# SITE DEVELOPMENT PLAN
# DOWNTOWN COLUMBIA
# CRESCENT NEIGHBORHOOD
## PARCELS 'A-1', 'A-2', 'A-3', AND PARCEL 'E'
## MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT

ASBUILTS

### GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST 48 HOURS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48-HOURS PRIOR TO ANY EXCAVATION WORK.
4. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF UTILITIES AT (410) 313-4900 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
5. PROJECT BACKGROUND:
   LOCATION: TAX MAP 36
   ZONING: PROPERTY IS ZONED 'NEW TOWN' PER THE 2013 COMPREHENSIVE ZONING PLAN AND IS DESIGNATED AS DOWNTOWN MIXED USE AREA. ADDITIONALLY, THE PROJECT AREA IS SUBJECT TO THE DOWNTOWN COLUMBIA PLAN - A GENERAL PLAN AMENDMENT EFFECTIVE APRIL 6, 2010.
   ELECTION DISTRICT: FIFTH ELECTION DISTRICT
   AREA OF BUILDABLE LOTS: PARCEL 'A'=4.09 AC; PARCEL 'E'=2.23 AC
   RECORD PLAT NO.: 23565-23566
   DPZ REF. FILE NO.: FDP-DC-CRESCENT-1, ECP 15-074, F 15-098, F 17-011
6. TOPOGRAPHIC AERIAL SURVEY WAS PERFORMED ON MARCH 2007 BY MCKENZIE SNYDER AND TOPOGRAPHIC FIELD SURVEY ON AUGUST, 2011 BY GUTSCHICK, LITTLE AND WEBER.
7. COORDINATES ARE BASED ON NAD '83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATION NUMBERS: 36AA AND 30GA.
8. THE EXISTING UTILITIES SHOWN HEREIN WERE DERIVED FROM AVAILABLE PUBLIC RECORDS AND FIELD LOCATIONS BY GUTSCHICK LITTLE & WEBER, P.A. THE CONTRACTOR MUST DIG TEST PITS BY HAND AT ALL UTILITY CROSSINGS AND CONNECTION POINTS TO VERIFY EXACT LOCATION.
9. SPOT ELEVATIONS SHOWN FOR CURB ARE BOTTOM OF CURB UNLESS OTHERWISE NOTED.
10. ALL PLAN DIMENSIONS ARE TO THE FACE OF BUILDING OR CURB UNLESS OTHERWISE NOTED. DIMENSIONS ARE MEASURED PERPENDICULAR OR RADIAL BETWEEN ITEMS UNLESS NOTED OTHERWISE.
11. THERE ARE NO KNOWN GRAVE SITES, CEMETERIES, FLOOD PLAINS OR WETLANDS ON SITE. WETLANDS AND FLOODPLAIN ARE PRESENT ADJACENT TO THIS SITE BUT ARE NOT BEING DISTURBED UNDER THIS PLAN.
12. CURB RADII ARE AS NOTED ON SHEET 2.
13. WATER SERVICE IS PUBLIC (CONTR. #24-4928-D).
14. SEWER SERVICE IS PUBLIC (CONTR. #24-4928-D).
15. TRAFFIC IMPACT STUDY: BASED ON WELLS & ASSOCIATES AUGUST 26, 2015 CRESCENT NEIGHBORHOOD AREA 1 TRAFFIC IMPACT STUDY AND UPDATED PER ADDENDUM DATED JULY 25, 2016.
16. THE PROJECT IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE SECTION 16.1202(B)(1)(IV) (PUD WITH A PDP APPROVED PRIOR TO 12/31/92).
17. THE CONTRACTOR SHALL TEST PIT ALL EXISTING UTILITIES AT LEAST (5) DAYS PRIOR TO STARTING ANY WORK SHOWN ON THESE DRAWINGS AND NOTIFY THE ENGINEER OF ANY CONFLICTS.
18. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
19. NOTE: IN CASE OF DISCREPANCIES BETWEEN THE PLAT AND THE PLANS, THE PLAT SHALL GOVERN.
20. ALL OUTDOOR LIGHTING SHALL BE ORIENTED TO DIRECT LIGHT INWARDS AND DOWNWARDS ON-SITE AWAY FROM ALL ADJOINING PUBLIC ROADS AND IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
21. THE LANDSCAPE PLAN WAS PREPARED ACCORDING TO THE ALTERNATIVE COMPLIANCE SECTION OF THE LANDSCAPE MANUAL. THE LANDSCAPE PLANS HAVE BEEN PREPARED BY A REGISTERED LANDSCAPE ARCHITECT AND IS CERTIFIED TO MEET THE DESIGN INTENT OF THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES.
22. THE MINIMUM BUILDING SETBACKS RESTRICTIONS FROM PROPERTY LINES AND PUBLIC ROAD RIGHTS OF WAY ARE TO BE IN ACCORDANCE WITH FDP-DC-CRESCENT-1 AND CRESCENT NEIGHBORHOOD DESIGN GUIDELINES.
23. THE PROPOSED BUILDINGS WILL HAVE AN AUTOMATIC FIRE SUPPRESSION SPRINKLER SYSTEM.
24. THIS PROPERTY IS SUBJECT TO THE CRESCENT NEIGHBORHOOD SPECIFIC DESIGN GUIDELINES (NSDG), RECORDED IN L. 16305, F. 415, THE CRESCENT NEIGHBORHOOD SPECIFIC IMPLEMENTATION PLAN (NSIP), RECORDED IN L. 16306, F. 1, THE CRESCENT NEIGHBORHOOD CONCEPT PLAN (NCP) RECORDED AS PLAT NOS. 23397 THRU 23402 AND THE CRESCENT FINAL DEVELOPMENT PLAN (FDP-DC-CRESCENT-1), RECORDED AS PLAT NOS. 23403 THRU 23409.
25. BUILDING 'A' OF THIS PROJECT IS REGISTERED WITH THE GREEN BUILDING CERTIFICATION INSTITUTE FOR LEED CERTIFICATION, PROJECT I.D. #1000057942.
26. FOOD SERVICE ESTABLISHMENTS MUST BE PROVIDED WITH A GREASE INTERCEPTOR. WASTEWATER DRAINS CONTAINING CONCENTRATIONS OF FATS, OILS AND GREASES MUST BE ISOLATED FROM OTHER SOURCES OF WASTEWATER AND SHALL PASS THROUGH A GREASE INTERCEPTOR PRIOR TO ENTERING THE SANITARY SEWER. WASTEWATER FROM REST ROOMS AND GARBAGE GRINDERS SHALL BYPASS THE GREASE INTERCEPTOR. THE GREASE INTERCEPTOR SHALL BE DESIGNED FOR EFFICIENT REMOVAL OF GREASE AT THE MAXIMUM FLOW RATE. GREASE INTERCEPTORS THAT ARE LOCATED OUTSIDE THE BUILDING SHALL BE PLACED IN AN AREA ACCESSIBLE FOR CLEANING THE GREASE BY MOTOR VEHICLE (WASTE HAULER), AND SHALL HAVE A MINIMUM SIZE OF 750 GALLONS. GREASE INTERCEPTORS LOCATED INSIDE THE FOOD SERVICE FACILITY MUST BE ISOLATED FROM FOOD PREPARATION AREAS AND MUST BE APPROVED BY THE HOWARD COUNTY HEALTH DEPARTMENT. IF APPROVAL FOR AN INSIDE GREASE INTERCEPTOR IS NOT GRANTED BY THE HOWARD COUNTY HEALTH DEPARTMENT, THEN AN EXTERIOR GREASE INTERCEPTOR WILL BE REQUIRED.
27. SURETY FOR THE REQUIRED LANDSCAPING IN THE AMOUNT OF $13,700 SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENTS. LANDSCAPING WITHIN THE MICRO-BIORETENTION FACILITIES WILL BE ASSESSED AS PART OF THE DEPARTMENT OF PUBLIC WORKS BIO-RETENTION SURETY.
28. THERE WILL BE 20 STREET TREES PLANTED IN THE BROKEN LAND PARKWAY AND LITTLE PATUXENT PARKWAY RIGHTS-OF-WAY AND THE $300 PER TREE SURETY WILL BE POSTED WITH THE COST ESTIMATE WITH THE DPW DEVELOPER'S AGREEMENT.
29. A SHARED PARKING ANALYSIS IS SUBMITTED WITH THIS SITE DEVELOPMENT PLAN. THE SHARED PARKING ANALYSIS INCLUDES THE INFORMATION INDICATED IN THE GENERAL SITE DATA ON THIS SHEET.
30. HEALTH DEPARTMENT APPROVAL OF THIS SITE DEVELOPMENT PLAN (SDP) DOES NOT ENSURE APPROVAL OF BUILDING PERMIT APPLICATIONS ASSOCIATED WITH THIS PLAN. PERMIT PLANS FOR CERTAIN FACILITIES TO BE CONSTRUCTED WITHIN THE LIMITS DESCRIBED BY THIS SDP WILL REQUIRE REVIEW AND APPROVAL BY THE HEALTH DEPARTMENT. SUCH FACILITIES MAY INCLUDE, BUT ARE NOT LIMITED TO, THOSE WHICH HAVE SWIMMING POOLS, OR THAT SELL PREPARED OR PACKAGED FOODS, OR THAT MAY HAVE EQUIPMENT THAT EMITS RADIATION.
31. AT THE TIME OF SDP APPROVAL, THE SITE IS UNDER PHASE I OF THE DOWNTOWN REVITALIZATION PHASING PROGRESSION.
32. CUMULATIVE AMOUNT OF DEVELOPMENT APPROVED AT THE TIME OF THIS SDP APPROVAL IS 1,145,285 SF (EST.) FOR BUILDING 'A' ONLY AND 1,277,785 SF (EST) FOR BUILDINGS 'A' AND 'B'. SEE DOWNTOWN COLUMBIA DATABASE MAINTAINED BY THE COUNTY. AS PER SECTION 125.0.H.2.c OF THE ZONING REGULATIONS, (a) CUMULATIVE AMOUNT OF DOWNTOWN REVITALIZATION DEVELOPMENT APPROVED AND BUILT IS 487,617 SF. (b) AN ADDITIONAL 436,668 SF OF DEVELOPMENT FOR DOWNTOWN REVITALIZATION IS PENDING AWAITING FINAL SIGNATURE APPROVAL OF SDP-14-024 AND BUILDING PERMIT APPROVAL. THIS CUMULATIVE AMOUNT OF DEVELOPMENT DOES NOT INCLUDE DEVELOPMENT TO RECEIVE BUILDING PERMITS WITH THIS SDP.
33. THERE ARE HIGHLY ERODIBLE SOILS ON SITE. MORE STRINGENT SEEDING AND STABILIZATION METHODS MAY BE EXPECTED. SOIL TABLE PROVIDED ON SHEET 9.
34. REQUIREMENTS FOR SECTION 16.144(b)&(g) HAVE BEEN WAIVED FOR AREAS 1 AND 2, DEFINED AS PARCELS A-C ON THE FINAL DEVELOPMENT PLAN BY WAIVER WP-15-144 GRANTED BY THE DIRECTOR OF THE DEPARTMENT OF PLANNING AND ZONING.
35. PUBLIC ART AS REQUIRED PER SECTION 125.A.9.F(2) OF THE ZONING REGULATIONS AND FDP-DC-CRESCENT-1 WILL BE PROVIDED AS PART OF THIS SDP. THE CONTRIBUTION SHALL INCLUDE THE DESIGN AND INSTALLATION OF A KINETIC SCULPTURE ON THE WEST FACADE OF THE PARKING GARAGE. THE SCULPTURE SHALL ALSO WRAP THE NORTHWEST CORNER OF THE GARAGE SO THAT ART CAN BE VIEWED FROM BOTH LITTLE PATUXENT PARKWAY AND BROKEN LAND PARKWAY.
36. THE MERRIWEATHER POST PAVILION PARKING DISPLACEMENT SOLUTION:

| AREA 1 AND 4 MERRIWEATHER PARKING ANALYSIS | | |
|---|---|---|
| | 2016 | 2017 |
| EXISTING SPACES: | | |
| AREA 1 EXISTING NUMBER OF SPACES (BASELINE) | 500 SPACES | 500 SPACES |
| AREA 1 NUMBER OF SPACES LOST TO CONSTRUCTION | (500) SPACES | (500) SPACES |
| NUMBER OF REPLACEMENT SPACES REQUIRED | 500 SPACES | 500 SPACES |
| REPLACEMENT SPACES: | | |
| AREA 4 TEMPORARY LOT | 162 SPACES | 162 SPACES |
| 40-70 CORP. CENTER (TEMPORARY RELOCATION) | 88 SPACES | --- |
| 50/60/70 DECK (TEMPORARY RELOCATION) | 250 SPACES | --- |
| AREA 1 PARKING (1,149 - 344 SPACES IDENTIFIED IN NOTE 5 BELOW) | --- | 805 SPACES |
| SPACES AVAILABLE FOR MERRIWEATHER EVENTS PER SDP-15-068 | 500 SPACES | 967 SPACES |

△3

NOTES:

1) THE TIME FRAMES ARE ESTIMATED

2) REPLACEMENT PARKING IN 40-70 CORPORATE CENTER, 50/60/70 DECK AND AREA 4 MAY BE RELOCATED WITHIN EXISTING OR PROPOSED PARKING AREA(S) LOCATED WITHIN DOWNTOWN. SEE HOWARD COUNTY LAND RECORDS LIBER 16604, FOLIO 57 AND LIBER 16695, FOLIO 466 FOR MITIGATION EASEMENT DETAILS.

3) ESTIMATED PARKING DEMAND IS FOR BOTH PARCEL A-1 AND PARCEL A-2 DEVELOPMENT.

4) FINAL PARKING REQUIREMENTS WILL BE DETERMINED AT TIME OF OCCUPANCY PERMIT(S) BASED ON SPECIFIC USES AND SQUARE FOOTAGE.

5) AREA 1 PARKING INCLUDES 1,149 TOTAL SPACES (1,127 STANDARD GARAGE SPACES, 15 NON-STANDARD GARAGE SPACES, AND 7 SURFACE-PARKING SPACES). THE CHART ABOVE REFLECTS THE FOLLOWING REDUCTIONS TO THE AVAILABLE PARKING FOR MERRIWEATHER POST PAVILION CONCERT PARKING :
- 10 SPACES FOR RESERVED OFFICE PARKING
- 323 SPACES FOR THE ESTIMATED WEEKEND RESTAURANT PARKING (REFLECTS A 20% CAPTURE RATE)
- 11 SPACES FOR THE ESTIMATED WEEKEND RETAIL PARKING

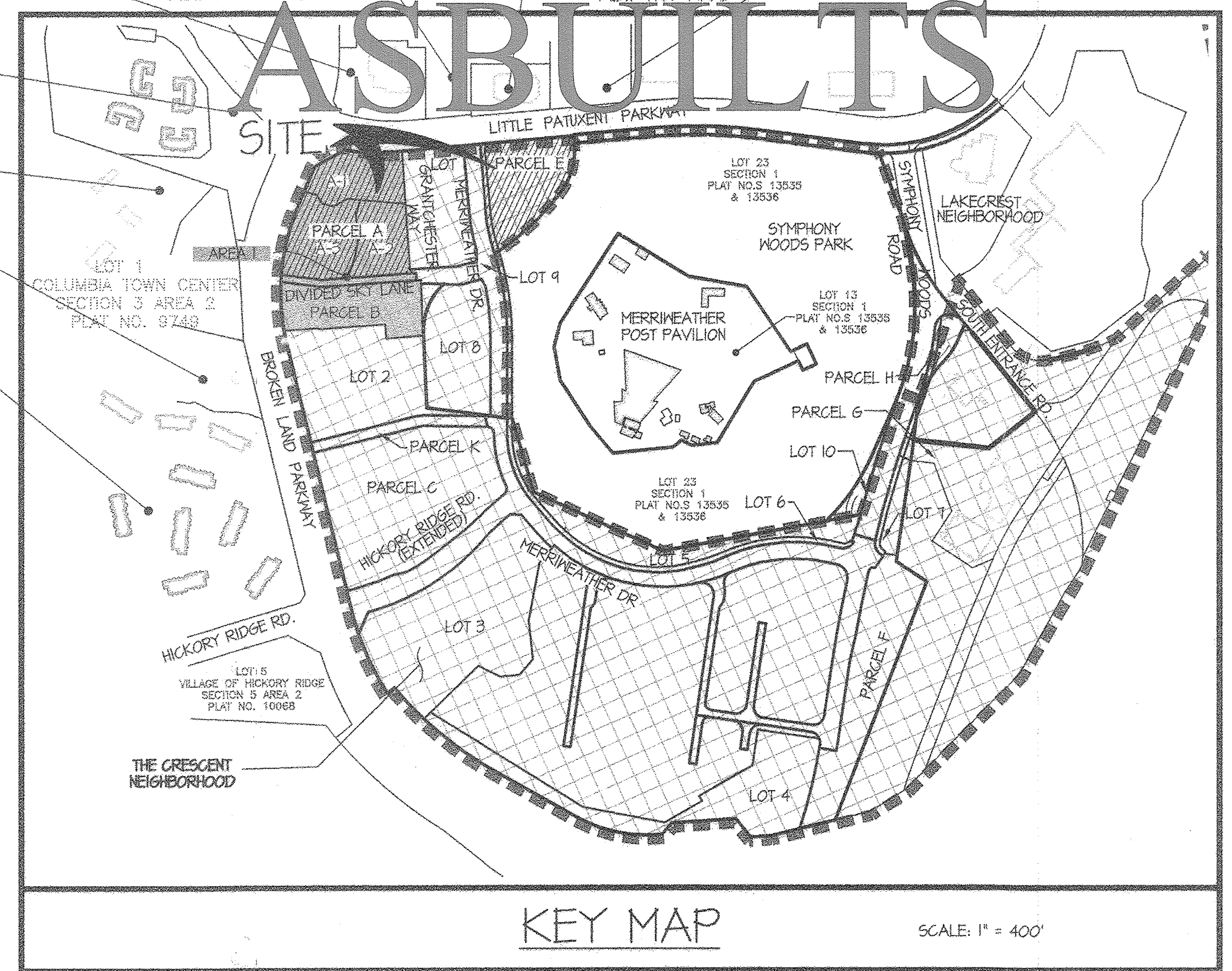
37. THE D&O CONDITIONS MET WITH THIS SDP: REGARDING THE D&O CONCLUSIONS OF THE LAW (LISTED ON PAGE 22 OF THE D&O), ITEMS 4&5 ARE RELEVANT TO THIS SITE. ITEM 4: ACKNOWLEDGED. PER THE DECISION AND ORDER OF PB 412, PLANNING BOARD REQUESTED THAT AN OPEN AREA WITH LESS STRUCTURED AMENITIES BE PROVIDED WITHIN THE CRESCENT NEIGHBORHOOD AND TO CONSIDER AREA 1 AS A LOCATION. AN OPEN AREA HAS NOT BEEN PROVIDED ON PARCEL 'A' BUT MORE TO BE CONSIDERED IN FUTURE SDP'S FOR PARCEL B OR ELSEWHERE IN THE NEIGHBORHOOD. ITEM 5: PLANNING RESTORATION IN AREA SS-55 IS UNDERWAY, FIELD INVESTIGATIONS AND SURVEYING TO BE COMPLETED BY THE END OF SEPTEMBER 2015. A CONCEPT PLAN WILL THEN BE DEVELOPED AND SUBMITTED TO MDE AND THE CORP BY 12/15/2015. MDE REVIEW AND APPROVAL EXPECTED BY 3/15/2016. SUBMISSION OF SITE PLAN TO HOWARD COUNTY EXPECTED BY 3/15/2016 AFTER MDE COMMENTS ARE ADDRESSED. CONSTRUCTION AND PLANTING EXPECTED IN THE FALL OF 2016.
38. DESIGN MANUAL WAIVERS FOR THIS SITE CONSIST OF A WAIVER OF VOL. 3-SECTION 2.4.C--OFF-STREET PARKING LOTS AND VOL. 3-SECTION 2.5.B.4.--CURB FILLET DESIGN, SUBMITTED ON JULY 8, 2015 AND APPROVED ON SEPTEMBER 29, 2015 WITH THE CONDITIONS OF APPROVAL AS FOLLOWS: PROVIDE 25FT RADIUS FILLETS AT CONNECTIONS OF PRIVATE ROADS TO PUBLIC ROADS AND 35 FT RADIUS FILLETS AT CONNECTIONS OF PUBLIC ROADS TO PUBLIC ROADS..
39. THE PROPOSED BUILDING HEIGHT OF BUILDING 'A' IS 8 STORIES, 116 FEET. THE PROPOSED MAX HEIGHT OF BUILDING 'B' IS 6 STORIES, 85 FEET. THE MAXIMUM HEIGHT OF BUILDINGS ALLOWED FOR THIS PROJECT PER GUIDELINES IS 15 STORIES AND 170 FEET.
40. BUILDING OWNER TO COORDINATE TRASH PICK UP TO THE BUILDINGS. BUILDING 'A' HAS DEDICATED SERVICE AREAS ON THE EAST AND WEST SIDES OF THE BUILDING. BUILDING 'B' HAS DEDICATED SERVICE AREA ON THE EAST SIDE OF THE BUILDING.
41. PLEASE REFER TO F-15-098 FOR SIGHT DISTANCE ANALYSIS OF THE INTERSECTION OF DIVIDED SKY LANE AND BROKEN LAND PARKWAY. NO SIGHT DISTANCE ANALYSIS IS NEEDED FOR THE ENTRANCE OFF OF LITTLE PATUXENT PARKWAY ONTO GRANTCHESTER WAY AS THAT ENTRANCE IS RIGHT-IN ONLY WITH NO TURN ONTO LITTLE PATUXENT PARKWAY.
42. SITE AREA FALLS WITHIN HOWARD COUNTY SCD SOIL MAP #18.
43. PAYMENTS REQUIRED BY CEPPAS #25 AND #27 ARE TO BE MADE UNDER THIS SDP.
44. A WAIVER PETITION, WP-16-024, TO SECTION 16.119(f)(1) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WAS SUBMITTED ON AUGUST 21, 2015 TO ALLOW A PRIVATE COMMERCIAL DRIVEWAY ENTRANCE TO ACCESS AN ARTERIAL ROAD (BROKEN LAND PARKWAY). THE ACCESS TO THIS DRIVEWAY WILL BE LIMITED TO TRASH PICKUP AND DELIVERIES AND THERE WILL NOT BE A POTENTIAL FOR CUT-THROUGH TRAFFIC. THE WAIVER PETITION WAS APPROVED ON OCTOBER 7, 2015.
45. △3 DOWNTOWN COMMUNITY COMMONS TO BE PROVIDED WITH THIS SDP IS 20,000 SQUARE FEET.
46. PROPERTY THAT IS INTENDED FOR COMMON, QUASI-PUBLIC AMENITY USE WILL BE HELD, OWNED AND MAINTAINED BY THE PROPERTY OWNER(S) SUBJECT TO SUCH MAINTENANCE RESPONSIBILITIES POTENTIALLY BEING SHARED AMONG PROPERTY OWNERS OR ASSUMED BY A MAINTENANCE OR OTHER ORGANIZATION. IT IS ANTICIPATED THAT THE PRIVATE STREETS AND DOWNTOWN COMMUNITY COMMONS WILL BE OWNED BY THE ADJACENT PROPERTY OWNER(S) AND THAT APPROPRIATE AGREEMENTS FOR MAINTENANCE AND ACCESS WILL BE PROVIDED. SPACE DESIGNATED AS DOWNTOWN COMMUNITY COMMONS AND ALL PRIVATE STREETS AND SIDEWALKS MUST BE GENERALLY ACCESSIBLE BY THE PUBLIC WITHOUT CHARGE. AMENITY AREAS AND OTHER SPACE INTENDED FOR BUILDING OCCUPANTS AND GUESTS ONLY SHALL REMAIN PRIVATE, AND NO RIGHT TO USE BY THE GENERAL PUBLIC IS HEREBY INTENDED OR CREATED.

PROFESSIONAL CERTIFICATION

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 12975, Expiration Date: May 26 2020.

11/12/18
Date

Carl K. Gutschick
Professional Engineer
Maryland Reg. No. 12975




KEY MAP

SCALE: 1" = 400'

| Community Enhancements, Programs and Public Amenities (CEPPAs) Tracking Table | | |
|---|---|---|
| Downtown Columbia Plan | | |
| Satisfied | | |
| CEPPA | Trigger | Notes |
| 1 | Prior to Submission of First FDP | Satisfied |
| 2 | Prior to Submission of First FDP | Satisfied |
| 3 | Prior to Submission of First FDP | Satisfied |
| 4 | Prior to Submission of First FDP | Satisfied |
| 5 | Prior to Approval of First FDP | Satisfied |
| 6 | Prior to Approval of First FDP | Satisfied |
| 7 | Prior to Approval of First SDP | Satisfied |
| 8 | Prior to Approval of First SDP | Satisfied |
| 9 | Prior to the Issuance of the First Building Permit | Satisfied, See FDP-DC-CRESCENT-1 |
| 10 | Upon Issuance of the First Building Permit | Satisfied |
| 11 | Upon Issuance of the Building Permit for the 400th Residential Unit | N/A |
| 12 | Prior to Issuance of a Building Permit for the 500,000th SF of Development (Pathway SDP only) | Completed by Bond per Alternative Compliance approved on 8/20/15 |
| 13 | Prior to Issuance of a Building Permit for the 500,000th SF of Development | Satisfied |
| Future CEPPAs | | |
| 14 | Prior to Issuance of a Building Permit for the 1,300,000th SF of Development | See FDP-DC-CRESCENT-1 |
| 15 | Prior to Issuance of a Building Permit for the 1,300,000th SF of Development | See FDP-DC-CRESCENT-1 |
| 16 | Prior to Issuance of a Building Permit for the 1,300,000th SF of Development | Complete |
| 17 | Upon Issuance of the Building Permit for the 1,375th Residential Unit | N/A |
| 18 | Prior to Issuance of a Building Permit for the 2,600,000th SF of Development | N/A |
| 19 | Prior to Issuance of a Building Permit for the 2,600,000th SF of Development | N/A |
| 20 | Prior to Issuance of a Building Permit for the 2,600,000th SF of Development | N/A |
| 21 | Prior to Issuance of a Building Permit for the 3,900,000th SF of Development | N/A |
| 22 | Prior to Issuance of a Building Permit for the 3,900,000th SF of Development | N/A |
| 23 | Prior to Issuance of a Building Permit for the 5,000,000th SF of Development | N/A |
| 24 | Prior to Issuance of a Building Permit for the 5,000,000th SF of Development | N/A |
| 25* | Prior to Approval of First FDP | First payment amount determined at certificate of occupancy issuance |
| 26** | Upon Issuance of Any Building Permit for a Building Containing Dwelling Units | N/A |
| 27** | Additional CEPPA Contribution | Final amount determined at certificate of occupancy issuance |

*Actual amount is escalated with the Consumer Price Index for All Urban Consumers (CPI-U) for the Washington-Baltimore Area, published by Bureau of Labor Statistics, Department of Labor, beginning April 6, 2011 and adjusting annually.

**Actual amount is escalated with the Engineering News-Record Building Cost Index, beginning April 6, 2011 and adjusting annually.

NOTE: Refer to the CEPPA chart in the Downtown Columbia Plan for specific requirements for each CEPPA.

CEPPA Status as of November 10, 2015:

CEPPAs 1-10, 13 and 16 - Satisfied. Per FDP-DC-Crescent-1 a final determination of the fire station site (CEPPA 9) must be made prior to approval of the first SDP within Crescent Area 2 (not here applicable).

CEPPA 11 - Not Applicable.

CEPPA 12 - Alternative timing approved by Planning Board decision dated August 21, 2015. The $500,000 owed for the Route 29 pedestrian bridge must be received by the County.

△3 CEPPA 14 - At this time it is believed the most likely location for a new transit center will be within the Symphony Overlook Neighborhood.

CEPPA 15 - Alternative timing approved in FDP-DC-Crescent-1.

CEPPA 17-24 - Should not be triggered by this SDP.

CEPPAs 25 - 27 - Payments will be made as required.

CEPPA 26 - Not Applicable.

| CUMULATIVE TRIP GENERATION (NET NEW EXTERNAL AM AND PM PEAK HOUR) | | |
|---|---|---|
| | AM | PM |
| *SDP-15-068 - BUILDING A | 351 | 303 |
| *SDP-15-068 - BUILDING B | 240 | 211 |
| **TOTAL | 591 | 514 |

△3

*BASED ON WELLS & ASSOCIATES ADDENDUM, JULY 25, 2016, CRESCENT NEIGHBORHOOD AREA 1 TRAFFIC IMPACT STUDY
**TOTAL NUMBER OF NET NEW EXTERNAL TRIPS REFLECTS ADJUSTMENTS REALIZED WHEN BOTH BUILDINGS ARE CONSTRUCTED.

NOTES:

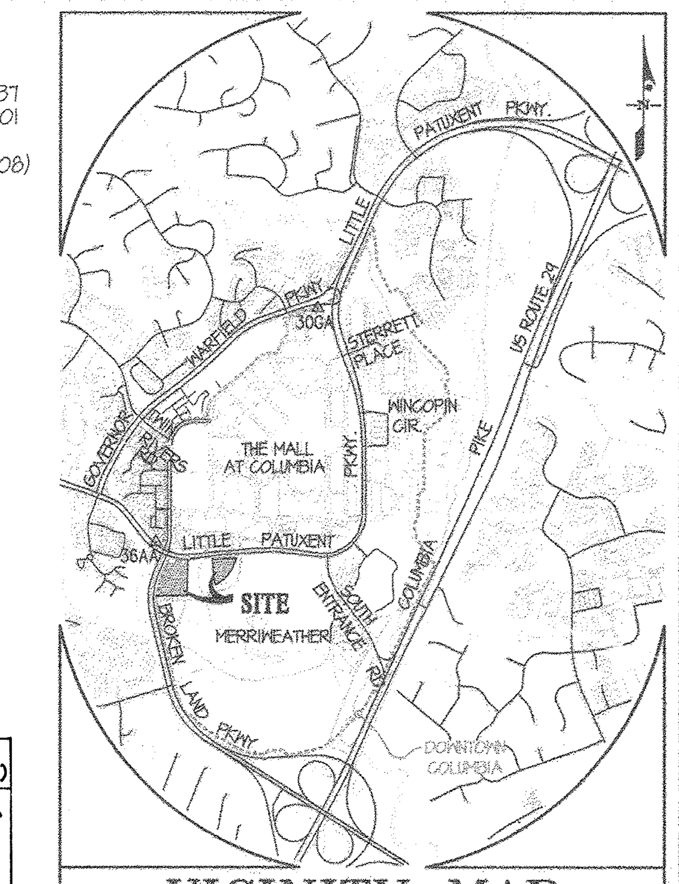
1. DELIVERY TRUCKS FOR THE RESTAURANT SHALL NOT PARK ON LITTLE PATUXENT PARKWAY OR BROKEN LAND PARKWAY, AND SHALL NOT BACK INTO OR OUT OF THE SERVICE AREA ON BROKEN LAND PARKWAY. ALL TRUCK MANEUVERS SHALL OCCUR WITHIN THE SERVICE AREA. △4
2. SEE FINAL PLANS (F 15-098) FOR ADDITIONAL INFORMATION ON IMPROVEMENTS TO THE ADJACENT ROADWAYS.

ASBUILTS

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

### HC CONTROL STATIONS

| 30GA | 36AA |
|---|---|
| NORTHING: 566,053.5979 | NORTHING: 562,804.8537 |
| EASTING: 1,352,177.5307 | EASTING: 1,349,906.1701 |
| ELEVATION: 339.878 | ELEVATION: 359.151 |
| (LATEST ADJ. NOV. 2008) | (LATEST ADJ. NOV. 2008) |




VICINITY MAP
SCALE: 1" = 2,000'
ADC MAP PAGE 33, GRID A1

1. GENERAL SITE DATA
   A. TOTAL PROJECT AREA: 275,504 SQUARE FEET OR 6.32 AC.
   B. LIMIT OF DISTURBED AREA: 248,728 SQUARE FEET OR 5.71 AC.
   C. PRESENT ZONING: NT (FDP DC-CRESCENT-1)
   D. PROPOSED USE OF SITE: OFFICE/COMMERCIAL, RETAIL, RESTAURANT, PARKING STRUCTURE, **HEALTH CLUB, DENTAL OFFICE** △8
   F. FLOOR SPACE: △3

A-1

| LEVEL | RETAIL/ REST. (SF) | OFFICE (SF) |
|---|---|---|
| 1 | 9,316 | 17,392 |
| 2-8 | -- | 26,503 |
| ROOF | -- | 4,994 |
| TOTAL: | 9,316 | 207,407 |

A-2 △8

| LEVEL | RETAIL/ REST. (SF) | OFFICE (SF) | HEALTH CLUB(SF) △8 | DENTAL OFFICE(SF) |
|---|---|---|---|---|
| B | △8 2,157 | 6,814 | △8 2,600 | 4,293 △8 |
| 1 | 6,406 | 14,137 | | |
| 4 | -- | 23,152* | | |
| 2-3 & 5 | -- | 23,152 | | |
| ROOF | -- | 570 | | |
| TOTAL: | △8 8,563 | 114,129 | △8 2,600 | 4,293 △8 |

△8 *660 SF FLOOR SLAB OPENING

2. PARCEL 'A-1' AND 'A-2' DEVELOPMENT DATA
   A. OFFICE
      1. A-1: PROPOSED OFFICE: 207,907 sf △8
      2. A-2: PROPOSED OFFICE: 118,422 sf △8
      TOTAL PROPOSED OFFICE: 326,329 sf △8 △3
   B. RETAIL (LOCATED ON THE FIRST FLOOR)
      1. A-1: PROPOSED RETAIL: 1,062 sf △8
      2. A-2: PROPOSED RETAIL: 4,826 sf △8
      TOTAL PROPOSED RETAIL: 5,888 sf △8
   C. RESTAURANT (LOCATED ON THE FIRST FLOOR)
      1. A-1: PROPOSED RESTAURANT: 8,254 sf
      2. A-2: PROPOSED RESTAURANT: 6,337 sf △8
      TOTAL PROPOSED RESTAURANT: 14,591 sf △8 △3
   D. INFORMATION FOR CUMULATIVE DOWNTOWN TRACKING CHART USE:
      RETAIL/RESTAURANT: 20,479 gross square feet △8
      OFFICE: 326,329 gross square feet △8
      TOTALS: 346,808 gross square feet
3. PARKING REQUIREMENTS: IN ACCORDANCE WITH SECTION 133.E.3 SHARED PARKING METHODOLOGY AND PARKING RATIOS.

   A SHARED PARKING ANALYSIS WAS INCLUDED WITH THIS SDP AND THE MAXIMUM MONTHLY PARKING DEMAND IS SUMMARIZED BELOW:
   MONTH: DECEMBER
   PEAK PERIOD: 2 PM WEEKDAY, 8 PM WEEKEND

   ESTIMATED PARKING DEMAND:

| | |
|---|---|
| △8 DENTAL OFFICE: | 20 SPACES (2 PM WEEKDAY) △8 |
| RETAIL: | 12 SPACES (2 PM WEEKDAY) △8 |
| | 9 SPACES (8 PM WEEKEND) △8 |
| RESTAURANT: | 165 SPACES (2 PM WEEKDAY) △8 |
| | 291 SPACES (8 PM WEEKEND) △8 |
| OFFICE: | 861 SPACES (2 PM WEEKDAY) |
| △8 HEALTH CLUB: | 12 SPACES (2 PM WEEKDAY) △8 |
| | 4 SPACES (8 PM WEEKEND) △8 |
| TOTAL: | 1,070 SPACES (2 PM WEEKDAY) △8 |
| | 304 SPACES (8 PM WEEKEND) △8 |

   NOTE:
   1) ESTIMATED PARKING DEMAND IS FOR BOTH PARCEL A-1 AND PARCEL A-2 DEVELOPMENT.
   2) FINAL PARKING REQUIREMENTS WILL BE DETERMINED AT TIME OF OCCUPANCY PERMIT(S) BASED ON SPECIFIC USES AND SQUARE FOOTAGE.
   △1 3) OUTDOOR SEATING IS NOT INCLUDED IN THE PARKING TABULATIONS PER DOWNTOWN COLUMBIA POLICY.
4. PARKING PROVIDED:
   PARKING STRUCTURE, A-3:

| | |
|---|---|
| LOWER LEVEL 1 | 125 SPACES TOTAL (4 STD. HANDICAP SPACES) (6 VAN HANDICAP SPACES) (4 LOW EMISSIONS SPACES) |
| LEVEL 2 | 129 SPACES TOTAL (2 STD. HANDICAP SPACES) (6 LOW EMISSIONS SPACES) |
| LEVEL 3 | 130 SPACES TOTAL (2 STD. HANDICAP SPACES) (4 LOW EMISSIONS SPACES) |
| LEVEL 4 | 130 SPACES TOTAL (2 STD. HANDICAP SPACES) (4 LOW EMISSIONS SPACES) |
| LEVEL 5 | 130 SPACES TOTAL (2 STD. HANDICAP SPACES) (4 LOW EMISSIONS SPACES) |
| LEVEL 6 | 130 SPACES TOTAL (2 STD. HANDICAP SPACES) (4 LOW EMISSIONS SPACES) |
| LEVEL 7 | 131 SPACES TOTAL (2 STD. HANDICAP SPACES) (4 LOW EMISSIONS SPACES) (12 COMPACT SPACES) |
| LEVEL 8 | 131 SPACES TOTAL (2 STD. HANDICAP SPACES) (4 LOW EMISSIONS SPACES) (12 COMPACT SPACES) |
| LEVEL 9 | 91 SPACES TOTAL (4 LOW EMISSIONS SPACES) (13 COMPACT SPACES) |
| TOTAL PARKING STRUCTURE SPACES: | 1,127 SPACES TOTAL (18 STD. HANDICAP SPACES) (6 VAN HANDICAP SPACES) (38 LOW EMISSIONS SPACES) (37 COMPACT SPACES) |
| TOTAL ON-STREET SPACES (DIVIDED SKY LN): | 7 PARALLEL PARKING SPACES |
| GRAND TOTAL PARKING SPACES PROVIDED: | 1,134 SPACES |

   ADDITIONAL NON-CREDITED SPACES (NOT COUNTED TOWARD GRAND TOTAL): 15

   TOTAL BICYCLE PARKING "SPACES" PROVIDED ON THE SITE AND IN THE GARAGE: 38 (14 ON THE SITE, 24 IN PARKING GARAGE). 16 ADDITIONAL SPACES TO BE PROVIDED WITH BUILDING 'B' CONSTRUCTION.

### SHEET INDEX △3 △6


●1 COVER SHEET
2 SITE DEVELOPMENT PLAN - PARCEL A
3 BUILDING PLANS & ELEVATIONS - I
4 BUILDING PLANS & ELEVATIONS - II
●5 GRADING PLAN - PARCEL A
6 SITE DEVELOPMENT & GRADING PLAN - PARCEL E TEMP. PARK. AREA
7 SEDIMENT CONTROL PLAN - PARCEL A
8 SEDIMENT CONTROL PLAN - PARCEL E TEMPORARY PARKING AREA
9 SEDIMENT CONTROL NOTES & DETAILS
10 PERVIOUS PAVING UNDERDRAIN PLAN - PARCEL E
11 PAVING DELINEATION PLAN & PLANTER BOX DETAILS
●12 SWM DETAILS, NOTES, & MAINTENANCE SCHEDULES - I
13 SWM DETAILS, NOTES, & MAINTENANCE SCHEDULES - II
●14 ESD FACILITIES PLAN & SECTIONS
●15 ESD FACILITIES PLAN & SECTIONS
●16 ESD FACILITIES PLAN & SECTIONS
17 STORM DRAIN DRAINAGE AREA MAP
18 SWM DRAINAGE AREA & SOILS TYPE MAP
●19 STORM DRAIN PROFILES & SCHEDULE TABLES
20 LANDSCAPE KEY PLAN
21 HARDSCAPE PLAN A
22 HARDSCAPE PLAN B
23 IRRIGATION PLAN A
24 IRRIGATION PLAN B
25 HARDSCAPE DETAILS
26 STAIR DETAILS
27 WALL DETAILS - I
28 WALL DETAILS - II
29 WALL DETAILS - III
●30 STREETSCAPE DETAILS
31 SITE FURNISHING DETAILS
32 DRAINAGE DETAILS
33 CORNER PLAZA - PLAN
34 CORNER PLAZA - DETAILS
35 RESTAURANT TERRACE - DETAILS
36 OFFICE TERRACE - PLAN
37 OFFICE TERRACE - ELEVATION
38 ROOF TERRACE - DETAILS
39 STREETSCAPE - DETAILS
40 STAIR & PLANTER - DETAILS
41 STAIR & PLANTER - DETAILS
42 SITE FURNISHING - DETAILS
43 STORMWATER - DETAILS
44 TREE PLAN A
45 TREE PLAN B
46 UNDERSTORY PLANTING PLAN A
47 UNDERSTORY PLANTING PLAN B
48 UNDERSTORY PLANTING PLAN C
49 PLANTING DETAILS
50 LIGHTING PLAN A
51 LIGHTING PLAN B
52 LIGHTING FIXTURE SCHEDULE
53 BOARDWALK - DECKING PLAN
54 BOARDWALK - POST + RAILING PLAN
55 BOARDWALK - LIGHTING PLAN
56 BOARDWALK - LIGHTING SCHEDULE
57 BOARDWALK - ENLARGEMENT PLANS
58 BOARDWALK - DETAILS
59 STRUCTURAL GENERAL NOTES - I
60 BOARDWALK PILE LAYOUT PLAN
61 BOARDWALK FRAMING PLAN
62 BOARDWALK FRAMING DETAILS - 1
63 BOARDWALK FRAMING DETAILS - 2


| CUMULATIVE DOWNTOWN COMMUNITY COMMONS TRACKING CHART | | | |
|---|---|---|---|
| FDP-DC-CRESCENT-1 | | | |
| Downtown Community Commons (DCC) Requirement: 149,909 SF | | | |
| SDP No. | Parcel | DCC Area Provided (SF) | Surplus by Parcel (SF) |
| | | 20,000 △3 | |
| | | | |
| | | | |
| Cumulative Totals (SF) | | 20,000 △3 | |

| | ADDRESS CHART |
|---|---|
| BUILDING A (A-1) | 10980 GRANTCHESTER WAY |
| BUILDING B (A-2) | 10960 GRANTCHESTER WAY |
| PARKING GARAGE (A-3) | 10970 GRANTCHESTER WAY |

| PERMIT INFORMATION CHART | | | | | | |
|---|---|---|---|---|---|---|
| SUBDIVISION NAME: | DOWNTOWN COLUMBIA CRESCENT NEIGHBRHOOD | | | SECTION/AREA N/A | | PARCEL PARCELS A-1,A-2,A-3, E |
| PLAT No. 23883 | PARCEL 527 | ZONE NT | TAX MAP 36 | BLOCK 1 | ELEC. DIST. 5 | CENSUS TRACT 6054 |
| WATER CODE: | E31 | | | SEWER CODE: | 5521000 | |

ASBUILT SHEET 1 OF 8

| APPROVED PLANNING BOARD OF HOWARD COUNTY |
|---|
| Date: AUGUST 18, 2016 |

APPROVED: FOR PUBLIC WATER & SEWERAGE SYSTEM HOWARD COUNTY HEALTH DEPARTMENT

| | |
|---|---|
| County Health Officer | Date 11/1/2018 |

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | Date 11-08-18 |
| Chief, Division of Land Development | Date 11-08-18 |
| Chief, Development Engineering Division | Date 11-6-18 |

**GLW GUTSCHICK LITTLE & WEBER, P.A.**
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\15019\PLANS BY GLW\SDP\15019sdp01 - Cover Sheet-Sheet 01.dwg | DES. NB | DRN. JH | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-27 | △3 ADDED D.C.C. CHART; REVISED TRAFFIC AND PARKING DATA; REVISED BUILDING G.S.F. INFORMATION; REVISED DOWNTOWN COMMUNITY COMMONS AREA; REVISED CEPPA NOTE 14; REVISED SHEET INDEX; REVISED TOTAL SHEET COUNT; ADDITION OF GENERAL NOTE #46 | JH | NB |
| 2017-11-17 | △6 REVISED SHEET INDEX AND NUMBER OF SHEETS IN TITLE BLOCK. | | |
| 2018-10 | △4 NOTE ADDED | | |
| 2019-10-23 | △8 REVISED GENERAL SITE DATA TO ADD HEALTH CLUB (RETAIL) AND DENTAL OFFICE (OFFICE) TO USES. | 9t. | MJT. |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 14931
EXPIRATION DATE: MAY 21, 2020

STATE OF MARYLAND · MICHAEL JAMES TRAPPEN · No. 14931 · REGISTERED PROFESSIONAL ENGINEER

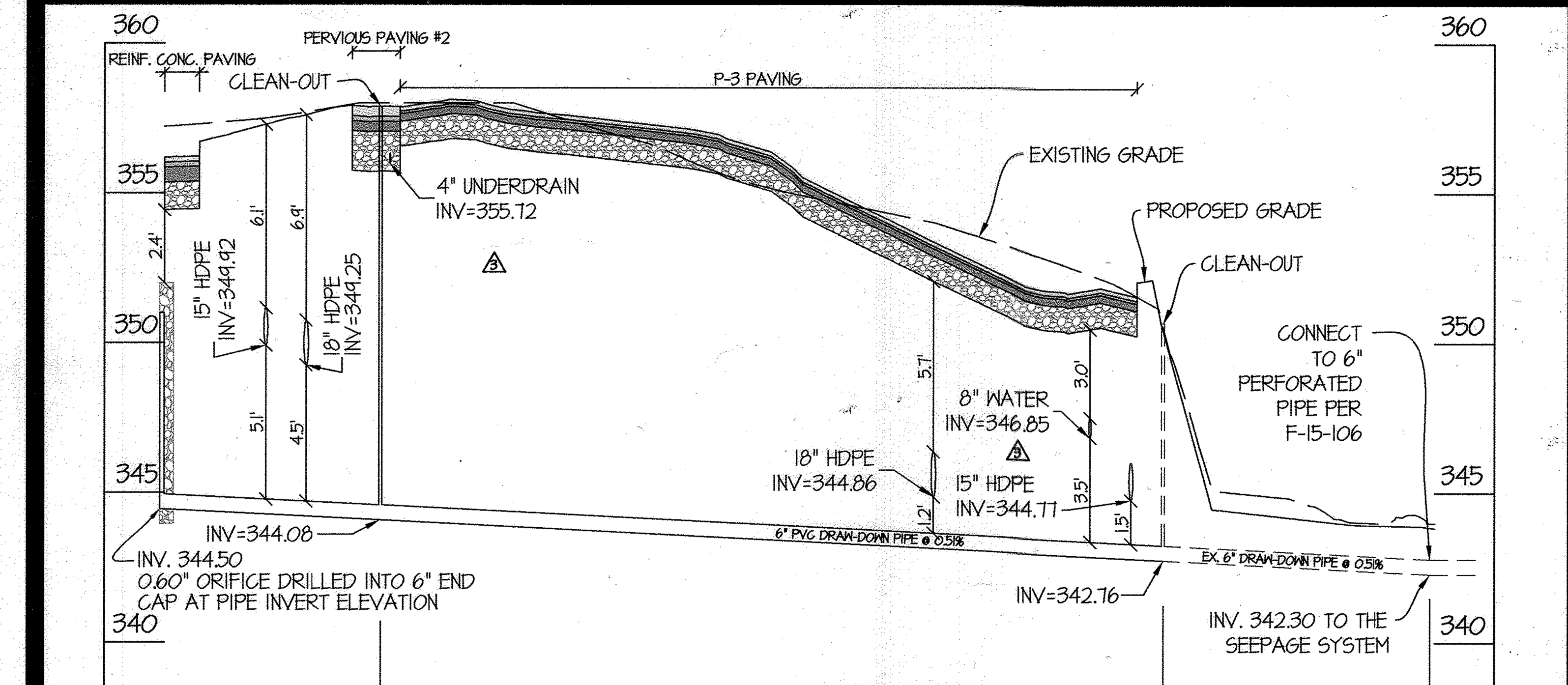
REVISED COVER SHEET
**DOWNTOWN COLUMBIA**
**CRESCENT NEIGHBORHOOD**
**PARCELS A-1, A-2, & A-3, AND PARCEL E**
**MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT**
**(PART OF TAX PARCEL 527) PLAT NO. 23565-23566**

ELECTION DISTRICT No. 5 | HOWARD COUNTY, MARYLAND

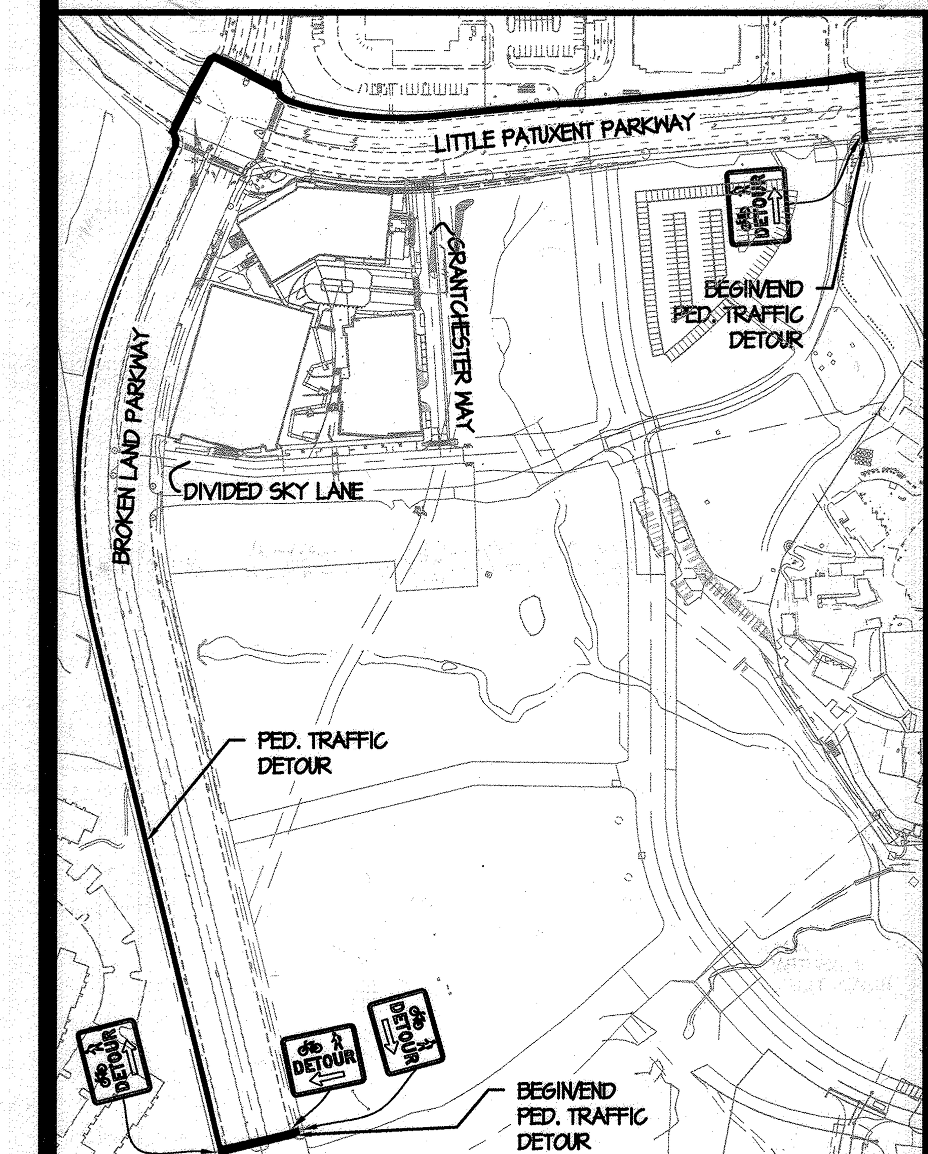
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE NOV., 2018 OCT., 2018 | TAX MAP - GRID 36 - 01 | SHEET △3 △6 1 OF 63 |

©GLW 2015

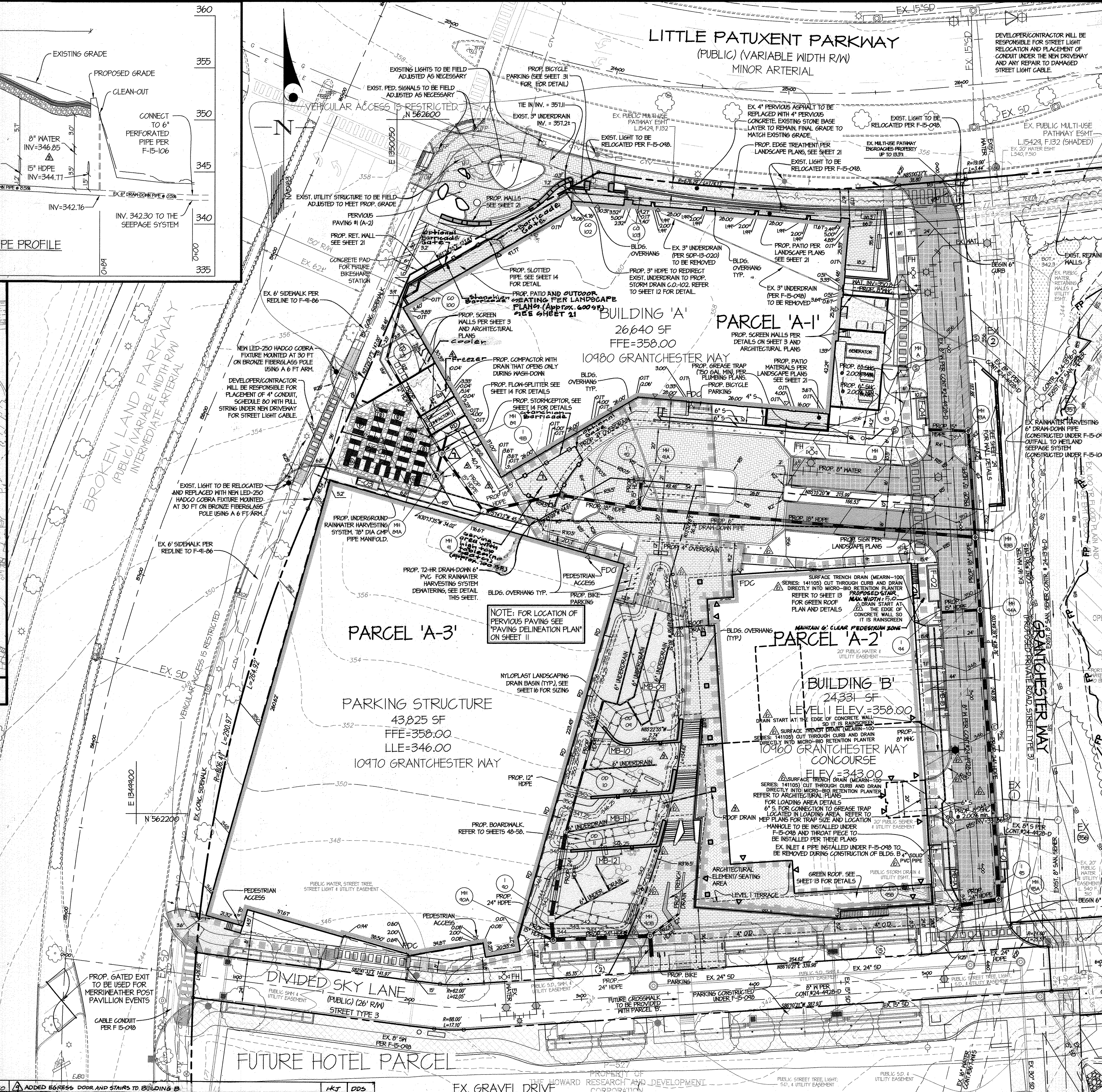
ASBUILTS **SDP-15-068**

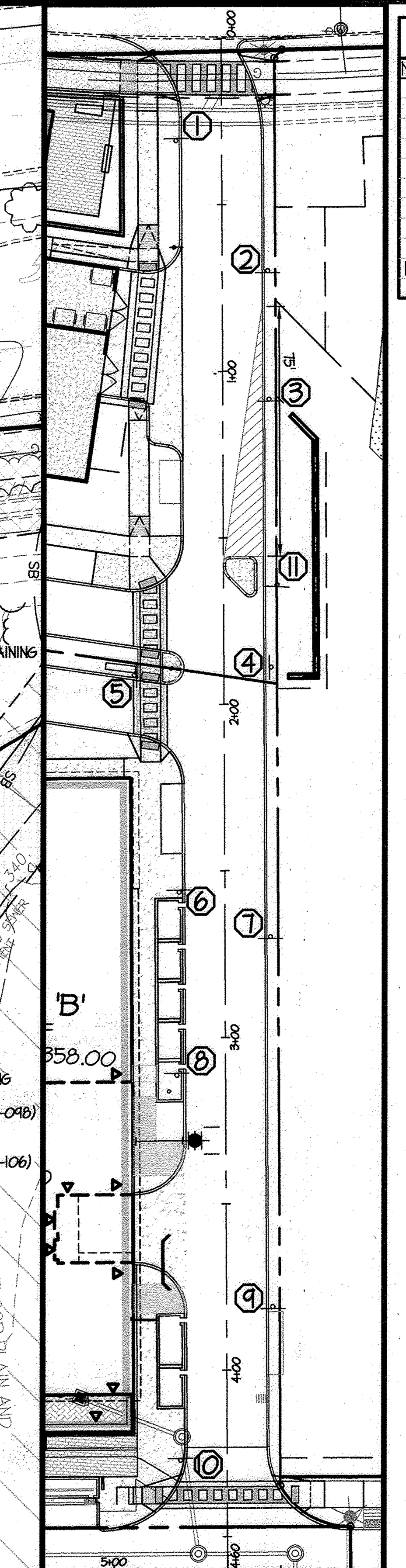



CISTERN DRAWDOWN PIPE PROFILE
SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)




PEDESTRIAN TRAFFIC DETOUR DETAIL
SCALE: 1" = 250'

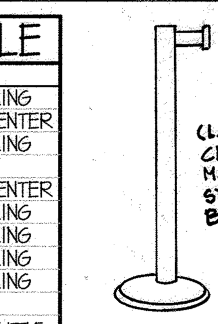



SIGNAGE PLAN
(GRANTCHESTER WAY)
SCALE: 1" = 40'

## SIGNAGE TABLE

| No. | STA. | OFFSET | TYPE |
|---|---|---|---|
| 1 | 0+30 | 13.7' R | NO PARKING |
| 2 | 0+70 | 13.7' L | DO NOT ENTER |
| 3 | 1+09 | 13.7' L | NO PARKING |
| 4 | 1+89 | 13.7' L | ONE WAY |
| 5 | 1+91 | 27.6' R | DO NOT ENTER |
| 6 | 2+54 | 13.7' R | NO PARKING |
| 7 | 2+70 | 13.7' L | NO PARKING |
| 8 | 3+11 | 13.7' R | NO PARKING |
| 9 | 3+86 | 13.7' L | NO PARKING |
| 10 | 4+30 | 13.7' R | STOP |
| 11 | 1+89 | 13.7' L | NO EXIT TO LITTLE PATUXENT PARKWAY |




STANCHION BARRIER DETAIL
(NTS)

## LEGEND

- 100-YR FLOODPLAIN
- LIMITS OF DISTURBANCE
- STREAM BUFFER
- WETLANDS BUFFER
- PROPOSED BUILDING
- PROPOSED SWM AREA
- PROPOSED PAVING (P-3)
- PROPOSED CONCRETE WALK
- PROPOSED DECORATIVE PAVERS, SEE LANDSCAPE PLANS FOR ADDITIONAL INFORMATION
- ADA ACCESSIBLE AREA & ROUTE
- EX. CONTOUR
- PROP CONTOUR
- STORM DRAIN
- SANITARY SEWER
- WATERLINE
- EX. CURB & GUTTER
- CONCRETE CURB & GUTTER
- PROPOSED REVERSE CURB & GUTTER
- SPOT ELEVATION
- PROP. ELECTRIC
- PROP. TREELINE
- US-## CISTERN DESIGNATION MDE STANDARD, M-1
- MB-## MICRO-BIO RETENTION DESIGNATION MDE STANDARD, M-6
- F-## FILTERRA DESIGNATION
- PROP. 4" OVERDRAIN
- PROP. 6" UNDERDRAIN
- RD PROP. ROOF DRAIN
- (5) ON-STREET PARKING COUNTED TOWARDS PARCEL 'A'. CONSTRUCTED UNDER F-15-098.
- BUILDING ENTRANCE
- STANCHION BARRICADE (7)

(BARRIER: SEE DETAIL ABOVE. ANY SUBSTITUTION MEET THE REQUIREMENTS OF THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES.)

(GATE: LAVI INDUSTRIES - SWINGING GATE, MODEL GATE/IL. METAL, BLACK. ANY SUBSTITUTION MUST MEET THE REQUIREMENTS OF THE CRESCENT NEIGHBORHOOD DESIGN GUIDE LINES)

SCALE: 1" = 30'
0' 15' 30' 60' 120'

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

### STREET LIGHT SCHEDULE

| | LOCATION | | TYPE |
|---|---|---|---|
| ℄ STA. 157+82.41 | BROKEN LAND PKWY | 58.90' RT. | A |
| ℄ STA. 158+52.05 | BROKEN LAND PKWY | 58.40' RT. | A |

STREET LIGHT TYPES:
A) LED-250 HADCO COBRA FIXTURE MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 6' ARM

STREET LIGHT NOTES:
1. STREET LIGHTS TO BE CONSISTENT THROUGHOUT DOWNTOWN.

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| Signature | Date |
|---|---|
| Valdis Lazdins — Director | 1-25-18 |
| J. Mcmahon for KS — Chief, Division of Land Development JMF | 1-25-18 |
| Chad Edmondson — Chief, Development Engineering Division | 1-4-18 |

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2023-11-30 | 9 ADDED EGRESS DOOR AND STAIRS TO BUILDING B | HKJ | DDS |
| 2018-10-26 | 7 Added Restaurant Area and sidewalk outside Building A | GT | DDM |
| 2016-03-08 | 1 REVISION TO BLDG A SHC; REVISION TO GARAGE NORTH ENTRANCE | GT | NB |
| 2016-05-02 | 2 REVISION TO ADD WHC TO GARAGE | GT | NB |
| 2016-06-21 | 3 REVISION TO SHEET NUMBERING; DRAWDOWN PIPE LAYOUT AND PROFILE; STORM DRAIN LAYOUT; PROPOSED BUILDING B FOOTPRINT AND DESIGN; PLAZA LAYOUT; ADDITION OF BOARDWALK OVER MICRO-BIORETENTION FACILITIES | JH | NB |
| 2017-06-05 | 4 ADDITIONAL SCREEN WALL & STORAGE UNITS AT BLDG A SERVICE AREA | JH | JH |
| 2017-08-10 | 5 ADDITIONAL DOOR AND SIDEWALK CONNECTION AT BLDG. A | GT | MJT |
| 2017-10-09 | 6 REARRANGE LOCATION OF BOLLARDS ON THE NORTH OF BUILDING B & ADD TRENCH DRAIN TO THE EAST SIDE OF BUILDING B | SS | MJT |

**GLW GUTSCHICK LITTLE & WEBER, P.A.**
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\15019\PLANS BY GLW\SDP\15019sdp02 - Site - Parcel A-Sheet 02.dwg | DES. | DRN. | CHK.

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 14931 EXPIRATION DATE: MAY 26, 2018

STATE OF MARYLAND — MICHAEL JAMES TRAPPEN — REGISTERED PROFESSIONAL ENGINEER

# REVISED SITE DEVELOPMENT PLAN - PARCEL A
# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527) PLAT NO. 23565-23566

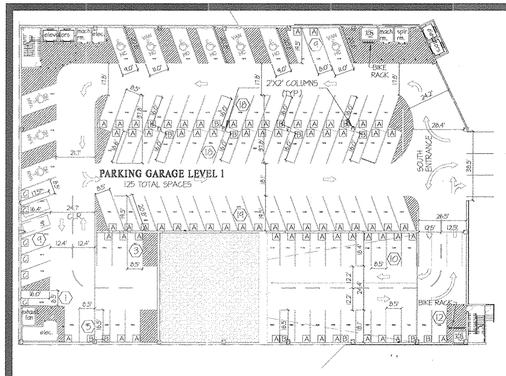
NO ASBUILT INFORMATION 11/12/2018

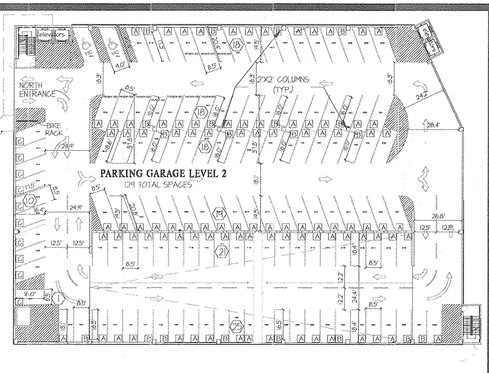
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

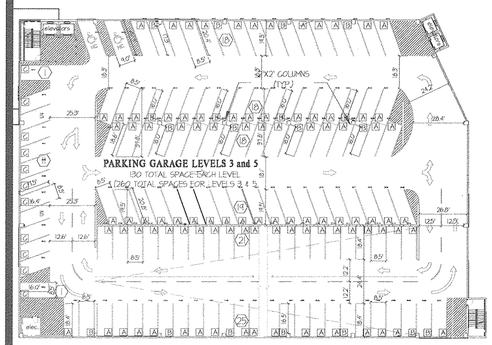
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=30' | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET |
| NOV., 2017 | 36 – 01 | 2 OF 63 |

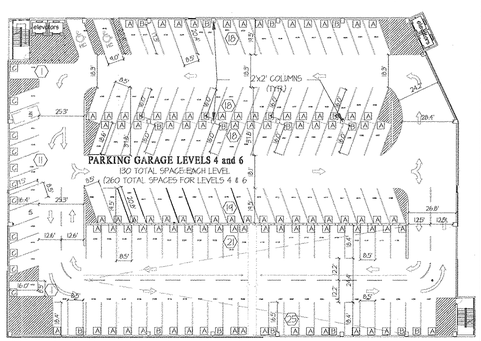
©GLW 2013

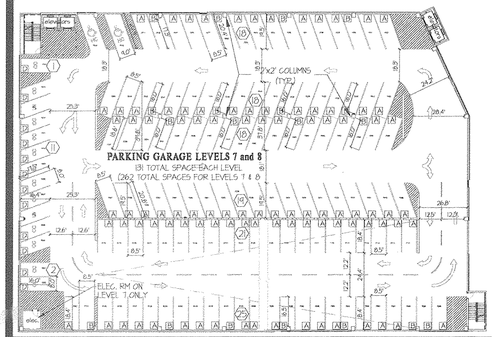
SDP-15-068

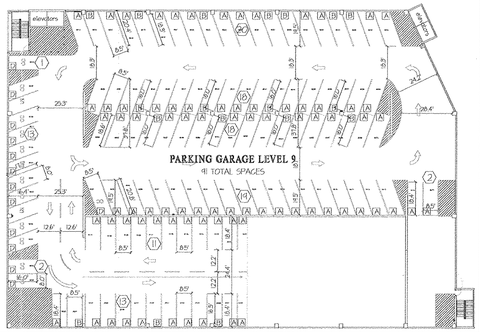



PARKING STRUCTURE - SPACE LAYOUT

NOTE: FDC CONNECTIONS PROVIDED AT LANDINGS BETWEEN PARKING GARAGE FLOORS

SCALE: 1" = 40'

NOTE:
EXTERIOR TENANT FIT-OUT MUST COMPLY WITH CRESCENT NEIGHBORHOOD DESIGN GUIDELINES.

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9-12-16

Chief, Development Engineering Division — Date 9-7-16

## PARKING TABULATION

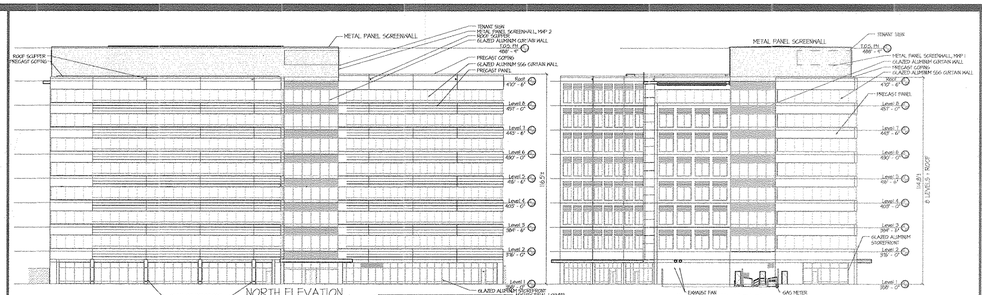
| LEVEL | PARKING SPACE TYPE: STANDARD | COMPACT | LOW EMISSIONS | HANDI-CAP CAR | HANDI-CAP VAN | SUBTOTAL | NON CREDIT * |
|---|---|---|---|---|---|---|---|
| 1 | 111 | 0 | 4 | 4 | 6 | 125 | 1 * |
| 2 | 121 | 0 | 6 | 2 | 0 | 129 | 0 |
| 3 | 124 | 0 | 4 | 2 | 0 | 130 | 2 * |
| 4 | 124 | 0 | 4 | 2 | 0 | 130 | 2 * |
| 5 | 124 | 0 | 4 | 2 | 0 | 130 | 2 * |
| 6 | 124 | 0 | 4 | 2 | 0 | 130 | 2 * |
| 7 | 113 | 12 | 4 | 2 | 0 | 131 | 2 * |
| 8 | 113 | 12 | 4 | 2 | 0 | 131 | 2 * |
| 9 | 74 | 13 | 4 | 0 | 0 | 91 | 2 * |
| TOTAL | 1028 | 37 | 38 | 18 | 6 | 1127 | 15 * |

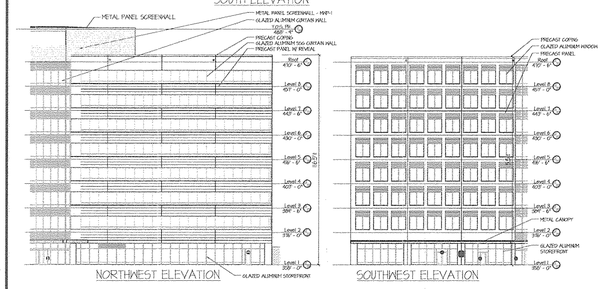
NOTE: RAMP IS COUNTED IN THE LEVEL BELOW (I.E., RAMP IS INCLUDED ON LEVELS 1-8 BUT NOT ON TOP LEVEL.)

* NON-CREDIT SPACES ARE SPACES BELOW THE MINIMUM STANDARD AND ARE NOT COUNTED TOWARDS THE TOTAL PARKING SPACE REQUIREMENTS.

## PARKING LEGEND

- NON-CREDIT SPACE (15 TOTAL)
- COMPACT SPACE (37 TOTAL)
- HANDI-CAP CAR SPACE (18 TOTAL)
- HANDI-CAP VAN SPACE (6 TOTAL)
- [A] 8.5' X 18' UNOBSTRUCTED (841 TOTAL)
- [B] 8.5' X 18' OBSTRUCTED (NET 8.5' X 16') (165 TOTAL)
- [C] 8.5' X 16' UNOBSTRUCTED (60 TOTAL)
- [D] 8.0' X 16' UNOBSTRUCTED (37 TOTAL)



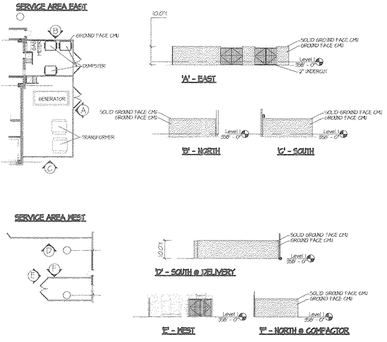




BUILDING A - ELEVATIONS

SCALE: 1" = 40'

BUILDING 'A' SIGNATURE ELEMENTS:

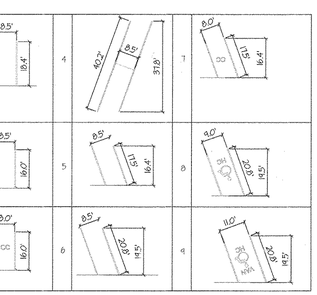
- The north facade has a large bay of curtain wall with enhanced vertical mullions centered on the view axis of Little Patuxent Parkway serving to terminate that vista.
- Building massing responds to the geometry of the existing buildings on LLP and the unique site geometry and property lines. "Building massing is designed responding to both these site context elements. "Per the Crescent Neighborhood Design Guidelines, the building design bends to address the ROW requirements while maintaining the requirements of the setback guidelines from curb face.
- The North entry and south entries have canopies and link to vertical glazing to show the hierarchical entry form the public street and the amenity commons.
- The building massing includes a heightened massing along the intersection of LPP and BLP to screen the mechanical equipment.
- The building has an increased first floor height, and taller windows and piers to create a strong base, per 5.2 of the GNDG.
- The design uses strong horizontal bands above the base to set up the corner bay, terminating the vista along LPP as a major architectural element. "The Facade on east and west includes glass and metal transitions facade treatments to a different architectural expression of punched windows to create a varied, but logical pattern, per 5.2 the GNDG. .
- The south facade has a large bay window centered on the masterplan axis of the open space and pathways to the south, again flanked by a pattern of punched openings. This creates a strong legible lobby entrance for the building, addressing the amenity open space.



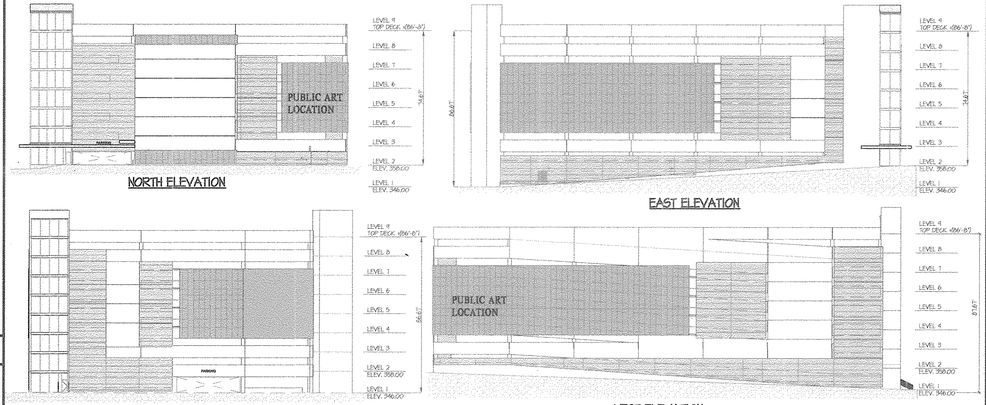

SCREEN WALL - ELEVATIONS

SCALE: 1" = 40'

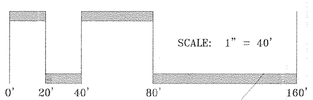
⚠ NOTE: SEE SHEET 4 FOR BUILDING 'B' INFORMATION




PARKING GEOMETRY




PARKING STRUCTURE NOTES:
1. PUBLIC ART AS REQUIRED PER SECTION 125.A.9.F(2) OF THE ZONING REGULATIONS AND FDP-DC-CRESCENT-1 WILL BE PROVIDED ON THE WEST AND NORTH FACADE OF THE PARKING STRUCTURE. ADDITIONAL PUBLIC ART WILL BE EVALUATED FOR LOCATING WITHIN THE PLAZA OPEN SPACE.
2. SIGNAGE SHALL NOT BE PROVIDED ON THE 9-STORY GLASS STAIRWELLS OF THE GARAGE.
3. LANDSCAPING PROVIDED ON THE WEST SIDE OF THE PARKING GARAGE SHALL BE COORDINATED WITH PUBLIC ART SO THAT ARTWORK IS NOT OBSTRUCTED OR DIMINISHED.




PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

PARKING STRUCTURE - ELEVATIONS

SCALE: 1" = 40'

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-27 | ⚠ REVISION TO SHEET TITLE AND NUMBERING; REMOVAL OF BUILDING B ELEVATION VIEW; GARAGE FDC NOTE ADDED | JH | NB |
| 11-17-2017 | ⚠ Revise sheet Nos. | GT | MJT |


GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186


L:\Cad\Drawings\19017\SDP\Plans by GLW\SDP15068sp03 - Elevations-I Sheet 10.dwg | DES. NB | DRN. KLP | CHK. MJT

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12935, EXPIRATION DATE: MAY 26, 2018.
8/19/16

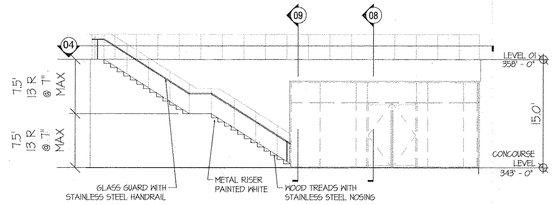
REVISED BUILDING PLANS & ELEVATIONS - I

# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527) PLAT NO. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET |
| JUNE, 2016 | 36 – 01 | 3 OF 63 |

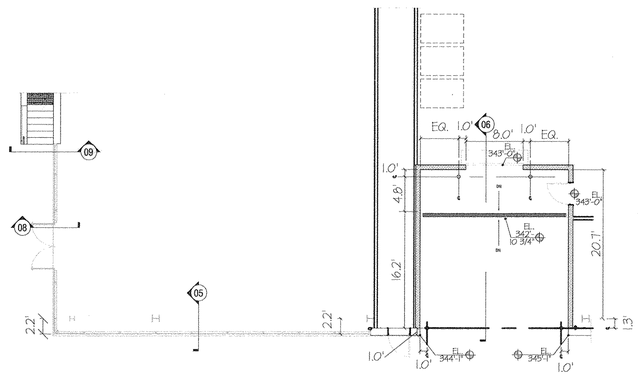
© GLW 2015

SDP-15-068

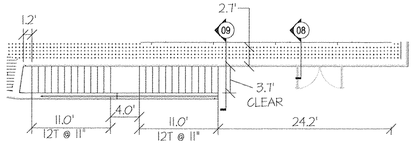



03 - ENLARGED ELEVATION

ENLARGED ELEVATION SCALE: 1" = 10'

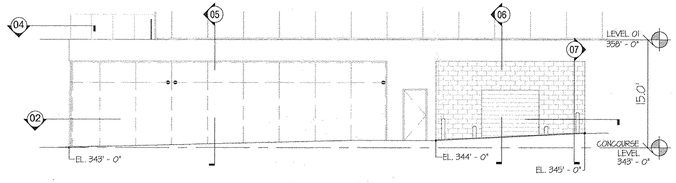



02 - ENLARGED PLAN - CONCOURSE LEVEL




04 - ENLARGED PLAN - CONCOURSE LEVEL TO LEVEL 01

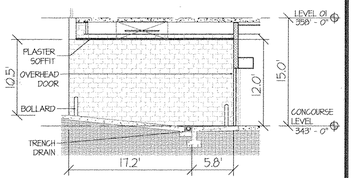
ENLARGED PLAN VIEW SCALE: 1" = 10'




01 - ENLARGED ELEVATION

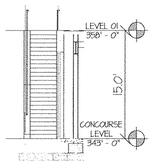
ENLARGED ELEVATION SCALE: 1" = 10'

ENLARGED PLAN VIEW OF THE CONCOURSE LEVEL SCALE: 1" = 10'




06 - WALL SECTION

WALL SECTION SCALE: 1" = 10'




09 - WALL SECTION

WALL SECTION SCALE: 1" = 10'

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

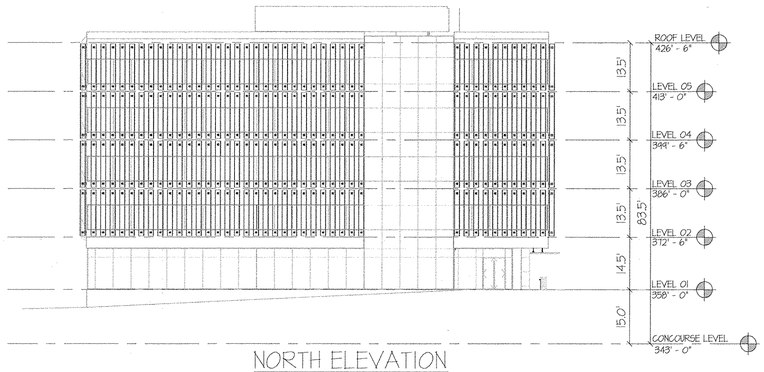
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

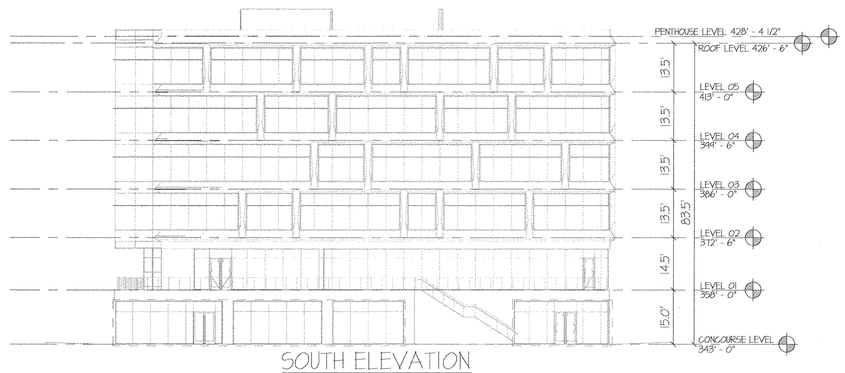
Director — Date 9-12-16

Chief, Division of Land Development — Date 9-12-16

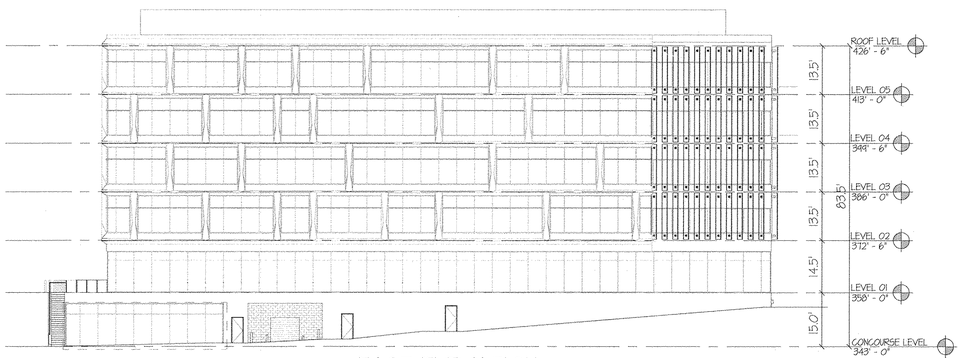
Chief, Development Engineering Division — Date 9-7-16




NORTH ELEVATION




SOUTH ELEVATION




EAST ELEVATION

WEST ELEVATION

BUILDING 'B' ELEVATIONS

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN

SCALE: 1" = 20'


**GLW GUTSCHICK LITTLE & WEBER, P.A.**
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186


L:\2015\DRAWINGS\15019\SDP\PLANS BY GLW\SDP15068p03A - Elevations-1-Sheet 04.dwg | DES. NB | DRN. KLP | CHK. MJT

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-27 | ⚠ ADDITIONAL SHEET AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. | JH | NB |
| 11.17.2017 | ⚠ Revise sheet Nos. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975, EXPIRATION DATE: MAY 26, 2018.
8/15/16

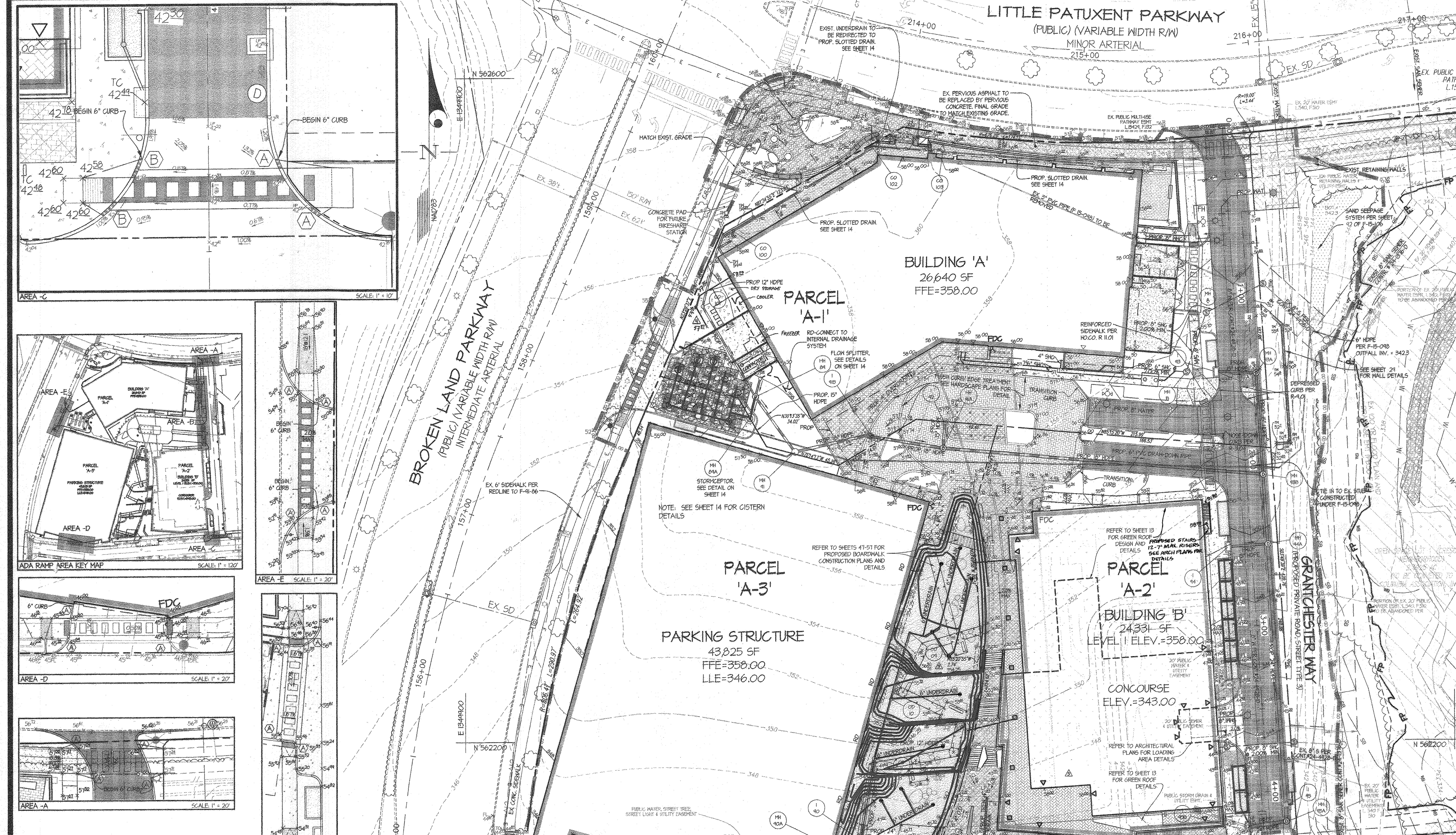
**BUILDING PLANS & ELEVATIONS - II**

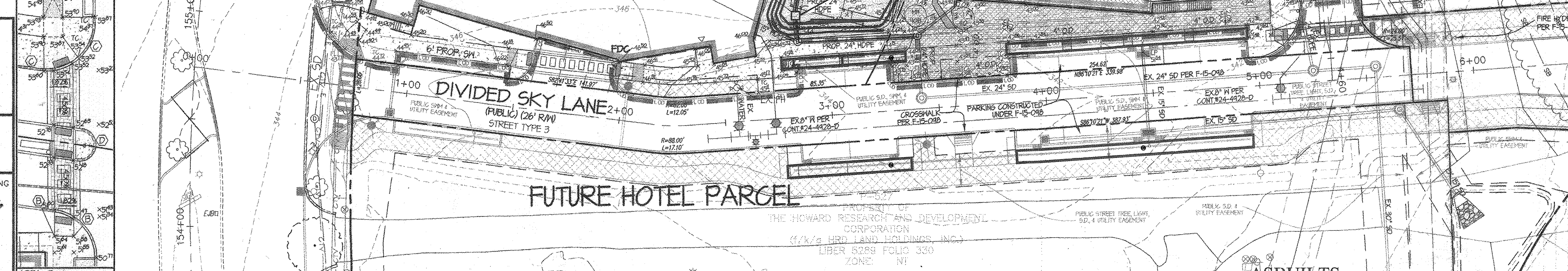
**DOWNTOWN COLUMBIA**
**CRESCENT NEIGHBORHOOD**
**PARCELS A-1, A-2, & A-3, AND PARCEL E**
**MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT**
**(PART OF TAX PARCEL 527) PLAT NO. 23565-23566**
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET ⚠4 |
| JUNE, 2016 | 36 – 01 | 4 OF 63 |

© GLW 2015

SDP-15-068




## LEGEND

| | |
|---|---|
| FP —— FP | 100-YR FLOODPLAIN |
| | LIMITS OF DISTURBANCE |
| SB —— SB | STREAM BUFFER |
| WB —— WB | WETLANDS BUFFER |
| 366 | EX. CONTOUR |
| 300 | PROP CONTOUR |
| | EXIST. STORM DRAIN |
| | SANITARY SEWER |
| | WATERLINE |
| | EX. CURB & GUTTER |
| | CONCRETE CURB & GUTTER |
| | PROPOSED REVERSE CURB & GUTTER |
| × 78.88 | SPOT ELEVATION |
| | PROP. 4" OVERDRAIN |
| | PROP. 6" UNDERDRAIN |
| | PROP. TREELINE |
| (A) | NOSE DOWN CURB (TAPER) CURB, 2' MIN. TAPER PER STD. R-4.05 (MODIFIED) |
| (B) | NOSE DOWN CURB PER STD. R-4.03 |
| (C) | DEPRESSED CURB PER STD. R-9.01 |
| (D) | NOSE DOWN CURB PER STD. R-3.04 |
| | GREEN ROOF |

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 12975, Expiration Date: May 26 2020.

Date 11/12/18

Carl K. Gutschick
Professional Engineer
Maryland Reg. No. 12975

SCALE: 1" = 30'
0' 15' 30' 60' 120'

ASBUILT SHEET 2 OF 8

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

APPROVED
PLANNING BOARD OF HOWARD COUNTY

Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9-12-16

Chief, Development Engineering Division — Date 9.2.16

ASBUILTS

**GLW GUTSCHICK LITTLE & WEBER, P.A.**
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\15019\PLANS BY GLW\SDP\15019sdp04 - Grading - Parcel A-Sheet 05.dwg | DES. XXX | DRN. XXX | CHK. XXX

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2023-11-30 | 4 ADDED EGRESS DOOR AND STAIR TO BUILDING B | HKJ | DDS |
| 2016-06-27 | 3 REVISION TO SHEET NUMBERING; REVISED GRADING SURROUNDING BUILDING B; ADDITION OF BOARDWALK ABOVE MICRO BIO-RETENTION PONDS | JH | NB |
| 2017-06-05 | 4 ADDITIONAL SCREEN WALL + STORAGE UNITS AT BLDG A SERVICE AREA | JH | JH |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 12975
EXPIRATION DATE: MAY 26, 2018
8/19/16

**REVISED GRADING PLAN - PARCEL A**

# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E
**MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT**
(PART OF TAX PARCEL 527) PLAT NO. 23565-23566

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

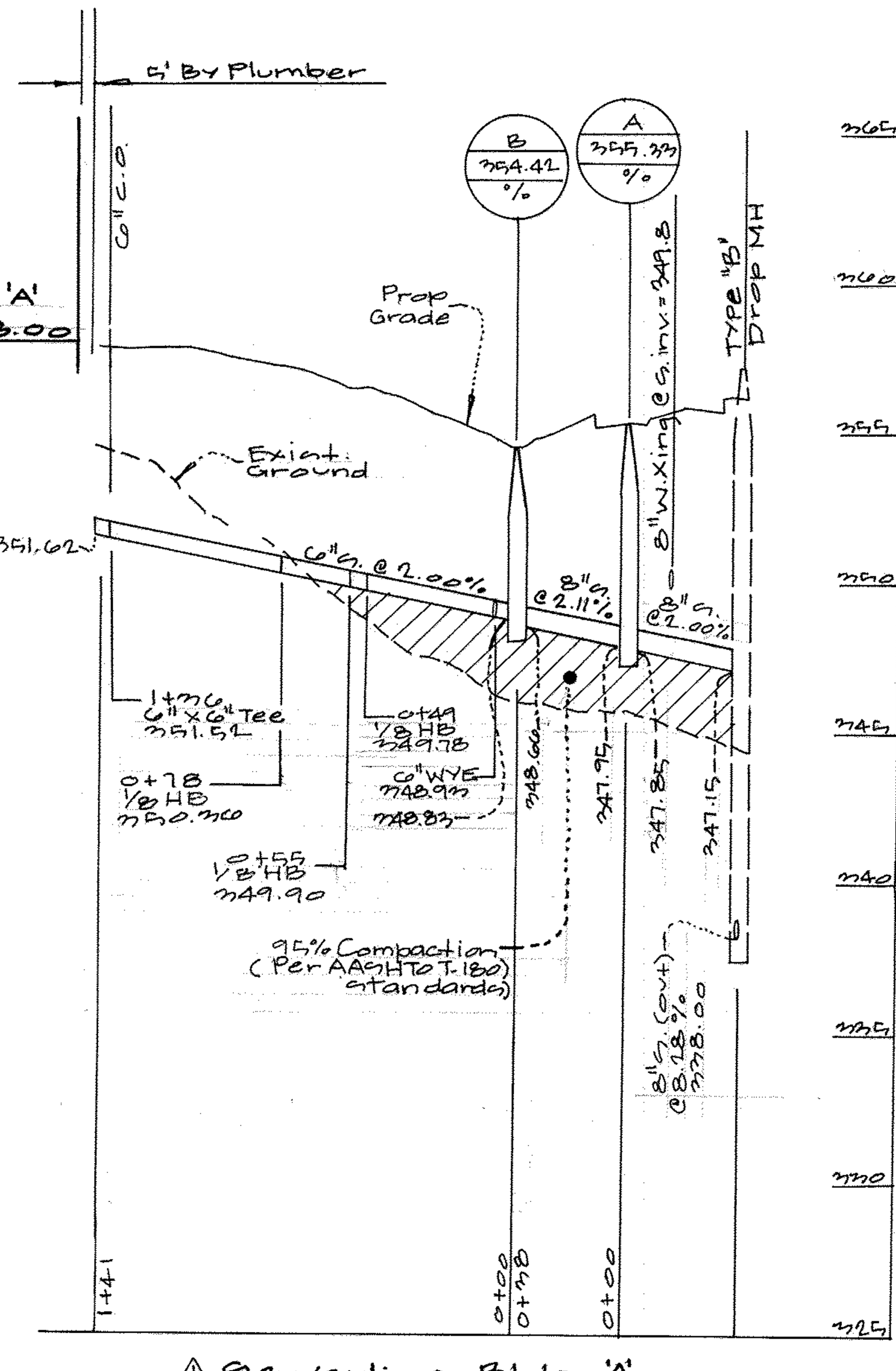
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1" = 30' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| NOV. 2018 JUNE, 2016 | 36 - 01 | 5 OF 58 |

©GLW 2015

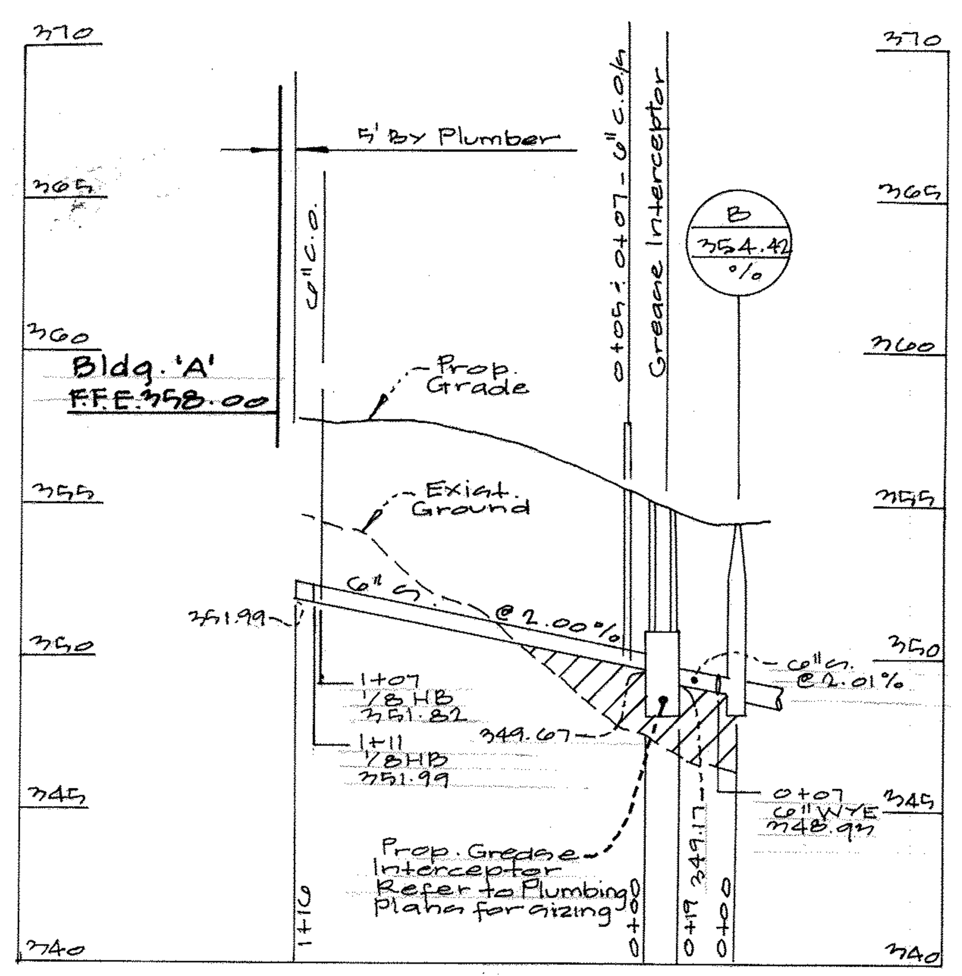
ASBUILTS SDP-15-068

# LEGEND

- 100-YR FLOODPLAIN (FP)
- STREAM BUFFER (SB)
- WETLANDS BUFFER (WB)
- EX. CONTOUR (366)
- PROP CONTOUR (300)
- EX. STORM DRAIN
- LIMIT OF DISTURBANCE (LOD)
- SANITARY SEWER
- WATERLINE
- EX. CURB & GUTTER
- CONCRETE CURB & GUTTER
- PROPOSED REVERSE CURB & GUTTER
- SPOT ELEVATION (x 78.88)
- PROP. STORM DRAIN
- PROPOSED BUILDING
- PROPOSED PAVING (P-3)
- PROPOSED CONCRETE WALK
- PROP. PERVIOUS PAVING




⚠ Sewerline Bldg. 'A'
scale: 1"=5' (Vertical)
1"=50' (Horizontal)

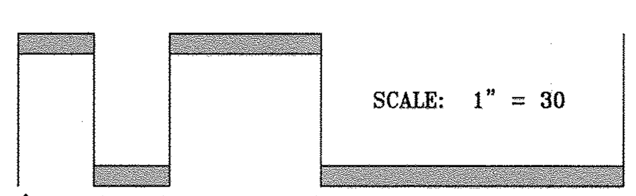



⚠ Greaseline Bldg 'A'
Scale: 1"=5' (Vert.)
1"=50' (Horiz.)

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

**Date:** October 15, 2015

UNDERDRAIN NOTE:
HDPE EQUIVALENT MAY BE USED IN LIEU OF PVC (PER AASHTO M252)



| | | | | |
|---|---|---|---|---|
| 12-18-16 | ⚠ Rev. SHC Profiles added to Plan | | gt | NB |
| 11-17-2017 | ⚠6 Revise Sheet Nos. | | gt. | mjt. |
| DATE | REVISION | | BY | APP'R. |

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | Date 12-18-15 |
| Chief, Division of Land Development | Date 12-17-15 |
| Chief, Development Engineering Division | Date 12-16-15 |

**GLW GUTSCHICK LITTLE & WEBER, P.A.**
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\15019\PLANS BY GLW\SDP\15019sdp05 - Plan - Grading - Parcel E.dwg | DES. NB | DRN. JH | CHK.

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975, EXPIRATION DATE: MAY 26, 2016
12-9-15

**SITE DEVELOPMENT & GRADING PLAN - PARCEL E TEMPORARY PARKING AREA**

# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E
**MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT**
**(PART OF TAX PARCEL 527) PLAT NO. 23565-23566**

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1" = 30' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET ⚠6 |
| DEC., 2015 | 36 - 01 | 6 OF 63 |

© GLW 2015

**SDP-15-068**

## LEGEND

- SCE — STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED EARTH DIKE
- SF — PROPOSED SILT FENCE
- SSF — PROPOSED SUPER SILT FENCE
- EXISTING EARTH DIKE CONSTRUCTED UNDER F-15-098
- EXISTING SILT FENCE CONSTRUCTED UNDER F-15-098
- EXISTING SUPER SILT FENCE CONSTRUCTED UNDER F-15-098
- IP — PROPOSED INLET PROTECTION
- GOS — GABION OUTLET STRUCTURE
- SOS — STONE OUTLET STRUCTURE
- LIMIT OF DISTURBANCE

SEDIMENT CONTROL NOTE:

EXISTING PERIMETER SEDIMENT CONTROL DEVICES INSTALLED PER F-PLAN, F-15-098.

LIMIT OF DISTURBANCE NOTE:

LOD SHOWN OFFSET FROM SEDIMENT CONTROL DEVICES FOR CLARITY PURPOSES ONLY. LOD SHALL NOT EXTEND BEYOND THE SEDIMENT CONTROL LIMITS, PROPERTY LINE BOUNDARIES OR OTHER ENVIRONMENTAL CONSTRAINTS.

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

John R. Robertson 12/28/17
Howard S.C.D. Date

### ENGINEER'S CERTIFICATE

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

Michael J. Troy 12/19/17
ENGINEER'S SIGNATURE DATE

### DEVELOPER'S/BUILDER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER/BUILDER 12.19.17 DATE

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director 1-25-18 Date

Chief, Division of Land Development 1-25-18 Date

Chief, Development Engineering Division 1.4.18 Date


**GLW GUTSCHICK LITTLE & WEBER, P.A.**
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186


L:\CAD\DRAWINGS\15019\SDP\SDP15-068PLANS BY GLW\SDP\15019sdp06 – Sediment Control – Parcel A-Sheet 07.dwg, 12/19/2017 8:53:56 AM, Michael Troy, AutoCAD PDF (General Documentation).pc3, ANSI B (11.00 x 17.00 Inches), PLOTTED BY: Mike Troy

| DES. XXX | DRN. JH | CHK. XXX |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-27 | ⚠ REVISION TO SHEET NUMBERING; BUILDING B LAYOUT; STORM DRAIN AND DRAWDOWN PIPE LAYOUT; ADDITION OF BOARDWALK | JH | NB |
| 2017-10-09 | ⚠ REARRANGE LOCATION OF BOLLARDS ON THE NORTH OF BUILDING B⚠ADD TRENCH DRAIN TO THE EAST SIDE OF BUILDING B | SS | MJT |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14923, EXPIRATION DATE: MAY 26, 2018

STATE OF MARYLAND · MICHAEL JAMES TROY · REG. NO. 14923 · PROFESSIONAL ENGINEER

# REVISED SEDIMENT CONTROL PLAN - PARCEL A

# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527) PLAT NO. 23565-23566
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1" = 30' | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET |
| NOV., 2017 | 36 – 01 | 7 OF 63 |

SDP-15-068

© GLW 2015

## LEGEND

- SCE — STABILIZED CONSTRUCTION ENTRANCE
- EARTH DIKE
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- CIP — PROPOSED INLET PROTECTION
- GOS — GABION OUTLET STRUCTURE
- SOS — STONE OUTLET STRUCTURE
- LOD — LIMIT OF DISTURBANCE
- DRAINAGE DIVIDE

| STATION | DRAINAGE AREA |
|---|---|
| 0+00 | 1.0 AC. |
| 1+70 | 1.1 AC. |

LIMIT OF DISTURBANCE NOTE:

LOD SHOWN OFFSET FROM SEDIMENT CONTROL DEVICES FOR CLARITY PURPOSES ONLY. LOD SHALL NOT EXTEND BEYOND THE SEDIMENT CONTROL LIMITS, PROPERTY LINE BOUNDARIES OR OTHER ENVIRONMENTAL CONSTRAINTS.

SCALE: 1" = 30

0' 15 30 60 120

NAD'83

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

Howard S.C.D. — Date 12/15/15

### ENGINEER'S CERTIFICATE

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

ENGINEER'S SIGNATURE — DATE 12-9-15

### DEVELOPER'S/BUILDER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER/BUILDER — DATE 11.25.15

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** October 15, 2015

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 12-18-15

Chief, Division of Land Development — Date 12-17-15

Chief, Development Engineering Division — Date 12.16.15


**GLW GUTSCHICK LITTLE & WEBER, P.A.**
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186


L:\CADD\DRAWINGS\15019\SDP\PLANS BY GLW\SDP15068sht07 - Plan - Sediment Control - Parcel E.dwg | DES. | DRN. JH | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 11.17.2017 | (6) Revise sheet Num. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975, EXPIRATION DATE: MAY 26, 2016
12-9-15

**SEDIMENT CONTROL PLAN - PARCEL E TEMPORARY PARKING AREA**

# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E

MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527) PLAT NO. 23565-23626

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1" = 30' | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET |
| NOV., 2015 | 36 – 01 | 8 OF 63 |

© GLW 2015

SDP-15-068

SEQUENCE OF CONSTRUCTION (SDP 15-068)

1. OBTAING GRADING PERMIT. (1 DAY)
2. ARRANGE FOR AN ON-SITE PRE CONSTRUCTION MEETING WITH THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. (1 DAY)

GENERAL ITEMS TO BE PERFORMED IN THE AREA OF PARCELS A1-A3

3. INSTALL THE STONE CONSTRUCTION ENTRANCE OFF OF LITTLE PATUXENT PARKWAY. (1 DAY)
4. CONTRACTOR IS TO INSPECT THE SEDIMENT CONTROL MEASURES INSTALLED UNDER F 15-098 AND MAKE ANY NECESSARY REPAIRS. (1 WEEK)

CONSTRUCTION ITEMS FOR IMPROVEMENTS TO PARCEL A-1 AND A-3

5. ONCE PERMISSION HAS BEEN OBTAINED FROM THE SEDIMENT CONTROL INSPECTOR, BEGIN FINE GRADING THE SITE PER THE CONTOURS AND SPOT ELEVATIONS SHOWN ON THESE PLANS. THE CONTRACTOR MUST IMPLEMENT DUST CONTROL MEASURES PER THE SPECIFICATIONS. (2 WEEKS)
6. INSTALL THE STORM DRAINS NECESSARY TO DRAIN THE DRIVEWAY IN FRONT OF BUILDING 'A', THE PATIO ON THE NORTHWEST CORNER, THE SERVICE AREA, AND GRANTCHESTER WAY. PART OF THE PATIO STORM DRAIN CONSTRUCTION WILL INCLUDE TYING THE EXISTING UNDERDRAIN FROM THE MULTI-USE PATH INTO THE TRENCH DRAIN.
7. BEGIN THE CONSTRUCTION OF BUILDING 'A'.

NOTE: IF THE CONTRACTOR SHOULD DECIDE TO BUILD THE PARKING STRUCTURE AT THE SAME TIME AS BUILDING 'A', THE FOLLOWING ITEMS NEED TO BE PERFORMED:

8. INSTALL STONE CONSTRUCTION ENTRANCE OFF OF DIVIDED SKY LANE AND INSTALL THE SUPER SILT FENCE AS SHOWN ON THESE PLANS
9. RELOCATE THE EARTH DIKE TO THE NORTH END OF THE PARKING STRUCTURE
10. INSTALL THE STORM DRAINS NECESSARY TO DRAIN THE PARKING STRUCTURE AND THE PLAZA AREA
11. BEGIN CONSTRUCTION OF PARKING STRUCTURE
12. STABILIZE THE DISTURBED AREAS IN ACCORDANCE WITH THE TEMPORARY SEEDING SPECIFICATIONS. (1 WEEK)
13. INSTALL THE CURB AND GUTTER, SIDEWALKS AND PAVING. (2 WEEKS)

⚠3 CONSTRUCTION ITEMS FOR IMPROVEMENTS TO PARCEL A-2

NOTE: CONSTRUCTION OF BUILDING 'B' AND SURROUNDING AREA CAN PROCEED CONCURRENTLY WITH ITEMS 5-13 ABOVE

14. REMOVE EARTH DIKE IN THE AREA OF BUILDING 'B', ALONG GRANTCHESTER WAY, AND NORTH OF THE PARKING STRUCTURE
15. BACKFILL SEDIMENT TRAP AND REMOVE EXISTING PIPE OUTLET STRUCTURE (PER F 15-098) AND ASSOCIATED STORM DRAIN. BEGIN CONSTRUCTION OF BUILDING 'B'
16. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR BEGIN CONSTRUCTION OF THE STORMWATER MANAGEMENT DEVICES. PROVIDE CLEAN WATER DIVERSION FOR THE PARKING STRUCTURE UNTIL CONSTRUCTION OF MB-09 THROUGH MB-12 IS COMPLETED. FILTER MEDIA FOR THE MICRO-BIORETENTION AREAS SHALL NOT BE INSTALLED UNTIL THE AREAS DRAINING TO THEM ARE STABILIZED. REFER TO PLAN FOR DETAILS. (2 WEEKS)
17. COMPLETE CONSTRUCTION OF BUILDING 'B', AND ANY REMAINING PAVING AND SITE WORK
18. AS AREAS ARE STABILIZED AND PERMISSION IS OBTAINED FROM THE SEDIMENT CONTROL INSPECTOR, THE SEDIMENT CONTROL DEVICES CAN BE REMOVED. THE CONTRACTOR IS TO IMMEDIATELY STABILIZE ANY AREAS THAT ARE DISTURBED AS A RESULT. (1 WEEK)

REFER TO GP 16-039 FOR PARCEL 'E' SEQUENCE OF CONSTRUCTION

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

[signature] 8/25/16
Howard S.C.D. Date

ENGINEER'S CERTIFICATE

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

[signature] 8/19/16
ENGINEER'S SIGNATURE DATE

DEVELOPER'S/BUILDER'S CERTIFICATE

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

[signature] 8-19-16
SIGNATURE OF DEVELOPER/BUILDER DATE

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[signature] 9-12-16
Director Date

[signature] 9-12-16
Chief, Division of Land Development Date

[signature] 9-2-16
Chief, Development Engineering Division Date

## B-4-2 STANDARD 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 1.5 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. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE 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; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (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 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.

**ENGINEER'S CERTIFICATE**

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

SIGNATURE OF ENGINEER DATE

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

HOWARD S.C.D. DATE

## 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: 6b<br>SEED MIXTURE: | | | | | FERTILIZER RATE (10-10-10) | LIME RATE |
|---|---|---|---|---|---|---|
| No. | SPECIES | APPLICATION RATE (lb/ac.) | SEEDING DATES | SEEDING DEPTHS | | |
| 1 | ANNUAL RYEGRASS | 40 lb/ac | Mar. 1 to May 15, Aug. 1 to Oct. 15 | 0.5 INCHES | 436 lb./ac. (10 lb./ 1,000 sf) | 2 tons/ac (90 lb./ 1,000 sf) |
| 2 | PEARL MILLET | 20 lb/ac | May 16 to July 31 | 0.5 INCHES | | |

## SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (410-313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
A. 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1,
B. 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
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 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 DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
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 HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
6. SITE ANALYSIS:

| SITE ANALYSIS "A" PARCELS | | SITE ANALYSIS PARCEL "E" | |
|---|---|---|---|
| TOTAL AREA OF SITE | : 4.4± ac. | TOTAL AREA OF SITE | : 2.6± ac. |
| AREA DISTURBED | : 4.4± ac. | AREA DISTURBED | : 2.6± ac. |
| AREA TO BE ROOFED OR PAVED | : 3.3± ac. | AREA TO BE ROOFED OR PAVED | : 2.3± ac. |
| AREA TO BE VEGETATIVELY STABILIZED | : 1.1± ac. | AREA TO BE VEGETATIVELY STABILIZED | : 0.2± ac. |
| TOTAL CUT | : TBD | TOTAL CUT | : TBD |
| TOTAL FILL | : TBD | TOTAL FILL | : TBD |
| OFF-SITE WASTE/BORROW AREA LOCATION | : F 15-098 | OFF-SITE WASTE/BORROW AREA LOCATION | : F 15-098 |

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 HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
9. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
10. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO 3 PIPE LENGTHS OR THAT WHICH SHALL BE BACKFILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.
11. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
12. A PROJECT IS TO BE SEQUENCED SO THAT THE 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 ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

## STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

DEFINITION

CONTROLLING THE SUSPENSION OF DUST PARTICLES FROM CONSTRUCTION ACTIVITIES.

PURPOSE

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES TO REDUCE ON AND OFF-SITE DAMAGE INCLUDING HEALTH AND TRAFFIC HAZARDS.

CONDITIONS WHERE PRACTICE APPLIES

AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

SPECIFICATIONS

1. MULCHES: SEE SECTION B-4-2 SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS, SECTION B-4-3 SEEDING AND MULCHING, AND SECTION B-4-4 TEMPORARY STABILIZATION. MULCH MUST BE ANCHORED TO PREVENT BLOWING.
2. VEGETATIVE COVER: SEE SECTION B-4-4 TEMPORARY STABILIZATION.
3. TILLAGE: TILL TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT THAT MAY PRODUCE THE DESIRED EFFECT.
4. IRRIGATION: SPRINKLE SITE WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. THE SITE MUST NOT BE IRRIGATED TO THE POINT THAT RUNOFF OCCURS.
5. BARRIERS: SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.
6. CHEMICAL TREATMENT: USE OF CHEMICAL TREATMENT REQUIRES APPROVAL BY THE APPROPRIATE PLAN REVIEW AUTHORITY.

**BUILDER'S CERTIFICATE**

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

SIGNATURE OF DEVELOPER/BUILDER DATE

## 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 1/2 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: 1 1/2 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

i. 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)

j. 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 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

k. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING SUMMARY

| HARDINESS ZONE: 6b<br>SEED MIXTURE: #9 (Tall Fescue/ Kentucky Bluegrass) | | | | | FERTILIZER RATE (10-20-20) | LIME RATE |
|---|---|---|---|---|---|---|
| No. | SPECIES | APPLICATION RATE | SEEDING DATES | SEEDING DEPTHS | | |
| 9 | *Certified Tall Fescue blend (95% by weight): Falcon IV, Penn 1901 & Rebel Exeda and Certified Kentucky Bluegrass blend (5% by weight): Courtyard, Raven & Yankee | 6-8 lb/ 1000 s.f. | Mar. 1 to May 15, Aug. 15 to Oct. 15 | 1/4 - 1/2 IN. | 1.0 lb/ 1000 s.f. (45 lb/acre) | 90 lb/ 1000 s.f. |

* Other cultivars listed as "proven" in the most current UMD TT-77 may also be used

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 3/4 INCH, PLUS OR MINUS 1/4 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
c. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY 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

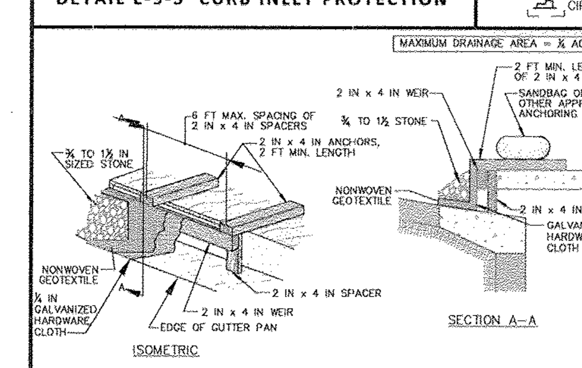
a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO 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.

3. SOD MAINTENANCE

a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

## DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL: CIP



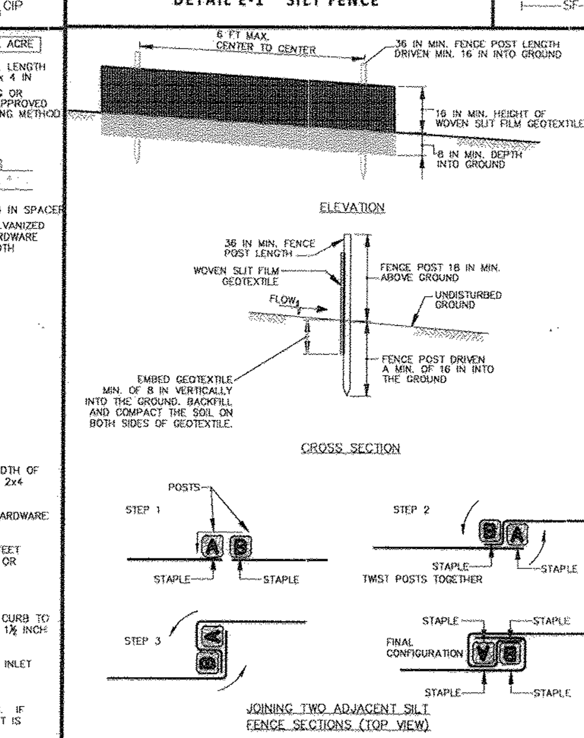

CONSTRUCTION SPECIFICATIONS

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

## 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

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

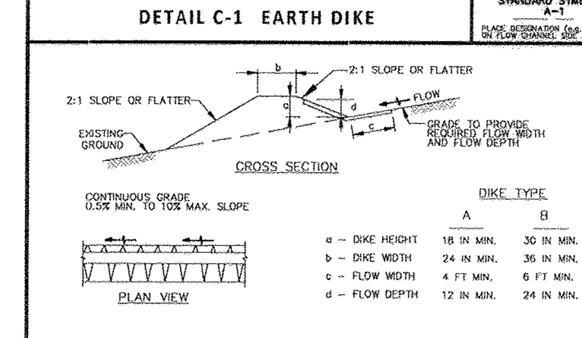
1. USE WOOD POSTS 1¾ X 1¾ ± ⅟16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
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

## DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: A-1 (PLACE DESIGNATION (e.g. A-1) ON FLOW CHANNEL SIDE OF DIKE.)




| | DIKE TYPE A | DIKE TYPE B |
|---|---|---|
| a - DIKE HEIGHT | 18 IN MIN. | 30 IN MIN. |
| b - DIKE WIDTH | 24 IN MIN. | 36 IN MIN. |
| c - FLOW WIDTH | 4 FT MIN. | 6 FT MIN. |
| d - FLOW DEPTH | 12 IN MIN. | 24 IN MIN. |

FLOW CHANNEL STABILIZATION

| | |
|---|---|
| A-1 | SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.) |
| A-2/B-2 | SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD. |
| A-3/B-3 | 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND. |

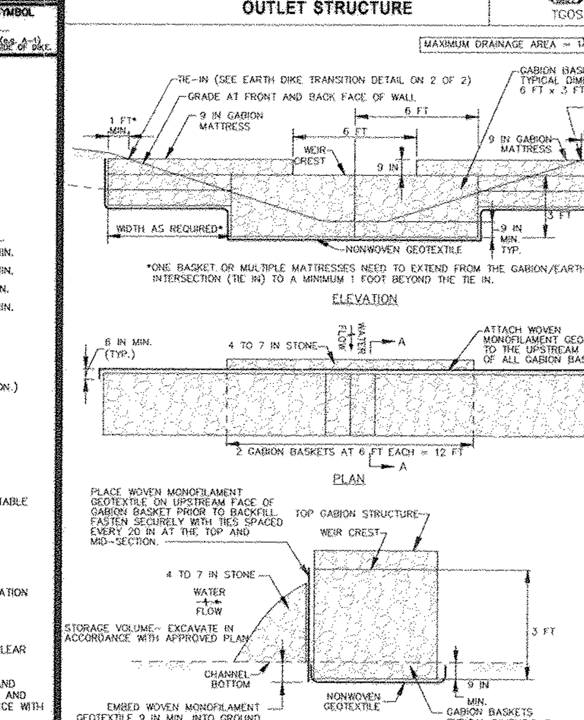
CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

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-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS

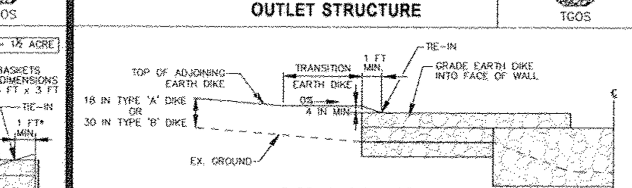



1 OF 2

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-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS




NOTES:

1. PROVIDE TRANSITION LENGTH AND HEIGHT AS SPECIFIED ON PLAN. HEIGHT OF TRANSITION EARTH DIKE MUST EXCEED 4 INCH MINIMUM FREEBOARD ABOVE TOP OF GABION AND EXTEND AT THIS ELEVATION UNTIL IT INTERCEPTS THE TOP OF ADJOINING EARTH DIKE.
2. PROVIDE POSITIVE DRAINAGE ALONG EARTH DIKE TO GABION OUTLET STRUCTURE.
3. COMPACT FILL.
4. SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED ON PLAN. BANK PROJECTIONS OR IRREGULARITIES ARE NOT ALLOWED.

CONSTRUCTION SPECIFICATIONS

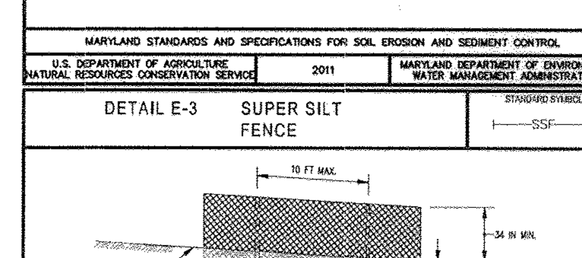
1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE BASKETS MADE OF 11 GAUGE WIRE OR HEAVIER.
3. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
4. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
5. EMBED THE GABION OUTLET STRUCTURE INTO THE SOIL A MINIMUM OF 9 INCHES. PROVIDE NONWOVEN GEOTEXTILE UNDER ALL GABIONS.
6. FILL GABION BASKETS WITH CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WIRE MESH.
7. MAKE THE WEIR CREST OF THE GABION OUTLET STRUCTURE 9 INCHES LOWER THAN THE TOP OF THE ADJACENT GABIONS.
8. PROVIDE A MINIMUM WEIR CREST OF 6 FEET.
9. ATTACH WOVEN MONOFILAMENT GEOTEXTILE TO THE UPSTREAM FACE OF GABION BASKETS AND COVER WITH 4 TO 7 INCH STONE.
10. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 12 INCHES OF THE WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO FUNCTION. MAINTAIN LINE, GRADE, AND CROSS SECTION.
11. UPON REMOVAL OF GABION OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

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-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



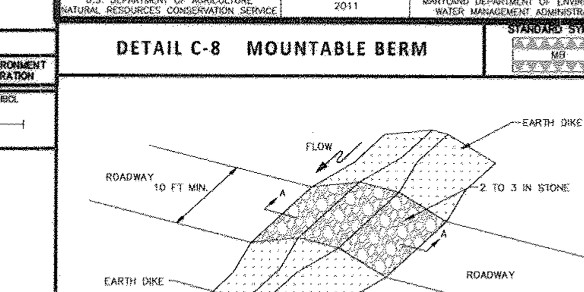

CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER 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 SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

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 C-8 MOUNTABLE BERM

STANDARD SYMBOL: MB



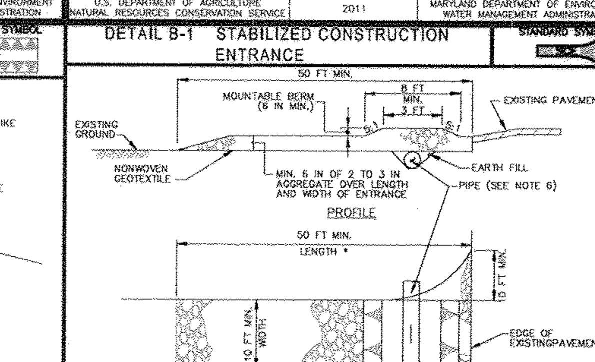

CONSTRUCTION SPECIFICATIONS

1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
3. PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM.
4. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.

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 B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL




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

## SOIL TYPES

| Symbol | Description | Soil Type | K Factor |
|---|---|---|---|
| Ha | Hatboro Codorus, 0 to 3 percent slopes | D | 0.37 |
| GbB | Gladstone Loam, 3 to 8 percent slopes | B | 0.20 |
| GbC | Gladstone Loam, 8 to 15 percent slopes | B | 0.20 |

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**GLW GUTSCHICK LITTLE & WEBER, P.A.**
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\15019\PLANS BY GLW\SDP\15019sdp08 - Details - Sediment Control-Sheet 09.dwg | DES. | DRN. JH | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-27 | ⚠3 REVISION TO SEQUENCE OF CONSTRUCTION TO ACCOMMODATE THE CONSTRUCTION OF BUILDING 'B' AND REVISED SHEET NUMBERING | JH | NB |
| 11.17.2017 | ⚠6 Revise sheet Nos. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975, EXPIRATION DATE: MAY 26, 2018
8/19/16 [signature]

**REVISED SEDIMENT CONTROL NOTES & DETAILS**

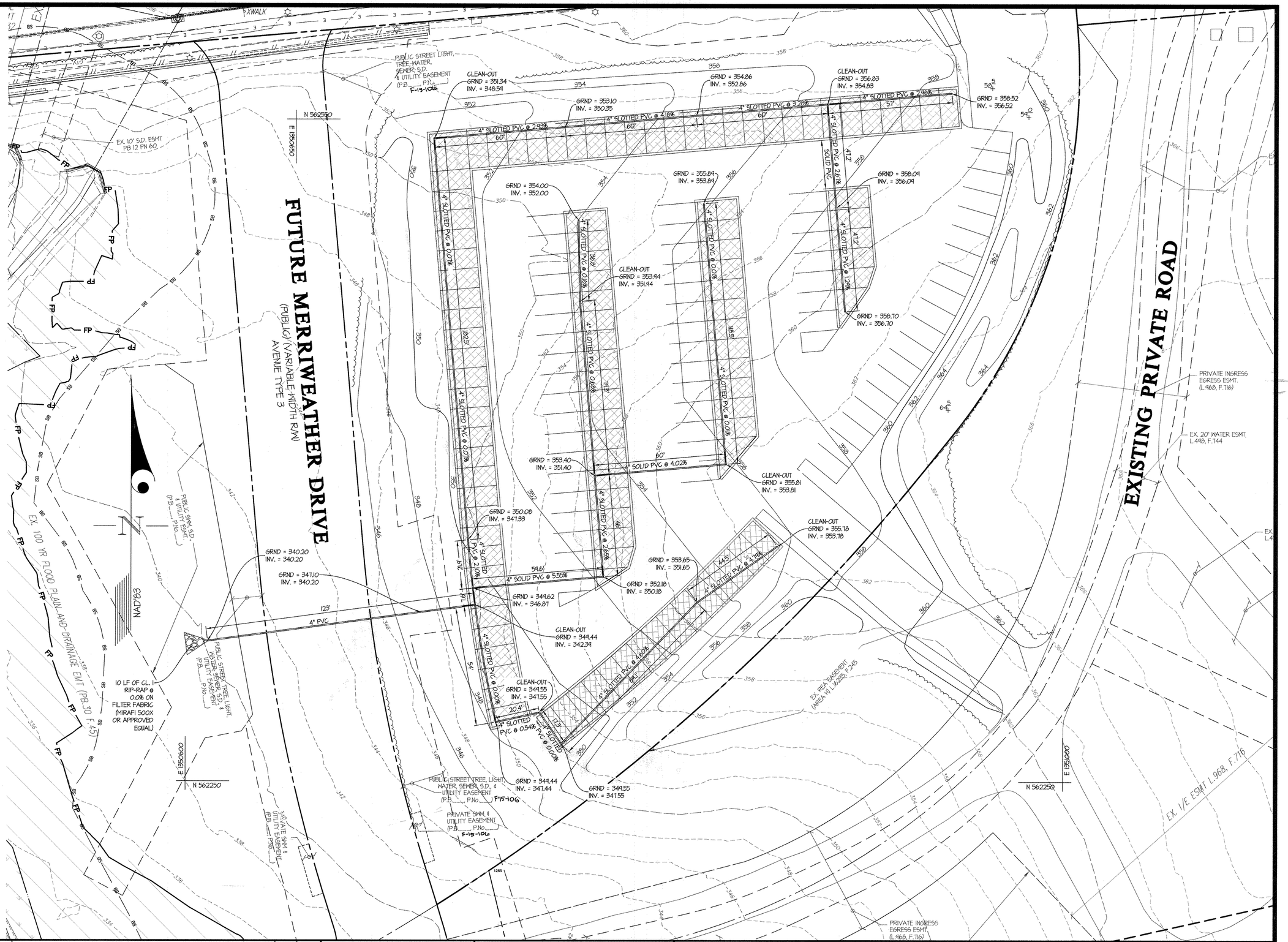
**DOWNTOWN COLUMBIA**
**CRESCENT NEIGHBORHOOD**
**PARCELS A-1, A-2, & A-3, AND PARCEL E**
**MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT**
**(PART OF TAX PARCEL 527) PLAT NO. 23565-23566**

ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | ⚠6 SHEET |
| JUNE, 2016 | 36 - 01 | 9 OF 63 |

© GLW 2013

**SDP-15-068**




APPROVED
PLANNING BOARD OF HOWARD COUNTY
Date: October 15, 2015

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | 12-10-15 Date |
| Chief, Division of Land Development | 12-17-15 Date |
| Chief, Development Engineering Division | 12-16-15 Date |


**GLW GUTSCHICK LITTLE & WEBER, P.A.**
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186


L:\CADD\DRAWINGS\11071\15019\PLANS BY GLW\SDP\15019sdp08 – Plan – Underdrain Manifold – Parcel E.dwg

| DES. JH | DRN. JH | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 11-17-2017 | Revise sheet Nos. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12675, EXPIRATION DATE: MAY 26, 2016
12-9-15

STATE OF MARYLAND – CHRISTOPHER M. JAKUBOWSKI – No. 21675 – PROFESSIONAL ENGINEER

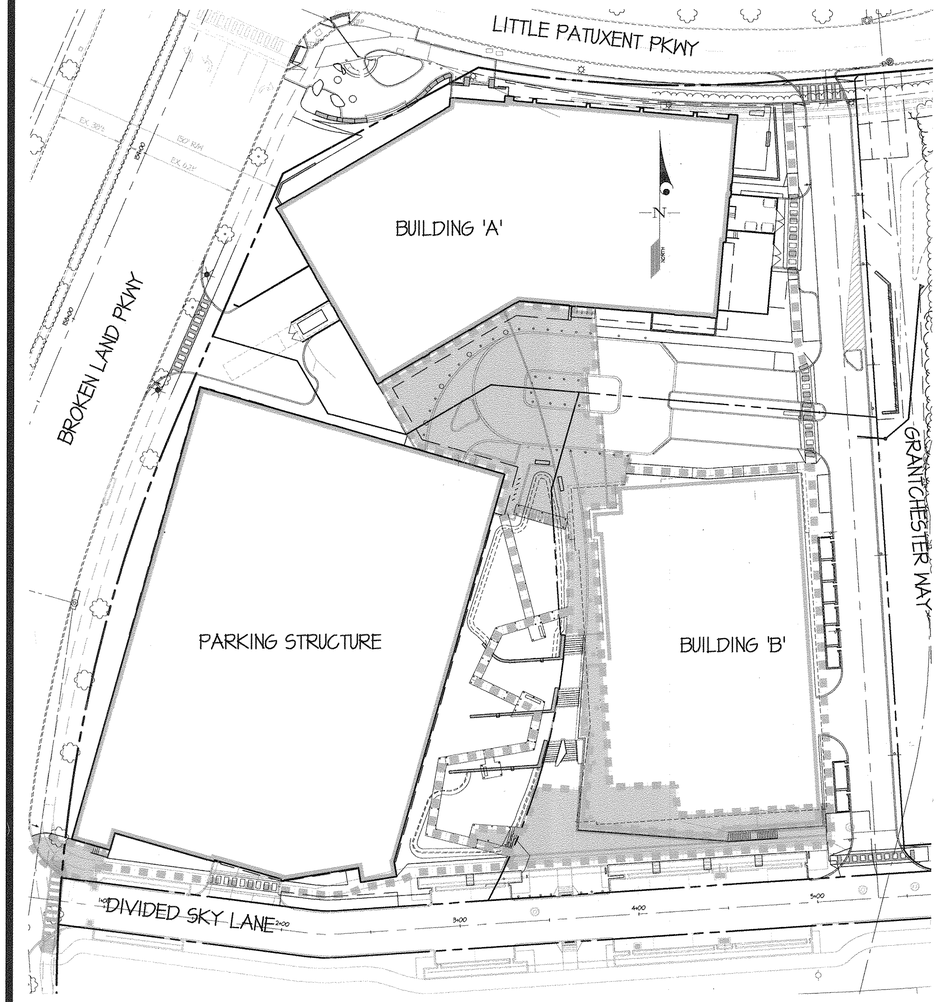
# PERVIOUS PAVING UNDERDRAIN PLAN - PARCEL E

## DOWNTOWN COLUMBIA
### CRESCENT NEIGHBORHOOD
### PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527) PLAT NO. 23565 - 23566
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=20' | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET |
| DEC., 2015 | 36 – 01 | 10 OF 63 |

© GLW 2013

SDP-15-068

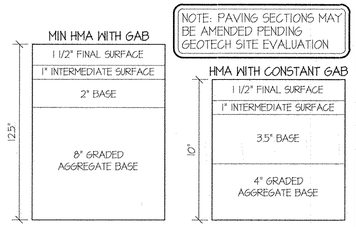



ADA DELINEATION PLAN ⚠

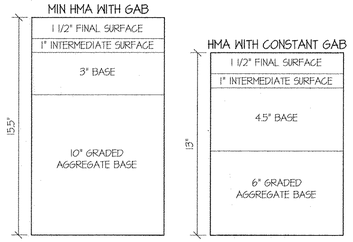
= ADA ACCESSIBLE AREA & ROUTE

1" = 40'

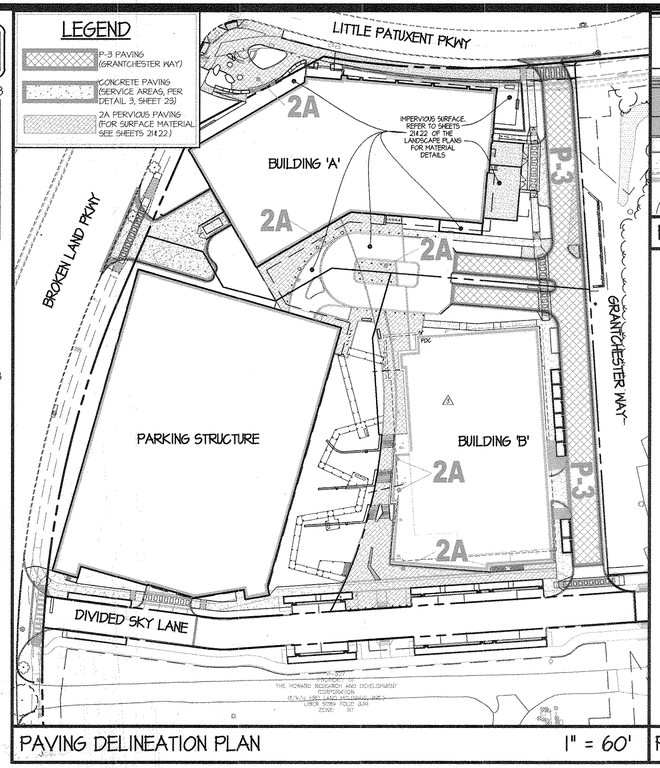
NOTE: PAVING SECTIONS MAY BE AMENDED PENDING GEOTECH SITE EVALUATION



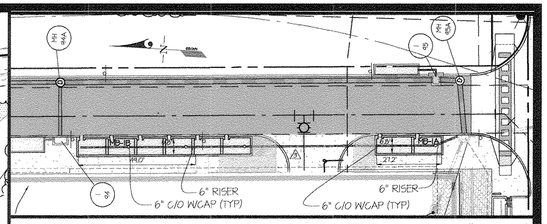

P-2 PAVING SECTION
FOR PARCEL E PARKING LOT
NOT TO SCALE



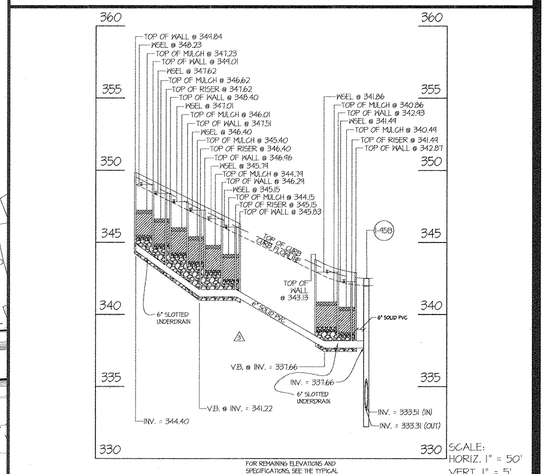

P-3 PAVING SECTION
FOR GRANTCHESTER WAY
NOT TO SCALE




PAVING DELINEATION PLAN 1" = 60'




PLANTERS ALONG GRANTCHESTER WAY 1" = 30'




FOR REMAINING ELEVATIONS AND SPECIFICATIONS, SEE THE TYPICAL SECTION, THIS SHEET.

SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

PLANTER PROFILES ALONG GRANTCHESTER WAY

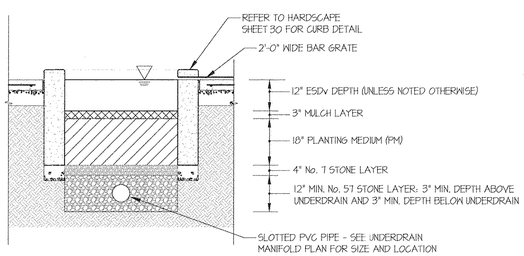
## NOTES:

1. IN CASE OF DISCREPANCIES BETWEEN THE CHART AND THE PLAN, THE PLAN SHALL GOVERN.
2. ALL RISERS FOR CLEANOUT LOCATIONS SHALL BE PVC WITH REMOVABLE PLUGS.
3. VERTICAL FITTINGS NOT INCLUDED.
4. ALL DRAIN RISERS SHALL BE PVC AND HAVE ADS ROUND DROP IN GRATES OR EQUIVALENT AT THE SPECIFIED ELEVATION UNLESS NOTED OTHERWISE.

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

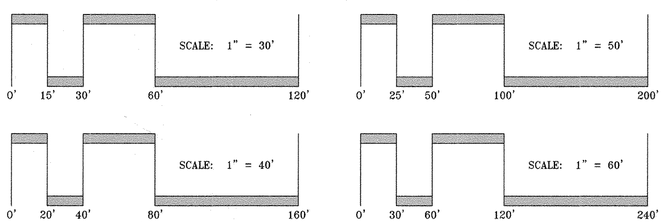
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

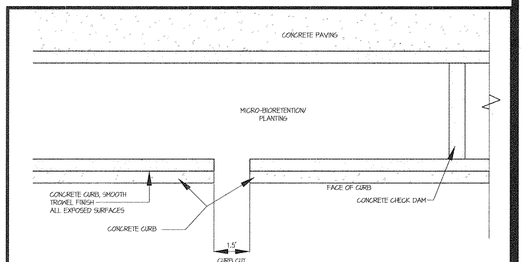
| | |
|---|---|
| Director | Date 9-12-16 |
| Chief, Division of Land Development | Date 9-12-16 |
| Chief, Development Engineering Division | Date 9.2.16 |




REFER TO ARCHITECTURAL DETAIL, SHEET 30, FOR ADDITIONAL INFORMATION

PLANTER SECTION FOR MICRO-BIORETENTION ALONG GRANTCHESTER WAY (NTS)




REFER TO LANDSCAPE DETAIL, SHEET 30, FOR ADDITIONAL INFORMATION

PLANTER DETAIL FOR MICRO-BIORETENTION ALONG GRANTCHESTER WAY
NTS

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.


GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186


L:\2016\16040\CAD\plan\16040PLANS BY OWNER\16040p03 - Paving Delineation - Parcel A-Sheet 11.dwg | DES. JH | DRN. JH | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-21 | ⚠ REVISION TO SHEET NUMBERING, REMOVAL OF MB-04, REVISION TO PLANTER BOX PLANS AND PROFILES, REMOVAL OF INTERIM GRADING PLAN, ADDITION OF ADA DELINEATION PLAN | JH | NB |
| 11-17-2017 | ⚠ Revise sheet Nos. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975, EXPIRATION DATE: MAY 26, 2018
8/19/16

REVISED PAVING DELINEATION PLAN & PLANTER BOX DETAILS

**DOWNTOWN COLUMBIA**
**CRESCENT NEIGHBORHOOD**
**PARCELS A-1, A-2, & A-3, AND PARCEL E**
MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527) PLAT NO. 23565-23566
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET |
| JUNE, 2016 | 36 – 01 | ⚠ 11 OF 63 |

© GLW 2013

SDP-15-068

# SPECIFICATIONS FOR BIORETENTION

1. Material Specifications
   The allowable materials to be used in bioretention area are detailed in Table B.3.2.

2. Planting Soil
   The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the bioretention area that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

   The planting soil shall be tested and shall meet the following criteria:

   | | |
   |---|---|
   | pH range | 5.2 - 7.0 |
   | organic matter | 1.5 - 4% (by weight) |
   | magnesium | 35 lb./ac |
   | phosphorus | (phosphate - P205) 75 lb./ac |
   | potassium | (potash - K20) 85 lb./ac soluble salts not to exceed 500 ppm |

   All bioretention areas shall have a minimum of one test. Each test shall consist of both the standard soil test for pH, phosphorus, and potassium and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the top soil was excavated.

   Since different labs calibrate their testing equipment differently, all testing results shall come from the same testing facility.

   Should the pH fall out of the acceptable range, it may be modified (higher) with lime or (lower) with iron sulfate plus sulfur.

3. Compaction
   It is very important to minimize compaction of both the base of the bioretention area and the required backfill. When possible, use excavation hoes to remove original soil. If bioretention areas are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

   Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

   Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

   When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

   When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

4. Plant Material
   Recommended plant material for bioretention areas can be found in Appendix A, Section A.2.3.

5. Plant Installation
   Mulch should be placed to a uniform thickness of 2" to 3". Shredded hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

   Root stock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

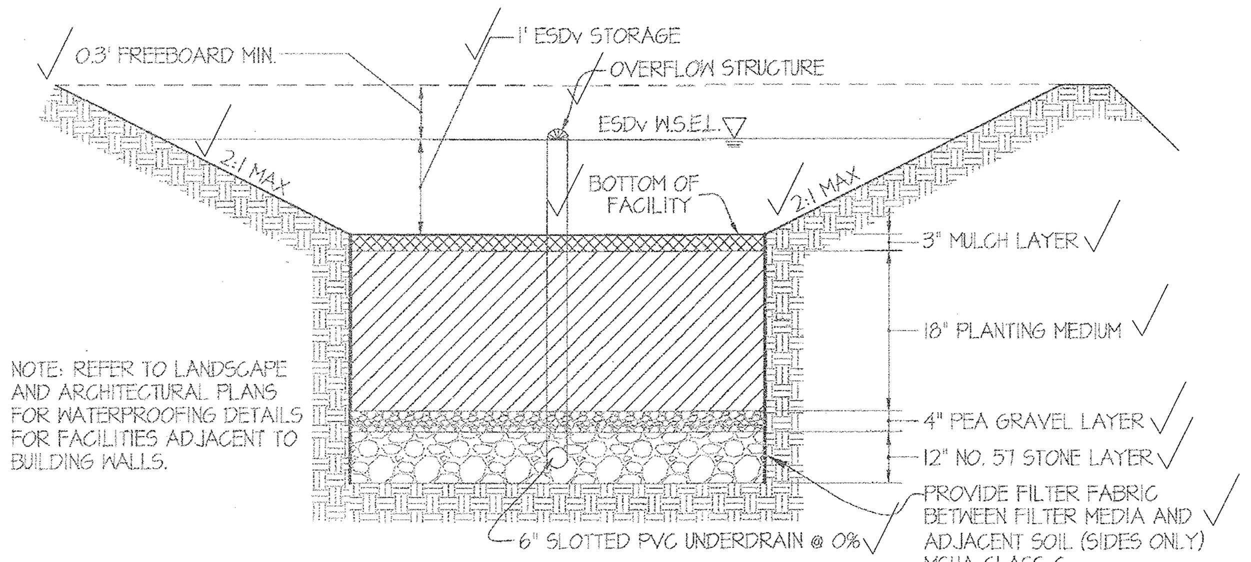
   Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.
   Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

   The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

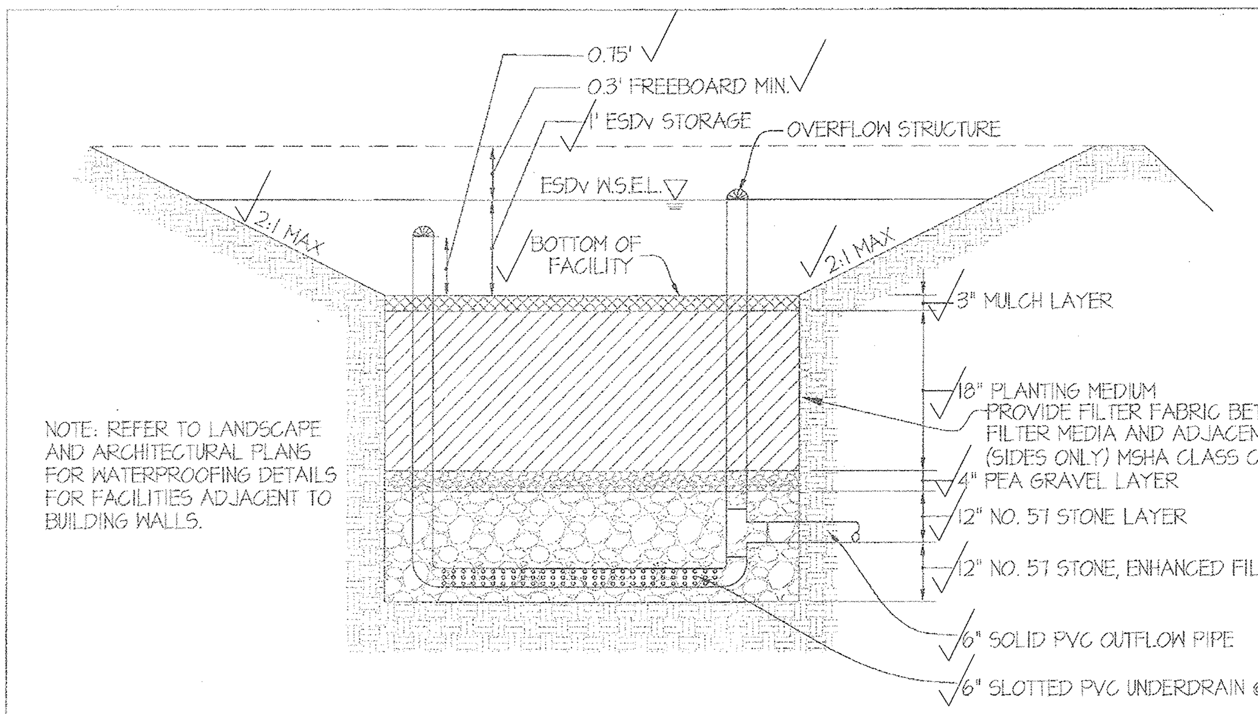
6. Underdrains
   Underdrains are to be placed on a 3'-0" wide section of filter cloth. Pipe is placed next, followed by the gravel bedding. The ends of underdrain pipes not terminating in an observation well shall be capped.

   The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

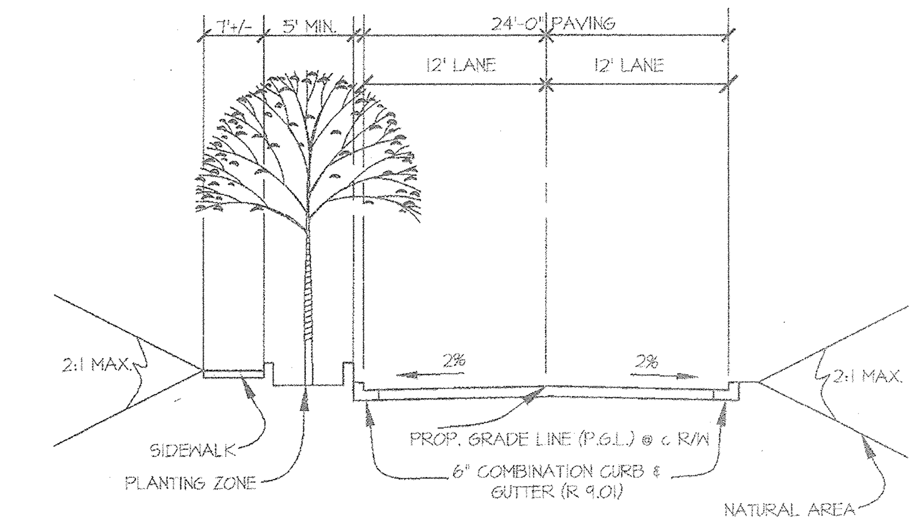
7. Miscellaneous
   The bioretention facility may not be constructed until all contributing drainage area has been stabilized.




## TYPICAL MICRO-BIORETENTION SECTION
FOR MB-10, MB-11 & MB-12
NOT TO SCALE




## TYPICAL MICRO-BIORETENTION SECTION W/ENHANCED FILTER
FOR MB-09 △3
NOT TO SCALE




## DOWNTOWN COLUMBIA
## TYPICAL PRIVATE ROAD SECTION
STREET TYPE 3 (PER NDG PG 29 & 37)
NOT TO SCALE

### TABLE B.3.2

| Material | Specification | Size | Notes |
|---|---|---|---|
| Plantings | See Appendix A, Table A.4 | N/A | Plantings are site-specific. |
| Planting soil [2.5' to 4' deep] | Sand 35 - 60% silt 30 - 55% clay 10 - 25% | N/A | USDA soil types loamy sand, sandy loam or loam. |
| Mulch | Shredded hardwood | | Aged 6 months, minimum. |
| Pea gravel diaphragm and curtain drain | Pea gravel: ASTM-D-448 ornamental stone: washed cobbles | pea gravel: No. 6 stone: 2" to 5" | |
| Geotextile | Class "C" - apparent opening size (ASTM-D-4751), grabtensile strength (ASTM-D4632), puncture resistance(ASTM-D-4833) | N/A | For use as necessary beneath underdrains only. |
| Underdrain gravel | AASHTO M-43 | 0.375" to 0.75" | |
| Underdrain piping | F 758, Type PS 28 or AASHTO M-278 | 4" to 6" rigid schedule 40 PVC or SDR35 | 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. |
| Poured in place concrete (if required) | MSHA Mix No. 3; f'c = 3500psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60 | N/A | On-site testing of poured-in-place concrete required 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking. |
| sand [1' deep] | AASHTO M-6 or ASTM-C-33 | 0.02" to 0.04" | Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand. |

### [OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3) MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), ENHANCED FILTERS (M-9)]

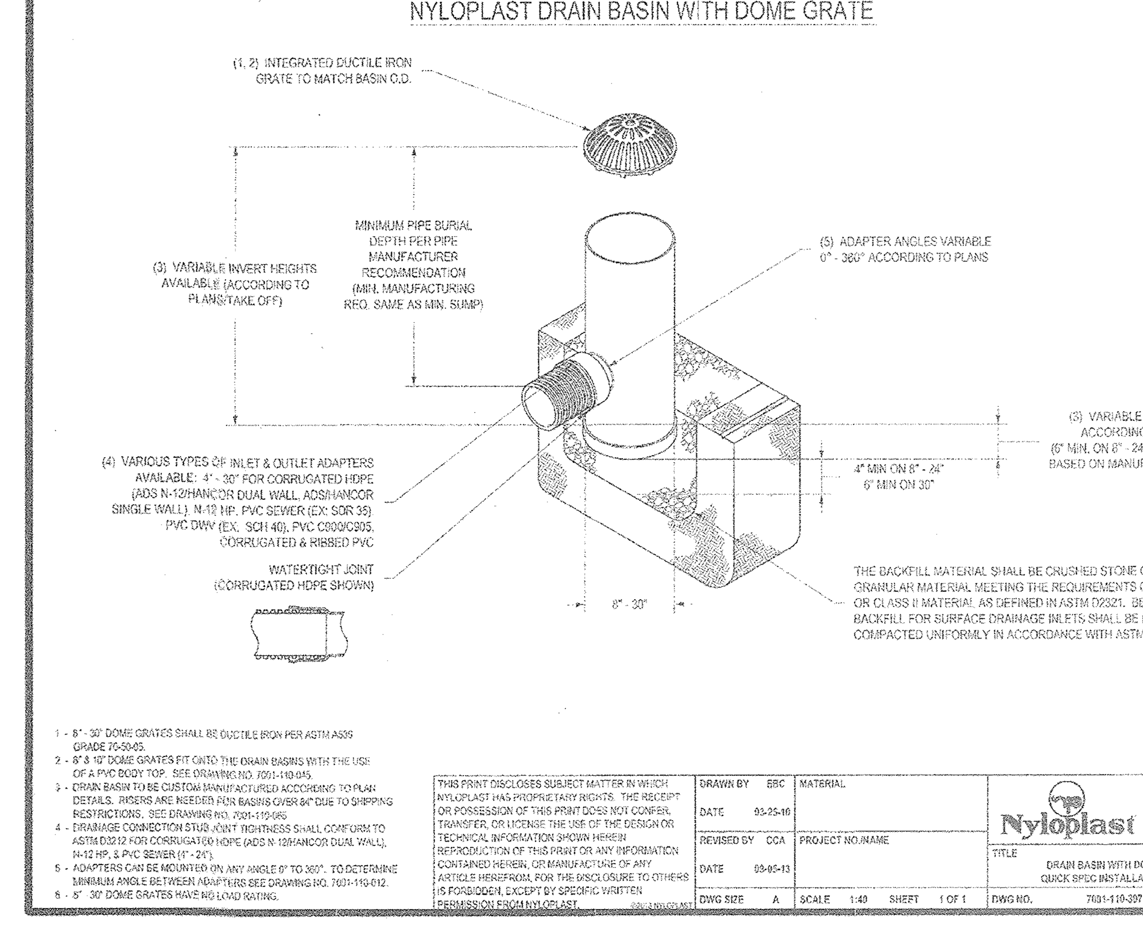
a. The Owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and 2.

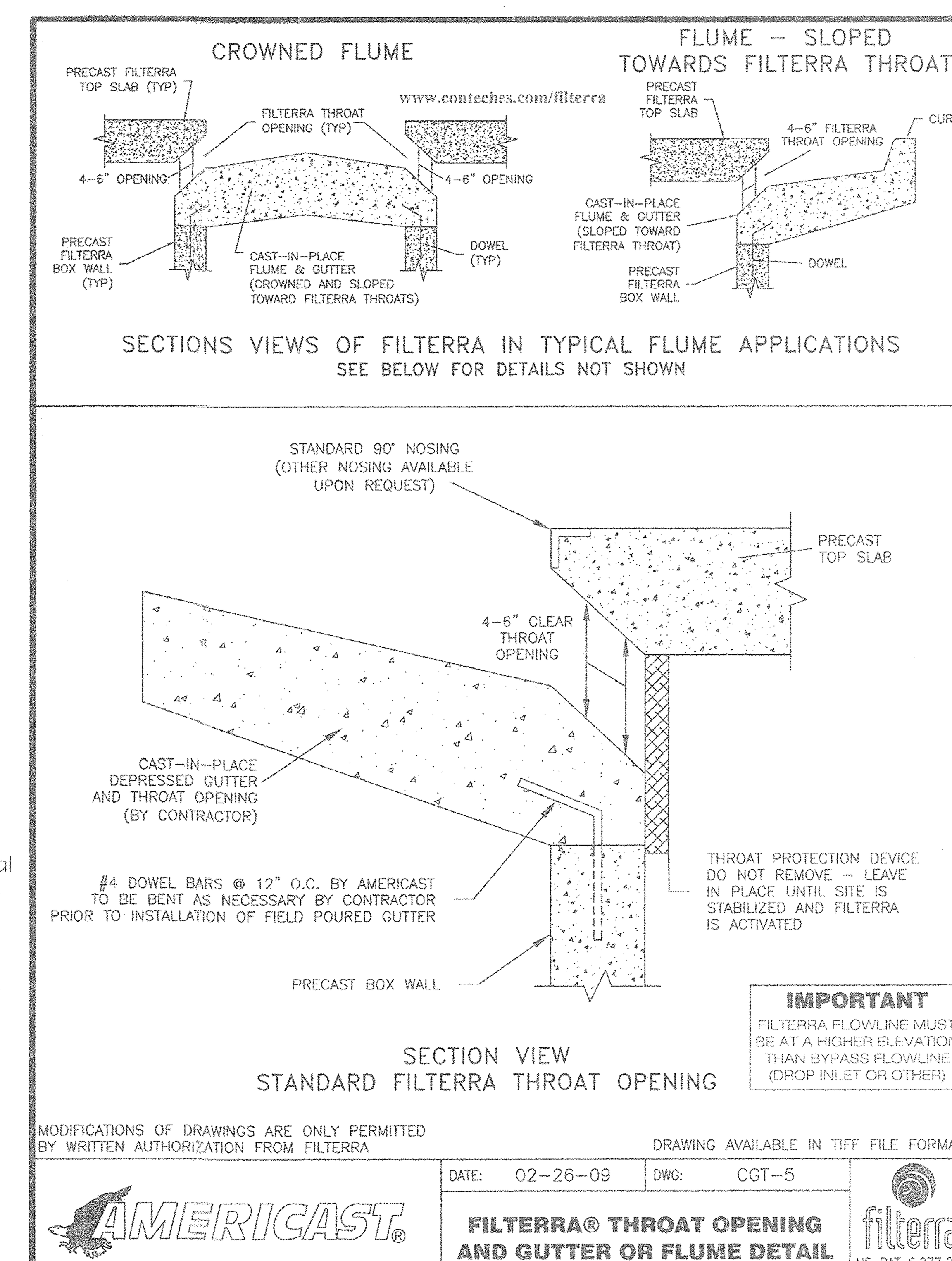
b. The Owner shall perform a plant in the spring and in the fall of each year. During the inspection, the Owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material, treat diseased trees and shrubs, and replace all deficient stakes and wires.

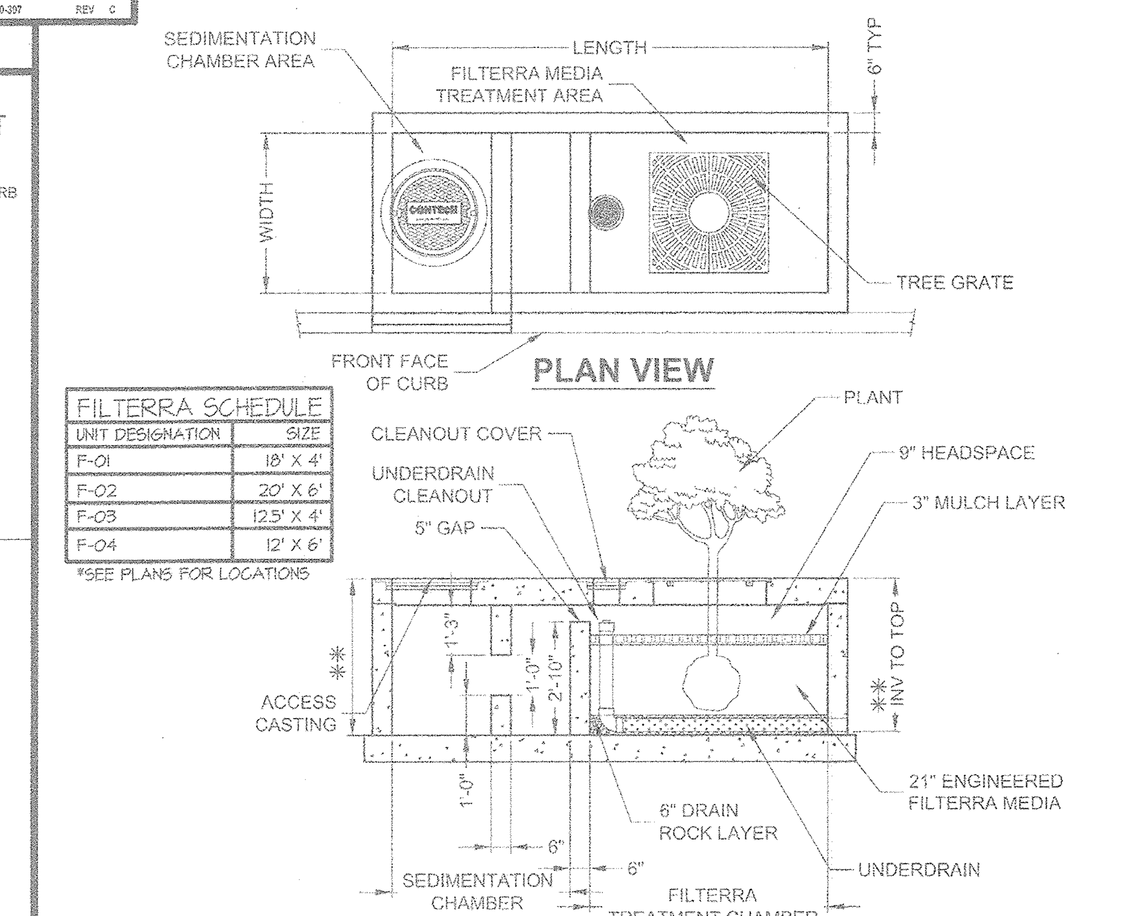
c. The Owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.

d. The Owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm..

### NYLOPLAST DRAIN BASIN WITH DOME GRATE




| FILTERRA SCHEDULE | |
|---|---|
| UNIT DESIGNATION | SIZE |
| F-01 | 18' X 4' |
| F-02 | 20' X 6' |
| F-03 | 12.5' X 4' |
| F-04 | 12' X 6' |

*SEE PLANS FOR LOCATIONS

* MODIFIED SEDIMENTATION CHAMBER
** VARIABLE DEPTHS, SEE STRUCTURE TABLE ON SHEET 17

| UNIT DESIGNATION | INSIDE VAULT DIMENSIONS | FILTERRA TREATMENT AREA | MAXIMUM DRAINAGE AREA TREATED (SF) | WQv STORAGE CAPACITY (CF) | WQv CREDIT PROVIDED (CF) |
|---|---|---|---|---|---|
| FTSC 6' x 4' | 12' x 4' | 6' x 4' | 5,216 | 103 | 412 |
| FTSC 8' x 4' | 16' x 4' | 8' x 4' | 7,141 | 141 | 564 |
| FTSC 6' x 6' | 12' x 6' | 6' x 6' | 7,847 | 155 | 620 |
| FTSC 8' x 6' | 16' x 6' | 8' x 6' | 10,734 | 212 | 848 |
| FTSC 10' x 6' | 19' x 6' | 10' x 6' | 12,638 | 250 | 1,000 |
| FTSC 10' x 8' | 20' x 8' | 10' x 8' | 18,178 | 360 | 1,440 |
| FTSC 11' x 8' | 22' x 8' | 11' x 8' | 20,000 | 398 | 1,592 |

NOTE:
1. MAXIMUM DRAINAGE AREA TREATED ASSUMES 25% WQv AND FILTER SURFACE AREA REQUIREMENTS ARE BOTH MET.
2. STORAGE CAPACITY ASSUMES 40% VOIDS IN UNDERDRAIN STONE AND 30% VOIDS IN MULCH AND MEDIA.
3. ALL INFORMATION IS BASED ON STANDARD 3.83' RIM TO OUTLET DEPTH. CONTACT CONTECH FOR CUSTOM SIZING IF DEPTH IS NOT 3.83'. ACCEPTABLE DEPTH IS 3.33' MIN. TO 5.00' MAX. RIM TO INVERT OUT.

filterra

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
605 Global Way, Suite 113, Linthicum, MD 21090
866-740-3318 OFFICE 866-376-8511 FAX

FILTERRA® WITH SEDIMENTATION CHAMBER
ASBUILT SHEET 3 OF 8

| DATE: 3-5-15 | SCALE: NONE | PRODUCT No.: FTSC | DRAWN BY: BCL |
|---|---|---|---|

### OPERATION AND MAINTENANCE SCHEDULE FOR
PRIVATELY OWNED AND MAINTAINED FILTERRA DEVICES

Activation
A. Activation of the Filterra™ unit is performed ONLY by the Supplier. Purchaser is responsible for Filterra™ inlet protection and subsequent clean out cost. This process cannot commence until the project site is fully stabilized and cleaned (full landscaping, grass cover, final paving and street sweeping completed), negating the chance of construction materials contaminating the Filterra™ system. Care shall be taken during construction not to damage the protective throat and top plates. B. Activation includes installation of plant(s) and mulch layers as necessary.

Maintenance
A. Each correctly installed Filterra™ unit is to be maintained by the Supplier, or a Supplier approved contractor for a minimum period of 1 year. The cost of this service is to be included in the price of each Filterra™ unit. Extended maintenance contracts are available at extra cost upon request.

B. Annual maintenance consists of a maximum of (2) scheduled visits. The visits are scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands. The fall visit helps the system by removing excessive leaflitter.

C. Each maintenance visit consists of the following tasks.
1. Filterra™ unit inspection
2. Foreign debris, silt, mulch & trash removal
3. Filter media evaluation and recharge as necessary
4. Plant health evaluation and pruning or replacement as necessary
5. Replacement of mulch
6. Disposal of all maintenance refuse items
7. Maintenance records updated and stored (reports available upon request)
D. The beginning and ending date of Supplier's obligation to maintain the installed system shall be determined by the Supplier at the time the system is activated. Owners must promptly notify the Supplier of any damage to the plant(s), which constitute(s) an integral part of the bioretention technology.

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 12975, Expiration Date: May 26 2020.

11/12/18
Date

Carl K. Gutschick
Professional Engineer
Maryland Reg. No. 12975

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

APPROVED
PLANNING BOARD OF HOWARD COUNTY
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | Date 9-12-16 |
| Chief, Division of Land Development | Date 9-12-16 |
| Chief, Development Engineering Division | Date 9-2-16 |

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

| L:\CADD\DRAWINGS\10\1\15019\PLANS BY GLW\SDP\15019sdp11 - Details - ESD and Road-Sheet 12.dwg | DES. JH | DRN. JH | CHK. |
|---|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-27 | △3 REMOVED DETAILS AND PROFILES FOR MB-02, MB-03 AND MB-04; ADDED ENHANCED FILTER SECTION; REVISED SHEET NUMBERING | JH | NB |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12975, EXPIRATION DATE: MAY 26, 2018
8/19/16

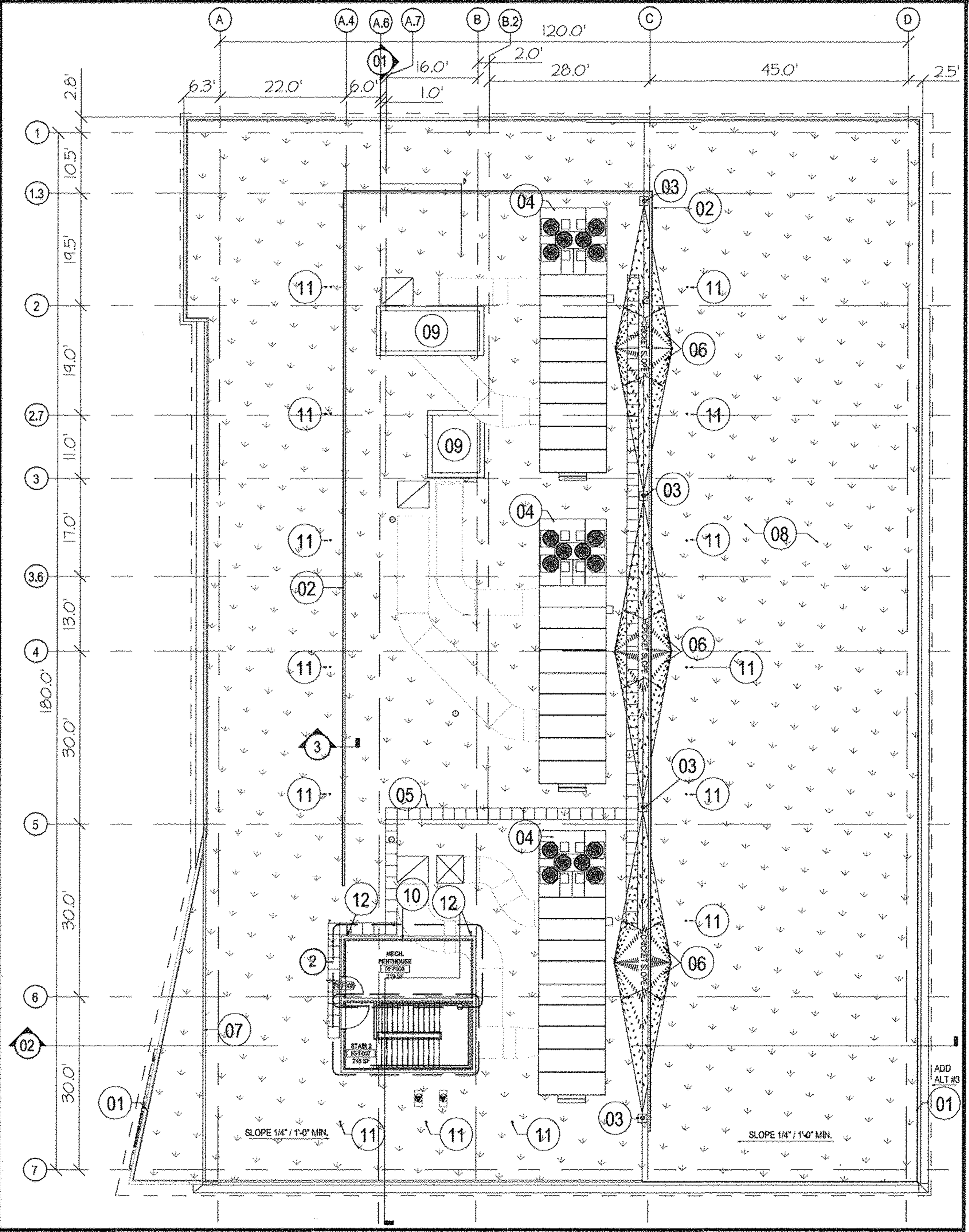
REVISED SWM DETAILS NOTES AND MAINTENANCE SCHEDULES - I

# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527) PLAT NO. 23565-23566
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET △3 |
| NOV. 2018 JUNE, 2016 | 36 - 01 | 12 OF 58 |

© GLW 2013

ASBUILTS SDP-15-068




**BUILDING B · ROOFTOP** SCALE: 1" = 20'

KEY

01 - HIGH POINT RIDGE IN SLOPE STRUCTURE
02 - FACTORY FINISHED METAL SCREEN WALL
03 - ROOF DRAIN
04 - MECHANICAL EQUIPMENT
05 - ROOF ACCESS PAVERS
06 - ROOF CRICKET - SLOPE AT 1/2" PER FOOT
07 - SCUPPER IN PARAPET WALL
08 - EXTENSIVE VEGETATIVE ROOF
09 - ELEVATOR OVERRUN
10 - MECHANICAL PENTHOUSE
11 - WINDOW WASHING TIE BACK ANCHORS
12 - DOWNSPOUT AND CONCRETE SPLASH BLOCK

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED
Green Roof (A-1)

The following Operation and Maintenance Schedule shall be implemented to the function of the Green Roof System in accordance with the recommendations of the "Green Roof System Distributor":

Weed - On an annual basis remove unwanted plant material.
Replace - Replace failed plant material when the failed plant area exceeds five percent (5%) of the roof area.
Irrigate - A newly installed roof should be irrigated during the first growing season. Saturate the Green Roof at least once a week during this first growing season. After vegetation is established, irrigation may be required periodically during dry periods.
Nutrient - The application of a slow-release fertilizer in the spring is recommended on an annual basis.
Inspect for Drainage - After each significant rainfall inspect downspouts or drainage channels/courses for clogs.
Inspect for Leaks - After each significant rainfall inspect the Green Roof for leaks.

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

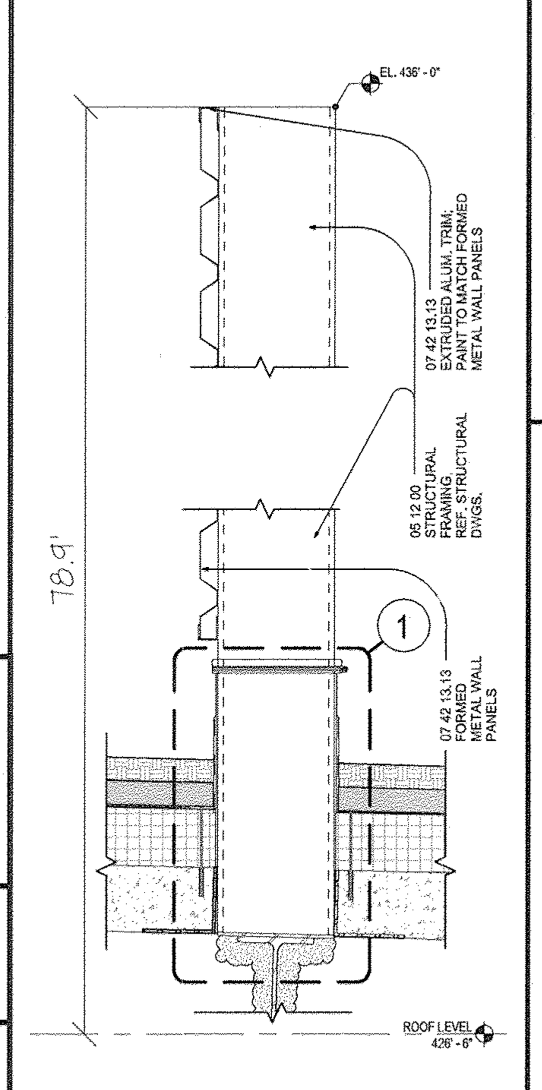
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

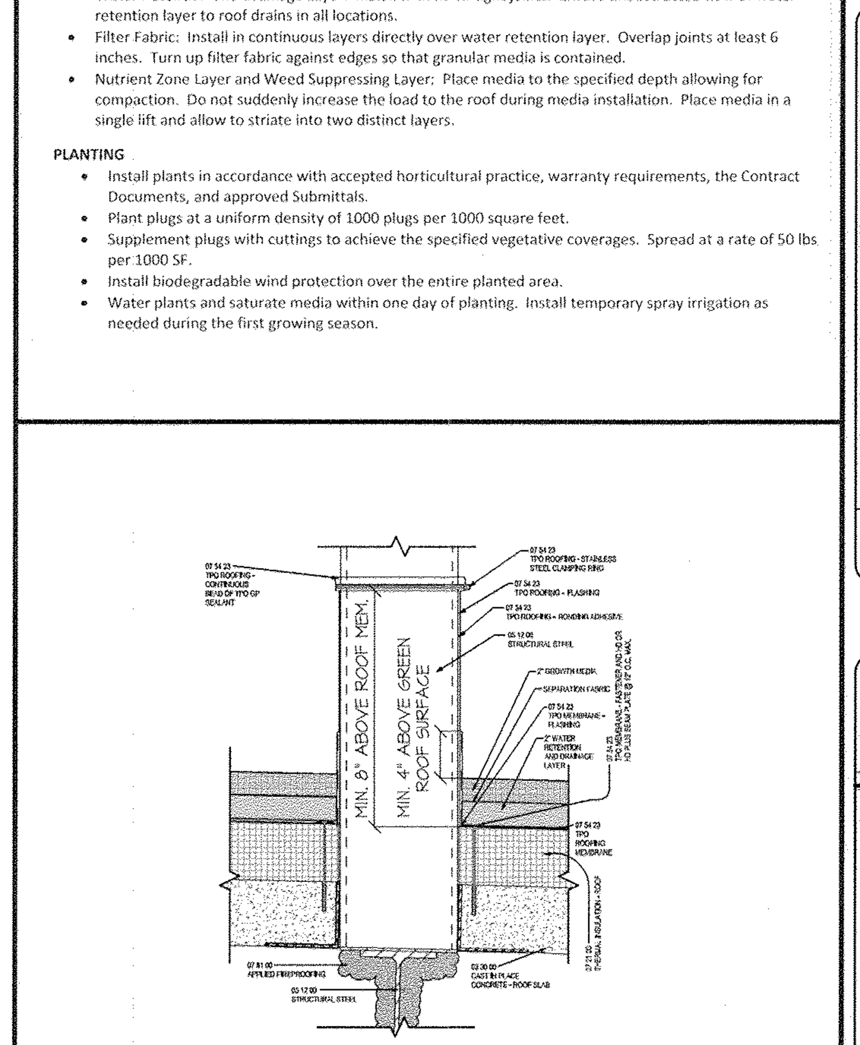
[signature] 9-12-16
Director Date

[signature] 9-12-16
Chief, Division of Land Development JMF Date

[signature] 9.2.16
Chief, Development Engineering Division HSP Date




3 SECTION @ SCREENWALL
NOT TO SCALE




1 SCREEN POST ROOF PENETRATION
SCALE: 3" = 1'-0"

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN

**FURBISH** EcoCline

Extensive Living Roof Maintenance Protocol

GENERAL

Initial installation of a living roof includes a two- to five-year vegetative warranty, issued as part of the overall system warranty. The vegetative warranty includes stewardship [maintenance] of the living roof. This document describes general protocols to be performed during the vegetative warranty, and generally protocols that should be followed thereafter.

Weeding
We check for infestation of weeds that could be introduced by wind, birds, and foot traffic on the roof. We try to prevent growth of species that were not planted intentionally or are not compatible with the living roof system. We pull weeds by hand before they go to seed or develop large root masses. Complete coverage of the Sedums (or other plant material from initial installation) will discourage weed growth, so we encourage coverage as soon as possible.

Nutrient Management
Extensive roof covers (predominantly Sedums) do not require frequent fertilization. Additionally, over-fertilization invites weed growth and contributes to nutrient-laden storm water discharges. We monitor soil conditions and plant health to determine if/when additional nutrient is needed. When appropriate we adjust for pH and nutrients using pelletized organic amendments.

Pruning
On an annual basis, pruning may be desired to cut down expired flower stalks. This will be performed as needed. A side benefit of this process is the distribution of more cuttings onto the roof.

Replanting
From time to time, some mortality will occur. We will attempt to supplement bare spots with additional cuttings or plugs as necessary. If the plant mortality is being caused by an underlying problem (such as ponding water), we will identify the cause and develop a strategy for remediation with the owner. Execution of such a strategy would fall outside of routine maintenance.

Irrigation
The need for irrigation is a function of soil type, soil depth, and plant selection. For the typical extensive roof cover, we encourage deep root growth during the grow-in phase. This promotes resilience in the plants; they become more drought tolerant. In most cases, irrigation of extensive roof covers is unnecessary and undesirable. If extreme conditions arise, we may identify a need for irrigation, which would fall outside of routine maintenance. For intensive plantings, manual or automated irrigation may be required and would be articulated in original installation proposal.

Reporting
We maintain records of the ongoing health of your roof. After each maintenance visit, we will forward a written and photographic report that summarizes conditions on the roof. It is our intention to keep you informed of your living roof conditions. We welcome feedback and suggestions for ways that we can better serve you.

3430 2nd Street - Suite 100 :: Baltimore MD 21225 :: 443.874.7465 :: www.furbishco.com

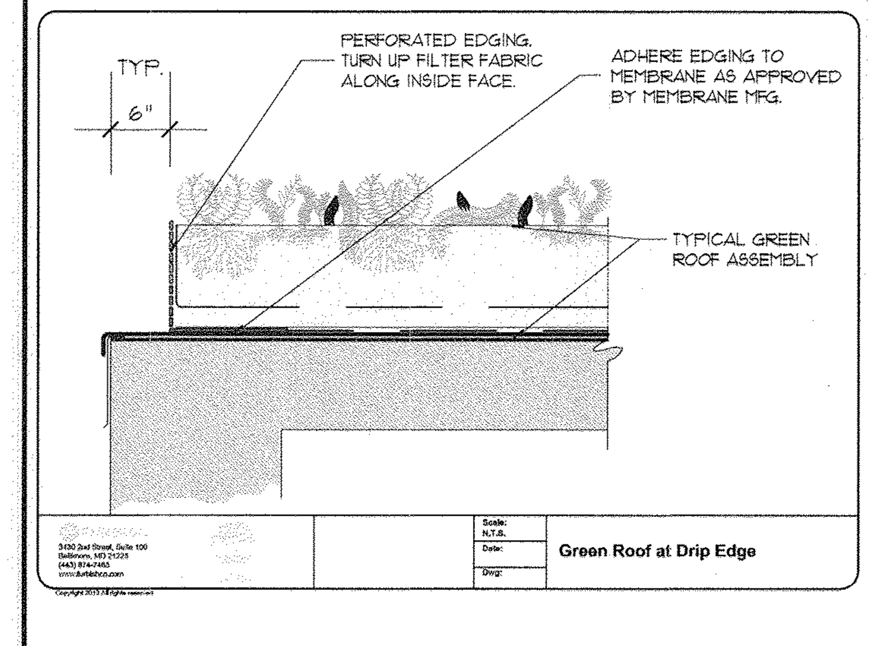
Typical Sequence of Construction for EcoCline To Be Used on Civil Engineering Permit Documents

**EXAMINATION**
- Examine the completed roofing system for compliance with drawings, installation tolerances, and other conditions affecting performance.
- Confirm that Roofing Manufacturer has tested roofing system and found it to be free of leaks prior to commencing installation.
- Notify the Architect immediately if any conditions are present that may be detrimental to the performance of the Work. Proceed only after unsatisfactory conditions have been corrected.

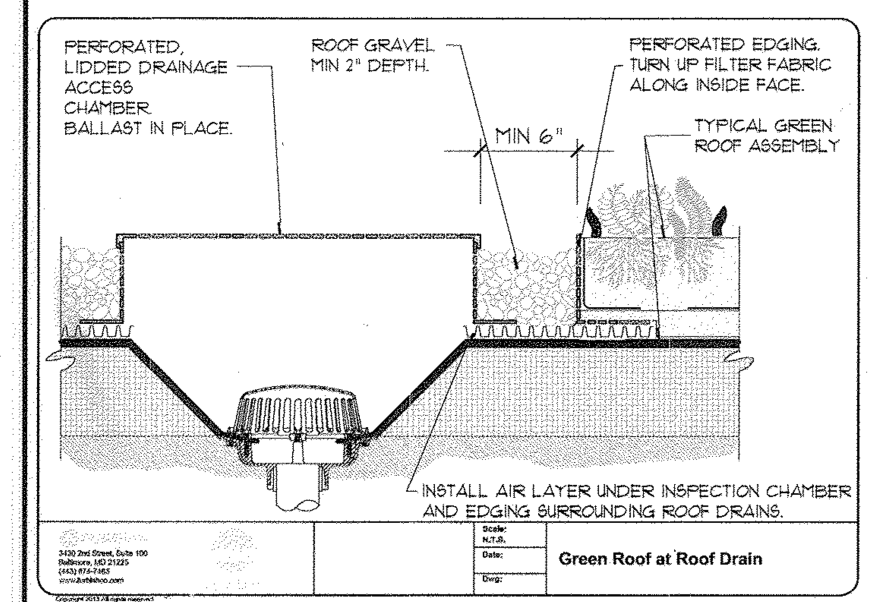
**GENERAL INSTALLATION SPECIFICATIONS**
- Install vegetated roof covering system in accordance with approved submittals and the Contract Documents.
- Until the first layer covering the roofing membrane has been installed, limit traffic over the working area to essential personnel, only.
- Protect heavily traveled areas (e.g., corridors for transporting media to the working areas) in a manner approved by the Roofing System Manufacturer.
- Protect lay down areas using protection fabric, ½-inch plywood or particle board over 1-inch sheets of insulation, or similar protective material approved by the Roofing System Manufacturer.
- Protect all loose-laid fabrics from wind damage. Maintain overlaps, folds, turn-ups, and turn-downs by methods which will not damage the roofing system.

**INSTALLATION**
- Protection Layer: Install in a continuous layer over all horizontal and vertical surfaces to receive vegetated roof covering, including against base flashings and roof penetrations. Overlap seams 4 to 6 inches. Keep underlying surface clean of all debris until protection layer is securely in-place.
- Air Layer: Starting at low points of the roof, install in a continuous layer. Overlap seams in a shingle formation to direct water within the water retention layer over the air layer toward roof drains, but prevent water in the water retention layer from flowing into the air layer. Ensure that air layer provides unobstructed flow to roof drains in all locations.
- Install air layer below drain access chambers, scupper access chambers and edging to allow free flow of water to roof drains.
- Edging: Install edging where indicated. Secure until permanently ballasted in place.
- Drainage Accessories: Place drain access chambers, scupper access chambers, drainage conduit and other drainage accessories per drawings. Ensure unobstructed flow to roof drains. Secure until permanently ballasted in-place.
- Water Retention and Drainage Layer: Install with hand-tight joints. Ensure unobstructed flow of water retention layer to roof drains in all locations.
- Filter Fabric: Install in continuous layers directly over water retention layer. Overlap joints at least 6 inches. Turn up filter fabric against edges so that granular media is contained.
- Nutrient Zone Layer and Weed Suppressing Layer: Place media to the specified depth allowing for compaction. Do not suddenly increase the load to the roof during media installation. Place media in a single lift and allow to striate into two distinct layers.

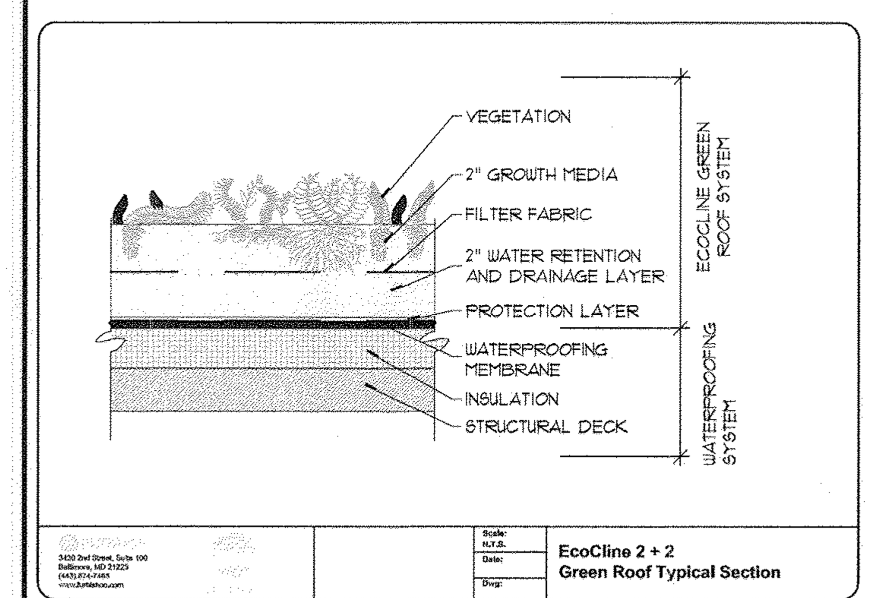
**PLANTING**
- Install plants in accordance with accepted horticultural practice, warranty requirements, the Contract Documents, and approved Submittals.
- Plant plugs at a uniform density of 1000 plugs per 1000 square feet.
- Supplement plugs with cuttings to achieve the specified vegetative coverages. Spread at a rate of 50 lbs per 1000 SF.
- Install biodegradable wind protection over the entire planted area.
- Water plants and saturate media within one day of planting. Install temporary spray irrigation as needed during the first growing season.



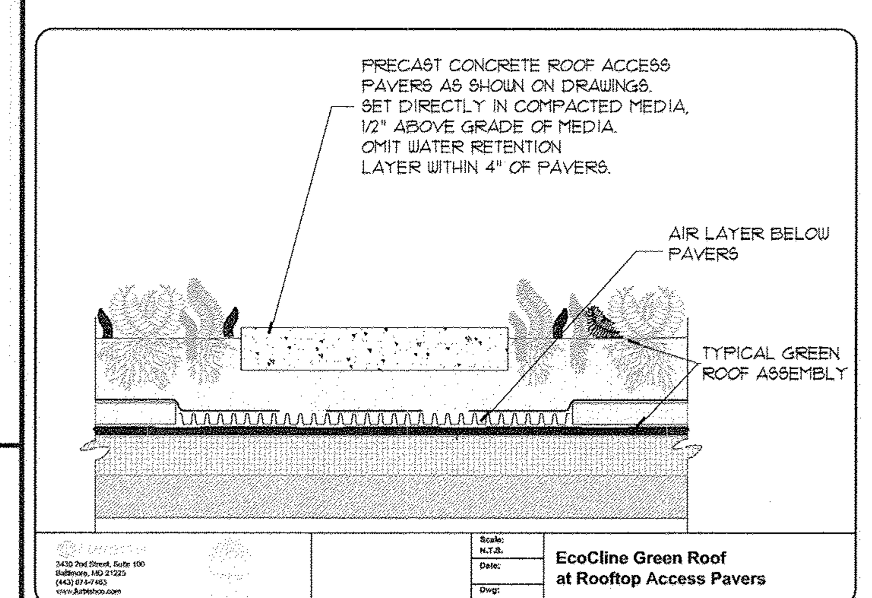

**Green Roof at Drip Edge**



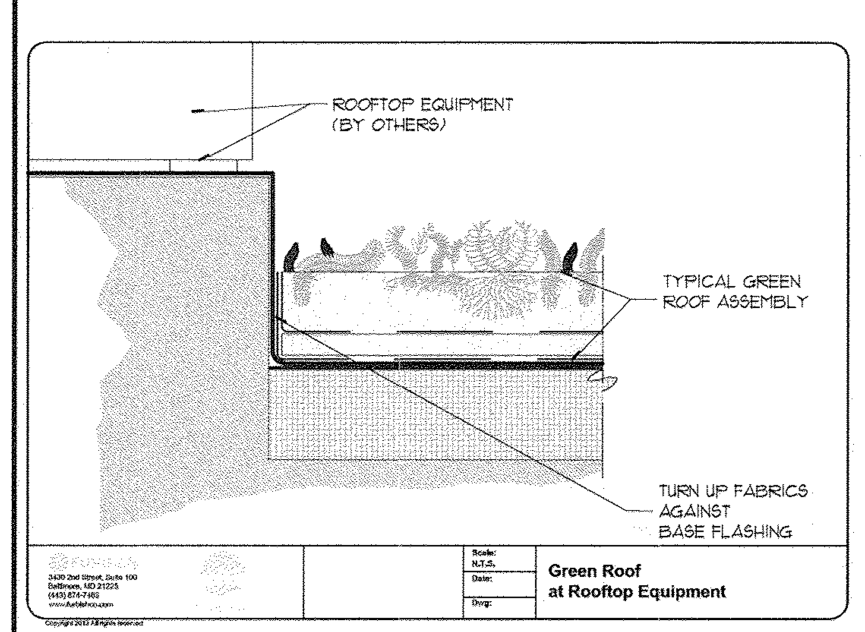

**Green Roof at Roof Drain**




**EcoCline 2 + 2**
**Green Roof Typical Section**




**EcoCline Green Roof**
**at Rooftop Access Pavers**




**Green Roof**
**at Rooftop Equipment**

SECTION 07 33 64 HIGH PERFORMANCE VEGETATED ROOF COVERING

PART 1: GENERAL

1.01. RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
B. Related requirements specified elsewhere include:
1. Roofing system: Division 07 Section 07 54 23
2. Leak detection: Division 07 Section "Membrane Integrity Test Systems"

1.02. SUMMARY
A. This Section includes a complete extensive vegetated roof covering system, as shown on the Drawings and described herein. The complete vegetated roof covering system includes all layers and associated accessories placed over the top of roofing membrane in areas designated to receive a vegetated roof covering.
B. Profiles:
1. Typical Profile consists of, from top to bottom:
Growth and Retention Assembly
a. Plants
b. Biodegradable wind protection
c. 1-inch thick weed-suppressing layer
d. 1-inch thick nutrient zone layer
e. Filter fabric
f. 2-inch thick water retention layer
Membrane Protection Layers
g. Geotextile Protection layer
Membrane
j. Roofing membrane (Division 07 Section 07 54 23)
C. This Section includes the following vegetated roof covering accessories:
1. Edging
2. Drainage Accessories
3. Roof Gravel
4. Rooftop Access Pavers
D. This Section includes warranty of the Vegetative Roof Covering.

1.03. PERFORMANCE REQUIREMENTS:
Vegetated roof covering system shall:
1. Retain at least 1.5 gallons of captured water per square foot.
2. Weigh not more than 27 lbs per square foot, fully saturated.
3. Comply with ANSI VF-1 and ANSP/SPRI RP-14.
4. Support a perennial plant landscape.
5. Provide efficient drainage of moisture that is in excess of moisture required for the vigorous growth of the installed vegetation.
6. Protect roofing materials from damage caused by exposure to ultraviolet radiation, physical abuse, and rapid temperature fluctuations.

1.04. DEFINITIONS
A. Standard Definitions
1. Captured Water: Water that is retained within the vegetated roof covering system after new water additions have ceased and that cannot escape the system except through evaporation or plant transpiration.
2. Extensive Planting: Vegetated roof covering with a total thickness of 6 inches or less.
3. Green Roof: Synonymous with vegetated roof covering.
4. Intensive Planting: Vegetated roof covering with a total thickness of 12 inches or more.
5. Semi-Intensive Planting: vegetated roof covering with a total thickness of greater than 6 inches but less than 12 inches.
6. Vegetative Coverage: Coverage of the roof area by any part of living and rooted vegetation, as measured vertically from the tips of vegetation during the period of greatest growth (typically May and June for extensive roofs). Full vegetative coverage is achieved when at least ninety percent (90%) of the roof is covered by desirable species of vegetation during the period of greatest growth, and at least seventy percent (70%) of the nutrient zone media area contains living root mass during periods of dormancy.
7. Vegetated Roof Covering: System of living plants, installed in a growing medium with drainage system over a roofing system. Vegetated roof covering system may include a protection layer, a root barrier and/or insulation as required for compatibility with the roofing system. Vegetated roof covering system may also include accessories such as edging, roof gravel, access pavers, drainage access chambers, or wind protection.
8. Vegetated System Installer: Company that installs the vegetated roof covering system. The Vegetated System installer may be the same company as the Roofing Installer.
9. Vegetated System Provider: Company that provides and warrants the vegetated roof covering system. Company that offers long-term support for the completed Vegetated Roof Covering system.
10. Roofing Installer: Company that installs the building roofing system.
11. Roofing Provider: Company that provides and warrants the building roofing system.

1.05. REFERENCES
A. The following standards are applicable to this section:
1. ANSI VF 1: External Fire Design Standard for Vegetative Roofs
2. ANSI/GRHC/SPRI VR-1: Procedure for Investigating Resistance to Root Penetration on Vegetative Roofs
3. ANSI/SPRI RP-14 Wind Design Standard for Vegetative Roofing Systems
4. ASTM: American Society for Testing and Materials

1.6. QUALITY ASSURANCE
A. Source Limitations: Obtain the entire vegetated roof covering from the Vegetated System Provider.
B. Vegetated System Installer shall:
1. Perform all work of this section;
2. Be certified by the Vegetated System Provider to install the specified system;
3. Provide full-time site supervision during all phases of installation; Site Supervisor must have a minimum of three (3) years documented experience in successful installation of projects of similar complexity and scale; Site Supervisor must be able to communicate effectively with Owner, Architect and installation crews; Site Supervisor must be a full-time employee of Vegetated System Installer;
C. Tests for media shall be conducted by an independent laboratory with experience in testing of green roof media.
D. Pre-Construction Meeting: At least one week prior to the commencement of work described under this section, the Roofing Installer, Vegetated System Installer and Vegetated System Provider shall meet with the general contractor to discuss project sequence, procedures for methods for protecting the work, and review completed work for compliance with the specifications.

1.07. SUBMITTALS
A. Qualification Data of Vegetated System Installer, including resumes of key personnel assigned to this project. Include certification issued by the Vegetated System Provider.
B. Product Data for the vegetated roof covering provided via a single full-system submittal prepared by the Vegetated System Provider. Include MSDS sheets for all materials.
C. Shop Drawings showing typical profile conditions and thicknesses, conditions at terminations, transitions, penetrations, roof drains, scuppers, or other unusual or project-specific details. Shop Drawings shall bear the approval of the Vegetated System Provider and Roofing Provider.
D. Samples:
1. Provide three (3) sets of samples indicated below.
2. Provide samples of the full system for each specified profile, assembled to the full depth specified. Assemble in a clear container at least 2 inches wide.
2. Accessories: Six-inch linear samples of edging and other linear accessories. Six-inch by six-inch samples of any nonlinear accessories.
E. Warranty: Sample warranty. Include with the sample warranty options for the Owner to extend the terms of the warranty. Include details of warranty phase Stewardship program.
F. Roofing Certification: Signed by the Roofing Provider, certifying that the proposed vegetated roof covering system is fully compatible with the roofing system and that the roofing system is eligible for a warranty from the Roofing Provider.
G. LEED Submittals:
1. Product Data for Credit MRc4: For products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content. Include statement indicating cost for each product having recycled content.
2. Product Data for Credit MRc5: Documentation of percentages of materials of each product produced within 500 miles of the project site.
H. Warranty Submittals: Stewardship reports, media tests and other warranty phase submittals per Part 3 of this Section.

1.08. DELIVERY, HANDLING AND STORAGE
A. Deliver plants to the jobsite in undamaged boxes or pallets that are clearly marked with the project name, contractor name, Vegetative System Provider's name, and plant species included.
B. Store plants in a sun-lit but shaded outdoor area. Irrigate as needed and in accordance with directions of the nursery. Install plants within 24 hours of receipt or unpackage and care for before installation.
C. Each delivery of bulk materials shall be accompanied by a delivery ticket indicating the specific product delivered, weight of delivery, name and address of manufacturer or place or origin, shipper, recipient, date and time of delivery, and project name. Unless installing bulk materials immediately upon receipt, place bulk materials on a tarp or in a container; cover with a tarp to minimize contamination, protect from weed seed infiltration, and maintain in a dry condition.
D. Maintain rolled and sheet goods in manufacturer's original packaging; store in a safe and secure location until installation.
E. Palletize and cover pavers and masonry materials; store in a safe and secure location until installation.

1.09. PROJECT CONDITIONS
A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit work to be performed when optimum results may be obtained. Apply products during favorable weather conditions according to Vegetated System Provider's written instructions and warranty requirements. Do not plant herbaceous materials when planting media temperatures are below freezing or when ice or snow is present.

1.10. WARRANTY
A. Provide a Single Source Vegetated System Warranty, issued by the Vegetated System Provider direct to the Owner. Warranty shall include all coverages listed below.
B. Terms: All terms begin immediately upon installation and continue through Substantial Completion. Terms listed below are terms which commence upon Substantial Completion.
1. Workmanship Warranty: One year
2. System Warranty: Twenty years
3. Overburden Warranty: Twenty years
4. Plant Performance: Two years
C. Workmanship Warranty: Vegetated System Provider agrees to repair or replace portions of the vegetated roof covering system that fail in workmanship within specified warranty period.
D. System Warranty: Vegetated System Provider agrees to repair or replace portions of the vegetated roof covering system that fail in materials within specified warranty period.
1. Failures include but are not limited to:
a. Loss of system permeability or drainage capacity
b. Development of conditions detrimental to plant growth
c. Cracked or disintegration of pavers due to freeze-thaw cycling
2. Limitations: Term of paver warranty is limited to ten (10) years.
E. Overburden Removal and Replacement Warranty: Vegetated System Provider agrees to remove and replace portions of vegetated roof covering in order to allow access to the Roofing Membrane in order that others may access and repair leaks detected in the Roofing Membrane.
1. A leak detection system (such as electronic vector field mapping, EFVM®, or comparable) must be installed and functional for the duration of the warranty period.
2. As required, on up to four (4) separate occurrences, remove and replace up to twenty-five square foot (25 SF) sections of vegetated roof covering in areas where leaks or membrane failures are suspected or detected.
F. Plant Performance: Vegetated System Provider shall act as Steward of the vegetated roof covering system as described in Part 3.
1. Vegetative Coverage:
a. Achieve full vegetative coverage within 24 months of Substantial Completion.
b Maintain full vegetative coverage for the duration of the warranty period. Replace or supplement plants in areas that do not achieve the specified coverages within the warranty period. Immediately remove dead plants and replace as soon as growing conditions permit.
2. Failures include, but are not limited to, death and unsatisfactory growth except for defects resulting from abuse or incidents that are beyond Vegetated System Provider's control.

PART 2: PRODUCTS

2.01. CONTINUOUS VEGETATED ROOF COVERING SYSTEM
A. Subject to compliance with requirements, provide one of the following:
3. EcoCline by Furbish (Furbish project #________).
4. Or Approved Equivalent.

2.02. PLANTS
A. Species:
1. Include at least 7 of the following, and per approved submittals:
Allium cernuum
Allium schoenoprasum
Allium senescens ssp. montanum var. glaucum
Delosperma cooperi
Delosperma nubigenum
Dianthus carthusianorum
Phedimus takesimensis 'Golden Carpet'
Sedum acre
Sedum aizoon 'Euphorbiodes'
Sedum album
Sedum album 'Murale'
Sedum hybridum 'Immergrunchen'
Sedum kamtschaticum
Sedum kamtschaticum var floriferum 'Weihenstephaner Gold'
Sedum pulchellum
Sedum reflexum 'Blue Spruce'
Sedum rupestre 'Angelina'
Sedum sieboldii
Sedum sexangulare
Sedum spurium 'Fuldaglut' and other cultivars
Talinum calycinum
B. Cuttings:
1. Sedum species or other approved species that develop aerial roots that will rapidly root in-situ into growing media.
2. Length: At least 0.75-inches.
3. Not in bloom.
4. Harvested on-demand.
C. Seed:
1. Provide clean dry Sedum seed for wide-leaf sedums not suitable for cuttings.
2. Mix seeds with fine sand to allow even sowing at a rate of 1/8 oz. of seed per Gallon of sand.
3. Sow seed at a rate of 1 oz. seed per 1000 SF of coverage.

2.03. GROWTH AND RETENTION ASSEMBLY
A. Biodegradable Wind Protection:
1. Material: Organic Tackifier
B. Weed-Suppressing Layer: An engineered aggregate material designed to provide anchorage for plant roots and maintain a high percentage of macropore space which rapidly drains in order to minimize germination of weed seed.
1. Mineral Material: >60% post-industrial or demolition product crushed brick. Maximum particle size: ⅝".
2. Organic Material: < 5% per volume.
C. Nutrient Zone Layer: An engineered soil-like material designed to provide anchorage for plant roots, maintain a relatively high CEC for optimal nutrient availability to plants, and maintain a high percentage of micropore space which maintains moisture within the high-CEC zone.
1. Mineral Material: >90% post-industrial or demolition product crushed brick. Less than 2% of mass shall contain particle sizes smaller than 0.25 mm.
2. Organic Material: 100% post-industrial pine fines. Organic material shall not exceed 20% per volume of combined weed-suppressing and nutrient zone layers.
D. Filter Fabric (Separation Fabric). Root-permeable, non-woven geotextile which is used to contain granular media layers. Inert to biological degradation and resistant to naturally occurring chemicals, alkalis and acids.

| | | |
|---|---|---|
| 1. Material | Polypropylene | |
| 2. Recycled content | >=30% | |
| 3. Unit Weight: | 4-6 oz/yd2 | ASTM-D3776 |
| 4. Grab tensile strength: | >= 60 lb | ASTM-D4632 |
| 5. Grab tensile elongation: | >= 50% | ASTM-D4632 |
| 6. Trapezoid tear strength | >= 50 lb | ASTM D4533 |
| 7. CBR puncture strength | >= 70 lb | ASTM D6241 |
| 8. Permittivity: | >= 0.9 sec-1 | ASTM-D4491 |
| 9. Flow rate | >= 100 gpm / ft2 | ASTM D4491 |
| 10. UV Resistance at 500 hours | >= 70% | ASTM D4355 |

E. Water Retention Layer. A layer of root-permeable synthetic material engineered to retain over 80% of its volume in captured water. UV Resistant. Inert to biological degradation and resistant to naturally occurring chemicals, alkalis and acids.

| | | |
|---|---|---|
| 1. Material | Mineral Wool or equivalent | |
| 2. Recycled content | >65% | |
| 3. In-Plane Flow per 1" width | >=0.05 gals/min/ft | ASTM D-4716 |

4. Able to withstand construction impacts and post-construction warranty phase pedestrian impact while retaining at least 95% of its retention capabilities.

2.04. MEMBRANE PROTECTION LAYERS
B. Geotextile Protection Fabric. Layer of non-woven geotextile designed to prevent mechanical damage to underlying layers during or after construction.

| | | |
|---|---|---|
| 1. Material | Polypropylene | |
| 2. Recycled Content | >=90% post-industrial | |
| 3. Weight | ≥ 12 oz/sy | ASTM-D5261 |
| 4. CBR Puncture Strength | ≥ 500 lbs | ASTM-D6241 |
| 5. Grab Tensile Strength | ≥ 200 lbs | ASTM-D4632 |
| 6. Trapezoidal Tear Strength | ≥ 70 lbs | ASTM D4533 |

2.05. ACCESSORIES
A. Edging
1. Material: Formed Aluminum
2. Mill finish.
3. Recycled Content: >=40%
4. Size: As shown on the drawings
5. Configuration: L-shaped
6. Wall Thickness: 16 gauge (0.050 inches)
7. Provide drainage openings to allow water to freely flow to roof drains.
B. Roofing Gravel: ¾" to 1-1/2" Stone
1. Locally quarried, no deleterious materials
2. Organic Impurities: None
3. Particle Size Distribution
1-1/2" 100%
1" >=80%
¾" >=60%
½" >=15%
⅜" <10%
#4 <3%
#8 <3%
C. Roof Drain and Scupper Access Chambers: Open-ended box or cylinder that covers drains and/or scuppers and freely admit water at its base, and which has a removable lid to allow access and cleaning but which prevents debris from entering the chamber.
1. Material: 16 gauge aluminum
2. Recycled content: >=40%
3. Color: Mill Finish
4. Height: Same as profile thickness, plus one inch
5. Length: 11 inches (nominal)
6. Width: 11 inches (nominal)
7. Open area: at least 6 square inches per lineal foot of face

2.06. PAVERS
A. Rooftop Access Pavers: Pavers set within vegetated roof covering.
1. Material: Hydraulically pressed precast concrete
2. Color: Manufacturer's standard gray
3. Weight: 20-25 lb/sf
4. Face Size: 24-inches by 24-inches (nominal). Bevel top edges 3/16 inch.
5. Thickness: 2 inches (nominal)
6. Absorption: Not greater than 5 percent per ASTM C 140
7. Compressive Strength: >=7,500 psi (52 MPa) minimum when tested according to ASTM C 140
8. No breakage and maximum 1 percent mass loss when tested for freeze-thaw resistance according to ASTM C 67.

PART 3: EXECUTION

3.01. EXAMINATION
A. Examine the completed roofing system for compliance with drawings, installation tolerances, and other conditions affecting performance.
B. Confirm that Roofing Provider has tested roofing system and found it to be free of leaks prior to commencing installation.
C. Notify the Architect immediately if any conditions are present that may be detrimental to the performance of the Work. Proceed only after unsatisfactory conditions have been corrected.

3.02. GENERAL
A. Install vegetated roof covering system in accordance with approved submittals and the Contract Documents.
B. Until the first layer covering the roofing membrane has been installed, limit traffic over the working area to essential personnel only.
C. Protect heavily traveled areas (e.g., corridors for transporting media to the working areas) in a manner approved by the Roofing System Provider.
D. Protect lay down areas using protection fabric, 1/2-inch plywood or particle board over 1-inch sheets of insulation, or similar protective material approved by the Roofing System Provider.
E. Protect all loose-laid fabrics from wind damage. Maintain overlaps, folds, turn-ups, and turn-downs by methods which will not damage the roofing system.

3.03. MEMBRANE PROTECTION LAYERS AND ACCESSORY INSTALLATION
A. Protection Layer: Install in a continuous layer over all horizontal and vertical surfaces to receive vegetated roof covering, including against base flashings and roof penetrations. Overlap seams 4 to 6 inches. Keep underlying surface clean of all debris until protection layer is securely in-place.
B. Edging: Install edging where indicated. Secure until permanently ballasted in place.
C. Drainage Accessories: Place drain access chambers and other drainage accessories per drawings. Ensure unobstructed flow to roof drains. Secure until permanently ballasted in-place.
D. Roof Gravel: Install to thickness shown on drawings. Do not suddenly increase the load to the roof during gravel installation.

3.04. VEGETATIVE ROOF COVERING INSTALLATION
A. Water Retention Layer: Install with hand-tight joints. Ensure unobstructed flow of water retention layer to roof drains in all locations.
B. Filter Fabric: Install in continuous layers directly over water retention layer. Overlap joints at least 6 inches. Turn up filter fabric against edges so that granular media is contained.
C. Nutrient Zone Layer and Weed Suppressing Layer: Place media to the specified depth allowing for compaction. Do not suddenly increase the load to the roof during media installation. Place media in a single lift and allow to striate into two distinct layers.
D. Pavers in Media Zone: Set pavers directly in compacted media as shown on drawings. Omit water retention layer directly below pavers as indicated on drawings. Do not suddenly increase load to the roof during paver installation.

3.05. PLANTING
A. Install plants and seed in accordance with accepted horticultural practice, warranty requirements, the Contract Documents, the approved Submittals and when seasonally appropriate.
B. Apply seed at specified rate with approved sand carrier using a mechanical spreader. Seed will be installed by the Vegetative System Provider, before cuttings are installed.
C. Install cuttings to achieve the specified vegetative coverages. Cuttings will be installed by the Vegetative System Provider after seed has been applied.
D. Install biodegradable wind protection over the entire planted area.
E. Water plants and saturate media on the day of planting. Vegetative System Provider will install temporary spray irrigation as needed during the first growing season. Vegetative System Provider will remove irrigation within one year of planting.

3.06. PLANT PERFORMANCE WARRANTY (STEWARDSHIP)
A. General: During Stewardship period, care for plantings by cultivating, weeding, and performing other operations as required to establish healthy, viable plantings. Maintain continuous vegetative coverage, conforming with Warranty requirements. Use only products and methods acceptable to Roofing Provider.
B. Facilitate natural adaptation of the plant palette to the unique microclimate of the project site.
1. As volunteer plant species emerge, distinguish between desirable species and weeds.
a. Desirable plant species include:
i. Plants that contribute toward a low-maintenance, continuous and year-round vegetative cover that is predominantly perennial in nature, but which may accommodate some annual plants.
ii Plants that grow and spread at a pace that does not diminish species diversity and that does not require excessive maintenance.
b. Weeds include:
i. Plants which are aggressively spreading or very fast-growing that, if not removed would destabilize the plant community to diminish the quality or quantity of desirable species.
ii. Plants that are considered noxious or invasive.
iii Plants whose root systems are not suited for long-term growth within the growing media (e.g. tree saplings in a 4-inch depth media) or whose ultimate size or type would pose damage to the roofing membrane.
2. Remove weeds and facilitate growth of desirable species. Supplement desirable species as needed.
3. In areas where the existing plant palette is not performing optimally, determine the reason for poor performance, and suggest planting changes to the Owner. Implement planting changes.
C. Apply treatments as required to keep plants and growing medium free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
D. Replace growing medium that becomes displaced or eroded because of settling, wind or water scour, or other processes.
E. Inspect roof drains. Remove debris to ensure roof drains are not obstructed.
F. Test media annually for nutrient levels, salt levels, pH and other conditions as necessary. Maintain a permanent log of all test results. Include all vegetative roof areas. Ensure that nutrient, salt, organic matter, and pH levels remain within ranges suitable for optimal plant growth while minimizing nutrient runoff. Supplement or flush media as necessary.
G. Review the Roofing Provider's warranty and assist the Owner in compliance with said warranty. Do not use any materials or perform any work which would compromise any existing warranties.
H. Submit a written and photographic report to the Owner after each stewardship visit. Include test results, general plant coverage, problem areas or detrimental conditions encountered, and proposed solutions to problems.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-27 | ⚠ ADDITIONAL SHEET AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. | JH | NB |
| 11.17.2017 | ⑥ Revise sheet No. | gt | mJt. |

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\15019\PLANS BY GLW\SDP\15019sdp11A - Details -Green Roof-Sheet 13.dwg | DES. JH | DRN. JH | CHK.

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12975, EXPIRATION DATE: MAY 26, 2018
8/19/16 [signature]

**SWM DETAILS NOTES AND MAINTENANCE SCHEDULES - II**

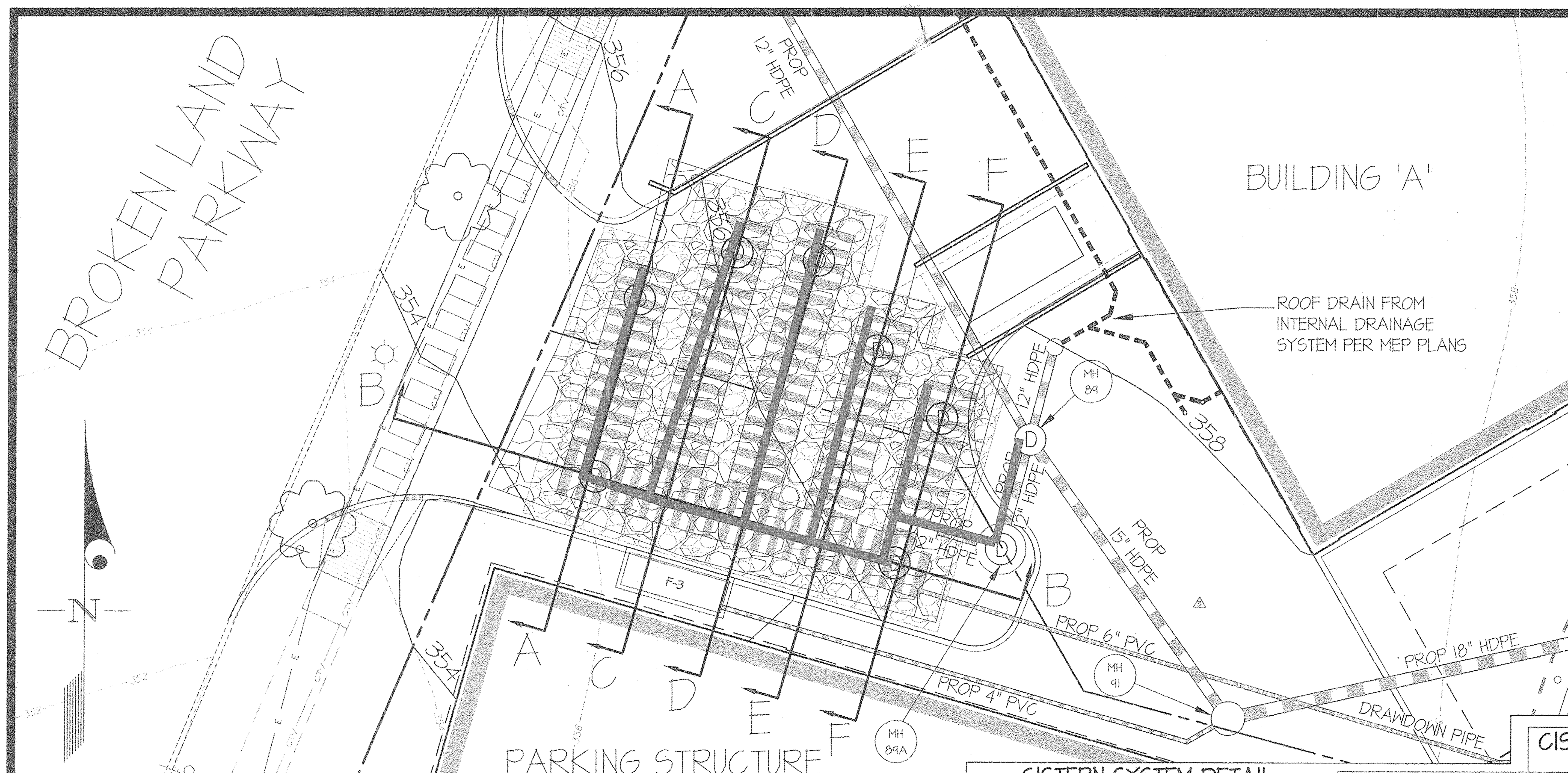
**DOWNTOWN COLUMBIA**
**CRESCENT NEIGHBORHOOD**
**PARCELS A-1, A-2, & A-3, AND PARCEL E**
**MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT**
**(PART OF TAX PARCEL 527) PLAT NO. 23565-23566**

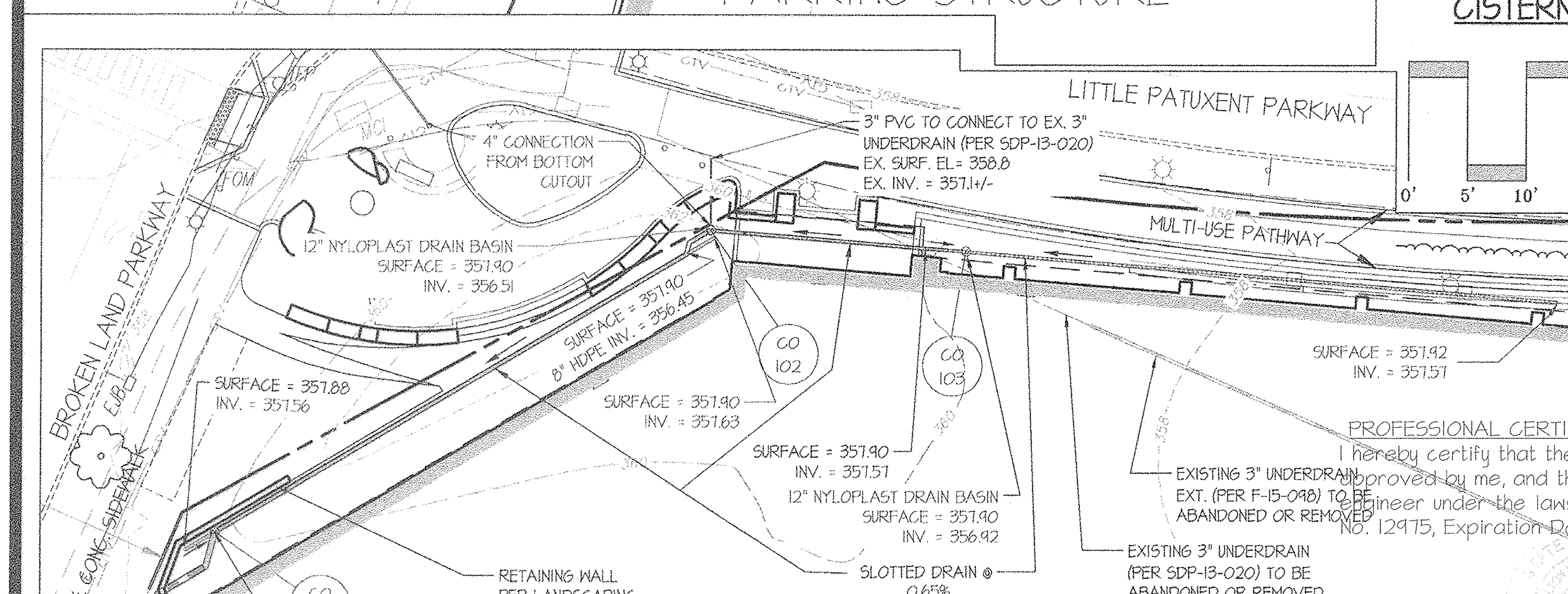
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET ⑥ |
| JUNE, 2016 | 36 - 01 | 13 OF 63 |

© GLW 2013

**SDP-15-068**



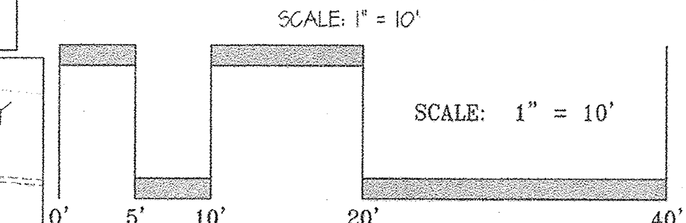



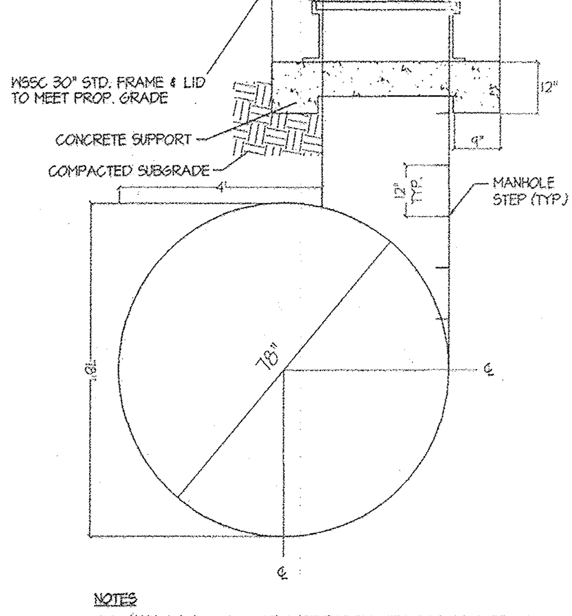

△ SLOTTED PIPE AND RE-ROUTING OF EXISTING UNDERDRAIN DETAIL

SCALE: 1" = 20'

CISTERN SYSTEM DETAIL

SCALE: 1" = 10'



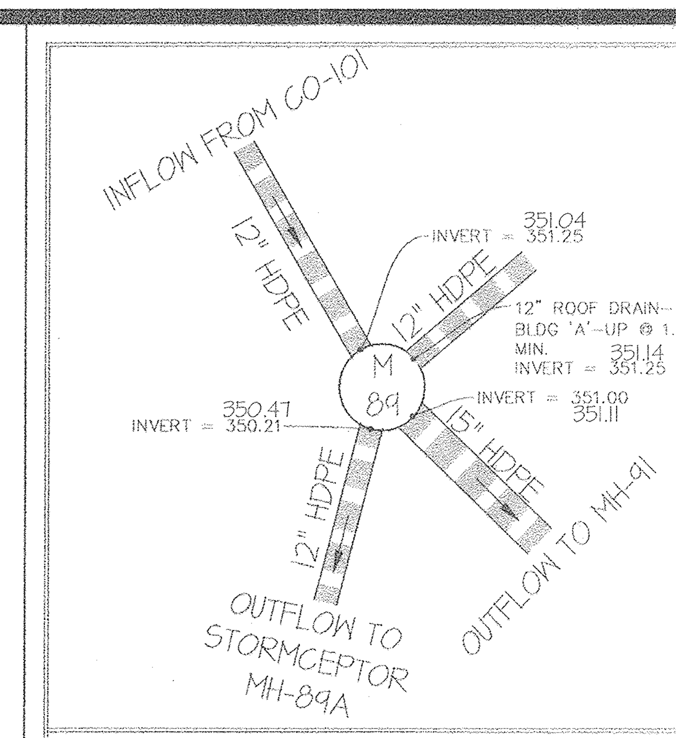

NOTES

THE MANHOLE UNIT IS TO BE SHOP FABRICATED FOR DELIVERY TO THE CONSTRUCTION SITE AS A COMPLETE UNIT. ACTUAL DESIGN DETAILS AND METHODS OF CONSTRUCTION WILL BE AT THE OPTION OF THE FABRICATOR AND MEETING THE APPROVAL OF THE ENGINEER, EXCEPT THAT PIPE SPECIFICATION, THICKNESS, CORRUGATION, AND SPECIFICATIONS TO BE MET WILL BE THE SAME AS THOSE REQUIRED FOR THE ADJOINING PIPE CULVERT.

* FOR ADDITIONAL NOTES, SEE SQUARE OPTION IN CONTECH ACCESS MANHOLE DETAIL ON SHEET 12

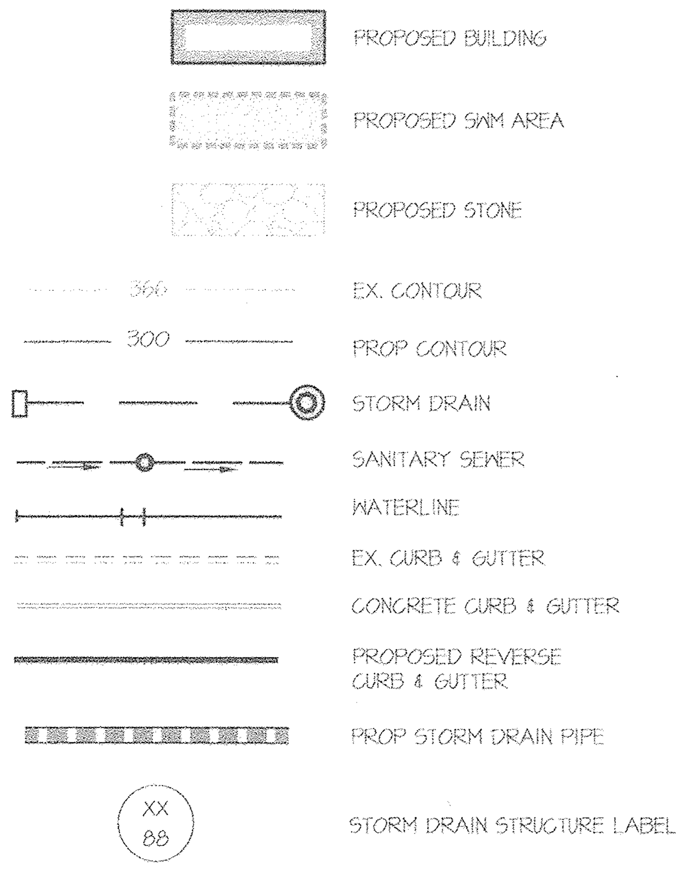
SECTION VIEW OF ACCESS MANHOLE

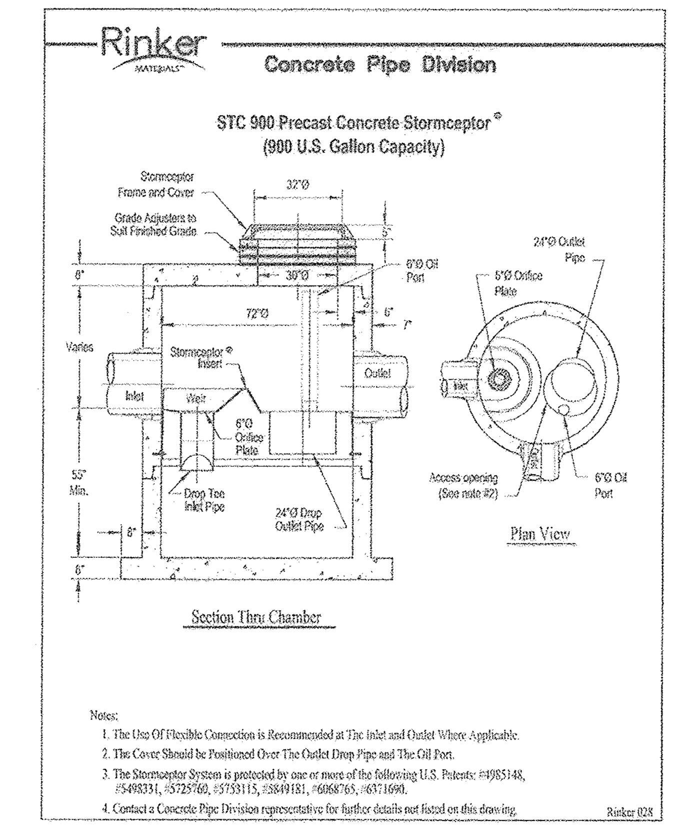
NTS




FLOWSPLITTER - M-89 (NTS)

## LEGEND




## CISTERN NOTES

1. A cistern shall be located under the loading bay.
2. The volume of the cistern shall provide at least 4079 cubic feet of storage
3. 5774 cubic feet of storage provided
4. Untreated rainfall up to 2.6 inches shall enter the cistern
5. Excessive runoff shall be diverted by the splitter structure and will not enter the cistern
6. A stormceptor has been provided to pre-treat run-off entering the cistern

## OPERATION AND MAINTENANCE SCHEDULE FOR

PRIVATELY OWNED AND MAINTAINED STORMCEPTOR WATER QUALITY DEVICE

A. THE OWNER SHALL INSPECT THE STORMCEPTOR WATER QUALITY STRUCTURE PERIODICALLY AND CLEAN IT TO MAINTAIN PROPER OPERATION AND FUNCTION. THE OWNER SHALL INSPECT THE STORMCEPTOR UNIT YEARLY AT A MINIMUM, UTILIZING THE STORMCEPTOR INSPECTION/MONITORING FORM. INSPECTIONS SHALL BE DONE BY USING A CLEAR PLEXIGLASS TUBE ("SLUDGE JUDGE") TO EXTRACT A WATER COLUMN SAMPLE. WHEN THE SEDIMENT DEPTHS EXCEED THE LEVEL SPECIFIED IN TABLE 6 OF THE STORMCEPTOR TECHNICAL MANUAL, THE STORMCEPTOR UNIT MUST BE CLEANED.

B. THE OWNER SHALL CHECK AND CLEAN IMMEDIATELY THE STORMCEPTOR WATER QUALITY STRUCTURE AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES AND CLEAN THE PETROLEUM SPILLS IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

C. THE MAINTENANCE OF THE STORMCEPTOR UNIT SHALL BE DONE USING A VACUUM TRUCK WHICH WILL REMOVE THE WATER, SEDIMENT, DEBRIS, FLOATING HYDROCARBONS AND OTHER MATERIALS IN THE STORMCEPTOR UNIT. THE OWNER SHALL FOLLOW ALL REQUIREMENTS FOR THE PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID.

D. THE OWNER SHALL CHECK THE INLET AND OUTLET PIPES FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX (6) MONTHS. IF OBSTRUCTIONS ARE FOUND, THE OWNER SHALL HAVE THEM REMOVED. THE OWNER SHALL REPAIR THE STRUCTURAL PARTS OF THE STORMCEPTOR UNIT AS NEEDED.

E. THE OWNER SHALL RETAIN AND MAKE THE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE THE HOWARD COUNTY OFFICIALS UPON THEIR REQUEST.

## CISTERN OPERATION AND MAINTENANCE SCHEDULE

NOTE: COMPONENTS ARE TO BE INSPECTED QUARTERLY

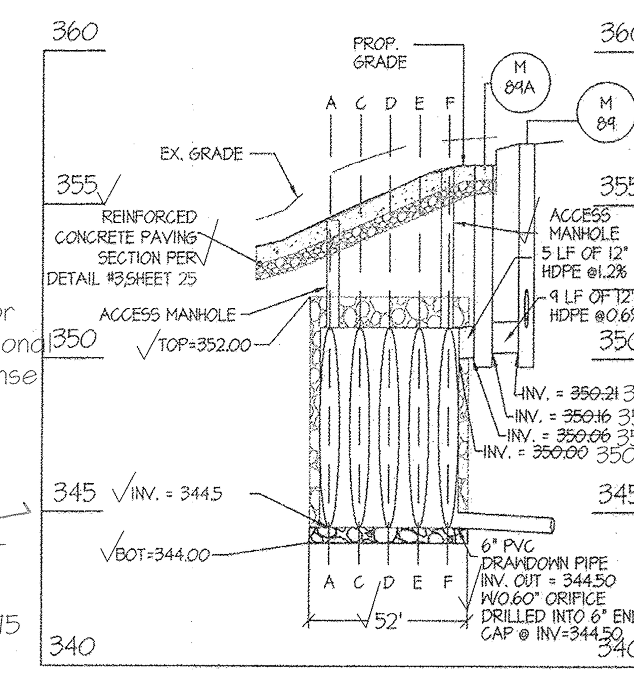
| FACILITY COMPONENT REQUIRING MAINTENANCE | MAINENANCE ACTIVITY | WHEN MAINTENANCE ACTIVITY IS REQUIRED | EXPECTED FACILITY PERFORMANCE AFTER MAINTENANCE |
|---|---|---|---|
| STORAGE MANIFOLD | TRASH AND DEBRIS REMOVAL, & SEDIMENT REMOVAL. | FLOATABLE OBJECTS OR OTHER DEBRIS IS PRESENT IN THE FILTER OR MANIFOLD SYSTEM. | FILTRATION CAPACITY IS MAXIMIZED. |
| PIPING FITTINGS AND CONTROL DEVICES. | ENSURE ALL FITTINGS ARE SECURE AND THAT ALL CONTROLS ARE UNCLOGGED. FLUSH WITH WATER. | DRAINAGE SYSTEM IS OBSTRUCTED BY DEBRIS OR SEDIMENT. | SYSTEM FLOWS FREELY. |

PROFESSIONAL CERTIFICATION

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 12975, Expiration Date: May 26 2020.

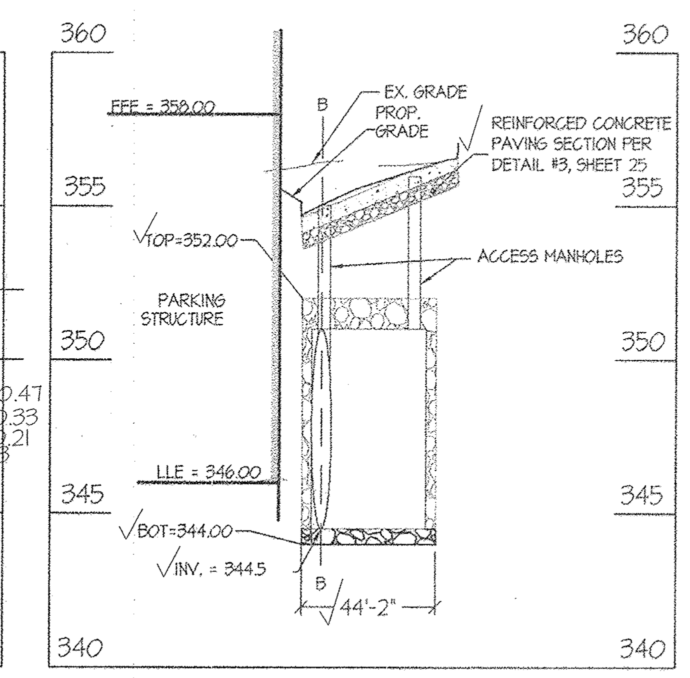
11/12/18
Date

Carl K. Gutschick
Professional Engineer
Maryland Reg. No. 12975



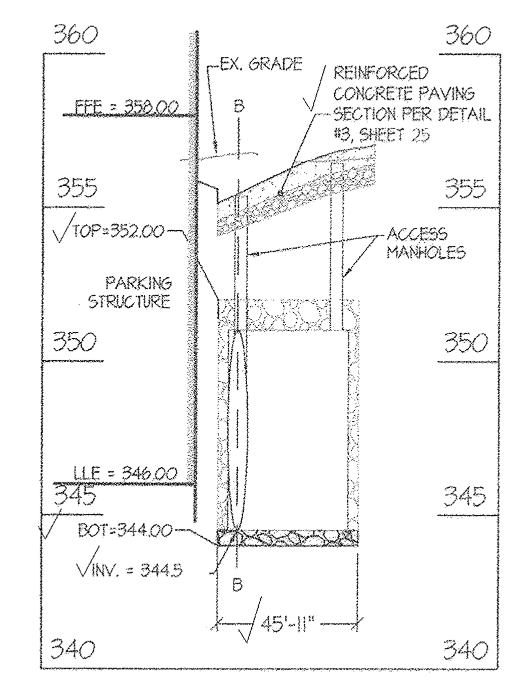

CISTERN SECTION (B-B)

SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)



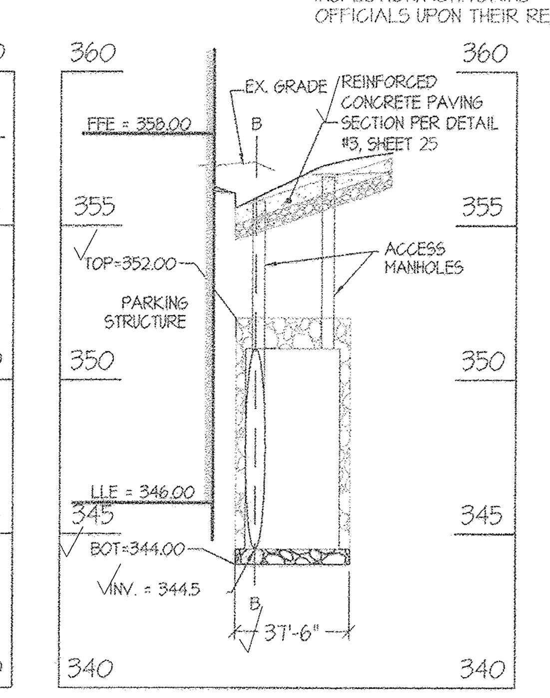

CISTERN SECTION (C-C)

SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)



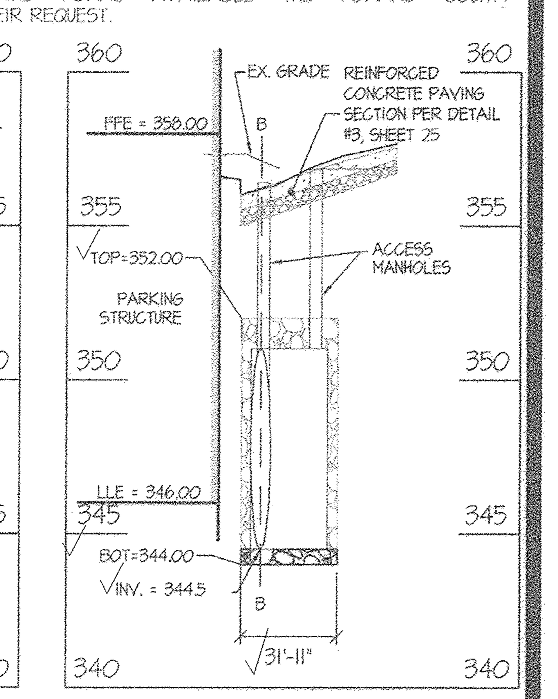

CISTERN SECTION (D-D)

SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)



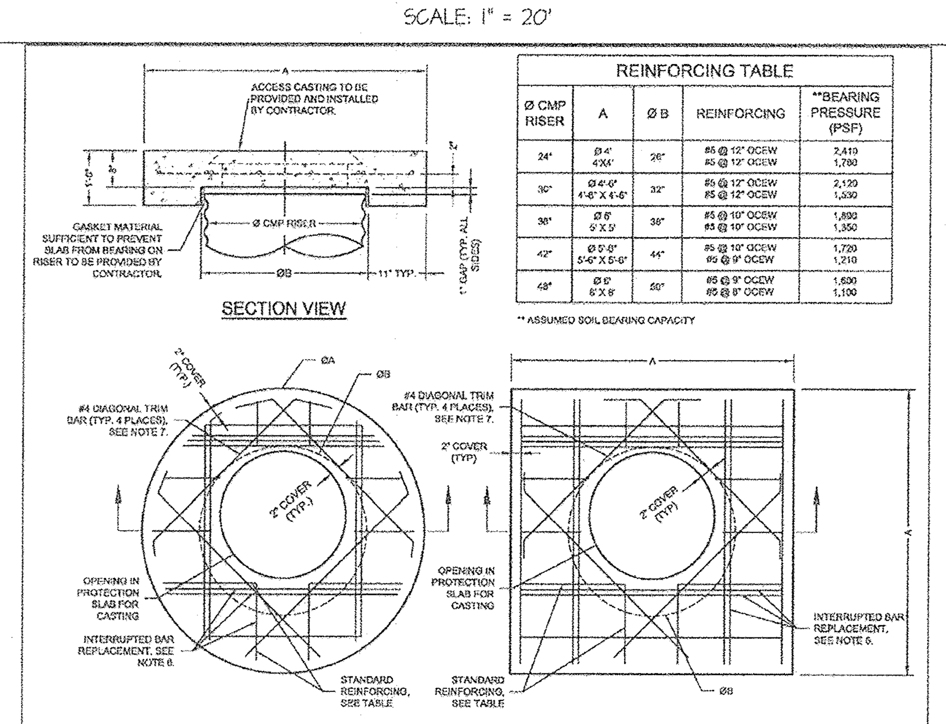

CISTERN SECTION (E-E)

SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)




CISTERN SECTION (F-F)

SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)



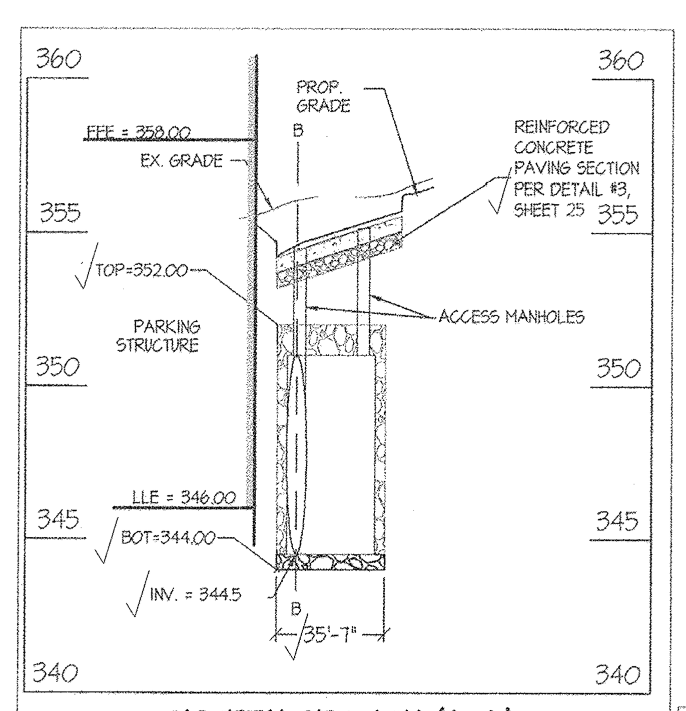

REINFORCING TABLE

| Ø CMP RISER | A | Ø B | REINFORCING | **BEARING PRESSURE (PSF) |
|---|---|---|---|---|
| 24" | Ø 4' 4'X4' | 26" | #5 @ 12" OCEW #5 @ 12" OCEW | 2,410 1,780 |
| 30" | Ø 4'-6" 4'-6" X 4'-6" | 32" | #5 @ 12" OCEW #5 @ 12" OCEW | 2,120 1,530 |
| 36" | Ø 5' 5' X 5' | 38" | #5 @ 10" OCEW #5 @ 10" OCEW | 1,890 1,350 |
| 42" | Ø 5'-6" 5'-6" X 5'-6" | 44" | #5 @ 10" OCEW #5 @ 9" OCEW | 1,720 1,210 |
| 48" | Ø 6' 6' X 6' | 50" | #5 @ 9" OCEW #5 @ 8" OCEW | 1,600 1,100 |

** ASSUMED SOIL BEARING CAPACITY

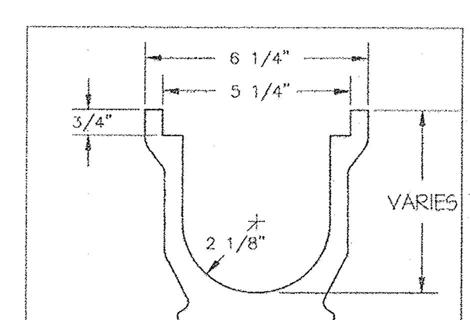
NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.




CISTERN SECTION (A-A)

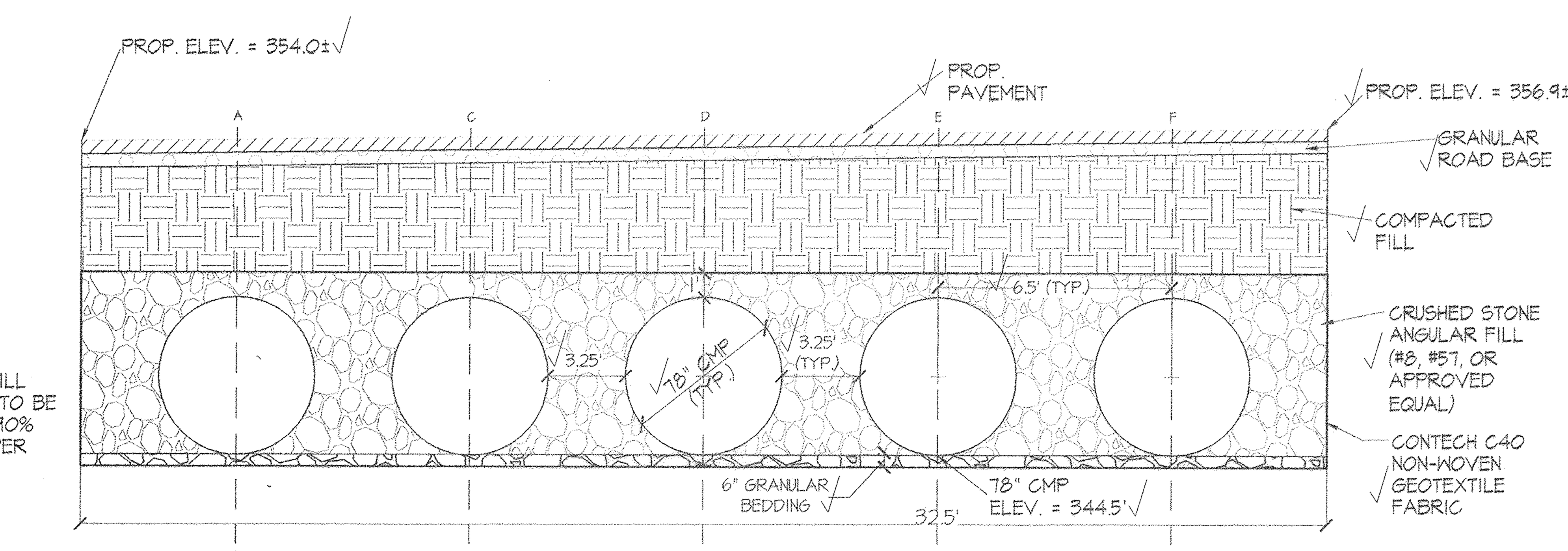
SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)




POLYCAST 600 SERIES TRENCH DRAIN

NOT TO SCALE

NOTE: EMBANKMENT FILL AND CRUSHED STONE TO BE COMPACTED TO MIN. 90% STANDARD DENSITY PER AASHTO T-99




ASBUILTS

CISTERN SECTION (B-B)

SCALE: 1" = 5'

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

ASBUILT SHEET 4 OF 8

APPROVED
PLANNING BOARD OF HOWARD COUNTY

Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9-12-16

Chief, Development Engineering Division — Date 9-2-16

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\15071\15019\PLANS BY GLW\SDP\15019sdp12 - Cistern Sections-Sheet 14.dwg | DES. JH | DRN. JH | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-21 | △ REVISION TO SHEET NUMBERING; REVISION OF DRAW-DOWN PIPE, TRENCH DRAIN AND STORM DRAIN PIPES | JH | NB |
| 2017-06-05 | △ ADDITIONAL SCREEN WALL + STORAGE UNITS AT BLDG A SERVICE AREA | JH | JH |

OWNER/PREPARED FOR:

THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975, EXPIRATION DATE: MAY 26, 2018

8/19/16

REVISED ESD FACILITIES PLAN & SECTIONS

# DOWNTOWN COLUMBIA

## CRESCENT NEIGHBORHOOD

## PARCELS A-1, A-2, & A-3, AND PARCEL E

MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT

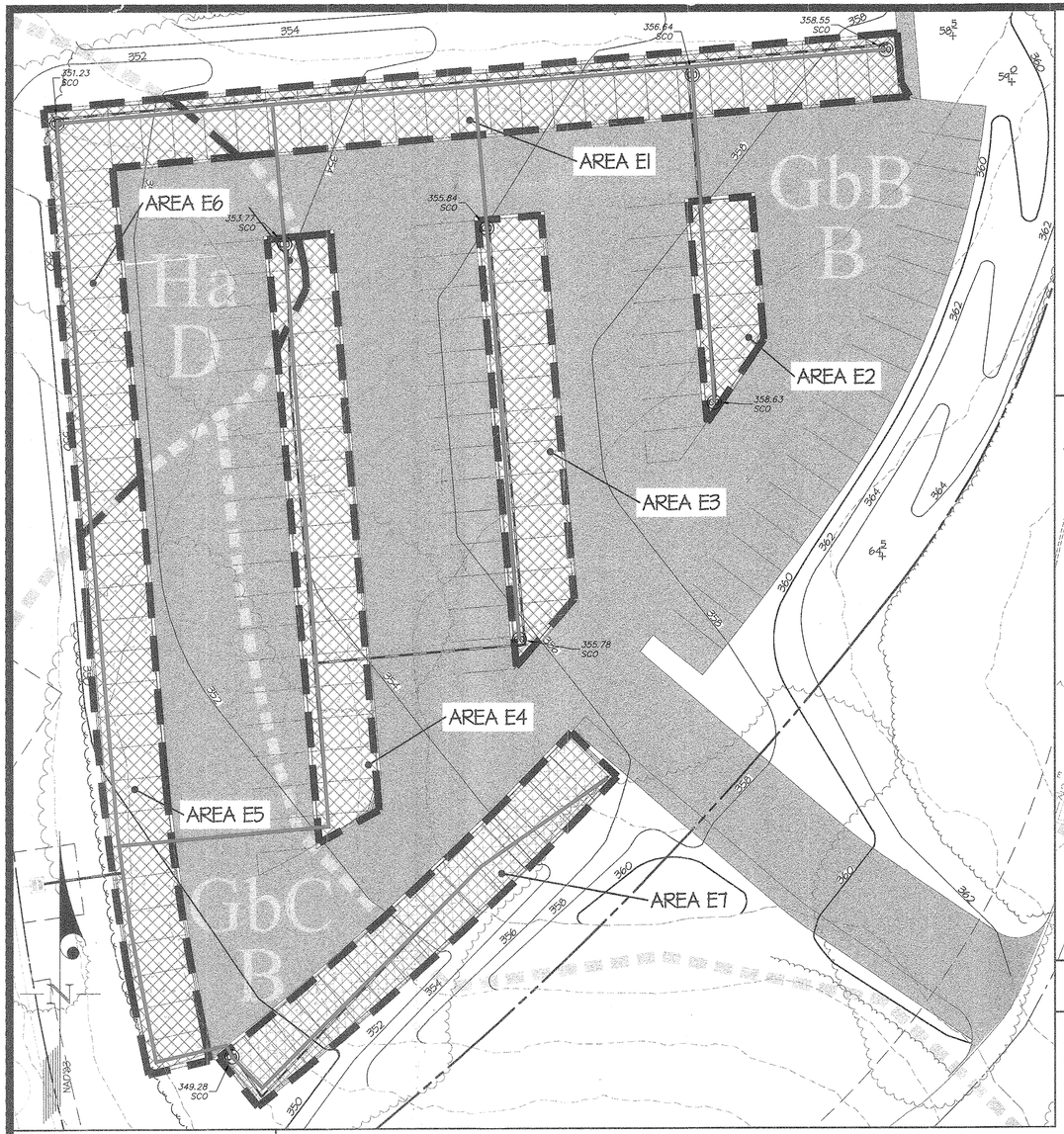
(PART OF TAX PARCEL 527) PLAT NO. 23565-23566

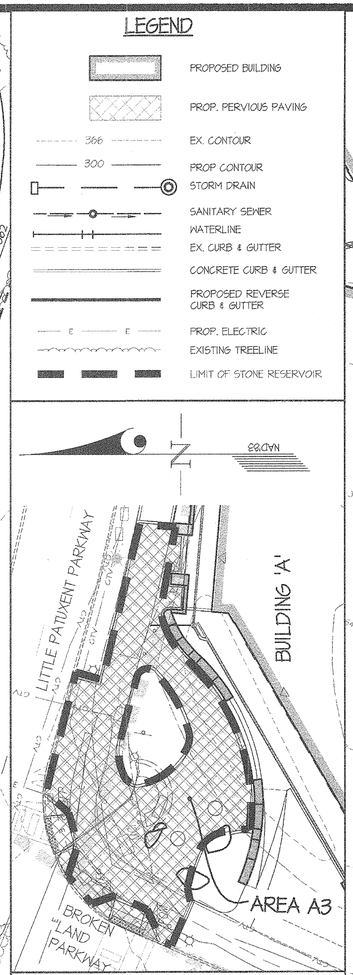
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

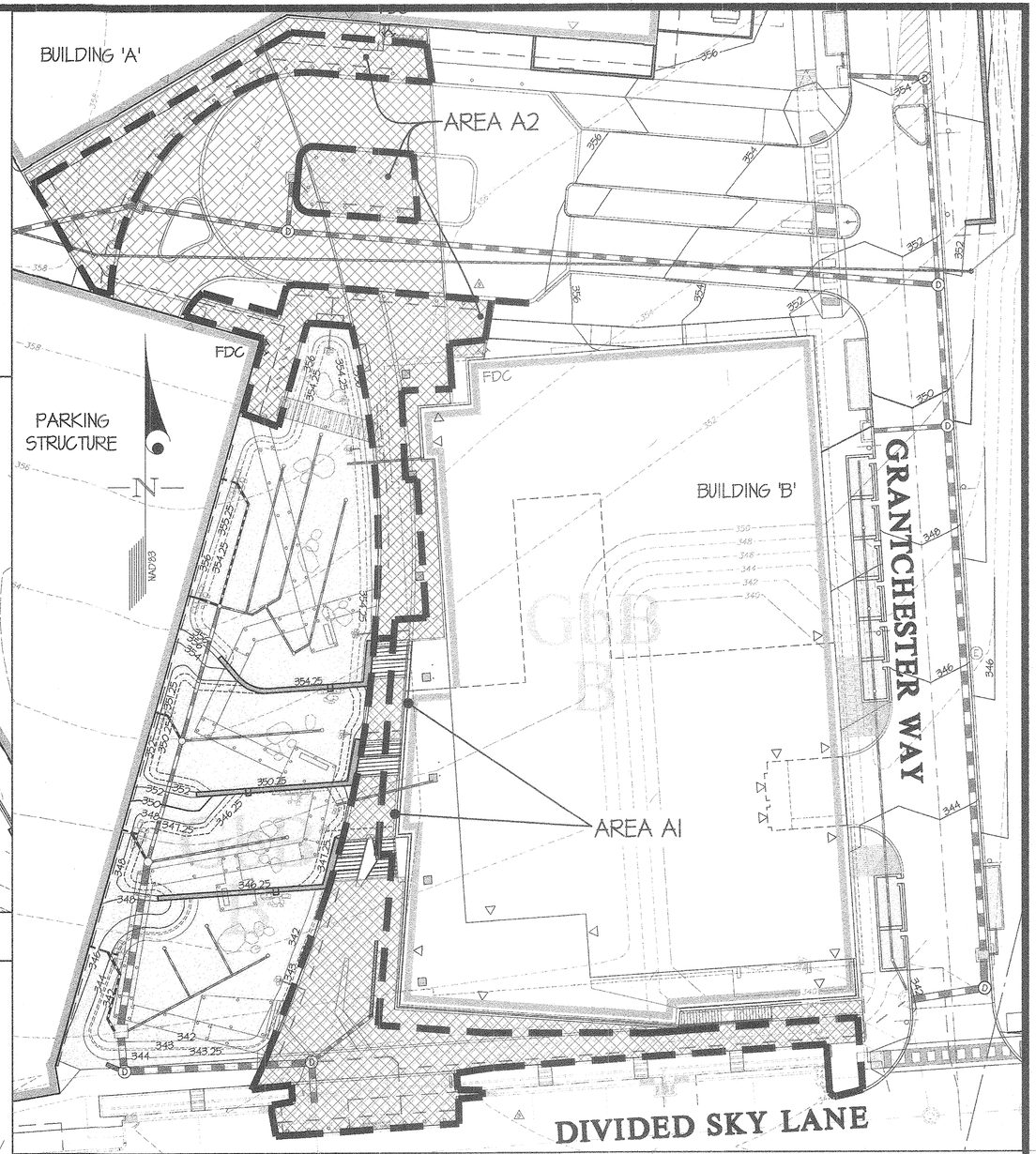
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE NOV., 2018 JUNE, 2016 | TAX MAP – GRID 36 – 01 | SHEET △ 14 OF 58 |

© GLW 2013

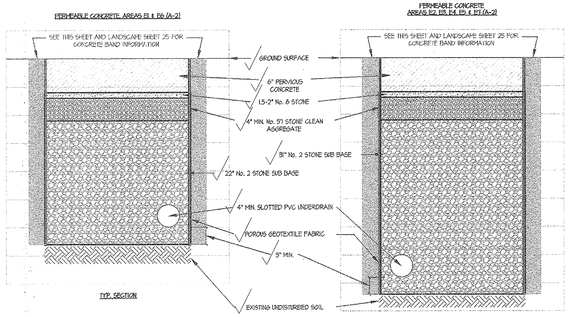
ASBUILTS SDP-15-068



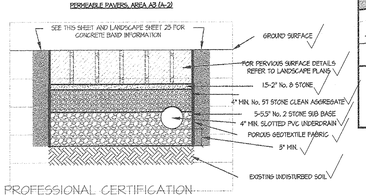

PERMEABLE CONCRETE, AREAS E1 & E6 (A-2)

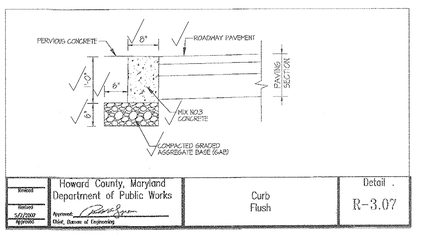



PERMEABLE CONCRETE, AREAS E2, E3, E4, E5, & E7 (A-2)

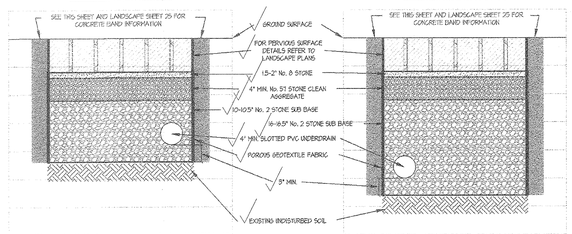



PERMEABLE PAVERS, AREA A3 (A-2)




PERMEABLE PAVERS, AREA A1 (A-2)




PERMEABLE PAVERS, AREA A2 (A-2)




APPROVED
PLANNING BOARD OF HOWARD COUNTY
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16
Chief, Division of Land Development — Date 9-12-16
Chief, Development Engineering Division — Date 9-7-16

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

PROFESSIONAL CERTIFICATION

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 12975, Expiration Date: May 26 2020.

11/12/18
Date

Carl R. Gutschick
Professional Engineer
Maryland Reg. No. 12975

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\2019\19-0019\CAD\SHEET\SDP19-0019_A-2 - Permeable Pavers Sections-Sheet 19.dwg | DES. JH | DRN. JH | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2018-08-21 | ⚠ REVISION TO PARCEL 'A' LIMITS OF PERVIOUS PAVING | JH | NB |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 12975 EXPIRATION DATE: MAY 26, 2018
8/19/16

REVISED ESD FACILITIES PLAN & SECTIONS
# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527) PLAT NO. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1" = 20' | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET |
| NOV., 2018 JUNE, 2016 | 36 – 01 | 15 OF 58 |

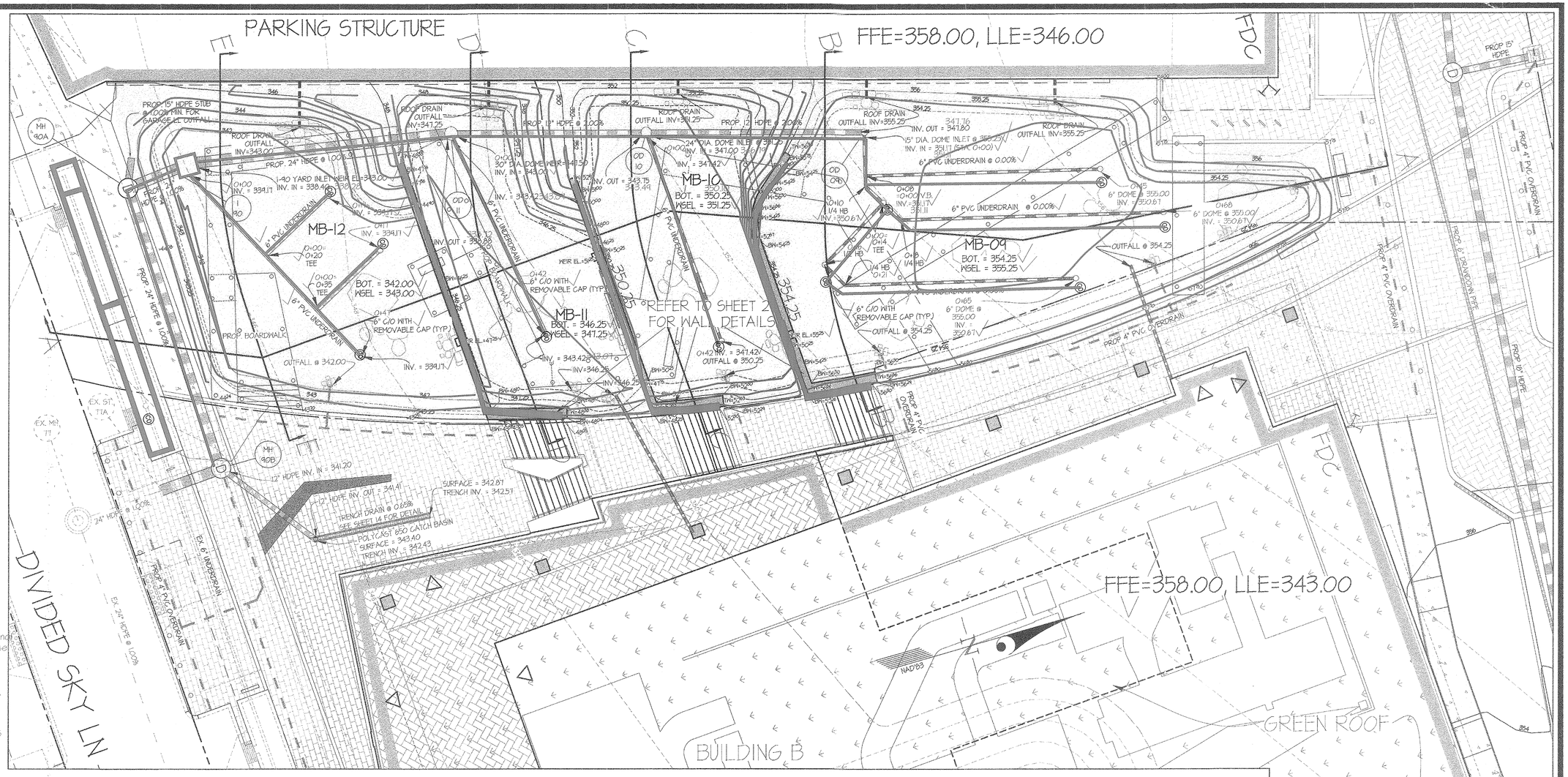
ASBUILT SHEET 5 OF 8

© GLW 2013

ASBUILTS SDP-15-068

## LEGEND

- PROPOSED BUILDING
- PROPOSED SAM AREA
- OPEN AREA
- PROPOSED PAVING
- PROPOSED CONCRETE WALK
- PROPOSED SPECIAL PAVING
- 366 — EX. CONTOUR
- 300 — PROP CONTOUR
- STORM DRAIN
- SANITARY SEWER
- WATERLINE
- EX. CURB & GUTTER
- CONCRETE CURB & GUTTER
- PROPOSED REVERSE CURB & GUTTER
- ×78.88 — SPOT ELEVATION
- E — E — PROP. ELECTRIC




PROFESSIONAL CERTIFICATION

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 12975, Expiration Date: May 26 2020.

11/12/18
Date

Carl K. Gutschick
Professional Engineer
Maryland Reg. No. 12975

NOTES:

1. RETAINING WALL DETAILS AND CALCULATIONS PER STRUCTURAL ENGINEER. REFER TO SHEET 24 .
2. REFER TO SHEET 12 FOR MICRO-BIORETENTION MEDIA TYPICAL SECTIONS.
3. REFER TO STRUCTURAL AND ARCHITECTURAL PLANS FOR WATERPROOFING OF WALLS ADJACENT TO STORMWATER MANAGEMENT DEVICES.

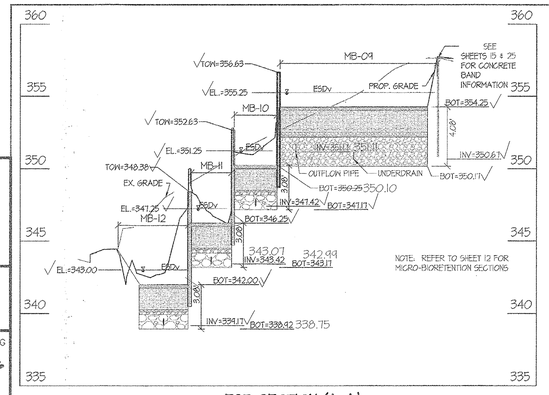
PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

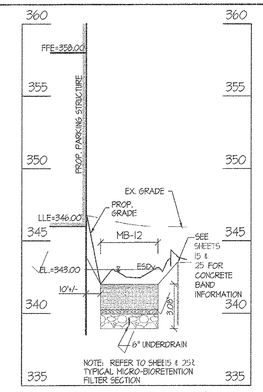
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

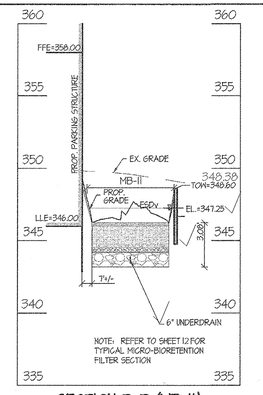
| | |
|---|---|
| Director | 9-12-16 Date |
| Chief, Division of Land Development | 9-12-16 Date |
| Chief, Development Engineering Division | 9.2.16 Date |



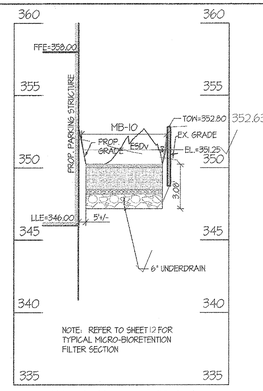

ESD SECTION (A-A)
SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)



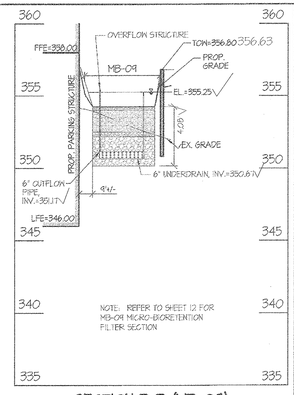

SECTION E-E (MB-12)
SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)




SECTION D-D (MB-11)
SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)

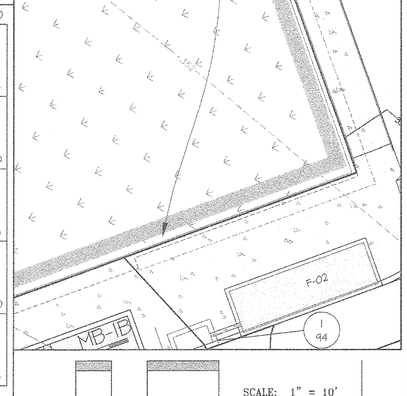



SECTION C-C (MB-10)
SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)




SECTION B-B (MB-09)
SCALE: 1" = 50' (HOR.)
1" = 5' (VER.)

ASBUILTS




ASBUILT SHEET 6 OF 8

| | | | |
|---|---|---|---|
| 2016-06-27 | REVISION TO SHEET NUMBERING; REVISED GRADING SURROUNDING BUILDING B; ADDITION OF BOARDWALK ABOVE MICRO BIO-RETENTION PONDS | JH | NB |

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|


GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186


DES. JH | DRN. JH | CHK.

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975, EXPIRATION DATE: MAY 26, 2018.

8/19/16

REVISED ESD FACILITIES PLAN & SECTIONS

# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E

MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527) PLAT NO. 23565-23566

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1" = 10' | NT | 15019 |
| DATE NOV., 2018 JUNE, 2016 | TAX MAP – GRID 36 – 01 | SHEET 16 OF 58 |

ASBUILTS SDP-15-068

© GLW 2013

| STORM DRAIN DRAINAGE AREA INFORMATION | | | |
|---|---|---|---|
| DA # | STRUCTURE | AREA (AC.) | % IMP. |
| 1 | M-89 (VIA ROOF DRAINS) | 0.91 | 87% |
| 2 | I-93 | 0.17 | 88% |
| 3 | I-96 | 0.18 | 78% |
| 4 | I-94 | 0.37 | 81% |
| 5 | I-91B/I-92 | 0.11 | 100% |
| 6 | I-90 | 1.91 | 14% |
| | | | |
| 8 | I-95 | 0.13 | 85% |
| 9 | OVERDRAIN | 0.10 | 100% |

LEGEND

(#) DRAINAGE AREA IDENTIFICATION

DRAINAGE DIVIDE

(XX/88) STRUCTURE LABEL

PROPOSED STORM DRAIN PIPE

SCALE: 1" = 30'
0' 15' 30' 60' 120'

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Director — Date 1-25-18
Chief, Division of Land Development — Date 1-25-18
Chief, Development Engineering Division — Date 1-4-18

**GLW GUTSCHICK LITTLE & WEBER, P.A.**
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\15019\PLANS BY GLW\SDP\15019sdp15 - DAM - Parcel A-Sheet 17.dwg | DES. JH | DRN. JH | CHK. XXX

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-27 | 3 REVISION TO SHEET NUMBERING; CHANGES TO DRAINAGE AREAS ASSOCIATED WITH BUILDING B; ADDITIONAL DRAINS IN SOUTHERN PLAZA AREA; REVISIONS TO DRAINAGE AREA INFORMATION TABLE | JH | NB |
| 2017-10-09 | 6 REARRANGE LOCATION OF BOLLARDS ON THE NORTH OF BUILDING B & ADD TRENCH DRAIN TO THE EAST SIDE OF BUILDING B | SS | MJT |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 14931, EXPIRATION DATE: MAY 26, 2018

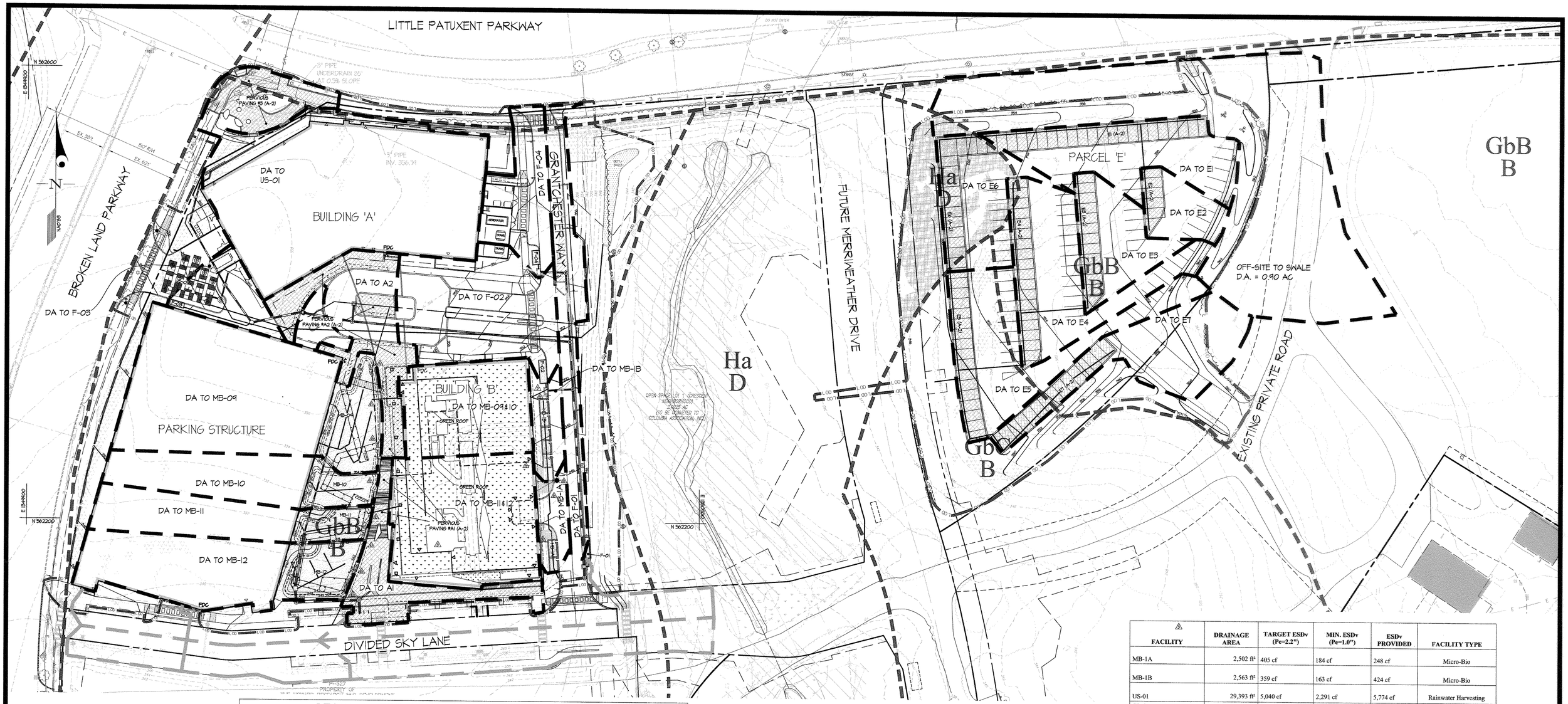
STATE OF MARYLAND — MICHAEL JAMES TRAPP — No. 14931 — REGISTERED PROFESSIONAL ENGINEER

# REVISED STORM DRAIN DRAINAGE AREA MAP
# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E
**MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT**
**(PART OF TAX PARCEL 527) PLAT NO. 23565-23566**

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=30' | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET 3 6 |
| NOV., 2017 | 36 – 01 | 17 OF 63 |

©GLW 2015




SCALE: 1" = 40'

0' 20' 40' 80' 160'

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 1-25-18

Chief, Division of Land Development — Date 1-25-18

Chief, Development Engineering Division — Date 1.4.18

## STORMWATER MANAGEMENT FOR PARCEL E

| FACILITY | DRAINAGE AREA | ESDv (Pe=1.97") | ESDv (Pe=1") | ESDv PROVIDED |
|---|---|---|---|---|
| E1 | 10573 | 1050 | 533 | 1218 |
| E2 | 3670 | 505 | 256 | 364 |
| E3 | 6320 | 986 | 500 | 743 |
| E4 | 11020 | 1657 | 841 | 2097 |
| E5 | 11407 | 1779 | 903 | 2252 |
| E6 | 7618 | 1188 | 603 | 1404 |
| E7 | 9700 | 823 | 418 | 1040 |
| TOTAL | 60308 | REQ: 7988 | N/A | 9118 |

## STORMWATER MANAGEMENT FOR PUBLIC PATH IMPROVEMENT

| FACILITY | DRAINAGE AREA | ESDv (Pe=1.80") | ESDv (Pe=1") | ESDv PROVIDED |
|---|---|---|---|---|
| 3 (A-2) | 5720 | 691 | 217 | 691 |
| TOTAL | 5720 | REQ: 224 | N/A | 691 |

## LEGEND

- LIMITS OF DISTURBANCE
- PROPOSED BUILDING
- PROP. PERVIOUS PAVING
- "K" > 0.35, SLOPE > 5%
- SLOPE > 15%
- EX. CONTOUR
- PROP CONTOUR
- STORM DRAIN
- SANITARY SEWER
- WATERLINE
- EX. CURB & GUTTER
- CONCRETE CURB & GUTTER
- EX. TREELINE
- PROP. TREELINE
- US-## — CISTERN DESIGNATION MDE STANDARD, M-1
- MB-## — MICRO-BIO RETENTION DESIGNATION MDE STANDARD, M-6
- F-## — FILTERRA DESIGNATION
- ## (A-2) — PERVIOUS PAVEMENT DESIGNATION MDE STANDARD, A-2
- EX. DRAINAGE AREA
- PROP. DRAINAGE AREA
- SOIL BOUNDARY

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

| FACILITY | DRAINAGE AREA | TARGET ESDv (Pe=2.2") | MIN. ESDv (Pe=1.0") | ESDv PROVIDED | FACILITY TYPE |
|---|---|---|---|---|---|
| MB-1A | 2,502 ft² | 405 cf | 184 cf | 248 cf | Micro-Bio |
| MB-1B | 2,563 ft² | 359 cf | 163 cf | 424 cf | Micro-Bio |
| US-01 | 29,393 ft² | 5,040 cf | 2,291 cf | 5,774 cf | Rainwater Harvesting |
| GR-01 - Part of Treatment Chain for Building 'B': | 24,400 ft² | 4,250 cf | 1,932 cf | 2,546 cf | Green Roof |
| MB-09 - Part of Treatment Chain for Building 'B': | 24,377 ft² | 3,533 cf | 1,606 cf | 5,480 cf | Micro-Bio |
| MB-10 - Part of Treatment Chain for Building 'B': | 9,141 ft² | 1,245 cf | 566 cf | 2,106 cf | Micro-Bio |
| MB-11 - Part of Treatment Chain for Building 'B': | 8,434 ft² | 1,138 cf | 517 cf | 1,832 cf | Micro-Bio |
| MB-12 - Part of Treatment Chain for Building 'B': | 13,570 ft² | 1,829 cf | 831 cf | 2,711 cf | Micro-Bio |
| F-01 | 7,740 ft² | 926 cf | 421 cf | 421 cf | Filterra |
| F-02 | 13,011 ft² | 1,680 cf | 763 cf | 763 cf | Filterra |
| F-03 | 4,200 ft² | 336 cf | 153 cf | 153 cf | Filterra |
| F-04 | 7,420 ft² | 1,102 cf | 501 cf | 501 cf | Filterra |
| Permeable Pavement A1 - South/Lower Plaza and Stair Landings | 4,849 ft² | 845 cf | 384 cf | 998 cf | Permeable Paving |
| Permeable Pavement A2 - North/Upper Plaza and Building 'A' Adjacent Areas | 7,942 ft² | 1,335 cf | 607 cf | 1,485 cf | Permeable Paving |
| **Subtotal** | 159 542 ft² | **24,021 cf** | | **25,440 cf** | |

**GLW GUTSCHICK LITTLE & WEBER, P.A.**
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

E:\CADD\DRAWINGS\15019\SDP\PLANS BY GLW\SDP15068 - ESD - DAM-Sheet 18.dwg | DES. JH | DRN. JH | CHK. XXX

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-27 | ⚠ REVISION TO SHEET NUMBERING; SWM DRAINAGE AREAS; SWM TABLE; CHANGES DUE TO BUILDING B LAYOUT AND SURROUNDING DESIGN; REMOVAL OF MB-02 THRU MB-04 | JH | NB |
| 2017-10-09 | ⚠ REARRANGE LOCATION OF BOLLARDS ON THE NORTH OF BUILDING B\ADD TRENCH DRAIN TO THE EAST SIDE OF BUILDING B | SS | MJT |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14931, EXPIRATION DATE: MAY 26, 2018

STATE OF MARYLAND — MICHAEL JAMES TROSEN — 14931 — REGISTERED PROFESSIONAL ENGINEER

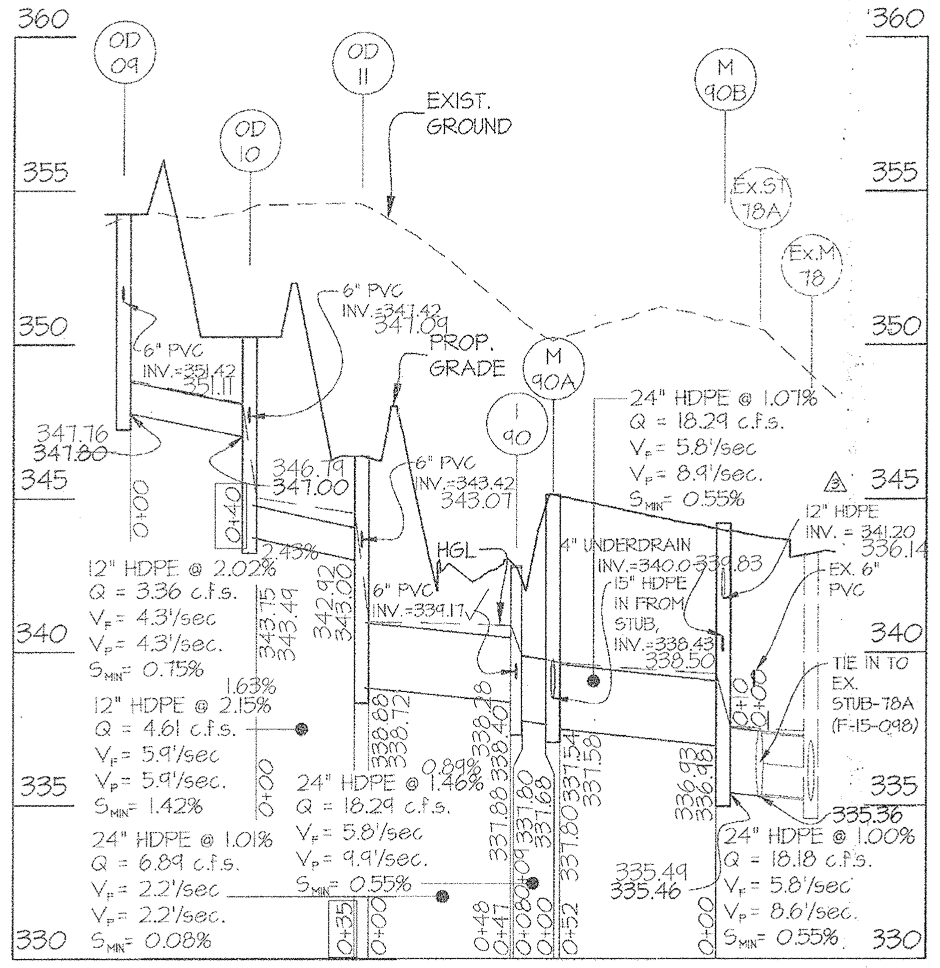
REVISED SWM DRAINAGE AREA AND SOIL TYPES MAP

# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E
**MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT**
**(PART OF TAX PARCEL 527) PLAT NO. 23565-23566**
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

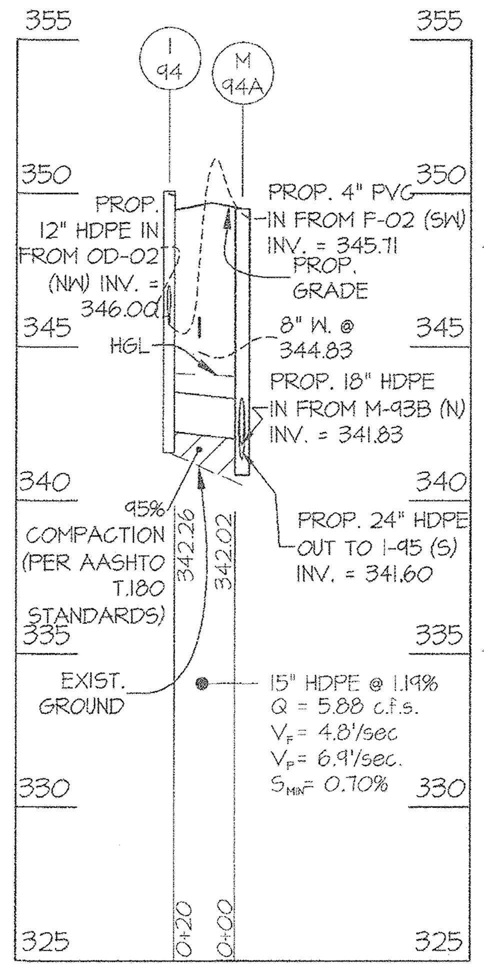
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=40' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| NOV., 2017 | 36 - 01 | ⚠ 18 OF ⚠ 63 |

© GLW 2015

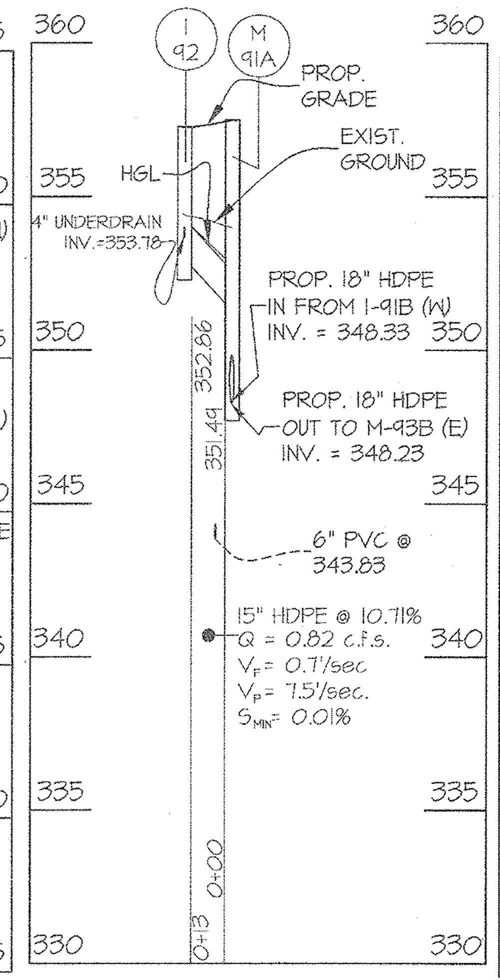
SDP-15-068



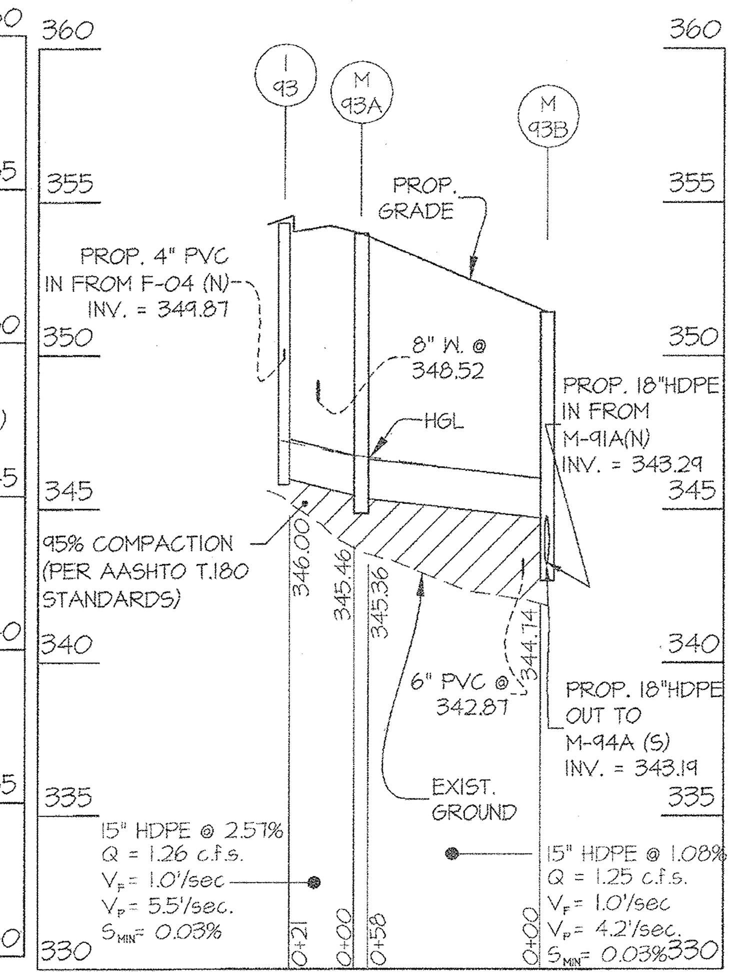

STORM DRAIN PROFILE
VERT. SCALE: 1" = 5'
HORIZ. SCALE: 1" = 50'



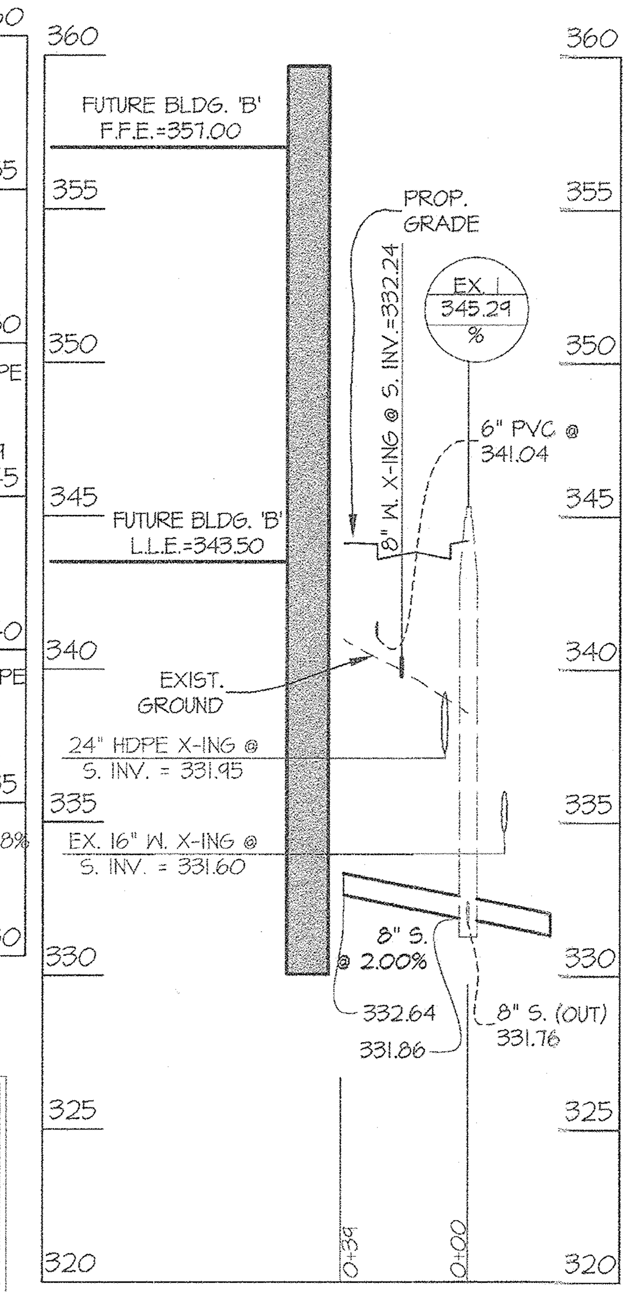

STORM DRAIN PROFILE
VERT. SCALE: 1" = 5'
HORIZ. SCALE: 1" = 50'



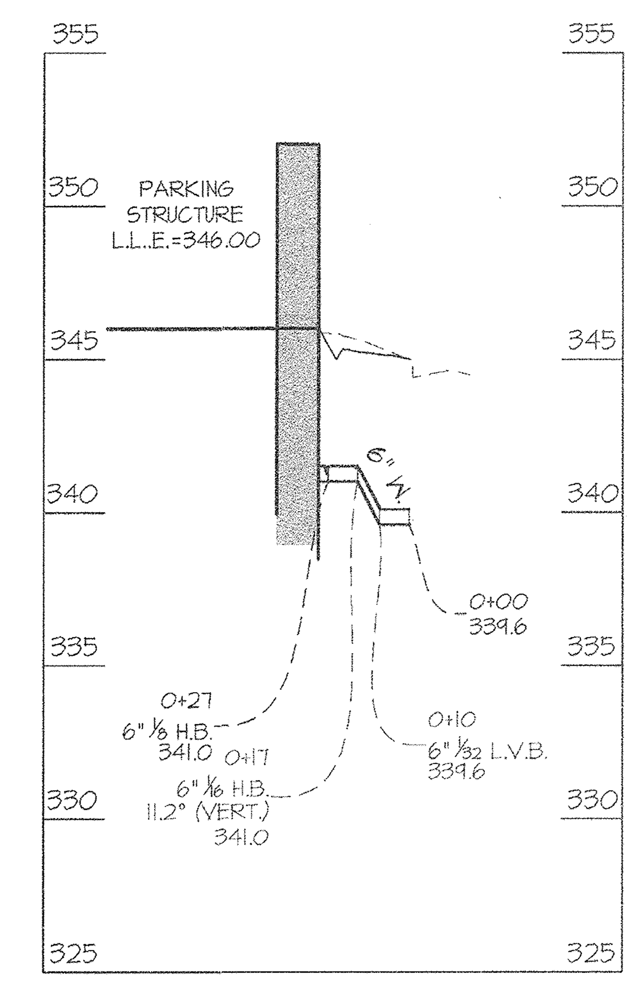

STORM DRAIN PROFILE
VERT. SCALE: 1" = 5'
HORIZ. SCALE: 1" = 50'



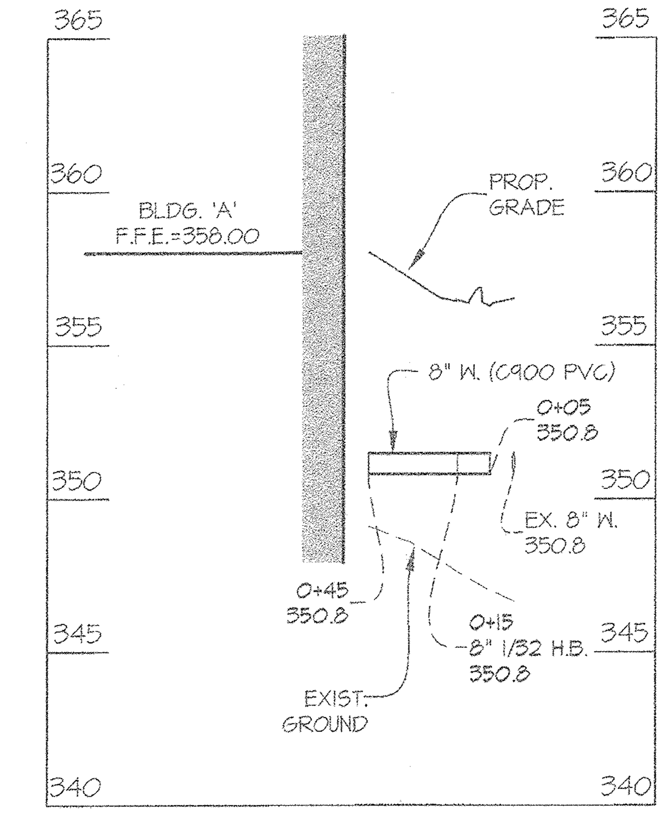

STORM DRAIN PROFILE
VERT. SCALE: 1" = 5'
HORIZ. SCALE: 1" = 50'



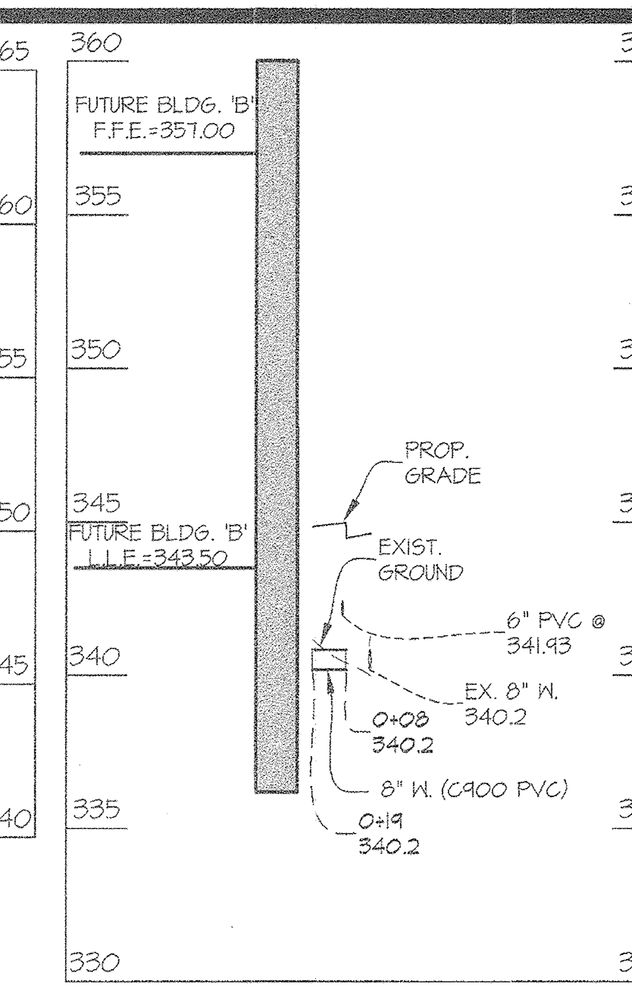

SEWERLINE BLDG. "B"
(SHC TO BLDG. "B")
VERT. SCALE: 1" = 5'
HORIZ. SCALE: 1" = 50'




WATER LINE-GARAGE
VERT. SCALE: 1" = 5'
HORIZ. SCALE: 1" = 50'




WATERLINE BLDG. "A"
(WHC TO BLDG. "A")
VERT. SCALE: 1" = 5'
HORIZ. SCALE: 1" = 50'

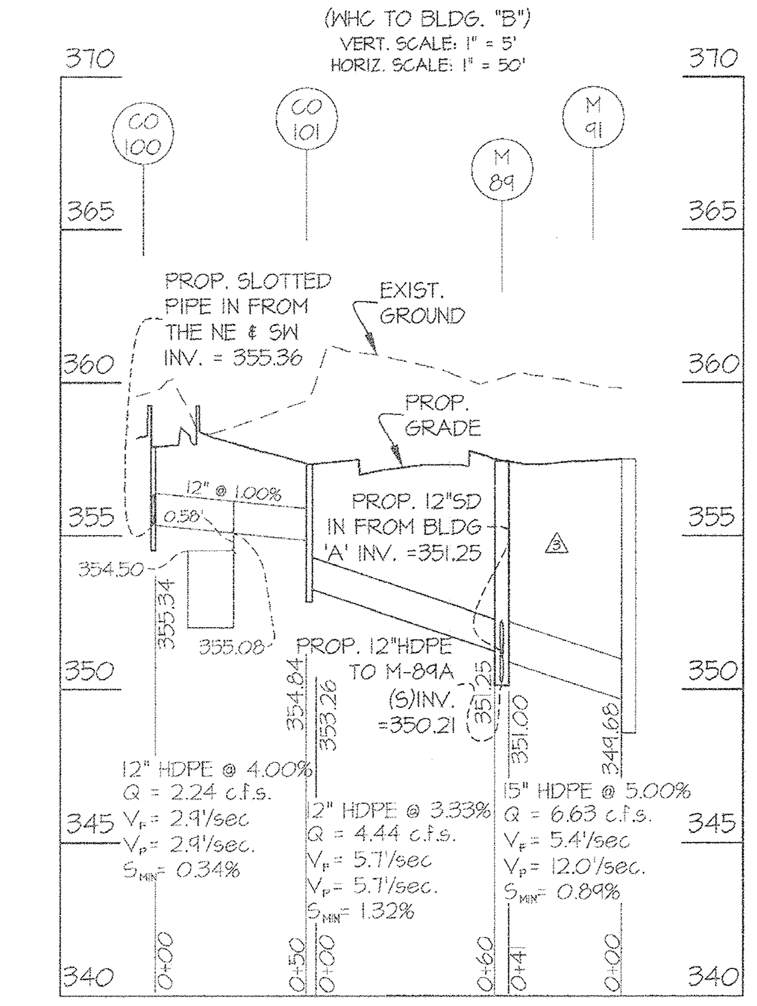



WATERLINE BLDG. "B"
(WHC TO BLDG. "B")
VERT. SCALE: 1" = 5'
HORIZ. SCALE: 1" = 50'

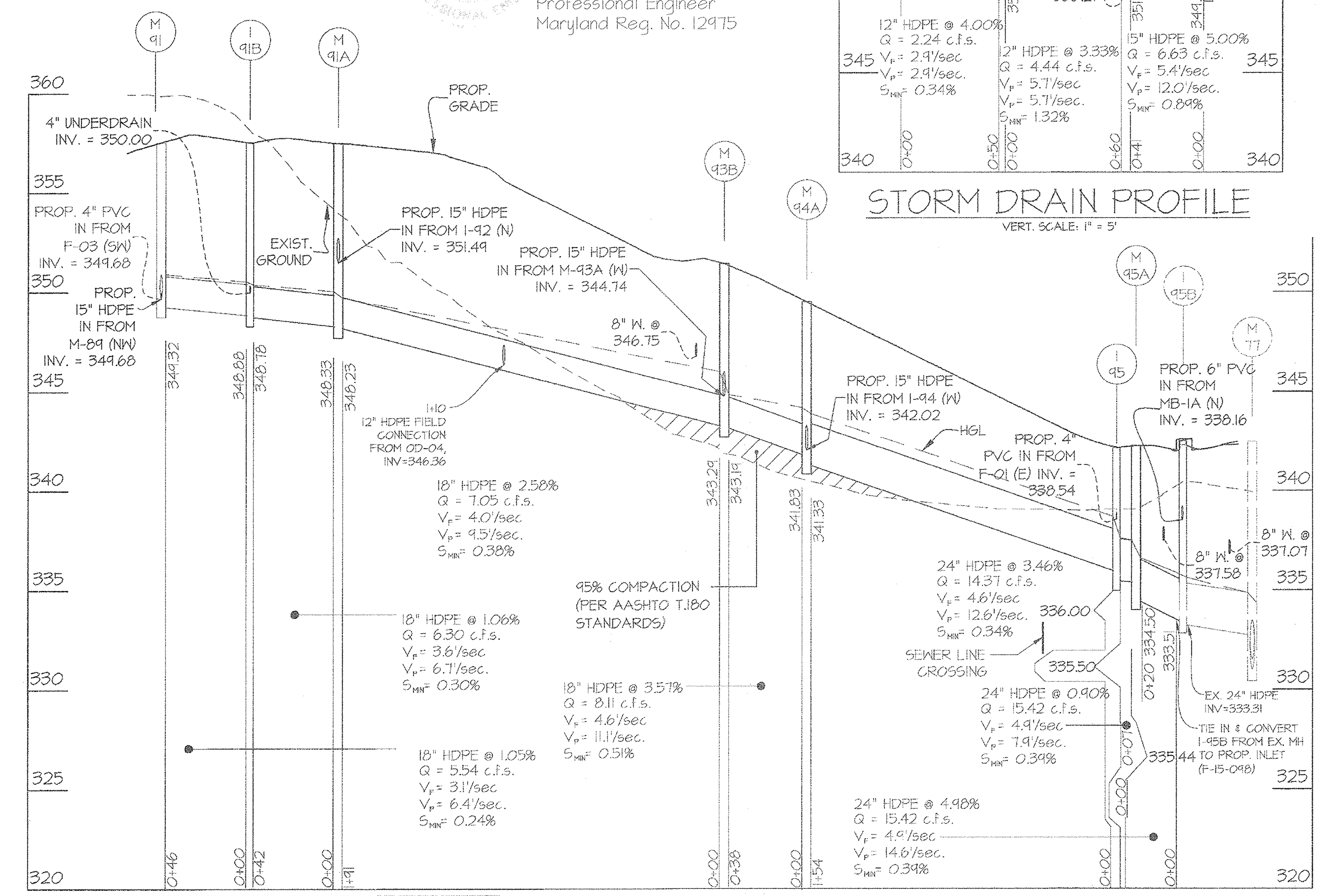
PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 12975, Expiration Date: May 26 2020.

11/12/18
Date

Carl K. Gutschick
Professional Engineer
Maryland Reg. No. 12975




STORM DRAIN PROFILE
VERT. SCALE: 1" = 5'




STORM DRAIN PROFILE
VERT. SCALE: 1" = 5'
HORIZ. SCALE: 1" = 50'

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

| PRIVATE WATER/SEWER QUANTITIES | | | | |
|---|---|---|---|---|
| ITEMS | QUANTITIES ESTIMATED | AS-BUILT | | |
| | | QUANTITIES | TYPE | MANUFACTURER/SUPPLIER |
| 4' MANHOLE | 2 EA. | | | |
| 8" WHC C900 DR18 PVC | 64 LF | | | |
| 6" SHC SDR 35 PVC | 269 LF | | | |
| 8" SHC SDR 35 PVC | 117 LF | | | |
| WAT - 8" 1/32 H.B. | 1 | | | |
| SEW - 6" WYE | 1 | | | |
| SEW - 6" TEE | 2 | | | |
| SEW - 6" 1/8HB | 4 | | | |

| STORM DRAIN PIPE SCHEDULE | | | |
|---|---|---|---|
| SIZE | TYPE | QUANTITY (l.f.) | REMARKS |
| 12" | HDPE | 255 | |
| 15" | HDPE | 175 | |
| 18" | HDPE | 320 | |
| 24" | HDPE | 260 | |

HDPE indicates High Density Polyethylene pipe, such as N-12 by ADS, or Hi-Q by Hancor or an approved equal. Trench bedding to be provided per Howard County Detail G 2.01, "Trench for P.V.C. pipe and H.D.P.E."

| STORM DRAIN FITTINGS CHART<br>PRIVATELY OWNED AND MAINTAINED<br>(PER AASHTO M278) | | |
|---|---|---|
| SIZE (in.) | TYPE | QUANTITY |
| 4" | TEE | 5 |
| 4" | 1/8 HB | 6 |
| 4" | 90° | 6 |
| 4" | 9/32 HB | 1 |
| 4" | 7/32 HB | 1 |
| 4" | 15/32 HB | 1 |
| 6" | TEE | 4 |
| 6" | 1/8 HB | 3 |
| 6" | 90° | 1 |

| OVERDRAIN & UNDERDRAIN S.D. PIPE SUMMARY TABLE<br>PRIVATELY OWNED AND MAINTAINED<br>(PER AASHTO M278) | | | |
|---|---|---|---|
| SIZE (in.) | TYPE | QUANTITY (L.F.) | REMARKS |
| 4" | SLOTTED PVC | 1782 | PERMEABLE PAVEMENT UNDERDRAIN |
| 4" | PVC | 100 | FILTERRA OUTFLOWS |
| 6" | SLOTTED PVC | 612 | MICRO-BIORETENTION UNDERDRAIN |
| 6" | PVC | 537 | CISTERN OUTFLOW AND MICRO-BIORETENTION |

⟨1⟩ COORDINATE POINT GIVEN IS TO THE CENTERLINE OF STRUCTURE AT THE FACE OF CURBS FOR INLETS AND TO THE CENTERLINE OF STRUCTURE FOR MANHOLES AND END SECTIONS.

⟨2⟩ TOP ELEVATION REFERS TO TOP OF SLAB AT TOP OF CURB FOR CURB INLETS AND FILTERRAS, TOP OF GRATE FOR YARD INLETS, TOP OF RIM FOR MANHOLES, RIM ELEVATION FOR NYLOPLAST DOMES, AND TOP OF WALL FOR END WALLS.

STORM DRAIN STRUCTURE SCHEDULE

| NO | TYPE | WIDTH (INSIDE) | TOP ELEVATION ⟨2⟩ PROPOSED UPPER | TOP ELEVATION PROPOSED LOWER | TOP ELEVATION AS-BUILT UPPER | TOP ELEVATION AS-BUILT LOWER | INVERT PROPOSED UPPER | INVERT PROPOSED LOWER | INVERT AS-BUILT UPPER | INVERT AS-BUILT LOWER | STD. DETAIL | LOCATIONS ⟨1⟩ | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I-90 | TYPE 'D' INLET PRECAST | 4'-0" | 342.00 | --- | | | 339.17 / 338.40 | 337.80 | 339.17 / 338.28 | 337.88 | HO.CO. D-4.10 | N 562139 E 1350140 | |
| M-90A | STANDARD MANHOLE | 4'-0" | 344.84 | --- | | | 338.43 / 337.68 | 337.54 | 338.50 / 337.80 | 337.58 | HO.CO. G-5.12 | N 562127 E 1350141 | |
| M-90B | STANDARD MANHOLE | 4'-0" | 343.54 | --- | | | 340.00 / 336.98 | 335.46 | 339.83 / 336.93 | 335.49 | HO.CO. G-5.12 | N 562129 E 1350197 | |
| I-94 | TYPE A-5 INLET | 2'-6" | 350.10 | 349.81 | | | 346.00 / 345.71 | 342.26 | | | HO.CO. D-4.01 | N 562316 E 1350363 | |
| M-94A | STANDARD MANHOLE | 4'-0" | 349.50 | --- | | | 342.02 / 341.83 | 341.33 | | | HO.CO. G-5.12 | N 562317 E 1350387 | |
| I-92 | S INLET | 2'-7.5" | 357.28 | --- | | | 353.78 | 352.86 | | | HO.CO. D-4.22 | N 562391 E 1350191 | |
| M-91A | STANDARD MANHOLE | 4'-0" | 357.49 | --- | | | 351.49 / 348.33 | 348.23 | | | HO.CO. G-5.12 | N 562376 E 1350190 | |
| I-93 | TYPE A-5 INLET | 3'-0" | 354.64 | 354.38 | | | 349.87 | 346.00 | | | HO.CO. D-4.02 | N 562421 E 1350356 | |
| M-93A | STANDARD MANHOLE | 4'-0" | 353.98 | --- | | | 345.46 | 345.36 | | | HO.CO. G-5.12 | N 562420 E 1350380 | |
| M-93B | STANDARD MANHOLE | 4'-0" | 351.42 | --- | | | 344.74 / 343.29 | 343.19 | | | HO.CO. G-5.12 | N 562359 E 1350384 | |
| I-95B | 5 FT COS INLET | 3'-0" | 342.49 | 342.49 | | | 338.16 / 333.51 | 333.31 | | | MD 374.63 | N 562147 E 1350374 | EX. STR., REPLACE TOP WITH INLET PIECE |
| M-95A | STANDARD MANHOLE | 4'-0" | 342.25 | --- | | | 335.44 | 334.50 | | | HO.CO. G-5.12 | N 562151 E 1350398 | |
| I-95 | TYPE 'S' COMBINATION INLET | 2'-7" | 342.63 | 342.63 | | | 338.54 / 336.00 | 335.50 | | | HO.CO. D-4.32 | N 562160 E 1350398 | |
| M-91 | STANDARD MANHOLE | 4'-0" | 357.52 | --- | | | 349.68 / 349.68 | 349.32 | | | HO.CO. D-4.10 | N 562374 E 1350100 | |
| OD-02 | 10" NYLOPLAST DOME | 0'-10" | 355.00 | --- | | | --- | 349.40 | | | --- | N 562328 E 1350343 | |
| OD-03 | 10" NYLOPLAST DOME | 0'-10" | 349.50 | --- | | | --- | 346.50 | | | --- | N 562208 E 1350242 | |
| OD-04 | 12" NYLOPLAST DOME | 1'-0" | 355.50 | --- | | | --- | 351.57 | | | --- | N 562341 E 1350261 | |
| OD-09 | 15" NYLOPLAST DOME | 1'-3" | 355.25 | --- | | | 351.42 | 347.80 | 351.11 | 347.76 | --- | N 562265 E 1350170 | |
| OD-10 | 24" NYLOPLAST DOME | 2' | 351.25 | --- | | | 347.42 / 341.00 | 343.75 | 347.09 / 346.79 | 343.49 | --- | N 562225 E 1350158 | |
| OD-11 | 30" NYLOPLAST DOME | 2'-6" | 347.25 | --- | | | 343.42 / 343.00 | 338.88 | 343.07 / 342.92 | 338.72 | --- | N 562189 E 1350148 | |
| I-91B | S INLET | 2'-7.5" | 357.54 | --- | | | 350.00 / 348.88 | 348.78 | | | HO.CO. D-4.22 | N 562383 E 1350146 | |
| M-89 | STANDARD MANHOLE | 4'-0" | 357.48 | --- | | | 351.25 / 351.25 | 351.00 / 350.21 | | | HO.CO. G-5.12 | N 562407 E 1350076 | |
| M-89A | STORMCEPTOR | 6'-0" | 356.55 | --- | | | 350.16 | 350.06 | | | RINKER 028 | N 562394 E 1350073 | |
| F-01 | 19' x 5' FILTERRA UNIT | 4'-0" | 343.49 | 342.79 | | | --- | 338.96 | | | FTSC 8' x 4' | N 562176 E 1350398 | MODIFIED SEDIMENTATION CHAMBER WITH 4" PVC OUTFLOW |
| F-02 | 21' x 7' FILTERRA UNIT | 6'-0" | 351.25 | 350.29 | | | --- | 346.21 | | | FTSC 10' x 6' | N 562333 E 1350364 | MODIFIED SEDIMENTATION CHAMBER WITH 4" PVC OUTFLOW |
| F-03 | 13.5' x 5' FILTERRA UNIT | 4'-0" | 355.13 | 354.56 | | △3 | --- | 350.65 | | | FTSC 6' x 4' | N 562387 E 1350039 | MODIFIED SEDIMENTATION CHAMBER WITH 4" PVC OUTFLOW |
| F-04 | 13' x 7' FILTERRA UNIT | 6'-0" | 355.30 | 354.80 | | | --- | 349.97 | | | FTSC 6' x 6' | N 562432 E 1350357 | MODIFIED SEDIMENTATION CHAMBER WITH 4" PVC OUTFLOW |
| CO-100 | 12" NYLOPLAST DRAIN | 1'-0" | 357.89 | --- | | | 355.36 | 355.34 | | | --- | N 562507 E 1350063 | CLEAN-OUT WITH SOLID COVER |
| CO-101 | 12" NYLOPLAST DRAIN | 1'-0" | 357.30 | --- | | | 354.84 | 353.26 | | | --- | N 562462 E 1350044 | CLEAN-OUT WITH SOLID COVER |
| CO-102 | 12" NYLOPLAST DRAIN | 1'-0" | 357.94 | --- | | | 355.23 | 355.13 | | | --- | N 562559 E 1350152 | CLEAN-OUT WITH SOLID COVER |
| CO-103 | 12" NYLOPLAST DRAIN | 1'-0" | 357.91 | --- | | | 355.56 | 355.46 | | | --- | N 562558 E 1350188 | CLEAN-OUT WITH SOLID COVER |

APPROVED
PLANNING BOARD OF HOWARD COUNTY
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16
Chief, Division of Land Development — Date 9-12-16
Chief, Development Engineering Division — Date 9-2-16

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

L:\CADD\DRAWINGS\11071\15019\PLANS BY GLW\SDP\15019sdp17 - Profiles-Sheet 19.dwg | DES. JH | DRN. JH | CHK. XXX

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 2016-06-27 | △3 REVISION TO SHEET NUMBERING; SD PROFILES; SD STRUCTURE TABLE | JH | NB |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975, EXPIRATION DATE: MAY 26, 2018
8/19/16

ASBUILTS

REVISED STORM DRAIN PROFILES & SCHEDULE TABLES

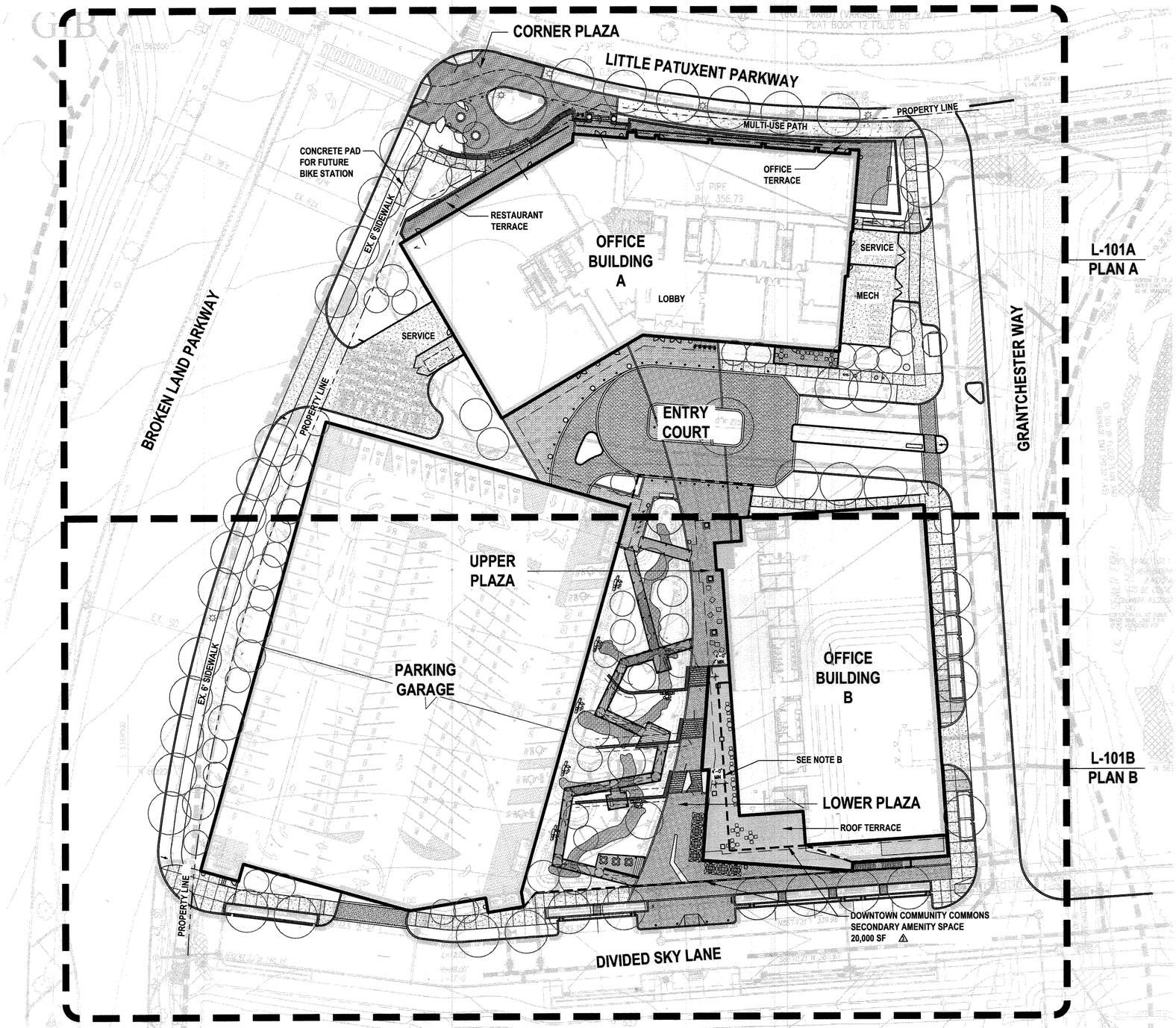
# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527) PLAT NO. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1" = 50' (H)<br>1" = 5' (V) | NT | 15019 |
| DATE<br>NOV., 2018<br>JUNE, 2016 | TAX MAP – GRID<br>36 – 01 | SHEET △3<br>19 OF 58 |

ASBUILT SHEET 7 OF 8

© GLW 2015

ASBUILTS SDP-15-068




NOTE A:
1. THIS PLAN WAS PREPARED ACCORDING TO THE ALTERNATIVE COMPLIANCE SECTION OF THE LANDSCAPE MANUAL. THE LANDSCAPE PLANS HAVE BEEN PREPARED BY A REGISTERED LANDSCAPE ARCHITECT AND ARE CERTIFIED TO MEET THE DESIGN INTENT OF THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES.

2. FINANCIAL SURETY FOR REQUIRED PLANTING HAS BEEN POSTED IN THE AMOUNT OF $13,770 FOR THE 10 SHADE TREES ($300 ea.), 36 ORNAMENTAL/EVERGREEN TREES ($150 ea.), AND 179 SHRUBS ($30 ea.) (PLEASE NOTE THAT SURETY WOULD BE FOR ALL TREES AND SHRUBS OUTSIDE OF THE BIORETENTION.)

3. FINANCIAL SURETY FOR TREES TO BE PLANTED IN THE BROKEN LAND PARKWAY AND LITTLE PATUXENT PARKWAY RIGHTS-OF-WAY WILL BE POSTED WITH THE COST ESTIMATE WITH THE DPW DEVELOPER'S AGREEMENT (20 STREET TREES @ $300 EACH).

4. 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 THE LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.

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

NOTE B: THERE SHALL BE A CONTINUOUS AND PREDICTABLE 4 FOOT MINIMUM CLEAR PEDESTRIAN ZONE ALONG THE TERRACE PATIO. FURNITURE IS TO BE BY FUTURE TENANT AND MAY VARY FROM CURRENT LAYOUT.

⚠ TOTAL DOWNTOWN COMMUNITY COMMONS FULL BUILD-OUT OF SITE PLAN: 20,000 SF

REF. F-15-098 FOR DIVIDED SKY LANE PLANS

CERTIFICATION NOTE:
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME

~~DEVELOPER'S/OWNER'S NAME~~

APPROVED
PLANNING BOARD OF HOWARD COUNTY
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16
Chief, Division of Land Development — Date 9-12-16
Chief, Development Engineering Division — Date 9-7-16

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

0' 15' 30' 60' 90'

N

L-101

DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |
| 11.17.2017 | ⚠ Revise sheet Note. | gt | mtt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND — NATHANIEL ALAN LEWIS — REG. NO. 21401 — LANDSCAPE ARCHITECT

REVISED LANDSCAPE KEY PLAN

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=30' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 20 OF 63 |

SDP-15-068

PERMANENT NEIGHBORHOOD IDENTIFICATION SIGNAGE:
PERMANENT NEIGHBORHOOD IDENTIFICATION SIGNAGE IS PROPOSED TO BE LOCATED OFF OF THE PARCEL A SITE TO A POINT WITHIN THE BROKEN LAND PARKWAY RIGHT-OF-WAY.

STATE OF MARYLAND — MICHAEL JAMES TROSEN — No. 21708 — REGISTERED PROFESSIONAL ENGINEER

Professional Certification

(By GLW For Revision #9)
I hereby certify that these plans were prepared or approved by me, and that I am a duly licensed Professional Engineer under the Laws of the State of Maryland,

License No.: 14991
Expiration Date: May 21, 2020

LITTLE PATUXENT PARKWAY
BROKEN LAND PARKWAY
GRANTCHESTER WAY
PROPERTY LINE
OFFICE BUILDING A
LOBBY
SERVICE
MECH
TERRACE
PLANTING
ENTRY COURT
PARKING GARAGE
OPTIONAL GATE
RESTAURANT TERRACE
STANCHION BARRICADE
CONCRETE PAD FOR FUTURE BIKE SHARE STATION
EXISTING 6' SIDEWALK
STORM DRAIN
LIMIT OF MULTI-USE PATH
10' WIDE POROUS CONCRETE MULTI-USE PATH, REF. 9/L-201
8" CONCRETE BAND
8" CONC. BAND/ FLUSH CURB TYP.
BIKE RACK, TYP. OF 2 REF. 3/L-205
BIKE RACK, TYP. OF 5 REF. 3/L-206
OFFICE TERRACE
EXTENT OF BUILDING ABOVE
GROUND FACE CMU BLOCK SCREEN WALL
DRY STORAGE, SEE NOTE A
COOLER, SEE NOTE A
SCREEN WALL, REF. ARCH
FREEZER, SEE NOTE B
COMPACTOR
12" CONC. BAND/ FLUSH CURB
8" CONC. BAND/ FLUSH CURB TYP.
BUILDING MOUNTED SIGN, REF. ARCH
VEH. DIRECTIONAL SIGN, REF. 4/L-206
FILTERRA, REF. CIVIL
12" CONC. BAND AT CROSSWALK, TYP.
42" HT. STAINLESS STEEL RAILING, REF. DETAIL 3/L-209
MONUMENT SIGN
PED. DIRECTIONAL SIGN, REF. 4/L-206
RAMP, REF. 2/L-214
COVERED WALKWAY/ CANOPY
VEHICULAR GARAGE ENTRANCE
PEDESTRIAN GARAGE ENTRANCE
8" FLUSH CURB
8" CONCRETE BAND/ FLUSH CURB, TYP.
HANDRAIL, REF. 3/L-214
HANDRAIL, REF. 4/L-214
MATCHLINE, REF. L-101B

⚠ NOTE A: STORAGE UNITS TO BE ACCESSED DIRECTLY FROM INSIDE OF BUILDING

NOTE B: STORAGE UNIT TO BE ACCESSED FROM EXTERIOR SERVICE AREA

## MATERIALS LEGEND

1 — 2 / L-201 — CONCRETE PAVING - PEDESTRIAN SECTION
COLOR: STANDARD GREY
FINISH: LIGHT SANDBLAST, MEDIUM BROOM FINISH

2 — CONCRETE UNIT PAVER - PEDESTRIAN SECTION

2A — 4 / L-201 — MANUFACTURER: HANOVER ARCHITECTURAL PRODUCTS
STYLE: PERMEABLE 3-1/4" X 18"
COLOR: MATRIX #M3070, TUDOR FINISH PATTERN: RUNNING BOND

2B — 6 / L-201 — MANUFACTURER: HANOVER ARCHITECTURAL PRODUCTS
STYLE: PLANKSTONE 6" X 18" X 2"
COLOR: MATRIX #M3070, TUDOR FINISH PATTERN: RUNNING BOND

3 — 8 / L-201 — CONCRETE UNIT PAVER - VEHICULAR SECTION

3A — MANUFACTURER: HANOVER
STYLE: PREST PAVER 4" X 8" X 3 1/4"
COLOR: MATRIX #M3070, TUDOR FINISH PATTERN: HERRINGBONE

3B — MANUFACTURER: HANOVER
STYLE: PREST PAVER 4" X 8" X 3 1/4"
COLOR: NATURAL, TUDOR FINISH PATTERN: HERRINGBONE

4 — 1 / L-202 — STONE STAIRS
SUPPLIER: LUCK STONE
MATERIAL: CLEARVIEW, SANDBLAST FINISH

~~5 — TERRACED SEATING - STONE BLOCK~~
~~SUPPLIER: LUCK STONE~~
~~MATERIAL: CLEARVIEW, REF. DETAIL FOR FINISH~~

6 — MICRO-BIORETENTION (MBR)
REF. CIVIL

~~7 — MICRO-BIORETENTION PLANTER~~
~~VENEER: LUCKSTONE - MASTERCUT NATURAL VENEER STONE - CLEARVIEW~~
~~WALL CAP: LUCKSTONE - CLEARVIEW - SAWN ALL FACES~~

8 — WALL - THIN STONE VENEER
VENEER: LUCKSTONE - MASTERCUT NATURAL VENEER STONE - CLEARVIEW
WALL CAP: LUCKSTONE - CLEARVIEW - SAWN ALL FACES

8A — 1 / L-203 — WEIR WALL

8B — 1 / L-204 — RESTAURANT TERRACE WALL

8C — 2 / L-204 — OFFICE TERRACE WALL

8D — 3 / L-204 — ENTRANCE PIER

9 — 2 / L-203 — SEAT WALL - STONE BLOCK
SUPPLIER: LUCK STONE
FLAG STONE STEPPING STONES PER PLAN
MATERIAL: CLEARVIEW

~~10 — BRIDGE~~
~~METAL GRATE~~

~~10A — AT MICRO-BIORETENTION~~
~~MANUFACTURER: TBD~~
~~SIZE: TBD~~

~~10B — AT STORMWATER PLANTER~~
~~MANUFACTURER: TBD~~
~~SIZE: TBD~~

11 — ORNAMENTAL POT
MATERIAL: PRECAST

11A — CIRCULAR
36" HT.

~~11B — SQUARE~~
~~42" HT.~~

11C — BOWL
24" HT.

12 — ML18 / L-410 — ILLUMINATED BOLLARD
REF. LIGHTING PLAN L-401A

13 — BENCH

13A — 2 / L-206 — MANUFACTURER: LANDSCAPE FORMS
STYLE: NEOLIVIANO

13B — CUSTOM WOOD BENCH
FABRICATED FROM TREE ON SITE

14 — RIVER ROCK CHANNEL

14A — RIVER ROCK MIX:
50% - 2" RIVER ROCK
50% - 4"-6" RIVER ROCK GREY

~~14B — ACCENT BOULDERS~~
~~SIZES VARIED WITHIN THE FOLLOWING RANGE:~~
~~MIN. 42"x42"x24" MAX. 36"x48"x24"~~

15 — 1 / L-205 — STREET STORMWATER PLANTER

16 — 1 / L-206 — WASTE/RECYCLING RECEPTACLE

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — 1-25-18 Date

Chief, Division of Land Development — 1-25-18 Date

Chief, Development Engineering Division — 1-4-18 Date

CERTIFICATION NOTE:
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

DEVELOPER'S/OWNER'S NAME
WILLIAM ROWE
THE HOWARD RESEARCH AND DEV. CORP.

DEVELOPER'S/OWNER'S NAME

NOTE: REFERENCE CIVIL DRAWINGS FOR MICRO-BIORETENTION DETAILS & ADA RAMPS

N

0' 10' 20' 40' 60'

L-101A

DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 1/15/2016 | ⚠ REVISION TO WALKWAY | JH | NB |
| 6/27/2016 | ⚠ REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |
| 6/05/2017 | ⚠ ADDITIONAL SCREEN WALL & STORAGE UNITS AT BLDG A SERVICE AREA | MM | AD |
| 9/02/2017 | ⚠ ADDITIONAL DOOR & SIDEWALK CONNECTION AT BLDG 'A' | GT | JMT |
| 11/17/2017 | ⚠ REVISIONS TO BUILDING B | MM | AD |
| 10-26-2018 | ⚠ ADDED SIDEWALK, RESTAURANT TERRACE, AND SEATING AREA | SH | DDC |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND — GARY L. WILLIAMS — No. 21708 — REGISTERED LANDSCAPE ARCHITECT

REVISED HARDSCAPE PLAN A

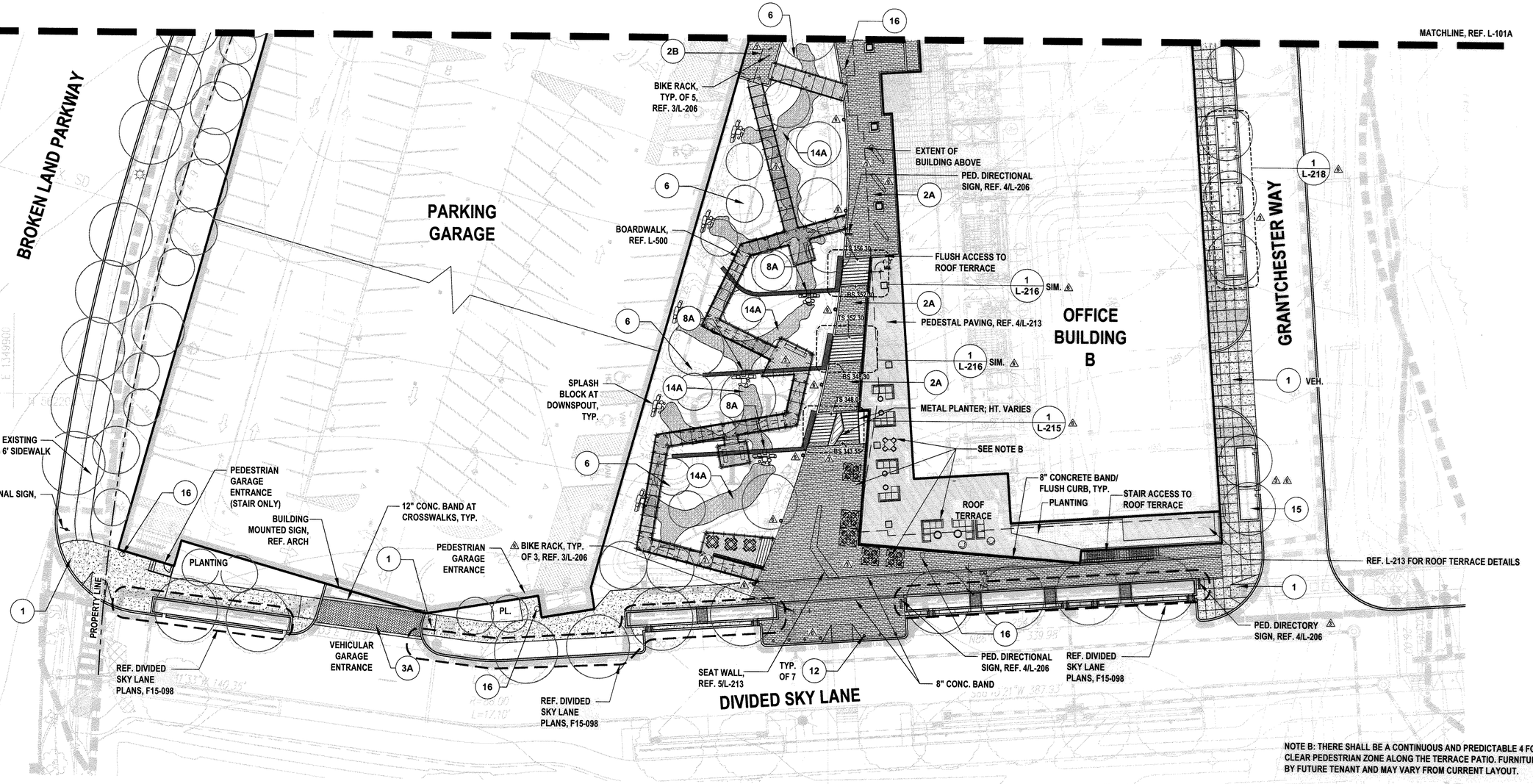
# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E

MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=20' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| NOV., 2017 | 36 - 01 | 21 OF 63 |

SDP-15-068




NOTE B: THERE SHALL BE A CONTINUOUS AND PREDICTABLE 4 FOOT MINIMUM CLEAR PEDESTRIAN ZONE ALONG THE TERRACE PATIO. FURNITURE IS TO BE BY FUTURE TENANT AND MAY VARY FROM CURRENT LAYOUT.

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 1-25-18
Chief, Division of Land Development — Date 1-25-18
Chief, Development Engineering Division — Date 1.4.18

## MATERIALS LEGEND

1 — 2 / L-201 — CONCRETE PAVING - PEDESTRIAN SECTION
COLOR: STANDARD GREY
FINISH: LIGHT SANDBLAST, MEDIUM BROOM FINISH

2 — CONCRETE UNIT PAVER - PEDESTRIAN SECTION

2A — 4 / L-201 — MANUFACTURER: HANOVER ARCHITECTURAL PRODUCTS
STYLE: PERMEABLE 3-1/4" X 18"
COLOR: MATRIX #M3070, TUDOR FINISH PATTERN: RUNNING BOND

2B — 6 / L-201 — MANUFACTURER: HANOVER ARCHITECTURAL PRODUCTS
STYLE: PLANKSTONE 6" X 18" X 2"
COLOR: MATRIX #M3070, TUDOR FINISH PATTERN: RUNNING BOND

3 — 8 / L-201 — CONCRETE UNIT PAVER - VEHICULAR SECTION

3A — MANUFACTURER: HANOVER
STYLE: PREST PAVER 4" X 8" X 3 1/4"
COLOR: MATRIX #M3070, TUDOR FINISH PATTERN: HERRINGBONE

3B — MANUFACTURER: HANOVER
STYLE: PREST PAVER 4" X 8" X 3 1/4"
COLOR: NATURAL, TUDOR FINISH PATTERN: HERRINGBONE

4 — 1 / L-202 — STONE STAIRS
SUPPLIER: LUCK STONE
MATERIAL: CLEARVIEW, SANDBLAST FINISH

5 — ~~TERRACED SEATING - STONE BLOCK~~
~~SUPPLIER: LUCK STONE~~
~~MATERIAL: CLEARVIEW, REF. DETAIL FOR FINISH~~

6 — MICRO-BIORETENTION (MBR)
REF. CIVIL

7 — ~~MICRO-BIORETENTION PLANTER~~
~~VENEER: LUCKSTONE - MASTERCUT NATURAL VENEER STONE - CLEARVIEW~~
~~WALL CAP: LUCKSTONE - CLEARVIEW - SAWN ALL FACES~~

8 — WALL - THIN STONE VENEER
VENEER: LUCKSTONE - MASTERCUT NATURAL VENEER STONE - CLEARVIEW
WALL CAP: LUCKSTONE - CLEARVIEW - SAWN ALL FACES

8A — 1 / L-203 — WEIR WALL

8B — 1 / L-204 — RESTAURANT TERRACE WALL

8C — 2 / L-204 — OFFICE TERRACE WALL

8D — 3 / L-204 — ENTRANCE PIER

9 — 2 / L-203 — SEAT WALL - STONE BLOCK
SUPPLIER: LUCK STONE
FLAG STONE STEPPING STONES PER PLAN
MATERIAL: CLEARVIEW

10 — ~~BRIDGE~~
~~METAL GRATE~~

10A — ~~AT MICRO-BIORETENTION~~
~~MANUFACTURER: TBD~~
~~SIZE: TBD~~

10B — ~~AT STORMWATER PLANTER~~
~~MANUFACTURER: TBD~~
~~SIZE: TBD~~

11 — ORNAMENTAL POT
MATERIAL: PRECAST

11A — CIRCULAR
36" HT.

11B — ~~SQUARE~~
~~42" HT.~~

11C — BOWL
24" HT.

12 — ML18 / L-410 — ILLUMINATED BOLLARD
REF. LIGHTING PLAN L-401A

13 — BENCH

13A — 2 / L-206 — MANUFACTURER: LANDSCAPE FORMS
STYLE: NEOLIVIANO

13B — CUSTOM WOOD BENCH
FABRICATED FROM TREE ON SITE

14 — RIVER ROCK CHANNEL

14A — RIVER ROCK MIX:
50% - 2" RIVER ROCK
50% - 4"-6" RIVER ROCK GREY

14B — ~~ACCENT BOULDERS~~
~~SIZES VARIED WITHIN THE FOLLOWING RANGE:~~
~~MIN. 42"x12"x24" MAX. 36"x48"x84"~~

15 — 1 / L-205 — STREET STORMWATER PLANTER

16 — 1 / L-206 — WASTE/RECYCLING RECEPTACLE

NOTE: REFERENCE CIVIL DRAWINGS FOR MICRO-BIORETENTION DETAILS & ADA RAMPS

0' 10' 20' 40' 60'

N

**CERTIFICATION NOTE:**
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

DEVELOPER'S/OWNER'S NAME
William Bowe
The Howard Research and Dev. Corp.
DEVELOPER'S/OWNER'S NAME


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |
| 11/17/2017 | ⚠ REVISIONS TO BUILDING B | MM | AD |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

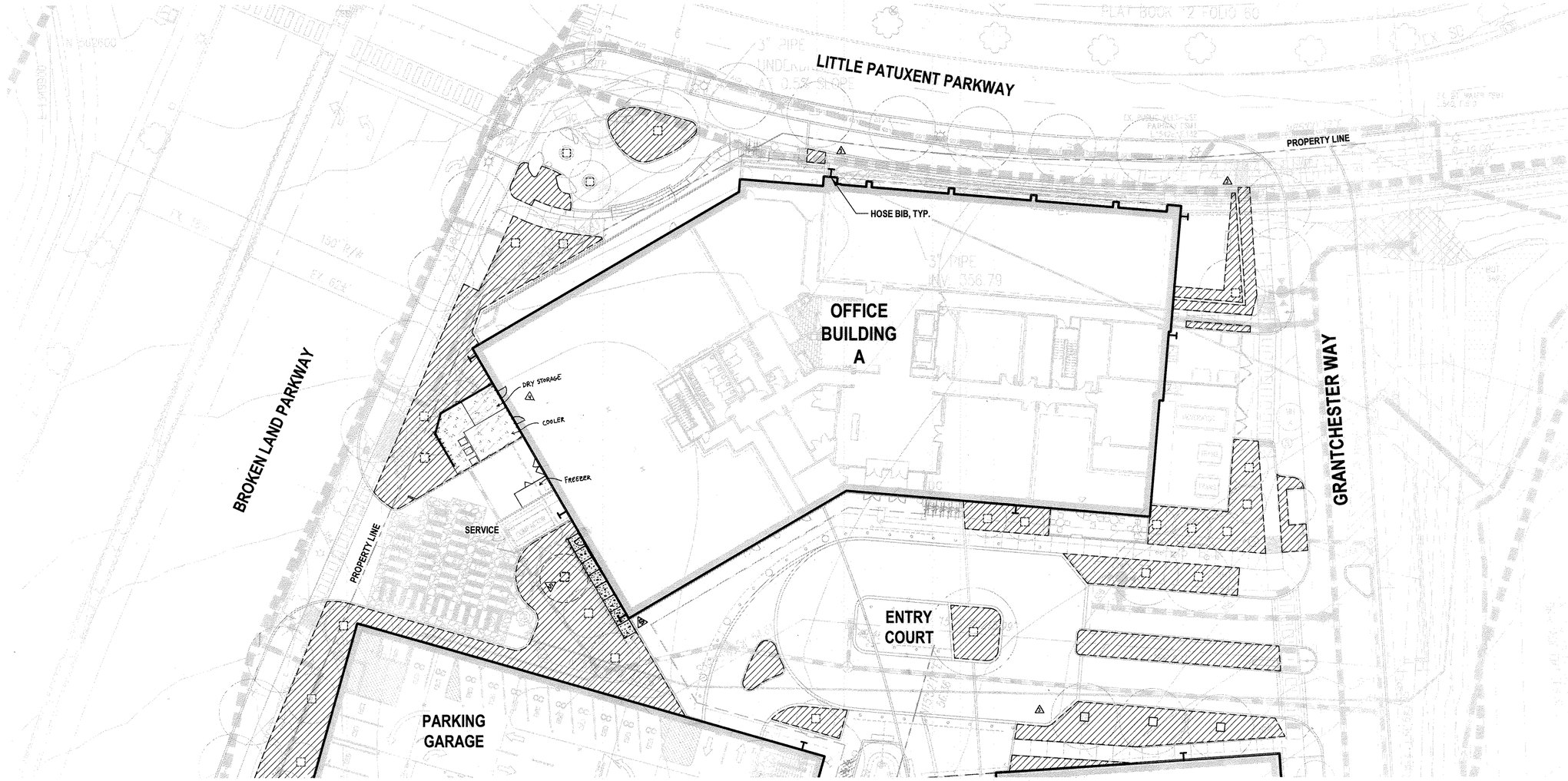
REVISED HARDSCAPE PLAN B

# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=20' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| NOV., 2017 | 36 - 01 | 22 OF 63 |

L-101B

SDP-15-068




PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9-2-16

Chief, Development Engineering Division — Date 9.2.16

## IRRIGATION LEGEND

ZONE 1 : SUBTERRANEAN DRIP IRRIGATION

ZONE 2 : TREE BUBBLER IRRIGATION [ 2 BUBBLERS PER TREE]

HOSE BIB

THIS PLAN IS SCHEMATIC ONLY. DESIGN OF IRRIGATION SYSTEM BY OTHERS. AREAS TO BE IRRIGATED WITH NON-POTABLE WATER.

**LANDSCAPE IRRIGATION**

ZONE 1 - SUBTERRANEAN DRIP IRRIGATION ON SEPARATE VALVE(S)
ZONE 2 - POP UP FLOOD BUBBLERS - FOR TREES - ON SEPARATE VALVE(S)

NOTES:
- THE EXTENT OF THE LANDSCAPE WILL BE IRRIGATED USING A HIGH-EFFICIENCY AUTOMATIC IRRIGATION SYSTEM TO MEET LEED-NC 2009 WE C1, OPERATED BY CONTROLLER(S), LOCATION TO BE APPROVED BY LANDSCAPE ARCHITECT.

- FLOW CONTROL WILL BE ADDRESSED BY THE USE OF A FLOW SENSOR AND MASTER VALVE. WATER USAGE WILL BE MANAGED THROUGH THE CORRECT VALVING OF ZONES 1-2 AND PROPER USE OF IRRIGATION DRIP LINES AND BUBBLERS.

- DRIP TUBING SHALL BE INSTALLED SO THAT EMITTERS AT LEAST MEET MANUFACTURER'S REQUIREMENTS FOR SPACING AND FLOW BASED ON PLANT TYPE, SOIL CONDITIONS, ETC. IF NECESSARY, CONTRACTOR SHALL ADJUST SPACING TIGHTER TO ENSURE THAT ADEQUATE WETTING PATTERN OCCURS THROUGHOUT SOIL (ALL SOIL MUST GET WET).

- FINAL IRRIGATION DESIGN AND EQUIPMENT LOCATION TO BE APPROVED BY LANDSCAPE ARCHITECT, INCLUDING: BACKFLOW PREVENTOR, IRRIGATION CONTROLLER, VALVE BOXES, RAIN SENSOR, HOSE BIBS, ETC.

- IRRIGATION CONTROLLER TO BE LOCATED IN MECHANICAL ROOM AS APPROVED BY LANDSCAPE ARCHITECT.

- ALL VALVE BOXES TO BE LOCATED IN PLANTING AREAS AS APPROVED BY LANDSCAPE ARCHITECT.

- CONTRACTOR TO ACCOMMODATE IRRIGATION LATERALS AND CONDUIT THROUGH SLEEVING IN PAVING, WALLS, AND STAIRS. COORDINATE AS NEEDED.

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME
~~DEVELOPER'S/OWNER'S NAME~~

N

0' 10' 20' 40' 60'

**L-110A**

**DESIGN**COLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |
| 6/05/2017 | ⚠ ADDITIONAL SCREEN WALL + STORAGE UNITS AT BLDG A SERVICE AREA | JH | AP |
| 9/01/2017 | ⚠ Additional door; sidewalk connection at Bldg 'A' | gt | mjt |
| 11.17.2017 | ⚠ Revise sheet Nos. | gt. | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

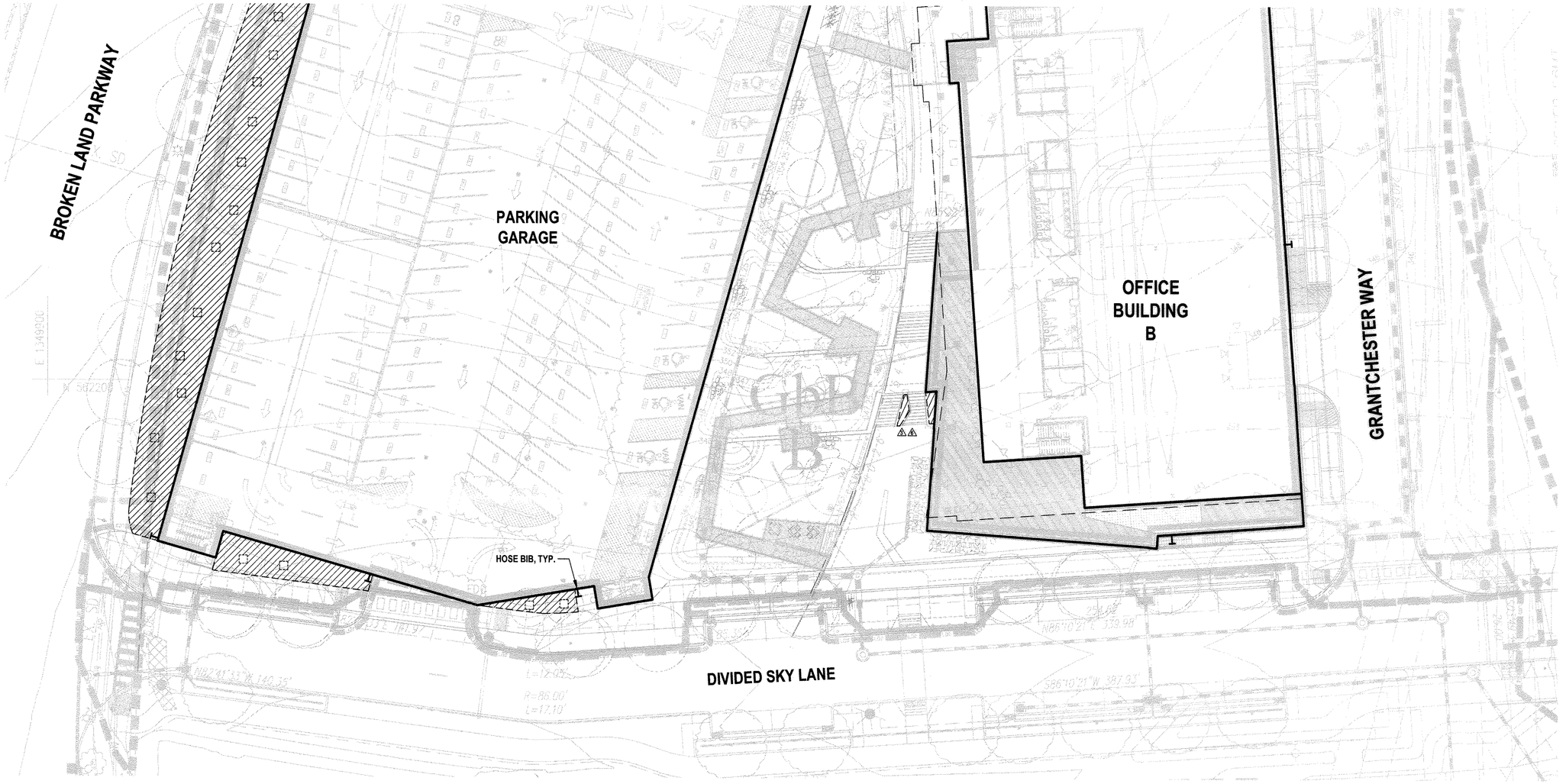
STATE OF MARYLAND — MICHAEL ALAN PHILLIPS — No. 1900 — LANDSCAPE ARCHITECT

REVISED IRRIGATION PLAN A

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=20' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 23 OF 63 |

SDP-15-068




PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 1-25-18

Chief, Division of Land Development — Date 1-25-18

Chief, Development Engineering Division — Date 1.4.18

## IRRIGATION LEGEND

ZONE 1 : SUBTERRANEAN DRIP IRRIGATION

ZONE 2 : TREE BUBBLER IRRIGATION [ 2 BUBBLERS PER TREE]

HOSE BIB

THIS PLAN IS SCHEMATIC ONLY. DESIGN OF IRRIGATION SYSTEM BY OTHERS. AREAS TO BE IRRIGATED WITH NON-POTABLE WATER.

**LANDSCAPE IRRIGATION**

ZONE 1 - SUBTERRANEAN DRIP IRRIGATION ON SEPARATE VALVE(S)
ZONE 2 - POP UP FLOOD BUBBLERS - FOR TREES - ON SEPARATE VALVE(S)

NOTES:
- THE EXTENT OF THE LANDSCAPE WILL BE IRRIGATED USING A HIGH-EFFICIENCY AUTOMATIC IRRIGATION SYSTEM TO MEET LEED-NC 2009 WE C1, OPERATED BY CONTROLLER(S), LOCATION TO BE APPROVED BY LANDSCAPE ARCHITECT.

- FLOW CONTROL WILL BE ADDRESSED BY THE USE OF A FLOW SENSOR AND MASTER VALVE. WATER USAGE WILL BE MANAGED THROUGH THE CORRECT VALVING OF ZONES 1-2 AND PROPER USE OF IRRIGATION DRIP LINES AND BUBBLERS.

- DRIP TUBING SHALL BE INSTALLED SO THAT EMITTERS AT LEAST MEET MANUFACTURER'S REQUIREMENTS FOR SPACING AND FLOW BASED ON PLANT TYPE, SOIL CONDITIONS, ETC. IF NECESSARY, CONTRACTOR SHALL ADJUST SPACING TIGHTER TO ENSURE THAT ADEQUATE WETTING PATTERN OCCURS THROUGHOUT SOIL (ALL SOIL MUST GET WET).

- FINAL IRRIGATION DESIGN AND EQUIPMENT LOCATION TO BE APPROVED BY LANDSCAPE ARCHITECT, INCLUDING: BACKFLOW PREVENTOR, IRRIGATION CONTROLLER, VALVE BOXES, RAIN SENSOR, HOSE BIBS, ETC.

- IRRIGATION CONTROLLER TO BE LOCATED IN MECHANICAL ROOM AS APPROVED BY LANDSCAPE ARCHITECT.

- ALL VALVE BOXES TO BE LOCATED IN PLANTING AREAS AS APPROVED BY LANDSCAPE ARCHITECT.

- CONTRACTOR TO ACCOMMODATE IRRIGATION LATERALS AND CONDUIT THROUGH SLEEVING IN PAVING, WALLS, AND STAIRS. COORDINATE AS NEEDED.

**CERTIFICATION NOTE:**
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

**DEVELOPER'S/OWNER'S NAME**
WILLIAM LOWE
THE HOWARD RESEARCH AND DEV. CORP.

**DEVELOPER'S/OWNER'S NAME**

0' 10' 20' 40' 60'

N

**L-110B**

DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |
| 11/17/2017 | ⚠ REVISIONS TO BUILDING B | MM | AD |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND — MATTHEW D. STORM — LANDSCAPE ARCHITECT

REVISED IRRIGATION PLAN B

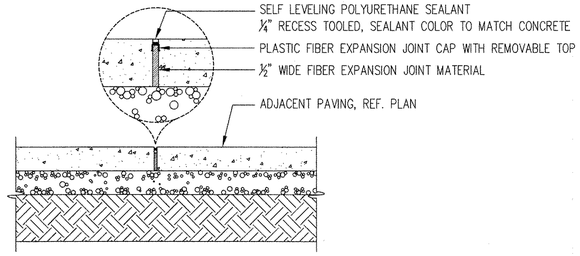
# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E

MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566

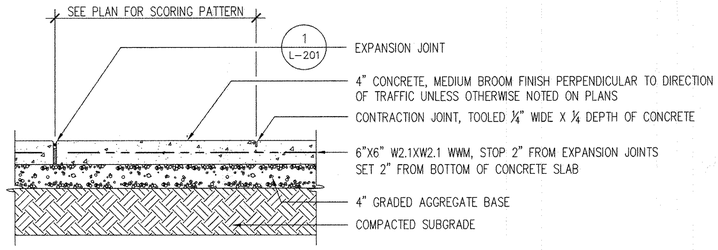
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=20' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| NOV., 2017 | 36 - 01 | 24 OF 63 |

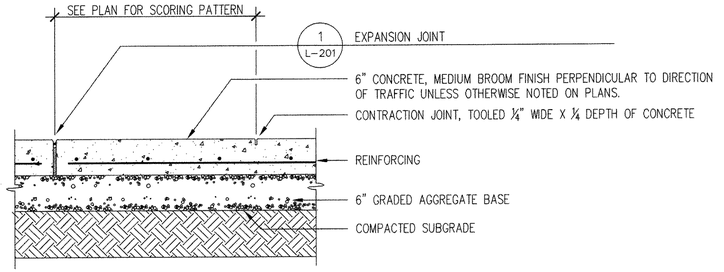
SDP-15-068



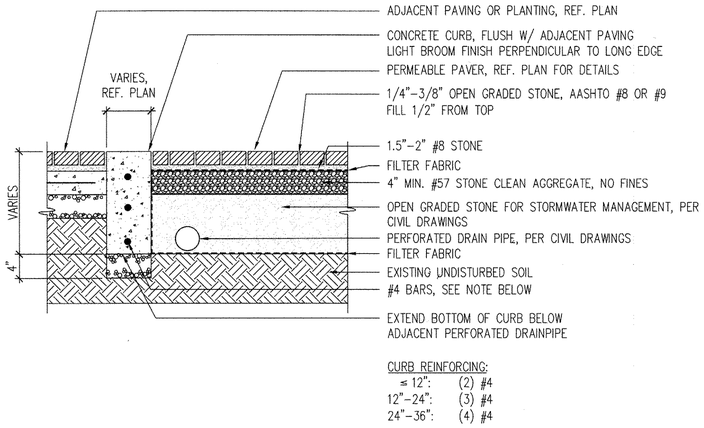

## 1 EXPANSION JOINT - CONCRETE
1" = 1'-0"




## 2 CONCRETE PAVING - PED. SECTION
1" = 1'-0"

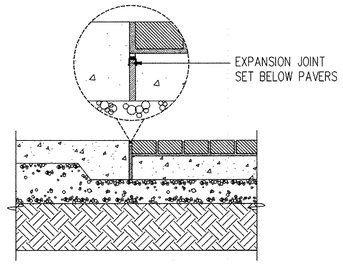



## 3 CONCRETE PAVING - VEH. SECTION
1" = 1'-0"

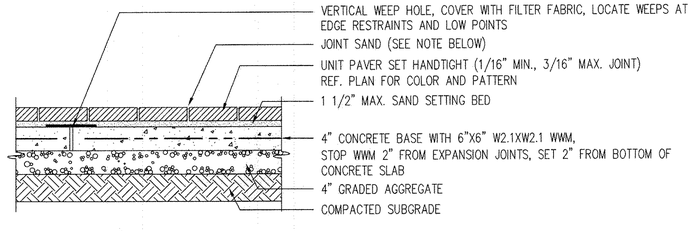



CURB REINFORCING:
- ≤ 12": (2) #4
- 12"-24": (3) #4
- 24"-36": (4) #4

## 4 UNIT PAVER (PERMEABLE) - PED. SECTION
1" = 1'-0"

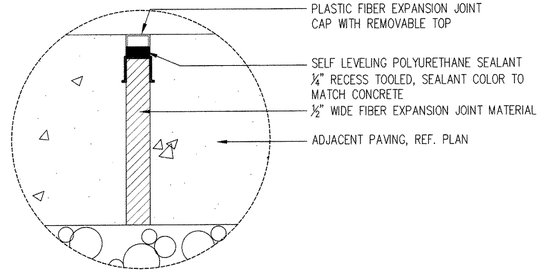



## 5 EXPANSION JOINT - PAVERS
1" = 1'-0"

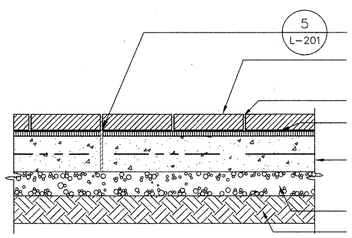



NOTE:
* SLOPE PAVERS 1/4" PER FOOT MIN. FOR DRAINAGE
* EXTEND BASE 4" BEYOND LIMITS OF PAVERS
* JOINT SAND: APPLY SAND, SWEEP JOINTS, REMOVE LARGE SAND PARTICLES FROM SURFACE, REPEAT PROCESS 3 TIMES MIN.

## 6 UNIT PAVER (IMPERVIOUS) - PED. SECTION
1" = 1'-0"

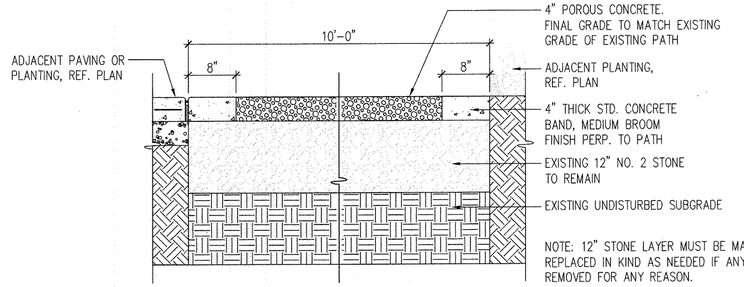



## 7 EXPANSION JOINT - ENLARGEMENT
1" = 1'-0"




NOTE:
* SLOPE PAVERS 1/4" PER FOOT MIN. FOR DRAINAGE
* EXTEND BASE 4" BEYOND LIMITS OF PAVERS
* JOINT SAND: APPLY SAND, SWEEP JOINTS, REMOVE LARGE SAND PARTICLES FROM SURFACE, REPEAT PROCESS 3 TIMES MIN.

## 8 UNIT PAVER - VEH. SECTION
1" = 1'-0"




NOTE: 12" STONE LAYER MUST BE MAINTAINED & REPLACED IN KIND AS NEEDED IF ANY STONE IS REMOVED FOR ANY REASON.

EXISTING UNDERDRAIN/OVERDRAIN DAMAGED BY THE PATH RECONSTRUCTION MUST BE REPLACED IN KIND

## 9 POROUS CONCRETE - MULTI-USE PATH
1" = 1'-0"

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME

By: ~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** October 15, 2015

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date: 12-18-15

Chief, Division of Land Development — Date: 12-17-15

Chief, Bureau of Engineering, Division — Date: 12.15.15


**DESIGN**COLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 11.17.2017 | A Revise sheet Nos. | gt | mlt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

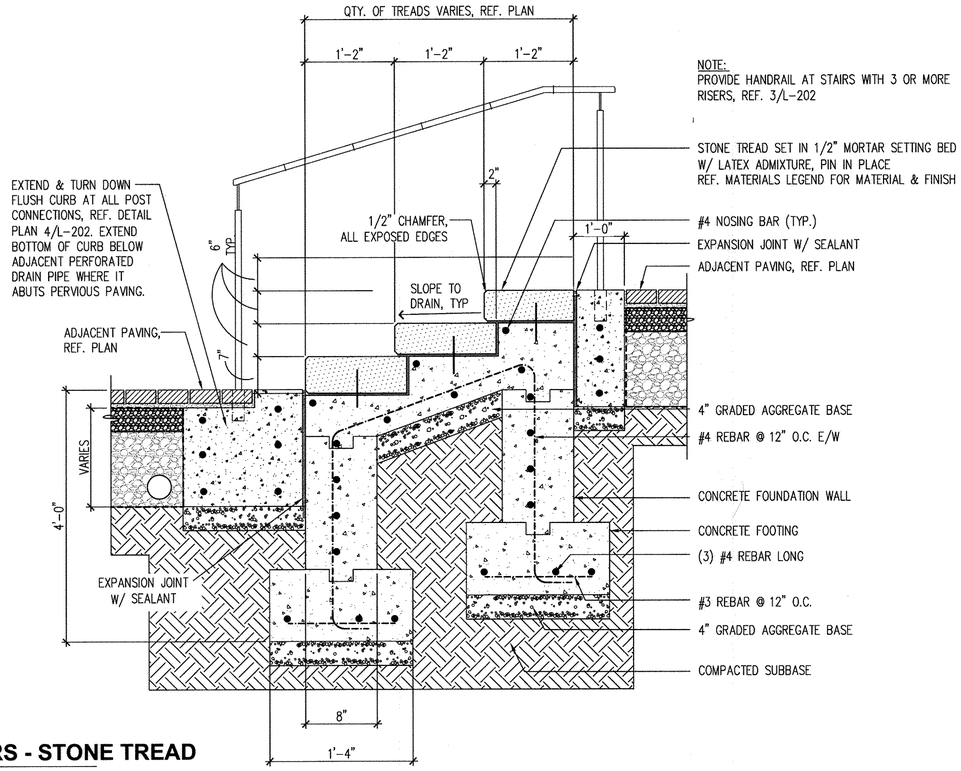
HARDSCAPE DETAILS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| NOV., 2015 | 36 - 01 | 25 OF 63 |

L-201

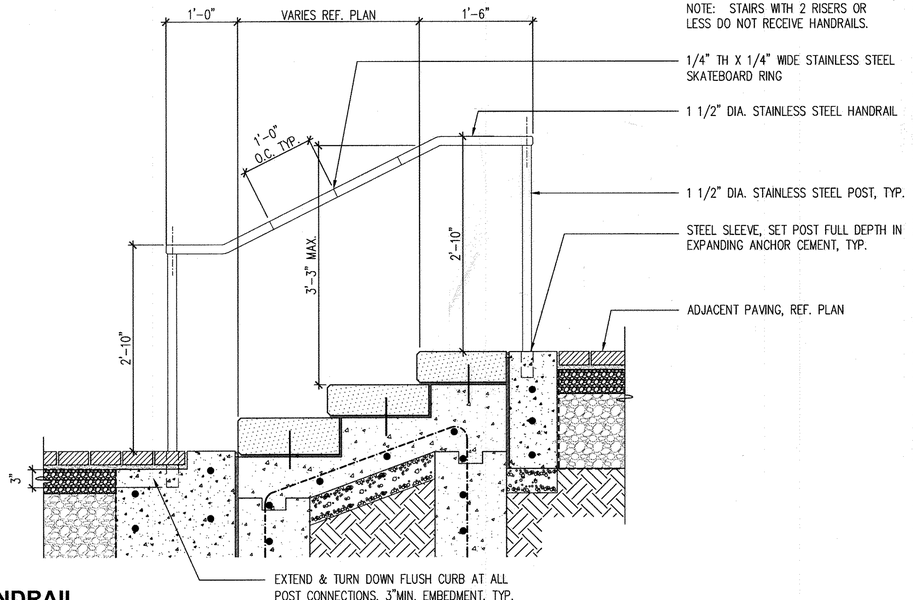
SDP-15-068




## 1 STAIRS - STONE TREAD
1" = 1'-0"

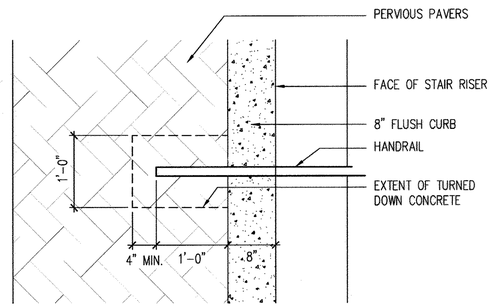
## ⚠ NOT USED

## 2 SEAT WALL - TERRACED STONE
1" = 1'-0"




## 3 HANDRAIL
1" = 1'-0"

NOTE: STAIRS WITH 2 RISERS OR LESS DO NOT RECEIVE HANDRAILS.




## 4 PLAN @ HANDRAIL
1" = 1'-0"

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME
~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 8-12-16
Chief, Division of Land Development — Date 8-12-16
Chief, Development Engineering Division — Date 9.2.16

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**L-202**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |
| 11.17.2017 | ⚠ Revise sheet Nos. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

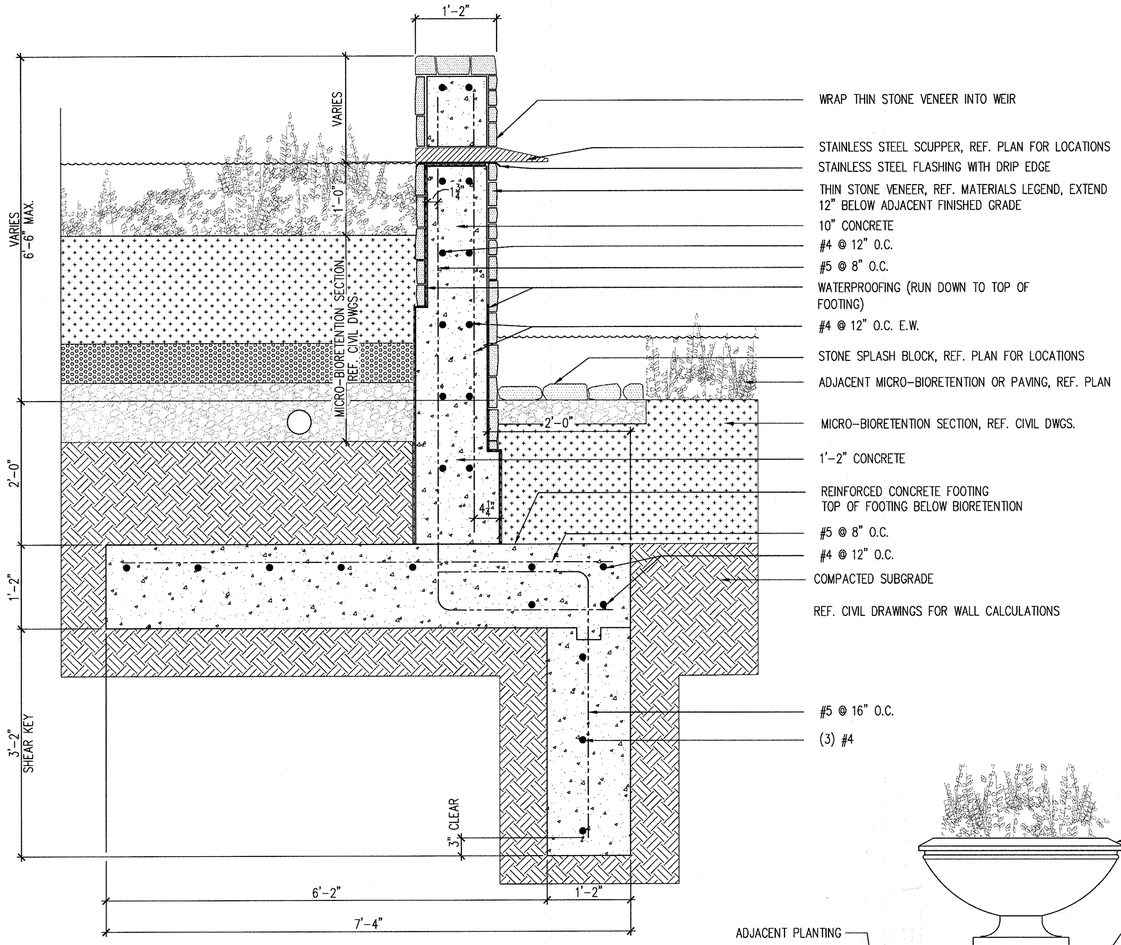
STATE OF MARYLAND — CHRISTOPHER ALAN CURTIS — 1099 — LANDSCAPE ARCHITECT

REVISED STAIR DETAILS

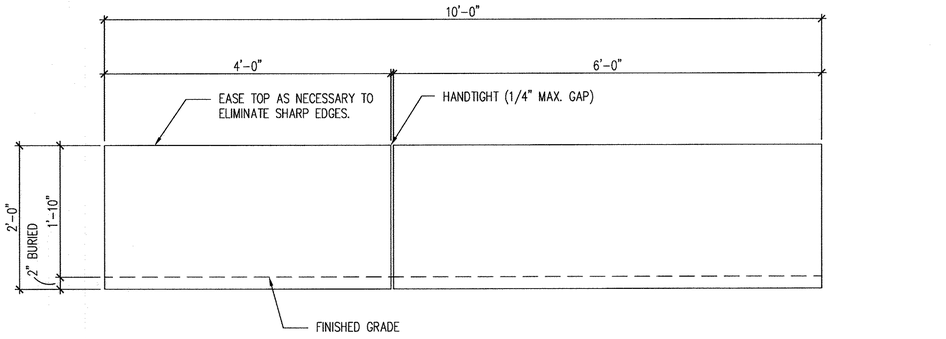
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 26 OF 63 |

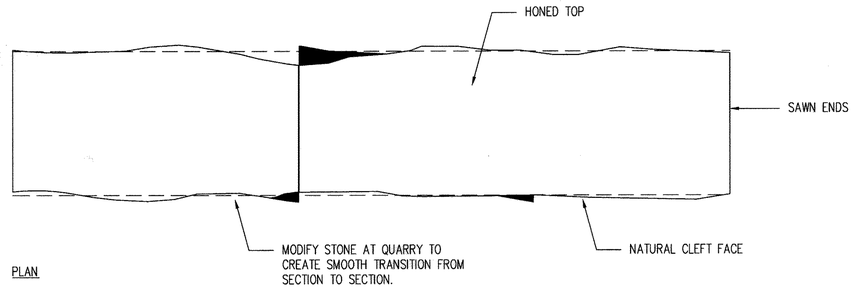
SDP-15-068




## 1 MICRO-BIORETENTION WALL
1" = 1'-0"

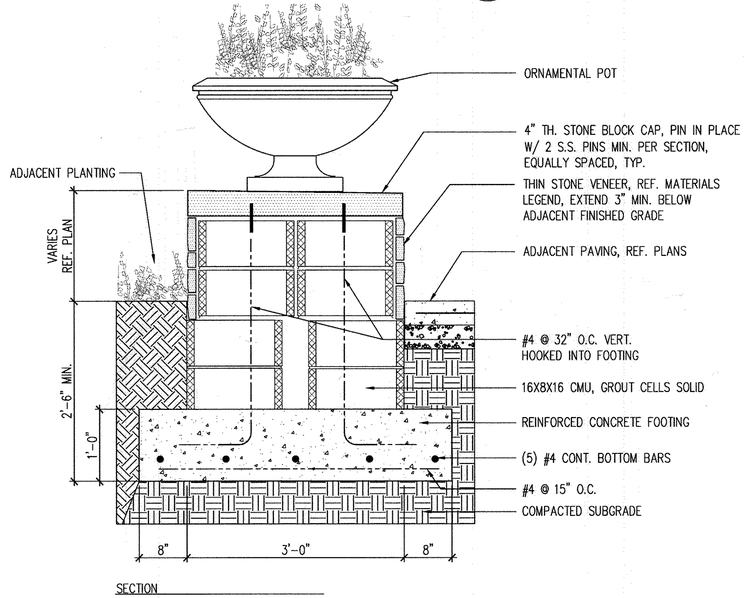



ELEVATION



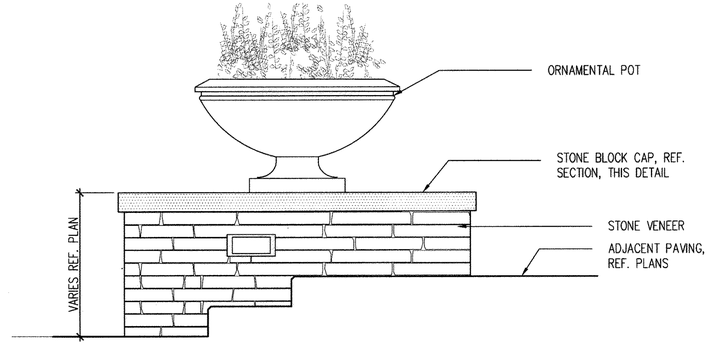

PLAN

## 2 SEAT WALL
1" = 1'-0"




SECTION

## 3 WALL - ENTRANCE PIER
1" = 1'-0"




ELEVATION

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**

~~**DEVELOPER'S/OWNER'S NAME**~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9.12.16

Chief, Development Engineering Division — Date 9.2.16

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**L-203**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DES. | DRN. | CHK. |
|---|---|---|
| | | |

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |
| 11.17.2017 | ⚠ Revise sheet Nos. | SH | MSH |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

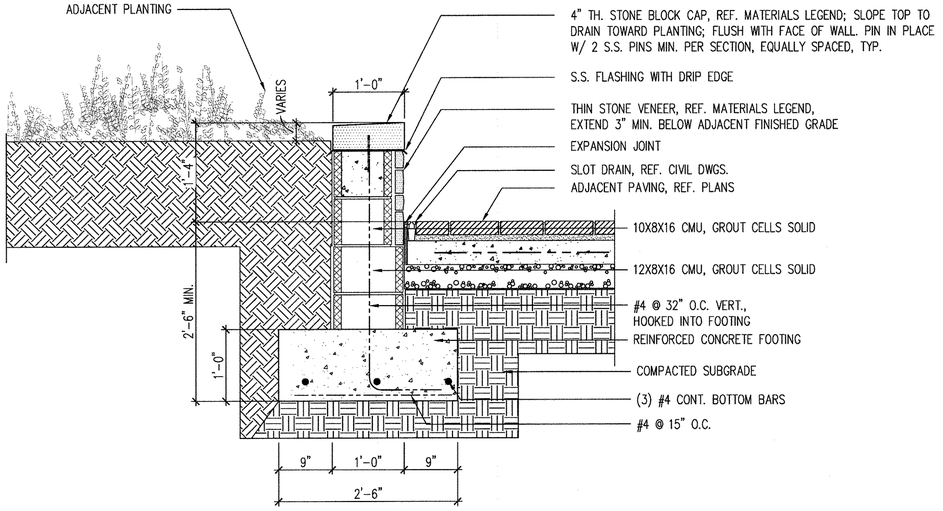
STATE OF MARYLAND — MICHAEL A. MARTINO — No. 1029 — LANDSCAPE ARCHITECT

REVISED WALL DETAILS - I

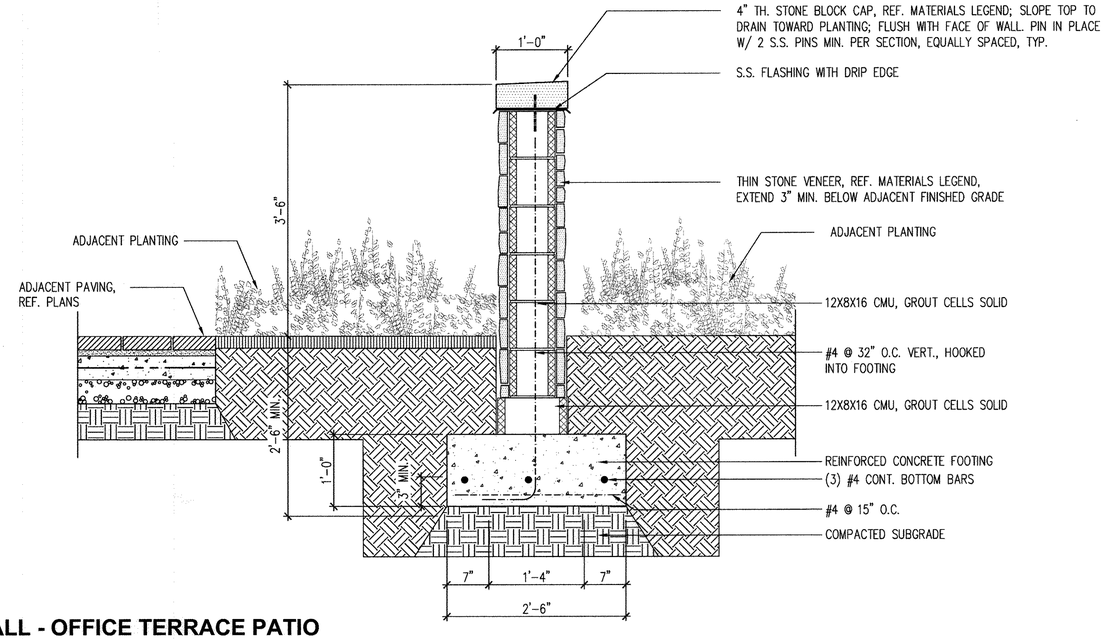
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 27 OF 62 |

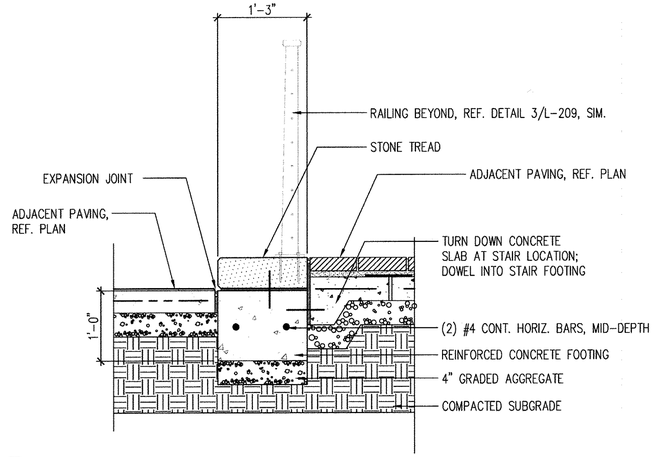
SDP-15-068



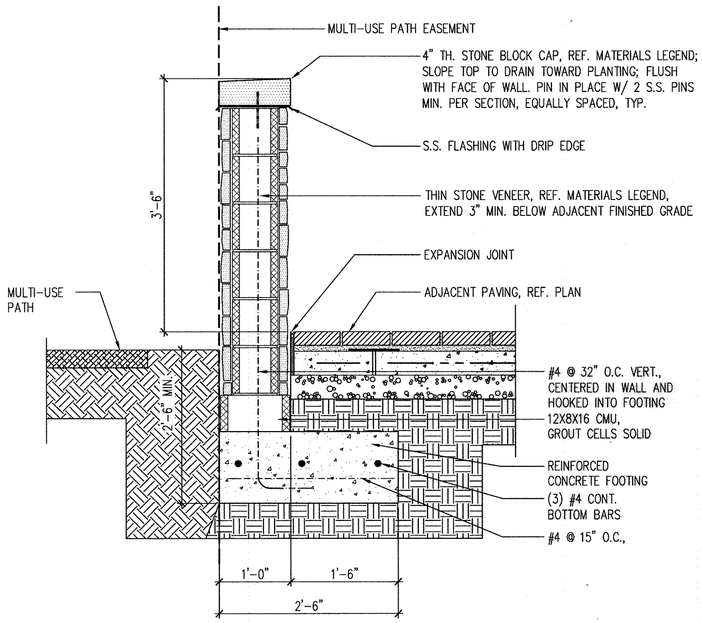

## 1 WALL - RESTAURANT TERRACE
1" = 1'-0"




## 2 WALL - OFFICE TERRACE PATIO
1" = 1'-0"

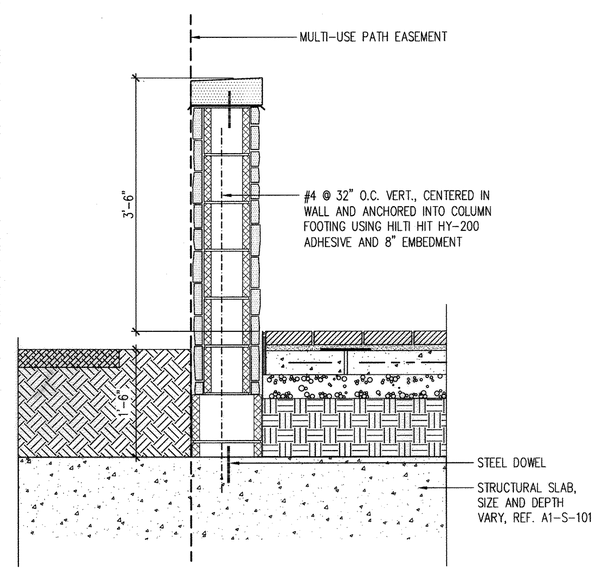



## 3 WALL - ENTRANCE PATIO
1" = 1'-0"




SECTION A – CONCRETE FOOTING

## 4 WALL - OFFICE TERRACE
1" = 1'-0"




SECTION B – @ STRUCTURAL FOOTING

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME

~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 8-12-16
Chief, Division of Land Development — Date 8.12.16
Chief, Development Engineering Division — Date 8.2.16

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**L-204**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 11.17.2017 | 6 Revise sheet Nos. | gt | mjt |

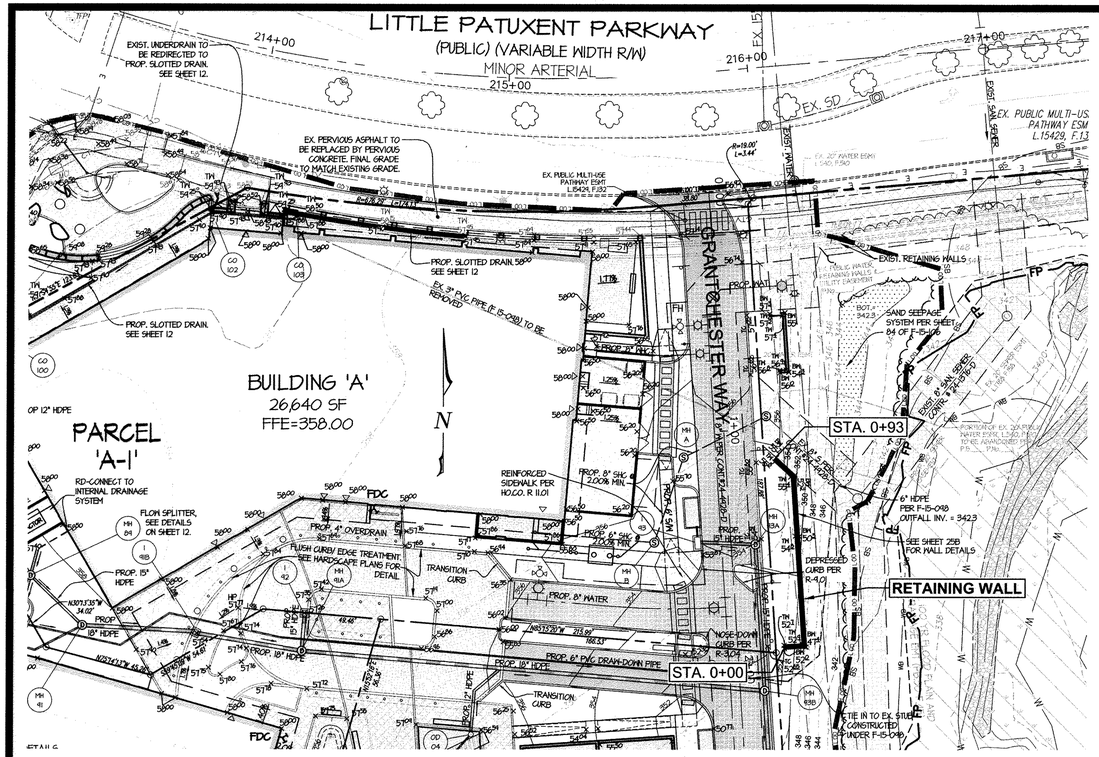
OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

REVISED WALL DETAILS – II

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET |
| JUNE, 2016 | 36 – 01 | 28 OF 63 |

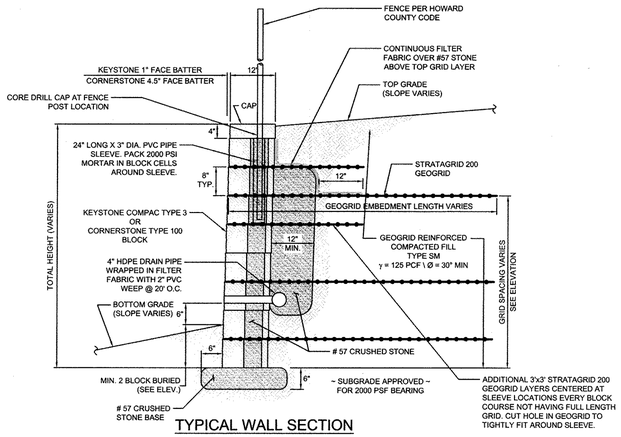
SDP-15-068




## WALL LOCATION PLAN
**1" = 30'**

**HOWARD COUNTY NOTES:**

1. NO TREES SHALL BE PLANTED WITHIN 10 FEET OF THE TOP OF THE RETAINING WALL.
2. RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN .
3. THE REQUIRED BEARING PRESSURE BENEATH THE WALL SYSTEM SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION MUST BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO START OF CONSTRUCTION. THE REQUIRED BEARING TEST SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM STP-399.
4. THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN. EACH 8" LIFT MUST BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
5. WALLS SHALL NOT BE CONSTRUCTED ON UNCERTIFIED FILL MATERIALS.
6. WALLS SHALL NOT BE CONSTRUCTED WITHIN A HOWARD COUNTY RIGHT-OF-WAY OR EASEMENT.




## TYPICAL WALL SECTION
N.T.S.

# SPECIFICATIONS
## MODULAR CONCRETE BLOCK RETAINING WALL

**PART 1: GENERAL**

**1.01 DESCRIPTION**

A. WORK SHALL CONSIST OF FURNISHING AND CONSTRUCTION OF A MODULAR RETAINING WALL SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN, AND DIMENSIONS SHOWN ON THE PLANS.

B. WORK INCLUDES PREPARING FOUNDATION SOIL, FURNISHING AND INSTALLING LEVELING PAD, UNIT DRAINAGE FILL AND BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS.

C. WORK INCLUDES FURNISHING AND INSTALLING GEOGRID SOIL REINFORCEMENT OF THE TYPE, SIZE, LOCATION, AND LENGTHS DESIGNATED ON THE CONSTRUCTION DRAWINGS.

**1.02 DELIVERY, STORAGE AND HANDLING**

A. CONTRACTOR SHALL CHECK ALL MATERIALS UPON DELIVERY TO ASSURE THAT THE PROPER TYPE, GRADE, COLOR, AND CERTIFICATION HAS BEEN RECEIVED.

B. CONTRACTOR SHALL PROTECT ALL MATERIALS FROM DAMAGE DUE TO JOB SITE CONDITIONS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DAMAGED MATERIALS SHALL NOT BE INCORPORATED INTO THE WORK.

**PART 2: PRODUCTS**

**2.01 MODULAR CONCRETE RETAINING WALL UNITS**

A. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING ARCHITECTURAL REQUIREMENTS:

FACE COLOR - COLOR MAY BE SPECIFIED BY THE OWNER.

FACE FINISH - SCULPTURED ROCK FACE IN ANGULAR TRI-PLANER OR FLAT CONFIGURATION. OTHER FACE FINISHES WILL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL OF OWNER.

BOND CONFIGURATION - RUNNING WITH BONDS NOMINALLY LOCATED AT MIDPOINT VERTICALLY ADJACENT UNITS, IN BOTH STRAIGHT AND CURVED ALIGNMENTS.

EXPOSED SURFACES OF UNITS SHALL BE FREE OF CHIPS, CRACKS OR OTHER IMPERFECTIONS WHEN VIEWED FROM A DISTANCE OF 10 FEET UNDER DIFFUSED LIGHTING.

B. MODULAR CONCRETE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1372 - STANDARD SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.

C. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING STRUCTURAL AND GEOMETRIC REQUIREMENTS MEASURED IN ACCORDANCE WITH APPROPRIATE REFERENCES:

COMPRESSIVE STRENGTH = 3000 PSI MINIMUM; ABSORPTION = 8% MAXIMUM (6% IN NORTHERN STATES) FOR STANDARD WEIGHT AGGREGATES;

DIMENSIONAL TOLERANCES = ±1/8" FROM NOMINAL UNIT DIMENSIONS NOT INCLUDING ROUGH SPLIT FACE. ±1/16"

UNIT HEIGHT - TOP AND BOTTOM PLANES; UNIT SIZE - 8" (H) X 18" (W) X 12" (D) MINIMUM;

UNIT WEIGHT - 75 LBS/UNIT MINIMUM FOR STANDARD WEIGHT AGGREGATES;

INTER-UNIT SHEAR STRENGTH - 1000 PLF MINIMUM AT 2 PSI NORMAL PRESSURE; AT 2 PSI NORMAL FORCE.

GEOGRID/UNIT PEAK CONNECTION STRENGTH - 1000 PLF MINIMUM

D. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING CONSTRUCTABILITY REQUIREMENTS: (IF APPLICABLE)

VERTICAL SETBACK = 1/8"± PER COURSE (NEAR VERTICAL) OR 1"± PER COURSE PER THE DESIGN, ALIGNMENT AND GRID POSITIONING MECHANISM - FIBERGLASS PINS, TWO PER UNIT MINIMUM;

MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE - 1/2 INCH.

**2.02 SHEAR CONNECTORS** (IF APPLICABLE)

A. SHEAR CONNECTORS SHALL BE 1/2 INCH DIAMETER THERMOSET ISOPTHALIC POLYESTER RESIN-PROTRUDED FIBERGLASS REINFORCEMENT RODS OR EQUIVALENT TO PROVIDE CONNECTION BETWEEN VERTICALLY AND HORIZONTALLY ADJACENT UNITS. STRENGTH OF SHEAR CONNECTORS BETWEEN VERTICAL ADJACENT UNITS SHALL BE APPLICABLE OVER A DESIGN TEMPERATURE OF 10 DEGREES F TO + 100 DEGREES F. B. SHEAR CONNECTORS SHALL BE CAPABLE OF HOLDING THE GEOGRID IN THE PROPER DESIGN POSITION DURING GRID PRE-TENSIONING AND BACKFILLING.

**2.03 BASE LEVELING PAD MATERIAL**

A. MATERIAL SHALL CONSIST OF A COMPACTED #57 CRUSHED STONE BASE AS SHOWN ON THE CONSTRUCTION DRAWINGS.

**2.04 UNIT DRAINAGE FILL**

A. UNIT DRAINAGE FILL SHALL CONSIST OF #57CRUSHED STONE

**2.05 REINFORCED BACKFILL**

A. REINFORCED BACKFILL SHALL TYPE SM, BE FREE OF DEBRIS AND MEET THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM D-422 AND MEET OTHER PROPERTIES SHOWN ON THE PLAN:

| SIEVE SIZE | PERCENT PASSING |
|---|---|
| 2 INCH | 100-75 |
| 3/4 INCH | 100-75 |
| NO. 40 | 0-60 |
| NO. 200 | 0-35 |

PLASTICITY INDEX (PI) <10 AND LIQUID LIMIT <35 PER ASTM D-4318.

B. MATERIAL CAN BE SITE EXCAVATED SOILS WHERE THE ABOVE REQUIREMENTS CAN BE MET. UNSUITABLE SOILS FOR BACKFILL (HIGH PLASTIC CLAYS OR ORGANIC SOILS) SHALL NOT BE USED IN THE REINFORCED SOIL MASS.

**2.06 GEOGRID SOIL REINFORCEMENT**

A. GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF GEOGRIDS MANUFACTURED SPECIFICALLY FOR SOIL REINFORCEMENT APPLICATIONS AND SHALL BE MANUFACTURED FROM HIGH TENACITY POLYESTER YARN.

**2.07 DRAINAGE PIPE**

A. THE DRAINAGE PIPE SHALL BE PERFORATED CORRUGATED HDPE PIPE MANUFACTURED IN ACCORDANCE WITH ASTM D-1248.

**PART 3 EXECUTION**

**3.01 EXCAVATION**

A. CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. OWNER'S REPRESENTATIVE SHALL BE RESPONSIBLE FOR INSPECTING AND APPROVING THE EXCAVATION PRIOR TO PLACEMENT OF LEVELING MATERIAL OR FILL SOILS.

**3.02 BASE LEVELING PAD**

A. LEVELING PAD MATERIAL SHALL BE PLACED TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS, TO A MINIMUM THICKNESS OF 6 INCHES AND EXTEND LATERALLY A MINIMUM OF 6" IN FRONT AND BEHIND THE MODULAR WALL UNIT.

B. LEVELING PAD SHALL BE PREPARED TO INSURE FULL CONTACT TO THE BASE SURFACE OF THE CONCRETE UNITS.

**3.03 MODULAR UNIT INSTALLATION**

A. FIRST COURSE OF UNITS SHALL BE PLACED ON THE LEVELING PAD AT THE APPROPRIATE LINE AND GRADE. ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL DIRECTIONS AND INSURE THAT ALL UNITS ARE IN FULL CONTACT WITH THE BASE AND PROPERLY SEATED.

B. PLACE THE FRONT OF UNITS SIDE-BY-SIDE. DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS. LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

C. INSTALL SHEAR/CONNECTING DEVICES PER MANUFACTURER'S RECOMMENDATIONS.

D. PLACE AND COMPACT DRAINAGE FILL WITHIN AND BEHIND WALL UNITS. PLACE AND COMPACT BACKFILL SOIL BEHIND DRAINAGE FILL. FOLLOW WALL CONSTRUCTION AND DRAINAGE FILL CLOSELY WITH STRUCTURE BACKFILL.

E. MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS, PRIOR TO UNIT DRAINAGE FILL AND BACKFILL PLACEMENT AND COMPACTION, SHALL NOT EXCEED THREE COURSES.

**3.04 STRUCTURAL GEOGRID INSTALLATION**

A. GEOGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE WALL ALIGNMENT.

B. GEOGRID REINFORCEMENT SHALL BE PLACED AT THE STRENGTHS, LENGTHS, AND ELEVATIONS SHOWN ON THE CONSTRUCTION DESIGN DRAWINGS OR AS DIRECTED BY THE ENGINEER.

C. THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL AND ATTACHED TO THE MODULAR WALL UNITS. PLACE THE NEXT COURSE OF MODULAR CONCRETE UNITS OVER THE GEOGRID. THE GEOGRID SHALL BE PULLED TAUT, AND ANCHORED PRIOR TO BACKFILL PLACEMENT ON THE GEOGRID.

D. GEOGRID REINFORCEMENTS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTHS AND PLACED SIDE-BY-SIDE TO PROVIDE 100% COVERAGE AT EACH LEVEL. SPLICED CONNECTIONS BETWEEN SHORTER PIECES OF GEOGRID OR GAPS BETWEEN ADJACENT PIECES OF GEOGRID ARE NOT PERMITTED.

**3.05 REINFORCED BACKFILL PLACEMENT**

A. REINFORCED BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOGRID AND INSTALLATION DAMAGE.

B. REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES WHERE HAND COMPACTION IS USED, OR 8 - 10 INCHES WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.

C. REINFORCED BACKFILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D698. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND SHALL BE + 3% TO - 3% OF OPTIMUM.

D. ONLY LIGHTWEIGHT HAND-OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET FROM THE TAIL OF THE MODULAR CONCRETE UNIT.

E. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOGRID REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEOGRID.

F. RUBBER TIRED EQUIPMENT MAY PASS OVER GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.

G. AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCED BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION SITE.

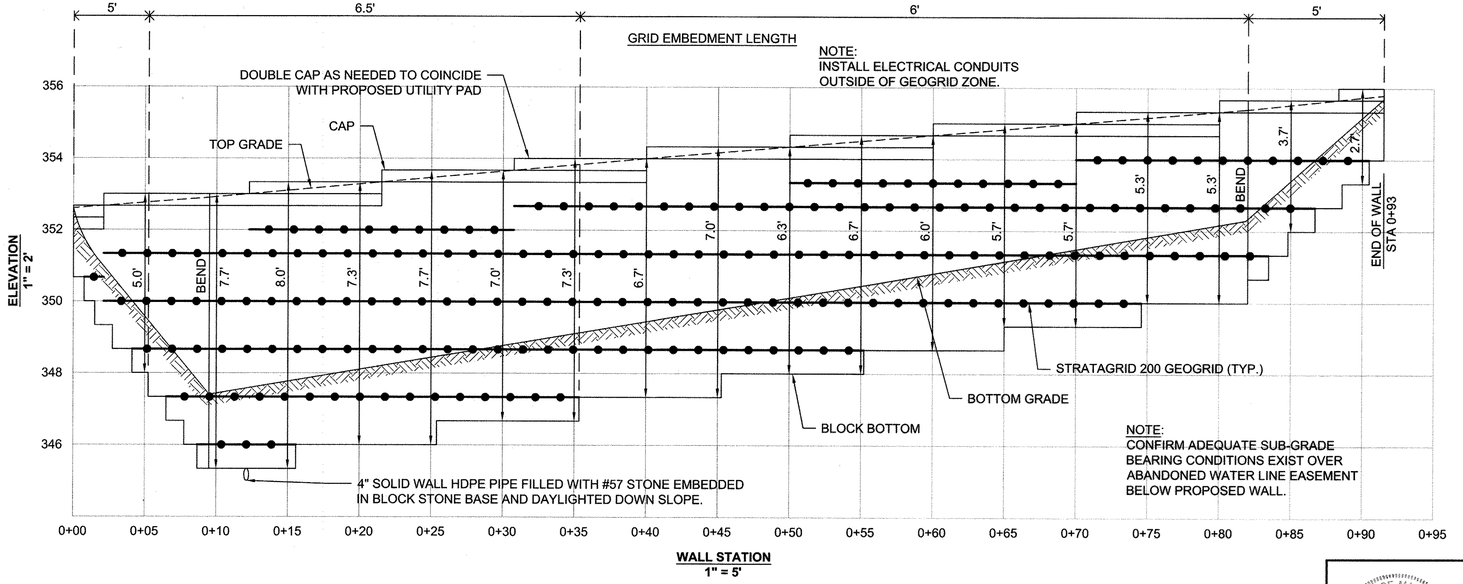
**3.06 CAP INSTALLATION**

A. CAP UNITS SHALL BE GLUED TO UNDERLYING UNITS WITH AN ALL-WEATHER ADHESIVE RECOMMENDED BY THE MANUFACTURER.

**3.07 FIELD QUALITY CONTROL**

A. THE OWNER SHALL ENGAGE INSPECTION AND TESTING SERVICES, INCLUDING INDEPENDENT LABORATORIES, TO PROVIDE QUALITY ASSURANCE AND TESTING SERVICES DURING CONSTRUCTION.

B. AS A MINIMUM, QUALITY ASSURANCE TESTING SHOULD INCLUDE FOUNDATION SOIL INSPECTION, SOIL AND BACKFILL TESTING, VERIFICATION OF DESIGN PARAMETERS, AND OBSERVATION OF CONSTRUCTION FOR GENERAL COMPLIANCE WITH DESIGN DRAWINGS AND SPECIFICATIONS.




**WALL STATION**
**1" = 5'**

## WALL ELEVATION

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

**Date:** October 15, 2015

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 12-18-15

Chief, Division of Land Development — Date 12-17-15

Chief, Development Engineering Division — Date 12.15.15

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14434, EXPIRATION DATE: 05/13/17.

STATE OF MARYLAND — RICHARD W. STUDT — No. 14434 — PROFESSIONAL ENGINEER


**HILLIS-CARNES ENGINEERING ASSOCIATES**
10975 Guilford Road, Suite A Annapolis Junction, Maryland
(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098


DES. HM | DRN. HM | CHK. RWS

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 11.17.2017 | Revise sheet Nos. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
410-964-4800

WALL DETAILS – 3

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL, AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT NO. 23565-23566
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

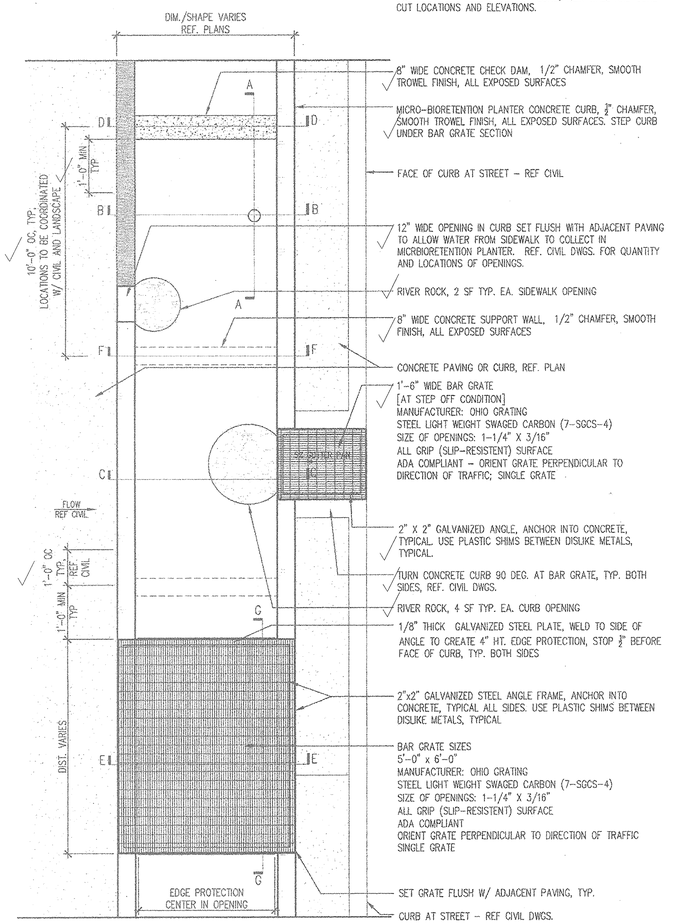
| SCALE | ZONING | HCEA JOB NO. |
|---|---|---|
| AS SHOWN | NT | 15065-F |
| DATE | TAX MAP - GRID | SHEET |
| NOV., 2015 | 36 - 01 | 29 OF 63 |

SDP-15-068

## RIVER ROCK

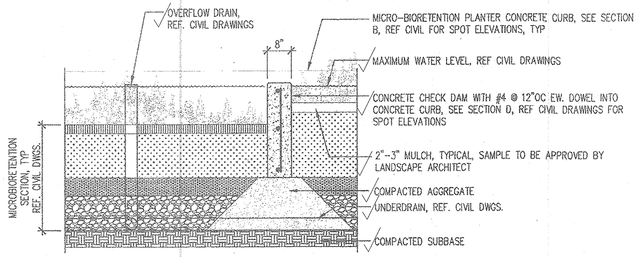
MATERIAL: BLUE/GREY RIVER ROCK
SIZE: 50% 2" RIVER ROCK
50% 4-6" RIVER ROCK

NOTE: PLAN ENLARGEMENT REPRESENTS A PARTIAL TYP. SECTION. REF. CIVIL DWGS. FOR CURB, WEIR WALL AND CURB CUT LOCATIONS AND ELEVATIONS.

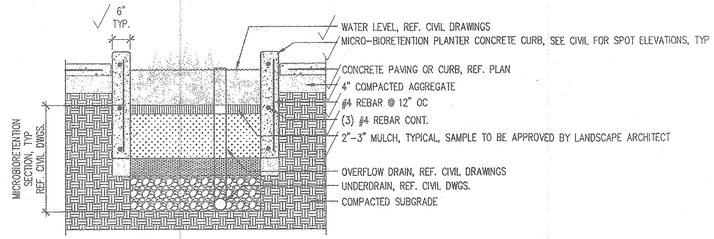



PLAN

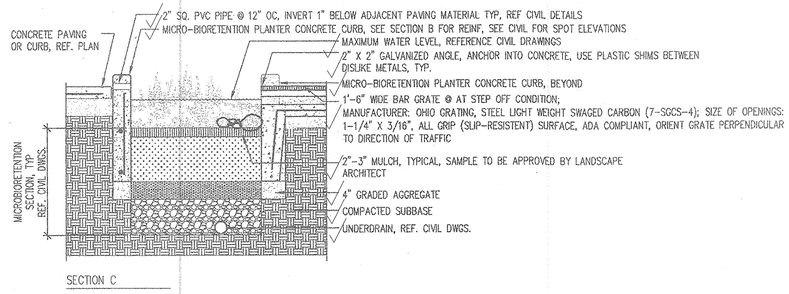
### 1 STORMWATER PLANTER
1/2" = 1'-0"



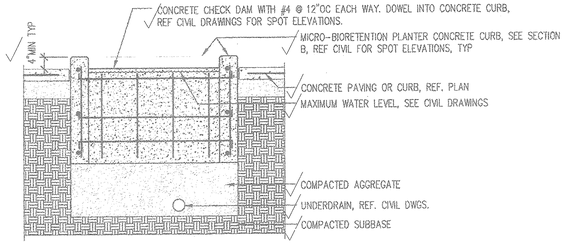

SECTION A



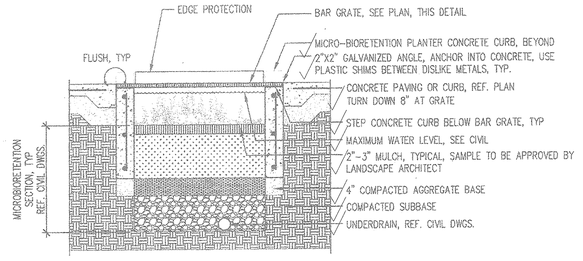

SECTION B



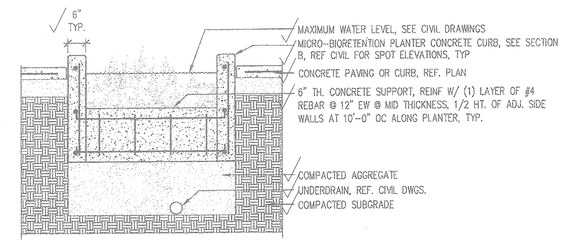

SECTION C



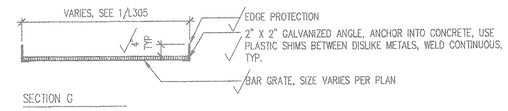

SECTION D




SECTION E




SECTION F




SECTION G

APPROVED
PLANNING BOARD OF HOWARD COUNTY
Date: October 15, 2015

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 12-18-15

Chief, Division of Land Development — Date 12-17-15

Chief, Development Engineering Division — Date 12/15/15

CERTIFICATION NOTE:
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER/OWNER'S NAME
~~DEVELOPER/OWNER'S NAME~~

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 12975, Expiration Date: May 26 2020.

11/12/18 — Date

Carl K. Gutschick
Professional Engineer
Maryland Reg. No. 12975

ASBUILTS

L-204

ASBUILT SHEET 8 OF 8

DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

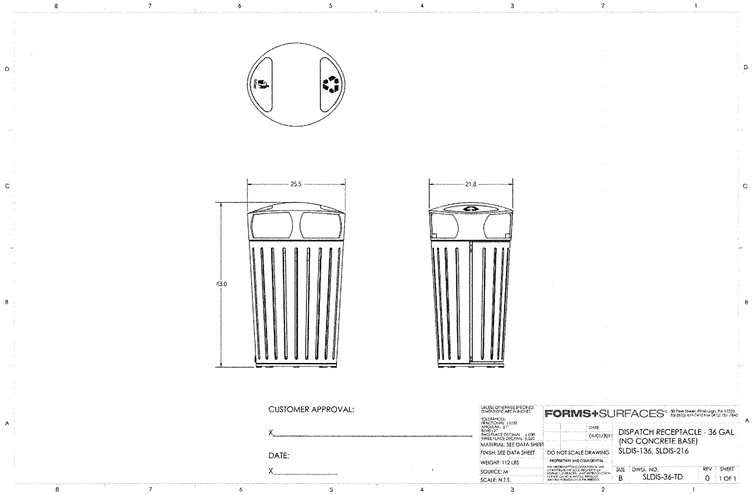
STATE OF MARYLAND — REVIEW PLAN ONLY — NOT FOR CONSTRUCTION

STREETSCAPE DETAILS

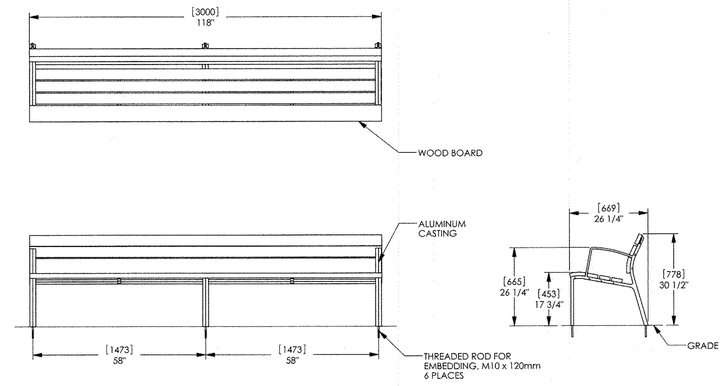
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE NOV., 2018 NOV., 2015 | TAX MAP - GRID 36 - 01 | SHEET 30 OF 58 |

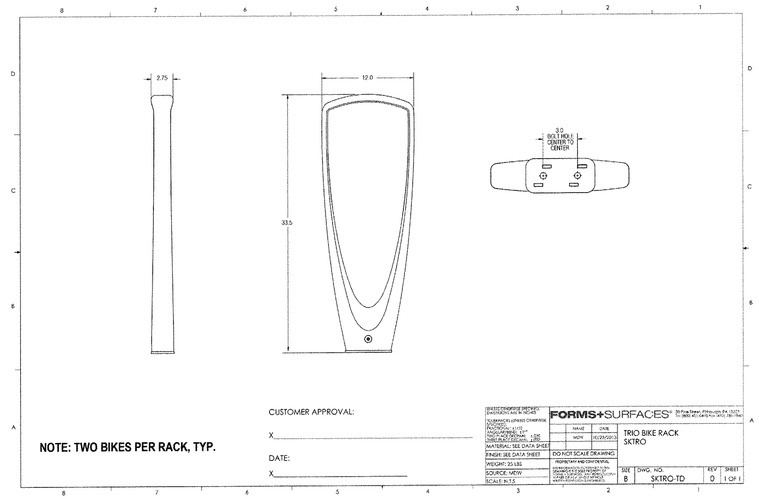
ASBUILTS SDP-15-068



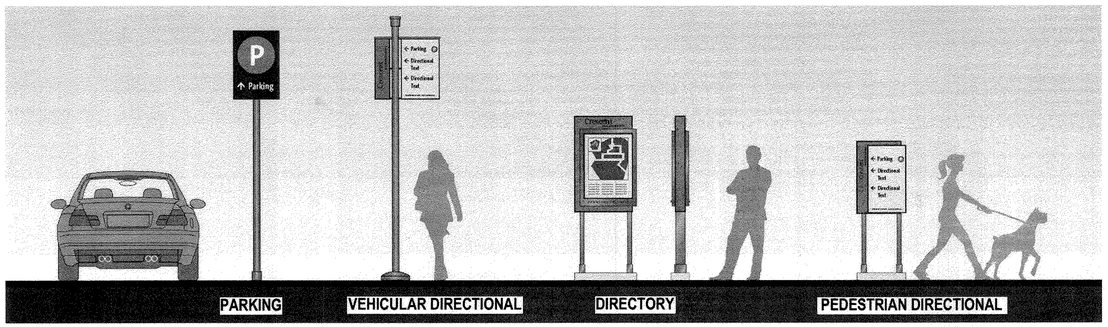

## 1 WASTE/RECYCLING RECEPTACLE




## 2 STREET BENCH



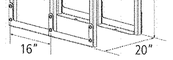

## 3 BIKE RACK - SITE




## 4 SIGNAGE

**U-LOCK IT™**

Submittal Sheet




**CAPACITY** 2 Bikes per hoop
3 hoop minimum for stability

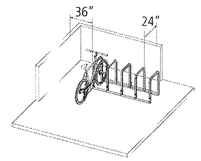
**MATERIALS** Hoop: 1.5" 16g sq. tube
Connectors: 11g plate

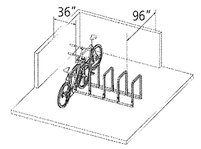
**FINISHES**
☐ **Powder Coat**
Our powder coat finish assures a high level of adhesion and durability by following these steps.
1. Sandblast
2. Epoxy primer electrostatically applied
3. Final thick TGIC polyester powder coat

☐ **Galvanized**
An after fabrication hot dipped galvanized finish is our standard option.

**MOUNT OPTIONS**
☐ **Surface**
All connections and mounting parts have pre-threaded mounting holes (except the feet). No drilling or tapping required.

**SETBACKS**




DERO

## 5 BIKE RACK - GARAGE

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

DEVELOPER'S/OWNER'S NAME

By:

~~DEVELOPER'S/OWNER'S NAME~~

APPROVED
PLANNING BOARD OF HOWARD COUNTY
Date: October 15, 2015

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date: 12-18-15

Chief, Division of Land Development — Date: 12-17-15

Chief, Bureau of Engineering, Division — Date: 12.15.15

**L-205**

DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 11.17.2017 | 4 Revise sheet Nos | gt | mht |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

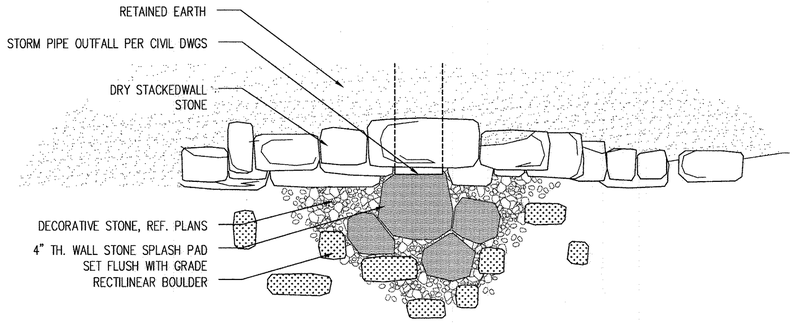
STATE OF MARYLAND — REGISTERED LANDSCAPE ARCHITECT — MARK H. TAYLOR — 1324

SITE FURNISHING DETAILS

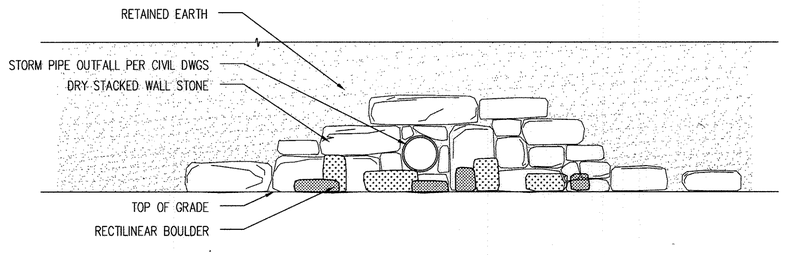
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| NOV., 2015 | 36 - 01 | 31 OF 63 |

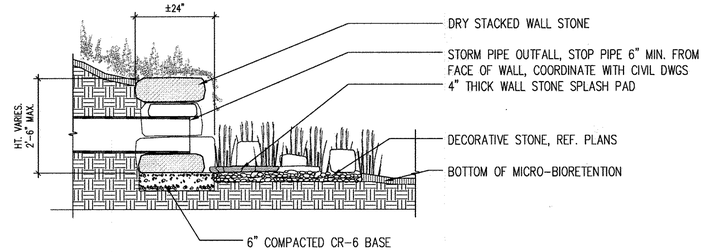
SDP-15-068




PLAN




ELEVATION




SECTION

## DOWNSPOUT RIPRAP LEGEND:

**TYPE:** STONE SALVAGED FROM ADJACENT SITE EXCAVATION; TO BE HAND SELECTED BY LANDSCAPE ARCHITECT

**FINISH:**
DRY STACKED, ROUGH CUT, DIMENSIONAL OF VARYING SIZES MIN: 6"X12"X12", MAX. 12"X24"X36"

**JOINTS:**
½" MORTAR JOINTS FLUSH IN FIELD.

**DIMENSIONS:** MIN: 6"X12"X12", MAX. 12"X24"X36"

**NOTES:**
A) LANDSCAPE ARCHITECT TO APPROVE SHOP DRAWINGS

B) LANDSCAPE ARCHITECT TO RECEIVE AND APPROVE STONE SAMPLES

## 1 DOWNSPOUT OUTFALL RIPRAP

1/2" = 1'-0"

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME

~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9.12.16

Chief, Development Engineering Division — Date 9.7.16

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

**L-207**

DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | MM | AD |
| 11.17.2017 | ⚠ Revise sheet Nos. | SY | MJT |

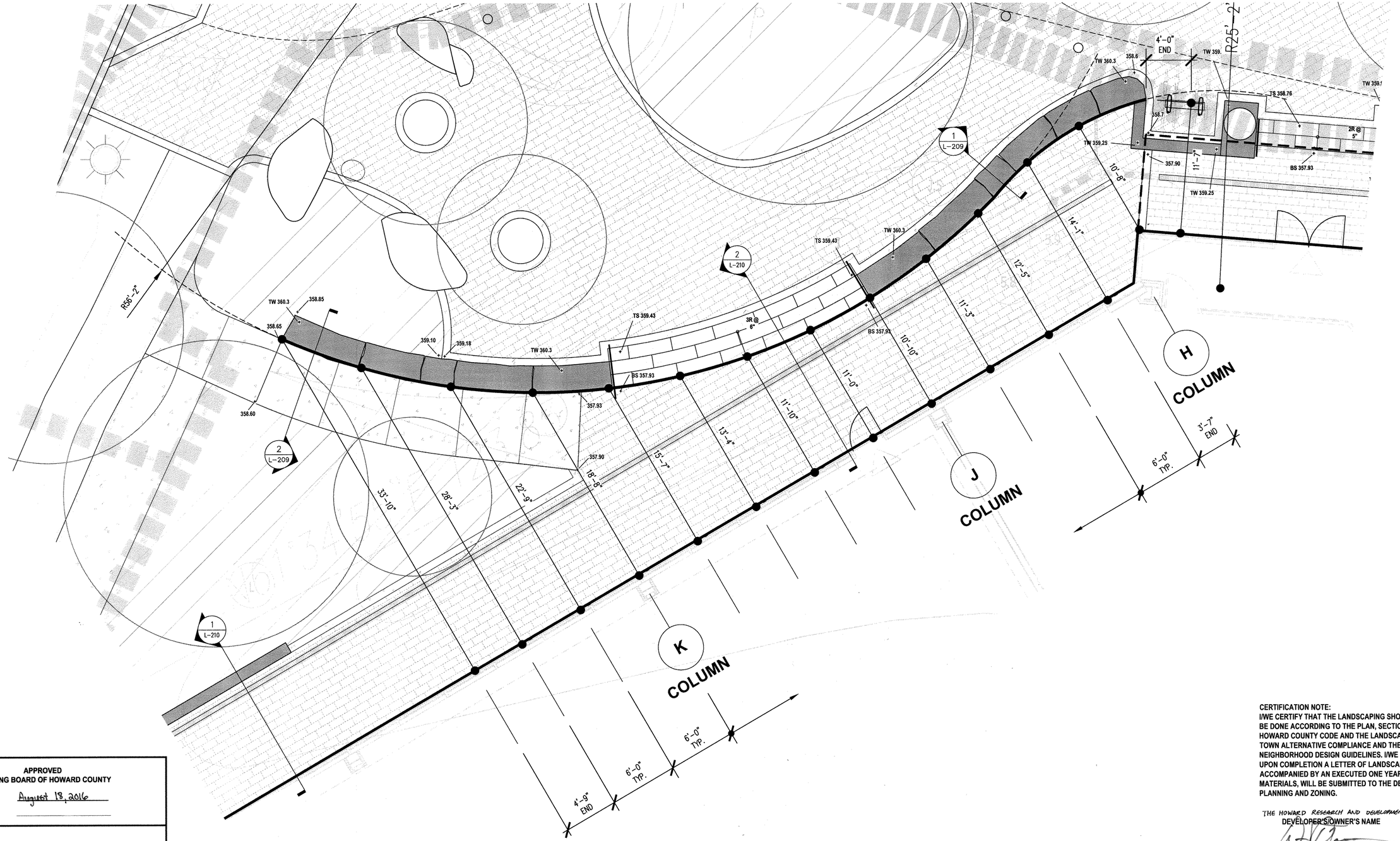
OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

DRAINAGE DETAILS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET ⚠ |
| JUNE, 2016 | 36 - 01 | 32 OF 63 |

SDP-15-068




# 1 SEATWALL LAYOUT PLAN - @ NORTHWEST PLAZA

1/4"=1'-0"

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date: 9-12-16
Chief, Division of Land Development — Date: 9/12/16
Chief, Development Engineering Division — Date: 9.2.16

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME
~~DEVELOPER'S/OWNER'S NAME~~

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

0' 2' 4' 8' 12'

N

**L-208**


**DESIGN**COLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | MM | AD |
| 11.17.2017 | ⚠ Revise sheet Nos. | gt | mdt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

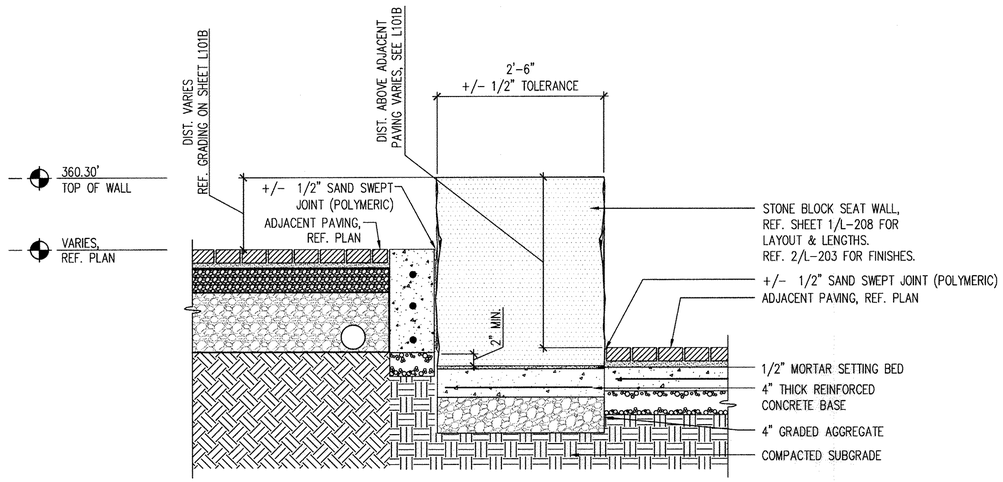
STATE OF MARYLAND — MATTHEW ALAN DUNN — 1009 — LANDSCAPE ARCHITECT

CORNER PLAZA – PLAN

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

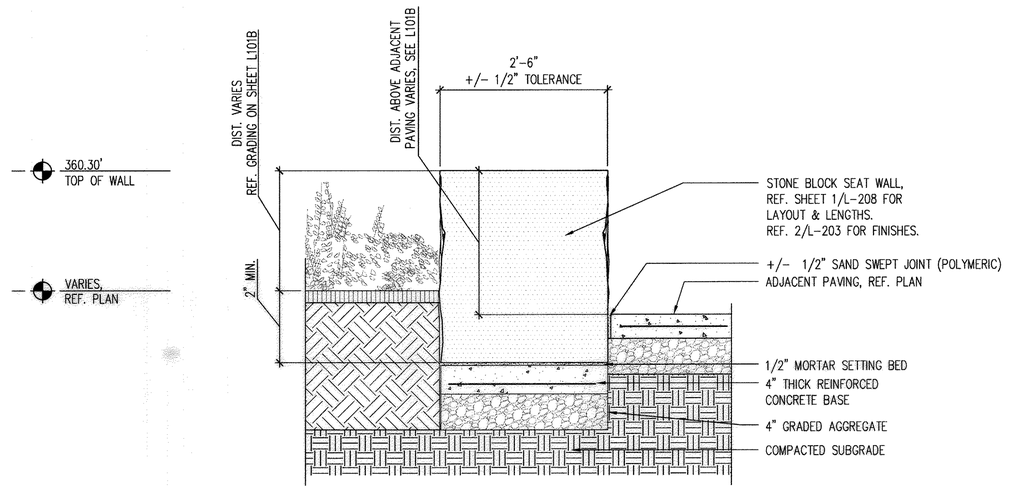
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1/4"=1'-0" | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 33 OF 63 |

SDP-15-068



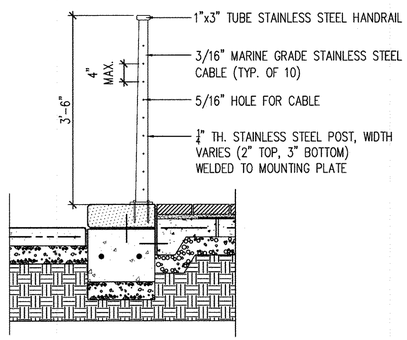

## 1 SEATWALL - SECTION A @ NORTHWEST PLAZA

1" = 1'-0"

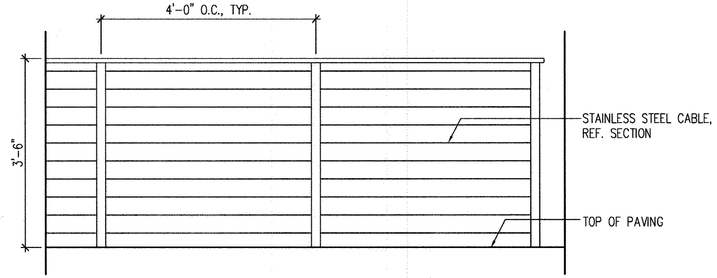



## 2 SEATWALL - SECTION B @ NORTHWEST PLAZA

1" = 1'-0"




SECTION




PARTIAL ELEVATION

## 3 GUARDRAIL @ BUILDING A - SOUTHEAST PATIO

3/4" = 1'-0"

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**
~~**DEVELOPER'S/OWNER'S NAME**~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | 9-12-16 Date |
| Chief, Division of Land Development | 9-12-16 Date |
| Chief, Development Engineering Division | 9.2.16 Date |

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

**L-209**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | MM | AD |
| 11.17.2017 | ⚠ Revise sheet Nos | 9+ | mjd |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

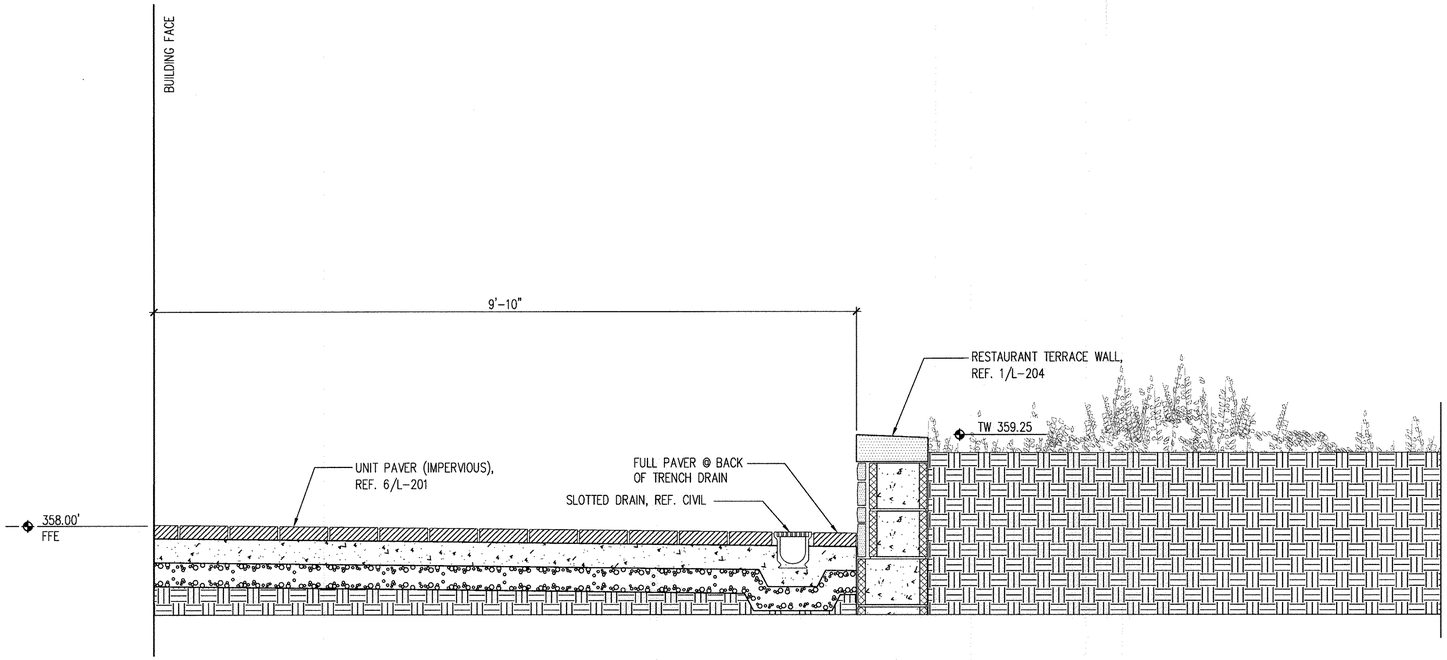
STATE OF MARYLAND — LANDSCAPE ARCHITECT — 988

CORNER PLAZA - DETAILS

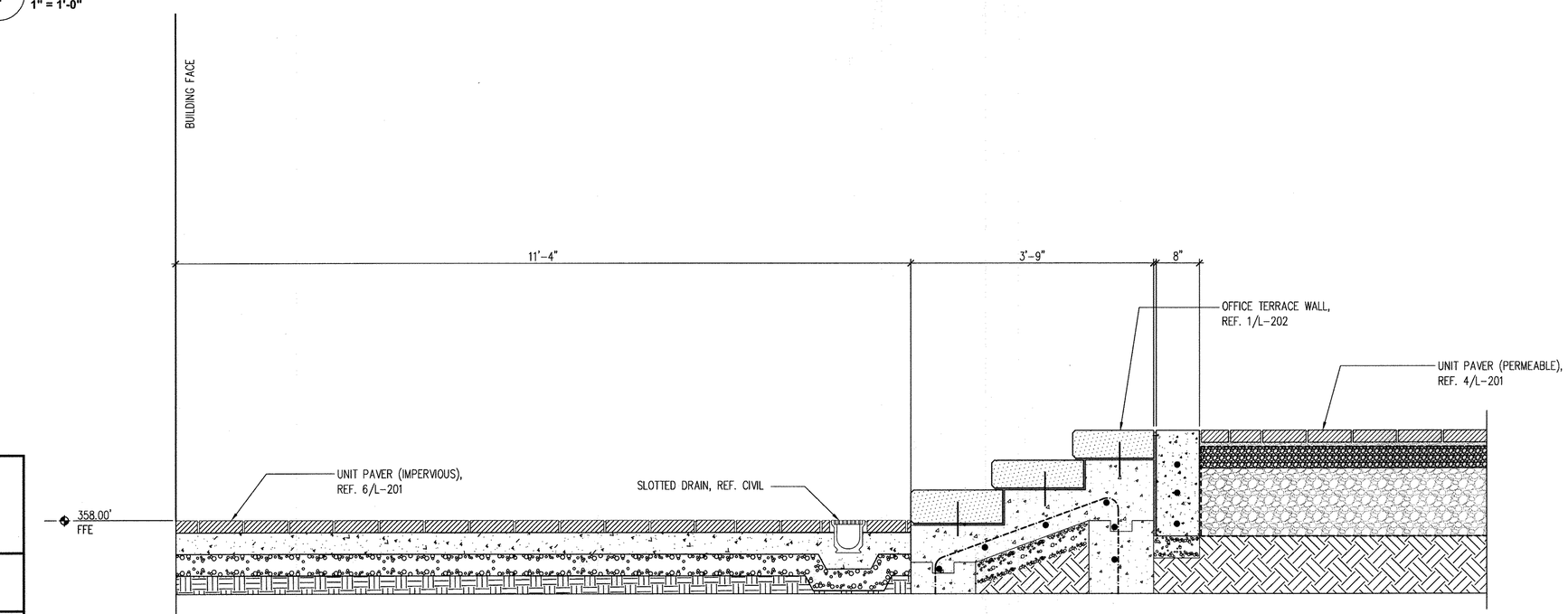
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET ⚠ |
| JUNE, 2016 | 36 - 01 | 34 OF 68 |

SDP-15-068




1 **RESTAURANT TERRACE - 1 @ BUILDING A**
1" = 1'-0"




2 **RESTAURANT TERRACE - 2 @ BUILING A**
1" = 1'-0"

**CERTIFICATION NOTE:**
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME

~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | Date 9-12-16 |
| Chief, Division of Land Development | Date 9-12-16 |
| Chief, Development Engineering Division | Date 9-2-16 |

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

**L-210**

DESIGN COLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | △ ADDITIONAL SHEET | MM | AD |
| 11.17.2017 | 6 Revise sheet Nos | gt | mjt. |

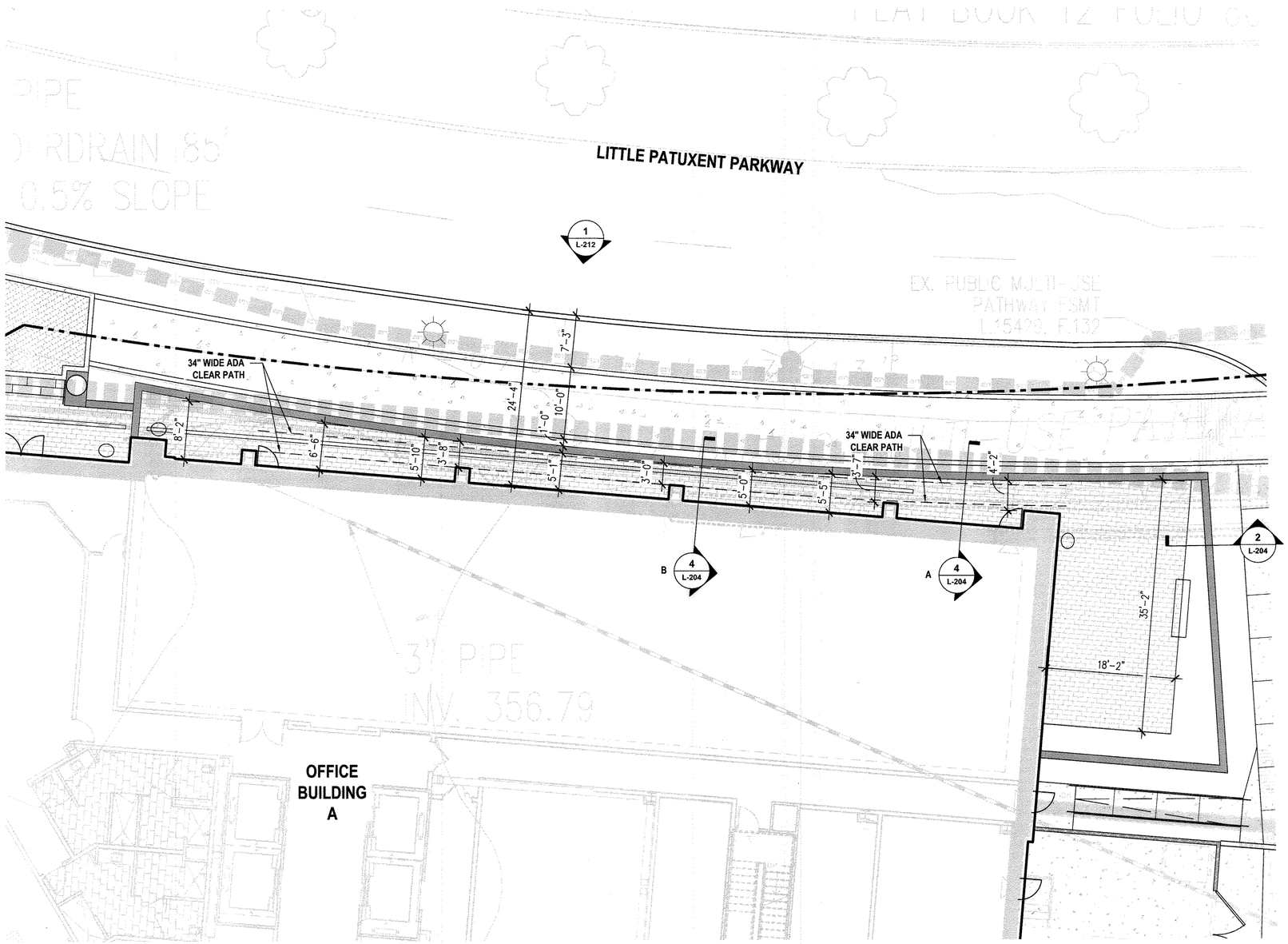
OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND
MATTHEW ALAN DAVIS
LANDSCAPE ARCHITECT
1039

RESTAURANT TERRACE – SECTIONS
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET 6 |
| JUNE, 2016 | 36 – 01 | 35 OF 63 |

SDP-15-068




REF. L-101A FOR MATERIALS

1 **OFFICE TERRACE ENLARGEMENT PLAN - @ BUILDING A**
1/4"=1'-0"

**CERTIFICATION NOTE:**
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME

~~DEVELOPER'S/OWNER'S NAME~~

APPROVED
PLANNING BOARD OF HOWARD COUNTY
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | Date 9-12-16 |
| Chief, Division of Land Development | Date 9-12-16 |
| Chief, Development Engineering Division | Date 9-7-16 |

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

0' 4' 8' 16' 24'

N

**L-211**

**DESIGN COLLECTIVE**
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | △1 ADDITIONAL SHEET | MM | AD |
| 11.17.2017 | △6 Revise sheet Non. | gt | Mdt. |

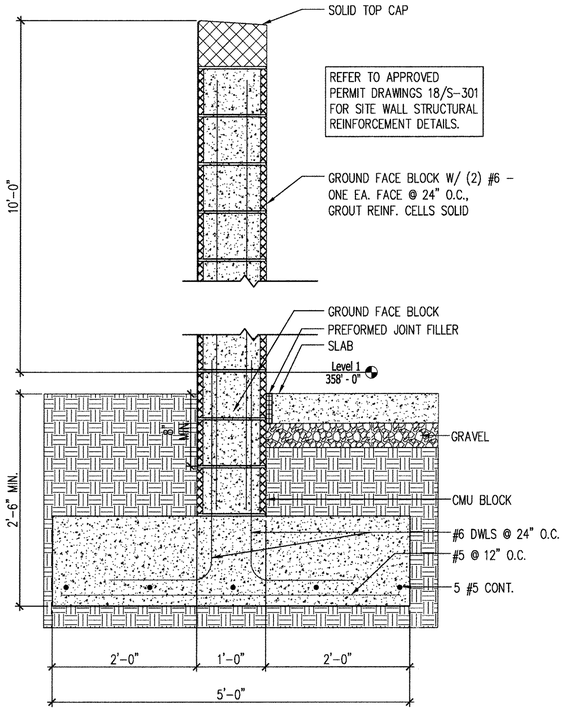
OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND
MATTHEW ALAN ALMOND
LANDSCAPE ARCHITECT
1099

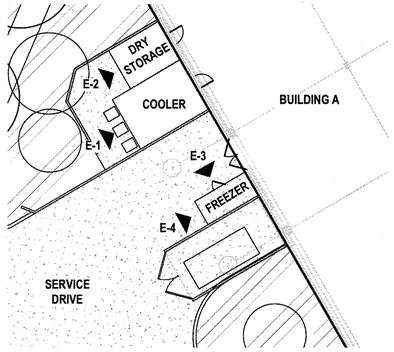
OFFICE TERRACE – PLAN
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1/8"=1'-0" | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET △6 |
| JUNE, 2016 | 36 – 01 | 36 OF 63 |

SDP-15-068

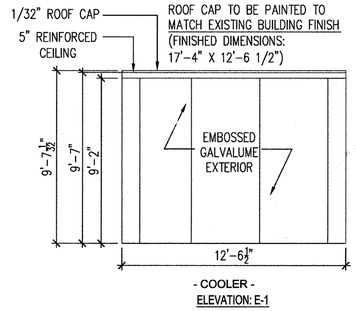



## 2 SCREEN WALL - SECTION
1" = 1'-0"

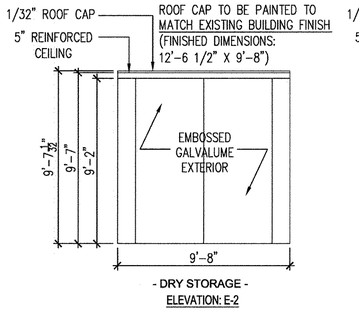



STORAGE UNITS - PARTIAL PLAN
1/16" = 1'-0"

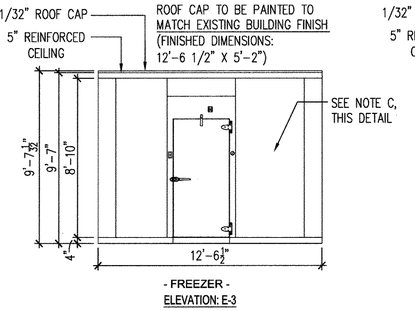
## 3 STORAGE UNITS - ELEVATIONS
1/4" = 1'-0"



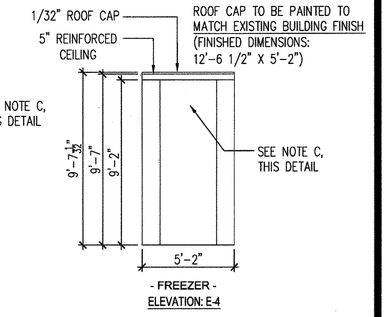

- COOLER -
ELEVATION: E-1




- DRY STORAGE -
ELEVATION: E-2




- FREEZER -
ELEVATION: E-3

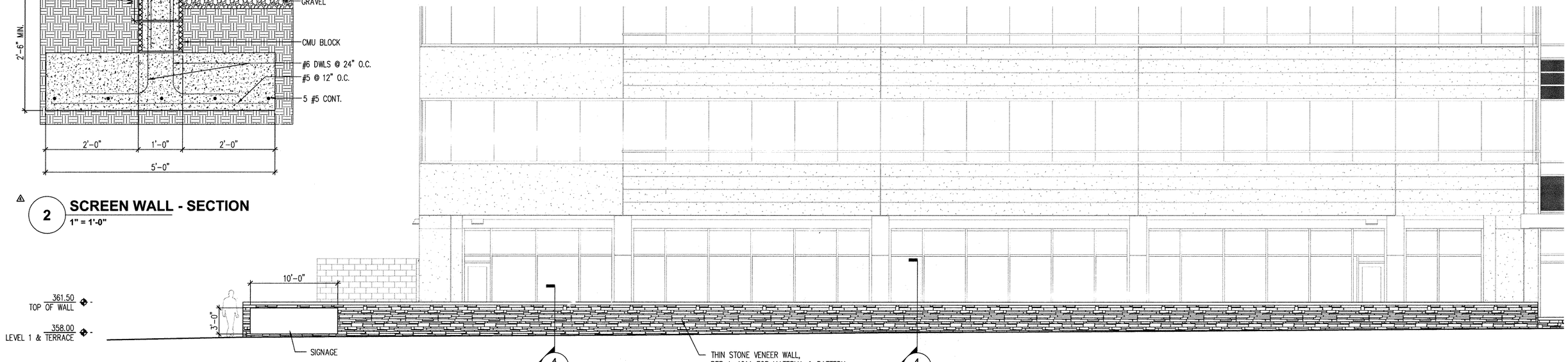



- FREEZER -
ELEVATION: E-4

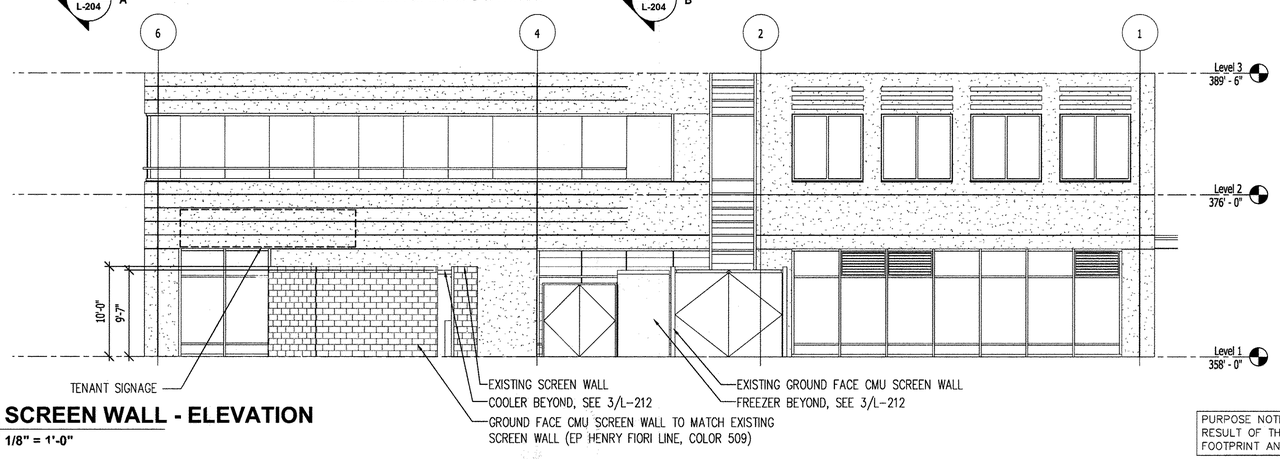
NOTE A:
IF THE PAINTED ROOF CAP STARTS TO FLAKE , THEN THE OWNER WILL ADDRESS THE RE-PAINTING OF THE ROOF CAP IMMEDIATELY .

NOTE B:
ALL WALK-IN COMPLEXES ARE DESIGNED FOR AN AVERAGE SNOW DRIFT LOAD OF 54 P.S.I.

NOTE C:
WALK-IN FREEZER EXTERIOR FINISH TO BE CLAD IN THE SAME METAL PANEL FINISH AS THE EXISTING BUILDING . (DURANAR SUNSTORM GALAXY SILVER)




## 1 PATIO TERRACE - ELEVATION @ BUILDING A
3/16" = 1'-0"




## 4 SCREEN WALL - ELEVATION
1/8" = 1'-0"

CERTIFICATION NOTE:
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

DEVELOPER'S/OWNER'S NAME
WILLIAM T. ROWE
DEVELOPER'S/OWNER'S NAME

APPROVED
PLANNING BOARD OF HOWARD COUNTY
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Director — Date 7-17-17
Chief, Division of Land Development — Date 7.17.17
Chief, Development Engineering Division — Date 7-13-17

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

**L-212**

DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | MM | AD |
| 6/05/2017 | ⚠ ADDITIONAL SCREEN WALL & STORAGE UNITS AT BLDG A SERVICE AREA | MM | AD |
| 11.17.2017 | ⚠ Revise sheet Nos. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

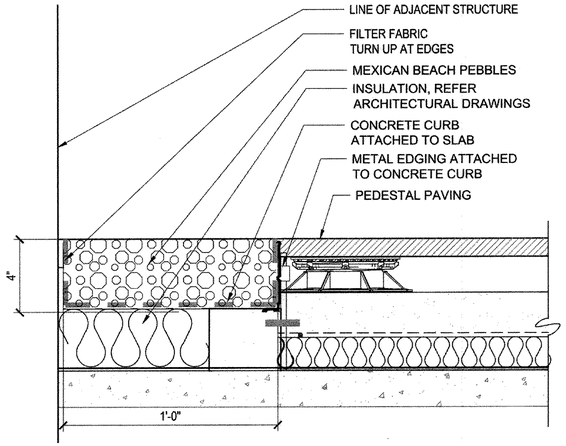
STATE OF MARYLAND — WILLIAM T. ROWE — No. 21437 — REGISTERED PROFESSIONAL ARCHITECT

OFFICE TERRACE – NORTH ELEVATION

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

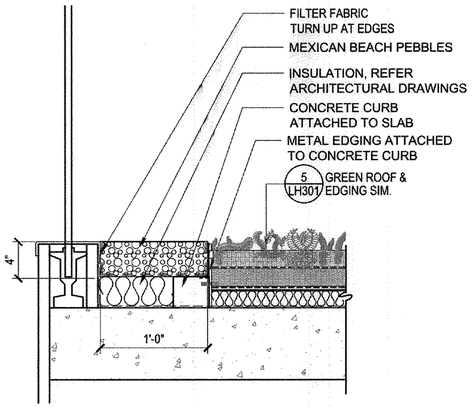
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 37 OF 63 |

SDP-15-068



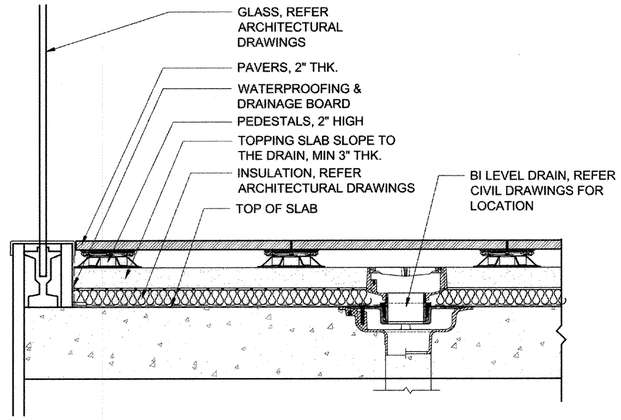

## 1 BUILDING EDGE DETAIL @ BUILDING B TERRACE

3" = 1'-0"



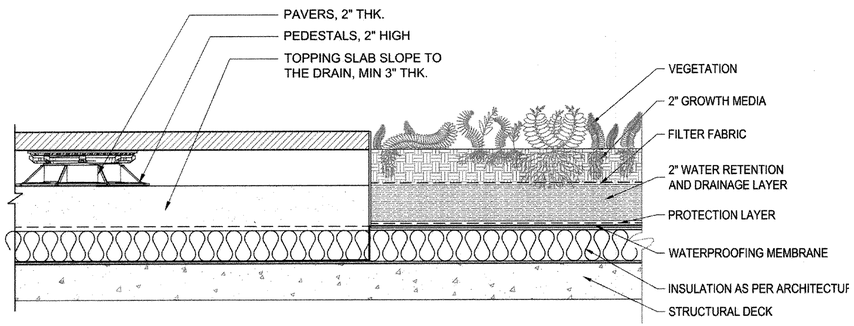

## 2 EDGE DETAIL @ BUILDING B TERRACE

1-1/2" = 1'-0"



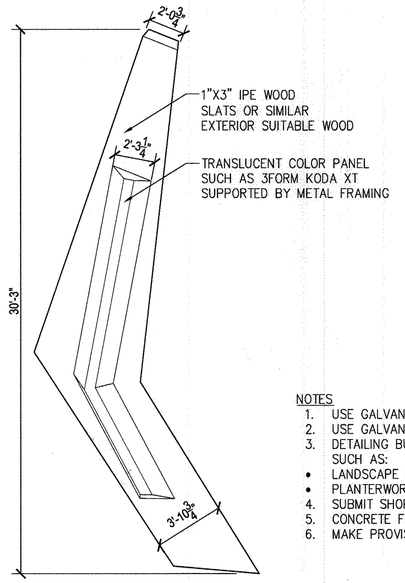

## 3 HANDRAIL EDGE DETAIL @ BUILDING B TERRACE

1-1/2" = 1'-0"



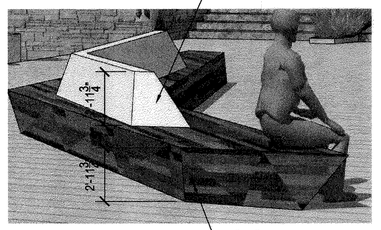

## 4 GREEN ROOF & EDGING @ BUILDING B TERRACE

3" = 1'-0"




## 5 SEATWALL @ LOWER PLAZA

1/4" = 1'-0"




SEATWALL: VIEW

NOTES

1. USE GALVANIZED STEEL SECTION FOR ALL METAL FRAMING.
2. USE GALVANIZED STEEL HARDWARE FOR ALL CONNECTIONS
3. DETAILING BUILT PIECE FROM MANUFACTURERS SUCH AS:
   - LANDSCAPE FORMS
   - PLANTERWORX
4. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL
5. CONCRETE FOUNDATION TO SUPPORT STEEL FRAMEWORK
6. MAKE PROVISION FOR LIGHTING INSIDE THE BACKREST

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**

~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9.12.16

Chief, Development Engineering Division — Date 9.7.16

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

**L-213**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | MM | AD |
| 11.17.2017 | ⚠ Revise sheet Nos. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

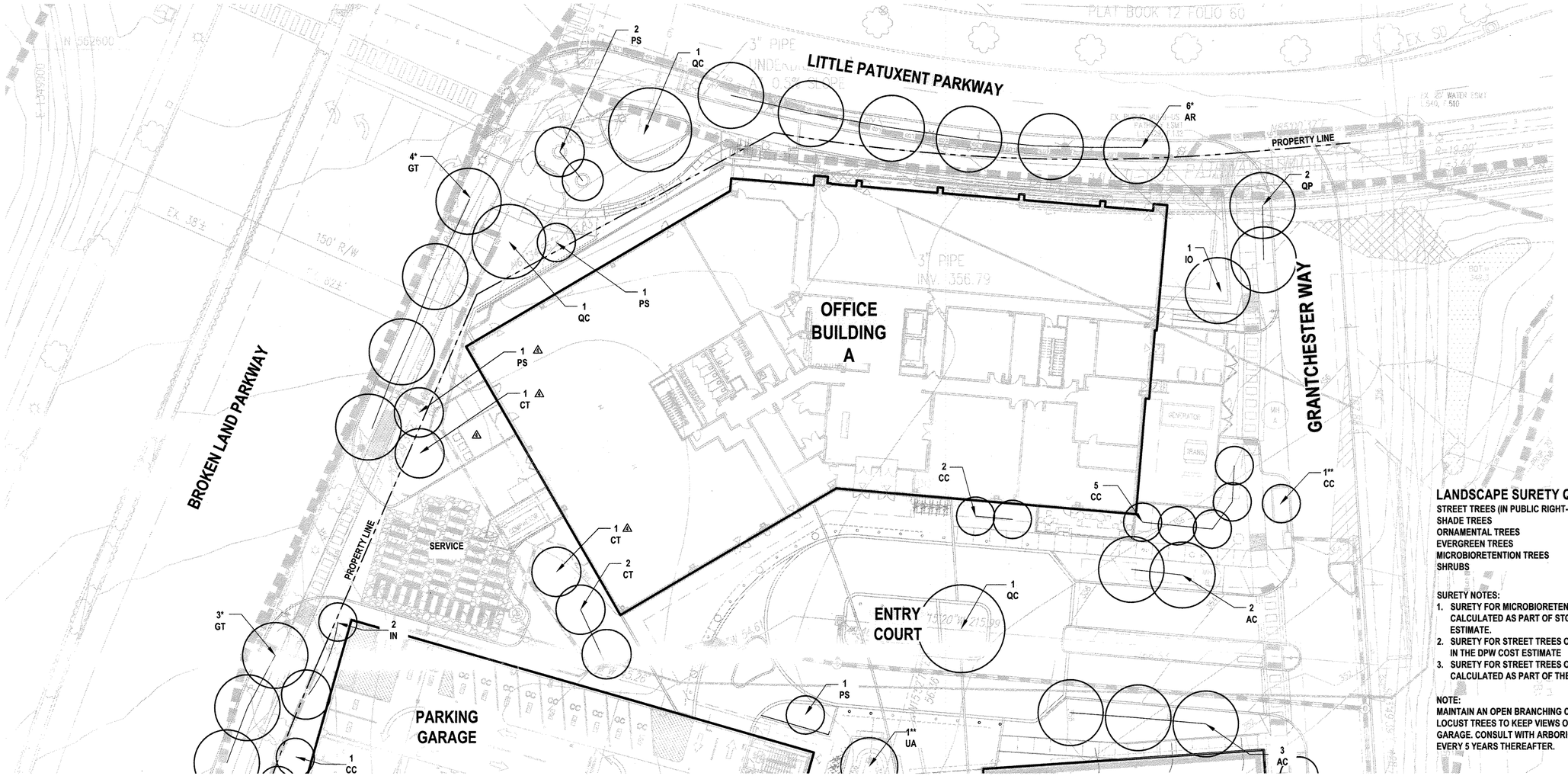
STATE OF MARYLAND — MARK ALAN JOHNSON — 1093 — LANDSCAPE ARCHITECT

ROOF TERRACE - DETAILS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET ⚠ |
| JUNE, 2016 | 36 - 01 | 38 OF 63 |

SDP-15-068




## LANDSCAPE SURETY QUANTITIES

| | |
|---|---|
| STREET TREES (IN PUBLIC RIGHT-OF-WAY) | 20 |
| SHADE TREES | 10 |
| ORNAMENTAL TREES | 24 |
| EVERGREEN TREES | 12 |
| MICROBIORETENTION TREES | 24 |
| SHRUBS | 179 |

**SURETY NOTES:**

1. SURETY FOR MICROBIORETENTION PLANTING WILL BE CALCULATED AS PART OF STORMWATER MANAGEMENT COST ESTIMATE.
2. SURETY FOR STREET TREES ON PUBLIC ROADS IS INCLUDED IN THE DPW COST ESTIMATE
3. SURETY FOR STREET TREES ON PRIVATE ROADS SHOULD BE CALCULATED AS PART OF THE DPZ COST ESTIMATE.

**NOTE:**
MAINTAIN AN OPEN BRANCHING CANOPY STRUCTURE ON HONEY LOCUST TREES TO KEEP VIEWS OPEN TO ART ON PARKING GARAGE. CONSULT WITH ARBORIST FOR INITIAL PRUNING AND EVERY 5 YEARS THEREAFTER.

## TREE LIST

### STREET TREES (*)

| Qty. | Key | Name | Size | Root |
|---|---|---|---|---|
| 6 | AR | Acer rubrum 'October Glory'<br>October Glory Red Maple | 3" Cal. | B&B |
| 14 | GT | Gleditsia triacanthos inermis 'Shademaster'<br>Shademaster Honey Locust | 4" Cal. | B&B |

### SHADE/FLOWERING/EVERGREEN TREES

| Qty. | Key | Name | Size | Root |
|---|---|---|---|---|
| 5 | AC | Aesculus x carnea<br>Red Horse Chestnut | 3" Cal. | B&B |
| 13 | CC | Cercis canadensis<br>Eastern Redbud | 16' Ht. | B&B |
| 4 | CF | Cornus florida 'Cherokee Princess'<br>Cherokee Princess Dogwood | 16' Ht. | B&B |
| 4 | CT | Chamaecyparis thyoides<br>Atlantic White Cedar | 12' Ht. | B&B |
| 1 | IO | Ilex opaca<br>American Holly | 4" Cal. | B&B |
| 7 | IN | Ilex x 'Nellie R Stevens'<br>Nellie Stevens Holly | 14' Ht. | B&B |
| 7 | PS | Prunus serrulata 'Kwanzan'<br>Kwanzan Cherry | 16' Ht. | B&B |
| 3 | QC | Quercus coccinea<br>Scarlet Oak | 5" Cal. | B&B |
| 2 | QP | Quercus phellos<br>Willow Oak | 3" Cal. | B&B |

### MICRO-BIORETENTION TREES (**)

| Qty. | Key | Name | Size | Root | Comments |
|---|---|---|---|---|---|
| ⚠ 7 | BN | Betula nigra 'Cully'<br>Heritage River Birch | 3" Cal. | B&B | Single stem |
| 3 | CT | Chamaecyparis thyoides<br>Atlantic White Cedar | 12' Ht. | B&B | Multi-Stem |
| 2 | CC | Cercis canadensis<br>Eastern Redbud | 16' Ht. | B&B | |
| 1 | IO | Ilex opaca<br>American Holly | 4" Cal. | B&B | |
| ⚠ 5 | MV | Magnolia virginiana<br>Sweetbay Mangolia | 16' Ht. | B&B | |
| 3 | NS | Nyssa sylvatica<br>Black Tupelo | 4" Cal. | B&B | |
| 2 | UA | Ulmus americana 'Princeton'<br>Princeton Elm | 5" Cal. | B&B | |
| ⚠ 1 | AR | Acer rubrum<br>Red Maple | 5" Cal. | B&B | |

0' 10' 20' 40' 60'

**CERTIFICATION NOTE:**
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

DEVELOPER'S/OWNER'S NAME
William T. Rowe
DEVELOPER'S/OWNER'S NAME

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

N

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 7-17-17
Chief, Division of Land Development — Date 7-17-17
Chief, Development Engineering Division — Date 7-13-17


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |
| 6/05/2017 | ⚠ ADDITIONAL SCREEN WALL & STORAGE UNITS AT BLDG A SERVICE AREA | MM | AD |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

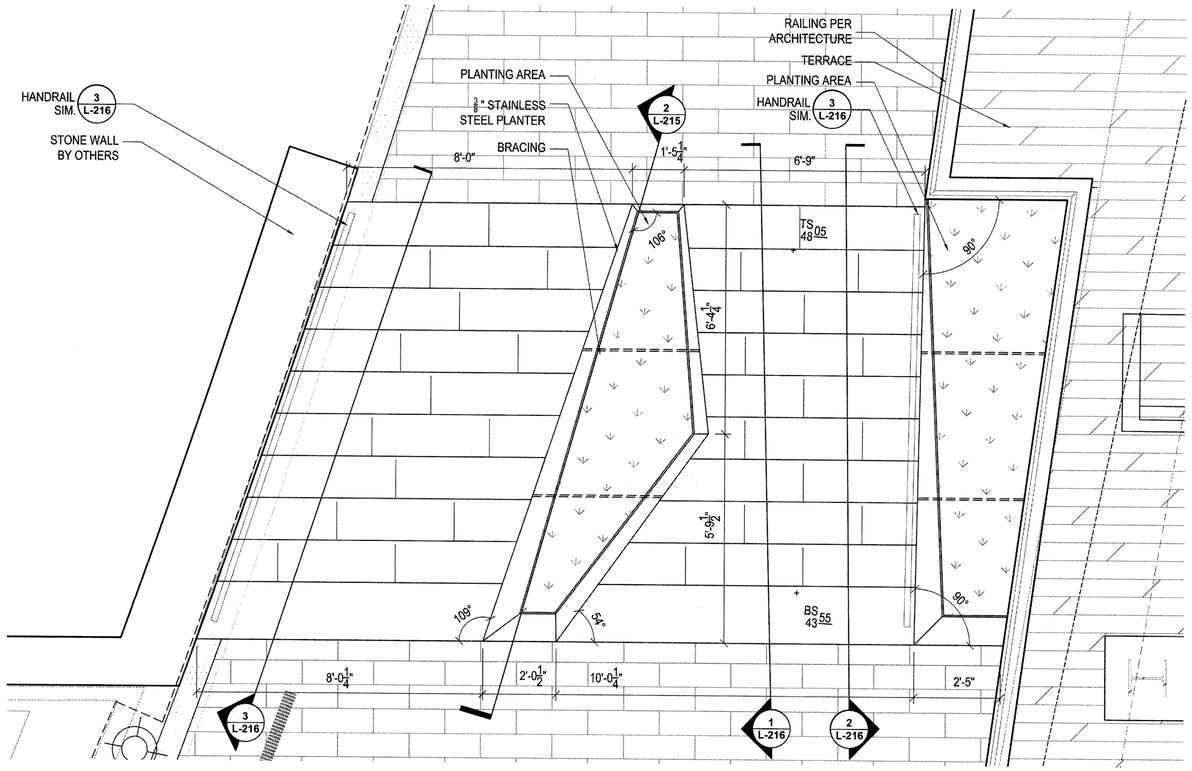
REVISED TREE PLAN A

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

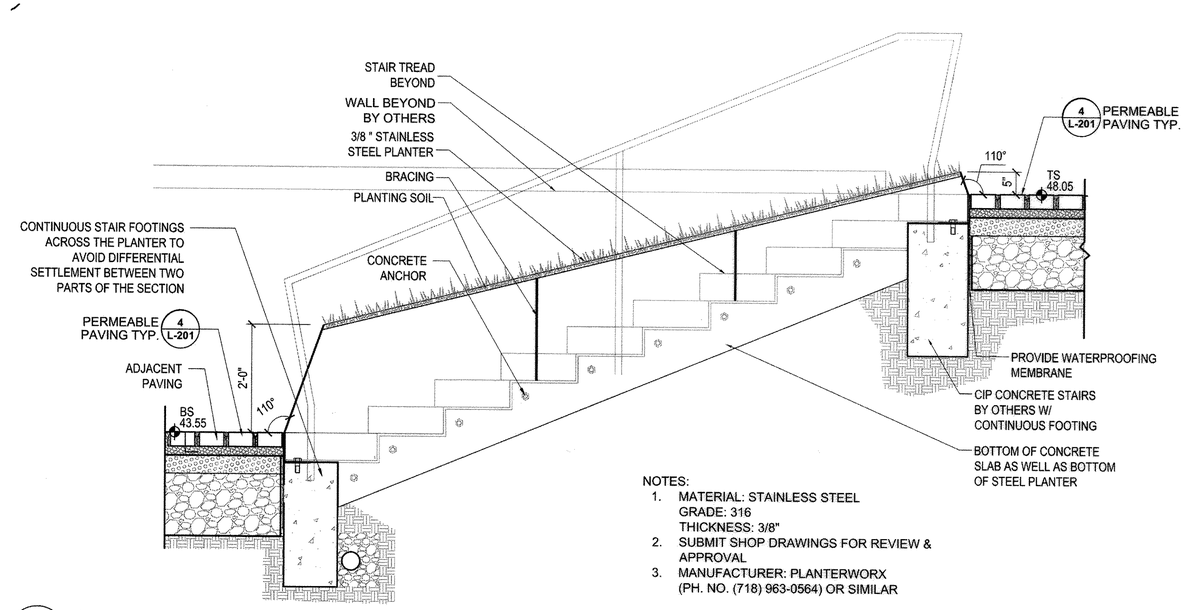
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=20' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 39 OF 58 |

L-301A

SDP-15-068




## 1 STAIR & PLANTER - PLAN
1/2" = 1'-0"




NOTES:
1. MATERIAL: STAINLESS STEEL
   GRADE: 316
   THICKNESS: 3/8"
2. SUBMIT SHOP DRAWINGS FOR REVIEW & APPROVAL
3. MANUFACTURER: PLANTERWORX
   (PH. NO. (718) 963-0564) OR SIMILAR

## 2 STAIR & PLANTER - SECTION
3/4" = 1'-0"

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

**DEVELOPER'S/OWNER'S NAME**
WILLIAM REAVE
THE HOWARD RESEARCH AND DEV. CORP.
**DEVELOPER'S/OWNER'S NAME**

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 1-25-18

Chief, Division of Land Development — Date 1-25-18

Chief, Development Engineering Division — Date 1.4.18

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

**L-215**

DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 11/17/2017 | ⚠ REVISIONS TO BUILDING B (ADDITIONAL SHEET) | MM | AD |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STAIR & PLANTER – DETAILS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A–1, A–2, & A–3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565–23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET |
| NOV., 2017 | 36 – 01 | 40 OF 63 |

SDP–15–068

## PLANT SCHEDULE

| SHRUBS | | QTY | BOTANICAL NAME / COMMON NAME | SIZE | SPACING |
|---|---|---|---|---|---|
| AP | | 26 | Aesculus parviflora / Bottlebrush Buckeye | 5 gal | 60" o.c. |
| AC | ⚠ | ~~15~~ | Amelanchier canadensis / Canadian Serviceberry | 8` Ht. | 84" o.c. |
| AD | | 63 | Azalea x `Delaware Valley White` / Valley White Azalea | 5 gal | 36" o.c. |
| **CA | ⚠⚠ | 39 | Clethra alnifolia / Summersweet Clethra | 5 gal | 48" o.c. |
| **CB | ⚠⚠ | 23 | Cornus baileyi / Bailey`s Red-twig Dogwood | 5 gal | 42" o.c. |
| **CA2 | ⚠⚠ | 25 | Cornus sericea `Arctic Fire` / Arctic Fire Dogwood | 5 gal | 36" o.c. |
| CH | | 11 | Cotoneaster horizontalis / Rock Cotoneaster | 5 gal | 36" o.c. |
| ~~⚠ EK~~ | | ~~0~~ | ~~Euonymus kiautschovicus `Manhattan` / Manhattan Euonymus~~ | ~~7 gal~~ | ~~42" o.c.~~ |
| FG | ⚠⚠ | 32 | Fothergilla gardenii / Dwarf Fothergilla | 5 gal | 42" o.c. |
| HA | ⚠ | 24 | Hamamelis x intermedia / Witch Hazel | 6` Ht. | 84" o.c. |
| ~~⚠ HW~~ | | ~~0~~ | ~~Hydrangea arborescens / Wild Hydrangea~~ | ~~5 gal~~ | ~~36" o.c.~~ |
| HL2 | | 19 | Hydrangea paniculata `Limelight` TM / Limelight Hydrangea | 5 gal | 48" o.c. |
| HL | | 11 | Hydrangea paniculata `Little Lime` / Little Lime Hydrangea | 5 gal | 36" o.c. |
| HQ | ⚠ | 48 | Hydrangea quercifolia / Oakleaf Hydrangea | 7 gal | 48" o.c. |
| **IG | ⚠⚠ | 253 | Ilex glabra / Inkberry Holly | ⚠ 10 gal | 48" o.c. |
| ~~⚠ **IR~~ | | ~~0~~ | ~~Ilex verticillata `Red Sprite` / Red Sprite Winterberry~~ | ~~5 gal~~ | ~~36" o.c.~~ |
| **IS | ⚠ | 54 | Ilex verticillata `Sparkleberry` / Winterberry | 7 gal | 48" o.c. |
| IW | | 11 | Ilex verticillata `Winter Red` / Winter Red Holly | 7 gal | 48" o.c. |
| **IV | ⚠ | 32 | Itea virginica / Virginia Willow | 5 gal | 42" o.c. |
| PC | | 18 | Pyracantha coccinea / Scarlet Pyracantha | 7 gal | 48" o.c. |
| RM | ⚠ | 29 | Rhododendron maximum / Rose Bay | 7 gal | 54" o.c. |
| RR | ⚠ | ~~34~~ | Rosa x `Knockout` TM / Rose | 7 gal | 36" o.c. |
| SB | | 3 | Spiraea x bumalda / Bumald Spiraea | 5 gal | 36" o.c. |
| VR | | 12 | Viburnum x rhytidophylloides `Alleghany` / Alleghany Viburnum | 7 gal | 72" o.c. |
| ⚠ ZPL | | 21 | Prunus laurocerasus / Cherry Laurel | 36" cont. | 42" o.c. |

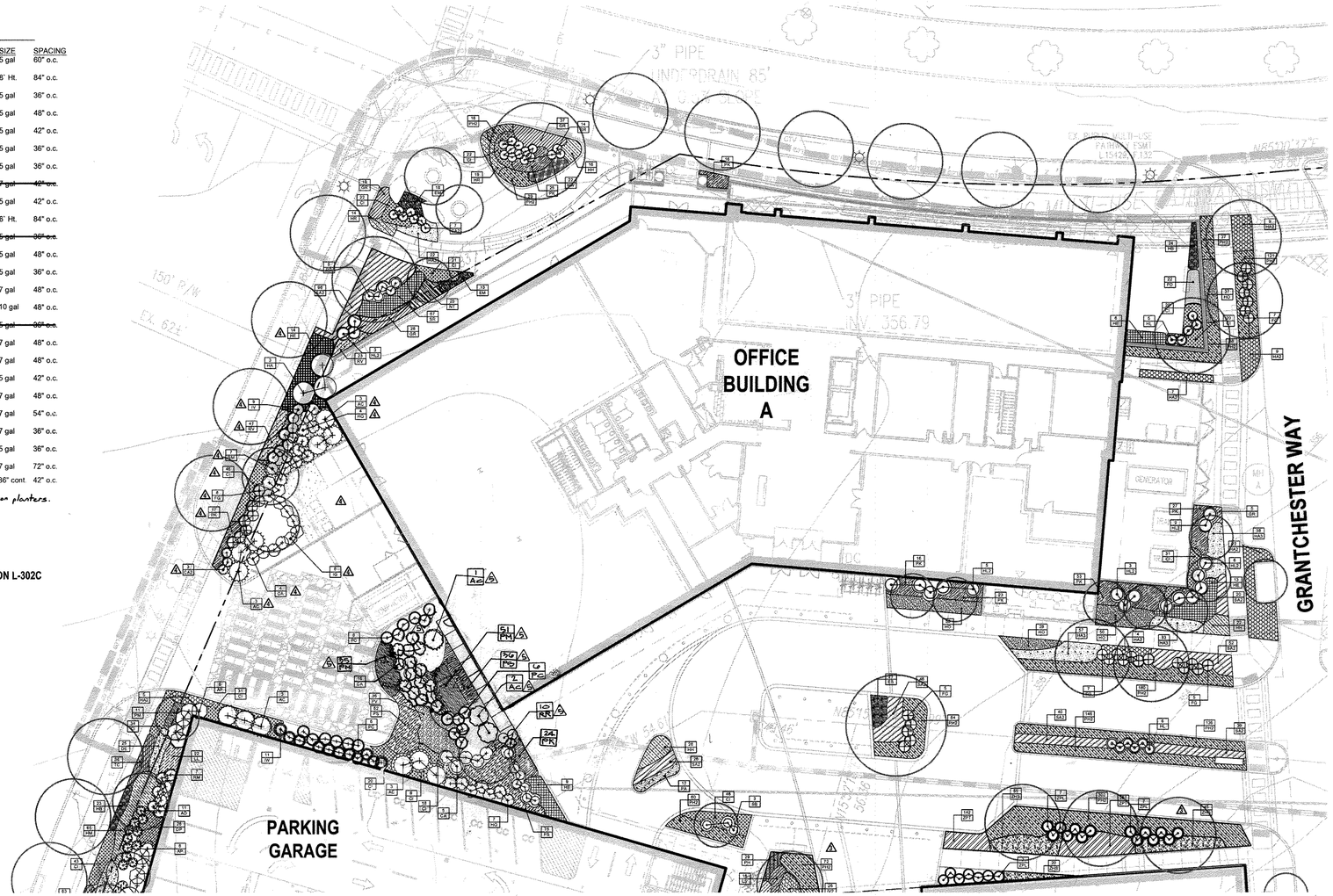
** Shrubs selected for microbioretention may also be planted in non-microbioretention planters.

## LANDSCAPE SURETY QUANTITIES

MICROBIORETENTION SHRUBS 238
NON-MICROBIORETENTION SHRUBS ~~386~~ 386 ⚠⚠⚠

**NOTE: PLANT SCHEDULE ON L-302A & L-302B INCLUDES SHRUBS SHOWN ON L-302C**

**SURETY NOTE:**
**SURETY FOR MICROBIORETENTION PLANTING WILL BE CALCULATED AS PART OF STORMWATER MANAGEMENT COST ESTIMATE.**




| GROUND COVERS | | QTY | BOTANICAL NAME / COMMON NAME | CONT | SPACING |
|---|---|---|---|---|---|
| AR | ⚠ | 107 | Actaea racemosa / Black Cohosh | 1 gal | 18" o.c. |
| ⚠ AZ | ⚠ | 170 | Zizia aurea / Golden Alexander | 1 qt | 15" o.c. |
| AD2 | ⚠ | 75 | Astilbe x arendsii `Deutschland` / Deutschland False Spiraea | 1 gal | 15" o.c. |
| BA | ⚠⚠ | 450 | Baptisia australis / Blue Wild Indigo | 1 qt | 15" o.c. |
| ~~⚠ CC~~ | | ~~0~~ | ~~Carex pensylvanica / Pennsylvania Sedge~~ | ~~1 qt~~ | ~~15" o.c.~~ |
| CI | ⚠⚠ | 660 | Carex x `Ice Dance` / Ice Dance Sedge | 1 qt | 15" o.c. |
| CL | ⚠ | 561 | Chasmanthium latifolium / Wood Oats | 1 qt | 15" o.c. |
| CG | ⚠ | 180 | Chelone glabra / White Turtle-head | 1 gal | 18" o.c. |
| DP | ⚠ | 241 | Dennstaedtia punctilobula / Hay-scented Fern | 1 gal | 18" o.c. |
| DE | | 136 | Dryopteris erythrosora / Autumn Fern | 1 gal | 18" o.c. |
| DF | | 11 | Dryopteris filix-mas / Male Fern | 1 gal | 18" o.c. |
| EM | ⚠ | 44 | Echinacea purpurea `Magnus` / Magnus Purple Coneflower | 1 gal | 18" o.c. |
| ~~⚠ EH~~ | | ~~0~~ | ~~Elymus hystrix / Bottlebrush Grass~~ | ~~1 qt~~ | ~~15" o.c.~~ |
| ES | | 21 | Eragrostis spectabilis / Purple Love Grass | 1 gal | 18" o.c. |
| EG | ⚠ | 57 | Eupatorium maculatum `Gateway` / Gateway Joe-Pye Weed | 1 gal | 18" o.c. |
| GR | ⚠ | 89 | Geranium x `Rozanne` TM / Hybrid Cranesbill | 1 gal | 18" o.c. |
| HM | | 65 | Hakonechloa macra / Japanese Forest Grass | 1 gal | 18" o.c. |
| HB | | 97 | Helleborus x `Brandywine` TM / Brandywine Hellebore | 1 gal | 15" o.c. |
| HH | | 66 | Hemerocallis x `Happy Returns` / Happy Returns Daylily | 1 gal | 18" o.c. |
| HR | | 66 | Hemerocallis x `Red Magic` / Daylily | 1 gal | 18" o.c. |
| HO | | 173 | Hemerocallis x `Stella de Oro` / Stella de Oro Daylily | 1 gal | 18" o.c. |
| HA3 | ⚠ | 409 | Heuchera villosa `Autumn Bride` / Autumn Bride Heuchera | 1 gal | 18" o.c. |
| HE | ⚠ | 76 | Hosta x `Elegans` / Plantain Lily | 1 gal | 36" o.c. |
| HA2 | ⚠ | ~~74~~ 74 | Hosta x `Sum and Substance` / Plantain Lily | 1 gal | 36" o.c. |
| ~~⚠ HF~~ | | ~~0~~ | ~~Hypericum frondosum `Sunburst` / Sunburst Hypericum~~ | ~~1 gal~~ | ~~24" o.c.~~ |
| IV2 | ⚠ | 164 | Iris versicolor / Blue Flag | 1 gal | 18" o.c. |
| JE | ⚠ | 481 | Juncus effusus / Soft Rush | 1 gal | 15" o.c. |
| LS | ⚠ | 90 | Liatris spicata / Spike Gayfeather | 1 gal | 18" o.c. |
| LL | | 85 | Ligularia x hessei `Little Rocket` / Little Rocket Ragwort | 1 gal | 18" o.c. |
| MS | | 13 | Matteuccia struthiopteris / Ostrich Fern | 1 gal | 24" o.c. |
| MJ | ⚠ | 10 | Monarda didyma `Jacob Cline` / Jacob Cline Bee Balm | 1 gal | 18" o.c. |
| NT | ⚠ | 25 | Nassella tenuissima / Texas Needle Grass | 1 gal | 18" o.c. |
| NW | ⚠ | 57 | Nepeta x faassenii `Walkers Low` / Walkers Low Catmint | 1 gal | 18" o.c. |
| PV | ⚠ | 36 | Panicum virgatum `Shenendoah` / Burgundy Switch Grass | 1 gal | 24" o.c. |
| PS | ⚠⚠ | 730 | Panicum virgatum `Shenendoah` / Burgundy Switch Grass | 1 qt | 18" o.c. |
| PA | | 12 | Pennisetum alopecuroides / Fountain Grass | 1 gal | 24" o.c. |
| PH2 | ⚠ | 1,260 | Pennisetum alopecuroides `Hameln` / Hameln Dwarf Fountain Grass | 1 gal | 15" o.c. |
| PK | ⚠ | 242 | Pennisetum orientale `Karley Rose` / Karley Rose Fountain Grass | 1 gal | 18" o.c. |
| PH | ⚠ | 239 | Penstemon digitalis `Husker Red` / Beardtongue | 1 qt | 12" o.c. |
| PD | | 22 | Phlox paniculata `David` / White Summer Phlox | 1 gal | 18" o.c. |
| PO | ⚠ | 0 | Polygonatum odoratum `Variegatum` / Solomon's Seal | 1 gal | 24" o.c. |
| PM | ⚠⚠ | ~~214~~ 214 | Pycnanthemum muticum / Clustered Mountainmint | 1 gal | 18" o.c. |
| RV | ⚠⚠ | 64 | Rudbeckia fulgida fulgida / Orange Coneflower | 1 qt | 15" o.c. |
| RH | | 25 | Rudbeckia hirta / Black-eyed Susan | 1 gal | 18" o.c. |
| RL | ⚠ | 39 | Rudbeckia laciniata / Cutleaf Coneflower | 1 gal | 15" o.c. |
| SA2 | ⚠ | 321 | Sedum x `Autumn Joy` / Autumn Joy Sedum | 1 gal | 18" o.c. |
| ~~⚠ SA~~ | | ~~0~~ | ~~Senecio aureus / Golden Ragwort~~ | ~~1 gal~~ | ~~12" o.c.~~ |
| SR | | 250 | Solidago rugosa `Fireworks` / Wrinkleleaf Goldenrod | 1 gal | 18" o.c. |
| TC | | 132 | Tiarella cordifolia / Foamflower | 1 gal | 15" o.c. |

| GROUND COVERS | QTY | BOTANICAL NAME / COMMON NAME | CONT | SPACING |
|---|---|---|---|---|
| ⚠ ZCA | 252 | Carex amphibola / Creek Sedge | 1 gal | 15" o.c. |
| ⚠ ZCE | 339 | Carex emoryi / Emory Sedge | 1 gal | 15" o.c. |
| ⚠ ZPA | 111 | Packera aurea / Golden Groundsel | 1 gal | 18" o.c. |
| ⚠ ZIA | 129 | Iris x 'Aristrocracy' / Aristocracy Iris | 1 gal | 15" o.c. |
| ⚠ ZHS | 120 | Hosta sieboldiana elegans / Blue Plantain Lily | 1 gal | 18" o.c. |
| ⚠ ZPT | 403 | Pachysandra terminalis / Japanese Spurge | 4" pot | 9" o.c. |

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

DEVELOPER'S/OWNER'S NAME

William T. Rowe

DEVELOPER'S/OWNER'S NAME

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 7-17-17
Chief, Division of Land Development — Date 7-17-17
Chief, Development Engineering Division — Date 7-13-17

0' 10' 20' 40' 60'

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

N

**L-302A**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 1/15/2016 | ⚠ REVISION TO WALKWAY AND PLANTING QUANTITIES | JH | NB |
| 6/7/2016 | ⚠ REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |
| 6/ 7/2017 | ⚠ ADDITIONAL SCREEN WALL & STORAGE UNITS AT BLDG A SERVICE AREA | MM | AD |
| 9/5/2017 | ⚠ Additional door + sidewalk connection at Bldg 'A' | JJ | MJ |

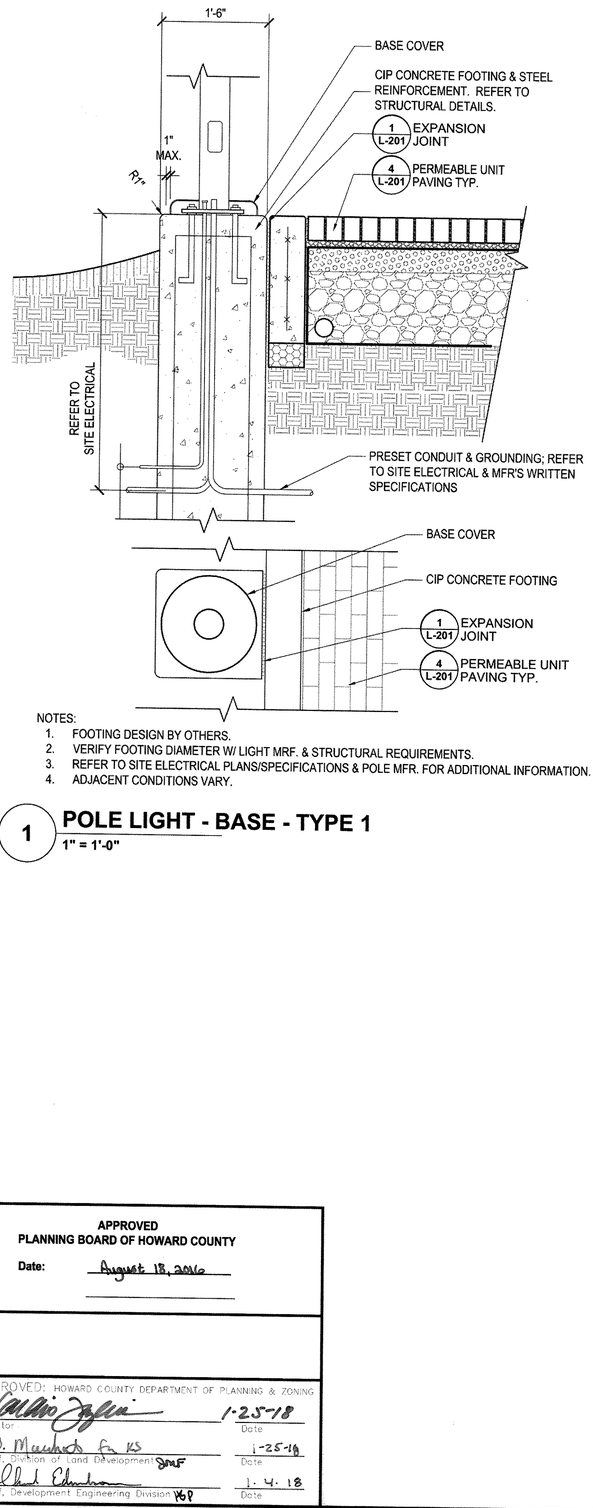
OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10420 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JEFFRIS
(410) 964-[illegible]

REVISED UNDERSTORY PLANTING PLAN A

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23565
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

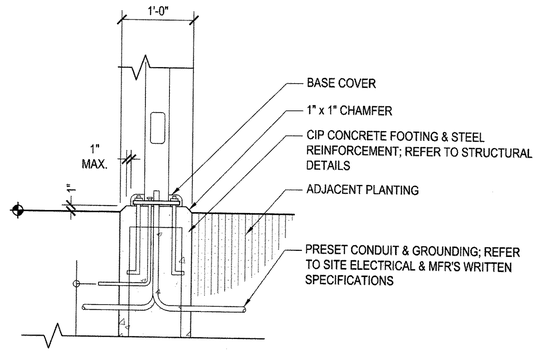
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=20' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 41 OF 58 |

SDP-15-068



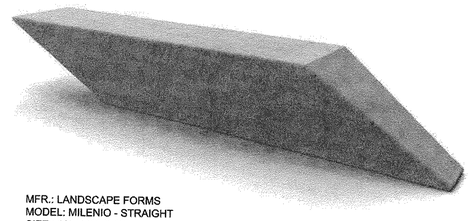

NOTES:
1. FOOTING DESIGN BY OTHERS.
2. VERIFY FOOTING DIAMETER W/ LIGHT MRF. & STRUCTURAL REQUIREMENTS.
3. REFER TO SITE ELECTRICAL PLANS/SPECIFICATIONS & POLE MFR. FOR ADDITIONAL INFORMATION.
4. ADJACENT CONDITIONS VARY.

## 1 POLE LIGHT - BASE - TYPE 1
1" = 1'-0"




NOTES:
1. FOOTING DESIGN BY OTHERS.
2. VERIFY FOOTING DIAMETER W/ LIGHT MRF. & STRUCTURAL REQUIREMENTS.
3. REFER TO SITE ELECTRICAL PLANS/SPECIFICATIONS & POLE MFR. FOR ADDITIONAL INFORMATION.

## 2 POLE LIGHT - BASE - TYPE 2
1" = 1'-0"



MFR.: LANDSCAPE FORMS
MODEL: MILENIO - STRAIGHT
SIZE : 18" X 99" X 18"
COLOR: GREY

## 3 BENCH - TYPE 3
NTS

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 1-25-18

Chief, Division of Land Development — Date 1-25-18

Chief, Development Engineering Division — Date 1.4.18

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

**DEVELOPER'S/OWNER'S NAME**
WILLIAM ROWE
THE HOWARD RESEARCH + DEV. CORP.
**DEVELOPER'S/OWNER'S NAME**

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

**L-217**

DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

| DES. | DRN. | CHK. |
|---|---|---|

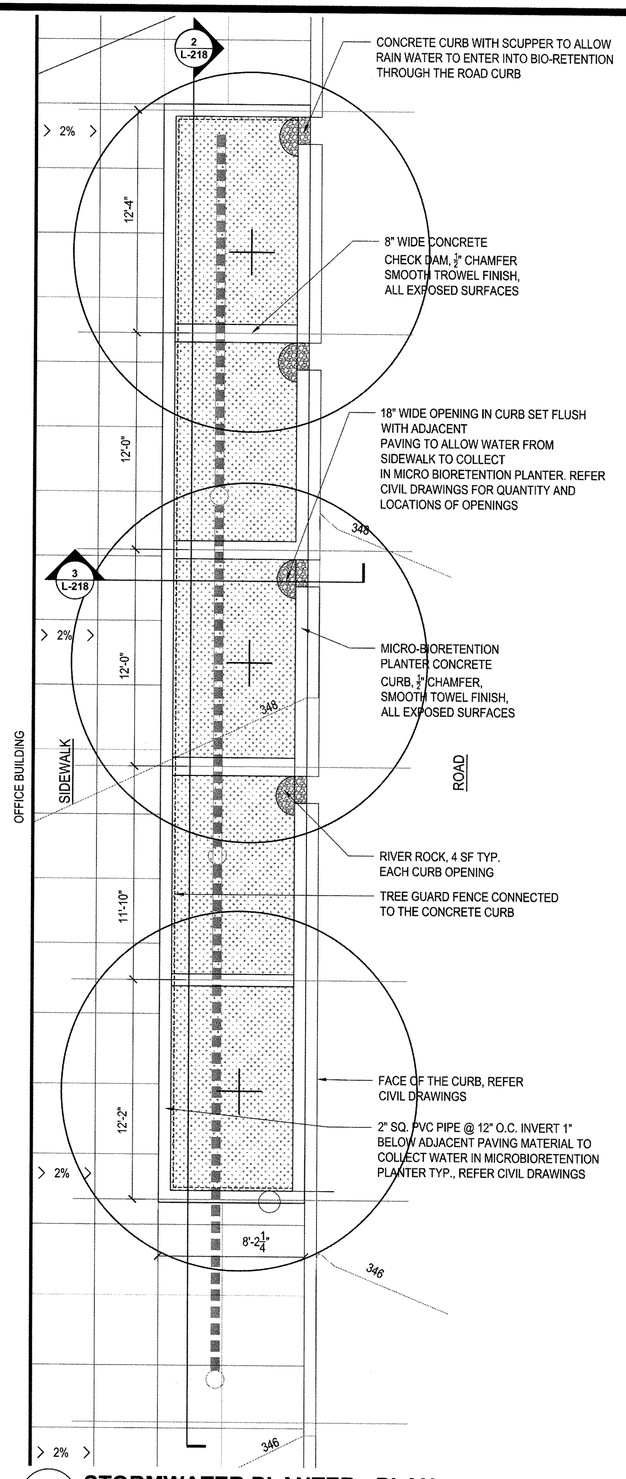
| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 11/17/2017 | ⚠ REVISIONS TO BUILDING B (ADDITIONAL SHEET) | MM | AD |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

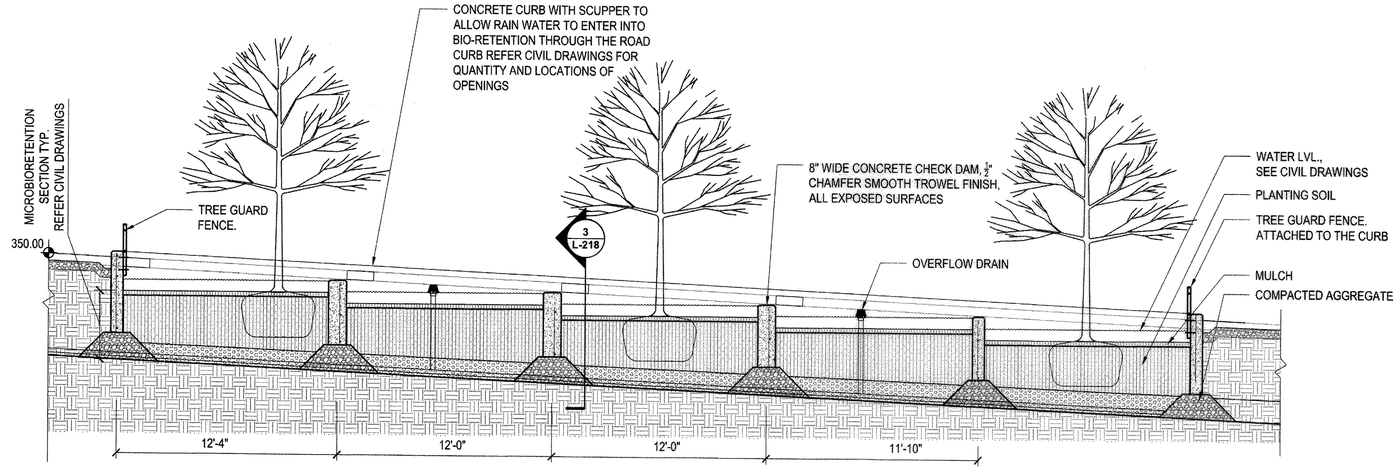
SITE FURNISHINGS - DETAILS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

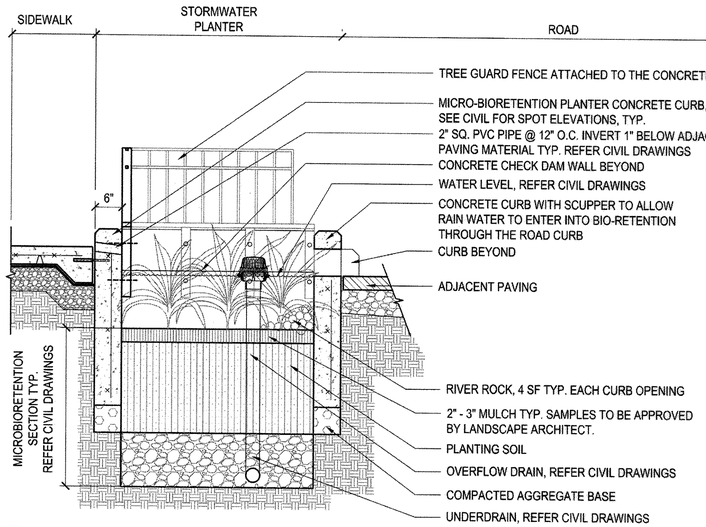
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| NOV., 2017 | 36 - 01 | 42 OF 63 |




## 1 STORMWATER PLANTER - PLAN
1/4" = 1'-0"




## 2 STORMWATER PLANTER - SECTION A
1/4" = 1'-0"




## 3 STORMWATER PLANTER - SECTION B
3/4" = 1'-0"

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

**DEVELOPER'S/OWNER'S NAME**
William Rouse
The Howard Research and Dev. Corp.
**DEVELOPER'S/OWNER'S NAME**

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date: 1-25-18

Chief, Division of Land Development — Date: 1-25-18

Chief, Development Engineering Division — Date: 1.4.18

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

**L-218**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 11/17/2017 | ⚠ REVISIONS TO BUILDING B (ADDITIONAL SHEET) | MM | AD |

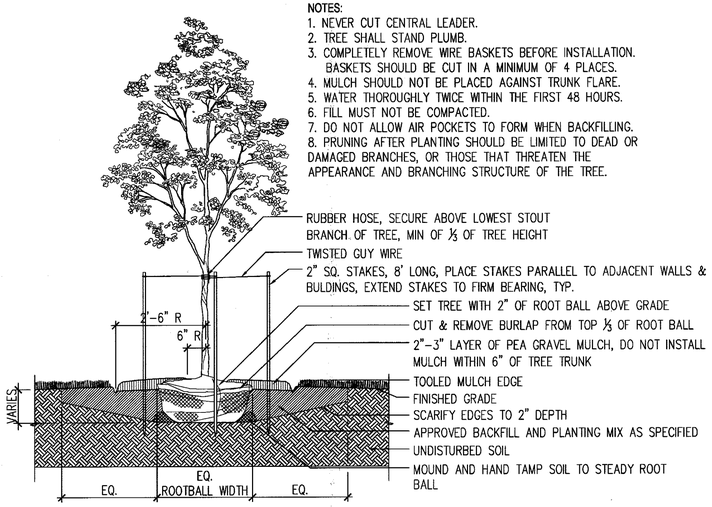
OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STORMWATER - DETAILS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| NOV., 2017 | 36 - 01 | 43 OF 63 |

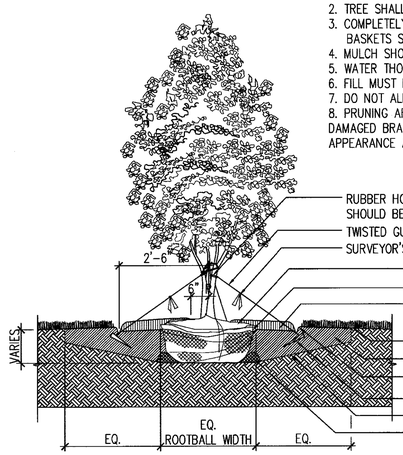
SDP-15-068




NOTES:
1. NEVER CUT CENTRAL LEADER.
2. TREE SHALL STAND PLUMB.
3. COMPLETELY REMOVE WIRE BASKETS BEFORE INSTALLATION. BASKETS SHOULD BE CUT IN A MINIMUM OF 4 PLACES.
4. MULCH SHOULD NOT BE PLACED AGAINST TRUNK FLARE.
5. WATER THOROUGHLY TWICE WITHIN THE FIRST 48 HOURS.
6. FILL MUST NOT BE COMPACTED.
7. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING.
8. PRUNING AFTER PLANTING SHOULD BE LIMITED TO DEAD OR DAMAGED BRANCHES, OR THOSE THAT THREATEN THE APPEARANCE AND BRANCHING STRUCTURE OF THE TREE.

- RUBBER HOSE, SECURE ABOVE LOWEST STOUT BRANCH OF TREE, MIN OF ⅓ OF TREE HEIGHT
- TWISTED GUY WIRE
- 2" SQ. STAKES, 8' LONG, PLACE STAKES PARALLEL TO ADJACENT WALLS & BULDINGS, EXTEND STAKES TO FIRM BEARING, TYP.
- SET TREE WITH 2" OF ROOT BALL ABOVE GRADE
- CUT & REMOVE BURLAP FROM TOP ⅓ OF ROOT BALL
- 2"-3" LAYER OF PEA GRAVEL MULCH, DO NOT INSTALL MULCH WITHIN 6" OF TREE TRUNK
- TOOLED MULCH EDGE
- FINISHED GRADE
- SCARIFY EDGES TO 2" DEPTH
- APPROVED BACKFILL AND PLANTING MIX AS SPECIFIED
- UNDISTURBED SOIL
- MOUND AND HAND TAMP SOIL TO STEADY ROOT BALL

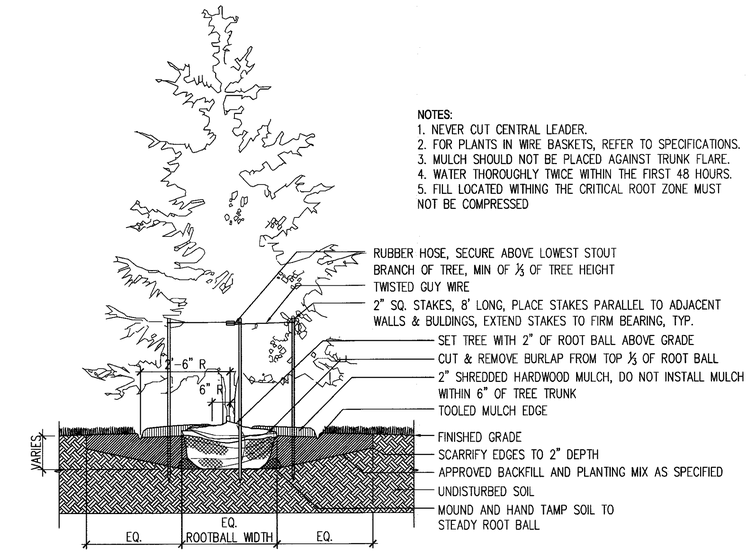
## 1 DECIDUOUS TREE PLANTING
1/2" = 1'-0"




NOTES:
1. NEVER CUT CENTRAL LEADER.
2. TREE SHALL STAND PLUMB.
3. COMPLETELY REMOVE WIRE BASKETS BEFORE INSTALLATION. BASKETS SHOULD BE CUT IN A MINIMUM OF 4 PLACES.
4. MULCH SHOULD NOT BE PLACED AGAINST TRUNK FLARE.
5. WATER THOROUGHLY TWICE WITHIN THE FIRST 48 HOURS.
6. FILL MUST NOT BE COMPACTED.
7. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING.
8. PRUNING AFTER PLANTING SHOULD BE LIMITED TO DEAD OR DAMAGED BRANCHES, OR THOSE THAT THREATEN THE APPEARANCE AND BRANCHING STRUCTURE OF THE TREE.

- RUBBER HOSE, SECURE ON EACH MAJOR STEM, ALL MAJOR STEMS SHOULD BE WIRED TOGETHER.
- TWISTED GUY WIRE, TYP. OF 3
- SURVEYOR'S FLAG, SECURE ONE TO EACH GUY WIRE
- SET TREE WITH 2" OF ROOT BALL ABOVE GRADE
- CUT & REMOVE BURLAP FROM TOP ⅓ OF ROOT BALL
- 2"-3" LAYER OF PEA GRAVEL MULCH, DO NOT INSTALL MULCH WITHIN 6" OF TREE TRUNK
- FINISHED GRADE
- APPROVED BACKFILL AND PLANTING MIX AS SPECIFIED
- TOOLED MULCH EDGE
- TREATED 2"X4" DEADMAN (6-8" LONG)
- SCARIFY EDGES TO 2" DEPTH
- MOUND AND HAND TAMP SOIL TO STEADY ROOT BALL

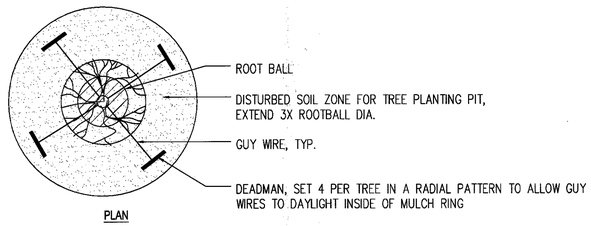
## 2 MULTI-STEM TREE PLANTING
1/2" = 1'-0"



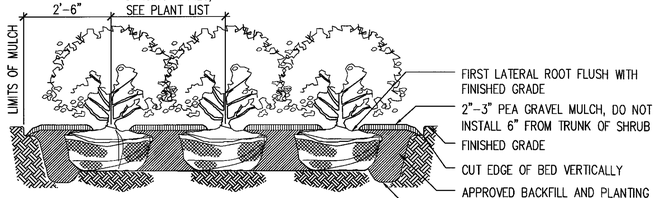

NOTES:
1. NEVER CUT CENTRAL LEADER.
2. FOR PLANTS IN WIRE BASKETS, REFER TO SPECIFICATIONS.
3. MULCH SHOULD NOT BE PLACED AGAINST TRUNK FLARE.
4. WATER THOROUGHLY TWICE WITHIN THE FIRST 48 HOURS.
5. FILL LOCATED WITHING THE CRITICAL ROOT ZONE MUST NOT BE COMPRESSED

- RUBBER HOSE, SECURE ABOVE LOWEST STOUT BRANCH OF TREE, MIN OF ⅓ OF TREE HEIGHT
- TWISTED GUY WIRE
- 2" SQ. STAKES, 8' LONG, PLACE STAKES PARALLEL TO ADJACENT WALLS & BULDINGS, EXTEND STAKES TO FIRM BEARING, TYP.
- SET TREE WITH 2" OF ROOT BALL ABOVE GRADE
- CUT & REMOVE BURLAP FROM TOP ⅓ OF ROOT BALL
- 2" SHREDDED HARDWOOD MULCH, DO NOT INSTALL MULCH WITHIN 6" OF TREE TRUNK
- TOOLED MULCH EDGE
- FINISHED GRADE
- SCARRIFY EDGES TO 2" DEPTH
- APPROVED BACKFILL AND PLANTING MIX AS SPECIFIED
- UNDISTURBED SOIL
- MOUND AND HAND TAMP SOIL TO STEADY ROOT BALL

## 3 EVERGREEN TREE PLANTING
1/2" = 1'-0"

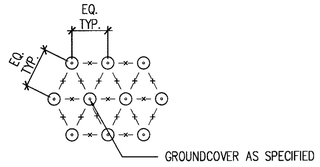



## 4 STAKED PLAN ENLARGEMENT
1/2" = 1'-0"




NOTES:
1. CUT AND REMOVE BURLAP FROM THE TOP ⅓ OF THE ROOT BALL
2. MIN. ROOT SPREAD TO BE IN ACCORDANCE WITH AMERICAN STANDARDS FOR NURSREY STOCK.
3. PRUNE ALL DAMAGED, DISEASED, OR WEAK LIMBS AND ROOTS.
4. CLEANLY PRUNE ALL DAMAGED ROOT ENDS.
5. DO NOT ALLOW ROOTS TO DRY OUT DURING INSTALLATION PROCESS.
6. SOAK ROOTS IN WATER OVERNIGHT BEFORE PLANTING.

## 5 SHRUB PLANTING
1/2" = 1'-0"




REFER TO PLANT LIST FOR SPACING

## 6 PLANT SPACING DIAGRAM
1/2" = 1'-0"

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**

~~**DEVELOPER'S/OWNER'S NAME**~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | 9-12-16 Date |
| Chief, Division of Land Development | 9.12.16 Date |
| Chief, Development Engineering Division | 9.2.16 Date |

**DESIGN**COLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND — MATTHEW ALAN DOBROTA — 1099 — LANDSCAPE ARCHITECT

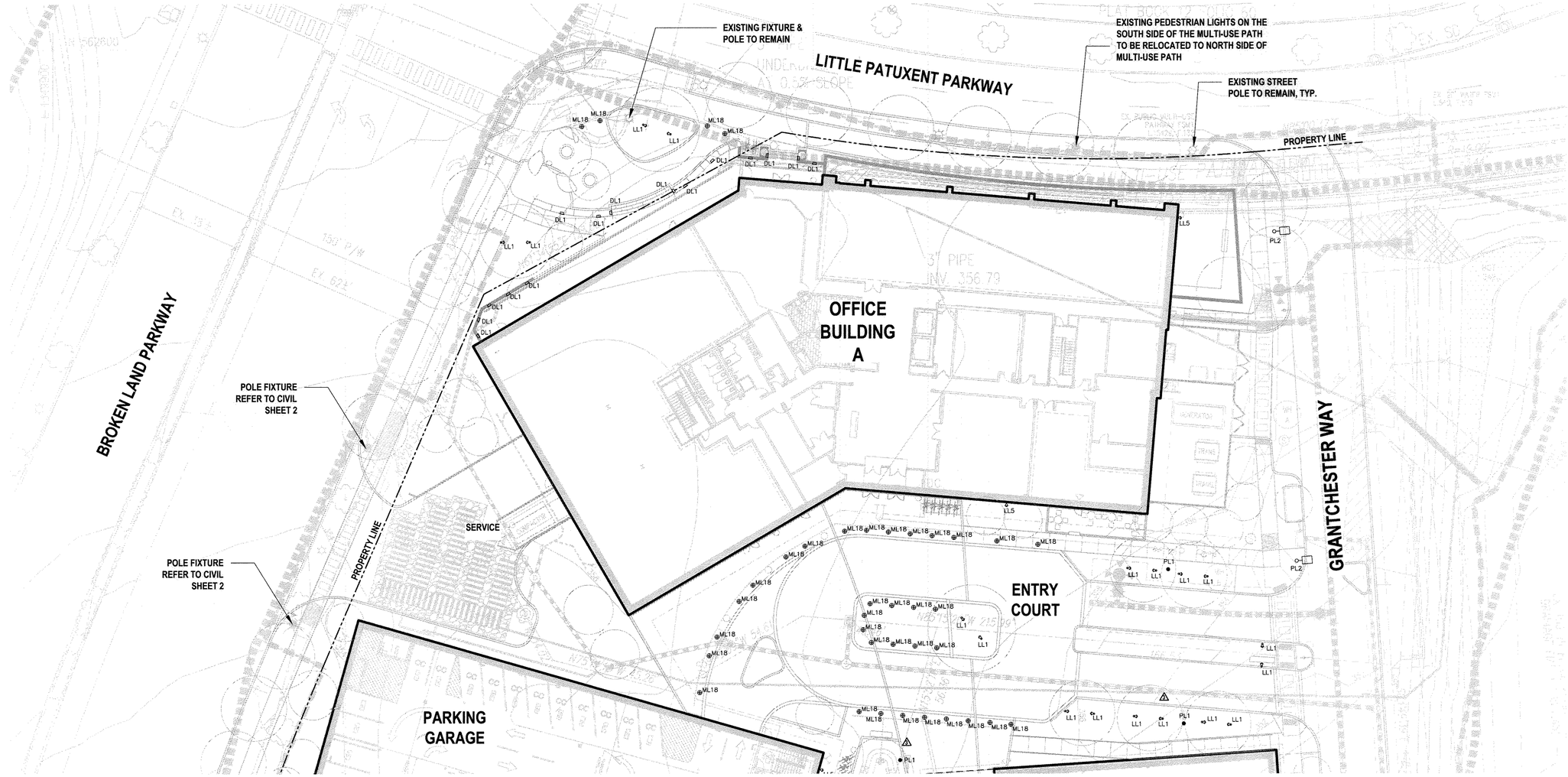
REVISED PLANTING DETAILS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 44 OF 58 |

**L-310**

SDP-15-068




**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | 9-12-16 Date |
| Chief, Division of Land Development | 9-12-16 Date |
| Chief, Development Engineering Division | 9.2.16 Date |

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

0' 10' 20' 40' 60'

N

**L-401A**


**DESIGN COLLECTIVE**
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 1/15/2016 | △1 REVISION TO WALKWAY AND LIGHTS | JH | NB |
| 6/27/2016 | △2 REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND MATTHEW ALAN DEMAND 1939 LANDSCAPE ARCHITECT

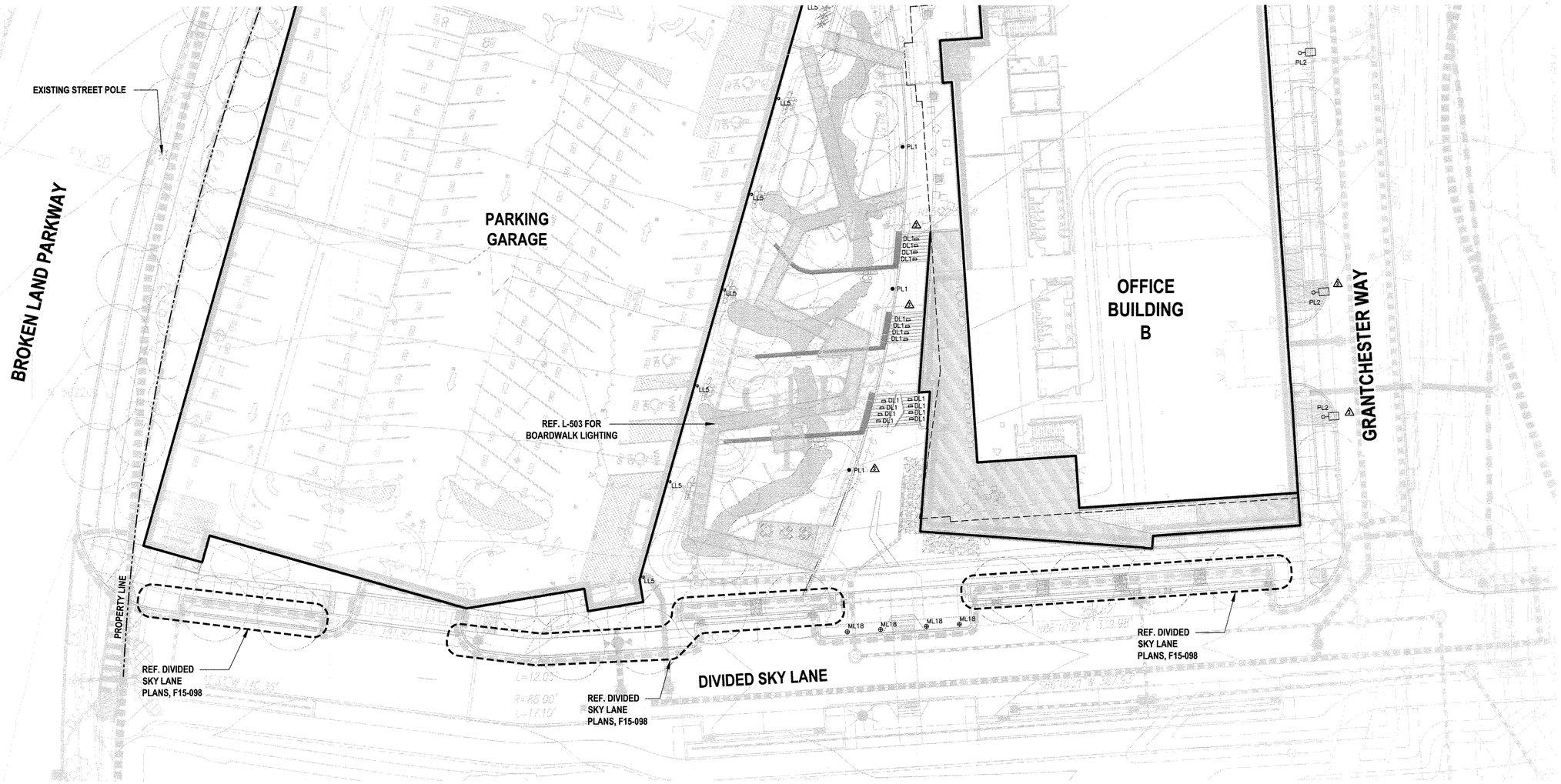
REVISED LIGHTING PLAN A

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566

ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=20' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 45 OF 58 |

SDP-15-068




**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9-12-16

Chief, Development Engineering Division — Date 9.7.16

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

0' 10' 20' 40' 60'

N

**L-401B**


**DESIGN**COLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND — CLINTON ALAN HOFFMAN — No. 1979 — LANDSCAPE ARCHITECT

REVISED LIGHTING PLAN B

# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E

MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=20' | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 46 OF 58 |

SDP-15-068

## LIGHTING FIXTURE SCHEDULE

| TYPE | MTG. | DESCRIPTION | LAMPING QTY. | LAMPING LAMP DESIGNATION | LOAD (VA) | VOLTS | MANUFACTURER | CATALOG NUMBER |
|---|---|---|---|---|---|---|---|---|
| DL1 | WALL | LED STEPLIGHT MOUNTED IN WALL | 15 | 3000K WHITE LED | 2 | 120 | BEGA | 1323LED-(FINISH) |
| LL1 | GROUND | LED GROUND MOUNTED UPLIGHT △3 | 18 | 3000K WHITE LED | 6 | 120-277 | WINONA | ASLED-3023-12V-L3-F0-SH0-C2-STD + GROUND MOUNTING ACCESSORY + REMOTE LOW-VOLTAGE TRANSFORMER |
| LL5 | WALL | LED ROOF MOUNTED FLOODLIGHT FOR MOONLIGHT EFFECT | 9 | 3000K WHITE LED | 34 | 120-277 | HYDREL | TPS1-18LED-WHT30K-MVOLT-MFL-YM-(ACCESSORIES)-GS-LP-(FINISH) |
| △3 ~~LL6~~ | ~~SURFACE~~ | ~~LED FLEXIBLE CONTINUOUS LINEAR FIXTURE FOR SPECIAL FEATURE LIGHTING~~ | ~~0~~ | ~~3000K WHITE LED~~ | ~~5 PER FOOT~~ | ~~120-277~~ | ~~MODALIGHT~~ | ~~SNX-F-(FEED)-3000K-(LENGTH) + REMOTE LOW-VOLTAGE TRANSFORMER~~ |
| ML18 | BOLLARD | LED ROAD AND SIDEWALK BOLLARD △3 | 41 | 4000K WHITE LED | 22 | 120-277 | LOUIS POULSEN | FLINDT BOLLARD - LED |
| PL1 | POLE | LED PEDESTRIAN POLE MOUNTED AREA LIGHT | 1 | | | | | |
| PL2 | POLE | LED ROADWAY POLE MOUNTED AREA LIGHT | 2 | LED | | | PHILIPS GARDCO | ECOFORM #160LA-481A LED |

## GENERAL NOTES:

1. ALL LIGHTING FIXTURES, LAMPS AND RELATED DEVICES FURNISHED UNDER THIS CONTRACT SHALL CARRY THE APPROVAL LABEL OF UL OR ETL FOR THE SPECIFIC APPLICATION IN WHICH THEY ARE USED.
2. THE STATEMENT "FINISH TO BE SELECTED BY DESIGN PROFESSIONAL" SHALL BE INTERPRETED TO MEAN THAT THE FINISH OF THE LUMINAIRE SHALL MATCH THE APPEARANCE OF A PAINT CHIP, COLOR NUMBER, OR METAL SWATCH FURNISHED BY THE DESIGN PROFESSIONAL DURING THE SUBMITTAL REVIEW PROCESS.
3. WHITE L.E.D.'S SHALL MEET, AT A MINIMUM, CHROMATICITY STANDARDS SET BY ANSI/NEMA/ANSLG C79.377-2011. L.E.D. LUMEN MAINTENANCE SHALL BE MEASURED IN ACCORDANCE WITH IESNA LM-80 STANDARDS. PHOTOMETRIC TESTING FOR SOLID STATE LUMINAIRES SHALL BE IN ACCORDANCE WITH IESNA LM-79 STANDARDS.
4. UNLESS OTHERWISE NOTED, LAMP DESIGNATIONS ARE FOR LAMPS BY OSRAM/SYLVANIA.
5. CONTRACTOR SHALL CONFIRM FIXTURE VOLTAGES, CEILING TRIMS, AND MOUNTING HARDWARE ARE COMPATIBLE WITH THEIR APPLICATION AS DETERMINED BY THE DESIGN PROFESSIONAL PRIOR TO ORDERING FIXTURES.
6. CONTRACTOR SHALL SELECT, FURNISH AND INSTALL THE CORRECT SIZE OF SECONDARY WIRING FROM REMOTE TRANSFORMERS AND/OR REMOTE BALLASTS AS REQUIRED TO KEEP VOLTAGE DROP IN THE SECONDARY WIRING BELOW 3% OF RATED VOLTAGE.
7. ALL L.E.D. LAMPS SHALL BE BURNED CONTINUOUSLY FOR 100 HOURS AT FULL OUTPUT PRIOR TO FOCUSING OF FIXTURES AND COMMISSIONING OF CONTROL SYSTEMS.
8. CONTRACTOR SHALL PROVIDE LABOR AND EQUIPMENT FOR FOCUSING OF ADJUSTABLE FIXTURES AND PRESETTING OF LIGHTING CONTROL SYSTEMS. FOCUSING AND PRESETTING SHALL BE DONE IN THE PRESENCE OF THE DESIGN PROFESSIONAL. CONTRACTOR SHALL FOCUS LIGHTING AFTER DARK IF DIRECTED BY THE OWNER'S REPRESENTATIVE. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL PROVIDE AT LEAST ONE DAY OF A FACTORY-TRAINED AND CERTIFIED TECHNICIAN TO PROVIDE WARRANTY START UP AND PROGRAMMING FOR ALL LIGHTING CONTROL SYSTEMS AND PROGRAMMABLE LIGHTING FIXTURES.
9. CONTRACTOR SHALL PROVIDE THE FOLLOWING WITH THEIR BID:
   A. THE UNIT PRICE, WITHOUT LAMP, FOR EACH LIGHTING FIXTURE TYPE LISTED WITHIN THE LIGHTING FIXTURE SCHEDULE. THE UNIT PRICE SHALL BE FOR ONE OF THE LISTED MANUFACTURER'S FOR THAT PARTICULAR FIXTURE. THE MANUFACTURER SHALL BE IDENTIFIED. SUBSTITUTIONS FOR FIXTURES PROVIDED BY MANUFACTURERS NOT LISTED IN THE SCHEDULE ARE NOT ACCEPTABLE. SEE BELOW FOR REQUIREMENTS ASSOCIATED WITH SUBMITTING LIGHTING FIXTURE SUBSTITUTIONS.
   B. THE TOTAL QUANTITY OF EACH FIXTURE TYPE WITH THE EXTENDED COST FOR THAT QUANTITY.
   C. THE UNIT PRICE, TYPE, AND QUANTITY OF LAMPS.
10. WITHIN 21 DAYS OF CONTRACT AWARD, THE CONTRACTOR SHALL FURNISH SUBMITTALS FOR ALL SPECIFIED LIGHTING FIXTURES FOR REVIEW BY THE DESIGN PROFESSIONAL. THE SUBMITTALS SHALL INCLUDE LUMINAIRE CATALOG CUTS, SUBMITTAL SHEETS, OR MANUFACTURERS SHOP DRAWINGS INDICATING THE FOLLOWING:
    A. MANUFACTURER'S NAME AND COMPLETE CATALOG NUMBER
    B. FIXTURE TYPE, DIMENSIONS AND FINISHES
    C. FIXTURE PHOTOMETRIC TEST DATA FROM AN INDEPENDENT TEST LABORATORY
    D. FIXTURE ACCESSORIES, COMPONENTS, AND HARDWARE WHEN SPECIFIED
    E. LAMP TYPE, QUANTITY, WATTAGE, LUMEN OUTPUT, RATED LIFE, COLOR TEMPERATURE, COLOR RENDERING INDEX AND BEAM SPREAD AS APPLICABLE
    F. BALLAST TYPE AND FIXTURE VOLTAGE

    SUBMITTALS FOR LIGHTING FIXTURES MOUNTED WITHIN ARCHITECTURAL COVES OR CASEWORK, VARIABLE LENGTH FIXTURES, AND FOR NON-STANDARD, OR CUSTOM FIXTURES, SHALL ALSO INCLUDE SCALED DRAWINGS SHOWING THE LAYOUT AND DIMENSIONS OF ALL FIXTURE COMPONENTS AND ACCESSORIES, THE METHOD OF INSTALLATION, AND A COMPLETE BILL OF MATERIALS.
11. LIGHTING FIXTURE SUBSTITUTION REQUESTS MUST BE SENT TO AND RECEIVED BY THE LIGHTING DESIGNER FOR REVIEW 14 DAYS PRIOR TO BID DATE. FAILURE TO SUBMIT WITHIN THIS DEADLINE SHALL CONSTITUTE A GUARANTEE THAT THE SPECIFIED FIXTURES WILL BE SUPPLIED. THE SUBMITTAL SHALL INCLUDE THE FOLLOWING:
    A. SIX HARD COPIES OF THE SUBMITTALS REQUIRED ABOVE FOR BOTH THE SPECIFIED FIXTURE AND THE PROPOSED SUBSTITUTION.
    B. ONE NON-RETURNABLE WORKING SAMPLE OF THE PROPOSED SUBSTITUTE FIXTURE WITH CORD & PLUG CONNECTION FOR 120 VOLT OPERATION, AND SPECIFIED LAMP(S).
    C. CONTRACTOR'S STATEMENT INDICATING THE EFFECT OF THE SUBSTITUTION ON THE CONSTRUCTION SCHEDULE COMPARED TO THE SCHEDULE WITHOUT THE APPROVAL OF THE PROPOSED SUBSTITUTION.
    D. CONTRACTOR'S CERTIFICATION STATING THAT THE PROPOSED SUBSTITUTION CONFORMS TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS IN EVERY RESPECT AND IS APPROPRIATE FOR THE APPLICATIONS INDICATED IN THE DOCUMENTS.
    E. CONTRACTOR'S CERTIFICATION STATING THAT ANY MODIFICATIONS TO ANY BUILDING SYSTEM OR EQUIPMENT THAT MAY RESULT FROM THE PROPOSED LIGHTING FIXTURE SUBSTITUTION WILL BE DESIGNED AND CONSTRUCTED AT THE CONTRACTOR'S EXPENSE.
    F. CONTRACTOR'S WAIVER OF RIGHTS TO ADDITIONAL PAYMENT OR TIME THAT MAY BECOME NECESSARY SHOULD THE PROPOSED SUBSTITUTION FAIL TO PERFORM IN A MANNER THAT MATCHES THE SPECIFIED FIXTURE.
    G. CONTRACTOR-NET UNIT PRICE FOR THE SPECIFIED FIXTURE AND FOR THE PROPOSED SUBSTITUTE FIXTURE.

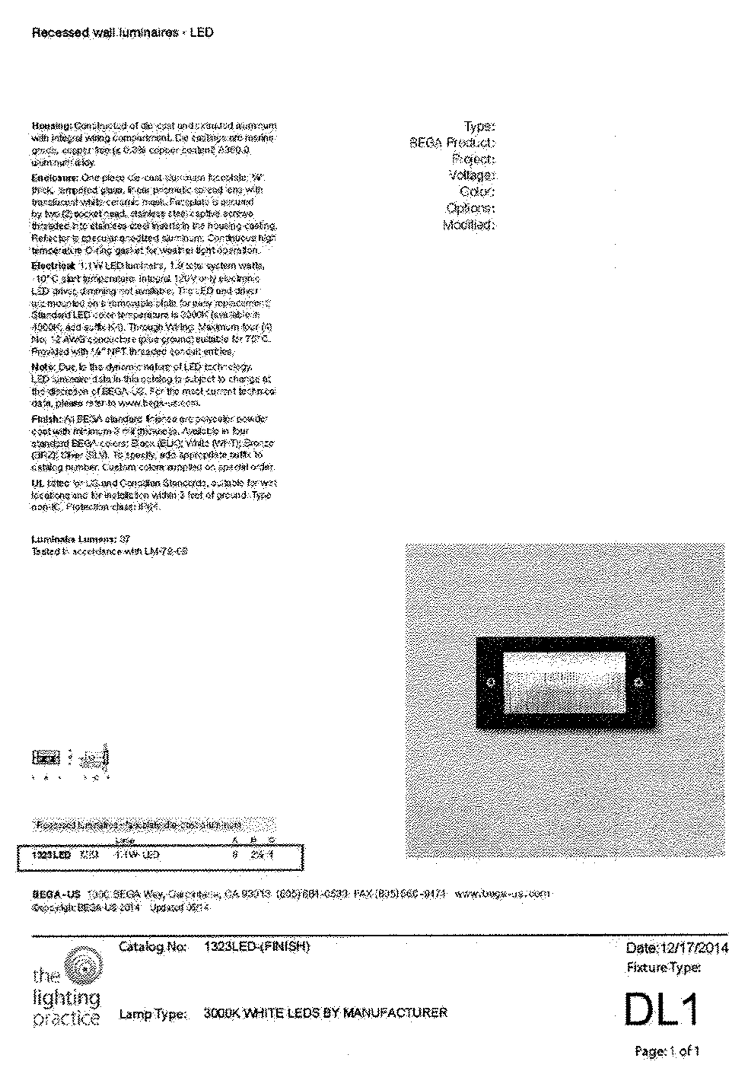
    THE LIGHTING DESIGNER SHALL BE REIMBURSED BY THE CONTRACTOR FOR ALL OF THE DESIGNER'S TIME ASSOCIATED WITH THE REVIEW OF THE PROPOSED FIXTURE SUBSTITUTION(S). PAYMENT SHALL BE MADE IN ADVANCE OF THE REVIEW, BASED ON THE DESIGNER'S ESTIMATE OF THE REQUIRED TIME. THE PAYMENT SHALL BE BASED ON THE DESIGNER'S STANDARD HOURLY RATES FOR THE PERSONNEL INVOLVED IN THE REVIEW.

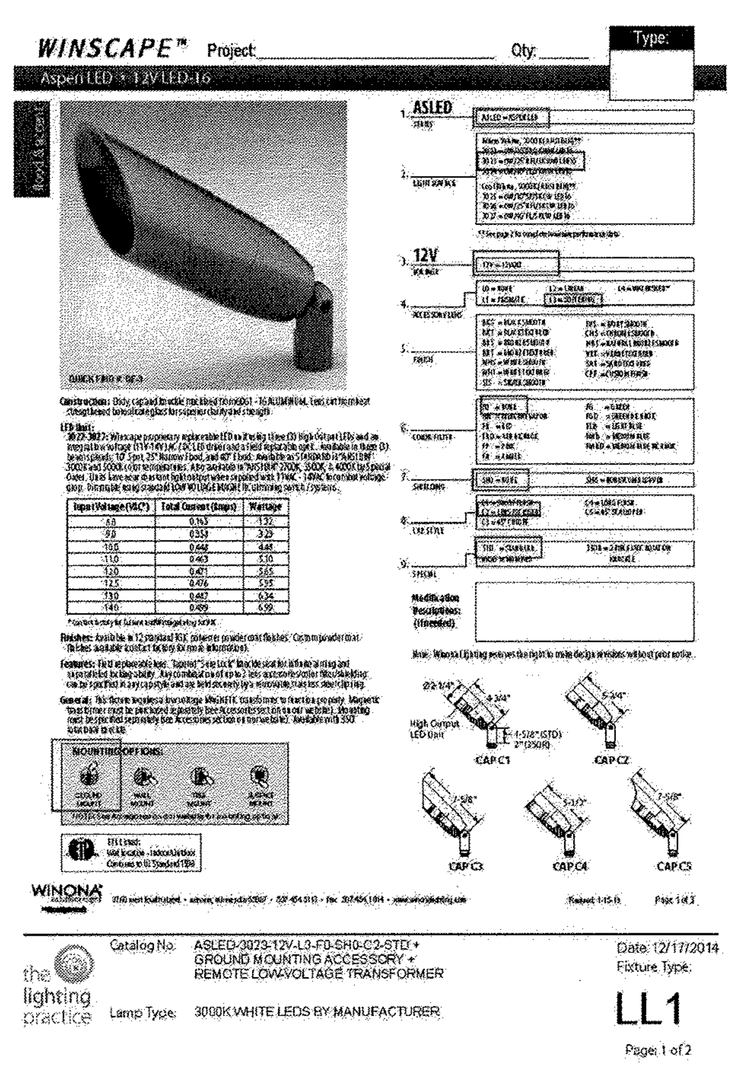
## SELECT DEFINITIONS:

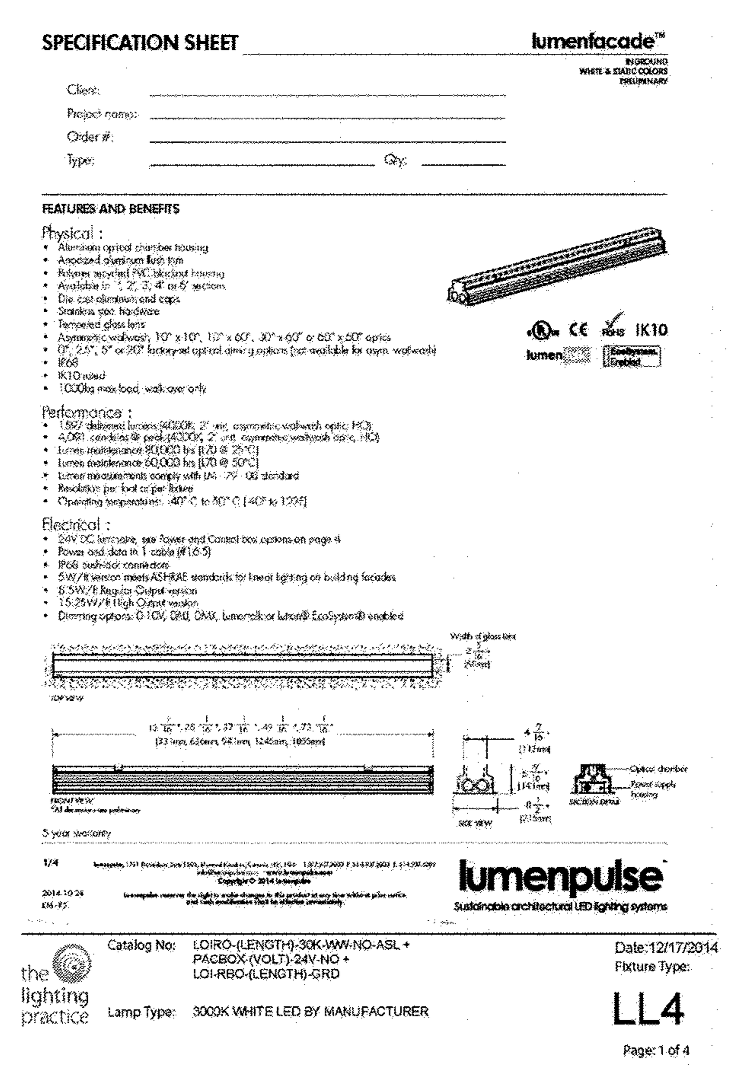
1. CORRELATED COLOR TEMPERATURE (CCT): THE ABSOLUTE TEMPERATURE, MEASURED IN DEGREES KELVIN, OF A BLACKBODY RADIATOR HAVING CHROMATICITY RESEMBLING THAT OF AN ELECTRIC LIGHT SOURCE. FOR LED SOURCES CCT SHALL NOT DEVIATE FROM THE REFERENCE COLOR TEMPERATURE BY NO MORE THAN THREE MACADAM ELLIPSES, AS DEFINED BY NEMA/ANSI/ANSLG C38.377-2011
2. COLOR RENDERING INDEX (CRI): MEASURE OF COLOR SHIFT OBJECTS UNDERGO WHEN ILLUMINATED BY AN ELECTRIC LIGHT SOURCE AS COMPARED WITH THE COLOR OF THE SAME OBJECTS ILLUMINATED BY A REFERENCE SOURCE AT THE SAME COLOR TEMPERATURE. CRI VALUES FOR ELECTRIC LIGHT SOURCES RANGE FROM APPROXIMATELY 20 (LOW PRESSURE SODIUM) TO 99 (HALOGEN). CRI VALUES FOR LED SOURCES SHALL BE MEASURED AFTER 6000 HOURS AND SHALL NOT DEVIATE MORE THAN 3 POINTS FROM THE RATED VALUE.
3. LED LIGHT ENGINE: THE COMBINED LED LIGHT SOURCE AND ITS ASSOCIATED ELECTRONIC DRIVER. THE LED LIGHT ENGINE MAY HAVE AN INTEGRAL DRIVER OR THE DRIVER MAY BE HOUSED IN A SEPARATE ENCLOSURE.
4. LED DRIVER: CONTROL DEVICE THAT MAINTAINS CONSTANT AMOUNT OF CURRENT TO THE LED LIGHT SOURCE. LED DRIVERS GENERALLY OPERATE AT 12VDC OR 24VDC. SOME DRIVERS ARE DESIGNED TO ACCEPT BRANCH CIRCUIT VOLTAGE RANGING FROM 120VAC THROUGH 277VAC OR MAY REQUIRE A SEPARATE TRANSFORMER.
5. TRANSFORMER: ELECTROMAGNETIC OR ELECTRONIC DEVICE THAT STEPS DOWN PRIMARY VOLTAGE TO A LOWER SECONDARY VOLTAGE. GENERALLY SECONDARY VOLTAGE WILL BE 12V OR 24V
6. DIMMING: THE REDUCTION OF LIGHT INTENSITY OF A LIGHT SOURCE. ALL SOURCES SHALL HAVE A SMOOTH, FLICKER-FREE AND CONTINUOUS DIMMING CURVE FROM FULL-OFF TO 100% OUTPUT. LED SOURCES MAY BE DIMMED BY EITHER CONSTANT CURRENT REDUCTION (CCR) OR BY PULSE WIDTH MODULATION (PWM) DIMMING FOR CONSTANT CURRENT DRIVERS.
7. RATED LUMEN MAINTENANCE LIFE: THE ELAPSED OPERATING TIME OVER WHICH AN LED LIGHT SOURCE WILL MAINTAIN THE PERCENTAGE OF ITS INITIAL LUMEN OUTPUT
   L70: TIME, IN HOURS, TO 70% LUMEN MAINTENANCE
   L50: TIME, IN HOURS, TO 50% LUMEN MAINTENANCE

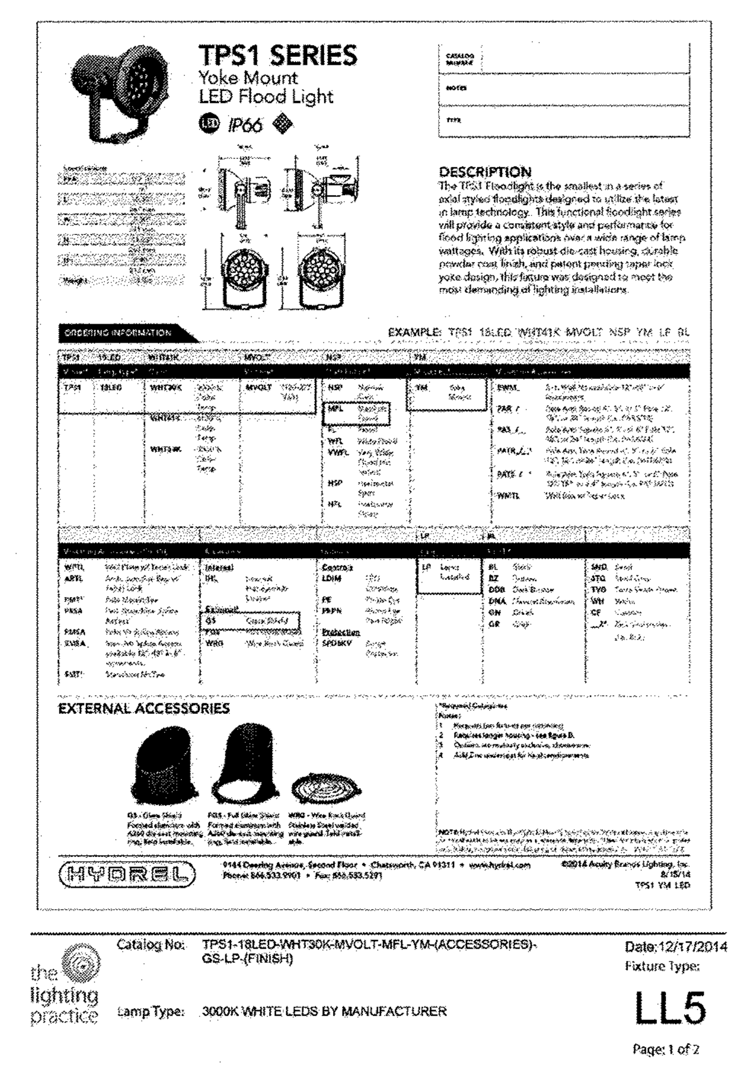
**NOTE: LIGHTING IS FOR PRELIMINARY PRICING PURPOSES ONLY. TO BE COORDINATED WITH LIGHTING DESIGNER TBD.**

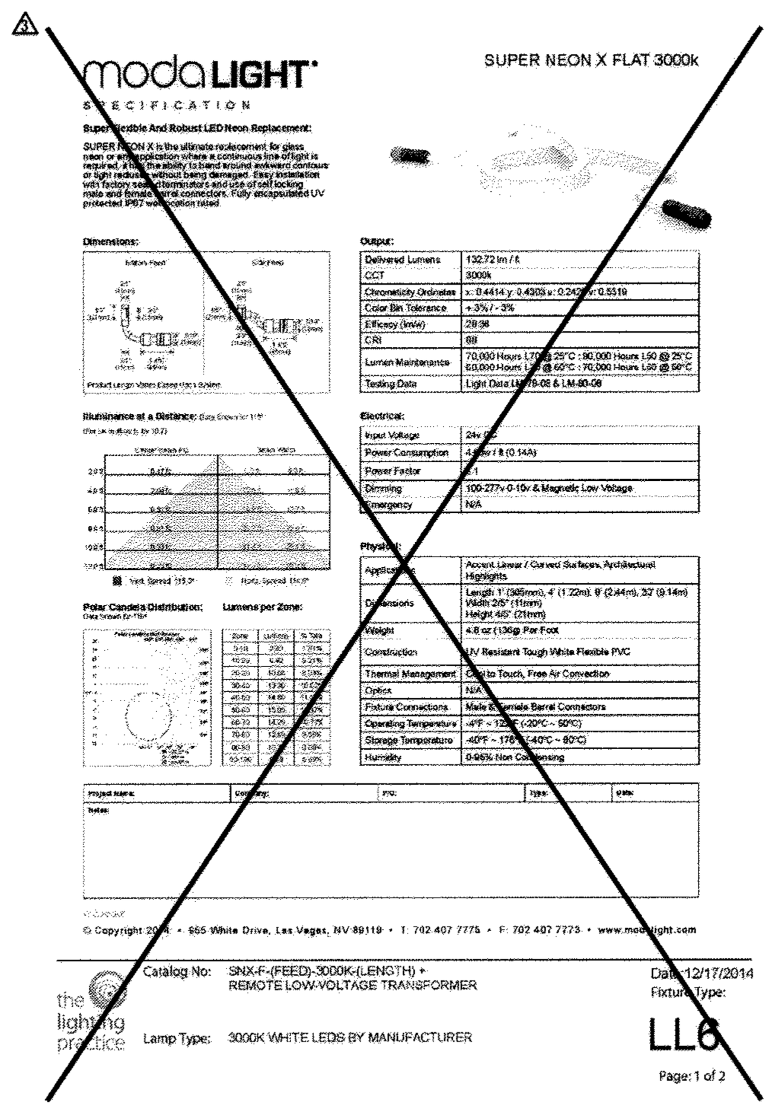
**ALL LIGHTING IS TO ADHERE TO SECTION 134 OF THE ZONING REGULATIONS.**

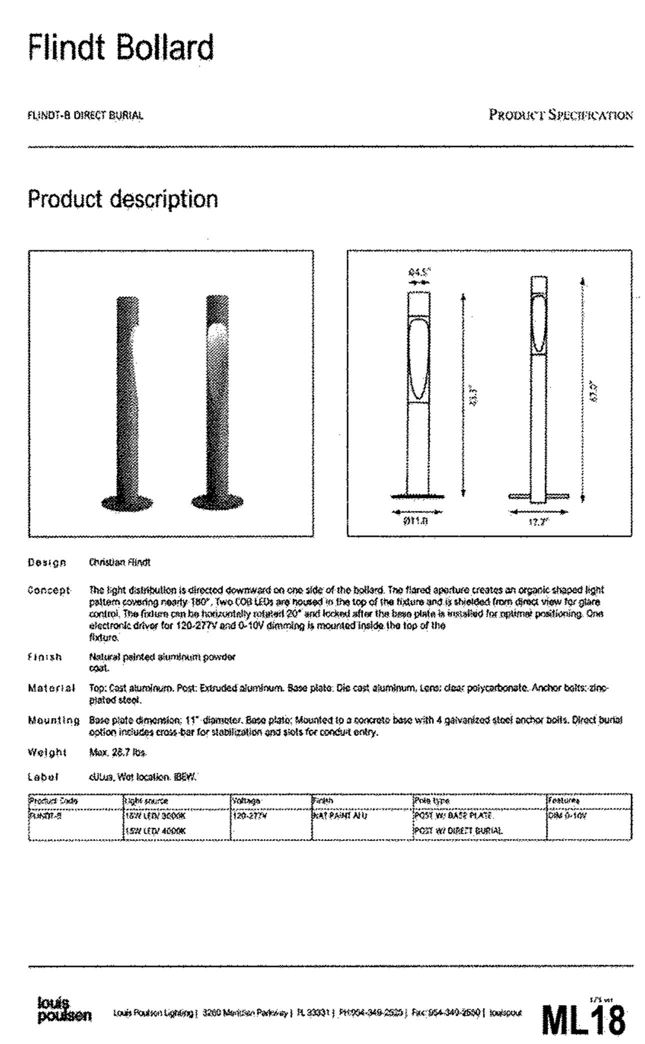


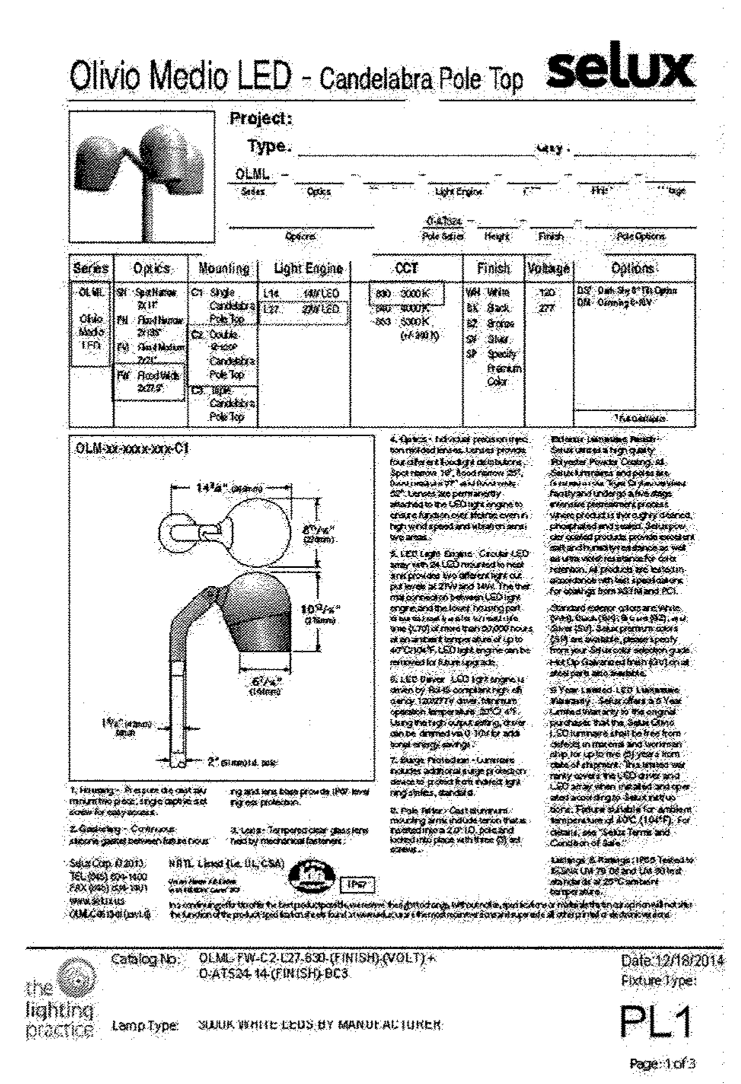



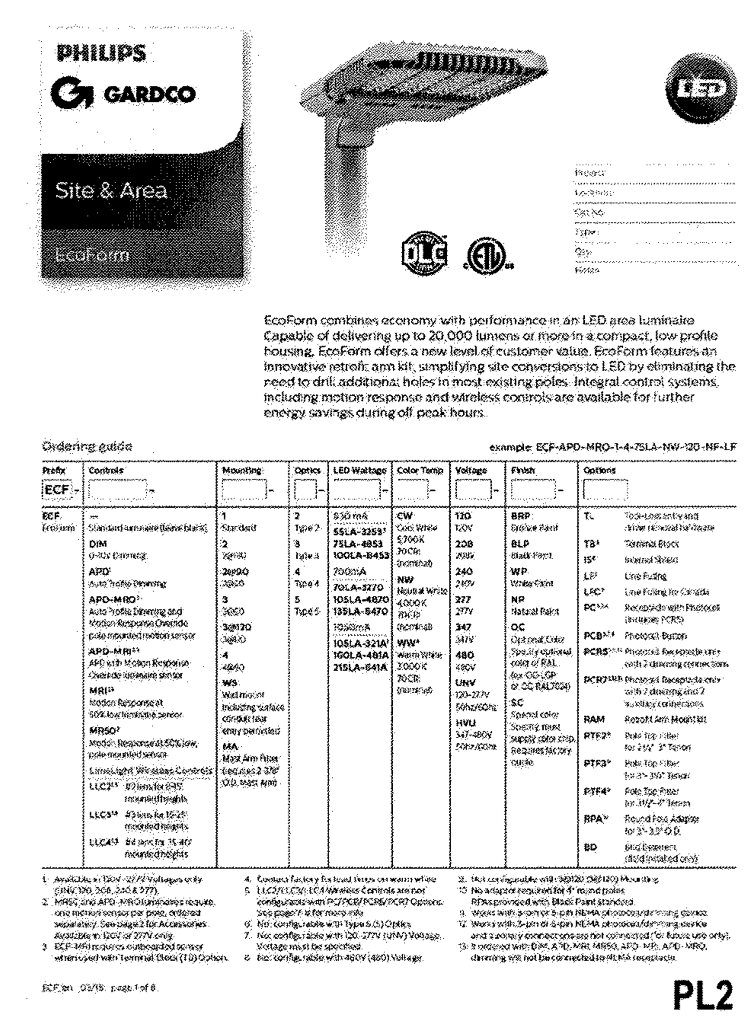




△3



| APPROVED PLANNING BOARD OF HOWARD COUNTY |
|---|
| Date: August 18, 2016 |

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| Signature | Date |
|---|---|
| Director | 9-12-16 |
| Chief, Division of Land Development | 9.12-16 |
| Chief, Development Engineering Division | 9.2.16 |

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**L-410**

DESIGN COLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

| DES. | DRN. | CHK. |
|---|---|---|
| | | |

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | △3 REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

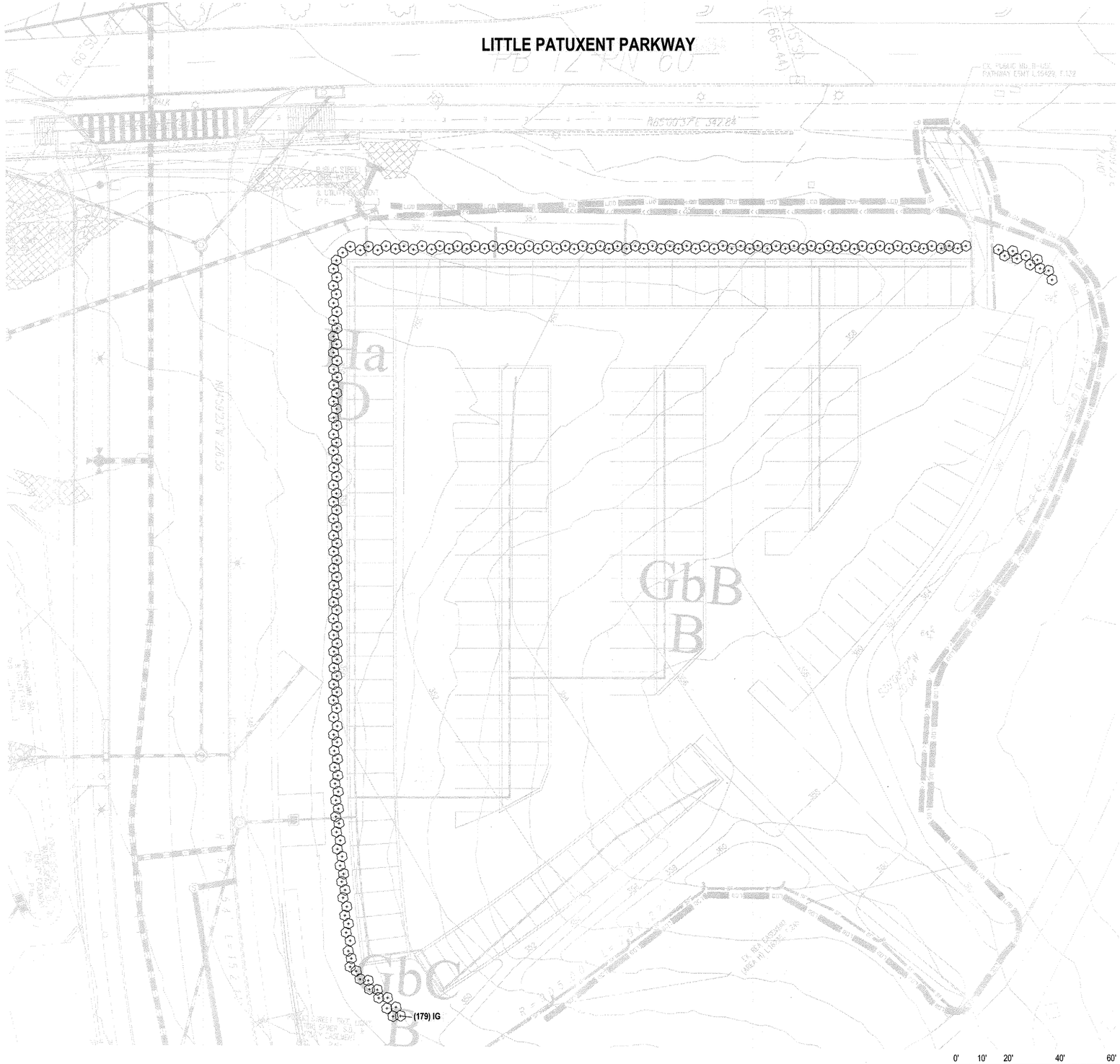
STATE OF MARYLAND · MATTHEW ALAN D'AMICO · LANDSCAPE ARCHITECT · 1039

REVISED LIGHTING FIXTURE SCHEDULE

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 47 OF 58 |

SDP-15-068




**SHRUB LIST**

| Qty. | Key | Name | Size | Height | Root |
|---|---|---|---|---|---|
| 179 | IG | Ilex glabra<br>Inkberry | 7 Gal. | 36"–42" | Cont. |

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**

~~**DEVELOPER'S/OWNER'S NAME**~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9-12-16

Chief, Development Engineering Division — Date 9.2.16

N

**L-302C**


**DESIGN**COLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DES. | DRN. | CHK. |
|---|---|---|
| | | |

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 11.17.2017 | 6. Revise sheet Nos. | gt | mdt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

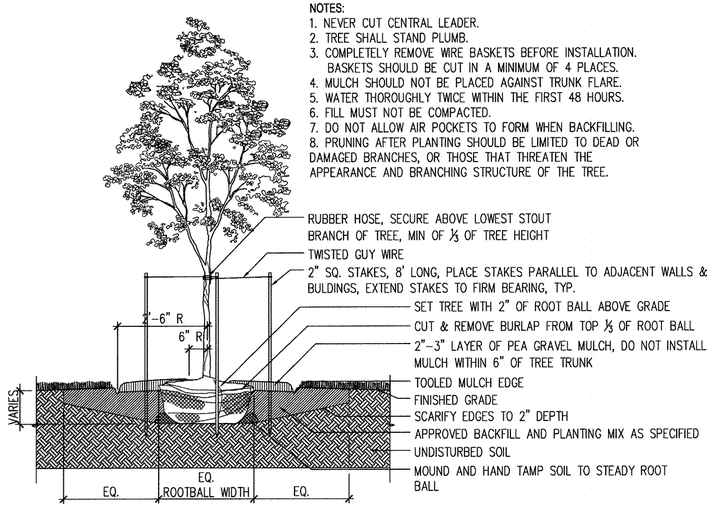
STATE OF MARYLAND — MATTHEW D. TULLY — LANDSCAPE ARCHITECT — 1099

REVISED UNDERSTORY PLANTING PLAN C

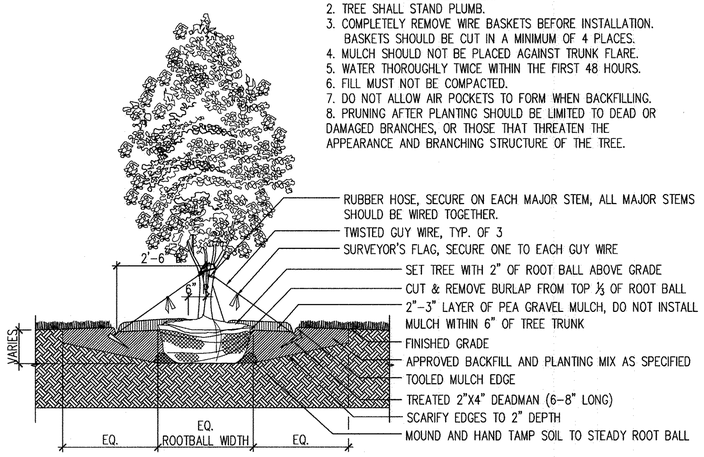
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A–1, A–2, & A–3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565–23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1"=20' | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET |
| JUNE, 2016 | 36 – 01 | 43 OF 60 |

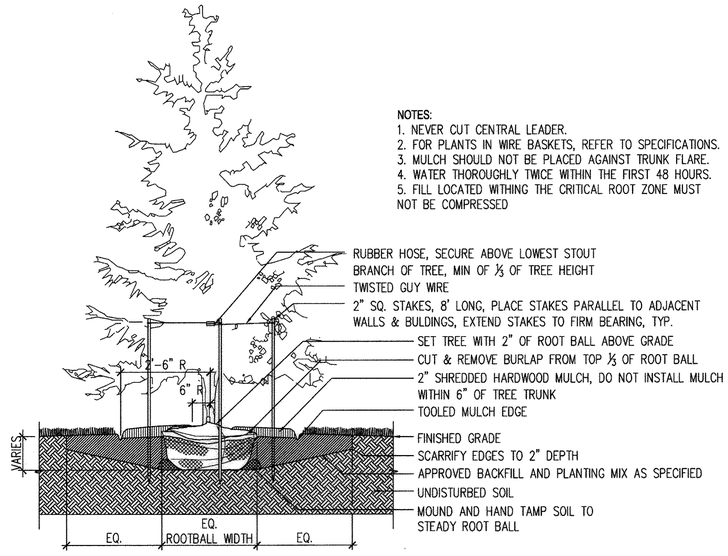
SDP-15-068



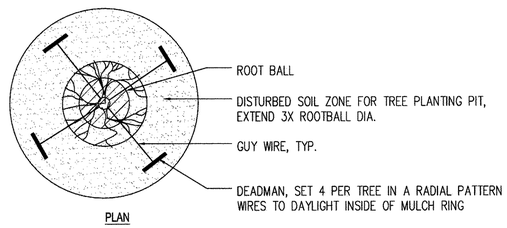

## 1 DECIDUOUS TREE PLANTING
1/2" = 1'-0"



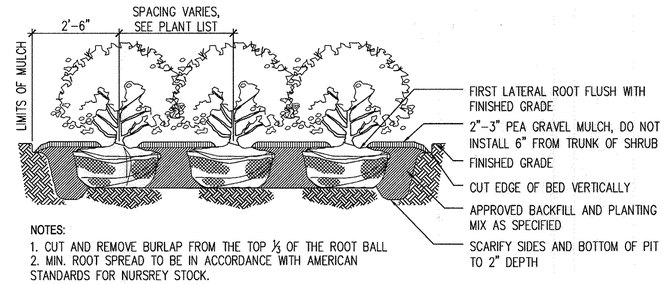

## 2 MULTI-STEM TREE PLANTING
1/2" = 1'-0"



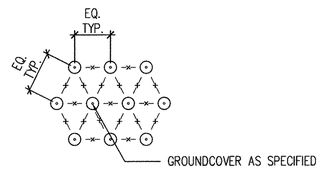

## 3 EVERGREEN TREE PLANTING
1/2" = 1'-0"




## 4 STAKED PLAN ENLARGEMENT
1/2" = 1'-0"




## 5 SHRUB PLANTING
1/2" = 1'-0"




## 6 PLANT SPACING DIAGRAM
1/2" = 1'-0"

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**
~~**DEVELOPER'S/OWNER'S NAME**~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | 9-12-16 Date |
| Chief, Division of Land Development | 9.12.16 Date |
| Chief, Development Engineering Division | 9.7.16 Date |


**DESIGN**COLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 11.17.2017 | Revise sheet Nos. | gt | mjt. |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND — MICHAEL JAY TROPPE — 1029 — LANDSCAPE ARCHITECT

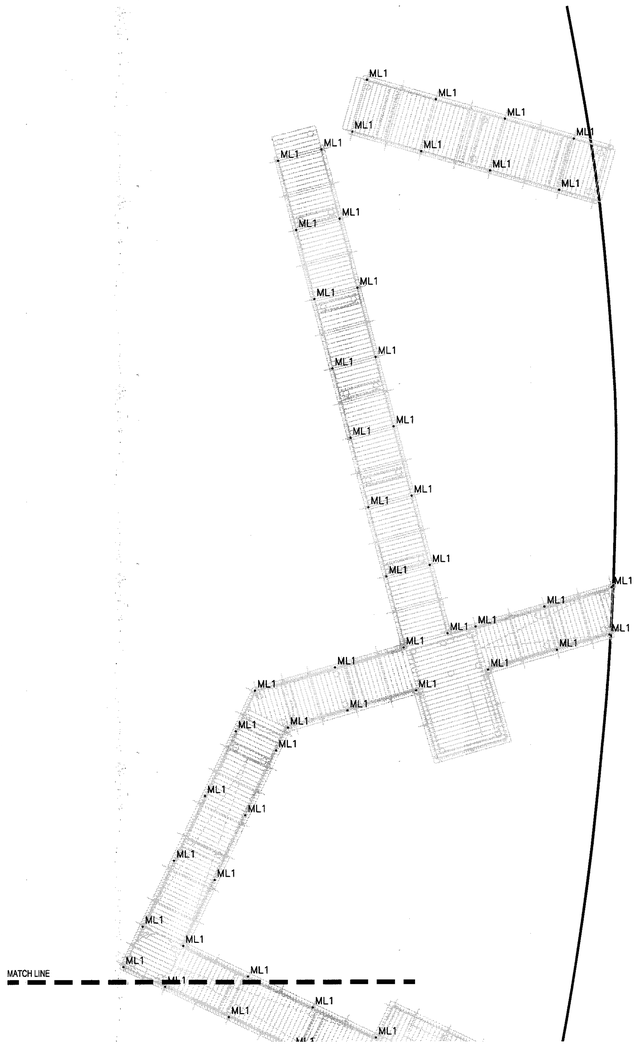
REVISED PLANTING DETAILS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

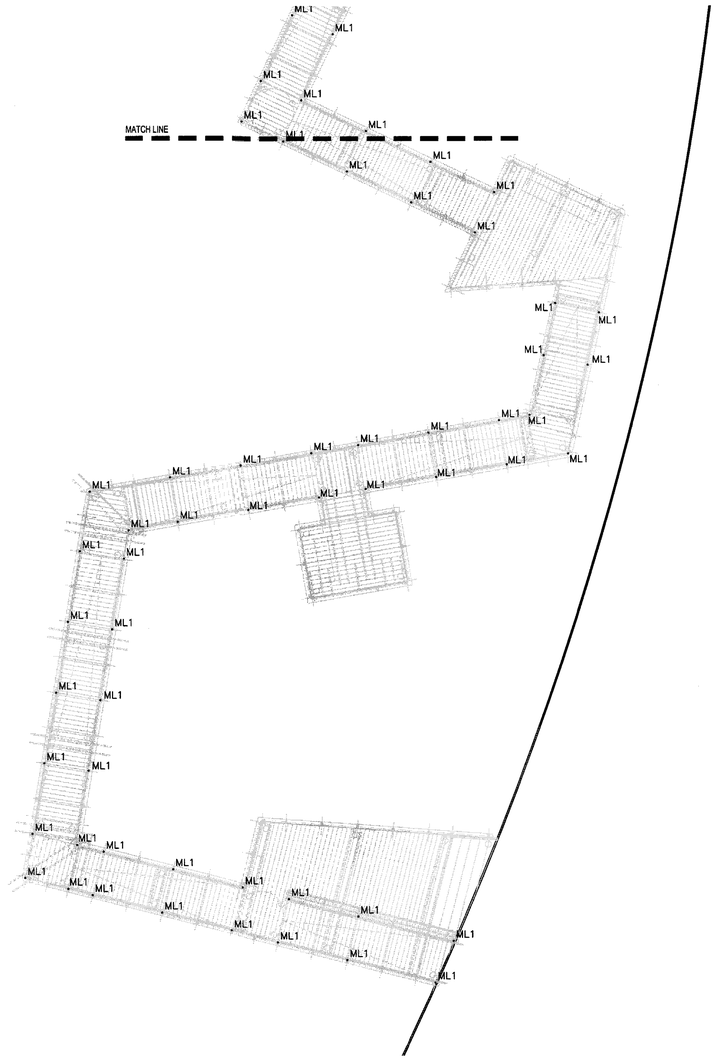
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 49 OF 63 |

**L-310**

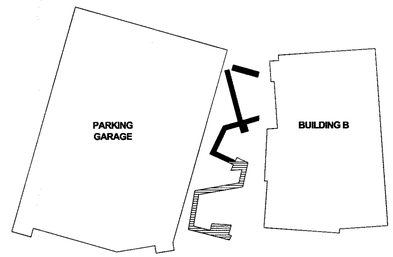
SDP-15-068




## 1 NORTH BOARDWALK PLAN
1/8" = 1'-0"




## 2 SOUTH BOARDWALK PLAN
1/8" = 1'-0"




**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME
~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16
Chief, Division of Land Development — Date 9-12-16
Chief, Development Engineering Division — Date 9-2-16

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

0' 4' 8' 16' 24'

N

**L-502**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | MM | AD |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND — MARYLAND REGISTERED LANDSCAPE ARCHITECT

BOARDWALK - LIGHTING PLAN

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1/8"=1'-0" | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 50 OF 58 |

SDP-15-068

| HOWARD HUGHES BOARDWALK<br>COLUMBIA, MARYLAND | | | | | TLP PROJECT NUMBER:<br>XXXXX.00 | | | TLP ISSUE DATE:<br>05/03/16 |
|---|---|---|---|---|---|---|---|---|
| LIGHTING FIXTURE SCHEDULE | | | | | | | | |
| TYPE | MTG. | DESCRIPTION | LAMPING | | WATTAGE PER FIXTURE | VOLTS | MANUFACTURER | CATALOG NUMBER |
| | | | QTY. | LAMP DESIGNATION | | | | |
| ML1 | SURF | LED RAILING LIGHT SYSTEM, 1.66 OR 1.90 INCH ADA-COMPLIANT DIAMETER X LENGTH AS SHOWN ON ARCHITECTURAL DRAWINGS, HANDRAIL WITH INTEGRAL LEDS MOUNTED IN DOWNLIGHT POSITION, LED MODULES SHALL HAVE A SYMMETRICAL LIGHT DISTRIBUTION, OVERALL FINISH TO BE SELECTED BY DESIGN PROFESSIONAL, PROVIDE REMOTE LED DRIVERS IN ACCESSIBLE LOCATIONS THAT SHALL BE COORDINATED WITH LANDSCAPE ARCHITECT WITHIN NEMA 3R ENCLOSURES. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING DETAILS. ENTIRE RAIL SYSTEM TO BE U.L. WET LOCATION RATED.<br><br>ELECTRICAL CONTRACTOR SHALL COORDINATE ALL COMPONENTS OF THE RAIL SYSTEM WITH THE DESIGN PROFESSIONAL AND VERIFY ALL LENGTHS IN FIELD PRIOR TO ORDERING. PROVIDE SCALED AND DIMENSIONED DRAWINGS OF ALL RAILING LAYOUTS INDICATING QUANTITY AND LOCATION OF REMOTE DRIVERS AND LED POD LOCATIONS PRIOR TO RELEASE OF ORDER. REFER TO ARCHITECTURAL DRAWINGS FOR HANDRAIL DETAILS AND ADDITIONAL SPECIFICATIONS FOR HANDRAIL SYSTEM. PROVIDE REMOTE POWER SUPPLIES SIZED AS REQUIRED FOR THE RUN LENGTHS SHOWN ON DRAWINGS, POWER SUPPLIES SHALL BE MOUNTED IN ACCESSIBLE BUT DISCRETE LOCATIONS. POWER SUPPLIES TO BE U.L. WET LOCATION LISTED.<br><br>ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY FEEDS, CONNECTORS, AND MOUNTING ACCESSORIES AS REQUIRED FOR A COMPLETE AND FULLY FUNCTIONING SYSTEM.<br><br>LED REQUIREMENTS:<br>NOMINAL 140 INITIAL DELIVERED LUMENS, L70 OF 50,000 HOURS, 3,000K CCT, 80+ CRI, AND A 5-YEAR WARRANTY. | – | LEDS BY MANUFACTURER | 1.5 | | WAGNER | LULP-[RAIL SIZE]-30K-S-[RAIL WALL THICKNESS]-[VOLT] |

## GENERAL NOTES:

1. ALL LIGHTING FIXTURES, LAMPS AND RELATED DEVICES FURNISHED UNDER THIS CONTRACT SHALL CARRY THE APPROVAL LABEL OF UL OR ETL FOR THE SPECIFIC APPLICATION IN WHICH THEY ARE USED.

2. THE STATEMENT "FINISH TO BE SELECTED BY DESIGN PROFESSIONAL" SHALL BE INTERPRETED TO MEAN THAT THE FINISH OF THE LUMINAIRE SHALL MATCH THE APPEARANCE OF A PAINT CHIP, COLOR NUMBER, OR METAL SWATCH FURNISHED BY THE DESIGN PROFESSIONAL DURING THE SUBMITTAL REVIEW PROCESS.

3. WHITE L.E.D.'S SHALL MEET, AT A MINIMUM, CHROMATICITY STANDARDS SET BY ANSI/NEMA/ANSLG C79.377-2011. L.E.D. LUMEN MAINTENANCE SHALL BE MEASURED IN ACCORDANCE WITH IESNA LM-80 STANDARDS. PHOTOMETRIC TESTING FOR SOLID STATE LUMINAIRES SHALL BE IN ACCORDANCE WITH IESNA LM-79 STANDARDS.

4. CONTRACTOR SHALL CONFIRM FIXTURE VOLTAGES, CEILING TRIMS, AND MOUNTING HARDWARE ARE COMPATIBLE WITH THEIR APPLICATION AS DETERMINED BY THE DESIGN PROFESSIONAL PRIOR TO ORDERING FIXTURES.

5. CONTRACTOR SHALL SELECT, FURNISH AND INSTALL THE CORRECT SIZE OF SECONDARY WIRING FROM REMOTE TRANSFORMERS AND/OR REMOTE BALLASTS AS REQUIRED TO KEEP VOLTAGE DROP IN THE SECONDARY WIRING BELOW 3% OF RATED VOLTAGE.

6. CONTRACTOR SHALL PROVIDE LABOR AND EQUIPMENT FOR FOCUSING OF ADJUSTABLE FIXTURES AND PRESETTING OF LIGHTING CONTROL SYSTEMS. FOCUSING AND PRESETTING SHALL BE DONE IN THE PRESENCE OF THE DESIGN PROFESSIONAL. CONTRACTOR SHALL FOCUS LIGHTING AFTER DARK IF DIRECTED BY THE OWNER'S REPRESENTATIVE. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL PROVIDE AT LEAST ONE DAY OF A FACTORY-TRAINED AND CERTIFIED TECHNICIAN TO PROVIDE WARRANTY START UP AND PROGRAMMING FOR ALL LIGHTING CONTROL SYSTEMS AND PROGRAMMABLE LIGHTING FIXTURES.

7. CONTRACTOR SHALL PROVIDE THE FOLLOWING WITH THEIR BID:

   A. THE UNIT PRICE, WITHOUT LAMP, FOR EACH LIGHTING FIXTURE TYPE LISTED WITHIN THE LIGHTING FIXTURE SCHEDULE. THE UNIT PRICE SHALL BE FOR ONE OF THE LISTED MANUFACTURER'S FOR THAT PARTICULAR FIXTURE. THE MANUFACTURER SHALL BE IDENTIFIED. SUBSTITUTIONS FOR FIXTURES PROVIDED BY MANUFACTURERS NOT LISTED IN THE SCHEDULE ARE NOT ACCEPTABLE. SEE BELOW FOR REQUIREMENTS ASSOCIATED WITH SUBMITTING LIGHTING FIXTURE SUBSTITUTIONS.
   B. THE TOTAL QUANTITY OF EACH FIXTURE TYPE WITH THE EXTENDED COST FOR THAT QUANTITY.
   C. THE UNIT PRICE, TYPE, AND QUANTITY OF LAMPS.

11. WITHIN 21 DAYS OF CONTRACT AWARD, THE CONTRACTOR SHALL FURNISH SUBMITTALS FOR ALL SPECIFIED LIGHTING FIXTURES FOR REVIEW BY THE DESIGN PROFESSIONAL. THE SUBMITTALS SHALL INCLUDE LUMINAIRE CATALOG CUTS, SUBMITTAL SHEETS, OR MANUFACTURERS SHOP DRAWINGS INDICATING THE FOLLOWING:

    A. MANUFACTURER'S NAME AND COMPLETE CATALOG NUMBER
    B. FIXTURE TYPE, DIMENSIONS AND FINISHES
    C. FIXTURE PHOTOMETRIC TEST DATA FROM AN INDEPENDENT TEST LABORATORY
    D. FIXTURE ACCESSORIES, COMPONENTS, AND HARDWARE WHEN SPECIFIED
    E. LAMP TYPE, QUANTITY, WATTAGE, LUMEN OUTPUT, RATED LIFE, COLOR TEMPERATURE, COLOR RENDERING INDEX AND BEAM SPREAD AS APPLICABLE
    F. BALLAST TYPE AND FIXTURE VOLTAGE

    SUBMITTALS FOR LIGHTING FIXTURES MOUNTED WITHIN ARCHITECTURAL COVES OR CASEWORK, VARIABLE LENGTH FIXTURES, AND FOR NON-STANDARD, OR CUSTOM FIXTURES, SHALL ALSO INCLUDE SCALED DRAWINGS SHOWING THE LAYOUT AND DIMENSIONS OF ALL FIXTURE COMPONENTS AND ACCESSORIES, THE METHOD OF INSTALLATION, AND A COMPLETE BILL OF MATERIALS.

12. LIGHTING FIXTURE SUBSTITUTION REQUESTS MUST BE SENT TO AND RECEIVED BY THE LIGHTING DESIGNER FOR REVIEW 14 DAYS PRIOR TO BID DATE. FAILURE TO SUBMIT WITHIN THIS DEADLINE SHALL CONSTITUTE A GUARANTEE THAT THE SPECIFIED FIXTURES WILL BE SUPPLIED. THE SUBMITTAL SHALL INCLUDE THE FOLLOWING:

    A. SIX HARD COPIES OF THE SUBMITTALS REQUIRED ABOVE FOR BOTH THE SPECIFIED FIXTURE AND THE PROPOSED SUBSTITUTION.
    B. ONE NON-RETURNABLE WORKING SAMPLE OF THE PROPOSED SUBSTITUTE FIXTURE WITH CORD & PLUG CONNECTION FOR 120 VOLT OPERATION, AND SPECIFIED LAMP(S).
    C. CONTRACTOR'S STATEMENT INDICATING THE EFFECT OF THE SUBSTITUTION ON THE CONSTRUCTION SCHEDULE COMPARED TO THE SCHEDULE WITHOUT THE APPROVAL OF THE PROPOSED SUBSTITUTION.
    D. CONTRACTOR'S CERTIFICATION STATING THAT THE PROPOSED SUBSTITUTION CONFORMS TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS IN EVERY RESPECT AND IS APPROPRIATE FOR THE APPLICATIONS INDICATED IN THE DOCUMENTS.
    E. CONTRACTOR'S CERTIFICATION STATING THAT ANY MODIFICATIONS TO ANY BUILDING SYSTEM OR EQUIPMENT THAT MAY RESULT FROM THE PROPOSED LIGHTING FIXTURE SUBSTITUTION WILL BE DESIGNED AND CONSTRUCTED AT THE CONTRACTOR'S EXPENSE.
    F. CONTRACTOR'S WAIVER OF RIGHTS TO ADDITIONAL PAYMENT OR TIME THAT MAY BECOME NECESSARY SHOULD THE PROPOSED SUBSTITUTION FAIL TO PERFORM IN A MANNER THAT MATCHES THE SPECIFIED FIXTURE.
    G. CONTRACTOR-NET UNIT PRICE FOR THE SPECIFIED FIXTURE AND FOR THE PROPOSED SUBSTITUTE FIXTURE.

    THE LIGHTING DESIGNER SHALL BE REIMBURSED BY THE CONTRACTOR FOR ALL OF THE DESIGNER'S TIME ASSOCIATED WITH THE REVIEW OF THE PROPOSED FIXTURE SUBSTITUTION(S). PAYMENT SHALL BE MADE IN ADVANCE OF THE REVIEW, BASED ON THE DESIGNER'S ESTIMATE OF THE REQUIRED TIME. THE PAYMENT SHALL BE BASED ON THE DESIGNER'S STANDARD HOURLY RATES FOR THE PERSONNEL INVOLVED IN THE REVIEW.

## DEFINITIONS:

1. CORRELATED COLOR TEMPERATURE (CCT): THE ABSOLUTE TEMPERATURE, MEASURED IN DEGREES KELVIN, OF A BLACKBODY RADIATOR HAVING CHROMATICITY RESEMBLING THAT OF AN ELECTRIC LIGHT SOURCE. FOR LED SOURCES CCT SHALL NOT DEVIATE FROM THE REFERENCE COLOR TEMPERATURE BY NO MORE THAN THREE MACADAM ELLIPSES, AS DEFINED BY NEMA/ANSI/ANSLG C38.377-2011

2. COLOR RENDERING INDEX (CRI): MEASURE OF COLOR SHIFT OBJECTS UNDERGO WHEN ILLUMINATED BY AN ELECTRIC LIGHT SOURCE AS COMPARED WITH THE COLOR OF THE SAME OBJECTS ILLUMINATED BY A REFERENCE SOURCE AT THE SAME COLOR TEMPERATURE. CRI VALUES FOR ELECTRIC LIGHT SOURCES RANGE FROM APPROXIMATELY 20 (LOW PRESSURE SODIUM) TO 99 (HALOGEN). CRI VALUES FOR LED SOURCES SHALL BE MEASURED AFTER 6000 HOURS AND SHALL NOT DEVIATE MORE THAN 3 POINTS FROM THE RATED VALUE.

3. LED LIGHT ENGINE: THE COMBINED LED LIGHT SOURCE AND ITS ASSOCIATED ELECTRONIC DRIVER. THE LED LIGHT ENGINE MAY HAVE AN INTEGRAL DRIVER OR THE DRIVER MAY BE HOUSED IN A SEPARATE ENCLOSURE.

4. LED DRIVER: CONTROL DEVICE THAT MAINTAINS CONSTANT AMOUNT OF CURRENT TO THE LED LIGHT SOURCE. LED DRIVERS GENERALLY OPERATE AT 12VDC OR 24VDC. SOME DRIVERS ARE DESIGNED TO ACCEPT BRANCH CIRCUIT VOLTAGE RANGING FROM 120VAC THROUGH 277VAC OR MAY REQUIRE A SEPARATE TRANSFORMER.

5. TRANSFORMER: ELECTROMAGNETIC OR ELECTRONIC DEVICE THAT STEPS DOWN PRIMARY VOLTAGE TO A LOWER SECONDARY VOLTAGE. GENERALLY SECONDARY VOLTAGE WILL BE 12V OR 24V

6. DIMMING: THE REDUCTION OF LIGHT INTENSITY OF A LIGHT SOURCE. ALL SOURCES SHALL HAVE A SMOOTH, FLICKER-FREE AND CONTINUOUS DIMMING CURVE AS NOTED IN LUMINAIRE DESCRIPTION. LED SOURCES MAY BE DIMMED BY EITHER CONSTANT CURRENT REDUCTION (CCR) OR BY PULSE WIDTH MODULATION (PWM) DIMMING FOR CONSTANT CURRENT DRIVERS.

7. RATED LUMEN MAINTENANCE LIFE: THE ELAPSED OPERATING TIME OVER WHICH AN LED LIGHT SOURCE WILL MAINTAIN THE PERCENTAGE OF ITS INITIAL LUMEN OUTPUT
   L70: TIME, IN HOURS, TO 70% LUMEN MAINTENANCE
   L50: TIME, IN HOURS, TO 50% LUMEN MAINTENANCE

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**

~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16
Chief, Division of Land Development — Date 9-12-16
Chief, Development Engineering Division — Date 9.2.16

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

**L-503**


**DESIGN**COLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DES. | DRN. | CHK. |
|---|---|---|
| | | |

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | MM | AD |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND — MATTHEW ALAN JENKINS — 1939 — LANDSCAPE ARCHITECT

BOARDWALK - LIGHTING SCHEDULE

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 51 OF 58 |

SDP-15-068

## LIGHTING FIXTURE SCHEDULE

| TYPE | MTG. | DESCRIPTION | LAMPING QTY. | LAMPING LAMP DESIGNATION | LOAD (VA) | VOLTS | MANUFACTURER | CATALOG NUMBER |
|---|---|---|---|---|---|---|---|---|
| △6 ~~DL1~~ | ~~WALL~~ | ~~LED STEPLIGHT MOUNTED IN WALL~~ | ~~15~~ | ~~3000K WHITE LED~~ | ~~2~~ | ~~120~~ | ~~BEGA~~ | ~~1323LED-(FINISH)~~ |
| LL1 | GROUND | LED GROUND MOUNTED UPLIGHT △3 | 18 | 3000K WHITE LED | 6 | 120-277 | WINONA | ASLED-3023-12V-L3-FO-SHO-C2-STD + GROUND MOUNTING ACCESSORY + REMOTE LOW-VOLTAGE TRANSFORMER |
| LL5 | WALL | LED ROOF MOUNTED FLOODLIGHT FOR MOONLIGHT EFFECT | 7 | 3000K WHITE LED | 34 | 120-277 | HYDREL | TPS1-18LED-WHT30K-MVOLT-MFL-YM-(ACCESSORIES)-GS-LP-(FINISH) |
| △3 ~~LL6~~ | ~~SURFACE~~ | ~~LED FLEXIBLE CONTINUOUS LINEAR FIXTURE FOR SPECIAL FEATURE LIGHTING~~ | ~~0~~ | ~~3000K WHITE LED~~ | ~~5 PER FOOT~~ | ~~120-277~~ | ~~MODALIGHT~~ | ~~SNX-F-(FEED)-3000K-(LENGTH) + REMOTE LOW VOLTAGE TRANSFORMER~~ |
| ML18 | BOLLARD | LED ROAD AND SIDEWALK BOLLARD △6 △3 | 46 | 4000K WHITE LED | 22 | 120-277 | LOUIS POULSEN | FLINDT BOLLARD - LED |
| PL1 | POLE | LED PEDESTRIAN POLE MOUNTED AREA LIGHT △6 | 2 | | | | | |
| PL2 | POLE | LED ROADWAY POLE MOUNTED AREA LIGHT | 2 | LED | | | PHILIPS GARDCO | ECOFORM #160LA-481A LED |
| △6 PL3A | POLE | LED PEDESTRIAN POLE MOUNTED AREA LIGHT | 5 | LED | | | FORMS+SURFACES | LIGHT COLUMN PEDESTRIAN (HEIGHT VARIES) |
| △6 PL3B | BOLLARD | LED SIDEWALK BOLLARD | 3 | LED | | | FORMS+SURFACES | LIGHT COLUMN BOLLARD |
| △6 SL1 | HANDRAIL | LED INTEGRAL HANDRAIL LIGHT | 6 | LED | | | | |

## GENERAL NOTES:

1. ALL LIGHTING FIXTURES, LAMPS AND RELATED DEVICES FURNISHED UNDER THIS CONTRACT SHALL CARRY THE APPROVAL LABEL OF UL OR ETL FOR THE SPECIFIC APPLICATION IN WHICH THEY ARE USED.
2. THE STATEMENT "FINISH TO BE SELECTED BY DESIGN PROFESSIONAL" SHALL BE INTERPRETED TO MEAN THAT THE FINISH OF THE LUMINAIRE SHALL MATCH THE APPEARANCE OF A PAINT CHIP, COLOR NUMBER, OR METAL SWATCH FURNISHED BY THE DESIGN PROFESSIONAL DURING THE SUBMITTAL REVIEW PROCESS.
3. WHITE L.E.D.'S SHALL MEET, AT A MINIMUM, CHROMATICITY STANDARDS SET BY ANSI/NEMA/ANSLG C79.377-2011. L.E.D. LUMEN MAINTENANCE SHALL BE MEASURED IN ACCORDANCE WITH IESNA LM-80 STANDARDS. PHOTOMETRIC TESTING FOR SOLID STATE LUMINAIRES SHALL BE IN ACCORDANCE WITH IESNA LM-79 STANDARDS.
4. UNLESS OTHERWISE NOTED, LAMP DESIGNATIONS ARE FOR LAMPS BY OSRAM/SYLVANIA.
5. CONTRACTOR SHALL CONFIRM FIXTURE VOLTAGES, CEILING TRIMS, AND MOUNTING HARDWARE ARE COMPATIBLE WITH THEIR APPLICATION AS DETERMINED BY THE DESIGN PROFESSIONAL PRIOR TO ORDERING FIXTURES.
6. CONTRACTOR SHALL SELECT, FURNISH AND INSTALL THE CORRECT SIZE OF SECONDARY WIRING FROM REMOTE TRANSFORMERS AND/OR REMOTE BALLASTS AS REQUIRED TO KEEP VOLTAGE DROP IN THE SECONDARY WIRING BELOW 3% OF RATED VOLTAGE.
7. ALL L.E.D. LAMPS SHALL BE BURNED CONTINUOUSLY FOR 100 HOURS AT FULL OUTPUT PRIOR TO FOCUSING OF FIXTURES AND COMMISSIONING OF CONTROL SYSTEMS.
8. CONTRACTOR SHALL PROVIDE LABOR AND EQUIPMENT FOR FOCUSING OF ADJUSTABLE FIXTURES AND PRESETTING OF LIGHTING CONTROL SYSTEMS. FOCUSING AND PRESETTING SHALL BE DONE IN THE PRESENCE OF THE DESIGN PROFESSIONAL. CONTRACTOR SHALL FOCUS LIGHTING AFTER DARK IF DIRECTED BY THE OWNER'S REPRESENTATIVE. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL PROVIDE AT LEAST ONE DAY OF A FACTORY-TRAINED AND CERTIFIED TECHNICIAN TO PROVIDE WARRANTY START UP AND PROGRAMMING FOR ALL LIGHTING CONTROL SYSTEMS AND PROGRAMMABLE LIGHTING FIXTURES.
9. CONTRACTOR SHALL PROVIDE THE FOLLOWING WITH THEIR BID:
   A. THE UNIT PRICE, WITHOUT LAMP, FOR EACH LIGHTING FIXTURE TYPE LISTED WITHIN THE LIGHTING FIXTURE SCHEDULE. THE UNIT PRICE SHALL BE FOR ONE OF THE LISTED MANUFACTURER'S FOR THAT PARTICULAR FIXTURE. THE MANUFACTURER SHALL BE IDENTIFIED. SUBSTITUTIONS FOR FIXTURES PROVIDED BY MANUFACTURERS NOT LISTED IN THE SCHEDULE ARE NOT ACCEPTABLE. SEE BELOW FOR REQUIREMENTS ASSOCIATED WITH SUBMITTING LIGHTING FIXTURE SUBSTITUTIONS.
   B. THE TOTAL QUANTITY OF EACH FIXTURE TYPE WITH THE EXTENDED COST FOR THAT QUANTITY.
   C. THE UNIT PRICE, TYPE, AND QUANTITY OF LAMPS.
10. WITHIN 21 DAYS OF CONTRACT AWARD, THE CONTRACTOR SHALL FURNISH SUBMITTALS FOR ALL SPECIFIED LIGHTING FIXTURES FOR REVIEW BY THE DESIGN PROFESSIONAL. THE SUBMITTALS SHALL INCLUDE LUMINAIRE CATALOG CUTS, SUBMITTAL SHEETS, OR MANUFACTURERS SHOP DRAWINGS INDICATING THE FOLLOWING:
    A. MANUFACTURER'S NAME AND COMPLETE CATALOG NUMBER
    B. FIXTURE TYPE, DIMENSIONS AND FINISHES
    C. FIXTURE PHOTOMETRIC TEST DATA FROM AN INDEPENDENT TEST LABORATORY
    D. FIXTURE ACCESSORIES, COMPONENTS, AND HARDWARE WHEN SPECIFIED
    E. LAMP TYPE, QUANTITY, WATTAGE, LUMEN OUTPUT, RATED LIFE, COLOR TEMPERATURE, COLOR RENDERING INDEX AND BEAM SPREAD AS APPLICABLE
    F. BALLAST TYPE AND FIXTURE VOLTAGE

    SUBMITTALS FOR LIGHTING FIXTURES MOUNTED WITHIN ARCHITECTURAL COVES OR CASEWORK, VARIABLE LENGTH FIXTURES, AND FOR NON-STANDARD, OR CUSTOM FIXTURES, SHALL ALSO INCLUDE SCALED DRAWINGS SHOWING THE LAYOUT AND DIMENSIONS OF ALL FIXTURE COMPONENTS AND ACCESSORIES, THE METHOD OF INSTALLATION, AND A COMPLETE BILL OF MATERIALS.
11. LIGHTING FIXTURE SUBSTITUTION REQUESTS MUST BE SENT TO AND RECEIVED BY THE LIGHTING DESIGNER FOR REVIEW 14 DAYS PRIOR TO BID DATE. FAILURE TO SUBMIT WITHIN THIS DEADLINE SHALL CONSTITUTE A GUARANTEE THAT THE SPECIFIED FIXTURES WILL BE SUPPLIED. THE SUBMITTAL SHALL INCLUDE THE FOLLOWING:
    A. SIX HARD COPIES OF THE SUBMITTALS REQUIRED ABOVE FOR BOTH THE SPECIFIED FIXTURE AND THE PROPOSED SUBSTITUTION.
    B. ONE NON-RETURNABLE WORKING SAMPLE OF THE PROPOSED SUBSTITUTE FIXTURE WITH CORD & PLUG CONNECTION FOR 120 VOLT OPERATION, AND SPECIFIED LAMP(S).
    C. CONTRACTOR'S STATEMENT INDICATING THE EFFECT OF THE SUBSTITUTION ON THE CONSTRUCTION SCHEDULE COMPARED TO THE SCHEDULE WITHOUT THE APPROVAL OF THE PROPOSED SUBSTITUTION.
    D. CONTRACTOR'S CERTIFICATION STATING THAT THE PROPOSED SUBSTITUTION CONFORMS TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS IN EVERY RESPECT AND IS APPROPRIATE FOR THE APPLICATIONS INDICATED IN THE DOCUMENTS.
    E. CONTRACTOR'S CERTIFICATION STATING THAT ANY MODIFICATIONS TO ANY BUILDING SYSTEM OR EQUIPMENT THAT MAY RESULT FROM THE PROPOSED LIGHTING FIXTURE SUBSTITUTION WILL BE DESIGNED AND CONSTRUCTED AT THE CONTRACTOR'S EXPENSE.
    F. CONTRACTOR'S WAIVER OF RIGHTS TO ADDITIONAL PAYMENT OR TIME THAT MAY BECOME NECESSARY SHOULD THE PROPOSED SUBSTITUTION FAIL TO PERFORM IN A MANNER THAT MATCHES THE SPECIFIED FIXTURE.
    G. CONTRACTOR-NET UNIT PRICE FOR THE SPECIFIED FIXTURE AND FOR THE PROPOSED SUBSTITUTE FIXTURE.

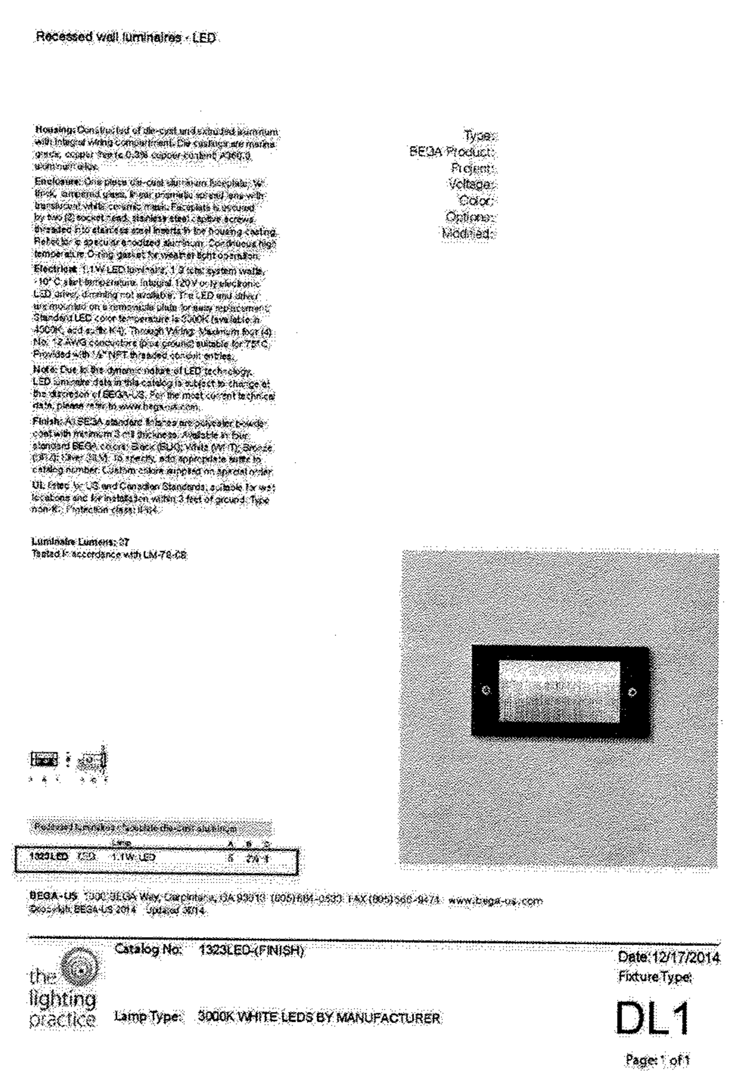
    THE LIGHTING DESIGNER SHALL BE REIMBURSED BY THE CONTRACTOR FOR ALL OF THE DESIGNER'S TIME ASSOCIATED WITH THE REVIEW OF THE PROPOSED FIXTURE SUBSTITUTION(S). PAYMENT SHALL BE MADE IN ADVANCE OF THE REVIEW, BASED ON THE DESIGNER'S ESTIMATE OF THE REQUIRED TIME. THE PAYMENT SHALL BE BASED ON THE DESIGNER'S STANDARD HOURLY RATES FOR THE PERSONNEL INVOLVED IN THE REVIEW.

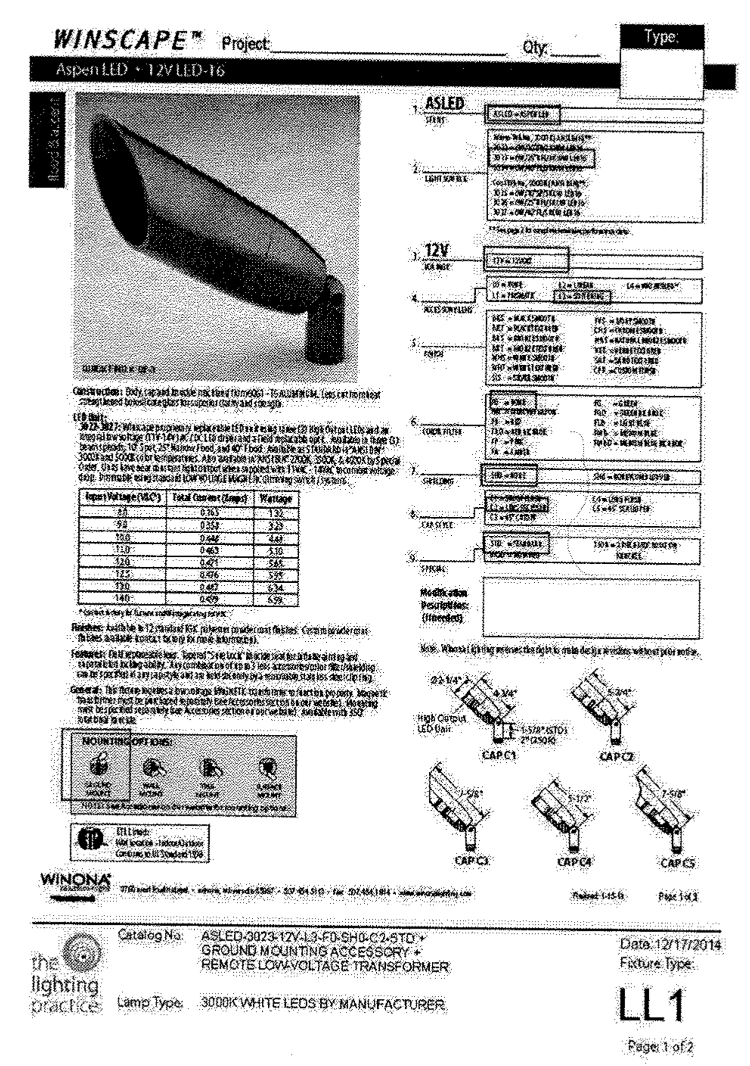
## SELECT DEFINITIONS:

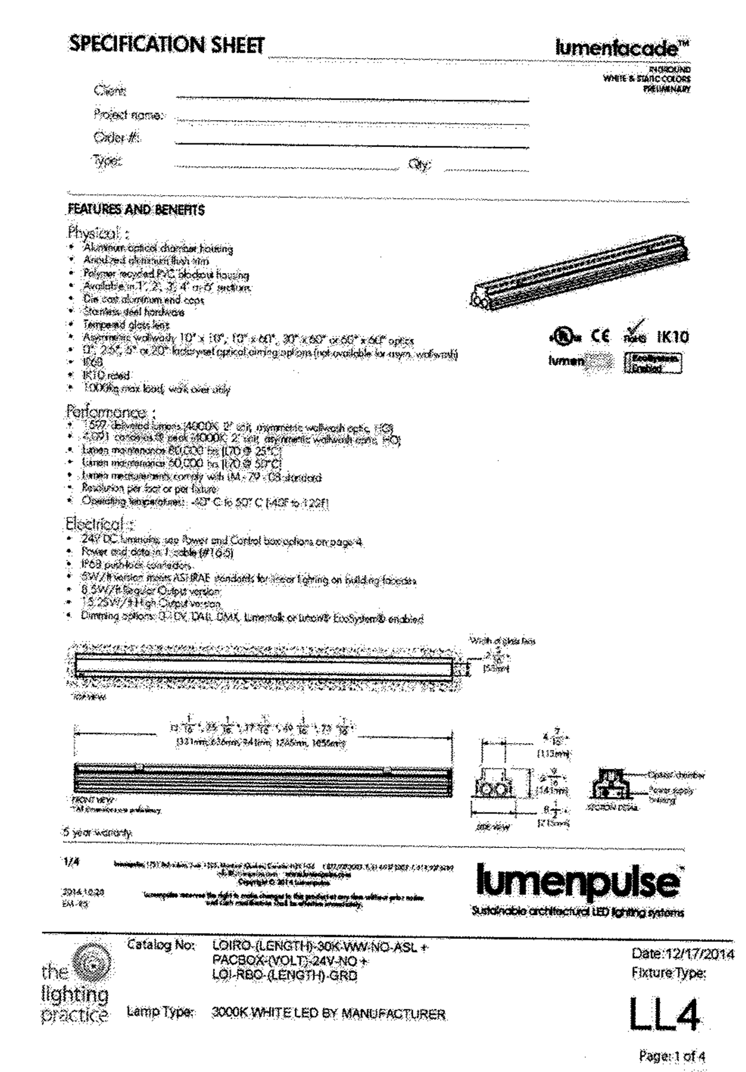
1. CORRELATED COLOR TEMPERATURE (CCT): THE ABSOLUTE TEMPERATURE, MEASURED IN DEGREES KELVIN, OF A BLACKBODY RADIATOR HAVING CHROMATICITY RESEMBLING THAT OF AN ELECTRIC LIGHT SOURCE. FOR LED SOURCES CCT SHALL NOT DEVIATE FROM THE REFERENCE COLOR TEMPERATURE BY NO MORE THAN THREE MACADAM ELLIPSES, AS DEFINED BY NEMA/ANSI/ANSLG C38.377-2011
2. COLOR RENDERING INDEX (CRI): MEASURE OF COLOR SHIFT OBJECTS UNDERGO WHEN ILLUMINATED BY AN ELECTRIC LIGHT SOURCE AS COMPARED WITH THE COLOR OF THE SAME OBJECTS ILLUMINATED BY A REFERENCE SOURCE AT THE SAME COLOR TEMPERATURE. CRI VALUES FOR ELECTRIC LIGHT SOURCES RANGE FROM APPROXIMATELY 20 (LOW PRESSURE SODIUM) TO 99 (HALOGEN). CRI VALUES FOR LED SOURCES SHALL BE MEASURED AFTER 6000 HOURS AND SHALL NOT DEVIATE MORE THAN 3 POINTS FROM THE RATED VALUE.
3. LED LIGHT ENGINE: THE COMBINED LED LIGHT SOURCE AND ITS ASSOCIATED ELECTRONIC DRIVER. THE LED LIGHT ENGINE MAY HAVE AN INTEGRAL DRIVER OR THE DRIVER MAY BE HOUSED IN A SEPARATE ENCLOSURE.
4. LED DRIVER: CONTROL DEVICE THAT MAINTAINS CONSTANT AMOUNT OF CURRENT TO THE LED LIGHT SOURCE. LED DRIVERS GENERALLY OPERATE AT 12VDC OR 24VDC. SOME DRIVERS ARE DESIGNED TO ACCEPT BRANCH CIRCUIT VOLTAGE RANGING FROM 120VAC THROUGH 277VAC OR MAY REQUIRE A SEPARATE TRANSFORMER.
5. TRANSFORMER: ELECTROMAGNETIC OR ELECTRONIC DEVICE THAT STEPS DOWN PRIMARY VOLTAGE TO A LOWER SECONDARY VOLTAGE. GENERALLY SECONDARY VOLTAGE WILL BE 12V OR 24V
6. DIMMING: THE REDUCTION OF LIGHT INTENSITY OF A LIGHT SOURCE. ALL SOURCES SHALL HAVE A SMOOTH, FLICKER-FREE AND CONTINUOUS DIMMING CURVE FROM FULL-OFF TO 100% OUTPUT. LED SOURCES MAY BE DIMMED BY EITHER CONSTANT CURRENT REDUCTION (CCR) OR BY PULSE WIDTH MODULATION (PWM) DIMMING FOR CONSTANT CURRENT DRIVERS.
7. RATED LUMEN MAINTENANCE LIFE: THE ELAPSED OPERATING TIME OVER WHICH AN LED LIGHT SOURCE WILL MAINTAIN THE PERCENTAGE OF ITS INITIAL LUMEN OUTPUT
   L70: TIME, IN HOURS, TO 70% LUMEN MAINTENANCE
   L50: TIME, IN HOURS, TO 50% LUMEN MAINTENANCE

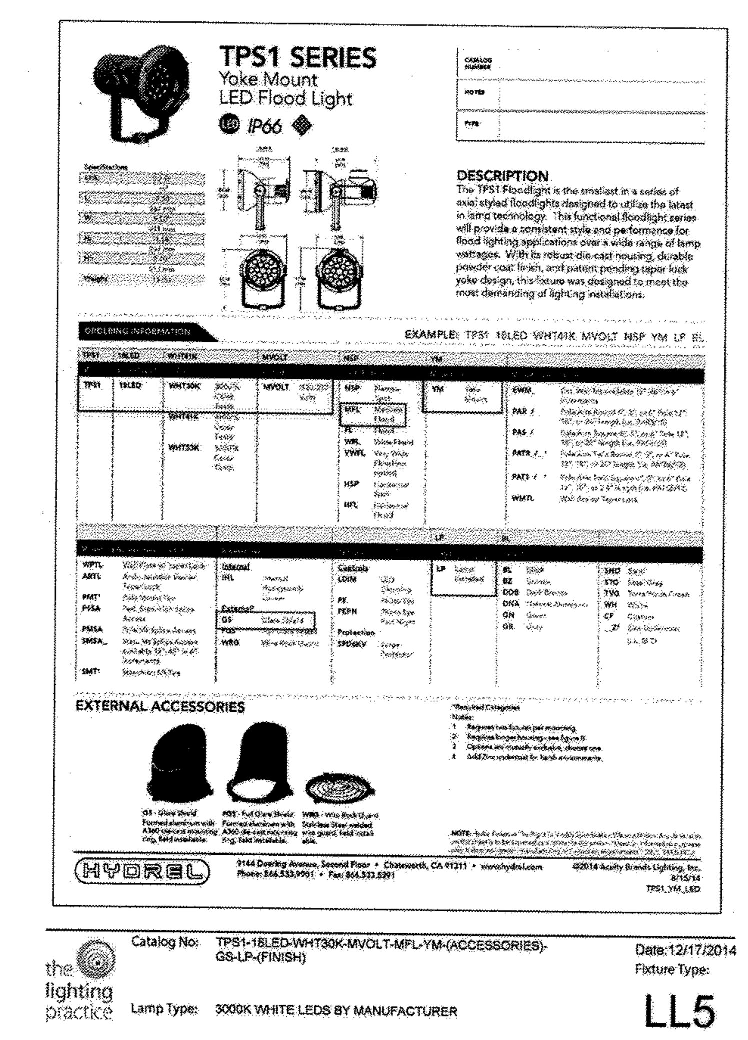
**NOTE: LIGHTING IS FOR PRELIMINARY PRICING PURPOSES ONLY. TO BE COORDINATED WITH LIGHTING DESIGNER TBD.**

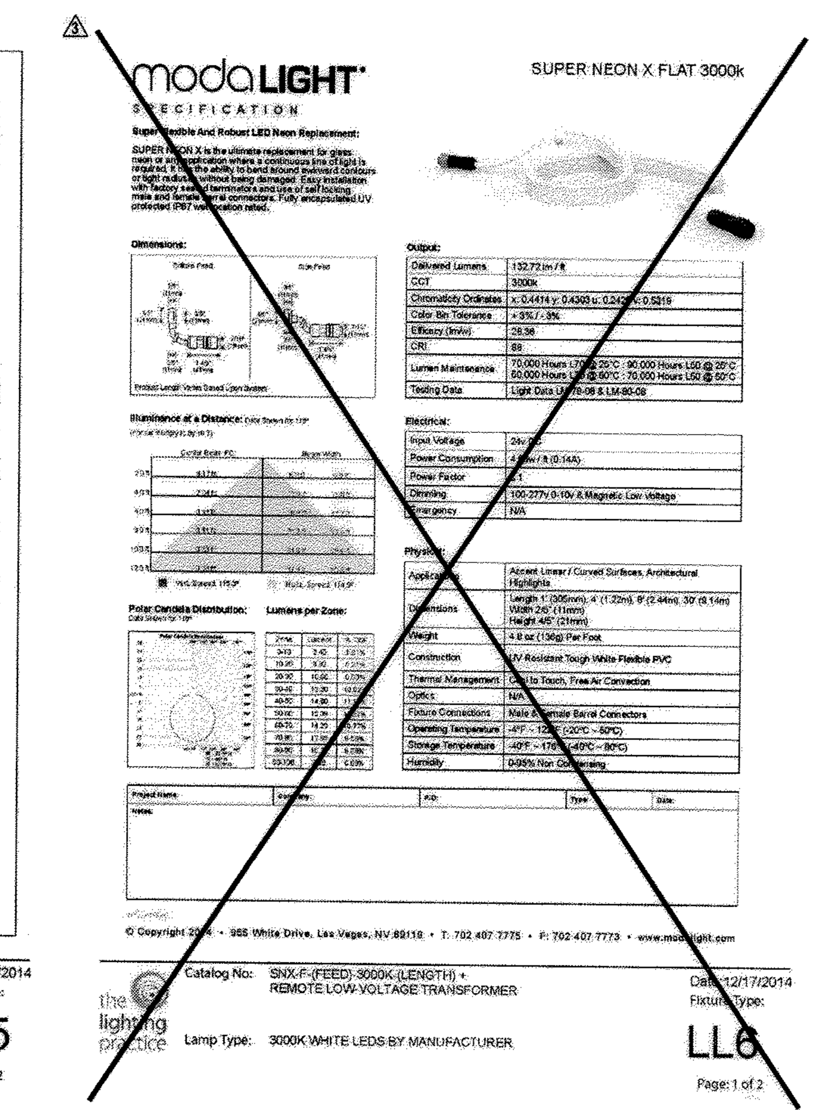
**ALL LIGHTING IS TO ADHERE TO SECTION 134 OF THE ZONING REGULATIONS.**

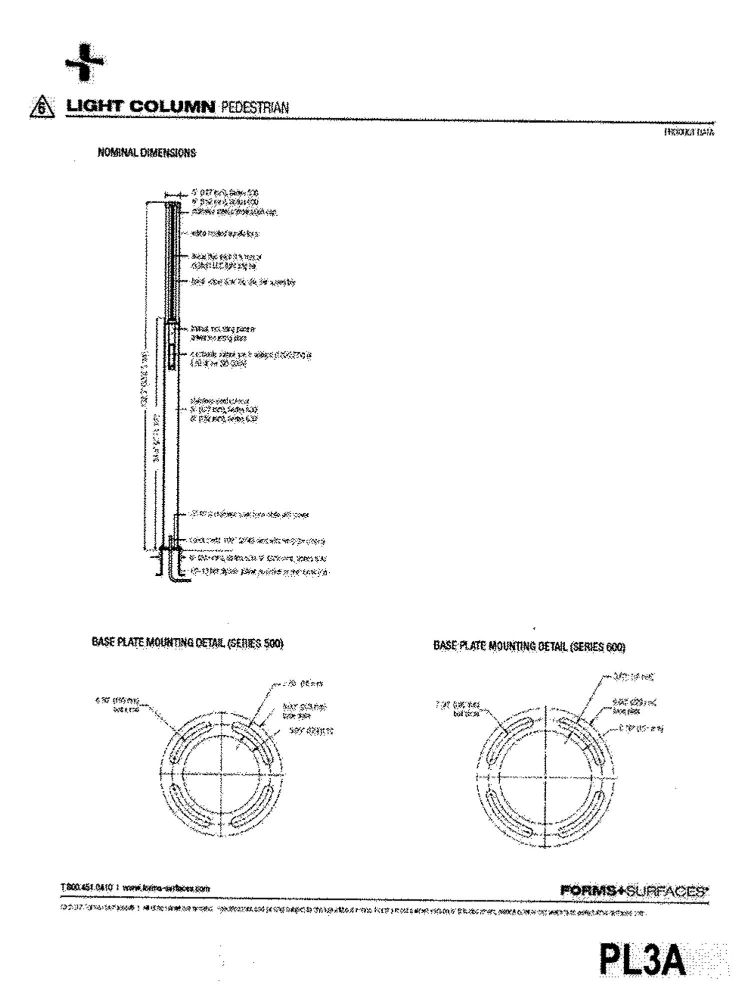


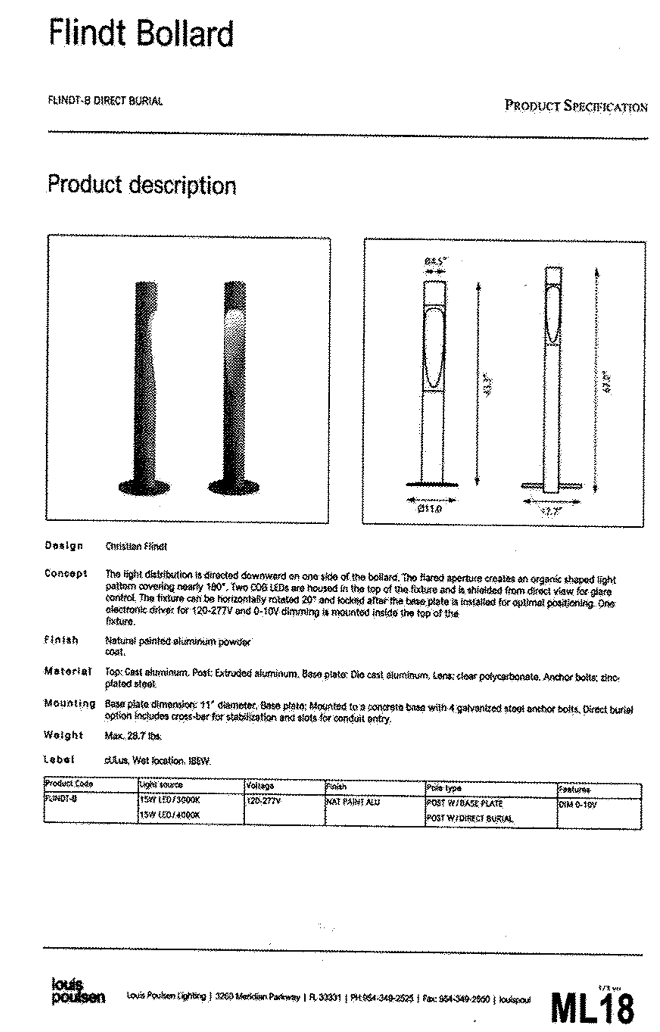



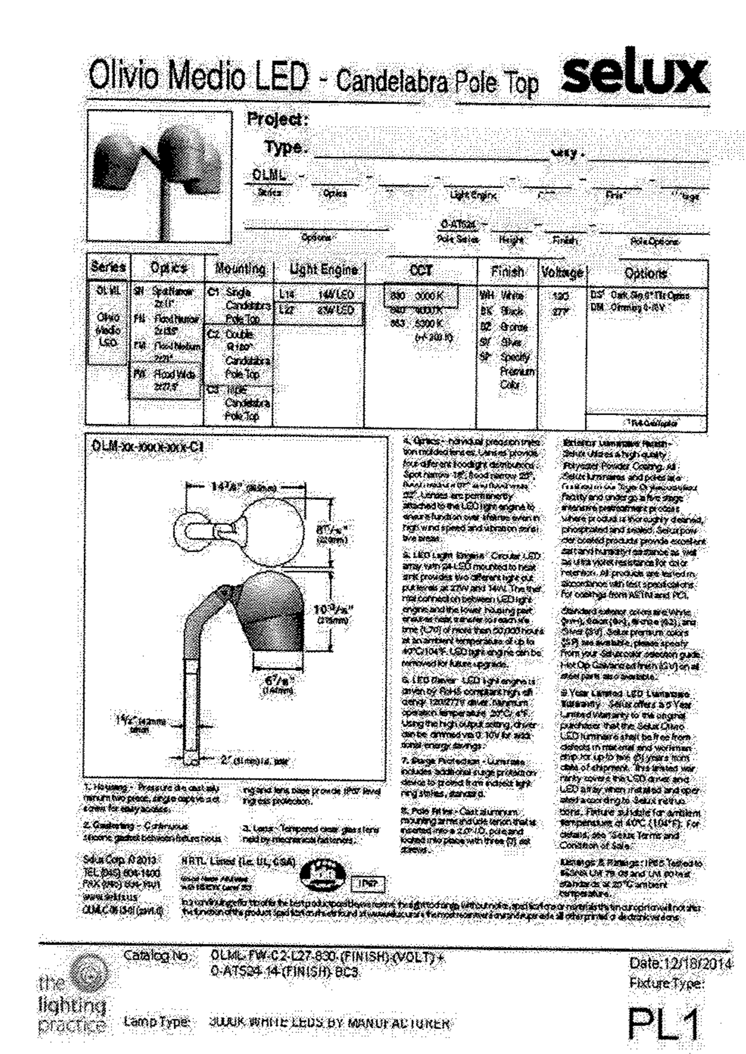



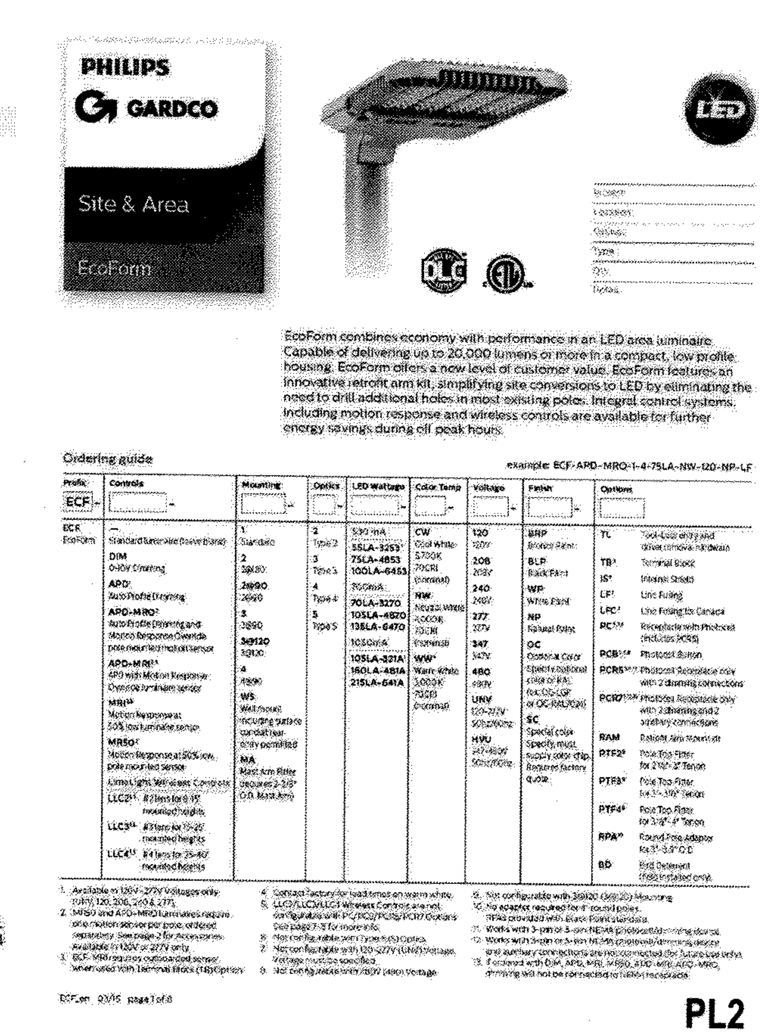



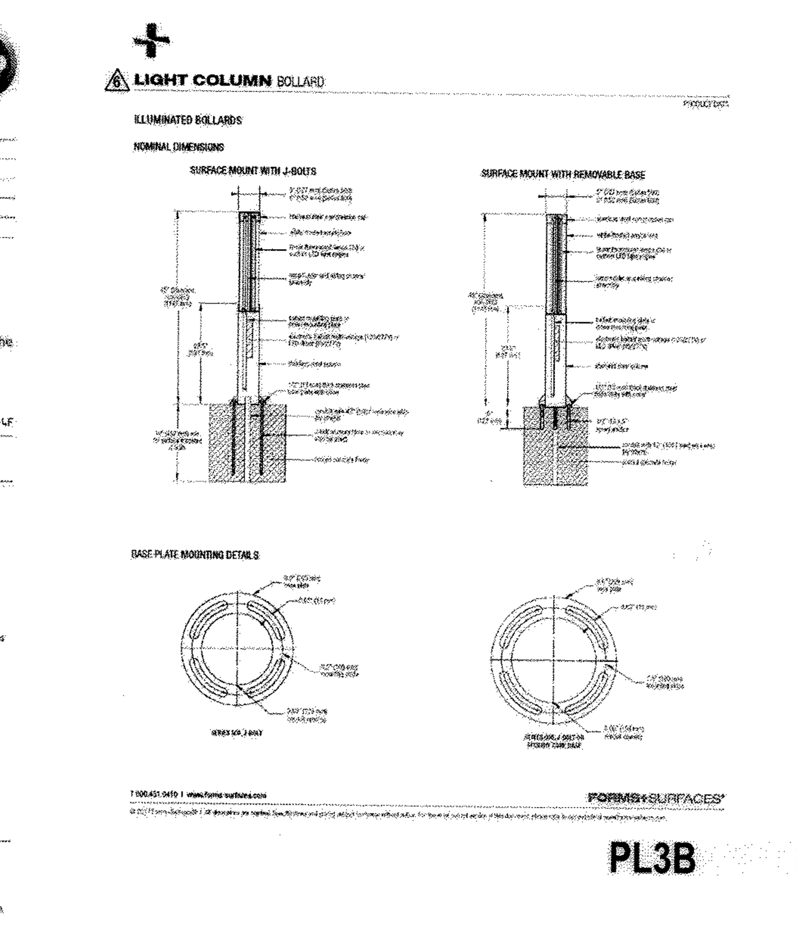




**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | Date 1-25-18 |
| Chief, Division of Land Development | Date 1-25-18 |
| Chief, Development Engineering Division | Date 1-4-18 |

PURPOSE NOTE: THE REVISIONS MADE TO THIS SHEET REFLECT CHANGES RESULTING FROM THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN. THIS PLAN SUPERCEDES THE PLAN SIGNED ON 12/18/2015.

**L-410**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | △3 REVISIONS TO BUILDING B & SURROUNDING AREA | MM | AD |
| 11/17/2017 | △6 REVISIONS TO BUILDING B | MM | AD |

DES. | DRN. | CHK.

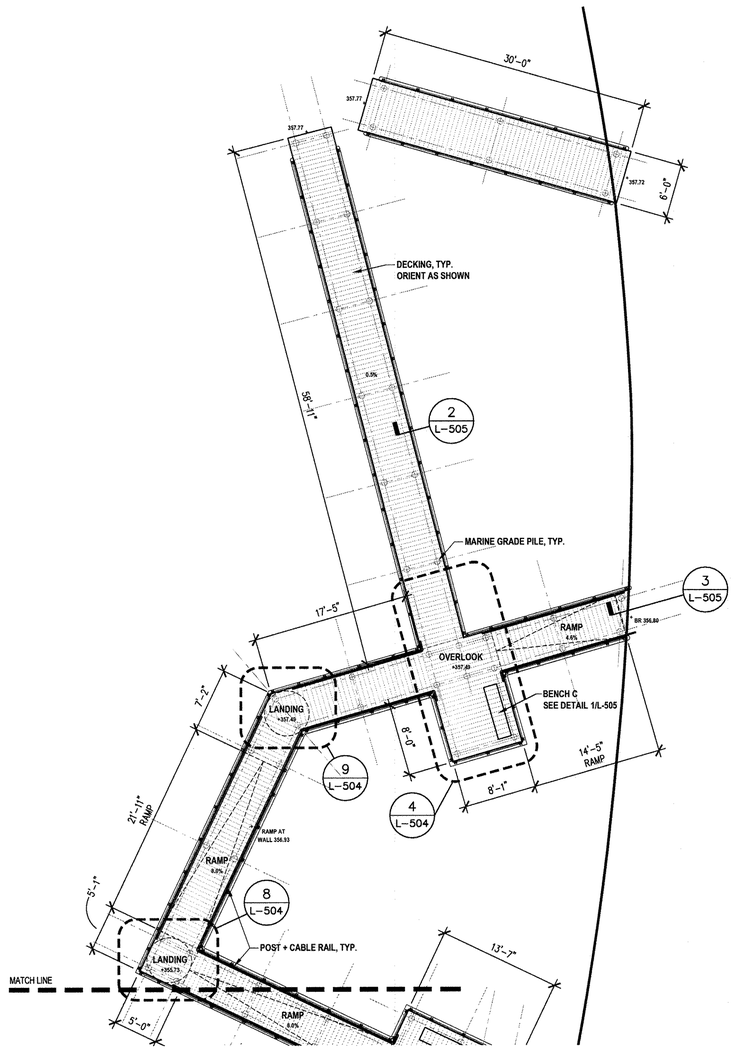
OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

REVISED LIGHTING FIXTURE SCHEDULE

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

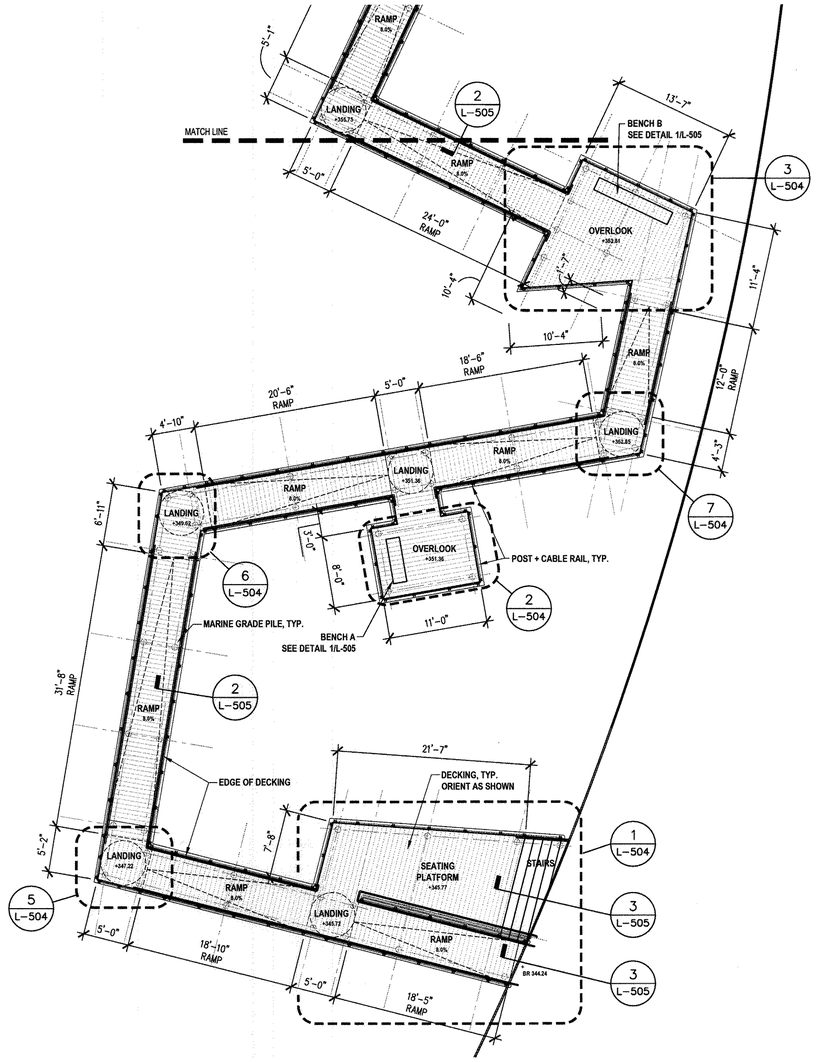
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| NOV., 2017 | 36 - 01 | 52 OF 63 |

SDP-15-068




## 1 NORTH BOARDWALK PLAN

1/8" = 1'-0"




## 2 SOUTH BOARDWALK PLAN

1/8" = 1'-0"




**CERTIFICATION NOTE:**
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME
~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | 9-12-16 Date |
| Chief, Division of Land Development | 9-02-16 Date |
| Chief, Development Engineering Division | 9.2.16 Date |

BOARDWALK MATERIALS (DECKING + RAILING):

DECKING

MATERIAL: 1"X6" PRESSURE TREATED DECKING
ATTACHMENT: HIDDEN FASTENER SYSTEM

CABLE RAILING

MANUFACTURER: WAGNER RAILING SYSTEMS OR APPROVED EQUAL
MODEL: ULTRA-TEC CABLE RAILING KIT SYSTEM
COMPONENTS: TYPE 316 STAINLESS STEEL CABLE (3/16" DIA.) PLATFORMS/HORIZONTAL RUNS – 262 SERIES RAMPS – 262 SERIES W BEVELED WASHERS EACH KIT TO INCLUDE ONE TENSIONER AND A SWAGELESS STOP END
NOTES: CABLE SPAN MAY NOT EXCEED 25 FEET POST SPACING NOT TO EXCEED 48" O.C. TO MAINTAIN CABLE SPANS WITH MINIMUM DEFLECTION.
SHOP DRAWINGS: PROVIDE SHOP DRAWINGS IDENTIFYING ALL MANUFACTURER RECOMMENDED COMPONENTS. LOCATION OF ALL FITTINGS TO BE IDENTIFIED ON PLAN.

HANDRAIL

MANUFACTURER: WAGNER RAILING SYSTEMS OR APPROVED EQUAL
MODEL: LUMENRAIL W LEDPOD LIGHTING AT EACH POST
COMPONENTS: TYPE 316 STAINLESS STEEL CABLE
SHOP DRAWINGS: PROVIDE SHOP DRAWINGS IDENTIFYING ALL MANUFACTURER RECOMMENDED COMPONENTS.

**NOTE: REF. S101 AND S102 FOR BOARDWALK PILING AND FRAMING PLANS**

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

0' 4' 8' 16' 24'

N

**L-500**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | MM | AD |
| 11.17.2017 | ⚠6 Revise sheet Nos. | gt | mjt. |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

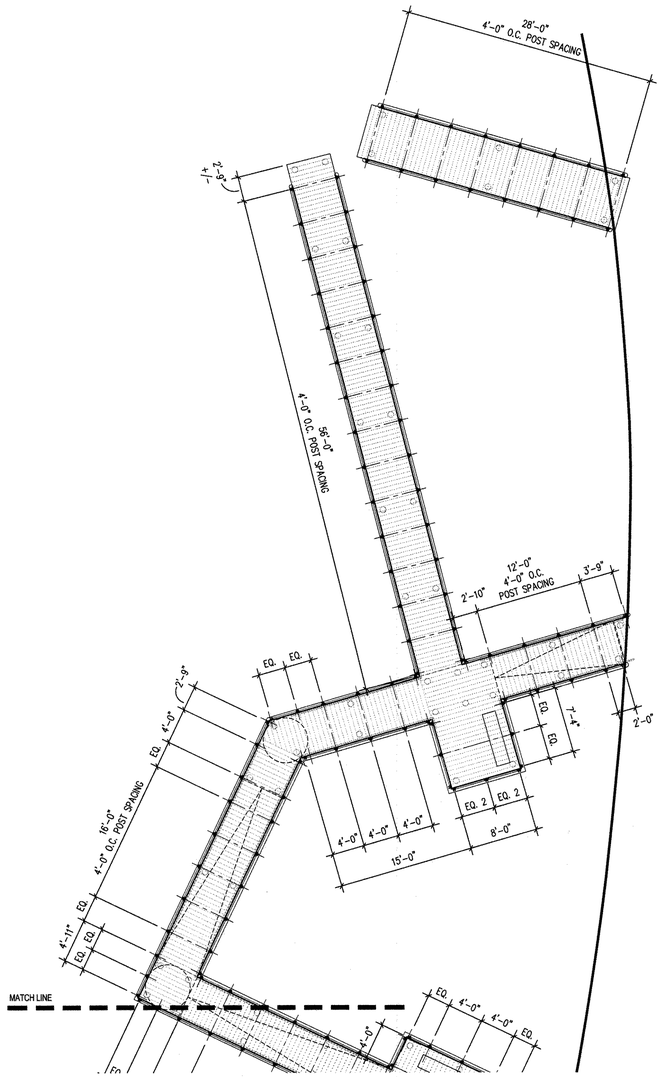
STATE OF MARYLAND — STEPHEN ALAN CROWLEY — 1030 — LANDSCAPE ARCHITECT

BOARDWALK – DECKING PLAN

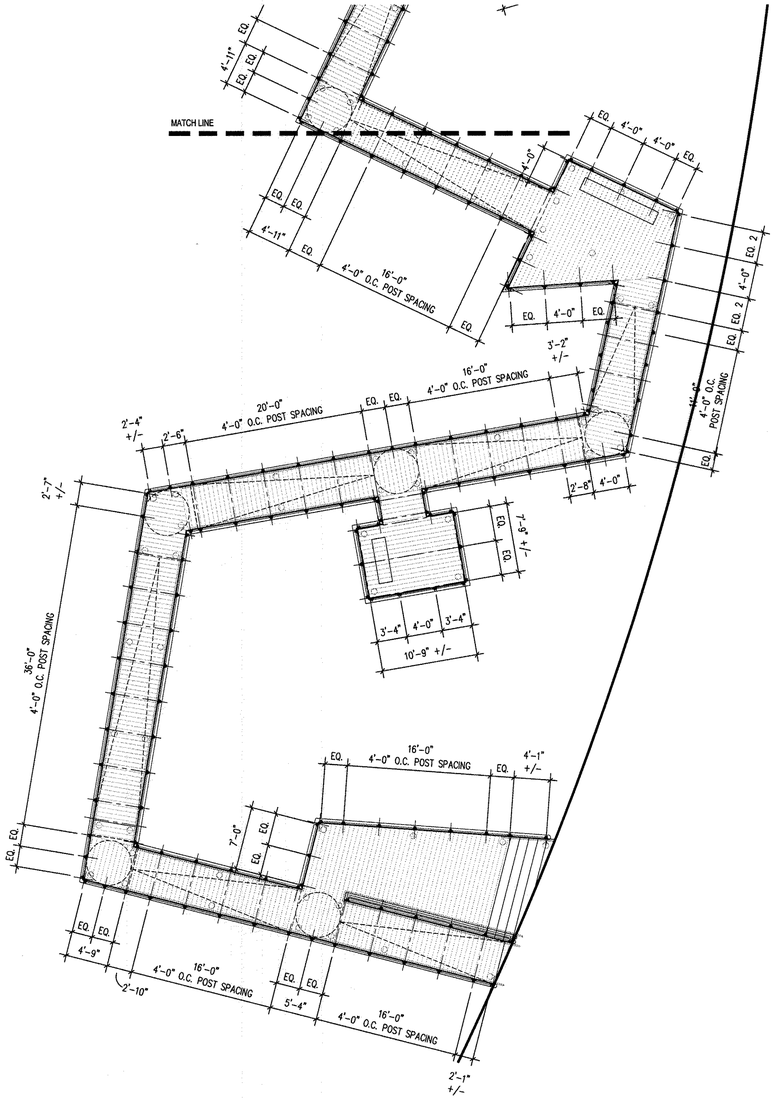
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1/8"=1'-0" | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 53 OF 69 |

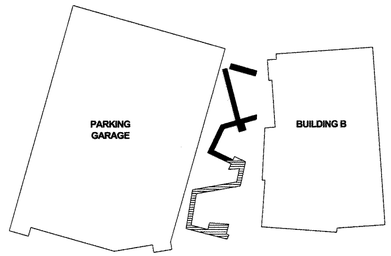
SDP-15-068




1 **NORTH BOARDWALK PLAN**
1/8" = 1'-0"




2 **SOUTH BOARDWALK PLAN**
1/8" = 1'-0"




KEY PLAN

NORTH BOARDWALK PLAN

SOUTH BOARDWALK PLAN

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

**DEVELOPER'S/OWNER'S NAME**

~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | Date 9-12-16 |
| Chief, Division of Land Development | Date 9-12-16 |
| Chief, Development Engineering Division | Date 9-2-16 |

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

0' 4' 8' 16' 24'

N

**L-501**

**DESIGN COLLECTIVE**
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | △ ADDITIONAL SHEET | MM | AD |
| 11.17.2017 | 6 Revise sheet Non. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

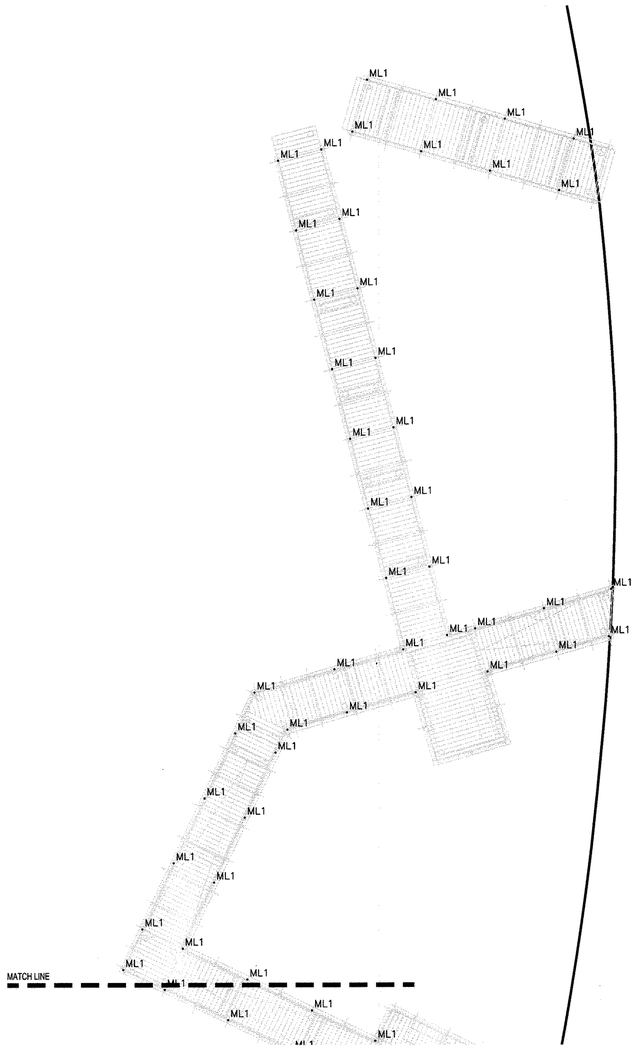
STATE OF MARYLAND MATTHEW ALAN DAVIDSON 1038 LANDSCAPE ARCHITECT

BOARDWALK – POST + RAILING PLAN

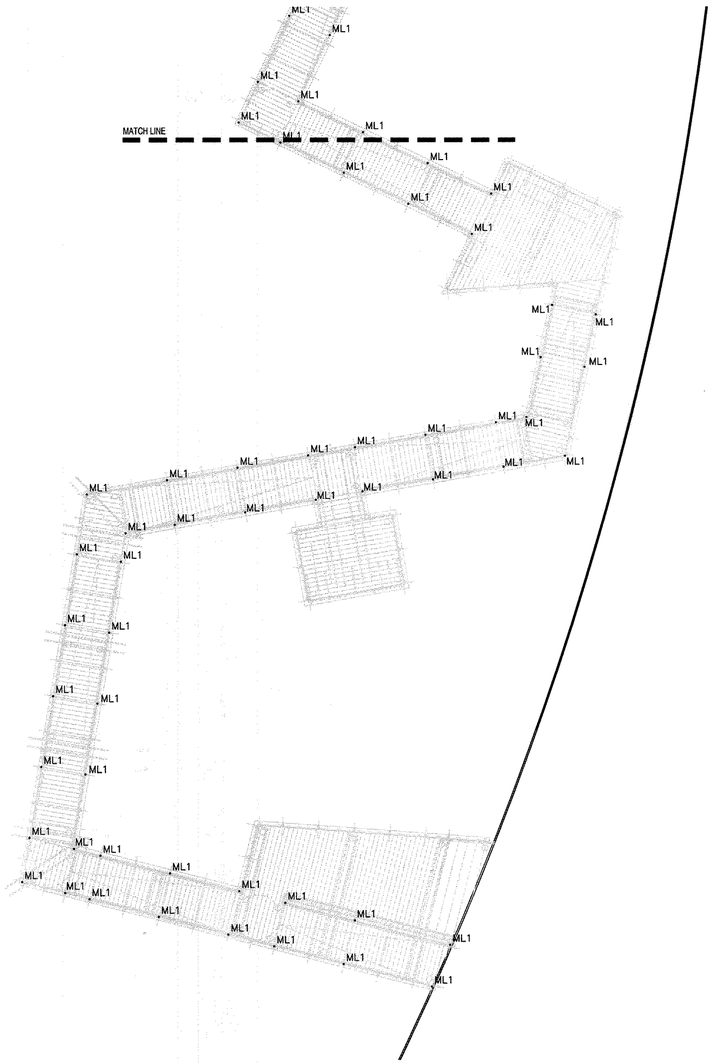
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1/8"=1'-0" | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET 6 |
| JUNE, 2016 | 36 – 01 | 54 OF 63 |

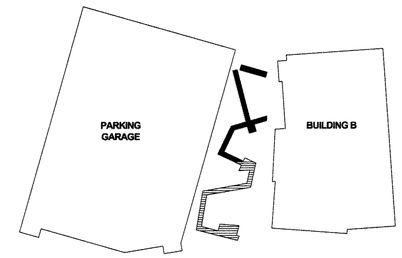
SDP-15-068




## 1 NORTH BOARDWALK PLAN
1/8" = 1'-0"




## 2 SOUTH BOARDWALK PLAN
1/8" = 1'-0"




**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME
~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Director — Date 9-12-16
Chief, Division of Land Development — Date 9-12-16
Chief, Development Engineering Division — Date 9.2.16

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

0' 4' 8' 16' 24'

N

**L-502**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | MM | AD |
| 11.17.2016 | ⚠ Revise sheet Nos. | BJ. | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND — ANTHONY MARK CARINO — 1999 — LANDSCAPE ARCHITECT

BOARDWALK – LIGHTING PLAN

# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1/8"=1'-0" | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 55 OF 63 |

SDP-15-068

| HOWARD HUGHES BOARDWALK<br>COLUMBIA, MARYLAND | | | | | TLP PROJECT NUMBER:<br>XXXXX.00 | | | TLP ISSUE DATE:<br>05/03/16 |
|---|---|---|---|---|---|---|---|---|
| LIGHTING FIXTURE SCHEDULE | | | | | | | | |
| TYPE | MTG. | DESCRIPTION | LAMPING | | WATTAGE PER FIXTURE | VOLTS | MANUFACTURER | CATALOG NUMBER |
| | | | QTY. | LAMP DESIGNATION | | | | |
| ML1 | SURF | LED RAILING LIGHT SYSTEM, 1.66 OR 1.90 INCH ADA-COMPLIANT DIAMETER X LENGTH AS SHOWN ON ARCHITECTURAL DRAWINGS, HANDRAIL WITH INTEGRAL LEDS MOUNTED IN DOWNLIGHT POSITION, LED MODULES SHALL HAVE A SYMMETRICAL LIGHT DISTRIBUTION, OVERALL FINISH TO BE SELECTED BY DESIGN PROFESSIONAL, PROVIDE REMOTE LED DRIVERS IN ACCESSIBLE LOCATIONS THAT SHALL BE COORDINATED WITH LANDSCAPE ARCHITECT WITHIN NEMA 3R ENCLOSURES. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING DETAILS. ENTIRE RAIL SYSTEM TO BE U.L. WET LOCATION RATED.<br><br>ELECTRICAL CONTRACTOR SHALL COORDINATE ALL COMPONENTS OF THE RAIL SYSTEM WITH THE DESIGN PROFESSIONAL AND VERIFY ALL LENGTHS IN FIELD PRIOR TO ORDERING. PROVIDE SCALED AND DIMENSIONED DRAWINGS OF ALL RAILING LAYOUTS INDICATING QUANTITY AND LOCATION OF REMOTE DRIVERS AND LED POD LOCATIONS PRIOR TO RELEASE OF ORDER. REFER TO ARCHITECTURAL DRAWINGS FOR HANDRAIL DETAILS AND ADDITIONAL SPECIFICATIONS FOR HANDRAIL SYSTEM. PROVIDE REMOTE POWER SUPPLIES SIZED AS REQUIRED FOR THE RUN LENGTHS SHOWN ON DRAWINGS, POWER SUPPLIES SHALL BE MOUNTED IN ACCESSIBLE BUT DISCRETE LOCATIONS. POWER SUPPLIES TO BE U.L. WET LOCATION LISTED.<br><br>ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY FEEDS, CONNECTORS, AND MOUNTING ACCESSORIES AS REQUIRED FOR A COMPLETE AND FULLY FUNCTIONING SYSTEM.<br><br>LED REQUIREMENTS:<br>NOMINAL 140 INITIAL DELIVERED LUMENS, L70 OF 50,000 HOURS, 3,000K CCT, 80+ CRI, AND A 5-YEAR WARRANTY. | – | LEDS BY MANUFACTURER | 1.5 | | WAGNER | LULP-[RAIL SIZE]-30K-S-[RAIL WALL THICKNESS]-[VOLT] |

## GENERAL NOTES:

1. ALL LIGHTING FIXTURES, LAMPS AND RELATED DEVICES FURNISHED UNDER THIS CONTRACT SHALL CARRY THE APPROVAL LABEL OF UL OR ETL FOR THE SPECIFIC APPLICATION IN WHICH THEY ARE USED.

2. THE STATEMENT "FINISH TO BE SELECTED BY DESIGN PROFESSIONAL" SHALL BE INTERPRETED TO MEAN THAT THE FINISH OF THE LUMINAIRE SHALL MATCH THE APPEARANCE OF A PAINT CHIP, COLOR NUMBER, OR METAL SWATCH FURNISHED BY THE DESIGN PROFESSIONAL DURING THE SUBMITTAL REVIEW PROCESS.

3. WHITE L.E.D.'S SHALL MEET, AT A MINIMUM, CHROMATICITY STANDARDS SET BY ANSI/NEMA/ANSLG C79.377-2011. L.E.D. LUMEN MAINTENANCE SHALL BE MEASURED IN ACCORDANCE WITH IESNA LM-80 STANDARDS. PHOTOMETRIC TESTING FOR SOLID STATE LUMINAIRES SHALL BE IN ACCORDANCE WITH IESNA LM-79 STANDARDS.

4. CONTRACTOR SHALL CONFIRM FIXTURE VOLTAGES, CEILING TRIMS, AND MOUNTING HARDWARE ARE COMPATIBLE WITH THEIR APPLICATION AS DETERMINED BY THE DESIGN PROFESSIONAL PRIOR TO ORDERING FIXTURES.

5. CONTRACTOR SHALL SELECT, FURNISH AND INSTALL THE CORRECT SIZE OF SECONDARY WIRING FROM REMOTE TRANSFORMERS AND/OR REMOTE BALLASTS AS REQUIRED TO KEEP VOLTAGE DROP IN THE SECONDARY WIRING BELOW 3% OF RATED VOLTAGE.

6. CONTRACTOR SHALL PROVIDE LABOR AND EQUIPMENT FOR FOCUSING OF ADJUSTABLE FIXTURES AND PRESETTING OF LIGHTING CONTROL SYSTEMS. FOCUSING AND PRESETTING SHALL BE DONE IN THE PRESENCE OF THE DESIGN PROFESSIONAL. CONTRACTOR SHALL FOCUS LIGHTING AFTER DARK IF DIRECTED BY THE OWNER'S REPRESENTATIVE. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL PROVIDE AT LEAST ONE DAY OF A FACTORY-TRAINED AND CERTIFIED TECHNICIAN TO PROVIDE WARRANTY START UP AND PROGRAMMING FOR ALL LIGHTING CONTROL SYSTEMS AND PROGRAMMABLE LIGHTING FIXTURES.

7. CONTRACTOR SHALL PROVIDE THE FOLLOWING WITH THEIR BID:

   A. THE UNIT PRICE, WITHOUT LAMP, FOR EACH LIGHTING FIXTURE TYPE LISTED WITHIN THE LIGHTING FIXTURE SCHEDULE. THE UNIT PRICE SHALL BE FOR ONE OF THE LISTED MANUFACTURER'S FOR THAT PARTICULAR FIXTURE. THE MANUFACTURER SHALL BE IDENTIFIED. SUBSTITUTIONS FOR FIXTURES PROVIDED BY MANUFACTURERS NOT LISTED IN THE SCHEDULE ARE NOT ACCEPTABLE. SEE BELOW FOR REQUIREMENTS ASSOCIATED WITH SUBMITTING LIGHTING FIXTURE SUBSTITUTIONS.
   B. THE TOTAL QUANTITY OF EACH FIXTURE TYPE WITH THE EXTENDED COST FOR THAT QUANTITY.
   C. THE UNIT PRICE, TYPE, AND QUANTITY OF LAMPS.

11. WITHIN 21 DAYS OF CONTRACT AWARD, THE CONTRACTOR SHALL FURNISH SUBMITTALS FOR ALL SPECIFIED LIGHTING FIXTURES FOR REVIEW BY THE DESIGN PROFESSIONAL. THE SUBMITTALS SHALL INCLUDE LUMINAIRE CATALOG CUTS, SUBMITTAL SHEETS, OR MANUFACTURERS SHOP DRAWINGS INDICATING THE FOLLOWING:

    A. MANUFACTURER'S NAME AND COMPLETE CATALOG NUMBER
    B. FIXTURE TYPE, DIMENSIONS AND FINISHES
    C. FIXTURE PHOTOMETRIC TEST DATA FROM AN INDEPENDENT TEST LABORATORY
    D. FIXTURE ACCESSORIES, COMPONENTS, AND HARDWARE WHEN SPECIFIED
    E. LAMP TYPE, QUANTITY, WATTAGE, LUMEN OUTPUT, RATED LIFE, COLOR TEMPERATURE, COLOR RENDERING INDEX AND BEAM SPREAD AS APPLICABLE
    F. BALLAST TYPE AND FIXTURE VOLTAGE

    SUBMITTALS FOR LIGHTING FIXTURES MOUNTED WITHIN ARCHITECTURAL COVES OR CASEWORK, VARIABLE LENGTH FIXTURES, AND FOR NON-STANDARD, OR CUSTOM FIXTURES, SHALL ALSO INCLUDE SCALED DRAWINGS SHOWING THE LAYOUT AND DIMENSIONS OF ALL FIXTURE COMPONENTS AND ACCESSORIES, THE METHOD OF INSTALLATION, AND A COMPLETE BILL OF MATERIALS.

12. LIGHTING FIXTURE SUBSTITUTION REQUESTS MUST BE SENT TO AND RECEIVED BY THE LIGHTING DESIGNER FOR REVIEW 14 DAYS PRIOR TO BID DATE. FAILURE TO SUBMIT WITHIN THIS DEADLINE SHALL CONSTITUTE A GUARANTEE THAT THE SPECIFIED FIXTURES WILL BE SUPPLIED. THE SUBMITTAL SHALL INCLUDE THE FOLLOWING:

    A. SIX HARD COPIES OF THE SUBMITTALS REQUIRED ABOVE FOR BOTH THE SPECIFIED FIXTURE AND THE PROPOSED SUBSTITUTION.
    B. ONE NON-RETURNABLE WORKING SAMPLE OF THE PROPOSED SUBSTITUTE FIXTURE WITH CORD & PLUG CONNECTION FOR 120 VOLT OPERATION, AND SPECIFIED LAMP(S).
    C. CONTRACTOR'S STATEMENT INDICATING THE EFFECT OF THE SUBSTITUTION ON THE CONSTRUCTION SCHEDULE COMPARED TO THE SCHEDULE WITHOUT THE APPROVAL OF THE PROPOSED SUBSTITUTION.
    D. CONTRACTOR'S CERTIFICATION STATING THAT THE PROPOSED SUBSTITUTION CONFORMS TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS IN EVERY RESPECT AND IS APPROPRIATE FOR THE APPLICATIONS INDICATED IN THE DOCUMENTS.
    E. CONTRACTOR'S CERTIFICATION STATING THAT ANY MODIFICATIONS TO ANY BUILDING SYSTEM OR EQUIPMENT THAT MAY RESULT FROM THE PROPOSED LIGHTING FIXTURE SUBSTITUTION WILL BE DESIGNED AND CONSTRUCTED AT THE CONTRACTOR'S EXPENSE.
    F. CONTRACTOR'S WAIVER OF RIGHTS TO ADDITIONAL PAYMENT OR TIME THAT MAY BECOME NECESSARY SHOULD THE PROPOSED SUBSTITUTION FAIL TO PERFORM IN A MANNER THAT MATCHES THE SPECIFIED FIXTURE.
    G. CONTRACTOR-NET UNIT PRICE FOR THE SPECIFIED FIXTURE AND FOR THE PROPOSED SUBSTITUTE FIXTURE.

    THE LIGHTING DESIGNER SHALL BE REIMBURSED BY THE CONTRACTOR FOR ALL OF THE DESIGNER'S TIME ASSOCIATED WITH THE REVIEW OF THE PROPOSED FIXTURE SUBSTITUTION(S). PAYMENT SHALL BE MADE IN ADVANCE OF THE REVIEW, BASED ON THE DESIGNER'S ESTIMATE OF THE REQUIRED TIME. THE PAYMENT SHALL BE BASED ON THE DESIGNER'S STANDARD HOURLY RATES FOR THE PERSONNEL INVOLVED IN THE REVIEW.

## DEFINITIONS:

1. CORRELATED COLOR TEMPERATURE (CCT): THE ABSOLUTE TEMPERATURE, MEASURED IN DEGREES KELVIN, OF A BLACKBODY RADIATOR HAVING CHROMATICITY RESEMBLING THAT OF AN ELECTRIC LIGHT SOURCE. FOR LED SOURCES CCT SHALL NOT DEVIATE FROM THE REFERENCE COLOR TEMPERATURE BY NO MORE THAN THREE MACADAM ELLIPSES, AS DEFINED BY NEMA/ANSI/ANSLG C38.377-2011

2. COLOR RENDERING INDEX (CRI): MEASURE OF COLOR SHIFT OBJECTS UNDERGO WHEN ILLUMINATED BY AN ELECTRIC LIGHT SOURCE AS COMPARED WITH THE COLOR OF THE SAME OBJECTS ILLUMINATED BY A REFERENCE SOURCE AT THE SAME COLOR TEMPERATURE. CRI VALUES FOR ELECTRIC LIGHT SOURCES RANGE FROM APPROXIMATELY 20 (LOW PRESSURE SODIUM) TO 99 (HALOGEN). CRI VALUES FOR LED SOURCES SHALL BE MEASURED AFTER 6000 HOURS AND SHALL NOT DEVIATE MORE THAN 3 POINTS FROM THE RATED VALUE.

3. LED LIGHT ENGINE: THE COMBINED LED LIGHT SOURCE AND ITS ASSOCIATED ELECTRONIC DRIVER. THE LED LIGHT ENGINE MAY HAVE AN INTEGRAL DRIVER OR THE DRIVER MAY BE HOUSED IN A SEPARATE ENCLOSURE.

4. LED DRIVER: CONTROL DEVICE THAT MAINTAINS CONSTANT AMOUNT OF CURRENT TO THE LED LIGHT SOURCE. LED DRIVERS GENERALLY OPERATE AT 12VDC OR 24VDC. SOME DRIVERS ARE DESIGNED TO ACCEPT BRANCH CIRCUIT VOLTAGE RANGING FROM 120VAC THROUGH 277VAC OR MAY REQUIRE A SEPARATE TRANSFORMER.

5. TRANSFORMER: ELECTROMAGNETIC OR ELECTRONIC DEVICE THAT STEPS DOWN PRIMARY VOLTAGE TO A LOWER SECONDARY VOLTAGE. GENERALLY SECONDARY VOLTAGE WILL BE 12V OR 24V

6. DIMMING: THE REDUCTION OF LIGHT INTENSITY OF A LIGHT SOURCE. ALL SOURCES SHALL HAVE A SMOOTH, FLICKER-FREE AND CONTINUOUS DIMMING CURVE AS NOTED IN LUMINAIRE DESCRIPTION. LED SOURCES MAY BE DIMMED BY EITHER CONSTANT CURRENT REDUCTION (CCR) OR BY PULSE WIDTH MODULATION (PWM) DIMMING FOR CONSTANT CURRENT DRIVERS.

7. RATED LUMEN MAINTENANCE LIFE: THE ELAPSED OPERATING TIME OVER WHICH AN LED LIGHT SOURCE WILL MAINTAIN THE PERCENTAGE OF ITS INITIAL LUMEN OUTPUT
   L70: TIME, IN HOURS, TO 70% LUMEN MAINTENANCE
   L50: TIME, IN HOURS, TO 50% LUMEN MAINTENANCE

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**

~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16
Chief, Division of Land Development — Date 9-12-16
Chief, Development Engineering Division — Date 9-2-16

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

# L-503


DESIGN COLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | MM | AD |
| 11.17.2017 | 6 Revise sheet Nos. | gt | mjt. |

DES. | DRN. | CHK.


OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800


STATE OF MARYLAND — MATTHEW ALAN D'AMICO — LANDSCAPE ARCHITECT — 1039

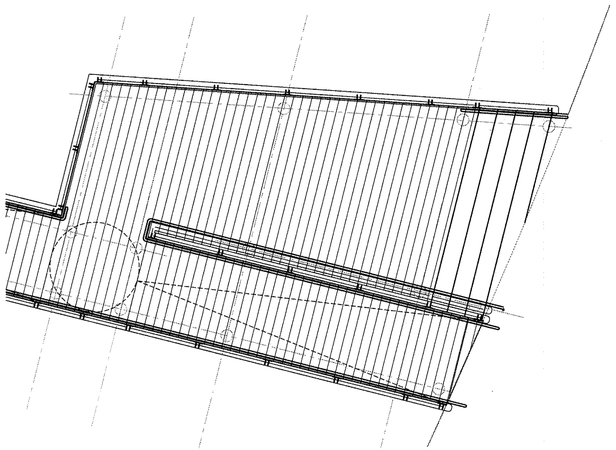
BOARDWALK - LIGHTING SCHEDULE

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566

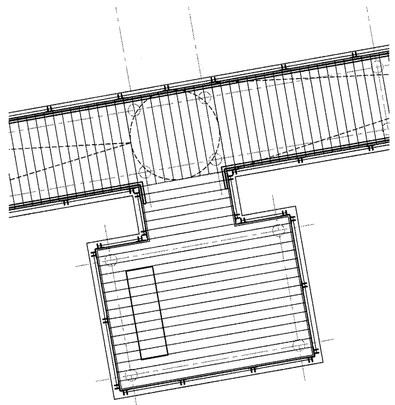
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET 6 |
| JUNE, 2016 | 36 - 01 | 56 OF 63 |

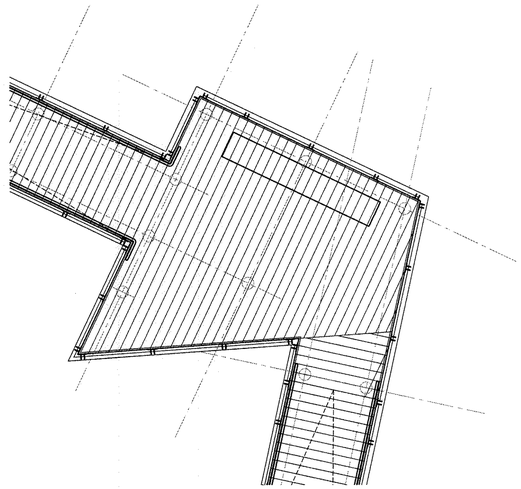
SDP-15-068



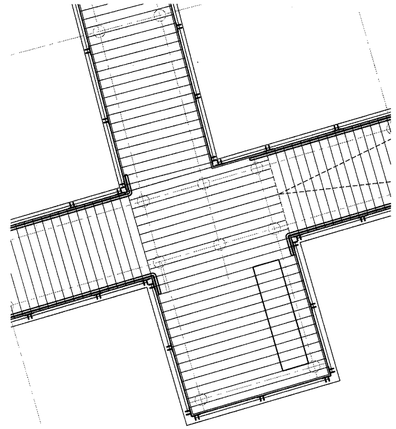
1 **ENLARGEMENT PLAN - A**
1/4" = 1'-0"



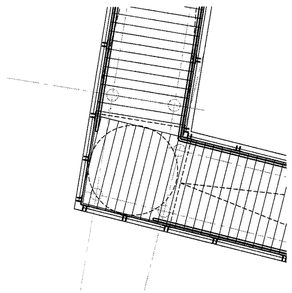
2 **ENLARGEMENT PLAN - B**
1/4" = 1'-0"



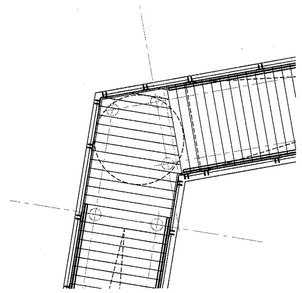
3 **ENLARGEMENT PLAN - C**
1/4" = 1'-0"



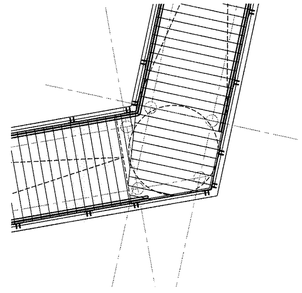
4 **ENLARGEMENT PLAN - D**
1/4" = 1'-0"



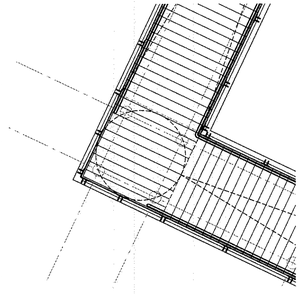
5 **ENLARGEMENT PLAN - E**
1/4" = 1'-0"



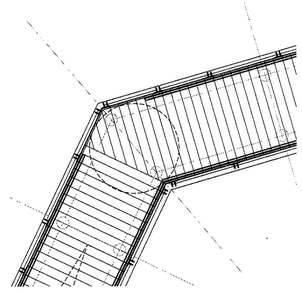
6 **ENLARGEMENT PLAN - F**
1/4" = 1'-0"



7 **ENLARGEMENT PLAN - G**
1/4" = 1'-0"



8 **ENLARGEMENT PLAN - H**
1/4" = 1'-0"



9 **ENLARGEMENT PLAN - I**
1/4" = 1'-0"

NOTE: ABOVE ENLARGEMENTS ILLUSTRATE DIRECTION OF DECKING AT TRANSITION AREAS

**CERTIFICATION NOTE:**
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME

~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | 9-12-16 Date |
| Chief, Division of Land Development | 9-12-16 Date |
| Chief, Development Engineering Division | 9-2-16 Date |

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

N

**L-504**

**DESIGN COLLECTIVE**
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242

| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | △1 ADDITIONAL SHEET | MM | AD |
| 11.17.2017 | △6 Revise sheet Nos. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

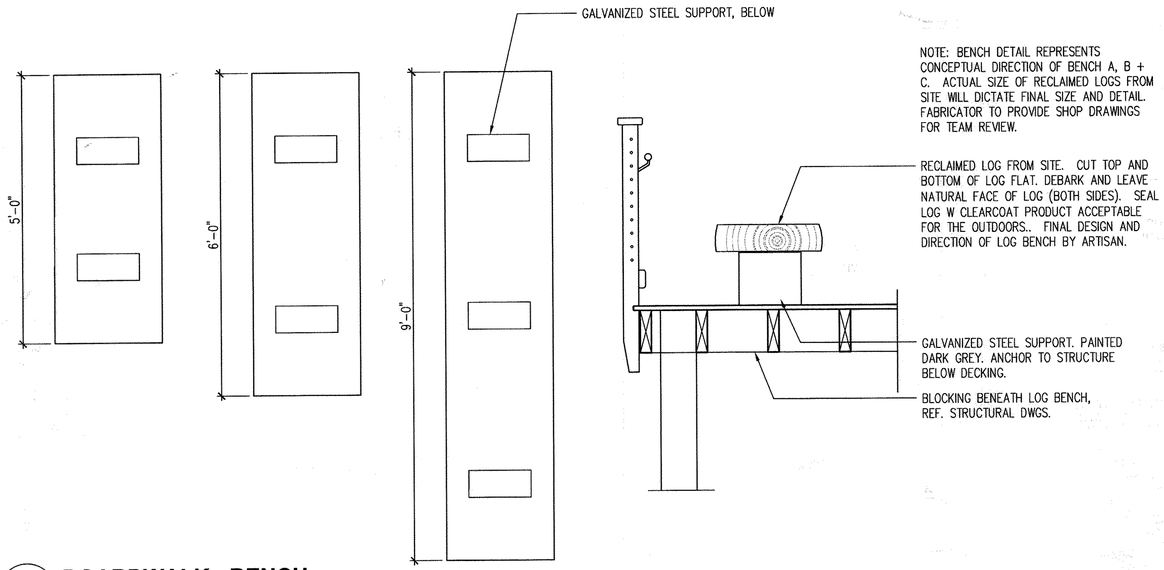
STATE OF MARYLAND · MATTHEW ALAN DAVIS · LANDSCAPE ARCHITECT · 1839

BOARDWALK – ENLARGEMENT PLANS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

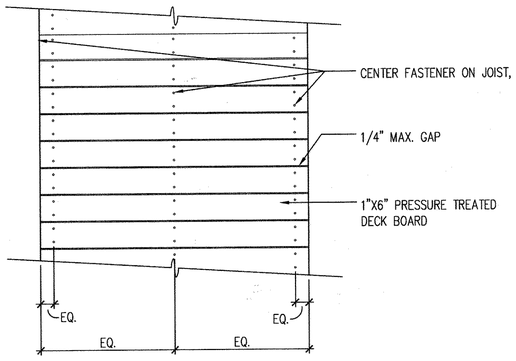
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP – GRID | SHEET △6 |
| JUNE, 2016 | 36 – 01 | 57 OF 63 |

SDP-15-068



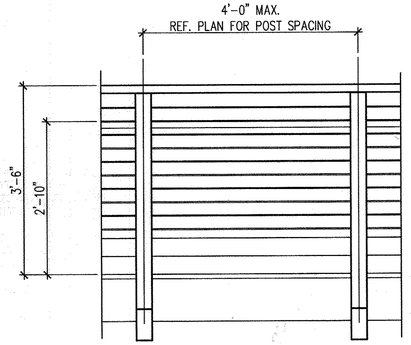

## 1 BOARDWALK - BENCH

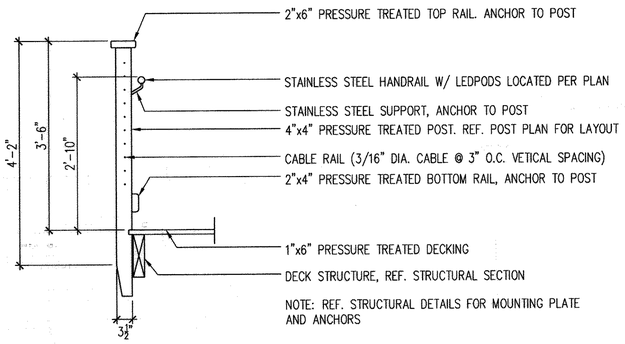
3/4" = 1'-0"




## 4 BOARDWALK - DECK SPACING - PARTIAL PLAN

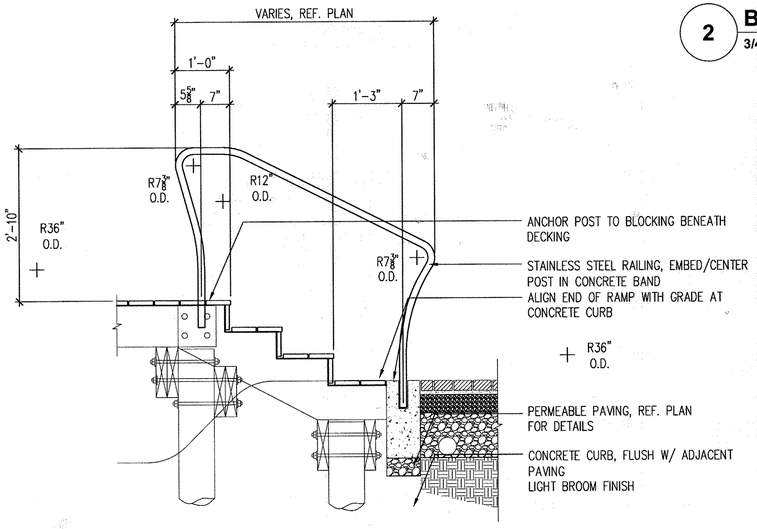
3/4" = 1'-0"



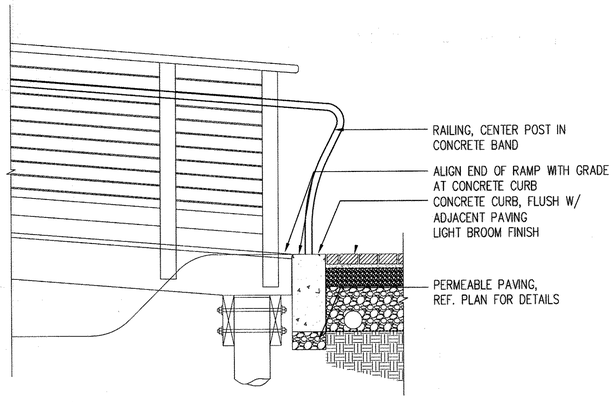

## 2 BOARDWALK - RAILING

3/4" = 1'-0"




## 3 BOARDWALK - HANDRAIL

3/4" = 1'-0"




**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME

~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9-12-16

Chief, Development Engineering Division — Date 9-12-16

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

**L-505**


DESIGNCOLLECTIVE
ARCHITECTURE, PLANNING, INTERIORS
WWW.DESIGNCOLLECTIVE.COM
601 EAST PRATT STREET, SUITE 300
BALTIMORE, MARYLAND 21202
T: 410.685.6655 F: 410.539.6242


DES. | DRN. | CHK.

| DATE | REVISION | BY | APPR. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | MM | AD |
| 11-17-2017 | ⚠ Revise sheet Nos. | gt | mdt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

STATE OF MARYLAND — MATTHEW DAVID TSCHUDY — 3039 — LANDSCAPE ARCHITECT

BOARDWALK - DETAILS

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| AS SHOWN | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| JUNE, 2016 | 36 - 01 | 58 OF 63 |

SDP-15-068

GENERAL STRUCTURAL NOTES

PART 1 - GENERAL REQUIREMENTS AND DESIGN CRITERIA

1.1 SPECIFICATIONS
A. THE WORK OF THESE DRAWINGS ADDRESSES STRUCTURAL INFORMATION ONLY. THE STRUCTURAL DOCUMENTS INCLUDE THESE S-SERIES DRAWINGS AND GENERAL NOTES. THERE ARE NO TECHNICAL SPECIFICATIONS IN ADDITION TO THESE GENERAL NOTES.

1.2 ELEVATIONS & DIMENSIONS
A. ALL ELEVATIONS AND DIMENSIONS SHOWN FOR NEW CONSTRUCTION ARE BASED ON THE ARCHITECTURAL / LANDSCAPE DRAWINGS. COORDINATE ALL ELEVATIONS AND DIMENSIONS BEFORE PROCEEDING WITH CONSTRUCTION.

1.3 GOVERNING BUILDING CODES
A. THE FOLLOWING BUILDING CODES AND STANDARDS, INCLUDING ALL SPECIFICATIONS REFERENCED WITHIN, SHALL APPLY TO THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF ALL WORK PERFORMED ON THE PROJECT.
1. "INTERNATIONAL BUILDING CODE - 2015", INTERNATIONAL CODE COUNCIL
2. "MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES", (ANSI/ASCE 7-10), AMERICAN SOCIETY OF CIVIL ENGINEERS.
B. ADDITIONAL CODES FOR MATERIALS SHALL BE FOUND IN THE APPROPRIATE SECTIONS THAT FOLLOW. SEE THOSE SECTIONS FOR THE APPLICABLE CODES.

1.4 DESIGN LOADS

A. FLOOR LIVE LOADS:
1. ELEVATED WALKWAY = 100 PSF

B. SNOW LOAD - PLUS DRIFTING AND SLIDING WHERE APPLICABLE
a. PG = 25 PSF
b. PF = 21 PSF
c. CE = 1.0
d. I = 1.0
e. CT = 1.2

C. DEAD LOADS - ALL PERMANENT STATIONARY CONSTRUCTION.

D. WIND LOAD PARAMETERS
1. BASIC WIND SPEED (3-SECOND GUST), V = 115 MPH
2. WIND IMPORTANCE FACTOR, I = 1.0, AND OCCUPANCY CATEGORY = II
3. EXPOSURE CATEGORY: C
4. COMPONENTS AND CLADDING:
a. ACTUAL PRESSURE(S) ON EVERY COMPONENT AND CLADDING ELEMENT SHALL BE DETERMINED BY THE CONTRACTOR'S SPECIALTY PROFESSIONAL ENGINEER, LICENSED IN THE PROJECT'S JURISDICTION, RESPONSIBLE FOR THE STRUCTURAL DESIGN OF SUCH ELEMENT(S).

E. SEISMIC LOAD PARAMETERS
1. SEISMIC IMPORTANCE FACTOR, I = 1.0, AND OCCUPANCY CATEGORY = II
2. MAPPED SPECTRAL RESPONSE ACCELERATIONS
a. S(S) = 0.125 g
b. S(1) = 0.051 g
3. SITE CLASS: D
4. SPECTRAL RESPONSE COEFFICIENTS
a. S(DS) = 0.132 g
b. S(D1) = 0.082 g
5. SEISMIC DESIGN CATEGORY = B
6. BASIC SEISMIC-FORCE-RESISTING SYSTEM: TIMBER BRACES / TIMBER CANTILEVERED COLUMNS
7. DESIGN BASE SHEAR, V = 3 KIPS
8. SEISMIC RESPONSE COEFFICIENT, C(S) = 0.088
9. RESPONSE MODIFICATION FACTOR, R = 1.5
10. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE

PART 2 - CONSTRUCTION

2.1 GENERAL
A. UNAUTHORIZED REPRODUCTION OF ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR RE-SUBMITTAL AS SHOP DRAWINGS IS PROHIBITED. SHOP DRAWINGS PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED.
B. THESE DRAWINGS REPRESENT THE COMPLETED PROJECT WHICH HAS BEEN DESIGNED FOR THE WEIGHTS OF MATERIALS, FOR THE SUPERIMPOSED LOADS INDICATED IN THE DESIGN LOAD CRITERIA ABOVE, AND FOR LOADS INDICATED ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALLOWABLE CONSTRUCTION LOADS AND TO PROVIDE PROPER DESIGN AND CONSTRUCTION OF FALSE WORK, STAGING, BRACING, SHEETING AND SHORING, ETC.
C. DEVELOPING AND IMPLEMENTING JOB SITE SAFETY AND CONSTRUCTION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
D. ALL COSTS OF INVESTIGATION AND REDESIGN, DUE TO THE CONTRACTOR MIS-LOCATION OF STRUCTURAL ELEMENTS OR OTHER LACK OF CONFORMANCE WITH THE PROJECT DOCUMENTS, SHALL BE AT THE CONTRACTOR'S EXPENSE.
E. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR DETAILED INFORMATION REGARDING FINISHES, WATERPROOFING, HAND RAILING, ETC.
F. IN CASE OF CONFLICT BETWEEN THE GENERAL NOTES, THE DETAILS AND SPECIFICATIONS, THE MOST RIGID SHALL GOVERN.
G. WORK NOT INCLUDED ON THE DRAWINGS BUT IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING LOCATIONS ELSEWHERE ON THE DRAWINGS SHALL BE REPEATED.

2.2 SHOP DRAWINGS

A. SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS ARE REQUIRED TO BE SUBMITTED BY THE CONTRACTOR AND REVIEWED BY THE STRUCTURAL ENGINEER. IF A CONTRACTOR OR OWNER FAILS TO SUBMIT THE SHOP DRAWINGS, TARANTINO ENGINEERING CONSULTANTS (TEC) WILL NOT BE RESPONSIBLE FOR THE STRUCTURAL CERTIFICATION AND DESIGN OF THE PROJECT.
B. SHOP DRAWINGS SUBMITTED FOR STRUCTURAL REVIEW SHALL CONSIST OF ELECTRONIC DRAWINGS. ONLY ONE MARKED UP SET OF ELECTRONIC DRAWINGS WITH THE STRUCTURAL ENGINEER'S COMMENTS WILL BE RETURNED TO THE CONTRACTOR.
C. ALLOW 10 BUSINESS DAYS FOR STRUCTURAL REVIEW OF SHOP DRAWINGS. THIS TIME SHOULD BE ALLOTTED IN THE CONTRACTOR'S SCHEDULE.
D. SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S STAMP OF APPROVAL WHICH SHALL CONSTITUTE CERTIFICATION THAT THEY HAVE VERIFIED ALL FIELD MEASUREMENTS, CONSTRUCTION CRITERIA, MATERIALS AND SIMILAR DATA AND HAVE CHECKED EACH DRAWING FOR COMPLETENESS, COORDINATION AND COMPLIANCE WITH THE CONTRACT DOCUMENTS.
E. THE CONTRACTOR SHALL SUBMIT FOR REVIEW, SIGNED AND SEALED DRAWINGS AND CALCULATIONS PREPARED BY A SPECIALTY STRUCTURAL ENGINEER REGISTERED IN THE PROJECT'S JURISDICTION FOR THE FOLLOWING ASSEMBLIES. THIS REVIEW SHALL BE FOR GENERAL CONFORMANCE WITH THE PROJECT'S PARAMETERS AS INDICATED ON THE DRAWINGS, SPECIFICATIONS AND GENERAL NOTES. THE DESIGN OF THESE ASSEMBLIES IS THE RESPONSIBILITY OF THE CONTRACTOR'S ENGINEER WHO HAS SIGNED AND SEALED THESE DRAWINGS AND CALCULATIONS. THESE SUBMISSIONS SHALL BE MADE AVAILABLE IN CONJUNCTION WITH OR PRIOR TO THE SHOP DRAWING FOR THE PRIMARY BUILDING STRUCTURE THAT SUPPORT THESE ASSEMBLIES.
1. METAL RAILINGS:
a. DESIGNS SHALL TAKE INTO ACCOUNT ALL VERTICAL AND LATERAL LOADS REQUIRED BY APPLICABLE BUILDING CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING EMBEDS AND HARDWARE AS REQUIRED BY THE RAILING DESIGN.

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16
Chief, Division of Land Development — Date 9-12-16
Chief, Development Engineering Division — Date 9.12.16

2.3 EXISTING CONDITIONS
A. EXISTING BUILDING INFORMATION SHOWN IS BASED ON EXISTING BUILDING DRAWINGS, FIELD OBSERVATIONS, OR AS INDICATED ON THE ARCHITECTURAL / LANDSCAPE DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION SHOWN (DIMENSIONS, ELEVATIONS, ETC.) AND NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES.
B. NEW FRAMED WALKWAY ELEVATIONS ARE TO MATCH EXISTING ADJACENT ELEVATIONS AS INDICATED ON THE ARCHITECTURAL / LANDSCAPE DRAWINGS. FOUNDATION ELEVATIONS OR THE LENGTH OF VERTICAL LOAD CARRYING ELEMENTS SHALL BE ADJUSTED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER TO ACHIEVE MATCHING SLAB ELEVATIONS.
C. UNLESS NOTED OR DETAILED OTHERWISE ON THE PLANS, NEW FOUNDATIONS ADJACENT TO EXISTING FOUNDATIONS SHALL BEAR AT THE SAME ELEVATION.

PART 3 - FOUNDATIONS / EARTHWORK / GEOTECHNICAL REPORT

3.1 REFERENCE GEOTECHNICAL REPORT:
A. FOUNDATION DESIGN IS IN ACCORDANCE WITH THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT PREPARED BY THE ROBERT B. BATTER COMPANY, DATED APRIL 27, 2016, AUTHOR'S REPORT NUMBER 16765-0.
B. ALL FOUNDATIONS SHALL BEAR A MINIMUM OF 30" BELOW ADJACENT EXTERIOR GRADE. THE CONTRACTOR SHALL COORDINATE THESE REQUIREMENTS WITH ALL UNDERGROUND UTILITIES, TUNNELS, ETC. AND NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER IN ADVANCE OF ANY CONSTRUCTION TO ALLOW FOR ADJUSTMENTS.
C. SEE THE SPECIFICATIONS AND GEOTECHNICAL REPORT REQUIREMENTS FOR EXCAVATION AND PREPARATION OF THE SUBGRADE FOR THE FOUNDATIONS AND THE SLAB ON GRADE, INCLUDING COMPACTION PROCEDURES. CONTRACTOR NOTE: REQUIREMENTS CONTAINED IN THE GEOTECHNICAL REPORT ARE PART OF THIS WORK.

3.2 FOUNDATION DESIGN PARAMETERS
A. PILES:
1. TREATED TIMBER PILES:
a. 4 TON CAPACITY; MINIMUM 7 INCH TIP DIAMETER.
2. PILE LOAD TEST SHALL BE PERFORMED ACCORDING TO THE CONTRACT SPECIFICATIONS AND ASTM D-1143.
3. ANY DEVIATION IN PILE LOCATION OR ELEVATION SHALL BE REPORTED IMMEDIATELY TO THE STRUCTURAL ENGINEER. ALL REDESIGN COSTS DUE TO PILE MIS-LOCATION SHALL BE AT THE CONTRACTOR'S EXPENSE.
4. PILES SHALL BE PRE-AUGERED WHEN SPECIFIED OR RECOMMENDED BY THE GEOTECHNICAL ENGINEER TO REDUCE VIBRATIONS. PILES SHALL BE DRIVEN TO COMPLETION IMMEDIATELY AFTER PRE-AUGERING OF EACH PILE LOCATION, AND PRIOR TO ANY FURTHER PRE-AUGERING.

3.3 EXCAVATION:
A. THE SLOPE BETWEEN THE LOWER EDGES OF ADJACENT FOUNDATIONS SHALL NOT EXCEED 45 DEGREES REFERENCED FROM THE HORIZONTAL, UNLESS NOTED OR DETAILED OTHERWISE ON THE PLAN. MAINTAIN A 1V:1H SLOPE FROM BOTTOM EDGE OF ANY EXCAVATION.
B. THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE FOUNDATION SYSTEM AS SHOWN PRIOR TO STARTING WORK.
C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES, ABOVE AND BELOW GRADE STRUCTURES, ETC., WHETHER INDICATED OR NOT, THAT MAY BE AFFECTED BY THE CONSTRUCTION PROCESS.
D. UTILITIES LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL UNLESS DETAILED OTHERWISE IN THE PLANS.
E. ALL SHORING, SHEETING AND DEWATERING SHALL BE THE TOTAL RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR'S ENGINEER, REGISTERED IN THE PROJECT'S JURISDICTION, SHALL DESIGN THE SHEETING AND SHORING AND PROVIDE SIGNED AND SEALED SUBMITTALS FOR REVIEW.

3.4 BACKFILL AGAINST WALLS:
A. DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL WALL CONCRETE IS AT FULL DESIGN STRENGTH. BACKFILL WITH APPROVED MATERIAL PLACED IN 6 IN. LAYERS AND COMPACTED TO 95% DENSITY AT OPTIMUM MOISTURE CONTENT AND FREE OF DEBRIS AS DEFINED BY ASTM D-1557, METHOD D.
B. NO BACKFILL MATERIAL SHALL BE PLACED AGAINST FOUNDATION WALLS UNTIL THE UPPER BRACING FLOORS ARE IN PLACE FOR AT LEAST 7 DAYS, OR ADEQUATE BRACING IS INSTALLED. THE CONTRACTOR'S ENGINEER, REGISTERED IN THE PROJECT'S JURISDICTION, SHALL DESIGN THE BRACING AND PROVIDE SIGNED AND SEALED SUBMITTALS FOR REVIEW.
C. WHERE THE FINAL GRADE ELEVATIONS ARE APPROXIMATELY EQUAL ON BOTH SIDES OF A WALL, BACKFILL IN LIFTS TO MAINTAIN LEVEL ELEVATIONS WITHIN 12 IN. ON BOTH SIDES AT ANY TIME.

PART 4 - WOOD FRAMING

4.1 CODES:
A. "DESIGN SPECIFICATIONS", TIMBER CONSTRUCTION MANUAL, AMERICAN INSTITUTE OF TIMBER CONSTRUCTION.
B. "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" WITH SUPPLEMENT, 2012, AMERICAN FOREST & PAPER ASSOCIATION.

4.2 MATERIALS:
A. SAWN LUMBER: ALL SAWN LUMBER SHALL HAVE 19% MAXIMUM MOISTURE CONTENT AND SHALL BE PRESSURE TREATED SOUTHERN PINE..
1. STRUCTURAL MEMBERS: GRADE #1 WITH THE FOLLOWING BASE DESIGN VALUES (PSI):

| SIZE | FB | FT | FV | FC(PERP) | FC(PARA) | E |
|---|---|---|---|---|---|---|
| 2x4, 4x4 | 1500 | 1000 | 175 | 565 | 1650 | 1,600,000 |
| 2x6 | 1350 | 875 | 175 | 565 | 1550 | 1,600,000 |
| 6x6 | 1350 | 900 | 165 | 375 | 825 | 1,600,000 |
| 3x10 | 1050 | 700 | 175 | 565 | 1450 | 1,600,000 |
| 3x12 | 1000 | 650 | 175 | 565 | 1400 | 1,600,000 |

B. TIMBER PILES: ALL TIMBER PILES SHALL BE ROUND, TREATED SOUTHERN PINE.
1. STRUCTURAL MEMBERS: GRADE ASTM D-25 ROUND #1

4.3 SAWN LUMBER:
A. SEE INTERNATIONAL BUILDING CODE CHAPTER 23, TABLE 2304.9.1 FOR MINIMUM BRACING AND FASTENING.
B. MEMBERS SHALL BE SET WITH CROWN SIDE UP AND HAVE A MINIMUM 3 IN. BEARING.
C. MEMBERS FRAMING TO BEAMS, HEADERS, ETC. SHALL BE SECURED WITH SIMPSON STRONG-TIE FRAMING ANCHORS OR APPROVED EQUAL, UNLESS DETAILED OTHERWISE.
D. ALL JOISTS AND RAFTERS SHALL BE RIGIDLY BRIDGED AT INTERVALS NOT EXCEEDING 8 FEET.
E. USE ½ IN. DIAMETER LAG SCREWS OR THRU BOLTS AT 24 INCH O.C. TO JOIN MULTIPLE 2X BEAMS OR GIRDERS SO THAT LOAD DISTRIBUTES EQUALLY.
F. PROVIDE CONTINUOUS SOLID BLOCKING UNDER CONCENTRATED LOADS (INCLUDING WINDOW AND DOOR JAMBS) DOWN THROUGH FLOOR FRAMING TO SLAB ON GRADE OR FOUNDATION.
G. ALL WOOD SILL PLATES SHALL BE ANCHORED TO GROUT FILLED CMU OR CONCRETE FOUNDATIONS WITH ½ IN. DIAMETER HOOKED ANCHORS AT 4 FEET O.C. (2 MINIMUM PER SILL PIECE). ANCHOR BOLTS SHALL BE EMBEDDED A MINIMUM OF 14 IN. INTO MORTAR GROUT AND 8 IN. INTO CAST-IN-PLACE CONCRETE.
H. ALL BOLTS AND LAG SCREWS SHALL BE FITTED WITH GALVANIZED, MALLEABLE IRON OR STEEL PLATE WASHERS.

4.4 WOOD PRESERVATIVE TREATMENT:
A. WHERE LUMBER OR PLYWOOD IS INDICATED AT 'TREATED', COMPLY WITH APPLICABLE REQUIREMENTS OR AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA) STANDARDS U1, T1 AND P5, AND WITH AWPB STANDARDS LISTED BELOW. MARK EACH TREATED ITEM WITH THE AWPB QUALITY MARK REQUIREMENTS.
B. PRESERVATIVE TREATMENT:

| | AWPA USE CATEGORY | PRESERVATIVE | RETENTION LEVEL |
|---|---|---|---|
| TIMBER PILES | UC4C | CHROMATED COPPER ARSENATE | 0.8 PCF |
| SAWN LUMBER | UC4C | CHROMATED COPPER ARSENATE | 0.6 PCF |

4.5 FASTENERS:
A. NAILS: COMMON WIRE, GALVANIZED, FOR ATTACHMENT OF HURRICANE TIES.
B. BOLTS: ASTM A307 FOR ALL WOOD-TO-WOOD AND STEEL-TO-WOOD CONNECTIONS, HOT-DIPPED GALVANIZED OR STAINLESS STEEL.
C. SCREWS: ASME B18.6.1 FOR ALL WOOD-TO-WOOD AND WOOD-TO-STEEL CONNECTIONS AND ATTACHMENT OF DECK BOARDS TO JOIST (OR AS SPECIFIED BY DECK BOARD MANUFACTUERER). CONNECTORS: SIMPSON STRONG-TIE OR APPROVED EQUAL.

| ABBREVIATION | WORD OR PHRASE |
|---|---|
| ASTM | AMERICAN SOCIETY FOR TESTING AND MATERIALS |
| ASCE | AMERICAN SOCIETY OF CIVIL ENGINEERS |
| AWS | AMERICAN WELDING SOCIETY |
| AB | ANCHOR BOLT |
| ARCH | ARCHITECT |
| @ | AT RATE OF |
| BM | BEAM |
| BRG | BEARING |
| BLK | BLOCKING |
| BLDG | BUILDING |
| CL | CENTERLINE |
| CLR | CLEAR |
| CONC | CONCRETE |
| CONN | CONNECTION |
| CONST | CONSTRUCTION |
| CONT | CONTINUOUS |
| DIA | DIAMETER |
| DIM | DIMENSION |
| DWLS | DOWELS |
| DN | DOWN |
| DWG | DRAWING |
| EA | EACH |
| EW | EACH WAY |
| EL | ELEVATION |

| ABBREVIATIONS - CONTINUED | |
|---|---|
| EL | ELEVATION |
| EQ | EQUAL |
| EX OR (E) | EXISTING |
| FT | FEET |
| FDN | FOUNDATION |
| GALV | GALVANIZED |
| INFO | INFORMATION |
| IBC | INTERNATIONAL BUILDING CODE |
| JB | JOIST BEARING |
| MFR | MANUFACTURER |
| MAX | MAXIMUM |
| MIN | MINIMUM |
| NDS | NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| PSF | POUNDS PER SQUARE FOOT |
| REF | REFERENCE |
| SS | STAINLESS STEEL |
| STD | STANDARD |
| STL | STEEL |
| TOW | TOP OF WALL |
| TYP | TYPICAL |
| UNO | UNLESS NOTED OTHERWISE |

1704.3 STATEMENT OF SPECIAL INSPECTIONS.

THE CONTRACTOR OR BUILDING OWNER SHALL RETAIN AN APPROVED THIRD PARTY AGENCY TO PERFORM SPECIAL INSPECTIONS. SPECIAL INSPECTIONS AND REPORTING SHALL CONFORM TO CHAPTER 17 OF THE 2015 INTERNATIONAL BUILDING CODE.

1705.7 DRIVEN DEEP FOUNDATIONS. *SPECIAL INSPECTIONS* AND TESTS SHALL BE PERFORMED DURING INSTALLATION OF DRIVEN DEEP FOUNDATION ELEMENTS AS SPECIFIED IN TABLE 1705.7. THE APPROVED GEOTECHNICAL REPORT AND THE *CONSTRUCTION DOCUMENTS* PREPARED BY THE *REGISTERED DESIGN PROFESSIONALS* SHALL BE USED TO DETERMINE COMPLIANCE.

TABLE 1705.7
REQUIRED SPECIAL INSPECTIONS AND TESTS OF DRIVEN DEEP FOUNDATIONS ELEMENTS

| VERIFICATION AND INSPECTION | FREQUENCY OF INSPECTION | |
|---|---|---|
| | CONTINUOUS | PERIODIC |
| 1. VERIFY ELEMENT MATERIALS, SIZES AND LENGTHS COMPLY WITH THE REQUIREMENTS. | X | - |
| 2. DETERMINE CAPACITIES OF TEST ELEMENTS AND CONDUCT ADDITIONAL LOAD TESTS, AS REQUIRED. | X | - |
| 3. INSPECT DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT. | X | - |
| 4. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM TYPE AND SIZE OF HAMMER, RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION, DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, RECORD TIP AND BUTT ELEVATIONS AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT. | X | - |
| 5. FOR STEEL ELEMENTS, PERFORM ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.2. | - | - |
| 6. FOR CONCRETE ELEMENTS AND CONCRETE-FILLED ELEMENTS, PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3. | - | - |
| 7. FOR SPECIALTY ELEMENTS, PERFORM ADDITIONAL INSPECTIONS AS DETERMINED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. | - | - |

1705.11.1 STRUCTURAL WOOD. CONTINUOUS SPECIAL INSPECTION IS REQUIRED DURING FIELD GLUING OPERATIONS OF ELEMENTS OF THE MAIN WINDFORCE-RESISTING SYSTEM. PERIODIC SPECIAL INSPECTION IS REQUIRED FOR NAILING, BOLTING, ANCHORING AND OTHER FASTENING OF ELEMENTS OF THE MAIN WINDFORCE-RESISTING SYSTEM, INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES AND HOLD-DOWNS.

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**
~~**DEVELOPER'S/OWNER'S NAME**~~

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

S001


TEC
Tarantino Engineering Consultants, PC
7678 Midtown Rd.
Fulton, MD 20759
410-921-7678
www.tarantinoec.com


DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | LR | BT |
| 11.17.2017 | ⚠6 Revise sheet Nos. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

Professional Certification. I certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License Number 24871, Expiration Date: 2/28/18.

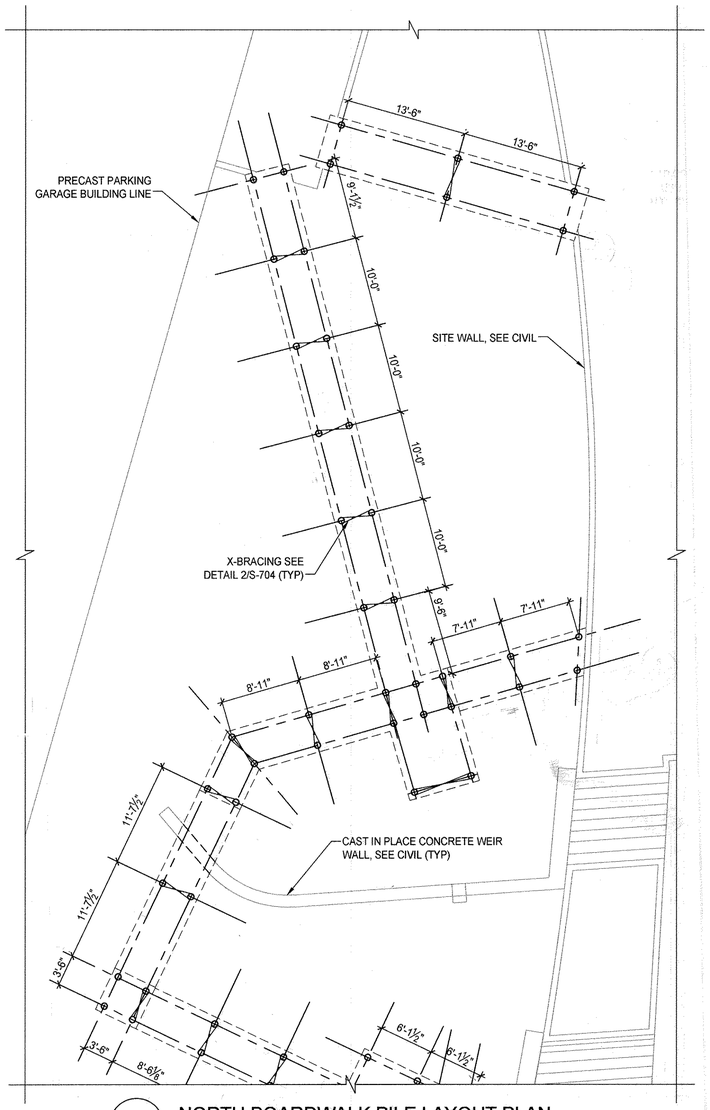
STATE OF MARYLAND — BRIAN TARANTINO — No. 24871 — PROFESSIONAL ENGINEER — 6/27/2016

STRUCTURAL GENERAL NOTES- 1

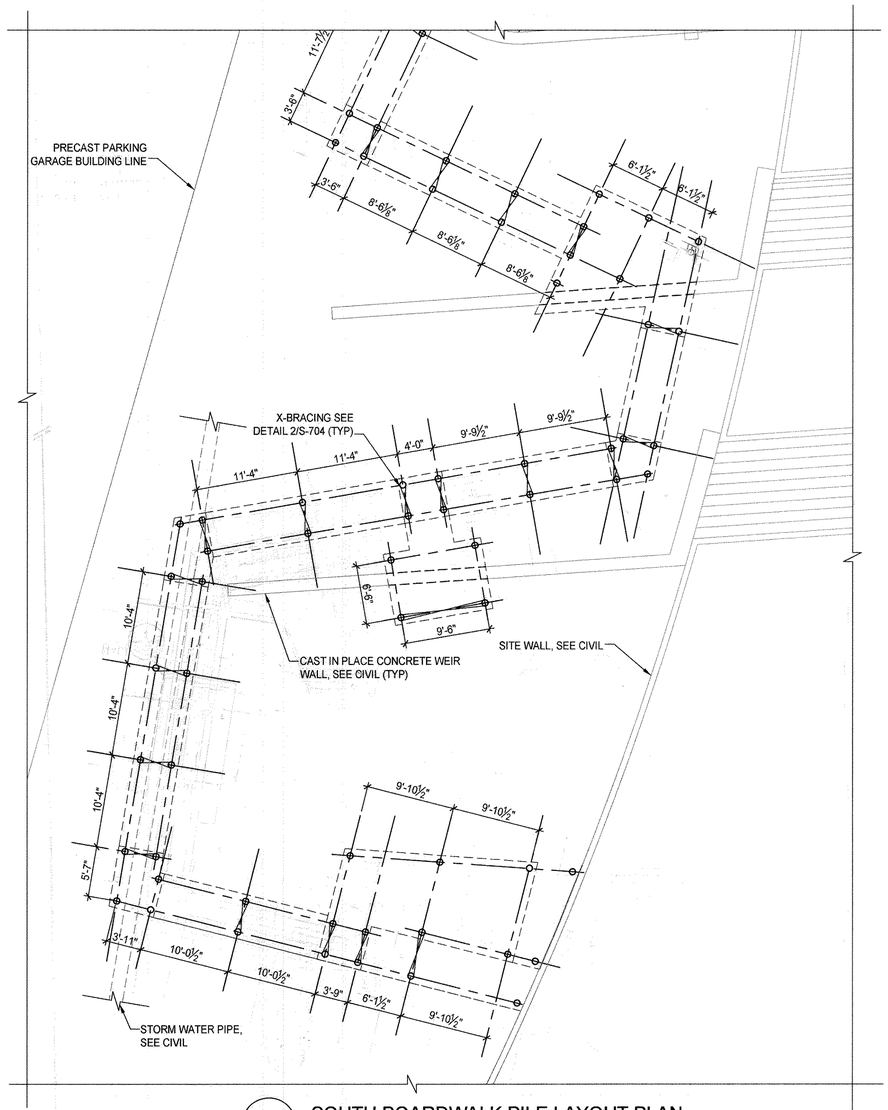
DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| NTS | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| MAY, 2016 | 36 - 01 | 59 OF 69 |

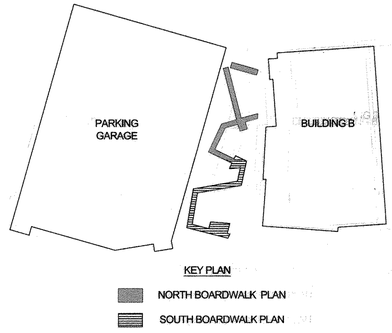
SDP-15-068




A NORTH BOARDWALK PILE LAYOUT PLAN
1/8" = 1'-0"




B SOUTH BOARDWALK PILE LAYOUT PLAN
1/8" = 1'-0"




**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
DEVELOPER'S/OWNER'S NAME

~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**
Date: August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

| | |
|---|---|
| Director | Date 9-12-16 |
| Chief, Division of Land Development | Date 9-12-16 |
| Chief, Development Engineering Division | Date 9.2.16 |

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

N

S101

**TEC**
Tarantino Engineering Consultants, PC
7678 Midtown Rd.
Fulton, MD 20759
410-921-7678
www.tarantinoec.com

| DES. | DRN. | CHK. |
|---|---|---|

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | △ ADDITIONAL SHEET | LR | BT |
| 11.17.2017 | 6 Revise sheet No. | gt | mjt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

Professional Certification. I certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License Number 24871, Expiration Date: 2/28/18.

STATE OF MARYLAND BRIAN TARANTINO No. 24871 PROFESSIONAL ENGINEER 8/27/16

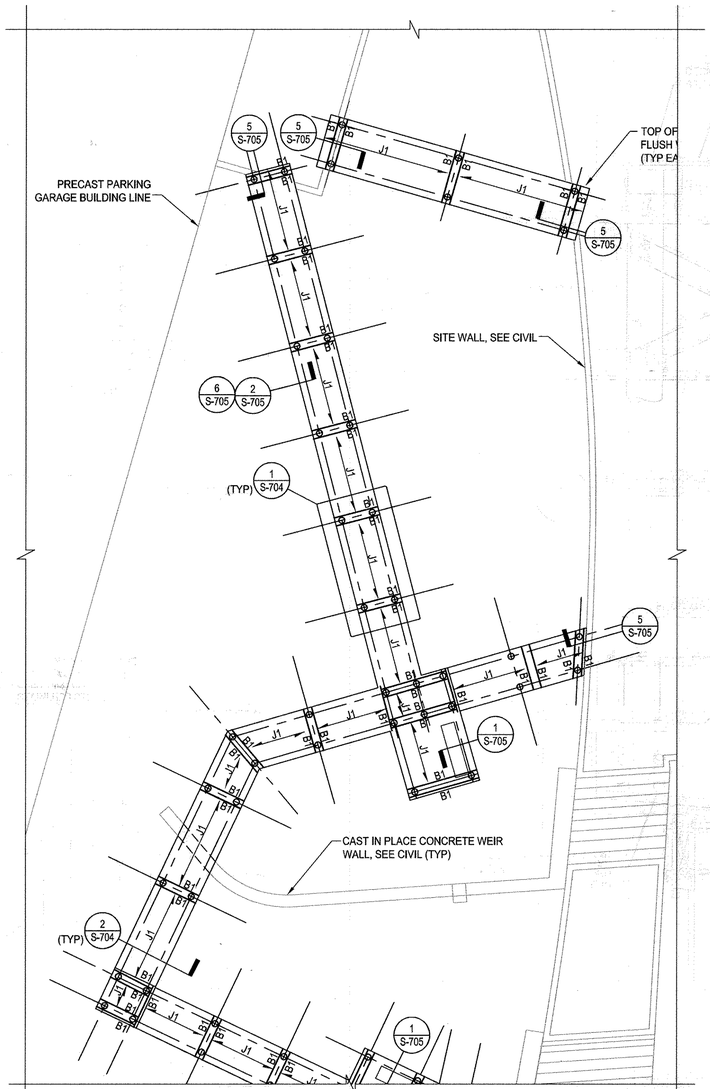
BOARDWALK PILE LAYOUT PLAN

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

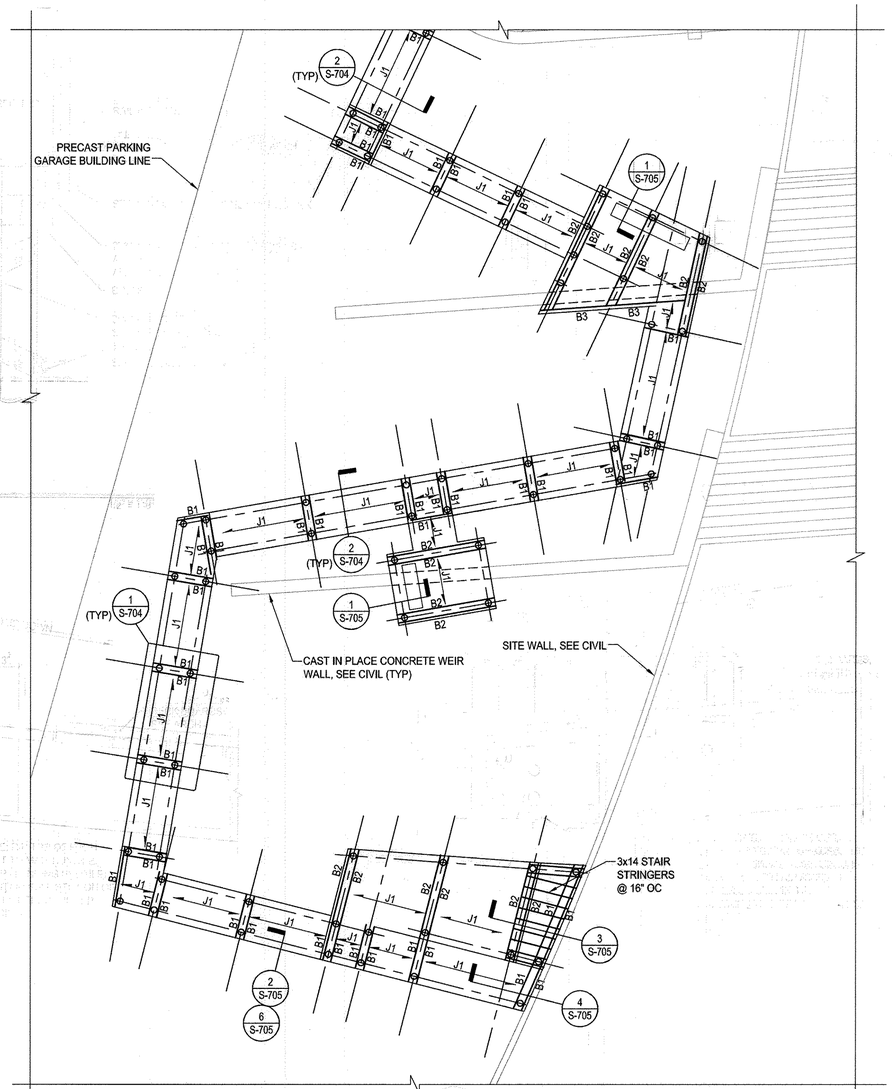
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1/8"=1'-0" | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET 6 |
| MAY, 2016 | 36 - 01 | 60 OF 63 |

SDP-15-068



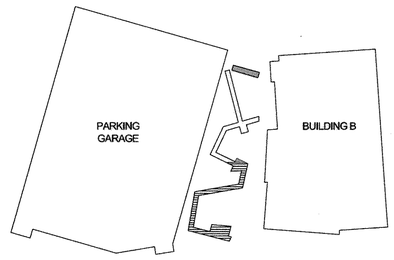

A NORTH BOARDWALK FRAMING PLAN

1/8" = 1'-0"




B SOUTH BOARDWALK FRAMING PLAN

1/8" = 1'-0"




KEY PLAN

NORTH BOARDWALK PLAN

SOUTH BOARDWALK PLAN

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9.12.16

Chief, Development Engineering Division — Date 9.7.16

PLAN NOTES

SCALE: 1/8" = 1'-0"

1. REFERENCE ELEVATIONS TO THE TOP OF THE BOARDWALK DECKING ARE PROVIDED IN THE ARCHITECTURAL DRAWINGS. SEE ARCHITECTURAL, LANDSCAPE AND CIVIL DRAWINGS FOR SLOPES, BOARDWALK GEOMETRY, GRADES AND SITE STRUCTURE ELEVATIONS.
2. PILE FOUNDATION SYSTEM SHALL BE NOMINALLY 8" Ø TIMBER DRIVEN PILES WITH A MINIMUM TIP DIAMETER OF 7" AND A SERVICE CAPACITY OF 4 TONS. ESTIMATED MINIMUM TOTAL EMBEDMENT LENGTH = 12'-0", WITH A MINIMUM OF 8'-0" OF EMBEDMENT BELOW THE BOTTOM OF THE PROPOSED BIO-RETENTION SYSTEM. ALL PILE DRIVING OPERATIONS SHALL BE MONITORED BY A GEOTECHNICAL ENGINEER REGISTERED IN MARYLAND WHO SHALL CERTIFY THE PILE CAPACITY AND EMBEDMENT LENGTH OF THE PRODUCTION PILES. WOOD PILES ARE NOTED ON PLAN THUS:
   - ○ PILES TO BE CUT FLUSH WITH TOP OF JOISTS/ BOTTOM OF DECK
3. SEE GEOTECHNICAL REPORT DATED 27 APRIL 2016 PREPARED BY THE ROBERT B. BALTER COMPANY FOR SITE WORK REQUIREMENTS, VIBRATION MONITORING REQUIREMENTS AND CONSIDERATIONS OF POSSIBLE EFFECTS ON THE STORMWATER MANAGEMENT SYSTEM, CAST IN PLACE CONCRETE WEIR WALLS, THE PARKING GARAGE, AS WELL AS BUILDINGS A AND B DURING PILE DRIVING OPERATIONS. THE DESIGN TEAM RECOMMENDS THAT THE TIMBER PILES BE INSTALLED PRIOR TO THE PLACEMENT OF THE CONCRETE WEIR WALLS TO ELIMINATE CONCERNS OF THE WALLS SETTLING AS A RESULT OF THE PILE DRIVING OPERATIONS.
4. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE LOCATIONS OF HAND RAIL POSTS. POSTS THAT ANCHOR CABLE RAILS ARE TO BE 6x6 PRESSURE TREATED SOUTHERN PINE NO.1, AND INTERMEDIATE POSTS THAT DO NOT ANCHOR CABLE RAILS ARE TO BE 4x4 PRESSURE TREATED SOUTHERN PINE NO.1.

| LEGEND/ SCHEDULE | |
|---|---|
| J1 | 3x10 AT 15" OC W/ BLOCKING MID-SPAN. |
| B1 | 3x10 |
| B2 | (2) 3x12 |
| B3 | (1) 3x12 |
| | |
| ○ | 8" Ø TIMBER DRIVEN PILE EMBED ±12'-0" |
| | |
| | |

LEGEND NOTES

BX BEAMS

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**

~~DEVELOPER'S/OWNER'S NAME~~

N

S102


TEC
Tarantino Engineering Consultants, PC
7678 Midtown Rd.
Fulton, MD 20759
410-921-7678
www.tarantinoec.com


| DES. | DRN. | CHK. |
|---|---|---|
| | | |

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | LR | BT |
| 11.17.2017 | ⚠ Revise sheet Nos. | 9+ | rwt |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

Professional Certification. I certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License Number 24971, Expiration Date: 2/28/18.

STATE OF MARYLAND — BRIAN T. TARANTINO — No. 24971 — PROFESSIONAL ENGINEER — 6/27/16

BOARDWALK FRAMING PLAN

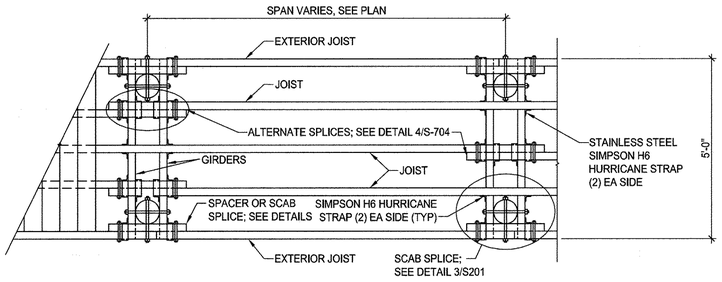
# DOWNTOWN COLUMBIA
## CRESCENT NEIGHBORHOOD
## PARCELS A-1, A-2, & A-3, AND PARCEL E

MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

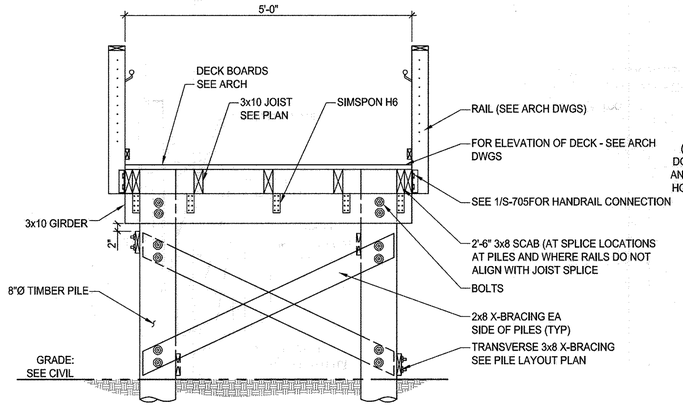
| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 1/8"=1'-0" | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| MAY, 2016 | 36 - 01 | 61 OF 63 |

SDP-15-068



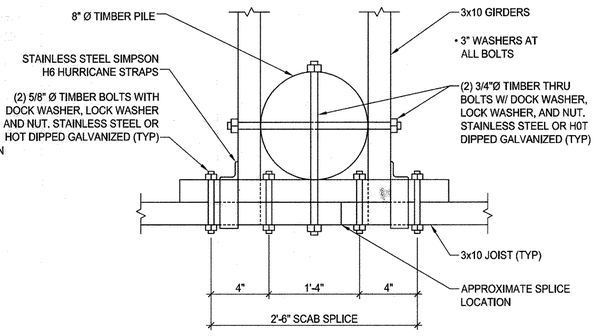

## 1 BOARDWALK FRAMING

1/2" = 1'-0"



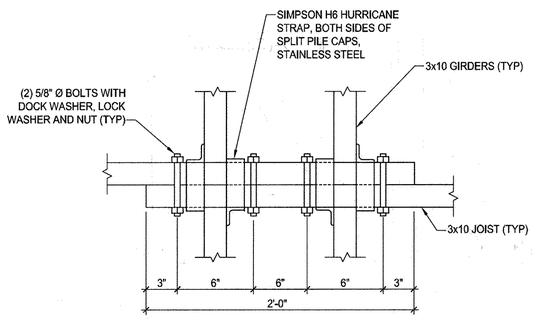

## 2 BOARDWALK SECTION

1/2" = 1'-0"



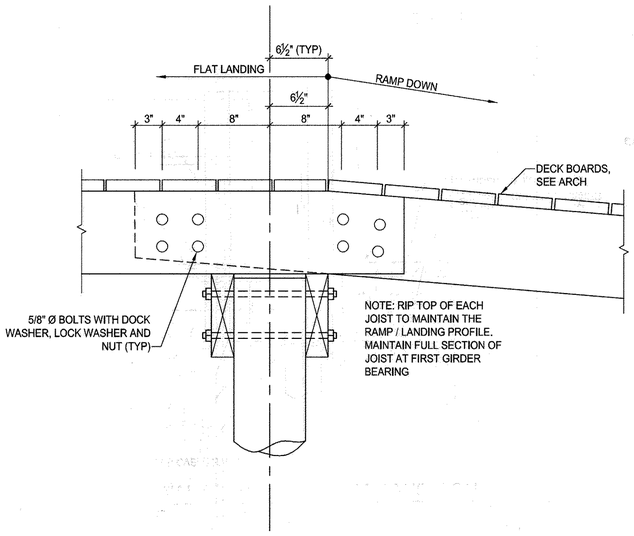

## 3 SCAB SPLICE DETAIL (PLAN VIEW)

1 1/2" = 1'-0"



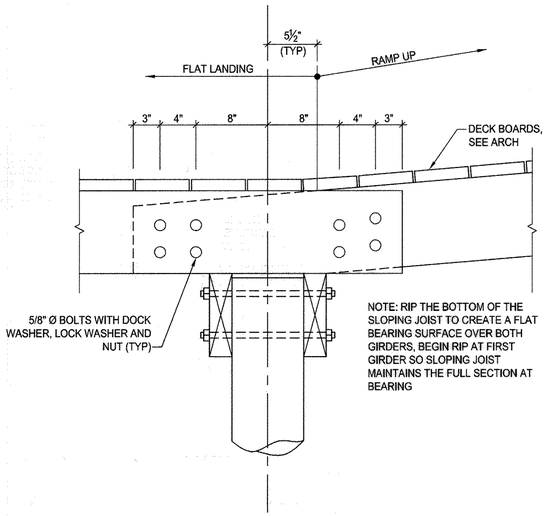

## 4 LAP SLICE DETAIL (PLAN VIEW)

1 1/2" = 1'-0"




## 5 RAMP TRANSITION DETAIL

1 1/2" = 1'-0"




## 6 RAMP TRANSITION DETAIL

1 1/2" = 1'-0"

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**

~~DEVELOPER'S/OWNER'S NAME~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9-12-16

Chief, Development Engineering Division — Date 9.7.16

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

S201


TEC
Tarantino Engineering Consultants, PC
7678 Midtown Rd.
Fulton, MD 20759
410-921-7678
www.tarantinoec.com


| DES. | DRN. | CHK. |
|---|---|---|
| | | |

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | LR | BT |
| 11.17.2017 | ⚠ Revise sheet Nos. | JL | MJL |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

Professional Certification. I certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License Number 24871, Expiration Date: 2/28/18.

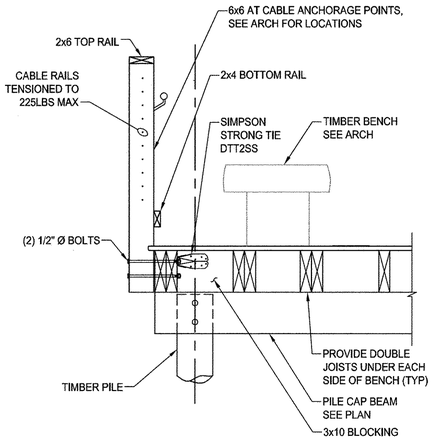
STATE OF MARYLAND — BRIAN TARANTINO — No. 24871 — PROFESSIONAL ENGINEER

BOARDWALK FRAMING DETAILS- 1

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566
ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

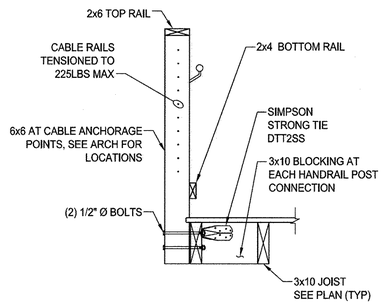
| SCALE | ZONING | G.L.W. FILE No. |
|---|---|---|
| VARIES | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| MAY, 2016 | 36 - 01 | ⚠ 62 OF 63 |

SDP-15-068



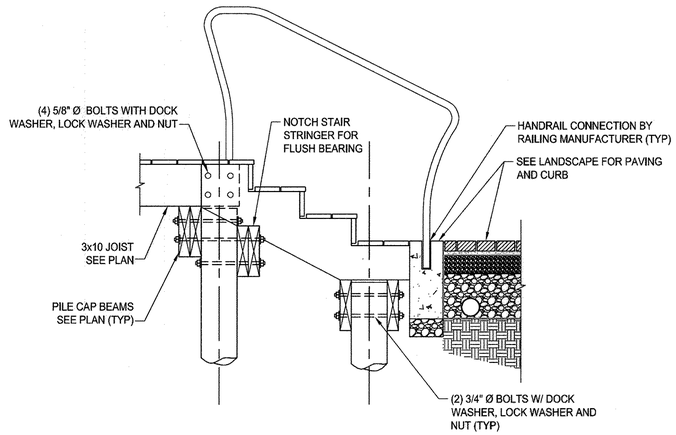

1 TYPICAL BENCH SUPPORT DETAIL

3/4" = 1'-0"



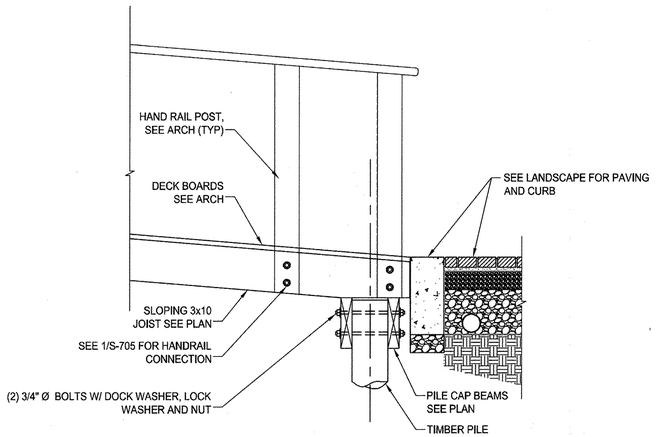

2 TYPICAL CABLE RAIL ANCHORAGE POST CONNECTION DETAIL

3/4" = 1'-0"




3 BOARDWALK STAIRS DETAIL

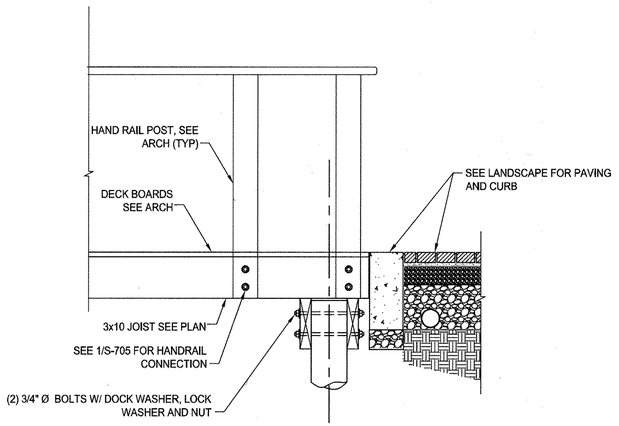
3/4" = 1'-0"




NOTE: CABLE RAILS NOT SHOWN

4 BOARDWALK RAMP TO LANDSCAPE TRANSITION

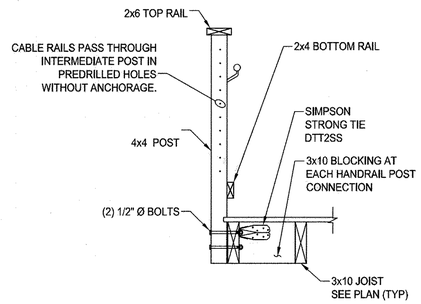
3/4" = 1'-0"




NOTE: CABLE RAILS NOT SHOWN

5 BOARDWALK TO LANDSCAPE TRANSITION

3/4" = 1'-0"




6 TYPICAL INTERMEDIATE HANDRAIL POST CONNECTION DETAIL

3/4" = 1'-0"

**CERTIFICATION NOTE:**
**I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR NEW TOWN ALTERNATIVE COMPLIANCE AND THE CRESCENT NEIGHBORHOOD DESIGN GUIDELINES. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.**

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
**DEVELOPER'S/OWNER'S NAME**

~~**DEVELOPER'S/OWNER'S NAME**~~

**APPROVED**
**PLANNING BOARD OF HOWARD COUNTY**

**Date:** August 18, 2016

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 9-12-16

Chief, Division of Land Development — Date 9.12.16

Chief, Development Engineering Division — Date 9.7.16

PURPOSE NOTE: THIS SHEET HAS BEEN ADDED AS A RESULT OF THE EXPANSION OF THE BUILDING 'B' FOOTPRINT AND DESIGN"

S202


TEC
Tarantino Engineering Consultants, PC
7678 Midtown Rd.
Fulton, MD 20759
410-921-7678
www.tarantinoec.com


DES. | DRN. | CHK.

| DATE | REVISION | BY | APP'R. |
|---|---|---|---|
| 6/27/2016 | ⚠ ADDITIONAL SHEET | LR | BT |
| 11-17-2017 | ⚠ Revise sheet Nos. | gt | mjt. |

OWNER/PREPARED FOR:
THE HOWARD HUGHES CORPORATION
10480 LITTLE PATUXENT PARKWAY
SUITE 400
COLUMBIA, MD 21044
ATTN: MR. ROBERT JENKINS
(410) 964-4800

Professional Certification. I certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License Number 24871, Expiration Date: 2/28/18.

STATE OF MARYLAND — JOHN TARANTINO — No. 24871 — PROFESSIONAL ENGINEER

BOARDWALK FRAMING DETAILS-2

DOWNTOWN COLUMBIA
CRESCENT NEIGHBORHOOD
PARCELS A-1, A-2, & A-3, AND PARCEL E
MIXED USE GREEN OFFICE, RETAIL AND RESTAURANT BUILDINGS AND TEMPORARY PARKING LOT
(PART OF TAX PARCEL 527); PLAT No. 23565-23566

ELECTION DISTRICT No. 5 — HOWARD COUNTY, MARYLAND

| SCALE | ZONING | G. L. W. FILE No. |
|---|---|---|
| 3/4" = 1'-0" | NT | 15019 |
| DATE | TAX MAP - GRID | SHEET |
| MAY, 2016 | 36 - 01 | 63 OF 63 |

SDP-15-068