

GENERAL NOTES

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ELEVATIONS SHOWN ARE BASED ON THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY DATUM. JHU-APL-DATUM - 0.94' = HOWARD COUNTY DATUM.
- THE CONTRACTOR SHALL CALL 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
- POLY FILTER X FILTER CLOTH BLANKET OR EQUAL SHALL BE PLACED UNDER ALL STONE RIP RAP.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN AN UNINTERRUPTED SERVICE. ANY DAMAGE BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- ACCESS TO THE CONSTRUCTION AREA THROUGH THE SECURE AREA OF THE APPLIED PHYSICS LABORATORY (WITHIN THE FENCED ENCLOSURE) MUST BE ARRANGED IN ADVANCE BY CONTACTING THE LABORATORY SECURITY OFFICE (301) 953-7100.
- SECURITY MUST BE MAINTAINED WITHIN THE EXISTING FENCED AREA. ALL REQUIRED FENCE CONSTRUCTION (EXCEPT AT NEW ELEC. SUBSTATION) AND RELOCATION SHALL BE BY THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY. HOWEVER THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH JHU APL AS TO WHEN SUCH WORK IS REQUIRED.
- LANDSCAPING SHALL BE BY JHU-APL.
- THE CONTRACTOR SHALL CONTACT MR. ARTHUR STUCKI, PLANT ENGINEER, (301) 953-7100 AT LEAST 5 WORKING DAYS PRIOR TO COMMENCING ANY WORK OR SHUTTING DOWN ANY UTILITIES.
- THE CONTRACTOR SHALL SHUTDOWN AND TIE-IN TO THE EXISTING WATER SYSTEM ONLY AFTER NORMAL WORKING HOURS AT JHU-APL. WORK SHALL BE SCHEDULED ACCORDINGLY. NORMAL WORKING HOURS ARE 8:30 AM TO 5:00 PM. MONDAY THROUGH FRIDAY.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- ALL WATER MAINS SHALL BE DUCTILE IRON PIPE CLASS 52.
- ALL SEWER MAINS SHALL BE P.V.C. UNLESS OTHERWISE NOTED. (HOWARD COUNTY SCHEDULE 35 PVC)
- THE CONTRACTOR SHALL MINIMIZE THE NUMBER OF TREES TO BE CUT DURING THE SANITARY SEWER CONSTRUCTION. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR THE DISPOSAL OF THESE CUT TREES.
- ALL 4 INCH TELEPHONE CONDUITS SHALL BE PLASTIC COATED STEEL AND INSTALLED WITH A MINIMUM OF 3' OF COVER.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
- TOP OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3/4 FEET OF COVER UNLESS OTHERWISE NOTED.
- ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1003 THE STANDARD SPECIFICATIONS.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS:  
 MISS UTILITY: 1-800-257-7777  
 VERIZON: 1-800-743-0033  
 BUREAU OF UTILITIES: 410-313-4900  
 AT&T: 1-800-252-1133  
 B.G.B.E. (CONSTRUCTION SERVICES): 410-637-8713  
 B.G.B.E. (EMERGENCY): 410-685-0123  
 STATE HIGHWAY ADMINISTRATION: 410-531-5633  
 COLONIAL PIPELINE CO.: 410-795-1390
- EXISTING TOPOGRAPHY SHOWN HEREON FOR THE PROPOSED MODULAR BUILDING IS TAKEN FROM FIELD RUN TOPOGRAPHIC SURVEYS WITH TWO FOOT CONTOUR INTERVALS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED FEBRUARY, 2018.
- SOIL COMPACTION SPECIFICATIONS, REQUIREMENTS, METHODS AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER. GEOTECHNICAL ENGINEER TO CONFIRM ACCEPTABILITY OF PROPOSED PAVING SECTION, BASED ON SOIL TEST PRIOR TO CONSTRUCTION.

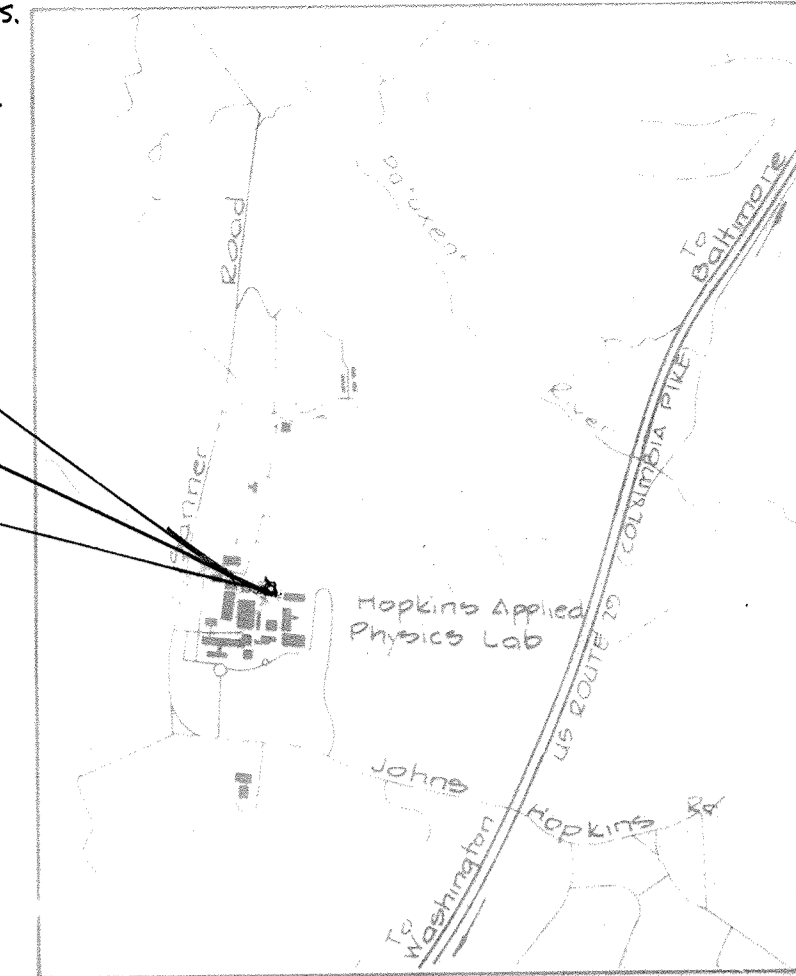
SITE DATA

1 ZONING	RURAL R
2 SITE AREA	14.0 ACRES
3 BUILDING FLOOR AREA (GROSS AREA OF THREE FLOORS)	77,000 S.F. 101,000 S.F. $\Delta$
4 ACREAGE OF ENTIRE PROPERTY	366 ACRES
5 EXISTING BUILDING COVERAGE	13.0 ACRES = 3.55% 15.2 ACRES = 4.15% $\Delta$
6 PROPOSED BUILDING COVERAGE	1.0 ACRES = 0.27%
7 MAXIMUM NUMBER OF EMPLOYEES IN THE PROPOSED BUILDING	300 325 $\Delta$
8 TOTAL NUMBER OF EXISTING EMPLOYEES PERSONNEL ON THE ENTIRE SITE	3100 3500 $\Delta$
9 TOTAL NUMBER OF EXISTING AND PROPOSED EMPLOYEES PERSONNEL ON THE ENTIRE SITE	3225 3500 $\Delta$
10 TOTAL NUMBER OF PARKING SPACES REQUIRED	2255 2450 $\Delta$
11 TOTAL NUMBER OF PARKING SPACES PROVIDED	2596* 3305* $\Delta$ $\Delta$
EXISTING SPACES	2494 3296
SPACES PROPOSED	102 9
* TOTAL SPACES	2596 3305 $\Delta$ $\Delta$

GENERAL NOTES CONTINUED

- THE GEOTECHNICAL ENGINEER TO CONFIRM PAVING SECTION PRIOR TO CONSTRUCTION (SEE DETAILS, SHEET 1).
- CONTRACTOR RESPONSIBLE FOR CONSTRUCTING ALL HANDICAP RAMPS AND HANDICAP ACCESS IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.
- THE SUBJECT PROPERTY IS ZONED REC IN ACCORDANCE WITH THE 10/06/13 COMPREHENSIVE ZONING PLAN.
- THERE ARE NO STEEP SLOPES, WETLANDS, STREAMS, THEIR BUFFERS, FOREST CONSERVATION EASEMENTS OR 100-YEAR FLOODPLANS LOCATED ON SITE.
- THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THIS PROPERTY.
- THERE ARE NO HISTORIC STRUCTURES LOCATED ON THE PROPERTY.
- SIGNAGE SHALL BE PROVIDED ON THE BUILDING IDENTIFYING THE BUILDING ADDRESS.
- TRASH COLLECTION AND RECYCLABLES TO BE PRIVATE.
- THE PROPOSED MODULAR BUILDING WILL BE LOCATED OVER EXISTING PAVING.
- SLOPES IN THE HANDICAP PARKING SPACES AND AISLE WILL NOT EXCEED 2% IN ANY DIRECTION.
- NO ESDV REQUIRED FOR PROPOSED MODULAR BUILDING.
- FOREST CONSERVATION OBLIGATION HAS BEEN FULFILLED UNDER F-04-188 AND F-07-035.

SITE



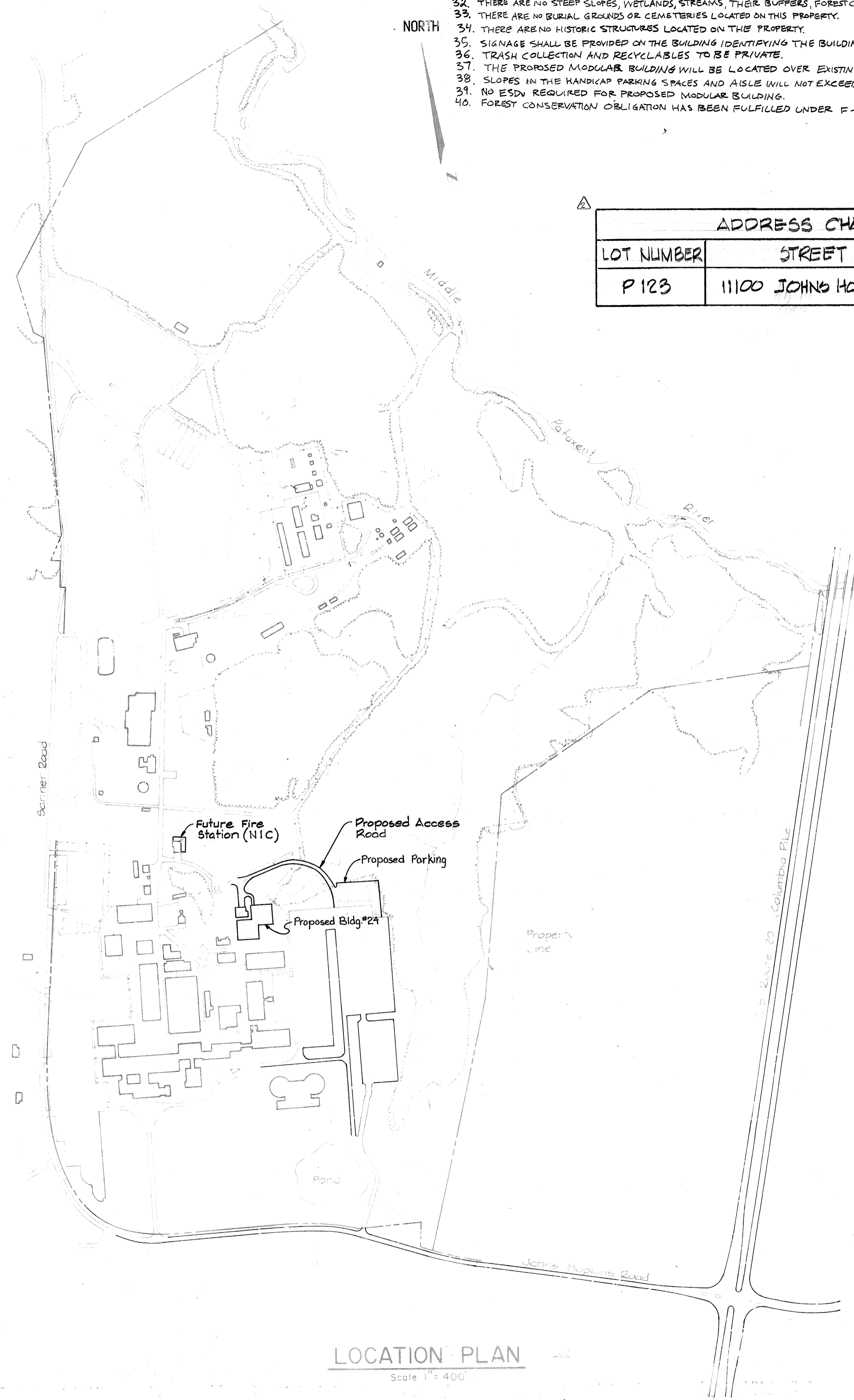
VICINITY MAP  
Scale 1"=200'

ADC MAP COORDINATES: 32/C7

SHEET INDEX

- TITLE SHEET
- BUILDING 24 GRADING AND UTILITY PLAN
- 50 SCALE GRADING AND UTILITY PLAN
- BUILDING CROSS SECTIONS AND ACCESS ROAD PROFILE
- STORM DRAIN PROFILES
- DRAINAGE AREA MAPS, ROAD AND DRAIN DETAILS
- WATER AND SEWER PROFILES AND DETAILS
- SEDIMENT CONTROL PLAN
- SEDIMENT CONTROL NOTES AND DETAILS
- STORMWATER MANAGEMENT PLANS AND DETAILS
- LANDSCAPE PLAN
- CONSTRUCTION SPECIFICATIONS
- SITE LAYOUT & GRADING PLAN, NOTES AND DETAILS.

ADDRESS CHART	
LOT NUMBER	STREET ADDRESS
P 123	11100 JOHN HOPKINS ROAD



LOCATION PLAN  
Scale 1"=400'

SUBDIVISION NAME		SECT./AREA	LOT/PARCEL
J.H.U. Applied Physics Lab		N/A	50 & 123
PLAT# OR L/F	BLOCK#	ZONE	TAX/ZONE MAP
18968	1G	REC	41
ELEC. DIST.		CENSUS TR.	
th		6051.02	
WATER CODE		SEWER CODE	

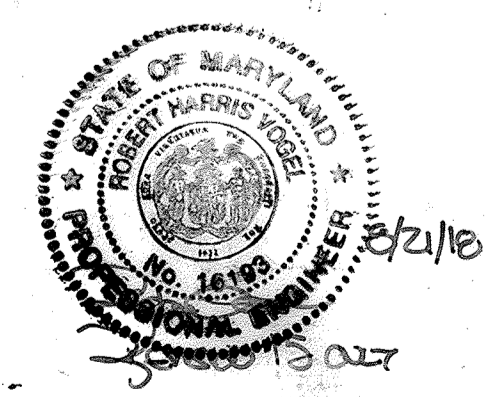
APPROVED FOR  
PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS.  
HOWARD COUNTY HEALTH DEPARTMENT  
*James Bolger* 4-1-85  
COUNTY HEALTH OFFICER

APPROVED: STORM DRAINAGE SYSTEMS, ROADS AND PUBLIC SEWERAGE SYSTEMS - HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Steve F. Nemey* 3-28-85  
DIRECTOR

*William J. Cain* 1-22-85  
CHIEF, BUREAU OF ENGINEERING

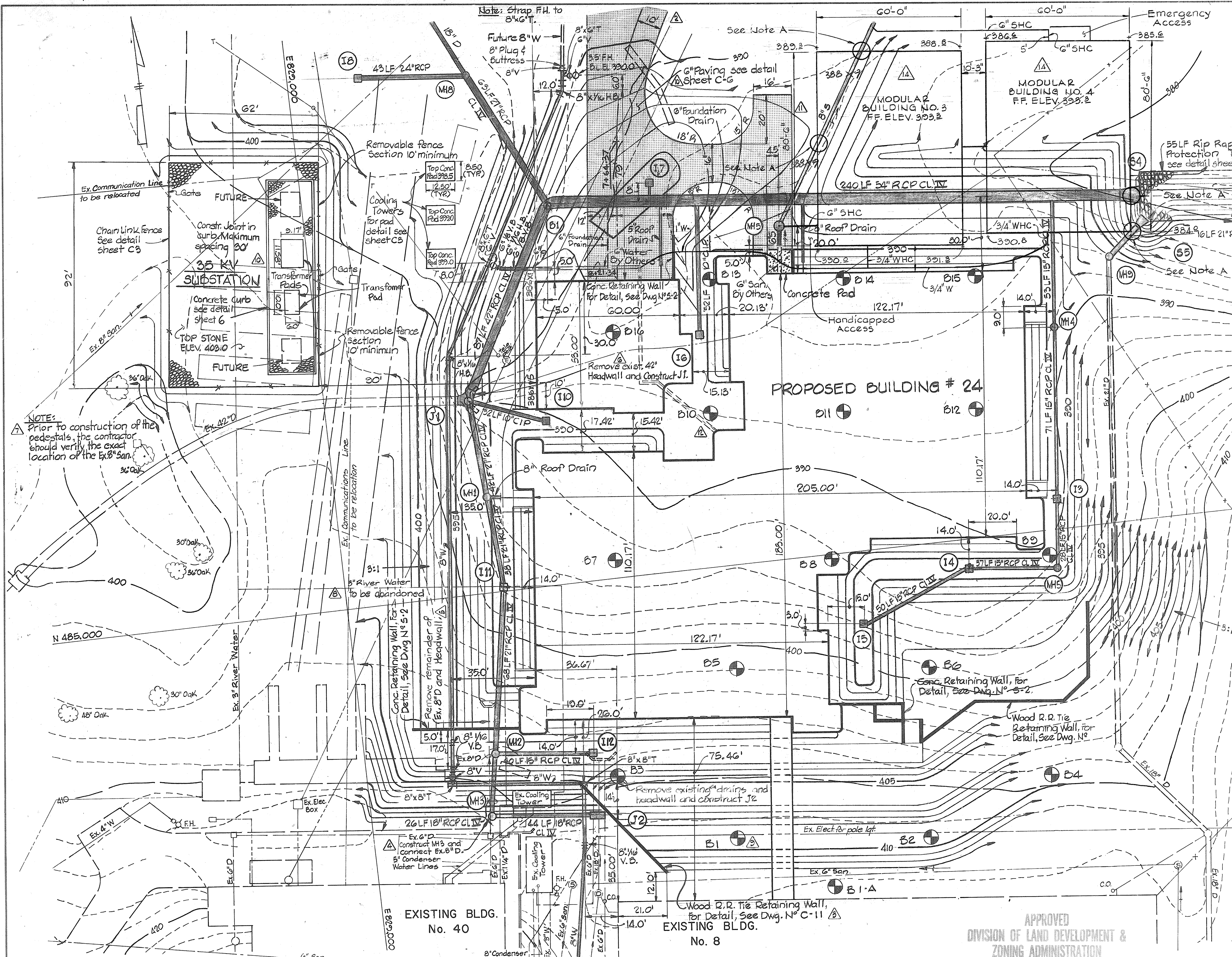
APPROVED, HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
PLANNING DIRECTOR  
*John W. Muehman* 4-2-85  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

APPROVED  
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION  
HOWARD COUNTY, MARYLAND  
DATE 2-25-85  
*John H. Hume*



BUILDING #24 ADDITION TO SDP-83-21

WHITMAN, REINHARDT AND ASSOCIATES CIVIL & STRUCTURAL ENGINEERS 2315 SAINT PAUL STREET BALTIMORE, MARYLAND 21218 <i>Kenneth A. Reinhardt</i>	JAMES GOLDSTEIN & PARTNERS ARCHITECTS 225 MILLBURN AVENUE MILLBURN, NEW JERSEY 07041 HENRY ADAMS, INC. MECHANICAL & ELECTRICAL ENGINEERS 600 BALTIMORE AVENUE BALTIMORE, MARYLAND	APPLIED PHYSICS LABORATORY THE JOHNS HOPKINS UNIVERSITY JOHNS HOPKINS ROAD HOWARD COUNTY, MARYLAND APPROVED FOR THE UNIVERSITY BY: DATE: TITLE: <i>C. J. Smith</i>	BUILDING 24 AND ASSOCIATED DEVELOPMENT & PROPOSED MODULAR BUILDING APPLIED PHYSICS LABORATORY THE JOHNS HOPKINS UNIVERSITY 11100 JOHN HOPKINS ROAD, LAUREL MD. 20707	TITLE SHEET PLAT 18968 4th ELECTION DISTRICT HOWARD COUNTY, MD. TAX MAP #1 PARCEL 50 AND 123	REVISIONS	SCALE AS SHOWN	DRAWING SHEET NO 1 OF 13 DATE 11-19-84 C1 OF C13									
					<table border="1"> <tr> <td>15</td> <td>REVISE TO SHOW THE REMOVAL OF BUILDING 40 (WHICH WAS PREVIOUSLY REMOVED) AND ILLUSTRATE A NEW MODULAR BUILDING.</td> <td>7-24-85</td> </tr> <tr> <td>A</td> <td>Revise Site Data Tabulation</td> <td>7-15-87</td> </tr> <tr> <td>2</td> <td>Add Sheet 12 to Index</td> <td>1-28-85</td> </tr> <tr> <td>3</td> <td>Add address chart</td> <td>1-28-85</td> </tr> <tr> <td>4</td> <td>Changes as per Addendum #1</td> <td>12-21-84</td> </tr> </table>	15		REVISE TO SHOW THE REMOVAL OF BUILDING 40 (WHICH WAS PREVIOUSLY REMOVED) AND ILLUSTRATE A NEW MODULAR BUILDING.	7-24-85	A	Revise Site Data Tabulation	7-15-87	2	Add Sheet 12 to Index	1-28-85	3
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2	Add Sheet 12 to Index	1-28-85														
3	Add address chart	1-28-85														
4	Changes as per Addendum #1	12-21-84														



- NOTE:**
1. Owner will relocate or abandon all existing utilities except 6" and 8" sanitary lines, prior to Contractor's start of site operations.
  2. Contractor shall hand-excavate ground 6" and 8" lines and sleeve the concrete "Incoming Pedestal Bases" at Electrical Substation.
  3. Contractor shall hand-excavate around 8" sanitary line for installation of 18". See Profile on Dwg. C-5.
  4. Contractor shall be responsible for protecting and maintaining existing 6" and 8" sanitary lines.

Note A:  
When working near utility lines contractor is to verify and protect the utility lines.

**STORM DRAIN STRUCTURE SCHEDULE**

No.	Type	Top	Inv. In	Inv. Out	Remarks
I 1	Δ5	381.00	376.20	373.60	SD 4.01
I 2	S Combination	390.00	-	384.43	SD 4.32
I 3	S	389.20	384.25	384.75	SD 4.22
I 4	S	389.20	386.10	385.80	SD 4.22
I 5	Yard Inlet	389.20	-	386.60	SD 4.14
I 6	Yard Inlet	389.20	-	384.47	SD 4.14
I 7	S	384.60	-	379.47	SD 4.22
I 8	Double S	395.00	-	388.50	SD 4.23 Rectangular Grate
I 9	S	397.00	-	392.45	SD 4.22
I 10	Yard Inlet	389.20	-	385.32	SD 4.14
I 11	S	389.50	385.70	385.48	SD 4.22
I 12	S	401.20	-	396.90	SD 4.22
J 1	Standard	392.00	384.40	383.13	SD 1.12
J 2	Special	411.60	407.66	402.90	See detail sheet
MH 1	Stand or Precast	391.00	385.10	384.82	
MH 2	"	401.80	394.00	386.38	
MH 3	"	411.50	400.00	397.30	
MH 4	"	389.20	384.04	382.86	
MH 5	"	389.90	385.43	385.23	
MH 6	"	370.85	365.50	364.24	
MH 7	"	376.50	370.60	370.12	
MH 8	"	396.50	386.01	384.04	
MH 9	"	386.00	375.80	377.10	
S 1	24" Precast CMP	-	364.00	-	SD 5.61
S 4	54" Precast	-	375.48	-	SD 5.51 or 5.52
S 5	21" Precast	-	376.14	-	SD 5.52
B 1	Bend	390.00	379.75	378.08	SD 1.01

NOTE:  
Prior to construction of the pedestals, the contractor should verify the exact location of the Ex. 8" San.

APPROVED  
DIVISION OF LAND DEVELOPMENT &  
ZONING ADMINISTRATION  
HOWARD COUNTY, MARYLAND  
DATE **2-25-85**

**REVISIONS**

Δ	Changed Inv. In/Out, J2 (MH) on table	6-18-85
Δ	show water line to Bldg. 24	1-28-85
Δ	Revise driveway & add turnaround	1-28-85
Δ	Changes as per Addendum #1	12-27-84
Δ	Added boring locations	12-28-84

APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS,  
HOWARD COUNTY HEALTH DEPARTMENT.

*John G. ...* 4-1-85  
DATE

APPROVED: STORM DRAINAGE SYSTEMS, ROADS AND  
PUBLIC SEWERAGE SYSTEMS - HOWARD COUNTY  
DEPARTMENT OF PUBLIC WORKS.

*Walter F. ...* 3-28-80  
DATE

*William B. ...* 3-28-85  
DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

PLANNING DIRECTOR  
*John W. ...* 4-2-85  
DATE

WHITMAN, REQUARDT AND ASSOCIATES  
CIVIL & STRUCTURAL ENGINEERS  
2315 SAINT PAUL STREET  
BALTIMORE, MARYLAND 21218  
*Kenneth ...*

JAMES GOLDSTEIN & PARTNERS  
ARCHITECTS  
225 MILLBURN AVENUE  
MILLBURN, NEW JERSEY 07041

HENRY ADAMS, INC.  
MECHANICAL & ELECTRICAL ENGINEERS  
600 BALTIMORE AVENUE  
BALTIMORE, MARYLAND

APPLIED PHYSICS LABORATORY  
THE JOHNS HOPKINS UNIVERSITY  
Johns Hopkins Road Howard County, Maryland

Approved For The University By:  
Date: Title: *CJ Smith*

**BUILDING 24**  
AND  
**ASSOCIATED DEVELOPMENT**  
APPLIED PHYSICS LABORATORY  
THE JOHNS HOPKINS UNIVERSITY  
11100 JOHNS HOPKINS ROAD, LAUREL MD. 20707

**GRADING AND UTILITY PLAN**  
Fifth Election District Howard County, MD  
Tax Map 41 Parcel 50 and 123

REVISIONS  
Δ Added constr. note 12-10-84  
Δ Added constr. note 12-10-84  
Δ Added constr. note 12-10-84  
Δ Added constr. note 12-10-84  
Δ Added constr. note 12-10-84  
Δ Added detail sheet no. 12-10-84  
Δ Added roadway dimension 12-10-84  
Δ Added north arrow 12-10-84

SCALE: 1" = 20'  
SHEET NO. 2  
OF 13  
DATE: 11-19-84

**DRAWING**  
**C 2**  
OF C 13  
SDP-85-100

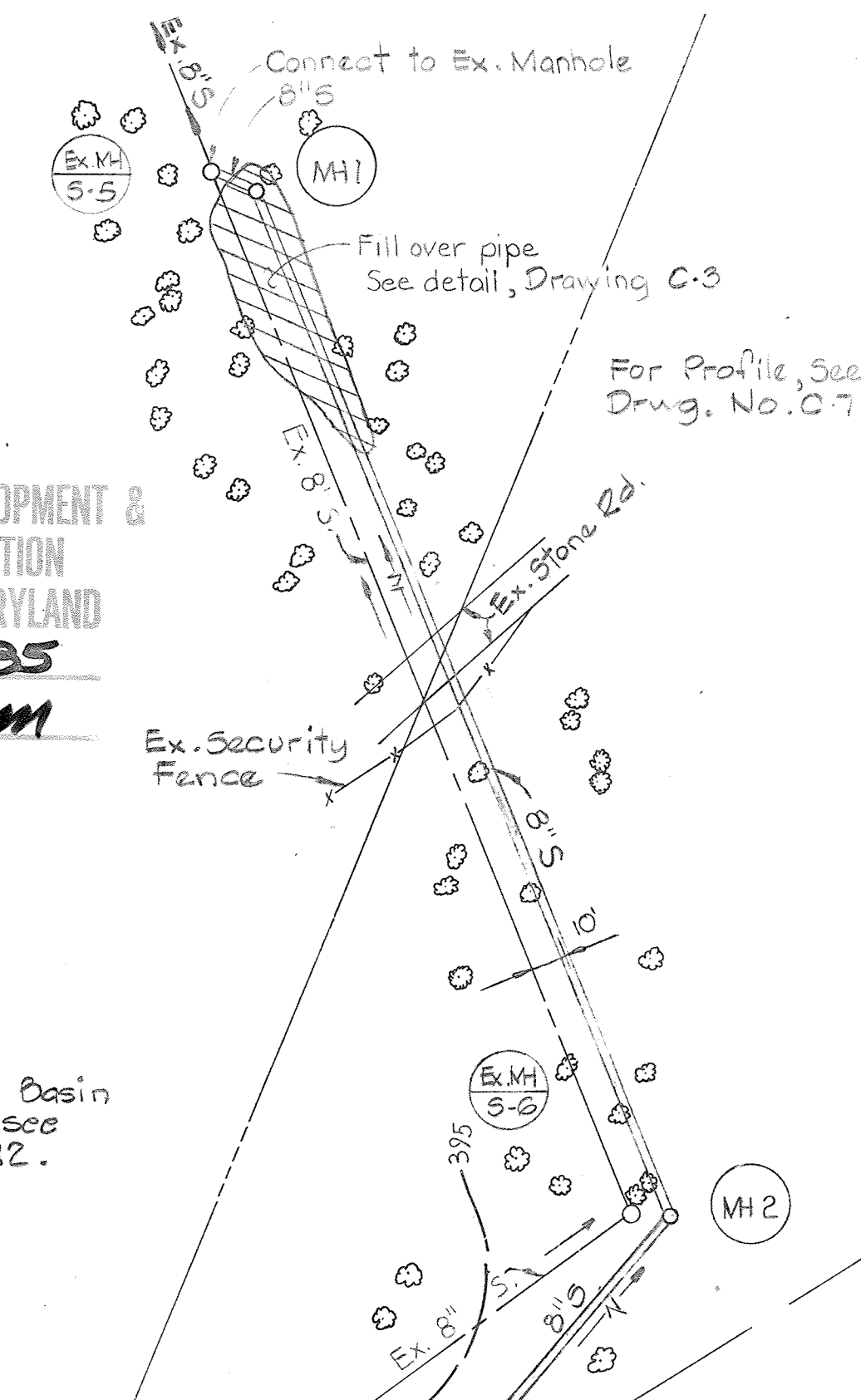
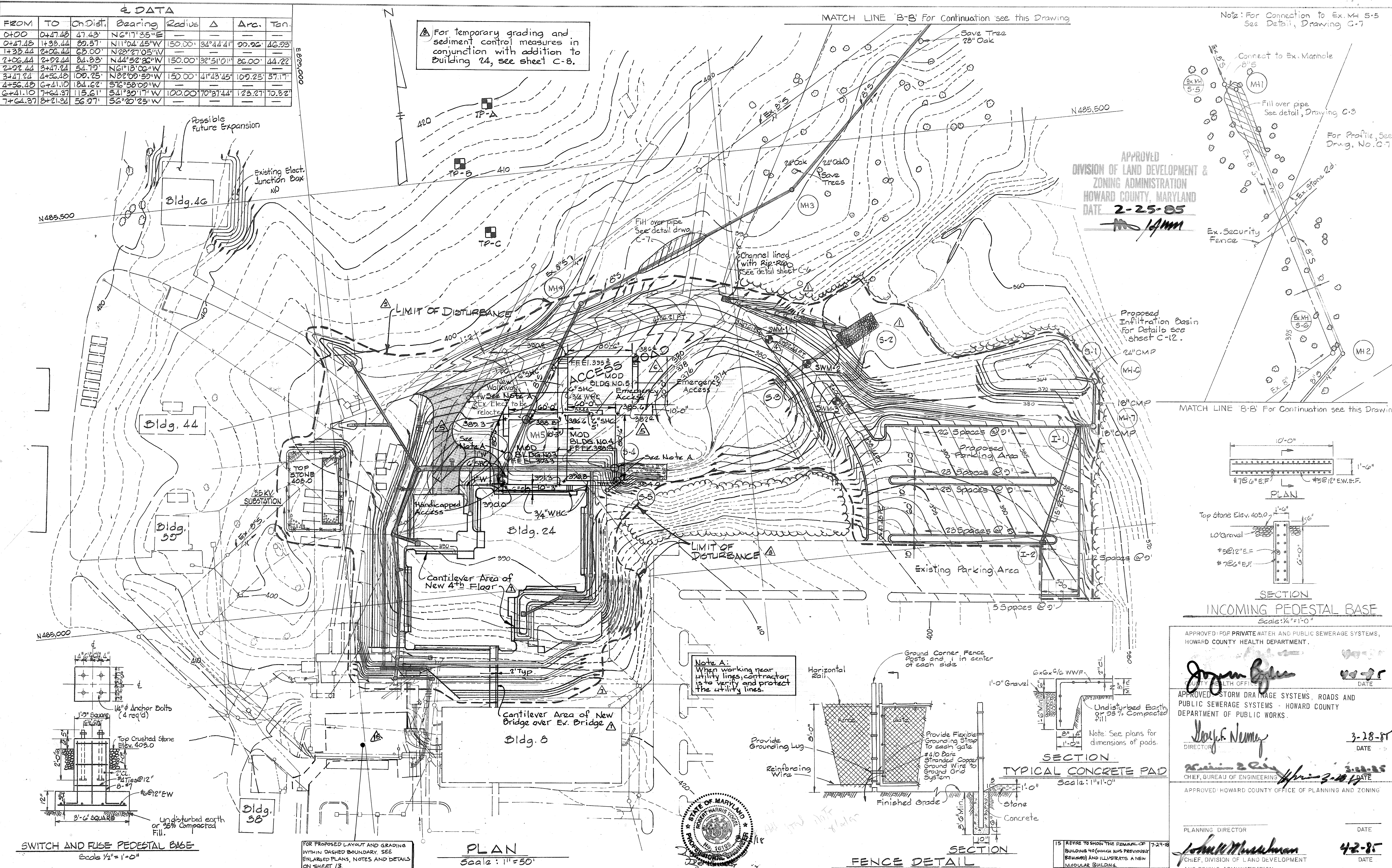
FROM	TO	Ch. Dist.	Bearing	Radius	Δ	Area	Tan.
0+00	0+47.48	47.48'	N6°17'35" E	—	—	—	—
0+47.48	1+38.44	89.57'	N11°04'45" W	150.00'	34°44'41"	90.26'	46.23'
1+38.44	2+06.44	68.00'	N28°27'05" W	—	—	—	—
2+06.44	2+92.44	86.00'	N44°52'32" W	150.00'	32°51'01"	86.00'	44.22'
2+92.44	3+47.44	55.00'	N61°18'06" W	—	—	—	—
3+47.44	4+56.48	109.25'	N82°09'59" W	150.00'	41°43'45"	109.25'	57.17'
4+56.48	6+11.10	154.62'	S76°58'09" W	—	—	—	—
6+11.10	7+64.37	153.27'	S41°39'17" W	100.00'	70°37'44"	123.27'	70.82'
7+64.37	8+21.32	56.95'	S6°20'25" W	—	—	—	—

▲ For temporary grading and sediment control measures in conjunction with addition to Building 24, see sheet C-8.

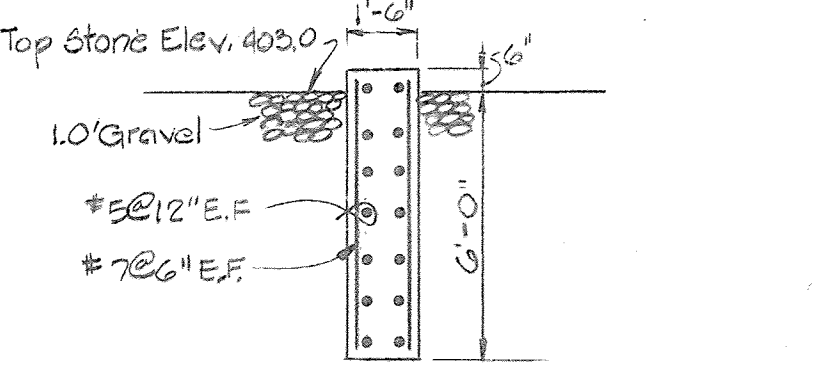
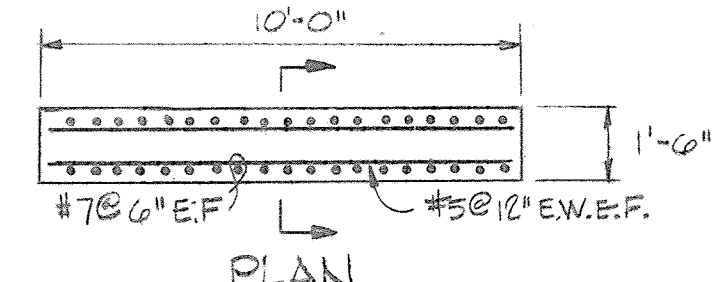
MATCH LINE 'B-B' For Continuation see this Drawing

Note: For Connection to Ex. MH 5-5 See Detail, Drawing C-7

APPROVED  
DIVISION OF LAND DEVELOPMENT &  
ZONING ADMINISTRATION  
HOWARD COUNTY, MARYLAND  
DATE **2-25-85**  
*M. J. Mann*



MATCH LINE 'B-B' For Continuation see this Drawing



SECTION  
INCOMING PEDESTAL BASE  
Scale: 1/4" = 1'-0"

APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS,  
HOWARD COUNTY HEALTH DEPARTMENT.

*Joyce Egan*  
COUNTY HEALTH OFFICER  
DATE 10-9-85

APPROVED STORM DRAINAGE SYSTEMS, ROADS AND  
PUBLIC SEWERAGE SYSTEMS - HOWARD COUNTY  
DEPARTMENT OF PUBLIC WORKS.

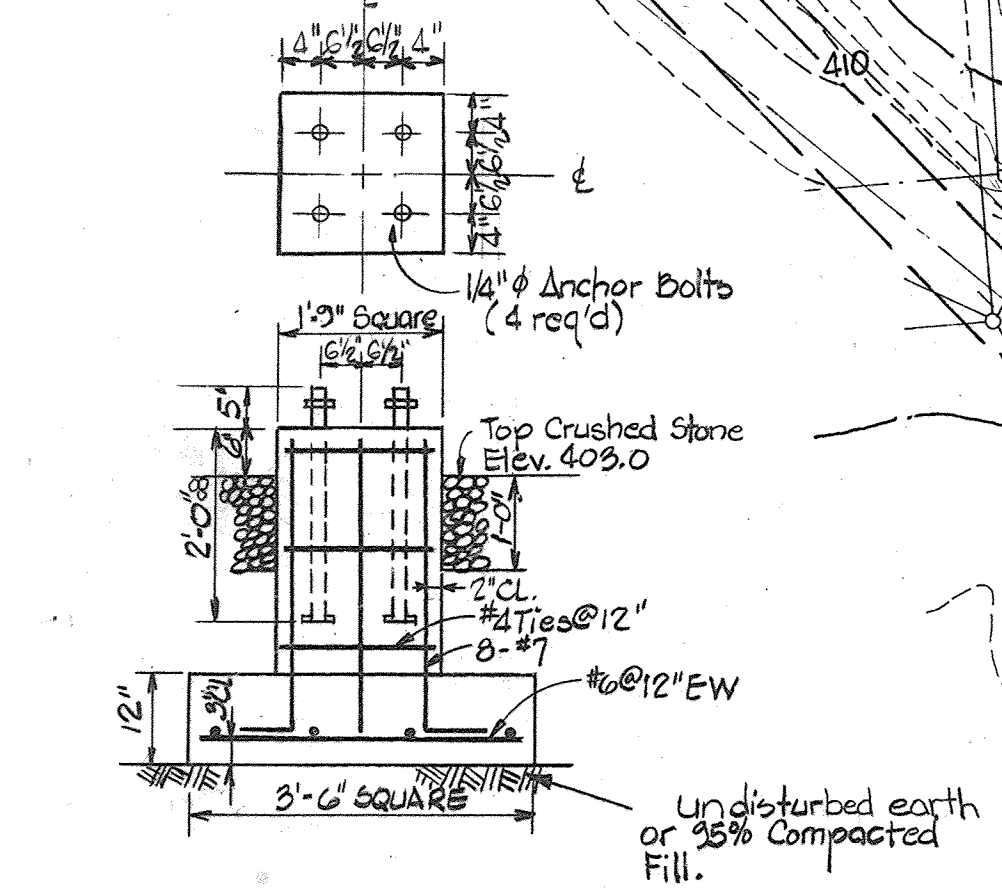
*Wayne F. Nemy*  
DIRECTOR  
DATE 3-28-85

*Kevin E. C...*  
CHIEF, BUREAU OF ENGINEERING  
DATE 3-10-85

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING

PLANNING DIRECTOR DATE

*John M. ...*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
AND ZONING ADMINISTRATION  
DATE 4-2-85

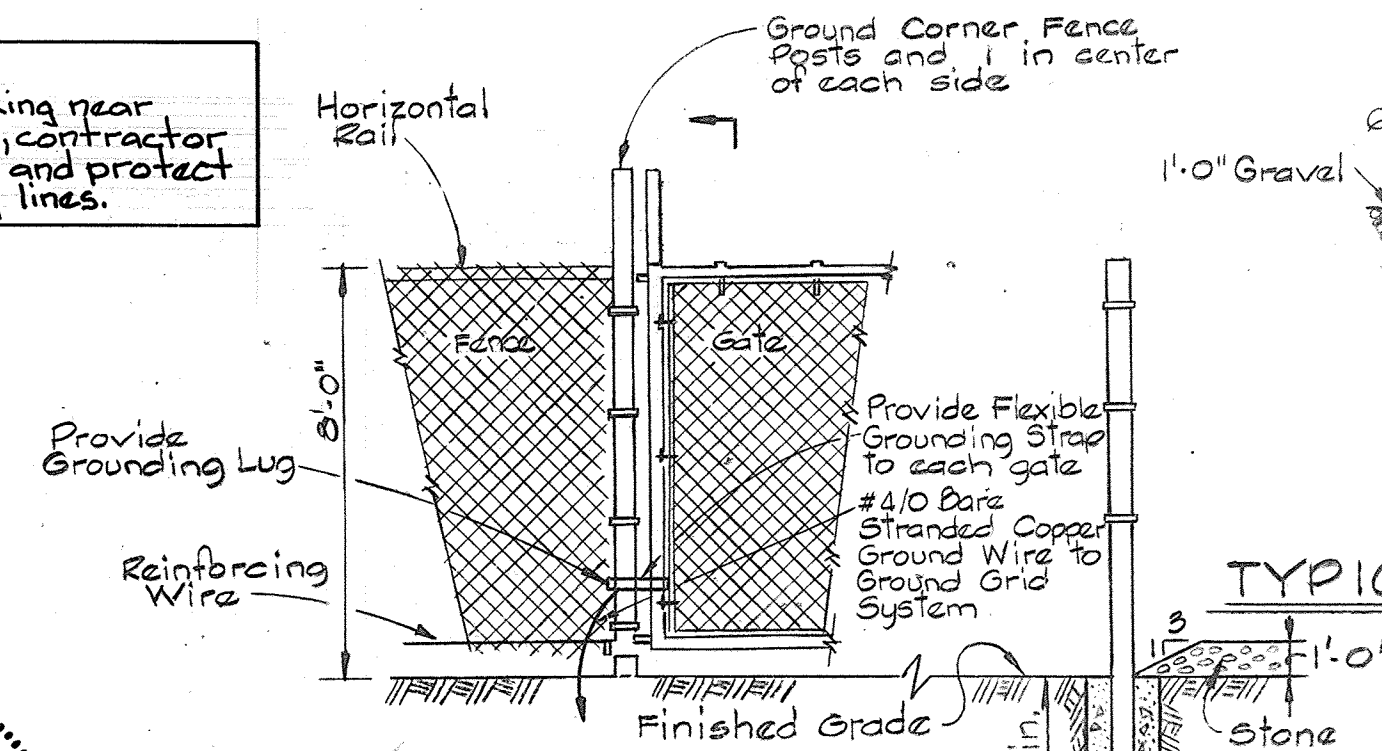


SWITCH AND FUSE PEDESTAL BASE  
Scale 1/2" = 1'-0"

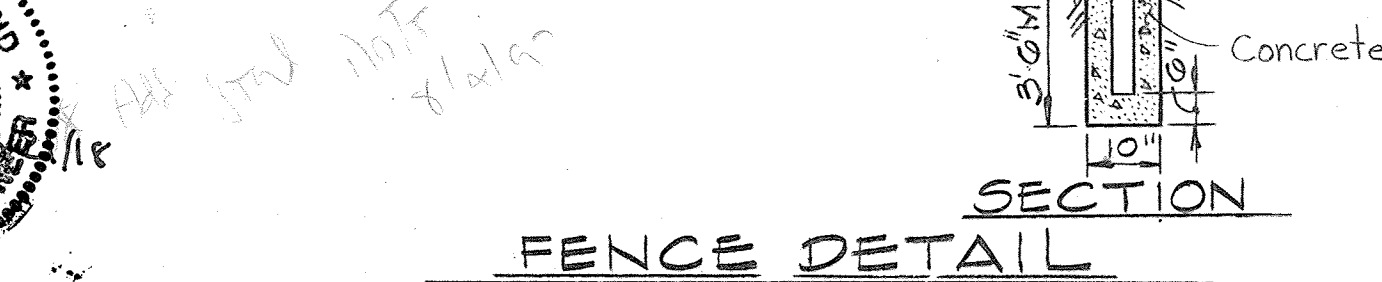
FOR PROPOSED LAYOUT AND GRADING  
WITHIN DASHED BOUNDARY. SEE  
ENLARGED PLANS, NOTES AND DETAILS  
ON SHEET 13.

PLAN  
Scale: 1" = 50'

Note A:  
When working near  
utility lines, contractor  
is to verify and protect  
the utility lines.



SECTION  
TYPICAL CONCRETE PAD  
Scale: 1" = 1'-0"



SECTION  
FENCE DETAIL  
No Scale

NO.	REVISIONS	DATE
15	REVISE TO SHOW THE REMOVAL OF BUILDING 40 (WHICH WAS PREVIOUSLY REMOVED) AND ILLUSTRATE A NEW MODULAR BUILDING	7-24-83
16	REVISED TREE CLEARING LIMITS	12-7-84

WHITMAN, REQUARDT AND ASSOCIATES  
CIVIL & STRUCTURAL ENGINEERS  
2315 SAINT PAUL STREET  
BALTIMORE, MARYLAND 21218  
*Kenneth J. McNeil*

JAMES GOLDSTEIN & PARTNERS  
ARCHITECTS  
225 MILLBURN AVENUE  
MILLBURN, NEW JERSEY 07041  
HENRY ADAMS, INC.  
MECHANICAL & ELECTRICAL ENGINEERS  
600 BALTIMORE AVENUE  
BALTIMORE, MARYLAND

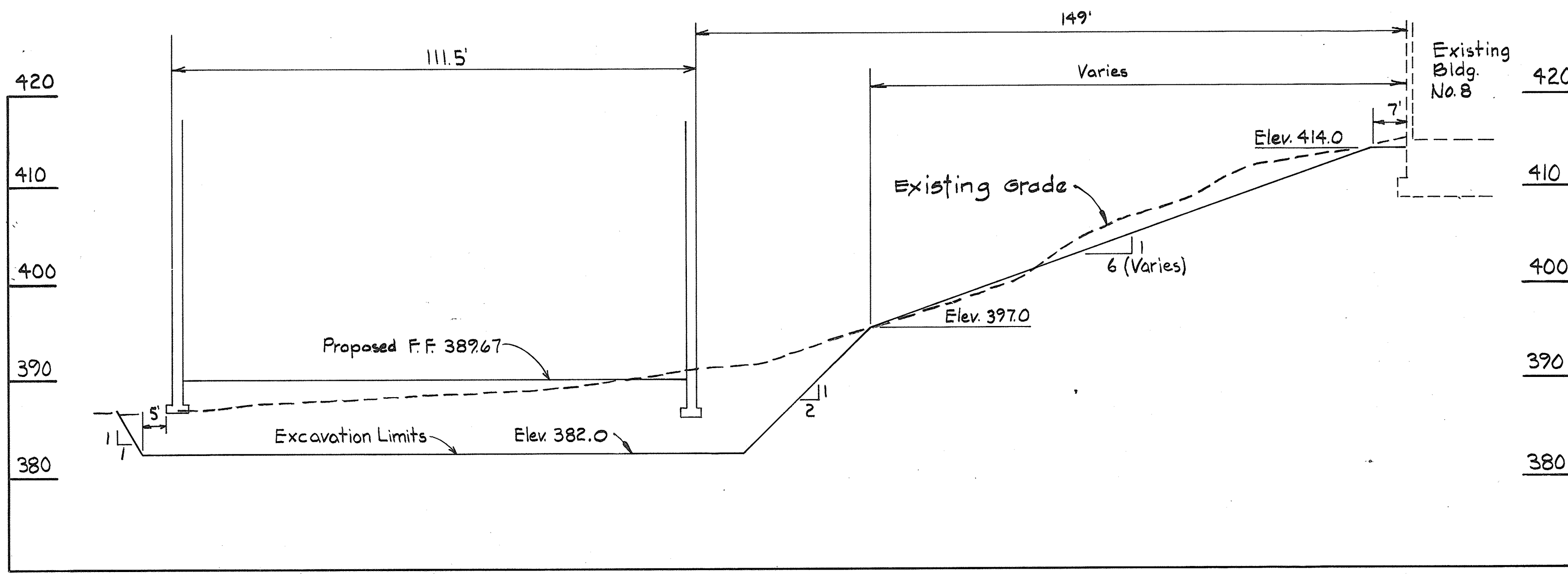
APPLIED PHYSICS LABORATORY  
THE JOHNS HOPKINS UNIVERSITY  
Johns Hopkins Road Howard County, Maryland  
Approved For The University By:  
Date: Title: *C. J. Smith*

**BUILDING 24**  
AND  
**ASSOCIATED DEVELOPMENT**  
APPLIED & PROPOSED MODULAR BUILDING  
PHYSICS LABORATORY  
THE JOHNS HOPKINS UNIVERSITY  
11100 JOHNS HOPKINS ROAD, LAUREL MD. 20707

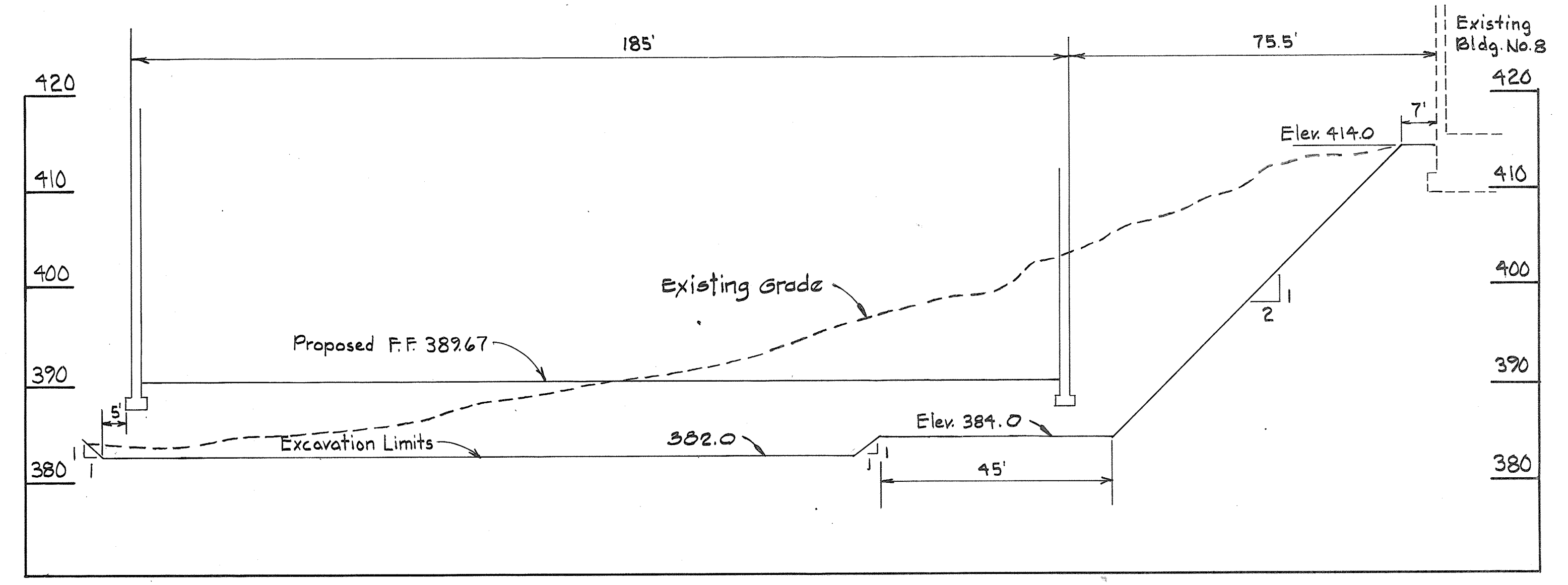
**GRADING AND UTILITY PLAN**  
PLAT 1896B  
4th Election District Howard County, MD  
Tax Map 41 Parcel 50 and 123

REVISIONS  
SCALE: 1" = 50'  
SHEET NO. 3  
OF 13  
DATE: 11-19-84

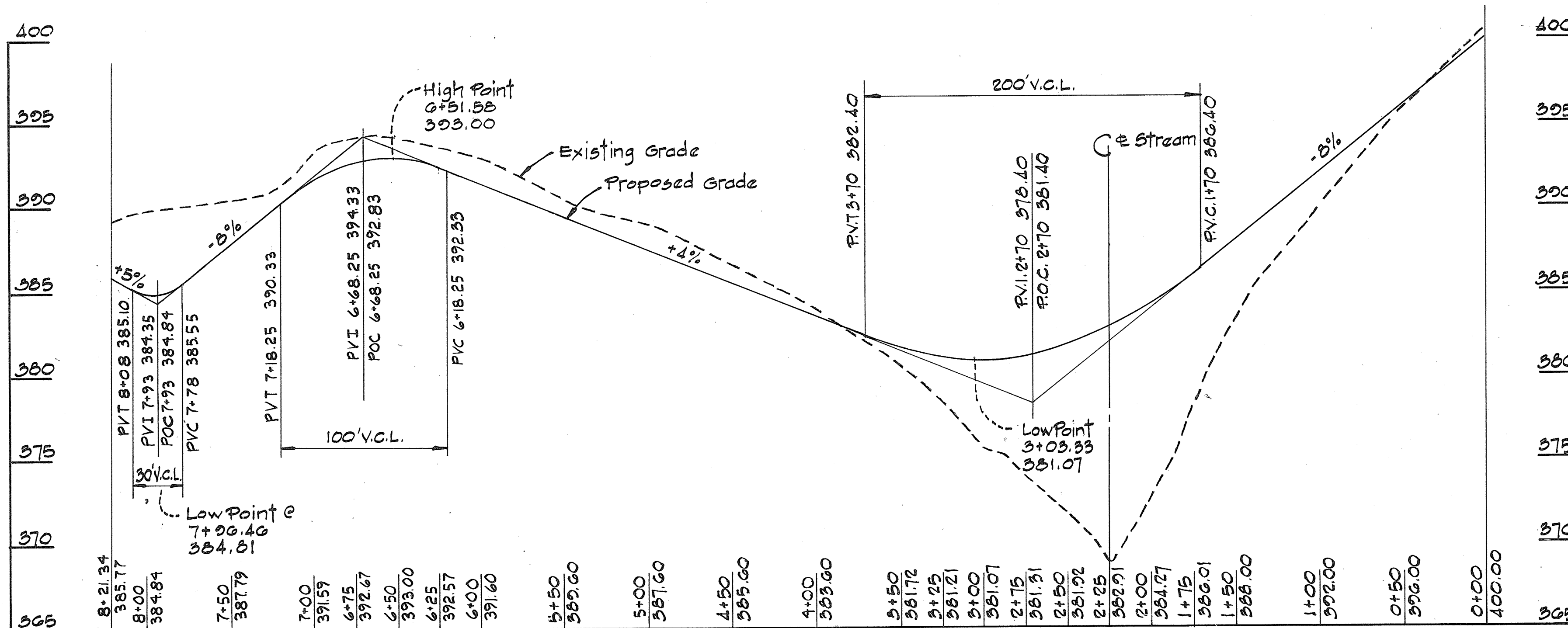
**DRAWING**  
**C3**  
OF C13



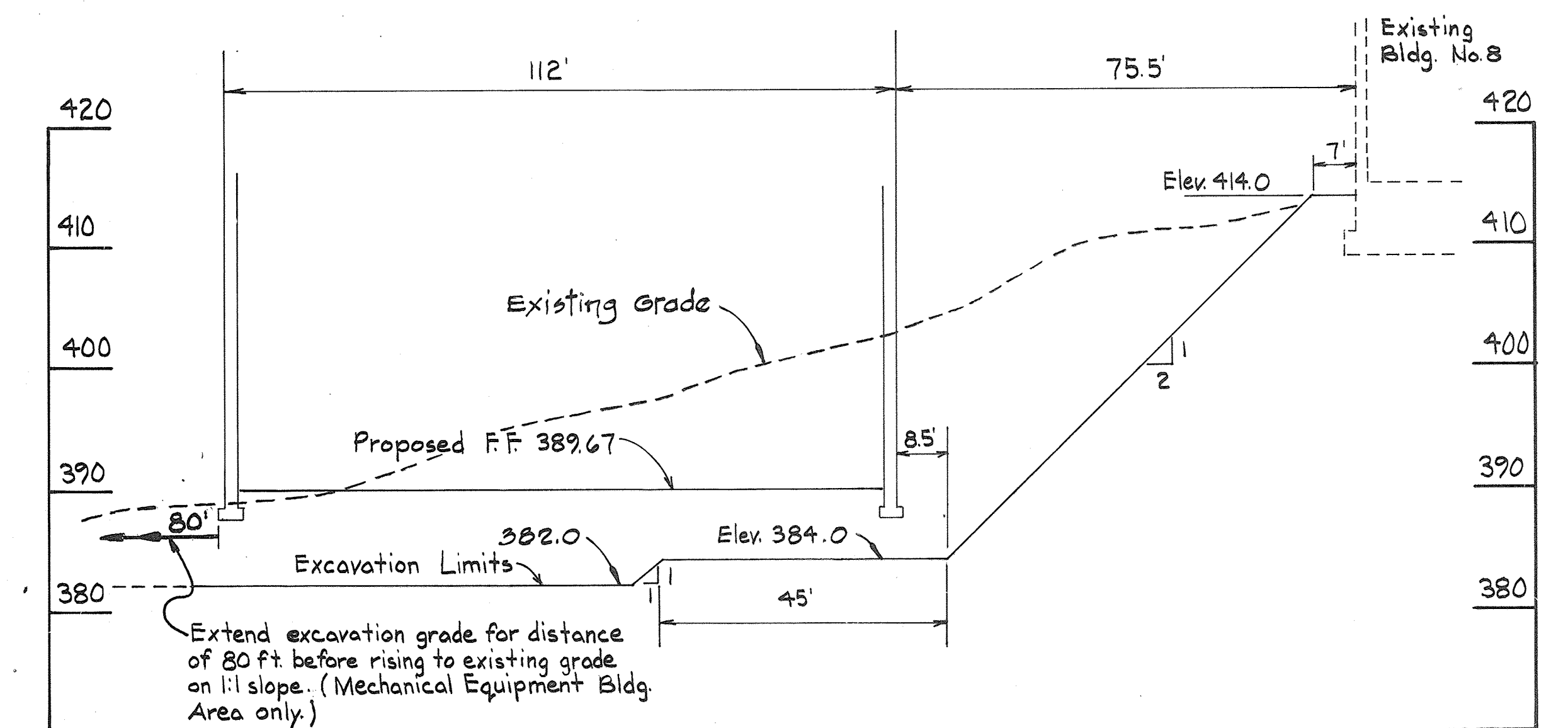
**EAST SIDE PROFILE**  
Scale: Hor. 1"=20'  
Ver. 1"=10'



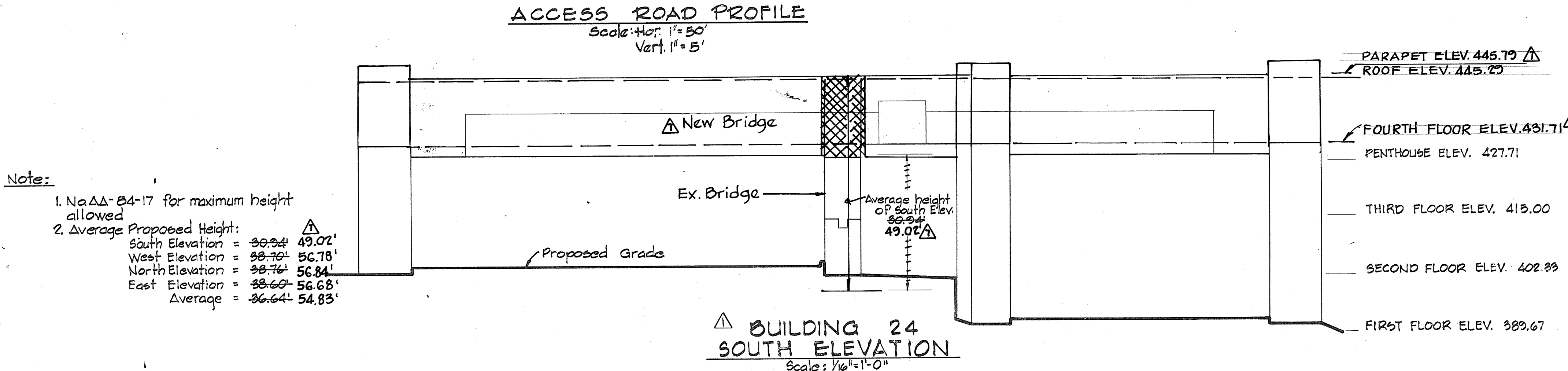
**CENTER PROFILE**  
Scale: Hor. 1"=20'  
Ver. 1"=10'



**ACCESS ROAD PROFILE**  
Scale: Hor. 1"=50'  
Ver. 1"=5'



**WEST SIDE PROFILE**  
Scale: Hor. 1"=20'  
Ver. 1"=10'



**BUILDING 24 SOUTH ELEVATION**  
Scale: 1/4"=1'-0"

Note:  
1. No. ΔΔ-84-17 for maximum height allowed  
2. Average Proposed Height:  
South Elevation = 49.02'  
West Elevation = 56.78'  
North Elevation = 56.84'  
East Elevation = 56.68'  
Average = 54.83'

Notes: Controlled Fill to be placed to subgrade elevation 388.67 in main building areas. Controlled Fill in Mechanical Equipment Building to be placed to subgrade of various slab elevation.

APPROVED  
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION  
HOWARD COUNTY, MARYLAND  
DATE 2-25-85

APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.  
COUNTY HEALTH OFFICER  
DATE  
APPROVED: STORM DRAINAGE SYSTEMS, ROADS AND PUBLIC SEWERAGE SYSTEMS - HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
DIRECTOR  
3-28-85  
DATE  
CHIEF, BUREAU OF ENGINEERING  
3-26-85  
DATE  
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
PLANNING DIRECTOR  
DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION  
4-2-85  
DATE

WHITMAN, REQUARDT AND ASSOCIATES  
CIVIL & STRUCTURAL ENGINEERS  
2315 SAINT PAUL STREET  
BALTIMORE, MARYLAND 21218  
Kenneth A. McLeod

JAMES GOLDSTEIN & PARTNERS  
ARCHITECTS  
225 MILLBURN AVENUE  
MILLBURN, NEW JERSEY 07041  
HENRY ADAMS, INC.  
MECHANICAL & ELECTRICAL ENGINEERS  
600 BALTIMORE AVENUE  
BALTIMORE, MARYLAND

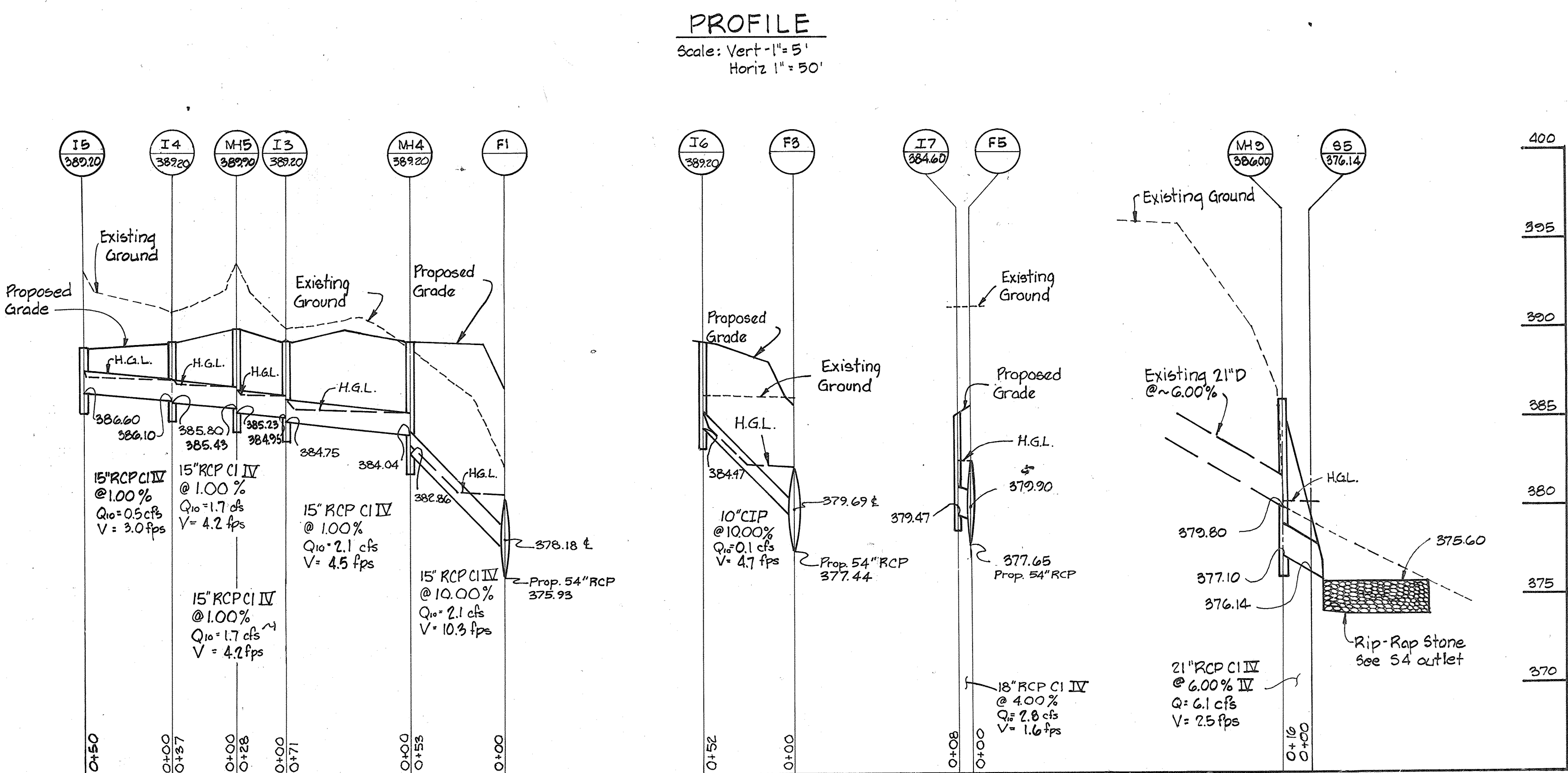
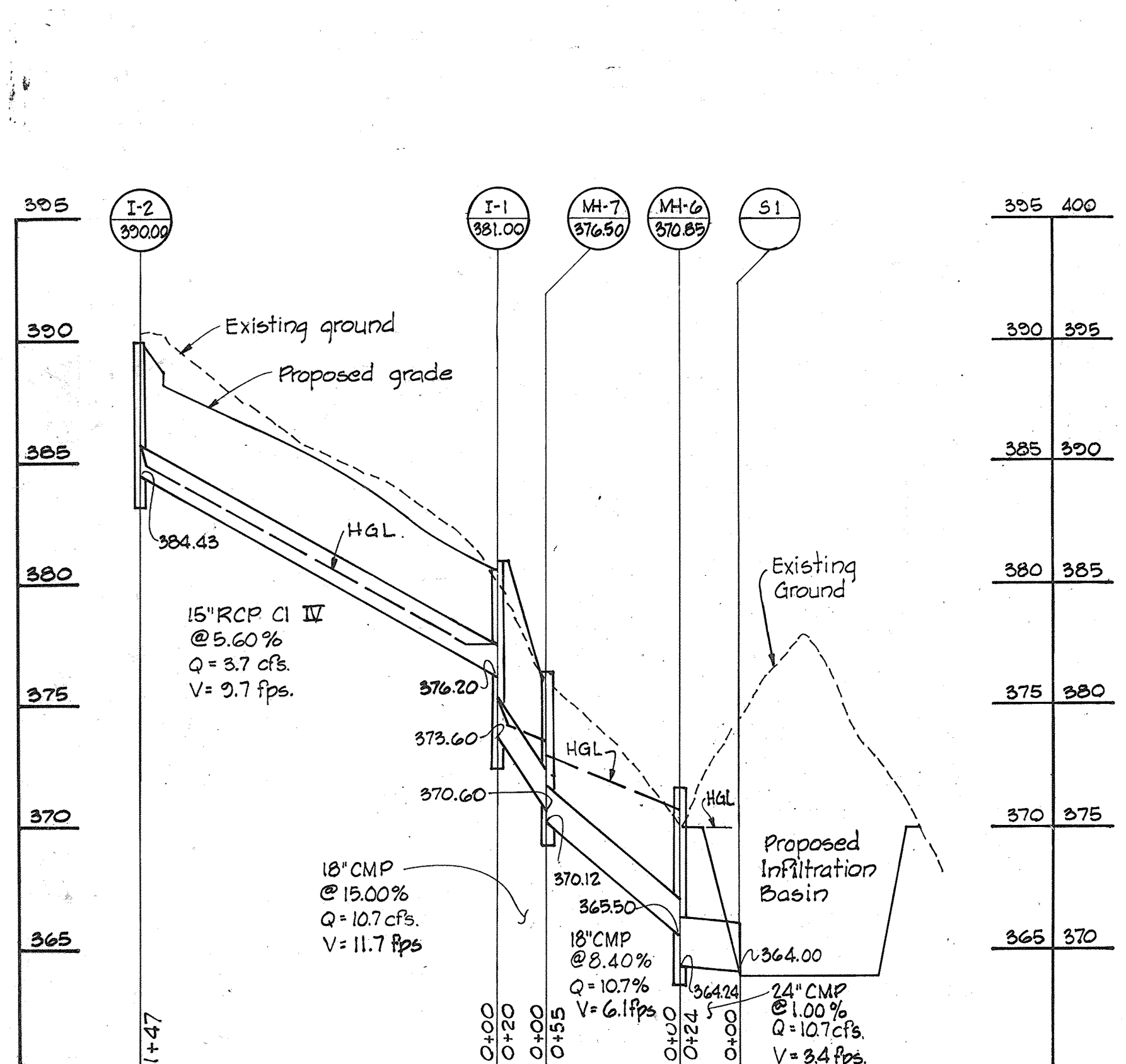
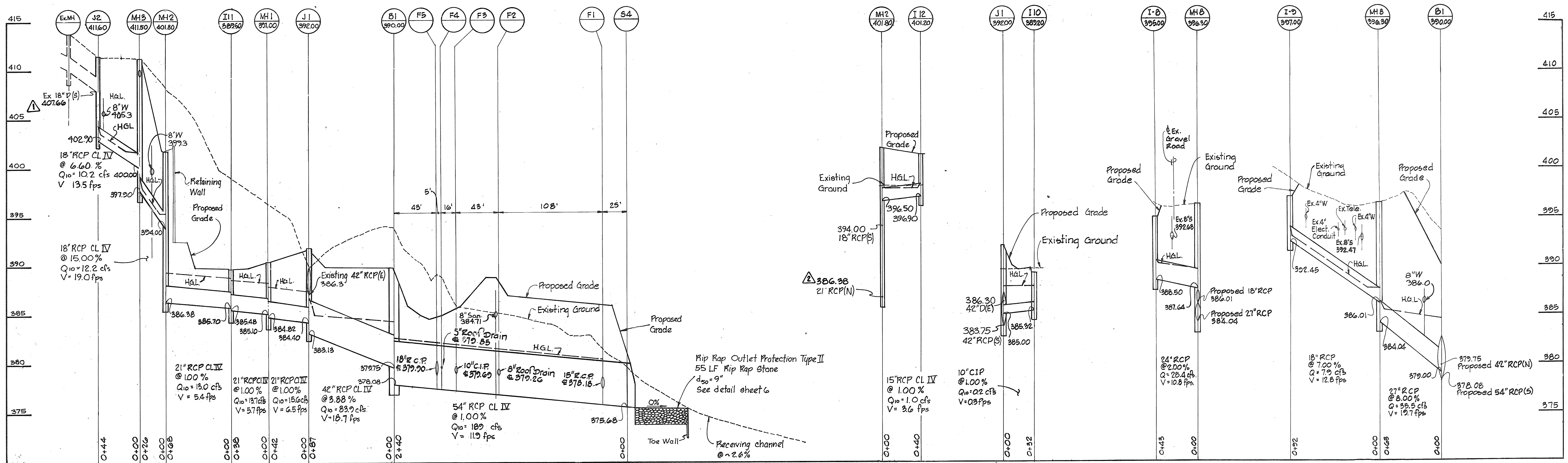
APPLIED PHYSICS LABORATORY  
THE JOHNS HOPKINS UNIVERSITY  
Johns Hopkins Road Howard County, Maryland  
Approved For The University By:  
Date: Title: CQ Smith

**BUILDING 24 AND ASSOCIATED DEVELOPMENT**  
APPLIED PHYSICS LABORATORY  
THE JOHNS HOPKINS UNIVERSITY  
11100 JOHNS HOPKINS ROAD, LAUREL MD. 20707.

**BUILDING CROSS SECTION AND ACCESS ROAD PROFILE**  
Fifth Election District Howard County, MD  
Tax Map 41 Parcel 50 and 123

REVISIONS  
SCALE:  
SHEET NO. 4 OF 13  
DATE: 11-19-84

**DRAWING C4 OF C13**



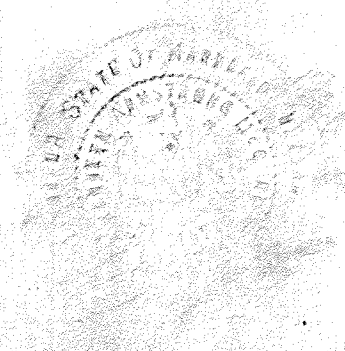
**PROFILE**  
 Scale: Vert. 1" = 5'  
 Horiz. 1" = 50'

**PROFILE**  
 Scale: Vert. 1" = 5'  
 Horiz. 1" = 50'

APPROVED  
 DIVISION OF LAND DEVELOPMENT &  
 ZONING ADMINISTRATION  
 HOWARD COUNTY, MARYLAND  
 DATE 2-25-85  
*[Signature]*

APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS,  
 HOWARD COUNTY HEALTH DEPARTMENT.  
*[Signature]*  
 COUNTY HEALTH OFFICER DATE  
 APPROVED: STORM DRAINAGE SYSTEMS, ROADS AND  
 PUBLIC SEWERAGE SYSTEMS - HOWARD COUNTY  
 DEPARTMENT OF PUBLIC WORKS.  
*[Signature]*  
 DIRECTOR DATE 3-21-85  
*[Signature]*  
 CHIEF, BUREAU OF ENGINEERING DATE 3-22-85  
 APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
 PLANNING DIRECTOR DATE  
*[Signature]*  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 AND ZONING ADMINISTRATION DATE 4-2-85

WHITMAN, REQUARDT AND ASSOCIATES  
 CIVIL & STRUCTURAL ENGINEERS  
 2315 SAINT PAUL STREET  
 BALTIMORE, MARYLAND 21218  
*[Signature]*



JAMES GOLDSTEIN & PARTNERS  
 ARCHITECTS  
 225 MILLBURN AVENUE  
 MILLBURN, NEW JERSEY 07041  
 HENRY ADAMS, INC.  
 MECHANICAL & ELECTRICAL ENGINEERS  
 600 BALTIMORE AVENUE  
 BALTIMORE, MARYLAND

APPLIED PHYSICS LABORATORY  
 THE JOHNS HOPKINS UNIVERSITY  
 Johns Hopkins Road Howard County, Maryland  
 Approved For The University By:  
 Date: Title: *[Signature]*

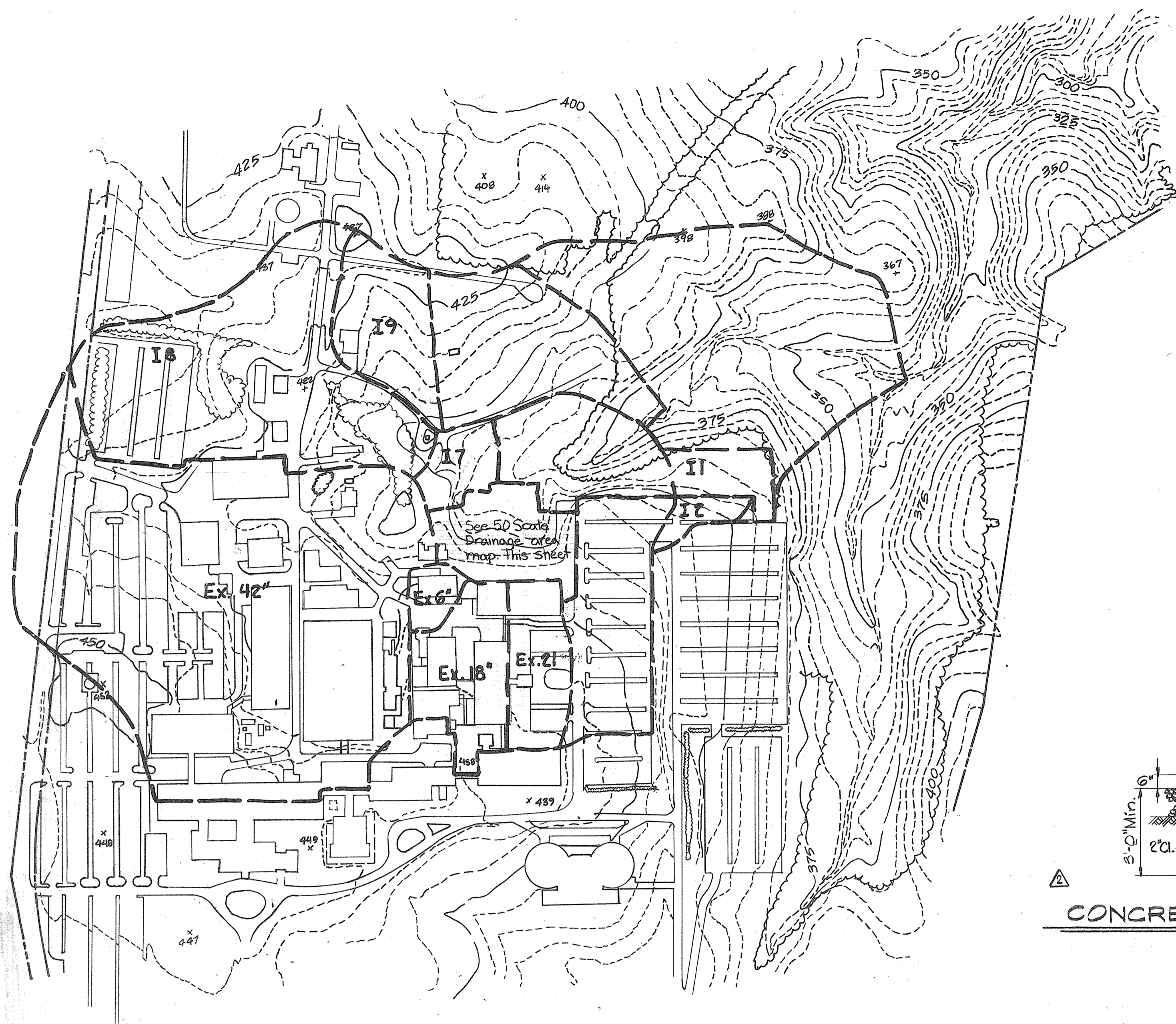
**BUILDING 24**  
 AND  
**ASSOCIATED DEVELOPMENT**  
 APPLIED PHYSICS LABORATORY  
 THE JOHNS HOPKINS UNIVERSITY  
 11100 JOHNS HOPKINS ROAD, LAUREL MD. 20707

**STORM DRAIN PROFILES**  
 Fifth Election District Howard County, MD  
 Tax Map 41 Parcel 50 and 123

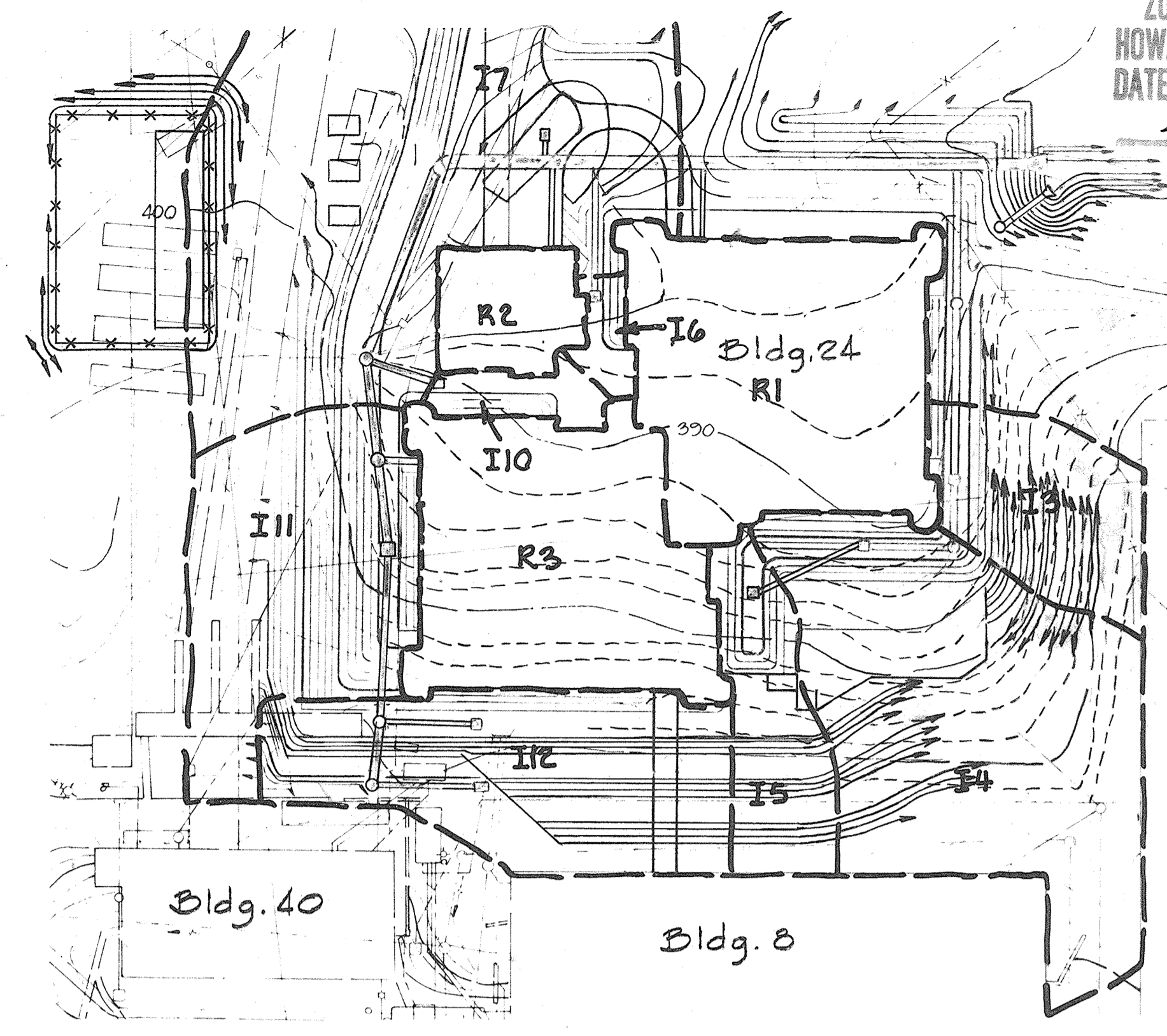
REVISIONS  
 SCALE: AS SHOWN  
 SHEET NO. 5  
 OF 13  
 DATE: 11-19-84  
 Changed Inv. Out. MH2 on Profile 6-18-85  
 Changed Inv. In. J2 on Profile 6-18-85

**DRAWING**  
**C5**  
 OF C13

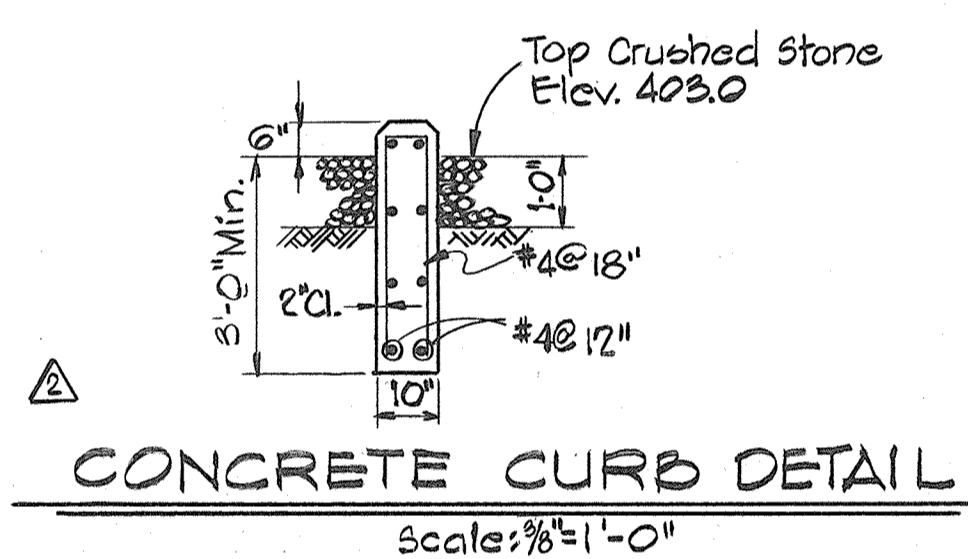
Inlet	Area (A)	Percent Impervious	C
1	0.90	95	0.95
2	0.46	95	0.95
3	0.12	10	0.50
4	0.46	10	0.50
5	0.11	10	0.50
6	0.02	0	0.35
7	0.83	35	0.50
8	8.47	35	0.60
9	2.10	10	0.60
10	0.03	0	0.35
11	0.28	30	0.50
12	0.28	20	0.50



**DRAINAGE AREA MAP**  
 Scale: 1" = 200"

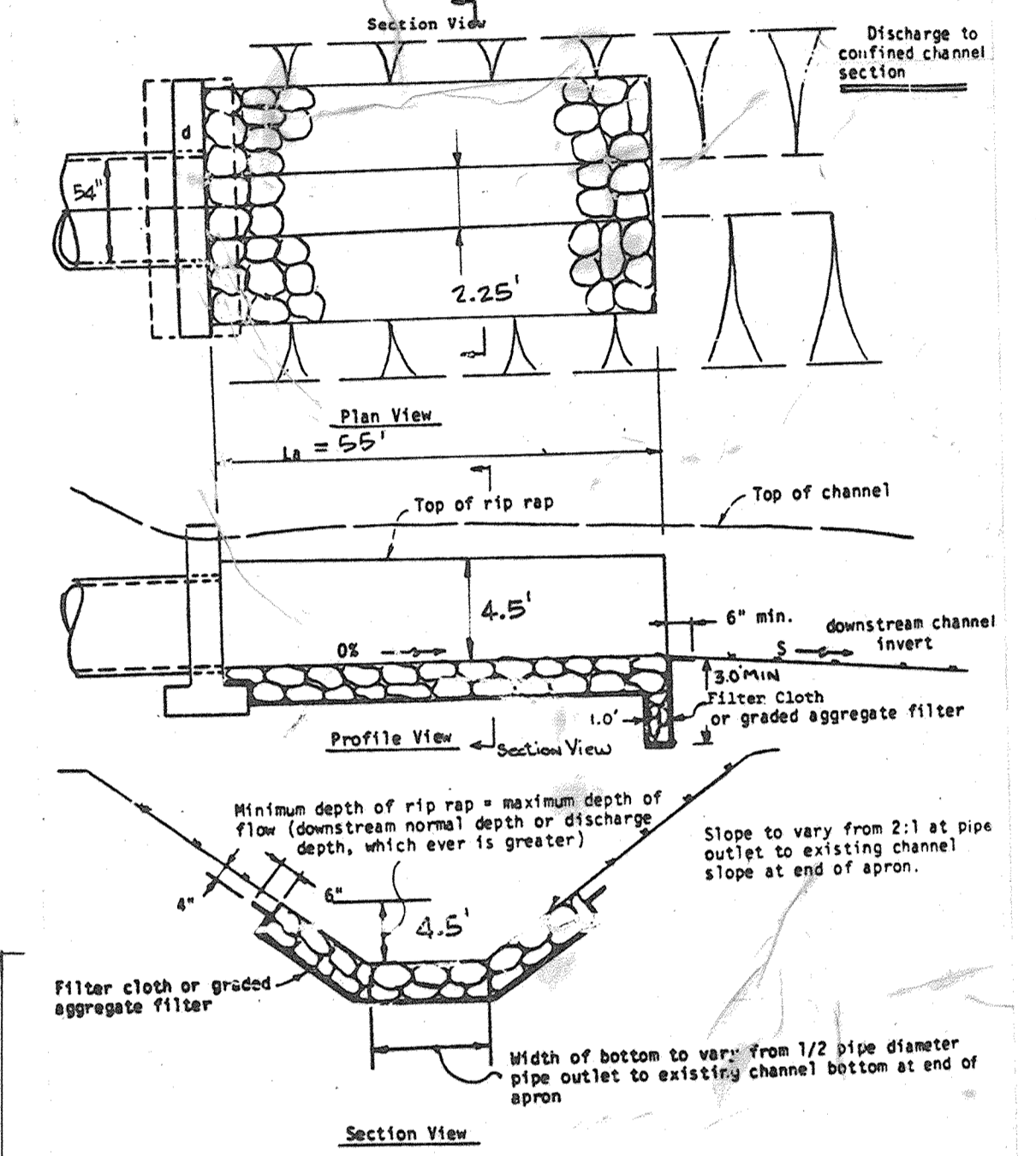


**DRAINAGE AREA MAP**  
 Scale: 1" = 50"

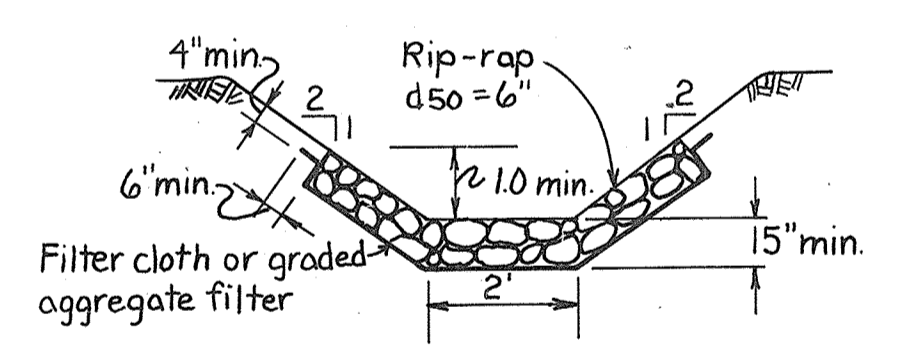


**CONCRETE CURB DETAIL**  
 Scale: 3/8" = 1'-0"

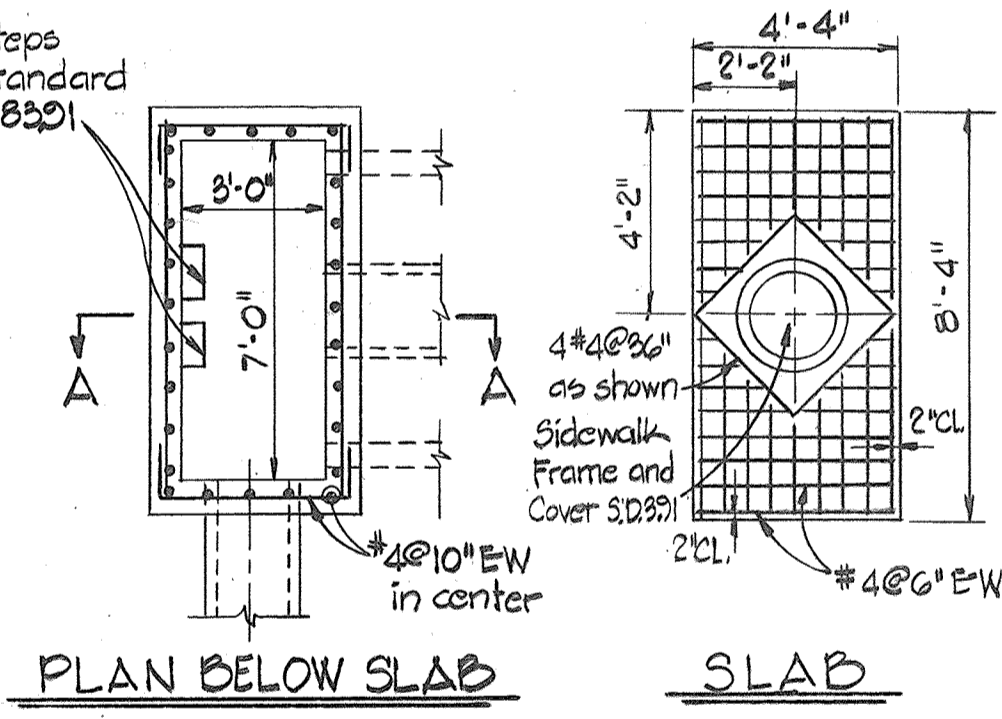
Note:  
 For S2 outlet Protection, use  
 ROP-II w/ bottom width = 20'  
 depth = 4.0', length = 50'



**Rip-Rap Outlet Protection II**  
 For S4

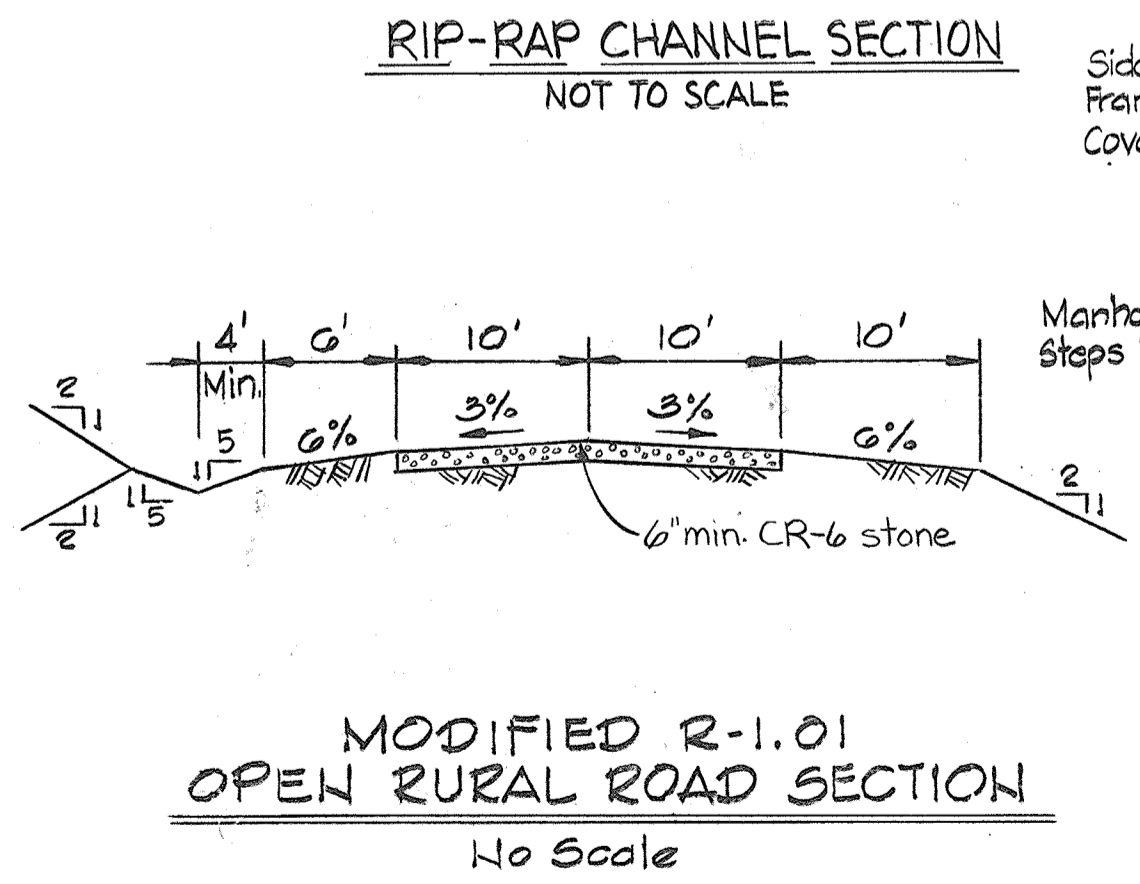


**RIP-RAP CHANNEL SECTION**  
 NOT TO SCALE

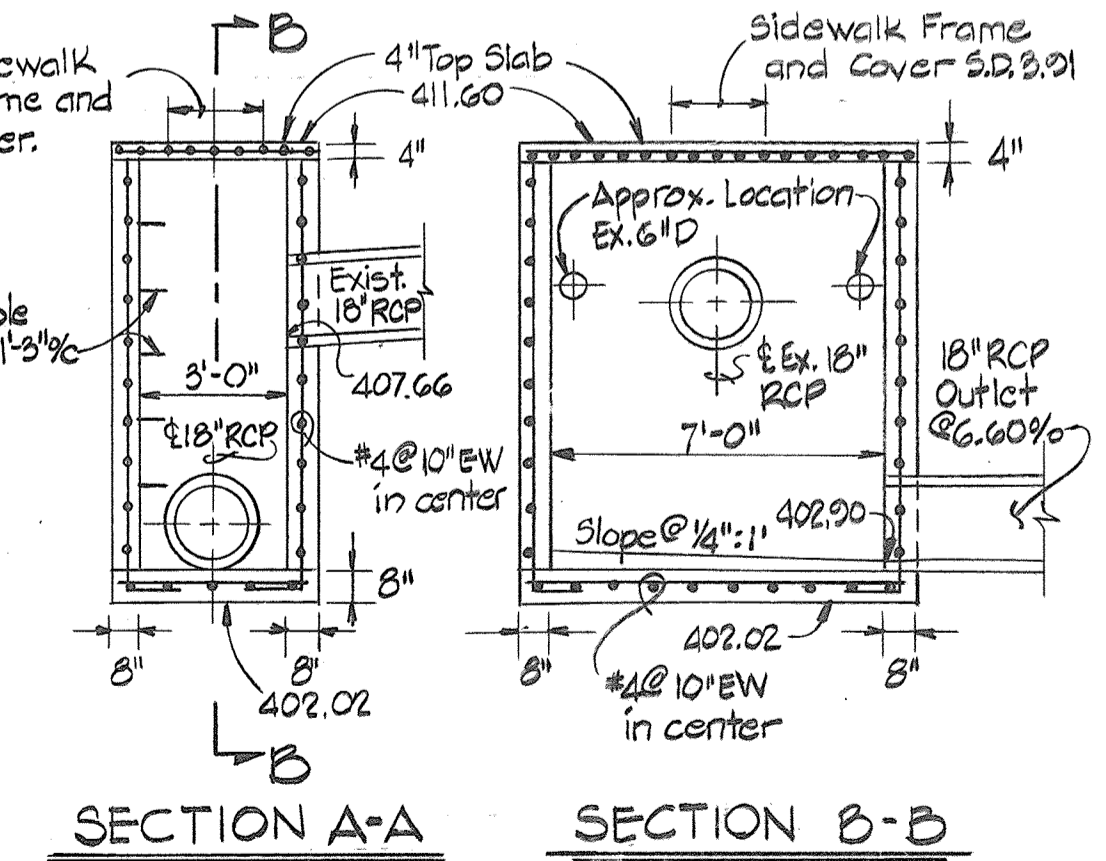


**PLAN BELOW SLAB**

**SLAB**



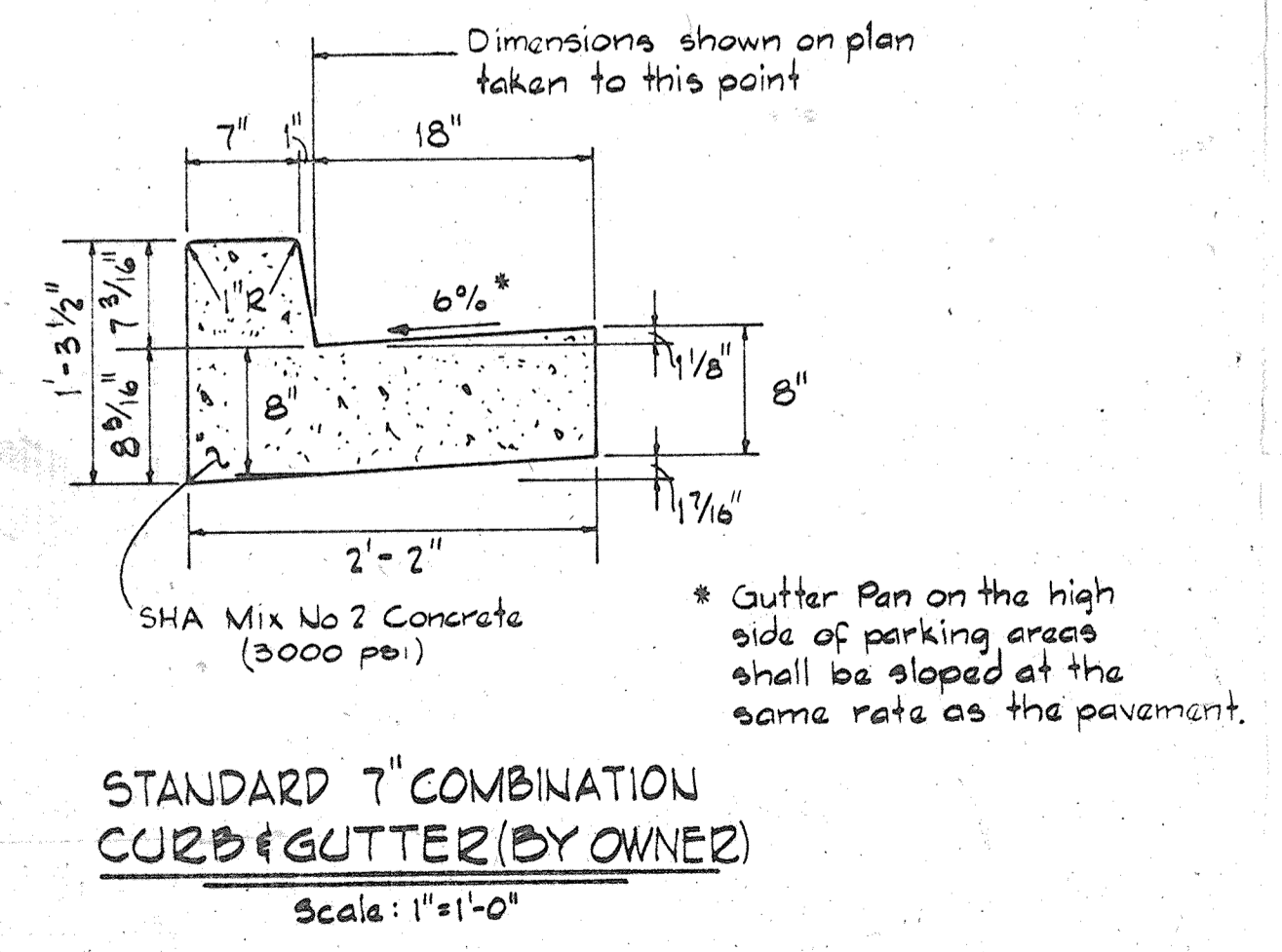
**MODIFIED 2-1.01**  
**OPEN RURAL ROAD SECTION**  
 No Scale



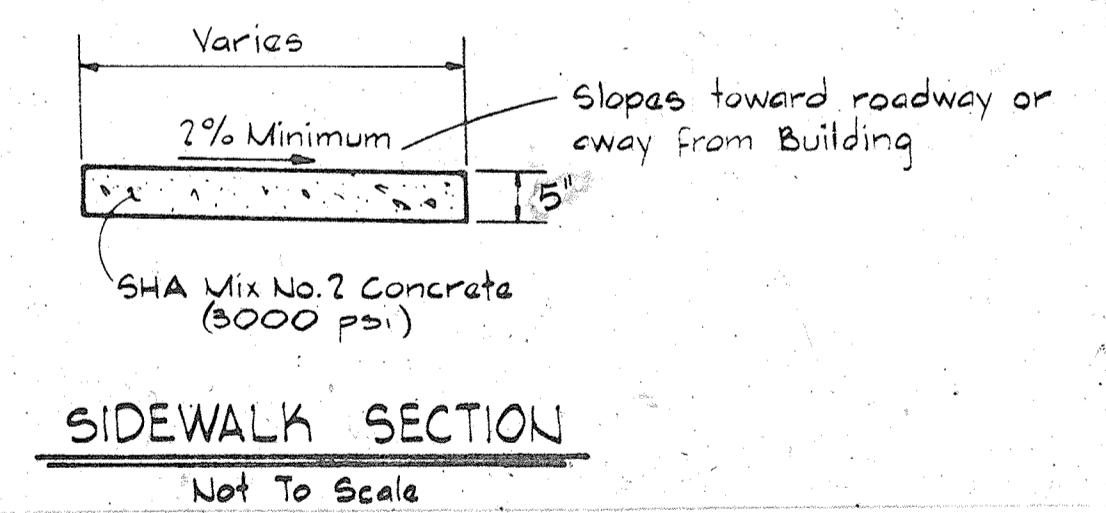
**SECTION A-A**

**SECTION B-B**

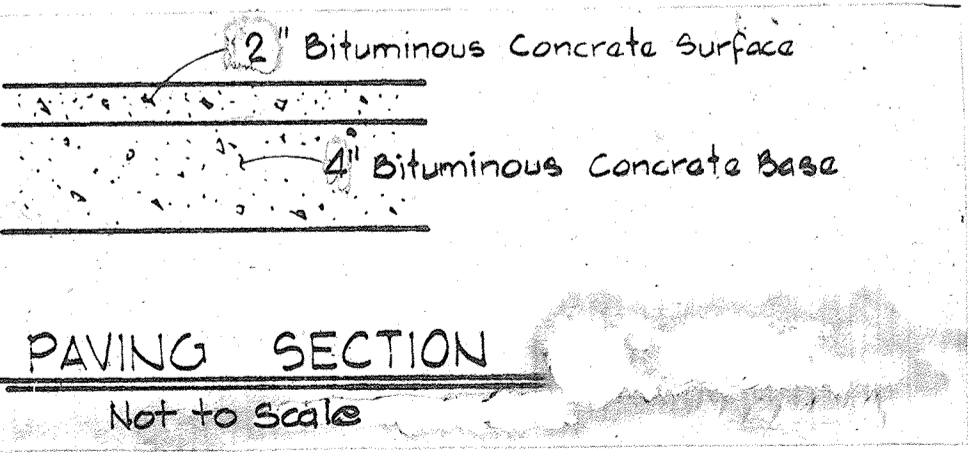
**J-2 STRUCTURE DETAIL**  
 Scale: 1/4" = 1'-0"



**STANDARD 7" COMBINATION**  
**CURB & GUTTER (BY OWNER)**  
 Scale: 1" = 1'-0"



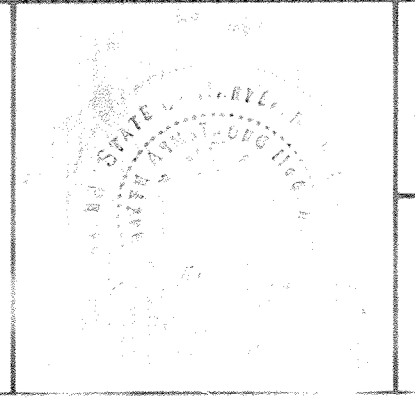
**SIDEWALK SECTION**  
 Not To Scale



**PAVING SECTION**  
 Not to Scale

APPROVED BY: PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS,  
 HOWARD COUNTY HEALTH DEPARTMENT  
 HEALTH OFFICER: [Signature] DATE: 3-21-85  
 APPROVED: STORM DRAINAGE SYSTEMS, ROADS AND  
 PUBLIC SEWERAGE SYSTEMS - HOWARD COUNTY  
 DEPARTMENT OF PUBLIC WORKS.  
 DIRECTOR: [Signature] DATE: 2-25-85  
 CHIEF, BUREAU OF ENGINEERING: [Signature] DATE: 2-25-85  
 APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
 PLANNING DIRECTOR: [Signature] DATE: 4-2-85  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 AND ZONING ADMINISTRATION

WHITMAN, REQUARTZ AND ASSOCIATES  
 CIVIL & STRUCTURAL ENGINEERS  
 2315 SAINT PAUL STREET  
 BALTIMORE, MARYLAND 21218  
 Kenneth A. Michael



JAMES GOLDSTEIN & PARTNERS  
 ARCHITECTS  
 225 MILLBURN AVENUE  
 MILLBURN, NEW JERSEY 07041  
 HENRY ADAMS, INC.  
 MECHANICAL & ELECTRICAL ENGINEERS  
 600 BALTIMORE AVENUE  
 BALTIMORE, MARYLAND

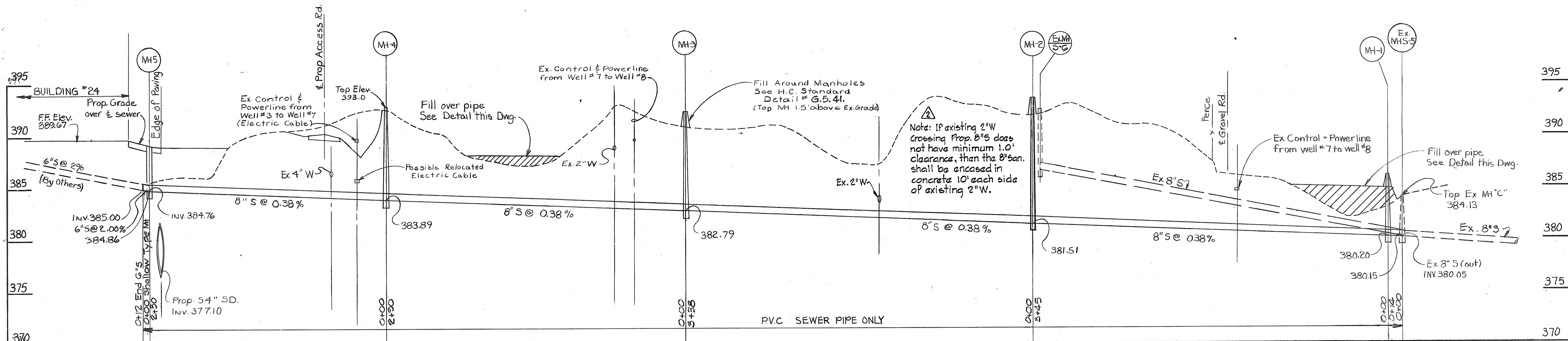
APPLIED PHYSICS LABORATORY  
 THE JOHNS HOPKINS UNIVERSITY  
 Johns Hopkins Road - Howard County, Maryland  
 Approved For The University By: [Signature]  
 Date: Title: C.F. Smith

**BUILDING 24**  
 AND  
**ASSOCIATED DEVELOPMENT**  
 APPLIED PHYSICS LABORATORY  
 THE JOHNS HOPKINS UNIVERSITY  
 11100 JOHNS HOPKINS ROAD, LAUREL MD. 20707

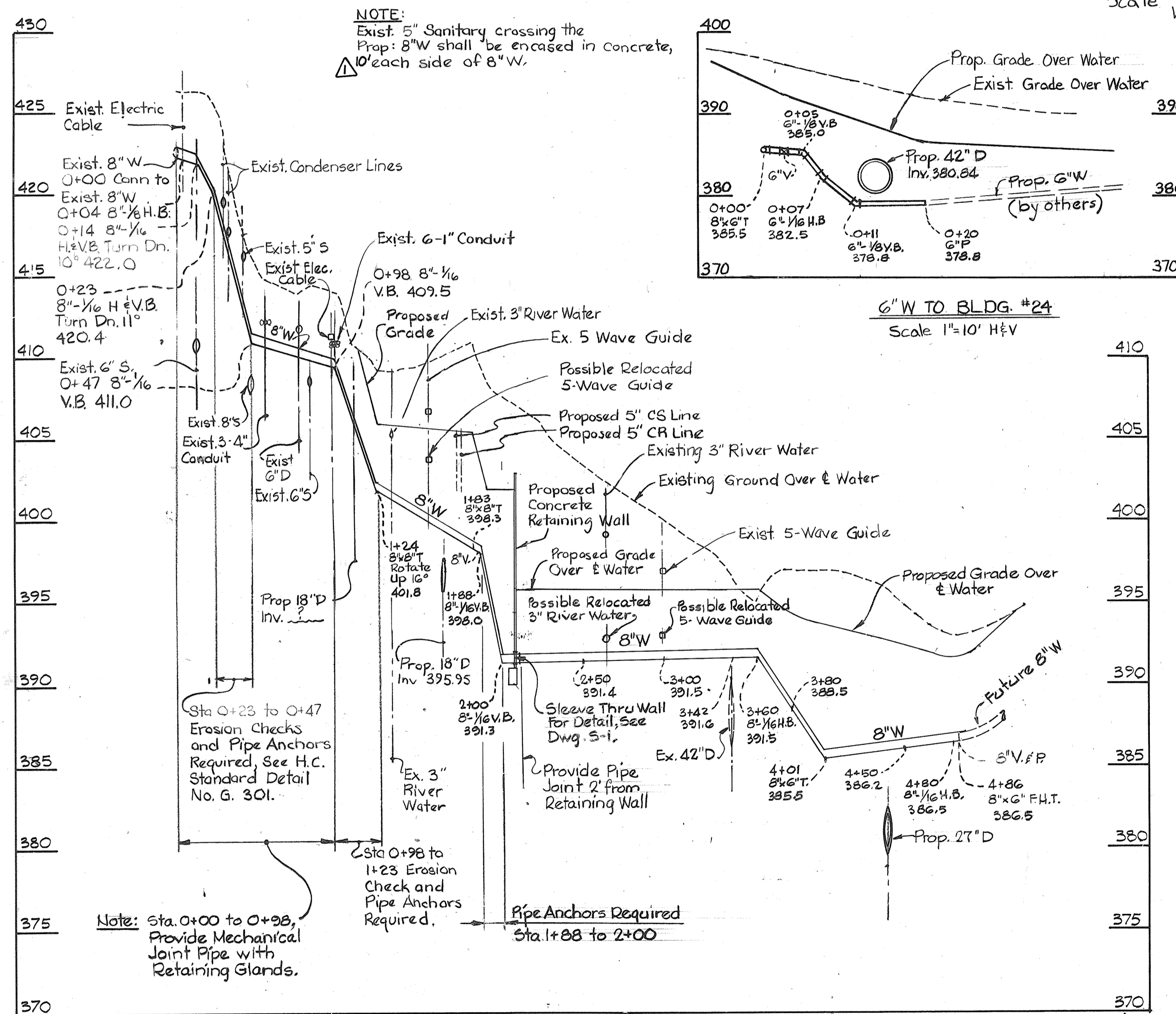
**DRAINAGE AREA MAPS**  
**ROAD AND DRAIN DETAILS**  
 Fifth Election District - Howard County, MD  
 Tax Map 41 Parcel 59 and 123

REVISIONS  
 Changes as per Addendum #1 10-27-84  
 Added concrete curb detail 12-7-84  
 Added J-2 structure detail 11-28-84

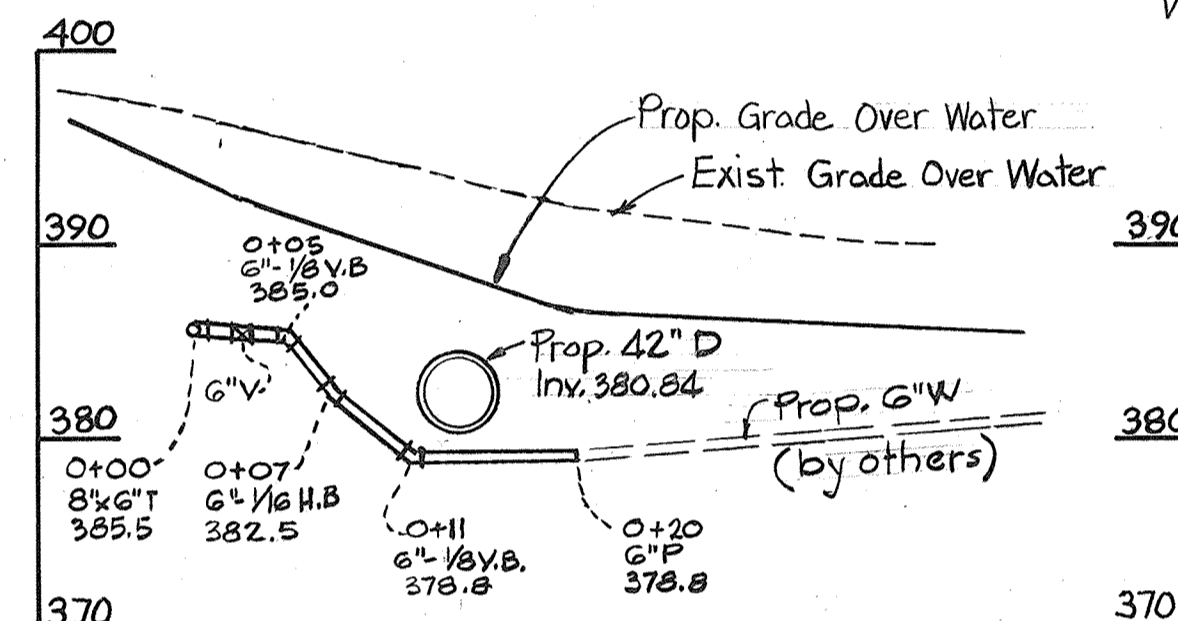
SCALE AS SHOWN  
 SHEET NO. 6  
 OF 13  
 DATE: 11-19-84  
**DRAWING**  
**C 6**  
 OF C13  
 SDP-85-100



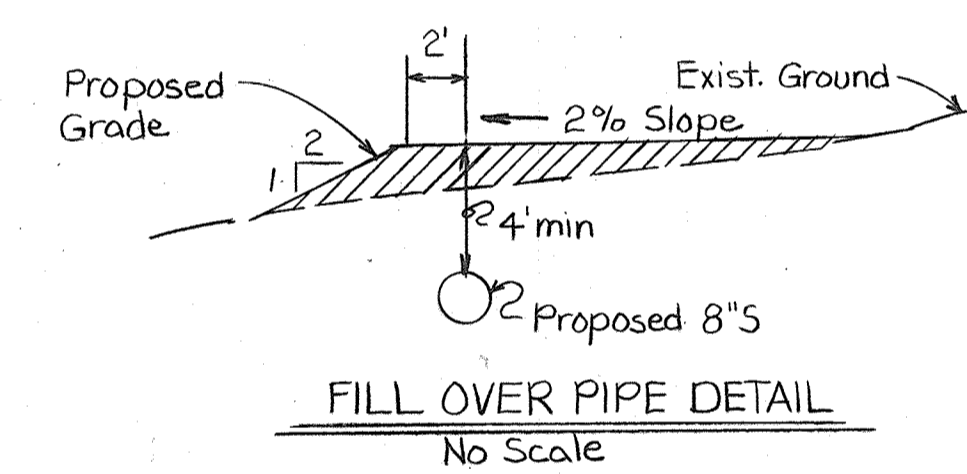
PROFILE  
Scale: H: 1" = 50'  
V: 1" = 5'



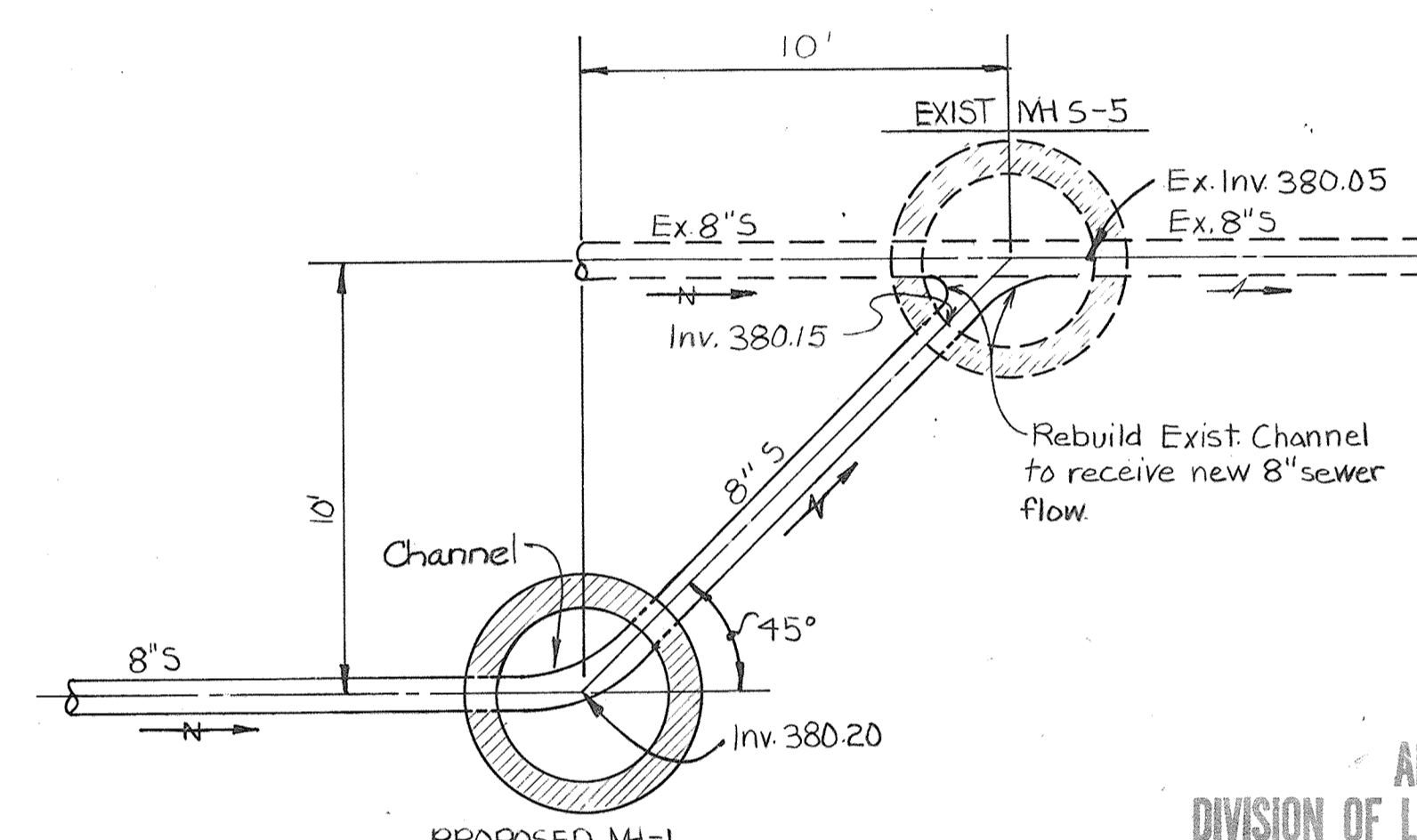
PROFILE OF 8" W TO PROPOSED BUILDING 24  
SCALE: H: 1" = 50'  
V: 1" = 5'



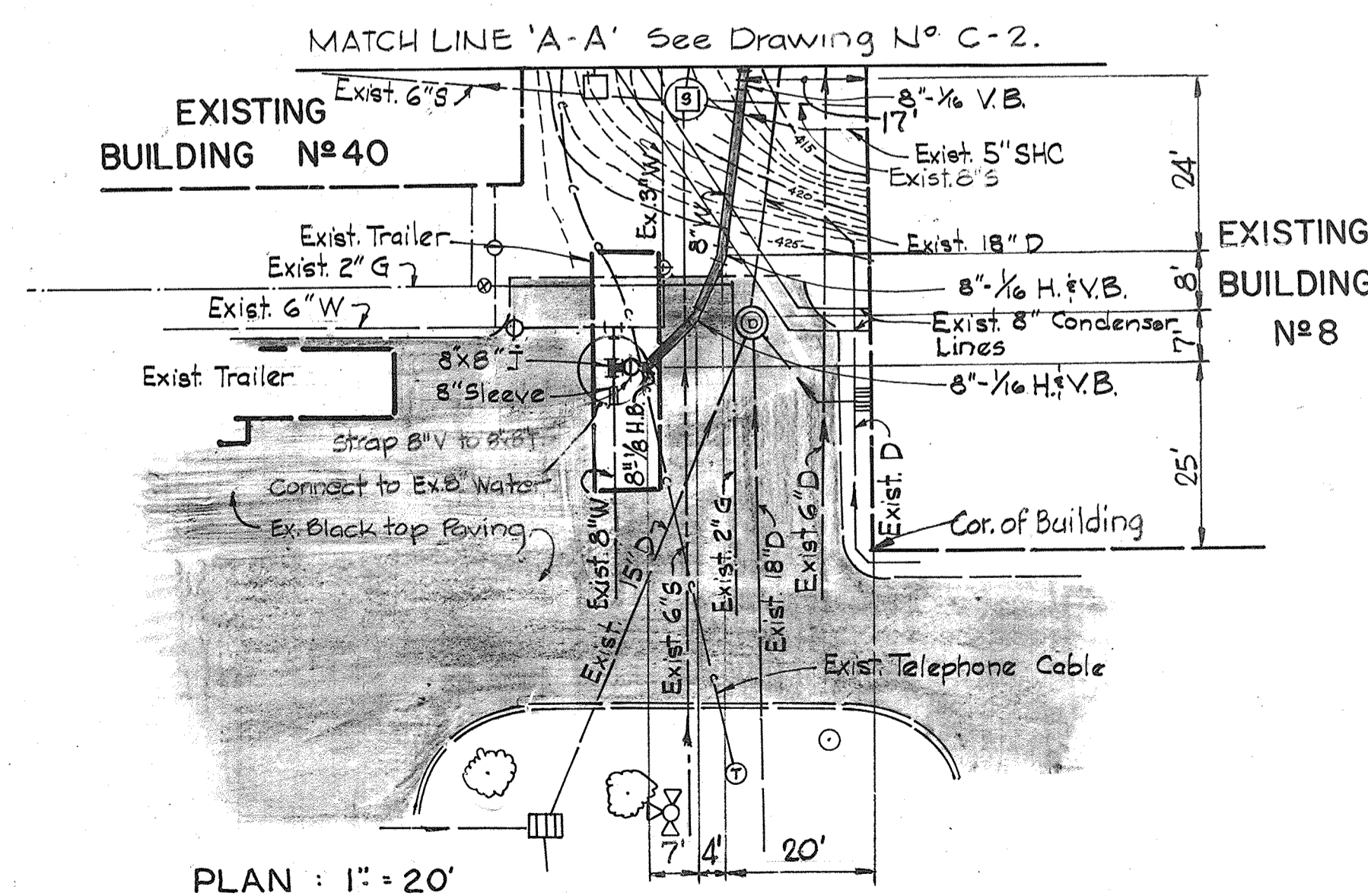
6" W TO BLDG. #24  
Scale: 1" = 10' H&V



FILL OVER PIPE DETAIL  
No Scale



PROPOSED MH-1  
CONNECTION TO EXISTING MH#5-5  
Scale: 1/4" = 1'-0"

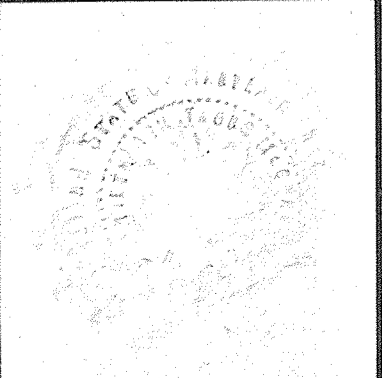


PLAN: 1" = 20'

APPROVED  
DIVISION OF LAND DEVELOPMENT &  
ZONING ADMINISTRATION  
HOWARD COUNTY, MARYLAND  
DATE: 2-25-85  
*[Signature]*

APPROVED: FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.	<i>[Signature]</i> COUNTY HEALTH OFFICER	DATE
APPROVED: STORM DRAINAGE SYSTEMS, ROADS AND PUBLIC SEWERAGE SYSTEMS - HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	<i>[Signature]</i> DIRECTOR	3-21-85 DATE
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING	<i>[Signature]</i> PLANNING DIRECTOR	4-2-85 DATE

WHITMAN, REQUARDT AND ASSOCIATES  
CIVIL & STRUCTURAL ENGINEERS  
2315 SAINT PAUL STREET  
BALTIMORE, MARYLAND 21218  
*[Signature]*



JAMES GOLDSTEIN & PARTNERS  
ARCHITECTS  
225 MILLBURN AVENUE  
MILLBURN, NEW JERSEY 07041  
HENRY ADAMS, INC.  
MECHANICAL & ELECTRICAL ENGINEERS  
600 BALTIMORE AVENUE  
BALTIMORE, MARYLAND

APPLIED PHYSICS LABORATORY  
THE JOHNS HOPKINS UNIVERSITY  
Johns Hopkins Road Howard County, Maryland  
Approved For The University By:  
Date: Title: *[Signature]*

**BUILDING 24**  
AND  
**ASSOCIATED DEVELOPMENT**  
APPLIED PHYSICS LABORATORY  
THE JOHNS HOPKINS UNIVERSITY  
11100 JOHNS HOPKINS ROAD, LAUREL MD. 20707

**WATER & SEWER**  
**PROFILES & DETAILS**  
Fifth Election District Howard County, MD  
Tax Map 41 Parcel 50 and 123

REVISIONS	SCALE: AS SHOWN
Added Note to Profile 6-18-85	SHEET NO. 7
Changed size of conc. encasement 6-18-85	OF 13
	DATE: 11-19-84

**DRAWING**  
**C7**  
OF C13

SEDIMENT TRAP SCHEDULE		
	TRAP #1	TRAP #2
Drainage Area	1.22 AC.	1.12 AC.
Volume Required	2106 CF	1854 CF
Design Vol. (1' below crest elev.)	6690 CF	2084 CF
Top Elevation	370.5	370
Crest Elevation	369	369
Bottom Elevation	363	365
Clean Out Elevation	365.2	364.5
Crest Opening	10 ft	6 ft

\*Note: For Temporary SWM the required storage is 8810 CF. The storage available in TRAP #1 (to crest elevation) is 2016 CF.

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

APPROVED Robert W. Ziehm DATE 3/4/85  
HOWARD S.C.D.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

SIGNATURE James M. Matlock DATE 3-20-85  
U.S. SOIL CONSERVATION SERVICE

CERTIFICATION BY THE DEVELOPER

I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY.

SIGNATURE C.J. Smith DATE 11-15-84  
SIGNATURE OF DEVELOPER

RESPONSIBLE PERSONNEL CERTIFICATION

I HEREBY CERTIFY THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

SIGNATURE C.J. Smith DATE 11-15-84  
SIGNATURE OF DEVELOPER

CERTIFICATION BY THE ENGINEER

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

SIGNATURE Kenneth A. Michael DATE 11-19-84  
SIGNATURE OF ENGINEER

APPROVED: FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

SIGNATURE James M. Matlock DATE 4-1-85  
COUNTY HEALTH OFFICER

APPROVED: STORM DRAINAGE SYSTEMS, ROADS AND PUBLIC SEWERAGE SYSTEMS - HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

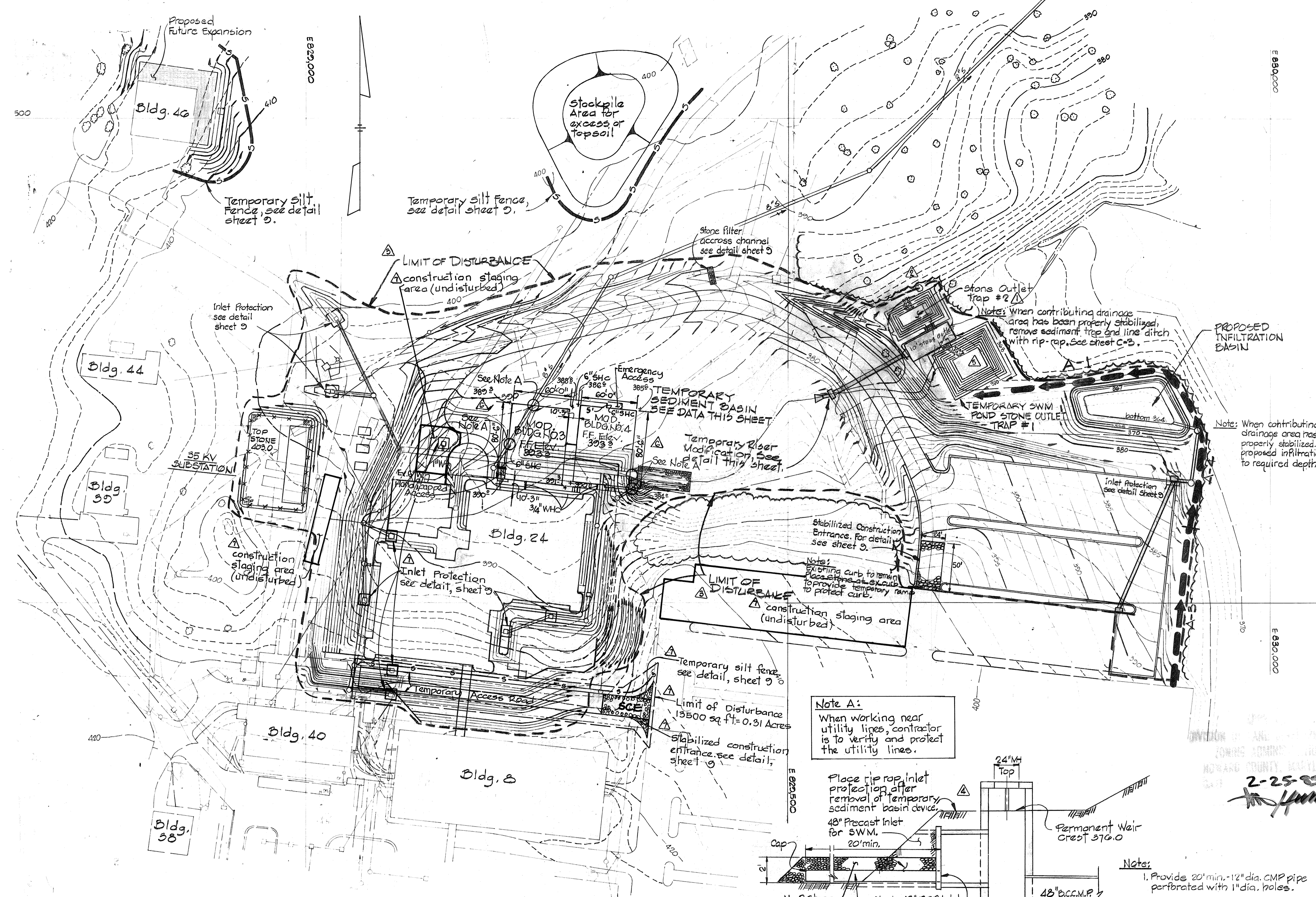
SIGNATURE Joseph F. Nemy DATE 3-21-85  
DIRECTOR

SIGNATURE William R. Reed DATE 3-28-85  
CHIEF, BUREAU OF ENGINEERING

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING

SIGNATURE John W. Hirschman DATE 4-2-85  
PLANNING DIRECTOR

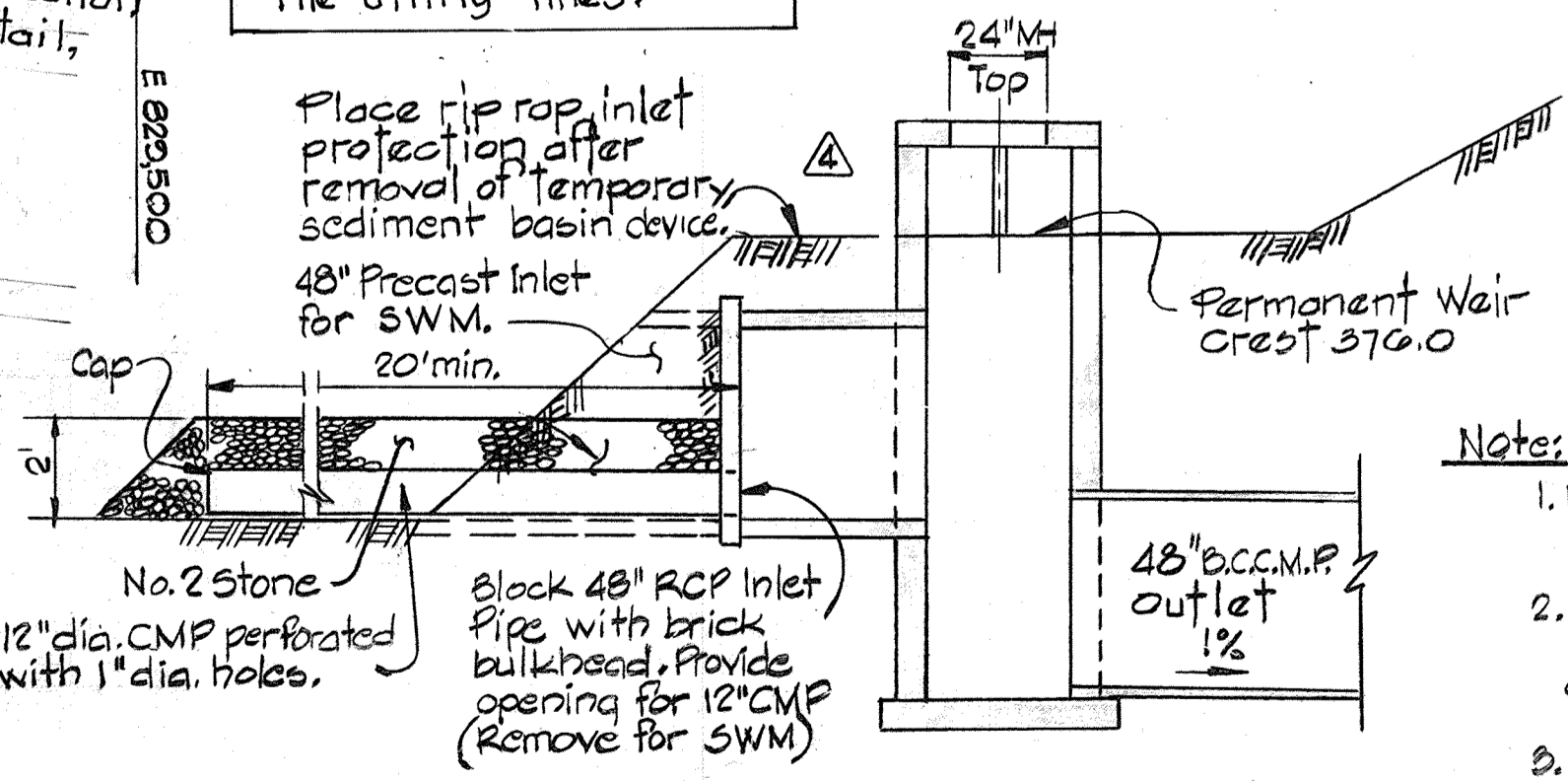
SIGNATURE John W. Hirschman DATE 4-2-85  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION



**SEDIMENT BASIN DATA**  
 Drainage Area = 12.0 Acres  
 Required Volume = 75,000 CF  
 Crest Elev. = 370.10  
 Cleanout Elev. = 370.50

**PLAN**  
 Scale: 1" = 50'

**Note A:**  
 When working near utility lines, contractor is to verify and protect the utility lines.



**TEMPORARY RISER MODIFICATION DETAIL**  
 Scale: 1/4" = 1'-0"

- Notes:**
- Provide 20' min. 12" dia. CMP pipe perforated with 1" dia. holes.
  - Wrap 12" dia perforated CMP with hardware cloth, then filter cloth, and cap end of pipe.
  - Back-fill with two (2) feet No. 2 Stone.

WHITMAN, REQUARDT AND ASSOCIATES  
 CIVIL & STRUCTURAL ENGINEERS  
 2315 SAINT PAUL STREET  
 BALTIMORE, MARYLAND 21218  
 Signature: Kenneth A. Michael

JAMES GOLDSTEIN & PARTNERS  
 ARCHITECTS  
 225 MILLBURN AVENUE  
 MILLBURN, NEW JERSEY 07041  
 HENRY ADAMS, INC.  
 MECHANICAL/ELECTRICAL ENGINEERS  
 600 BALTIMORE AVENUE  
 BALTIMORE, MARYLAND

APPLIED PHYSICS LABORATORY  
 THE JOHNS HOPKINS UNIVERSITY  
 Johns Hopkins Road - Howard County, Maryland  
 Approved For The University By  
 Date: Title: C.J. Smith

**BUILDING 24 AND ASSOCIATED DEVELOPMENT**  
 APPLIED PHYSICS LABORATORY  
 THE JOHNS HOPKINS UNIVERSITY  
 11100 JOHNS HOPKINS ROAD, LAUREL MD. 20707

**SEDIMENT CONTROL PLAN**  
 Fifth Election District Howard County, MD.  
 Tax Map 41 Parcel 50 and 123

REVISIONS

Temporary Construction Access	7-15-87
Addition of Modular Bldgs	4-15-87
Relocated Trap #1 to be used as temp. Storm Water Management Pond	3-11-85
Added dewatering device	1-28-85
Limits of disturbance	1-28-85
Revise tree clearing limits	1-28-85
Add sediment trap #2	1-28-85

SCALE AS SHOWN  
 SHEET NO 8 OF 13  
 DATE 11-19-84  
**DRAWING C 8**  
 OF C13



**STANDARD AND SPECIFICATIONS FOR STORM DRAIN INLET PROTECTION DEFINITION**

FILTER CLOTH INSTALLED AROUND INLETS IN THE FORM OF A FENCE OR ACROSS AN OPENING, THEREBY REDUCING SEDIMENT CONTENT OF SEDIMENT LADEN WATER.

**PURPOSE**

TO PREVENT SEDIMENT LADEN WATER FROM ENTERING A STORM DRAIN SYSTEM THROUGH INLETS.

**CONDITIONS WHERE PRACTICE APPLIES**

THIS PRACTICE SHALL BE USED WHERE THE DRAINAGE AREA TO AN INLET IS DISTURBED, IT IS NOT POSSIBLE TO TEMPORARILY DIVERT THE STORM DRAIN OUTFALL INTO A SEDIMENT TRAPPING DEVICE AND WATER TIGHT BLOCKING OF INLETS IS NOT ADVISABLE. IT IS NOT TO BE USED IN PLACE OF SEDIMENT TRAPPING DEVICES. THIS PRACTICE MAY BE USED IN CONJUNCTION WITH STORM DRAIN DIVERSION TO HELP PREVENT SILTATION IN PIPES INSTALLED WITH A LOW SLOPE ANGLE.

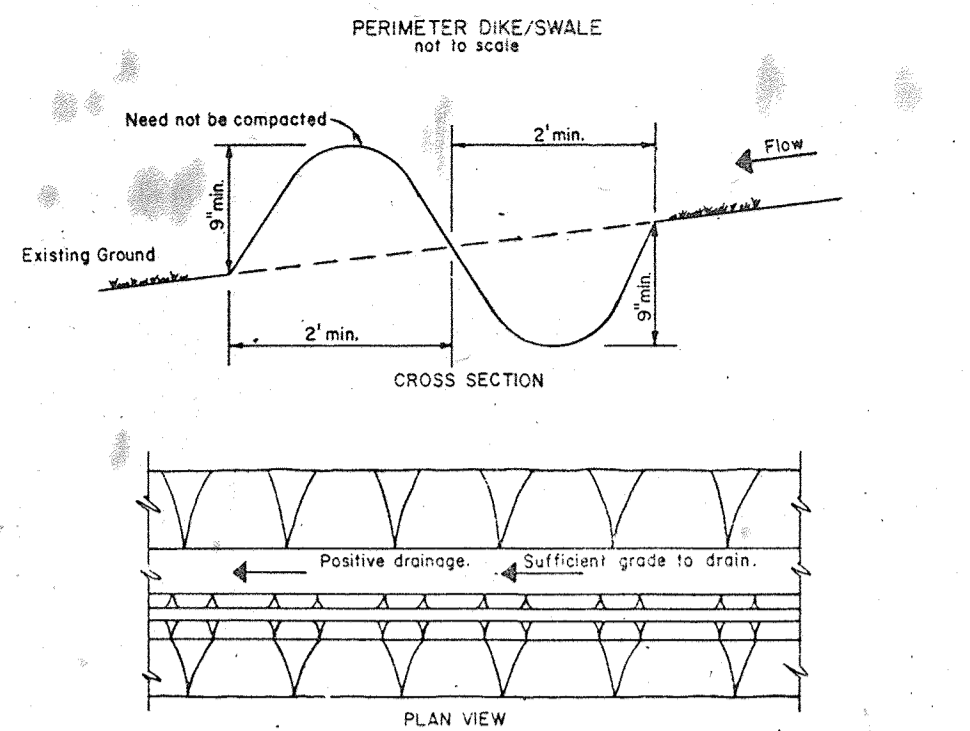
**CONSTRUCTION SPECIFICATIONS**

**I. MATERIALS**

- WOODEN FRAME IS TO BE CONSTRUCTED OF 2" X 4" CONSTRUCTION GRADE LUMBER.
- WIRE MESH MUST BE OF SUFFICIENT STRENGTH TO SUPPORT FILTER FABRIC, AND STONE FOR CURB INLETS, WITH WATER FULLY IMPOUNDED AGAINST IT.
- FILTER CLOTH MUST BE OF A TYPE APPROVED FOR THIS PURPOSE; RESISTANT TO SUNLIGHT WITH SIEVE SIZE, EGS. 40-85, TO ALLOW SUFFICIENT PASSAGE OF WATER AND REMOVAL OF SEDIMENT.
- STONE IS TO BE 2" IN SIZE AND CLEAN, SINCE FINES WOULD CLOG THE CLOTH.

**II. PROCEDURE**

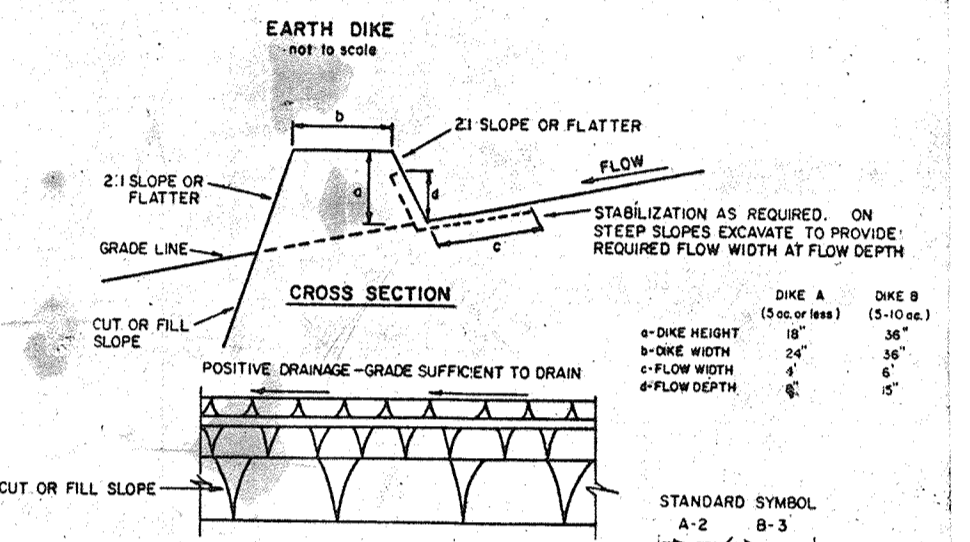
- A SWALE, DITCHLINE OR YARD INLET PROTECTION.**
  - EXCAVATE COMPLETELY AROUND INLET TO A DEPTH OF 18" BELOW NOT ELEVATION.
  - DRIVE 2 X 4 POST 1" INTO GROUND AT FOUR CORNERS OF INLET. PLACE NAIL STRIPS BETWEEN POSTS ON ENDS OF INLET. ASSEMBLE TOP PORTION OF 2X4 FRAME USING OVERLAP JOINT SHOW. TOP OF FRAME (WEIR) MUST BE 6" BELOW EDGE OF ROADWAY ADJACENT TO INLET.
  - STRETCH WIRE MESH TIGHTLY AROUND FRAME AND FASTEN SECURELY. ENDS MUST MEET AT POST.
  - STRETCH FILTER CLOTH TIGHTLY OVER WIRE MESH. THE CLOTH MUST EXTEND FROM TOP OF FRAME TO 18" BELOW INLET NOTCH ELEV. FASTEN SECURELY TO FRAME. ENDS MUST MEET AT POST, BE OVERLAPPED AND FOLDED, THEN FASTENED DOWN.
  - BACKFILL AROUND INLET IN COMPACTED 6" LAYERS UNTIL LAYER OF EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.
  - IF THE INLET IS NOT IN A LOW POINT, CONSTRUCT A COMPACTED EARTH DIKE IN THE DITCHLINE BELOW IT. THE TOP OF THIS DIKE IS TO BE AT LEAST 1/8" HIGHER THAN THE TOP OF FRAME (WEIR).
  - THIS STRUCTURE MUST BE INSPECTED FREQUENTLY AND THE FILTER FABRIC REPLACED WHEN CLOGGED.
- CURB INLET PROTECTION**
  - ATTACH A CONTINUOUS PIECE OF WIRE MESH (30" MIN. WIDTH BY THROAT LENGTH PLUS 4") TO THE 2" X 4" WEIR (MEASURING THROAT LENGTH PLUS 2") AS SHOWN ON THE STANDARD DRAWING.
  - PLACE A PIECE OF APPROVED FILTER CLOTH (40-85 SIEVE) OF THE SAME DIMENSIONS AS THE WIRE MESH OVER THE WIRE MESH AND SECURELY ATTACH TO THE 2" X 4" WEIR.
  - SECURELY NAIL THE 2" X 4" WEIR TO 9" LONG VERTICAL SPACERS TO BE LOCATED BETWEEN THE WEIR AND INLET FACE (MAX. 6' APART).
  - PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL (MINIMUM 2" LENGTHS OF 2" X 4" TO THE TOP OF THE WEIR AT SPACER LOCATIONS. THESE 2" X 4" ANCHORS SHALL EXTEND ABOVE THE INLET TOP AND BE HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHT.



**CONSTRUCTION SPECIFICATIONS**

- ALL PERIMETER DIKE/SWALE SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
- DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
- DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSION VELOCITY.
- THE SWALE SHALL BE EXCAVATED OR SHARPED TO LINE GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED IN THE STANDARD.
- STABILIZATION OF THE AREA DISTURBED BY THE DIKE AND SWALE SHALL BE DONE IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SEED AND STRAW MULCH, AND SHALL BE DONE WITHIN 30 DAYS.
- PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

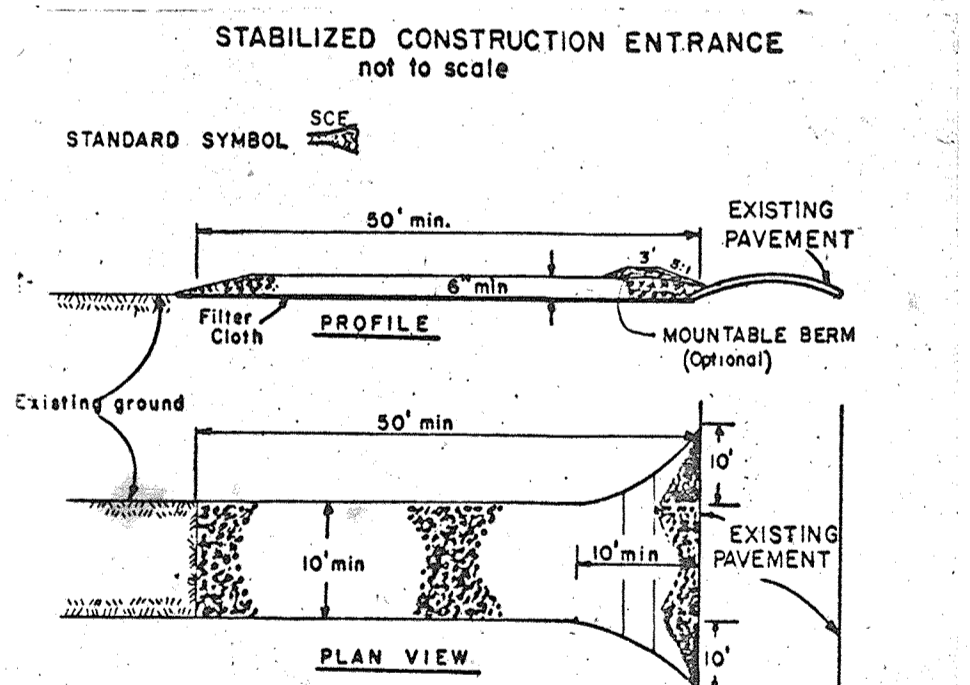
Max. Drainage Area Limit: 2 Acres



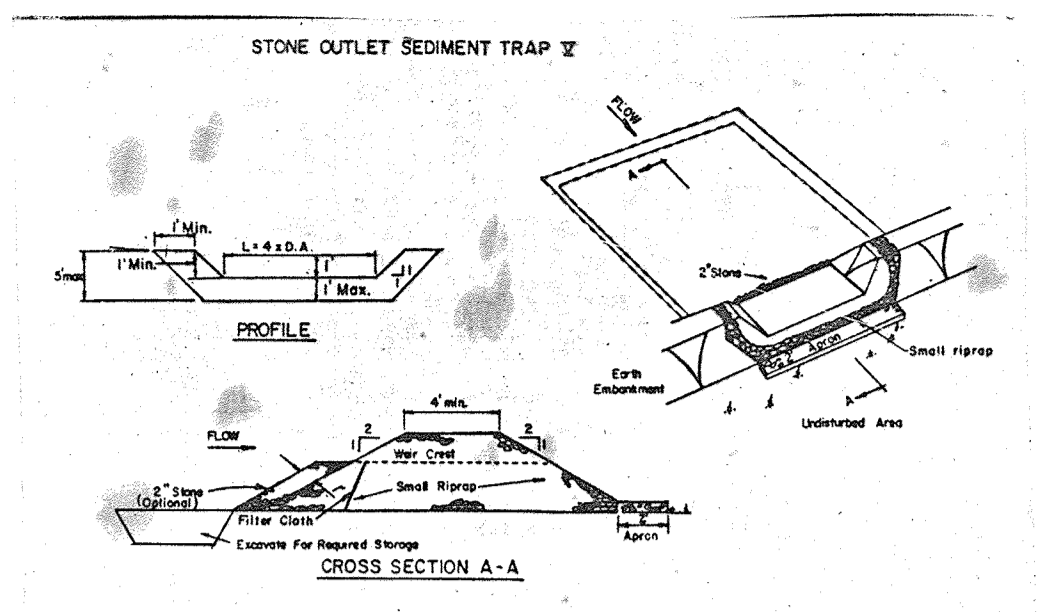
- ALL DIKES SHALL BE CONSTRUCTED BY EARTH-MOVING EQUIPMENT.
- DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
- TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
- FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT IMMEDIATELY STABILIZED.
- STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

TYPE OF TREATMENT	CHANNEL SIZE	DIKE A	DIKE B
1	5-15.00	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.00	SEED AND STRAW MULCH	SEED WITH JUTE, OR COCOONING, 500' X 2' DIKE
3	5.1-8.00	SEED WITH JUTE, OR SOIL	LINED RIP-RAP 4-8"
4	8.1-200	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

- STONE TO BE 2" IN SIZE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3" THICK AND 10" WIDE AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
- RIP-RAP TO BE 4-8" IN SIZE AND 10" WIDE AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
- APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
- PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.



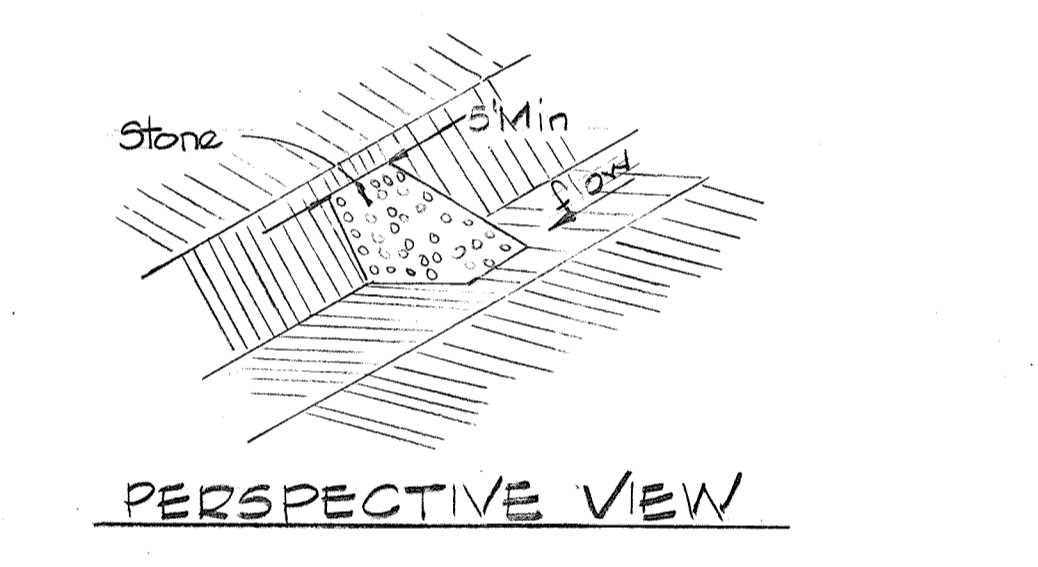
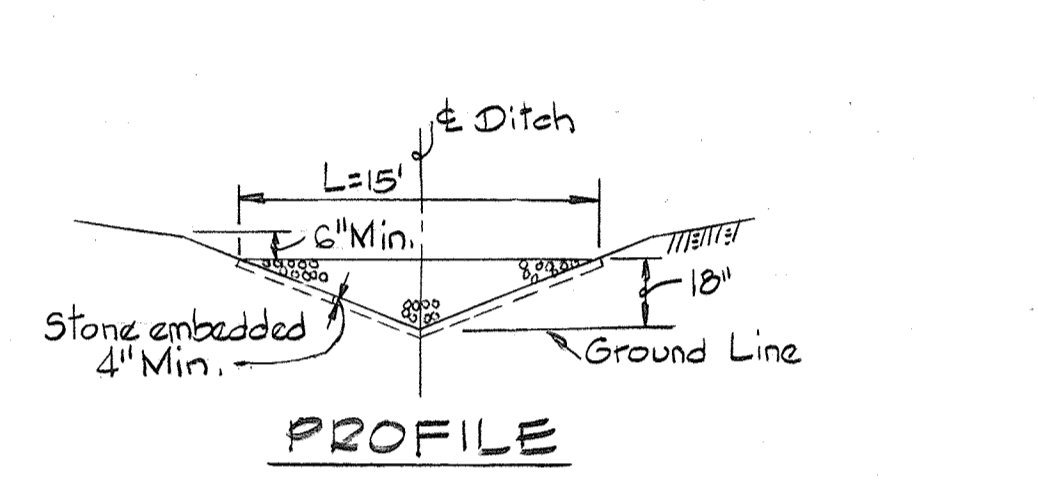
- Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
- Length - As required, but not less than 50 feet (except on a single residential lot where a 30 foot minimum length would apply).
- Thickness - Not less than six (6) inches.
- Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
- Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 3:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any secesses used to trap sediment. All sediment applied, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.



**CONSTRUCTION SPECIFICATIONS FOR ST-T**

- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The soil area shall be cleared.
- The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
- All cut and fill slopes shall be 3:1 or flatter.
- The stone used in the outlet shall be small riprap 4-8" along with a 1" thickness of 2" aggregate placed on the upstream side on the small riprap or subsided filter cloth in the riprap.
- Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap.
- The structure shall be inspected after each rain and repaired, as needed.
- Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
- The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

Maximum Drainage Area: 5 Acres



- NOTES:**
- The stone shall be crushed stone. Gravel may be used if crushed stone is not available. The stone shall meet MSHA Size No. 2 or AASHTO designation M43 Size No. 2 or 21.
  - The crest of the stone filter shall be at least 6" below the lowest elevation of the top of the ditch and shall be level.
  - The stone filter structure shall be embedded into the soil a minimum of four (4) inches.
  - The stone filter structure shall be inspected after each rain, and the stone shall be replaced when the structure ceases to function as intended due to silt accumulation among the stone, washout, etc.

**STONE FILTER STRUCTURE**

No Scale

- CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**
- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
  - FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 2' AT TOP AND MID SECTION.
  - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
  - MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO DEVELOP IN THE SILT FENCE.
- POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD  
 FENCE: WOVEN WIRE, 34 GA. 6" MAX. WIRE SPACING  
 FILTER CLOTH: FILTER X, FLOW LINED, 100% POLYPROPYLENE  
 FABRICATED UNIT: GEOSAD, ANTIFIBRE, OR APPROVED EQUAL.

**SILT FENCE DETAIL**

No Scale

**SEDIMENT CONTROL NOTES**

- NOTIFY THE HOWARD SOIL CONSERVATION DISTRICT AND THE HOWARD COUNTY BUREAU OF LICENCES, INSPECTIONS AND PERMITS 48 HOURS BEFORE ANY WORK BEGINS.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL OTHER SLOPES GREATER THAN 3:1.
  - 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 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.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL; FOR PERMANENT SEEDINGS (SEC. 5.1), SOD (SEC. 5.4), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 5.2). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 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.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY THE GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- THESE GRADING AND SEDIMENT CONTROL DRAWINGS SHALL BE USED FOR THE GRADING AND CONSTRUCTION OF SEDIMENT CONTROL PRACTICES ONLY. FOR ALL OTHER CONSTRUCTION SEE THE "FINAL DEVELOPMENT PLANS".
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPW SEDIMENT CONTROL INSPECTOR.

**PERMANENT SEEDING NOTES**

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

**Seedbed Preparation:** Loosen three inches of soil by raking, discing or other acceptable means before seeding.

**Soil Amendments:** In lieu of soil test recommendations, use one of the following schedules:

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square ft) and 600 lbs per acre 10-10-10 fertilizer (24 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

**Seeding -** For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.5 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

**Mulching -** Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 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/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

**Maintenance -** Inspect all seeded areas and make needed repairs, replacements and reseedings.

**TEMPORARY SEEDING NOTES**

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

**Seedbed Preparation:** Loosen three inches of soil by raking, discing or other acceptable means before seeding.

**Soil Amendments:** Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft)

**Seeding -** For periods March 1 thru April 30 and from August 15 thru November 15, seed with 25 bushel per acre of annual ryegrass (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (0.7 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

**Mulching -** Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

APPROVED  
 DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION  
 HOWARD COUNTY, MARYLAND  
 DATE 2-25-85

**SITE ANALYSIS**

Total Area of Site	366 ± Acres
Area disturbed	89 ± Acres
Area to be roofed or paved	2.3 ± Acres
Area to be stabilized	6.6 ± Acres
Total Cut	5550 CY
Total Fill	7565 CY
Waste/Borrow Area Location	Onsite, See plans

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

APPROVED *Robert W. Zilmer* DATE 3/1/85  
 HOWARD S.C.D.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

SIGNATURE *James M. Zilmer* DATE 3-20-85  
 U.S. SOIL CONSERVATION SERVICE

**CERTIFICATION BY THE DEVELOPER**

I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY.

*C. J. Smith* 11-15-84  
 SIGNATURE OF DEVELOPER DATE

**RESPONSIBLE PERSONNEL CERTIFICATION**

"I HEREBY CERTIFY THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT"

*C. J. Smith* 11-15-84  
 SIGNATURE OF DEVELOPER DATE

**CERTIFICATION BY THE ENGINEER**

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

*Kenneth A. Michael* 11-19-84  
 SIGNATURE OF ENGINEER DATE

APPROVED: FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.

*James F. Nemy* 4-1-85  
 SIGNATURE OF HEALTH OFFICER DATE

APPROVED: STORM DRAINAGE SYSTEMS, ROADS AND PUBLIC SEWERAGE SYSTEMS - HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Joseph F. Nemy* 3-25-85  
 DIRECTOR DATE

*James F. Nemy* 3-22-85  
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

*John W. Muschman* 4-2-85  
 PLANNING DIRECTOR DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

WHITMAN, REQUARDT AND ASSOCIATES  
 CIVIL & STRUCTURAL ENGINEERS  
 2315 SAINT PAUL STREET  
 BALTIMORE, MARYLAND 21218  
*Kenneth A. Michael*

JAMES GOLDSTEIN & PARTNERS  
 ARCHITECTS  
 225 MILLBURN AVENUE  
 MILLBURN, NEW JERSEY 07041

HENRY ADAMS, INC.  
 MECHANICAL & ELECTRICAL ENGINEERS  
 600 BALTIMORE AVENUE  
 BALTIMORE, MARYLAND

APPLIED PHYSICS LABORATORY  
 THE JOHNS HOPKINS UNIVERSITY  
 Johns Hopkins Road Howard County, Maryland  
 Approved For The University By: *C. J. Smith*  
 Date: Title:

BUILDING 24  
 AND  
 ASSOCIATED DEVELOPMENT  
 APPLIED PHYSICS LABORATORY  
 THE JOHNS HOPKINS UNIVERSITY  
 11100 JOHNS HOPKINS ROAD, LAUREL MD. 20707

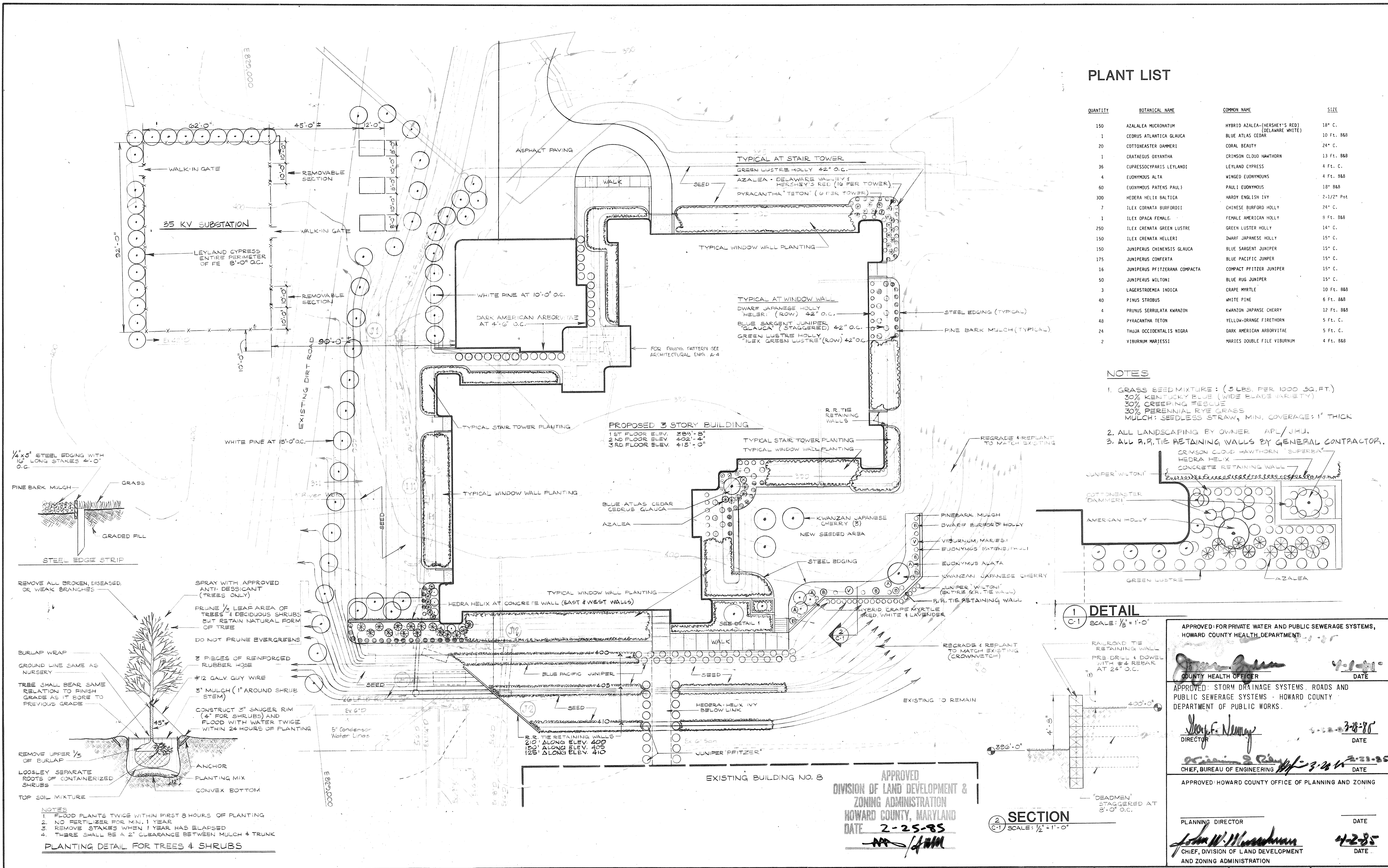
SEDIMENT CONTROL  
 NOTES & DETAILS  
 Fifth Election District Howard County, MD  
 Tax Map 41 Parcel 50 and 123

REVISIONS

Added Site Analysis	2-12-85
Revise sequence of constr. to C12	1-23-85
Add fencing and stabilization notes	1-23-85

SCALE AS SHOWN  
 SHEET NO. 9  
 OF 13  
 DATE: 11-19-84  
 DRAWING  
 C9  
 OF C13



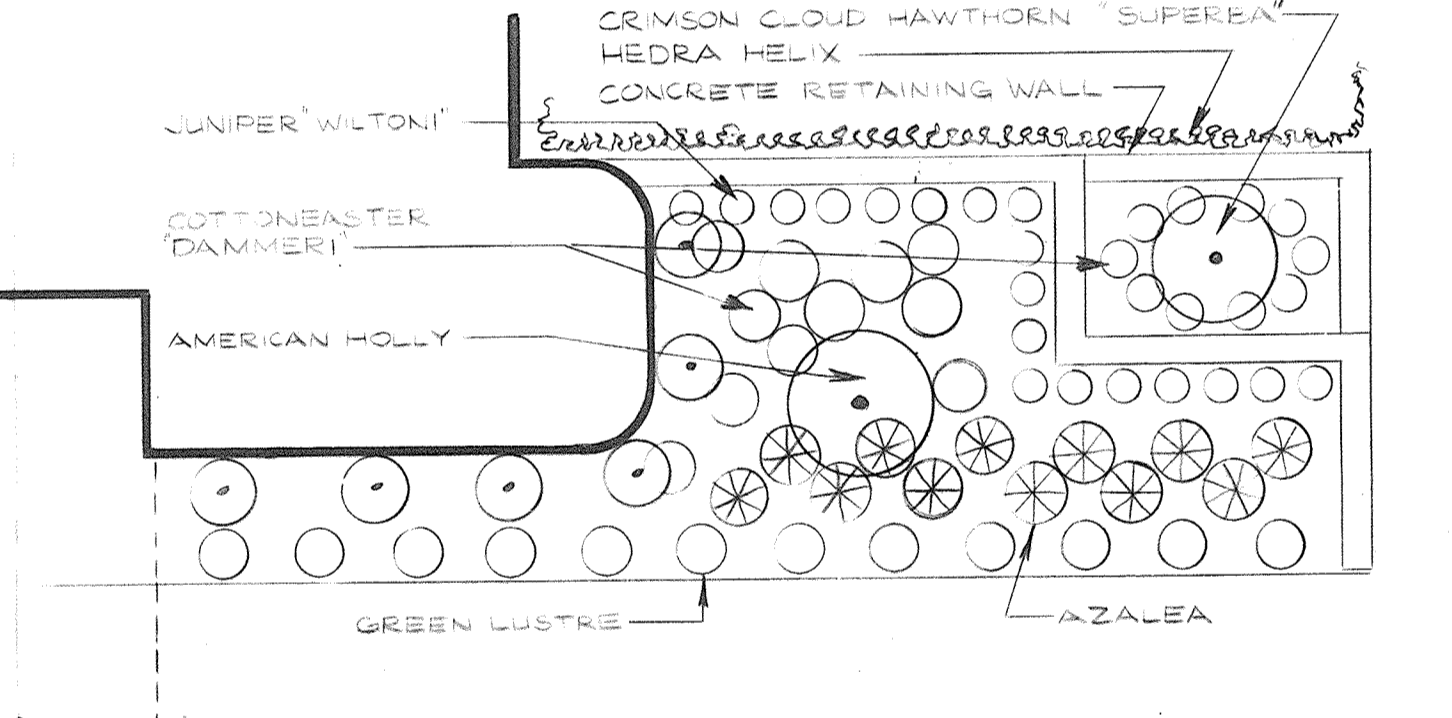


**PLANT LIST**

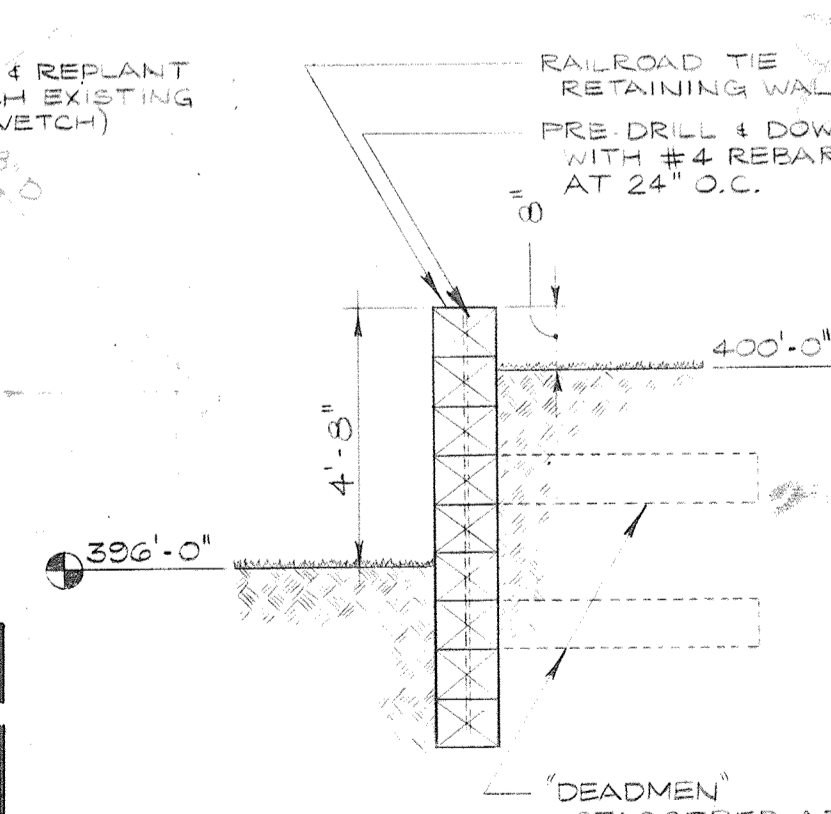
QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE
150	AZALEA MICRONATIUM	HYBRID AZALEA-(HERSHEY'S RED) (DELAWARE WHITE)	18" C.
1	CEDRUS ATLANTICA GLAUGA	BLUE ATLAS CEDAR	10 FT. 8&B
20	COTONEASTER DAMMERI	CORAL BEAUTY	24" C.
1	CRATAEGUS OXYANTHA	CRIMSON CLOUD HAWTHORN	13 FT. 8&B
36	CUPRESSOCYPARIS LEYLANDI	LEYLAND CYPRESS	4 FT. C.
4	EUONYMUS ALTA	WINGED EUONYMUS	4 FT. 8&B
60	EUONYMUS PATENS PAULI	PAULI EUONYMUS	18" 8&B
300	HEDERA HELIX BALTICA	HARDY ENGLISH IVY	2-1/2" Pot
7	ILEX CORNATA BURFORDII	CHINESE BURFORD HOLLY	24" C.
1	ILEX OPACA FEMALE	FEMALE AMERICAN HOLLY	9 FT. 8&B
250	ILEX CRENATA GREEN LUSTRE	GREEN LUSTER HOLLY	14" C.
150	ILEX CRENATA HELLERI	DWARF JAPANESE HOLLY	15" C.
150	JUNIPERUS CHINENSIS GLAUGA	BLUE SARGENT JUNIPER	15" C.
175	JUNIPERUS CONFERTA	BLUE PACIFIC JUNIPER	15" C.
16	JUNIPERUS PFITZERANA COMPACTA	COMPACT PFITZER JUNIPER	15" C.
50	JUNIPERUS WILTONI	BLUE RUG JUNIPER	15" C.
3	LAGERSTROEMIA INDICA	CAPE MYRTLE	10 FT. 8&B
40	PINUS STROBUS	WHITE PINE	6 FT. 8&B
4	PRUNUS SERRULATA KWANZON	KWANZON JAPANESE CHERRY	12 FT. 8&B
48	PYRACANTHA TETON	YELLOW-ORANGE FIRETHORN	5 FT. C.
24	THUJA OCCIDENTALIS NIGRA	DARK AMERICAN ARBORVITAE	5 FT. C.
2	VIBURNUM MARIESII	MARIES DOUBLE FILE VIBURNUM	4 FT. 8&B

**NOTES**

- GRASS SEED MIXTURE: (5 LBS. PER 1000 SQ. FT.)  
 30% KENTUCKY BLUE (WIDE BLADE VARIETY)  
 30% CREEPING FESCUE  
 30% PERENNIAL RYE GRASS  
 MULCH: SEEDLESS STRAW, MIN. COVERAGE: 1" THICK
- ALL LANDSCAPING BY OWNER APL/JHU.
- ALL R.R. TIE RETAINING WALLS BY GENERAL CONTRACTOR.



**1 DETAIL**  
C-1 SCALE: 1/2" = 1'-0"



**2 SECTION**  
C-1 SCALE: 1/2" = 1'-0"

APPROVED: FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS,  
HOWARD COUNTY HEALTH DEPARTMENT

*[Signature]* COUNTY HEALTH OFFICER DATE 4-1-85

APPROVED: STORM DRAINAGE SYSTEMS, ROADS AND  
PUBLIC SEWERAGE SYSTEMS - HOWARD COUNTY  
DEPARTMENT OF PUBLIC WORKS

*[Signature]* DIRECTOR DATE 3-28-85

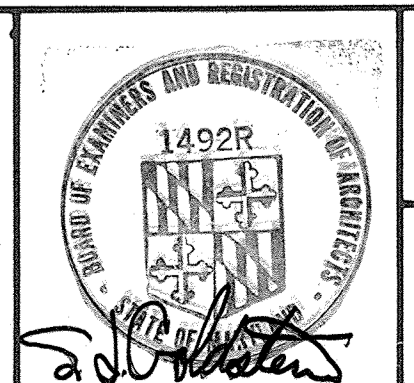
*[Signature]* CHIEF, BUREAU OF ENGINEERING DATE 2-23-85

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

PLANNING DIRECTOR DATE

*[Signature]* CHIEF, DIVISION OF LAND DEVELOPMENT  
AND ZONING ADMINISTRATION DATE 4-2-85

WHITMAN, REQUARDT AND ASSOCIATES  
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THE JOHNS HOPKINS UNIVERSITY  
Johns Hopkins Road Howard County, Maryland

Approved For The University By:  
Date: Title: *[Signature]*

**BUILDING 24**  
AND  
**ASSOCIATED DEVELOPMENT**

APPLIED PHYSICS LABORATORY  
THE JOHNS HOPKINS UNIVERSITY  
11100 JOHNS HOPKINS ROAD, LAUREL MD. 20707

**LANDSCAPE PLAN**

Fifth Election District Howard County, MD  
Tax Map 41 Parcel 50 and 123

REVISIONS

SCALE: 1" = 20'

SHEET NO. 11  
OF 13

DATE: 11-19-84

**DRAWING**

C11  
OF C13

CONSTRUCTION SPECIFICATIONS

I. SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE POND OR RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

II. EARTH FILL

**MATERIAL**  
THE FILL MATERIAL SHALL BE TAKEN FROM AN APPROVED BORROW AREA AS DIRECTED BY THE ENGINEER IN THE FIELD. THE CUTOFF TRENCH AND EMBANKMENT FILL SHALL BE CONSTRUCTED OF IMPERVIOUS MATERIAL SUCH AS CLAY, SILTY CLAY, OR SANDY CLAY. THE FILL MATERIAL SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, OVERSIZED STONES, FROZEN OR OTHER OBJECTIONABLE MATERIALS.

**PLACEMENT**  
AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN 8-INCH MAXIMUM THICKNESS (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST POROUS BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT.

**COMPACTION**  
THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRE OR VIBRATORY ROLLER. EACH LAYER SHALL BE COMPACTED TO AT LEAST 90% OF THE MAXIMUM DRY DENSITY AS DETERMINED ACCORDING TO AASHTO T-180. THE MOISTURE CONTENT OF THE MATERIAL SHALL BE WITHIN 3% OF THE OPTIMUM MOISTURE CONTENT ACCORDING TO AASHTO T-180. NO DRIVEN COMPACTION EQUIPMENT SHALL BE OPERATED CLOSER THAN TWO FEET TO ANY PART OF A STRUCTURE.

**CUTOFF TRENCH**  
A CUTOFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE AS SHOWN ON THE DRAWINGS, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL MATERIAL FOR THE CUTOFF TRENCH SHALL BE THE MOST IMPERVIOUS MATERIAL AVAILABLE AND SHALL BE COMPACTED WITH EQUIPMENT OR ROLLERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

III. STRUCTURAL BACKFILL

BACKFILL MATERIAL SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO A STRUCTURE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN TWO FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF TWENTY-FOUR INCHES OR GREATER OVER THE STRUCTURE OR PIPE.

IV. PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

A. CORRUGATED METAL PIPE

1. MATERIALS - (STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL BE GALVANIZED AND FULLY BITUMINOUS COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A WITH WATERTIGHT COUPLING BANDS. ANY BITUMINOUS COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND.

STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THE FOLLOWING COATINGS ARE COMMERCIALY AVAILABLE: NEXON PLASTI-COTE, BLAC-KLAD, AND BETH-CU-LOY. COATED CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M-245 AND M246.

2. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. WATERTIGHT COUPLING BANDS OR FLANGES SHALL BE USED AT ALL JOINTS. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH, WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. LAYING PIPE - THE PIPE SHALL BE PLACED WITH INSIDE CIRCUMFERENTIAL LAPS POINTING DOWNSTREAM AND WITH THE LONGITUDINAL LAPS AT THE SIDES.  
5. BACKFILLING SHALL CONFORM TO STRUCTURAL BACKFILL AS SHOWN ABOVE.  
6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

B. REINFORCED CONCRETE PIPE

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE A RUBBER GASKET JOINT AND SHALL EQUAL OR EXCEED ASTM SPECIFICATION C-361. AN APPROVED EQUIVALENT IS AWWA SPECIFICATION C-301.

2. BEDDING - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3", OR AS SHOWN ON THE DRAWINGS.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE.

4. BACKFILLING SHALL CONFORM TO STRUCTURAL BACKFILL AS SHOWN ABOVE.

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

V. CONCRETE

1. MATERIALS

- a. CEMENT - NORMAL PORTLAND CEMENT SHALL CONFORM TO THE LATEST ASTM SPECIFICATION C-150.
- b. WATER - THE WATER USED IN CONCRETE SHALL BE CLEAN, FREE FROM OIL, ACID, ALKALI, SCALES, ORGANIC MATTER OR OTHER OBJECTIONABLE SUBSTANCES.
- c. SAND - THE SAND USED IN CONCRETE SHALL BE CLEAN, HARD, STRONG AND DURABLE, AND SHALL BE WELL GRADED WITH 100 PERCENT PASSING A ONE-QUARTER INCH SIEVE. LIMESTONE SAND SHALL NOT BE USED.
- d. COARSE AGGREGATE - THE COARSE AGGREGATE SHALL BE CLEAN, HARD, STRONG AND DURABLE, AND FREE FROM CLAY OR DIRT. IT SHALL BE WELL GRADED WITH A MAXIMUM SIZE OF ONE AND ONE-HALF (1-1/2) INCHES.
- e. REINFORCING STEEL - THE REINFORCING STEEL SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE BILLET STEEL OR RAIL STEEL CONFORMING TO ASTM SPECIFICATION A-615.

2. DESIGN MIX - THE CONCRETE SHALL BE MIXED IN THE FOLLOWING PROPORTIONS, MEASURED BY WEIGHT. THE WATER-CEMENT RATIO SHALL BE 5-1/2 TO 6 U.S. GALLONS OF WATER PER 94 POUND BAG OF CEMENT. THE PROPORTION OF MATERIALS FOR THE TRIAL MIX SHALL BE 1:2:3-1/2. THE COMBINATION OF AGGREGATES MAY BE ADJUSTED TO PRODUCE A PLASTIC AND WORKABLE MIX THAT WILL NOT PRODUCE HARSHNESS IN PLACING OR HONEYCOMBING IN THE STRUCTURE.

3. MIXING - THE CONCRETE INGREDIENTS SHALL BE MIXED IN BATCH MIXERS UNTIL THE MIXTURE IS HOMOGENEOUS AND OF UNIFORM CONSISTENCY. THE MIXING OF EACH BATCH SHALL CONTINUE FOR NOT LESS THAN ONE AND ONE-HALF MINUTES AFTER ALL THE INGREDIENTS, EXCEPT THE FULL AMOUNT OF WATER, ARE IN THE MIXER. THE MINIMUM MIXING TIME IS PREDICTED ON PROPER CONTROL OF THE SPEED OF ROTATION OF THE MIXER AND OF THE INTRODUCTION OF THE MATERIALS, INCLUDING WATER, INTO THE MIXER. WATER SHALL BE ADDED PRIOR TO, DURING, AND FOLLOWING THE MIXER-CHARGING OPERATIONS. EXCESSIVE OVERMIXING REQUIRING THE ADDITION OF WATER TO PRESERVE THE REQUIRED CONCRETE CONSISTENCY SHALL NOT BE PERMITTED. TRUCK MIXING WILL BE ALLOWED PROVIDED THAT THE USE OF THIS METHOD SHALL CAUSE NO VIOLATION OF ANY APPLICABLE PROVISIONS OF THE SPECIFICATIONS GIVEN HERE.

4. FORMS - THE FORMS SHALL HAVE SUFFICIENT STRENGTH AND RIGIDITY TO HOLD THE CONCRETE AND TO WITHSTAND THE NECESSARY PRESSURE, TAMPING, AND VIBRATION WITHOUT DEFLECTION FROM THE PRESCRIBED LINES. THEY SHALL BE MORTAR-TIGHT AND CONSTRUCTED SO THAT THEY CAN BE REMOVED WITHOUT HAMMERING OR PRYING AGAINST THE CONCRETE. THE INSIDE OF FORMS SHALL BE OILED WITH A NON-STAINING MINERAL OIL OR THOROUGHLY WETTED BEFORE CONCRETE IS PLACED. FORMS MAY BE REMOVED 24 HOURS AFTER THE PLACEMENT OF CONCRETE. ALL WIRE TIES AND OTHER DEVICES USED SHALL BE RECESSED FROM THE SURFACE OF THE CONCRETE.

5. REINFORCING STEEL - ALL REINFORCING MATERIAL SHALL BE FREE OF DIRT, RUST, SCALE, OIL, PAINT OR ANY OTHER COATINGS. THE STEEL SHALL BE ACCURATELY PLACED AND SECURELY TIED AND BLOCKED INTO POSITION SO THAT NO MOVEMENT OF THE STEEL WILL OCCUR DURING PLACEMENT OF CONCRETE.

6. CONSOLIDATING - CONCRETE SHALL BE CONSOLIDATED WITH INTERNAL TYPE MECHANICAL VIBRATORS. VIBRATION SHALL BE SUPPLEMENTED BY SPADING AND HAND TAMPING AS NECESSARY TO INSURE SMOOTH AND DENSE CONCRETE ALONG FORM SURFACE, IN CORNERS, AND AROUND EMBEDDED ITEMS.

7. FINISHING - DEFECTIVE CONCRETE, HONEYCOMBED AREAS, VOIDS LEFT BY THE REMOVAL OF THE RODS, RIDGES ON ALL CONCRETE SURFACES PERMANENTLY EXPOSED TO VIEW OR EXPOSED TO WATER ON THE FINISHED STRUCTURE, SHALL BE REPAIRED IMMEDIATELY AFTER THE REMOVAL OF FORMS. ALL VOIDS SHALL BE REAMED AND COMPLETELY FILLED WITH DRY-PATCHING MORTAR.

8. PROTECTION AND CURING - EXPOSED SURFACES OF CONCRETE SHALL BE PROTECTED FROM THE DIRECT RAYS OF THE SUN FOR AT LEAST THE FIRST THREE (3) DAYS. ALL CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST FOR AT LEAST TEN (10) DAYS AFTER BEING PLACED. MOISTURE MAY BE APPLIED BY SPRAYING OR SPRINKLING AS NECESSARY TO PREVENT THE CONCRETE FROM DRYING. CONCRETE SHALL NOT BE EXPOSED TO FREEZING DURING THE CURING PERIOD. CURING COMPOUNDS MAY ALSO BE USED.

9. PLACING TEMPERATURE - CONCRETE MAY NOT BE PLACED AT TEMPERATURES BELOW 37°F. WITH THE TEMPERATURE FALLING, OR 34° WITH THE TEMPERATURE RISING.

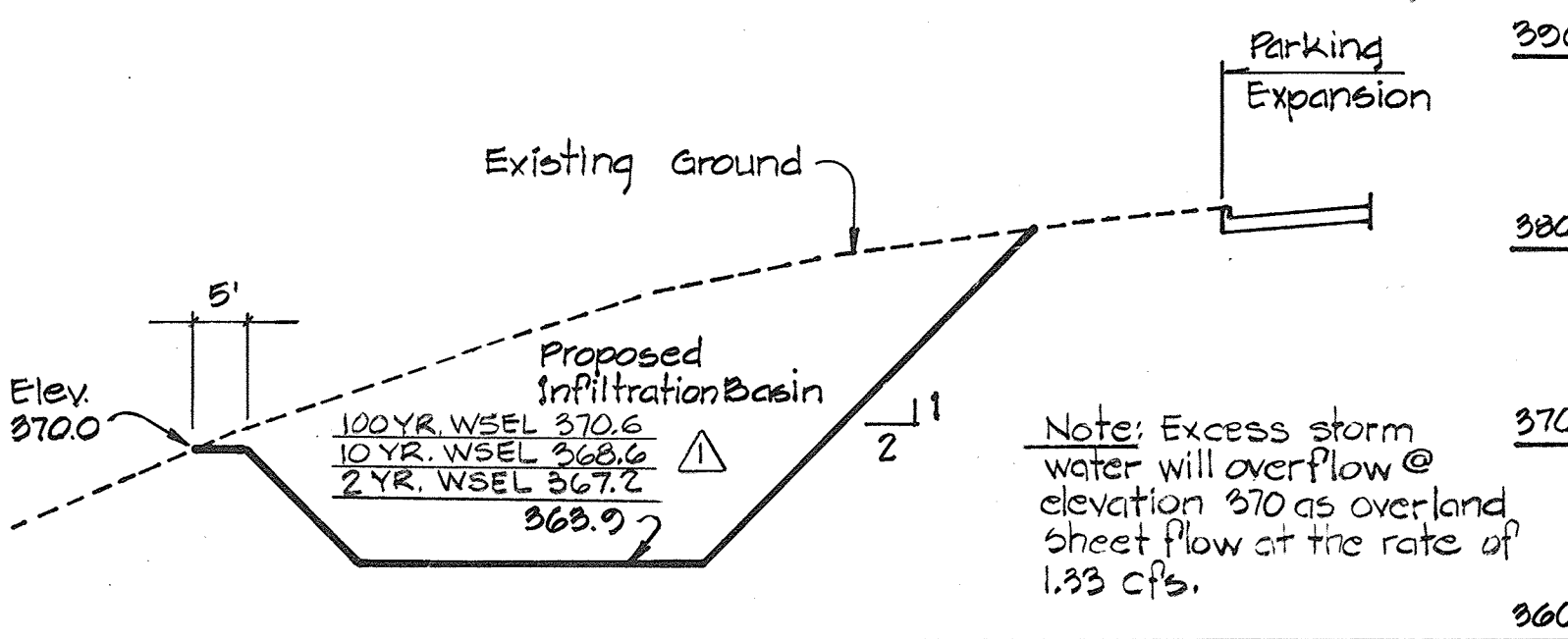
VI. STABILIZATION

ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING (IF REQUIRED) IN ACCORDANCE WITH THE VEGETATIVE TREATMENT SPECIFICATIONS.

SEQUENCE OF CONSTRUCTION

1. NOTIFY THE HOWARD SOIL CONSERVATION DISTRICT AND THE HOWARD COUNTY BUREAU OF LICENSES. INSPECTIONS AND PERMITS 48 HOURS BEFORE ANY WORK BEGINS.
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
3. CLEAR AND GRUB FOR SEDIMENT TRAPS, SEDIMENT BASIN, AND SEDIMENT CONTROL FEATURES.
4. CONSTRUCT SEDIMENT TRAPS, DIVERSION DIKES, STORM WATER MANAGEMENT POND WITH SEDIMENT CONTROL MODIFICATIONS, AND TEMPORARY SWM POND.
5. CLEAR AND GRUB REMAINDER OF SITE.
6. STRIP TOPSOIL IN THE VICINITY OF THE PROPOSED BUILDING AND STOCKPILE IN DESIGNATED AREA.
7. COMPLETE GRADING FOR THE PROPOSED SERVICE ROAD AND APPLY TEMPORARY SEEDING TO SIDE SLOPES AND OTHER APPROPRIATE AREAS.
8. EXCAVATE FOR BUILDING FOUNDATION TO SUBGRADE ELEVATION.
9. FINISH GRADING THE SITE.
10. CONSTRUCT BUILDING, STORM DRAINS AND ALL OTHER UTILITIES.
11. CONSTRUCT CURB AND GUTTER, PAVEMENT, SIDEWALK AND ALL OTHER SITE IMPROVEMENTS.
12. PERMANENTLY SEED AND STABILIZE PROPOSED GRASSED AREAS.
13. PUMP THE STANDING CLEAN WATER FROM THE SEDIMENT TRAPS AND SEDIMENT BASIN WHEN THE CONTRIBUTING AREAS HAVE BEEN STABILIZED.
14. DISPOSE OF THE SEDIMENT FROM THE SEDIMENT TRAP AND SEDIMENT BASIN IN A MANNER APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT.
15. REMOVE TEMPORARY DENEATERING DEVICE AND CONSTRUCT THE PERMANENT DETENTION STRUCTURE COMPLETE WITH RIP RAP INLET PROTECTION TO THE STORM WATER MANAGEMENT POND.
16. EXCAVATE THE INFILTRATION BASIN TO THE PROPOSED ELEVATIONS AFTER ALL AREAS HAVE BEEN STABILIZED.

CONSTRUCTION SEQUENCE	
OPERATION	TIME SCHEDULE
1. CLEARING AND GRUBBING	FEB. 15/85 - MAR. 15
2. SEDIMENT CONTROL CONSTRUCTION	FEB. 15 - MAR. 15
3. GRADING	MAR. 15 - APRIL 15
4. STORM DRAINS AND UTILITIES	MAY 15 - JUNE 15
5. BUILDING CONSTRUCTION	MAY 15/85 - MAY/86
6. PERMANENT SEEDING AND REMOVAL OF SEDIMENT CONTROL	MAY/86
7. INFILTRATION POND	MAY/86



SECTION - INFILTRATION BASIN

INFILTRATION BASIN DATA

DRAINAGE AREA	= 1.22 AC.
VOLUME REQUIRED	= 36,120 CF.
VOLUME AVAILABLE	= 25,925 CF.
TOP ELEVATION (OVERFLOW)	= 370
BOTTOM ELEVATION	= 363.9
DEPTH OF POND	= 6.1 FT.

APPROVED  
DIVISION OF LAND DEVELOPMENT &  
ZONING ADMINISTRATION  
HOWARD COUNTY, MARYLAND  
DATE 2-25-85  
*[Signature]*

CERTIFICATION BY THE DEVELOPER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS IN COMPLETION."

*[Signature]*  
DATE 1/30/85

CERTIFICATION BY THE ENGINEER

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30 DAYS OF COMPLETION."

*[Signature]*  
KENNETH A. MCCORD, P.E. NO. 1974  
DATE 1/30/85

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
*[Signature]* 3-20-85  
U.S. SOIL CONSERVATION DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
APPROVED: *[Signature]* 3-21-85  
HOWARD S.C.D. DATE

RESPONSIBLE PERSONNEL CERTIFICATION

"I HEREBY CERTIFY THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT."

*[Signature]* 1/31/85  
SIGNATURE OF DEVELOPER DATE

APPROVED FOR PRIVATE WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.  
*[Signature]* 4-1-85  
COUNTY HEALTH OFFICER DATE

APPROVED - STORM DRAINAGE SYSTEMS, ROADS AND PUBLIC SEWERAGE SYSTEMS - HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*[Signature]* 3-28-85  
DIRECTOR DATE

CHIEF BUREAU OF ENGINEERING *[Signature]* 3-28-85  
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING DATE

PLANNING DIRECTOR *[Signature]* 4-2-85  
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

WHITMAN, REQUARDT AND ASSOCIATES  
CIVIL & STRUCTURAL ENGINEERS  
2315 SAINT PAUL STREET  
BALTIMORE, MARYLAND 21218

*[Signature]*

JAMES GOLDSTEIN & PARTNERS  
ARCHITECTS  
225 MILLBURN AVENUE  
MILLBURN, NEW JERSEY 07041

HENRY ADAMS, INC.  
MECHANICAL & ELECTRICAL ENGINEERS  
600 BALTIMORE AVENUE  
BALTIMORE, MARYLAND

APPLIED PHYSICS LABORATORY  
THE JOHNS HOPKINS UNIVERSITY  
Johns Hopkins Road Howard County, Maryland

Approved For The University By:  
Date: *[Signature]* Title: *[Signature]*

BUILDING 24  
AND  
ASSOCIATED DEVELOPMENT  
APPLIED PHYSICS LABORATORY  
THE JOHNS HOPKINS UNIVERSITY  
1100 JOHNS HOPKINS ROAD, LAUREL MD. 20707

Fifth Election District Howard County, MD  
Tax Map 41 Parcel 50 and 123

REVISIONS

△ Add Weel to Infiltration Basin 2-11-85

SCALE: 1" = 20'  
SHEET NO. 12  
OF 13  
DATE: 11-19-84

DRAWING  
C12  
OF C13

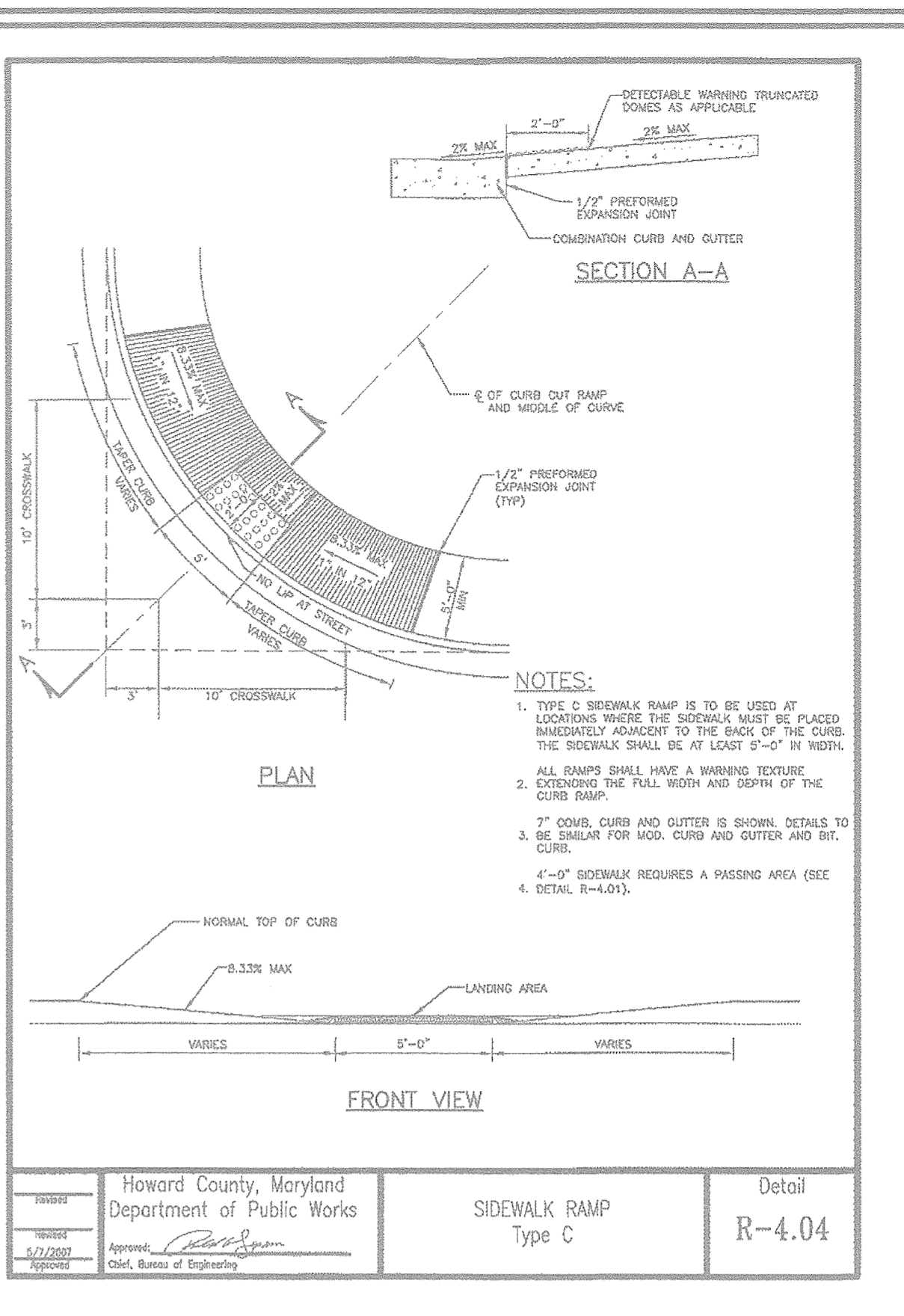
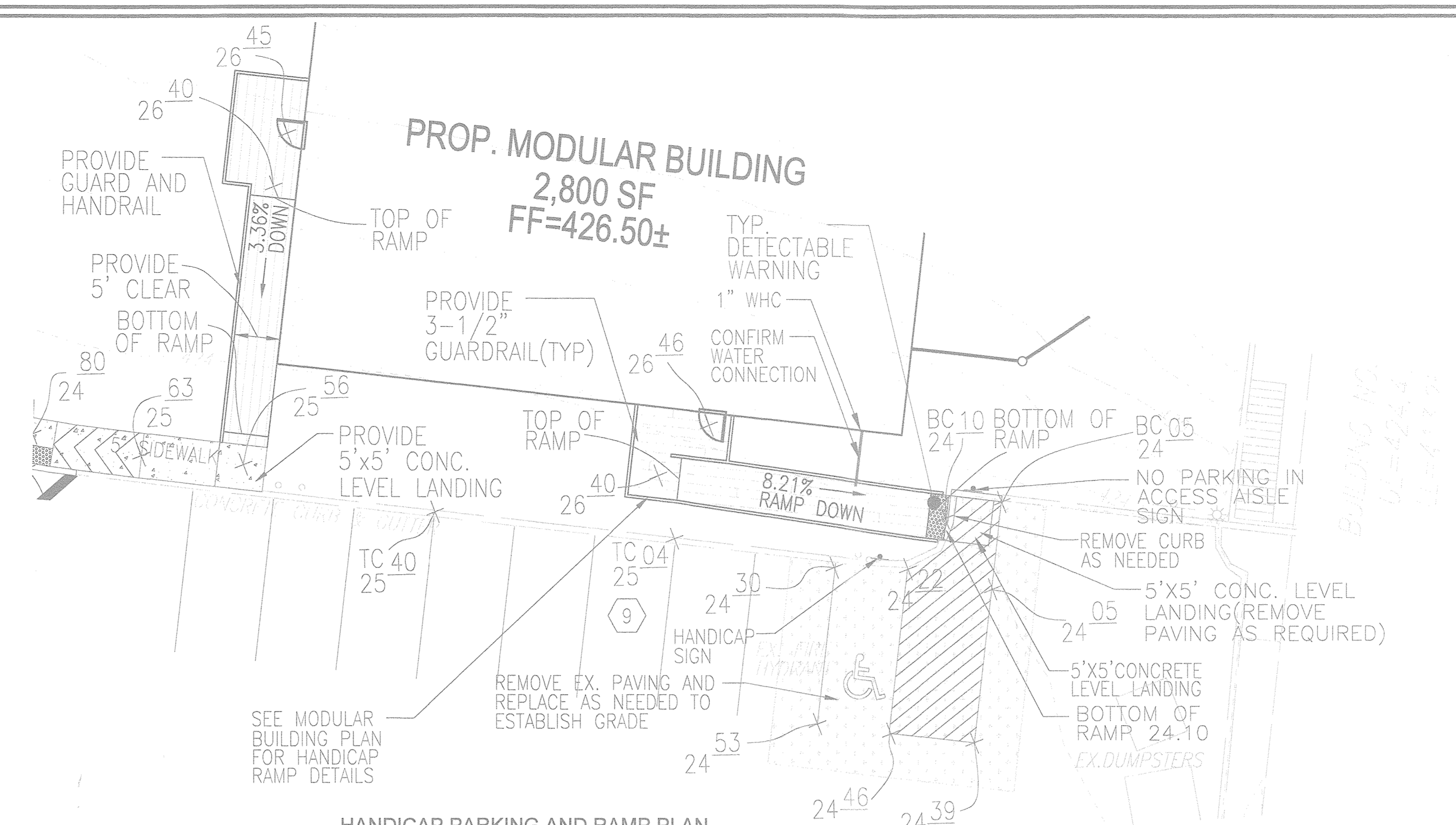
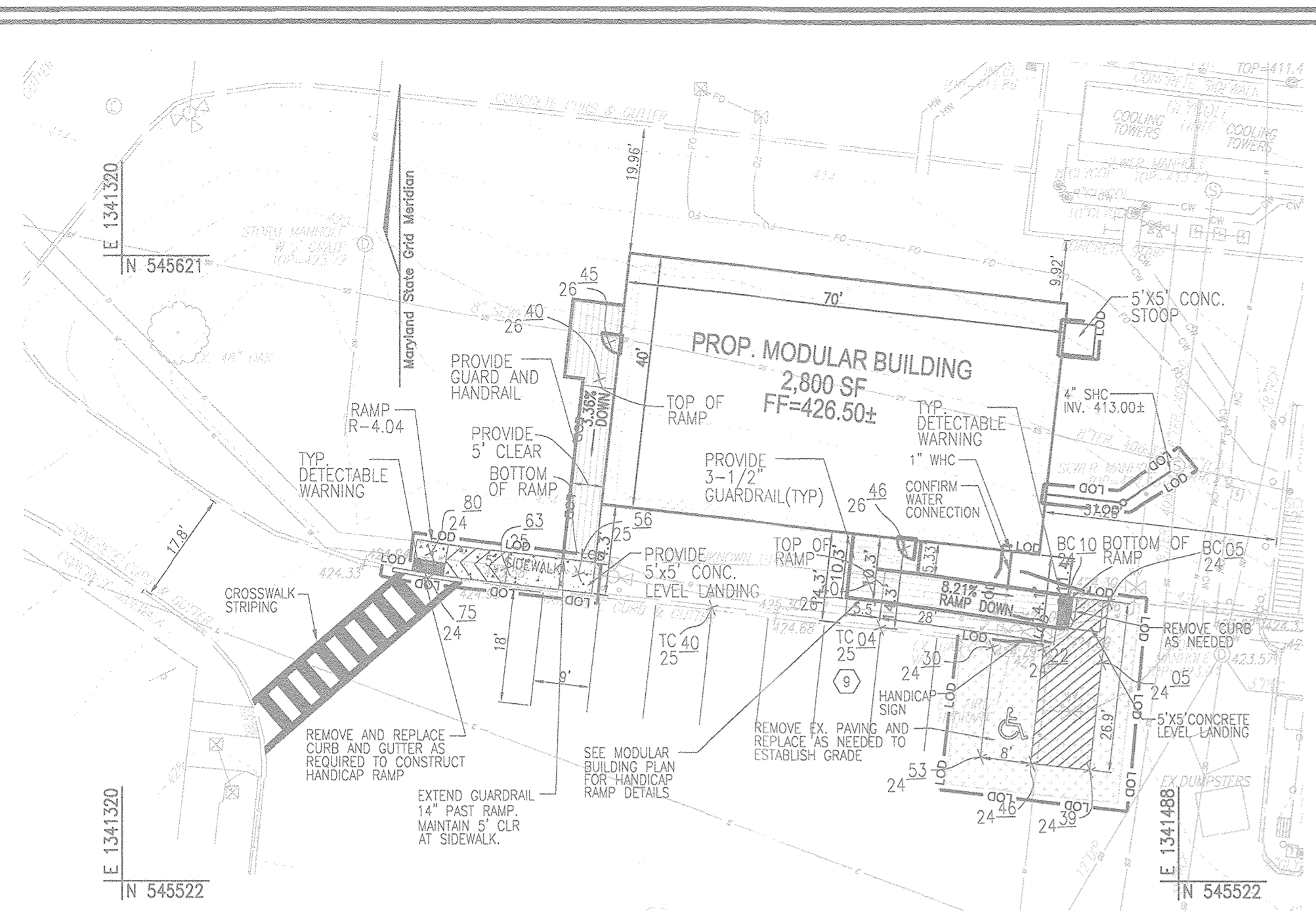
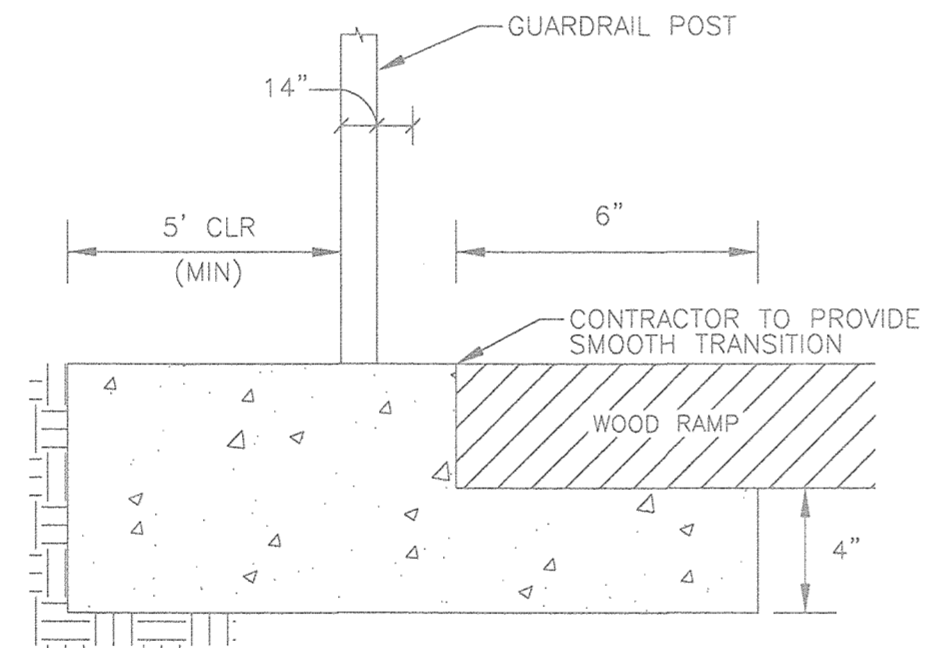


Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate 1'		Seeding Depth 2' (inches)	Recommended Seeding Dates by Plant Hardiness Zone 2'		
	lb/ac	lb/1000 ft <sup>2</sup>		5b and 6a	6b	7a and 7b
<b>Cool-Season Grasses</b>						
Annual Ryegrass ( <i>Lolium perenne</i> ssp. <i>multiflorum</i> )	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Barley ( <i>Hordeum vulgare</i> )	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Oats ( <i>Avena sativa</i> )	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Wheat ( <i>Triticum aestivum</i> )	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Cereal Rye ( <i>Secale cereale</i> )	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15
<b>Warm-Season Grasses</b>						
Foxtail Millet ( <i>Cenchrus ciliaris</i> )	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14
Pearl Millet ( <i>Pennisetum glaucum</i> )	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14

NOTES:  
 1' Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.  
 Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent wood mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.  
 Oats are the recommended nurse crop for warm-season grasses.  
 2' For steady soils, plant seeds at twice the depth listed above.  
 3' The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

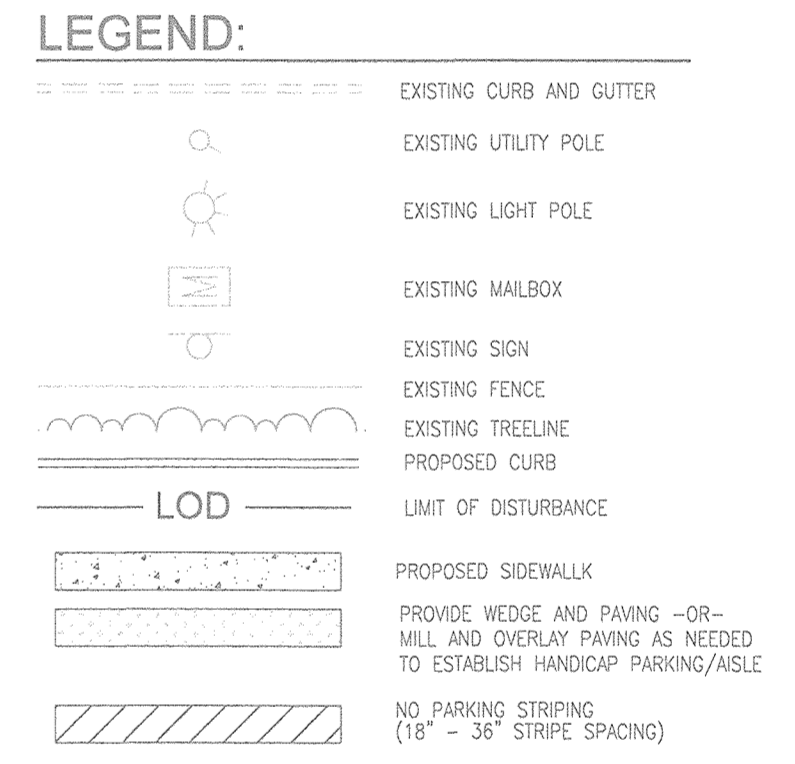
IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES:  
 WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5b, 6a)  
 CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 6b)  
 SOUTHERN MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7a, 7b)



CONCRETE LEVEL LANDING DETAIL NOT TO SCALE

**SITE ANALYSIS:**

TOTAL PARCEL AREA	366 ACRES
PROJECT AREA	0.17 ACRES
AREA DISTURBED (LOD)	0.03 ACRES
AREA TO BE ROOFED OR PAVED	0.03 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.00 ACRES
TOTAL CUT	0 CY
TOTAL FILL	0 CY
WASTE/BORROW LOCATION	N/A



**OWNER / DEVELOPER**  
 APPLIED PHYSICS LABORATORY  
 THE JOHNS HOPKINS UNIVERSITY  
 1100 JOHNS HOPKINS ROAD  
 LAUREL, MARYLAND 20723

- SEQUENCE OF CONSTRUCTION**
- OBTAIN GRADING PERMIT (1 DAY)
  - DEVELOPER/CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE (1 DAY)
  - NOTIFY HOWARD COUNTY BUREAU OF ENGINEERING, CONSTRUCTION INSPECTION DIVISION (410-313-1880) AT LEAST 24 HRS BEFORE STARTING WORK. (1 DAY)
  - STAKEOUT LIMITS OF DISTURBANCE (1 DAY)
  - WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, CLEAR AS NEEDED FOR CONSTRUCTION OF SITE. (1 WEEK)
  - INSTALL SITE UTILITIES (SHC AND WHC) (1 WEEK)
  - PREPARE AND SET MODULAR BUILDING PER PLAN AND ELEVATION. (3 DAYS)
  - CONSTRUCT WOODEN DECK AND RAMP CONSTRUCTION. (1 WEEK)
  - CONSTRUCT SIDEWALK AND CROSSWALK RAMP. (1 WEEK)
  - COMPLETE PAVING MODIFICATIONS. (1 WEEK)
  - INSTALL PAVING SURFACE COURSE WHERE NEEDED. (2 DAYS)
  - WITH INSPECTOR'S APPROVAL, FINE GRADE SITE AND STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEEDING. REMOVE ALL TRASH, JUNK AND DEBRIS FROM ENTIRE WORK AREA. (1 DAY)
  - AFTER PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR STABILIZE DISTURBED AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW AND MULCH (1 WEEK)
  - INSTALL CROSSWALK PAVEMENT MARKINGS.
- NOTES:**
- DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN.
  - FOLLOWING INITIAL SOIL DISTURBANCES OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
    - THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
    - SEVEN (7) CALENDAR DAYS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
  - ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.

15	REVISE TO SHOW THE REMOVAL OF BUILDING 40 (WHICH WAS PREVIOUSLY REMOVED) AND ILLUSTRATE A NEW MODULAR BUILDING.	07/24/18
NO.	REVISION	DATE

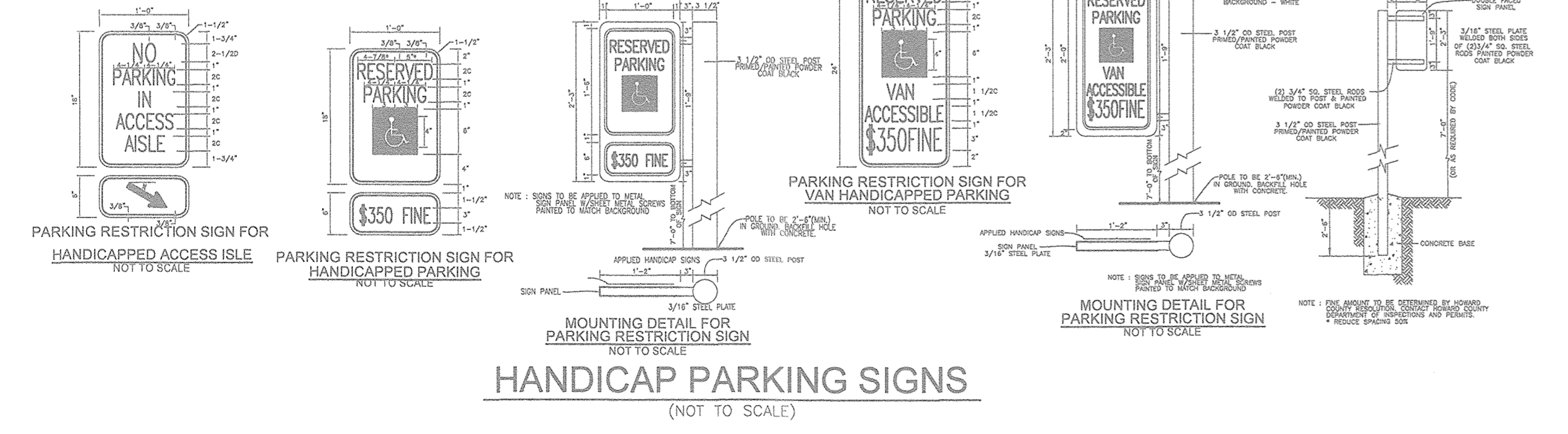
REVISED SITE DEVELOPMENT PLAN  
 SITE G  
 SITE LAYOUT & GRADING PLAN,  
 NOTES AND DETAILS  
 APPLIED PHYSICS LABORATORY  
 THE JOHNS HOPKINS UNIVERSITY

TAX MAP 41 GRID 16  
 4TH ELECTION DISTRICT

ZONED: PEC  
 PLAT 18868

PARCEL 123  
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 3300 N. RIDGE ROAD, SUITE 110  
 ELLICOTT CITY, MD 21103  
 TEL: 410.461.7666  
 FAX: 410.461.8961



HANDICAP PARKING SIGNS (NOT TO SCALE)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Chf Edmundo*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 8-29-18  
 DATE

*Valerie Jagan*  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 9-4-18  
 DATE

**OWNER/DEVELOPER CERTIFICATION:**  
 I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

*Robert A. McLean*  
 ROBERT A. MCLEAN, VICE PRESIDENT  
 PRINTED NAME & TITLE

**DESIGN CERTIFICATION:**  
 I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS. THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Robert H. Vogel*  
 ROBERT H. VOGEL  
 PRINTED NAME  
 MD REGISTRATION NO. 16193  
 (P.E., R.L.S., OR R.L.A. (circle one))

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

*[Signature]*  
 HOWARD S.C.D.  
 DATE

**PROFESSIONAL CERTIFICATE**

DESIGN BY: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 DATE: JULY 2018  
 SCALE: AS SHOWN  
 W.O. NO.: 41136

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND AND LICENSE NO. 16193 EXPIRATION DATE 09-27-2018

**C-13**  
 13 SHEET OF 13

ROBERT H. VOGEL, PE No. 16193