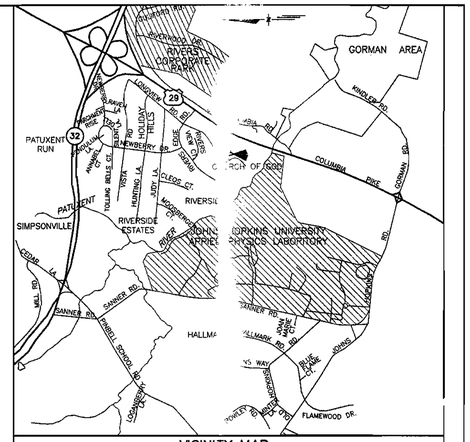
SITE GRADING AND UTILITIES PLAN

THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY LOCATED SOUTHEAST INTERSECTION OF ROUTE 29 & 32 IN HOWARD COUNTY, MD



VICINITY MAP
SCALE: 1"=2000'

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CONTACT PERSON FOR OWNER: JEFFREY A. ANDERSON
TELEPHONE: 443-778-5960 FAX: 443-778-5960

ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS
P # 1	11100 JOHNS HOPKINS ROAD, LAUREL
	MD 20723, CONTACT JEFFREY ANDERSON
	443-778-5960

PERMIT INFORMATION CHART

Subdivision Name			SECTION/AREA		Lot/Parcel No
J.H.U. APPLIED PHYSICS LAB			N/A		1
Plat# or L/F	Grid#	Zoning	Tax Map No.	Elect Distr.	Census Tract
15429-15433	16	PEC	41	5	6051
Water Code			Sewer Code		
E-21			6480000		

SITE ANALYSIS TOTAL APL PROPERTY:

A. AREA OF PARCEL/LOT = 361 ACRES, PLAN SUBMISSION/DISTURBED AREA = 11.5 ACRES
B. PRESENT ZONING = PEC
C. PARKING TABULATION: EXISTING PARKING SPACES = 3,780
TOTAL SPACES PROVIDED = 4,256
D. EXISTING BUILDING COVERAGE = 36.2 ACRES GROSS FLOOR AREA, COVERAGE = 18.1 ACRES, 5% OF TOTAL LOT AREA
E. PROPOSED BUILDING COVERAGE = NO BUILDINGS OTHER THAN UTILITY CONTROL BLDG. ARE PROPOSED WITH THIS PLAN
F. TOTAL PROPOSED BUILDING COVERAGE = 18.1 ACRES, 5.00% OF TOTAL LOT AREA
G. PROPOSED DISTURBED AREA = 11.5 ACRES
H. PROPOSED USE = EDUCATION/RESEARCH
I. FLOOR SPACE USE = EDUCATION/RESEARCH
J. MAXIMUM NUMBER OF EMPLOYEES = 3,900
K. NO LOT SUBDIVISION IS ANTICIPATED.
L. RELATED DPZ FILES: S-01-12, WP-01-80 AND F-02-40.
M. SANITARY SEWER / WATER SERVICE SEE GENERAL NOTES.
N. EXISTING OPEN SPACE AREA (LOT AREA MINUS PARKING AND BUILDINGS) = 308 ACRES, 85.3% OF TOTAL LOT AREA.
O. PROPOSED OPEN SPACE AREA = 303 ACRES, 83.9% OF TOTAL LOT (PROPOSED BUILDINGS AND PARKING = 5 ACRES)

GENERAL NOTES:

1. WATER IS PUBLIC (HOWARD COUNTY)
2. SEWER IS PUBLIC (HOWARD COUNTY)
3. THE FLOODPLAIN LIMITS FOR THIS PROJECT WAS TAKEN FROM HOWARD COUNTY STUDY.
4. DIMENSION TO NEW STRUCTURES ARE PERPENDICULAR TO PROPERTY LINE.
5. THE PURPOSE OF THIS SDP PLAN IS TO REPRESENT RELOCATION OF UTILITIES AND SITE GRADING ASSOCIATED WITH THE LABORATORY OPERATION AND RESEARCH.
6. THE SDP PLAN AREA OF THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY IS NOT LOCATED IN THE 100 YEAR FLOOD PLAIN. THE LIMIT OF DISTURBANCE FOR THIS SITE PLAN AREA (10.4 ACRES) OF THE JOHN HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY IS NOT LOCATED IN THE 100 YEAR FLOODPLAIN.
7. ALL EXISTING UTILITIES WITHIN THE FOOTPRINT OF NEW BUILDINGS WILL BE RELOCATED OUTSIDE THE BUILDING AREA AS SHOWN.
8. SOIL MAP USED SHEET NO. 29, SOIL SURVEY JULY 1968 HOWARD COUNTY, MARYLAND, USDA.
9. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS AND FOREST CONSERVATION EASEMENT AREA.
10. FOREST CONSERVATION OBLIGATION ADDRESSED WITH F-02-40.
11. STORMWATER MANAGEMENT PONDS ARE PRIVATELY OWNED AND MAINTAINED.
12. THE SUBJECT PROPERTY IS ZONED PEC PER THE OCTOBER 18, 1993 COMPREHENSIVE ZONING PLAN.
13. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. NO LANDSCAPE PLANTINGS ARE REQUIRED FOR THIS PLAN SINCE NO PROPOSED IMPROVEMENTS ARE ADJACENT TO PUBLIC ROAD OR ADJOINING PROPERTY.

----------GERNERAL NOTES CONTINUED ON SHEET #C-2 (T-2)--------

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."

5/10/02
SIGNATURE OF DEVELOPER — Date
PRINT NAME BELOW SIGNATURE

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR UTILITIES 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.

5/10/02
SIGNATURE OF ENGINEER Robert A. Warner — 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.

5/28/02
USDA-NATURAL RESOURCES CONSERVATION SERVICE — Date

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

5/28/02
HOWARD SOIL CONSERVATION DISTRICT — Date

Review for HOWARD SCD and meets Technical Requirements.

USDA – Natural Resources Conservation Service — Date 5/28/02

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

Howard SCD — Date 5/28/02

~~APPROVED: DEPARTMENT OF PUBLIC WORKS~~

~~CHIEF, BUREAU OF HIGHWAYS~~ — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division MK — Date 5/31/02
Chief, Division of Land Development HB — Date 6/3/02
Director — Date 6/11/02

2) BY THE ENGINEER:

"I certify that the plan for pond construction, erosion and sediment 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 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."

Design Engineer Signature — Date 5/10/02
Robert A. Warner — Printed Name
13403 — Registration Number

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 5/10/02
Robert A. Warner — Print Name

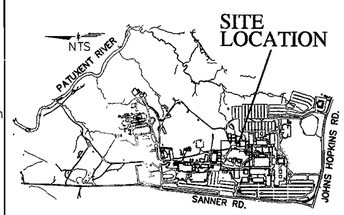
STATE OF MARYLAND — ROBERT ANTHONY WARNER — LICENSE NO. 13403 — REGISTERED PROFESSIONAL ENGINEER

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 personal 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 an provides 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."

KEY LEGEND



SCALE: NTS

AMT
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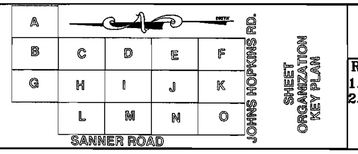
ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02



SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:	DATE:
1. NOTES	03/15/02
2. NOTES	05/10/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
PARCEL 1

TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. T-1
COUNTY SHEET NO. C-1

SDP-02-88

GERNERAL NOTES CONTINUED FROM SHEET #C-1 (T-1)

14. THE TOPOGRAPHIC AND UTILITY INFORMTION SHOWN IN THIS DEVELOPMENT PLAN, WAS OBTAINED FROM FIELD SURVEYS PERFORMED BY WHITMAN, REQUARDT AND ASSOCIATES (TOPOGRAPHY) AND APPLIED PHYSICS LABORATORY (UTILITIES) CONSULTANTS IN NOVEMBER 1998 AND FROM REPORTS PROVIDED BY JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LAB (APL). AND MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION TO HIS OWN SATISFACTION.
15. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY AND MSHA SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, UNLESS OTHERWISE NOTED.
16. ELEVATIONS SHOWN ARE BASED ON AN ASSUMED DATUM PROVIDED BY WHITMAN, REQUAROT AND ASSOCIATES.
17. APPROXIMATE LOCATIONS OF EXISTING UTILITES ARE SHOWN, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO COST TO THE OWNER.
18. ACCESS TO THE CONSTRUCTION AREA THROUGH THE SECURE AREA OF THE APPLIED PHYSICS LABORATORY (WITHIN THE FENCED ENCLOSEURE) MUST BE ARRANGED IN ADVANCE BY CONTACTING THE PROGRAM MANAGER, JEFFREY ANDERSON (240) 228-5960.
19. SECURITY MUST BE MAINTAINED WITHIN THE CONSTRUCTION AREA. ALL REQUIRED FENCE CONSTRUCTION AND RELOCATION SHALL BE BY THE CONTRACTOR WHO SHALL BE RESPONSIBLE TO COORDINATE WITH JHU-APL AS TO WHEN SUCH WORK IS REQUIRED.
20. THE CONTRACTOR SHALL CONTACT MR. JEFFREY ANDERSON (240) 228-5960. AT LEAST FIVE DAYS BEFORE STARTING WORK OR NEEDING TO SHUT DOWN ANY UTILITIES.
21. THE CONTRACTOR SHALL TIE-IN TO THE EXISTING UTILITES ONLY AFTER NORMAL WORKING HOURS AT JHU-APL. WORK MUST BE SCHEDULED ACCORDINGLY THRU JHU-APL. NORMAL WORKING HOURS ARE 8:30 A.M. TO 5:00 P.M., MONDAY THROUGH FRIDAY.
22. THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION, 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK, AT (410) 313-1880.
23. CLEAR ALL UTILITES BY MINIMUM OF 6". CLEAR ALL POLES AND FOUNDATIONS BY 2'-0" MINIMUM, OR TUNNEL AS REQUIRED.
24. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEMS. COORDINATE WITH THE OWNER FOR OPERATING WATERMAIN VALVES.
25. THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL STORM DRAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
26. THE CONTRACTOR SHALL PERMANENTLY SEED AND STABILIZE ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED.
27. ALL DRIVWAYS ARE PRIVATELY OWNED AND MAINTAINED.
28. THE AREA SHOWN IS LOCATED ON TAX MAP #41.
29. THE INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AT ALL CROSSINGS WELL IN ADVANCE OF CONSTRUCTION.
30. ALL SITE UTILITIES ARE THE PROPERTY OF APL. APL WILL HORIZONTALLY LOCATE ALL ACTIVE UTILITIES FOR THE CONTRACTOR.
31. EXISTING PAVEMENTS, (ROADWAY, SIDEWALKS ETC.) REMOVED TO INSTALL PROPOSED UTILITIES, SHALL BE REPLACED "IN-KIND" OR AS DETAILED HEREIN THESE PLANS. TRAFFIC SHALL BE MAINTAINED BY THE CONTRACTOR ALONG EXISTING ROADWAYS DURING PROPOSED WORK, AT ALL TIMES. THE PAVED DRIVE NORTHEAST OF BUILDING #41 SHALL BE OPEN TO ONE LANE OF TRAFFIC (15' WIDE) AT ALL TIMES.
32. SEE DETAIL SHEETS FOR OTHER ITEMS THAT APPLY TO THIS PROJECT.
33. THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS SO AS NOT TO DAMAGE EXISTING ADJACENT FACILITIES AND STRUCTURES. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION OR BETTER UNLESS NOTED OTHERWISE.
34. DUE TO THE PROXIMITY OF LIVE UNDERGROUND UTILITIES, THE OWNER AND A. MORTON THOMAS AND ASSOCIATES, INC. IS NOT RESPONSIBLE FOR ANY DAMAGE OR INJURY SUSTAINED DURING CONSTRUCTION BY ANY PERSON, VEHICLES OR EQUIPMENT USED ON OR ADJACENT TO THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES BY TEST PIT OR OTHER MEANS OF INVESTIGATION APPROVED BY THE OWNER BEFORE THE EXCAVATION STARTS. UTILITY PROFILES ON THESE PLANS ARE ILLUSTRATE POSSIBLE UTILITY LOCATIONS.
THE FOLLOWING DEPTHS WERE ASSUMED BUT NOT FIELD CONFIRMED: WATER MAINS 4' COVER; GAS PIPE, ELECTRIC CONDUIT/DUCT AND TELECOM CONDUIT/DUCT, 1.5' COVER. CONTRACTOR SHALL CONFIRM ACTUAL DEPTH AND PREPARE REVISED PROFILES IF REQUIRED BY CONFLICTS. ALL REVISION SHALL BE APPROVED BY THE OWNER BEFORE THE START OF THE UTILITY'S CONSTRUCTION.
35. ACCESS TO ALL EXISTING FACILITIES SHALL BE MAINTAINED AT ALL TIMES.
36. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNER OF ANY DEVIATION FROM THESE PLANS PRIOR TO ANY CHANGE BEING MADE. ANY DEVIATION FROM THESE PLANS WITHOUT WRITTEN AUTHORIZATION BY THE OWNER WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
37. 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.
38. THE CONTRACTOR SHALL MAKE EVERY ATTEMPT TO MINIMIZE DAMAGE TO EXISTING TREES DURING CONSTRUCTION.
39. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL MEET CURRENT HOWARD COUNTY DEPARTMENT OF PERMITTING SERVICES STANDARDS AND DIRECTIVES.
40. 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 OWNER.
41. CONTRACTOR SHALL CONTACT JHU-APPLIED PHYSICS LAB PLANT FACILITIES OFFICE (240) 228-5134, 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.
42. TRENCH AND INSTALLATION OF NEW UTILITIES SHALL BE SCHEDULED SO THAT ALL TRENCHES WILL BE BACK FILLED AT THE END OF EACH DAY. NO TRENCHES WILL BE ALLOWED TO BE OPEN AT THE END OF EACH WORK DAY. TRENCH AREAS SHALL BE MULCHED AND TEMPORARY SEEDED IN NON-PAVED AREA, AND TRAFFIC BARING TEMPORARY SURFACE SHALL BE INSTALLED IN PAVED AREAS.
43. CONTRACTOR SHALL PREPARE CONSTRUCTION SHOP DRAWING FOR THE NEW UTILITIES AND RETAINING WALL BETWEEN THE WEST SIDE OF BUILDING #24 AND THE PROPOSED EAST SIDE OF BUILDING #17. SHOP DRAWINGS SHALL SHOW IN SECTIONS AND PLANS THE VERTICAL AND HORIZONTAL LOCATION FOR ALL PIPS, CONDUITS, MANHOLES, DUCTBANKS AND RETAINING WALL. SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED BY APL BEFORE START OF WORK IN THIS AREA.
44. CONTRACTOR SHALL CAP ALL ENDS OF WATER PIPING TO REMAIN AS PER HOWARD COUNTY DPW DETAIL #W2.21 "BUTTRESSES FOR CAPS AND HORIZONTAL BENDS". CONTRACTOR SHALL PLUG ALL STORM AND SANITARY ENDS OF PIPE TO REMAIN WITH MORTARED CONCRETE BLOCK, OR POURED IN PLACE CONCRETE 6" THICK WITH #4 BARS 12" ON CENTER EACH WAY. PLUG SHALL SEAL AND COVER THE ENTIRE OUTSIDE EDGE OF THE END OF THE PIPE.
45. ALL NEW WATER MAIN TAPS SHALL BE WET TAPS THAT WILL NOT CAUSE THE INTERRUPTION OF WATER SERVICE AT APL.
46. CONTRACTOR SHALL MAINTAIN CONTINUOUS FLOW IN THE STORM DRAIN PIPES DURING CONSTRUCTION AS CONDENSATE WATER FLOWS IN THE STORM DRAIN PIPES CONTINUOUSLY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division	MK	6/3/02	Date 5/31/02
~~CHIEF, DIVISION OF LAND DEVELOPMENT~~ HD		DATE 6/11/02	
Director			Date

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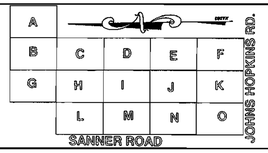
ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02



SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:	DATE:
1. ADDITION OF NOTE #33-#36	03/15/02
2. NOTE	05/10/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
LIST OF DRAWINGS & GENERAL NOTES
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. T-2
COUNTY SHEET NO. C-2

SDP-02-88

UTILITIES LEGEND

EXISTING

- EXISTING CONTOUR
- TREELINE
- FOREST STAND
- DRAINAGE AREA
- 100 YEAR FLOODPLAIN
- STREAM VALLEY BUFFER
- STREAM SYSTEM
- WETLANDS
- 25' WETLAND BUFFER
- SOIL CLASSIFICATION BOUNDARY
- STREAMS
- DD — DRAINAGE DITCH
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- 8" SAN. — EXISTING SANITARY SEWER
- 12" W — EXISTING WATER
- 18" DRAIN. — EXISTING STORM DRAIN
- EXISTING FENCE

PROPOSED

- SAN — PROPOSED SANITARY LINE
- 154' 36" — PROPOSED STORM LINE
- 1/8 HB — PROPOSED WATER LINE
- PROPOSED TELECOMMUNICATION
- PROPOSED ELECTRIC
- CWSR / HWSR — PROPOSED CHILLED WATER / PROPOSED HOTWATER
- GAS — PROPOSED GAS LINE

- PROPOSED SANITARY MANHOLE
- PROPOSED STORM MANHOLE
- PROPOSED STORMCEPTOR
- PROPOSED STORM DRAIN CATCH BASIN
- PROPOSED WATER LINE CONNECTIONS
- PROPOSED TELCOM MANHOLE
- F.H. — PROPOSED FIRE HYDRANT

GENERAL LEGEND

- 26 — EXISTING BUILDING
- PARKING LOT
- EDGE OF ROAD
- A1B2 — SOILS CLASSIFICATION

- EXISTING WATER TANK
- C.B. C.B. — CATCH BASIN
- M.H. — EXISTING MANHOLE
- S.M.H. — SANITARY SEWER MANHOLE
- PIV — EXISTING POST INDICATOR VALVE
- WV — EXISTING WATER VALVE
- F.H. — EXISTING FIRE HYDRANT
- C.O. — EXISTING CLEANOUT

UTILITIES DEMOLITION LEGEND

- 18" DRAIN — EXISTING STORM DRAIN TO BE REMOVED
- 12" W — EXISTING WATER TO BE REMOVED
- 8" SAN. — EXISTING SANITARY SEWER TO BE REMOVED
- 8" SAN. — EXISTING SANITARY SEWER TO BE ABANDONED
- EXISTING UTILITY TO BE CAPPED
- EXISTING UTILITY TO BE CAPPED & REMOVED
- EXISTING UTILITY TO BE CAPPED & ABANDONED

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division MK	Date 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT HD	DATE 6/3/02
Director	Date 6/11/02

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DES: B. WARNER
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DATE: 04/12/02

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SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:	DATE:
1. LEGEND	03/15/02
2. LEGEND	05/10/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
GENERAL NOTES & LEGEND PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. T-3
COUNTY SHEET NO. C-3

SDP-93-98

SOURCE: HOWARD COUNTY SOIL SERVEY, MARYLAND

SOILS MAP LEGEND:

Ba	BAILE SILT LOAM
CgB2	CHESTER GRAVELLY SILT LOAM
ChB2	CHESTER SILT LOAM
GIA GIB2	GLENELG LOAM
MgB2 MgC2	MANOR GRAVRLLY LOAM
MIB2 MID2	MANOR LOAM

100 0 100 200
SCALE
1"=100'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6/3/02
DIRECTOR	DATE 6/11/02

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 # 98-193

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

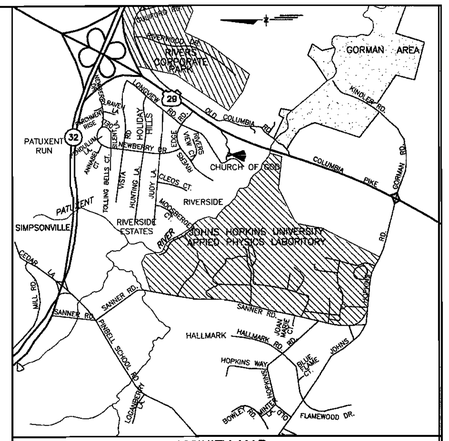
SITE GRADING AND UTILITIES

REVISIONS: DATE:
1. SOIL LEGEND 03/15/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
SOILS MAP FOR PARCEL 1
PROJECT AREA
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CSM-1
COUNTY SHEET NO. C-4

SDP-02-88



VICINITY MAP
SCALE: 1"=2000'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6/3/02
DIRECTOR	DATE 6/11/02

200 0 200 400
SCALE
1"=200'

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 # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

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G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:
1. BLDG #17

DATE:
03/25/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
KEYED MAP PLAN PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

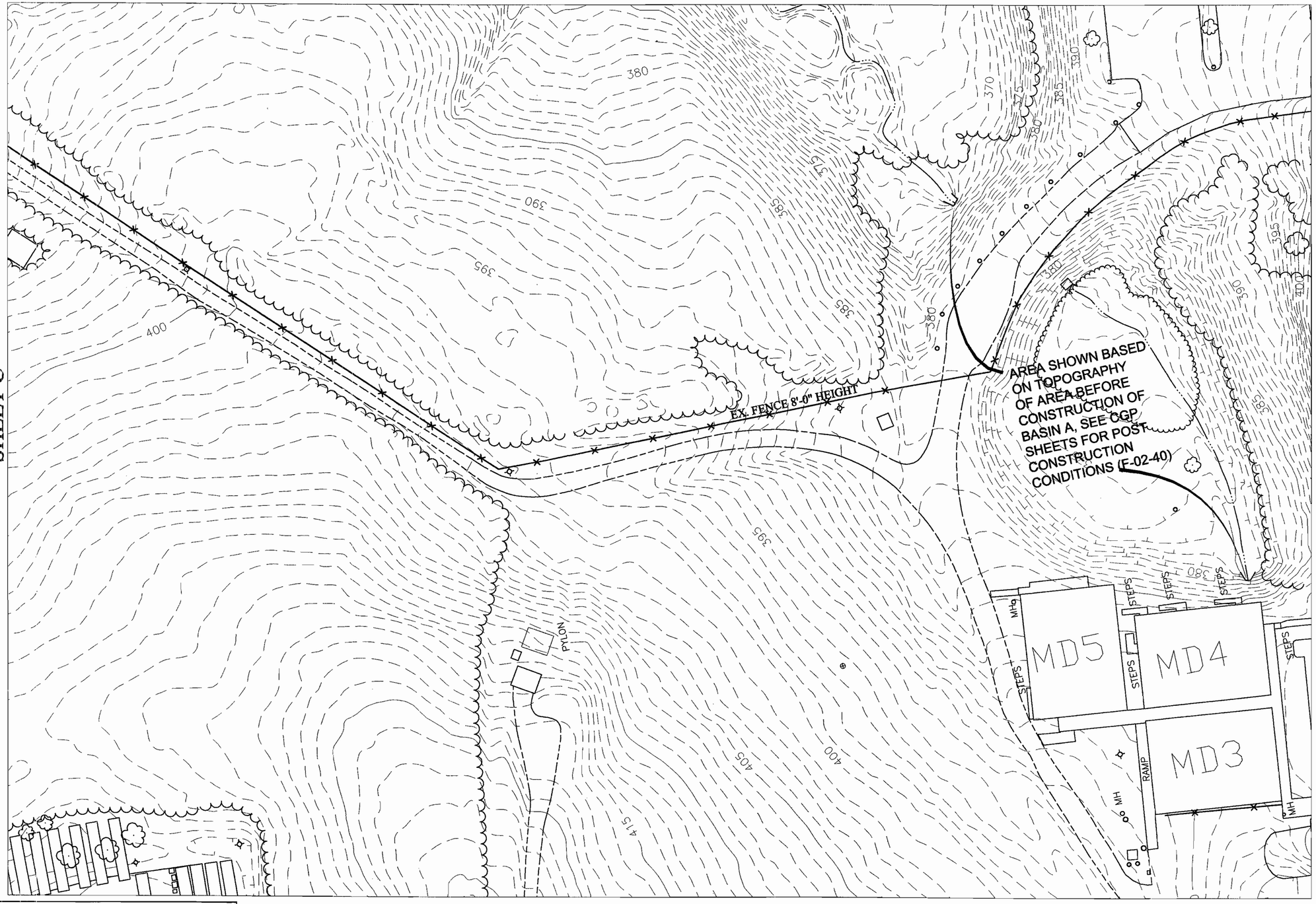
SCALE AS SHOWN

APL SHEET NO.
C-1

COUNTY SHEET NO.
C-5

SDP-02-88

SHEET C



SHEET E

30 0 30 60 90 120

SCALE 1"=30'

SHEET I

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT HO	DATE 6/3/02
DIRECTOR	DATE 6/11/02

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
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THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

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SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:
1. EX. CONTOUR LINES-DASHED

DATE: 04/12/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1

EXISTING CONDITIONS PLAN D

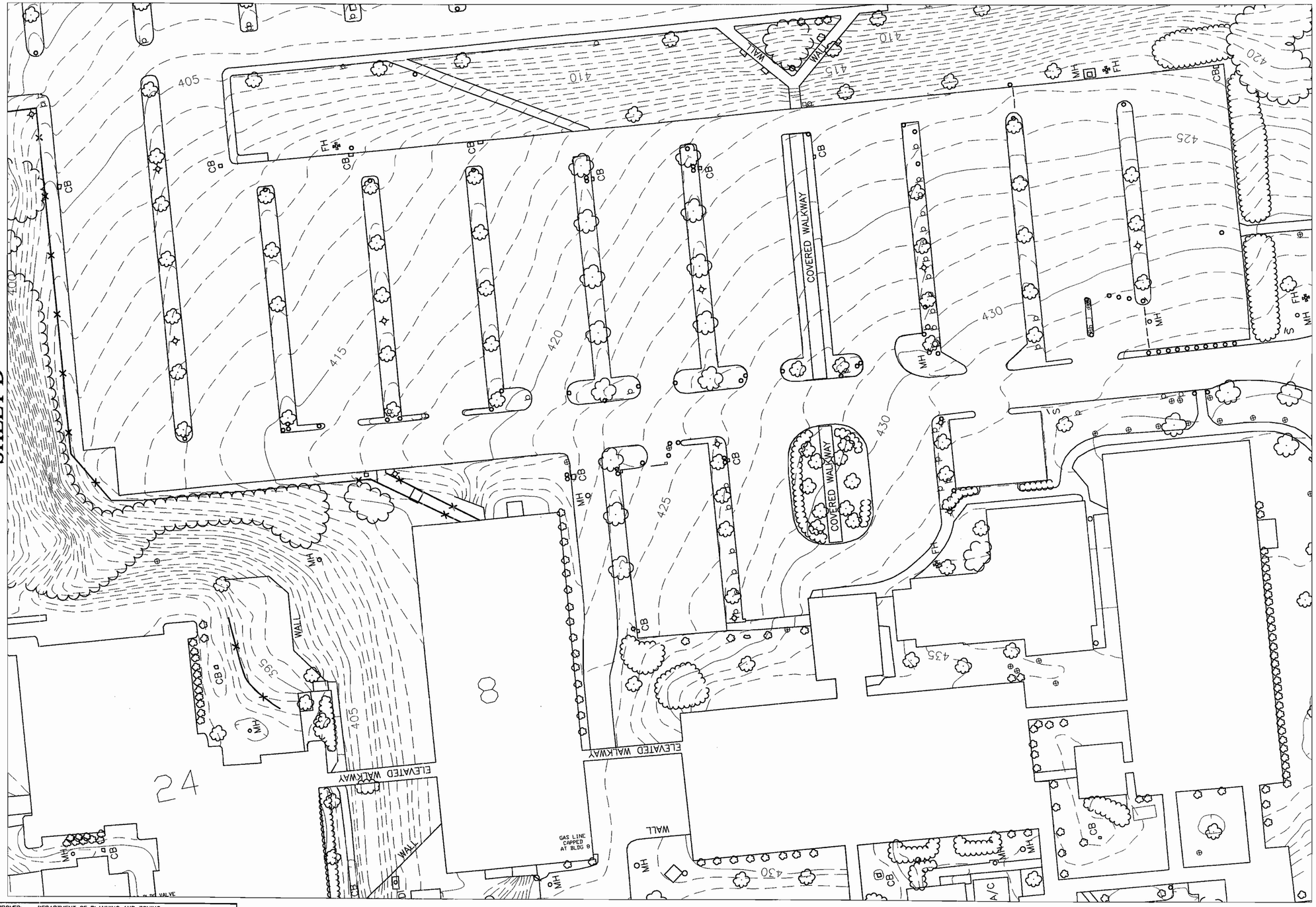
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO. CTP-1

COUNTY SHEET NO. C-6

SDP-02-88



SCALE
1"=30'

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT WB	DATE 6/7/02
DIRECTOR	DATE 6/11/02

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2945 FAX (301) 881-0814
AMT FILE # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

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SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:
1. EX. CONTOUR LINES-DASHED

DATE: 04/12/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1

EXISTING CONDITIONS PLAN E

TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO. CTP-2

COUNTY SHEET NO. C-7

SDP-02-88

SHEET D

SHEET H

SHEET J

SHEET M

30 0 30 60 90 120

SCALE 1"=30'

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6/3/02
DIRECTOR	DATE 6/11/02

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

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B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:
1. EX. CONTOUR LINES-DASHED

DATE:
04/12/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1

EXISTING CONDITIONS PLAN I

TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

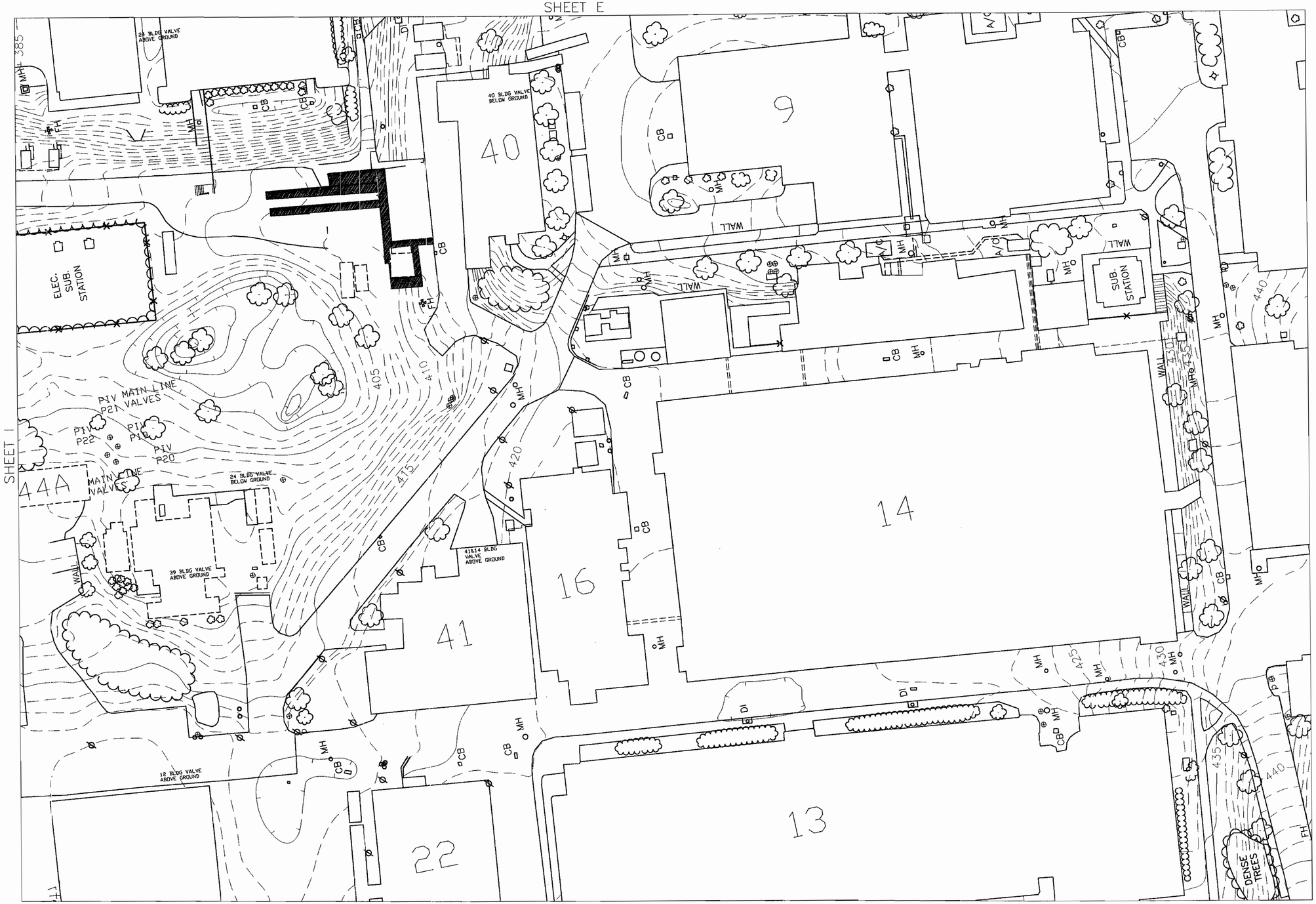
SCALE AS SHOWN

APL SHEET NO.
CTP-3

COUNTY SHEET NO.
C-8

SDP-02-88

SHEET E



SHEET I

SHEET K

SHEET N

30 0 30 60 90 120

SCALE 1"=30'

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6/3/02
DIRECTOR	DATE 6/11/02

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TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 98-153

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WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
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SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:
1. EX. CONTOUR LINES-DASHED

DATE: 04/12/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1

EXISTING CONDITIONS PLAN J

TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO. CTP-4

COUNTY SHEET NO. C-9

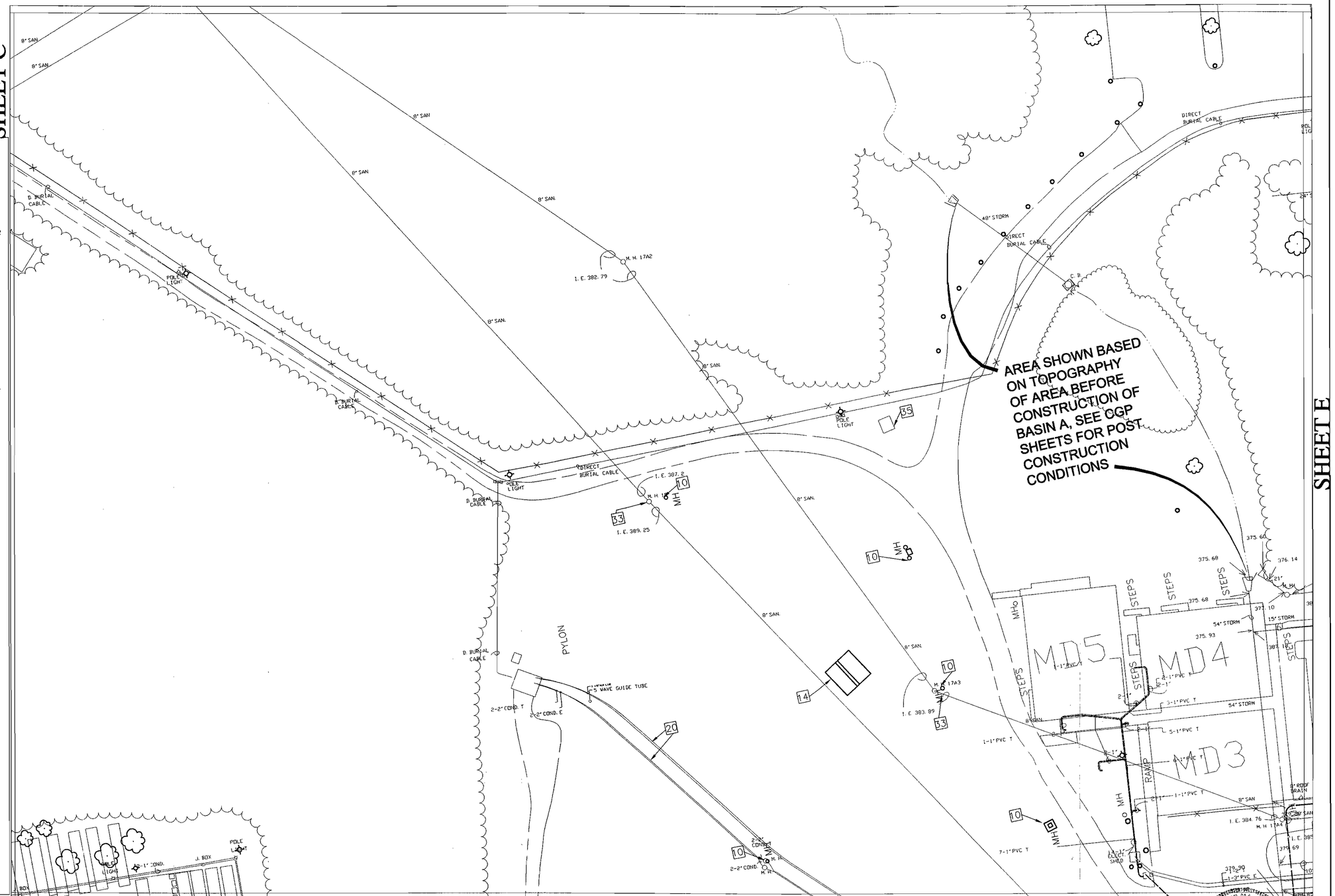
SDP-02-88

KEYED NOTE

KEYED NOTES APPLY TO ALL CDP SHEETS UNLESS NOTED WITH THE CDP NUMBER AT THE END OF THE NOTE THAT REFERENCE A SPECIFIC CDP SHEET NO., EXAMPLE : (1)

1. BUILDING TO BE REMOVED; CONCRETE BLOCK WALLS (12' HIGH) WITH CONCRETE FOOTER (3' DEEP), REMOVE ALL INCLUDING CONCRETE FOOTER.
2. EXISTING TREES AND STUMPS TO BE REMOVED.
3. 10' OF EXISTING FENCE AND CONCRETE CURB TO BE REMOVED: 12" DIAMETER CONCRETE FOOTER ON EACH FENCE POST SHALL BE REMOVED.
4. METAL VEHICLE SHED TO BE REMOVED: CONCRETE FLOOR SLAB AND 3' DEEP PERIMETER FOUNDATION WALL SHALL BE REMOVED. (3&4)
5. STORAGE (SHIPPING CONTAINERS) TO REMOVED BY APL.
6. SOIL BINS TO BE REMOVED: WOOD PLANK SIDES AND POSTS BURIED IN CONCRETE FOUNDATION 4' DEEP PER POST. (3&4)
7. TRAILER TO BE REMOVED BY APL. (4)
8. ROOF OVERHANG TO BE REMOVED.
9. WOOD DECK, STAIRS, HANDRAILS AND SUPPORT POSTS TO BE REMOVED. (4)
10. EXISTING SANITARY MANHOLE, STORM DRAIN, ELECTRICAL AND TELECOM DUCT BANKS TO BE REMOVED AND EXISTING PIPES AND DUCTS PLUGGED WITH CONCRETE.
11. EXISTING LIGHT POLE, CONCRETE FOUNDATION, CONDUIT AND CONDUCTORS TO BE REMOVED.
12. EXISTING WOOD RETAINING WALL TO BE REMOVED (3' HIGH). (4)
13. EXISTING ASPHALT TO BE REMOVED, 12" THICK, SAW CUT EDGE TO REMAIN AT LIMIT OF REMOVAL.
14. EXISTING CONCRETE PAVEMENT TO BE REMOVED (10" THICK, REINFORCED).
15. HAZARDOUS MATERIAL CABINETS AND CONCRETE SLAB TO BE REMOVED. (4)
16. ELECTRICAL CONCRETE UNDER TRANSFORMERS TO REMAIN. (4)
17. EXISTING CATCH BASIN TO BE REMOVED.
18. EXISTING STORM OUT FALL TO BE REMOVED.
19. EXISTING WATERLINE VALVES TO BE REMOVED.
20. EXISTING ELECTRIC AND TELECOM DUCKBANKS AND STRUCTURES DEMOLITION. SEE ELECTRICAL AND TELECOM DRAWINGS.
21. EXISTING CATCH BASIN TO REMAIN.
22. EXISTING WATERLINE AND VALVE TO BE ABANDONED IN PLACE AND CAPPED.
23. LIMIT OF EXISTING PAVEMENT REMOVAL.
24. EXISTING WATERLINE TO REMAIN.
25. EXISTING PIPES TO BE REMOVED.
26. EXISTING SECURITY LIGHT TO BE REMOVED.
27. EXISTING SHIPPING CONTAINERS TO REMAIN. (3)
28. EXISTING CONCRETE RAMP TO BE REMOVED. (4)
29. EXISTING RETAINING WALL AND FENCE TO REMAIN, EXISTING TREES ALONG FENCE TO BE REMOVED.
30. LIMIT OF REMOVAL CAP WATER, AND CAP GAS LINES; PLUG STORM DRAINS, SANITARY LINES AND CONDUIT, IFA NEW STRUCTURE IS NOT INSTALLED AT THAT LOCATION.
31. LIMIT OF UTILITY ABANDONMENT, REMOVE SECTION OF UTILITY AND PLUG OR CAP AS PER KEYED NOTE.
32. EXISTING WOOD RETAINING WALL (3' HIGH) TO BE REMOVED. (4)
33. EXISTING MANHOLE TOP CONE SECTION AND FRAME/COVER TO BE REMOVED, NEW PRECAST CONCRETE SECTIONS ADDED AND CONE SECTION AND FRAME/COVER TO BE REINSTALLED TO MEET NEW GRADES (SEE CGP SHEETS FOR ELEVATIONS). (1)
34. EXISTING BUILDING #24 6" FOUNDATION DRAIN GROUND FOR BUILDING TO BE REMOVED. (3)
35. EXISTING WELL TO BE REMOVED, CONCRETE BLOCK STRUCTURE WITH 3' DEEP FOUNDATION. (1)
36. EXISTING TEST APPARATUS, STEEL POSTS CABLES AND CONCRETE FOUNDATION MIN 5' DEEP. (3)
37. EXISTING WELL-HOUSE AND HYDRANT TO BE REMOVED: ONE STORY CONCRETE BLOCK STRUCTURE WITH 3' CONCRETE FOUNDATION REMOVE ALL MECHANICAL AND ELECTRICAL EQUIPMENT. (3)

- EXISTING UTILITY TO BE REMOVED
- EXISTING UTILITY TO BE CAPPED
- EXISTING UTILITY TO BE CAPPED & REMOVED
- EXISTING UTILITY TO BE CAPPED & ABANDONED



30 0 30 60 90 120

SCALE 1"=30'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 6/3/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6/3/02
DIRECTOR	DATE 6/11/02

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2945 FAX (301) 881-0814
AMT FILE # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

JOHNS HOPKINS RD.
SANNER ROAD
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:
1. LEGEND

DATE: 03/15/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
PARCEL 1
DEMOLITION PLAN D

TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

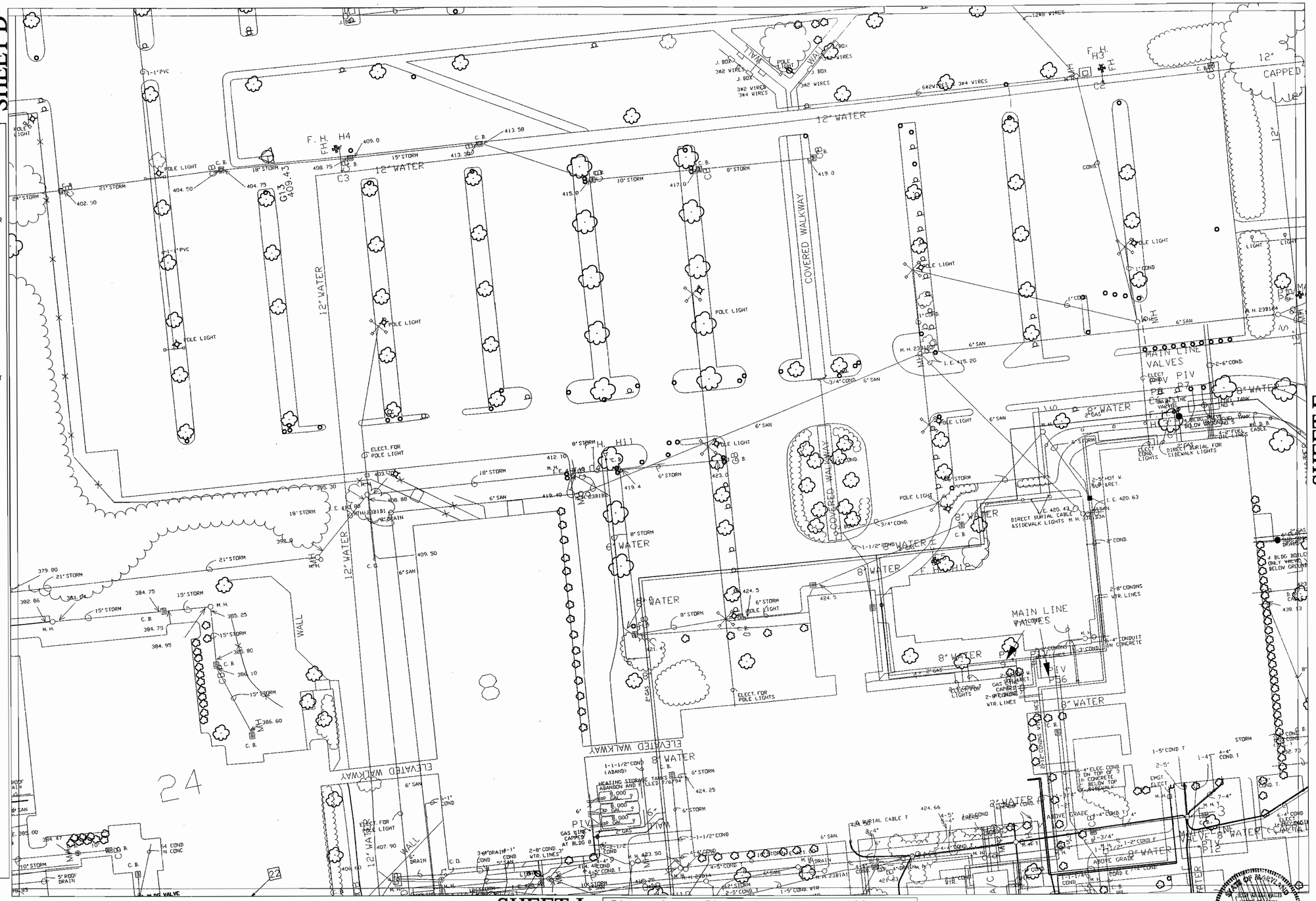
SCALE AS SHOWN

APL SHEET NO. CDP-1

COUNTY SHEET NO. C-10

SDP-02-88

SHEET D



SHEET F

SHEET J

KEYED NOTE

KEYED NOTES APPLY TO ALL CDP SHEETS UNLESS NOTED WITH THE CDP NUMBER AT THE END OF THE NOTE THAT REFERENCE A SPECIFIC CDP SHEET NO., EXAMPLE : (1)

1. BUILDING TO BE REMOVED; CONCRETE BLOCK WALLS (12' HIGH) WITH CONCRETE FOOTER (3' DEEP), REMOVE ALL INCLUDING CONCRETE FOOTER.
2. EXISTING TREES AND STUMPS TO BE REMOVED.
3. 10' OF EXISTING FENCE AND CONCRETE CURB TO BE REMOVED: 12" DIAMETER CONCRETE FOOTER ON EACH FENCE POST SHALL BE REMOVED.
4. METAL VEHICLE SHED TO BE REMOVED: CONCRETE FLOOR SLAB AND 3' DEEP PERIMETER FOUNDATION WALL SHALL BE REMOVED. (3&4)
5. STORAGE (SHIPPING CONTAINERS) TO REMOVED BY APL.
6. SOIL BINS TO BE REMOVED: WOOD PLANK SIDES AND POSTS BURIED IN CONCRETE FOUNDATION 4' DEEP PER POST. (3&4)
7. TRAILER TO BE REMOVED BY APL. (4)
8. ROOF OVERHANG TO BE REMOVED.
9. WOOD DECK, STAIRS, HANDRAILS AND SUPPORT POSTS TO BE REMOVED. (4)
10. EXISTING SANITARY MANHOLE, STORM DRAIN, ELECTRICAL AND TELECOM DUCT BANKS TO BE REMOVED AND EXISTING PIPES AND DUCTS PLUGGED WITH CONCRETE.
11. EXISTING LIGHT POLE, CONCRETE FOUNDATION, CONDUIT AND CONDUCTORS TO BE REMOVED.
12. EXISTING WOOD RETAINING WALL TO BE REMOVED (3' HIGH). (4)
13. EXISTING ASPHALT TO BE REMOVED, 12" THICK, SAW CUT EDGE TO REMAIN AT LIMIT OF REMOVAL.
14. EXISTING CONCRETE PAVEMENT TO BE REMOVED (10" THICK, REINFORCED).
15. HAZARDOUS MATERIAL CABINETS AND CONCRETE SLAB TO BE REMOVED. (4)
16. ELECTRICAL CONCRETE UNDER TRANSFORMERS TO REMAIN. (4)
17. EXISTING CATCH BASIN TO BE REMOVED.
18. EXISTING STORM OUT FALL TO BE REMOVED.
19. EXISTING WATERLINE VALVES TO BE REMOVED.
20. EXISTING ELECTRIC AND TELECOM DUCKBANKS AND STRUCTURES DEMOLITION. SEE ELECTRICAL AND TELECOM DRAWINGS.
21. EXISTING CATCH BASIN TO REMAIN.
22. EXISTING WATERLINE AND VALVE TO BE ABANDONED IN PLACE AND CAPPED.
23. LIMIT OF EXISTING PAVEMENT REMOVAL.
24. EXISTING WATERLINE TO REMAIN.
25. EXISTING PIPES TO BE REMOVED.
26. EXISTING SECURITY LIGHT TO BE REMOVED.
27. EXISTING SHIPPING CONTAINERS TO REMAIN. (3)
28. EXISTING CONCRETE RAMP TO BE REMOVED. (4)
29. EXISTING RETAINING WALL AND FENCE TO REMAIN, EXISTING TREES ALONG FENCE TO BE REMOVED.
30. LIMIT OF REMOVAL CAP WATER, AND CAP GAS LINES; PLUG STORM DRAINS, SANITARY LINES AND CONDUIT, IFA NEW STRUCTURE IS NOT INSTALLED AT THAT LOCATION.
31. LIMIT OF UTILITY ABANDONMENT, REMOVE SECTION OF UTILITY AND PLUG OR CAP AS PER KEYED NOTE.
32. EXISTING WOOD RETAINING WALL (3' HIGH) TO BE REMOVED. (4)
33. EXISTING MANHOLE TOP CONE SECTION AND FRAME/COVER TO BE REMOVED, NEW PRECAST CONCRETE SECTIONS ADDED AND CONE SECTION AND FRAME/COVER TO BE REINSTALLED TO MEET NEW GRADES (SEE CGP SHEETS FOR ELEVATIONS). (1)
34. EXISTING BUILDING #24 6" FOUNDATION DRAIN GROUND FOR BUILDING TO BE REMOVED. (3)
35. EXISTING WELL TO BE REMOVED, CONCRETE BLOCK STRUCTURE WITH 3' DEEP FOUNDATION. (1)
36. EXISTING TEST APPARATUS, STEEL POSTS CABLES AND CONCRETE FOUNDATION MIN 5' DEEP. (3)
37. EXISTING WELL-HOUSE AND HYDRANT TO BE REMOVED: ONE STORY CONCRETE BLOCK STRUCTURE WITH 3' CONCRETE FOUNDATION REMOVE ALL MECHANICAL AND ELECTRICAL EQUIPMENT. (3)

- EXISTING UTILITY TO BE REMOVED
- EXISTING UTILITY TO BE CAPPED
- EXISTING UTILITY TO BE CAPPED & REMOVED
- EXISTING UTILITY TO BE CAPPED & ABANDONED

30 0 30 60 90 120

SCALE 1"=30'

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT HB	DATE 6/3/02
DIRECTOR	DATE 6/11/02

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AMT FILE # 96-153

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	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.

SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:
1. LEGEND

DATE: 03/15/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
DEMOLITION PLAN E
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

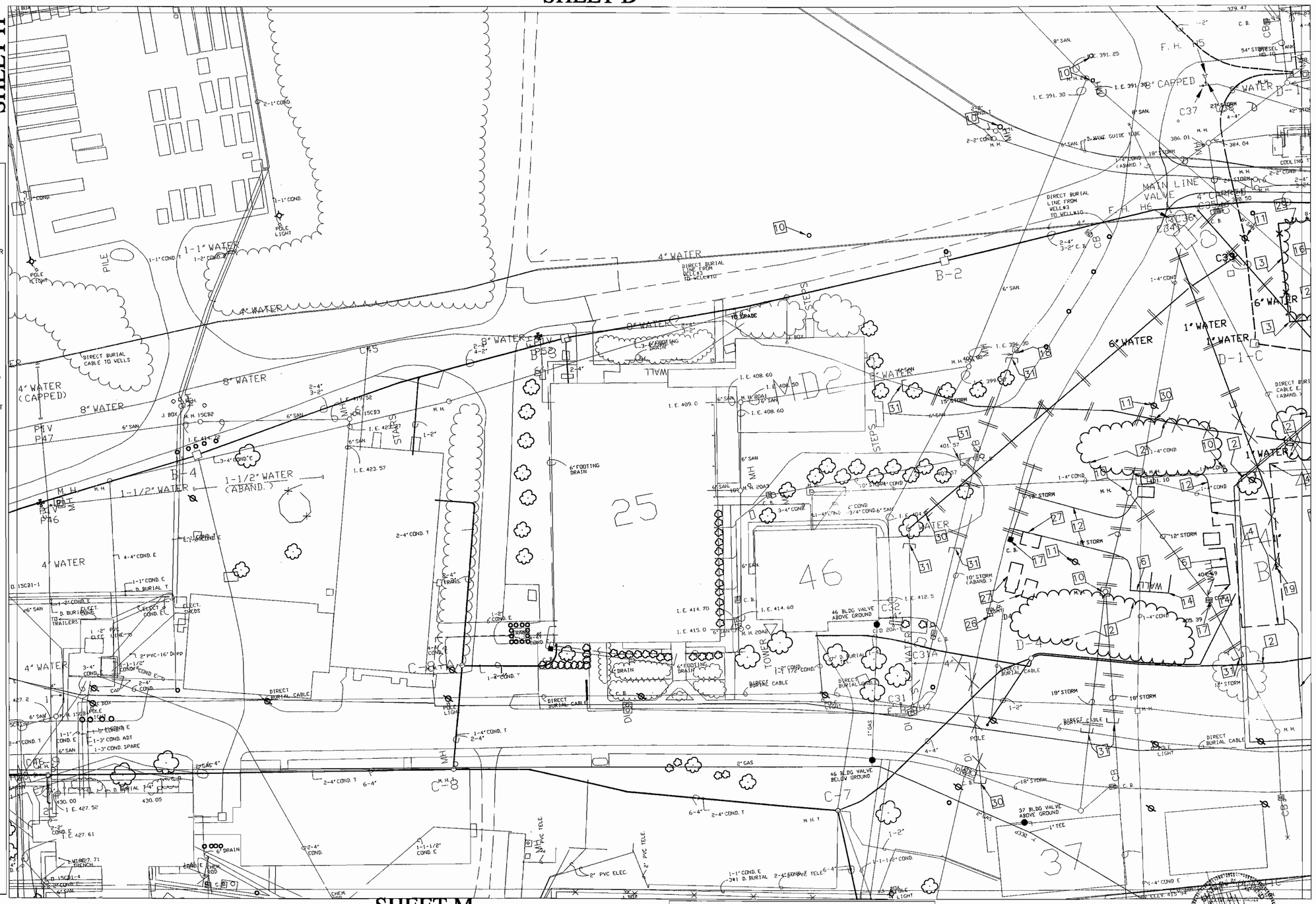
APL SHEET NO. CDP-2

COUNTY SHEET NO. C-11

SDP-02-88

SHEET D

SHEET H



KEYED NOTE

KEYED NOTES APPLY TO ALL CDP SHEETS UNLESS NOTED WITH THE CDP NUMBER AT THE END OF THE NOTE THAT REFERENCE A SPECIFIC CDP SHEET NO., EXAMPLE : (1)

1. BUILDING TO BE REMOVED; CONCRETE BLOCK WALLS (12' HIGH) WITH CONCRETE FOOTER (3' DEEP), REMOVE ALL INCLUDING CONCRETE FOOTER.
2. EXISTING TREES AND STUMPS TO BE REMOVED.
3. 10' OF EXISTING FENCE AND CONCRETE CURB TO BE REMOVED: 12" DIAMETER CONCRETE FOOTER ON EACH FENCE POST SHALL BE REMOVED.
4. METAL VEHICLE SHED TO BE REMOVED: CONCRETE FLOOR SLAB AND 3' DEEP PERIMETER FOUNDATION WALL SHALL BE REMOVED. (3&4)
5. STORAGE (SHIPPING CONTAINERS) TO REMOVED BY APL.
6. SOIL BINS TO BE REMOVED: WOOD PLANK SIDES AND POSTS BURIED IN CONCRETE FOUNDATION 4' DEEP PER POST. (3&4)
7. TRAILER TO BE REMOVED BY APL. (4)
8. ROOF OVERHANG TO BE REMOVED.
9. WOOD DECK, STAIRS, HANDRAILS AND SUPPORT POSTS TO BE REMOVED. (4)
10. EXISTING SANITARY MANHOLE, STORM DRAIN, ELECTRICAL AND TELECOM DUCT BANKS TO BE REMOVED AND EXISTING PIPES AND DUCTS PLUGGED WITH CONCRETE.
11. EXISTING LIGHT POLE, CONCRETE FOUNDATION, CONDUIT AND CONDUCTORS TO BE REMOVED.
12. EXISTING WOOD RETAINING WALL TO BE REMOVED (3' HIGH). (4)
13. EXISTING ASPHALT TO BE REMOVED, 12" THICK, SAW CUT EDGE TO REMAIN AT LIMIT OF REMOVAL.
14. EXISTING CONCRETE PAVEMENT TO BE REMOVED (10" THICK, REINFORCED).
15. HAZARDOUS MATERIAL CABINETS AND CONCRETE SLAB TO BE REMOVED. (4)
16. ELECTRICAL CONCRETE UNDER TRANSFORMERS TO REMAIN. (4)
17. EXISTING CATCH BASIN TO BE REMOVED.
18. EXISTING STORM OUT FALL TO BE REMOVED.
19. EXISTING WATERLINE VALVES TO BE REMOVED.
20. EXISTING ELECTRIC AND TELECOM DUCKBANKS AND STRUCTURES DEMOLITION. SEE ELECTRICAL AND TELECOM DRAWINGS.
21. EXISTING CATCH BASIN TO REMAIN.
22. EXISTING WATERLINE AND VALVE TO BE ABANDONED IN PLACE AND CAPPED.
23. LIMIT OF EXISTING PAVEMENT REMOVAL.
24. EXISTING WATERLINE TO REMAIN.
25. EXISTING PIPES TO BE REMOVED.
26. EXISTING SECURITY LIGHT TO BE REMOVED.
27. EXISTING SHIPPING CONTAINERS TO REMAIN. (3)
28. EXISTING CONCRETE RAMP TO BE REMOVED. (4)
29. EXISTING RETAINING WALL AND FENCE TO REMAIN, EXISTING TREES ALONG FENCE TO BE REMOVED.
30. LIMIT OF REMOVAL CAP WATER, AND CAP GAS LINES; PLUG STORM DRAINS, SANITARY LINES AND CONDUIT, IFA NEW STRUCTURE IS NOT INSTALLED AT THAT LOCATION.
31. LIMIT OF UTILITY ABANDONMENT, REMOVE SECTION OF UTILITY AND PLUG OR CAP AS PER KEYED NOTE.
32. EXISTING WOOD RETAINING WALL (3' HIGH) TO BE REMOVED. (4)
33. EXISTING MANHOLE TOP CONE SECTION AND FRAME/COVER TO BE REMOVED, NEW PRECAST CONCRETE SECTIONS ADDED AND CONE SECTION AND FRAME/COVER TO BE REINSTALLED TO MEET NEW GRADES (SEE CGP SHEETS FOR ELEVATIONS). (1)
34. EXISTING BLILDING #24 6" FOUNDATION DRAIN GROUND FOR BUILDING TO BE REMOVED. (3)
35. EXISTING WELL TO BE REMOVED, CONCRETE BLOCK STRUCTURE WITH 3' DEEP FOUNDATION. (1)
36. EXISTING TEST APPARATUS, STEEL POSTS CABLES AND CONCRETE FOUNDATION MIN 5' DEEP. (3)
37. EXISTING WELL-HOUSE AND HYDRANT TO BE REMOVED: ONE STORY CONCRETE BLOCK STRUCTURE WITH 3' CONCRETE FOUNDATION REMOVE ALL MECHANICAL AND ELECTRICAL EQUIPMENT. (3)

- EXISTING UTILITY TO BE REMOVED
- EXISTING UTILITY TO BE CAPPED
- EXISTING UTILITY TO BE CAPPED & REMOVED
- EXISTING UTILITY TO BE CAPPED & ABANDONED

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE	5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT WD	DATE	6/7/02
DIRECTOR	DATE	6/11/02

SHEET M

30 0 30 60 90 120

SCALE 1"=30'

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 # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
PARCEL 1
DEMOLITION PLAN I

TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO. CDP-3

COUNTY SHEET NO. C-12

SDP-02-88

KEYED NOTE

KEYED NOTES APPLY TO ALL CDP SHEETS UNLESS NOTED WITH THE CDP NUMBER AT THE END OF THE NOTE THAT REFERENCE A SPECIFIC CDP SHEET NO., EXAMPLE : (1)

1. BUILDING TO BE REMOVED; CONCRETE BLOCK WALLS (12' HIGH) WITH CONCRETE FOOTER (3' DEEP), REMOVE ALL INCLUDING CONCRETE FOOTER.
2. EXISTING TREES AND STUMPS TO BE REMOVED.
3. 10' OF EXISTING FENCE AND CONCRETE CURB TO BE REMOVED: 12" DIAMETER CONCRETE FOOTER ON EACH FENCE POST SHALL BE REMOVED.
4. METAL VEHICLE SHED TO BE REMOVED: CONCRETE FLOOR SLAB AND 3' DEEP PERIMETER FOUNDATION WALL SHALL BE REMOVED. (3&4)
5. STORAGE (SHIPPING CONTAINERS) TO REMOVED BY APL.
6. SOIL BINS TO BE REMOVED: WOOD PLANK SIDES AND POSTS BURIED IN CONCRETE FOUNDATION 4' DEEP PER POST. (3&4)
7. TRAILER TO BE REMOVED BY APL. (4)
8. ROOF OVERHANG TO BE REMOVED.
9. WOOD DECK, STAIRS, HANDRAILS AND SUPPORT POSTS TO BE REMOVED. (4)
10. EXISTING SANITARY MANHOLE, STORM DRAIN, ELECTRICAL AND TELECOM DUCT BANKS TO BE REMOVED AND EXISTING PIPES AND DUCTS PLUGGED WITH CONCRETE.
11. EXISTING LIGHT POLE, CONCRETE FOUNDATION, CONDUIT AND CONDUCTORS TO BE REMOVED.
12. EXISTING WOOD RETAINING WALL TO BE REMOVED (3' HIGH). (4)
13. EXISTING ASPHALT TO BE REMOVED, 12" THICK, SAW CUT EDGE TO REMAIN AT LIMIT OF REMOVAL.
14. EXISTING CONCRETE PAVEMENT TO BE REMOVED (10" THICK, REINFORCED).
15. HAZARDOUS MATERIAL CABINETS AND CONCRETE SLAB TO BE REMOVED. (4)
16. ELECTRICAL CONCRETE UNDER TRANSFORMERS TO REMAIN. (4)
17. EXISTING CATCH BASIN TO BE REMOVED.
18. EXISTING STORM OUT FALL TO BE REMOVED.
19. EXISTING WATERLINE VALVES TO BE REMOVED.
20. EXISTING ELECTRIC AND TELECOM DUCKBANKS AND STRUCTURES DEMOLITION. SEE ELECTRICAL AND TELECOM DRAWINGS.
21. EXISTING CATCH BASIN TO REMAIN.
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23. LIMIT OF EXISTING PAVEMENT REMOVAL.
24. EXISTING WATERLINE TO REMAIN.
25. EXISTING PIPES TO BE REMOVED.
26. EXISTING SECURITY LIGHT TO BE REMOVED.
27. EXISTING SHIPPING CONTAINERS TO REMAIN. (3)
28. EXISTING CONCRETE RAMP TO BE REMOVED. (4)
29. EXISTING RETAINING WALL AND FENCE TO REMAIN, EXISTING TREES ALONG FENCE TO BE REMOVED.
30. LIMIT OF REMOVAL CAP WATER, AND CAP GAS LINES; PLUG STORM DRAINS, SANITARY LINES AND CONDUIT, IFA NEW STRUCTURE IS NOT INSTALLED AT THAT LOCATION.
31. LIMIT OF UTILITY ABANDONMENT, REMOVE SECTION OF UTILITY AND PLUG OR CAP AS PER KEYED NOTE.
32. EXISTING WOOD RETAINING WALL (3' HIGH) TO BE REMOVED. (4)
33. EXISTING MANHOLE TOP CONE SECTION AND FRAME/COVER TO BE REMOVED, NEW PRECAST CONCRETE SECTIONS ADDED AND CONE SECTION AND FRAME/COVER TO BE REINSTALLED TO MEET NEW GRADES (SEE CGP SHEETS FOR ELEVATIONS). (1)
34. EXISTING BUILDING #24 6" FOUNDATION DRAIN GROUND FOR BUILDING TO BE REMOVED. (3)
35. EXISTING WELL TO BE REMOVED, CONCRETE BLOCK STRUCTURE WITH 3' DEEP FOUNDATION. (1)
36. EXISTING TEST APPARATUS, STEEL POSTS CABLES AND CONCRETE FOUNDATION MIN 5' DEEP. (3)
37. EXISTING WELL-HOUSE AND HYDRANT TO BE REMOVED: ONE STORY CONCRETE BLOCK STRUCTURE WITH 3' CONCRETE FOUNDATION REMOVE ALL MECHANICAL AND ELECTRICAL EQUIPMENT. (3)

- EXISTING UTILITY TO BE REMOVED
- EXISTING UTILITY TO BE CAPPED
- EXISTING UTILITY TO BE CAPPED & REMOVED
- EXISTING UTILITY TO BE CAPPED & ABANDONED

APPROVED	DEPARTMENT OF PLANNING AND ZONING	
	CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
	CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6/3/02
	DIRECTOR	DATE 6/11/02

30 0 30 60 90 120

SCALE 1"=30'

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TRINBROOK PARKWAY, SUITE 220, GAITHERSBURG MD 20878
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AMT FILE # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
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ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

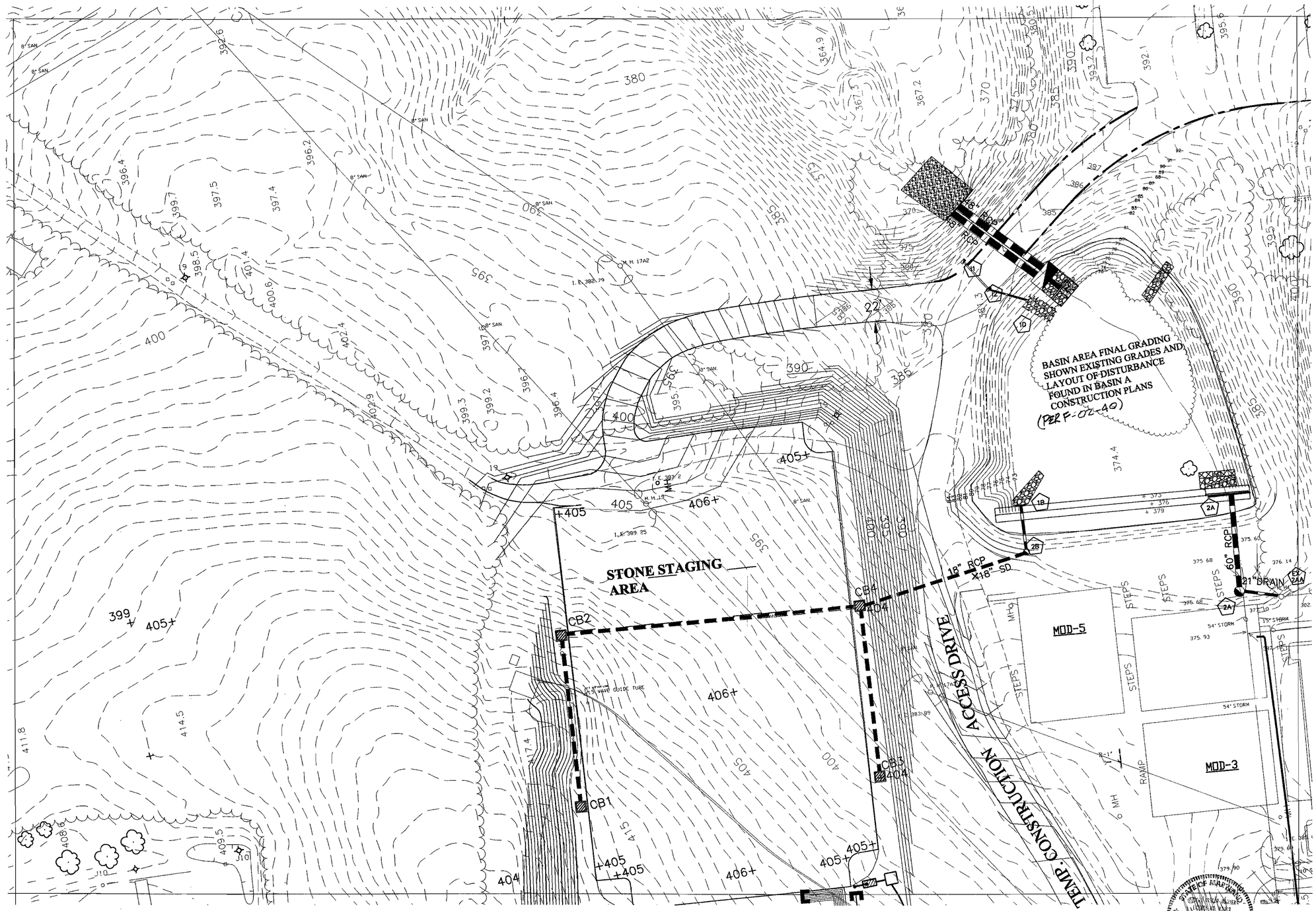
DEMOLITION PLAN J
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO. CDP-4

COUNTY SHEET NO. C-13

SDP-02-88



30 0 30 60 90

SCALE
1"=30'

NOTE: GRADES WILL BE THE SAME AFTER INSTALLATION OF UTILITIES UNLESS OTHERWISE NOTED.

APPROVED: DEPARTMENT OF PLANNING AND ZONING		
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE	5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT RD	DATE	6/3/02
DIRECTOR	DATE	6/11/02

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
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AMT FILE # 98-153

Einhorn Yaffee Prescott

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WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.

SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:
1. GRADING & NOTES

DATE:
03/15/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
ROUGH GRADING
PLAN D
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO.
CGP-1

COUNTY SHEET NO.
C-14

SDP-02-88

NOTE: GRADES WILL BE THE SAME AFTER INSTALLATION OF UTILITIES UNLESS OTHERWISE NOTED

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6/3/02
DIRECTOR	DATE 6/11/02

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
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ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:
1. CROSS SECTIONS DELETED FROM THIS DRAWING
2. CORRECTION TO BUILDING NO. 46

DATE: 03/26/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
ROUGH GRADING
PLAN I

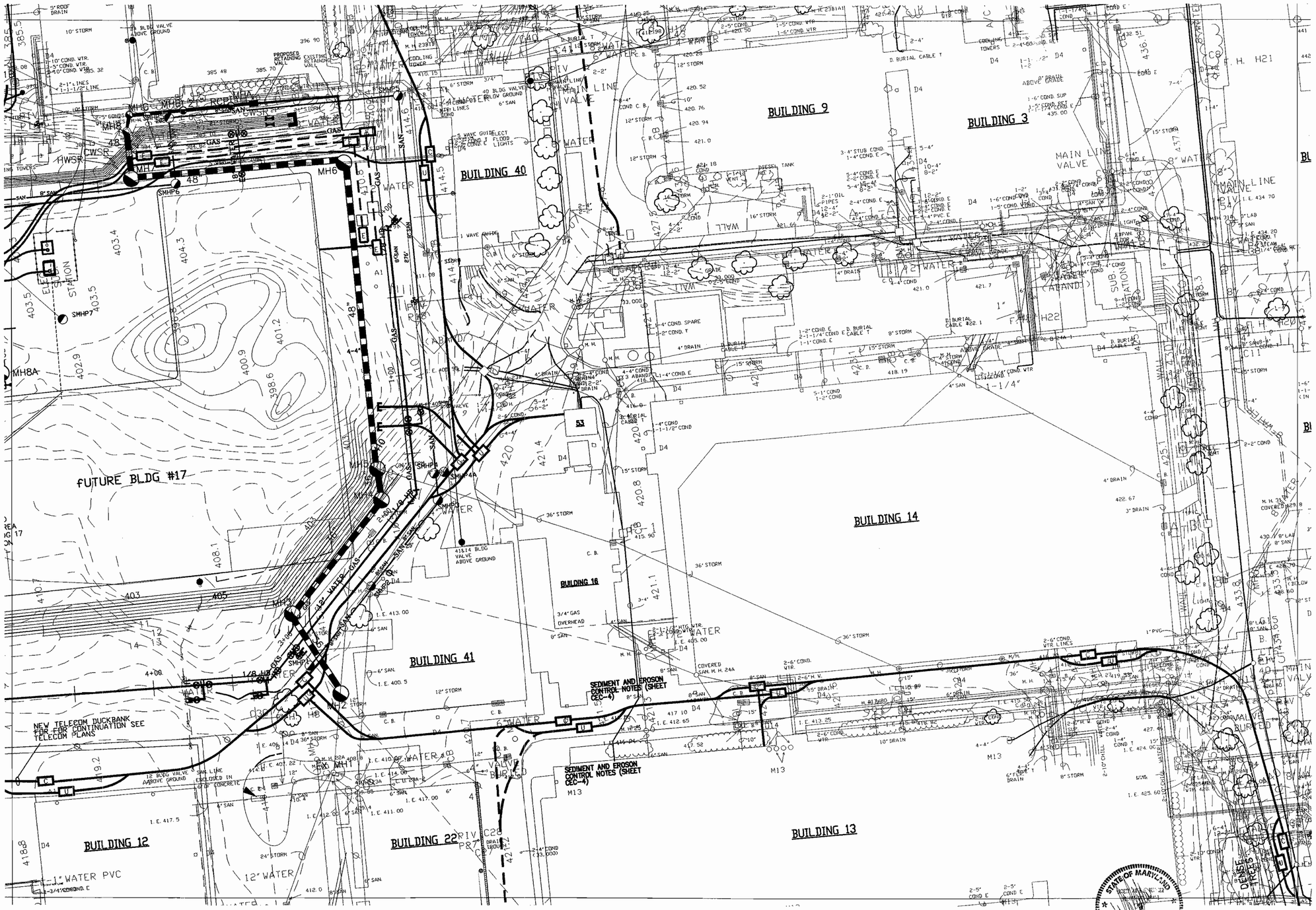
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO. CGP-2

COUNTY SHEET NO. C-15

SDP-02-188



30 0 30 60 90

SCALE 1"=30'

NOTE: GRADES WILL BE THE SAME AFTER INSTALLATION OF UTILITIES UNLESS OTHERWISE NOTED.

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6/3/02
DIRECTOR	DATE 6/11/02

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER

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AMT FILE # 98-153

Einhorn Yaffee Prescott

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ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

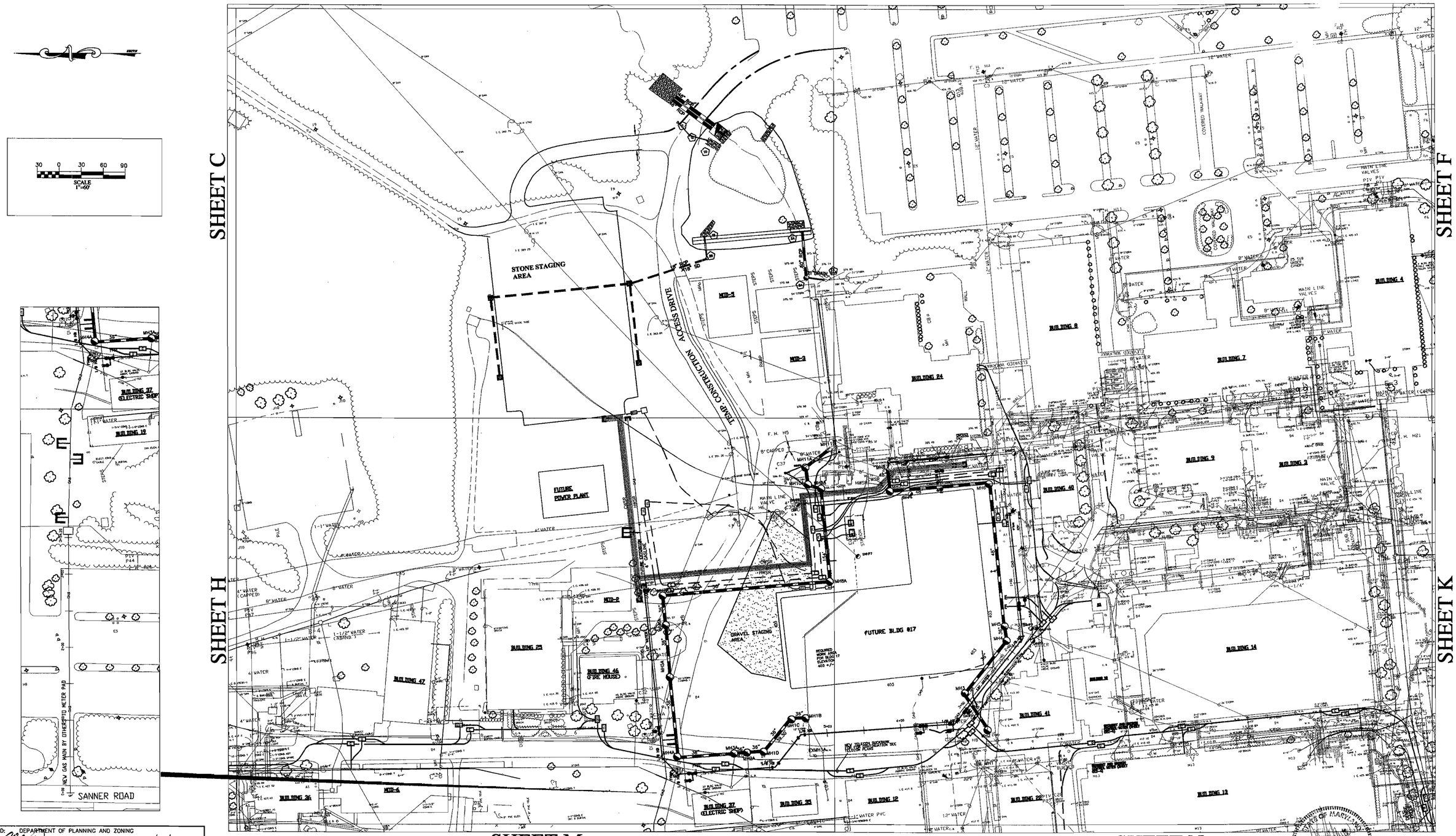
SITE GRADING AND UTILITIES

REVISIONS:
1. CROSS SECTIONS DELETED FROM THIS DRAWING — DATE: 03/26/02
2. CORRECTION TO BUILDING NO. 12
3. CORRECTION TO MH NOs
4. NOTE ADDED — 04/12/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
ROUGH GRADING PLAN J
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CGP-3
COUNTY SHEET NO. C-16

SDP-02-88



APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6/3/02
DIRECTOR	DATE 6/11/02

NOTE:
1. SECTIONS: A-A, B-B, C-C, D-D AND E-E SHOWN ON SHEET # CU-2 (C-18)

A. MORTON THOMAS AND ASSOCIATES, INC.
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TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:
1. NOTES

DATE:
03/15/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1

UTILITIES COMPOSITE LAYOUT

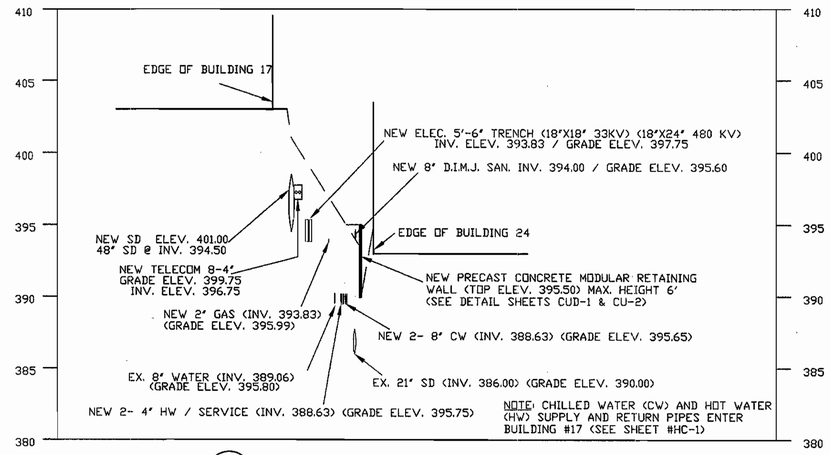
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

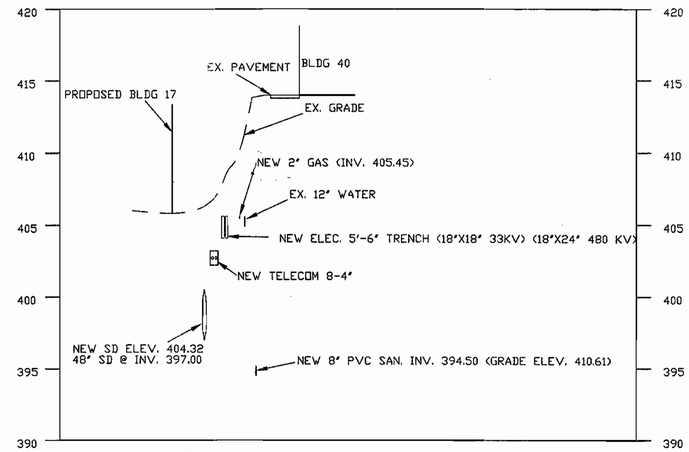
APL SHEET NO.
CU-1

COUNTY SHEET NO.
C-17

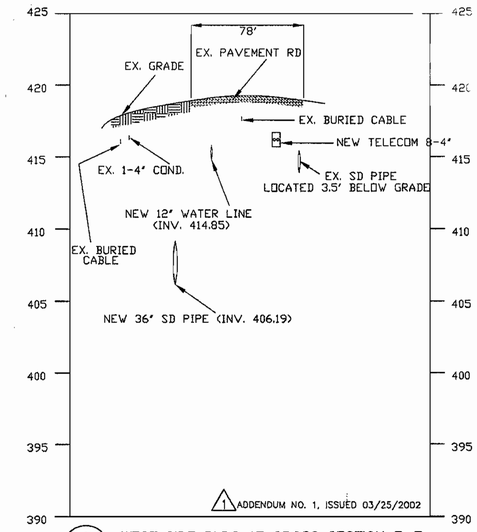
SDP-02-88



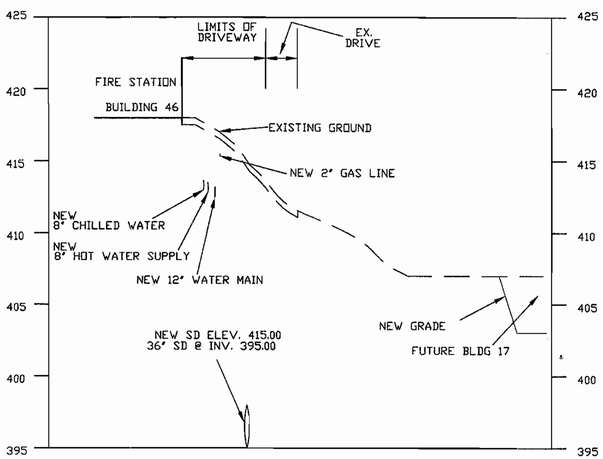
1 EAST SIDE BLDG 17 CROSS SECTION A-A
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



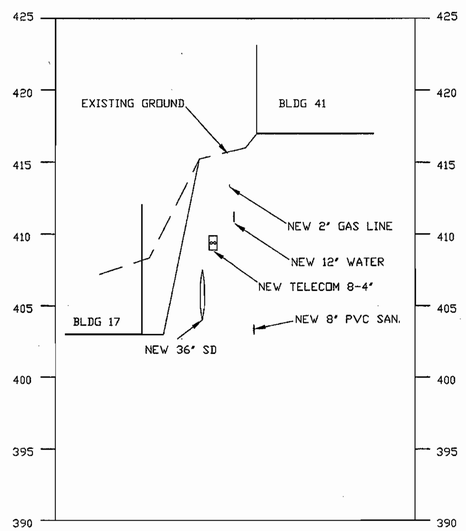
2 SOUTHEAST SIDE BLDG 17 CROSS SECTION C-C
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



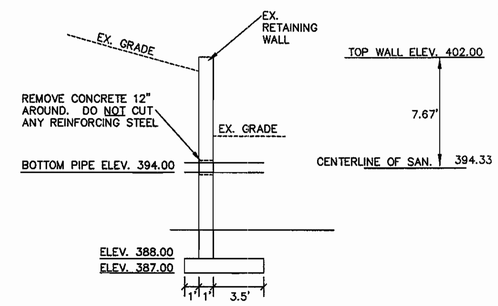
3 WEST SIDE BLDG 17 CROSS SECTION E-E
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



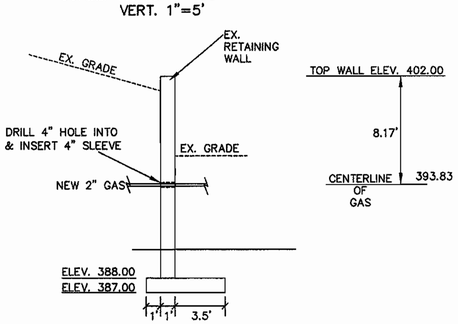
4 NORTH SIDE BLDG 17 CROSS SECTION B-B
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



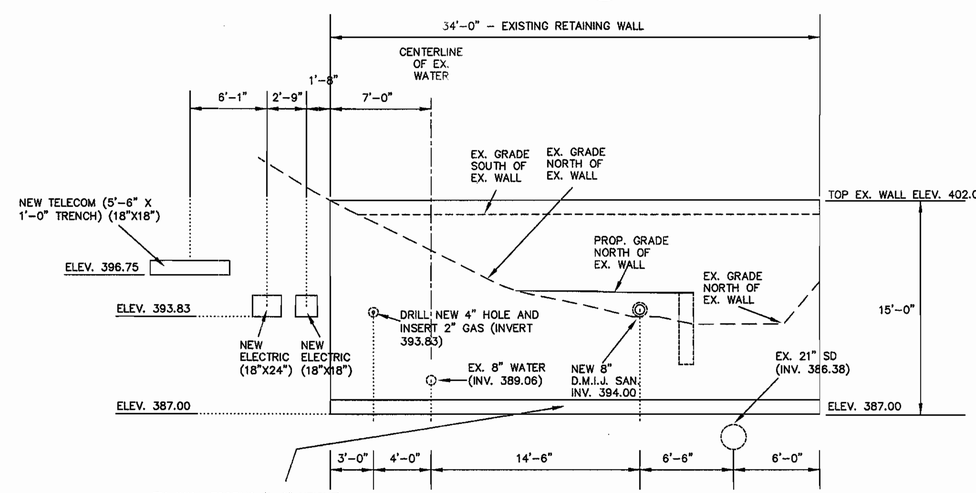
5 SOUTHWEST SIDE BLDG 17 CROSS SECTION D-D
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



7 RETAINING WALL CROSS SECTION OF PROP. 8" SAN.
SCALE: 1"=5'



8 RETAINING WALL CROSS SECTION OF NEW 2" GAS
SCALE: 1"=5'



9 EX. RETAINING WALL PENETRATION DETAIL
SCALE: 1"=5'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6/3/02
DIRECTOR	DATE 6/11/02

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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AMT FILE # 96-

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
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ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: P. FRIAS
CHK: S. ITANI
DATE: 04/12/02

SANNER ROAD — JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

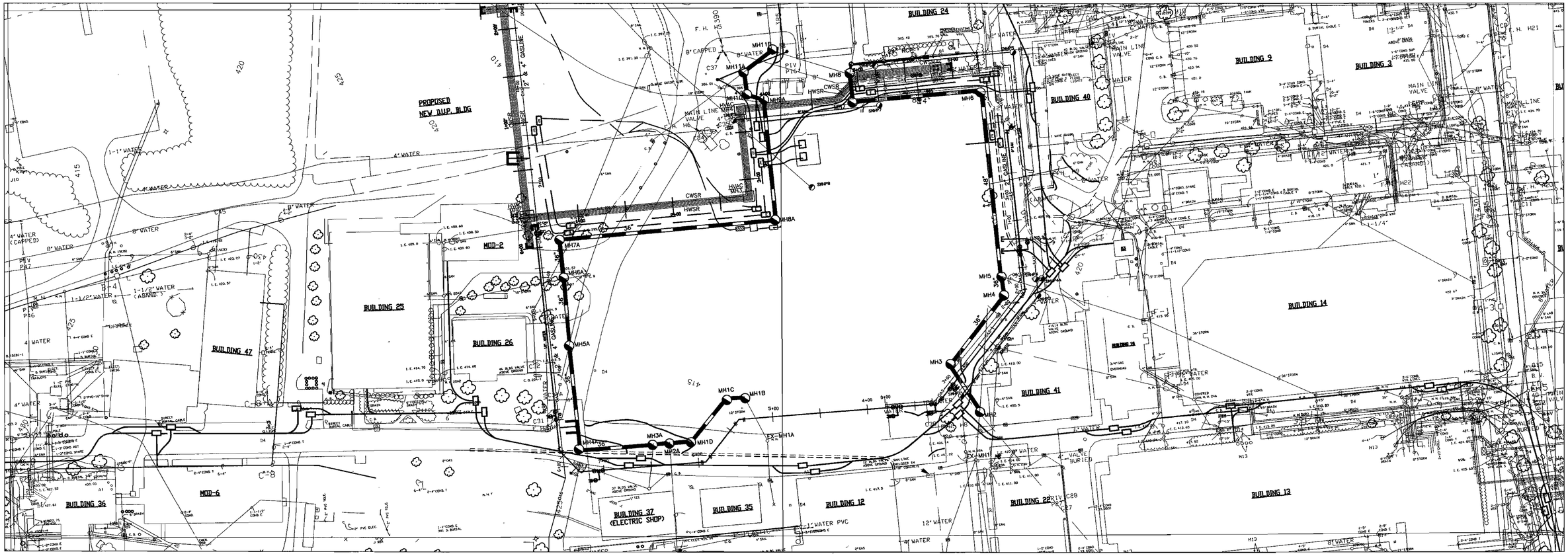
REVISIONS: DATE
1. WEST SIDE BLDG 17 CROSS SECTION; WEST SIDE BLDG 17 CROSS SECTION; CROSS SECTIONS & RETAINING WALL PENETRATION DETAIL — 03/27/02
1 ADDENDUM NO. 1, ISSUED 03/25/2002
2. CROSS SECTION C-C REVISION - ADDED 2" GAS LINE; REVISED LABEL TO WATER LINE — 04/09/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
PARCEL 1
UTILITY COMPOSITE SECTIONS

TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CU-2
COUNTY SHEET NO. C-18

SDP-02-88



1 WATER LAYOUT PLAN (I/J)

SCALE: HORIZ. 1"=50'

NORTH

25 0 25 50 75 100

SCALE 1"=50'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE 5/31/02

CHIEF, DIVISION OF LAND DEVELOPMENT HB DATE 6/3/02

DIRECTOR DATE 6/11/02

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 881-0014
AMT FILE # 95

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: JELLA KASPA

DRN: P. FRIAS

CHK: B. WARNER

DATE: 04/12/2002

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD

JOHNS HOPKINS RD.

SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISION: DATE:

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
PARCEL 1
WATER MAIN LAYOUT PLAN (I/J)

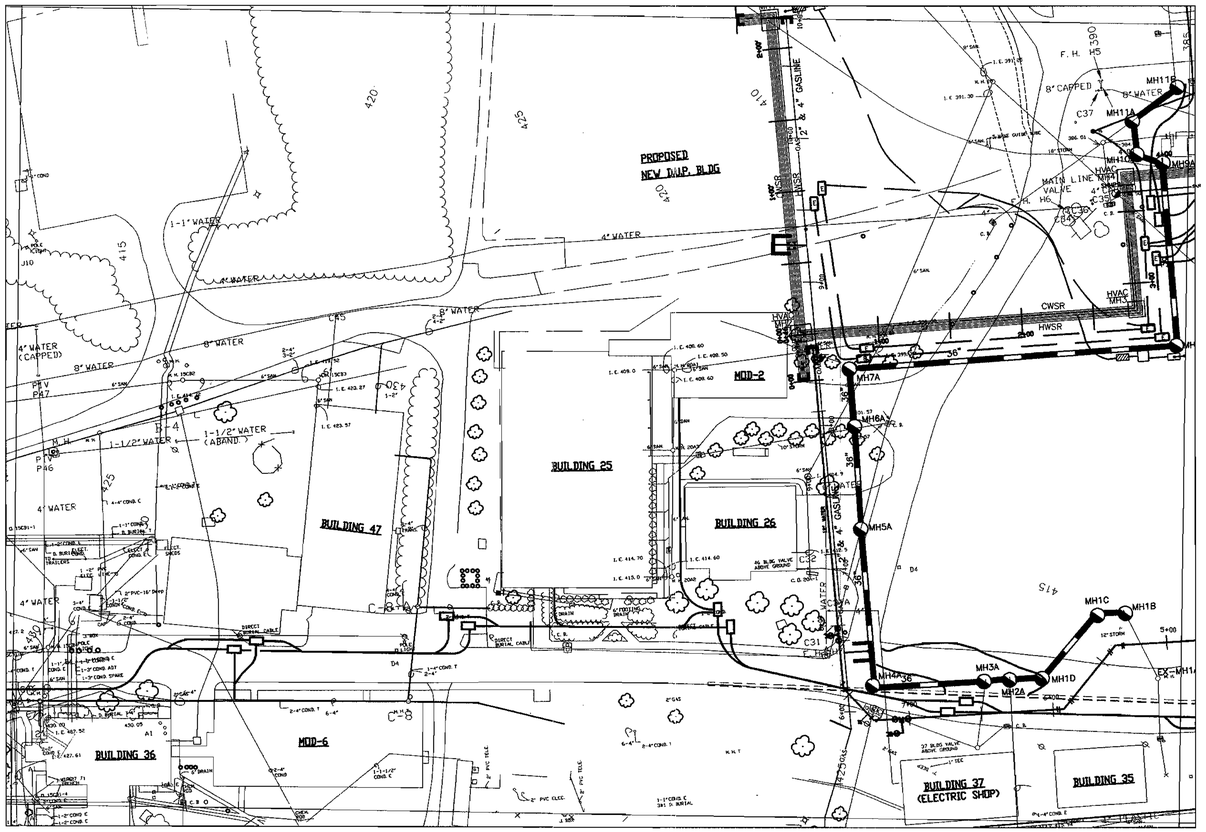
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

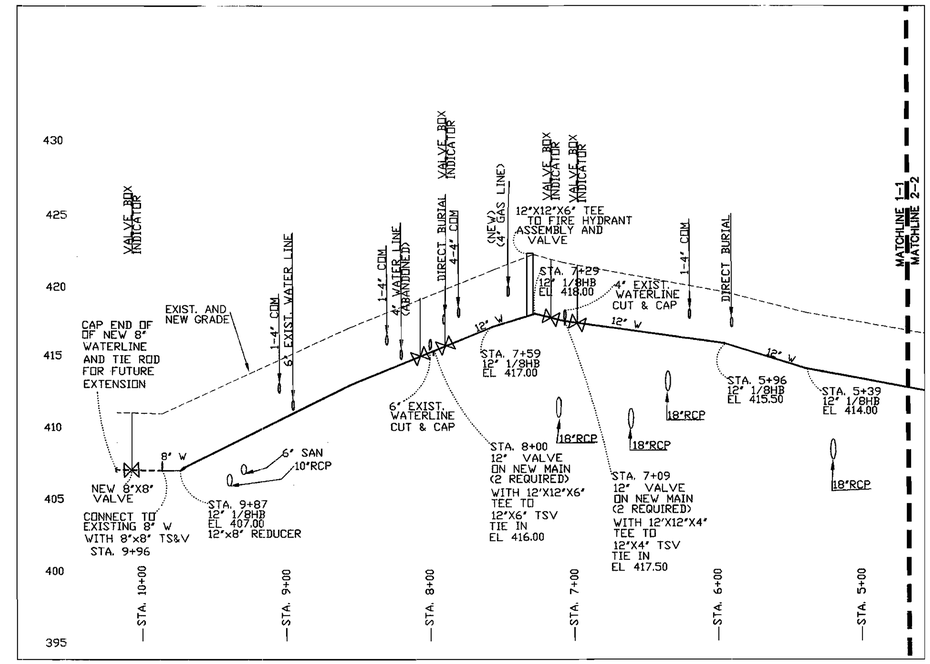
APL SHEET NO. CW-1

COUNTY SHEET NO. C-19

SDP-02-88



1 WATER MAIN PLAN (I)
SCALE: HORIZ. 1"=50'



2 WATER MAIN PROFILE FROM SATION 3+72 TO 9+96
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

25 0 25 50 75 100
SCALE 1"=50'

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT HB — DATE 6/3/02
DIRECTOR — DATE 6/11/02

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 # 98

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: JELLA KASPA
DRN: P. FRIAS
CHK: B. WARNER
DATE: 04/12/2002

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

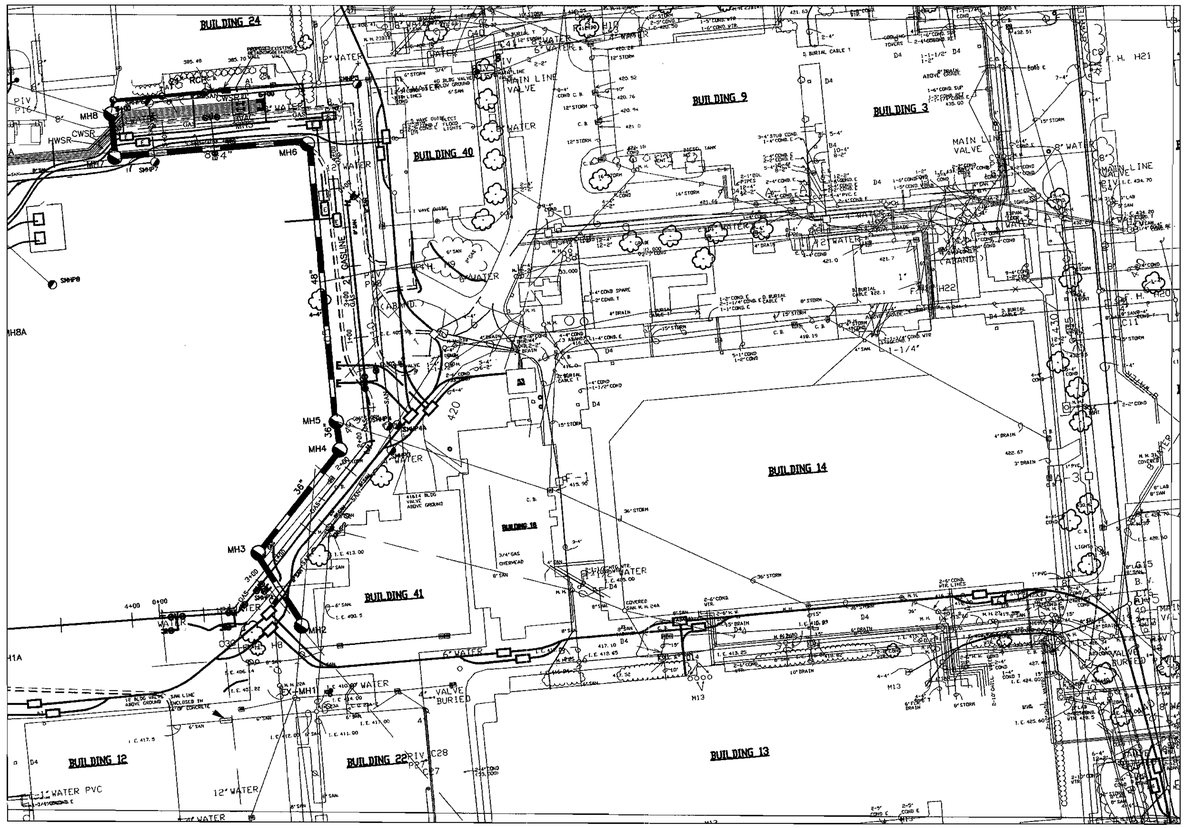
SITE GRADING AND UTILITIES

REVISION: DATE:

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
WATER MAIN PLAN/PROFILE (I)
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

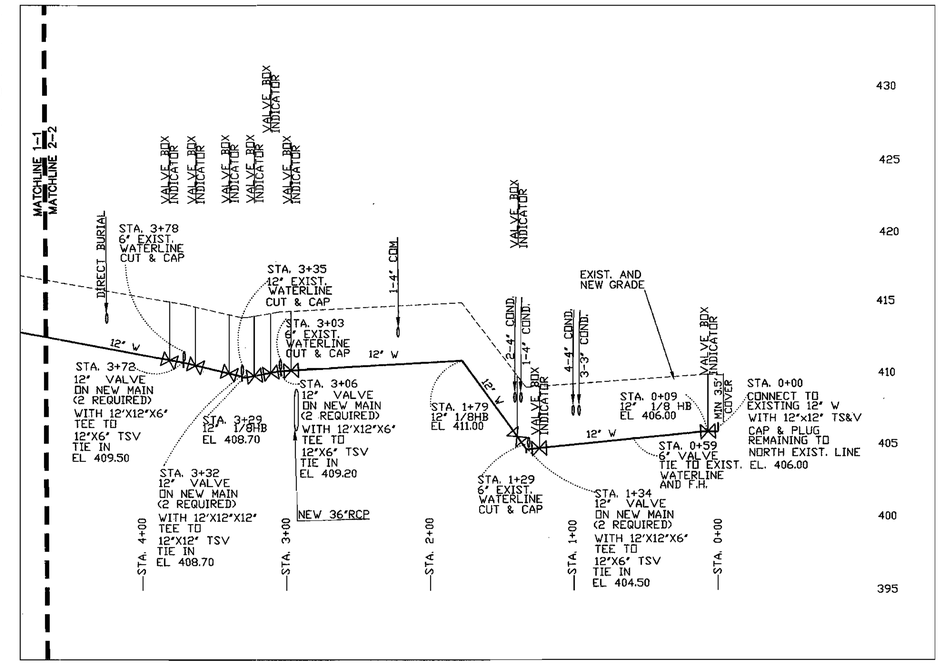
SCALE AS SHOWN
APL SHEET NO. CW-2
COUNTY SHEET NO. C-20

SDB-02-88



1 WATER MAIN PLAN (J)
SCALE: HORIZ. 1"=50'

NORTH



2 WATER MAIN PROFILE FROM SATION 0+00 TO 3+72
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

25 0 25 50 75 100
SCALE 1"=50'

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02
DIRECTOR — DATE 6/4/02

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY SUITE [illegible] ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 9[illegible]

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: JELLA KASPA
DRN: P. FRIAS
CHK: B. WARNER
DATE: 04/12/2002

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

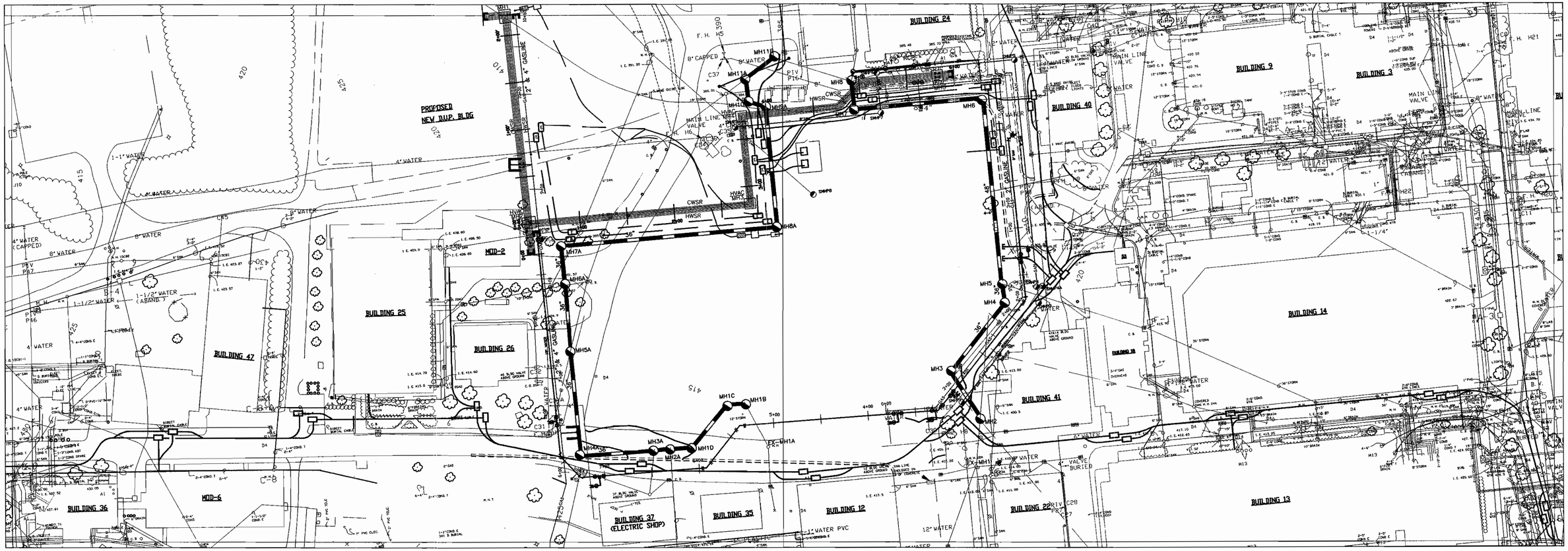
REVISION: 1. ADD SD CROSSING
DATE: 03/25/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

WATER MAIN PLAN/PROFILE (J)
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CW-3
COUNTY SHEET NO. C-21

SDP-02-88



1 SANITARY LAYOUT PLAN (I/J)
SCALE: HORIZ. 1"=50'

NORTH

25 0 25 50 75 100
SCALE
1"=50'

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT HO — DATE 6/3/02
DIRECTOR — DATE 6/11/02

STATE OF MARYLAND — 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 # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: J. KASPA
DRN: P. FRIAS
CHK: B. WARNER
DATE: 04/12/2002

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

JOHNS HOPKINS RD.
SANNER ROAD
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

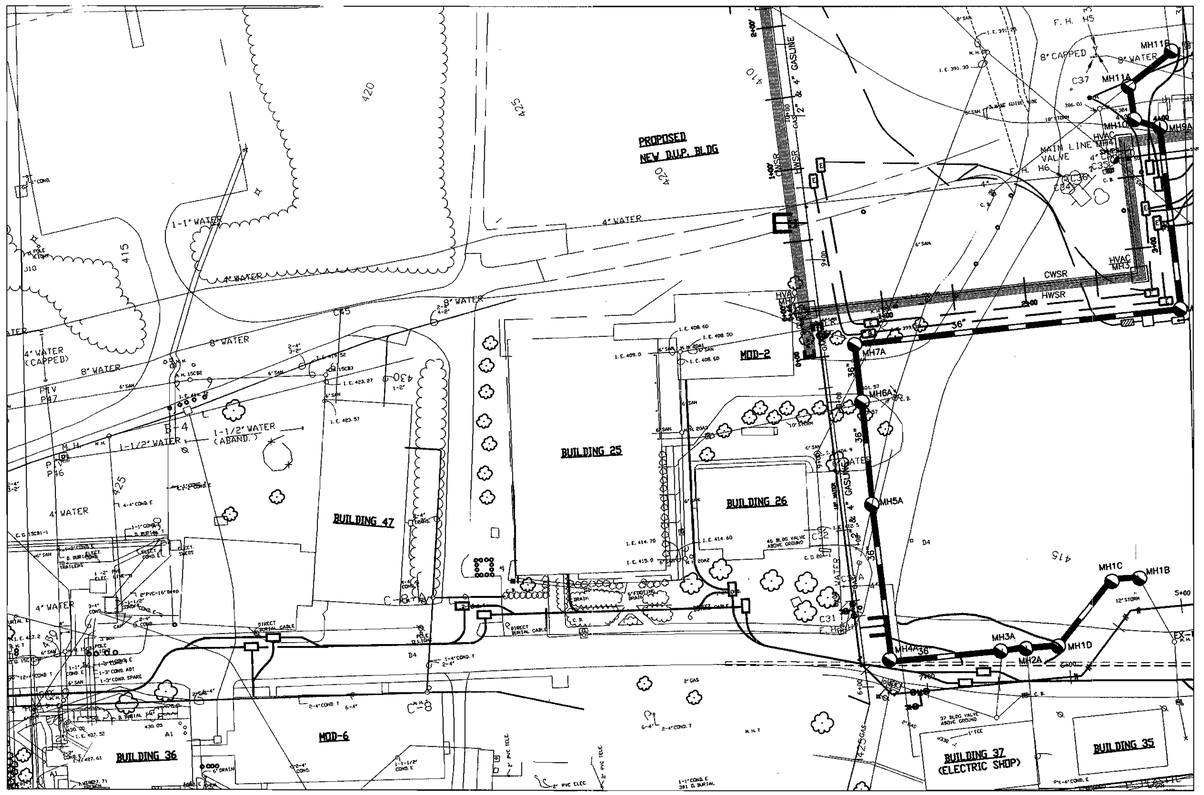
REVISION: DATE:

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

SANITARY LAYOUT PLAN (I/J)
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

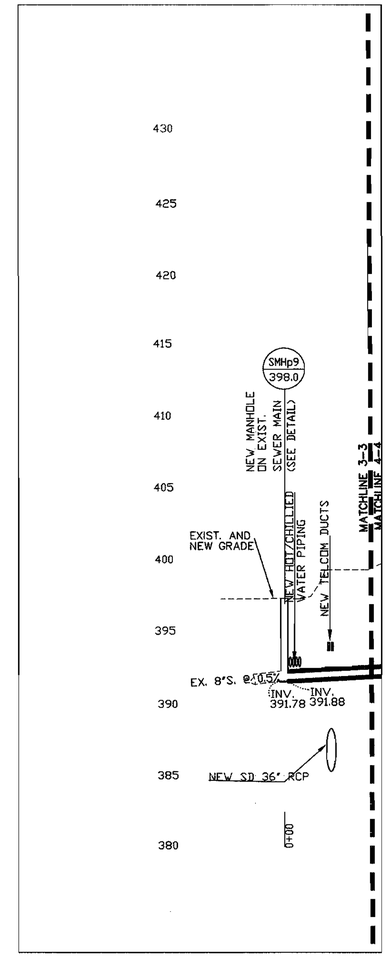
SCALE AS SHOWN
APL SHEET NO. CS-1
COUNTY SHEET NO. C-22

SDP-02-188



1 SANITARY PLAN (I)
SCALE: HORIZ. 1"=50'

NORTH



2 SANITARY PROFILE
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT HD	DATE 6/3/02
DIRECTOR	DATE 6/11/02

25 0 25 50 75 100
SCALE
1"=50'

STATE OF MARYLAND

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 # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: JELLA KASPA
DRN: P. FRIAS
CHK: B. WARNER
DATE: 04/12/2002

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

JOHNS HOPKINS RD.
SANNER ROAD
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISION:
1. ADD PIPE SLOPE, INV.

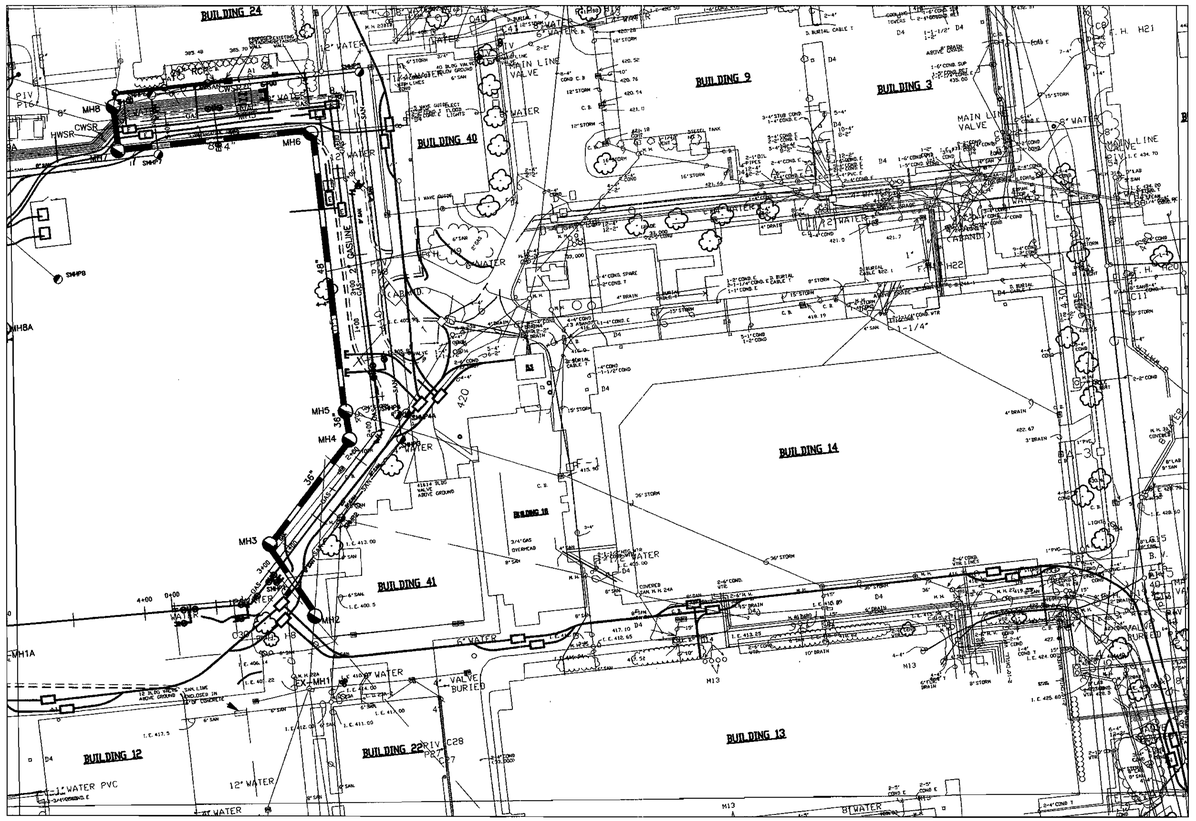
DATE:
03/25/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

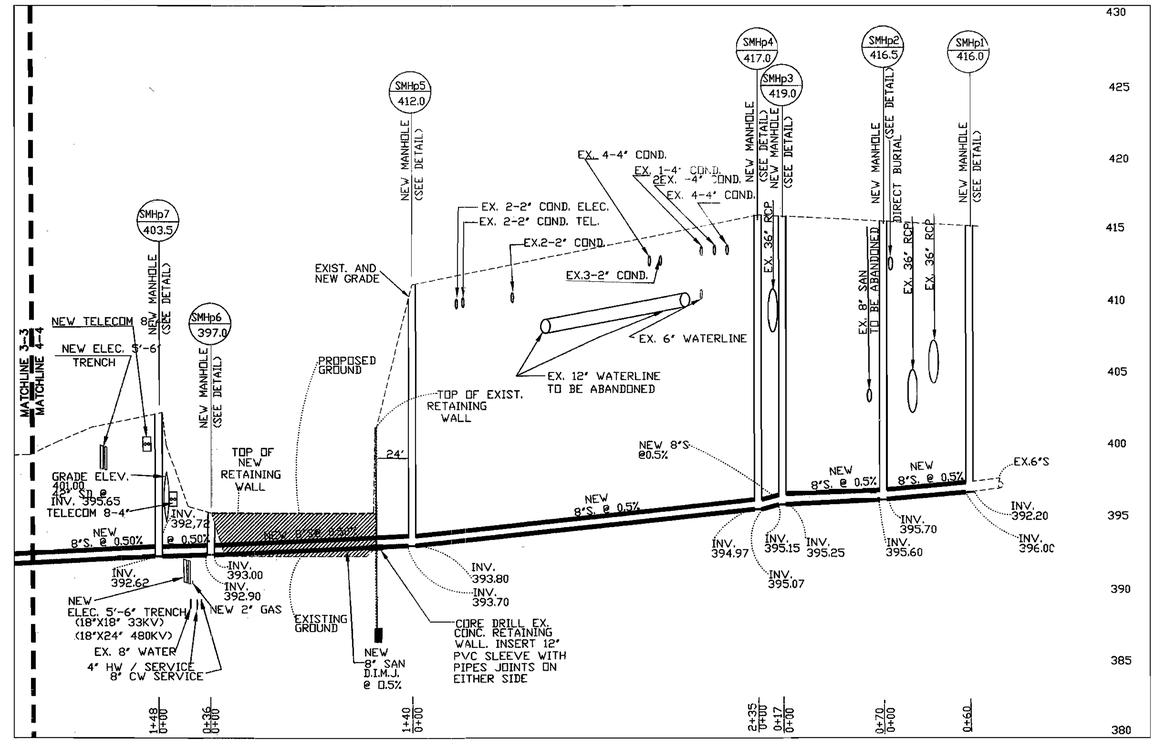
SANITARY PLAN/PROFILE (I)
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CS-2
COUNTY SHEET NO. C-23

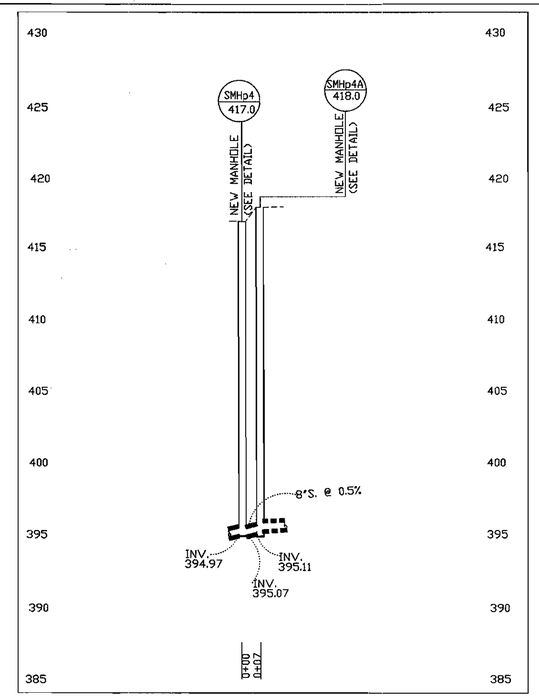
SDP-02-88



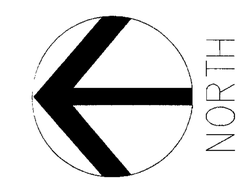
1 SANITARY PLAN (J)
SCALE: HORIZ. 1"=50'

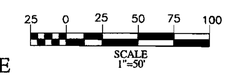


2 SANITARY PROFILE
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



3 SANITARY PROFILE
SCALE: HORIZ. 1"=50'
VERT. 1"=5'





3 ADDENDUM NO. 1 ISSUED 03/25/2002

3 ADDENDUM NO. 3 ISSUED 04/03/2002

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT NG	DATE 6/3/02
DIRECTOR	DATE 6/11/02

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY ROCKVILLE MD 20852
TEL (301) 881-2545 (301) 881-0814
AMT

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: JELLA KASPA
DRN: P. FRIAS
CHK: B. WARNER
DATE: 04/12/2002

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISION:
1. ADD SD, CROSSING, SLOPE, INV.

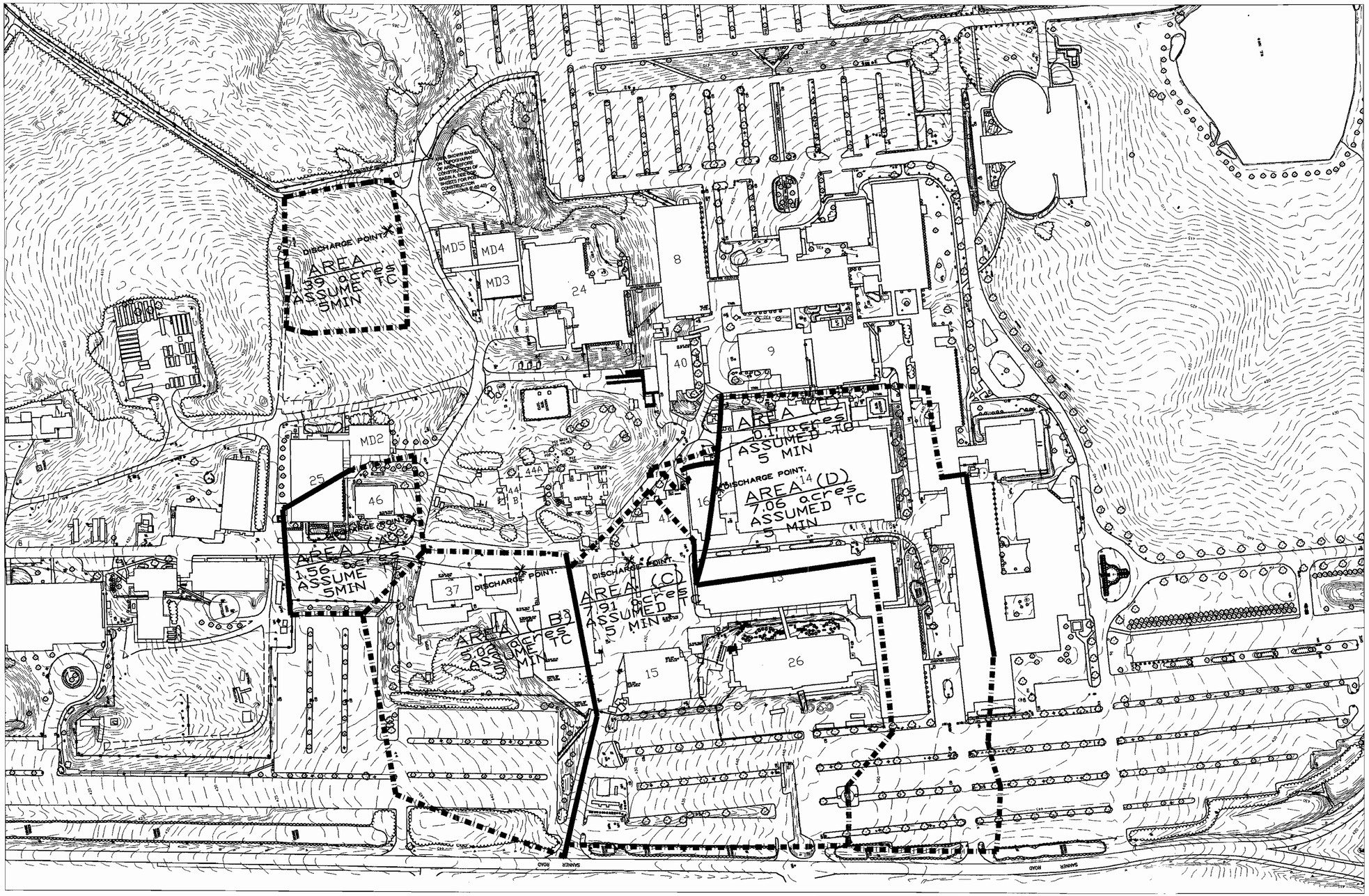
DATE: 03/25/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

SANITARY PLAN/PROFILE (J)
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CS-3
COUNTY SHEET NO. C-24

SDP-02-88



APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE	5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT HO	DATE	6/3/02
DIRECTOR	DATE	6/11/02

100 0 100 200

SCALE
1"=100'

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 # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:	DATE:
1. SCALE	03/15/02
2. EX. CONTOUR LINES-DASHED	04/12/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1

DRAINAGE AREA PLAN
D/E/F/I/J/K/M/N/O

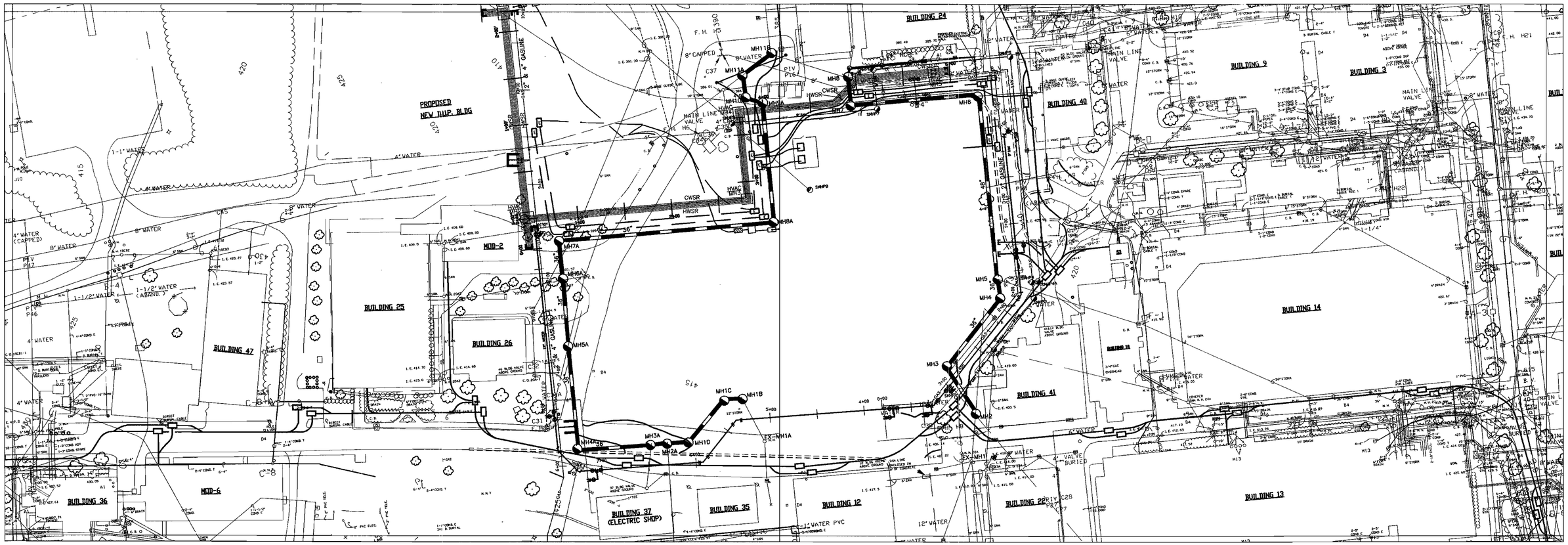
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO.
CD-1

COUNTY SHEET NO.
C-25

SDP-02-88



1 STORM DRAINAGE LAYOUT PLAN (I/J)

SCALE: HORIZ. 1"=50'

NORTH

25 0 25 50 75 100

SCALE 1"=50'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 5/31/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02

DIRECTOR — DATE 6/11/02

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 # 98-

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: J. KASPA
DRN: P. FRIAS
CHK: B. WARNER
DATE: 04/12/2002

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD

JOHNS HOPKINS RD.

SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISION: DATE:

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
PARCEL 1

STORM DRAINAGE LAYOUT PLAN (I/J)

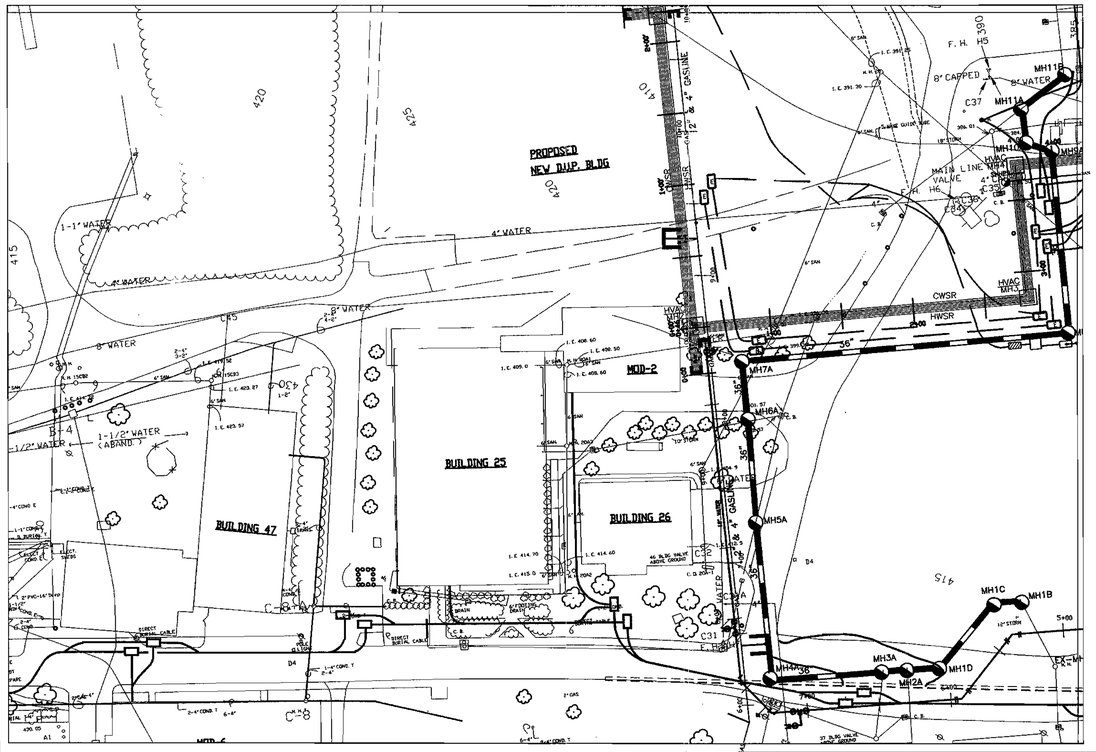
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO. CD-2

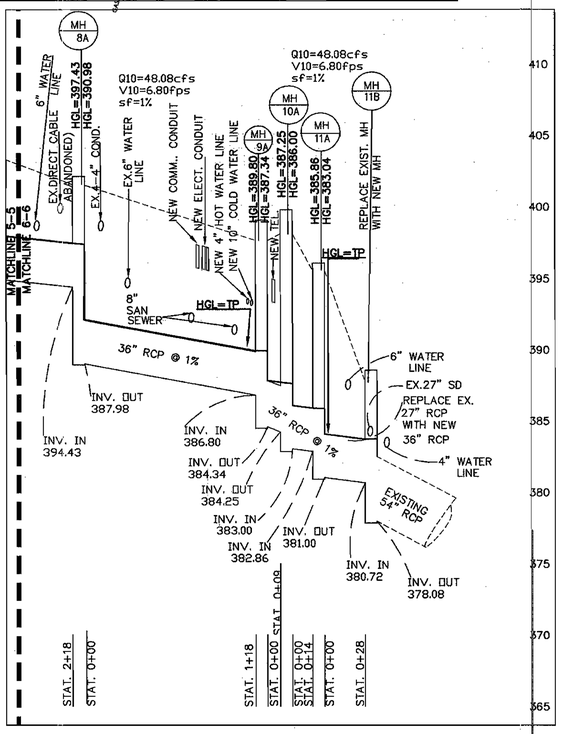
COUNTY SHEET NO. C-26

SDP-02-88



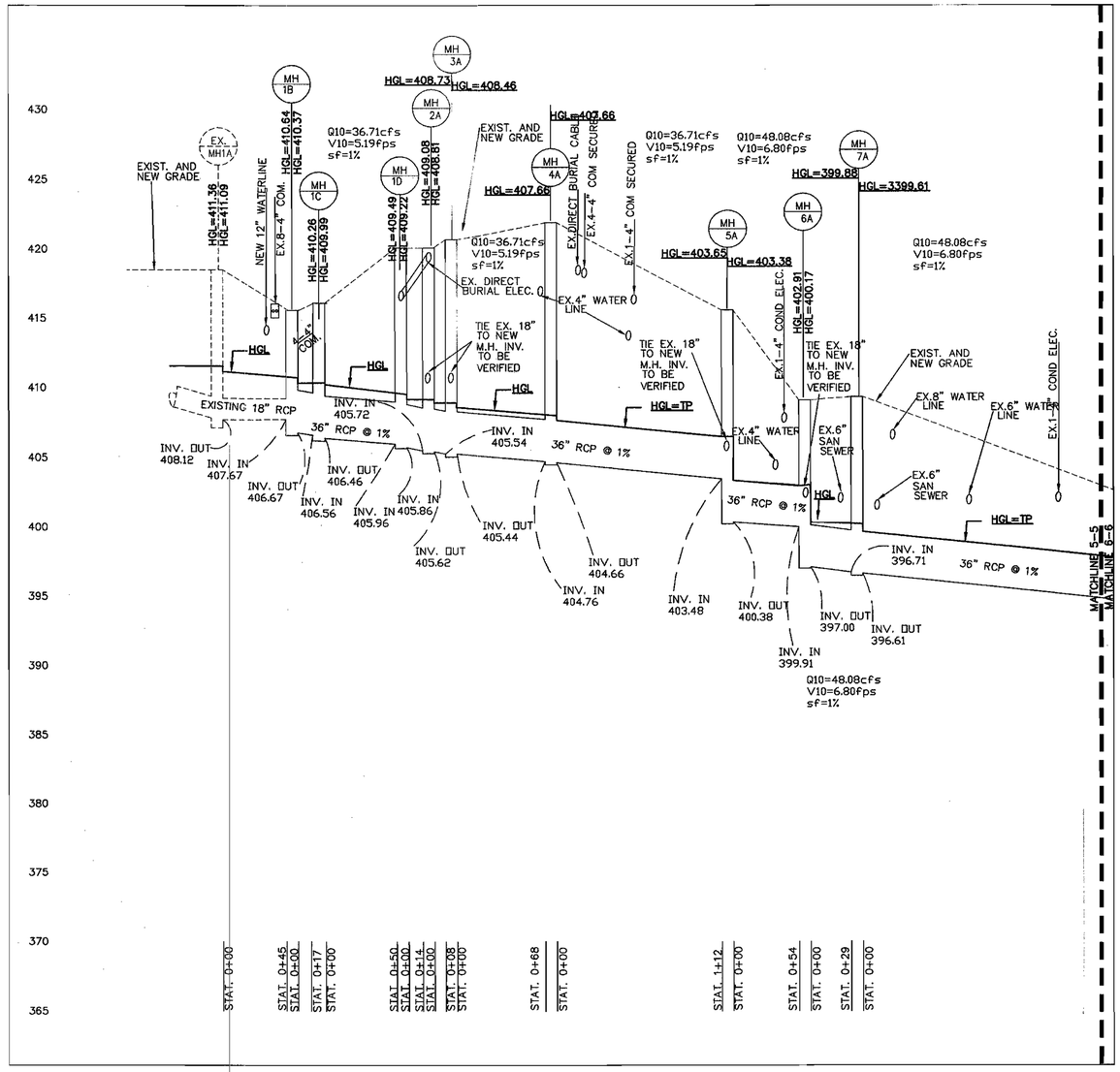
1 PLAN OF BLOCK I

SCALE: HORIZ. 1"=50'



2 STORM DRAIN PROFILE

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



3 STORM DRAIN PROFILE

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

NORTH

25 0 25 50 75 100
SCALE 1"=50'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/31/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02

DIRECTOR — DATE 6/11/02

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 320 ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 96-52

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: JELLA KASPA
DRN: P. FRIAS
CHK: B. WARNER
DATE: 04/12/2002

A B C D E F G H I J K L M N O
JOHNS HOPKINS RD.
SANNER ROAD
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISION: 1. ADD SD, WATER CROSSING, NEW TEL.
DATE: 03/25/02

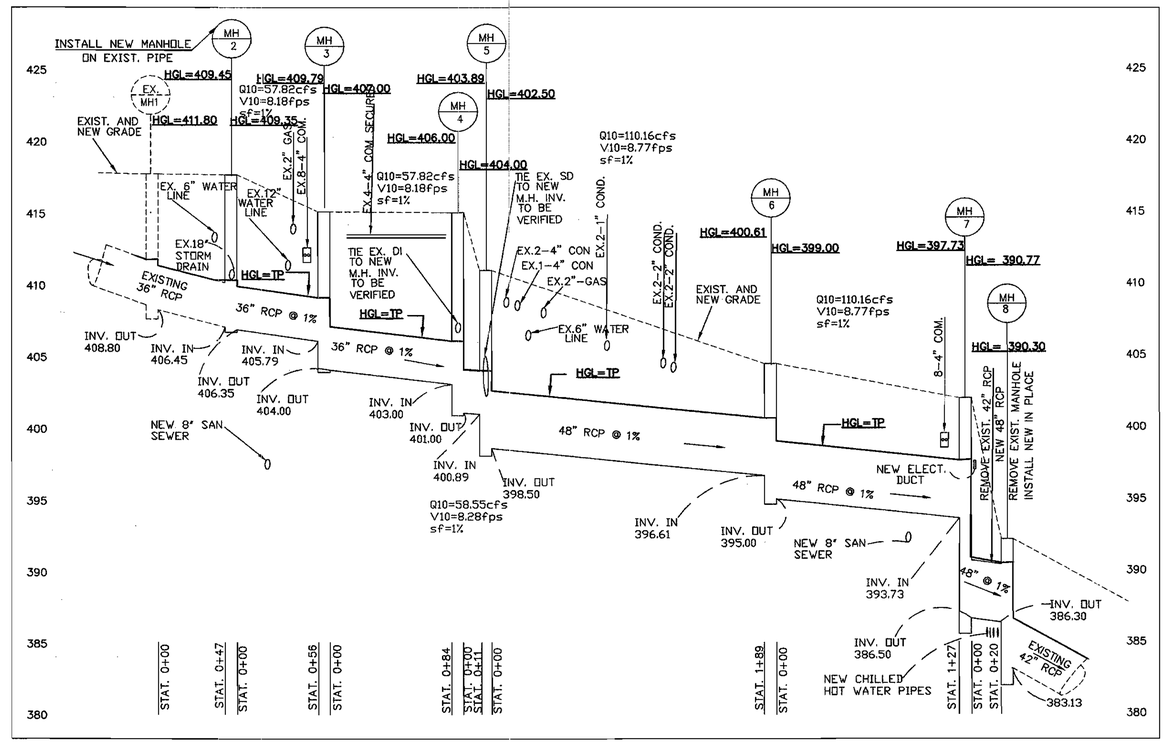
APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
PARCEL 1
STORM PROFILES

TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

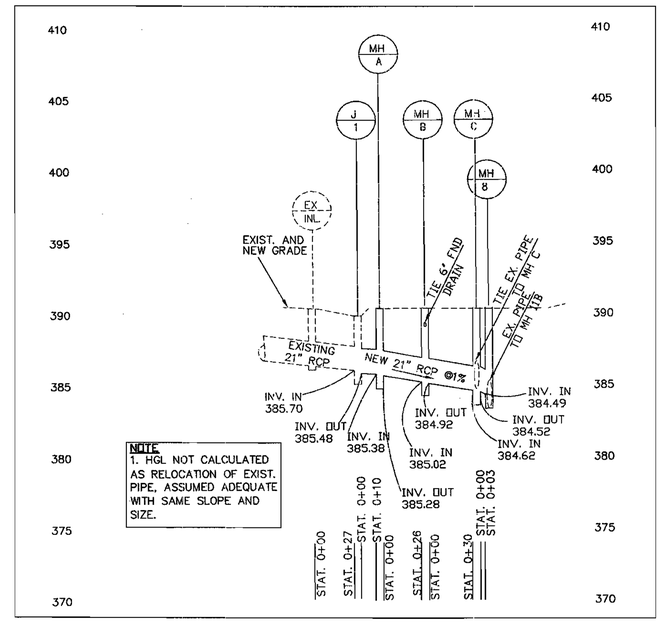
SCALE AS SHOWN
APL SHEET NO. CD-3
COUNTY SHEET NO. C-27

SDP-02-98

1 STORM DRAINAGE PLAN (J)
SCALE: HORIZ. 1"=50'



2 STORM DRAINAGE PROFILE
SCALE: HORIZ. 1"=50'
VERT. 1"=5'



3 STORM DRAINAGE PROFILE
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

NORTH

25 0 25 50 75 100
SCALE 1"=50'

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02
DIRECTOR — DATE 6/11/02

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 # 98-15C

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: JELLA KASPA
DRN: P. FRIAS
CHK: B. WARNER
DATE: 04/12/2002

SHEET ORGANIZATION KEY PLAN
A B C D E F G H I J K L M N O
JOHNS HOPKINS RD.
SANNER ROAD

SITE GRADING AND UTILITIES

REVISION: 1. ADD SD, CROSSING, ELEC DUCT, SS, CW/HW
DATE: 03/25/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

STORM DRAINAGE PROFILES (J)
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CD-4
COUNTY SHEET NO. C-28

SDP-02-88

NOTES:
ALL RCP PIPES SHALL HAVE RUBBER GASKETS

STORM DRAIN COMPUTATION SHEET

COMPUTED BY: JELLA K. DATE: 10/01 PROJECT: APL-JHU
CHECKED BY: RAW DATE: 10/01 STORM FREQUENCY: 10-YEAR

MANNING'S "N" (RCP) = 0.013

PIPE STRUCTURE		DRAINAGE AREA		RUN-OFF COEFF.	"AREA"X"C"		TIME OF CONC.	RAINFALL INTENSITY	RUNOFF "Q"	PIPE DIAMETER	PIPE LENGTH	MIN. PIPE	ACTUAL PIPE	VELOCITY	TIME IN PIPE	PIPE "Q" CAPAC.
FROM	TO	INC (AC)	TOTAL (AC)	"C"	INC (AC)	TOTAL (AC)	SYSTEM (MIN)	"I" (IN/HR)	(CFS)	(IN)	(ft)	SLOPE (f/f)	SLOPE (f/f)	(FPS)	(MIN)	(CFS)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
EX MH1	MH2	7.91	7.91	0.86	6.80	6.80	5.00	–	–	36	47	–	–	–	–	61.93
MH12	MH3	7.91	7.91	0.86	6.80	6.80	5.00	8.50	57.82	36	56	0.000	0.030	8.76	0.11	61.93
MH13	MH4	0.00	7.91	0.86	0.00	6.80	5.00	8.50	57.82	36	84	0.000	0.010	8.76	0.16	61.93
MH14	MH5	0.10	8.01	0.86	0.09	6.89	5.00	8.50	58.55	36	11	0.009	0.010	8.76	0.02	61.93
MH5	MH6	7.06	15.07	0.86	6.07	12.98	5.00	8.50	110.16	48	189	0.007	0.010	10.62	0.30	133.40
MH6	MH7	0.00	15.07	0.86	0.00	12.98	5.00	8.50	110.16	48	127	0.007	0.010	10.62	0.20	133.40
MH7	MH8	0.00	15.07	0.86	0.00	12.98	5.00	8.50	110.16	48	20	0.007	0.010	10.62	0.03	133.40

NOTE: MANHOLES "A", "B" AND "C" RELOCATION OF EXISTING WITH SAME DRAINAGE AREA; ASSUMED ADEQUATE.

STORM DRAIN PIPE SCHEDULE

FROM	TO	SIZE	LENGTH	SLOPE	FLOW	10-YRS	VELOCITY	PIPE
		(INCH)	(FEET)	%	CAP.(cfs)	Q (cfs)	(fps)	TYPE
EX.MH1	MH2	36	47	–	61.93	–	8.76	RCP
MH2	MH3	36	56	1.0	61.93	57.82	8.76	RCP
MH3	MH4	36	84	1.0	61.93	57.82	8.76	RCP
MH4	MH5	36	11	1.0	61.93	58.55	8.76	RCP
MH5	MH6	48	189	1.0	133.40	110.16	10.62	RCP
MH6	MH7	48	127	1.0	133.40	110.16	10.62	RCP
MH7	MH8	48	20	1.0	133.40	110.16	10.62	RCP
RELOCATION								
EX.J	MHA	21	5	1.0	133.40	110.16	10.62	–
MHA	MHB	21	21	1.0	133.40	110.16	10.62	RCP
MHB	MHC	21	25	1.0	133.40	110.16	10.62	RCP
MHC	MH8	21	20	1.0	133.40	110.16	10.62	RCP

STORM DRAIN STRUCTURE SCHEDULE

STRUC. No	TYPE	STANDARD No.	TOP ELEVATION	SIZE(ft)	INV. IN	INV. OUT	COMMENT
EX.MH1	MH	–	416.88	–	–	408.12	EXISTING MANHOLE
MH1B	MH	MD-384.07	418.50	6.00	405.87	405.77	EXISTING MANHOLE
MH1C	MH	MD-384.07	415.00	6.00	405.44	405.34	72" DIAMETER PRECAST MANHOLE
MH1D	MH	MD-384.07	417.00	6.00	403.84	403.74	72" DIAMETER PRECAST MANHOLE
MH2A	MH	MD-384.07	421.50	6.00	403.32	403.22	72" DIAMETER PRECAST MANHOLE
MH3A	MH	MD-384.07	421.50	6.00	402.98	402.88	72" DIAMETER PRECAST MANHOLE
MH4A	MH	MD-384.07	421.50	6.00	400.84	400.74	72" DIAMETER PRECAST MANHOLE
MH5A	MH	MD-384.07	414.00	6.00	397.20	397.10	72" DIAMETER PRECAST MANHOLE
MH6A	MH	MD-384.07	408.00	6.00	395.69	395.59	72" DIAMETER PRECAST MANHOLE
MH7A	MH	MD-384.07	409.00	6.00	394.72	394.62	72" DIAMETER PRECAST MANHOLE
MH8A	MH	MD-384.07	401.72	6.00	388.08	387.98	72" DIAMETER PRECAST MANHOLE
MH9A	MH	MD-384.07	391.53	6.00	384.44	384.34	72" DIAMETER PRECAST MANHOLE
MH10A	MH	–	391.53	6.00	383.29	378.08	EXISTING MANHOLE
MH11A	MH	MD-384.07	388.00	6.00	377.63	377.53	72" DIAMETER PRECAST MANHOLE
MH11B	MH	MD-384.07	386.40	6.00	377.15	376.30	72" DIAMETER PRECAST MANHOLE
TEMPORARY STAGING AREA							
CB1	INLET	*ADVANCED DRAINAGE SYSTEMS INC.	–	–	–		ADS 2830 AG
CB2	INLET	*ADVANCED DRAINAGE SYSTEMS INC.	–	–	–		ADS 2830 AG
CB3	INLET	*ADVANCED DRAINAGE SYSTEMS INC.	–	–	–		ADS 2830 AG
CB4	INLET	ADVANCED DRAINAGE SYSTEMS INC.	–	–	–		ADS 2830 AG
MHT5	INLET	ADVANCED DRAINAGE SYSTEMS INC.	–	–	–		ADS 2830 AG

*ADVANCED DRAINAGE SYSTEMS, INC., 3300 RIVERSIDE DRIVE, COLUMBUS, OH 43221 1-800-821-6710 WWW.ADS-PIPE.COM

STORM DRAIN STRUCTURE SCHEDULE

STRUC. No	TYPE	STANDARD No.	TOP ELEVATION	SIZE(ft)	INV. IN	INV. OUT	COMMENT
EX.MH1	MH	MD-384.07	417.50	–	–	408.80	EXISTING MANHOLE
MH2	MH	MD-384.07	417.00	6.00	406.45	406.35	72" DIAMETER PRECAST MANHOLE
MH3	MH	MD-384.07	415.00	6.00	405.79	404.00	72" DIAMETER PRECAST MANHOLE
MH4	MH	MD-384.07	415.00	6.00	403.00	401.00	72" DIAMETER PRECAST MANHOLE
MH5	MH	MD-384.07	411.20	7.00	400.89	398.50	84" DIAMETER PRECAST MANHOLE
MH6	MH	MD-384.07	405.00	7.00	396.61	395.00	84" DIAMETER PRECAST MANHOLE
MH7	MH	MD-384.07	402.00	7.00	393.73	386.50	84" DIAMETER PRECAST MANHOLE
MH8	MH	MD-384.07	388.00	7.00	386.30	383.13	EXISTING MANHOLE
RELOCATION							
MHC	MH	MD-384.05	–	5.00	–	–	60" DIAMETER PRECAST MANHOLE
MHB	MH	MD-384.05	–	5.00	–	–	60" DIAMETER PRECAST MANHOLE
MHA	MH	MD-384.05	–	5.00	–	–	60" DIAMETER PRECAST MANHOLE

NOTES:
ALL RCP PIPES SHALL HAVE RUBBER GASKETS

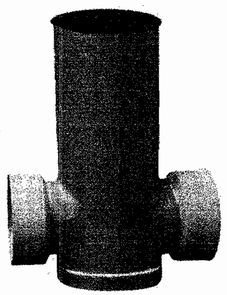
STORM DRAIN COMPUTATION SHEET

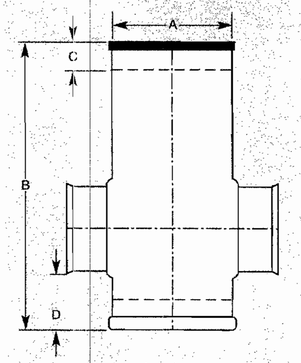
COMPUTED BY: JELLA K. DATE: 10/01 PROJECT: APL-JHU
CHECKED BY: RAW DATE: 10/01 STORM FREQUENCY: 10-YEAR

MANNING'S "N" (RCP) = 0.013

PIPE STRUCTURE		DRAINAGE AREA		RUN-OFF COEFF.	"AREA"X"C"		TIME OF CONC.	RAINFALL INTENSITY	RUNOFF "Q"	PIPE DIAMETER	PIPE LENGTH	MIN. PIPE	ACTUAL PIPE	VELOCITY	TIME IN PIPE	PIPE "Q" CAPAC.
FROM	TO	INC (AC)	TOTAL (AC)	"C"	INC (AC)	TOTAL (AC)	SYSTEM (MIN)	"I" (IN/HR)	(CFS)	(IN)	(ft)	SLOPE (f/f)	SLOPE (f/f)	(FPS)	(MIN)	(CFS)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
EX MH1A	MH1B	–	–	–	–	–	–	–	–	–	45	–	–	–	–	–
MH1B	MH1C	5.02	5.02	0.86	4.32	4.32	5.00	8.50	36.71	36	11	0.004	0.010	8.76	0.02	61.93
MH1C	MH1D	0.00	5.02	0.86	0.00	4.32	5.00	8.50	36.71	36	50	0.004	0.010	8.76	0.10	61.93
MH1D	MH2A	0.00	5.02	0.86	0.00	4.32	5.00	8.50	36.71	36	14	0.004	0.010	8.76	0.03	61.93
MH2A	MH3A	0.00	5.02	0.86	0.00	4.32	5.00	8.50	36.71	36	8	0.004	0.010	8.76	0.02	61.93
MH3A	MH4A	0.00	5.02	0.86	0.00	4.32	5.00	8.50	36.71	36	68	0.004	0.010	8.76	0.13	61.93
MH4A	MH5A	0.00	5.02	0.86	0.00	4.32	5.00	8.50	36.71	36	118	0.004	0.010	8.76	0.22	61.93
MH5A	MH6A	1.56	6.58	0.86	1.34	5.66	5.00	8.50	48.08	36	47	0.004	0.010	8.76	0.09	61.93
MH6A	MH7A	0.00	6.58	0.86	0.00	5.66	5.00	8.50	48.08	36	29	0.006	0.010	8.76	0.06	61.93
MH7A	MH8A	0.00	6.58	0.86	0.00	5.66	5.00	8.50	48.08	36	218	0.006	0.010	8.76	0.41	61.93
MH8A	MH9A	0.00	6.58	0.86	0.00	5.66	5.00	8.50	48.08	36	118	0.006	0.010	8.76	0.22	61.93
MH9A	MH10A	0.00	6.58	0.86	0.00	5.66	5.00	8.50	48.08	36	35	0.006	0.010	8.76	0.02	61.93
MH10A	MH11A	0.00	6.58	0.86	0.00	5.66	5.00	8.50	48.08	36	54	0.006	0.010	8.76	0.03	61.93
MH11A	MH11B	0.00	6.58	0.86	0.00	5.66	5.00	8.50	48.08	36	54	0.006	0.010	8.76	0.05	61.93
TEMPORARY STAGING AREA																
CB1	CB2	0.12	0.12	0.88	0.10	0.10	5.00	8.50	0.88	18	103	0.000	0.010	5.52	0.03	9.75
CB2	CB4	0.10	0.22	0.88	0.09	0.19	5.00	8.50	1.61	18	181	0.000	0.010	5.52	0.03	9.75
CB3	CB4	0.63	0.63	0.88	0.54	0.54	5.00	8.50	4.59	18	104	0.002	0.010	5.52	0.03	9.75
CB4	MHT5	0.54	1.39	0.88	0.46	1.19	5.00	8.50	10.15	21	103	0.005	0.010	6.12	0.03	14.71
MHT5	BA-A	0.00	1.39	0.88	0.00	1.19	5.00	8.50	10.15	21	28	0.005	0.010	6.12	0.03	14.75

18", 24", and 30" Drain Basins – Customized





Riser Extensions

	Drain Basin Size
2912AG	12"
2915AG	15"
2918AG	18"
2924AG	24"

Any height available. Priced per foot or fraction thereof. Contact ADS for details.

18", 24" and 30" DRAIN BASINS

Size	A	B Standard	B Max.	C Min.	D Min.
18"	18"	36"	120"	6"	6"
24"	24"	36"	120"	6"	6"
30"	30"	48"	120"	11"	10"

18" PRODUCT NUMBERS

2818AG Specify adapter type and size for multiple 4"-6"-8"-10"-12"-15" or up to two 18" inlets/outlets.

Variable height (up to 10') and adapter elevations.

Approx. Weight (Basin only): 80 lbs.
Approx. Weight (Grate only): 80 lbs.

24" PRODUCT NUMBERS

2824AG Specify adapter type and size for multiple 4"-6"-8"-10"-12"-15"-18" or up to two 24" inlets/outlets.

Variable height (up to 10') and adapter elevations.

Approx. Weight (Basin only): 109 lbs.
Approx. Weight (Grate only): 152 lbs.

30" PRODUCT NUMBERS

2830AG Specify adapter type and size for multiple 4"-6"-8"-10"-12"-15"-18"-24" or up to two 30" inlets/outlets.

Variable height (up to 10') and adapter elevations.

Approx. Weight (Basin only): 230 lbs. (min.)
Approx. Weight (Grade only): 187 lbs.

Cast iron grates available: Standard H-20 • Perforated • Solid • Locking • Pedestrian (H-10)

STORM DRAIN PIPE SCHEDULE

FROM	TO	SIZE	LENGTH	SLOPE	FLOW	10-YRS	VELOCITY	PIPE
		(INCH)	(FEET)	%	CAP.(cfs)	Q (cfs)	(fps)	TYPE
EX.MH1A	MH1B	36	45	–	61.93	–	8.76	RCP
MH1B	MH1C	36	11	1.0	61.93	36.71	8.76	RCP
MH1C	MH1D	36	50	1.0	61.93	36.71	8.76	RCP
MH1D	MH2A	36	14	1.0	61.93	36.71	8.76	RCP
MH2A	MH3A	36	8	1.0	61.93	36.71	8.76	RCP
MH3A	MH4A	36	68	1.0	61.93	36.71	8.76	RCP
MH4A	MH5A	36	118	1.0	61.93	36.71	8.76	RCP
MH5A	MH6A	36	47	1.0	61.93	48.08	8.76	RCP
MH6A	MH7A	36	29	1.0	61.93	48.08	8.76	RCP
MH7A	MH8A	36	218	1.0	61.93	48.08	8.76	RCP
MH8A	MH9A	36	118	1.0	61.93	48.08	8.76	RCP
MH9A	MH10A	36	9	1.0	61.93	48.08	8.76	RCP
MH10A	MH11A	36	14	1.0	61.93	48.08	8.76	RCP
MH11A	MH11B	36	28	1.0	61.93	48.08	8.76	RCP
TEMPORARY STAGING AREA								
CB1	CB2	18	103	1.0	9.75	0.88	5.52	PVC
CB2	CB4	18	181	1.0	9.75	1.61	5.52	PVC
CB3	CB4	21	104	1.0	9.75	4.59	5.52	PVC
CB4	MHT5	21	103	1.0	14.71	10.15	6.12	PVC
MHT5	BA-A	21	28	1.0	14.71	10.15	6.12	PVC

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 8/21/02
CHIEF, DIVISION OF LAND DEVELOPMENT RB — DATE 6/3/02
DIRECTOR — DATE 6/11/02

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200 ROCKVILLE MD 20852
TEL (301) 881-2545 FAX 881-0814
AMT FILE # 98-

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: JELLA KASPA
DRN: P. FRIAS
CHK: B. WARNER
DATE: 04/12/2002

SHEET ORGANIZATION KEY PLAN
A B C D E F G H I J K L M N O
JOHNS HOPKINS RD.
SANNER ROAD

SITE GRADING AND UTILITIES

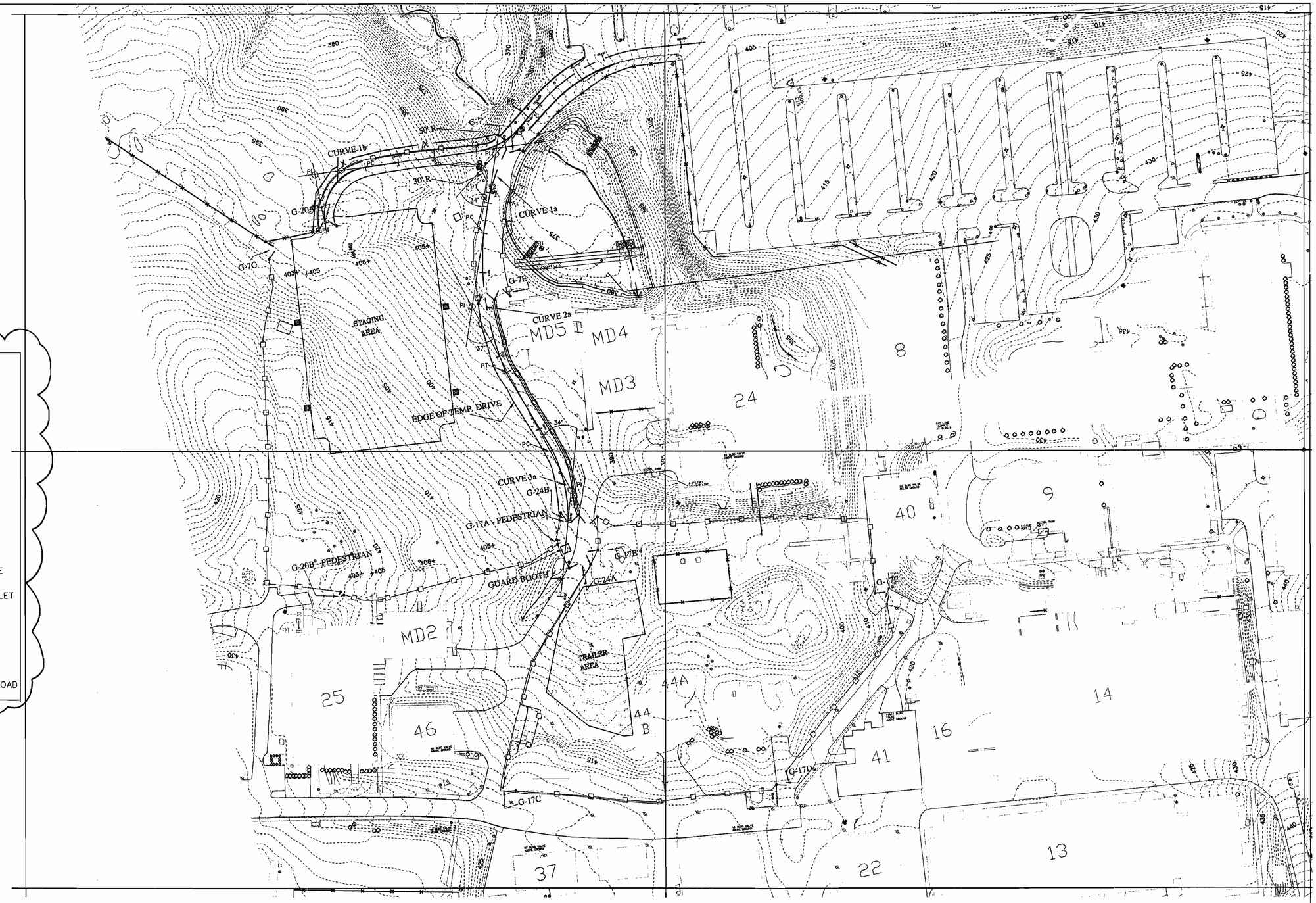
REVISION: DATE:

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY
PARCEL 1
STORM DRAINAGE SCHEDULES

TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CD-5
COUNTY SHEET NO. C-29

SDP-02-88



LEGEND

- EXISTING CONTOUR
- NEW FENCE
- TEMPORARY FENCE
- EXISTING FENCE
- PROPOSED GATES
- LIMITS OF TEMPORARY DRIVE
- PROPOSED STORM DRAIN INLET
- EXISTING STREAM
- EX. BUILDING
- EX. TREES
- CENTERLINE OF PROPOSED ROAD

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 5/31/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02

DIRECTOR — DATE 6/11/02

1 FENCE STAGING AREA & ROAD LAYOUT D/E/I/J

SCALE: 1"=60'

60 0 60 120 180

SCALE 1"=60'

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 # 96

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

SANNER ROAD — JOHNS HOPKINS RD.

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS: DATE
1. TRIMMED P.V.C. & P.V.T. EXTENSION LINES; ADDED LEGEND — 03/29/02
2. EX. CONTOUR LINES DASHED — 04/11/02

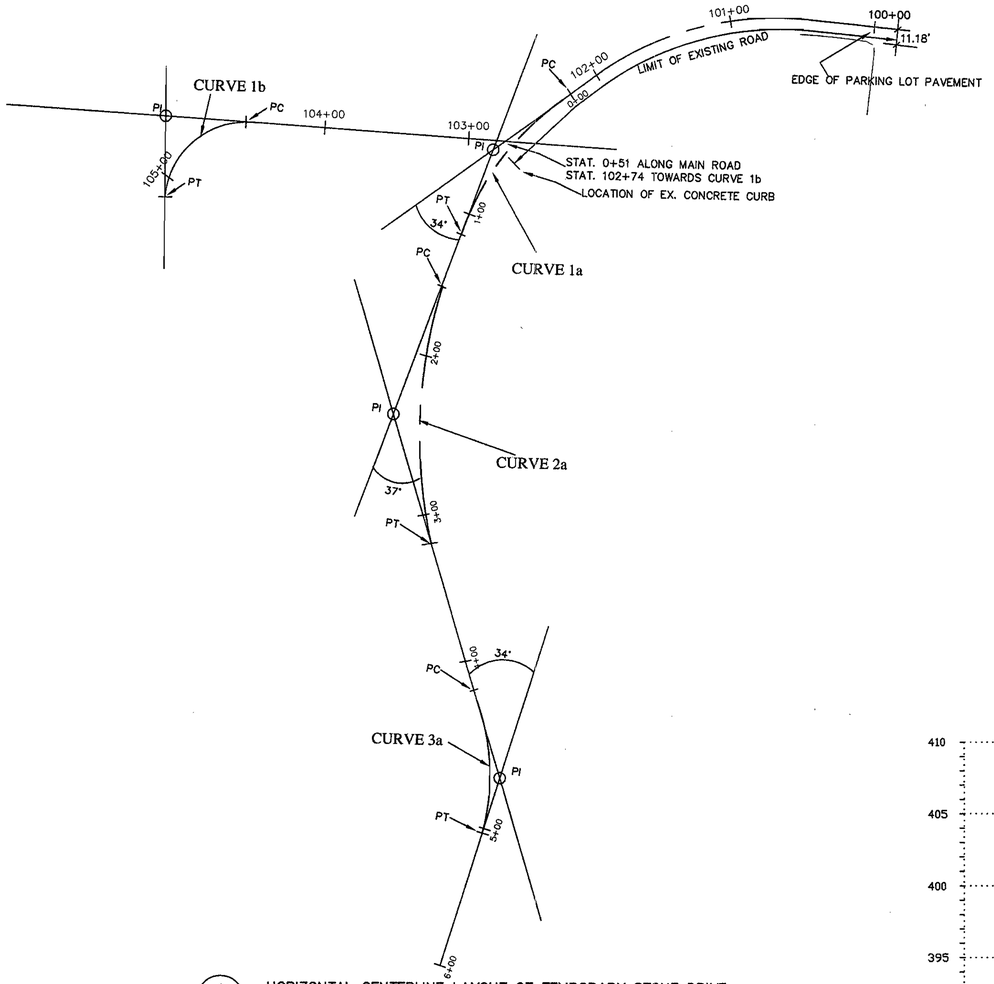
APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
FENCE STAGING AREA & ROAD LAYOUT D/E/I/J
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO. CTEM-1

COUNTY SHEET NO. C-30

SDP-02-88

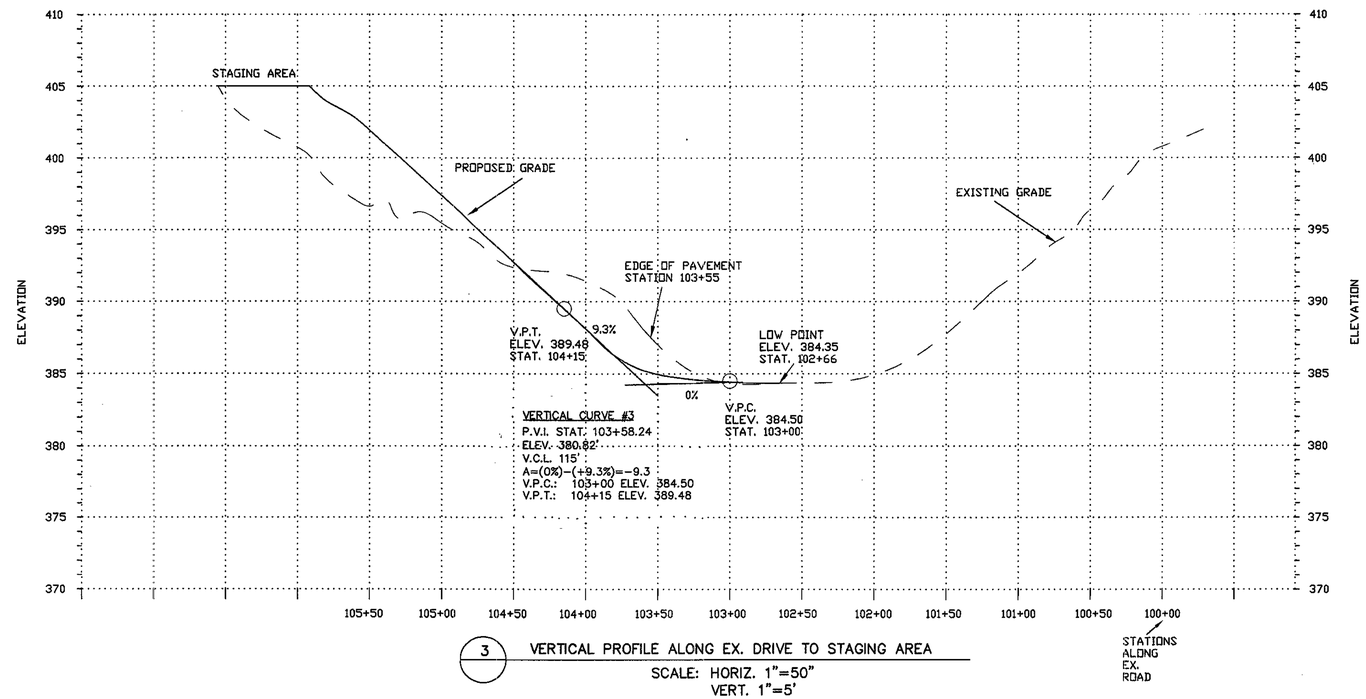


1 HORIZONTAL CENTERLINE LAYOUT OF TEMPORARY STONE DRIVE

SCALE: 1"=50'

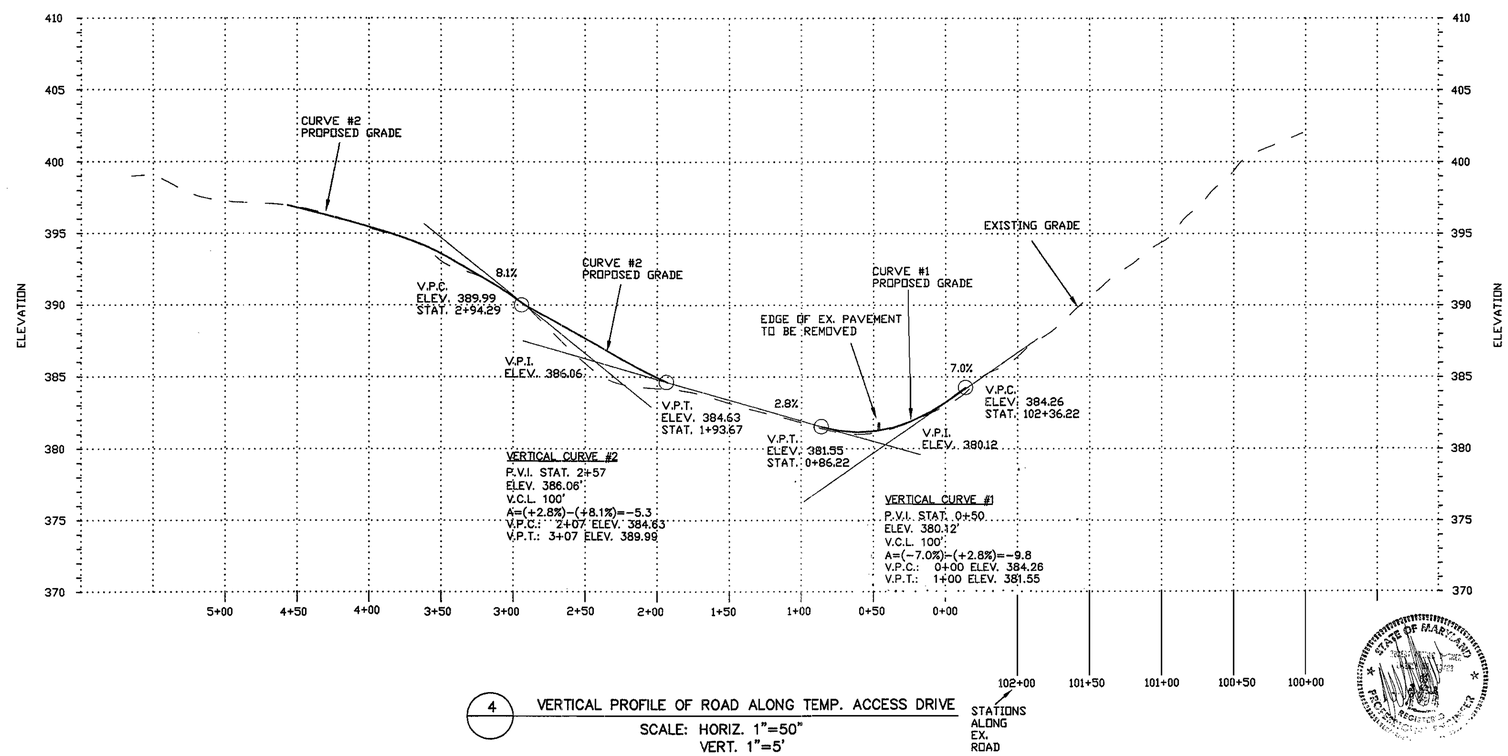
	CURVE 1a	CURVE 2a	CURVE 3a	CURVE 1b
PI	0+62.7	2+38	4+73	104+75
Δ	34°	37°	34°	86°
T	62.7'	100.4'	45.9'	55.9'
L.C.	119.9'	190.4'	87.7'	81.8'
M	8.9'	15.5'	6.55'	16.1'
E	9.4'	16.3'	6.9'	22.0'
D	27.9'	19.1'	38.2'	95.5'
L	121.6'	193.7'	89.0'	90.1'
B.C.	0+00	1+37.6	4+27.1	104+19.1
E.C.	1+21.6	3+31.3	5+16.1	105+9.2

2 HORIZONTAL CENTERLINE LAYOUT OF TEMPORARY STONE DRIVE



3 VERTICAL PROFILE ALONG EX. DRIVE TO STAGING AREA

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



4 VERTICAL PROFILE OF ROAD ALONG TEMP. ACCESS DRIVE

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/31/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02

DIRECTOR — DATE 6/11/02

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
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AMT FILE # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: P. FRIAS
CHK: S. ITANI
DATE: 03/01/02

SHEET ORGANIZATION KEY PLAN

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

JOHNS HOPKINS RD.
SANNER ROAD

SITE GRADING AND UTILITIES

REVISIONS: DATE
1. ADDITION OF VERTICAL CURVE CALCULATIONS; REVISIONS TO VERTICAL CURVE CALCULATIONS — 03/25/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

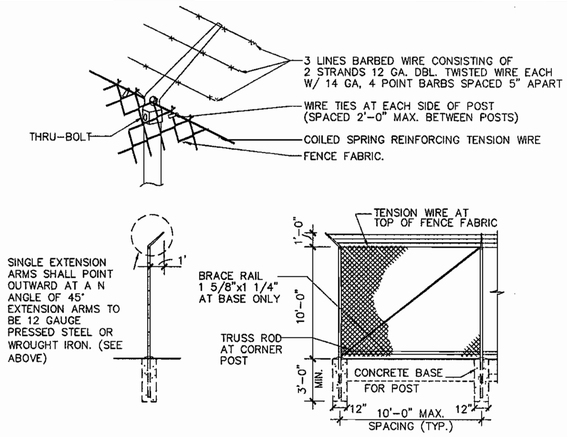
TEMP. DRIVE PLAN / PROFILE
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO. CTEM-2

COUNTY SHEET NO. C-31

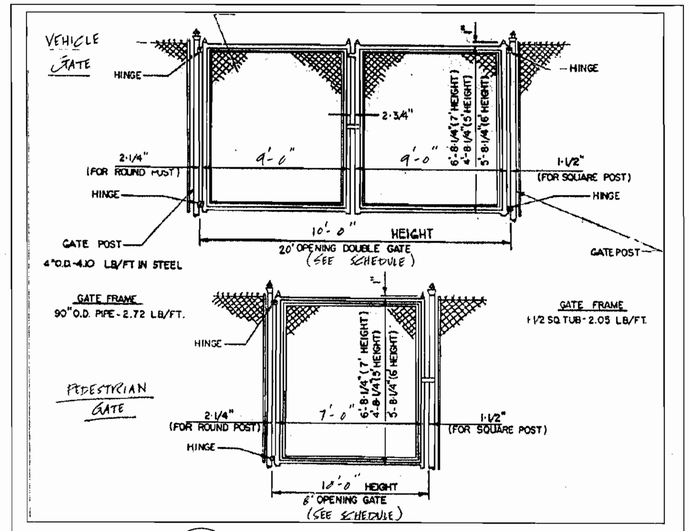
SDP-02-88



NOTE:
1. TOP GUARD SHALL BE USED IN A VERTICAL POSITION AT GATES AND OTHER CONDITIONS WHERE NECESSARY TO AVOID INTERFERENCE.

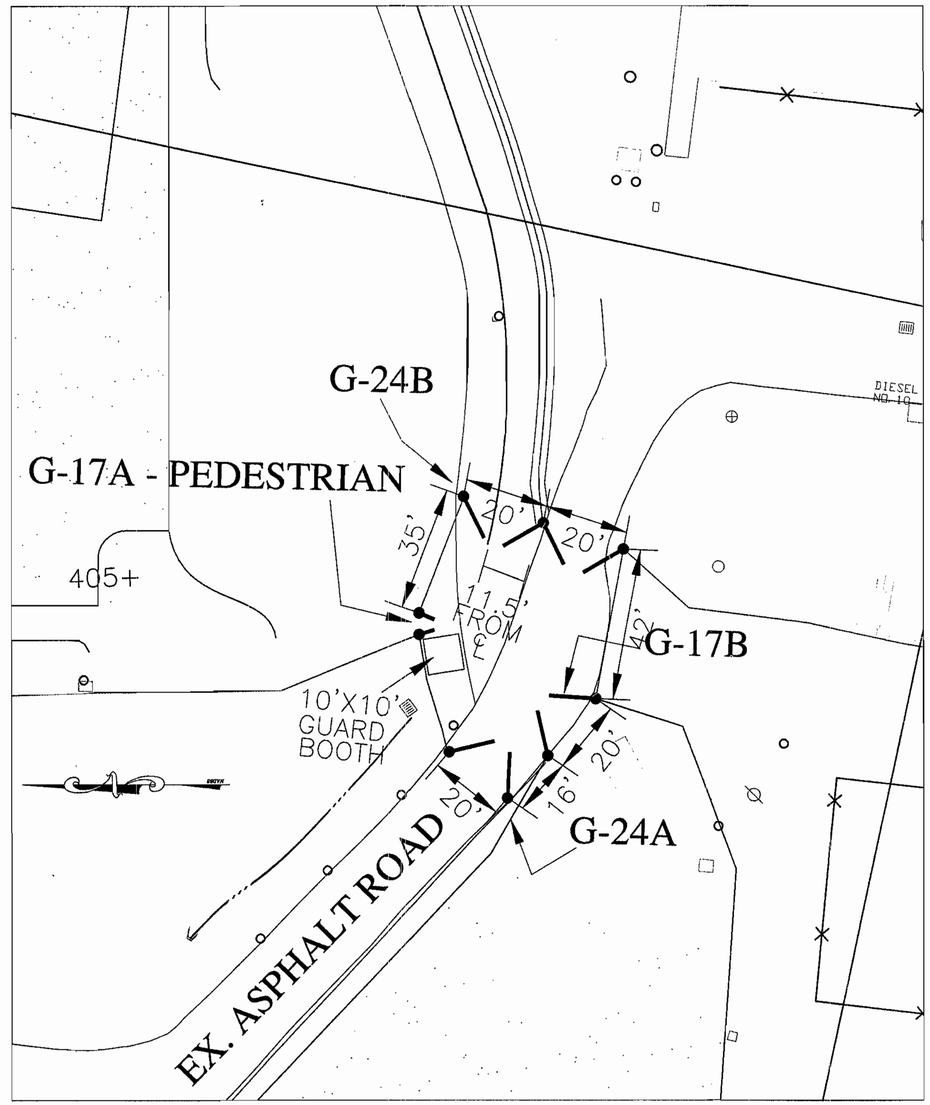
1 / CTEM3 CHAIN LINK FENCE AND TOP GUARD DETAIL

NOT TO SCALE



2 / CTEM3 CHAIN LINK FENCE GATE DETAIL

NOT TO SCALE



3 / CTEM3 GATE CONFIGURATION DETAIL

SCALE: 1"=20'

GATE	TYPE	OPENING WIDTH	HEIGHT
G-24B	VEHICLE	20'	10'-0"
G-17B	VEHICLE	20'	10'-0"
G-24A	VEHICLE	20'	10'-0"
G-17A	PEDESTRIAN	8'	10'-0"

4 / CTEM3 GATE SCHEDULE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 5/31/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02

DIRECTOR — DATE 6/11/02

AMT
A. MORTON THOMAS & ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE [illegible] ROCKVILLE MD 20852
TEL (301) 881-2545 881-0814
AMT FILE

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: P. FRIAS
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

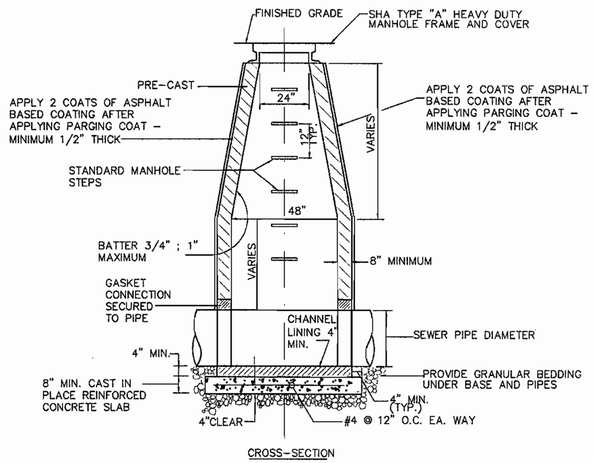
SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
TEMPORARY SECURITY FENCE DETAILS
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CTEM-3
COUNTY SHEET NO. C-32

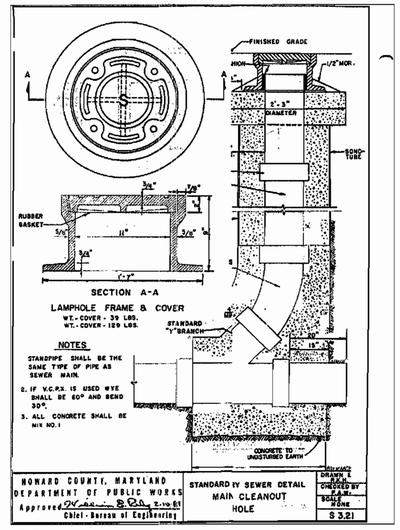
SDP-02-88



CROSS-SECTION

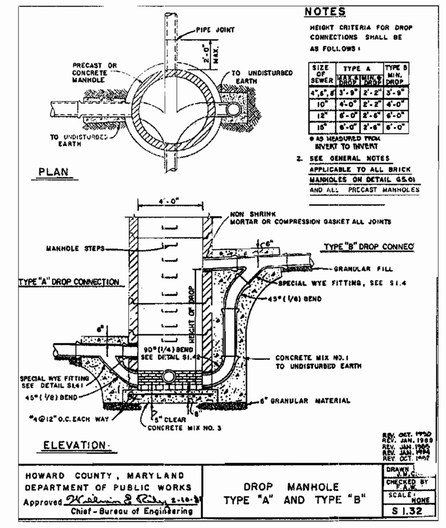
1 / CSD1 STANDARD SANITARY MANHOLE DETAIL

NOT TO SCALE



2 / CSD1 STANDARD SANITARY MANHOLE DETAIL

NOT TO SCALE



3 / CSD1 DROP MANHOLE TYPE "A" AND TYPE "B"

NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 5/31/02

CHIEF, DIVISION OF LAND DEVELOPMENT WP — DATE 6/3/02

DIRECTOR — DATE 6/11/02

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, ROCKVILLE MD 20852
TEL (301) 881-2540 881-0814
AMT FAX

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER

DRN: P. FRIAS

CHK: S. ITANI

DATE: 03/01/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD

JOHNS HOPKINS RD.

SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS: DATE
1. REMOVED CLEANOUT COVER ASSEMBLY DETAIL 03/25/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

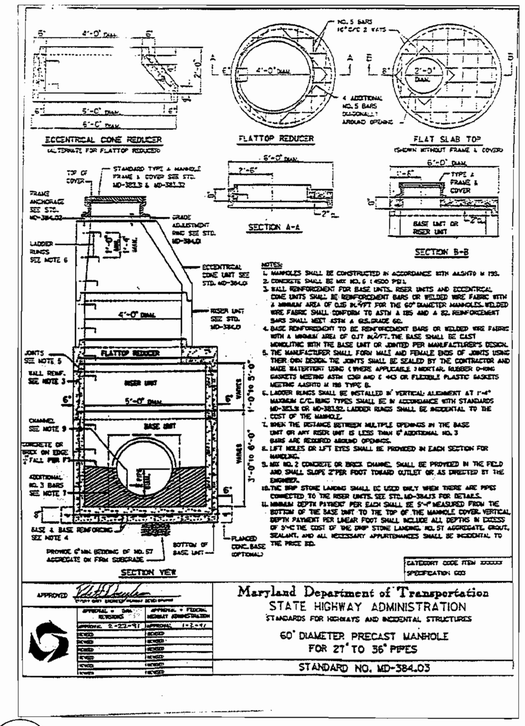
SANITARY SEWER DETAILS
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

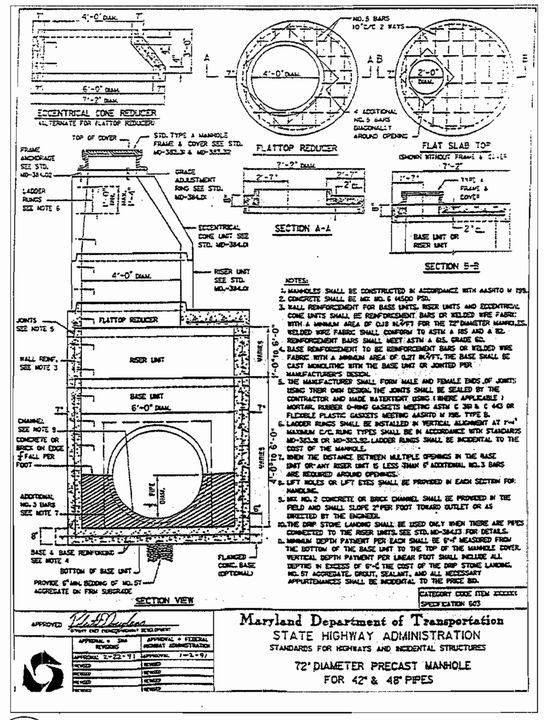
APL SHEET NO. CSD-1

COUNTY SHEET NO. C-33

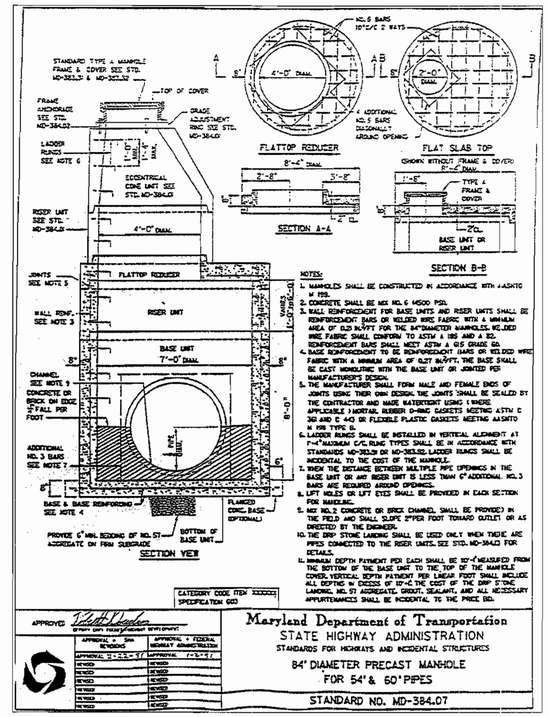
SDP-02-88



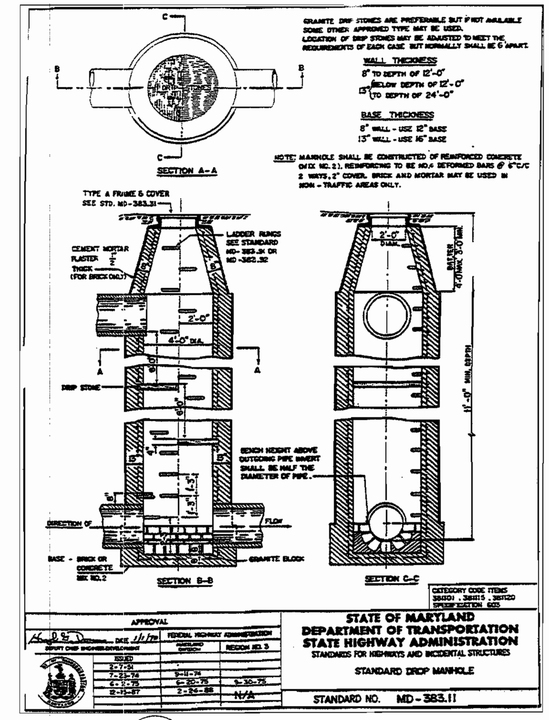
1 CDD1 60" DIAMETER PRECAST MANHOLE FOR 27" TO 36" PIPES
NOT TO SCALE



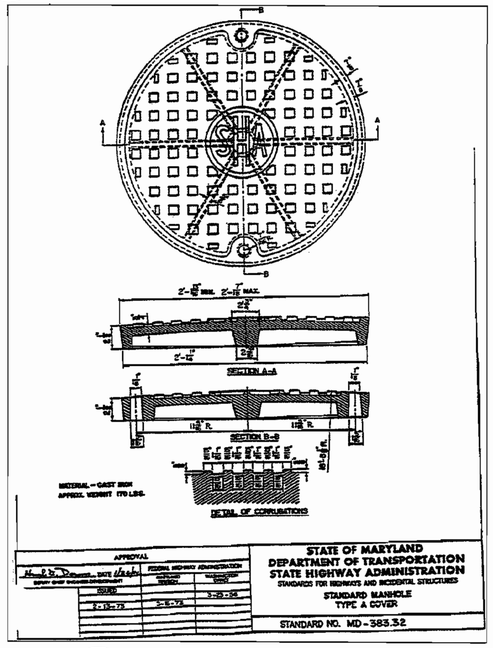
2 CDD1 72" DIAMETER PRECAST MANHOLE FOR 42" & 48" PIPES
NOT TO SCALE



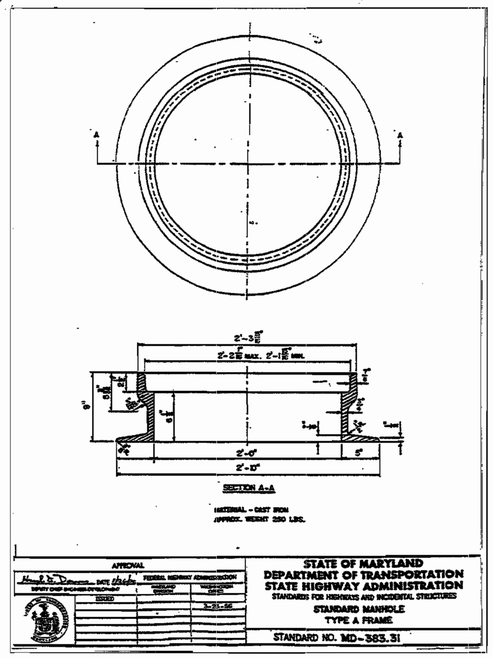
3 CDD1 84" DIAMETER PRECAST MANHOLE FOR 54" & 60" PIPES
NOT TO SCALE



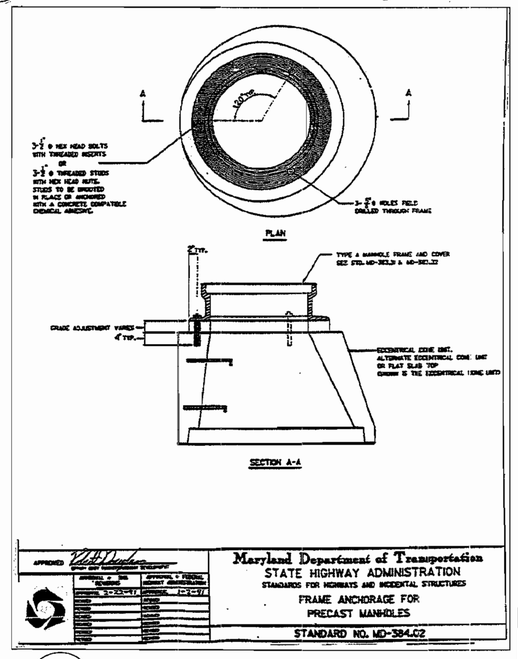
4 CDD1 STANDARD DROP MANHOLE
NOT TO SCALE



5 CDD1 STANDARD MANHOLE COVER TYPE A
NOT TO SCALF



6 CDD1 STANDARD MANHOLE TYPE A FRAME
NOT TO SCALE



7 CDD1 FRAME ANCHORAGE FOR PRECAST MANHOLES
NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT HB — DATE 6/7/02
DIRECTOR — DATE 6/11/02

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 # 98-153

Einhorn Yaffee Prescott
THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000
ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: P. FRIAS
CHK: S. ITANI
DATE: 03/01/02

SHEET ORGANIZATION KEY PLAN
A B C D E F G H I J K L M N O
JOHNS HOPKINS RD.
SANNER ROAD

SITE GRADING AND UTILITIES

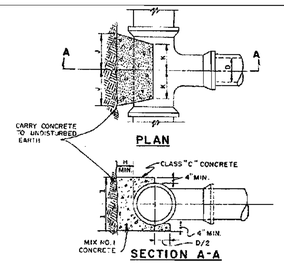
REVISIONS: DATE 03/25/02
1. ADDITION OF DETAILS STANDARD MH TYPE A FRAME, FRAME ANCHORAGE DETAIL, & STANDARD MD TYPE A MH COVER

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

STORM DRAINAGE DETAILS
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CDD-1
COUNTY SHEET NO. C-34

SDP-02-88



MINIMUM DIMENSIONS OF BUTTRESS FOR TEES						
SIZE OF BRANCH						
D	6"	8"	10"	12"	16"	20"	24"
H	6"	9"	10"	1'-0"	1'-4"	1'-8"	2'-2"
I	10"	1'-1"	1'-4"	1'-7"	2'-2"	2'-8"	3'-2"
J	6"	8"	1'-1"	1'-1"	1'-5"	1'-8"	2'-1"
K	6"	7"	8"	9"	10"	1'-2"	1'-4"

2. AREA OF BEARING = 2J X 2I.
BUTTRESS DIMENSIONS ARE BASED ON A WATER PRESSURE OF 150 PSI. AND A MINIMUM SOIL BEARING PRESSURE OF 3000 PSF. WHERE THE ACTUAL FIELD CONDITIONS ARE DIFFERENT, THE AREA OF BEARING SHALL BE INCREASED AS DETERMINED BY THE ENGINEER.

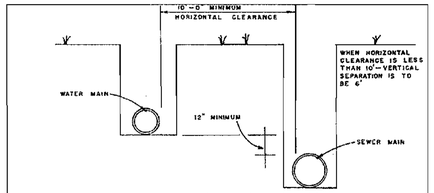
BUTTRESS FOR TEES

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 2-10-98
Chief - Bureau of Engineering

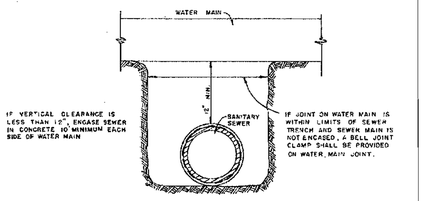
STANDARD WATER DETAILS
BUTTRESS FOR TEES

DRAWN BY M.T.K.
CHECKED BY: F.A.W.
SCALE: NONE
W2.23

1 / CWD1 STANDARD BUTTRESS DETAIL
NOT TO SCALE



MINIMUM HORIZONTAL AND VERTICAL SEPARATION FOR SEWER PARALLEL TO WATER



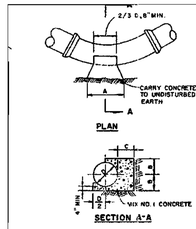
WATER SANITARY CROSSING CLEARANCE

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 2-10-98
Chief - Bureau of Engineering

STANDARD SANITARY SEWER DETAILS
WATER SEWER CLEARANCE REQUIREMENTS

DRAWN BY: D.M.B.
CHECKED BY: F.A.W.
SCALE: NONE
S 3.13

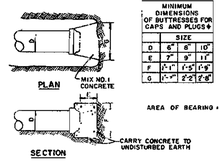
3 / CWD1 WATER-SANITARY CROSSING CLEARANCE
NOT TO SCALE



MINIMUM DIMENSIONS OF BUTTRESS FOR HORIZONTAL BENDS *								
BEND		6"	8"	10"	12"	16"	20"	24"
1/64 (5 5/8°)	A	–	–	–	–	–	1'-8"	2'-0"
	B	–	–	–	–	–	10"	1'-0"
	C	–	–	–	–	–	10"	1'-0"
1/32 (11 1/4°)	A	6"	8"	1'-0"	1'-2"	1'-7"	2'-0"	2'-4"
	B	7"	8"	9"	10"	1'-0"	1'-2"	1'-4"
	C	8"	8"	8"	8"	10"	10"	1'-0"
1/16 (22 1/2°)	A	1'-1"	1'-2"	1'-6"	1'-10"	2'-5"	3'-0"	3'-7"
	B	1"	8"	9"	10"	1'-1"	1'-2"	1'-5"
	C	8"	9"	10"	1'-1"	1'-2"	1'-4"	1'-6"
1/8 (45°)	A	1'-9"	1'-10"	2'-4"	2'-10"	3'-9"	4'-8"	5'-7"
	B	7"	8"	10"	1'-1"	1'-3"	1'-5"	1'-7"
	C	8"	9"	10"	1'-1"	1'-2"	1'-4"	1'-6"

AREA OF BEARING = A X 2B

BUTTRESS FOR HORIZONTAL BENDS



MINIMUM DIMENSIONS OF BUTTRESSES FOR CAPS AND PLUGS *			
	SIZE		
D	6"	8"	10"
E	7"	9"	11"
F	1'-1"	1'-5"	1'-9"
G	1'-7"	2'-2"	2'-8"

AREA OF BEARING = F X G

BUTTRESS FOR CAPS AND PLUGS

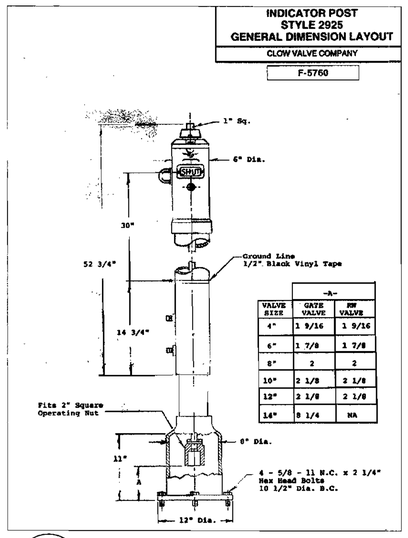
* ALL BUTTRESS DIMENSIONS ARE BASED ON A STATIC WATER PRESSURE OF 150 P.S.I. AND A MINIMUM SOIL BEARING PRESSURE OF 3000 P.S.F. WHERE ACTUAL FIELD CONDITIONS ARE DIFFERENT, THE AREA OF BEARING SHALL BE INCREASED AS DETERMINED BY THE ENGINEER.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 2-10-98
Chief - Bureau of Engineering

STANDARD WATER DETAILS
BUTTRESSES FOR CAPS AND HORIZONTAL BENDS

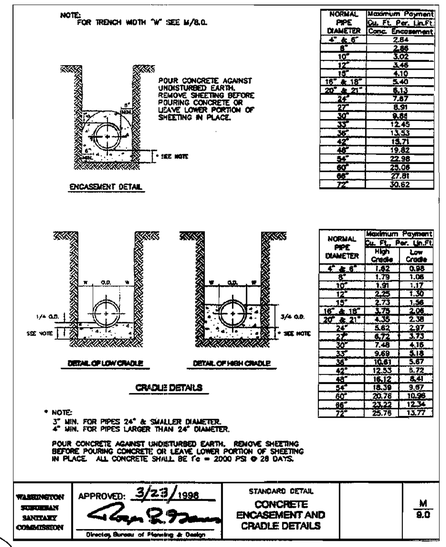
DRAWN BY M.T.K.
CHECKED BY: F.A.W.
SCALE: NONE
W 2.21

5 / CWD1 BUTTRESS DETAIL FOR HORIZONTAL BENDS
NOT TO SCALE



VALVE SIZE	GATE VALVE	MSF VALVE
4"	1 9/16	1 9/16
6"	1 7/8	1 7/8
8"	2	2
10"	2 1/8	2 1/8
12"	2 1/8	2 1/8
14"	8 1/4	NA

2 / CWD1 INDICATOR POST STYLE 2925
NOT TO SCALE



NORMAL PIPE DIAMETER	Maximum Payment Cu. Ft. Per Lin.Ft. Conc. Encasement
4" & 6"	2.64
8"	2.86
10"	3.02
12"	3.46
16"	4.10
18" & 18"	5.40
20" & 21"	6.13
24"	7.87
27"	8.91
30"	9.84
33"	12.45
36"	13.53
42"	15.71
48"	19.82
54"	22.98
60"	25.08
66"	27.91
72"	30.62

NORMAL PIPE DIAMETER	Maximum Payment Cu. Ft. Per Lin.Ft. High Cradle	Low Cradle
4" & 6"	1.62	0.95
8"	1.79	1.06
10"	1.91	1.17
12"	2.25	1.30
16"	2.73	1.56
18" & 18"	3.78	2.06
20" & 21"	4.35	2.39
24"	5.63	2.97
27"	6.72	3.73
30"	7.48	4.16
33"	9.69	5.18
36"	10.61	5.67
42"	12.53	5.72
48"	16.12	6.41
54"	18.59	9.07
60"	20.76	10.98
66"	23.22	12.34
72"	25.76	13.77

* NOTE:
3" MIN. FOR PIPES 24" & SMALLER DIAMETER.
4" MIN. FOR PIPES LARGER THAN 24" DIAMETER.

POUR CONCRETE AGAINST UNDISTURBED EARTH. REMOVE SHEETING BEFORE POURING CONCRETE, OR LEAVE LOWER PORTION OF SHEETING IN PLACE. ALL CONCRETE SHALL BE f'c = 2000 PSI @ 28 DAYS.

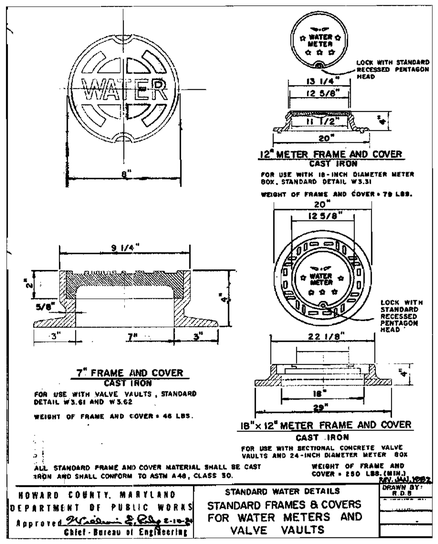
WASHINGTON SUBURBAN SANITARY COMMISSION

APPROVED: 3/23/1998
Director, Bureau of Planning & Design

STANDARD DETAIL
CONCRETE ENCASEMENT AND CRADLE DETAILS

M 8.0

4 / CWD1 CONCRETE ENCASEMENT AND CRADLE DETAILS
NOT TO SCALE



HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved [signature] 2-10-98
Chief - Bureau of Engineering

STANDARD WATER DETAILS
STANDARD FRAMES & COVERS FOR WATER METERS AND VALVE VAULTS

REV. MAY 1982
DRAWN BY: R.D.B.

6 / CWD1 STANDARD WATER METER VALVE COVERS
NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02
DIRECTOR — DATE 6/11/02

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 2[illegible]
LAUREL, MD 20852
TEL (301) 981-2545 FAX [illegible]0814
AMT FILE # 96[illegible]

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SAMMER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

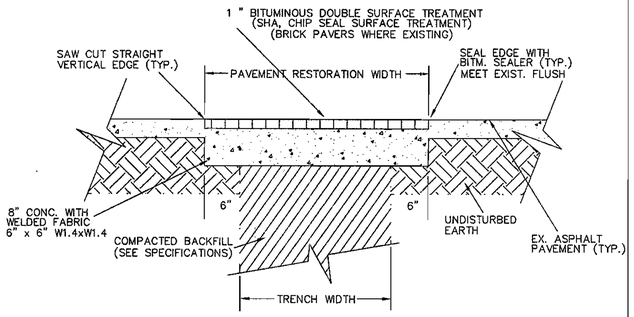
SITE GRADING AND UTILITIES

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

WATER MAIN DETAILS
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CWD-1
COUNTY SHEET NO. C-35

SDP-02-88

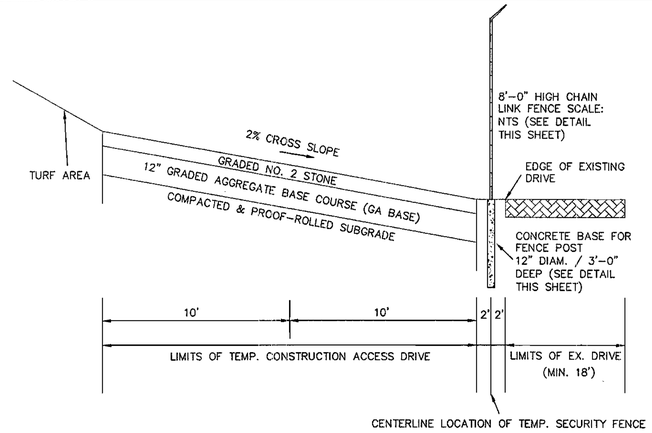


NOTES:

1. WHEN PATCHING PAVEMENT WITH ASPHALT, A NEAT, CLEAN JOINT BETWEEN OLD AND NEW PAVEMENT SHALL BE PROVIDED FOR PAVEMENT RESTORATION.
2. WHEN THE UTILITY TRENCH REQUIRES SHEETING AND SHORING, A WIDER WIDTH SHALL BE PROVIDED BY THE CONTRACTOR TO ACCOMMODATE A TRENCH BOX OR SHEETING/SHORING.
3. PROVIDE AND INSTALL ALL MATERIALS AS PER LATEST EDITION OF MARYLAND DEPT. OF TRANSPORTATION SHA SPECIFICATIONS FOR HIGHWAY STRUCTURES.
4. ALL EXPOSED EDGES OF EXISTING BITUMINOUS SURFACE COURSE AND BASE COURSE SHALL BE TACK COATED BEFORE THE BITUMINOUS MIXTURE IS PLACED.

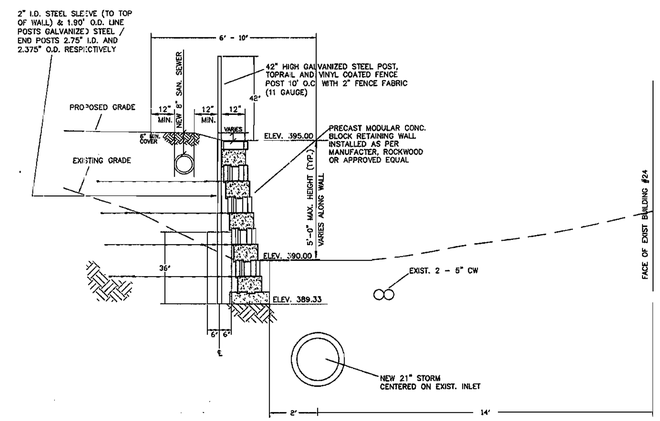
1 / CUD1 — PAVEMENT RESTORATION DETAIL

NOT TO SCALE



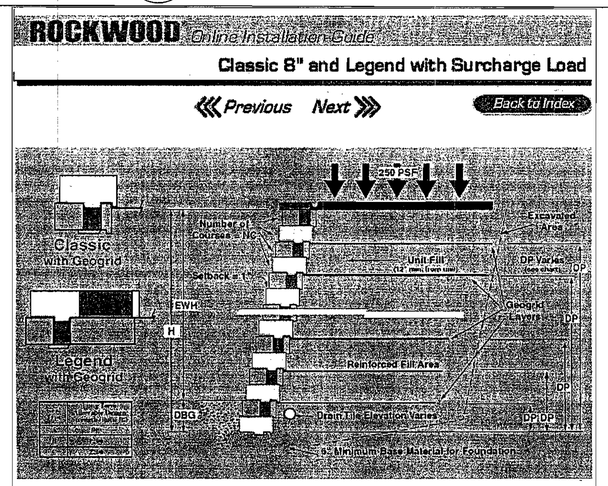
3 / CUD1 — TYPICAL SECTION THRU TEMP. CONSTRUCTION ACCESS DRIVE

NOT TO SCALE



6 / CUD1 — TYPICAL RETAINING WALL SECTION WEST OF BLDG #24

SCALE: 1"=3'



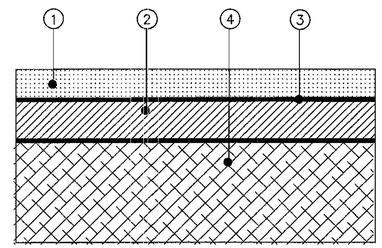
Total Wall Height H	Exposed Wall Height EWH	Depth Below Grade DBG	Total # of Courses NC	Type of Geogrid	Length of Geogrid LG	GEOGRID PLACEMENT Distance up from Foundation or Leveling Pad DP						Total Geogrid Layers NL
4'8"	4'	0'8"	7	A	5'0"	1'-4"	3'-4"					2
6'8"	6'	0'8"	10	B	5'6"	0 - 8"	2'-8"	4'-8"				3
9'4"	8'	1'4"	14	B	6'6"	0 - 8"	2'-0"	3'-4"	5'-4"	7'-4"		5
11'4"	10'	1'4"	17	B	8'0"	0 - 8"	2'-0"	3'-4"	5'-4"	7'-4"	9'-4"	6
13'4"	12'	1'4"	20	B	9'0"	0 - 8"	2'-0"	3'-4"	5'-4"	7'-4"	9'-4"	11'-4"	7

Total Wall Height H	Exposed Wall Height EWH	Depth Below Grade DBG	Total # of Courses NC	Type of Geogrid	Length of Geogrid LG	GEOGRID PLACEMENT Distance up from Foundation or Leveling Pad DP						Total Geogrid Layers NL
4'8"	4'	8"	7	B	5'0"	1'-4"	3'-4"					2
6'8"	6'	8"	10	B	6'0"	0 - 8"	2'-0"	3'-4"	4'-8"			4
9'4"	8'	1'4"	14	B	7'0"	0 - 8"	2'-0"	3'-4"	5'-4"	7'-4"		5
11'4"	10'	1'4"	17	B	8'6"	0 - 8"	2'-0"	3'-4"	5'-4"	7'-4"	9'-4"	6
13'4"	12'	1'4"	20	B	10'0"	0 - 8"	2'-0"	3'-4"	5'-4"	7'-4"	9'-4"	11'-4"	7

Total Wall Height H	Exposed Wall Height EWH	Depth Below Grade DBG	Total # of Courses NC	Type of Geogrid	Length of Geogrid LG	GEOGRID PLACEMENT Distance up from Foundation or Leveling Pad DP						Total Geogrid Layers NL
4'8"	4'	0'8"	7	B	6'0"	1'-4"	3'-4"					2
6'8"	6'	0'8"	10	B	7'0"	0 - 8"	2'-0"	3'-4"	4'-8"			4
9'4"	8'	1'4"	14	B	9'0"	0 - 8"	2'-0"	3'-4"	5'-4"	7'-4"		5
11'4"	10'	1'4"	17	B	10'0"	0 - 8"	2'-0"	3'-4"	5'-4"	7'-4"	9'-4"	6
13'4"	12'	1'4"	20	B	12'0"	0 - 8"	2'-0"	3'-4"	5'-4"	7'-4"	9'-4"	11'-4"	7

5 / CUD1 — CLASSIC 8" AND LEGEND WITH SURCHARGE LOAD

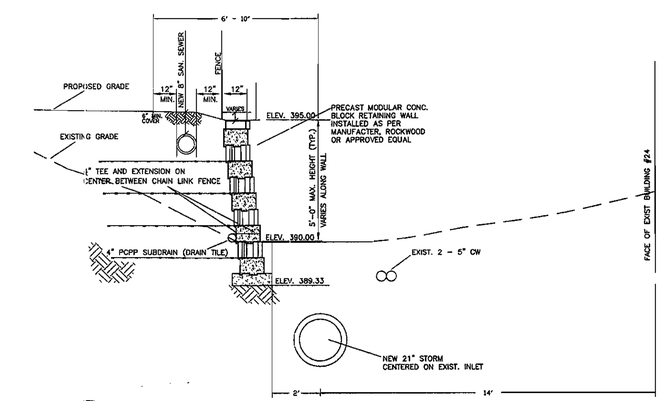
NOT TO SCALE



TEMP. CONST. CAR PARKING	TEMP. CONST. TRAILERS	TEMP. CONST. DRIVE	
2"	2"	2"	1 GRADED NO. 2 STONE
6"	6"	12"	2 GRADED AGGREGATE BASE COURSE (GA BASE)
--	--	--	3 GEOTEXTILE
--	--	--	4 COMPACTED AND PROOF-ROLLED SUBGRADE

4 / CUD1 — PAVING SECTION FOR ASPHALT PARKING AREAS

NOT TO SCALE



7 / CUD1 — TYPICAL RETAINING WALL SECTION WEST OF BLDG #24

WITHOUT FENCE POST

SCALE: 1"=3'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 5/31/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02

DIRECTOR — DATE 6/11/02

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 # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

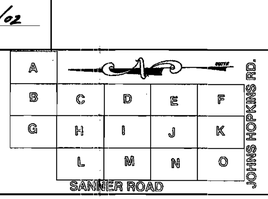
ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER

DRN: P. FRIAS

CHK: S. ITANI

DATE: 04/12/02



SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS: DATE

1. ADDED TYPICAL SECTION RETAINING WALL DETAILS; REMOVED GRAVITY RETAINING WALL SECTION — 03/22/02

1 ADDENDUM NO. 1, ISSUED 03/25/2002.

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY

UTILITIES DETAILS
PARCEL 1
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO. CUD-1

COUNTY SHEET NO. C-36

SDP-02-88

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 THE 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 — 5/13/02
SIGNATURE OF DEVELOPER — Date
PRINT NAME BELOW SIGNATURE: James E. Loesch

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR URBAN 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."

5/10/02
SIGNATURE OF ENGINEER — Date
PRINT NAME BELOW SIGNATURE: Robert A. Warner

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

5/20/02
USDA-NATURAL RESOURCES CONSERVATION SERVICE — Date

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

5/22/02
HOWARD SOIL CONSERVATION DISTRICT — Date

PIPE OULET TRAP #1

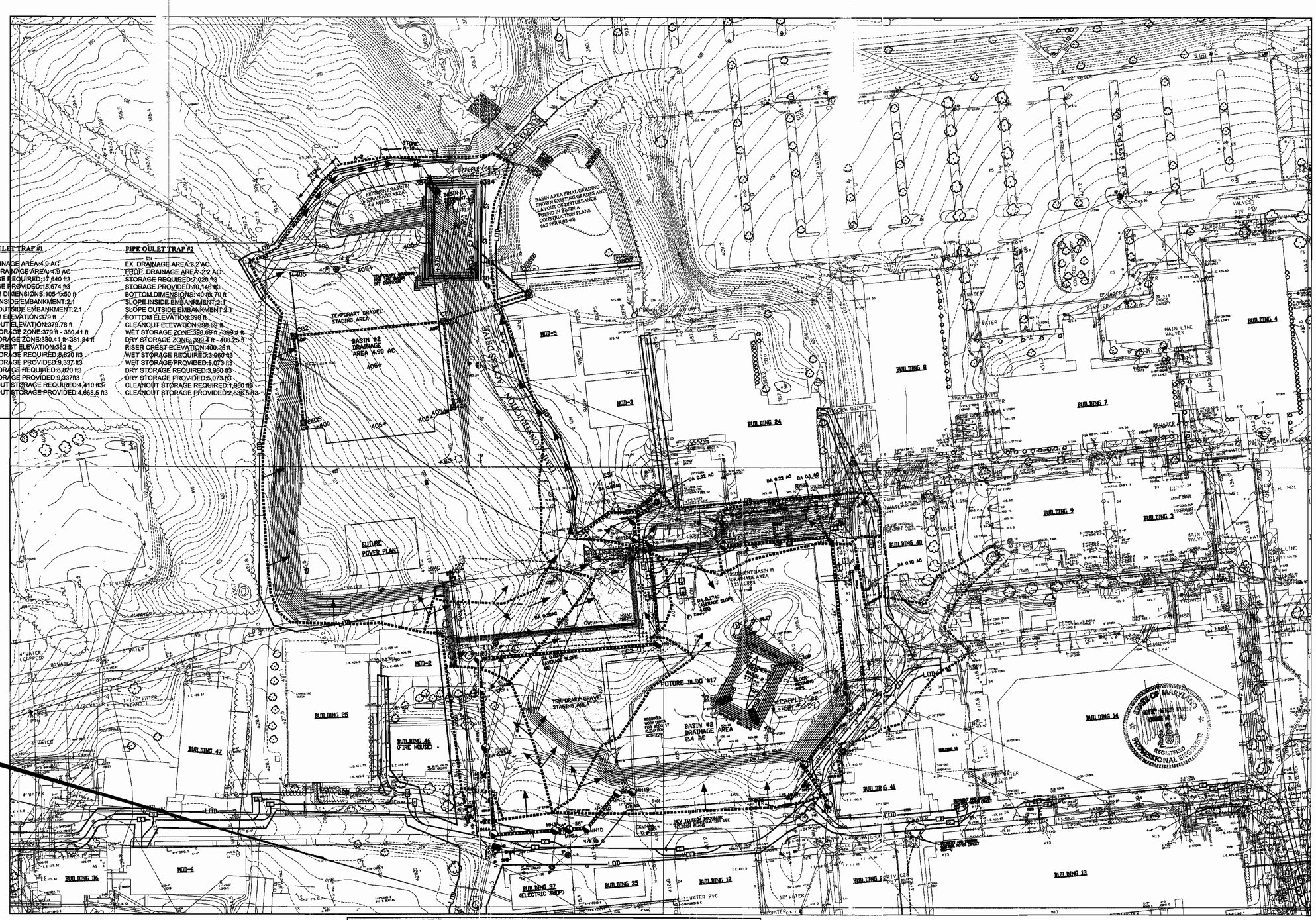
EX. DRAINAGE AREA:4.9 AC
PROP. DRAINAGE AREA:4.9 AC
STORAGE REQUIRED:17,640 ft3
STORAGE PROVIDED:18,674 ft3
BOTTOM DIMENSIONS:105 ft x 50 ft
SLOPE INSIDE EMBANKMENT:2:1
SLOPE OUTSIDE EMBANKMENT:2:1
BOTTOM ELEVATION:379 ft
CLEANOUT ELEVATION:379.78 ft
WET STORAGE ZONE:379 ft - 380.41 ft
DRY STORAGE ZONE:380.41 ft-381.84 ft
RISER CREST ELEVATION:382 ft
WET STORAGE REQUIRED:8,820 ft3
WET STORAGE PROVIDED:9,337 ft3
DRY STORAGE REQUIRED:8,820 ft3
DRY STORAGE PROVIDED:9,337ft3
CLEANOUT STORAGE REQUIRED:4,410 ft3
CLEANOUT STORAGE PROVIDED:4,668.5 ft3

PIPE OULET TRAP #2

EX. DRAINAGE AREA:2.2 AC
PROP. DRAINAGE AREA:2.2 AC
STORAGE REQUIRED:7,920 ft3
STORAGE PROVIDED:10,146 ft3
BOTTOM DIMENSIONS:40 ft x 70 ft
SLOPE INSIDE EMBANKMENT:2:1
SLOPE OUTSIDE EMBANKMENT:2:1
BOTTOM ELEVATION:398 ft
CLEANOUT ELEVATION:398.69 ft
WET STORAGE ZONE:398.69 ft - 399.4 ft
DRY STORAGE ZONE:399.4 ft - 400.25 ft
RISER CREST ELEVATION:400.25 ft
WET STORAGE REQUIRED:3,960 ft3
WET STORAGE PROVIDED:5,073 ft3
DRY STORAGE REQUIRED:3,960 ft3
DRY STORAGE PROVIDED:5,073 ft3
CLEANOUT STORAGE REQUIRED:1,980 ft3
CLEANOUT STORAGE PROVIDED:2,636.5 ft3

EROSION CONTROL LEGEND

SCE	STABILIZED CONSTRUCTION ENTRANCE
SF	SILT FENCE
SSF	SUPER SILT FENCE
LOD	LIMIT OF DISTURBANCE
TP	TREE PROTECTION
CIP	CURB INLET PROTECTION
AGIP	AT GRADE INLET PROTECTION
SIP	STANDARD INLET PROTECTION
A-2	EARTH DIKE
	RIPRAP
	SEDIMENT BASIN
RPS	SEDIMENT BASIN



APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02
DIRECTOR — DATE 6/11/02

SCALE 1"=60'

KEYED NOTES:

1. CONNECT PIPE OUTLET TO EXISTING STORM DRAIN INLET
2. ALL UTILITY PIPES
3. PROPOSED STORM WILL NOT BE USED UNTIL STABILIZED.

	SEDIMENT BASIN #1	SEDIMENT BASIN #2
BOTTOM DIM.	50' x 105'	70' x 40'
TOP DIM.	70' x 125'	90' x 60'
DEPTH	5'	5'

AMT
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ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

REVISIONS:
1. SEDIMENT & EROSION — 03/26/02
2. LEGEND
3. BASIN 2
4. BASIN SIZE, INLET PROTECTION, DRAINAGE AREAS AND SEDIMENT BASINS GRADING — 04/12/02
5. SEDIMENT BASIN, DRAINAGE AND CONTOURS — 05/06/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
SEDIMENT/EROSION CONTROL PLAN D/E/I/J
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

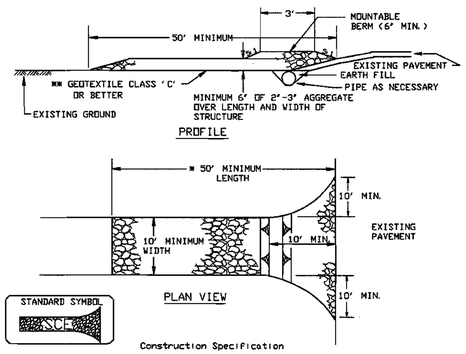
SCALE AS SHOWN
APL SHEET NO. CEC-1
COUNTY SHEET NO. C-37

SDP-02-88

EROSION CONTROL LEGEND

SCE	STABILIZED CONSTRUCTION ENTRANCE
SF	SILT FENCE
SSF	SUPER SILT FENCE
LOD	LIMIT OF DISTURBANCE
TP	TREE PROTECTION
CIP	CURB INLET PROTECTION
AGIP	AT GRADE INLET PROTECTION
SIP	STANDARD INLET PROTECTION
A-2	EARTH DIKE
	RIPRAP
	SEDIMENT BASIN
RPS	SEDIMENT BASIN

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.

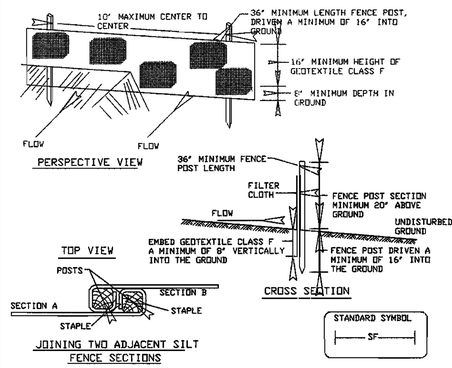
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

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 22 – SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard 'T' or 'U' section weighting not less than 1.00 pond per linear foot.

2. Geotextile 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 posts.

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

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 15 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

PIPE OUTLET SEDIMENT TRAP – ST 1

6. Construction operations shall be carried out in such a manner that erosion and water pollution are 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.

7. The structure shall be removed and area stabilized when the drainage area has been properly stabilized.

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

9. All pipe connections shall be watertight.

10. Above the wet storage elevation, the riser shall be perforated with 1/2" wide by 6" long slits or 1" diameter holes spaced 6" vertically and horizontally. No perforations will be allowed within 6" of the horizontal barrel.

11. The riser shall be wrapped with 1/2" hardware cloth (wire) then wrapped with Geotextile Class E. The filter cloth shall extend 6" above the highest slit and 6" below the lowest slit. Where ends of filter cloth come together, they shall be overlapped, folded and fastened to prevent bypass. Filter cloth shall be replaced as necessary to prevent clogging.

12. Straps or connecting bands shall be used to hold the filter cloth and wire fabric in place. They shall be placed at the top and bottom of the cloth.

13. Fill material around the pipe spillway shall be hand compacted in 4" layers. A minimum of 2" of hand-compacted backfill shall be placed over the pipe spillway before crossing it with construction equipment.

14. The riser shall be anchored with either a concrete base or steel plate base to prevent flotation. Concrete bases shall be at least twice the riser diameter and 12" deep with the riser embedded 9". Steel plate bases shall be at least twice the riser diameter, 1/4" minimum thickness; and attached to the bottom of the riser by a continuous weld to form a watertight connection. Then place 2" of stone, gravel or tamped earth on the plate.

15. Anti seep collars shall be constructed in accordance with plans (ref. table 16 and Details 13 and 14).

16. Concentric trash rack and anti-vortex device design details are on Detail 16.

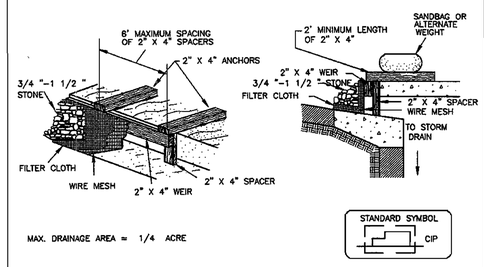
17. Refer to Section D for dewatering requirements of sediment traps.

18. Outlet – An outlet shall be provided, which includes a means of conveying the discharge in an erosion free manner to an existing stable channel.

19. Where discharge occurs at the property line, local ordinances and drainage easement requirements shall be met.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 9 – 7A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4") to the 2" x 4" weir (measuring throat length plus 2") as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

6. Form the 1/2" x 1/2" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4" x 1 1/2" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 16 – 5B	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SILT FENCE

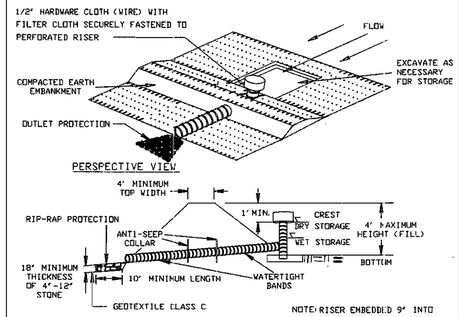
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 15 – 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 8 – PIPE OUTLET SEDIMENT TRAP – ST 1



NOTE: RISER EMBEDDED 9" INTO CONCRETE OR 1/4" STEEL PLATE ATTACHED TO RISER WITH A CONTINUOUS WELD ON BOTTOM AND 2' OF STONE PLACED ON STEEL PLATE TWICE THE RISER DIAMETER (MIN.)

Construction Specifications

1. The area under the 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 oversized stones, rocks, organic material, or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.

3. The total trap volume as measured from the bottom to riser crest elevation shall be 3600 cubic feet per acre of drainage area (see Table 9). The top of embankment must be ≧ 1' above the riser crest elevation.

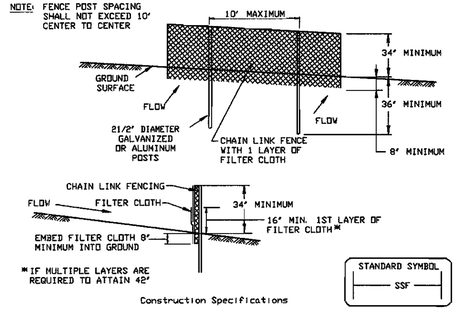
4. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap (900cf/ac). The sediment shall be deposited in a suitable area and in such a manner that it will not erode.

5. The structure shall be inspected periodically and after each rain and repairs made as necessary.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 9 – 7	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 – SUPER SILT FENCE

NOTE: FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER



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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H – 28 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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 5/13/02
SIGNATURE OF DEVELOPER Date
PRINT NAME BELOW SIGNATURE James E. Loesch

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR UTILITIES 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.

5/13/02
SIGNATURE OF ENGINEER Date
PRINT NAME BELOW SIGNATURE Robert A. Warner

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
5/28/02
USDA–NATURAL RESOURCES CONSERVATION SERVICE Date

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
5/28/02
HOWARD SOIL CONSERVATION DISTRICT Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division MK — Date 5/31/02
Chief, Division of Land Development — Date 6/3/02
Director — Date 6/11/02

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 # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

SHEET ORGANIZATION KEY PLAN

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

JOHNS HOPKINS RD.
SANNER ROAD

SITE GRADING AND UTILITIES

REVISIONS: DATE:
2. NOTES REVISED 05/06/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
SEDIMENT & EROSION DETAILS / SCH.
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CEC-2
COUNTY SHEET NO. C-38

SDP-02-88

Figure 2. Temporary Sediment Basin Design Data Sheet

Computed by: ______ Date: ______ Checked by: ______ Date: ______
Project name: SDP-02-88 Basin #: 1
Location: JHU/APL Utilities Relocation

Total area draining to basin: 4.9 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 4.9 ac. drainage = 17,640 ft³
2. Actual Volume of basin = 18,674 ft³
3. Excavate 18,674 ft³ (692 yd³) to obtain required capacity.
4. Vol. at dewatering elev. = 1800 ft³/ac x 4.9 ac. = 8820 ft³
5. Vol. of basin at cleanout = 900 ft³/ac x 4.9 ac. = 4,410 ft³
6. Elevation corresponding to min. required volume of basin (riser crest elevation) 381.84 ft.
7. Permanent pool elevation 380.41 ft.
8. Distance from riser crest elevation to permanent pool elevation 1.43 ft.
9. Basin cleanout elevation 379.78 ft.
10. Distance from riser crest elevation to cleanout elevation 2.06 ft.

Spillway Design

11. Q_{10} = 14.6 cfs (peak discharge from 10-yr, 24-hr storm event, attach computations)
C=0.35 A=4.9 Ac. I=8.5"/hr. Q=(0.35)(4.9Ac.)(8.5"/hr)=14.6cfs

Principal Spillway (Ops) (See Detail 11)

12. Design Principal Spillway (Barrel) discharge, Design Q_{ps} = 14.6 cfs (min. 10% of 10 year peak or 8" Diameter Pipe)
13. H = 8 ft.; Barrel length = 60 ft. (382)-(374)=8'
14. Barrel Diam. 21 in. Note: Q_{ps} must equal or exceed Design Q_{ps}
Q_{ps} = Q (from Table 13 or 14) 22.6 x (length correction factor) 1.05 = 23.7 cfs.
15. Riser Diameter 48 in.; Riser Height 3 ft.; Riser Head (h) = 0.50 ft.
16. Trash Rack Diam. 72 in.; Trash Rack Height = 21 in.

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

C-10-10

BASIN #
Emergency Spillway (Oes)
N/A

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

Anti-Seep Collar Design (If Required)

21. y = 2.00 ft.; z = 2 :1; pipe slope = 13 %; Ls = 60 ft
22. Use 4 collars, 4 ft. - 0 in. square; projection = 1.1 ft.

Design Elevations

23. Riser Crest	= 382.0 ft.	24. Design High Water	= 382.5 ft.
25. Emergency Spillway Crest	= — ft.	25. Min. settled top of dam	= 0 ft.
27. Permanent pool	= 380.41 ft.	28. Bottom of Basin	= 378.00 ft.
29. Draw-down orifice invert	= 380.41 ft.		

Surface Area Design

30. Min. basin surface area; SA ≥ 0.0035 x Q_{10} = 0.0035 x 14.6 cfs ≤ 0.05 ac. 0.17 Provided

Draw-down Device

31. Draw-down device orifice diameter = 4 in. (From Table 11)
32. A_t = Total area of perforations ≥ $4A_o$
A_t = (# of perforation/foot)(perforation area ft²)(perforated section length ft.)
A_t = 0.35 ft²
A_o = Internal orifice area (from Table 11 or computed)

Figure 2. Temporary Sediment Basin Design Data Sheet

Computed by: SI Date: ______ Checked by: ______ Date: ______
Project name: SD-02-88 Basin #: 2
Location: JHU/APL Utilities Relocation

Total area draining to basin: 2.2 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 2.2 ac. drainage = 7,920 ft³
2. Actual Volume of basin = 10,146 ft³
3. Excavate 10,146 ft³ (376 yd³) to obtain required capacity.
4. Vol. at dewatering elev. = 1800 ft³/ac x 2.2 ac. = 3,960 ft³
5. Vol. of basin at cleanout = 900 ft³/ac x 2.2 ac. = 1,980 ft³
6. Elevation corresponding to min. required volume of basin (riser crest elevation) 400.26 ft.
7. Permanent pool elevation 399.4 ft.
8. Distance from riser crest elevation to permanent pool elevation 0.86 ft.
9. Basin cleanout elevation 398.69 ft.
10. Distance from riser crest elevation to cleanout elevation 1.56 ft.

Spillway Design

11. Q_{10} = 16.5 cfs (peak discharge from 10-yr, 24-hr storm event, attach computations)
C=0.35 A=2.2Ac I=8.5in/hr Q=(0.35)(2.2Ac)(8.5in/hr)=6.5cfs

Principal Spillway (Ops) (See Detail 11)

12. Design Principal Spillway (Barrel) discharge, Design Q_{ps} = 6.5 cfs (min. 10% of 10 year peak or 8" Diameter Pipe)
13. H = 3.25 ft.; Barrel length = 60 ft.
14. Barrel Diam. 15 in. Note: Q_{ps} must equal or exceed Design Q_{ps}
Q_{ps} = Q (from Table 13 or 14) 9.43 x (length correction factor) 1.05 = 9.9 cfs.
15. Riser Diameter 24 in.; Riser Height 2.25 ft.; Riser Head (h) = 0.48 ft.
16. Trash Rack Diam. 36 in.; Trash Rack Height = 12 in.

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

C-10-10

Emergency Spillway (Oes) BASIN #2
N/A

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

Anti-Seep Collar Design (If Required)

21. y = 2.25 ft.; z = 2 :1; pipe slope = 5.4 %; Ls = 60 ft
22. Use 4 collars, 3 ft. - 9 in. square; projection = 1.1 ft.

Design Elevations

23. Riser Crest	= 400.26 ft.	24. Design High Water	= 400.73 ft.
25. Emergency Spillway Crest	= — ft.	26. Min. settled top of dam	= 0 ft.
27. Permanent pool	= 399.4 ft.	28. Bottom of Basin	= 398 ft.
29. Draw-down orifice invert	= 399.4 ft.		

Surface Area Design

30. Min. basin surface area; SA ≥ 0.0035 x Q_{10} = 0.0035 x 6.5 cfs ≤ 0.02 ac. 0.10 AC provided

Draw-down Device

31. Draw-down device orifice diameter = 4 in. (From Table 11)
32. A_t = Total area of perforations ≥ $4A_o$
A_t = (# of perforation/foot)(perforation area ft²)(perforated section length ft.)
A_t = 0.35 ft²
A_o = Internal orifice area (from Table 11 or computed)

BAFFLE CALCULATION:

Basin sediment #1

D=31.50ft
A=8750ft2

Le=L1+L2+L3+L4+L5+L6+L7
Le=26.66+71.39+106.58+104.19+105.58+104.77+63.90
Le=583.07

We=A/D
We=8750/31.50
We=277.78

Le/We >=2
=583.07/277.78
=2.1 >2

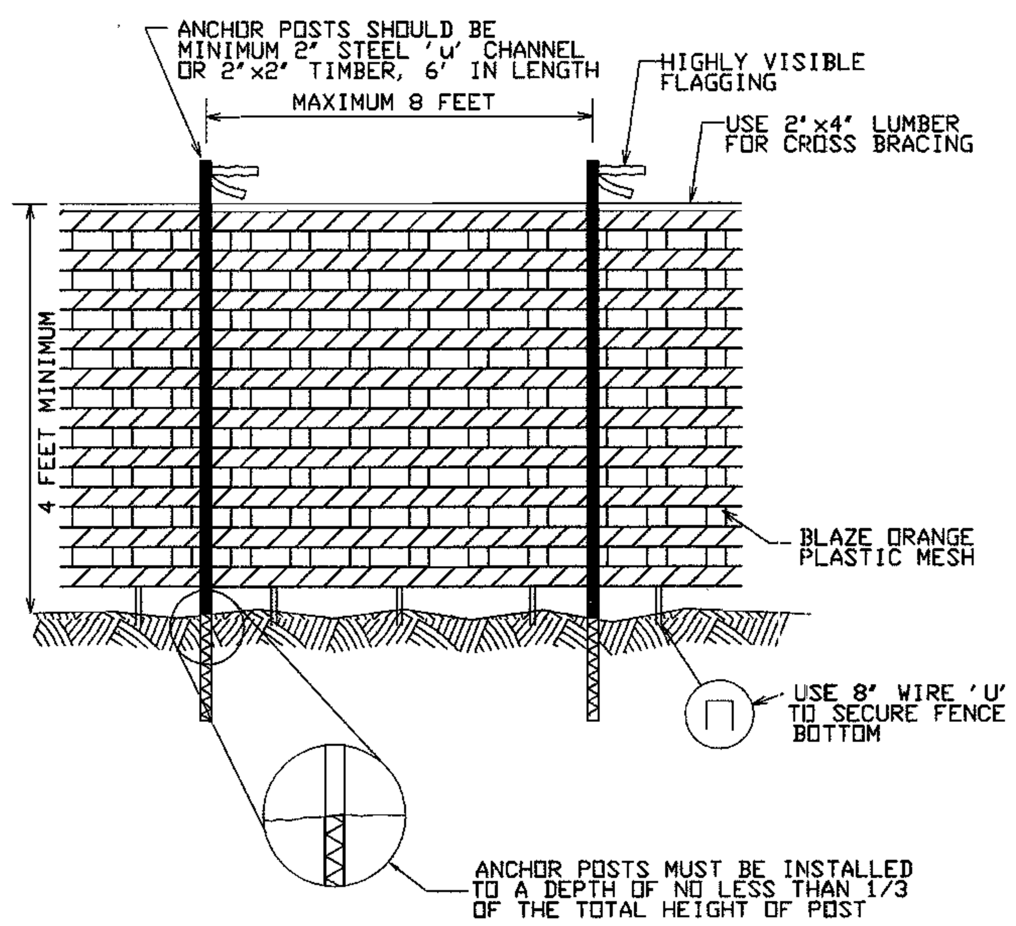
Basin sediment #2

D=64.10ft
A=5400 ft2

Le=L1+L2+L3
Le=70.08+61.29+40.18
Le=171.55

We=A/D
We=5400/64.10
We=84.24

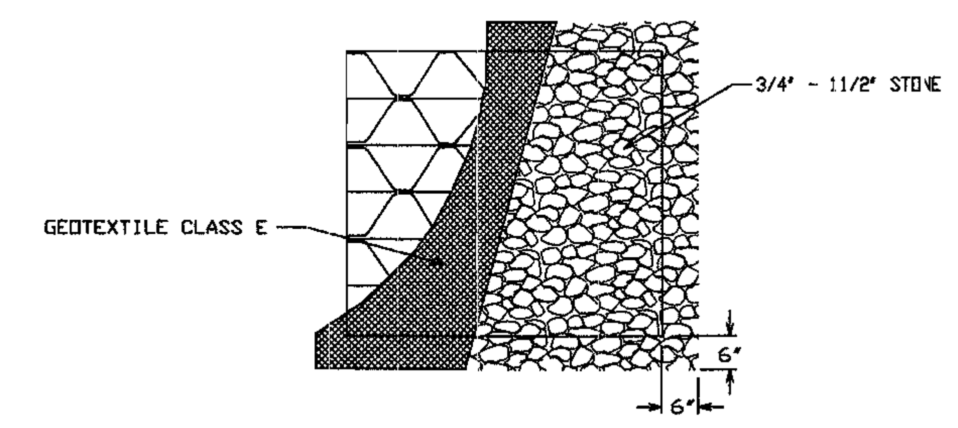
Le/We >=2
=171.55/84.24
=2.0 >2



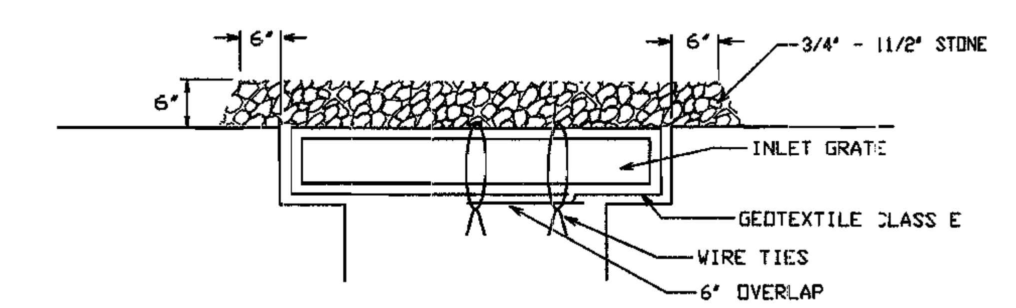
NOTES:
1. Forest protection device only.
2. Retention Area will be set as part of the review process.
3. Boundaries of retention Area should be staked and flagged prior to installation device.
4. Root damage should be avoided.
5. Protective signage is required.
6. Device should be maintained throughout construction

TREE PROTECTION DEVICE
NOT TO SCALE

DETAIL 23B – AT GRADE INLET PROTECTION



PLAN/CUT AWAY VIEW



STANDARD SYMBOL
AGIP

CROSS SECTION

MAX. DRAINAGE AREA = 1/4 ACRE

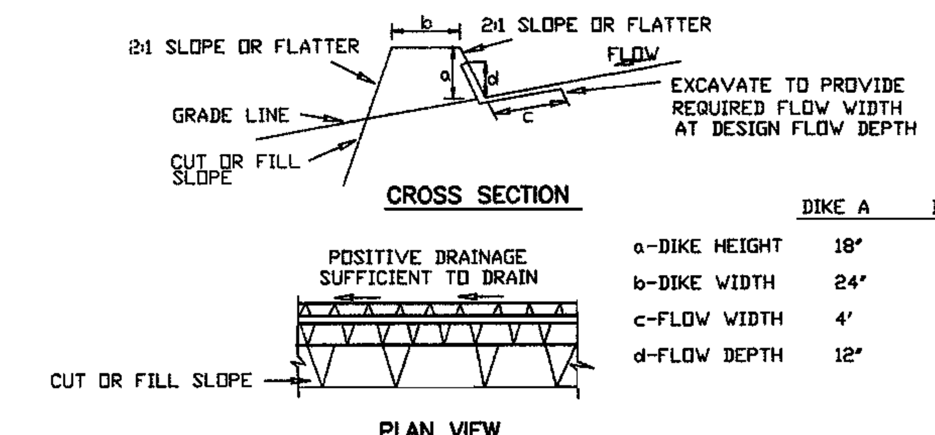
Construction Specifications

1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.

2. Place 3/4" to 11/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 5A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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 STABILIPATION
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.

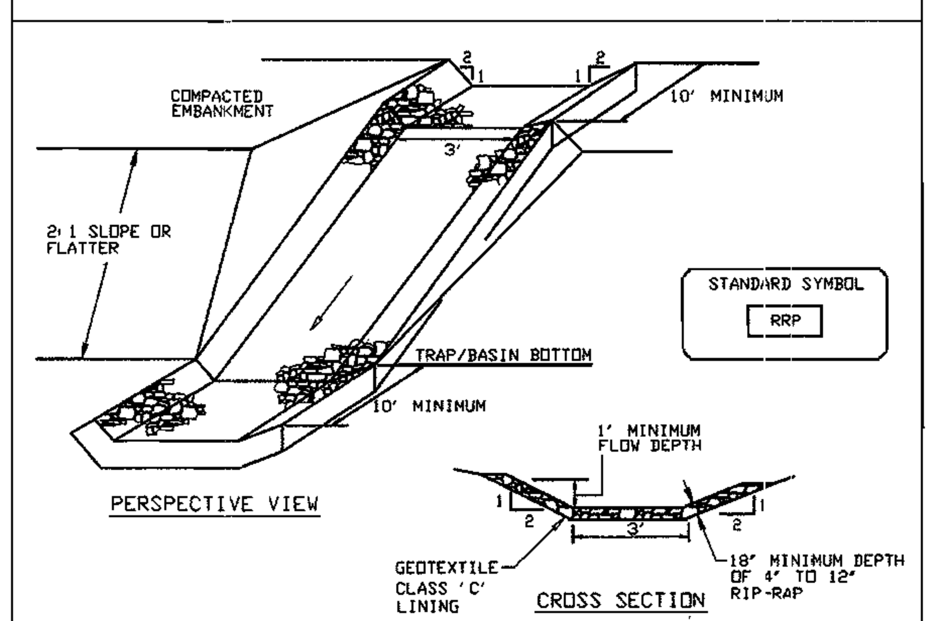
6. Fill shall be compacted by earth moving equipment.

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

DETAIL 5 – RIP-RAP INFLOW PROTECTION



STANDARD SYMBOL
RRP

Construction Specifications

1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".

2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.

3. Entrance and exit sections shall be installed as shown on the detail section.

4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.

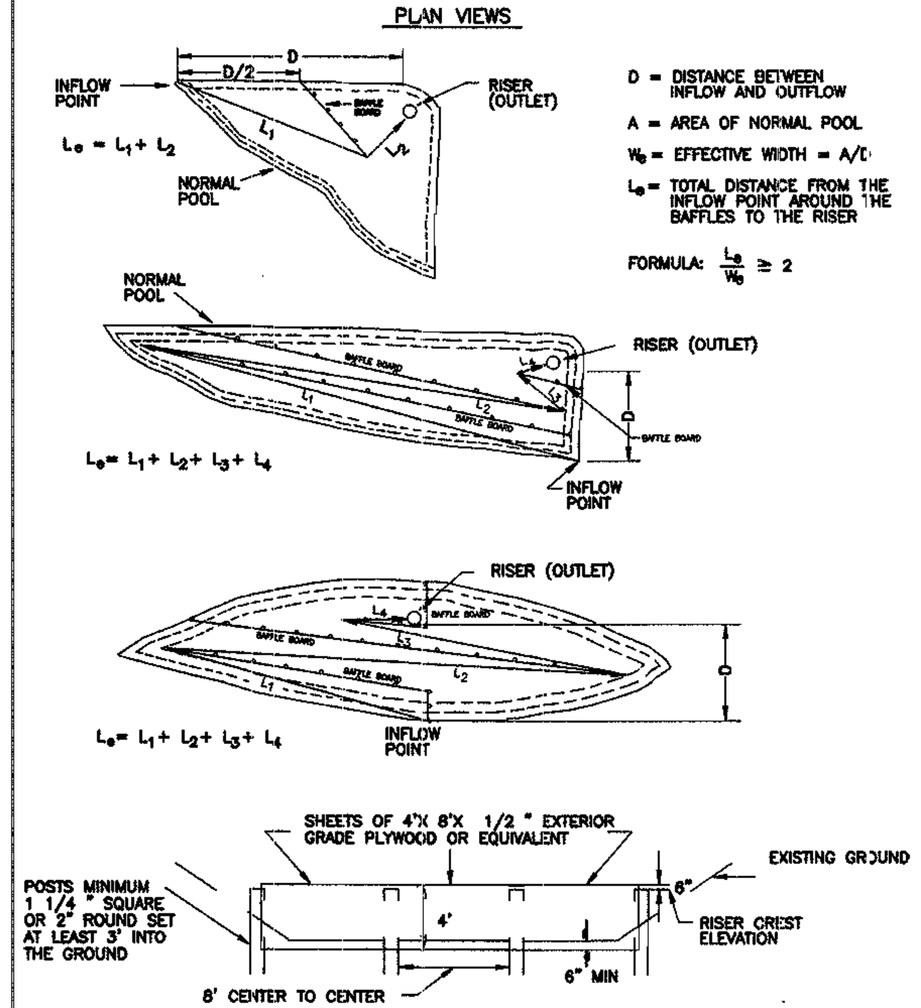
5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.

6. Rip-rap should blend into existing ground.

7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE B - 6 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 – SEDIMENT BASIN BAFFLES

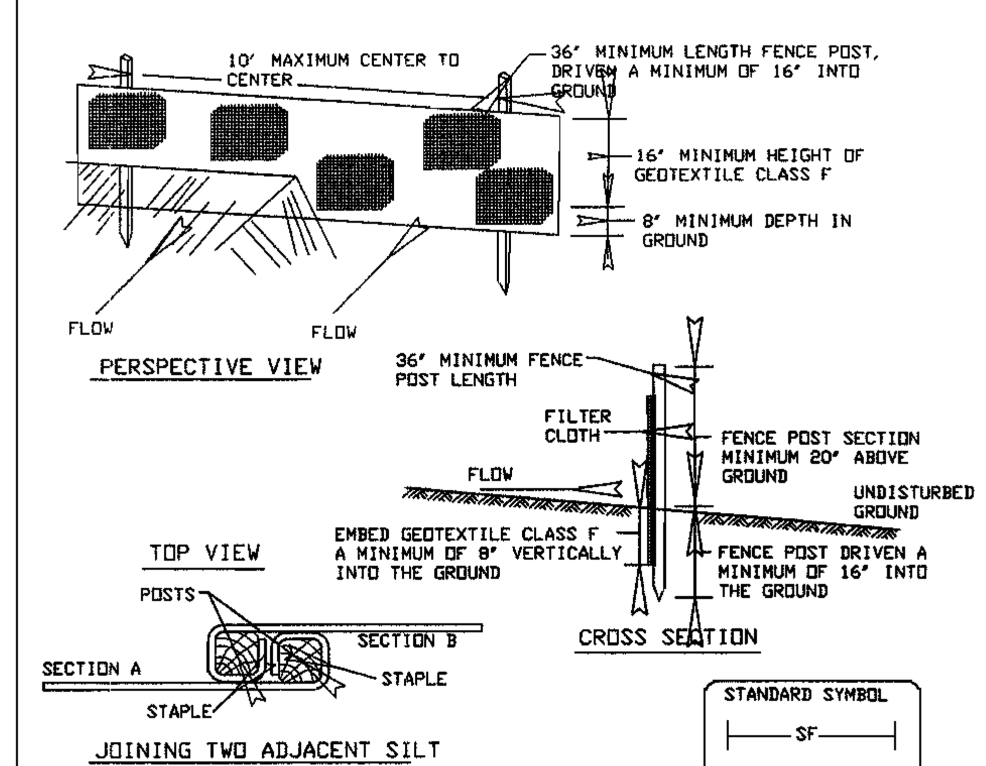


D = DISTANCE BETWEEN INFLOW AND OUTFLOW
A = AREA OF NORMAL POOL
W_e = EFFECTIVE WIDTH = A/D
L_e = TOTAL DISTANCE FROM THE INFLOW POINT AROUND THE BAFFLES TO THE RISER

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 22 – SILT FENCE



STANDARD SYMBOL
SF

Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard 'T' or 'U' section weighting not less than 1.00 pond per linear foot.

2. Geotextile 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: posts.

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

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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] 5/13/02
SIGNATURE OF DEVELOPER James E Loesch Date
PRINT NAME BELOW SIGNATURE

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR UTILITIES 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.

[signature] 5/13/02
SIGNATURE OF ENGINEER Robert A. Warner 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.

[signature] 5/28/02
USDA-NATURAL RESOURCES CONSERVATION SERVICE Date

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

[signature] 5/28/02
HOWARD SOIL CONSERVATION DISTRICT Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] 5/31/02
Chief, Development Engineering Division Date

[signature] MK 6/3/02
CHIEF, DIVISION OF LAND DEVELOPMENT HB DATE

[signature] 6/11/02
Director Date

AMT
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ALBANY, NY BOSTON, MA WHITE PLAINS, NY
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DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

SHEET ORGANIZATION KEY PLAN

A				
B	C	D	E	F
G	H	I	J	K
	L	M	N	O

SANNER ROAD
JOHNS HOPKINS RD.

SITE GRADING AND UTILITIES

REVISIONS:	DATE:
1. SEDIMENT BASINS CALCULATIONS	04/12/02
2. NOTES REVISED	05/06/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
SEDIMENT & EROSION DETAILS / SCH.
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CEC-3
COUNTY SHEET NO. C-39

SDP-02-88

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 James E. Loesch Date 5/13/02
PRINT NAME BELOW SIGNATURE

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR UTILITIES 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.

SIGNATURE OF ENGINEER Robert A. Warner Date 5/10/02
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 5/28/02

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

HOWARD SOIL CONSERVATION DISTRICT Date 5/28/02

SEDIMENT CONTROL NOTES:

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THE FOLLOWING: 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	361.0	ACRES
AREA DISTURBED	10.4	ACRES
AREA TO BE ROOFED OR PAVED	0.0	ACRES
AREA TO BE VEGITATIVELY STABILIZED	10.4	ACRES (TEMPORARY STONE 1.8 AC)
TOTAL CUT	37,000	CU.YDS.
TOTAL FILL	6,300	CU.YDS.
OFF SITE WASTE/BORROW AREA LOCATION	*	CU. YDS.

8) ANY SEDIMENT CONTROL PRACTICE WHICH ID DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE PREPARED ON THE SAME DAY OF DISTURBANCE.

* ANY CUT WILL BE TRANSFERRED TO A SITE WITH APPROVED AND ACTIVE PERMITTED PROJECT

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 LENGTHS THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY (MAXIMUM 100 FT/DAY/CREW).
ALL DISTURBED NON-PAVED TRENCH AREAS SHALL BE MULCHED AND SEEDED AT THE END OF EACH DAY TO ESTABLISH TURF. ALL DISTURBED PAVED TRENCH AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT TRAFFIC BEARING COVER.

SEQUENCE OF CONSTRUCTION (S.O.C.):

DURATION (WEEKS):	SEQUENCE OF CONSTRUCTION (S.O.C.):
4	1. CONTRACTOR SHALL OBTAIN A GRADING PERMIT. CONTRACTOR SHALL PREPARE A SEQUENCE FOR SEDIMENT CONTROL. THE OWNER SHALL REVIEW AND APPROVE THE WRITTEN SEQUENCE PERFORMING S.O.C. #2
3	2. NOTIFY APL AND COUNTY SEDIMENT CONTROL INSPECTOR AT LEAST 14 DAYS PRIOR TO BEGINNING WORK TO ARRANGE FOR A PRE-CONSTRUCTION MEETING.
2	3. INSTALL TEMPORARY SECURITY FENCE OUTSIDE CONSTRUCTION AREA AND GAIN APPROVAL OF FENCE INSTALLATION.
1	4. PERFORM CLEARING ONLY AS NECESSARY TO INSTALL TREE PROTECTION, STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SEDIMENT TRAP, INLET PROTECTION AND ALL OTHER SEDIMENT CONTROL FACILITIES WITHIN THE PROJECT LIMIT.
1	5. ESTABLISH STAGING AREA FOR CONSTRUCTION. DO NOT START S.O.C. #6 UNTIL FIRST RECEIVING PERMISSION FROM THE INSPECTOR TO PROCEED.
10	6. ROUGH GRADE SITE AND EXCAVATE TRENCH FOR CONSTRUCTION NEW UTILITIES CONTRACTOR SHALL PROVIDE MEANS OF MAINTAINING CONDENSATE FLOW FROM THE STORM DRAINS THROUGH THE CONSTRUCTION OF THE NEW UTILITIES AND OUTLET WORKS. FILL AND STABILIZE TRENCHES WITH VEGETATION AT THE END OF OF EACH DAY. MAXIMUM LENGTH OF TRENCH PER DAY 100 FEET PER CREW. REMOVE ANY SEDIMENT AT THE END OF EACH DAY FROM THE PAVED AREAS.
1	8. PERFORM FINE GRADING AND PERMANENT STABILIZATION OF THE SITE INCLUDING SOD, RIP-RAP, LANDSCAPE PLANTING, GABIONS, AND VEGETATIVE STABILIZATION.
1	9. CLEAN BASIN A (APPROVED PERMIT F-02-40) OF ANY SEDIMENTS TO ITS APPROVED GRADE AND REQUEST FINAL INSPECTION FROM COUNTY SEDIMENT CONTROL INSPECTOR.
1	10. WITH COUNTY SEDIMENT CONTROL INSPECTOR'S APPROVAL TO REMOVE CONTROLS BASED ON SITE CONDITIONS, REMOVE SEDIMENT CONTROL FACILITIES.
1	11. GRADED AREA AROUND TRAP #2 NEEDS TO BE STABILIZED AND NEW STORM DRAINAGE FUNCTIONING. EXISTING STORM DRAINAGE TO BE DISCONNECTED AND REMOVED. AT THE SAME TIME AS BASIN #2 IS TO BE DEMOLISHED. PORTABLE SEDIMENT TRAP TO BE USED FOR DEWATERING DURING PIPE REMOVAL. STABILIZE ALL DISTURBED AREA.
1	11. PROVIDE AND INSTALL PERMANENT SECURITY FENCE ALONG THE NEW ROAD AND GATE WHERE EXISTING GATE WAS LOCATED AT THE START OF CONSTRUCTION.
1	12. AFTER APPROVAL OF NEW FENCE BY APL, REMOVE TEMPORARY SECURITY FENCE AND RESTORE FENCE AREA DISTURBED BY THIS OPERATION.
27	TOTAL TIME

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 DISCING 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.) ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SEEDING:

FOR THE PERIOD MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 1-1/2 BUSHEL PER ANNUAL RYE (3.2 LBS/1,000 SQ. FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS/ACRE OF WEEPING LOVE GRASS (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 RAW 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) 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.

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

PERMANENT SEEDING NOTES:

ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:

SEEDBED PREPARATION:

LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS:

APPLY TWO TONS PER ACRE DOLOMITIC LIME STONE (92 LBS/1,000 SQ.FT) AND 600 LBS PER ACRE 0-20-20 FERTILIZER (14 LBS/1,000 SQ.FT) BEFORE SEEDING HARROW OR DISCING INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LNS PER ACRE 38-0-0 UREAFORM FERTILIZER (9 LBS/1,000 SQ. FT.) AND 500 LBS PER ACRE (11.5 LBS/1,000 SQ. FT.) OF 10-20-20 FERTILIZER.

SOIL AMENDMENTS:

FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 100 LBS PER ACRE (2.3 LBS/1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE, FOR THE PERIOD MAY 1 THROUGH JULY 21, 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. PROJECT 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 500, OPTION (3) - SEED WITH 100 LBS/ACRE KENTUCKY 21 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STAW. ALL SLOPES SHOULD BE HYDROSEEDED.

MULCHING:

APPLY 1-1/2 TO 2 TONS PER ACRE (10 TO 90 LBS/1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GAL/1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES. ON SLOPES 8 FEET OR HIGHER USE 348 GALLONS PER ACRE (8 GAL/1,000 SQ.FT.) FOR ANCHORING.

MAINTENANCE:

INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.
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 MISTURE IS MARCH 1 TO APRIL 30.

TOP SOIL SPECIFICATIONS - SOIL TO BE USED AS TOP SOIL MUST MEET THE FOLLOWING:S
TOPSOIL SHALL BE A SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM OR 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 TASH, OR OTHER MATERIALS LARGER THAN 1-1/2" IN DIAMETER.

TOPSOIL MUST BE FREE OF PLANTS OR 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/1000 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.

ALLITERATIVE 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:

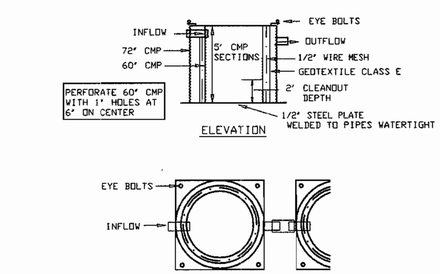
A.) COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.

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.

DETAIL 21 - PORTABLE SEDIMENT TANK



STANDARD SYMBOL
⊠ PST

Construction Specifications

1. The following formula should be used in determining the storage volume of the sediment tank: 1 cubic foot of storage for each gallon per minute of pump discharge capacity.

2. An example of a typical sediment tank is shown above. Other container designs can be used if the storage volume is adequate and approval is obtained from the local approving agency.

3. Tanks may be connected in series.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE D - 14 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 5/31/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02
Director — Date 6/11/02

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

FOR EROSION AND SEDIMENT CONTROL ONLY

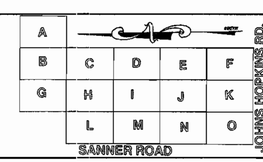
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02



SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

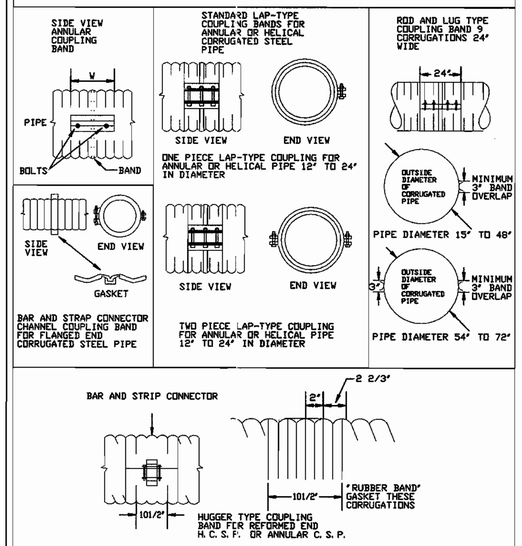
REVISIONS: DATE:
1. NOTES REVISED 04/12/02
2. NOTES REVISED 05/06/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
SEDIMENT & EROSION NOTES / SPEC.
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CEC-4
COUNTY SHEET NO. C-40

SDP-02-88

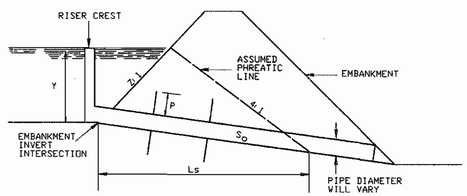
DETAIL 17 – TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE
(ALL CONNECTOR BANDS REQUIRE NEOPRENE GASKETS)



NOTE: UNDER NO CIRCUMSTANCES WILL THE DIMPLE (UNIVERSAL) CONNECTOR BAND BE ACCEPTABLE FOR USE IN ANY SEDIMENT CONTROL OR STORMWATER MANAGEMENT STRUCTURE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 10 – 27	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 13 – ANTI-SEEP COLLAR DESIGN



ANTI-SEEP COLLAR DESIGN

where: p= vertical projection of anti-seep collar(ft).

Ls= length of pipe in the saturated zone (ft.)

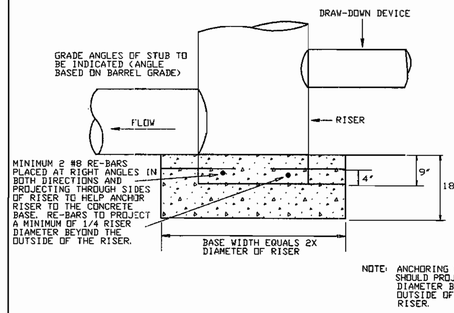
y= distance in feet from upstream invert of pipe to highest normal water level expected to occur during the life of the structure, usually the top of the riser.

z= slope of upstream embankment as a ratio of z ft. horizontal to one ft. vertical.

So= slope of pipe in feet per foot.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 10 – 23	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 15 – RISER BASE DETAIL



Construction Specifications

The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 10' or less in height are:

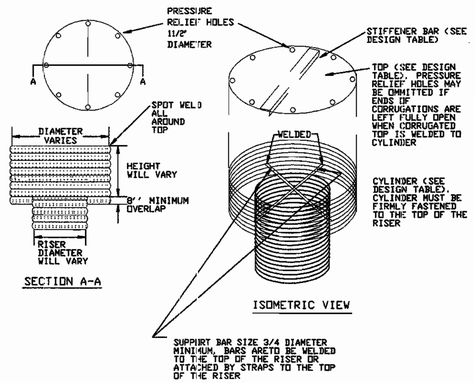
1. A concrete base 18" thick with the riser embedded 9" in the base.

2. A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2' of stone, gravel, or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

Note: For risers greater than ten feet high computations shall be made to design a base which will prevent floatation. The minimum factor of safety shall be 1.20 (downward forces = 1.20 x upward forces).

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 10 – 25	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 16 – CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE



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

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 James E. Loesch Date 5/13/02
PRINT NAME BELOW SIGNATURE

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR UTILITIES 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.

SIGNATURE OF ENGINEER Robert A. Werner Date 5/10/02
PRINT NAME BELOW SIGNATURE

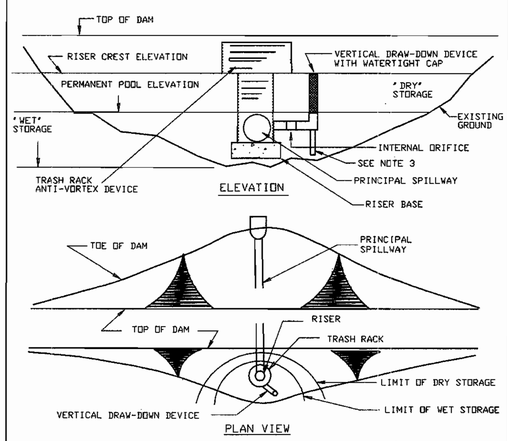
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

USDA-NATURAL RESOURCES CONSERVATION SERVICE Date 5/28/02

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

HOWARD SOIL CONSERVATION DISTRICT Date 5/28/02

BASIN DRAWDOWN SCHEMATIC
VERTICAL DRAW-DOWN DEVICE



Construction Specifications

1. Perforations in the draw-down device may not extend into the wet storage.

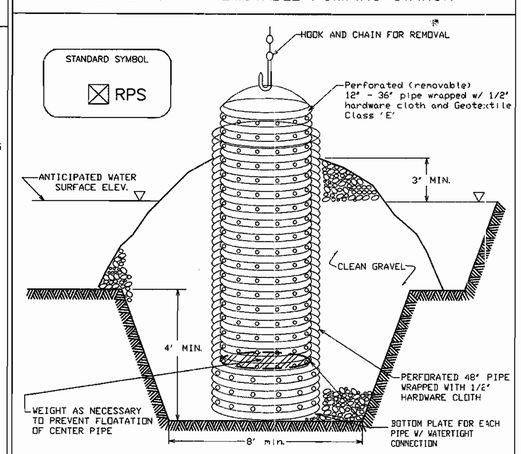
2. The total area of the perforations must be greater than 2 times the area of the internal orifice.

3. The perforated portion of the draw-down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.

4. 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 guage minimum wire.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 10 – 30	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 20A – REMOVABLE PUMPING STATION



ELEVATION (CUT AWAY)

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 1/2" 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 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE D – 12 – 5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 16 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE (continued)

Riser Diam., in.	Trash Rack Cylinder Diam. in.	Thick., gage	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 x1/4 angle	10 ga.	--
54	78	12	25	"	"	--
60	90	12	29	1-1/2" pipe or 1-1/2 x 1-1/2 x1/4 angle	8 ga.	--
66	96	10	33	2" pipe or 2x2x3/16 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	"	2-1/2 x2-1/2x 5/16 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.

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 5/21/02
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/3/02
Director — Date 6/11/02

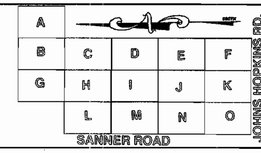
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
AMT FILE # 98-153

Einhorn Yaffee Prescott

THE FLOUR MILL 1000 POTOMAC ST. NW STE. L1
WASHINGTON, D.C. 20007 (202) 471-5000

ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02



SHEET ORGANIZATION KEY PLAN

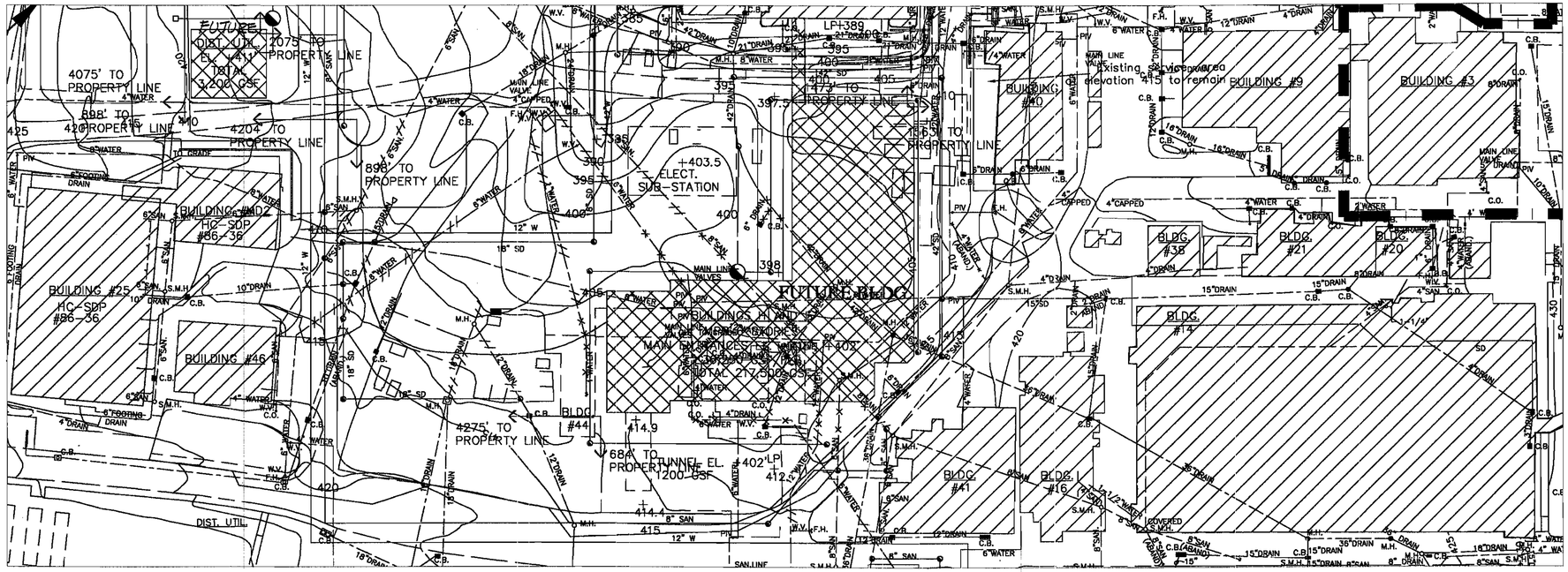
SITE GRADING AND UTILITIES

REVISIONS:
1. NEW SHEET ADDED 04/12/02
2. NOTES REVISED 05/06/02

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
SEDIMENT & EROSION DETAILS / SCH.
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
APL SHEET NO. CEC-5
COUNTY SHEET NO. C-41

SDP-02-88



LEGEND

- EXISTING CONTOUR
- TREELINE
- FOREST STAND
- DRAINAGE AREA
- 100 YEAR FLOODPLAIN
- STREAM VALLEY BUFFER
- STREAM SYSTEM
- WETLANDS
- 25' WETLAND BUFFER
- SOIL CLASSIFICATION BOUNDARY
- DD — STREAMS
- 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
- 18" DRAIN — EXISTING STORM DRAIN TO BE REMOVED
- 12" W — EXISTING WATER TO BE REMOVED
- 8" SAN. — EXISTING SANITARY SEWER TO BE REMOVED
- 8" SAN. — EXISTING SANITARY SEWER TO BE ABANDONED
- EXISTING STORM WATER MANAGEMENT POND
- WETLANDS
- SLOPES >25%
- SLOPES 15% – 25%
- 26 — EXISTING BUILDING
- 26 — FUTURE PROPOSED BUILDING
- PARKING LOT
- EDGE OF ROAD

- OA-1 — OBSERVATION AREA
- A1 — 30" DBH TREE
- A1B2 — SOILS CLASSIFICATION
- PROPOSED INFILTRATION TRENCH
- C.B. C.B. — CATCH BASIN
- M.H. — EXISTING MANHOLE
- S.M.H. — SANITARY SEWER MANHOLE
- PROPOSED MANHOLE
- PROPOSED STORMCEPTOR
- PIV — EXISTING POST INDICATOR VALVE
- WV — EXISTING WATER VALVE
- F.H. — EXISTING FIRE HYDRANT
- C.O. — EXISTING CLEANOUT
- PROPOSED STORM DRAIN CATCH BASIN
- PROPOSED STORM WATER MANAGEMENT POND

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/31/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/7/02

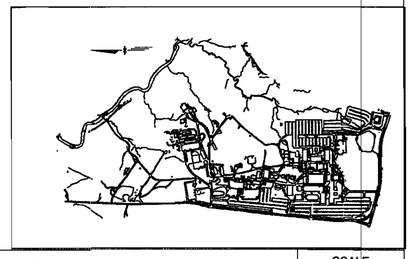
DIRECTOR — DATE 6/11/02

OWNER/DEVELOPER
APPLIED PHYSICS LABORATORY–
THE JOHNS HOPKINS UNIVERSITY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20707

SURVEYOR
WHITMAN, REQUART AND ASSOCIATES
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND 21218

0 50' 100' 150'

NORTH



A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
10750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
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ALBANY, NY BOSTON, MA WHITE PLAINS, NY
NEW YORK CITY, NY LOS ANGELES, CA

DES: B. WARNER
DRN: S. ITANI
CHK: S. ITANI
DATE: 04/12/02

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B	C	D	E	F
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SANNER ROAD
JOHNS HOPKINS RD.
SHEET ORGANIZATION KEY PLAN

SITE GRADING AND UTILITIES

APPLIED PHYSICS LABORATORY
THE JOHNS HOPKINS UNIVERSITY PARCEL 1
NEW BUILDINGS LOCATION
TAX MAP 41 PARCEL 123
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

APL SHEET NO. CBL-1

COUNTY SHEET NO. C-42

SDP-02-88