

SANNER ROAD IMPROVEMENTS

THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY IN HOWARD COUNTY, MD

SITE ANALYSIS TOTAL JHU/APL PROPERTY:

PROPERTY NOTES

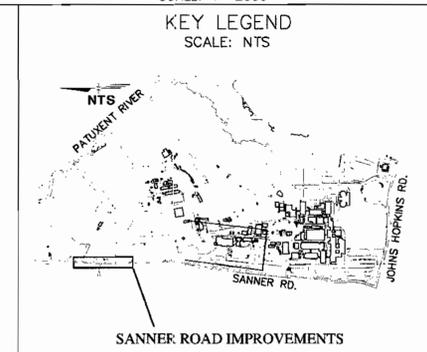
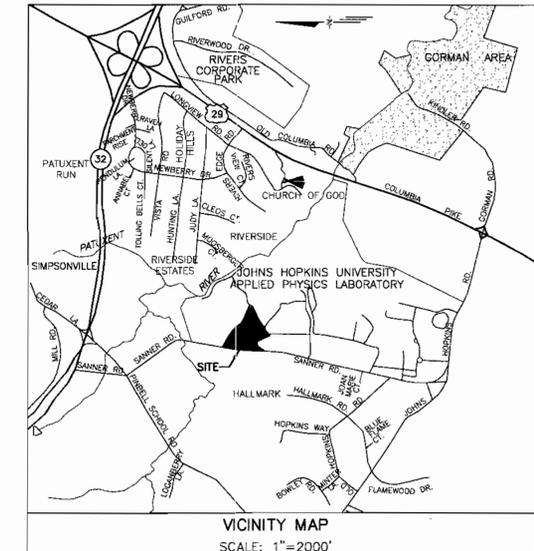
1. COURSES AND COORDINATES ARE BASED ON THE MARYLAND STATE COORDINATE SYSTEM (NAD 83) AND ARE DERIVED FROM THE FOLLOWING JOHNS HOPKINS UNIVERSITY CONTROL STATIONS:

STATION	NORTH	EAST
HOPKINS	544836.5300	1340825.3542
G12	550256.5002	1342325.2642
G7	548107.0328	1341025.0830
G8	549478.7005	1341170.4345
41 EA	544825.8093	1339217.4439

- A. AREA OF PARCEL/LOT = 361 ACRES
- B. PRESENT ZONING = PEC
- C. PARKING TABULATION: EXISTING PARKING SPACES = 4,815
PROPOSED PARKING SPACES = 0
TOTAL SPACES PROVIDED = 4,815
- D. EXISTING BUILDING COVERAGE = 47.7 ACRES GROSS FLOOR AREA COVERAGE = 22.7 ACRES, 6.3% OF TOTAL LOT AREA PER SDP-05-42
- E. PROPOSED BUILDING COVERAGE = 0.0 ACRES GROSS FLOOR AREA COVERAGE = 0 ACRES, 0.0% OF TOTAL LOT AREA
- F. TOTAL PROPOSED BUILDING COVERAGE = 22.7 ACRES, 6.3% OF TOTAL LOT AREA
- G. PROPOSED BUILDINGS DISTURBED AREA = 0.70 ACRES
- H. PROPOSED USE = EDUCATION/RESEARCH
- I. FLOOR SPACE USE = EDUCATION/RESEARCH
- J. MAXIMUM NUMBER OF EMPLOYEES = 4,600 PER REVISED APFO TRAFFIC STUDY WITH THIS PLAN
- K. NO LOT SUBDIVISION IS ANTICIPATED
- L. CASE NUMBERS APPLICABLE: IMPROVEMENTS.
SDP F-02-77 - SWM BASIN B
SDP 04-35 - BASIN 'G'
SDP 04-66 - BALL FIELD ENTRANCE AND PARKING LOTS.
SDP 04-76 - SERVICE AREA COMPLEX
WP 03-23 - PERIMETER SECURITY FENCE
F 04-188 - FOREST CONSERVATION
SDP 04-133 - SWM BASIN C
SDP 05-42 - LIBRARY SERVICE CENTER
- M. SANITARY SEWER/WATER SERVICE SEE GENERAL NOTES
- N. EXISTING OPEN SPACE AREA (LOT AREA MINUS PARKING & BUILDINGS)=283.6 ACRES, 78.6% OF TOTAL LOT AREA
- O. PROPOSED OPEN SPACE AREA = 283.6 ACRES, 78.6% OF TOTAL LOT

GENERAL NOTES

1. THE TOPOGRAPHIC AND UTILITY INFORMATION SHOWN IN THIS DEVELOPMENT PLAN WERE OBTAINED FROM FIELD SURVEYS PERFORMED BY A. MORTON THOMAS AND ASSOCIATES AND AERIAL SURVEY BY APPLIED PHYSICS LABORATORY CONSULTANTS IN NOVEMBER 1998, AND FROM REPORTS (JHU/APL). SINCE NOT ALL INFORMATION SHOWN MAY REFLECT CURRENT CONDITIONS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION TO HIS OWN SATISFACTION.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY AND MSHA SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, UNLESS OTHERWISE NOTED.
3. ALL WORK ON THESE PLANS SHALL BE COORDINATED WITH NORTH PARKING AND TRADES CONTRACTS, NORTH CAMPUS IMPROVEMENTS PROJECT, BASIN'S B AND G, AND THE LSC ACCESS ROAD PROJECT.
4. APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO COST TO THE JHU/APL.
5. TRAFFIC MUST BE MAINTAINED WITHIN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL COORDINATE ANY REQUIRED TEMPORARY LANE CLOSURES WITH JHU/APL AND HOWARD COUNTY DPW WITH NOTIFICATIONS OF ALL SCHEDULES AND REQUIREMENTS.
6. THE CONTRACTOR SHALL CONTACT MR. RUSTY OBER (443) 778-0167 AT LEAST FIVE DAYS BEFORE STARTING WORK OR DISRUPTION OF ANY UTILITIES.
7. THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCING WORK AT (410) 313-1880.
8. ALL UTILITIES SHALL HAVE A MINIMUM CLEARANCE OF 6". ALL POLES AND FOUNDATIONS SHALL HAVE A MINIMUM CLEARANCE OF 2'-0", OR TUNNEL AS REQUIRED.
9. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEMS. COORDINATE WITH THE OWNER FOR OPERATING WATER MAIN VALVES.
10. THE CONTRACTOR SHALL PERMANENTLY SEED AND STABILIZE ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED.
11. ALL DRIVEWAYS ARE PRIVATELY OWNED AND MAINTAINED BY JHU/APL.
12. THE AREA SHOWN IS LOCATED ON TAX MAP #41.
13. THE INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION BY DIGGING TEST PITS BY HAND AT ALL CROSSINGS WELL IN ADVANCE OF CONSTRUCTION.
14. ALL SITE UTILITIES ARE THE PROPERTY OF THE COUNTY AND UTILITY COMPANIES WHO WILL HORIZONTALLY LOCATE ALL ACTIVE UTILITIES FOR THE CONTRACTOR. ADJOINING SITE UTILITIES ARE OWNED BY JHU/APL (SEE NOTE #24, THIS SHEET).
15. TRAFFIC SHALL BE MAINTAINED BY THE CONTRACTOR ALONG EXISTING ROADWAYS DURING PROPOSED WORK AT ALL TIMES. SEE MAINTENANCE OF TRAFFIC PLAN.
16. SEE DETAIL SHEETS FOR OTHER ITEMS THAT APPLY TO THIS PROJECT.
17. THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO AVOID DAMAGE TO EXISTING ADJACENT FACILITIES AND STRUCTURES. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION OR BETTER UNLESS NOTED OTHERWISE.
18. DUE TO THE PROXIMITY OF LIVE UNDERGROUND UTILITIES, THE JHU/APL AND A. MORTON THOMAS AND ASSOCIATES, INC. ARE NOT RESPONSIBLE FOR ANY DAMAGE OR INJURY SUSTAINED DURING CONSTRUCTION BY ANY PERSON, VEHICLES, OR EQUIPMENT USED ON OR ADJACENT TO THE SITE.
19. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE JHU/APL OF ANY DEVIATION FROM THESE PLANS PRIOR TO ANY CHANGE BEING MADE. ANY DEVIATION FROM THESE PLANS SHALL NOT BE MADE WITHOUT WRITTEN AUTHORIZATION BY JHU/APL, A. MORTON THOMAS & ASSOC., HOWARD COUNTY DPZ, & SCD.
20. SURFACED STREETS AND PARKING AREAS SHALL BE MAINTAINED IN A CLEAN CONDITION, MUD AND DUST FREE AT ALL TIMES. ADEQUATE MEANS SHALL BE PROVIDED TO CLEAN TRUCKS AND OTHER EQUIPMENT USING EXISTING SURFACED STREETS AND PARKING AREAS.
21. THE CONTRACTOR SHALL MAKE EVERY ATTEMPT TO MINIMIZE DAMAGE TO EXISTING TREES DURING CONSTRUCTION.
22. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL MEET CURRENT HOWARD COUNTY DEPARTMENT OF PERMITTING SERVICES STANDARDS AND DIRECTIVES.
23. EXISTING SIGNS, GUARDRAILS, AND OTHER MINOR SITE FEATURES IN THE WAY OF PROPOSED CONSTRUCTION, WHETHER OR NOT SHOWN ON THESE PLANS, SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE JHU/APL.
24. CONTRACTOR SHALL CONTACT JHU/APL PLANT FACILITIES OFFICE (443) 778-0167 AND "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR START OF THE EXCAVATION AND MUST NOTIFY ALL PUBLIC UTILITY COMPANIES AND THE OWNER OF UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION.
25. THE SUBJECT PROPERTY IS ZONED PEC PER THE FEBRUARY 2004 COMPREHENSIVE ZONING PLAN.
26. NO CLEARING, GRADING, OR CONSTRUCTION ARE PERMITTED WITHIN THE RESTRICTED FOREST CONSERVATION, WETLANDS, STREAMS, OR THEIR BUFFERS, AS THESE ACTIVITIES ARE NOT PERMITTED BY MDE, U.S. ARMY CORPS OF ENGINEERS, AND HOWARD COUNTY.
27. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION ARE PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. THE FOREST CONSERVATION OBLIGATION HAS BEEN ADDRESSED WITH F-04-188, F-02-40.
28. THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED AS DESCRIBED IN GENERAL NOTE #1 AND BY GROUND SURVEY OF THE EXISTING ROADWAY.
29. WATER IS PUBLIC (HOWARD COUNTY)
30. SEWER IS PUBLIC (HOWARD COUNTY)
31. THE FLOODPLAIN LIMITS FOR THIS PROJECT WAS TAKEN FROM HOWARD COUNTY STUDY.
32. THE FINAL PLAN AREA AND THE LIMIT OF DISTURBANCE OF THE SANNER ROAD IMPROVEMENTS ARE NOT LOCATED IN THE 100 YEAR FLOOD PLAN.
33. SOIL MAP USED: SHEET NO. 29, SOIL SURVEY JULY 1968 HOWARD COUNTY, MARYLAND, USDA.
34. JHU/ENVIRONMENTAL CONDITIONS ASSESSMENT REPORT REQUIREMENTS HAVE BEEN ADDRESSED BY ENVIRONMENTAL REPORTS ISSUED BY JHU/APL AND ACCEPTED BY THE COUNTY UNDER F-02-40 SWM BASIN A.
35. NO LANDSCAPING IS REQUIRED/PROVIDED UNDER THIS CONTRACT. IF/WHEN BUILDINGS ARE PROPOSED ALONG THIS SECTION OF ROADWAY, LANDSCAPING REQUIREMENTS WILL BE ADDRESSED. LANDSCAPING PROPOSED UNDER SD-04-66 WILL BE REPLACED UPON COMPLETION OF THE WORK ON THIS CONTRACT.



CONTACT PERSON FOR OWNER: RUSTY OBER
TELEPHONE: (443) 778-0167 FAX: (443) 778-6122

ADDRESS CHART	
LOT/PARCEL #1	STREET ADDRESS 11100 JOHNS HOPKINS ROAD LAUREL, MD 20723 CONTACT: MR. RUSTY OBER

PERMIT INFORMATION CHART					
SUBDIVISION NAME JHU APPLIED PHYSICS LAB		SECTION / AREA N/A		PARCEL NO 1	
PLAT OR REF 17042-17046	GRID# 16	ZONING PEC	TAX MAP NO. 41	ELEC. DISTRICT 5	CENSUS TRACT 6051
WATER CODE E-21			SEWER CODE 6480000		

INDEX OF DRAWINGS

SHT. NO.	SHEET TITLE
1	COVER SHEET
2	DETAILS AND TYPICAL SECTION
3	EXISTING CONDITIONS/DEMOLITION PLAN
4	ROADWAY AND DRAINAGE PLAN
5	PROFILES
6	GRADING PLAN
7	EROSION AND SEDIMENT CONTROL PLAN
8	SEDIMENT CONTROL NOTES
9	STORM WATER MANAGEMENT
10	STORM WATER MANAGEMENT DETAILS 1
11	STORM WATER MANAGEMENT DETAILS 2
12	SIGNING AND STRIPING PLAN
13	PROJECT AREA SOILS MAP
14	OVERALL DRAINAGE AREA MAP
15	MAINTENANCE OF TRAFFIC
16-18	CROSS-SECTIONS

~~Review for HOWARD SCD and meets Technical Requirements~~

~~USDA - Natural Resources Conservation Service~~

~~This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.~~

~~APPROVED: DEPARTMENT OF PUBLIC WORKS~~

~~Director, Bureau of Highways~~

APPROVED: DEPARTMENT OF PLANNING AND ZONING

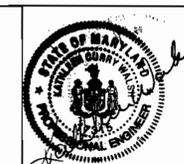
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE: 4/12/05

CHIEF, DIVISION OF LAND DEVELOPMENT RB DATE: 4/28/05

DIRECTOR DATE: 4/29/05

JHU/APL INTERNAL USE

THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

PROPERTY OWNER: JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MD 20723
CONTACT: MR. RUSTY OBER
(443) 778-0167

**APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY**

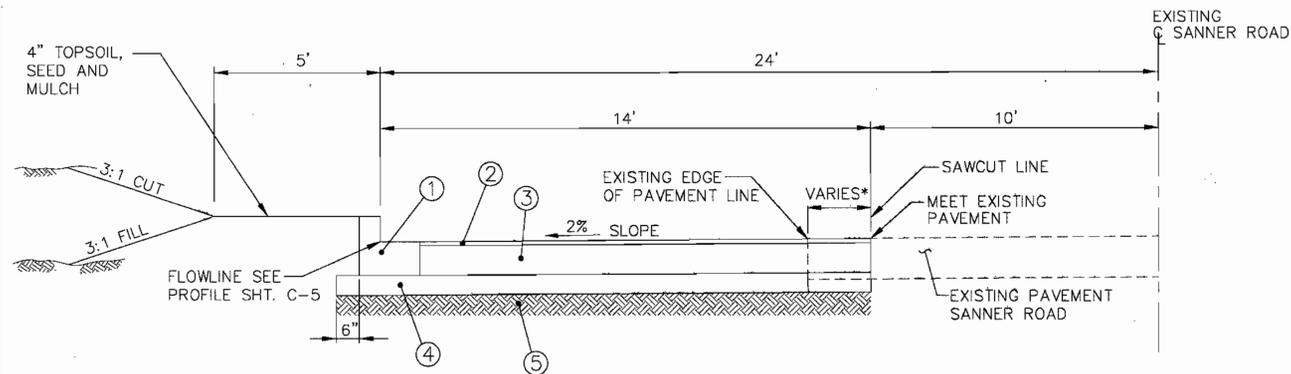
COVER SHEET

TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
C-1

SHEET 1 OF 18

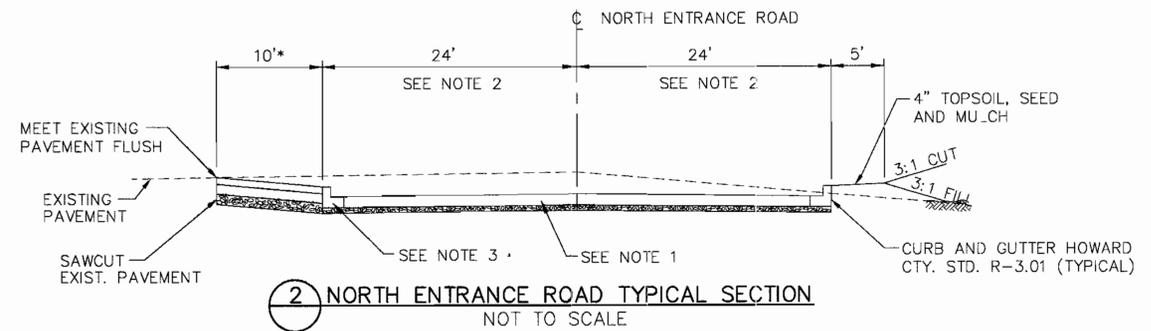


1 SANNER ROAD TYPICAL SECTION
NOT TO SCALE

STA. 40+35 TO STA. 52+04.71

- ① CURB AND GUTTER; HOWARD CTY. STD. R-3.01
- ② 1 1/2" 12.5 SUPERPAVE SURFACE COURSE, PG 64-22
- ③ 6 1/2" 19MM SUPERPAVE BASE COURSE, PG 64-22
- ④ 6" GRADED AGGREGATE BASE
- ⑤ COMPACTED SUBGRADE

*REMOVE EXISTING PAVEMENT VARIES: 0' TO 2'

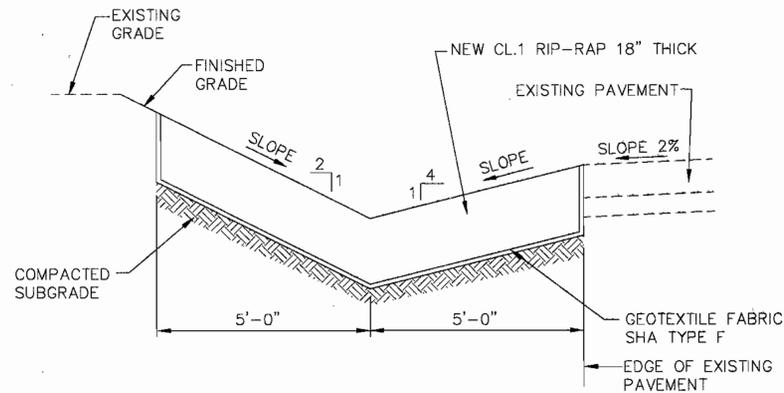


2 NORTH ENTRANCE ROAD TYPICAL SECTION
NOT TO SCALE

(SEE ROADWAY AND DRAINAGE PLAN FOR LIMITS OF TYPICAL SECTION)

NOTE:

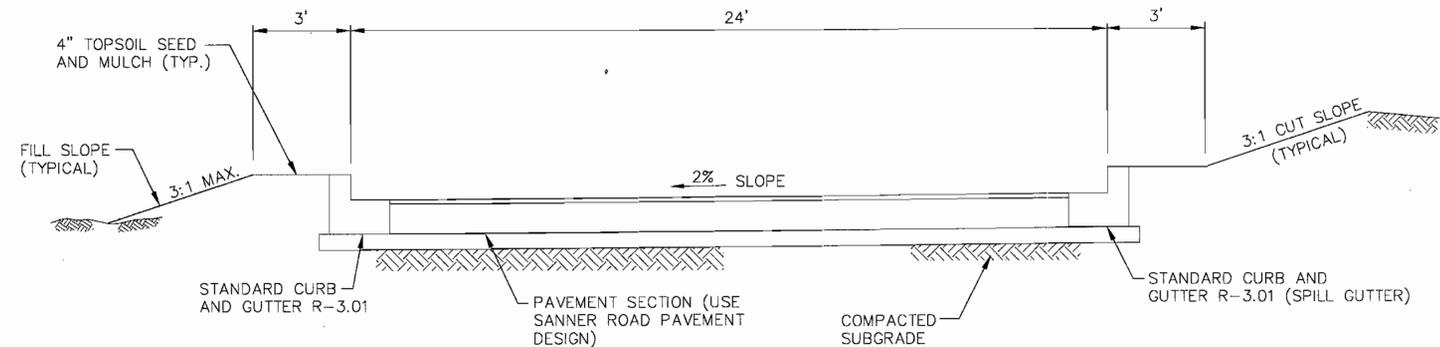
1. USE SANNER ROAD PAVEMENT DESIGN SECTION FOR ALL PROPOSED PAVEMENT AREAS.
2. WIDTH OF ROAD TO MATCH EXISTING NORTH ENTRANCE ROAD WIDTH.
3. STA 10+50 TO STA. 11+12: LEFT OF NORTH ENTRANCE ROAD, CONSTRUCT 4" MODIFIED CURB AND GUTTER. USE HOWARD COUNTY STD. R-301 ELSEWHERE CONSTRUCT PAVEMENT BEHIND CURB FOR 10' TO MEET EXISTING BALL FIELD DRIVE.



3 TYPICAL SECTION RIP-RAP DRAINAGE CHANNEL

SCALE 1/2" = 1'-0"

STATION 39+95 TO 40+35, RIGHT SANNER ROAD

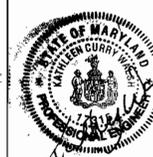


4 LSC ACCESS ROAD TYPICAL SECTION

STA. 20+12 TO STA. 20+69.87

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/13/05
 CHIEF, DIVISION OF LAND DEVELOPMENT HP DATE 4/29/05
 DIRECTOR DATE 4/29/05

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

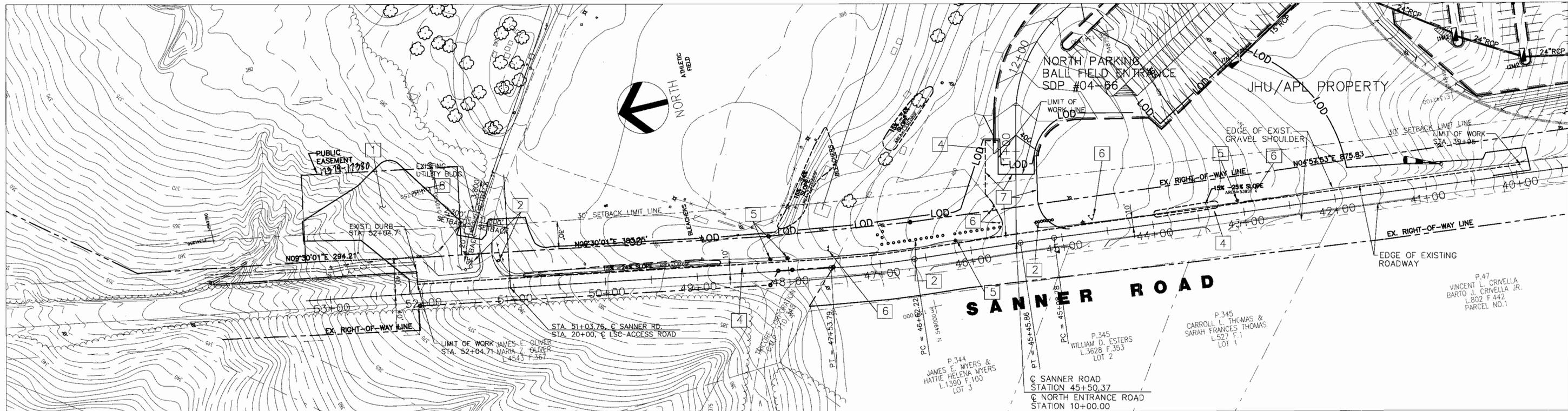


DES: KCW					
ORN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
DETAILS AND TYPICAL SECTION
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-2
 SHEET 2 OF 18



1 EXISTING CONDITIONS/DEMOLITION
SCALE: 1"=50'

LEGEND:
 — LOD — LIMIT OF DISTURBANCE AND TREE PROTECTION
 — COMM — UNDERGROUND COMMUNICATION

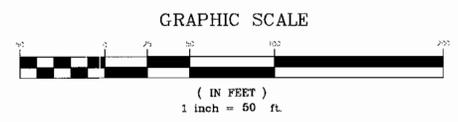
KEYED NOTES:

- 1 EXISTING TREES TO BE REMOVED WITHIN LIMITS OF DISTURBANCE
- 2 EXISTING WOOD BOLLARDS TO BE REMOVED AND BACKFILLED WITH DENSE GRADED AGGREGATE (MIN. 31 BOLLARDS).
- 3 NOT USED
- 4 SAWCUT LINE, SEE TYPICAL SECTIONS FOR LIMITS OF PAVEMENT REMOVAL.
- 5 CONTRACTOR TO COORDINATE WITH THE UNITED STATES POSTAL SERVICE AND THE RESIDENTS OF 7150 AND 7152 SANNER ROAD FOR THE RELOCATION OF THEIR MAILBOXES TO THE WEST SIDE OF SANNER ROAD.
- 6 EXISTING SIGNS TO BE RELOCATED TO THE EAST OF NEW CONSTRUCTION, COORDINATE WITH APL AND HOWARD COUNTY DPW. SEE SIGNING AND STRIPING PLAN.
- 7 LIMIT OF EXISTING PAVEMENT REMOVAL.
- 8 CRITICAL COMMUNICATION CONDUITS ARE IN THE VICINITY OF THE UTILITY BUILDING. CONTRACTOR SHALL FIELD LOCATE, HAND DIG, AND PROTECT THESE COMMUNICATION LINES.

GENERAL NOTE:

- 1. RIGHT OF WAY LINES HAVE BEEN ESTABLISHED BY OTHERS AND THIS PLAN DOES NOT GUARANTEE THEIR ACCURACY.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 4/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE
 [Signature] 4/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT HP DATE
 [Signature] 4/20/05
 DIRECTOR DATE



JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

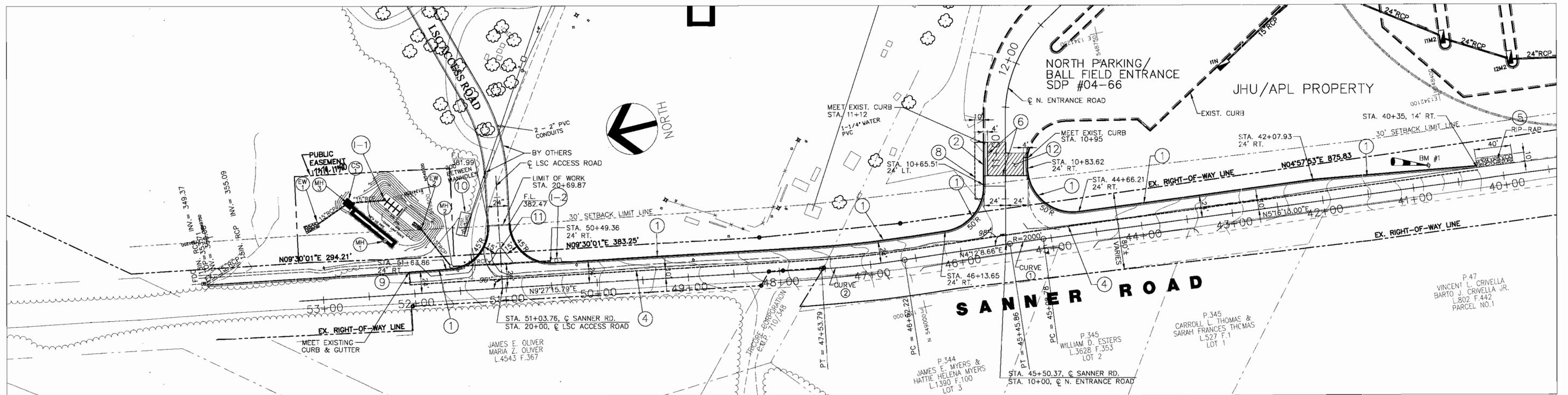


DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
 EXISTING CONDITION/
 DEMOLITION PLAN
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-3
 SHEET 3 OF 18



- KEYED NOTES:**
- NEW 7" CONCRETE CURB AND GUTTER (HOWARD COUNTY NO. R-3.01).
 - NEW 4" MODIFIED COMBINATION CURB AND GUTTER (HOWARD COUNTY NO. R-3.01) STA. 10+65 TO STA. 11+12, 24 FT. LEFT. TRANSITION BETWEEN 7" CURB AND 4" CURB IN 5'.
 - SANDFILTER. SEE STORMWATER MANAGEMENT PLAN.
 - SAWCUT LINE ALONG SANNER ROAD, SEE TYPICAL SECTION SHEET
 - NEW 18" THICK CLASS 1 RIP-RAP ON GEOTEXTILE. SEE DETAIL SHEET C-10.
 - MATCH LINE FOR NORTH ENTRANCE ROAD WORK UNDER HOWARD COUNTY SDP #04-66. MEET EXISTING PAVEMENT.
 - NOT USED
 - SAW CUT EXISTING PAVEMENT STA. 10+50, 34 FT LEFT TO STA. 11+12, 34 FT. LEFT. REMOVE EXISTING PAVEMENT BETWEEN SAW CUT LINE AND PROPOSED CURB. SEE DETAIL SHEET FOR PAVEMENT PLACEMENT.
 - MEET EXISTING PAVEMENT, STA. 52+04.71.
 - EXISTING UTILITY BUILDING TO BE PROTECTED AND UNDISTURBED DURING CONSTRUCTION.
 - SEE DETAIL THIS SHEET FOR TRAFFIC ISLAND GEOMETRY.
 - OVERLAY EXISTING PAVEMENT WITH 1 1/2" SURFACE COURSE. MILL EXISTING PAVEMENT TO MEET PROPOSED ELEVATIONS.

- GENERAL NOTES:**
- ALL OFFSETS MEASURED TO FACE OF CURB.

1 ROAD AND DRAINAGE PLAN
SCALE: 1"=50'

BM #1
SPIKE IN A POWER POLE
BCE #283610
ELEVATION 387.14

CENTERLINE GEOMETRY - SANNER ROAD

POINT	STATION	NORTH	EAST
P.O.T.	40+42.68	548393.01	1341000.95
P.C.	45+08.78	548857.14	1341043.76
P.I.	45+27.32	548875.60	1341045.47
P.T.	45+45.86	548894.09	1341046.83
P.C.	46+62.22	549010.14	1341055.36
P.I.	47+08.04	549055.83	1341058.73
P.T.	47+53.79	549101.02	1341066.25
P.O.T.	51+92.95	549534.22	1341138.39

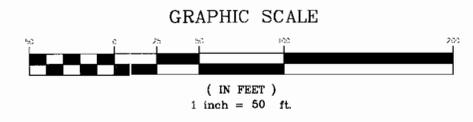
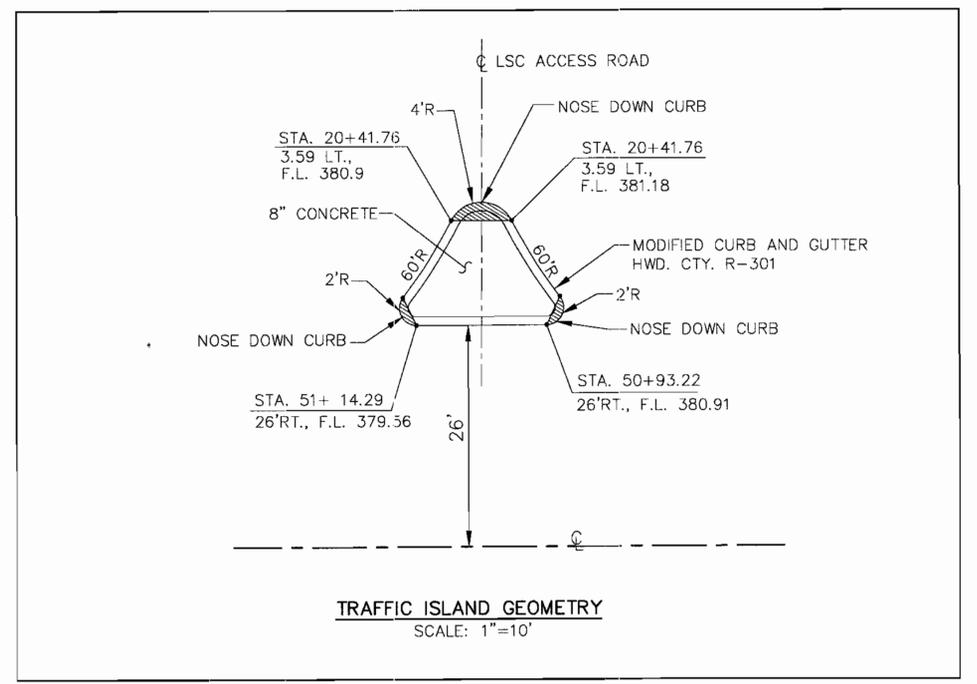
CURVE 1	CURVE 2
PC=45+08.78	PC=46+62.22
PT=45+45.86	PT=47+53.79
R=2000.00 FT.	R=1000.00 FT.
D=2°51'53.24"	D=5°43'46.48"
L=37.08 FT.	L=91.57 FT.
T=18.54 FT.	T=45.82 FT.
E=0.09 FT.	E=1.05 FT.

CENTERLINE GEOMETRY-N. ENTRANCE ROAD

POINT	STATION	NORTH	EAST
P.O.T.	10+00	548898.58	1341047.15
P.C.	11+38.56	548868.15	1341182.33

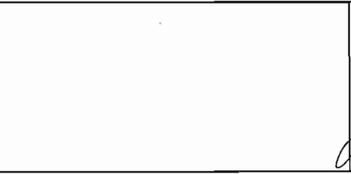
CENTERLINE GEOMETRY-LSC ACCESS ROAD

POINT	STATION	NORTH	EAST
P.O.T.	20+00	549446.21	1341123.73
P.C.	20+69.87	549434.68	1341192.65



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division MK 4/19/05
 Chief, Division of Land Development RB 4/20/05
 Director 4/20/05

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



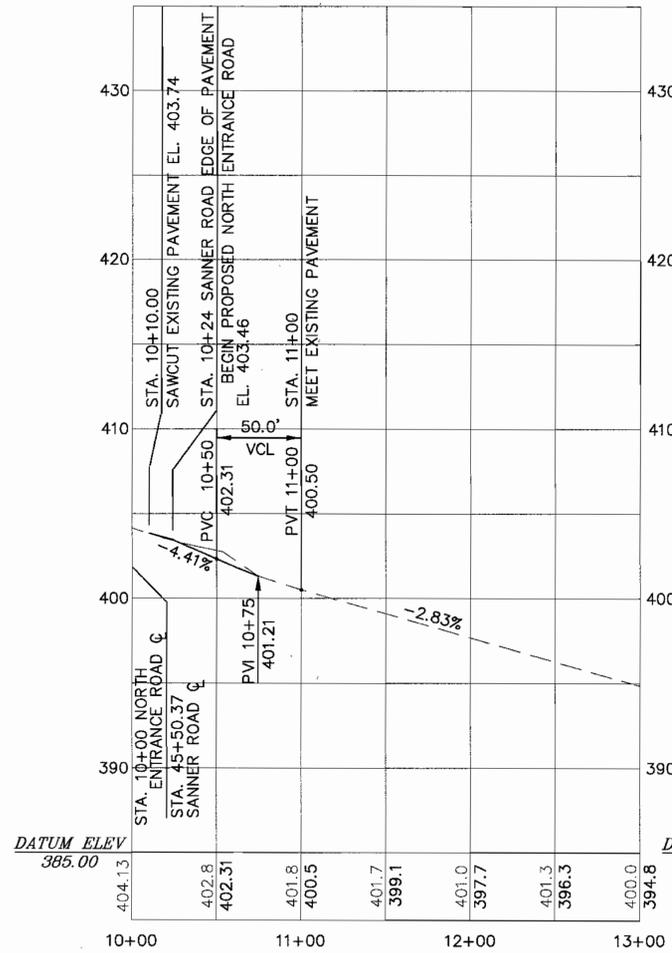
DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

**APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
 ROADWAY AND DRAINAGE PLAN**

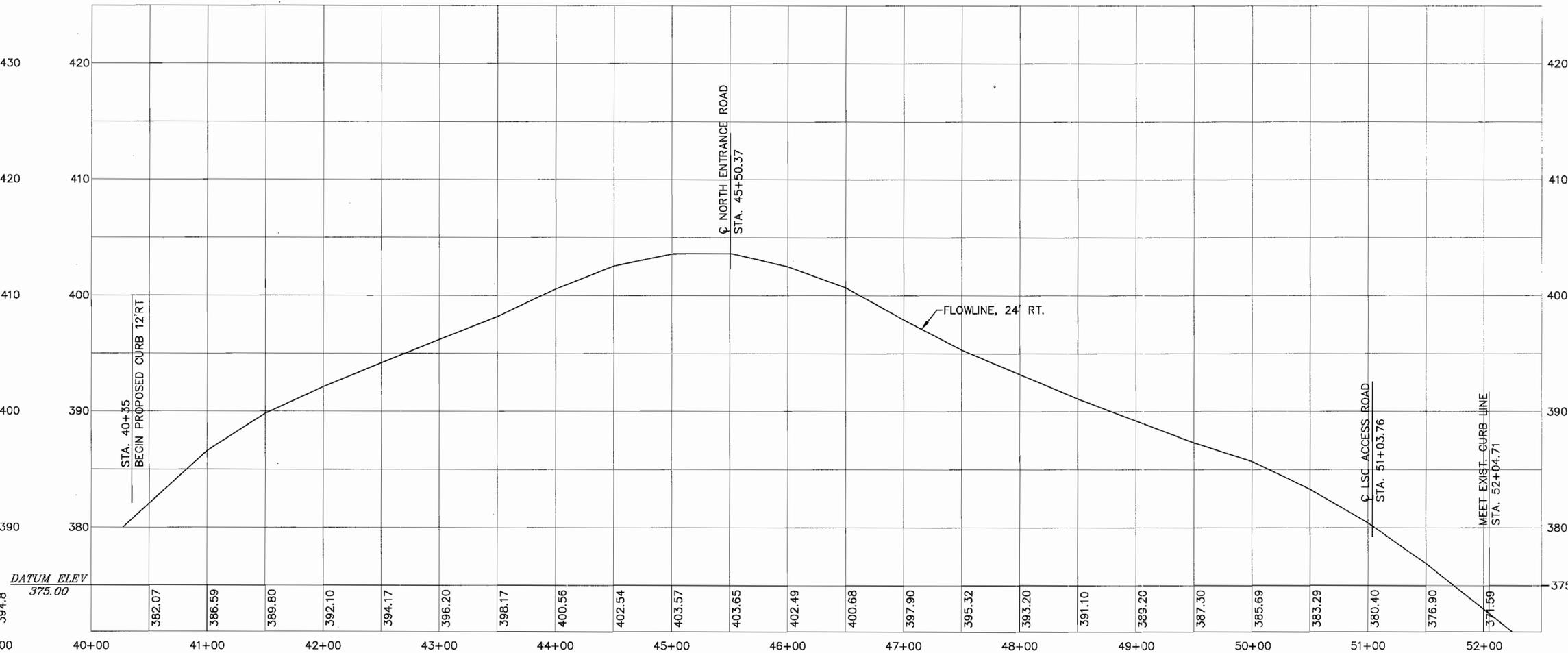
TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-4
 SHEET 4 OF 18



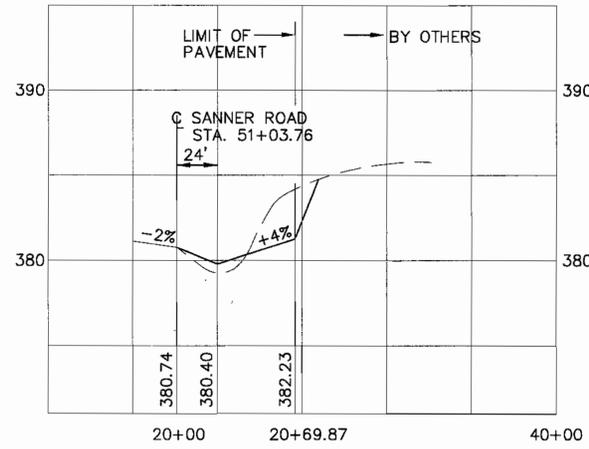
MAIN PARKING LOT DRIVEWAY PROFILE

SCALE: 1"=50' (H)
1"=5' (V)



SANNER ROAD
FLOWLINE PROFILE: EAST SIDE ROADWAY

SCALE: 1"=50' (H)
1"=5' (V)

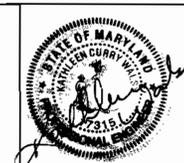


LSC ACCESS ROAD PROFILE

SCALE: 1"=50' (H)
1"=5' (V)

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 4/13/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MKK DATE 4/20/05
 [Signature] DATE 4/24/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] DATE
 DIRECTOR

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

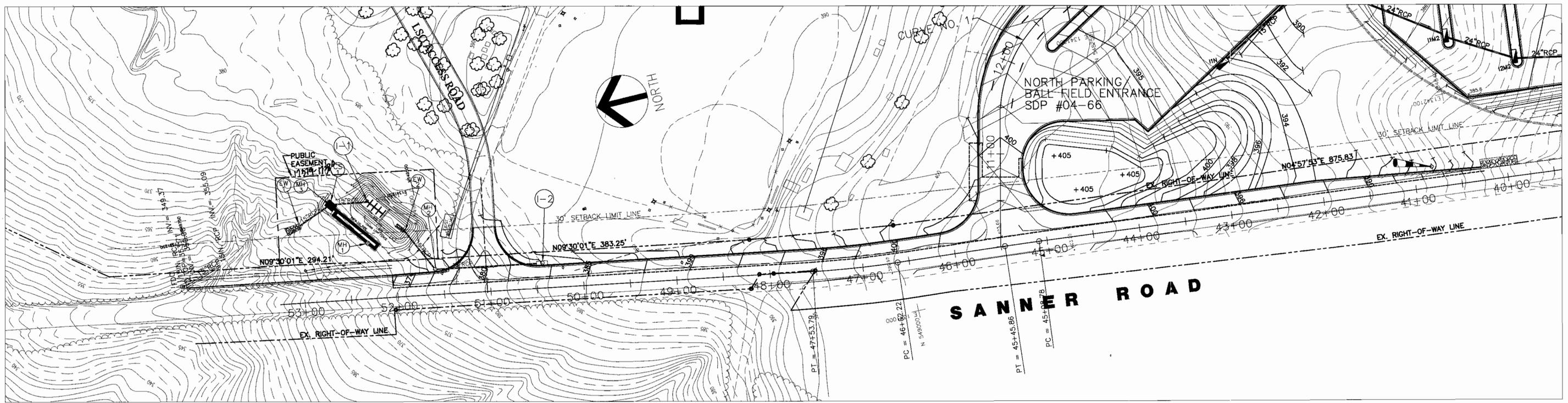


DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
PROFILES
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-5
 SHEET 5 OF 18



1 GRADING PLAN
SCALE: 1"=50'

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

James E. Loesch 3/14/05
 SIGNATURE OF DEVELOPER DATE
 PRINT NAME BELOW SIGNATURE
 James E. Loesch

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

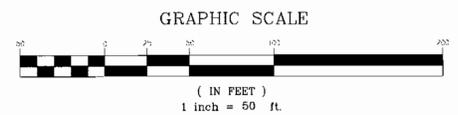
Anthony Walsh 2-23-05
 SIGNATURE OF ENGINEER DATE
 PRINT NAME BELOW SIGNATURE
 Anthony Walsh

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

() THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE



APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 4/13/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

[Signature] 4/25/05
 CHIEF, DIVISION OF LAND DEVELOPMENT BB DATE

[Signature] 4/20/05
 DIRECTOR DATE

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



DES: KCW									
DRN: RLP									
CHK: FEW									
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP			

SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY

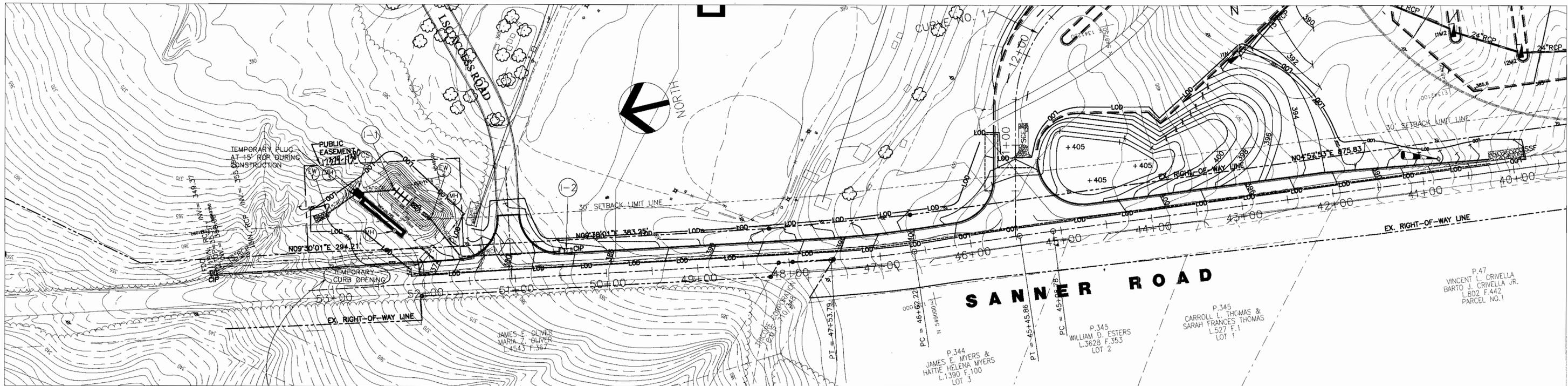
GRADING PLAN

TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET C-6

SHEET 6 OF 18



TO DIRECT RUNOFF INTO SSF DURING CONSTRUCTION, SSF MUST BE ON THE CONTOUR.

1 EROSION AND SEDIMENT CONTROL PLAN
SCALE: 1"=50'

SEDIMENT CONTROL SYMBOLS LEGEND

- SSF — SUPER SILT FENCE
- LOD — LIMIT OF DISTURBANCE
- CIP — INLET PROTECTION
- ⊗ SP

SEDIMENT CONTROL

() BY THE DEVELOPER:
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.
I DO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Developer: *James E. Leach* 3/14/05
DATE: 3/14/05
PRINT NAME BELOW SIGNATURE: James E. Leach

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

Signature of Engineer: *Kathy Walsh* 2-23-05
DATE: 2-23-05
PRINT NAME BELOW SIGNATURE: Kathy Walsh

() THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Signature: *Jim Meyer* 4/6/05
DATE: 4/6/05
USDA-NATURAL RESOURCES CONSERVATION SERVICE

() THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *Howard Soil Conservation District* 4/6/05
DATE: 4/6/05
HOWARD SOIL CONSERVATION DISTRICT

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

Construction Specifications

- Length - minimum of 50' (*30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
- Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
- Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 7 - 17 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 - SUPER SILT FENCE

Construction Specifications

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6" fence shall be used, substituting 42" fabric and 6" length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt mounds removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:
Tensile Strength: 50 lbs/in (min.) Test: MSMT 509
Tensile Modulus: 20 lbs/in (min.) Test: MSMT 509
Flow Rate: 0.3 gal/ft²/min (max.) Test: MSMT 322
Filtering Efficiency: 75% (min.) Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 8 - 26 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)

Construction Specifications

- Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4") to the 2" x 4" weir (measuring throat length plus 2") as shown on the standard drawing.
- Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.
- Securely nail the 2" x 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4" apart).
- Place the assembly against the inlet throat and nail (minimum 2" lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbag or alternate weight.
- The assembly shall be placed so that the end spacers are a minimum 1" beyond both ends of the throat opening.
- Form the 1/2" x 1/2" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4" x 1 1/2" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.
- This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
- Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 9 - 18 - 5B MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

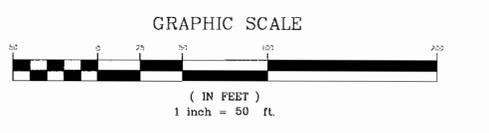
DETAIL 20B - SUMP PIT

Construction Specifications

- Pit dimensions are variable, with the minimum diameter being 2 times the standpipe diameter.
- The standpipe should be constructed by perforating a 12" to 24" diameter corrugated or PVC pipe. Then wrapping with 1/2" hardware cloth and Geotextile Class E. The perforations shall be 1/2" x 6" slots or 1" diameter holes.
- A base of filter material consisting of clean gravel or #57 stone should be placed in the pit to a depth of 12". After installing the standpipe, the pit surrounding the standpipe should then be backfilled with the same filter material.
- The standpipe should extend 12" to 18" above the lip of the pit or the riser crest elevation (basin dewatering only) and the filter material should extend 3" minimum above the anticipated standing water elevation.

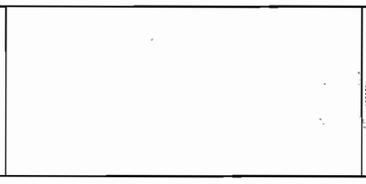
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 10 - 13 - 2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE: 4/13/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 4/13/05
DIRECTOR DATE: 4/22/05



JHU/APL INTERNAL USE
THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINEBROOK PARKWAY, SUITE 200, ROCKVILLE, MD 20852
TEL: (301) 881-3548 FAX: (301) 881-8814
AMT FILE # 102-440



DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
EROSION AND SEDIMENT CONTROL PLAN
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET C-7
SHEET 7 OF 18

SEDIMENT CONTROL NOTES

- 1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
- 2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERE TO.
- 3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1. B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- 5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 7) *SITE ANALYSIS:

TOTAL AREA OF SITE	361	ACRES
AREA DISTURBED	0.70	ACRES
AREA TO BE ROOFED OR PAVED	0.46	ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.27	ACRES
TOTAL CUT (INSITU, IN GROUND)	1530	CU.YDS.
TOTAL FILL (COMPACTED)	100	CU.YDS.
OFF SITE WASTE/BORROW AREA LOCATION	APL STOCKPILE SITE COUNTY FIELD APPROVED SEDIMENT CONTROLLED	

*NOTE: THESE QUANTITIES ARE A GROSS ESTIMATE BASED IN SITU CONDITION (NON BULKING OR COMPACTION) AND SHALL NOT BE USED BY THE CONTRACTOR FOR BIDDING PURPOSES. CONTRACTOR IS RESPONSIBLE FOR ALL QUANTITIES OF CONSTRUCTION AS REPRESENTED BY THE GRADING PLAN.
- 8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- 9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- 11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- 12) EXCAVATION AND FILL QUANTITIES SHOWN ARE FOR THE USE OF THE SEDIMENT AND EROSION CONTROL REVIEW ONLY. THE CONTRACTOR SHALL NOT ESTIMATE THEIR CONSTRUCTION COSTS BASED ON THESE QUANTITIES AS THEY ARE APPROXIMATE AND ARE SUBJECT TO UNKNOWN SITE CONDITIONS.

TEMPORARY SEEDING NOTES:

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEED PREPARATION:

LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS:

APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ. FT.)

SEEDING:

FOR THE PERIOD MARCH 1 THROUGH APRIL 30, AND FROM AUGUST 15 THROUGH OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1,000 SQ. FT.) FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS./ACRE OF WEEPING LOVEGRASS (0.07 LBS./1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING:

APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT) OR UNROTTED WEED FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL./1,000 SQ.FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1988 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDING NOTES:

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION:

LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS:

1. PREFERRED - APPLY TWO TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1,000 SQ.FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS./1,000 SQ.FT) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1,000 SQ. FT.)
2. ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1,000 SQ. FT.) AND 1,000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS./1,000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING:

FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS/ACRE (1.4 LBS./1,000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS PER ACRE (0.05 LBS./1,000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28 PROTECT SITE BY:
 OPTION (1) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRINGS
 OPTION (2) - USE SOD
 OPTION (3) - SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW.

MULCHING:

APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES. ON SLOPES 8 FEET OR HIGHER USE 348 GALLONS PER ACRE (8 GAL./1,000 SQ. FT.) FOR ANCHORING.

MAINTENANCE:

INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS. WATER SEEDED AREAS AND MAINTAIN FOR 30 DAYS. OPTIMUM SEEDING DATE FOR THIS MOISTURE IS MARCH 1 TO APRIL 30.

TOP SOIL SPECIFICATION

TOP SOIL SPECIFICATIONS - SOIL TO BE USED AS TOP SOIL MUST MEET THE FOLLOWING: TOPSOIL SHALL BE A LOAM SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURE SUBSOIL AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1-1/2" IN DIAMETER.

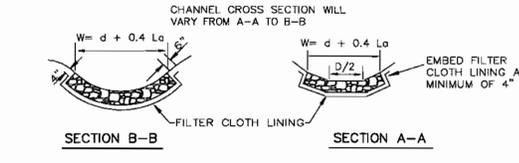
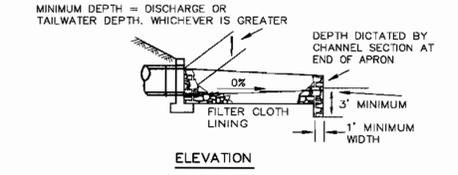
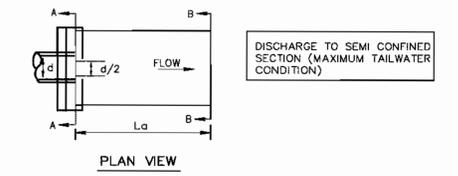
TOPSOIL MUST BE FREE OF PLANTS, PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

WHERE THE TOPSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS/1,000 SQ.FT.) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTURBED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

FOR SITE HAVING DISTURBED AREAS UNDER 5 ACRES: PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
 ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZERS, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:

- COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
- A) COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
 - B) COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
 - C) COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQ.FT. PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
- COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LBS/1,000 SQ. FT. AND 1/3 THE NORMAL LIME APPLICATION RATE.

DETAIL 25 - ROCK OUTLET PROTECTION I



NOTE: FILTER CLOTH MUST EXTEND A MINIMUM OF 6" BEYOND APRON AND SIDES

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

ROCK OUTLET PROTECTION

Construction Specifications

1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

TIME SEQUENCE OF CONSTRUCTION:

WEEKS	SEQUENCE OF CONSTRUCTION:
1	CONTRACTOR SHALL OBTAIN A GRADING PERMIT FROM APL.
2	NOTIFY JHU/APL AND COUNTY SEDIMENT CONTROL INSPECTOR, AT LEAST 14 DAYS PRIOR TO BEGINNING WORK TO ARRANGE FOR A PRE-CONSTRUCTION MEETING.
2	PERFORM CLEARING ONLY AS NECESSARY TO INSTALL SILT FENCE, AND ALL OTHER SEDIMENT CONTROL FACILITIES WITHIN THE PROJECT LIMIT. STAGING AREA FOR CONSTRUCTION WILL BE OFF-SITE.
1	PLACE ALL M.O.T. TRAFFIC CONTROL SIGNS, STRIPING AND DRUMS AS NOTED IN PLANS.
2	SAWCUT EDGE OF PAVEMENT AND GRADE ROAD WIDENING. CONSTRUCT STORM DRAIN STRUCTURES AND PIPES. CONSTRUCT SANDFILTER. (LESS SAND).
2	CONSTRUCT PROPOSED CURB AND GUTTER AND PLACE PAVEMENT.
1	SIGN AND STRIPE ROADWAY AS NOTED IN PLANS.
1	PERFORM PERMANENT STABILIZATION OF THE SITE, VEGETATIVE STABILIZATION, INSTALL SAND IN SAND FILTER.
2	CONTRACTOR SHALL REQUEST FINAL INSPECTION FROM COUNTY SEDIMENT CONTROL INSPECTOR TO ALLOW FOR REMOVAL OF SEDIMENT CONTROLS.
13	TOTAL

SEDIMENT CONTROL

() BY THE DEVELOPER:
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.
 I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

James E. Storch 3/14/05
 SIGNATURE OF DEVELOPER DATE

James E. Storch
 PRINT NAME BELOW SIGNATURE

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

John P. Walsh 2-23-05
 SIGNATURE OF ENGINEER DATE

John P. Walsh
 PRINT NAME BELOW SIGNATURE

() THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

John P. Walsh 4/6/05
 SIGNATURE OF DISTRICT ENGINEER DATE

() THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

John P. Walsh 4/6/05
 SIGNATURE OF DISTRICT ENGINEER DATE

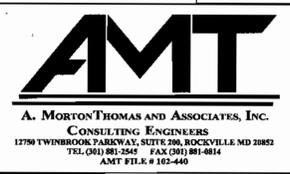
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division MK 4/13/05
 DATE

Chief, Division of Land Development HP 4/20/05
 DATE

Director 4/20/05
 DATE

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS REP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

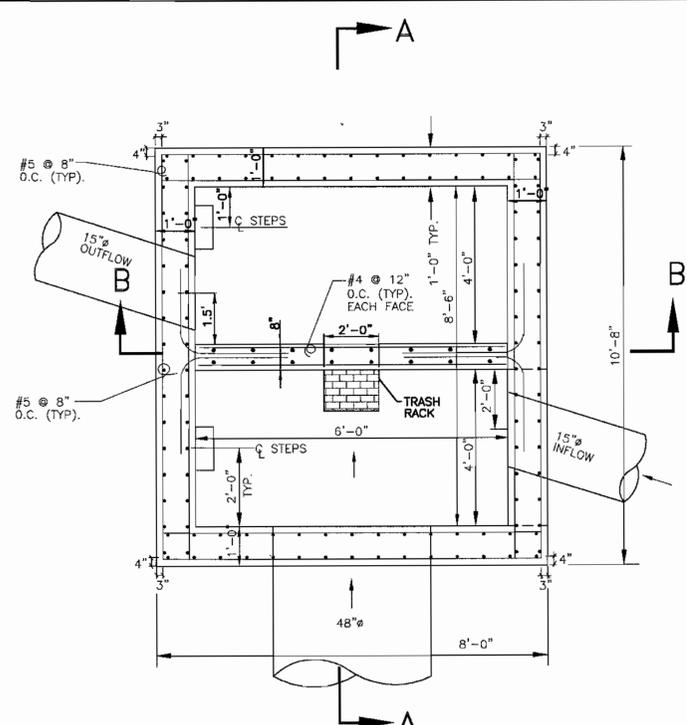


DES: KCV					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP

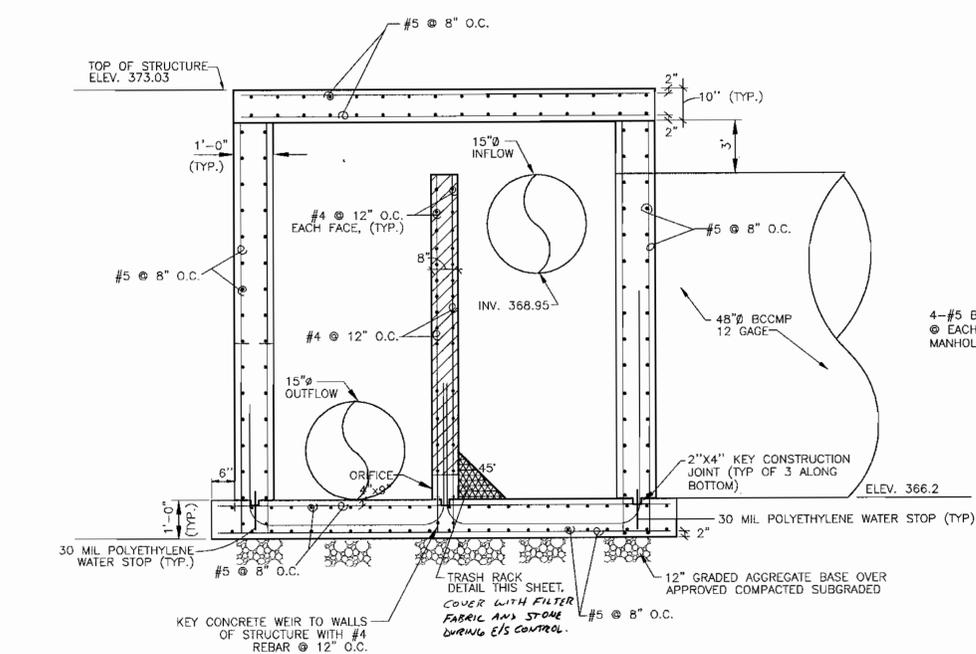
SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
SEDIMENT CONTROL NOTES
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-8
 SHEET 8 OF 18

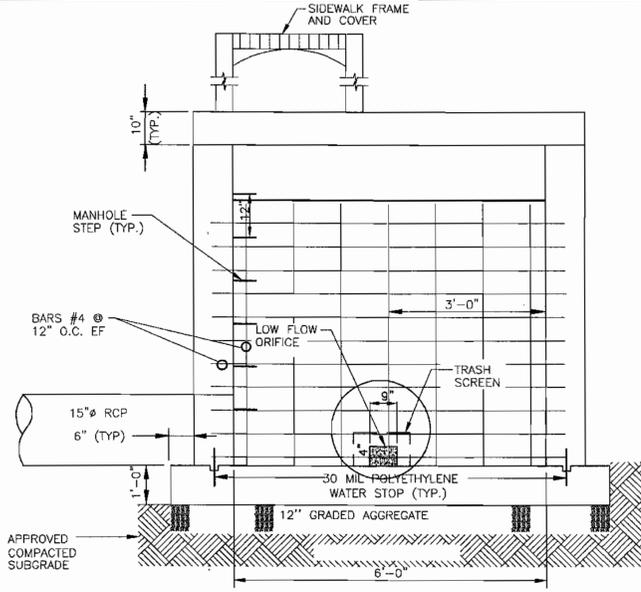


PLAN VIEW
NOT TO SCALE

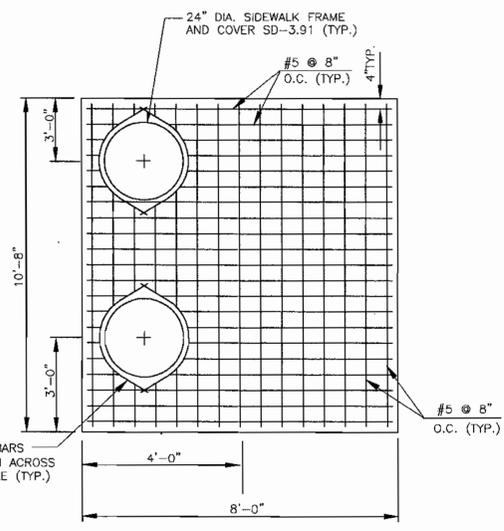


SECTION A-A
NOT TO SCALE

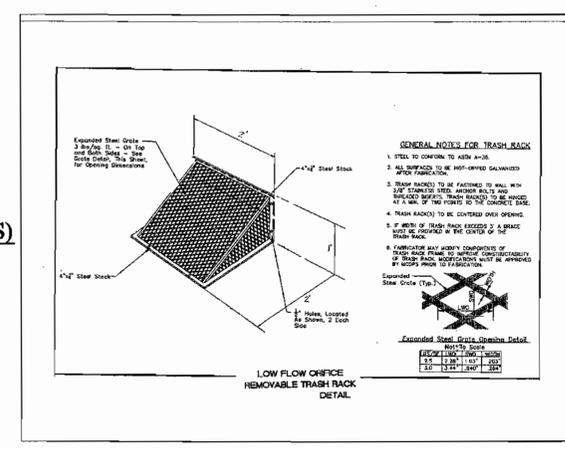
CONTROL STRUCTURE DETAIL (CS)
NOT TO SCALE



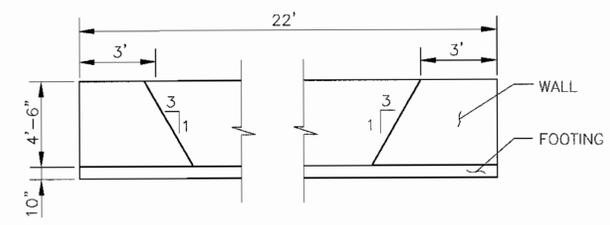
SECTION B-B
NOT TO SCALE



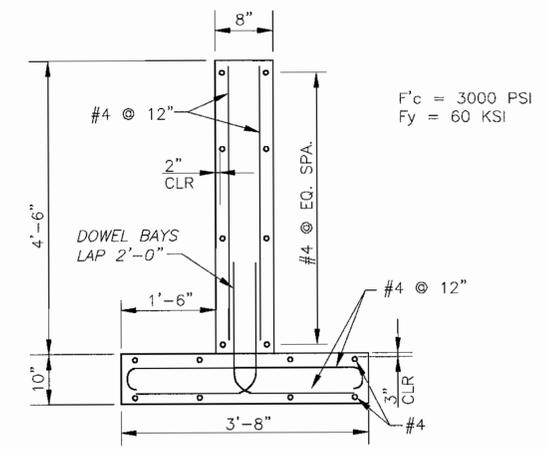
PLAN VIEW TOP SLAB
NOT TO SCALE



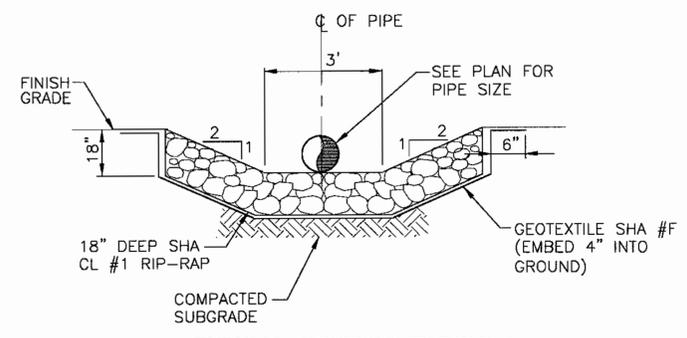
**LOW FLOW ORIFICE
REMOVABLE TRASH RACK
DETAIL**



SAND FILTER WEIR ELEVATION
NOT TO SCALE



SAND FILTER WEIR
NOT TO SCALE



**TYPICAL SECTION ENDWALL
RIP-RAP AT OUTFALL**
NOT TO SCALE

MAINTENANCE AND INSPECTION
MAINTENANCE
THE STORM WATER MANAGEMENT FACILITY NOTED IN THESE PLANS WILL BE A PUBLIC FACILITY. MAINTENANCE SHALL BE ACCORDING TO THE PROVISIONS SPECIFIED IN THE CURRENT EDITION OF THE MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II AND THIS DESIGN MANUAL FOR EACH SPECIFIC TYPE OF STORMWATER MANAGEMENT SYSTEM.

- A. JHU/APL WILL BE RESPONSIBLE FOR MOWING AND CLEARING DEBRI FROM THE STORM WATER MANAGEMENT FACILITY.
- B. HOWARD COUNTY WILL BE RESPONSIBLE FOR MAINTAINING THE STORM WATER MANAGEMENT STRUCTURE AND SAND FILTER.

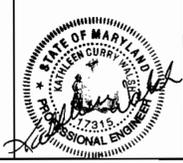
INSPECTION
A. INSPECTION SCHEDULE AND REPORTS

1. THE DEVELOPER SHALL NOTIFY THE COUNTY AT LEAST 48 HOURS BEFORE COMMENCING ANY WORK IN CONJUNCTION WITH THE STORMWATER MANAGEMENT PLAN AND UPON COMPLETION OF A PROJECT WHEN A FINAL INSPECTION WILL BE CONDUCTED.
2. INSPECTIONS SHALL BE CONDUCTED BY THE DEPARTMENT OF PUBLIC WORKS OR ITS AUTHORIZED REPRESENTATIVE. WRITTEN INSPECTION REPORTS SHALL BE MADE OF THE PERIODIC INSPECTIONS NECESSARY DURING CONSTRUCTION OF STORMWATER MANAGEMENT SYSTEMS TO ENSURE COMPLIANCE WITH THE APPROVED PLAN.
3. WRITTEN INSPECTION REPORTS SHALL INCLUDE:
 - (A) DATE AND LOCATION OF THE INSPECTION;
 - (B) WHETHER CONSTRUCTION WAS IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLAN;
 - (C) ANY VARIATIONS FROM THE APPROVED CONSTRUCTION SPECIFICATIONS;
 - (D) ANY VIOLATIONS THAT EXIST.
4. THE OWNER/DEVELOPER AND ON-SITE PERSONNEL SHALL BE NOTIFIED IN WRITING WHEN VIOLATIONS ARE OBSERVED. WRITTEN NOTIFICATION SHALL DESCRIBE THE NATURE OF THE VIOLATION AND THE REQUIRED CORRECTIVE ACTION.
5. NO WORK SHALL PROCEED UNTIL THE COUNTY INSPECTS AND APPROVES THE WORK PREVIOUSLY COMPLETED AND FURNISHES THE DEVELOPER WITH THE RESULTS OF THE INSPECTION REPORTS AFTER COMPLETION OF EACH REQUIRED INSPECTION.

B. INSPECTION REQUIREMENTS DURING CONSTRUCTION

1. AT A MINIMUM, REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED AT THE FOLLOWING SPECIFIED STAGES OF SAND FILTER CONSTRUCTION.
 - (A) UPON COMPLETION OF EXCAVATION TO SUB-FOUNDATION AND WHEN REQUIRED, INSTALLATION OF STRUCTURAL SUPPORTS OR REINFORCEMENT FOR STRUCTURES, INCLUDING BUT NOT LIMITED TO CORE TRENCHES FOR STRUCTURAL EMBANKMENTS, INLET AND OUTLET STRUCTURES, ANTI-SEEP COLLARS OR FILTER DIAPHRAGMS, WATERTIGHT CONNECTORS ON PIPES, AND TRENCHES FOR ENCLOSED STORM DRAIN FACILITIES.
 - (B) DURING PLACEMENT OF STRUCTURAL FILL, CONCRETE AND INSTALLATION OF PIPING AND CATCH BASINS.
 - (C) DURING BACKFILL OF FOUNDATIONS AND TRENCHES.
 - (D) DURING EMBANKMENT CONSTRUCTION.
 - (E) UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.
2. THE COUNTY MAY, FOR ENFORCEMENT PURPOSES, USE ANY ONE OF A COMBINATION OF THE FOLLOWING ACTIONS:
 - (A) A NOTICE OF VIOLATION SHALL BE ISSUED SPECIFYING THE NEED FOR A VIOLATION TO BE CORRECTED IF STORMWATER MANAGEMENT PLAN NON-COMPLIANCE IS IDENTIFIED.
 - (B) A STOP WORK ORDER SHALL BE ISSUED FOR THE SITE BY THE COUNTY IF A VIOLATION PERSISTS.
 - (C) BONDS OR SECURITIES MAY BE WITHHELD OR THE CASE MAY BE REFERRED FOR LEGAL ACTION IF REASONABLE EFFORTS TO CORRECT THE VIOLATION HAVE NOT BEEN UNDERTAKEN.
 - (D) IN ADDITION TO ANY OTHER SANCTIONS, A CIVIL ACTION OR CRIMINAL PROSECUTION MAY BE BROUGHT AGAINST ANY PERSON IN VIOLATION OF THE STORMWATER MANAGEMENT SUBTITLE 18.900.
3. ANY STEP IN THE ENFORCEMENT PROCESS MAY BE TAKEN AT ANY TIME, DEPENDING ON THE SEVERITY OF THE VIOLATION.
4. ONCE CONSTRUCTION IS COMPLETE, AN AS-BUILT PLAN CERTIFICATION SHALL BE SUBMITTED BY THE APPROPRIATE DESIGN PROFESSIONAL LICENSED IN THE STATE OF MARYLAND TO ENSURE THAT CONSTRUCTED STORMWATER MANAGEMENT PRACTICES AND CONVEYANCE SYSTEMS COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE APPROVED PLANS. AT A MINIMUM, AS-BUILT CERTIFICATION SHALL INCLUDE A SET OF DRAWINGS COMPARING THE APPROVED STORMWATER MANAGEMENT PLAN WITH WHAT WAS CONSTRUCTED. THE COUNTY RESERVES THE RIGHT TO REQUIRE ADDITIONAL INFORMATION IT DEEMS NECESSARY TO ENSURE COMPLIANCE WITH THE APPROVED PLANS.
5. THE COUNTY SHALL SUBMIT NOTICE OF CONSTRUCTION COMPLETION TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, ON A FORM SUPPLIED BY MDE FOR EACH STRUCTURAL STORMWATER MANAGEMENT PRACTICE WITHIN 45 DAYS OF CONSTRUCTION COMPLETION. IF BMP'S REQUIRING HSCD APPROVAL ARE CONSTRUCTED, NOTICE OF CONSTRUCTION COMPLETION SHALL ALSO BE SUBMITTED TO HSCD.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/13/05
 CHIEF, DIVISION OF LAND DEVELOPMENT RP DATE 4/28/05
 DIRECTOR DATE 4/28/05

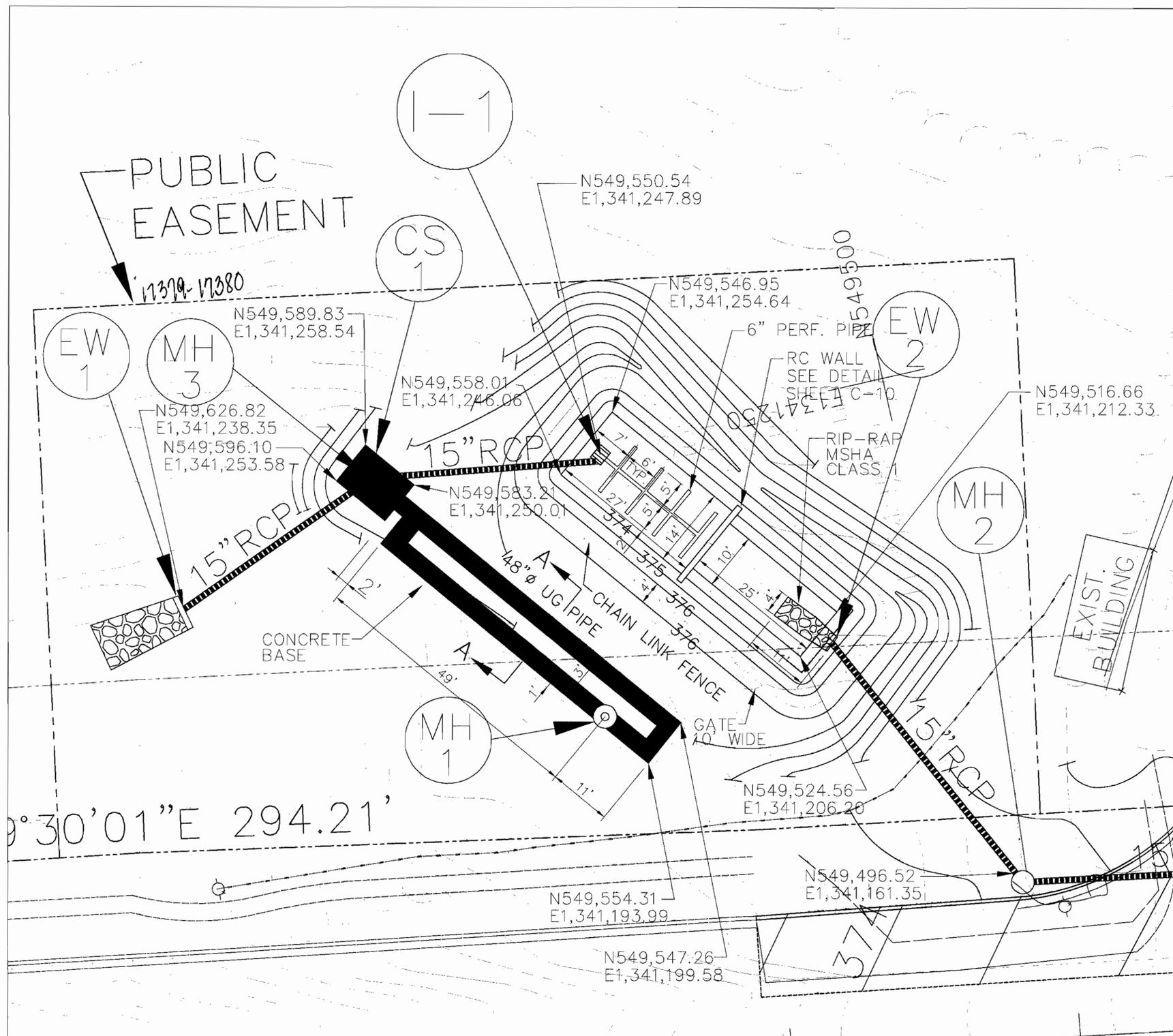


DES: KCW									
DRN: RLP									
CHK: KCW									
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP			

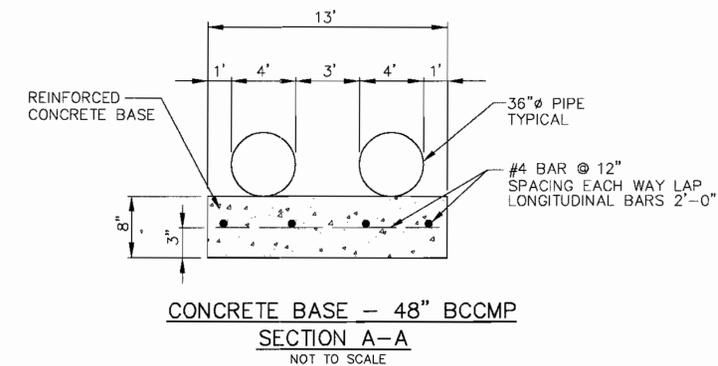
SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
**STORM WATER MANAGEMENT
 DETAILS 1**
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE
AS SHOWN
 SHEET
C-10
 SHEET 10 OF 18



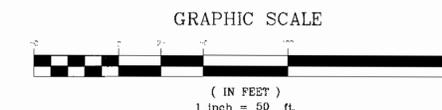
POCKET SANDFILTER DETAIL
SCALE: 1" = 10'



FROM	TO	SIZE (in.)	LENGTH (ft.)	10 YR. Q (cfs)	PIPE	INV. IN	INV. OUT
I-2	MH-2	15	108	3.64	RCP CL. V	375.66	373.50
MH-2	EW-2	15	38	3.64	RCP CL. V	373.30	373.00
I-1	CS-1	15	34	3.00	RCP CL. V	370.75	368.95
CS-1	EW-1	15	36	2.00	RCP CL. V	366.20	365.77

STRUCTURE NO.	TYPE	STD. NO.	TOP ELEV. (ft.)	STA.	OFFSET (ft.)	INV. IN	INV. OUT
I-1	YARD INLET	SD-4.14	375.00	DETAIL THIS SHEET	DETAIL THIS SHEET	371.5	370.75
I-2	CURB OPENING INLET	SD-4.02 A-10	384.13	50+43	24.0**	-	376.8
EW-1	TYPE C ENDWALL	SD-5.21	367.50	53+03	90.00	-	365.77
EW-2	TYPE C ENDWALL	SD-5.21	376.00	51+90	48.0	-	373.0
MH-3/CS-1	DETAIL SHT. C-10	-	374.50	DETAIL THIS SHEET	DETAIL THIS SHEET	*	*
MH-1	STD. PRECAST MANHOLE	G-5.11	374.00	52+27.5	35.24	368.0	368.0
MH-2	STD. PRECAST MANHOLE	G-5.11	377.20	51+58.44	27.19	373.50	373.30

*SEE DETAIL SHEET C-10
**FACE OF CURB



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/13/05
 CHIEF, DIVISION OF LAND DEVELOPMENT HP DATE 4/13/05
 DIRECTOR DATE 4/20/05

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

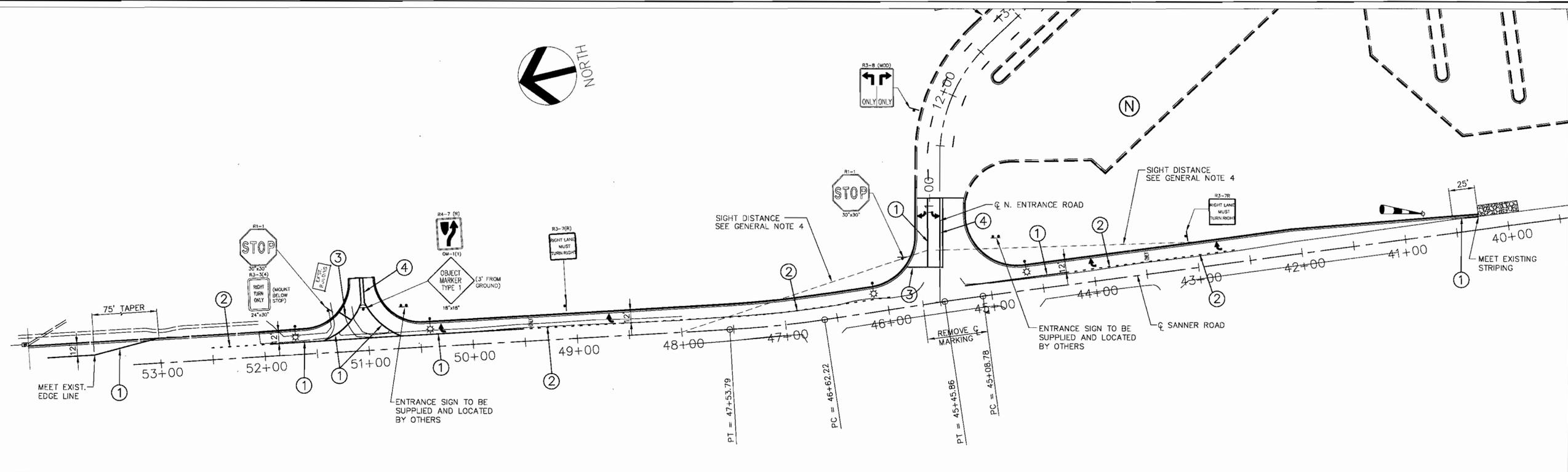


DES: KCW									
DRN: RLP									
CHK: FEW									
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP			

SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
STORM WATER MANAGEMENT
DETAIL 2
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-11
 SHEET 11 OF 18



1 SIGNING AND STRIPING PLAN
SCALE: 1"=50'

PAVMENT MARKINGS LEGEND:

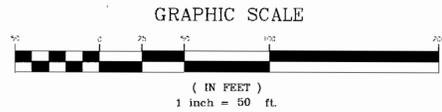
- ① 5" SOLID WHITE LINE
- ② 5" DASHED WHITE LINE (2' DASH, 6' SPACE)
- ③ 24" SOLID WHITE STOP BAR (LOCATION TO BE DETERMINED BY TRAFFIC ENGINEER).
- ④ 5" SOLID DOUBLE YELLOW

STREET LIGHTS

- ☼ 250 WATT HPS VAPOR (SAG) PENDANT MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM (BY OTHERS).

GENERAL NOTES:

1. ALL PERMANENT STRIPING AND MARKINGS TO BE PLACED FOLLOWING SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS FOR REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS. ALL MARKINGS AND SIGN LOCATIONS SHALL BE APPROVED BY HOWARD COUNTY TRAFFIC PRIOR TO ANY INSTALLATION.
2. SIGN POSTS: ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST. EDGE OF SIGNS 6 FT. FROM FACE OF CURB; BOTTOM EDGE OF SIGN 5'-6" FROM ROAD SURFACE.
3. ALL EXISTING SIGNS IN THE DISTURBED AREA MUST BE RELOCATED TO 6 FT. FROM FACE OF PROPOSED CURB.
4. SIGHT DISTANCE LINE - NO SIGNS OR OBJECTS TO BE LOCATED BETWEEN SIGHT DISTANCE LINE AND BACK OF CURB.
5. YELLOW CENTER LINE MUST BE REMOVED FROM STA. 45+25 TO STA. 45+75, ALONG SANNER ROAD.
6. SOLID WHITE EDGE LINE TO BE REMOVED FROM STA. 52+00 TO STA. 53+75.



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DIRECTOR

DATE: 4/13/05
 DATE: 4/25/05
 DATE: 7/24/05

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

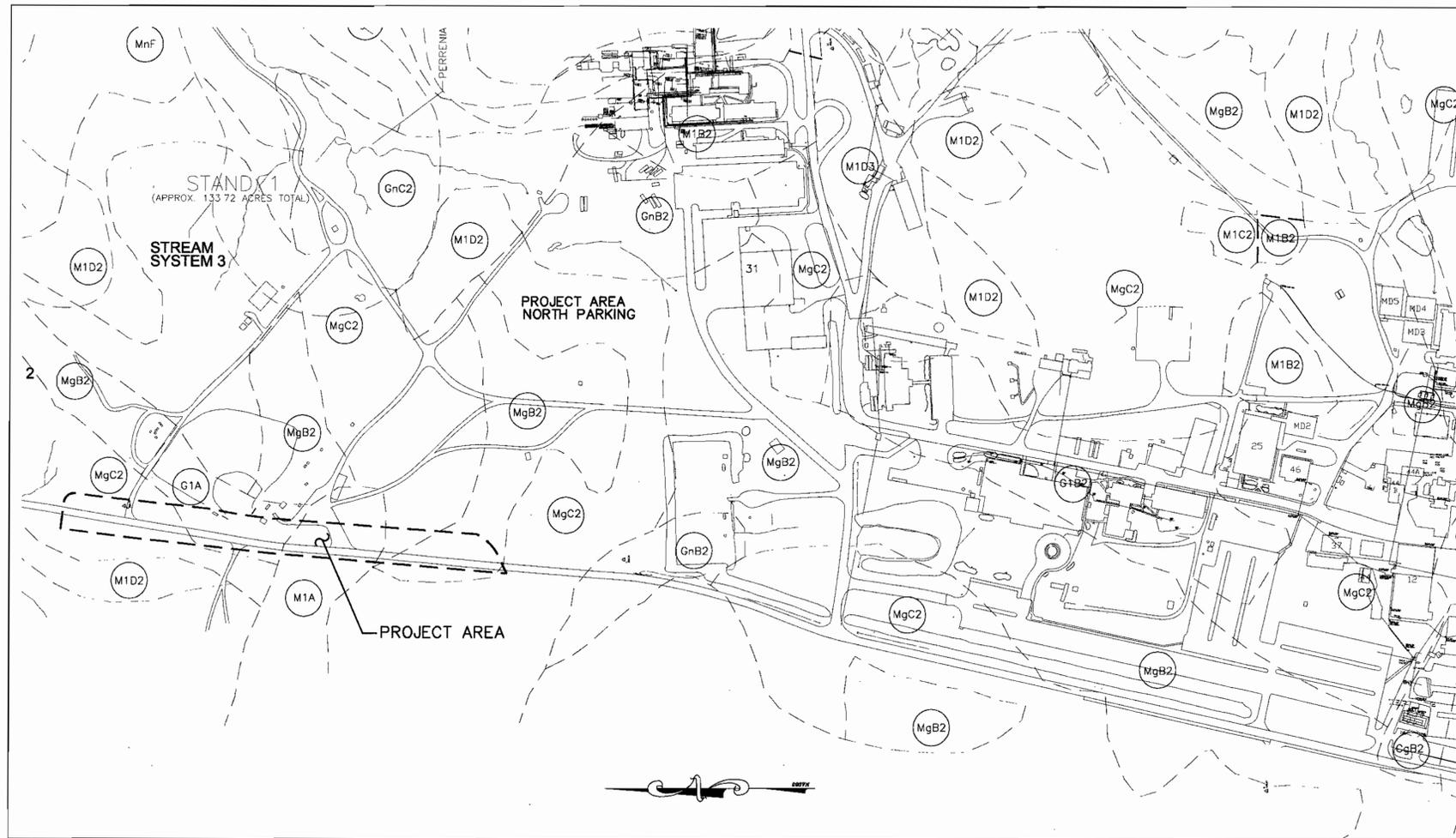


DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
SIGNING AND STRIPING PLAN
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

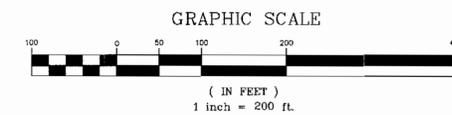
SCALE AS SHOWN
 SHEET C-12
 SHEET 12 OF 18



SOILS MAP LEGEND:

- CgB2 CHESTER GRAVELLY SILT LOAM 3-8% SLOPES MODERATELY ERODED
- G1A GLENELG LOAM, 0-3% SLOPES
- G1B2 GLENELG LOAM, 3-8% SLOPES MODERATELY ERODED
- Gnc2 GLENVILLE SILT LOAM, 8-15% SLOPES
- GnB2 GLENVILLE SILT LOAM, 3-8% SLOPES
- MgB2 MANOR GRAVELLY LOAM, 3-8% SLOPES
- MgC2 MANOR GRAVELLY LOAM, 8-15% SLOPES, MODERATELY ERODED
- M1A MANOR LOAM, 0-3% SLOPE
- M1B2 MANOR LOAM, 3-8% SLOPES, MODERATELY ERODED
- M1C2 MANOR LOAM, 8-15% SLOPES, MODERATELY ERODED
- M1D2 MANOR LOAM, 15-25% SLOPES, MODERATELY ERODED
- M1D3 MANOR LOAM, 15-25% SLOPES, SEVERELY ERODED
- MnF MANOR VERY STONY LOAM, 20-60% SLOPES

1 PROJECT AREA SOIL MAP
SCALE: 1"=200'



APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 4/13/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE
[Signature] 4/25/05
 CHIEF, DIVISION OF LAND DEVELOPMENT HP DATE
[Signature] 4/26/05
 DIRECTOR DATE

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

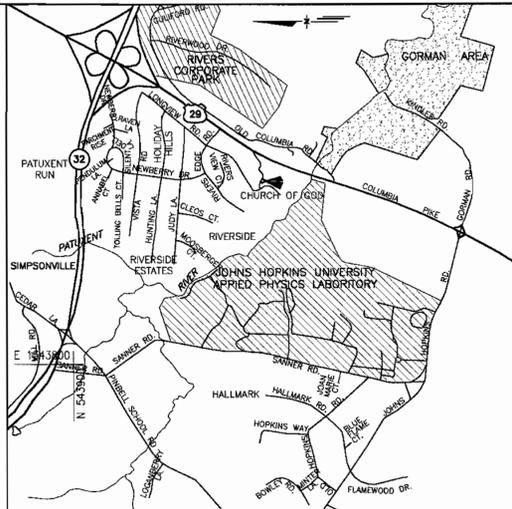
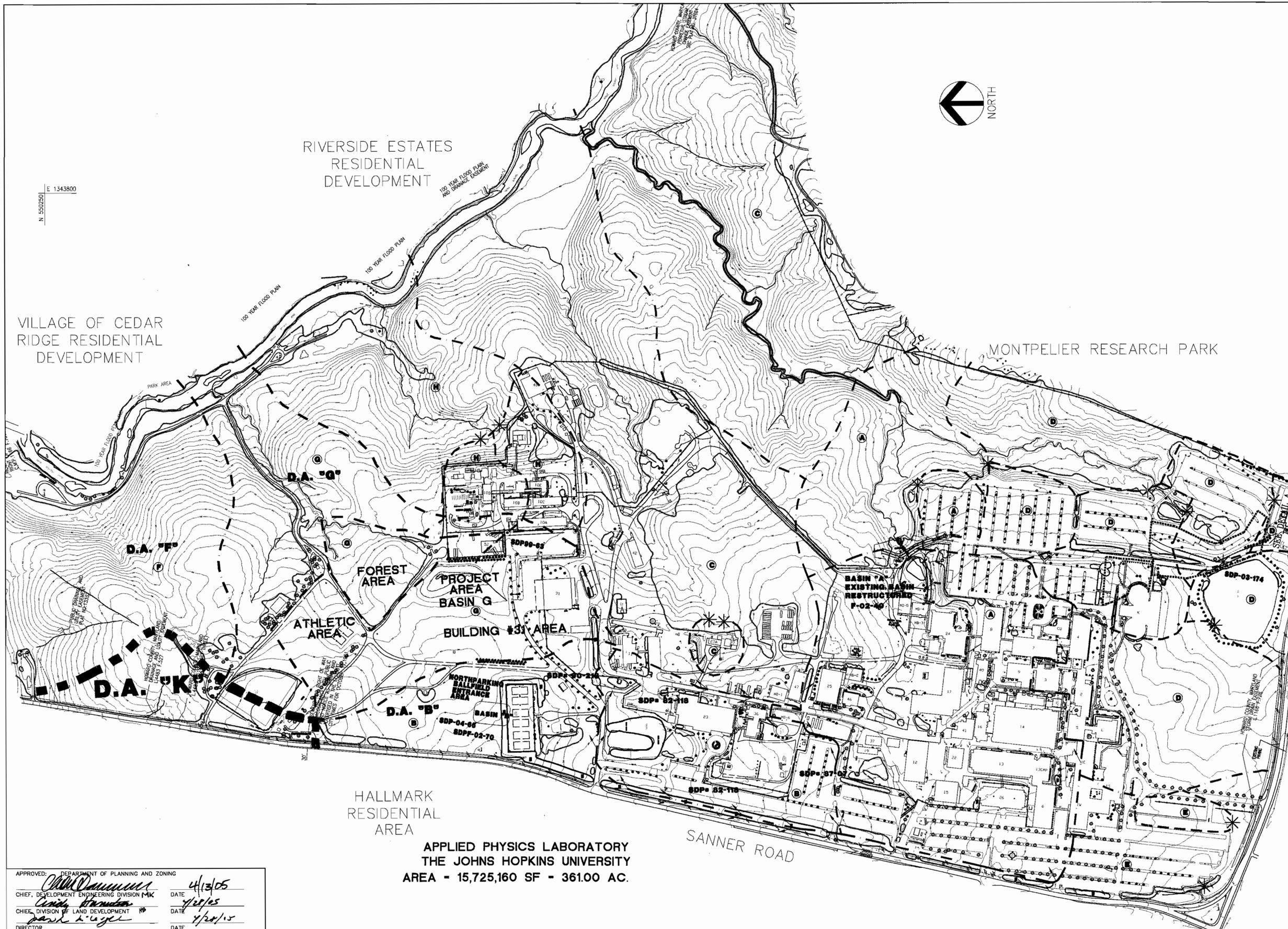


DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
PROJECT AREA
SOILS MAP
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-13
 SHEET 13 OF 18



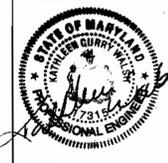
LEGEND

—	EXISTING CONTOUR	⊠	SOILS CLASSIFICATION
—	TREELINE	⊞	CATCH BASIN
- - -	DRAINAGE AREA	C.B.	C.B.
- - -	100 YEAR FLOODPLAIN	M.H.	EXISTING MANHOLE
- - -	STREAM SYSTEM	S.M.H.	EXISTING SANITARY SEWER MANHOLE
- - -	WETLANDS	⊙	PROPOSED MANHOLE
- - -	STREAMS	P.V.	EXISTING POST INDICATOR VALVE
- - -	DRAINAGE DITCH	W.V.	EXISTING WATER VALVE
- - -	PROPERTY LINE	F.H.	EXISTING FIRE HYDRANT
- - -	ADJACENT PROPERTY LINE	C.O.	EXISTING CLEANOUT
- - -	8" SAN. EXISTING SANITARY SEWER	⊞	PROPOSED STORM DRAIN CATCH BASIN
- - -	8" SAN. PROPOSED SANITARY SEWER	⊞	DRAINAGE AREA
- - -	12" W. EXISTING WATER		
- - -	12" W. PROPOSED WATER		
- - -	18" DRAIN EXISTING STORM DRAIN		
- - -	18" SD PROPOSED STORM DRAIN		

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
AREA - 15,725,160 SF - 361.00 AC.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/13/05
[Signature]
 CHIEF, DIVISION OF LAND DEVELOPMENT HP DATE 4/20/05
 DIRECTOR DATE 4/20/05

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



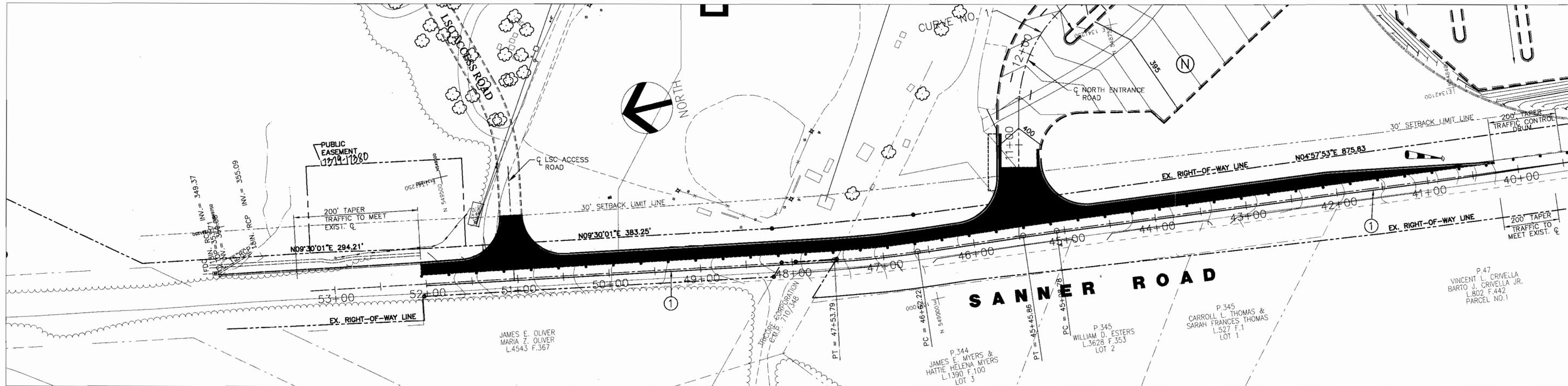
DES: KCW									
DRN: RLP									
CHK: FEW									
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP			

SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
OVERALL DRAINAGE AREA MAP
 TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-14
 SHEET 14 OF 18





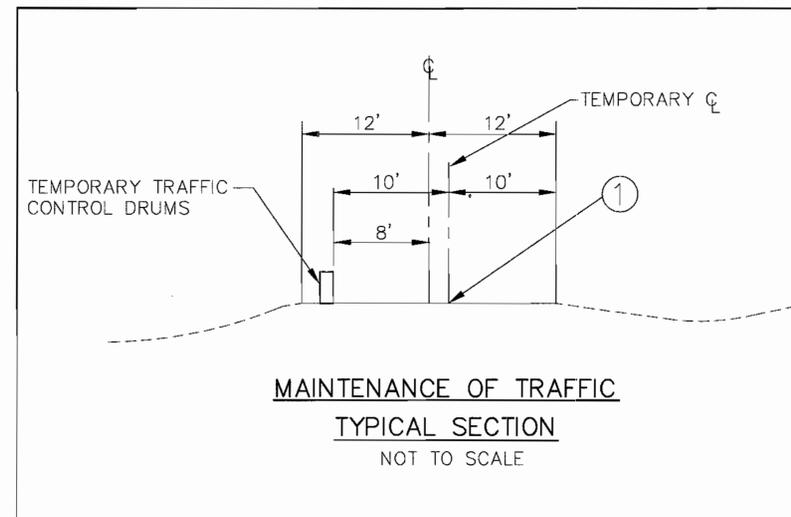
① MAINTENANCE OF TRAFFIC
SCALE: 1"=50'

GENERAL NOTES:

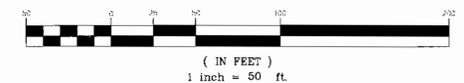
1. FILLET MATERIAL MUST BE PROVIDED AGAINST ANY PAVEMENT DROP-OFF EXCEEDING 2 IN. (GAB STONE).
2. REMOVE OR COVER ANY EXISTING PAVEMENT MARKINGS OR TEMPORARY PAVEMENT MARKINGS THAT CONFLICT WITH THE TEMPORARY MARKINGS FOR CURRENT PHASE.
3. TEMP. PAVEMENT MARKINGS ARE TO BE INSTALLED USING TAPE. REPLACE DAMAGED STRIPING TAPE.
4. TRAFFIC CONTROL DRUMS SHALL BE PROVIDED AS SHOWN AND IN COMPLIANCE WITH MD DOT SHA STD.
5. PLACE TRAFFIC CONTROL DRUMS AT AN INTERVAL OF 30 FT.
6. SHADED AREA IS WORK ZONE.
7. MINIMUM THRU TRAFFIC LANE TO BE 10 FT.
8. ACCESS TO NORTH ENTRANCE ROAD TO BE AVAILABLE AT ALL TIMES.
9. RE-ESTABLISH CENTER LINE PAVEMENT MARKINGS.
10. PLACE SIGNS FOR SHOULDER WORK MDIO4.33-02 FROM SHA STDS.

LEGEND:

- ① 4" DOUBLE YELLOW LINE, TEMPORARY THERMOPLASTIC TRAFFIC CONTROL TAPE.



GRAPHIC SCALE



APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chad Damman 4/13/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
Linda Thomas 4/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
Paul Neugebauer 4/20/05
 DIRECTOR

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS REP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



A. MORTON THOMAS AND ASSOCIATES, INC.
 CONSULTING ENGINEERS
 12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE, MD 20852
 TEL: (301) 881-2545 FAX: (301) 881-0814
 AMT FILE # 102-449



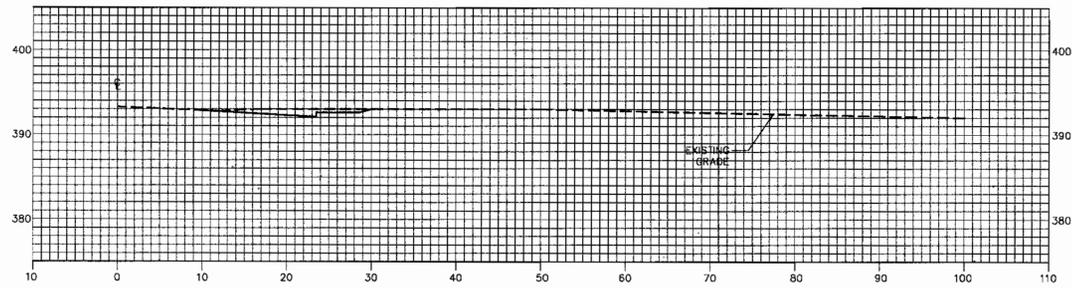
DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

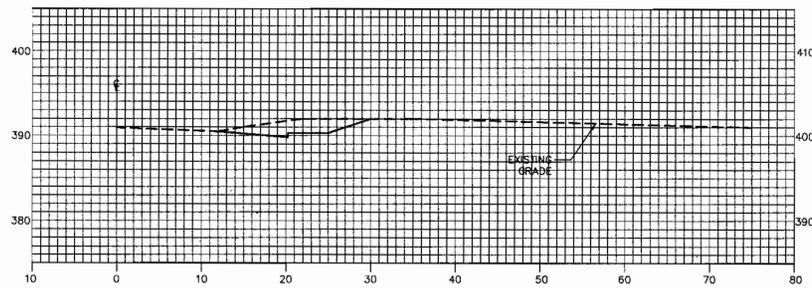
APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
MAINTENANCE OF TRAFFIC

TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

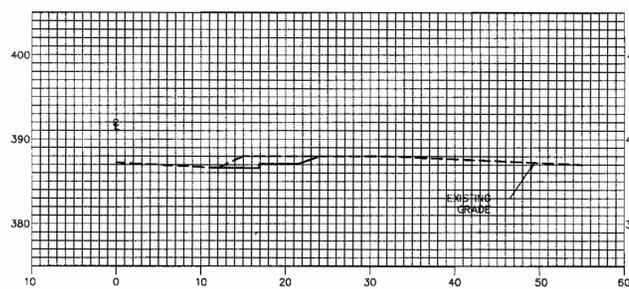
SCALE AS SHOWN
 SHEET C-15
 SHEET 15 OF 18



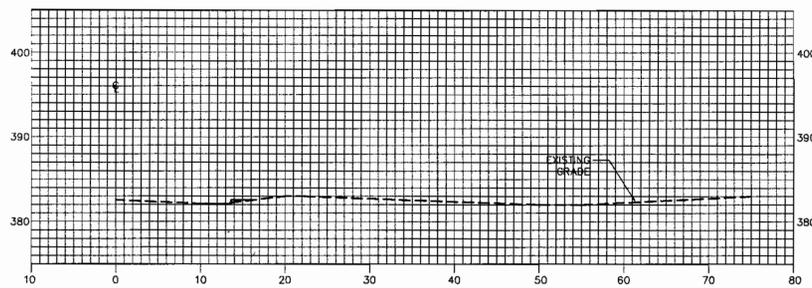
STA. 42+00



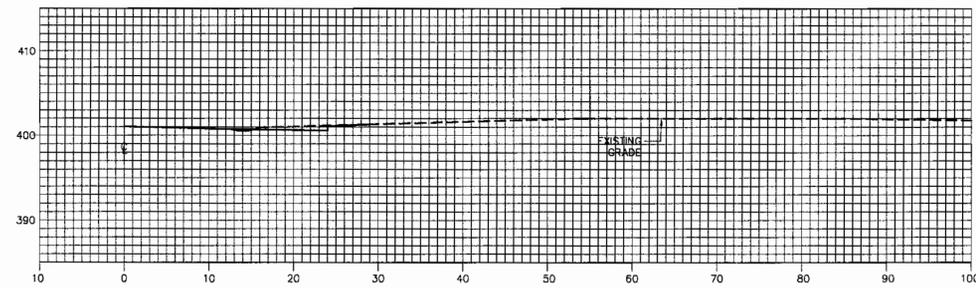
STA. 41+50



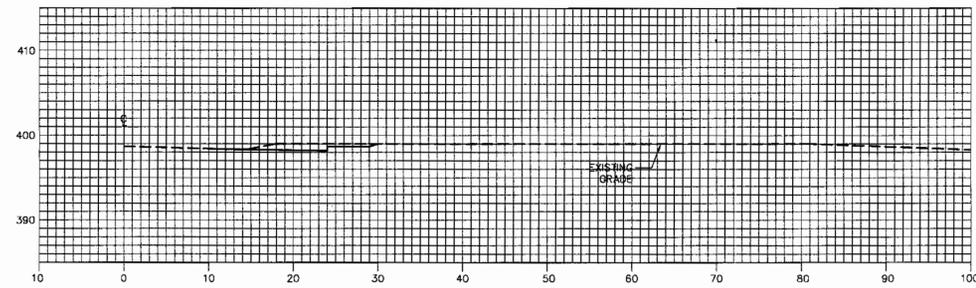
STA. 41+00



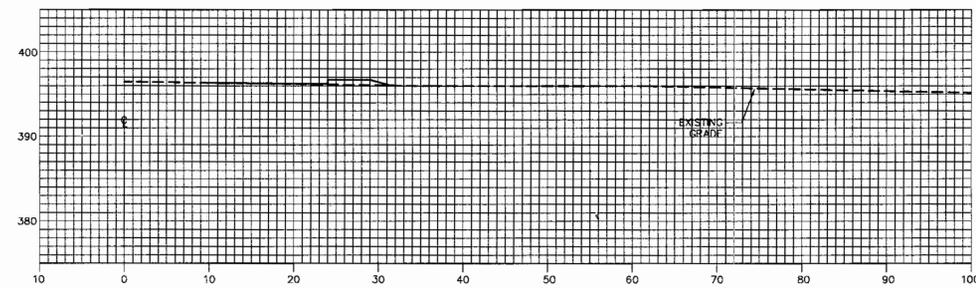
STA. 40+50



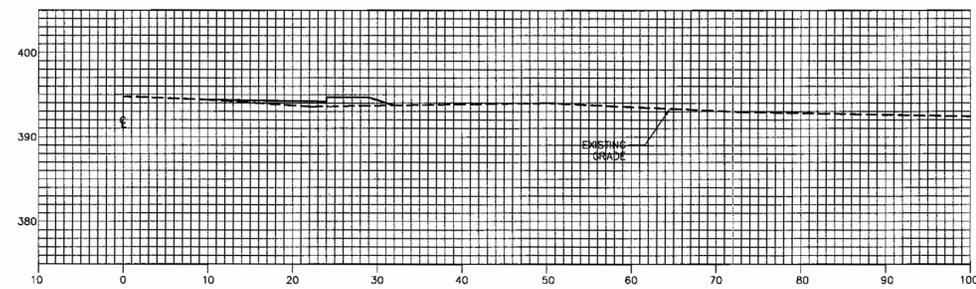
STA. 44+00



STA. 43+50

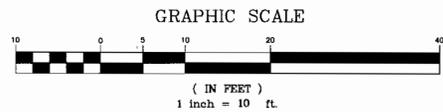


STA. 43+00



STA. 42+50

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 4/13/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/28/05
[Signature]
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 4/28/05
[Signature]
 DIRECTOR DATE 4/28/05



JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY

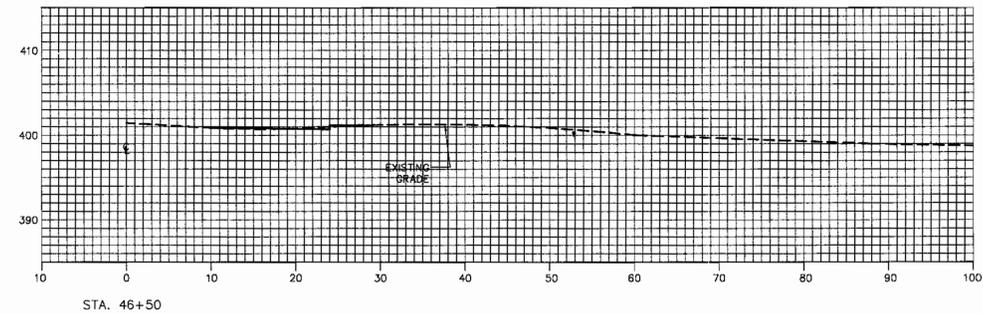
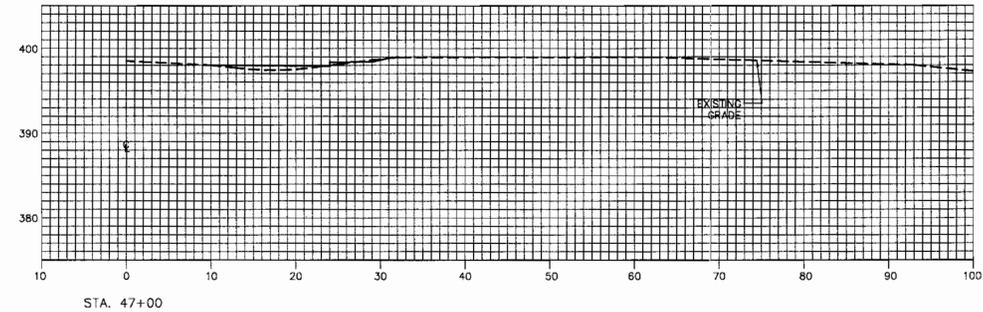
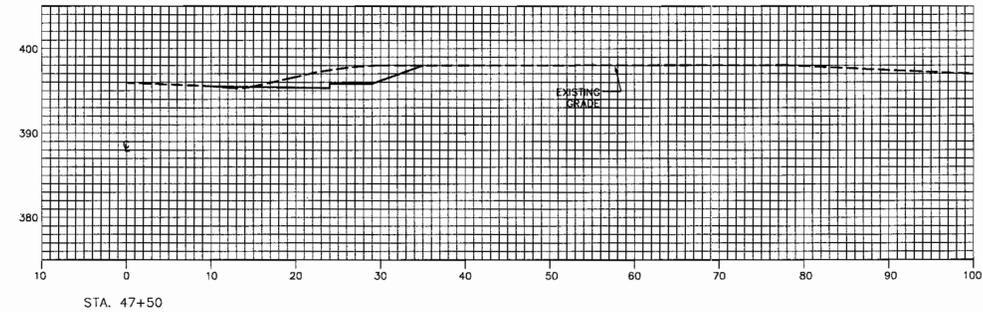
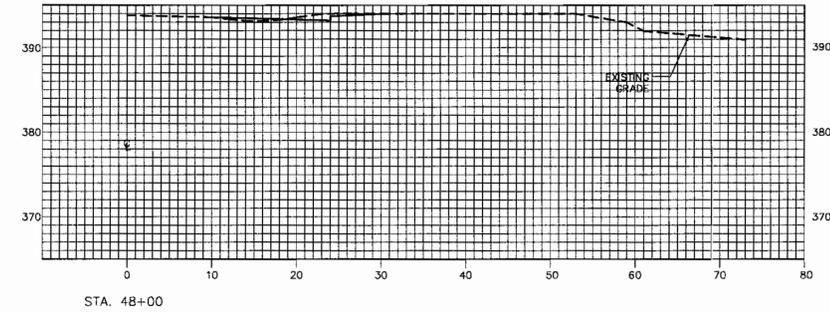
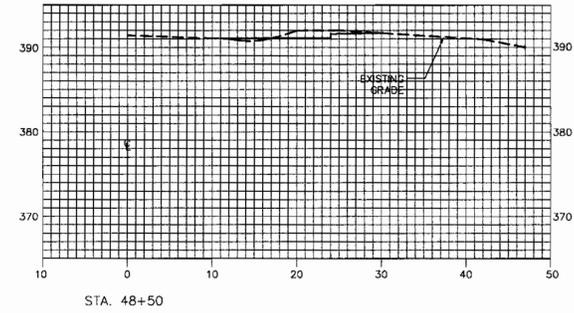
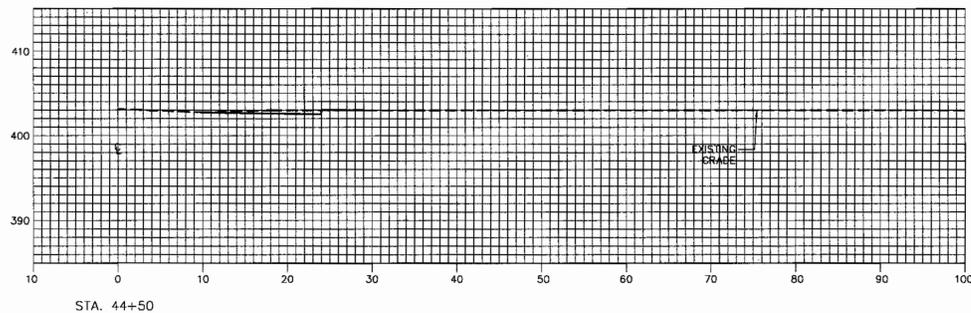
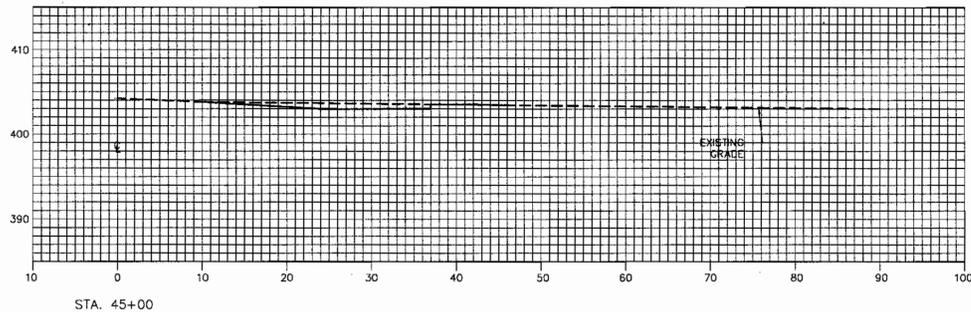
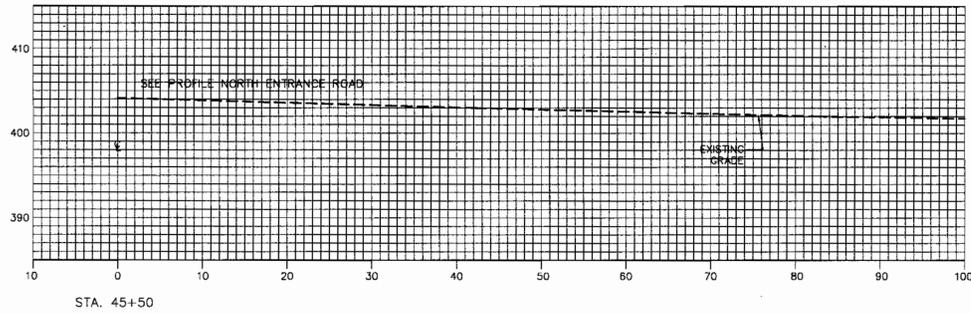
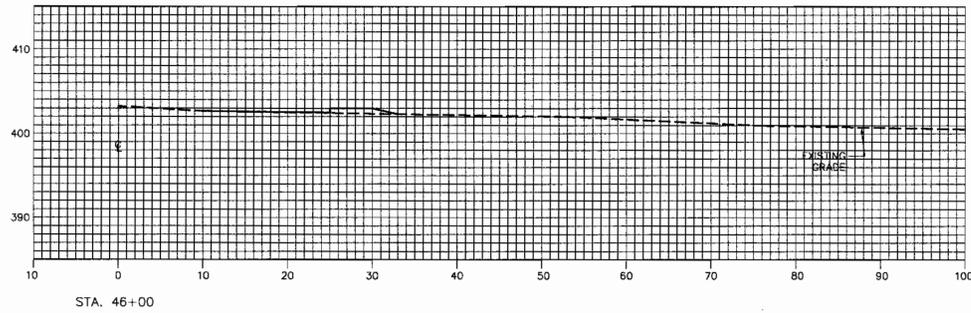
CROSS-SECTIONS

TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

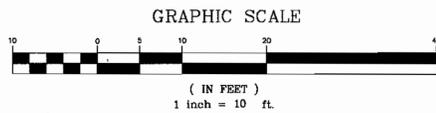
SCALE AS SHOWN

SHEET C-16

SHEET 16 OF 18



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/13/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 4/15/05
 DIRECTOR DATE 4/20/05



JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

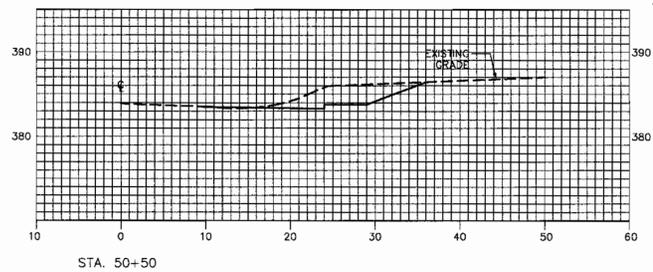


DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

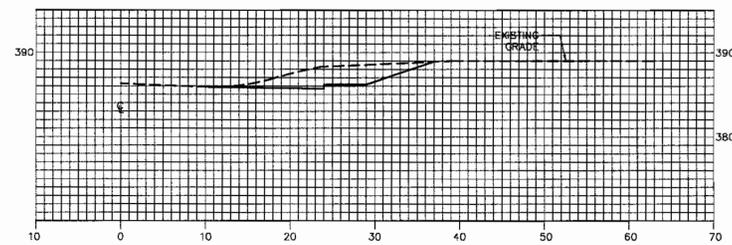
SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
 CROSS-SECTIONS
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

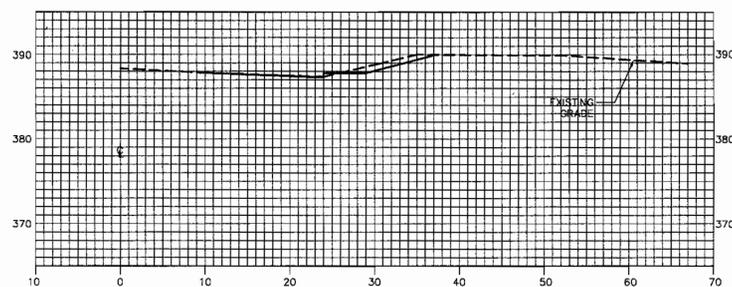
SCALE AS SHOWN
 SHEET C-17
 SHEET 17 OF 18



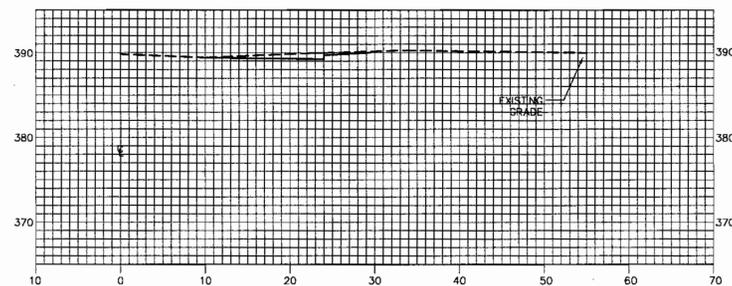
STA. 50+50



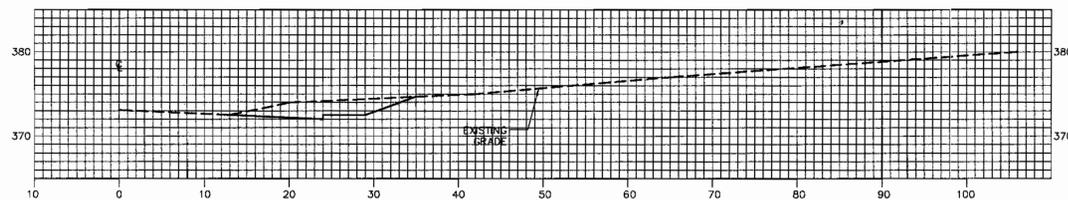
STA. 50+00



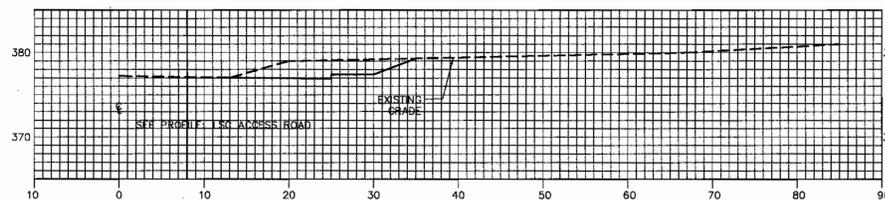
STA. 49+50



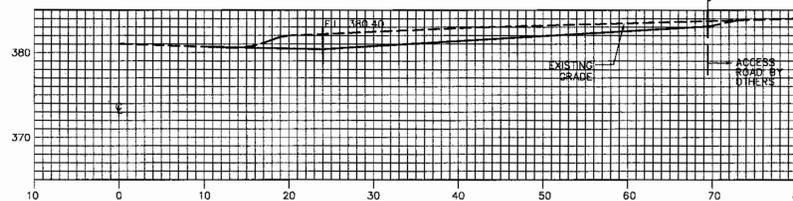
STA. 49+00



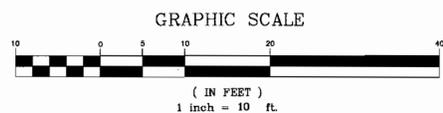
STA. 52+00



STA. 51+50



STA. 51+00



APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] DATE 4/13/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK
[Signature] DATE 4/13/05
 CHIEF, DIVISION OF LAND DEVELOPMENT BB
[Signature] DATE 7/20/05
 DIRECTOR

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

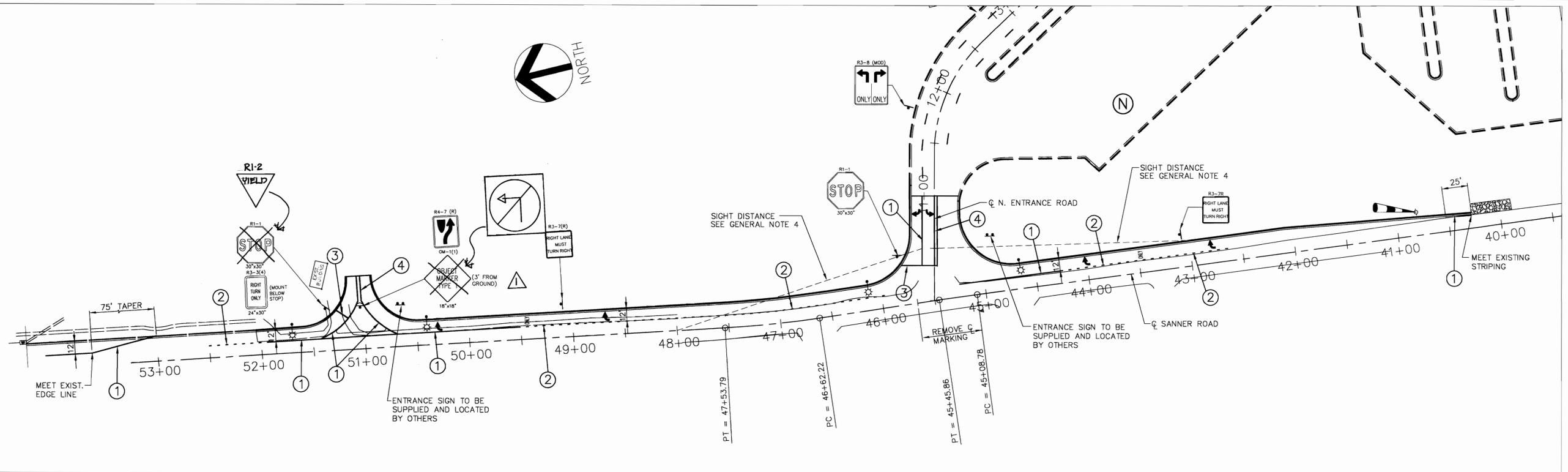
SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY

CROSS-SECTIONS

TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-18
 SHEET 18 OF 18



1 SIGNING AND STRIPING PLAN
SCALE: 1"=50'

PAVMENT MARKINGS LEGEND:

- ① 5" SOLID WHITE LINE
- ② 5" DASHED WHITE LINE (2' DASH, 6' SPACE)
- ③ 24" SOLID WHITE STOP BAR (LOCATION TO BE DETERMINED BY TRAFFIC ENGINEER).
- ④ 5" SOLID DOUBLE YELLOW

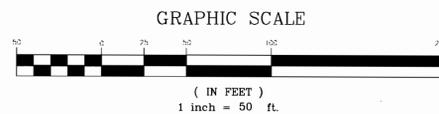
STREET LIGHTS

- ⊗ 250 WATT HPS VAPOR (SAG) PENDANT MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM (BY OTHERS).

GENERAL NOTES:

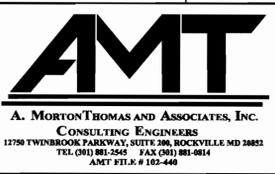
1. ALL PERMANENT STRIPING AND MARKINGS TO BE PLACED FOLLOWING SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS FOR REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS. ALL MARKINGS AND SIGN LOCATIONS SHALL BE APPROVED BY HOWARD COUNTY TRAFFIC PRIOR TO ANY INSTALLATION.
2. SIGN POSTS: ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST. EDGE OF SIGNS 6 FT. FROM FACE OF CURB; BOTTOM EDGE OF SIGN 5'-6" FROM ROAD SURFACE.
3. ALL EXISTING SIGNS IN THE DISTURBED AREA MUST BE RELOCATED TO 6 FT. FROM FACE OF PROPOSED CURB.
4. SIGHT DISTANCE LINE - NO SIGNS OR OBJECTS TO BE LOCATED BETWEEN SIGHT DISTANCE LINE AND BACK OF CURB.
5. YELLOW CENTER LINE MUST BE REMOVED FROM STA. 45+25 TO STA. 45+75, ALONG SANNER ROAD.
6. SOLID WHITE EDGE LINE TO BE REMOVED FROM STA. 52+00 TO STA. 53+75.

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS. THIS IS BASED ON INFORMATION PROVIDED BY APL AND VISUAL OBSERVATIONS.



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/13/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 7/25/05
 DIRECTOR DATE 7/26/05

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

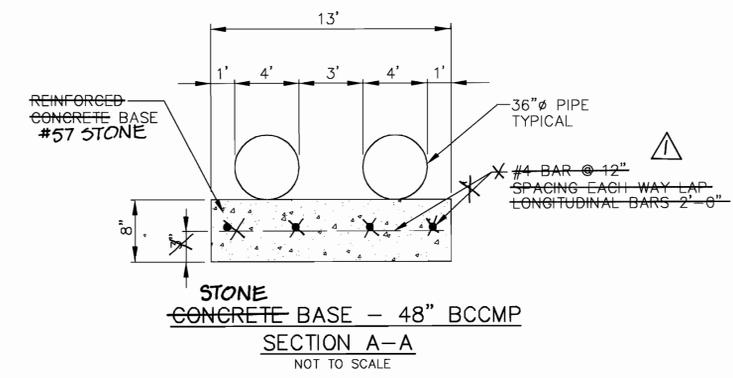
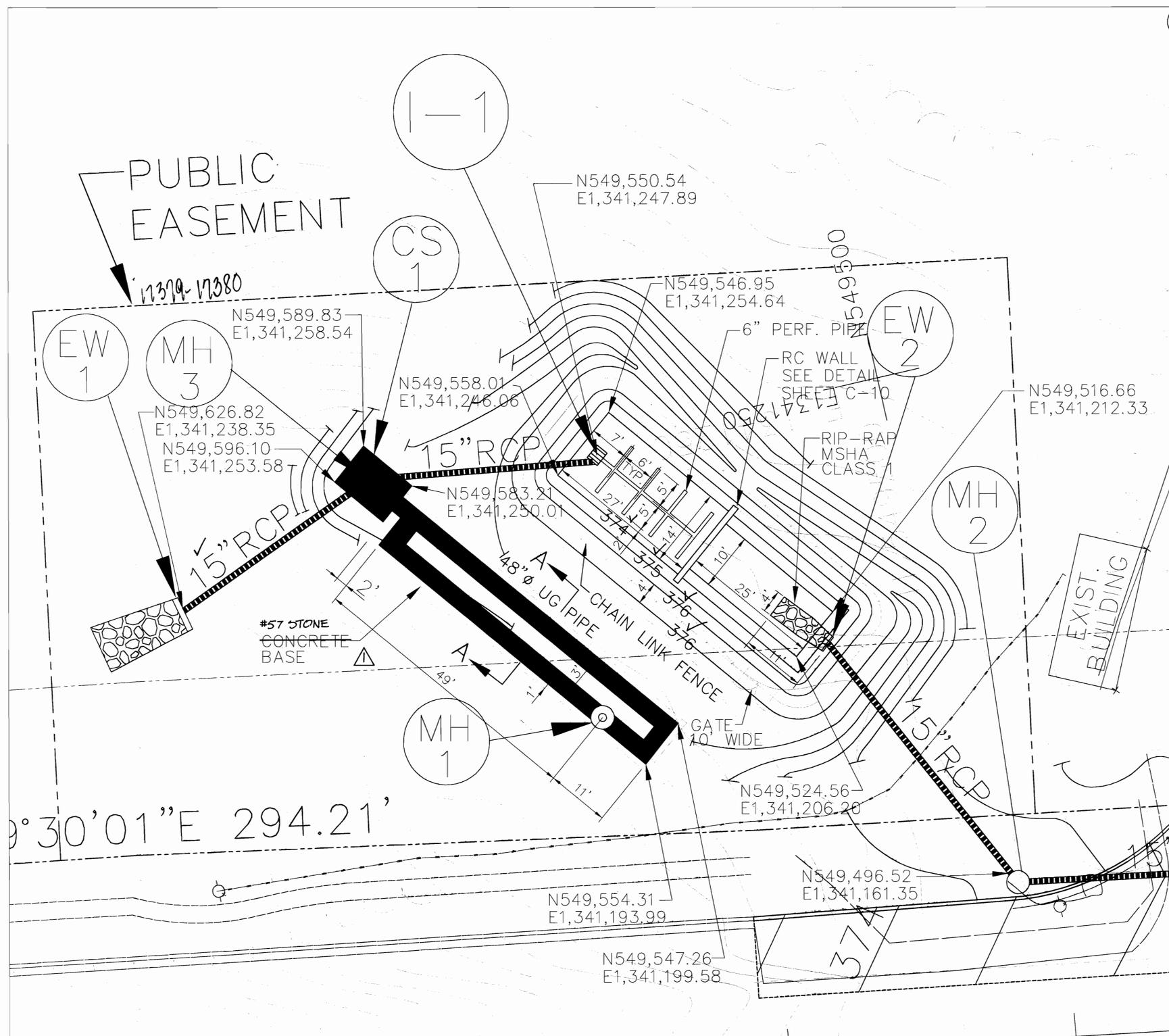


DES:	KCW								
DRN:	RLP								
CHK:	FEW								
DATE:	11/01/04	3/10/06	AS-BUILT						
		DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP		

SANNER ROAD IMPROVEMENTS
 AS-BUILT PLAN

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
 SIGNING AND STRIPING PLAN
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-12
 SHEET 12 OF 18



FROM	TO	SIZE (in.)	LENGTH (ft.)	10 YR. Q (cfs)	PIPE	INV. IN	INV. OUT
I-2	MH-2	15	108	3.64	RCP CL. V	375.66	373.50
MH-2	EW-2	15	38	3.64	RCP CL. V	373.30	373.00
I-1	CS-1	15	34	3.00	RCP CL. V	370.75	368.95
CS-1	EW-1	15	36	2.00	RCP CL. V	366.20	365.77

STRUCTURE NO.	TYPE	STD. NO.	TOP ELEV. (ft.)	STA.	OFFSET (ft.)	INV. IN	INV. OUT
I-1	YARD INLET	SD-4.14	375.00 ⁰²	DETAIL THIS SHEET	DETAIL THIS SHEET	371.5 ⁴⁷	370.75 ⁰⁸
I-2	CURB OPENING INLET	SD-4.02 A-10	384.13 ³⁵	50+43	24.0**	-	375.80 ^{376.8}
EW-1	TYPE C ENDWALL	SD-5.21	367.50 ⁹⁵	53+03	90.00	-	365.77 ⁶²
EW-2	TYPE C ENDWALL	SD-5.21	376.00 ⁹⁵	51+90	48.0	-	372.98 ^{373.0}
MH-3/CS-1	DETAIL SHT. C-10	-	373.23 ^{374.50}	DETAIL THIS SHEET	DETAIL THIS SHEET	*	*
MH-1	STD. PRECAST MANHOLE	G-5.11	374.00 ⁹⁵	52+27.5	35.24	368.0 ⁹⁵	368.0 ⁹⁵
MH-2	STD. PRECAST MANHOLE	G-5.11	376.79 ^{377.20}	51+58.44	27.19	373.50 ⁹⁵	373.30 ⁹⁵

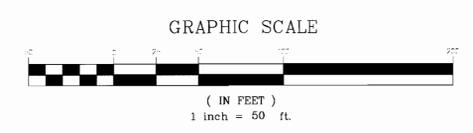
*SEE DETAIL SHEET C-10
 **FACE OF CURB

POCKET SANDFILTER DETAIL
 SCALE: 1" = 10'

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/13/05
 CHIEF, DIVISION OF LAND DEVELOPMENT HP DATE 4/29/05
 DIRECTOR DATE 4/29/05



I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS. THIS IS BASED ON INFORMATION PROVIDED BY APL AND VISUAL OBSERVATIONS.



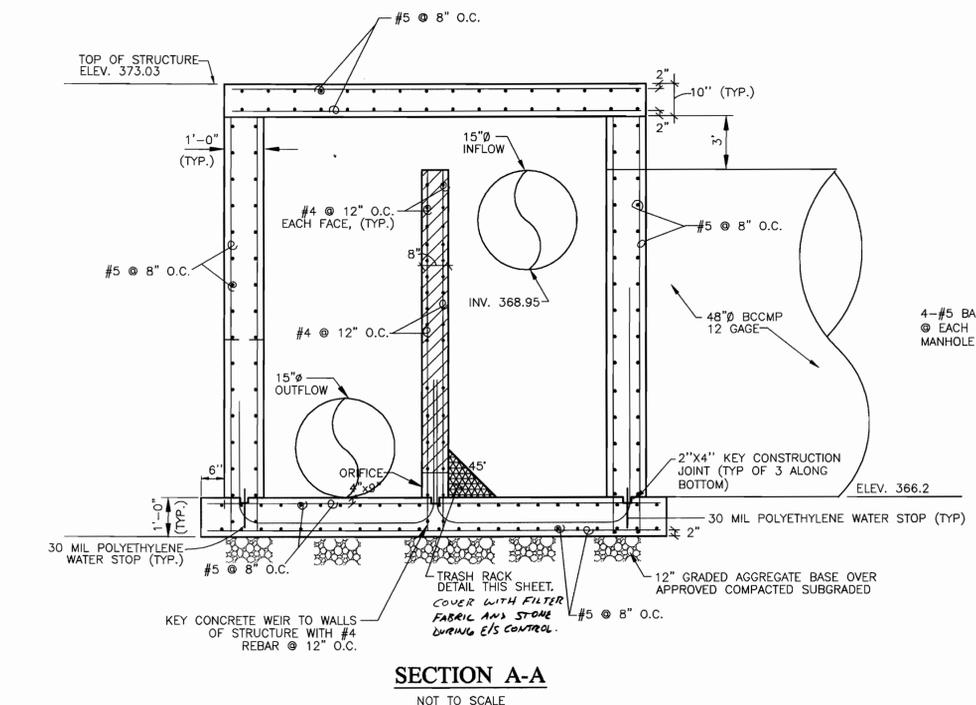
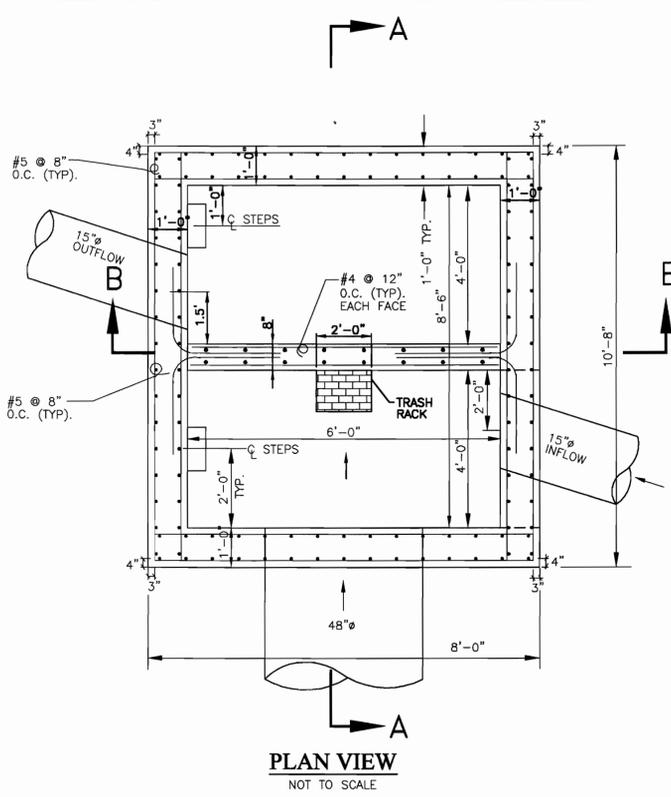
JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

DES: KCV									
DRN: RLP									
CHK: FEW									
DATE: 11/01/04	3/10/06	AS-BUILT							
	DATE	REVISIONS AND RECORD OF ISSUE		NO.	BY	CK	APP		

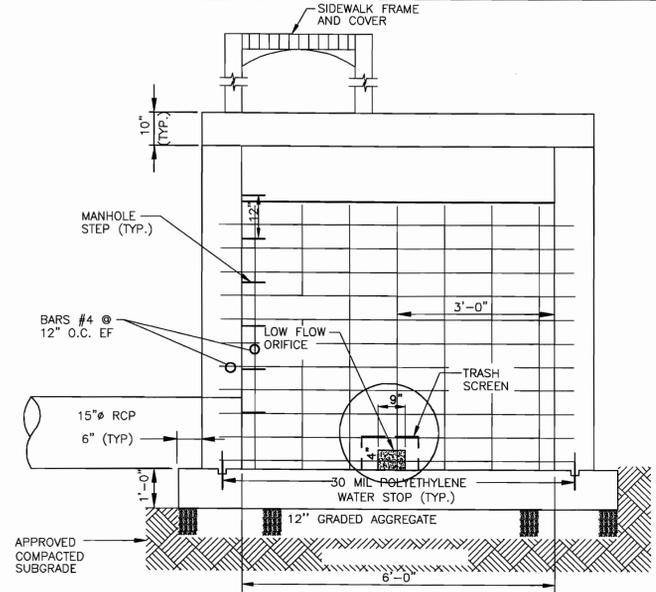
SANNER ROAD IMPROVEMENTS
 AS-BUILT PLAN

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
 STORM WATER MANAGEMENT
 DETAIL 2
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

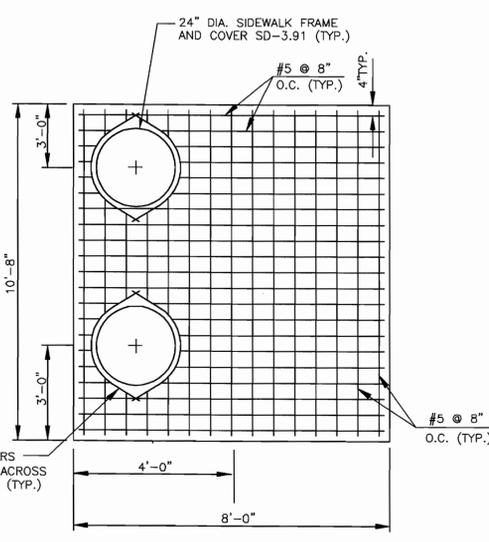
SCALE AS SHOWN
 SHEET C-11
 SHEET 11 OF 18



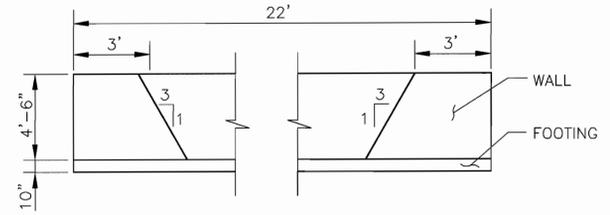
CONTROL STRUCTURE DETAIL (CS)
NOT TO SCALE



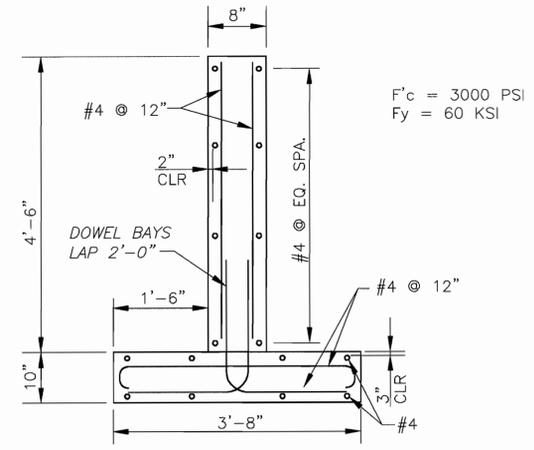
SECTION B-B
NOT TO SCALE



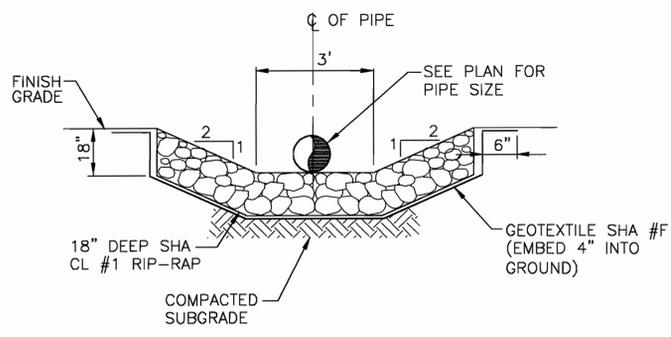
PLAN VIEW TOP SLAB
NOT TO SCALE



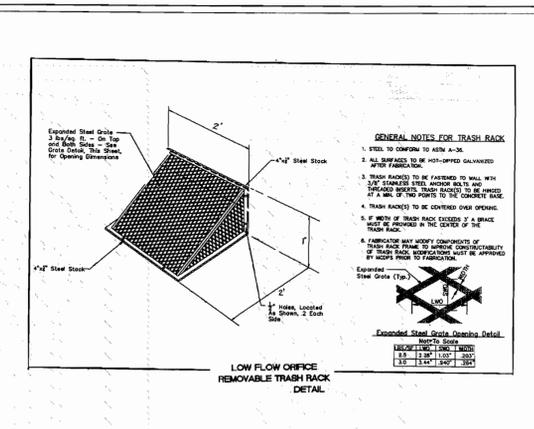
SAND FILTER WEIR ELEVATION
NOT TO SCALE



SAND FILTER WEIR
NOT TO SCALE



**TYPICAL SECTION ENDWALL
RIP-RAP AT OUTFALL**
NOT TO SCALE



MAINTENANCE AND INSPECTION
MAINTENANCE
THE STORM WATER MANAGEMENT FACILITY NOTED IN THESE PLANS WILL BE A PUBLIC FACILITY. MAINTENANCE SHALL BE ACCORDING TO THE PROVISIONS SPECIFIED IN THE CURRENT EDITION OF THE MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II AND THIS DESIGN MANUAL FOR EACH SPECIFIC TYPE OF STORMWATER MANAGEMENT SYSTEM.

- A. JHU/APL WILL BE RESPONSIBLE FOR MOWING AND CLEARING DEBRI FROM THE STORM WATER MANAGEMENT FACILITY.
- B. HOWARD COUNTY WILL BE RESPONSIBLE FOR MAINTAINING THE STORM WATER MANAGEMENT STRUCTURE AND SAND FILTER.

INSPECTION
INSPECTION SCHEDULE AND REPORTS

1. THE DEVELOPER SHALL NOTIFY THE COUNTY AT LEAST 48 HOURS BEFORE COMMENCING ANY WORK IN CONJUNCTION WITH THE STORMWATER MANAGEMENT PLAN AND UPON COMPLETION OF A PROJECT WHEN A FINAL INSPECTION WILL BE CONDUCTED.
2. INSPECTIONS SHALL BE CONDUCTED BY THE DEPARTMENT OF PUBLIC WORKS OR ITS AUTHORIZED REPRESENTATIVE. WRITTEN INSPECTION REPORTS SHALL BE MADE OF THE PERIODIC INSPECTIONS NECESSARY DURING CONSTRUCTION OF STORMWATER MANAGEMENT SYSTEMS TO ENSURE COMPLIANCE WITH THE APPROVED PLAN.
3. WRITTEN INSPECTION REPORTS SHALL INCLUDE:
 - (A) DATE AND LOCATION OF THE INSPECTION;
 - (B) WHETHER CONSTRUCTION WAS IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLAN;
 - (C) ANY VARIATIONS FROM THE APPROVED CONSTRUCTION SPECIFICATIONS;
 - (D) ANY VIOLATIONS THAT EXIST.
4. THE OWNER/DEVELOPER AND ON-SITE PERSONNEL SHALL BE NOTIFIED IN WRITING WHEN VIOLATIONS ARE OBSERVED. WRITTEN NOTIFICATION SHALL DESCRIBE THE NATURE OF THE VIOLATION AND THE REQUIRED CORRECTIVE ACTION.
5. NO WORK SHALL PROCEED UNTIL THE COUNTY INSPECTS AND APPROVES THE WORK PREVIOUSLY COMPLETED AND FURNISHES THE DEVELOPER WITH THE RESULTS OF THE INSPECTION REPORTS AFTER COMPLETION OF EACH REQUIRED INSPECTION.

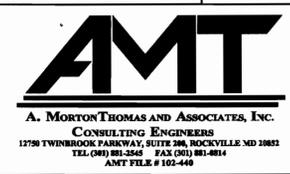
INSPECTION REQUIREMENTS DURING CONSTRUCTION

1. AT A MINIMUM, REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED AT THE FOLLOWING SPECIFIED STAGES OF SAND FILTER CONSTRUCTION.
 - (A) UPON COMPLETION OF EXCAVATION TO SUB-FOUNDATION AND WHEN REQUIRED, INSTALLATION OF STRUCTURAL SUPPORTS OR REINFORCEMENT FOR STRUCTURES, INCLUDING BUT NOT LIMITED TO CORE TRENCHES FOR STRUCTURAL EMBANKMENTS, INLET AND OUTLET STRUCTURES, ANTI-SEEP COLLARS OR FILTER DIAPHRAGMS, WATERTIGHT CONNECTORS ON PIPES, AND TRENCHES FOR ENCLOSED STORM DRAIN FACILITIES.
 - (B) DURING PLACEMENT OF STRUCTURAL FILL, CONCRETE AND INSTALLATION OF PIPING AND CATCH BASINS.
 - (C) DURING BACKFILL OF FOUNDATIONS AND TRENCHES.
 - (D) DURING EMBANKMENT CONSTRUCTION.
 - (E) UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.
2. THE COUNTY MAY, FOR ENFORCEMENT PURPOSES, USE ANY ONE OF A COMBINATION OF THE FOLLOWING ACTIONS:
 - (A) A NOTICE OF VIOLATION SHALL BE ISSUED SPECIFYING THE NEED FOR A VIOLATION TO BE CORRECTED IF STORMWATER MANAGEMENT PLAN NON-COMPLIANCE IS IDENTIFIED.
 - (B) A STOP WORK ORDER SHALL BE ISSUED FOR THE SITE BY THE COUNTY IF A VIOLATION PERSISTS.
 - (C) BONDS OR SECURITIES MAY BE WITHHELD OR THE CASE MAY BE REFERRED FOR LEGAL ACTION IF REASONABLE EFFORTS TO CORRECT THE VIOLATION HAVE NOT BEEN UNDERTAKEN.
 - (D) IN ADDITION TO ANY OTHER SANCTIONS, A CIVIL ACTION OR CRIMINAL PROSECUTION MAY BE BROUGHT AGAINST ANY PERSON IN VIOLATION OF THE STORMWATER MANAGEMENT SUBTITLE 18.900.
3. ANY STEP IN THE ENFORCEMENT PROCESS MAY BE TAKEN AT ANY TIME, DEPENDING ON THE SEVERITY OF THE VIOLATION.
4. ONCE CONSTRUCTION IS COMPLETE, AN AS-BUILT PLAN CERTIFICATION SHALL BE SUBMITTED BY THE APPROPRIATE DESIGN PROFESSIONAL LICENSED IN THE STATE OF MARYLAND TO ENSURE THAT CONSTRUCTED STORMWATER MANAGEMENT PRACTICES AND CONVEYANCE SYSTEMS COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE APPROVED PLANS. AT A MINIMUM, AS-BUILT CERTIFICATION SHALL INCLUDE A SET OF DRAWINGS COMPARING THE APPROVED STORMWATER MANAGEMENT PLAN WITH WHAT WAS CONSTRUCTED. THE COUNTY RESERVES THE RIGHT TO REQUIRE ADDITIONAL INFORMATION IT DEEMS NECESSARY TO ENSURE COMPLIANCE WITH THE APPROVED PLANS.
5. THE COUNTY SHALL SUBMIT NOTICE OF CONSTRUCTION COMPLETION TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, ON A FORM SUPPLIED BY MDE FOR EACH STRUCTURAL STORMWATER MANAGEMENT PRACTICE WITHIN 45 DAYS OF CONSTRUCTION COMPLETION. IF BMP'S REQUIRING HSCD APPROVAL ARE CONSTRUCTED, NOTICE OF CONSTRUCTION COMPLETION SHALL ALSO BE SUBMITTED TO HSCD.

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS. THIS IS BASED ON INFORMATION PROVIDED BY APL AND VISUAL OBSERVATIONS.



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/13/06
 CHIEF, DIVISION OF LAND DEVELOPMENT HP DATE 4/28/06
 DIRECTOR DATE 4/28/06



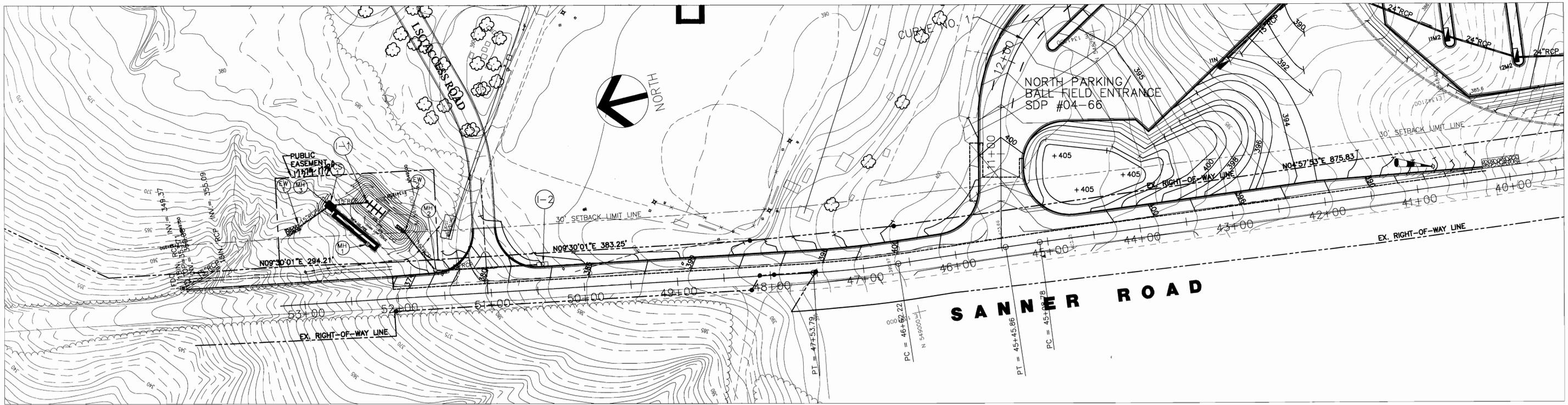
DES: KCW					
DRN: RLP					
CHK: KCW					
DATE: 11/01/04	DATE: 3/10/06	AS-BUILT (NO CHANGES THIS SH.)			
		REVISIONS AND RECORD OF ISSUE			

SANNER ROAD IMPROVEMENTS

AS-BUILT PLAN

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
**STORM WATER MANAGEMENT
 DETAILS 1**
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-10
 SHEET 10 OF 18



1 GRADING PLAN
SCALE: 1"=50'

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

James E. Loesch 3/14/05
 SIGNATURE OF DEVELOPER DATE
 JAMES E. LOESCH
 PRINT NAME BELOW SIGNATURE

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

Robert Walsh 2-23-05
 SIGNATURE OF ENGINEER DATE
 ROBERT WALSH
 PRINT NAME BELOW SIGNATURE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

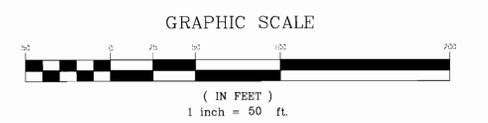
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

() THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE

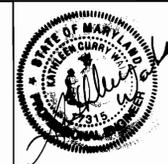


I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS. THIS IS BASED ON INFORMATION PROVIDED BY APL AND VISUAL OBSERVATIONS.



APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 4/13/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE
[Signature] 4/15/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
[Signature] 4/24/05
 DIRECTOR DATE

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	3/10/06	AS-BUILT (NO CHANGE THIS SHT.)			
DATE	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APL

SANNER ROAD IMPROVEMENTS

AS-BUILT PLAN

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY

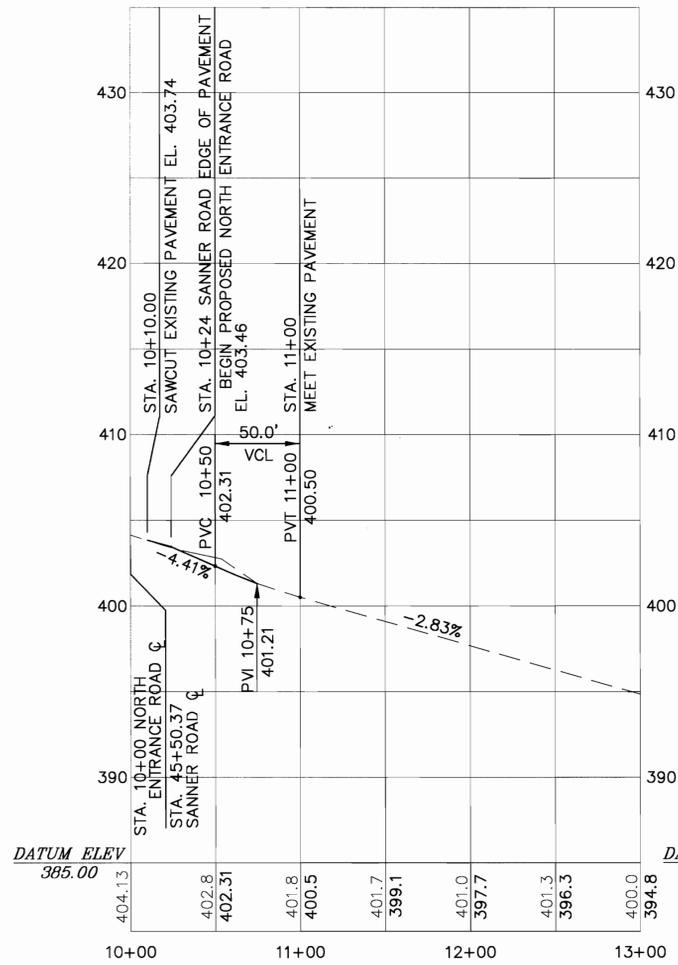
GRADING PLAN

TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

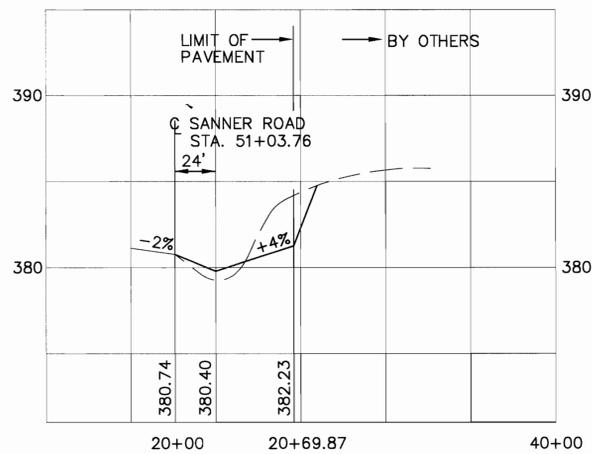
SHEET C-6

SHEET 6 OF 18



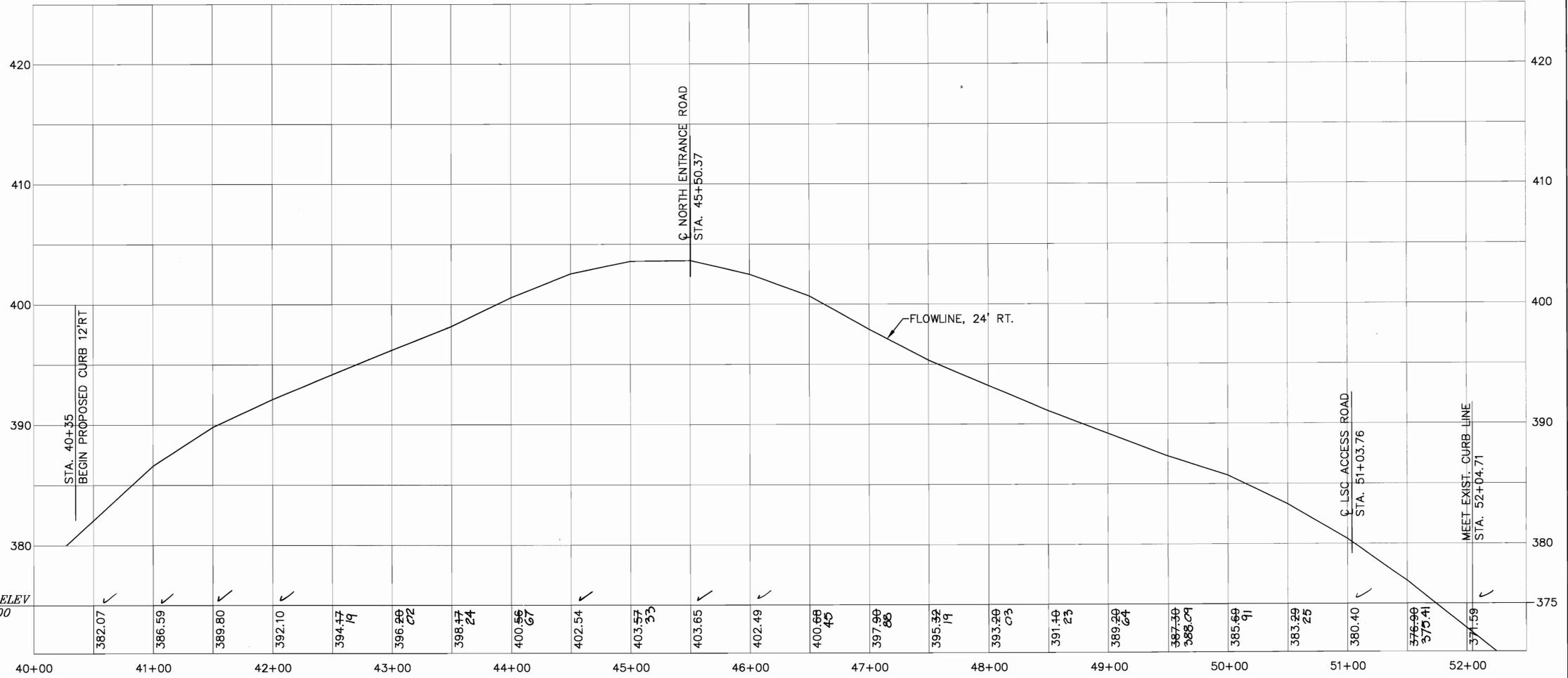
MAIN PARKING LOT DRIVEWAY PROFILE

CENTERLINE 1
 SCALE: 1"=50' (H)
 1"=5' (V)



LSC ACCESS ROAD PROFILE

SCALE: 1"=50' (H)
 1"=5' (V)



SANNER ROAD
 FLOWLINE PROFILE: EAST SIDE ROADWAY

SCALE: 1"=50' (H)
 1"=5' (V)

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 4/13/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/28/05
 CHIEF, DIVISION OF LAND DEVELOPMENT [Signature] DATE 4/28/05
 DIRECTOR [Signature] DATE



DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	3/10/06	AS-BUILT			
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

AS-BUILT PLAN



I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS. THIS IS BASED ON INFORMATION PROVIDED BY APL AND VISUAL OBSERVATIONS.

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY

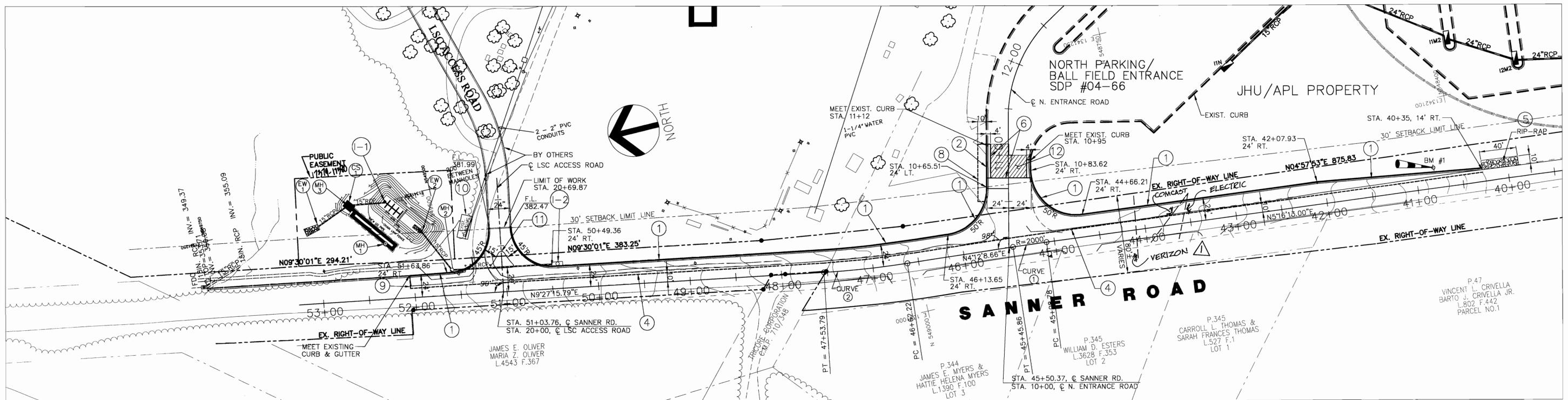
PROFILES

TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET C-5

SHEET 5 OF 18



- KEYED NOTES:**
- NEW 7" CONCRETE CURB AND GUTTER (HOWARD COUNTY NO. R-3.01).
 - NEW 4" MODIFIED COMBINATION CURB AND GUTTER (HOWARD COUNTY NO. R-3.01) STA. 10+65 TO STA. 11+12, 24 FT. LEFT. TRANSITION BETWEEN 7" CURB AND 4" CURB IN 5'.
 - SANDFILTER. SEE STORMWATER MANAGEMENT PLAN.
 - SAWCUT LINE ALONG SANNER ROAD, SEE TYPICAL SECTION SHEET
 - NEW 18" THICK CLASS 1 RIP-RAP ON GEOTEXTILE. SEE DETAIL SHEET C-10.
 - MATCH LINE FOR NORTH ENTRANCE ROAD WORK UNDER HOWARD COUNTY SDP #04-66. MEET EXISTING PAVEMENT.
 - NOT USED
 - SAW CUT EXISTING PAVEMENT STA. 10+50, 34 FT LEFT TO STA. 11+12, 34 FT. LEFT. REMOVE EXISTING PAVEMENT BETWEEN SAW CUT LINE AND PROPOSED CURB. SEE DETAIL SHEET FOR PAVEMENT PLACEMENT.
 - MEET EXISTING PAVEMENT, STA. 52+04.71.
 - EXISTING UTILITY BUILDING TO BE PROTECTED AND UNDISTURBED DURING CONSTRUCTION.
 - SEE DETAIL THIS SHEET FOR TRAFFIC ISLAND GEOMETRY.
 - OVERLAY EXISTING PAVEMENT WITH 1 1/2" SURFACE COURSE. MILL EXISTING PAVEMENT TO MEET PROPOSED ELEVATIONS.

- GENERAL NOTES:**
- ALL OFFSETS MEASURED TO FACE OF CURB.

1 ROAD AND DRAINAGE PLAN
SCALE: 1"=50'

BM #1
SPIKE IN A POWER POLE
BGE #283610
ELEVATION 387.14

CENTERLINE GEOMETRY - SANNER ROAD

POINT	STATION	NORTH	EAST
P.O.T.	40+42.68	548393.01	1341000.95
P.C.	45+08.78	548857.14	1341043.76
P.I.	45+27.32	548875.60	1341045.47
P.T.	45+45.86	548894.09	1341046.83
P.C.	46+62.22	549010.14	1341055.36
P.I.	47+08.04	549055.83	1341058.73
P.T.	47+53.79	549101.02	1341066.25
P.O.T.	51+92.95	549534.22	1341138.39

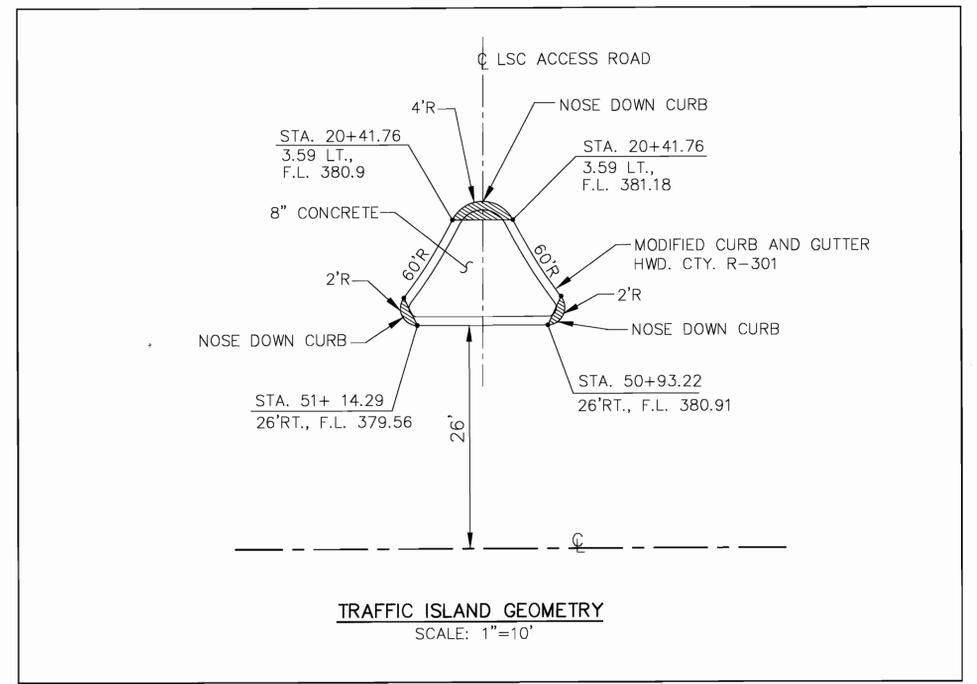
CURVE 1	CURVE 2
PC=45+08.78	PC=46+62.22
PT=45+45.86	PT=47+53.79
R=2000.00 FT.	R=1000.00 FT.
D=2°51'53.24"	D=5°43'46.48"
L=37.08 FT.	L=91.57 FT.
T=18.54 FT.	T=45.82 FT.
E=0.09 FT.	E=1.05 FT.

CENTERLINE GEOMETRY-N. ENTRANCE ROAD

POINT	STATION	NORTH	EAST
P.O.T.	10+00	548898.58	1341047.15
P.C.	11+38.56	548868.15	1341182.33

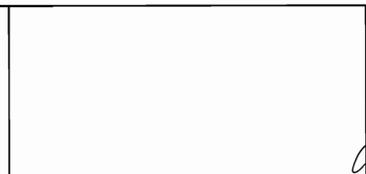
CENTERLINE GEOMETRY-LSC ACCESS ROAD

POINT	STATION	NORTH	EAST
P.O.T.	20+00	549446.21	1341123.73
P.C.	20+69.87	549434.68	1341192.65



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 4/19/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 4/20/05
 DIRECTOR DATE 4/20/05

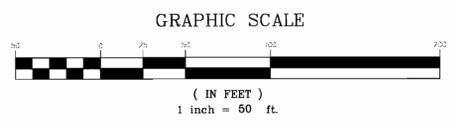
JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS RFP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	3/12/06	AS-BUILT			
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP



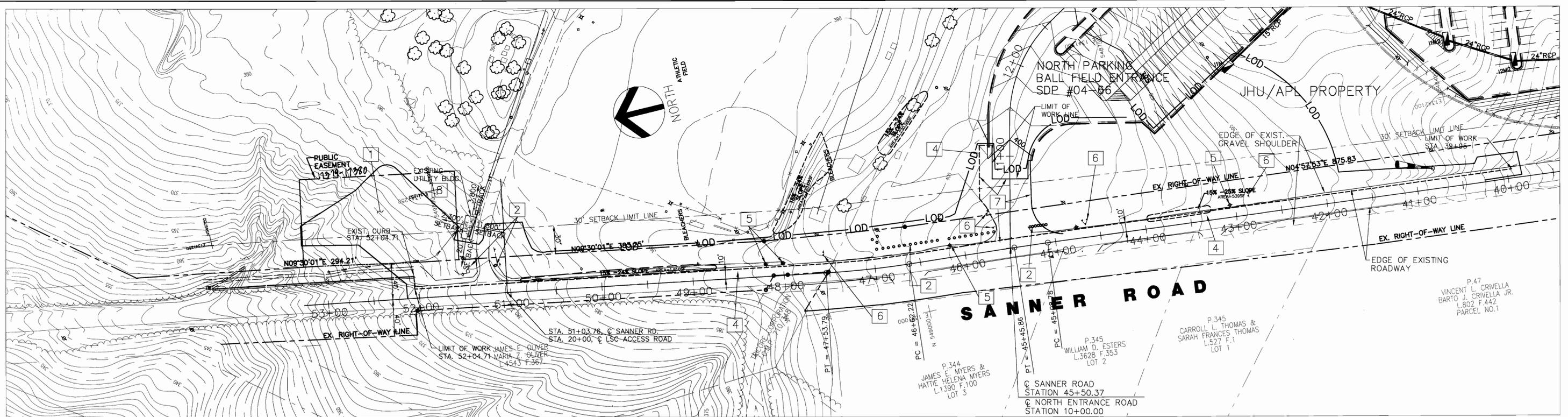
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS. THIS IS BASED ON INFORMATION PROVIDED BY APL AND VISUAL OBSERVATIONS.



SANNER ROAD IMPROVEMENTS
AS-BUILT PLAN

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
ROADWAY AND DRAINAGE PLAN
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-4
 SHEET 4 OF 18



1 EXISTING CONDITIONS/DEMOLITION
SCALE: 1"=50'

LEGEND:
 — LOD — LIMIT OF DISTURBANCE AND TREE PROTECTION
 — COMM — UNDERGROUND COMMUNICATION

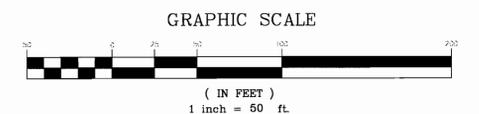
KEYED NOTES:

- 1 EXISTING TREES TO BE REMOVED WITHIN LIMITS OF DISTURBANCE
- 2 EXISTING WOOD BOLLARDS TO BE REMOVED AND BACKFILLED WITH DENSE GRADED AGGREGATE (MIN. 31 BOLLARDS).
- 3 NOT USED
- 4 SAWCUT LINE, SEE TYPICAL SECTIONS FOR LIMITS OF PAVEMENT REMOVAL.
- 5 CONTRACTOR TO COORDINATE WITH THE UNITED STATES POSTAL SERVICE AND THE RESIDENTS OF 7150 AND 7152 SANNER ROAD FOR THE RELOCATION OF THEIR MAILBOXES TO THE WEST SIDE OF SANNER ROAD.
- 6 EXISTING SIGNS TO BE RELOCATED TO THE EAST OF NEW CONSTRUCTION, COORDINATE WITH APL AND HOWARD COUNTY DPW. SEE SIGNING AND STRIPING PLAN.
- 7 LIMIT OF EXISTING PAVEMENT REMOVAL.
- 8 CRITICAL COMMUNICATION CONDUITS ARE IN THE VICINITY OF THE UTILITY BUILDING. CONTRACTOR SHALL FIELD LOCATE, HAND DIG, AND PROTECT THESE COMMUNICATION LINES.

GENERAL NOTE:

- 1. RIGHT OF WAY LINES HAVE BEEN ESTABLISHED BY OTHERS AND THIS PLAN DOES NOT GUARANTEE THEIR ACCURACY.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 4/12/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE
[Signature] 4/29/05
 CHIEF, DIVISION OF LAND DEVELOPMENT HP DATE
[Signature] 4/29/05
 DIRECTOR DATE



JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS REP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

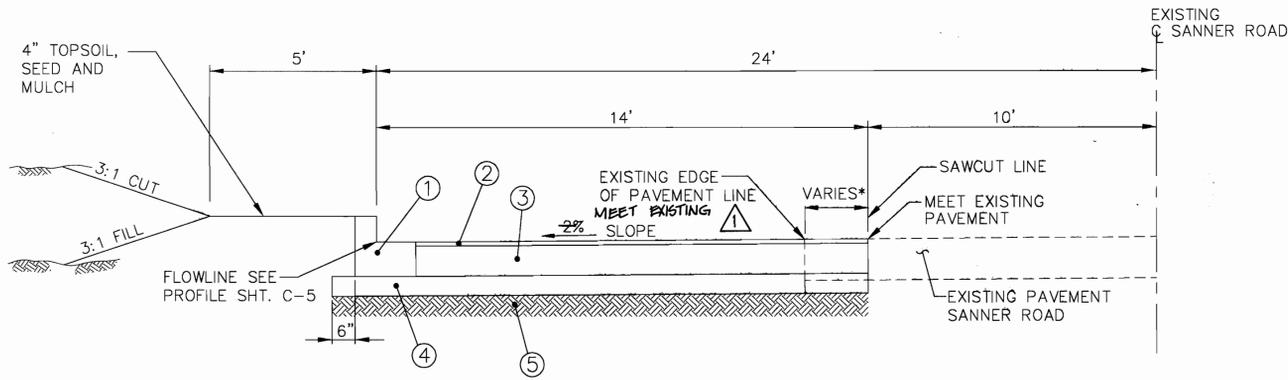


DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

SANNER ROAD IMPROVEMENTS

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
**EXISTING CONDITION/
 DEMOLITION PLAN**
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-3
 SHEET 3 OF 18

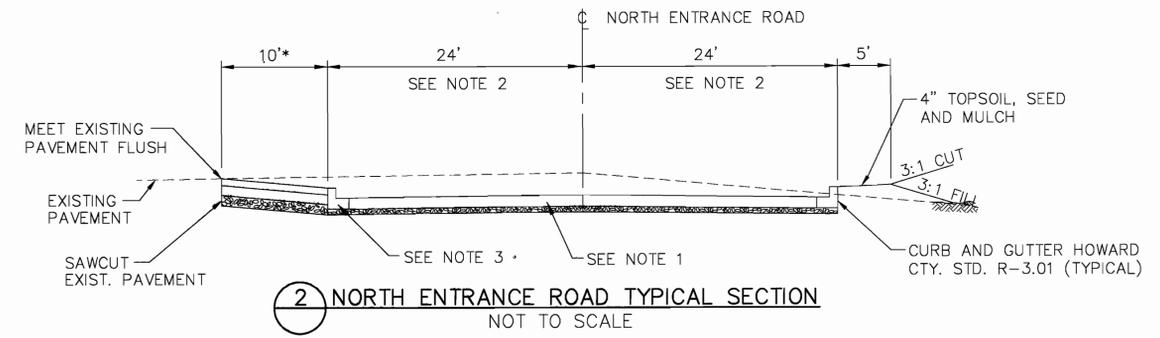


1 SANNER ROAD TYPICAL SECTION NOT TO SCALE

STA. 40+35 TO STA. 52+04.71

- 1 CURB AND GUTTER; HOWARD CTY. STD. R-3.01
- 2 1 1/2" 12.5 SUPERPAVE SURFACE COURSE, PG 64-22
- 3 6 1/2" 19MM SUPERPAVE BASE COURSE, PG 64-22
- 4 6" GRADED AGGREGATE BASE
- 5 COMPACTED SUBGRADE

*REMOVE EXISTING PAVEMENT VARIES: 0' TO 2'

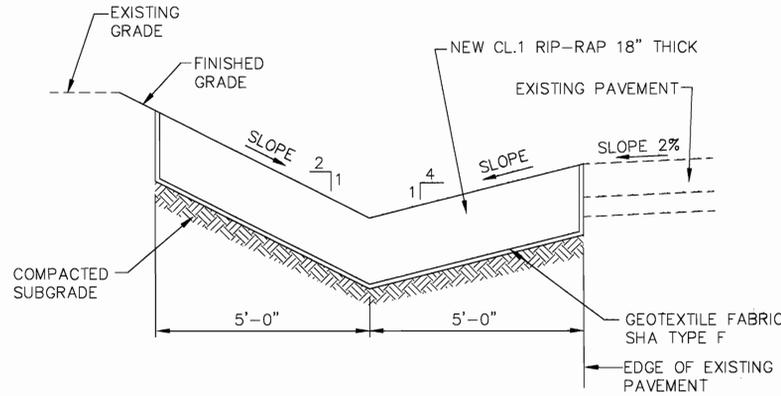


2 NORTH ENTRANCE ROAD TYPICAL SECTION NOT TO SCALE

(SEE ROADWAY AND DRAINAGE PLAN FOR LIMITS OF TYPICAL SECTION)

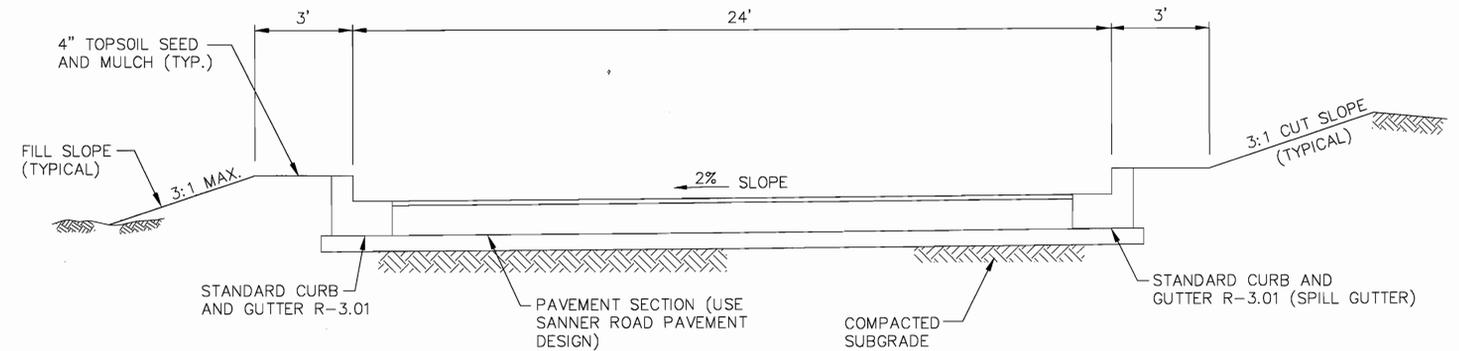
NOTE:

1. USE SANNER ROAD PAVEMENT DESIGN SECTION FOR ALL PROPOSED PAVEMENT AREAS.
2. WIDTH OF ROAD TO MATCH EXISTING NORTH ENTRANCE ROAD WIDTH.
3. STA 10+50 TO STA. 11+12: LEFT OF NORTH ENTRANCE ROAD, CONSTRUCT 4" MODIFIED CURB AND GUTTER. USE HOWARD COUNTY STD. R-301 ELSEWHERE CONSTRUCT PAVEMENT BEHIND CURB FOR 10' TO MEET EXISTING BALL FIELD DRIVE.



3 TYPICAL SECTION RIP-RAP DRAINAGE CHANNEL SCALE 1/2" = 1'-0"

STATION 39+95 TO 40+35, RIGHT SANNER ROAD



4 LSC ACCESS ROAD TYPICAL SECTION

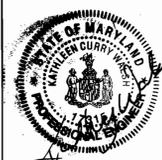
STA. 20+12 TO STA. 20+69.87

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS. THIS IS BASED ON INFORMATION PROVIDED BY APL AND VISUAL OBSERVATIONS.



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] DATE 4/13/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK
 [Signature] DATE 4/29/05
 CHIEF, DIVISION OF LAND DEVELOPMENT HP
 [Signature] DATE 4/24/05
 DIRECTOR

JHU/APL INTERNAL USE
 THIS DATA SHALL NOT BE DISCLOSED TO A THIRD PARTY AND SHALL NOT BE DUPLICATED, USED, OR DISCLOSED IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN TO EVALUATE THIS REP OR, IN THE CASE OF A CONTRACT AWARD, TO PERFORM THE WORK REQUIRED HEREUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.



DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP
		5/10/06 AS-BUILT			

SANNER ROAD IMPROVEMENTS

AS-BUILT PLAN

APPLIED PHYSICS LABORATORY
 THE JOHNS HOPKINS UNIVERSITY
 DETAILS AND TYPICAL SECTION
 TAX MAP 41 PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET C-2
 SHEET 2 OF 18

SANNER ROAD IMPROVEMENTS

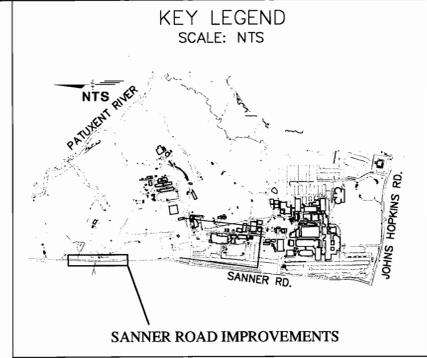
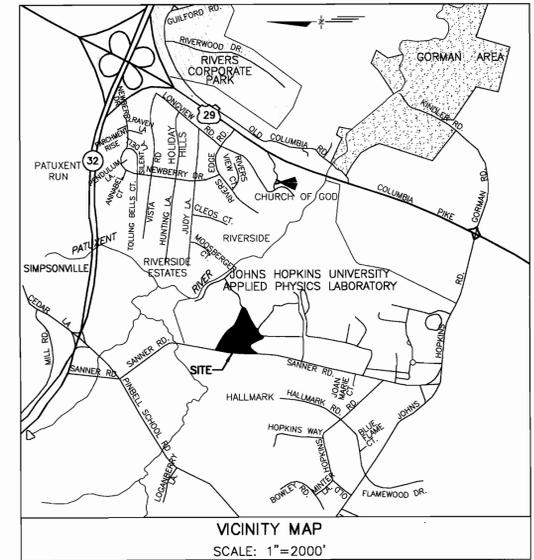
THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY IN HOWARD COUNTY, MD

SITE ANALYSIS TOTAL JHU/APL PROPERTY:

- PROPERTY NOTES**
1. COURSES AND COORDINATES ARE BASED ON THE MARYLAND STATE COORDINATE SYSTEM (NAD 83) AND ARE DERIVED FROM THE FOLLOWING JOHNS HOPKINS UNIVERSITY CONTROL STATIONS:
- | | | |
|---------|-------------|--------------|
| STATION | NORTH | EAST |
| HOPKINS | 544836.5300 | 1340825.3542 |
| G12 | 550256.5002 | 1342325.2642 |
| G7 | 548107.0328 | 1341025.0830 |
| G8 | 549478.7005 | 1341170.4345 |
| 41 EA | 544829.8093 | 1339217.4439 |
- A. AREA OF PARCEL/LOT = 361 ACRES
 - B. PRESENT ZONING = PEC
 - C. PARKING TABULATION: EXISTING PARKING SPACES = 4,815
PROPOSED PARKING SPACES = 0
TOTAL SPACES PROVIDED = 4,815
 - D. EXISTING BUILDING COVERAGE = 47.7 ACRES GROSS FLOOR AREA COVERAGE = 22.7 ACRES, 6.3% OF TOTAL LOT AREA PER SDP-05-42
 - E. PROPOSED BUILDING COVERAGE = 0.0 ACRES GROSS FLOOR AREA COVERAGE = 0 ACRES, 0.0% OF TOTAL LOT AREA
 - F. TOTAL PROPOSED BUILDING COVERAGE = 22.7 ACRES, 6.3% OF TOTAL LOT AREA
 - G. PROPOSED BUILDINGS DISTURBED AREA = 0.70 ACRES
 - H. PROPOSED USE = EDUCATION/RESEARCH
 - I. FLOOR SPACE USE = EDUCATION/RESEARCH
 - J. MAXIMUM NUMBER OF EMPLOYEES = 4,600 PER REVISED APFO TRAFFIC STUDY WITH THIS PLAN
 - K. NO LOT SUBDIVISION IS ANTICIPATED
 - L. CASE NUMBERS APPLICABLE: IMPROVEMENTS.
 - SDP F-02-77 - SWM BASIN B
 - SDP 04-35 - BASIN 'G'
 - SDP 04-66 - BALL FIELD ENTRANCE AND PARKING LOTS.
 - SDP 04-76 - SERVICE AREA COMPLEX
 - WP 03-23 - PERIMETER SECURITY FENCE
 - F 04-188 - FOREST CONSERVATION
 - SDP 04-133 - SWM BASIN C
 - SDP 05-42 - LIBRARY SERVICE CENTER
 - M. SANITARY SEWER/WATER SERVICE SEE GENERAL NOTES
 - N. EXISTING OPEN SPACE AREA (LOT AREA MINUS PARKING & BUILDINGS)=283.6 ACRES, 78.6% OF TOTAL LOT AREA
 - O. PROPOSED OPEN SPACE AREA = 283.6 ACRES, 78.6% OF TOTAL LOT

GENERAL NOTES

1. THE TOPOGRAPHIC AND UTILITY INFORMATION SHOWN IN THIS DEVELOPMENT PLAN WERE OBTAINED FROM FIELD SURVEYS PERFORMED BY A. MORTON THOMAS AND ASSOCIATES AND AERIAL SURVEY BY APPLIED PHYSICS LABORATORY CONSULTANTS IN NOVEMBER 1998, AND FROM REPORTS/JHU/APL, SINCE NOT ALL INFORMATION SHOWN MAY REFLECT CURRENT CONDITIONS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION TO HIS OWN SATISFACTION.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY AND MSHA SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, UNLESS OTHERWISE NOTED.
3. ALL WORK ON THESE PLANS SHALL BE COORDINATED WITH NORTH PARKING AND TRADES CONTRACTS, NORTH CAMPUS IMPROVEMENTS PROJECT, BASIN'S B AND G, AND THE LSC ACCESS ROAD PROJECT.
4. APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO COST TO THE JHU/APL.
5. TRAFFIC MUST BE MAINTAINED WITHIN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL COORDINATE ANY REQUIRED TEMPORARY LANE CLOSURES WITH JHU/APL AND HOWARD COUNTY DPW WITH NOTIFICATIONS OF ALL SCHEDULES AND REQUIREMENTS.
6. THE CONTRACTOR SHALL CONTACT MR. RUSTY OBER (443) 778-0167 AT LEAST FIVE DAYS BEFORE STARTING WORK OR DISRUPTION OF ANY UTILITIES.
7. THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCING WORK AT (410) 313-1880.
8. ALL UTILITIES SHALL HAVE A MINIMUM CLEARANCE OF 6". ALL POLES AND FOUNDATIONS SHALL HAVE A MINIMUM CLEARANCE OF 2'-0", OR TUNNEL AS REQUIRED.
9. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEMS. COORDINATE WITH THE OWNER FOR OPERATING WATER MAIN VALVES.
10. THE CONTRACTOR SHALL PERMANENTLY SEED AND STABILIZE ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED.
11. ALL DRIVEWAYS ARE PRIVATELY OWNED AND MAINTAINED BY JHU/APL.
12. THE AREA SHOWN IS LOCATED ON TAX MAP #41.
13. THE INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION BY DIGGING TEST PITS BY HAND AT ALL CROSSINGS WELL IN ADVANCE OF CONSTRUCTION.
14. ALL SITE UTILITIES ARE THE PROPERTY OF THE COUNTY AND UTILITY COMPANIES WHO WILL HORIZONTALLY LOCATE ALL ACTIVE UTILITIES FOR THE CONTRACTOR. ADJOINING SITE UTILITIES ARE OWNED BY JHU/APL (SEE NOTE #24, THIS SHEET).
15. TRAFFIC SHALL BE MAINTAINED BY THE CONTRACTOR ALONG EXISTING ROADWAYS DURING PROPOSED WORK AT ALL TIMES. SEE MAINTENANCE OF TRAFFIC PLAN.
16. SEE DETAIL SHEETS FOR OTHER ITEMS THAT APPLY TO THIS PROJECT.
17. THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO PROTECT EXISTING ADJACENT FACILITIES AND STRUCTURES. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION OR BETTER UNLESS NOTED OTHERWISE.
18. DUE TO THE PROXIMITY OF LIVE UNDERGROUND UTILITIES, THE JHU/APL AND A. MORTON THOMAS AND ASSOCIATES, INC. ARE NOT RESPONSIBLE FOR ANY DAMAGE OR INJURY SUSTAINED DURING CONSTRUCTION BY ANY PERSON, VEHICLES, OR EQUIPMENT USED ON OR ADJACENT TO THE SITE.
19. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE JHU/APL OF ANY DEVIATION FROM THESE PLANS PRIOR TO ANY CHANGE BEING MADE. ANY DEVIATION FROM THESE PLANS SHALL NOT BE MADE WITHOUT WRITTEN AUTHORIZATION BY JHU/APL, A. MORTON THOMAS & ASSOC., HOWARD COUNTY DPZ, & SCD.
20. SURFACED STREETS AND PARKING AREAS SHALL BE MAINTAINED IN A CLEAN CONDITION, MUD AND DUST FREE AT ALL TIMES. ADEQUATE MEANS SHALL BE PROVIDED TO CLEAN TRUCKS AND OTHER EQUIPMENT USING EXISTING SURFACED STREETS AND PARKING AREAS.
21. THE CONTRACTOR SHALL MAKE EVERY ATTEMPT TO MINIMIZE DAMAGE TO EXISTING TREES DURING CONSTRUCTION.
22. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL MEET CURRENT HOWARD COUNTY DEPARTMENT OF PERMITTING SERVICES STANDARDS AND DIRECTIVES.
23. EXISTING SIGNS, GUARDRAILS, AND OTHER MINOR SITE FEATURES IN THE WAY OF PROPOSED CONSTRUCTION, WHETHER OR NOT SHOWN ON THESE PLANS, SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE JHU/APL.
24. CONTRACTOR SHALL CONTACT JHU/APL PLANT FACILITIES OFFICE (443) 778-0167 AND "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR START OF THE EXCAVATION AND MUST NOTIFY ALL PUBLIC UTILITY COMPANIES AND THE OWNER OF UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION.
25. THE SUBJECT PROPERTY IS ZONED PEC PER THE FEBRUARY 2004 COMPREHENSIVE ZONING PLAN.
26. NO CLEARING, GRADING, OR CONSTRUCTION ARE PERMITTED WITHIN THE RESTRICTED FOREST CONSERVATION, WETLANDS, STREAMS, OR THEIR BUFFERS; AS THESE ACTIVITIES ARE NOT PERMITTED BY MDE, U.S. ARMY CORPS OF ENGINEERS, AND HOWARD COUNTY.
27. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION ARE PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT. THE FOREST CONSERVATION OBLIGATION HAS BEEN ADDRESSED WITH F-04-188, F-02-40.
28. THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED AS DESCRIBED IN GENERAL NOTE #1 AND BY GROUND SURVEY OF THE EXISTING ROADWAY.
29. WATER IS PUBLIC (HOWARD COUNTY)
30. SEWER IS PUBLIC (HOWARD COUNTY)
31. THE FLOODPLAIN LIMITS FOR THIS PROJECT WAS TAKEN FROM HOWARD COUNTY STUDY.
32. THE FINAL PLAN AREA AND THE LIMIT OF DISTURBANCE OF THE SANNER ROAD IMPROVEMENTS ARE NOT LOCATED IN THE 100 YEAR FLOOD PLAIN.
33. SOIL MAP USED: SHEET NO. 29, SOIL SURVEY JULY 1968 HOWARD COUNTY, MARYLAND, USA.
34. JHU/ENVIRONMENTAL CONDITIONS ASSESSMENT REPORT REQUIREMENTS HAVE BEEN ADDRESSED BY ENVIRONMENTAL REPORTS ISSUED BY JHU/APL AND ACCEPTED BY THE COUNTY UNDER F-02-40 SWM BASIN A.
35. NO LANDSCAPING IS REQUIRED/PROVIDED UNDER THIS CONTRACT. IF/WHEN BUILDINGS ARE PROPOSED ALONG THIS SECTION OF ROADWAY, LANDSCAPING REQUIREMENTS WILL BE ADDRESSED. LANDSCAPING PROPOSED UNDER SD-04-66 WILL BE REPLACED UPON COMPLETION OF THE WORK ON THIS CONTRACT.



INDEX OF DRAWINGS

SHT. NO.	SHEET TITLE
1	COVER SHEET
2	DETAILS AND TYPICAL SECTION
3	EXISTING CONDITIONS/DEMOLITION PLAN
4	ROADWAY AND DRAINAGE PLAN
5	PROFILES
6	GRADING PLAN
7	EROSION AND SEDIMENT CONTROL PLAN
8	SEDIMENT CONTROL NOTES
9	STORM WATER MANAGEMENT
10	STORM WATER MANAGEMENT DETAILS 1
11	STORM WATER MANAGEMENT DETAILS 2
12	SIGNING AND STRIPING PLAN
13	PROJECT AREA SOILS MAP
14	OVERALL DRAINAGE AREA MAP
15	MAINTENANCE OF TRAFFIC
16-18	CROSS-SECTIONS

AS-BUILT PLAN

CONTACT PERSON FOR OWNER: RUSTY OBER TELEPHONE: (443) 778-0167 FAX: (443) 778-6122		
ADDRESS CHART		
LOT/PARCEL #1	STREET ADDRESS 11100 JOHNS HOPKINS ROAD LAUREL, MD 20723 CONTACT: MR. RUSTY OBER	
PERMIT INFORMATION CHART		
SUBDIVISION NAME JHU APPLIED PHYSICS LAB	SECTION / AREA N/A	PARCEL NO 1
PLAT# OR REF# 17042-17046	GRID# 16	ZONING PEC
TAX MAP NO. 41	ELEC. DISTRICT 5	CENSUS TRACT 6051
WATER CODE E-21	SEWER CODE 6480000	

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS. THIS IS BASED ON INFORMATION PROVIDED BY APL AND VISUAL OBSERVATIONS.

Fred E. Weber 3/10/06



~~Review for HOWARD SCD and meets Technical Requirements~~

USA - Natural Resources Conservation Service

~~This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.~~

~~APPROVED: DEPARTMENT OF PUBLIC WORKS~~

~~APPROVED: BUREAU OF HIGHWAYS~~

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chad Williams 4/12/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK

Lynda Kinnel 4/28/05
CHIEF, DIVISION OF LAND DEVELOPMENT MB

Wanda A. Leyle 4/28/05
DIRECTOR



DES: KCW					
DRN: RLP					
CHK: FEW					
DATE: 11/01/04	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP
		3/10/06 AS-BUILT (NO CHANGE THIS SHT.)			

SANNER ROAD IMPROVEMENTS

PROPERTY OWNER: JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MD 20723
CONTACT: MR. RUSTY OBER
(443) 778-0167

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

COVER SHEET

TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET C-1
SHEET 1 OF 18