SITE ANALYSIS DATA CHART

a. Total Project Area:	101.89 Ac+/- / 4,438,403 SF
b. Limit of Submission:	25.87 Ac+/- / 1,126,926 SF
c. Limit of Disturbed Area:	20.41 Ac+/- / 889,066 SF
d. Present Zoning Designation:	M-1
e. Proposed Use for Site and Structures:	Sports Fields, Pavilions, Restrooms and Associated Parking & SWM
f. Parking Spaces Required:	Determined by DRP
g. Floodplain Within Limit of Submission:	0.00 Ac+/-

PARKING TABULATION

a. REQUIRED (AS DETERMINED BY DRP):

50 SPACES PER FIELD X 2 FIELDS	100 SPACES
10 SPACES PER PLAYGROUND X 1 PLAYGROUND	10 SPACES
0 SPACES PER PAVILION X 5 PAVILIONS *	0 SPACES
TOTAL	110 SPACES REQUIRED

b. PROVIDED:

PHASE 1 - THREE PARKING LOTS	146 SPACES PROVIDED (INCLUDING 8 ACCESSIBLE SPACES)
PHASE 2 - TWO PARKING LOTS	496 SPACES PROVIDED (INCLUDING 14 ACCESSIBLE SPACES AND 5 BUS PARKING SPACES)
TOTAL - FIVE PARKING LOTS	641 SPACES PROVIDED (INCLUDING 22 ACCESSIBLE SPACES AND 5 BUS PARKING SPACES)

c. EXCESS PROVIDED FOR THIS SITE PLAN APPROVAL	386 SPACES
d. EXCESS PROVIDED FROM SDP-11-003	46 SPACES
e. TOTAL AVAILABLE FOR FUTURE BUILDING PROGRAM	432 SPACES

* PER DRP:
PAVILIONS ARE DESCRIBED BY ARCHITECTURAL BUILDING TYPE AND TITLE ONLY. AS A FUNCTION, THEY ARE SHADE STRUCTURES AND RESTROOM FACILITIES ANCILLARY TO THE SPORTS FIELDS. THEY ARE NOT RENTAL FACILITIES AND THEREFORE NO PARKING REQUIREMENTS ARE REQUIRED FOR THESE BUILDINGS.

PROJECT PARCEL/LOT DESCRIPTION

THE TROY PARK PHASE 2 PROJECT IS COMPRISED OF THE FOLLOWING PARCELS:		
PARCEL A-22	PLAT #15170	RECORDED PLAT
PARCEL A-21	PLAT #15171	RECORDED PLAT
TAX MAP 37	TAX PARCEL #345	UNRECORDED TAX PARCEL
TAX MAP 37	TAX PARCEL #342	UNRECORDED TAX PARCEL
TAX MAP 37	TAX PARCEL #561	UNRECORDED TAX PARCEL

VICINITY MAP

1"=2000'

BENCHMARKS

NAD83/91 & NAVD88 IN USE.

#37IM3 ALSO KNOWN AS R-125 NGS PID: JV0628 ELEV: 123.961
BRASS DISC ON BRIDGE ABUTMENT ON US-1 0.5 MI. NORTHEAST OF RT-100.

#37IM4 ALSO KNOWN AS N/A NGS PID: N/A ELEV: 170.156
LIGHT POLE BOLT AT END OF RAMP FROM I-100 TO US-1 SBL.

DRAWING INDEX

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PERMIT INFORMATION CHART

Subdivision Name			Section/Area		Lot/Parcel *
TROY HILL CORPORATE CENTER PH. III B			TROY PARK		PARCEL 0135, LOTS A-21/A-22
Plat # or L/F: L.577 / F.414, Plat 15170	Grid #: 17 & 18	Zoning: M-1	Tax Map No.: 37	Elect. Dist.: 1	Census Tract: 6012.02
Water Code: 400			Sewer Code: 2152200		

* SEE ADDRESS/PERMIT INFORMATION AND PLAN VIEW FOR MORE INFORMATION ON THE DEEDED PARCELS.

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/4/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-13-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.577 / F.414, L.10585 / F.357, L.12205 / F.390, L.5783 / F.600, L.5341 / F.78, L.4933 / F.437, L.6153 / F.690, L.6135 / F. 690
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — 16144 — 8-14-2014
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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

COVER SHEET

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: 1"=200'

C0.01

SHEET 1 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C0.01 Cover Sheet.dwg-Layout1 Aug 14, 2014 10:22am JLT

GENERAL NOTES (THESE NOTES PERTAIN TO ALL CIVIL DRAWINGS)

1. All construction shall be in accordance with the latest standards and specifications of Howard County, 2010 ADA Standards for Accessible Design and MSHA standards and specifications if applicable.

2. The contractor shall notify the Department of Public Works/Bureau of Engineering/ Construction Inspection Division at (410) 313-1880 at least five (5) working days prior 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 being done.

4. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Maryland Manual of Uniform Traffic Control Devices (MdMUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt. All sign posts used for traffic control signs installed the County Right-of-Way (including Recreation & Parks ROW) shall be mounted on a 2" galvanized steel, perforated, ("Quick Punch" type), square tube post (14 gauge) inserted into a 2-1/2" galvanized steel, perforated, square tube sleeve (12 gauge) - 3" long. The sleeve shall not extend more than two Quick Punch holes above ground level. A galvanized steel pole cap shall be mounted on top of each post.

5. All plan dimensions are to face of curb unless otherwise noted.

6. The existing topography was obtained from a combination of aerial survey with 1 foot contour intervals on March 31, 2009 performed by Axis GeoSpatial, LLC and designed grading from Troy Park - Phase One (SDP-11-003). Additional topography shown taken from Howard County GIS.

7. The coordinates shown hereon are based on NAD '83 coordinate values of SHA Plat #56701 and two Plats of Survey for Parcels 371 and 345 prepared by the Howard County Department of Public Works.

8. Water connection will be made at 12" public line in Mansion Lane (Contract 14-4698-D).

9. Sewer connection will be made at 8" public line in Mansion Lane (Contract 14-4698-D).

10. Stormwater Management will be provided by environmental site design (ESD) practices, including Micro-bioretention and Non Rooftop Disconnection, and in a Sand Filter. The facilities are to be publicly maintained.

11. Existing utilities are based on surveys performed by Shanaberger and Lane, design information from Troy Park - Phase One (SDP-11-003) and Howard County GIS, the contractor must determine the exact location of utilities by digging test pits, by hand, at all utility crossings prior to construction.

12. The floodplains shown on this site are based on the FEMA National Flood Insurance Program, Flood Insurance Rate Map, Howard County, Maryland, Panel 35 of 45, Map Number 240044 0035B (Dated Dec.4, 1985) however there is a Floodplain Easement shown on this plan from Plat #15171, Dated Dec. 27, 2001 by Patton, Harris, Rust and Associates.

13. There are streams and stream buffers located on this site as shown on the plan. The wetlands shown on this site were field located by Shanaberger and Lane Dated April 23, 2010 and delineated in the field by Eco-Science Professionals Inc.

14. A traffic study and APFO Test was conducted by The Traffic Group, dated January 23, 2014.

15. No grading, removal of vegetative cover or trees, paving and new structures shall be permitted within the wetlands, streams or their buffers, forest conservation easement areas, steep slopes 25% or greater and 100 year floodplain except as approved by DPZ per WP-10-173.

16. All exterior light fixtures shall be oriented to direct light downward on-site, away from adjoining properties and public roads in accordance with the requirements of Section 134 of the Howard County Zoning Regulations. Light trespass onto adjoining residential use properties shall be limited to 0.5 foot candles and no foot candle requirement for adjoining non-residential uses.

17. There are no cemeteries or grave sites on the subject property.

18. This project is subject to the amended fifth edition of the Subdivision and Land Development Regulations and the Zoning Regulations approved under Council Bill #32-2013. Development or construction must comply with setback and buffer regulations in effect at the time of submission of the Site Development Plan, waiver petition application or building/grading permit.

19. All utilities constructed within fill material must be installed in accordance with AASHTO-T180.

20. ABBREVIATIONS:

PROP	Proposed*	DIP	Ductile Iron Pipe
EX	Existing	PVC	Polyvinyl Chloride Pipe
BIT	Bituminous	HDPE	High Density Polyethylene Pipe
CONC	Concrete	CMP	Corrugated Metal Pipe
M or MH	Manhole	RCCP	Reinforced Concrete Pipe
SD	Storm Drain	C&G	Concrete Curb & Gutter
I	Inlet	INV	Invert Elevation
SAN	Sanitary Sewer	FDC	Fire Department Connection
FF	Finished Floor Elevation	FH	Fire Hydrant
BF	Basement Floor Elevation		
TC	Top of Curb	BC	Bottom of Curb
TS	Top of Step	BS	Bottom of Step
TW	Top of Wall	BW	Bottom of Wall
PC	Point of Curvature	PS	Parking Space
PT	Point of Tangency	HC	Handicapped Parking Space
PI	Point of Intersection	TYP	Typical
AGIP	At-Grade Inlet Protection	CIP	Curb Inlet Protection
COIP	Combination Inlet Protection	ED	Earth Dike
FB	Filter Bag	IB	Inlet Blocking
RPS	Removable Pumping Station	SCE	Stabilized Construction Entrance
SFD	Super Fence Diversion	SIP	Standard Inlet Protection
SP	Sump Pit	SSF	Super Silt Fence
TS	Temporary Swale	TSOS	Temporary Stone Outlet Structure

*Proposed means work included in the base contract unless accompanied by the phrases "N.I.C." or "By Others."

21. The subject property is zoned M-1 per the Comprehensive Zoning Plan effective 10/6/2013.

22. All spot elevations are at flowline / bottom of curb unless otherwise mentioned.

23. Developer shall be responsible for any damage to the public right-of-way.

24. This plan has been prepared in accordance with Section 16.124 of the Howard County Code and the Landscape Manual. Financial surety is not required for this project because this is a County Capital Project.

25. Retaining Wall General Notes
   a) Retaining walls shall only be constructed under the observation of a Registered Professional Engineer and a (NICET, WACEL or equivalent) certified soils technician.
   b) The required bearing pressure beneath the footing of the wall shall be verified in the field by a certified soils technician. Testing documentation shall be provided to the Howard County Inspector prior to the start of construction. The required test procedure shall be the Dynamic Cone Penetrometer Test ASTM STP-399.
   c) The suitability of fill material shall be confirmed by the onsite soils technician. Each eight (8) inch lift shall be compacted to a minimum of 95% Standard Procter Density and the testing report shall be made available to the Howard County Inspector upon completion of construction.
   d) For "CRITICAL" walls, one soil boring shall be required every 100' along the entire length of the wall. Copies of all boring reports shall be provided to the Howard County Inspector prior to the start of construction. Refer to Howard County DPW Design Manual, Volume III.

28. EXISTING INFORMATION AND CONDITIONS NOT GUARANTEED; VERIFY AND TEST PIT EXISTING UTILITIES: The correctness and completeness of the information showing existing conditions is not guaranteed. Before beginning construction, the Contractor shall perform the following tasks:

   (a) Notify Miss Utility at 1-800-257-7777, and make sure they complete the marking of utilities within the limits of construction at least 48 hours prior to installing sediment control measures. Maintain all markings throughout construction. The Contractor shall also include in his bid price marking of on-site utilities that might not be marked by MISS Utility; the contractor shall either mark these on-site utilities himself or by subcontracting with a private on-site utility location company.
   (b) Verify the general accuracy of the existing conditions shown on the site drawings by visual inspection of the surface of the site and all existing structures, paving and utility appurtenances visible thereon;
   (c) With regard to the structures & appurtenances observed as required per item (b) above, determine the type, size, location and elevation of all those existing utilities (including but not limited to all storm drains, sanitary lines, water lines, gas lines, steam lines, electric lines, telephone lines, and communication ducts, and all manholes, inlets, clean-outs, valves, handholes, etc. related thereto) within the limits of construction in order to: (i) avoid damaging or disrupting service, and (ii) to coordinate and facilitate construction of proposed utilities and other improvements. In addition to the Contractor's visual observation and the utility marking (as required above), the contractor shall schedule and complete Test Pitting of all existing utilities (for the purposes set forth above) and shall do so in a timely manner in order to allow time for analysis and redesign by Site Resources and/or other consultants, without delaying the project schedule.
   (d) Immediately report to Site Resources, Inc. the results of steps (a), (b) and (c) which might indicate any discrepancy between actual conditions and those shown on the plan, and any potential conflicts between proposed improvements and existing condition.

   Test pitting defined: For the purposes of this contract, excavation of utility trenches does not constitute test pitting. Test pitting is a separate operation completed at least seven days before utility installation is scheduled to begin. Test pitting means excavation to expose existing utilities in two situations: (i) where proposed improvements cross existing utilities (pipes, lines, structures, appurtenances) and; (ii) where proposed utilities are designed to connect to existing utilities. Test pitting includes recording the type, size, location and elevation of the exposed utilities, and faxing and mailing the record to Site Resources, Inc. and the Owner. The record may be a legible hand-written field sketch.

29. EXISTING AND PROPOSED GAS LINES, ELECTRIC LINES, TELEPHONE LINES, COMMUNICATION LINES AND OTHER UTILITIES: These drawings include information and depictions of Baltimore Gas & Electric Company's (BGE) electric and/or gas utilities located within the general project area. Locations, dimensions, depths, and other details of any such utilities may not be as actually constructed, and the information shall not be relied upon without field verification by test pitting as defined above. Excavators must employ safe digging practices when approaching BGE electric and/or gas utilities and comply with all applicable federal, state, and local laws including, but not limited to, the law governing notification of Miss Utility. No representation, guarantees, or warranties expressed or implied are made by BGE or Site Resources, Inc. as to the quality, completeness, or accuracy of the BGE utility information, and in accepting these drawings, the recipient expressly agrees that it is not relying on the accuracy of the same.

   Existing and proposed gas lines, steam lines, electric lines, telephone lines, communication ducts and other such utilities are NOT part of the scope of work shown on these site plans and Site Resources, Inc. has no responsibility for design, specification or installation of said utilities. To the extent that some or all of such utilities (whether existing or proposed) appear on the site drawings, it is presented only for the convenience of the contractor and the correctness and completeness of the information showing these utilities is not guaranteed.

30. COORDINATION BETWEEN PROPOSED UTILITIES: The contractor shall adjust the location and elevation of proposed gas lines, electric lines, telephone lines, communication lines, and water lines as needed to construct the proposed storm drains and sanitary sewer with minimum clearances. Coordinate with the Mechanical/Electrical Drawings and Specifications and appropriate utility company.

31. RELOCATION OF EXISTING UTILITIES: In the event that the location or elevation of existing minor underground electric lines and phone lines conflict with proposed storm drains, sanitary sewer lines or water lines, the contractor shall, with the permission of the owner and without an extra cost to the project, adjust these lines to permit installation of the new utilities. In the event that any other utility is relocated to accommodate a new utility, said relocation shall be an extra cost to the project, subject to the terms and conditions of the construction contract.

32. UTILITIES TO REMAIN OPERATIONAL; ADJUSTMENT FOR FINAL GRADE: All existing utilities shall be retained unless marked otherwise. Existing utilities not to be removed are to remain operational at all times. Existing utilities to be replaced or relocated shall remain in service until replaced or relocated utilities are operational. All existing utility appurtenances shall be adjusted for final grade.

33. UTILITY TRENCHING, BACKFILL AND COMPACTION: All trenching for sanitary sewer, storm drains and water mains shall be done in accordance with the Howard County Standard Specifications and Details for Construction.

34. UTILITY CERTIFICATION: The Contractor shall have a professional engineer registered in the State of Maryland certify, on a form provided by the Owner, that all proposed storm drains, sanitary sewers and water lines shown hereon were installed in accordance with these plans and Howard County specifications. If said Certification is not possible because the utilities were not installed in accordance with these plans and Howard County specifications, then the Owner has the option of waiving, in writing, this Certification, in whole or part. If the Owner does not elect to waive the Certification, the Contractor shall adjust and, if necessary, reconstruct the utilities to bring them in conformance with these plans and Howard County specifications.

35. UTILITY CAPPING AND PROTECTION: All building connections shall be capped at upstream end, 5 feet from proposed buildings, caissons or column footings or as noted, and shall be protected by providing three stakes (the height being a minimum of 18 inches above proposed grade) with high visibility flagging around the capped end of the utility.

36. PROPOSED PRIVATE WATER LINES: Proposed water lines shall have a minimum of 4'-0" cover from finished grade, 1'-0" clearance from storm drains and 1'-0" clearance from sanitary sewers, unless otherwise noted on the plans. All water lines shall be high-density polyethylene unless otherwise noted on the plans.

37. PROPOSED STORM DRAINS: All storm drains 12 inches and larger shall be class IV reinforced circular concrete pipe (RCCP) unless indicated otherwise on these construction drawings.

38. PROPOSED PRIVATE SANITARY SEWERS: All pipe and fittings for sanitary house connection shall be polyvinyl chloride (PVC) meeting material requirements of ASTM D3034, (SDR-35). Joints shall be elastomeric gasketed.

39. STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS: Unless otherwise noted or detailed on the drawings, all construction shall follow the latest Howard County Standard Specifications and Details for Construction.

40. SEDIMENT CONTROL: The contractor shall coordinate installation of all utilities to avoid construction problems/conflicts with sediment and erosion control measures. Any disturbance to sediment and erosion control measures shall be repaired at the end of each working day. Contractor shall, without extra cost to the project, repair and maintain existing sediment control devices until all areas within limits of construction are stabilized. With the approval of sediment control inspector, all sediment control devices shall be removed and areas restored and stabilized. All sediment control measures referred to on these plans shall be in accordance with the publication entitled 2011 Maryland Standards and Specifications For Soil Erosion and Sediment Control.

41. DISTURBED AREAS: All areas disturbed by the contractor during or prior to construction, not designated to receive paving, mulch or solid sod shall be fine graded, seeded and mulched in accordance with the permanent seeding notes and specifications shown on the Sediment Control drawings.

42. REPAIR AND REPLACEMENT OF DAMAGE CAUSED BY CONTRACTOR AND SUBCONTRACTORS: In the event that the contractor or any of his subcontractors damage any existing curb, gutter, paving, utilities, sidewalks, trees, shrubs, lawns, or any other existing conditions (not indicated to be demolished), or any newly installed proposed improvement, the general contractor shall repair and replace said damage to owner's satisfaction, at general contractor's sole cost and expense.

43. BENCHMARKS: See Cover Sheet.

44. ELEVATION AND LABELING: All spot grade elevations in roadways and parking lots are for bottom of curb unless otherwise noted. Elevations on hard surfaces (roads, walks, walls, steps, manholes, inlets, etc.) are labeled to the hundredth of a foot (e.g. 245.45). Elevations on proposed lawn and planting areas are labeled to the tenth of a foot (e.g. 245.5).

45. DIMENSIONS: Unless otherwise noted on the drawing, all dimensions shown on the site drawings follow these conventions:

   (a) dimensions to a building or retaining wall are to the face of the wall;
   (b) dimensions to a curb are to the face (not the back) of the curb;
   (c) dimensions to a fence are to the centerline of the fence;
   (d) dimensions for sidewalks abutting a curb are from the face of curb to the back edge of the walk;
   (e) dimensions for other sidewalks or open paving sections are measured to the edge of paving;
   (f) dimensions to a manhole, inlet, cleanout, pipe bend, valve, fire hydrant or other utility appurtenance are to the center of the structure;
   (g) dimensions for steps are to the outer edge of the staircase and the nose of the top or bottom step;
   (h) layout of sediment control measures and plant material shall be scaled.

46. GRADING: It is the intent of the grading design to achieve positive drainage and aesthetically pleasing vertical curves and lines. Transitions between existing and proposed pavement shall be smooth and joints flush. Unless otherwise expressly noted on the plan (by arrow with the percent slope labeled), all proposed bituminous paving shall have a slope of at least 2 percent and all concrete shall have a minimum slope of 1.5 percent in the direction indicated by proposed contours. Unpaved areas shall have a minimum slope of 2 percent and a maximum slope of 2:1. Final grading shall achieve positive surface drainage away from buildings and toward drainage facilities (swales, gutters, inlets, etc.).

Round top and bottom of slopes.

Correct Method Incorrect Method

47. COMPACTION: All earth fill material under slabs, footings and paved areas shall be placed in 8" loose layers and compacted to 95% of maximum dry density at optimum moisture content as determined by ASTM D 698. All other fill shall be compacted to 90%.

48. HEADINGS: The headings contained in these General Notes are for the convenience of the reader only and shall not limit the responsibility of the Contractor. It shall be distinctly understood that failure to mention specifically any work which would normally be required to complete the project shall not relieve the Contractor from completing such work.

49. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES): It is the contractor's responsibility to implement all the provisions and requirements of the NPDES permit. The permit has been applied for by the Owner, but no land disturbance is permitted until the NPDES permit has been issued.

50. The public right of way for Mansion Lane from approximately 0+50 to 11+00 was abandoned in accordance with County Council of Howard County, Maryland resolution number 122-2010, approved on 10/28/10.

51. This project is subject to the waiver petition WP-10-173 approved 7/06/10 for the following:

   a. Section 16.116(a)(2)(iv) - requires that grading, removal of vegetative cover and trees, paving and new structures shall not be permitted within 50 feet of a perennial streambank buffer in non-residential zoning districts. the waiver is to allow minimal disturbance to provide emergency access road improvements to widen an existing road with a culvert extension to provide a second means of emergency access from the county park to U.S. Route 1.

   b. Section 16.1202(a)(2) - requires the submission of a Forest Conservation Plan for approval for the entire project as part of the Site Development Plan submission. The waiver is to allow the forest conservation requirements for this project to be reviewed in phases rather than under one submission for the entire county park.

   c. Section 16.1204(d)(8) - requires the recording of a plat of Forest Conservation Easement (FCE) for the entire project along with the establishment of Forest Conservation Easements with the forest conservation plan. The waiver is to allow for the temporary deferral for submission and recording of the plat of fce until the last phase of development for the county park.

   d. Section 16.1205(a)(7) and (10) - requires that priority on-site retention of state champion trees, trees 75% of the diameter of state champion trees, trees 30" in diameter or larger and specimen trees be left undisturbed during the grading and construction process. The waiver is to allow for the removal of 4 specimen trees within phase 1 of the county park project.

52. A Forest Conservation Easement will been established to fulfill the requirements of Section 16.1200 of the Howard County Code and the Forest Conservation Act. No clearing, grading or construction is permitted within the Forest Conservation Easements, however, forest management practices as defined in the Deed of Forest Conservation Easement are allowed. Development on Lots A21 & A22 are exempt from the Forest Conservation Act as they are part of the Troy Hill Corporate Center which is a planned business park of at least 75 acres which received approval prior to 12/31/92 in accordance with Section 16.1202 (b)(1)(v) of the Howard County Code. A forest conservation obligation for Phase 1 of 17.4 acres will be met with 3.3 acres of on-site retention and 14.1 acres of on-site reforestation. Of the 14.1 acres of reforestation, 1.6 acres will be completed in Phase 1 with the remaining 12.5 acres will be planted with future phases of the development.

53. In accordance with Section 128.A.10 of the Zoning regulations, setbacks from lot lines internal to a development are not required when two or more continuous lots or parcels are treated as a single lot for development purposes.

54. Historic Troy Mansion and associated grounds, MHT #44, will not be disturbed under Phase II.

55. Troy Mansion and it's grounds are listed on the Howard County Historic Sites Inventory as HO-44. This plan came to the Historic District Commission on April 1, 2010 for Advisory Comments.

56. A waiver to allow mass grading of the site prior to SDP approval was applied for on 09/13/10. The waiver WP-11-038 was approved on 10/08/10 subject to the following conditions.
   a. Approval from the Howard Soil Conservation District and the Department of Inspections, Licenses and Permits is required for the associated grading plan prior to the issuance of any required permits.
   b. The limit of disturbance and grading permit shall not exceed the limits as shown on the waiver plan exhibit submitted with this waiver request.
   c. The developer must continue processing SDP-11-003 to it's completion of signature approval and meet all applicable processing deadlines. If the SDP is voided or withdrawn for any reason, the developer will be required to address the forest conservation obligation requirement for the limit of disturbance indicated for this site under the grading plan and grading permit application.
   d. The grading shown on the exhibit is temporary and shall be stabilized in accordance with the latest Sediment and Erosion Control standards and specifications.
   e. Final grading and development shall be approved in accordance with SDP-11-003 which will design the final stormwater management requirements for the final design conditions.

57. The Howard County Council adopted Resolution 122-2010, which closes an approximately .16 mile part of Mansion Lane. It was adopted on 10/28/10.

58. Pavilions 1, 2, 3, 4 and the Grandstand Restroom Building will have private water meters inside the building in the mechanical room.

59. The Howard County Council adopted a Variance Request Resolution under County Resolution 168-2013 to reduce the 50 foot structure and use setback to 22 feet for field S-3 and the related fence under Phase 1 of the Troy Park site plan.

60. Construction plans for any structure wherein pre-packaged food products are sold or prepared will have to be reviewed and approved by the Health Department. Vendors desiring to distribute pre=packaged or prepared foods at events must apply to the Health Department for a temporary permit and be approved per event.

61. Contractor shall provide AASHTO T-180 Specifications references for roads or pipes in fill.

62. All sidewalks, paths and other paved areas shall be finish graded with a maximum longitudinal slope of 5% (1:20) and a maximum cross slope of 2% (1:50) unless otherwise noted.

63. It is the contractor's responsibility to ensure that all site elements are constructed in accordance with the ADA 2010 Standards for Accessible Design or most current.

64. To the extent that quantities may be listed on these plans, they are for permitting purposes only and NOT for bidding purposes. Contractor shall form his own conclusions about the quantities of all materials and operations necessary to complete the project.

65. Design engineer shall confirm the turf section for adequate drainage with the turf manufacturer.

66. The pavilions at Troy Park at Elkridge will not be rented out for public use. The pavilions are for programmatic use only. Therefore, the ADA parking spaces, as shown on the SDP plan, should be sufficient to meet ADA requirements.

67. To the extent that quantities may be listed on these plans, they are for permitting purposes only and NOT for bidding purposes. Contractor shall form his own conclusions about the quantities of all materials and operations necessary to complete the project.

ASSOCIATED PROJECT REVIEW FILE NUMBERS

S-90-005, P-90-23, F-91-24, F-96-136, F-98-169, WP-96-91, F-00-103, F-02-94, ECP-10-008 Plans associated with Troy Hill Corporate Center and Mansion Lane.

WP 10-173 Troy Park waiver for road crossing stream, removal of specimen trees, adjust Forest Conservation review, postpone Forest Conservation easements, and setback from right-of-way.

WP 11-038 Troy Park waiver to allow mass grading of the site prior to approval of the SDP.

SDP-11-003 Troy Park Phase 1 Site Development Plan.

ECP-10-08 Troy Park Phase 1 Environmental Concept Plan

A Simplified Environmental Concept Plan (ECP) for Troy Park Phase 2 was submitted to and approved by Howard county on January 22, 2014.

LIGHTING FIXTURE SCHEDULE

SYMBOL	TYPE	DESCRIPTION	LAMPS			MAX W.	MOUNTING	MANU. / MODEL No. (OR APPROVED EQUAL)
			VOLTS	NO.	TYPE			
⊖■	STREET	SHOEBOX FIXTURE MOUNTED AT 30' ON A FIBERGLASS POLE.	-	1	LED	250	30' POLE	XSB CROSSOVER AREA LIGHT
■⊖■	STREET	DOUBLE SHOEBOX FIXTURE MOUNTED AT 30' ON A FIBERGLASS POLE.	-	2	LED	250	30' POLE	XSB CROSSOVER AREA LIGHT
—○—	SPORT FIELD	MULTIPLE FIXTURES MOUNTED AT 70 '- 110' ON A STEEL POLE.	-	VARIES	MZ	1500	70' - 110' POLE	MUSCO

EXISTING VEGETATIVE COMMUNITIES

The site was largely covered by successional forest approximately 20-40 years of age. Approximately 39.5 acres of the site was cleared and mass graded during Phase 1 of Troy Park. The condition of most of the remaining forest stand is fair with many invasive species and dense vine cover. There is a small stand containing some mature, larger trees outside of the developed area adjacent to Rt.100.

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR	9/18/14 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY	9-3-14 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	9-18-14 DATE

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 140, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.571 / F.414, L.10585 / F.357, L.12205 / F.340, L.5183 / F.600,
L.5341 / F.78, L.4933 / F.431, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND ALBERT F. EDWARDS 16144 PROFESSIONAL ENGINEER

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. 16144, EXPIRATION DATE: 08/14/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

SITE NOTES

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

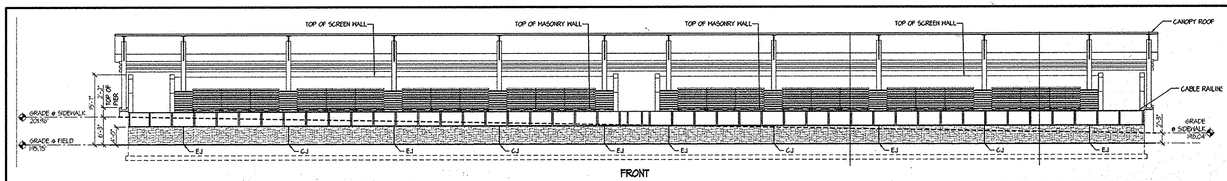
SCALE: AS SHOWN

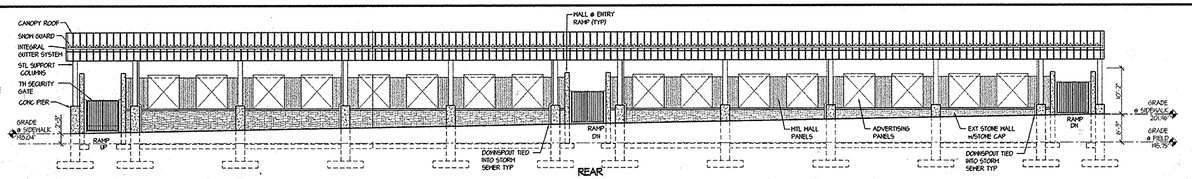
C0.02

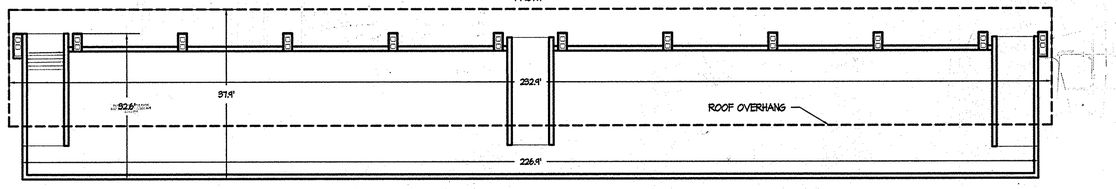
SHEET 2 OF 67

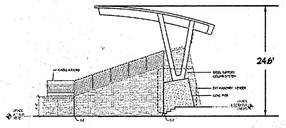
SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C0.02 Site Notes.dwg-Layout1 Aug 14, 2014 04:37pm JLT



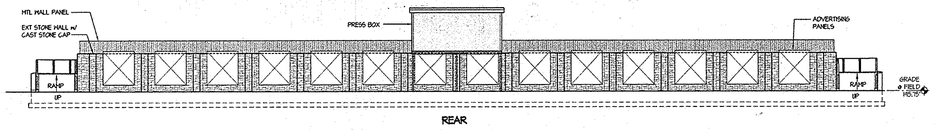


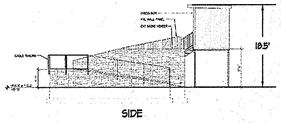


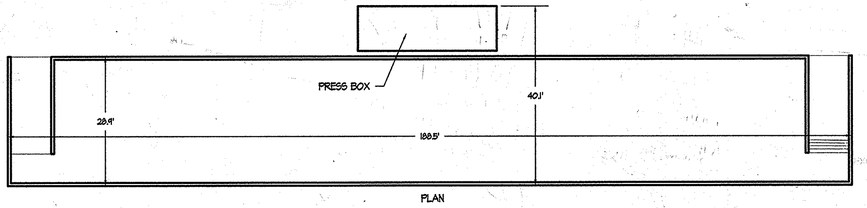


1 CHAMPIONSHIP FIELD (FIELD 1) HOME GRANDSTAND

SCALE: 1/16"=1'



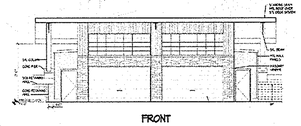


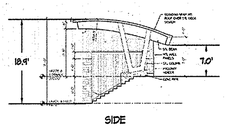


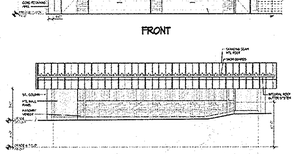
2 CHAMPIONSHIP FIELD (FIELD 1) VISITOR GRANDSTAND

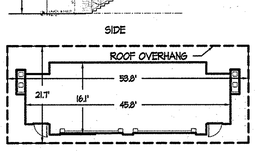
FRONT ELEVATION SIMILAR TO HOME GRANDSTAND WITHOUT ROOF CANOPY

SCALE: 1/16"=1'



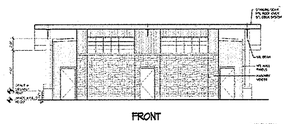


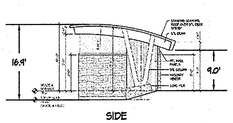


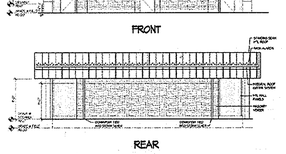


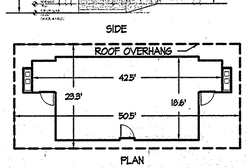
3 GRANDSTAND STORAGE BUILDING

SCALE: 1/16"=1'



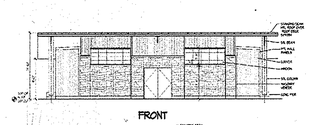


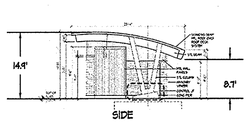


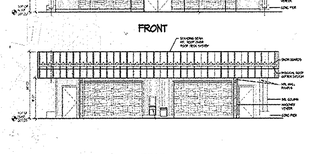


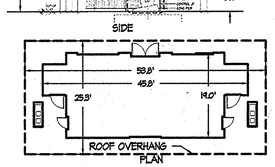
4 GRANDSTAND RESTROOM BUILDING

SCALE: 1/16"=1'



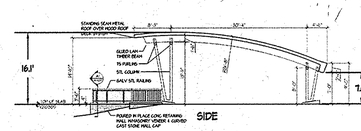


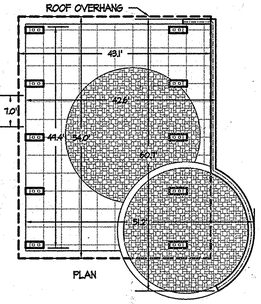




5 PAVILION 1

SCALE: 1/16"=1'

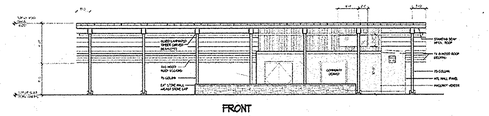


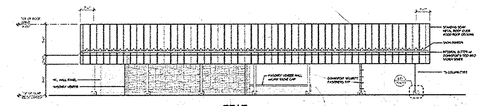


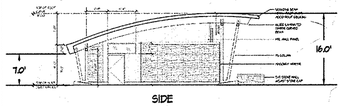
6 PAVILION 5

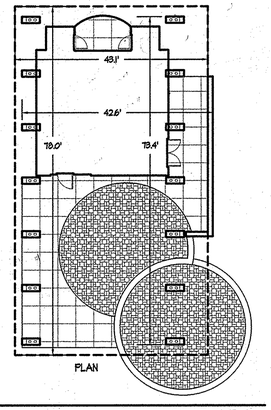
FRONT & REAR ELEVATION SIMILAR TO PAVILIONS 2, 3 AND 4

SCALE: 1/16"=1'



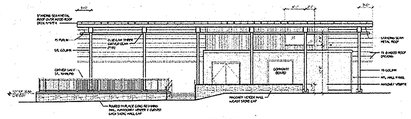


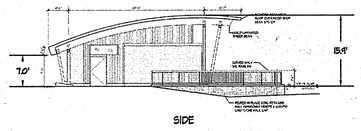


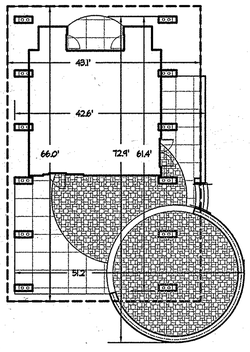


7 PAVILION 2 & 4

SCALE: 1/16"=1'



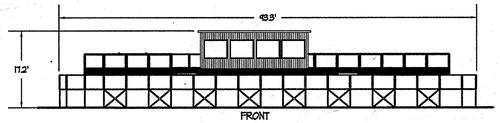


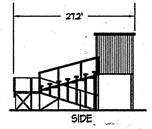


8 PAVILION 3

REAR ELEVATION SIMILAR TO PAVILIONS 2 AND 4

SCALE: 1/16"=1'





9 FIELD 2 BLEACHERS & PRESS BOX

RAMPS MAY BE ALTERED/ADDED TO PROVIDE ACCESSIBILITY BASED ON THE SPECIFIC LOCATION

SCALE: 1/16"=1'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/10/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-2-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 361, 365, 366, 2286, 1160, 1155, 1135 LOT A-21, 1135 LOT A-22
ADDRESS: 6480 MANSION LANE
L.5171 / F.414, L.10585 / F.357, L.12205 / F.340, L.5183 / F.600, L.5241 / F.19, L.4933 / F.457, L.4453 / F.640, L.6825 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6062.02
WATER CODE: 400, SEWER CODE: 2162200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
16315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. LEGG — 16144 — PROFESSIONAL ENGINEER

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. 16144, EXPIRATION DATE: 09/19/16.

DES:	JLT			
DRN:	JLT/AM			
CHK:	AFE			
DATE:	08/14/14	BY	NO.	REVISION

BUILDING ELEVATIONS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

CO.03

SHEET 3 OF 67

SDP-14-033

Z:\07\07042-Troy Park, Phase II Site Development Plan\Dwg\CO.03 Building Elevations.dwg-Layout Aug 19, 2014 0:30pm JLT

VICINITY MAP

1"=2000'

LEGEND

(THIS LEGEND APPLIES TO THIS DRAWING ONLY)

- PROPERTY LINE
- EXISTING CONTOURS (350, 348)
- EXISTING TREELINE TO REMAIN
- FB — EXISTING FOREST BUFFER
- EXISTING TREELINE TO BE REMOVED
- CRITICAL ROOT ZONE — EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- EXISTING SHRUBS TO REMAIN
- EXISTING SHRUBS TO BE REMOVED
- EXISTING WALK TO REMAIN
- EXISTING ROAD TO REMAIN
- EXISTING CURB TO REMAIN
- EXISTING PAVING TO BE REMOVED
- EX. 15" SD D — EXISTING STORM DRAIN TO REMAIN
- EX. 15" SD D — EXISTING STORM DRAIN TO BE REMOVED
- W — EXISTING WATER TO REMAIN
- EX. 6" WATER W — EXISTING WATER TO BE REMOVED
- S — EXISTING SANITARY SEWER TO REMAIN
- EX. 8" SAN S — EXISTING SANITARY SEWER TO BE REMOVED
- EX. 2" GAS G — EXISTING GAS TO REMAIN
- EX. 2" GAS G — EXISTING GAS TO BE REMOVED
- EX. 2" PROPANE LP — EXISTING PROPANE TO REMAIN
- EX. 2" PROPANE LP — EXISTING PROPANE TO BE REMOVED
- EX. FUEL OIL F — EXISTING FUEL OIL TO REMAIN
- EX. FUEL OIL F — EXISTING FUEL OIL TO BE REMOVED

DEMOLITION NOTES

(THESE NOTES APPLY TO THIS SHEET ONLY)

- D-1 SAW CUT AND REMOVE EXISTING CURB AND GUTTER AT NEAREST JOINT.
- D-2 EXISTING TREE/WOODS TO BE REMOVED.
- D-3 REMOVE EXISTING CHECK DAM AND UNDERDRAIN. CAP END OF EXISTING UNDERDRAIN TO REMAIN.
- D-4 REMOVE EXISTING WALKWAY
- D-5 REMOVE EXISTING PAVEMENT STRIPING PRIOR TO INSTALLING SURFACE COURSE.

NORTH

0 20 50 100 200 300

SCALE: 1" = 100'

APPROVED: DEPARTMENT OF PLANNING & ZONING

Signature	Date
DIRECTOR	9/10/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION	9-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5711 / F.414, L.10585 / F.357, L.12205 / F.390, L.5783 / F.600, L.5341 / F.78, L.4433 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — 16144 — PROFESSIONAL ENGINEER
8-14-2014

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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

EXISTING CONDITIONS AND DEMOLITION PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957

HOWARD COUNTY, MARYLAND

SCALE: 1"=100'

C1.00

SHEET 4 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C1.00 Ex Conditions & Demo Plan.dwg-Layout1 Aug 13, 2014 12:29pm JLT

LINE TABLE

LINE #	BEARING	DISTANCE
L1	N80° 23'44"E	44.56'
L2	S26° 42'43"E	354.95'
L3	S63° 17'17"W	402.79'
L4	S26° 42'43"E	426.90'
L5	S26° 42'43"E	437.27'
L6	S26° 42'43"E	430.09'
L7	S26° 42'43"E	400.55'
L8	S63° 17'17"W	43.00'
L9	S26° 42'43"E	301.00'
L10	N63° 17'17"E	60.00'
L11	N26° 27'02"W	74.41'
L12	N67° 44'56"W	9.82'
L13	S42° 23'08"E	125.34'

CURVE TABLE

CURVE #	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	330.00'	136.18'	135.21'	N51° 27'54"E	023° 38'37"
C2	150.00'	40.00'	39.88'	N47° 17'04"E	015° 16'47"
C3	350.00'	154.98'	153.72'	N67° 36'34"E	025° 22'14"
C4	54.00'	84.82'	76.37'	S18° 17'17"W	089° 59'58"
C5	17.00'	26.70'	24.04'	S18° 17'17"W	090° 00'00"
C6	190.03'	138.59'	135.54'	N46° 51'18"W	041° 47'16"
C7	190.00'	198.66'	189.74'	N37° 47'41"W	059° 54'31"
C8	50.00'	162.93'	99.83'	S78° 48'28"W	186° 42'13"
C9	470.66'	228.71'	226.46'	S28° 27'53"E	027° 50'29"

VICINITY MAP 1"=2000'

LEGEND

(THIS LEGEND APPLIES TO DRAWINGS C1.11 THROUGH C1.16 ONLY)

- PROPERTY LINE
- EXISTING TREELINE
- FB — EXISTING FOREST BUFFER
- CRITICAL ROOT ZONE — EXISTING TREES
- EXISTING SHRUBS
- EXISTING WALK
- EXISTING ROAD
- EXISTING CURB
- EX. 15" SD D — EXISTING STORM DRAIN
- EX. 6" WATER W — EXISTING WATER
- EX. 8" SAN S — EXISTING SANITARY SEWER
- EX. TELE T — EXISTING TELEPHONE
- EX. ELEC E — EXISTING ELECTRIC
- EX. ELEC OHW — EXISTING OVERHEAD ELECTRIC
- EXISTING LIGHTING
- EX. COM COM — EXISTING COMMUNICATIONS
- EX. CATV CATV — EXISTING CABLE TV
- EX. FO FO — EXISTING FIBER OPTIC
- EXISTING FENCE
- EXISTING GUARDRAIL
- EXISTING FLAGPOLE
- EXISTING BUILDING
- EXISTING WETLANDS
- WB — WETLAND BUFFER
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- 100 YR FLOODPLAIN — EXISTING 100 YR. FLOODPLAIN

NORTH
0 10 20 40 80 120
SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 3/19/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — NY — DATE 9-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5711 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4433 / F.437, L.6153 / F.640, L.6135 / F. 640
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(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND ALBERT F. EDWARDS 16144 PROFESSIONAL ENGINEER
8-14-2014

PROFESSIONAL CERTIFICATION
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DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

SITE LAYOUT PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

C1.01

SDP-14-033

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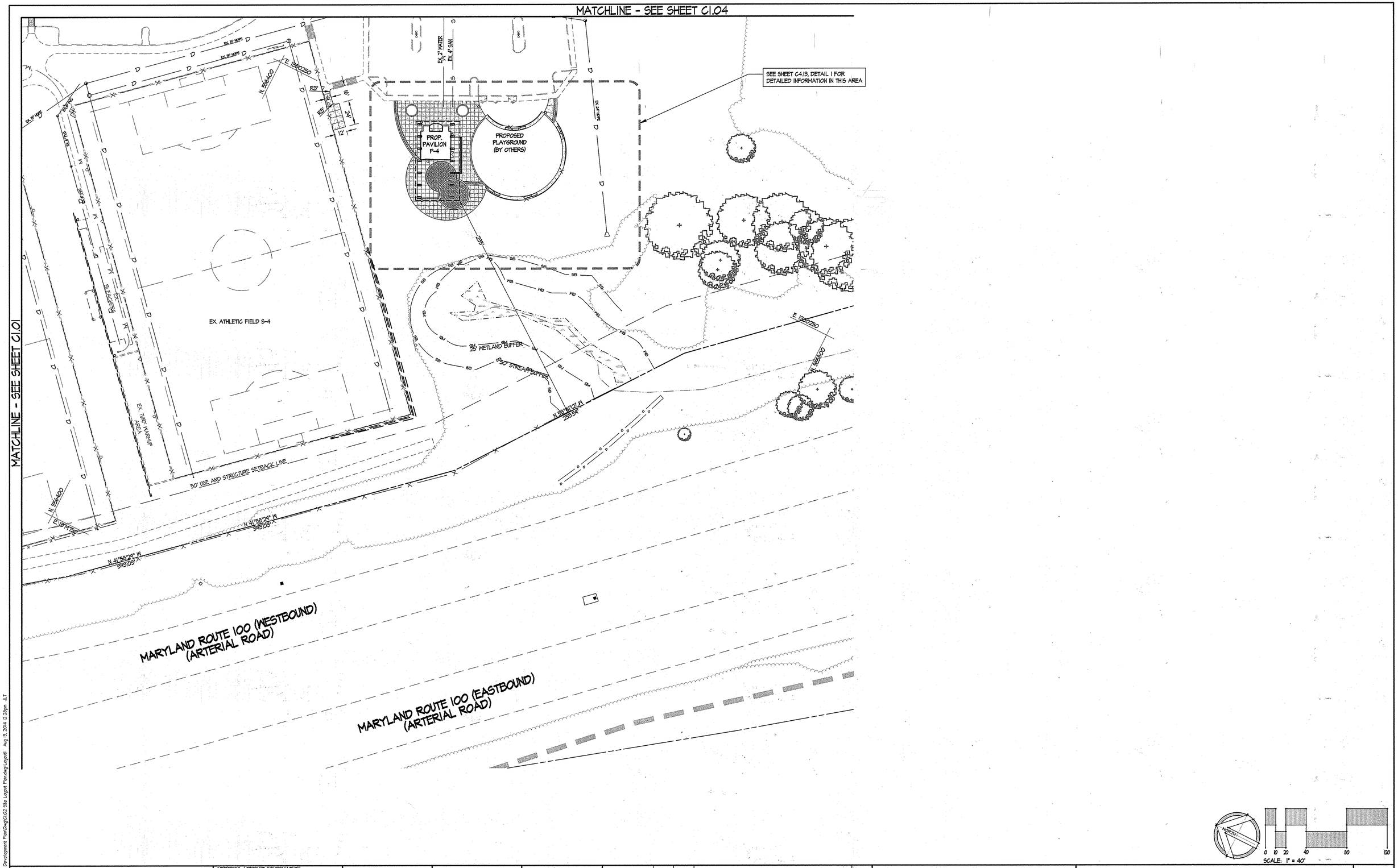

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/18/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 545, 542, 536, 140, 135, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L571 / F.414, L10585 / F.357, L12205 / F.340, L5783 / F.600, L5341 / F.78, L4933 / F.437, L6153 / F.640, L6135 / F. 640
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(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND ALBERT F. EDWARDS 16144 PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER CERTIFICATE
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. 16144, EXPIRATION DATE: 08/14/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

SITE LAYOUT PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

C1.02

SHEET 6 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C1.02 Site Layout Plan.dwg-Layout1 Aug 13, 2014 12:28pm JLT

SEE SHEET C4.15, DETAIL 1 FOR DETAILED INFORMATION IN THIS AREA

MATCHLINE - SEE SHEET C1.04

MATCHLINE - SEE SHEET C1.01

SEE SHEET C4.12, DETAIL 1 FOR DETAILED INFORMATION IN THIS AREA

SEE SHEET C4.12, DETAIL 2 FOR DETAILED INFORMATION IN THIS AREA

SEE SHEET C4.15, DETAIL 1 FOR DETAILED INFORMATION IN THIS AREA

LIMITS OF 100 YEAR FLOODPLAIN AND PUBLIC DRAINAGE AND UTILITY EASEMENT - PLAT #15170

100 YR FLOODPLAIN EASEMENT #15170

FEMA 100 YEAR FLOODPLAIN

100 YEAR FLOODPLAIN DEER RUN TRIB TO HEC ANALYSIS

25' WETLAND BUFFER PLAT #11813

50' STREAM BUFFER PLAT #11813

25' WETLAND BUFFER

50' STREAM BUFFER

380.8' FENCE TO FENCE

PROP. ATHLETIC FIELD S-2
EDGE OF FIELD ELEVATION 198.00

PROP. TURF AREA

PROP. BLEACHERS

PROP. PRESS BOX

PROP. PAVILION P-3

PROP. PAVILION P-4

PROP. RPS

PROP. GP

PROP. SSF

PROP. 25' WIDE ACCESS

PROP. 2' CURB

PROP. 4' CONCRETE WALK

PROP. 5' CONCRETE WALK

PROP. 6' CONCRETE WALK

PROP. 8' CONCRETE WALK

PROP. 10' CONCRETE WALK

PROP. 12' CONCRETE WALK

PROP. 30' STREAM BUFFER

PROP. 25' WETLAND BUFFER

PROP. 50' STREAM BUFFER

PROP. 100 YR FLOODPLAIN

PROP. 100 YR FLOODPLAIN EASEMENT

PROP. LIMITS OF 100 YEAR FLOODPLAIN AND PUBLIC DRAINAGE AND UTILITY EASEMENT - PLAT #15170

PROP. 25' WIDE ACCESS

PROP. 2' CURB

PROP. 4' CONCRETE WALK

PROP. 5' CONCRETE WALK

PROP. 6' CONCRETE WALK

PROP. 8' CONCRETE WALK

PROP. 10' CONCRETE WALK

PROP. 12' CONCRETE WALK

PROP. 30' STREAM BUFFER

PROP. 25' WETLAND BUFFER

PROP. 50' STREAM BUFFER

PROP. 100 YR FLOODPLAIN

PROP. 100 YR FLOODPLAIN EASEMENT

PROP. LIMITS OF 100 YEAR FLOODPLAIN AND PUBLIC DRAINAGE AND UTILITY EASEMENT - PLAT #15170

SCALE: 1" = 40'

0 10 20 40 80 120

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/16/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9.18.14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6480 MARSON LANE
L.917 / F.414, L.10565 / F.391, L.12205 / F.340, L.5783 / F.600, L.8341 / F.18, L.4935 / F.497, L.6153 / F.690, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
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7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
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SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — KEVIN L. EDWARDS — No. 21568 — PROFESSIONAL ENGINEER — 26-264

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. 21568, EXPIRATION DATE: 08/14/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

SITE LAYOUT PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

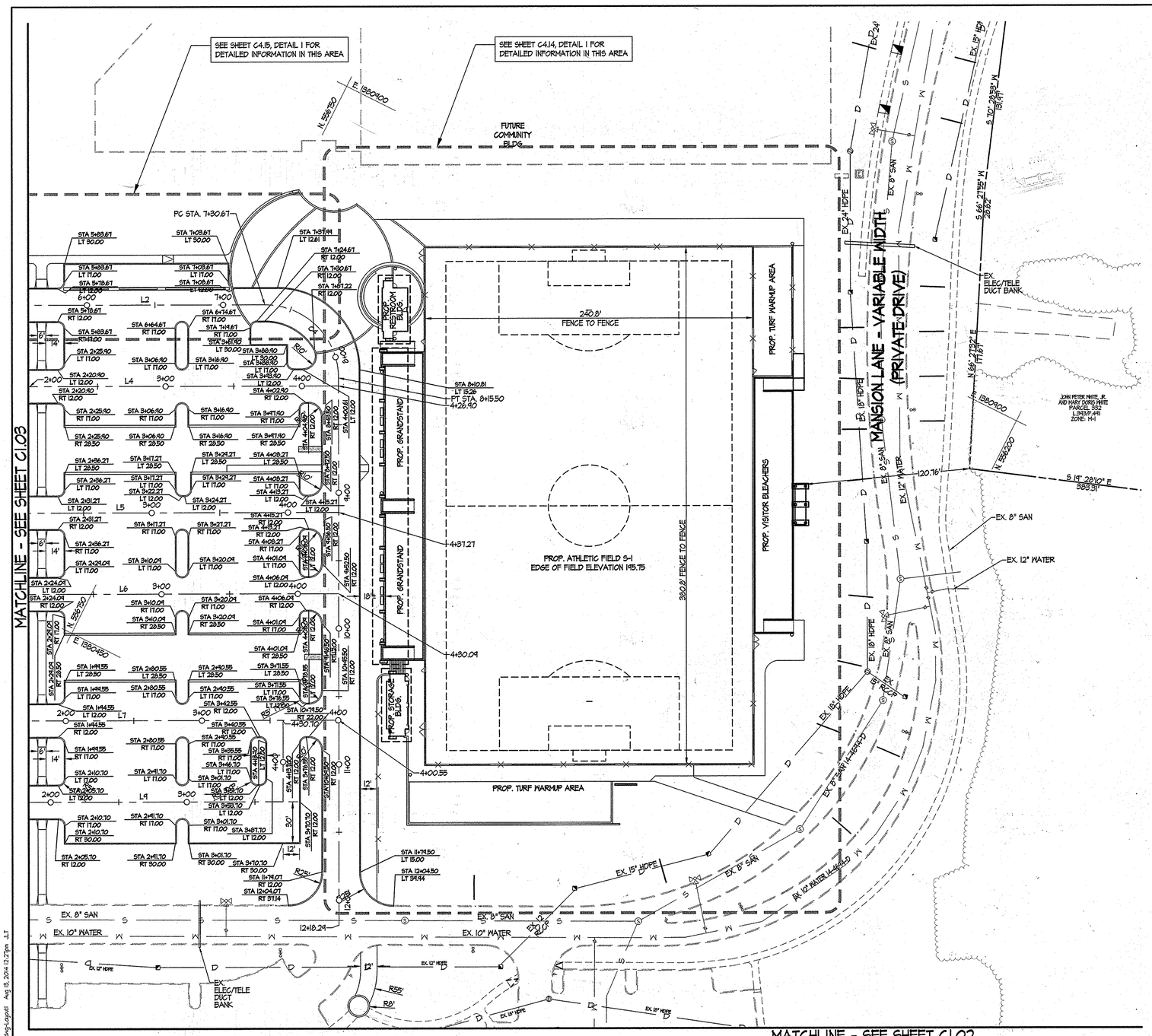
SCALE: 1"=40'

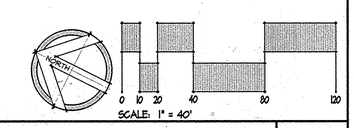
C1.03

SHEET 7 OF 67

SDP-14-033

Z:\10\10043-Troy Park Phase II Site Development Plan\Dwg\C1.03 Site Layout Plan.dwg-Layout1 Aug 29, 2014 04:30pm a.e





APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/18/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 343, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5T7 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4133 / F.431, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
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7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
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DEVELOPER:
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SITE RESOURCES Incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND ALBERT F. EDWARDS 16144 PROFESSIONAL ENGINEER

I HEREBY CERTIFY THAT THE SUBMITTED HERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

SITE LAYOUT PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

C1.04

SHEET 8 OF 67

SDP-14-033

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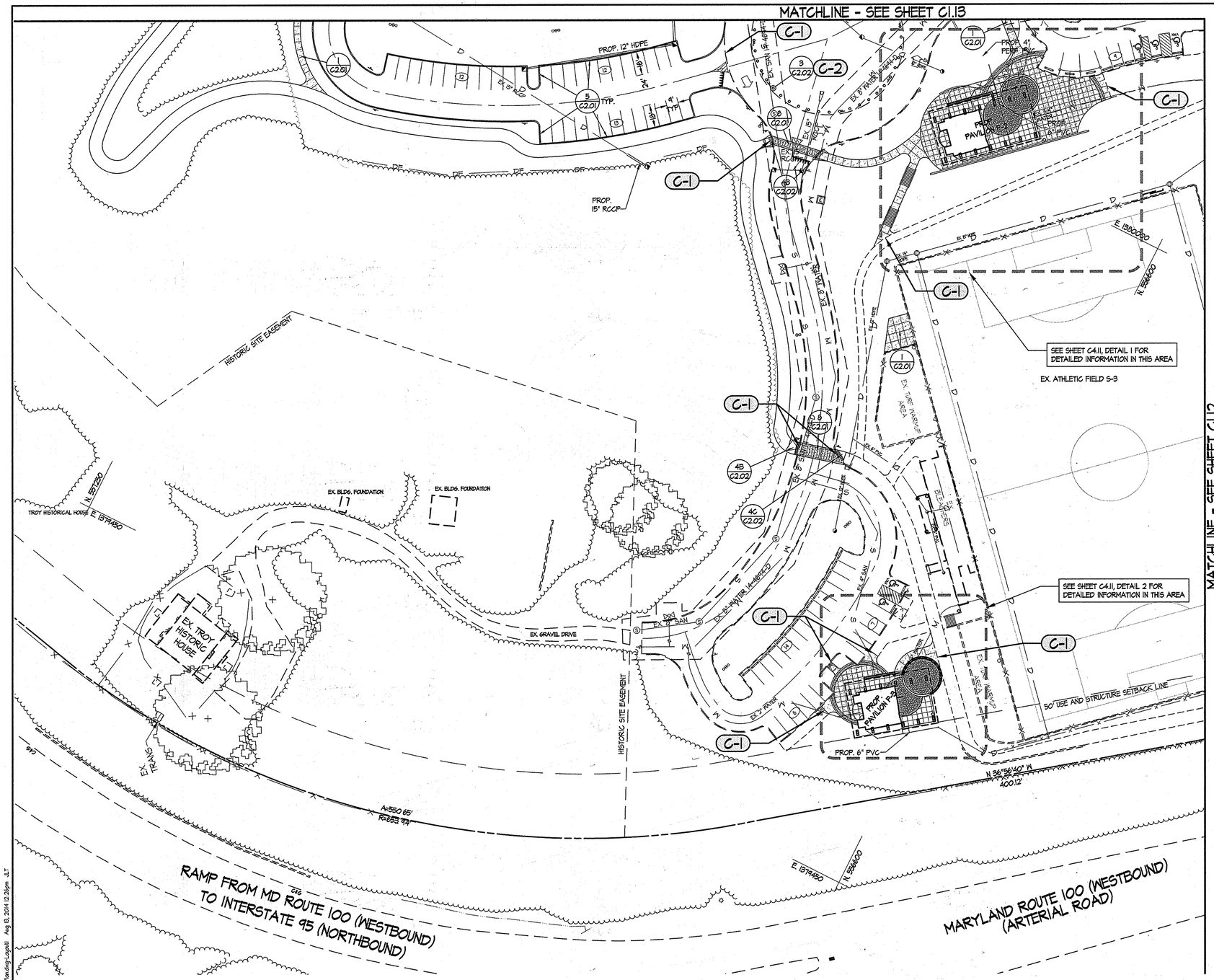
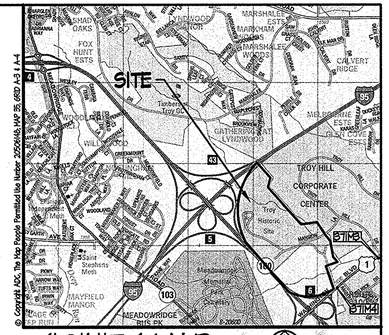




VICINITY MAP 1"=2000'

LEGEND

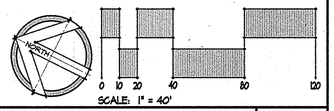
(THIS LEGEND APPLIES TO DRAWINGS C1.01 THROUGH C1.06 ONLY)

- PROPERTY LINE
- EXISTING TREELINE
- EXISTING TREES
- EXISTING WALK
- EXISTING ROAD
- EXISTING CURB
- EX. 15" SD D — EXISTING STORM DRAIN
- EX. 6" WATER W — EXISTING WATER
- EX. 8" SAN S — EXISTING SANITARY SEWER
- EX. FO FO — EXISTING FIBER OPTIC
- 100 YR FLOODPLAIN — EXISTING 100 YR. FLOODPLAIN
- PROPOSED WOODSLINE
- PROPOSED WALK
- PROPOSED ROAD
- PROPOSED FENCE
- PROPOSED BUILDING
- PROP. 15" SD — PROPOSED STORM DRAIN
- PROP. 6" WATER — PROPOSED WATER
- PROP. 8" SAN — PROPOSED SANITARY SEWER
- PROPOSED LIGHTING

CONSTRUCTION NOTES (THESE NOTES APPLY TO THIS SHEET ONLY)

C-1 MEET EXISTING PAVEMENT, CURB& GUTTER AND/OR WALK SMOOTHLY FOR LINE & GRADE.

C-2 EQUAL SPACING AT 6' O.C.±



SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/18/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
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L577 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4433 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
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7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
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(410) 683-3338 • fax (410) 683-3339

STATE OF MARYLAND ALBERT F. EDWARDS 16144 PROFESSIONAL ENGINEER

8-13-2014

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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

DETAIL REFERENCE PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

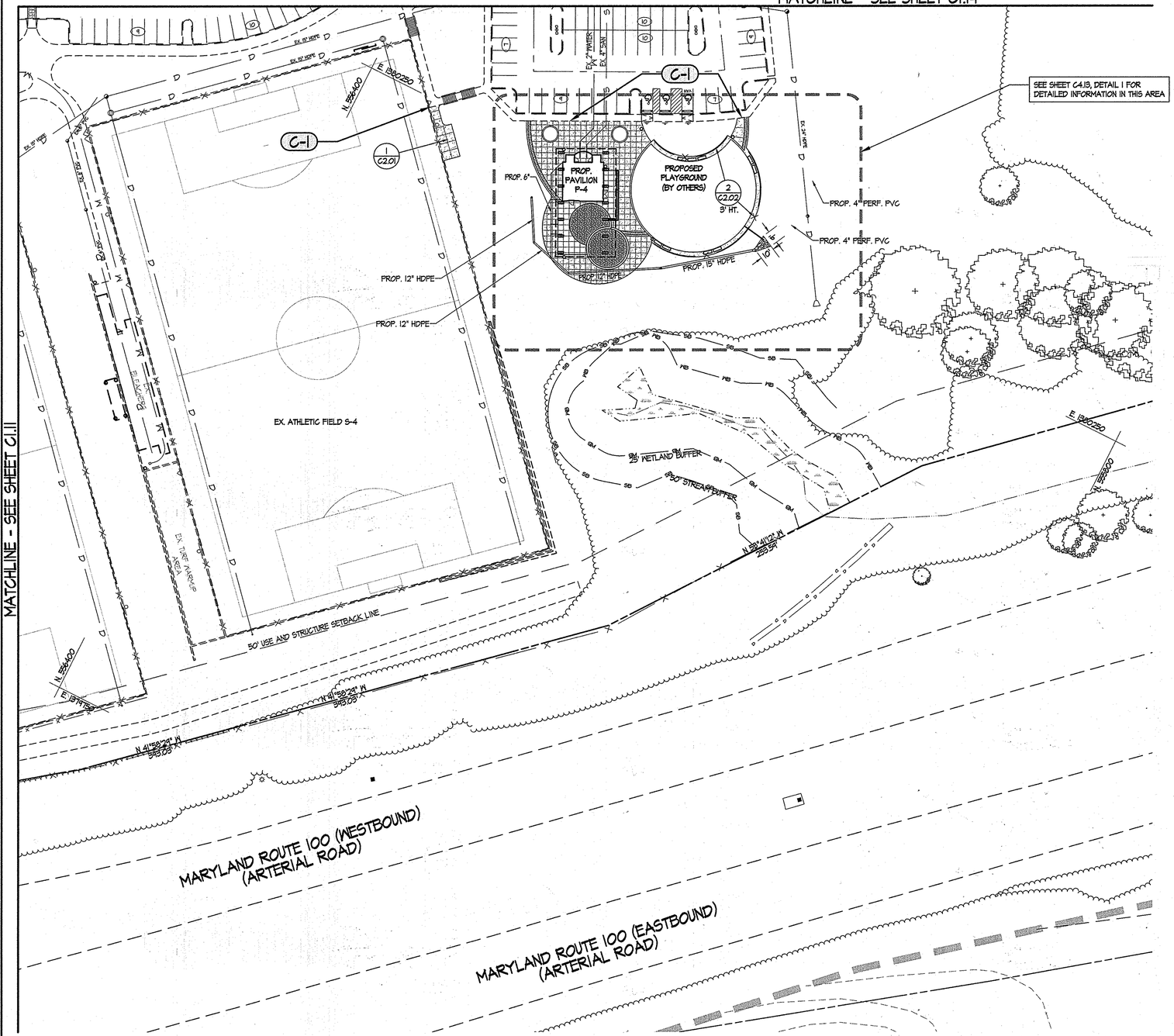
SCALE: 1"=40'

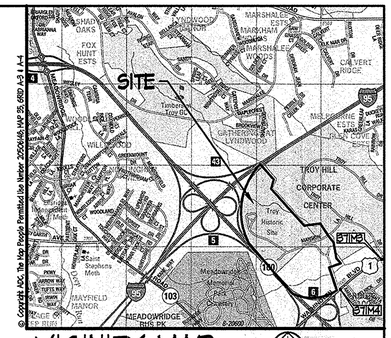
C1.11

SHEET 9 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C1.11 Detail Reference Plan.dwg-Layout1 Aug 13, 2014 12:26pm JLT

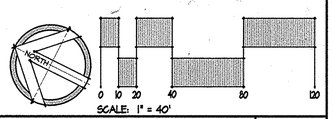




VICINITY MAP 1"=2000'

CONSTRUCTION NOTES (THESE NOTES APPLY TO THIS SHEET ONLY)

C-1 MEET EXISTING WALK SMOOTHLY FOR LINE AND GRADE.



SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/10/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
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(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND ALBERT F. EDWARDS 16144 PROFESSIONAL ENGINEER
9-11-2014

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

DETAIL REFERENCE PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 — HOWARD COUNTY, MARYLAND

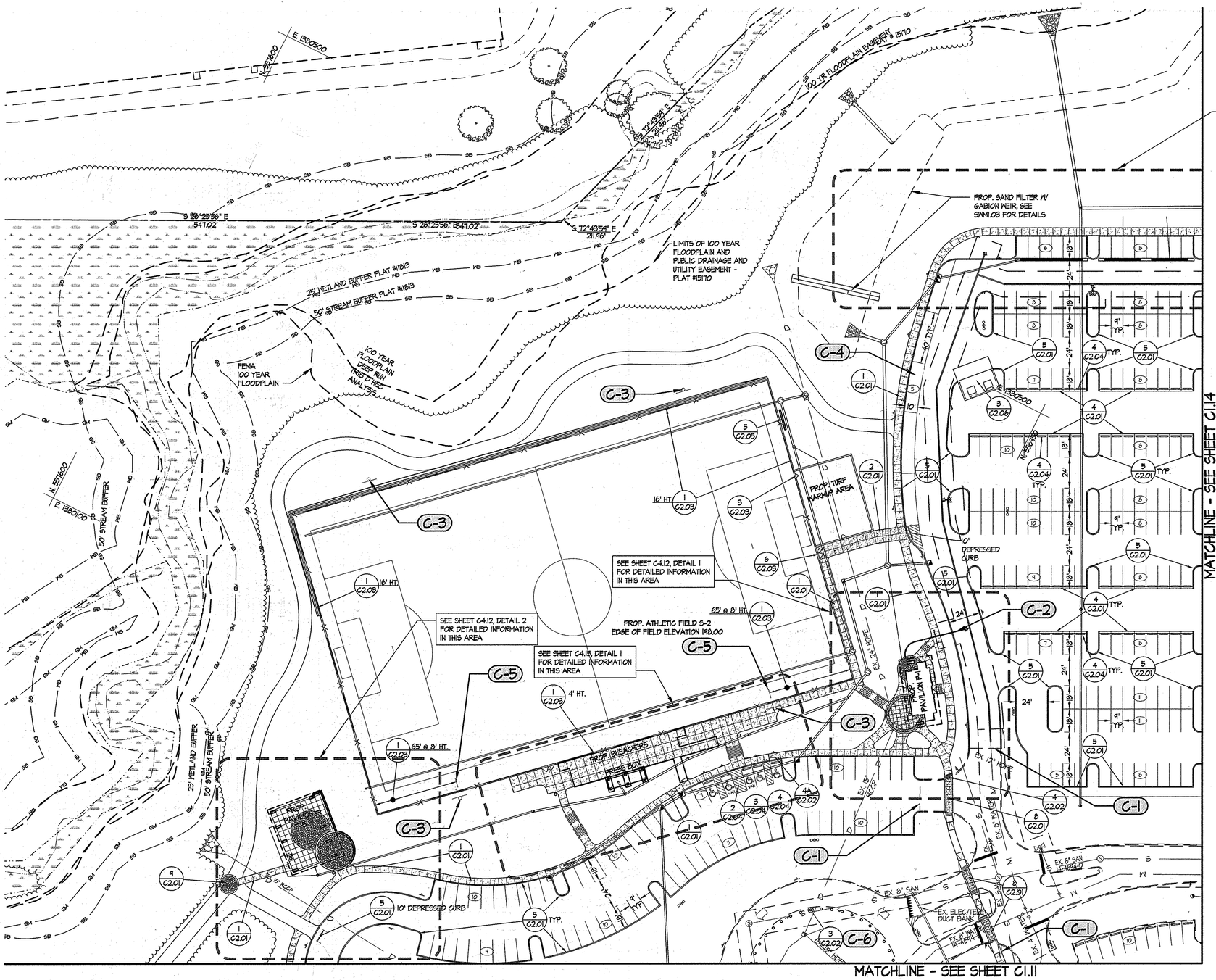
SCALE: 1"=40'

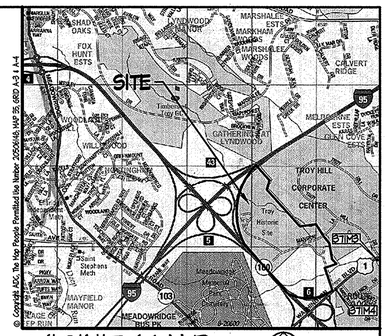
C1.12

SHEET 10 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C1.12 Detail Reference Plan.dwg-Layout1 Aug 13, 2014 12:24pm JLT





VICINITY MAP 1"=2000'

CONSTRUCTION NOTES (THESE NOTES APPLY TO THIS SHEET ONLY)

- C-1 MEET EXISTING PAVING SMOOTHLY FOR LINE & GRADE.
- C-2 PROP. 2" WHC, CONSTRUCTION BY ADVANCED DEPOSIT ORDER (ADO)
- C-3 PROPOSED ATHLETIC FIELD LIGHTING, TYP OF 4.
- C-4 BUS PARKING SPACES
- C-5 BEGIN 4' HT. FENCE
- C-6 EQUAL SPACING AT 6' O.C.±

SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/14/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 140, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.577 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4938 / F.437, L.6153 / F.690, L.6135 / F. 690
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — REGISTERED PROFESSIONAL ENGINEER — 9-26-14

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

DETAIL REFERENCE PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

C1.13

SHEET 11 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C1.13 Detail Reference Planding-Layout1 Aug 25, 2014 04:51pm a_m

VICINITY MAP 1"=2000'

CONSTRUCTION NOTES (THESE NOTES APPLY TO THIS SHEET ONLY)

- C-1 MEET EXISTING CURB & GUTTER SMOOTHLY FOR LINE & GRADE.
- C-2 PROPOSED RETAINING WALL (SEE STRUCTURAL PLANS)
- C-3 PROPOSED ATHLETIC FIELD LIGHTING, TYP OF 6.

SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR	DATE 9/4/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9.3.14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9-2-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
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L.5711 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600,
L.5341 / F.78, L.4433 / F.437, L.6153 / F.640, L.6135 / F. 690
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
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7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
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7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
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(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND ALBERT F. EDWARDS 16144 PROFESSIONAL ENGINEER

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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

DETAIL REFERENCE PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

C1.14

SHEET 12 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C1.14 Detail Reference Plan.dwg-Layout1 Aug 13, 2014 12:22pm JLT

MATCHLINE A-A

PROP. ATHLETIC FIELD 5-2
EDGE OF FIELD ELEVATION 198.00

PROP. ATHLETIC FIELD 5-1
EDGE OF FIELD ELEVATION 195.75

PROP. TURF WARM-UP AREA

PROP. GRANDSTAND

PROP. VISITOR BLEACHERS

PROP. BLEACHERS

PROP. PAVILION P-5

PROP. PAVILION P-4

PROPOSED PLAYGROUND (BY OTHERS)

ON EX. POST

LIMITS OF 100 YEAR FLOODPLAIN AND PUBLIC DRAINAGE AND UTILITY EASEMENT - PLAT #5970

FEMA 100 YEAR FLOODPLAIN

100 YEAR FLOODPLAIN PER FEMA FIRM MAP NO. 24027C0152E

25' WETLAND BUFFER

50' STREAM BUFFER

50' USE AND STRUCTURE SETBACK LINE

EX. SITE PARKING AREA

EX. BLEACHERS

EX. SITE PARKING AREA

EX. SITE ENTRANCE

EXISTING SITE ENTRANCE

S 26°25'58" E
341.02'

N 66°56'40" W
375.05'

N 66°56'40" W
355.31'

SIGNAGE LEGEND

SEE DETAIL 1/C2.02 FOR SIGNS

1. STOP SIGN
2. 4-WAY STOP SIGN
3. ONE-WAY SIGN
4. CHEVRON SIGN
5. NO PARKING SIGN, TWO ARROW UNLESS OTHERWISE NOTED
6. PEDESTRIAN CROSSING SIGN
7. SPEED HUMP SIGN
8. BUS PARKING ONLY SIGN
9. HANDICAPPED PARKING SIGNS, SEE DETAIL 2/C2.04
10. YIELD SIGN

PAVING LEGEND

- 15" P-3 ASPHALT SURFACE COURSE ONLY, SEE HOWARD COUNTY DPW STANDARD DETAIL R-2.01
- 2" P-5 ASPHALT SURFACE COURSE ONLY, SEE HOWARD COUNTY DPW STANDARD DETAIL R-2.01
- P-1 ASPHALT FULL SECTION PAVEMENT, SEE HOWARD COUNTY DPW STANDARD DETAIL R-2.01*
- P-2 ASPHALT FULL SECTION PAVEMENT, SEE HOWARD COUNTY DPW STANDARD DETAIL R-2.01* MAY BE REDUCED TO P-1 IF SOIL CEMENT IS USED FOR SUB-GRADE STABILIZATION
- P-3 ASPHALT FULL SECTION PAVEMENT, SEE HOWARD COUNTY DPW STANDARD DETAIL R-2.01* MAY BE REDUCED TO P-2 IF SOIL CEMENT IS USED FOR SUB-GRADE STABILIZATION)
- P-5 ASPHALT FULL SECTION PAVEMENT, SEE HOWARD COUNTY DPW STANDARD DETAIL R-2.01*
- HEAVY DUTY CONCRETE PAVING, SEE DETAIL 2, SHEET C2.01

*CONTRACTOR SHALL USE HMA WITH CONSTANT GAB SECTIONS AS SHOWN IN HOWARD COUNTY DPW STANDARD DETAIL R-2.01.

PAVING NOTES (THESE NOTES APPLY TO THIS SHEET ONLY)

- P-1 ASPHALT SPEED HUMP, SEE DETAIL 6, SHEET C2.01
- P-2 SPEED HUMP WITH CONCRETE CROSSING, SEE DETAIL 7, SHEET C2.01
- P-3 CONCRETE CROSSING, SEE DETAIL 8, SHEET C2.01
- P-4 THERMOPLASTIC PEDESTRIAN CROSSING, SEE DETAIL 1/C2.03
- P-5 PAINT CURB RED WITH "NO PARKING" IN WHITE LETTERS
- P-6 STOP BAR, 24" WIDE THERMOPLASTIC, TYP.
- P-7 "SHARK'S TOOTH" PAVEMENT MARKING PER MUTCD
- P-8 PAINTED SPEED HUMP MARKING PER MMUTCD, TYP.
- P-9 DOUBLE WIDE STRIPE (10") AROUND CIRCLE

Contractor: SEE INSTRUCTIONS TO BIDDERS FOR PAVING THIS AREA

MATCHLINE A-A

NORTH

SCALE: 1" = 60'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/12/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-10-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 356, 190, 186, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5717 / F.444, L.10505 / F.397, L.12205 / F.340, L.5783 / F.600, L.5834 / F.78, L.4833 / F.481, L.4858 / F.492, L.4635 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6062.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
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PHONE (410) 313-2700

SITE RESOURCES Incorporated
Comprehensive Land Planning & Site Design Services
10315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — No. 10844 — REGISTERED PROFESSIONAL ENGINEER — 9-10-14

I HEREBY CERTIFY THAT THE 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. 10844, EXPIRATION DATE: 09/19/15.

DES:	JLT				
DRN:	JLT/AM				
CHK:	AFE				
DATE:	08/14/14	BY	NO.	REVISION	DATE

PAVING & SIGNAGE PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

CAPITAL PROJECT NO. N-3457

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

HOWARD COUNTY, MARYLAND

SCALE: 1"=60'

C1.20

SHEET 13 OF 67

SDP-14-033

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LIGHTING FIXTURE SCHEDULE

SYMBOL	TYPE	DESCRIPTION	LAMPS VOLTS	LAMPS NO.	LAMPS TYPE	MAX W.	MOUNTING	MANU. / MODEL No. (OR APPROVED EQUAL)
	STREET	SHOEBOX FIXTURE MOUNTED AT 30' ON A FIBERGLASS POLE.	-	1	LED	250	30' POLE	XSB CROSSOVER AREA LIGHT
	STREET	DOUBLE SHOEBOX FIXTURE MOUNTED AT 30' ON A FIBERGLASS POLE.	-	2	LED	250	30' POLE	XSB CROSSOVER AREA LIGHT
	SPORT FIELD	MULTIPLE FIXTURES MOUNTED AT 70' - 110' ON A STEEL POLE.	-	VARIES	MZ	1500	70' - 110' POLE	MUSCO

NORTH

0 20 40 60 100 200

SCALE: 1" = 60'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/16/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 140, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L577 / F.414, L10585 / F.357, L12205 / F.390, L5783 / F.600, L5341 / F.78, L4933 / F.437, L6153 / F.640, L6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 601202
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

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14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND ALBERT F. EDWARDS 16144 PROFESSIONAL ENGINEER

9-11-2014

I HEREBY CERTIFY THAT THE DOCUMENTS HERE PREPARED ARE MADE AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16144, EXPIRATION DATE: 08/15/16.

DESIGN: JLT					
DRAWN: JLT/AM					
CHECK: AFE					
DATE: 08/14/14	BY	NO.	REVISION	DATE	

LIGHTING LEVELS PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

SCALE: 1"=60'

C1.21

SHEET 14 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C1.21 Lighting Levels Planning-Layout Aug 13, 2014 12:21pm JLT

NOTES
1. Place expansion joints not more than 20'-25' apart and at the end of each contiguous pour.
2. Place contraction joints at interval matching width of sidewalk but not more than 6' apart.
3. Provide expansion joints where pour meets existing concrete paving or curb.
4. Expansion joints to be recessed 1/4" below surface of sidewalk.
5. When sidewalk abuts back of street curb, walk shall be 1/4" above top of curb.
6. When sidewalk abuts existing concrete walk, core drill and install dowels per detail.
7. Match score pattern of adjacent sidewalk where practical.
8. Unless otherwise shown on plan, contractor to submit layout of proposed contraction expansion joints for approval prior to pouring concrete.
9. The cross slope of an accessible route shall not exceed 2%.

(1) CONCRETE PAVEMENT

NOT TO SCALE

NOTES:
1. PROVIDE EXPANSION JOINTS AS SHOWN ON PLAN AT 40' ON CENTER MAX OR CONTRACTOR TO PROVIDE LAYOUT PRIOR TO CONSTRUCTION.
2. PROVIDE EXPANSION JOINTS WHERE POUR MEETS EXISTING CONCRETE PAVING OR CURB AND GUTTER.
3. PROVIDE CONTRACTION JOINTS (SCORE LINES) AS SHOWN ON PLAN AT 2" DEPTH AND 20' ON CENTER MAX OR CONTRACTOR TO PROVIDE LAYOUT PRIOR TO CONSTRUCTION.

(2) HEAVY-DUTY CONCRETE PAVEMENT

NOT TO SCALE

SEE DETAIL 11, THIS SHEET FOR ALTERNATE PAVER SECTION

PAVERS

MANUFACTURER:	WHITACRE GREER (OR APPROVED EQUAL)
TELEPHONE:	(800) 947-2837
SIZE:	4"x8"x2.75"
COLOR:	#32 ANTIQUE
PATTERN:	STACKED SAILOR COURSE

(3) PAVER BANDS IN CONCRETE PAVING

NOT TO SCALE

(4) FLUSH CURB DETAIL

NOT TO SCALE

NOTES:
1. A REVERSE GUTTER PAN SHALL HAVE A GUTTER SLOPE OF 4.17% AWAY FROM THE FLOW LINE AND SHALL NOT BE USED WHERE THIS DRAINAGE CREATES A HAZARDOUS CONDITION.
2. GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.
3. A MINIMUM OF TWO (2) FEET OF COMPACTED STABILIZED EARTH, OR EQUIVALENT, SHALL SUPPORT THE ENTIRE BACK OF CURB.
4. POSITIVE DRAINAGE SHALL BE PROVIDED BOTH BEHIND THE CURB AND ALONG THE GUTTER AND FLOW LINE.

(5) CURB AND GUTTER

HOWARD COUNTY STD. DETAIL R-3.01 NOT TO SCALE

(6) ASPHALT SPEED HUMP DETAIL

WATTS PROFILE, 3" MAX HEIGHT. NOT TO SCALE

(7) SPEED HUMP WITH CONCRETE CROSSING DETAIL

WATTS PROFILE, 3" MAX HEIGHT. NOT TO SCALE

(8) CONCRETE CROSSING DETAIL

NOT TO SCALE

PAVERS

MANUFACTURER:	WHITACRE GREER (OR APPROVED EQUAL)
TELEPHONE:	(800) 947-2837
SIZE:	4"x8"x2.75" AND 8"x8"x2.75"
COLOR:	(A) #32 ANTIQUE, (B) #43 TANGERINE
PATTERN:	PAVER CIRCLES: - PATTERN #3 ON MANUFACTURER WEBSITE SEAT WALL PAVERS BY FIELD 1: - RUNNING BOND (USE ONLY 4"X8" PAVERS)

SEE DETAIL 11, THIS SHEET FOR ALTERNATE PAVER SECTION

(9) UNIT PAVERS WITH CONCRETE EDGE

NOT TO SCALE

NOTES:
1. EXPANSION JOINTS SHALL BE PLACED A MAX. OF 20' UNLESS OTHERWISE NOTED.
2. CONTRACTION JOINTS SHALL BE SPACED 5' MAX UNLESS OTHERWISE NOTED ON PLAN.
3. CONCRETE EDGE TO RECEIVE SAME BROOM FINISH AS ADJACENT SIDEWALK. BROOM DIRECTION SHALL BE PARALLEL TO THE CURVE OF THE PLAYGROUND EDGE.
4. WHERE FENCING IS SHOWN ON THE PLANS, CORE DRILL 8" MINIMUM DEPTH INTO PLAYGROUND EDGE FOR FENCE POSTS AND SECURE POSTS IN DRILLED HOLES WITH NON-SHRINK GROUT.

(10) FLUSH CONCRETE PLAYGROUND EDGE

NOT TO SCALE

(11) ALTERNATE PAVER SECTION

DEDUCT ALTERNATE NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR	9/16/14 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	9.3.14 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	9.18.14 DATE

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
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L.5341 / F.78, L.4933 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
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7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

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(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND ALBERT F. EDWARDS 16144 PROFESSIONAL ENGINEER

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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

SITE DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO
PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

C2.01

SHEET 15 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C2.01 Site Details.dwg-Layout1 Aug 13, 2014 12:20pm JLT

A STOP SIGN MMUTCD R1-1

B ALL WAY SIGN MMUTCD R1-3P

C YIELD SIGN MMUTCD R1-2 36"X36"X36"

D PEDESTRIAN CROSSING SIGNS MMUTCD W11-2 & W16-7P BACKGROUND TO BE FLOURESCENT YELLOW

E NO PARKING SIGN MMUTCD R7-1

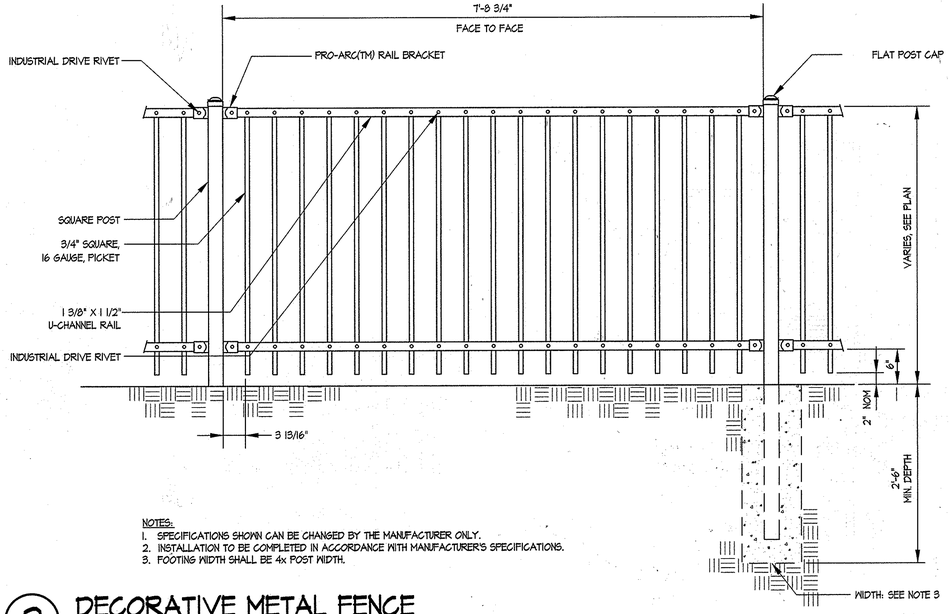
F SPEED HUMP SIGN MMUTCD W17-1

G CHEVRON SIGN MMUTCD R6-4

H ONE WAY SIGN MMUTCD R6-2

1 SIGNAGE

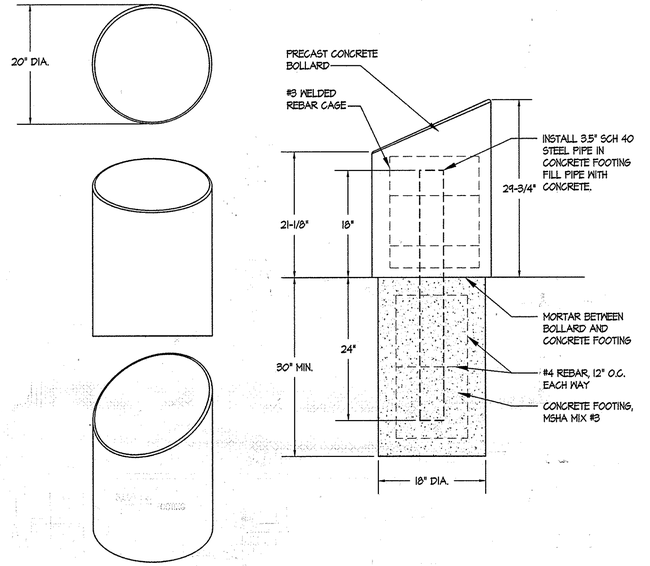
SEE DETAIL 3/C2.04 FOR MOUNTING POST DETAILS — NOT TO SCALE



NOTES:
1. SPECIFICATIONS SHOWN CAN BE CHANGED BY THE MANUFACTURER ONLY.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. FOOTING WIDTH SHALL BE 4x POST WIDTH.

2 DECORATIVE METAL FENCE

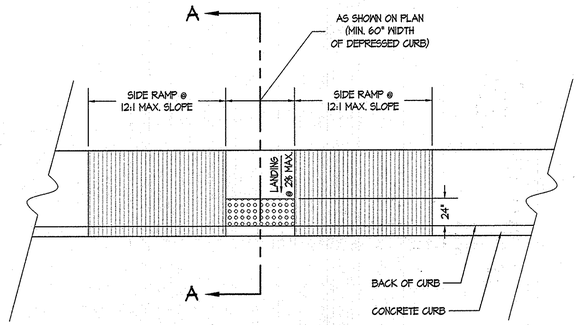
3/4" PICKETS — NOT TO SCALE



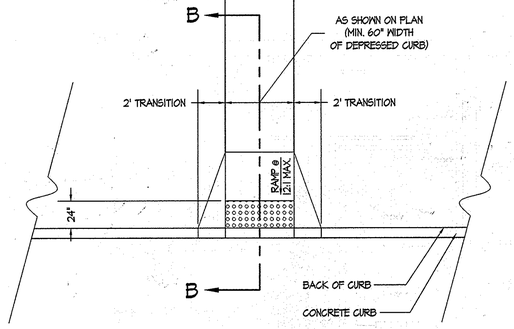
3 CONCRETE BOLLARD

PETERSEN MANUFACTURING COMPANY, MODEL #BP OR APPROVED EQUAL — NOT TO SCALE

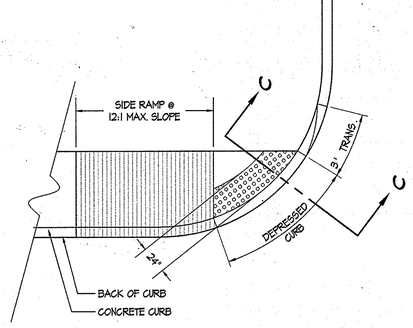
NOTES:
1. SURFACE TEXTURE OF ALL CONCRETE RAMPS SHALL BE COARSE BROOMING OR OTHER NON-SKID TYPE FINISH.
2. TRUNCATED DOME DETECTABLE WARNING STRIPS SHALL BE INSTALLED FOR ALL RAMPS IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATION STD. NO. MD-655.40.



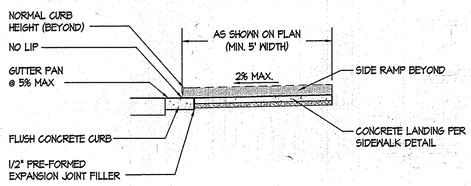
PLAN 'A'



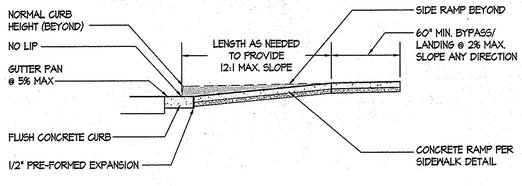
PLAN 'B'



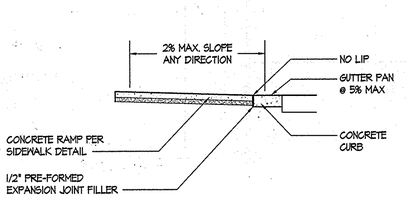
PLAN 'C'



SECTION A-A



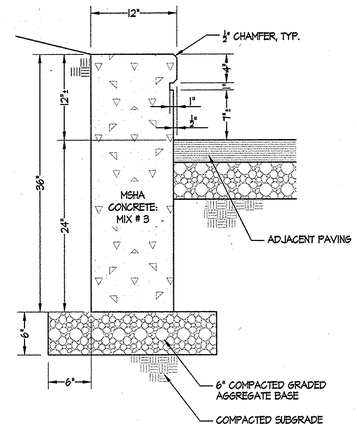
SECTION B-B



SECTION C-C

4 CURB RAMP

NOT TO SCALE



5 PLANTER CURB DETAIL

NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 8/26/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-8-14

ADDRESS / PERMIT INFORMATION
PARCEL: 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.577 / F.414, L.10585 / F.267, L.12205 / F.340, L.5783 / F.600, L.2841 / F.78, L.4928 / F.457, L.4859 / F.640, L.6155 / F. 640
GRID: 17 & 18 ZONED: NT TAX MAP NO. 31
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 1600 SEWER CODE: 2512200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES Incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT EDWARD PRICE — 19144 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THE DOCUMENTS HERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19144, EXPIRATION DATE: 09/19/15.

DES:	JLT				
DRN:	JLT/AM				
CHK:	AFE				
DATE:	08/14/14	BY	NO.	REVISION	DATE

SITE DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 — HOWARD COUNTY, MARYLAND

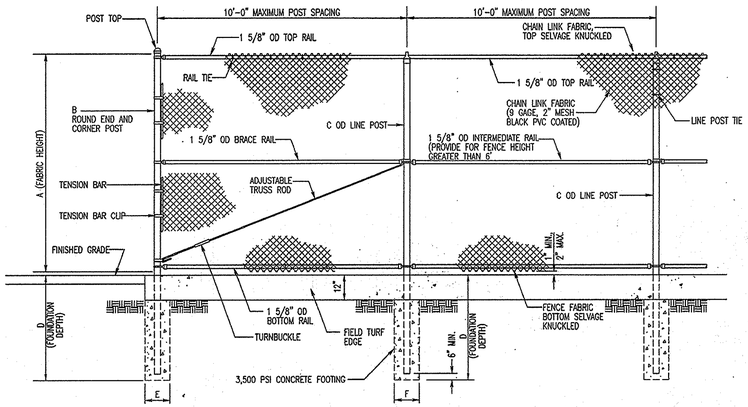
SCALE: AS SHOWN

C2.02

SHEET 16 OF 67

SDP-14-033

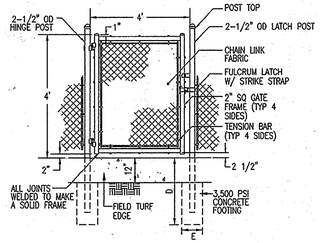
Z:\JOBS\2043-Troy Park Phase II Site Development Plans\Dwg\C2.02 Site Details-Landscape.dwg Aug 13, 2014 12:20pm JLT



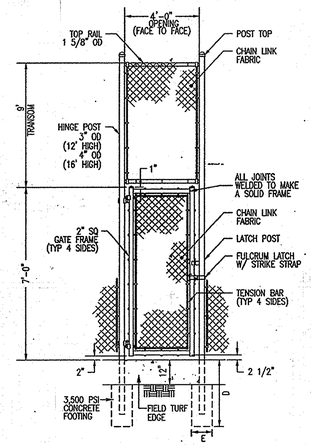
A (FENCE HEIGHT AS SHOWN ON PLAN)	4'-0"/6'-0"	8'-0"	12'-0"	16'-0"
B (END AND CORNER POST DIA.)*	2 1/2"	3"	3"	4"
C (LINE POST DIA.)	2"	2 1/2"	3"	3"
D (FOUNDATION DEPTH)	3'-0"	3'-6"	4'-6"	5'-6"
E (END AND CORNER POST FOUNDATION DIA.)	12"	15"	15"	18"
F (LINE POST FOUNDATION DIA.)	10"	12"	15"	15"

ALL RAILS AND POSTS SHALL BE BLACK PVC COATED
* WHERE FENCES WITH DIFFERENT HEIGHTS MEET, PROVIDE END/CORNER POST WITH LARGEST DIAMETER

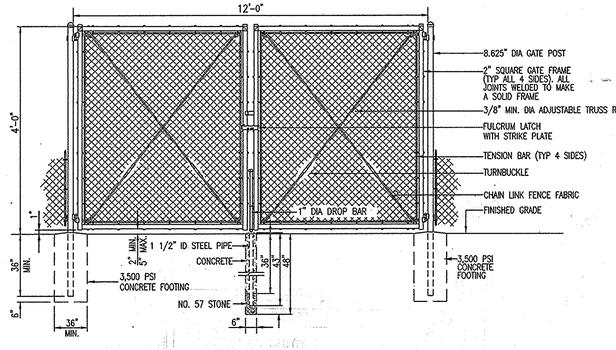
1 CHAIN LINK FENCE
NOT TO SCALE



2 4' WIDE CHAIN LINK FENCE GATE
4' HEIGHT
NOT TO SCALE



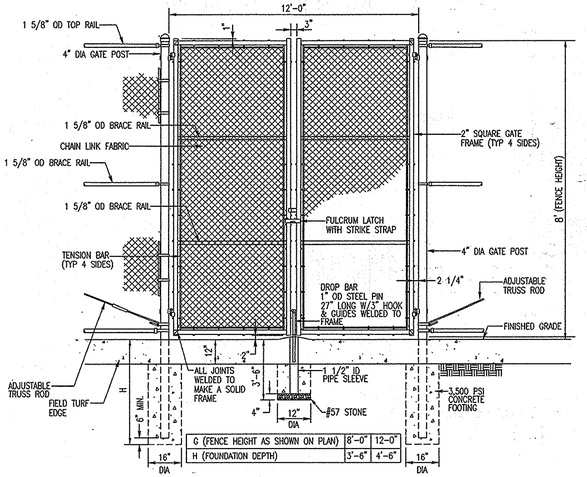
3 4' WIDE CHAIN LINK FENCE GATE
16' HEIGHT
NOT TO SCALE



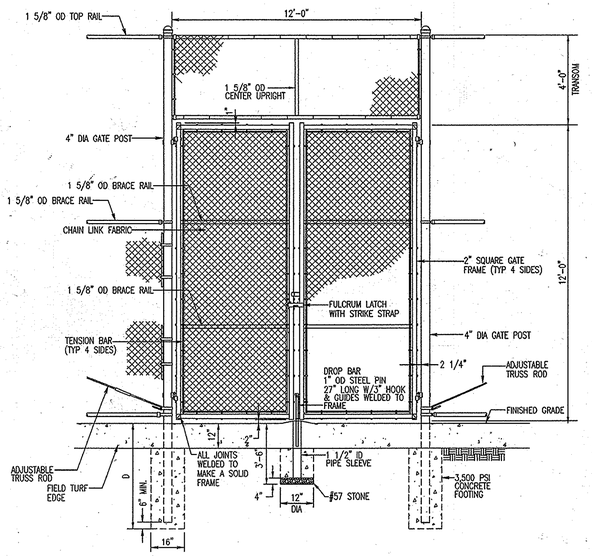
4 12' WIDE, 4' HIGH CHAIN LINK FENCE GATE
NOT TO SCALE

FENCING NOTES (APPLIES TO ALL CHAIN LINK FENCING):

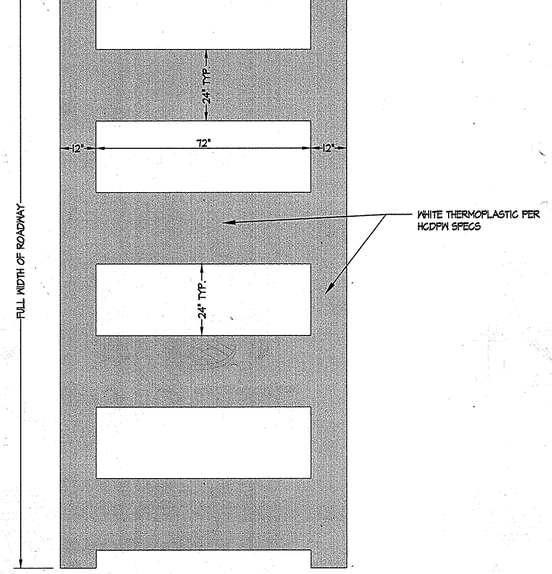
1. ALL CHAIN LINK FENCING, POSTS, RAILS, GATES AND APPURTENANCES SHALL BE BLACK PVC COATED UNLESS OTHERWISE NOTED.
2. MIDDLE FENCE RAIL IS REQUIRED FOR FENCES HIGHER THAN 6', EVEN IF NOT SHOWN ON SHOP DRAWING SUBMITTAL.



5 12' WIDE, 8' HIGH CHAIN LINK FENCE GATE
NOT TO SCALE



6 12' WIDE, 16' HIGH CHAIN LINK FENCE GATE
NOT TO SCALE



7 PAINTED CROSSWALK STRIPING DETAIL
NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/10/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-3-14

ADDRESS / PERMIT INFORMATION
PARCEL 506, 548, 842, 936, 140, 189, 139 LOT A-21, 135 LOT A-22
ADDRESS: 6400 MANSION LANE
L.5171 / F.464, L.12935 / F.291, L.12205 / F.340, L.5185 / F.600, L.5341 / F.78, L.4933 / F.431, L.6155 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2652200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
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SITE RESOURCES Incorporated
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(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — 16144 — PROFESSIONAL ENGINEER

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. 16144, EXPIRATION DATE: 09/19/16.

DES: JLT					
DRN: JLT/AM					
CHK: AFE					
DATE: 08/14/14	BY	NO.	REVISION	DATE	

SITE DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO
PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 — HOWARD COUNTY, MARYLAND

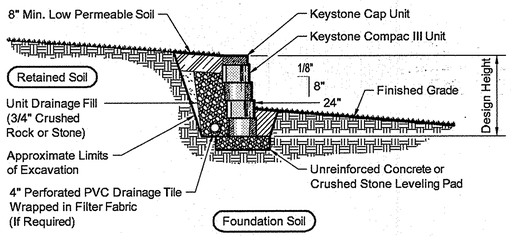
SCALE: AS SHOWN

C2.03

SHEET 17 OF 67

SDP-14-033

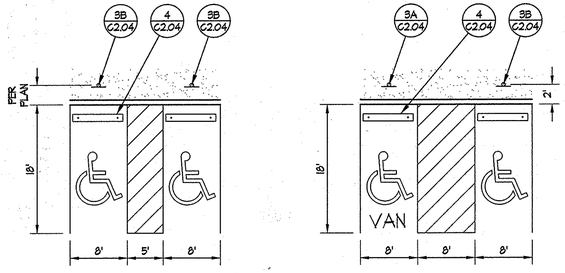
Z:\JOBS\2042-Troy Park Phase II Site Development Plan\Dwg\C2.03 Site Details.dwg-Layout1 Aug 13, 2014 12:20pm JLT



NOTES:
1. THIS DETAIL IS FOR WALLS A MAXIMUM OF 36" EXPOSED HEIGHT.
2. THIS DETAIL IS GENERAL IN NATURE & NOT MEANT TO DICTATE THE DESIGN OR EXACT DIMENSIONS OF THE SEGMENTAL BLOCK RETAINING WALL. SPECIFIC DESIGN & DETAILING OF THE WALL SHALL BE DETERMINED & IS THE RESPONSIBILITY OF THE WALL UNIT SUPPLIER IN CONJUNCTION WITH THE INSTALLING CONTRACTOR.
3. WALL COLOR TO BE "SMOKE" TO MATCH EXISTING WALLS ON SITE.

1 SEGMENTAL BLOCK WALL

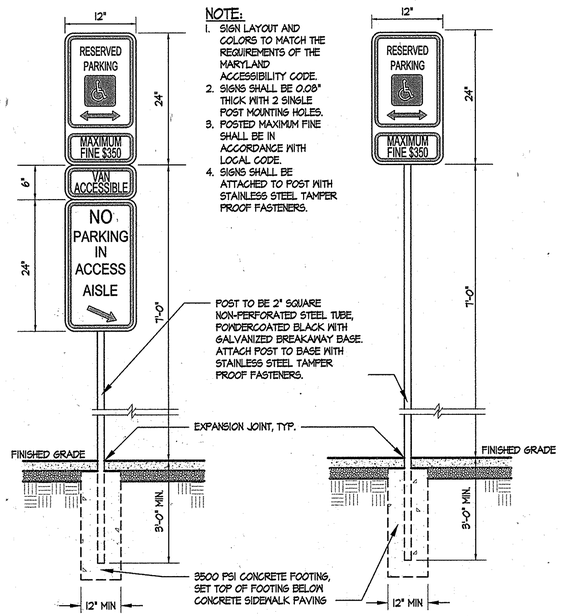
NOT TO SCALE



NOTES:
1. HANDICAP PARKING AND ACCESS SHALL COMPLY WITH THE CURRENT ADA REQUIREMENTS AT TIME OF CONSTRUCTION.
2. PARKING STALL AND ACCESS AISLE WIDTHS ARE SHOWN AS MINIMUMS.

2 HANDICAP PARKING

NOT TO SCALE

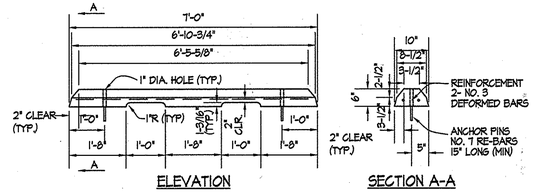


NOTE:
1. SIGN LAYOUT AND COLORS TO MATCH THE REQUIREMENTS OF THE MARYLAND ACCESSIBILITY CODE.
2. SIGNS SHALL BE 0.08" THICK WITH 2 SINGLE POST MOUNTING HOLES.
3. POSTED MAXIMUM FINE SHALL BE IN ACCORDANCE WITH LOCAL CODE.
4. SIGNS SHALL BE ATTACHED TO POST WITH STAINLESS STEEL TAMPER PROOF FASTENERS.

3 HANDICAP PARKING SIGNS

NOT TO SCALE

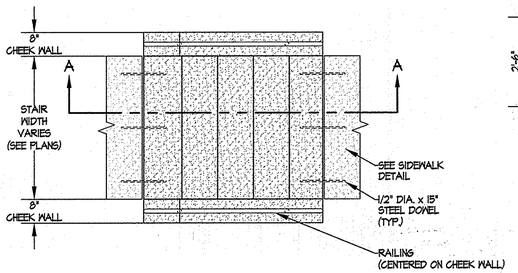
NOTE:
1. ANCHOR PINS SHALL BE FLUSH WITH TOP OF WHEELSTOP.
2. INSTALL WHEELSTOPS 24" FROM CURB.



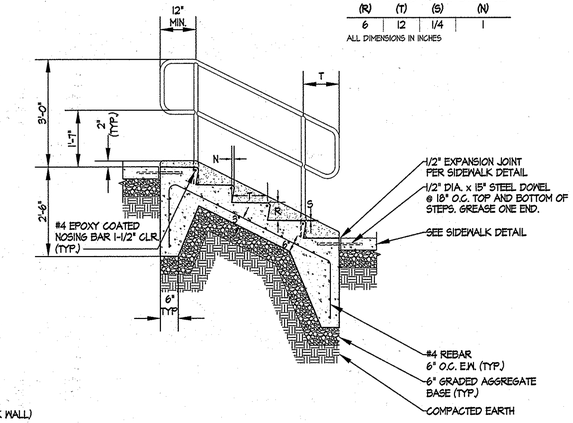
4 CONCRETE WHEELSTOP

NOT TO SCALE

NOTES:
1. RAILINGS & POST TO BE SHOP FABRICATED OF 1-1/2" O.D. STEEL TUBING WITH ALL JOINTS CONTINUOUSLY WELDED AND GROUND SMOOTH. ASSEMBLY SHALL BE ELECTROCHEMICALLY GALVANIZED AFTER FABRICATION.
2. TOP OF RAILING TO BE 36" ABOVE WALKING SURFACE AND STAIR NOSE.
3. RAILING TO EXTEND A MINIMUM OF 12" BEYOND BOTTOM AND TOP RISER.
4. ALL CONCRETE TO BE SHA MIX NO. 3.
5. ALL CHEEK WALL AND STAIR NOSE RADII SHALL BE 1/2".
6. CHEEK WALL SHALL BE 2" ABOVE STAIR NOSE AND WALKING SURFACE.
7. ALL RAILING EXTERIOR RADII SHALL BE 4".
8. RAILING POSTS SHALL BE INSTALLED AT A DEPTH OF 8" INTO CHEEK WALL. CHEEK WALL SHALL BE CORE DRILLED AND POST SET WITH NON-SHRINK GROUT.
9. STAIR TREADS TO RECEIVE LIGHT BRUSHED NON-SLIP FINISH. (SEE SPECS)
10. UNLESS OTHERWISE SHOWN ON PLAN, ALL REBAR SHALL HAVE A CLEARANCE OF 3" FROM SURFACE.



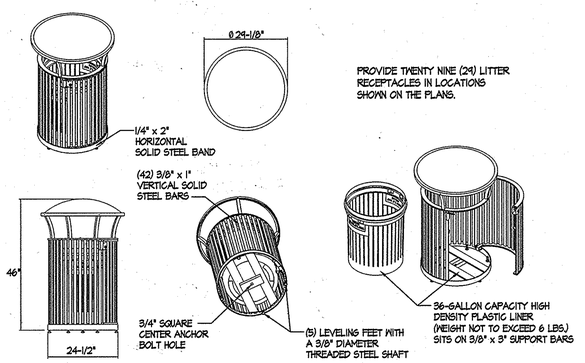
PLAN



SECTION A-A

5 CONCRETE STAIRS & RAILING

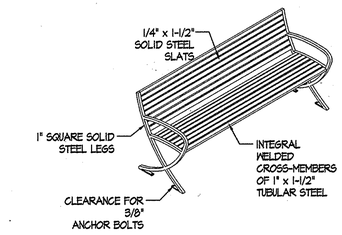
SCALE: 1/2" = 1'-0"



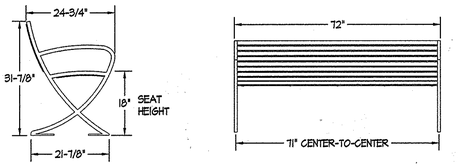
NOTES:
1. ALL FABRICATED METAL COMPONENTS ARE STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATINGS. PRODUCTS ARE FULLY CLEANED AND PRETREATED, PREHEATED AND COATED WHILE HOT TO FILL CREVICES AND BUILD COATING FILM. COATED PARTS ARE THEN FULLY CURED TO COATING MANUFACTURER'S SPECIFICATIONS. THE THICKNESS OF THE RESULTING FINISH AVERAGES 8-10 MILS (200-250 MICRONS).
2. OIL IMPREGNATED BRONZE BUSHINGS AND STAINLESS STEEL PIVOT PINS FOR DOOR MOVEMENT, STANDARD 3/16" SOLID STEEL LATCH ASSEMBLY OR OPTIONAL PATENTED STAINLESS STEEL KEYED LOCK ASSEMBLY.
3. THIS VICTOR STANLEY, INC. PRODUCT MUST BE PERMANENTLY AFFIXED TO THE GROUND. IT IS NOT RECOMMENDED TO LOCATE ANCHOR BOLTS UNTIL RECEPTACLE IS IN PLACE. CONTRACTOR TO PROVIDE STAINLESS STEEL ANCHOR BOLTS WITH TAMPER PROOF HEADS.
4. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE. CONTACT MANUFACTURER FOR DETAILS.

6 TRASH RECEPTACLE

VICTOR STANLEY MODEL #A-36 (36 GAL.) OR APPROVED EQUAL — NOT TO SCALE



PROVIDE SEVENTEEN (17) BENCHES IN LOCATIONS SHOWN ON THE PLANS.



NOTES:
1. ALL FABRICATED METAL COMPONENTS ARE STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATINGS. PRODUCTS ARE FULLY CLEANED AND PRETREATED, PREHEATED AND COATED WHILE HOT TO FILL CREVICES AND BUILD COATING FILM. COATED PARTS ARE THEN FULLY CURED TO COATING MANUFACTURER'S SPECIFICATIONS. THE THICKNESS OF THE RESULTING FINISH AVERAGES 8-10 MILS (200-250 MICRONS).
2. IT IS NOT RECOMMENDED TO LOCATE ANCHOR BOLTS UNTIL BENCH IS IN PLACE. THIS VICTOR STANLEY, INC. PRODUCT MUST BE PERMANENTLY AFFIXED TO THE GROUND. 3. CONTRACTOR TO PROVIDE STAINLESS STEEL ANCHOR BOLTS WITH TAMPER PROOF HEADS AND ATTACH BENCH TO THE PAVEMENT. ANCHOR BOLTS NOT PROVIDED BY VICTOR STANLEY, INC.
3. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE. CONTACT MANUFACTURER FOR DETAILS.

7 STEEL BENCH

VICTOR STANLEY MODEL #LIL-20CA-F OR APPROVED EQUAL — NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/10/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 164, 548, 342, 836, 150, 155, 139 LOT A-21, 155 LOT A-22
ADDRESS: 6450 MANSION LANE
L.811 / F.44, L.10599 / F.291, L.12205 / F.340, L.5783 / F.600, L.8341 / F.78, L.4823 / F.431, L.4153 / F.640, L.6135 / F. 640
GRID 11 & 18 ZONE: M-1 TAX MAP NO. 37
6th ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
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SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — BRENT EDWARD LEWIS — 18141 — PROFESSIONAL ENGINEER — 9-18-2014

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. 18141, EXPIRATION DATE: 09/09/16.

DES:	JLT				
DRN:	JLT/AM				
CHK:	AFE				
DATE:	09/14/14	BY	NO.	REVISION	DATE

SITE DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

CAPITAL PROJECT NO. N-3457 — HOWARD COUNTY, MARYLAND

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

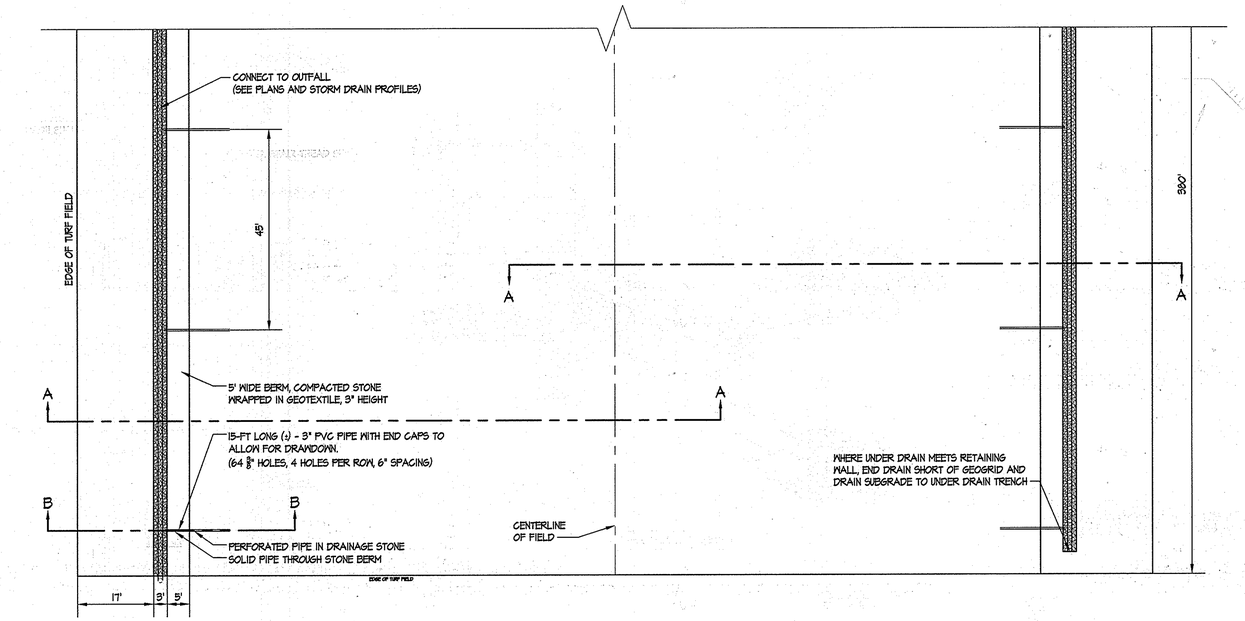
SCALE: AS SHOWN

C2.04

SHEET 18 OF 67

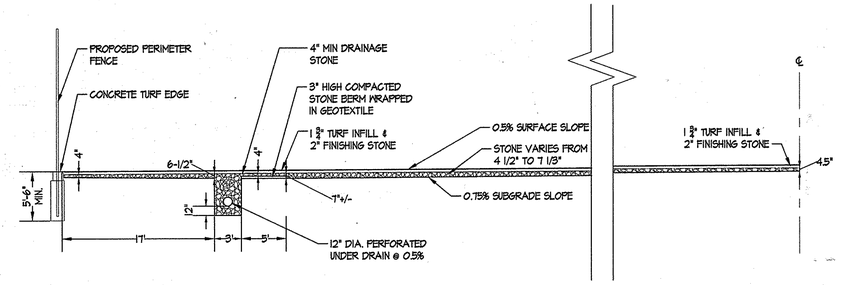
SDP-14-033

Z:\NJOB\2043-Troy Park, Phase II Site Development Plan\Dwg\C2.04 Site Details.dwg-Layout1 Aug 18, 2014 12:20pm JLT



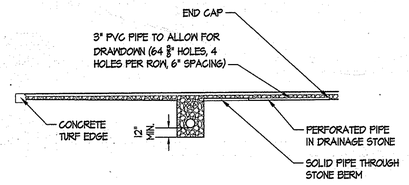
1 SYNTHETIC TURF FIELD PLAN VIEW

NOT TO SCALE



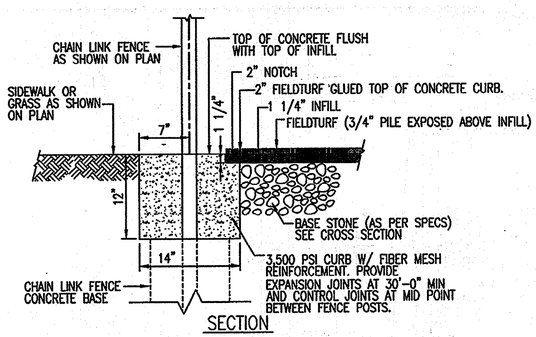
2 SECTION A-A

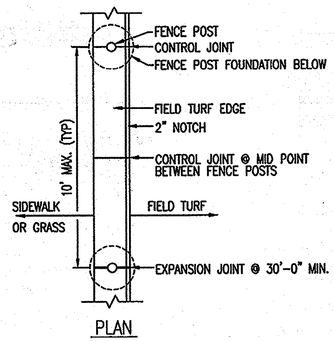
NOT TO SCALE

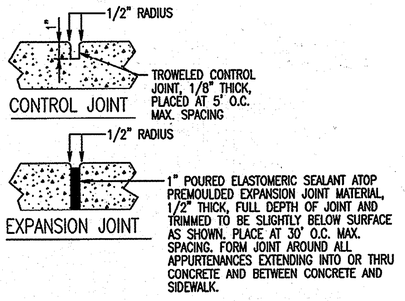


3 SECTION B-B

NOT TO SCALE

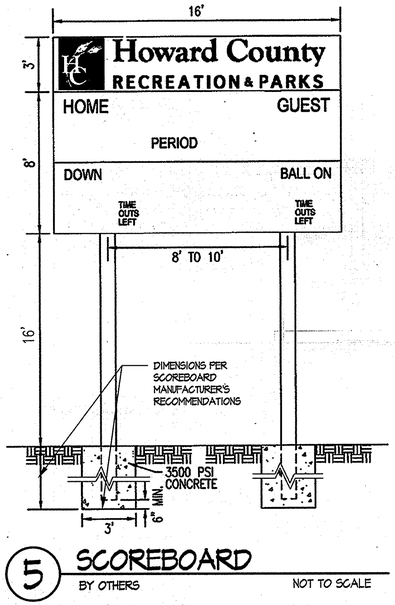






4 FIELD TURF CONCRETE EDGE

NOT TO SCALE



5 SCOREBOARD

BY OTHERS

NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 8/18/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-12-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 945, 942, 936, 950, 155, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 HANSON LANE
L.517 / F.414, L.10585 / F.251, L.12205 / F.340, L.5788 / F.600, L.3241 / F.19, L.4933 / F.431, L.4158 / F.490, L.4855 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
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Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — SCOTT F. EDWARDS — No. 19944 — REGISTERED PROFESSIONAL ENGINEER
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. 19944, EXPIRATION DATE: 08/09/16.

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

SITE DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

C2.05

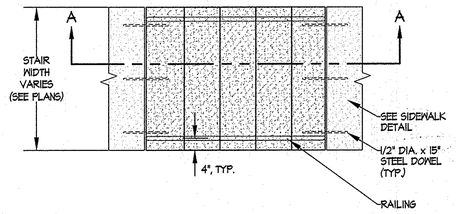
SHEET 19 OF 67

SDP-14-033

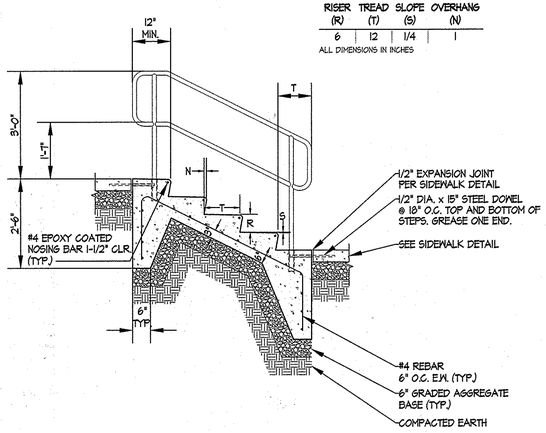
Z:\NYDOCS\Troy Park Phase II Site Development Plan\Dwg\C2.05 Site Details.dwg-Layout1 Aug 19, 2014 05:22pm JLT

NOTES:

1. RAILINGS & POST TO BE SHOP FABRICATED OF 1-1/2" O.D. STEEL TUBING WITH ALL JOINTS CONTINUOUSLY WELDED AND GROUND SMOOTH. ASSEMBLY SHALL BE ELECTROCHEMICALLY GALVANIZED AFTER FABRICATION.
2. TOP OF RAILING TO BE 36" ABOVE WALKING SURFACE AND STAIR NOSE.
3. RAILING TO EXTEND A MINIMUM OF 12" BEYOND BOTTOM AND TOP RISER.
4. ALL CONCRETE TO BE SHA MIX NO. 3.
5. ALL STAIR NOSE RADII SHALL BE 1/2".
6. ALL RAILING EXTERIOR RADII SHALL BE 4".
7. RAILING POSTS SHALL BE INSTALLED AT A DEPTH OF 8" STAIR TREAD. STAIR TREAD SHALL BE CORE DRILLED AND POST SET WITH NON-SHRINK GROUT.
8. STAIR TREADS TO RECEIVE LIGHT BRUSHED NON-SLIP FINISH. (SEE SPECS)
9. UNLESS OTHERWISE SHOWN ON PLAN, ALL REBAR SHALL HAVE A CLEARANCE OF 3" FROM SURFACE.



PLAN



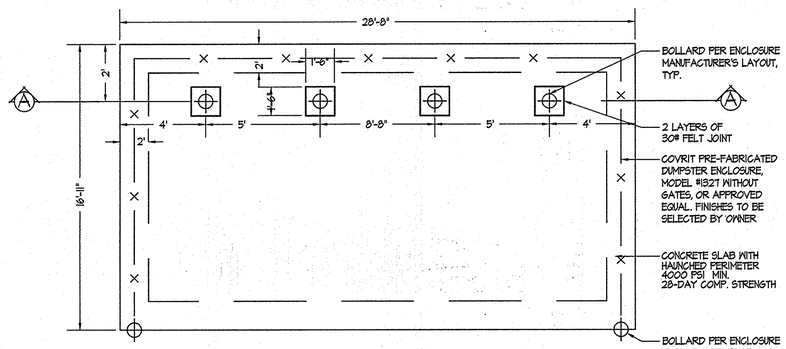
RISER (R)	TREAD (T)	SLOPE (S)	OVERHANG (N)
6	12	1/4	1

ALL DIMENSIONS IN INCHES

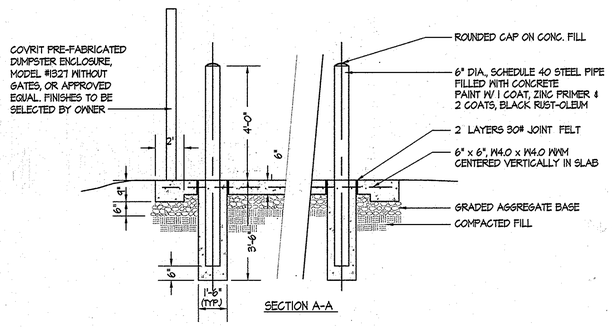
SECTION A-A

1 CONCRETE STAIRS & RAILING (NO CHEEK WALL)

SCALE: 1/2" = 1'-0"



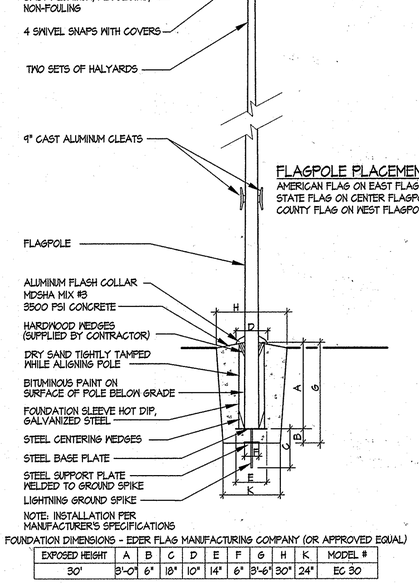
PLAN



SECTION A-A

3 DUMPSTER PAD DETAIL

NOT TO SCALE



FLAGPOLE PLACEMENT:
AMERICAN FLAG ON EAST FLAGPOLE
STATE FLAG ON CENTER FLAGPOLE
COUNTY FLAG ON WEST FLAGPOLE

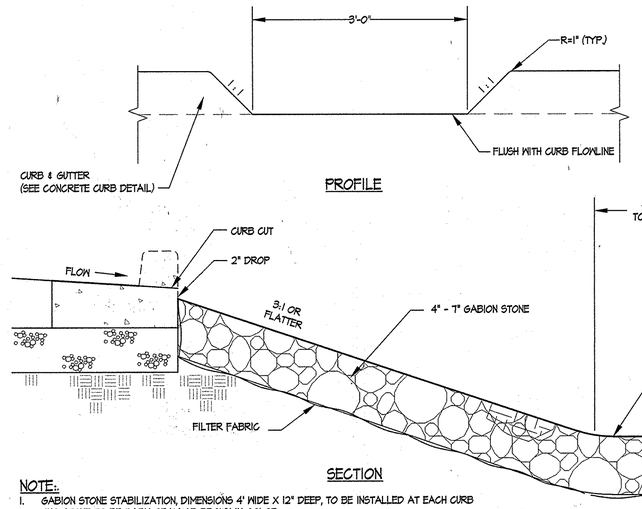
NOTE: INSTALLATION PER MANUFACTURER'S SPECIFICATIONS

FOUNDATION DIMENSIONS - EDER FLAG MANUFACTURING COMPANY (OR APPROVED EQUAL)

EXPOSED HEIGHT	A	B	C	D	E	F	G	H	K	MODEL #
30'	9'-0"	6"	18"	10"	14"	6"	3'-6"	30"	24"	EC 30

4 FLAG POLE MOUNTING DETAIL

NOT TO SCALE



PROFILE

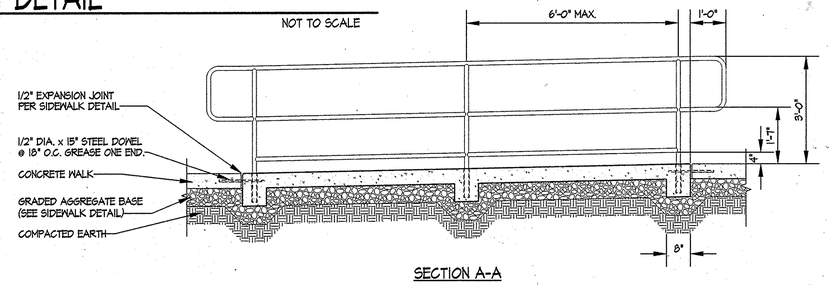
SECTION

NOTE:

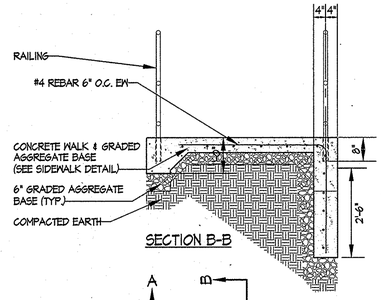
1. GABION STONE STABILIZATION, DIMENSIONS 4' WIDE X 12" DEEP, TO BE INSTALLED AT EACH CURB CUT. STONE TO BE DARK GRAY OR BROWN IN COLOR.
2. MAINTAIN GUTTER SLOPE THROUGH CURB CUT OPENINGS.

2 CURB CUT STONE INLET DETAIL

NOT TO SCALE



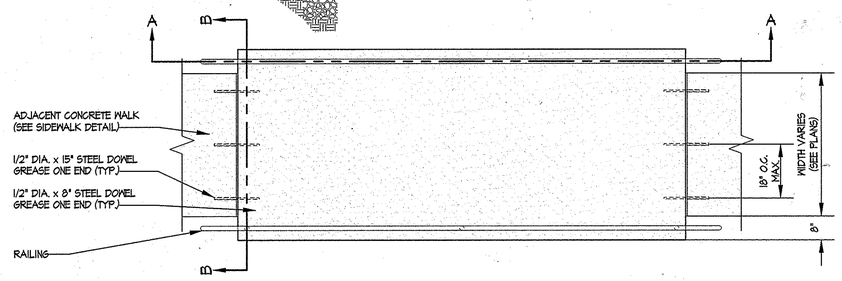
SECTION A-A



SECTION B-B

NOTES:

1. RAILINGS & POST TO BE SHOP FABRICATED OF 1-1/2" O.D. STEEL TUBING WITH ALL JOINTS CONTINUOUSLY WELDED AND GROUND SMOOTH. ASSEMBLY TO BE ELECTROCHEMICALLY GALVANIZED AFTER FABRICATION.
2. TOP OF RAILING TO BE 36" ABOVE WALKING SURFACE.
4. ALL CONCRETE TO BE SHA MIX NO. 3.
5. ALL EXPOSED CONCRETE EDGE RADII SHALL BE 1/2".
6. ALL RAILING EXTERIOR RADII SHALL BE 4".
7. RAILING POSTS SHALL BE INSTALLED AT A DEPTH OF 8" INTO CONCRETE. CONCRETE SHALL BE CORE DRILLED AND POST SET WITH NON-SHRINK GROUT.
8. WALKING SURFACE TO RECEIVE LIGHT BRUSHED NON-SLIP FINISH THAT IS PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL. (SEE SPECS)
9. UNLESS OTHERWISE SHOWN ON PLAN, ALL REBAR SHALL HAVE A MINIMUM CLEARANCE OF 3" FROM SURFACE.
10. EXPANSION AND CONTRACTION JOINTS SHALL BE SPACED IN ACCORDANCE WITH CONCRETE SIDEWALK DETAIL.
11. ALL EXPANSION JOINTS ON RAMP SHALL BE DOWELED AS SHOWN.



PLAN

5 CONCRETE RAMP & RAILING

SCALE: 1/2" = 1'-0"

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 8/26/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-28-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 545, 542, 336, 162, 185, 139 LOT A-21, 135 LOT A-22
ADDRESS: 6480 MANSION LANE
L.571 / F.414, L.10565 / F.351, L.12205 / F.340, L.5183 / F.600, L.5341 / F.18, L.4828 / F.431, L.6153 / F.640, L.6155 / F. 640
GRID 17 & 18, ZONE: W-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152300
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — STEVEN EDWARD FOSNOCHT — 19134 — PROFESSIONAL ENGINEER — 9-14-14

THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON PREPARED OR APPROVED THE DOCUMENTS HERETO ATTACHED AND IS A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19144, EXPIRATION DATE: 09/14/15.

DES: JLT			
DRN: JLT/AM			
CHK: AFE			
DATE: 08/14	BY	NO.	REVISION

SITE DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

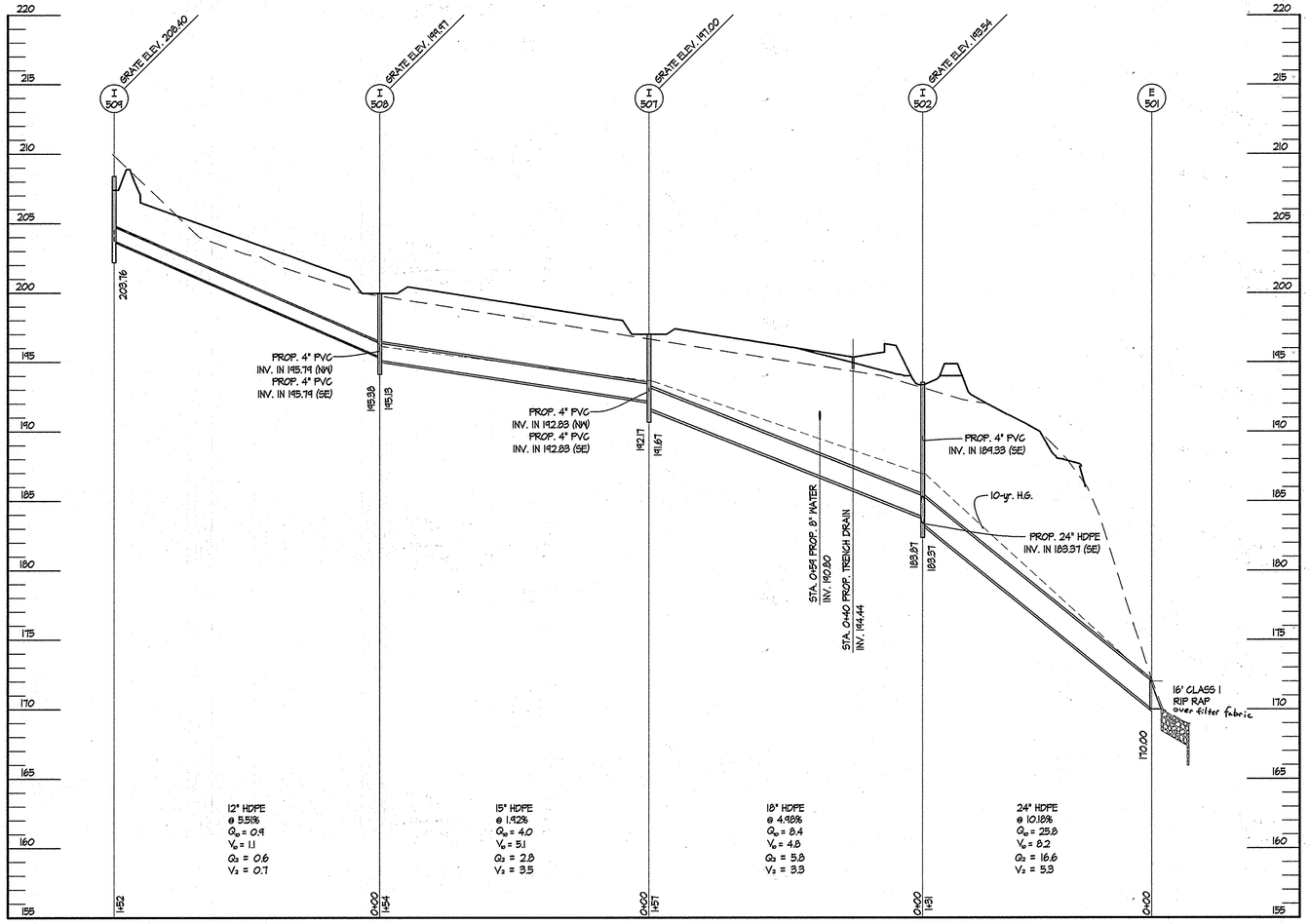
SCALE: AS SHOWN

C2.06

SHEET 20 OF 67

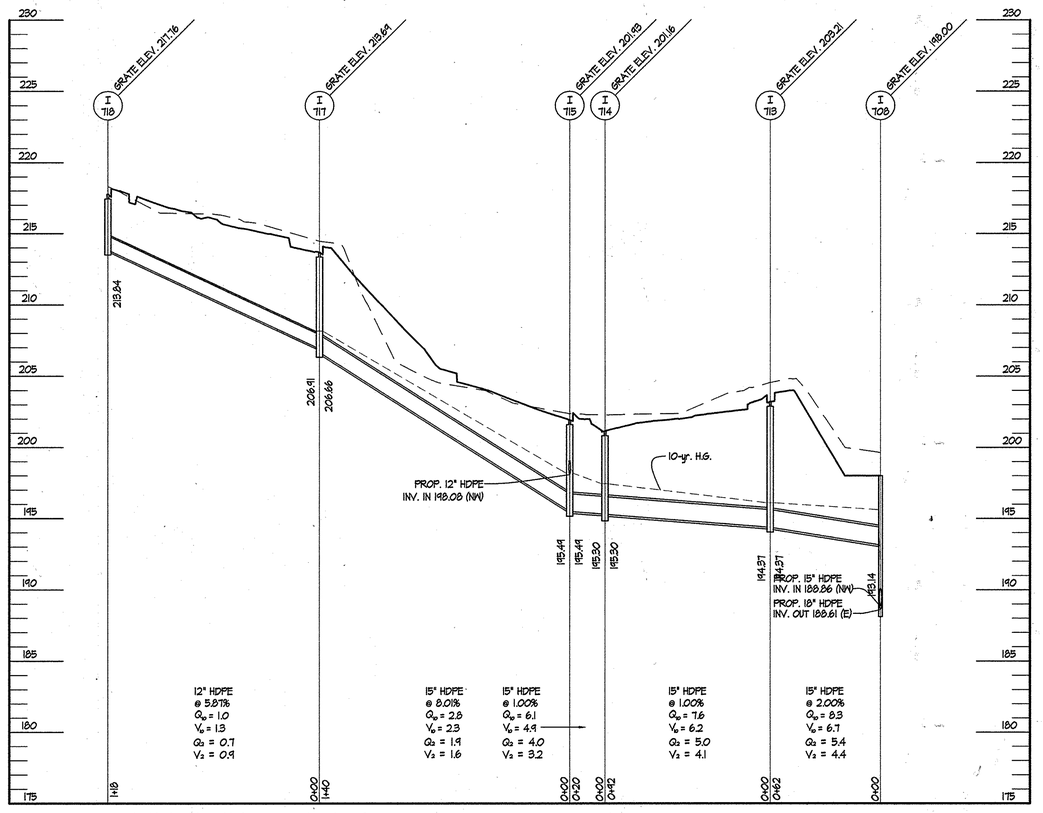
SDP-14-033

Z:\NOVO\540-Troy Park Phase II Site Development Plan\Dwg\C2.06 Site Details.dwg-Layout Aug 13, 2014 12:18pm JLT



1 PROFILE I-509 TO E-501

SCALES: HORIZ. 1" = 40
VERT. 1" = 5'



2 PROFILE I-718 TO I-708

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/9/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-12-14

ADDRESS / PERMIT INFORMATION
PARCEL 194, 545, 542, 336, 190, 195, 139 LOT A-21, 195 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5171 / F.414, L.10938 / F.297, L.12305 / F.340, L.5788 / F.600, L.5541 / F.78, L.4693 / F.497, L.6153 / F.840, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6062.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
16315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — No. 10144 — REGISTERED PROFESSIONAL ENGINEER — 8-14-2014

I HEREBY CERTIFY THAT THESE DRAWINGS 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. 10144, EXPIRATION DATE: 09/09/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

STORM DRAIN PROFILES

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

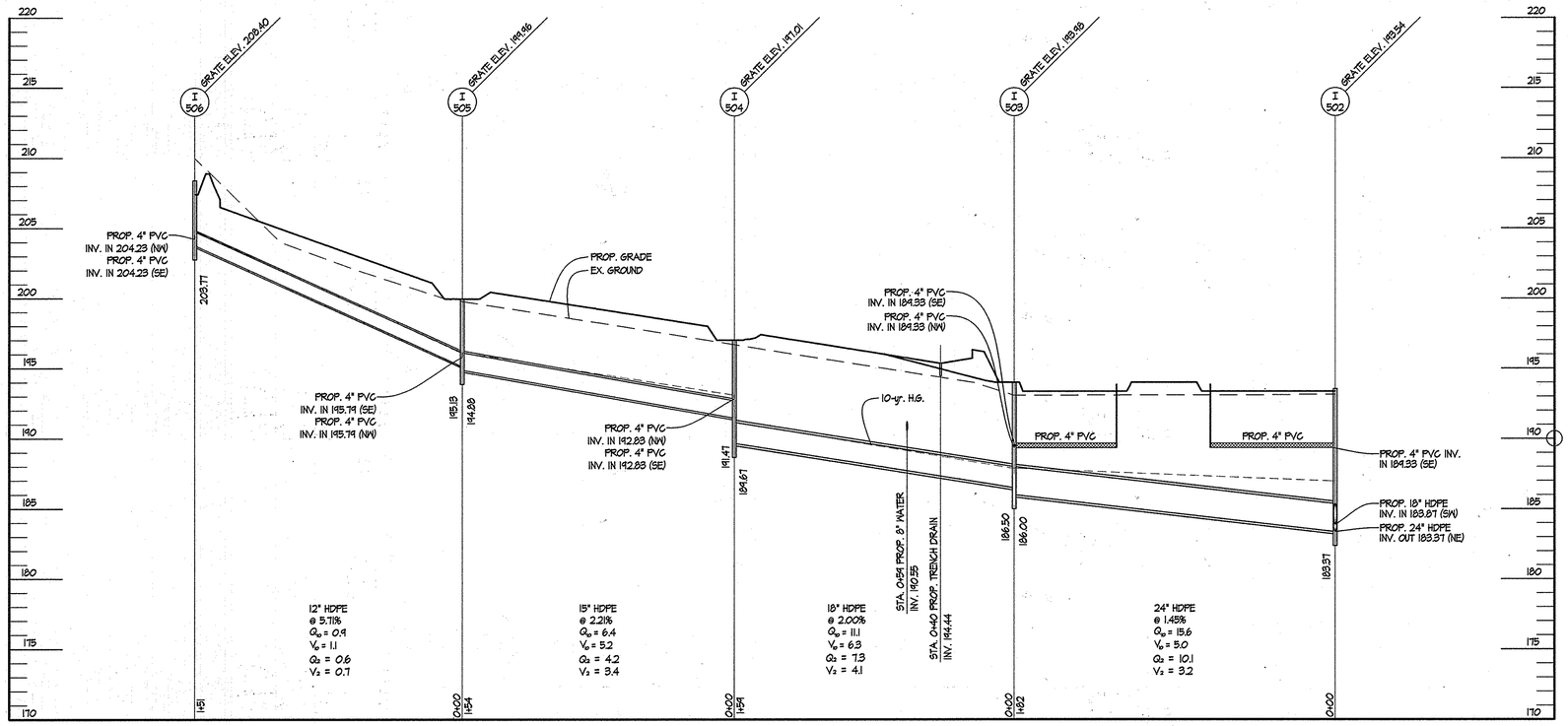
SCALE: AS SHOWN

C3.01

SHEET 21 OF 67

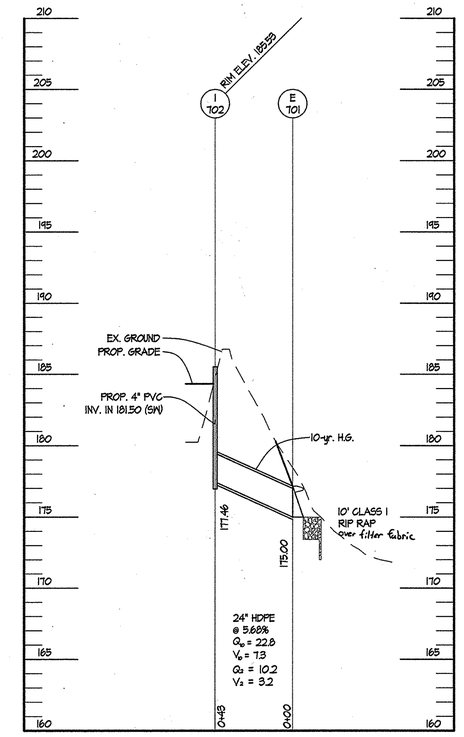
SDP-14-033

Z:\JOBS\2042-Troy Park, Phase II Site Development Plan\Dwg\C3.01 Storm Drain Profiles.dwg-Layout1 Aug 14, 2014 03:08pm JLT



1 PROFILE I-506 TO I-502

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'



2 PROFILE I-702 TO E-701

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 3/18/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 545, 542, 336, 140, 185, 195 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.577 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4433 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — REGISTERED PROFESSIONAL ENGINEER — 9-14-2014
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. 16144, EXPIRATION DATE: 08/14/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

STORM DRAIN PROFILES

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

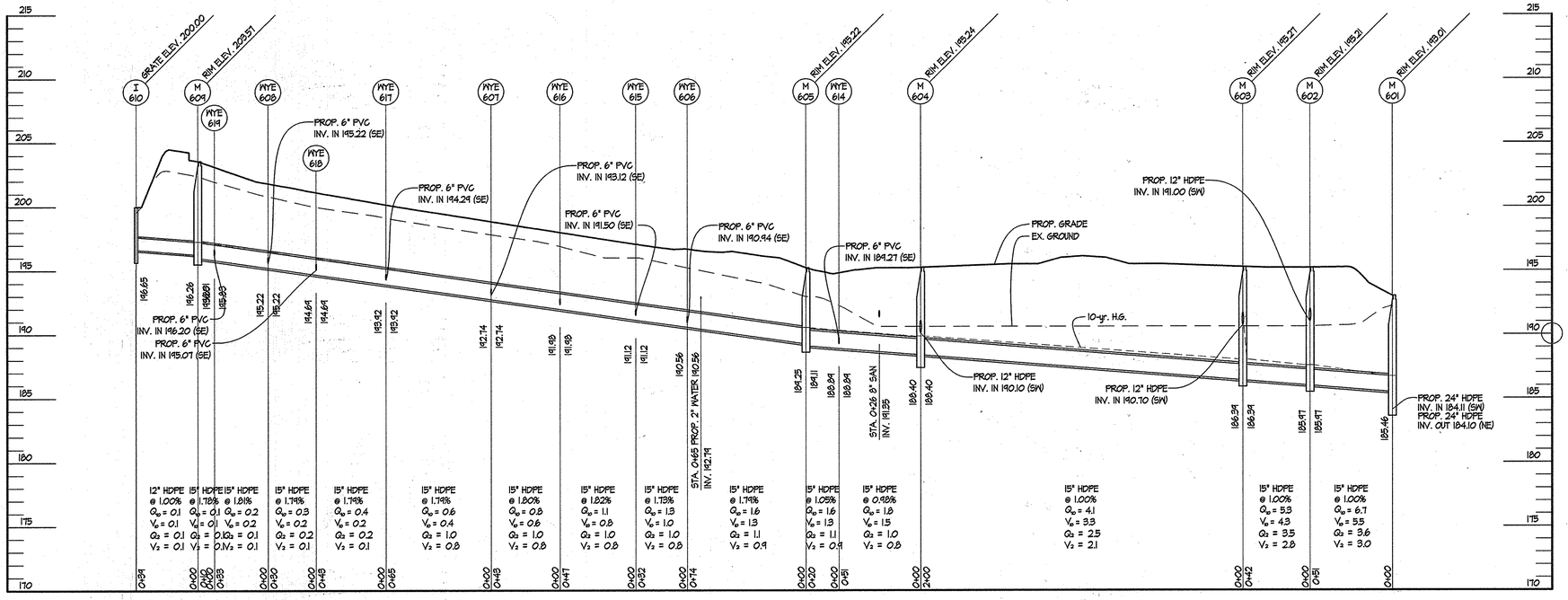
SCALE: AS SHOWN

C3.02

SHEET 22 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C3.02 Storm Drain Profiles.dwg-Layout1 Aug 14, 2014 03:08pm JLT



1 PROFILE I-610 TO E-601

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'

2 PROFILE I-716 TO I-715

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/9/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 563, 842, 936, 950, 955, 1139 LOT A-21, 1135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.917 / F.414, L.10589 / F.1297, L.12205 / F.3940, L.5128 / F.600, L.8341 / F.18, L.4833 / F.437, L.6653 / F.640, L.6135 / F. 640
GRID 11 & 18, ZONE: NT, TAX MAP NO. 27
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2652200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES
incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — PROFESSIONAL ENGINEER
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. 16144, EXPIRATION DATE 09/09/16.
8-14-2014

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

STORM DRAIN PROFILES

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

C3.03

SHEET 23 OF 67

SDP-14-033

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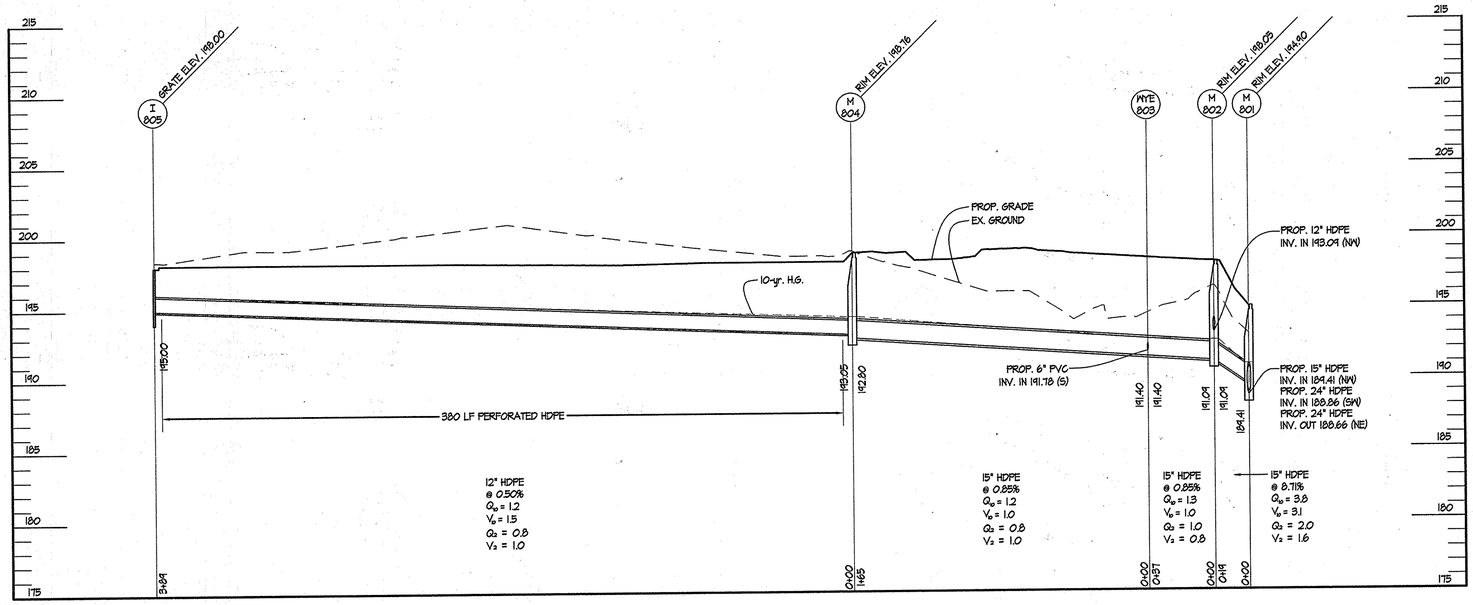
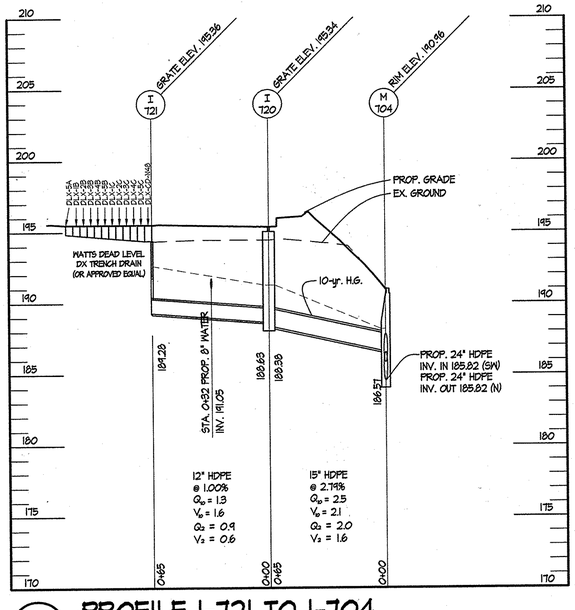


1 PROFILE I-805 TO M-801

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'



2 PROFILE I-721 TO I-704

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/18/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 545, 542, 536, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L577 / F.414, L10585 / F.357, L12205 / F.390, L5783 / F.600,
L5341 / F.78, L4933 / F.437, L6153 / F.690, L6135 / F. 690
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14335 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — PROFESSIONAL ENGINEER — 11-14-2014
PROFESSIONAL ENGINEER CERTIFICATE
I HEREBY CERTIFY THAT THE PLANS AND SPECIFICATIONS HERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16144, EXPIRATION DATE: 08/14/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

STORM DRAIN PROFILES

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

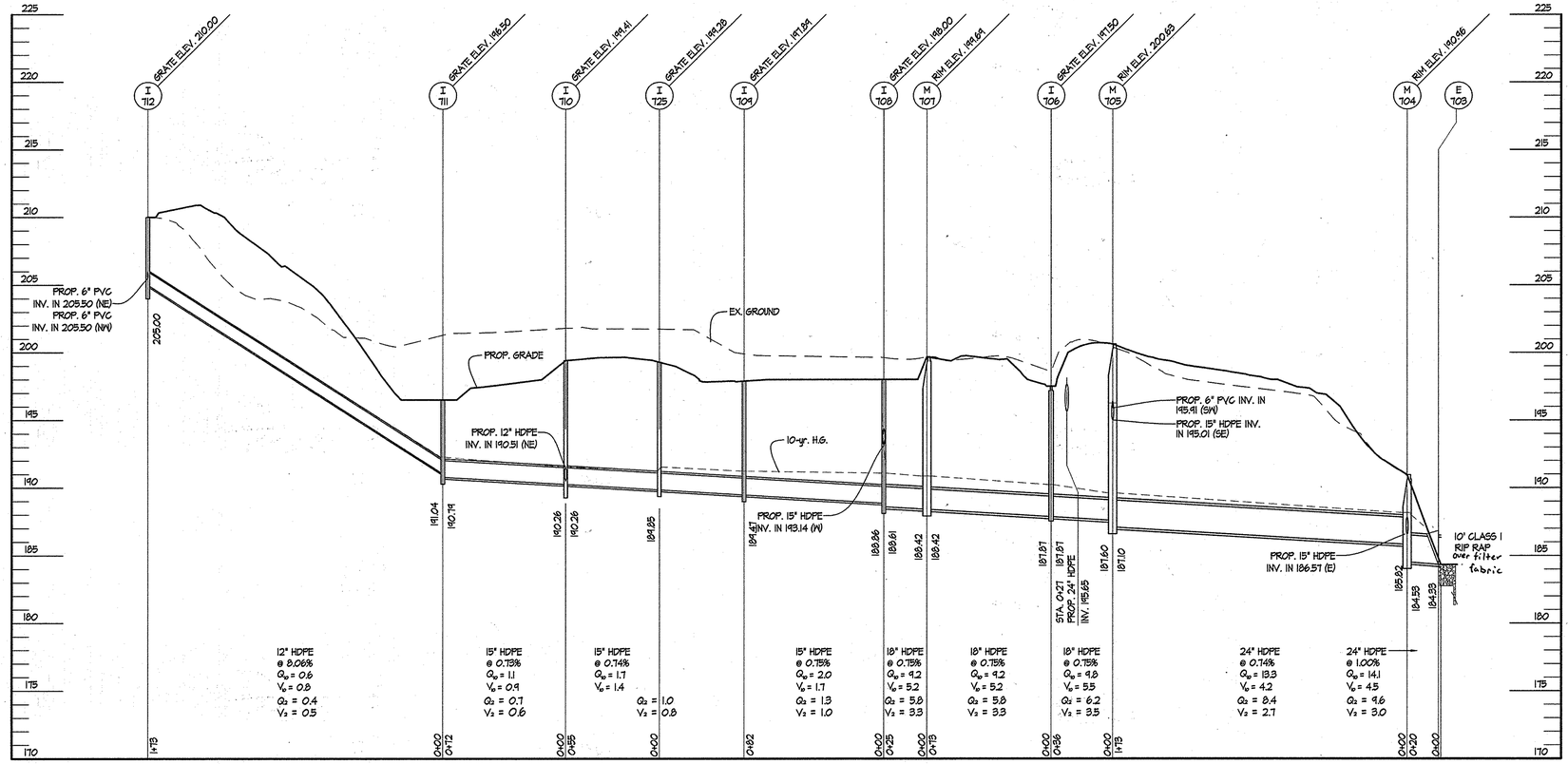
SCALE: AS SHOWN

C3.04

SHEET 24 OF 67

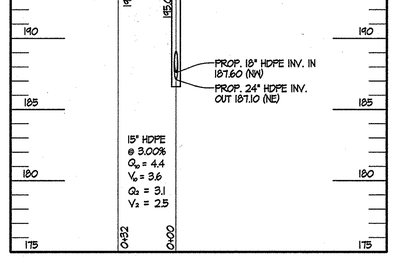
SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C3.04 Storm Drain Profiles.dwg-Layout1 Aug 14, 2014 03:07pm JLT



1 PROFILE I-712 TO E-703

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'



2 PROFILE I-719 TO M-705

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/12/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-12-14

ADDRESS / PERMIT INFORMATION
PARCEL 194, 340, 342, 356, 1160, 1185, 1315 LOT A-21, 1315 LOT A-22
ADDRESS: 6450 MANSION LANE
L.517 / F.444, L.10938 / F.393, L.12305 / F.540, L.5188 / F.600, L.5541 / F.19, L.4933 / F.451, L.4153 / F.640, L.6185 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2552200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES
Incorporated
Comprehensive Land Planning & Site Design Services
16315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT C. EDWARDS — No. 10144 — REGISTERED PROFESSIONAL ENGINEER
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. 10144, EXPIRATION DATE: 09/19/15.
8-14-2014

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

STORM DRAIN PROFILES

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

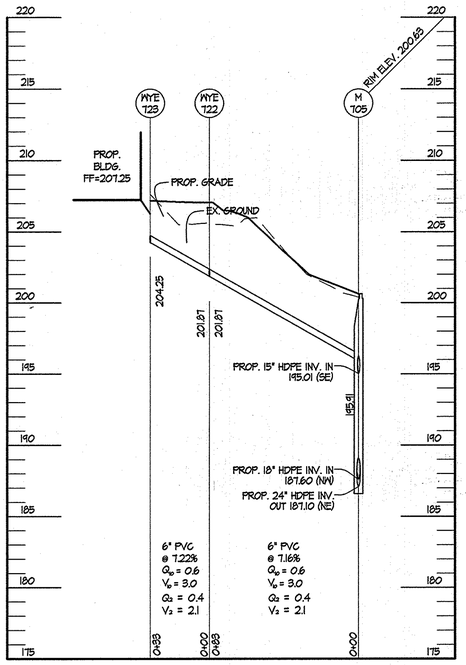
SCALE: AS SHOWN

C3.05

SHEET 25 OF 67

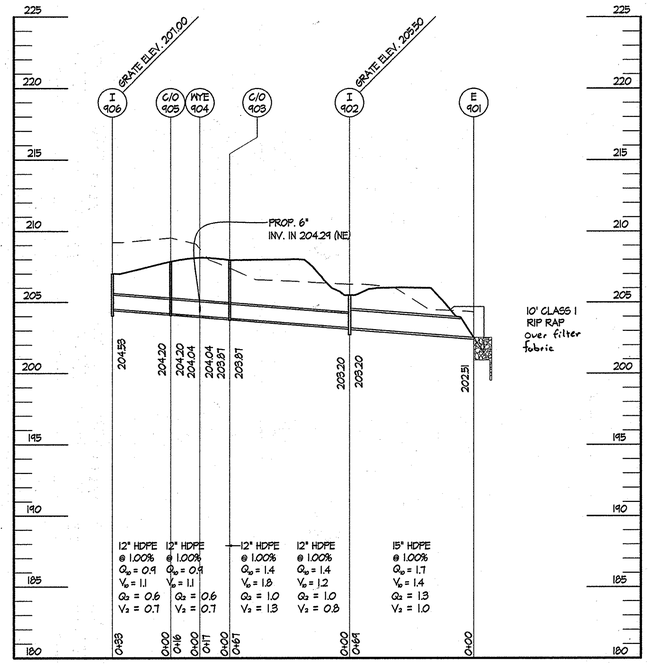
SDP-14-033

Z:\10\10243-Troy Park Phase II Site Development Plan\Dwg\C3.05 Storm Drain Profiles.dwg-Layout1 Aug 14, 2014 03:07pm JLT



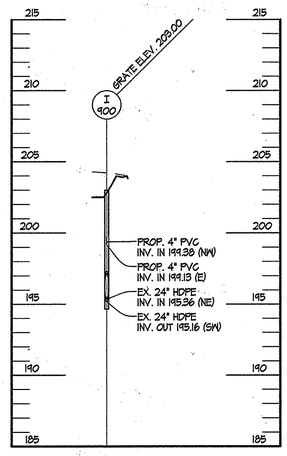
1 PROFILE PAVILION TO M-705

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'



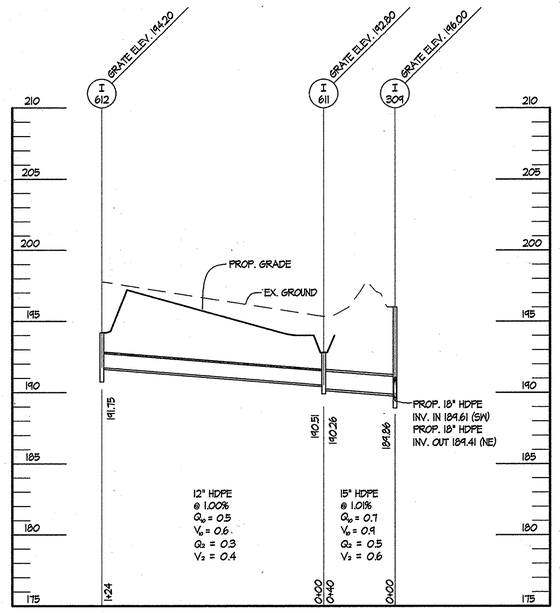
2 PROFILE I-906 TO E-901

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'



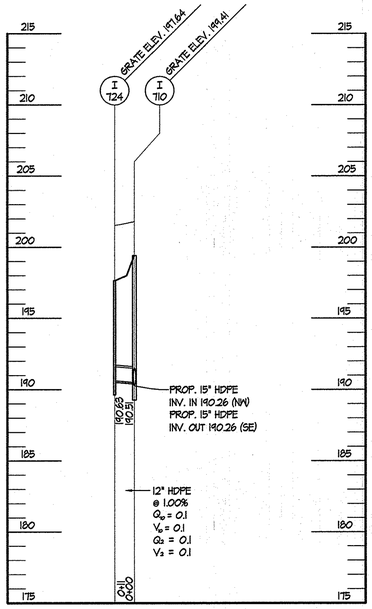
3 PROFILE I-900

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'



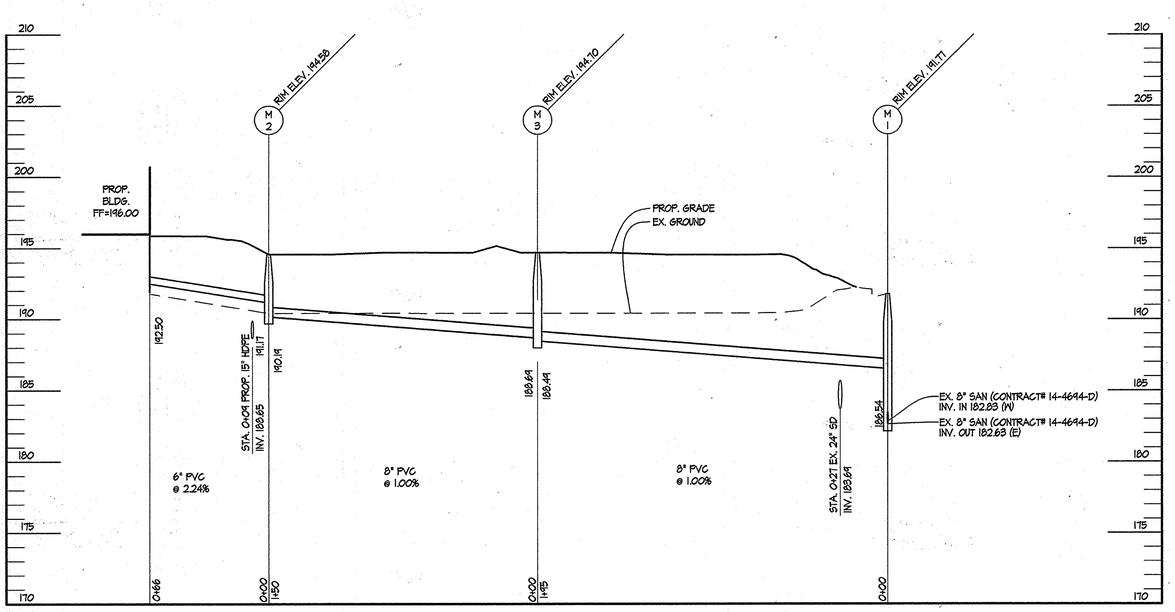
4 PROFILE I-612 to ex. I-309

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'



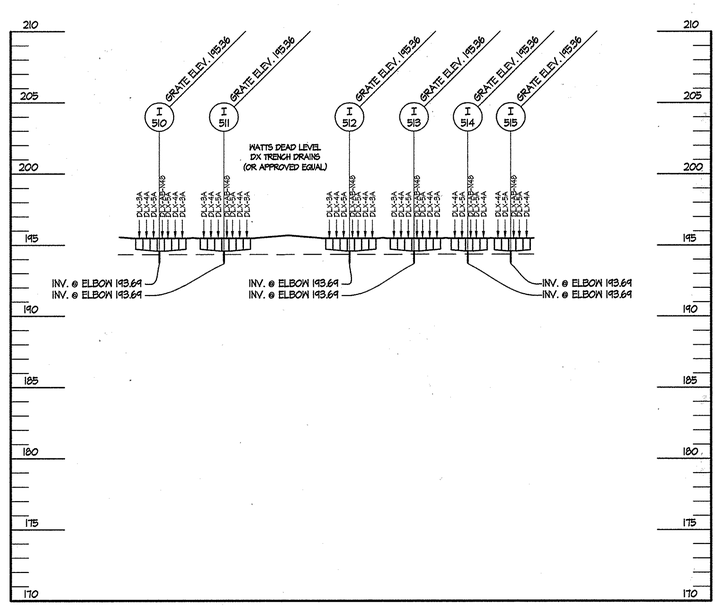
5 PROFILE I-724 to I-710

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'



6 SANITARY PROFILE BLDG. TO MH-1

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'



7 TRENCH DRAIN PROFILES

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/15/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.7.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9.18.14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 545, 342, 336, 190, 185, 135 LOT A-21, 185 LOT A-22
ADDRESS: 6450 MARSHON LANE
L.577 / F.414, L.10585 / F.381, L.12205 / F.340, L.5783 / F.600, L.8541 / F.18, L.4638 / F.451, L.4183 / F.450, L.6135 / F. 640
GRID 17 & 18, 2ND&3RD, M-1, TAX MAP NO. 27
1st ELECTION DISTRICT, CENSUS TRACT 6072.02
WATER CODE: 4000, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
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STATE OF MARYLAND — ALBERT F. EDWARDS — PROFESSIONAL ENGINEER
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. 18144, EXPIRATION DATE: 09/19/16.
9/11/2014

BY	NO.	REVISION	DATE

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

STORM DRAIN & SANITARY SEWER PROFILES

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
C3.06
SHEET 26 OF 67

SDP-14-033

Z:\01\0043-Troy Park, Phase II-Site Development Plan\Dwg\3.06 Storm Drain Profiles.dwg Layout: Aug 14, 2014 09:07pm JLT

1 PROFILE I-621 TO I-603

SCALES: HORIZ. 1" = 40'
VERT. 1" = 5'

STRUCTURE TABLE

STRUCTURE #	STRUCTURE TYPE	TOP ELEV.	INV. IN	INV. OUT	COORDINATES
I-501	24" HDPE END SECTION	172.25	24" HDPE (SW) 170.00		N: 557,071.03 E: 1,380,761.99
I-502	24" NYLOPLAST DRAIN BASIN WITH DOMED GRATE*	193.54	24" HDPE (SE) 183.37 18" HDPE (SW) 183.87 4" PVC (SE) 189.33	24" HDPE (NE) 183.37	N: 556,993.97 E: 1,380,655.73
I-503	24" NYLOPLAST DRAIN BASIN WITH DOMED GRATE*	193.98	18" HDPE (SW) 186.50 4" PVC (SE) 189.33 4" PVC (NW) 189.33	24" HDPE (NW) 186.00	N: 556,832.11 E: 1,380,738.47
I-504	24" NYLOPLAST DRAIN BASIN WITH DOMED GRATE*	197.01	15" HDPE (SW) 191.47 4" PVC (NW) 192.83 4" PVC (SE) 192.83	18" HDPE (NE) 189.67	N: 556,747.91 E: 1,380,604.11
I-505	24" NYLOPLAST DRAIN BASIN WITH DOMED GRATE*	199.96	12" HDPE (SW) 195.13 4" PVC (SE) 195.79 4" PVC (NW) 195.79	15" HDPE (NE) 194.88	N: 556,678.39 E: 1,380,466.56
I-506	24" NYLOPLAST DRAIN BASIN WITH DOMED GRATE*	208.40	4" PVC (NW) 204.23 4" PVC (SE) 204.23	12" HDPE (NE) 203.77	N: 556,610.08 E: 1,380,331.41
I-507	24" NYLOPLAST DRAIN BASIN WITH DOMED GRATE*	197.00	15" HDPE (SW) 192.17 4" PVC (NW) 192.83 4" PVC (SE) 192.83	18" HDPE (NE) 191.67	N: 556,922.79 E: 1,380,516.10
I-508	24" NYLOPLAST DRAIN BASIN WITH DOMED GRATE*	199.97	4" PVC (NW) 195.79 4" PVC (SE) 195.79 12" HDPE (SW) 195.38	15" HDPE (NE) 195.13	N: 556,853.89 E: 1,380,378.24
I-509	24" NYLOPLAST DRAIN BASIN WITH DOMED GRATE*	208.40	4" PVC (NW) 204.22 4" PVC (SE) 203.71	12" HDPE (NE) 203.76	N: 556,785.88 E: 1,380,242.18
I-510	WATTS DEAD LEVEL DX TRENCH DRAIN WITH DI-ADA DUCTILE IRON GRATE*	194.95		6" PVC (NE) 193.69	N: 556,947.00 E: 1,380,634.72
I-511	WATTS DEAD LEVEL DX TRENCH DRAIN WITH DI-ADA DUCTILE IRON GRATE*	194.95		6" PVC (NE) 193.69	N: 556,914.84 E: 1,380,650.90
I-512	WATTS DEAD LEVEL DX TRENCH DRAIN WITH DI-ADA DUCTILE IRON GRATE*	194.95		6" PVC (NE) 193.69	N: 556,852.31 E: 1,380,682.37
I-513	WATTS DEAD LEVEL DX TRENCH DRAIN WITH DI-ADA DUCTILE IRON GRATE*	194.95		6" PVC (NE) 193.69	N: 556,820.15 E: 1,380,698.55
I-514	WATTS DEAD LEVEL DX TRENCH DRAIN WITH DI-ADA DUCTILE IRON GRATE*	194.95		6" PVC (NE) 193.69	N: 556,793.36 E: 1,380,712.03
I-515	WATTS DEAD LEVEL DX TRENCH DRAIN WITH DI-ADA DUCTILE IRON GRATE*	194.95		6" PVC (NE) 193.69	N: 556,771.92 E: 1,380,722.82
I-601	HO.CO. G-5.12 48" PRECAST MANHOLE	193.01	24" HDPE (SW) 184.11 15" HDPE (NW) 185.46	24" HDPE (NE) 184.10	N: 556,373.30 E: 1,380,973.31
I-602	HO.CO. G-5.12 48" PRECAST MANHOLE	195.21	15" HDPE (NW) 185.97 12" HDPE (SW) 191.00	15" HDPE (SE) 185.97	N: 556,418.98 E: 1,380,950.24
I-603	HO.CO. G-5.12 48" PRECAST MANHOLE	195.27	15" HDPE (NW) 186.39 12" HDPE (SW) 190.70	15" HDPE (SE) 186.39	N: 556,456.28 E: 1,380,931.47
I-604	HO.CO. G-5.12 48" PRECAST MANHOLE	195.24	15" HDPE (NW) 188.40 12" HDPE (SW) 190.10	15" HDPE (SE) 188.40	N: 556,635.19 E: 1,380,841.44
I-605	HO.CO. G-5.12 48" PRECAST MANHOLE	195.22	15" HDPE (SW) 189.25	15" HDPE (SE) 189.11	N: 556,698.86 E: 1,380,809.40

STRUCTURE TABLE

STRUCTURE #	STRUCTURE TYPE	TOP ELEV.	INV. IN	INV. OUT	COORDINATES
I-609	HO.CO. G-5.12 48" PRECAST MANHOLE	203.57	12" HDPE (SE) 196.26	15" HDPE (NE) 196.01	N: 556,530.38 E: 1,380,471.17
I-610	24" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	200.00		12" HDPE (NW) 196.65	N: 556,496.22 E: 1,380,488.45
I-611	24" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	192.80	12" HDPE (W) 190.51	15" HDPE (SE) 190.26	N: 556,292.94 E: 1,380,751.41
I-612	24" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	194.20		12" HDPE (E) 191.75	N: 556,253.23 E: 1,380,634.16
I-613	24" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	195.79	12" HDPE (NW) 192.75	12" HDPE (NE) 192.75	N: 556,276.31 E: 1,380,568.70
I-621	24" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	195.36		12" HDPE (SE) 193.26	N: 556,315.61 E: 1,380,536.71
I-701	24" HDPE END SECTION	177.25	24" HDPE (S) 175.00		N: 557,187.32 E: 1,380,650.18
I-702	24" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	185.53	4" PVC (SW) 181.50	24" HDPE (N) 177.46	N: 557,146.58 E: 1,380,635.62
I-703	24" HDPE END SECTION	186.58		24" HDPE (S) 184.33	N: 557,102.30 E: 1,380,492.18
I-704	HO.CO. G-5.12 48" PRECAST MANHOLE	190.96	24" HDPE (SW) 185.82 15" HDPE (E) 186.57 24" HDPE (N) 184.53		N: 557,082.66 E: 1,380,494.92
I-705	HO.CO. G-5.12 48" PRECAST MANHOLE	200.63	18" HDPE (NW) 187.60 15" HDPE (SE) 195.01 6" PVC (SW) 195.91	24" HDPE (NE) 187.10	N: 557,002.30 E: 1,380,341.80
I-706	18" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	197.50	18" HDPE (SW) 187.87	18" HDPE (SE) 187.87	N: 557,027.38 E: 1,380,315.73
I-707	HO.CO. G-5.12 48" PRECAST MANHOLE	199.69	18" HDPE (W) 188.42	18" HDPE (NE) 188.42	N: 556,978.88 E: 1,380,261.20
I-708	HO.CO. G-5.12 48" PRECAST MANHOLE	198.00	15" HDPE (NW) 188.86 15" HDPE (W) 193.14	18" HDPE (E) 188.61	N: 556,983.79 E: 1,380,236.33
I-709	24" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	197.89	15" HDPE (NW) 189.47	15" HDPE (SE) 189.47	N: 557,039.66 E: 1,380,176.20
I-710	24" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	199.41	15" HDPE (NW) 190.26 12" HDPE (NE) 190.51	15" HDPE (SE) 190.26	N: 557,103.24 E: 1,380,092.95
I-711	24" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	196.50	12" HDPE (NW) 191.04	15" HDPE (SE) 190.79	N: 557,160.61 E: 1,380,049.12
I-712	24" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	210.00	6" PVC (NE) 205.50 6" PVC (NW) 205.50	12" HDPE (SE) 205.00	N: 557,286.73 E: 1,379,930.45
I-713	HO.CO. D-4.37 SINGLE WR INLET PRECAST	203.21	15" HDPE (NW) 194.37	15" HDPE (E) 194.37	N: 556,996.79 E: 1,380,176.07
I-714	HO.CO. D-4.37 SINGLE WR INLET PRECAST	201.16	15" HDPE (NW) 195.30	15" HDPE (SE) 195.30	N: 557,063.60 E: 1,380,112.49

STRUCTURE TABLE

STRUCTURE #	STRUCTURE TYPE	TOP ELEV.	INV. IN	INV. OUT	COORDINATES
I-715	HO.CO. D-4.37 SINGLE WR INLET PRECAST	201.93	12" HDPE (NW) 198.08 15" HDPE (SW) 195.49	15" HDPE (SE) 195.49	N: 557,073.96 E: 1,380,095.73
I-716	HO.CO. D-4.37 SINGLE WR INLET PRECAST	206.68		12" HDPE (SE) 203.18	N: 557,126.21 E: 1,380,008.18
I-717	HO.CO. D-4.37 SINGLE WR INLET PRECAST	213.69	12" HDPE (NW) 206.91	15" HDPE (NE) 206.66	N: 557,005.79 E: 1,379,973.98
I-718	HO.CO. D-4.37 SINGLE WR INLET PRECAST	217.76		12" HDPE (SE) 213.84	N: 557,101.36 E: 1,379,904.61
I-719	HO.CO. D-4.37 SINGLE WR INLET PRECAST	199.48		15" HDPE (NW) 195.98	N: 556,974.45 E: 1,380,358.06
I-720	HO.CO. D-4.35 DOUBLE WR INLET PRECAST	195.34	12" HDPE (SE) 188.63	15" HDPE (W) 188.38	N: 557,067.27 E: 1,380,558.06
I-721	WATTS DEAD LEVEL DX TRENCH DRAIN WITH DI-ADA DUCTILE IRON GRATE*	194.37		12" HDPE (NW) 189.28	N: 557,017.11 E: 1,380,599.44
I-724	12" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	197.64		12" HDPE (SW) 190.63	N: 557,112.46 E: 1,380,099.05
I-725	24" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	199.28	15" HDPE (NW) 189.85	15" HDPE (SE) 189.85	N: 557,072.54 E: 1,380,138.66
I-900	24" NYLOPLAST DRAIN BASIN WITH DOMED GRATE*	203.00	24" HDPE (NE) 195.36 4" PVC (NW) 199.38 4" PVC (E) 199.13	24" HDPE (SW) 195.16	N: 556,071.40 E: 1,380,295.60
I-901	15" HDPE END SECTION	203.67	15" HDPE (NW) 202.51		N: 556,094.15 E: 1,380,256.91
I-902	15" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	205.50	12" HDPE (NW) 203.20	15" HDPE (SE) 203.20	N: 556,149.13 E: 1,380,214.61
I-906	12" NYLOPLAST DRAIN BASIN WITH H-10 PEDESTRIAN GRATE*	207.00		12" HDPE (SW) 204.53	N: 556,255.16 E: 1,380,218.42

*OR APPROVED EQUAL

PIPE QUANTITIES

PIPE SIZE/TYPE	QUANTITY
12" HDPE	2,954
15" HDPE	2,152
18" HDPE	907
24" HDPE	1,222
4" PVC	1,215
6" PVC	999

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 5/16/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-8-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.577 / F.414, L.10585 / F.351, L.12205 / F.340, L.5783 / F.600,
L.5341 / F.78, L.4933 / F.437, L.6153 / F.690, L.6135 / F. 690
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
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STATE OF MARYLAND — ALBERT F. EDWARDS — 16144 — PROFESSIONAL ENGINEER — 8-14-2014

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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

STORM DRAIN & SANITARY SEWER PROFILES

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

C3.07

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C3.07 Storm Drain Profiles.dwg-Layout1 Aug 14, 2014 03:06pm JLT

VICINITY MAP

1"=2000'

STORM DRAIN SUMMARY TABLE

STRUCTURE NO.	DRAINAGE AREA (AC)	% IMPERVIOUS	C FACTOR
I - 502	0.67	79%	0.81
I - 503	0.86	77%	0.79
I - 504	0.86	77%	0.79
I - 505	0.91	80%	0.82
I - 506	0.27	19%	0.37
I - 507	0.73	73%	0.76
I - 508	0.62	73%	0.76
M - 603	1.05	0%	0.24
M - 604	1.05	0%	0.24
Y - 606	0.02	100%	0.96
Y - 607	0.15	100%	0.96
Y - 608	0.02	100%	0.96
I - 610	0.04	0%	0.24
I - 611	0.29	17%	0.36
I - 612	0.28	7%	0.29
I - 618	0.29	7%	0.29
I - 702	0.54	7%	0.29
I - 706	0.22	27%	0.44
I - 708	0.12	33%	0.48
I - 709	0.11	55%	0.63
I - 710	0.13	62%	0.68
I - 711	0.29	10%	0.31
I - 712	0.10	70%	0.74
I - 713	0.17	59%	0.66
I - 714	0.38	45%	0.56
I - 715	0.27	52%	0.61
I - 716	0.48	54%	0.63
I - 717	0.28	86%	0.86
I - 718	0.17	65%	0.71
I - 719	0.54	100%	0.96
I - 720	0.17	100%	0.96
I - 721	0.16	100%	0.96
M - 802	1.05	0%	0.24
Y - 803	0.06	0%	0.24
M - 804	1.05	0%	0.24
I - 805	0.07	0%	0.24
I - 900	0.23	13%	0.33
I - 902	0.07	43%	0.55
Y - 904	0.07	100%	0.96
I - 906	0.10	30%	0.46

LEGEND

- DRAINAGE DIVIDE
- IMPERVIOUS COVER
- TURF FIELDS

SCALE: 1" = 60'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/4/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

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STATE OF MARYLAND — ROBERT F. EDWARDS — PROFESSIONAL ENGINEER
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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE 08/14/14

BY	NO.	REVISION	DATE

STORM DRAIN DRAINAGE AREA MAP

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957

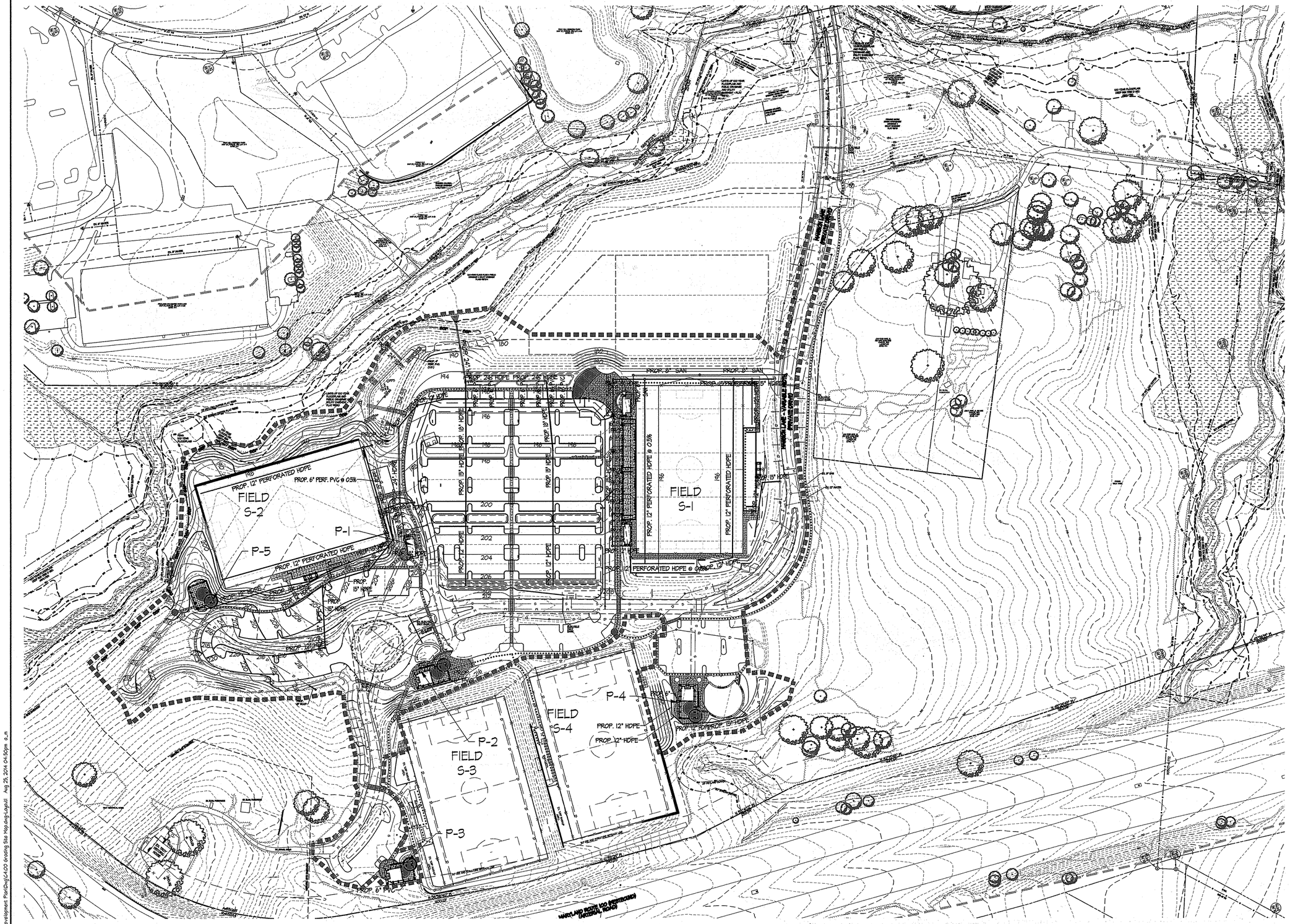
HOWARD COUNTY, MARYLAND

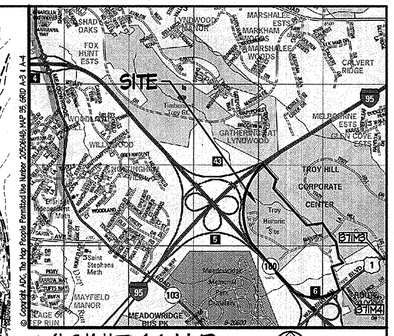
SCALE: 1"=60'

C3.11

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C3.11 Storm Drain DA Map.dwg-Layout1 Aug 13, 2014 12:17pm JLT



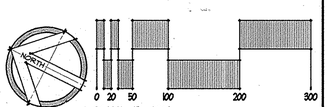


VICINITY MAP 1"=2000'

LEGEND

(THIS LEGEND APPLIES TO THIS DRAWING ONLY)

- PROPERTY LINE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING FOREST BUFFER
- EXISTING TREES
- EXISTING SHRUBS
- EXISTING WALK
- EXISTING ROAD
- EXISTING CURB
- EX. 15" SD — EXISTING STORM DRAIN
- EX. 6" WATER — EXISTING WATER
- EX. 8" SAN — EXISTING SANITARY SEWER
- EX. 2" GAS — EXISTING GAS
- EX. 2" PROPANE — EXISTING PROPANE
- EX. FUEL OIL — EXISTING FUEL OIL
- EX. TELE — EXISTING TELEPHONE
- EX. ELEC — EXISTING ELECTRIC
- EX. ELEC — EXISTING OVERHEAD ELECTRIC
- EXISTING LIGHTING
- EX. COM — EXISTING COMMUNICATIONS
- EX. CATV — EXISTING CABLE TV
- EX. FO — EXISTING FIBER OPTIC
- EX. CWS — EXISTING CHILLED WATER SUPPLY
- EX. CWR — EXISTING CHILLED WATER RETURN
- EX. HWS — EXISTING HOT WATER SUPPLY
- EX. HWR — EXISTING HOT WATER RETURN
- EXISTING FENCE
- EXISTING GUARDRAIL



SCALE: 1" = 100'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR	DATE 9/18/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9.3.14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 140, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5711 / F.414, L.10585 / F.357, L.12205 / F.340, L.5788 / F.600, L.5841 / F.78, L.4438 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES Incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND LIBERTY F. EDWARDS 8-26-14 REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THE DOCUMENTS HERE PREPARED WITHIN THE SCOPE OF MY DIRECTION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18444, EXPIRATION DATE: 08/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

GRADING SITE MAP

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

SCALE: 1"=100'

C4.00

SHEET 29 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C4.00 Grading Site Map.dwg-Layout1 Aug 25, 2014 04:50pm a_m

MATCHLINE - SEE SHEET C4.03

MATCHLINE - SEE SHEET C4.02

HISTORIC SITE EASEMENT

TROY HISTORICAL HOUSE E 1314450 N 557250

EX. BLDG. FOUNDATION

EX. BLDG. FOUNDATION

EX. TROY HISTORIC HOUSE

EX. OAK

EX. OAK

EX. GRAVEL DRIVE

EX. 8" SAN

EX. 8" WATER

EX. 2" WATER

PROP. 12" HDPE

PROP. 15" RCP

EX. 15" SD

EX. 6" WATER

EX. 8" SAN

EX. 8" WATER

EX. 8" SAN

EX. 8" WATER

EX. 2" WATER

EX. 2" GAS

EX. 4" PVC

PROP. PAVILION P-2 FFE 247.00

PROP. 6" PVC

PROP. 4" PVC

EX. TREE MARKUP AREA

EX. TREE MARKUP AREA

EX. ATHLETIC FIELD S-3

SEE SHEET C4.11, DETAIL 1 FOR GRADING INFORMATION IN THIS AREA

SEE SHEET C4.11, DETAIL 2 FOR GRADING INFORMATION IN THIS AREA

50' USE AND STRUCTURE SETBACK LINE

N 36°56'40" W 400.12'

E 1320000

N 564000

E 1314450

N 564000

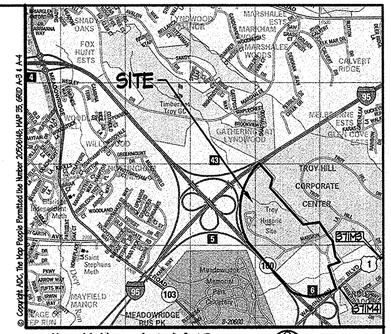
A=550.65'
R=655.44'

RAMP FROM MD ROUTE 100 (WESTBOUND) TO INTERSTATE 95 (NORTHBOUND)

MARYLAND ROUTE 100 (WESTBOUND) (ARTERIAL ROAD)

VICINITY MAP

1"=2000'



© Copyright NGI, The Map Bridge Permitted for Master 2004Mar4 MP 2.850 16:14

LEGEND

(THIS LEGEND APPLIES TO DRAWINGS C4.01 THROUGH C4.06 ONLY)

- PROPERTY LINE
- EXISTING CONTOURS (348 / 350)
- EXISTING TREELINE
- FB — EXISTING FOREST BUFFER
- CRITICAL ROOT ZONE — EXISTING TREES
- EXISTING SHRUBS
- EXISTING WALK
- EXISTING ROAD
- EXISTING CURB
- D — EX. 15" SD — EXISTING STORM DRAIN
- W — EX. 6" WATER — EXISTING WATER
- S — EX. 8" SAN — EXISTING SANITARY SEWER
- G — EX. 2" GAS — EXISTING GAS
- LP — EX. 2" PROPANE — EXISTING PROPANE
- F — EX. FUEL OIL — EXISTING FUEL OIL
- T — EX. TELE — EXISTING TELEPHONE
- E — EX. ELEC — EXISTING ELECTRIC
- OHA — EX. ELEC — EXISTING OVERHEAD ELECTRIC
- EXISTING LIGHTING
- COM — EX. COM — EXISTING COMMUNICATIONS
- CATV — EX. CATV — EXISTING CABLE TV
- FO — EX. FO — EXISTING FIBER OPTIC
- CS — EX. CWS — EXISTING CHILLED WATER SUPPLY
- CR — EX. CWR — EXISTING CHILLED WATER RETURN
- HS — EX. HWS — EXISTING HOT WATER SUPPLY
- HR — EX. HWR — EXISTING HOT WATER RETURN
- X — EXISTING FENCE
- EXISTING GUARDRAIL
- EXISTING FLAGPOLE
- EXISTING BUILDING
- EXISTING WETLANDS
- WB — WETLAND BUFFER
- EXISTING STREAM

NORTH

0 10 20 40 80 120

SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/8/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/8/14

ADDRESS / PERMIT INFORMATION
PARCEL 194, 540, 542, 596, 140, 188, 139 LOT A-21, 195 LOT A-22
ADDRESS: 6450 MARSHALEE LANE
L.5717 / F.414, L.10265 / F.397, L.12226 / F.340, L.9158 / F.600, L.5341 / F.78, L.4833 / F.401, L.4853 / F.640, L.8135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
16315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — JEFFREY L. TURNER — No. 10644 — REGISTERED PROFESSIONAL ENGINEER — 9/8/2014

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. 10644, EXPIRATION DATE: 09/09/16.

DES:	JLT				
DRN:	JLT/AM				
CHK:	AFE				
DATE:	08/14 /14	BY	NO.	REVISION	DATE

GRADING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

C4.01

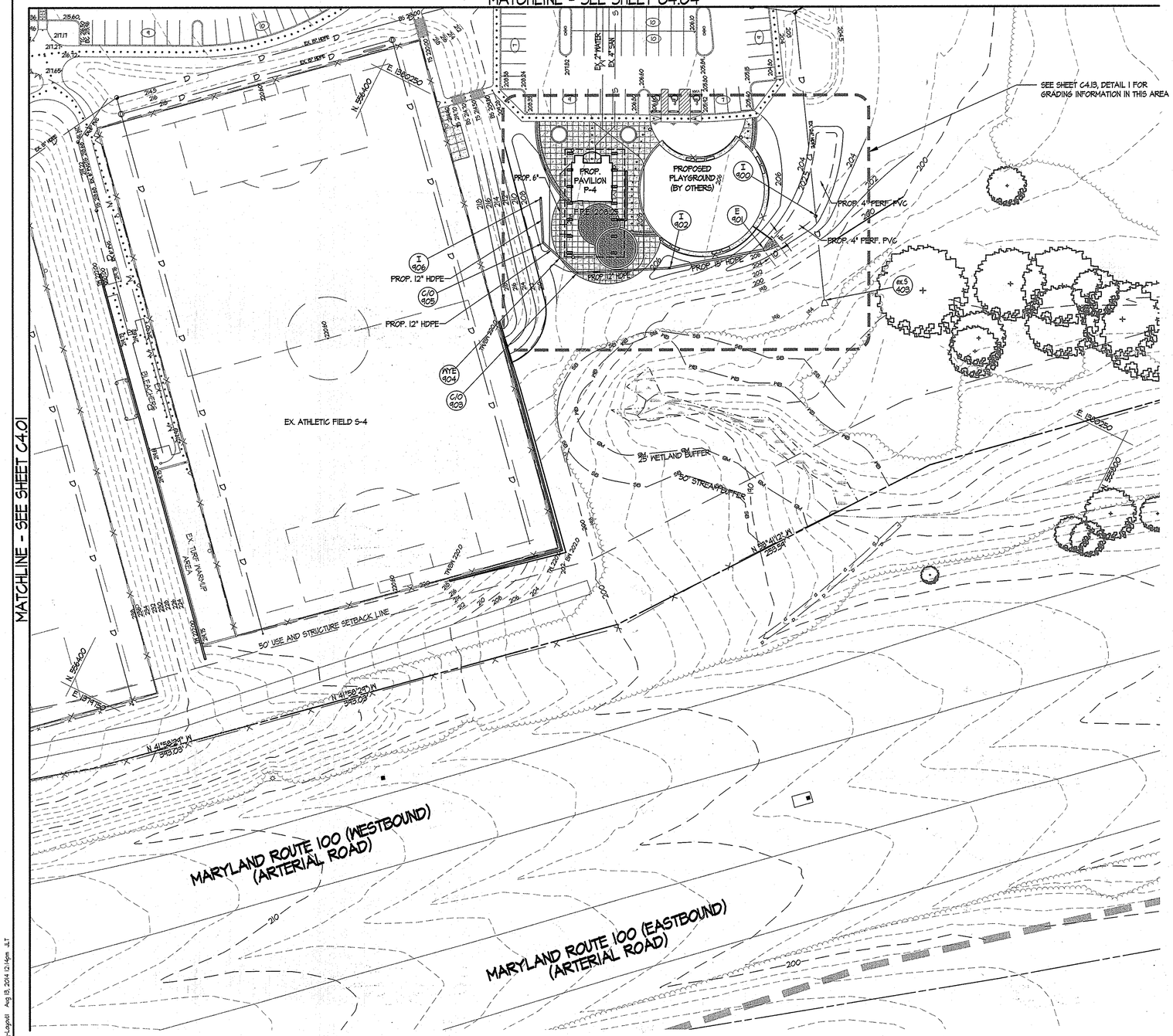
SHEET 30 OF 67

SDP-14-033

Z:\JOBS\2042-Troy Park, Phase II 5&a Development Plan\Dwg\C4.01 Grading Plan.dwg-Layout1 Aug 18, 2014 12:15pm JLT

MATCHLINE - SEE SHEET C4.04

MATCHLINE - SEE SHEET C4.01



NORTH

0 10 20 40 80 120

SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/16/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/8/14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 565, 342, 336, 150, 155, 139 LOT A-21, 135 LOT A-22
ADDRESS: 6460 MARION LANE
L.5711 / F.414, L.12595 / F.251, L.12205 / F.360, L.5785 / F.600, L.5841 / F.78, L.6423 / F.457, L.6853 / F.640, L.6135 / F. 640
GRID 17 & 18 ZONE: M-1 TAX MAP NO. 51
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES Incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — JAMES F. EBERLY — 9-4-2014 — PROFESSIONAL ENGINEER

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. 16144, EXPIRATION DATE: 09/09/16.

DES: JLT					
DRN: JLT/AM					
CHK: AFE					
DATE: 08/14/14	BY	NO.	REVISION	DATE	

GRADING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 — HOWARD COUNTY, MARYLAND

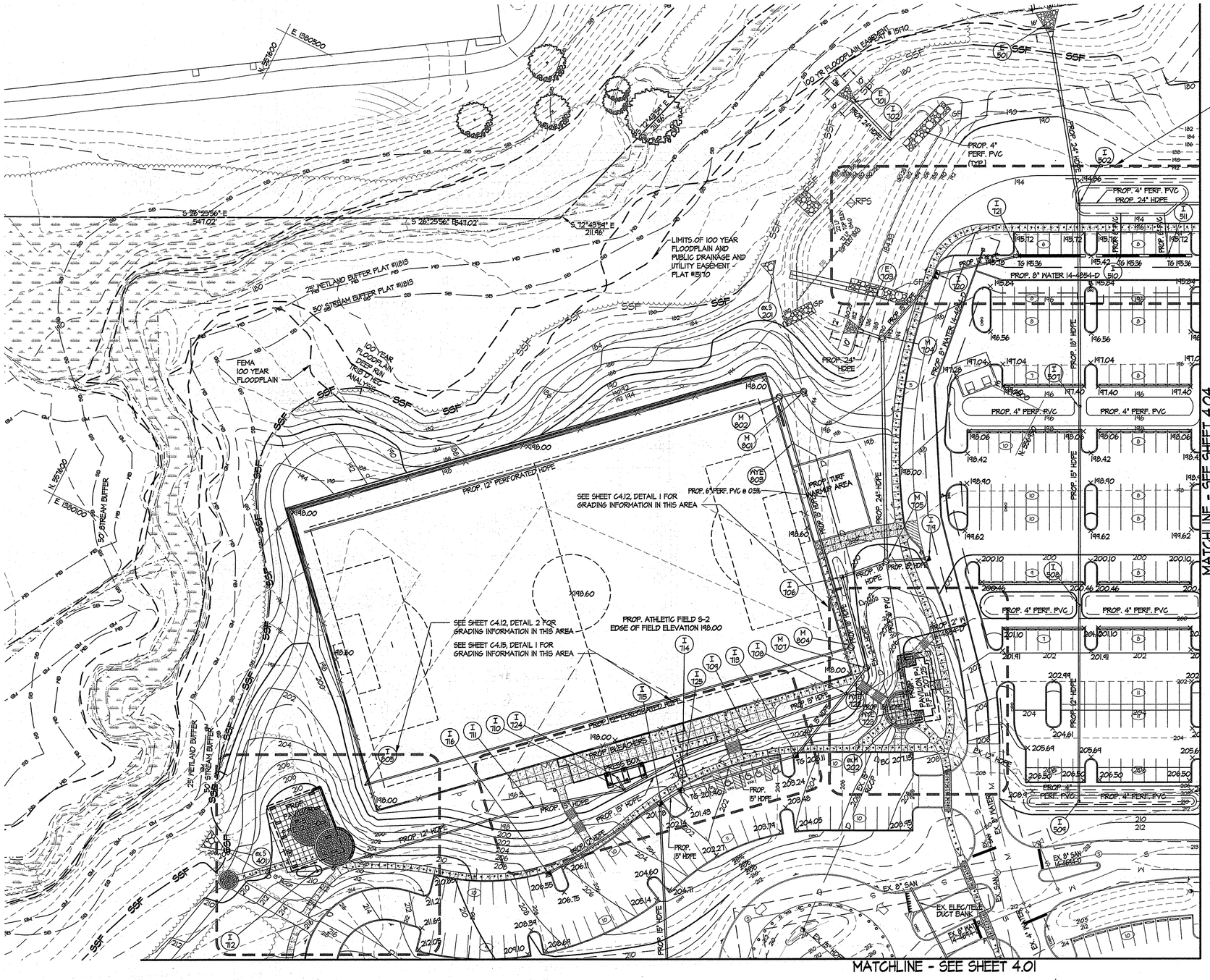
SCALE: 1"=40'

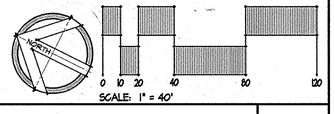
C4.02

SHEET 31 OF 67

SDP-14-033

Z:\WORK\42-Troy Park, Phase II Site Development Plan\Dwg\C4.02 Grading Planning-Layout Aug 13, 2014 12:14pm JLT





APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR	9/18/14 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	9-3-14 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	9-18-14 DATE

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.577 / F.414, L.10585 / F.357, L.12205 / F.540, L.5788 / F.600, L.5341 / F.78, L.4933 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

8/26/14
STATE OF MARYLAND ALBERT F. EDWARDS 16144 PROFESSIONAL ENGINEER
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THE PLAN HEREBY PREPARED IS SUBMITTED FOR THE PURPOSE OF A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

GRADING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

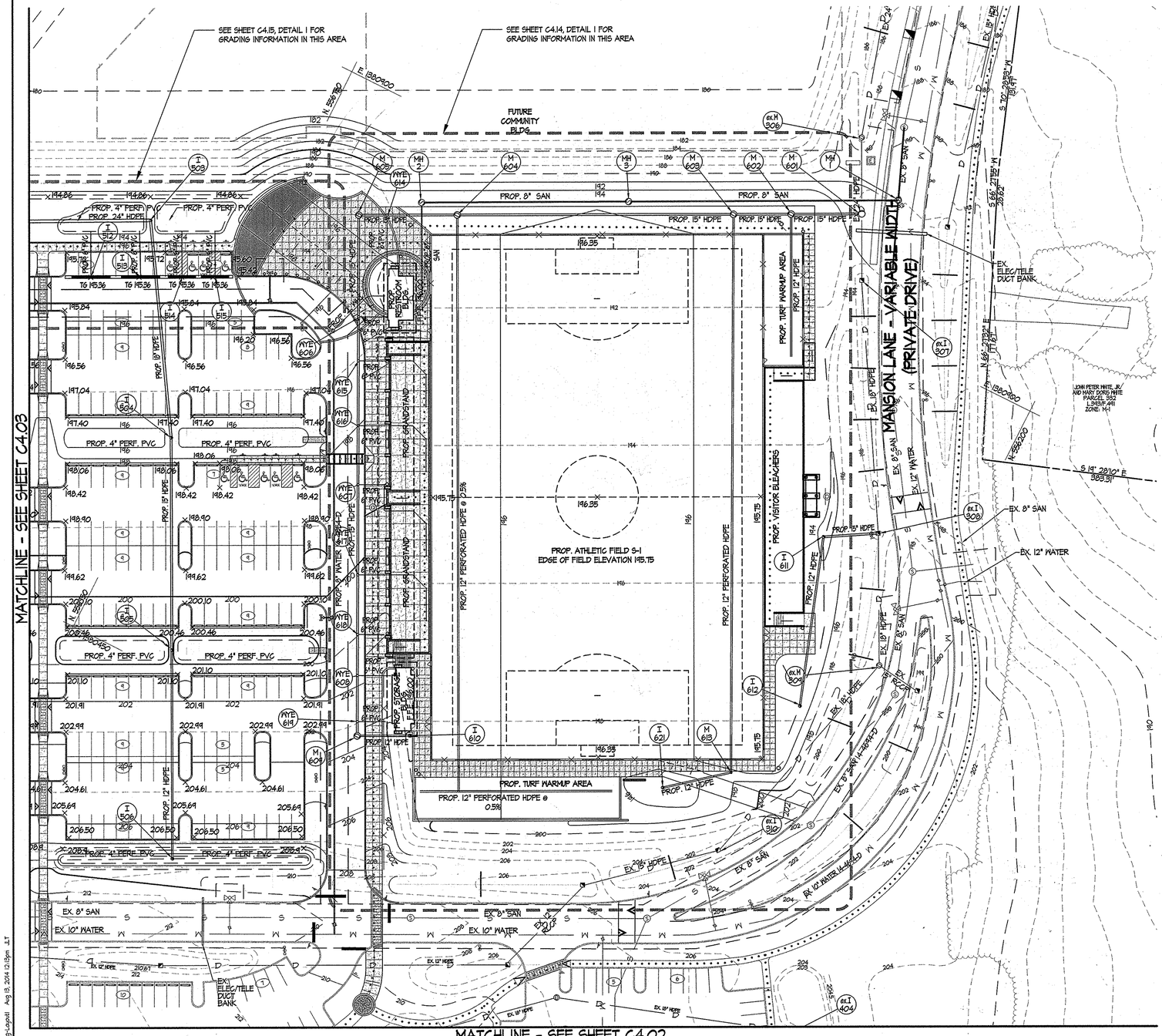
SCALE: 1"=40'

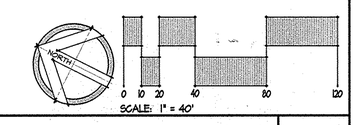
C4.03

SHEET 32 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C4.03 Grading Plan.dwg-Layout1 Aug 25, 2014 04:49pm a_m





APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/16/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — NY — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 545, 542, 536, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5711 / F.414, L.10585 / F.357, L.12205 / F.340, L.5788 / F.600, L.5341 / F.76, L.4938 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES Incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — BERT F. EDWARDS — LICENSED PROFESSIONAL ENGINEER — 9/14/2014
PROFESSIONAL ENGINEER STATE OF MARYLAND
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. 16644, EXPIRATION DATE: 08/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

GRADING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

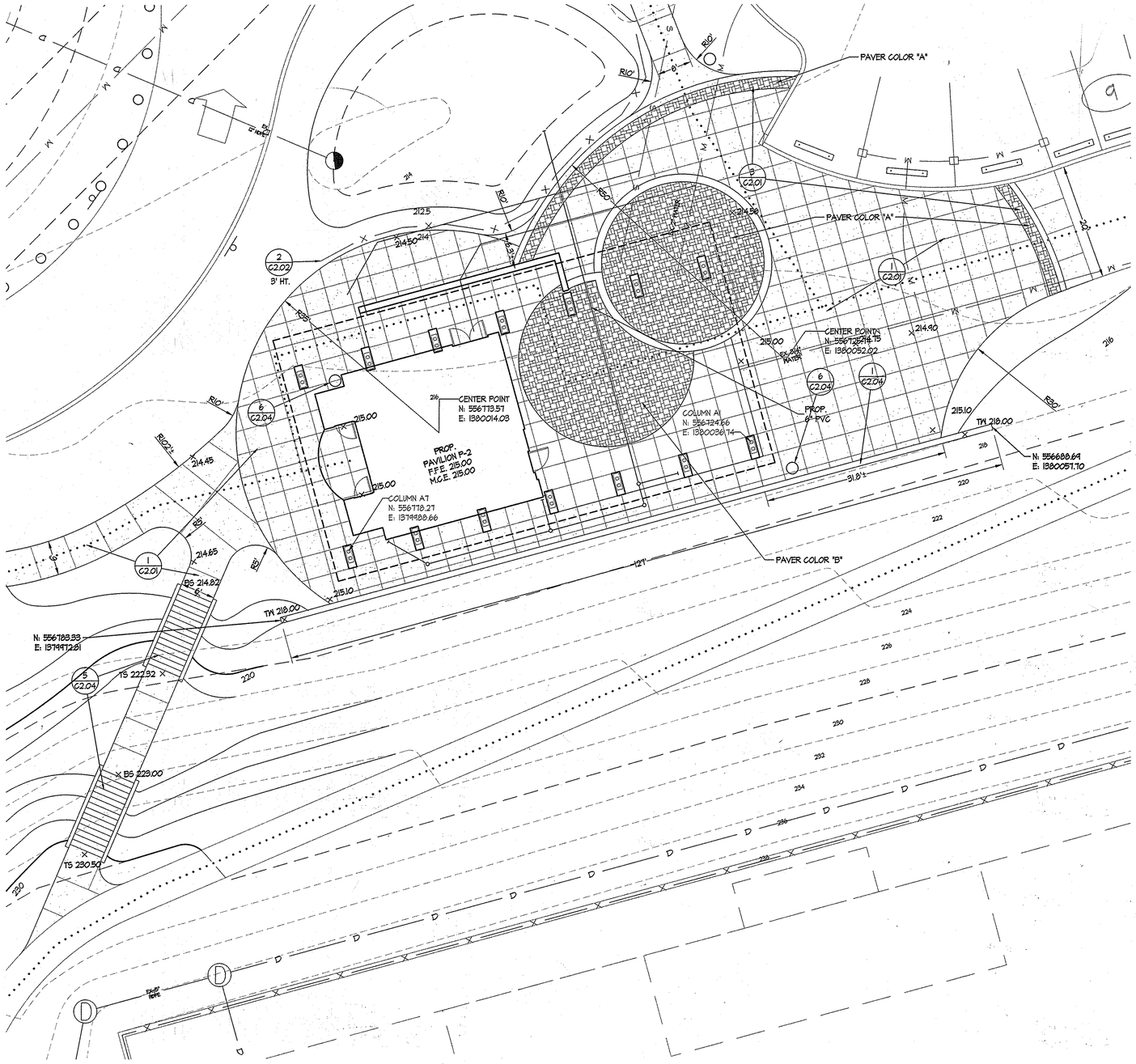
SCALE: 1"=40'

C4.04

SHEET 33 OF 67

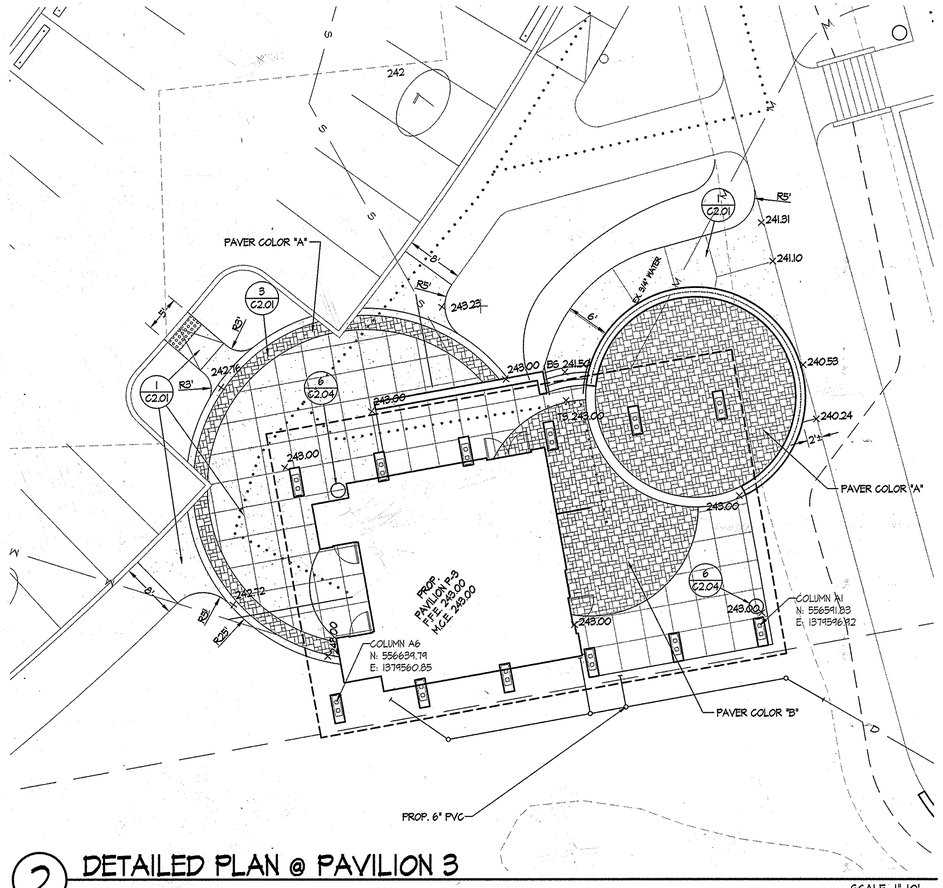
SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C4.04 Grading Plan.dwg-Layout1 Aug 13, 2014 12:13pm JLT



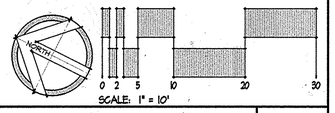
1 DETAIL PLAN @ PAVILION 2

SCALE: 1"=10'



2 DETAILED PLAN @ PAVILION 3

SCALE: 1"=10'



SCALE: 1" = 10'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/16/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.571 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4933 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — PROFESSIONAL ENGINEER — 11/14-2014
PROFESSIONAL ENGINEER 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. 11444, EXPIRATION DATE: 08/14/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

DETAIL LAYOUT & GRADING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

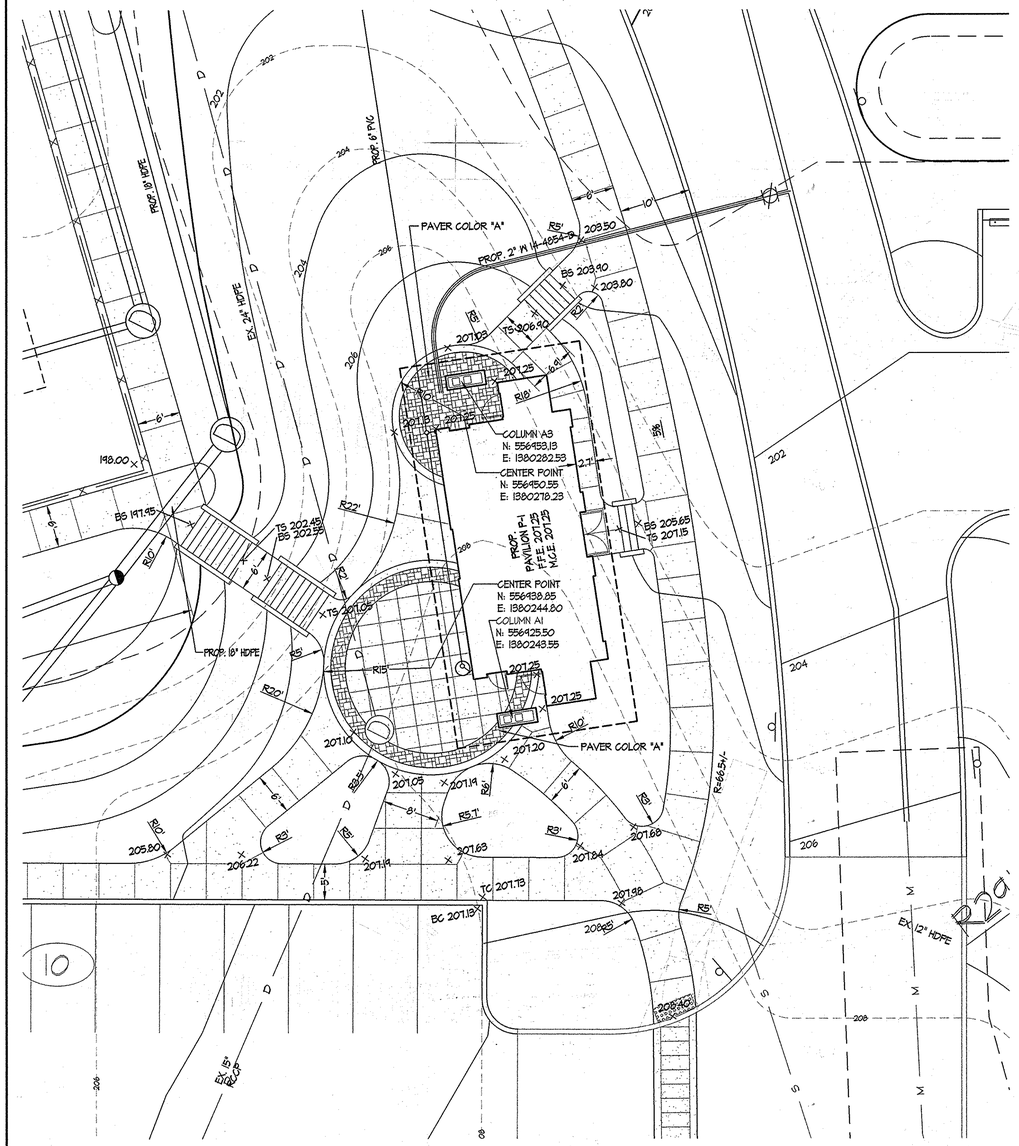
SCALE: 1"=10'

C4.11

SHEET 34 OF 67

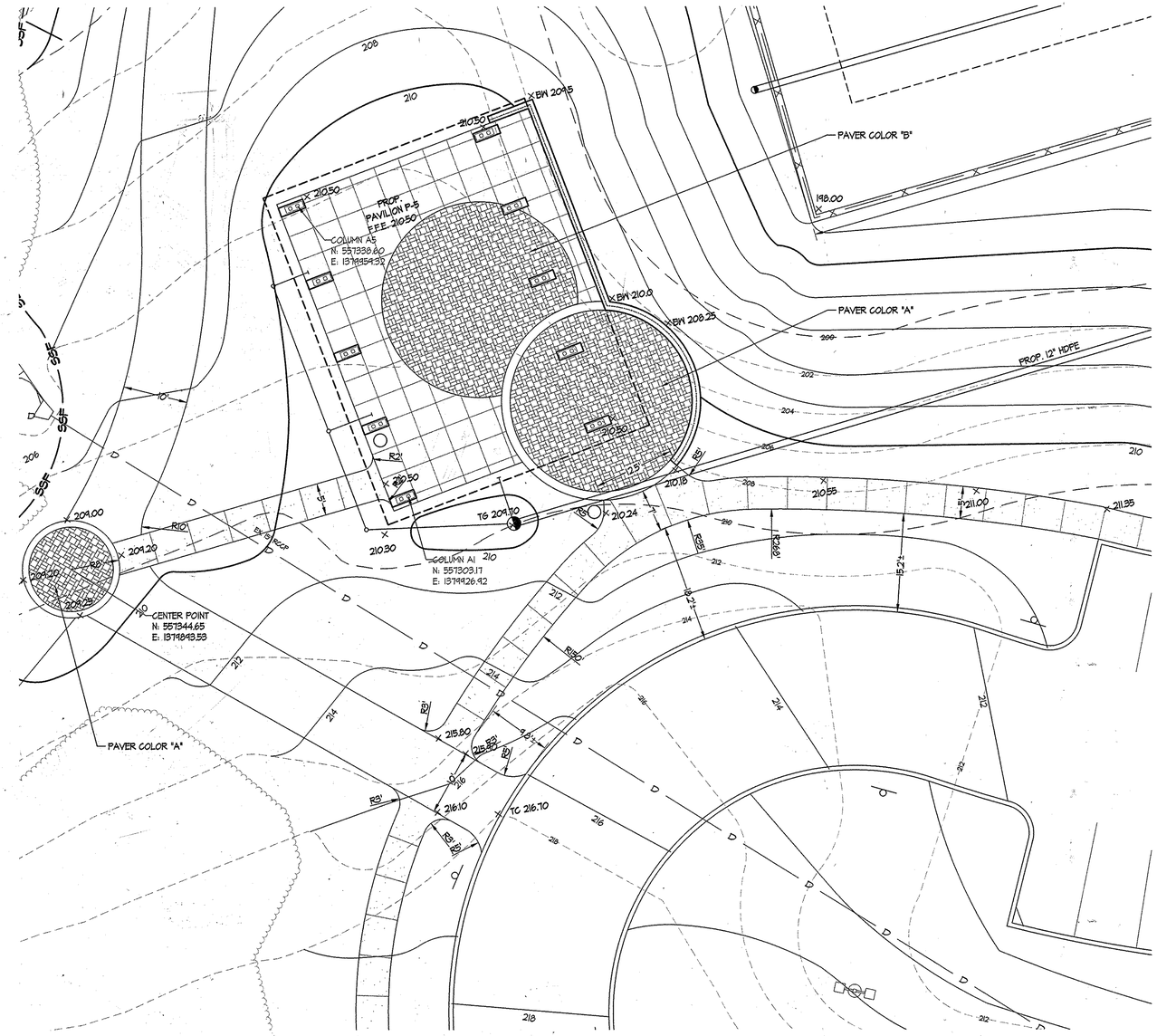
SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C4.11 Detail Layout & Grading Plan.dwg-Layout1 Aug 13, 2014 12:12pm JLT



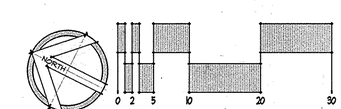
1 DETAIL PLAN @ PAVILION 1

SCALE: 1"=10'



2 DETAIL PLAN @ PAVILION 5

SCALE: 1"=10'



SCALE: 1" = 10'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR	DATE 9/18/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 9-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 545, 542, 536, 140, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L577 / F.414, L10585 / F.357, L12205 / F.340, L5783 / F.600, L5341 / F.78, L4433 / F.437, L6153 / F.640, L6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND
ALBERT F. EDWARDS
PROFESSIONAL ENGINEER
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. 16444, EXPIRATION DATE: 08/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

DETAIL LAYOUT & GRADING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

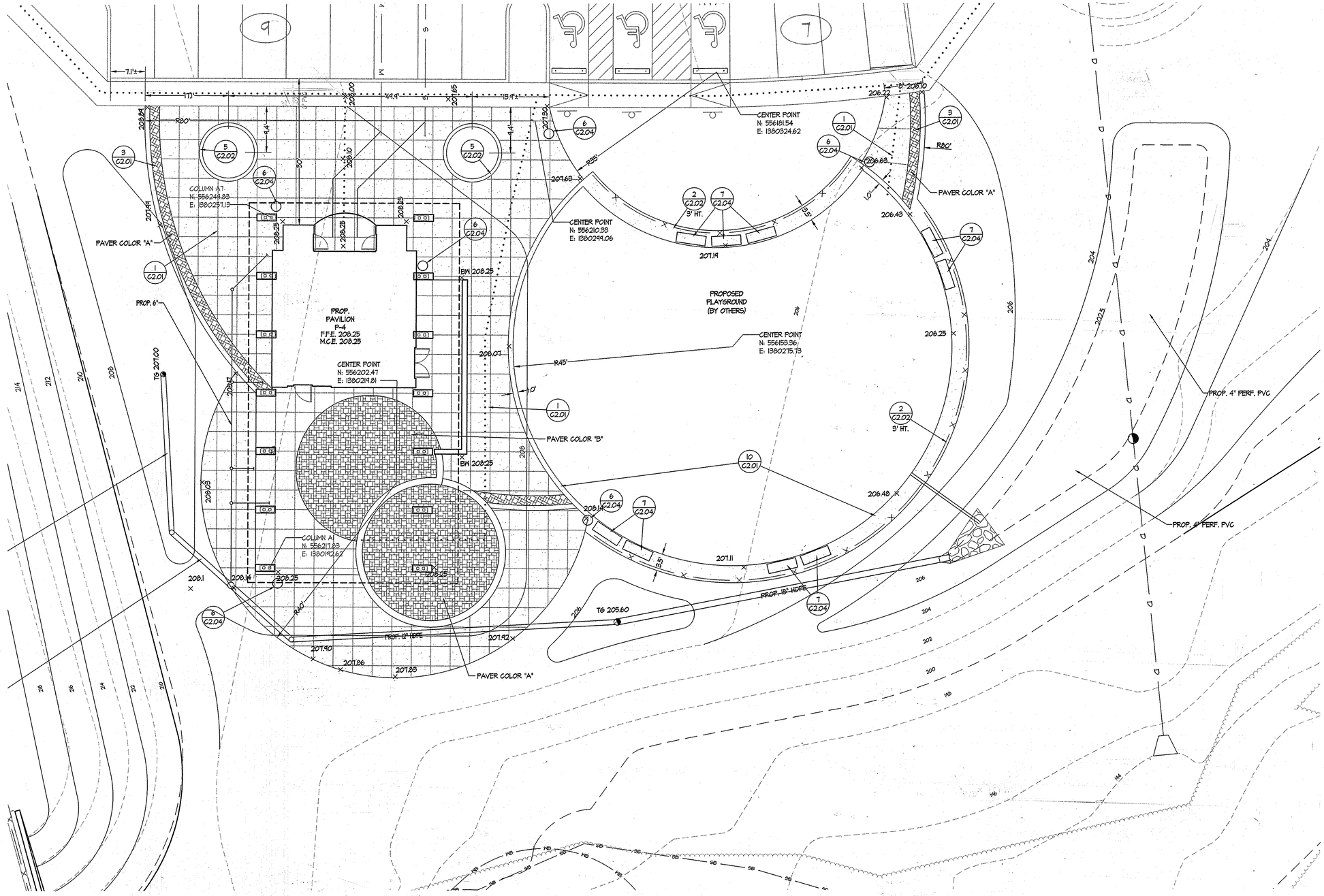
SCALE: 1"=10'

C4.12

SHEET 35 OF 67

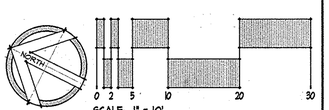
SDP-14-033

Z:\01\0042-Troy Park Phase III Site Development Plan\Dwg\C4.12 Detail Layout & Grading Plan.dwg-Layout1 Aug 13, 2014 12:11pm JLT



1 DETAILED GRADING PLAN @ PAVILION 4 AND PLAYGROUND

SCALE: 1"=10'



APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/4/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9.18.14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.577 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4933 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
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DEVELOPER:
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(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — PROFESSIONAL ENGINEER — 9/14/2014
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. 16144, EXPIRATION DATE: 02/09/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

DETAIL LAYOUT & GRADING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

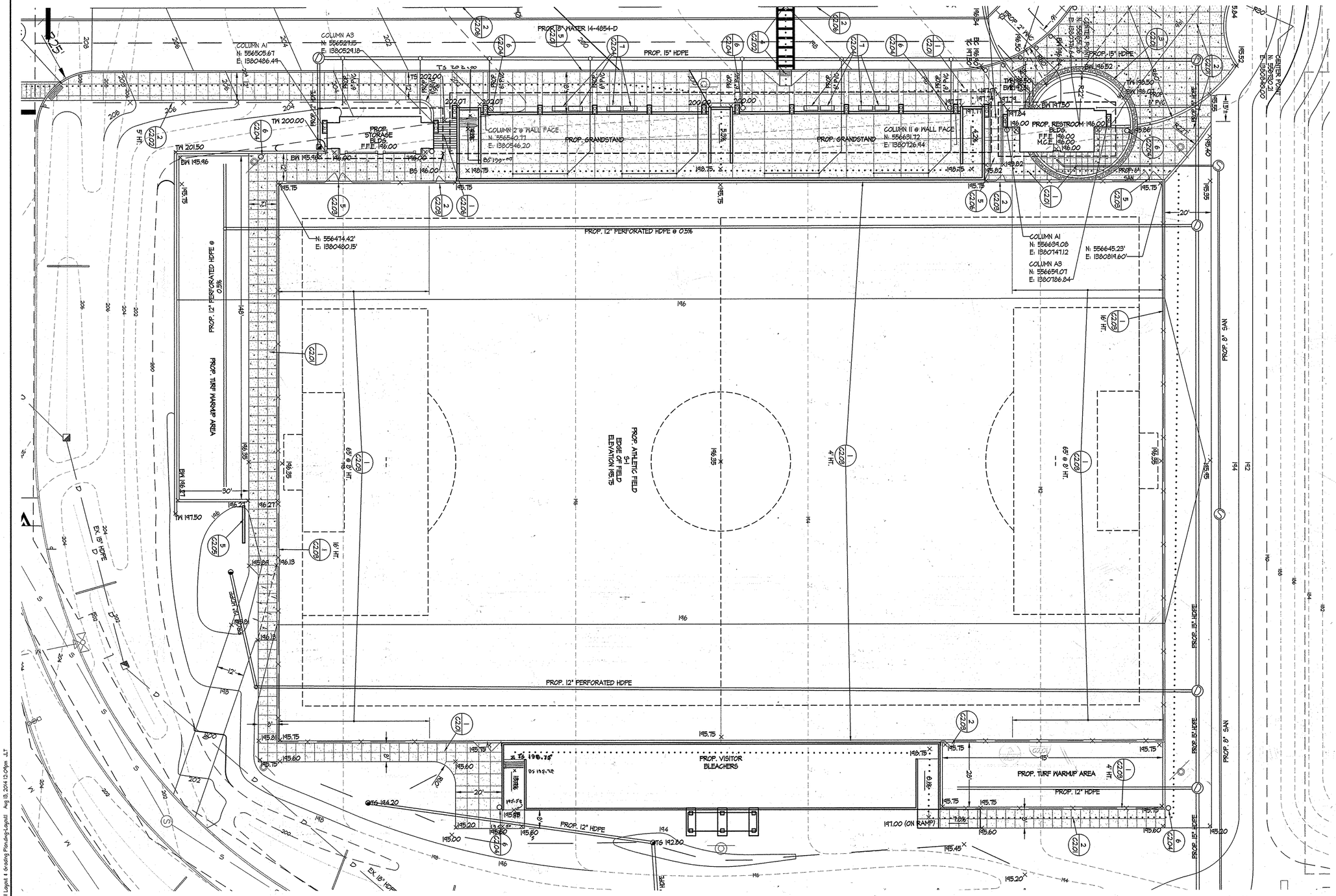
SCALE: 1"=10'

C4.13

SHEET 36 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C4.13 Detail Layout & Grading Plan.dwg-Layout1 Aug 13, 2014 12:09pm JLT


COLUMN A1
N: 556505.67
E: 1380486.44
COLUMN A3
N: 556527.15
E: 1380521.18
PROP. 8" WATER 14-4854-D
PROP. 15" HDPE
PROP. STORAGE BLDG. F.F.E. 196.00
TW 200.00
BW 195.96
TW 201.50
TS 202.00
BS 196.00
COLUMN 2 @ WALL FACE
N: 556540.77
E: 1380546.20
PROP. GRANDSTAND
COLUMN 11 @ WALL FACE
N: 556631.72
E: 1380726.94
PROP. RESTROOM 196.00
BLDG. F.F.E. 196.00
M.E. 196.00
PROP. 6" PVC
PROP. 12" PERFORATED HDPE @ 0.5%
N: 556474.42'
E: 1380480.15'
COLUMN A1
N: 556639.08
E: 1380747.12
COLUMN A3
N: 556659.07
E: 1380786.84
N: 556645.23'
E: 1380819.60'
PROP. TURF WARM-UP AREA
PROP. ATHLETIC FIELD
SLOPE OF FIELD
ELEVATION 195.75
65' @ 8' HT.
16' HT.
4' HT.
PROP. 8" SAN
EX. 15" HDPE
EX. 18" HDPE
PROP. 12" HDPE
PROP. VISITOR BLEACHERS
197.00 (ON RAMP)
TW 197.50
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BW 0.35
BW 0.15
BW -0.05
BW -0.25
BW -0.45
BW -0.65
BW -0.85
BW -1.05
BW -1.25
BW -1.45
BW -1.65
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BW -2.05
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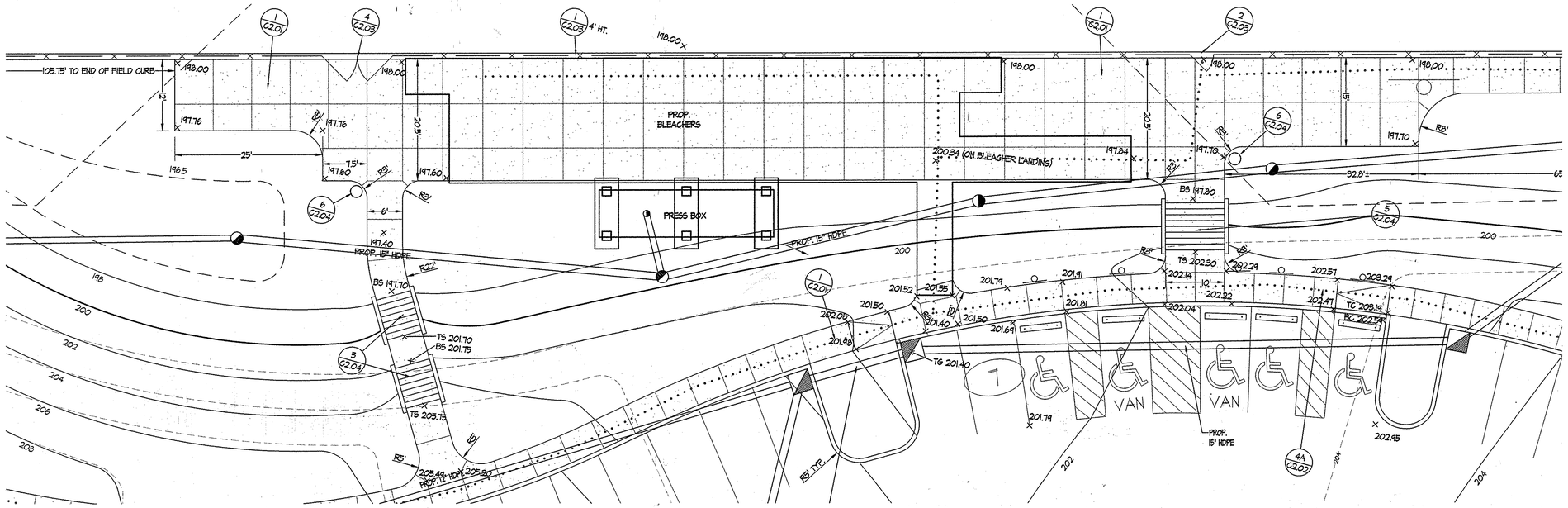
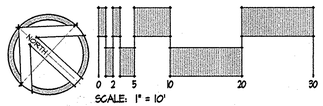
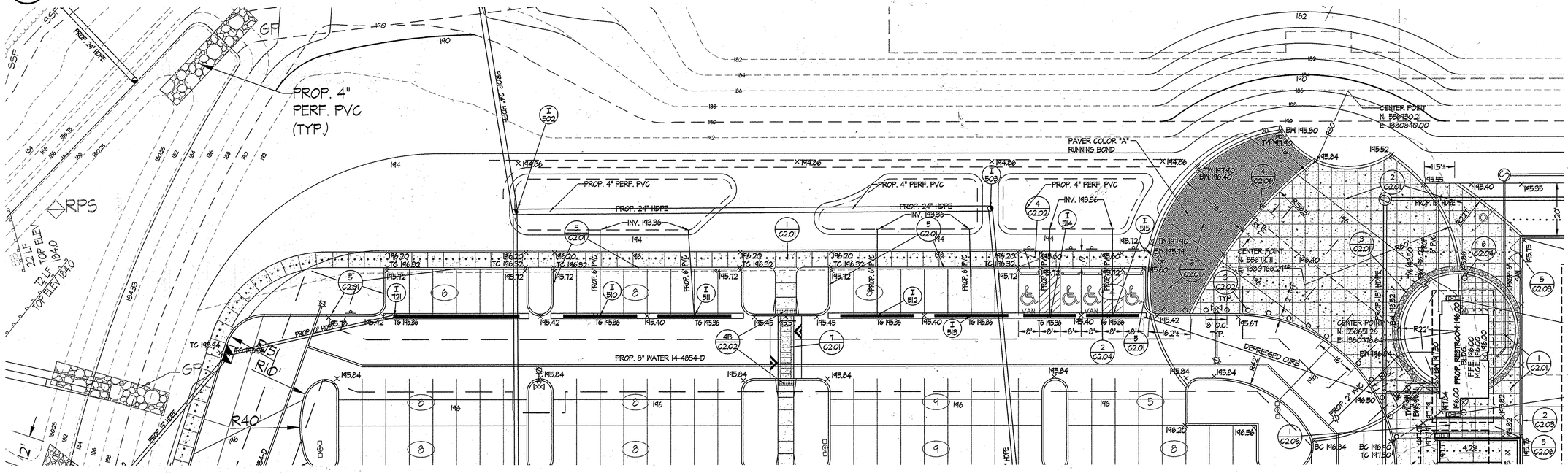




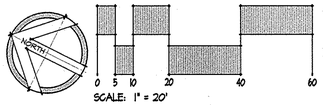
1 DETAILED GRADING PLAN @ FIELD 2 BLEACHERS AND HC PARKING

SCALE: 1"-10'



2 DETAILED GRADING PLAN @ FIELD 1 HC PARKING & PLAZA

SCALE: 1"-20'



APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR	9/10/14 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	9-5-14 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	9-18-14 DATE

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.577 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4933 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES Incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND · ROBERT F. EDWARDS · REGISTERED PROFESSIONAL ENGINEER · 16144 · PROFESSIONAL ENGINEER · 8/14/2014

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. 16144, EXPIRATION DATE: 09/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

DETAIL LAYOUT & GRADING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

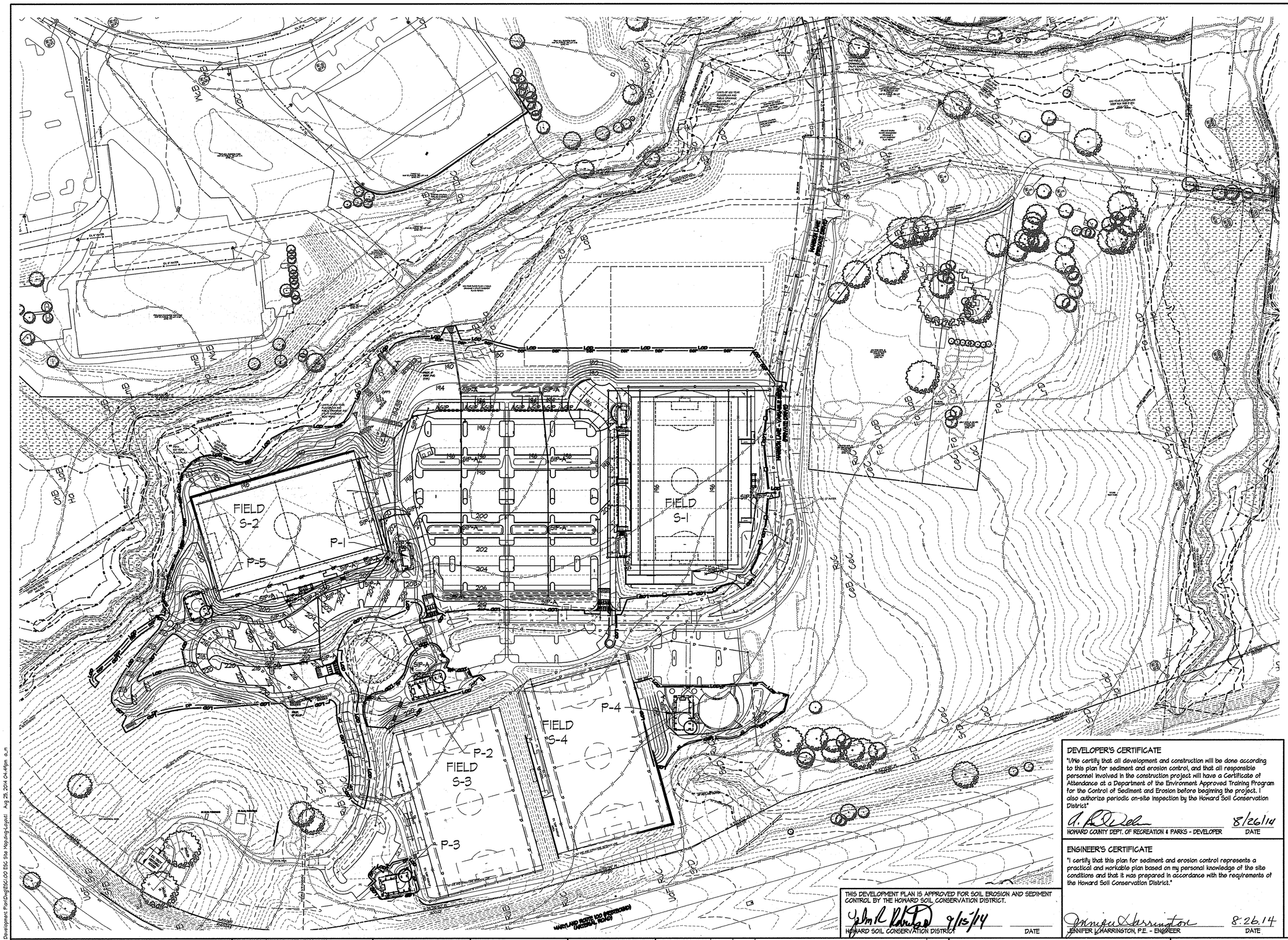
SCALE: AS SHOWN

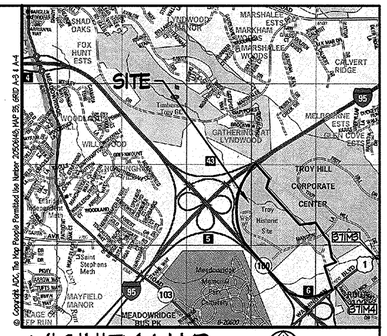
C4.15

SHEET 38 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\C4.15 Detail Layout & Grading Plan.dwg-Layout1 Aug 13, 2014 12:08pm JLT





VICINITY MAP 1"=2000'

LEGEND

(THIS LEGEND APPLIES TO THIS DRAWING ONLY)

- PROPERTY LINE
- EXISTING CONTOURS (350 / 348)
- EXISTING TREELINE
- EXISTING TREES (CRITICAL ROOT ZONE)
- EXISTING WALK
- EXISTING ROAD
- EXISTING STORM DRAIN (EX. 15" SD)
- EXISTING BUILDING
- EXISTING WETLANDS
- WETLAND BUFFER
- EXISTING STREAM
- EXISTING STREAM BUFFER
- EXISTING 100 YR. FLOODPLAIN
- EXISTING SOILS (NeB2 / GcB2)
- PROPOSED WALK
- PROPOSED ROAD
- PROPOSED BUILDING
- SILT FENCE
- SUPER SILT FENCE
- DIVERSION FENCE
- INLET PROTECTION (SIP STANDARD)
- STABILIZED CONSTRUCTION ENTRANCE with MOUNTABLE BERM
- LIMIT OF DISTURBANCE
- PROPOSED STORM DRAIN (PROP. 15" SD)

SCALE: 1" = 100'

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

HOWARD COUNTY DEPT. OF RECREATION & PARKS - DEVELOPER — DATE 8/26/14

ENGINEER'S CERTIFICATE

"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

JENNIFER L. HARRINGTON, P.E. - ENGINEER — DATE 8.26.14

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 9/15/14

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/18/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 341, 345, 342, 336, 190, 189, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L. 571 / F.44 L.10595 / F.251, L.12205 / F.340, L.5183 / F.600, L.3541 / F.18, L.4933 / F.401, L.6153 / F.640, L.8135 / F. 640
GRID 17 & 18, ZONE: M-4, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6062.02
WATER CODE: 400, SEWER CODE: 2852200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2100
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2350

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3338 • fax (410) 683-3339

PROFESSIONAL ENGINEER — STATE OF MARYLAND — JENNIFER L. HARRINGTON — 21611 — 8-26-14

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. 16144, EXPIRATION DATE: 09/09/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL SITE MAP

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

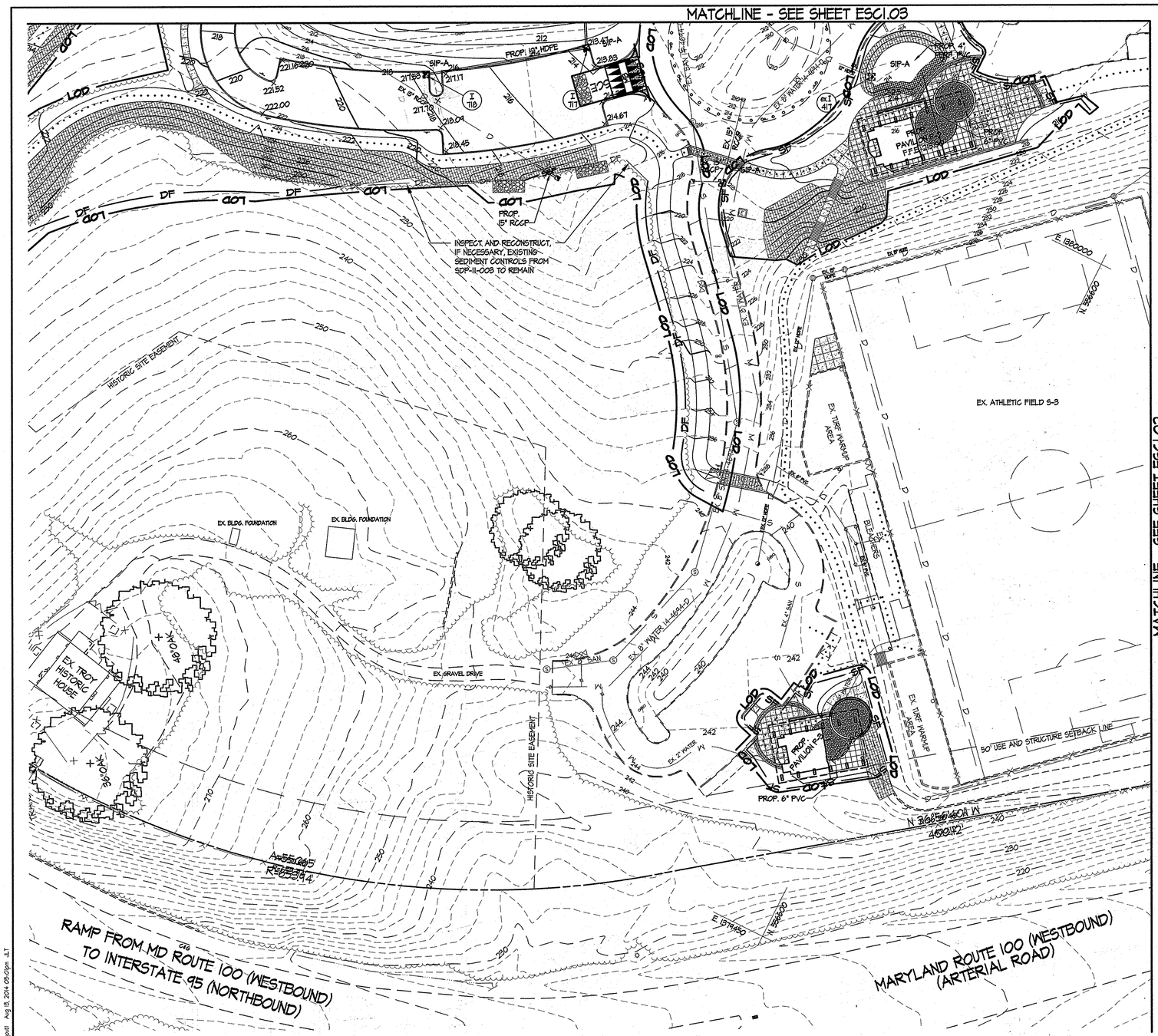
SCALE: 1"=40'

ESC1.00

SHEET 34 OF 67

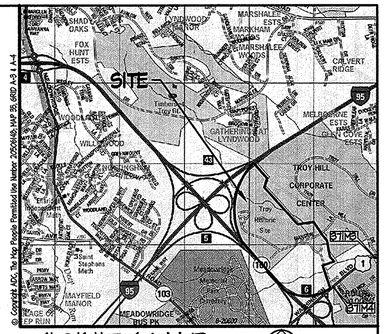
SDP-14-033

Z:\10\10040\Troy Park Phase II Site Development Plan\Dwg\ESC1.00 ESC Site Map.dwg-Layout: Aug 25, 2014 04:48pm a.m



LEGEND (THIS LEGEND APPLIES TO DRAWINGS ESC1.01 THROUGH ESC1.08 ONLY)

- PROPERTY LINE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING TREES (CRITICAL ROOT ZONE)
- EXISTING WALK
- EXISTING CURB
- EXISTING STORM DRAIN (EX. 15" SD)
- EXISTING WATER (EX. 6" WATER)
- EXISTING SANITARY SEWER (EX. 8" SAN)
- EXISTING TELEPHONE (EX. TELE)
- EXISTING ELECTRIC (EX. ELEC)
- EXISTING LIGHTING
- EXISTING FENCE
- EXISTING GUARDRAIL
- EXISTING BUILDING
- EXISTING WETLANDS
- WETLAND BUFFER
- EXISTING STREAM
- STREAM BUFFER
- EXISTING 100 YR. FLOODPLAIN
- PROPOSED WOODSLINE
- PROPOSED WALK
- PROPOSED ROAD
- PROPOSED FENCE
- PROPOSED GUARDRAIL
- PROPOSED BUILDING
- PROPOSED CONTOURS
- SILT FENCE
- SUPER SILT FENCE
- DIVERSION FENCE
- INLET PROTECTION (STANDARD)
- STABILIZED CONSTRUCTION ENTRANCE with MOUNTABLE BERM
- LIMIT OF DISTURBANCE
- STABILIZATION MATTING
- SOD STABILIZATION
- BLAZE ORANGE FENCING
- PROPOSED STORM DRAIN (PROP. 15" SD)
- PROPOSED WATER (PROP. 6" WATER)
- PROPOSED SANITARY SEWER (PROP. 8" SAN)
- PROPOSED TELEPHONE (PROP. TELE)
- PROPOSED ELECTRIC (PROP. ELEC)
- PROPOSED OVERHEAD ELECTRIC (PROP. OHW)
- PROPOSED LIGHTING



VICINITY MAP 1"=2000'

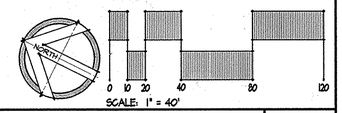
BENCHMARKS

NAD83/91 & NAVD88 IN USE.

#13M3 ALSO KNOWN AS R-125 NGS PID: JV0628 ELEV: 123.961
BRASS DISC ON BRIDGE ABUTMENT ON US-1 0.5 MI. NORTHEAST OF RT-100.

#11M4 ALSO KNOWN AS N/A NGS PID: N/A ELEV: 170.156
LIGHT POLE BOLT AT END OF RAMP FROM I-100 TO US-1 SBL.

NOTE:
ALL VEGETATIVE AREAS SHALL RECEIVE A MINIMUM OF 4 INCHES TOPSOIL PRIOR TO PERMANENT SEEDING AND/OR CURLEX APPLICATION. SEE SPECIFICATIONS.



DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

HOWARD COUNTY DEPT. OF RECREATION & PARKS - DEVELOPER — DATE 8/14/2014

ENGINEER'S CERTIFICATE

"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

JENNIFER L. HARRINGTON, P.E. - ENGINEER — DATE 8/14/14

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 8/21/14

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/4/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 160, 159, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6480 MARION LANE
L.371 / F.414, L.10595 / F.351, L.12205 / F.340, L.5783 / F.600, L.8341 / F.19, L.4923 / F.431, L.6153 / F.640, L.6155 / F. 640
GRID 17 & 18, ZONE: 14H, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2512200

OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2100

DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2100

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16144, EXPIRATION DATE: 09/14/16.

DES:	JLT				
DRN:	JLT/AM				
CHK:	AFE				
DATE:	08/14/14	BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

SHEET ESC1.01 40 OF 67

SDP-14-033

Z:\ENGINEER\2-Troy Park Phase II Site Development Plan\Dwg\ESC\01 ESC Planning Layout.dwg Aug 18, 2014 - 05:41pm JLT

VICINITY MAP 1"=2000'

NOTE:
ALL VEGETATIVE AREAS SHALL RECEIVE A MINIMUM OF 4 INCHES TOPSOIL PRIOR TO PERMANENT SEEDING AND/OR CURLEX APPLICATION. SEE SPECIFICATIONS.

DEVELOPER'S CERTIFICATE
"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District"

HOWARD COUNTY DEPT. OF RECREATION & PARKS - DEVELOPER — DATE 8/14/2014

ENGINEER'S CERTIFICATE
"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

JENNIFER L. HARRINGTON, P.E. - ENGINEER — DATE 8/14/14

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 8/21/14

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/18/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5711 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4433 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — PROFESSIONAL ENGINEER
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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

ESC1.02

SHEET 41 OF 67

SDP-14-033

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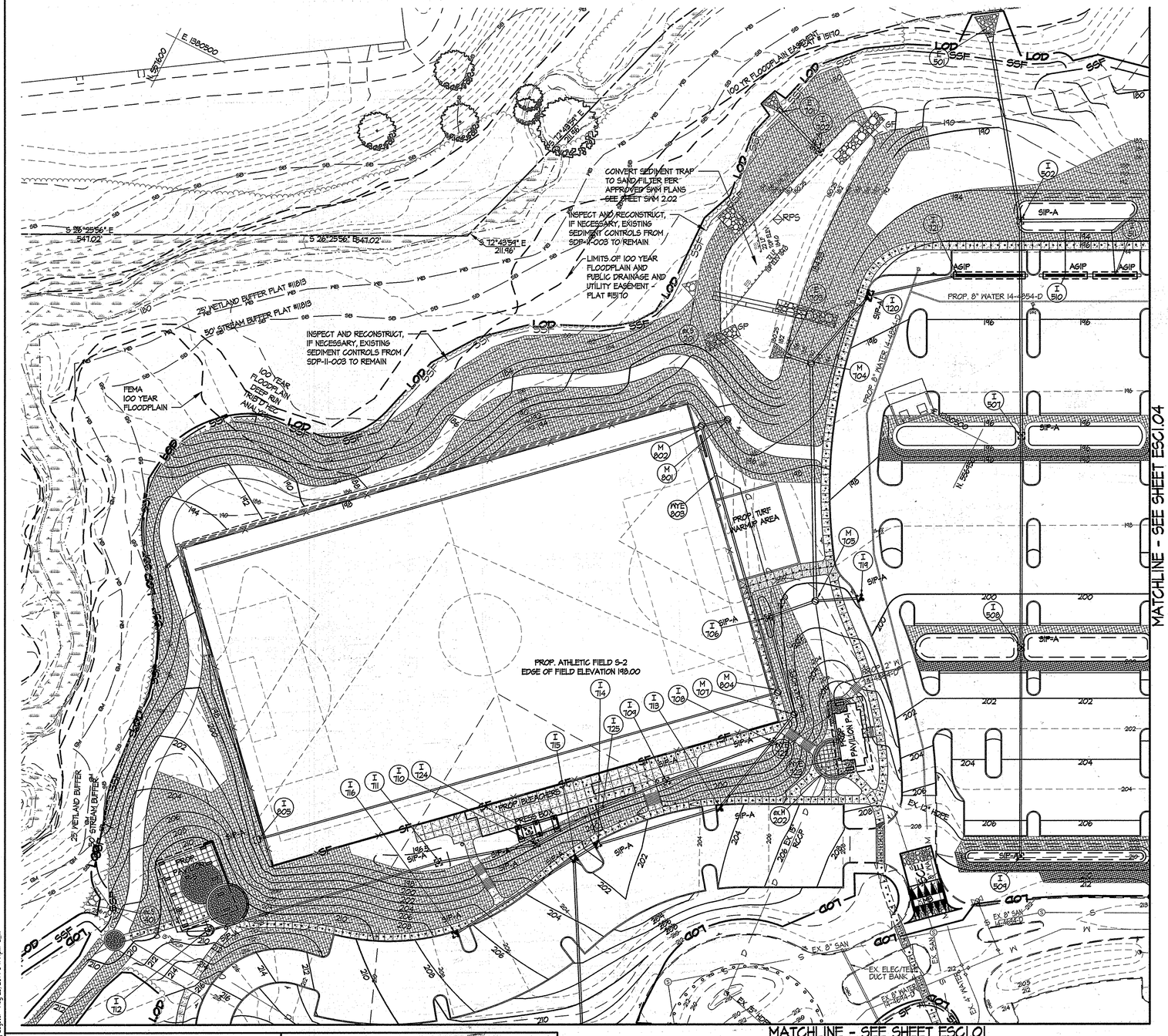
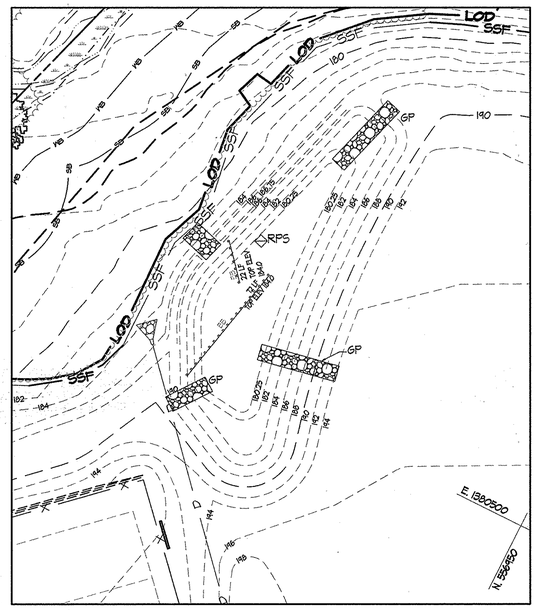
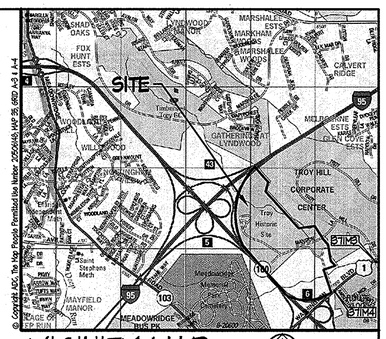




1 SEDIMENT TRAP #2

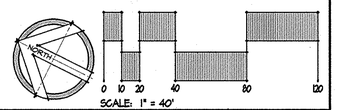
MAINTAIN EXISTING SEDIMENT TRAP #2 FROM SDP-10-003 UNTIL ALL CONTRIBUTING DRAINAGE AREAS HAVE BEEN COMPLETELY STABILIZED, THEN CONVERT SEDIMENT TRAP TO SAND FILTER PER APPROVED SWM PLANS

SCALE: 1" = 40'



VICINITY MAP 1"=2000'

NOTE:
ALL VEGETATIVE AREAS SHALL RECEIVE A MINIMUM OF 4 INCHES TOPSOIL PRIOR TO PERMANENT SEEDING AND/OR CURLEX APPLICATION. SEE SPECIFICATIONS.



SCALE: 1" = 40'

DEVELOPER'S CERTIFICATE

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HOWARD COUNTY DEPT. OF RECREATION & PARKS - DEVELOPER — DATE 8/26/14

ENGINEER'S CERTIFICATE

"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

JENNIFER L. HARRINGTON, P.E. - ENGINEER — DATE 8.26.14

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 9/15/14

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/14/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
*PARCEL 194, 540, 542, 594, 960, 1165, 1175 LOT A-21, 1175 LOT A-22
ADDRESS: 6450 MARSHALEE LANE
L.531 / F.446, L.10905 / F.285, LL2205 / F.940, L.5188 / F.600, L.5941 / F.78, L.4833 / F.4311, L.4833 / F.840, L.8155 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6052.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — JENNIFER LYNN HARRINGTON — No. 15444 — REGISTERED PROFESSIONAL ENGINEER — 8-26-14
I HEREBY CERTIFY THAT THE PLANS HERE PREPARED WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15444, EXPIRATION DATE: 09/09/15

DES: JLT					
DRN: JLT/AM					
CHK: AFE					
DATE: 08/14/14	BY	NO.	REVISION	DATE	

EROSION AND SEDIMENT CONTROL PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

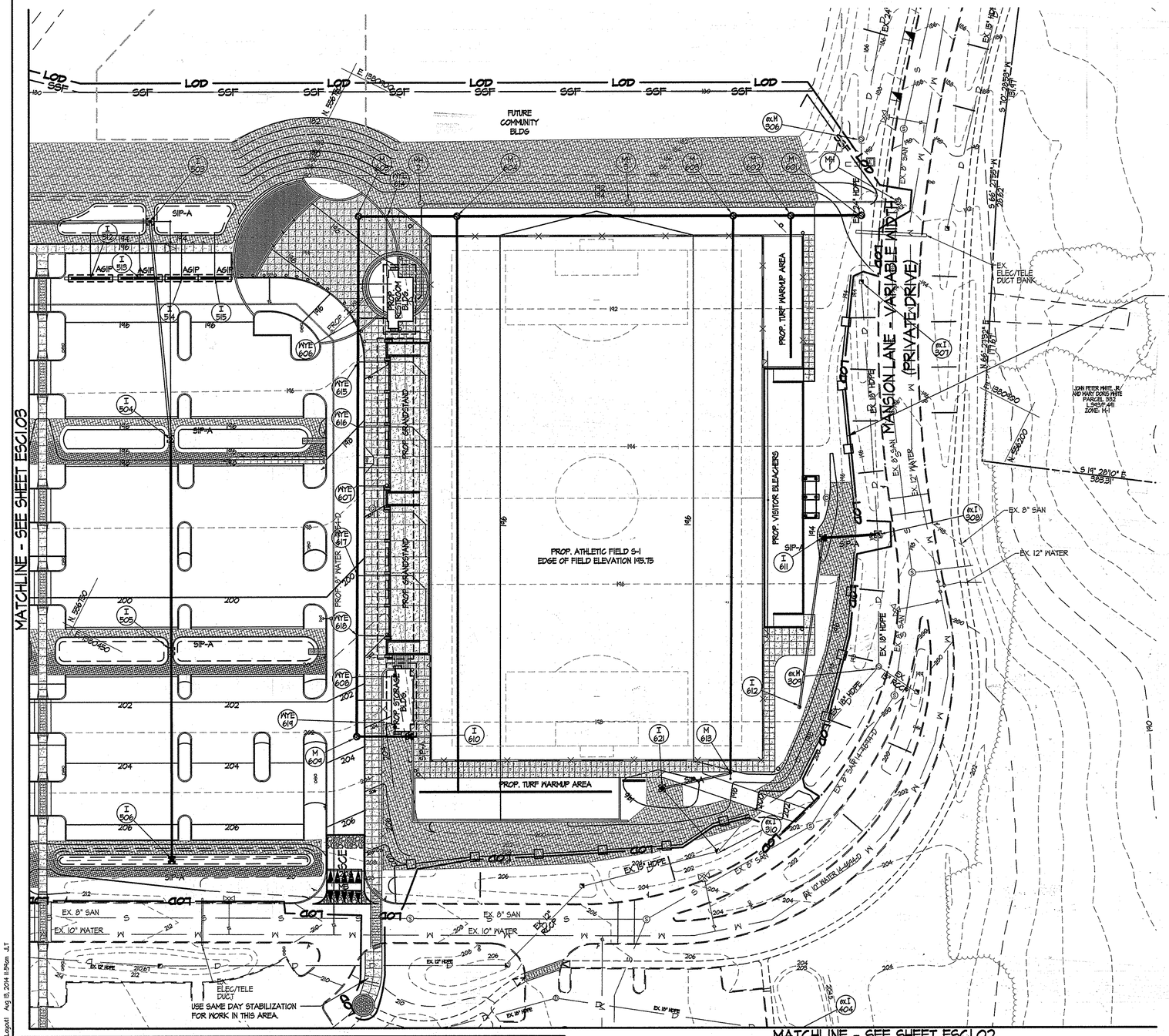
SCALE: 1"=40'

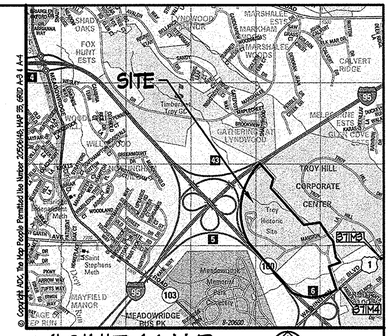
ESC1.03

SHEET 42 OF 67

SDP-14-033

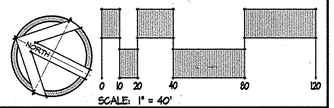
Z:\JOBS\2042-Troy Park Phase II Site Development Plan\Dwg\ESC1.03 ESC Plan.dwg-Layout: Aug 25, 2014 04:43pm a.n





VICINITY MAP 1"=2000'

NOTE:
ALL VEGETATIVE AREAS SHALL RECEIVE A MINIMUM OF 4 INCHES TOPSOIL PRIOR TO PERMANENT SEEDING AND/OR CURLEX APPLICATION. SEE SPECIFICATIONS.



DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

HOWARD COUNTY DEPT. OF RECREATION & PARKS - DEVELOPER — DATE 8/14/2014

ENGINEER'S CERTIFICATE

"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

JENNIFER L HARRINGTON, P.E. - ENGINEER — DATE 8/14/14

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 8/21/14

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/10/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 545, 542, 536, 760, 555, 555 LOT A-22, 555 LOT A-22
ADDRESS: 6480 MAINSAIL LANE
L.571 / F.414, L.10588 / F.393, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4938 / F.451, L.4939 / F.460, L.6135 / F. 640
GRID 17 & 18 ZONED: M-1 TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 4100 SEWER CODE: 3152000

OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
16315 Auweltenville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

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. 16144, EXPIRATION DATE: 09/09/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/12/14	BY	NO.	REVISION	DATE

600' SCALE MAP NO. 51 BLOCK NO. 16

EROSION AND SEDIMENT CONTROL PLAN

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 — HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

ESC1.04

SHEET 43 OF 67

SDP-14-033

Z:\NOVADAS-Troy Park Phase III Site Development Plan\Dwg\ESC1.04 ESC Planning-Layout Aug 13, 2014 11:59am JLT

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE

CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

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 C-9 DIVERSION FENCE

STANDARD SYMBOL: DF

MAXIMUM DRAINAGE AREA = 2 ACRES

CONSTRUCTION SPECIFICATIONS

1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE

CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. 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

JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

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-1 SILT FENCE

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 E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

TYPE A MAXIMUM DRAINAGE AREA = ¼ ACRE
TYPE B MAXIMUM DRAINAGE AREA = 1 ACRE

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

CONSTRUCTION SPECIFICATIONS

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

   FOR TYPE B, USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
4. BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
5. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

1. Blaze orange fence shall be blaze orange plastic mesh with anchor posts. Anchor posts shall be minimum 2" steel 'U' channel or 2" x 2" timber, 6' in length, spaced 8' O.C. (maximum) marked with highly visible flagging. Anchor posts must be installed to a depth of no less than 1/3 of the total height of the post. Use 2" x 4" lumber for cross bracing along top of fence. Use 8" wire 'U' to secure fence bottom.
2. Tree root damage should be avoided during installation of anchor posts and fence.
3. No construction equipment, materials or excavated earth is permitted inside blaze orange fences.
4. Maintain blaze orange fence throughout construction.
5. This fence is a separation device only.

(1) BLAZE ORANGE FENCE

NOT TO SCALE

NOTE:
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 (see Standard Sediment Control Note #2).

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District"

[signature] 8/14/2014
HOWARD COUNTY DEPT. OF RECREATION & PARKS - DEVELOPER — DATE

ENGINEER'S CERTIFICATE

"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

[signature] 8/14/14
JENNIFER HARRINGTON, P.E. - ENGINEER — DATE

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

[signature] 8/21/14
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

[signature] 9/08/14 — DIRECTOR — DATE
[signature] 9-3-14 — CHIEF, DEVELOPMENT ENGINEERING DIVISION — NY — DATE
[signature] 9-8-14 — CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5117 / F.414, L.10585 / F.357, L.12205 / F.390, L.5783 / F.600, L.5341 / F.78, L.4933 / F.437, L.6153 / F.690, L.6135 / F. 690
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — PROFESSIONAL ENGINEER — 8-14-2014
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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO
PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

ESC2.01

SHEET 44 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\ESC2.01 ESC Details.dwg-Layout1 Aug 13, 2014 11:58am JLT

DETAIL C-6 CLEAR WATER DIVERSION PIPE

STANDARD SYMBOL
CWD – 12
DESIGNATION CWD-12 REFERS TO 12 INCH CLEAR WATER DIVERSION.

CONSTRUCTION SPECIFICATIONS

1. FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. MAKE ALL JOINTS WATERTIGHT.
2. FOR SANDBAGS USE MATERIALS THAT ARE RESISTANT TO ULTRA-VIOLENT RADIATION, TEARING, AND PUNCTURE AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL.
3. USE 10 MIL OR THICKER, UV RESISTANT, IMPERMEABLE SHEETING OR OTHER APPROVED MATERIAL THAT IS IMPERMEABLE AND RESISTANT TO PUNTURING AND TEARING.
4. PLACE IMPERMEABLE SHEETING SUCH THAT UPGRADE PORTION OVERLAPS DOWNGRADE PORTION BY A MINIMUM OF 18 INCHES.
5. SET HEIGHT OF SANDBAG DIKE AT TWICE THE PIPE DIAMETER. MAINTAIN HEIGHT ALONG LENGTH OF SANDBAG DIKE. PLACE DOUBLE ROW OF SANDBAGS.
6. AT A MINIMUM, SECURELY ANCHOR DIVERSION PIPE AT EACH DOWNGRADE JOINT.
7. SET OUTLET END OF DIVERSION PIPE LOWER THAN INLET END.
8. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
9. DEWATER WORK AREA USING AN APPROVED EROSION AND SEDIMENT CONTROL PRACTICE AS SPECIFIED ON APPROVED PLAN.
10. KEEP POINT OF DISCHARGE FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REPLACE SANDBAGS AND IMPERMEABLE SHEETING IF TORN.

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-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL
PSSMS – * lb/ft²
(* INCLUDE SHEAR STRESS)

CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

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 G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STANDARD SYMBOL
ST–II

MAXIMUM DRAINAGE AREA = 10 ACRES

1 OF 3

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 G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

STANDARD SYMBOL
ST–II

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
2. CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
3. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
4. CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WEIR CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
5. MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
6. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
7. USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS I RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
8. PLACE 1 FOOT OF CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE UPSTREAM FACE OF THE WEIR.
9. CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
10. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
11. REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION.
12. WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
13. UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

2 OF 3

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 F-1 REMOVABLE PUMPING STATION

STANDARD SYMBOL
☒RPS

CONSTRUCTION SPECIFICATIONS

1. USE CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS 6 INCHES ON CENTER.
2. USE A MINIMUM 12 INCH DIAMETER INNER PIPE WITH AN OUTER PIPE A MINIMUM 6 INCHES LARGER IN DIAMETER. BOTTOM OF EACH PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
3. WRAP EACH PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH. ON INNER PIPE WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
4. EXCAVATE 8 FEET X 8 FEET X 4 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
5. SET TOP OF INNER AND OUTER PIPES MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN).
6. BACKFILL PIT AROUND THE OUTER PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
7. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A REMOVABLE PUMPING STATION REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, PULL OUT INNER PIPE AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

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 G-2-4 BAFFLE BOARDS

STANDARD SYMBOL
BB

BAFFLES ARE REQUIRED TO PROVIDE A FLOW LENGTH BETWEEN INFLOW POINT AND OUTLET EQUAL TO TWICE THE EFFECTIVE TRAP/BASIN WIDTH.

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

MAINTAIN EXISTING SEDIMENT TRAP #2 FROM SDP-11-003 ACCORDING TO THESE DETAILS, F-1, G-1-2, AND G-2-4.

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

HOWARD COUNTY DEPT. OF RECREATION & PARKS - DEVELOPER — DATE 8/14/2014

ENGINEER'S CERTIFICATE

"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

JENNIFER HARRINGTON, P.E. - ENGINEER — DATE 8/14/14

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 8/21/14

NOTE:
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 (see Standard Sediment Control Note #2).

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/4/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.571 / F.414, L.10585 / F.357, L.12205 / F.340, L.5183 / F.600, L.5341 / F.18, L.4433 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

EROSION AND SEDIMENT CONTROL DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

ESC2.02

SHEET 45 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\ESC2.02 ESC Details.dwg-Layout1 Aug 13, 2014 11:58am JLT

B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Definition
Using vegetation as cover to protect exposed soil from erosion.

Purpose
To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies
On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity
Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment
Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

1. Adequate vegetative stabilization requires 95 percent groundcover.
2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

Definition
Establishment of vegetative cover on cut and fill slopes.

Purpose
To provide timely vegetative cover on cut and fill slopes as work progresses.
Conditions Where Practice Applies
Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria
A. Incremental Stabilization - Cut Slopes
   1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
   2. Construction sequence example (Refer to Figure B.1):
      a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
      b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
      c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
      d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

B. Incremental Stabilization - Fill Slopes
   1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
   2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed on the plans.
   3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
   4. Construction sequence example (Refer to Figure B.2):
      a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
      b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
      c. Place Phase 1 fill, prepare seedbed, and stabilize.
      d. Place Phase 2 fill, prepare seedbed, and stabilize.
      e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

DEVELOPER'S CERTIFICATE
"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."
[signature] 8/14/2014
HOWARD COUNTY DEPT. OF RECREATION & PARKS - DEVELOPER DATE

ENGINEER'S CERTIFICATE
"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."
[signature] 8/14/14
JENNIFER HARRINGTON, P.E. - ENGINEER DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
[signature] 8/21/14
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING
[signature] 9/16/14
DIRECTOR DATE
[signature] 9-3-14
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
[signature] 9-18-14
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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

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

Purpose
To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies
Where vegetative stabilization is to be established.

Criteria
A. Soil Preparation
   1. Temporary Stabilization
      a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
      b. Apply fertilizer and lime as prescribed on the plans.
      c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
   2. Permanent Stabilization
      a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
         i. Soil pH between 6.0 and 7.0.
         ii. Soluble salts less than 500 parts per million (ppm).
         iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: If lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
         iv. Soil contains 1.5 percent minimum organic matter by weight.
         v. Soil contains sufficient pore space to permit adequate root penetration.
      b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
      c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
      d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
      e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling
   1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
   2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
   3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
      a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
      b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
      c. The original soil to be vegetated contains material toxic to plant growth.
      d. The soil is so acidic that treatment with limestone is not feasible.
   4. Areas having slopes steeper than 2:1 require special consideration and design.
   5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
      a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
      b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
      c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
   6. Topsoil Application
      a. Erosion and sediment control practices must be maintained when applying topsoil.
      b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
      c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)
   1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
   2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
   3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
   4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
   5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

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

Definition
The application of seed and mulch to establish vegetative cover.

Purpose
To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies
To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria
A. Seeding
   1. Specifications
      a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
      b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
      c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
      d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
   2. Application
      a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
         i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
         ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
      b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
         i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
         ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
      c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
         i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
         ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
         iii. Mix seed and fertilizer on site and seed immediately and without interruption.
         iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching
   1. Mulch Materials (in order of preference)
      a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
      b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
         i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
         ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
         iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
         iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
         v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
   2. Application
      a. Apply mulch to all seeded areas immediately after seeding.
      b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
      c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
   3. Anchoring
      a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
         i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
         ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
         iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
         iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-4 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					
Species	Application Rate (lbs./ac.)	Seeding Dates	Seeding Depth	Fertilizer Rate (10-20-20)	Lime Rate
Annual Ryegrass	40 lbs./ac.	3/1 - 5/15 7/1 - 10/15	½"	436 lb./ac. (10 lb./1000 sf	2 tons/ac. (90 lb./1000 s.f.)
Foxtail Millet	30 lbs./ac.	5/16 - 7/31	½"		

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

Definition
To stabilized disturbed soils with permanent vegetation.

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

Conditions Where Practice Applies
Exposed soils where ground cover is needed for 6 months or more.

Criteria
A. Seed Mixtures
   1. General Use
      a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
      b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
      c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
      d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
   2. Turfgrass Mixtures
      a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
      b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
         i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
         ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas whererapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
         iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
         iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1½ to 3 pounds per 1000 square feet.

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

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

      c. Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a) Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
      d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
      e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (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					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P_2O_5	K_2O	
-	Tall Fescue*	285 lb/ac**	3/1 - 5/15 8/15 - 10/15	1/4" - 1/2"	45 lb/ac (1.0 lb/1000sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons/ac (90lb/1000 sf)
	Kentucky Bluegrass*	15 lb/ac	3/1 - 5/15 8/15 - 10/15	1/4" - 1/2"				

* Select turfgrass varieties from those listed as proven cultivars in the most current University of Maryland publication, "Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland."
** For tall fescue choose 3 proven cultivars to be used in equal proportions in the seed mix.

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).
   1. General Specifications
      a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
      b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
      c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
      d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
      e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.
   2. Sod Installation
      a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
      b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
      c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
      d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.
   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.

NOTE:
ALL VEGETATIVE AREAS SHALL RECEIVE A MINIMUM OF 4 INCHES TOPSOIL PRIOR TO PERMANENT SEEDING AND/OR CURLEX APPLICATION. SEE SPECIFICATIONS.

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5117 / F.414, L.10585 / F.351, L.12205 / F.390, L.5783 / F.600, L.5341 / F.78, L.4433 / F.437, L.6153 / F.690, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
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SITE RESOURCES
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(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ROBERT E. EDWARDS — 16144 — PROFESSIONAL ENGINEER
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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT	BY	NO.	REVISION	DATE
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14				

EROSION AND SEDIMENT CONTROL NOTES

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO
PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22
CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
ESC2.11
SHEET 46 OF 67

SDP-14-033

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STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 2 (EXISTING TO BE MAINTAINED FROM SDP-11-003)

DRAINAGE AREA - INITIAL	8.3	ACRES
DRAINAGE AREA - INTERIM	-	ACRES
DRAINAGE AREA - FINAL	3.86	ACRES
TOTAL STORAGE REQUIRED	13896	CF
TOTAL STORAGE PROVIDED	25967	CF
WET STORAGE REQUIRED	6948	CF
WET STORAGE PROVIDED	15982	CF
DRY STORAGE REQUIRED	6948	CF
DRY STORAGE PROVIDED	15542	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	183	FT
TRAP BOTTOM ELEVATION	180.25	FT
TRAP BOTTOM DIMENSIONS	147 x 40	FT x FT
WEIR LENGTH	34	FT
WEIR CREST (DRY STORAGE) ELEVATION	184.9	FT
CLEANOUT ELEVATION	182	FT
TOP OF EMBANKMENT ELEVATION	186.75	FT
SIDE SLOPE	2:1	H:V
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION - LENGTH	10	FT
OUTLET PROTECTION - DEPTH	19	IN

SEDIMENT AND EROSION CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (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 conditions until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
6. SITE ANALYSIS:

Total Area of Site:	101.89 Acres
Area Disturbed:	20.32 Acres
Area to be roofed or paved:	8.73 Acres
Area to be vegetatively stabilized:	11.59 Acres
Total Cut:	180,000 Cu. Yds.
Total Fill:	180,000 Cu. Yds.
Offsite Waste/Borrow Area Location:	______

See note 67 on sheet 20 of 67

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 three pipe lengths or that which shall be back-filled and stabilized by the end of each work day, whichever is shorter.
11. Any changes or revision 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 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.

SEQUENCE OF CONSTRUCTION

1. Assure that Grading Permit and all other necessary permits are obtained from Owner.
2. Notify Howard County Department of Public Works at least 48 hours before start of work. Contact Miss Utility at 1-800-257-7777 at least three days in advance of starting work shown on plans.
3. Clear and grub for and install erosion and sediment control measures or devices. See ESC 1.00 for the overall sediment control plan.
   3.a. Retain Sediment Trap 2 from Phase I - SDP-11-003. This trap will be converted to a Sand Filter later in the sequence.
   3.b. Maintain diversion fence (DF) at the north side of the site from the nearest point to the Historic House to the point where the existing diversion fence turns to the east near to the proposed loop parking area. From this point, extend diversion fence to the north a distance of about 150 linear feet as shown. Install rock outlet protection (ROP III) 8' wide by 24' long, class I riprap at each outfall of the diversion fence as shown.
   3.c. Maintain existing super silt fence (SSF) where shown along the northern limit of disturbance near to Turf Field S-2. Install super silt fence (SSF) at remaining locations as shown.
   3.d. Install the stabilized construction entrances (SCE) and inlet protection (IP).
4. Notify Sediment Control Inspector and Engineer upon completion of this installation.
5. The three development areas for Pavilion construction shall occur such that no more than 20 acres of area is disturbed at one time. This construction project will not exceed 20 acres of disturbance during any time.
6. For access and construction of the three development areas for the proposed Pavilions, use only rubber tired construction equipment where access to these areas will be through recently stabilized site construction areas.
7. Install storm drains. Construct the 900 series storm drains as part of the Pavilion P-4 work. Construct the 800 series storm drains as part of the Athletic Field S-2 work. Construct the 700 series storm drains as part of the loop drive work. Construct the 600 series storm drains as part of the Athletic Field S-1 work. Construct the 500 series storm drains as part of the primary parking area work. Install inlet protection as shown on approved Erosion and Sediment Control Plans.
8. Install water and sanitary sewer lines and manholes.
9. Fine grade and install base course for all road surfaces and parking lots. Install curb and gutter.
10. Construct synthetic fields in accordance with manufacturer's specifications including underdrains, concrete edging for fencing, and turf surface. Construction bleachers and walks associated with Fields 1 and 2.
11. Final grade the remaining areas and permanently stabilize those areas.
12. After all contributing drainage areas have been completely stabilized, install proposed SWM facilities per approved SWM plans.
13. Convert Sediment Trap 2 to a Sand Filter per approved SWM plans.
14. Pave all road surfaces with the final surface course.
15. After permanent stabilization of site with established vegetation and with permission of the Sediment Control Inspector, remove erosion and sediment control measures or devices, and stabilize those areas disturbed by this process.

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DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District"

HOWARD COUNTY DEPT. OF RECREATION & PARKS - DEVELOPER 8/14/2014 DATE

ENGINEER'S CERTIFICATE

"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

JENNIFER HARRINGTON, P.E. - ENGINEER 8/14/14 DATE

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

HOWARD SOIL CONSERVATION DISTRICT 8/21/14 DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR 9/18/14 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 9.3.14 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 9-18-14 DATE

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.577 / F.414, L.10585 / F.357, L.12205 / F.390, L.5783 / F.600, L.5341 / F.78, L.4933 / F.437, L.6153 / F.690, L.6135 / F. 690
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND ALBERT F. EDWARDS PROFESSIONAL ENGINEER 8-14-2014
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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

SEDIMENT TRAP TABLES

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

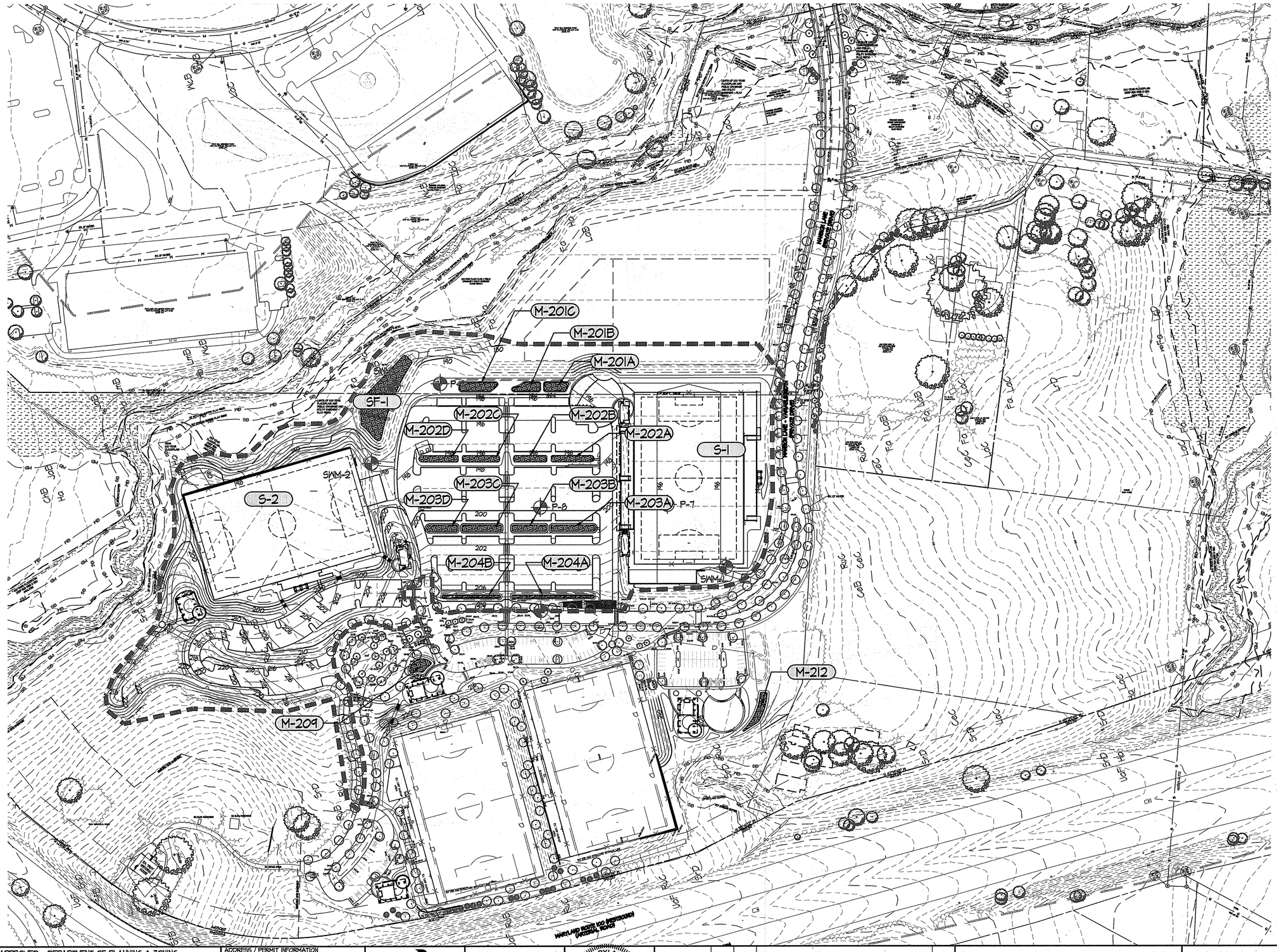
PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

ESC2.12

SDP-14-033



LEGEND

(THIS LEGEND APPLIES TO THIS DRAWING ONLY)

- PROPERTY LINE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING FOREST BUFFER
- EXISTING TREES (CRITICAL ROOT ZONE)
- EXISTING SHRUBS
- EXISTING WALK
- EXISTING ROAD
- EXISTING CURB
- EXISTING STORM DRAIN (EX. 15" SD)
- EXISTING WATER (EX. 6" WATER)
- EXISTING SANITARY SEWER
- EXISTING GAS (EX. 2" GAS)
- EXISTING PROPANE (EX. 2" PROPANE)
- EXISTING FUEL OIL (EX. FUEL OIL)
- EXISTING TELEPHONE (EX. TELE)
- EXISTING ELECTRIC (EX. ELEC)
- EXISTING OVERHEAD ELECTRIC (EX. ELEC OHX)
- EXISTING LIGHTING
- EXISTING COMMUNICATIONS (EX. COM)
- EXISTING CABLE TV (EX. CATV)
- EXISTING FIBER OPTIC (EX. FO)
- EXISTING CHILLED WATER SUPPLY (EX. CHS)
- EXISTING CHILLED WATER RETURN (EX. CHR)
- EXISTING HOT WATER SUPPLY (EX. HWS)
- EXISTING HOT WATER RETURN (EX. HWR)
- EXISTING FENCE
- EXISTING GUARDRAIL

ESD TABLE (THIS TABLE APPLIES TO SHEETS SWM1.00 - SWM1.04)

ESD NO.	DETAIL REFERENCE	APPROX. PLANTING MEDIA DIMENSIONS (Ft x Ft)	PLANTING MEDIA AREA (SF)	PERFORATED 4" PIPE (LF)	NEAREST SOIL BORING
M-201A	#1 / SHT. SWM2.01	20 X 50	960	45	S-14
M-201B	#1 / SHT. SWM2.01	20 X 45	960	40	S-14
M-201C	#1 / SHT. SWM2.01	20 X 75	1480	70	S-13
M-202A	#1 / SHT. SWM2.01	14 X 94	1280	89	B-201
M-202B	#1 / SHT. SWM2.01	14 X 73	1000	68	P-8
M-202C	#1 / SHT. SWM2.01	14 X 82	1120	77	P-8
M-202D	#1 / SHT. SWM2.01	14 X 86	1170	81	SWM-2
M-203A	#1 / SHT. SWM2.01	14 X 99	1370	94	P-8
M-203B	#1 / SHT. SWM2.01	14 X 75	1070	70	P-8
M-203C	#1 / SHT. SWM2.01	14 X 86	1200	81	P-8
M-203D	#1 / SHT. SWM2.01	14 X 68	940	63	B-209
M-204A	#1 / SHT. SWM2.01	5 X 180	890	175	P-4
M-204B	#1 / SHT. SWM2.01	5 X 130	640	125	P-3
M-209	#1 / SHT. SWM2.01	20 X 50	990	45	B-214
M-212	#1 / SHT. SWM2.01	15 X 80	1220	75	B-217
S-1	SHT C2.05	-	-	-	P-7
S-2	SHT C2.05	-	-	-	SWM-2
SF-1	#1 / SHT. SWM2.02	-	-	-	SWM-3

* REFER TO GEOTECHNICAL REPORTS FOR SPECIFIC SOIL BORING INFORMATION

NORTH

0 20 50 100 200 300

SCALE: 1" = 100'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 3/6/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9.15.14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 563, 342, 336, 180, 185, 139 LOT A-21, 185 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5117 / F.464, L.10595 / F.391, L.12205 / F.340, L.5183 / F.600, L.5541 / F.18, L.6933 / F.431, L.6153 / F.640, L.6185 / F. 640
GRID 11 & 18 ZONE: NH TAX MAP NO: 31
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND HILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
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7120 OAKLAND HILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES Incorporated
Comprehensive Land Planning & Site Design Services
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(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — No. 16414 — PROFESSIONAL ENGINEER

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. 16414, EXPIRATION DATE: 09/09/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

STORMWATER MANAGEMENT SITE MAP

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3951 — HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

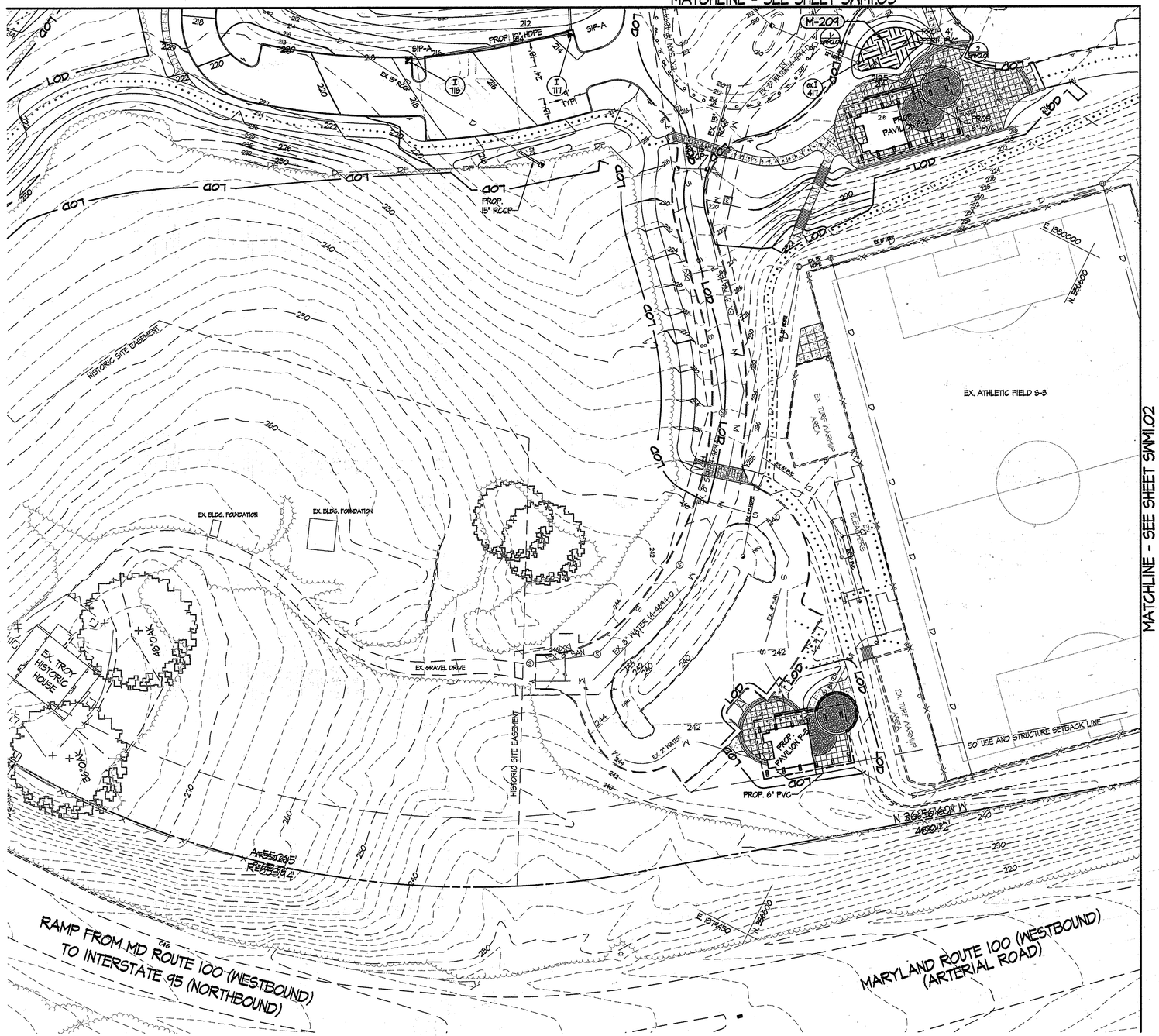
SWM1.00

SHEET 48 OF 67

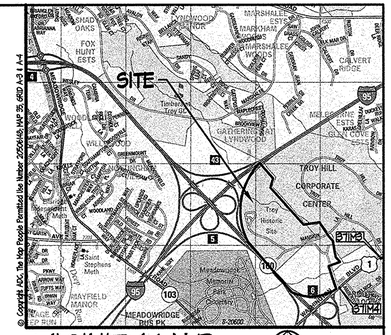
SDP-14-033

Z:\WORK\42-Troy Park, Phase II Site Development Plan\Dwg\SWM1.00 SWM Site Map.dwg-Layout Aug 29, 2014 04:46pm a.m

MATCHLINE - SEE SHEET SWMI.03



MATCHLINE - SEE SHEET SWMI.02



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VICINITY MAP 1"=2000'

LEGEND (THIS LEGEND APPLIES TO DRAWINGS SWMI.01 THROUGH SWMI.06 ONLY)

- PROPERTY LINE
- EXISTING TREELINE
- FB — EXISTING FOREST BUFFER
- CRITICAL ROOT ZONE — EXISTING TREES
- EXISTING SHRUBS
- EXISTING WALK
- EXISTING ROAD
- EXISTING CURB
- EX. 15" SD D — EXISTING STORM DRAIN
- EX. 6" WATER W — EXISTING WATER
- EX. 8" SAN S — EXISTING SANITARY SEWER
- EX. TELE T — EXISTING TELEPHONE
- EX. ELEC E — EXISTING ELECTRIC
- EX. ELEC OHW — EXISTING OVERHEAD ELECTRIC
- EXISTING LIGHTING
- EX. COM COM — EXISTING COMMUNICATIONS
- EX. CATV CATV — EXISTING CABLE TV
- EX. FO FO — EXISTING FIBER OPTIC
- EXISTING FENCE
- EXISTING GUARDRAIL
- EXISTING FLAGPOLE
- EXISTING BUILDING
- EXISTING WETLANDS
- WB — WETLAND BUFFER
- EXISTING STREAM
- SB — EXISTING STREAM BUFFER
- 100 YR FLOODPLAIN — EXISTING 100 YR. FLOODPLAIN

NORTH

0 10 20 40 80 120

SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/4/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9.2.14

ADDRESS / PERMIT INFORMATION
PARCEL 161, 545, 542, 336, 150, 105, 139 LOT A-21, 195 LOT A-22
ADDRESS: 6450 MARSHALEE LANE
L.1317 / F.464, L.12595 / F.321, L.12205 / F.340, L.5183 / F.600, L.5841 / F.18, L.4833 / F.431, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6052.02
WATER CODE: 400, SEWER CODE: 2162200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Arrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3089

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. 19344, EXPIRATION DATE: 09/09/16.
5-11-2014

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

STORMWATER MANAGEMENT PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 — HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

SHEET SWMI.01 44 OF 67

SDP-14-033

Z:\JOBS\2042-Troy Park, Phase II Site Development Plan\Dwg\SWMI.01 SWM Plan.dwg-Layout1 Aug 13, 2014 11:57am JLT

VICINITY MAP 1"=2000'

SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/18/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9.18.14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5711 / F.414, L.10585 / F.357, L.12205 / F.390, L.5783 / F.600,
L.5341 / F.78, L.4433 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
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PHONE (410) 313-2700
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(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — PROFESSIONAL ENGINEER
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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

STORMWATER MANAGEMENT PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

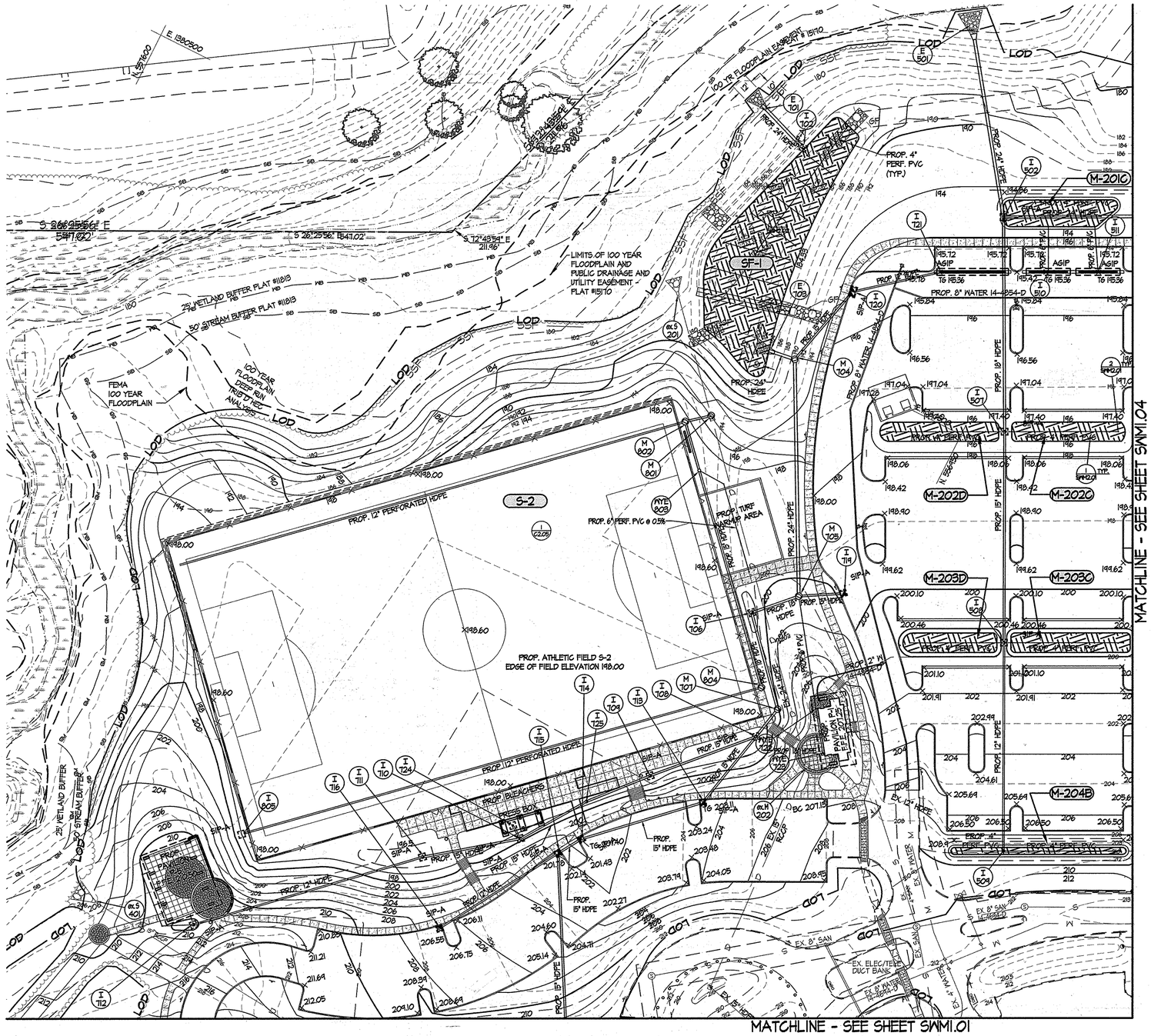
SCALE: 1"=40'

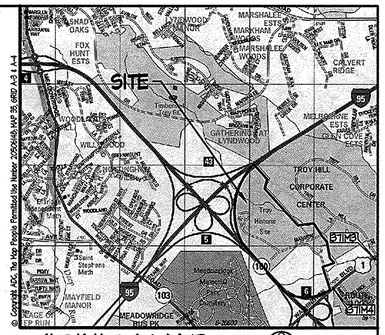
SWM1.02

SHEET 50 OF 67

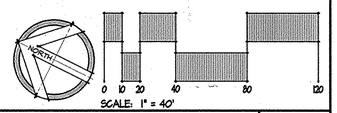
SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\SWM1.02 SWM Planding-Layout1 Aug 13, 2014 11:56am JLT





VICINITY MAP 1"=2000'



APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/4/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 545, 542, 536, 140, 155, 139 LOT A-21, 135 LOT A-22
ADDRESS: 6480 MARSHALEE LANE
L.517 / F.414, L.10555 / F.351, L.12205 / F.340, L.5183 / F.600, L.5341 / F.19, L.4183 / F.431, L.4653 / F.640, L.6135 / F. 640
GRID 11 & 18, ZONE: MH, TAX MAP NO. 51
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2652200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
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Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3089

STATE OF MARYLAND — JOHN L. TAYLOR — 21546 — REGISTERED PROFESSIONAL ENGINEER — 9/4/14
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. 21546, EXPIRATION DATE: 08/09/16

DES: JLT					
DRN: JLT/AM					
CHK: AFE					
DATE: 08/14/14	BY	NO.	REVISION	DATE	

STORMWATER MANAGEMENT PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

SWMI.03

SHEET 51 OF 67

SDP-14-033

Z:\01\DOAD-Troy Park Phase II Site Development Plan\Dwg\SWM\03 SWM Plan.dwg-Layout1 Aug 25, 2014 04:46pm a.m

VICINITY MAP
1"=2000'

SCALE: 1" = 40'

Z:\1010042-Troy Park Phase II Site Development Plan\Dwg\SWM1.04 SWM Plan.dwg-Layout1 Aug 13, 2014 11:55am JLT

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — 9/18/14 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 9-3-14 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 9-18-14 DATE

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L.5341 / F.78, L.4433 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
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(410) 683-3388 • fax (410) 683-3389

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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

STORMWATER MANAGEMENT PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO
PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

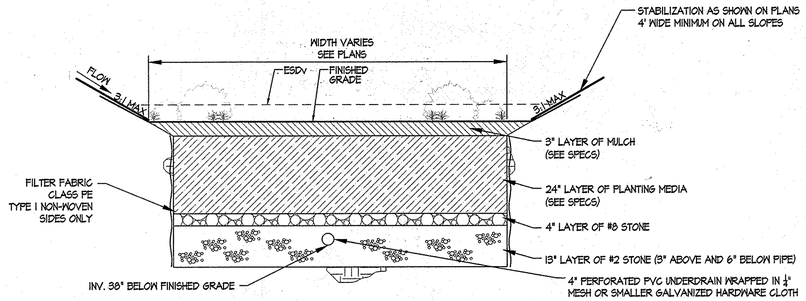
CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

SWM1.04

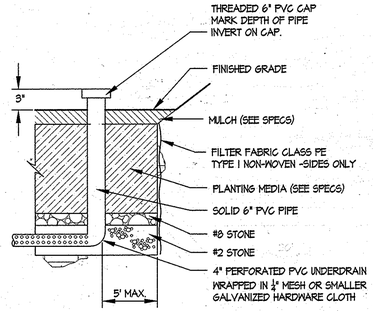
SHEET 52 OF 67

SDP-14-033



1 MICRO-BIORETENTION (M-6) (24" DEPTH)

NOT TO SCALE



2 6" CAPPED CLEANOUT / OBSERVATION WELL

NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/16/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
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GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
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PHONE (410) 313-2700

SITE RESOURCES
Incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND
ALBERT F. EDWARDS
PROFESSIONAL ENGINEER
8/14/2014
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. 16144, EXPIRATION DATE: 03/19/16.

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

STORMWATER MANAGEMENT DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 HOWARD COUNTY, MARYLAND

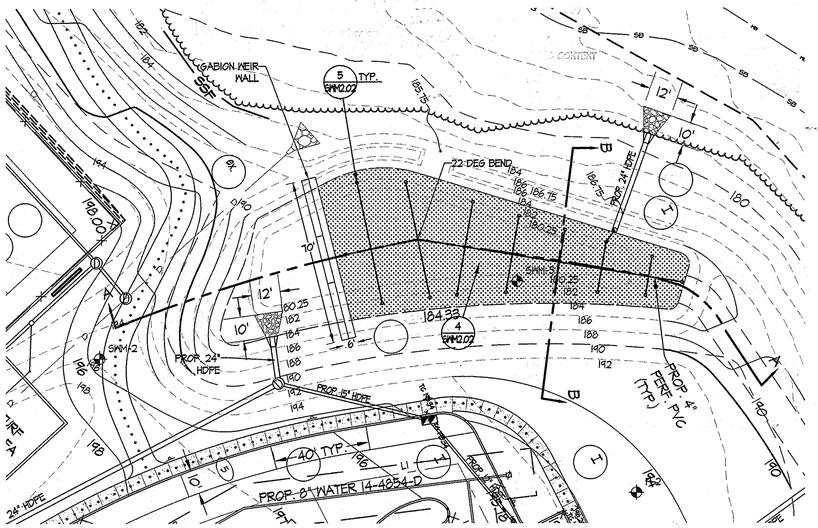
SCALE: AS SHOWN

SWM2.01

SHEET 53 OF 67

SDP-14-033

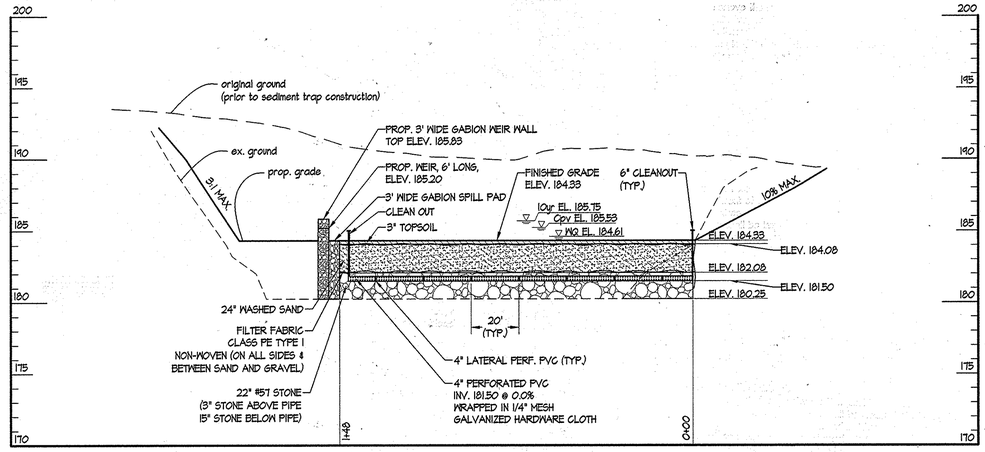
Z:\NO\10042-Troy Park Phase II Site Development Plan\Dwg\SWM2.01 SWM Details.dwg-Layout1 Aug 13, 2014 11:54am JLT



1 SAND FILTER #1 - PLAN VIEW

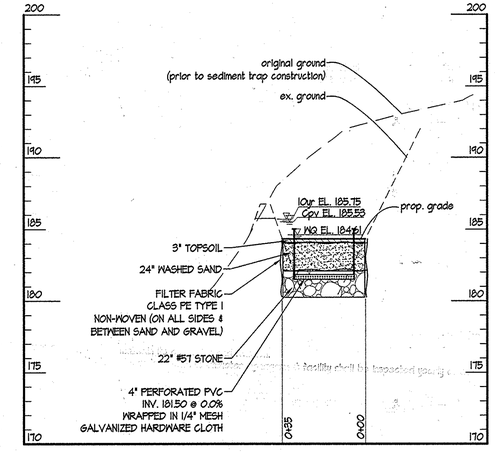
NOT A 378 FACILITY - CLASS 'A' STRUCTURE EXEMPT FROM SCD POND APPROVAL WHERE STORAGE < 40,000 CF AND HEIGHT OF EMBANKMENT < 6 FT.

SCALE: 1"=30'



2 SAND FILTER #1 - SECTION A-A

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



3 SAND FILTER #1 - SECTION B-B

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

NOTES:
1. SAND FILTER SAND SHALL BE LINED WITH FILTER CLOTH ON ALL SIDES AND BETWEEN SAND AND GRAVEL.
2. GABION WALL SHALL BE LINED WITH MCF 12I2 (OR APPROVED EQUIVALENT) FOR FULL BURIED DEPTH AND SIDES.
3. FILTER CLOTH SHALL BE CLASS PE TYPE I NON-WOVEN FILTER CLOTH

4 SAND FILTER SECTION (TYP.)

NOT TO SCALE

5 CLEAN-OUT / OBSERVATION WELL

NOT TO SCALE .

PROJECT NAME: TROY PARK PHASE 2		
AS-BUILT DATA FOR SAND FILTER *TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER		
TYPE OF FACILITY: SAND FILTER		ESD ID: SF-1
FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	149' X 61' (6,440 SF)	
FINISHED GRADE SURFACE ELEVATION	184.33	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	185.53	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	181.50	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	180.25	

DATE AS-BUILT ACCEPTED BY COUNTY: _____

PROJECT NAME: TROY PARK PHASE 2		
AS-BUILT DATA FOR ALTERNATIVE SURFACE *TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER		
TYPE OF FACILITY: ALTERNATIVE SURFACE		ESD ID: S-1
FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	240' X 380' (91,200 SF)	
FINISHED GRADE SURFACE ELEVATION	195.75	
THICKNESS OF FILTER MEDIA	7"	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	190.10	
RECHARGE STORAGE BOTTOM ELEVATION	189.10	

DATE AS-BUILT ACCEPTED BY COUNTY: _____

PROJECT NAME: TROY PARK PHASE 2		
AS-BUILT DATA FOR ALTERNATIVE SURFACE *TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER		
TYPE OF FACILITY: ALTERNATIVE SURFACE		ESD ID: S-2
FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	240' X 380' (91,200 SF)	
FINISHED GRADE SURFACE ELEVATION	198.00	
THICKNESS OF FILTER MEDIA	7"	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	193.05	
RECHARGE STORAGE BOTTOM ELEVATION	192.05	

DATE AS-BUILT ACCEPTED BY COUNTY: _____

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

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

SUMMARY TABULATION		
SAND FILTER DRAINAGE AREA	=	4.60 Ac
IMPERVIOUS AREA REQUIRING TREATMENT	=	1.90 Ac
ADDITIONAL MANAGEMENT REQUIREMENTS, Cpv	=	15,241 CF
WQV REQUIRED	=	7,042 CF
Q 10 (TR55)	=	17,591 CF
Q 100 (TR55)	=	21,161 CF

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/10/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9.28.14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 565, 342, 356, 140, 185, 139 LOT A-21, 135 LOT A-22
ADDRESS: 6480 MANSION LANE
L.511 / F.414, L.10565 / F.351, L.12205 / F.340, L.5183 / F.600, L.5341 / F.18, L.4933 / F.431, L.655 / F.640, L.6135 / F. 640
GRID 17 & 18 ZONE: 14-1 TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 9100 SEWER CODE: 2512000
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
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SITE RESOURCES incorporated
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(410) 683-3388 • fax (410) 683-3389

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. 16444, EXPIRATION DATE: 09/14/16.

DES: JLT					
DRN: JLT/AM					
CHK: AFE					
DATE: 08/14/14	BY	NO.	REVISION	DATE	

STORMWATER MANAGEMENT DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SWM2.02

SHEET 54 OF 67

SDP-14-033

Z:\10\10043-Troy Park Phase II Site Development Plan\Dwg\SWM2.02_SWM_Details.dwg-Layout Aug 19, 2014 11:54am JLT

920.01.05 MDSHA BIORETENTION SOIL MIX

920.01.05 Bioretention Soil Mix (BSM). A homogeneous mixture composed by loose volume of 5 parts Coarse Sand, 3 parts Base Soil, and 2 parts Fine Bark. BSM shall conform to the following:

(a) Components. Components of BSM shall be sampled, tested and approved before mixing as follows:

(1) Coarse Sand. MSMT 356. Coarse Sand shall be washed silica sand or crushed glass that conforms to ASTM Fine Aggregate C-33. Coarse Sand shall include less than 1% by weight of clay or silt size particles, and less than 5% by weight of any combination of diabase, greystone, calcareous or dolomitic sand.

(2) Base Soil. Base Soil shall be tested and certified by the producer to conform to the following requirements:

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

(3) Fine Bark. Fine Bark shall be the bark of hardwood trees that is milled and screened to a uniform particle size of 2 in. or less. Fine Bark shall be composted and aged for 6 months or longer, and be free from sawdust and foreign materials. A 1 to 2 lb sample of Fine Bark shall be submitted to the Landscape Operations Division for examination.

(b) Composition. BSM shall be sampled and tested according to the requirements of MSMT 356 and conform to the following:

COMPOSITION - BIORETENTION SOIL MIX (BSM)						
TEST PROPERTY	TEST METHOD	TEST VALUE AND AMENDMENT				
WEEDS	-	FREE OF SEED AND VIABLE PLANT PARTS OF SPECIES IN 920.06.02(a)(b)(c) WHEN INSPECTED.				
DEBRIS	-	920.01.05(a)(2)				
TEXTURAL ANALYSIS	T 88	PARTICLE		% PASSING BY WEIGHT		
		SIZE	mm	MINIMUM	MAXIMUM	
		SAND	2.0-0.050	55	85	
		SILT	0.050-0.002	-	20	
		CLAY	LESS THAN 0.002	1	8	
SOIL pH	D 4972	pH OF 5.7 TO 7.1				
ORGANIC MATTER	T 194	MINIMUM 1.5% BY WEIGHT				
NUTRIENT ANALYSIS AND SOLUBLE SALTS	MEHLICH-3	CONCENTRATION				
		ELEMENT	MINIMUM		MAXIMUM	
			ppm	FIV	ppm	FIV
		CALCIUM (Ca)	32	25	NO LIMIT	NO LIMIT
		MAGNESIUM (Mg)	15	25	NO LIMIT	NO LIMIT
		PHOSPHORUS (P)	18	25	92	100
		POTASSIUM (K)	22	25	NO LIMIT	NO LIMIT
		SULFUR (SO_4)	25	N/A	NO LIMIT	NO LIMIT
	ECl:2 (V:V)	SOLUBLE SALTS	40	N/A	500	N/A
HARMFUL MATERIALS	-	920.01.01(a)				

(c) Amendment or Failure. BSM that does not conform to composition requirements for pH or nutrient analysis shall be amended as specified by the NMP. BSM that exceeds maximum phosphorus concentration or fails other composition requirements will not be accepted, and shall not be delivered or used as BSM.

(d) Storage. 920.01.02(b). BSM shall be stored in a stockpile that is protected from weather under tarp or shed. BSM stored for 6 months or longer shall be resampled, retested, and reapproved before use.

(e) Approval. 920.01.02(c).

(f) Certification and Delivery. 920.01.02(d).

TABLE B.4.1 MATERIAL SPECIFICATIONS FOR MICRO-BIORETENTION, BIO-SWALE RAIN GARDENS & LANDSCAPE INFILTRATION

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE PLANTING PLAN	N/A	PLANTINGS ARE SITE-SPECIFIC
*PLANTING SOIL (2' TO 4' DEEP)	~~LOAMY SAND (60-65%) & COMPOST (35-40%) OR SANDY LOAM (30%), COARSE SAND (30%) & COMPOST (40%)~~	N/A	~~USDA SOIL TYPES LOAMY SAND OR SANDY LOAM; CLAY CONTENT < 5%~~
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM D 2974)		
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM; NO PINE OR WOOD CHIPS
PEA GRAVEL DIAPHRAGM	PEA GRAVEL: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
CURTAIN DRAIN	ORNAMENTAL STONE: WASHED COBBLES	STONE: 2" TO 5"	
GEOTEXTILE		N/A	PE TYPE I NONWOVEN
GRAVEL (UNDERDRAINS AND INFILTRATION BERMS)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR 35	SLOTTED OR PERFORATED PIPE; 3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4 INCH GALVANIZED HARDWARE CLOTH.
POURED IN PLACE CONCRETE (IF REQUIRED)	MSHA MIX NO. 3; F'c=3500 PSI @ 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	AASHTO-M-6 OR ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.

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

SEQUENCE OF CONSTRUCTION

1. Assure that Grading Permit and all other necessary permits are obtained from Owner.
2. Notify Howard County Department of Public Works at least 48 hours before start of work. Contact Miss Utility at 1-800-257-7777 at least three days in advance of starting work shown on plans.
3. Clear and grub for and install erosion and sediment control measures or devices. See ESC 1.00 for the overall sediment control plan.
   3.a. Retain Sediment Trap 2 from Phase I - SDP-11-003. This trap will be converted to a Sand Filter later in the sequence.
   3.b. Maintain diversion fence (DF) at the north side of the site from the nearest point to the Historic House to the point where the existing diversion fence turns to the east near to the proposed loop parking area. From this point, extend diversion fence to the north a distance of about 150 linear feet as shown. Install rock outlet protection (ROP III) 8' wide by 24' long, class I riprap at each outfall of the diversion fence as shown.
   3.c. Maintain existing super silt fence (SSF) where shown along the northern limit of disturbance near to Turf Field S-2. Install super silt fence (SSF) at remaining locations as shown.
   3.d. Install the stabilized construction entrances (SCE) and inlet protection (IP).
4. Notify Sediment Control Inspector and Engineer upon completion of this installation.
5. For access and construction of the three small development areas to the west of Mansion Drive, use only rubber tired construction equipment.
6. Install storm drains. Install water and sanitary sewer lines and manholes. Install inlet protection as shown on approved Erosion and Sediment Control Plans.
7. Fine grade and install base course for all road surfaces and parking lots. Install curb and gutter.
8. Construct synthetic fields in accordance with manufacturer's specifications including underdrains, concrete edging for fencing, and turf surface. Construction bleachers and walks associated with Fields 1 and 2.
9. Final grade the remaining areas and permanently stabilize those areas.
10. After all contributing drainage areas have been completely stabilized, install proposed SWM facilities per approved SWM plans.
11. Convert Sediment Trap 2 to a Sand Filter per approved SWM plans.
12. Pave all road surfaces with the final surface course.
13. After permanent stabilization of site with established vegetation and with permission of the Sediment Control Inspector, remove erosion and sediment control measures or devices, and stabilize those areas disturbed by this process.

CONSTRUCTION SPECIFICATIONS FOR SAND FILTERS, BIORETENTION AND OPEN CHANNELS

B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDENS, LANDSCAPE INFILTRATION AND INFILTRATION BERMS

1. Material Specifications
The allowable materials to be used in these practices are detailed in Table B.4.1.

2. Filtering Media or Planting Soil
The soil shall be 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 micro-bioretention practice 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:
- Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
- Organic Content - Minimum 1.5% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
- Clay Content - Media shall have a clay content of less than 8%.
- pH Range - Should be between 5.7 - 7.1. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, 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 topsoil was excavated.

3. Compaction
It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices areexcavated 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 micro-bioretention practices can be found in Appendix A, Section A.2.3.

5. Plant Installation
Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

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

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the 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 should meet the following criteria:
- Pipe- Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTMF 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4) galvanized hardware cloth.
- Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.
- The main collector pipe shall be at a minimum 0.5% slope.
- A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.
- A 4" layer of pea gravel (1/8" to 3/8" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

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

7. Miscellaneous
These practices may not be constructed until all contributing drainage area has been stabilized

OPERATION AND MAINTENANCE SCHEDULE

BAYSAVER WATER QUALITY DEVICE
1. The BaySaver water quality structure shall be periodically inspected and cleaned to maintain operation and function. The owner shall inspect the BaySaver unit yearly at a minimum, utilizing the BaySaver Inspection/Monitoring Form. Inspections shall be done by using a Grade Stick or similar device. When the sediment depths exceed 2 feet, the unit must be cleaned.
2. The BaySaver water quality structure shall be checked and cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies.
3. The maintenance of the BaySaver unit shall be done using a vacuum truck which will remove the water, sediment, debris, floating hydrocarbons and other materials in the unit. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
4. The inlet and outlet pipes shall be checked for any obstructions at least once every six months. If obstructions are found the owner shall have them removed. Structural parts of the BaySaver unit shall be repaired as needed.
5. The owner shall retain and make the BaySaver Inspection/Monitoring Forms available the Howard County officials upon their request.

MICRO BIO-RETENTION AREAS (M-6) & BIO-SWALES (M-8)
1. Annual maintenance of plant material, mulch layer and soil layer is required. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning.
2. Schedule of plant inspection will be twice a year in spring and fall. This inspection will include removal of dead and diseased vegetation considered beyond treatment, treatment of all diseased trees and shrubs and replacement of all deficient stakes and wires.
3. Mulch shall be inspected each spring. Remove previous mulch layer before applying new layer once every 2 to 3 years.
4. Soil erosion to be addressed on an as needed basis, with a minimum of once per month and after heavy storm events.

STORMWATER INFILTRATION TRENCHES (I-1)
1. The monitoring wells and structures shall be inspected on a quarterly basis and after every large storm event.
2. Water levels and sediment build up in the monitoring wells shall be recorded over a period of several days to insure trench drainage.
3. A logbook shall be maintained to determine the rate at which the facility drains.
4. When the facility becomes clogged so that it does not drain down within the 72 hour time period, corrective action shall be taken.
5. The maintenance logbook shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
6. Once the performance characteristics of the infiltration facility have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

JOINTLY MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5)
1. Top and side slopes of the embankment shall be mowed a minimum of two (2) times per year, once in June and once in September. Other side slopes and maintenance access shall be mowed as needed.
2. Debris and litter shall be removed during regular mowing operations and as needed.
3. When deemed necessary for aesthetic reasons, and upon approval from the Department of Public Works, sediment shall be removed from the pond.

PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION BASINS (I-2)
1. The infiltration basin shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
2. The top and side slopes of the embankment shall be mowed a minimum of once per year, when vegetation reaches 18" in height or as needed.
3. Debris and litter shall be removed during regular mowing operations and as needed.
4. Visible signs of erosion in the facility shall be repaired as soon as it is noticed.
5. Remove silt when it exceeds four (4) inches deep in the forebay.
6. The bottom of the facility shall be rototilled at least once every two (2) years to insure that the soil maintains the infiltration capability.
7. A logbook shall be maintained to determine the rate at which the facility drains. The maintenance logbook shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
8. Once the performance characteristics of the infiltration basin have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5)
Routine Maintenance:
1. Facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the pond is functioning properly.
2. Top and side slopes of the embankment shall be mowed a minimum of two (2) times per year, once in June and once in September. Other side slopes and maintenance access shall be mowed as needed.
3. Debris and litter shall be removed during regular mowing operations and as needed.
4. Visible signs of erosion in the pond as well as the riprap or gabion outlet area shall be repaired as soon as it is noticed.

Non-Routine Maintenance:
1. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
2. Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond, or forebay, is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.

PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION TRENCHES (I-1)
1. The monitoring wells and structures shall be inspected on a quarterly basis and after every large storm event.
2. Water levels and sediment build up in the monitoring wells shall be recorded over a period of several days to insure trench drainage.
3. A logbook shall be maintained to determine the rate at which the facility drains.
4. When the facility becomes clogged so that it does not drain down within the 72 hour time period, corrective action shall be taken.
5. The maintenance logbook shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
6. Once the performance characteristics of the infiltration facility have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

PRIVATELY OWNED AND MAINTAINED STORMCEPTOR WATER QUALITY DEVICE
1. The Stormceptor water quality structure shall be periodically inspected and cleaned to maintain 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 Plexiglas 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 unit must be cleaned.
2. The Stormceptor water quality structure shall be checked and cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies.
3. 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 unit. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
4. The inlet and outlet pipes shall be checked for any obstructions at least once every six months. If obstructions are found the owner shall have them removed. Structural parts of the Stormceptor unit shall be repaired as needed.
5. The owner shall retain and make the Stormceptor Inspection/Monitoring Forms available the Howard County officials upon their request.

PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1, F-4, AND F-5)
1. The stormwater wetland facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
2. The top and side slopes of the embankment shall be mowed a minimum of once per year, when vegetation reaches 18" in height or as needed.
3. Filters that have a grass cover shall be mowed a minimum of three (3) times per growing season to maintain a maximum grass height of less than 12 inches.
4. Debris and litter shall be removed during regular mowing operations and as needed.
5. Visible signs of erosion in the facility shall be repaired as soon as it is noticed.
6. Remove silt when it exceeds four (4) inches deep in the forebay.
7. When water ponds on the surface of the filter bed for more than 72 hours, the top few inches of discolored material shall be replaced with fresh material. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
8. A logbook shall be maintained to determine the rate at which the facility drains.
9. The maintenance logbook shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
10. Once the performance characteristics of the infiltration system have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

PRIVATELY OWNED AND MAINTAINED UNDERGROUND FACILITIES
1. The underground stormwater management facility is privately owned and it shall be the responsibility of the owner to periodically inspect and clean the facility to maintain its operation and function.
2. The underground stormwater management facility shall be inspected yearly at a minimum and after especially severe storm events.
3. When sediment accumulation of more than 2" is observed or any debris that might obstruct the outfall is observed, the facility shall be cleaned.
4. The facility shall be cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies notifying them of the spill and cleanup operation.
5. The sediment and debris shall be removed from the underground stormwater management facility by vacuum truck or other manual means. The owner shall follow proper cleaning and disposal of the removed material and liquid.
6. The inlet and outlet pipes shall be checked for any obstructions at least once every six (6) months. If obstructions are found, the owner shall have them removed and properly disposed of.

PRIVATELY OWNED AND MAINTAINED UNDERGROUND STORMWATER FILTRATION SYSTEMS (F-2 AND F-3)
1. The sediment chamber outlet devices shall be cleaned and/or repaired when drawdown times within the chamber exceed 36 hours.
2. Debris and litter shall be removed as necessary to insure proper operation of the system.
3. Sediment shall be cleaned out of the sedimentation chamber when it accumulates to a depth of 6 inches. Vegetation within the sediment chamber shall be limited to a height of 18 inches.
4. When water ponds on the surface of the filter bed for more than 72 hours, the top few inches of discolored material shall be replaced with fresh material. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
5. A logbook shall be maintained to determine the rate at which the facility drains.
6. The maintenance logbook shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
7. Once the performance characteristics of the infiltration system have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

~~These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.~~

USDA - Natural Resources Conservation Service Date

These plans for ~~small pond~~ construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

9/15/14

Howard Soil Conservation District Date

BY THE ENGINEER:
"I certify that this plan for ~~pond~~ construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise ~~pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.~~"

Signature of Engineer 8.14.2014 Date

Albert F. Edwards, P.E.
Printed Name of Engineer

BY THE DEVELOPER:
"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. ~~I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.~~ I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Laura T. Wetherald 8/14/2014
Signature of DEVELOPER Date

Laura T. Wetherald 8/14/2014
Printed Name of DEVELOPER

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR 9/18/14 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 9.3.14 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 9-18-14 DATE

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.577 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4933 / F.437, L.6153 / F.690, L.6135 / F. 690
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — 8.14.2014
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. 16144, EXPIRATION DATE 08/19/16.

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

STORMWATER MANAGEMENT NOTES

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO
PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SWM2.11

SHEET 55 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\SWM2.11 SWM Notes.dwg-Layout1 Aug 13, 2014 11:52am JLT

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 201A

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	20' X 78' (1470 SF)	
FINISHED GRADE SURFACE ELEVATION	192.5	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	193.50	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	189.33	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	188.83	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 201B

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	20' X 75' (1450 SF)	
FINISHED GRADE SURFACE ELEVATION	192.5	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	193.50	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	189.33	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	188.83	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 201C

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	20' X 89' (1720 SF)	
FINISHED GRADE SURFACE ELEVATION	192.5	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	193.50	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	189.33	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	188.83	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 202A

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	14' X 94' (1280 SF)	
FINISHED GRADE SURFACE ELEVATION	196.0	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	197.00	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	193.83	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	193.33	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 202B

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	14' X 73' (1000 SF)	
FINISHED GRADE SURFACE ELEVATION	196.0	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	197.00	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	193.83	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	193.33	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 202C

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	14' X 82' (1120 SF)	
FINISHED GRADE SURFACE ELEVATION	196.0	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	197.00	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	193.83	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	193.33	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 202D

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	14' X 86' (1170 SF)	
FINISHED GRADE SURFACE ELEVATION	196.0	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	197.00	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	193.83	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	193.33	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 203A

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	14' X 99' (1370 SF)	
FINISHED GRADE SURFACE ELEVATION	199.0	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	199.97	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	196.80	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	196.30	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 203B

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	14' X 75' (1070 SF)	
FINISHED GRADE SURFACE ELEVATION	199.0	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	199.97	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	196.80	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	196.30	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 203C

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	14' X 86' (1200 SF)	
FINISHED GRADE SURFACE ELEVATION	199.0	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	199.97	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	196.80	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	196.30	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 203D

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	14' X 68' (940 SF)	
FINISHED GRADE SURFACE ELEVATION	199.0	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	199.97	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	196.80	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	196.30	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 204A

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	5' X 180' (890 SF)	
FINISHED GRADE SURFACE ELEVATION	207.4	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	208.40	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	205.23	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	204.73	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 204B

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	5' X 130' (640 SF)	
FINISHED GRADE SURFACE ELEVATION	207.4	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	208.40	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	205.23	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	204.73	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 209

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	20' X 50' (990 SF)	
FINISHED GRADE SURFACE ELEVATION	212.5	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	213.5	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	209.33	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	208.83	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

PROJECT NAME: TROY PARK PHASE 2

AS-BUILT DATA FOR MICRO-BIORETENTION
*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

TYPE OF FACILITY: MICRO-BIORETENTION ESD ID: 212

FEATURE	DESIGN	*AS-BUILT
FILTER BED DIMENSIONS & AREA	15' X 80' (1220 SF)	
FINISHED GRADE SURFACE ELEVATION	202.5	
THICKNESS OF FILTER MEDIA	24"	
GRATE ELEVATION	203.5	
OUTLET PIPE (UNDERDRAIN) SIZE/INVERT ELEVATION	200.33	
PLANTINGS	(SEE LANDSCAPE PLANS)	
RECHARGE STORAGE BOTTOM ELEVATION	199.83	

DATE AS-BUILT ACCEPTED BY COUNTY: ____________

NOTE:

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

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

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/18/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5711 / F.414, L.10585 / F.357, L.12205 / F.340, L.5783 / F.600, L.5341 / F.78, L.4933 / F.437, L.6153 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — PROFESSIONAL ENGINEER

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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

STORMWATER MANAGEMENT DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO
PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SWM2.12

SHEET 56 OF 67

SDP-14-033

Z:\1010042-Troy Park Phase II Site Development Plan\Dwg\SWM2.12 SWM Notes.dwg-Layout1 Aug 13, 2014 11:52am JLT

LOG OF BORING NO. B-2

Sheet 1 of 1

PROJECT: Troy Park
PROJECT NO: 100462
PROJECT LOCATION: Howard County, Maryland

WATER LEVEL (ft): ▽ 21.0 ▼ 13.4
DATE: 5/28/2010 6/1/2010
CAVED (ft): 18.2 16.8

DATE STARTED: May 28, 2010
DATE COMPLETED: May 28, 2010
DRILLING CONTRACTOR: Geo-Technology Associates, Inc.
DRILLER: Fleming
DRILLING METHOD: HSA
SAMPLING METHOD: Split Spoon

WATER ENCOUNTERED DURING DRILLING (ft)▽: 21.0
GROUND SURFACE ELEVATION: 208.0
DATUM: Survey
EQUIPMENT: CME 45
LOGGED BY: Jude O-A
CHECKED BY: Mark Grande

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)
S-1	0.0	12	6-7-7	14
S-2	2.5	14	9-19-21	40
S-3	5.0	12	18-31-36	67
S-4	8.5	18	22-34-22	56
S-5	13.5	4	50/4"	50/4"
S-6	18.5	10	15-50/4"	50/4"
S-7	23.5	5	50/5"	50/5"

ELEVATION (ft.)	USCS	DESCRIPTION	REMARKS
205.5	ML	Green-Brown, Grey, moist, medium dense, SILT with Sand	Topsoil: 2 in.
203.0	MH	Brown, Green-Brown, Grey, moist, very dense, Sandy Elastic SILT with Rock Fragments	
183.0		Brown, Green-Brown, Grey, Tan, moist to slightly wet, very dense, Highly Weathered Rock.	
		Boring Terminated at 25.0 ft.	

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC. 14280 Park Center Drive, Suite A Laurel, Maryland 20707 — LOG OF BORING NO. B-2 — Sheet 1 of 1

LOBG 100462.GPJ 7/2/10

LOG OF BORING NO. B-5

Sheet 1 of 1

PROJECT: Troy Park
PROJECT NO: 100462
PROJECT LOCATION: Howard County, Maryland

WATER LEVEL (ft): ▽ Dry ▼ Dry
DATE: 6/1/2010 6/2/2010
CAVED (ft): 9.3 8.8

DATE STARTED: June 1, 2010
DATE COMPLETED: June 1, 2010
DRILLING CONTRACTOR: Geo-Technology Associates, Inc.
DRILLER: Fleming
DRILLING METHOD: HSA
SAMPLING METHOD: Split Spoon

WATER ENCOUNTERED DURING DRILLING (ft)▽: Dry
GROUND SURFACE ELEVATION: 211.3
DATUM: Survey
EQUIPMENT: CME 45
LOGGED BY: Jude O-A
CHECKED BY: Mark Grande

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)
S-1	0.0	14	2-2-3	5
S-2	2.5	6	17-14-8	22
S-3	5.0	16	5-7-9	16
S-4	8.5	18	8-11-14	25
S-5	13.5	18	9-11-13	24

ELEVATION (ft.)	USCS	DESCRIPTION	REMARKS
206.3	SC	Brown, moist, loose to medium dense, Clayey SAND and Gravel	Topsoil: 6 in.
197.8	MH	Orange-Brown, Pale Green to Green-Brown, moist, very stiff, Sandy Elastic SILT	
196.3	ML	Brown, Dark Brown, Red-Brown, moist, medium dense, SILT with Sand	
		Boring Terminated at 15.0 ft.	

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC. 14280 Park Center Drive, Suite A Laurel, Maryland 20707 — LOG OF BORING NO. B-5 — Sheet 1 of 1

LOBG 100462.GPJ 7/1/10

LOG OF BORING NO. B-6

Sheet 1 of 1

PROJECT: Troy Park
PROJECT NO: 100462
PROJECT LOCATION: Howard County, Maryland

WATER LEVEL (ft): ▽ Dry ▼ Dry
DATE: 5/28/2010 6/1/2010
CAVED (ft): 4.7 3.0

DATE STARTED: May 28, 2010
DATE COMPLETED: May 28, 2010
DRILLING CONTRACTOR: Geo-Technology Associates, Inc.
DRILLER: Fleming
DRILLING METHOD: HSA
SAMPLING METHOD: Split Spoon

WATER ENCOUNTERED DURING DRILLING (ft)▽: Dry
GROUND SURFACE ELEVATION: 198.8
DATUM: Survey
EQUIPMENT: CME 45
LOGGED BY: Jude O-A
CHECKED BY: Mark Grande

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)
S-1	0.0	16	2-4-6	10
S-2	2.5	10	10-10-13	23
S-3	5.0	18	4-8-12	20
S-4	8.5	14	8-12-14	26
S-5	13.5	16	18-23-26	49

ELEVATION (ft.)	USCS	DESCRIPTION	REMARKS
193.8	SC	Brown, Orange-Brown, moist, loose to medium dense, Clayey SAND with Gravel and Rock Fragments	Topsoil: 4 in.
190.3	CL	Brown, Dark-Brown, Orange-Brown, Tan, moist, very stiff, Lean CLAY with Sand	
183.8	MH	Brown, Red-Brown, Pale Green to Green-Brown, moist, very stiff to hard, Sandy Elastic SILT with Rock Fragments	
		Boring Terminated at 15.0 ft.	

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC. 14280 Park Center Drive, Suite A Laurel, Maryland 20707 — LOG OF BORING NO. B-6 — Sheet 1 of 1

LOBG 100462.GPJ 7/1/10

LOG OF BORING NO. LP-1

Sheet 1 of 1

PROJECT: Troy Park
PROJECT NO: 100462
PROJECT LOCATION: Howard County, Maryland

WATER LEVEL (ft): ▽ Dry ▼ 17.6
DATE: 6/2/2010 6/3/2010
CAVED (ft): 18.4 18.6

DATE STARTED: June 2, 2010
DATE COMPLETED: June 2, 2010
DRILLING CONTRACTOR: Geo-Technology Associates, Inc.
DRILLER: Fleming
DRILLING METHOD: HSA
SAMPLING METHOD: Split Spoon

WATER ENCOUNTERED DURING DRILLING (ft)▽: Dry
GROUND SURFACE ELEVATION: 224.0
DATUM: Survey
EQUIPMENT: CME 45
LOGGED BY: Jude O-A
CHECKED BY: Mark Grande

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)
S-1	0.0	14	1-1-3	4
S-2	2.5	10	5-9-8	17
S-3	5.0	18	4-7-7	14
S-4	8.5	18	4-5-7	12
S-5	13.5	18	2-3-4	7
S-6	18.5	18	7-13-15	28
S-7	23.5	18	6-12-13	25
S-8	28.5	18	7-13-13	26

ELEVATION (ft.)	USCS	DESCRIPTION	REMARKS
219.0	SM	Brown, Light Brown, Orange-Brown, Tan, moist, very loose to medium dense, Silty SAND	Topsoil: 3in.
205.5	CL	Light Brown, Brown, Orange-Brown, Red-Brown, Tan, moist, medium stiff to stiff, Sandy Lean CLAY	
200.5	SC SM	White to Light Grey, moist, medium dense, Silty Clayey SAND	
194.0	MH	Grey, Pale Green to Green-Brown, Tan, moist, very stiff, Sandy Elastic SILT with Rock Fragments	
		Boring Terminated at 30.0 ft.	

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC. 14280 Park Center Drive, Suite A Laurel, Maryland 20707 — LOG OF BORING NO. LP-1 — Sheet 1 of 1

LOBG 100462.GPJ 7/1/10

LOG OF BORING NO. P-2

Sheet 1 of 1

PROJECT: Troy Hill Tennis Patrons
PROJECT NO: 100461
PROJECT LOCATION: Howard County, Maryland

WATER LEVEL (ft): ▽ Dry ▼ Dry
DATE: 5/24/2010 5/25/2010
CAVED (ft): 5.9 5.5

DATE STARTED: May 24, 2010
DATE COMPLETED: May 24, 2010
DRILLING CONTRACTOR: Geo-Technology Associates, Inc.
DRILLER: Fleming
DRILLING METHOD: HSA
SAMPLING METHOD: Split Spoon

WATER ENCOUNTERED DURING DRILLING (ft)▽: Dry
GROUND SURFACE ELEVATION: 195.2
DATUM: Survey
EQUIPMENT: CME 45
LOGGED BY: Jude O-A
CHECKED BY: Mark Grande

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY	SAMPLE BLOWS/6 inches	N (blows/ft)
S-1	0.0	12	2-4-4	8
S-2	2.5	12	11-14-14	28
S-3	5.0	18	15-23-18	41
S-4	8.5	18	27-31-36	67

ELEVATION (ft)	USCS	DESCRIPTION	REMARKS
190.2	MH	Brown, Grey, moist, medium stiff to very stiff, Sandy Elastic SILT with Gravel and Rock Fragments	Topsoil: 4 in.
186.7	SM	Brown, Grey, moist, dense, Silty SAND with Gravel and Rock Fragments	
185.2		Brown, Grey, moist, very dense, Highly Weathered Rock	
		Boring Terminated at 10.0 ft	

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC. 14280 Park Center Drive, Suite A Laurel, Maryland 20707 — LOG OF BORING NO. P-2 — Sheet 1 of 1

LOBG 100461.GPJ 6/10/10

LOG OF BORING NO. P-3

Sheet 1 of 1

PROJECT: Troy Hill Tennis Patrons
PROJECT NO: 100461
PROJECT LOCATION: Howard County, Maryland

WATER LEVEL (ft): ▽ Dry ▼ Dry
DATE: 6/3/2010 6/4/2010
CAVED (ft): 3.7 5.6

DATE STARTED: June 3, 2010
DATE COMPLETED: June 3, 2010
DRILLING CONTRACTOR: Geo-Technology Associates, Inc.
DRILLER: Fleming
DRILLING METHOD: HSA
SAMPLING METHOD: Split Spoon

WATER ENCOUNTERED DURING DRILLING (ft)▽: Dry
GROUND SURFACE ELEVATION: 203.4
DATUM: Survey
EQUIPMENT: CME 45
LOGGED BY: Jude O-A
CHECKED BY: Mark Grande

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY	SAMPLE BLOWS/6 inches	N (blows/ft)
S-1	0.0	14	1-1-3	4
S-2	2.5	13	4-5-7	12
S-3	5.0	18	5-7-8	15
S-4	8.5	18	5-7-7	14

ELEVATION (ft)	USCS	DESCRIPTION	REMARKS
200.9	MH	Brown, Tan, Yellow-Brown, moist, soft, Sandy Elastic SILT	
198.4	SC	Brown, Red-Brown, moist, medium dense, Clayey SAND with Gravel	
193.4	MH	Brown, moist, stiff, Sandy Elastic SILT	
		Boring Terminated at 10.0 ft.	

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC. 14280 Park Center Drive, Suite A Laurel, Maryland 20707 — LOG OF BORING NO. P-3 — Sheet 1 of 1

LOBG 100461.GPJ 6/10/10

LOG OF BORING NO. P-4

Sheet 1 of 1

PROJECT: Troy Hill Tennis Patrons
PROJECT NO: 100461
PROJECT LOCATION: Howard County, Maryland

WATER LEVEL (ft): ▽ Dry ▼ Dry
DATE: 6/3/2010 6/4/2010
CAVED (ft): 5.8 5.3

DATE STARTED: June 3, 2010
DATE COMPLETED: June 3, 2010
DRILLING CONTRACTOR: Geo-Technology Associates, Inc.
DRILLER: Fleming
DRILLING METHOD: HSA
SAMPLING METHOD: Split Spoon

WATER ENCOUNTERED DURING DRILLING (ft)▽: Dry
GROUND SURFACE ELEVATION: 207.3
DATUM: Survey
EQUIPMENT: CME 45
LOGGED BY: Jude O-A
CHECKED BY: Mark Grande

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY	SAMPLE BLOWS/6 inches	N (blows/ft)
S-1	0.0	10	1-1-3	4
S-2	2.5	6	8-14-14	28
S-3	5.0	12	8-12-9	21
S-4	8.5	12	6-8-11	19

ELEVATION (ft)	USCS	DESCRIPTION	REMARKS
204.8	SC	Brown, Tan, moist, very loose, Clayey Sand, trace Gravel	Topsoil: 5 in.
203.8	CL	Brown, Light Tan, moist, very stiff, Lean CLAY	
202.3	SM	Brown, Red- Brown, molt, medium dense, Silty SAND	
197.3	MH	Brown, Red-Brown, Tan, Yellow to Light Green, moist, very stiff, Sandy Elastic SILT	
		Boring Terminated at 10.0 ft.	

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC. 14280 Park Center Drive, Suite A Laurel, Maryland 20707 — LOG OF BORING NO. P-4 — Sheet 1 of 1

LOBG 100461.GPJ 6/10/10

LOG OF BORING NO. P-8

Sheet 1 of 1

PROJECT: Troy Hill Tennis Patrons
PROJECT NO: 100461
PROJECT LOCATION: Howard County, Maryland

WATER LEVEL (ft): ▽ Dry ▼ Dry
DATE: 6/3/2010 6/4/2010
CAVED (ft): 4.8 5.6

DATE STARTED: June 3, 2010
DATE COMPLETED: June 3, 2010
DRILLING CONTRACTOR: Geo-Technology Associates, Inc.
DRILLER: Fleming
DRILLING METHOD: HSA
SAMPLING METHOD: Split Spoon

WATER ENCOUNTERED DURING DRILLING (ft)▽: Dry
GROUND SURFACE ELEVATION: 195.7
DATUM: Survey
EQUIPMENT: CME 45
LOGGED BY: Jude O-A
CHECKED BY: Mark Grande

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY	SAMPLE BLOWS/6 inches	N (blows/ft)
S-1	0.0	8	1-2-2	4
S-2	2.5	6	5-6-5	10
S-3	5.0	16	4-4-6	10
S-4	8.5	16	22-26-39	65

ELEVATION (ft)	USCS	DESCRIPTION	REMARKS
190.7	SC	Dark Brown,Tan, moist, very loose to loose, Clayey SAND with Organics	Topsoil: 3.9 in.
189.7	CH	Brown, Tan, moist, stiff, Fat CLAY with Sand	
187.2	MH	Brown, Tan, Yellow-Brown, moist, stiff, Sandy Elastic SILT with Rock Fragments	
185.7		Brown, Tan, Yellow-Brown, moist, very dense, Highly Weathered Rock	
		Boring Terminated at 10.0 ft.	

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC. 14280 Park Center Drive, Suite A Laurel, Maryland 20707 — LOG OF BORING NO. P-8 — Sheet 1 of 1

LOBG 100461.GPJ 6/10/10

LOG OF BORING NO. S-9

Sheet 1 of 1

PROJECT: Troy Hill Tennis Patrons
PROJECT NO: 100461
PROJECT LOCATION: Howard County, Maryland

WATER LEVEL (ft): ▽ 21.1 ▼ 15.3
DATE: 5/22/2010 5/25/2010
CAVED (ft): 22.5 21.3

DATE STARTED: May 22, 2010
DATE COMPLETED: May 22, 2010
DRILLING CONTRACTOR: Geo-Technology Associates, Inc.
DRILLER: Fleming
DRILLING METHOD: HSA
SAMPLING METHOD: Split Spoon

WATER ENCOUNTERED DURING DRILLING (ft)▽: 27.0
GROUND SURFACE ELEVATION: 198.0
DATUM: Survey
EQUIPMENT: CME 45
LOGGED BY: Jude O-A
CHECKED BY: Mark Grande

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY	SAMPLE BLOWS/6 inches	N (blows/ft)
S-1	0.0	16	2-3-3	6
S-2	2.5	18	3-4-5	9
S-3	5.0	16	5-8-9	17
S-4	8.5	18	5-9-12	21
S-5	13.5	18	10-12-20	32
S-6	18.5	10	17-50/5"	50/5"
S-7	23.5	14	10-40-50/2"	50/2"
S-8	27.8	.5	50/.5"	50/.5"

ELEVATION (ft)	USCS	DESCRIPTION	REMARKS
190.5	CH	Brown, moist, medium stiff to very stiff, Fat CLAY, trace Gravel	Topsoil: 4 in.
179.5	MH	Brown, Dark-Brown, Tan, Yellow-Brown, moist, very stiff to hard, Sandy Elastic SILT with Rock Fragments	
170.2		Light-Grey to Grey, moist, very dense, Highly Weathered Rock	
		Boring Terminated at 27.8 ft	

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC. 14280 Park Center Drive, Suite A Laurel, Maryland 20707 — LOG OF BORING NO. S-9 — Sheet 1 of 1

LOBG 100461.GPJ 6/10/10

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

USDA - Natural Resources Conservation Service — Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — Date

BY THE ENGINEER:
"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Signature of Engineer — Date: 8.14.2014
Albert F. Edwards, P.E.
Printed Name of Engineer

BY THE DEVELOPER:
"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Signature of DEVELOPER — Date: 8/14/2014
Laura T. Wetherald
Printed Name of DEVELOPER

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/16/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-2-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5711 / F.414, L.10585 / F.357, L.12205 / F.390, L.5783 / F.600, L.5341 / F.78, L.4433 / F.437, L.6153 / F.690, L.6135 / F. 690
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — ALBERT F. EDWARDS — PROFESSIONAL ENGINEER

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. 16144, EXPIRATION DATE: 08/19/16.

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

SOIL BORINGS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

SWM2.21

SHEET 57 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\SWM2.21 SWM Soil Borings.dwg-Layout1 Aug 13, 2014 11:52am JLT

VICINITY MAP 1"=2000'

LEGEND (THIS LEGEND APPLIES TO DRAWINGS L1.01 THROUGH L1.04 ONLY)

- PROPERTY LINE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING FOREST BUFFER (FB)
- EXISTING TREES (CRITICAL ROOT ZONE)
- EXISTING SHRUBS
- EXISTING PHASE I TREES TO REMAIN
- **PROPOSED SHADE TREE**
- **PROPOSED ORNAMENTAL TREE**
- **PROPOSED SHRUBS**
- **PROPOSED GROUNDCOVERS/ PERENNIALS/GRASSES**
- EXISTING WALK
- EXISTING ROAD
- EXISTING CURB
- EXISTING STORM DRAIN (EX. 15" SD, D)
- EXISTING WATER (W)
- EXISTING SANITARY SEWER (S)
- EXISTING GAS (EX. 2" GAS, G)
- EXISTING PROPANE (EX. 2" PROPANE, LP)
- EXISTING FUEL OIL (EX. FUEL OIL, F)
- EXISTING TELEPHONE (EX. TELE, T)
- EXISTING ELECTRIC (EX. ELEC, E)
- EXISTING OVERHEAD ELECTRIC (EX. ELEC, OHW)
- EXISTING LIGHTING
- EXISTING COMMUNICATIONS (EX. COM, COM)
- EXISTING CABLE TV (EX. CATV, CATV)
- EXISTING FIBER OPTIC (EX. FO, FO)
- EXISTING CHILLED WATER SUPPLY (EX. CWS, CS)
- EXISTING CHILLED WATER RETURN (EX. CWR, CR)
- EXISTING HOT WATER SUPPLY (EX. HWS, HS)
- EXISTING HOT WATER RETURN (EX. HWR, HR)
- EXISTING FENCE
- EXISTING GUARDRAIL
- EXISTING FLAGPOLE
- EXISTING BUILDING
- EXISTING WETLANDS
- WETLAND BUFFER (WB)
- EXISTING STREAM
- EXISTING STREAM BUFFER (SB)
- EXISTING 100 YR. FLOODPLAIN (100 YR FLOODPLAIN)

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/16/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9.18.14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
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L.5711 / F.414, L.10585 / F.357, L.12205 / F.390, L.5783 / F.600,
L.5341 / F.78, L.4933 / F.437, L.6153 / F.690, L.6135 / F. 690
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
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7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
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(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — JASON LEE THOMPSON — LANDSCAPE ARCHITECT — NO. 3177

DES: JLT
DRN: JLT/AM
CHK: AFE
DATE: 08/14/14

BY	NO.	REVISION	DATE

PLANTING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

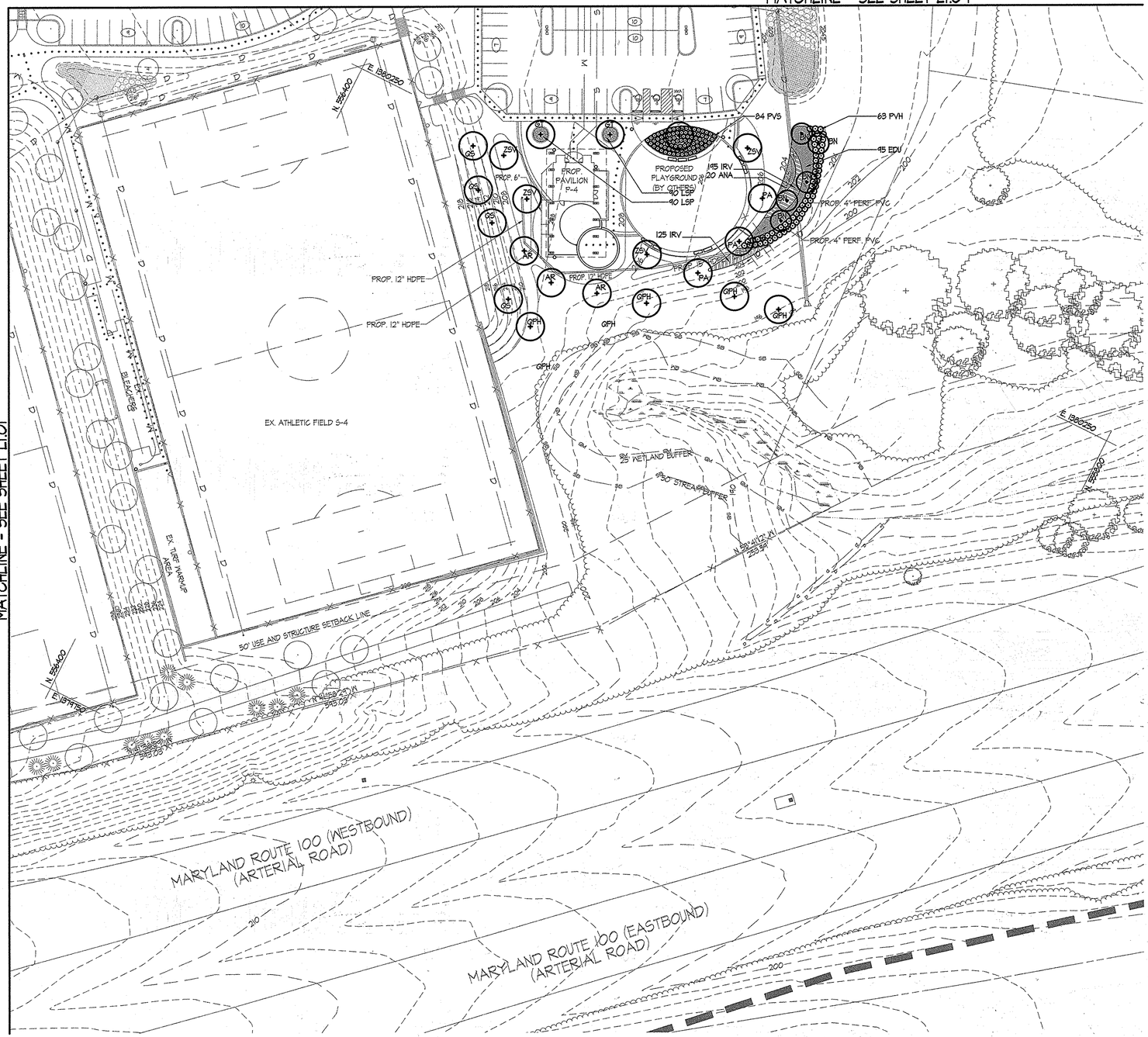
L1.01

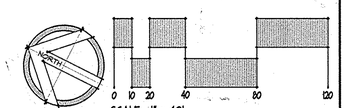
SHEET 58 OF 67

SDP-14-033

Z:\10\10042-Troy Park Phase II Site Development Plan\Dwg\L1.01 Planting Plan.dwg-Layout1 Aug 13, 2014 11:52am JLT

MATCHLINE - SEE SHEET L1.04





SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/4/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 140, 135, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L577 / F.414, L10585 / F.357, L12205 / F.340, L5783 / F.600, L5341 / F.78, L4933 / F.437, L6153 / F.640, L6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
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7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

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Comprehensive Land Planning & Site Design Services
14335 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — JASON LEE THOMPSON — No. 21774 — LANDSCAPE ARCHITECT — 9/14/14

DES: JLT				
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14	BY	NO.	REVISION	DATE

PLANTING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3457 — HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

L1.02

SHEET 54 OF 67

SDP-14-033

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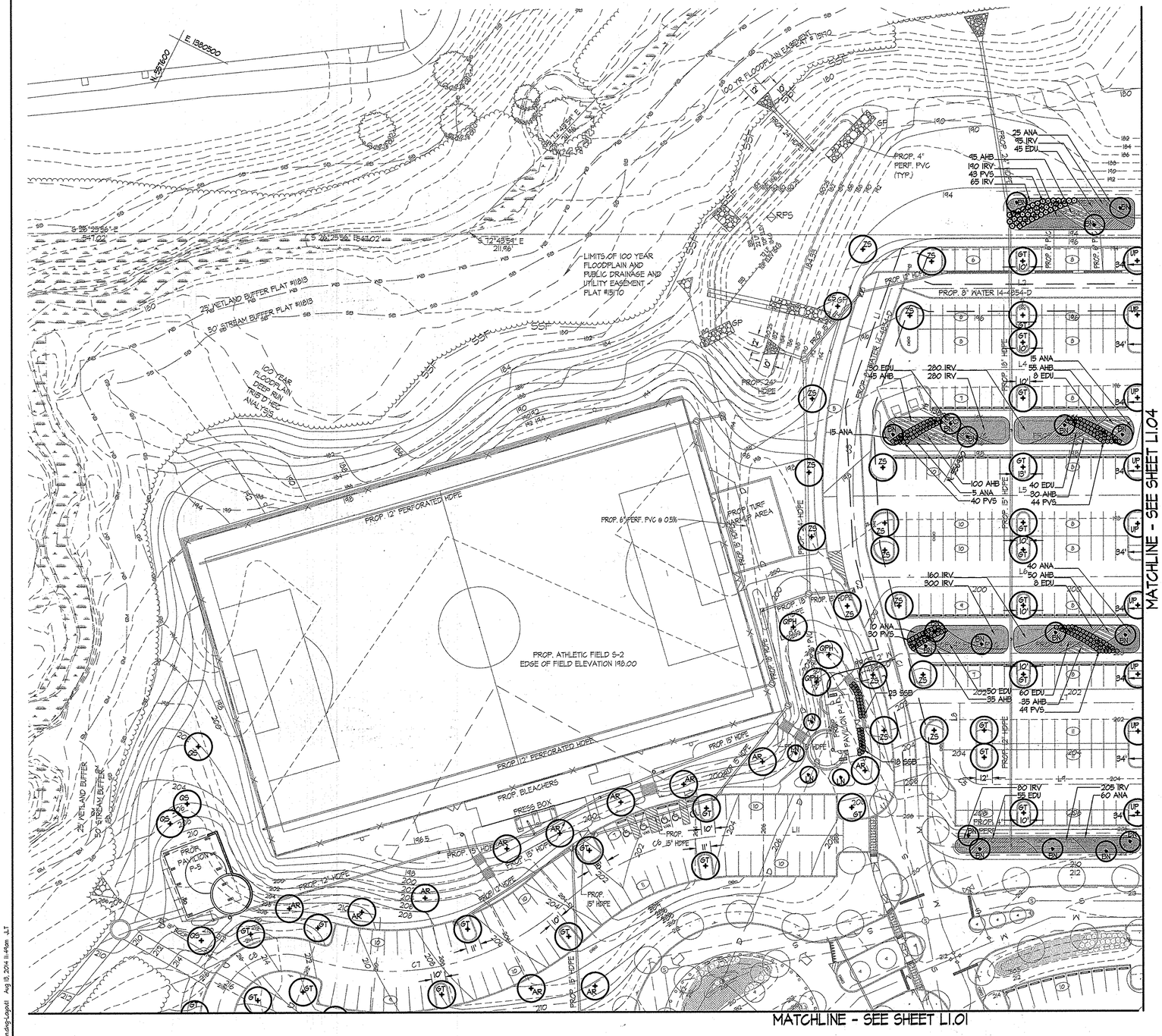

NORTH

0 10 20 40 80 120

SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/18/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 545, 542, 936, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6480 MANSION LANE
L.571 / F.414, L.10585 / F.397, L.12205 / F.340, L.5783 / F.600, L.5621 / F.78, L.4653 / F.431, L.4651 / F.540, L.6105 / F. 640
GRID 17 & 20 ZONED: M-1, TAX MAP NO. 31
1st ELECTION DISTRICT, CENSUS TRACT 602.02
WATER CODE: 400, SEWER CODE: 2152000
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND HILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
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STATE OF MARYLAND · JASON LEE THOMPSON · LANDSCAPE ARCHITECT — 9/18/14

DES: JLT					
DRN: JLT/AM					
CHK: AFE					
DATE: 08/14/14	BY	NO.	REVISION	DATE	

PLANTING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 — HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

L1.03

SHEET 60 OF 67

SDP-14-033

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APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/18/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

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GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
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STATE OF MARYLAND — JASON LEE THOMPSON — LANDSCAPE ARCHITECT — 8/14/14

DES: JLT	BY	NO.	REVISION	DATE
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14				

PLANTING PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: 1"=40'

L1.04

SHEET 61 OF 67

SDP-14-033

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PLANTING SCHEDULE

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
SHADE TREES					
29	AR	ACER RUBRUM 'BRANDYWINE'	BRANDYWINE RED MAPLE	2.5" CAL.	FULL CROWN, CENTRAL LEADER
50	GT	GLEDITSIA TRIACANTHOS VAR. INERMIS 'SHADEMASTER'	SHADEMASTER HONEYLOCUST	2.5" CAL.	FULL CROWN, EVENLY BRANCHED
3	PA	PLATANUS X ACERIFOLIA 'COLUMBIA'	COLUMBIA LONDON PLANETREE	2.5" CAL.	FULL CROWN, CENTRAL LEADER
7	QPH	QUERCUS PHELLOS	WILLOW OAK	2.5" CAL.	FULL CROWN, CENTRAL LEADER
8	QS	QUERCUS SHUMARDII	PIN OAK	2.5" CAL.	FULL CROWN, CENTRAL LEADER
18	UP	ULMUS PARVIFOLIA 'EMER II' PP 7552	ALLEE ELM	2.5" CAL.	FULL CROWN, EVENLY BRANCHED
26	ZS	ZELKOVA SERRATA 'GREEN VASE'	GREEN VASE ZELKOVA	2.5" CAL.	FULL CROWN, EVENLY BRANCHED
8	ZSV	ZELKOVA SERRATA 'VILLAGE GREEN'	VILLIAGE GREEN ZELKOVA	2.5" CAL.	FULL CROWN, EVENLY BRANCHED
ORNAMENTAL TREES					
45	BN	BETULA NIGRA 'DURA-HEAT'	DURA-HEAT RIVER BIRCH	12' HT.	MULTI-STEM; 3 STEM MIN.
9	CC	CERCIS CANADENSIS	EASTERN REDBUD	6' HT.	MULTI-STEM; 3 STEM MIN.
5	LN	LAGERSTROEMIA INDICA 'NATCHEZ'	NATCHEZ CRAPEMYRTLE	10' HT.	MULTI-STEM; 3 STEM MIN., HEAVY FOLIAGE
13	PY	PRUNUS X YEDOENSIS	YOSHINO FLOWERING CHERRY	1.5" CAL.	SINGLE STEM
PERENNIALS / ORNAMENTAL GRASSES					
1,040	AHB	AMSONIA HUBRICHTII	THREAD-LEAF BLUE STAR	#1 CONT.	PLANT 24" O.C.
487	ANA	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	4" POT	PLANT 36" O.C.
881	EDU	EUPATORIUM DUBIUM 'LITTLE JOE'	DWARF JOE PYE WEED	4" POT	PLANT 36" O.C.
3,640	IRV	IRIS VERSICOLOR/IRIS PSEUDOCORUS	BLUE FLAG IRIS/YELLOW FLAG IRIS	4" POT	PLANT 18" O.C., MIX 50/50 WITHIN EACH PLANTING BED
910	LMB	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LIRIOPE	4" POT	PLANT 12" O.C.
180	LSP	LIRIOPE SPICATA	CREEPING LIRIOPE	4" POT	PLANT 12" O.C.
135	PVH	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCHGRASS	4" POT	PLANT 36" O.C.
536	PVS	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCHGRASS	4" POT	PLANT 36" O.C.
277	SRF	SOLIDAGO RUGOSA 'FIREWORKS'	GOLDENROD	#1 CONT.	PLANT 18" O.C.
41	SSB	SCHIZACHYRIUM SCOPARIUM	'THE BLUES' LITTLE BLUESTEM	#1 CONT.	PLANT 18" O.C.

PARKING LOT INTERNAL LANDSCAPING (per SDP 14-033)

PARKING LOT 1: 376 PARKING SPACES
REQUIRED: 19 SHADE TREES AND 19 ISLANDS
PROVIDED: 61 SHADE TREES AND 49 ISLANDS

PARKING LOT 2: 114 PARKING SPACES
REQUIRED: 6 SHADE TREES AND 6 ISLANDS
PROVIDED: 14 SHADE TREES AND 7 ISLANDS

STREET TREE LANDSCAPING (per redline #2 SDP 11-003)

5796 LF OF PRIVATE ROADWAY (BOTH SIDES)

REQUIRED:
145 STREET TREES REQUIRED IF PLACED 40 APART
193 STREET TREES REQUIRED IF PLACED 30 APART

PROVIDED:
154 LARGE TREES
12 SMALL TREES

INTERNAL LANDSCAPE PLAN

0 40 100 200 400 600
SCALE: 1" = 200'

NOTES:
1. THE CENTRAL LEADER SHALL NOT BE CUT.
2. CONTRACTOR SHALL LOOSEN ROOTS OF ALL CONTAINER GROWN MATERIAL TO ENCOURAGE LATERAL GROWTH OF ROOTS.
3. CONTRACTOR SHALL SCARIFY SIDES OF TREE PIT TO ELIMINATE SPADE GLAZING.

DECIDUOUS TREE DETAIL

NOTES:
1. THE CENTRAL LEADER SHALL NOT BE CUT.
2. CONTRACTOR SHALL LOOSEN ROOTS OF ALL CONTAINER GROWN MATERIAL TO ENCOURAGE LATERAL GROWTH OF ROOTS.
3. CONTRACTOR SHALL SCARIFY SIDES OF TREE PIT TO ELIMINATE SPADE GLAZING.

EVERGREEN TREE DETAIL

NOTE:
FOR USE ONLY WHEN PLANTS ARE SPACED EQUIDISTANT FROM EACH OTHER AS SHOWN, AND SPECIFIED IN THE PLANT LIST.

SPACING "D"	ROW "A"	PLANTS / S.F.
6" O.C.	5.20"	4.61
8" O.C.	6.93"	2.60
10" O.C.	8.66"	1.66
12" O.C.	10.40"	1.15
15" O.C.	13.00"	.738
18" O.C.	15.60"	.512
24" O.C.	20.80"	.290
30" O.C.	26.00"	.185
36" O.C.	30.00"	.128

PLANT SPACING CHART

SHRUB/ PERENNIAL DETAIL

NOTES:
1. CONTRACTOR SHALL LOOSEN ROOTS OF ALL CONTAINER GROWN MATERIAL TO ENCOURAGE LATERAL GROWTH OF ROOTS.
2. CONTRACTOR SHALL SCARIFY SIDES OF SHRUB PIT TO ELIMINATE SPADE GLAZING.
3. PERENNIALS SHALL BE PLANTED IN 12" DEEP PLANTING MIX

LANDSCAPING NOTES

1. QUANTITIES SHOWN ON THE PLANTING SCHEDULE ARE ESTIMATES ONLY; THE CONTRACTOR IS REQUIRED TO INSTALL THE QUANTITIES LABELED IN PLAN VIEW. CONTRACTOR SHALL NOTIFY SITE RESOURCES OF ANY DISCREPANCY BETWEEN THE QUANTITIES LISTED IN THE PLANTING SCHEDULE AND QUANTITIES SHOWN IN PLAN VIEW.
2. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 A MINIMUM OF TWO WORKING DAYS PRIOR TO BEGINNING PLANTING AND CONSTRUCTION.
3. DAMAGE TO EXISTING CONDITIONS AND UTILITIES SHALL BE REPAIRED AND RESTORED AT THE EXPENSE OF THE CONTRACTOR.
4. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE, THE LANDSCAPE MANUAL.
5. ANY WIRE BASKETS USED TO SECURE PLANT ROOT BALLS SHOULD BE COMPLETELY REMOVED PRIOR TO PLANT INSTALLATION.
6. THIS PROJECT IS EXEMPT FROM SWM AREA LANDSCAPE MANUAL REQUIREMENTS, HOWEVER, THE PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE 2007 SWM MANUAL.
7. LANDSCAPE SURETY FOR THE REQUIRED PLANTING MATERIAL IS NOT REQUIRED FOR COUNTY CAPITAL PROJECTS.

GENERAL PLANTING NOTES

1. PLANT MATERIAL SUBSTITUTIONS ARE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT.
2. PLANT MATERIAL SHALL BE TAGGED AT THE SOURCE BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE UNLESS THE REQUIREMENT IS SPECIFICALLY WAIVED.
3. LOCATIONS OF ALL PLANT MATERIAL SHALL BE STAKED FOR APPROVAL BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE.
4. ALL SHRUB AND GROUND COVER AREAS SHALL BE PLANTED IN CONTINUOUS PREPARED BEDS, MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILED AND SPECIFIED.
5. PLANTING BEDS SHALL HAVE POSITIVE DRAINAGE WITH A MINIMUM 2 PERCENT SLOPE EXCEPT IN ESD AREAS.
6. CONTRACTOR SHALL VERIFY ACCURACY OF BASE INFORMATION AND EXISTING CONDITIONS IN THE FIELD TO HIS OWN SATISFACTION. BID SHALL BE BASED ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.
7. ALL PLANT MATERIAL SHALL BE NURSERY GROWN AND SHALL CONFORM TO AMERICAN NURSERYMEN ASSOCIATION STANDARDS.
8. ALL PLANTING PROCEDURES SHALL CONFORM TO THE LATEST EDITION OF LANDSCAPE CONTRACTOR ASSOCIATION GUIDELINES FOR THE BALTIMORE/WASHINGTON METROPOLITAN AREA AND THE PROJECT SPECIFICATIONS.
9. SEE GRADING & UTILITY DRAWINGS FOR EXISTING & PROPOSED GRADES AND UTILITIES. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS TO HIS OWN SATISFACTION.
10. SEE PREVIOUS SHEETS FOR PLANTING PLAN.
11. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING.
12. SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN DIE, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
13. THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES, AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
14. SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED, AS NEEDED, IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS. STABILIZE ALL DISTURBED AREAS AS SOON AS FINAL GRADING HAS BEEN COMPLETED. ALL DISTURBED AREAS SHALL BE SEEDED WITH THE EXCEPTION OF PLANTING BEDS.
15. INSTALL TREE PROTECTION FENCING ALONG THE LIMITS OF DISTURBANCE (LOD) OF ALL EXISTING WOODS TO REMAIN (SEE ESC PLANS). ALL SITE GRADING, PLANTING BED PREPARATION, AND TREE AND SHRUB PLANTING MUST BE DONE OUTSIDE OF THE DRIP LINE OF EXISTING TREES TO BE PRESERVED, UNLESS OTHERWISE NOTED, IN ORDER TO MAINTAIN AND PROTECT THE ROOT SYSTEM.
16. TREES ARE NOT TO BE INSTALLED CLOSER THAN 6' TO ANY EDGE OF PAVEMENT, CURB OR SIDEWALK, UNLESS OTHERWISE NOTED.
17. PER THE LANDSCAPE MANUAL, LANDSCAPING IS NOT REQUIRED BETWEEN INTERNAL LOTS OR PARCELS WITHIN THE SAME DEVELOPMENT, THEREFORE PARCEL A-21 IS EXEMPT BECAUSE IT IS PART OF THE TROY HILL CORPORATE CENTER SUBDIVISION. PERIMETER LANDSCAPING FOR THE REMAINING TROY PARK PROJECT WILL BE REQUIRED WITH FUTURE PHASES OF DEVELOPMENT.

PREPARED BY: JASON L. THOMPSON, PLA
STATE OF MARYLAND
REGISTERED LANDSCAPE ARCHITECT
REGISTRATION NO. 3172
NAME

DEVELOPER'S/BUILDER'S CERTIFICATE
I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Subdivision and Land Development Regulations and the Landscape Manual. I/We further certify that upon completion a letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.
Name: [signature] Date: 8/26/14

APPROVED: DEPARTMENT OF PLANNING & ZONING
DIRECTOR — DATE 9/18/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14 NY
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 345, 342, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.577 / F.414, L.10585 / F.357, L.12205 / F.390, L.5783 / F.600, L.5341 / F.78, L.4933 / F.437, L.6153 / F.640, L.6135 / F. 690
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
1st ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

STATE OF MARYLAND — JASON LEE THOMPSON — NO. 3172 — LANDSCAPE ARCHITECT

DES: JLT	BY	NO.	REVISION	DATE
DRN: JLT/AM				
CHK: AFE				
DATE: 08/14/14				

PLANTING NOTES AND DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO
PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-3957 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
L2.01
SHEET 62 OF 67

SDP-14-033

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FCP Legend -

- Proposed Limits of Phase
- Ex. Contours
- Ex. Forest Limits
- Proposed Forest Limits
- Forest Conservation Easement
- Proposed Retention Area
- Proposed Reforestation Area
- Permanent Protective Signage Location
- Temporary Protective Fencing Location

Tree Protection Fencing

Temporary Tree Protection Fencing is required along all the limits of disturbance that occur within the limits of the existing forest or within 25 feet of existing forest edge. Fencing is shown graphically along edge of new tree line. Temporary Protective Fencing that occurs within proposed reforestation limits shall be remove prior to installation of reforestation plantings

INTERSTATE 95

FOREST CONSERVATION EASEMENT #4
1.2 ACRES
0.3 acres to be retained (nta)
0.3 acres to be planted
0.6 acres non-credited floodplain retention

FOREST CONSERVATION EASEMENT #5
1.2 ACRES
1.2 acres to be planted

PARCEL A-23
(12.201 AC.)

PARCEL A-22
(2.2 AC.)

MANSION LANE

PHASE I PROJECT LIMITS
48.0 ACRES

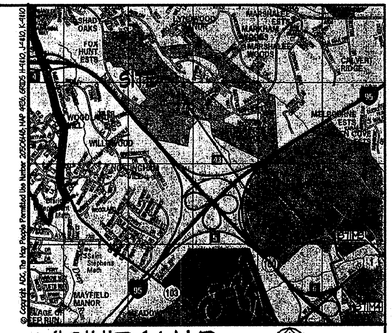
PHASE II PROJECT LIMITS
0.7 ACRES
(In addition to Phase I Area)

FOREST CONSERVATION EASEMENT #1
2.7 ACRES
2.5 acres to be retained (nta)
0.2 acres to be planted

FOREST CONSERVATION EASEMENT #2
0.3 ACRES
0.2 acres to be retained (nta)
0.1 acres to be planted

FOREST CONSERVATION EASEMENT #3
0.7 ACRES
0.7 ACRES TO BE RETAINED (NTA)

ROUTE 100



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VICINITY MAP 1"=2000'

LEGEND

- PROPERTY LINE
- EXISTING TREELINE
- FB — EXISTING FOREST BUFFER
- CRITICAL ROOT ZONE — EXISTING TREES
- EXISTING SHRUBS
- EXISTING WALK
- EXISTING ROAD
- EXISTING CURB
- EX. 15" SD — EXISTING STORM DRAIN
- W — EXISTING WATER
- S — EXISTING SANITARY SEWER
- G — EXISTING GAS
- LP — EXISTING PROPANE
- EX. FUEL OIL — EXISTING FUEL OIL
- T — EXISTING TELEPHONE
- E — EXISTING ELECTRIC
- OHW — EXISTING OVERHEAD ELECTRIC
- EXISTING LIGHTING
- EX COM — EXISTING COMMUNICATIONS
- CATV — EXISTING CABLE TV
- FO — EXISTING FIBER OPTIC
- CS — EXISTING CHILLED WATER SUPPLY
- CR — EXISTING CHILLED WATER RETURN
- HS — EXISTING HOT WATER SUPPLY
- HR — EXISTING HOT WATER RETURN
- X — EXISTING FENCE
- EXISTING GUARDRAIL
- PROPOSED WOODSLINE
- PROPOSED WALK
- PROPOSED BUILDING

MATCHLINE - SEE SHEET FC1.02

KEY MAP

NORTH

0 20 50 100 200 300
SCALE: 1" = 100'

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5006 Glen Arm, Maryland 21057 Telephone (410) 833-2400 Fax (410) 833-2488

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP03MD0610064EE
Jodi F. Cassles

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 2/10/15

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL NO. 540, 542, 1004, NO. 155, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 HANSON LANE
L.5711 / F.414, L.10595 / F.361, L.12205 / F.390, L.5183 / F.600, L.5941 / F.19, L.4632 / F.431, L.433 / F.450, L.6135 / F. 640
GRID: 11 & 16, ZONE: MH, TAX MAP NO. 37
2nd ELECTION DISTRICT, CENSUS TRACT: 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES incorporated
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(410) 683-3388 • fax (410) 683-3389

DES:
DRN:
CHK:
DATE: 08/14/14

BY	NO.	REVISION	DATE

NOT FOR CONSTRUCTION

FOREST CONSERVATION PLAN

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-XXXX HOWARD COUNTY, MARYLAND

SCALE: 1"=100'

FC1.01

SHEET 680 OF 67

SDP-14-033

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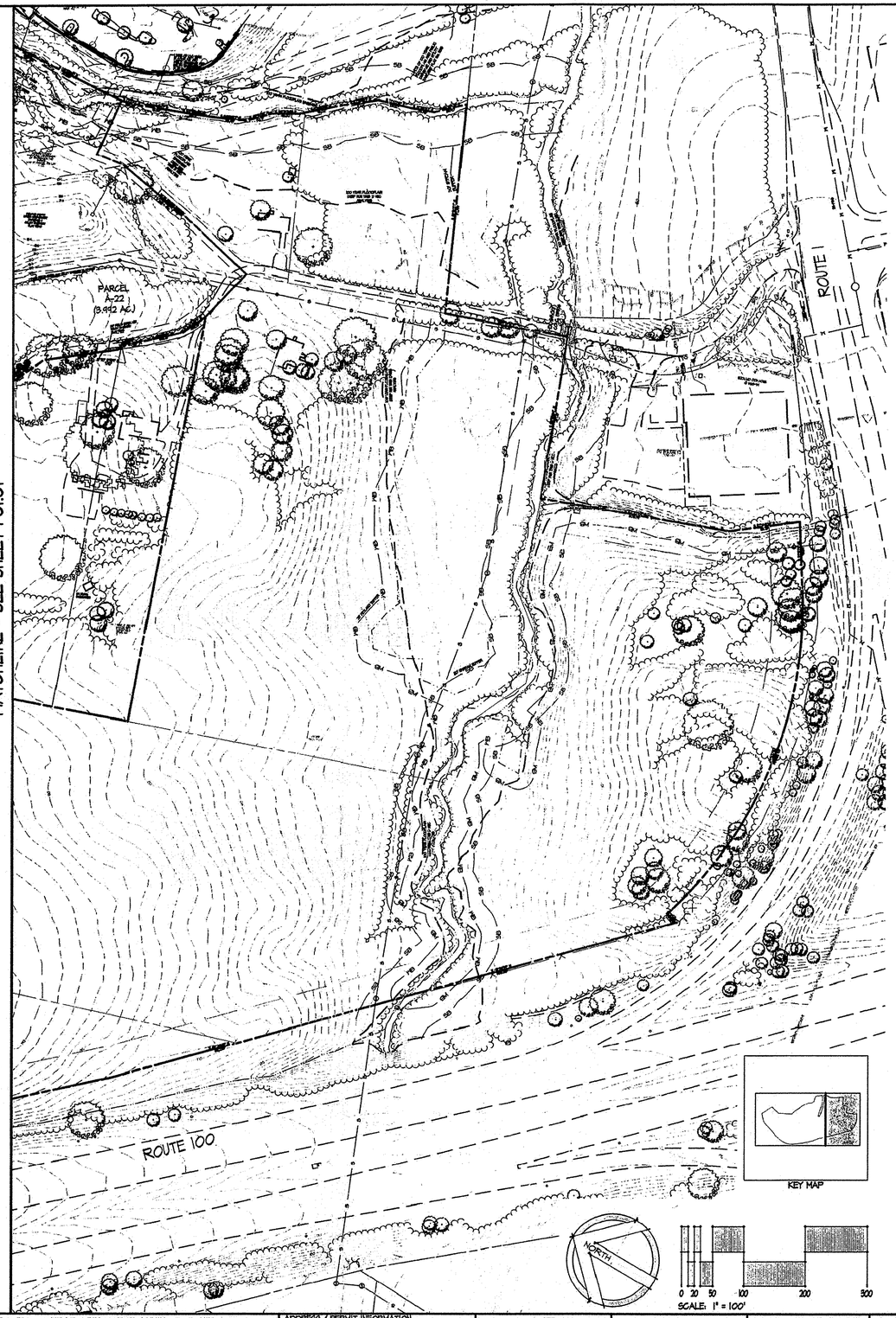


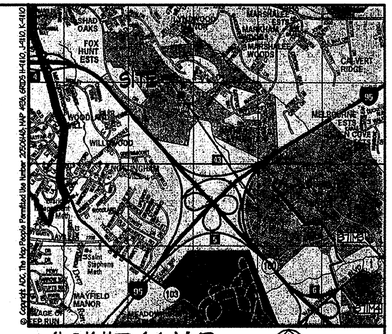
FOREST CONSERVATION OVERVIEW BY PHASE

UPDATED JANUARY 9, 2014

Phase	Comment	Gross Acreage	Net Tract Area	Existing Forest (nta)	Forest to be Cleared	Forest to be Retained	Afforestation Required	Reforestation Required/ Provided	Retention in excess of BEP *
I	1	48.0	34.9	33.9	30.6	3.3	0	14.1/1.1	0
II	2	48.7	35.6	34.6	30.9	3.7	0	13.7/1.8	0
Future	3	51.9	38.0	36.1	Break Even Point for Entire Site = 25.9 acres				

* forest retained in excess of BEP may be credited toward retention requirements of other phases

Comment 1 - revised per plan update 7/1/13
Comment 2 - Phase II is comprised of 48.0 acres of Phase I plus 0.7 acres of additional land area. Reductions in overall forest retention shown from Phase I value is the result of grading/clearing of forest that was proposed to be retained as part of Phase I site design but will be impacted by Phase II improvements. Forest clearing calculations shown in Phase II include clearing and retention amounts for work performed under Phases I and II and are not additive.
Comment 3 - Values shown for "Future" reflects the acreage and forest outside of the defined boundary of Phases I and II. If forest retention for the entire site can meet the 25.9 acres break even point, no reforestation will be required.



FOREST CONSERVATION WORKSHEET

Version 1.0

Project: Troy Park
Date: January 22, 2014

NET TRACT AREA	Whole Site ACRES	Phase I ACRES	Phase II ACRES	Future Phases ACRES
A. Total tract area	100.6	48.0	48.7	51.9
B. Area within Exempt Lots A-21 and A-22	16.1	12.5	12.5	3.6
C. Area within 100 year floodplain outside Lots A21 and A 22	10.9	0.6	0.6	10.3
D. Net Tract Area	73.6	34.9	35.6	38.0
LAND USE CATEGORY: (from table 3.2.1, page 40, Manual) ARA MDR IDA HDR MPD CIA	IDA	IDA	IDA	IDA
E. Afforestation Threshold (percentage) 15%	11.0	5.2	5.3	5.7
F. Conservation Threshold (percentage) 20%	14.7	7.0	7.1	7.6
EXISTING FOREST COVER:				
G. Existing forest cover (excluding floodplain)	70.7	33.9	34.6	36.1
H. Area of forest above afforestation threshold	58.7	28.7	29.3	30.4
I. Area of forest above conservation threshold	56.0	26.9	27.5	28.5
BREAK EVEN POINT:				
J. Forest retention above threshold with no mitigation	11.2	5.4	5.5	5.7
Break-Even Point	25.9	12.4	12.6	13.3
K. Clearing permitted without mitigation	44.8	21.5	22.0	22.8 *
PROPOSED FOREST CLEARING:				
L. Total area of forest to be Cleared or Retained Outside FCE		30.6	30.9	
M. Total area of forest to be Retained in FCE		3.3	3.7	
PLANTING REQUIREMENTS:				
N. Reforestation for clearing above Conservation Threshold		6.7	6.9	
P. Reforestation for clearing below Conservation Threshold		7.4	6.8	
Q. Credit for retention above conservation threshold		0	0	
R. Total reforestation required		14.1	13.7	
S. Total afforestation required		0	0	
T. Total reforestation and afforestation required		14.1	13.7	

* To meet the break even point for the entire site, the future phases will need to retain 22.2 acres of existing forest.

FCP NOTES

1. A waiver (Waiver petition file WP-10-173) was granted July 6, 2010 to allow the Forest Conservation requirement for this project to be reviewed in phases rather than under one submission for the entire County Park.
2. A waiver has been granted to allow for the temporary deferral for submission and recording of the Plat of FCE until the last phase of the development for the County Park.
3. A waiver has been granted to allow for the removal of four specimen trees within Phase I of the project
4. Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
5. Limits of disturbance shall be restricted to areas within the limit of temporary fencing.
6. There shall be no clearing, grading, construction or disturbance of vegetation beyond the depicted limits of disturbance, except as permitted by Howard County DPZ.
7. No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as non-disturbance areas.
8. Temporary fencing shall be used to protect forest resources during construction. Fencing shall be installed along limits of disturbance occurring within 50 feet of the proposed forest retention limits.
9. Development on Lots A21 and A-22 are exempt from the Forest Conservation Act as they are part of the Troy Hill corporate Center which is a planned business park of at least 75 acres which received approved prior to 12/31/92 in accordance with Section 16.1202 (b)(1)(v) of the Howard County Code.
10. Phase II of the project will be constructed primarily on areas of the site that were graded as part of Phase I of the development plan. Phase II will expand the disturbance area 0.7 acres but also will result in impacts to forest that was proposed for retention under Phase I. The calculations for the project have been updated for Phase II so that they include the total area of the site to be impacted by Phases I and II and so that they reflect the actual proposed forest retention/clearing required for both of these phases.
11. As indicated on the Forest Conservation Overview and the Forest Conservation Worksheet the reforestation obligation for Phases I and II is 13.7 acres. This reforestation obligation will be re-evaluated upon the preparation of development plans for future phases of the project. It is possible that retention credit available in future phases could offset this reforestation obligation. If reforestation is required for the overall project, it is likely that this obligation will be met in an offsite location.
12. The forest conservation easement has been established to fulfill the requirements of section 16.1200 of the Howard County code and the Forest conservation Act. No clearing. Grading or construction is permitted within the forest conservation easements. However, forest management practices defined in the Deed of Forest Conservation Easement area allowed.

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5006 Glen Arm, Maryland 21057 Telephone (410) 832-2450 Fax (410) 833-2488

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WD-2003-0104-0102
John F. Canoles

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 9/10/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9.3.14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 648, 942, 836, 160, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MARION LANE
L.571 / F.414, L.10585 / F.351, L.12205 / F.340, L.5765 / F.600, L.8941 / F.18, L.4935 / F.491, L.4659 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONES: NT, TAX MAP NO. 37
2nd ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2852000
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES Incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

DES:				
DRN:				
CHK:				
DATE: 08/14/14	BY	NO.	REVISION	DATE

NOT FOR CONSTRUCTION

FOREST CONSERVATION PLAN NOTES AND DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-XXXX — HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

FCI.02

SHEET 6th OF 67

SDP-14-033

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PLANTING SCHEDULE

FCE # 1 - 0.2 acre planting area
Planting units Required: 140
Planting units Provided: 140

Qty	Species	Size	Spacing	Total FCA Units
4	Cercis canadensis - Red bud	2" cal.	20' o.c.	
8	Cornus florida - Flowering dogwood	2" cal.	20' o.c.	
4	Liriodendron tulipifera - Tulip poplar	2" cal.	20' o.c.	
4	Quercus alba - White oak	2" cal.	20' o.c.	
20	Total 2" caliper trees x 7 units/tree= FCA unit credit			140
	Total Unit Credit			140

FCE # 2 - 0.1 acre planting area
Planting units Required: 70
Planting units Provided: 70

Qty	Species	Size	Spacing	Total FCA Units
2	Cercis canadensis - Red bud	2" cal.	20' o.c.	
4	Cornus florida - Flowering dogwood	2" cal.	20' o.c.	
2	Liriodendron tulipifera - Tulip poplar	2" cal.	20' o.c.	
2	Quercus alba - White oak	2" cal.	20' o.c.	
10	Total 2" caliper trees x 7 units/tree= FCA unit credit			70
	Total Unit Credit			70

FCE # 4 - 0.3 acre planting area
Planting units Required: 211
Planting units Provided: 210

Qty	Species	Size	Spacing	Total FCA Units
6	Liriodendron tulipifera - Tulip poplar	1" cal.	15' o.c.	
6	Total 1" caliper trees x 3.5 units/tree= FCA unit credit			21
10	Acer rubrum - Red maple	2-3' whip	11' o.c.	
20	Cornus florida - Flowering dogwood	2-3' whip	11' o.c.	
10	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
20	Prunus serotina - Black cherry	2-3' whip	11' o.c.	
15	Robinia pseudo-acacia - Black locust	2-3' whip	11' o.c.	
20	Viburnum prunifolium - Blackhaw	2-3' whip	11' o.c.	
95	Total whip plantings x 2 units /tree = FCA unit credit			190
	Total Unit Credit			211

FCE # 5 - 1.2 acre planting area
Planting units Required: 840
Planting units Provided: 840

Qty	Species	Size	Spacing	Total FCA Units
15	Liriodendron tulipifera - Tulip poplar	1" cal.	15' o.c.	
25	Quercus rubra - Red oak	1" ca.	15' o.c.	
40	Total 1" caliper trees x 3.5 units/tree= FCA unit credit			140
50	Acer rubrum - Red maple	2-3' whip	11' o.c.	
45	Cornus florida - Flowering dogwood	2-3' whip	11' o.c.	
40	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
75	Prunus serotina - Black cherry	2-3' whip	11' o.c.	
75	Robinia pseudo-acacia - Black locust	2-3' whip	11' o.c.	
65	Viburnum prunifolium - Blackhaw	2-3' whip	11' o.c.	
350	Total whip plantings x 2 units /tree = FCA unit credit			700
	Total Unit Credit			840

PLANTING NOTES:

Planting density based spacing requirements:1" caliper trees @ 15' on center, whips with shelter @ 11' on center.

1" caliper trees should be staggered along the perimeter of the planting area to serve as demarcation of the boundary as indicated on the plan. Actual spacing may be greater than spacing credit shown in planting schedule chart. Spacing credit is used to determine square foot credit per planting unit and may not define actual spacing in the field.

Planting may be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance

Multiflora rose/heavy brush removal/control may be required prior to installation of planting.

All whips are required to be installed with tree shelters per Howard County FCA requirements.

Planting units defined by the spacing requirements established in the FCA Manual. One plant unit is defined as 1 seedling or whip without shelter. The Manual states that 700 seedlings/whips without shelters are required per acre, or 350 whips w/shelters, or 200 1" caliper trees, or 100 2" caliper trees. By conversion it has been determined that a seeding or whip without shelter = 1 unit, whip with shelter = 2 units, 1"caliper tree = 3.5 units and 2" caliper tree =7 units. The use of plant units simplifies the plant density calculations when mixing stock size.

Typical Planting Layout

Lt		Ps		Lt		Ar
	Ar		Rp		Lt	
Qa		Vp		Ar		Rp
	Lt		Ps		Rp	
Ar		Rp		Lt		Lt

This diagram shows a typical dispersal of species within planting area. The spacing shall be in accordance with the approved planting schedule. Where the size of the planting stock varies, the planting units shall installed at averaged spacing to provide approximately uniform coverage.

Planting/Soil Specifications

1. Installation of bareroot/plug plant stock shall take place between March 15 - April 20; b&b/container stock March 15 -May 30 or September 15 - November 15. Fall planting of B&B stock is not recommended.
2. Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
3. Bareroot plants shall be installed so that the top of root mass is level with the top of existing grade. Roots shall be dipped in an anti-desiccant gel prior to planting. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or equivalent.
4. Fertilizer shall consist of Agriform 22-8-2, or equivalent, applied as per manufacturer's specifications, for woody plants. Herbaceous plant shall be fertilized with Osmocote 8-6-12.
5. Plant material shall be transported to the site in a tarped or covered truck. Plants shall be kept moist prior to planting.
6. The contractor shall remove all non-organic debris associated with the planting operation from the site.

Sequence of Construction

1. Sediment control shall be installed in accordance with general construction plan for site.
2. Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the project.
3. Upon completion of the planting, signage shall be installed as shown.
4. Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.

Maintenance of Plantings

1. Maintenance of plantings shall last for a period of two years.
2. Plantings must receive 2 gallons of water, either through precipitation or watering, weekly during the 1st growing season, as needed. During second growing season, once a month during May-September, if needed.
3. Invasive exotics and noxious weeds will be removed, as required, from planting areas mechanically and/or with limited herbicide. Old field successional species will be retained.
4. Plants shall be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.
5. Dead branches will be pruned from plantings.

Guarantee Requirements

1. A 90 percent survival rate of the reforestation plantings will be required after one growing season. All plant material below the 90 percent survival threshold will be replaced at the beginning of the second growing season. At the end of the second growing season, a 75 percent survival rate will be required. All plant material below the 75 percent survival threshold will be replaced by the beginning of the next growing season.

Education of New Occupants

1. The developer shall provide educational information to all property owners within the new development/home about the proper use of forest conservation areas.

Final Inspection and Release of Obligations

1. At the end of the post-construction management and protection period the developer shall submit a certification to the County that all forest conservation areas have remained intact or have been restored to appropriate condition, that the stipulated survival rates have been achieved, and that any permanent protection measures required by the plan are in place. Upon review and acceptance, the County will inform the developed of their release the development of future obligations related to the Forest Conservation Act.

Container Grown and B&B Planting Techniques — Figure C-16

REFORESTATION PLAN

The retention/reforestation areas shown hereon will be placed into a Forest Conservation Easement.

A. Planting Plan and Methods

Plant species selection was based on our knowledge regarding plant communities in Maryland's Piedmont Plateau and information provided in the soil survey on typical vegetation for the soil type on the planting site. Species selection was also based on our knowledge of plant availability in the nursery industry.

Reforestation will be accomplished through a mixed planting of whips and branched transplants. Container grown stock is recommended but bareroot stock may be used to help control afforestation costs. If bareroot stock is used the root systems of all plants will be dipped in an anti-desiccant gel prior to planting to improve moisture retention in the root systems.

Prior to planting the proposed Forest Conservation Easements all multiflora rose in the planting area shall be removed. Removal of the rose may be performed with mowing and herbicide treatments. Physical removal of all top growth following by a periodic herbicide treatment of stump sprouts is recommended. Native tree and shrub species occurring within the rose thickets should be retained wherever possible. Herbicides treatments shall occur on 2 month intervals during the first growing season and once each in the spring and fall for subsequent years. Herbicide used shall be made specifically to address woody plant material and shall be applied as per manufacturers specifications. Care should be taken not to spray planted trees or naturally occurring native tree/shrub seedlings. It is recommended that initiation of rose removal begin at least six months prior to planting.

B. Planting and Soil Specifications

Plant material will be installed in accordance with the Planting Detail and Planting Specifications shown on the Forest Conservation Plan.

Amendments to existing soil will be in accordance with the Planting Specifications shown on the Forest Conservation Plan. Soil disturbance will be limited to individual planting locations.

C. Maintenance of Plantings

For information regarding maintenance of the reforestation plantings, see Post Construction Management Plans.

D. Guarantee Requirements

A 90 percent survival rate of the reforestation plantings will be required after one growing season. All plant material below the 90 percent survival threshold will be replaced at the beginning of the second growing season. At the end of the second growing season, a 75 percent survival rate will be required. All plant material below the 75 percent survival threshold will be replaced by the beginning of the next growing season.

E. Security for Reforestation

Section 16-1209 of the Howard County Forest Conservation Act requires that a developer shall post a security (bond, letter of credit, etc.) with the County to insure that all work is done in accordance with the FCP. **Security is not required for County Capital Projects**

Plastic Mesh Tree Protection Fence — Figure C-5

Construction Signs — Figure C-4

CONSTRUCTION PERIOD PROTECTION PROGRAM

A. Forest Protection Techniques

1. Soil Protection Area (Critical Root Zone)

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

2. Fencing and Signage

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

B. Pre-Construction Meeting

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

C. Storage Facilities/Equipment Cleaning

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

D. Sequence of Construction

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

Below find a proposed sequence of construction.

1. Install all signage and sediment control devices.
2. Hold pre-construction meeting between developer, contractor and County inspector.
3. Build access roads, install well and septic systems, and construct houses. Stabilize all disturbed areas accordingly.
4. Begin multiflora rose removal. Install permanent protective signage for Easements and initiate plantings in accordance with Forest Conservation Plan. Plantings will be completed within two (2) years of subdivision approval.
5. Remove sediment control.
6. Hold post-construction meeting with County inspectors to assure compliance with FCP. Submit Certification of Installation.
7. Monitor and maintain plantings for 2 years.

E. Construction Monitoring

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

F. Post-Construction Meeting

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

POST-CONSTRUCTION MANAGEMENT PLAN

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

The following items will be incorporated into the plan:

A. Fencing and Signage

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

B. General Site Inspections/Maintenance of Plantings

Site inspections will be performed a minimum of three times during the growing season. The purpose of the inspections will be to assess the health of the afforestation plantings. Appropriate measures will be taken to rectify any problems which may arise.

In addition, maintenance of the afforestation plantings will involve the following steps:

1. Watering - All plant material shall be watered twice a month during the 1st growing season, more or less frequently depending on weather conditions. During the second growing season, once a month during May-September, if needed.
2. Removal of invasive exotics and noxious weeds. Old field successional species will be retained.
3. Identification of serious plant pests and diseases, treatment with appropriate agent.
4. Pruning of dead branches.
5. After 12 and 24 months, replacement of plants, if required, in accordance with the Guarantee Requirements shown on the FCP.

C. Education

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

D. Final Inspection

At the end of the two year post-construction management period, Eco-Science Professionals, or another qualified professional, will submit to the administrator of the Howard County Forest Conservation Program certification that all retention/
reforestation/afforestation requirements have been met

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification #WDCP93MD0610044B2
John P. Canoles

Eco-Science Professionals, Inc.
Consulting Ecologists
P.O. Box 5006 Glen Arm, Maryland 21057 Telephone (410) 832-2480 Fax (410) 832-2488

APPROVED: DEPARTMENT OF PLANNING & ZONING
DIRECTOR — DATE 9/18/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-18-14

ADDRESS / PERMIT INFORMATION
PARCEL 561, 545, 542, 336, 190, 185, 135 LOT A-21, 135 LOT A-22
ADDRESS: 6450 MANSION LANE
L.5T1 / F.414, L.10505 / F.351, L.12205 / F.340, L.5183 / F.600, L.5341 / F.18, L.4433 / F.431, L.6158 / F.640, L.6135 / F. 640
GRID 17 & 18, ZONE: M-1, TAX MAP NO. 37
2nd ELECTION DISTRICT, CENSUS TRACT 6012.02
WATER CODE: 400, SEWER CODE: 2152200
OWNER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700
DEVELOPER:
HOWARD COUNTY MARYLAND DEPT. OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD, COLUMBIA, MARYLAND 21046
PHONE (410) 313-2700

SITE RESOURCES Incorporated
Comprehensive Land Planning & Site Design Services
14315 Jarrettsville Pike • Phoenix, Maryland 21131
(410) 683-3388 • fax (410) 683-3389

DES:
DRN:
CHK:
DATE: 08/14/14

BY	NO.	REVISION	DATE

NOT FOR CONSTRUCTION

FOREST CONSERVATION NOTES AND DETAILS

600' SCALE MAP NO. 51 BLOCK NO. 16

TROY PARK - PHASE TWO

PART OF TROY HILL CORPORATE CENTER PHASE IIIB PARCELS A-21 AND A-22

CAPITAL PROJECT NO. N-XXXX HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

FC1.03

SHEET 65 OF 67

SDP-14-033

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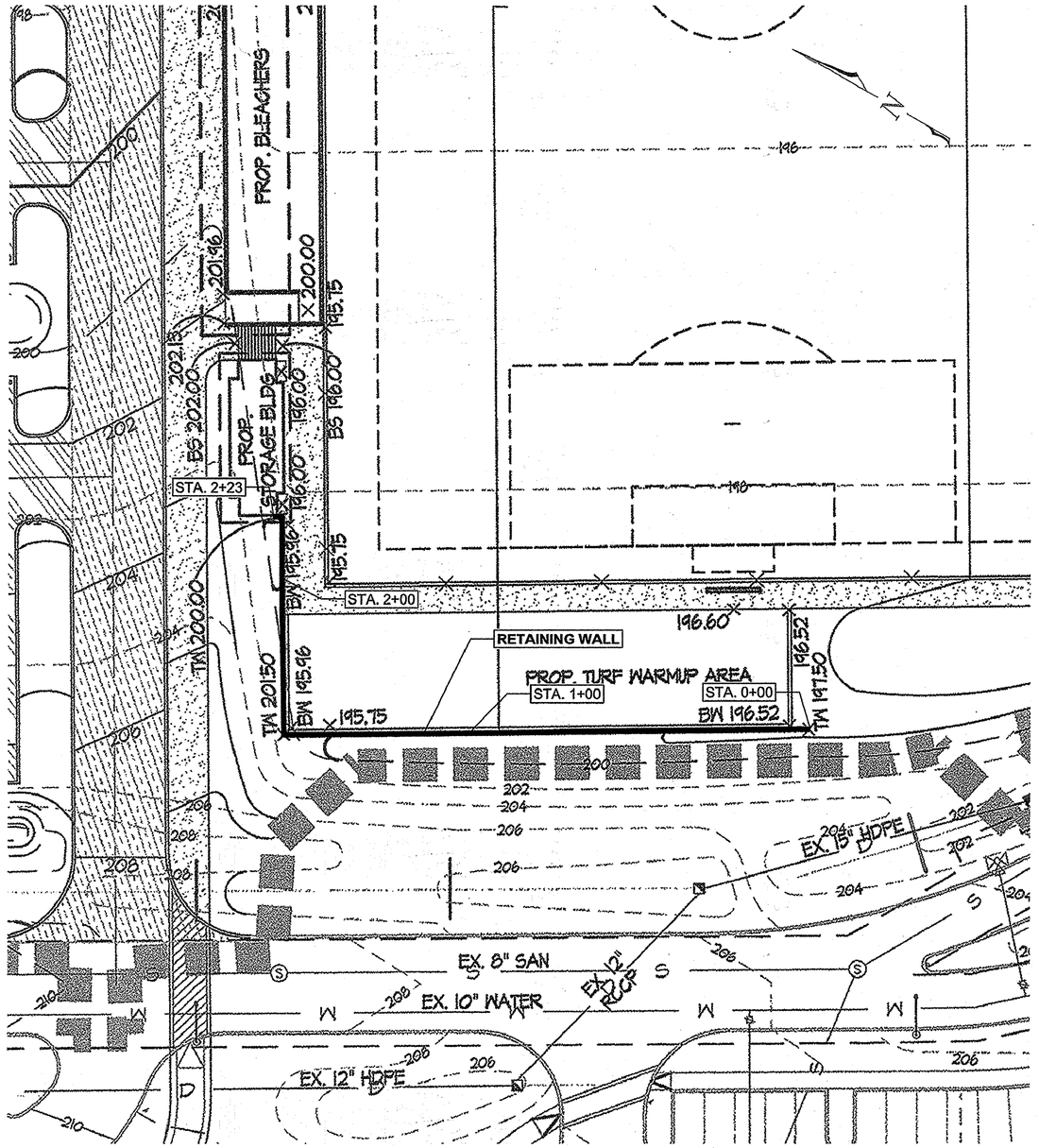


WALL LOCATION PLAN
1" = 20'

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 erection 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.

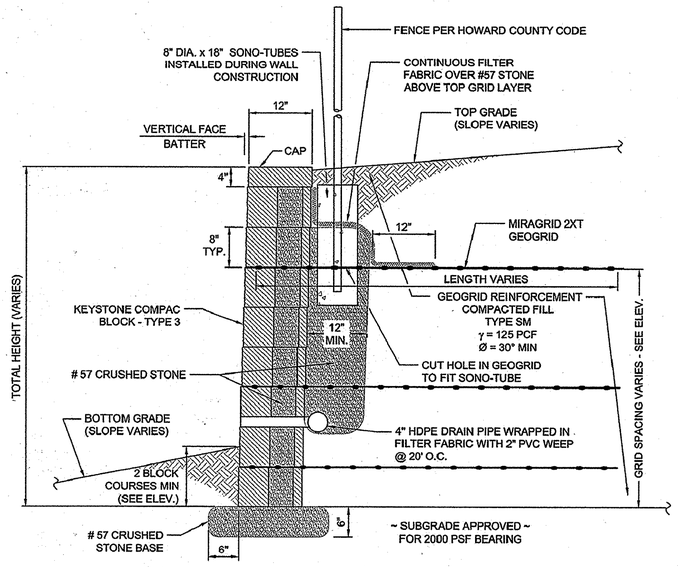
3.06 Cap Installation

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.



TYPICAL WALL SECTION
N.T.S.

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR	9/12/14 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY	9-3-14 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	9-12-14 DATE

STATE OF MARYLAND · RICHARD W. STEVENS · No. 14434 · PROFESSIONAL ENGINEER
8/28/14

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: 05/13/15.

STATE OF MARYLAND · RICHARD WESLEY STEVENS · No. 14434 · 1ST ISSUED · PROFESSIONAL ENGINEER

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A (410) 880-4788 · Annapolis Junction, MD Fax: (410) 880-4098

RETAINING WALL PLAN AND DETAILS
TROY PARK - PHASE TWO - TURF WARMUP AREA
PART OF TROY HILL CORPORATE CENTER HOWARD COUNTY, MARYLAND

REVISION NO.	DESCRIPTION	DATE

JOB NUMBER:	10439-G	DESIGNED BY:	AL
SCALE:	AS SHOWN	DRAWN BY:	AL
DATE:	01/15/14	APPROVED BY:	RWS

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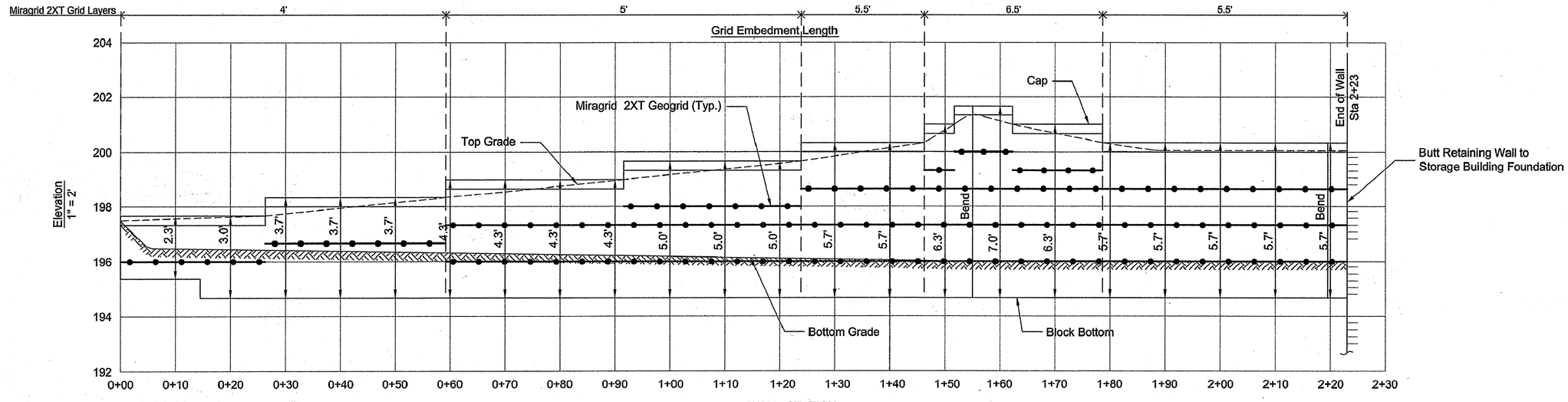

WALL STATION
1" =10'

WALL ELEVATION

STATE OF MARYLAND
RICHARD W. STUDENY
No. 14434
PROFESSIONAL ENGINEER
8/28/14

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR	9/18/14 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY	9-3-14 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	9-18-14 DATE

PROFESSIONAL CERTIFICATION

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STATE OF MARYLAND
RICHARD W. STUDENY
No. 14434
REGISTERED
PROFESSIONAL ENGINEER

HILLIS-CARNES
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10975 Guilford Road, Suite A Annapolis Junction, MD
(410) 880-4788 Fax: (410) 880-4098

RETAINING WALL ELEVATION
TROY PARK - PHASE TWO - TURF WARMUP AREA
PART OF TROY HILL CORPORATE CENTER HOWARD COUNTY, MARYLAND

REVISION NO.	DESCRIPTION	DATE

JOB NUMBER:	10439-G	DESIGNED BY:	AL
SCALE:	AS SHOWN	DRAWN BY:	AL
DATE:	01/15/14	APPROVED BY:	RWS

RW1.02
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