

NRCS HYDROLOGIC SOILS GROUP - HOWARD COUNTY, MARYLAND				
MAP UNIT SYMBOL	MAP UNIT NAME	HSG RATING	Kw	AREA (AC)
GgB	Glenelg Loam, 3 to 8% slopes	B	0.28	1.5
GmC	Glenville silt loam, 8 to 15% slopes	C	0.37	0.1
GuB	Glenville-Urban Land-Udorthents complex, 0 to 8% slopes	C/D	0.28/0.37	0.1
MaB	Manor loam, 3 to 8% slopes	B	0.24	3.4
MaC	Manor loam, 8 to 15% slopes	B	0.24	6.5
MaD	Manor loam, 15 to 25% slopes	B	0.24	7.2
UuD	Urban land-Udorthents complex, 8 to 25% slopes	B	0.28	0.6

Site Analysis Data Sheet					
Site Area	Environmental Areas		Proposed Uses		
Campus Area	357.976 Ac.		Green Open Space	16.857 Ac.	
Project Area/LOD	19.3 Ac.	Floodplain Reservation	21.406 Ac./N.A.	Paved Areas (Treated)	2.407 Ac.
		Forest Conservation	89.404 Ac./N.A.	Storage Buildings	0.037 Ac.
		Steep Slopes (>15%)	7.2 Ac.*		
		Wetlands	NONE*		
		Highly Erodible Soils**	7.2 Ac.*		

\* Information is for work in the proposed project area (LOD) only  
 \*\*Highly Erodible Soils criteria are: K Factor=Kw-Factor >0.35 with slopes > 5% or Slope > 15%.

**SITE ANALYSIS DATA CHART**

TOTAL PROJECT AREA: 357.976 AC.  
 AREA OF PLAN SUBMISSION: 19.3 AC.  
 LIMIT OF DISTURBANCE: 19.3 AC.  
 PRESENT ZONING: PEC  
 PROPOSED USE: OPEN SPACE  
 EXISTING NUMBER OF JHU/APL EMPLOYEES: 4,600  
 EXISTING MAXIMUM NUMBER OF PARKING SPACES REQUIRED BY ZONING: 2,850 (SDP-05-133)  
 EXISTING ONSITE PARKING SPACES: 4,798 (SDP 05-133)  
 NO PARKING FOR OFFSITE VEHICLES PROPOSED AS PART OF THIS SUBMISSION  
 ASSIGNABLE OFFICE SPACE: 0 GSF  
 NO ADDITIONAL JHU/APL EMPLOYEES ARE PROPOSED AS PART OF THIS SUBMISSION  
 PROPOSED BUILDING GROSS FT<sup>2</sup>: 1,620 GSF  
 EXISTING OPEN SPACE AREA: 278.89 ACRES (77.9% OF TOTAL LOT AREA)  
 PROPOSED OPEN SPACE AREA: 278.85 ACRES (77.9% OF TOTAL LOT AREA)  
 NATURAL STEEP SLOPES (>15%) = 7.2 ACRES  
 HIGHLY ERODIBLE SOILS = 7.2 ACRES

CASE NUMBERS APPLICABLE:  
 F-04-188, SDP-04-133, F-078-035

SANITARY SEWER / WATER SERVICE:  
 PRIVATE ONSITE SYSTEM, PUBLIC CONNECTION

EXISTING BUILDING COVERAGE (INCLUDES SDP 18-035):  
 25.57 ACRES (7.1%)

PROPOSED BUILDING COVERAGE:  
 0.037 ACRES (1,620 FT<sup>2</sup>)

TOTAL PROPOSED BUILDING COVERAGE:  
 25.61 ACRES (7.2%)

NO FLOODPLAINS OR FOREST CONSERVATION EASEMENTS PRESENT WITHIN THE LIMITS OF DISTURBANCE.

**NARRATIVE**

The Maryland Stormwater Management Act of 2007 and regulations in place by the Maryland Department of the Environment (MDE), and Howard County, require that stormwater management for this project must be addressed through the use of Environmental Site Design (ESD) techniques, implemented to the Maximum Extent Practicable (MEP). The required stormwater management features will treat runoff from the proposed project site. The overall intent of ESD to the MEP is to mimic the hydrologic conditions of "woods in good condition" which is accomplished by treating the target volume of rainfall (the ESD volume). The ESD volume is calculated as a combination of Hydrologic Soil Group Classification and the imperviousness of the site. The ESD volume can be up to the volume of runoff generated by the 1 year storm rainfall depth of 2.6" (NOAA 14). The first inch of which is the Water Quality Volume (WQV) must be treated by "non-structural" practices. These include alternative surfaces, disconnection of runoff and/or micro-scale practices.

The outdoor testing areas project will transform a presently wooded site into three open areas (primarily grass fields) for outdoor testing of applied physics labs projects. Each site will have a small 400 square foot storage building and site OTA 1 will have an additional 420 square foot storage building. Each site will be served by a paved private access road. All three sites are outside the existing quantity control structures on campus, however they are within previously approved campus drainage areas C, G, H and J.

This project is being treated as new development due to the existing impervious area of the site being less than 40%. The design will be required to provide WQv, Rev, and Cpv for its contributing watershed.

The design of the outdoor testing areas will maintain to the extent possible, pre-construction drainage distribution patterns. Sediment control measures will be implemented and integrated with proposed ESD features to limit the amount of disturbed area impacts to existing forested areas. "ESD to the MEP" will be achieved through the implementation of pervious pavement for all paved areas, rooftop disconnection for the storage buildings and non-rooftop disconnection where pervious pavement is not possible. Required groundwater recharge volumes (Rev) storage will be provided in stone reservoirs located beneath the pervious pavement areas.

Overbank (10 year) and Extreme Flood (100 year) storm management is not required for projects within the Middle Patuxent River watershed.

**CONCLUSION**

The site will be designed and constructed in accordance with the Maryland Stormwater Management Act of 2007, MDE, and Howard County regulations in effect at the time. The impact to the receiving waterways and surrounding area is minimal due to the implementation of "ESD to the MEP."

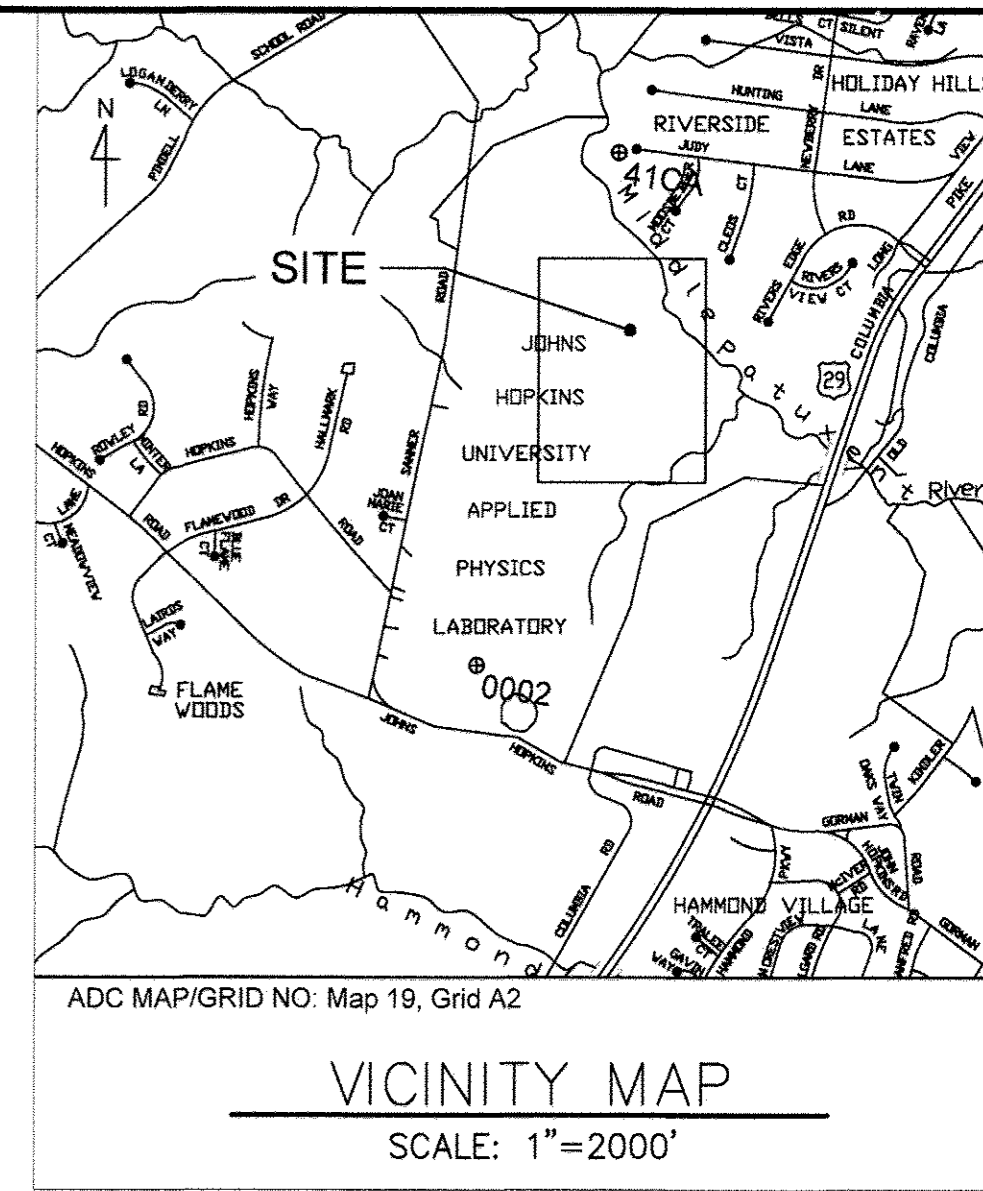
**ESD SUMMARY**

SITE	ESDv REQUIRED (CF)	ESDv PROVIDED (CF)	IART (SF)	IAT (SF)	Pe Achieved (IN)	Pe Target (IN)
OTA-1	3,442	5,690	29,027	29,027	2.4	1.0
OTA-2	1,958	2,767	14,114	14,114	2.4	1.0
OTA-3	6,849	11,640	59,069	59,069	2.4	1.2
Total	12,249	20,097	102,210	102,210	2.4	

# THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY OUTDOOR TESTING AREAS

HOWARD COUNTY, MARYLAND  
 ELECTION DISTRICT No. 5

## ENVIRONMENTAL CONCEPT PLAN



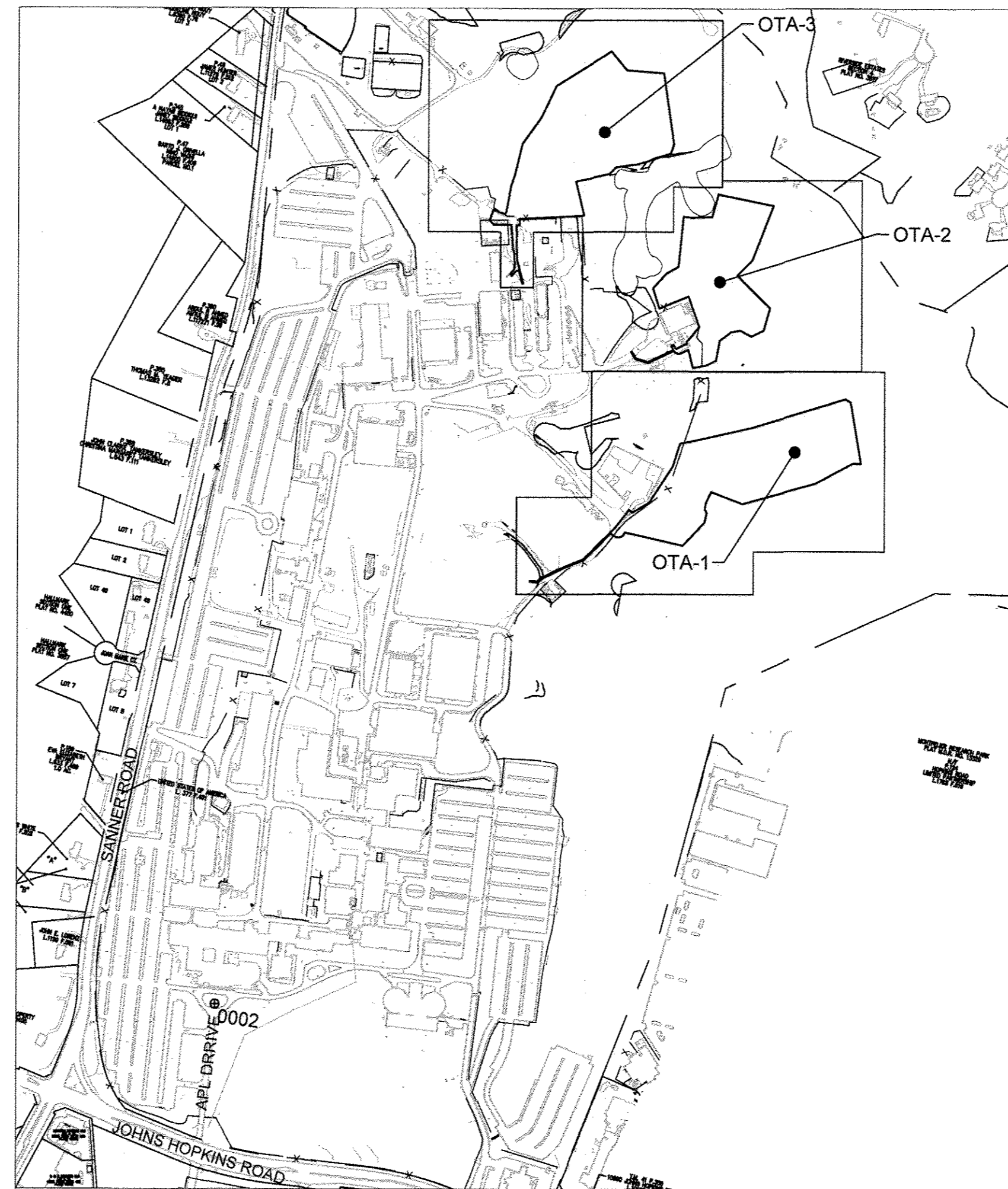
VICINITY MAP  
 SCALE: 1"=2000'

**GEODETTIC CONTROL**

0002: N 544836.502 E 1340825.389 NGVD ELEV. 444.479  
 41CA: N550124.832 E 134296.880 NGVD ELEV. 295.393

**GENERAL NOTES**

- THE TOPOGRAPHIC INFORMATION SHOWN HEREON, WAS OBTAINED FROM AN AERIAL SURVEY FLOWN BY AXIS GEOSPATIAL ON APRIL 6, 2014 AND PROVIDED TO RK&K IN AUGUST OF 2017. THE UTILITY INFORMATION WAS PROVIDED ELECTRONICALLY TO RK&K BY JHU APL IN AUGUST OF 2017. TOPOGRAPHIC AND UTILITY INFORMATION MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER PRIOR TO THE START OF ANY WORK.
- BEARINGS, COORDINATES AND ELEVATIONS SHOWN ON THIS PLAN ARE SHOWN IN MARYLAND STATE PLANE. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88.
- NO WETLANDS OR 100-YEAR FLOOD PLAINS EXIST WITHIN 25' OF THIS PROJECTS LIMIT OF DISTURBANCE.
- WHERE REFERENCE IS MADE TO STANDARD DETAILS IT WILL BE THE CONTRACTORS RESPONSIBILITY TO HAVE IN HIS POSSESSION THE LATEST UP-TO-DATE STANDARD DETAILS OF ALL JURISDICTIONS GOVERNING THE SITE. FOR DETAILS NOT SHOWN ON THE DRAWINGS AND FOR ALL MATERIALS AND CONSTRUCTION METHODS, USE HOWARD DESIGN MANUAL, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS.
- IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, TO PROVIDE ALL SITE SUB-CONTRACTORS/BIDDERS WITH FULL AND COMPLETE SETS OF ALL CIVIL DRAWINGS AND SPECIFICATIONS FOR THEIR USE IN PREPARING BIDS. THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER SHALL BE RESPONSIBLE FOR ANY AND ALL DELAYS AND COSTS ARISING DURING CONSTRUCTION FROM BIDS BASED UPON INCOMPLETE SETS OF SITE DOCUMENTS.
- THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY, BASED UPON RECORD DOCUMENTS. THEY HAVE NOT BEEN COMPARED TO OR VERIFIED WITH FIELD TEST PITS. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY TO HIS OWN SATISFACTION THE EXACT LOCATION, SIZE AND TYPE OF ALL EXISTING UNDERGROUND UTILITIES BEFORE COMMENCING ANY WORK. THE CONTRACTOR MUST NOTIFY THE UTILITY COMPANIES AFFECTED BY THE PROJECT PRIOR TO THE START OF THE WORK. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR THE COST OF ANY AND ALL DAMAGES WHICH OCCUR AS A RESULT OF A FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES TO REMAIN.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" (1-800-257-7777) FIVE (5) DAYS BEFORE STARTING WORK AND THE JOHNS HOPKINS UNIVERSITY, APPLIED PHYSICS LABORATORY FIVE (5) DAYS BEFORE STARTING WORK.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY INVERTS AND CLEARANCES FROM NEW WORK PRIOR TO START OF ANY WORK.
- THE CONTRACTOR MUST PROTECT AND MINIMIZE INTERRUPTIONS TO ALL EXISTING UTILITY SERVICES/HOUSE CONNECTIONS INCLUDING GAS, ELECTRIC, TELEPHONE, WATER AND SEWER DURING CONSTRUCTION, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.
- ALL EXISTING SITE FEATURES IMPACTED BY THE PROPOSED WORK SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. ALL EXISTING UTILITIES ARE TO BE ADJUSTED TO FINISHED GRADE AND TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL REPAIR OR REPLACE FACILITIES DISTURBED OR DAMAGED BY HIS OPERATIONS INSIDE AND OUTSIDE OF THE PROJECT LIMITS, TO THE OWNERS SATISFACTION AND AT NO ADDITIONAL EXPENSE.
- LIMIT OF DISTURBANCE AS SHOWN ON ALL CIVIL DRAWINGS IS APPROXIMATE AND SHALL NOT PREVENT THE CONTRACTOR FROM EXTENDING BEYOND THESE LIMITS FOR COMPLETE INSTALLATION OF PROJECT ELEMENTS.
- ALL WATER MAINS TO BE DIP, UNLESS OTHERWISE NOTED. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3.5' COVER UNLESS OTHERWISE NOTED.
- FOREST CONSERVATION OBLIGATION WAS FULFILLED UNDER F-04-188 AND F-07-035. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY F-02-40, F-04-188, AND F-07-035.
- ALL DISTURBED AREAS NOT STABILIZED WITH STRUCTURES, PAVING, AND/OR PLANTINGS SHALL BE STABILIZED WITH FOUR INCHES OF TOPSOIL, SEED, MULCH AND WATERED TO ESTABLISH AN ADEQUATE GROWTH OF GRASS AS SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLANS.
- APPROVAL OF THIS ECP PLAN DOES NOT CONSTITUTE ANY APPROVALS OF SUBSEQUENT SUBDIVISION PLANS, SITE DEVELOPMENT PLANS OR RED-LINE REVISIONS TO APPROVED SDP PLANS, FOREST CONSERVATION PLANS AND GRADING OR BUILDING PERMITS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED COMMENTS THAT MAY ALTER THE SITE DESIGN, HOUSE OR STRUCTURE LOCATION, DRIVEWAY LOCATION, GRADING, TREE CLEARING AND/OR OTHER REQUIREMENTS AS THE DEVELOPMENT PLAN PROGRESSES THROUGH THE PLAN REVIEW AND/OR PERMIT APPLICATION PROCESS IN ACCORDANCE WITH THE SUBDIVISION, LAND DEVELOPMENT AND ZONING REGULATIONS AND THE FOREST CONSERVATION REQUIREMENTS.



SITE MAP  
 1" = 500'

**Sheet List Table**

Sheet Number	Sheet Title	Sheet Description
01	C-001	Cover Sheet
02	C-201	Concept Plan - OTA 1
03	C-202	Concept Plan - OTA 2
04	C-203	Concept Plan - OTA 3
05	C-601	ESC & SWM Concept Plan - OTA 1
06	C-602	ESC & SWM Concept Plan - OTA 2
07	C-603	ESC & SWM Concept Plan - OTA 3

ADDRESS CHART				
LOT/PARCEL #	STREET ADDRESS			
1/123	11100 JOHNS HOPKINS ROAD			

PERMIT INFORMATION CHART					
SUBDIVISION NAME	N/A	SECTION/AREA	LOT/PARCEL NO.		
			1/123		
PLAT # or L.F.	GRID #	ZONING	TAX MAP NO.	ELECT DISTRICT	CENSUS TRACT
18968	16	PEC	41	5	605102
WATER CODE	SEWER CODE				
E21	6480000				

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Date: 5.1.18  
 Chief, Division of Land Development  
 Date: 4-30-18

**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 ENGINEERS/CONSTRUCTION MANAGERS/PLANNERS/SCIENTISTS  
 RESPONSIVE PEOPLE • CREATIVE SOLUTIONS  
 700 East Pratt Street, Suite 500  
 Baltimore, MD 21202  
 Contact: John D'Espagnier  
 WWW.RK&K.COM

DESIGN BY: CWWW  
 DRAWN BY: CWWW  
 CHECKED BY: CDK  
 DATE: 4/25/2018

**NOT FOR CONSTRUCTION**

BY	NO.	REVISION	DATE

OWNER/DEVELOPER  
 JOHNS HOPKINS  
 APPLIED PHYSICS LABORATORY  
 11100 JOHNS HOPKINS ROAD  
 LAUREL, MARYLAND 20723

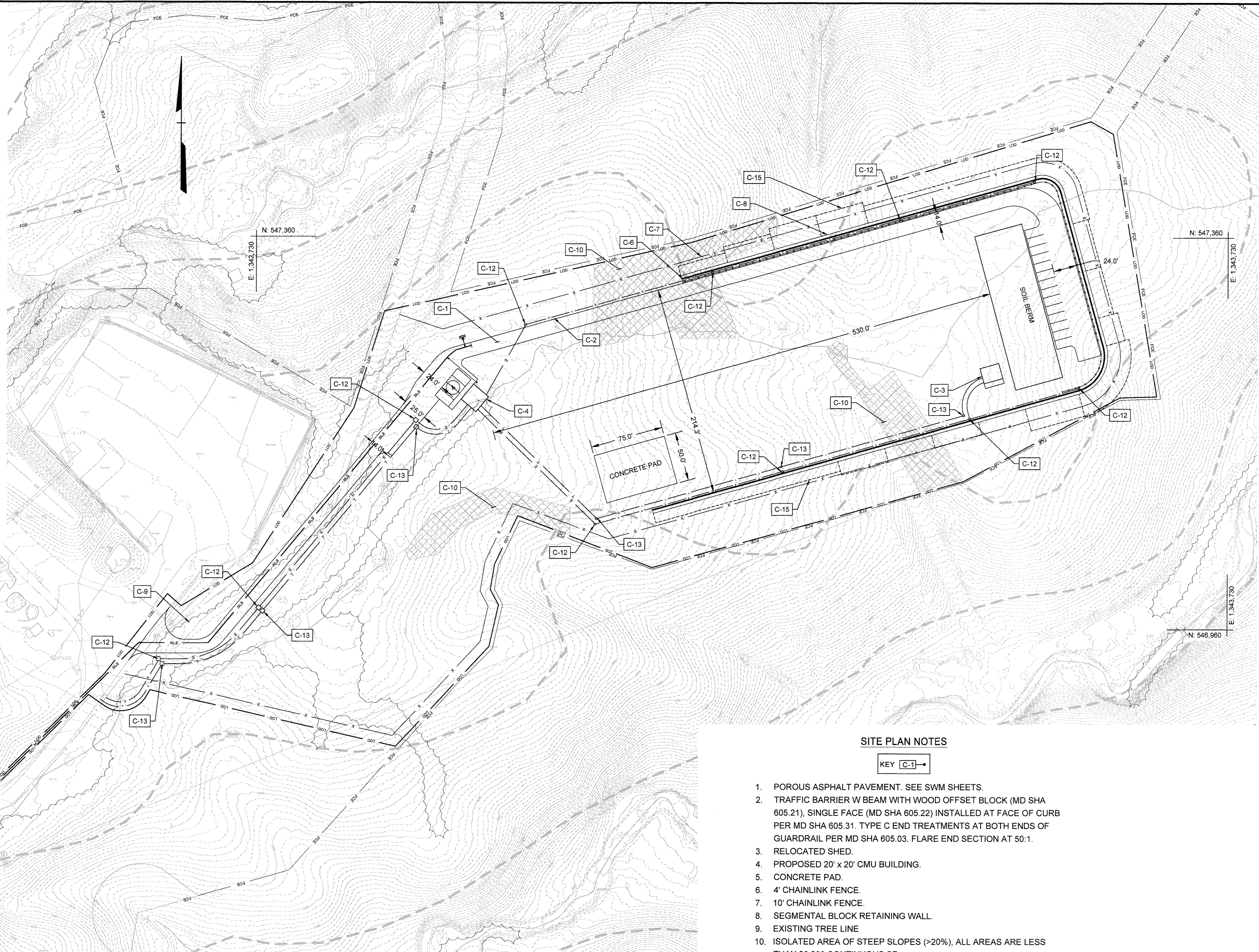
**COVER SHEET**  
 JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY  
**OUTDOOR TESTING AREAS**  
 11100 JOHNS HOPKINS ROAD  
 TAX MAP: 41 PARCEL: 123 ZONED: PEC  
 ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND  
 SHEET 01 OF 07

C-001  
 RK&K PROJECT NUMBER 17152  
 SCALE: As Shown

- LIMIT OF DISTURBANCE
- 4' CHAIN LINK FENCE
- GUARDRAIL
- 10' SECURITY FENCE
- EXISTING MINOR CONTOUR INTERVAL
- EXISTING MAJOR CONTOUR INTERVAL
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED ELECTRIC
- PROPOSED COMMUNICATION
- PROPOSED WATER
- PROPOSED WATER HYDRANT
- EX. FOREST CONSERVATION EASEMENT
- STEEP SLOPES (>20%), LESS THAN 20,000 CONTINUOUS SF

**CONCEPT PLAN NOTES**

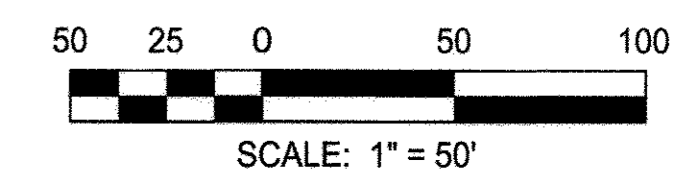
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**SITE PLAN NOTES**

KEY C-1 →

1. POROUS ASPHALT PAVEMENT. SEE SWM SHEETS.
2. TRAFFIC BARRIER W BEAM WITH WOOD OFFSET BLOCK (MD SHA 605.21), SINGLE FACE (MD SHA 605.22) INSTALLED AT FACE OF CURB PER MD SHA 605.31. TYPE C END TREATMENTS AT BOTH ENDS OF GUARDRAIL PER MD SHA 605.03. FLARE END SECTION AT 50:1.
3. RELOCATED SHED.
4. PROPOSED 20' x 20' CMU BUILDING.
5. CONCRETE PAD.
6. 4' CHAINLINK FENCE.
7. 10' CHAINLINK FENCE.
8. SEGMENTAL BLOCK RETAINING WALL.
9. EXISTING TREE LINE
10. ISOLATED AREA OF STEEP SLOPES (>20%), ALL AREAS ARE LESS THAN 20,000 CONTINUOUS SF.
11. NOT USED.
12. ELECTRIC MANHOLE / HANDBOX.
13. COMMUNICATIONS MANHOLE / HANDBOX.
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15. RETAINING WALL MAINTENANCE SETBACK.

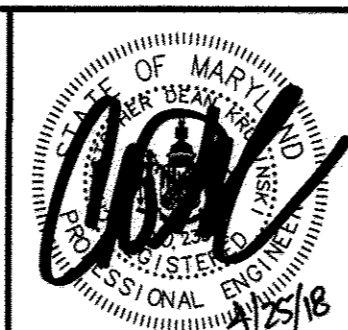


APPROVED: DEPARTMENT OF PLANNING AND ZONING

*John P. ...*  
 Chief, Development Engineering Division  
 Date: 5.1.18  
*Kat ...*  
 Chief, Division of Land Development  
 Date: 4.26.18

**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 ENGINEERS, ARCHITECTS, PLANNERS, SCIENTISTS  
 RESPONSIVE PEOPLE. POSITIVE SOLUTIONS.  
 700 East Pratt Street, Suite 500  
 Baltimore, MD 21202  
 Ph: 410.728.2900 Contact: John D. Espagnier  
 www.rkk.com

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 2612, EXPIRATION DATE: MARCH 6, 2019.



DESIGN BY:	CWMM			
DRAWN BY:	CWMM			
CHECKED BY:	CDK			
DATE:	4/25/2018	BY	NO.	REVISION
				DATE

**NOT FOR CONSTRUCTION**

OWNER/DEVELOPER  
 JOHNS HOPKINS  
 APPLIED PHYSICS LABORATORY  
 11100 JOHNS HOPKINS ROAD  
 LAUREL, MARYLAND 20723

CONCEPT PLAN - OTA 1  
 JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY  
**OUTDOOR TESTING AREAS**

11100 JOHNS HOPKINS ROAD  
 TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC  
 ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND  
 SHEET 02 OF 07

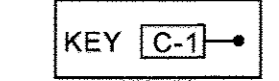
C-201  
 RK&K PROJECT NUMBER 17152  
 SCALE: As Shown



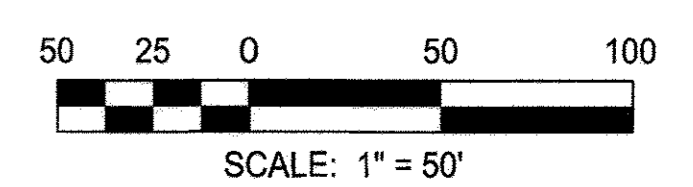
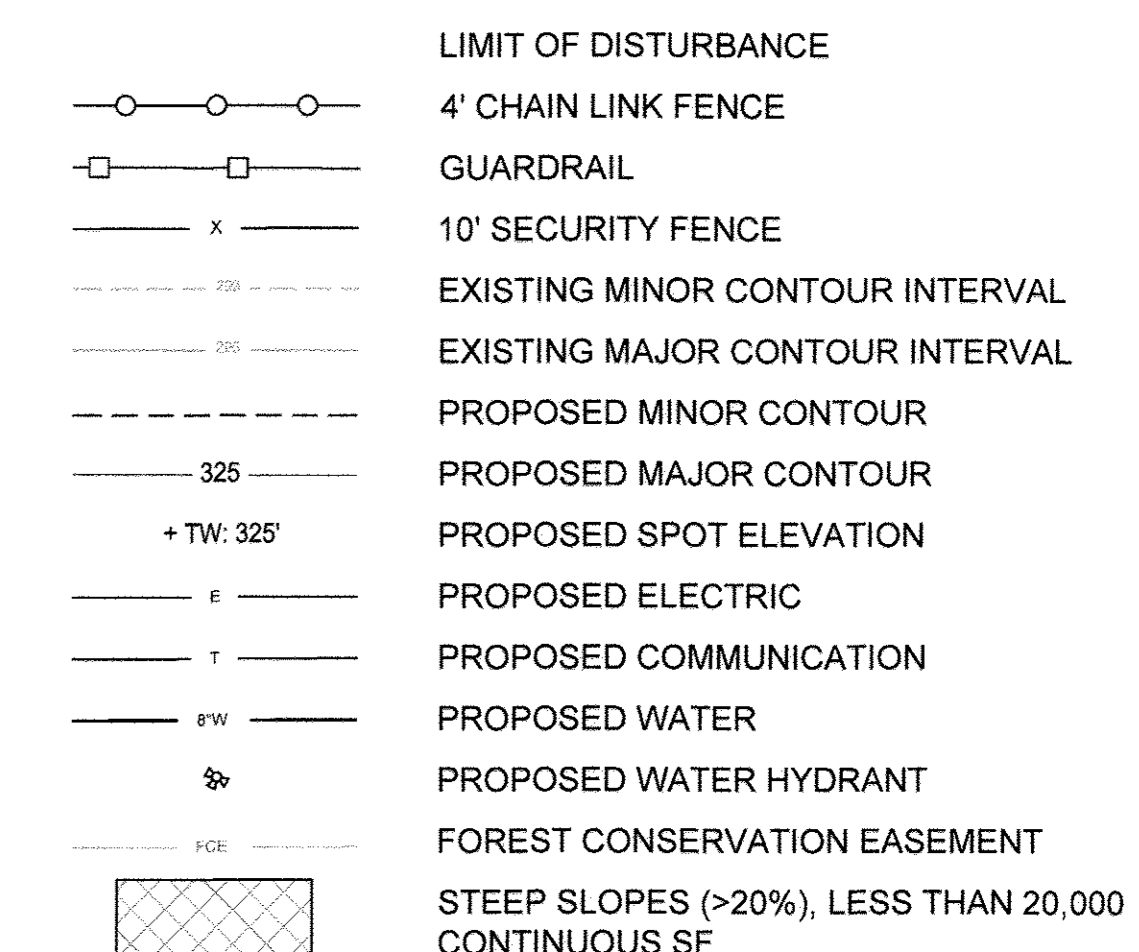
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7. 10' CHAINLINK FENCE.
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APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Chief, Division of Land Development  
 Date: 5-1-19  
 Date: 4-30-18

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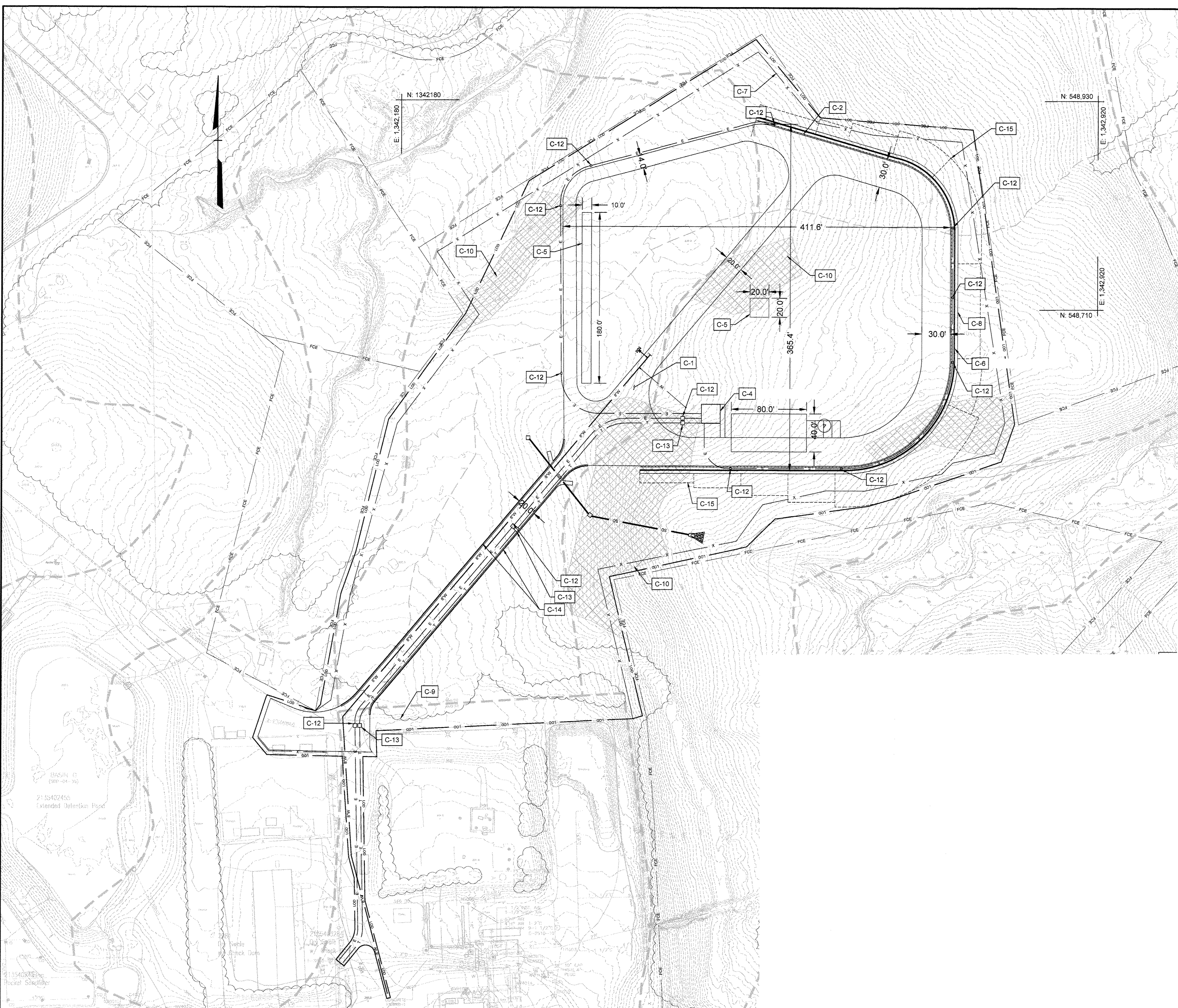
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BY	NO.
REVISION	DATE

OWNER/DEVELOPER  
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**CONCEPT PLAN - OTA 2**  
 JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY  
**OUTDOOR TESTING AREAS**  
 11100 JOHNS HOPKINS ROAD  
 TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC  
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 SHEET 03 OF 07

C-202  
 RK&K PROJECT NUMBER 17152  
 SCALE: As Shown



**CONCEPT PLAN NOTES**

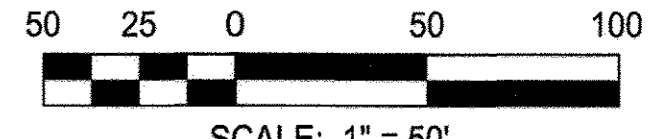
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- LIMIT OF DISTURBANCE
- 4' CHAIN LINK FENCE
- GUARDRAIL
- 10' SECURITY FENCE
- EXISTING MINOR CONTOUR INTERVAL
- EXISTING MAJOR CONTOUR INTERVAL
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED ELECTRIC
- PROPOSED COMMUNICATION
- PROPOSED WATER
- PROPOSED FIRE HYDRANT
- PROPOSED STORM DRAIN
- FOREST CONSERVATION EASEMENT
- STEEP SLOPES (>20%), LESS THAN 20,000 CONTINUOUS SF



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*John E. Edwards*  
 Chief, Development Engineering Division 4  
 Date: 5-1-18  
*Kevin Shaver*  
 Chief, Division of Land Development  
 Date: 4-30-18

**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 ENGINEERS/CONSTRUCTION MANAGERS/PLANNERS/SCIENTISTS  
 RESPONSIVE PEOPLE. CREATIVE SOLUTIONS.  
 700 East Pratt Street, Suite 500  
 Baltimore, MD 21202  
 Ph: 410.728.2900 Contact: John D'Angier  
 www.rkk.com

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. 23612, EXPIRATION DATE: MARCH 6, 2019.

DESIGN BY: CWMM  
 DRAWN BY: CWMM  
 CHECKED BY: CDK  
 DATE: 4/25/2018

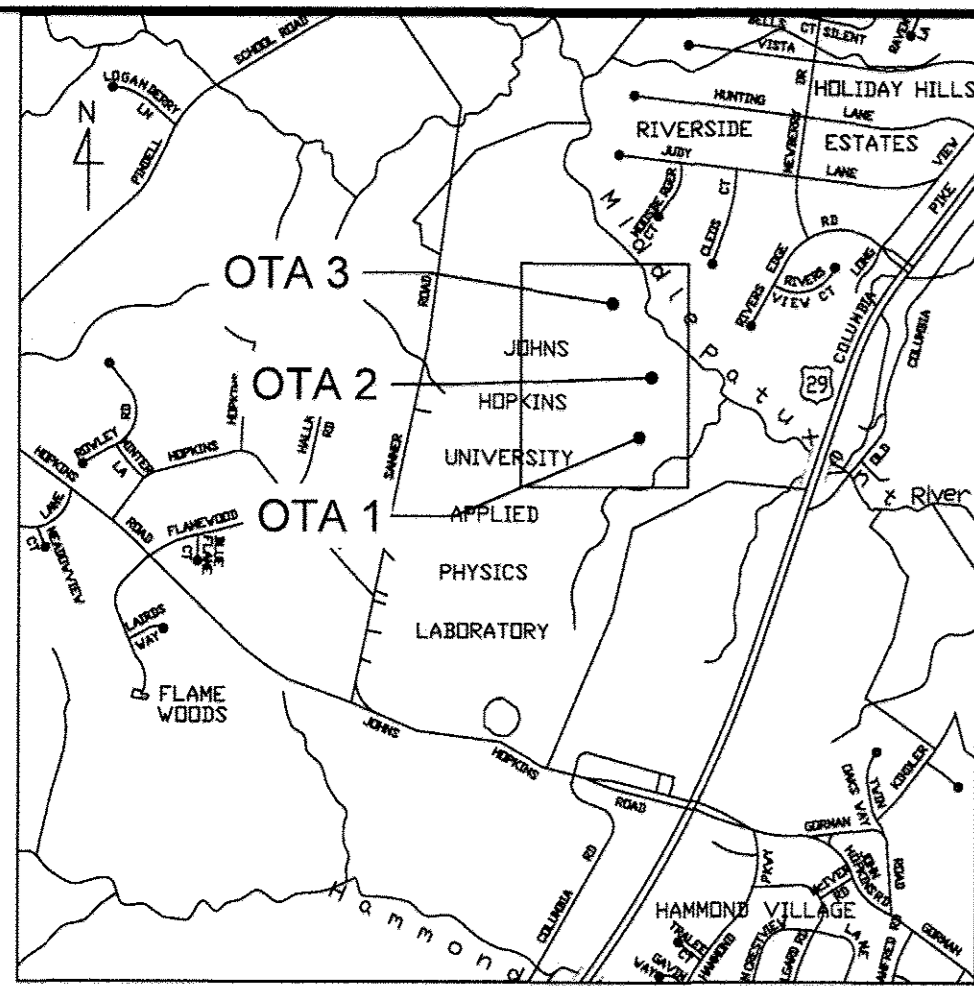
BY	NO.	REVISION	DATE

**NOT FOR CONSTRUCTION**

OWNER/DEVELOPER  
 JOHNS HOPKINS  
 APPLIED PHYSICS LABORATORY  
 11100 JOHNS HOPKINS ROAD  
 LAUREL, MARYLAND 20723

CONCEPT PLAN - OTA 3  
 JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY  
**OUTDOOR TESTING AREAS**  
 11100 JOHNS HOPKINS ROAD  
 TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC  
 ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND  
 SHEET 04 OF 07

C-203  
 RK&K PROJECT NUMBER 17152  
 SCALE: As Shown



ADC MAP/GRID NO: Map 32, Grid C7

VICINITY MAP

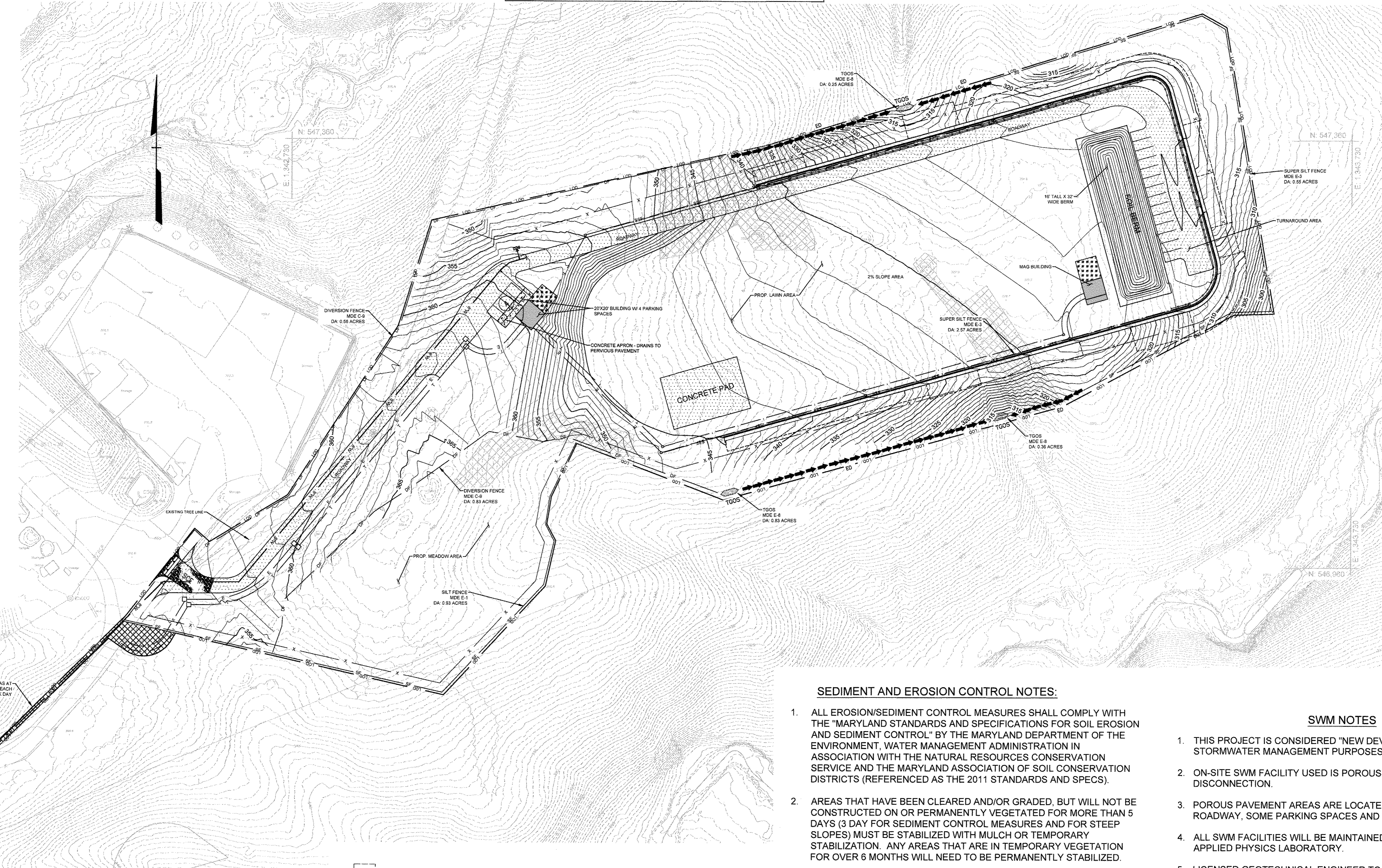
SCALE: 1"=2000'

LEGEND

- LIMIT OF DISTURBANCE / PROPOSED TREELINE
- STABILIZED CONSTRUCTION ENTRANCE, W/ WASH RACK
- SUPER SILT FENCE
- DIVERSION FENCE
- SAME DAY STABILIZATION
- POROUS PAVEMENT
- IMPERVIOUS AREA TREATED VIA NON-ROOFTOP DISCONNECTION
- ROOFTOP DISCONNECTION AREA
- STEEP SLOPES (>20%), LESS THAN 20,000 CONTINUOUS SF

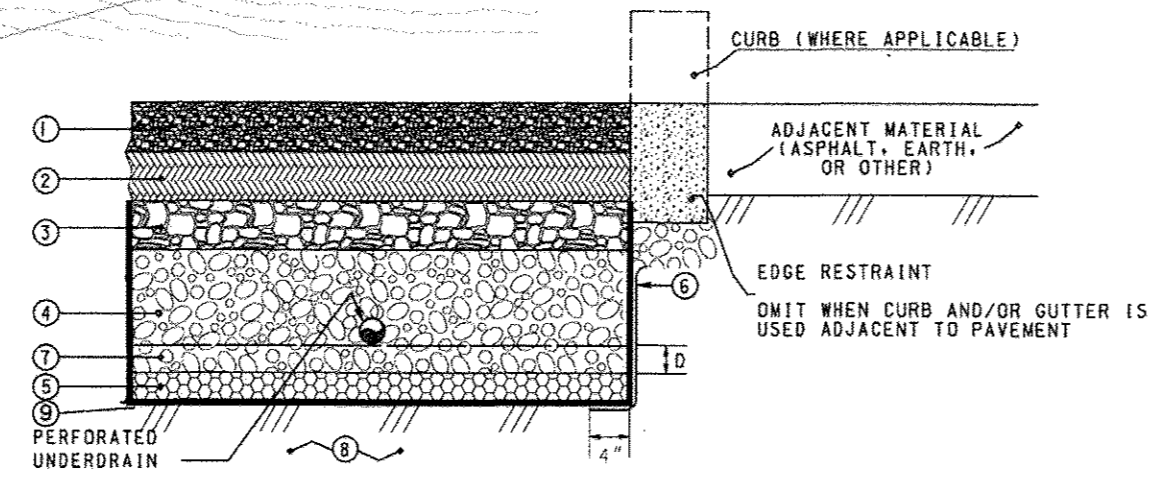
SWM ESDv COMPLIANCE SUMMARY					
ESDv REQUIRED	ESDv PROVIDED	IART	IAT	TARGET Pe	Pe ACHIEVED
3,442	5,690	29,027	29,027	1	2.4

**STANDARD STABILIZATION NOTE:**  
 Following initial soil disturbance or re-disturbance, seeding for permanent or temporary stabilization shall be completed within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed or graded areas on the project site not under active grading. Once vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.



NOTES

- THE TOPOGRAPHIC INFORMATION SHOWN HEREON WAS OBTAINED FROM AN AERIAL SURVEY FLOWN BY AXIS GEOSPATIAL ON APRIL 6, 2014 AND PROVIDED TO RK&K IN AUGUST OF 2017. THE UTILITY INFORMATION WAS PROVIDED ELECTRONICALLY TO RK&K BY JHU APL IN AUGUST OF 2017. TOPOGRAPHIC AND UTILITY INFORMATION MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER PRIOR TO THE START OF ANY WORK.
- BEARINGS, COORDINATES AND ELEVATIONS SHOWN ON THIS PLAN ARE SHOWN IN MARYLAND STATE PLANE. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88.
- FOR GENERAL NOTES, SEE THE COVER SHEET.



POROUS PAVEMENT DETAIL

NOTES

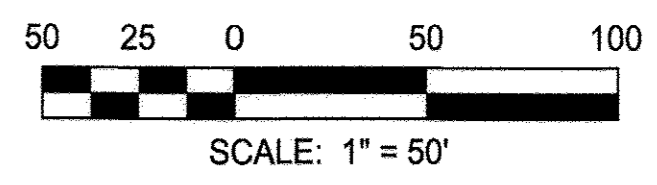
- POROUS ASPHALT SURFACE COURSE - HMA 12.5 MM
- POROUS ASPHALT BASE COURSE - HMA 25 MM
- CHOKER LAYER, AASHTO '57 OR APPROVED EQUIVALENT
- RESERVOIR LAYER, AASHTO '3, '2, OR '57 OR APPROVED EQUIVALENT
- FILTER LAYER, AASHTO '8 OR APPROVED EQUIVALENT
- GEOTEXTILE CLASS 2, LOCATED ON SIDES OF PRACTICES ONLY
- INFILTRATION SUMP, FOR STANDART DESIGN, D = 1'
- UNCOMPACTED SUBGRADE FOR AREAS DESIGNED FOR INFILTRATION PRACTICES. FOR SOFT SOIL INSTALL GEOGRID PER GEOTECHNICAL ENGINEER RECOMMENDATIONS.
- IMPERVIOUS LINER IN FILL CONDITIONS.

SEDIMENT AND EROSION CONTROL NOTES:

- ALL EROSION/SEDIMENT CONTROL MEASURES SHALL COMPLY WITH THE "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, WATER MANAGEMENT ADMINISTRATION IN ASSOCIATION WITH THE NATURAL RESOURCES CONSERVATION SERVICE AND THE MARYLAND ASSOCIATION OF SOIL CONSERVATION DISTRICTS (REFERENCED AS THE 2011 STANDARDS AND SPECS).
- AREAS THAT HAVE BEEN CLEARED AND/OR GRADED, BUT WILL NOT BE CONSTRUCTED ON OR PERMANENTLY VEGETATED FOR MORE THAN 5 DAYS (3 DAY FOR SEDIMENT CONTROL MEASURES AND FOR STEEP SLOPES) MUST BE STABILIZED WITH MULCH OR TEMPORARY STABILIZATION. ANY AREAS THAT ARE IN TEMPORARY VEGETATION FOR OVER 6 MONTHS WILL NEED TO BE PERMANENTLY STABILIZED.
- NO PROPOSED SLOPE THAT IS REQUIRED TO BE SEEDED AND/OR MULCHED SHALL BE STEEPER THAN 2:1. SLOPES STEEPER THAN 2:1 SHALL REQUIRE AN ENGINEERED DESIGN FOR STABILIZATION.
- THE DISTRICT APPROVAL FOR THIS SEDIMENT CONTROL PLAN IS GOOD FOR 2 YEARS. AT THE END OF THE 2 YEARS, IF CONSTRUCTION OF THE PLAN HAS NOT STARTED, THE PLAN WILL NEED TO BE RESUBMITTED TO THE SOIL CONSERVATION DISTRICT FOR REVIEW AND RE-APPROVAL. ANY PLANS THAT ARE CURRENTLY UNDER CONSTRUCTION AFTER 2 YEARS MAY BE REQUIRED TO BE RESUBMITTED TO THE SOIL CONSERVATION DISTRICT BY THE SEDIMENT CONTROL INSPECTOR.

SWM NOTES

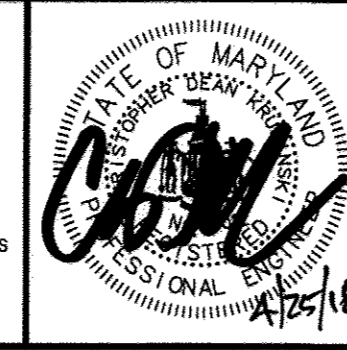
- THIS PROJECT IS CONSIDERED "NEW DEVELOPMENT" FOR STORMWATER MANAGEMENT PURPOSES.
- ON-SITE SWM FACILITY USED IS POROUS PAVEMENT & ROOFTOP DISCONNECTION.
- POROUS PAVEMENT AREAS ARE LOCATED ON PARTS OF THE ROADWAY, SOME PARKING SPACES AND THE CONCRETE PAD.
- ALL SWM FACILITIES WILL BE MAINTAINED BY JOHNS HOPKINS APPLIED PHYSICS LABORATORY.
- LICENSED GEOTECHNICAL ENGINEER TO EVALUATE GROUNDWATER CONDITIONS TO DETERMINE GROUNDWATER ELEVATION.



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Date: 5-1-18  
 Chief, Division of Land Development  
 Date: 4-30-18

**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 ENGINEERS/CONSTRUCTION MANAGERS/PLANNERS/SCIENTISTS  
 RESPONSIVE PEOPLE - CREATIVE SOLUTIONS  
 700 East Pratt Street, Suite 500  
 Baltimore, MD 21202  
 Ph: 410.728.2800 Contact: John d'Epagnier  
 www.rkk.com

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. 20712, EXPIRATION DATE: MARCH 6, 2019.



DESIGN BY: CWWM  
 DRAWN BY: CWWM  
 CHECKED BY: CDK  
 DATE: 4/25/2018

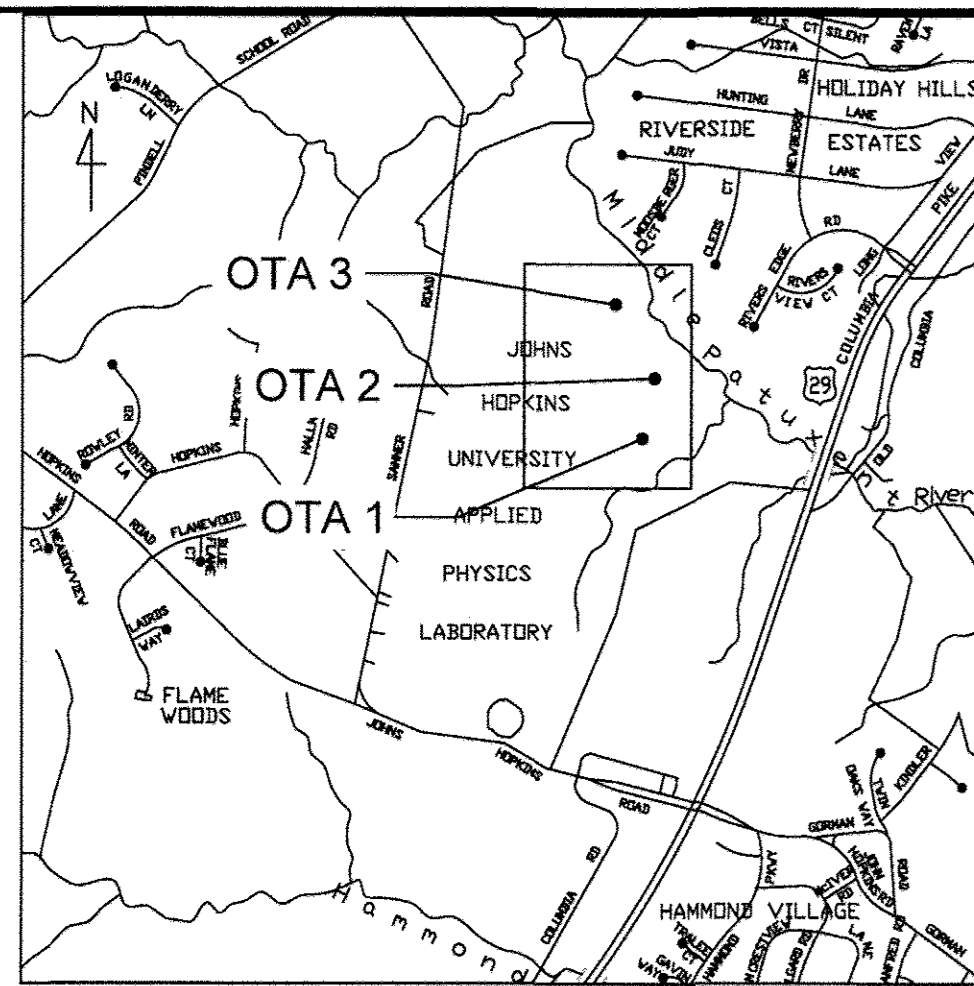
BY	NO.	REVISION	DATE

NOT FOR CONSTRUCTION

OWNER/DEVELOPER  
 JOHNS HOPKINS  
 APPLIED PHYSICS LABORATORY  
 11100 JOHNS HOPKINS ROAD  
 LAUREL, MARYLAND 20723

ESC & SWM PLAN - OTA 1  
 JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY  
**OUTDOOR TESTING AREAS**  
 11100 JOHNS HOPKINS ROAD  
 TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC  
 ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND  
 SHEET 05 OF 07

C-601  
 RK&K PROJECT NUMBER 17152  
 SCALE: As Shown



ADC MAP/GRID NO: Map 32, Grid C7

VICINITY MAP  
SCALE: 1"=2000'



**NOTES**

1. THE TOPOGRAPHIC INFORMATION SHOWN HEREON, WAS OBTAINED FROM AN AERIAL SURVEY FLOWN BY AXIS GEOSPATIAL ON APRIL 6, 2014 AND PROVIDED TO RK&K IN AUGUST OF 2017. THE UTILITY INFORMATION WAS PROVIDED ELECTRONICALLY TO RK&K BY JHU APL IN AUGUST OF 2017. TOPOGRAPHIC AND UTILITY INFORMATION MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER PRIOR TO THE START OF ANY WORK.
2. BEARINGS, COORDINATES AND ELEVATIONS SHOWN ON THIS PLAN ARE SHOWN IN MARYLAND STATE PLANE. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88.
3. FOR GENERAL NOTES, SEE THE COVER SHEET.
4. FOR SEDIMENT AND EROSION CONTROL NOTES, SEE SHEET C-601.

**SWM NOTES**

1. THIS PROJECT IS CONSIDERED "NEW DEVELOPMENT" FOR STORMWATER MANAGEMENT PURPOSES.
2. ON-SITE SWM FACILITY USED IS PERVIOUS PAVEMENT.
3. **PERVIOUS PAVEMENT:** PERVIOUS PAVEMENT AREAS ARE LOCATED ON PARTS OF THE ROADWAY, AND SOME PARKING SPACES.
4. ALL SWM FACILITIES WILL BE MAINTAINED BY JOHNS HOPKINS APPLIED PHYSICS LABORATORY.
5. LICENSED GEOTECHNICAL ENGINEER TO EVALUATE GROUNDWATER CONDITIONS TO DETERMINE GROUNDWATER ELEVATION.

**SWM ESDv COMPLIANCE SUMMARY**

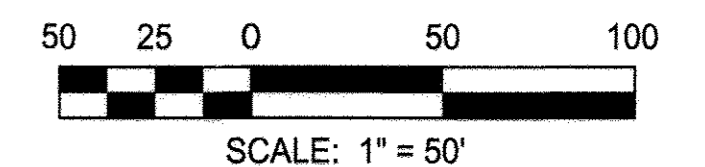
ESDv REQUIRED	ESDv PROVIDED (PERVIOUS PAVEMENT)	IART	IAT (PERVIOUS PAVEMENT)	TARGET Pe	Pe ACHIEVED
1,958	2,808	14,114	14,114	1	2.4

**LEGEND**

- 100 — 100 — LIMIT OF DISTURBANCE / PROPOSED TREELINE
- SCE STABILIZED CONSTRUCTION ENTRANCE, W/ WASH RACK
- SSF — SUPER SILT FENCE
- DF — DIVERSION FENCE
- SAME DAY STABILIZATION
- POROUS PAVEMENT
- IMPERVIOUS AREA TREATED VIA NON-ROOFTOP DISCONNECTION
- ROOFTOP DISCONNECTION AREA
- STEEP SLOPES (>20%), LESS THAN 20,000 CONTINUOUS SF

**STANDARD STABILIZATION NOTE:**

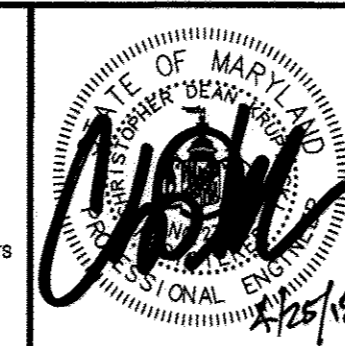
Following initial soil disturbance or re-disturbance, seeding for permanent or temporary stabilization shall be completed within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed or graded areas on the project site not under active grading. Once vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Date: 5-1-18  
 Chief, Division of Land Development  
 Date: 4-30-18

**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 ENGINEERS/CONSTRUCTION MANAGERS/PLANNERS/SCIENTISTS  
 RESPONSIVE PEOPLE. CREATIVE SOLUTIONS.  
 700 East Pratt Street, Suite 500  
 Baltimore, MD 21202  
 Ph: 410.728.2800 Contact: John DePagnier  
 www.rkk.com

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. 23012, EXPIRATION DATE: MARCH 6, 2019.



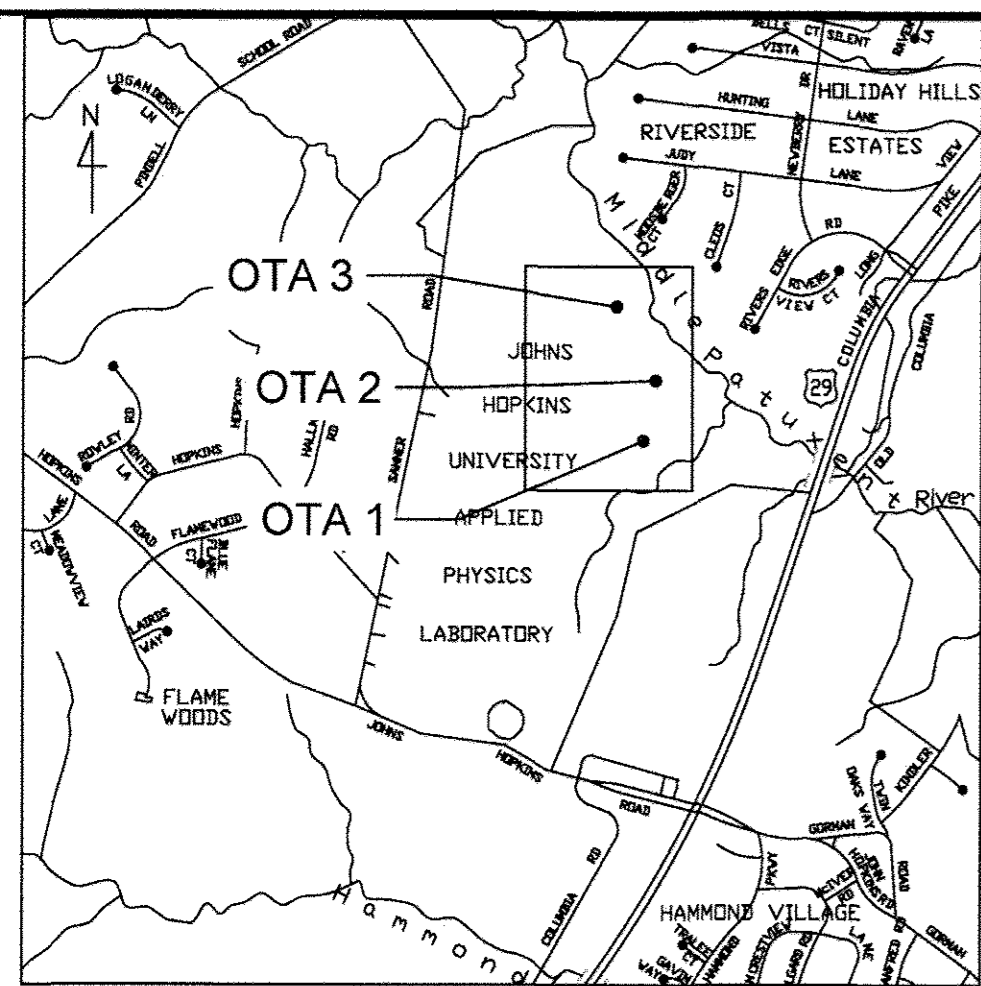
DESIGN BY:	CWMM				
DRAWN BY:	CWMM				
CHECKED BY:	CDK				
DATE:	4/25/2018	BY	NO.	REVISION	DATE

**NOT FOR CONSTRUCTION**

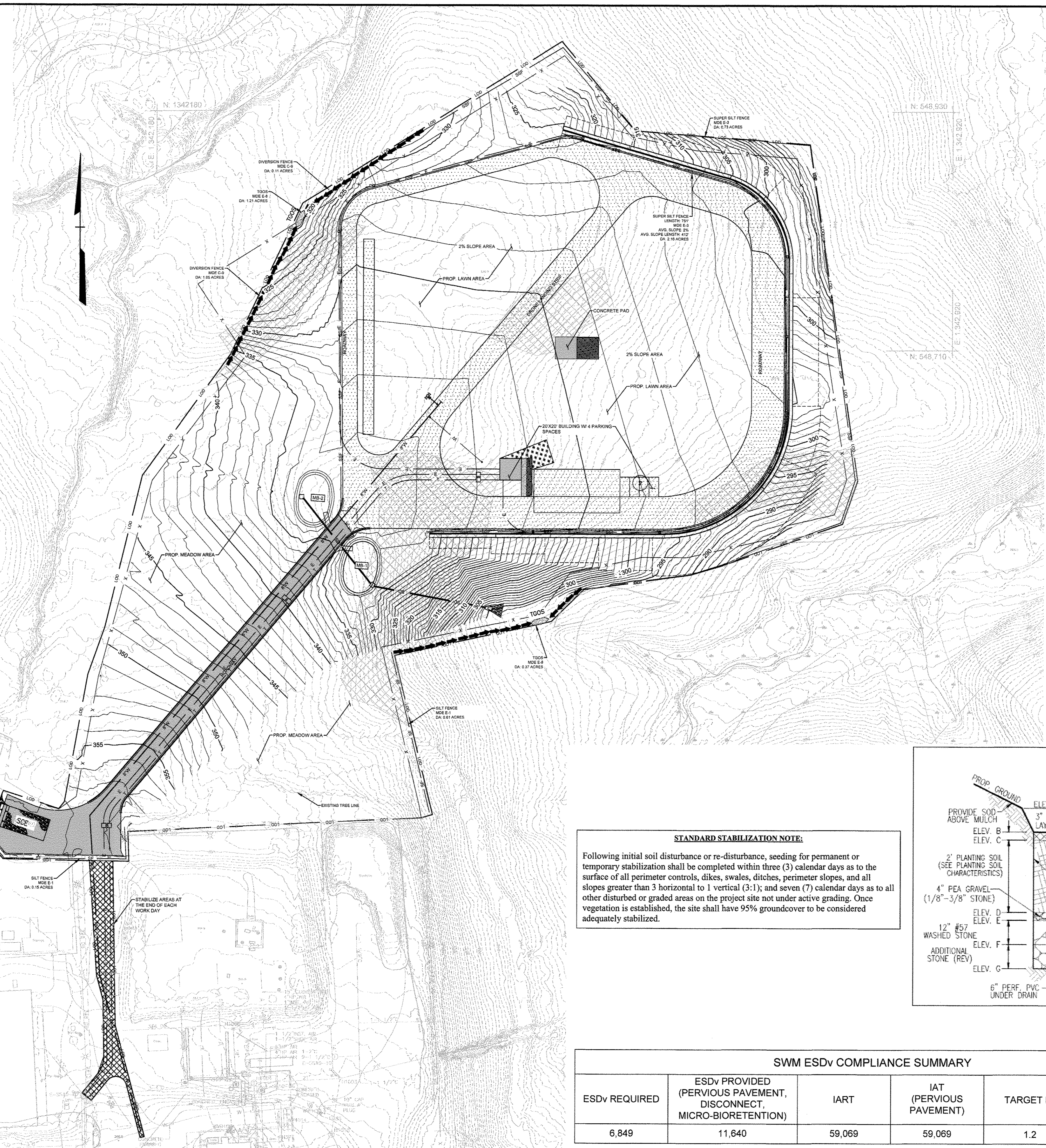
OWNER/DEVELOPER  
 JOHNS HOPKINS  
 APPLIED PHYSICS LABORATORY  
 11100 JOHNS HOPKINS ROAD  
 LAUREL, MARYLAND 20723

ESC & SWM PLAN - OTA 2  
 JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY  
**OUTDOOR TESTING AREAS**  
 11100 JOHNS HOPKINS ROAD  
 TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC  
 ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND  
 SHEET 06 OF 07

C-602  
 RK&K PROJECT NUMBER 17152  
 SCALE: As Shown



ADC MAP/GRID NO: Map 32, Grid C7  
**VICINITY MAP**  
 SCALE: 1"=2000'



- NOTES**
- THE TOPOGRAPHIC INFORMATION SHOWN HEREON, WAS OBTAINED FROM AN AERIAL SURVEY FLOWN BY AXIS GEOSPATIAL ON APRIL 6, 2014 AND PROVIDED TO RK&K IN AUGUST OF 2017. THE UTILITY INFORMATION WAS PROVIDED ELECTRONICALLY TO RK&K BY JHU APL IN AUGUST OF 2017. TOPOGRAPHIC AND UTILITY INFORMATION MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER PRIOR TO THE START OF ANY WORK.
  - BEARINGS, COORDINATES AND ELEVATIONS SHOWN ON THIS PLAN ARE SHOWN IN MARYLAND STATE PLANE. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88.
  - FOR GENERAL NOTES, SEE THE COVER SHEET.
  - FOR SEDIMENT AND EROSION CONTROL NOTES, SEE SHEET C-601.

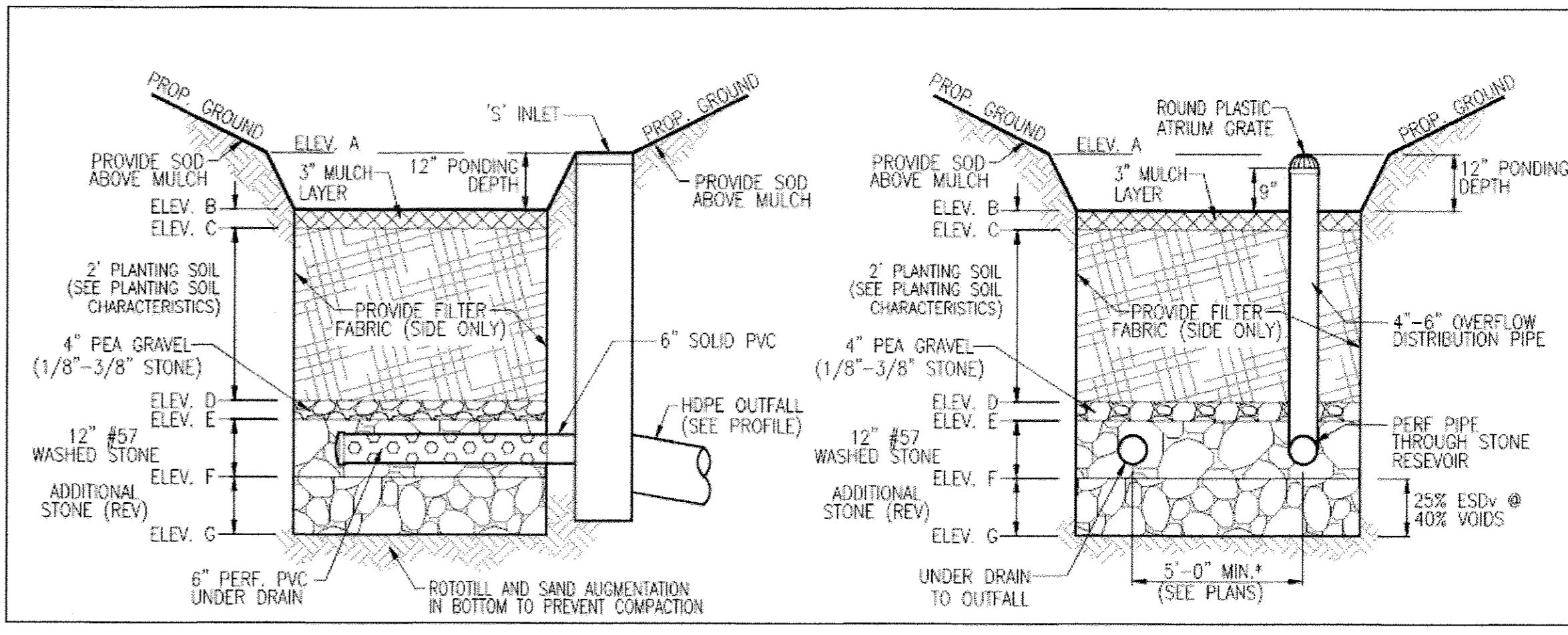
- SWM NOTES**
- THIS PROJECT IS CONSIDERED "NEW DEVELOPMENT" FOR STORMWATER MANAGEMENT PURPOSES.
  - ON-SITE SWM FACILITIES USED ARE POROUS PAVEMENT, ROOFTOP DISCONNECTION, NON-ROOFTOP DISCONNECTION & MICROBIORETENTION.
  - POROUS PAVEMENT AREAS ARE LOCATED ON PARTS OF THE ROADWAY, AND THE FLAT CONCRETE PAD.
  - ALL SWM FACILITIES WILL BE MAINTAINED BY JOHNS HOPKINS APPLIED PHYSICS LABORATORY.
  - LICENSED GEOTECHNICAL ENGINEER TO EVALUATE GROUNDWATER CONDITIONS TO DETERMINE GROUNDWATER ELEVATION.

**LEGEND**

- LOD LIMIT OF DISTURBANCE / PROPOSED TREELINE
- SCE STABILIZED CONSTRUCTION ENTRANCE, W/ WASH RACK
- SSF SUPER SILT FENCE
- DF DIVERSION FENCE
- SAME DAY STABILIZATION
- POROUS PAVEMENT
- TREATED IMPERVIOUS AREA
- ROOFTOP DISCONNECTION AREA & NON-ROOFTOP DISCONNECTION AREA
- STEEP SLOPES (>20%), LESS THAN 20,000 CONTINUOUS SF

**STANDARD STABILIZATION NOTE:**

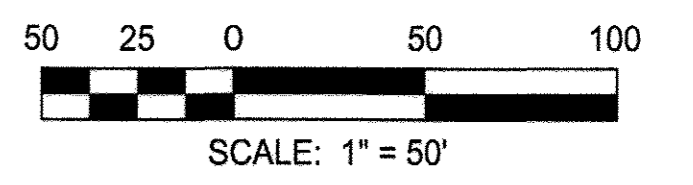
Following initial soil disturbance or re-disturbance, seeding for permanent or temporary stabilization shall be completed within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed or graded areas on the project site not under active grading. Once vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.



**BIO-RETENTION DETAIL**

**SWM ESDv COMPLIANCE SUMMARY**

ESDv REQUIRED	ESDv PROVIDED (PERVIOUS PAVEMENT, DISCONNECT, MICRO-BIORETENTION)	IART	IAT (PERVIOUS PAVEMENT)	TARGET Pe	Pe ACHIEVED
6,849	11,640	59,069	59,069	1.2	2.0



\\bospr05\2017\2017\17152\_JHUAPL\_CADD\Plans\ECP\C-600 (ESC Plans).dwg Mar 21, 2018 12:27:27pm mcurcio

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division  
 Date: 5-1-18  
 Date: 4-30-18

**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 ENGINEERS/ARCHITECTS/PLANNERS/SCIENTISTS  
 700 East Pratt Street, Suite 500  
 Baltimore, MD 21202  
 Ph: 410.728.2800 Contact: John d'Epagnier  
 www.rkk.com

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 2812, EXPIRATION DATE: MARCH 6, 2019.

DESIGN BY: CWWM  
 DRAWN BY: CWWM  
 CHECKED BY: CDK  
 DATE: 4/25/2018

**NOT FOR CONSTRUCTION**

BY	NO.	REVISION	DATE

OWNER/DEVELOPER  
**JOHNS HOPKINS APPLIED PHYSICS LABORATORY**  
 11100 JOHNS HOPKINS ROAD  
 LAUREL, MARYLAND 20723

ESC & SWM PLAN - OTA 3  
 JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY  
**OUTDOOR TESTING AREAS**  
 11100 JOHNS HOPKINS ROAD  
 TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC  
 ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND  
 SHEET 07 OF 07

C-603  
 RK&K PROJECT NUMBER 17152  
 SCALE: As Shown