HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
3430 Courthouse Drive ■ Ellicott City, Maryland 21043 ■ 410-313-2350
Voice/Relay

Valdis Lazdins, Director FAX 410-313-3467

TECHNICAL STAFF REPORT
Planning Board Meeting of October 5, 2017

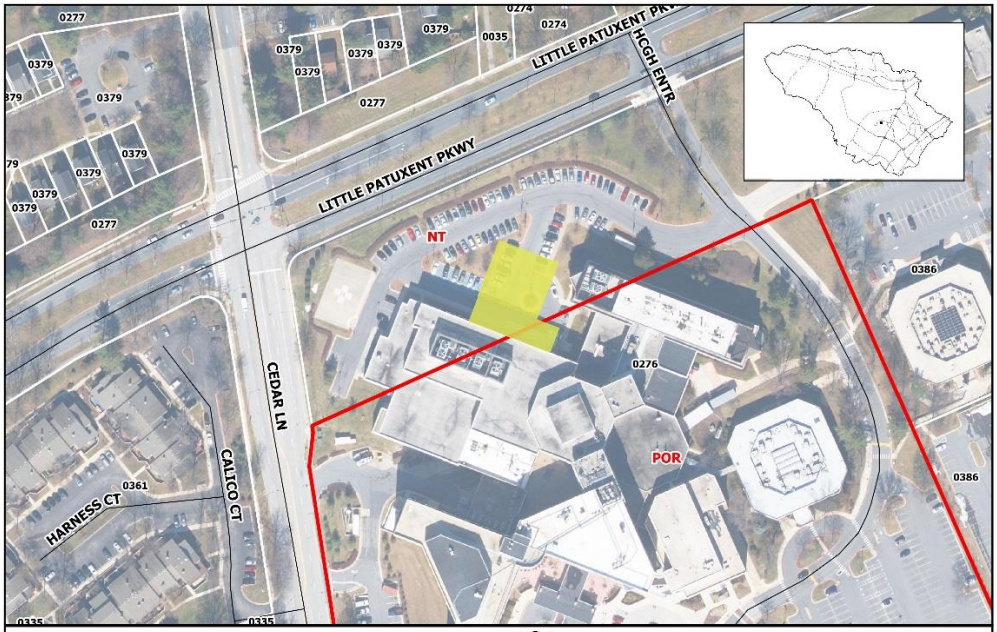
Project/Petitioner: SDP-17-061 Howard County General Hospital- Psychiatric Building Addition

Planner: Eric Buschman
Division of Land Development
410-313-0729

Request: To approve a site development plan to construct a 16,184 square foot, two-story building addition and associated site improvements, in accordance with Final Development Plan FDP-83 and the Zoning Regulations.

Recommendation: ***Approval subject to compliance with Subdivision Review Committee (SRC) comments and any conditions imposed by the Planning Board.***

Location: The Howard County General Hospital is located on the southeast corner of the Little Patuxent Parkway and Cedar Lane intersection, in Section 8, Area 2, of the Columbia Town Center. The 25.51-acre site is split-zoned New Town-Town Center Commercial and Planned Office Research (POR). The hospital is accessed from Little Patuxent Parkway, Cedar Lane, and Charter Drive. The site currently contains a hospital building, two medical office buildings, a parking garage, and surface parking lots. The proposed building addition is located on the northern side of the hospital building, adjacent to Little Patuxent Parkway and will be connected to the existing Emergency Department.



Vicinity-Zoning Map: SDP-17-061 NORTH NOT TO SCALE

Vicinal Properties: The site is bounded on the west by Cedar Lane, on the north by Little Patuxent Parkway, on the east by medical office buildings and the Howard Community College campus, and on the south by residential townhomes, office and retail buildings.

Site History:

- 03/11/70: Final Development Plan FDP-83 recorded and established a land use map and criteria for Columbia Town Center Section 8 Area 2.
- 04/07/70: Final plat recorded in Plat Book 18, Page 23, creating Parcel 1.
- 08/03/71: Site Development Plan SDP-71-066 approved to construct a main hospital building and associated parking lots.
- 11/08/06: Site Development Plan SDP-00-072 approved to construct an emergency room addition.
- 04/17/07: Site Development Plan SDP-07-057 approved to construct a tower addition and 6-story parking garage.

Site Improvements: A 16,184 square foot building addition; including associated site improvements, such as sidewalks, stormwater management and landscaping.

Stormwater Management: Stormwater management (quantity and quality) is provided by an on-site stormwater management pond, approved and constructed per SDP-95-114. The facility is owned and operated by the Howard County General Hospital.

Environmental Considerations: The subject property does not contain wetlands, streams, buffers or 100-year floodplains, nor are there adjacent cemeteries, historic structures, forest resources or scenic roads.

Landscaping: Landscaping will be provided in accordance with Section 16.124 of the Howard County Code and the Howard County Landscape Manual.

Evaluation and Conclusions: The Site Development Plan complies with Final Development Plan FDP-83, as follows:

- **Setbacks:** The proposed building addition meets a 30' setback from a public road right-of-way.
- **Land Use:** A hospital is among the permitted uses in commercial districts and commercial land use zones. These include all uses in the 'B-1', 'B-2' and 'SC' zoning districts, including hospitals.
- **Building Height:** No height limitation is imposed upon structures constructed within the Final Development Plan FDP-83 phase, provided improvements are constructed in accordance with a Site Development Plan approved by the Howard County Planning Board.
- **Parking:** Per FDP-83, hospital parking is based on one space for each two beds. Section 133.0.D.7 of the Zoning Regulations requires one space for each seven beds. The existing hospital and accessory medical buildings on campus provide 1,681 parking spaces, which fulfills the parking requirements for the proposed building addition.

SRC Action: The SRC notified the petitioner on August 23, 2017, that the plan may be approved, subject to Planning Board approval.

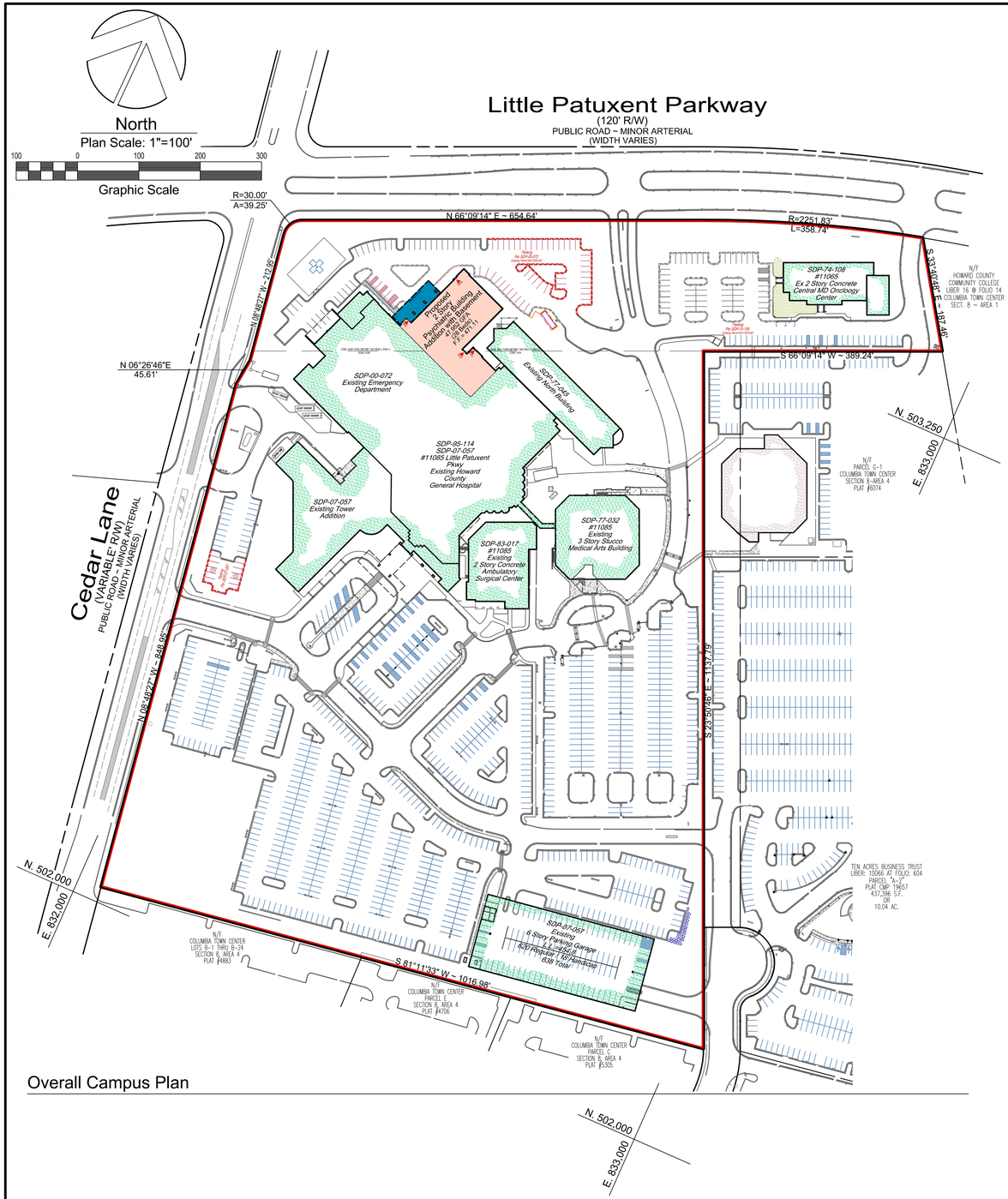
Recommendation: The Department of Planning and Zoning recommends approval of Site Development Plan SDP-17-061, subject to compliance with SRC comments and any conditions by the Planning Board.

9/18/17

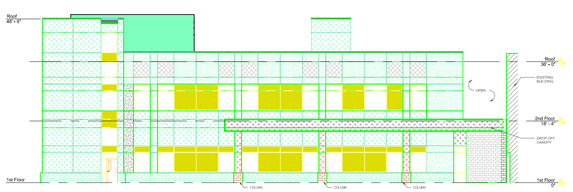
Valdis Lazdins, Director Date
Department of Planning & Zoning

VL:eb

Please note that this file is available for public review <u>by appointment</u> at the Department of Planning and Zoning's public service counter, Monday through Thursday, 8:00 a.m. to 5:00 p.m. and Friday, 8:00 a.m. to 3:00 p.m.



Overall Campus Plan



Building Elevation:

NOT TO SCALE

Legend:

SEE SHEET 2 OF XX AND 3 OF XX

Benchmark Information:

ELEVATIONS HEREON ARE BASED UPON THE GRID MERIDIAN OF THE MARYLAND COORDINATE SYSTEM AND DERIVED FROM THE FOLLOWING HOWARD COUNTY CONTROL SYSTEM: #2639003 3/4" IRON BAR ELEVATION = 479.559 LOCATED SOUTH OF LITTLE PATUXENT PARKWAY 12.1 FEET FROM THE FACE OF CONCRETE CURB, 0.16 MILES EAST OF CEDAR LANE.

BM#1: GRID POINT NUMBER B-3; A PK NAIL IN THE BITUMINOUS CONCRETE PAVED DRIVEWAY ENTRANCE, ELEVATION = 474.73, 1929 U,S,C,G,S. GENERAL DATUM.

BM#2: GRID POINT NUMBER F-3; A PK NAIL IN THE BITUMINOUS CONCRETE PAVED DOCTOR'S PARKING LOT, WEST OF THE MAIN BUILDING ELEVATION = 470.44, 1929 U,S,C,G,S. GENERAL DATUM.

BM#3: SQUARE CUT IN TOP OF SOUTHEAST CORNER OF CONCRETE PEDESTAL LIGHT BASE IN THE MAIN PARKING LOT, SOUTHEAST SECTION, ELEVATION = 463.79, 1929 U.S.C.G.S. GENERAL DATUM.

General Site Data:

1. GENERAL SITE DATA:

   A. HOWARD COUNTY GENERAL HOSPITAL
   5755 CEDAR LANE
   COLUMBIA, MARYLAND 21044

   B. EXISTING ZONING: NT / POR

   C. PLAT REFERENCE: HOWARD COUNTY GENERAL HOSPITAL
   TOWN CENTER ~ SECTION 8, AREA 2, LOT 5
   PLAT NUMBER: 24098 (RECORDED: FEBRUARY 24, 2017)

   D. APPLICABLE CAMPUS DPZ FILE REFERENCES:
   SDP-86-207, FDP-83, SDP-85-17, F-76-101, SDP-86-296, F-91-65, S-90-32, PB 266, SDP-94-04, AA-90-09, AA-95-23, WP-90-106, BA-9036, SDP-90-190, SDP-95-114, WP-O5-99, F-07-56, and SDP-00-072, WP 97-72, WP 98-33, WP 98-35, F 70-52, SDP 83-17, SDP 86-209, P-76-08, F-07-155, SDP 86-247, and SDP-77-45

   E. PROPOSED USE OF SITE OR STRUCTURE(S): HOSPITAL, MEDICAL OFFICE BUILDINGS & PRIVATE PARKING GARAGE

   F. PROPOSED WATER SYSTEMS: PUBLIC

2. AREA TABULATION:

   A. TOTAL GROSS/NET HOSPITAL CAMPUS AREA: 1,111,105 SQUARE FEET OR 25.51 ACRES

   B. LIMIT OF DISTURBANCE UNDER THIS APPROVAL: 22,755 SQUARE FEET OR 0.52 ACERS.

   C. BUILDING COVERAGE OF SITE:

LOT AREA=	1,111,105 SQUARE FEET OR 25.51 ACRES
EXISTING BUILDING COVERAGE:	
EXISTING HOSPITAL	134,373 SQUARE FEET OR 3.08 ACRES
EXISTING MEDICAL OFFICE BUILIDNG (ARTS)	17,660 SQUARE FEET OR 0.41 ACRES
EXISTING MEDICAL OFFICE BUILDING (ONCOLOGY)	8,776 SQUARE FEET OR 0.20 ACRES
EXISTING CANOPY=	3,350 SQUARE FEET OR 0.07 ACRES
EXISTING PARKING GARAGE=	34,282 SQUARE FEET OR 0.79 ACRES
PROPOSED BUILDING ADDITION=	16,184 SQUARE FEET OR 0.37 ACRES
TOTAL BUILDING COVERAGE=	214,565 SQUARE FEET OR 4.93 ACRES = 19.31 %

3. PARKING SPACE DATA:

REQUIRED PARKING SPACES;
NOTE: PARKING CALCULATIONS ARE BASED ON SECTION 133 OF THE ZONING REGULATIONS

EXISTING HOSPITAL (BZA)		
(UP-DATED UNDER SDP 95-114)		
1. PATIENT BEDS:	223 (1 SPACE/2 BEDS)	112 SPACES
2. EMPLOYEES PER MAJOR SHIFT:	300 (1 SPACE/EMPLOYEE)	300 SPACES
3. DR.'S TREATING OUTPATIENTS ON MAJOR SHIFT:	4 (4 SPACES/DOCTOR)	16 SPACES
EXISTING AMBULATORY SURGERY CENTER (SDP 83-017)		
(UP-DATED UNDER SDP 95-114)		
1. EMPLOYEES PER MAJOR SHIFT:	80 (1 SPACE/EMPLOYEE)	80 SPACES
2. DR.'S TREATING OUTPATIENTS:	13 (4 SPACES/DOCTOR)	52 SPACES
EXISTING EMERGENCY DEPARTMENT ADDITION (SDP 00-072):		
1. EMPLOYEES PER MAJOR SHIFT:	40 (1 SPACE/EMPLOYEE)	40 SPACES
2. DR.'S TREATING OUTPATIENTS:	20 (4 SPACES/DOCTOR)	80 SPACES
EXISTING VERTICAL EXPANSION (SDP 95-114)		
1. EMPLOYEES PER MAJOR SHIFT:	50 (1 SPACES/EMPLOYEE)	50 SPACES
2. DR.'S TREATING OUTPATIENTS:	8 (4 SPACES/DOCTOR)	32 SPACES
EXISTING DOCTORS OFFICES (MEDICAL ARTS, SDP 95-114)		
(UP-DATED UNDER SDP 95-114)		
1. EMPLOYEES PER MAJOR SHIFT:	50 (1 SPACES/EMPLOYEE)	50 SPACES
2. DR.'S TREATING OUTPATIENTS:	24 (4 SPACES/DOCTOR)	96 SPACES
EXISTING HOSPITAL 'TOWER' ADDITION (SDP 07-057):		
1. PATIENT BEDS:	40 (1 SPACE/2 BEDS)	20 SPACES
2. EMPLOYEES PER MAJOR SHIFT:	100 (1 SPACE/EMPLOYEE)	100 SPACES
3. DR.'S TREATING OUTPATIENTS ON MAJOR SHIFT:	8 (4 SPACES/DOCTOR)	32 SPACES
EXISTING MEDICAL OFFICE BUILDING (ONCOLOGY)(SDP 74-108):	40 (1SPACE/2 PERSONS)	20 SPACES
TOTAL REQUIRED PARKING (PREVIOUSLY APPROVED SDP PRIOR TO APRIL 6, 2010):		1080 SPACES
PROPOSED 2 STORY HOSPITAL ADDITION WITH BASEMENT ~ 47,952 GFA (SDP 17-061)		
PATIENT BEDS:	28 (7 SPACES/BED)	196 SPACES
GRAND TOTAL REQUIRED PARKING:		1,276 SPACES

PROVIDED PARKING SPACES;

A.	NUMBER OF PARKING SPACES REQUIRED BY ZONING REGULATIONS AND/OR FDP CRITERIA:	1,276 SPACES
B.	NUMBER OF REGULAR PARKING SPACES PROVIDED ON-SITE:	962 SPACES
C.	NUMBER OF HANDICAP PARKING SPACES PROVIDED:	61 SPACES
D.	NUMBER OF HANDICAP VAN PARKING SPACES PROVIDED:	20 SPACES
E.	NUMBER OF REGULAR SPACES WITH 6 STORY GARAGE:	620 SPACES
F.	NUMBER OF HANDICAP SPACES WITH 6 STORY GARAGE:	18 SPACES
	NUMBER OF TOTAL SPACES PROVIDED ON SITE=	1,681 SPACES
NOTE:	NUMBER OF AMBULANCE & POLICE PARKING SPACES PROVIDED: (NOT INCLUDE IN TOTAL)	9 SPACES

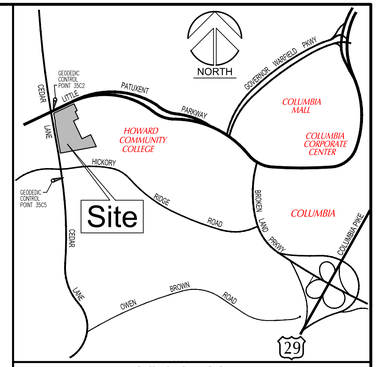
4. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

General Site Notes:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY AND M.S.H.A.STANDARDS AND SPECIFICATIONS AS APPLICABLE.
2. APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN FROM AVAILABLE UTILITY RECORDS AND INFORMATION. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS REQUIRED TO PROTECT ANY EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S SOLE EXPENSE.
3. THE CONTRACTOR SHALL TEST PIT, BY HAND, ALL EXISTING UTILITY CROSSINGS AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION AS SHOWN ON THESE DRAWINGS, TO VERIFY THEIR LOCATION AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF LOCATIONS AND/OR ELEVATIONS ARE OTHER THAN SHOWN.
4. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF CONSTRUCTION FOR ANY WORK SHOWN ON THESE DRAWINGS:

AT&T	1-800-252-1133
BGE (CONTRACTOR SERVICES)	1-410-850-4620
BGE (UNDER GROUND DAMAGE CONTROL)	1-410-685-1400
BUREAU OF UTILITIES	1-410-313-4900
COLONIAL PIPELINE CO.	1-410-795-1390
MISS UTILITY	1-800-257-7777
STATE HIGHWAY ADMINISTRATION	1- 410-531-5533
VERIZON	1-800-743-0033 / 410-224-9210
HOWARD COUNTY CONSTRUCTION INSPECTION SURVEY DIVISION:	1-410-313-1880 (24 HOURS NOTICE PRIOR TO START OF WORK)

5. EXISTING TOPOGRAPHIC SURVEY INFORMATION WAS OBTAINED FROM FIELD RUN SURVEY WITH TWO FOOT CONTOUR INTERVALS PREPARED BY DAFT MCCUNE WALKER, DATED FEBRUARY 22, 1995, AND SUPPLEMENTED BY JOYCE ENGINEERING CORPORATION DATED OCTOBER 10, 1999.
6. ALL INLET STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS OR MSHA STANDARDS AS SPECIFIED ON THE STRUCTURE SCHEDULE.
7. OPERATING EXISTING VALVES, SWITCHES, SERVICES OR START UP OF NEW SERVICES SHALL BE COORDINATED WITH THE OWNERS REPRESENTATIVE.
8. REQUIRED SOIL EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE PROVIDED, INSTALLED AND MAINTAINED AS REQUIRED.
9. THE CONTRACTOR SHALL CAREFULLY REMOVE FROM THE AREA TO BE DISTURBED ALL TREES, SHRUBS AND PLANT MATERIALS USING PROCEDURES RECOMMENDED BY THE AMERICAN NURSERYMAN'S ASSOCIATION SO AS TO MAXIMIZE THE CONTINUAL SURVIVAL AND HEALTH OF THE MATERIALS. THESE TREES, SHRUBS AND PLANT MATERIALS SHALL BE TRANSPORTED TO A DESIGNATED LOCATION ON THE OWNER'S PROPERTY AND HEELED INTO A MULCH HOLDING BED FOR FUTURE USE BY THE OWNER IN LOCATIONS OTHER THAN THOSE INVOLVED IN THE CONTRACT WORK, OR PERMANENTLY PLANTED IMMEDIATELY AT THE DIRECTION OF THE LANDSCAPER ARCHITECT OR OWNER.
10. WHERE DEMOLITION IS INDICATED ON THE DRAWINGS, IT SHALL MEAN TO COMPLETELY DEMOLISH THE FEATURE, CLEAR THE AREAS OF ALL DEBRIS AND DISPOSE OF THE MATERIAL OFF-SITE AT A LEGAL DUMP-SITE. ABANDON MEANS TO LEAVE THE FEATURE IN PLACE AND CUT WHERE REQUIRED, AND BULKHEAD ALL CUT ENDS WITH A PLUG OR CAP OR CONSTRUCT A MINIMUM 9" THICK BRICK AND MORTAR BULKHEAD CONFORMING TO THE EXISTING UTILITY MATERIALS.
11. THE NEW TOWN ZONED PORTION OF THIS PROPERTY IS EXEMPT FROM THE FOREST CONSERVATION (FC) ORDINANCE IN ACCORDANCE WITH SECTION 16.1202 [B] [I] [IV] OF THE HOWARD COUNTY CODE.
12. THE POR ZONED PORTION OF THIS PROPERTY IS EXEMPT FROM THE FOREST CONSERVATION (FC) ORDINANCE IN ACCORDANCE WITH SECTION 16.1202 [B] [I] [III] OF THE HOWARD COUNTY CODE.
13. THERE ARE NO KNOWN CEMETERIES OR BURIAL GROUNDS ON THIS SITE.
14. ALL EXTERIOR LIGHTING SHALL COMPLY WITH SECTION 134 OF THE ZONING REGULATIONS.
15. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
16. ALL CURB RADII ARE 5' UNLESS OTHERWISE NOTED.
17. 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 TO THE PLACEMENT OF ANY ASPHALT.
18. THERE IS NO FLOODPLAIN ON-SITE.
19. THERE ARE NO WETLANDS ON THIS SITE.
20. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, DATED JUNE 28, 2004.
21. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODEDIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NUMBERS 35C2 AND 39C5 WERE USED FOR THIS PROJECT.
22. THIS SITE IS SERVED BY PUBLIC WATER & SEWER SYSTEM
23. STORMWATER MANAGEMENT (QUANTITY & QUALITY) IS PROVIDED BY AN ON-SITE STORM WATER MANAGEMENT POND DESIGN, APPROVED AND CONSTRUCTED PER SDP-95-114. THE FACILITY IS OWNED AND OPERATED BY THE HOWARD COUNTY GENERAL HOSPITAL. THE ORIGINAL APPROVED FACILITY WAS DESIGNED FOR A TOTAL IMPERVIOUS AREA OF 611,029 SQUARE FEET. THE CURRENT PLAN REFLECTS A TOTAL NET DECREASE OF IMPERVIOUS AREA OF 42,806 SQUARE FEET OR 0.98 ACRES.
24. THE SUBJECT PROPERTY IS ZONED POR AND NT PER THE 2/02/04 COMPREHENSIVE ZONING PLAN AND THE COMP LITE ZONING REGULATION AMENDMENTS EFFECTIVE 7/28/06.
25. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF $4,800.00 FOR 11 SHADE TREES, 4 EVERGREEN TREES, AND 30 SHRUBS.
26. THIS SDP IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY CB-75-2003 AND THE COMPLETE ZONING REGULATION AMENDMENTS. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACKS AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING PERMIT APPLICATION.



Vicinity Map

Scale: 1" = 2000'
Howard County ADC Map Page 15 (22nd Ed.) ~ Grid C-6

Sheet Index

1 of 12 Cover Sheet Site Development Plan
2 of 12 Site Development Campus Plan (North)
3 of 12 Site Development Campus Plan (South)
4 of 12 Site Development & Grading Plan
5 of 12 Site Development Details
6 of 12 Landscaping Plan
7 of 12 Landscaping Notes, Schedules & Details
8 of 12 Sediment and Erosion Control Plan
9 of 12 Sediment and Erosion Control Notes & Details
10 of 12 Sediment and Erosion Control Notes & Details
11 of 12 Existing & Proposed Conditions DAM (North)
12 of 12 Existing & Proposed Conditions DAM (South)

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: _____

_____

APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

DATE	NO.	REVISION DESCRIPTION

PROJECT

Howard County General Hospital Psychiatric Addition

Columbia Town Center

Section 8 - Area 2 - Lot 5

Owner/Developer:
Howard County General Hospital, Inc.
5755 Cedar Lane
Columbia, Maryland 21044
Attn: Ryan Brown, Vice Principal of Operations
Phone: 410-740-7720

JOYCE ENGINEERING CORPORATION
CIVIL ENGINEERING LAND SURVEYING LAND PLANNING CONSTRUCTION MANAGEMENT
10766 BALTIMORE AVENUE - BELTSVILLE, MARYLAND 20705
TEL: (301) 595-4353 FAX: (301) 595-4650 WEB: www.joyceeng.com

Drawing name: C:\Users\Murphy\appdata\local\temp\AcPublish_8024\D16052 SDP-1 [Cover Sheet].dwg
Plotted: Sep 13, 2017 - 11:44am

ADDRESS CHART

LOT/PARCEL	STREET ADDRESS
5	5755 Cedar Lane ~ Columbia, MD 21044 [Hospital] 11068 Little Patuxent Parkway ~ Columbia, MD 21044 [Oncology Bldg] 11085 Little Patuxent Parkway ~ Columbia, MD 21044 [Medical Arts Bldg]

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.

Signature 11243 12/17/18
License No: Exp Date

PERMIT INFORMATION CHART

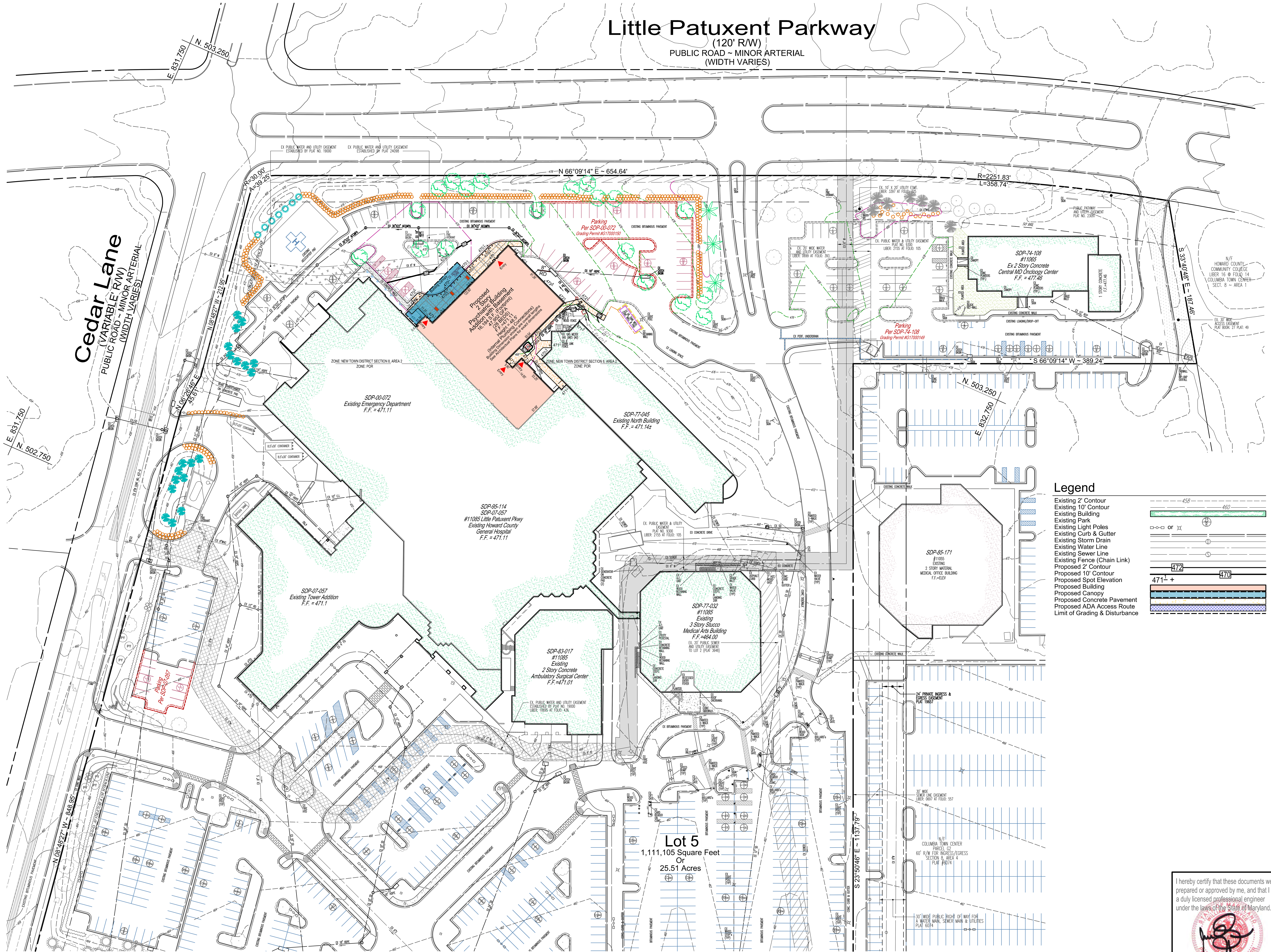
SUBDIVISION HCGH TOWN CENTER			SECTION/AREA 8/2		LOT/PARCEL # Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE POR/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

TITLE

Site Development Cover Sheet

DES BY WAJ	SCALE 1" = 100'	PROJ. NO. 016052	
DRN BY HAL	DATE May 2017	1 OF 12	
CHK BY JEC	APPROVED WAJ		

SDP #17-061


Little Patuxent Parkway
(120' R/W)
PUBLIC ROAD ~ MINOR ARTERIAL
(WIDTH VARIES)
Cedar Lane
(VARIABLE' R/W)
PUBLIC ROAD ~ MINOR ARTERIAL
(WIDTH VARIES)
N 66°09'14" E ~ 654.64'
S 66°09'14" W ~ 389.24'
R=2251.83'
L=358.74'
S 33°40'48" E ~ 187.46'
S 23°50'46" E ~ 1137.79'
N 08°48'27" W ~ 848.95'
SDP-00-072
Existing Emergency Department
F.F. = 471.11
SDP-77-045
Existing North Building
F.F. = 471.14±
SDP-95-114
SDP-07-057
#11085 Little Patuxent Pkwy
Existing Howard County
General Hospital
F.F. = 471.11
SDP-07-057
Existing Tower Addition
F.F. = 471.1
SDP-83-017
#11085
Existing
2 Story Concrete
Ambulatory Surgical Center
F.F.=471.01
SDP-77-032
#11085
Existing
3 Story Stucco
Medical Arts Building
F.F. =464.00
SDP-85-171
SDP-74-108
#11065
Ex 2 Story Concrete
Central MD Oncology Center
F.F. = 477.46
Parking
Per SDP-00-072
Parking
Per SDP-74-108
Lot 5
1,111,105 Square Feet
Or
25.51 Acres
Legend
Existing 2' Contour
Existing 10' Contour
Existing Building
Existing Park
Existing Light Poles
Existing Curb & Gutter
Existing Storm Drain
Existing Water Line
Existing Sewer Line
Existing Fence (Chain Link)
Proposed 2' Contour
Proposed 10' Contour
Proposed Spot Elevation
Proposed Building
Proposed Canopy
Proposed Concrete Pavement
Proposed ADA Access Route
Limit of Grading & Disturbance

SEE SHEET 3 OF 12

North
Plan Scale: 1"=50'

50 0 50 100 150
Graphic Scale

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: ______________________

APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

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Drawing name: C:\Users\Murphyt\appdata\local\temp\AcPublish_8024\016052 SDP-2 [Site Plan-1].dwg
Plotted: Sep 13, 2017 - 11:10am

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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.

Signature

11243	12/17/18
License No:	Exp Date

PERMIT INFORMATION CHART

SUBDIVISION			SECTION/AREA		LOT/PARCEL #
HCGH TOWN CENTER			8/2		Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE POR/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

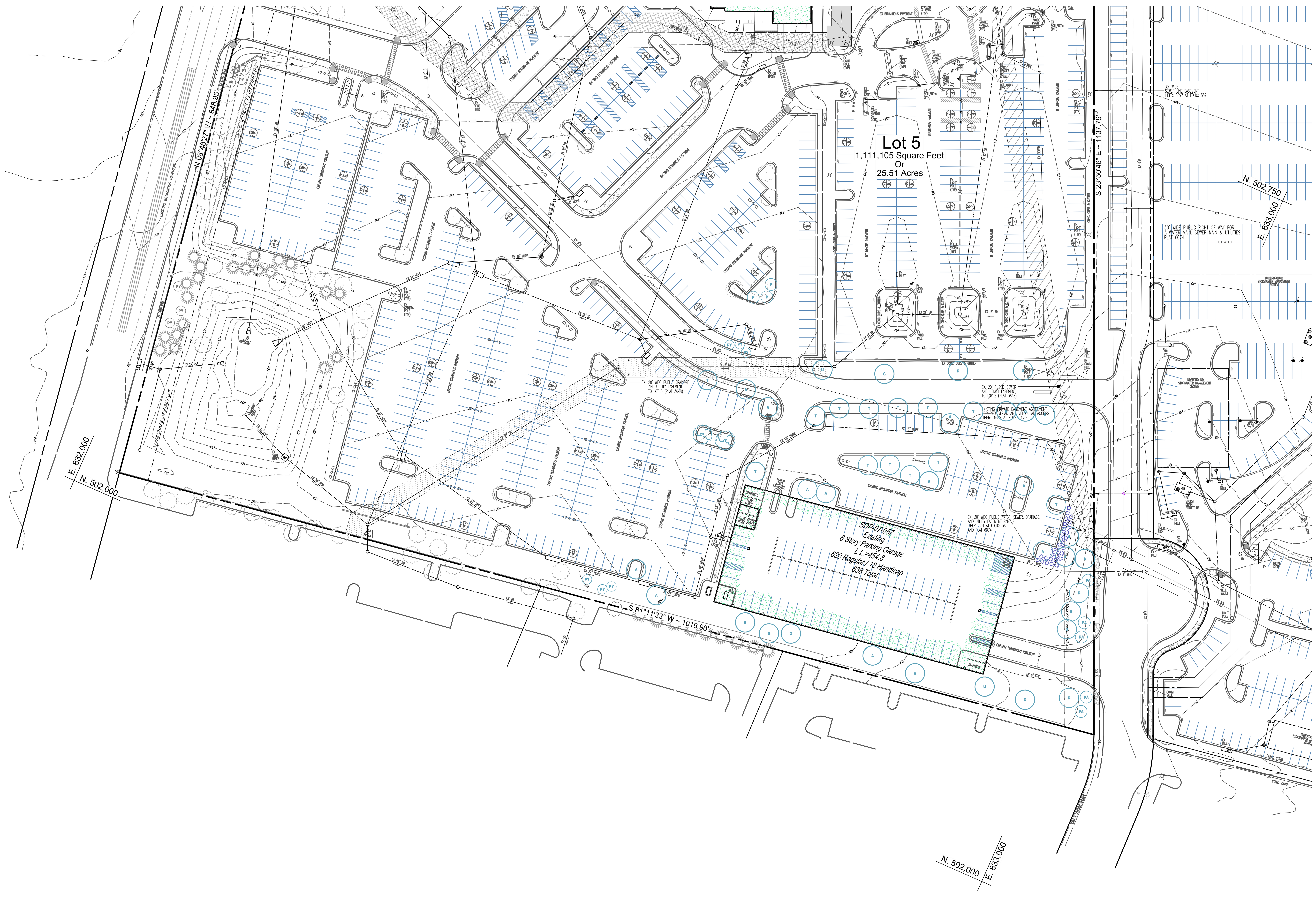
TITLE

Site Campus Plan North

DES BY WAJ	SCALE 1" = 50'	PROJ. NO. 016052
DRN BY HAL	DATE May 2017	2 OF 12
CHK BY JEC	APPROVED WAJ	

SDP #17-061

SEE SHEET 2 OF 12



Legend

Existing 2' Contour	458
Existing 10' Contour	460
Existing Building	
Existing Park	
Existing Light Poles	or
Existing Curb & Gutter	
Existing Storm Drain	
Existing Water Line	
Existing Sewer Line	
Existing Fence (Chain Link)	
Proposed 2' Contour	472
Proposed 10' Contour	470
Proposed Spot Elevation	471 +
Proposed Building	
Proposed Canopy	
Proposed Concrete Pavement	
Proposed ADA Access Route	
Limit of Grading & Disturbance	

North

Plan Scale: 1"=50'

50 0 50 100 150

Graphic Scale

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: ______________________

APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

DATE	NO.	REVISION DESCRIPTION

PROJECT

Howard County General Hospital Psychiatric Addition

Columbia Town Center
Section 8 - Area 2 - Lot 5

Owner/Developer:
Howard County General Hospital, Inc.
5755 Cedar Lane
Columbia, Maryland 21044
Attn: Ryan Brown, Vice Principal of Operations
Phone: 410-740-7720

JOYCE ENGINEERING CORPORATION
CIVIL ENGINEERING LAND SURVEYING LAND PLANNING CONSTRUCTION MANAGEMENT
10766 BALTIMORE AVENUE - BELTSVILLE, MARYLAND 20705
TEL: (301) 595-4353 FAX: (301) 595-4650 WEB: www.joyceeng.com
Drawing name: C:\Users\Murphyt\appdata\local\temp\AcPublish_8024\016052 SDP-3 [Site Plan-2].dwg
Plotted: Sep 13, 2017 - 11:58am

ADDRESS CHART

LOT/PARCEL	STREET ADDRESS
5	5755 Cedar Lane ~ Columbia, MD 21044 [Hospital] 11068 Little Patuxent Parkway ~ Columbia, MD 21044 [Oncology Bldg] 11085 Little Patuxent Parkway ~ Columbia, MD 21044 [Medical Arts Bldg]

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.

Signature

11243 12/17/18

License No: Exp Date

PERMIT INFORMATION CHART

SUBDIVISION			SECTION/AREA		LOT/PARCEL #
HCGH TOWN CENTER			8/2		Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE POR/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

TITLE

Site Campus Plan South

DES BY WAJ	SCALE 1" = 50'	PROJ. NO. 016052
DRN BY HAL	DATE May 2017	3 OF 12
CHK BY JEC	APPROVED WAJ	

SDP #17-061

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: ______________________

APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

DATE	NO.	REVISION DESCRIPTION

Legend

- Existing 2' Contour
- Existing 10' Contour
- Existing Building
- Existing Park
- Existing Light Poles
- Existing Curb & Gutter
- Existing Storm Drain
- Existing Water Line
- Existing Sewer Line
- Existing Fence (Chain Link)
- Proposed 2' Contour
- Proposed 10' Contour
- Proposed Spot Elevation
- Proposed Building
- Proposed Canopy
- Proposed Concrete Pavement
- Proposed ADA Access Route
- Limit of Grading & Disturbance

PROJECT
Howard County General Hospital Psychiatric Addition
Columbia Town Center
Section 8 - Area 2 - Lot 5

Owner/Developer:
Howard County General Hospital, Inc.
5755 Cedar Lane
Columbia, Maryland 21044
Attn: Ryan Brown, Vice Principal of Operations
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JOYCE ENGINEERING CORPORATION
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10766 BALTIMORE AVENUE - BELTSVILLE, MARYLAND 20705
TEL: (301) 595-4353 FAX: (301) 595-4650 WEB: www.joyceeng.com
Drawing name: C:\Users\Murphy\appdata\local\temp\AcPublish_8024\016052 SDP-4 [Site Plan 30ft].dwg
Plotted: Sep 13, 2017 - 12:05pm

ADDRESS CHART

LOT/PARCEL	STREET ADDRESS
5	5755 Cedar Lane ~ Columbia, MD 21044 [Hospital] 11068 Little Patuxent Parkway ~ Columbia, MD 21044 [Oncology Bldg] 11085 Little Patuxent Parkway ~ Columbia, MD 21044 [Medical Arts Bldg]

PERMIT INFORMATION CHART

SUBDIVISION			SECTION/AREA		LOT/PARCEL #
HCGH TOWN CENTER			8/2		Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE POR/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

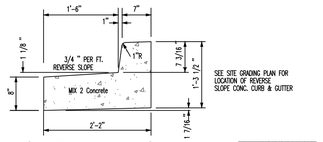
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

Signature
11243 12/17/18
License No: Exp Date

TITLE
Site Grading Plan

DES BY WAJ	SCALE 1" = 30'	PROJ. NO. 016052
DRN BY HAL	DATE May 2017	4 OF 12
CHK BY JEC	APPROVED WAJ	

SDP #17-061

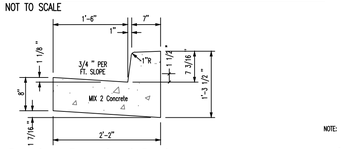


SEE SITE GRADING PLAN FOR LOCATION OF REVERSE SLOPE CONC. CURB & GUTTER

Section-Reverse Curb

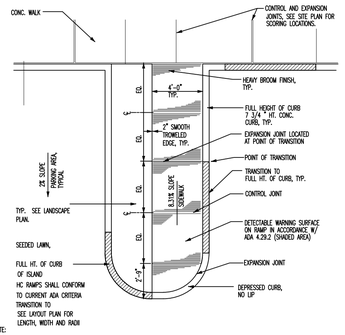
SHOWN THUS:

NOT TO SCALE



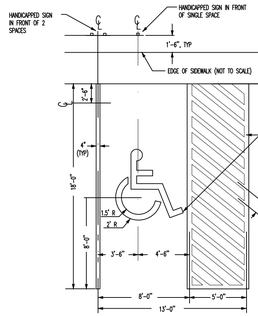
Section-Standard Curb

NOT TO SCALE



Handicapped Ramp Type A

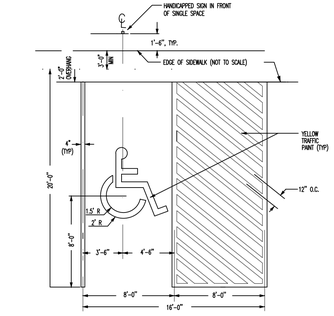
NOT TO SCALE



Handicapped Parking Space

ANSI A117.1-1980

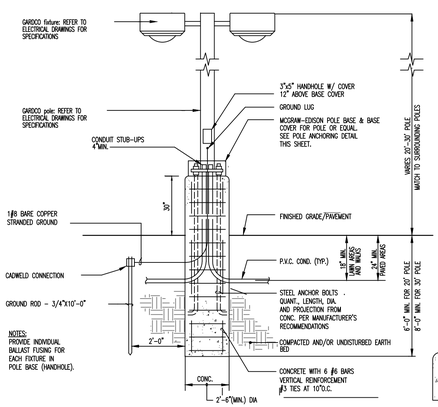
NOT TO SCALE



Handicapped Van Parking Space

ANSI A117.1-1980

NOT TO SCALE



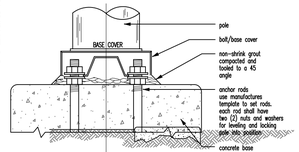
Site Lighting Pole Base and Lamp Fixtures

NOT TO SCALE

CAUTION: SOIL CONSISTANCY MUST BE VERIFIED WITH STRUCTURAL/GEOTECHNICAL ENGINEERS.

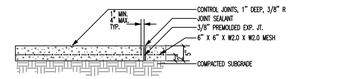
Lighting Notes

1. LIGHTING CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR LIGHTING OF PARKING EXPANSION. THESE DRAWINGS ARE TO ACCOMPANY THE BID.
2. PARKING FIXTURE TYPE AND POLE TO MATCH EXISTING FIXTURES AND POLES. VERIFY MANUFACTURER, MODEL NUMBER AND LOCATION OF EXISTING LIGHT FIXTURES. SEE NOTE #6.
3. INCLUDE CIRCUITRY IN BID AND ON SHOP DRAWINGS.
4. SEE ARCHITECTURAL PLANS FOR LOCATION OF PEDESTRIAN LIGHTING FOR ENTRANCE WALK AREA.
5. ALL EXTERIOR LIGHTING SHALL COMPLY WITH SECTION 134 OF THE ZONING REGULATIONS.
6. FOR DETAILS OF LIGHTING FIXTURES, INSTALLATION, DESIGN CRITERIA, AND SITE LIGHTING INFORMATION, REFER TO ELECTRICAL PLANS PREPARED BY LEACH WALLACE ASSOCIATES, INC. THE INFORMATION SHOWN ON THIS PLAN IS GENERIC IN NATURE AND THE CONTRACTOR SHALL COMPLY WITH ANY AND ALL INFORMATION SHOWN ON LEACH WALLACE ASSOCIATES PLANS.



Pole Anchoring for Light Fixtures

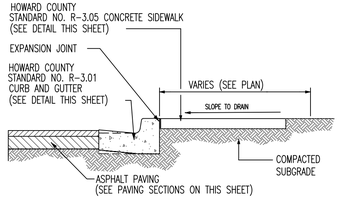
NOT TO SCALE



Concrete Walk*

SHOWN THUS:

NOT TO SCALE

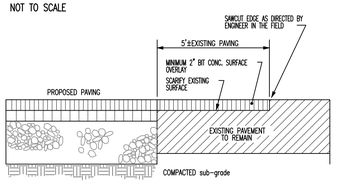


Sidewalk Details

NOT TO SCALE

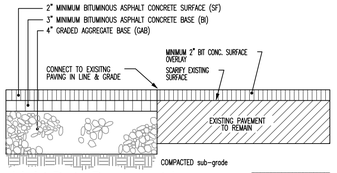
Typical Paving Sections

* THE PAVING SECTIONS SHOWN ARE PROVIDED FOR GENERAL SITE DESIGN ONLY. THE DESIGNS ARE SUBJECT TO REVIEW AND REVISIONS BY A GEO-TECHNICAL ENGINEER.



Transition Paving *

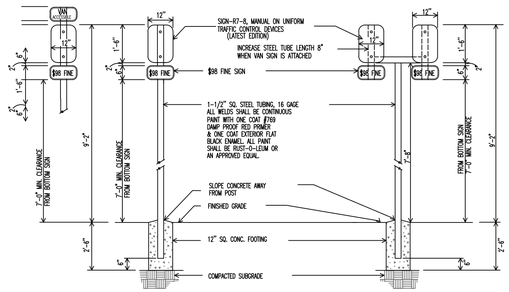
NOT TO SCALE



Light Duty Pavement *

SHOWN THUS:

NOT TO SCALE



Handicapp Signs

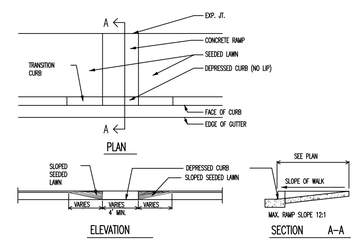
NOT TO SCALE

SIGN COLORS

LETTERS AND BORDER - GREEN
WHITE H.C. SYMBOLS ON BLUE BACKGROUND
BACKGROUND - WHITE

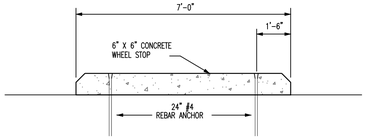
NOTES

1. DISTANCE FROM GROUND TO BOTTOM OF SIGN SHALL BE 7'
2. SEE HANDICAPPED PARKING SPACE DETAILTHIS SHEET FOR LOCATION OF HANDICAPPED SIGN.
3. SPACE MARKED 'V' SHALL INCLUDE "VAN SIGN" AS REQUIRED



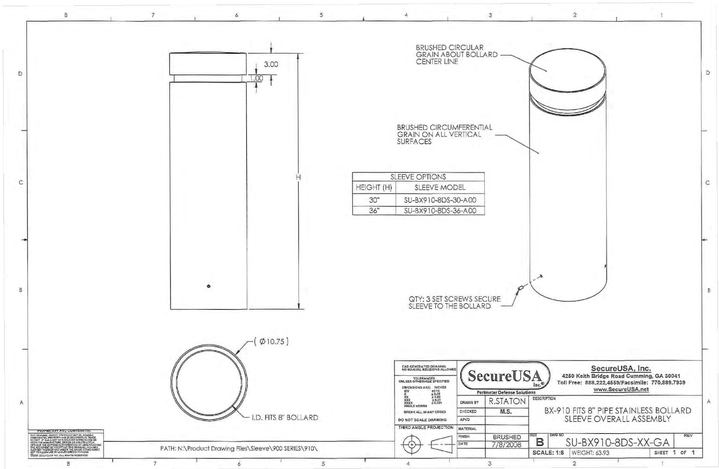
Handicapped Ramp Type B

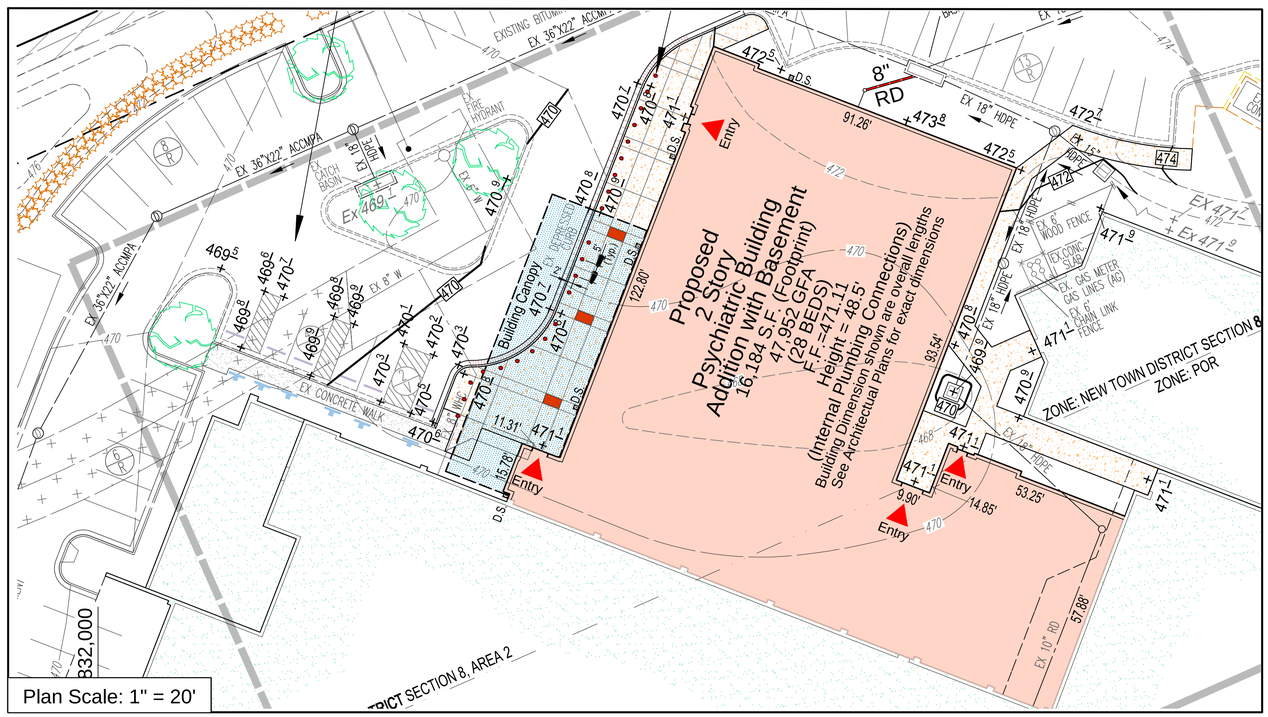
NOT TO SCALE



Concrete Wheel Stop

NOT TO SCALE





APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: _____

APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

DATE	NO.	REVISION DESCRIPTION

PROJECT

Howard County General Hospital Psychiatric Addition

Columbia Town Center
Section 8 - Area 2 - Lot 5

Owner/Developer:
Howard County General Hospital, Inc.
5755 Cedar Lane
Columbia, Maryland 21044
Attn: Ryan Brown, Vice Principal of Operations
Phone: 410-740-7720

JOYCE ENGINEERING CORPORATION
CIVIL ENGINEERING LAND SURVEYING LAND PLANNING CONSTRUCTION MANAGEMENT
10766 BALTIMORE AVENUE - BELTSVILLE, MARYLAND 20705
TEL: (301) 595-4353 FAX: (301) 595-4650 WEB: www.joyceeng.com

Drawing name: C:\Users\Murphy\appdata\local\temp\AcPublish_8024\016052 SDP-5 [Site Details].dwg
Plotted: Sep 13, 2017 - 11:23am

ADDRESS CHART

LOT/PARCEL	STREET ADDRESS
5	5755 Cedar Lane ~ Columbia, MD 21044 [Hospital] 11068 Little Patuxent Parkway ~ Columbia, MD 21044 [Oncology Bldg] 11085 Little Patuxent Parkway ~ Columbia, MD 21044 [Medical Arts Bldg]

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.

Signature
11243 12/17/18
License No: Exp Date

PERMIT INFORMATION CHART

SUBDIVISION HCGH TOWN CENTER			SECTION/AREA 8/2		LOT/PARCEL # Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE POR/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

TITLE

Site Development Details

DES BY WAJ	SCALE 1" = 20'	PROJ. NO. 016052	5 OF 12
DRN BY HAL	DATE May 2017		
CHK BY JEC	APPROVED WAJ		

SDP #17-061

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: ____________

APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

DATE	NO.	REVISION DESCRIPTION

PROJECT
Howard County General Hospital Psychiatric Addition
Columbia Town Center
Section 8 - Area 2 - Lot 5

Owner/Developer:
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10766 BALTIMORE AVENUE - BELTSVILLE, MARYLAND 20705
TEL: (301) 595-4353 FAX: (301) 595-4650 WEB: www.joyceeng.com

Drawing name: C:\Users\Murphyt\appdata\local\temp\AcPublish_8024\016052 SDP-6 [Landscape Plan].dwg
Plotted: Sep 13, 2017 - 12:12pm

ADDRESS CHART

LOT/PARCEL	STREET ADDRESS
5	5755 Cedar Lane ~ Columbia, MD 21044 [Hospital] 11068 Little Patuxent Parkway ~ Columbia, MD 21044 [Oncology Bldg] 11085 Little Patuxent Parkway ~ Columbia, MD 21044 [Medical Arts Bldg]

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Signature
11243 — 12/17/18
License No: — Exp Date

PERMIT INFORMATION CHART

SUBDIVISION HCGH TOWN CENTER			SECTION/AREA 8/2		LOT/PARCEL # Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE POR/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

TITLE

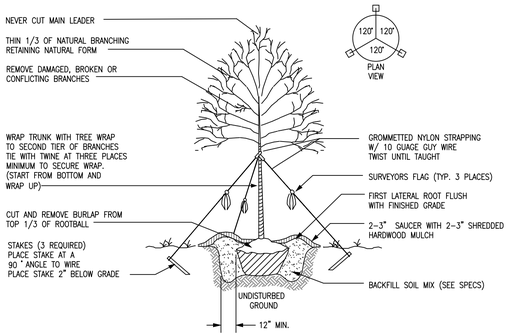
Landscaping Plan

DES BY WAJ	SCALE 1" = 30'	PROJ. NO. 016052
DRN BY HAL	DATE May 2017	6 OF 12
CHK BY JEC	APPROVED WAJ	

SDP #17-061

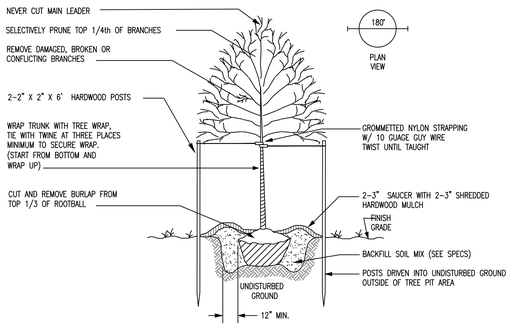
Landscape Notes

1. The contractor shall review architectural/engineering plans to become thoroughly familiar with grading and surface utilities.
2. All equipment and tools shall be placed so as not to interfere or hinder the pedestrian and vehicular traffic flow.
3. The contractor shall coordinate with lighting and Irrigation contractors regarding timing of installation of plant material.
4. The contractor shall Insure that his work does not Interrupt established or projected drainage patterns.
5. During planting operations, excess waste materials shall be promptly and frequently removed from the site.
6. Call Miss Utility a minimum of three days prior to any excavation. The contractor Is advised of the existence of underground utilities on the site. Their exact location shall be verified in the field with the owner or general contractor prior to the commencement of any digging operations. In the event they are uncovered, the contractor shall be held responsible for all damage to utilities and such damage shall not result in any additional expenses to the owner. Any damage of unreported lines shall not be the responsibility of the contractor.
7. If utility lines are encountered in excavation of tree pits, other locations for trees shall be made by the contractor without additional compensation. No changes of location shall be made without approval by the landscape architect.
8. Maintain positive drainage out of planting beds at a minimum 2% slope. All grades, dimensions, and existing conditions shall be verified by the contractor on site before construction begins. Any discrepancies shall be brought to the attention of the landscape architect or owner.
9. Every possible safeguard shall be taken to protect building surfaces, equipment, and furnishing. The contractor shall be responsible for any damage or injury to person or property which may occur as a result of his negligence in the execution of the work.
10. In the event of variation between quantities shown on the plant list and the plans, the plans shall control. The contractor is responsible for verifying all plant quantities prior to the commencement of work. Seed quantity take-offs are the responsibility of the contractor. All discrepancies shall be reported to the landscape architect for clarification prior to bidding. The contractor shall furnish plant material in sizes as specified in plant list.
11. Plants shall be located as shown on the drawings or as designated in the field. The contractor shall stake all material located on the site for review and/or adjustment by the landscape architect prior to planting. All locations are to be approved by the landscape architect before excavation.
12. Plants shall conform to current 'American Standards for Nursery Stock' by American Association of Nurserymen (AAN), particularly with regard to size, growth, size of ball, and density of branch structure. Plant material shall be tagged at the source by the landscape architect unless THIS requirement is specifically waived.
13. All plants (B&B or container) shall be property Identified by weatherproof labels securely attached thereto before delivery to project site. Labels shall identify plants' by name. species, and size, Labels shall not be removed until the final Inspection by the landscape architect or agent In charge.
14. Any material and/or work may be rejected by the landscape architect if it does not meet the requirements of the specifications. All rejected materials shall be removed from the site by the contractor.
15. No substitutions shall be made without written consent of the owner or landscape architect.
16. The landscape architect or owner shall have the right, at any stage of the operations, to reject any and all work and material which, In his opinion, does not meet the requirements of these plans and specifications.
17. The contractor shall be wholly responsible for stability and conditions of all trees and shrubs and shall be legally liable for any damage caused by instability of any plant materials. Staking of all trees shall be done utilizing a method agreed upon by the landscape architect, as Indicated on the documents.
18. All proposed trees to be installed either entirely on or entirely out of planting beds. Planting bed lines are not to be obstructed. All shrubs and ground cover areas shall be planted in continuous prepared bed and top dressed with 3-inch shredded hardwood mulch, Mulch shall have been shredded within the last six months.
19. Spade edge all planting beds.
20. Maintenance shall begin after each plant has been installed and shall continue until 90 days after final acceptance by the architect or owner representative. Maintenance Includes watering, pruning, weeding, fertilizing, mulching, replacement of sick or dead plants, and any other care necessary for the proper growth of the plant material. The contractor must be able to provide continued maintenance If requested by the owner.
21. Upon completion of all landscaping, an acceptance of work shall be held. The contractor shall notify the landscape architect or owner for scheduling the inspection at least seven (7) days prior to the anticipated inspection date.
22. All trees shall be guaranteed for 12 months from the date of acceptance. All shrubs and ground covers shall be guaranteed for 12 months from the date of acceptance. Replacement plants used shall be guaranteed for an additional 90 days.
23. The contractor is responsible for testing project soils. The contractor Is to provide a certified soils report to the owner. The contractor shall verity that the soils on site are acceptable for the PROPER growth of the proposed plant material. Should the contractor find poor soil conditions, the CONTRACTOR shall be required to provide soil amendments as necessary. These amendments shall include, BUT NOT be limited to, fertilizers, lime, and topsoil. Proper planting soils must be verified prior to PLANTING OF materials.
24. The contractor shall dispose of stumps and major roots of all plants to be removed. Any depressions caused by removal operations shall be refilled with fertile, friable soil placed and compacted so as to reestablish proper grade for new planting and/or lawn areas.
25. The contractor shall Insure adequate vertical drainage in all plant beds.
26. All disturbed areas of the site not planted with shrubs or ground cover shall be fine graded and seeded.
27. All lawn areas to be seeded where disturbance has occurred within the limit of construction, Loosen upper 30 of soil before seeding, if not previously loosened. Amend soil per soil test recommendations. During the periods March 1 thru April 30, and August I thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq. ft.) of Rebel 11 Tall Fescue. For the period May I thru July 31 seed with 60 lbs. Rebel II Tall Fescue per acre and 2 lbs. per acre (.05 lbs,1000 sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by spreading 2 tons per acre of well anchored straw mulch and seed as soon as possible In the spring.
28. Seed mulch: Apply 1.5 to 2 tons/acre (70-90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after applications using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes > 8%, use 348 gal. per acre (8 gal/1000 sq. ft.) for anchoring.
29. Inspect all seeded areas and make needed repairs and reseed until lawn is established.
30. Bulbs: in accordance with section 11 of the American Association of Nurserymen standards



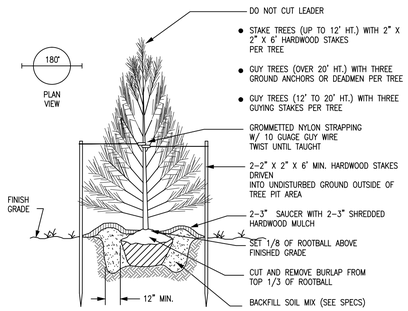
BALL & BAG TREE PLANTING DETAIL

FOR DECIDUOUS TREES 2 1/2" CALIPER OR GREATER
NO TO SCALE



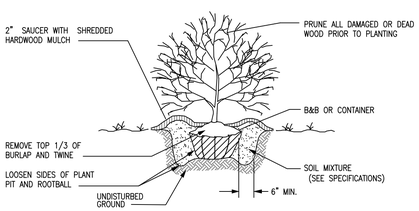
BALL & BAG TREE PLANTING DETAIL

FOR DECIDUOUS TREES LESS THAN 2 1/2" CALIPER
NOT TO SCALE



EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL

DECIDUOUS OR EVERGREEN
NO TO SCALE

NOTE: ALL JUNIPER PLANTS SHALL BE PLANTED SO TOP OF ROOT MASS OCCURS AT FINISHED GRADE OF MULCH LAYER. ANY BROKEN ROOTBALL WILL BE REJECTED.

SCHEDULE 'A' ~ PERIMETER LANDSCAPE EDGE

LOCATION : ONCOLOGY PARKING LOT EXPANSION

CATEGORY	ADJACENT TO LITTLE PATUXENT PARKWAY	
LANDSCAPE TYPE	'E' PROPOSED	'E' EXISTING
LINEAR FEET OF ROADWAY FRONTAGE / PERIMETER	90	90
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NECESSARY)	YES	YES
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NECESSARY)	NO	YES
NUMBER OF PLANTS REQUIRED: (BASED ON TOTAL PERIMETER)		
SHADE TREES 1 PER 40 L.F.	3	3
EVERGREEN TREES N/A	0	0
SHRUBS 1 PER 4 L.F.	23	23
NUMBER OF PLANTS PROVIDED:		
SHADE TREES 1 PER 40 L.F.	3	3
EVERGREEN TREES	0	6
OTHER TREES (2:1 SUBSTITUTION)	0	0
SHRUBS (10:1 SUBSTITUTION)	0	19
TOTAL SHRUBS	25	19

SCHEDULE 'B' ~ PARKING LOT INTERNAL LANDSCAPING

LOCATION : ONCOLOGY PARKING LOT EXPANSION

NUMBER OF PARKING SPACES	51
INTERNAL ISLANDS REQUIRED 1/20 SPACES	3
INTERNAL ISLANDS PROVIDED	4
NUMBER OF SHADE TREES REQUIRED REQUIRED 1/20 SPACES	3
NUMBER OF SHADE TREES PROVIDED	4

LANDSCAPE PLANTING LIST

KEY	QUANTITY	PLANT: BOTANICAL NAME	PLANT: COMMON NAME	SIZE AND CONDITION	REMARKS
SHADE TREES:					
AS	3	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2-1/2" - 3" CAL.	
AR	4	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2-1/2" - 3" CAL.	
SHRUBS:					
IG	12	IIEX GLABRA 'COMPACTA'	COMPACT INKBERRY	21/2'-3' HGT	
IC	13	IIEX X CORNUTA 'BURFORDII'	BUFORD HOLLY	21/2'-3' HGT	

LANDSCAPE SURETY:
THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 7 SHADE TREES ($2,100) & AND 23 SHRUBS ($750) FOR A TOTAL AMOUNT OF $2,850.00 WILL BE PART OF THE DEVELOPER'S AGREEMENT FOR THIS SDP.

NOTE:

"AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES 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 RELOCATIONS 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 LANDSCAPIING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED".

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: _____

APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

DATE	NO.	REVISION DESCRIPTION

PROJECT

Howard County General Hospital Psychiatric Addition

Columbia Town Center
Section 8 - Area 2 - Lot 5

Owner/Developer:
Howard County General Hospital, Inc.
5755 Cedar Lane
Columbia, Maryland 21044
Attn: Ryan Brown, Vice Principal of Operations
Phone: 410-740-7720

JOYCE ENGINEERING CORPORATION
CIVIL ENGINEERING LAND SURVEYING LAND PLANNING CONSTRUCTION MANAGEMENT
10766 BALTIMORE AVENUE - BELTSVILLE, MARYLAND 20705
TEL: (301) 595-4353 FAX: (301) 595-4650 WEB: www.joyceeng.com

Drawing name: C:\Users\Murphy\appdata\local\temp\AcPublish_8024\016052 SDP-7 [Landscape Details].dwg
Plotted: Sep 13, 2017 - 12:13pm

ADDRESS CHART

LOT/PARCEL	STREET ADDRESS
5	5755 Cedar Lane ~ Columbia, MD 21044 [Hospital] 11068 Little Patuxent Parkway ~ Columbia, MD 21044 [Oncology Bldg] 11085 Little Patuxent Parkway ~ Columbia, MD 21044 [Medical Arts Bldg]

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.

Signature
11243 12/17/18
License No: Exp Date

PERMIT INFORMATION CHART

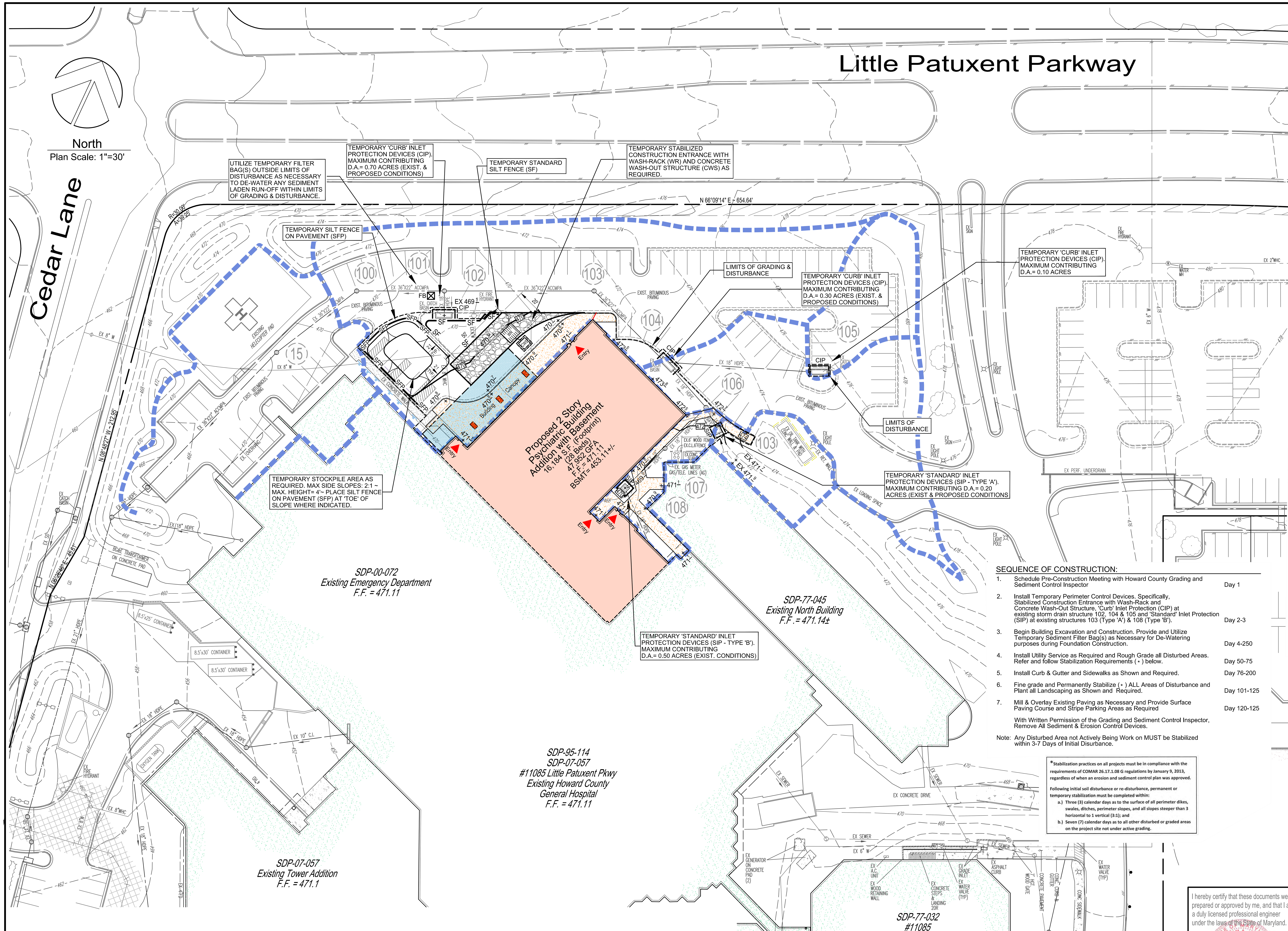
SUBDIVISION HCGH TOWN CENTER			SECTION/AREA 8/2		LOT/PARCEL # Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE P/O R/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

TITLE

Landscape Details

DES BY WAJ		SCALE As Shown	PROJ. NO. 016052
DRN BY HAL		DATE May 2017	7 OF 12
CHK BY JEC		APPROVED WAJ	

SDP #17-061



SEQUENCE OF CONSTRUCTION:

1.	Schedule Pre-Construction Meeting with Howard County Grading and Sediment Control Inspector	Day 1
2.	Install Temporary Perimeter Control Devices. Specifically, Stabilized Construction Entrance with Wash-Rack and Concrete Wash-Out Structure, 'Curb' Inlet Protection (CIP) at existing storm drain structure 102, 104 & 105 and 'Standard' Inlet Protection (SIP) at existing structures 103 (Type 'A') & 108 (Type 'B').	Day 2-3
3.	Begin Building Excavation and Construction. Provide and Utilize Temporary Sediment Filter Bag(s) as Necessary for De-Watering purposes during Foundation Construction.	Day 4-250
4.	Install Utility Service as Required and Rough Grade all Disturbed Areas. Refer and follow Stabilization Requirements (*) below.	Day 50-75
5.	Install Curb & Gutter and Sidewalks as Shown and Required.	Day 76-200
6.	Fine grade and Permanently Stabilize (*) ALL Areas of Disturbance and Plant all Landscaping as Shown and Required.	Day 101-125
7.	Mill & Overlay Existing Paving as Necessary and Provide Surface Paving Course and Stripe Parking Areas as Required	Day 120-125
	With Written Permission of the Grading and Sediment Control Inspector, Remove All Sediment & Erosion Control Devices.	

Note: Any Disturbed Area not Actively Being Work on MUST be Stabilized within 3-7 Days of Initial Disurbance.

*Stabilization practices on all projects must be in compliance with the requirements of COMAR 26.17.1.08 G regulations by January 9, 2013, regardless of when an erosion and sediment control plan was approved.

Following initial soil disturbance or re-disturbance, permanent or temporary stabilization must be completed within:

a.) Three (3) calendar days as to the surface of all perimeter dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and

b.) Seven (7) calendar days as to all other disturbed or graded areas on the project site not under active grading.

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: ____________________

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DIRECTOR	DATE

DATE	NO.	REVISION DESCRIPTION

PROJECT
Howard County General Hospital Psychiatric Addition
Columbia Town Center
Section 8 - Area 2 - Lot 5

Owner/Developer:
Howard County General Hospital, Inc.
5755 Cedar Lane
Columbia, Maryland 21044
Attn: Ryan Brown, Vice Principal of Operations
Phone: 410-740-7720

JOYCE ENGINEERING CORPORATION
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10766 BALTIMORE AVENUE - BELTSVILLE, MARYLAND 20705
TEL: (301) 595-4353 FAX: (301) 595-4650 WEB: www.joyceeng.com

Drawing name: C:\Users\Murphyt\appdata\local\temp\AcPublish_8024\016052 SDP-8 [Sediment Control Plan].dwg
Plotted: Sep 13, 2017 - 12:17pm

ADDRESS CHART

LOT/PARCEL	STREET ADDRESS
5	5755 Cedar Lane ~ Columbia, MD 21044 [Hospital] 11068 Little Patuxent Parkway ~ Columbia, MD 21044 [Oncology Bldg] 11085 Little Patuxent Parkway ~ Columbia, MD 21044 [Medical Arts Bldg]

PERMIT INFORMATION CHART

SUBDIVISION HCGH TOWN CENTER			SECTION/AREA 8/2		LOT/PARCEL # Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE POR/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

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.

Signature
11243 — 12/17/18
License No: — Exp Date

TITLE
Sediment and Erosion Control Plan

DES BY WAJ	SCALE As Shown	PROJ. NO. 016052
DRN BY HAL	DATE May 2017	8 OF 12
CHK BY JEC	APPROVED WAJ	

This plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard Soil Conservation District — Date

DESIGN CERTIFICATION:
"I herby certify that this plan has been designed in accordance with the current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Designer's Signature — Date

OWNERS/ DEVELOPER CERTIFICATION:
"I / We certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a 'Certificate of Training' at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County Soil Conservation District and/or MDE".

Owner's / Developer's signature — Date
Name / Title:

SDP #17-061

H-1 STANDARDS AND SPECIFICATIONS

FOR

MATERIALS

Table H.1: Geotextile Fabrics

PROPERTY	TEST METHOD	WOVEN SLIT FILM GEOTEXTILE MD	WOVEN SLIT FILM GEOTEXTILE CD	WOVEN MONOFILAMENT GEOTEXTILE MD	WOVEN MONOFILAMENT GEOTEXTILE CD	NONWOVEN GEOTEXTILE MD	NONWOVEN GEOTEXTILE CD
		MINIMUM AVERAGE ROLL VALUE[1]					
Grab Tensile Strength	ASTM D-4632	200 lb	200 lb	370 lb	250 lb	200 lb	200 lb
Grab Tensile Elongation	ASTM D-4632	15%	10%	15%	15%	50%	50%
Trapezoidal Tear Strength	ASTM D-4533	75 lb	75 lb	100 lb	60 lb	80 lb	80 lb
Puncture Strength	ASTM D-6241	450 lb		900 lb		450 lb	
Apparent Opening Size[2]	ASTM D-4751	U.S. Sieve 30 (0.59 mm)		U.S. Sieve 70 (0.21 mm)		U.S. Sieve 70 (0.21 mm)	
Permittivity	ASTM D-4491	0.05 sec^{-1}		0.28 sec^{-1}		1.1 sec^{-1}	
Ultraviolet Resistance Retained at 500 hours	ASTM D-4355	70% strength		70% strength		70% strength	

[1] All numeric values except apparent opening size (AOS) represent minimum average roll values (MARV). MARV is calculated as the typical minus two standard deviations. MD is machine direction; CD is cross direction.

[2] Values for AOS represent the average maximum opening.

Geotextiles must be evaluated by the National Transportation Product Evaluation Program (NTPEP) and conform to the values in Table H.1.

The geotextile must be inert to commonly encountered chemicals and hydrocarbons and must be rot and mildew resistant. The geotextile must be manufactured from fibers consisting of long chain synthetic polymers and composed of a minimum of 95 percent by weight of polyolefins or polyesters, and formed into a stable network so the filaments or yarns retain their dimensional stability relative to each other, including selvages.

When more than one section of geotextile is necessary, overlap the sections by at least one foot. The geotextile must be pulled taut over the applied surface. Equipment must not run over exposed fabric. When placing riprap on geotextile, do not exceed a one foot drop height.

Table H.2: Stone Size

TYPE	SIZE RANGE	d_{50}	d_{100}	AASHTO	MIDSIZE WEIGHT[3]
NUMBER 57[1]	3/8 to 1 ½ inch	½ in	1 ½ in	M-43	N/A
NUMBER 1	2 to 3 inch	2 ½ in	3 in	M-43	N/A
RIPRAP[2] (CLASS 0)	4 to 7 inch	5 ½ in	7 in	N/A	N/A
CLASS I	N/A	9 ½ in	15 in	N/A	40 lb
CLASS II	N/A	16 in	24 in	N/A	200 lb
CLASS III	N/A	23 in	34 in	N/A	600 lb

[1] This classification is to be used on the upstream face of stone outlets and check dams.

[2] This classification is to be used for gabions.

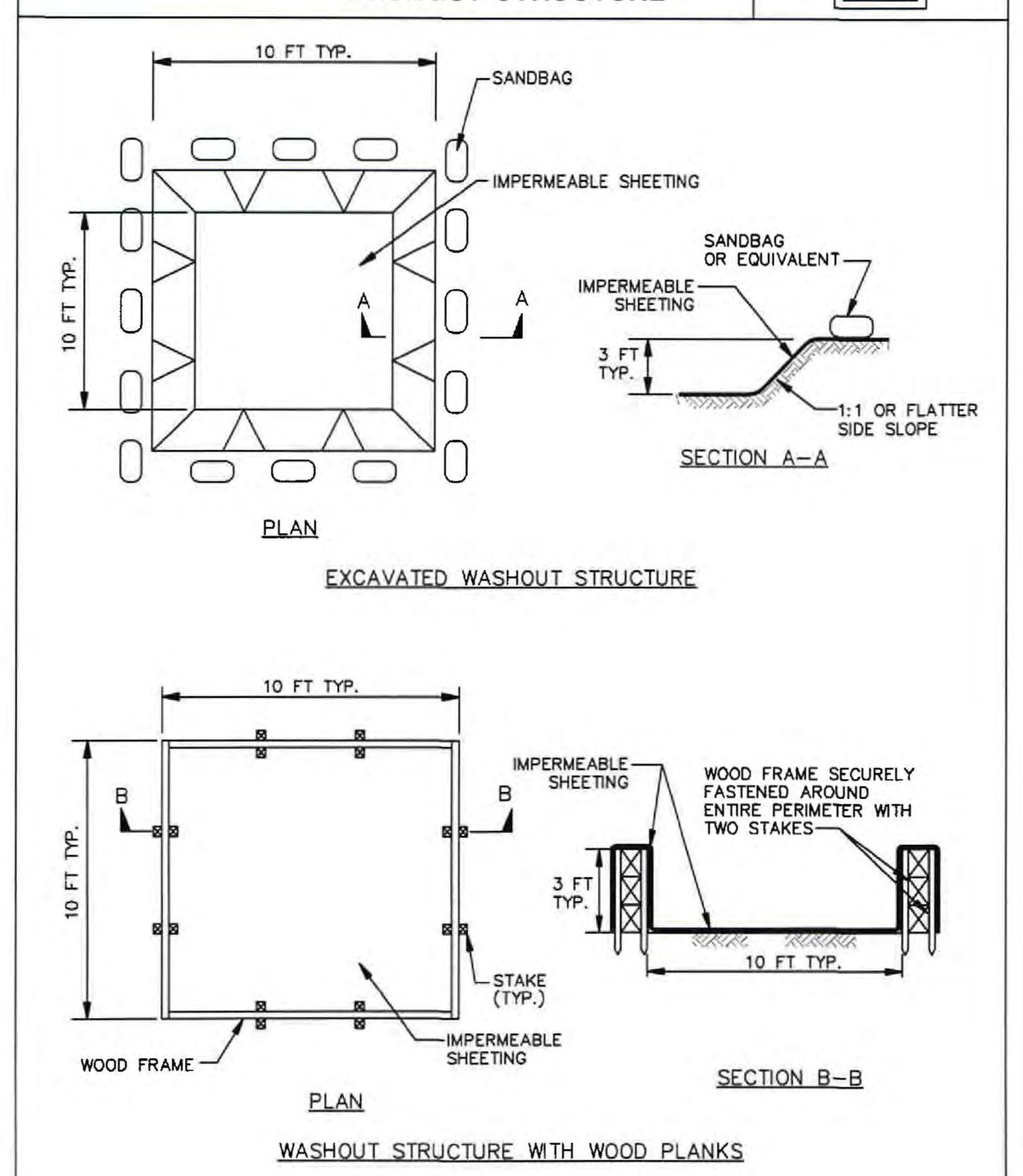
[3] Optimum gradation is 50 percent of the stone being above and 50 percent below the midsize.

Stone must be composed of a well graded mixture of stone sized so that fifty (50) percent of the pieces by weight are larger than the size determined by using the charts. A well graded mixture, as used herein, is defined as a mixture composed primarily of larger stone sizes but with a sufficient mixture of other sizes to fill the smaller voids between the stones. The diameter of the largest stone in such a mixture must not exceed the respective d_{100} selected from Table H.2. The d_{50} refers to the median diameter of the stone. This is the size for which 50 percent, by weight, will be smaller and 50 percent will be larger.

Note: Recycled concrete equivalent may be substituted for all stone classifications for temporary control measures only. Concrete broken into the sizes meeting the appropriate classification, containing no steel reinforcement, and having a minimum density of 150 pounds per cubic foot may be used as an equivalent.

DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL: CWS



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

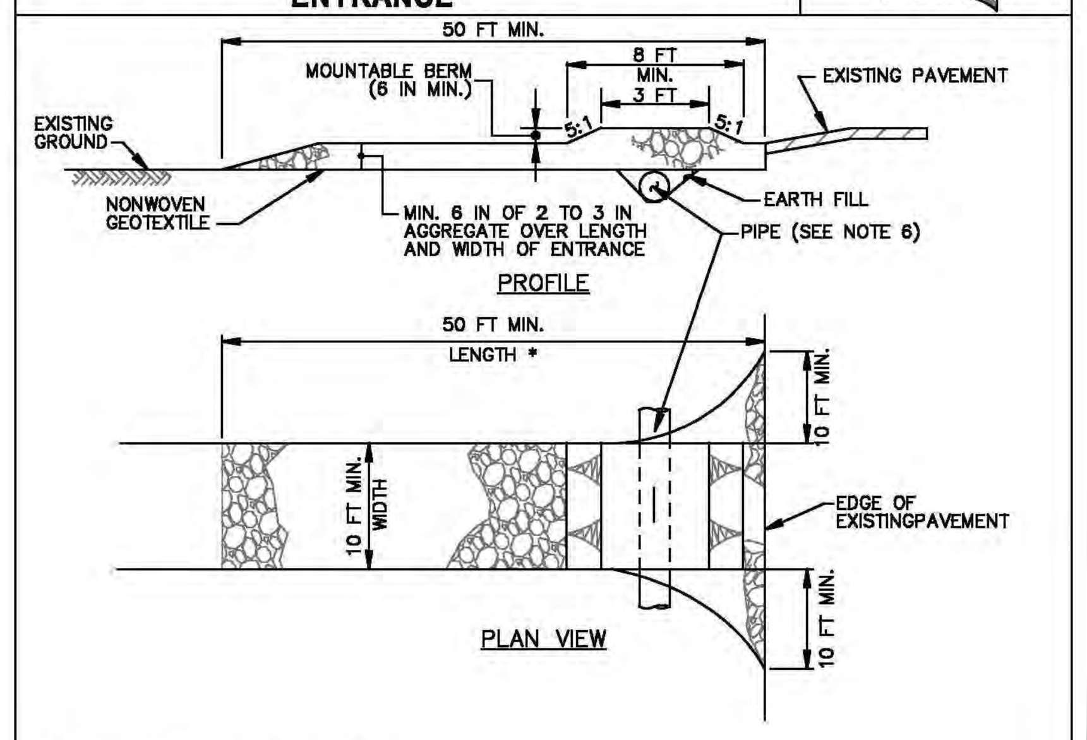
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

H.24

Owner/Developer/Applicant:
Howard County General Hospital, Inc.
5755 Cedar Lane
Columbia, Maryland 21044
Attn: Ryan Brown, Vice Principal of Operations
Phone: 410-740-7720

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

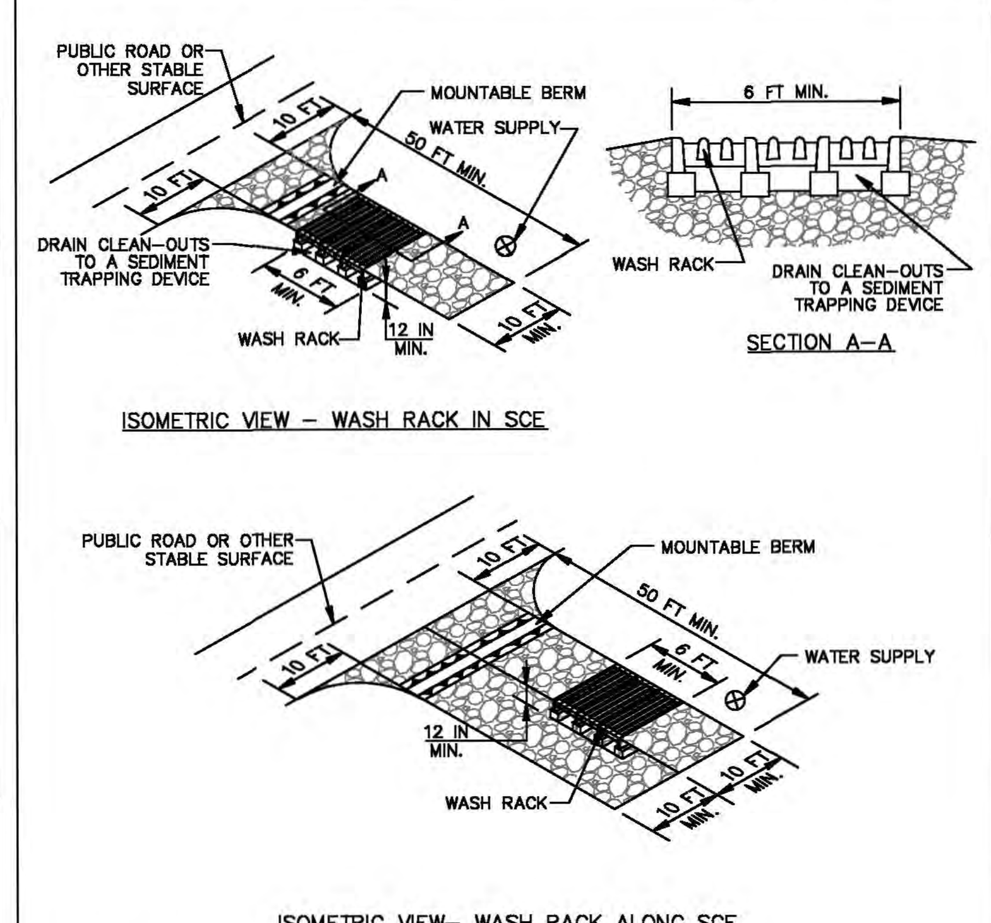
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

B.2

DETAIL B-2 WASH RACK OPTION

STANDARD SYMBOL: WR



CONSTRUCTION SPECIFICATIONS

1. USE A WASH RACK DESIGNED AND CONSTRUCTED/MANUFACTURED FOR THE ANTICIPATED TRAFFIC LOADS. CONCRETE, STEEL, OR OTHER MATERIALS ARE ACCEPTABLE. PRE–FABRICATED UNITS SUCH AS CATTLE GUARDS ARE ACCEPTABLE. USE MINIMUM DIMENSION OF 6 FEET x 10 FEET. ORIENT DIRECTION OF RIBS AS SHOWN ON THE DETAIL.
2. INSTALL PRIOR TO, ALONG SIDE OF, OR AS PART OF THE SCE.
3. DIRECT WASH WATER TO AN APPROVED SEDIMENT TRAPPING DEVICE.
4. KEEP AREA UNDER WASH RACK FREE OF ACCUMULATED SEDIMENT. IF DAMAGED, REPAIR OR REPLACE WASH RACK.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

B.4

Table H.3: Compost

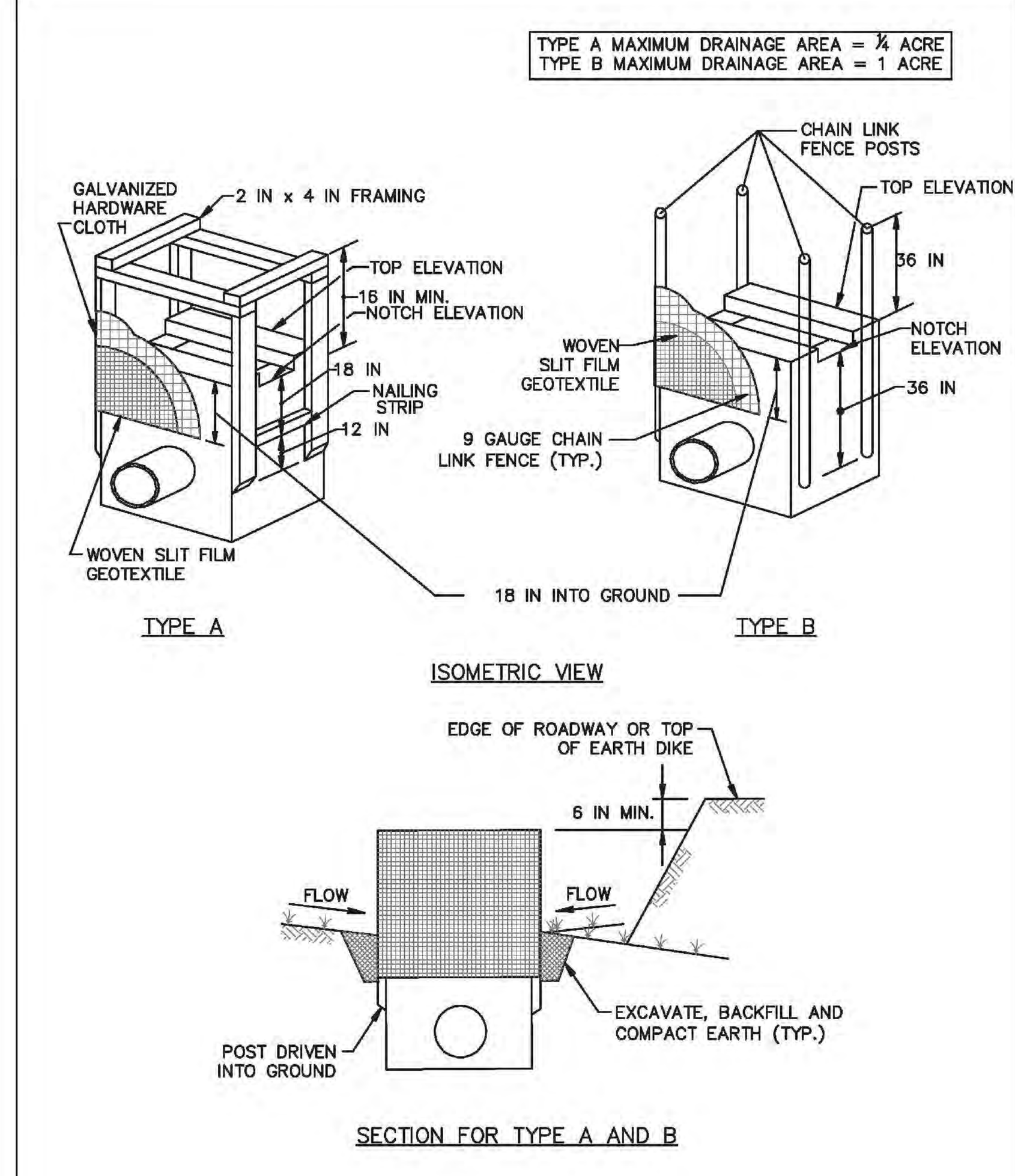
Parameters[1]	Acceptable Range
pH	5.0 - 8.5
Moisture content	30% - 60%, wet weight basis
Organic matter content	25% - 65%, dry weight basis
Particle size	% passing a selected mesh size, dry weight basis 3 in (75 mm), 100% passing 1 in (25 mm), 90 – 100% passing 0.75 in (19 mm), 70 – 100% passing 0.25 in (6.4 mm), 30 – 60% passing 0.04 in (1 mm), 30% min. passing
Physical contaminants (manmade inerts)	<1% dry weight basis

Adapted from AASHTO Standards Specs for Compost Filter Socks and EPA Example Compost Filter Parameters.

[1] Recommended test methodologies are provided in Test Methods for the Examination of Composting and Compost (TMEC, The U.S Composting Council).

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

CONSTRUCTION SPECIFICATIONS

1. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS.
2. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
3. FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN. STRETCH ½ INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.

   FOR TYPE B, USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
4. BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
5. 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 STONE.

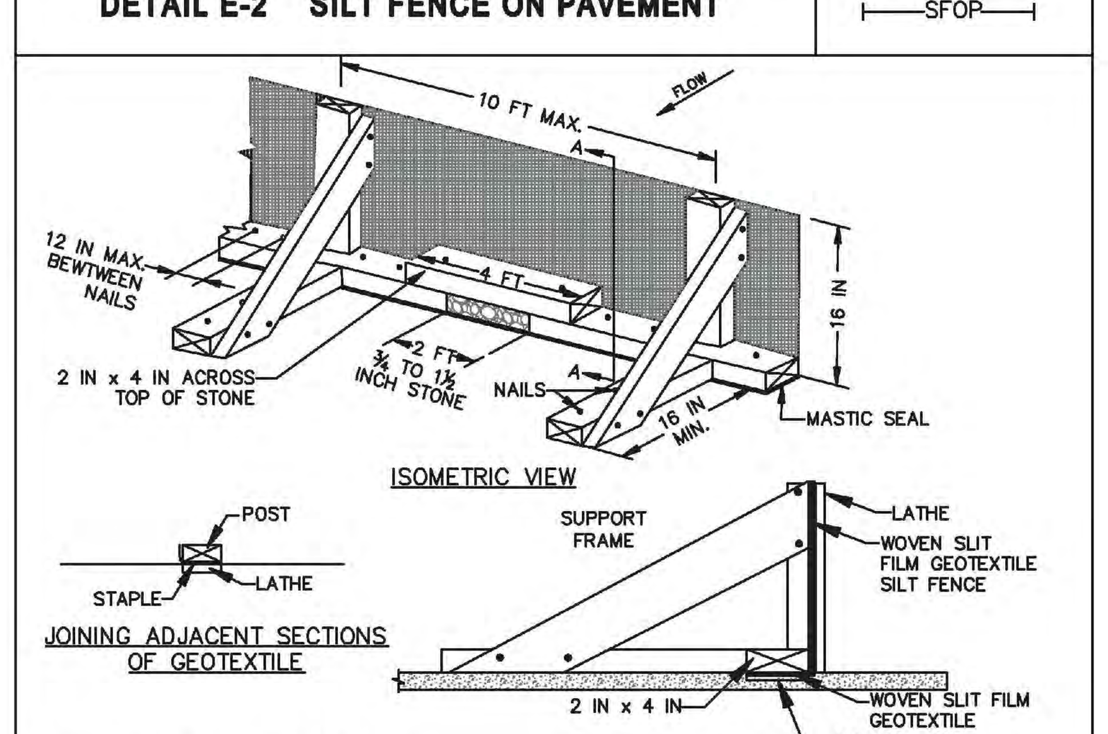
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-2 SILT FENCE ON PAVEMENT

STANDARD SYMBOL: SFOP



CONSTRUCTION SPECIFICATIONS

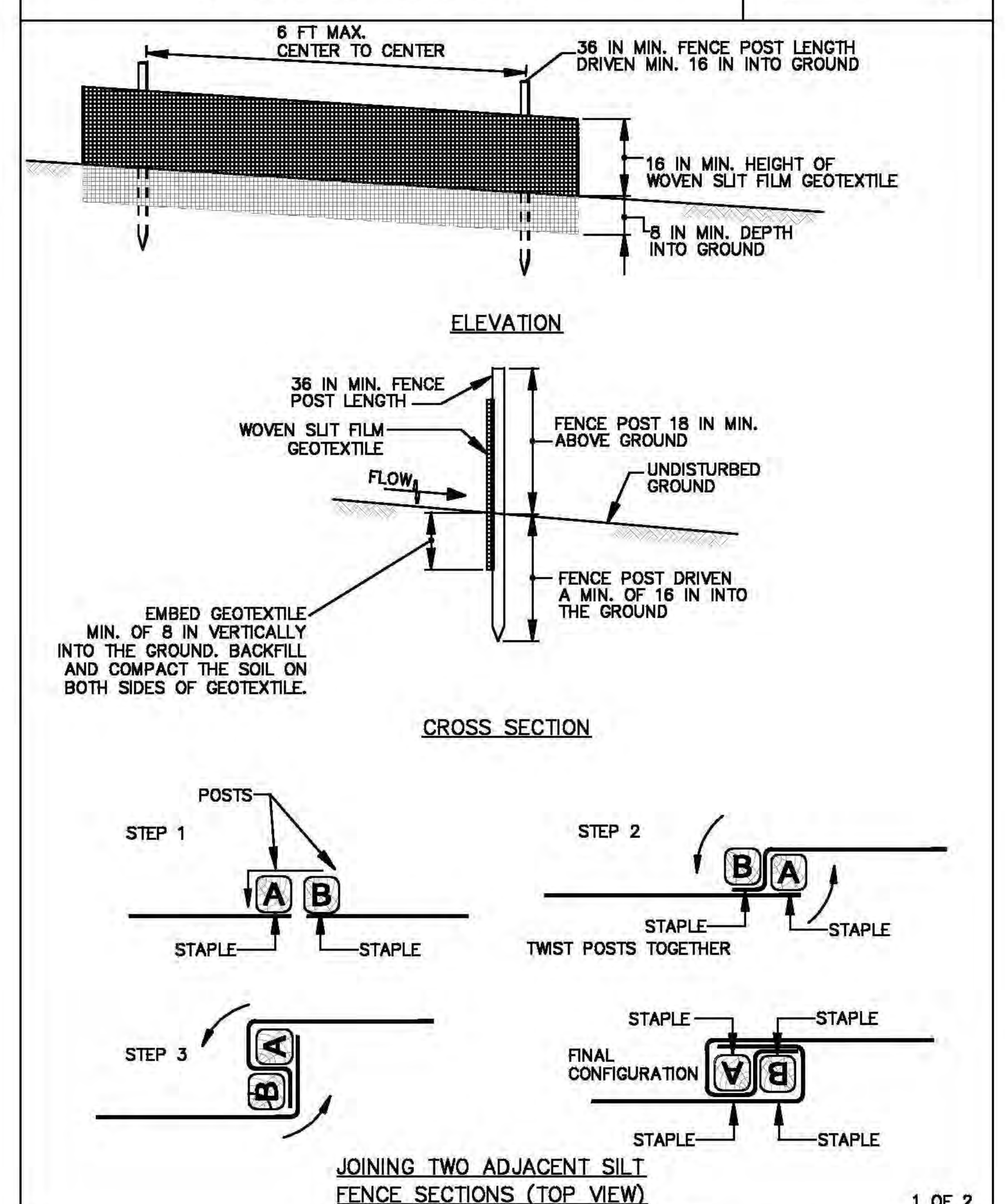
1. USE NOMINAL 2 INCH X 4 INCH LUMBER.
2. USE WOVEN SLIT FILM GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS.
3. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.
4. SPACE UPRIGHT SUPPORTS NO MORE THAN 10 FEET APART.
5. PROVIDE A TWO FOOT OPENING BETWEEN EVERY SET OF SUPPORTS AND PLACE STONE IN THE OPENING OVER GEOTEXTILE.
6. KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS. EXTEND GEOTEXTILE UNDER 2x4.
7. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. ATTACH LATHE.
8. PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT–LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION.
9. SECURE BOARDS TO PAVEMENT WITH 40D 5 INCH MINIMUM LENGTH NAILS.
10. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

E.2

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅙ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID–SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

E.3

B-4-8 STANDARDS AND SPECIFICATIONS

FOR

STOCKPILE AREA

Definition

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

HOWARD SOIL CONSERVATION DISTRICT (HSCD)
STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages:
   a. Prior to the start of earth disturbance,
   b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
   c. Prior to the start of another phase of construction or opening of another grading unit,
   d. Prior to the removal or modification of sediment control practices.

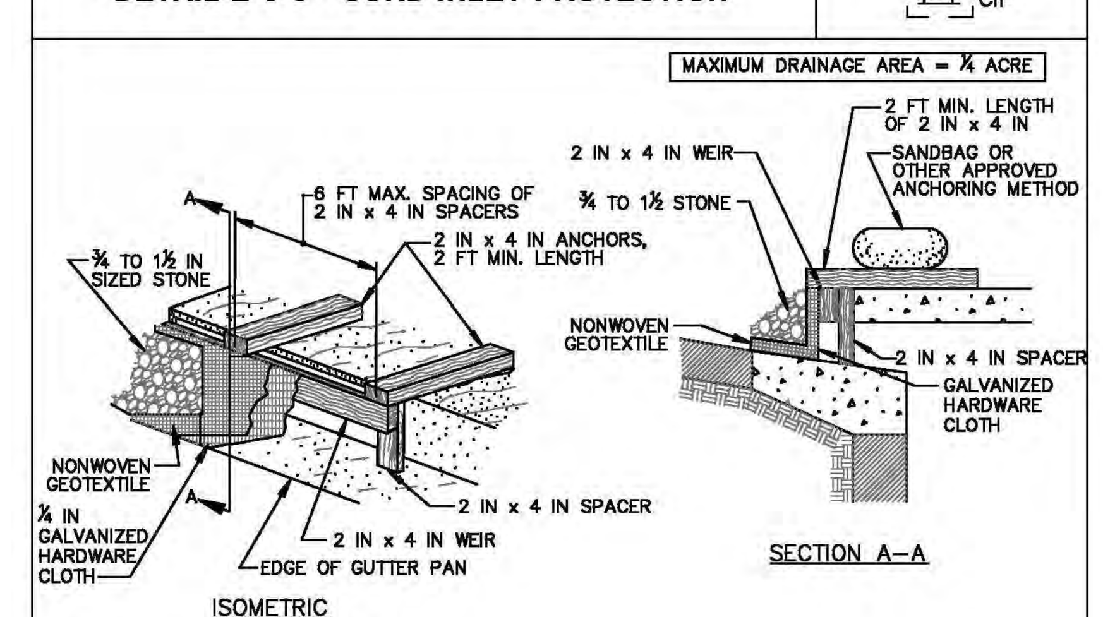
   Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.
4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
5. All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.
6. Site Analysis:

Total Area of Site:	25.51	Acres
Area Disturbed:	0.60	Acres
Area to be roofed or paved:	0.46	Acres
Area to be vegetatively stabilized:	0.14	Acres
Total Cut:	275	Cu. Yds.
Total Fill:	75	Cu. Yds.
Offsite waste/borrow area location:	* TBD	

   * NOTE: Location to be from a site with an active, approved and valid Sediment & Erosion Control Plan
7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
8. Additional sediment control must be provided, if deemed necessary by the CID. 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 every inspection and should include:
   - Inspection date
   - Inspection type (routine, pre-storm event, during rain event)
   - Name and title of inspector
   - Weather information (current conditions as well as time and amount of last recorded precipitation)
   - Brief description of project's status (e.g., percent complete) and/or current activities
   - Evidence of sediment discharges
   - Identification of plan deficiencies
   - Identification of sediment controls that require maintenance
   - Identification of missing or improperly installed sediment controls
   - Compliance status regarding the sequence of construction and stabilization requirements
   - Photographs
   - Monitoring/sampling
   - Maintenance and/or corrective action performed
   - Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).
9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may allowed by the CID per the list of HSCD-approved field changes.
11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the HSCD, no more than 30 acres cumulatively may be disturbed at a given time.
12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.
14. All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.
15. Stream channels must not be disturbed during the following restricted time periods (inclusive):
   - Use I and IP March 1 - June 15
   - Use III and IIIP October 1 - April 30
   - Use IV March 1 - May 31
16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL: CIP



CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
6. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON–SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. 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 STONE.

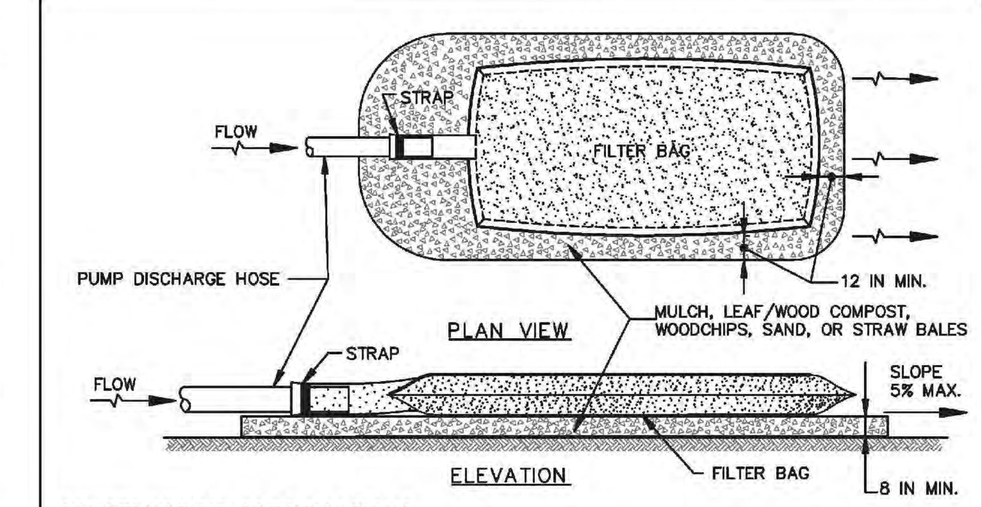
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

E.27

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: FB



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
5. USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

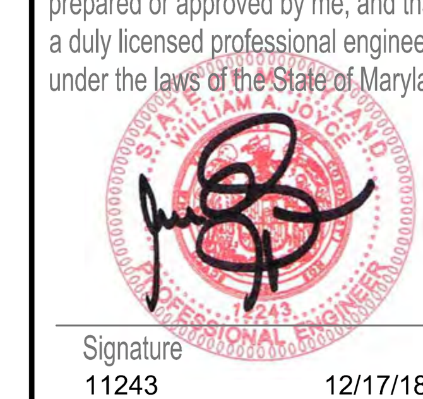
GRAB TENSILE	250 LB	ASTM D–4632
PUNCTURE	150 LB	ASTM D–4833
FLOW RATE	70 GAL/MIN/FT²	ASTM D–4491
PERMITTIVITY (SEC^{-1})	1.2 SEC^{-1}	ASTM D–4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D–4355
APPARENT OPENING SIZE (AOS)	0.15–0.18 MM	ASTM D–4751
SEAM STRENGTH	90%	ASTM D–4632

6. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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.



Signature	
11243	12/17/18
License No:	Exp Date

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: ______________________

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

DATE	NO.	REVISION DESCRIPTION

PROJECT

Howard County General Hospital Psychiatric Addition

Columbia Town Center
Section 8 - Area 2 - Lot 5

JOYCE ENGINEERING CORPORATION
CIVIL ENGINEERING LAND SURVEYING LAND PLANNING CONSTRUCTION MANAGEMENT
10766 BALTIMORE AVENUE - BELTSVILLE, MARYLAND 20705
TEL: (301) 595-4353 FAX: (301) 595-4650 WEB: www.joyceeng.com

Drawing name: C:\Users\Murphyt\appdata\local\temp\AcPublish_8024\016052 SDP-9 [Sediment Control Details].dwg
Plotted: Sep 13, 2017 - 12:21pm

ADDRESS CHART

LOT/PARCEL	STREET ADDRESS
5	5755 Cedar Lane ~ Columbia, MD 21044 [Hospital] 11068 Little Patuxent Parkway ~ Columbia, MD 21044 [Oncology Bldg] 11085 Little Patuxent Parkway ~ Columbia, MD 21044 [Medical Arts Bldg]

PERMIT INFORMATION CHART

SUBDIVISION			SECTION/AREA		LOT/PARCEL #
HCGH TOWN CENTER			8 / 2		Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE POR/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

TITLE

Sediment & Erosion Control Details and Specifications

DES BY WAJ	SCALE As Shown	PROJ. NO. 016052
DRN BY HAL	DATE May 2017	9 OF 12
CHK BY JEC	APPROVED WAJ	

This plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard Soil Conservation District Date

DESIGN CERTIFICATION:

"I herby certify that this plan has been designed in accordance with the current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Designer's Signature Date

OWNERS/ DEVELOPER CERTIFICATION:

"I / We certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a 'Certificate of Training' at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County Soil Conservation District and/or MDE".

Owner's / Developer's signature Date
Name / Title:

SDP #17-061

B-4-2 STANDARDS AND SPECIFICATIONS

FOR

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition

The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation

1. 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.
   b. Apply fertilizer and lime as prescribed on the plans.
   c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. 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:
      i. Soil pH between 6.0 and 7.0.
      ii. 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.
      iv. Soil contains 1.5 percent minimum organic matter by weight.
      v. Soil contains sufficient pore space to permit adequate root penetration.
   b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
   c. 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 soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones 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

1. 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 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.
4. Areas having slopes steeper than 2:1 require special consideration and design.
5. 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, or other materials larger than 1½ inches in diameter.
   b. 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.
   c. 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.
6. 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.

C. Soil Amendments (Fertilizer and Lime Specifications)

1. 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.
2. 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.
3. 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.
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.

B-4-3 STANDARDS AND SPECIFICATIONS

FOR

SEEDING AND MULCHING

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

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.

Criteria

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.
   b. 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.
   c. 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.
   d. 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
   a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
      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.
   b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      i. 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.
      ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
   c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
      i. 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; P_2O_5 (phosphorous), 200 pounds per acre; K_2O (potassium), 200 pounds per acre.
      ii. 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.
      iii. Mix seed and fertilizer on site and seed immediately and without interruption.
      iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching

1. 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.**
   b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
      i. 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.
      ii. 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.
      iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
      v. 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.
2. Application
   a. Apply mulch to all seeded areas immediately after seeding.
   b. 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.
   c. 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.
3. 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:
      i. 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.
      ii. 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 other 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.**
      iv. 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.

B-4-5 STANDARDS AND SPECIFICATIONS

FOR

PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures

1. General Use
   a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
   b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
   c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
   d. 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 soil amendments shown in the Permanent Seeding Summary .
2. Turfgrass Mixtures
   a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
   b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
      i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in 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 mixture by weight.
      ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
      iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1½ to 3 pounds per 1000 square feet.

      Notes:
      Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

      Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line
   c. Ideal Times of Seeding for Turf Grass Mixtures

      Western 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 October 15 (Hardiness Zone: 6b)

      Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
   d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
   e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ 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 hot seasons, or on adverse sites.

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): 6 b Seed Mixture (from Table B.3):					Fertilizer Rate (10-20-20)			Lime Rate
No.	**Species**	**Application Rate (lb/ac)**	**Seeding Dates**	**Seeding Depths**	**N**	**P_2O_5**	**K_20**	
	See	Options	at Right	¼- ½ in	45 pounds per acre (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
				¼- ½ in				
				¼- ½ in				

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

1. General Specifications
   a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
   b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ 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 affect its survival.
   e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil 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 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.
   c. 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.
   d. 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.

Table B.2: Recommended Permanent Seeding Mixtures by Site Condition or Purpose

Site Condition or Purpose of the Planting	Recommended Mix (see Table B.3)												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Steep Slopes, Roadsides	R	R	R	A	R	A				A	A	R	R
Sand and Gravel Pits, Sanitary Landfills	R	R	R	A	R	A				A	A	R	
Salt-Damaged Areas	A												R
Mine Spoil, Dredged Material, and Spoil Banks	A		R	A	A								
Utility Rights-of-Way	R	R	R	R	R	R	A			R	R	R	
Dikes and Dams	A	A	R	A		R	R	A		R	R	R	
Berms and Low Embankments (not on Ponds)	R	R	R	R	R	R	A	A		R	R	R	A
Pond and Channel Banks, Streambanks	R	R	R	R	A	A	A			A	A		
Grassed Waterways, Diversions, Terraces, Spillways	A				A	R	R	A	R		R		A
Bottom of Drainage Channels, Swales, Detention Basins				A		R	A			A	R		R
Field Borders, Filter Strips, Contour Buffer Strips	R	R	R	A	A	R	A	R	R	R	R	R	A
Wastewater Treatment Strips and Areas								R	A	A			
Heavy Use Areas (Grass Loafing Paddocks for Livestock)								R					
Athletic Fields, Residential and Commercial Lawns							A	R	R		R		
Recreation Areas							R	R	R		R		

R = Recommended mix for this site condition or purpose.
A = Alternative mix, depending on site conditions.

Table B.3: Selected List of Permanent Herbaceous Seeding Mixtures

Mix	Recommended Cultivar	Seeding Rate[1/] lb/ac	Seeding Rate lb/1000 ft²	Soil Drainage Class[2/]	Max. Height (inch)	Maint. Level[3/]	Remarks
WARM-SEASON/COOL-SEASON GRASS MIXES							
1. SELECT ONE WARM-SEASON GRASS:							
Switch Grass (*Panicum virgatum*)	Blackwell, Carthage, Cave-in-Rock, or Shelter	10	0.23	E - P	4 - 7	C - D	All species are native to Maryland. Plant this mix with a regular grass drill.
OR Coastal Panic Grass (*Panicum amarum var. amarulum*)	Atlantic	10	0.23				Coastal panicgrass is best adapted to Zones 7a and 7b.
AND ADD: Creeping Red Fescue (*Festuca rubra var. rubra*)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	15	0.34				Creeping red fescue is a cool-season grass that will provide erosion protection while the warm-season grass (switchgrass or coastal panicgrass) is becoming established.
PLUS ONE OF THE FOLLOWING LEGUMES: Partridge Pea (*Chamaecrista fasciculata*)	Common	4	0.09				Switchgrass, coastal panicgrass, the 'Dawson' variety of creeping red fescue, and partridge pea are moderately salt-tolerant. Do not use bush clover or wild indigo on wet sites.
Bush Clover (*Lespedeza capitata*)	Common	2	0.05				
Wild Indigo (*Baptisia tinctoria*)	Common	2	0.05				
2. Big Bluestem (*Andropogon gerardii*)	Niagara or Rountree	6	0.14	E - MW	6 - 8	C - D	All species are native to Maryland.
Indiangrass (*Sorghastrum nutans*)	Rumsey	6	0.14				The indiangrass and bluestems have fluffy seeds. Plant with a specialized native seed drill.
Little Bluestem (*Schizachyrium scoparium*)	Aldous or Blaze	4	0.09				
Creeping Red Fescue (*Festuca rubra var. rubra*)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	15	0.34				Creeping red fescue is a cool-season grass that will provide erosion protection while the warm-season grasses are becoming established.
PLUS ONE OF THE FOLLOWING LEGUMES: Partridge Pea (*Chamaecrista fasciculata*)	Common	4	0.09				
Bush Clover (*Lespedeza capitata*)	Common	2	0.05				
Wild Indigo (*Baptisia tinctoria*)	Common	2	0.05				
Showy Tick-Trefoil (*Desmodium canadense*)	Common	1	0.02				

Table B.3: Selected List of Permanent Herbaceous Seeding Mixtures (Continued)

Mix	Recommended Cultivar	Seeding Rate[1/] lb/ac	Seeding Rate lb/1000 ft²	Soil Drainage Class[2/]	Max. Height (inch)	Maint. Level[3/]	Remarks
WARM-SEASON/COOL-SEASON GRASS MIXES							
3. SELECT THREE GRASSES:							
Deertongue (*Dichanthelium clandestinum*)	Tioga	20	0.46	E - MW	4 - 6	C - D	Excellent for excessively droughty, low pH (acidic) soils.
Sheep Fescue (*Festuca ovina*)	Common or Bighorn	20	0.46				Sheep fescue, Canada wild rye, and redtop are cool-season grasses that will provide erosion protection while the warm-season grass (deertongue) is becoming established.
OR Canada Wild Rye (*Elymus canadensis*)	Common	3	0.07				
Redtop (*Agrostis gigantean*)	Streaker	1	0.02				
PLUS ONE OF THE FOLLOWING LEGUMES: Common Lespedeza (*Lespedeza striata*)	Kobe	10	0.23				Common lespedeza ('Kobe' variety) is more tolerant of low acidity and high manganese concentrations than Korean lespedeza. These lespedezas are reseeding annuals.
Korean Lespedeza (*Lespedeza stipulacea*)	Climax or Rowan	10	0.23				
4. Deertongue (*Dichanthelium clandestinum*)	Tioga	15	0.34	W - P	2 - 3	C - D	
Creeping Red Fescue (*Festuca rubra var. rubra*)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	20	0.46				
Virginia Wild Rye (*Elymus virginicus*)	Common	5	0.11				Use Virginia wild rye on moist, shady sites.
OR Canada Wild Rye (*Elymus canadensis*)	Common	5	0.11				Use Canada wild rye on droughty sites.

Table B.3: Selected List of Permanent Herbaceous Seeding Mixtures (Continued)

Mix	Recommended Cultivar	Seeding Rate[1/] lb/ac	Seeding Rate lb/1000 ft²	Soil Drainage Class[2/]	Max. Height (inch)	Maint. Level[3/]	Remarks
COOL-SEASON GRASS MIXES							
5. SELECT TWO GRASSES:							
Creeping Red Fescue (*Festuca rubra var. rubra*)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	20	0.46	E - SP	2 - 3	B - D	Use creeping red fescue in heavy shade and on moist sites.
OR Hard Fescue (*Festuca trachyphylla*)	Attila or Aurora	20	0.46				Perennial ryegrass and redtop will establish more rapidly than either fescue. Redtop tolerates wet sites better than ryegrass.
Perennial Ryegrass (*Lolium perenne*)	Blazer (II), Pennfine	10	0.23				
OR Redtop (*Agrostis gigantean*)	Streaker	1	0.02				Flatpea will suppress woody vegetation. It should be planted in the spring, or as a dormant seeding in late fall or winter. It must be incorporated into the soil or covered with mulch. It may not be winter-hardy if planted late summer - fall. Caution: Flatpea can spread aggressively, and can be toxic to livestock.
AND ADD THE FOLLOWING LEGUME: Flatpea (*Lathyrus sylvestris*)	Lathco	15	0.34				
6. Tall Fescue (*Lolium arundinaceum*) (formerly *Festuca arundinacea*)	Recommended MD turf-types[4/]	40	0.93	W - SP	2 - 3	C - D	
Perennial Ryegrass (*Lolium perenne*)	Blazer (II), Pennfine	25	0.57				
PLUS ONE OF THE FOLLOWING LEGUMES: Birdsfoot Trefoil (*Lotus corniculatus*)	Empire, Viking, Norcen, Leo	8	0.18				Birdsfoot trefoil is suitable for use only in Zones 5b and 6a.
White Clover (*Trifolium repens*)	Common	5	0.11				
7. Creeping Red Fescue (*Festuca rubra var. rubra*)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	60	1.38	W - MW	1 - 2	C - D	This mix has good shade tolerance.
Kentucky Bluegrass (*Poa pratensis*)	Recommended MD turf-types[4/]	15	0.34				

Table B.3: Selected List of Permanent Herbaceous Seeding Mixtures (Continued)

Mix	Recommended Cultivar	Seeding Rate[1/] lb/ac	Seeding Rate lb/1000 ft²	Soil Drainage Class[2/]	Max. Height (inch)	Maint. Level[3/]	Remarks
8. Tall Fescue (*Lolium arundinaceum*) (formerly *Festuca arundinacea*)	Recommended MD turf-types[4/]	100	2.3	E - SP	2 - 3	A - D	Tall fescue produces a dense turf if frequently mowed, but tends to be clumpy if mowed only occasionally. For best results, recommend using a blend of 3 cultivars. Use low-endophyte cultivars in areas where livestock may graze.
9. SELECT ONE SPECIES OF FESCUE:							
Tall Fescue (*Lolium arundinaceum*) (formerly *Festuca arundinacea*)	Recommended MD turf-types[4/]	60	1.38	W - SP	2 - 3	A - B	Good for highly managed athletic fields. Tall fescue is more suitable for compacted, high use areas and on moist sites.
OR Hard Fescue (*Festuca trachyphylla*)	Attila or Aurora	40	0.92				Hard fescue produces finer-textured turf with more shade tolerance.
AND ADD: Kentucky Bluegrass (*Poa pratensis*)	Recommended MD turf-types[4/]	40	0.92				Use tall fescue instead of hard fescue for wastewater treatment strips and areas.
Perennial Ryegrass (*Lolium perenne*)	Blazer (II), Pennfine	20	0.46				For best results, recommend using a blend of 3 cultivars each for tall fescue and Kentucky bluegrass.
10. Orchardgrass (*Dactylis glomerata*)	Any	25	0.57	W - SP	2 - 3	C - D	Low maintenance mix that is easy to establish.
Creeping Red Fescue (*Festuca rubra var. rubra*)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	10	0.23				
Redtop (*Agrostis gigantean*)	Streaker	1	0.02				
Alsike Clover (*Trifolium hybridum*)	Common	3	0.07				Alsike clover can be toxic to horses.
White Clover (*Trifolium repens*)	Common	3	0.07				Omit the clovers if using this mix for wastewater treatment strips and areas.

Table B.3: Selected List of Permanent Herbaceous Seeding Mixtures (Continued)

Mix	Recommended Cultivar	Seeding Rate[1/] lb/ac	Seeding Rate lb/1000 ft²	Soil Drainage Class[2/]	Max. Height (inch)	Maint. Level[3/]	Remarks
11. Creeping Red Fescue (*Festuca rubra var. rubra*)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	30	0.69	E - MW	2 - 3	B - D	
Chewings Fescue (*Festuca rubra ssp. commutata*)	Common	30	0.69				
Kentucky Bluegrass (*Poa pratensis*)	Recommended MD turf-types[4/]	20	0.46				
OPTIONAL ADDITION Rough Bluegrass (*Poa trivialis*)	Common	15	0.34				Add rough bluegrass in moist, shady conditions.
12. Creeping Red Fescue (*Festuca rubra var. rubra*)	Dawson, Pennlawn, Flyer, Fortess, Ruby, or Salem	25	0.57	E - MW	2 - 3	C - D	Attractive mix of fine fescues and wildflowers for low maintenance conditions. Once well-established, the grasses may tend to outcompete the wildflowers.
Hard Fescue (*Festuca trachyphylla*)	Attila or Aurora	25	0.57				
Sheep Fescue (*Festuca ovina*)	Common or Bighorn	25	0.57				Wildflowers are best established by broadcasting and cultipacking on a prepared seedbed. Drilling can be also used, but care must be taken so that seeds are not drilled too deep.
PLUS WILDFLOWER MIX: Black-eyed Susan (*Rudbeckia hirta*)	Common	2	0.05				Hydroseeding is not recommended for this mix if wildflowers are used. (They have very small seeds.)
Lance-leaved Coreopsis (*Coreopsis lanceolata*)	Common	2	0.05				
Purple Coneflower (*Echinacea purpurea*)	Common	2	0.05				
Partridge Pea (*Chamaecrista fasciculate*)	Common	5	0.11				
OR ADD CLOVER MIX: White Clover (*Trifolium repens*)	Common	3	0.07				
Red Clover (*Trifolium pretense*)	Any	3	0.07				

Table B.3: Selected List of Permanent Herbaceous Seeding Mixtures (Continued)

Mix	Recommended Cultivar	Seeding Rate[1/] lb/ac	Seeding Rate lb/1000 ft²	Soil Drainage Class[2/]	Max. Height (inch)	Maint. Level[3/]	Remarks
13. Alkali Saltgrass (*Puccinellia distans*)	Fults or Salty	20	0.46	W - P	2 - 3	B - D	This is the recommended mix for saline sites. Saltgrass will persist only under saline conditions.
Creeping Red Fescue (*Festuca rubra var. rubra*)	Dawson	15	0.34				For best results, use only the 'Dawson' variety of creeping red fescue. It is a salt-tolerant variety.
Fowl Meadowgrass (*Poa palustris*)	Common	2	0.05				
OPTIONAL ADDITION Creeping Bentgrass (*Agrostis stolonifera*)	Seaside	2	0.05				Add bentgrass for wetter conditions.

Notes:

1/ **Seeding Rates: Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates must be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses, legumes, or wildflowers. All legume seeds must be inoculated before planting with the appropriate Rhizobium bacteria. When feasible, hard-seeded legumes should be scarified to improve germination.**

2/ **Soil Drainage Class (refer to the county soil survey for further information):**
E - Excessively Drained; W - Well Drained; MW - Moderately Well Drained; SP - Somewhat Poorly Drained; P - Poorly Drained.

3/ **Maintenance Level:**
A - Intensive mowing (every 2 - 4 days), fertilization, lime, insect and weed control, and watering (examples: high maintenance lawns and athletic fields).
B - Frequent mowing (every 4 - 7 days), occasional fertilization, lime, pest control, and watering (examples: residential, school, and commercial lawns).
C - Periodic mowing (every 7 - 14 days), occasional fertilization and lime (examples: residential lawns, parks).
D - Infrequent or no mowing, fertilization, or lime after the first year of establishment (examples: wildlife areas, roadsides, steep banks).

4/ **Turf-type cultivars of tall fescue and Kentucky bluegrass must be selected based on recommendations of the University of Maryland Cooperative Extension Service, Agronomy Mimeo 77. Recommendations are as follows:**

A. Kentucky Bluegrass –
1. The following Kentucky bluegrass cultivars are suitable for general use, and are also noted for shade tolerance:

America	Coventry	Quantum Leap
Ascot	Liberator	Showcase
Brilliant	Moonlight	SR 2000
Champagne	Nuglade	Unique
Compact	Princeton 105	

B-4-4 STANDARDS AND SPECIFICATIONS

FOR

TEMPORARY STABILIZATION

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

Purpose

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.

Criteria

1. 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.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. 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.

Temporary Seeding Summary

Hardiness Zone (from Figure B.3): 6 b Seed Mixture (from Table B.1): at Left					Fertilizer Rate (10-20-20)	Lime Rate
No.	**Species**	**Application Rate (lb/ac)**	**Seeding Dates**	**Seeding Depths**		
	Cereal Rye (Secale Cereale)	112	Mar.1st-May 15th Aug.15th-Oct.15th	1"	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	Foxtail Millet (Secale Cereale)	30		1/2"		

B-4-6 STANDARDS AND SPECIFICATIONS

FOR

SOIL STABILIZATION MATTING

Definition

Material used to temporarily or permanently stabilize channels or steep slopes until groundcover is established.

Purpose

To protect the soils until vegetation is established.

Conditions Where Practice Applies

On newly seeded surfaces to prevent the applied seed from washing out; in channels and on steep slopes where the flow has erosive velocities or conveys clear water; on temporary swales, earth dikes, and perimeter dike swales as required by the respective design standard; and, on stream banks where moving water is likely to wash out new vegetative plantings.

Design Criteria

1. The soil stabilization matting that is used must withstand the flow velocities and shear stresses determined for the area, based on the 2-year, 24-hour frequency storm for temporary applications and the 10-year, 24-hour frequency storm for permanent applications. Designate on the plan the type of soil stabilization matting using the standard symbol and include the calculated shear stress for the respective treatment area.
2. Matting is required on permanent channels where the runoff velocity exceeds two and half feet per second (2.5 fps) or the shear stress exceeds two pounds per square foot (2 lbs/ft²). On temporary channels discharging to a sediment trapping practice, provide matting where the runoff velocity exceeds four feet per second (4 fps).
3. Temporary soil stabilization matting is made with degradable (lasts 6 months minimum), natural, or manmade fibers of uniform thickness and distribution of fibers throughout and is smolder resistant. The maximum permissible velocity for temporary matting is 6 feet per second.
4. Permanent soil stabilization matting is an open weave, synthetic material consisting of non-degradable fibers or elements of uniform thickness and distribution of weave throughout. The maximum permissible velocity for permanent matting is 8.5 feet per second.
5. Calculate channel velocity and shear stress using the following procedure:

   Shear Stress (τ) is a measure of the force of moving water against the substrate and is calculated as:

   $\tau = \gamma \cdot R \cdot S_w$ where:

   τ = shear stress (lb/ft²)
   γ = weight density of water (62.4 lb/ft³)
   R = average water depth (hydraulic radius) (ft)
   S_w = water surface slope (ft/ft)

   Velocity (v) measures the rate of flow through a defined area and is calculated as:

   $$v = \frac{1.486 R^{2/3} s^{1/2}}{n}$$

   where:
   v = velocity (ft/sec)
   n = Manning's roughness coefficient
   R = hydraulic radius (ft)
   s = channel slope (ft/ft)

6. Use Table B.7 to assist in selecting the appropriate soil stabilization matting for slope applications based on the slope, the slope length, and the soil-erodibility K factor.

Table B.7: Soil Stabilization on Slopes

Slope	20:1 or Flatter (≤5%)			<20:1 to 4:1 (>5 - 25%)			<4:1 to 3:1 (>25 - 33%)			<3:1 to 2.5:1 (>33 - 40%)			<2.5:1 to 2:1** (>40 - 50%)		
Slope Length (feet)*	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60	60-120	0-30	30-60	60-120
Straw Mulch/Wood Cellulose Fiber				for K ≤ 0.35***											
Temporary Matting with Design Shear Stress ≥ 1.5 lb/sf															
Temporary Matting with Design Shear Stress ≥ 1.75 lb/sf															
Temporary Matting with Design Shear Stress ≥ 2.0 lb/sf															
Temporary Matting with Design Shear Stress ≥ 2.25 lb/sf															

Effective range for all K values unless otherwise specified

* Slope length includes contributing flow length.
** Slopes steeper than 2:1 must be engineered.
*** Soil having a K value less than or equal to 0.35 can be stabilized effectively with straw mulch or wood cellulose fiber when located on slopes steeper than 5%. Soil stabilization matting is required on all slopes steeper than 5% that have soil with a K factor greater than 0.35. K factor ratings are published in the NRCS Soil Survey http:// websoilsurvey.nrcs.usda.gov/app. During construction or reclamation, the soil-erodibility K value should represent the upper 6 inches of the final fill material re-spread as the last lift. Only the effects of rock fragments within the soil profile are considered in the estimation of the K value. Do not adjust K values to account for rocks on the soil surface or increases in soil organic matter related to management activities.

Maintenance

Vegetation must be established and maintained so that the requirements for Adequate Vegetative Establishment are continuously met in accordance with Section B-4 Vegetative Stabilization.

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.

Signature
11243 — License No:
12/17/18 — Exp Date

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: ____________________

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DIRECTOR — DATE

DATE	NO.	REVISION DESCRIPTION

PROJECT

Howard County General Hospital Psychiatric Addition

Columbia Town Center
Section 8 - Area 2 - Lot 5

JOYCE ENGINEERING CORPORATION
CIVIL ENGINEERING LAND SURVEYING LAND PLANNING CONSTRUCTION MANAGEMENT
10766 BALTIMORE AVENUE - BELTSVILLE, MARYLAND 20705
TEL: (301) 595-4353 FAX: (301) 595-4650 WEB: www.joyceeng.com
Drawing name: C:\Users\Murphyt\appdata\local\temp\AcPublish_8024\016052 SDP-10 [Sediment Control Details].dwg
Plotted: Sep 13, 2017 - 12:22pm

ADDRESS CHART

LOT/PARCEL	STREET ADDRESS
5	5755 Cedar Lane ~ Columbia, MD 21044 [Hospital] 11068 Little Patuxent Parkway ~ Columbia, MD 21044 [Oncology Bldg] 11085 Little Patuxent Parkway ~ Columbia, MD 21044 [Medical Arts Bldg]

PERMIT INFORMATION CHART

SUBDIVISION HCGH TOWN CENTER			SECTION/AREA 8 / 2		LOT/PARCEL # Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE POR/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

TITLE

Sediment & Erosion Control Details and Specifications

DES BY WAJ	SCALE As Shown	PROJ. NO. 016052
DRN BY HAL	DATE May 2017	10 OF 12
CHK BY JEC	APPROVED WAJ	

This plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard Soil Conservation District — Date

DESIGN CERTIFICATION:
"I herby certify that this plan has been designed in accordance with the current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

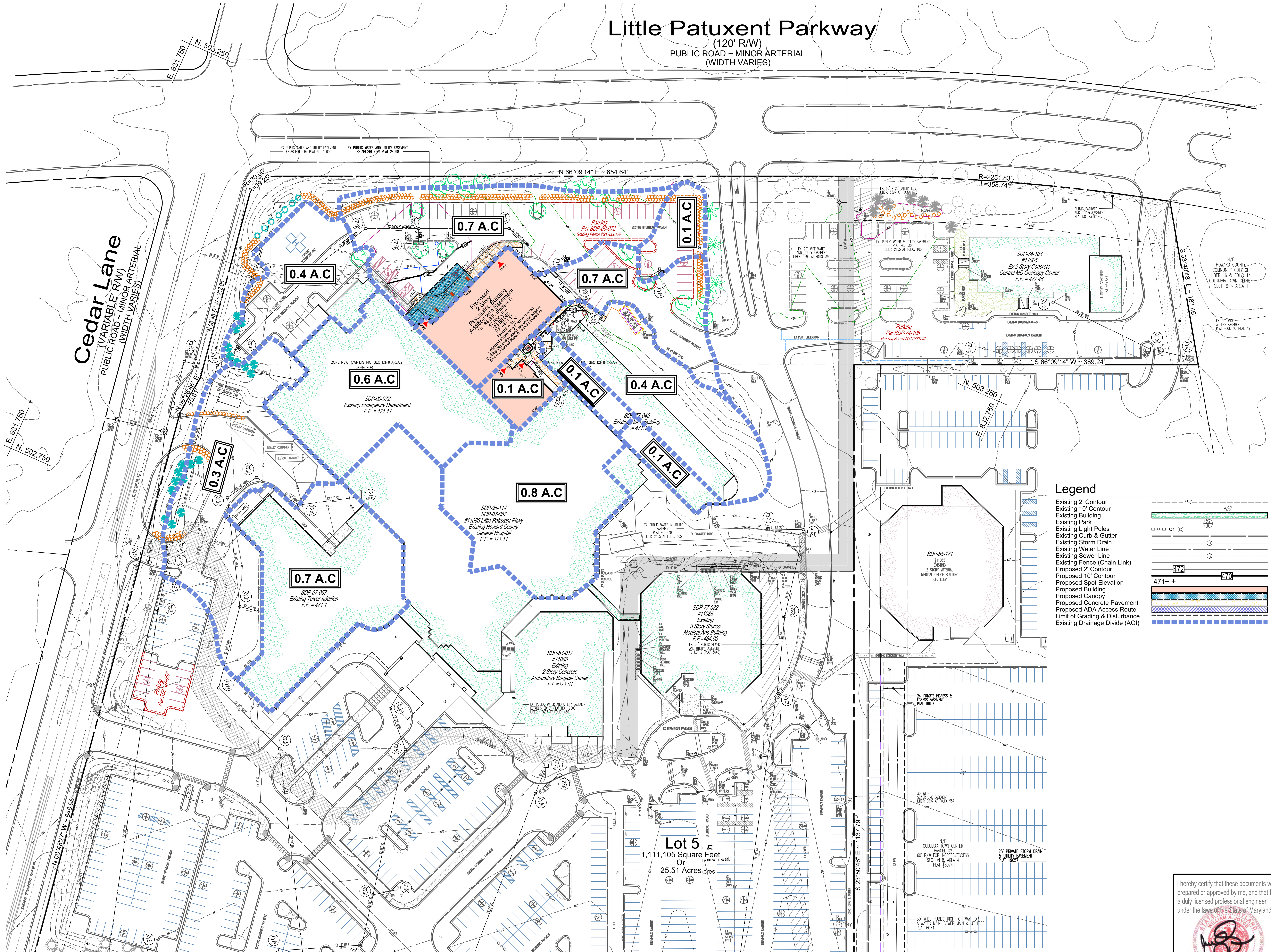
Designer's Signature — Date

OWNERS/ DEVELOPER CERTIFICATION:
"I / We certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a 'Certificate of Training' at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County Soil Conservation District and/or MDE".

Owner's / Developer's signature — Date
Name / Title:

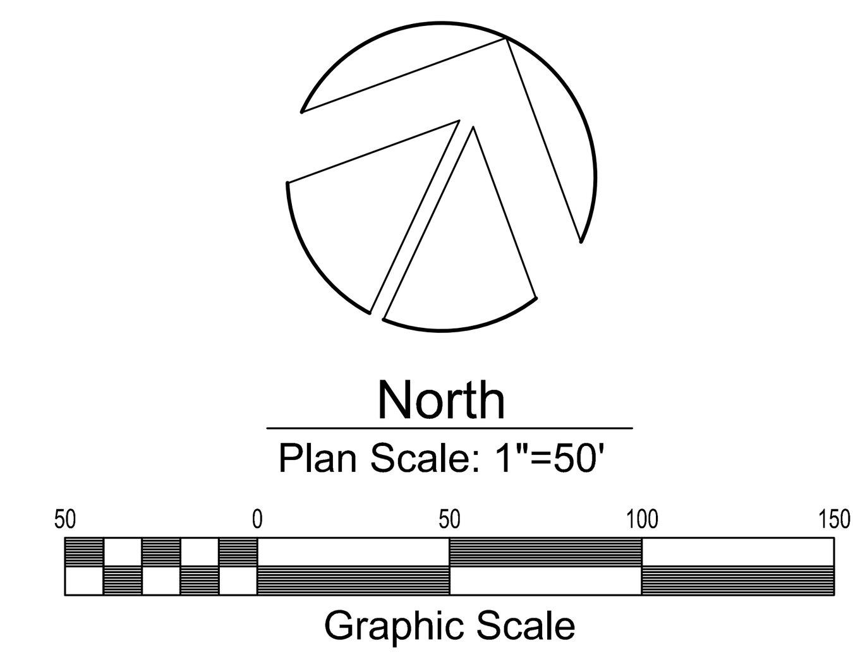
Owner/Developer/Applicant:
Howard County General Hospital, Inc.
5755 Cedar Lane
Columbia, Maryland 21044
Attn: Ryan Brown, Vice Principal of Operations
Phone: 410-740-7720

SDP #17-061



Little Patuxent Parkway
(120' R/W)
PUBLIC ROAD ~ MINOR ARTERIAL
(WIDTH VARIES)
Cedar Lane
(VARIABLE' R/W)
PUBLIC ROAD ~ MINOR ARTERIAL
(WIDTH VARIES)
0.7 A.C
0.4 A.C
0.1 A.C
0.7 A.C
0.6 A.C
0.1 A.C
0.1 A.C
0.4 A.C
0.3 A.C
0.1 A.C
0.8 A.C
0.7 A.C
N 66°09'14" E ~ 654.64'
S 66°09'14" W ~ 389.24'
S 23°50'46" E ~ 1137.79'
SDP-00-072
Existing Emergency Department
F.F. = 471.11
SDP-95-114
SDP-07-057
#11085 Little Patuxent Pkwy
Existing Howard County
General Hospital
F.F. = 471.11
SDP-07-057
Existing Tower Addition
F.F. = 471.1
SDP-83-017
#11085
Existing
2 Story Concrete
Ambulatory Surgical Center
F.F.=471.01
SDP-77-032
#11085
Existing
3 Story Stucco
Medical Arts Building
F.F.=464.00
SDP-74-108
#11065
Ex 2 Story Concrete
Central MD Oncology Center
F.F. = 477.46
SDP-85-171
Lot 5
1,111,105 Square Feet
Or
25.51 Acres
Legend
Existing 2' Contour
Existing 10' Contour
Existing Building
Existing Park
Existing Light Poles
Existing Curb & Gutter
Existing Storm Drain
Existing Water Line
Existing Sewer Line
Existing Fence (Chain Link)
Proposed 2' Contour
Proposed 10' Contour
Proposed Spot Elevation
Proposed Building
Proposed Canopy
Proposed Concrete Pavement
Proposed ADA Access Route
Limit of Grading & Disturbance
Existing Drainage Divide (AOI)

For Continuation ~ See Sheet 11 of 12



APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: ____________________

APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

DATE	NO.	REVISION DESCRIPTION

PROJECT

Howard County General Hospital Psychiatric Addition

Columbia Town Center
Section 8 - Area 2 - Lot 5

Owner/Developer:
Howard County General Hospital, Inc.
5755 Cedar Lane
Columbia, Maryland 21044
Attn: Ryan Brown, Vice Principal of Operations
Phone: 410-740-7720

JOYCE ENGINEERING CORPORATION
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TEL: (301) 595-4353 FAX: (301) 595-4650 WEB: www.joyceeng.com
Drawing name: C:\Users\Murphyt\appdata\local\temp\AcPublish_8024\016052 SDP-11 [Existing Dam-1].dwg
Plotted: Sep 13, 2017 - 12:24pm

ADDRESS CHART

LOT/PARCEL	STREET ADDRESS
5	5755 Cedar Lane ~ Columbia, MD 21044 [Hospital] 11068 Little Patuxent Parkway ~ Columbia, MD 21044 [Oncology Bldg] 11085 Little Patuxent Parkway ~ Columbia, MD 21044 [Medical Arts Bldg]

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.

Signature
11243 12/17/18
License No: Exp Date

PERMIT INFORMATION CHART

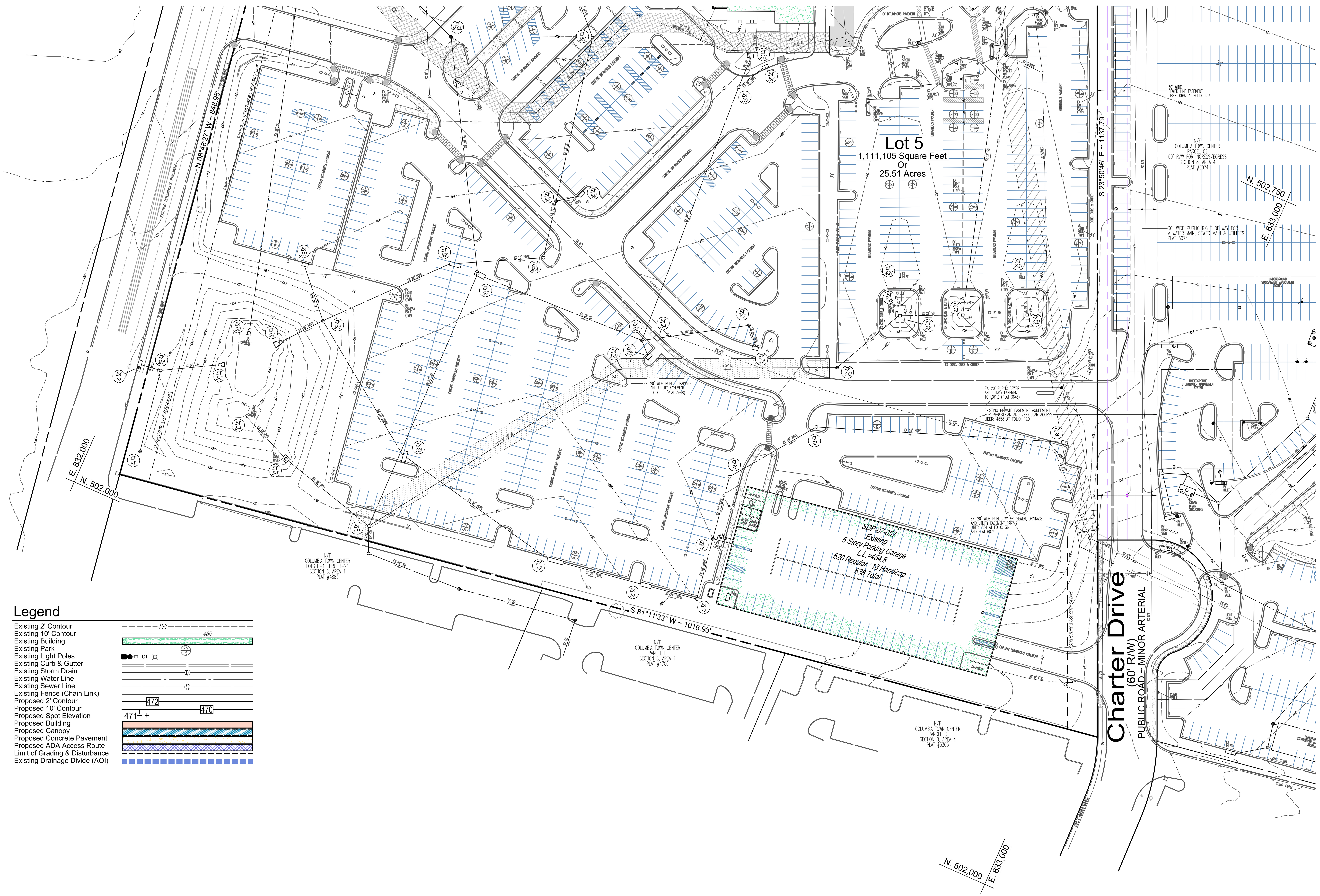
SUBDIVISION			SECTION/AREA		LOT/PARCEL #
HCGH TOWN CENTER			8/2		Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE POR/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

TITLE

Existing & Proposed Drainage Area Map (North)

DES BY WAJ	SCALE 1" = 50'	PROJ. NO. 016052
DRN BY HAL	DATE May 2017	11 OF 12
CHK BY JEC	APPROVED WAJ	

For Continuation ~ See Sheet 11 of 12



Legend

Existing 2' Contour	458
Existing 10' Contour	460
Existing Building	
Existing Park	
Existing Light Poles	or
Existing Curb & Gutter	
Existing Storm Drain	
Existing Water Line	
Existing Sewer Line	
Existing Fence (Chain Link)	
Proposed 2' Contour	472
Proposed 10' Contour	470
Proposed Spot Elevation	471¹ +
Proposed Building	
Proposed Canopy	
Proposed Concrete Pavement	
Proposed ADA Access Route	
Limit of Grading & Disturbance	
Existing Drainage Divide (AOI)	

North

Plan Scale: 1"=50'

50 0 50 100 150

Graphic Scale

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE: ____________________

APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

DATE	NO.	REVISION DESCRIPTION

PROJECT

Howard County General Hospital Psychiatric Addition

Columbia Town Center
Section 8 - Area 2 - Lot 5

Owner/Developer:
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TEL: (301) 595-4353 FAX: (301) 595-4650 WEB: www.joyceeng.com

Drawing name: C:\Users\Murphyt\appdata\local\temp\AcPublish_8024\016052 SDP-12 [Existing Dam-2].dwg
Plotted: Sep 13, 2017 - 12:25pm

ADDRESS CHART

LOT/PARCEL	STREET ADDRESS
5	5755 Cedar Lane ~ Columbia, MD 21044 [Hospital] 11068 Little Patuxent Parkway ~ Columbia, MD 21044 [Oncology Bldg] 11085 Little Patuxent Parkway ~ Columbia, MD 21044 [Medical Arts Bldg]

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11243 12/17/18
License No: Exp Date

PERMIT INFORMATION CHART

SUBDIVISION			SECTION/AREA		LOT/PARCEL #
HCGH TOWN CENTER			8/2		Lot 5
PLAT# OR L/F 24098	BLOCK	ZONE POR/NT	TAX/ZONE MAP 35	ELECT. DISTRICT 5TH	CENSUS TRACT 6053.02
WATER CODE 106			SEWER CODE 5522500		

TITLE

Existing & Proposed Drainage Area Map (South)

DES BY WAJ	SCALE 1" = 50'	PROJ. NO. 016052
DRN BY HAL	DATE May 2017	12 OF 12
CHK BY JEC	APPROVED WAJ	

SDP #17-061