THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
OUTDOOR TESTING AREAS
SITE DEVELOPMENT PLAN

SITE ANALYSIS DATA CHART

TOTAL PROJECT AREA: 357.976
AREA OF PLAN SUBMISSION: ~~10.8 AC.~~ 27.9 AC.
LIMIT OF DISTURBANCE: ~~10.8 AC.~~ 27.9 AC.
PRESENT ZONING: PEC
PROPOSED USE: OUTDOOR TESTING AREAS
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 FT². 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%)

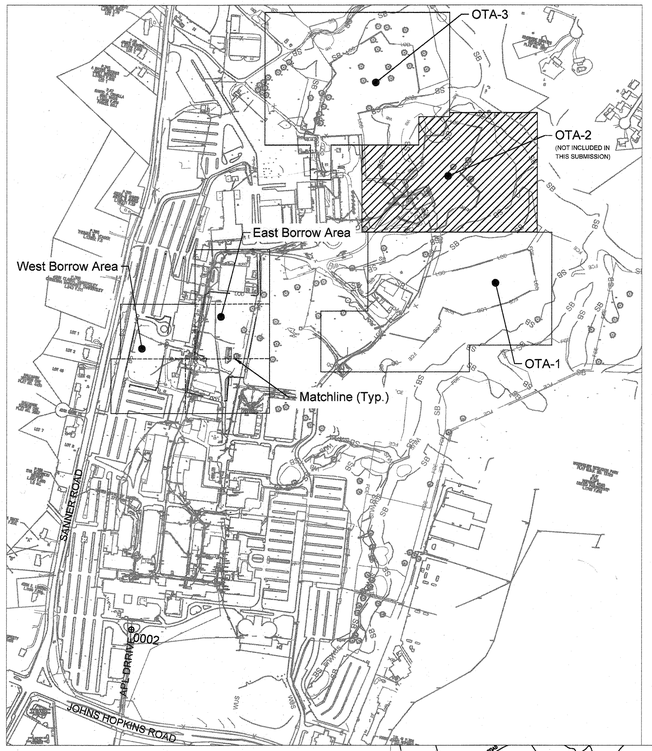
PROPOSED BUILDING COVERAGE:
~~0.037 ACRES (1,620 FT²)~~ 0.074 ACRES (3,240 FT²)

TOTAL PROPOSED BUILDING COVERAGE:
~~25.61 ACRES (7.2%)~~ 25.64 ACRES (7.3%)

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

GENERAL NOTES

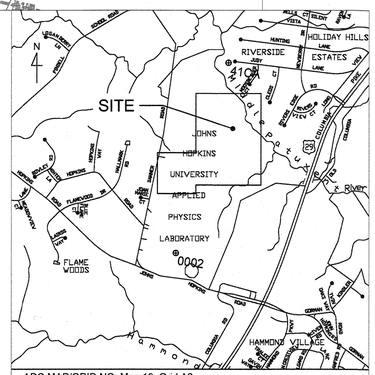
1. THE TOPOGRAPHIC INFORMATION SHOWN HEREON, WAS OBTAINED FROM AN AERIAL SURVEY FLOWN BY AXIS GEOSPATIAL ON APRIL 6, 2014 AND PROVIDED TO RK&K IN AUGUST OF 2017. THE UTILITY INFORMATION WAS PROVIDED ELECTRONICALLY TO RK&K BY JHU APL IN AUGUST OF 2017. TOPOGRAPHIC AND UTILITY INFORMATION MAY NOT REFLECT 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. SOILS INFORMATION TAKEN FROM NRCS WEB SOIL SURVEY DATED APRIL 28, 2017.
4. THE SUBJECT PROPERTY ZONED PEC (PLANNED EMPLOYMENT CENTER) PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
5. PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS:
   SDP-04-76: SERVICES AREA COMPLEX
   F-02-40: SWM BASIN 'A', APFO, FOREST CONSERVATION
   SDP-99-63: B52
   SDP-04-133: BASIN 'C' SWM FACILITIES AND LAYDOWN AREA
   SDP-05-042: JHU/LIBRARIES SERVICES CENTER (FOREST CONSERVATION & WETLANDS UPDATES)
   SDP-03-043: SANNER ROAD IMPROVEMENTS (NEW APFO NUMBER: 4,600)
   F-04-188: FOREST CONSERVATION EASEMENTS RE-PLAT
   F-07-035: FOREST CONSERVATION, RE-PLAT EASEMENT
   SDP-08-084: SERVICES AND SUPPORT AREA INFRASTRUCTURE FACILITY PHASE
6. 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. FOREST CONSERVATION OBLIGATION WAS FULFILLED UNDER F-04-188 AND F-07-035.
7. NO WETLANDS, STREAMS OR 100-YEAR FLOOD PLAINS EXIST WITHIN 25' OF THIS PROJECTS LIMIT OF DISTURBANCE.
8. NO CEMETERIES EXIST ON THIS SITE BASED ON A SITE VISIT AND ON AN EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP.
9. NO HISTORIC STRUCTURES EXIST ON THE SUBJECT PROPERTY.
10. THERE ARE NO EXISTING DWELLINGS ON THIS SITE.
11. TRASH PICK UP WILL BE PRIVATELY MAINTAINED.
12. NO OFF-SITE ACTIVITIES ARE PROPOSED FOR THIS PROJECT.
13. THE SITE IS NOT IN THE AIRPORT ZONE.
14. THE PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
15. EXISTING WATER IS PUBLIC; WATER DISTRIBUTED WITHIN THE PROPERTY BOUNDARIES IS PRIVATE.
16. EXISTING SEWER IS PUBLIC; SEWER COLLECTION WITHIN THE PROPERTY BOUNDARIES IS PRIVATE.
17. NO WORK IS PROPOSED IN THE COUNTY RIGHT-OF-WAY. ALL PROPOSED WORK IS INTERIOR TO THE SITE.
18. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. PERIMETER LANDSCAPING IS NOT REQUIRED WITH THIS SDP BECAUSE THE PROPOSED FIELDS ARE LOCATED INTERNAL TO THE SITE.
19. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
20. STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH THE 2010 MDE, CHAPTER 5 REGULATIONS (ESD TO MEP)AND THE LATEST HOWARD COUNTY DESIGN MANUAL, VOL. 1, CHAPTER 5, ADOPTED ON OR ABOUT MAY 4, 2010. RECHARGE VOLUME WILL BE PROVIDED THROUGH THE USE OF A STONE RESERVOIRS. STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY JOHNS HOPKINS UNIVERSITY. SEVEN (7) ESD PRACTICES SHALL BE USED TO ADDRESS THE SITE PE AND ESDV.
21. HEALTH DEPARTMENT APPROVAL OF THIS DEVELOPMENT PLAN DOES NOT ENSURE APPROVAL OF BUILDING PERMIT APPLICATIONS ASSOCIATED WITH THIS PLAN. PLANS FOR CERTAIN FACILITIES TO BE CONSTRUCTED WITHIN THE LIMITS DESCRIBED BY THIS PLAN WILL REQUIRE REVIEW AND APPROVAL BY THE HEALTH DEPARTMENT. SUCH FACILITIES MAY INCLUDE, BUT ARE NOT LIMITED TO, THOSE WHICH HAVE SWIMMING POOLS, OR THAT SELL PREPARED OR PACKAGED FOODS, OR THAT MAY HAVE EQUIPMENT THAT EMITS RADIATION.
22. FOR BUILDING ELEVATIONS, SEE SHEET A-101.
23. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS.
24. 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. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY AND MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
25. 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.
26. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST (5) WORKING DAYS PRIOR TO START OF WORK.
27. 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.
28. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY INVERTS AND CLEARANCES FROM NEW WORK PRIOR TO START OF ANY WORK. 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 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.
29. EXISTING UTILITIES WHICH ARE NOT TO BE REMOVED OR ABANDONED SHALL REMAIN OPERATIONAL AT ALL TIMES. APPROPRIATE EXISTING UTILITIES SHALL REMAIN IN SERVICE UNTIL REPLACEMENT/RELOCATED UTILITIES ARE OPERATIONAL.
30. 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.
31. 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.
32. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED. NUMERICAL DIMENSIONS AND ELEVATIONS SHOWN SHALL SUPERSEDE ANY DISCREPANCY IN THE SCALING ON THE DRAWINGS.
33. ALL GRADING AND EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S REPORT AND INSPECTED BY A GEOTECHNICAL ENGINEER.
34. CONSTRUCTION OF SUBGRADE, UNDERDRAINS, AND PAVING SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER.
35. 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.
36. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL EXISTING AND PROPOSED BUILDING ENTRANCES DURING ALL PHASES OF CONSTRUCTION, UNLESS OTHERWISE NOTED IN THESE DOCUMENTS. CONTRACTOR SHALL NOTIFY ENGINEER / OWNER IF EXISTING OR PROPOSED CONDITIONS RESTRICT ABILITY TO ACHIEVE POSITIVE DRAINAGE FROM BUILDINGS PRIOR TO THE START OF CONSTRUCTION.
37. ALL WATER MAINS TO BE DIP, UNLESS OTHERWISE NOTED. TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 4' COVER UNLESS OTHERWISE NOTED.
38. 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.
39. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN.
40. A WAIVER HAS BEEN SUBMITTED FOR THE USE OF POROUS ASPHALT IN THE PROPOSED DRIVEWAYS AND WAS APPROVED ON 08/11/2018.
41. A WAIVER WAS APPROVED ON 6 SEPTEMBER 12,2023 TO ALLOW NCMA STANDARDS FOR THE DESIGN OF THE RETAINING WALL.



SITE MAP
1" = 500'

LEGEND

LOD	LIMIT OF DISTURBANCE / PROPOSED TREELINE
	4' CHAIN LINK FENCE
	GUARDRAIL
X	SECURITY FENCE
	EXISTING MINOR CONTOUR INTERVAL
255	EXISTING MAJOR CONTOUR INTERVAL
	PROPOSED MINOR CONTOUR
325	PROPOSED MAJOR CONTOUR
+ TW: 325'	PROPOSED SPOT ELEVATION
SSF	SUPER SILT FENCE
SD	PROPOSED STORM DRAIN
UD	PROPOSED UNDERDRAIN
E	PROPOSED ELECTRIC
T	PROPOSED COMMUNICATION
W	PROPOSED WATER
	PROPOSED FIRE HYDRANT
FCE	EX. FOREST CONSERVATION EASEMENT
WB	EX. 25' WETLAND BUFFER
SB	EX. 25' STREAM BUFFER



ADC MAP/GRID NO: Map 19, Grid A2

VICINITY MAP
SCALE: 1"=2000'

INDEX OF SHEETS		
SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION
01	C-001	Cover Sheet
02	A-101	Shed Plan & Elevation; Concrete Pad Detail
03	A-106	Shed Plan & Elevation - OTA 3 (Phase 2)
04	C-101	Ex. Condition & Demo Plan - OTA 1 (Phase 1)
05	C-103	Ex. Condition & Demo Plan - OTA 3 (Phase 2)
06	C-201	Site, Grading and Utility Plan - OTA 1 (Phase 1)
07	C-203	Site, Grading and Drainage Plan - OTA 3 (Phase 2)
08	C-204	Layout Plan - OTA 1 (Phase 1)
09	C-206	Layout Plan - OTA 3 (Phase 2)
10	C-207	Roadway Profiles - OTA 1 (Phase 1)
11	C-208	Roadway Profiles - OTA 1 (Phase 1)
12	C-212	Roadway Profiles - OTA 3 (Phase 2)
13	C-213	Roadway Profiles - OTA 3 (Phase 2)
14	C-214	Roadway Profiles - OTA 3 (Phase 2)
15	C-215	Site Details & Structure Table
16	C-220	Storm Drain Profiles
17	C-281	Ex. Condition & Demo Plan - East Borrow Area (Phase 2)
18	C-282	Ex. Condition & Demo Plan - East Borrow Area (Phase 2)
19	C-283	Ex. Condition & Demo Plan - East Borrow Area (Phase 2)
20	C-284	Ex. Condition & Demo Plan - West Borrow Area (Phase 2)
21	C-285	Ex. Condition & Demo Plan - West Borrow Area (Phase 2)
22	C-286	Site and Grading Plan - East Borrow Area (Phase 2)
23	C-287	Site and Grading Plan - East Borrow Area (Phase 2)
24	C-288	Site and Grading Plan - East Borrow Area (Phase 2)
25	C-289	Site and Grading Plan - West Borrow Area (Phase 2)
26	C-290	Site and Grading Plan - West Borrow Area (Phase 2)
27	C-291	Utility Plan - East Borrow Area (Phase 2)
28	C-292	Utility Plan - East Borrow Area (Phase 2)
29	C-293	Utility Plan - East Borrow Area (Phase 2)
30	C-294	Site Details - Borrow Area
31	C-295	Water Profiles - Borrow Area (Phase 2)
32	C-296	Sanitary & Storm Sewer Profiles - Borrow Area (Phase 2)
33	C-320	Retaining Wall Elevation - OTA 1 (Phase 1)
34	C-321	Retaining Wall Elevation - OTA 1 (Phase 1)
35	C-322	Retaining Wall Elevation - OTA 1 (Phase 1)
36	C-323	Retaining Wall Elevation - OTA 1 (Phase 1)
37	C-327	Retaining Wall Elevation - OTA 3 (Phase 2)
38	C-328	Retaining Wall Elevation - OTA 3 (Phase 2)
39	C-329	Retaining Wall Elevation - OTA 3 (Phase 2)
40	C-330	Segmental Block Retaining Wall Section
41	C-331	Segmental Block Retaining Wall Section - OTA 3 (Phase 2)
42	C-501	Stormwater Management Plan - OTA 1 (Phase 1)
43	C-503	Stormwater Management Plan - OTA 3 (Phase 2)
44	C-504	SWM Notes

INDEX OF SHEETS		
SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION
45	C-505	SWM Details
46	C-506	SWM Landscaping Plan - OTA 3 (Phase 2)
47	C-581	Stormwater Management Plan - East Borrow Area (Phase 2)
48	C-582	Stormwater Management Plan - West Borrow Area (Phase 2)
49	C-601	Erosion Sediment Control Plan - OTA 1 (ESC Phase 1A)
50	C-602	Erosion Sediment Control Plan - OTA 1 (ESC Phase 1B)
51	C-605	Erosion Sediment Control Plan - OTA 3 (ESC Phase 2A)
52	C-606	Erosion Sediment Control Plan - OTA 3 (ESC Phase 2B)
53	C-607	Erosion Sediment Control Notes & Details
54	C-608	Erosion Sediment Control Notes & Details
55	C-609	Erosion Sediment Control Details
56	C-681	Erosion Sediment Control Plan - East Borrow Area (ESC Phase 2A)
57	C-682	Erosion Sediment Control Plan - East Borrow Area (ESC Phase 2A)
58	C-683	Erosion Sediment Control Plan - East Borrow Area (ESC Phase 2A)
59	C-684	Erosion Sediment Control Plan - West Borrow Area (ESC Phase 2A)
60	C-685	Erosion Sediment Control Plan - West Borrow Area (ESC Phase 2A)
61	C-686	Erosion Sediment Control Plan - East Borrow Area (ESC Phase 2B)
62	C-687	Erosion Sediment Control Plan - East Borrow Area (ESC Phase 2B)
63	C-688	Erosion Sediment Control Plan - East Borrow Area (ESC Phase 2B)
64	C-689	Erosion Sediment Control Plan - West Borrow Area (ESC Phase 2B)
65	C-690	Erosion Sediment Control Plan - West Borrow Area (ESC Phase 2B)
66	C-691	Erosion Sediment Control Plan - East Borrow Area (ESC Phase 2C)
67	C-692	Erosion Sediment Control Plan - East Borrow Area (ESC Phase 2C)
68	C-693	Erosion Sediment Control Plan - East Borrow Area (ESC Phase 2C)
69	C-694	Erosion Sediment Control Plan - West Borrow Area (ESC Phase 2C)
70	C-695	Erosion Sediment Control Plan - West Borrow Area (ESC Phase 2C)
71	C-696	Erosion Control Notes & Details - Borrow Area
72	C-697	Erosion Control Notes & Details - Borrow Area
73	C-698	Erosion Control Profiles & Details - Borrow Area

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

3 PURPOSE STATEMENT (4/7/22): ADDITION OF TWO 6'x40' CONCRETE PADS

GEODETIC CONTROL

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

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

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

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE

County Health Officer
Howard County Health Department — Date 12/1/23

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

DESIGN BY: SHK				
DRAWN BY: JMS/DTP	RK&K	3	Addition of Two 6"x40' Concrete Pads	4/7/22
CHECKED BY: CWWM	RK&K	4	Replacement Sheet - OTA-3 and Borrow Area Modifications	11/1/23
DATE: 11/1/2023	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 GRID: 16 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 01 OF 73

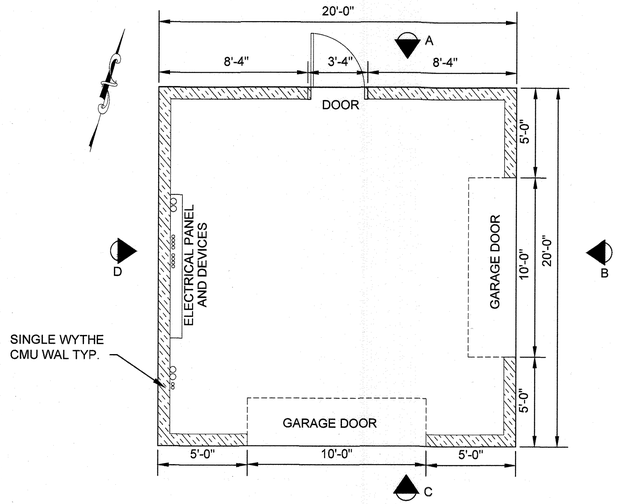
C-001

RK&K PROJECT NUMBER 21047.013

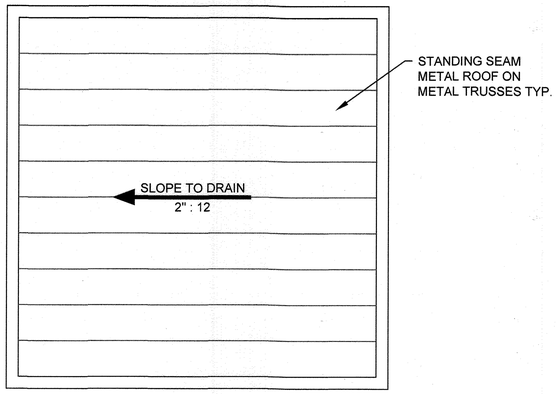
SCALE: As Shown

SDP-18-060

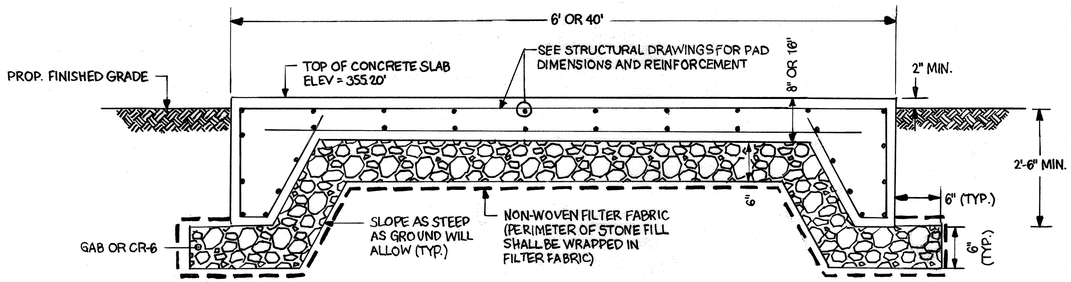
\\rkk.com\fs\Cloud\Projects\2021\21047_API.2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-001 (Cover Sheet) - SDP.dwg Oct 31, 2023 1:03pm jsaltz



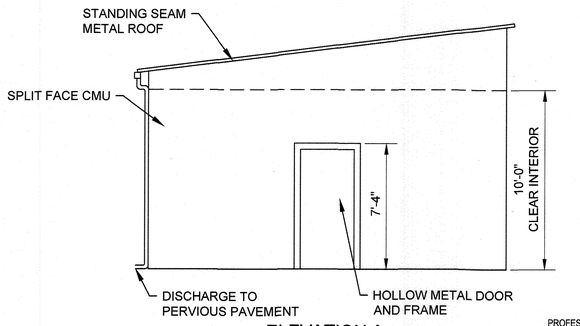
OTA # 1 FLOOR PLAN
SCALE: 1/4" = 1'



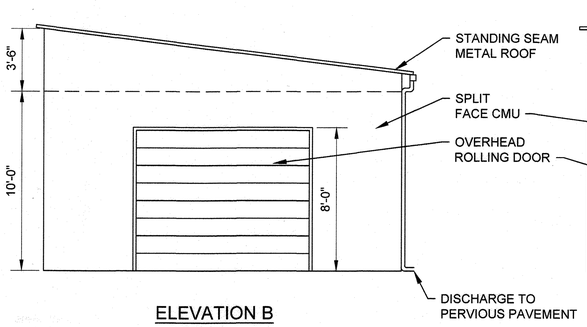
OTA # 1 ROOF PLAN
SCALE: 1/4" = 1'



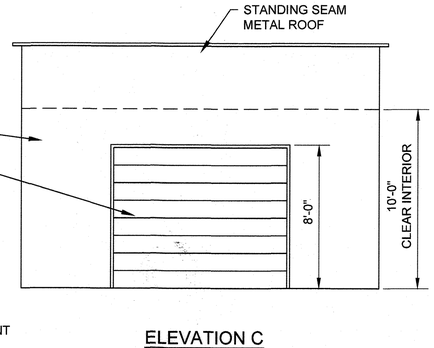
3 CONCRETE PAD DETAIL
NOT TO SCALE



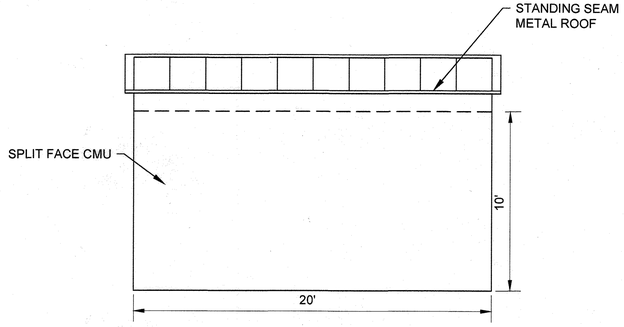
ELEVATION A
SCALE: 1/4" = 1'



ELEVATION B
SCALE: 1/4" = 1'



ELEVATION C
SCALE: 1/4" = 1'



ELEVATION D
SCALE: 1/4" = 1'

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. 49432, EXPIRATION DATE: 5/31/24.

3 PURPOSE STATEMENT (4/7/22): ADDITION OF TWO 6'X40' CONCRETE PADS.

No As-Built Information in this sheet 2/14/23

4 2 0 4 8
SCALE: 1/4" = 1'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 9.21.18

T. Murakata for KS
Chief, Division of Land Development — Date 9-25-18

Director — Date 9-26-18

RK&K
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Ph: 410.728.2900 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. 29912, EXPIRATION DATE: MARCH 9, 2019.

8/17/18

DESIGN BY:	CWWM
DRAWN BY:	CWWM
CHECKED BY:	CDK
DATE:	8/17/18

BY	NO.	REVISION	DATE
RK&K	3	ADDITION OF TWO 6'X40' CONCRETE PADS	4/7/22
		SDP SUBMISSION	

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

SHED PLAN & ELEVATION AS-BUILT

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 73

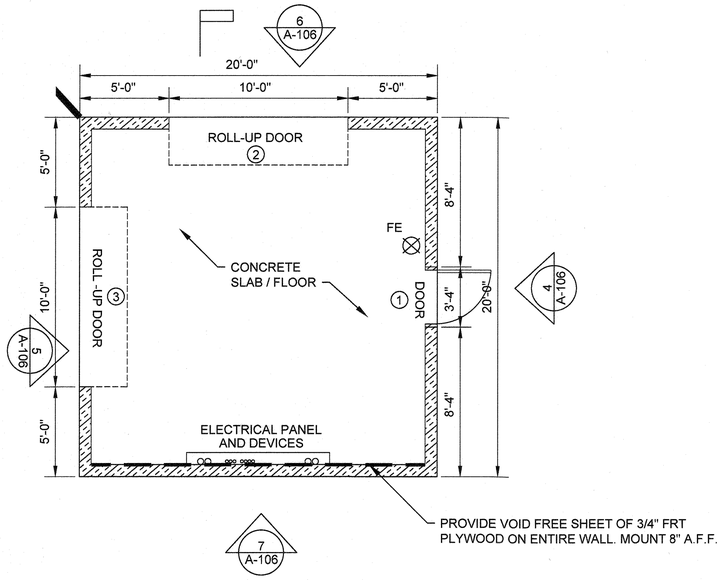
A-101

RK&K PROJECT NUMBER 17152

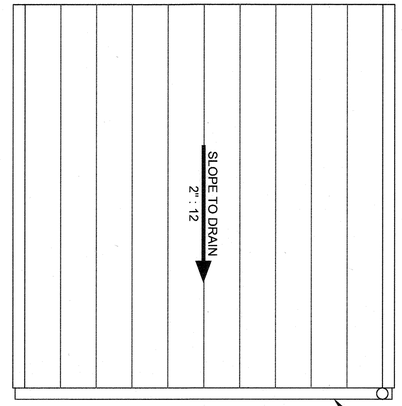
SCALE: As Shown

SDP-18-060

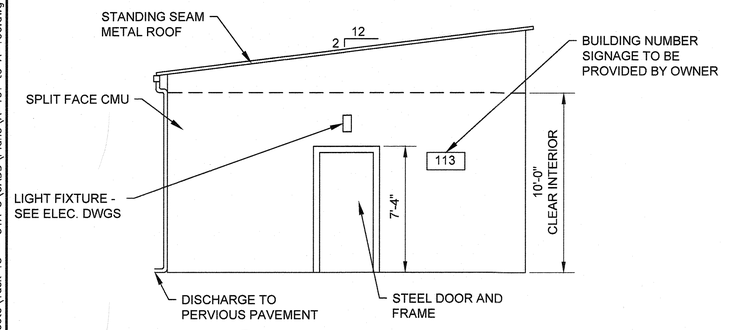
\\balsrv05\v2017\2017\17152_JHUAPL\CADD\Plans\A-101 Building Plan & Elevation.dwg Jul 03, 2018 2:33pm cmitchell



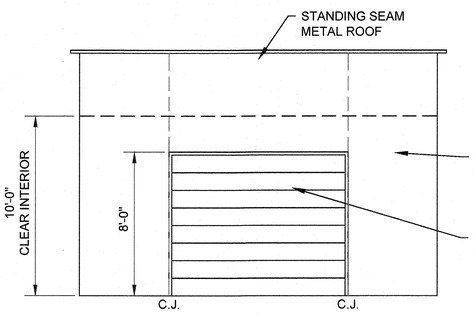
2 A-106 **OTA # 3 FLOOR PLAN**
SCALE: 1/4" = 1'-0"



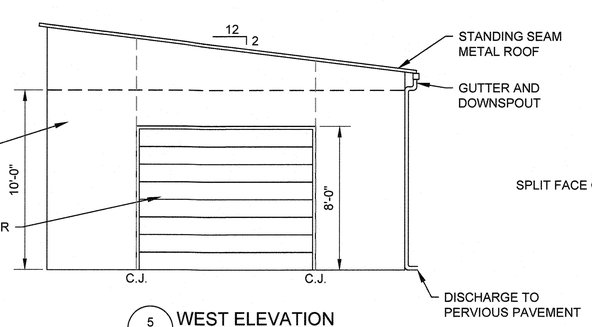
8 A-106 **OTA # 3 ROOF PLAN**
SCALE: 1/4" = 1'-0"



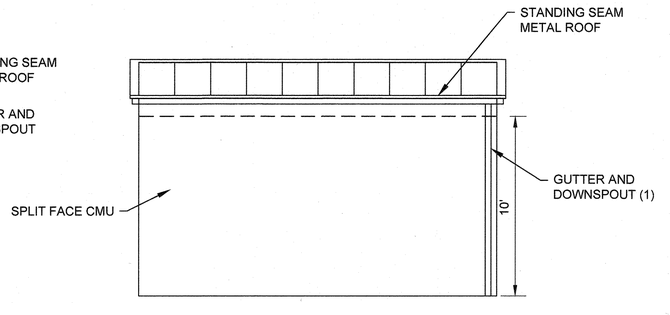
4 A-106 **EAST ELEVATION**
SCALE: 1/4" = 1'



6 A-106 **NORTH ELEVATION**
SCALE: 1/4" = 1'



5 A-106 **WEST ELEVATION**
SCALE: 1/4" = 1'



7 A-106 **SOUTH ELEVATION**
SCALE: 1/4" = 1'-0"

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3: INCLUDING THE SOURCE OF BORROW MATERIAL REFERRED TO AS THE EAST AND WEST BORROW AREAS.

4 2 0 4 8
SCALE: 1/4" = 1'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

DESIGN BY:	RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23
SHK				
DRAWN BY:				
JMS/DTP				
CHECKED BY:				
CWWM				
DATE:				
11/1/2023	BY	NO.	REVISION	DATE

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

SHED PLAN & ELEVATION - OTA 3 (Phase 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 03 OF 73

A-106

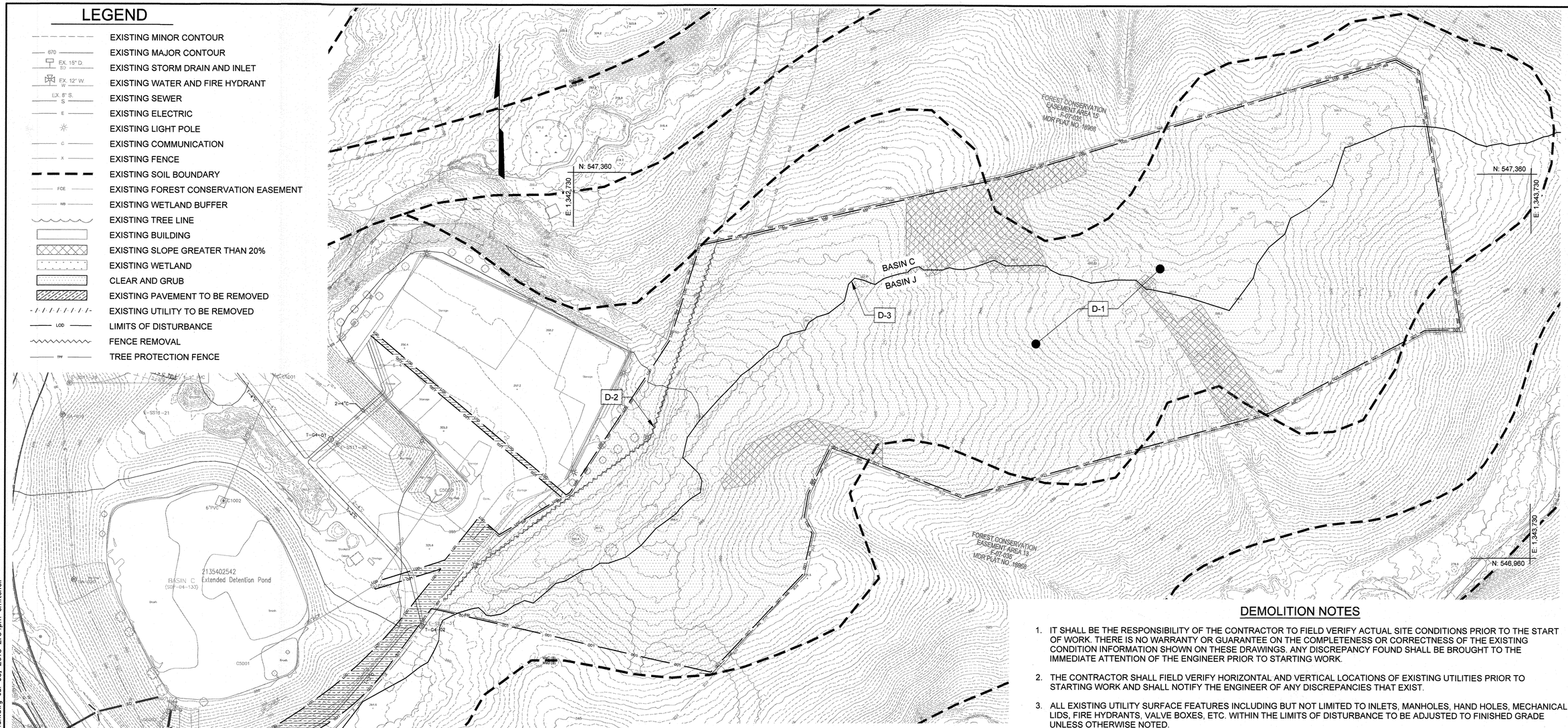
RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

LEGEND

- EXISTING MINOR CONTOUR
- 670 — EXISTING MAJOR CONTOUR
- EX. 15" D. SD — EXISTING STORM DRAIN AND INLET
- EX. 12" W — EXISTING WATER AND FIRE HYDRANT
- EX. 8" S. S — EXISTING SEWER
- E — EXISTING ELECTRIC
- EXISTING LIGHT POLE
- C — EXISTING COMMUNICATION
- X — EXISTING FENCE
- EXISTING SOIL BOUNDARY
- FCE — EXISTING FOREST CONSERVATION EASEMENT
- WB — EXISTING WETLAND BUFFER
- EXISTING TREE LINE
- EXISTING BUILDING
- EXISTING SLOPE GREATER THAN 20%
- EXISTING WETLAND
- CLEAR AND GRUB
- EXISTING PAVEMENT TO BE REMOVED
- EXISTING UTILITY TO BE REMOVED
- LOD — LIMITS OF DISTURBANCE
- FENCE REMOVAL
- TPF — TREE PROTECTION FENCE



GENERAL 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 PROJECT GENERAL NOTES, SEE THE COVER SHEET.
4. THE SITE IS PRIMARILY WOODED AND ALL TREES WILL BE REMOVED FROM THE SITE. THE PROPOSED TREE LINE WILL BE THE LIMIT OF DISTURBANCE (LOD).

50 25 0 50 100

SCALE: 1" = 50'

DEMO PLAN NOTES

KEY D-1

1. CLEAR ALL TREES AND GRUB. REMOVE ALL ROOT AND LEAF MATTER TO AN APPROXIMATE DEPTH OF 2.5' IN FILL AREAS.
2. REMOVE EXISTING FENCE.
3. EXISTING DRAINAGE BASIN BOUNDARY.
4. TEMPORARILY PLUG EX. 8" SEWER AT EX. MH SA-009 AND AND EX. MH SA-006. PROVIDE A PUMP AROUND SERVICE FROM MH SA-009 TO SA-006. REMOVE EXISTING SANITARY SEWER PIPE AND CONNECT PROPOSED SANITARY SEWER PIPE. COORDINATE WORK WITH THE INSTALLATION OF NEW PIPE TO LIMIT INTERRUPTION TIME. PUMP AND TRANSFER OF SERVICE WORK MUST BE COMPLETED BETWEEN FRIDAY AT 7PM AND MONDAY AT 4AM. COORDINATE WITH OWNER 14 DAYS PRIOR TO OUTAGE.
5. RETAIN AND PROTECT SELECTED TREES IN THIS AREA AS TAGGED BY THE OWNER ON SITE PRIOR TO TREE REMOVAL.
6. EX. SHED TO BE RELOCATED BY OWNER.

NOTE: SOME NOTES MAY NOT BE REPRESENTED ON THIS SHEET.

DEMOLITION NOTES

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION SHOWN ON THESE DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO STARTING WORK AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES THAT EXIST.
3. ALL EXISTING UTILITY SURFACE FEATURES INCLUDING BUT NOT LIMITED TO INLETS, MANHOLES, HAND HOLES, MECHANICAL LIDS, FIRE HYDRANTS, VALVE BOXES, ETC. WITHIN THE LIMITS OF DISTURBANCE TO BE ADJUSTED TO FINISHED GRADE UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO REMOVE ALL EXISTING RIP-RAP, GRAVEL, DEBRIS, TREES, POSTS, AND STONE WITHIN THE LOD TO FACILITATE THE WORK TO BE COMPLETED.
5. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM BUILDINGS AND STRUCTURES AT ALL TIMES.
6. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" (1-800-257-7777) AT LEAST 48 HOURS PRIOR TO BEGINNING ANY DEMOLITION, UTILITY, OR EXCAVATION ACTIVITY.
7. ALL EXISTING FEATURES OUTSIDE OF THE LIMITS OF DISTURBANCE ARE TO REMAIN, UNLESS OTHERWISE NOTED.
8. UTILITIES MARKED FOR DEMOLITION WILL BE REMOVED.
9. COORDINATE REMOVAL OF EXISTING UTILITIES WITH INSTALLATION OF NEW UTILITIES TO MINIMIZE OUTAGE DURATION. ANY OUTAGE MUST BE COORDINATED IN ADVANCE WITH APPROPRIATE FACILITIES MANAGEMENT.
10. ALL CUTS OF EXISTING PAVEMENT SHALL BE NEAT AND IN A STRAIGHT LINE TO FACILITATE NEW PAVING. CONTRACTOR SHALL REMOVE TWO FEET OF THE SURFACE COURSE OF PAVEMENT (2" DEPTH) BEYOND ANY SAW CUTS TO OVERLAP PAVEMENT PATCHES.
11. CONTRACTOR TO TEST EXISTING SANITARY PIPES TO BE REMOVED FOR ASBESTOS. SHOULD PIPE TEST POSITIVE, CONTRACTOR IS REQUIRED TO NOTIFY THE OWNER & ENGINEER AND PROPERLY REMOVE & DISPOSE OF THE PIPING.
12. SEE UTILITY SITE PLAN FOR ADDITIONAL INFORMATION.
13. CONTRACTOR TO PROTECT EXITING UTILITIES TO REMAIN WITHIN LOD DURING CONSTRUCTION .

No As-Built information in this sheet 2/14/23

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 9.21.18
T. Mueh & A KS

Chief, Division of Land Development — Date 9-25-18

Director — Date 9-26-18

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'Eggenier
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.

STATE OF MARYLAND — CHRISTOPHER D. KEARNEY — 23012 — REGISTERED PROFESSIONAL ENGINEER — 8/17/18

DESIGN BY:	CWWM
DRAWN BY:	CWWM
CHECKED BY:	CDK
DATE:	8/17/18

BY	NO.	REVISION	DATE
		SDP SUBMISSION	

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

EX. CONDITION & DEMO PLAN - OTA 1 (PHASE 1) AS-BUILT

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

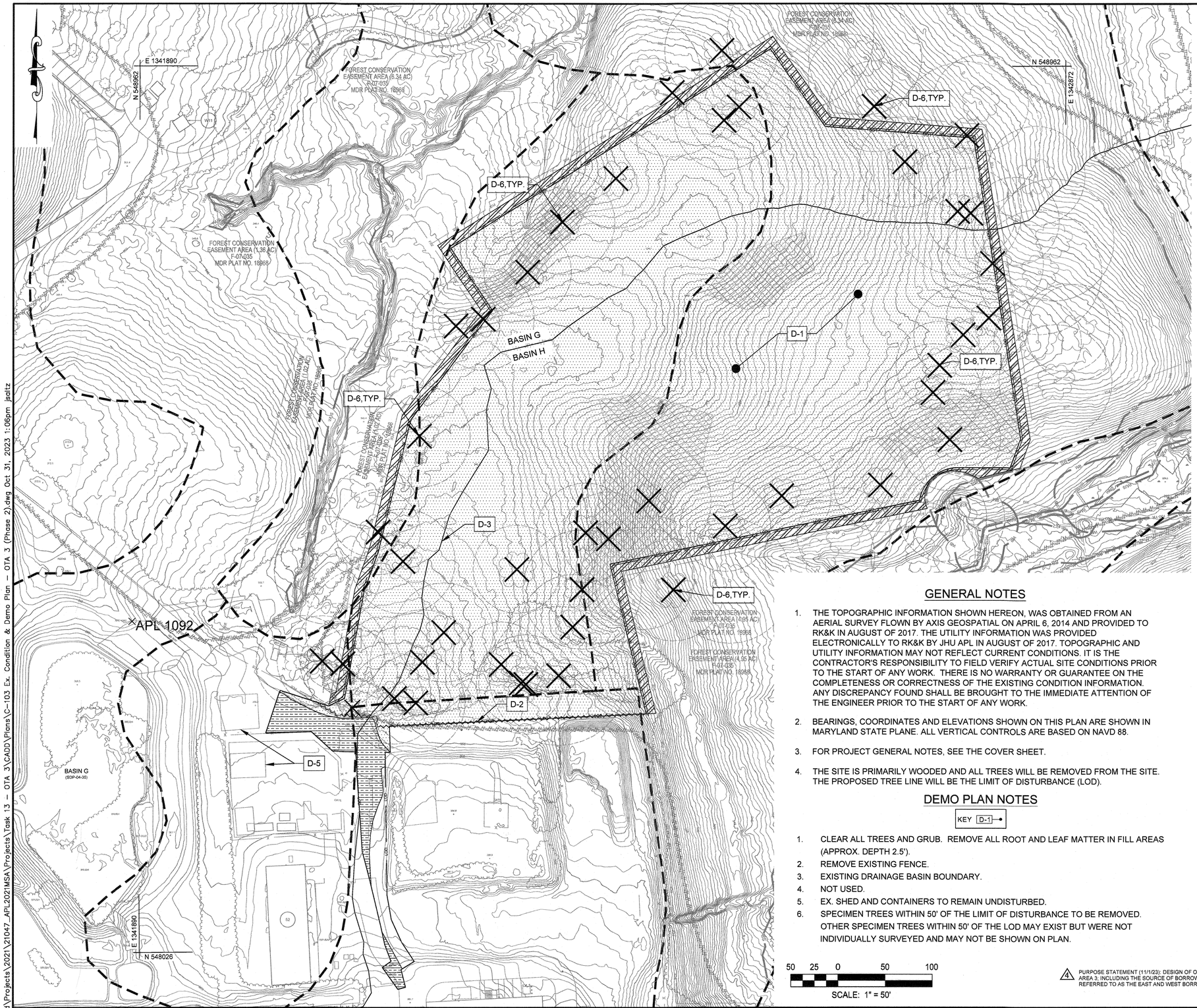
11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 04 OF 73

C-101

RK&K PROJECT NUMBER 17152

SCALE: As Shown

SDP-18-060



LEGEND

- EXISTING MINOR CONTOUR
- 670 — EXISTING MAJOR CONTOUR
- EX. 15" D. SD — EXISTING STORM DRAIN AND INLET
- EX. 12" W. W — EXISTING WATER AND FIRE HYDRANT
- EX. 8" S. S — EXISTING SEWER
- E — EXISTING ELECTRIC
- EXISTING LIGHT POLE
- C — EXISTING COMMUNICATION
- X — EXISTING FENCE
- EXISTING SOIL BOUNDARY
- FCE — EXISTING FOREST CONSERVATION EASEMENT
- WB — EXISTING WETLAND BUFFER
- EXISTING TREE LINE
- EXISTING BUILDING
- EXISTING SLOPE GREATER THAN 20%
- PROP. CLEAR AND GRUB
- EXISTING PAVEMENT TO BE REMOVED
- EXISTING UTILITY TO BE REMOVED
- LOD — LIMITS OF DISTURBANCE
- PROP. FENCE REMOVAL
- TPF — PROP. TREE PROTECTION FENCE
- SB — STREAM BUFFER
- TREE WITH CRITICAL ROOT ZONE
- SPECIMEN TREES TO BE REMOVED (SEE DEMO PLAN NOTE 6)
- CONTRACTOR TO CLEAR/REMOVE VEGETATION WITHIN 10' ZONE OUTSIDE THE LOD. ACTIVITIES SHOULD NOT INCLUDE GRUBBING/REMOVAL OF TREE ROOTS (i.e. SOIL DISTURBANCE)

Clearing is not permitted within the Forest Conservation Easement

GENERAL DEMOLITION NOTES

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION SHOWN ON THESE DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER PRIOR TO STARTING WORK.
2. THE CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO STARTING WORK AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES THAT EXIST.
3. ALL EXISTING UTILITY SURFACE FEATURES INCLUDING BUT NOT LIMITED TO INLETS, MANHOLES, HAND HOLES, MECHANICAL LIDS, FIRE HYDRANTS, VALVE BOXES, ETC. WITHIN THE LIMITS OF DISTURBANCE TO BE ADJUSTED TO FINISHED GRADE UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO REMOVE ALL EXISTING RIP-RAP, GRAVEL, DEBRIS, TREES, BRUSH, FENCES, POSTS, AND GABION BASKETS/STONE WITHIN THE LOD TO FACILITATE THE WORK TO BE COMPLETED.
5. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM BUILDINGS AND STRUCTURES AT ALL TIMES.
6. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" (1-800-257-7777) AT LEAST 48 HOURS PRIOR TO BEGINNING ANY DEMOLITION, UTILITY, OR EXCAVATION ACTIVITY.
7. ALL EXISTING FEATURES OUTSIDE OF THE LIMITS OF DISTURBANCE ARE TO REMAIN, UNLESS OTHERWISE NOTED.
8. UTILITIES MARKED FOR DEMOLITION WILL BE REMOVED.
9. COORDINATE REMOVAL OF EXISTING UTILITIES WITH INSTALLATION OF NEW UTILITIES TO MINIMIZE OUTAGE DURATION. ANY OUTAGE MUST BE COORDINATED IN ADVANCE WITH APPROPRIATE FACILITIES MANAGEMENT.
10. ALL CUTS OF EXISTING PAVEMENT SHALL BE NEAT AND IN A STRAIGHT LINE TO FACILITATE NEW PAVING. CONTRACTOR SHALL REMOVE TWO FEET OF THE SURFACE COURSE OF PAVEMENT (2" DEPTH) BEYOND ANY SAW CUTS TO OVERLAP PAVEMENT PATCHES.
11. SEE UTILITY SITE PLAN FOR ADDITIONAL INFORMATION.
12. CONTRACTOR TO PROTECT EXISTING UTILITIES TO REMAIN WITHIN LOD DURING CONSTRUCTION .

GENERAL 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 PROJECT GENERAL NOTES, SEE THE COVER SHEET.
4. THE SITE IS PRIMARILY WOODED AND ALL TREES WILL BE REMOVED FROM THE SITE. THE PROPOSED TREE LINE WILL BE THE LIMIT OF DISTURBANCE (LOD).

DEMO PLAN NOTES

KEY D-1

1. CLEAR ALL TREES AND GRUB. REMOVE ALL ROOT AND LEAF MATTER IN FILL AREAS (APPROX. DEPTH 2.5').
2. REMOVE EXISTING FENCE.
3. EXISTING DRAINAGE BASIN BOUNDARY.
4. NOT USED.
5. EX. SHED AND CONTAINERS TO REMAIN UNDISTURBED.
6. SPECIMEN TREES WITHIN 50' OF THE LIMIT OF DISTURBANCE TO BE REMOVED. OTHER SPECIMEN TREES WITHIN 50' OF THE LOD MAY EXIST BUT WERE NOT INDIVIDUALLY SURVEYED AND MAY NOT BE SHOWN ON PLAN.

50 25 0 50 100
SCALE: 1" = 50'

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL REFERRED TO AS THE EAST AND WEST BORROW AREAS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W.W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EX. CONDITION & DEMO PLAN - OTA 3 (PHASE 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 05 OF 73

C-103

RK&K PROJECT NUMBER 21047.013

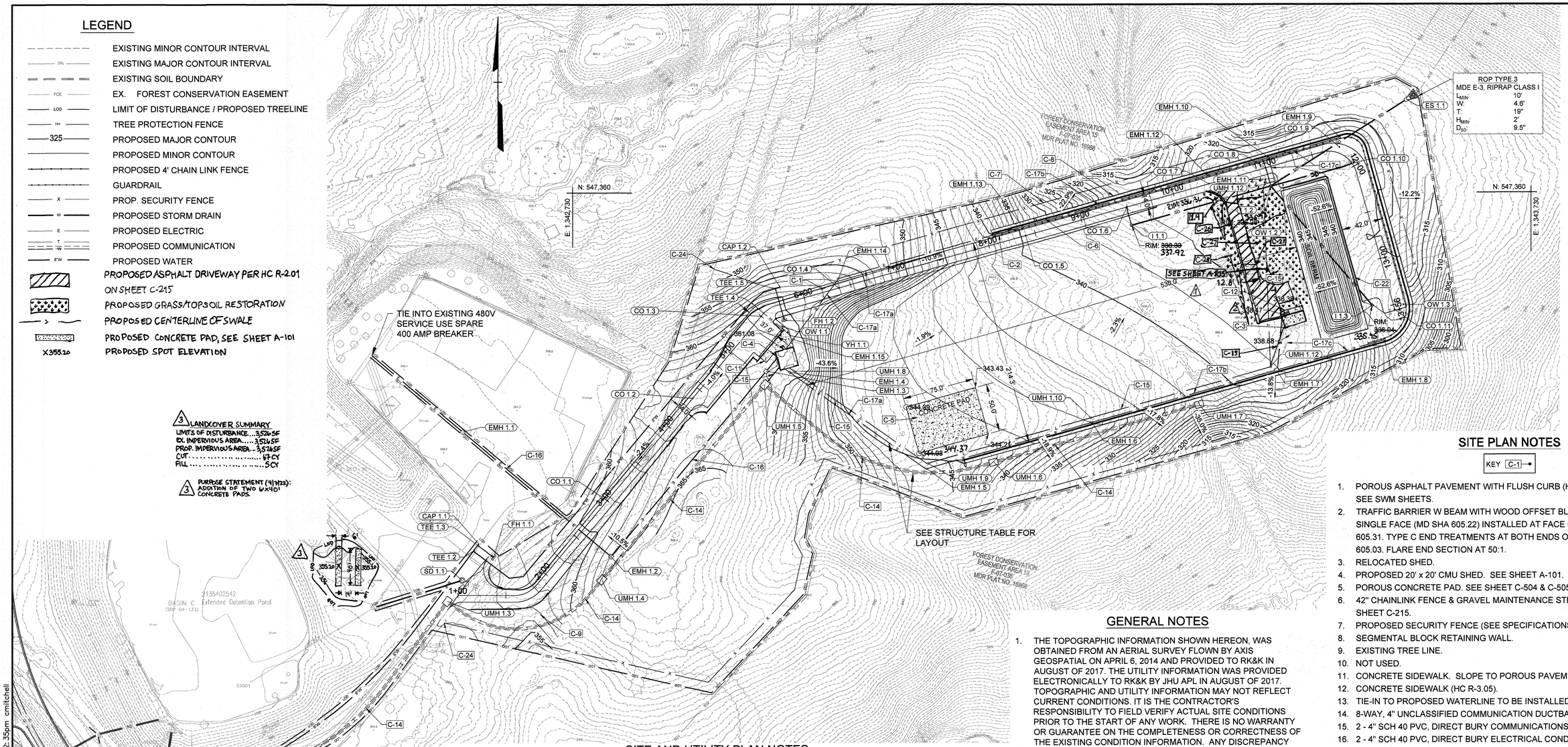
SCALE: As Shown

SDP-18-060

\\ad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-103 Ex. Condition & Demo Plan - OTA 3 (Phase 2).dwg Oct 31, 2023 1:06pm jsaltz

LEGEND

- EXISTING MINOR CONTOUR INTERVAL
- EXISTING MAJOR CONTOUR INTERVAL
- EXISTING SOIL BOUNDARY
- FCE — EX. FOREST CONSERVATION EASEMENT
- LOD — LIMIT OF DISTURBANCE / PROPOSED TREELINE
- TPF — TREE PROTECTION FENCE
- 325 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED 4' CHAIN LINK FENCE
- GUARDRAIL
- X — PROP. SECURITY FENCE
- SD — PROPOSED STORM DRAIN
- E — PROPOSED ELECTRIC
- T — PROPOSED COMMUNICATION
- W — PROPOSED WATER
- PROPOSED ASPHALT DRIVEWAY PER HC R-2.01 ON SHEET C-215
- PROPOSED GRASS/TOPSOIL RESTORATION
- PROPOSED CENTERLINE OF SWALE
- PROPOSED CONCRETE PAD, SEE SHEET A-101
- X355.20 — PROPOSED SPOT ELEVATION



SITE PLAN NOTES

KEY C-1

1. POROUS ASPHALT PAVEMENT WITH FLUSH CURB (HC R-3.07) ON ALL SIDES. 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 SHED. SEE SHEET A-101.
5. POROUS CONCRETE PAD. SEE SHEET C-504 & C-505.
6. 42" CHAINLINK FENCE & GRAVEL MAINTENANCE STRIP (HC G-7.21). SEE SHEET C-215.
7. PROPOSED SECURITY FENCE (SEE SPECIFICATIONS).
8. SEGMENTAL BLOCK RETAINING WALL.
9. EXISTING TREE LINE.
10. NOT USED.
11. CONCRETE SIDEWALK. SLOPE TO POROUS PAVEMENT (HC R-3.05).
12. CONCRETE SIDEWALK (HC R-3.05).
13. TIE-IN TO PROPOSED WATERLINE TO BE INSTALLED UNDER SDP 18-035
14. 8-WAY, 4" UNCLASSIFIED COMMUNICATION DUCTBANK.
15. 2 - 4" SCH 40 PVC, DIRECT BURY COMMUNICATIONS CONDUIT.
16. 2 - 4" SCH 40 PVC, DIRECT BURY ELECTRICAL CONDUIT.
17. NOT USED.

17a. 4-1.5" SCH 40 PVC, DIRECT BURY ELECTRICAL CONDUIT.
17b. 3-1.5" SCH 40 PVC, DIRECT BURY ELECTRICAL CONDUIT.
17c. 2-1.5" SCH 40 PVC, DIRECT BURY ELECTRICAL CONDUIT.

18. CONCRETE ANCHOR PAD.
19. CONCRETE RAIL PAD WITH RAILROAD TRACKS.
20. CAST IN PLACE CONCRETE RETAINING WALL.
21. 7" COMBINATION CURB & GUTTER (HC R-3.01).
22. 7" CONCRETE BARRIER CURB (HC R-3.03). (SUBSTITUTE BARRIER CURB FOR FLUSH CURB).
23. TIE-IN TO PROPOSED UMH-2 WALL TERMINATOR (8-4") TO BE INSTALLED UNDER SDP 18-035.
24. CONNECT NEW FENCE TO EXISTING FENCE.
25. NOT USED
26. PROPOSED ASPHALT DRIVEWAY PER HC R-2.01 ON SHEET C-215
27. GRASS/TOPSOIL RESTORATION
28. SWALE CENTERLINE

GENERAL 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 PROJECT GENERAL NOTES, SEE THE COVER SHEET.
4. THE SITE IS PRIMARILY WOODED AND ALL TREES WILL BE REMOVED FROM THE SITE. THE PROPOSED TREE LINE WILL BE THE LIMIT OF DISTURBANCE (LOD).

SEE SHEET C-215 FOR SITE DETAILS AND STRUCTURE TABLES.

SITE AND UTILITY PLAN NOTES

1. UNLESS OTHERWISE NOTED, DIMENSIONS FROM CURB ARE MEASURED TO FACE OF CURB.
2. THE CONTRACTOR SHALL PROVIDE A TWO-FOOT AREA AT 1/2-INCH PER FOOT SLOPE BEHIND ALL PROPOSED CURB, UNLESS OTHERWISE INDICATED.
3. FINISHED GRADES SHALL FALL AWAY FROM EXISTING AND PROPOSED BUILDINGS AT A MINIMUM OF 1/4-INCH PER FOOT FOR VEGETATED AREAS AND A MINIMUM OF 1/8-INCH PER FOOT FOR PAVED AREAS UNLESS OTHERWISE INDICATED.
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5. THE CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO STARTING WORK AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES THAT EXIST.
6. ALL EXISTING UTILITY SURFACE FEATURES INCLUDING BUT NOT LIMITED TO INLETS, MANHOLES, HAND HOLES, MECHANICAL LIDS, FIRE HYDRANTS, VALVE BOXES, ETC. WITHIN THE LIMITS OF DISTURBANCE TO BE ADJUSTED TO FINISHED GRADE UNLESS OTHERWISE NOTED.
7. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM BUILDINGS AND STRUCTURES AT ALL TIMES.
8. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" (1-800-257-7777) AT LEAST 48 HOURS PRIOR TO BEGINNING ANY DEMOLITION, UTILITY, OR EXCAVATION ACTIVITY.
9. SEE SHEET C-501 THROUGH C-505 FOR UNDERDRAIN LOCATION, DIAMETER & DETAILS.

Purpose Statement (7/20/21): This red line submission adds a proposed asphalt driveway with a concrete curb to the existing shed at OTA 1. A proposed storm drain inlet and swale are included.

Purpose Statement (9/10/19): This red line submission adjusts the configuration of the proposed shed at OTA 1. Changes to utilities are also required and identified under this revision.

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, 2023. 3/30/21

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. 44432, EXPIRATION DATE: 5/31/24. 7/7/22

SCALE: 1" = 50'

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this plan were constructed as shown on the "AS-BUILT" plan meet the Approved Plans and Specifications.
Charles W. W. Mitchell, III, PE # 44932, 2/14/23

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	Date 9.21.18
Chief, Division of Land Development	Date 9-25-18
Director	Date 9-26-18

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'Spagnier
www.rkk.com

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DESIGN BY:	BY	NO.	REVISION	DATE
CWWM	RK&K	1	SHED LOCATION REVISION	9/10/19
DRAWN BY: CWWM	RK&K	2	ASPHALT DRIVEWAY ADDITION	7/20/21
CHECKED BY: CDK			SDP SUBMISSION	
DATE: 8/17/18	RK&K	3	ADDITION OF TWO 6'X40' CONCRETE PADS.	4/13/22

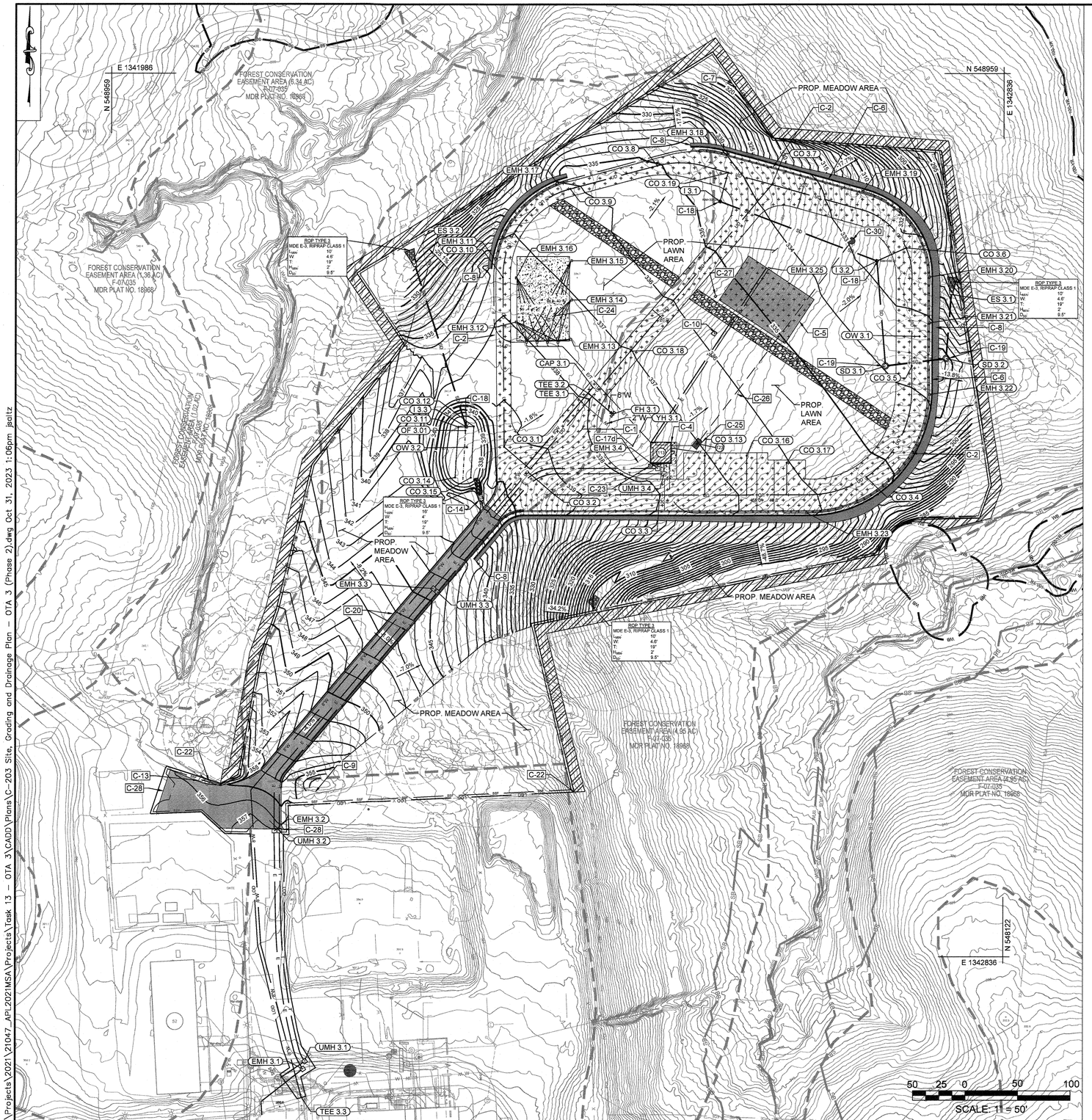
OWNER/DEVELOPER
JOHNS HOPKINS APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

SITE, GRADING AND UTILITY PLAN - OTA 1 (PHASE 1) AS-BUILT
JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY
OUTDOOR TESTING AREAS
11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC
ELECTION DISTRICT 6 HOWARD COUNTY, MARYLAND
SHEET 06 OF 73

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

SDP-18-060

\\balsrv05\v2017\2017\17152_JHUAPL\CADD\Plans\C-201-203 Site Plans.dwg Jul 03, 2018 2:35pm cmitchell



GENERAL 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.
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SITE AND UTILITY PLAN NOTES

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9. REFER TO SHEET E-104 ELECTRICAL & COMMUNICATIONS SITE PLAN FOR SITE ELECTRICAL AND COMMUNICATIONS DISPOSITION NOTES AND LAYOUT.

SITE PLAN NOTES* KEY C-1

1. PROPOSED POROUS ASPHALT PAVEMENT WITH FLUSH CURB (HC R-3.07) ON ALL SIDES. SEE SWM SHEETS. REFER TO FLUSH CURB DETAIL ON C-216 AND POROUS ASPHALT PAVEMENT ON C-505.
2. PROPOSED 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. NOT USED.
4. PROPOSED 20' x 20' CMU SHED.
5. PROPOSED POROUS CONCRETE PAD, SEE DETAIL ON SHEET C-505.
6. PROPOSED 48" CHAINLINK FENCE & GRAVEL MAINTENANCE STRIP (HC G-7.21).
7. PROPOSED SECURITY FENCE, REFER TO SPECIFICATION SECTION 32 31 13
8. PROPOSED SEGMENTAL BLOCK RETAINING WALL.
9. EXISTING TREE LINE.
10. PROPOSED 4'W x 4'L x 4'D CONCRETE ANCHOR BLOCK, REFER TO STRUCTURAL DWGS.
11. PROPOSED CONCRETE SIDEWALK. SLOPE TO POROUS PAVEMENT (HC R-3.05).
12. PROPOSED CONCRETE SIDEWALK (HC R-3.05).
13. PROPOSED 10' WIDE DOUBLE SWING GATE WITH 5' PANELS FOR VEHICULAR ACCESS, REFER TO SPECIFICATION SECTION 32 31 13.
14. PROPOSED CONCRETE CURB OPENING (SEE MD SHA 640.01, SHEET C-505).
15. NOT USED.
16. NOT USED.
17. NOT USED.

17a. NOT USED.

17b. NOT USED.

17c. NOT USED.

17d. NOT USED.

17e: NOT USED.

18. PROPOSED YARD INLET (HC D-4.14).
19. PROPOSED 48" PRECAST MANHOLE.
20. PROPOSED 7" CONCRETE BARRIER CURB (HC R-3.01). (SUBSTITUTE BARRIER CURB FOR FLUSH CURB).
21. TIE-IN TO PROPOSED UMH-2 WALL TERMINATOR (8-4") TO BE INSTALLED UNDER SDP 18-035.
22. CONNECT NEW PROPOSED FENCE TO EXISTING FENCE.
23. PROPOSED TRANSFORMER PAD, 36"x44"x6". 3000 PSI CONCRETE. MINIMUM 4' FROM FACE OF BUILDING.
24. PROPOSED 80' X 50' CONTAINER FOUNDATION PAD, 10" THICKNESS WITH TURNDOWN EDGES
25. PROPOSED PORTA-KING SPORTS VIEWING TOWER FOR CAMERA CABLE SYSTEM, REFER TO ELEVATION ON SHEET A-106.
26. PROPOSED TEMPORARY STEEL CABLE FOR CAMERA SYSTEM
27. PROPOSED SURVEY MONUMENT, REFER TO DETAIL ON SHEET C-216.
28. MEET EXISTING CONDITIONS
29. PROPOSED STORMWATER MANAGEMENT FACILITY, SEE SHEET C-503.
30. PROPOSED 60' HEIGHT SPORTS POLE FOR CAMERA CABLE SYSTEM.

*NOTES:

1. SOME NOTES MAY NOT BE REPRESENTED ON THIS SHEET.
2. DETAIL REFERENCES ARE STANDARD HOWARD COUNTY OR MDSHA DETAILS.

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

PERMANENT STABILIZATION NOTE

UNLESS OTHERWISE NOTED, ALL DISTURBED AREAS SHOULD RECEIVE 4" OF TOPSOIL AND SEED MIX CONTAINING 70% TURF TYPE TALL FESCUE AND 30% PERENNIAL RYE, WITH A CURLEX COVERING. LOOSE STRAW IS NOT PERMITTED.

OTA-3 LANDCOVER SUMMARY

LIMITS OF DISTURBANCE.....311,260 SF
EX. IMPERVIOUS AREA.....6,432 SF
PROP. IMPERVIOUS AREA....69,184 SF
CUT.....5,100 CY
FILL.....86,980 CY

LEGEND

- EXISTING MINOR CONTOUR INTERVAL
- 295 EXISTING MAJOR CONTOUR INTERVAL
- EXISTING SOIL BOUNDARY
- FCE EX. FOREST CONSERVATION EASEMENT
- LOD LIMIT OF DISTURBANCE / PROPOSED TREELINE
- TPF TREE PROTECTION FENCE
- SSF SUPER SILT FENCE
- 325 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED 4' CHAIN LINK FENCE
- GUARDRAIL
- X PROP. SECURITY FENCE
- SD PROPOSED STORM DRAIN
- E PROPOSED ELECTRIC
- T PROPOSED COMMUNICATION
- E/T PROPOSED ELECTRIC/TELECOM
- 8"W PROPOSED WATER
- PROPOSED FIRE HYDRANT
- PROPOSED ASPHALT PAVEMENT
- PROPOSED RETAINING WALL
- PROPOSED POROUS ASPHALT PAVEMENT
- PROPOSED REINFORCED TURF/GRAVELPAVE
- PROPOSED CONCRETE PAVEMENT
- PROPOSED BUILDING
- PROPOSED POROUS CONCRETE PAVEMENT
- WB EXISTING WETLAND BUFFER
- EXISTING WETLAND
- WUS EXISTING WATERS OF THE U.S.
- MaB MaD SOIL BOUNDARY
- 100-YR 100-YR FLOOD PLAIN
- SB STREAM/RIVER BUFFER
- SEE LEGEND ON C-103

C-203

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

RK&K
RUMMEL, KLEPPER & KAHL, LLP
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Ph: 410.728.2900 Contact: Matt Thomasson
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. 49430, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. WHITTLE — 49430 — PROFESSIONAL ENGINEER — Charles Whittle

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

SITE, GRADING AND UTILITY PLAN - OTA 3 (PHASE 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 07 OF 73

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\ad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-203 Site, Grading and Drainage Plan - OTA 3 (Phase 2).dwg Oct 31, 2023 1:06pm jsoltz

LEGEND

- LOD — LIMIT OF DISTURBANCE
- 4' CHAIN LINK FENCE
- GUARDRAIL
- X — 10' SECURITY FENCE
- 295 — EXISTING MAJOR CONTOUR INTERVAL
- SD — PROPOSED STORM PIPE
- FCE — EX. FOREST CONSERVATION EASEMENT
- ASPHALT DRIVEWAY
- GRASS/TOPSOIL RESTORATION
- CONCRETE PAD, SEE SHEET A-101

GENERAL NOTES

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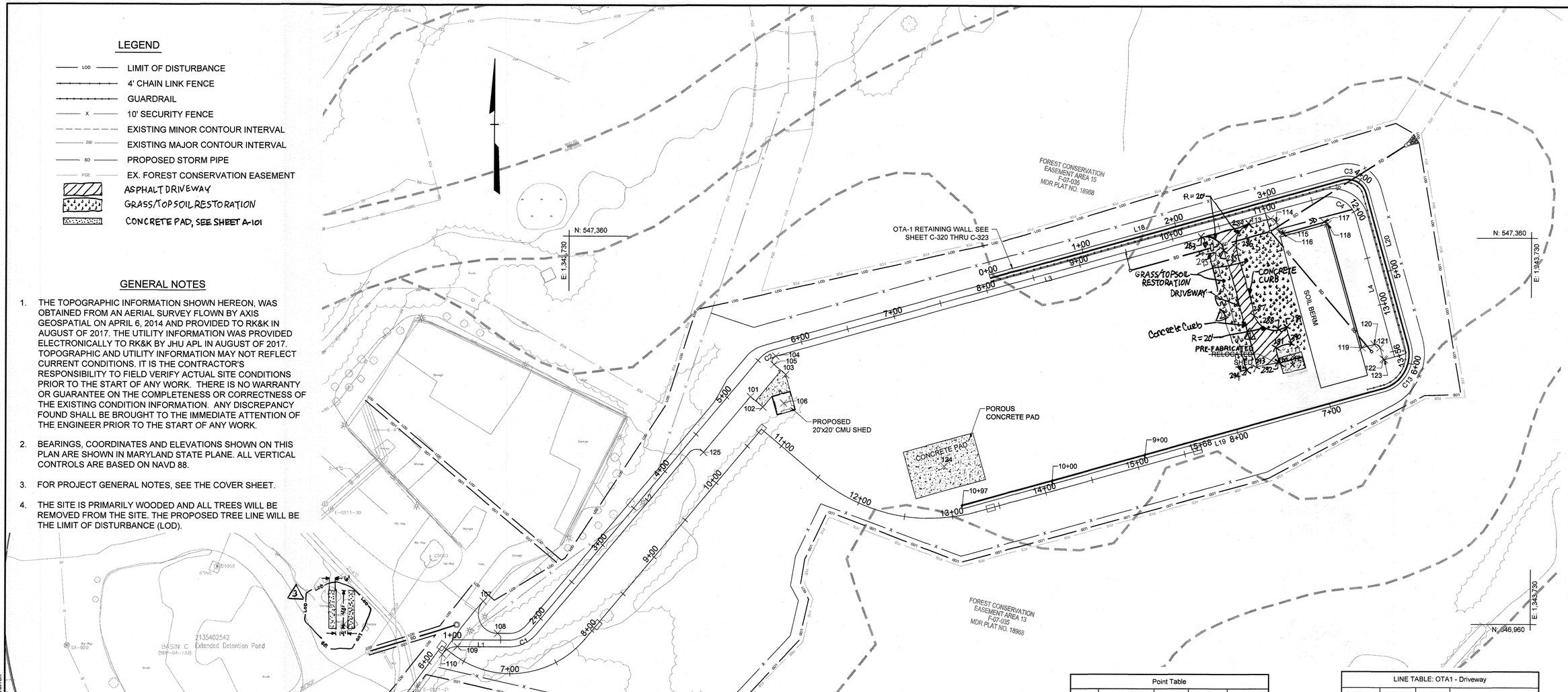

Purpose Statement (7/30/21): This red line submission adds a proposed asphalt driveway with a concrete curb to the existing shed at OTA 1. A proposed storm drain inlet and swale are included.

Purpose Statement (9/10/19): This red line submission adjusts the configuration of the proposed shed at OTA 1. Changes to utilities are also required and identified under this revision.

STATE OF MARYLAND — CHARLES W. W. MITCHELL III — No. 23012 — PROFESSIONAL ENGINEER

8/20/21

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, 2020.

Point Table

Point#	Raw Description	Elevation	Northing	Easting
283	SPOT	337.265	547359.6466	1343387.3099
284	SPOT	336.552	547373.6661	1343437.3844
285	SPOT	337.094	547345.7793	1343411.9615
286	SPOT	336.996	547343.0145	1343423.5771
287	SPOT	339.127	547277.6932	1343443.4851
288	SPOT	338.226	547263.8259	1343468.1367
289	SPOT	338.326	547266.5219	1343477.7664
290	SPOT	338.537	547249.1885	1343482.6193
291	SPOT	338.357	547244.3356	1343465.2858
292	SPOT	338.670	547230.6668	1343469.1127
293	SPOT	338.721	547224.1963	1343446.0014
294	SWALE	339.121	547221.5002	1343436.3717
295	SWALE	336.494	547343.0833	1343402.3318

111	CL SLAB	338.650	547236.3583	1343480.2867
112	FFE	338.670	547228.1740	1343482.5784

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. 44432 EXPIRATION DATE: 5/31/24

STATE OF MARYLAND — CHARLES W. W. MITCHELL III — 44432 — PROFESSIONAL ENGINEER

7/22

Point Table

Point #	Raw Description	Elevation	Northing	Easting
101	SPOT	361.440	547194.0581	1342918.8909
102	SPOT ✓	361.440	547183.1310	1342931.9139
103	SPOT	360.647	547218.7917	1342955.5833
104	SPOT 360.17	~~360.389~~	547235.8296	1342945.0629
105	SPOT 360.29	~~360.584~~	547227.1845	1342943.1970
~~106~~	~~SPOT~~	~~360.000~~	~~547187.1830~~	~~1342963.4123~~
107	SPOT 355.76	~~0.000~~	546981.3798	1342642.1345
108	SPOT 358.82	~~357.152~~	546948.1370	1342667.1221
109	SPOT 356.39	~~356.135~~	546934.1370	1342815.4513
110	SPOT ✓	356.350	546926.2372	1342599.5269
~~111~~	~~SPOT~~	~~0.000~~	~~547236.0439~~	~~1343482.3715~~
~~112~~	~~SPOT~~	~~338.302~~	~~547226.8316~~	~~1343486.2024~~
113	SPOT 335.89	~~335.297~~	547379.6203	1343458.6515
114	SPOT 335.89	~~335.361~~	547376.1535	1343464.8144
115	SPOT 335.97	~~335.662~~	547366.5238	1343467.5105
116	SPOT 336.01	~~335.703~~	547364.4437	1343471.2082
117	SPOT 336.72	~~335.984~~	547376.5827	1343514.5662
118	SPOT 335.58	~~335.910~~	547374.5026	1343518.2639
119	SPOT 335.25	~~335.427~~	547246.1490	1343554.1994
120	SPOT 335.48	~~335.732~~	547249.6538	1343566.7180
121	SPOT 335.30	~~335.570~~	547246.1870	1343572.8809
122	SPOT	335.770	547234.6314	1343576.1162
123	SPOT	335.753	547233.9380	1343577.3488
124	SPOT	344.094	547122.0000	1343120.5000
125	SPOT ✓	363.861	547136.0877	1342870.2501

LINE TABLE: OTA1 - Driveway			
NUMBER	LENGTH	RADIUS	LINE/CHORD DIRECTION
L1	58.92'		N90° 00' 00.00"E
C1	26.18'	30.00'	N64° 59' 57.68"E
L2	366.84'		N39° 59' 55.35"E
C2	17.99'	30.00'	N57° 10' 44.27"E
L3	589.69'		N74° 21' 33.19"E
C4	47.12'	30.00'	S60° 38' 26.81"E
L4	149.29'		S15° 38' 26.81"E

POINT OF BEGINNING: N 546,941.14, E 1,342,610.27

LINE TABLE: OTA1 - RETAINING WALL			
NUMBER	LENGTH	RADIUS	LINE/CHORD DIRECTION
L18	379.90'		N74° 21' 33.19"E
C3	36.14'	23.01'	S60° 38' 26.81"E
L20	163.28'		S15° 38' 26.81"E
C13	62.85'	40.01'	S29° 21' 31.18"W
L19	454.90'		S74° 21' 29.17"W

POINT OF BEGINNING: N 547,320.78, E 1,343,166.84

STATE OF MARYLAND — CHARLES W. W. MITCHELL III — 44432 — PROFESSIONAL ENGINEER

AS-BUILT CERTIFICATION

I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.

Charles W.W. Mitchell, III
PE # 44432, 02/14/23

⚠ PURPOSE STATEMENT (4/7/22): ADDITION OF TWO 6'x40' CONCRETE PADS.

50 25 0 50 100

SCALE: 1" = 50'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	Date 9.21.18
Chief, Division of Land Development	Date 9-25-18
Director	Date 9-26-18

RK&K — RUMMEL, KLEPPER & KAHL, LLP — ENGINEERS|CONSTRUCTION MANAGERS|PLANNERS|SCIENTISTS — RESPONSIVE PEOPLE • CREATIVE SOLUTIONS
700 East Pratt Street, Suite 500
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Ph: 410.728.2900 Contact: John d'Espagnier
www.rkk.com

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STATE OF MARYLAND — CHARLES W. W. MITCHELL III — 23012 — REGISTERED PROFESSIONAL ENGINEER

8/17/18

DESIGN BY:	CWWM	RK&K ⚠1	SHED LOCATION REVISION — 9/10/19
DRAWN BY:	CWWM	RK&K ⚠2	ASPHALT DRIVEWAY ADDITION — 7/30/21
CHECKED BY:	CDK		SDP SUBMISSION
DATE:	8/17/18	RK&K ⚠3	ADDITION OF TWO 6'x40' CONCRETE PADS — 4/7/22

BY	NO.	REVISION	DATE

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

LAYOUT PLAN - OTA 1 (PHASE 1) AS-BUILT

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 08 OF 73

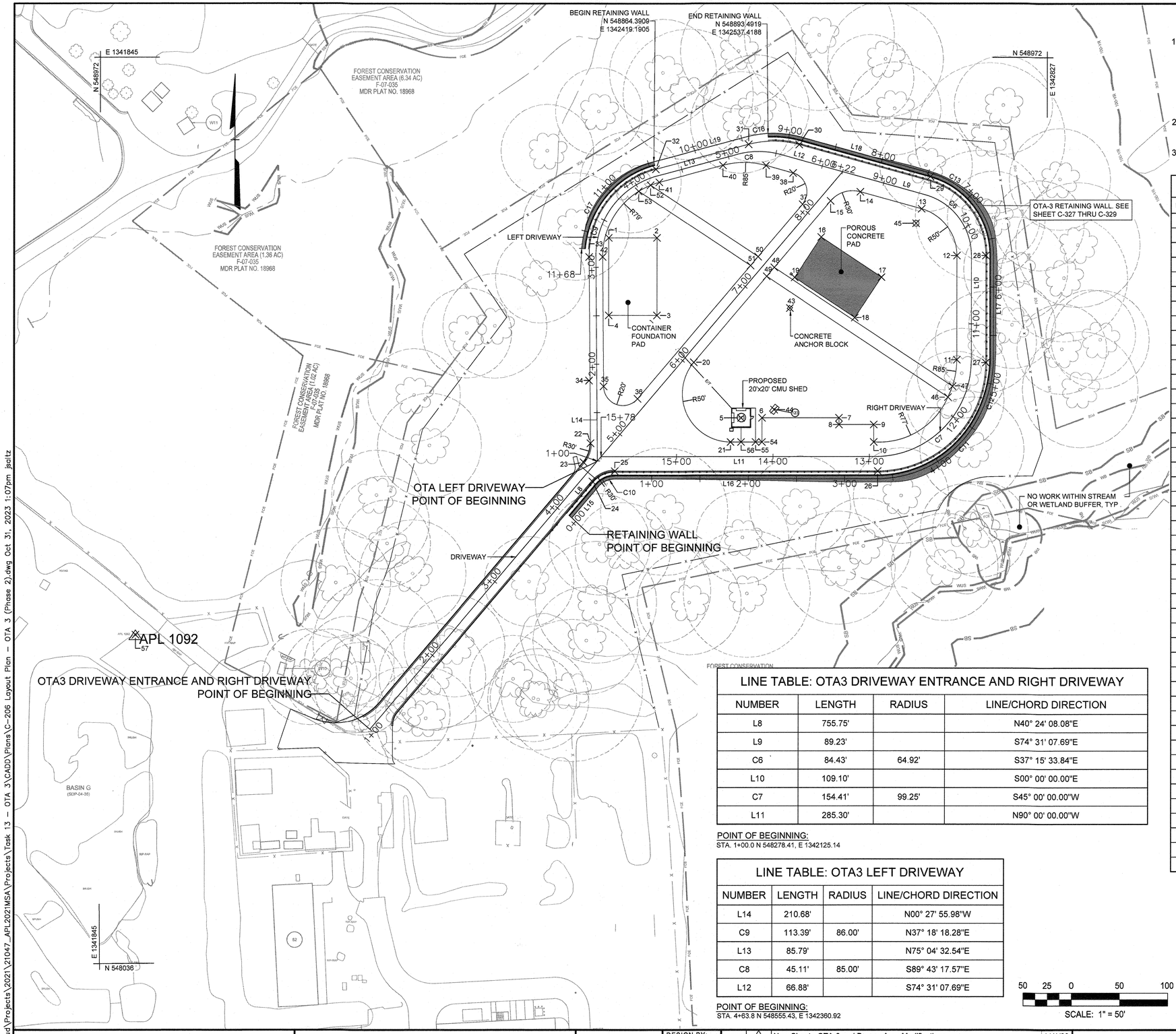
C-204

RK&K PROJECT NUMBER 17152

SCALE: As Shown

SDP-18-060

\\balsrv05\V2017\17152_JHUAPL\CADD\Plans\C-204-206 Layout Plans.dwg Jul 03, 2018 2:36pm cmitchell



GENERAL 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. THE SITE IS PRIMARILY WOODED AND ALL TREES WILL BE REMOVED FROM THE SITE. THE PROPOSED TREE LINE WILL BE THE LIMIT OF DISTURBANCE (LOD).

Point Table

Point #	Elevation	Northing	Easting
1	335.500	548785.8316	1342372.5333
2	333.983	548785.8316	1342422.5333
3	333.779	548705.8316	1342422.5333
4	335.500	548705.8316	1342372.5333
5	331.385	548599.8170	1342509.7963
6	330.945	548599.9420	1342531.4571
7	329.421	548599.9420	1342611.4571
8	329.462	548592.9420	1342611.4571
9	328.771	548592.9420	1342647.4571
10	328.659	548574.9420	1342647.4571
11	326.130	548659.9420	1342733.5630
12	325.259	548767.4822	1342733.5630
13	325.754	548815.6681	1342696.9091
14	327.306	548833.2770	1342633.3325
15	328.146	548823.8100	1342602.4794
16	328.608	548786.5261	1342592.8005
17	327.367	548745.1075	1342655.3265
18	328.336	548703.4235	1342627.7141
19	329.543	548744.8421	1342565.1881
20	332.349	548657.3495	1342460.7992
21	331.606	548574.9420	1342498.8749
22	333.924	548573.7387	1342353.7679
23	334.343	548554.0505	1342346.6143
24	334.476	548534.2611	1342355.8389
25	333.829	548544.9420	1342378.9499
26	328.564	548544.9420	1342651.5630
27	326.132	548656.9420	1342763.5630
28	325.259	548767.4822	1342763.5630
29	325.398	548848.9164	1342706.1179
30	328.984	548882.0120	1342569.7681
31	331.024	548882.2669	1342517.3216
32	333.310	548856.6608	1342421.2509
33	335.441	548766.0423	1342352.2054
34	336.152	548638.4774	1342352.2395
35	336.010	548632.5350	1342367.2907
36	333.237	548619.7345	1342402.5202
37	328.637	548820.4024	1342573.3155
38	329.189	548852.6301	1342563.4585
39	330.265	548860.4338	1342535.4795
40	331.722	548860.6940	1342490.7430
41	333.617	548843.1331	1342424.8564
42	335.441	548766.1561	1342366.2049
43	329.857	548713.2561	1342560.2830
44	330.680	548608.3331	1342544.0392
45	325.847	548800.6908	1342691.1603

Point Table

Point #	Elevation	Northing	Easting
46	326.572	548621.4265	1342724.3360
47	326.402	548632.6824	1342729.0733
48	329.979	548755.2154	1342544.0962
49	330.224	548746.0109	1342536.2619
50	330.033	548766.3405	1342527.3016
51	330.273	548757.1360	1342519.4674
52	333.906	548840.1524	1342415.8743
53	334.252	548833.9238	1342403.5475
54	330.977	548574.9420	1342531.4571
55	331.110	548574.9420	1342524.7963
56	331.410	548574.9420	1342509.7963
57	363.992	548375.6175	1341882.0668

LINE TABLE: OTA3 - RETAINING WALL

NUMBER	LENGTH	RADIUS	LINE/CHORD DIRECTION
L15	42.52'		N40° 24' 08.08"E
C10	19.15'	22.85'	N64° 54' 41.25"E
L16	269.51'		N90° 00' 00.00"E
C11	139.01'	118.55'	N57° 46' 50.21"E
C12	53.16'	133.68'	N13° 15' 47.48"E
L17	109.20'		N00° 00' 01.79"E
C13	114.45'	88.00'	N37° 15' 32.95"W
L18	140.24'		N74° 31' 07.69"W
C16	57.31'	108.00'	N89° 43' 17.57"W
L19	99.42'		S75° 04' 32.54"W
C17	124.29'	101.00'	S39° 49' 21.15"W

POINT OF BEGINNING:
STA. 0+00.0 N 548496.68, E 1342334.55

LINE TABLE: OTA3 DRIVEWAY ENTRANCE AND RIGHT DRIVEWAY

NUMBER	LENGTH	RADIUS	LINE/CHORD DIRECTION
L8	755.75'		N40° 24' 08.08"E
L9	89.23'		S74° 31' 07.69"E
C6	84.43'	64.92'	S37° 15' 33.84"E
L10	109.10'		S00° 00' 00.00"E
C7	154.41'	99.25'	S45° 00' 00.00"W
L11	285.30'		N90° 00' 00.00"W

POINT OF BEGINNING:
STA. 1+00.0 N 548278.41, E 1342125.14

LINE TABLE: OTA3 LEFT DRIVEWAY

NUMBER	LENGTH	RADIUS	LINE/CHORD DIRECTION
L14	210.68'		N00° 27' 55.98"W
C9	113.39'	86.00'	N37° 18' 18.28"E
L13	85.79'		N75° 04' 32.54"E
C8	45.11'	85.00'	S89° 43' 17.57"E
L12	66.88'		S74° 31' 07.69"E

POINT OF BEGINNING:
STA. 4+63.8 N 548555.43, E 1342360.92

50 25 0 50 100
SCALE: 1" = 50'

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

LEGEND

- LOD — LIMIT OF DISTURBANCE
- PROP. 4' CHAIN LINK FENCE
- PROP. GUARDRAIL
- X — PROP. 10' SECURITY FENCE
- SD — PROP. STORM DRAIN
- UD — PROP. UNDERDRAIN
- FCE — EXISTING FOREST CONSERVATION EASEMENT
- WB — EXISTING WETLAND BUFFER
- SB — EXISTING STREAM BUFFER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER — 11/1/2023

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

RK&K		New Sheet - OTA-3 and Borrow Area Modifications	11/1/23
BY	NO.	REVISION	DATE

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

LAYOUT PLAN - OTA 3 (PHASE 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 09 OF 73

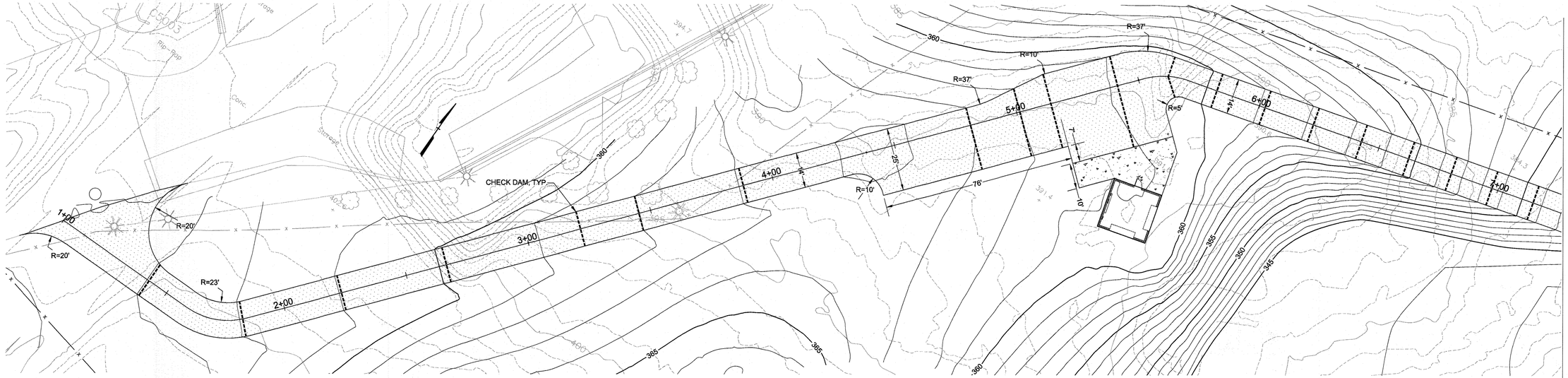
C-206

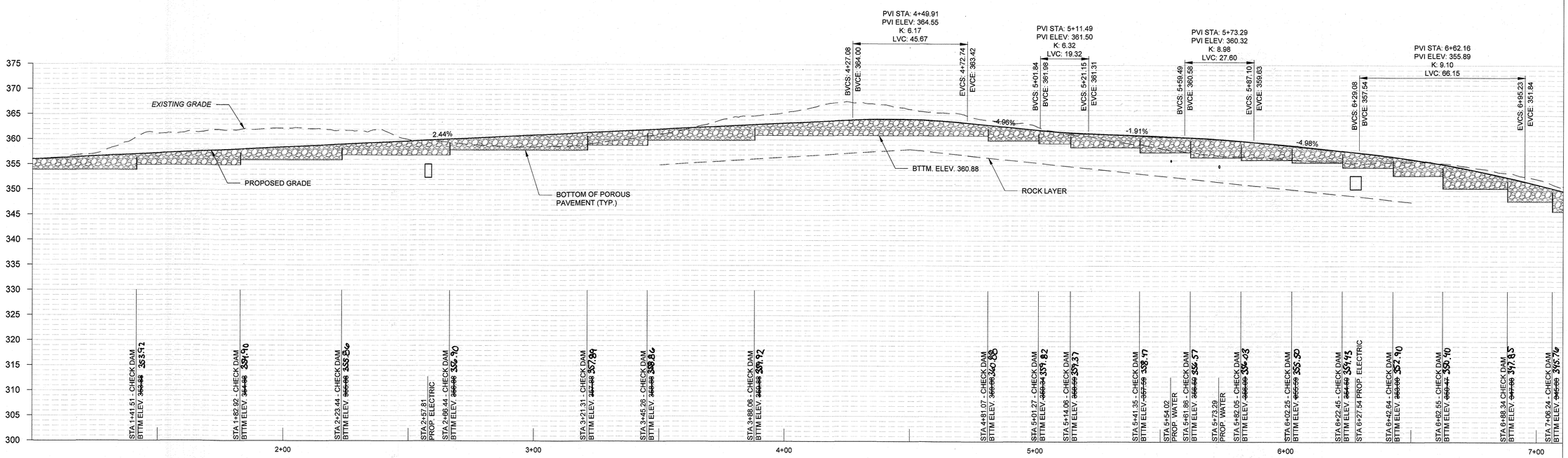
RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\adc.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-206 Layout Plan - OTA 3 (Phase 2).dwg Oct 31, 2023 1:07pm jsaltz





MATCHLINE STA. 7+10
FOR CONTINUATION SEE SHEET C-208

NOTES

1. FOR POROUS PAVEMENT & CHECK DAM DETAILS, NOTES AND SPECIFICATIONS SEE SHEETS C-501 THROUGH C-506.
2. FOR ROADWAY AND NON POROUS PAVING SECTIONS SEE SHEET C-215.
3. FOR UNDERDRAIN LOCATIONS SEE SHEET C-501.

OTA-1 ROADWAY PROFILE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.
Charles W. W. Mitchell, III, PE # 19932, 02/14/23

SCALE: 1" = 10'

SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 9.21.18
Chief, Division of Land Development — Date 9-25-18
Director — Date 9-26-18

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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'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. 20012, EXPIRATION DATE: MARCH 6, 2019.

STATE OF MARYLAND — "DEAN" — REGISTERED PROFESSIONAL ENGINEER — 8/17/18

DESIGN BY: CWWM				
DRAWN BY: CWWM			SDP SUBMISSION	
CHECKED BY: CDK				
DATE: 8/17/18				
	BY	NO.	REVISION	DATE

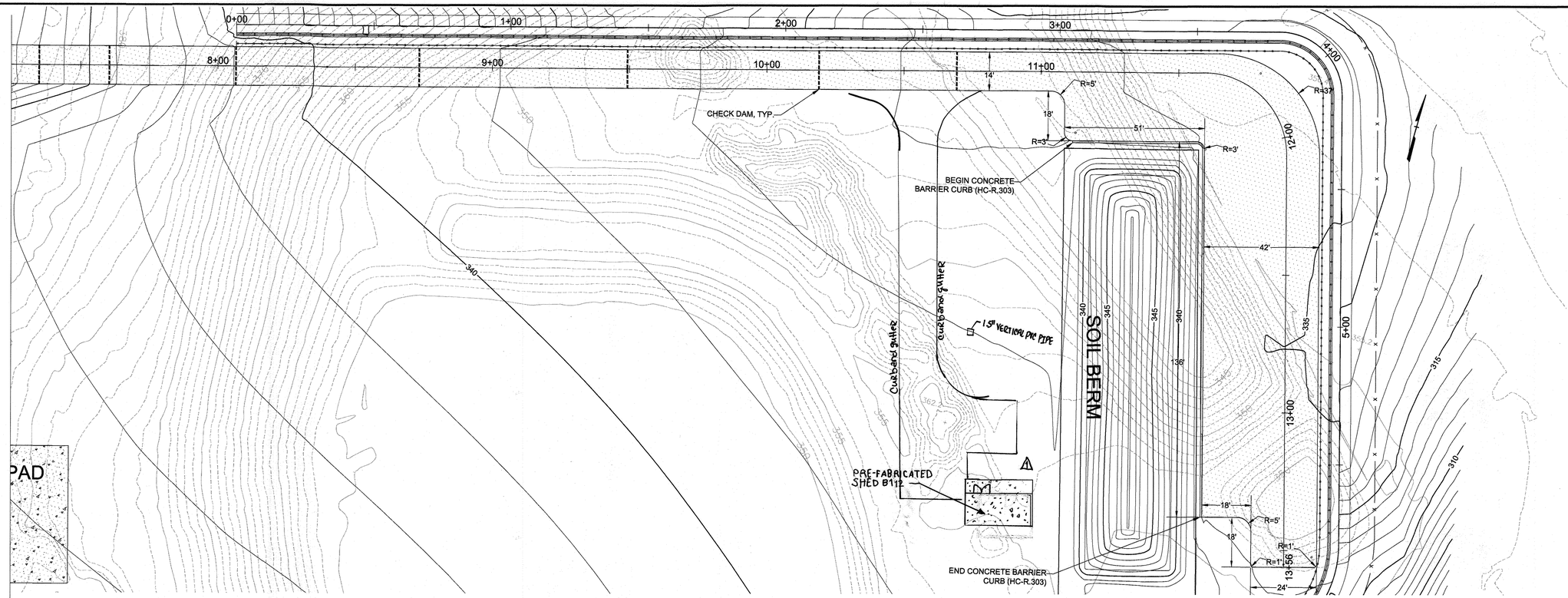
OWNER/DEVELOPER
JOHNS HOPKINS
APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

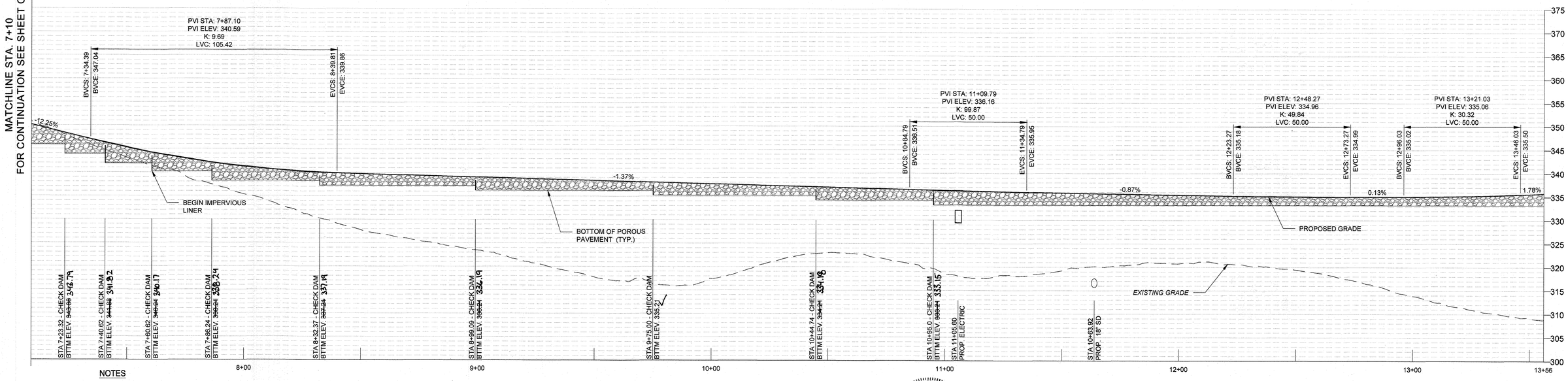
ROADWAY PROFILES - OTA 1 (PHASE 1)
AS-BUILT
JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY
OUTDOOR TESTING AREAS
11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 10 OF 73

C-207
RK&K PROJECT NUMBER 17152
SCALE: As Shown

SDP-18-060

\\balsrv05\2017\2017\17152_JHUAPL\CADD\Plans\C-207-214 (OTA Roadway Profiles).dwg Jul 03, 2018 2:37pm cmitchell





NOTES

1. FOR POROUS PAVEMENT & CHECK DAM DETAILS, NOTES AND SPECIFICATIONS SEE SHEETS C-501 THROUGH C-506.
2. FOR ROADWAY AND NON POROUS PAVING SECTIONS SEE SHEET C-215.
3. FOR UNDERDRAIN LOCATIONS SEE SHEET C-501.

Purpose Statement (9/10/19): This red line submission adjusts the configuration of the proposed shed at OTA 1. Changes to utilities are also required and identified under this revision.

OTA-1 ROADWAY PROFILE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

AS-BUILT CERTIFICATION

I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications

Charles W. W. Mitchell, III, PE #19432, 02/19/20

10 5 0 10 20
SCALE: 1" = 10'

20 10 0 20 40
SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 9.21.18
Chief, Division of Land Development — Date 9-25-18
Director — Date 9-26-18

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Baltimore, MD 21202
Ph: 410.728.2900 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. 23012, EXPIRATION DATE: MARCH 5, 2019.

STATE OF MARYLAND — CHARLES WILLIAM WILLIAMS MITCHELL III — NO. 23012 — REGISTERED PROFESSIONAL ENGINEER — 8/17/18

DESIGN BY:	CWWM
DRAWN BY:	CWWM
CHECKED BY:	CDK
DATE:	8/17/18

RK&K	⚠	SHED LOCATION REVISION	9/10/19
		SDP SUBMISSION	
BY	NO.	REVISION	DATE

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

ROADWAY PROFILES - OTA 1 (PHASE 1)
AS-BUILT
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 11 OF 73

C-208

RK&K PROJECT NUMBER 17152

SCALE: As Shown

SDP-18-060

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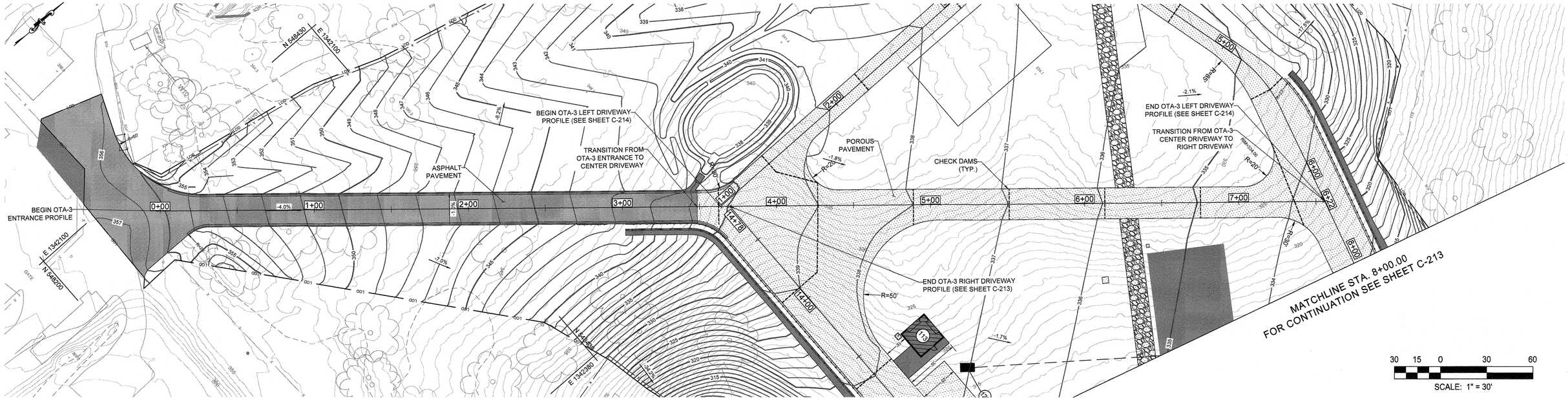

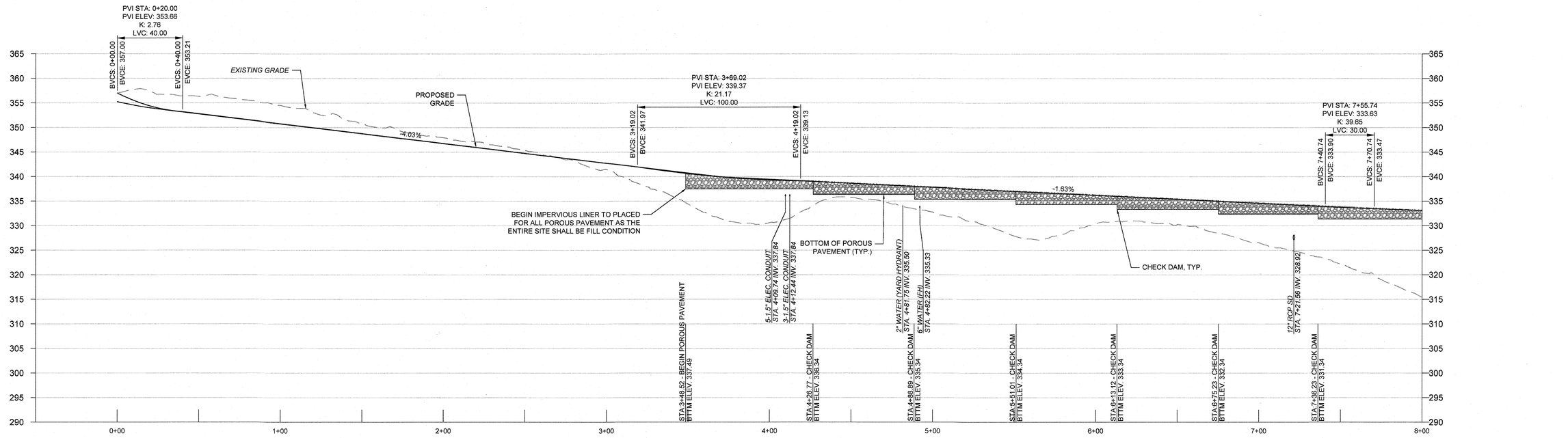

NOTES

1. FOR POROUS PAVEMENT & CHECK DAM DETAILS, NOTES AND SPECIFICATIONS SEE SHEETS C-501 THROUGH C-506.
2. FOR ROADWAY AND NON POROUS PAVING SECTIONS SEE SHEET C-215.
3. FOR UNDERDRAIN LOCATIONS SEE SHEET C-503.
4. FOR LEGEND SEE SHEET C-203.

OTA-3 ENTRANCE AND CENTER DRIVEWAY PROFILE

SCALE: HORIZ. 1" = 30'
VERT. 1" = 10'

10 5 0 10 20
SCALE: 1" = 10'

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

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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Ph: 410.728.2900
Contact: Matt Thomasson
www.rkk.com

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STATE OF MARYLAND — CHALE W. MICHEL — 46432 — REGISTERED PROFESSIONAL ENGINEER

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

ROADWAY PROFILES - OTA 3 (PHASE 2)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY
OUTDOOR TESTING AREAS
11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 18 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 12 OF 73

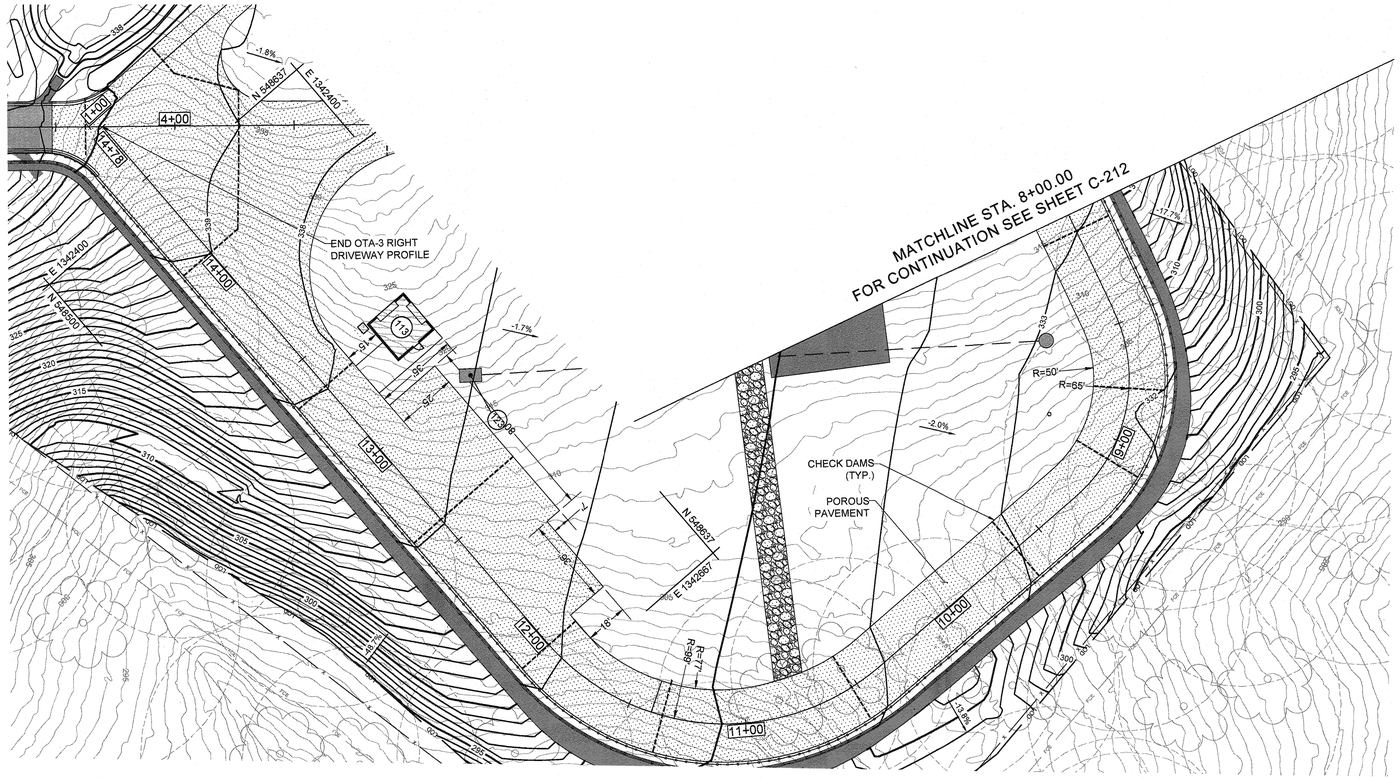
RK&K PROJECT NUMBER 21047.013

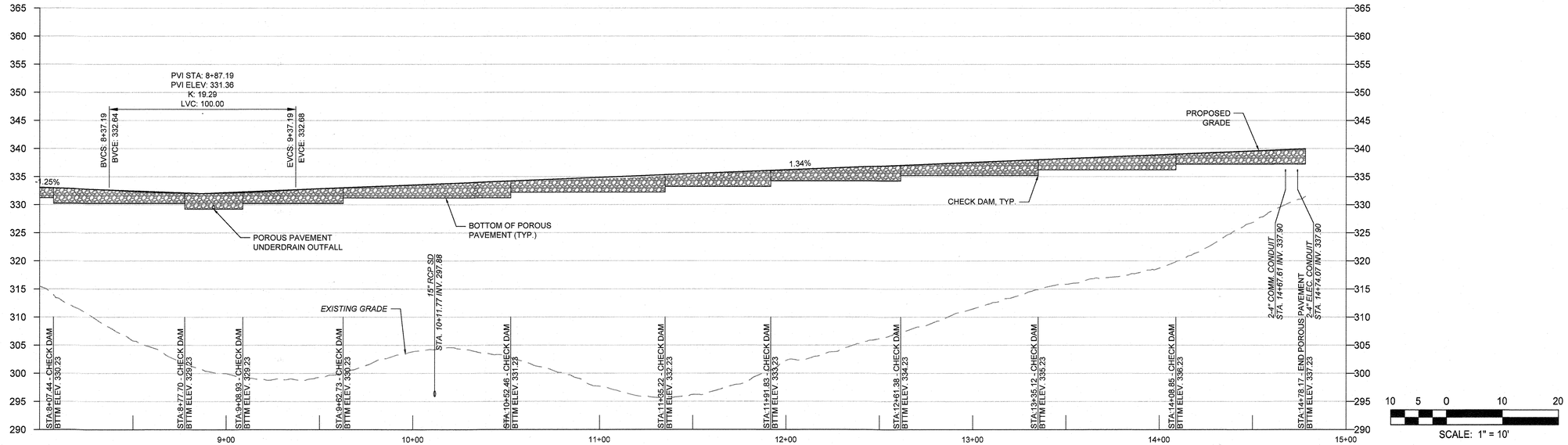
SCALE: As Shown

C-212

SDP-18-060

\\ad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-212 Roadway Profiles - OTA 3 (Phase 2).dwg Oct 31, 2023 1:08pm jsaltz





OTA-3 RIGHT DRIVEWAY PROFILE

SCALE: HORIZ. 1" = 30'
VERT. 1" = 10'

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

10 5 0 10 20
SCALE: 1" = 10'

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

NOTES

1. FOR POROUS PAVEMENT & CHECK DAM DETAILS, NOTES AND SPECIFICATIONS SEE SHEETS C-501 THROUGH C-506.
2. FOR ROADWAY AND NON POROUS PAVING SECTIONS SEE SHEET C-215.
3. FOR UNDERDRAIN LOCATIONS SEE SHEET C-503.
4. FOR LEGEND SEE SHEET C-203.

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3 INCLUDING THE SOURCE OF BORROW MATERIAL REFERRED TO AS THE EAST AND WEST BORROW AREAS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

RK&K
RUMMEL, KLEPPER & KAHL, LLP
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700 East Pratt Street, Suite 500
Baltimore, MD 21202
Ph: 410.728.2900 Contact: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

ROADWAY PROFILES - OTA 3 (PHASE 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 13 OF 73

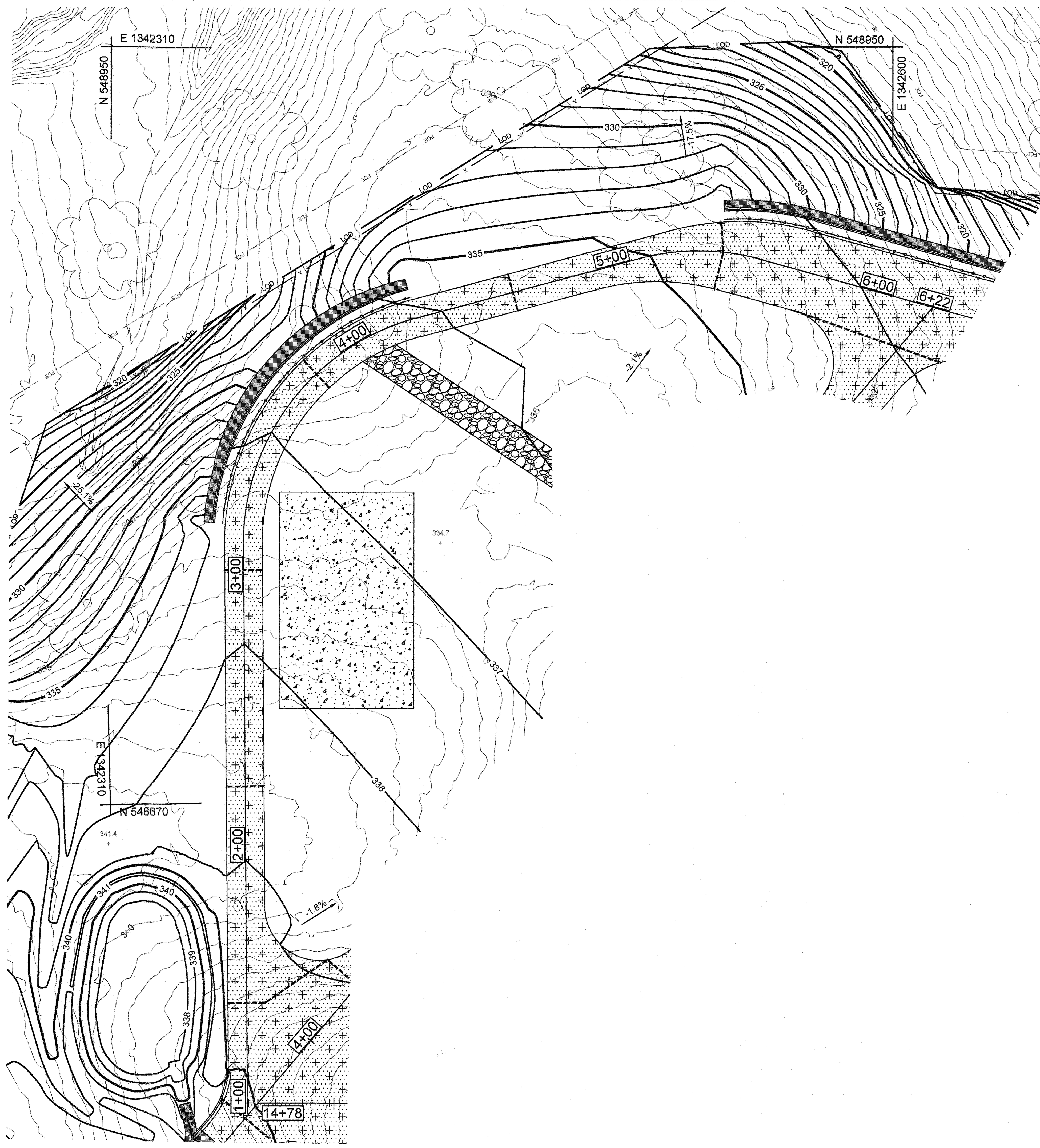
C-213

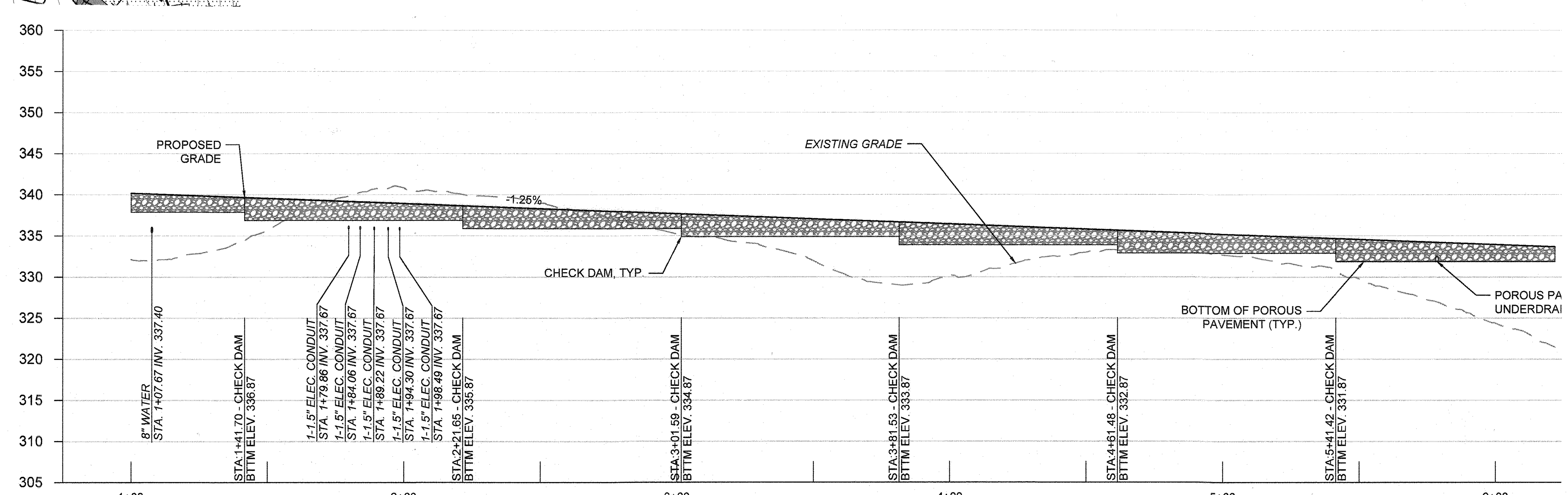
RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\adc.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-213 Roadway Profiles - OTA 3 (Phase 2).dwg Oct 31, 2023 1:09pm jsaltz





OTA-3 LEFT DRIVEWAY PROFILE

SCALE: HORIZ. 1" = 30'
VERT. 1" = 10'

NOTES

1. FOR POROUS PAVEMENT & CHECK DAM DETAILS, NOTES AND SPECIFICATIONS SEE SHEETS C-501 THROUGH C-506.
2. FOR ROADWAY AND NON POROUS PAVING SECTIONS SEE SHEET C-215.
3. FOR UNDERDRAIN LOCATIONS SEE SHEET C-503.
4. FOR LEGEND SEE SHEET C-203.

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

10 5 0 10 20
SCALE: 1" = 10'

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

C-214

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[illegible] Chief, Development Engineering Division	12-5-23 Date
Chief, Division of Land Development	2/22/24 Date
[illegible] Director	2/22/24 Date

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: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND
CHARLES W. W. MITCHELL, III
49432
PROFESSIONAL ENGINEER
11/1/23

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

ROADWAY PROFILES - OTA 3 (PHASE 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 14 OF 73

RK&K PROJECT NUMBER
21047.013

SCALE:
As Shown

SDP-18-060

\\ad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-214 Roadway Profiles - OTA 3 (Phase 2).dwg Oct 31, 2023 1:10pm jsaltz

PIPE SCHEDULE (ALL PHASES)

TYPE	SIZE	MATERIAL	TOTAL LENGTH
SANITARY	8"	DIP CL 52	426'
SANITARY	8"	PVC SCH 40	936'
STORM	6"	PVC SCH 40 PERFORATED	5,171'
STORM	12"	RCP CL. IV	591'
STORM	12"	RCP CL. V	163'
STORM	15"	RCP CL. IV	329'
STORM	15"	RCP CL. V	94'
STORM	18"	RCP CL. IV	89'
STORM	18"	RCP CL. V	166'
STORM	24"	RCP CL. IV	50'
WATER	2"	PVC SCH 40	52'
WATER	2"	TYPE K COPPER	65'
WATER	6"	DIP CL 52	31'
WATER	8"	DIP CL 52	1684'
WATER	6"	DIP CL 54	81'
WATER	8"	DIP CL 54	1650'

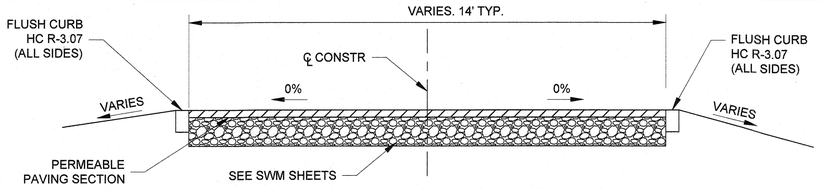
NOTE: PIPE SCHEDULE IS INCLUSIVE OF OTA PHASE 1, 2, 3 AND THE BORROW AREA. ALL PIPES MATERIALS, SIZES, TYPES AND QUANTITIES TO BE BACK CHECKED WITH THE CURRENT PHASE PLANS AND PROFILES PRIOR TO ORDERING. NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND.

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥ 7	3 TO <5	5 TO <7	≥ 7
		PAVEMENT MATERIAL (INCHES)	MIN HMA WITH GAB			HMA WITH CONSTANT GAB		
P-1	PARKING BAYS: RESIDENTIAL AND NON-RESIDENTIAL PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE (NA)	NA	NA	NA	NA	NA	NA
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	3.0	2.5
		GRADED AGGREGATE BASE (GAB)	8.5	7.0	5.0	4.0	4.0	4.0
P-2	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SACS: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0
P-3	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SACS: NON-RESIDENTIAL MINOR COLLECTORS: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)	3.0	3.0	3.0	4.5	3.0	2.0
		GRADED AGGREGATE BASE (GAB)	10.0	6.0	3.0	6.0	6.0	6.0
P-4	MINOR COLLECTORS: NON-RESIDENTIAL MAJOR COLLECTORS	HMA SUPERPAVE FINAL SURFACE 12.5 MM, PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM, PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	6.0	5.0	3.0
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0	6.0	6.0

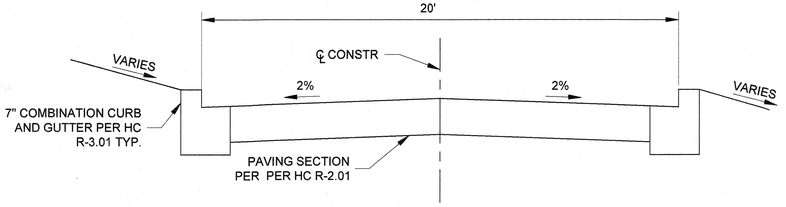
Notes:
1) HEAVY TRUCKS ARE DEFINED AS THOSE WITH SIX (6) WHEELS OR MORE INCLUDING GARBAGE TRUCKS.
2) HMA SUPERPAVE LAYERS SHALL BE PLACED IN APPROPRIATE COMPACTED LIFT THICKNESS: 19.0 MM BASE (2.0" MIN TO 4.0" MAX), 12.5 MM SURFACE (1.5" MIN TO 3.0" MAX), AND 9.5 MM SURFACE (1.0" MIN TO 2.0" MAX)
3) GRADED AGGREGATE BASE (GAB) TO BE PLACED AND COMPACTED IN 6" MAX COMPACTED THICKNESS LAYERS.
4) THE INTERMEDIATE SURFACE COURSE LAYER MUST BE PLACED WITHIN 2 WEEKS OF PLACEMENT OF BASE COURSE, AND IS REQUIRED PRIOR TO SUBSTANTIAL COMPLETION INSPECTION AND BOND REDUCTION.
5) IN LIEU OF PLACING THE INTERMEDIATE SURFACE COURSE LAYER FOR COMMERCIAL/INDUSTRIAL ENTRANCE APRONS WITHIN THE COUNTY RIGHT-OF-WAY WHERE AUXILIARY LANES ARE NOT REQUIRED, THE THICKNESS OF THE INTERMEDIATE PAVEMENT LAYER CAN BE ADDED TO THE REQUIRED THICKNESS OF THE BASE ASPHALT LAYER.
6) THE CONSTRUCTION DRAWINGS SHALL SHOW THE PAVING SECTION, ROAD CLASSIFICATION AND CRB VALUE FOR EACH ROADWAY

HMA SUPERPAVE FINAL SURFACE
HMA SUPERPAVE INTERMEDIATE SURFACE
HMA SUPERPAVE BASE
GRADED AGGREGATE BASE (GAB)

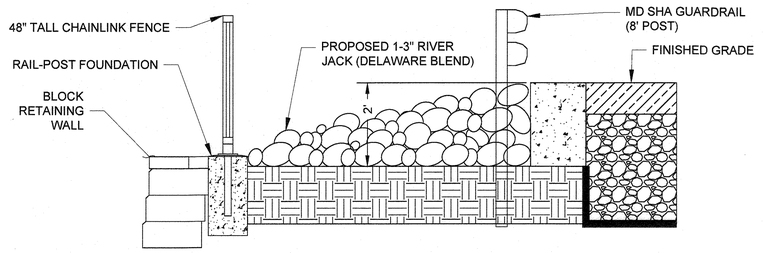
Revised	Howard County, Maryland Department of Public Works	Detail
Revised 5/1/2007 Approved	Approved: Chief, Bureau of Engineering	PAVING SECTIONS P-1 to P-4 — R-2.01



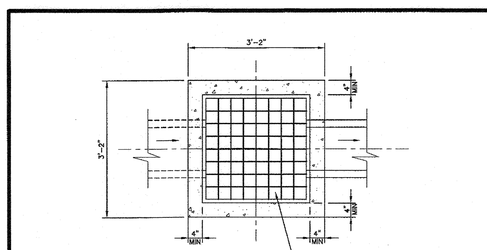
POROUS ASPHALT PAVEMENT ROAD - TYPICAL SECTION



ASPHALT ROAD - TYPICAL SECTION

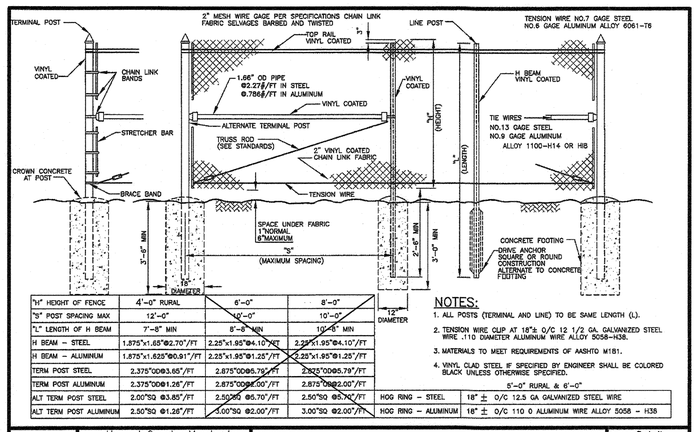


MAINTENANCE STRIP AT RETAINING WALL



NOTE:
1. INLET TO BE USED IN A SWALE OR SUMP. MAX. CAPACITY UNDER .25'=3 C.F.S. TO BE USED WITH 15" CONN. OR SMALLER. NOT TO BE USED IN ROADWAY OR PARKING AREA.
2. TO BE USED ONLY WHEN APPROVED BY COUNTY.

Revised	Howard County, Maryland Department of Public Works	Detail
Revised 5/1/2007 Approved	Approved: Chief, Bureau of Engineering	Yard Inlet — D-4.14



"H" HEIGHT OF FENCE	4'-0" RURAL	6'-0"	8'-0"
"S" POST SPACING MAX	12'-0"	10'-0"	10'-0"
"L" LENGTH OF H BEAM	7'-8" MIN	8'-8" MIN	10'-8" MIN
H BEAM - STEEL	1.875"x1.65"Ø2.70"/FT	2.25"x1.95"Ø4.10"/FT	2.25"x1.95"Ø4.10"/FT
H BEAM - ALUMINUM	1.875"x1.625"Ø0.91"/FT	2.25"x1.95"Ø1.25"/FT	2.25"x1.95"Ø1.25"/FT
TERM POST STEEL	2.375"ODØ3.65"/FT	2.875"ODØ5.79"/FT	2.875"ODØ5.79"/FT
TERM POST ALUMINUM	2.375"ODØ1.26"/FT	2.875"ODØ2.00"/FT	2.875"ODØ2.00"/FT
ALT TERM POST STEEL	2.00"SQ Ø3.65"/FT	2.50"SQ Ø5.70"/FT	2.50"SQ Ø5.70"/FT
ALT TERM POST ALUMINUM	2.50"SQ Ø1.26"/FT	3.00"SQ Ø2.00"/FT	3.00"SQ Ø2.00"/FT

5'-0" RURAL & 6'-0"

HOG RING - STEEL	18" ± O/C	12.5 GA GALVANIZED STEEL WIRE
HOG RING - ALUMINUM	18" ± O/C	110 0 ALUMINUM WIRE ALLOY 5056 - H38

NOTES:
1. ALL POSTS (TERMINAL AND LINE) TO BE SAME LENGTH (L).
2. TENSION WIRE CLIP AT 18"± O/C 12 1/2 GA. GALVANIZED STEEL WIRE .110 DIAMETER ALUMINUM WIRE ALLOY 5056-H38.
3. MATERIALS TO MEET REQUIREMENTS OF AASHTO M181.
4. VINYL CLAD STEEL IF SPECIFIED BY ENGINEER SHALL BE COLORED BLACK UNLESS OTHERWISE SPECIFIED.

Revised	Howard County, Maryland Department of Public Works	Detail
Revised 5/1/2007 Approved	Approved: Chief, Bureau of Engineering	CHAIN LINK FENCE — G-7.21

Structure Table			
NORTHING	EASTING	STRUCTURE NAME	DESCRIPTION
546994.9444	1342631.9628	CAP 1.1	8" VALVE & CAP
547261.4828	1342946.2925	CAP 1.2	8" VALVE & CAP
547987.0090	1342927.3554	CAP 2.1	8" VALVE & CAP
548661.9915	1342445.0525	CAP 3.1	8" VALVE & CAP
547039.8610	1342766.0299	CO 1.1	CLEANOUT S-3.21
547145.9822	1342855.0486	CO 1.2	CLEANOUT S-3.21
547231.3902	1342926.7179	CO 1.3	CLEANOUT S-3.21
547260.6588	1343007.7834	CO 1.4	CLEANOUT S-3.21
547315.2421	1343202.7427	CO 1.5	CLEANOUT S-3.21
547344.7052	1343308.0577	CO 1.6	CLEANOUT S-3.21
547368.8383	1343394.1556	CO 1.7	CLEANOUT S-3.21
547385.3911	1343453.2998	CO 1.8	CLEANOUT S-3.21
547406.9406	1343530.2699	CO 1.9	CLEANOUT S-3.21
547390.5883	1343544.9145	CO 1.10	CLEANOUT S-3.21
547237.8666	1343587.6718	CO 1.11	CLEANOUT S-3.21
547845.3963	1343026.0892	CO 2.1	CLEANOUT S-3.21
547954.3258	1342899.8367	CO 2.2	CLEANOUT S-3.21
547995.2899	1342888.4348	CO 2.3	CLEANOUT S-3.21
548111.4713	1342953.3269	CO 2.4	CLEANOUT S-3.21
548286.0391	1343050.9286	CO 2.5	CLEANOUT S-3.21
548605.4499	1342360.5105	CO 3.1	CLEANOUT S-3.21
548559.9420	1342408.5941	CO 3.2	CLEANOUT S-3.21
548560.0076	1342508.6489	CO 3.3	CLEANOUT S-3.21
548576.8921	1342705.2647	CO 3.4	CLEANOUT S-3.21
548682.1330	1342748.5630	CO 3.5	CLEANOUT S-3.21
548794.0611	1342742.9350	CO 3.6	CLEANOUT S-3.21
548853.9250	1342814.9796	CO 3.7	CLEANOUT S-3.21
548871.9937	1342505.9456	CO 3.8	CLEANOUT S-3.21
548849.9002	1342423.0536	CO 3.9	CLEANOUT S-3.21
548766.1024	1342359.2051	CO 3.10	CLEANOUT S-3.21
548624.1828	1342316.7928	CO 3.11	CLEANOUT S-3.21
548624.7295	1342331.5263	CO 3.12	CLEANOUT S-3.21
548597.3022	1342551.4571	CO 3.13	CLEANOUT S-3.21
548576.3331	1342313.6540	CO 3.14	CLEANOUT S-3.21
548576.1785	1342328.6744	CO 3.15	CLEANOUT S-3.21
548597.2946	1342591.4571	CO 3.16	CLEANOUT S-3.21
548590.3149	1342629.4571	CO 3.17	CLEANOUT S-3.21
548696.2859	1342480.8202	CO 3.18	CLEANOUT S-3.21
548865.4711	1342573.2926	CO 3.19	CLEANOUT S-3.21
547111.3447	1342615.2797	EMH 1.1	HANDBOX TYPE E-1
546981.4418	1342770.0989	EMH 1.2	HANDBOX TYPE E-2
547174.3800	1342931.8197	EMH 1.3	HANDBOX TYPE E-2
547172.7103	1342956.5621	EMH 1.4	HANDBOX TYPE E-3
547072.5467	1343099.4182	EMH 1.5	HANDBOX TYPE E-3 & POWER PEDESTAL
547120.9187	1343272.0729	EMH 1.6	HANDBOX TYPE E-3 & POWER PEDESTAL
547174.7695	1343464.5356	EMH 1.7	HANDBOX TYPE E-2 & POWER PEDESTAL
547206.2184	1343576.8822	EMH 1.8	HANDBOX TYPE E-3 & POWER PEDESTAL
547416.9501	1343530.5532	EMH 1.9	HANDBOX TYPE E-4 & POWER PEDESTAL
547396.2952	1343456.2684	EMH 1.10	HANDBOX TYPE E-4
547374.3410	1343461.9690	EMH 1.11	HANDBOX TYPE E-3 & POWER PEDESTAL
547378.2127	1343392.1914	EMH 1.12	HANDBOX TYPE E-4 & POWER PEDESTAL
547324.2442	1343199.6667	EMH 1.13	HANDBOX TYPE E-4 & POWER PEDESTAL
547270.3016	1343007.4473	EMH 1.14	HANDBOX TYPE E-3 & POWER PEDESTAL
547207.2708	1342960.4040	EMH 1.15	HANDBOX TYPE E-3
547705.6541	1342902.8066	EMH 2.1	HANDBOX TYPE E-2
547835.3295	1343035.3025	EMH 2.2	HANDBOX TYPE E-2
547945.1352	1342943.0371	EMH 2.3	HANDBOX TYPE E-2
547943.0188	1342959.9928	EMH 2.4	HANDBOX TYPE E-3
547959.9172	1342929.7686	EMH 2.5	HANDBOX TYPE E-3
548023.1624	1342887.1663	EMH 2.6	HANDBOX TYPE E-3 & POWER PEDESTAL
548179.1931	1342974.5150	EMH 2.7	HANDBOX TYPE E-4 & POWER PEDESTAL
548335.2269	1343061.7542	EMH 2.8	HANDBOX TYPE E-4 & POWER PEDESTAL
548342.7551	1343088.3758	EMH 2.9	HANDBOX TYPE E-4 & POWER PEDESTAL
548281.0863	1343198.7498	EMH 2.10	HANDBOX TYPE E-3 & POWER PEDESTAL
548251.0714	1343207.3205	EMH 2.11	HANDBOX TYPE E-3 & POWER PEDESTAL
548097.1469	1343121.2607	EMH 2.12	HANDBOX TYPE E-3 & POWER PEDESTAL
547941.1131	1343034.0214	EMH 2.13	HANDBOX TYPE E-3 & POWER PEDESTAL
548015.3874	1342169.5190	EMH 3.1	HANDBOX TYPE E-1
548240.9831	1342141.9613	EMH 3.2	HANDBOX TYPE E-1
548471.0944	1342293.2102	EMH 3.3	HANDBOX TYPE E-2
548584.9420	1342506.7963	EMH 3.4	HANDBOX TYPE E-2
NOT USED			
NOT USED			
NOT USED			
NOT USED			
NOT USED			
548783.6834	1342350.9644	EMH 3.11	HANDBOX TYPE E-4 & POWER PEDESTAL
548723.8072	1342371.7833	EMH 3.12	HANDBOX TYPE E-4 & POWER PEDESTAL
548707.3128	1342424.5333	EMH 3.13	HANDBOX TYPE E-4 & POWER PEDESTAL

Structure Table			
NORTHING	EASTING	STRUCTURE NAME	DESCRIPTION
548744.6398	1342424.5333	EMH 3.14	HANDBOX TYPE E-4 & POWER PEDESTAL
548781.9869	1342424.5333	EMH 3.15	HANDBOX TYPE E-4 & POWER PEDESTAL
548785.6571	1342371.7833	EMH 3.16	HANDBOX TYPE E-4 & POWER PEDESTAL
548855.9206	1342410.2160	EMH 3.17	HANDBOX TYPE E-4 & POWER PEDESTAL
548883.1498	1342573.1924	EMH 3.18	HANDBOX TYPE E-4 & POWER PEDESTAL
548847.6499	1342701.5981	EMH 3.19	HANDBOX TYPE E-4 & POWER PEDESTAL
548766.4822	1342765.6255	EMH 3.20	HANDBOX TYPE E-4 & POWER PEDESTAL
548722.9420	1342765.6255	EMH 3.21	HANDBOX TYPE E-4 & POWER PEDESTAL
548654.9420	1342765.6255	EMH 3.22	HANDBOX TYPE E-4 & POWER PEDESTAL
548542.8335	1342648.5630	EMH 3.23	HANDBOX TYPE E-4 & POWER PEDESTAL
NOT USED			
548775.1179	1342612.7385	EMH 3.25	HANDBOX TYPE E-4 & POWER PEDESTAL
547456.3746	1343600.4002	ES 1.1	END SECTION D-5.51
548286.6588	1343014.7658	ES 2.1	END SECTION D-5.51
548749.8025	1342785.9872	ES 3.1	END SECTION D-5.51
548782.4005	1342273.6145	ES 3.2	END SECTION D-5.51
548782.4005	1342273.6145	ES 3.2	END SECTION D-5.51
546980.7699	1342647.5859	FH 1.1	FIRE HYDRANT
547227.0729	1342950.8770	FH 1.2	FIRE HYDRANT
547962.6084	1342918.2956	FH 2.1	FIRE HYDRANT
548636.4051	1342463.9215	FH 3.1	FIRE HYDRANT
547325.8948	1343313.2900	I 1.1	YARD INLET D-4.14
547366.4765	1343458.5954	I 1.2	YARD INLET D-4.14
547242.2731	1343564.0183	I 1.3	YARD INLET D-4.14
548336.8808	1343079.3630	I 2.1	YARD INLET D-4.14
548838.2130	1342565.6171	I 3.1	YARD INLET D-4.14
548781.5957	1342715.3171	I 3.2	YARD INLET D-4.14
548624.4341	1342324.2380	I 3.3	YARD INLET D-4.14
548620.9035	1342323.5213	OF 3.01	6" OVER FLOW W/ATRIUM GRATE
547220.7027	1342948.4915	OW 1.1	OBSERVATION WELL SEE C-504
547367.5392	1343471.4377	OW 1.2	OBSERVATION WELL SEE C-504
547243.1747	1343596.7555	OW 1.3	OBSERVATION WELL SEE C-504
547948.7348	1342968.6710	OW 2.1	OBSERVATION WELL SEE C-504
548331.2575	1343065.8329	OW 2.2	OBSERVATION WELL SEE C-504
548710.1418	1342755.9804	OW 3.1	OBSERVATION WELL SEE C-504
548604.9861	1342325.0582	OW 3.2	OBSERVATION WELL SEE C-504
546956.8537	1342614.6618	SD 1.1	48" PRECAST MH G-5.12
548354.6541	1343048.2318	SD 2.1	48" PRECAST MH G-5.12
548682.1330	1342723.5630	SD 3.1	48" PRECAST MH G-5.12
548689.2216	1342781.2184	SD 3.2	48" PRECAST MH G-5.12
547918.6754	1342869.7917	SS 2.1	48" PRECAST MH G-5.12
547959.9866	1342828.1878	SS 2.2	48" PRECAST MH G-5.12
548075.7380	1342862.7478	SS 2.3	48" PRECAST MH G-5.12
548127.9894	1342868.0810	SS 2.4	48" PRECAST MH G-5.12
548690.2757	1342210.3884	TEE 1.1	8" x 8" TEE & 3 VALVES
546987.3254	1342626.2679	TEE 1.2	8" x 8" TEE & 3 VALVES
546993.3424	1342630.7654	TEE 1.3	8" x 6" TEE & 6" VALVE
547245.4798	1342916.3533	TEE 1.4	SERVICE CONNECTION HC W-3.22
547260.0837	1342941.4922	TEE 1.5	8" x 6" TEE & 6" VALVE
547985.0570	1342930.8467	TEE 2.1	8" x 6" TEE & 6" VALVE
547963.2847	1342969.8872	TEE 2.2	SERVICE CONNECTION HC W-3.22
547705.0946	1342689.1846	TEE 2.3	8" x 8" TEE & 3 VALVES
548648.4923	1342433.5629	TEE 3.1	SERVICE CONNECTION HC W-3.22
548656.4671	1342440.3505	TEE 3.2	8" x 6" TEE & 6" VALVE
547988.2543	1342168.0765	TEE 3.3	8" x 8" TEE & 3 VALVES
546852.1302	1342262.5172	UMH 1.1	HANDBOX TYPE C-1
546757.8748	1342407.0532	UMH 1.2	HANDBOX TYPE C-1
546935.0856	1342599.1027	UMH 1.3	HANDBOX TYPE C-1
546957.4169	1342760.4918	UMH 1.4	HANDBOX TYPE C-2
547159.9512	1342930.0364	UMH 1.5	HANDBOX TYPE C-2
547174.0858	1342961.1100	UMH 1.6	HANDBOX TYPE C-3
547078.1317	1343100.8209	UMH 1.7	HANDBOX TYPE C-3
547125.4612	1343270.7459	UMH 1.8	HANDBOX TYPE C-3
547178.2364	1343458.3727	UMH 1.9	HANDBOX TYPE C-3
547371.5818	1343463.1555	UMH 1.10	HANDBOX TYPE C-3
547888.9474	1342757.1894	UMH 2.1	HANDBOX TYPE C-2
548010.8528	1342825.3472	UMH 2.2	HANDBOX TYPE C-2
547948.0163	1342937.8306	UMH 2.3	HANDBOX TYPE C-2
548022.7424	1342171.2840	UMH 3.1	HANDBOX TYPE C-1
548241.0390	1342146.8788	UMH 3.2	HANDBOX TYPE C-1
548467.8537	1342297.0177	UMH 3.3	HANDBOX TYPE C-2
548579.9420	1342512.7963	UMH 3.4	HANDBOX TYPE C-2
547211.1885	1342957.2530	YH 1.1	YARD HYDRANT, PER C-218
547958.4641	1342967.2032	YH 2.1	YARD HYDRANT, PER C-218
548606.3625	1342483.0612	YH 3.1	YARD HYDRANT, PER C-218

NOTE: COORDINATES ARE TO THE CENTER OF THE STRUCTURE.

STRUCTURE LABEL FORMAT:
1.XX = OTA-1 STRUCTURES (PREVIOUSLY CONSTRUCTED)
2.XX = OTA-2 STRUCTURES (FUTURE PROJECT - NOT IN CONTRACT/NOT FOR CONSTRUCTION)
3.XX = OTA-3 STRUCTURES (FOR CONSTRUCTION)

FOR BORROW AREA STRUCTURES, SEE SHEET C-294

5 PURPOSE STATEMENT (4/7/22): ADDITION OF TWO 6'x40' CONCRETE PADS

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL. REFERRED TO AS THE EAST AND WEST BORROW AREAS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	3	Addition of Two 6"x40' Concrete Pads	4/7/22
RK&K	4	Replacement Sheet - OTA-3 and Borrow Area Modifications	11/1/23

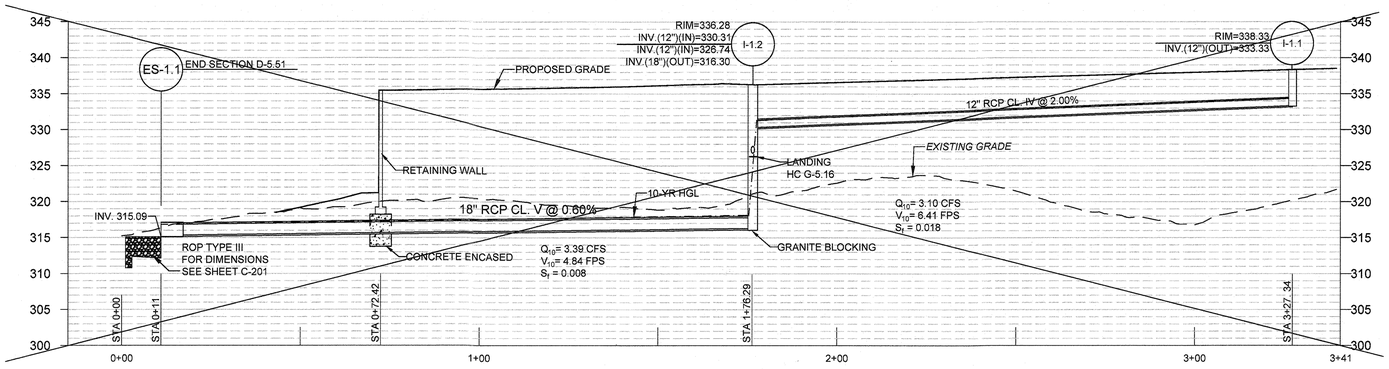
OWNER/DEVELOPER
JOHNS HOPKINS APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

SITE DETAILS & STRUCTURE TABLE
JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY
OUTDOOR TESTING AREAS
11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 18 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 15 OF 73

C-215
RK&K PROJECT NUMBER 21047.013
SCALE: As Shown

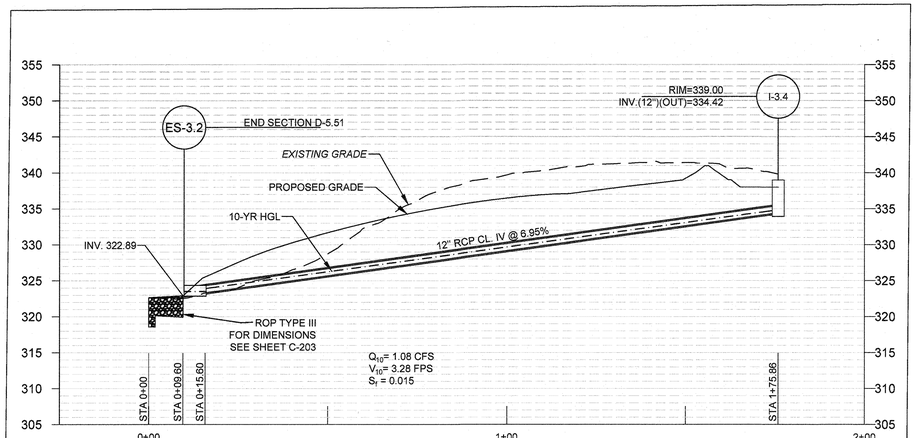
SDP-18-060

\\ad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-215 Site Details & Structure Table.dwg Oct 31, 2023 1:52pm jsaltz



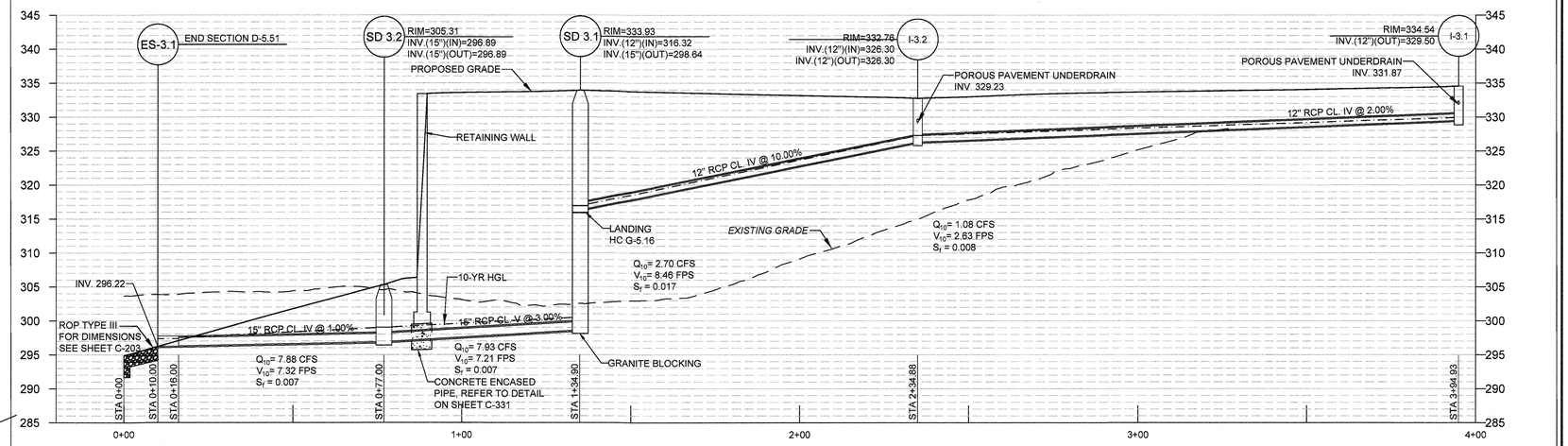
STRM I-1.1 TO ES 1.1

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'



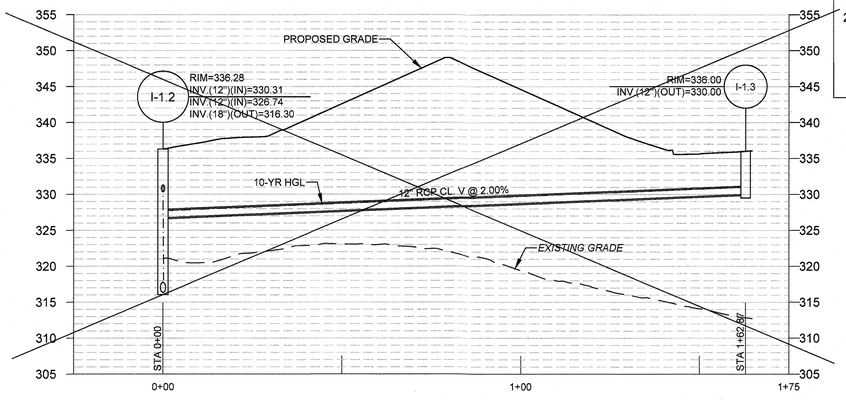
STRM I-3.4 TO ES-3.2

SCALE: HORIZ. 1" = 50'
VERT. 1" = 25'



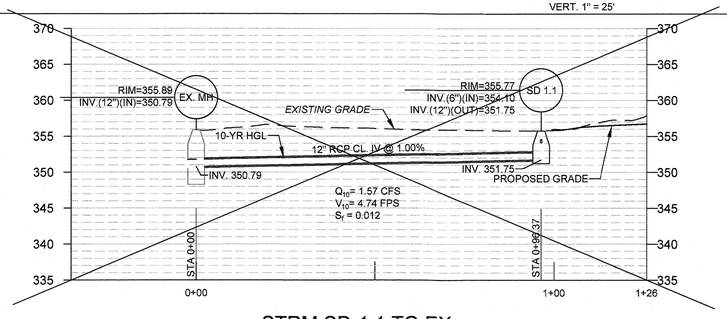
STRM I-3.1 TO ES-3.1

SCALE: HORIZ. 1" = 50'
VERT. 1" = 25'



I-1.3 TO I-1.2

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'



STRM SD-1.1 TO EX.

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

NOTE: FOR STRUCTURE TABLE AND SCHEDULE SEE SHEET C-215

HORIZ. SCALE: 1" = 20' (20 10 0 20 40)

VERT. SCALE: 1" = 10' (10 5 0 10 20)

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

RK&K
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PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CRAIG W. MITCHELL — 49432 — PROFESSIONAL ENGINEER

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	3	Addition of Two 6"x40' Concrete Pads	4/7/22
RK&K	4	Replacement Sheet - OTA-3 and Borrow Area Modifications	11/1/23

3 PURPOSE STATEMENT (4/7/22): ADDITION OF TWO 6'x40' CONCRETE PADS

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

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

STORM DRAIN PROFILES

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 16 OF 73

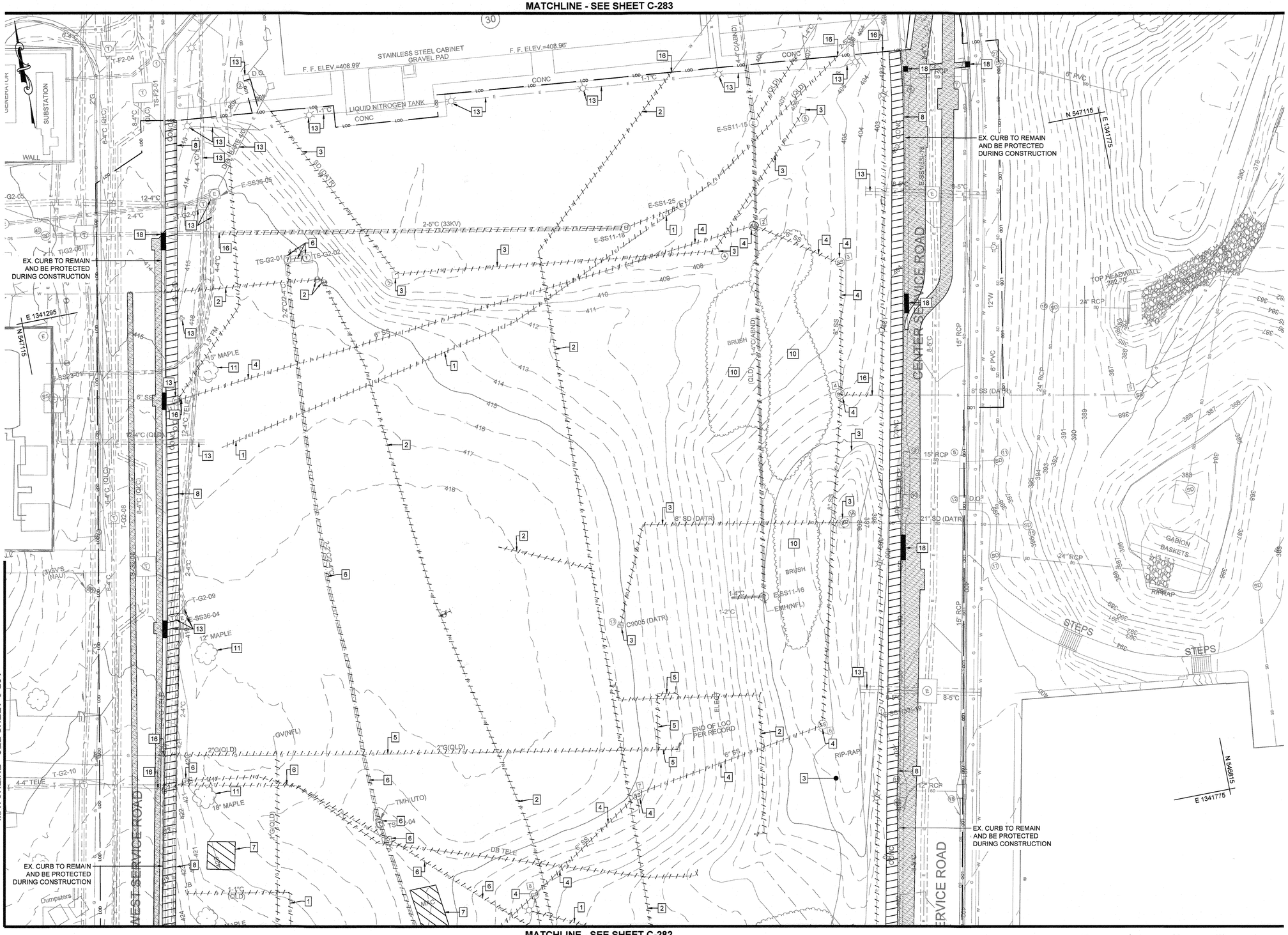
C-220

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

MATCHLINE - SEE SHEET C-283



MATCHLINE - SEE SHEET C-284

MATCHLINE - SEE SHEET C-282

GENERAL NOTES

1. TOPOGRAPHIC AND SURFACE INFORMATION SHOWN WAS OBTAINED FROM FIELD SURVEY BY RK&K, REVISED ON MAY 2, 2023. UTILITY INFORMATION SHOWN WAS PROVIDED BY A|||DATA, REVISED ON MAY 2, 2023.
2. 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 ARCHITECT / ENGINEER PRIOR TO THE START OF ANY WORK.
3. BEARINGS AND HORIZONTAL COORDINATES SHOWN ON THIS PLAN ARE BASED UPON MARYLAND STATE PLANE COORDINATE SYSTEM NAD83. VERTICAL ELEVATIONS SHOWN ARE BASED UPON VERTICAL DATUM NAVD88.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" AT 1-800-257-7777 FIVE DAYS PRIOR TO THE START OF ANY EXCAVATION WORK.
5. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY INVERTS AND CLEARANCES FROM NEW WORK PRIOR TO START OF ANY WORK.
6. THE CONTRACTOR SHALL STAKE OUT THE LOCATION OF ALL NEW CONSTRUCTION AND VERIFY ALL JURISDICTIONAL SETBACKS AND BUFFERS PRIOR TO START OF ANY WORK.
7. EXISTING UTILITIES WHICH ARE NOT TO BE REMOVED OR ABANDONED SHALL REMAIN OPERATIONAL AT ALL TIMES. APPROPRIATE EXISTING UTILITIES SHALL REMAIN IN SERVICE UNTIL REPLACEMENT/RELOCATED UTILITIES ARE OPERATIONAL.

DEMOLITION NOTES

1. REMOVE EXISTING ELECTRIC CONDUIT/DUCTBANK AND ALL ASSOCIATED STRUCTURES AND POLE. POLES SALVAGED FOR REUSE.
2. REMOVE EXISTING WATER PIPE AND ALL ASSOCIATED STRUCTURES
3. REMOVE EXISTING STORM DRAIN PIPE AND ALL ASSOCIATED STRUCTURES, INLETS, AND RIP-RAP
4. REMOVE EXISTING SANITARY PIPE AND ALL ASSOCIATED STRUCTURES
5. REMOVE EXISTING GAS PIPE AND ALL ASSOCIATED STRUCTURES
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7. REMOVE EXISTING CONCRETE OR ASPHALT PAVEMENT AND ALL ASSOCIATED CURB/GUTTER, PAVEMENT MARKINGS, AND SIGNAGE
8. REMOVE EXISTING SIDEWALK/STEPS
9. REMOVE EXISTING RETAINING WALL AND ALL ASSOCIATED FOOTINGS
10. REMOVE EXISTING TREES / BRUSH
11. REMOVE EXISTING TREE
12. REMOVE EXISTING SIGN
13. EXISTING UTILITY TO REMAIN AND BE PROTECTED DURING CONSTRUCTION
14. EXISTING SECURITY CAMERA POLE TO BE SALVAGED FOR REUSE; CONTRACTOR TO COORDINATE WITH APL
15. EXISTING CURB ISLAND AND ALL ASSOCIATED CURB AND CUTTER TO BE REMOVED FOR CONSTRUCTION VEHICLE ACCESS
16. CUT AND CAP / BULKHEAD EXISTING UTILITY
17. PROTECT EXISTING FENCE DURING CONSTRUCTION
18. REPLACE EXISTING CURB & GUTTER IN KIND TO NEAREST JOINT AFTER UTILITY INSTALLATION

DEMOLITION LEGEND

- LOD — LIMITS OF DISTURBANCE
- REMOVE EXISTING UTILITY
- REMOVE CONCRETE OR ASPHALT PAVEMENT OR SIDEWALK/STEPS (SEE DEMOLITION NOTES)
- TEMPORARY PAVEMENT REMOVAL & RESTORATION IN KIND (UTILITY TRENCHING)
- REPLACE EXISTING CURB & GUTTER IN KIND TO NEAREST JOINT AFTER UTILITY INSTALLATION

EXISTING LEGEND

- PROPERTY LINE
- CURB AND GUTTER
- TREE LINE / BRUSH LINE
- TREE / BUSH
- 405 MAJOR CONTOUR
- 404 MINOR CONTOUR
- DITCH
- E ELECTRIC
- T COMMUNICATIONS
- G GAS
- SD STORM
- S SANITARY
- W WATER
- E ELECTRIC
- T COMM.
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- G GAS
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- ELECTRIC POLE / LIGHT POLE
- E ELECTRIC MANHOLE
- E ELECTRIC HANDHOLE
- T COMMUNICATIONS MANHOLE
- FO COMMUNICATIONS HANDHOLE
- SD # STORM MANHOLE AND IDENTIFIER
- # STORM INLET AND IDENTIFIER
- STORM CLEAN OUT
- SS # SANITARY MANHOLE AND IDENTIFIER
- WATER VALVE
- W WATER STRUCTURE
- FIRE HYDRANT
- GAS VALVE

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

20 0 20 40
SCALE: 1" = 20'

C-281

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

RK&K
RUMMEL, KLEPPER & KAHL, LLP
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PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES K. MITCHELL — 49432 — PROFESSIONAL ENGINEER

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EX. CONDITION & DEMO PLAN - EAST BORROW AREA (PHASE 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 17 OF 73

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\cd.rkk.com\fs\Cloud\Projects\2021\21047_API2021MSA\Projects\Task 13 — OTA 3\CADD\Plans\C-281 Ex. Condition & Demo Plan — East Borrow Area (Phase 2).dwg Oct 31, 2023 1:12pm jpoltz

MATCHLINE - SEE SHEET C-281

MATCHLINE - SEE SHEET C-284

MATCHLINE - SEE SHEET C-285

SUBSTATION 36 TO REMAIN AND BE PROTECTED DURING CONSTRUCTION. ANY UTILITIES IN THE VICINITY WHICH CANNOT BE REMOVED WITHOUT DAMAGING THE INTEGRITY OF THE EXISTING SUBSTATION, FOUNDATIONS, OR EQUIPMENT SHOULD BE TEMPORARILY ABANDONED IN PLACE.

EX. CURB TO REMAIN AND BE PROTECTED DURING CONSTRUCTION

TRAILER/BUILDING PREVIOUSLY REMOVED. DEMOLISH ALL ASSOCIATED FOOTINGS AND RETAINING WALLS. REMOVE EXISTING FENCE AND STORE AT OWNERS DIRECTION.

EX. CURB TO REMAIN AND BE PROTECTED DURING CONSTRUCTION

PLUG EXISTING KNOCKOUTS IN MANHOLE AFTER CONDUIT REMOVAL

EXISTING EQUIPMENT TO REMAIN

EX. CURB TO REMAIN AND BE PROTECTED DURING CONSTRUCTION

WEST SERVICE ROAD

CENTER SERVICE ROAD

SUBSTATION #36

SUBSTATION #25

N 546760 E 1341705

N 546680 E 1341705

SA-3

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

SCALE: 1" = 20'

GENERAL NOTES

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DEMOLITION NOTES

1. REMOVE EXISTING ELECTRIC CONDUIT/DUCTBANK AND ALL ASSOCIATED STRUCTURES AND POLE. POLES SALVAGED FOR REUSE.
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18. REPLACE EXISTING CURB & GUTTER IN KIND TO NEAREST JOINT AFTER UTILITY INSTALLATION

DEMOLITION LEGEND

- LOD — LIMITS OF DISTURBANCE
- REMOVE EXISTING UTILITY
- REMOVE CONCRETE OR ASPHALT PAVEMENT, OR SIDEWALK/STEPS (SEE DEMOLITION NOTES)
- TEMPORARY PAVEMENT REMOVAL & RESTORATION IN KIND (UTILITY TRENCHING)
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EXISTING LEGEND

- PROPERTY LINE
- CURB AND GUTTER
- TREE LINE / BRUSH LINE
- TREE / BUSH
- 405 MAJOR CONTOUR
- 404 MINOR CONTOUR
- DITCH
- E — E ELECTRIC
- T — T COMMUNICATIONS
- G — G GAS
- SD — SD STORM
- S — S SANITARY
- W — W WATER
- E — E ELECTRIC
- T — T COMM.
- FO — FO FIBER OPTIC
- G — G GAS
- SD — SD STORM
- S — S SANITARY
- W — W WATER
- ELECTRIC POLE / LIGHT POLE
- (E) (E) ELECTRIC MANHOLE
- [E] ELECTRIC HANDHOLE
- (T) COMMUNICATIONS MANHOLE
- [FO] COMMUNICATIONS HANDHOLE
- (SD) (#) STORM MANHOLE AND IDENTIFIER
- [SD] (#) STORM INLET AND IDENTIFIER
- STORM CLEAN OUT
- (SS) (#) SANITARY MANHOLE AND IDENTIFIER
- WATER VALVE
- (W) WATER STRUCTURE
- FIRE HYDRANT
- GAS VALVE

APPROVED; DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

RK&K		REVISION	DATE
	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

OWNER/DEVELOPER

JOHNS HOPKINS APPLIED PHYSICS LABORATORY

11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

EX. CONDITION & DEMO PLAN - EAST BORROW AREA (PHASE 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 18 OF 73

C-282

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\ad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-282 Ex. Condition & Demo Plan - East Borrow Area (Phase 2).dwg Oct 31, 2023 1:12pm jsaltz

MATCHLINE - SEE SHEET C-281

GENERAL NOTES

1. TOPOGRAPHIC AND SURFACE INFORMATION SHOWN WAS OBTAINED FROM FIELD SURVEY BY RK&K, REVISED ON MAY 2, 2023. UTILITY INFORMATION SHOWN WAS PROVIDED BY A|||DATA, REVISED ON MAY 2, 2023.
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DEMOLITION NOTES

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3. REMOVE EXISTING STORM DRAIN PIPE AND ALL ASSOCIATED STRUCTURES, INLETS, AND RIP-RAP
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13. EXISTING UTILITY TO REMAIN AND BE PROTECTED DURING CONSTRUCTION
14. EXISTING SECURITY CAMERA POLE TO BE SALVAGED FOR REUSE; CONTRACTOR TO COORDINATE WITH APL
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16. CUT AND CAP / BULKHEAD EXISTING UTILITY
17. PROTECT EXISTING FENCE DURING CONSTRUCTION
18. REPLACE EXISTING CURB & GUTTER IN KIND TO NEAREST JOINT AFTER UTILITY INSTALLATION

DEMOLITION LEGEND

- LOD — LIMITS OF DISTURBANCE
- REMOVE EXISTING UTILITY
- REMOVE CONCRETE OR ASPHALT PAVEMENT, OR SIDEWALK/STEPS (SEE DEMOLITION NOTES)
- TEMPORARY PAVEMENT REMOVAL & RESTORATION IN KIND (UTILITY TRENCHING)
- REPLACE EXISTING CURB & GUTTER IN KIND TO NEAREST JOINT AFTER UTILITY INSTALLATION

EXISTING LEGEND

- PROPERTY LINE
- CURB AND GUTTER
- TREE LINE / BRUSH LINE
- TREE / BUSH
- 405 MAJOR CONTOUR
- 404 MINOR CONTOUR
- DITCH
- E ELECTRIC
- T COMMUNICATIONS
- G GAS
- SD STORM
- S SANITARY
- W WATER
- E ELECTRIC
- T COMM.
- FO FIBER OPTIC
- G GAS
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- W WATER
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- E ELECTRIC HANDHOLE
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- FO COMMUNICATIONS HANDHOLE
- SD # STORM MANHOLE AND IDENTIFIER
- # STORM INLET AND IDENTIFIER
- STORM CLEAN OUT
- SS # SANITARY MANHOLE AND IDENTIFIER
- WATER VALVE
- W WATER STRUCTURE
- FIRE HYDRANT
- GAS VALVE

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

RK&K
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Ph: 410.728.2900 Contact: Matt Thomasson
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PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. MATTESON — 49432 — REGISTERED PROFESSIONAL ENGINEER

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EX. CONDITION & DEMO PLAN - EAST BORROW AREA (PHASE 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 19 OF 73

C-283

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\ad.rkk.com\fs\Cloud\Projects\2021\21047_API.2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-283 Ex. Condition & Demo Plan - East Borrow Area (Phase 2).dwg Oct 31, 2023 1:13pm jsoltz

GENERAL NOTES

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MATCHLINE - SEE SHEET C-281

MATCHLINE - SEE SHEET C-282

MATCHLINE - SEE SHEET C-285

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

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SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 12/22/24

Director — Date 12/22/24

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STATE OF MARYLAND — CHARLES W. WHITCOMB — 49432 — PROFESSIONAL ENGINEER

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EX. CONDITION & DEMO PLAN - WEST BORROW AREA (PHASE 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 20 OF 73

C-284

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

CONTRACTOR TO PROVIDE TEMPORARY LIGHTING DURING CONSTRUCTION

CONTRACTOR TO PROVIDE TEMPORARY LIGHTING DURING CONSTRUCTION

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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STATE OF MARYLAND — CHARLES W. W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER

Charles Mitchell

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EX. CONDITION & DEMO PLAN - WEST BORROW AREA (PHASE 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 21 OF 73

C-285

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

MATCHLINE - SEE SHEET C-288

MATCHLINE - SEE SHEET C-287

GENERAL NOTES

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EAST BORROW AREA LANDCOVER SUMMARY

LIMITS OF DISTURBANCE......263,170 SF
EX. IMPERVIOUS AREA............79,300 SF
PROP. IMPERVIOUS AREA................0 SF
CUT..44,125 CY
FILL..2,450 CY
NET CUT...................................41,675 CY

PROPOSED GRADING LEGEND

420	MAJOR CONTOUR
421	MINOR CONTOUR
× EX. 406.04	EXISTING SPOT ELEVATION
×406.04	PROPOSED SPOT ELEVATION
3.5%	SLOPE

EXISTING LEGEND

	PROPERTY LINE
	CURB AND GUTTER
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405	MAJOR CONTOUR
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(#)	STORM INLET AND IDENTIFIER
	STORM CLEAN OUT
(SS) [#]	SANITARY MANHOLE AND IDENTIFIER
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(W)	WATER STRUCTURE
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PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

20 0 20 40
SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	Date 12-5-23
Chief, Division of Land Development	Date 2/22/24
Director	Date 2/22/24

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STATE OF MARYLAND – CHARLES W. W. MITCHELL III – PROFESSIONAL ENGINEER 49432 – 11/1/23

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

SITE AND GRADING PLAN - EAST BORROW AREA (PHASE 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 22 OF 73

C-286
RK&K PROJECT NUMBER 21047.013
SCALE: As Shown

SDP-18-060

MATCHLINE - SEE SHEET C-286

MATCHLINE - SEE SHEET C-289

MATCHLINE - SEE SHEET C-290

ROP TYPE 3
MDE E-3, RIP RAP CLASS 1
LMIN: 10'
W: 6'
T: 19"
HMIN: 2'
D50: 9.5"

EXISTING DUCT BANK TO BE PROTECTED DURING CONSTRUCTION AND GRADING OPERATIONS

EXISTING DUCT BANK TO BE PROTECTED DURING CONSTRUCTION AND GRADING OPERATIONS

EXISTING DUCT BANK TO BE PROTECTED DURING CONSTRUCTION AND GRADING OPERATIONS

WEST SERVICE ROAD

CENTER SERVICE ROAD

SUBSTATION #36

SUBSTATION #25

WOOD STEPS

TRAILER

WOODEN DECK

BUILDING

METAL GRATE

SHIPPING CONTAINER

GENERATOR

ROCKS

GATE

SWITCHGEAR

GRAVEL PAD

ELEC CABINET

ELEC TRANS

MAC PATH TO BLDG 14 & 15

WOOD DECK & STEPS

PATHWAY TO BLDG 14 & 15

SPEED LIMIT 15 MPH

3" STAND PIPE

ELEC OUTLET

XFMR

GRASS

24" CEDAR

N 546733
E 1341702

N 546433
E 1341702

E 1341222
N 546733

PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

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SCALE: 1" = 20'

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C-287

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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RUMMEL, KLEPPER & KAHL, LLP
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RESPONSIVE PEOPLE • CREATIVE SOLUTIONS
700 East Pratt Street, Suite 500
Baltimore, MD 21202
Ph: 410.728.2900 Contact: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

SITE AND GRADING PLAN - EAST BORROW AREA (PHASE 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 23 OF 73

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\Ad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 – OTA 3\CADD\Plans\C–287 Site and Grading Plan – East Borrow Area (Phase 2).dwg Oct 31, 2023 1:16pm jbaltz

MATCHLINE - SEE SHEET C-286

GENERAL NOTES

1. TOPOGRAPHIC AND SURFACE INFORMATION SHOWN WAS OBTAINED FROM FIELD SURVEY BY RK&K, REVISED ON MAY 2, 2023. UTILITY INFORMATION SHOWN WAS PROVIDED BY AIIDATA, REVISED ON MAY 2, 2023.
2. 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 ARCHITECT / ENGINEER PRIOR TO THE START OF ANY WORK.
3. BEARINGS AND HORIZONTAL COORDINATES SHOWN ON THIS PLAN ARE BASED UPON MARYLAND STATE PLANE COORDINATE SYSTEM NAD83. VERTICAL ELEVATIONS SHOWN ARE BASED UPON VERTICAL DATUM NAVD88.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" AT 1-800-257-7777 FIVE DAYS PRIOR TO THE START OF ANY EXCAVATION WORK.
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EAST BORROW AREA LANDCOVER SUMMARY

LIMITS OF DISTURBANCE	263,170 SF
EX. IMPERVIOUS AREA	79,300 SF
PROP. IMPERVIOUS AREA	0 SF
CUT	44,125 CY
FILL	2,450 CY
NET CUT	41,675 CY

PROPOSED GRADING LEGEND

420	MAJOR CONTOUR
421	MINOR CONTOUR
× EX. 406.04	EXISTING SPOT ELEVATION
×406.04	PROPOSED SPOT ELEVATION
3.5%	SLOPE

EXISTING LEGEND

- PROPERTY LINE
- CURB AND GUTTER
- TREE LINE / BRUSH LINE
- TREE / BUSH
- 405 MAJOR CONTOUR
- 404 MINOR CONTOUR
- DITCH
- E ELECTRIC
- T COMMUNICATIONS
- G GAS
- SD STORM
- S SANITARY
- W WATER
- E ELECTRIC
- T COMM.
- FO FIBER OPTIC
- G GAS
- SD STORM
- S SANITARY
- W WATER
- ELECTRIC POLE / LIGHT POLE
- E ELECTRIC MANHOLE
- E ELECTRIC HANDHOLE
- T COMMUNICATIONS MANHOLE
- FO COMMUNICATIONS HANDHOLE
- SD # STORM MANHOLE AND IDENTIFIER
- # STORM INLET AND IDENTIFIER
- STORM CLEAN OUT
- SS # SANITARY MANHOLE AND IDENTIFIER
- WATER VALVE
- W WATER STRUCTURE
- FIRE HYDRANT
- GAS VALVE

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

20 0 20 40
SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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STATE OF MARYLAND — CHARLES W. MATTHEWS — 49432 — PROFESSIONAL ENGINEER

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DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

SITE AND GRADING PLAN - EAST BORROW AREA (PHASE 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 24 OF 73

C-288

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

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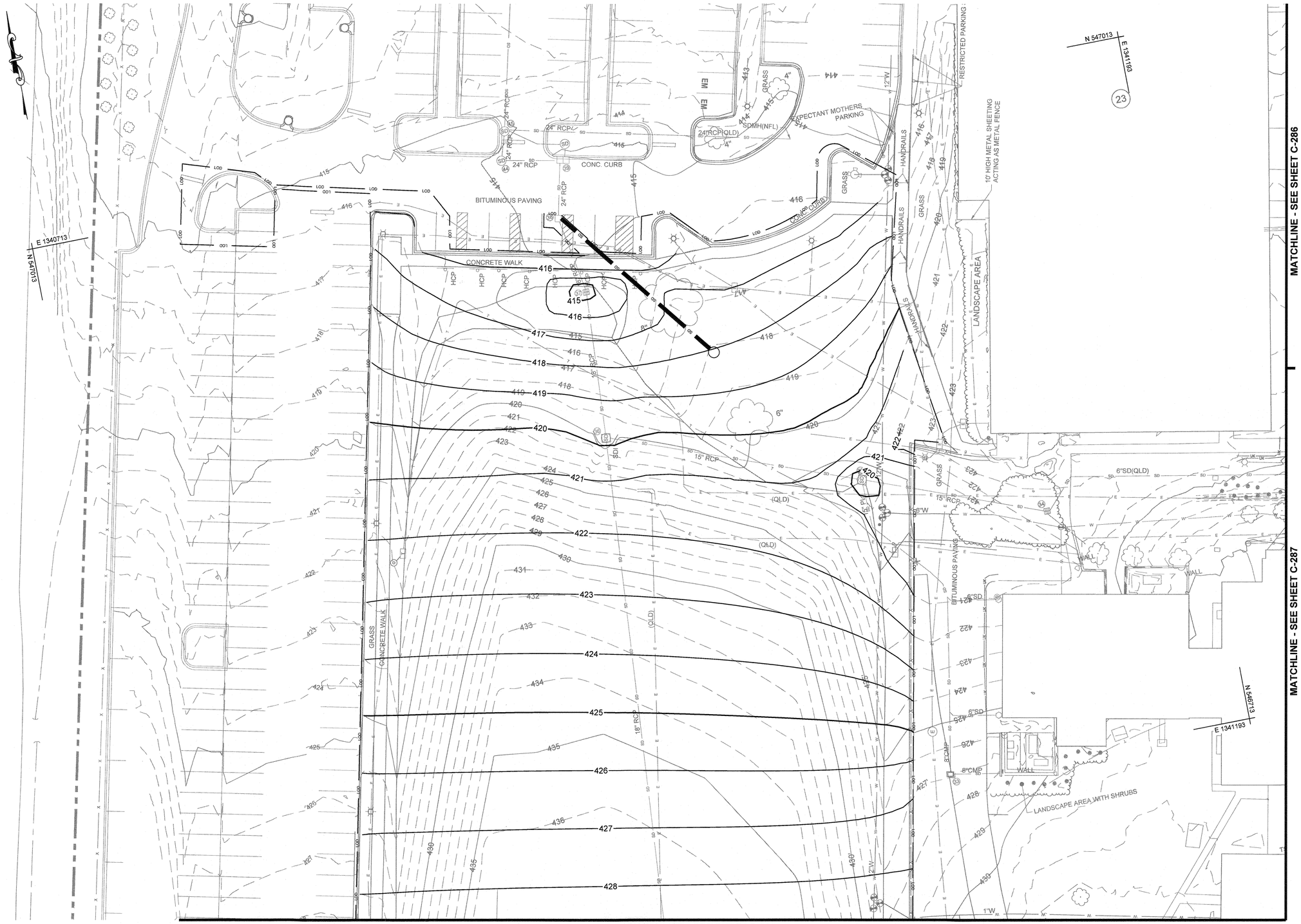

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WEST BORROW AREA LANDCOVER SUMMARY

LIMITS OF DISTURBANCE	116,760 SF
EX. IMPERVIOUS AREA	4,200 SF
PROP. IMPERVIOUS AREA	0 SF
CUT	14,850 CY
FILL	470 CY
NET CUT	14,380 CY

PROPOSED GRADING LEGEND

420	MAJOR CONTOUR
421	MINOR CONTOUR
× EX. 406.04	EXISTING SPOT ELEVATION
×406.04	PROPOSED SPOT ELEVATION
3.5%	SLOPE

EXISTING LEGEND

PROPERTY LINE
CURB AND GUTTER
TREE LINE / BRUSH LINE
TREE / BUSH
405 MAJOR CONTOUR
404 MINOR CONTOUR
DITCH
E ELECTRIC
T COMMUNICATIONS
G GAS
SD STORM
S SANITARY
W WATER
E ELECTRIC
T COMM.
FO FIBER OPTIC
G GAS
SD STORM
S SANITARY
W WATER
ELECTRIC POLE / LIGHT POLE
E ELECTRIC MANHOLE
E ELECTRIC HANDHOLE
T COMMUNICATIONS MANHOLE
FO COMMUNICATIONS HANDHOLE
SD # STORM MANHOLE AND IDENTIFIER
STORM INLET AND IDENTIFIER
STORM CLEAN OUT
SS # SANITARY MANHOLE AND IDENTIFIER
WATER VALVE
W WATER STRUCTURE
FIRE HYDRANT
GAS VALVE

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20 0 20 40
SCALE: 1" = 20'

C-289

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — PROFESSIONAL ENGINEER
Charles Mitchell

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

SITE AND GRADING PLAN - WEST BORROW AREA (PHASE 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 25 OF 73

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\od.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 – OTA 3\CADD\Plans\C-289 Site and Grading Plan – West Borrow Area (Phase 2).dwg Oct 31, 2023 1:18pm jsaltz

MATCHLINE - SEE SHEET C-289

MATCHLINE - SEE SHEET C-287

MATCHLINE - SEE SHEET C-287

MANHOLE RIM ELEVATION TO BE ADJUSTED TO PROPOSED GRADE

MANHOLE RIM ELEVATION TO BE ADJUSTED TO PROPOSED GRADE

MANHOLE RIM ELEVATION TO BE ADJUSTED TO PROPOSED GRADE

15" CMP

12" CMP

18" RCP

GRASS

UTILITY POLE (NAU)

GW(OLD)

NO PARKING SIGN

CONC. CURB

BITUMINOUS PAVING

GATE

EX. 434.32

EX. 433.58

EX. 433.18

EX. 434.59

E 1340711

N 545495

N 546595

E 1341161

N 545312

E 1341161

36A

101

WEST SERVICE ROAD

CONC ADA RAMP

MAC

CONC WALL

T-H2-06

(OLC)

(2)4"G

EW

20 0 20 40

SCALE: 1" = 20'

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

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WEST BORROW AREA LANDCOVER SUMMARY

LIMITS OF DISTURBANCE	116,760 SF
EX. IMPERVIOUS AREA	4,200 SF
PROP. IMPERVIOUS AREA	0 SF
CUT	14,850 CY
FILL	470 CY
NET CUT	14,380 CY

PROPOSED GRADING LEGEND

420	MAJOR CONTOUR
421	MINOR CONTOUR
× EX. 406.04	EXISTING SPOT ELEVATION
×406.04	PROPOSED SPOT ELEVATION
3.5%	SLOPE

EXISTING LEGEND

- PROPERTY LINE
- CURB AND GUTTER
- TREE LINE / BRUSH LINE
- TREE / BUSH
- MAJOR CONTOUR
- MINOR CONTOUR
- DITCH
- ELECTRIC
- COMMUNICATIONS
- GAS
- STORM
- SANITARY
- WATER
- ELECTRIC
- COMM.
- FIBER OPTIC
- GAS
- STORM
- SANITARY
- WATER
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- COMMUNICATIONS MANHOLE
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- STORM MANHOLE AND IDENTIFIER
- STORM INLET AND IDENTIFIER
- STORM CLEAN OUT
- SANITARY MANHOLE AND IDENTIFIER
- WATER VALVE
- WATER STRUCTURE
- FIRE HYDRANT
- GAS VALVE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 12/22/24

Director — Date 2/22/24

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STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

RK&K			
BY	NO.	REVISION	DATE
	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

OWNER/DEVELOPER

JOHNS HOPKINS APPLIED PHYSICS LABORATORY

11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

SITE AND GRADING PLAN - WEST BORROW AREA (PHASE 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 26 OF 73

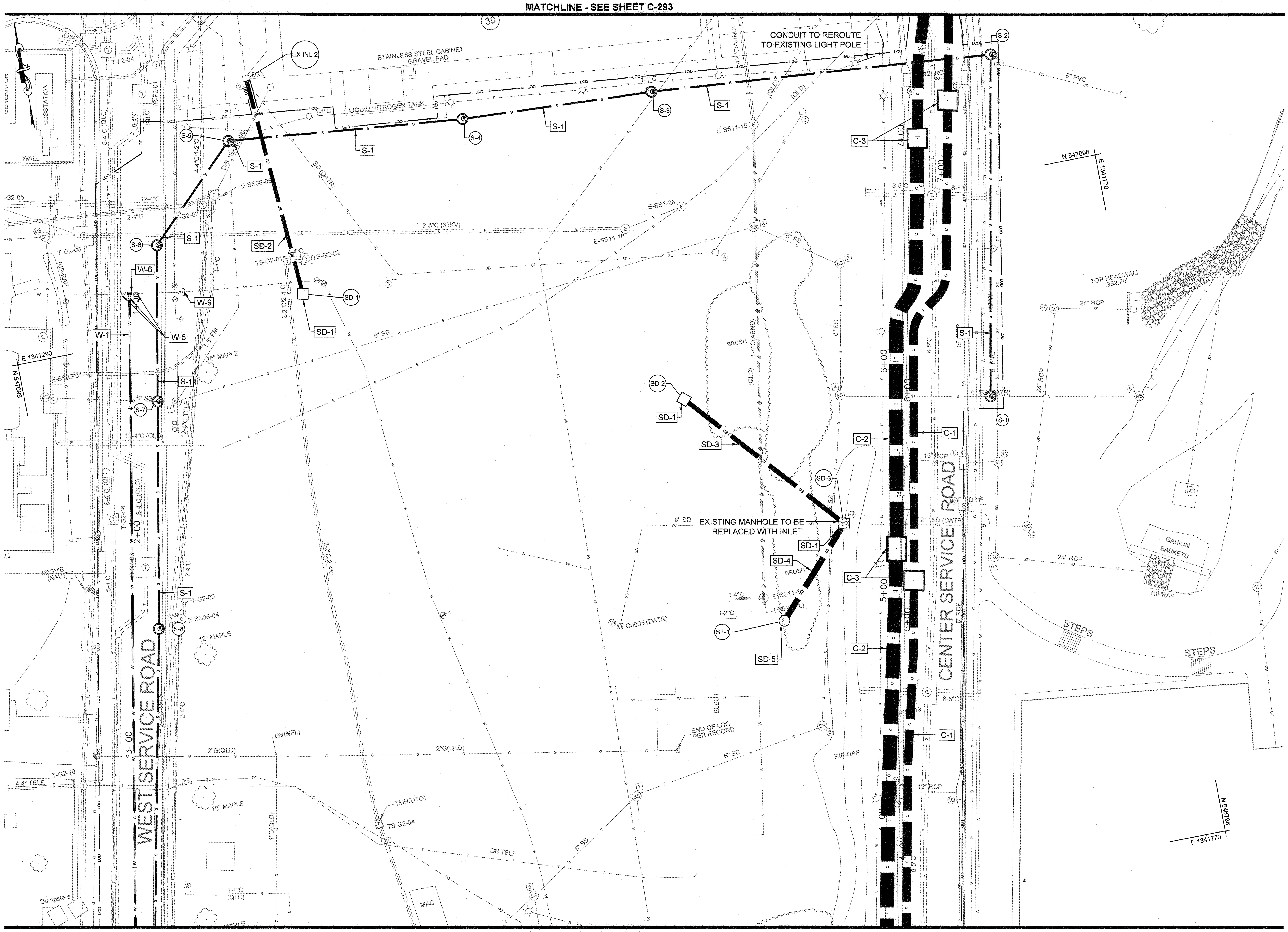
C-290

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

MATCHLINE - SEE SHEET C-293



MATCHLINE - SEE SHEET C-292

GENERAL NOTES

1. TOPOGRAPHIC AND SURFACE INFORMATION SHOWN WAS OBTAINED FROM FIELD SURVEY BY RK&K, COMPLETED DECEMBER 23, 2021. UTILITY INFORMATION SHOWN WAS PROVIDED BY A|I|DATA ON FEBRUARY 4, 2022.
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4. THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY, BASED UPON FIELD OBSERVATIONS AND 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 INVOLVED 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.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" AT 1-800-257-7777 FIVE DAYS PRIOR TO THE START OF ANY EXCAVATION WORK.
6. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY INVERTS AND CLEARANCES FROM NEW WORK PRIOR TO START OF ANY WORK.
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9. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL EXISTING AND PROPOSED BUILDING ENTRANCES DURING ALL PHASES OF CONSTRUCTION, UNLESS OTHERWISE NOTED IN THESE DOCUMENTS. CONTRACTOR SHALL NOTIFY ENGINEER / OWNER IF EXISTING OR PROPOSED CONDITIONS RESTRICT ABILITY TO ACHIEVE POSITIVE DRAINAGE FROM BUILDINGS PRIOR TO THE START OF CONSTRUCTION.

UTILITY KEY NOTES

- C-1 PROPOSED 12-WAY SECURE COMMUNICATION DUCT BANK*
- C-2 PROPOSED 24-WAY COMMUNICATION DUCT BANK*
- C-3 TELECOMMUNICATIONS VAULT (SEE SHEETS C-297, C-298, C-294B)
- C-4 CONNECT TO EXISTING COMMUNICATION MANHOLE (SEE SHEET C-294A)
- S-1 8" SANITARY SEWER (GRAVITY) SCH 40 PVC
- W-1 8" WATER DIP
- W-2 TAP INTO EX. WATER MAIN WITH 22.5° HB WITH 8" VALVE AND VAULT STRAPPED TO WEST SIDE, FOLLOWED BY 4' PIPE AND 11.25° HB
- W-3 45° HB
- W-4 8"x6" TEE & BUTTRESS TO CONNECT TO EX. WATER
- W-5 8" VALVE AND VAULT STRAPPED TO ALL THREE SIDES OF PROPOSED TEE
- W-6 8"x8" TEE & BUTTRESS TO CONNECT TO EX. WATER
- W-7 ANY EXISTING 4" WATER FROM THE PROPOSED TEE TO THIS POINT TO BE REPLACED WITH 6" WATER
- W-8 EXISTING FIRE HYDRANT LINE TO BE REPLACED WITH 6" WATER, 6" VALVE & VAULT, AND NEW FIRE HYDRANT
- W-9 8" VALVE AND VAULT STRAPPED TO PROPOSED CAP (ROADWAY VALVE BOX, PER HC DETAILS. SEE UTILITY DETAILS)
- SD-1 4'x4' YARD INLET (HC D-412)
- SD-2 15" STORM DRAIN
- SD-3 18" STORM DRAIN
- SD-4 TEMPORARY 24" STORM DRAIN SEDIMENT TRAP OUTFALL
- SD-5 33" DIA. RISER STRUCTURE

*WHEN 1 FT APART FROM OUTER DIAMETER, GAP TO BE FILLED WITH #57 STONE

FOR BORROW AREA STRUCTURE TABLES, SEE SHEET C-294

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

20 0 20 40
SCALE: 1" = 20'

20 0 20 40
SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	Date 12-5-23
Chief, Division of Land Development	Date 2/22/24
Director	Date 2/22/24

RK&K
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STATE OF MARYLAND — CHARLES W. W. MITCHELL, III — 49432 — PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

UTILITY PLAN - EAST BORROW AREA (PHASE 2)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

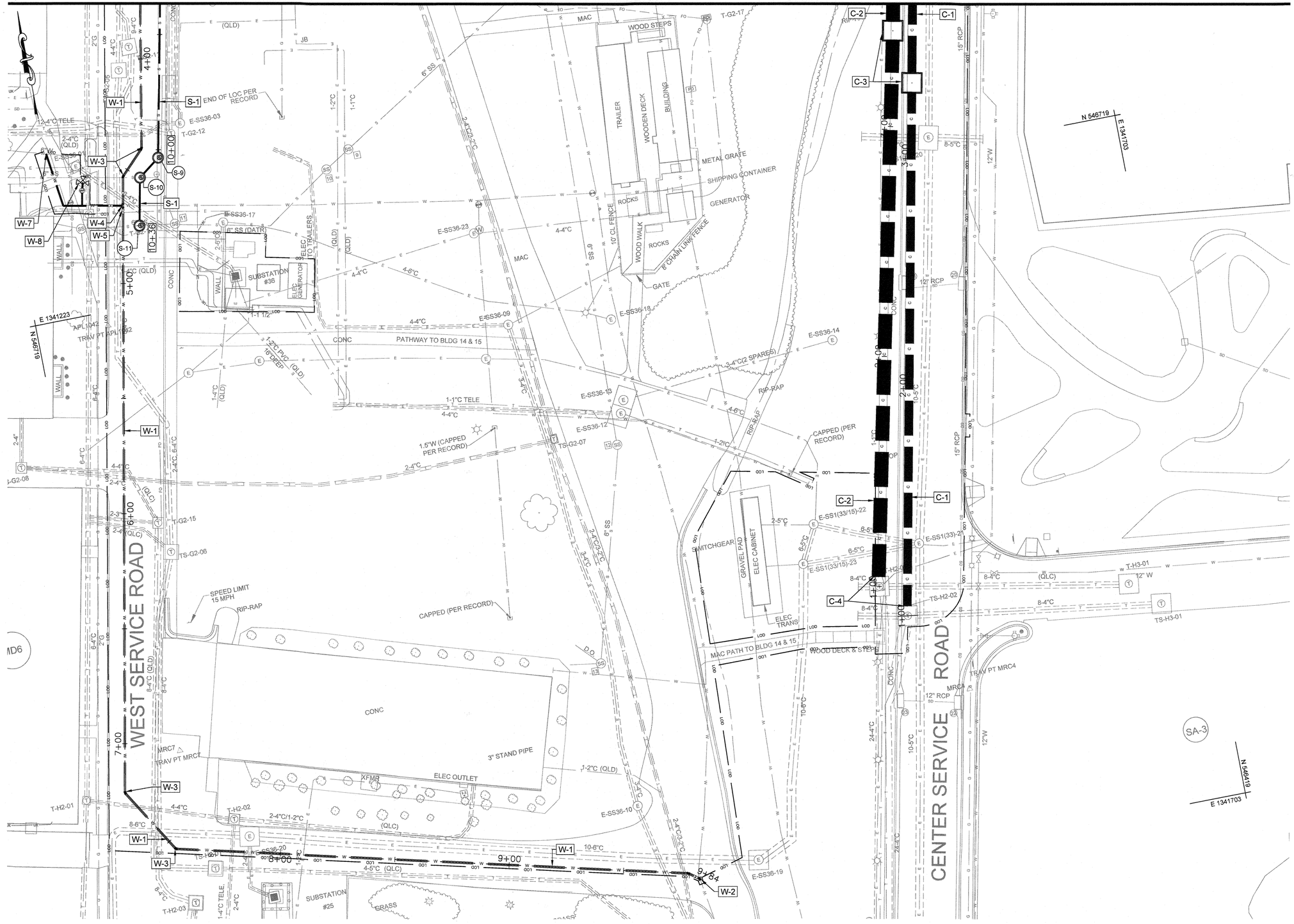
11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 27 OF 73

C-291

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060



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4. THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY, BASED UPON FIELD OBSERVATIONS AND 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 INVOLVED 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.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" AT 1-800-257-7777 FIVE DAYS PRIOR TO THE START OF ANY EXCAVATION WORK.
6. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY INVERTS AND CLEARANCES FROM NEW WORK PRIOR TO START OF ANY WORK.
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UTILITY KEY NOTES

- C-1 PROPOSED 12-WAY SECURE COMMUNICATION DUCT BANK*
- C-2 PROPOSED 24-WAY COMMUNICATION DUCT BANK*
- C-3 TELECOMMUNICATIONS VAULT (SEE SHEETS C-297, C-298, C-294B)
- C-4 CONNECT TO EXISTING COMMUNICATION MANHOLE (SEE SHEET C-294A)
- S-1 8" SANITARY SEWER (GRAVITY) SCH 40 PVC
- W-1 8" WATER DIP
- W-2 TAP INTO EX. WATER MAIN WITH 22.5° HB WITH 8" VALVE AND VAULT STRAPPED TO WEST SIDE, FOLLOWED BY 4' PIPE AND 11.25° HB
- W-3 45° HB
- W-4 8"x6" TEE & BUTTRESS TO CONNECT TO EX. WATER
- W-5 8" VALVE AND VAULT STRAPPED TO ALL THREE SIDES OF PROPOSED TEE
- W-6 8"x8" TEE & BUTTRESS TO CONNECT TO EX. WATER
- W-7 ANY EXISTING 4" WATER FROM THE PROPOSED TEE TO THIS POINT TO BE REPLACED WITH 6" WATER
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- SD-3 18" STORM DRAIN
- SD-4 TEMPORARY 24" STORM DRAIN SEDIMENT TRAP OUTFALL
- SD-5 33" DIA. RISER STRUCTURE

*WHEN 1 FT APART FROM OUTER DIAMETER, GAP TO BE FILLED WITH #57 STONE

FOR BORROW AREA STRUCTURE TABLES, SEE SHEET C-294

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

20 0 20 40
SCALE: 1" = 20'

C-292

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/12/24

Director — Date 2/23/24

RK&K
RUMMEL, KLEPPER & KAHL, LLP
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700 East Pratt Street, Suite 500
Baltimore, MD 21202
Ph: 410.728.2900 Contact: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHAD K. MARTIN — 49432 — PROFESSIONAL ENGINEER — 11/1/2023

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

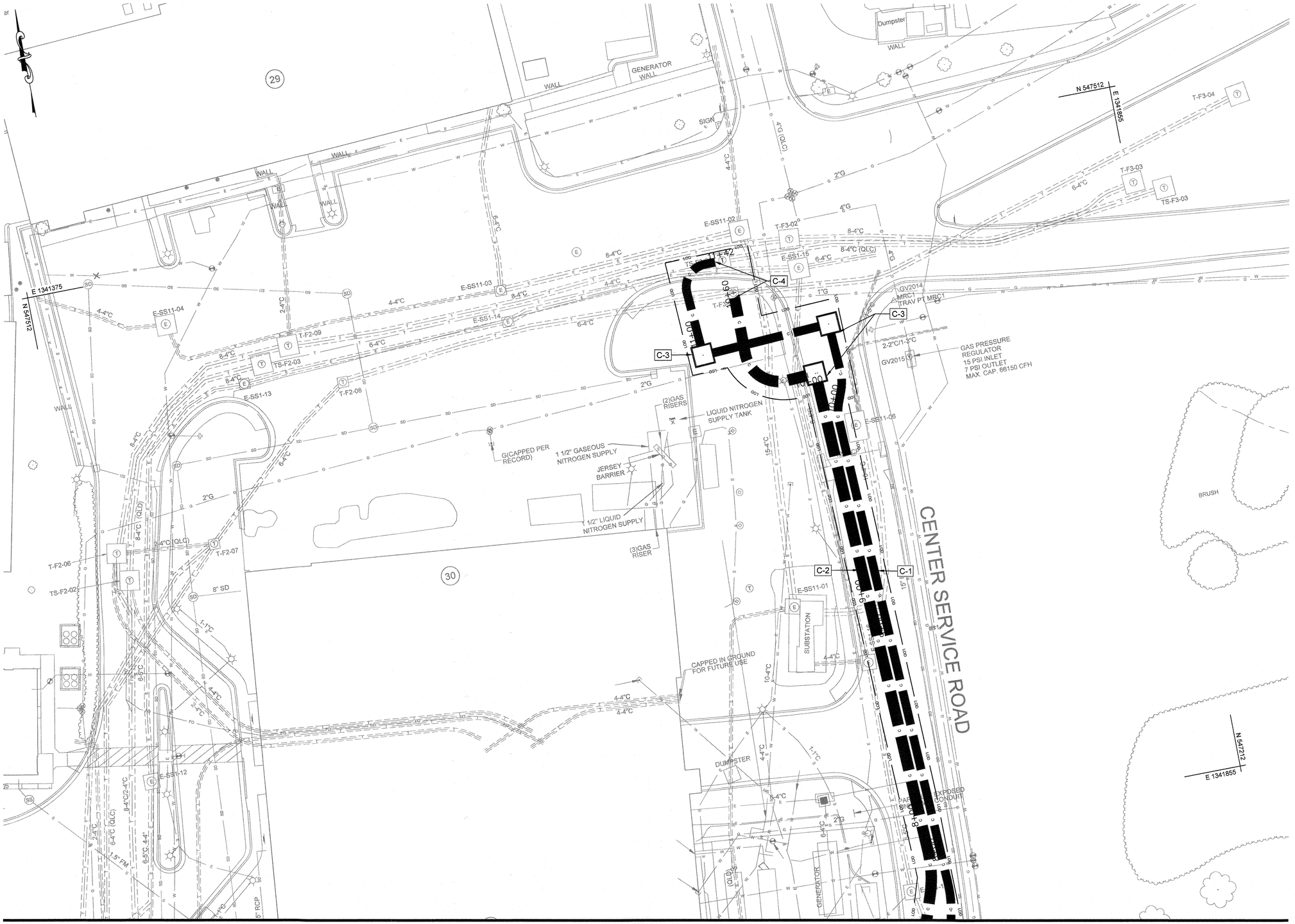
UTILITY PLAN - EAST BORROW AREA (PHASE 2)
JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY
OUTDOOR TESTING AREAS
11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 18 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 28 OF 73

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\cad.rkk.com\fs\Cloud\Projects\21047_APL2021WSA\Projects\Task 13 - OTA 3\CADD\Plans\C-292 Utility Plan - East Borrow Area (Phase 2).dwg Oct. 31, 2023 1:20pm jsaltz



MATCHLINE - SEE SHEET C-291

GENERAL NOTES

1. TOPOGRAPHIC AND SURFACE INFORMATION SHOWN WAS OBTAINED FROM FIELD SURVEY BY RK&K, COMPLETED DECEMBER 23, 2021. UTILITY INFORMATION SHOWN WAS PROVIDED BY A|I|DATA ON FEBRUARY 4, 2022.
2. 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 ARCHITECT/ENGINEER PRIOR TO THE START OF ANY WORK.
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*WHEN 1 FT APART FROM OUTER DIAMETER, GAP TO BE FILLED WITH #57 STONE

FOR BORROW AREA STRUCTURE TABLES, SEE SHEET C-294

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 12/22/24

Director — Date 12/22/24

RK&K
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STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

RK&K			
4	New Sheet - OTA-3 and Borrow Area Modifications		11/1/23
BY	NO.	REVISION	DATE

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

UTILITY PLAN - EAST BORROW AREA (PHASE 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 29 OF 73

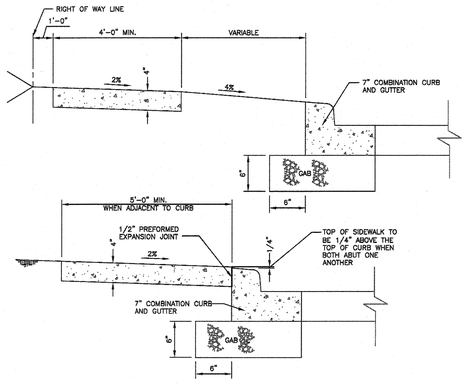
C-293

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

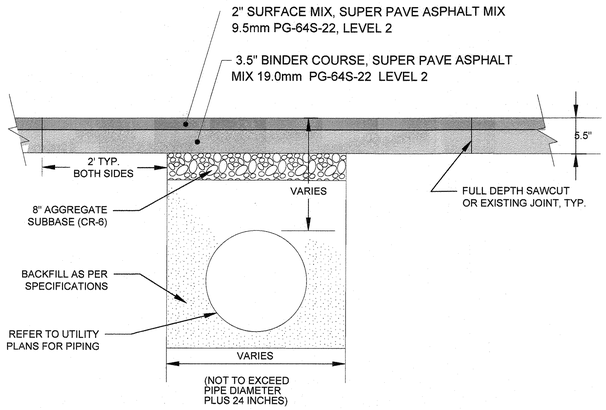
\\cad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-293 Utility Plan - East Borrow Area (Phase 2).dwg Oct 31, 2023 1:21pm jsaltz



NOTES:

1. SIDEWALK TO BE SCRIBED IN 5'-0" MAXIMUM SQUARES.
2. EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO BE MORE THAN 15' APART, OR 16' FOR 4' WIDE SIDEWALK.
3. 1/2" PREFORMED EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK.
4. CONCRETE TO BE MIX #3.
5. WHEN SIDEWALK ABUTS CURB, SIDEWALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED EXPANSION JOINT BETWEEN SIDEWALK AND CURB.
6. ON LONGITUDINAL SIDEWALK GRADES OF 5% OR GREATER, A CONCRETE HEADER, 6" THICK AND 6" DEEP BELOW THE NORMAL 4" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERVALS OF 48 FEET. THE HEADERS SHALL BE PLACED AT THE EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.
7. SIDEWALK WIDTH ADJACENT TO CURB SHALL BE 5'-0" MINIMUM EXCEPT SIDEWALK ADJACENT TO CURB IN CUL-DE-SAC BULBS MAY BE 4'-0" WIDE.
8. SIDEWALK LOCATED 2' OR MORE FROM CURB MAY BE 4'-0" IN WIDTH WITH A 5'x5' PAVED SECTION PLACED 200' APART.
9. 4'-0" SIDEWALK REQUIRES A PASSING AREA (SEE DETAIL R-4.01).

Revised 5/20/2017 / Revised 5/1/2007 / Approved	Howard County, Maryland Department of Public Works — Approved: Thomas E. Smith, Chief, Bureau of Engineering	CONCRETE SIDEWALK	Detail R-3.05



UTILITY TRENCH DETAIL IN VEHICULAR CONCRETE PAVEMENT

SCALE: NONE

NOTE: FOR ADDITIONAL UTILITY DETAILS, SEE SHEETS C-216 TO C-219

SANITARY STRUCTURE TABLE			
NAME	NORTHING	EASTING	DESCRIPTION
S-1	547003.4749	1341705.14	PRECAST 48" SANITARY SEWER DOGHOUSE MANHOLE (HC G-5.14)
S-2	547149.6998	1341733.34	PRECAST 48" SANITARY SEWER MANHOLE (HC G-5.12)
S-3	547161.9077	1341584.61	PRECAST 48" SANITARY SEWER MANHOLE (HC G-5.12)
S-4	547166.0274	1341501.33	PRECAST 48" SANITARY SEWER MANHOLE (HC G-5.12)
S-5	547176.0054	1341398.86	PRECAST 48" SANITARY SEWER MANHOLE (HC G-5.12)
S-6	547137.3340	1341359.64	PRECAST 48" SANITARY SEWER MANHOLE (HC G-5.12)
S-7	547070.5515	1341347.06	PRECAST 48" SANITARY SEWER MANHOLE (HC G-5.12)
S-8	546973.1721	1341328.78	PRECAST 48" SANITARY SEWER MANHOLE (HC G-5.12)
S-9	546780.3419	1341289.09	PRECAST 48" SANITARY SEWER MANHOLE (HC G-5.12)
S-10	546773.3674	1341279.66	PRECAST 48" SANITARY SEWER MANHOLE (HC G-5.12)
S-11	546752.8675	1341275.53	PRECAST 48" SANITARY SEWER DOGHOUSE MANHOLE (HC G-5.14)

STORM DRAIN STRUCTURE TABLE			
NAME	NORTHING	EASTING	DESCRIPTION
EX INL 2	547201.0251	1341411.63	RECTANGULAR JUNCTION STRUCTURE NF
EX INL 38	546982.3996	1340939.51	RECTANGULAR JUNCTION STRUCTURE NF
SD-1	547104.5528	1341418.30	YARD INLET (PRECAST) HC D-4.12
SD-2	547027.6689	1341573.23	YARD INLET (PRECAST) HC D-4.12
SD-3	546961.1761	1341631.79	YARD INLET (PRECAST) HC D-4.12
ST-1	546924.5319	1341598.10	33" DIAMETER CMP RISER WITH TRASH RACK
ST-2	546912.6510	1340994.86	21" DIAMETER CMP RISER WITH TRASH RACK

TELECOMM STRUCTURE TABLE			
NAME	NORTHING	EASTING	DESCRIPTION
C-1	546773.3689	1341614.46	8'X8'X8' VAULT
C-2	546946.0757	1341652.16	10'X8'X9' VAULT
C-3	547119.8032	1341694.96	8'X8'X14' VAULT
C-4	547414.3942	1341705.66	8'X8'X11' VAULT
C-5	546749.5869	1341618.32	8'X8'X12' VAULT
C-6	546930.9547	1341657.05	8'X8'X10' VAULT
C-7	547133.5349	1341711.20	8'X8X13' VAULT
C-8	547434.3504	1341715.39	8'X8X10' VAULT
C-9	547431.5198	1341659.09	8'X8'X15' VAULT
T-F3-01	547455.5409	1341677.16	T-F3-01
T-H2-04	546537.6643	1341562.81	T-H2-04
TS-F3-01	547470.3482	1341675.14	TS-F3-01
TS-H2-02	546522.5340	1341572.63	TS-H2-02

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 11/22/24

Director — Date 2/22/24

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: Matt Thomasson — www.rkk.com

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STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

OWNER/DEVELOPER

JOHNS HOPKINS APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

SITE DETAILS - BORROW AREAS

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 30 OF 73

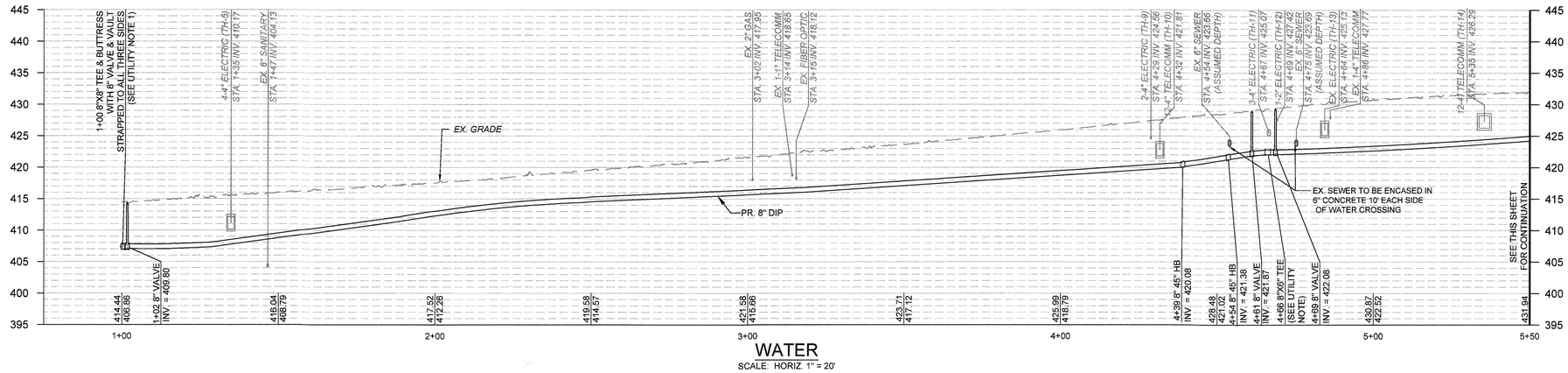
C-294

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\ad.rkk.com\ts\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-294 Site Details & Structure Table.dwg Oct 31, 2023 1:21pm jsaltz

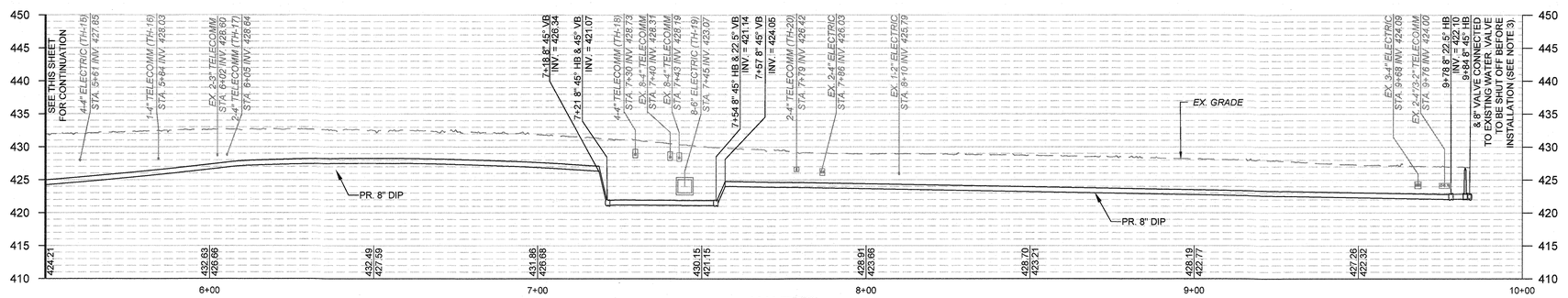


WATER

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

UTILITY NOTES

1. CONTRACTOR TO CONFIRM DEPTH OF EXISTING UTILITY CROSSINGS AND TIE-IN POINTS PRIOR TO CONSTRUCTION. ALL EXISTING DEPTHS SHOWN HAVE BEEN ASSUMED AT STANDARD DEPTHS PER TYPICAL ENGINEERING PRACTICE.



WATER

SCALE: HORIZ. 1" = 20'
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UTILITY NOTES

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2. TEST PITS WILL BE CONDUCTED TO VERIFY DEPTHS OF SELECT UTILITIES TO REMAIN BEFORE CONSTRUCTION DOCUMENT ISSUANCE.
3. CONTRACTOR TO COORDINATE WITH OWNER FOR TEMPORARY SHUT OFF OF EXISTING WATER AT LEAST ONE MONTH IN ADVANCE OF INSTALLATION.

PROFILE LEGEND

FINISHED GRADE
INVERT
STATION

20 0 20 40
HORIZ SCALE: 1" = 20'

10 0 10 20
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STATE OF MARYLAND — CHARLES W. W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER — 11/1/23

Charles Mitchell

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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LAUREL, MARYLAND 20723

WATER PROFILES - BORROW AREA (PHASE 2)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 18 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 31 OF 73

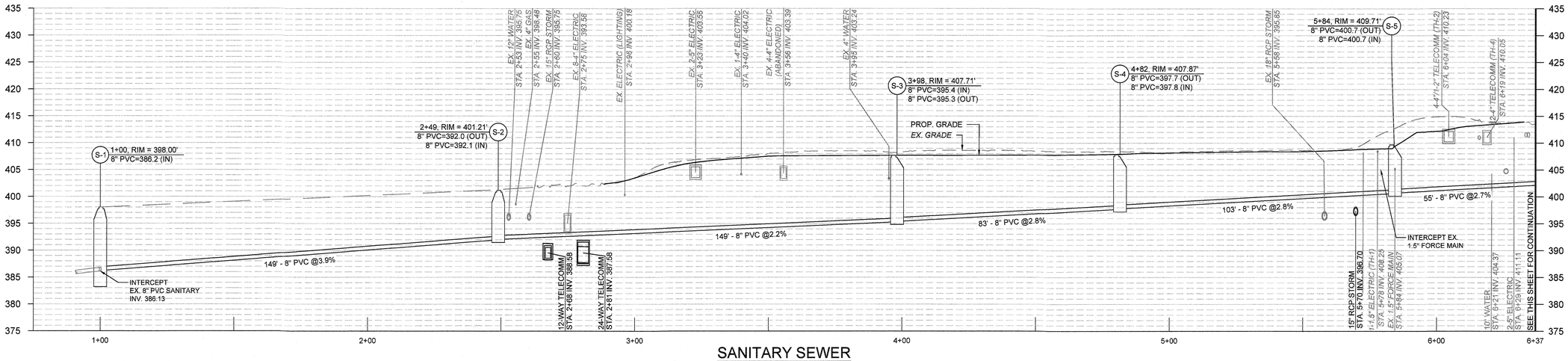
C-295

RK&K PROJECT NUMBER
21047.013

SCALE:
As Shown

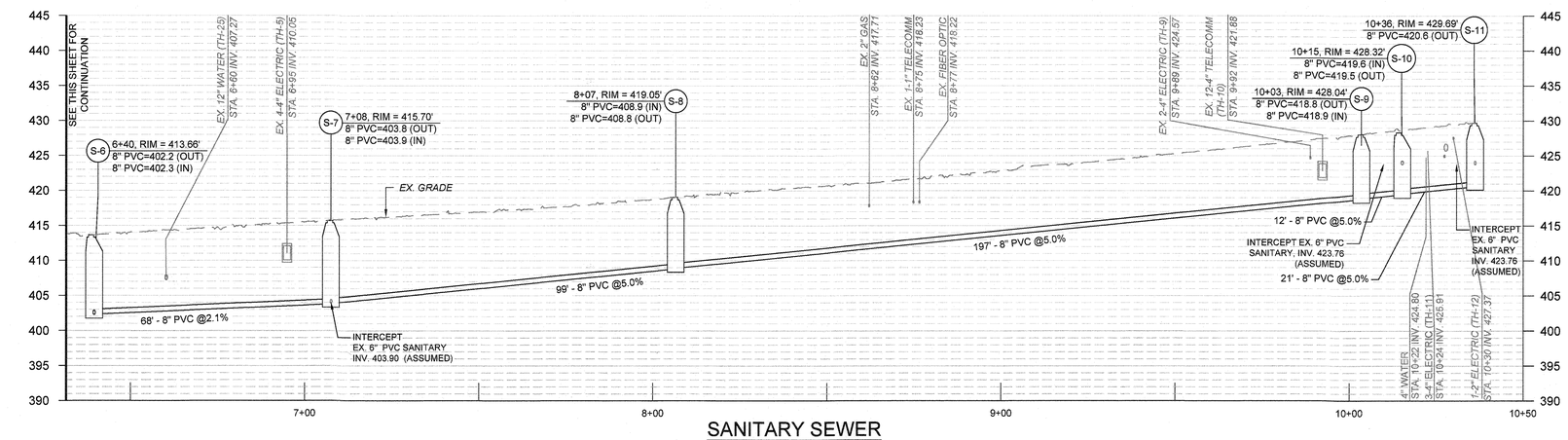
SDP-18-060

\\adc.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-295 Water Profiles - Borrow Area (Phase 2).dwg Oct 31, 2023 1:22pm jsaltz



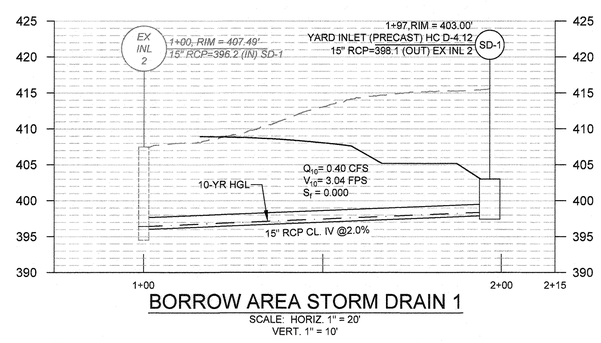
SANITARY SEWER

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'



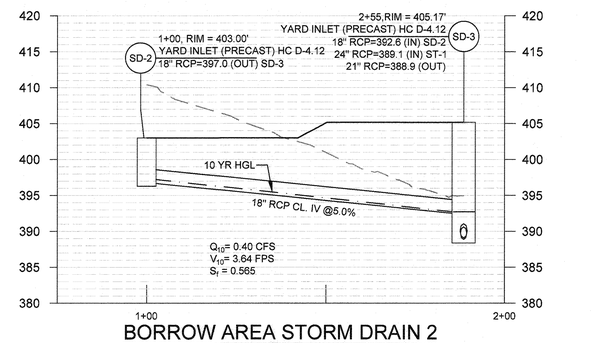
SANITARY SEWER

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'



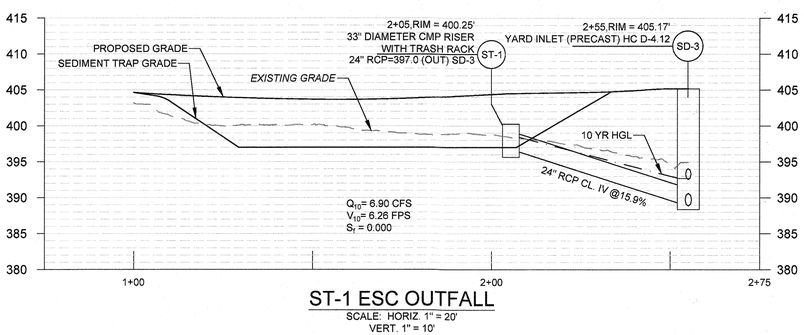
BORROW AREA STORM DRAIN 1

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'



BORROW AREA STORM DRAIN 2

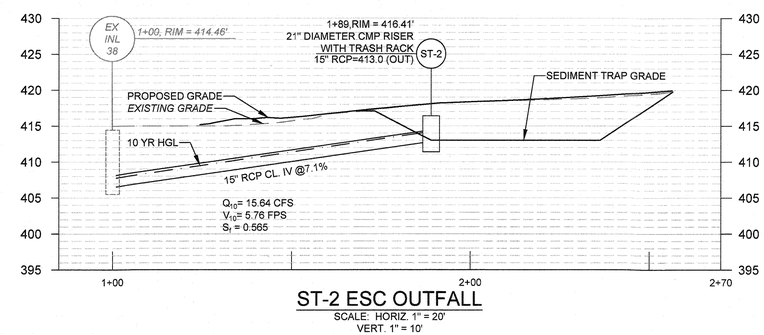
SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'



ST-1 ESC OUTFALL

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

NOTE: ADDITIONAL SEDIMENT TRAP DESIGN INFORMATION CAN BE FOUND ON THE EROSION SEDIMENT CONTROL PROFILES ONSHEET C-698



ST-2 ESC OUTFALL

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

NOTE: ADDITIONAL SEDIMENT TRAP DESIGN INFORMATION CAN BE FOUND ON THE EROSION SEDIMENT CONTROL PROFILES ONSHEET C-698

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

20 0 20 40
HORIZ SCALE: 1" = 20'

10 0 10 20
VERT. SCALE: 1" = 10'

C-296

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/26/24

Director — Date 2/22/24

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Ph: 410.728.2900
Contact: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

SANITARY SEWER PROFILES - BORROW AREA (PHASE 2)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

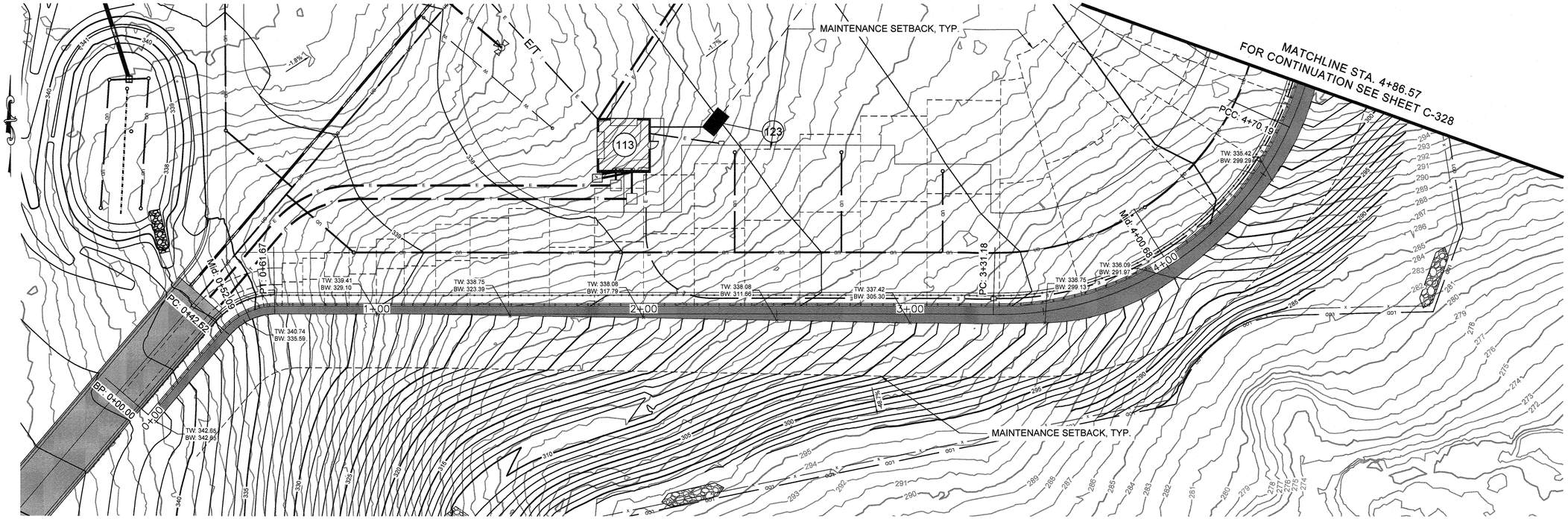
11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 32 OF 73

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

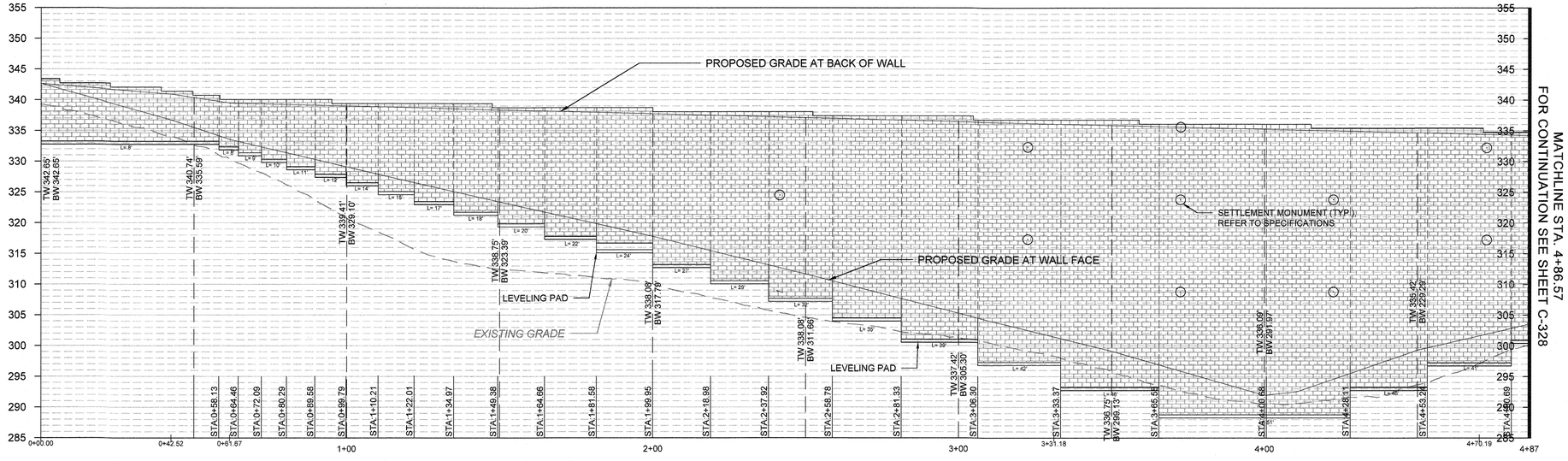
SDP-18-060

\\cad.rkk.com\fs\Cloud Projects\2021\21047_APL 2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-296 Sanitary Sewer Profiles - Borrow Area (Phase 2).dwg Oct 31, 2023 1:23pm jsaltz



OTA-3 RETAINING WALL PLAN VIEW

SCALE: 1" = 20'



OTA-3 RETAINING WALL PROFILE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

NOTE:

1. FOR WALL SECTIONS, SEE SHEET C-331.
2. LENGTHS FOR GEO-SYNTHETIC REINFORCEMENT (L) GIVEN ARE MINIMUMS. SEE TYPICAL SECTION FOR DETAILS.

SCALE: 1" = 20'

SCALE: 1" = 10'

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL REFERRED TO AS THE EAST AND WEST BORROW AREAS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

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STATE OF MARYLAND — CHARLES W. MATTHEWS — 49432 — 11/1/2023

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BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

OWNER/DEVELOPER
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11100 JOHNS HOPKINS ROAD
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RETAINING WALL ELEVATION - OTA 3
(PHASE 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 37 OF 73

C-327

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

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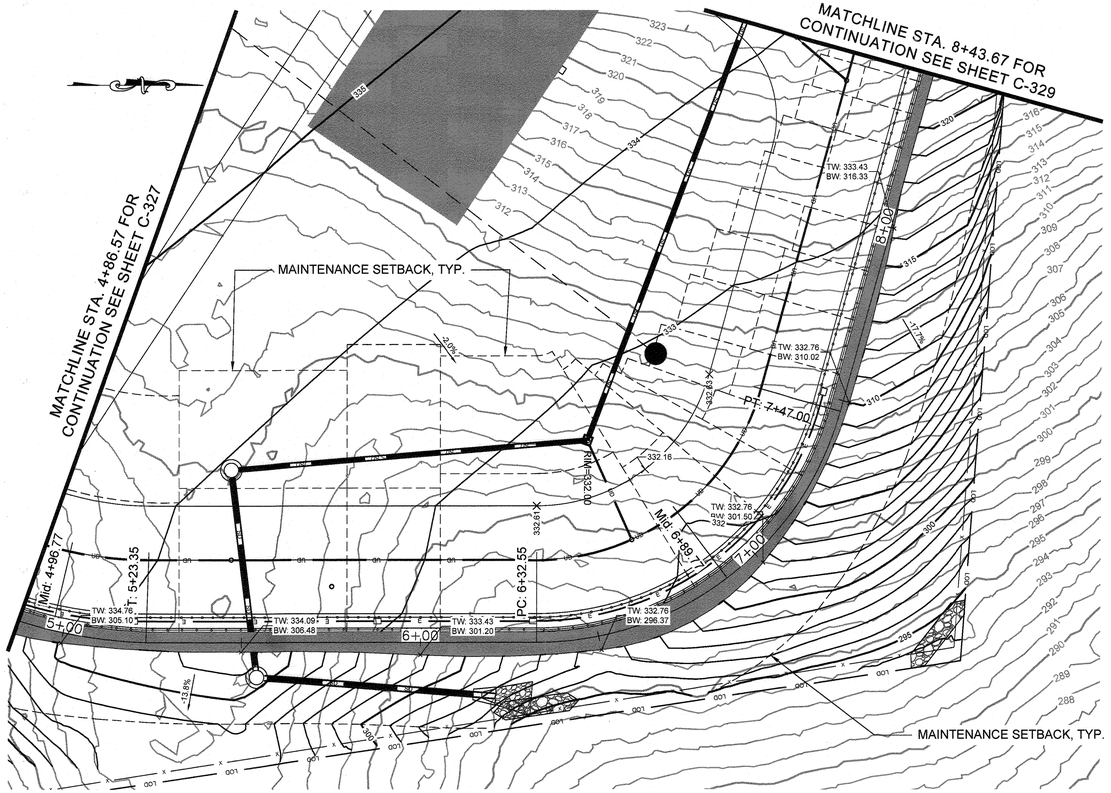
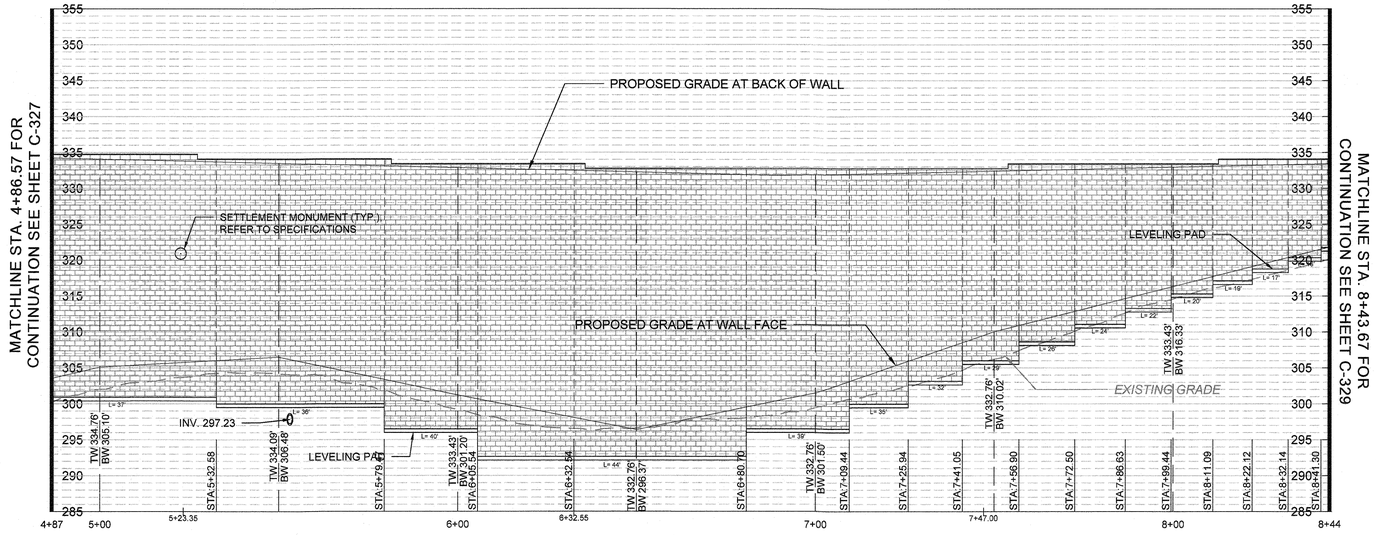


OTA-3 RETAINING WALL PLAN VIEW

SCALE: 1" = 20'



OTA-3 RETAINING WALL PROFILE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

20 10 0 20 40
SCALE: 1" = 20'

10 5 0 10 20
SCALE: 1" = 10'

NOTE:
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BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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RETAINING WALL ELEVATION - OTA 3
(PHASE 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 38 OF 73

C-328

RK&K PROJECT NUMBER
21047.013

SCALE:
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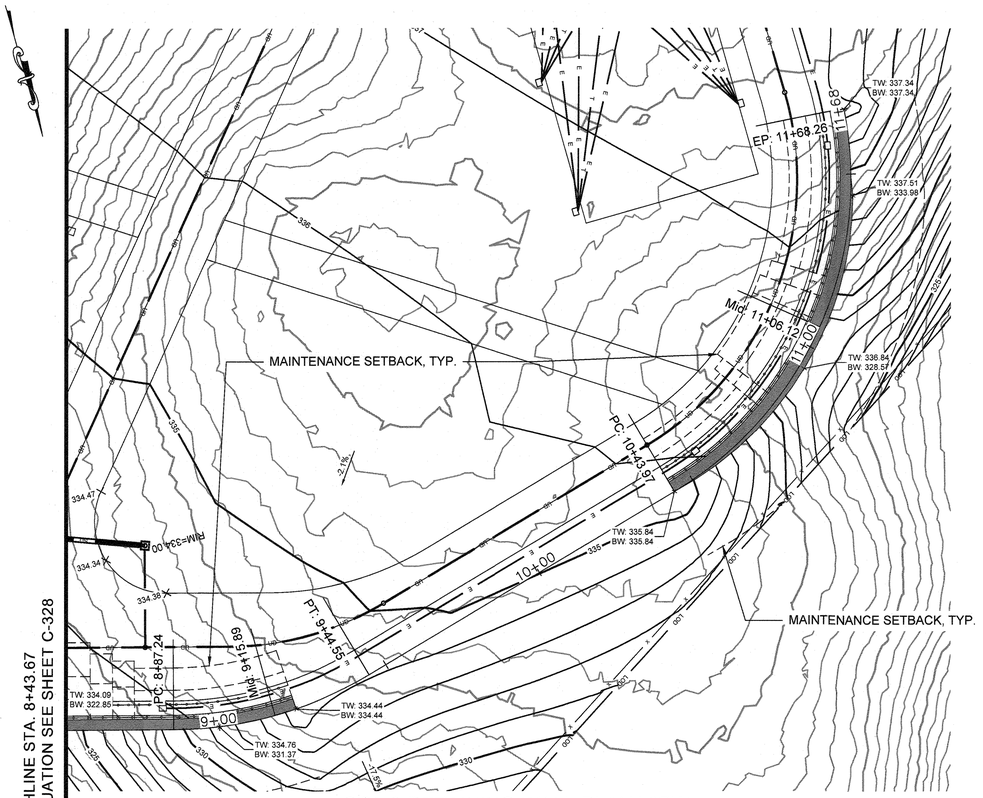
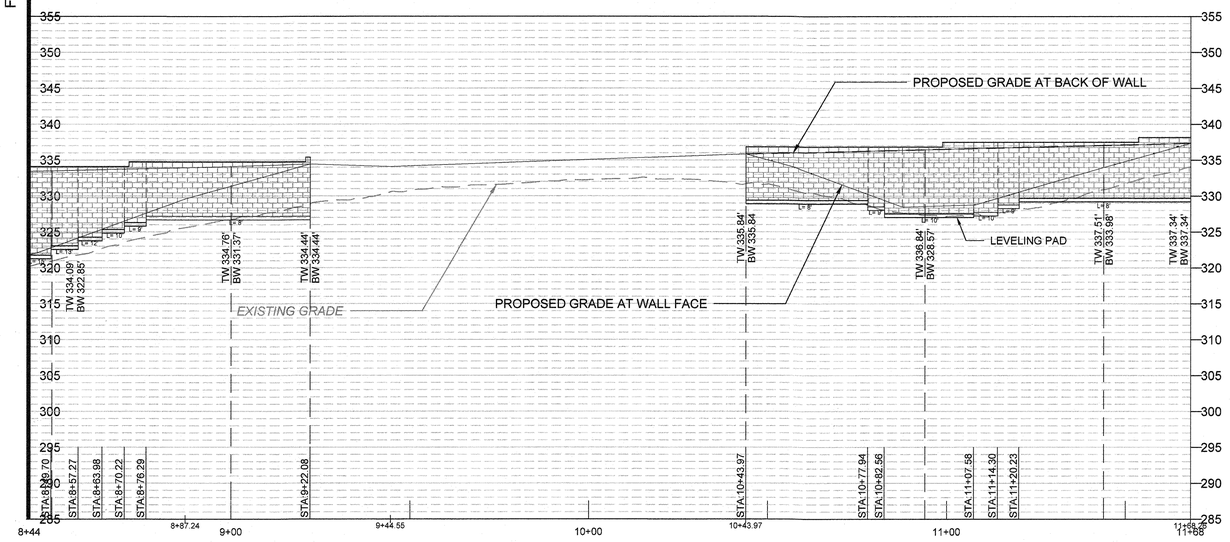


OTA-3 RETAINING WALL PLAN VIEW

SCALE: 1" = 20'



OTA-3 RETAINING WALL PROFILE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

20 10 0 20 40
SCALE: 1" = 20'

10 5 0 10 20
SCALE: 1" = 10'

NOTE:
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C-329

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 12/22/24

Director — Date 2/22/24

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STATE OF MARYLAND — CHARLES W. W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER — 11/1/23

Charles Mitchell

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RK&K	NO.	REVISION	DATE
	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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RETAINING WALL ELEVATION - OTA 3
(PHASE 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 39 OF 73

RK&K PROJECT NUMBER
21047.013

SCALE:
As Shown

SDP-18-060

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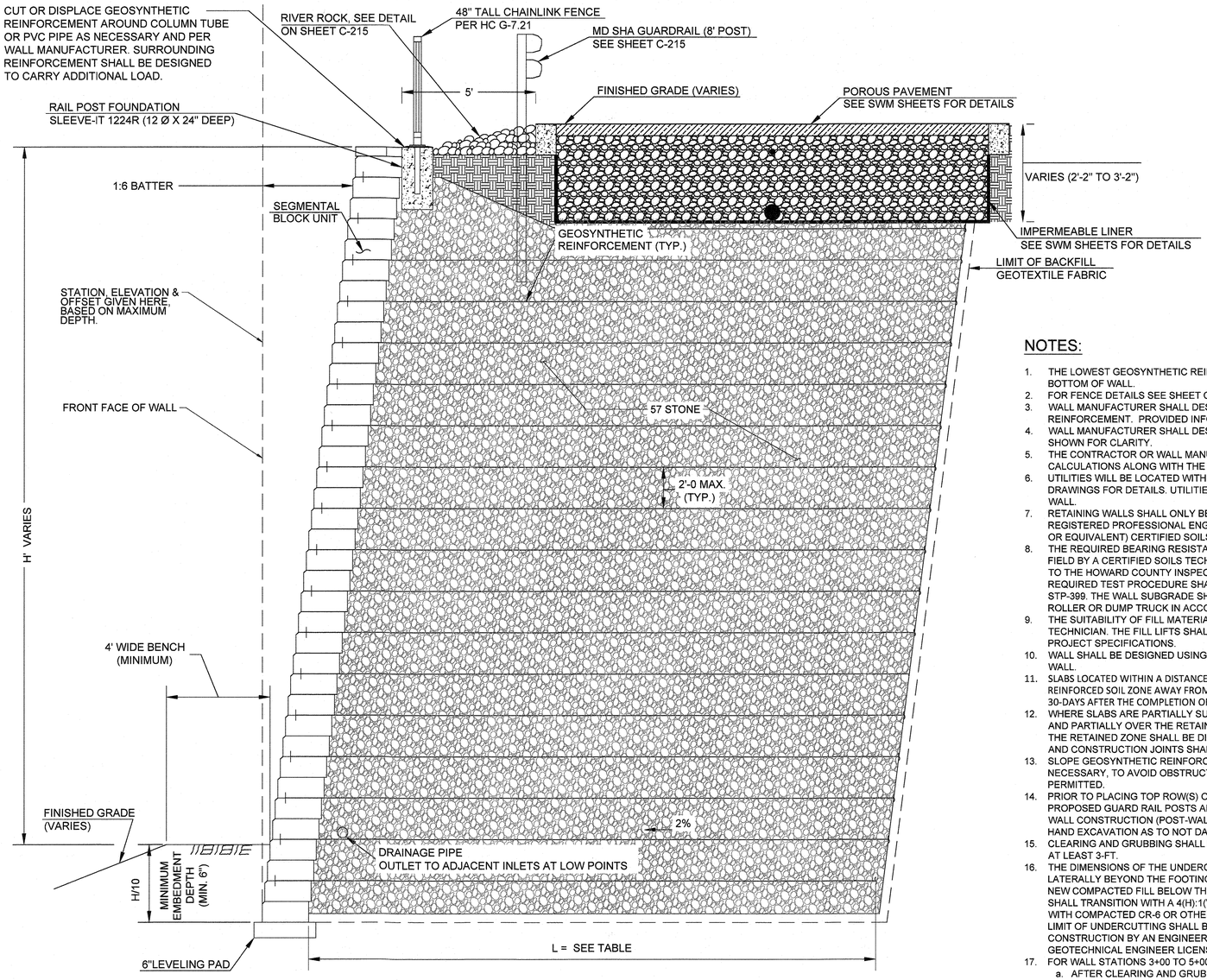
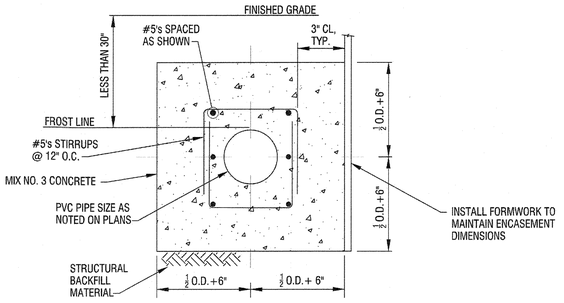


TYPICAL SECTION FOR SEGMENTAL BLOCK RETAINING WALL

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

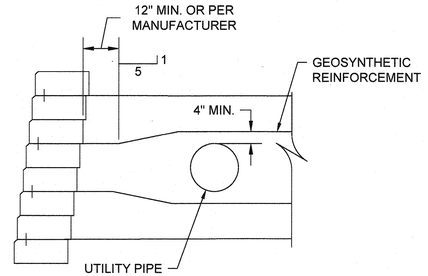
RETAINING WALL DESIGN PARAMETERS			
MATERIAL	Description	DESIGN UNIT WEIGHT - γ (pcf)	DRAINED ANGLE OF FRICTION - Φ (deg)
Foundation Soil	Natural Soil	125	30
Retained Soil	Fill, Common Borrow	125	30
Reinforced Soil	No. 57 Stone	105	38

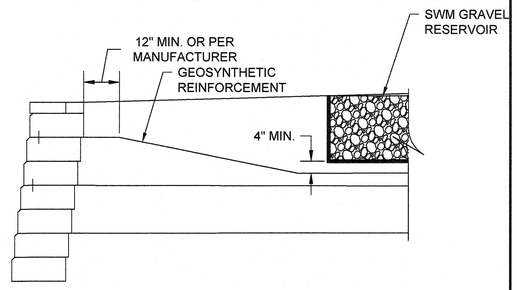
RETAINING WALL REINFORCEMENT MINIMUM LENGTHS (L)		
OTA	Description	Minimum Reinforcement Strap Length
3	Entire Wall Length	1.2H'
H' = The full height of the wall excluding embedment (ft)		



CONCRETE ENCASED PIPE

SCALE: NTS





GEOSYNTHETIC REINFORCEMENT SPLAY DETAIL

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

NOTES:

1. THE LOWEST GEOSYNTHETIC REINFORCEMENT SHALL NOT BE MORE THAN 12" FROM BOTTOM OF WALL.
2. FOR FENCE DETAILS SEE SHEET C-215.
3. WALL MANUFACTURER SHALL DESIGN SIZE, LENGTH AND QUANTITY OF GEOSYNTHETIC REINFORCEMENT. PROVIDED INFORMATION IS MINIMUM REQUIRED.
4. WALL MANUFACTURER SHALL DESIGN DRAINAGE SYSTEM. DRAINAGE INFORMATION SHOWN FOR CLARITY.
5. THE CONTRACTOR OR WALL MANUFACTURER SHALL SUBMIT GLOBAL STABILITY CALCULATIONS ALONG WITH THE SHOP DRAWINGS FOR REVIEW.
6. UTILITIES WILL BE LOCATED WITHIN THE GEOSYNTHETIC REINFORCEMENT - SEE UTILITY DRAWINGS FOR DETAILS. UTILITIES WILL CROSS UNDERNEATH, BUT NOT THROUGH, THE WALL.
7. RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND AND A (NICET, WACEL OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN.
8. THE REQUIRED BEARING RESISTANCE OF THE WALL SUBGRADE 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. THE WALL SUBGRADE SHALL BE PROOFROLLED WITH A 35-TON PNEUMATIC-TIRED ROLLER OR DUMP TRUCK IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
9. THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ONSITE SOILS TECHNICIAN. THE FILL LIFTS SHALL BE PLACED, COMPACTED AND REPORTED AS PER THE PROJECT SPECIFICATIONS.
10. WALL SHALL BE DESIGNED USING A MINIMUM LIVE LOAD OF 250-PSF AT THE TOP OF THE WALL.
11. SLABS LOCATED WITHIN A DISTANCE OF ONE WALL HEIGHT MEASURED FROM THE BACK OF THE REINFORCED SOIL ZONE AWAY FROM THE WALL FACE SHALL NOT BE CONSTRUCTED FOR AT LEAST 30-DAYS AFTER THE COMPLETION OF THE WALLS.
12. WHERE SLABS ARE PARTIALLY SUPPORTED DIRECTLY OVER THE REINFORCEMENT ZONE AND PARTIALLY OVER THE RETAINED ZONE, THE PORTION OF THE SLAB SUPPORTED OVER THE RETAINED ZONE SHALL BE DIRECTLY SUPPORTED BY A 3-FT THICK LAYER OF CR-6, AND CONSTRUCTION JOINTS SHALL BE USED TO CONTROL CRACKING.
13. SLOPE GEOSYNTHETIC REINFORCEMENT DOWN PER MANUFACTURER SPECIFICATIONS, IF NECESSARY, TO AVOID OBSTRUCTIONS. NO KINKS IN THE REINFORCEMENT WILL BE PERMITTED.
14. PRIOR TO PLACING TOP ROW(S) OF REINFORCING THE CONTRACTOR MUST LOCATE ALL PROPOSED GUARD RAIL POSTS AND COLUMN TUBE OR PVC PIPE TO BE INSTALLED DURING WALL CONSTRUCTION (POST-WALL CONSTRUCTION POST FOUNDATION WILL REQUIRE HAND EXCAVATION AS TO NOT DAMAGE REINFORCEMENT).
15. CLEARING AND GRUBBING SHALL INCLUDE THE REMOVAL OF TREE ROOTS TO A DEPTH OF AT LEAST 3-FT.
16. THE DIMENSIONS OF THE UNDERCUTTING SHALL EXTEND A MINIMUM OF 9-INCHES LATERALLY BEYOND THE FOOTING OR REINFORCED PERIMETER FOR EACH 12-INCHES OF NEW COMPACTED FILL BELOW THE FOOTING OR PERIMETER. THE END OF THE UNDERCUT SHALL TRANSITION WITH A 4(H):1(V) SLOPE. THE UNDERCUT MATERIAL SHALL BE REPLACED WITH COMPACTED CR-6 OR OTHER MATERIAL APPROVED BY THE ENGINEER. THE ACTUAL LIMIT OF UNDERCUTTING SHALL BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION BY AN ENGINEERING TECHNICIAN ACTING UNDER THE GUIDANCE OF A GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF MARYLAND.
17. FOR WALL STATIONS 3+00 TO 5+00
    a. AFTER CLEARING AND GRUBBING AND UNDERCUTTING, IF SOFT SOILS ARE ENCOUNTERED, THE SOFT SOILS SHALL BE UNDERCUT AND REPLACED WITH A GEOSYNTHETIC-REINFORCED WORKING PLATFORM CONSISTING OF #2 OR SIMILAR SIZED STONE WRAPPED IN SEPARATION FABRIC. THE WORKING PLATFORM SHALL EXTEND AT LEAST 5-FT BEYOND THE REINFORCED ZONE ON ALL SIDES. THE UPPER PORTION OF THE WORKING PLATFORM MAY BE CHOKED WITH CR-6 OR OTHER MATERIAL APPROVED BY THE ENGINEER. THE WORKING PLATFORM SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND AND SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.
    b. REMAINING FILL UP TO THE LEVELING PAD AND REINFORCED ZONE SHALL CONSIST OF COMPACTED CR-6 OR OTHER MATERIAL APPROVED BY THE ENGINEER.
    c. THE WALL SHALL BE BUILT UP PARTIALLY THEN QUARANTINED AND MONITORED FOR MOVEMENTS FOR A PERIOD OF 4-WEEKS BEFORE CONTINUING PLACING FILL. QUARANTINE PERIODS SHALL BE OBSERVED AT TOTAL FILL HEIGHTS OF 20-FT AND 35-FT. MONITORING SHALL BE AS REQUIRED IN THE SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.
    d. CONTRACTOR SHALL DOCUMENT A DAILY INSPECTION OF THE FACING AND NOTE ANY OBSERVED MOVEMENT. DOCUMENTATION OF INSPECTION SHALL BE PROVIDED TO THE ENGINEER WEEKLY, OR SAME DAY IF MOVEMENT IS NOTED.
    e. WORK MAY CONTINUE ON OTHER PARTS OF THE WALL DURING THE QUARANTINE PERIOD(S).
18. RETAINING WALL MANUFACTURER / INSTALLER TO COORDINATE DEPTH AND LOCATION OF THE SWM POROUS PAVEMENT WITH THE LOCATION OF THE GEO-SYNTHETIC REINFORCEMENT. SEE SHEETS C-207 TO C-214 FOR EXACT DEPTH OF SWM FACILITIES.

RETAINING WALL SUBGRADE UNDERCUTTING			
OTA	WALL STATION RANGE	ESTIMATED UNDERCUTTING DEPTH (FT)	REASON FOR UNDERCUTTING
3	3+00 TO 5+50	2	WET, LOOSE SOIL ENCOUNTERED IN BORING RW3-5
SEE NOTE 15 FOR ADDITIONAL UNDERCUTTING NOTES.			

GENERAL NOTES:

SPECIFICATIONS: SEE PROVIDED SPECIFICATIONS.

NATIONAL CONCRETE MASONRY ASSOCIATION DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS, 3RD EDITION 5TH PRINTING

CONCRETE: ALL CONCRETE SHALL BE MIX No.3 (3500 PSI).

WALL SYSTEM: CONTRACTOR HAS THE OPTION TO SELECT A PROPRIETARY WALL. ONCE SELECTED, THIS TYPE OF WALL MUST BE USED THROUGHOUT THE PROJECT. THE CONTRACTOR CAN ADJUST THE STEPS IN THE LEVELING PAD TO ACCOMMODATE THE WALL TYPE SELECTED.

SERVICE LIFE: ALL RETAINING WALL COMPONENTS SHALL BE DESIGNED FOR A MINIMUM SERVICE LIFE OF 75 YEARS.

BACK FILL: ALL BACKFILL MATERIAL WITHIN THE REINFORCING ZONE FOR THE SEGMENTAL WALL SHALL BE AS PER THE PROVIDED SPECIFICATIONS.

TEMPORARY SUPPORT OF EXCAVATION: THE CONTRACTOR SHALL DETERMINE THE NEED FOR ANY TEMPORARY SUPPORT OF EXCAVATION FOR EXCAVATION OF THE RETAINING WALLS, THE LOCATION AND LIMITS OF THE SUPPORT OF EXCAVATION AND THE TYPE USED IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL ENSURE THAT THE TEMPORARY SUPPORT OF EXCAVATION EXTENDS TO THE TOP OF THE PROPOSED GRADE. ALL SIGNED AND SEALED (BY A MARYLAND PE) CALCULATIONS SHALL BE SUBMITTED WITH SHOP DRAWINGS. IF REQUIRED, TEMPORARY SUPPORT OF EXCAVATION SHALL BE INCIDENTAL TO THE LUMP SUM RETAINING WALL ITEM.

UTILITY SEQUENCING: UTILITIES WITHIN A DISTANCE OF ONE WALL HEIGHT MEASURED FROM THE BACK OF THE REINFORCED ZONE AWAY FROM THE WALL FACE AND 5' IN FRONT OF THE WALL FACE SHALL BE CONSTRUCTED IN CONJUNCTION WITH THE RETAINING WALL AND CAPPED OUTSIDE OF THIS ZONE FOR AT LEAST 30 DAYS PRIOR TO CONNECTION TO ANY MANHOLE OR STRUCTURE.

4 PURPOSE-STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

RK&K RUMMEL, KLEPPER & KAHL, LLP
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PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. MCWHITE — 49432 — PROFESSIONAL ENGINEER

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

SEGMENTAL BLOCK RETAINING WALL SECTION - OTA 3 (PHASE 2)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 18 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 41 OF 73

C-331

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

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.

SWM NOTES-OTA 3

1. THIS PROJECT IS CONSIDERED "NEW DEVELOPMENT" FOR STORMWATER MANAGEMENT PURPOSES.
2. ON-SITE SWM FACILITIES ARE PROVIDED TO MEET 100% OF SWM REQUIREMENTS. THESE ARE COMPRISED OF POROUS PAVEMENT, NON-ROOF DISCONNECT, REINFORCED TURF (GRAVELPAVE), AND ONE MICRO-BIORETENTION FACILITY.
3. POROUS PAVEMENT: PERVIOUS PAVEMENT AREAS ARE LOCATED AS THE PROPOSED ROADWAY AND THE CONCRETE PAD. PERVIOUS PAVEMENT ARE DESIGNED TO INCLUDE TEN (10) FOOT SETBACK FROM PROPOSED BUILDINGS AND CAPTURE 48,988 OF IMPERVIOUS AREA.
4. MICRO-BIORETENTION: ONE MICRO-BIORETENTION FACILITY IS ADJACENT TO THE PROPOSED ROADWAY AND WILL PROVIDE TREATMENT FOR THE PORTION OF THE PROPOSED ROADWAY THAT IS IMPERVIOUS ASPHALT OF 12,467 SF. THE RUNOFF FROM THE ROADWAY WILL BE CONVEYED TO THE MICRO-BIORETENTIONS VIA CONCRETE FLUME. SEE C505 FOR DETAILS.
5. REINFORCED TURF (GRAVELPAVE): A DRIVEWAY CONSISTING OF 4,340 SF OF REINFORCED TURF (GRAVELPAVE) RUNS PERPENDICULAR (EAST TO WEST) TO THE PROPOSED ROADWAY. THE RUNOFF FROM THE GRAVELPAVE WILL DRAIN TO THE NORTHEAST CORNER OF THE SITE.
6. NON-ROOFTOP DISCONNECT: THE 4,000 SF IMPERVIOUS CONCRETE AREA IS DIRECTED ONTO AN ADJACENT VEGETATED AREA OF EQUAL SQUARE FEET WHERE THE RUNOFF FLOWS OVER THE DISCONNECTION AREA, FILTERS THROUGH THE VEGETATION, AND SOAKS INTO THE GROUND.
7. FOR SWM COMPUTATIONS AND ADDITIONAL INFORMATION SEE THE SWM REPORT.
8. ALL SWM FACILITIES WILL BE MAINTAINED BY JOHNS HOPKINS APPLIED PHYSICS LABORATORY.

STORMWATER NOTES

KEY SW-1

1. PROPOSED MICRO-BIORETENTION FACILITY
2. PROPOSED NON-ROOFTOP DISCONNECT AT MAX. 2%.
3. PROPOSED POROUS PAVEMENT.
4. 6" UNDERDRAIN.
5. PROPOSED BUILDING GUTTER AND DOWNSPOUT.
6. 6" PERFORATED PIPE THROUGH STONE RESEVOIR.
7. PROPOSED REINFORCED TURF/GRAVELPAVE

REFER TO SHEET C-505 FOR STORMWATER MANAGEMENT DETAILS

SWM LEGEND

- PERVIOUS PAVEMENT
- TREATED IMPERVIOUS COVER PAVEMENT
- MICRO-BIORETENTION FACILITY, TYP. (MB-1)
- NON-ROOFTOP DISCONNECT
- DRAINAGE AREA BOUNDARY
- REINFORCED TURF/GRAVELPAVE (PERVIOUS)
- RETAINING WALL
- PERVIOUS CONCRETE PAVEMENT

SWM ESDv COMPLIANCE SUMMARY-OTA 3

FACILITY	ESDv REQUIRED (CF)	ESDv PROVIDED (CF)	IMPERVIOUS AREA REQUIRING TREATMENT (IART) (SF)	IMPERVIOUS AREA TREATED (IAT) (SF)	TARGET Pe (IN)	Pe ACHIEVED (IN)
POROUS PAVEMENT	4,198	10,454	52,717	48,988	2.5	2.5
REINFORCED TURF	143			4,340		
NON-ROOFTOP DISCONNECT	784	784	4,000	4000	1.0	1.0
MICRO-BIORETENTION	2566	2076*	12,467	12,467	2.6	2.6
TOTAL	7,691	13,314	69,184	69,795	1.2	2.3

*TOTAL STORAGE VOLUME IN MICRO-BIORETENTION FACILITY IS 2,805 CF WHEN INCLUDING THE 729 CF OF THE STONE RESERVOIR LAYER.

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

50 25 0 50 100
SCALE: 1" = 50'

C-503

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23
Chief, Division of Land Development — Date 2/22/24
Director — Date 2/22/24

RK&K
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STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — PROFESSIONAL ENGINEER — 11/1/23

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OWNER/DEVELOPER
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STORMWATER MANAGEMENT PLAN - OTA 3 (PHASE 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 43 OF 73

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\cad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-503 Stormwater Management Plan - OTA 3 (Phase 2).dwg Oct 31, 2023 4:38pm jsaltz

BIORETENTION: OPERATION AND MAINTENANCE

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. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.

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.

IN-SITU INFILTRATION TEST

At completion of construction, for each microbioretention facility, the contractor shall perform an in-situ infiltration test on the installed microbioretention soils using MDE spec detailed in "Appendix D.1 Testing Requirements for Infiltration, Bioretention and Sand Filter Subsoils" in the "Maryland Stormwater Design Manual", and supplements, for infiltration test. The microbioretention facility will not be accepted by JHU/APL until the contractor has documented via the infiltration tests that the completed facility achieves a minimum infiltration rate of 0.52 in/hr, including during the 2-year warranty period. The test shall be performed 8 inches below the surface of the micro-bioretention facility.

CONSTRUCTION OF MICROBIORETENTION AREAS

Construct stormwater filtration facilities only after all contributing drainage areas are permanently stabilized and vegetation including turfgrass and turfgrass sod are established according to contract documents. Do not stockpile materials nor store equipment in these areas. Any areas compacted during construction require tilling 24" below proposed bottom of facility. See paragraph 3.

Use methods of excavation that minimize the compaction of the underlying soil. Use excavators and backhoes operating on the adjacent ground. If the bottom width of the excavated area is greater than 15 ft, wide-track or marsh-track equipment, or light equipment with turf-type tires may be used to excavate, grade, and place fill materials. Do not use equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires.

Till the excavation pit bottom to a minimum depth of 24" to alleviate compaction from excavation activities by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. Substitute methods must be approved by the engineer. Remove any standing water from the excavation pit prior to tilling. Only till soil that is friable. Do not till soil while in a muddy or frozen condition.

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

AS-BUILT DATA FOR MICRO-BIORETENTION-1

*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

FACILITY NAME: MICRO-BIORETENTION FACILITY 1 - MB-1

FEATURE	DESIGN	*AS-BUILT
OVERFLOW INLET ELEVATION	~~331 FT.~~ 339 FT.	
SURFACE AREA	~~1,200 SF.~~ 1,822 SF.	
FILTER BED DIMENSIONS (L X W X D)	~~48' x 31' x 2'~~ 65' x 35' x 2'	
FILTER BED SURFACE ELEVATION	~~330 FT.~~ 338 FT.	
OUTLET PIPE SIZE / INVERT	12 IN. / ~~322.87 FT.~~ 334.42 FT.	
ELEVATION OF BERM	~~332 FT.~~ 341 FT.	
UNDERDRAIN PIPE SIZE / INVERT	6 IN. / ~~325.67 FT.~~ 334.67 FT.	
THICKNESS OF FILTER MEDIA	2 FT.	
WEIR WALL ELEVATION ABOVE BED	N/A	
PLANTINGS	SEE LANDSCAPING DWGS	
GEOTEXTILE	PE TYPE 1 NON-WOVEN, SIDES ONLY	
COMPOSITION OF FILTER MEDIA	SEE TABLE, C-504	
OBSERVATION WELL WITH DEPTH TO FILTER BOTTOM INDICATED ON CAP	4.83 FT.	
OVERFLOW INLET STRUCTURE LOCATION: MD STATE PLANE COORDINATES NAD 83	~~N: 54,8492.8144~~ N: 548,624.4341 ~~E: 134,2381.6687~~ E: 1,342,324.2380	

AS-BUILT DATA FOR MICRO-BIORETENTION-2

*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

FACILITY NAME: MICRO-BIORETENTION FACILITY 2 - MB-2

FEATURE	DESIGN	*AS-BUILT
OVERFLOW INLET ELEVATION	332 FT.	
SURFACE AREA	1,065 SF.	
FILTER BED DIMENSIONS (L X W X D)	45' x 29' x 2'	
FILTER BED SURFACE ELEVATION	331 FT.	
OUTLET PIPE SIZE / INVERT	12 IN. / 325 FT.	
ELEVATION OF BERM	333.25 FT.	
UNDERDRAIN PIPE SIZE / INVERT	6 IN. / 326.67 FT.	
THICKNESS OF FILTER MEDIA	2 FT.	
WEIR WALL ELEVATION ABOVE BED	N/A	
PLANTINGS	SEE LANDSCAPING DWGS	
GEOTEXTILE	PE TYPE 1 NON-WOVEN, SIDES ONLY	
COMPOSITION OF FILTER MEDIA	SEE TABLE, C-504	
OBSERVATION WELL WITH DEPTH TO FILTER BOTTOM INDICATED ON CAP	4.83 FT.	
OVERFLOW INLET STRUCTURE LOCATION: MD STATE PLANE COORDINATES NAD 83	N: 54,8572.0475 E: 134,2310.5750	

MAINTENANCE CRITERIA FOR POROUS PAVEMENT:

1. PAVEMENT SURFACES SHOULD BE SWEPT AND VACUUMED TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT. WASHING OR COMPRESSED AIR UNITS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.

2. DRAINAGE PIPES, INLETS, STONE EDGE DRAINS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE SHOULD BE CLEANED OUT AT REGULAR INTERVALS.

3. DEICERS SHOULD BE USED IN MODERATION. DEICERS SHOULD BE NON-TOXIC AND BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT. SNOW PLOWING SHOULD BE DONE CAREFULLY WITH BLADES SET ONE-INCH ABOVE THE SURFACE. PLOWED SNOW PILES AND SNOWMELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.

AS-BUILT DATA FOR PERVIOUS PAVEMENT - OTA-1

*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

FACILITY NAME: PP OTA -1

FEATURE	DESIGN	*AS-BUILT
SURFACE AREA	29,030 SQ- FT.	
POROUS PAVEMENT DEPTH/ ELEV.	2 IN./ SEE GRADING PLAN	
BASE LAYER DEPTH	2.5 IN.	
CHOKER LAYER DEPTH	4 IN.	
RESERVOIR LAYER DEPTH	13 IN.	
UNDERDRAIN PIPE SIZE / INVERT	6 IN. / 354.10 FT.	
OBSERVATION WELL STRUCTURE LOCATION: MD STATE PLANE COORDINATES NAD 83	SEE SCHEDULE TABLE SHEET C-216	

AS-BUILT DATA FOR PERVIOUS PAVEMENT - OTA-2

*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

FACILITY NAME: PP OTA-2

FEATURE	DESIGN	*AS-BUILT
SURFACE AREA	13,725 SQ- FT.	
PERVIOUS PAVEMENT DEPTH/ ELEV.	2 IN./ SEE GRADING PLAN	
BASE LAYER DEPTH	2.5 IN.	
CHOKER LAYER DEPTH	4 IN.	
RESERVOIR LAYER DEPTH	13 IN.	
UNDERDRAIN PIPE SIZE / INVERT	6IN. / 311.66 FT.	
CLEANOUT STRUCTURE LOCATION: MD STATE PLANE COORDINATES NAD 83	SEE SCHEDULE TABLE SHEET C-216	

AS-BUILT DATA FOR PERVIOUS PAVEMENT - OTA-3

*TO BE COMPLETED BY THE CONTRACTOR'S CERTIFYING ENGINEER

FACILITY NAME: PP OTA-3

FEATURE	DESIGN	*AS-BUILT
SURFACE AREA	~~44,700 SQ- FT.~~ 52,603 SQ- FT.	
PERVIOUS PAVEMENT DEPTH/ ELEV.	2 IN./ SEE GRADING PLAN	
BASE LAYER DEPTH	2.5 IN.	
CHOKER LAYER DEPTH	4 IN.	
RESERVOIR LAYER DEPTH	13 IN.	
UNDERDRAIN PIPE SIZE / INVERT	6IN. / ~~323.06 FT.~~ 329.23 FT.	
CLEANOUT STRUCTURE LOCATION: MD STATE PLANE COORDINATES NAD 83	SEE SCHEDULE TABLE SHEET C-216	

CONTRACTOR AS-BUILT NOTE

AS-BUILT PLANS AND CERTIFICATION ARE REQUIRED FOR ALL STORMWATER MANAGEMENT FACILITY ON THESE PLANS. THESE MUST BE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER OR SURVEYOR, OBTAINED BY THE CONTRACTOR. HOWARD COUNTY OR THE OWNER'S ENGINEER WILL NOT PREPARE THE AS-BUILT PLANS OR CERTIFICATION. THE STORMWATER MANAGEMENT PERMIT BOND WILL NOT BE RELEASED UNTIL THE AS-BUILT PLANS AND CERTIFICATION ARE APPROVED BY HOWARD COUNTY.

IN ORDER TO PREPARE THE REQUIRED AS-BUILT PLANS AND CERTIFICATION, THIS STORMWATER MANAGEMENT FACILITY MUST BE INSPECTED BY THE CONTRACTOR'S ENGINEER AT SPECIFIC STAGES DURING CONSTRUCTION AND AS REQUIRED BY THE CURRENT HOWARD COUNTY STORMWATER MANAGEMENT POLICIES AND PROCEDURES. THE CONTRACTOR SHALL NOTIFY THE CONTRACTOR'S ENGINEER AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ANY WORK SHOWN ON THESE PLANS.

INSPECTION NOTES:

REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION:

1. DURING EXCAVATION TO SUBGRADE
2. PLACEMENT AND BACKFILL OF UNDERDRAIN SYSTEMS.
3. DURING PLACEMENT OF FILTER MEDIA
4. DURING CONSTRUCTION OF APPURTENANT CONVEYANCE.
5. UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.

MAINTENANCE CRITERIA FOR DISCONNECT:

1. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

SEQUENCE OF CONSTRUCTION FOR STORMWATER MANAGEMENT

1. CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES SHALL BE COORDINATED WITH EROSION AND SEDIMENT CONTROL SEQUENCE OF CONSTRUCTION.
2. THE CONTRACTOR SHALL NOTIFY AS-BUILT CERTIFYING ENGINEER PRIOR TO BEGINNING CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES, CERTIFYING ENGINEER SHALL SUBMIT STORMWATER MANAGEMENT AS-BUILT PLANS WITHIN 30 DAYS OF COMPLETION. AS-BUILT CERTIFYING ENGINEER SHALL BE PROVIDED BY THE CONTRACTOR.
3. PERFORM PRE-CONSTRUCTION INFILTRATION TESTING. THE CONTRACTOR CONFIRM INFILTRATION RATES AT A DEPTH OF 3" BELOW THE PROPOSED BOTTOM ELEVATION OF THE FILTER MEDIA. EXCEPT AS APPENDED BY THIS NOTE, CONTRACTOR SHALL PERFORM THE TESTING USING MDE SPEC DETAILED IN "APPENDIX D.1 TESTING REQUIREMENTS FOR INFILTRATION, BIORETENTION AND SAND FILTER SUBSOILS" IN THE "MARYLAND STORMWATER DESIGN MANUAL". CONTRACTOR SHALL SEND THE RESULTS TO THE ENGINEER FOR APPROVAL 1 WEEK PRIOR TO COMMENCING CONSTRUCTION ON THE SWM FACILITIES. THE MICROBIORETENTION FACILITY WILL NOT BE AUTHORIZED FOR CONSTRUCTION UNTIL THE CONTRACTOR HAS DOCUMENTED VIA THE INFILTRATION TESTS THAT THE COMPLETED FACILITY ACHIEVES A MINIMUM INFILTRATION RATE OF 0.5 IN/HR.
4. WITH ENGINEER'S APPROVAL CONSTRUCT THE MICRO-BIORETENTION FACILITIES.
5. THE CONTRACTOR SHALL FOLLOW THE INSPECTION SCHEDULE, THIS SHEET.
6. PERFORM POST CONSTRUCTION INFILTRATION TEST. AT COMPLETION OF CONSTRUCTION, FOR EACH MICROBIORETENTION FACILITY, THE CONTRACTOR SHALL PERFORM AN IN-SITU INFILTRATION TEST ON THE INSTALLED MICROBIORETENTION SOILS USING MDE SPEC DETAILED IN "APPENDIX D.1 TESTING REQUIREMENTS FOR INFILTRATION, BIORETENTION AND SAND FLTER SUBSOILS" IN THE "MARYLAND STORMWATER DESIGN MANUAL", AND SUPPLEMENTS, FOR INFILTRATION TEST. THE MICROBIORETENTION FACILITY WILL NOT BE ACCEPTED UNTIL THE CONTRACTOR HAS DOCUMENTED VIA THE INFILTRATION TESTS THAT THE COMPLETED FACILITY ACHIEVES A MINIMUM INFILTRATION RATE OF 0.5 IN/HR, INCLUDING DURING THE 2-YEAR WARRANTY PERIOD.
7. PREPARE AND SUBMIT STORMWATER MANAGEMENT AS-BUILTS CERTIFIED BY CONTRACTOR'S MD LICENSED PROFESSIONAL ENGINEER.

TABLE B.4.1 MATERIALS SPECIFICATIONS

	SPECIFICATIONS		NOTES
PLANTINGS	SEE SWMLANDSCAPE PLANS	N/A	PLANTINGS ARE SITE-SPECIFIC
BIORETENTION SOIL MIX	SAND 50% FINE AGGREGATE, MSHA 901 MULCH 20% DOUBLE SHREDDED HARDWOOD, AGED 6 MONTHS MIN. BASE SOIL 30% - SEE BELOW PH OF 5.7 - 7.1	2.0-0.50 MM 2" MAX. SEE BELOW	MEET REQUIREMENTS OF MSHA CATEGORY 900 BIORETENTION SOIL MIX (BSM), LATEST EDITION. SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.
BASE SOIL	SAND 50 - 85% SILT 5 - 45% CLAY 5 - 10% ORGANIC MATTER 1.0-10% BY WEIGHT PH OF 5.7 - 6.9	2.0-0.50 MM 0.050-0.002 MM LESS THAN 0.002 MM N/A	MEET REQUIREMENTS OF MSHA CATEGORY 900 BIORETENTION SOIL MIX (BSM),LATEST EDITION.
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")	
GEOTEXTILE	CLASS "C" - APPARENT OPENING SIZE (ASTM-D-4571), GRAB TENSILE STRENGTH (ASTM-D-4632), PUNCTURE RESSISTANCE (ASTM-D-4833)	N/A	PE TYPE 1 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	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;Fc=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-20]; ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
RIGID PLASTIC PANELING (VINYL SHEET PILE)	MATERIAL: RIGID VINYL, UV STABILIZED, EXTERIOR GRADE SECTION DEPTH: MINIMUM 2" MAXIMUM 8" SECTION WIDTH: 12" 24" MINIMUM THICKNESS: 0.23" 0.30" PROFILE: FLAT OR Z-PROFILE TENSILE STRENGTH: ASTM-D638 6,000 lbs/in FLEXURAL STRENGTH: ASTM-D790 211,000 psi MODULUS OF ELASTICITY: ASTM-D790 380,000 psi NOTCHED IZOD IMPACT: ASTM-D256 13.75 lbs/in HEAT DEFLECTION TEMPERATURE: ASTM-D648 150 degrees F		
IMPERMEABLE LINER	ASTM-D-4833 (THICKNESS) ASTM-D-412 (TENSILE STRENGTH 1,100 lb., ELONGATION 200%) ASTM-D-624 (TEAR RESISTANCE - 150 lb./in) ASTM-D-471 (WATER ABSORPTION: +8 to -2% mass)	30 MIL THICKNESS	LINER TO BE ULTRAVIOLET RESISTANT. A GEOTEXTILE FABRIC SHOULD BE USED TO PROTECT THE LINER FROM PUNCTURE.

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

3 PURPOSE STATEMENT (4/7/22): ADDITION OF TWO 6'x40' CONCRETE PADS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 12/22/24

Director — Date 12/22/24

RK&K
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STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER

DESIGN BY:	BY	NO.	REVISION	DATE
SHK	RK&K	3	Addition of Two 6"x40' Concrete Pads	4/7/22
DRAWN BY: JMS/DTP	RK&K	4	Replacement Sheet - OTA-3 and Borrow Area Modifications	11/1/23
CHECKED BY: CWWM				
DATE: 11/1/2023				

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

SWM NOTES
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 44 OF 73

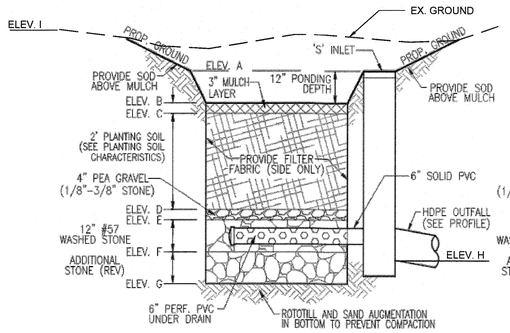
C-504

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

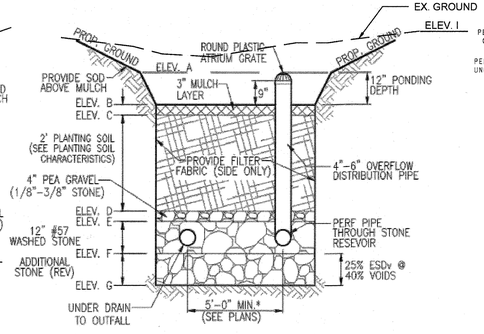
SDP-18-060

\\cad.rkk.com\ts\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-504 SWM Notes.dwg Oct 31, 2023 1:25pm jsaltz



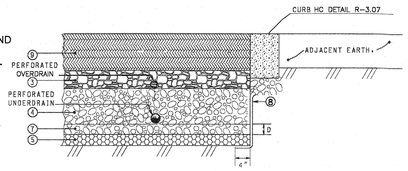
MICRO-BIORETENTION (UNDERDRAIN)

NOT TO SCALE



MICRO-BIORETENTION (OVERFLOW)

NOT TO SCALE



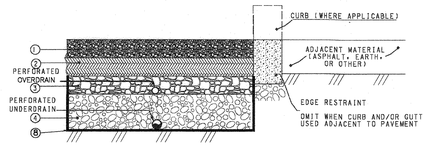
POROUS CONCRETE PAD

NOT TO SCALE

MATERIAL SPECIFICATIONS			
Material	**Specification**	**Size**	**Notes**
Underdrain	AASHTO M-278	6"	SCH 40 pipe - with 3/8" perferations @ 6" on center. 4 holes per row. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth.
Overdrain	AASHTO M-278	2"	Schedule 40 pipe - with 3/8" perferations @ 6" on center. 4 holes per row. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth.

NOTES:

1. POROUS PAVEMENT SURFACES (ASPHALT OR CONCRETE) SHALL HAVE A PERMEABILITY OF EIGHT INCHES PER HOUR OR GREATER TO CONVEY WATER INTO THE SUBBASE RAPIDLY.
2. INSTALL CLEANOUT AT THE UPSLOPE END OF EACH RUN OF PIPE AND MIDWAY BETWEEN UPSLOPE AND DOWNSLOPE ENDS OF PIPE AT A MINIMUM.
3. CONTRACTOR SHALL VARY THE ELEVATION OF THE UNDERDRAIN AS NEEDED WITHIN THE RESERVOIR LAYER TO ENSURE POSITIVE DRAINAGE TO THE DOWNSLOPE END OF THE PIPE AT THE TIE IN LOCATION.

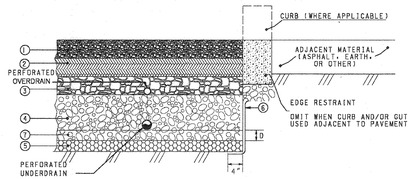


POROUS PAVEMENT DETAIL TYP. (FILL CONDITIONS)

N.T.S.

KEY NOTES

1. 2" POROUS ASPHALT SURFACE COURSE - HMA 12.5 MM
2. 2.5" POROUS ASPHALT BASE COURSE - HMA 25 MM
3. 4" CHOKER LAYER, AASHTO # 57 OR APPROVED EQUIVALENT
4. 19" RESERVOIR LAYER, AASHTO # 57 OR APPROVED EQUIVALENT
5. 4" FILTER LAYER, AASHTO *8 OR APPROVED EQUIVALENT
6. GEOTEXTILE CLASS 2, LOCATED ON SIDES OF PRACTICES ONLY
7. INFILTRATION SUMP, FOR STANDARD DESIGN, D = 0.25' UNCOMPACTED SUBGRADE FOR AREAS DESIGNED FOR INFILTRATION PRACTICES. FOR SOFT SOIL INSTALL GEOGRID PER GEOTECHNICAL ENGINEER RECOMMENDATIONS.
8. IMPERVIOUS LINER IN FILL CONDITIONS.
9. 4" POROUS CONCRETE



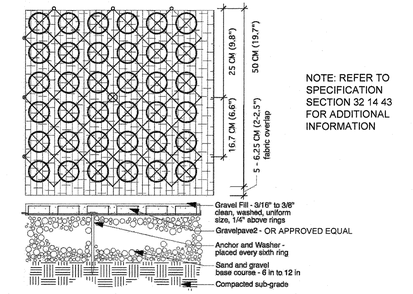
POROUS PAVEMENT DETAIL TYP. (CUT CONDITIONS)

N.T.S.

MICROBIORETENTION DATA										
FACILITY	PONDING (ELEV A)	TOP OF MULCH LAYER (ELE. B)	TOP OF BIORETENTION SOIL (BSM)- (ELEV. C)	BOTTOM OF BSM/ TOP OF CHOKER LAYER (ELEV.D)	BOTTOM OF CHOKER LAYER/ TOP OF RESERVOIR LAYER (ELEV.E)	12" #57 STONE ELEV. (ELEV.F)	BOTTOM OF MICRO-BIORETENTION FACILITY (ELEV. G)	OUTLET PIPE INV. ELEV (ELEV. H)	EXISTING GRADE (ELEV. I)	GROUNDWATER ELEV.
MB-1	~~331~~ 339	~~330~~ 338	~~329.75~~ 337.75	~~327.75~~ 335.75	~~327.42~~ 335.42	~~326.42~~ 334.42	~~325.42~~ 333.42	~~325~~ 334.67	MIN. ~~329.11~~ 334.5 MAX.~~336.87~~ 341.4	NONE
~~MB-2~~	~~332~~	~~331.00~~	~~330.75~~	~~328.75~~	~~328.42~~	~~327.42~~	~~326.42~~	~~322.87~~	MIN. 335.50 MAX.339.20	~~NONE~~

MICRO-BIORETENTION NOTES

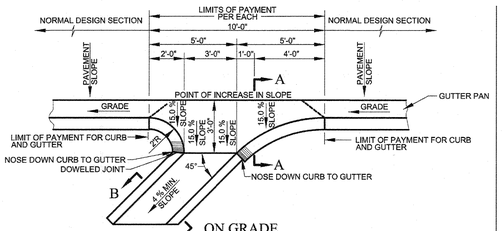
1. BIORETENTION MATERIALS AND CONSTRUCTION SHALL MEET HOWARD COUNTY CONSTRUCTION SPECIFICATION FOR SHALLOW FACILITY .
2. TREES AND PLANTS SHALL BE INSTALLED IN ACCORDANCE WITH LANDSCAPE PLANS. ALL PLANTINGS SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL.
3. THE UNDERDRAIN SHALL BE 6-INCH DIAMETER SCHEDULE 40 OR STRONGER PERFORATED PVC PIPE AT 0.00% SLOPE. PERFORATIONS MUST BE 3/8 INCH IN DIAMETER AND MUST BE LOCATED 6 INCHES ON CENTER, EVERY 90 DEGREES AROUND THE PIPE.
4. WRAP THE PERFORATED MBR UNDERDRAIN PIPE WITH 1/4" MESH (4x4) OR SMALLER GALVANIZED HARDWARE CLOTH.
5. PROVIDE 5' MINIMUM SPACING BETWEEN UNDER DRAIN AND PERFORATED PIPE THROUGH STONE RESERVOIR OR SPACE PIPE EQUALLY ACROSS BOTTOM FOR SMALL MICRO-BIORETENTIONS.
6. BOTTOM OF FACILITY SHALL BE AT LEAST 2' ABOVE SEASONAL HIGH WATER TABLE AND BEDROCK AS DETERMINED BY GEOTECHNICAL INVESTIGATION.
7. THE GRAVEL LAYER/ STONE RESERVOIR LAYER SURROUNDING THE UNDERDRAIN PIPE(S) MUST MEET AASHTO M-43 , AND MUST PROVIDE A MINIMUM OF 6 INCHES COVER OVER THE PIPE(S), AND MINIMUM 3 INCHES UNDER THE PIPE.
8. NO GEOTEXTILE OR FILTER FABRIC IS ALLOWED TO BE PLACED HORIZONTALLY ANYWHERE WITHIN THE FILTER MEDIA.
9. SEE TABLE B.4.1 MATERIALS SPECIFICATIONS FOR MICRO-BIORETENTION ON SHEET C-504



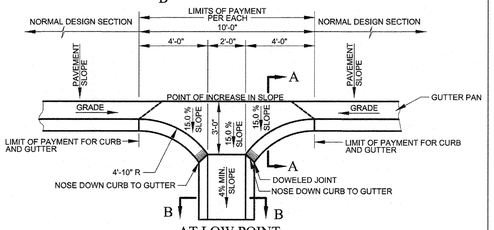
NOTE: REFER TO SPECIFICATION SECTION 32 14 43 FOR ADDITIONAL INFORMATION

RE-INFORCED TURF / GRAVELPAVE DETAIL

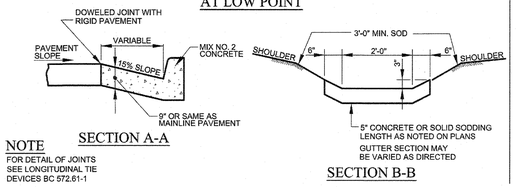
N.T.S.



ON GRADE



AT LOW POINT



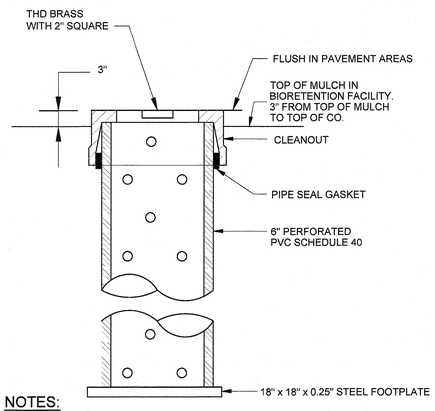
NOTE
FOR DETAIL OF JOINTS SEE LONGITUDINAL TIE DEVICES BC 572.61-1

SECTION A-A

SECTION B-B

CURB CUT DETAIL

NOT TO SCALE

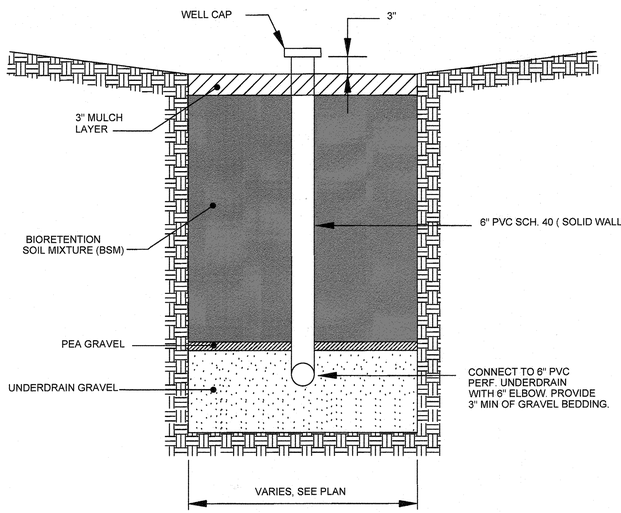


NOTES:

1. OBSERVATION WELLS (6" PVC SCH. 40 PIPE) SHALL BE PLACED IN THE FACILITY AT THE LOCATIONS INDICATED ON THE PLAN SHEETS.
2. THE WELL IS TO BE CAPPED USING A THREADED PVC FITTING AND SEWER CAP WITH A 2 INCH SQUARE LUG. THE DEPTH OF THE FACILITY IS TO BE MARKED ON THE CAP.
3. THE BOTTOM OF THE BIORETENTION FACILITY SHALL BE GRADED FLAT.
4. ENTIRE BARREL OF OBSERVATION WELL IS TO BE WRAPPED IN GEOTEXTILE.

DETAIL - OBSERVATION WELL

SCALE: N.T.S.

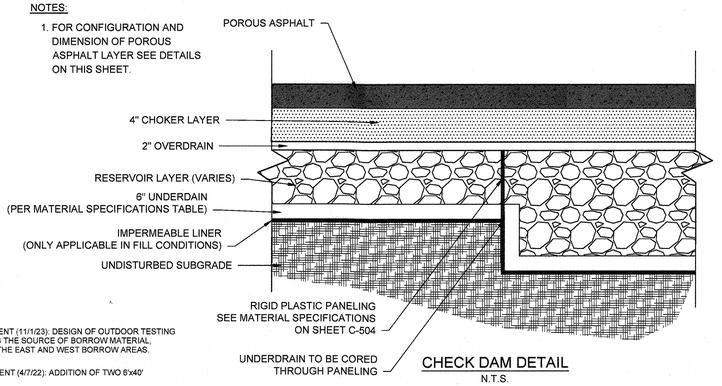


MICROBIORETENTION CLEANOUT DETAIL

N.T.S.

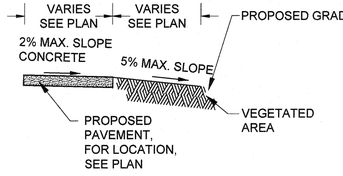
NOTES:

1. FOR CONFIGURATION AND DIMENSION OF POROUS ASPHALT LAYER SEE DETAILS ON THIS SHEET.



CHECK DAM DETAIL

N.T.S.



NON-ROOFTOP DISCONNECTION DETAIL

SCALE 1/4"=1'

3 PURPOSE STATEMENT (4/7/22): ADDITION OF TWO 6'x40' CONCRETE PADS

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHAD W. MEDLIN — 49432 — REGISTERED PROFESSIONAL ENGINEER

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	3	Addition of Two 6"x40' Concrete Pads	4/7/22
RK&K	4	Replacement Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

SWM DETAILS

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 45 OF 73

C-505

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

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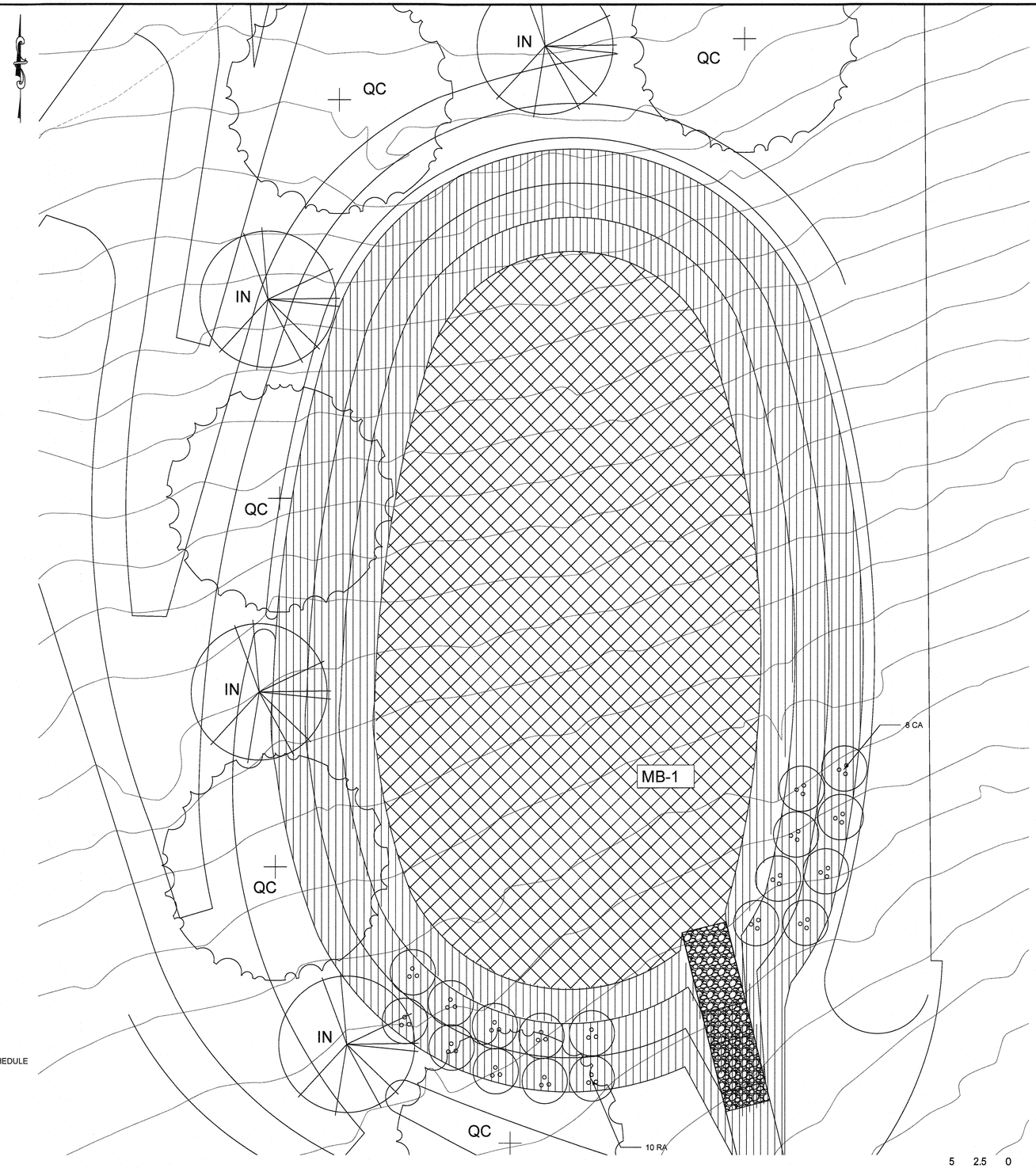

PLANTING LIST						
	SYMBOL	BOTANICAL/ COMMON NAME	QUANTITY	SIZE & ROOT	SPACING	REMARKS
TREES	QC	Quercus coccinea Scarlet Oak	5	2.5 CAL B&B		WELL-BRANCHED, STRAIGHT TRUNK
	IN	Juncus effusus SOFT RUSH	4	6'-8' Ht. B&B		WELL-BRANCHED, STRAIGHT TRUNK
GRASSES/ HERBACEOUS	DES	Deschampsia cespitosa TUFTED HAIRGRASS	595	#1 CONT.	18" O.C.	
	JUN	Juncus effusus SOFT RUSH	595	#1 CONT.	18" O.C.	
	BOU	Bouteloua curtipendula SIDE OATS GRAMA	273	#1 CONT.	24" O.C.	
LOW SHRUB	CA	Clethra alnifolia 'Sixteen Candles' SUMMERSWEET	8	#3 CONT.	24" Spd.	FULL, WELL-BRANCHED
	RA	Rhus aromatica "Gro Low" BWARF FRAGRABT SUMAC	10	#3 CONT.	4' O.C.	FULL, WELL-BRANCHED

NOTE:

FOR STRUCTURE TYPE, DIMENSIONS AND ELEVATIONS SEE STRUCTURE SCHEDULE TABLE ON SHEET C-215.
FOR MICRO-BIORETENTION DIMENSIONS AND DETAILS SEE SHEET C-505.
FOR MATERIAL, SPECIFICATIONS AND MAINTENANCE SEE SHEET C-504.

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

OTA 3 LANDSCAPING PLAN MICRO- BIORETENTION

5 2.5 0 5 10
SCALE: 1" = 5'

C-506

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — PROFESSIONAL ENGINEER

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

RK&K	NO.	REVISION	DATE
	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

SWM LANDSCAPING PLAN - OTA 3 (PHASE 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 46 OF 73

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

GENERAL NOTES

1. TOPOGRAPHIC AND SURFACE INFORMATION SHOWN WAS OBTAINED FROM FIELD SURVEY BY RK&K, COMPLETED DECEMBER 23, 2021. UTILITY INFORMATION SHOWN WAS PROVIDED BY AIIDATA ON FEBRUARY 4, 2022.
2. 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 ARCHITECT/ENGINEER PRIOR TO THE START OF ANY WORK.
3. BEARINGS AND HORIZONTAL COORDINATES SHOWN ON THIS PLAN ARE BASED UPON MARYLAND STATE PLANE COORDINATE SYSTEM NAD83. VERTICAL ELEVATIONS SHOWN ARE BASED UPON VERTICAL DATUM NAVD88.
4. THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY, BASED UPON FIELD OBSERVATIONS AND 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 INVOLVED 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.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" AT 1-800-257-7777 FIVE DAYS PRIOR TO THE START OF ANY EXCAVATION WORK.
6. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY INVERTS AND CLEARANCES FROM NEW WORK PRIOR TO START OF ANY WORK
7. THE CONTRACTOR SHALL STAKE OUT THE LOCATION OF ALL NEW CONSTRUCTION AND VERIFY ALL JURISDICTIONAL SETBACKS AND BUFFERS PRIOR TO START OF ANY WORK.
8. EXISTING UTILITIES WHICH ARE NOT TO BE REMOVED OR ABANDONED SHALL REMAIN OPERATIONAL AT ALL TIMES. APPROPRIATE EXISTING UTILITIES SHALL REMAIN IN SERVICE UNTIL REPLACEMENT/RELOCATED UTILITIES ARE OPERATIONAL.
9. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL EXISTING AND PROPOSED BUILDING ENTRANCES DURING ALL PHASES OF CONSTRUCTION, UNLESS OTHERWISE NOTED IN THESE DOCUMENTS. CONTRACTOR SHALL NOTIFY ENGINEER / OWNER IF EXISTING OR PROPOSED CONDITIONS RESTRICT ABILITY TO ACHIEVE POSITIVE DRAINAGE FROM BUILDINGS PRIOR TO THE START OF CONSTRUCTION.
10. SEE SHEET C-003 FOR FULL EXISTING AND PROPOSED FEATURES LEGEND

SWM NOTE - BORROW AREA

STORMWATER MANAGEMENT APPROACH FOR THE BORROW AREAS IS REMOVAL OF EXISTING IMPERVIOUS AREA AND COMPLETING LINEAR UTILITY WORK TRENCHING. THERE ARE NO PERMANENT STORMWATER MANAGEMENT STRUCTURES TO BE INSTALLED IN THE BORROW AREA SITES. FOR SWM COMPUTATIONS AND ADDITIONAL INFORMATION SEE THE SWM REPORT.

THERE ARE NO PROPOSED STORMWATER MANAGEMENT FACILITIES TO CONSTRUCT FOR THE EAST BORROW AREA SITE. PLAN PROVIDED FOR AGENCY REVIEW ONLY.

EAST BORROW AREA SWM COMPUTATIONS	
SITE AREA	263,170 SF
EXISTING IMPERVIOUS AREA	79,300 SF
PROPOSED IMPERVIOUS AREA	0 SF
NET CHANGE IN IMPERVIOUS	-79,300 SF
UTILITY TRENCHING	33,420 SF

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

40 0 40 80
SCALE: 1" = 40'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

RK&K
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STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

STORMWATER MANAGEMENT PLAN - EAST BORROW AREA (PHASE 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 47 OF 73

C-581

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\cad.rkk.com\fs\Cloud\Projects\2021\21047_API_2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-582 Stormwater Management Plan - West Borrow Area (Phase 2).dwg Oct 31, 2023 1:28pm jsaltz

GENERAL NOTES

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6. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY INVERTS AND CLEARANCES FROM NEW WORK PRIOR TO START OF ANY WORK.
7. THE CONTRACTOR SHALL STAKE OUT THE LOCATION OF ALL NEW CONSTRUCTION AND VERIFY ALL JURISDICTIONAL SETBACKS AND BUFFERS PRIOR TO START OF ANY WORK.
8. EXISTING UTILITIES WHICH ARE NOT TO BE REMOVED OR ABANDONED SHALL REMAIN OPERATIONAL AT ALL TIMES. APPROPRIATE EXISTING UTILITIES SHALL REMAIN IN SERVICE UNTIL REPLACEMENT/RELOCATED UTILITIES ARE OPERATIONAL.
9. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL EXISTING AND PROPOSED BUILDING ENTRANCES DURING ALL PHASES OF CONSTRUCTION. UNLESS OTHERWISE NOTED IN THESE DOCUMENTS, CONTRACTOR SHALL NOTIFY ENGINEER / OWNER IF EXISTING OR PROPOSED CONDITIONS RESTRICT ABILITY TO ACHIEVE POSITIVE DRAINAGE FROM BUILDINGS PRIOR TO THE START OF CONSTRUCTION.
10. SEE SHEET C-003 FOR FULL EXISTING AND PROPOSED FEATURES LEGEND

SWM NOTE - BORROW AREA

STORMWATER MANAGEMENT APPROACH FOR THE BORROW AREAS IS REMOVAL OF EXISTING IMPERVIOUS AREA AND COMPLETING LINEAR UTILITY WORK TRENCHING. THERE ARE NO PERMANENT STORMWATER MANAGEMENT STRUCTURES TO BE INSTALLED IN THE BORROW AREA SITES. FOR SWM COMPUTATIONS AND ADDITIONAL INFORMATION SEE THE SWM REPORT.

THERE ARE NO PROPOSED STORMWATER MANAGEMENT FACILITIES TO CONSTRUCT FOR THE EAST BORROW AREA SITE. PLAN PROVIDED FOR AGENCY REVIEW ONLY.

WEST BORROW AREA SWM COMPUTATIONS	
SITE AREA	116,760 SF
EXISTING IMPERVIOUS AREA	4,200 SF
PROPOSED IMPERVIOUS AREA	0 SF
NET CHANGE IN IMPERVIOUS	-4,200 SF

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

60 0 60 120
SCALE: 1" = 60'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 12/22/24

Director — Date 2/22/24

RK&K
RUMMEL, KLEPPER & KAHL, LLP
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700 East Pratt Street, Suite 500
Baltimore, MD 21202
Ph: 410.728.2900 Contact: Matt Thomasson
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. 43432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. W. MITCHELL III — 43432 — PROFESSIONAL ENGINEER
Charles W. Mitchell III 11/1/23

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

RK&K	NO.	REVISION	DATE
	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

STORMWATER MANAGEMENT PLAN - WEST BORROW AREA (PHASE 2)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

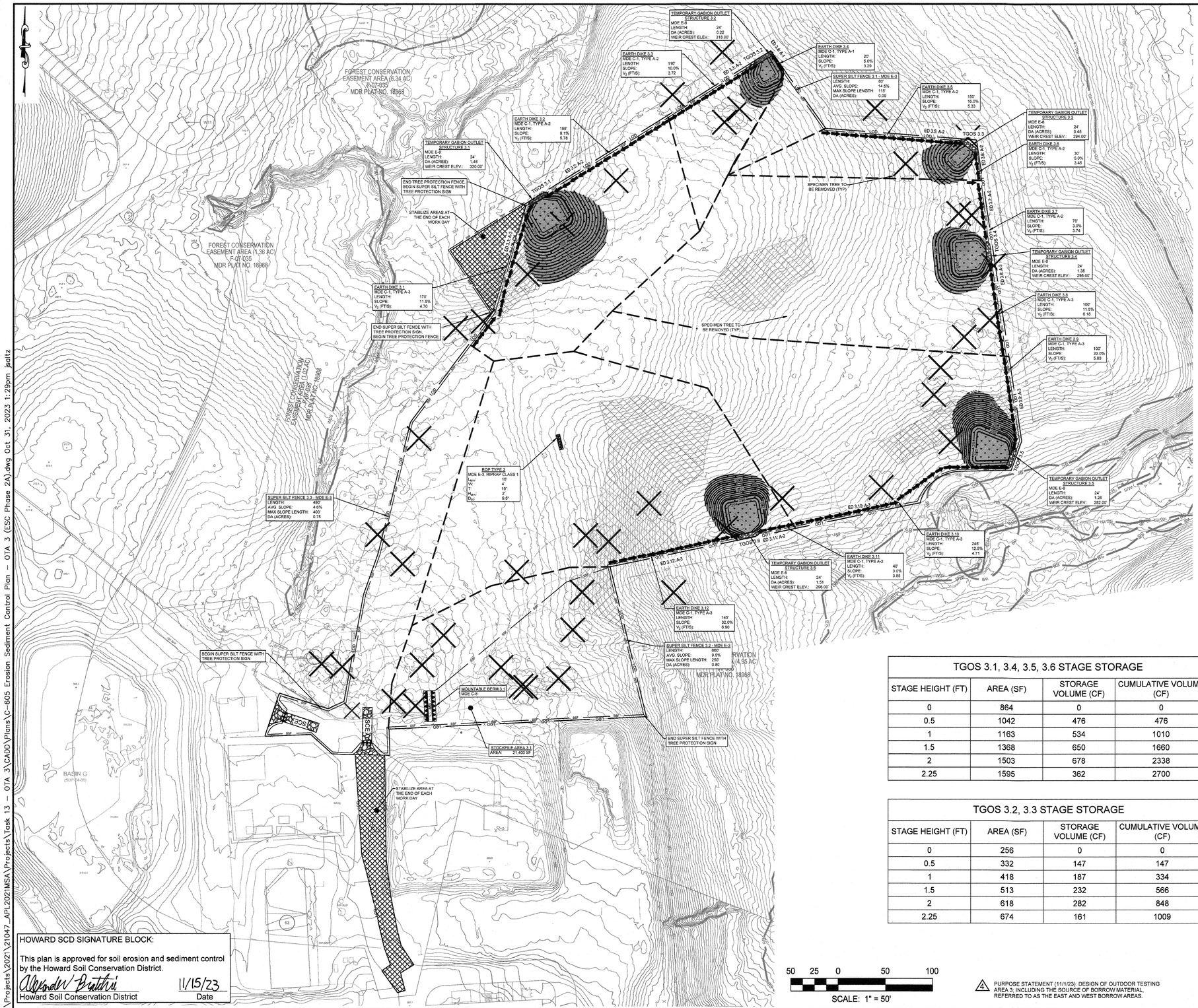
11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 48 OF 73

C-582

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060



NOTES

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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 ADDITIONAL EROSION AND SEDIMENT CONTROL NOTES, SEE SHEET C-609.

LEGEND

- LOD — LIMIT OF DISTURBANCE / PROPOSED TREELINE
- TPF — TREE PROTECTION FENCE
- DRAINAGE AREA
- SCE — STABILIZED CONSTRUCTION ENTRANCE, W/ WASH RACK
- SSF — SUPER SILT FENCE
- DF — DIVERSION FENCE
- SAME DAY STABILIZATION
- STEEP SLOPES (>20%), LESS THAN 20,000 CONTINUOUS SF
- DIVERSION DIKE
- TGOS — TEMPORARY GABION OUTLET STRUCTURE
- TEMPORARY INTERIM GRADING FOR STAGE STORAGE
- MOUNTABLE BERM
- SPECIMEN TREE TO BE REMOVED*
- TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION (DETAIL B-4-6-B)

*ONLY SPECIMEN TREES WITHIN 50' OF THE LIMITS OF DISTURBANCE HAVE BEEN SURVEYED TO ENSURE THAT ALL SPECIMEN TREES WITHIN THE FOREST CONSERVATION EASEMENT ARE PRESERVED. SPECIMEN TREE REMOVAL HAS BEEN IDENTIFIED FOR SURVEYED TREES. ALL OTHER TREES WITHIN THE LIMIT OF DISTURBANCE SHALL BE REMOVED AS REQUIRED, INCLUDING SPECIMEN TREES.

TGOS 3.1, 3.4, 3.5, 3.6 STAGE STORAGE			
STAGE HEIGHT (FT)	AREA (SF)	STORAGE VOLUME (CF)	CUMULATIVE VOLUME (CF)
0	864	0	0
0.5	1042	476	476
1	1163	534	1010
1.5	1368	650	1660
2	1503	678	2338
2.25	1595	362	2700

TGOS 3.2, 3.3 STAGE STORAGE			
STAGE HEIGHT (FT)	AREA (SF)	STORAGE VOLUME (CF)	CUMULATIVE VOLUME (CF)
0	256	0	0
0.5	332	147	147
1	418	187	334
1.5	513	232	566
2	618	282	848
2.25	674	161	1009

SEQUENCE OF CONSTRUCTION: PHASE 2A

1. CLEAR AS NECESSARY FOR INSTALLATION OF THE SEDIMENT CONTROL DEVICES AND MEASURES AS SHOWN ON THE PLAN OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. 5 DAYS
2. INSTALL STABILIZED CONSTRUCTION ENTRANCES. EXISTING PAVEMENT MUST BE REMOVED PRIOR TO PLACEMENT OF SCE. 2 DAYS
3. INSTALL PHASE 2A EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN VIEW: EARTH DIKES ED-1.1 THRU ED-1.12, SUPER SILT FENCE SSF-3.1 THRU SSF-3.3, STOCKPILE AREA 3.1, MOUNTABLE BERM 3.1, AND TEMPORARY GABION OUTLET STRUCTURE TGOS-3.1 THRU TGOS-3.6. 5 DAYS
4. ONCE ALL PHASE 2A AREAS ARE PERMANENTLY STABILIZED AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, PROCEED TO PHASE 2B (SHEET C-606). 2 DAYS

HOWARD SCD SIGNATURE BLOCK:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Howard Soil Conservation District — 11/15/23 Date

50 25 0 50 100

SCALE: 1" = 50'

△4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — 12.5.23 Date

Chief, Division of Land Development — 2/22/24 Date

Director — 2/20/24 Date

RK&K
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PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EROSION SEDIMENT CONTROL PLAN - OTA 3
(ESC PHASE 2A)
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 51 OF 73

C-605

RK&K PROJECT NUMBER 21047.013

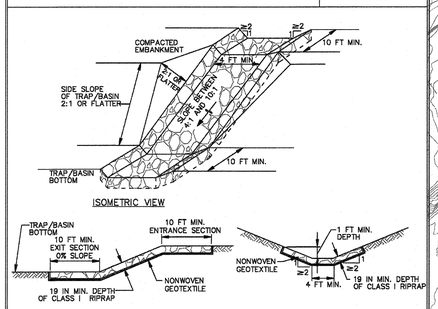
SCALE: As Shown

SDP-18-060

\\ad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 – OTA 3\CADD\Plans\C-605 Erosion Sediment Control Plan – OTA 3 (ESC Phase 2A).dwg Oct 31, 2023 1:29pm jscoltz

DETAIL D-3-1 RIPRAP INFLOW PROTECTION

STANDARD SYMBOL: RRPI



CONSTRUCTION SPECIFICATIONS

1. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
2. CONSTRUCT INFLOW CHANNEL WITH CLASS I RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D_{50}) AND A 1 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
3. INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
4. BLEND RIPRAP INTO EXISTING GROUND.
5. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW 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

HOWARD SCD SIGNATURE BLOCK:

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Howard Soil Conservation District — Date: 11/15/23

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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 ADDITIONAL EROSION AND SEDIMENT CONTROL NOTES, SEE SHEET C-609.

SEQUENCE OF CONSTRUCTION: PHASE 2B

1. COMPLETE SEQUENCE OF CONSTRUCTION - PHASE 2A (SHEET C-605). 14 DAYS
2. LEAVE IN PLACE THE REMAINING PHASE 2A EROSION AND SEDIMENT CONTROL DEVICES SUCH AS CONSTRUCTION ENTRANCES, STABILIZED CONSTRUCTION ENTRANCE, SUPER SILT AND DIVERSION FENCES, EARTH DIKES, AND TEMPORARY GABION OUTLET STRUCTURE. INSTALL PROPOSED PERMANENT SECURITY FENCING. 3 DAYS
3. CONSTRUCT PROPOSED RETAINING WALL, AND ALL ASSOCIATED SITE GRADING. 30 DAYS
4. FOR MASS GRADING, EXCESS CUT FROM THE BORROW AREAS TO BE INSTALLED AS FILL FOR THIS SITE. 10 DAYS
5. IN HATCHED AREAS, INSTALL SHOWN UTILITY SERVICES, AND STABILIZE AREAS AT THE END OF EACH WORK DAY. 30 DAYS
6. INSTALL ADDITIONAL PHASE 2 EROSION AND SEDIMENT CONTROL MEASURES: SIP-3.1 AND GABION INLET PROTECTION GIP-3.1 AND GIP-3.2. 2 DAYS
7. INSTALL PROPOSED ROAD AND OTHER SITE FEATURES. 7 DAYS
8. ONCE ALL PHASE 2B AREAS ARE PERMANENTLY STABILIZED AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROLS. PROVIDE PERMANENT STABILIZATION TO THOSE AREAS DISTURBED BY THIS OPERATION. 2 DAYS

LEGEND

- LOD — LIMIT OF DISTURBANCE / PROPOSED TREELINE
- TPF — TREE PROTECTION FENCE
- DRAINAGE AREA
- SCE — STABILIZED CONSTRUCTION ENTRANCE, W/ WASH RACK
- SSF — SUPER SILT FENCE
- SAME DAY STABILIZATION
- POROUS PAVEMENT
- STEEP SLOPES (>20%), LESS THAN 20,000 CONTINUOUS SF
- POROUS CONCRETE PAD
- IMPERVIOUS PAVEMENT
- DIVERSION DIKE
- TGOS — TEMPORARY GABION OUTLET STRUCTURE
- SD — STORM DRAIN WITH CONCRETE END SECTION AND RIPRAP OUTFALL
- GIP — GABION INLET PROTECTION
- MB — MOUNTABLE BERM
- SIP — STANDARD INLET PROTECTION
- PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION (PSSMC - 0.22 LB/SF)
- PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION (PSSMS - 2.0 LB/SF)**

*ONLY SPECIMEN TREES WITHIN 50' OF THE LIMITS OF DISTURBANCE HAVE BEEN SURVEYED TO ENSURE THAT ALL SPECIMEN TREES WITHIN THE FOREST CONSERVATION EASEMENT ARE PRESERVED. SPECIMEN TREE REMOVAL HAS BEEN IDENTIFIED FOR SURVEYED TREES. ALL OTHER TREES WITHIN THE LIMIT OF DISTURBANCE SHALL BE REMOVED AS REQUIRED, INCLUDING SPECIMEN TREES.

**SINCE THE STEEPEST SLOPE IS 2:1 WITH A SLOPE LENGTH LESS THAN 30 FT, TEMPORARY MATTING WITH DESIGN SHEAR STRESS ≥ 2.0 LB/SF IS REQUIRED PER TABLE B.7 OF 2011 MD STANDARDS AND SPECIFICATIONS FOR SOIL EROSION & SEDIMENT CONTROL

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL: PSSMC – * 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 1 ½ 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 IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. 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 NEXT DOWNSTREAM 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

B.40

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date: 12.5.23

Chief, Division of Land Development — Date: 2/22/24

Director — Date: 2/28/24

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DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EROSION SEDIMENT CONTROL PLAN - OTA 3 (ESC PHASE 2B)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 18 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 52 OF 73

C-606

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

C:\Users\DPILAC~1\AppData\Local\Temp\AcPublish_25928\C–606 Erosion Sediment Control Plan – OTA 3 (ESC Phase 2B).dwg Nov 01, 2023 10:56am dpilachowski

HOWARD SOIL CONSERVATION DISTRICT (HSCD)
STANDARD SEDIMENT CONTROL NOTES

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

   Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.

3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.

4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).

5. All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.

6. Site Analysis:

Total Area of Site:	27.9 ~~19.8~~	Acres
Area Disturbed:	27.9 ~~19.8~~	Acres
Area to be roofed or paved:	8.0 ~~2.3~~	Acres
Area to be vegetatively stabilized:	19.9 ~~17.5~~	Acres
Total Cut:	86,375 ~~33,400~~	Cu. Yds.
Total Fill:	173,300 ~~146,500~~	Cu. Yds.
Offsite ~~waste~~/borrow area location:	86,925 TO BE DETERMINED	

7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:
   - Inspection date
   - Inspection type (routine, pre-storm event, during rain event)
   - Name and title of inspector
   - Weather information (current conditions as well as time and amount of last recorded precipitation)
   - Brief description of project's status (e.g., percent complete) and/or current activities
   - Evidence of sediment discharges
   - Identification of plan deficiencies
   - Identification of sediment controls that require maintenance
   - Identification of missing or improperly installed sediment controls
   - Compliance status regarding the sequence of construction and stabilization requirements
   - Photographs
   - Monitoring/sampling
   - Maintenance and/or corrective action performed
   - Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).

   See the Site Analysis Quantities table below for detailed summaries by each area on site.

9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.

10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may allowed by the CID per the list of HSCD-approved field changes.

11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the HSCD, no more than 30 acres cumulatively may be disturbed at a given time.

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.

13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.

14. All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.

15. Stream channels must not be disturbed during the following restricted time periods (inclusive):
   - Use I and IP March 1 - June 15
   - Use III and IIIP October 1 - April 30
   - Use IV March 1 - May 31

16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

OTA3 & BORROW AREA CERTIFICATES

Owners/Developer Certification:

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

Nicholas A Laswell — 8/18/2023
Owner's/ Developer's Signature — Date

Nicholas Laswell, P.E. Assistant Group Supervisor FDC
Printed Name & Title

Rev. 8.2016

Design Certification:

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

Charles Mitchell — 09/22/2023
Designer's Signature — Date

Charles W. W. Mitchell, III — MD Registration No. 49432
Printed Name — (P.E.) R.L.S., or R.L.A. (circle one)

EROSION AND SEDIMENT CONTROL GENERAL NOTES

1. 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.
2. FOR SPECIFICATIONS ON PERMANENT OR TEMPORARY STABILIZATION, SEE B-4-4 AND B-4-5.
3. MULCHING ONLY IS RESTRICTED TO USE ON DISTURBED AREAS AS A TEMPORARY COVER WHERE VEGETATION IS NOT FEASIBLE OR WHERE SEEDING GERMINATION CANNOT BE COMPLETED BECAUSE OF WEATHER CONDITIONS. FOR SPECIFICATIONS SEE B-4-3, A.1.B.
4. FOR SPECIFICATIONS ON THE STABILIZATION OF CUT AND FILL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL, SEE INCREMENTAL STABILIZATION B-4-1.
5. THE EXISTING TOPSOIL FROM ON OR OFF SITE THAT IS USED MUST MEET THE MINIMUM SPECIFICATION IN B-4-2.
6. THE REQUIRED SEQUENCE OF CONSTRUCTION MUST BE FOLLOWED DURING SITE DEVELOPMENT. ANY CHANGES IN THE SEQUENCE OF CONSTRUCTION MUST BE APPROVED BY THE SOIL CONSERVATION DISTRICT.
7. ANY REVISIONS TO THE SEDIMENT CONTROL PLAN, NOT COVERED UNDER THE LIST OF PLAN MODIFICATIONS THAT CAN BE APPROVED BY THE SEDIMENT CONTROL INSPECTOR, NEED TO BE SUBMITTED TO THE SOIL CONSERVATION DISTRICT FOR APPROVAL.
8. 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.
9. ALL SEDIMENT CONTROL STRUCTURES ARE TO BE INSPECTED ONCE A WEEK AND AFTER EACH RAINFALL AND ARE TO BE REPAIRED, AS NEEDED, SO THAT THE STRUCTURE MEETS THE MINIMUM SPECIFICATIONS AS SHOWN IN THE 2011 MDE STANDARDS AND SPECS.
10. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SEDIMENT AND EROSION CONTROL MEASURES UNTIL THE DISTURBED AREAS ARE PERMANENTLY STABILIZED.
11. 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.
12. PLANTINGS FOR MEADOW AREAS SHALL FOLLOW MARYLAND SHA STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS SECTION 707 - MEADOW ESTABLISHMENT.

HOWARD SCD SIGNATURE BLOCK:

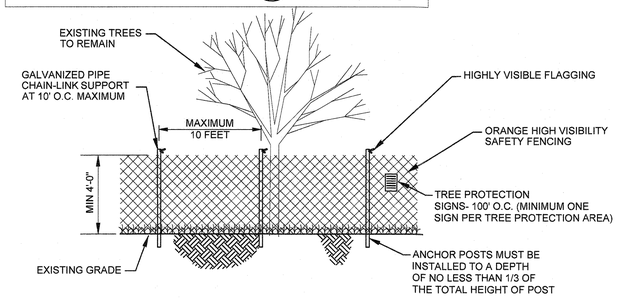
This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Alexander Brathrie — 11/15/23
Howard Soil Conservation District — Date

SITE ANALYSIS QUANTITIES

	SITE AREA	DISTURBED AREA	PAVED AREA	VEGETATIVE AREA	CUT (CY)	FILL (CY)	OFFSITE WASTE/BORROW
OTA1	7.0	7.0	0.7	6.3	9700	55275	45575
OTA2	5.0	5.0	0.4	4.6	12600	28125	15525
OTA3	7.2	7.2	5.6	1.6	5100	86980	81880
WEST BORROW AREA	2.7	2.7	0.2	2.5	14850	470	-14380
EAST BORROW AREA	6.0	6.0	1.1	4.9	44125	2450	-41675

NOTE: OFFSITE BORROW MUST COME FROM A SITE WITH AN ACTIVE GRADING PERMIT



NOTES:
1. TREE PROTECTION FENCING SHALL BE INSTALLED ALONG THE BOUNDARY OF ALL FOREST CONSERVATION EASEMENTS BORDERING THE LOD.
2. BOUNDARIES OF FOREST CONSERVATION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
3. ROOT DAMAGE SHOULD BE AVOIDED.
4. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.
5. WHERE COMBINED SUPER SILT FENCE/ TREE PROTECTION FENCE IS SPECIFIED INSTALL SUPER SILT FENCE PER DETAIL, EXCEPT, APPLY TREE PROTECTION SIGN TO SUPER SILT FENCE.

TREE PROTECTION FENCE - HIGH VISIBILITY ORANGE FENCE

3 PURPOSE STATEMENT (4/7/22): ADDITION OF TWO 6'x40' CONCRETE PADS

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

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

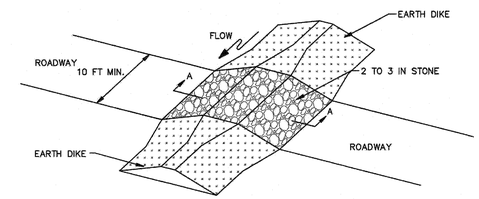
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

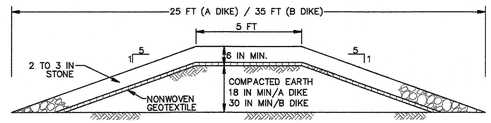
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-8 MOUNTABLE BERM

STANDARD SYMBOL: MB



ISOMETRIC VIEW



SECTION A-A

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

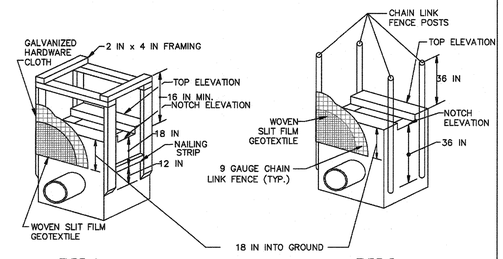
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

C.24

DETAIL E-9-1 STANDARD INLET PROTECTION

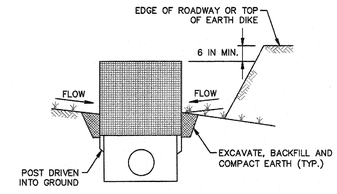
STANDARD SYMBOL: SIP

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



TYPE A — TYPE B

ISOMETRIC VIEW



SECTION FOR TYPE A AND B

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23
Chief, Division of Land Development — Date 2/22/24
Director — Date 2/22/24

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: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES WILLIAM WOODWARD MITCHELL III — 49432 — REGISTERED PROFESSIONAL ENGINEER — 9/22/23

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	3	Addition of Two 6"x40' Concrete Pads	4/7/22
RK&K	4	Replacement Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EROSION SEDIMENT CONTROL DETAILS
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 55 OF 73

C-609
RK&K PROJECT NUMBER 21047.013
SCALE: As Shown

SDP-18-060

\\cd.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-609 Erosion Sediment Control Details.dwg Oct 31, 2023 1:33pm jgaltz

MATCHLINE - SEE SHEET C-683

DIVERSION FENCE 1
MDE C-9
LENGTH: 210 FT
AVG. SLOPE: 12.5%
AVG SLOPE LENGTH: 8 FT
DRAINAGE AREA: 0.44 AC
VELOCITY: 3.06 FT/S

DF/SSF TRANSITION

SSF/DF TRANSITION

STANDARD INLET PROTECTION 1
TYPE B
MDE E-9-1
DRAINAGE AREA: 0.72 AC

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SAME DAY STABILIZATION = 0.43 AC

SUPER SILT FENCE 2
MDE E-3
LENGTH: 473 FT
AVG. SLOPE: 5.2%
AVG. SLOPE LENGTH: 20 FT

STANDARD INLET PROTECTION 3
TYPE A
MDE E-9-1
DRAINAGE AREA: 0.10 AC

TEMPORARY SWALE 1
(TYPE A-2) MDE C-2
LENGTH: 204 FT
SLOPE: 8.5%
DRAINAGE AREA: 0.40 AC

COMBINATION INLET PROTECTION 1
MDE E-9-6
DRAINAGE AREA: 0.03 AC

SUPER SILT FENCE 1
MDE E-3
LENGTH: 120 FT
AVG. SLOPE: 4.8%
AVG. SLOPE LENGTH: 8 FT

AT-GRADE INLET PROTECTION 1
MDE E-9-2
DRAINAGE AREA: 0.16 AC.

STABILIZED CONSTRUCTION ENTRANCE 1 & WASH RACK
MDE B-1

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SAME DAY STABILIZATION = 0.70 AC

STANDARD INLET PROTECTION 2
TYPE A
MDE E-9-1
DRAINAGE AREA: 0.08 AC.

COMBINATION INLET PROTECTION 2
MDE E-9-6
DRAINAGE AREA: 0.15 AC

COMBINATION INLET PROTECTION 3
MDE E-9-6
DRAINAGE AREA: 0.01 AC

STANDARD INLET PROTECTION 6
TYPE B
MDE E-9-1
DRAINAGE AREA: 0.50 AC

6'x6' ANTI-SEEP CONCRETE COLLAR ON 24" PIPE OUTFALL

33" DIA. CONCRETE RISER WITH TRASH RACK

HORIZONTAL DRAWDOWN DEVICE

SEDIMENT TRAP
MDE G-1-1
DRAINAGE AREA: 3.09 AC

BAFFLE BOARD, TYP.
FLOW LENGTH: 137'

COMBINATION INLET PROTECTION 4
MDE E-9-6
DRAINAGE AREA: 0.10 AC

TEMPORARY SWALE 1
(TYPE A-2) MDE C-2
LENGTH: 27 FT
SLOPE: 10%
DRAINAGE AREA: 0.02 AC

SUPER SILT FENCE 3
MDE E-3
LENGTH: 576 FT
AVG. SLOPE: 1.8%
AVG. SLOPE LENGTH: 56 FT

MATCHLINE - SEE SHEET C-682

MATCHLINE - SEE SHEET C-685

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

SCALE: 1" = 20'

GENERAL NOTES

1. TOPOGRAPHIC AND SURFACE INFORMATION SHOWN WAS OBTAINED FROM FIELD SURVEY BY RK&K, COMPLETED DECEMBER 23, 2021. UTILITY INFORMATION SHOWN WAS PROVIDED BY AII|DATA ON FEBRUARY 4, 2022.
2. 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 ARCHITECT/ENGINEER PRIOR TO THE START OF ANY WORK.
3. BEARINGS AND HORIZONTAL COORDINATES SHOWN ON THIS PLAN ARE BASED UPON MARYLAND STATE PLANE COORDINATE SYSTEM NAD83. VERTICAL ELEVATIONS SHOWN ARE BASED UPON VERTICAL DATUM NAVD88.
4. THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY, BASED UPON FIELD OBSERVATIONS AND 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 INVOLVED 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.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" AT 1-800-257-7777 FIVE DAYS PRIOR TO THE START OF ANY EXCAVATION WORK.
6. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY INVERTS AND CLEARANCES FROM NEW WORK PRIOR TO START OF ANY WORK.
7. THE CONTRACTOR SHALL STAKE OUT THE LOCATION OF ALL NEW CONSTRUCTION AND VERIFY ALL JURISDICTIONAL SETBACKS AND BUFFERS PRIOR TO START OF ANY WORK.
8. EXISTING UTILITIES WHICH ARE NOT TO BE REMOVED OR ABANDONED SHALL REMAIN OPERATIONAL AT ALL TIMES. APPROPRIATE EXISTING UTILITIES SHALL REMAIN IN SERVICE UNTIL REPLACEMENT/RELOCATED UTILITIES ARE OPERATIONAL.
9. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL EXISTING AND PROPOSED BUILDING ENTRANCES DURING ALL PHASES OF CONSTRUCTION. UNLESS OTHERWISE NOTED IN THESE DOCUMENTS. CONTRACTOR SHALL NOTIFY ENGINEER / OWNER IF EXISTING OR PROPOSED CONDITIONS RESTRICT ABILITY TO ACHIEVE POSITIVE DRAINAGE FROM BUILDINGS PRIOR TO THE START OF CONSTRUCTION.
10. SEE SHEET C-003 FOR FULL EXISTING AND PROPOSED FEATURES LEGEND

SITE SOILS SUMMARY TABLE

NAME	UNIT	Slope	HSG	HYDRIC	K FACTOR
Urban land-Udorthents complex	UdD	8-25%	D	No	Unrated
Manor loam	MaB	3-8%	B	No	0.24
Manor loam	MaC	8-15%	B	No	0.28
Glenville silt loam	GmB	3-8%	C/D	No	0.37

SEQUENCE OF CONSTRUCTION: PHASE 2A

1. CLEAR AS NECESSARY FOR INSTALLATION OF THE SEDIMENT CONTROL DEVICES AND MEASURES AS SHOWN ON THE PLAN OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR. 5 DAYS
2. INSTALL STABILIZED CONSTRUCTION ENTRANCES. EXISTING PAVEMENT MUST BE REMOVED PRIOR TO PLACEMENT OF SCE. 2 DAYS
3. INSTALL PHASE 2A EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN VIEW: EARTH DIKES 1 THRU 2, SILT FENCE 1 THRU 3, SUPER SILT FENCE 1 THRU 9, SILT FENCE ON PAVEMENT 1 THRU 2, DIVERSION FENCE 1 THRU 2, AT-GRADE INLET PROTECTION 1 THRU 2, STANDARD INLET PROTECTION 1 THRU 3, COMBINATION INLET PROTECTION 1 THRU 5 AND STABILIZED CONSTRUCTION ENTRANCES 1 THRU 7. 5 DAYS
4. BEGIN GRADING FOR SEDIMENT TRAPS (ST 1 AND 2) AFTER CLEARING AND GRUBBING TO THE EXTENT OF THESE PRACTICES ONLY. INSTALL BAFFLE BOARDS AND ANTI-VORTEX RISER STRUCTURE CONNECTING TO EXISTING STORM DRAIN. 10 DAYS
5. ONCE ALL PHASE 2A AREAS ARE PERMANENTLY STABILIZED AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, PROCEED TO PHASE 2B (SHEET C-686 THRU 690). 2 DAYS

EROSION AND SEDIMENT CONTROL LEGEND

- LOD — LIMIT OF DISTURBANCE
- SSF — SUPER SILT FENCE
- SFOP — SILT FENCE ON PAVEMENT
- DF — DIVERSION FENCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- CIP — CURB INLET PROTECTION
- COIP — COMBINATION INLET PROTECTION
- AGIP — AT-GRADE INLET PROTECTION
- SAME DAY STABILIZATION
- x — TEMPORARY CONSTRUCTION FENCE
- DRAINAGE AREA
- EXISTING STEEP SLOPES (>15%)
- PIPE TO BE REMOVED
- PROPERTY LINE

HOWARD SCD SIGNATURE BLOCK:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Howard Soil Conservation District — Date 11/15/23

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. W. MICHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EROSION SEDIMENT CONTROL PLAN - EAST BORROW AREA (ESC PHASE 2A)

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 56 OF 73

C-681

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

C:\Users\DPILAC~1\AppData\Local\Temp\AcPublish_16752\C-681 - C-686 Erosion Sediment Control Plan - East Borrow Area (Phase 2A).dwg Oct 31, 2023 3:31pm dpilachowski

MATCHLINE - SEE SHEET C-681

MATCHLINE - SEE SHEET C-685

MATCHLINE - SEE SHEET C-684

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SAME DAY STABILIZATION = 0.43 AC

TEMPORARY SWALE 1 (TYPE A-2) MDE C-2 LENGTH: 204 FT SLOPE: 8.5% DRAINAGE AREA: 0.40 AC

SUPER SILT FENCE 4 MDE E-3 LENGTH: 170 FT AVG. SLOPE: 15% AVG. SLOPE LENGTH: 8 FT

SAME DAY STABILIZATION = 0.43 AC

STAGING/STOCKPILE AREA

SUPER SILT FENCE 5 MDE E-3 LENGTH: 206 FT AVG. SLOPE: 2.5% AVG. SLOPE LENGTH: 40 FT

STABILIZED CONSTRUCTION ENTRANCE 3 MDE B-1

SUPER SILT FENCE 6 MDE E-3 LENGTH: 266 FT AVG. SLOPE: 2.2% AVG. SLOPE LENGTH: 45 FT

SILT FENCE 1 MDE E-1 LENGTH: 320 FT

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SUPER SILT FENCE 7 MDE E-3 LENGTH: 168 FT AVG. SLOPE: 5.8% AVG. SLOPE LENGTH: 17 FT

STABILIZED CONSTRUCTION ENTRANCE 4 MDE B-1

EARTH DIKE MDE C-1, TYPE A-2 LENGTH: 202 FT SLOPE: 5.9% AVG. SLOPE LENGTH: 17FT VELOCITY: 1.69 FT/S

SUPER SILT FENCE 8 MDE E-3 LENGTH: 81 FT AVG. SLOPE: 23% AVG. SLOPE LENGTH: 4.5 FT

COMBINATION INLET PROTECTION 5 MDE E-9-6 DRAINAGE AREA: 0.10 AC.

SUPER SILT FENCE 3 MDE E-3 LENGTH: 576 FT AVG. SLOPE: 1.8% AVG. SLOPE LENGTH: 56 FT

STABILIZED CONSTRUCTION ENTRANCE 2 WITH PIPE MDE B-1

SAME DAY STABILIZATION = 0.70 AC

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

GENERAL NOTES

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SITE SOILS SUMMARY TABLE

NAME	UNIT	Slope	HSG	HYDRIC	K FACTOR
Urban land-Udorthents complex	UdD	8-25%	D	No	Unrated
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Manor loam	MaC	8-15%	B	No	0.28
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EROSION AND SEDIMENT CONTROL LEGEND

- LOD — LIMIT OF DISTURBANCE
- SSF — SUPER SILT FENCE
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HOWARD SCD SIGNATURE BLOCK:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Howard Soil Conservation District — Date 11/15/23

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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: Matt Thomasson — 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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. MATTHEWS — 49432 — 11/1/23

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

OWNER/DEVELOPER

JOHNS HOPKINS APPLIED PHYSICS LABORATORY

11100 JOHNS HOPKINS ROAD LAUREL, MARYLAND 20723

EROSION SEDIMENT CONTROL PLAN - EAST BORROW AREA (ESC PHASE 2A)

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 57 OF 73

C-682

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

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MATCHLINE - SEE SHEET C-681

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Charles W. Mitchell 11/1/23

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
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BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EROSION SEDIMENT CONTROL PLAN - EAST BORROW AREA (ESC PHASE 2A)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 18 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 58 OF 73

C-683
RK&K PROJECT NUMBER 21047.013
SCALE: As Shown

SDP-18-060

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MATCHLINE - SEE SHEET C-685

MATCHLINE - SEE SHEET C-682

MATCHLINE - SEE SHEET C-682

STAGING/STOCKPILE AREA

SUPER SILT FENCE 9
MDE E-3
LENGTH: 503 FT
AVG. SLOPE: 4%
AVG SLOPE LENGTH: 25 FT

SILT FENCE 2
MDE E-1
LENGTH: 320 FT

STABILIZED CONSTRUCTION ENTRANCE 5
MDE B-1

MOUNTABLE BERM 3.1
MDE C-8

DIVERSION FENCE 2
MDE C-9
LENGTH: 433 FT
AVG. SLOPE: 4.8%
AVG. SLOPE LENGTH: 20 FT
DRAINAGE AREA: 0.44 AC
VELOCITY: 2.76 FT/S

SILT FENCE
MDE E-1
LENGTH: 207 FT
AVG. SLOPE: 0%

SILT FENCE ON PAVEMENT 2
MDE E-2
LENGTH: 49 FT
AVG. SLOPE: 5%
AVG SLOPE LENGTH: 20 FT

STABILIZED CONSTRUCTION ENTRANCE 6
MDE B-1

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

BITUMINOUS PAVING

WEST SERVICE ROAD

36A

101

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SCALE: 1" = 20'

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Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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STATE OF MARYLAND — CHARLES WILLIAM MITCHELL — No. 49432 — PROFESSIONAL ENGINEER

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

RK&K			
4	New Sheet - OTA-3 and Borrow Area Modifications		11/1/23
BY	NO.	REVISION	DATE

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

EROSION SEDIMENT CONTROL PLAN - WEST BORROW AREA (ESC PHASE 2A)
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 59 OF 73

C-684

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

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SILT FENCE ON PAVEMENT 1
MDE E-2
LENGTH: 245 FT
AVG. SLOPE: 3.3%
AVG. SLOPE LENGTH: 59 FT
DRAINAGE AREA = 0.15 AC.

AT-GRADE INLET
PROTECTION 2
MDE E-9-2
DRAINAGE AREA: 0.09 AC

STABILIZED
CONSTRUCTION
ENTRANCE 7
MDE B-1

AT-GRADE INLET
PROTECTION 3
MDE E-9-2
DRAINAGE AREA: 1.03 AC

STANDARD INLET PROTECTION 7
TYPE B
MDE E-9-1

EARTH DIKE 1
MDE C-1, TYPE A-2
LENGTH: 93 FT
AVG. SLOPE: 10%
AVG SLOPE LENGTH: 6 FT
VELOCITY: 2.48 FT/S

SUPER SILT FENCE 9
MDE E-3
LENGTH: 503 FT
AVG. SLOPE: 4%
AVG SLOPE LENGTH: 25 FT

MAINTAIN 7.5' CLEARANCE
ACCESS AROUND FIRE
HYDRANT AT ALL TIMES
DURING CONSTRUCTION

ANTI-SEEP CONCRETE COLLAR
ON 15" PIPE OUTFALL

21" DIA. CONCRETE RISER
WITH TRASH RACK

SEDIMENT TRAP 2
MDE G-1-1
DRAINAGE AREA: 1.15 AC

BAFFLE BOARD, TYP.
FLOW LENGTH: 75'

TEMPORARY SWALE 1
(TYPE A-1) MDE C-2
LENGTH: 83 FT
SLOPE: 3%
DRAINAGE AREA: 0.41 AC

STANDARD INLET
PROTECTION 8
TYPE B
MDE E-9-1

DIVERSION FENCE 2
MDE C-9
LENGTH: 433 FT
AVG. SLOPE: 4.8%
AVG. SLOPE LENGTH: 20 FT
DRAINAGE AREA: 0.44 AC
VELOCITY: 2.76 FT/S

MATCHLINE - SEE SHEET C-684

MATCHLINE - SEE SHEET C-681

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SHEET 60 OF 73

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SCALE: As Shown

SDP-18-060

C:\Users\DPILAC~1\AppData\Local\Temp\AcPublish_16752\C-681 - C-686 Erosion Sediment Control Plan - East Borrow Area (Phase 2A).dwg Oct 31, 2023 3:46pm dpilachowski

MATCHLINE - SEE SHEET C-688

DIVERSION FENCE 1
MDE C-9
LENGTH: 210 FT
AVG. SLOPE: 12.5%
AVG SLOPE LENGTH: 8 FT
DRAINAGE AREA: 0.44 AC
VELOCITY: 3.06 FT/S

DF/SSF TRANSITION

SSF/DF TRANSITION

STANDARD INLET PROTECTION 4
TYPE B
MDE E-9-1
DRAINAGE AREA: 0.23 AC

SUMP PIT (MDE F-2) TO CONNECT TO PORTABLE SEDIMENT TANK (MDE F-3) FOR DRAINAGE, TYP

DIVERSION FENCE 3
MDE C-9
LENGTH: 630 FT
SLOPE: 0%

SUMP PIT TO CONNECT TO STANDARD INLET PROTECTION FOR DRAINAGE, MDE F-2

SUMP PIT TO CONNECT TO STANDARD INLET PROTECTION FOR DRAINAGE, MDE F-2

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SAME DAY STABILIZATION = 0.43 AC

SUPER SILT FENCE 2
MDE E-3
LENGTH: 473 FT
AVG. SLOPE: 5.2%
AVG. SLOPE LENGTH: 20 FT

SUPER SILT FENCE 10
MDE E-3
LENGTH: 311 FT
AVG. SLOPE: 0%
AVG. SLOPE LENGTH: 40 FT

COMBINATION INLET PROTECTION 1
MDE E-9-6
DRAINAGE AREA: 0.04 AC

SUPER SILT FENCE 1
MDE E-3
LENGTH: 120 FT
AVG. SLOPE: 4.8%
AVG. SLOPE LENGTH: 8 FT

STABILIZED CONSTRUCTION ENTRANCE 1 & WASH RACK
MDE B-1

SUMP PIT TO CONNECT TO COMBINATION INLET PROTECTION FOR DRAINAGE

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SAME DAY STABILIZATION = 0.70 AC

STANDARD INLET PROTECTION 5
TYPE A
MDE E-9-1
DRAINAGE AREA: 0.23 AC

COMBINATION INLET PROTECTION 2
MDE E-9-6
DRAINAGE AREA: 0.18 AC

COMBINATION INLET PROTECTION 3
MDE E-9-6
DRAINAGE AREA: 0.04 AC

STANDARD INLET PROTECTION 6
TYPE B
MDE E-9-1
DRAINAGE AREA: 0.95 AC

6'x6' ANTI-SEEP CONCRETE COLLAR ON 24" PIPE OUTFALL

33" DIA. CONCRETE RISER WITH TRASH RACK

HORIZONTAL DRAWDOWN DEVICE

SEDIMENT TRAP
MDE G-1-1
DRAINAGE AREA: 3.21 AC

BAFFLE BOARD, TYP.
FLOW LENGTH: 137'

COMBINATION INLET PROTECTION 4
MDE E-9-6
DRAINAGE AREA: 0.10 AC

TEMPORARY SWALE 1
(TYPE A-2) MDE C-2
LENGTH: 27 FT
SLOPE: 10%
DRAINAGE AREA: 0.02 AC

SUPER SILT FENCE 3
MDE E-3
LENGTH: 576 FT
AVG. SLOPE: 1.8%
AVG. SLOPE LENGTH: 56 FT

MATCHLINE - SEE SHEET C-690

MATCHLINE - SEE SHEET C-687

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

SCALE: 1" = 20'

GENERAL NOTES

1. TOPOGRAPHIC AND SURFACE INFORMATION SHOWN WAS OBTAINED FROM FIELD SURVEY BY RK&K, COMPLETED DECEMBER 23, 2021. UTILITY INFORMATION SHOWN WAS PROVIDED BY AIIDATA ON FEBRUARY 4, 2022.
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10. SEE SHEET C-003 FOR FULL EXISTING AND PROPOSED FEATURES LEGEND

SITE SOILS SUMMARY TABLE

NAME	UNIT	Slope	HSG	HYDRIC	K FACTOR
Urban land-Udorthents complex	UdD	8-25%	D	No	Unrated
Manor loam	MaB	3-8%	B	No	0.24
Manor loam	MaC	8-15%	B	No	0.28
Glenville silt loam	GmB	3-8%	C/D	No	0.37

SEQUENCE OF CONSTRUCTION: PHASE 2B

1. COMPLETE SEQUENCE OF CONSTRUCTION - PHASE 2A (SHEET C-681). 24 DAYS
2. BEGIN DEMOLITION AND/OR RELOCATION OF EXISTING STRUCTURES, PAVING, CURB, AND UTILITY SERVICES. 30 DAYS
3. REMOVE PHASE 2A EROSION AND SEDIMENT CONTROL MEASURES UPON COMPLETION OF ASSOCIATED UTILITY REMOVAL: AT-GRADE INLET PROTECTION 1, AND STANDARD INLET PROTECTION 1 THRU 3.

   LEAVE IN PLACE THE REMAINING PHASE 2A EROSION AND SEDIMENT CONTROL DEVICES SUCH AS STABILIZED CONSTRUCTION ENTRANCES, SILT FENCE, SUPER SILT FENCE, SILT FENCE ON PAVEMENT AND DIVERSION FENCES, EARTH DIKES, INLET PROTECTIONS, TEMPORARY SWALES AND SEDIMENT TRAPS. 3 DAYS
4. INSTALL PROPOSED STORM DRAIN IN BORROW AREA. INSTALL REMAINING UTILITIES IN SURROUNDING SERVICE ROADS USING TRENCHES AND STABILIZE AREAS AT THE END OF EACH WORK DAY. 30 DAYS
5. INSTALL PHASE 2B EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN VIEW: STANDARD INLET PROTECTION 4 THRU 6, SUPER SILT FENCE 10 THRU 11, AND SUMP PITS CONNECTED TO PORTABLE SEDIMENT TANKS. 2 DAYS
6. BEGIN MASS GRADING AFTER CLEARING AND GRUBBING IN BORROW AREAS WITH TEMPORARY STABILIZATION AS REQUIRED AND NECESSARY. EXTEND TEMPORARY SWALE TO ADJACENT AREA BY SUBSTATION. 60 DAYS
7. UPON COMPLETION OF PREVIOUS STEPS, AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, PROCEED TO PHASE 2C (SHEET C-691 THRU 695). 2 DAYS

EROSION AND SEDIMENT CONTROL LEGEND

- LOD — LIMIT OF DISTURBANCE
- SSF — SUPER SILT FENCE
- SFOP — SILT FENCE ON PAVEMENT
- DF — DIVERSION FENCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- CIP — CURB INLET PROTECTION
- COIP — COMBINATION INLET PROTECTION
- AGIP — AT-GRADE INLET PROTECTION
- SAME DAY STABILIZATION
- x — TEMPORARY CONSTRUCTION FENCE
- DRAINAGE AREA
- EXISTING STEEP SLOPES (>15%)
- PIPE TO BE REMOVED
- PROPERTY LINE

HOWARD SCD SIGNATURE BLOCK:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Howard Soil Conservation District — Date 11/15/23

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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700 East Pratt Street, Suite 500
Baltimore, MD 21202
Ph: 410.728.2900 Contact: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EROSION SEDIMENT CONTROL PLAN - EAST BORROW AREA (ESC PHASE 2B)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 18 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 61 OF 73

C-686

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

C:\Users\DPILAC~1\AppData\Local\Temp\AcPublish_16752\C--686 - C-690 Erosion Sediment Control Plan - East Borrow Area (Phase 2B).dwg Oct 31, 2023 3:27pm dpilachowski

MATCHLINE - SEE SHEET C-686

MATCHLINE - SEE SHEET C-690

MATCHLINE - SEE SHEET C-689

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SAME DAY STABILIZATION = 0.43 AC

SUPER SILT FENCE 10
MDE E-3
LENGTH: 311 FT
AVG. SLOPE: 0%
AVG. SLOPE LENGTH: 40 FT

SUMP PIT (MDE F-2) TO CONNECT TO PORTABLE SEDIMENT TANK (MDE F-3) FOR DRAINAGE, TYP

ROP TYPE 3
MDE E-3, RIP RAP CLASS 1
LMIN: 10'
W: 6'
T: 19"
HMIN: 2'
D50: 9.5"

TEMPORARY SWALE
(TYPE A-2) MDE C-2
LENGTH: 322 FT
SLOPE: 8.5%
DRAINAGE AREA: 0.40 AC

SUPER SILT FENCE 4
MDE E-3
LENGTH: 170 FT
AVG. SLOPE: 15%
AVG. SLOPE LENGTH: 8 FT

SAME DAY STABILIZATION = 0.43 AC

STAGING/STOCKPILE AREA

SUPER SILT FENCE 5
MDE E-3
LENGTH: 206 FT
AVG. SLOPE: 2.5%
AVG. SLOPE LENGTH: 40 FT

STABILIZED CONSTRUCTION ENTRANCE 3
MDE B-1

SUPER SILT FENCE 6
MDE E-3
LENGTH: 266 FT
AVG. SLOPE: 2.2%
AVG. SLOPE LENGTH: 45 FT

SILT FENCE 1
MDE E-1
LENGTH: 320 FT

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SUPER SILT FENCE 7
MDE E-3
LENGTH: 168 FT
AVG. SLOPE: 5.8%
AVG. SLOPE LENGTH: 17 FT

STABILIZED CONSTRUCTION ENTRANCE 4
MDE B-1

EARTH DIKE
MDE C-1, TYPE A-2
LENGTH: 202 FT
SLOPE: 5.9%
AVG. SLOPE LENGTH: 17FT
VELOCITY: 1.69 FT/S

SUPER SILT FENCE 8
MDE E-3
LENGTH: 81 FT
AVG. SLOPE: 23%
AVG. SLOPE LENGTH: 4.5 FT

COMBINATION INLET PROTECTION 5
MDE E-9-6
DRAINAGE AREA: 0.10 AC.

SUMP PIT (MDE F-2) TO CONNECT TO PORTABLE SEDIMENT TANK (MDE F-3) FOR DRAINAGE, TYP

SUPER SILT FENCE 3
MDE E-3
LENGTH: 576 FT
AVG. SLOPE: 1.8%
AVG. SLOPE LENGTH: 56 FT

STABILIZED CONSTRUCTION ENTRANCE 2 WITH PIPE
MDE B-1

SAME DAY STABILIZATION = 0.70 AC

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SITE SOILS SUMMARY TABLE

NAME	UNIT	Slope	HSG	HYDRIC	K FACTOR
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Howard Soil Conservation District — Date 11/15/23

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SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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JOHNS HOPKINS
APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

EROSION SEDIMENT CONTROL PLAN - EAST BORROW AREA (ESC PHASE 2B)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

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TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 62 OF 73

C-687

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\ad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-686 - C-690 Erosion Sediment Control Plan - East Borrow Area (Phase 2B).dwg Oct 31, 2023 3:09pm dpilachowski

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- AGIP — AT-GRADE INLET PROTECTION
- SAME DAY STABILIZATION
- X — TEMPORARY CONSTRUCTION FENCE
- DRAINAGE AREA
- EXISTING STEEP SLOPES (>15%)
- PIPE TO BE REMOVED
- PROPERTY LINE

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Howard Soil Conservation District — Date 11/15/23

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

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STATE OF MARYLAND — CHARLES W. MITCHELL III — 49432 — REGISTERED PROFESSIONAL ENGINEER

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DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EROSION SEDIMENT CONTROL PLAN - EAST BORROW AREA (ESC PHASE 2B)

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 63 OF 73

C-688

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

MATCHLINE - SEE SHEET C-690

MATCHLINE - SEE SHEET C-687

MATCHLINE - SEE SHEET C-687

SUPER SILT FENCE 9
MDE E-3
LENGTH: 503 FT
AVG. SLOPE: 4%
AVG SLOPE LENGTH: 25 FT

SILT FENCE 2
MDE E-1
LENGTH: 320 FT

STABILIZED CONSTRUCTION ENTRANCE 5
MDE B-1

SILT FENCE
MDE E-1
LENGTH: 207 FT
AVG. SLOPE: 0%

SILT FENCE ON PAVEMENT 2
MDE E-2
LENGTH: 49 FT
AVG. SLOPE: 5%
AVG SLOPE LENGTH: 20 FT

MOUNTABLE BERM 3.1
MDE C-8

DIVERSION FENCE 2
MDE C-9
LENGTH: 433 FT
AVG. SLOPE: 4.8%
AVG. SLOPE LENGTH: 20 FT
DRAINAGE AREA: 0.44 AC
VELOCITY: 2.76 FT/S

STABILIZED CONSTRUCTION ENTRANCE 6
MDE B-1

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

STAGING/STOCKPILE AREA

SCE

BITUMINOUS PAVING

15" CMP

12" CMP

18" RCP

GRASS

NO PARKING SIGN

UTILITY POLE (NAU)

WEST SERVICE ROAD

CONC ADA RAMP

CONC WALL

E-SS56-21

T-H2-06

36A

101

GENERAL NOTES

1. TOPOGRAPHIC AND SURFACE INFORMATION SHOWN WAS OBTAINED FROM FIELD SURVEY BY RK&K, COMPLETED DECEMBER 23, 2021. UTILITY INFORMATION SHOWN WAS PROVIDED BY AII|DATA ON FEBRUARY 4, 2022.
2. 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 ARCHITECT/ENGINEER PRIOR TO THE START OF ANY WORK.
3. BEARINGS AND HORIZONTAL COORDINATES SHOWN ON THIS PLAN ARE BASED UPON MARYLAND STATE PLANE COORDINATE SYSTEM NAD83. VERTICAL ELEVATIONS SHOWN ARE BASED UPON VERTICAL DATUM NAVD88.
4. THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY, BASED UPON FIELD OBSERVATIONS AND 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 INVOLVED 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.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" AT 1-800-257-7777 FIVE DAYS PRIOR TO THE START OF ANY EXCAVATION WORK.
6. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY INVERTS AND CLEARANCES FROM NEW WORK PRIOR TO START OF ANY WORK.
7. THE CONTRACTOR SHALL STAKE OUT THE LOCATION OF ALL NEW CONSTRUCTION AND VERIFY ALL JURISDICTIONAL SETBACKS AND BUFFERS PRIOR TO START OF ANY WORK.
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10. SEE SHEET C-003 FOR FULL EXISTING AND PROPOSED FEATURES LEGEND

SITE SOILS SUMMARY TABLE					
NAME	UNIT	Slope	HSG	HYDRIC	K FACTOR
Urban land-Udorthents complex	UdD	8-25%	D	No	Unrated
Manor loam	MaB	3-8%	B	No	0.24
Manor loam	MaC	8-15%	B	No	0.28
Glenville silt loam	GmB	3-8%	C/D	No	0.37

EROSION AND SEDIMENT CONTROL LEGEND

- LOD — LIMIT OF DISTURBANCE
- SSF — SUPER SILT FENCE
- SFOP — SILT FENCE ON PAVEMENT
- DF — DIVERSION FENCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- CIP — CURB INLET PROTECTION
- COIP — COMBINATION INLET PROTECTION
- AGIP — AT-GRADE INLET PROTECTION
- SAME DAY STABILIZATION
- x — TEMPORARY CONSTRUCTION FENCE
- DRAINAGE AREA
- EXISTING STEEP SLOPES (>15%)
- PIPE TO BE REMOVED

HOWARD SCD SIGNATURE BLOCK:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Howard Soil Conservation District — Date: 11/15/23

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL REFERRED TO AS THE EAST AND WEST BORROW AREAS.

20 0 20 40

SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/20/24

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: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EROSION SEDIMENT CONTROL PLAN - WEST BORROW AREA (ESC PHASE 2B)

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 64 OF 73

C-689

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

C:\Users\DPILAC~1\AppData\Local\Temp\AcPublish_16752\C-686 - C-690 Erosion Sediment Control Plan - East Borrow Area (Phase 2B).dwg Oct 31, 2023 4:14pm dpilachowski

SILT FENCE ON PAVEMENT 1
MDE E-2
LENGTH: 245 FT
AVG. SLOPE: 3.3%
AVG. SLOPE LENGTH: 59 FT
DRAINAGE AREA = 0.15 AC.

AT-GRADE INLET PROTECTION 2
MDE E-9-2
DRAINAGE AREA: 0.67 AC

STABILIZED CONSTRUCTION ENTRANCE 7
MDE B-1

AT-GRADE INLET PROTECTION 3
MDE E-9-2
DRAINAGE AREA: 0.12 AC

STANDARD INLET PROTECTION 7
TYPE B
MDE E-9-1

EARTH DIKE 1
MDE C-1, TYPE A-2
LENGTH: 93 FT
AVG. SLOPE: 10%
AVG SLOPE LENGTH: 6 FT
VELOCITY: 2.48 FT/S

SUPER SILT FENCE 9
MDE E-3
LENGTH: 503 FT
AVG. SLOPE: 4%
AVG SLOPE LENGTH: 25 FT

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

ANTI-SEEP CONCRETE COLLAR ON 15" PIPE OUTFALL

21" DIA. CONCRETE RISER WITH TRASH RACK

SEDIMENT TRAP 2
MDE G-1-1
DRAINAGE AREA: 1.54 AC

BAFFLE BOARD, TYP.
FLOW LENGTH: 75'

TEMPORARY SWALE 1
(TYPE A-1) MDE C-2
LENGTH: 83 FT
SLOPE: 3%
DRAINAGE AREA: 0.41 AC

STANDARD INLET PROTECTION 8
TYPE B
MDE E-9-1

DIVERSION FENCE 2
MDE C-9
LENGTH: 433 FT
AVG. SLOPE: 4.8%
AVG. SLOPE LENGTH: 20 FT
DRAINAGE AREA: 0.44 AC
VELOCITY: 2.76 FT/S

ST-2

EMB = 418

MATCHLINE - SEE SHEET C-689

MATCHLINE - SEE SHEET C-686

MATCHLINE - SEE SHEET C-687

GENERAL NOTES

1. TOPOGRAPHIC AND SURFACE INFORMATION SHOWN WAS OBTAINED FROM FIELD SURVEY BY RK&K, COMPLETED DECEMBER 23, 2021. UTILITY INFORMATION SHOWN WAS PROVIDED BY AMDATA ON FEBRUARY 4, 2022.
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10. SEE SHEET C-003 FOR FULL EXISTING AND PROPOSED FEATURES LEGEND

SITE SOILS SUMMARY TABLE					
NAME	UNIT	Slope	HSG	HYDRIC	K FACTOR
Urban land-Udorthents complex	UdD	8-25%	D	No	Unrated
Manor loam	MaB	3-8%	B	No	0.24
Manor loam	MaC	8-15%	B	No	0.28
Glenville silt loam	GmB	3-8%	C/D	No	0.37

EROSION AND SEDIMENT CONTROL LEGEND

- LOD — LIMIT OF DISTURBANCE
- SSF — SUPER SILT FENCE
- SFOP — SILT FENCE ON PAVEMENT
- DF — DIVERSION FENCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- CIP — CURB INLET PROTECTION
- COIP — COMBINATION INLET PROTECTION
- AGIP — AT-GRADE INLET PROTECTION
- SAME DAY STABILIZATION
- x — TEMPORARY CONSTRUCTION FENCE
- DRAINAGE AREA
- EXISTING STEEP SLOPES (>15%)
- PIPE TO BE REMOVED
- PROPERTY LINE

HOWARD SCD SIGNATURE BLOCK:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Howard Soil Conservation District — Date 11/15/23

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

RK&K
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STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER — 11/1/23

Charles Mitchell

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EROSION SEDIMENT CONTROL PLAN - WEST BORROW AREA (ESC PHASE 2B)

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 65 OF 73

C-690

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

MATCHLINE - SEE SHEET C-693

DIVERSION FENCE 1
MDE C-9
LENGTH: 210 FT
AVG. SLOPE: 12.5%
AVG SLOPE LENGTH: 8 FT
DRAINAGE AREA: 0.44 AC
VELOCITY: 3.06 FT/S

DF/SSF TRANSITION

SSF/DF TRANSITION

STANDARD INLET PROTECTION 4
TYPE B
MDE E-9-1
DRAINAGE AREA: 0.23 AC

SUMP PIT (MDE F-2) TO CONNECT TO PORTABLE SEDIMENT TANK (MDE F-3) FOR DRAINAGE, TYP

DIVERSION FENCE 3
MDE C-9
LENGTH: 630 FT
SLOPE: 0%

SUMP PIT TO CONNECT TO STANDARD INLET PROTECTION FOR DRAINAGE, MDE F-2

SUMP PIT TO CONNECT TO STANDARD INLET PROTECTION FOR DRAINAGE, MDE F-2

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SAME DAY STABILIZATION = 0.43 AC

SUPER SILT FENCE 2
MDE E-3
LENGTH: 473 FT
AVG. SLOPE: 5.2%
AVG. SLOPE LENGTH: 20 FT

SUPER SILT FENCE 10
MDE E-3
LENGTH: 311 FT
AVG. SLOPE: 0%
AVG. SLOPE LENGTH: 40 FT

COMBINATION INLET PROTECTION 1
MDE E-9-6
DRAINAGE AREA: 0.04 AC

SUPER SILT FENCE 1
MDE E-3
LENGTH: 120 FT
AVG. SLOPE: 4.8%
AVG. SLOPE LENGTH: 8 FT

STABILIZED CONSTRUCTION ENTRANCE 1 & WASH RACK
MDE B-1

SUMP PIT TO CONNECT TO COMBINATION INLET PROTECTION FOR DRAINAGE

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SAME DAY STABILIZATION = 0.70 AC

STANDARD INLET PROTECTION 5
TYPE A
MDE E-9-1
DRAINAGE AREA: 0.23 AC

COMBINATION INLET PROTECTION 2
MDE E-9-6
DRAINAGE AREA: 0.18 AC

COMBINATION INLET PROTECTION 3
MDE E-9-6
DRAINAGE AREA: 0.04 AC

STANDARD INLET PROTECTION 6
TYPE B
MDE E-9-1
DRAINAGE AREA: 0.95 AC

6'x6' ANTI-SEEP CONCRETE COLLAR ON 24" PIPE OUTFALL

33" DIA. CONCRETE RISER WITH TRASH RACK

HORIZONTAL DRAWDOWN DEVICE

SEDIMENT TRAP
MDE G-1-1
DRAINAGE AREA: 3.17 AC

BAFFLE BOARD, TYP.
FLOW LENGTH: 137'

COMBINATION INLET PROTECTION 4
MDE E-9-6
DRAINAGE AREA: 0.10 AC

TEMPORARY SWALE 1
(TYPE A-2) MDE C-2
LENGTH: 27 FT
SLOPE: 10%
DRAINAGE AREA: 0.02 AC

SUPER SILT FENCE 3
MDE E-3
LENGTH: 576 FT
AVG. SLOPE: 1.8%
AVG. SLOPE LENGTH: 56 FT

MATCHLINE - SEE SHEET C-692

MATCHLINE - SEE SHEET C-693

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

SCALE: 1" = 20'

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10. SEE SHEET C-003 FOR FULL EXISTING AND PROPOSED FEATURES LEGEND

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.

SITE SOILS SUMMARY TABLE

NAME	UNIT	Slope	HSG	HYDRIC	K FACTOR
Urban land-Udorthents complex	UdD	8-25%	D	No	Unrated
Manor loam	MaB	3-8%	B	No	0.24
Manor loam	MaC	8-15%	B	No	0.28
Glenville silt loam	GmB	3-8%	C/D	No	0.37

SEQUENCE OF CONSTRUCTION: PHASE 2C

1. COMPLETE SEQUENCE OF CONSTRUCTION - PHASE 2A (SHEET C-681). 24 DAYS
2. COMPLETE SEQUENCE OF CONSTRUCTION - PHASE 2B (SHEET C-686). 127 DAYS
3. PROVIDE PERMANENT STABILIZATION TO ALL BORROW AREAS. ONCE ALL AREAS ARE PERMANENTLY STABILIZED AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROLS AND STABILIZE AREAS DISTURBED BY THIS OPERATION. 2 DAYS

EROSION AND SEDIMENT CONTROL LEGEND

- LOD — LIMIT OF DISTURBANCE
- SSF — SUPER SILT FENCE
- SFOP — SILT FENCE ON PAVEMENT
- DF — DIVERSION FENCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- SAME DAY STABILIZATION
- x — TEMPORARY CONSTRUCTION FENCE
- DRAINAGE AREA
- SP — SUMP PIT
- PST — PORTABLE SEDIMENT TANK
- PERMANENT SEEDING STABILIZATION (B-4-5)
- PERMANENT SOIL STABILIZATION MATTING
- SLOPE APPLICATION (PSSMS - 2.25 LB/SF)
- PROPERTY LINE

HOWARD SCD SIGNATURE BLOCK:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Howard Soil Conservation District — Date 11/15/23

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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STATE OF MARYLAND — CHARLES W. KAHL — 49432 — REGISTERED PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	DRAWN BY:	CHECKED BY:	DATE:
SHK	JMS/DTP	CWWM	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EROSION SEDIMENT CONTROL PLAN - EAST BORROW AREA (ESC PHASE 2C)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 19 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 66 OF 73

C-691

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

C:\Users\DPILAC~1\AppData\Local\Temp\AcPublish_16752\C-691 - C-695 Erosion Sediment Control Plan - East Borrow Area (Phase 2C).dwg Oct 31, 2023 4:07pm dpilachowski

ATCHLINE - SEE SHEET C-691

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SAME DAY STABILIZATION = 0.43 AC

SUPER SILT FENCE 10
MDE E-3
LENGTH: 311 FT
AVG. SLOPE: 0%
AVG. SLOPE LENGTH: 40 FT

ROP TYPE 3
MDE E-3, RIP RAP CLASS 1
LMIN: 10'
W: 6'
T: 19"
HMIN: 2'
D50: 9.5"

SUMP PIT (MDE F-2) TO CONNECT TO PORTABLE SEDIMENT TANK (MDE F-3) FOR DRAINAGE, TYP

TEMPORARY SWALE
(TYPE A-2) MDE C-2
LENGTH: 322 FT
SLOPE: 8.5%
DRAINAGE AREA: 0.40 AC

SUPER SILT FENCE 4
MDE E-3
LENGTH: 170 FT
AVG. SLOPE: 15%
AVG. SLOPE LENGTH: 8 FT

SAME DAY STABILIZATION = 0.43 AC

STAGING/STOCKPILE AREA

SUPER SILT FENCE 5
MDE E-3
LENGTH: 206 FT
AVG. SLOPE: 2.5%
AVG. SLOPE LENGTH: 40 FT

STABILIZED CONSTRUCTION ENTRANCE 3
MDE B-1

SUPER SILT FENCE 6
MDE E-3
LENGTH: 266 FT
AVG. SLOPE: 2.2%
AVG. SLOPE LENGTH: 45 FT

SILT FENCE 1
MDE E-1
LENGTH: 320 FT

EARTH DIKE
MDE C-1, TYPE A-2
LENGTH: 202 FT
SLOPE: 5.9%
AVG. SLOPE LENGTH: 17FT
VELOCITY: 1.69 FT/S

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SUPER SILT FENCE 7
MDE E-3
LENGTH: 168 FT
AVG. SLOPE: 5.8%
AVG. SLOPE LENGTH: 17 FT

STABILIZED CONSTRUCTION ENTRANCE 4
MDE B-1

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

SAME DAY STABILIZATION = 0.70 AC

STABILIZED CONSTRUCTION ENTRANCE 2 WITH PIPE
MDE B-1

SUPER SILT FENCE 3
MDE E-3
LENGTH: 576 FT
AVG. SLOPE: 1.8%
AVG. SLOPE LENGTH: 56 FT

SUMP PIT (MDE F-2) TO CONNECT TO PORTABLE SEDIMENT TANK (MDE F-3) FOR DRAINAGE, TYP

COMBINATION INLET PROTECTION 5
MDE E-9-6
DRAINAGE AREA: 0.10 AC.

SUPER SILT FENCE 8
MDE E-3
LENGTH: 81 FT
AVG. SLOPE: 23%
AVG. SLOPE LENGTH: 4.5 FT

UuD (HSG D)

MaB (HSG B)

GENERAL NOTES

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EROSION AND SEDIMENT CONTROL LEGEND

- LOD — LIMIT OF DISTURBANCE
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- SFOP — SILT FENCE ON PAVEMENT
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- PERMANENT SEEDING STABILIZATION (B-4-5)
- PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION (PSSMS - 2.25 LB/SF)
- PROPERTY LINE

HOWARD SCD SIGNATURE BLOCK:

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Howard Soil Conservation District — Date 11/15/23

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SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

RK&K
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700 East Pratt Street, Suite 500
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Ph: 410.728.2900
Contact: Matt Thomasson
www.rkk.com

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DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

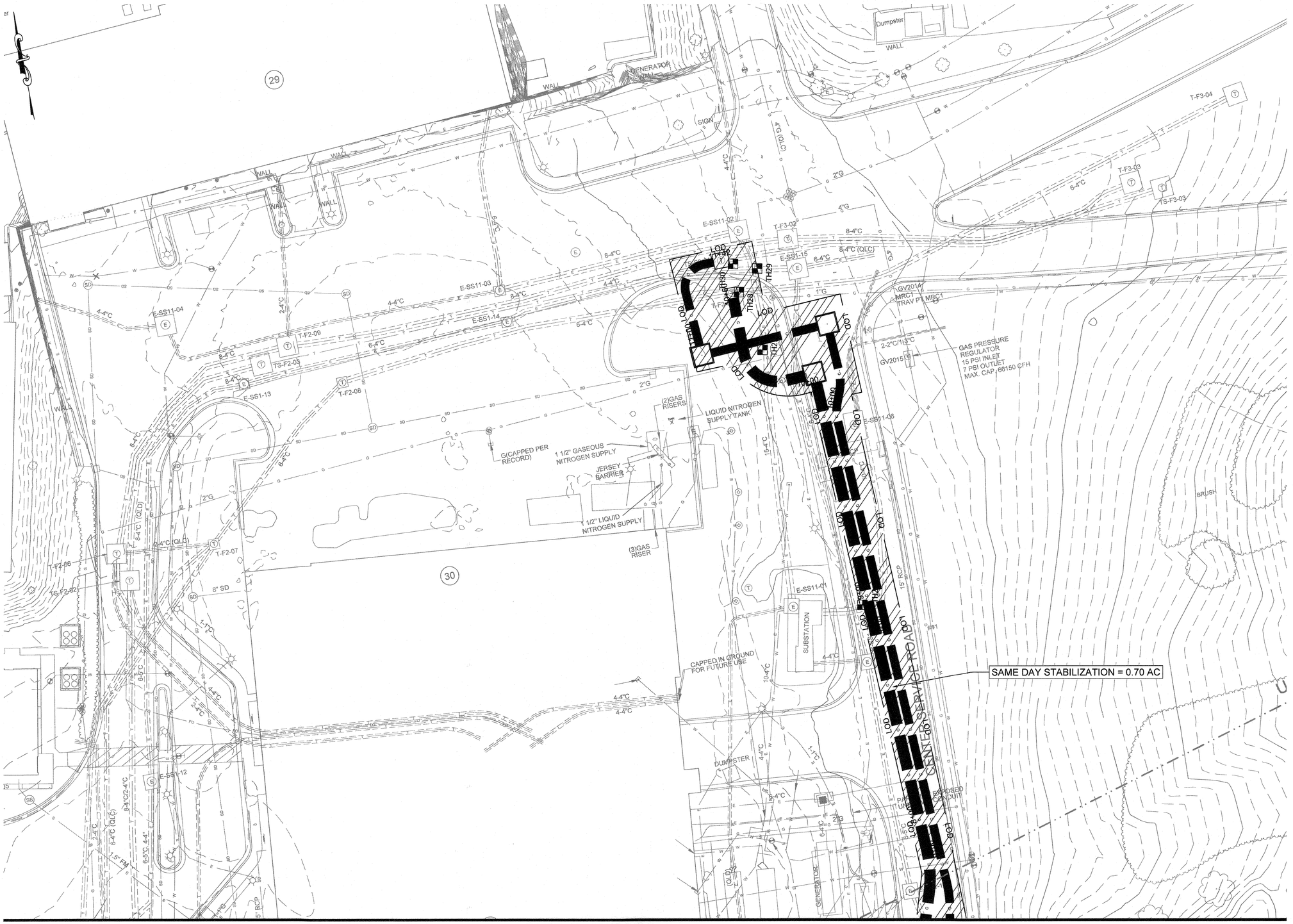
OWNER/DEVELOPER
JOHNS HOPKINS
APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

EROSION SEDIMENT CONTROL PLAN - EAST BORROW AREA (ESC PHASE 2C)
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 67 OF 73

C-692
RK&K PROJECT NUMBER 21047.013
SCALE: As Shown

SDP-18-060

C:\Users\DPILAC~1\AppData\Local\Temp\AcPublish_16752\C-691 - C-695 Erosion Sediment Control Plan - East Borrow Area (Phase 2C).dwg Oct 31, 2023 4:43pm dpilachowski



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EROSION AND SEDIMENT CONTROL LEGEND

LOD — LIMIT OF DISTURBANCE

SAME DAY STABILIZATION

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL REFERRED TO AS THE EAST AND WEST BORROW AREAS.

SCALE: 1" = 20'

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Howard Soil Conservation District — Date 11/15/23

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

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STATE OF MARYLAND — CHARLES W. MATTHEWS — 49432 — PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	SHK
DRAWN BY:	JMS/DTP
CHECKED BY:	CWWM
DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

EROSION SEDIMENT CONTROL PLAN - EAST BORROW AREA (ESC PHASE 2C)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

11100 JOHNS HOPKINS ROAD
TAX MAP: 41 PARCEL: 123 GRID: 18 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 68 OF 73

C-693

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

MATCHLINE - SEE SHEET C-695

MATCHLINE - SEE SHEET C-692

MATCHLINE - SEE SHEET C-692

STAGING/STOCKPILE AREA

SUPER SILT FENCE 9
MDE E-3
LENGTH: 503 FT
AVG. SLOPE: 4%
AVG SLOPE LENGTH: 25 FT

SILT FENCE 2
MDE E-1
LENGTH: 320 FT

STABILIZED CONSTRUCTION ENTRANCE 5
MDE B-1

SILT FENCE
MDE E-1
LENGTH: 207 FT
AVG. SLOPE: 0%

SILT FENCE ON PAVEMENT 2
MDE E-2
LENGTH: 49 FT
AVG. SLOPE: 5%
AVG SLOPE LENGTH: 20 FT

MOUNTABLE BERM 3.1
MDE C-8

DIVERSION FENCE 2
MDE C-9
LENGTH: 433 FT
AVG. SLOPE: 4.8%
AVG. SLOPE LENGTH: 20 FT
DRAINAGE AREA: 0.44 AC
VELOCITY: 2.76 FT/S

STABILIZED CONSTRUCTION ENTRANCE 6
MDE B-1

MAINTAIN 7.5' CLEARANCE ACCESS AROUND FIRE HYDRANT AT ALL TIMES DURING CONSTRUCTION

BITUMINOUS PAVING

WEST SERVICE ROAD

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SCALE: 1" = 20'

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Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 12/27/23

Director — Date 2/22/24

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STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY:	SHK
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DATE:	11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

EROSION SEDIMENT CONTROL PLAN - WEST BORROW AREA (ESC PHASE 2C)

JOHNS HOPKINS UNIVERSITY - APPLIED PHYSICS LABORATORY

OUTDOOR TESTING AREAS

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TAX MAP: 41 PARCEL: 123 GRID: 16 ZONED: PEC
ELECTION DISTRICT 5 - HOWARD COUNTY, MARYLAND
SHEET 69 OF 73

C-694

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

C:\Users\DPILAC~1\AppData\Local\Temp\AcPublish_16752\C-691 - C-695 Erosion Sediment Control Plan - East Borrow Area (Phase 2C).dwg Oct 31, 2023 4:02pm dpilachowski

SILT FENCE ON PAVEMENT 1
MDE E-2
LENGTH: 245 FT
AVG. SLOPE: 3.3%
AVG. SLOPE LENGTH: 59 FT
DRAINAGE AREA = 0.15 AC.

AT-GRADE INLET
PROTECTION 2
MDE E-9-2
DRAINAGE AREA: 0.67 AC

STABILIZED
CONSTRUCTION
ENTRANCE 7
MDE B-1

AT-GRADE INLET
PROTECTION 3
MDE E-9-2
DRAINAGE AREA: 0.12 AC

STANDARD INLET PROTECTION 7
TYPE B
MDE E-9-1

EARTH DIKE 1
MDE C-1, TYPE A-2
LENGTH: 93 FT
AVG. SLOPE: 10%
AVG SLOPE LENGTH: 6 FT
VELOCITY: 2.48 FT/S

SUPER SILT FENCE 9
MDE E-3
LENGTH: 503 FT
AVG. SLOPE: 4%
AVG SLOPE LENGTH: 25 FT

MAINTAIN 7.5' CLEARANCE
ACCESS AROUND FIRE
HYDRANT AT ALL TIMES
DURING CONSTRUCTION

ANTI-SEEP CONCRETE COLLAR
ON 15" PIPE OUTFALL

21" DIA. CONCRETE RISER
WITH TRASH RACK

SEDIMENT TRAP 2
MDE G-1-1
DRAINAGE AREA: 1.54 AC

BAFFLE BOARD, TYP.
FLOW LENGTH: 75'

TEMPORARY SWALE 1
(TYPE A-1) MDE C-2
LENGTH: 83 FT
SLOPE: 3%
DRAINAGE AREA: 0.41 AC

STANDARD INLET
PROTECTION 8
TYPE B
MDE E-9-1

DIVERSION FENCE 2
MDE C-9
LENGTH: 433 FT
AVG. SLOPE: 4.8%
AVG. SLOPE LENGTH: 20 FT
DRAINAGE AREA: 0.44 AC
VELOCITY: 2.76 FT/S

MATCHLINE - SEE SHEET C-694

MATCHLINE - SEE SHEET C-691

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Howard Soil Conservation District — Date 11/15/23

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

SCALE: 1" = 20'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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: Matt Thomasson
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. 49432, EXPIRATION DATE: MAY 31, 2024.

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

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

EROSION SEDIMENT CONTROL PLAN - WEST BORROW AREA (ESC PHASE 2C)

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 70 OF 73

C-695

RK&K PROJECT NUMBER 21047.013

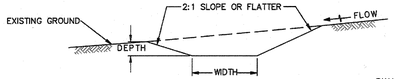
SCALE: As Shown

SDP-18-060

C:\Users\DPILAC~1\AppData\Local\Temp\AcPublish_16752\C-691 - C-695 Erosion Sediment Control Plan - East Borrow Area (Phase 2C).dwg Oct 31, 2023 3:59pm dpilachowski

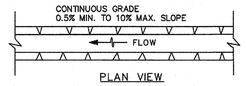
DETAIL C-2 TEMPORARY SWALE

STANDARD SYMBOL: A-1



CROSS SECTION

SWALE TYPE	A	B
MIN. DEPTH	1 FT MIN.	1 FT MIN.
BOTTOM WIDTH	4 FT MIN.	6 FT MIN.



PLAN VIEW

FLOW CHANNEL STABILIZATION

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

CONSTRUCTION SPECIFICATIONS

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

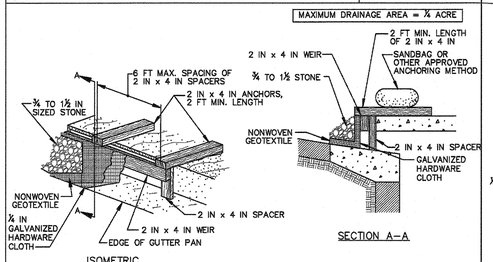
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL: CIP

MAXIMUM DRAINAGE AREA = ¼ ACRE



ISOMETRIC — SECTION A–A

CONSTRUCTION SPECIFICATIONS

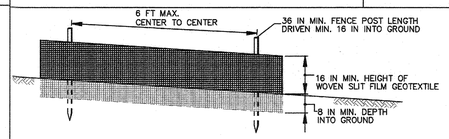
1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
6. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON–SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

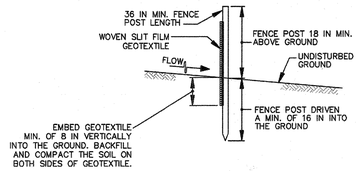
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

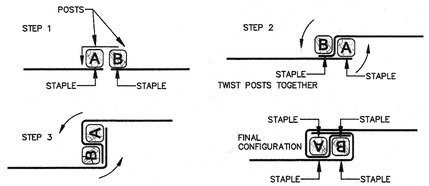
STANDARD SYMBOL: SF



ELEVATION



CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

1 OF 2

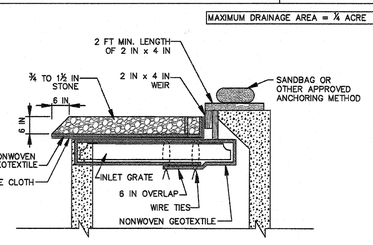
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

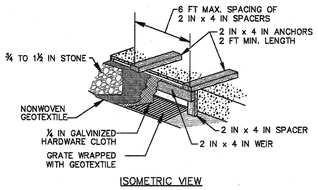
DETAIL E-9-6 COMBINATION INLET PROTECTION

STANDARD SYMBOL: COIP

MAXIMUM DRAINAGE AREA = ¼ ACRE



SECTION



ISOMETRIC 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 ± 1/8 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-9-6 COMBINATION INLET PROTECTION

STANDARD SYMBOL: COIP

CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH x 4 INCH LUMBER.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS.
3. LIFT GRATE, AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS, THEN SET GRATE BACK IN PLACE.
4. ATTACH A CONTINUOUS PIECE OF ½ INCH GALVANIZED HARDWARE CLOTH WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2X4 WEIR, EXTENDING 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH IT TO THE WEIR.
6. NAIL THE 2X4 WEIR TO THE TOP OF A 9 INCH LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAXIMUM 4 FEET APART).
7. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2X4 ANCHORS (MINIMUM 2 FOOT LENGTHS OF 2x4 INCH TO THE TOP OF THE WEIR AT SPACER LOCATIONS). EXTEND 2X4 ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
8. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND BOTH ENDS OF THE THROAT OPENING.
9. FORM THE ½ INCH HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE OVER THE HARDWARE CLOTH AND GEOTEXTILE IN SUCH A MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE.
10. AT NON–SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
11. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

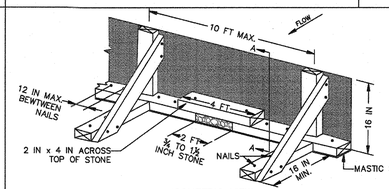
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

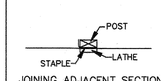
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-2 SILT FENCE ON PAVEMENT

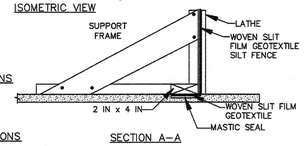
STANDARD SYMBOL: SFOP



ISOMETRIC VIEW



JOINING ADJACENT SECTIONS OF GEOTEXTILE



SECTION A–A

CONSTRUCTION SPECIFICATIONS

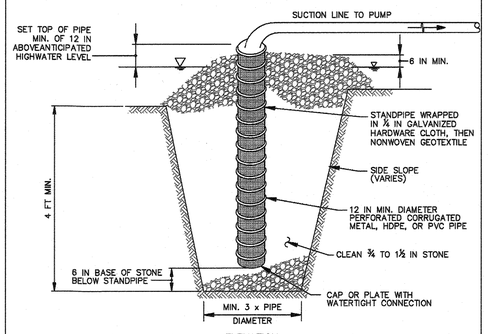
1. USE NOMINAL 2 INCH X 4 INCH LUMBER.
2. USE WOVEN SLIT FILM GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS.
3. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-2 SUMP PIT

STANDARD SYMBOL: SP



ELEVATION

CONSTRUCTION SPECIFICATIONS

1. USE 12 INCH OR LARGER DIAMETER CORRUGATED METAL, HDPE, OR PVC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER. BOTTOM OF PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
2. WRAP PIPE WITH ¼ INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, OVER THE HARDWARE CLOTH.
3. EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
4. SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
5. BACKFILL PIT AROUND THE 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.
6. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
7. A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

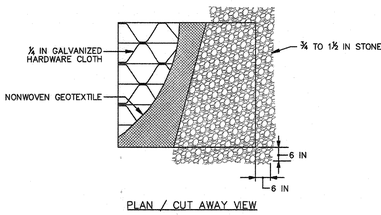
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

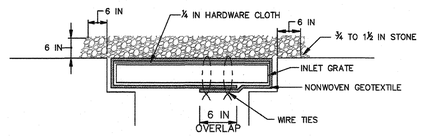
DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE



PLAN / CUT AWAY VIEW



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

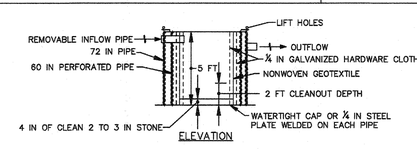
1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM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

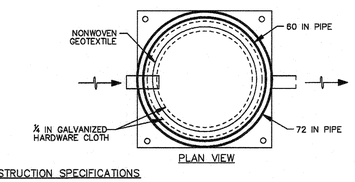
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE | 2011 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-3 PORTABLE SEDIMENT TANK

STANDARD SYMBOL: PST



ELEVATION



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. PROVIDE 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP CAPACITY. REQUIRED STORAGE VOLUME MAY BE ATTAINED BY PLACEMENT OF TANKS IN PARALLEL WITH INFLOW EVENLY DISTRIBUTED AMONG TANKS. OVERTOPPING OF TANKS IS NOT PERMITTED.
2. USE 60 INCH CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER FOR THE INNER PIPE. LINE PIPE WITH NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, SANDWICHED BETWEEN, AND ATTACHED TO, ¼ INCH HARDWARE CLOTH.
3. OVERLAP GEOTEXTILE 8 INCHES MINIMUM AT VERTICAL SEAM AND AT THE BOTTOM PLATE.
4. ANCHOR GEOTEXTILE AT BOTTOM OF TANK WITH 4 INCHES OF 2 TO 3 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE.
5. USE 72 INCH CORRUGATED METAL OR PLASTIC OUTER PIPE WITH PERMANENT OUTFLOW PIPE WITH INVERT LOWER THAN INFLOW PIPE
6. INFLOW PIPE MUST DISCHARGE INTO INNER PIPE AND BE REMOVABLE.
7. PLACE TANK ON LEVEL SURFACE AND DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A PORTABLE SEDIMENT TANK REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT FROM INNER PIPE WHEN IT REACHES TWO FEET IN DEPTH. IF SYSTEM CLOGS, PULL OUT INNER PIPE, REMOVE ACCUMULATED SEDIMENT, AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF 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

E.27 | E.30 | E.31 | F.5 | F.7

HOWARD SCD SIGNATURE BLOCK:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Alexander Brattin — Howard Soil Conservation District — 11/15/23 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12-5-23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

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: Matt Thomasson — 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. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. MCDOWELL — 49432 — REGISTERED PROFESSIONAL ENGINEER — 11/1/23

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

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

EROSION CONTROL NOTES & DETAILS - BORROW AREAS

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 71 OF 73

C-696

RK&K PROJECT NUMBER 21047.013

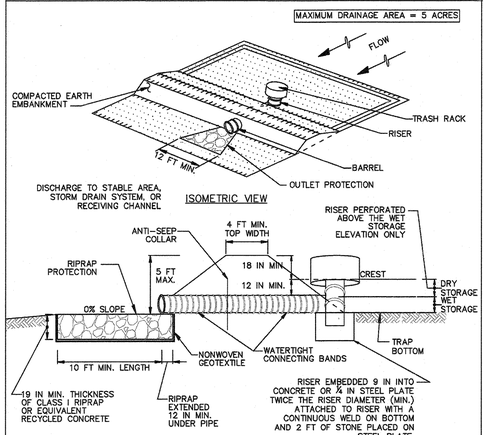
SCALE: As Shown

SDP-18-060

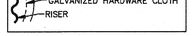
\\ad.rkk.com\Vs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-696 Erosion Control Notes & Details - Borrow Areas.dwg Oct 31, 2023 1:36pm jsaltz

DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL: ST-I



¼ INCH GALVANIZED HARDWARE CLOTH WITH NONWOVEN GEOTEXTILE SECURELY FASTENED TO PERFORATED RISER



NOTE:
REFER TO DETAIL G-2-1 – TYPICAL ANTI-SEEP COLLARS
REFER TO DETAIL G-2-2 – RISER BASE
REFER TO DETAIL G-2-3 – CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

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

G.43

DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL: ST-I

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. PERFORATE THE RISER WITH 1 INCH DIAMETER HOLES SPACED 6 INCHES ON CENTER WITH THE LOWEST PERFORATIONS AT THE WET STORAGE ELEVATION OR PROVIDE A HORIZONTAL OR VERTICAL DRAW-DOWN DEVICE PERFORATED ACCORDING TO APPROVED PLAN. DO NOT PERFORATE THE RISER WITHIN 6 INCHES OF THE TOP OF THE HORIZONTAL BARREL.
4. SET RISER/BARREL ASSEMBLY PRIOR TO EMBANKMENT CONSTRUCTION. MAKE ALL PIPE CONNECTIONS WATERTIGHT. OFFSET RISER FROM EMBANKEMENT TO ACCOMODATE PLACEMENT OF THE TRASH RACK. ANCHOR THE RISER WITH EITHER A REINFORCED CONCRETE BASE OR STEEL PLATE BASE TO PREVENT FLOTATION. MAKE CONCRETE BASES AT LEAST TWICE THE RISER DIAMETER AND 18 INCHES THICK WITH THE RISER EMBEDDED 9 INCHES.
5. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
6. HAND COMPACT IN 4 INCH LAYERS FILL MATERIAL AROUND THE PIPE SPILLWAY. PLACE A MINIMUM OF 2 FEET OF HAND COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
7. CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE RISER CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
8. MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
9. WRAP THE RISER WITH ¾ INCH GALVANIZED HARDWARE CLOTH THEN WRAP WITH NONWOVEN GEOTEXTILE. DO NOT WRAP WITH MORE THAN ONE LAYER OF GEOTEXTILE. EXTEND HARDWARE CLOTH AND GEOTEXTILE AT LEAST 6 INCHES ABOVE THE HIGHEST PERFORATIONS AND AT LEAST 6 INCHES BELOW THE LOWEST PERFORATIONS. OVERLAP, FOLD AND FASTEN WHERE ENDS OF GEOTEXTILE COME TOGETHER TO PREVENT BYPASS. REPLACE GEOTEXTILE AS NECESSARY TO PREVENT CLOGGING.
10. USE STRAPS OR CONNECTING BANDS AT THE TOP AND BOTTOM OF THE GEOTEXTILE TO HOLD THE GEOTEXTILE AND HARDWARE CLOTH IN PLACE.
11. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
12. STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
13. CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO THE APPROVED PLAN AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
14. 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. MAINTAIN WATER TIGHT CONNECTIONS. REPLACE GEOTEXTILE AROUND PERFORATED RISER IF DRY STORAGE VOLUME DOES NOT DRAW DOWN WITHIN 10 HOURS.
15. WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
16. 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

G.44

DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL: ST-I

PIPE OUTLET SEDIMENT TRAP ST-I, TRAP NO. 1		
DRAINAGE AREA – INTIAL	3.09	ACRES
DRAINAGE AREA – INTERIM	3.17	ACRES
DRAINAGE AREA – FINAL	3.17	ACRES
TOTAL STORAGE REQUIRED	11340	CF
TOTAL STORAGE PROVIDED	13428	CF
WET STORAGE REQUIRED	5670	CF
WET STORAGE PROVIDED	7252	CF
DRY STORAGE REQUIRED	5670	CF
DRY STORAGE PROVIDED	6176	CF
TRAP BOTTOM ELEVATION	395.00	FT
TRAP BOTTOM DIMENSIONS	76 x 38	FT x FT
RISER CREST (DRY STORAGE) ELEVATION	398.25	FT
OUTLET (WET STORAGE) ELEVATION	397.00	FT
CLEANOUT ELEVATION	396.00	FT
TOP OF EMBANKMENT ELEVATION	400.00	FT
SIDE SLOPE	3:1	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
PRINCIPAL SPILLWAY MATERIAL (BARREL, RISER, ANTI-SEEP COLLAR)	CONCRETE	
RISER DIAMETER	33	IN
BARREL DIAMETER	24	IN
TRASH RACK DIAMETER	48	IN
TRASH RACK HEIGHT	23	IN
ANTI-SEEP COLLAR DIMENSIONS	6	FT
OUTLET PROTECTION – LENGTH	N/A	FT
OUTLET PROTECTION – WIDTH	N/A	FT
OUTLET PROTECTION – DEPTH	N/A	IN

3 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

G.45

DETAIL G-1-1 PIPE OUTLET SEDIMENT TRAP ST-I

STANDARD SYMBOL: ST-I

PIPE OUTLET SEDIMENT TRAP ST-I, TRAP NO. 2		
DRAINAGE AREA – INTIAL	1.15	ACRES
DRAINAGE AREA – INTERIM	1.54	ACRES
DRAINAGE AREA – FINAL	1.54	ACRES
TOTAL STORAGE REQUIRED	5508	CF
TOTAL STORAGE PROVIDED	6047	CF
WET STORAGE REQUIRED	2754	CF
WET STORAGE PROVIDED	3049	CF
DRY STORAGE REQUIRED	2754	CF
DRY STORAGE PROVIDED	2998	CF
TRAP BOTTOM ELEVATION	413.00	FT
TRAP BOTTOM DIMENSIONS	46 x 23	FT x FT
RISER CREST (DRY STORAGE) ELEVATION	416.25	FT
OUTLET (WET STORAGE) ELEVATION	415.00	FT
CLEANOUT ELEVATION	414.00	FT
TOP OF EMBANKMENT ELEVATION	418.00	FT
SIDE SLOPE	3:1	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
PRINCIPAL SPILLWAY MATERIAL (BARREL, RISER, ANTI-SEEP COLLAR)	CONCRETE	
RISER DIAMETER	21	IN
BARREL DIAMETER	15	IN
TRASH RACK DIAMETER	30	IN
TRASH RACK HEIGHT	19	IN
ANTI-SEEP COLLAR DIMENSIONS	5.25	FT
OUTLET PROTECTION – LENGTH	N/A	FT
OUTLET PROTECTION – WIDTH	N/A	FT
OUTLET PROTECTION – DEPTH	N/A	IN

3 OF 3

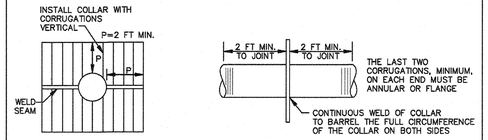
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

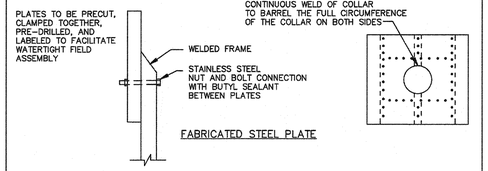
G.46

DETAIL G-2-1 TYPICAL ANTI-SEEP COLLARS

STANDARD SYMBOL:



CORRUGATED COLLAR WELDED IN PLACE ON BARREL SECTION



FABRICATED STEEL PLATE

COLLAR FOR FLANGE JOINT PIPE

3 OF 3

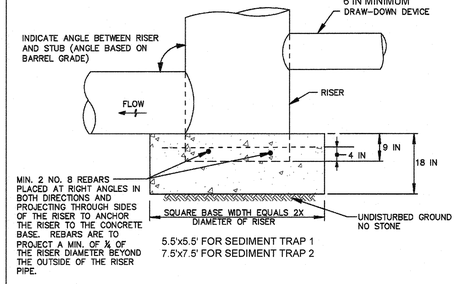
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

G.47

DETAIL G-2-2 CORRUGATED RISER BASE

STANDARD SYMBOL:



CONSTRUCTION SPECIFICATIONS

1. BOTTOM OF CONCRETE BASE TO BE PLACED ON UNDISTURBED, NATURAL GROUND.
2. NO STONE IS ALLOWED UNDER BASE. IF NECESSARY, TO ACHIEVE STABILITY INCREASE DEPTH OF CONCRETE BASE.

1 OF 2

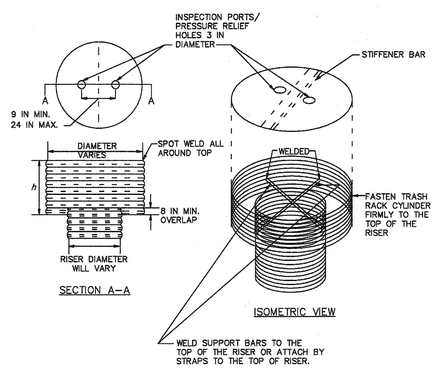
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

G.43

DETAIL G-2-3 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

STANDARD SYMBOL: TR



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

G.44

DETAIL G-2-3 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

STANDARD SYMBOL: TR

RISER DIAM. (IN)	TRASH RACK CYLINDER DIAM. (IN)	TRASH RACK CYLINDER THICKNESS (GAUGE)	h (IN)	MINIMUM SIZE SUPPORT BAR	MINIMUM TOP THICKNESS (GAUGE)	MINIMUM TOP STIFFENER
12	18	16	14	#6 REBAR	16	N/A
15	21	16	15	#6 REBAR	16	N/A
18	27	16	16	#6 REBAR	16	N/A
21	30	16	19	#6 REBAR	16	N/A
24	36	16	21	#6 REBAR	14	N/A
27	42	16	21	#6 REBAR	14	N/A
36	54	14	25	#8 REBAR	12	N/A
42	60	14	27	#8 REBAR	12	N/A
48	72	12	29	1¼ IN PIPE OR 1¼ x 1¼ x ¼ ANGLE	10	N/A
54	78	12	33	1¼ IN PIPE OR 1¼ x 1¼ x ¼ ANGLE	10	N/A
60	90	12	37	1½ IN PIPE OR 1½ x 1½ x ¾ ANGLE	8	N/A
66	96	10	41	2 IN PIPE OR 2 x 2 x 3/16 ANGLE	8	2 x 2 x ¼ ANGLE
72	102	10	44	2 IN PIPE OR 2 x 2 x 3/16 ANGLE	8	2½ x 2½ x ¼ ANGLE
78	114	10	47	2½ IN PIPE OR 2 x 2 x ¼ ANGLE	8	2½ x 2½ x ¼ ANGLE
84	120	10	50	2½ IN PIPE OR 2½ x 2½ x ¼ ANGLE	8	2½ x 2½ x 5/16 ANGLE

NOTE:
THE ABOVE TRASH RACK AND ANTI-VORTEX DEVICE INFORMATION IS FOR CORRUGATED METAL PIPE ONLY. CONCRETE RISERS MUST MEET THE REQUIREMENTS OF MD 378.

2 OF 2

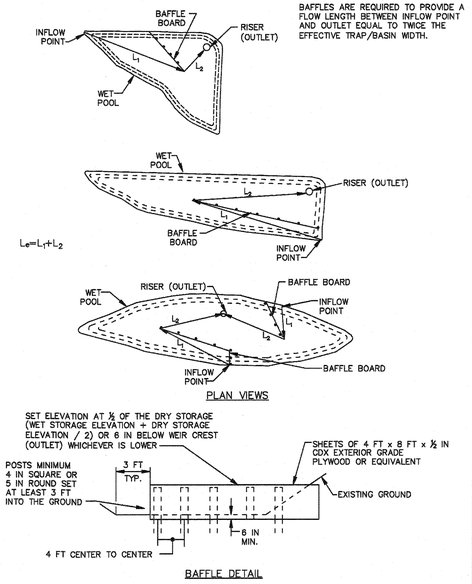
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

G.45

DETAIL G-2-4 BAFFLE BOARDS

STANDARD SYMBOL: BB



BAFFLE DETAIL

3 OF 3

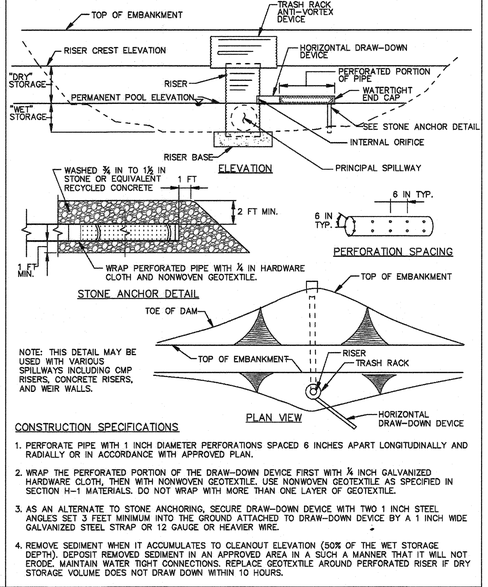
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

G.46

DETAIL G-2-6 SEDIMENT BASIN SCHEMATIC HORIZONTAL DRAW-DOWN DEVICE

STANDARD SYMBOL: HDDD



CONSTRUCTION SPECIFICATIONS

1. PERFORATE PIPE WITH 1 INCH DIAMETER PERFORATIONS SPACED 6 INCHES APART LONGITUDINALLY AND RADIALLY OR IN ACCORDANCE WITH APPROVED PLAN.
2. WRAP THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE FIRST WITH ¼ INCH GALVANIZED HARDWARE CLOTH, THEN WITH NONWOVEN GEOTEXTILE. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS. DO NOT WRAP WITH MORE THAN ONE LAYER OF GEOTEXTILE.
3. AS AN ALTERNATE TO STONE ANCHORING, SECURE DRAW-DOWN DEVICE WITH TWO 1 INCH STEEL ANGLES SET 3 FEET MINIMUM INTO THE GROUND ATTACHED TO DRAW-DOWN DEVICE BY A 1 INCH WIDE GALVANIZED STEEL STRAP OR 12 GAUGE OR HEAVIER WIRE.
4. REMOVE SEDIMENT WHEN IT ACCUMULATES TO CLEANOUT ELEVATION (50% OF THE WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA IN A SUCH A MANNER THAT IT WILL NOT ERODE. MAINTAIN WATER TIGHT CONNECTIONS. REPLACE GEOTEXTILE AROUND PERFORATED RISER IF DRY STORAGE VOLUME DOES NOT DRAW DOWN WITHIN 10 HOURS.

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

G.48

HOWARD SCD SIGNATURE BLOCK:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Howard Soil Conservation District — Date 11/15/23

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

RK&K — RUMMEL, KLEPPER & KAHL, LLP
ENGINEERS|CONSTRUCTION MANAGERS|PLANNERS|SCIENTISTS
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Baltimore, MD 21202
Ph: 410.728.2900 Contact: Matt Thomasson
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. 49452, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. MITCHELL — 49452 — REGISTERED PROFESSIONAL ENGINEER

DESIGN BY: SHK
DRAWN BY: JMS/DTP
CHECKED BY: CWWM
DATE: 11/1/2023

BY	NO.	REVISION	DATE
RK&K	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3; INCLUDING THE SOURCE OF BORROW MATERIAL. REFERRED TO AS THE EAST AND WEST BORROW AREAS.

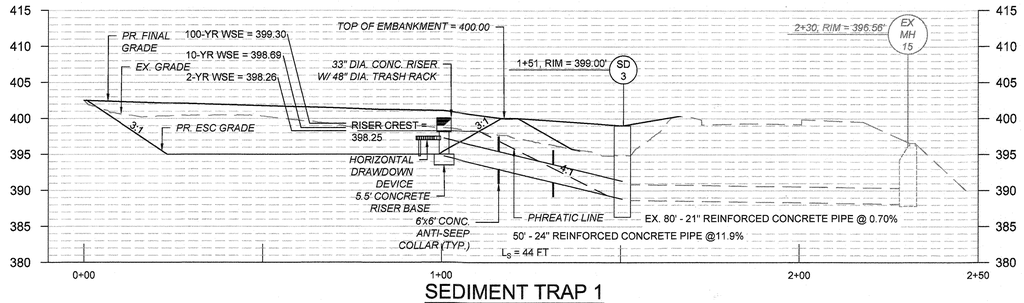
OWNER/DEVELOPER
JOHNS HOPKINS
APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

EROSION CONTROL NOTES & DETAILS - BORROW AREAS
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 72 OF 73

C-697
RK&K PROJECT NUMBER 21047.013
SCALE: As Shown

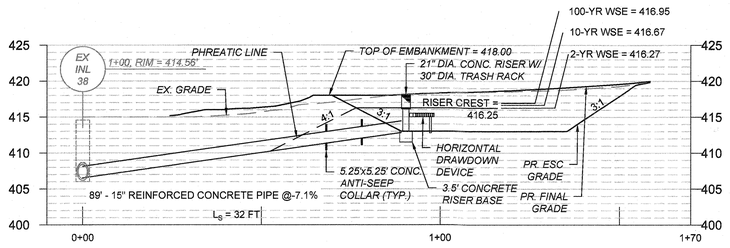
SDP-18-060

\\cad.rkk.com\ts\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-697 Erosion Control Notes & Details - Borrow Areas.dwg Oct 31, 2023 1:38pm jsaltz



SEDIMENT TRAP 1

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

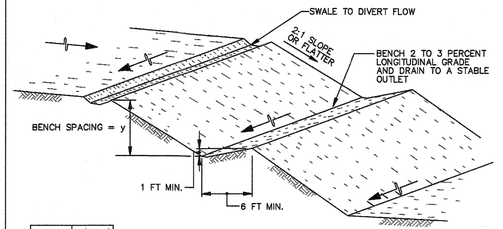


SEDIMENT TRAP 2

SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'

DETAIL B-3-1 BENCHING

STANDARD SYMBOL: BENCHING



SLOPE	y (MAX.)
2:1	20 FT
3:1	30 FT
4:1	40 FT

CONSTRUCTION SPECIFICATIONS

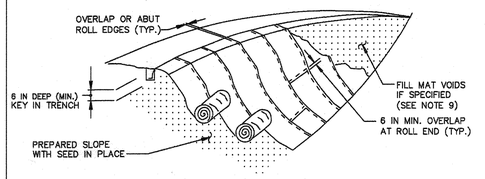
1. USE FILL MATERIAL FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
2. DO NOT INCORPORATE FROZEN, SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS INTO FILL SLOPES OR STRUCTURAL FILLS. DO NOT PLACE FILL ON A FROZEN FOUNDATION.
3. PLACE ALL FILL IN LOOSE LIFTS NOT TO EXCEED 8 INCHES AND THEN COMPACT.
4. COMPACT ALL FILLS AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, OR OTHER RELATED PROBLEMS. COMPACT FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, CONDUITS, ETC., IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
5. HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH SECTION H-2 SUBSURFACE DRAINS OR OTHER APPROVED METHODS.
6. MAINTAIN LINE, GRADE, AND CROSS SECTION OF BENCHING. STABILIZE IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION CRITERIA OR AS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. INSTALLATION OF EROSION CONTROL MATTING MAY BE NECESSARY IN BENCH/SWALE INVERTS. CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
7. KEEP ALL BENCHES FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.

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)



ISOMETRIC VIEW

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

HOWARD SCD SIGNATURE BLOCK:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Howard Soil Conservation District — Date 11/15/23

4 PURPOSE STATEMENT (11/1/23): DESIGN OF OUTDOOR TESTING AREA 3, INCLUDING THE SOURCE OF BORROW MATERIAL, REFERRED TO AS THE EAST AND WEST BORROW AREAS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12.5.23

Chief, Division of Land Development — Date 2/22/24

Director — Date 2/22/24

RK&K
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PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 49432, EXPIRATION DATE: MAY 31, 2024.

STATE OF MARYLAND — CHARLES W. MITCHELL — 49432 — REGISTERED PROFESSIONAL ENGINEER

Charles Mitchell 11/1/23

DESIGN BY:	SHK		
DRAWN BY:	JMS/DTP		
CHECKED BY:	CWWM		
DATE:	11/1/2023		

RK&K			
	4	New Sheet - OTA-3 and Borrow Area Modifications	11/1/23
BY	NO.	REVISION	DATE

OWNER/DEVELOPER

JOHNS HOPKINS
APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20723

EROSION CONTROL PROFILES & DETAILS - BORROW AREAS

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 73 OF 73

C-698

RK&K PROJECT NUMBER 21047.013

SCALE: As Shown

SDP-18-060

\\vad.rkk.com\fs\Cloud\Projects\2021\21047_APL2021MSA\Projects\Task 13 - OTA 3\CADD\Plans\C-698 Erosion Control Profiles & Details - Borrow Areas.dwg Oct 31, 2023 1:39pm jsaltz