NORTH PARKING/BALL FIELD ENTRANCE AREA DEVELOPMENT

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

DEVELOPER & ENGINEER CERTIFICATES

1) BY THE DEVELOPER:

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a certificate of attendance at a Department of the Environment approved training program for the control of sediment and erosion before beginning the project. I shall engage a registered professional engineer to supervise all construction and provide the Howard County Soil Conservation District with an "As-Built" plans within 30 days of completion.

James E. Loesch — Developer Signature — Date June 18, 2003

James E. Loesch — Printed Name — Registration Number

2) BY THE ENGINEER:

"I certify that the erosion and sediment control plan 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 County Soil Conservation District.

Design Engineer Signature — Date 3/15/04

R.A. Warner — Printed Name — Registration Number 13403

12750 TWINBROOK PARKWAY
ROCKVILLE, MARYLAND 20852
301.881.2545

3) CERTIFICATION BY PROFESSIONAL:

There are no wetlands on the site that will be disturbed. Therefore, the requirement of 401 and 404 wetlands permits from the State of Maryland and Corps of Engineers are not needed.

Professional's Signature — Date 3/15/04

R.A. Warner — Print Name

SITE ANALYSIS TOTAL JHU/APL PROPERTY:

PROPERTY NOTES

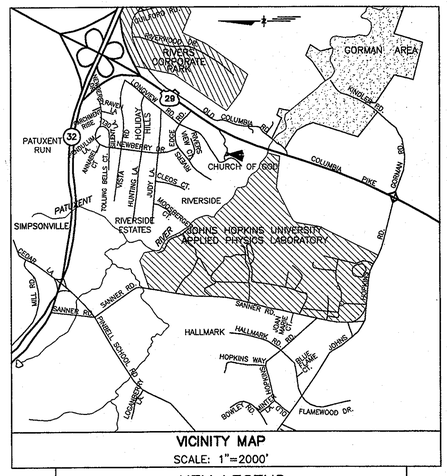
1. COURSES AND COORDINATES ARE BASED ON THE MARYLAND STATE COORDINATE SYSTEM (NAD 83) AND ARE DERIVED FROM THE FOLLOWING JOHNS HOPKINS UNIVERSITY CONTROL STATIONS:

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 = 3,746
PROPOSED PARKING SPACES = ~~1,194~~ ~~1,188~~ 1,076 △7
TOTAL SPACES PROVIDED = ~~4,940~~ ~~4,934~~ 4,822 △6
D. EXISTING BUILDING COVERAGE = 42.7 ACRES GROSS FLOOR AREA COVERAGE = 19.7 ACRES, 5.5% OF TOTAL LOT AREA
E. PROPOSED BUILDING COVERAGE = 0.02ACRES GROSS FLOOR AREA COVERAGE = 0.02ACRES, 0.00% OF TOTAL LOT AREA
F. TOTAL PROPOSED BUILDING COVERAGE = 19.7 ACRES, 5.5% OF TOTAL LOT AREA
G. PROPOSED BUILDINGS DISTURBED AREA = 16.7 ACRES/PROP. UTILITIES EXT. LOD = 0.60AC. △8
H. PROPOSED USE = EDUCATION/RESEARCH
I. FLOOR SPACE USE = EDUCATION/RESEARCH
J. MAXIMUM NUMBER OF EMPLOYEES = 3,937
K. NO LOT SUBDIVISION IS ANTICIPATED
L. CASE NUMBERS APPLICABLE: IMPROVEMENTS.
F02-40 FOREST CONSERVATION AND APFO
SDP # 90-218 - BUILDING #31
SDP 99-63 BUILDING #52
SDP F-02-70 - SWM BASIN B
SDP 03-174 - POND ENTRANCE ROAD
M. SANITARY SEWER/WATER SERVICE SEE GENERAL NOTES
N. EXISTING OPEN SPACE AREA (LOT AREA MINUS PARKING & BUILDINGS)=300 ACRES, 83.8% OF TOTAL LOT AREA
O. PROPOSED OPEN SPACE AREA = ~~291~~ 292 ACRES, 80.6% OF TOTAL LOT

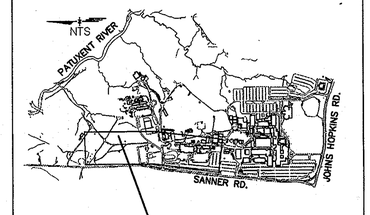
GENERAL NOTES

1. THE TOPOGRAPHIC AND UTILITY INFORMATION SHOWN IN THIS DEVELOPMENT PLAN WERE OBTAINED FROM FIELD SURVEYS PERFORMED BY A. MORTON THOMAS AND ASSOCIATES (TOPOGRAPHY) AND APPLIED PHYSICS LABORATORY (UTILITIES) CONSULTANTS IN NOVEMBER 1998, AND FROM REPORTS PROVIDED BY JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LAB (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 TRADES CONTRACT, BASIN'S B AND G.
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. SECURITY MUST BE MAINTAINED WITHIN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL COORDINATE ANY REQUIRED FENCE CONSTRUCTION AND RELOCATION WITH JHU/APL 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. ALL "TIE-INS" TO EXISTING UTILITIES MAY ONLY BE DONE AFTER NORMAL WORKING HOURS AT JHU-APL. WORK MUST BE SCHEDULED ACCORDINGLY THRU JHU/APL. NORMAL WORKING HOURS ARE 8:00 A.M. TO 5:00 P.M., MONDAY THROUGH FRIDAY. "TIE-INS" TO STORM DRAINAGE MAY BE DONE DURING NORMAL WORK HOURS.
8. THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCING WORK AT (410) 313-1880.
9. 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.
10. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEMS. COORDINATE WITH THE OWNER FOR OPERATING WATER MAIN VALVES.
11. THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL STORM DRAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
12. THE CONTRACTOR SHALL PERMANENTLY SEED AND STABILIZE ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED.
13. ALL DRIVEWAYS ARE PRIVATELY OWNED AND MAINTAINED BY JHU/APL.
14. THE AREA SHOWN IS LOCATED ON TAX MAP #41.
15. 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.
16. ALL SITE UTILITIES ARE THE PROPERTY OF JHU/APL WHO WILL HORIZONTALLY LOCATE ALL ACTIVE UTILITIES FOR THE CONTRACTOR.
17. EXISTING PAVEMENT, (ROADWAY SIDEWALKS ETC.) TO BE REMOVED AND REPLACED BY NEW PAVEMENT SHALL BE REPLACED "IN-KIND". TRAFFIC SHALL BE MAINTAINED BY THE CONTRACTOR ALONG EXISTING ROADWAYS DURING PROPOSED WORK AT ALL TIMES.
18. SEE DETAIL SHEETS FOR OTHER ITEMS THAT APPLY TO THIS PROJECT.
19. 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.
20. 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.
21. ACCESS TO ALL EXISTING FACILITIES SHALL BE MAINTAINED AT ALL TIMES.
22. 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 WITHOUT WRITTEN AUTHORIZATION BY THE JHU/APL THE JHU/APL, A. MORTON THOMAS & ASSOC., HOWARD COUNTY DPZ, & SCD.
23. 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.
24. THE CONTRACTOR SHALL MAKE EVERY ATTEMPT TO MINIMIZE DAMAGE TO EXISTING TREES DURING CONSTRUCTION.
25. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL MEET CURRENT MARYLAND DEPARTMENT OF THE ENVIRONMENT STANDARDS AND DIRECTIVES.
26. 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. △2
27. 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.
28. THE SUBJECT PROPERTY IS ZONED PEC PER THE OCTOBER 1993 COMPREHENSIVE ZONING PLAN.
29. NO CLEARING, GRADING, OR CONSTRUCTION ARE PERMITTED WITHIN THE RESTRICTED FOREST FOREST CONSERVATION, WETLANDS, STREAMS, OR THEIR BUFFERS AS NOT PERMITTED BY MDE, U.S. ARMY CORPS OF ENGINEERS, AND HOWARD COUNTY.
30. 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-02 40, JHU/APL SWM BASIN A.
31. THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED AS DESCRIBED IN GENERAL NOTE #1.
32. WATER IS PUBLIC (HOWARD COUNTY)
33. SEWER IS PUBLIC (HOWARD COUNTY)
34. THE FLOODPLAIN LIMITS FOR THIS PROJECT WAS TAKEN FROM HOWARD COUNTY STUDY.
35. DIMENSION TO NEW STRUCTURES ARE PERPENDICULAR TO PROPERTY LINE.
36. THE LOD OF THIS PLAN IS NOT IN THE 100 YEAR FLOODPLAIN.
37. SOIL MAP USED SHEET NO. 29, SOIL SURVEY JULY 1968 HOWARD COUNTY, MARYLAND, USDA.
38. JHU/ENVIRONMENTAL CONDITIONS ASSESSMENT REPORT REQUIREMENTS HAVE BEEN ADDRESSED BY ENVIRONMENTAL REPORTS ISSUED BY JHU/APL AND ACCEPTED BY THE COUNTY UNDER F02-04 SWM BASIN A.
39. THE EXISTING SECURITY FENCE IS CONSIDERED A STRUCTURE WHICH COMPLIES WITH THE VARIANCE #BA-02-48V (DATED OCTOBER 2, 2002), AND THE VARIANCE APPLIES ONLY TO USES AND STRUCTURES DESCRIBED IN THE PETITION SUBMITTED. THE EXISTING SECURITY FENCE WAS APPROVED UNDER WP-03-23 (OCTOBER 9, 2002) WITH NO CONDITIONS. △2
40. DPZ HOWARD COUNTY WAIVER, DESIGN MANUAL HAS BEEN GRANTED,12/17/03, FOR A HOWARD COUNTY MANUAL VOLUME IV, PERTAINING TO THE DIMENSIONS AND GEOMETRY OF A COMMERCIAL PARKING LOT. THE WAIVER IS BASED ON EXISTING PARKING GEOMETRY. △3
41. THE STORMWATER MANAGEMENT POND MUST BE IN PLACE BEFORE THE PARKING LOT CONSTRUCTION CAN BE STARTED.
42. THE EXCLUSIVE LEFT TURN ON SANNER ROAD WILL BE CONSTRUCTION AS PART OF THE NORTH BALL ENTRANCE SANNER ROAD ACCELERATION/DECELERATION LANES IMPROVEMENT SDP SUBMISSION TO THE COUNTY. △3
43. THE UPDATE OF THE F-02-77 APPROVED PERMIT THAT LAPSED DUE TO TIME WAS REINSTITUTED UNDER WAIVER PETITION #WP-04-82 (JANUARY 14, 2004) NEW DEADLINE TO APPLY FOR GRADING PERMIT NOVEMBER 24, 2004. △4



VICINITY MAP
SCALE: 1"=2000'

KEY LEGEND
SCALE: NTS



NORTH PARKING/BALL FIELD ENTRANCE AREA

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			SECTION / AREA		PARCEL NO
JHU APPLIED PHYSICS LAB			N/A		1
PLAT# OR L/F	GRID#	ZONING	TAX MAP NO.	ELEC. DISTRICT	CENSUS TRACT
15429-15433	16	PEC	41	5	6051
WATER CODE			SEWER CODE		
E-21			6480000		

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."

SIGNATURE OF DEVELOPER — DATE 3/16/04
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 A. WARNER — SIGNATURE OF ENGINEER — DATE 3/15/04

DRAINAGE AREAS B AND G BASINS DRAINAGE NOTES

A. DRAINAGE AREAS: B=28.8 ACRES; G=25.8 ACRES
B. DESIGN IMPERVIOUS SURFACE: ~~29%~~
EXISTING: B=4.6 ACRES (16%); G=6.1 ACRES (23.7%)
7.5 NEW: ~~B=9.0~~ ACRES (~~31%~~); G=1.8 ACRES (7.0%)
12.1 TOTAL: ~~B=13.6~~ ACRES (47%); G=7.9 ACRES (30.6%)
PERMITTED: B=25.7 ACRES (89%); G=19.5 ACRES (76%)
C. HYDRAULIC CALULATIONS FOUND:
BASIN B: MDE APPROVED "SWM FINAL PLAN BASIN B REPORT (AUGUST 2002).
BASIN G: SDP-90-218 (BUILDING #31) AND SDP-04-35 (BASIN EXPANSION)

7/28/09	RED-LINE SUBMISSION	△8	MV	JL	JL
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

INDEX OF DRAWINGS

△8 Add Diffraction Fence to Antenna Range.

SHT. NO.	SHEET TITLE
1	C0.1 COVER SHEET
2	C0.2 CENTERLINE GEOMETRY
3	C0.3 KEY PLAN SHEET
4	C1.0 EXISTING CONDITION PLAN 1
5	C1.1 EXISTING CONDITION PLAN 2
6	C1.2 EXISTING CONDITION PLAN 3
7	C1.3 PROJECT AREA SOIL MAP
8	C1.4 DEMOLITION PLAN 1
9	C1.5 DEMOLITION PLAN 2
10	C1.6 DEMOLITION PLAN 3
11	C1.7 LAYOUT SITE PLAN 1
12	C1.8 LAYOUT SITE PLAN 2
13	C1.9 LAYOUT SITE PLAN 3
14	C1.10 SITE UTILITY PLAN 1
15	C1.11 SITE UTILITY PLAN 2
16	C1.12 SITE UTILITY PLAN 3
17	C1.13 SITE GRADING & STORM DRAINAGE PLAN 1
18	C1.14 SITE GRADING & STORM DRAINAGE PLAN 2
19	C1.15 SITE GRADING & STORM DRAINAGE PLAN 3
20	C1.16 DRAINAGE AREA B PLAN
21	C1.17 OVERALL DRAINAGE AREA MAP
22	C1.18 SEDIMENT CONTROL PLAN PHASE 1 AND 3
* 23	C.1.19 SEDIMENT CONTROL PLAN PHASE 2
24	C1.20 CONSTRUCTION PHASING 1 AND 2 PLAN
25	C1.21 CONSTRUCTION PHASING 3 PLAN
26	C2.1 STORM DRAINAGE PIPE PROFILE 1
27	C2.2 STORM DRAINAGE PIPE PROFILE 2
28	C2.3 STORM DRAINAGE PIPE PROFILE 3
29	C2.4 STORM DRAINAGE STRUCTURES SCHEDULES
30	C2.5 TYPICAL DRIVE SECTIONS
31	C2.6 DRIVE PROFILES
32	C2.7 DRIVE PROFILES
33	C2.8 WALL AND DRIVE PROFILES
34	C2.9 STORMCEPTOR DETAILS
35	C2.10 DETAILS
36	C2.11 POCKET SAND FILTER PLAN AND DETAILS
37	C2.12 SEDIMENT CONTROL DETAILS
38	C2.13 SEDIMENT CONTROL NOTES
39	C-201 FRONT FENCE AND GATE - DETAILS
40	C-202 BACK FENCE AND GATE - DETAILS
41	L1.1 LANDSCAPE PLAN 1
42	L1.2 LANDSCAPE PLAN 2
43	L1.3 LANDSCAPE PLAN 3
44	L1.4 LANDSCAPE DETAILS AND NOTES
45	E1.0 ELECTRICAL NOTES, DETAILS AND SCHEDULES
46	E1.1 ELECTRICAL SITE PLAN 1
47	E1.2 ELECTRICAL SITE PLAN 2
48	E1.3 ELECTRICAL SITE PLAN 3

23A C1.19A EROSION AND SEDIMENT CONTROL PLAN RED-LINE
26A C2.1A PIPE PROFILE △6

REVISED SITE DEVELOPMENT PLAN - RETAIN △5
EXISTING ANTENNA RANGE AND PARKING LOT F1

STORMWATER MANAGEMENT DRAINAGE AREA B BASIN

ALLOWED ADDITIONAL IMPERVIOUS	NC1 STORM DRAINAGE AREA EXISTING	POST NC1 SDP STORM DRAIN AREA	RED-LINE (8/17/05)	REMAINING SWM AREA TO BE PAVED
25.7 AC.	4.6 AC.	9.0AC	1.5AC	13.6AC

* 22A C1.18A SEDIMENT & EROSION CONTROL PLAN △5 △7

Review for HOWARD SCD and meets Technical Requirements.

USDA - Natural Resources Conservation Service — Date 3/22/04

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

Howard SCD — Date 3/22/04

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — Date

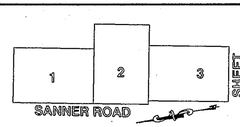
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/30/04
DIRECTOR — DATE 3/31/04

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.

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 # 102-440



SHEET ORGANIZATION KEY PLAN

DES: JK	8/17/05	RED-LINE SUBMISSION	△5		
	6/25/04	RED-LINE	△4		
DRN: RLP	5/17/04	FUTURE LIBRARIES SERVICE UTILITIES EXTENSIONS	△3		
	3/1/04	COUNTY SET △1			
CHK: BW	1/26/04	COUNTY SET △1			
	12/16/03	COUNTY SET △1			
DATE: 10/10/03	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

NORTH PARKING / BALL FIELD ENTRANCE

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

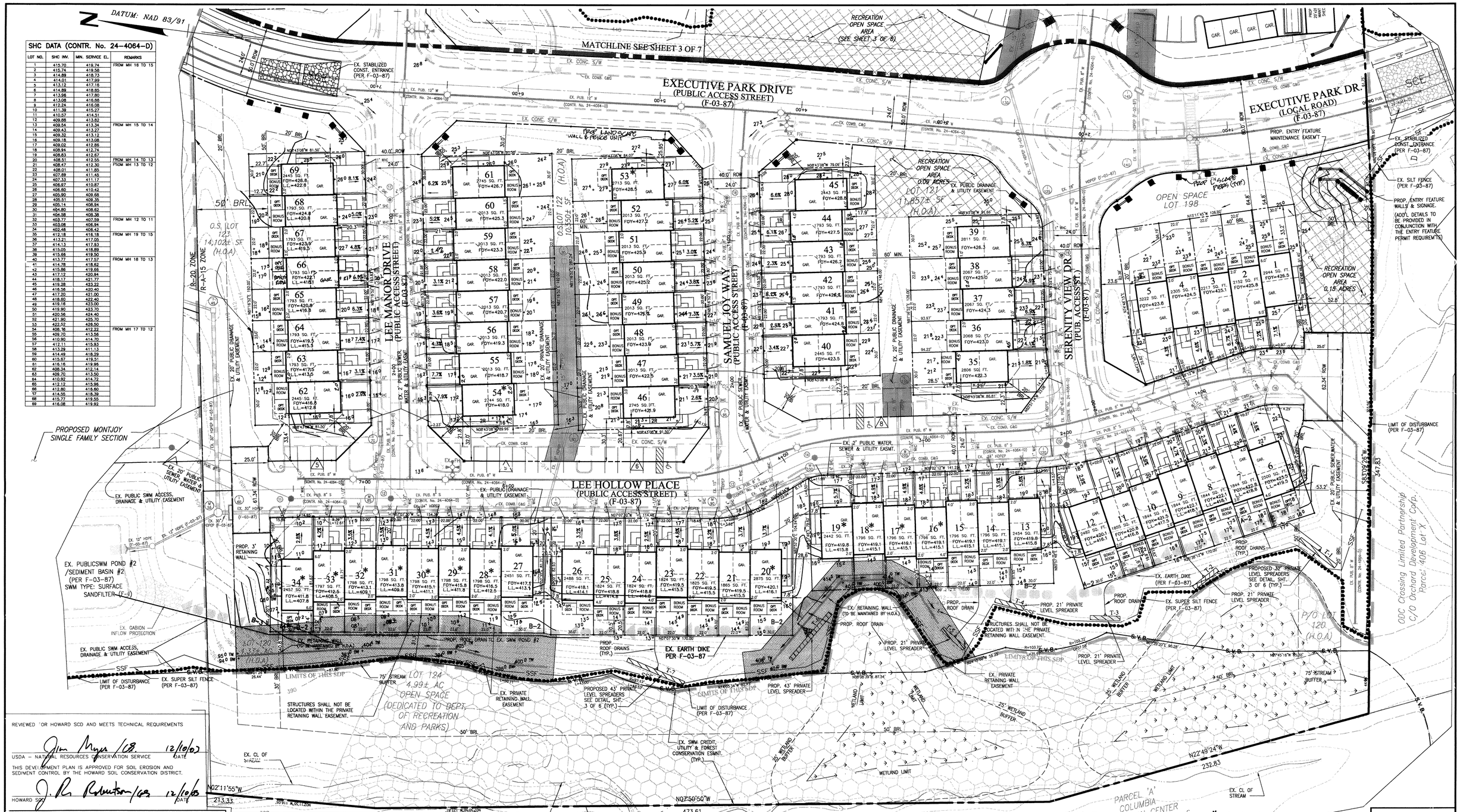
SCALE AS SHOWN

SHEET C0.1

SHEET 1 OF 48

SDP-04-66

SHC DATA (CONTR. No. 24-4064-D)			
LOT NO.	SHC INV.	MIN. SERVICE EL.	REMARKS
1	415.70	419.74	FROM MH 16 TO 15
2	415.74	419.58	
3	414.89	418.73	
4	414.01	417.89	
5	413.12	417.16	
6	414.89	418.85	
7	413.96	417.80	
8	413.08	416.88	
9	412.24	416.08	
10	411.39	415.27	
11	410.57	414.51	
12	409.88	413.82	
13	409.54	413.34	FROM MH 15 TO 14
14	409.43	413.27	
15	409.32	413.12	
16	409.18	413.08	
17	409.02	412.85	
18	408.94	412.74	
19	408.83	412.67	
20	408.51	412.55	FROM MH 14 TO 13
21	408.47	412.30	FROM MH 13 TO 12
22	408.01	411.85	
23	407.69	411.45	
24	407.33	411.17	
25	406.97	410.87	
26	406.60	410.42	
27	405.90	409.68	
28	405.51	409.35	
29	405.14	408.94	
30	404.80	408.62	
31	404.38	408.38	
32	403.77	407.59	FROM MH 12 TO 11
33	403.08	406.94	
34	402.48	406.42	
35	412.18	416.18	FROM MH 19 TO 15
36	413.21	417.05	
37	414.13	417.83	
38	415.05	418.89	
39	415.66	419.50	
40	413.77	417.57	FROM MH 18 TO 13
41	414.78	418.62	
42	415.86	419.66	
43	417.12	420.94	
44	418.17	421.77	
45	419.28	423.22	
46	416.56	420.40	
47	417.20	421.00	
48	418.60	422.40	
49	419.16	423.00	
50	419.90	423.70	
51	420.56	424.40	
52	421.90	425.70	
53	422.52	426.50	
54	408.16	412.22	FROM MH 17 TO 12
55	409.70	413.56	
56	410.90	414.70	
57	412.11	415.93	
58	413.29	417.13	
59	414.49	418.29	
60	415.67	419.51	
61	416.16	419.96	
62	406.34	412.14	
63	409.70	413.50	
64	410.92	414.72	
65	412.12	415.96	
66	412.80	416.60	
67	414.55	418.39	
68	415.77	419.55	
69	416.08	419.92	



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA – NATURAL RESOURCES CONSERVATION SERVICE — DATE 12/10/03

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

HOWARD SCD — DATE 12/10/03

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 12/19/03

Chief, Division of Land Development — Date 12/30/03

Director (Acting) — Date 12/30/03

DEVELOPER'S CERTIFICATE

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

SIGNATURE OF DEVELOPER — DATE 12/3/03

(PRINT NAME BELOW SIGNATURE) MIKE J. CONLEY

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER — DATE 12/3/03

(PRINT NAME BELOW SIGNATURE) FRANK G. BOSSONG IV

*** NO BONUS ROOMS ALLOWED ON LOTS 17, 18, 19, 34, 53 & 54. NO DECKS ALLOWED ON LOTS 17, 18 & 19. LOTS 16, 17, 18, 19, 20, 28, 29, 30, 31, 32, 33 & 34 ARE IMPACTED BY RETAINING WALL EASEMENT.**

NOTE: SEDIMENT CONTROLS PROPOSED UNDER F-03-87 AS SHOWN WILL BE UTILIZED FOR IMPLEMENTATION OF THIS PLAN

12/3/03

DATE	REVISION	DATE
	ROUTING: REVISE GRADES FOR LOT 34 & SHT ELEV. FOR LOT 31	12/8/03
	ROUTING: REVISE TH. GRADES & D/N	11/22/03
	FINAL MYLAR SUBMITTAL FOR SIGNATURE	12-04-03
	REVISED PER HOWARD COUNTY COMMENTS	09-30-03
	SUBMITTED FOR REVIEW	07-10-03

	BY	DATE
BASE DATA	CADD	
DESIGNED	PFB,RC	
DRAWN	CoV	
REVIEWED	PFB	

RELEASE FOR

BY _____ DATE _____

Developer/Owner:
Winchester Homes, Inc. &
Winchester Homes, Inc. , as nominee for Stringtown Investments, LLC
6905 Rockledge Drive
Suite 800
Bethesda, Maryland 20817
Michael J. Conley, Vice President
(301) 803 - 4800

SITE DEVELOPMENT & GRADING PLAN

RODGERS CONSULTING
Enhancing the value of land assets

Rodgers Consulting, Inc.
9260 Gaither Road
Gaithersburg, MD 20877
301.948.4700
301.948.6256 (fax)
301.253.6609
www.rodgers.com

PHASES I, II & III – TOWNHOMES SDP

Montjoy

ELECTION DISTRICT NO. #2
HOWARD COUNTY, MARYLAND
TAX MAP: 30 GRID:12 PARCEL 260
DPZ FILES: S-01-20, WP-01-117, P-02-10, P-02-17, P-03-03, F-03-87

SCALE: 1"=30'
JOB No. 506V3
DATE: 07/10/03
INDEX No. SG-1
SHEET No. 2 OF 7

\\Compaq4\SHAREROOT\MD-Howard\Mount Joy\dwg\SDP\506V3\02-SD_Grading.dwg 12/02/03 09:16:15 AM EST

SDP 04-06

RIVERSIDE ESTATES RESIDENTIAL DEVELOPMENT

VILLAGE OF CEDAR RIDGE RESIDENTIAL DEVELOPMENT

MONTPELIER RESEARCH PARK

HALLMARK RESIDENTIAL AREA

SANNER ROAD

JOHNS HOPKINS ROAD

WESTVACO CORPORATION BUILDING SITE

NORTH

DRAINAGE AREA "G"

FOREST AREA

PROJECT AREA BASIN G

BUILDING #31 AREA

ATHLETIC AREA

1

2

3

NORTH PARKING BALL FIELD ENTRANCE AREA

BASIN "A" EXISTING BASIN RESTRUCTURED F-02-90

SDP99-63

SDP# 90-219

SDP# 82-118

SDP# 87-03

SDP# 82-115

SDPF-02-77

SDP-03-174

100 YEAR FLOOD PLAIN

100 YEAR FLOOD PLAIN AND DRAINAGE EASEMENT

PARK AREA

HOWARD COUNTY, MARYLAND DRAINAGE EASEMENT

HOWARD COUNTY, MARYLAND DRAINAGE AND UTILITY EASEMENT

FIRST DRAINAGE AND UTILITY EASEMENT PLAT NO. 13,529

BOUNDARY EASEMENT OF WAY AND DRAINAGE EASEMENT AS ESTABLISHED BY CITY ORDINANCE FOR OCTOBER 1980

N 550250

E 1343800

N 549300

E 1343800

N85°14'54"W 862.11'

S21°52'35"W 1402.88'

N09°15'34"E 299.94'

N09°33'52"E 382.09'

N06°36'36"E 1037.03'

S16°30'44"W 1184.60'

S05°21'38"E 1064.80'

S05°21'38"E 1064.80'

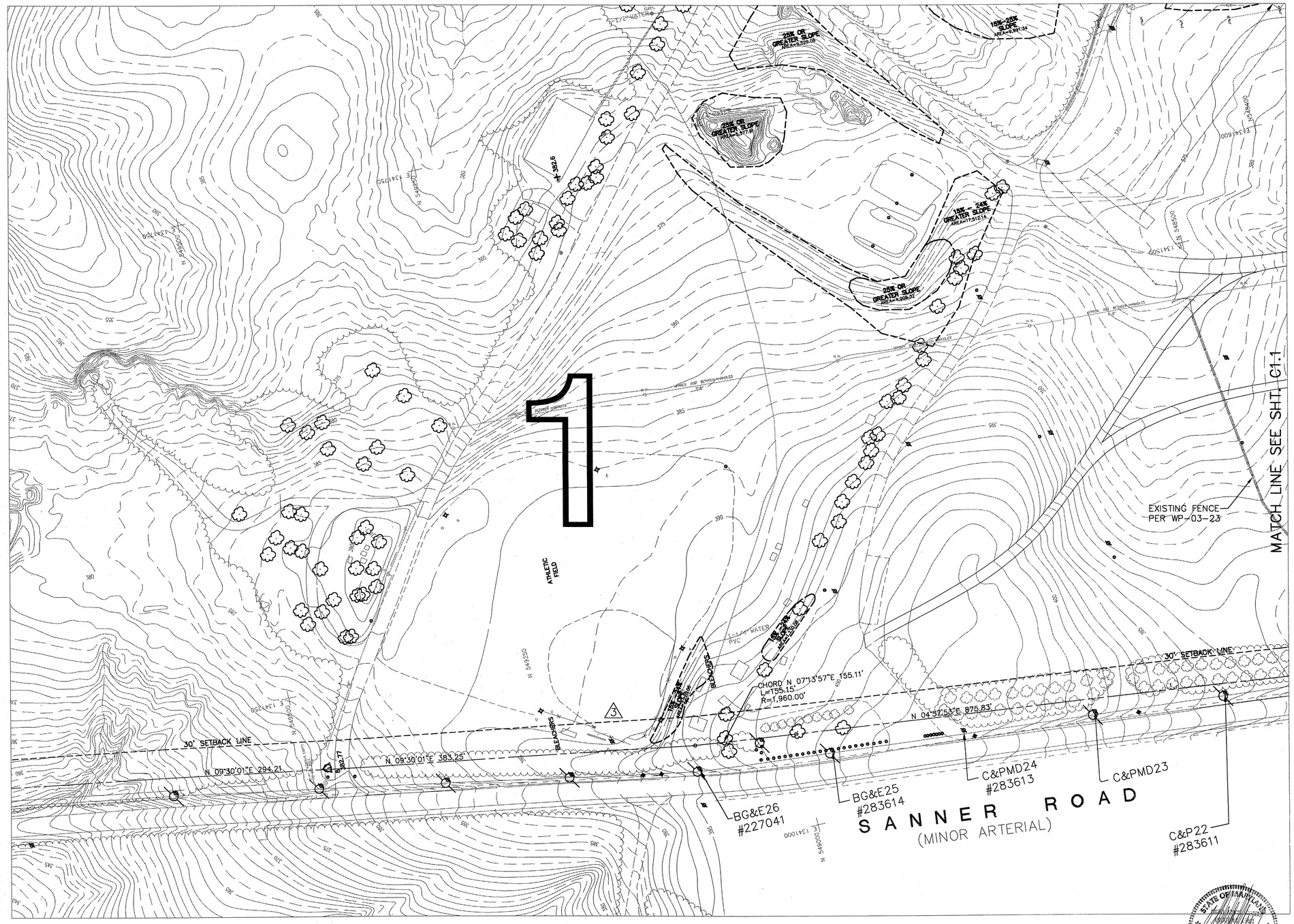
S16°30'44"W 1184.60'

S16°30'44"W 1184.60'

S05°21'38"E 1064.80

NOTE:

1. THERE ARE NO STREAM CHANNELS, 100-YEAR FLOOD PLAINS, NON-TIDAL WETLANDS WITHIN THE LIMIT OF DISTURBANCE SHOWN.
2. ALL BUILDINGS SHOWN ARE TO REMAIN UNDER THIS SDP, EXCEPT FOR THE TENNIS CLUBHOUSE (SEE SHEET C1.1).



NORTH

1 EXISTING CONDITIONS PLAN
NORTH PARKING
SCALE: 1"=50'

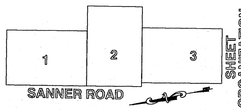
GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/30/04

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-3545 FAX (301) 881-0814
AMT FILE # 102-440



SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
1/26/04	COUNTY SET 3				
12/16/03	COUNTY SET 2				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

EXISTING CONDITION PLAN 1

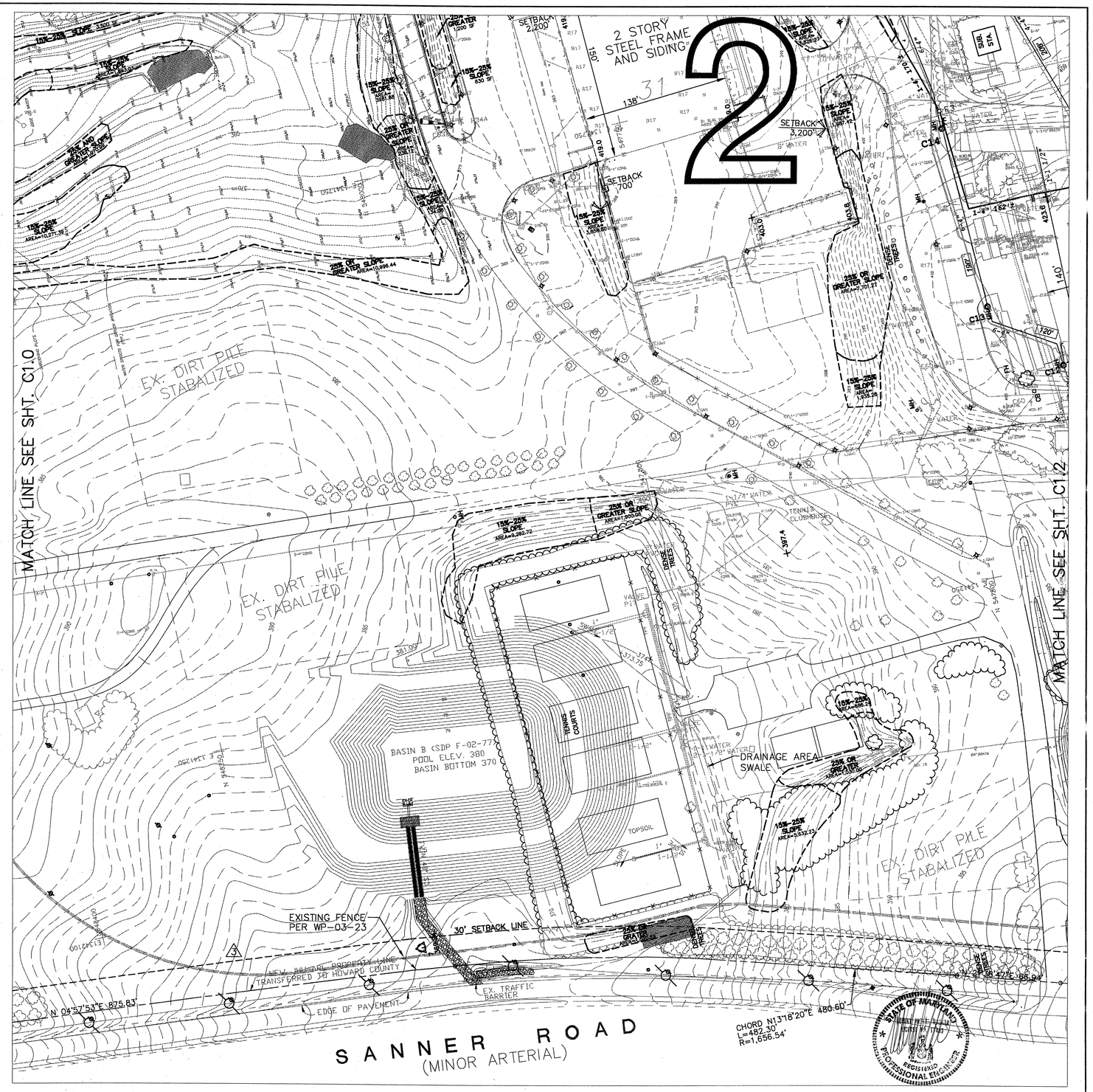
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

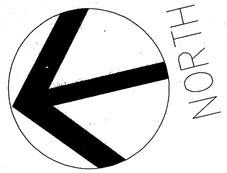
SCALE AS SHOWN

SHEET C1.0

SHEET 4 OF 48

SDP-04-66





1 EXISTING CONDITIONS PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/29/04
DIRECTOR	DATE 3/29/04

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 # 102-440

SANNER ROAD — 1 2 3 — SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
1/26/04	COUNTY SET 3				
12/16/03	COUNTY SET 2				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

EXISTING CONDITION PLAN 2

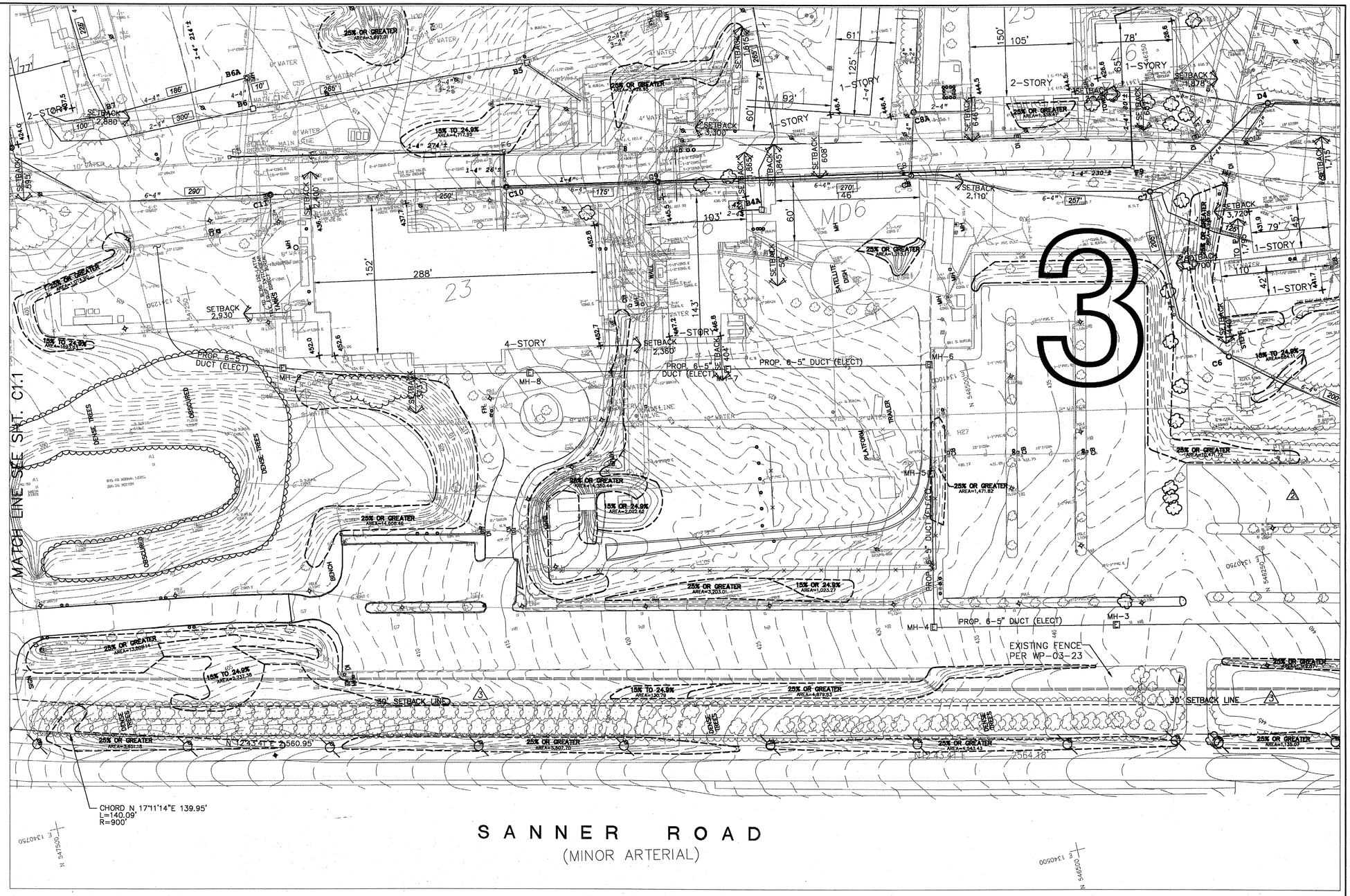
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

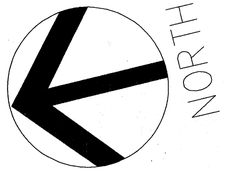
SCALE AS SHOWN

SHEET C1.1

SHEET 5 OF 48

SDP-04-66





1 EXISTING CONDITIONS PLAN
NORTH PARKING
SCALE: 1"=50'

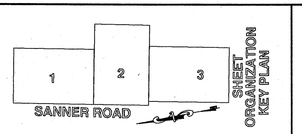
GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/30/04

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-4814
AMT FILE # 102-440



DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
1/26/04	COUNTY SET 3				
12/16/03	COUNTY SET 2				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

EXISTING CONDITION PLAN 3

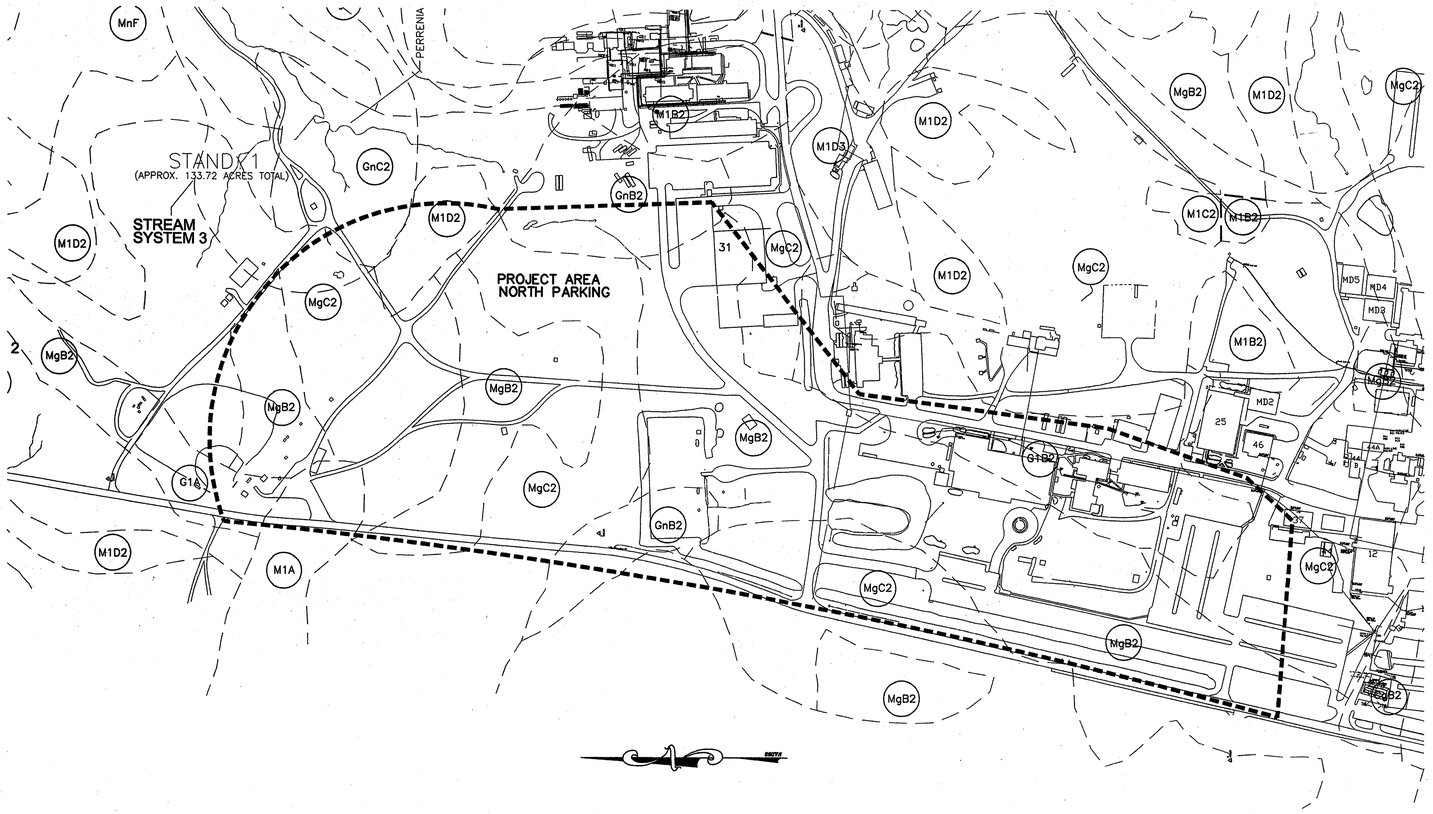
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET C1.2

SHEET 6 OF 48

SDP-04-66



1 PROJECT AREA SOIL MAP

SCALE: 1"=200'

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

SEDIMENT CONTROL & POND CONSTRUCTION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 3/16/04
PRINT NAME BELOW SIGNATURE

( ) BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

ROBERT A. WARNER — DATE 3/15/04
SIGNATURE OF ENGINEER

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

USDA-NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 200 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/26/04
DIRECTOR — DATE 3/26/04

STATE OF MARYLAND — ROBERT ARTHUR WARNER — LICENSE NO. 17633 — REGISTERED PROFESSIONAL ENGINEER

AMT
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 # 102-440

SHEET ORGANIZATION KEY PLAN
1 2 3
SANNER ROAD

DES: JK
DRN: PF
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

NORTH PARKING / BALL FIELD ENTRANCE

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 C1.3

SHEET 7 OF 48

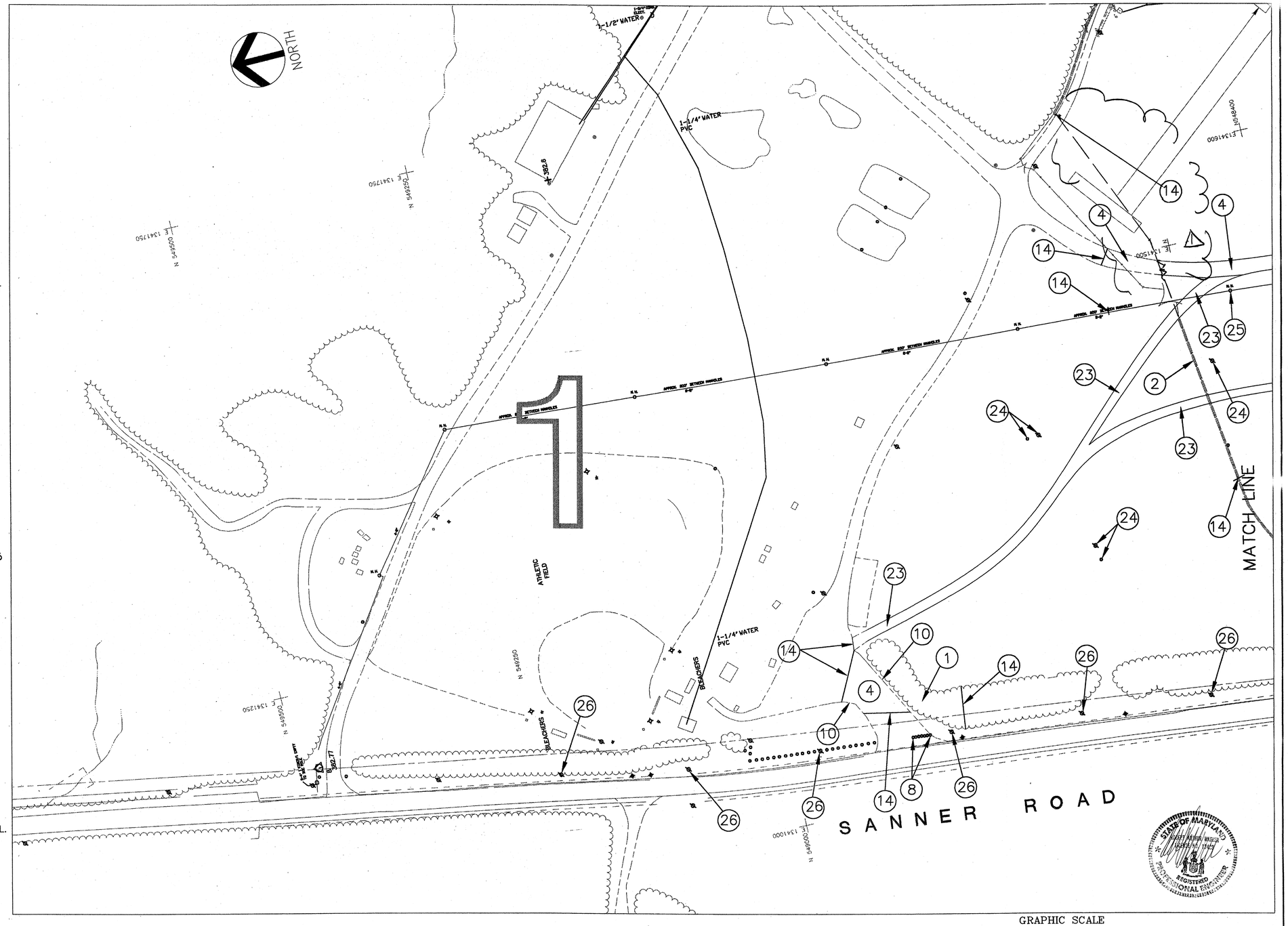
SDP-04-66

KEYED NOTED

1. EXISTING TREE, SHRUBS AND STUMPS TO BE REMOVED.
2. EXISTING STEEL PICKET AND CHAIN LINK FENCE WITH 2' WIDE REINFORCED CONCRETE MOWING STRIP AND GATE LIMIT TO BE REMOVED, REMOVE FENCE POST FOUNDATION (4' DEEP AND 36" DIAMETER) SALVAGE GATE LEAFS, HARDWARE, AND STEEL PICKET FENCE PANELS. PACKAGE AND TRANSPORT TO APL STORAGE AREA.
3. EXISTING INLET AND PIPE TO REMAIN.
4. EXISTING ASPHALT PAVEMENT TO BE REMOVED (SAW CUT EDGE OF EXISTING TO REMAIN).
5. EXISTING UN-COMPACTED DIRT PILES (TOPSOIL AND SUBSOIL) AREA TO BE REMOVED AND ARE AVAILABLE TO THE CONTRACTOR FOR USE FOR THIS PROJECT.
6. EXISTING TENNIS CLUBHOUSE (1-STORY STRUCTURE), CONCRETE FLOOR/ FOUNDATION, SEPTIC FIELD AND UTILITIES TO BE REMOVED.
7. EXISTING SIGNS AND SIGN POSTS TO BE REMOVED.
8. EXISTING WOOD AND STEEL POST BOLLARDS AND CONCRETE FOUNDATION (APPROXIMATELY 4" DEEP AND 36" DIAMETER) TO BE REMOVED.
9. EXISTING REINFORCED CONCRETE CURB AND GUTTER (APPROXIMATELY 12" THICK) AND SIDEWALKS (APPROXIMATELY 6" THICK) TO BE REMOVED.
10. EXISTING EDGE OF PAVEMENT.
11. EXISTING STREET LIGHT, CONDUIT AND FOUNDATION (54" SQUARE 6" DEEP REINFORCED CONCRETE) TO BE REMOVED IN ENTIRETY, EXISTING STREET LIGHT POLES AND FIXTURES TO BE SALVAGE, CLEAN, AND TRANSPORT TO JHU/APL STORAGE AREA.
12. EXISTING STREET LIGHT TO REMAIN.
13. EXISTING ELECTRICAL CONDUIT TO BE REMOVED, AND CONDUCTOR WIRES TO BE REMOVED TO THE BRAKER PANEL, OR LAST LIGHT POLE TO REMAIN.
14. LIMIT OF REMOVAL.
15. EXISTING WATER MAIN AND OR FIRE HYDRANT TO REMAIN.
16. EXISTING CONCRETE CURB AND GUTTER TO REMAIN.
17. EXISTING ANTENNAE RANGE STRUCTURES (WOOD, STEEL AND CONCRETE), FOUNDATIONS AND UTILITIES TO BE REMOVED.
18. EXISTING STORM DRAINAGE STRUCTURE AND PIPE TO BE REMOVED.
19. LIMIT OF EXISTING STORM DRAINAGE PIPE REMOVAL. PLUG END OF PIPE WITH 8" REINFORCXED (#4 BARS 12" O.C. BOTHWAYS) CONCRETE. 1
20. EXISTING 8 FEET HIGH CHAIN LINK FENCE AND POST CONCRETE FOUNDATIONS (12" DIAMETER, 4' DEEP) TO BE REMOVED.
21. EXISTING PIPE TO REMAIN.
22. EXISTING WATER SERVICE PIPES, VALVES, BOXES, AND IRRIGATION HEADS, PITS TO BE REMOVED AND A PRESSURE CAP INSTALLED TO HOWARD COUNTY STANDARDS AT LIMIT OF REMOVAL.
23. EXISTING GRAVEL DRIVE TO BE REMOVED.
24. EXISTING WOOD ELECTRIC POWER AND COMMUNICATION OVERHEAD SERVICE POLES AND WIRES TO BE REMOVED BACK TO THE BRAKER PANEL AND COMMUNICATION SWITCH PANEL.
25. EXISTING CONCRETE ENCASED COMMUNICATIONS DUCT BANK, MANHOLES AND HANDHOLES TO BE REMOVED AND END PLUGGED WITH CONCRETE (6" THICK AND EXTEND 12" OUTSIDE DUCT BANK).
26. EXISTING UTILITY POLES TO BE REMOVED BY OTHERS. CONTRACTOR SHALL COORDINATE WORK WITH OWNER OF POLES AND JHU/APL CONSTRUCTION.
27. EXISTING COMMUNICATIONS TOWER TO BE REMOVED BY OTHERS. EXISTING ONE STORY BUILDING AND TOWER FOUNDATION TO BE REMOVED.

NOTES:

1. DEMOLITION WORK SHALL FOLLOW THE PHASING SHOWN ON SHEETS #C1.20 AND #C1.21. DEMOLITION WORK SHALL NOT BE STARTED ON PHASE 2 WORK UNTIL PHASE 1 NEW WORK HAS BEEN COMPLETED AND APPROVED BY JHU/APL. DEMOLITION WORK SHALL NOT BE STARTED ON PHASE 3 WORK. UNTIL PHASE 2 NEW WORK HAS BEEN COMPLETED AND APPROVED BY JHU/APL.
2. DRAINAGE AREAS B AND G BASIN WORK SHALL BE COORDINATED WITH THESE DEMOLITION PLANS.



1 DEMOLITION PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/26/04
DIRECTOR	DATE 3/29/04

AMT
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 # 102-440

SHEET ORGANIZATION KEY PLAN
1 2 3
SANNER ROAD

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
11/24/03	ADDENDUM 1				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

DEMOLITION PLAN 1

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

SCALE AS SHOWN

SHEET C1.4

SHEET 8 OF 48

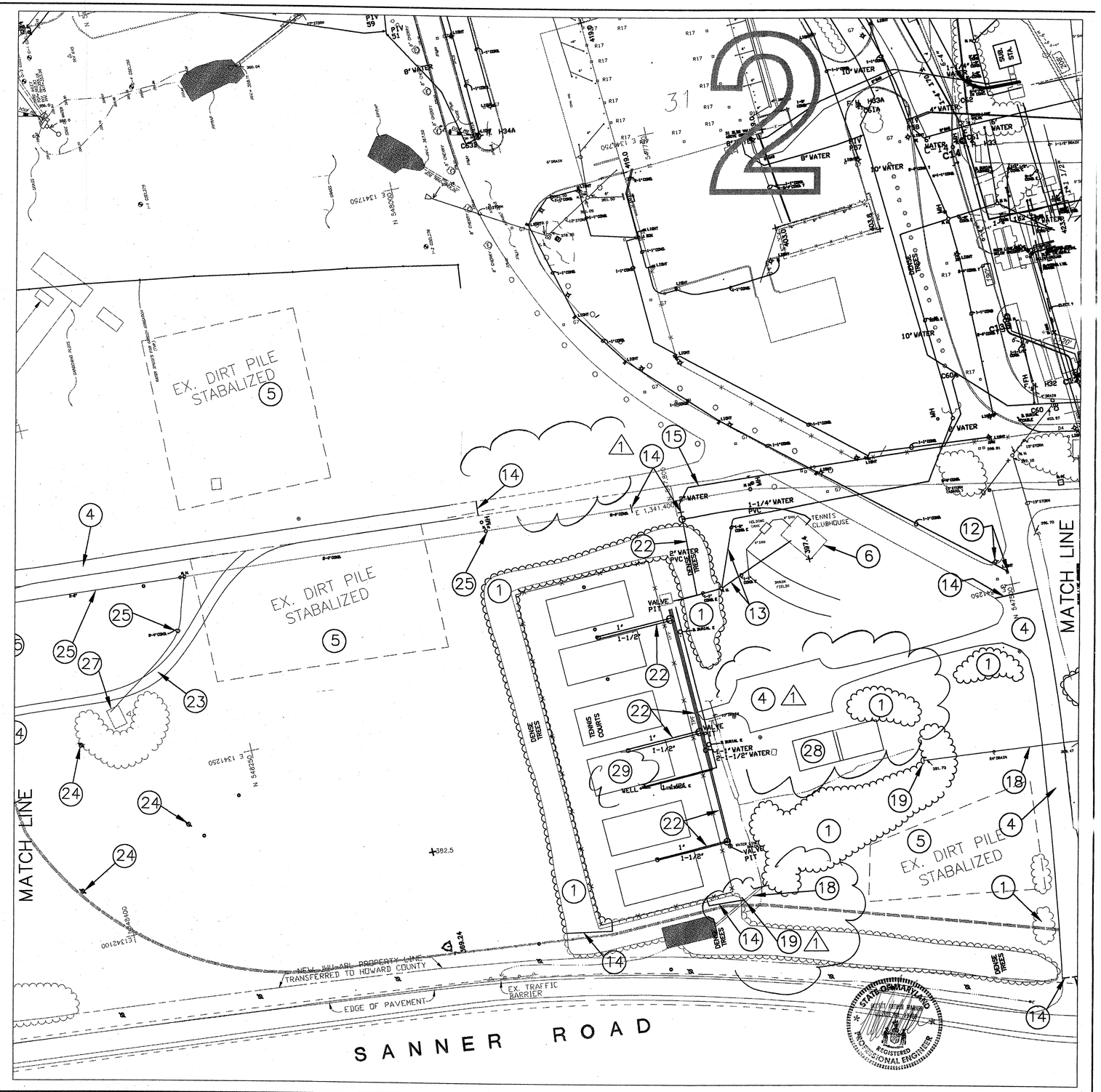
SDP-04-66

KEYED NOTED

1. EXISTING TREE, SHRUBS AND STUMPS TO BE REMOVED.
2. EXISTING STEEL PICKET AND CHAIN LINK FENCE WITH 2' WIDE REINFORCED CONCRETE MOWING STRIP AND GATE LIMIT TO BE REMOVED, REMOVE FENCE POST FOUNDATION (4' DEEP AND 36" DIAMETER) SALVAGE GATE LEAFS, HARDWARE, AND STEEL PICKET FENCE PANELS. PACKAGE AND TRANSPORT TO APL STORAGE AREA.
3. EXISTING INLET AND PIPE TO REMAIN.
4. EXISTING ASPHALT PAVEMENT TO BE REMOVED (SAW CUT EDGE OF EXISTING TO REMAIN).
5. EXISTING UN-COMPACTED DIRT PILES (TOPSOIL AND SUBSOIL) AREA TO BE REMOVED AND ARE AVAILABLE TO THE CONTRACTOR FOR USE FOR THIS PROJECT.
6. EXISTING TENNIS CLUBHOUSE (1-STORY STRUCTURE), CONCRETE FLOOR/ FOUNDATION, SEPTIC FIELD AND UTILITIES TO BE REMOVED.
7. EXISTING SIGNS AND SIGN POSTS TO BE REMOVED.
8. EXISTING WOOD AND STEEL POST BOLLARDS AND CONCRETE FOUNDATION (APPROXIMATELY 4" DEEP AND 36" DIAMETER) TO BE REMOVED.
9. EXISTING REINFORCED CONCRETE CURB AND GUTTER (APPROXIMATELY 12" THICK) AND SIDEWALKS (APPROXIMATELY 6" THICK) TO BE REMOVED.
10. EXISTING EDGE OF PAVEMENT.
11. EXISTING STREET LIGHT, CONDUIT AND FOUNDATION (54" SQUARE 6" DEEP REINFORCED CONCRETE) TO BE REMOVED, EXISTING STREET LIGHT POLES AND FIXTURES TO BE SALVAGE, CLEAN, AND TRANSPORT TO JHU/APL STORAGE AREA.
12. EXISTING STREET LIGHT TO REMAIN.
13. EXISTING ELECTRICAL CONDUIT TO BE REMOVED, AND CONDUCTOR WIRES TO BE REMOVED TO THE BRAKER PANEL, OR LAST LIGHT POLE TO REMAIN.
14. LIMIT OF REMOVAL.
15. EXISTING WATER MAIN AND OR FIRE HYDRANT TO REMAIN.
16. EXISTING CONCRETE CURB AND GUTTER TO REMAIN.
17. EXISTING ANTENNAE RANGE STRUCTURES (WOOD, STEEL AND CONCRETE), FOUNDATIONS AND UTILITIES TO BE REMOVED.
18. EXISTING STORM DRAINAGE STRUCTURE AND PIPE TO BE REMOVED.
19. LIMIT OF EXISTING STORM DRAINAGE PIPE REMOVAL, PLUG END OF PIPE WITH 8" REINFORCED (#4 BARS 12" O.C. BOTH WALLS) CONCRETE. △1
20. EXISTING 8 FEET HIGH CHAIN LINK FENCE AND POST CONCRETE FOUNDATIONS (12" DIAMETER, 4' DEEP) TO BE REMOVED.
21. EXISTING PIPE TO REMAIN.
22. EXISTING WATER SERVICE PIPES, VALVES, VALVE PIT, BOXES, AND IRRIGATION HEAD TO BE REMOVED AND A PRESSURE CAP INSTALLED TO HOWARD COUNTY STANDARDS AT LIMIT OF REMOVAL.
23. EXISTING GRAVEL DRIVE TO BE REMOVED.
24. EXISTING WOOD ELECTRIC POWER AND COMMUNICATION OVERHEAD SERVICE POLES AND WIRES TO BE REMOVED BACK TO THE BRAKER PANEL AND COMMUNICATION SWITCH PANEL.
25. EXISTING CONCRETE ENCASED COMMUNICATIONS DUCT BANK, MANHOLES AND HANDHOLES TO BE REMOVED AND END PLUGGED WITH CONCRETE (6" THICK AND EXTEND 12" OUTSIDE DUCT BANK).
26. EXISTING UTILITY POLES TO BE REMOVED BY OTHERS. CONTRACTOR SHALL COORDINATE WORK WITH OWNER OF POLES AND JHU/APL CONSTRUCTION.
27. EXISTING COMMUNICATIONS TOWER TO BE REMOVED BY OTHERS. EXISTING ONE STORY BUILDING AND TOWER FOUNDATION TO BE REMOVED.
28. EXISTING ASPHALT PAVEMENT (6" THICK), AND CONCRETE WALL (18" THICK, REINFORCED) WITH 4' DEEP, 48" WIDE BY 24" THICK CONTINOUS REINFORCED CONCRETE FOUNDATION TO BE REMOVED.
29. EXISTING TENNIS COURT, NETS, FENCES, BENCHES AND ALL SUBSURFACE FEATURES (FOUNDATIONS, UTILITIES, PIPES) ATTACHED TO SAME.
30. EXISTING GARDEN SPIGOTS IRRIGATION AND PIPE TO BE REMOVED, CAP END TO REMAIN HOWARD COUNTY STANDARD. △1

NOTES:

1. DEMOLITION WORK SHALL FOLLOW THE PHASING SHOWN ON SHEETS #C1.20 AND #C1.21. DEMOLITION WORK SHALL NOT BE STARTED ON PHASE 2 WORK UNTIL PHASE 1 NEW WORK HAS BEEN COMPLETED AND APPROVED BY JHU/APL. DEMOLITION WORK SHALL NOT BE STARTED ON PHASE 3 WORK. UNTIL PHASE 2 NEW WORK HAS BEEN COMPLETED AND APPROVED BY JHU/APL.
2. DRAINAGE AREAS B AND G BASIN WORK SHALL BE COORDINATED WITH THESE DEMOLITION PLANS.



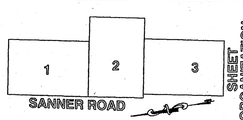
1 DEMOLITION PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/31/04

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-4814
AMT FILE # 102-440



SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
11/24/03	ADDENDUM 1 △1				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

DEMOLITION PLAN 2

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

SCALE AS SHOWN

SHEET C1.5

SHEET 9 OF 48

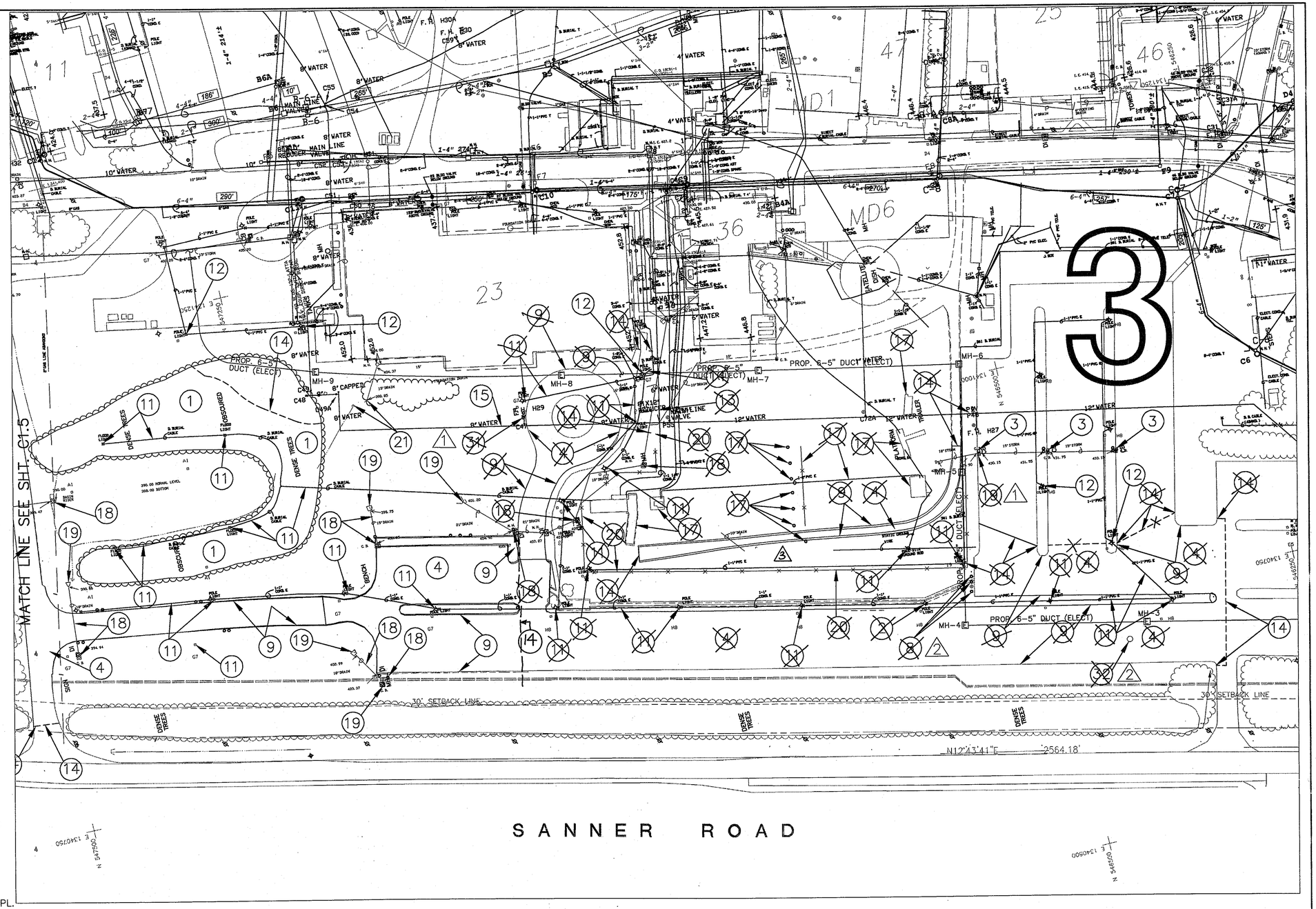
SDP-04-66

KEYED NOTED

1. EXISTING TREE, SHRUBS AND STUMPS TO BE REMOVED.
2. EXISTING STEEL PICKET AND CHAIN LINK FENCE WITH 2' WIDE REINFORCED CONCRETE MOWING STRIP AND GATE LIMIT TO BE REMOVED, REMOVE FENCE POST FOUNDATION (4' DEEP AND 36" DIAMETER) SALVAGE GATE LEAFS, HARDWARE, AND STEEL PICKET FENCE PANELS. PACKAGE AND TRANSPORT TO APL STORAGE AREA.
3. EXISTING INLET AND PIPE TO REMAIN.
4. EXISTING ASPHALT PAVEMENT TO BE REMOVED (SAW CUT EDGE OF EXISTING TO REMAIN).
5. EXISTING UN-COMPACTED DIRT PILES (TOPSOIL AND SUBSOIL) AREA TO BE REMOVED AND ARE AVAILABLE TO THE CONTRACTOR FOR USE FOR THIS PROJECT.
6. EXISTING TENNIS CLUBHOUSE (1-STORY STRUCTURE), CONCRETE FLOOR/ FOUNDATION, SEPTIC FIELD AND UTILITIES TO BE REMOVED.
7. EXISTING SIGNS AND SIGN POSTS TO BE REMOVED.
8. EXISTING WOOD AND STEEL POST BOLLARDS AND CONCRETE FOUNDATION (APPROXIMATELY 4" DEEP AND 36" DIAMETER) TO BE REMOVED.
9. EXISTING REINFORCED CONCRETE CURB AND GUTTER (APPROXIMATELY 12" THICK) AND SIDEWALKS (APPROXIMATELY 6" THICK) TO BE REMOVED.
10. EXISTING EDGE OF PAVEMENT.
11. EXISTING STREET LIGHT, CONDUIT AND FOUNDATION (54" SQUARE 6" DEEP REINFORCED CONCRETE) TO BE REMOVED, EXISTING STREET LIGHT POLES AND FIXTURES TO BE SALVAGE, CLEAN, AND TRANSPORT TO JHU/APL STORAGE AREA.
12. EXISTING STREET LIGHT TO REMAIN.
13. EXISTING ELECTRICAL CONDUIT TO BE REMOVED, AND CONDUCTOR WIRES TO BE REMOVED TO THE BRAKER PANEL, OR LAST LIGHT POLE TO REMAIN.
14. LIMIT OF REMOVAL.
15. EXISTING WATER MAIN AND OR FIRE HYDRANT TO REMAIN.
16. EXISTING CONCRETE CURB AND GUTTER TO REMAIN.
17. EXISTING ANTENNAE RANGE STRUCTURES (WOOD, STEEL AND CONCRETE), FOUNDATIONS AND UTILITIES TO BE REMOVED.
18. EXISTING STORM DRAINAGE STRUCTURE AND PIPE TO BE REMOVED.
19. LIMIT OF EXISTING STORM DRAINAGE PIPE REMOVAL.
20. EXISTING 8 FEET HIGH CHAIN LINK FENCE AND POST CONCRETE FOUNDATIONS (12" DIAMETER, 4' DEEP) TO BE REMOVED.
21. EXISTING PIPE TO REMAIN.
22. EXISTING WATER SERVICE PIPES, VALVES, BOXES, AND IRRIGATION HEADS TO BE REMOVED AND A PRESSURE CAP INSTALLED TO HOWARD COUNTY STANDARDS AT LIMIT OF REMOVAL.
23. EXISTING GRAVEL DRIVE TO BE REMOVED.
24. EXISTING WOOD ELECTRIC POWER AND COMMUNICATION OVERHEAD SERVICE POLES AND WIRES TO BE REMOVED BACK TO THE BRAKER PANEL AND COMMUNICATION SWITCH PANEL.
25. EXISTING CONCRETE ENCASED COMMUNICATIONS DUCT BANK, MANHOLES AND HANDHOLES TO BE REMOVED AND END PLUGGED WITH CONCRETE (6" THICK AND EXTEND 12" OUTSIDE DUCT BANK).
26. EXISTING UTILITY POLES TO BE REMOVED BY OTHERS. CONTRACTOR SHALL COORDINATE WORK WITH OWNER OF POLES AND JHU/APL CONSTRUCTION.
27. EXISTING COMMUNICATIONS TOWER TO BE REMOVED BY OTHERS. EXISTING ONE STORY BUILDING AND TOWER FOUNDATION TO BE REMOVED.
28. TO 30 SHEET #C1.5
31. REMOVE EXISTING FIRE HYDRANT AND RETAIN VALVE AND VALVE BOX.
32. EXISTING USGS MANHOLE FRAME AND COVER REMOVED AND SALVAGED AND REINSTALL IN SAME LOCATION FLUSH WITH GRADE. △2

NOTES:

1. DEMOLITION WORK SHALL FOLLOW THE PHASING SHOWN ON SHEETS #C1.20 AND #C1.21. DEMOLITION WORK SHALL NOT BE STARTED ON PHASE 2 WORK UNTIL PHASE 1 NEW WORK HAS BEEN COMPLETED AND APPROVED BY JHU/APL. DEMOLITION WORK SHALL NOT BE STARTED ON PHASE 3 WORK. UNTIL PHASE 2 NEW WORK HAS BEEN COMPLETED AND APPROVED BY JHU/APL.
2. DRAINAGE AREAS B AND G BASIN WORK SHALL BE COORDINATED WITH THESE DEMOLITION PLANS.



GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

NORTH

1 DEMOLITION PLAN
NORTH PARKING
SCALE: 1"=50'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT HB	DATE 3/26/04
DIRECTOR	DATE 3/26/04

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 HERCUNDER, WITHOUT THE EXPRESS WRITTEN CONSENT OF JHU/APL.

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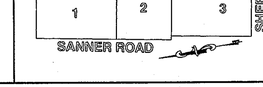


SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/17/05	RED-LINE SUBMISSION	△3			
3/9/04	COORDINATION	△2			
11/24/03	ADDENDUM 1	△1			

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

DEMOLITION PLAN 3

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

SCALE AS SHOWN

SHEET C1.6

SHEET 10 OF 48

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER

SDP-04-66

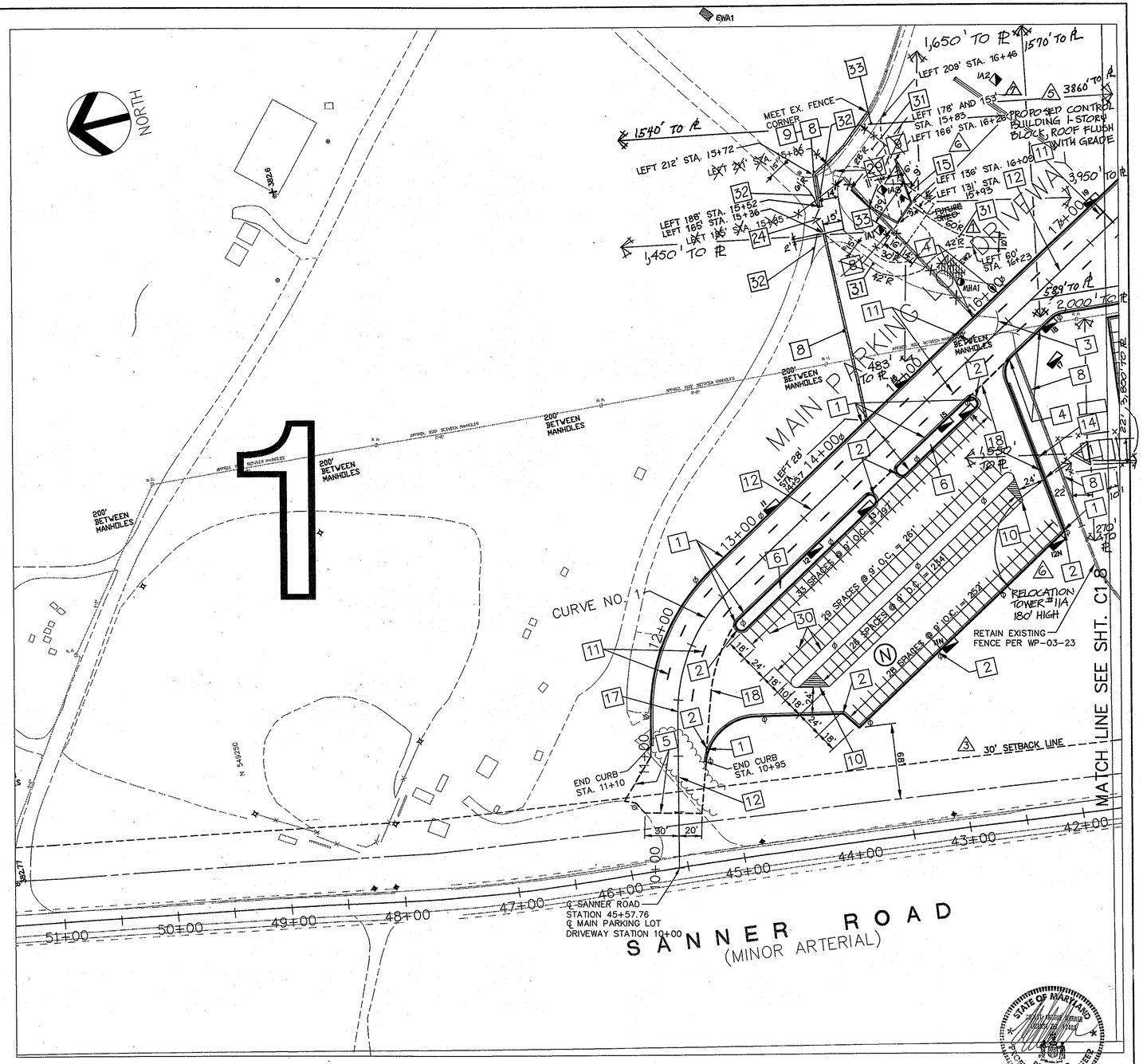
KEYED NOTES:

1. NEW 7" CONCRETE CURB AND GUTTER (HOWARD COUNTY NO. R3.01).
2. NEW 4" ROLLED CURB (HOWARD COUNTY NO. R-3.01 MOLIFIED).
3. NEW 54' OPENING SWING GATE, AEGIS II CLASSIC TYPE, STATION 15+85 MAIN PARKING DRIVE. (SEE DETAIL SHT #C-202).
4. LIMIT OF NEW CURB TYPE, TRANSITION FROM ROLLED TO 7" STANDARD OR EXISTING ON 5' BEFORE LIMIT.
5. LIMIT OF NEW HOT MIX ASPHALT PAVEMENT, MEET EXISTING FLUSH.
6. NEW 10' WIDE, 5" THICK CONCRETE WALK WITH 6"x6" W1.4XW1.4 WELDED WIRE FABRIC, BROOM FINISH; WHEN WALK ADJOINS CONCRETE CURB SET TOP TO TOP OF CURB AND SLOPE TOWARD CURB (2%), JOINTS: CONTRACTION 5' O.C., EXPANSION 30' O.C.
7. NEW POLE LIGHT ON NEW CONCRETE FOUNDATION (SEE DETAIL SHT #E-1.0).
8. NEW AEGIS II CLASSIC FENCE, REUSE SALVAGED PANEL (SEE DETAIL SHEET #C-201).
9. NEW CHAIN LINK FENCE 8' HIGH (SEE DETAIL SHEET #C-202). INSTALL NEW END POST WHERE FENCE MEETS NEW CLASSIC FENCE AND EXISTING CHAIN LINK FENCE, NOTE USED ON SHEET #C1.9 AND #C1.7.
10. NEW 4" WHITE PAINT STRIPING OUTLINE OF ISLAND AREA (10' WIDE WITH 5' RADIUS ENDS) WITH DIAGONAL STRIPES 2' O.C. LOT #N, AND DIAGONAL STRIPING SHOWN IN OTHER LOTS.
11. NEW 4" WHITE PAINT STRIPING 10' LONG AND 30' APART 12' FROM CENTERLINE (BOTH SIDES) ALONG DRIVE STATION 11+00 TO STATION 19+50.
12. CENTER LINE OF DRIVE AND NEW 4" WHITE PAINT STRIPING CONTINUOUS STATION 11+00 TO STATION 19+50 MAIN PARKING DRIVE.
13. NEW 4" WHITE PAINT STRIPING 10' APART FOR CROSS WALK AND PARKING LOT WALKS.
14. NEW TRAFFIC BARRIER SHA TYPE W BEAM (MD#660.03). WITH TYPE B TRAFFIC BARRIER END TREATMENT (EAST END) (MD#605.02). SET BACK FROM BACK OF CURB TO ACCOMMODATE NEW GATE.
15. NEW PRECAST CONCRETE MODULAR RETAINING WALL, FACE OF WALL 12" FROM EDGE OF EXISTING CONCRETE FENCE CURB. (SEE DETAIL SHEET #C2.8) NOTE USED SHEET #C1.8.
16. EXISTING CONCRETE CURB TO REMAIN, NOTE USED ON SHEET #C1.9.
17. CENTER LINE OF DRIVE AND NEW 4" WHITE PAINT STRIPING 10' LONG AND 30' APART: STATIONS 11+00 TO 14+00 CONNECTOR DRIVEWAY; STATIONS 21+00 TO 42+50 MAIN PARKING LOT DRIVEWAY.
18. NEW PARKING LOT PAVEMENT (HOWARD COUNTY #P-4) SHA 1 1/2" 12MM SUPERPAVE SURFACE, ON A TACK COAT, ON 6 1/2" 19 MM SURPERPAVE BASE HIGH ESAL, ON 4" GRADED AGGREGATE BASE. (DASHED LINE DESIGNATED EDGE OF PARKING PAVEMENT AND IS NOT PAINT). 4
19. SIDEWALK RAMP HOWARD COUNTY STANDARD TYPE A (#R4.01) ON CURB CURVE SECTION. NOTE USED ON SHEET #C1.8.
20. NEW 4" WHITE PAINT STRIPING 5' LONG AT 10' APART, 15' RIGHT OF CENTER LINE STATION 22+78 TO 23+80 MAIN PARKING LOT DRIVEWAY. 1
21. NEW HANDICAP PARKING SPACE SYMBOL PAINTED ON PAVEMENT (4 REQ.) STANDARD POLE AND SIGN FOR ONE HANDICAP CAR SPACE AND ONE 3 VAN SPACES (SHOWN ON SHEETS #C1.8 (LOT #V5), #C1.9 (LOT #F1), AND #C-202 PLAN DETAIL LOT #V5).
22. NEW 2" THICK ASPHALT SIDEWALK HMA 12MM SUPERPAVE SURFACE, MINIMUM 10' WIDE A JOINING CURB (SEE SECTION SHEET #C2.5).
23. NEW TRANSFORMER PAD BY OTHERS.
24. NEW 26' OPENING SWING GATE, AEGIS II CLASSIC TYPE FOR ACCESS DRIVE (SEE DETAIL SHEET #C-202).
25. NEW 10' WIDE 8" THICK CONCRETE WALK WITH #4 BARS 6" O.C. EACH WAY BROOM FINISH SLOPE AT 2% (MIN.) TOWARD TOP OF CURB, JOINTS: CONTRACTION 5' O.C., EXPANSION 30' O.C. AND AT EDGE WITH 5" THICK SIDEWALK.
26. NEW CONCRETE SLOPE LOCATED BETWEEN BACK OF NEW CURB AND EDGE OF PERIMETER FENCE CONCRETE CURB (SEE DETAIL SHEET #C2.2).
27. NEW HANDICAP RAMPS (2-30' AND ONE 10' RAMP, MAX. 8.33%, WITH 2-10 LONG LANDINGS) WITH HAND RAILS BOTH SIDES TO THE HOWARD COUNTY AND FEDERAL STANDARDS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR HANDRAIL LAYOUT AND FOUNDATION FOR APL ARRPOVAL BEFORE FABRICATION. HAND RAIL SHALL BE TUBULAR STEEL GALVANIZED AND COATED WITH AND EPOXY COATING SYSTEM, BLACK COLOR.
28. PAVEMENT WITH TRANSITION FROM 30' TO 25' FROM STATION 26+50 TO 28+00 AND ASSURE THAT POSITIVE CROSS SLOPE AND GUTTER ALIGNMENT IS FORMED TO DRAIN TO INLETS.
29. NEW 26' OPENING SWING GATE (SEE KEYED NOTE #2 THIS SHEET). 1
30. NEW 4" WHITE PAINT STRIPING, PARKING SPACES (TYP.) 3

NOTES:

1. NEW WORK SHALL FOLLOW THE PHASING SHOWN ON SHEETS #C1.20 AND #C1.21. NEW WORK SHALL NOT BE STARTED ON PHASE 2 WORK UNTIL PHASE 1 WORK HAS BEEN COMPLETED AND APPROVED BY JHU/APL. NEW WORK SHALL NOT BE STARTED ON PHASE 3 WORK UNTIL PHASE 2 WORK HAS BEEN COMPLETED AND APPROVED BY JHU/APL.
2. DRAINAGE AREAS B AND G BASINS WORK SHALL BE COORDINATED WITH THESE PLANS.
3. COORDINATE ALL WORK WITH TRADES CONTRACT.
4. KEY NOTES ARE REFERENCED ON THIS SHEET AND SHEETS #C1.8 AND #C1.9.
5. CONCRETE CURB AND GUTTER LOCATIONS TABULATED ON SHEET #C1.8 AND REFER TO FACE OF CURB LOCATIONS.
6. DRIVEWAY CROSS SECTIONS SHOWN ON SHEET #C2.2.

31. GRASS PAVEMENT SHALL BE SOD INSTALLED ON "GEO BLOCK SYSTEM" (PRESTO) ," GRASS PAVE" (INVISIBLE STRUCTRES, INC.), OR "GRASSCRETE" (BOMANITE). INSTALL AS PER MANUFACTURES SPECIFICATIONS AND DETAILS TO CARRY AN H-20 LOAD AASHTO.
32. LIMIT OF EXISTING ASPHALT PAVEMENT TO BE REMOVED SAWCUT EDGE. 5
33. EXISTING PAVEMENT TO REMAIN.



1 SITE GRADING AND DRAINAGE PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT		DATE 3/25/04
DIRECTOR		DATE 3/25/04

JHU/APL INTERNAL USE

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SANNER ROAD 1 2 3 SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/28/09	RED-LINE SUBMISSION	7	MW		
8/17/05	RED-LINE SUBMISSION	6			
6/25/04	RED-LINE SUBMISSION	5			
3/9/04	COORDINATION 4				
1/26/04	COUNTY SET 3				
12/16/03	COUNTY SET 2				
11/24/03	ADDENDUM 1 1				

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT #1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

LAYOUT SITE PLAN 1

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

SCALE AS SHOWN

SHEET C1.7

SHEET 11 OF 48

SDP-04-66

MAIN PARKING LOT DRIVEWAY FACE OF CURB LOCATION FROM ℄

STA. 32+39.06 220.58' LT TO STA. 32+39.06 275.42' LT
STA. 35+31.76 88.58' LT TO STA. 35+37.34 83.00' LT 5.58' RADIUS
STA. 35+31.76 143.42' LT TO STA. 35+37.34 149.00' LT 5.58' RADIUS
STA. 35+31.76 154.58' LT TO STA. 35+37.34 149.00' LT 5.58' RADIUS
STA. 35+31.77 11.42' LT TO STA. 35+37.34 17.00' LT 5.58' RADIUS
STA. 35+31.81 77.42' LT TO STA. 35+37.34 83.00' LT 5.58' RADIUS
STA. 35+32.60 22.58' LT TO STA. 35+37.34 17.00' LT 5.58' RADIUS
STA. 35+60.18 17.00' LT TO STA. 35+65.76 11.42' LT 5.58' RADIUS
STA. 35+60.18 17.00' LT TO STA. 35+65.76 22.58' LT 5.58' RADIUS
STA. 35+60.18 83.00' LT TO STA. 35+65.76 88.58' LT 5.58' RADIUS
STA. 35+60.18 83.00' LT TO STA. 35+65.89 77.42' LT 5.58' RADIUS
STA. 35+60.18 149.00' LT TO STA. 35+65.76 143.42' LT 5.58' RADIUS
STA. 35+60.18 149.00' LT TO STA. 35+65.76 154.58' LT 5.58' RADIUS
STA. 35+65.76 11.42' LT TO STA. 39+83.87 11.42' LT
STA. 35+65.76 22.58' LT TO STA. 39+83.86 22.58' LT
STA. 35+65.76 88.58' LT TO STA. 39+82.98 88.58' LT
STA. 35+65.76 143.42' LT TO STA. 39+82.08 143.42' LT
STA. 35+65.76 154.58' LT TO STA. 39+82.08 154.58' LT
STA. 35+65.89 77.42' LT TO STA. 39+82.98 77.42' LT
STA. 39+82.08 143.42' LT TO STA. 39+87.66 149.08' LT 5.58' RADIUS
STA. 39+82.08 154.58' LT TO STA. 39+87.66 149.08' LT 5.58' RADIUS
STA. 39+82.98 77.42' LT TO STA. 39+88.55 83.08' LT 5.58' RADIUS
STA. 39+82.98 88.58' LT TO STA. 39+88.55 83.08' LT 5.58' RADIUS
STA. 39+83.86 22.58' LT TO STA. 39+89.45 17.08' LT 5.58' RADIUS
STA. 39+83.87 11.42' LT TO STA. 39+89.45 17.08' LT 5.58' RADIUS
STA. 40+10.27 209.42' LT TO STA. 40+12.47 46.32' LT
STA. 40+12.47 46.32' LT TO STA. 40+18.05 40.82' LT 5.58' RADIUS
STA. 40+18.05 40.82' LT TO STA. 40+23.63 46.47' LT 5.58' RADIUS
STA. 40+23.51 55.88' LT TO STA. 40+23.63 46.47' LT
STA. 40+80.86 113.01' LT TO STA. 40+81.68 16.95' LT
STA. 40+81.68 16.95' LT TO STA. 40+88.19 11.42' LT 5.58' RADIUS
STA. 40+88.19 11.42' LT TO STA. 40+93.76 17.05' LT 5.58' RADIUS
STA. 40+92.95 113.08' LT TO STA. 40+93.76 17.05' LT
STA. 41+50.58 119.41' LT TO STA. 41+50.70 16.99' LT
STA. 41+50.70 16.99' LT TO STA. 41+57.22 11.42' LT 5.58' RADIUS
STA. 41+57.22 11.42' LT TO STA. 41+62.80 17.01' LT 5.58' RADIUS
STA. 41+62.68 119.43' LT TO STA. 41+62.80 17.01' LT
STA. 42+20.79 165.61' LT TO STA. 42+20.88 17.00' LT
STA. 42+20.88 17.00' LT TO STA. 42+26.46 11.42' LT 5.58' RADIUS
STA. 42+26.46 11.42' LT TO STA. 42+58.96 11.42' LT
STA. 42+58.96 11.42' LT TO STA. 42+64.54 17.00' LT 5.58' RADIUS
STA. 42+64.45 165.85' LT TO STA. 42+64.54 17.00' LT
STA. 31+03.79 13.39' RT TO STA. 40+13.84 11.42' RT

CONNECTOR DRIVEWAY FACE OF CURB LOCATION FROM ℄

STA. 11+42.48 69.62' LT TO STA. 11+59.87 13.88' LT 30.58' RADIUS
STA. 11+59.87 13.88' LT TO STA. 13+77.21 13.88' LT
STA. 13+77.21 13.88' LT TO STA. 14+05.77 34.71' LT 30.00' RADIUS
STA. 10+14.77 18.97' RT TO STA. 10+26.08 15.44' RT 20.00' RADIUS
STA. 10+26.08 15.44' RT TO STA. 10+79.85 15.36' RT
STA. 10+58.21 276.69' RT TO STA. 10+64.71 26.55' RT
STA. 10+58.21 276.69' RT TO STA. 11+33.47 367.07' RT
STA. 10+64.71 26.55' RT TO STA. 10+79.94 26.52' RT
STA. 10+79.85 15.36' RT TO STA. 10+85.44 21.09' RT 5.58' RADIUS
STA. 10+79.94 26.52' RT TO STA. 10+85.44 21.09' RT 5.58' RADIUS
STA. 11+17.47 305.98' RT TO STA. 11+22.92 311.70' RT 5.58' RADIUS
STA. 11+22.92 311.70' RT TO STA. 11+28.63 306.27' RT 5.58' RADIUS
STA. 11+24.61 31.03' RT TO STA. 11+30.18 25.87' RT 5.58' RADIUS
STA. 11+30.18 25.87' RT TO STA. 11+35.76 31.59' RT 5.58' RADIUS
STA. 11+33.47 367.07' RT TO STA. 13+27.57 372.11' RT
STA. 11+87.21 339.46' RT TO STA. 11+92.64 345.18' RT 5.58' RADIUS
STA. 11+92.64 345.18' RT TO STA. 11+98.36 339.75' RT 5.58' RADIUS
STA. 11+95.22 31.20' RT TO STA. 12+00.78 25.76' RT 5.58' RADIUS
STA. 12+00.78 25.76' RT TO STA. 12+06.37 31.49' RT 5.58' RADIUS
STA. 12+57.76 341.29' RT TO STA. 12+63.20 347.01' RT 5.58' RADIUS
STA. 12+63.20 347.01' RT TO STA. 12+68.92 341.58' RT 5.58' RADIUS
STA. 12+65.82 31.10' RT TO STA. 12+71.39 25.66' RT 5.58' RADIUS
STA. 12+71.39 25.66' RT TO STA. 12+76.98 31.39' RT 5.58' RADIUS
STA. 13+36.44 30.43' RT TO STA. 13+41.43 25.56' RT 5.00' RADIUS
STA. 13+42.59 25.56' RT TO STA. 13+47.60 30.69' RT 5.00' RADIUS
STA. 13+44.34 156.03' RT TO STA. 13+47.60 30.69' RT
STA. 13+60.97 90.72' RT TO STA. 13+66.47 85.12' RT 5.58' RADIUS
STA. 13+60.97 90.72' RT TO STA. 13+66.63 96.28' RT 5.58' RADIUS
STA. 13+63.41 19.93' RT TO STA. 13+68.91 14.49' RT 5.58' RADIUS
STA. 13+63.41 19.93' RT TO STA. 13+69.07 25.65' RT 5.58' RADIUS
STA. 13+68.91 14.49' RT TO STA. 14+34.90 13.54' RT
STA. 13+69.07 25.65' RT TO STA. 14+35.34 24.69' RT
STA. 14+34.90 13.54' RT TO STA. 14+40.56 19.26' RT 5.58' RADIUS
STA. 14+35.34 24.69' RT TO STA. 14+40.56 19.26' RT 5.58' RADIUS

UPPER DRIVEWAY FACE OF CURB LOCATION FROM ℄

STA. 10+00.00 23.42' LT TO STA. 10+67.52 26.15' LT
STA. 10+67.52 26.15' LT TO STA. 10+87.67 26.27' LT 50.00' RADIUS
STA. 10+87.67 26.27' LT TO STA. 11+75.00 27.29' LT
STA. 11+72.10 8.94' RT TO STA. 11+75.00 8.77' RT

MAIN PARKING LOT DRIVEWAY FACE OF CURB LOCATION FROM ℄

STA. 12+60.41 23.42' LT TO STA. 19+50.00 23.42' LT
STA. 20+54.77 81.32' LT TO STA. 20+96.90 14.42' LT 50.00' RADIUS
STA. 20+96.90 14.42' LT TO STA. 23+23.57 13.81' LT
STA. 23+23.57 13.81' LT TO STA. 23+85.11 14.48' LT 75.58' RADIUS
STA. 23+85.11 14.48' LT TO STA. 24+68.62 39.48' LT
STA. 24+62.49 60.80' LT TO STA. 24+69.33 46.64' LT
STA. 24+62.49 60.80' LT TO STA. 30+28.85 275.92' LT
STA. 24+68.62 39.48' LT TO STA. 24+69.33 46.64' LT 5.00' RADIUS
STA. 24+80.97 24.99' LT TO STA. 24+84.25 19.18' LT 5.58' RADIUS
STA. 24+80.97 24.99' LT TO STA. 24+86.50 29.98' LT 5.58' RADIUS
STA. 24+84.25 19.18' LT TO STA. 26+60.44 15.00' LT
STA. 24+86.50 29.98' LT TO STA. 26+60.43 26.16' LT
STA. 25+08.62 59.52' LT TO STA. 25+09.86 52.49' LT 5.00' RADIUS
STA. 25+08.62 59.52' LT TO STA. 30+23.17 221.08' LT
STA. 25+09.86 52.49' LT TO STA. 25+10.93 52.06' LT
STA. 25+10.93 52.06' LT TO STA. 25+17.22 54.35' LT 5.00' RADIUS
STA. 25+17.22 54.35' LT TO STA. 30+23.15 209.92' LT
STA. 25+81.62 58.62' LT TO STA. 25+84.16 51.64' LT 5.00' RADIUS
STA. 25+81.62 58.62' LT TO STA. 30+30.27 155.08' LT
STA. 25+84.16 51.64' LT TO STA. 25+85.24 51.20' LT
STA. 25+85.24 51.20' LT TO STA. 25+91.52 53.49' LT 5.00' RADIUS
STA. 25+91.52 53.49' LT TO STA. 30+30.86 143.92' LT
STA. 26+56.86 59.50' LT TO STA. 26+59.40 52.52' LT 5.00' RADIUS

NOTES:

1. DRIVEWAY CROSS SECTION SHOWN ON SHEET #C2.2.
2. KEYED NOTES SYMBOLS SHOWN DEFINED ON SHEET #C1.7.
3. REFERENCES TO CURB FROM CETER LINE, "RIGHT" AND "LEFT" ARE LOOKING UP-STATION ALONG THE CENTER LINE PERPENDICULAR TO CENTER LINE.
4. CURB LOCATIONS SHOWN ON THIS SHEET AND SHEETS #C1.7 AND #C1.9.

MAIN PARKING LOT DRIVEWAY FACE OF CURB LOCATION

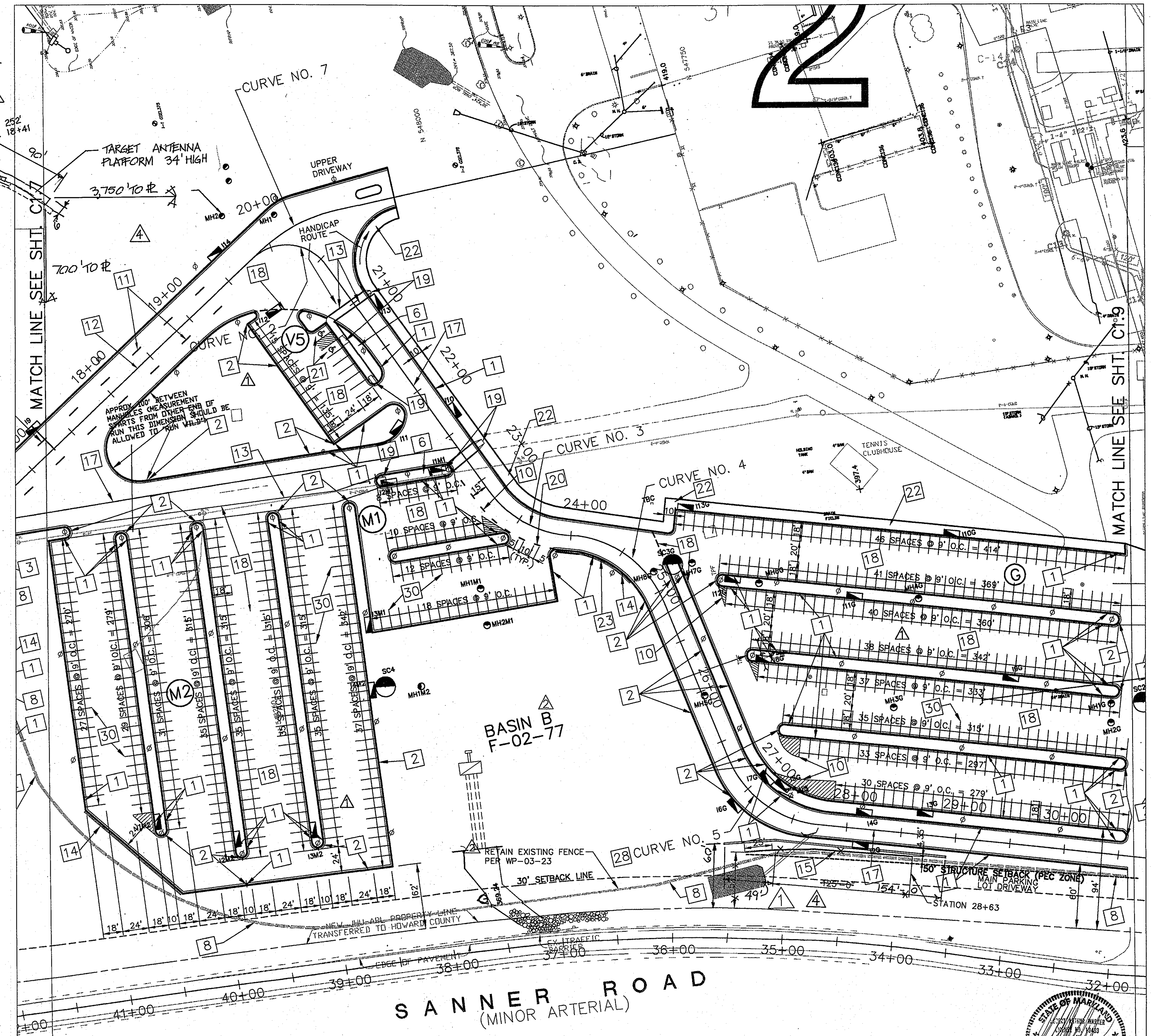
STA. 11+10.00 23.42' LT TO STA. 11+38.56 23.42' LT
STA. 11+38.56 23.42' LT TO STA. 12+60.41 23.42' LT 173.42' RADIUS
STA. 12+60.41 23.42' LT TO STA. 19+50.00 23.42' LT
STA. 10+95.00 23.76' RT TO STA. 11+34.99 68.36' RT 45.58' RADIUS
STA. 12+35.23 27.86' RT TO STA. 12+41.15 34.21' RT 5.58' RADIUS
STA. 12+35.23 27.86' RT TO STA. 12+42.84 23.13' RT 5.58' RADIUS
STA. 12+42.84 23.13' RT TO STA. 14+02.42 24.00' RT
STA. 12+55.17 148.47' RT TO STA. 12+56.60 166.74' RT
STA. 12+56.60 166.74' RT TO STA. 15+06.05 166.74' RT
STA. 14+02.42 24.00' RT TO STA. 14+08.00 29.58' RT 5.58' RADIUS
STA. 14+02.42 35.16' RT TO STA. 14+08.00 29.58' RT 5.58' RADIUS
STA. 14+35.89 29.58' RT TO STA. 14+41.41 35.16' RT 5.58' RADIUS
STA. 14+35.89 29.58' RT TO STA. 14+41.44 24.00' RT 5.58' RADIUS
STA. 14+41.44 24.00' RT TO STA. 15+26.50 24.00' RT
STA. 15+06.05 166.74' RT TO STA. 15+62.29 36.09' RT
STA. 15+26.50 24.00' RT TO STA. 15+31.50 29.00' RT 5.00' RADIUS
STA. 15+26.50 35.16' RT TO STA. 15+31.50 30.16' RT 5.00' RADIUS
STA. 15+31.50 29.00' RT TO STA. 15+31.50 30.16' RT
STA. 15+62.29 36.09' RT TO STA. 15+80.66 24.00' RT 20.00' RADIUS
STA. 15+80.66 24.00' RT TO STA. 16+28.62 24.00' RT
STA. 16+28.62 24.00' RT TO STA. 16+39.93 27.51' RT 20.00' RADIUS

MAIN PARKING LOT DRIVEWAY FACE OF CURB LOCATION FROM ℄

STA. 26+56.86 59.50' LT TO STA. 30+42.55 89.08' LT
STA. 26+59.40 52.52' LT TO STA. 26+60.48 52.08' LT
STA. 26+60.43 26.16' LT TO STA. 27+84.53 23.08' LT 89.12' RADIUS
STA. 26+60.44 15.00' LT TO STA. 27+84.37 11.92' LT 100.29' RADIUS
STA. 26+60.48 52.08' LT TO STA. 26+67.63 54.36' LT 5.00' RADIUS
STA. 26+67.63 54.36' LT TO STA. 30+43.65 77.92' LT
STA. 27+84.37 11.92' LT TO STA. 30+50.66 11.92' LT
STA. 27+84.37 23.08' LT TO STA. 30+49.60 23.08' LT
STA. 30+23.15 209.92' LT TO STA. 30+29.10 215.87' LT 5.60' RADIUS
STA. 30+23.17 221.08' LT TO STA. 30+29.10 215.87' LT 5.59' RADIUS
STA. 30+26.09 301.95' LT TO STA. 30+28.85 275.92' LT
STA. 30+30.27 155.08' LT TO STA. 30+36.11 149.87' LT 5.59' RADIUS
STA. 30+30.86 143.92' LT TO STA. 30+36.11 149.87' LT 5.60' RADIUS
STA. 30+42.55 89.08' LT TO STA. 30+48.89 84.55' LT 5.68' RADIUS
STA. 30+43.65 77.92' LT TO STA. 30+48.89 84.55' LT 5.60' RADIUS
STA. 30+49.60 23.08' LT TO STA. 30+55.90 18.54' LT 5.68' RADIUS
STA. 30+50.16 295.62' LT TO STA. 30+52.91 269.66' LT
STA. 30+50.66 11.92' LT TO STA. 30+55.90 18.54' LT 5.60' RADIUS
STA. 30+52.91 269.66' LT TO STA. 32+39.06 275.42' LT
STA. 30+59.30 209.58' LT TO STA. 30+64.26 215.72' LT 5.58' RADIUS
STA. 30+59.30 209.58' LT TO STA. 30+65.44 204.62' LT 5.58' RADIUS
STA. 30+64.26 215.72' LT TO STA. 32+39.06 220.58' LT
STA. 30+65.44 204.62' LT TO STA. 40+10.27 209.42' LT
STA. 30+71.24 144.48' LT TO STA. 30+76.20 150.61' LT 5.58' RADIUS
STA. 30+71.24 144.48' LT TO STA. 30+77.38 139.52' LT 5.58' RADIUS
STA. 30+76.20 150.61' LT TO STA. 35+31.76 154.58' LT
STA. 30+77.38 139.52' LT TO STA. 35+31.76 143.42' LT
STA. 30+78.21 78.84' LT TO STA. 30+83.17 84.98' LT 5.58' RADIUS
STA. 30+78.21 78.84' LT TO STA. 30+84.35 73.88' LT 5.58' RADIUS
STA. 30+83.17 84.98' LT TO STA. 35+31.76 88.58' LT
STA. 30+84.35 73.88' LT TO STA. 35+31.81 77.42' LT
STA. 30+85.18 13.21' LT TO STA. 30+90.14 19.35' LT 5.58' RADIUS
STA. 30+85.18 13.21' LT TO STA. 30+91.32 8.25' LT 5.58' RADIUS
STA. 30+90.14 19.35' LT TO STA. 35+32.60 22.58' LT
STA. 30+91.32 8.25' LT TO STA. 35+31.77 11.42' LT

MAIN PARKING LOT DRIVEWAY FACE OF CURB LOCATION FROM ℄

STA. 17+84.11 23.42' RT TO STA. 18+98.99 23.42' RT
STA. 18+98.99 23.42' RT TO STA. 19+46.03 35.09' RT 100.58' RADIUS
STA. 19+43.86 41.80' RT TO STA. 19+46.03 35.09' RT 3.58' RADIUS
STA. 19+43.86 41.80' RT TO STA. 20+59.42 90.42' RT
STA. 20+59.42 90.42' RT TO STA. 21+94.42 90.42' RT
STA. 20+80.18 39.83' RT TO STA. 20+83.89 49.58' RT 5.58' RADIUS
STA. 20+80.18 39.83' RT TO STA. 21+47.01 14.42' RT 100.58' RADIUS
STA. 20+83.89 49.58' RT TO STA. 20+94.84 49.58' RT
STA. 20+94.84 49.58' RT TO STA. 21+00.42 44.00' RT 5.58' RADIUS
STA. 21+00.42 31.58' RT TO STA. 21+66.84 31.58' RT
STA. 21+00.42 44.00' RT TO STA. 21+00.42 31.58' RT
STA. 21+47.01 14.42' RT TO STA. 21+61.84 14.42' RT
STA. 21+61.84 14.42' RT TO STA. 21+72.42 25.00' RT 10.58' RADIUS
STA. 21+66.84 31.58' RT TO STA. 21+72.42 26.00' RT 5.58' RADIUS
STA. 21+72.42 26.00' RT TO STA. 21+72.42 25.00' RT
STA. 21+94.42 90.42' RT TO STA. 21+94.42 30.55' RT
STA. 21+94.42 90.42' RT TO STA. 22+12.41 23.00' RT 10.58' RADIUS
STA. 22+68.60 18.58' RT TO STA. 22+76.25 16.09' RT 5.58' RADIUS
STA. 22+76.25 16.09' RT TO STA. 22+78.76 23.19' RT 5.58' RADIUS
STA. 23+44.15 19.18' RT TO STA. 23+50.60 19.16' RT 5.58' RADIUS
STA. 23+50.42 27.25' RT TO STA. 23+50.60 19.16' RT 5.58' RADIUS
STA. 23+84.86 21.63' RT TO STA. 23+87.47 14.22' RT 5.62' RADIUS
STA. 23+84.86 21.63' RT TO STA. 23+94.37 60.86' RT
STA. 23+87.47 14.22' RT TO STA. 24+09.11 14.30' RT
STA. 24+09.11 14.30' RT TO STA. 24+12.61 14.27' RT 60.73' RADIUS
STA. 24+12.61 14.27' RT TO STA. 25+10.80 15.00' RT 88.21' RADIUS
STA. 25+10.80 15.00' RT TO STA. 26+70.92 15.14' RT
STA. 26+70.92 15.14' RT TO STA. 27+64.19 12.42' RT 99.73' RADIUS
STA. 27+64.19 12.42' RT TO STA. 30+41.00 11.92' RT
STA. 30+41.00 11.92' RT TO STA. 30+60.18 29.41' RT 20.78' RADIUS
STA. 30+85.41 32.71' RT TO STA. 31+03.79 13.39' RT 20.58' RADIUS



NORTH

1 SITE GRADING AND DRAINAGE PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/4
DIRECTOR	DATE 3/31/04

AMT
A. MORTONTHOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 102-440

SHEET ORGANIZATION KEY PLAN: 1, 2, 3 — SANNER ROAD

	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
DES: JK	8/17/05	RED-LINE SUBMISSION	4			
DRN: RLP	6/25/04	RED-LINE SUBMISSION	3			
CHK: BW	12/16/03	COUNTY SET 2				
	11/24/03	ADDENDUM 1 1				
DATE: 10/10/03						

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

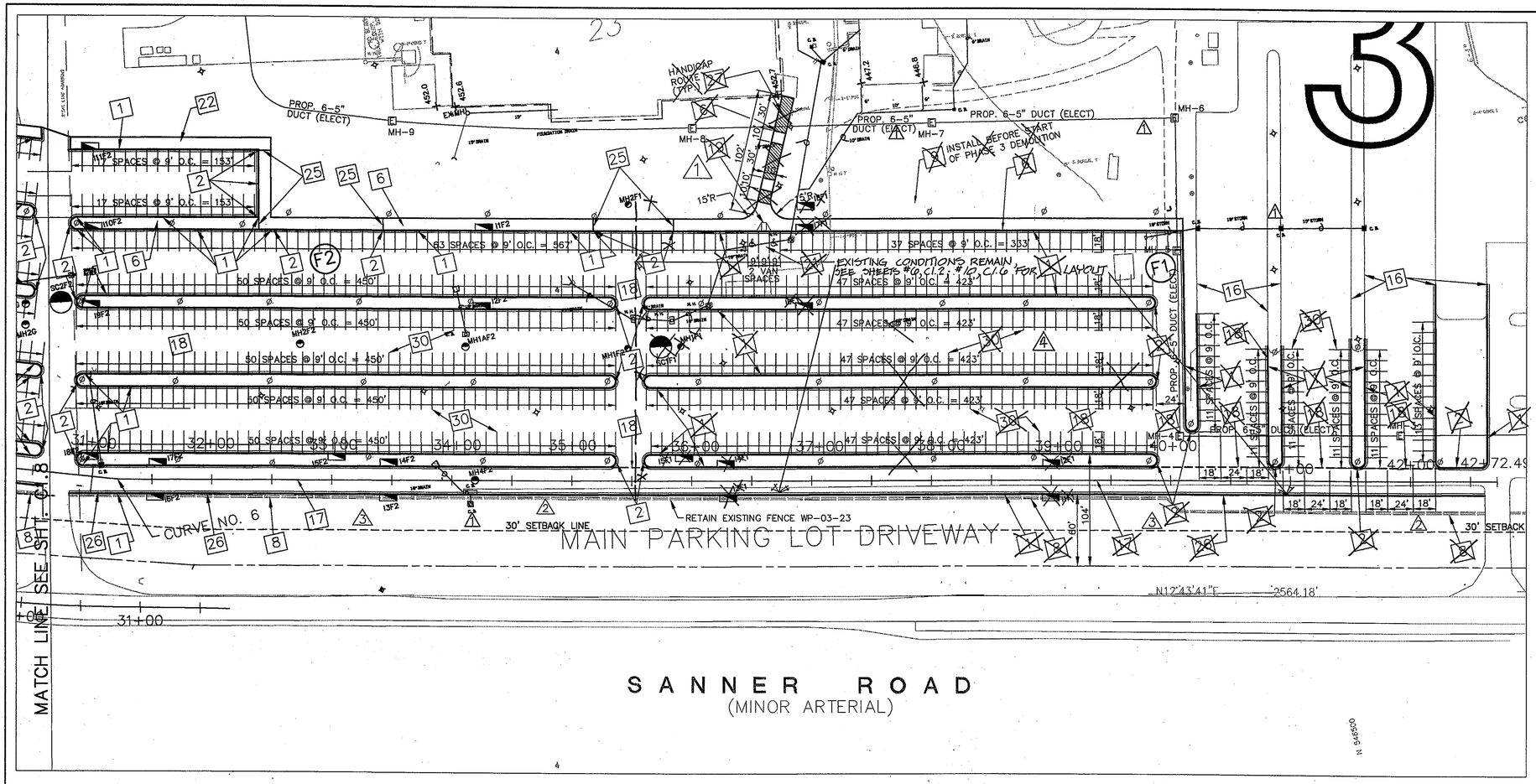
APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

LAYOUT SITE PLAN 2

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

SCALE AS SHOWN
SHEET C1.8
SHEET 12 OF 48

SDP-04-66



STORM SEWER COORDINATES

STRUC. NO.	EASTING	NORTHING	COMMENT
~~I1F1~~	~~1340730.49~~	~~546713.70~~	
~~I2F1~~	~~1340752.83~~	~~546708.71~~	
~~I3F1~~	~~1340790.31~~	~~546976.24~~	
~~I4F1~~	~~1340812.63~~	~~546974.06~~	
~~I5F1~~	~~1340825.70~~	~~547005.67~~	
~~I7F1~~	~~1340991.42~~	~~546886.00~~	
~~I8F1~~	~~1340920.25~~	~~546882.08~~	
~~MHIIF1~~	~~1340918.68~~	~~546980.29~~	
~~SC1F1~~	~~1340920.80~~	~~546995.24~~	
~~I6F1~~	~~1341008.83~~	~~546801.53~~	
MH2F1	1341044.77	546996.39	
MH1F2	1340926.81	547023.71	
MH1AF2	1340954.54	547156.93	
MH2F2	1340990.35	547289.66	
I3F2	1340852.41	547252.62	
I4F2	1340875.04	547245.83	
I5F2	1340898.23	547287.17	
I6F2	1340895.97	547441.19	
I7F2	1340915.77	547434.39	
I8F2	1340934.44	547491.02	
I1F2	1341050.38	547127.65	
I2F2	1340986.49	547143.87	
I11F2	1341182.79	547420.45	
I10F2	1341124.31	547443.87	
I9F2	1341059.22	547460.66	
SC2F2	1341065.33	547476.95	
MH1G	1341073.42	547505.88	
MH2G	1341054.96	547510.06	
MH3G	1341113.11	547700.93	
MH5G	1341163.06	547866.63	
NOT USED	NOT USED	NOT USED	
I2G	1341003.19	547764.73	
I3G	1341005.73	547691.95	
I4G	1341018.45	547744.37	
I5G	1341062.18	547810.54	
I6G	1341053.76	547856.26	
I7G	1341083.53	547829.38	
I8G	1341184.14	547798.87	
I9G	1341115.67	547584.86	
I10G	1341254.17	547608.81	
MH4G	1341205.66	547656.15	
I11G	1341217.89	547707.56	
MH6G	1341251.72	547794.88	
I12G	1341258.65	547812.84	
I13G	1341332.03	547840.17	
MH7G	1341286.25	547850.46	
SC3G	1341288.41	547867.51	
MH8G	1341285.05	547886.33	
MH1M1	1341306.37	548044.22	
MH2M1	1341272.31	548046.16	
I1N	1341187.18	548624.01	
I2N	1341252.42	548509.44	
I1M2	1341160.47	548382.57	
I2M2	1341122.13	548315.21	
I3M2	1341110.06	548245.46	
I1M1	1341421.25	548057.52	
I2M1	1341418.64	548110.28	
I3M1	1341293.05	548150.40	
I4M2	1341235.07	548168.37	
SC4M2	1341235.42	548149.97	
MH1M2	1341229.53	548116.29	
EW1M1	1341235.25	548048.26	
EW1M2	1341225.97	548108.63	
I1	1341338.94	548747.38	
I2	1341294.40	548719.17	
I3	1341318.59	548674.00	
I4	1341382.09	548558.92	
I5	1341375.48	548581.91	
I6	1341421.07	548608.74	
I7	1341408.89	548474.70	
I8	1341443.46	548472.51	
I9	1341540.16	548410.75	
I10	1341470.72	548031.25	
I11	1341466.84	548083.42	
I12	1341594.66	548173.28	
I14	1341659.13	548211.97	
I13	1341582.73	548075.53	
MH1	1341682.06	548151.33	
MH2	1341691.48	548198.49	
EW1	1341496.76	548537.10	

NOTES:

1. NEW WORK SHALL FOLLOW THE PHASING SHOWN ON SHEETS #C1.20 AND #C1.21. NEW WORK SHALL NOT BE STARTED ON PHASE 2 WORK UNTIL PHASE 1 WORK HAS BEEN COMPLETED AND APPROVED BY JHU/APL. NEW WORK SHALL NOT BE STARTED ON PHASE 3 WORK UNTIL PHASE 2 WORK HAS BEEN COMPLETED AND APPROVED BY JHU/APL.
2. DRAINAGE AREAS B AND G BASINS WORK SHALL BE COORDINATED WITH THESE PLANS.
3. COORDINATE ALL WORK WITH TRADES CONTRACT.
4. KEY NOTES ARE REFERENCED ON THIS SHEET AND SHEETS #C1.8 AND #C1.9.
5. CONCRETE CURB AND GUTTER LOCATIONS TABULATED ON SHEET #C1.8 AND REFER TO FACE OF CURB LOCATIONS.
6. DRIVEWAY CROSS SECTIONS SHOWN ON SHEET #C2.2.

1 SITE GRADING AND DRAINAGE PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

NORTH

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/30/04
DIRECTOR — DATE 3/31/04

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 280, ROCKVILLE MD 20852
TEL (301) 881-3565 FAX (301) 881-0814
AMT FILE # 102-440

SANNER ROAD — SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/17/05	RED-LINE SUBMISSION	4			
1/26/04	COUNTY SET	3			
12/16/03	COUNTY SET	2			
11/24/03	ADDENDUM 1	1			

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

LAYOUT SITE PLAN 3

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

SCALE AS SHOWN

SHEET C1.9

SHEET 13 OF 48

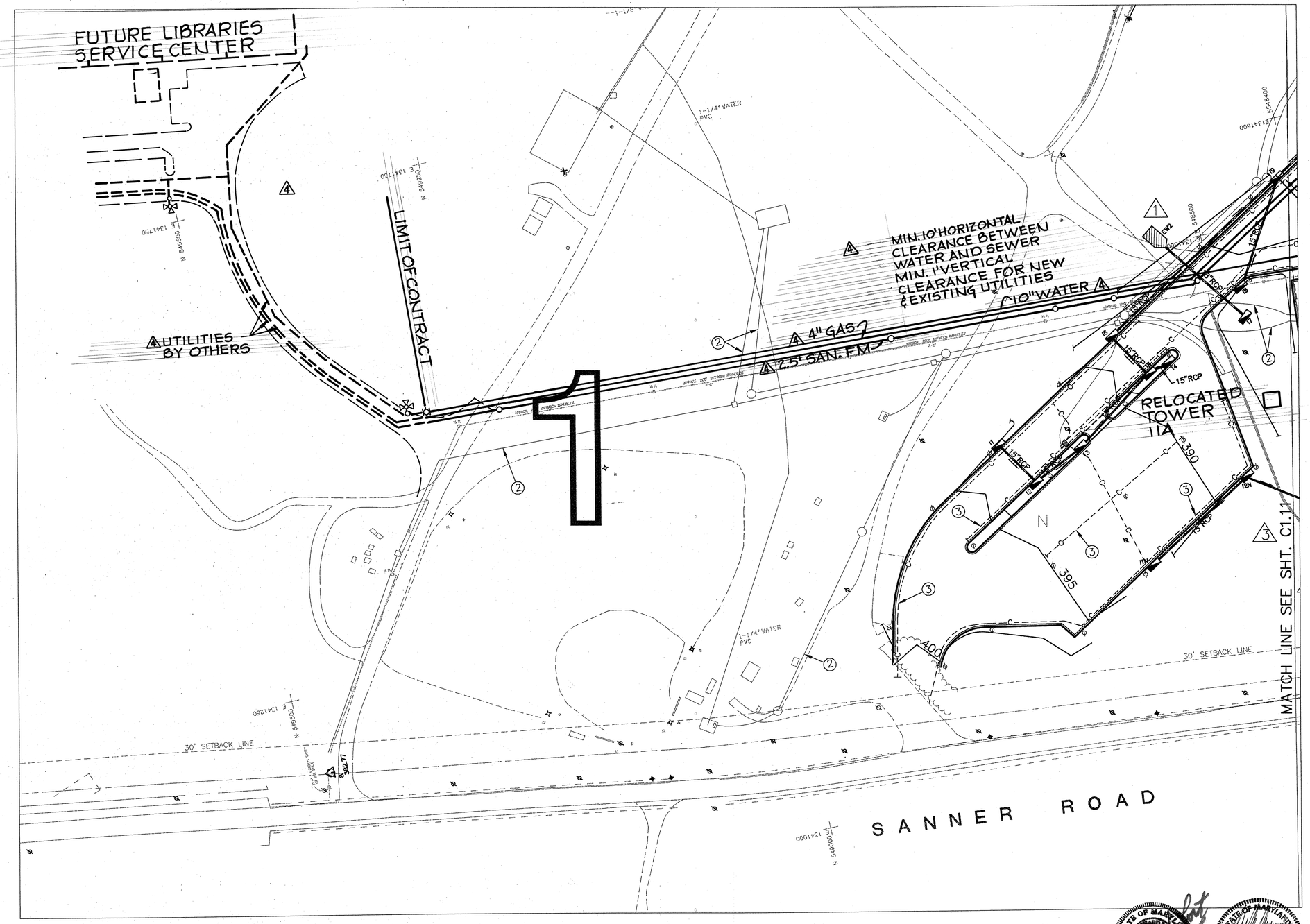
SDP-04-66

KEYED NOTED:

1. NEW HIGH VOLTAGE DUCT BANK 5"-6 WAY DUCT BY OTHER COORDINATE WITH OTHER CONTRACTORS
2. NEW 2-WAY TO 8 WAY DUCT BANKS, SEE SHEET #E1.4 FOR SIZES AND LOCATIONS.
3. NEW 1" OR 2" ELECTRICAL CONDUIT FOR PARKING LOT LIGHTING SYSTEM, LOCATE IN PAVEMENT AREA, SEE SHEETS #E-1.1 THROUGH #E-1.3 FOR SIZE AND LOCATION.

NOTES:

1. DUCT BANKS AND CONDUITS SHOWN ARE SCHEDULED AND LOCATED APPROXIMATELY ON SHEET #E-1.4, NORTH CAMPUS DISTRIBUTION SITE PLAN, AND #E-1.0 THROUGH #E-1.3 AND #E-1.4.
2. ELECTRICAL HAND HOLE, DUCT BANKS, CONDUIT, AND MANHOLE LOCATIONS ARE APPROXIMATE AND SHALL BE ADJUSTED TO ACCOMMODATE STORM DRAINAGE STRUCTURES AND PIPES, CURBS AND GUTTERS.
3. ALL FRAMES AND COVERS ON ALL MANHOLES AND HANDHOLES SHALL BE HEAVY DUCT (AASHTO #H-20 LOAD BEARING).



1 UTILITY PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/29/04
DIRECTOR	DATE 3/29/04

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 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0014
AMT FILE # 102-440

SANNER ROAD 1 2 3

SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
5/17/04	FUTURE LIBRARIES SERVICE UTILITIES EXTENSIONS	4			
1/26/04	COUNTY SET	3			
11/24/03	ADDENDUM 1	1			

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

UTILITY PLAN

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

SCALE AS SHOWN

SHEET C1.10

SHEET 14 OF 48

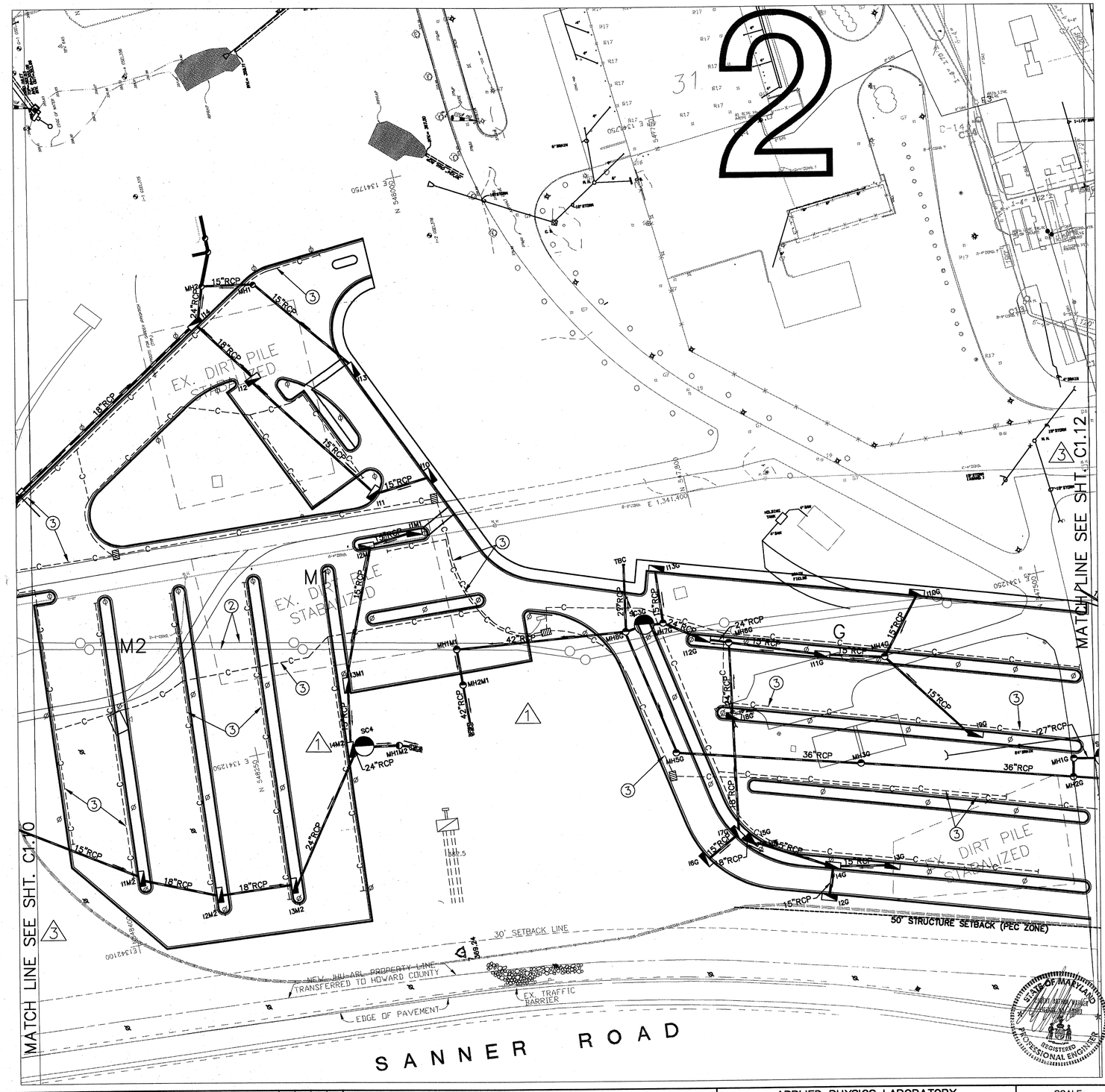
SDP-04-66

KEYED NOTED:

1. NEW HIGH VOLTAGE DUCT BANK 5"-6 WAY DUCT BY OTHER COORDINATE WITH OTHER CONTRACTORS
2. NEW 2-WAY TO 8 WAY DUCT BANKS, SEE SHEET #E1.4 FOR SIZES AND LOCATIONS.
3. NEW 1" OR 2" ELECTRICAL CONDUIT FOR PARKING LOT LIGHTING SYSTEM, LOCATE IN PAVEMENT AREA, SEE SHEETS #E-1.1 THROUGH #E-1.3 FOR SIZE AND LOCATION.

NOTES:

1. DUCT BANKS AND CONDUITS SHOWN ARE SCHEDULED AND LOCATED APPROXIMATELY ON SHEET #E-1.4, NORTH CAMPUS DISTRIBUTION SITE PLAN, AND #E-1.0 THROUGH #E-1.3 AND #E-1.4.
2. ELECTRICAL HAND HOLE, DUCT BANKS, CONDUIT, AND MANHOLE LOCATIONS ARE APPROXIMATE AND SHALL BE ADJUSTED TO ACCOMMODATE STORM DRAINAGE STRUCTURES AND PIPES, CURBS AND GUTTERS.
3. ALL FRAMES AND COVERS ON ALL MANHOLES AND HANDHOLES SHALL BE HEAVY DUCT (AASHTO #H-20 LOAD BEARING).



NORTH

1 UTILITY PLAN
NORTH PARKING
SCALE: 1"=50'

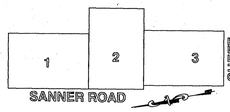
GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING		
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE	3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	3/30/04
DIRECTOR	DATE	3/31/04

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2840 FAX (301) 881-0814
AMT FILE # 102-440



SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
1/26/04	COUNTY SET 3				
11/24/03	ADDENDUM 1 1				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

UTILITY PLAN

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

SCALE AS SHOWN

SHEET C1.11

SHEET 15 OF 48

SDP-04-66

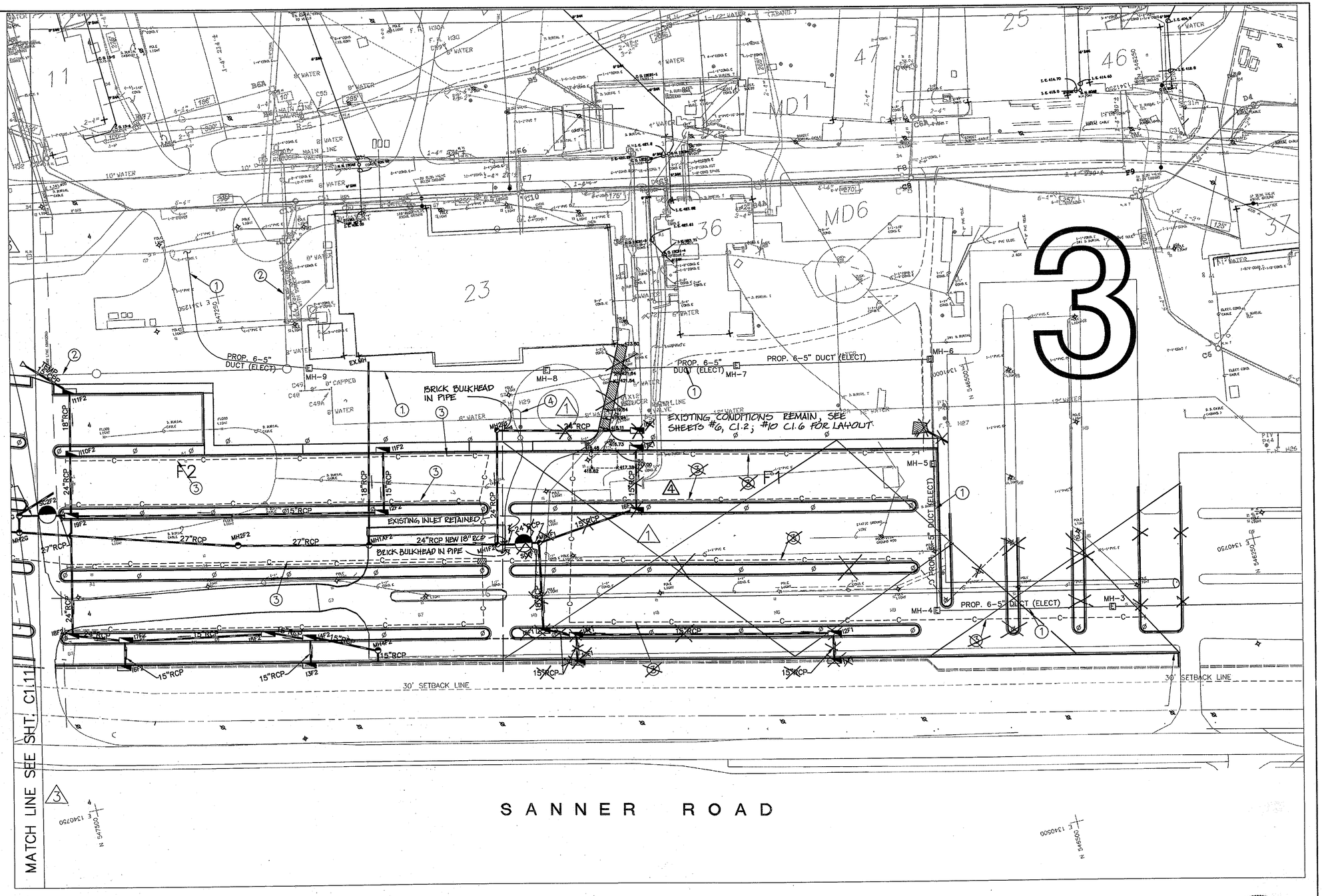
KEYED NOTED:

1. NEW HIGH VOLTAGE DUCT BANK 5"-6 WAY DUCT BY OTHER COORDINATE WITH OTHER CONTRACTORS
2. NEW 2-WAY TO 8 WAY DUCT BANKS, SEE SHEET #E1.4 FOR SIZES AND LOCATIONS.
3. NEW 1" OR 2" ELECTRICAL CONDUIT FOR PARKING LOT LIGHTING SYSTEM, LOCATE IN PAVEMENT AREA, SEE SHEETS #E-1.1 THROUGH #E-1.3 FOR SIZE AND LOCATION.
4. NEW FIRE HYDRANT 6" GATE VALVE, POST INDICATOR, AND NEW 6" DUCTILE IRON PIPE (4-45° ELBOWS) WITH MUGA LUG RETAINER GLANDS ON ALL JOINTS, INSTALLED WITH 4' OF COVER (MINIMUM) ALL TO HOWARD COUNTY AND APL STANDARDS. HYDRANT SHALL BE 2' BEHIND SIDEWALK (SHOWN ON SHEET C1.12 ONLY).

1

NOTES:

1. DUCT BANKS AND CONDUITS SHOWN ARE SCHEDULED AND LOCATED APPROXIMATELY ON SHEET #E-1.4, NORTH CAMPUS DISTRIBUTION SITE PLAN, AND #E-1.0 THROUGH #E-1.3.
2. ELECTRICAL HAND HOLES, DUCT BANKS, CONDUIT, AND MANHOLE LOCATIONS ARE APPROXIMATE AND SHALL BE ADJUSTED TO ACCOMMODATE STORM DRAINAGE STRUCTURES AND PIPES, CURBS AND GUTTERS.
3. ALL FRAMES AND COVERS ON ALL MANHOLES AND HANDHOLES SHALL BE HEAVY DUCT (AASHTO #H-20 LOAD BEARING).



NORTH

1 UTILITY PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING		
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE	3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	3/30/04
DIRECTOR	DATE	3/31/04

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 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 102-440

1 2 3
SANNER ROAD
SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/7/05	RED-LINE SUBMISSION	4			
1/26/04	COUNTY SET	3			
11/24/03	ADDENDUM 1	1			

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

UTILITY PLAN

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

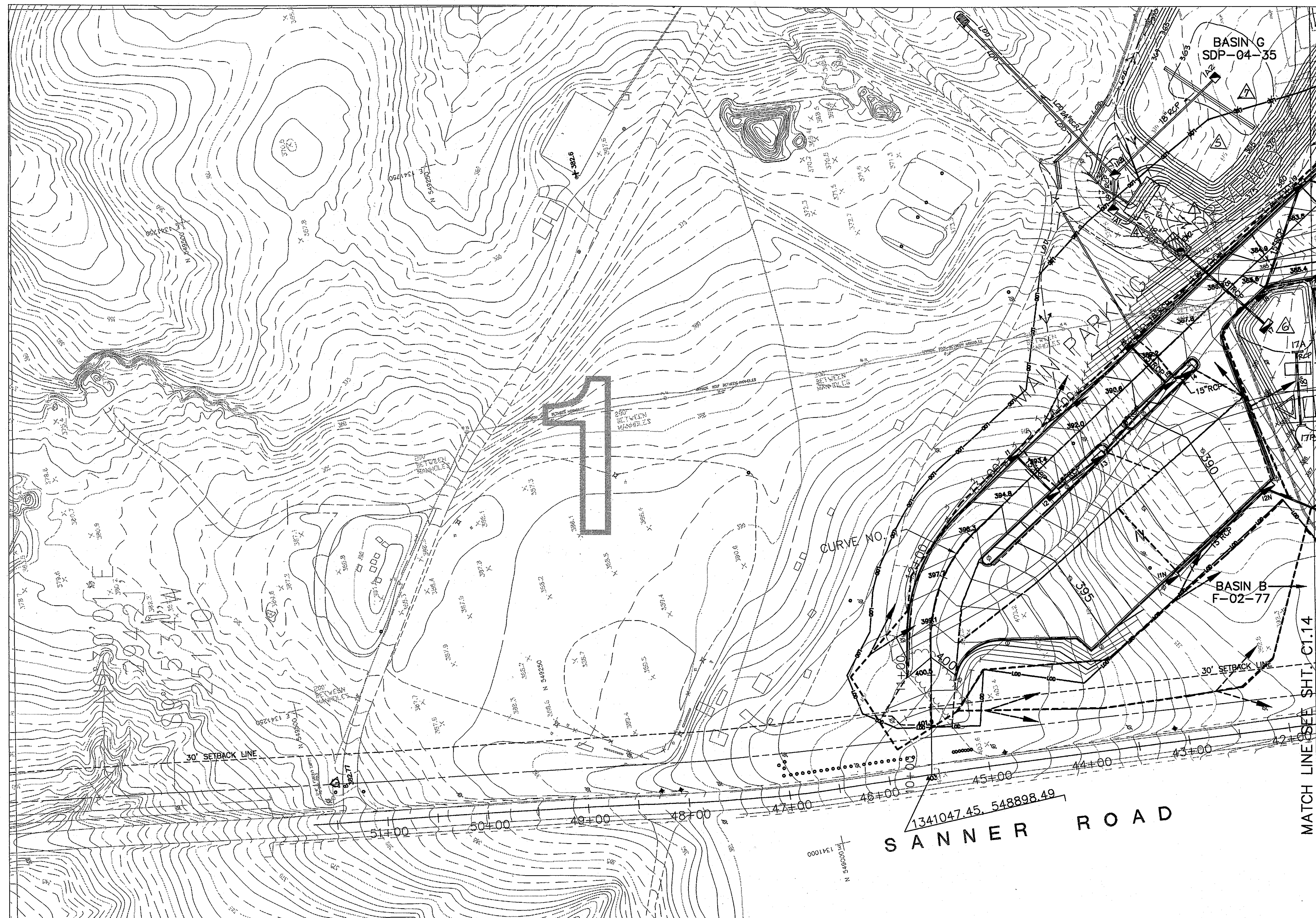
SCALE AS SHOWN

SHEET C1.12

SHEET 16 OF 48

SDP-04-66

NORTH



1 SITE GRADING AND DRAINAGE PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

NOTE:
△3 1. THE SITE PLAN FOR BASIN G MUST BE UNDER CONSTRUCTION OR FINISHED BEFORE THIS BUILDING CONSTRUCTION CAN PROCEED.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/28/04
DIRECTOR	DATE 3/31/04

AMT
A. MORTONTHOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 102-440

DES: JK
DRN: PF
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/28/09	RED-LINE SUBMISSION	7	MV		
8/17/05	RED-LINE SUBMISSION	6			
6/25/04	RED-LINE SUBMISSION	5			
3/9/04	COORDINATION 4				
1/26/04	COUNTY SET 3				
12/16/03	COUNTY SET 2				
11/24/03	ADDENDUM 1				

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

SITE GRADING & STORM DRAINAGE PLAN 1

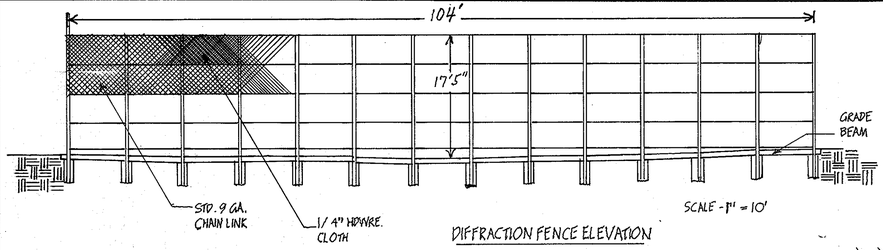
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

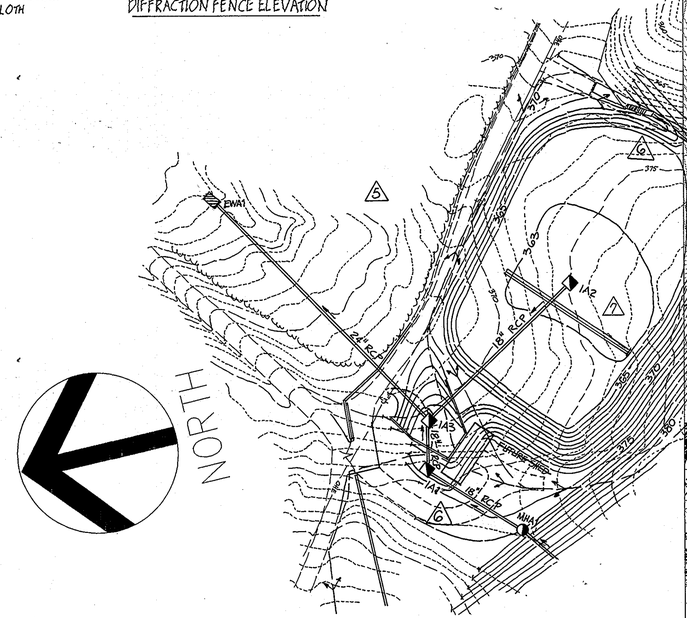
SHEET C1.13

SHEET 17 OF 48

SDP-04-66



DIFFRACTION FENCE ELEVATION



1 SITE GRADING AND DRAINAGE PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/31/04

NOTE: 3

1. THE SITE PLAN FOR BASIN G MUST BE UNDER CONSTRUCTION OR FINISHED BEFORE THIS BUILDING CONSTRUCTION CAN PROCEED.

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2565 FAX (301) 881-0814
AMT FILE # 102-440

DES: JK
DRN: RLP
CHK: BW
DATE: 12/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/28/09	RED-LINE SUBMISSION	7	MV		
8/17/05	RED-LINE SUBMISSION	6			
6/25/04	RED-LINE SUBMISSION	5			
3/9/04	COORDINATION 4				
1/26/04	COUNTY SET 3				
12/16/03	COUNTY SET 2				
11/24/03	ADDENDUM 1				

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

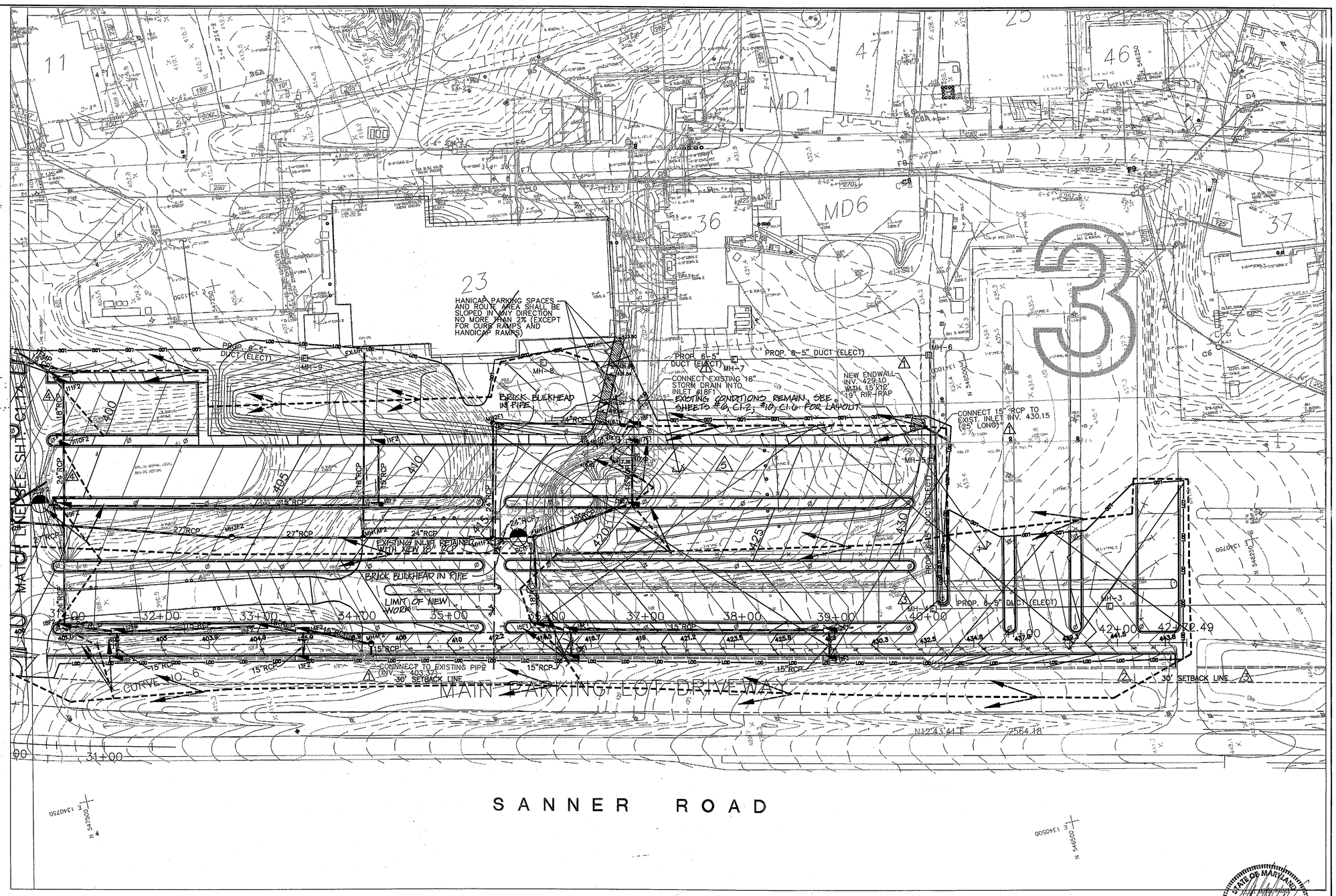
APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
SITE GRADING & STORM DRAINAGE PLAN 2
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET C1.14

SHEET 18 OF 48

SDP-04-66



1 SITE GRADING AND DRAINAGE PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/30/04

△3 NOTE:
1. THE SITE PLAN FOR BASIN G MUST BE UNDER CONSTRUCTION OR FINISHED BEFORE THIS BUILDING CONSTRUCTION CAN PROCEED.

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 240, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 102-440

DES: JK
DRN: RLP
CHK: BW
DATE: 12/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/17/05	RED-LINE SUBMISSION	△5			
3/9/04	COORDINATION	△4			
1/26/04	COUNTY SET	△3			
12/16/03	COUNTY SET	△2			
11/24/03	ADDENDUM 1				

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

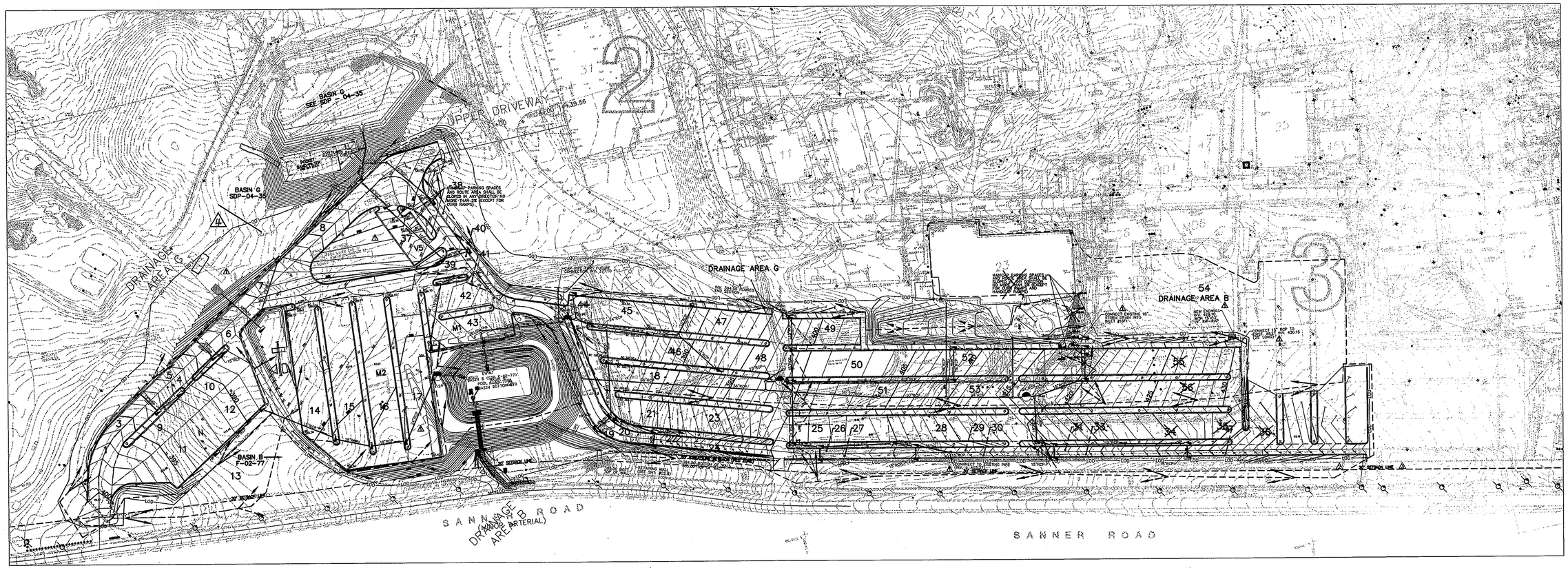
APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
SITE GRADING & STORM DRAINAGE PLAN 3
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET C1.15

SHEET 19 OF 48

SDP-04-66



GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

1 SITE GRADING AND DRAINAGE PLAN
NORTH PARKING
SCALE: 1"=100'

SEDIMENT CONTROL

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

SIGNATURE OF DEVELOPER — DATE 3/16/04
PRINT NAME BELOW SIGNATURE

( ) BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE CONSTRUCTION.

ROBERT A. WARNER — DATE 3/15/04
SIGNATURE OF ENGINEER

( ) 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

DRAINAGE AREA	DRAINAGE AREA	DRAINAGE AREA	DRAINAGE AREA	DRAINAGE AREA	DRAINAGE AREA	DRAINAGE AREA	DRAINAGE AREA	DRAINAGE AREA	DRAINAGE AREA
1 D.A=0.16 AC c=0.90 % IMPERVIOUS=99%	7 D.A=0.29 AC c=0.90 % IMPERVIOUS=99%	13 D.A=0.98 AC c=0.45 % IMPERVIOUS=10%	19 D.A=0.15 AC c=0.9 % IMPERVIOUS=99%	25 D.A=0.43 AC c=0.90 % IMPERVIOUS=95%	~~31 D.A=0.07 AC~~ ~~c=0.90~~ ~~% IMPERVIOUS=99%~~	37 D.A=0.92 AC c=0.75 % IMPERVIOUS=25%	43 D.A=0.27 AC c=0.90 % IMPERVIOUS=95%	49 D.A=0.19 AC c=0.90 % IMPERVIOUS=95%	~~55 D.A=0.40 AC~~ ~~c=0.90~~ ~~% IMPERVIOUS=95%~~
2 D.A.=0.98 AC c=0.45 % IMPERVIOUS=10%	8 D.A.=0.3 AC c=0.9 % IMPERVIOUS=99%	14 D.A.=0.32 AC c=0.9 % IMPERVIOUS=99%	20 D.A.=0.20 AC c=0.9 % IMPERVIOUS=99%	26 D.A.=0.05 AC c=0.9 % IMPERVIOUS=99%	~~32 D.A.=0.07 AC~~ ~~c=0.9~~ ~~% IMPERVIOUS=99%~~	38 D.A.=0.04 AC c=0.9 % IMPERVIOUS=99%	44 D.A.=0.06 AC c=0.9 % IMPERVIOUS=95%	50 D.A.=0.42 AC c=0.9 % IMPERVIOUS=95%	~~56 D.A.=0.42 AC~~ ~~c=0.9~~ ~~% IMPERVIOUS=95%~~
3 D.A.=0.17 AC c=0.9 % IMPERVIOUS=99%	9 D.A.=0.23 AC c=0.9 % IMPERVIOUS=99%	15 D.A.=0.44 AC c=0.9 % IMPERVIOUS=95%	21 D.A.=0.41 AC c=0.9 % IMPERVIOUS=95%	27 D.A.=0.05 AC c=0.9 % IMPERVIOUS=99%	~~33 D.A.=0.08 AC~~ 3 ~~c=0.9~~ ~~% IMPERVIOUS=99%~~	39 D.A.=0.08 AC c=0.9 % IMPERVIOUS=99%	45 D.A.=0.25 AC c=0.9 % IMPERVIOUS=95%	51 D.A.=0.41 AC c=0.9 % IMPERVIOUS=95%	
4 D.A.=0.09 AC c=0.9 % IMPERVIOUS=99%	10 D.A.=0.13 AC c=0.9 % IMPERVIOUS=99%	16 D.A.=0.45 AC c=0.9 % IMPERVIOUS=95%	22 D.A.=0.06 AC c=0.9 % IMPERVIOUS=99%	28 D.A.=0.38 AC c=0.9 % IMPERVIOUS=95%	~~34 D.A.=0.04 AC~~ ~~c=0.9~~ ~~% IMPERVIOUS=99%~~	40 D.A.=0.02 AC c=0.9 % IMPERVIOUS=99%	46 D.A.=0.19 AC c=0.9 % IMPERVIOUS=95%	52 D.A.=0.34 AC c=0.9 % IMPERVIOUS=95%	
5 D.A.=0.09 AC c=0.9 % IMPERVIOUS=99%	11 D.A.=0.33 AC c=0.9 % IMPERVIOUS=99%	17 D.A.=0.46 AC c=0.9 % IMPERVIOUS=95%	23 D.A.=0.3 AC c=0.9 % IMPERVIOUS=95%	29 D.A.=0.09 AC c=0.9 % IMPERVIOUS=99%	~~35 D.A.=0.04 AC~~ ~~c=0.9~~ ~~% IMPERVIOUS=99%~~	41 D.A.=0.06 AC c=0.9 % IMPERVIOUS=99%	47 D.A.=0.26 AC c=0.9 % IMPERVIOUS=95%	53 D.A.=0.34 AC c=0.9 % IMPERVIOUS=95%	
6 D.A.=0.10 AC c=0.9 % IMPERVIOUS=99%	12 D.A.=0.26 AC c=0.9 % IMPERVIOUS=99%	18 D.A.=0.47 AC c=0.9 % IMPERVIOUS=95%	24 D.A.=0.14 AC c=0.9 % IMPERVIOUS=99%	30 D.A.=0.07 AC c=0.9 % IMPERVIOUS=99%	~~36 D.A.=0.11 AC~~ ~~c=0.9~~ ~~% IMPERVIOUS=95%~~	42 D.A.=0.22 AC c=0.9 % IMPERVIOUS=99%	48 D.A.=0.21 AC c=0.9 % IMPERVIOUS=95%	54 D.A.=1.21 AC c=0.45 % IMPERVIOUS=10%	

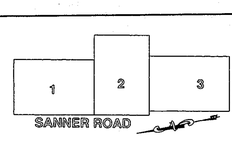
NORTH

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/30/04
DIRECTOR — DATE 3/31/04

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — No. 13403

AMT
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 # 102-440



SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: PF
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/28/09	RED LINE SUBMISSION	4	MV		
8/17/05	RED-LINE SUBMISSION	3			
12/16/03	COUNTY SET	2			

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN- RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

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

SCALE AS SHOWN

SHEET C1.16

SHEET 20 OF 48

SDP-04-66

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 — 3/16/04
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."

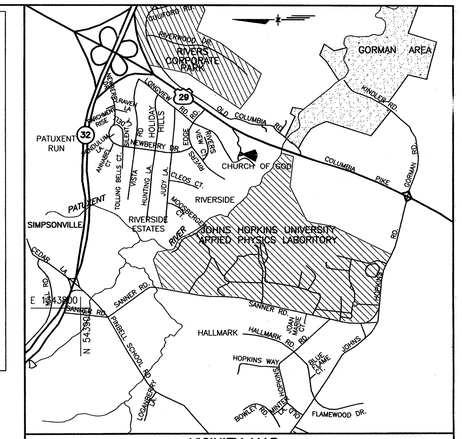
ROBERT A. WARNER — 3/15/04
SIGNATURE OF ENGINEER — DATE
PRINT NAME BELOW SIGNATURE

( ) 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.

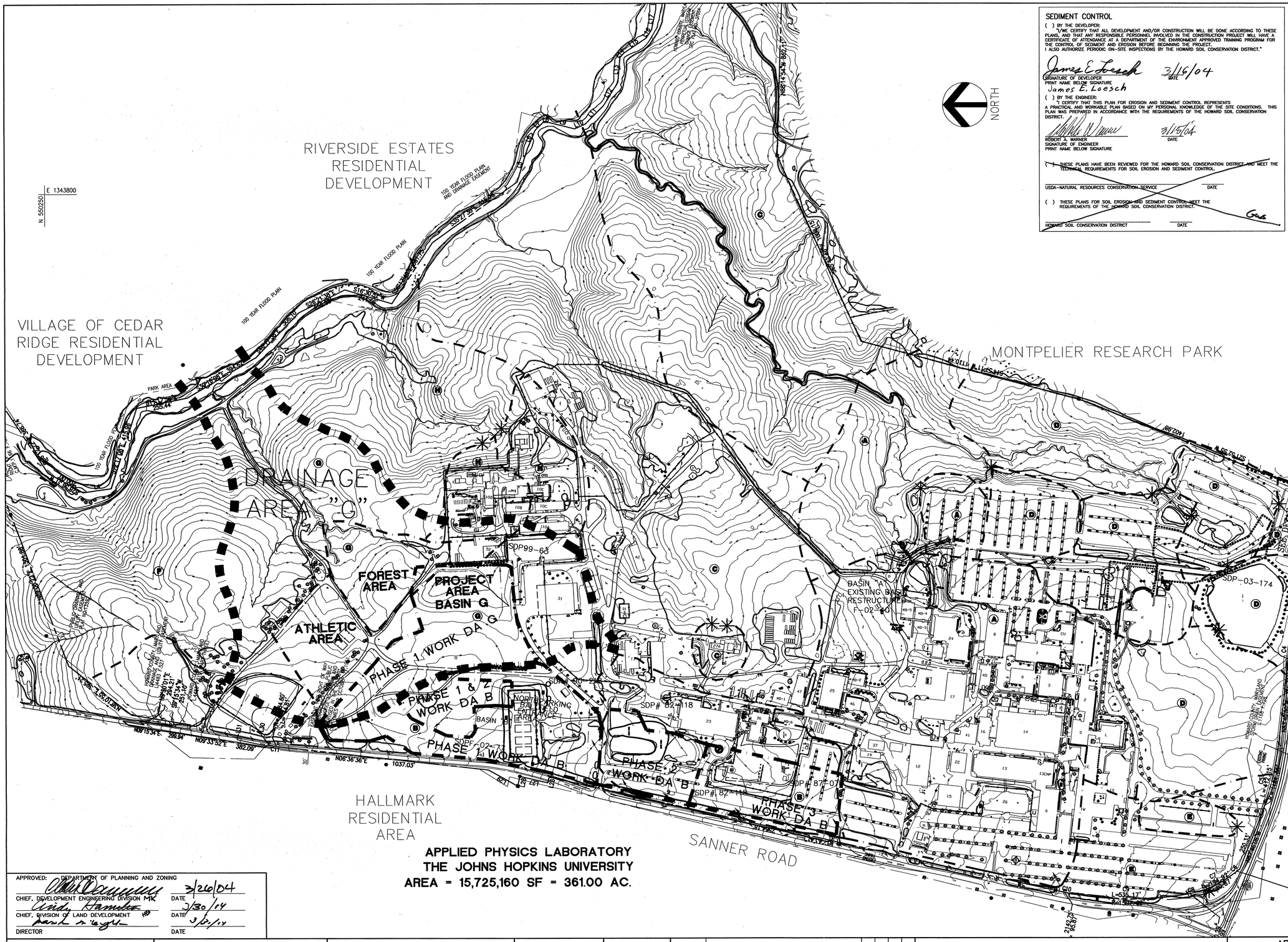
HOWARD SOIL CONSERVATION DISTRICT — DATE



VICINITY MAP
SCALE: 1"=2000'

LEGEND

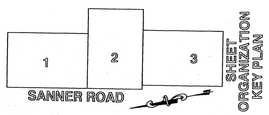
- EXISTING CONTOUR
- TREELINE
- DRAINAGE AREA
- 100 YEAR FLOODPLAIN
- STREAM SYSTEM
- WETLANDS
- STREAMS
- DD — DRAINAGE DITCH
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- 8" SAN. — EXISTING SANITARY SEWER
- 8" SAN. — PROPOSED SANITARY SEWER
- 12" W — EXISTING WATER
- 12" W — PROPOSED WATER
- 18" DRAIN — EXISTING STORM DRAIN
- 18" SD — PROPOSED STORM DRAIN
- A182 — SOILS CLASSIFICATION
- C.B. — CATCH BASIN
- M.H. — EXISTING MANHOLE
- S.M.H. — EXISTING SANITARY SEWER MANHOLE
- PROPOSED MANHOLE
- PIV — EXISTING POST INDICATOR VALVE
- WV — EXISTING WATER VALVE
- F.H. — EXISTING FIRE HYDRANT
- C.O. — EXISTING CLEANOUT
- PROPOSED STORM DRAIN CATCH BASIN
- (A) — DRAINAGE AREA



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

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/30/04

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 # 192-440



DES: JK
DRN: RLP
CHK: BW
DATE: 12/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
12/16/03	COUNTY SET 2				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

OVERALL DRAINAGE AREA MAP

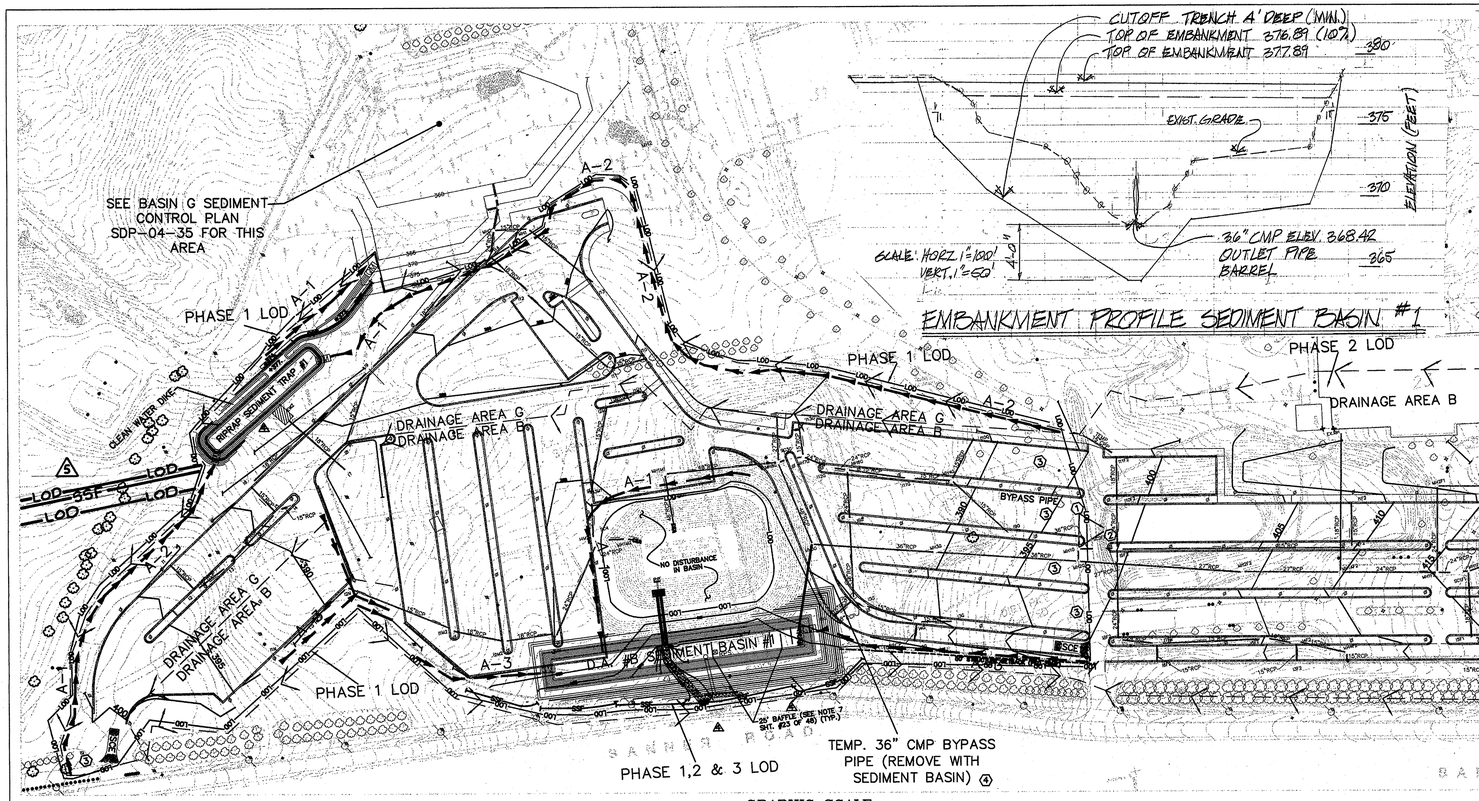
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

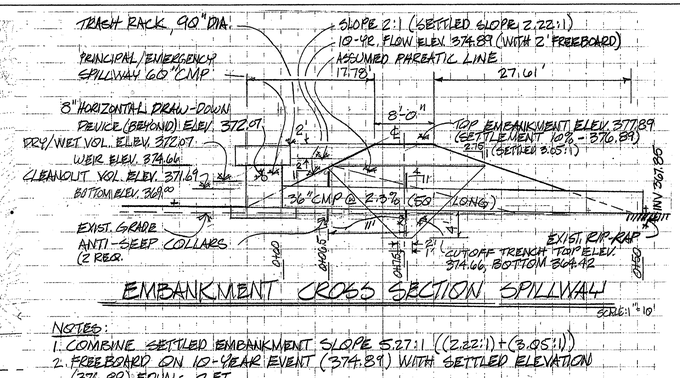
SHEET C1.17

SHEET 21 OF 48

SDP-04-66

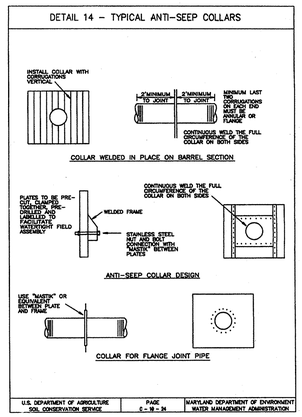


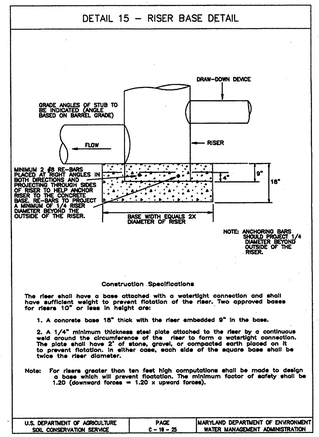
EMBANKMENT PROFILE SEDIMENT BASIN #1

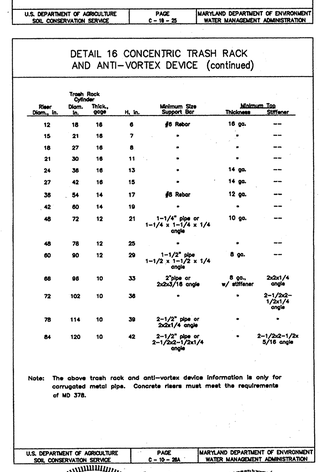


EMBANKMENT CROSS SECTION SPILLWAY

NOTES:
1. COMBINE SETTLED EMBANKMENT SLOPE 5.27:1 ((2.22:1)+(3.05:1))
2. FREEBOARD ON 10-YEAR EVENT (374.89) WITH SETTLED ELEVATION (376.89) EQUALS 2 FT.





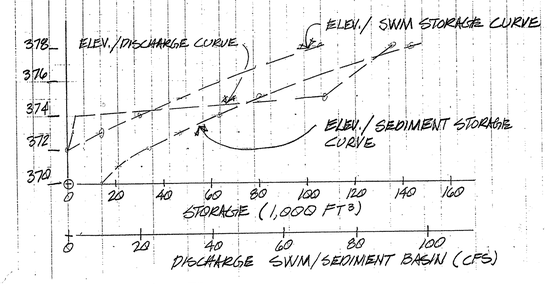


Riser Diam., in.	Trash Rack Cylinder Diam., in.	Trash Rack Cylinder Thick., in.	H, in.	Minimum Size Support Bar	Minimum Top Thickness	Minimum Top Stiffener
12	18	16	6	#6 Rebar	16 ga.	---
15	21	16	7	"	"	---
18	27	16	8	"	"	---
21	30	16	11	"	"	---
24	36	16	13	"	14 ga.	---
27	42	16	15	"	14 ga.	---
36	54	14	17	#8 Rebar	12 ga.	---
42	60	14	19	"	"	---
48	72	12	21	1-1/4" pipe or 1-1/4 x 1-1/4 x 1/4 angle	10 ga.	---
48	78	12	25	"	"	---
60	90	12	29	1-1/2" pipe 1-1/2 x 1-1/2 x 1/4 angle	8 ga.	---
66	96	10	33	2" pipe or 2x2x1/4 angle	8 ga., w/ stiffener	2x2x1/4 angle
72	102	10	36	"	"	2-1/2x2-1/2x1/4 angle
78	114	10	39	2-1/2" pipe or 2x2x1/4 angle	"	"
84	120	10	42	2-1/2" pipe or 2-1/2x2-1/2x1/4 angle	"	2-1/2x2-1/2x 3/16 angle

Note: The above trash rack and anti-vortex device information is only for corrugated metal pipe. Concrete risers must meet the requirements of MD 378.

SEDIMENT BASIN #1 STORAGE-ELEVATION AND DISCHARGE-ELEVATION TABLE

ELEVATION (FEET)	AREA (FEET)	TOTAL VOLUME SEDIMENT (FT.³)	TOTAL VOLUME SWM (FT³)	HEAD (FEET)	DISCHARGE (CFS)
369	25 X 350	—	0.0	0.0	
370	29 X 354	9,508	0.0	0.0	
371	33 X 358	20,548	0.0	0.0	
372	37 X 362	33,152	74	0.0	0.01
373	41 X 366	47,352	14,275	0.6	1.81
374	45 X 370	63,180	30,104	1.6	2.13
375	49 X 374	80,668	47,594	2.6	71.48
378	61 X 386	143,476	105,825	5.6	90.60



NOTES:
3. NO STOCK PILES WILL BE ALLOWED BY THESE PLANS, WITHOUT FILING A RED-LINE SUBMISSION.

NOTE:
1. THE SITE PLAN FOR BASIN G MUST BE UNDER CONSTRUCTION OR FINISHED BEFORE THIS BUILDING CONSTRUCTION CAN PROCEED.

1 SEDIMENT CONTROL PLAN PHASE 1
NORTH PARKING
SCALE: 1"=100'

GRAPHIC SCALE
(IN FEET)
1 inch = 100 ft.

RIPRAP SEDIMENT TRAP #1

EXISTING D.A. = 6.5 AC
PROPOSED D.A. = – AC
VOLUME REQUIRED = 3600 x 6.5 = 23,400 CF
VOLUME PROVIDED = 24,000 CF

WEIR LENGTH = 4 x 6.5 = 26 FT
BOTTOM ELEVATION = 373.00
DRY VOLUME ELEVATION = 377.00
WET VOLUME ELEVATION = 375.00
CLEANOUT ELEVATION = 374.00
TOP OF DAM ELEVATION = 378.00
WEIR CREST ELEVATION = 377.00

TEMPORARY SEDIMENT BASIN #1

DRY STORAGE: REQ. 34,200 CF
PROP. 34,200 CF

EXISTING D.A. = 19.0 AC
PROPOSED D.A. = 19.0 AC
WET VOLUME REQUIRED = 3600 x 19 = 68,400 CF
WET VOLUME PROVIDED = 80,364 CF
RISER SIZE = 60" BARREL SIZE = 36"

ANTI-SEEP COLLAR SIZE = 7' BY 7' SQ. (2' REQUIRED)
BOTTOM ELEVATION = 369.00 DIMENSION : 25' x 350'
DRY VOLUME ELEVATION = 372.07
WET VOLUME ELEVATION = 372.07
CLEANOUT ELEVATION = 371.69
TOP OF DAM ELEVATION = 377.89
1-YEAR Q: EX.–13.51 CFS, PROP. 8.13 CFS

NOTES
1. SEDIMENT BASIN MAY BACK WATER INTO BASIN. 3

SEDIMENT AND EROSION CONTROL LEGEND

SUPER SILT FENCE — SSF
SILT FENCE — SF
STANDARD INLET PROTECTION — SIP
CURB INLET PROTECTION — CIP
AT GRADE INLET PROTECTION — AGIP
STANDARD CONSTRUCTION ENTRANCE
EARTH DIKE TYPE A-1, A-2, & A-3
GABION INFLOW PROTECTION — GM
REMOVABLE PUMPING STATION 4 — RPS

KEYED NOTES

1. CONSTRUCT A TEMPORARY 24" RCP PIPE CONNECTION FROM EXISTING BASIN OUTFALL PIPE TO MH1G. 3
2. REMOVE TEMPORARY 24" RCP PIPE CONNECTION INSTALLED DURING PHASE 2 WORK TO MH1G AND INSTALL NEW SD SYSTEM AS SHOWN (SEE REFERENCE SHEET 23).
3. INSTALL TEMPORARY BARRIERS AND REMOVE ONCE AREA IS STABILIZED (SHOWN ON BOTH SHEETS 22 AND 23).
4. INSTALL TEMPORARY BULK-HEAD IN MH5G TO DIVERT STORM DRAINING TO TEMPORARY 36" CMP BYPASS PIPE TO D.A. #B SEDIMENT BASIN #1 3 ONCE BASIN #1 REMOVED REMOVE TEMPORARY 36" CMP AND BULK-HEAD.

SEDIMENT CONTROL

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

SIGNATURE OF DEVELOPER — DATE 3/16/04
PRINT NAME BELOW SIGNATURE J.E. Loesch

( ) BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE CONSTRUCTION.

ROBERT A. WARNER, SIGNATURE OF ENGINEER — DATE 3/15/04

( ) 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 3/22/04

( ) THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SOIL CONSERVATION DISTRICT — DATE 3/22/04

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/30/04
DIRECTOR — DATE 3/24/04

NORTH

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 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 102-440

SANNER ROAD — 1 2 3 — SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

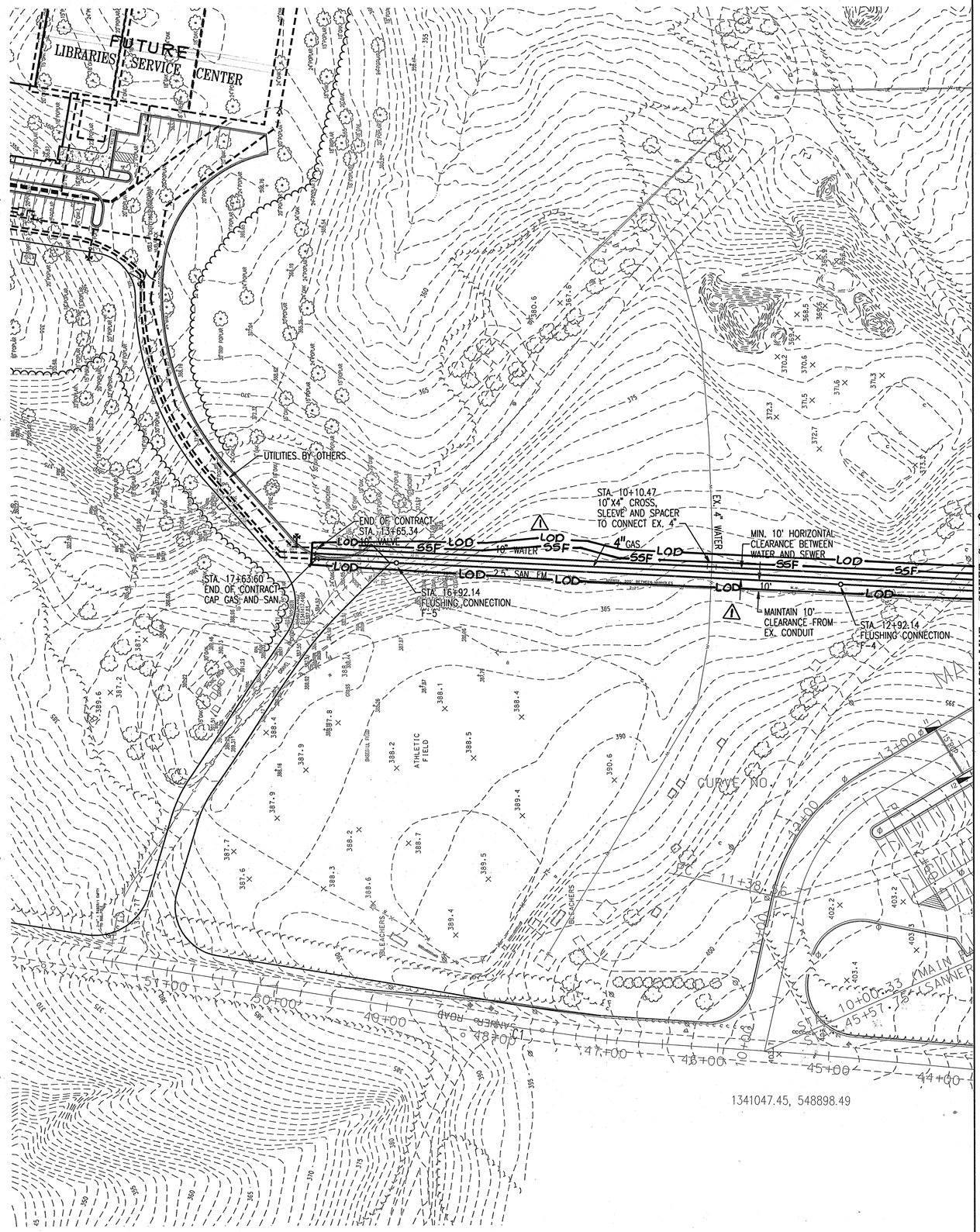
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
5/17/04	FUTURE LIBRARIES SERVICE UTILITIES EXTENSIONS 3				
3/1/04	COUNTY SET 4				
1/26/04	COUNTY SET 3				
11/24/03	ADDENDUM 1				

NORTH PARKING / BALL FIELD ENTRANCE

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

SCALE AS SHOWN
SHEET C1.18
SHEET 22 OF 48

SDP-04-66



REVISIONS		
1	FUTURE LIBRARIES SERVICE UTILITIES EXTENSIONS	5/17/04

APPROVALS	
REQUESTER:	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEW	
TSC GROUP	
TSF GROUP	
SAFETY OFFICER	
DIRECTORS OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-6099

THE JOHNS HOPKINS UNIVERSITY

LIBRARIES SERVICE CENTER

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.

GRAPHIC SCALES

50 0 50 100
SCALE: 1" = 50'

Reviewed for HOWARD S.C.D.
Name
Signature Date 8/10/04
USDA, NATURAL REBOURCES CONS. SERVICE

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

Approved Howard S.C.D. Date 8/10/04

WR&A
WHITMAN, REQUARDT AND ASSOCIATES, LLP
801 SOUTH CAROLINE STREET
BALTIMORE, MARYLAND 21231
410 - 235 - 3450

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	MK	DATE 8/25/04
CHIEF, DIVISION OF LAND DEVELOPMENT		DATE 8/27/04
DIRECTOR		DATE 8/27/04

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.

STATE OF MARYLAND
CLEARHARD DOUGLAS
No. 4870
PROFESSIONAL ENGINEER

NORTH CAMPUS UTILITY EXTENSION
EROSION & SEDIMENT CONTROL PLAN

DRAWING NO. C1.18A

SHEET 22A OF 48

SCALE: 1"=50'

DES: CYH | CHECK: AUO | DATE: 04/29/04

SDP-04-066

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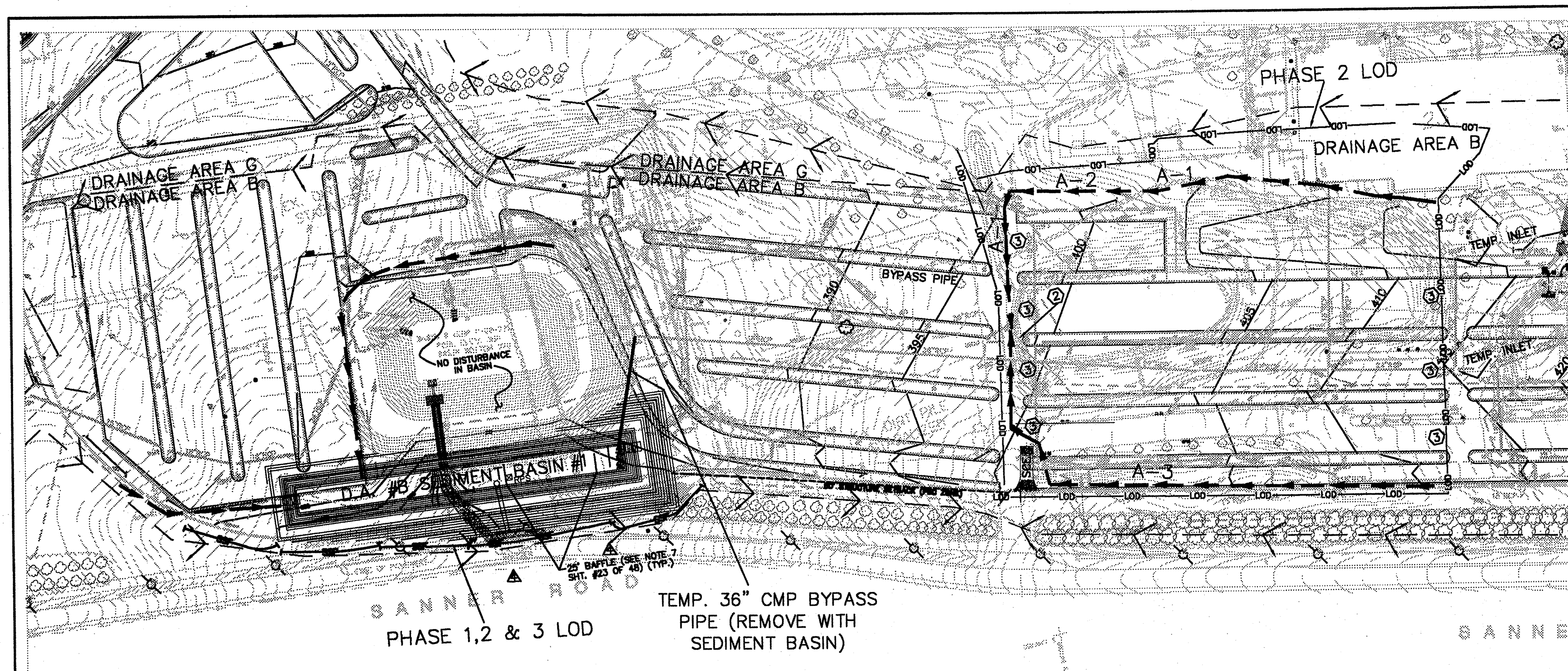
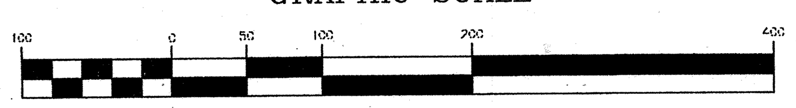
Mon Jul19 07:13:27 2004



*SEE SHEET C1.18 FOR DESCRIPTION OF KEYED NOTES.

GRAPHIC SCALE



(IN FEET)
1 inch = 100 ft.

NORTH

1 SEDIMENT CONTROL PLAN PHASE 2
NORTH PARKING
SCALE: 1"=100'

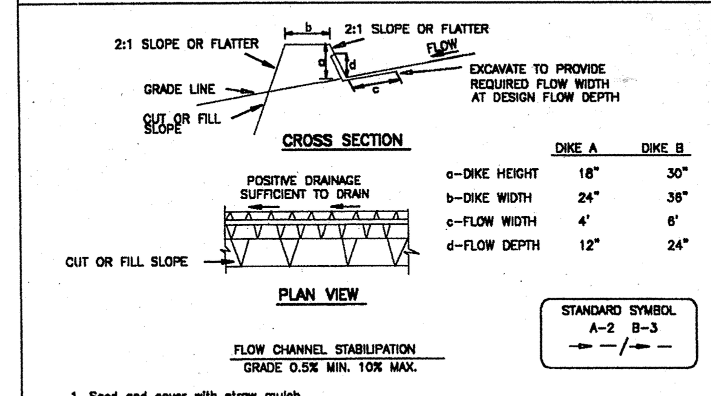
SEDIMENT AND EROSION CONTROL LEGEND

SUPER SILT FENCE	—SSF—
SILT FENCE	—SF—
STANDARD INLET PROTECTION	SIP
CURB INLET PROTECTION	CIP
AT GRADE INLET PROTECTION	AGIP
STANDARD CONSTRUCTION ENTRANCE	
EARTH DIKE TYPE A–1, A–2, & A–3	
GABION INFLOW PROTECTION	GM ⚠4
REMOVABLE PUMPING STATION	☒ RPS

NOTE:

1. ALL RUNOFF WITHIN PHASE 2 LIMITS SHALL DRAIN INTO BYPASS PIPE VIA EARTHDIKES AS SHOWN.
2. D.A. #B SEDIMENT BASIN RETAINED FROM PHASE 1 AND USED DURING PHASE 2&3.
3. COMPLETE DRAINAGE AREA B DRAINS INTO D.A. #B SEDIMENT BASIN AS SHOWN ON SHEET C1.18.
4. CONVERT MANHOLE COVER TO A BEEHIVE GRATE(NEENAH #R–2510–A) OR APPROVED EQUAL FOR THE CONSTRUCTION OF TEMPORARY INLET.
5. CONTRACTOR SHALL MAINTAIN FLOW THROUGH STORM DRAINAGE SYSTEM AND FLUSH WITH WATER AS NEEDED TO REMOVE ANY SEDIMENT.
6. NO TEMPORARY STOCK PILES WILL BE ALLOWED BY THESE PLANS WITHOUT FILING ⚠3 RED–LINE SUBMISSION.
7. 25' LONG SEDIMENT BASIN BAFFLES, 3 SPACED AT 15' O.C. (SOUTH END), AND ONE SOUTH OF RISER, 4 REQUIRED. BASED ON D=140', A=12,045 SF, We=86, Le=174'. ⚠4

DETAIL 1 – EARTH DIKE



	DIKE A	DIKE B
a–DIKE HEIGHT	18"	30"
b–DIKE WIDTH	24"	36"
c–FLOW WIDTH	4'	6'
d–FLOW DEPTH	12"	24"

STANDARD SYMBOL
A–2 B–3

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" – 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non–erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A – 1 – 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Emergency Spillway (Qes)

NA 17. Emergency spillway cap., $Q_{es} = Q_{10} - Q_{ps}$ = ____ - ____ = ____cfs
18. Width ____ ft; Hp ____ft
19. Entrance channel slope ________%.
20. Exit channel slope ________% } NA

Anti-Seep Collar Design (If Required)

21. y = 5.81 ft.; z = 2 :1; pipe slope = 2 %; Ls = 32 ft
22. Use 2 collars, 7 ft. - ____ in. square; projection = 2 ft.

Design Elevations

23. Riser Crest = 374.66 ft. 24. Design High Water = 375.81 ft.
25. Emergency Spillway Crest = — ft. 26. Min. settled top of dam = 376.81 ft.
27. Permanent pool = 372.07 ft. 28. Bottom of Basin = 369.0 ft.
29. Draw-down orifice invert = 372.07 ft.

Surface Area Design

30. Min.basin surface area; SA ≥ 0.0035 x Q_{10} = 0.0035 x 50.18 cfs ≤ 0.175 ac. < 0.40 @ Elev. 375

Draw-down Device

31. Draw-down device orifice diameter = 8 in. (From Table 11)
32. A_t = Total area of perforations ≥ $4A_o$ 4α 0.34 = 1.36
A_t = (# of perforation/foot)(perforation area ft²)(perforated section length ft.)
A_t = ______ft²
A_o = Internal orifice area (from Table 11 or computed)
=

At = 12 x 0.0031 x 50 = 1.86 sf > 1.36 o/k

C-10-11

Ls = 5.81 (6) / 1.08 = 32.

3/4" φ = 0.0625'
A = 0.0031
L = 50'

1994

Figure 2 Temporary Sediment Basin Design Data Sheet

Computed by: ATM Date: 12-11-03 Checked by: ____ Date: ____
Project name: JHU APL Basin #: D.A.#B Sediment Basin
Location: Howard County
Total area draining to basin: 19 acres (ac)

Basin Volume Design

Note: 1. Also see Surface Area Design #30, this form.
2. To convert ft³ to yd³, divide ft³ by 27. To convert ft² to yd², divide ft² by 9.

1. Min. required vol. = 3600 ft³/ac x 19.0 ac. drainage = 68400 ft³
2. Actual Volume of basin = ________ft³
3. Excavate ________ft³ (________yd³) to obtain required capacity.
4. Vol. at dewatering elev. = 1800 ft³/ac x 19 ac. = 34,200 ft³
5. Vol. of basin at cleanout = 900 ft³/ac x 19 ac. = 17,100 ft³
6. Elevation corresponding to min. required volume of basin (riser crest elevation) 374.3 ft.
7. Permanent pool elevation 372.07 ft. @ 34,200 CF
8. Distance from riser crest elevation to permanent pool elevation 2.59 ft. 374.66 - 372.07
9. Basin cleanout elevation 371.69 ft.
10. Distance from riser crest elevation to cleanout elevation 2.97 ft. 374.66 - 371.61

Spillway Design

11. Q_{10} = 50.18 cfs (peak discharge from 10-yr, 24-hr storm event, attach computations)

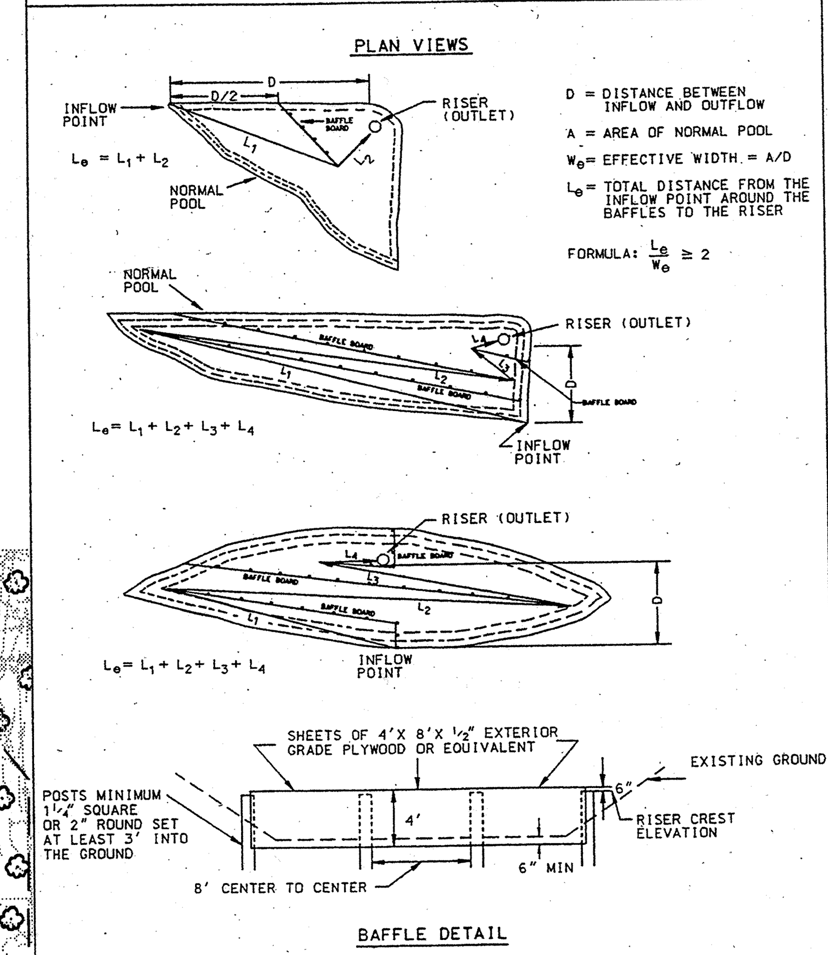
Principal Spillway (Qps) (See Detail 11)

12. Design Principal Spillway (Barrel) discharge, Design Q_{ps} = 50.18 cfs (min. 10% of 10 year peak or 8" Diameter Pipe)
13. H = 6.36 ft.; Barrel length = 50 ft. Invert At: Riser 369.00 Outlet 367.85
14. Barrel Diam. 36 in. Note: Q_{ps} must equal or exceed Design Q_{ps}
Q_{ps} = Q (from Table 13 or 14) 76.3 x (length correction factor) 1.05 = 76.2 cfs.
15. Riser Diameter 60 in.; Riser Height 5.8 ft.; Riser Head (h) = 1 ft.
16. Trash Rack Diam. 90 in.; Trash Rack Height = 29 in.

NOTE: A table showing design data shall be included on the plan for each basin.

C-10-10

DETAIL 18 – SEDIMENT BASIN BAFFLES

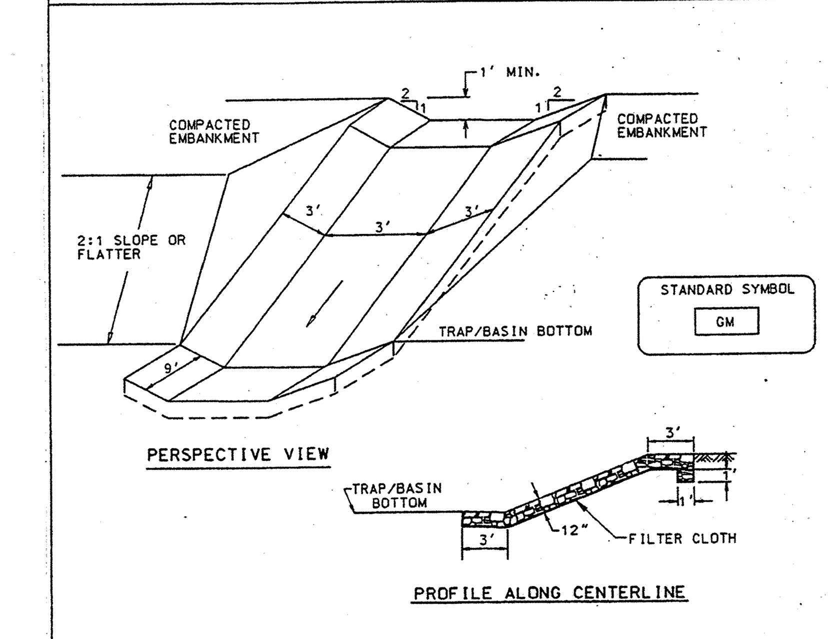


D = DISTANCE BETWEEN INFLOW AND OUTFLOW
A = AREA OF NORMAL POOL
W_e= EFFECTIVE WIDTH = A/D
L_e= TOTAL DISTANCE FROM THE INFLOW POINT AROUND THE BAFFLES TO THE RISER

FORMULA: $\frac{L_e}{W_e} \geq 2$

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 10 – 28	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 6 – GABION INFLOW PROTECTION



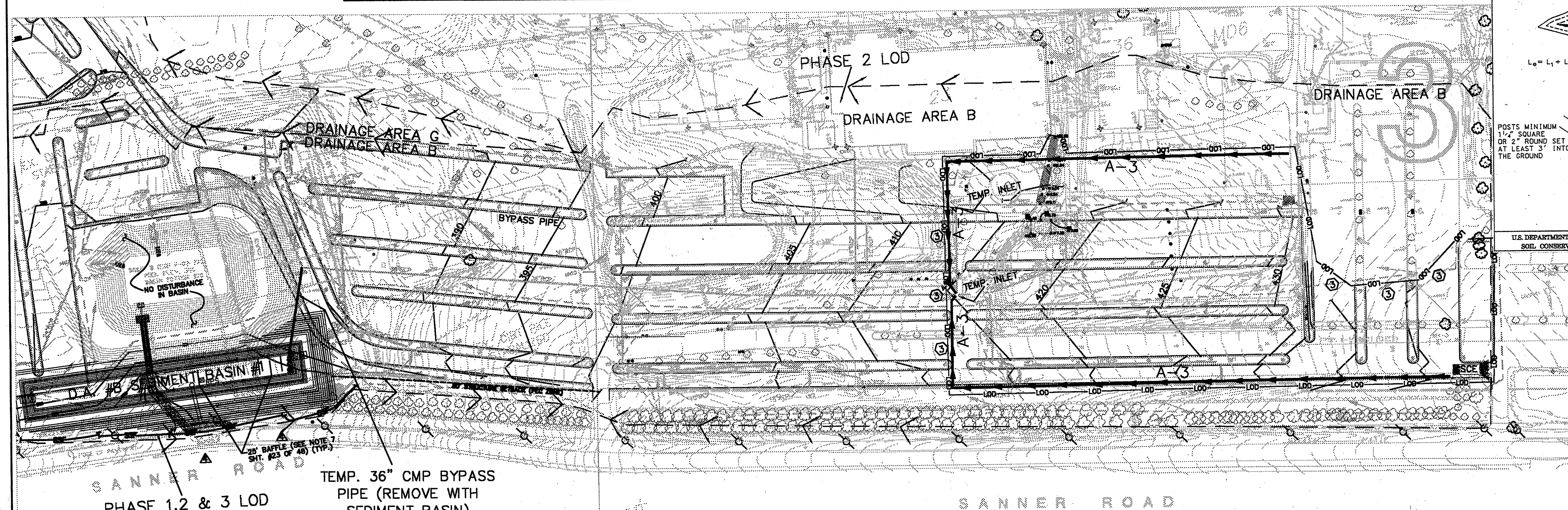
STANDARD SYMBOL
GM

Construction Specifications

1. Gabion inflow protection shall be constructed of 9' x 3' x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
2. Geotextile Class C shall be installed under all gabion baskets.
3. The stone used to fill the gabion baskets shall be 4" – 7".
4. Gabions shall be installed in accordance with manufacturers recommendations.
5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B – 7 – 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER



2 SEDIMENT CONTROL PLAN PHASE 3
NORTH PARKING
SCALE: 1"=100'

1. ALL RUNOFF WITHIN PHASE 3 LIMITS SHALL DRAIN INTO BYPASS PIPE VIA EARTHDIKES AS SHOWN.

7.0 STANDARDS AND SPECIFICATIONS

FOR

GABION INFLOW PROTECTION

Definition

A temporary or permanent, lined drainageway installed to convey concentrated runoff into sediment traps and basins or down steep slopes as applicable. Gabion Inflow Protection consists of the installation of wire baskets (Gabions) filled with rock or recycled concrete equivalent in a flow channel for stabilization.

Purpose

The purpose of Gabion Inflow Protection is to provide stable conveyance of concentrated runoff down steep slopes, (i.e. into temporary sediment traps and basins) thereby preventing erosion of the flow channel.

Conditions Where Practice Applies

Gabion Inflow Protection is required where the slope of a drainage way contributing to a sediment trap or basin, or other steep area as applicable, exceeds 4:1 (25%). Surface runoff may be directed to the inflow device by means of dikes or swales.

Design Criteria

Gabion Inflow Protection shall be 4"- 7" stone[6] (min.) placed within manufactured wire baskets, underlain with Geotextile Class C[7] and placed from the ditch overfall elevation to the bottom of the trap or basin when the inflow slope is between 2:1 and 4:1. Slopes flatter than 10:1 shall be stabilized in accordance with Temporary Swale or Earth Dike criteria as applicable. For slopes between 4:1 and 10:1, see Rip-rap Inflow Protection.

Construction Specifications

1. Gabion Inflow Protection shall be constructed by arranging 9'x 3'x 9" gabion baskets forming a trapezoidal cross section 1' deep with 2:1 side slopes and 3' bottom width.
2. Geotextile Class C shall be installed under all gabion baskets.
3. The stone used to fill the gabion baskets shall be 4" - 7".
4. Gabion shall be installed in accordance with manufacturer's recommendations.
5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

SEDIMENT CONTROL

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE CONSTRUCTION. I ALSO AUTHORIZED PERIODIC ON–SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

J.E. Loesch 3/16/04
SIGNATURE OF DEVELOPER DATE
PRINT NAME BELOW SIGNATURE J.E. Loesch

( ) BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE CONSTRUCTION.

3/15/04
ROBERT A. WARNER DATE
SIGNATURE OF ENGINEER

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

3/22/04
USDA–NATURAL RESOURCES CONSERVATION SERVICE DATE

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

3/22/04
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT HB	DATE 3/30/04
DIRECTOR	DATE 3/31/04

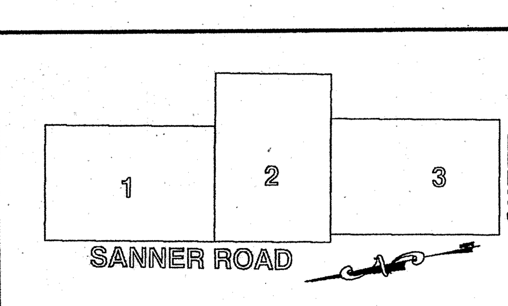
NOTE:

1. THE SITE PLAN FOR BASIN G MUST BE UNDER CONSTRUCTION ⚠4 OR FINISHED BEFORE THIS BUILDING CONSTRUCTION CAN PROCEED.

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. MORTONTHOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 102-440



DES: JK	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
DRN: RLP	3/1/04	COUNTY SET ⚠4				
CHK: BW	1/26/04	COUNTY SET ⚠3				
DATE: 10/10/03	11/24/03	ADDENDUM 1				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
SEDIMENT CONTROL PLAN
PHASE 2 & 3
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET C1.19

SHEET 23 OF 48

SDP-04-66

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

SEDIMENT AND EROSION CONTROL LEGEND

SUPER SILT FENCE	SF
SILT FENCE	SF
STANDARD INLET PROTECTION	SIP
CURB INLET PROTECTION	CIP
AT GRADE INLET PROTECTION	AGIP
STANDARD CONSTRUCTION ENTRANCE	
EARTH DIKE TYPE A-1, A-2, & A-3	
GABION INFLOW PROTECTION	GM
REMOVABLE PUMPING STATION	RPS

RIPRAP SEDIMENT TRAP #2

EXISTING D.A. = 1.3 AC
PROPOSED D.A. = 1.3 AC
VOLUME REQUIRED = 3600 x 1.3 = 4,680 CF
VOLUME PROVIDED = 4,725 CF
BOTTOM DIMENSIONS = 63 FT. X 30 FT.

WEIR LENGTH = 18" DIA. = 4.7 FT
BOTTOM ELEVATION = 359.50
DRY VOLUME ELEVATION = 362.00
WET VOLUME ELEVATION = 360.75
CLEANOUT ELEVATION = 360.12
TOP OF DAM ELEVATION = 363.00 (BASIN EDGE)
WEIR CREST ELEVATION = 362.00 (RISER)

RIPRAP SEDIMENT TRAP #3

EXISTING D.A. = 0.4 AC
PROPOSED D.A. = 0.4 AC
VOLUME REQUIRED = 3600 x 0.4 = 1,440 CF
VOLUME PROVIDED = 1,440 CF
BOTTOM DIMENSIONS = 15 FT x 32 FT

WEIR LENGTH = 15" DIA. = 3.9 FT
BOTTOM ELEVATION = 368.40
DRY VOLUME ELEVATION = 371.40
WET VOLUME ELEVATION = 369.90
CLEANOUT ELEVATION = 369.15
TOP OF DAM ELEVATION = 372.40
WEIR CREST ELEVATION = 371.40

9/7/04

NOTES:

1. NEW RIP-RAP HEADWALL #EWA1 AND 24" RCP SHALL BE EXCAVATED IN NO MORE THEN 100 LINEAR FEET PER DAY. AT THE COMPLETION OF A DAY'S WORK THE AREA WILL BE BACK FILLED, TOPSOIL INSTALLED, SEEDED AND MULCHED. WORK SHALL START FROM THE HEADWALL AREA AND PROCEED ALONG THE PIPE TO INLET #IA3.

SEDIMENT CONTROL & POND CONSTRUCTION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE
PRINT NAME BELOW SIGNATURE

( ) BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

ROBERT A. WARNER — 6/25/04
SIGNATURE OF ENGINEER — DATE

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

USDA-NATURAL RESOURCES CONSERVATION SERVICE — 9-16-04 DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 9-16-04 DATE

APPROVED REVISIONS
DATE 8/24/04
SIGNATURE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 9/21/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9/22/04
DIRECTOR	DATE 9/22/04

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

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 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 102-440

DES: JK
DRN: PF
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
6/25/04	RED-LINE SUBMISSION				
3/9/04	COORDINATION 4				
1/26/04	COUNTY SET 3				
12/16/03	COUNTY SET 2				
11/24/03	ADDENDUM 1				

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMNT PLAN
GRADING OF AREA TO BE USED FOR ANTENNA RANGE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

EROSION AND SEDIMENT CONTROL PLAN RED-LINE

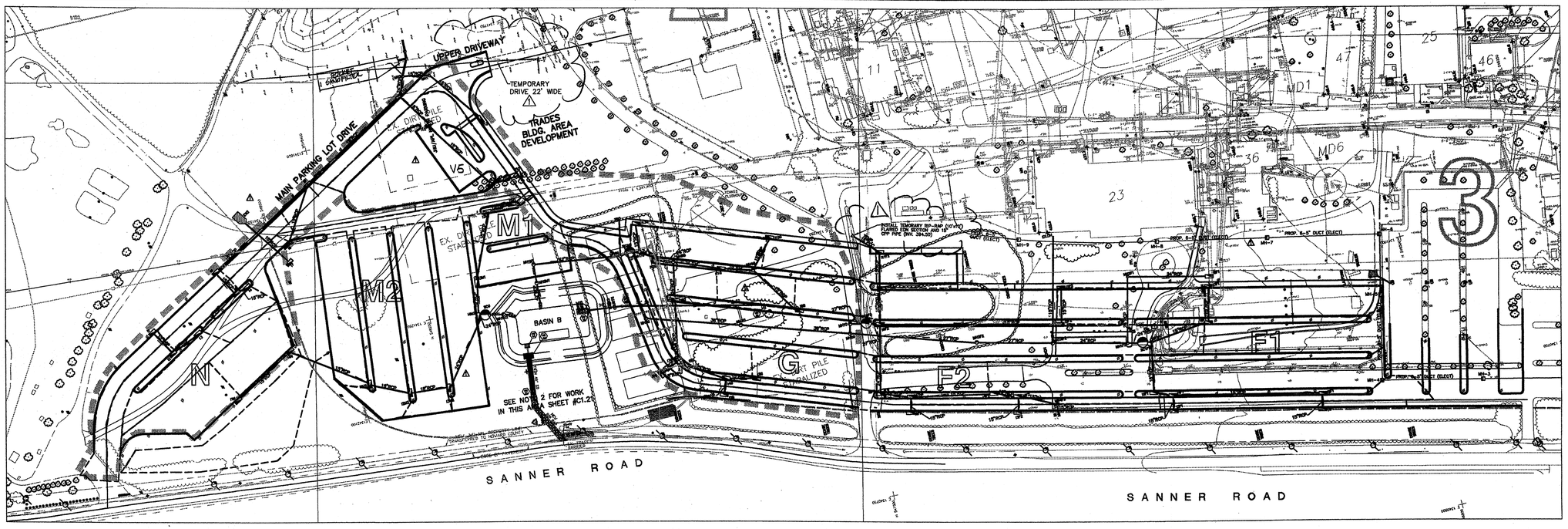
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

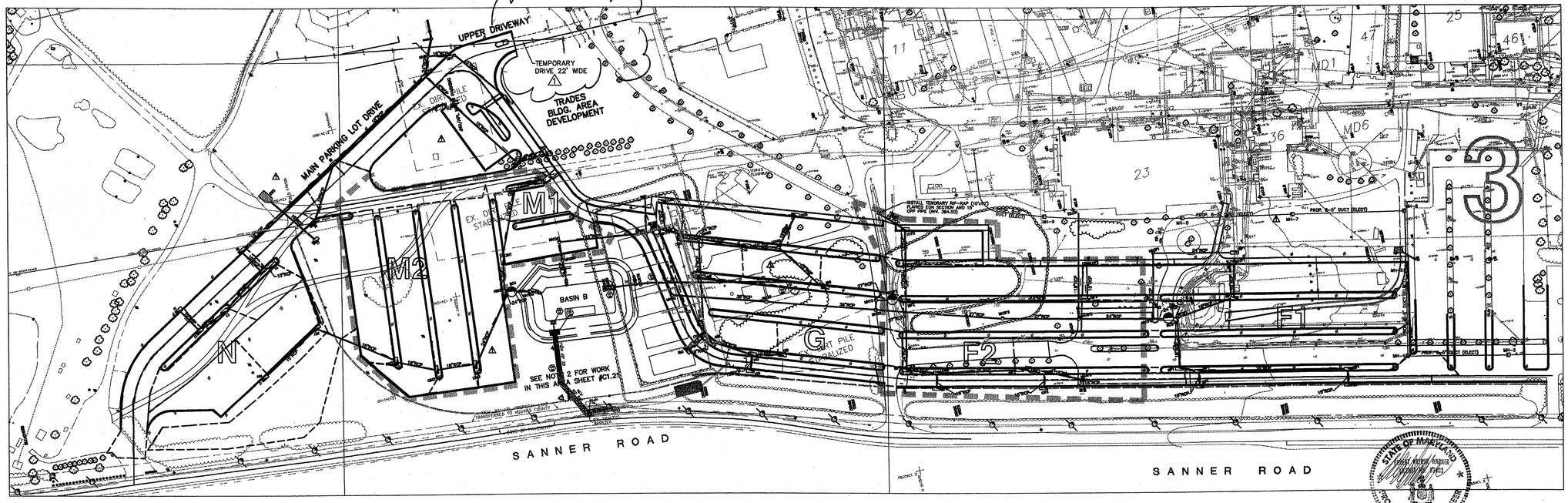
SHEET C1.19A

SHEET 23A OF 48

SDP-04-66



1 CONSTRUCTION PHASING #1 PLAN
NORTH PARKING
SCALE: 1"=100'



2 CONSTRUCTION PHASING #2 PLAN
NORTH PARKING
SCALE: 1"=100'

NORTH

GRAPHIC SCALE

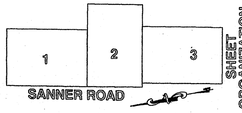
100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/31/04
DIRECTOR	DATE 3/31/04

STATE OF MARYLAND
Gopal Arthur Gogineni
No. 17863
REGISTERED PROFESSIONAL ENGINEER

AMT
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 # 102-440



SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: PF
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
11/24/03	ADDENDUM 1 △1				

NORTH PARKING / BALL FIELD ENTRANCE

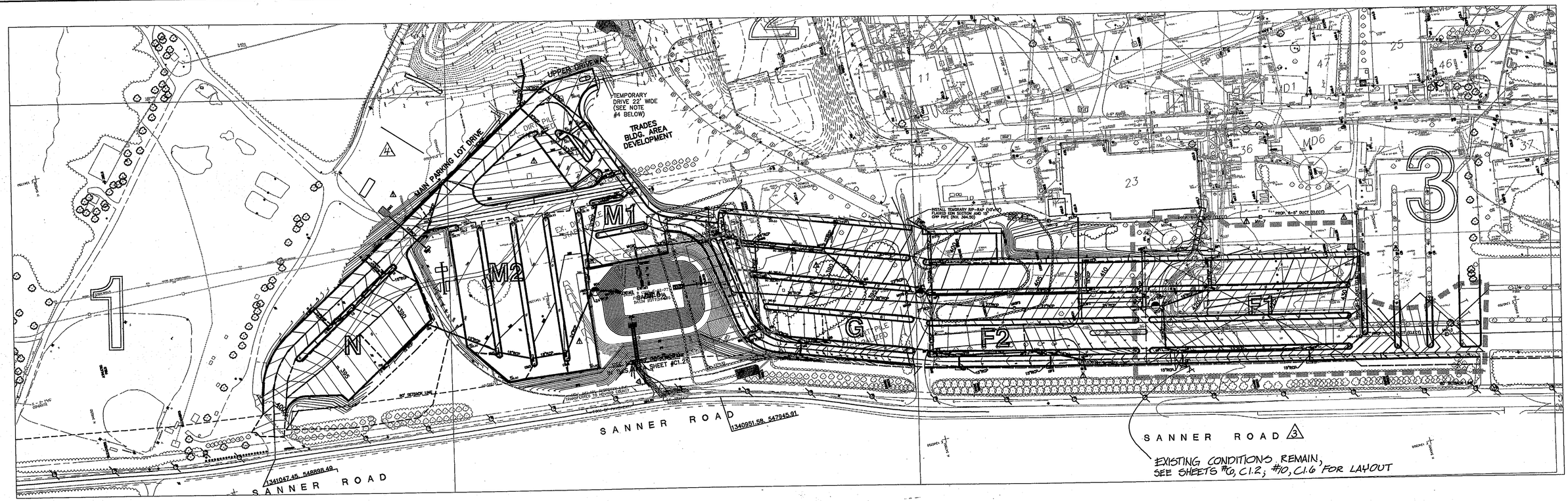
APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
CONSTRUCTION
PHASING 1 & 2 PLAN
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET C1.20

SHEET 24 OF 48

SDP-04-66



1 CONSTRUCTION PHASING #3 PLAN
NORTH PARKING
SCALE: 1"=100'

SEQUENCE OF CONSTRUCTION NOTES
MAINTENANCE OF TRAFFIC

NORTH

1. ONCE NOTICE TO PROCEED IS OBTAINED, CONTRACTOR SHALL FOLLOW SEQUENCE OF CONSTRUCTION, AS DESCRIBED ON SHEET #C2.13. TRAFFIC FLOW ON THE EXISTING DRIVE SOUTH OF PHASE 1 FROM SANNER ROAD SHALL BE MAINTAINED AT ALL TIMES.
2. PHASE WORK SHALL INCLUDE THE AREA DESIGNATED ON THE PLAN PLUS GRADING AREA AND STORM DRAINAGE AREA IN LOTS #M1 AND #M2, PLUS BASIN B AS FOLLOWS:
   - PHASE 1 WORK INCLUDES: PARKING LOTS #M1 AND #M2 ROUGH GRADE TO WITHIN 12" OF FINISHED GRADE, TOPSOIL AND PERMANENT SEED (ESTABLISH TURF).
   - PHASE 1 WORK INCLUDES CONSTRUCTION OF BASIN B AS PERMITTED UNDER SDP F-02-70.
   - PHASE 1 WORK INCLUDES STORM DRAINAGE PIPE SYSTEM FROM MANHOLE #MH8G TO AND INCLUDING RIP-RAP AT END WALL #EW1M1.
3. ALL PHASE 1 WORK SHALL BE COMPLETELY INSPECTED AND APPROVED BY JHU/APL BEFORE THE START OF PHASE 2 WORK, AND PHASE 3 WORK SHALL NOT BE STARTED UNTIL PHASE 2 WORK IS APPROVED. ALLOW FOR A MINIMUM 30 DAYS PERIOD BETWEEN PHASES OF WORK TO COMPLY WITH INSPECTION ACCEPTANCE COMPLIANCE.
4. AFTER RECEIVING NOTICE TO PROCEED FOR PHASE 2 WORK, THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION AS DESCRIBED ON SHT. # C2.13. TRAFFIC FLOW ON THE MAIN PARKING LOT DRIVE (BUILT IN PHASE 1) SHALL BE MAINTAINED AT ALL TIMES. A TEMPORARY ACCESS DRIVE FROM THE NEW UPPER DRIVEWAY TO BUILDING #31 LOADING AREA SHALL BE MAINTAINED AT ALL TIMES DURING PHASE 2, AND SHALL BE RELOCATED AS REQUIRED BY APL (AT LEAST TWO TIMES). THE TEMPORARY ACCESS DRIVE SHALL BE MAINTAINED AT ALL TIMES FOR 2-WAY TRACK TRAILER TRAFFIC WITH AN ALL WEATHER/DUST FREE SURFACE, MINIMUM 22' WIDE. (1)
5. AFTER RECEIVING NOTICE TO PROCEED FOR PHASE 3 WORK, THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION AS DESCRIBED ON SHT. #C2.13 BEFORE START OF PHASE 3 WORK. INSTALL A TEMPORARY SECURITY FENCE SOUTH OF BUILDING #23 AND EAST OF THE WORK, SEE SHT. #C1.6 FOR LOCATION.
6. EACH PHASE OF THE WORK SHALL BE COMPLETED AS SHOWN. COMPLY WITH CLOSURE REQUIREMENTS FOR EACH PHASE SPECIFIED IN THE SEQUENCE OF CONSTRUCTION SHT. #C2.13.

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/30/04

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
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AMT FILE # 102-040

1 2 3
SANNER ROAD
SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: PF
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
7/28/09	RED-LINE SUBMISSION	4	MV		
8/17/05	RED-LINE SUBMISSION	3			
12/16/03	COUNTY SET	2			
11/24/03	ADDENDUM 1	1			

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

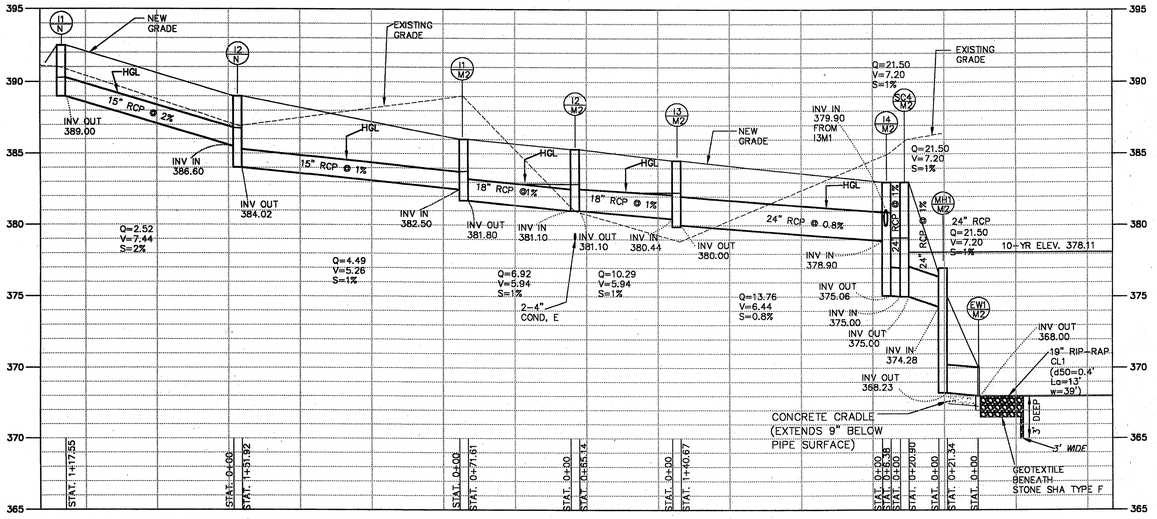
APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
CONSTRUCTION PHASING #3 PLAN
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

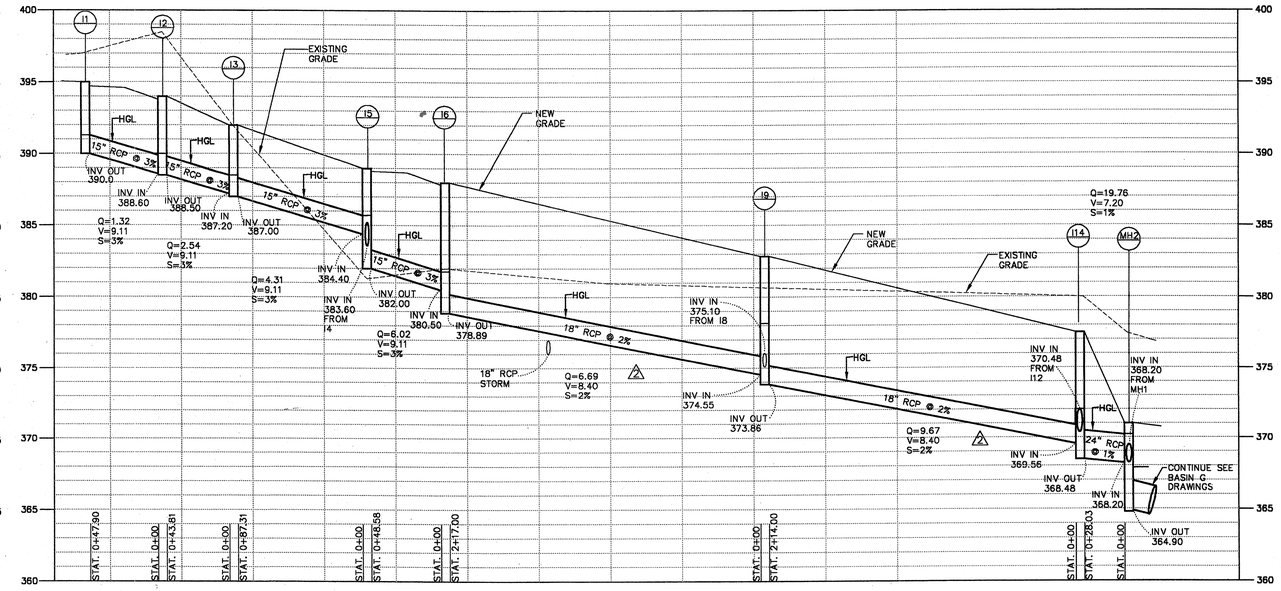
SHEET C1.21

SHEET 25 OF 48

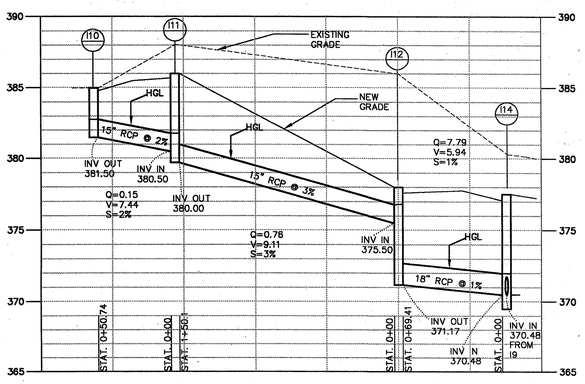
SDP-04-65



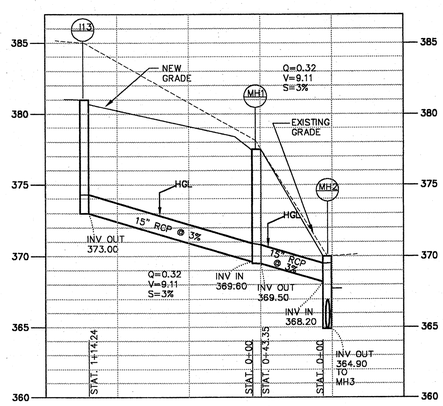
1 PIPE PROFILE I1N TO BASIN B
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



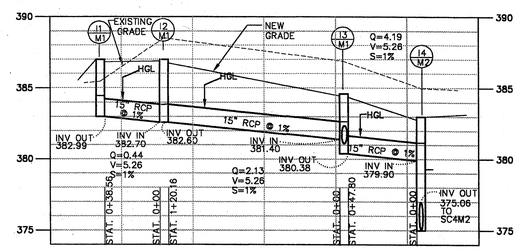
2 PIPE PROFILE I1 TO MH2
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



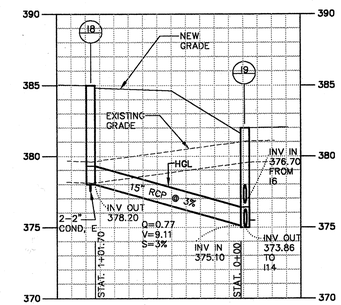
3 PIPE PROFILE I10 TO I14
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



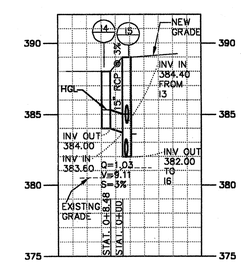
4 PIPE PROFILE I13 TO MH2
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



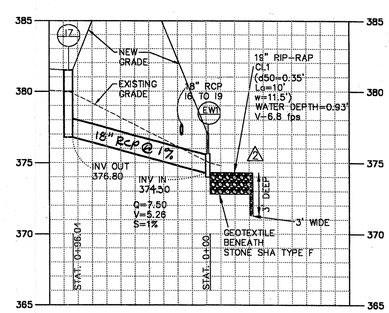
5 PIPE PROFILE I1M1 TO I4M2
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



6 PIPE PROFILE I8 TO I9
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



7 PIPE PROFILE I4 TO I5
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



8 PIPE PROFILE I7 TO EW
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

NOTES
1. RCP SHALL BE CLASS V

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/09
DIRECTOR	DATE 3/31/09

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.

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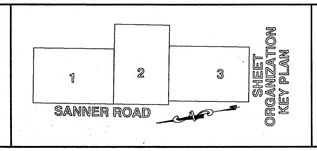
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-4814
AMT FILE # 102-440



DES: JK						
DRN: RLP						
CHK: BW	3/9/04	COORDINATION 2				
DATE: 10/10/03	11/24/03	ADDENDUM 1 1				
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

PIPE PROFILE

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

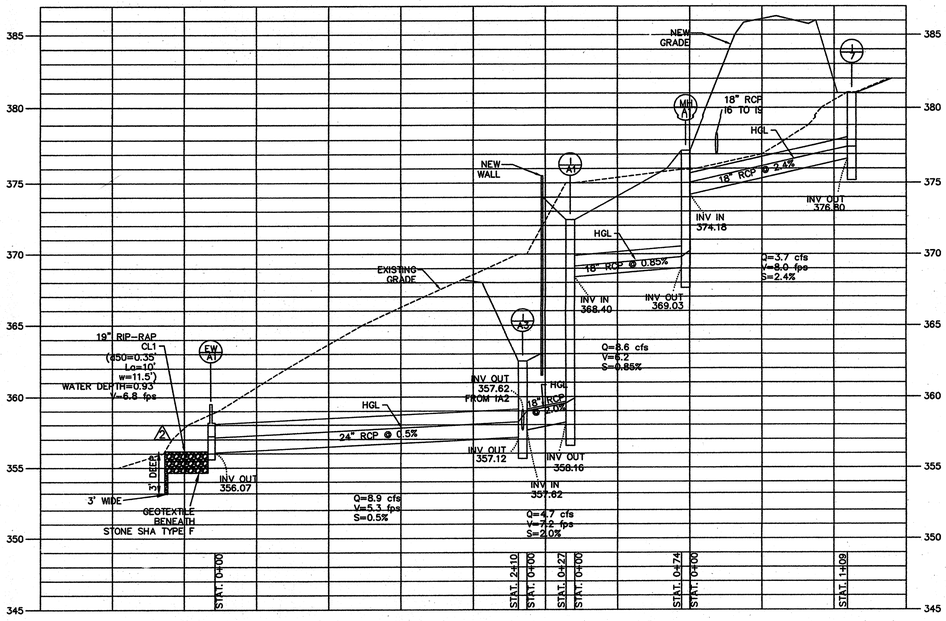
SCALE AS SHOWN

SHEET C2.1

SHEET 26 OF 48

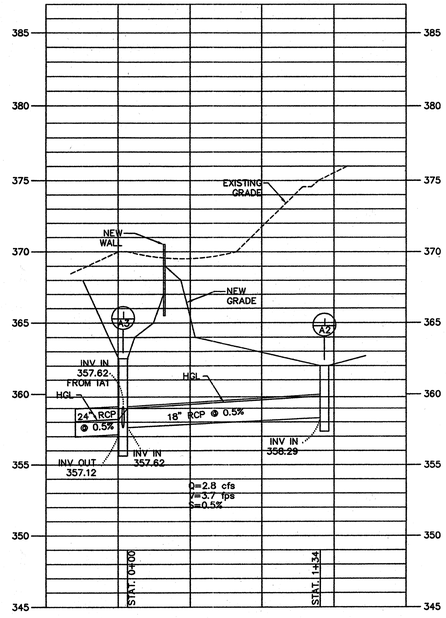
STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER

SDP-04-66
DP-04-66



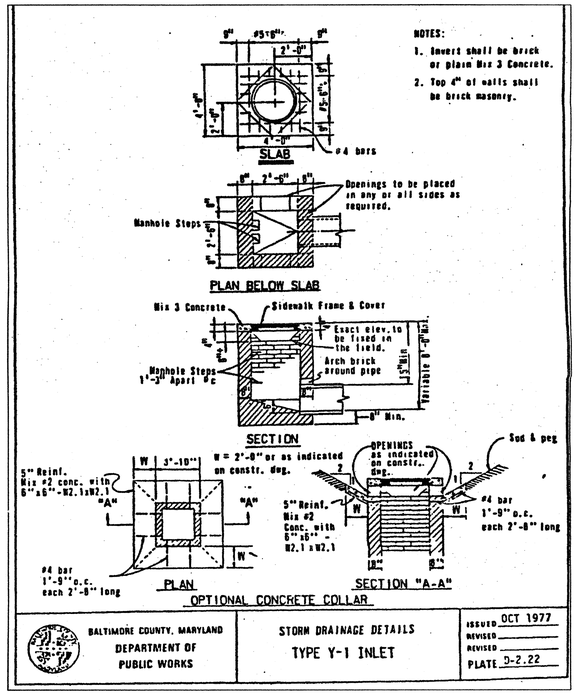
1 PIPE PROFILE I7 TO EWA1

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



2 PIPE PROFILE IA3 TO IA2

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



STORM DRAIN PIPE SCHEDULE

FROM	TO	SIZE (inches)	LENGTH (feet)	SLOPE %	FLOW CAP.(cfs)	10-YR Q (cfs)	VELOCITY (fps)	PIPE type
I7	MHA1	18	109	2.4	14.4	3.7	8.0	RCP
MHA1	IA1	18	74	0.85	8.6	3.7	6.2	RCP
IA1	IA3	18	27	2.0	13.1	4.7	7.2	RCP
IA2	IA3	18	134	0.5	6.6	2.8	3.7	RCP
IA3	EWA1	24	210	0.5	14.1	8.9	5.3	RCP
NOTE: ALL RCP CLASS V.								

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	STANDARD NO.	TOP ELEV.	SIZE (ft)	INV. IN	INV. OUT	COMMENT
IA1	INLET	BALTIMORE COUNTY TYPE Y-1 INLET	372.40	2.5X2.5	368.40	358.16	OPEN 4-SIDES, W=1.5' (CONC. APRON)
IA2	INLET	BALTIMORE COUNTY TYPE Y-1 INLET	362.00	2.5X2.5	--	358.29	OPEN 4-SIDES, W=1.5' (CONC. APRON)
IA3	INLET	BALTIMORE COUNTY TYPE Y-1 INLET	362.50	2.5X2.5	357.62	357.12	OPEN 4-SIDES, W=1.5' (CONC. APRON)
					357.62		
MHA1	MANHOLE	SHA #MD-384.03	377.00	5.0	374.18	369.03	PRECAST MANHOLE
EWA1	END WALL	SHA #MD-354.01	359.00	--	356.07	--	PRECAST END WALL

STORM DRAIN COMPUTATION SHEET

COMPUTED BY: PCF DATE: 06/03 PROJECT: APL-JHU BASIN G
CHECKED BY: JK DATE: 06/03 STORM FREQUENCY: 10-YEAR

MANNING'S "N" (RCP) = 0.013
MANNING'S "N" (PVC) = 0.011

PIPE STRUCTURE FROM (1)	TO (2)	DRAINAGE AREA INC (AC) (3)	TOTAL (AC) (4)	RUNOFF COEFF. "C" (5)	"AREA"X"C" INC (AC) (6)	TOTAL (AC) (7)	TIME OF CONC. SYSTEM (MIN) (8)	RAINFALL INTENSITY "I" (IN/HR) (9)	RUNOFF "Q" (CFS) (10)	PIPE DIAMETER (IN) (11)	PIPE LENGTH (ft) (12)	MIN. PIPE SLOPE (f/f) (13)	ACTUAL PIPE SLOPE (f/f) (14)	VELOCITY (FPS) (15)	TIME IN PIPE (MIN) (16)	PIPE "Q" CAPACITY (CFS) (17)	INLET "Q" (CFS) (18)
I7	MHA1	0.98	.98	0.45	0.44	0.44	5.00	8.50	3.7	18	109	0.55	2.4	8.0	0.2	14.4	3
MHA1	IA1	0.00	.98	0.45	0.44	0.44	5.00	8.50	3.7	18	74	0.55	0.85	6.2	0.2	8.6	0.0
IA1	IA3	0.4	1.38	0.25	0.10	0.55	5.00	8.50	4.7	18	27	0.25	2.0	7.2	0.1	13.1	0.8
IA2	IA3	1.3	2.68	0.25	0.32	0.32	5.00	8.50	2.8	18	134	0.09	0.50	3.7	0.5	6.6	2.8
IA3	EWA1	0.7	3.38	0.25	0.18	1.05	5.00	8.50	8.9	24	210	0.19	0.50	5.3	0.7	14.1	1.5

NOTE:

1. PIPE PROFILES CONTINUED ON THIS SHEET FROM SHEET C2.1 (26 OF 48).
2. PIPE AND STRUCTURAL SCHEDULES CONTINUED FROM SHEET C2.4 (29 OF 48)

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 9/21/04
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 9/22/04
DIRECTOR DATE 9/22/04

APPROVED REVISIONS
DATE 8/24/04
SIGNATURE

STATE OF MARYLAND
9/7/04

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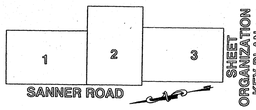
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
15 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 102-440



DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
6/25/04	RED-LINE SUBMISSION				

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN
GRADING OF AREA TO BE USED FOR ANTENNA RANGE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

PIPE PROFILE

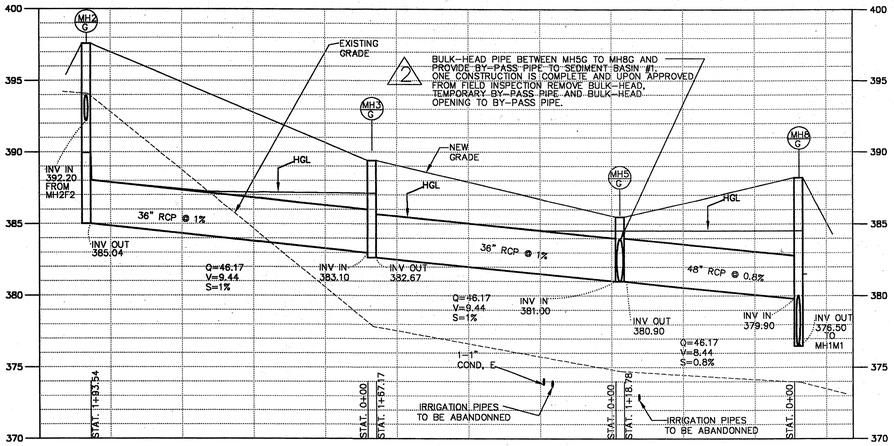
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

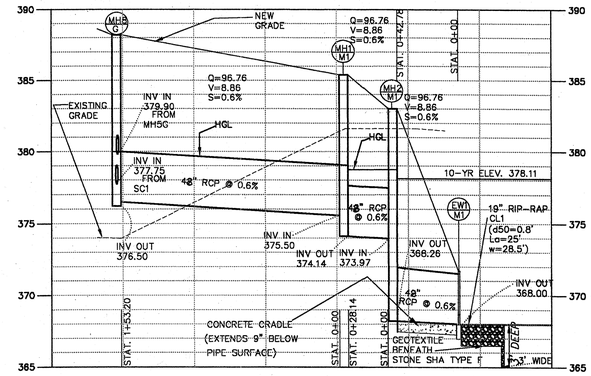
SHEET C2.1A

SHEET 26A ~~OF 48~~

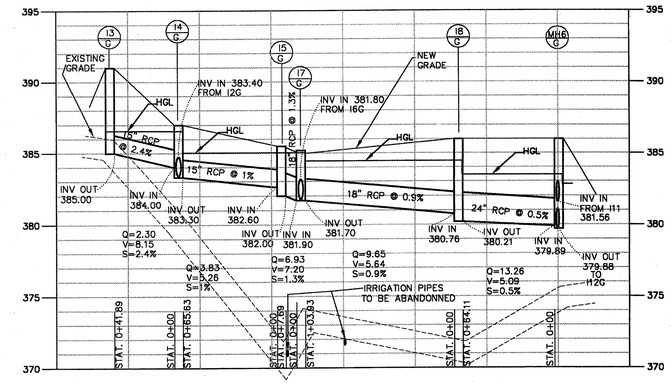
SDP-04-66



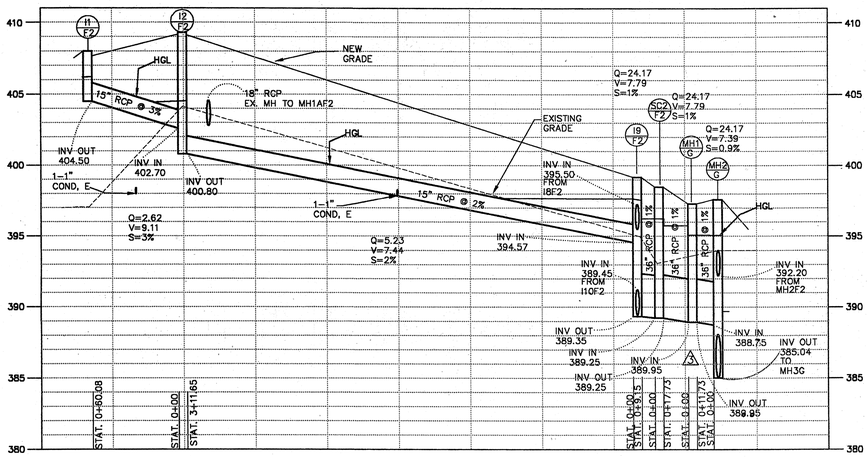
1 PIPE PROFILE MH2G TO MH8G
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



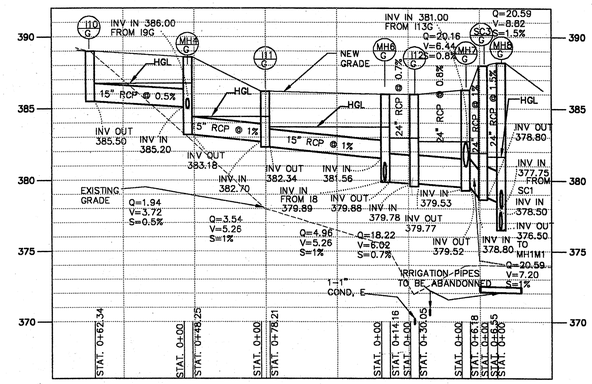
2 PIPE PROFILE MH8G TO BASIN B
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



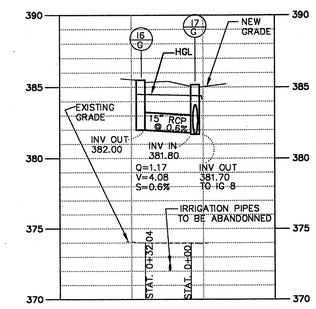
3 PIPE PROFILE I3G TO MH6G
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



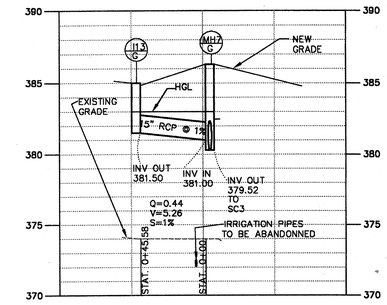
4 PIPE PROFILE I1F2 TO MH2G
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



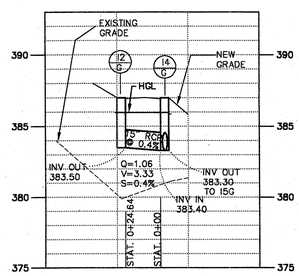
5 PIPE PROFILE I10G TO MH8G
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



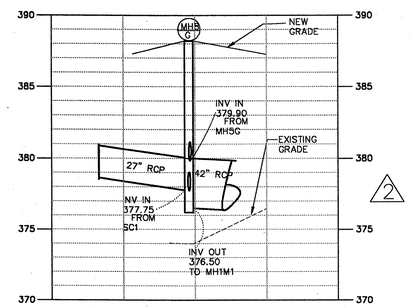
6 PIPE PROFILE I6G TO I7G
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



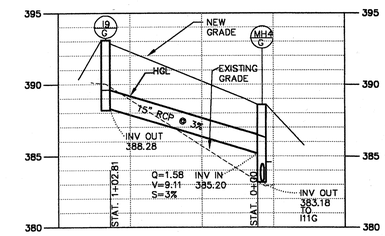
7 PIPE PROFILE I13G TO MH7G
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



8 PIPE PROFILE I1G TO I4G
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



9 PIPE PROFILE MH8G TO BE CONTINUED TO SC1
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



10 PIPE PROFILE I9G TO MH4G
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

NOTES
1. RCP SHALL BE CLASS V

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/31/04

STATE OF MARYLAND — PAUL LEE WANSER — No. 16403 — REGISTERED PROFESSIONAL ENGINEER

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CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2560 FAX (301) 881-8814
AMT FILE # 102-440

SANNER ROAD — 1 2 3 — SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
3/9/04	COORDINATION	3			
1/26/01	COUNTY SET	2			
11/24/03	ADDENDUM 1	1			

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

PIPE PROFILE

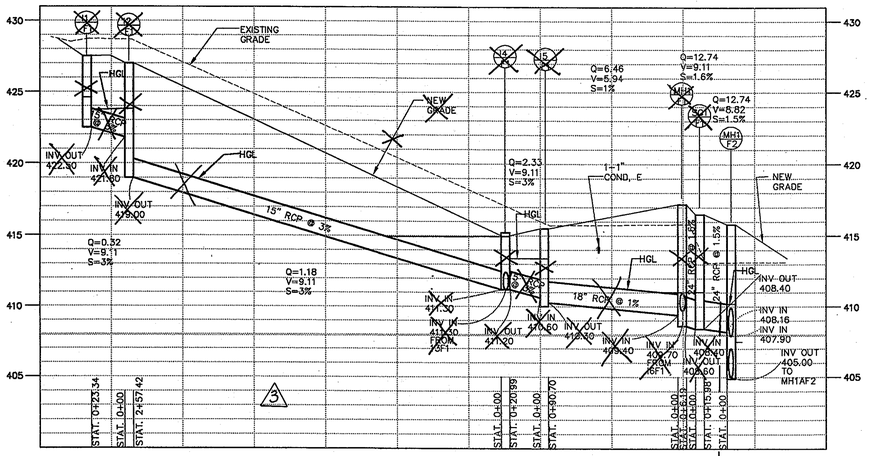
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

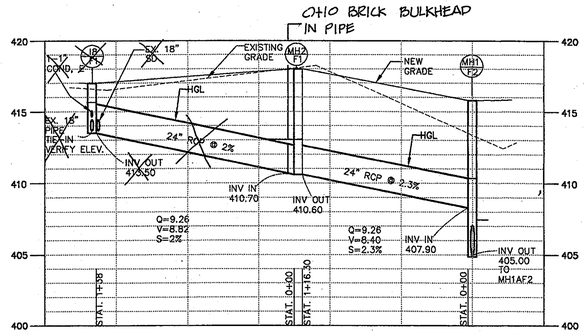
SHEET C2.2

SHEET 27 OF 48

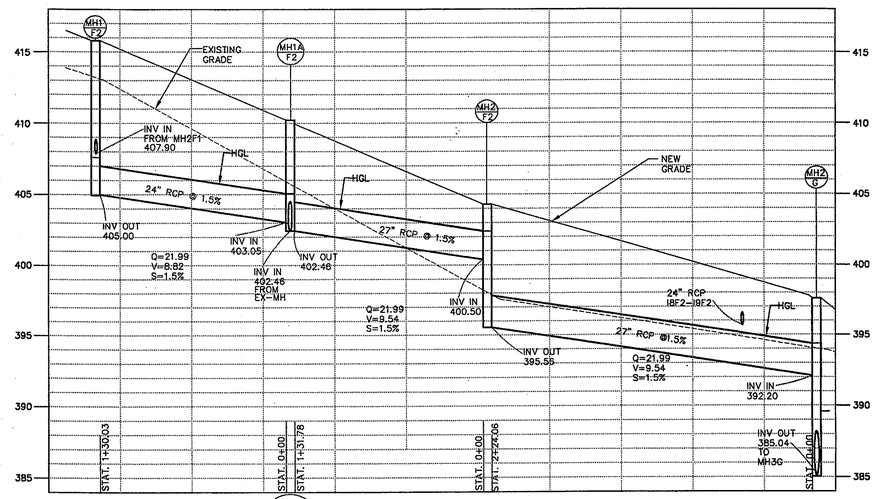
SDP-04-66



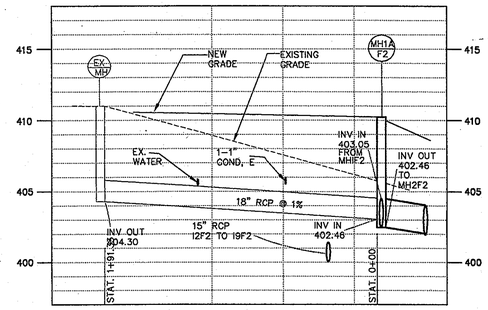
1 PIPE PROFILE I1F1 TO MH1F2
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



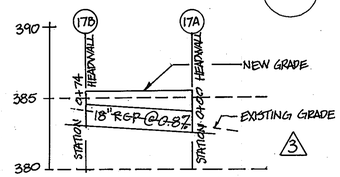
2 PIPE PROFILE I8 TO MH1F2
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



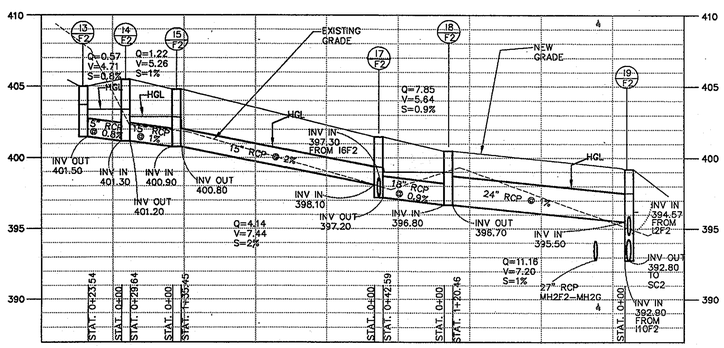
3 PIPE PROFILE MH1F2 TO MH2G
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



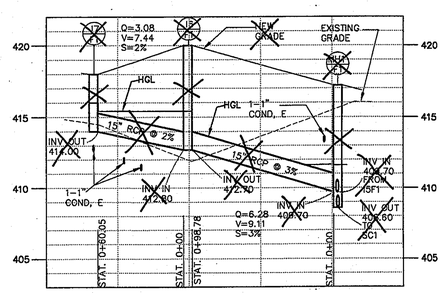
2 PIPE PROFILE EX.MH TO MH1AF2
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



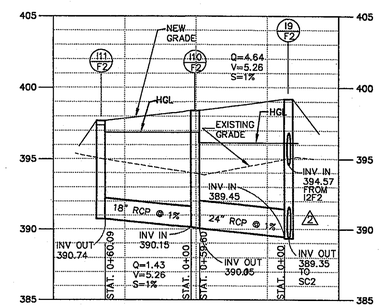
9 PIPE PROFILE 17B TO 17A
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



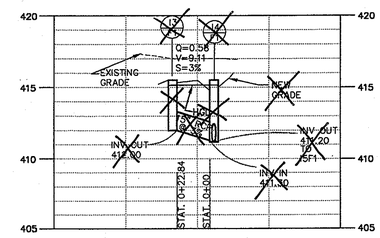
4 PIPE PROFILE I3F2 TO I9F2
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



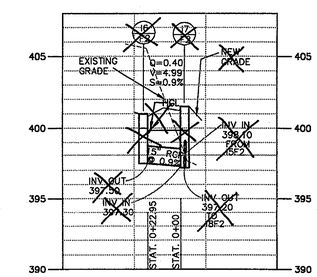
5 PIPE PROFILE I7F1 TO MH1F1
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



6 PIPE PROFILE I11F2 TO I9F2
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



7 PIPE PROFILE I3F1 TO 14F1
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



8 PIPE PROFILE I6F2 TO I7F2
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

NOTES
1. RCP SHALL BE CLASS V

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/31/04
DIRECTOR — DATE 3/31/04

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

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TEL (301) 881-2565 FAX (301) 881-5814
AMT FILE # 102-440

SANNER ROAD — 1 2 3 — SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/17/05	RED-LINE SUBMISSION	5			
3/9/04	COORDINATION	2			
11/24/03	ADDENDUM 1	1			

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

PIPE PROFILE

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

SCALE AS SHOWN

SHEET C2.3

SHEET 28 OF 48

SDP-04-86

STORM DRAIN PIPE SCHEDULE

FROM	TO	SIZE (inches)	LENGTH (feet)	SLOPE %	FLOW CAP.(cfs)	10-YR Q (cfs)	VELOCITY (fps)	PIPE type
~~I1F1~~	~~I2F1~~	~~15~~	~~23.34~~	~~0.03~~	~~11.19~~	~~0.32~~	~~9.11~~	~~RCP~~
~~I2F1~~	~~I4F1~~	~~15~~	~~257.42~~	~~0.03~~	~~11.19~~	~~1.18~~	~~9.11~~	~~RCP~~
~~I3F1~~	~~I4F1~~	~~15~~	~~22.84~~	~~0.03~~	~~11.19~~	~~0.58~~	~~9.11~~	~~RCP~~
~~I4F1~~	~~I5F1~~	~~15~~	~~20.99~~	~~0.03~~	~~11.19~~	~~2.33~~	~~9.11~~	~~RCP~~
~~I5F1~~	~~MH1F1~~	~~18~~	~~90.70~~	~~0.01~~	~~11.19~~	~~6.46~~	~~5.94~~	~~RCP~~
~~I7F1~~	~~I6F1~~	~~15~~	~~60.05~~	~~0.02~~	~~9.13~~	~~3.08~~	~~7.44~~	~~RCP~~
~~I6F1~~	~~MH1F1~~	~~15~~	~~98.78~~	~~0.03~~	~~11.19~~	~~6.28~~	~~9.11~~	~~RCP~~
~~MH1F1~~	~~SC1F1~~	~~24~~	~~6.19~~	~~0.016~~	~~28.61~~	~~12.74~~	~~9.11~~	~~RCP~~
~~SC1F1~~	~~MH1F2~~	~~24~~	~~15.98~~	~~0.015~~	~~27.70~~	~~12.74~~	~~8.82~~	~~RCP~~
~~I8F1~~	~~MH2F1~~	~~24~~	~~138.00~~	~~0.02~~	~~31.99~~	~~9.26~~	~~8.82~~	~~RCP~~
MH2F1	MH1F2	24	116.30	0.023	34.30	9.26	8.40	RCP
MH1F2	MH1AF2	24	130.03	0.015	27.70	21.99	8.82	RCP
EX-MH	MH1AF2	18	191.33	0.01	10.50	9.26	7.20	RCP
MH1AF2	MH2F2	27	131.78	0.015	37.93	21.99	9.54	RCP
MH2F2	MH2G	27	224.06	0.015	37.93	21.99	9.54	RCP
I3F2	I4F2	15	23.54	0.008	5.78	0.57	4.71	RCP
EX.-I	MH4AF2	15	17.16	0.01	–	–	–	RCP
MH4AF2	I4F2	15	61.15	0.01	–	–	–	RCP
I4F2	I5F2	15	29.64	0.01	6.46	1.22	5.26	RCP
I5F2	I7F2	15	135.45	0.02	9.13	4.14	7.44	RCP
I6F2	I7F2	15	22.95	0.009	6.13	0.40	4.99	RCP
I7F2	I8F2	18	42.59	0.009	9.96	7.85	5.64	RCP
I8F2	I9F2	24	120.46	0.01	22.62	11.16	7.20	RCP
I1F2	I2F2	15	60.08	0.03	11.19	2.62	9.11	RCP
I2F2	I9F2	15	311.65	0.02	9.13	5.23	7.44	RCP
I11F2	I10F2	18 △2	60.09	0.01	10.5	△2 9.83	5.94 △2	RCP
I10F2	I9F2	24	59.60	0.01	6.46	13.04	7.20	RCP
I9F2	SC2F2	36	9.15	0.01	30.97	32.57	9.44	RCP
SC2F2	MH1G	36	17.73	0.01	30.97	32.57	9.44	RCP
MH1G	MH2G	36	11.73	0.009	30.97	32.57	8.95	RCP
MH2G	MH3G	36	193.54	0.01	66.70	61.38	9.44	RCP
MH3G	MH5G	36	167.17	0.01	66.70	61.38	9.44	RCP
MH5G	MH8G	48	118.78	0.008	59.66	61.38	8.44	RCP
NOT USED	I2G	NOT USED	216.39	NOT USED	6.46	NOT USED	5.26	NOT USED
I2G	I4G	15	24.64	0.004	4.08	1.06	3.33	RCP
I3G	I4G	15	41.89	0.024	10.00	2.30	8.15	RCP
I4G	I5G	15	65.63	0.01	6.46	3.83	5.26	RCP
I5G	I7G	18	7.69	0.013	11.97	6.93	7.20	RCP
I6G	I7G	15	32.04	0.006	5.00	1.17	4.08	RCP
I7G	I8G	18	103.93	0.009	9.96	9.65	5.64	RCP
I8G	MH6G	24	64.11	0.005	15.99	13.26	5.09	RCP
I9G	MH4G	15	102.81	0.03	11.19	1.58	9.11	RCP
I10G	MH4G	15	62.34	0.005	4.57	1.97	3.72	RCP
MH4G	I11G	15	48.25	0.01	6.46	3.54	5.26	RCP
I11G	MH6G	15	78.21	0.01	6.46	4.96	5.26	RCP
MH6G	I12G	24	14.16	0.007	18.92	18.22	6.02	RCP
I12G	MH7G	24	30.05	0.008	22.62	20.16	7.20	RCP
I13G	MH7G	15	45.58	0.01	6.46	0.44	5.26	RCP
MH7G	SC3G	24	6.18	0.01	27.70	20.59	7.20	RCP
SC3G	MH8G	24	6.55	0.015	27.70	20.59	8.82	RCP
MH8G	MH1M1	48 △2	153.20	0.006	111.28	96.70	8.86	RCP
MH1M1	MH2M1	48	28.14	0.006	111.28	96.70	8.86	RCP
MH2M1	EW1M1	48	42.78	0.006	111.28	96.70	8.86	RCP
I1N	I2N	15	117.55	0.02	9.13	2.52	7.44	RCP
I2N	I1M2	15	151.92	0.01	6.46	4.49	5.26	RCP
I1M2	I2M2	18	71.61	0.01	10.50	6.92	5.94	RCP
I2M2	I3M2	18	65.14	0.01	10.50	10.29	5.94	RCP
I3M2	I4M2	24	140.67	0.008	20.23	13.76	6.44	RCP
I1M1	I2M1	15	38.56	0.01	6.46	0.44	5.26	RCP
I2M1	I3M1	15	120.16	0.01	6.46	2.13	5.26	RCP
I3M1	I4M2	15	47.80	0.01	6.46	4.19	5.26	RCP
I4M2	SC4M2	24	6.38	0.01	22.62	21.50	7.20	RCP
SC4M2	MH1M2	24	20.90	0.01	22.62	21.50	7.20	RCP
MH1M2	EW1M2	24	21.34	0.01	22.62	21.50	7.20	RCP
POND G AREA SANDFILTER								
I1	I2	15	47.90	0.03	11.19	1.32	9.11	RCP
I2	I3	15	43.81	0.03	11.19	2.54	9.11	RCP
I3	I5	15	87.31	0.03	11.19	4.31	9.11	RCP
I4	I5	15	8.48	0.03	11.19	1.03	9.11	RCP
I5	I6	15	48.58	0.03	11.19	6.02	9.11	RCP
I6	I9	18 △2	217.00	0.02	14.85	6.69	8.40	RCP
I8	I9	15	101.70	0.03	11.19	0.77	9.11	RCP
I9	I14	18	218.00	0.02	14.85	9.67	8.40	RCP
I10	I11	15	50.74	0.02	9.13	0.15	7.44	RCP
I11	I12	15	150.10	0.03	11.19	0.76	9.11	RCP
I12	I14	18	69.41	0.01	10.50	7.79	5.94	RCP
I14	MH2	24	28.03	0.01	22.62	19.76	7.20	RCP
I13	MH1	15	114.24	0.03	11.19	0.32	9.11	RCP
MH1	MH2	15	43.35	0.03	11.19	0.32	9.11	RCP
NOT USED	MH3	NOT USED	18.79	NOT USED	22.62	NOT USED	7.20	NOT USED
NOT USED	MH4	NOT USED	–	NOT-USED	22.62	NOT-USED	7.20	NOT USED
I7	EW2	18	△2 105.00	0.01	10.50	7.50	5.26	RCP

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	STANDARD NO.	TOP ELEV.	SIZE (ft)	INV. IN	INV. OUT	COMMENT
~~I1F1~~	~~INLET~~	~~HOWARD COUNTY DPW TYPE 'A-5 INLET. SD.4.01~~	~~428.36~~	~~5.00~~	~~–~~	~~422.50~~	~~CAST IN PLACE INLET~~
~~I2F1~~	~~INLET~~	~~HOWARD COUNTY DPW TYPE 'A-5 INLET. SD.4.01~~	~~428.36~~	~~5.00~~	~~421.80~~	~~419.00~~	~~CAST IN PLACE INLET~~
~~I3F1~~	~~INLET~~	~~HOWARD COUNTY DPW TYPE 'A-5 INLET. SD.4.01~~	~~416.24~~	~~5.00~~	~~–~~	~~412.00~~	~~CAST IN PLACE INLET~~
~~MH4AF2~~	~~MANHOLE~~	~~SHA #MD-384.03~~		~~5.00~~	~~403.20~~	~~403.19~~	~~PRECAST MANHOLE~~
~~I4F1~~	~~INLET~~	HOWARD COUNTY DPW TYPE 'A-5 INLET. SD.4.01	~~416.02~~	~~5.00~~	~~411.30~~ ~~411.30~~	~~411.20~~	~~CAST IN PLACE INLET~~
~~I5F1~~	~~INLET~~	~~HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02~~	~~414.60~~	~~10.00~~	~~410.60~~	~~410.30~~	~~PRECAST INLET~~
~~I7F1~~	~~INLET~~	~~HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02~~	~~418.60~~	~~10.00~~	~~–~~	~~414.00~~	~~PRECAST INLET~~
~~I6F1~~	~~INLET~~	~~HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02~~	~~420.60~~	~~10.00~~	~~412.80~~	~~412.70~~	~~PRECAST INLET~~
~~MH1F1~~	~~MANHOLE~~	~~SHA #MD-384.03~~	~~417.20~~	~~5.00~~	~~409.40~~ ~~400.70~~	~~408.60~~	~~PRECAST MANHOLE~~
~~SC1F1~~	~~STORMCEPTOR~~		~~416.50~~	~~8.00~~	~~408.40~~	~~408.40~~	~~STORMCEPTOR~~
~~I8F1~~	~~INLET~~	~~SHA DOT TYPE WR INLET 4.37~~	~~419.00~~	~~10.00~~	~~–~~	~~413.60~~	~~PRECAST INLET~~
MH2F1	MANHOLE	SHA #MD-384.03	418.00	5.00	410.70	410.60	PRECAST MANHOLE
MH1F2	MANHOLE	SHA #MD-384.03	415.80	5.00	408.16	405.00	PRECAST MANHOLE
MH1AF2	MANHOLE	SHA #MD-384.03	410.00	5.00	403.05 402.46	402.46	PRECAST MANHOLE
MH2F2	MANHOLE	SHA #MD-384.03	404.30	5.00	400.50	395.56	PRECAST MANHOLE
I3F2	INLET	HOWARD COUNTY DPW TYPE 'A-5 INLET. SD.4.01	406.26	5.00	–	401.50	CAST IN PLACE INLET
I4F2	INLET	HOWARD COUNTY DPW TYPE 'A-5 INLET. SD.4.01	406.26	5.00	401.30	401.20	CAST IN PLACE INLET
I5F2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	405.40	10.00	400.90	400.80	PRECAST INLET
I6F2	INLET	HOWARD COUNTY DPW TYPE 'A-5 INLET. SD.4.01	402.36	5.00	–	397.50	CAST IN PLACE INLET
I7F2	INLET	HOWARD COUNTY DPW TYPE 'A-5 INLET. SD.4.01	402.30	5.00	398.10 397.30	397.20	CAST IN PLACE INLET
I8F2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	401.10	10.00	396.80	396.70	PRECAST INLET
I1F2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	408.60	10.00	–	404.50	PRECAST INLET
I2F2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	410.00	10.00	402.70	400.80	PRECAST INLET
I11F2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	397.60	10.00	–	390.74	PRECAST INLET
I10F2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	399.00	10.00	390.15	390.05	PRECAST INLET
I9F2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	399.80	10.00	394.57 389.45 395.50 △2	389.35	PRECAST INLET
SC2F2	STORMCEPTOR		398.50	10.00	389.25	389.25	STORMCEPTOR
MH1G	MANHOLE	SHA #MD-384.03	397.30	5.00	388.95	388.85	PRECAST MANHOLE
MH2G	MANHOLE	SHA #MD-384.05	397.60	6.00	388.75	385.04	PRECAST MANHOLE
MH3G	MANHOLE	SHA #MD-384.05	389.40	6.00	383.10	382.67	PRECAST MANHOLE
MH5G	MANHOLE	SHA #MD-384.05	385.50	6.00	381.00	380.90	PRECAST MANHOLE
NOT USED	NOT USED	NOT USED NOT USED	400.00	NOT USED	NOT USED	392.00	NOT USED
I2G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	387.70	10.00	–	383.50	PRECAST INLET
I3G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	391.60	10.00	–	385.00	PRECAST INLET
I4G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	387.70	10.00	384.00 383.40	383.30	PRECAST INLET
I5G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	386.10	10.00	382.60	382.00	PRECAST INLET
I6G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	385.86	10.00	–	382.00	PRECAST INLET
I7G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	385.86	10.00	381.90 381.80	381.70	PRECAST INLET
I8G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	386.60	10.00	380.76	380.21	PRECAST INLET
I9G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	393.60	10.00	–	388.28	PRECAST INLET
I10G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	389.60	10.00	–	385.50	PRECAST INLET
MH4G	MANHOLE	SHA #MD-384.03	388.50	5.00	386.00 385.20	383.18	PRECAST MANHOLE
I11G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	386.60	10.00	382.70	382.34	PRECAST INLET
MH6G	MANHOLE	SHA #MD-384.03	386.00	5.00	381.56 379.89	379.88	PRECAST MANHOLE
I12G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	385.00	10.00	379.78	379.77	PRECAST INLET
I13G	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	385.60	10.00	–	381.50	PRECAST INLET
MH7G	MANHOLE	SHA #MD-384.03	386.30	5.00	379.53 381.00	379.52	PRECAST MANHOLE
SC3G	STORMCEPTOR		388.00	8.00	378.80	378.80	STORMCEPTOR
MH8G	MANHOLE	SHA #MD-384.07	388.20	7.00	379.90 380.00	376.50	PRECAST MANHOLE
MH1M1	MANHOLE	SHA #MD-384.07	387.70	7.00	375.50	374.14	PRECAST MANHOLE
I1N	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	393.10	10.00	–	389.00	PRECAST INLET
I2N	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	389.60	10.00	386.60	384.02	PRECAST INLET
I1M2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	385.40	10.00	382.50	381.80	PRECAST INLET
I2M2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	384.60	10.00	381.10	381.10	PRECAST INLET
I3M2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	385.10	10.00	380.44	380.00	PRECAST INLET
I1M1	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	387.60	10.00	–	382.99	PRECAST INLET
I2M1	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	387.60	10.00	382.70	382.60	PRECAST INLET
I3M1	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	385.20	10.00	381.40	380.38	PRECAST INLET
I4M2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	383.00	10.00	381.40 379.90	375.06	PRECAST INLET
SC4M2	STORMCEPTOR		383.00	8.00	375.00	375.00	STORMCEPTOR
MH1M2	MANHOLE	SHA #MD-384.03	377.00	5.00	374.28	368.23	PRECAST MANHOLE
EW1M1	ENDWALL	SHA #MD-354.01	371.70	5.00	–	368.00	STANDARD TYPE C ENDWALL
EW1M2	ENDWALL	SHA #MD-354.01	370.30	5.00	–	368.00	STANDARD TYPE C ENDWALL
EX.- I	EX. INLET	–	–	–	–	403.37	STANDARD TYPE C ENDWALL
MH2M1	MANHOLE	SHA #MD-384.03	383.00	5.00	373.97	368.26	PRECAST MANHOLE
POND G AREA SANDFILTER							
I1	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	393.92	10.00	–	390.00	PRECAST INLET
I2	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	393.92	10.00	388.60	388.50	PRECAST INLET
I3	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	392.00	10.00	387.20	387.00	PRECAST INLET
I4	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	388.00	10.00	–	384.00	PRECAST INLET
I5	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	389.32	10.00	384.40 383.60	382.00	PRECAST INLET
I6	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	389.32	10.00	380.50	378.89	PRECAST INLET
I7	INLET	SHA DOT TYPE WR INLET 4.37	381.50	10.00	–	△2 376.80	PRECAST INLET
I8	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	385.72	10.00	–	378.20	PRECAST INLET
I9	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	382.85	10.00	△2 374.55 375.10	373.86	PRECAST INLET
I10	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	385.90	10.00	–	381.50	PRECAST INLET
I11	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	386.72	10.00	380.50	380.00	PRECAST INLET
I12	INLET	SHA DOT TYPE WR INLET 4.37	376.59	10.00	375.50	371.17	PRECAST INLET
I14	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	377.57	10.00	△2 369.56 370.48	368.48	PRECAST INLET
I13	INLET	HOWARD COUNTY DPW TYPE 'A-10 INLET. SD.4.02	381.55	10.00	–	373.00	PRECAST INLET
MH1	MANHOLE	SHA #MD-384.03	370.00	5.00	369.60	369.50	PRECAST INLET
MH2	MANHOLE	SHA #MD-384.03	380.00	5.00	368.20 368.20	364.90	PRECAST INLET
EW1	ENDWALL	SHA #MD-354.01	377.00	–	–	△2 374.30	STANDARD TYPE C ENDWALL

△3

STORM DRAIN COMPUTATION SHEET

COMPUTED BY: PCF DATE: 06/03 PROJECT: APL-JHU BASIN G

CHECKED BY: JK DATE: 06/03 STORM FREQUENCY: 10-YEAR

MANNING'S "N" (RCP) = 0.013
MANNING'S "N" (PVC) = 0.011

PIPE STRUCTURE FROM (1)	TO (2)	DRAINAGE AREA INC (AC) (3)	TOTAL (AC) (4)	RUNOFF COEFF. "C" (5)	"AREA"X"C" INC (AC) (6)	TOTAL (AC) (7)	TIME OF CONC. SYSTEM (MIN) (8)	RAINFALL INTENSITY "I" (IN/HR) (9)	RUNOFF "Q" (CFS) (10)	PIPE DIAMETER (IN) (11)	PIPE LENGTH (ft) (12)	MIN. PIPE SLOPE (f/f) (13)	ACTUAL PIPE SLOPE (f/f) (14)	VELOCITY (FPS) (15)	TIME IN PIPE (MIN) (16)	PIPE "Q" CAPACITY (CFS) (17)	INLET "Q" (CFS) (18)
~~I1F1~~	~~I2F1~~	~~0.04~~	~~0.04~~	~~0.9~~	~~0.04~~	~~0.04~~	~~5.00~~	~~8.50~~	~~0.32~~	~~15~~	~~23.34~~	~~0.000~~	~~0.030~~	~~9.11~~	~~0.04~~	~~11.19~~	~~0.32~~
~~I2F1~~	~~I4F1~~	~~0.11~~	~~0.15~~	~~0.9~~	~~0.10~~	~~0.14~~	~~5.00~~	~~8.50~~	~~1.18~~	~~15~~	~~257.42~~	~~0.000~~	~~0.030~~	~~9.11~~	~~0.47~~	~~11.19~~	~~0.86~~
~~I3F1~~	~~I4F1~~	~~0.08~~	~~0.08~~	~~0.9~~	~~0.07~~	~~0.07~~	~~5.00~~	~~8.50~~	~~0.58~~	~~15~~	~~22.84~~	~~0.000~~	~~0.030~~	~~9.11~~	~~0.04~~	~~11.19~~	~~0.58~~
~~I4F1~~	~~I5F1~~	~~0.07~~	~~0.30~~	~~0.9~~	~~0.07~~	~~0.27~~	~~5.00~~	~~8.50~~	~~2.33~~	~~15~~	~~20.99~~	~~0.001~~	~~0.030~~	~~9.11~~	~~0.04~~	~~11.19~~	~~0.57~~
~~I5F1~~	~~MH1F1~~	~~0.54~~	~~0.84~~	~~0.9~~	~~0.49~~	~~0.76~~	~~5.00~~	~~8.50~~	~~6.46~~	~~18~~	~~90.70~~	~~0.004~~	~~0.010~~	~~5.94~~	~~0.25~~	~~10.50~~	~~4.13~~
~~I7F1~~	~~I6F1~~	~~0.40~~	~~0.40~~	~~0.9~~	~~0.36~~	~~0.36~~	~~5.00~~	~~8.50~~	~~3.08~~	~~15~~	~~60.05~~	~~0.002~~	~~0.020~~	~~7.44~~	~~0.13~~	~~9.13~~	~~3.08~~
~~I6F1~~	~~MH1F1~~	~~0.42~~	~~0.82~~	~~0.9~~	~~0.38~~	~~0.74~~	~~5.00~~	~~8.50~~	~~6.28~~	~~15~~	~~98.78~~	~~0.009~~	~~0.030~~	~~9.11~~	~~0.18~~	~~11.19~~	~~3.21~~
~~MH1F1~~	~~SC1F1~~	~~0.00~~	~~1.67~~	~~0.9~~	~~0.00~~	~~1.50~~	~~5.00~~	~~8.50~~	~~12.74~~	~~24~~	~~6.19~~	~~0.003~~	~~0.016~~	~~9.11~~	~~0.01~~	~~28.61~~	~~0.00~~
~~SC1F1~~	~~MH1F2~~	~~0.00~~	~~1.67~~	~~0.9~~	~~0.00~~	~~1.50~~	~~5.00~~	~~8.50~~	~~12.74~~	~~24~~	~~15.98~~	~~0.003~~	~~0.015~~	~~8.82~~	~~0.03~~	~~27.70~~	~~0.00~~
~~I8F1~~	~~MH2F1~~	~~1.21~~	~~1.21~~	~~0.9~~	~~1.09~~	~~1.09~~	~~5.00~~	~~8.50~~	~~9.26~~	~~18~~	~~138.54~~	~~0.008~~	~~0.020~~	~~8.40~~	~~0.27~~	~~14.85~~	~~9.26~~
MH2F1	MH1F2	0.00	1.21	0.9	0.00	1.09	5.00	8.50	9.26	18	116.30	0.008	0.023	9.01	0.22	15.93	0.00
MH1F2	MH1AF2	0.00	2.88	0.9	0.00	2.59	5.00	8.50	21.99	24	130.03	0.009	0.015	8.82	0.25	27.70	0.00
EX-MH	MH1AF2	0.89	0.89	0.9	0.80	0.80	5.00	8.50	6.81	18	191.33	0.004	0.010	5.94	0.54	10.50	0.00
MH1AF2	MH2F2	0.00	3.77	0.9	0.00	3.39	5.00	8.50	28.80	27	131.78	0.009	0.015	9.54	0.23	37.93	0.00
MH2F2	MH2G	0.00	3.77	0.9	0.00	3.39	5.00	8.50	28.80	27	224.06	0.009	0.015	9.54	0.39	37.93	0.00
I3F2	I4F2	0.07	0.07	0.9	0.07	0.07	5.00	8.50	0.57	15	23.54	0.000	0.008	4.71	0.08	5.78	0.57
I4F2	I5F2	0.09	0.16	0.9	0.08	0.14	5.00	8.50	1.22	15	29.64	0.000	0.010	5.26	0.09	6.46	0.66
I5F2	I7F2	0.38	0.54	0.9	0.34	0.49	5.00	8.50	4.14	15	135.45	0.004	0.020	7.44	0.30	9.13	2.91
I6F2	I7F2	0.05	0.05	0.9	0.05	0.05	5.00	8.50	0.40	15	22.95	0.000	0.009	4.99	0.08	6.13	0.40
I7F2	I8F2	0.43	1.03	0.9	0.39	0.92	5.00	8.50	7.85	18	42.59	0.006	0.009	5.64	0.13	9.96	3.31
I8F2	I9F2	0.43	1.46	0.9	0.39	1.31	5.00	8.50	11.16	24	120.46	0.002	0.010	7.20	0.28	22.62	3.31
I1F2	I2F2	0.34	0.34	0.9	0.31	0.31	5.00	8.50	2.62	15	60.08	0.002	0.030	9.11	0.11	11.19	2.62
I2F2	I9F2	0.34	0.68	0.9	0.31	0.62	5.00	8.50	5.23	15	311.65	0.007	0.020	7.44	0.70	9.13	2.62
I11F2	I10F2	0.19	0.19	0.9	0.17	0.17	5.00	8.50	9.83 △2	18 △2	60.09	0.009	0.010	5.94 △2	0.17	10.5 △2	1.43
I10F2	I9F2	0.42	0.61	0.9	0.38	0.55	5.00	8.50	13.04	24	59.60	0.003	0.010	7.20	0.14	22.62	3.21
I9F2	F2	0.41	3.16	0.9	0.37	2.84	5.00	8.50	32.57	36	9.15	0.002	0.010	9.44	0.02	66.70	3.14
SC2F2	MH1G	0.00	3.16	0.9	0.00	2.84	5.00	8.50	32.57	36	17.73	0.002	0.010	9.44	0.03	66.70	0.00
MH1G	MH2G	0.00	3.16	0.9	0.00	2.84	5.00	8.50	32.57	36	11.73	0.002	0.009	8.95	0.02	63.28	0.00
MH2G	MH3G	0.00	6.93	0.9	0.00	6.23	5.00	8.50	61.38	36	193.54	0.006	0.010	9.44	0.34	66.70	0.00
MH3G	MH5G	0.00	6.93	0.9	0.00	6.23	5.00	8.50	61.38	36	167.17	0.006	0.010	9.44	0.30	66.70	0.00
MH5G	MH8G	0.00	6.93	0.9	0.00	6.23	5.00	8.50	61.38	48	118.78	0.002	0.008	10.23	0.19	128.49	0.00
NOT USED	I2G	NOT	USED	0.9	NOT USED	0.07	NOT USED	8.50	NOT USED	NOT USED	NOT USED	NOT USED	0.008	4.71	NOT USED	5.78	NOT USED
I2G	I4G	0.07	0.14	0.9	0.06	0.12	5.00	8.50	1.06	15	24.64	0.000	0.004	3.33	0.12	4.08	0.50
I3G	I4G	0.30	0.30	0.9	0.27	0.27	5.00	8.50	2.30	15	41.89	0.001	0.024	8.15	0.09	10.00	2.30
I4G	I5G	0.06	0.50	0.9	0.06	0.45	5.00	8.50	3.83	15	65.63	0.004	0.010	5.26	0.21	6.46	0.48
I5G	I7G	0.41	0.91	0.9	0.37	0.82	5.00	8.50	6.93	18	7.69	0.004	0.013	6.78	0.02	11.97	3.10
I6G	I7G	0.15	0.15	0.9	0.14	0.14	5.00	8.50	1.17	15	32.04	0.000	0.006	4.08	0.13	5.00	1.17
I7G	I8G	0.20	1.26	0.9	0.18	1.14	5.00	8.50	9.65	18	103.93	0.008	0.009	5.64	0.31	9.96	1.55
I8G	MH6G	0.47	1.73	0.9	0.43	1.56	5.00	8.50	13.26	24	64.11	0.003	0.005	5.09	0.21	15.99	3.61
I9G	MH4G	0.21	0.21	0.9	0.19	0.19	5.00	8.50	1.58	15	102.81	0.001	0.030	9.11	0.19	11.19	1.58
I10G	MH4G	0.26	0.26	0.9	0.23	0.23	5.00	8.50	1.97	15	62.34	0.001	0.005	3.72	0.28	4.57	1.97
MH4G	I11G	0.00	0.46	0.9	0.00	0.42	5.00	8.50	3.54	15	48.25	0.003	0.010	5.26	0.15	6.46	0.00
I11G	MH6G	0.19	0.65	0.9	0.17	0.58	5.00	8.50	4.96	15	78.21	0.006	0.010	5.26	0.25	6.46	1.42
MH6G	I12G	0.00	2.38	0.9	0.00	2.14	5.00	8.50	18.22	24	14.16	0.007	0.007	6.02	0.04	18.92	0.00
I12G	MH7G	0.25	2.64	0.9	0.23	2.37	5.00	8.50	20.16	24	30.05	0.008	0.008	6.44	0.08	20.23	1.94
I13G	MH7G	0.06	0.06	0.9	0.05	0.05	5.00	8.50	0.44	15	45.58	0.000	0.010	5.26	0.14	6.46	0.44
MH7G	SC3G	0.00	2.69	0.9	0.00	2.42	5.00	8.50	20.59	24	6.18	0.008	0.010	7.20	0.02	22.62	0.00
SC3G	MH8G	0.00	2.69	0.9	0.00	2.42	5.00	8.50	20.59	24	6.55	0.008	0.015	8.82	0.01	27.70	0.00
TBC	MH8G	0.00	0.00	0.9	0.00	0.00	5.00	8.50	30.00	36	0.00	0.002	0.005	6.67	0.00	47.16	0.00
MH8G	MH1M1	0.00	9.62	0.9	0.00	8.66	5.00	8.50	101.97	48	153.20	0.005	0.006	8.86	0.29	111.28	0.00
MH1M1	MH2M1	0.00	9.62	0.9	0.00	8.66	5.00	8.50	△2 101.97	△2 48	28.14	0.005	0.006	8.86 △2	0.29	111.28	0.00
MH2M1	EW1M1	0.00	9.62	0.9	0.00	8.66	5.00	8.50	101.97	48	42.78	0.005	0.006	8.86	0.29	111.28	0.00
I1N	I2N	0.33	0.33	0.9	0.30	0.30	5.00	8.50	2.52	15	117.55	0.002	0.020	7.44	0.26	9.13	2.52
I2N	I1M2	0.26	0.59	0.9	0.23	0.53	5.00	8.50	4.49	15	151.92	0.005	0.010	5.26	0.48	6.46	1.97
I1M2	I2M2	0.32	0.91	0.9	0.29	0.82	5.00	8.50	6.92	18	71.61	0.004	0.001	4.20	0.28	7.43	2.43
I2M2	I3M2	0.44	1.35	0.9	0.40	1.21	5.00	8.50	10.29	18	65.14	0.001	0.001	4.20	0.26	10.50	3.37
I3M2	I4M2	0.45	1.80	0.9	0.41	1.62	5.00	8.50	13.76	24	140.67	0.004	0.005	6.44	0.36	20.23	3.47
I1M1	I2M1	0.06	0.06	0.9	0.05	0.05	5.00	8.50	0.44	15	38.56	0.000	0.010	5.26	0.12	6.46	0.44
I2M1	I3M1	0.22	0.28	0.9	0.20	0.25	5.00	8.50	2.13	15	120.16	0.001	0.001	9.11	0.22	11.19	1.68
I3M1	I4M2	0.27	0.55	0.9	0.24	0.49	5.00	8.50	4.19	15	47.80	0.004	0.010	5.26	0.15	6.46	2.07
I4M2	SC4M2	0.46	2.81	0.9	0.42	2.53	5.00	8.50	21.50	24	6.38	0.009	0.010	7.20	0.01	22.62	3.54
SC4M2	MH1M2	0.00	2.81	0.9	0.00	2.53	5.00	8.50	21.50	24	20.90	0.009	0.010	7.20	0.05	22.62	0.00
MH1M2	EW1M2	0.00	2.81	0.9	0.00	2.53	5.00	8.50	21.50	24	21.34	0.009	0.010	7.20	0.05	22.62	0.00
POND G AREA SANDFILTER																	
I1	I2	0.17	0.17	0.9	0.16	0.16	5.00	8.50	1.32	15	47.90	0.000	0.030	9.11	0.09	11.19	1.32
I2	I3	0.16	0.33	0.9	0.14	0.30	5.00	8.50	2.54	15	43.81	0.002	0.030	9.11	0.08	11.19	1.22
I3	I5	0.23	0.56	0.9	0.21	0.51	5.00	8.50	4.31	15	87.31	0.004	0.030	9.11	0.16	11.19	1.77
I4	I5	0.13	0.13	0.9	0.12	0.12	5.00	8.50	1.03	15	8.48	0.000	0.030	9.11	0.02	11.19	1.03
I5	I6	0.09	0.79	0.9	0.08	0.71	5.00	8.50	6.02	15	48.58	0.009	0.030	9.11	0.09	11.19	0.68
I6	I9	0.09	0.87	0.9	0.08	0.79	5.00	8.50	6.69	18	117.33	0.004	0.020	8.40	0.22	14.85	0.67
I8	I9	0.10	0.10	0.9	0.09	0.09	5.00	8.50	0.77	15	101.70	0.000	0.030	9.11	0.19	11.19	0.77
I9	I14	0.29	1.26	0.9	0.26	1.14	5.00	8.50	9.67	18	168.90	0.009	0.020	8.40	0.34	14.85	2.22
I10	I11	0.02	0.02	0.9	0.02	0.02	5.00	8.50	0.15	15	50.74	0.000	0.020	7.44	0.11	9.13	0.15
I11	I12	0.08	0.10	0.75	0.07	0.09	5.00	8.50	0.76	15	150.10	0.000	0.030	9.11	0.27	11.19	0.61
I12	I14	0.92	1.02	0.9	0.83	0.92	5.00	8.50	7.79	18	69.41	0.005	0.010	5.94	0.19	10.50	7.03
I14	MH2	0.30	2.58	0.9	0.27	2.33	5.00	8.50	19.76	24	28.03	0.008	0.010	7.20	0.06	22.62	2.30
I13	MH1	0.04	0.04	0.9	0.04	0.04	5.00	8.50	0.32	15	114.24	0.000	0.030	9.11	0.21	11.19	0.32
MH1	MH2	0.00	0.04	0.9	0.00	0.04	5.00	8.50	0.32	15	43.35	0.000	0.030	9.11	0.08	11.19	0.00
NOT USED	MH3	NOT	USED	0.9	NOT USED	2.36	NOT USED	8.50	NOT USED	NOT USED	NOT USED	NOT USED	0.010	7.20	NOT USED	22.62	NOT USED
I7	EW2	0.98	0.98	0.45	0.44	0.44	5.00	8.50	3.75	18	96.04	0.001	0.010	5.94	0.27	10.50	3.75

NOTE:

1. TOP OF HOWARD COUNTY A-5 AND A-10 REPRESENT THE TOP OF CURB ELEVATION OF THE STRUCTURE AND SLOPED TO FOLLOW SLOPE OF CURB SO AS THE TOP FRONT OF THE INLET SHALL BE AT HE SAME LONGITUDINAL SLOPE AS THE CURB MEET FRONT EDGE OF CURB FLUSH. △2
2. TOP OF SHA WR REPRESENT TOP OF GRATE AT EACH END.

STATE OF MARYLAND — ROBERT ARTHUR MARKER — LICENSE NO. 13403 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 3/26/04

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/30/04

DIRECTOR — DATE 3/31/04

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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 # 102-440

SHEET ORGANIZATION KEY PLAN: 1 2 3 — SANNER ROAD

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/17/05	RED-LINE SUBMISSION	△3			
3/9/04	COORDINATION △2				
11/24/03	ADDENDUM 1 △1				

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

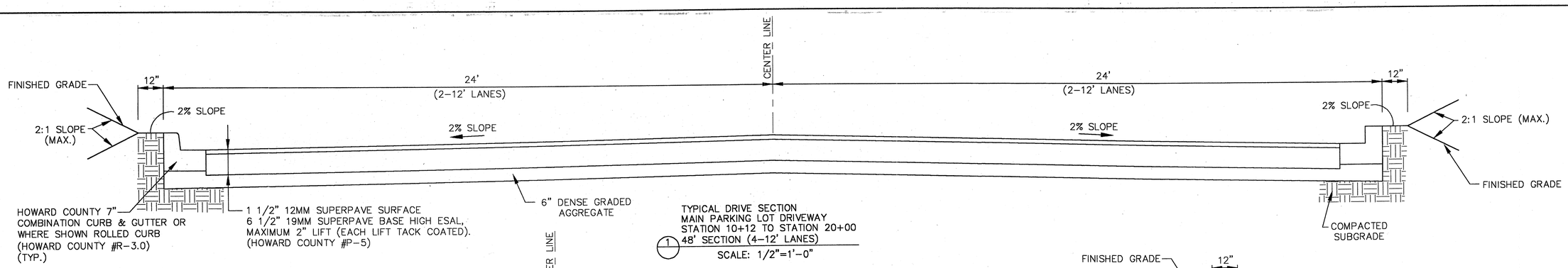
STRUCTURE SCHEDULES

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

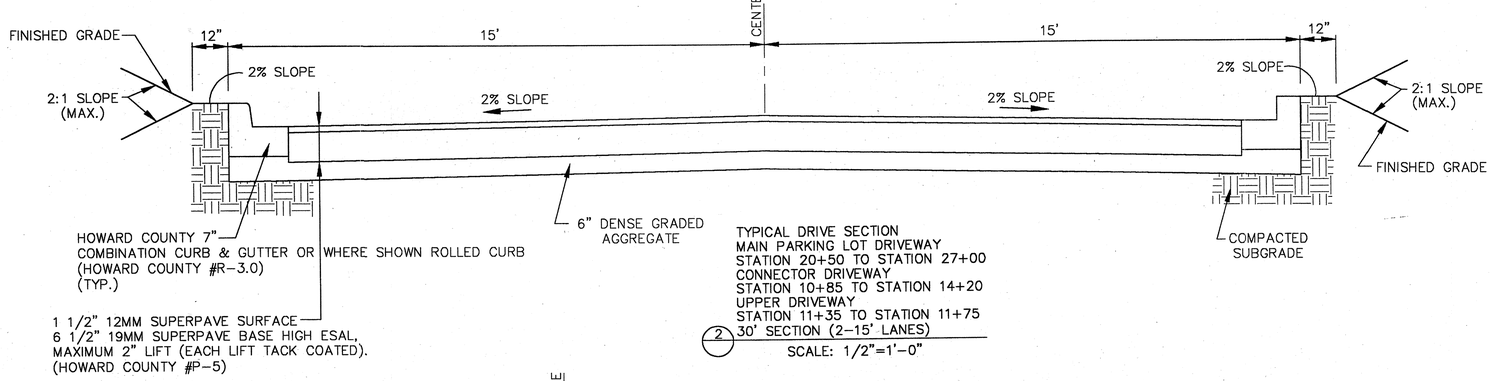
SCALE AS SHOWN

SHEET C2.4

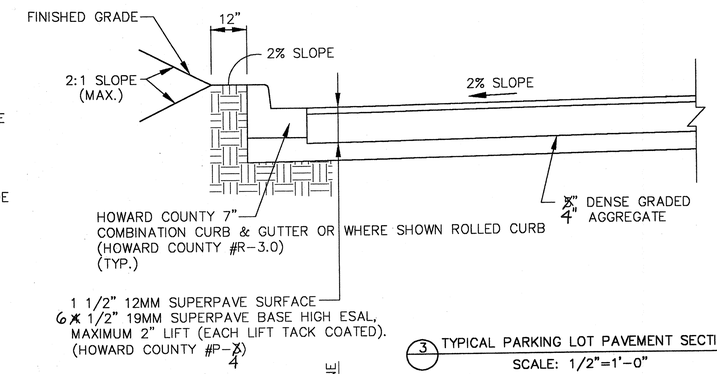
SDP-04-66



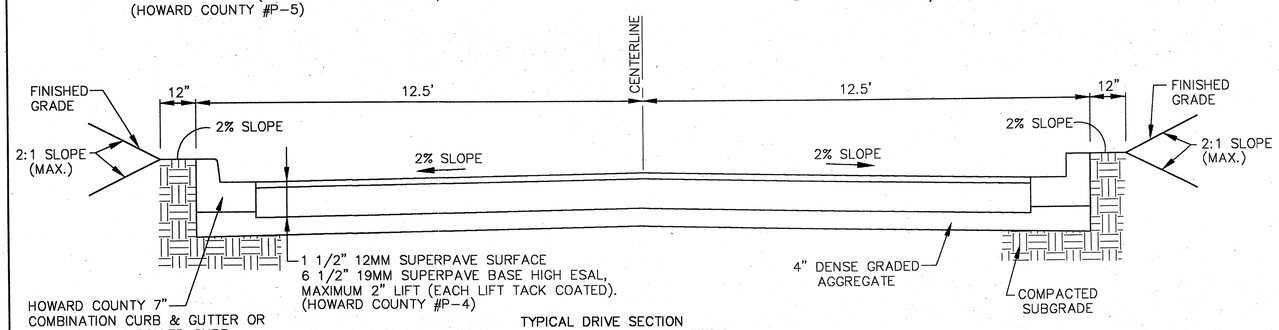
TYPICAL DRIVE SECTION
MAIN PARKING LOT DRIVEWAY
STATION 10+12 TO STATION 20+00
1 48' SECTION (4-12' LANES)
SCALE: 1/2"=1'-0"



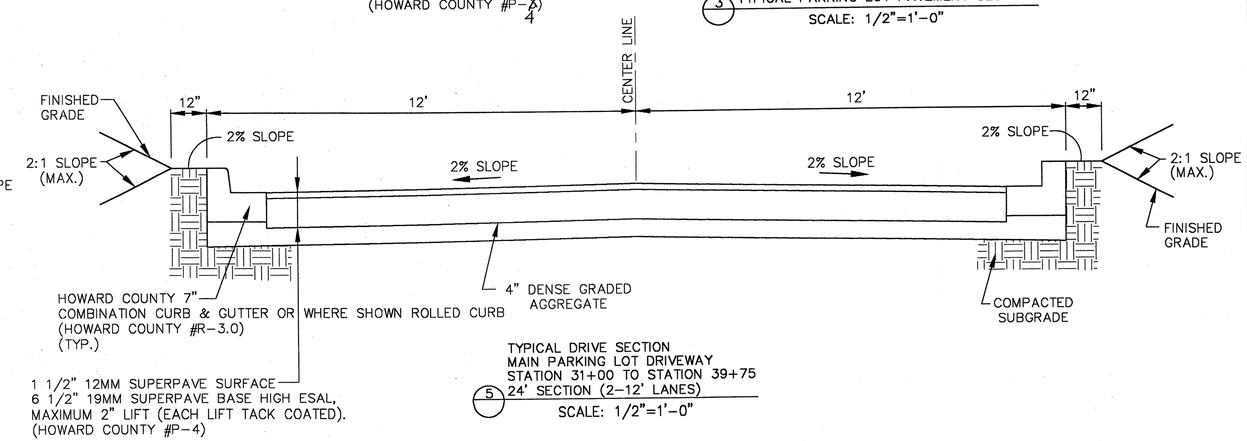
TYPICAL DRIVE SECTION
MAIN PARKING LOT DRIVEWAY
STATION 20+50 TO STATION 27+00
CONNECTOR DRIVEWAY
STATION 10+85 TO STATION 14+20
UPPER DRIVEWAY
STATION 11+35 TO STATION 11+75
2 30' SECTION (2-15' LANES)
SCALE: 1/2"=1'-0"



3 TYPICAL PARKING LOT PAVEMENT SECTION
SCALE: 1/2"=1'-0"



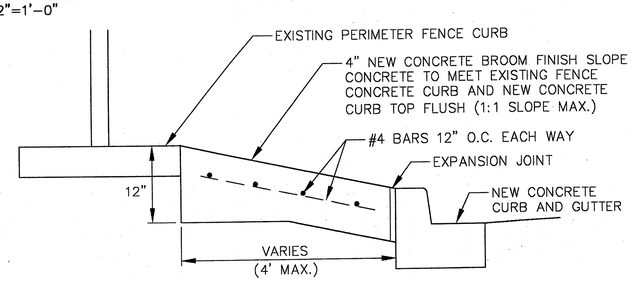
TYPICAL DRIVE SECTION
MAIN PARKING LOT DRIVEWAY
STATION 27+50 TO STATION 30+50
4 25' SECTION (2-12.5' LANES)
SCALE: 1/2"=1'-0"



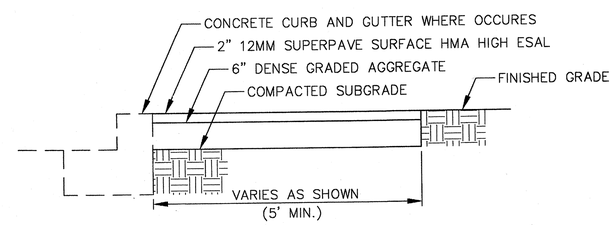
TYPICAL DRIVE SECTION
MAIN PARKING LOT DRIVEWAY
STATION 31+00 TO STATION 39+75
5 24' SECTION (2-12' LANES)
SCALE: 1/2"=1'-0"

GENERAL NOTES ALL PAVED AREAS:

1. TOP 6" OF PAVEMENT AREA SUBGRADE TO BE COMPACTED TO 100 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D-698.
2. THE SOIL MATERIAL USED FOR SUBGRADE IN PAVED AREAS SHALL HAVE A MAXIMUM LIQUID LIMIT OF 45 AND MAXIMUM PLASTIC INDREX OF 20. 1



CONCRETE SLOPE MAIN DRIVEWAY
STATION 31+25 TO 42+00
RIGHT (BACK OF CURB TO PERIMETER FENCE) 2 3
6 SCALE: 3/4"=1'-0"



7 TEMPORARY ASPHALT SIDEWALK SECTION
SCALE: 3/4"=1'-0"

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT HB	DATE 3/26/04
DIRECTOR	DATE 3/26/04

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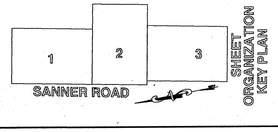
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-8814
AMT TFLE # 102-440



DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
3/9/04	COORDINATE	3			
12/16/03	COUNTY SET	2			
11/24/03	ADDENDUM 1	1			

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

TYPICAL DRIVE SECTIONS

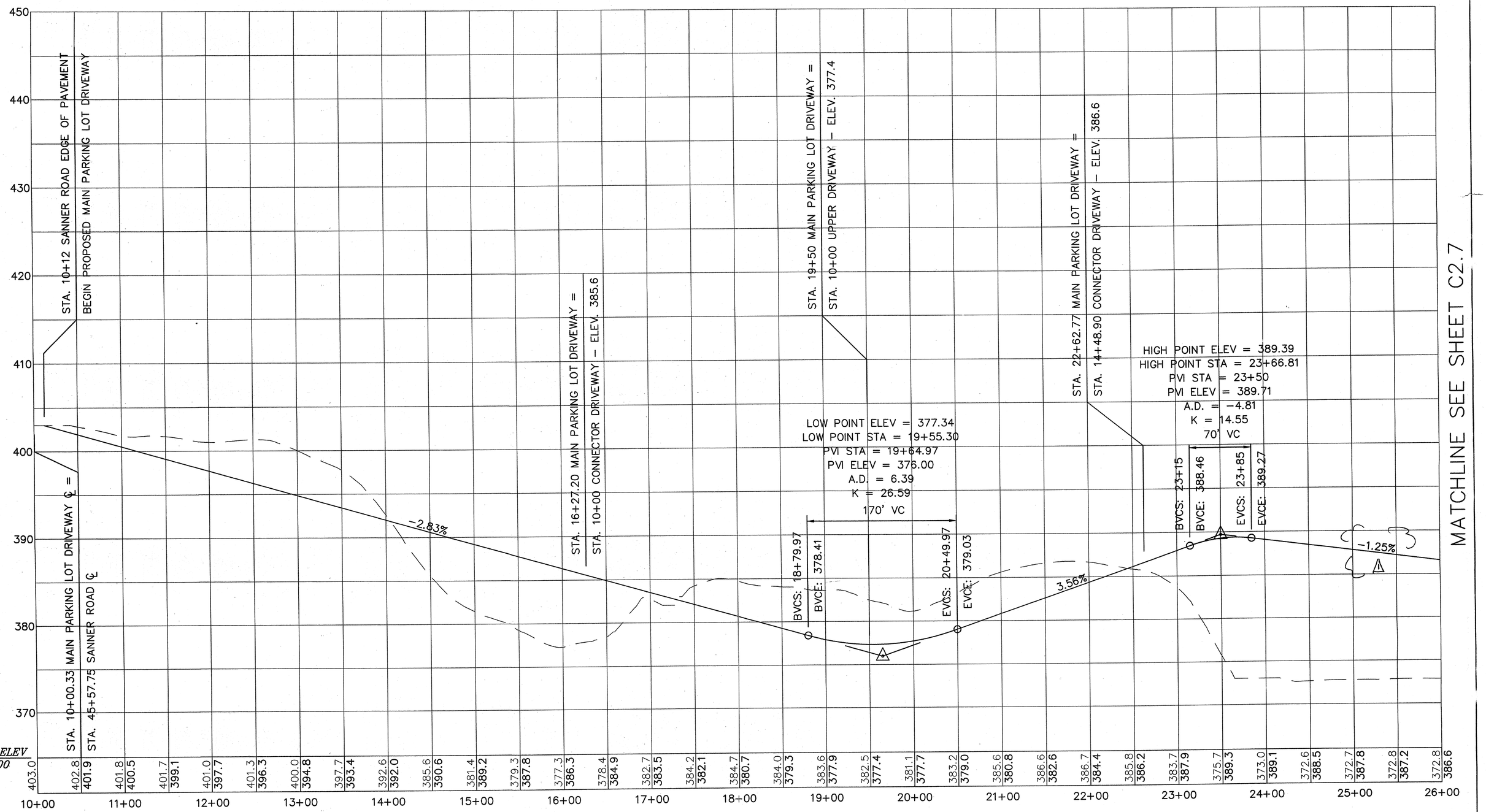
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET C2.5

SHEET 30 OF 48

SDP-04-66



MATCHLINE SEE SHEET C2.7

MAIN PARKING LOT DRIVEWAY PROFILE

CENTERLINE 1

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/30/04

STATE OF MARYLAND — ROBERT BRUCE WARNER — No. 13403 — REGISTERED PROFESSIONAL ENGINEER

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
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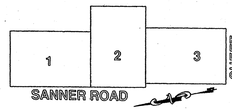
AMT FILE # 102-440



SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: PF
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
11/24/03	ADDENDUM 1 △1				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

DRIVE PROFILE

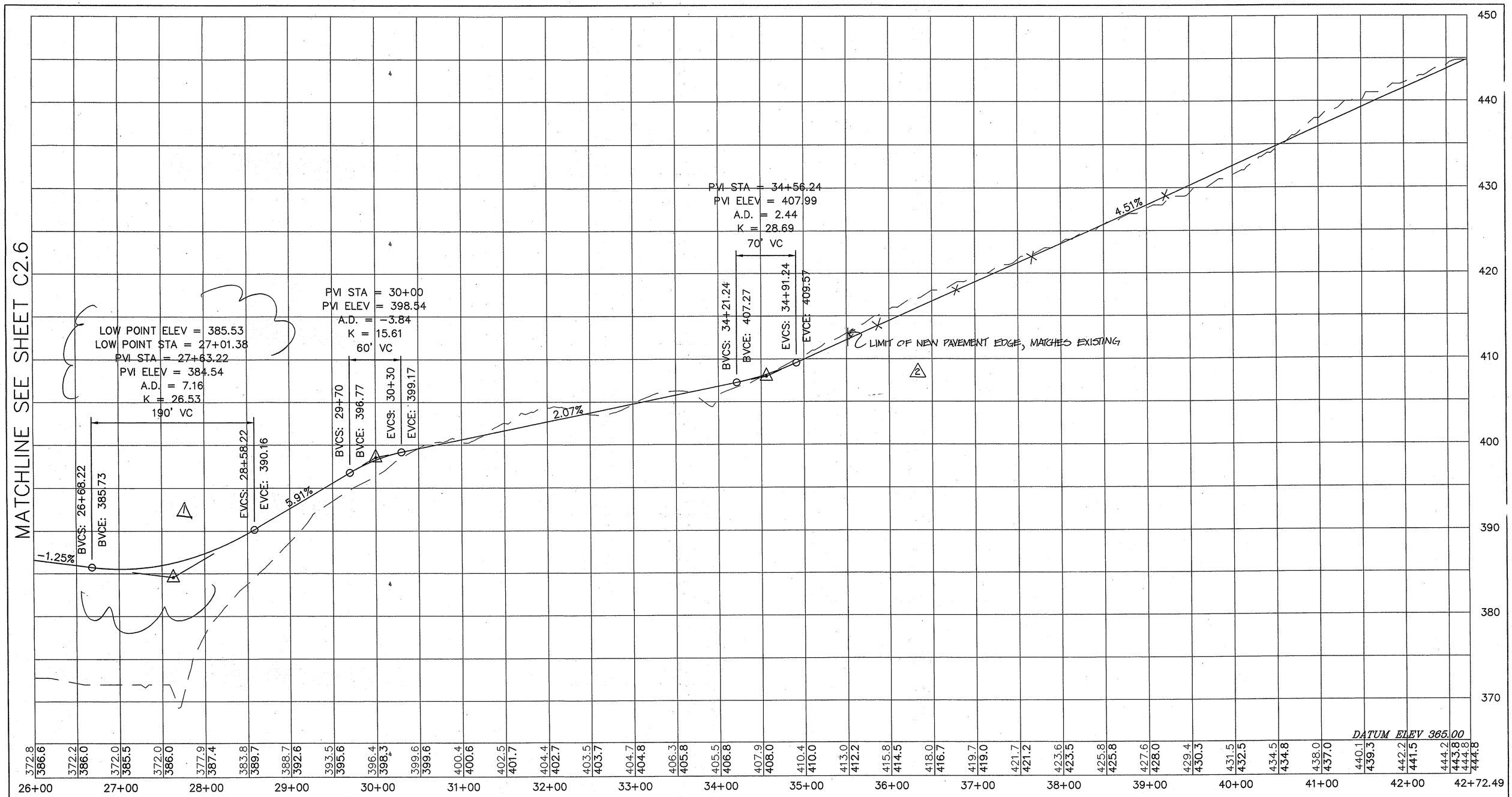
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET C2.6

SHEET 31 OF 48

SDP-04-66



MAIN PARKING LOT DRIVEWAY PROFILE

CENTERLINE 1

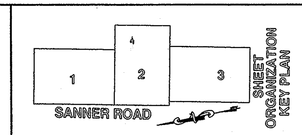
SCALE: 1"=50' (H)
1"=5' (V)

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/31/04
DIRECTOR	DATE 3/31/04

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

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 # 102-440



DES: JK					
DRN: PF					
CHK: BW	8/17/05	RED-LINE SUBMISSION	2		
	11/24/03	ADDENDUM 1 1			
DATE: 10/10/03	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

DRIVE PROFILE

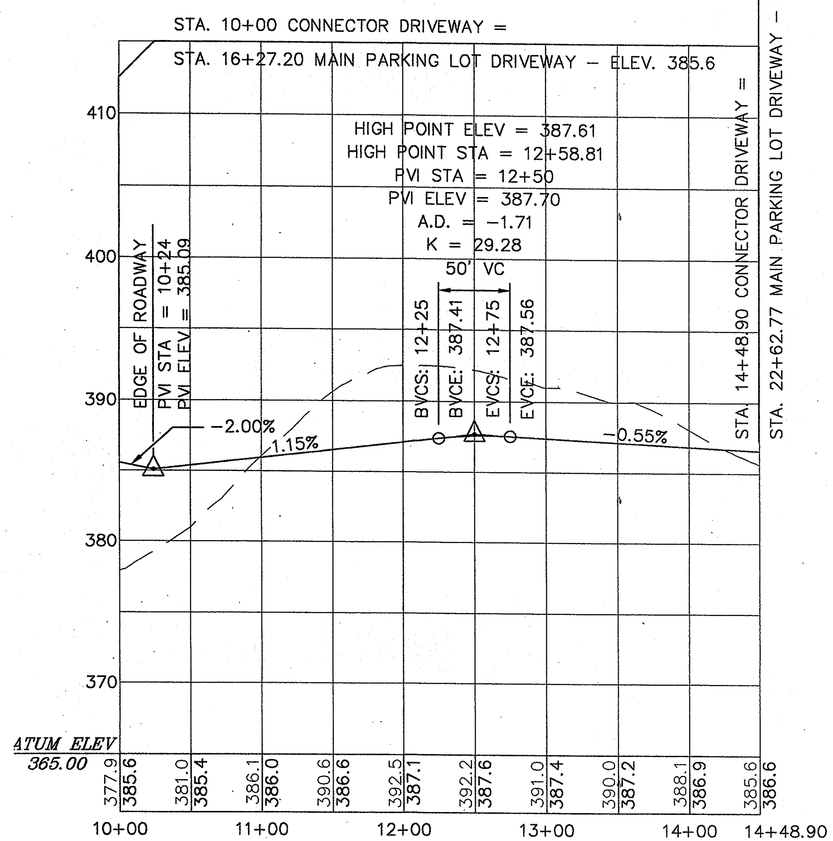
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

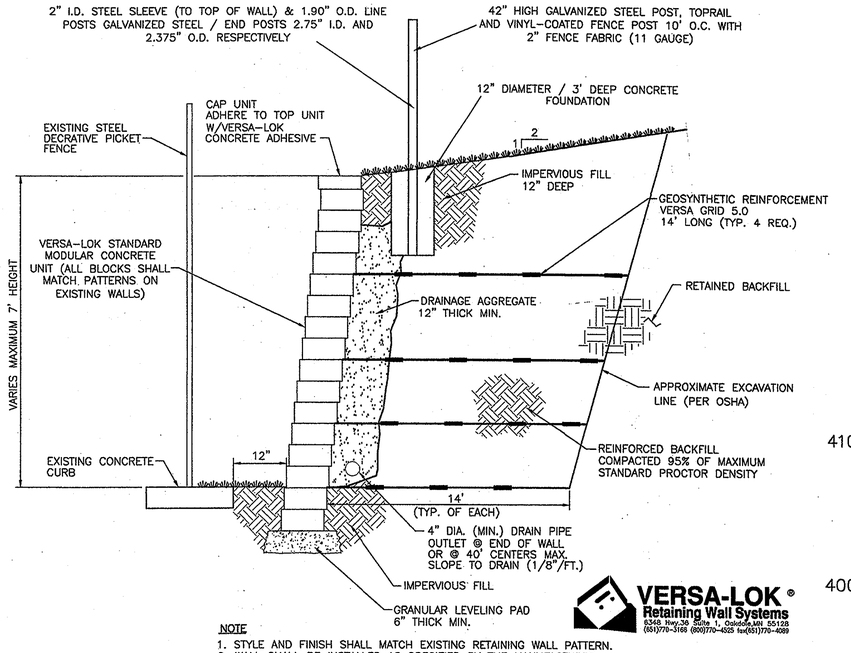
SHEET C2.7

SHEET 32 OF 48

SDP-04-66

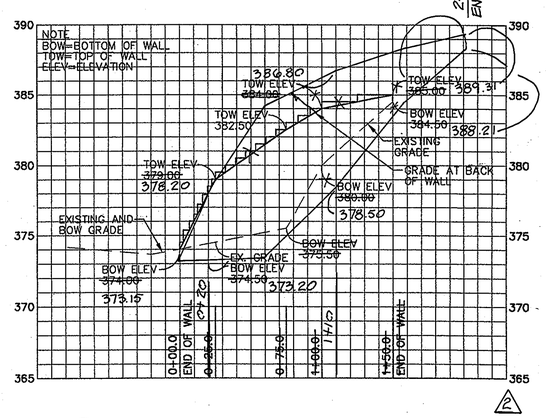


1 CONNECTOR DRIVEWAY PROFILE
CENTERLINE 2
SCALE: 1"=50' (H)
1"=5' (V)

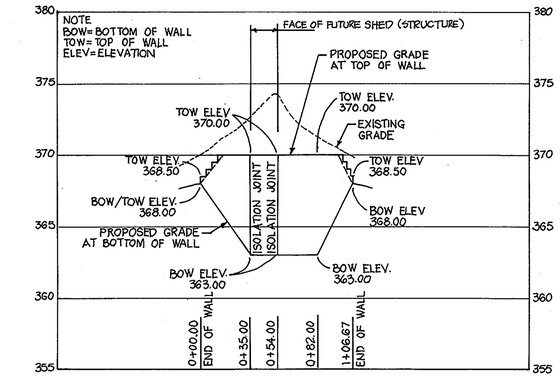


NOTE
1. STYLE AND FINISH SHALL MATCH EXISTING RETAINING WALL PATTERN.
2. WALL SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER OR APPROVED EQUALS, AND SHOP DRAWING SHALL BE SUBMITTED FOR APPROVAL AND APPROVED/SEALED BY A REGISTERED ENGINEER IN MARYLAND.
3. FOUNDATION FILL SHALL BE 6" MINIMUM BASE MATERIAL.
4. SECTION PROVIDED BY VERSA-LOK RETAINING WALL SYSTEMS.

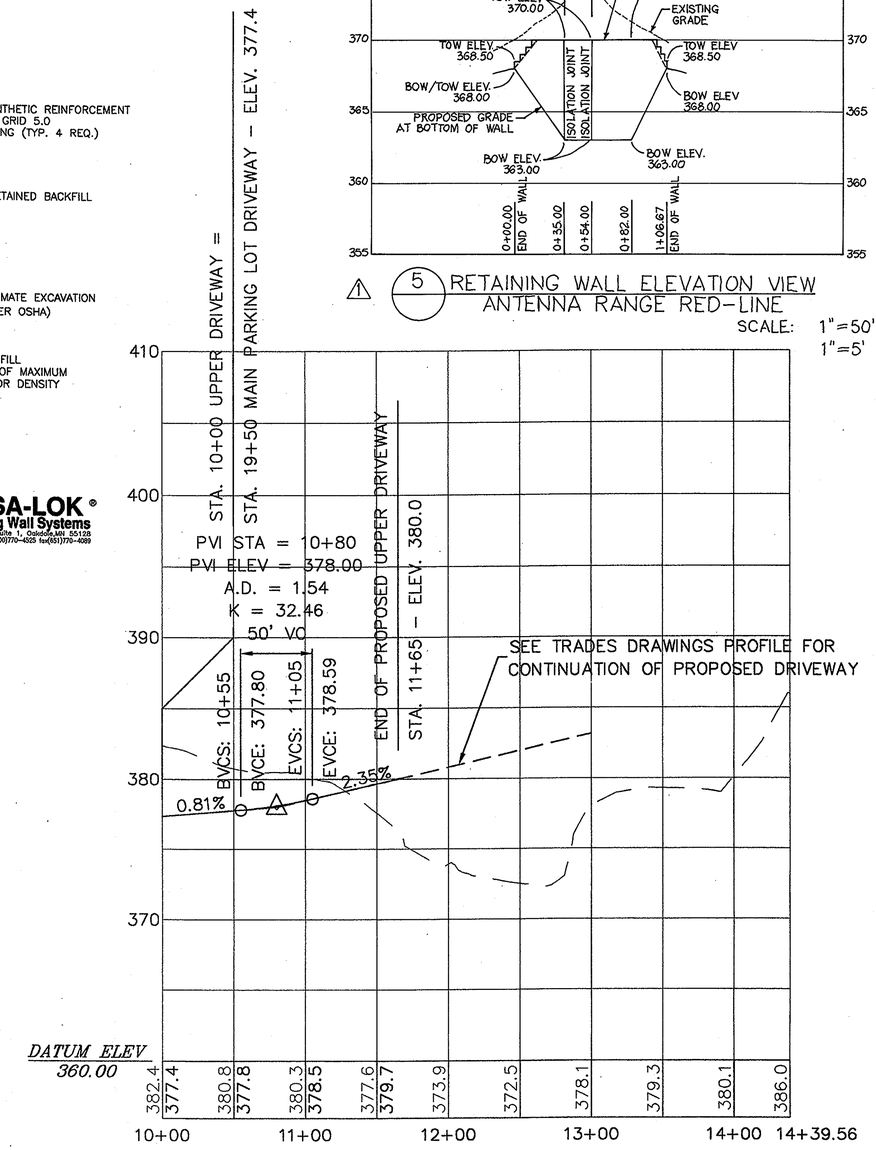
2 TYPICAL RETAINING WALL SECTION
NOT TO SCALE



3 RETAINING WALL ELEVATION VIEW
SCALE: 1"=50' (H)
1"=5' (V)



5 RETAINING WALL ELEVATION VIEW
ANTENNA RANGE RED-LINE
SCALE: 1"=50' (H)
1"=5' (V)

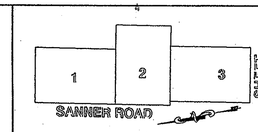


4 UPPER DRIVEWAY PROFILE
CENTERLINE 3
SCALE: 1"=50' (H)
1"=5' (V)

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/31/04

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL: (301) 881-5940 FAX (301) 881-0894
AMT FILE # 102-440



SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: PF
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/17/05	RED-LINE SUBMISSION	2			
6/25/04	RED-LINE SUBMISSION	1			

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

DRIVE PROFILES

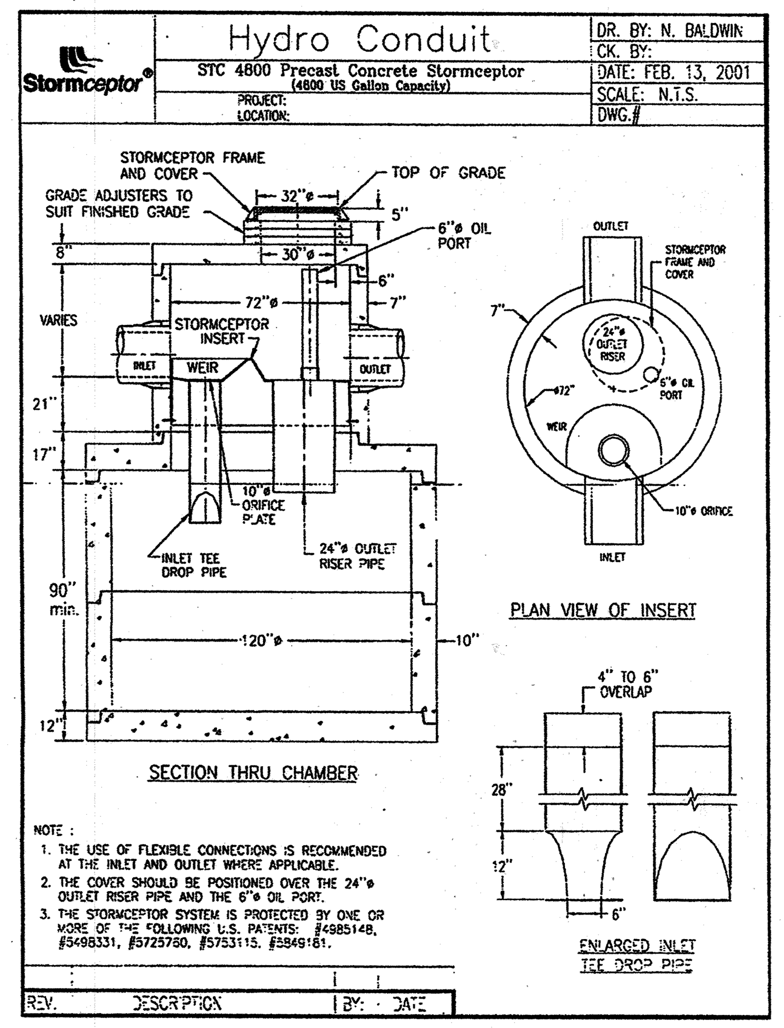
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

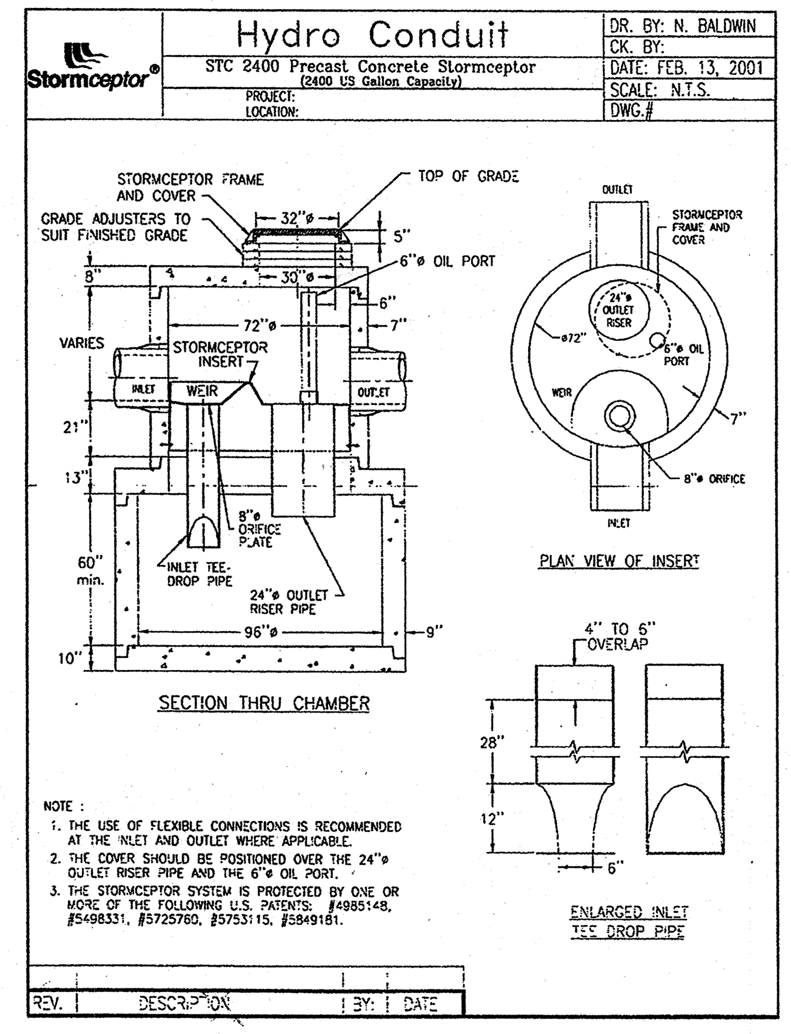
SHEET C2.8

SHEET 33 OF 48

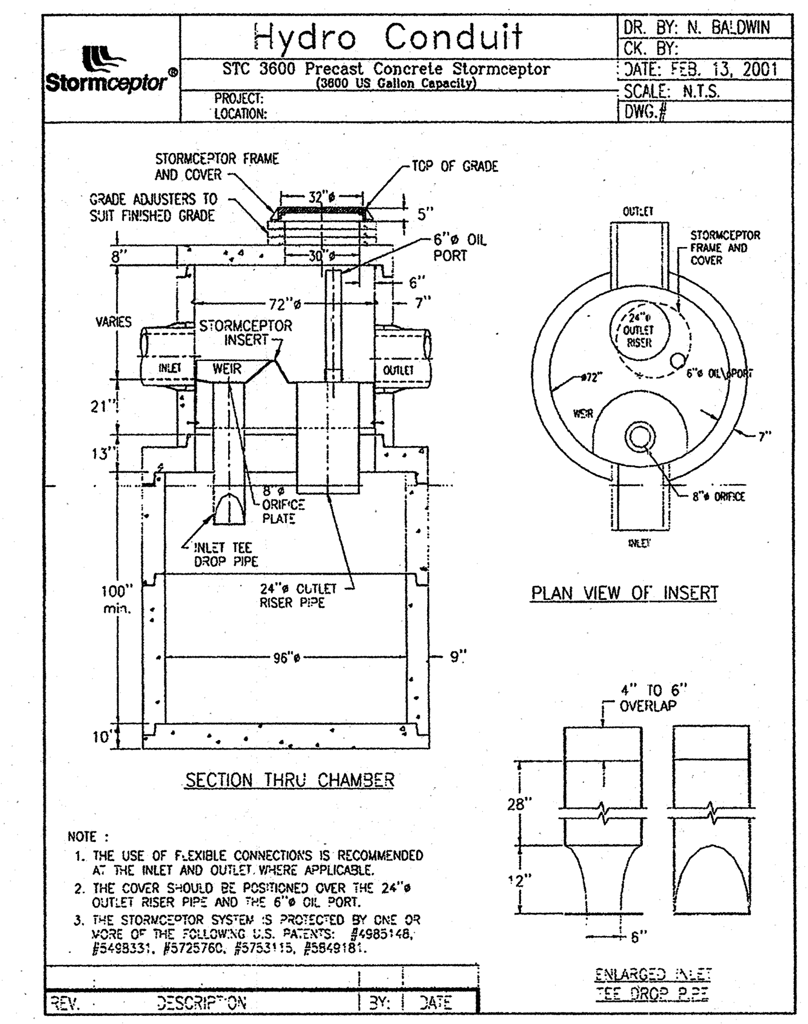
SDP-04-16



1 PRECAST CONCRETE STORMCEPTOR (STC 4800)
NOT TO SCALE



2 PRECAST CONCRETE STORMCEPTOR (STC 2400)
NOT TO SCALE



3 PRECAST CONCRETE STORMCEPTOR (STC 3600)
NOT TO SCALE

CONTRACTOR INSTALLATION INSTRUCTIONS PRECAST CONCRETE STORMCEPTOR

1. STAKE-OUT THE LOCATION OF THE STORMCEPTOR AND EXCAVATE HOLE. EXCAVATE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO UNIT. INSTALL A 12" DEEP (OR AS REQUIRED) LAYER OF COMPACTED AGGREGATE SUBBASE AT BOTTOM OF EXCAVATION. INSTALL MULE OR SHORING, AS NEEDED.
2. CHECK ELEVATION OF UNIT BY MEASURING ITS SECTIONS FROM BASE OF THE STORAGE CHAMBER (BOTTOM OF UNIT'S SLAB) TO THE INVERT OF STORMCEPTOR BYPASS CHAMBER INLET ELEVATION (FIBERGLASS INSERT). SUBTRACT THIS DISTANCE FROM DESIGN INVERT ELEVATION TO DETERMINE TOP OF SUBBASE ELEVATION. CHECK ELEVATION OF INSTALLED SUBBASE AND ADJUST AS NEEDED.
3. SECURE INSPECTOR APPROVAL OF SUBGRADE AND SUBBASE.
4. INSTALL STORAGE CHAMBER. INSTALL SCREW INSERTS INTO BASE OF STORAGE CHAMBER. ATTACH CABLES OR CHAINS TO ALL 3 LIFTING LUGS ON THE BASE SLAB. USING LARGE EQUIPMENT OR CRANE LIFT, PLACE THE BASE SECTION OF THE STORAGE CHAMBER IN THE EXCAVATED HOLE ON THE SUBBASE. MAKE SURE THAT THE BASE IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS NOT REQUIRED. INSTALL RUBBER GASKET ON BASE UNIT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT). IF NOT PRELUBRICATED,INSTALL ADDITIONAL STORAGE CHAMBER SECTIONS, AS REQUIRED (PROCEDURE IS SAME AS STEP 6).
5. INSTALL REDUCING SLAB (STORMCEPTOR MODELS STC-2400, STC-3600, STC-4800, STC-6000 AND STC-7200) CHECK THAT SECTION IS SET FLUSH, LEVEL, AND IS AT THE PROPER ELEVATION. INSTALL RUBBER GASKET ON THE TRANSITION SLAB SPIGOT AND COAT WITH LUBRICATING GREASE (PROVIDED IN SHIPMENT).
6. INSTALL BYPASS CHAMBER OF STORMCEPTOR WITH FACTORY INSTALLED STORMCEPTOR INSERT. LIFT BYPASS SECTION AND INSTALL, WHILE CHECKING ALIGNMENT AND GRADE OF INLET AND OUTLET DRAINAGE PIPES. CHECK TO MAKE SURE THE BYPASS CHAMBER IS SET FLUSH, LEVEL AND IS AT THE PROPER ELEVATION. THE BYPASS CHAMBER MUST BE ORIENTED SUCH THAT THE INLET PIPE DISCHARGES INTO THE V-SHAPED FIBERGLASS WEIRS (INSIDE INSERT). INSTALL RUBBER GASKET ON TOP OF BYPASS SECTION AND COAT WITH LUBRICATING GREASE, IF NOT LUBRICATED.
7. INSTALL STORMCEPTOR DROP PIPES ACCORDING TO STC PIPE INSTALLATION PROCEDURE AS SHOWN ON THIS SHEET.
8. INSTALL RISER SECTION. LIFT RISER SECTION AND INSTALL, WHILE CHECKING THAT SECTION IS SET FLUSH AND IS AT PROPER ELEVATION AND THAT UNIT IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS REQUIRED IF STEP(S) ARE INCLUDED. ALIGN STEPS ABOVE INLET INSPECTION PORT. NOTE, FOR SHALLOW INSTALLATIONS THIS SECTION MAY NOT BE REQUIRED.
9. INSTALL TOP CAP WITH OPENING FOR STORMCEPTOR COVER. IF OPENING IS OFFSET(NOT CENTERED), THE TOP CAP OPENING SHOULD BE ORIENTED ABOVE THE STORMCEPTOR INLET INSPECTION PORT(PLUG).
10. BACKFILL STORMCEPTOR WITH APPROVED BACKFILL MATERIAL (NO ORGANIC OR TOPSOIL IS TO BE USED FOR BACKFILL). BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL SHOULD BE COMPACTED TO LOCAL/STATE REQUIREMENTS.
11. INSTALL AND SET GRADE ADJUSTING RINGS AS NEEDED.
12. INSTALL AND SET STORMCEPTOR FRAME AND COVER.
13. INSTALL INLET AND OUTLET STORM DRAIN PIPES. CONNECT INLET AND OUTLET STORM DRAIN PIPES WITH FLEXIBLE BOOTS (WHEN PROVIDED) AND WITH NON-SHRINK GROUT WHEN NO FLEXIBLE BOOTS ARE PROVIDED. THE INVERT OF THE INLET AND OUTLET PIPE IS TO MATCH WITH THE INVERT OF THE STORMCEPTOR INSERT. FLEXIBLE BOOT INSTALLATION PROCEDURES: CENTER THE PIPE IN THE BOOT OPENING, LUBRICATE THE OUTSIDE OF THE PIPE AND/OR THE INSIDE OF THE BOOT IF THE PIPE OUTSIDE DIAMETER IS THE SAME AS THE INSIDE DIAMETER OF THE BOOT. POSITION THE PIPE CLAMP IN THE GROOVE OF THE BOOT WITH THE SCREW AT THE TOP. TIGHTEN THE PIPE CLAMP SCREW TO 60 INCH POUNDS. IF THE PIPE IS MUCH SMALLER THAN THE BOOT LIFT THE BOOT SUCH THAT IT CONTACTS THE BOTTOM OF THE PIPE WHILE TIGHTENING THE CLAMP TO ENSURE EVEN CONTRACTION OF THE RUBBER. MOVE THE PIPE HORIZONTALLY AND/OR VERTICALLY TO BRING IT TO GRADE.
14. THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN THE SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
15. FINAL INSPECTION

FOR TECHNICAL INFORMATION CALL STORMCEPTOR AT 1-800-762-4703

AS MANUFACTURED BY CSR-HYDRO CONDUIT AND STORMCEPTOR CORPORATION. MODEL STC-3600, PRECAST CONCRETE.
FOR TECHNICAL INFORMATION CALL STORMCEPTOR AT 301-762-8361.
TO ORDER CONTACT CSR-HYDRO CONDUIT, VIRGINIA PRECAST AT 1-800-999-2278 AT LEAST 3 WEEKS PRIOR TO NEEDED DELIVERY.

NOTES :

1. THE STORMCEPTOR IS® PROTECTED BY U.S. PATENT NO. 4,985,148.
2. CAST IRON FRAME & COVER TO BE APPROVED BY STORMCEPTOR CORPORATION. "STORMCEPTOR" TO BE EMBOSSED ON COVER
3. BEDDING, BACKFILL AND GENERAL INSTALLATION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND A PROFESSIONAL ENGINEER BASED ON SITE SPECIFIC SOILS CONDITIONS, SUBJECT TO THE APPROVAL OF THE REGULATORY AGENCIES.
4. SIZING OF THE STORMCEPTOR SHALL BE IN ACCORDANCE WITH THE GUIDELINES PROVIDED BY STORMCEPTOR CORPORATION, SUBJECT TO THE APPROVAL OF THE REGULATORY AGENCIES.
5. THE STORMCEPTOR SHOULD BE MAINTAINED ANNUALLY AND/OR IMMEDIATELY FOLLOWING ANY KNOWN SPILLS.
6. THE STORMCEPTOR CONFORMS TO ASTM C 478 DESIGN SPECIFICATIONS / STANDARDS.
7. A MINIMUM OF 1 STEP IS TO BE USED IN THE ACCESS WAY.
8. COVER TO BE OFFSET 6" FROM ACCESS WALL ADJACENT TO INLET INSPECTION PORT.
9. NON-SMOOTH WALL O.D. PIPE TO BE GROUTED IN PLACE
10. FURTHER TECHNICAL INFORMATION IS AVAILABLE FROM STORMCEPTOR CORPORATION 1 (800) 762-4703.

CONSTRUCTION NOTES

1. SILT AND DEBRIS SHALL NOT BE ALLOWED TO ENTER THE STORMCEPTOR UNTIL THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN PERMANENTLY STABILIZED. SILT MAY BE ALLOWED TO ENTER STORMCEPTOR IF IT IS BEING USED AS A FINAL SEDIMENT CONTROL FILTERING DEVICE.
2. ALL OPENINGS TO STRUCTURES SHALL BE PROTECTED WITH THE APPROPRIATE SEDIMENT CONTROL MEASURES.
3. THE STORMCEPTOR MUST BE PUMPED OUT AND CLEANED AT THE END OF THE CONSTRUCTION OF THE PROJECT.

FLOWS AND CAPACITIES*

MODEL	MAX. TREATED FLOW RATE (gpm)**	SEDIMENT CAPACITY (ft3)	OIL CAPACITY (US gal)	TOTAL CAPACITY (US gal)

* APPROXIMATE
** WITHOUT BY-PASSING

Stormceptor Capacities Table

Model #	Sediment (ft3)	Oil (Gal)	Total Volume (gal)	Diameter (ft)	Depth (ft)	Empty Weight (ton)	Full Weight (ton)
STC 450i	45.1	85.9	468.9	4.0	5.7	6.5	8.5
STC 900	75.4	251.0	951.0	6.0	5.2	14.9	20.4
STC 1200	113.1	251.0	1233.7	6.0	6.6	16.1	22.9
STC 1800	193.2	251.0	1832.0	6.0	9.4	18.8	28.0
STC 2400	154.9	840.1	2462.1	8.0	8.7	24.0	33.4
STC 3600	322.6	840.1	3714.3	8.0	12.0	29.3	43.9
STC 4800	464.7	908.8	5058.9	10.0	11.7	39.9	59.9
STC 6000	608.7	908.8	6135.4	10.0	13.5	44.0	68.4
STC 7200	725.8	1058.0	7419.3	12.0	12.3	58.0	87.7
STC 11000	942.5	2796.3	11193.0	20.0	11.7	79.9	119.7
STC 13000	1230.4	2796.3	13347.3	20.0	13.5	88.0	136.8
STC 16000	1470.2	3053.8	15917.7	24.0	12.3	116.0	175.5

Sediment and Oil volumes are maximum capacities
Notes:
Depth = Depth of tank from the invert of the pipe to the bottom of the structure
Diameter = Diameter of the lower tank below the invert of the pipe
Empty Weight = Weight of the Concrete Structure
Full Weight = Weight of the Concrete Structure when it is full of water

CONCRETE STORMCEPTOR DATA

STRUCTURE NUMBER	DRAINAGE AREA (ACRES)	TOP ELEVATION	PIPE SIZE & TYPE	INVERT IN	INVERT OUT	MATERIAL/ MODEL NO.
SC1F1	1.67	416.50	24" RCP	408.50	408.40	STC2400
SC2F2 (1)	~~3.16~~ 4.51	398.50	27" RCP	392.70	392.60	STC ~~4800~~ 6000
SC3G	2.69	388.00	24" RCP	380.20	380.10	STC3600
SC4M2	2.81	383.00	24" RCP	375.80	375.00	STC3600

3

Concrete Stormceptor® Order Request Form *

Office Use Only
Order # ______
Date ______
Internal Sale ______

Contractor Information
NAME
ADDRESS
CITY
STATE
ZIP CODE
CONTACT
PHONE
FAX

90° 180° 0° 270°

Owner Information
NAME
PHONE
FAX

Please draw orientation of inlet and outlet pipes on diagram along with pipe inside diameter (in.) and invert elevation (ft.) Clearly mark inlet pipes with an O and outlet pipes with an * and provide the inlet/outlet pipe angle in degrees.

Stormceptor® Model: 900 [X] 3600 [ ] 1200 [X] 4800 [ ] 1800 [ ] 6000 [ ] 2400 [ ] 7200 [ ]

Insert Size: 22" [X] 32" [ ] 44" [ ] Custom ____

Manhole Number
Top Elevation (ft)
Inlet Pipe Invert (ft)
Outlet Pipe Invert (ft)
Pipe Type:
Pipe Inside Diameter (in) [ID]
Pipe Outside Diameter (in) [OD]

Project Name
Approximate time frame until required delivery (weeks)
Delivery Address: Street
City State Zip Code
Designer Company
Designer Contact Phone Fax

Please fax this sheet back to Hydro Conduit/Virginia Precast at (804) 798-3426
Attn: Dave Brinser / Ed O'Malley (Phone: 1-800-999-2278)

For credit information/applications contact Carole Broadus at (804) 798-6068
For Technical Assistance Please Call Stormceptor Corporation at (301) 762-8361 or toll free at 1 (800) 762-4703

*TO BE INCLUDED ON SWM PLAN BY DESIGNER 11/13/95

*CONTRACTOR SHALL FIELD VERIFY ALIGNMENT AND ELEVATION DATA PRIOR TO ORDERING STORMCEPTOR.

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
James E. Loesch 3/16/04
SIGNATURE OF DEVELOPER DATE
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.

[signature] 3/15/04
SIGNATURE OF ENGINEER DATE
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~~

INSPECTION NOTES: PRECAST CONCRETE STORMCEPTOR

1. PRIOR TO THE START OF INSTALLING THE STORMCEPTOR, THE INSPECTOR MUST BE CALLED 48 HOURS IN ADVANCE (PRE-CONSTRUCTION MEETING).
2. THE APL INSPECTOR MUST BE NOTIFIED AT EACH OF THE FOLLOWING STAGES:
   A. APPROVAL OF SUBGRADE; PREPARE A COMPACTED GRAVEL BED AT THE BOTTOM OF THE EXCAVATION. ENSURE COMPACTION TO 95% DENSITY.
   B. PLACE STORMCEPTOR IN EXCAVATION AT CORRECT ELEVATION AND AT CORRECT ALIGNMENT AND GRADE FOR INLET AND OUTLET STORM DRAINS. LEVEL UNIT INSTALL BASE AND LOWER TANK, MIDDLE SECTION WITH STORMCEPTOR INSERT, RISER SECTION, TOP SLAB WITH PERSONWAY, LEVELING RINGS AND MANHOLE FRAME AND COVER.
   C. BACKFILL STORMCEPTOR WITH SUITABLE NATIVE SOIL (NO ORGANIC OR TOPSOIL IS TO BE USED FOR BACKFILL). BACKFILL AND COMPACT IN 8" LIFTS. BACKFILL SHOULD BE AT 95% OF DENSITY.
   D. WHEN SITE IS PERMANENTLY STABILIZED AND SEDIMENT CONTROL MEASURES HAVE BEEN REMOVED AND STABILIZED, THEN THE STORMCEPTOR WILL BE PUMPED OUT AND CLEANED AND PLACED IN STORMWATER MANAGEMENT OPERATION.
   E. FINAL INSPECTION
3. ALL GEOTECHNICAL REPORTS, SOIL COMPACTION, BEARING CAPACITY, AND CONCRETE TESTING DATA & RESULTS SHALL BE PROVIDED TO THE INSPECTOR AND COPIED TO THE OWNER.

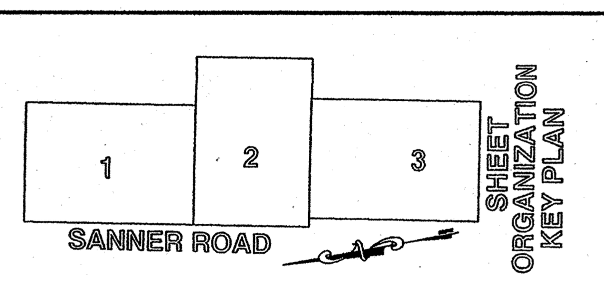
MAINTENANCE NOTES: WATER QUALITY STRUCTURE

1. WATER QUALITY STRUCTURES WILL REQUIRE PERIODIC CLEANING. OWNERS OF THESE FACILITIES WILL HAVE TO CLEAN THEM AS NEEDED.
2. MAINTENANCE OF THESE FACILITIES WILL CONSIST OF CLEANING OUT THE STORMCEPTOR AND DISPOSAL OF THE WASTE AND REPAIR OF THE FACILITY AS NEEDED. PERIODIC INSPECTIONS OF THESE FACILITIES WILL BE MADE BY THE OWNER.
3. THE DISPOSAL OF THE LIQUID AND SOLID MATTER SHALL BE AS FOLLOWS:
   A. ALL LIQUID MATERIAL IN THE STORMCEPTOR SHALL BE PUMPED INTO A SUITABLE TANK TRUCK AND DISPOSED OF AT AN APPROVED SANITARY DISTRICT DISCHARGE MANHOLE OR TO BE TAKEN TO AN APPROVED SEWAGE TREATMENT PLANT FOR DISCHARGE.
   B. THE SOLID MATERIAL SHALL BE LANDFILLED IN AN APPROVED SANITARY LANDFILL.
4. THE INLET PIPES AND STRUCTURAL PARTS SHALL BE REPAIRED AS NEEDED.
5. STORMCEPTOR INLET AND OUTLET ASSEMBLY SHALL BE PERIODICALLY INSPECTED. BLOCKAGES SHALL BE REMOVED AND DISPOSED OF AS REQUIRED IN 3B ABOVE.

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER (seal)

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 3/30/04
DIRECTOR DATE 3/31/04

A. MORTONTHOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 102-440



SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
11/24/03	ADDENDUM #1 (1)				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

STORMCEPTOR DETAILS

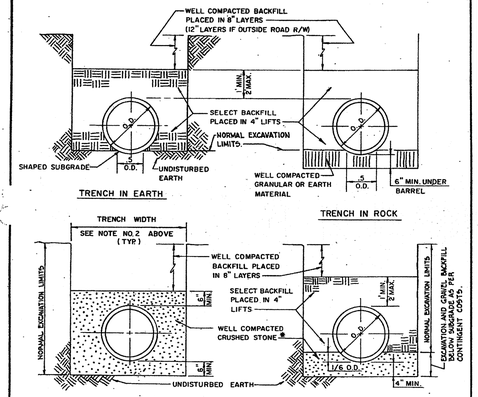
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET C2.9
SHEET 34 OF 48

SDP-04-66

NOTES :

1. WITHIN ROAD RIGHT-OF-WAY, TRENCH COMPACTION DENSITY SHALL BE 95% AS DETERMINED BY A.A.S.H.T.O. T-180-A
2. FOR PAY WIDTHS SEE DETAIL G 2.02 - A



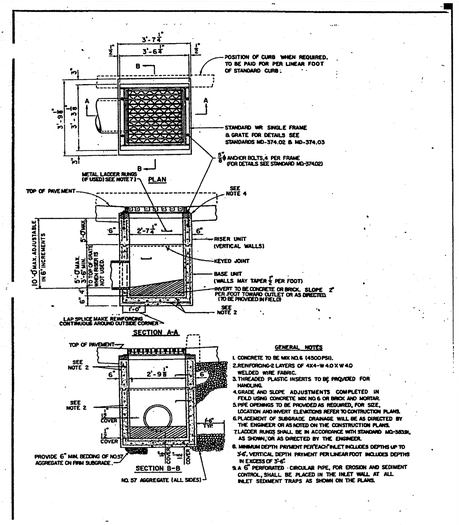
* MIN. 1/4" TO 1-1/2" MAX. DIAMETER

REV. MAR. 1986 REV. JAN. 1986
REV. JAN. 1989 REV. JAN. 1982

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 2-10-89
Chief - Bureau of Engineering

TRENCH BEDDING DETAILS

DRAWN BY: R.K.H.
CHECKED BY: J.L.R.
SCALE: NONE
G 2.01



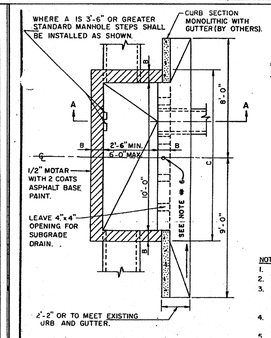
GENERAL NOTES

1. CONCRETE TO BE MIN. 6.5 (4500) PSI.
2. REINFORCING-2 LAYERS OF 4X4-W 4.0 X W 4.0 WELDED WIRE FABRIC.
3. THREADED PLASTIC INSERTS TO BE PROVIDED FOR HANDLING.
4. GRADE AND SLOPE ADJUSTMENTS COMPLETED IN FIELD USING CONCRETE AND NO. 6 OR BRICK AND MORTAR.
5. PIPE OPENINGS TO BE PROVIDED AS REQUIRED, FOR SIZE, LOCATION AND INVERT ELEVATIONS REFER TO CONSTRUCTION PLANS.
6. PLACEMENT OF SUBGRADE DRAINAGE WILL BE AS DIRECTED BY THE ENGINEER OR AS NOTED ON THE CONSTRUCTION PLANS.
7. LADDER RUNGS SHALL BE IN ACCORDANCE WITH STANDARD MD-383.01, AS SHOWN, OR AS DIRECTED BY THE ENGINEER.
8. MINIMUM DEPTH PAVEMENT REST AGAINST INLET INCLUDES DEPTHS UP TO 3'-0". VERTICAL DEPTH PAVEMENT REST-LINEAR FOOT INCLUDES DEPTHS IN EXCESS OF 3'-0".
9. A 6" PERFORATED - CIRCULAR PIPE, FOR EROSION AND SEDIMENT CONTROL, SHALL BE PLACED IN THE INLET WALL AT ALL INLET SEDIMENT TRAPS AS SHOWN ON THE PLANS.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 2-10-89
Chief - Bureau of Engineering

PRECAST SINGLE WR INLET

DRAWN BY: M.H.
CHECKED BY: J.L.R.
SCALE : NONE
SD 4.37



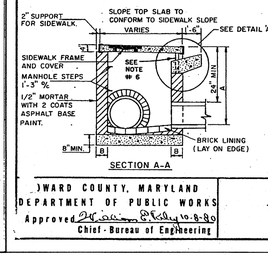
4" ø E 5.4 TO HAVE ONE SHOP COAT AND ONE FIELD COAT OF AN APPROVED PAINT, ON EACH SIDE.
SIDEWALK FRAME AND COVER
4 #4x36" AS SHOWN.
SLAB REINFORCING #4 BARS 1' CLEAR FROM BOTTOM OF SLAB.
MIX #2 CONCRETE.
3/4" x 10" ANCHOR BOLTS WELDED TO C AS SHOWN.

NOTES:

1. INVERTS SHALL BE BRICK, GRADE SM (ASTM C-32)
2. BASE SHALL BE MIX #3 CONCRETE.
3. WALLS SHALL BE GRADE MS ASTM C-32 BRICK, PLAIN CONCRETE (P.C.), OR REINFORCED CONCRETE (R.C.) SEE TABLE FOR DIMENSIONS
4. *REINFORCING: #4 @ 10" % E.W. IN ℄ OF WALLS, REINFORCING CONTINUOUS AT CORNERS. ALL LAPS 1'-4"
5. TOP 4" OF WALLS SHALL BE BRICK MASONRY.
6. PROVIDE 3" ø RUST PROOF STEEL PIPE, PAINTED GRAY, AT MID POINT OF THROAT, FILL WITH CONCRETE.

A	B *	C	WALLS
=< 5'	8"	11'-4"	BR.OR P.C.
5' TO 8'	12"	12'-0"	BR. OR PC.
5' TO 10'	8"	11'-4"	R.C.*

* WALL THICKNESS (B) MAY BE STEPPED AT DEPTHS SHOWN

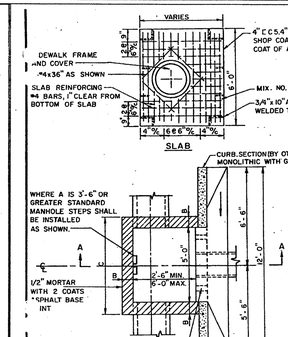


REV. OCT. 1990
REV. JAN. 1989
REV. MAR. 1986
REV. OCT. 1982

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 10-8-90
Chief - Bureau of Engineering

TYPE 'A-10' INLET

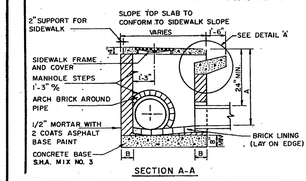
DRAWN BY: R.K.H.
CHECKED BY: J.L.R.
SCALE: NONE
SD 4.02



NOTES:

1. INVERTS SHALL BE BRICK, GRADE SM (ASTM C-32)
2. BASE SHALL BE MIX NO. 3 CONCRETE
3. WALLS SHALL BE GRADE MS BRICK, PLAIN CONCRETE (P.C.) OR REINFORCED CONCRETE (R.C.). SEE TABLE FOR DIMENSIONS.
4. *REINFORCING: #4 @ 10" % E.W. IN ℄ OF WALLS. REINFORCING CONTINUOUS AT CORNERS. ALL LAPS 1'-4"
5. TOP 4" OF WALLS SHALL BE BRICK MASONRY. ADDITIONAL BRICK SHALL BE USED TO BRING M COVER TO EXIST. GROUND IF REQUIRED.
6. * WALL THICKNESS MAY BE STEPPED AT DEPTHS SHOWN.
7. BENCH (AS PER TYPE 'A' MANHOLE) SHALL BE BUILT INTO INLET WHERE DRAINS 24" AND LARGER RUN THROUGH INLET.

A	B *	C	WALLS
=< 6'	8"	6'-4"	BR.OR P.C.
6' TO 10'	12"	7'-0"	BR. OR PC.
6' TO 15	8"	6'-4"	R.C.*

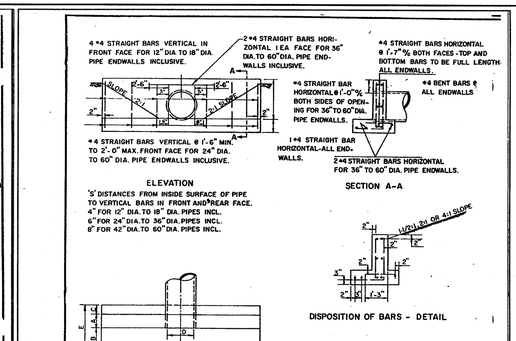


REV. OCT. 1990
REV. JAN. 1989
REV. MAR. 1986

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 10-8-90
Chief - Bureau of Engineering

TYPE 'A-5' INLET
BRICK OR CAST-IN-PLACE

DRAWN BY: R.K.
CHECKED BY: J.L.R.
SCALE: NONE
SD-4.01



REINFORCING: DEFORMED STEEL BARS (1/2" DIA.)
CHAMFER: ALL EXPOSED EDGES (1x1" OR AS DIRECTED.
CONC. SHALL BE S.H.A. MIX NO. 2.

OPENINGS		DIMENSIONS							VOLUME	STEEL
D IN.	AREA SQ.FT.	A	B	C	E	F	H	L	CONC. C.Y.	LBS.
12	0.79	9"	6"	6"	1'-9"	9"	1'-9"	6'-6"	0.61	38
15	1.23	9"	6"	6"	1'-9"	9"	2'-0"	7'-9"	0.78	55
18	1.78	9"	6"	6"	1'-9"	9"	2'-3"	9'-0"	0.95	62
24	3.14	9"	9"	6"	2'-3"	9"	2'-9"	11'-6"	1.56	91
30	4.91	9"	14"	8"	2'-5"	10"	3'-6"	14'-2"	2.19	136
36	7.07	12"	16"	10"	3'-2"	12"	4'-0"	16'-8"	4.18	222
42	9.62	12"	16"	10"	3'-2"	12"	4'-0"	19'-2"	5.15	265

REV. MAR. 1986

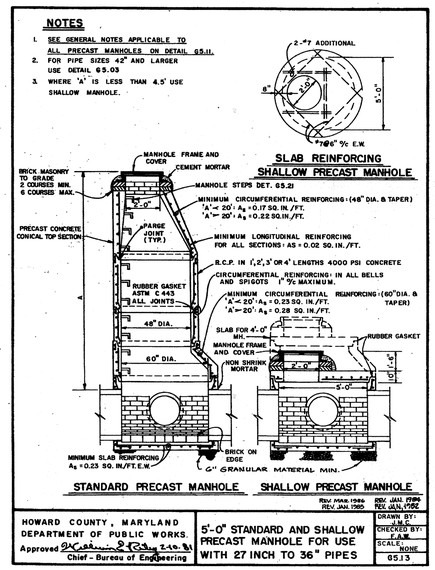
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 10-8-90
Chief - Bureau of Engineering

TYPE "C" ENDWALL
CIRCULAR PIPE

DRAWN
CHECKED BY:
SCALE NONE
SD-5.21

NOTES

1. SEE GENERAL NOTES APPLICABLE TO ALL PRECAST MANHOLES ON DETAIL G5.11.
2. FOR PIPE SIZES 42" AND LARGER USE DETAIL G 5.03
3. WHERE "A" IS LESS THAN 4.5' USE SHALLOW MANHOLE.



REV. MAR. 1986 REV. JAN. 1989
REV. JAN. 1985 REV. JAN. 1982

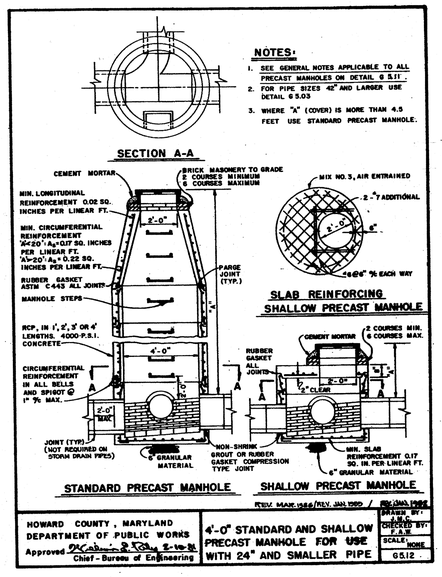
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS.
Approved [signature] 2-10-89
Chief - Bureau of Engineering

5'-0" STANDARD AND SHALLOW PRECAST MANHOLE FOR USE WITH 27 INCH TO 36" PIPES

DRAWN BY: F.A.W.
CHECKED BY: F.A.W.
SCALE: NONE
G5.13

NOTES:

1. SEE GENERAL NOTES APPLICABLE TO PRECAST MANHOLES ON DETAIL G 5.11.
2. FOR PIPE SIZES 42" AND LARGER USE DETAIL G 5.03
3. WHERE "A" (COVER) IS MORE THAN 4.5 FEET USE STANDARD PRECAST MANHOLE.

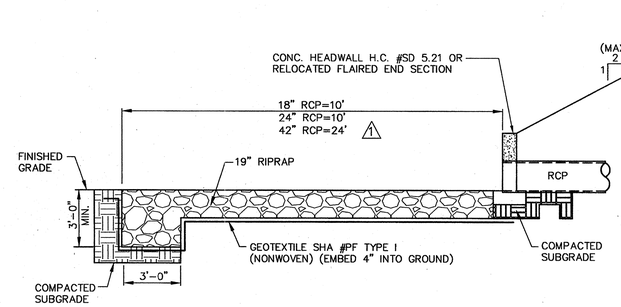


REV. MAR. 1986 / REV. JAN. 1989 REV. JAN. 1982

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 2-10-89
Chief - Bureau of Engineering

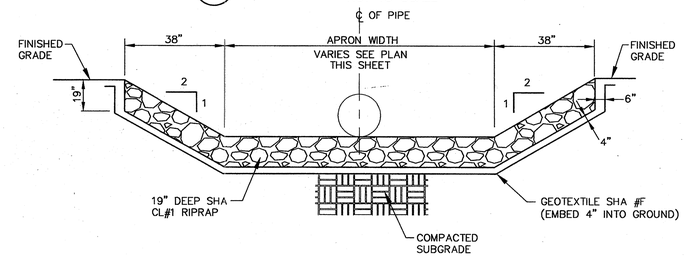
4'-0" STANDARD AND SHALLOW PRECAST MANHOLE FOR USE WITH 24" AND SMALLER PIPE

DRAWN BY: F.A.W.
CHECKED BY: F.A.W.
SCALE: NONE
G5.12



3 RIP-RAP SWALE AT OUTFALL

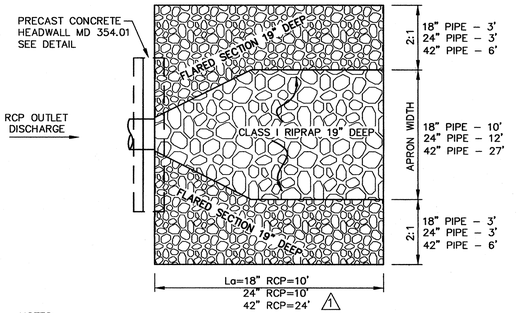
NOT TO SCALE



TYPICAL SECTION HEADWALL RIP-RAP SWALE AT OUTFALL

4

NOT TO SCALE



NOTES:

1. 18" RCP EW1 Hydraulics: Q(capacity) = 10.5 cfs
   Velocity (Partial) = 2 fps
   Depth (partial) = 0.93'
2. 24" RCP EW1M2 Hydraulics: Q(capacity) = 21.5 cfs
   Velocity (Partial) = 10 fps
   Depth (Partial) = 1.5'
3. 42" RCP EW1M1 Hydraulics: Q(capacity) = 100.6 cfs
   Velocity (Partial) = 10.6 fps
   Depth (Partial) = 2.7'

2 TYPICAL PLAN VIEW

NOT TO SCALE

SEDIMENT CONTROL & POND CONSTRUCTION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER [signature] DATE 3/16/04
PRINT NAME BELOW SIGNATURE J.E. Loesch

( ) BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

ROBERT E. DARNER, SR. [signature] DATE 3/16/04
SIGNATURE OF ENGINEER

STATE OF MARYLAND ROBERT E. DARNER, SR. No. 11664 REGISTERED PROFESSIONAL ENGINEER

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

USDA-NATURAL RESOURCES CONSERVATION SERVICE [signature] DATE 3/22/04

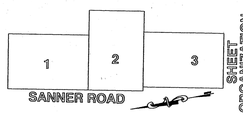
( ) THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT [signature] DATE 3/22/04

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION [signature] DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT [signature] DATE 3/30/04
DIRECTOR [signature] DATE 3/31/04

AMT
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 # 102-440



DES: JK					
DRN: RLP					
CHK: BW	12/16/03	COUNTY SET 2			
	11/24/03	ADDENDUM 1 1			
DATE: 12/10/03	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

DETAILS

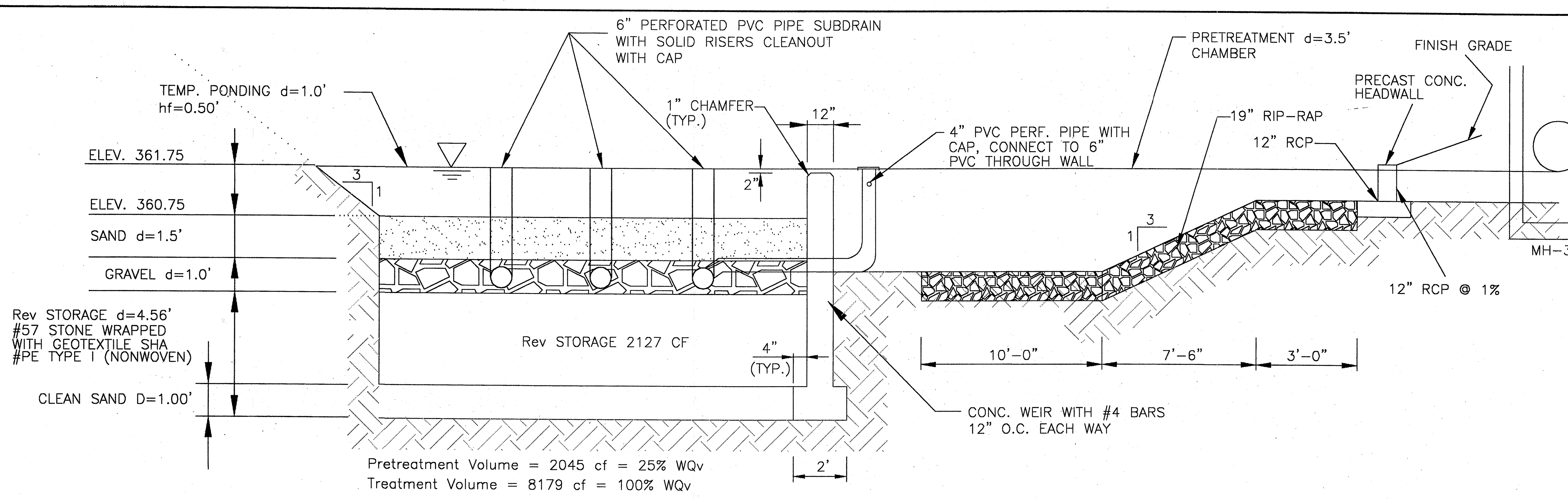
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

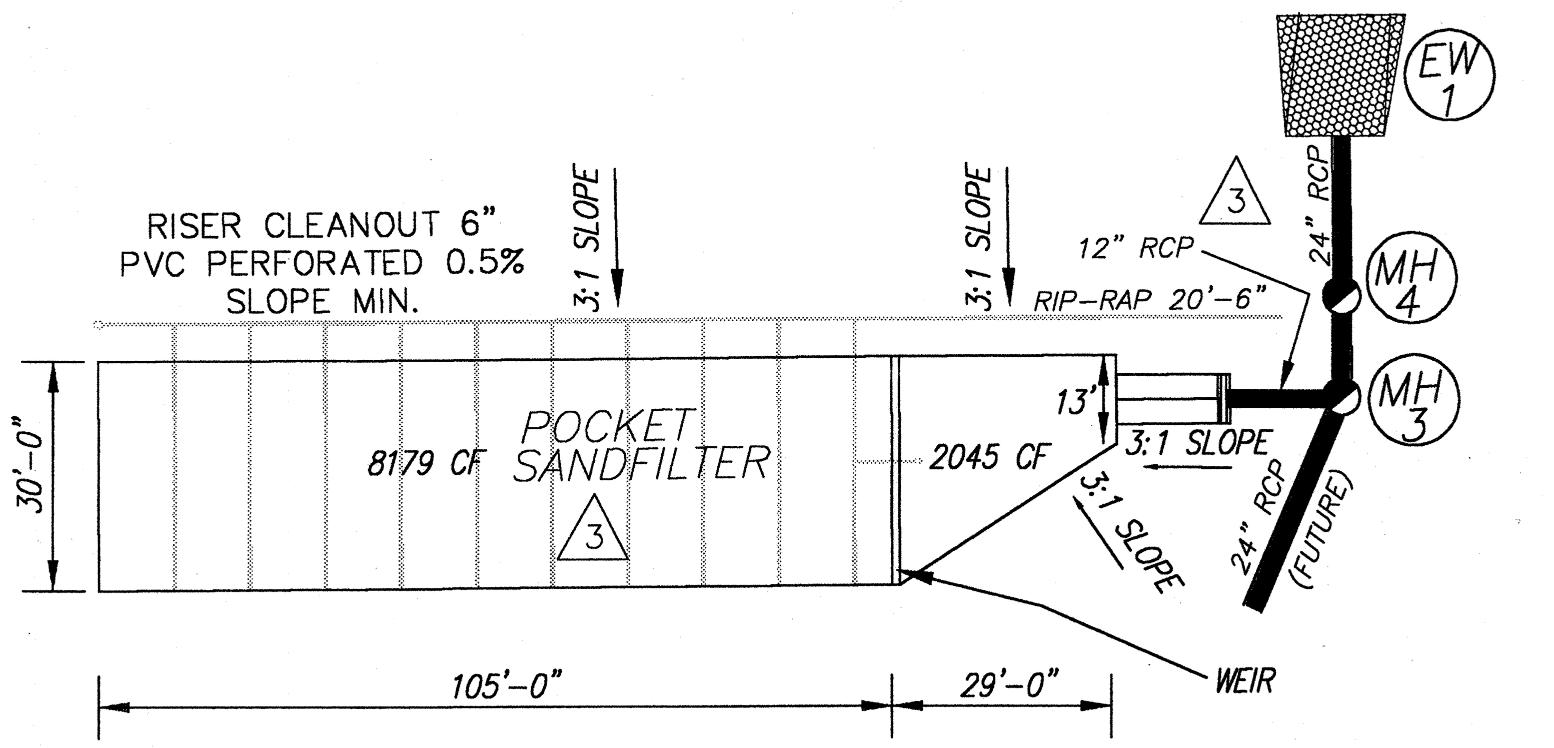
SHEET C2.10

SHEET 35 OF 48

SDP-04-66



SECTION A-A
(1) POCKET SAND FILTER – PROFILE / SECTION
SCALE: NTS



(2) POCKET SAND FILTER – PLAN VIEW
SCALE: NTS

MAINTENANCE AND INSPECTION

MAINTENANCE

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.

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 IT'S 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 FILTERING SYSTEM CONSTRUCTION:
   (A) DURING EXCAVATION TO SUBGRADE;
   (B) DURING PLACEMENT AND BACKFILL OF UNDER DRAIN SYSTEM;
   (C) DURING PLACEMENT OF GEOTEXTILES AND ALL FILTER MEDIA;
   (D) DURING CONSTRUCTION OF APPURTENANT CONVEYANCE SYSTEMS SUCH AS DIVERSION STRUCTURES, PRE-FILTERS FILTERS, INLETS, OUTLETS, AND FLOW DISTRIBUTION STRUCTURES;
   (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 AMY 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 WITH 45 DAYS OF CONSTRUCTION COMPLETION. IF BMP'S REQUIRING HSCD APPROVAL ARE CONSTRUCTED, NOTICE OF CONSTRUCTION COMPLETION SHALL ALSO BE SUBMITTED TO HSCD.

C. MAINTENANCE INSPECTION

1. THE DEPARTMENT OF PUBLIC WORKS SHALL ENSURE THAT PREVENTATIVE MAINTENANCE IS PERFORMED BY INSPECTING ALL STORMWATER MANAGEMENT SYSTEMS DURING THE FIRST YEAR OF OPERATION AND AT LEAST ONCE EVERY 3 YEARS THEREAFTER. THE DEPARTMENT OF PUBLIC WORKS SHALL NOTIFY IN WRITING ANY PROPERTY OWNER OF ANY DEFICIENCIES IN THE STORMWATER MANAGEMENT SYSTEM THAT ARE FOUND DURING THE INSPECTIONS PURSUANT TO THE CRITERIA SET FORTH IN THIS DESIGN MANUAL.
2. INSPECTION REPORTS SHALL BE MAINTAINED BY THE COUNTY FOR ALL STORMWATER MANAGEMENT SYSTEMS.
3. INSPECTION REPORTS FOR STORMWATER MANAGEMENT SYSTEM SHALL INCLUDE THE FOLLOWING:
   (A) THE DATE OF INSPECTION;
   (B) NAME OF INSPECTOR;
   (C) THE CONDITION OF;
      1) VEGETATION OR FILTER MEDIA;
      2) TREATMENT AREAS;
      3) INLET AND OUTLET STRUCTURES;
      4) UNDERGROUND DRAINAGE SYSTEMS;
      5) SEDIMENT AND DEBRIS ACCUMULATION IN STORAGE AND FOREBAY AREAS;
      6) ANY OTHER ITEM THAT COULD AFFECT THE PROPER FUNCTION STORMWATER MANAGEMENT SYSTEM.
   (D) DESCRIPTION OF NEEDED MAINTENANCE.

SANDFILTER MAINTENANCE PROCEDURES

INSPECT THE SANDFILTER FROM THE SURFACE. THE PRETREATMENT FOREBAY SHALL BE CLEANED/REPAIRED WHEN DRAWDOWN TIME WITHIN THE CHAMBER EXCEED 36 HOURS. TRASH AND DEBRIS SHALL BE REMOVED AS NECESSARY.

SEDIMENT SHOULD BE CLEANED OUT OF THE PRETREATMENT FOREBAY WHEN IT ACCUMULATES TO A DEPTH OF MORE THAN 5 INCHES. VEGETATION WITHIN THE PRETREATMENT FOREBAY SHALL BE LIMITED TO A HEIGHT OF 18 INCHES.

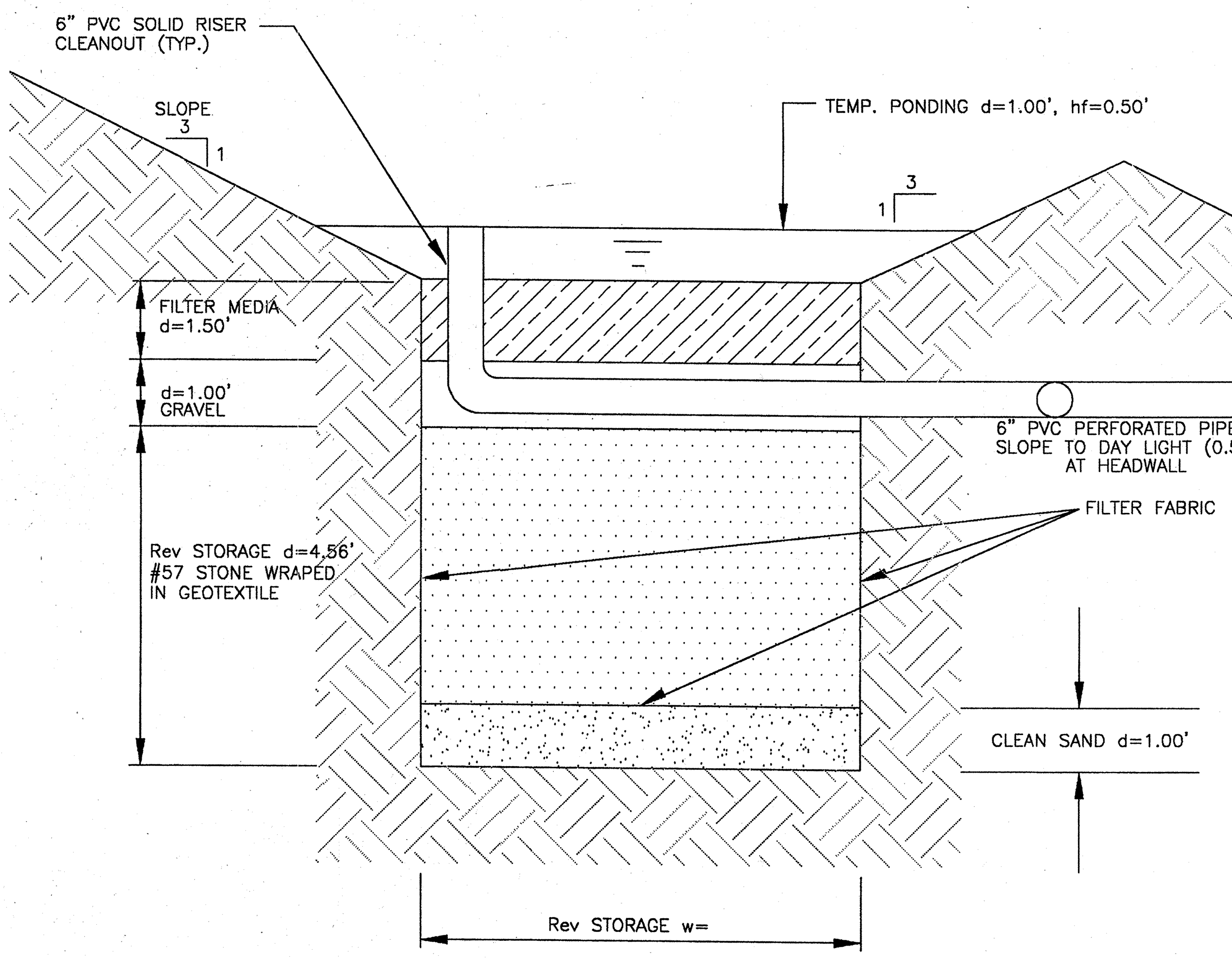
WHEN THE FILTERING CAPACITY OF THE SANDFILTER DIMINISHES SUBSTANTIALLY. (E.G. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS). THE TOP FEW INCHES OF DISCOLORED SAND MATERIAL SHALL BE REMOVED AND SHALL BE REPLACED WITH FRESH SAND MATERIAL PER THE MATERIAL SPECIFICATIONS. THE REMOVED SEDIMENTS SHOULD BE DISPOSED OF IN AN ACCEPTABLE MANNER (E.G. LANDFILL). SILT/SEDIMENT SHOULD BE REMOVED FROM THE FILTER BED WHEN THE ACCUMULATION EXCEEDS 1 INCH.

STORMCEPTOR MAINTENANCE PROCEDURE

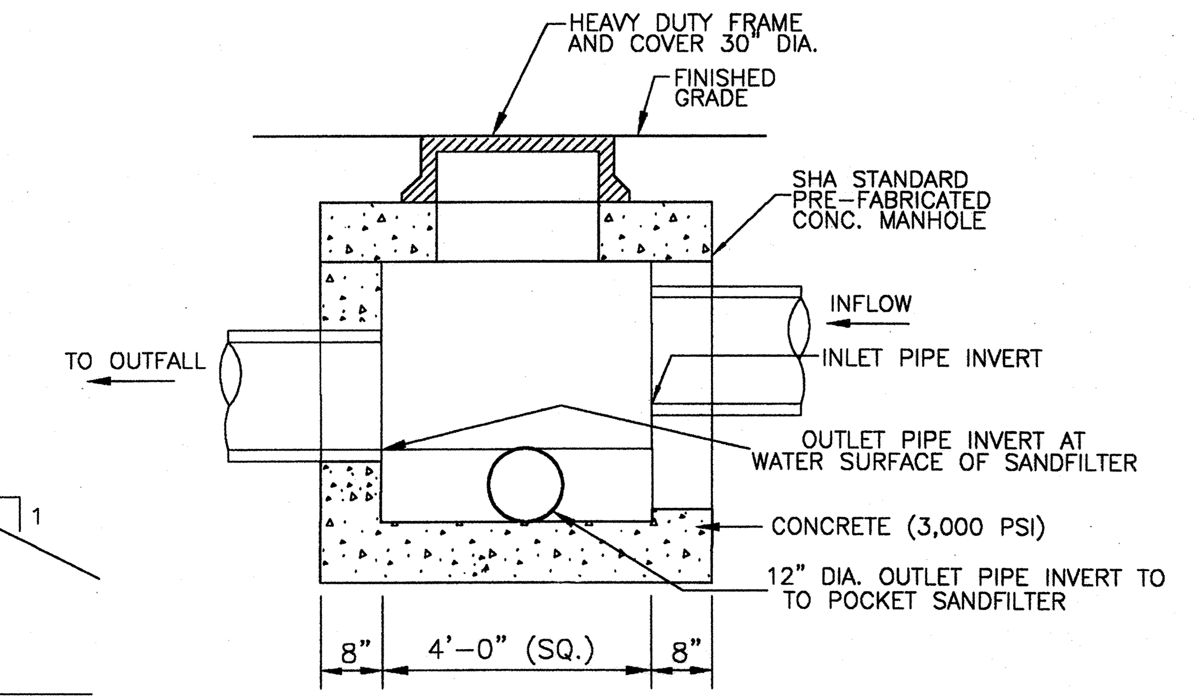
INSPECT AND MAINTAIN THE STORMCEPTOR FROM THE SURFACE, WITHOUT ENTRY INTO THE UNIT. PERFORM MAINTENANCE ONCE THE STORED VOLUME REACHES 15% OF THE STORMCEPTOR CAPACITY, OR IMMEDIATELY IN THE EVENT OF A SPILL.

MAINTENANCE INTERVALS VARY DEPENDING ON THE APPLICATION THEREFORE, PERFORM INSPECTIONS QUARTERLY DURING THE FIRST YEAR OF INSTALLATION. THEREAFTER, PERFORM INSPECTIONS ON A SCHEDULE DERIVED FROM THE FIRST YEARS MAINTENANCE REQUIREMENTS.

REMOVE OIL AND SEDIMENT THROUGH THE 24 INCH DIAMETER OUTLET RISER PIPE. ALTERNATIVELY, YOU MAY REMOVE FLOATABLES AND HYDROCARBONS THROUGH THE 6 INCH OIL INSPECTION PORT. DISPOSE OF THE SEPARATOR CONTENTS AT A LOCATION APPROVED BY HOWARD COUNTY AND/OR MARYLAND DEPARTMENT OF THE ENVIRONMENT.



SECTION B-B
(3) POCKET SAND FILTER – CROSS SECTION
SCALE: 1/2"=1'-0"



NOTES:
1. SEE PROFILE FOR PIPE INVERT AND SIZE.
2. STRUCTURE AND FRAME/COVER MD SHA 383.00 EXCEPT 30" FRAME AND COVER.
3. SEE STRUCTURE SCHEDULE FOR ELEVATION.
4. HYDRAULIC CAPACITY OF SPLITTER MANHOLE IS BASED ON FILLING SANDFILTER TO DESIGN CAPACITY BEFORE FLOW EXITS VIA SPLITTER BOX TO OUTLET PIPE.

(4) SPLITTER MANHOLE
SCALE: NTS

SEDIMENT CONTROL

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

J.E. Loesch 3/16/04
SIGNATURE OF DEVELOPER — DATE
PRINT NAME BELOW SIGNATURE J.E. Loesch

( ) BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE CONSTRUCTION.

ROBERT A. WARNER — 2/15/04
SIGNATURE OF ENGINEER — DATE

( ) 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

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

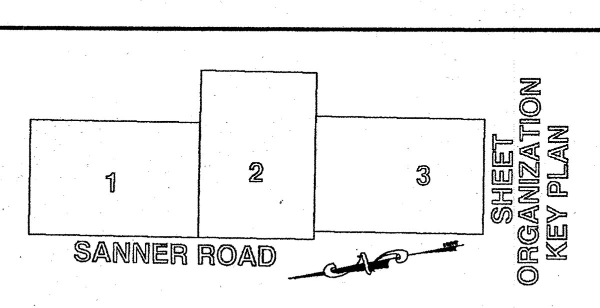
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT HB	DATE 3/31/04
DIRECTOR	DATE 3/31/04

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. MORTONTHOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 102-440



DES: JK							
DRN: RLP							
CHK: BW	3/9/4	COORDINATION 3					
	12/26/03	COUNTY SET 2					
DATE: 10/10/03	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP	

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

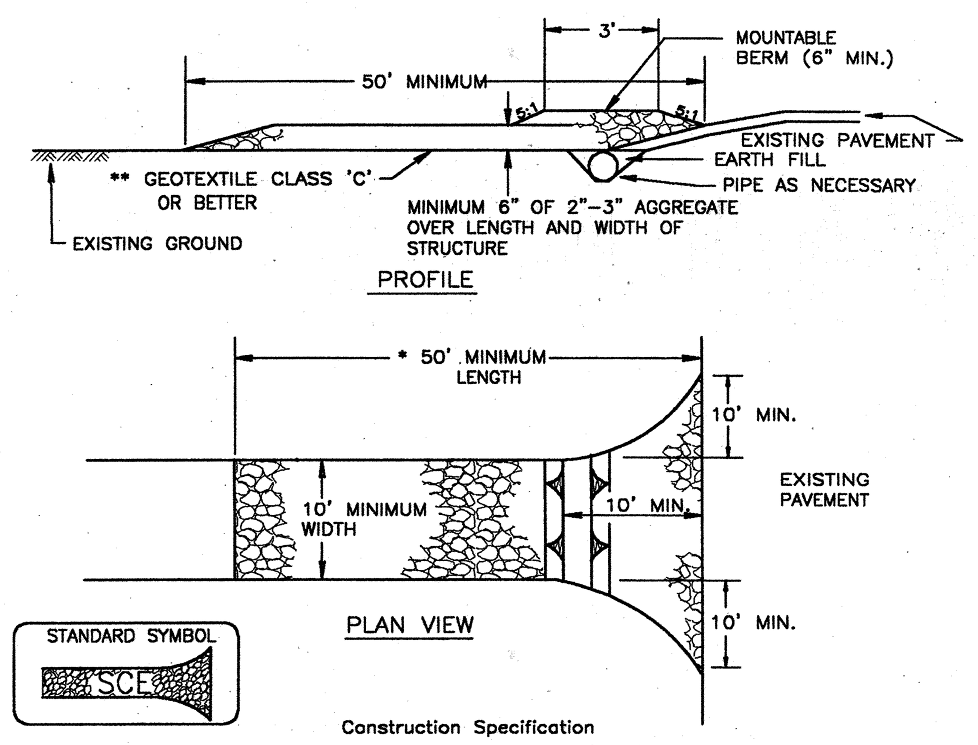
POCKET SANDFILTER PLAN AND DETAILS

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

SCALE AS SHOWN
SHEET C2.11
SHEET 36 OF 48

SDP-04-66

DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).

2. Width – 10' minimum, should be flared at the existing road to provide a turning radius.

3. 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.

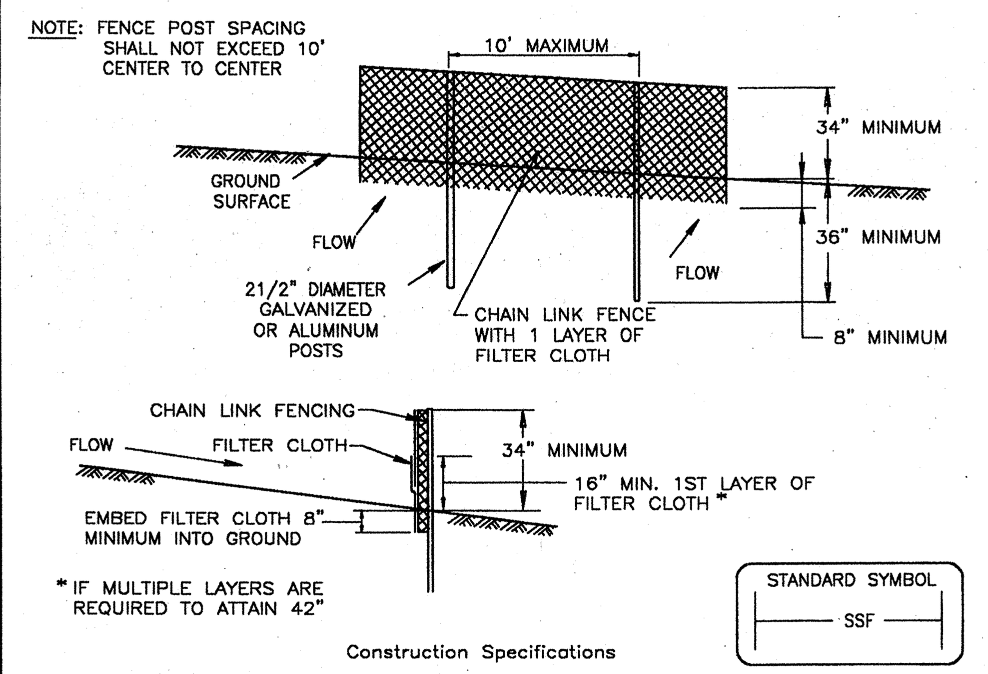
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. 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.

6. 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 F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 – SUPER SILT FENCE



Construction Specifications

1. 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.

2. 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.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

7. 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/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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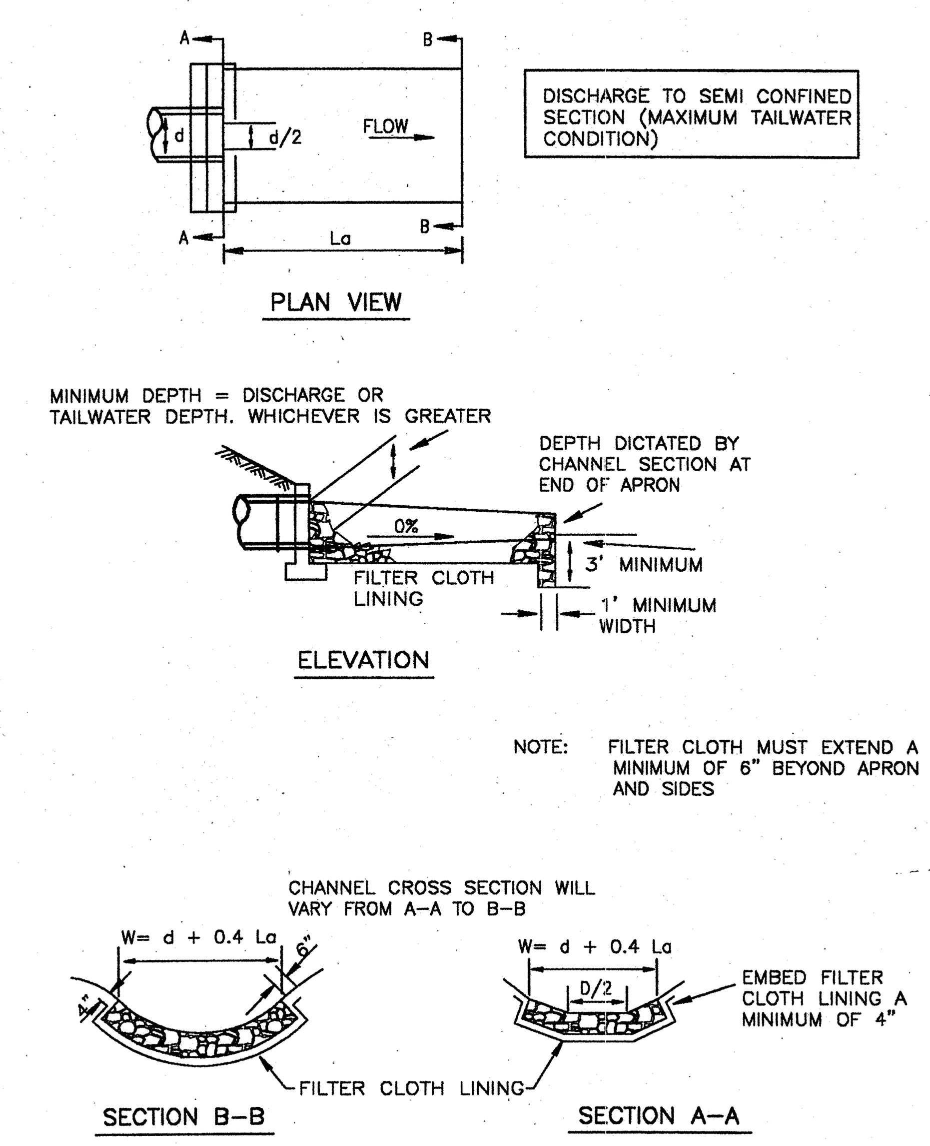
DETAIL 25 – ROCK OUTLET PROTECTION I



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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.

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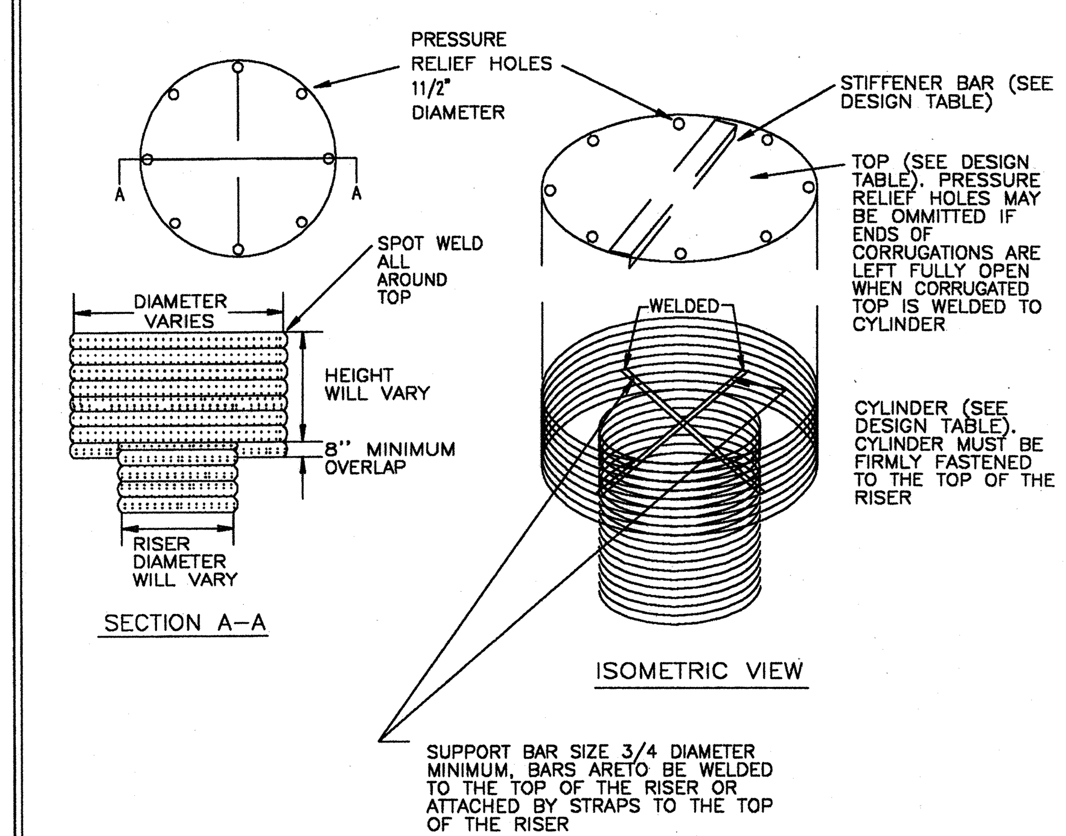
DETAIL 16 – CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE



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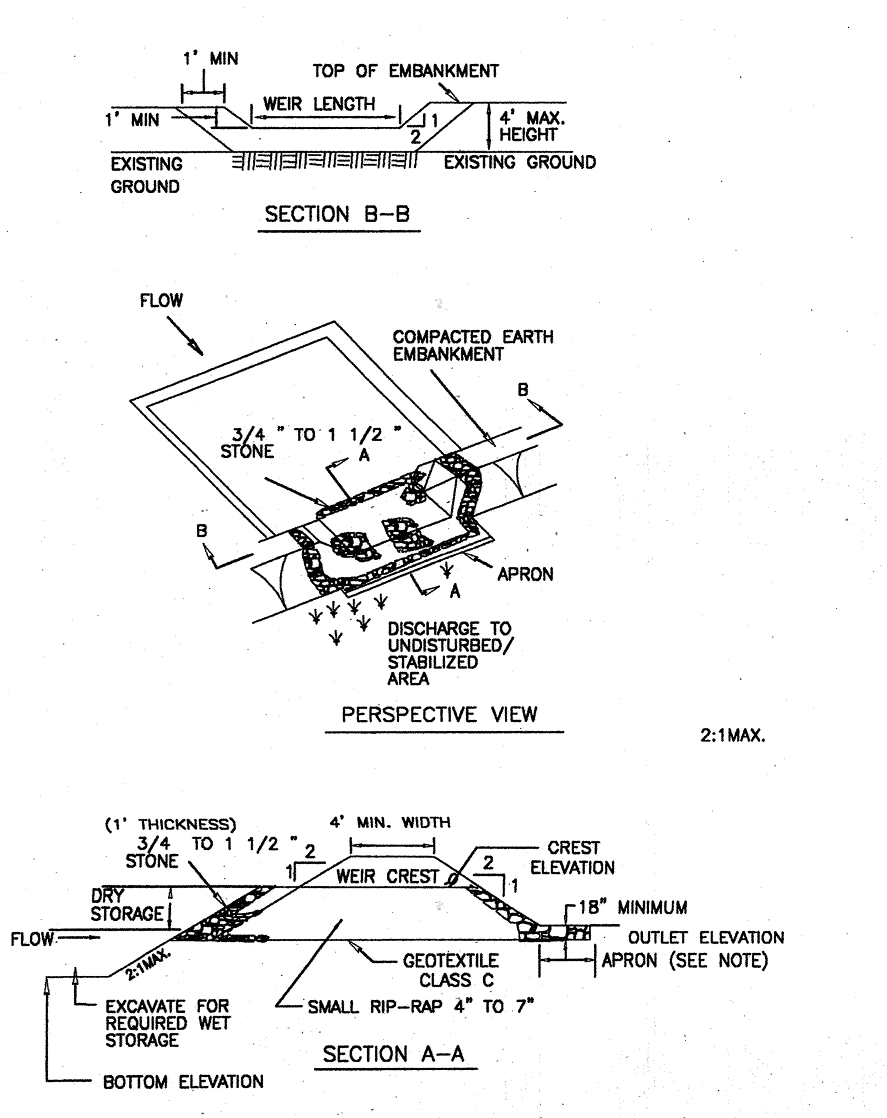
DETAIL 10A – STONE RIP-RAP OUTLET SEDIMENT TRAP – ST IV



NOTE: 5' MIN LENGTH UP TO 5 ACRES. OVER 5 ACRES USE 10' MIN

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STONE RIP-RAP OUTLET SEDIMENT TRAP – ST IV

Constuction Specifications

1. The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.

2. The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be 4', measured at centerline of embankment.

3. All cut and fill slopes shall be 2:1 or flatter.

4. Elevation of the top of any dike directing water into trap must equal or exceed the height of trap embankment.

5. Storage area provided shall be figured by computing the volume measured from top of excavation. (For storage requirements see Table 9).

6. Geotextile Class C shall be placed over the bottom and sides of the outlet channelprior to placement of stone. Section of fabric must overlap at least 1' with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.

7. 4" – 7" stone shall be used to construct the weir and 4" – 12" or Class I rip-rap shall be used to construct the outlet channel.

8. Outlet – An outlet shall include a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge point shall be provided as necessary.

9. Outlet channel must have positive drainage from the trap.

10. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 of the wet storage depth of the trap (900 cf/ac). Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

11. The structure shall be inspected periodically after each rain and repaired as needed.

12. Construction of traps shall be carried out in such a manner that sediment pollution is abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentrated inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.

13. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.

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Construction Specifications

SEDIMENT BASIN CONSTRUCTION

1. Site Preparation: Perimeter sediment control devices must be installed prior to clearing and grubbing. Areas where the embankment is to be placed shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots or other objectionable material. The pool area shall not be cleared until completion of the dam embankment unless the pool area is to be used for borrow. In order to facilitate clean-out and restoration, the pool area (measured at the top of the pipe spillway) shall be cleared of all brush, trees, and other objectionable materials.

2. Cut-off Trench: A cut-off trench shall be excavated along the centerline of earth fill embankments. The minimum depth shall be four feet. The cut-off trench shall extend up both abutments to the riser crest elevation. The minimum bottom width shall be two feet, but wide enough to permit operation of excavation and compaction equipment. The side slopes shall be no steeper than 1:1. Compaction requirements shall be the same as those for the embankment. The trench shall be dewatered during the backfilling-compaction operations. For dewatering see Section D.

3. Embankment: The fill material shall be taken from approved areas shown on the plans. It shall be clean mineral soil free of roots, woody vegetation, oversized stones, rocks, or other objectionable material. Relatively pervious materials such as sand or gravel (Unified Soil Classes GW, GP, SW & SP) or organic materials (Unified Soil Classes OL and OH) shall not be placed in the embankment. Areas on which fill is to be placed shall be scarified prior to placement of fill. The fill material shall contain sufficient moisture so that it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction. Fill material shall be placed in six-inch to eight-inch thick continuous lifts over the entire length of the fill. Compaction shall be obtained by routing and hauling the construction equipment over the fill so that the entire surface of each layer of the fill is traversed by at least one wheel or tread track of the equipment or by the use of a compactor. The embankment shall be constructed to an elevation 10 percent higher than the design height to allow for settlement.

4. Principal Spillway: Steel risers shall be securely attached to the barrel or barrel stub by welding the full circumference making a watertight structural connection. Concrete risers shall be poured with the principal spillway in place or precast with voids around the principal spillway filled with concrete or shrink proof grout for watertight connection. The barrel stub must be attached to the riser at the same percent (angle) of grade as the outlet conduit. The connection between the riser and the riser base shall be watertight. All connections between barrel sections must be achieved by approved watertight band assemblies. The barrel and riser shall be placed on a firm, smooth foundation of impervious soil as the embankment is constructed. Breaching the embankment to install the barrel is unacceptable. Pervious materials such as sand, gravel, or crushed stone shall not be used as backfill around the pipe or anti-seep collars. The fill material around the pipe spillway shall be placed in four inch lifts and hand compacted under and around the pipe to at least the same density as the adjacent embankment. A depth of 1.5 times the pipe diameter (min.) shall be backfilled over the principal spillway and hand compacted before crossing it with construction equipment.

5. Emergency Spillway: The emergency spillway shall be installed in undisturbed ground. The achievement of planned elevations, grades, design width, entrance and exit channel slopes are critical to the successful operation of the emergency spillway and must be constructed within a tolerance of ± 0.2 feet.

C-10-6

6. Vegetative Treatment: Stabilize the embankment in accordance with the appropriate vegetative Standard and Specifications immediately following construction. In no case shall the embankment remain unstabilized for more than seven (7) days. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon basin completion and monitored and maintained erosion free during the life of the basin.

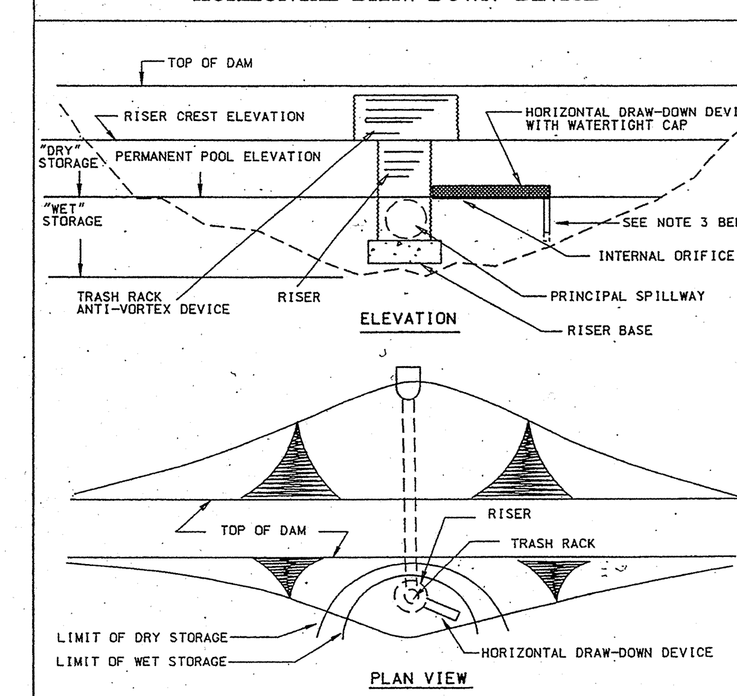
7. Safety: Local requirements concerning fencing and signs shall be met, warning the public of hazards of soft sediment and floodwater.

8. Maintenance: Repair all damage caused by soil erosion and construction equipment at or before the end of each working day. Sediment shall be removed from the basin when it reaches the specified distance below the top of the riser as shown on the riser. This sediment shall be placed in such a manner that it will not erode from the site. The sediment shall not be deposited downstream from the embankment, adjacent to a stream or floodplain. Disposal areas must be stabilized.

9. Final Disposal: When temporary structures have served their intended purpose and the contributing drainage area has been properly stabilized, the embankment and resulting sediment deposits are to be leveled or otherwise disposed of in accordance with the approved sediment control plan. The proposed use of a sediment basin site will often dictate final disposition of the basin and any sediment contained therein. If the site is scheduled for future construction, then the basin material and trapped sediments must be removed and safely disposed of and the basin shall be backfilled with a structural fill. When the basin area is to remain open space, the pond may be pumped dry (using methods in Section D - Dewatering), graded, and back filled.

10. Conversion to Stormwater Management Structure: After permanent stabilization of all disturbed contributory drainage areas, temporary sediment basins, if initially built and certified to meet permanent standards, may be converted to permanent stormwater management structures. To convert the basin from temporary to permanent use, the outlet structure must be modified in accordance with approved stormwater management design plans. Additional grading may also be necessary to provide the required storage volume in the basin. Conversion can only take place after all disturbed areas have been permanently stabilized to the satisfaction of the inspection authority and storm drains have been flushed.

BASIN DRAWDOWN SCHEMATIC HORIZONTAL DRAW-DOWN DEVICE



Construction Specifications

1. The total area of the perforations must be greater than 2 times the area of the internal orifice.

2. The perforated portion of the draw-down device shall be wrapped with ½" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.

3. Provide support of draw-down device to prevent sagging and floatation. An acceptable preventative measure is to stake both sides of draw-down device with 1" steel angle, or 1' by 4" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 gauge minimum wire.

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12.0 DEWATERING SPECIFICATIONS FOR REMOVABLE PUMPING STATION

Definition

A temporary structure which is used to remove water from excavated areas, sediment traps and basins.

Purpose

The Removable Pumping Station is an easily maintained device that filters sediment laden water at a pump intake, prior to discharging to a suitable area.

Conditions Where Practice Applies

Removable Pumping Stations are constructed when water collects and must be pumped away during excavation, cofferdam dewatering, maintenance or removal of sediment traps and basins or for other uses as applicable. These are preferred over Sump Pits on projects where a long duration of pumping is expected.

Design Criteria

The number of Removable Pumping Stations and their locations shall be determined by the designer and included on the plans. Contractors may relocate sump pits to optimize use but discharge location changes must be coordinated with inspectors. A design is not required but construction must conform to the general criteria outlined on Detail 20A.

A perforated, vertical standpipe wrapped with wire mesh and geotextile is placed inside a larger pipe. The outside pipe is then enveloped by a cone of washed stone. Water is then pumped from the center of the inside pipe to a suitable discharge area.

Water pumped from the standpipe should discharge into a sediment trap, sediment basin or stabilized area.

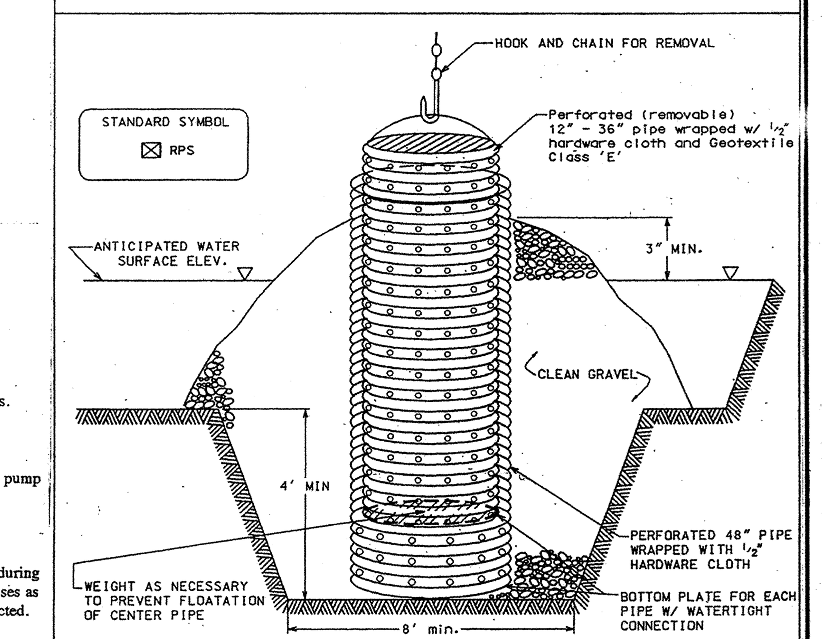
Construction Specifications

1. The inner pipe shall be constructed by perforating a 12" to 36" diameter pipe with a watertight cap on the bottom end and wrapping it with 1/2" hardware cloth and Geotextile Class E[19]. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center.

2. The outer pipe shall be at least 4" larger in diameter than the inside pipe. Both the inner and outer pipes should extend 12" to 18" above the riser crest elevation, or anticipated high water elevation.

D-12-3

DETAIL 20A – REMOVABLE PUMPING STATION



Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with ½" hardware cloth to prevent backfill material from entering the perforations.

2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.

3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be ½" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with ½" hardware cloth first, then wrapped again with Geotextile Class E.

4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

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SEDIMENT CONTROL

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

J.E. Loesch 3/16/04

SIGNATURE OF DEVELOPER — DATE
PRINT NAME BELOW SIGNATURE

( ) BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE CONSTRUCTION.

3/15/04

ROBERT A. WARNER — DATE
SIGNATURE OF ENGINEER

STATE OF MARYLAND — ROBERT ARTHUR WARNER — LICENSE NO. 13403 — REGISTERED PROFESSIONAL ENGINEER

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

3/22/04

USDA-NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

3/22/04

HOWARD SOIL CONSERVATION DISTRICT — DATE

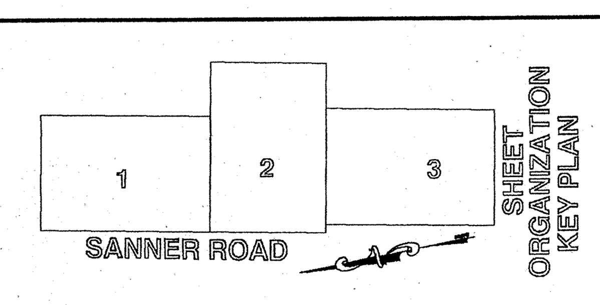
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/31/04

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 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 102-440



DES: JK						
DRN: RLP						
CHK: BW	3/1/04	COUNTY SET 1				
DATE: 10/10/03	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

EROSION & SEDIMENT CONTROL DETAILS

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

SCALE AS SHOWN

SHEET C2.12

SHEET 37 OF 48

SDP-04-66

SEDIMENT CONTROL

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

J.E. Loesch — J.E. Loesch — 3/16/04
SIGNATURE OF DEVELOPER — DATE
PRINT NAME BELOW SIGNATURE

( ) BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE CONSTRUCTION.

ROBERT A. WARNER — DATE
SIGNATURE OF ENGINEER

( ) 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 — 3/22/04 DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 3/22/04 DATE

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 DIVERSION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).

2) ALL VEGETATIVE AND STRUCTURAL PRACTICES AE 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	~~16.7~~ 17.3	ACRES
AREA TO BE ROOFED OR PAVED (4)	11.2	ACRES
AREA TO BE VEGETATIVELY STABILIZED	~~5.5~~ 6.1	ACRES
TOTAL CUT (INSITU, IN GROUND)	48,440 ~~39,317~~	CU.YDS.
TOTAL FILL (COMPACTED)	102,162	CU.YDS.
OFF SITE WASTE/BORROW AREA LOCATION	SOURCE UNKNOWN BUT HAS BEEN BUT HAS BEEN REQUIRED TO HAVE AN ACTIVE PERMIT SEDIMENT CONTROL	CU. YDS.

*NOTE: THESE QUANTITIES ARE A GROSS ESTIMATE BASED INSITU 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 ESTIMATE THEIR CONSTRUCTION COSTS BASED ON THESE QUANTITIES AS THEY ARE APPROXIMATE AND ARE SUBJECT TO UNKNOWN SITE CONDITIONS.

SEQUENCE OF CONSTRUCTION:

TIME (WEEKS)	SEQUENCE OF CONSTRUCTION
	1. CONTRACTOR SHALL OBTAIN A GRADING PERMIT FROM APL, THAT IS ISSUED BY HOWARD COUNTY.
2	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	4. PERFORM CLEARING ONLY AS NECESSARY TO INSTALL TREE PROTECTION, STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, AND ALL OTHER SEDIMENT CONTROL FACILITIES WITHIN THE PROJECT LIMIT. INSTALL STABILIZED CONSTRUCTION ENTRANCES LOCATIONS FOR ACCESS TO EXISTING JHU/APL DRIVERS AS SHOWN FOR BASIN G SDP-04-35 AND BASIN B F-02-77 PERMITTED PLANS.
3	5. ESTABLISH STAGING AREA FOR CONSTRUCTION. TEMPORARY SITE GRADING SHALL ALLOW FOR ALL RUNOFF TO DRAIN DIRECTLY INTO EXISTING DRAINS. DIVERT SURFACE RUNOFF OUTSIDE THE LOD AWAY FROM THE CONSTRUCTION SITE DURING ENTIRE CONSTRUCTION PERIOD.
4	6. ROUGH GRADE SWM BASINS AND SEDIMENT BASIN AREA B.
3	7. INSTALL OUTLET WORK FOR SWM BASINS AND SEDIMENT BASIN AREA B.
4	8. PROVIDE AND INSTALL REMAINDER OF CONSTRUCTION AS SHOWN FOR SWM BASIN G AND BASIN B, ALONG WITH SEDIMENT BASIN AREA B.
2	9. PERFORM FINE GRADING AND PERMANENT STABALIZATION OF THE BASINS.
	10. CONTRACTOR SHALL REQUEST FINAL INSPECTION OF SWM BASIN B AND G TO ALLOW FOR REMOVAL OF STABALIZED CONSTRUCTION ENTRANCE AND PERFORM PER-CONSTRUCTION MEETING FOR PHASE 1 WORK.
2	11. PERFORM CLEARING ONLY NECESSARY TO INSTALL TREE PROTECTION, STABALIZED CONSTRUCTION ENTRANCE, SILT FENCE, AND ALL OTHER SEDIMENT CONTROL FACILITIES WITHIN THE PROJECT LIMITS FOR PHASE 1 WORK.
2	12. INSTALL SITE GRADING THAT SHALL ALLOW FOR ALL RUNOFF TO DRAIN DIRECTLY INTO EXISTING DRAINS. DIVERT SURFACE RUNOFF OUTSIDE THE LOD FROM THE CONSTRUCTION SITE DURING ENTIRE CONSTRUCTION PERIOD.
3	13. ROUGH GRADE AREA OF PHASE 1 WORK (SEE SHEETS: #C1.13, #C1.4, AND #C1.20).
4	14. INSTALL NEW STORM DRAINAGE SYSTEM PHASE 1.
4	15. PROVIDE AND INSTALL REMINDER OF CONSTRUCTION AS SHOWN FOR PHASE 1.
2	16. PERFORM FINE GRADING AND PERMANENT STABALIZATION OF THE SITE INCLUDING PAVEMENT AND VEGETATIVE STABILIZATION FOR PHASE 1.
4	17. CONTRACTOR SHALL REQUEST FINAL INSPECTION OF PHASE 1 FROM COUNTY SEDIMENT CONTROL INSPECTOR TO ALLOW FOR REMOVAL OF PHASE 1 STABILIZED CONSTRUCTION ENTRANCE AND PERFORM PRE-CONSTRUCTION MEETING FOR PHASE 2.
2	18. PERFORM CLEARING ONLY AS NECESSARY TO INSTALL TREE PROTECTION, STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, AND ALL OTHER SEDIMENT CONTROL FACILITIES WITHIN THE PROJECT LIMIT. INSTALL PHASE 2 STABILIZED CONSTRUCTION ENTRANCE AT ~~2~~ 3 LOCATIONS FOR ACCESS TO PHASE 1 CONSTRUCTED ACCESS DRIVES. (SEE SHEET # C1.19), AND ANTENNA RANGE RED-LINE (SEE SHEET #C1.19△).
2	19. TEMPORARY SITE GRADING SHALL BE PERFORMED AS NOTE #5 OF THIS SEQUENCE SPECIFIES. (4)
4	20. ROUGH GRADE AREA OF PHASE 2 WORK (SEE SHEETS #C1.13, #C1.14, #C1.15 AND #C1.21).
3	21. INSTALL NEW STORM DRAINAGE SYSTEM PHASE 2.
4	22. PROVIDE AND INSTALL REMAINDER OF CONSTRUCTION AS SHOWN FOR PHASE 2.
2	23. PERFORM FINE GRADING AND PERMANENT STABILIZATION OF THE SITE INCLUDING PAVEMENT AND VEGETATIVE STABILIZATION FOR PHASE 2.
4	24. CONTRACTOR SHALL REQUEST FINAL INSPECTION OF PHASE 2 FROM COUNTY SEDIMENT CONTROL INSPECTION TO ALLOW FOR REMOVAL OF PHASE 2 STABILIZED CONSTRUCTION ENTRANCE AND PERFORM PRE-CONSTRUCTION MEETING FOR PHASE 3.
1	25. PERFORM CLEARING ONLY AS NECESSARY TO INSTALL TREE PROTECTION, STABALIZED CONSTRUCTION ENTRANCE, SILT FENCE, AND ALL OTHER SEDIMENT CONTROL FACILITIES WITHIN THE PROJECT. LIMIT. INSTALL PHASE 3 STABILIZED CONSTRUCTION ENTRANCE TO ACCESS EXISTING JHU/APL DRIVE. (SEE SHEET # C1.18)
2	26. TEMPORARY SITE GRADING SHALL BE PERFORMED AS NOTE #5 OF THIS SEQUENCE SPECIFIES.
3	27. ROUGH GRADE AREA OF PHASE 3 WORK (SEE SHEET #C1.15 AND #C1.20).
2	28. INSTALL NEW STORM DRAINAGE SYSTEM PHASE 3.
3	29. PROVIDE AND INSTALL REMAINDER OF CONSTRUCTION AS SHOWN FOR PHASE 3.
2	30. PERFORM FINE GRADING AND PERMANENT STABILIZATION OF THE SITE INCLUDING PAVEMENT AND VEGETATIVE STABILIZATION FOR PHASE 3.
4	31. CONTRACTOR SHALL REQUEST FINAL INSPECTION OF PHASE 3 FROM COUNTY SEDIMENT CONTROL INSPECTOR TO ALLOW FOR REMOVAL OF PHASE 3 STABILIZED CONSTRUCTION ENTRANCE. AND TEMPORARY 36" CMP.
4	32. CONTRACTOR SHALL REQUEST PERMISSION FOR REMOVAL OF SEDIMENT BASIN #1, AND SHALL INSTALL SUPER SILT FENCE ALONG THE DISTURBED AREA EAST OF SANNER ROAD (420' MINIMUM). FOR BASIN B OUTLET CHANNEL CONSTRUCTION WITH A STABILIZED CONSTRUCTION ENTRANCE FROM SANNER ROAD. (3)
4	33. CONSTRUCTOR SHALL REQUEST FINAL INSPECTION OF PROJECT FROM COUNTY SEDIMENT CONTROL INSPECTOR TO ALLOW FOR REMOVAL OF STABILIZED CONSTRUCTION ENTRANCE AND SUPER SILT FENCE. (3)
89 TOTAL	

APL PROCEDURAL NOTES:

1. CONTRACTOR, UPON WRITTEN JHU/APL APPROVAL OF AMOUNT AND LOCATION, WILL BE ALLOWED BY JHU/APL TO DUMP EXCESS SOIL MATERIAL AT THE EXISTING JHU/APL STOCKPILE SITE. CONTRACTOR IS RESPONSIBLE FOR ALL SEDIMENT CONTROLS AND SITE RESTORATION/ STABILIZATION TO HOWARD COUNTY SCD STANDARD AND OBTAIN APPROVAL OF SEDIMENT CONTROLS BY HOWARD COUNTY SCD.

GENERAL TEMPORARY STORMWATER MANAGEMENT SEQUENCE AND NOTES:

1. DRAINAGE AREA G AND B BASINS SHALL BE CONSTRUCTED AS PER SDP #04-35, AND F-02-77 RESPECTIVELY BEFORE GROUND DISTURBANCE IS STARTED FOR PARKING.
2. BASIN B SEQUENCE OF CONSTRUCTION REQUIRES ROUGH GRADING AND INSTALLATION OF STORM DRAINAGE SYSTEM. AT THE END OF MASS GRADING AND INSTALLATION OF STORM DRAINS THE GROUND WILL BE EXPOSED AND INLETS WILL BE BLOCKED AND SURFACE RUN OFF WILL BE CONTROLED BY THE SEDIMENT BASIN AREA B FOR THE 1-YEAR RUN OFF RATE AND CONVEY THE 10 YEAR FLOW. THIS SEDIMENT BASIN IS SIZE FOR THE TOTAL DRAINAGE AREA AND ALL PHASES OF THE WORK WILL DRAIN INTO THE BASIN. PHASE 2 AND 3 WORK WILL BE DRAINED THROUGH THE STORM DRAINAGE SYSTEM BY-PASSING THE PERMANENT STORMWATER MANAGEMENT BASIN.
3. BASIN G WILL PROVIDE STORMWATER MANAGEMENT FOR THE DRAINAGE AREA DOWN STREAM OF THE SEDIMENT TRAP AND IS SIZED AND PERMITTED FOR THE NEW IMPRVIOUS SURFACES.

TEMPORARY SEEDING NOTES:

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

SEEDED 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 AREA (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 PREVIOVSLY LOOSENED.

SOIL AMENDMENTS:

1. PREFERED - 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.

SEQUENCE OF CONSTRUCTION MAINTENANCE OF TRAFFIC

1. ONCE NOTICE TO PROCEED IS OBTAINED, CONTRACTOR SHALL FOLLOW SEQUENCE OF CONSTRUCTION, AS DESCRIBED ON SHEET #C2.13. TRAFFIC FLOW ON THE EXISTING DRIVE SOUTH OF PHASE 1 FROM SANNER ROAD SHALL BE MAINTAINED AT ALL TIMES.
2. PHASE #1 WORK SHALL INCLUDE THE AREA DESIGNATED ON THE PLAN PLUS GRADING AREA AND STORM DRAINAGE AREA IN LOTS #M1 AND #M2, PLUS BASIN B AS FOLLOWS:
   - PHASE #1 WORK INCLUDES: PARKING LOTS #M1 AND #M2 ROUGH GRADE TO WITHIN 12" OF FINISHED GRADE, TOPSOIL AND PERMANENT SEED (ESTABLISH TURF).
   - PHASE #1 WORK INCLUDES CONSTRUCTION OF BASIN B AS PERMITTED UNDER SDP F-02-70.
   - PHASE #1 WORK INCLUDES STORM DRAINAGE PIPE SYSTEM FROM MANHOLE #MH8G TO AND INCLUDING RIP-RAP AT END WALL #EW1M1.
3. ALL PHASE 1 WORK SHALL BE COMPLETELY INSPECTED AND APPROVED BY JHU/APL BEFORE THE START OF PHASE 2 WORK, AND PHASE 3 WORK SHALL NOT BE STARTED UNTIL PHASE 2 WORK IS APPROVED. ALLOW FOR A MINIMUM 30 DAYS PERIOD BETWEEN PHASES OF WORK TO COMPLY WITH INSPECTION ACCEPTANCE COMPLIANCE.
4. AFTER RECEIVING NOTICE TO PROCEED FOR PHASE 2 WORK, THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION AS DESCRIBED ON SHT. #C2.13. TRAFFIC FLOW ON THE MAIN PARKING LOT DRIVE (BUILT IN PHASE 1) SHALL BE MAINTAINED AT ALL TIMES. PARKING LOTS #M1 AND #M2 SHALL HAVE TOPSOIL STRIPED AND NEW PAVEMENT SECTION INSTALLED AND AND STRIPED ALONG WITH NEW LIGHTING SYSTEM.
5. AFTER RECEIVING NOTICE TO PROCEED FOR PHASE 3 WORK, THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION AS DESCRIBED ON SHT. #C2.13 BEFORE START OF PHASE 3 WORK. INSTALL A TEMPORARY SECURITY FENCE SOUTH OF BUILDING #23 AND EAST OF THE WORK, SEE SGT, #C1.6 FOR LOCATION.
6. EACH PHASE OF THE WORK SHALL BE COMPLETED AS SHOWN. COMPLY WITH CLOSURE REQUIREMENTS FOR EACH PHASE SPECIFIED IN THE SEQUENCE OF CONSTRUCTION SHT. #C2.13.

MAINTENANCE:

INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.
FOR PUBLIC PONDS SUBSTITUTE CHEMUNG CROWN VETCH AT 15 LBS/ACRE AND KENTUCKY 31 TALL FESCUE AT 40 LBS/ACRE AS THE SEEDING REQUIREMENT.
OPTIMUM SEEDING DATE FOR THIS MOISTURE IS MARCH 1 TO APRIL 30.

TOPSOIL SPECIFICATION

TOP SOIL SPECIFICATIONS - SOIL TO BE USED AS TOP SOIL MUST MEET THE FOLLOWING: S
TOPSOIL SHALL BE A LOAM SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IT 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.

ATERATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZERS, COMPOSED 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.

30.0 DUST CONTROL

Definition

Controlling dust blowing and movement on construction sites and roads.

Purpose

To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.

Conditions Where Practice Applies

This practice is applicable to areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Specifications

Temporary Methods

1. Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or tacked to prevent blowing.
2. Vegetative Cover - See standards for temporary vegetative cover.
3. Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12" apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.
4. Irrigation - This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.
5. Barriers - Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
6. Calcium Chloride - Apply at rates that will keep surface moist. May need retreatment.

Permanent Methods

1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
2. Topsoiling - Covering with less erosive soil materials. See standards for topsoiling.
3. Stone - Cover surface with crushed stone or coarse gravel.

References

1. Agriculture Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss.
2. Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA-ARS.

H-30-1

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

FOR EROSION AND SEDIMENT CONTROL ONLY

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/30/04
DIRECTOR — DATE 3/30/04

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 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
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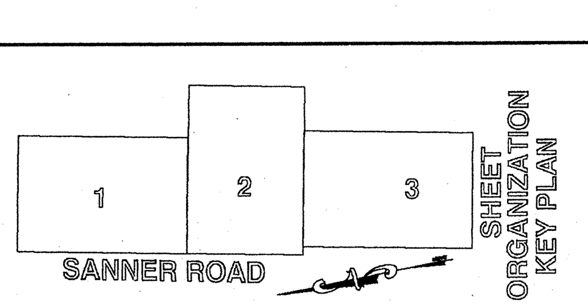
AMT FILE # 102-440



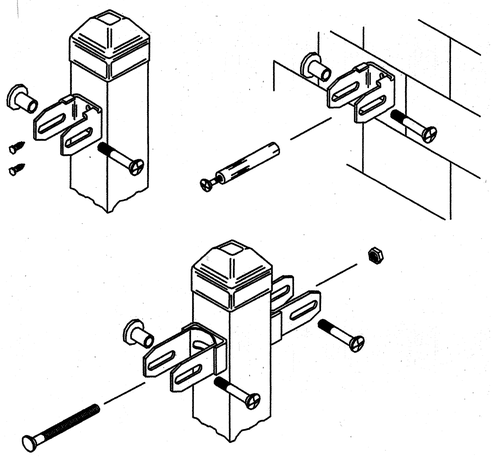
DES: JK	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
DRN: RLP	6/25/04	RED-LINE SUBMISSION	4			
CHK: BW	3/1/04	COUNTY SET	3			
DATE: 10/10/03	12/16/03	COUNTY SET	2			

NORTH PARKING / BALL FIELD ENTRANCE

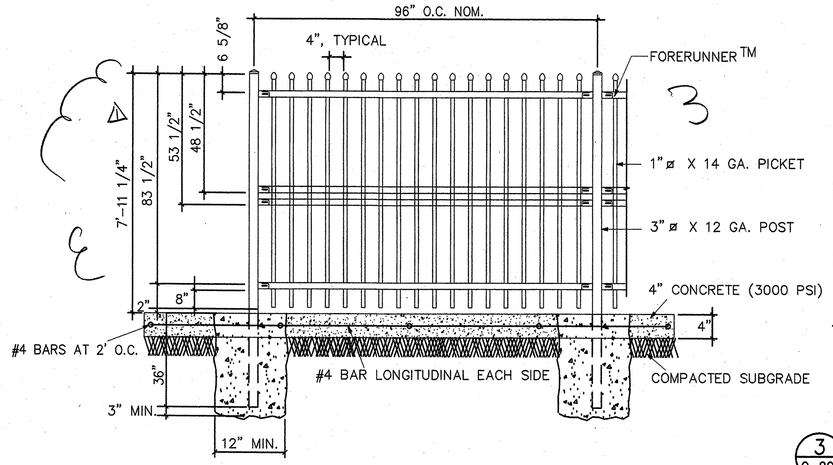
APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
EROSION & SEDIMENT CONTROL NOTES
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET C2.13
SHEET 38 OF 48

SDP-04-66



1 C-201 TYPICAL POST CONNECTIONS
NOT TO SCALE



2 C-201 AEGIS II CLASSIC FENCE PANNEL
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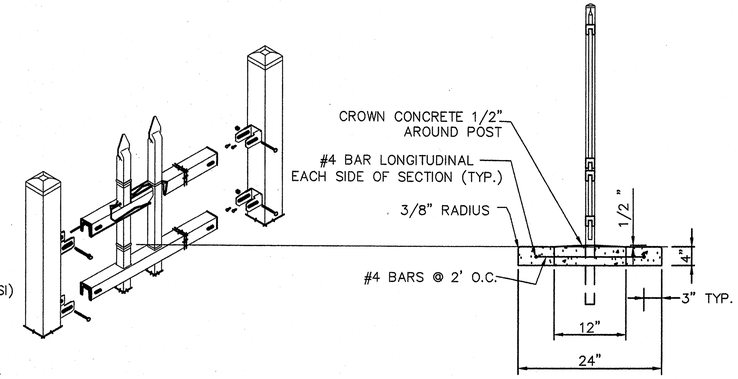
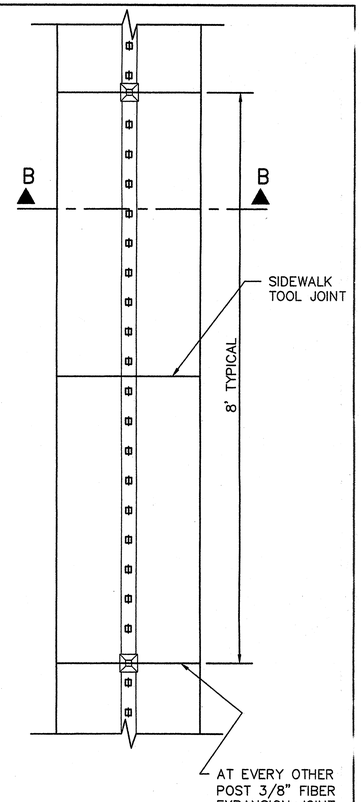
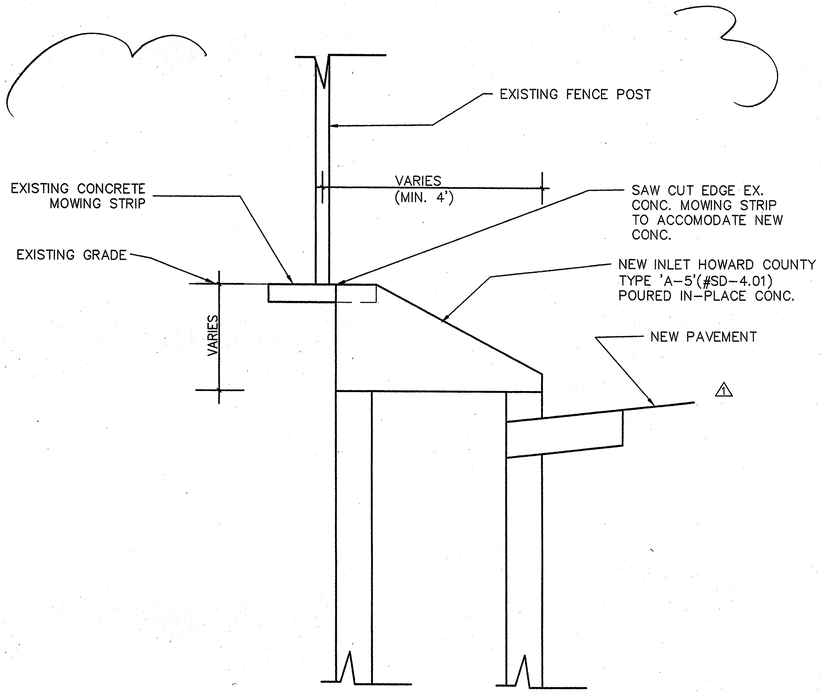


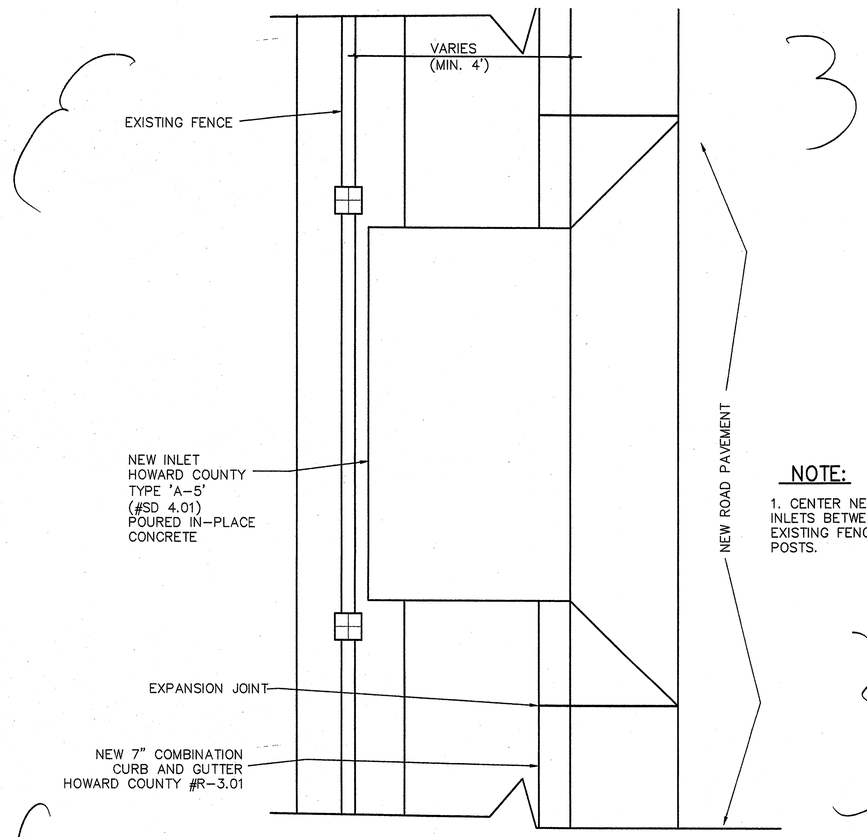
3 C-201 AEGIS II CLASSIC ISOMETRIC
NOT TO SCALE

SECTION B–B





4 C-201 TYPICAL SECTION INLETS SOUTHBOUND SIDE MAIN PARKING LOT DRIVEWAY
STATION 31+00 TO 40+00
SCALE: 3/4"=1'-0"



NOTE:

1. CENTER NEW INLETS BETWEEN EXISTING FENCE POSTS.

5 C-201 TYPICAL PLAN CURB INLET SOUTHBOUND SIDE MAIN PARKING LOT DRIVEWAY
STATION 31+00 TO 40+00
SCALE: 3/4"=1'-0"

APPROVED: DEPARTMENT OF PLANNING AND ZONING		
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE	3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	3/29/04
DIRECTOR	DATE	3/31/04

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

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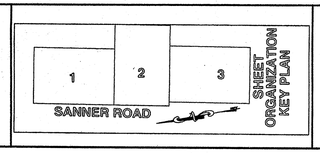


DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
11/24/03	ADDENDUM 1	1			

NORTH PARKING / BALL FIELD ENTRANCE

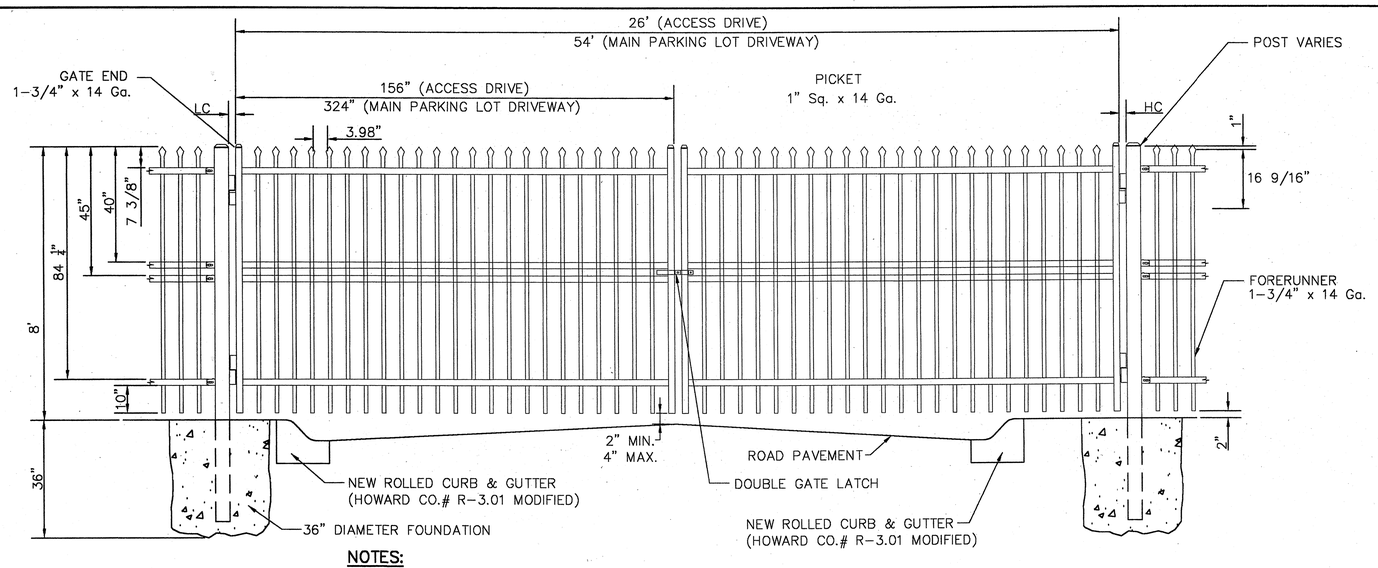
APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
FRONT FENCE AND GATE DETAILS
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET C-201

SHEET 39 OF 48

SDP-04-146



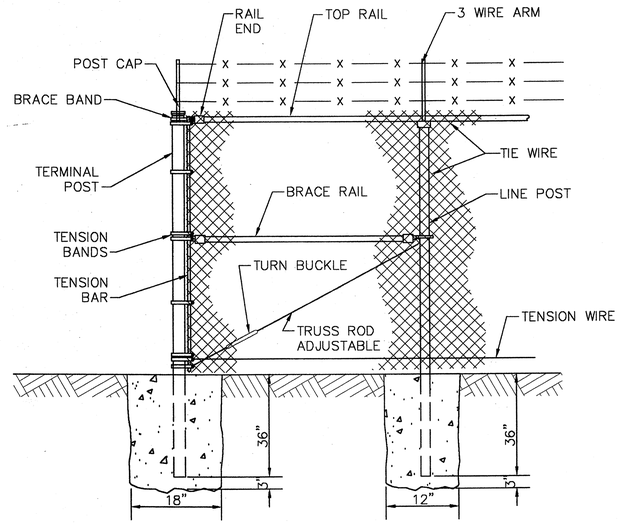
NOTES:

1. FENCE GATE LEAFS SHALL BE MANUFACTURED TO ASSURE SAG AT LATCH POINT (WHEN CLOSED) SET THE BOTTOM OF THE GATE LEAF A MINIMUM OF 2" AND A MAXIMUM OF 4" ABOVE THE PAVEMENT, AND WHEN OPEN MINIMUM OF 2" ABOVE THE TOP OF CURB.
2. A STEEL POST WITH CHAIN TO SECURE THE GATE LEAF (ONE PER LEAF), WHEN GATE IS OPEN, SET IN CONCRETE AND FINISHED IN THE SAME MATERIAL AS THE FENCE SHALL BE PROVIDED AND INSTALLED 2' BEHIND THE BACK OF CURB. CONTRACTOR SHALL SUBMIT A SHOP DRAWING AND OBTAIN APL APPROVAL BEFORE FABRICATION.

1

1 / C-202 TYPICAL DOUBLE LEAF SWING GATE

NOT TO SCALE

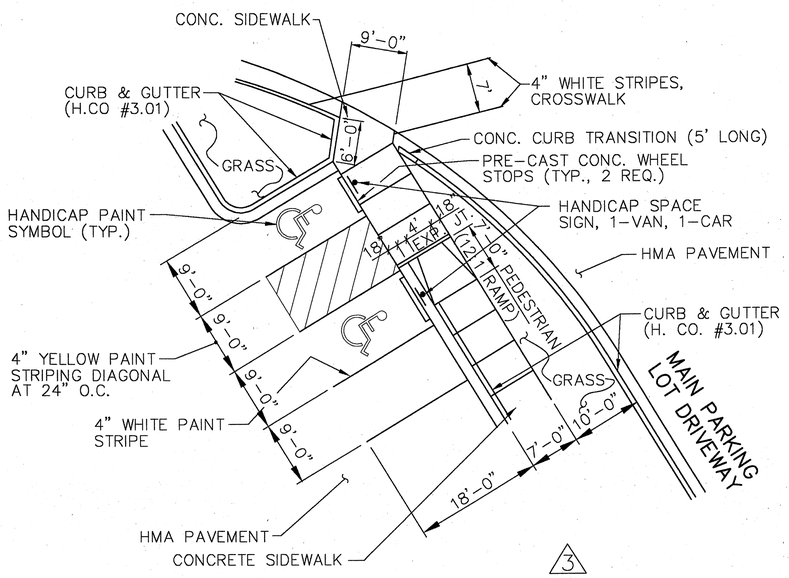


NOTE:

ALL CHAIN LINK FENCE WILL HAVE THREE STRANDS OF BARBED WIRE ON TOP.

2 / C-202 8' CHAIN LINK BACKFENCE

NOT TO SCALE



3

3 / C-202 PLAN DETAIL HANDICAP PARKING SPACES PARKING LOT #V5

SCALE 1" = 10'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/26/04
DIRECTOR	DATE 3/29/04

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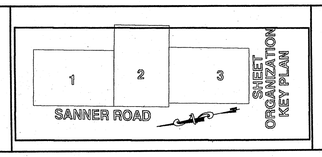
TEL (301) 881-2565 FAX (301) 881-6814
AMT FILE # 102-440



DES: JK						
DRN: RLP						
CHK: BW	1/26/04	FINAL COUNTY SET 3				
DATE: 10/10/03	11/24/03	ADDENDUM 1 1				
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

NORTH PARKING / BALL FIELD ENTRANCE

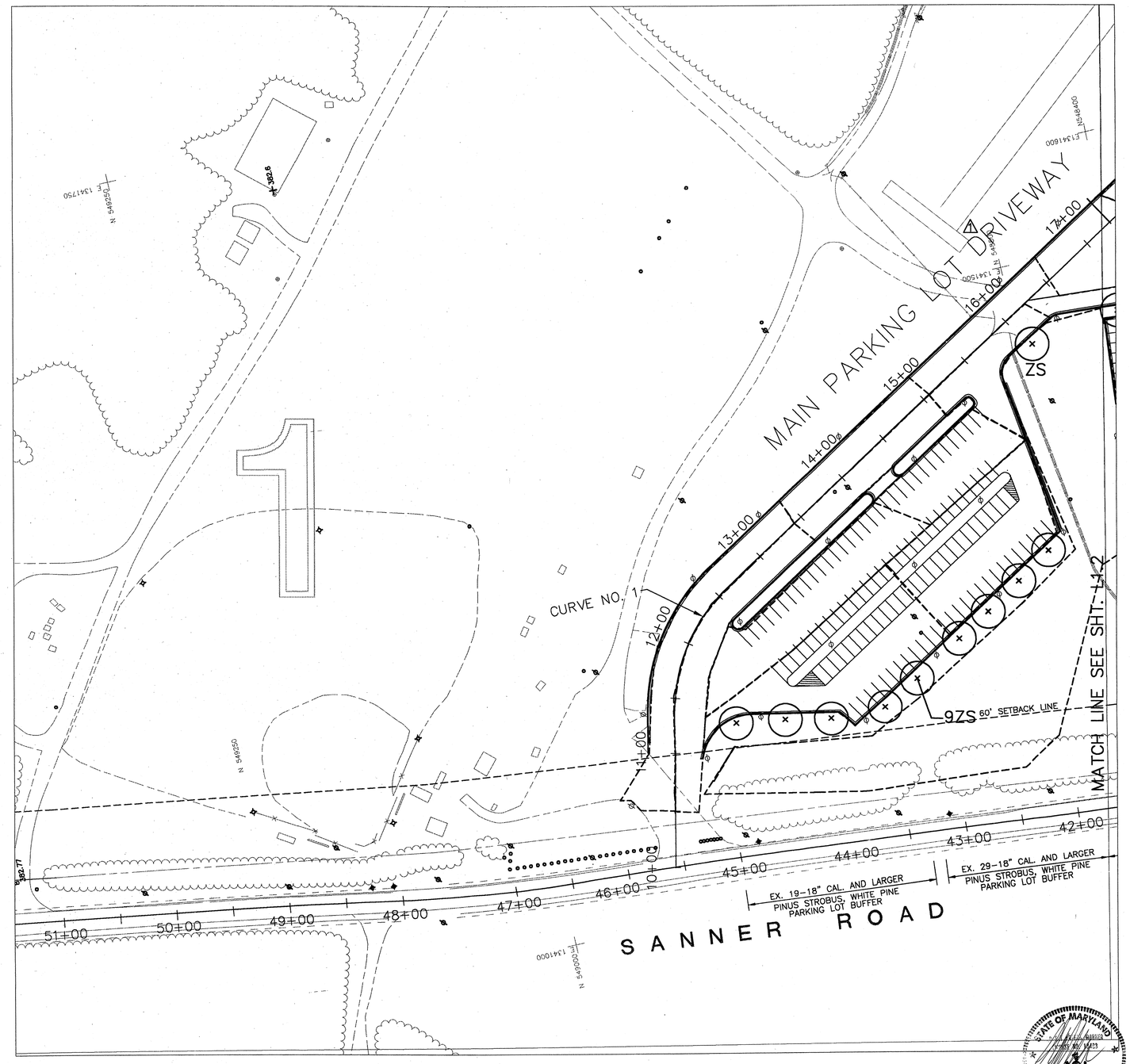
APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
BACK FENCE AND GATE DETAILS
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET C-202

SHEET 40 OF 48

SDP-04-166



NORTH

1 LANDSCAPE PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/26/04
DIRECTOR	DATE 3/26/04

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-5990 FAX (301) 881-5014
AMT FILE # 3102-040

1 2 3
SANNER ROAD
SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
12/16/03	COUNTY SET 2				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

LANDSCAPE PLAN 1

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

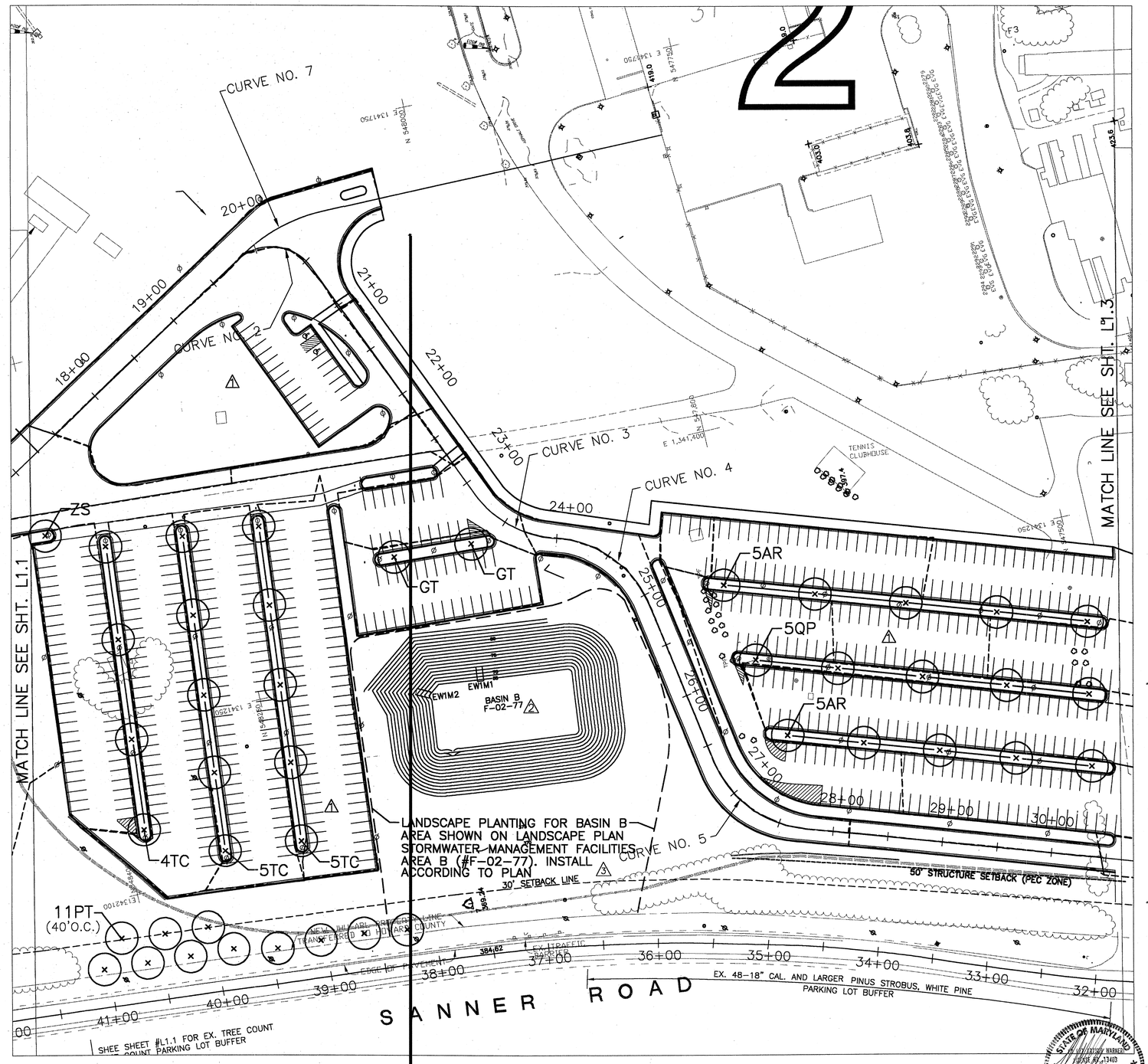
SCALE AS SHOWN

SHEET L1.1

SHEET 41 OF 48

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER

SDP-04-66



NORTH

1 LANDSCAPE PLAN
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE

50 0 25 50 100 200

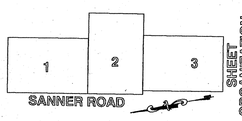
(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/26/04
DIRECTOR	DATE 3/31/04

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER

AMT
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 # 102-440



SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
1/26/04	COUNTY SET 3				
12/16/03	COUNTY SET 2				

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

LANDSCAPE PLAN 2

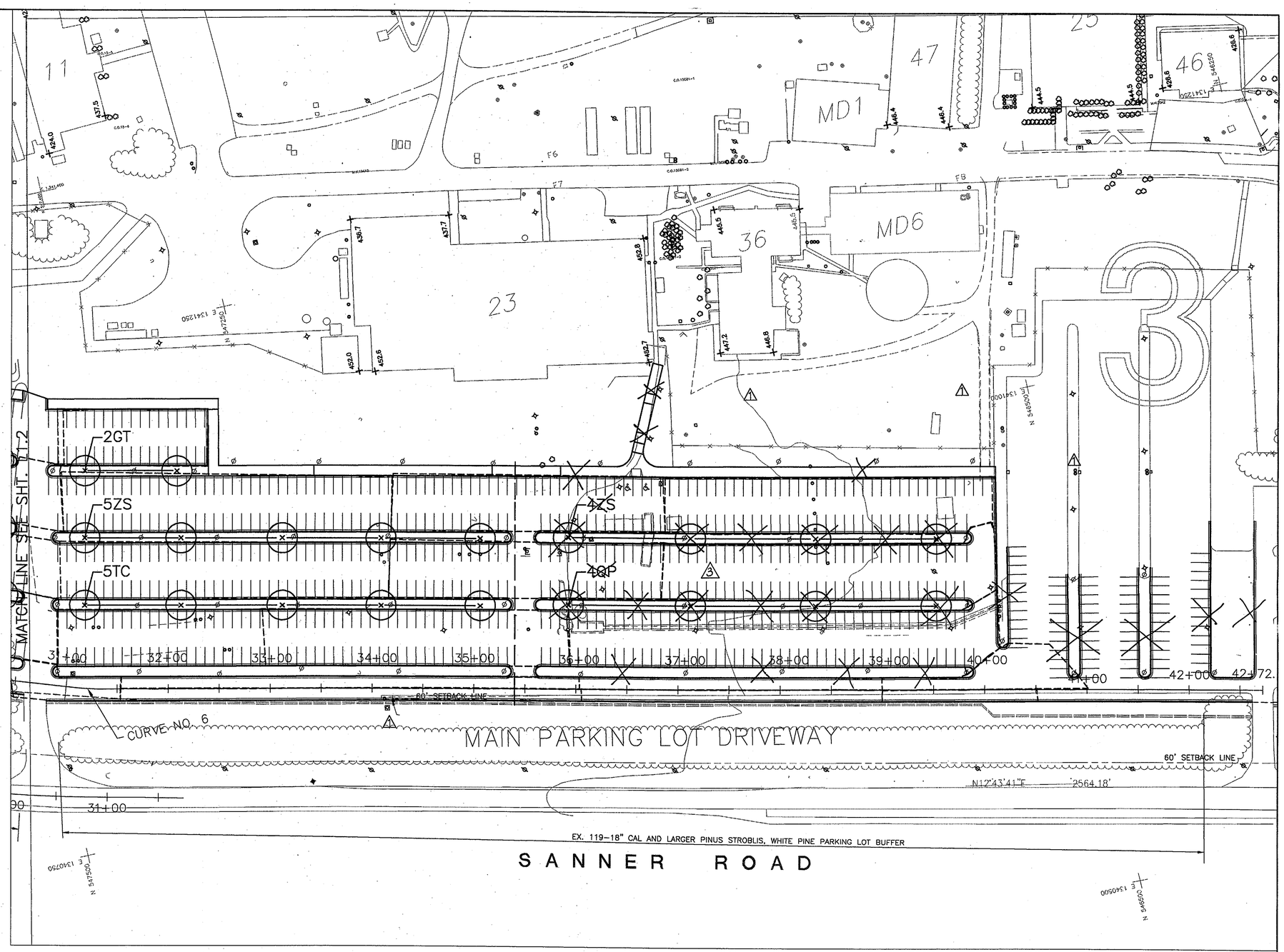
TAX MAP 41 PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

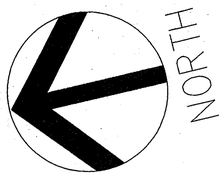
SCALE AS SHOWN

SHEET L1.2

SHEET 42 OF 48

SDP-04-66





1 LANDSCAPE PLAN 3
NORTH PARKING
SCALE: 1"=50'

GRAPHIC SCALE

50 0 25 50 100 200

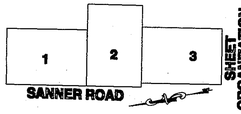
(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/31/04

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-3040 FAX (301) 881-9814
AMT FILE # 102-040



SHEET ORGANIZATION KEY PLAN

DES: JK						
DRN: RLP						
CHK: BW	8/17/05	RED-LINE SUBMISSION	3			
	12/16/03	COUNTY SET 2				
DATE: 10/10/03	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

LANDSCAPE PLAN 3

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

SCALE AS SHOWN

SHEET L1.3

SHEET 43 OF 48

SDP-04-66

LANDSCAPING NOTES

1. This plan is for landscaping measures only.

2. All contractors performing work on this site shall notify "Miss Utility" 48 hours prior to any construction or grading by calling 1-800-257-7777 for the location of all utilities.

3. The contractors performing work on the site are responsible for protecting existing plantings during construction.

4. The landscape contractor shall perform work and the plantings shall conform with the "Landscape Specification Guidelines For The Baltimore-Washington Metropolitan Areas", latest edition.

5. The landscape contractor is to verify all plant quantities and availability and notify landscape architect or owner if there are any problems prior to bidding.

6. Sod or seed areas as directed by owner for all disturbed areas to be stabilized that are not landscaped or covered.

7. For tree pruning and care methods please refer to the National Arborist Standards, latest edition.

8. The owner, A. Morton Thomas & Associates, Howard Co. DPZ, and Howard Co. SCD are not responsible for any consequences resulting from any deviations or substitutions to these plans.

9. Financial surety for the required landscaping has been posted as part of the DPW developer's agreement in the amount of $18,000 each for 60 shade trees, 0 evergreen trees, and 0 shrubs. 3

SEQUENCE OF CONSTRUCTION FOR LANDSCAPING

1. Flag limits of construction and stake out sediment control measures.

2. Arrange pre-construction meeting with the owner, Inspector, and landscape architect at (301)881-2545.

3. Call "Miss Utility" at 1-800-257-7777 prior to any work for the location of all utilities.

4. Adjust existing sediment control measures for landscape construction as required.

5. After site construction has been completed implement site landscaping as shown on plan.

6. After site has been stabilized and all construction has been completed, remove sediment control measures upon inspectors approval. 3

PROPOSED PLANT MATERIALS

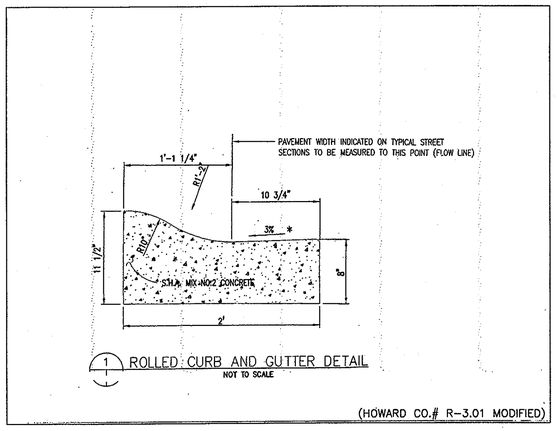
KEY	BOTANICAL NAME	COMMON NAME	SIZE	FORM	SPACING	QUANTITY	
SHADE TREES							
AR	ACER RUBRUM	RED MAPLE	2.5"CAL.	B&B	SHOWN	10	
GT	GLEDITSIA TRICANTHOS INERMIS	IMPERIAL THORNLESS HONEYLOUST	2.5"CAL.	B&B	SHOWN	4	
QP	QUERCUS PHELLOS	WILLOW OAK	2.5"CAL.	B&B	SHOWN	~~13~~ 9	
TC	TILIA CORDATA	GREENSPIRE LITTLE LEAF LINDEN	2.5"CAL.	B&B	SHOWN	15	
ZS	ZELKOVA SERRATA	VILLAGE GREEN JAPANESE ZELKOVA	2.5"CAL.	B&B	SHOWN	~~20~~ 16	
EVERGREEN TREES							
PN	PINUS NIGRA	AUSTRIAN PINE	8' HIGH	CONT.	SHOWN	11	
STABILIZATION							
SEED	SHA	SEED MIX NO. 1	SEED	100LBS./ ACRE	SHOWN		
VETCH	CORUNILLA VARIA	CROWNVETCH	SEED	75LBS./ ACRE	SHOWN		COMBINE WITH TEMPORARY SEED MIX (SEE SEDIMENT CONTROL NOTES)

SCHEDULE B
PARKING LOT INTERNAL AND BUFFER LANDSCAPING

INTERNAL	
NUMBER OF NON-RESEDENTIAL PARKING SPACES	1,078 ~~1,194~~ SPACES
NUMBER OF TREES REQUIRED	54 ~~60~~ 4
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	 ~~62~~ 54 0 0

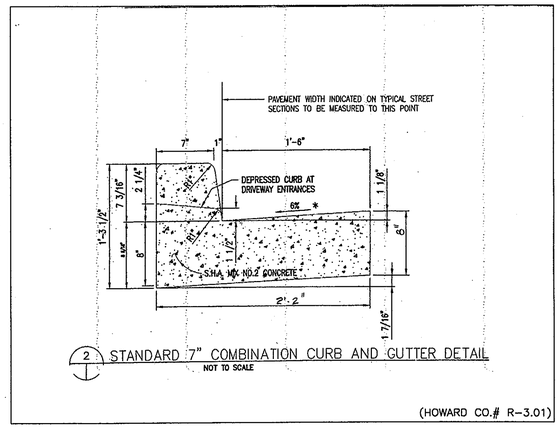
SCHEDULE A
PERIMETER LANDSCAPE EDGE 3

BUFFER	
LENGTH OF ROAD FRONTAGE	1,700 FT.
REQUIRED NUMBER OF SHADE TREES (ST) (1:40) SHRUBS (1:4)	43 425
NUMBER OF EQUIVALENT EVERGREENS (EG) (2 EG/ST & 1 EG/10 SHRUBS)	86+43=129
NUMBER OF EXISTING EG (18" CALIPER AND LARGER)	225
NUMBER OF ADDITIONAL EG	11
NUMBER OF EG TREES PROVIDED	236



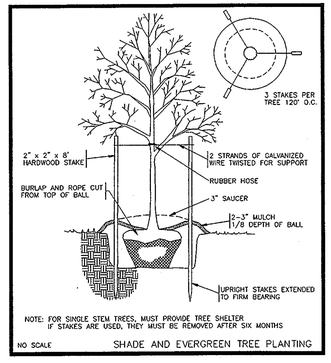
1 ROLLED CURB AND GUTTER DETAIL
NOT TO SCALE

(HOWARD CO.# R-3.01 MODIFIED)



2 STANDARD 7" COMBINATION CURB AND GUTTER DETAIL
NOT TO SCALE

(HOWARD CO.# R-3.01)

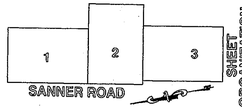


SHADE AND EVERGREEN TREE PLANTING

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/30/04

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 100, ROCKVILLE MD 20852
TEL (301) 881-3545 FAX (301) 881-6814
AMT FILE # 102-440



SHEET ORGANIZATION KEY PLAN

DES: JK
DRN: RLP
CHK: BW
DATE: 10/10/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/17/05	RED-LINE SUBMISSION	4			
1/26/04	COUNTY SET	3			
12/16/03	COUNTY SET	2			

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

LANDSCAPE NOTES & DETAILS PLAN

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

SCALE AS SHOWN

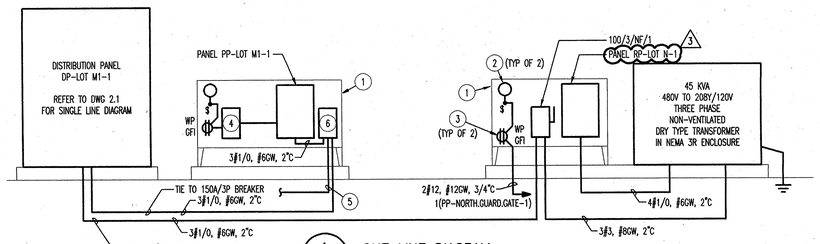
SHEET L1.4

SHEET 44 OF 48

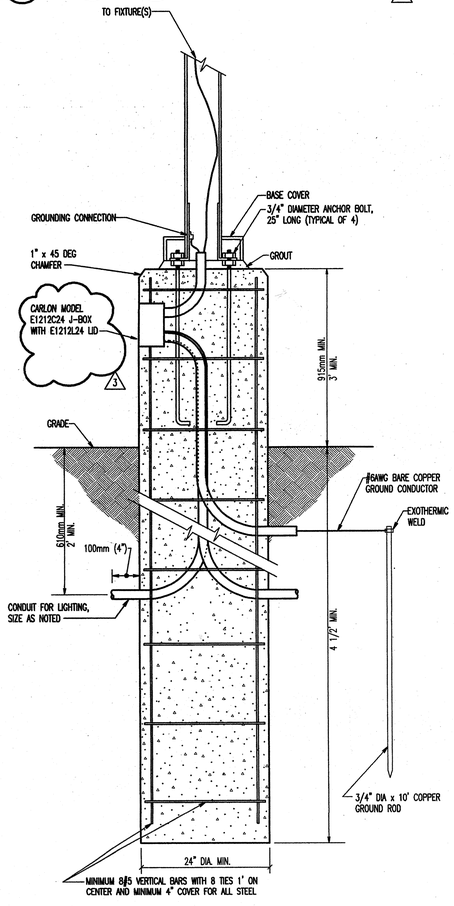
SDP-DA-166

ONELINE NOTES

1. PAD-MOUNTED NEMA 3R ENCLOSURE; 60"H x 36"W x 12"D, B-LINE MODEL 603612RHC, WITH SELF SUPPORTING 12" LEGS, B-LINE MODEL MFK8, AND BACK PANEL, B-LINE MODEL N6036P. ENCLOSURE SHALL HAVE HINGED LOCKABLE DOORS. REFER TO EQUIPMENT PAD DETAIL 5/E1.0.
2. SURFACE MOUNTED INCANDESCENT LIGHT FIXTURE, APPLETON MODEL PM1575 WITH VGL-1HR GLASS GLOBE AND 100W A19 LAMP. MOUNT ON REAR PANEL OF ENCLOSURE.
3. PROVIDE NEMA 5-20 WEATHERPROOF GFI-RATED DEVICE IN SURFACE JUNCTION BOX. MOUNT ON REAR PANEL OF ENCLOSURE.
4. PROVIDE SINGLE PHASE 2KVA DRY TYPE TRANSFORMER, ACME ELECTRIC CORPORATION MODEL T-2-53172-1S. MOUNT ON REAR PANEL OF ENCLOSURE.
5. 2" C FROM MANHOLE "LATA-6" FOR SIGNAL CABLE TO CONTACTOR COIL. SIGNAL CABLE PROVIDED BY OWNER.
6. PROVIDE ELECTRICALLY HELD 4 POLE LIGHTING CONTACTOR WITH 120V COIL AND 480V CONTACTS RATED FOR 100A, SQUARE D CLASS 8903 MODEL SG612 V02.

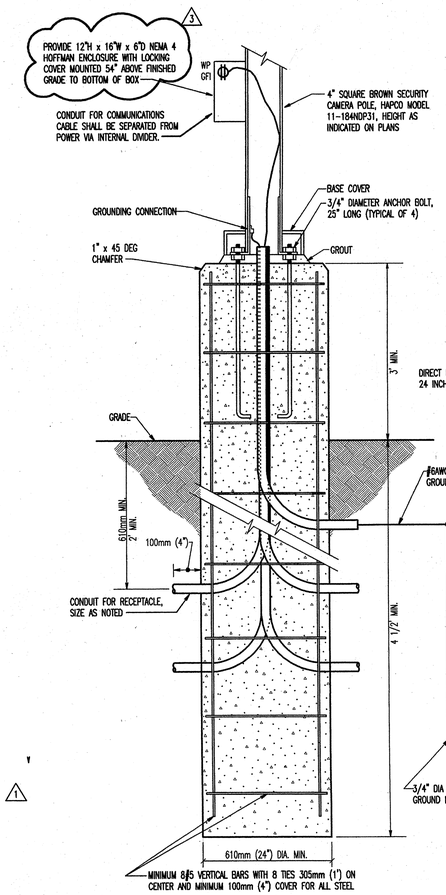


1 / E1.0 ONE LINE DIAGRAM
NOT TO SCALE



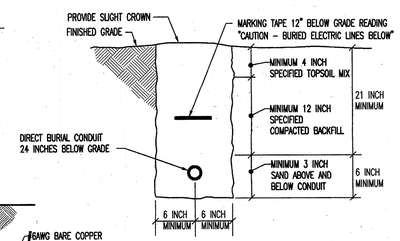
NOTES:
- PROVIDE 3/4" PVC CONDUIT IN BASE TO 12 INCHES BELOW GRADE TO GROUND ROD AS SPECIFIED.
- CONTRACTOR SHALL SUBMIT CALCULATIONS SEALED BY STRUCTURAL ENGINEER CERTIFYING THAT POLE BASES ARE ADEQUATE FOR ALL EFFECTIVE PROJECTED AREAS OF FIXTURE AND POLE COMBINATIONS INDICATED, IN SOIL TYPE AT SITE, AND AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS) WIND RATINGS BASED ON LOCATION. WHERE SIZE INDICATED IS INADEQUATE, INCREASE DEPTH OF POLE BELOW GRADE AS REQUIRED. SUBMIT ADDITIONAL CALCULATIONS FROM STRUCTURAL ENGINEER TO SUPPORT DEPTH USED. DO NOT INCREASE POLE BASE DIAMETER OR REDUCE ABOVE-GRADE HEIGHT.

2 / E1.0 ELEVATED SITE LIGHTING POLE BASE
NOT TO SCALE

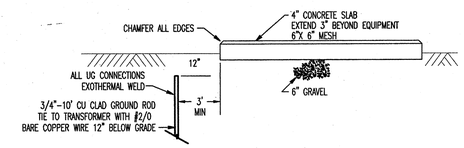


NOTES:
- PROVIDE 3/4" PVC CONDUIT IN BASE TO 12 INCHES BELOW GRADE TO GROUND ROD AS SPECIFIED.
- CONTRACTOR SHALL SUBMIT CALCULATIONS SEALED BY STRUCTURAL ENGINEER CERTIFYING THAT POLE BASES ARE ADEQUATE FOR ALL EFFECTIVE PROJECTED AREAS OF FIXTURE AND POLE COMBINATIONS INDICATED, IN SOIL TYPE AT SITE, AND AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS) WIND RATINGS BASED ON LOCATION. WHERE SIZE INDICATED IS INADEQUATE, INCREASE DEPTH OF POLE BELOW GRADE AS REQUIRED. SUBMIT ADDITIONAL CALCULATIONS FROM STRUCTURAL ENGINEER TO SUPPORT DEPTH USED. DO NOT INCREASE POLE BASE DIAMETER OR REDUCE ABOVE-GRADE HEIGHT.

3 / E1.0 ELEVATED SECURITY CAMERA POLE BASE
NOT TO SCALE



4 / E1.0 DIRECT BURIAL CONDUIT
NOT TO SCALE



5 / E1.0 EQUIPMENT PAD DETAIL
NOT TO SCALE

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION
OA	ARM MOUNTED, ALUMINUM "SHOEBOX" HID AREA LIGHTING FIXTURE WITH TYPE II DISTRIBUTION AND ONE LAMP WITH SUPPORT ON 15' POLE ON 3' BASE WITH DARK BRONZE FINISH MFGR LITHONIA MODEL KSF2 R2 480 SP04 LS LAMPS ONE 400W METAL HALIDE POLE SSS 15 4C
OB	ARM MOUNTED, ALUMINUM "SHOEBOX" HID AREA LIGHTING FIXTURE WITH TYPE IV SHARP CUTOFF DISTRIBUTION AND ONE LAMP WITH SUPPORT ON 15' POLE ON 3' BASE WITH DARK BRONZE FINISH MFGR LITHONIA MODEL KSF2 R4SC 480 SP04 LS LAMPS ONE 400W METAL HALIDE POLE SSS 15 4C
OC	TWO ARM MOUNTED, ALUMINUM "SHOEBOX" HID AREA LIGHTING FIXTURES AT 180 DEGREE ORIENTATION WITH TYPE II DISTRIBUTION AND ONE LAMP EACH WITH SUPPORT ON 15' POLE ON 3' BASE WITH DARK BRONZE FINISH MFGR LITHONIA MODEL (TWO) KSF2 R2 480 SP04 LS LAMPS ONE 400W METAL HALIDE (EACH) POLE SSS 15 4C
OD	TWO ARM MOUNTED, ALUMINUM "SHOEBOX" HID AREA LIGHTING FIXTURES AT 180 DEGREE ORIENTATION, ONE WITH TYPE II DISTRIBUTION AND ONE WITH TYPE IV SHARP CUTOFF DISTRIBUTION, AND ONE LAMP EACH WITH SUPPORT ON 15' POLE ON 3' BASE WITH DARK BRONZE FINISH MFGR LITHONIA MODEL (ONE) KSF2 R2 480 SP04 LS & (ONE) KSF2 R4SC 480 SP04 LS LAMPS ONE 400W METAL HALIDE (EACH) POLE SSS 15 4C
OE	ARM MOUNTED, ALUMINUM "SHOEBOX" HID AREA LIGHTING FIXTURE WITH TYPE IV SHARP CUTOFF DISTRIBUTION AND ONE LAMP WITH SUPPORT ON 22' POLE ON 3' BASE WITH DARK BRONZE FINISH MFGR LITHONIA MODEL KSF2 R4SC 480 SP04 LS LAMPS ONE 400W METAL HALIDE POLE SSS 22 4C
OF	TWO ARM MOUNTED, ALUMINUM "SHOEBOX" HID AREA LIGHTING FIXTURES AT 180 DEGREE ORIENTATION, ONE WITH TYPE II DISTRIBUTION AND ONE WITH TYPE IV SHARP CUTOFF DISTRIBUTION, AND ONE LAMP EACH WITH SUPPORT ON 22' POLE ON 3' BASE WITH DARK BRONZE FINISH MFGR LITHONIA MODEL (ONE) KSF2 R2 480 SP04 LS & (ONE) KSF2 R4SC 480 SP04 LS LAMPS ONE 400W METAL HALIDE (EACH) POLE SSS 22 4C

NOTES: (APPLICABLE TO LIGHTING FIXTURE SCHEDULE ONLY)

CATALOG NUMBERS FOR LIGHTING FIXTURES INDICATE THE TYPE AND QUALITY OF THE FIXTURE TO BE PROVIDED BY THE CONTRACTOR AND ARE GENERAL IN NATURE. THE CATALOG NUMBERS ARE NOT INTENDED TO INDICATE AN ACTUAL ORDER MODEL NUMBER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE FIXTURES WITH THE TYPE OF LAMP, BALLAST, LENS OR DIFFUSER, AND CONSTRUCTION FEATURES AS INDICATED IN THE SPECIFICATIONS AND IN THE LIGHTING FIXTURE SCHEDULE. UNLESS OTHERWISE NOTED, EQUIVALENT FIXTURES WILL BE ACCEPTED PROVIDED THEY ARE PROVEN TO BE EQUAL TO OR BETTER THAN THE FIXTURE SPECIFIED, IN ALL RESPECTS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONSTRUCTION FEATURES, APPEARANCE AND PERFORMANCE. WHERE A FIXTURE IS NOTED AS "NO EQUAL," SUBSTITUTIONS WILL NOT BE ACCEPTED.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
	LUMINARE - SEE SCHEDULE FOR TYPE (SINGLE OR DUAL POLE MOUNTED SITE LIGHT - BOX)	- -
	LUMINARE WITH FORWARD THROW DISTRIBUTION - SEE SCHEDULE FOR TYPE (SINGLE POLE MOUNTED SITE LIGHT - BOX)	- -
	RECEPTACLE - NEMA CONFIGURATION 5-20R DUPLEX	18"
	SAFETY SWITCH	46"
	UNDERGROUND CONDUIT	- -
E	ELECTRICAL HANDHOLE - PROVIDE 36" x 36" x 36"D PRECAST SERVICE BOX WITH OPEN BOTTOM, QUAZITE MODEL PG3636BA36. PROVIDE STANDARD COVER, QUAZITE MODEL PG3636WA00, WITH "ELECTRICAL" LOGO. INSTALL FLUSH IN GRADE OR SURROUNDING PAVEMENT.	- -
C	COMMUNICATIONS ELECTRICAL HANDHOLE - PROVIDE 36" x 36" x 36"D PRECAST SERVICE BOX WITH OPEN BOTTOM, QUAZITE MODEL PG3636BA36. PROVIDE STANDARD COVER, QUAZITE MODEL PG3636WA00, WITH "COMMUNICATIONS" LOGO. INSTALL FLUSH IN GRADE OR SURROUNDING PAVEMENT.	- -

NOTES: (APPLICABLE TO ELECTRICAL LEGEND ONLY)

1. THE MOUNTING HEIGHTS GIVEN ON THIS SHEET IN THE ELECTRICAL LEGEND ARE GENERAL AND SHALL BE USED ONLY WHEN MOUNTING HEIGHTS CANNOT BE ESTABLISHED BY REFERENCE TO DETAILS, ELEVATIONS, AND NOTES ON THE DRAWINGS.
2. ALL MOUNTING HEIGHTS, UNLESS OTHERWISE NOTED, SHALL BE MEASURED FROM THE FINISHED FLOOR TO THE CENTERLINE OF THE OUTLET OR DEVICE.
3. HEIGHTS OF ALL ITEMS NOT COVERED BY THE ELECTRICAL LEGEND AND NOT SHOWN ON THE DRAWINGS SHALL BE AS DIRECTED BY THE ENGINEER.
4. WHERE PLACING ANY ITEM AT THE HEIGHTS LISTED OR NOTED WILL CAUSE INTERFERENCE WITH THE WORK OF OTHER TRADES, OR IS NOT PHYSICALLY POSSIBLE OR DESIRABLE FOR ONE REASON OR ANOTHER, THE ITEM SHALL BE MOVED TO A LOCATION APPROVED BY THE ENGINEER.

ELECTRICAL ABBREVIATIONS

A	AMPERE	NTS	NOT TO SCALE
AFF	ABOVE FINISHED FLOOR	OCP	OVERCURRENT PROTECTION
AFG	ABOVE FINISHED GRADE		
AIC	AMPERE INTERRUPTING CAPACITY	PH	PHASE
ASYM	ASYMMETRICAL	PVC	POLYVINYL CHLORIDE
C	CONDUIT		
CB	CIRCUIT BREAKER	RX	REMOVE EXISTING
CKT	CIRCUIT		
		SYM	SYMMETRICAL
DWG	DRAWING		
		TYP	TYPICAL
ETR	EXISTING TO REMAIN		
EX	EXISTING	UG	UNDERGROUND
		UON	UNLESS OTHERWISE NOTED
GFI	GROUND FAULT INTERRUPTER		
GW	GROUND WIRE	V	VOLTS
KCMIL	THOUSAND CIRCULAR MILS	W	WIRE
KVA	KILO-VOLT-AMPERE	WP	WEATHER PROOF
MCB	MAIN CIRCUIT BREAKER	XFMR	TRANSFORMER

ELECTRICAL CONVENTIONS

REFERENCE

1 — SPECIAL NOTE (APPLIES WHERE INDICATED ON THE DRAWING)

1 / E-1 — DETAIL DESIGNATION; NUMBER DENOTES DETAIL IDENTIFICATION; DRAWING NUMBER WHERE DETAIL IS LOCATED

DISCONNECTS

30/3/15/4 SDH — DEVICE RATING; MINIMUM POLES REQUIRED; DEVICE TYPE; NEMA ENCLOSURE TYPE (UNLESS SPECIFIED); OVERCURRENT PROTECTION RATING (IF REQUIRED)

PANELBOARD PP-LOT M1-1

LOCATION: ENCLOSURES AT LOT M1 — SECTION NUMBER: 1 OF 1 — MOUNTING: SURFACE
PROTECTIVE DEVICES: 18,000 RMS SYMMETRICAL AIC MINIMUM — MAIN: 150A MCB — BUS: 225A — VOLTS: 480
FEEDER: REFER TO ONE LINE DIAGRAM — PHASE: 3
☐ INTEGRAL SPD ☐ 200% NEUTRAL ■ GROUND BUS ☐ ISOLATED GROUND BUS

DESCRIPTION	LTG.	REC.	VOLT-AMP PH A	PH B	PH C	BREAKER AMP	POLE	CIRC./POLE NUMBER	A B C	CIRC./POLE NUMBER	BREAKER POLE	VOLT-AMP PH A	PH B	PH C	LTG.	REC.	DESCRIPTION
POLE LIGHTS - LOT F2			3000			20		1/1		2/2	20		3000				POLE LIGHTS - LOT M2
-				3000			2	/3		/4		2		3000			-
POLE LIGHTS - LOT F2					2800	20		5/5		6/6	20			3000			POLE LIGHTS - LOT M2
-			2800				2	/7		/8		2	3000				-
POLE LIGHTS - LOT F1				2800		20		9/9		10/10	20			1600			POLE LIGHTS - LOT V-5
-					2800		2	/11		/12		2			1600		-
POLE LIGHTS - LOT F1			2800			20		13/13		14/14	20		1400				POLE LIGHTS - LOT V-5
-				2800			2	/15		/16		2		1400			-
POLE LIGHTS - LOT G					2800	20		17/17		18/18	20				2500		POLE LIGHTS - LOT N
-			2800				2	/19		/20		2	2500				-
POLE LIGHTS - LOT G				3700		20		21/21		22/22	20			1600			POLE LIGHTS - LOT N
-					3700		2	/23		24/24		2			1600		-
PROVISIONS			-			-	-	25/25		26/26	-	-	-				PROVISIONS
PROVISIONS				-		-	-	27/27		28/28	-	-		-			PROVISIONS
PROVISIONS					-	-	-	29/29		30/30	-	-			-		PROVISIONS
PROVISIONS			-			-	-	31/31		32/32	-	-	-				PROVISIONS
PROVISIONS				-		-	-	33/33		34/34	-	-		-			PROVISIONS
PROVISIONS					-	-	-	35/35		36/36	-	-			-		PROVISIONS

VOLT-AMPERES: BUS A / BUS B / BUS C
TOTAL: 11400 / 12300 / 12100 (ODD); 9900 / 7600 / 8700 (EVEN)
SUBTOTALS: 21300 + 19900 + 20800 = TOTAL OF 62.0 KVA (CONNECTED)
DEMAND KVA = 62.0
DEMAND AMPS TOTAL = 74.6

PANELBOARD RP-LOT N-1

LOCATION: ENCLOSURE AT NORTH BALLFIELD ENTRANCE — SECTION NUMBER: 1 OF 1 — MOUNTING: SURFACE
PROTECTIVE DEVICES: 10,000 RMS SYMMETRICAL AIC MINIMUM — MAIN: 150A MCB — BUS: 225A — VOLTS: 208Y/120
FEEDER: REFER TO ONE LINE DIAGRAM — PHASE: 3
☐ INTEGRAL SPD ☐ 200% NEUTRAL ■ GROUND BUS ☐ ISOLATED GROUND BUS

DESCRIPTION	LTG.	REC.	VOLT-AMP PH A	PH B	PH C	BREAKER AMP	POLE	CIRC./POLE NUMBER	A B C	CIRC./POLE NUMBER	BREAKER POLE	VOLT-AMP PH A	PH B	PH C	LTG.	REC.	DESCRIPTION
SECURITY POLE #9			500			20	1	1/1		2/2	60		2500				GUARD BOOTH
SECURITY POLE #10				500		20	1	3/3		/4		2		2500			-
SPARE					-	20	1	5/5		6/6	60			2500			GUARD BOOTH
SPARE			-			20	1	7/7		/8		2	2500				-
SPARE				-		20	1	9/9		10/10	60			2500			GUARD BOOTH
SPARE					-	20	1	11/11		/12		2			2500		-
SPACE			-			-	-	13/13		14/14	60		2500				GUARD BOOTH
SPACE				-		-	-	15/15		/16		2		2500			-
SPACE					-	-	-	17/17		18/18	60				2500		GUARD BOOTH
SPACE			-			-	-	19/19		/20		2	2500				-
SPACE				-		-	-	21/21		22/22	60			2500			GUARD BOOTH
SPACE					-	-	-	23/23		/24		2			2500		-

VOLT-AMPERES: BUS A / BUS B / BUS C
TOTAL: 500 / 500 / 0 (ODD); 10000 / 10000 / 10000 (EVEN)
SUBTOTALS: 10500 + 10500 + 10000 = TOTAL OF 31.0 KVA (CONNECTED)
DEMAND KVA = 31.0
DEMAND AMPS TOTAL = 86.1

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/26/04
DIRECTOR — DATE 3/31/04

STATE OF MARYLAND — DAVID K. VON BERGEN — No. 27313 — PROFESSIONAL ENGINEER — 3/17/04

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AMT FILE # 102-440

SANNER ROAD — 1 2 3 — SHEET ORGANIZATION KEY PLAN

DES: DMvB
DRN: DMvB
CHK: JDT
DATE: 9/15/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
02/17/04	FEB 13 APL COMMENTS	3	DMvB	JDT	JDT
01/09/04	ADDENDUM 2	2	DMvB	JDT	JDT
11/24/03	ADDENDUM 1	1	DMvB	JDT	JDT

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

ELECTRICAL NOTES, DETAILS & SCHEDULES

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

SCALE AS SHOWN
SHEET E1.0
SHEET 45 OF 48

SDP-04-66

HAI JOB NUMBER A0970O

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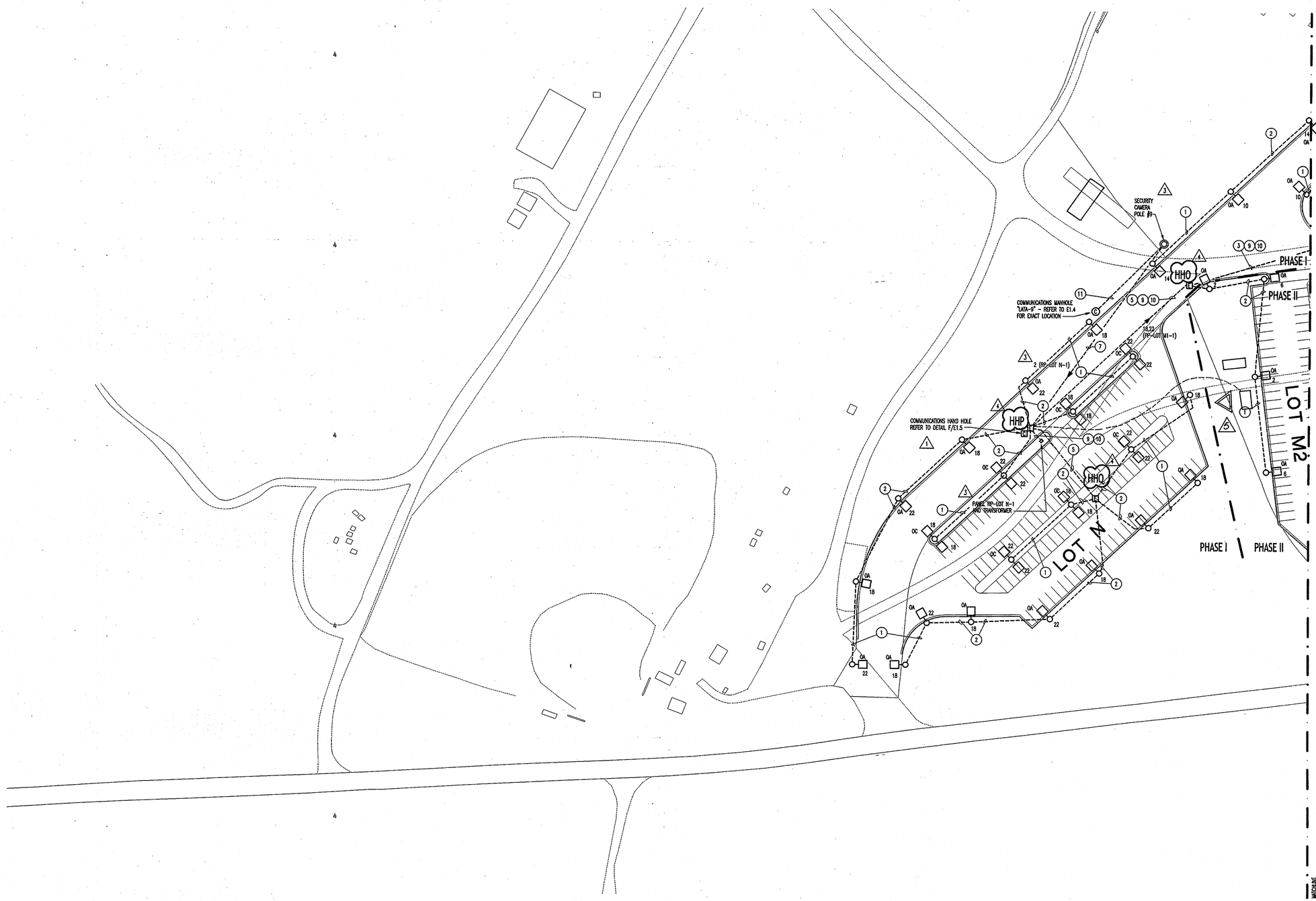

DRAWING NOTES (THIS SHEET ONLY)

1. CONDUIT ROUTING AS SHOWN ON THIS PLAN IS DIAGRAMATIC ONLY. PROVIDE SHORTEST POSSIBLE ROUTING BETWEEN POLES AND HAND HOLES.
2. ALL BRANCH CIRCUITS FOR LIGHTING AT POLES SHALL BE TIED TO PANEL PP-LOT M1-1, BREAKER NUMBER AS INDICATED, UNLESS OTHERWISE NOTED.
3. SECURITY CAMERA POLES SHALL BE 16' TOTAL HEIGHT INCLUDING BASE, UNLESS NOTED OTHERWISE.

SPECIAL NOTES (THIS SHEET ONLY)

(1) 2#10, #10GW, 1"C.

(2) 4#10, #10GW, 2"C.

(3) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 2,6,18,22 (PP-LOT M1-1) - 4#8, 4#6, #8GW, 4"C. 3

(4) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 1,5,9,13,17,21 (PP-LOT M1-1) - 4#10, 4#6, 4#2, #6GW, 4"C.

(5) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 10,14 (PP-LOT M1-1) AND 18,22 (PP-LOT M1-1) - 4#6, #6GW, 4"C.

(6) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 1,5,9,13 (PP-LOT M1-1) - 4#6, 4#2, #6GW, 4"C.

(7) BRANCH CIRCUIT FEEDER TO SECURITY POLE #9 - 2#4, #8GW, 2"C.

(8) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 9,13 (PP-LOT M1-1) - 4#2, #6GW, 4"C.

(9) BRANCH CIRCUIT FEEDER FROM BUILDING 23 TO SECURITY POLE #1 AND FROM PANEL "RP-LOT N-1" TO SECURITY POLE #10 - 2#1/0, #6GW, 2"C.

(10) PRIMARY FEEDER TO PANEL RP-LOT N-1. REFER TO DETAIL 1/E1.0 FOR SIZE.

(11) 2"C WITH PULL STRING FOR COMMUNICATIONS CABLES TO SECURITY POLES.

(12) RX SECURITY CAMERA POLE AND BASE TO BELOW GRADE. RETAIN CAMERA AND TURN OVER TO OWNER FOR REUSE. (SEE NOTE 13).

(13) PROVIDE AND ELECTRICAL AND COMMUNICATIONS MANHOLE. LOCATE TO INTERCEPT POWER AND COMMUNICATIONS CONDUIT SERVING SECURITY CAMERA (SEE NOTE 12) - FIELD VERIFY EXACT LOCATION. COORDINATE REMOVAL OF COMMUNICATIONS WIRING WITH OWNER. EXTEND EXISTING ELECTRICAL BRANCH CIRCUIT IN 2"C FROM ELECTRICAL HANDHOLE TO POLE. PROVIDE 2"C WITH PULL STRING FROM COMMUNICATIONS HANDHOLE TO POLE FOR COMMUNICATIONS WIRING.

(14) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 2,6,10,14,18,22 (PP-LOT M1-1) - 4#8, 8#6, #8GW, 4"C. 3

1 / E1.1 SITE LIGHTING PLAN
NORTH PARKING
SCALE: 1"=50'

NORTH

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

MATCHLINE REFER TO DWG. E1.2 FOR CONTINUATION

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/26/04
DIRECTOR	DATE 3/31/04

STATE OF MARYLAND — DAVID H. VON BERG — No. 27314 — PROFESSIONAL ENGINEER — 3/17/04

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SANNER ROAD — 1 2 3 4 — SHEET ORGANIZATION KEY PLAN

DES: DMvB
DRN: DMvB
CHK: JDT
DATE: 9/15/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/17/05	RED-LINE SUBMISSION	5			
03/05/04	ADD HANDHOLE DESIGNATIONS	4	DMB	JDT	JDT
02/17/04	FEB 13 APL COMMENTS	3	DMB	JDT	JDT
01/09/04	ADDENDUM 2	2	DMB	JDT	JDT
11/24/03	ADDENDUM 1	1	DMB	JDT	JDT

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT PLAN - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
SITE LIGHTING PLAN

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

SCALE AS SHOWN

SHEET E1.1 2

SHEET 46 OF 48

SDP-04-66

HAL JOB NUMBER A000700

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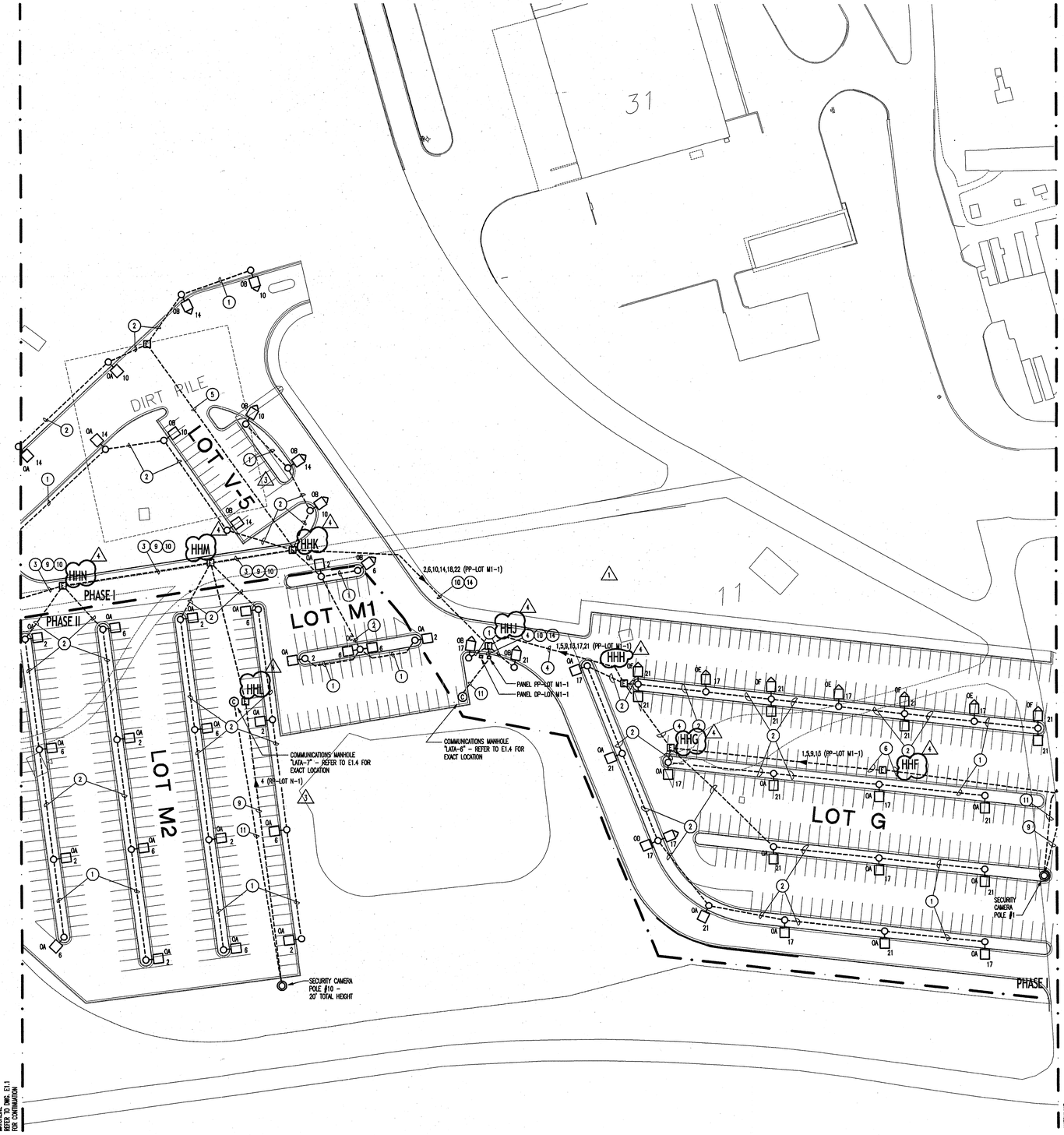

DRAWING NOTES (THIS SHEET ONLY)

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3. SECURITY CAMERA POLES SHALL BE 16' TOTAL HEIGHT INCLUDING BASE, UNLESS NOTED OTHERWISE.

SPECIAL NOTES (THIS SHEET ONLY)

(1) 2#10, #10CW, 1"C.

(2) 4#10, #10CW, 2"C.

(3) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 2,6,18,22 (PP-LOT M1-1) - 4#8, 4#6, #8GW, 4"C. 3

(4) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 1,5,9,13,17,21 (PP-LOT M1-1) - 4#10, 4#6, 4#2, #6GW, 4"C.

(5) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 10,14 (PP-LOT M1-1) AND 18,22 (PP-LOT M1-1) - 4#6, #8GW, 4"C.

(6) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 1,5,9,13 (PP-LOT M1-1) - 4#6, 4#2, #6GW, 4"C.

(7) BRANCH CIRCUIT FEEDER TO SECURITY POLE #9 - 2#4, #8GW, 2"C.

(8) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 9,13 (PP-LOT M1-1) - 4#2, #6GW, 4"C.

(9) BRANCH CIRCUIT FEEDER FROM BUILDING 23 TO SECURITY POLE #1 AND FROM PANEL "RP-LOT N-1" TO SECURITY POLE #10 - 2#1/0, #6GW, 2"C.

(10) PRIMARY FEEDER TO PANEL RP-LOT N-1. REFER TO DETAIL 1/E1.0 FOR SIZE.

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(12) RX SECURITY CAMERA POLE AND BASE TO BELOW GRADE. RETAIN CAMERA AND TURN OVER TO OWNER FOR REUSE. (SEE NOTE 13).

(13) PROVIDE AND ELECTRICAL AND COMMUNICATIONS MANHOLE. LOCATE TO INTERCEPT POWER AND COMMUNICATIONS CONDUIT SERVING SECURITY CAMERA (SEE NOTE 12) - FIELD VERIFY EXACT LOCATION. COORDINATE REMOVAL OF COMMUNICATIONS WIRING WITH OWNER. EXTEND EXISTING ELECTRICAL BRANCH CIRCUIT IN 2"C FROM ELECTRICAL HANDHOLE TO POLE. PROVIDE 2"C WITH PULL STRING FROM COMMUNICATIONS HANDHOLE TO POLE FOR COMMUNICATIONS WIRING.

(14) BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 2,6,10,14,18,22 (PP-LOT M1-1) - 4#8, 8#6, #8GW, 4"C. 3

1 / E1.2 SITE LIGHTING PLAN
NORTH PARKING
SCALE: 1"=50'

NORTH

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE	3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	3/30/04
DIRECTOR	DATE	4/2/04

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TEL:(301) 881-2545 FAX:(301) 881-0814
AMT FILE # 102-440

SANNER ROAD

1 2 3

SHEET ORGANIZATION KEY PLAN

STATE OF MARYLAND DAVID A. VON BERGEN No. 27215 PROFESSIONAL ENGINEER

DES: DMvB
DRN: DMvB
CHK: JDT
DATE: 9/15/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
03/05/04	ADD HANDHOLE DESIGNATIONS	4	DMvB	JDT	JDT
02/17/04	FEB 13 APL COMMENTS	3	DMvB	JDT	JDT
01/09/04	ADDENDUM 2	2	DMvB	JDT	JDT
11/24/03	ADDENDUM 1	1	DMvB	JDT	JDT

NORTH PARKING / BALL FIELD ENTRANCE

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

SITE LIGHTING PLAN

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

SCALE AS SHOWN

SHEET E1.2 2

SHEET 47 OF 48

STATE OF MARYLAND DAVID A. VON BERGEN No. 27215 PROFESSIONAL ENGINEER
3/17/04

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SDP-DA-66

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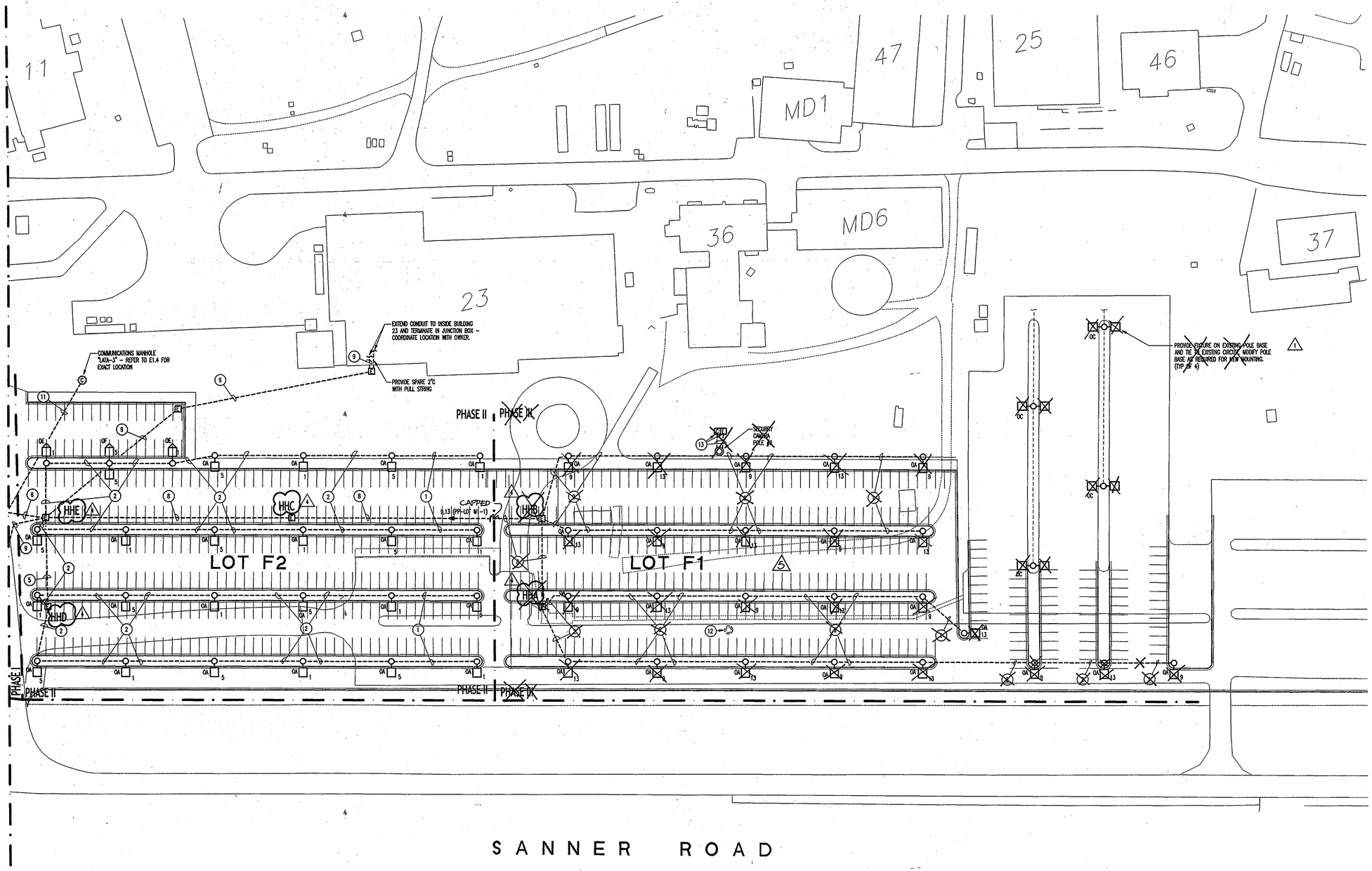

DRAWING NOTES (THIS SHEET ONLY)

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2. ALL BRANCH CIRCUITS FOR LIGHTING AT POLES SHALL BE TIED TO PANEL PP-LOT M1-1, BREAKER NUMBER AS INDICATED, UNLESS OTHERWISE NOTED.
3. SECURITY CAMERA POLES SHALL BE 16' TOTAL HEIGHT INCLUDING BASE, UNLESS NOTED OTHERWISE.

SPECIAL NOTES (THIS SHEET ONLY)

1. 2#10, #10GW, 1"C.
2. 4#10, #10GW, 2"C.
3. BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 2,6,18,22 (PP-LOT M1-1) - 4#8, 8#6, #8GW, 4"C. △3
4. BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 1,5,9,13,17,21 (PP-LOT M1-1) - 4#10, 4#6, 4#2, #6GW, 4"C.
5. BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 10,14 (PP-LOT M1-1) AND 18,22 (PP-LOT M1-1) - 4#6, #8GW, 4"C.
6. BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 1,5,9,13 (PP-LOT M1-1) - 4#6, 4#2, #6GW, 4"C.
7. BRANCH CIRCUIT FEEDER TO SECURITY POLE #9 - 2#4, #8GW, 2"C.
8. BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 9,13 (PP-LOT M1-1) - 4#2, #6GW, 4"C.
9. BRANCH CIRCUIT FEEDER FROM BUILDING 23 TO SECURITY POLE #1 AND FROM PANEL "RP-LOT N-1" TO SECURITY POLE #10 - 2#1/0, #6GW, 2"C.
10. PRIMARY FEEDER TO PANEL RP-LOT N-1. REFER TO DETAIL 1/E1.0 FOR SIZE.
11. 2"C WITH PULL STRING FOR COMMUNICATIONS CABLES TO SECURITY POLES.
12. RX SECURITY CAMERA POLE AND BASE TO BELOW GRADE. RETAIN CAMERA AND TURN OVER TO OWNER FOR REUSE. (SEE NOTE 13).
13. PROVIDE AND ELECTRICAL AND COMMUNICATIONS MANHOLE. LOCATE TO INTERCEPT POWER AND COMMUNICATIONS CONDUIT SERVING SECURITY CAMERA (SEE NOTE 12) - FIELD VERIFY EXACT LOCATION. COORDINATE REMOVAL OF COMMUNICATIONS WIRING WITH OWNER. EXTEND EXISTING ELECTRICAL BRANCH CIRCUIT IN 2"C FROM ELECTRICAL HANDHOLE TO POLE. PROVIDE 2"C WITH PULL STRING FROM COMMUNICATIONS HANDHOLE TO POLE FOR COMMUNICATIONS WIRING.
14. BRANCH CIRCUIT FEEDER FOR LIGHTING POLE CIRCUITS 2,6,10,14,18,22 (PP-LOT M1-1) - 4#8, 8#6, #8GW, 4"C. △3

1 / E1.3 SITE LIGHTING PLAN
NORTH PARKING
SCALE: 1"=50'

NORTH

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

MATCHLINE SHEET E1.1 FOR CONTINUATION

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 3/26/04
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/30/04
DIRECTOR	DATE 3/31/04

3/17/04

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AMT FILE # 102-440

1 2 3
SANNER ROAD
SHEET ORGANIZATION KEY PLAN

STATE OF MARYLAND DAVID M. VON RENNER No. 27315 PROFESSIONAL ENGINEER

DES: DMvB
DRN: DMvB
CHK: JDT
DATE: 9/15/03

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
8/17/05	RED-LINE SUBMISSION	△2			
03/05/04	ADD HANDHOLE DESIGNATIONS	4	DMvB	JDT	JDT
02/17/04	FEB 13 APL COMMENTS	3	DMvB	JDT	JDT
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11/24/03	ADDENDUM 1	1	DMvB	JDT	JDT

NORTH PARKING / BALL FIELD ENTRANCE

REVISED SITE DEVELOPMENT - RETAIN EXISTING ANTENNA RANGE AND PARKING LOT F1

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

SITE LIGHTING PLAN

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

SCALE AS SHOWN

SHEET E1.3 △2

SHEET 48 OF 48

SDP-04-66

HAI JOB NUMBER A0097OO

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