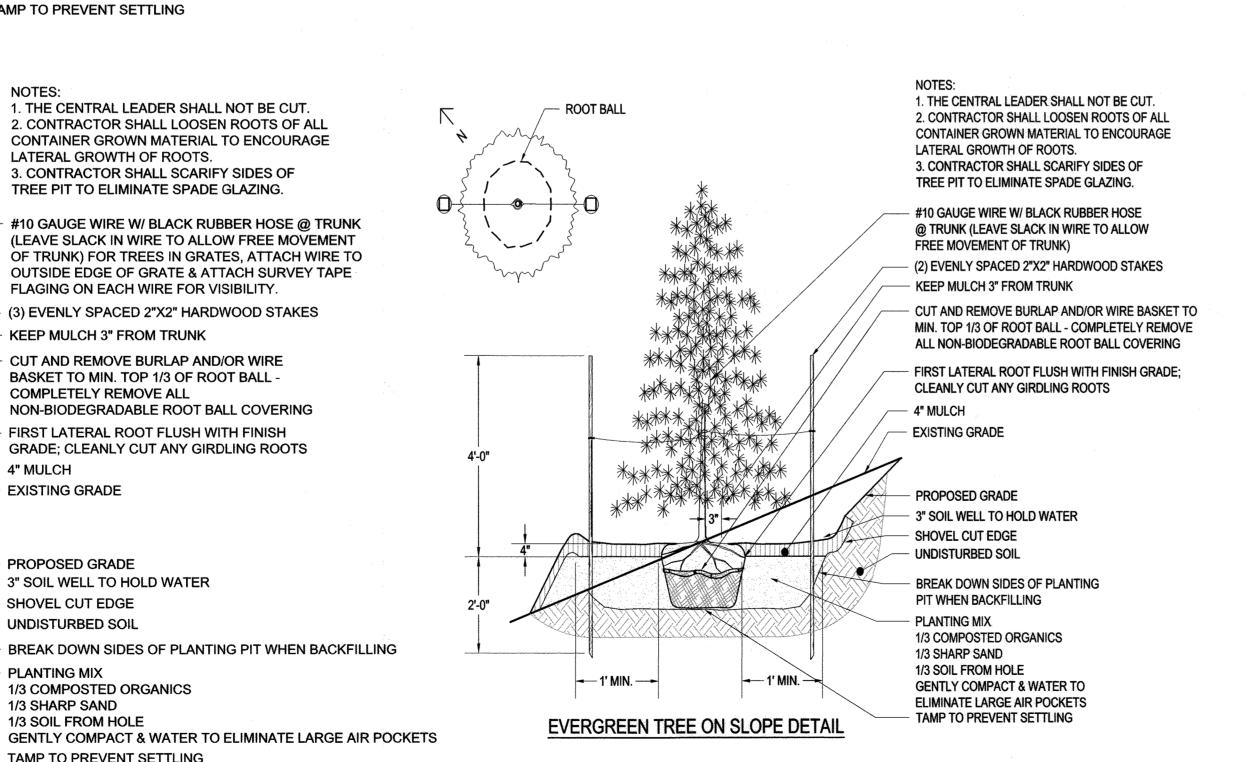
(LEAVE SLACK IN WIRE TO ALLOW FREE MOVEMENT

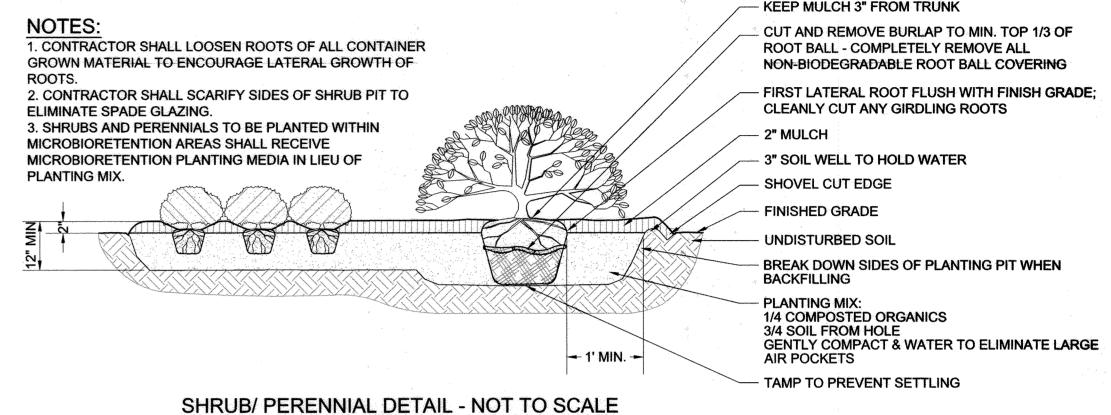
OF TRUNK) FOR TREES IN GRATES, ATTACH WIRE TO

OUTSIDE EDGE OF GRATE & ATTACH SURVEY TAPE

ROOTBALL) DECIDUOUS TREE DETAIL - NOT TO SCALE







#### GENERAL NOTE:

AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREE LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.

THE OWNER, TENANTS, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

PLANTING SHOWN BEYOND THE REQUIRED PERIMETER AND PARKING LOT LANDSCAPING IS PROVIDED IN ACCORDANCE WITH THE CONCEPT PLANS PRESENTED TO THE COUNTY DURING DESIGN SELECTION.

### LANDSCAPE NOTES

(THESE NOTES APPLY TO ALL PLANTING IN THIS CONTRACT)

 QUANTITIES SHOWN ON THE PLANT LIST ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. SYMBOLS ON THE PLAN SHALL TAKE PRECEDENCE. CONTRACTOR SHALL VERIFY ALL PLANT QUANTITIES TO HIS OWN SATISFACTION.

PLANT MATERIAL SUBSTITUTIONS ARE SUBJECT TO APPROVAL BY THE PROJECT LANDSCAPE ARCHITECT.

3. PLANT MATERIAL SHALL BE TAGGED AT THE SOURCE BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE UNLESS THE REQUIREMENT IS SPECIFICALLY 4. LOCATIONS OF ALL PLANT MATERIAL SHALL BE STAKED FOR APPROVAL BY THE PROJECT LANDSCAPE ARCHITECT.

5. ALL SHRUB AND GROUND COVER AREAS SHALL BE PLANTED IN CONTINUOUS PREPARED BEDS MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILED AND SPECIFIED. PLANTING BEDS SHALL HAVE POSITIVE DRAINAGE WITH A MINIMUM 2% SLOPE.

CONTRACTOR SHALL VERIFY ACCURACY OF BASE INFORMATION AND EXISTING CONDITIONS AND UTILITIES IN THE FIELD TO HIS OWN SATISFACTION. UTILITIES BID SHALL BE BASED ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS. 8. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 A MINIMUM OF TWO WORKING DAYS PRIOR TO BEGINNING PLANTING AND CONSTRUCTION.

9. DAMAGE TO EXISTING CONDITIONS AND UTILITIES SHALL BE REPAIRED AND RESTORED AT THE EXPENSE OF THE CONTRACTOR.

10. ALL PLANT MATERIAL SHALL BE NURSERY GROWN AND SHALL CONFORM TO AMERICAN NURSERY & LANDSCAPE ASSOCIATION'S AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1.

11. A SLOW RELEASE WATERING BAG SHALL BE PLACED AND FILLED WITH WATER ON ALL DECIDUOUS TREES AFTER INSTALLATION.

### MINIMUM LANDSCAPE MAINTENANCE REQUIREMENTS

1. LAWN AREAS SHALL BE MOWED TO A HEIGHT OF 2 TO 3 INCHES AND NOT ALLOWED TO REACH

A HEIGHT OF 4 INCHES BEFORE MOWING

- 2. ALL CURBS AND WALKS SHALL BE EDGED AS NEEDED. ALL LAWN AREAS ADJACENT TO BUILDING FACES OR STRUCTURES SHALL BE TRIMMED
- 4. A SLOW RELEASE NITROGEN BALANCED FERTILIZER WITH A 2-1-1 RATIO SHALL BE APPLIED AT A RATE OF 2 POUNDS OF NITROGEN PER 1000 SQUARE FEET IN SEPTEMBER, OCTOBER, AND FEBRUARY. 5. LIME SHALL BE APPLIED AT THE RATE DETERMINED BY A SOILS REPORT.

6. IT IS RECOMMENDED THAT LAWN AREAS BE TREATED IN MID-MARCH TO EARLY APRIL WITH PRE-EMERGENT HERBICIDE (BETASAN) OR EQUAL APPLIED AT THE MANUFACTURER'S RECOMMENDED RATE.

7. A POST-EMERGENT HERBICIDE (TRIMEC) OR EQUAL IS RECOMMENDED TO BE SPRAYED ON LAWN AREAS IN THE LATE SPRING OR THE EARLY FALL. FOLLOW MANUFACTURER'S RATES AND RECOMMENDATIONS.

8. INSECTICIDES AND FUNGICIDES ARE RECOMMENDED FOR INSECT AND DISEASE CONTROL. 9. RESEED BARE AREAS OF LAWN AS NECESSARY. YEARLY AERATION IS RECOMMENDED. 10. ALL TRASH, LITTER, AND DEBRIS SHALL BE REMOVED FROM LAWN AREAS, PARKING LOTS, AND

- SHRUB BEDS AS NEEDED. 11. MULCH ALL SHRUB AND GROUNDCOVER BEDS YEARLY WITH 3 INCHES OF SHREDDED HARDWOOD BARK.
- 12. PERMIT SHRUBS AND TREES TO GROW AND ENLARGE TO THEIR DESIGN SIZE. CONSULT PROJECT LANDSCAPE ARCHITECT FOR DETAILS.
- 13. PRUNE TREES IN ACCORDANCE WITH LANDSCAPE CONTRACTORS ASSOCIATION GUIDELINES.

### SEEDING SPECIFICATIONS

. PERMANENT TURFGRASS SEED SHALL BE IN ACCORDANCE WITH B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION ON **DRAWING ESC-2.11** 

PREPARED BY: STEVE MCCURDY, PLA STATE OF MARYLAND REGISTERED LANDSCAPE ARCHITECT **REGISTRATION NO. 492** 

SIGNATURE

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

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING. 11/18/20

SMATURE DATE **CHRISTA WILLIAMS** 

APPROVED: DEPARTMENT OF PLANNING & ZONING 2.26.21 DATE CHIEF, DEVELOPMENT ENGINEERING DIVISION CHIEF, DIVISION OF LAND DEVELOPMENT \*\* DATE Am Gon-4/1/21

DECIDUOUS TREE ON SLOPE DETAIL

DATE

SLOW RELEASE

WATERING BAG -

**BALTIMORE GAS** & ELECTRIC BGE HOWARD SERVICE CENTER

5130 ILCHESTER ROAD

ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032

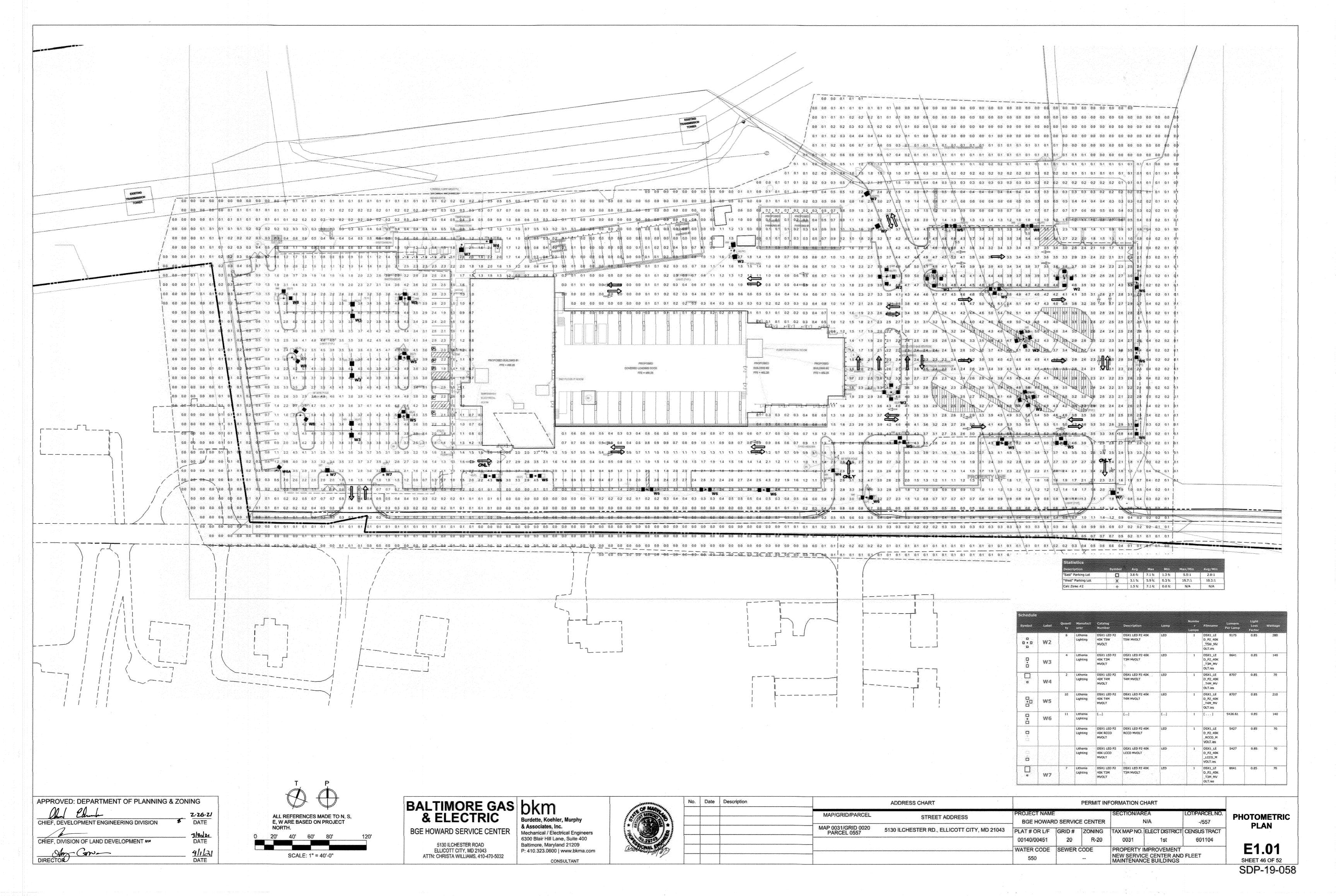


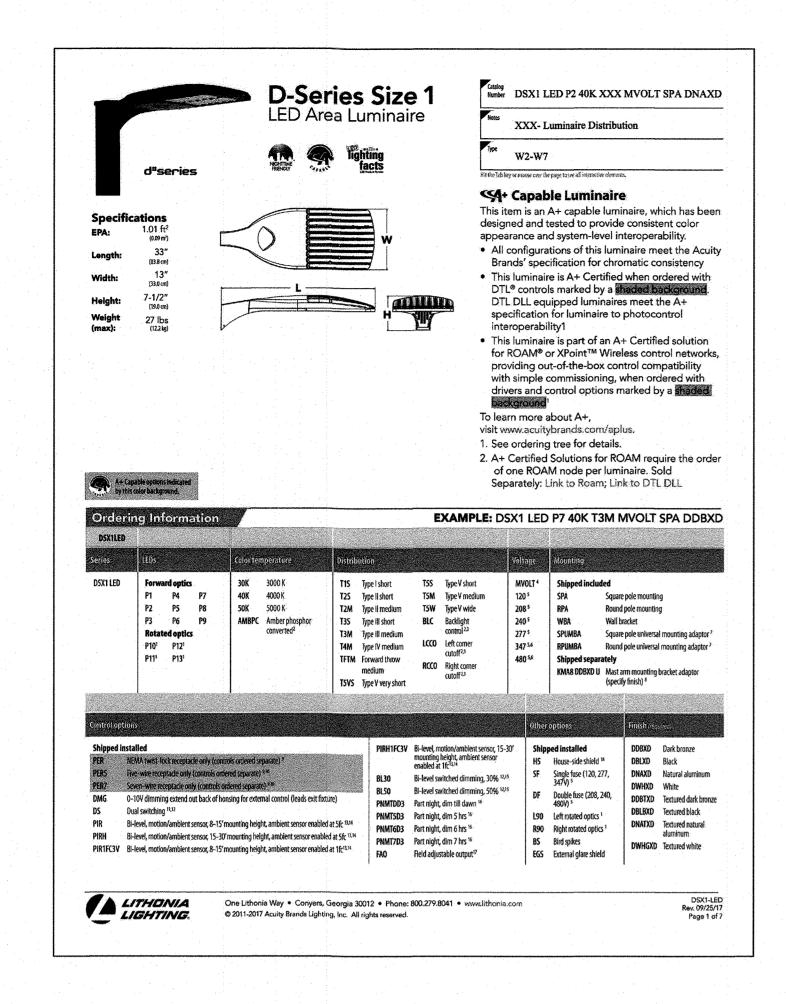


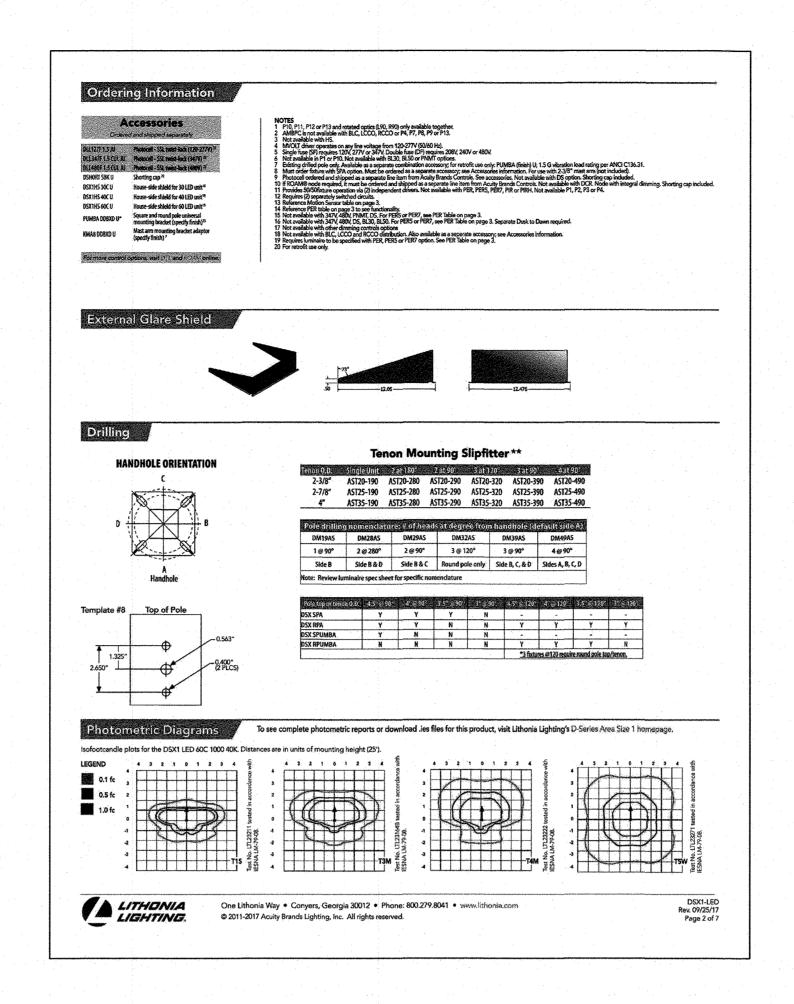
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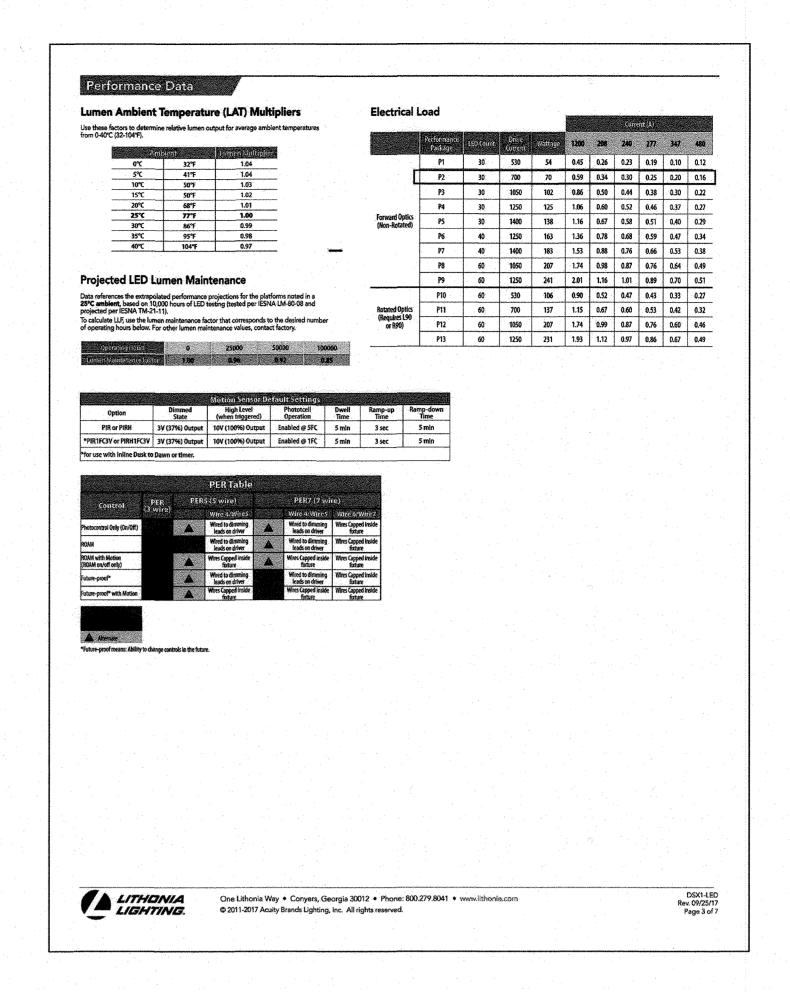
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MAP/GRID/PARCEL	STREET ADDRESS	PROJECT NAME BGE HOWAR	- · · · · · · · · · · · · · · · · · · ·	E CENTER	SECTION/AR	EA N/A	LOT/PARCEL NO. -/557
MAP 0031/GRID 0020 PARCEL 0557	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F 00140/00451	GRID # 20	ZONING R-20	TAX MAP NO. 0031	ELECT DISTRICT 1st	CENSUS TRACT 601104
		WATER CODE 550	SEWER	CODE 	NEW SERVICE	MPROVEMENT CE CENTER AND CE BUILDINGS	) FLEET

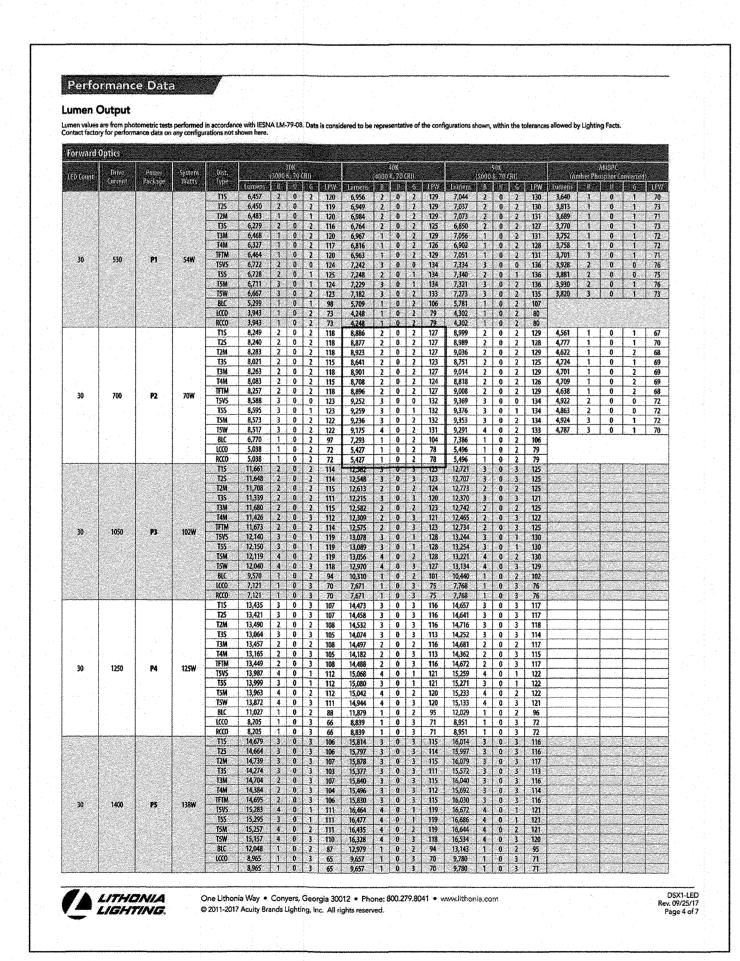
**LANDSCAPE DETAILS &** NOTES

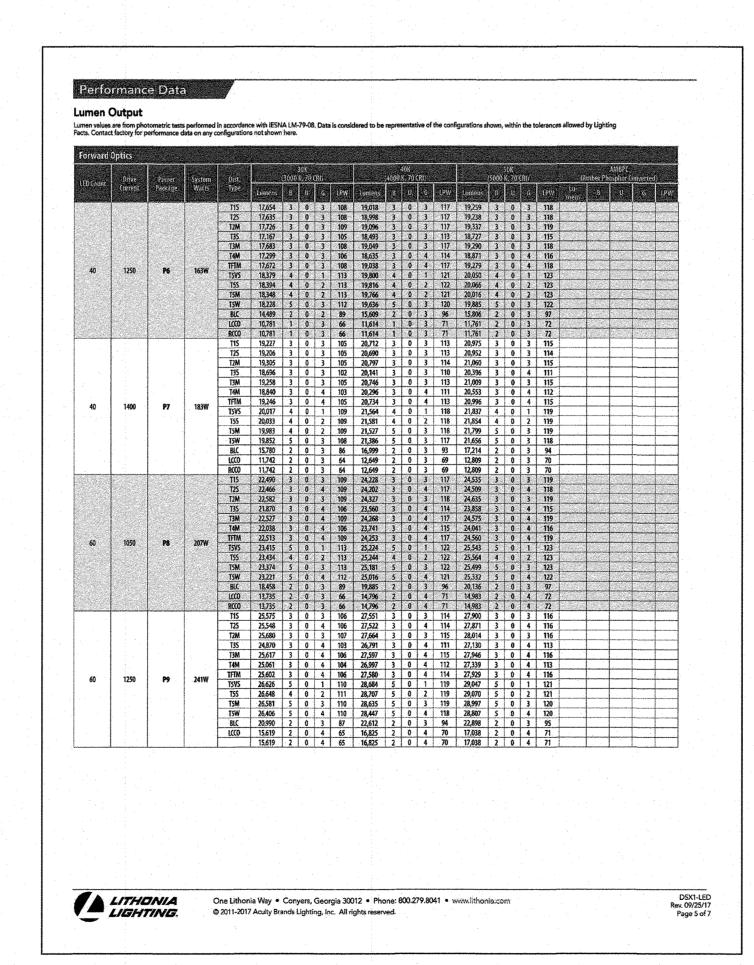


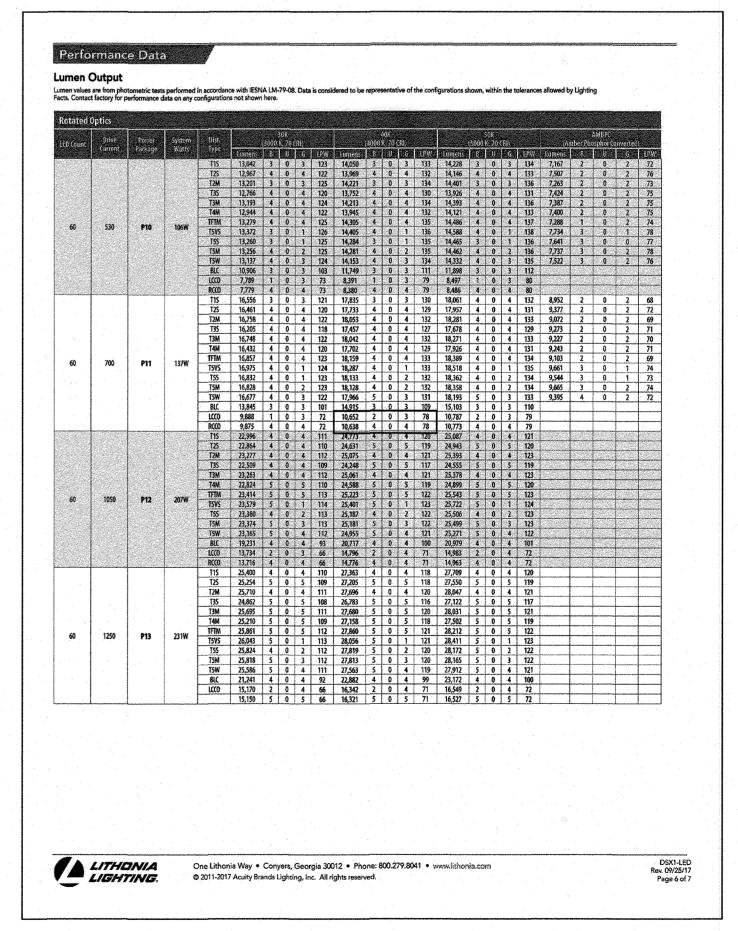












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<b>3</b> C	APPROVED: DEPARTMENT OF PLANNING & ZON	IING
	Clark Educk	2.26.21
S	CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
RE		3/30/21
Ш	CHIEF, DIVISION OF LAND DEVELOPMENT NA	DATE
S	Ang Gon-	4/1/21
0	DIRECTOR )	DATE

BALTIMORE GAS & ELECTRIC

BGE HOWARD SERVICE CENTER

BURDLE Koehle & Associates, In Mechanical / Elected & A

5130 ILCHESTER ROAD

ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032

Burdette, Koehler, Murphy & Associates, Inc.
Mechanical / Electrical Engineers 6300 Blair Hill Lane, Suite 400 Baltimore, Maryland 21209 P: 410.323.0600 | www.bkma.com

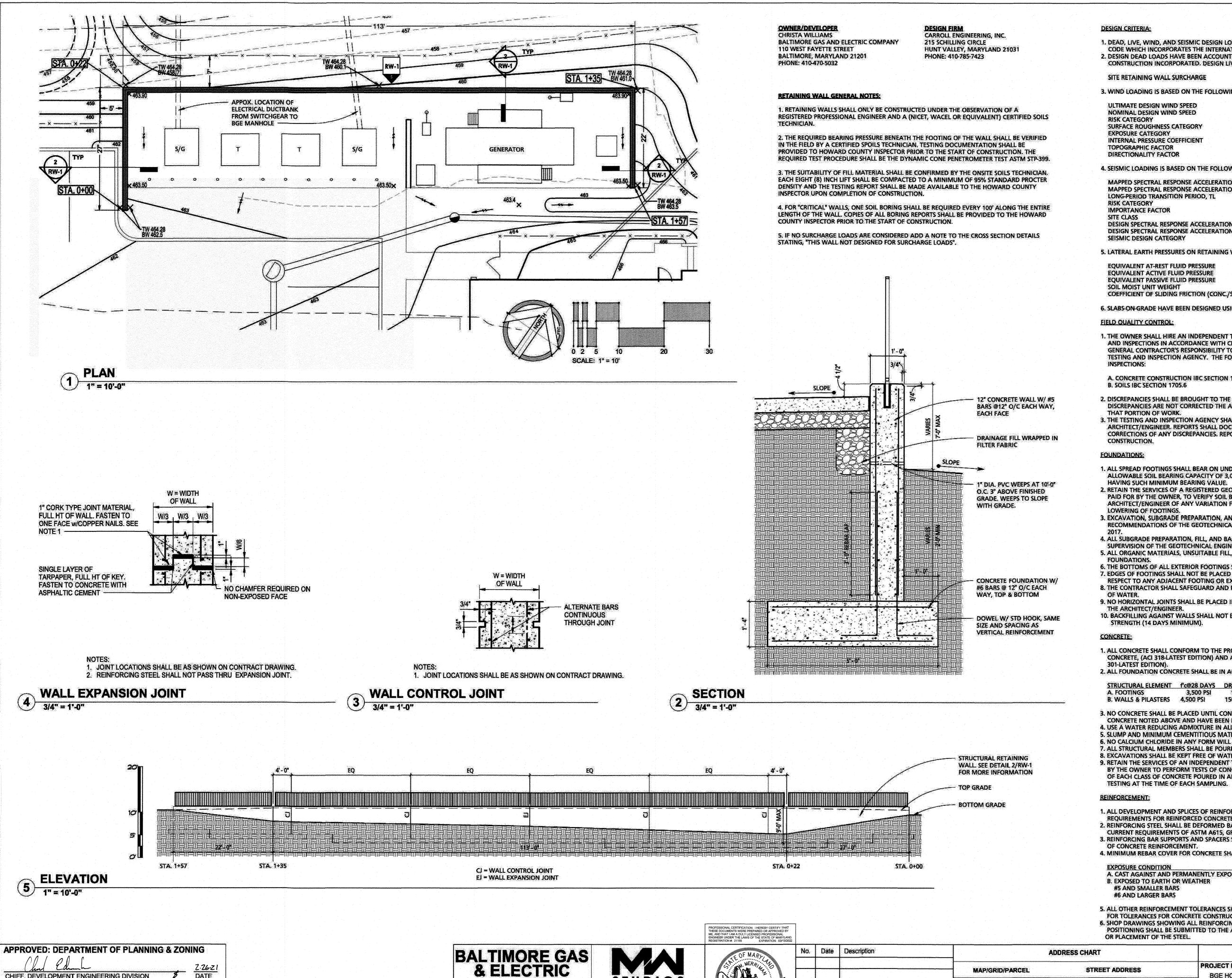


No.	Date	Description	ADDRESS CHART	PERMIT INFORMATION CHART						
	 		MAP/GRID/PARCEL STREET ADDRESS	PROJECT NAME	D SERVICE CENTER	SECTION/AREA N/A	LOT/PARCEL NO. -/557			
			MAP 0031/GRID 0020 PARCEL 0557 5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F		TAX MAP NO. ELECT DISTRICT				
				00140/00451	20 R-20	0031 1st	601104			
				WATER CODE	SEWER CODE	PROPERTY IMPROVEMENT				
				550		NEW SERVICE CENTER AND MAINTENANCE BUILDINGS	FLEET			

LIGHTING DETAILS

**E2.01**SHEET 47 OF 52

SDP-19-058



STUDIOS

ARCHITECTURE

MASTER PLANNING

www.mwsarch.com 410-344-1460

CONSULTANT

STRUCTURAL ELEMENTS ONLY

**BGE HOWARD SERVICE CENTER** 

5130 ILCHESTER ROAD

ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIÉF, DIVISION OF LAND DEVELOPMENT \*\*

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**DESIGN CRITERIA:** 

1. DEAD, LIVE, WIND, AND SEISMIC DESIGN LOADS ARE IN ACCORDANCE WITH THE HOWARD COUNTY BUILDING

CODE WHICH INCORPORATES THE INTERNATIONAL BUILDING CODE - IBC 2015. 2. DESIGN DEAD LOADS HAVE BEEN ACCOUNTED FOR BASED UPON THE ACTUAL WEIGHT OF MATERIALS OF

CONSTRUCTION INCORPORATED. DESIGN LIVE LOADS ARE AS FOLLOWS:

SITE RETAINING WALL SURCHARGE 125 PSF

3. WIND LOADING IS BASED ON THE FOLLOWING:

120 MPH **ULTIMATE DESIGN WIND SPEED** NOMINAL DESIGN WIND SPEED **93 MPH RISK CATEGORY SURFACE ROUGHNESS CATEGORY EXPOSURE CATEGORY** +/-0.18 INTERNAL PRESSURE COEFFICIENT TOPOGRAPHIC FACTOR 1.00 DIRECTIONALITY FACTOR

4. SEISMIC LOADING IS BASED ON THE FOLLOWING:

0.125 G MAPPED SPECTRAL RESPONSE ACCELERATION, 55 MAPPED SPECTRAL RESPONSE ACCELERATION, S1 0.051 G LONG-PERIOD TRANSITION PERIOD, TL **RISK CATEGORY IMPORTANCE FACTOR** SITE CLASS DESIGN SPECTRAL RESPONSE ACCELERATION, SDs 0.133 G DESIGN SPECTRAL RESPONSE ACCELERATION, SD1 0.082 G SEISMIC DESIGN CATEGORY

5. LATERAL EARTH PRESSURES ON RETAINING WALLS ARE BASED ON THE FOLLOWING:

**EQUIVALENT AT-REST FLUID PRESSURE EQUIVALENT ACTIVE FLUID PRESSURE** 37.5 PCF **EQUIVALENT PASSIVE FLUID PRESSURE** 375 PCF SOIL MOIST UNIT WEIGHT COEFFICIENT OF SLIDING FRICTION (CONC./SOIL)

6. SLABS-ON-GRADE HAVE BEEN DESIGNED USING A MODULUS OF SUBGRADE REACTION (k) OF 100 PCI.

#### FIELD QUALITY CONTROL:

1. THE OWNER SHALL HIRE AN INDEPENDENT TESTING AND INSPECTION AGENCY TO PROVIDE ALL REQUIRED TESTING AND INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE. IT SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL TESTING AND INSPECTIONS WITH THE INDEPENDENT TESTING AND INSPECTION AGENCY. THE FOLLOWING STRUCTURAL ITEMS REQUIRE THIRD-PARTY TESTING AND/OR INSPECTIONS:

A. CONCRETE CONSTRUCTION IBC SECTION 1705.3 B. SOILS IBC SECTION 1705.6

2. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF DISCREPANCIES ARE NOT CORRECTED THE ARCHITECT/ENGINEER SHALL BE CONTACTED PRIOR TO COMPLETION OF

THAT PORTION OF WORK. 3. THE TESTING AND INSPECTION AGENCY SHALL SUBMIT REPORTS TO THE CONTRACTOR, OWNER, AND ARCHITECT/ENGINEER. REPORTS SHALL DOCUMENT THE REQUIRED TESTS, INSPECTIONS, DISCREPANCIES, AND CORRECTIONS OF ANY DISCREPANCIES. REPORTS SHALL BE PROVIDED AT INTERVALS CONVEYING THE PROGRESS OF

#### **FOUNDATIONS:**

1. ALL SPREAD FOOTINGS SHALL BEAR ON UNDISTURBED SOIL OR CONTROLLED STRUCTURAL FILL, HAVING A MINIMUM ALLOWABLE SOIL BEARING CAPACITY OF 3,000 PSF. ALL SPREAD FOOTINGS SHALL PROJECT AT LEAST 1'-0" INTO SOIL HAVING SUCH MINIMUM BEARING VALUE.

2. RETAIN THE SERVICES OF A REGISTERED GEOTECHNICAL ENGINEER, APPROVED BY THE ARCHITECT/ENGINEER AND PAID FOR BY THE OWNER, TO VERIFY SOIL BEARING CAPACITY AT EACH FOOTING PRIOR TO INSTALLATION, NOTIFY ARCHITECT/ENGINEER OF ANY VARIATION FROM ANTICIPATED BEARING CAPACITY FOR APPROPRIATE REDESIGN OR

3. EXCAVATION, SUBGRADE PREPARATION, AND FOOTING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT PREPARED BY KIM ENGINEERING, INC., DATED SEPTEMBER 22,

4. ALL SUBGRADE PREPARATION, FILL, AND BACKFILL OPERATIONS SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF THE GEOTECHNICAL ENGINEER.

5. ALL ORGANIC MATERIALS, UNSUITABLE FILL, AND CONSTRUCTION DEBRIS SHALL BE REMOVED IN REGIONS OF ALL FOUNDATIONS. 6. THE BOTTOMS OF ALL EXTERIOR FOOTINGS SHALL BE 2'-6" MINIMUM BELOW FINISHED GRADE.

7. EDGES OF FOOTINGS SHALL NOT BE PLACED AT A GREATER THAN 1 (VERTICAL) TO 2 (HORIZONTAL) SLOPE WITH RESPECT TO ANY ADJACENT FOOTING OR EXCAVATION. 8. THE CONTRACTOR SHALL SAFEGUARD AND PROTECT ALL EXCAVATIONS, AND ALL EXCAVATIONS SHALL BE KEPT FREE

9. NO HORIZONTAL JOINTS SHALL BE PLACED IN WALLS EXCEPT AS SHOWN ON THE DRAWINGS WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER.

10. BACKFILLING AGAINST WALLS SHALL NOT BE DONE UNTIL CONCRETE HAS BEEN CURED TO ATTAIN SUFFICIENT STRENGTH (14 DAYS MINIMUM).

### CONCRETE:

1. ALL CONCRETE SHALL CONFORM TO THE PROVISIONS OF ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, (ACI 318-LATEST EDITION) AND ACI SPECIFICATIONS FOR STRUCTURAL CONCRETE IN BUILDINGS, (ACI 301-LATEST EDITION).

2. ALL FOUNDATION CONCRETE SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

STRUCTURAL ELEMENT Fc@28 DAYS DRY WEIGHT MAX W/C AGGREGATE SIZE AIR CONTENT 3/8" TO 1" 3,500 PSI 150 PSF 4.5% +/- 1.5% B. WALLS & PILASTERS 4,500 PSI 6% +/- 1.5%

3. NO CONCRETE SHALL BE PLACED UNTIL CONCRETE DESIGN MIXES HAVE BEEN SUBMITTED FOR EACH CLASS OF CONCRETE NOTED ABOVE AND HAVE BEEN REVIEWED BY THE ARCHITECT/ENGINEER.

4. USE A WATER REDUCING ADMIXTURE IN ALL CONCRETE.

5. SLUMP AND MINIMUM CEMENTITIOUS MATERIALS CONTENT SHALL BE AS REQUIRED BY ACI 301-LATEST EDITION. 6. NO CALCIUM CHLORIDE IN ANY FORM WILL BE PERMITTED IN CONCRETE.

7. ALL STRUCTURAL MEMBERS SHALL BE POURED FOR THEIR FULL DEPTHS IN ONE OPERATION.

8. EXCAVATIONS SHALL BE KEPT FREE OF WATER. NO CONCRETE SHALL BE PLACED IN WATER. 9. RETAIN THE SERVICES OF AN INDEPENDENT TESTING AGENCY APPROVED BY THE ARCHITECT/ENGINEER AND PAID FOR BY THE OWNER TO PERFORM TESTS OF CONCRETE. TAKE A MINIMUM OF 6 CYLINDER SAMPLES PER 50 CUBIC YARDS OF EACH CLASS OF CONCRETE POURED IN ANY ONE DAY. PERFORM SLUMP, AIR CONTENT, AND TEMPERATURE

### REINFORCEMENT:

1. ALL DEVELOPMENT AND SPLICES OF REINFORCEMENT SHALL CONFORM TO THE PROVISIONS OF ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, (ACI 318-LATEST EDITION).

2. REINFORCING STEEL SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE NEW BILLET STEEL CONFORMING TO CURRENT REQUIREMENTS OF ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.

3. REINFORCING BAR SUPPORTS AND SPACERS SHALL CONFORM TO (ACI 315-LATEST EDITION) DETAILS AND DETAILING

OF CONCRETE REINFORCEMENT. 4. MINIMUM REBAR COVER FOR CONCRETE SHALL BE AS SHOWN IN THE FOLLOWING TABLE, UNO:

**PROJECT NAME** 

00140/00451

WATER CODE

**EXPOSURE CONDITION** CONCRETE COVER TOLERANCE (+/-) A. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3/8" B. EXPOSED TO EARTH OR WEATHER 1-1/2" #5 AND SMALLER BARS #6 AND LARGER BARS

5. ALL OTHER REINFORCEMENT TOLERANCES SHALL CONFORM TO THE PROVISIONS OF ACI STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS, (ACI 117-LATEST EDITION).

6. SHOP DRAWINGS SHOWING ALL REINFORCING STEEL AND NECESSARY SECTIONS AND DETAILS FOR THE PROPER POSITIONING SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW AND COMMENT BEFORE FABRICATION

**BGE HOWARD SERVICE CENTER** 

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SEWER CODE

R-20

PLAT # OR L/F GRID # ZONING

OR PLACEMENT OF THE STEEL.

5130 ILCHESTER RD., ELLICOTT CITY, MD 21043

MAP 0031/GRID 0020

PARCEL 0557

PERMIT INFORMATION CHART

SECTION/AREA

TAX MAP NO. ELECT DISTRICT

MAINTENANCE BUILDINGS

PROPERTY IMPROVEMENT
NEW SERVICE CENTER AND FLEET

LOT/PARCEL NO. RETAINING WALL PLAN, NOTES, & DETAILS **CENSUS TRACT** 

**RW1.01** 

-/557

601104

**SHEET 48 OF 52** SDP-19-058

CONCRETE MATERIALS SECTION 033000 - CAST-IN-PLACE CONCRETE Regional Materials: Concrete shall be manufactured within 500 miles of Project site from aggregates and cementitious materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site. PART 1 - GENERAL Regional Materials: Concrete shall be manufactured within 500 miles of Project site. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section Portland Cement: ASTM C 150/C 150M, Type I, Type II, Type I/II, or Type III; gray. Fly Ash: ASTM C 618, Class F or C. Section includes cast in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes Slag Cement: ASTM C 989/C 989M, Grade 100 or 120. Silica Fume: ASTM C 1240, amorphous silic Section 033300 "Architectural Concrete" for general building applications of specially finished formed concrete. Normal-Weight Aggregates: ASTM C 33/C 33M, Class 4S for exterior, Class 4M for interior, coarse aggregate or better, graded. Provide aggregates from a single source Section 312000 "Earth Moving" for drainage fill under slabs on-grade. Section 321313 "Concrete Paving" for concrete pavement and walks. Maximum Coarse-Aggregate Size: 1 Inch nominal. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement. Lightweight Aggregate: ASTM C 330/C 330M, 3/4-inch nominal maximum aggregate size Air-Entraining Admixture: ASTM C 260/C 260M. Section 321316 "Decorative Concrete Paving" for decorative concrete pavement and walks **DEFINITIONS** Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride. W/C Ratio: The ratio by weight of water to cementitious materials. Water-Reducing Admixture: ASTM C 494/C 494M, Type A **PREINSTALLATION MEETINGS** Retarding Admixture: ASTM C 494/C 494M, Type B. Preinstallation Conference: Conduct conference at Project site. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F. High-Range, Water-Reducing and Retarding Ad Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II. Admixture: ASTM C 494/C 494M, Type G. Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete and complying with ASTM C 494/C 494M, Type C.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following: Independent testing agency Ready-mix concrete manufacturer. BASF Corporation-Construction Systems; MasterLife Cl 30 (Pre-2014: Rheocrete CNI). Concrete Subcontractor. Euclid Chemical Company (The); an RPM company; EUCON CIA. Grace Construction Products: W.R. Grace & Co. – Conn.; DCI. 2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot- weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, forms and form removal limitations, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, methods for achieving specified floor and slab flatness and levelness floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection. Sika Corporation: Sika CNI. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete. Products: Subject to compliance with requirements, provide one of the following:

a. <u>BASF Corporation-Construction Systems</u>: MasterLife Ci 222 (Pre-2014: Rheocrete 222+). Product Data: For each type of product Sustainable Design Submittals Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost. Product Certificates: For regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project and cost for each regional material. Grace Construction Products: W.R. Grace & Co. - Conn.; DCI-S. aboratory Test Reports: For liquid floor treatments and curing and sealing compounds, indicating compliance with requirements for low-emitting materials. Sika Corporation; FerroGard 901 Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments Water: ASTM C 94/C 94M and potable Indicate amounts of mixing water to be withheld for later addition at Project site. Steel Reinforcement Shop Drawings: Placing Drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, 3/4 by 1 inch. connections, tie spacing, hoop spacing, and supports for concrete reinforcement. <u>Products:</u> Subject to compliance with requirements, provide one of the following: Construction Joint Layout: Indicate proposed construction joints required to construct the structure. Carlisle Coatings & Waterproofing Inc. MiraSTOP. Location of construction joints is subject to approval of the Architect. CETCO, a Minerals Technologies company; Waterstop-RX-101 INFORMATIONAL SUBMITTALS Concrete Sealants Inc.; Conseal CS-231 Qualification Data: For Installer. Henry Company, Sealants Division; Hydro-Flex Material Certificates: For each of the following, signed by manufacturers: Specialties, Inc.; Earth Shield Type 20. Cementitious materials. **VAPOR RETARDERS** Form materials and form-release agents. Sheet Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape. Steel reinforcement and accessories <u>Products:</u> Subject to compliance with requirements, provide one of the following: Fortifiber Building Systems Group; Moistop Ultra 10. Fiber reinforcement. Grace Construction Products; W.R. Grace & Co. - Conn.; Florprufe 120 Waterstops. **Curing compounds** Insulation Solutions, Inc.; Viper VaporCheck II 10-mil Poly-America, L.P.; Husky Yellow Guard Vapor Retarder 10 Mil ASTM E-1745 Class A Bonding agents. Rayen Industries, Inc. Vapor Block 10. Vapor retarders Reef Industries, Inc. Griffolyn 10 mil Green. Semirigid joint fill ego Industries. LLC: Stego Wrap 10 mil Class A. <u> [ex-Trude, Inc.;</u> Etreme 10 Mil Underslab Vapor Barrier. V.R. Meadows, Inc. Perminator 10 mil. Repair material Material Test Reports: For the following, from a qualified testing agency:
1. Aggregates: Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity. **CURING MATERIALS** Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete

1. <u>Products:</u> Subject to compliance with requirements, provide one of the following: Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer, detailing fabrication, assembly, and support of formwork BASF Corporation-Construction Systems; Confilm. Bon Tool Co.: 32-301-B7 BonWay Evaporation Retarder Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and reshoring installation and removal. Floor surface flatness and levelness measurements indicating compliance with specified tolerances. Field quality-control reports. Brickform; a division of Solomon Colors; Evaporation Retarder Minutes of preinstallation conference <u>ChemMasters, Inc.</u> Spray-Film. Dayton Superior, Aquafilm Concentrate J74 or Aquafilm J74RTU. **QUALITY ASSURANCE** Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician. udid Chemical Company (The); an RPM company; Eucobar. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment. Kaufman Products, Inc. VaporAid Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities." L&M Construction Chemicals, Inc. E-CON Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program. Lambert Corporation: LAMBCO Skin. <u>letalcrete Industries</u>: Waterhold. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Nox-Crete Products Group: MONOFILM. Sika Corporation: Caltexol CIMFILM or SikaFilm. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M SpecChem, LLC: Spec Film TK Products: TK-2120 TRI-FILM. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on concrete mixtures /excon Chemicals Inc.; Certi-Vex EnvioAssist. DELIVERY, STORAGE, AND HANDLING W.R. Meadows, Inc. EVAPRE Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage. Avoid damaging coatings on steel reinforcement. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry. Noisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants. FIELD CONDITIONS Water, Potable. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, 18 to 25 percent solids, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering. Products: Subject to compilance with requirements, provide one of the following:

a. AWRC Corporation: AMERI-SHIELD Shield-Sheen WB 20. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301 Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs. BASF Corporation-Construction Systems: MasterKure CC 200 WB (Pre- 2014: Kure-N-Seal W) ChemMasters, Inc. Polyseal WB. Hot-Weather Placement: Comply with ACI 301 and as follows: Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid Dayton Superior: Cure & Seal 1315 J22 W8. nitrogen to cool concrete is Contractor's option Euclid Chemical Company (The): an RPM company: Diamond Clear VOX. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas L&M Construction Chemicals, Inc. Dress & Seal WB. ambert Corporation: Glazecote Sealer-20. PART 2 - PRODUCTS Metalcrete Industries: Metcure 0800. CONCRETE, GENERAL SpecChem, LLC; Cure & Seal WB 25. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents: <u>/excon Chemicals Inc.;</u> Starseal 0800 W.R. Meadows, Inc; Vocomp-20, RELATED MATERIALS 2.9 Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork. 2.2 FORM-FACING MATERIALS Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 or aromatic polyurea with a Type A shore durometer hardness range of 90 to 95 according to ASTM D 2240. Bonding Agent: ASTM C 1059/C 1059M, Type II, nonredispersible, acrylic emulsion or styrene butadiene. Plywood, metal, or other approved panel materials Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

1. Types I and II at nonload bearing conditions, Types IV and V at load bearing conditions, for bonding hardened or freshly mixed concrete to hardened concrete.

Reglets: Fabricate reglets of not less than 0.022-inch-thick, galvanized-steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

Dovetail Anchor Slots: Hot-dip galvanized-steel sheet, not less than 0.034 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows: High-density overlay, Class 1 or better. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed. Structural 1, B-B or better; mill oiled and edge sealed. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed REPAIR MATERIALS Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit. Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber- reinforced plastic, paper, or fiber tubes that produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C 109/C 109M. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum. Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal. Primer: Product of topping manufacturer recommended for substrate, conditions, and application. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer. Formulate form-release agent with rust inhibitor for steel form-facing materials. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109N Form Ties: Factory-fabricated, removable or snap-off glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface. CONCRETE MIXTURES, GENERAL Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301. Furnish ties that, when removed, leave holes no larger than 1 inch in diameter in concrete surface. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows: STEEL REINFORCEMENT Fly Ash: 25 percent Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 60 percent. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed. Combined Fly Ash and Pozzolan: 25 percent. Slag Cement: 50 percent. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed. Combined Fly Ash or Pozzolan and Slag Cement: 50 percent portland cement minimum, with fly ash or pozzolan not exceeding 25 percent, Galvanized Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed bars, ASTM A 767/A 767M, Class II zinc coated after fabrication and bending.

Epoxy-Coated Reinforcing Bars: ASTM A 615/A 615M, Grade 60 deformed bars, ASTM A 775/A 775M, epoxy coated, with less than 2 percent damaged coating in each 12-inch bar length. Stainless-Steel Reinforcing Bars: ASTM A 955/A 955M, Grade 60, Type 316L, deformed.

Steel Bar Mats: ASTM A 184/A 184M, fabricated from ASTM A 615/A 615M, Grade 60, deformed bars, assembled with clips. Combined Fly Ash, Pozzolans, and Silica Fume: 35 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.

Combined Fly Ash or Pozzolans, Slag Cement, and Silica Fume: 50 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent. Limit water-soluble, chloride on content in hardened concrete to the following by percent by weight of cement: Plain-Steel Wire: ASTM A 1064/A 1064M, as drawn. Prestressed and Post-Tensioned concrete: 0.06 Deformed-Steel Wire: ASTM A 1064/A 1064M. Reinforced concrete exposed to chloride: 0.15 Epoxy-Coated Wire: ASTM A 884/A 884M, Class A, Type 1 coated, as-drawn, plain-steel wire, with less than 2 percent damaged coating in each 12-inch wire length. Reinforced concrete that is not dry or protected from moisture: 0.30 Welded-Wire Reinforcement: ASTM A 1064/A 1064M, plain, fabricated from as-drawn steel wire into flat sheets: Reinforced concrete that is dry or protected from moisture: 1.00 Deformed-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, flat sheet. Admixtures: Use admixtures according to manufacturer's written instructions Use water-reducing, high-range water-reducing, or plasticizing admixture in concrete, as required, for placement and workability.

Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions Galvanized-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, plain, fabricated from galvanized-steel wire into flat sheets. Epoxy-Coated Welded-Wire Reinforcement: ASTM A 884/A 884M, Class A coated, Type 1, plain steel. REINFORCEMENT ACCESSORIES Use water-reducing admixture in pumped concrete, concrete for heavy- use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a w/c ratio below 0.50. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs. Epoxy-Coated Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, ASTM A 775/A 775M epoxy coated. Use corrosion-inhibiting admixture in concrete mixtures where indicated. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup Epoxy Repair Coating: Liquid, two-part, epoxy repair coating; compatible with epoxy coating on reinforcement and complying with ASTM A 775/A 775M. Zinc Repair Material: ASTM A 780/A 780M. FABRICATING REINFORCEMENT Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice." E. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows: CONCRETE MIXING Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information. For concrete surfaces exposed to view, where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer- coated wire bar supports. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..

Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

APPROVED: DEPARTMENT OF PLANNING & ZONING DATE CHIEF, DEVELOPMENT ENGINEERING DIVISION CHIEF, DIVISION OF LAND DEVELOPMENT NH Am Gma

**BALTIMORE GAS** & ELECTRIC **BGE HOWARD SERVICE CENTER** 

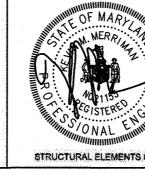
5130 ILCHESTER ROAD

ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032

ARCHITECTURE MASTER PLANNING www.mwsgrch.com 410-344-1460

CONSULTANT



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No.	Date	Description		ADDRESS CHART									
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		MAP 0031/GRID 0020 5 PARCEL 0557		5130 ILCHESTER RD., ELLICOTT CITY, MD 21043			GRID# ZONING		ELECT DISTRICT	CENSUS TRACT	SPECIFICATIONS		
					00140/00451	20	R-20	0031	1st	601104			
					WATER CODE SEWER CODE PROPERTY IMPROVEMENT NEW SERVICE CENTER AND FLEET MAINTENANCE BUILDINGS		FLEET	RW2.01 SHEET 49 OF 52					

**SHEET 49 OF 52** 

SDP-19-058

PART 3 - EXECUTION MISCELLANEOUS CONCRETE ITEM INSTALLATION FORMWORK INSTALLATION Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads. required to complete the Work Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:

1. Class A, 1/8 inch for smooth-formed finished surfaces. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded. Equipment Bases and Foundation Coordinate sizes and locations of concrete bases with actual equipment provided Class B, 1/4 inch for rough-formed finished surfaces. Construct concrete bases 4 inches high unless otherwise indicated, and extend base not less than 6 inches in each direction beyond the maximum dimensions of supported equipment unless otherwise indicated or unless required for seismic anchor Construct forms tight enough to prevent loss of concrete mortar Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Minimum Compressive Strength: 3000 psi at 28 days. Install keyways, reglets, recesses, and the like, for easy removal Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base, Do not use rust-stained steel form-facing materia For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete substrate. et edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds. Prior to pouring concrete, place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations Cast anchor-bolt insert into bases. Install anchor bolts to elevations required for proper attachment to supported equipment Chamfer exterior corners and edges of permanently exposed concrete, unless otherwise noted. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast in inserts and accessories as shown on Drawings, Screed, tamp, and trowel finish concrete surfaces. orm openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items. CONCRETE PROTECTING AND CURING Clean forms and adjacent surfaces to receive concrete. Remove thips, wood, sawdust, dirt, and other debris just before placing concrete. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement. after placing, screeding, and bull floating or darbying concrete, but before float finishing. EMBEDDED ITEM INSTALLATION Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.

2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions. remainder of curing period. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces. Cure concrete according to ACI 308.1, by one or a combination of the following methods: Install dovetail anchor slots in concrete structures as indicated Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials: **REMOVING AND REUSING FORMS** General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations, and curing and protection operations need to be maintained. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers. Leave formwork for beam soffits, joists, slabs, and other structural elements that support weight of concrete in place until concrete has achieved its 28-day design compressive strength Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material are not acceptable for exposed surfaces. Apply new form-release agent. than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.

Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments. When forms are reused, clean surfaces, remove fins and laltance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect, HORING AND RESHORING INSTALLATION Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies does not interfere with bonding of floor covering used on Project. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions, Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating Do not remove shoring or reshoring until measurement of slab tolerances is complete. and repair damage during curing period. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound does not interfere with Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions. application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period. Lap joints 6 inches and seal with manufacturer's recommended tape LIQUID FLOOR TREATMENT APPLICATION Bituminous Vapor Retarders: Place, protect, and repair bituminous vapor retarder according to manufacturer's written instructions. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions STEEL REINFORCEMENT INSTALLATION Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement Do not apply to concrete that is less than 28 days' old. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete, Sealing Coat: Uniformly apply a continuous sealing coat of curing and sealing compound to hardened concrete by power spray or roller according to manufacturer's written instructions. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars. JOINT FILLING Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated. Prepare, clean, and install joint filler according to manufacturer's written instructions Set wire ties with ends directed into concrete, not toward exposed concrete surfaces. Defer joint filling until concrete has aged at least six month(s). Do not fill joints until construction traffic has permanently ceased Install welded-wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire. Epoxy-Coated Reinforcement: Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D. Use epoxy-coated steel wire ties to fasten epoxy-coated steel reinforcement: Repair cut and damaged zinc coatings with zinc repair material according to ASTM A 780/A 780M. Use galvanized-steel wire ties to fasten zinc-coated steel reinforcement. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.

Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening. CONCRETE SURFACE REPAIRS 3.7 JOINTS Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approva Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete. Limit cut depth to 3/4 inch. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and General: Construct joints true to line with faces perpendicular to surface plane of concrete. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs. Form keved joints as indicated. Embed keys at least 1-1/2 inches into concrete. brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar matches surrounding color. Patch a test area at inconspicuous locations to verify mixture and color Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs. match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect. space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows: Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces. width, and other objectionable conditions Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random After concrete has cured at least 14 days, correct high areas by grinding.

Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated. Feather edges to match adjacent floor elevations. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, specified in Section 079200 "Joint Sealants," are indicated. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections toget nanufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with dean, square cuts and expose steel reinforcement with at least a 3/4 inch clearance WATERSTOP INSTALLATION all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate. Place, compact, and finish to blend with Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's adjacent finished concrete. Cure in same manner as adjacent concrete. B. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated, according to manufacturer's written instructions, adhesive bonding, mechanically fastening, and firmly pressing into place. Install in longest lengths practicable CONCRETE PLACEMENT Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed Repair materials and installation not specified above may be used, subject to Architect's approval. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, FIELD QUALITY CONTROL 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit Special Inspections: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports. Testing Agency: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports. concrete to avoid segregation Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints. Steel reinforcement placement. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301. Steel reinforcement welding. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to Headed bolts and stude se plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate. Verification of use of required design mixture. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete Concrete placement, including conveying and depositing Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners. Curing procedures and maintenance of curing temperature. Maintain reinforcement in position on chairs during concrete placement. Verification of concrete strength before removal of shores and forms from beams and slabs. Screed slab surfaces with a straightedge and strike off to correct elevatio osite samples of fresh concrete obtained according to ASTM C 172/C 172M shall be performed according to the following requirements: Slope surfaces uniformly to drains where required Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change FINISHING FORMED SURFACES Air Content: ASTM C 231/C 231M, pressure method, for normal-weight concrete; ASTM C 173/C 173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities Apply to concrete surfaces not exposed to public view. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of Unit Weight: ASTM C 567/C 567M, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture. seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities. Compression Test Specimens: ASTM C 31/C 31M. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, or to be covered with a coating or covering material applied directly to concrete. Cast and laboratory cure three sets of two standard cylinder specimens for each composite sample.

Cast and field cure an additional set of two standard cylinder specimens as the composite sample for post-tensioned concrete used to determine if the concrete has achieved proper strength prior to tendon stressing. Rubbed Finish: Apply the following to smooth-formed-finished as-cast concrete where indicated:

Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days. If 28 day tests do not meet specified compressive-strength requirements, hold remaining set of two Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix 1 part portland cement to 1-1/2 parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts laboratory-cured specimens for 56 day tests. determined by trial patches, so color of dry grout matches adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours. Test the set of two field-cured specimens prior to post-tensioning tendon stressing. The results of this test shall be used to determine if the concrete has achieved the necessary strength to stress the tendons. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix 1 part portland cement and 1 part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches, so color of dry grout matches adjacent A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated. surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive. unformed surfaces unless otherwise indicated: strength by more than 500 psi. FINISHING FLOORS AND SLABS Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction. concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for 7-, 28-, and 56-day tests. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete. Apply scratch finish to surfaces to receive concrete floor toppings or mortar setting beds for bonded cementitious floor finishes. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture. inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.

Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements. 1. Apply float finish to surfaces to receive trowel finish or to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents. would telegraph through applied coatings or floor coverings. Measure floor and slab flatness and levelness according to ASTM E 1155 within 24 hours of finishing. Apply a trowel finish to surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system. Finish surfaces to the following tolerances, according to ASTM E 11.55, for a randomly trafficked floor surface: PROTECTION OF LIQUID FLOOR TREATMENTS Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 17; and of levelness, F(L) 15 Finish and measure surface, so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.- long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/4 inch. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces where ceramic or quarry tile is to be installed by either thickset or thinset method. While concrete is still plastic, slightly scarify surface with a fine broom. Comply with flatness and levelness tolerances for trowel-finished floor surfaces, Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated. 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application. Slip-Resistive Finish: Before final floating, apply slip-resistive aggregate finish where indicated and to concrete stair treads, platforms, and ramps. Apply according to manufacturer's written instructions and as follows: Uniformly spread 25 lb/100 sq. ft. of dampened slip-resistive aggregate over surface in one or two applications. Tamp aggregate flush with surface, but do not force below surface. After broadcasting and tamping, apply float finish. After curing, lightly work surface with a steel wire brush or an abrasive stone and water to expose slip-resistive aggregate. Dry-Shake Floor Hardener Finish: After initial floating, apply dry-shake floor hardener to surfaces according to manufacturer's written instructions and as follows: Uniformly apply dry-shake floor hardener at a rate of 100 lb/100 sq. ft. unless greater amount is recommended by manufacturer. Uniformly distribute approximately two-thirds of dry-shake floor hardener over surface by hand or with mechanical spreader, and embed by power floating with a second dry-shake floor hardener application, uniformly distributing remainder of material,

and embed by power floating.

After final floating, apply a trowel finish. Cure concrete with curing compound recommended by dry-shake floor hardener manufacturer and apply immediately after final finishing.

BALTIMORE GAS & ELECTRIC BGE HOWARD SERVICE CENTER

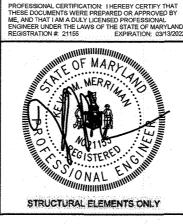
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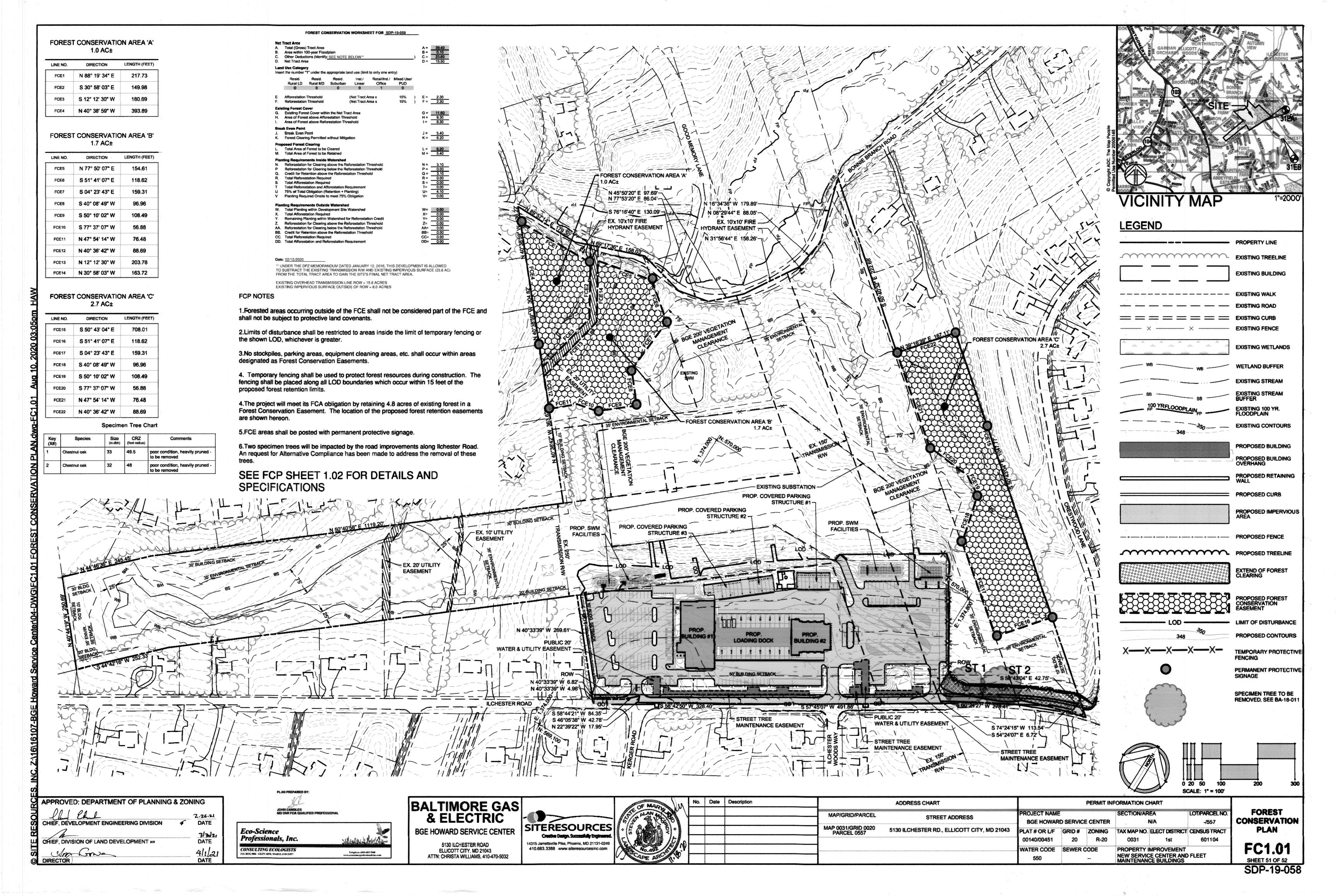
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-		MAP 0031/GRID 0020 PARCEL 0557			

	PERMIT INFORMATION CHART						
MAP/GRID/PARCEL	STREET ADDRESS	PROJECT NAME  BGE HOWARD SERVICE CENTER			SECTION/AREA N/A		LOT/PARCEL
MAP 0031/GRID 0020 PARCEL 0557	5130 ILCHESTER RD., ELLICOTT CITY, MD 21043	PLAT # OR L/F	GRID#	ZONING		ELECT DISTRICT	CENSUS TRA
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RETAINING WALL SPECIFICATIONS

SDP-19-058

**SHEET 50 OF 52** 



#### CONSTRUCTION PERIOD PROTECTION PROGRAM

#### A. Forest Protection Techniques

1. Soil Protection Area (Critical Root Zone)

The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of a its roots may be found. The majority of roots responsible for water and nutrient uptake are located just below the soil surface. Temporary fencing shall be placed around the critical root zone of the forest in areas where the forest limits occur within 25 feet of the limit of disturbance.

#### 2. Fencing and Signage

Existing forest limits occurring within 25 feet of the limits of disturbance shall be protected using temporary protective fencing. Permanent signage shall be placed around the afforestation area prior to plant installation, as shown on the plan.

#### B. Pre-Construction Meeting

Upon staking of limits of disturbance a pre-construction meeting will be held between the developer, contractor and appropriate County inspector. The purpose of the meeting will be to verify that all sediment control is in order, and to notify the contractor of possible penalties for non-compliance with the FCP.

#### C. Storage Facilities/Equipment Cleaning

All equipment storage, parking, sanitary facilities, material stockpiling, etc. associated with construction of the project will be restricted to those areas outside of the proposed Forest Conservation Easement. Cleaning of equipment will be limited to area within the LOD of the proposed homesites. Wastewater resulting from equipment cleaning will be controlled to prevent runoff into environmentally sensitive areas.

#### D. Sequence of Construction

The following timetable represents the proposed timetable for development of the subject property. The items outlined in the Forest Conservation Plan will be enacted within two (2) years of subdivision approval.

#### Below find a proposed sequence of construction.

- 1. Install all signage and sediment control devices.
- 2. Hold pre-construction meeting between developer, contractor and County inspector.
- 3. Build access roads, install water and sewer, and construct houses. Stabilize all disturbed areas accordingly.
- 4. Remove sediment control.

  5. Hold post-construction meeting with County inspectors to assure compliance with FCP. Submit Certification of Retention.

#### E. Construction Monitoring

Eco-Science Professionals, or another qualified professional designated by the developer, will monitor construction of the project to ensure that all activities are in compliance with the Forest Conservation Plan.

#### F. Post-Construction Meeting

Upon completion of construction, Eco-Science Professionals, or another qualified professional designated by the developer, will notify the County that construction has been completed and arrange for a post-construction meeting to review the project site. The meeting will allow the County inspector to verify that forest retention requirements have been met

#### POST-CONSTRUCTION MANAGEMENT PLAN

Howard County requires a two year post-construction management plan be prepared as part of the Forest Conservation Plan. The plan goes into effect upon acceptance of the construction certification of completion by the County. Eco-Science Professionals, or another qualified professional designated by the developer, will be responsible for implementation of the post-construction management plan.

#### The following items will be incorporated into the plan for the subject property:

#### A. Fencing and Signage

Permanent signage indicating the limits of the retention/planting area shall be maintained.

#### B. General Site Inspections

Site inspections will be performed to insure that retention of the forest is met in accordance with this plan and that the forest edge remains healthy and stable.

## C. Education

The developer will provide appropriate materials to property owners informing them of the location and purpose of the forest conservation easement. Materials may include site plans and information explaining the intent of the forest conservation law.

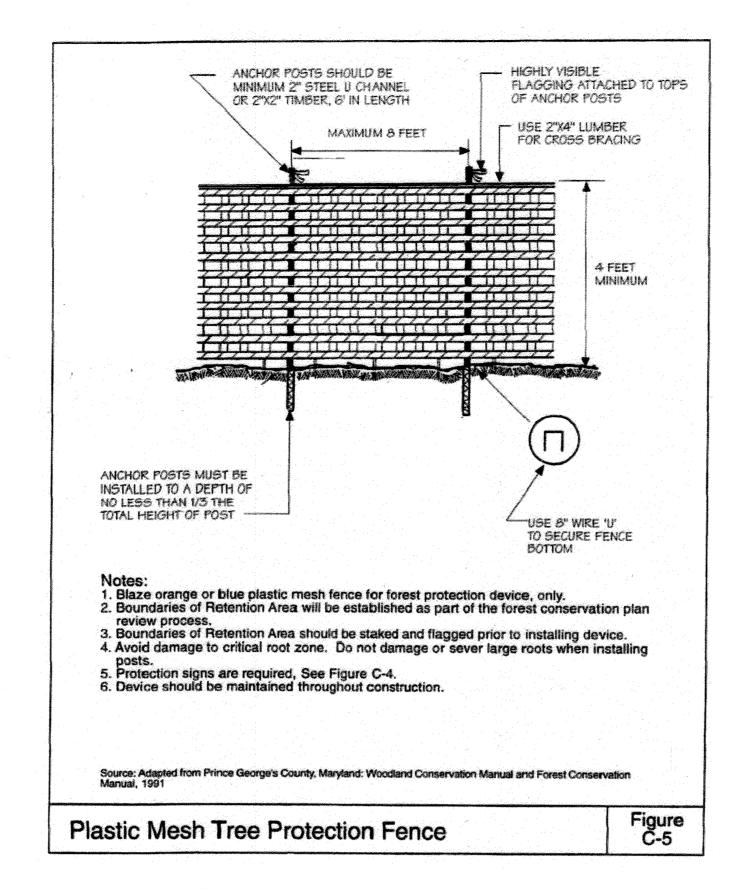
### D. Final Inspection

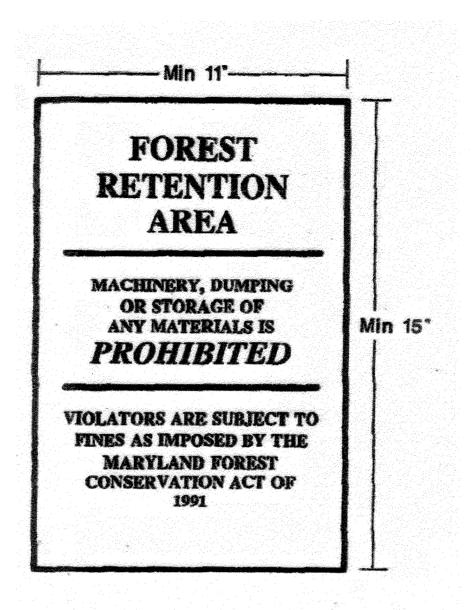
At the end of the two year post-construction management period, Eco-Science Professionals, or another qualified professional, will submit to the administrator of the Howard County Forest Conservation Program certification that all retention/afforestation requirements have been met. Upon acceptance of this certification, the County will release the developer from all future obligations and release the developer's bond.

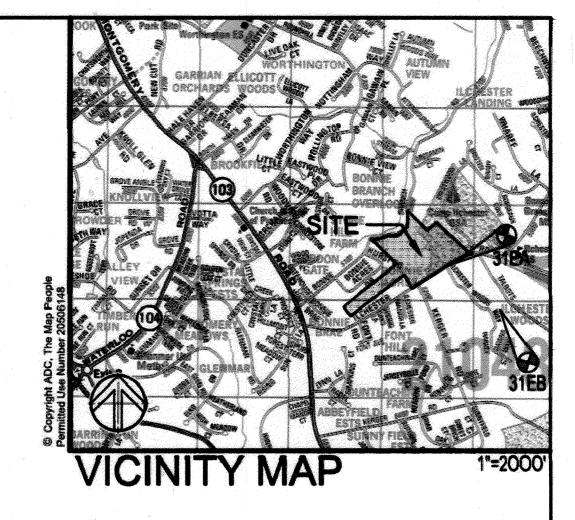
### FOREST CONSERVATION EASEMENTS

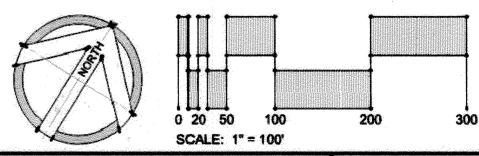
Easements are a legal means of providing permanent protection of forests, farmland and open space. In accordance with the criteria outlined in the Howard County Forest Conservation Manual, a forest conservation easement will be recorded for the retention areas the subject property. Submission of the easements for recordation will occur prior to commencement of construction activities.

DATE









APPROVED: DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT NH

DATE

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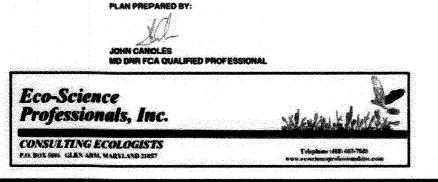
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BALTIMORE GAS & ELECTRIC BGE HOWARD SERVICE CENTER

5130 ILCHESTER ROAD

ELLICOTT CITY, MD 21043

ATTN: CHRISTA WILLIAMS, 410-470-5032



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PERMIT INFORMATION CHART

PROJECT NAME

BGE HOWARD SERVICE CENTER

PLAT # OR L/F GRID # ZONING TAX MAP NO. ELECT DISTRICT CENSUS TRACT

00140/00451 20 R-20 0031 1st 601104

WATER CODE SEWER CODE

PROPERTY IMPROVEMENT

NEW SERVICE CENTER AND FLEET

MAINTENANCE BUILDINGS

FOREST CONSERVATION NOTES

SHEET 52 OF 52 SDP-19-058