

THE JOHNS HOPKINS UNIVERSITY

APPLIED PHYSICS LABORATORY BUILDING 20: DISTRICT UTILITY PLANT

GENERAL NOTES

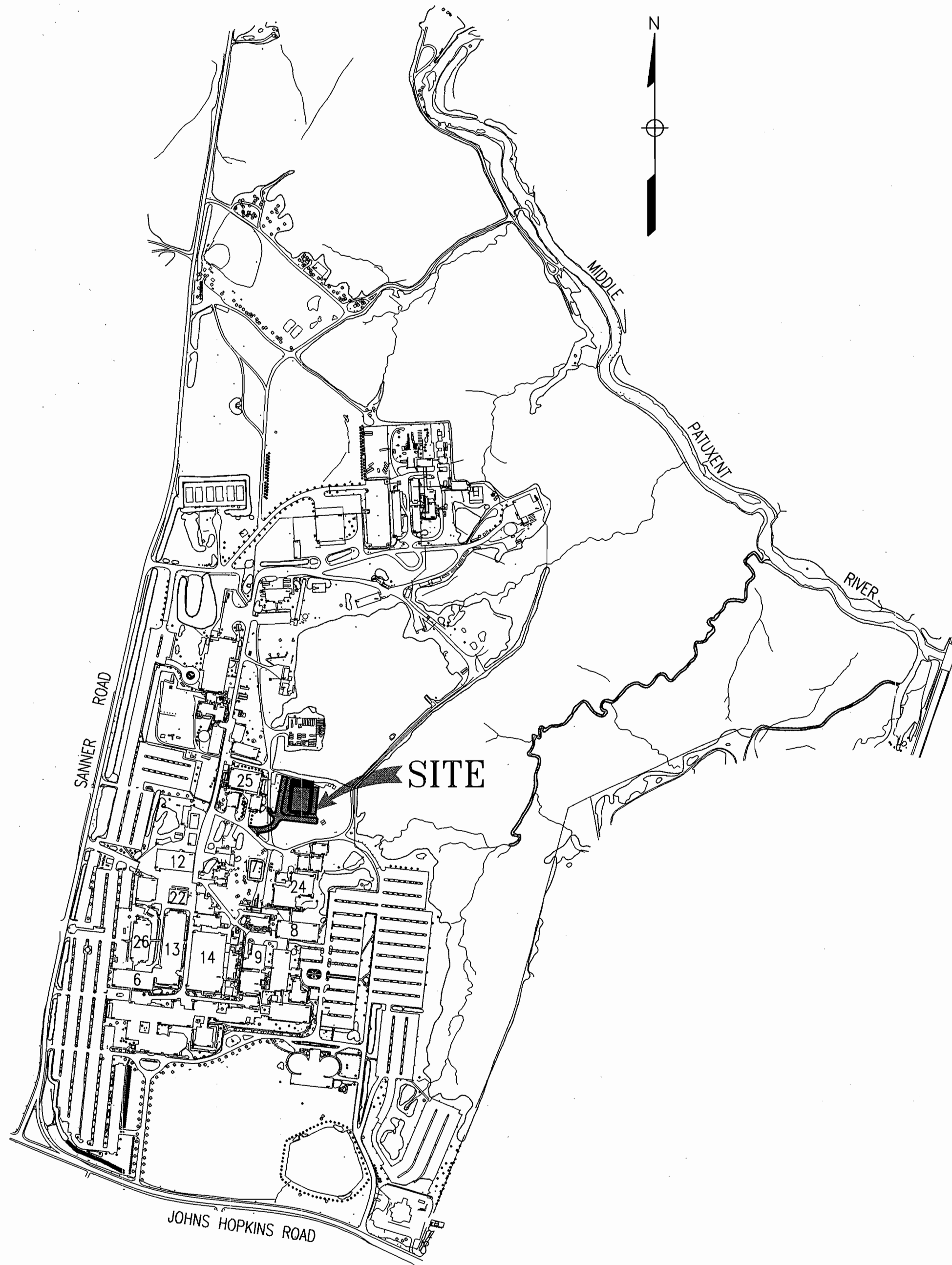
- ACCESS TO THE CONSTRUCTION AREA THROUGH THE SECURE AREA OF THE APPLIED PHYSICS LABORATORY (WITHIN THE FENCED ENCLOSURE) MUST BE ARRANGED IN ADVANCE. BY CONTACTING THE PROGRAM MANAGER, JEFFERY ANDERSON (443) 778-5960.
- SECURITY MUST BE MAINTAINED WITHIN THE EXISTING FENCED AREA. ALL REQUIRED FENCE CONSTRUCTION AND RELOCATION SHALL BE BY JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LAB (JHU-APL). HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH JHU-APL AS TO WHEN SUCH WORK IS REQUIRED.
- THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK AT 410-313-1880.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY SPECIFICATIONS AND DETAILS FOR CONSTRUCTION PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE SUBJECT PROPERTY IS ZONED PEC PER THE OCTOBER 18, 1993 COMPREHENSIVE ZONING PLAN.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAM(S) OR THEIR REQUIRED BUFFERS AND FOREST CONSERVATION EASEMENTS.
- 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 A PUBLIC ROAD OR ADJOINING PROPERTIES.
- THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION AS APPROVED UNDER F-02-40.
- NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- WATER IS PUBLIC (HOWARD COUNTY). WATER MAINS ON PROPERTY ARE PRIVATELY OWNED AND MAINTAINED.
- SEWER IS PUBLIC (HOWARD COUNTY)
- THERE ARE NO WETLANDS OR FLOODPLAIN WITHIN THE LIMITS OF THIS PLAN SUBMISSION.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM (NAD 83).
- ELEVATIONS SHOWN ARE BASED ON NAVD 88. AERIAL SURVEYS OF JHU-APL WERE PERFORMED BY WHITMAN REQUARDT AND ASSOCIATES LLP (WRA) IN NOVEMBER 1998. FIELD SURVEYS OF THE SITE WERE PERFORMED BY WRA IN JANUARY 2001. ADDITIONAL UTILITY INFORMATION WAS PROVIDED BY JHU-APL AND MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION.
- THE CONTRACTOR SHALL CONTACT THE PROGRAM MANAGER, MR. JEFFERY ANDERSON (443) 778-5960 AND THE PROJECT MANAGER, MR. TIMOTHY MORRIS (443) 778-6361, AT LEAST 5 WORKING DAYS PRIOR TO COMMENCING ANY WORK OR SHUTTING DOWN ANY UTILITIES.
- APPROXIMATE LOCATION AND INVERTS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN AN UNINTERRUPTED SERVICE. CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND CROSSINGS WELL IN ADVANCE OF CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- ALL SITE UTILITIES ARE THE PROPERTY OF JHU-APL. JHU-APL WILL APPROXIMATELY LOCATE HORIZONTAL LOCATIONS OF ALL ACTIVE UTILITIES FOR THE CONTRACTOR.
- DUE TO THE PROXIMITY OF LIVE UNDERGROUND UTILITIES, THE OWNER AND WHITMAN, REQUARDT & ASSOCIATES ARE 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 ULTIMATELY 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 BEGINS. UTILITY PROFILES ON THESE PLANS ARE BASED ON DRAWINGS AND RECORDS PROVIDED BY JHU-APL. CONTRACTOR SHALL CONFIRM ACTUAL DEPTH AND PREPARE REVISED PROFILES IF REQUIRED BY CONFLICTS. THE OWNER SHALL APPROVE ALL REVISIONS BEFORE THE START OF THE UTILITY'S CONSTRUCTION.
- TRENCH AND INSTALLATION OF NEW UTILITIES SHALL BE SCHEDULED SO THAT ALL TRENCHES WILL BE BACKFILLED AT THE END OF EACH DAY. NO OPEN TRENCHES WILL BE ALLOWED AT THE END OF EACH WORK DAY. TRENCH AREAS SHALL BE MULCHED AND TEMPORARILY SEEDED IN NON-PAVED AREAS AND TRAFFIC BEARING SURFACES SHALL BE INSTALLED IN PAVED AREAS.
- THE CONTRACTOR SHALL SHUT DOWN AND TIE-IN TO THE EXISTING UTILITIES 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 NEW WATER MAIN TAPS SHALL BE WE TAPS THAT WILL NOT CAUSE THE INTERRUPTION OF WATER SERVICE AT JHU-APL.
- ALL SEWER MAINS SHALL BE P.V.C. UNLESS OTHERWISE NOTED (HOWARD COUNTY SCHEDULE 35 PVC).
- TOP OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3-1/2 FEET OF COVER UNLESS OTHERWISE NOTED.
- 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 OF THE STANDARD SPECIFICATIONS.
- FOR UTILITY CROSSINGS, CLEAR ALL UTILITIES BY A MINIMUM OF 1 FOOT. 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. COORDINATE WITH THE OWNER AS NECESSARY.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL STORM DRAIN AND SANITARY MAINS WITHIN 2'-0" OF THE EXTERIOR MANHOLE WALL.
- STORMWATER MANAGEMENT PONDS ON THE SITE SHALL BE PRIVATELY OWNED AND MAINTAINED. (F-02-40)
- THE CONTRACTOR SHALL PERMANENTLY STABILIZE AND SEED ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED.
- ALL DRIVEWAYS ARE PRIVATELY OWNED AND MAINTAINED.
- 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.
- ACCESS TO ALL EXISTING FACILITIES SHALL BE MAINTAINED AT ALL TIMES.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNER OF ANY DEVIATION FROM THESE PLANS PRIOR TO ANY CHANGES. ANY DEVIATION FROM THESE PLANS WITHOUT WRITTEN AUTHORIZATION BY THE OWNER WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 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.
- THE CONTRACTOR SHALL MAKE EVERY ATTEMPT TO MINIMIZE DAMAGE TO EXISTING TREES DURING CONSTRUCTION.
- EXISTING SIGNS, GUARDRAILS AND OTHER MINOR SITE FEATURES IN THE OF PROPOSED CONSTRUCTION, WHETHER OR NOT SHOWN ON THESE PLANS, SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER.
- SEE DETAIL SHEETS FOR OTHER ITEMS THAT APPLY TO THIS PROJECT.

SITE ANALYSIS DATA

TOTAL PROJECT AREA: 361 ACRES
 AREA OF PLAN SUBMISSION: 2.2 ACRES
 LIMIT OF DISTURBED AREA: 2.2 ACRES
 PRESENT ZONING: PEC
 PROPOSED USES FOR STRUCTURE: CENTRAL UTILITY BUILDING
 FLOOR SPACE PER USE: 15,410 SF
 PARKING TABULATION
 EXISTING PARKING SPACES = 3,853
 TOTAL SPACES REQUIRED = 2,953 (MAX. EMPLOYEE 3,937 X 0.75)
 MAXIMUM NUMBER OF EMPLOYEES PROPOSED = 3,937 (SDP-02-140)
 NUMBER OF EMPLOYEES PROPOSED = 3718 - 3800
 MAXIMUM NUMBER OF EMPLOYEES FOR BUILDING 20: 5
 PROPOSED OPEN SPACE ON SITE, ACRES: 1.23 AC, 58% OF SITE AREA
 BUILDING COVERAGE OF SITE: 0.35 ACRES, 16.5% OF SITE AREA
 APPLICABLE DPZ FILE REFERENCES: SDP-02-088, SDP-02-140
 S-01-12, WP-01-80, F-02-40

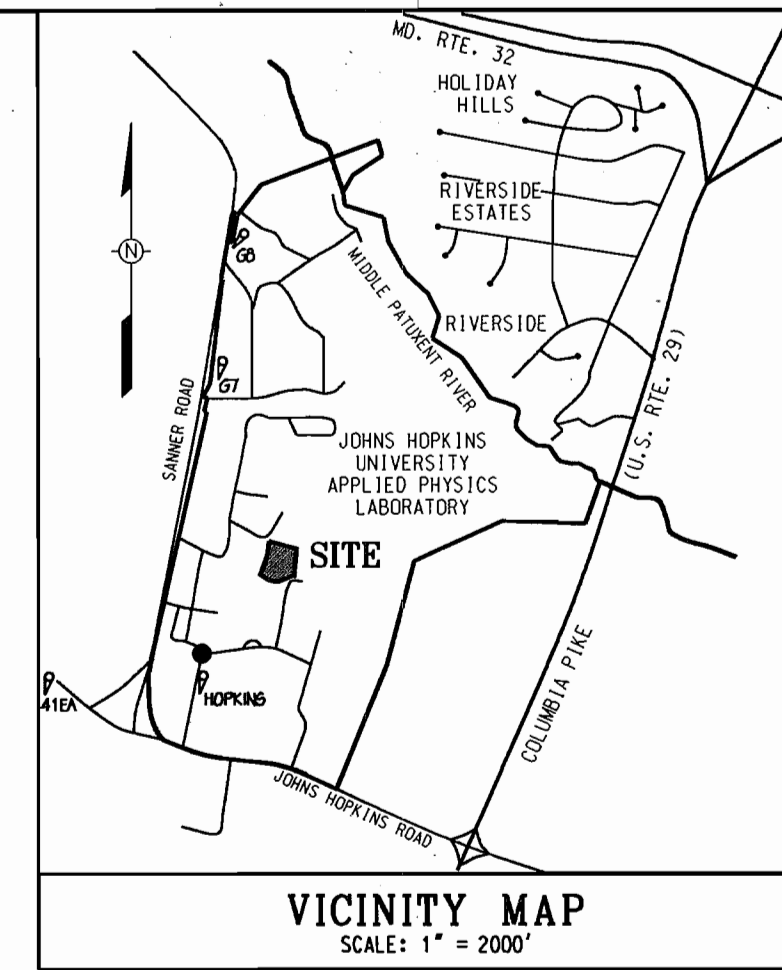
LOCATION PLAN

SCALE: 1" = 500'



COURSES AND COORDINATES ARE BASED ON THE MARYLAND STATE COORDINATE SYSTEM (NAD 83/91) AND ARE DERIVED FROM THE FOLLOWING JOHNS HOPKINS UNIVERSITY CONTROL STATIONS:

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



VICINITY MAP
SCALE: 1" = 2000'

LEGEND

EXISTING	PROPOSED	DESCRIPTION
---40---	---400---	CONTOUR
	---401.00---	TOP/BOTTOM OF CURB
		SPOT ELEVATIONS
	⊕	FIRE HYDRANT
	⊕	12" SD
	⊕	8" W
	⊕	6" S
	⊕	2" GAS
	⊕	ELEC
	⊕	UNDERGROUND ELECTRIC
	⊕	UNDERGROUND TELEPHONE
	⊕	MANHOLE/INLET
	⊕	TREE LINE
	⊕	BUILDINGS
	⊕	CURB AND GUTTER
	⊕	BITUMINOUS PAVING
	⊕	CONCRETE PAVING
	⊕	STONE PAVING
	⊕	BORING
	⊕	CLEAN OUT
	⊕	FENCE

SHEET INDEX

- G-1 COVER SHEET
- C-1 SURVEY/DEMOLITION PLAN
- C-2 GRADING/PAVING PLAN
- C-3 UTILITY PLAN
- C-4 ROAD PROFILES
- C-5 STORM DRAIN PROFILES
- C-6 UTILITY PROFILES
- C-7 DETAILS AND SECTIONS
- C-8 EROSION/SEDIMENT CONTROL PLAN
- C-9 EROSION/SEDIMENT CONTROL NOTES/DETAILS
- C-10 EROSION/SEDIMENT CONTROL NOTES
- C-11 DRAINAGE AREA PLAN

ADDRESS CHART

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

PERMIT INFORMATION CHART

SECTION NAME	SEC./AREA	USE/PARCEL
JJUL APPLIED PHYSICS LAB	N/A	PARCEL 1
PER # or URS/PROJ	JOB #	ZONING
MR 15429-15433	16	PEC
WORK CODE	SEWER CODE	CHARGE TRAC
E-21	6480000	6051

REVISIONS	

APPROVALS	
REQUIRER	
PLANT FACILITIES	
CHIEF ENGINEER	
CORE COMPLIANCE	
REVIEW	
TIC GROUP	
TSP GROUP	
SAFETY	
OFFICE	
DIRECTOR	
OFFICE	
COORDINATOR	
SENIOR LEADER	

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



BUILDING 20: DISTRICT UTILITY PLANT

Henry Adams, Inc.
 Consulting Engineers

 600 Baltimore Avenue
 Baltimore, MD 21204-4079
 410.296.8500
 Fax 410.296.3556

Architect

PEOPLE ARCHITECTURE
 GSD

Structural

MIPM
 Mincin, Patel, Milano, Inc.
 6511 Harford Road
 Baltimore, MD 21214

Civil

WRA
 Whitman, Requardt and Associates, LLP
 801 South Caroline Street
 Baltimore, MD 21251

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

COVER SHEET

	DRAWING NO.
	G-1
SCALE: AS SHOWN	SDP SHEET 1 OF 12
DES: C.Y.H. CHECK: A.L.O. DATE: 12/06/02	

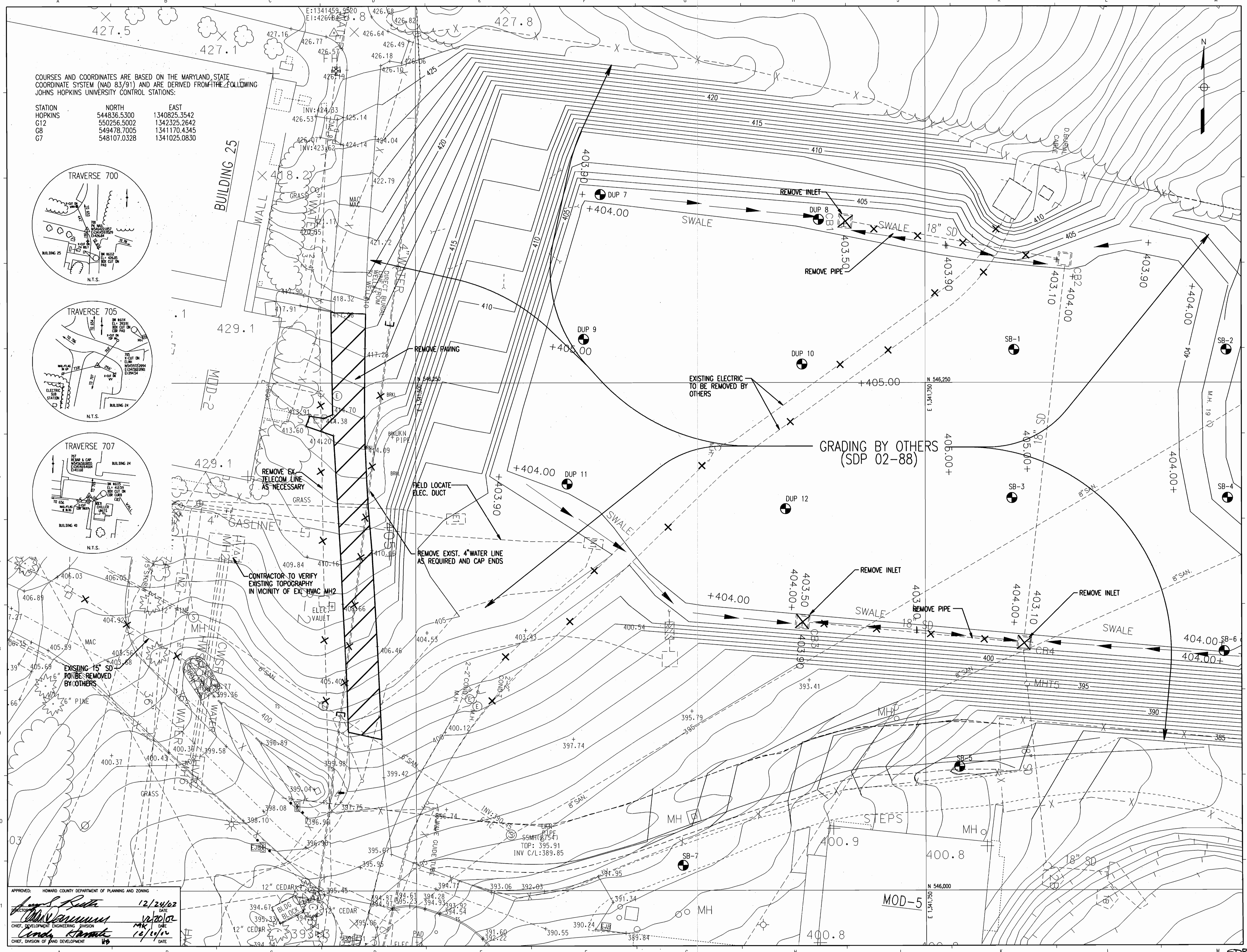
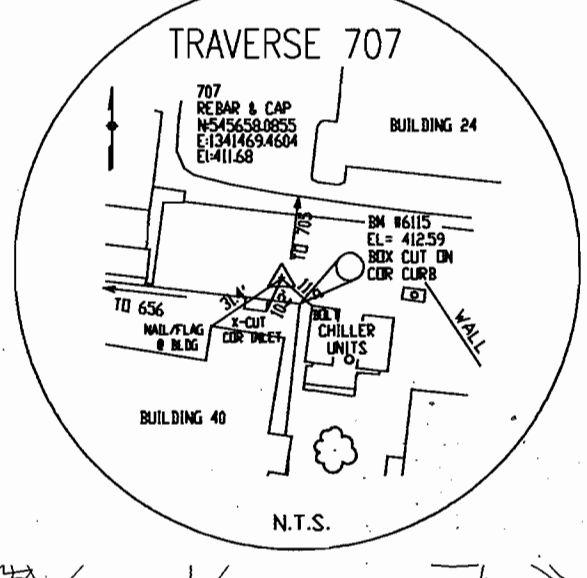
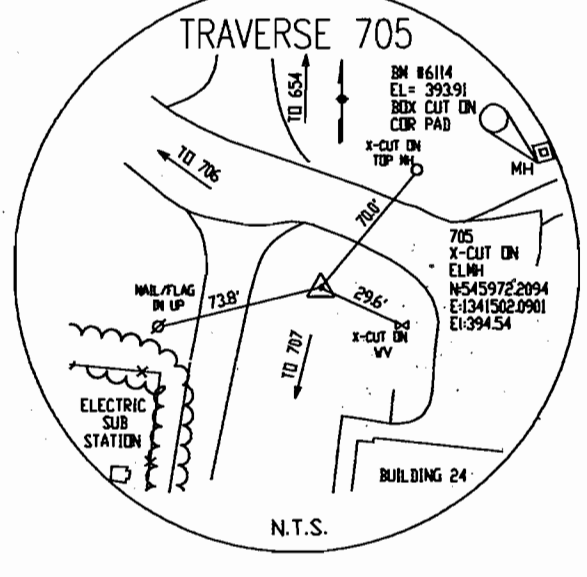
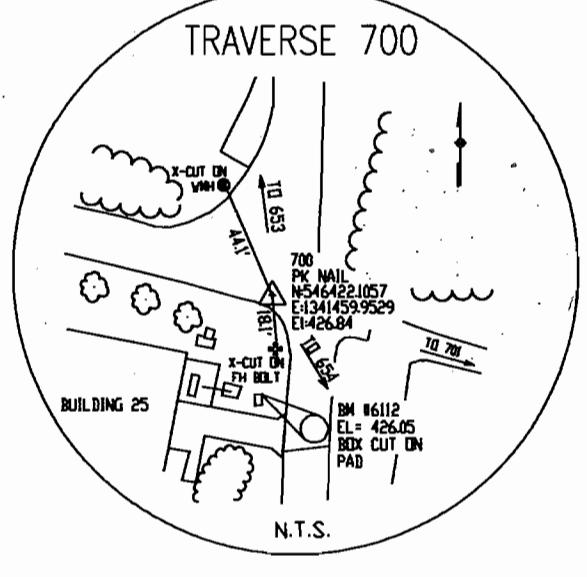
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 DATE: 12/24/02
 DATE: 12/20/02
 DATE: 12/19/02

CONTACT FOR OWNER: JEFFEREY A. ANDERSON
 PHONE: 443-778-5960 FAX: 443-778-5980

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STATION	NORTH	EAST
HOPKINS	544836.5300	1340825.3542
G12	550256.5002	1342325.2642
G8	549478.7005	1341170.4345
G7	548107.0328	1341025.0830



REVISIONS	

APPROVALS	
REQUESTER	
PLANT FACILITIES	
CHIEF ENGINEER	
CODE COMPLIANCE	
OFFICE	
TYP. GROUP	
TYP. GROUP	
SAFETY	
OFFICE	
SUPERVISOR	
OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
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 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-8089

**BUILDING 20:
 DISTRICT
 UTILITY
 PLANT**

Henry Adams, Inc.
 Consulting Engineers

 600 Baltimore Avenue
 Baltimore, MD 21204-4079
 410.296.6500
 Fax 410.296.3556

Architect

PEOPLE ARCHITECTURE
 C S D
 Cochran, Stephenson, & Donkersvoet, Inc.
 THE WAREHOUSE @ CAMDEN YARDS
 323 West Camden St., 4700, Baltimore, MD 21201

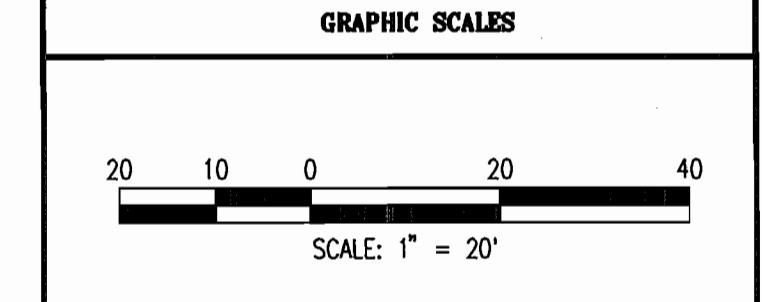
Structural

MINCIN PATEL MILANO, INC.
 Consulting Structural Engineers
 MPM
 Mincin, Patel, Milano, Inc.
 6511 Harford Road
 Baltimore, MD 21214

Civil

WR&A
 Whitman, Reardon and Associates, LLP
 801 South Caroline Street
 Baltimore, MD 21231

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



SURVEY/DEMOLITION PLAN

DRAWING NO.
C-1

SCALE: 1" = 20'
 SDP SHEET 2 OF 12
 DES: C.Y.H. CHECK: A.L.O. DATE: 12/06/02

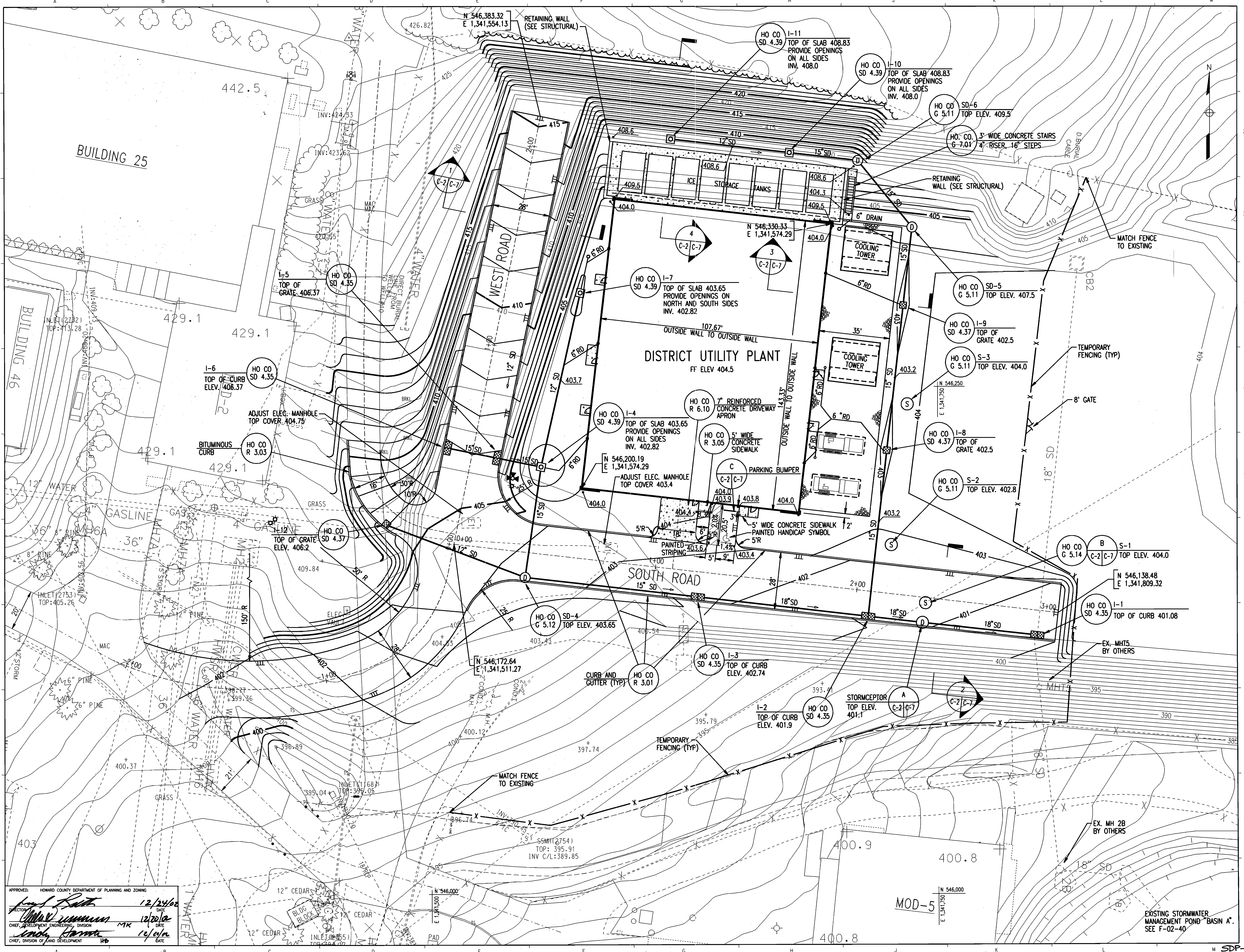
STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 REG. NO. 4578

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard K. Kester
 DIRECTOR
 DATE: 12/24/02

John J. Williams
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 12/20/02

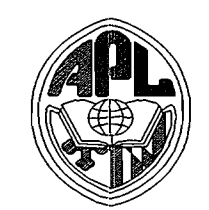
Condy Stewart
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 12/10/02




REVISIONS	


APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE REVIEWER	
TSC GROUP	
TSP GROUP	
SAFETY OFFICER	
DIRECTOR	
COORDINATOR	
SENIOR LEADER	

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 LAUREL, MARYLAND 20723-0999



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 323 West Camden St., #700, Baltimore, MD 21201

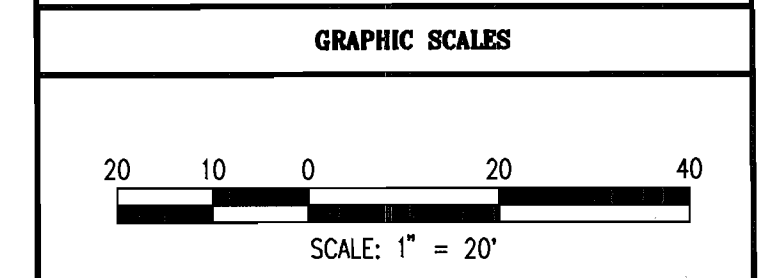
Structural

MPMC
 Minchin, Patel, Milano, Inc.
 6511 Harford Road
 Baltimore, MD 21214

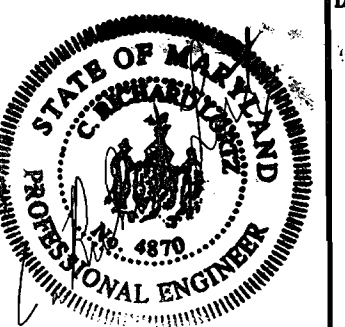
Civil




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 Whitman, Reardon and Associates, LLP
 601 South Caroline Street
 Baltimore, MD 21231

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

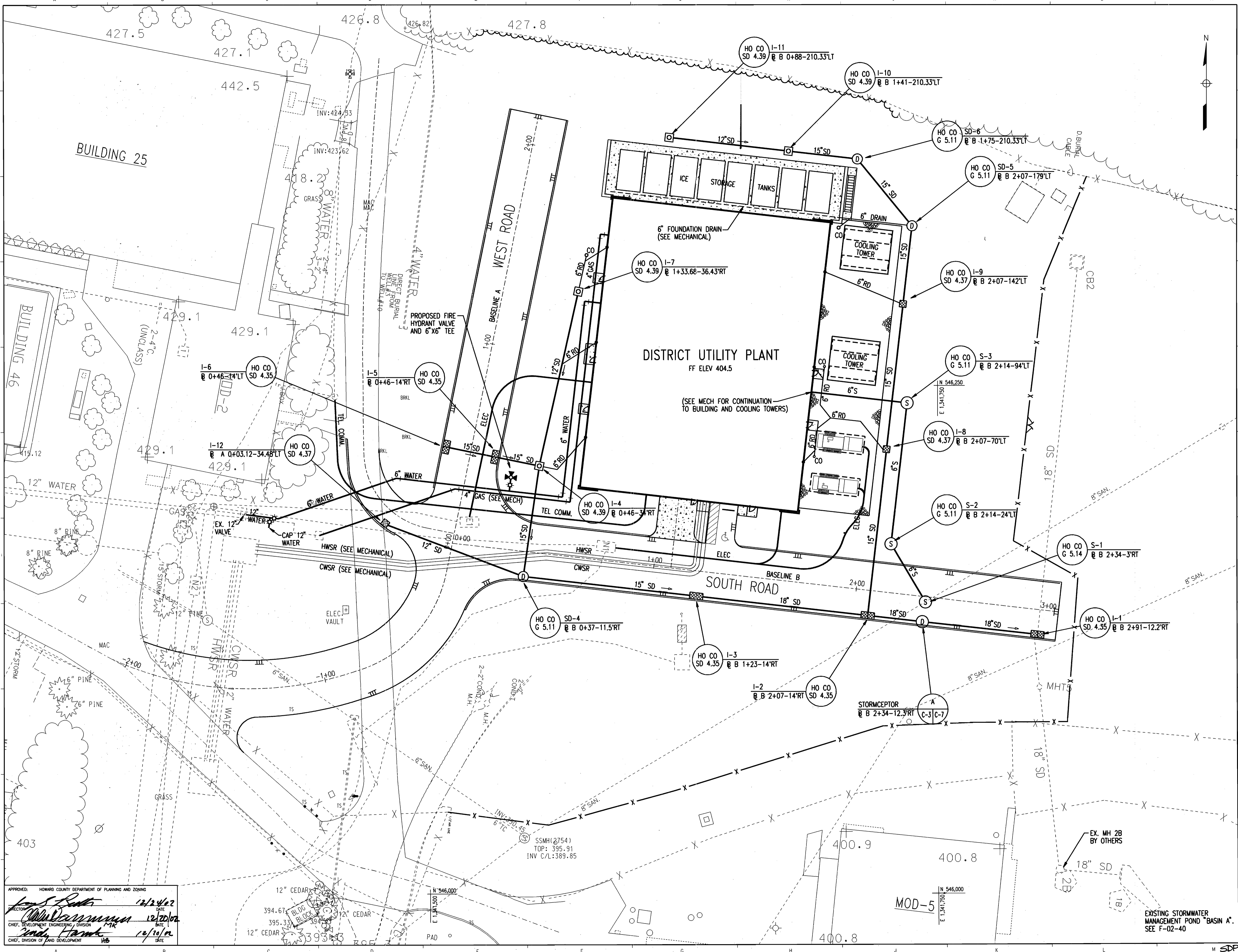


GRADING/PAVING PLAN

 C. Y. H. CIVIL ENGINEER No. 12100	DRAWING NO. C-2
	SDP SHEET 3 OF 12 DES: C.Y.H. CHECK: A.U.O. DATE: 12/08/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 DIRECTOR

 CHIEF, DEVELOPMENT ENGINEERING DIVISION

 CHIEF, DIVISION OF LAND DEVELOPMENT

DATE: 12/24/02
 DATE: 12/22/02
 DATE: 12/16/02



REVISIONS	

APPROVALS	
REQUESTER	
PLANT FACILITIES	
CHIEF ENGINEER	
CODE COMPLIANCE	
NOTE	
TIC GROUP	
TYP GROUP	
SAFETY OFFICE	
DIRECTOR'S OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
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 LAUREL MARYLAND 20723-8099



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 Fax 410.236.3566

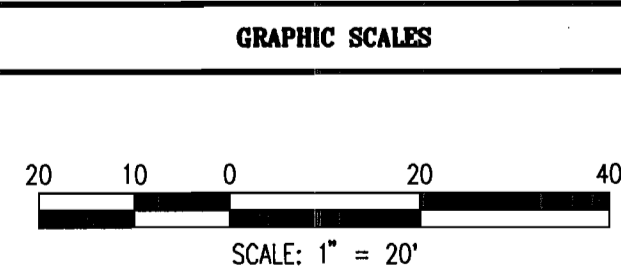
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WR&A
 Whitman, Reardon and Associates, LLP
 201 South Caroline Street
 Baltimore, MD 21201

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



UTILITY PLAN

DRAWING NO.
C-3

SCALE: 1"=20'
 SDP SHEET 4 OF 12
 DES: C.Y.H. / CHECK: A.U.O. / DATE: 12/06/02

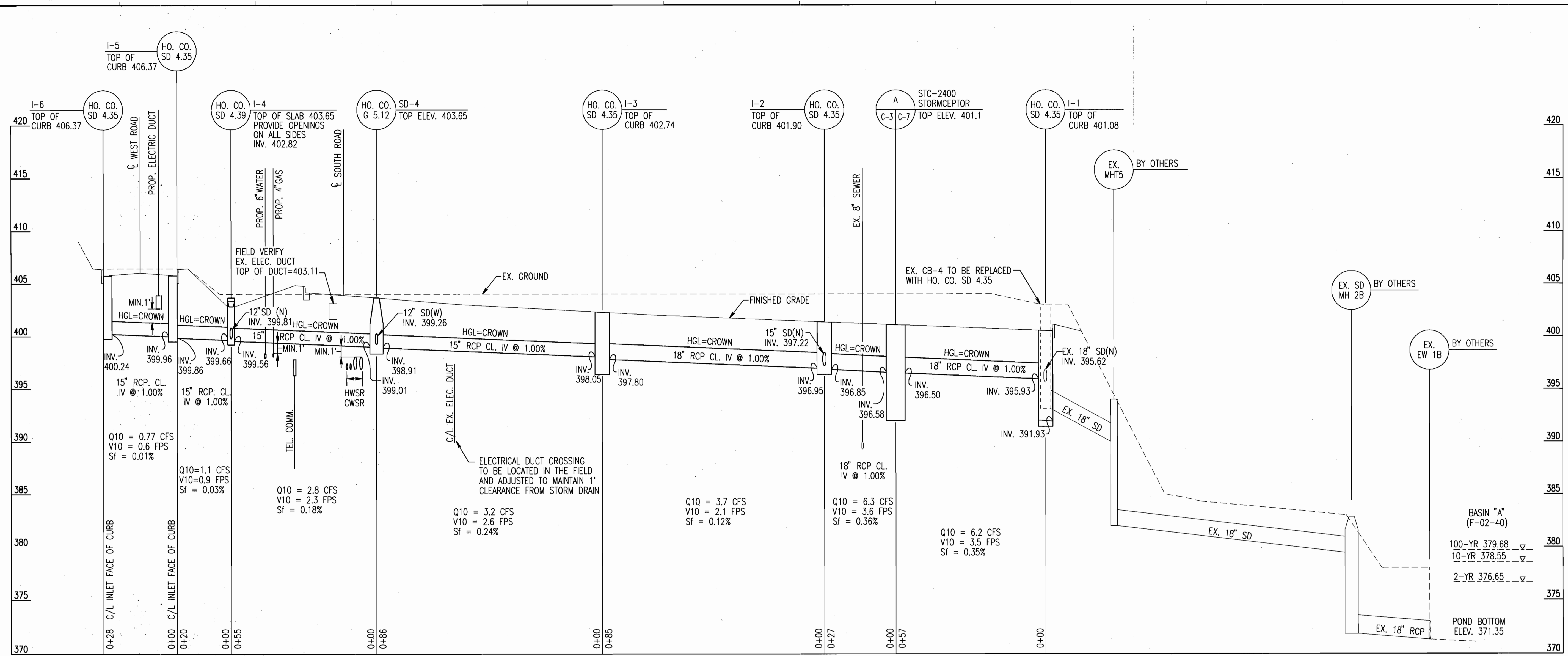
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 12/24/02
 DIRECTOR

[Signature] 12/20/02
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

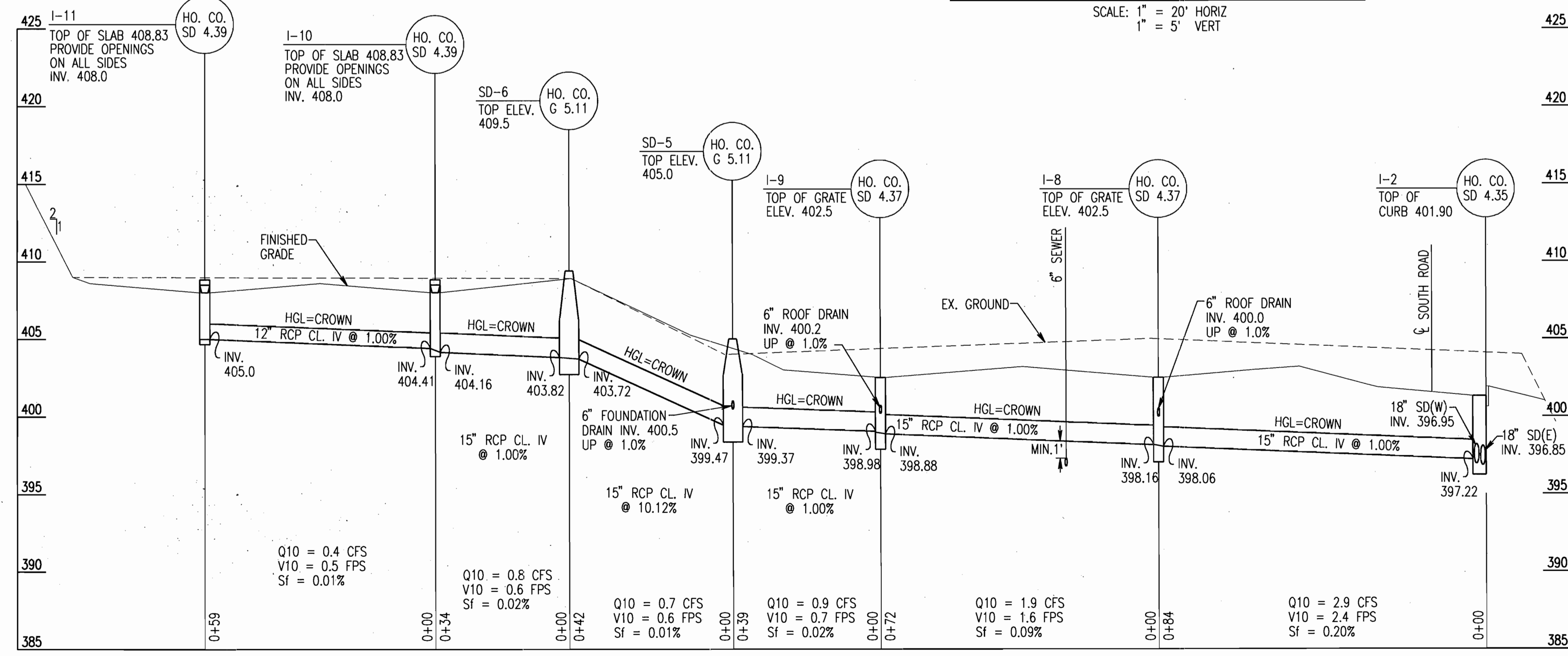
[Signature] 12/10/02
 CHIEF, DIVISION OF LAND DEVELOPMENT

EXISTING STORMWATER
 MANAGEMENT POND "BASIN A".
 SEE F-02-40



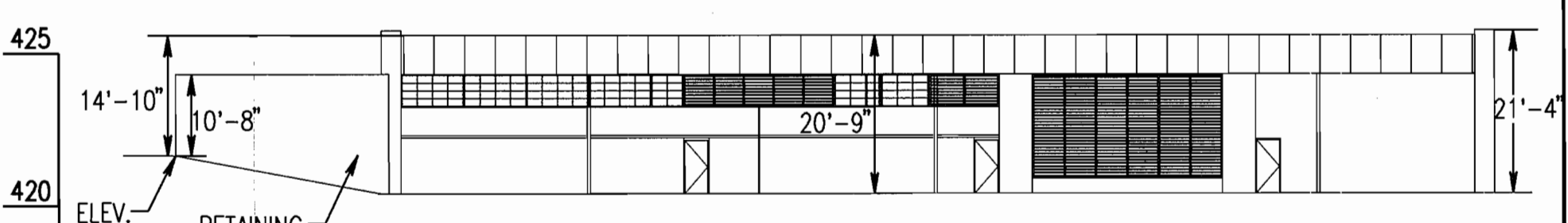
STORM DRAIN PROFILE I-6 TO I-1

SCALE: 1" = 20' HORIZ
1" = 5' VERT



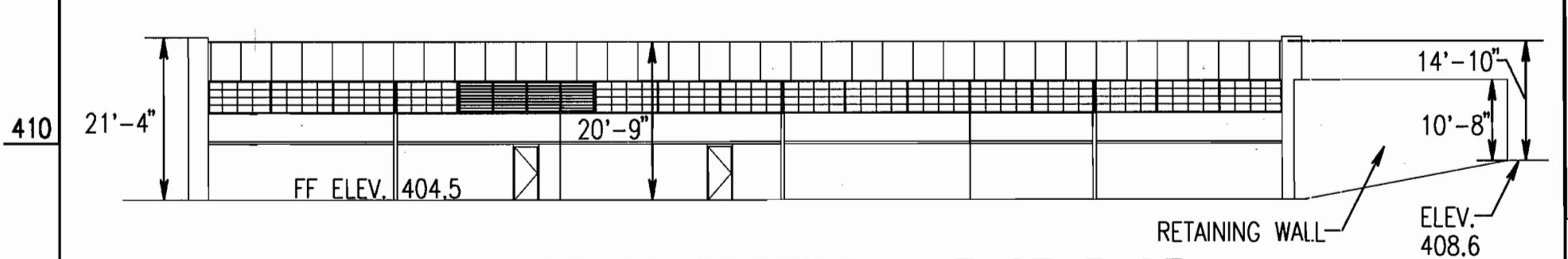
STORM DRAIN PROFILE I-11 TO I-2

SCALE: 1" = 20' HORIZ
1" = 5' VERT



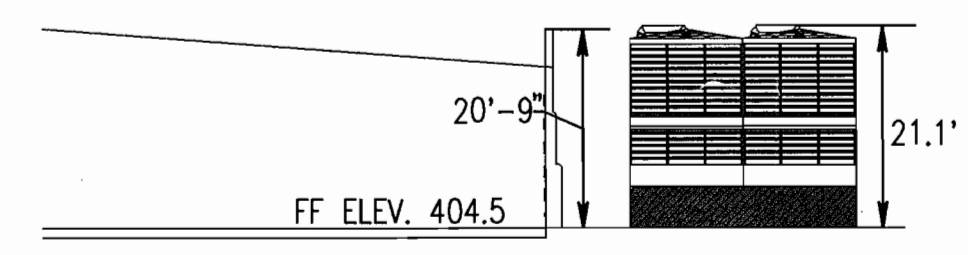
BUILDING PROFILE - WEST FACE

SCALE: 1" = 20'



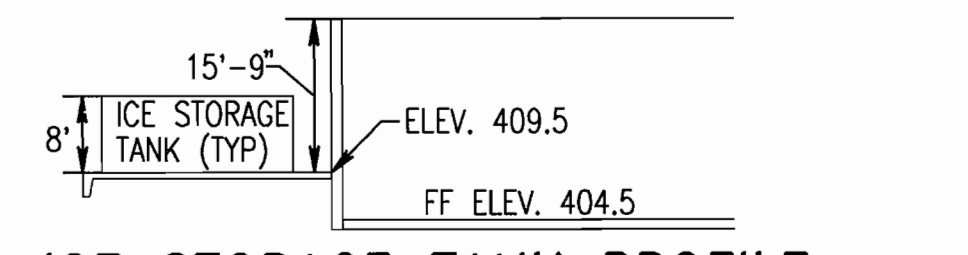
BUILDING PROFILE - EAST FACE

SCALE: 1" = 20'



COOLING TOWER PROFILE

SCALE: 1" = 20'



ICE STORAGE TANK PROFILE

SCALE: 1" = 20'

REVISIONS	

APPROVALS	
REQUESTER	
DESIGNER	
CHECKER	
DATE	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
LAUREL MARYLAND 20723-0099



BUILDING 20:
DISTRICT
UTILITY
PLANT

Henry Adams, Inc.
Consulting Engineers
600 Baltimore Avenue
Baltimore, MD 21204-4079
410.296.6500
Fax 410.296.3556

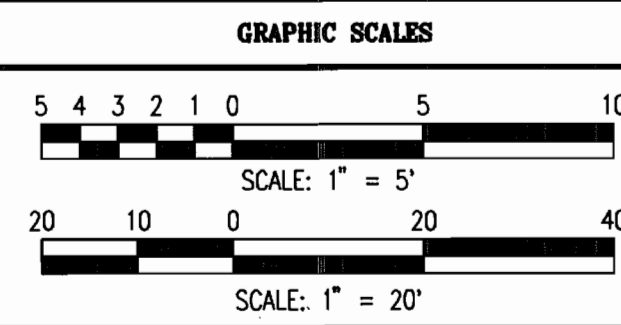
Architect
PEOPLE ARCHITECTURE
CSD

Cochran, Stephenson, & Donkervoet, Inc.
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323 West Camden St. #700, Baltimore, MD 21201

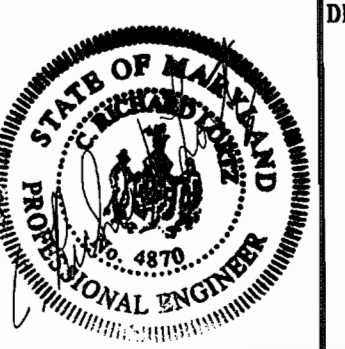
Structural
MILICIN, PATEL, MILANO, INC.
Consulting Structural Engineers
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Baltimore, MD 21214

Civil
WR&A
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201 South Caroline Street
Baltimore, MD 21201

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



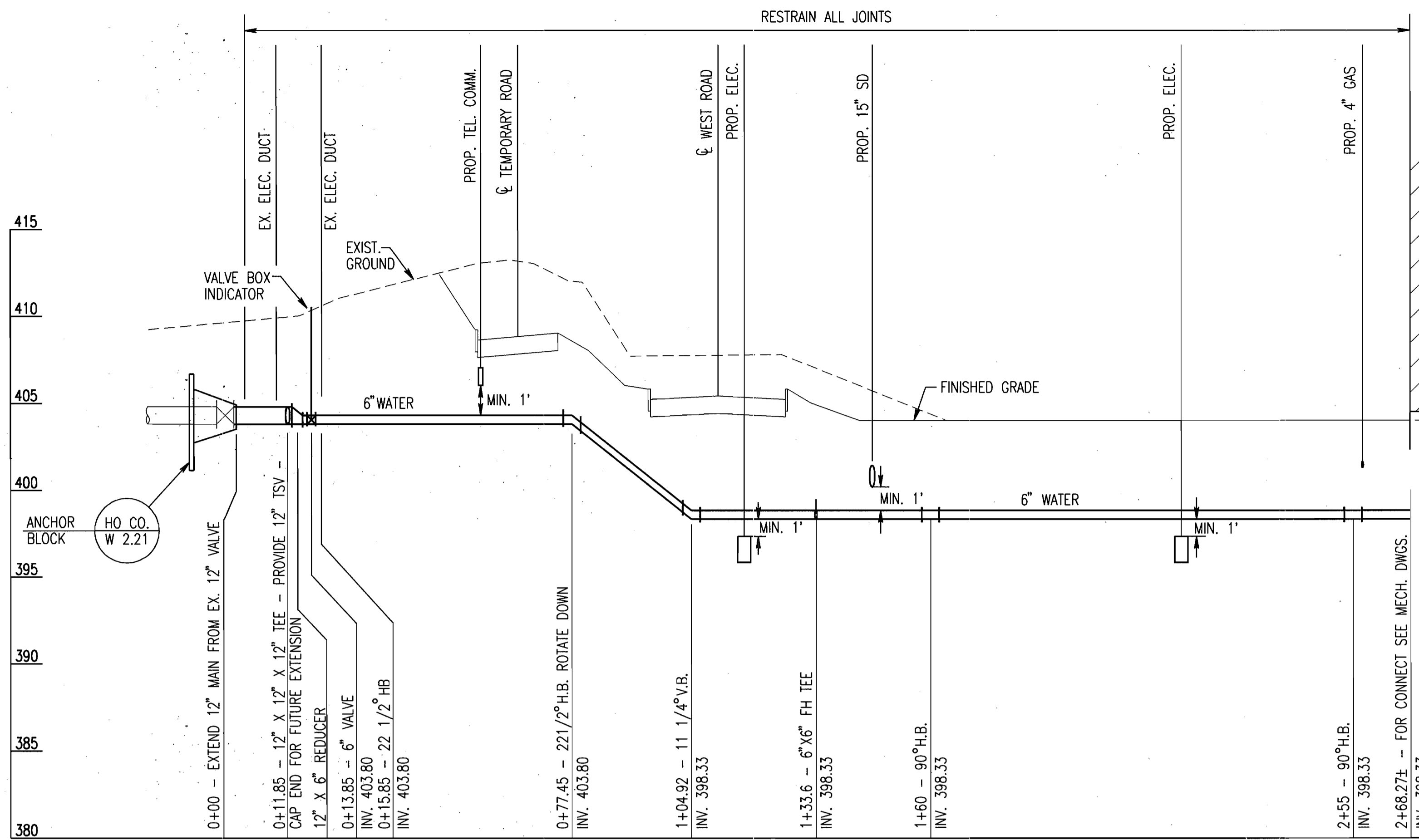
PROFILES



DRAWING NO.
C-5

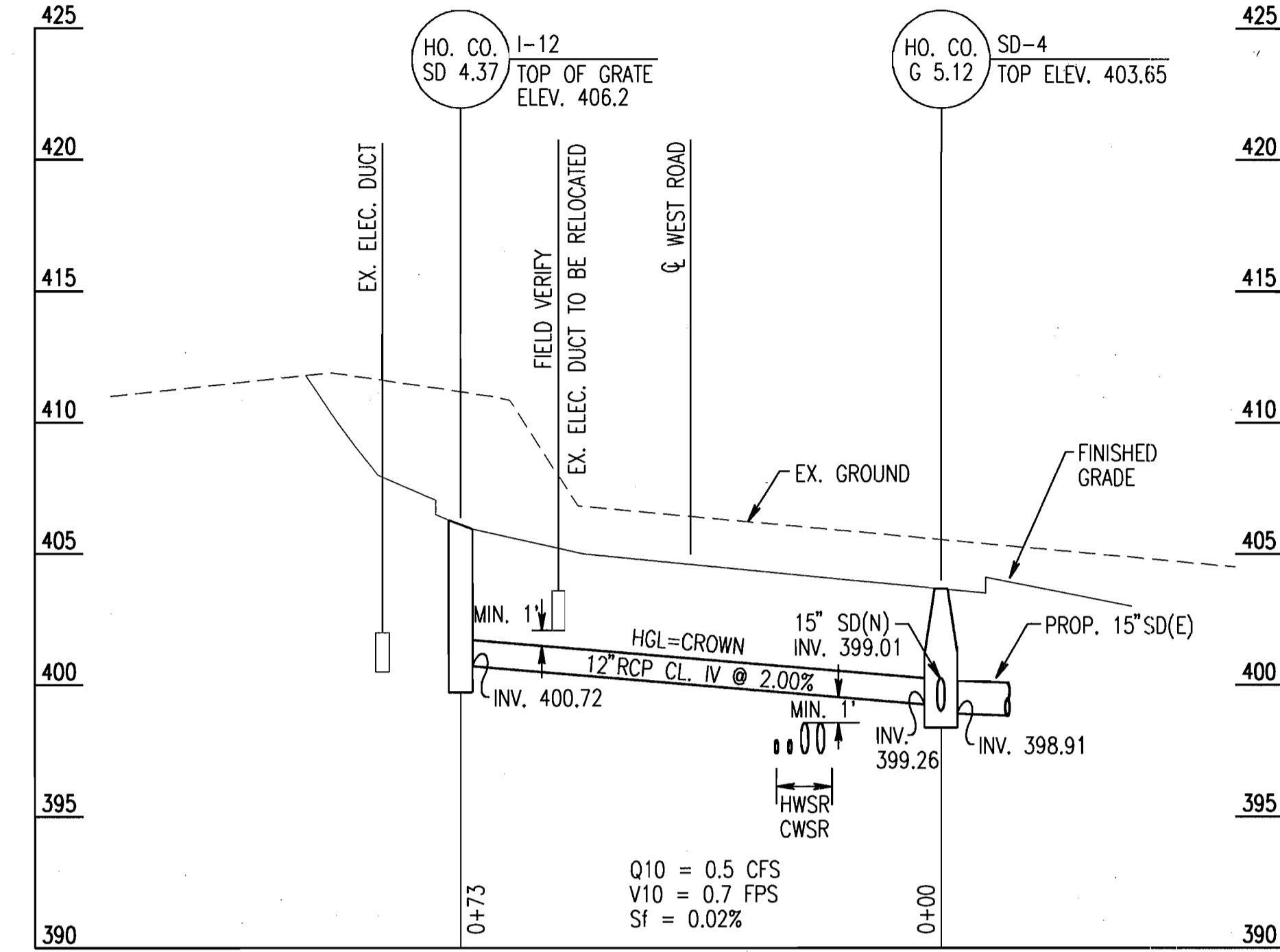
SCALE: AS SHOWN SDP SHEET 6 OF 12
DES: C.Y.H. CHECK: A.U.O. DATE: 12/06/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DIRECTOR: [Signature] 12/24/02
CHIEF DEVELOPMENT ENGINEER DIVISION: [Signature] 12/21/02
CHIEF DIVISION OF LAND DEVELOPMENT: [Signature] 12/21/02



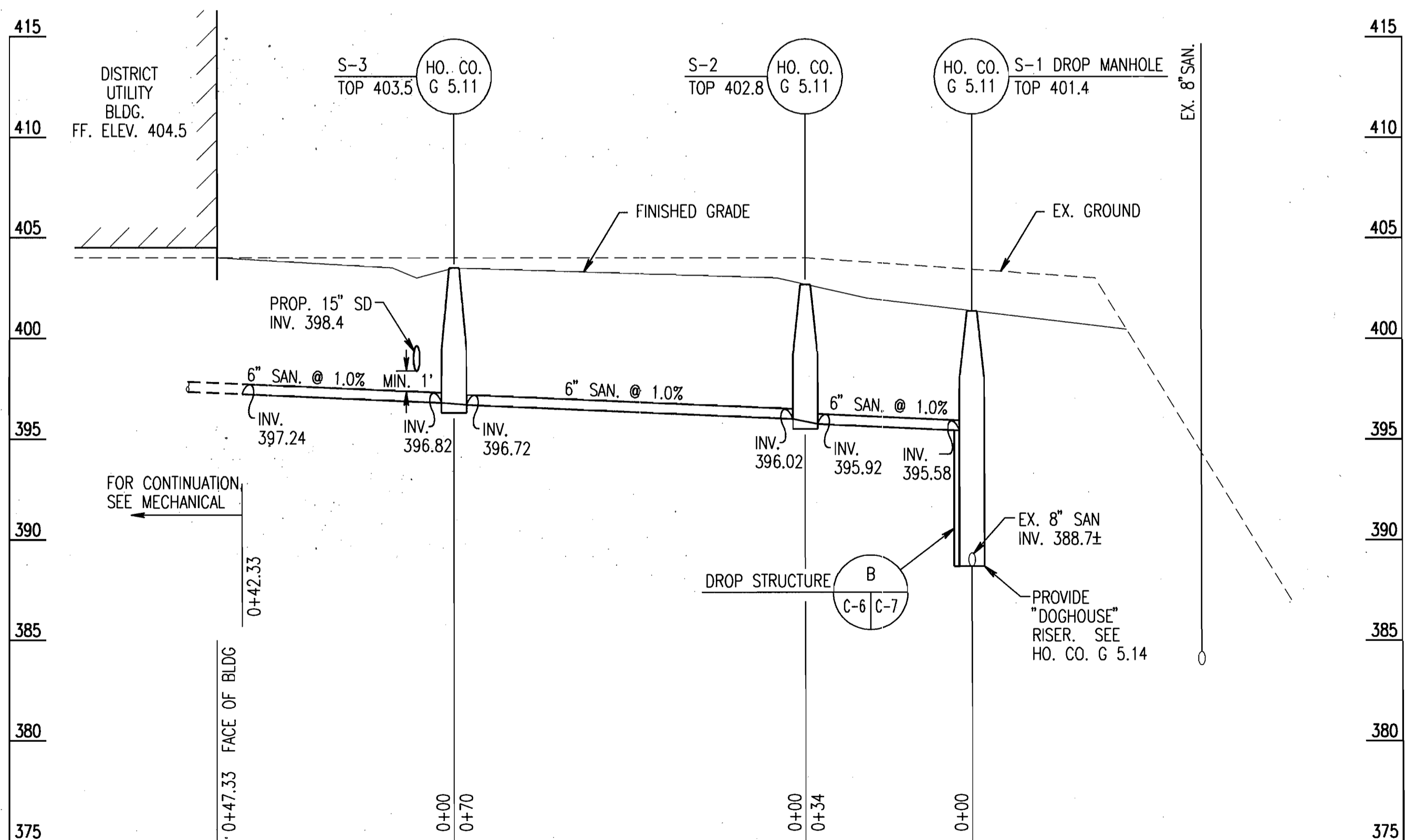
6" WATER PROFILE

SCALE: 1" = 20' HORIZ
1" = 5' VERT



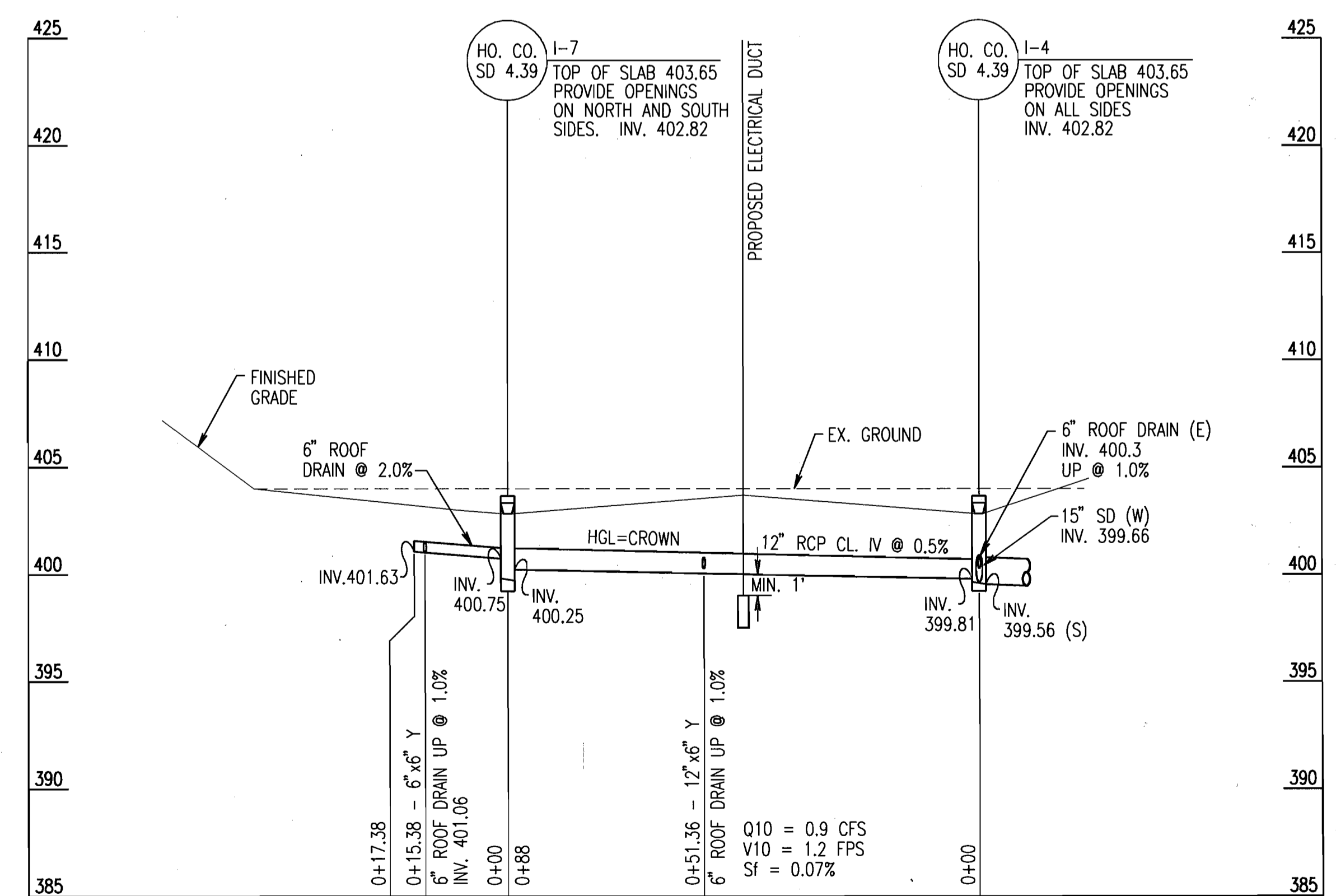
STORM DRAIN PROFILE I-12 TO SD-4

SCALE: 1" = 20' HORIZ
1" = 5' VERT



6" SANITARY PROFILE

SCALE: 1" = 20' HORIZ
1" = 5' VERT



STORM DRAIN PROFILE I-4 TO I-7

SCALE: 1" = 20' HORIZ
1" = 5' VERT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

12/24/02

12/20/02

12/21/02

REVISIONS	

APPROVALS	
REQUESTER	
PLANT FACILITIES	
CODE COMPLIANCE	
REVIEW	
TDC GROUP	
TRF GROUP	
SAFETY OFFICER	
DIRECTOR'S OFFICE	
COORDINATOR	
SENIOR LEADER	

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

BUILDING 20: DISTRICT UTILITY PLANT

Henry Adams, Inc.
Consulting Engineers

600 Baltimore Avenue
Baltimore, MD 21204-4079
410.296.6500
Fax 410.296.3556

Architect

Cochran, Stephenson, & Donkervoet, Inc.
THE WAREHOUSE @ CAMDEN YARDS
323 West Camden St. #700, Baltimore, MD 21201

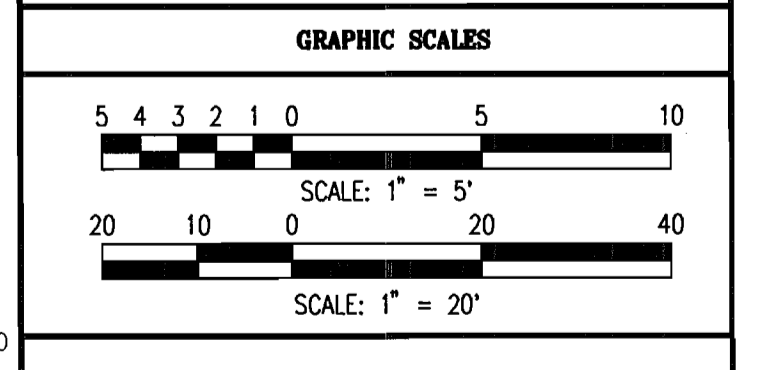
Structural

Mincin, Patel, Milano, Inc.
6511 Harford Road
Baltimore, MD 21214

Civil

Whitman, Reardon & Associates, LLP
601 South Caroline Street
Baltimore, MD 21231

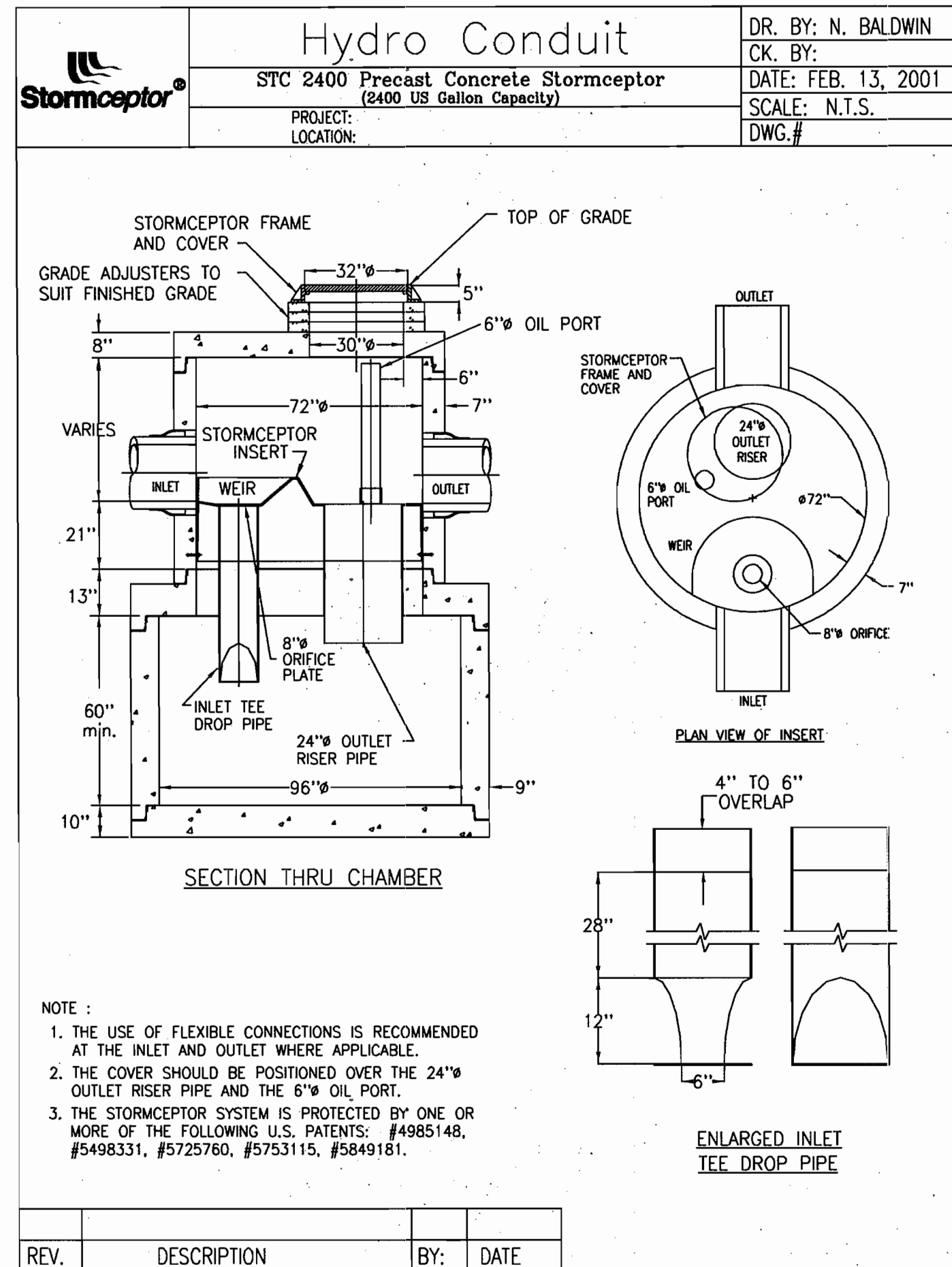
TAX MAP 41, PARCEL 1
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MARYLAND



PROFILES

DRAWING NO.
C-6

SCALE: AS SHOWN SDP SHEET 7 OF 12
DES: C.Y.H. I. CHECK: A.U.O. DATE: 12/06/02



Precast Concrete Stormceptor Order Request Form

Contractor Information

Name _____
Address _____
City _____
State _____
Zip Code _____
Contact _____
Phone _____
Fax _____

Owner Information

Name: JOHNS HOPKINS UNIVERSITY
Phone: 443-778-5960
Fax: 443-778-5980

IMPERVIOUS DRAINAGE AREA FOR THIS UNIT: 1.1 AC.

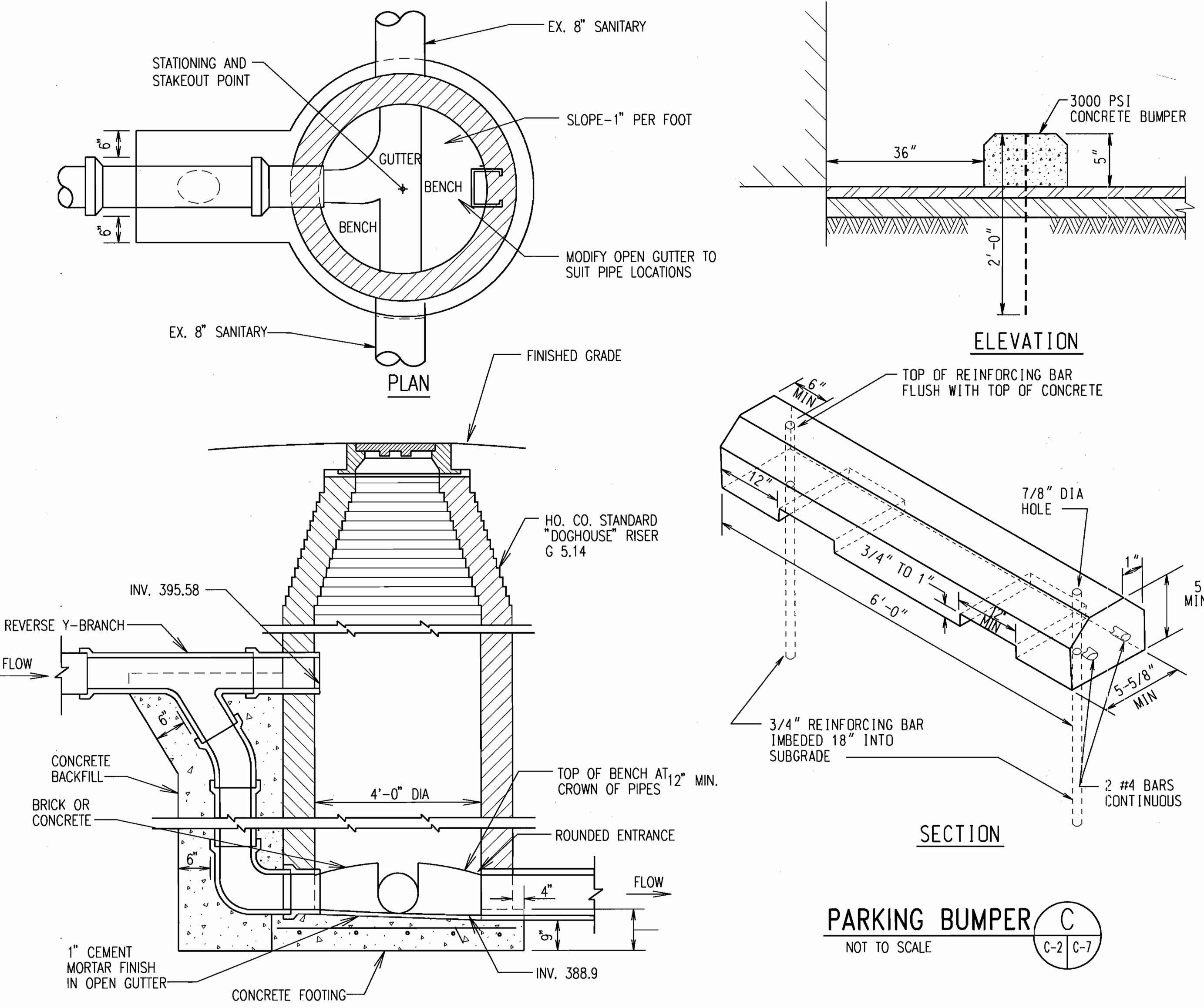
Stormceptor Model -
 STC 450i 3600
 900 4800
 1200 6000
 1800 7200
 2400

Monohole Number: STC-2400
 Top Elevation (ft): 401.1
 Inlet Pipe Invert (ft): 396.58
 Outlet Pipe Invert (ft): 396.50
 Pipe Type: RCP CLASS IV
 Inlet Pipe Inside Diameter (ID): 1.5'
 Inlet Pipe Outside Diameter (OD): 1.92'
 Outlet Pipe Inside Diameter (ID): 1.5'
 Outlet Pipe Outside Diameter (OD): 1.92'

Project Name: JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LAB DISTRICT UTILITY PLANT
 Approximate time frame of delivery (weeks): _____
 Delivery Address Street (For Permits): _____
 City: _____ State: _____ Zip Code: _____
 Designer Company: WHITMAN REQUARDT & ASSOCIATES
 Designer Contact: CHRIS HO Phone: 410 235-3450 Fax: 410 243-5716

* These fields must be filled out for processing.

PLEASE FILL OUT COMPLETELY AND FAX TO:
ATTN: DUANE THOMAS FAX: (301)698-5351, PHONE: (800)414-7960



REVISIONS	

APPROVALS	
REQUESTER	
PLANT FACILITIES CHIEF ENGINEER	
CODE COMPLIANCE OFFICER	
TIC GROUP	
TIF GROUP	
SAFETY OFFICER	
INSPECTOR	
COORDINATOR	
SENIOR LEADER	

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

BUILDING 20: DISTRICT UTILITY PLANT

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Consulting Engineers

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Baltimore, MD 21204-4079
410.296.6500
Fax 410.296.3556

Architect

PEOPLE ARCHITECTURE
C S D

Cochran, Stephenson, & Donkersoet, Inc.
THE WAREHOUSE @ CAMDEN YARDS
323 West Camden St., #700, Baltimore, MD 21201

Structural

MINCIN IN PATEL MILANO, INC.
Consulting Structural Engineers
MIPMI

Mincin, Patel, Milano, Inc.
6511 Harford Road
Baltimore, MD 21214

Civil

WR&A

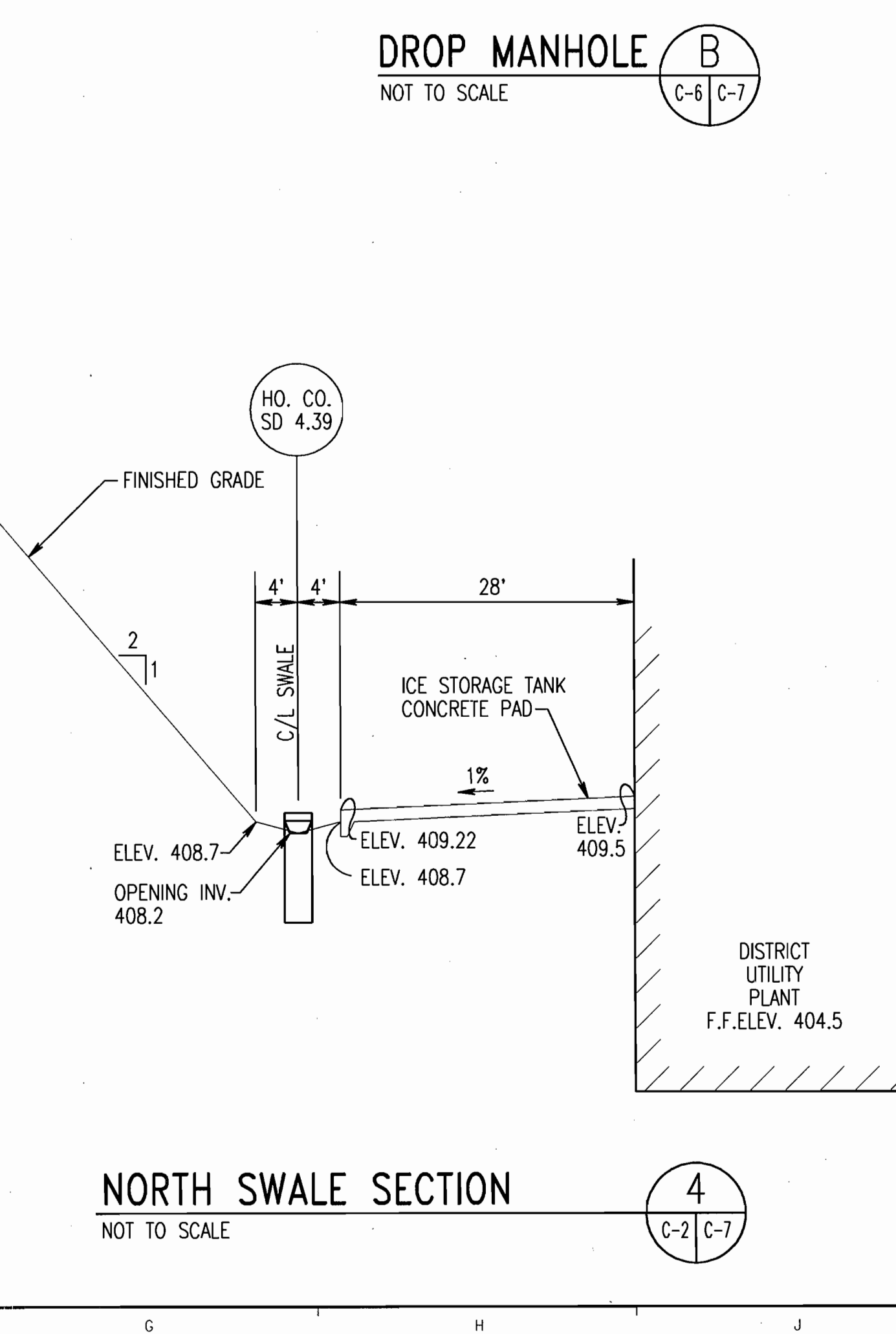
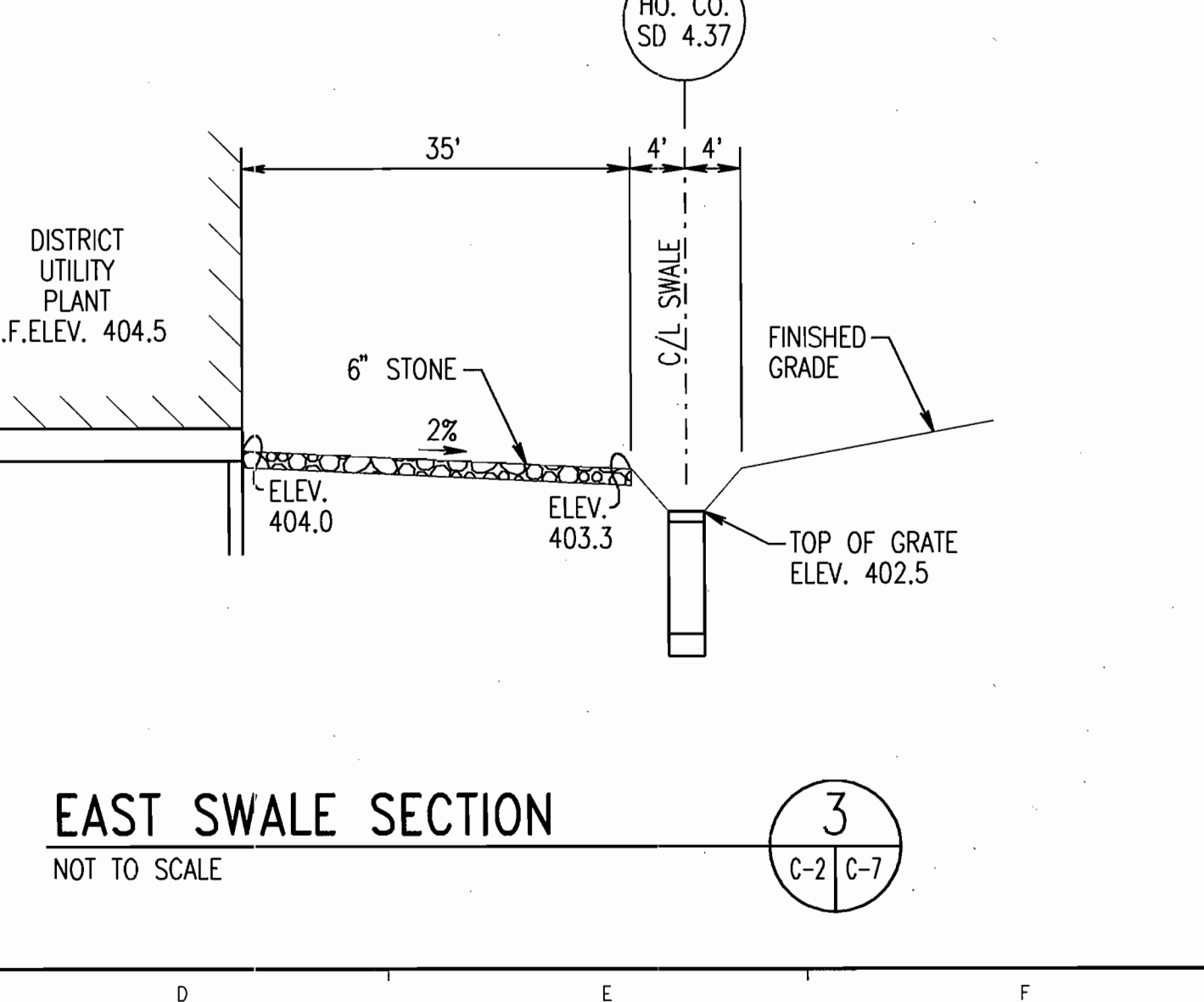
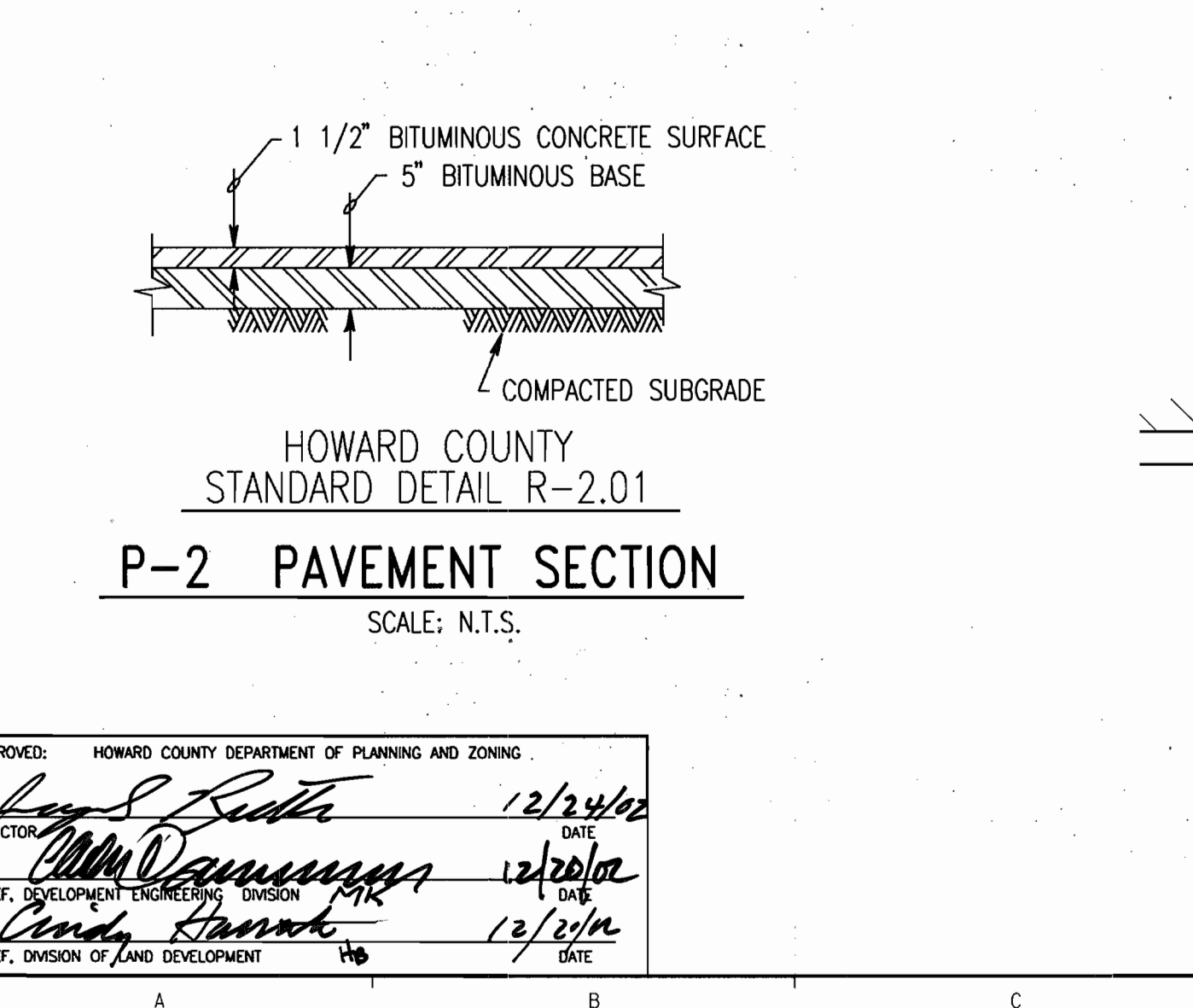
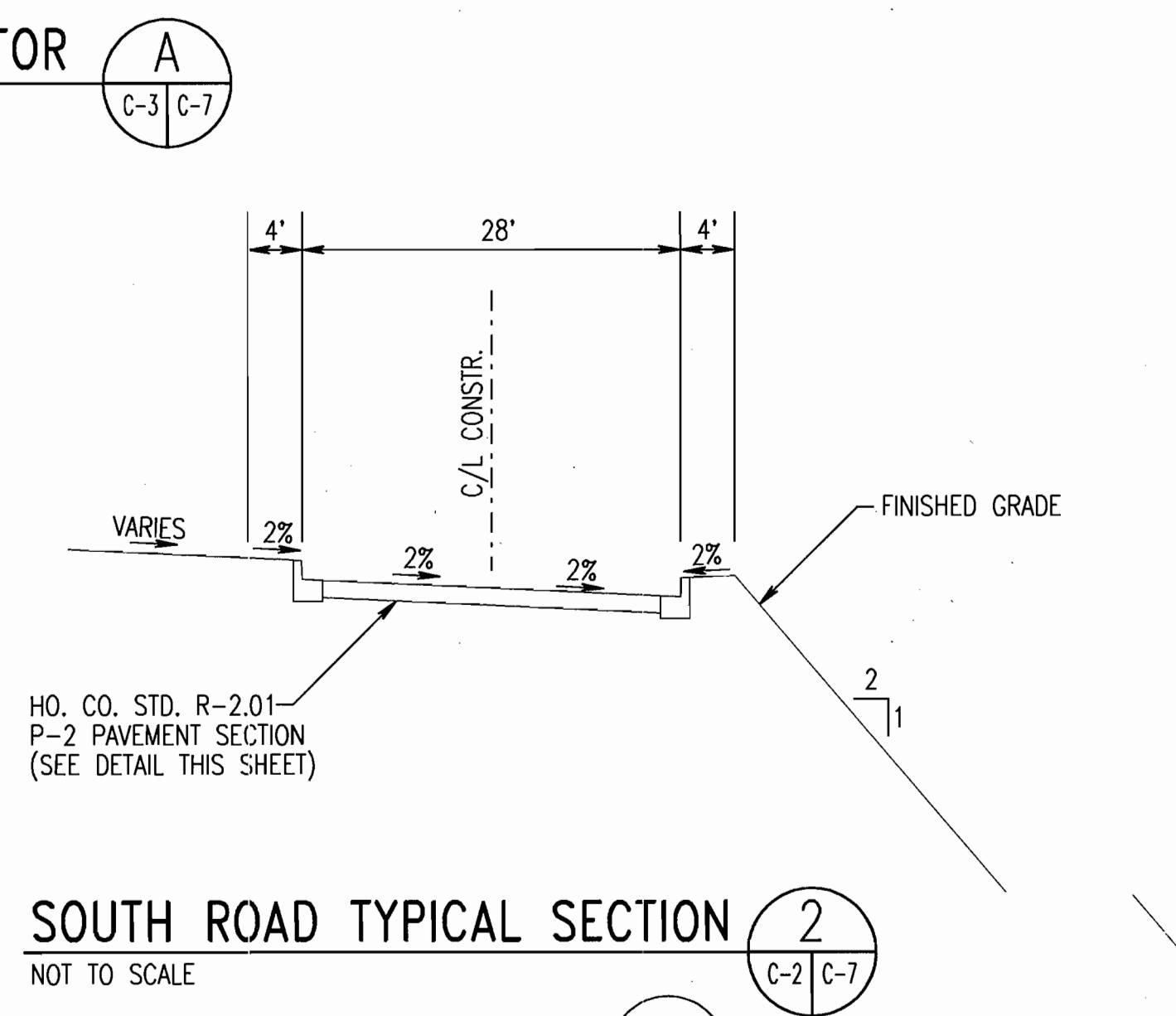
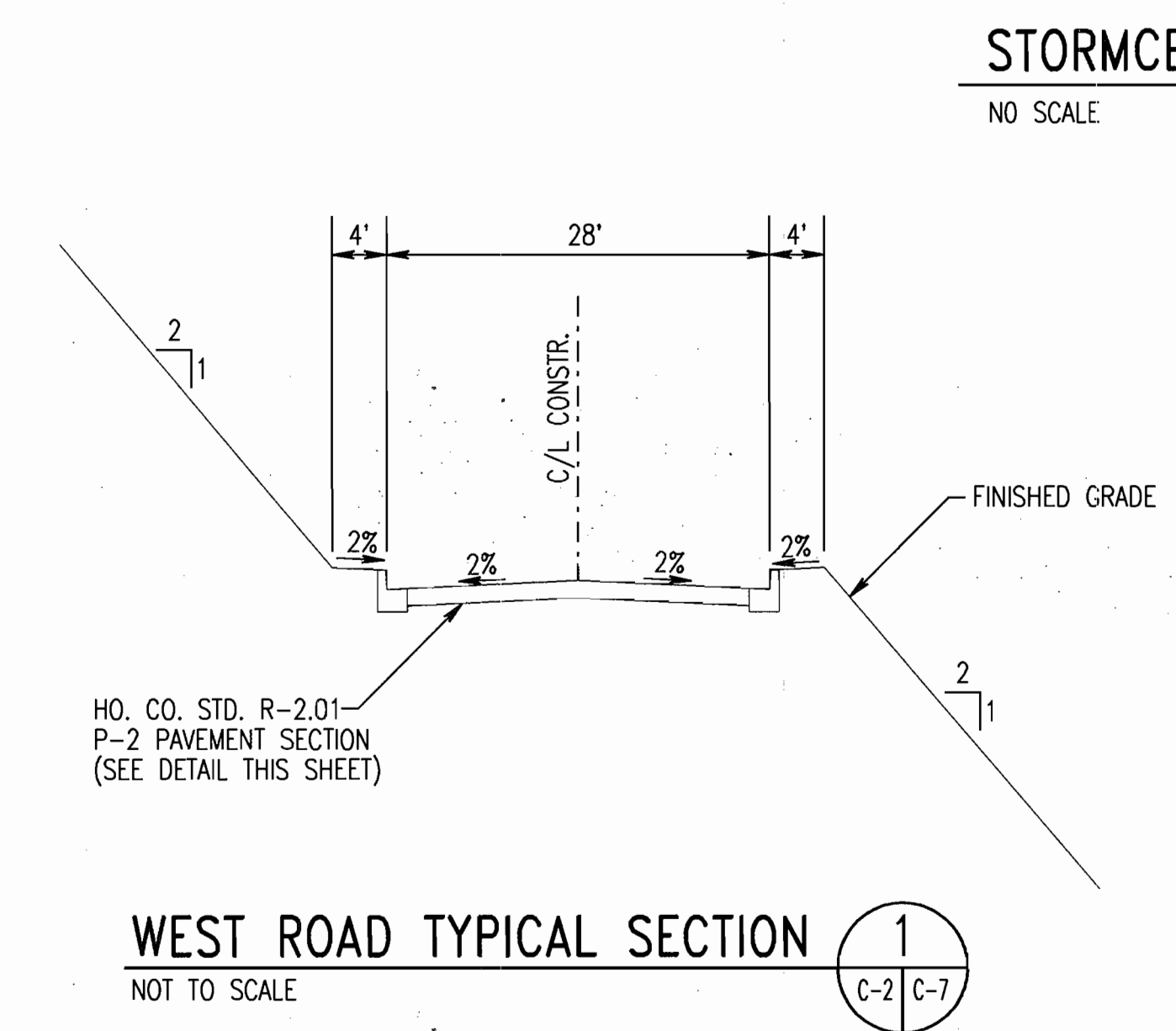
Whitman, Requardt and Associates, LLP
601 South Caroline Street
Baltimore, MD 21231

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

DETAILS AND SECTIONS

DRAWING NO. **C-7**

SCALE: AS SHOWN SDP SHEET 8 OF 12
DES: C.Y.H. | CHECK: A.U.O. | DATE: 12/06/02
M:\80929\apl\dup\c07.dgn
FRI Dec 06 14:00:31 2002



STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP ELEV.	INV. IN	INV. OUT	STANDARD DETAIL
I-1	CURB/GRATE INLET	401.08*	395.93	391.93	HO. CO. SD 4.35
I-2	CURB/GRATE INLET	401.9*	396.95	396.85	HO. CO. SD 4.35
I-3	CURB/GRATE INLET	402.74*	398.05	397.8	HO. CO. SD 4.35
I-4	D INLET	403.65	399.81	399.56	HO. CO. SD 4.39
I-5	CURB/GRATE INLET	406.37*	399.96	399.86	HO. CO. SD 4.35
I-6	CURB/GRATE INLET	406.37*	-	400.24	HO. CO. SD 4.35
I-7	D INLET	403.65	400.75	400.25	HO. CO. SD 4.39
I-8	GRATE INLET	402.5	398.16	398.06	HO. CO. SD 4.37
I-9	GRATE INLET	402.5	398.98	398.88	HO. CO. SD 4.37
I-10	D INLET	408.83	404.41	404.16	HO. CO. SD 4.39
I-11	D INLET	408.83	-	405	HO. CO. SD 4.39
I-12	CURB/GRATE INLET	406.2*	-	400.72	HO. CO. SD 4.37
SD-4	MANHOLE	403.65	399.26	398.91	HO. CO. G 5.12
SD-5	MANHOLE	407.5	399.47	399.37	HO. CO. G 5.11
SD-6	MANHOLE	409.5	403.82	403.72	HO. CO. G 5.11
STC-2400	STORMCEPTOR	401.1	396.58	396.5	SEE THIS SHEET

* TOP OF CURB ELEVATION

STORM DRAIN PIPE SCHEDULE

FROM	TO	SIZE	TYPE	LENGTH	SLOPE
I-6	I-5	15"	RCP CL. IV	28'	1.00%
I-5	I-4	15"	RCP CL. IV	20'	1.00%
I-4	SD-4	15"	RCP CL. IV	55'	1.00%
SD-4	I-3	15"	RCP CL. IV	86'	1.00%
I-3	I-2	18"	RCP CL. IV	85'	1.00%
I-2	STC-2400	18"	RCP CL. IV	27'	1.00%
STC-2400	I-1	18"	RCP CL. IV	57'	1.00%
I-7	I-4	12"	RCP CL. IV	88'	0.50%
I-12	SD-4	12"	RCP CL. IV	73'	2.00%
I-11	I-10	12"	RCP CL. IV	59'	1.00%
I-10	SD-6	15"	RCP CL. IV	34'	1.00%
SD-6	SD-5	15"	RCP CL. IV	42'	10.12%
SD-5	I-9	15"	RCP CL. IV	39'	1.00%
I-9	I-8	15"	RCP CL. IV	72'	1.00%
I-8	I-2	15"	RCP CL. IV	84'	1.00%

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

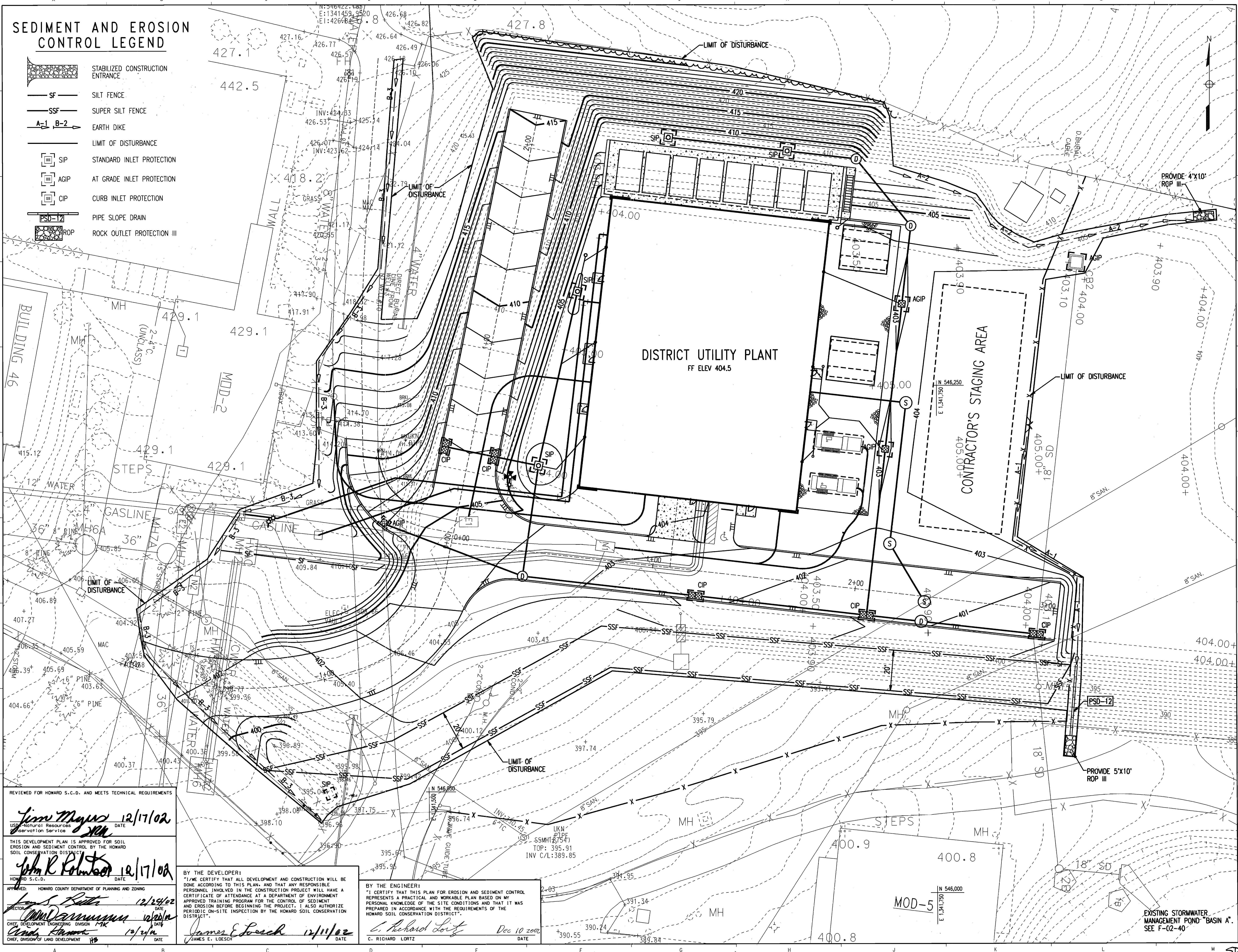
[Signature] 12/24/02
DIRECTOR DATE

[Signature] 12/20/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 12/21/02
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

SEDIMENT AND EROSION CONTROL LEGEND

- STABILIZED CONSTRUCTION ENTRANCE
- SILT FENCE
- SUPER SILT FENCE
- EARTH DIKE
- LIMIT OF DISTURBANCE
- SIP STANDARD INLET PROTECTION
- AGIP AT GRADE INLET PROTECTION
- CIP CURB INLET PROTECTION
- PSD-12 PIPE SLOPE DRAIN
- ROP ROCK OUTLET PROTECTION III



REVISIONS	

APPROVALS	
REQUIRER	
PLANT FACILITIES	
OPER COMPLIANCE	
SAFETY	
TSC GROUP	
TOP GROUP	
SAFETY OFFICE	
DIRECTOR	
OFFICE	
COORDINATOR	
SENIOR LEADER	

THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-6098



BUILDING 20: DISTRICT UTILITY PLANT

Henry Adams, Inc.
 Consulting Engineers

 600 Baltimore Avenue
 Baltimore, MD 21204-4079
 410.296.6500
 Fax 410.296.3566

Architect

PEOPLE ARCHITECTURE
 CSD

Cochran, Stephenson, & Donkervoet, Inc.
 THE WAREHOUSE @ CAMDEN YARDS
 323 West Camden St., #700, Baltimore, MD 21201

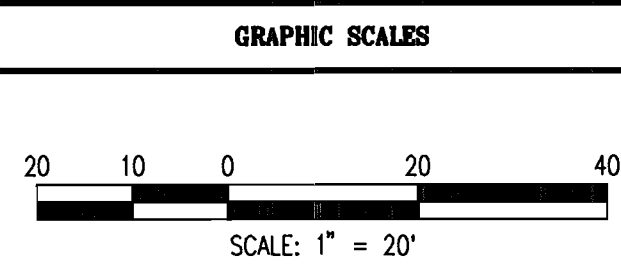
Structural

MPMC
 Mincin, Patel, Milano, Inc.
 6511 Harford Road
 Baltimore, MD 21214

Civil

WR&A
 Whitman, Reardon and Associates, LLP
 801 South Caroline Street
 Baltimore, MD 21231

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



SEDIMENT & EROSION CONTROL PLAN

DRAWING NO. **C-8**

SCALE: 1" = 20'

SDP SHEET 9 OF 12

DES: C.Y.H. CHECK: A.U.O. DATE: 12/06/02

SDP-03-49

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

Jim Meyer 12/17/02
 DATE

USDA Natural Resources Conservation Service

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

John R. Kolton 12/17/02
 DATE

HOWARD S.C.D.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

James E. Loesch 12/24/02
 DATE

RECTOR

James E. Loesch 12/24/02
 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT

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

James E. Loesch 12/11/02
 DATE

JAMES E. LOESCH

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

C. Richard Lortz Dec 10 2002
 DATE

C. RICHARD LORTZ

EXISTING STORMWATER MANAGEMENT POND "BASIN A".
 SEE F-02-40

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

- THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

- FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

- TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
- TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
 - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - WHERE THE SUBSOIL 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 PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

- FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

V. TOPSOIL APPLICATION

- WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SUPER SILT FENCE AND SEDIMENT TRAPS AND BASINS.
- GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" - 8" HIGHER IN ELEVATION.
- TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
- TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

- ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:
 - COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
 - 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.
 - 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.
 - COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
 - COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB./1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATIONS RATE.

- 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.

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- COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.

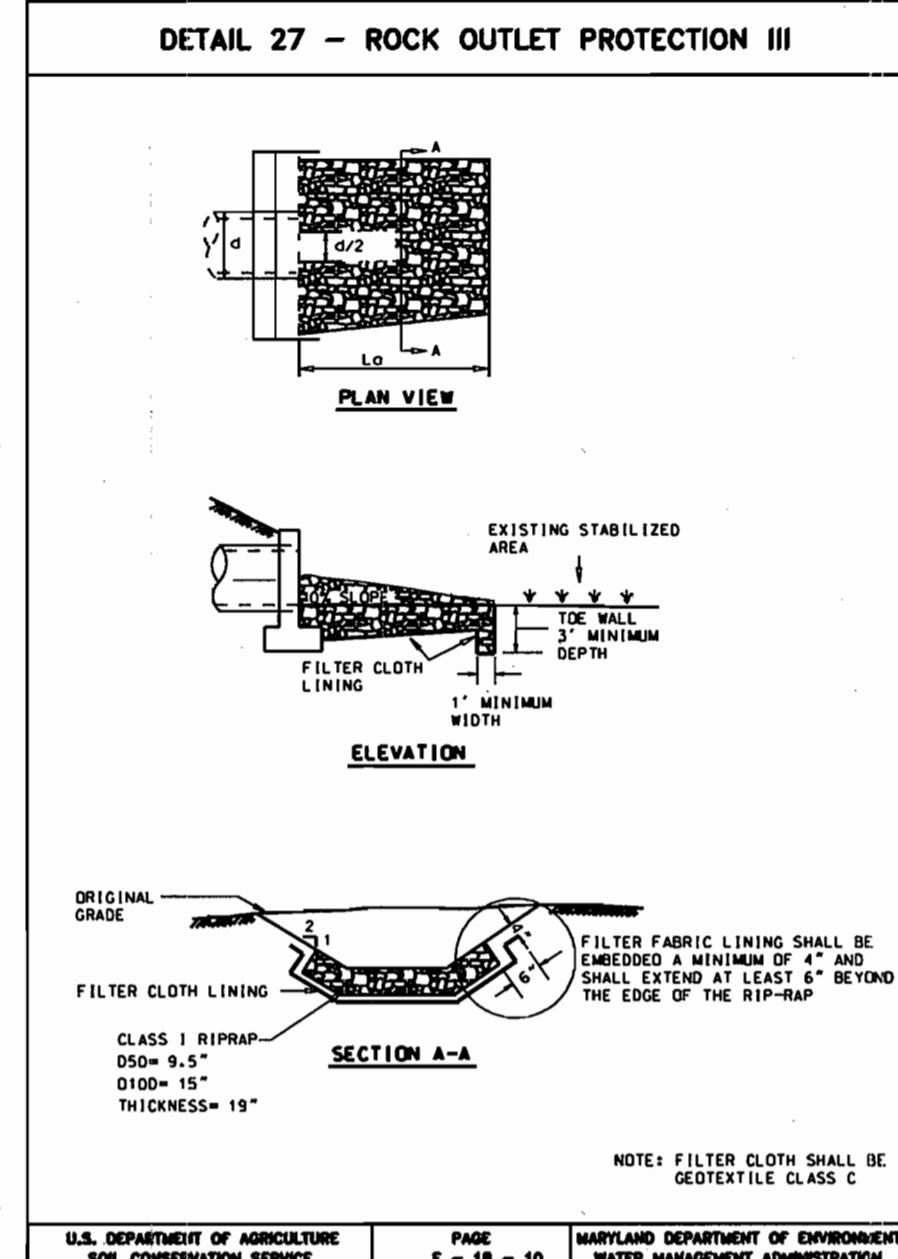
- COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB./1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATIONS RATE.

REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING MD-VA. PUB. #1, COOPERATIVE EXTENSION SERVICE UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES, REVISED 1973.

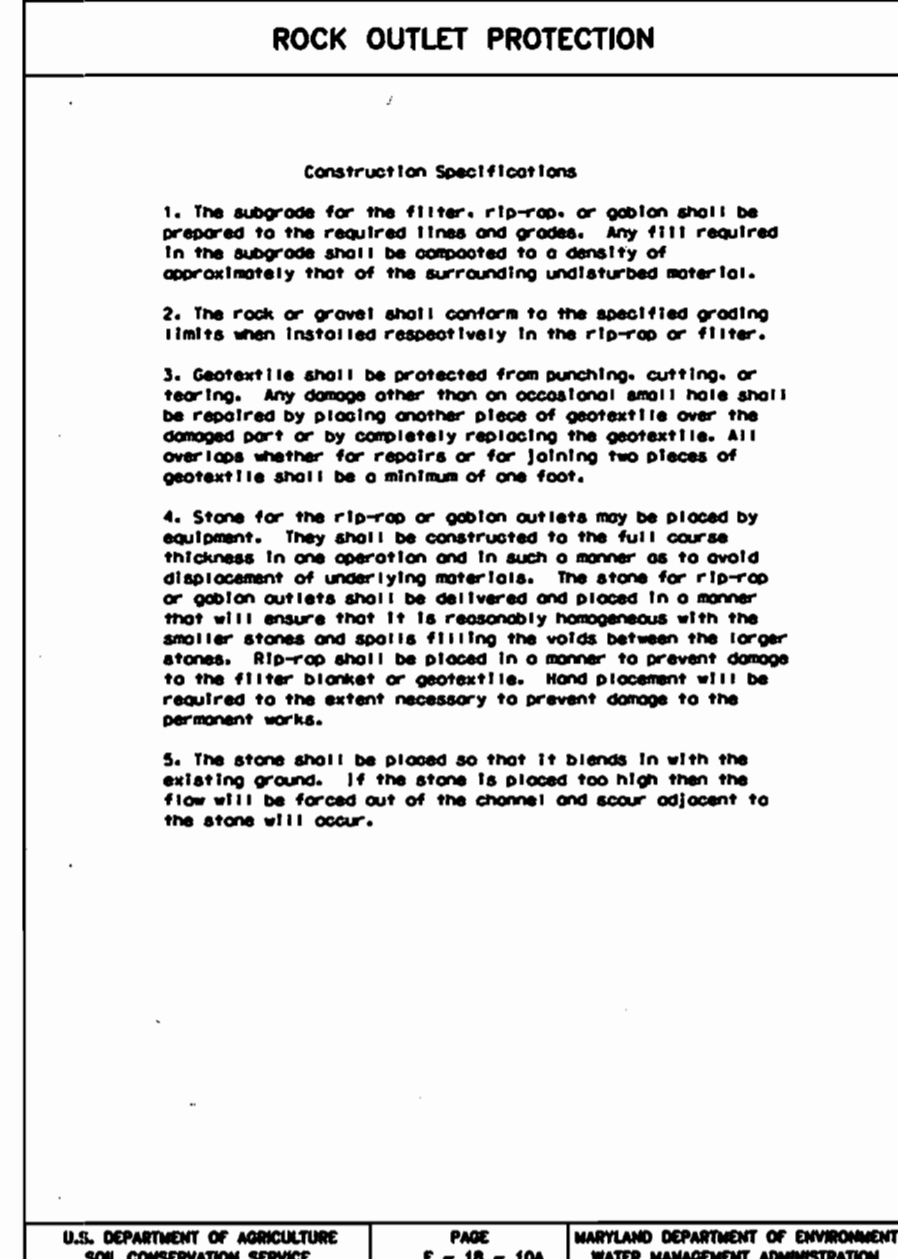
SEQUENCE OF CONSTRUCTION

- NOTIFY THE SEDIMENT CONTROL INSPECTION OFFICE 24 HOURS PRIOR TO CONSTRUCTION.
- CLEAR AND GRUB AS NECESSARY TO INSTALL PERIMETER SEDIMENT CONTROL DEVICES. INSTALL SILT FENCE AND EARTH DIKE. INSTALL STABILIZED CONSTRUCTION ENTRANCE AS REQUIRED BY THE SEDIMENT CONTROL INSPECTOR.
- PERFORM GRADING OF SITE. EXCESS SPOIL MATERIAL SHALL BE TRANSPORTED TO THE SITE DESIGNATED BY THE OWNER. THE STOCKPILE AREA SHALL HAVE AN APPROVED AND ACTIVE EROSION AND SEDIMENT CONTROL PLAN.
- INSTALL STORM DRAIN AND UTILITIES. UPON COMPLETION OF STORM DRAIN INLETS, IMMEDIATELY INSTALL INLET PROTECTION.
- BEGIN BUILDING CONSTRUCTION.
- COMPLETE UTILITY AND BUILDING CONSTRUCTION.
- STABILIZE SITE WITH PAVING AND PERMANENT STABILIZATION.
- UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES.

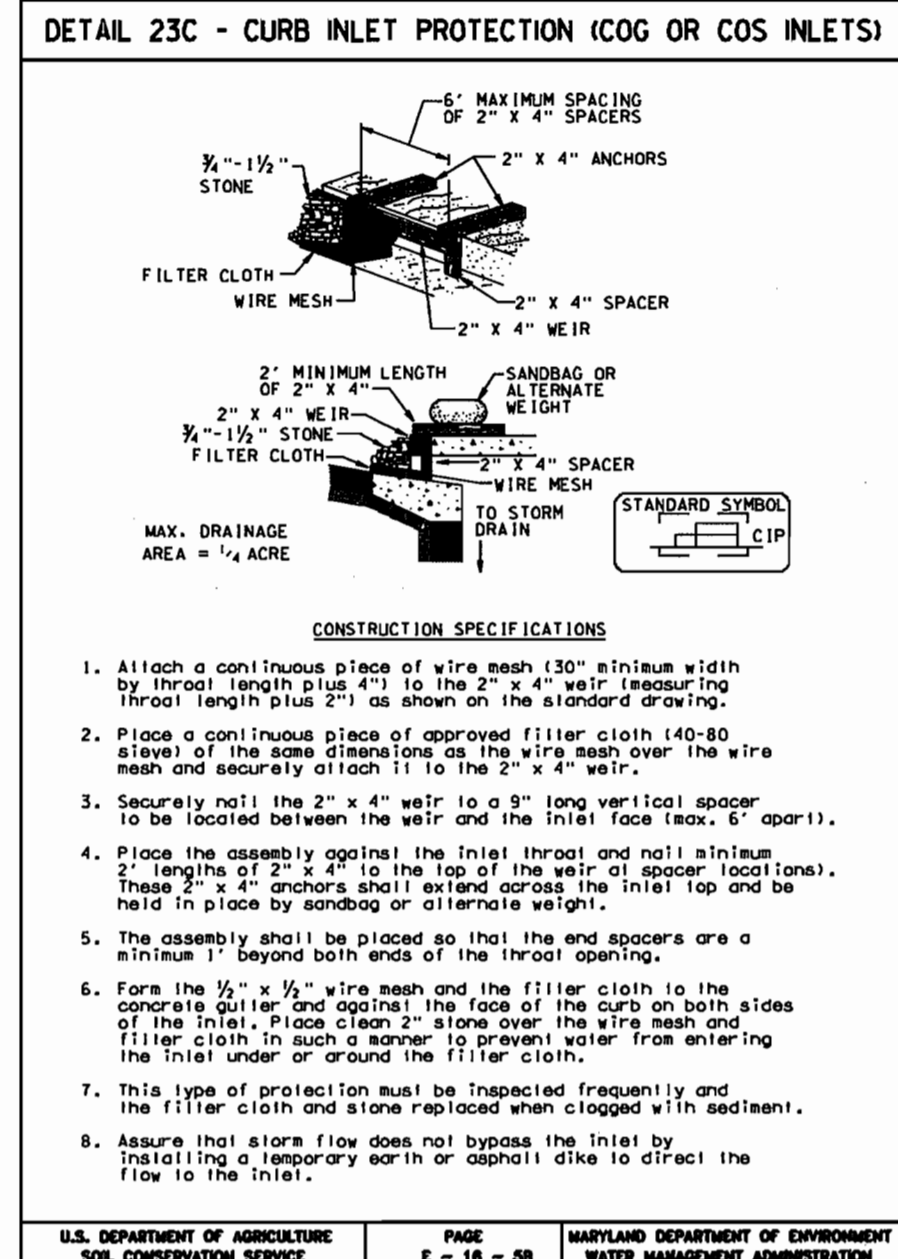
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 12/24/02
 [Signature] 12/24/02
 [Signature] 12/24/02



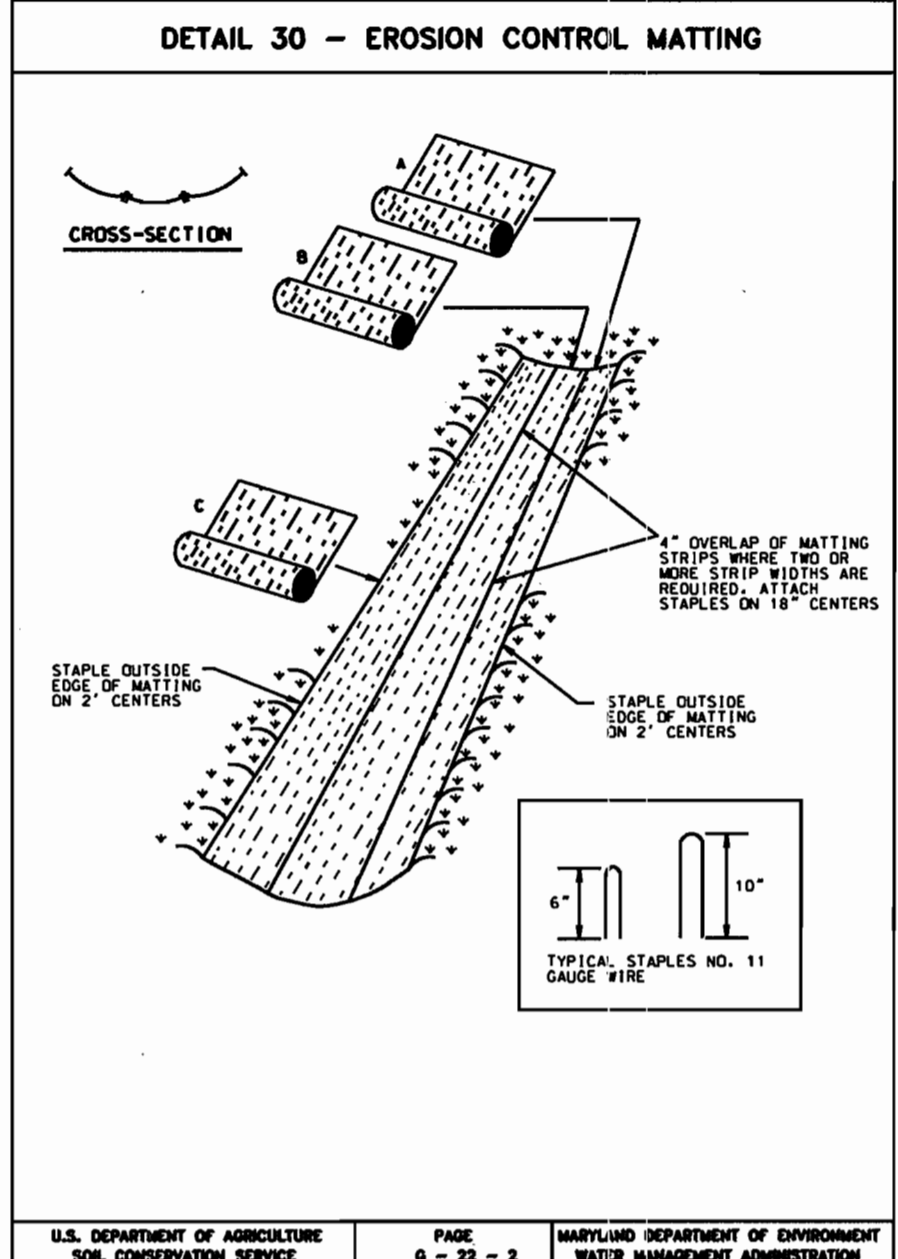
U.S. DEPARTMENT OF AGRICULTURE PAGE 7-18-10 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



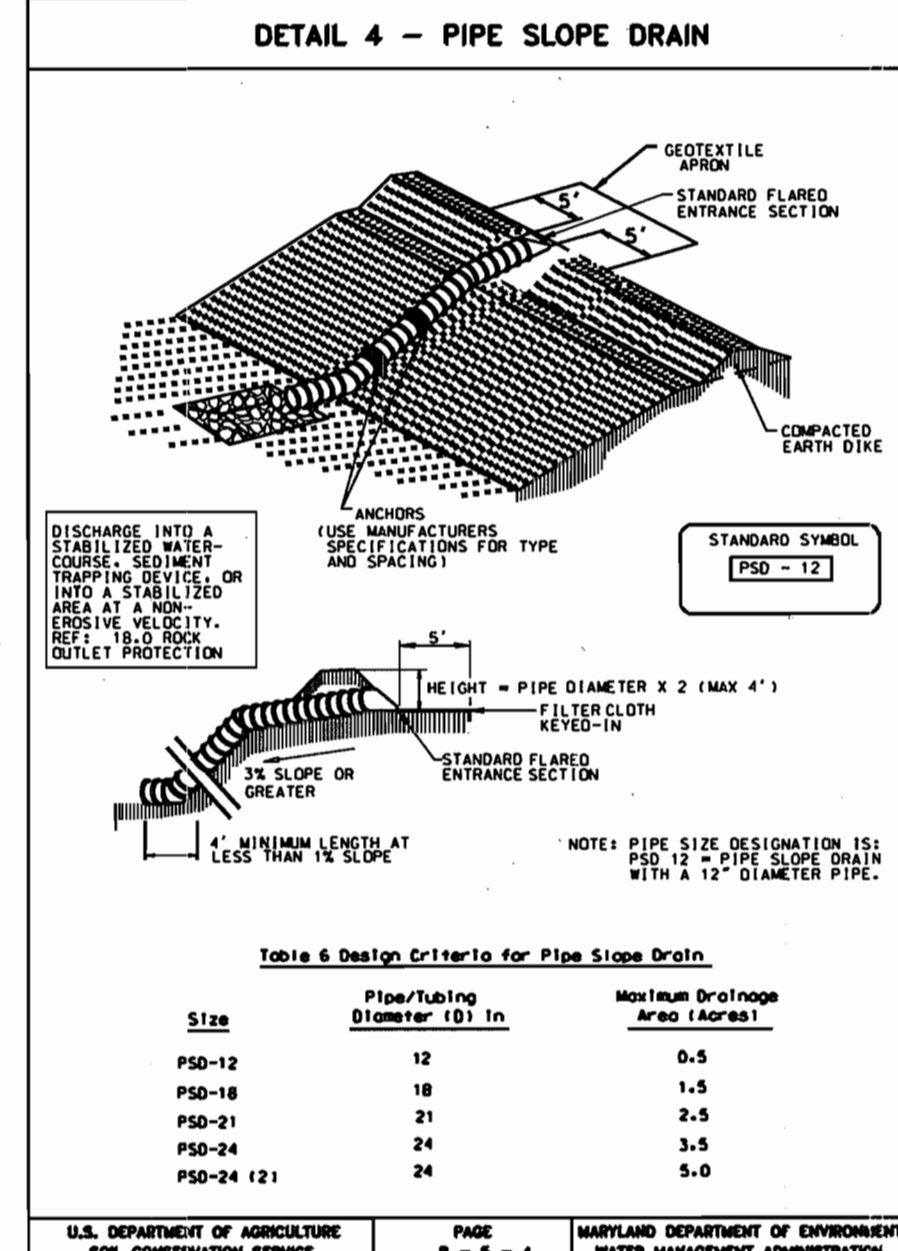
U.S. DEPARTMENT OF AGRICULTURE PAGE 7-18-10A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



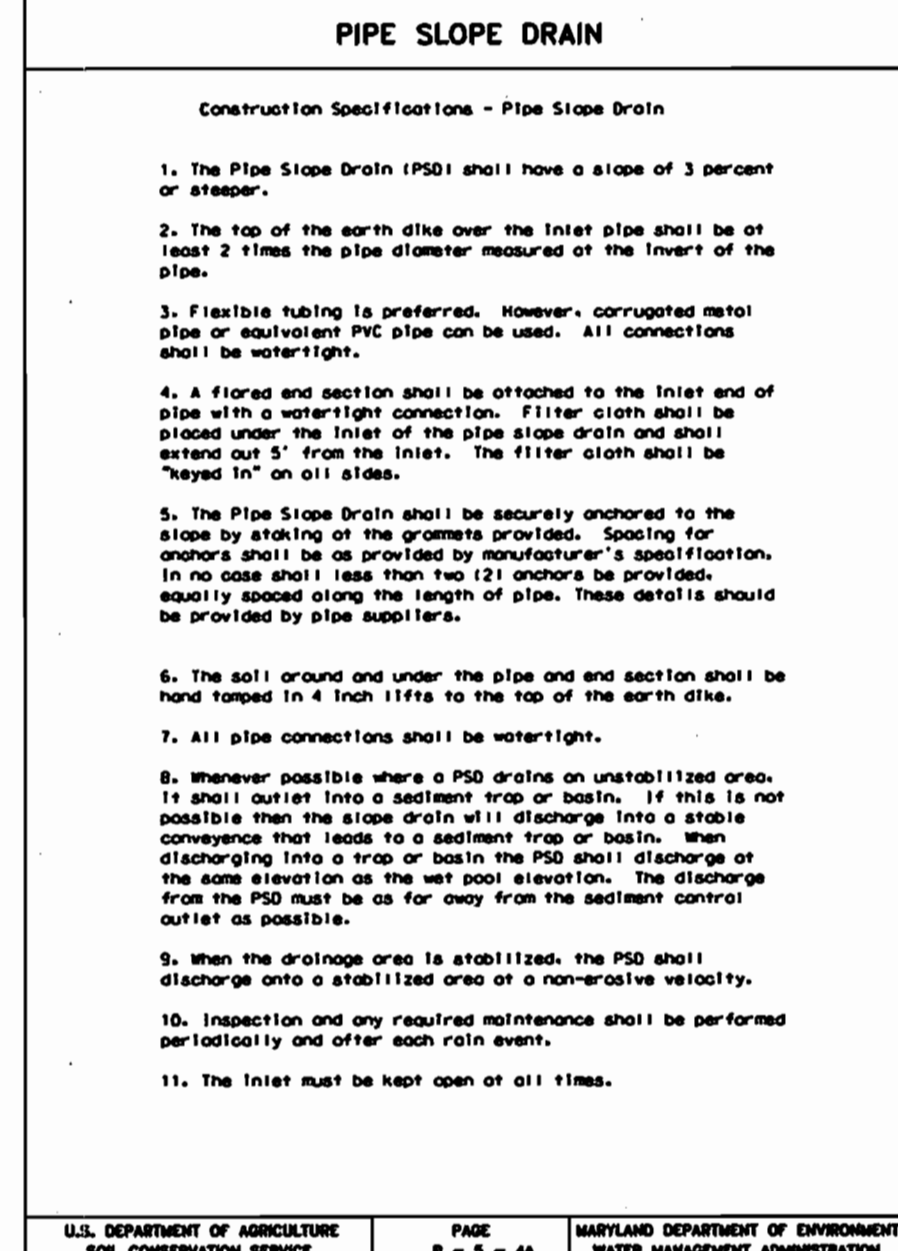
U.S. DEPARTMENT OF AGRICULTURE PAGE E-18-08 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



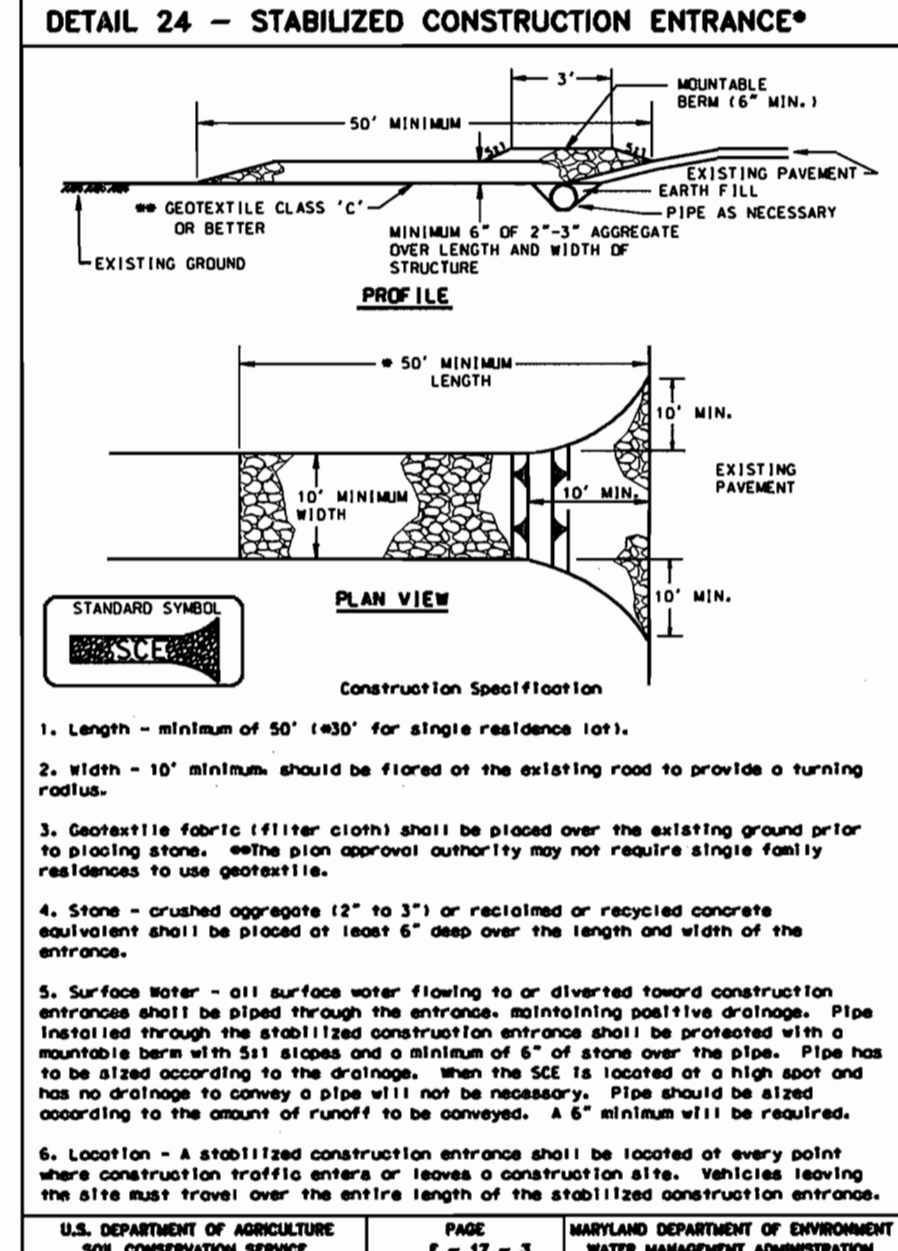
U.S. DEPARTMENT OF AGRICULTURE PAGE 6-22-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



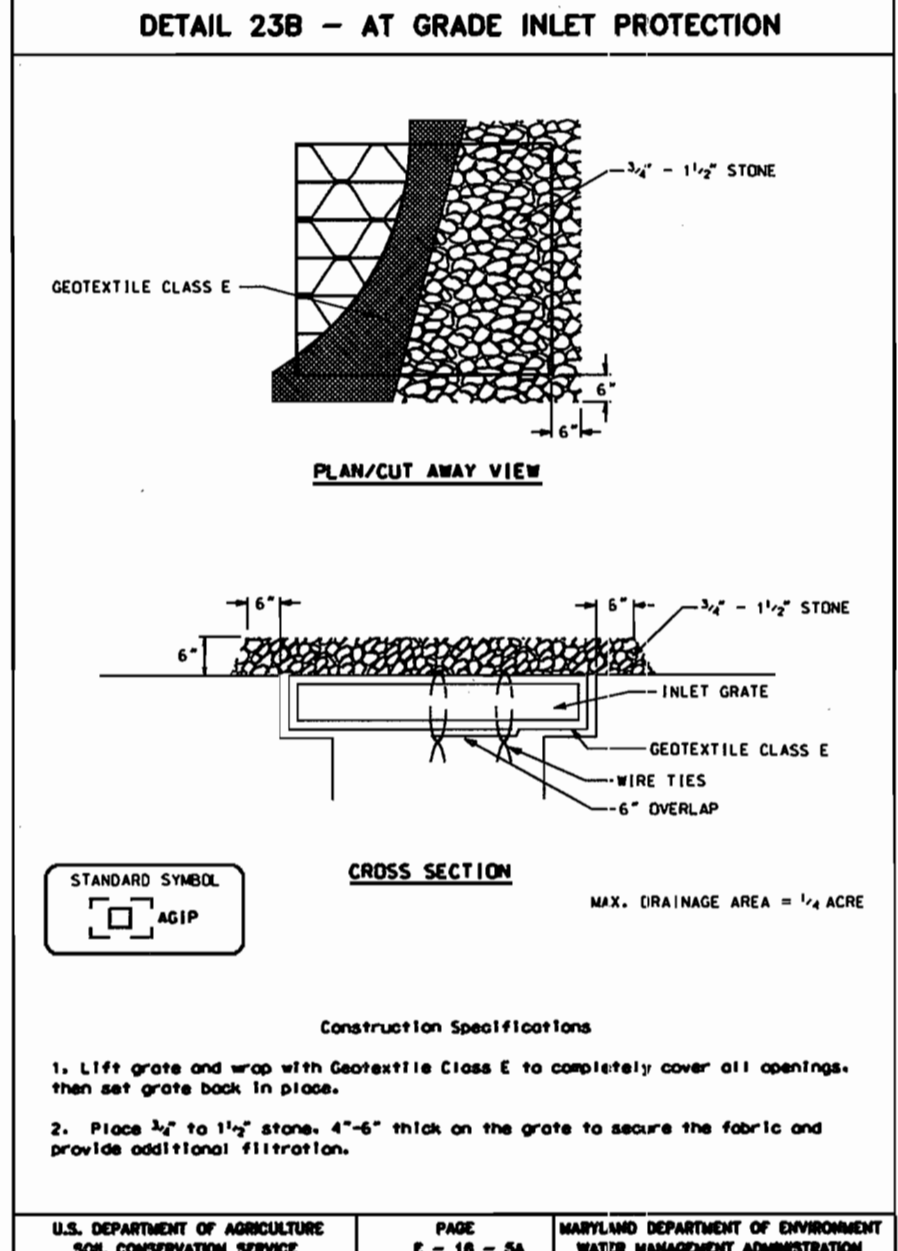
U.S. DEPARTMENT OF AGRICULTURE PAGE 8-9-4 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



U.S. DEPARTMENT OF AGRICULTURE PAGE 8-9-4A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



U.S. DEPARTMENT OF AGRICULTURE PAGE 8-9-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

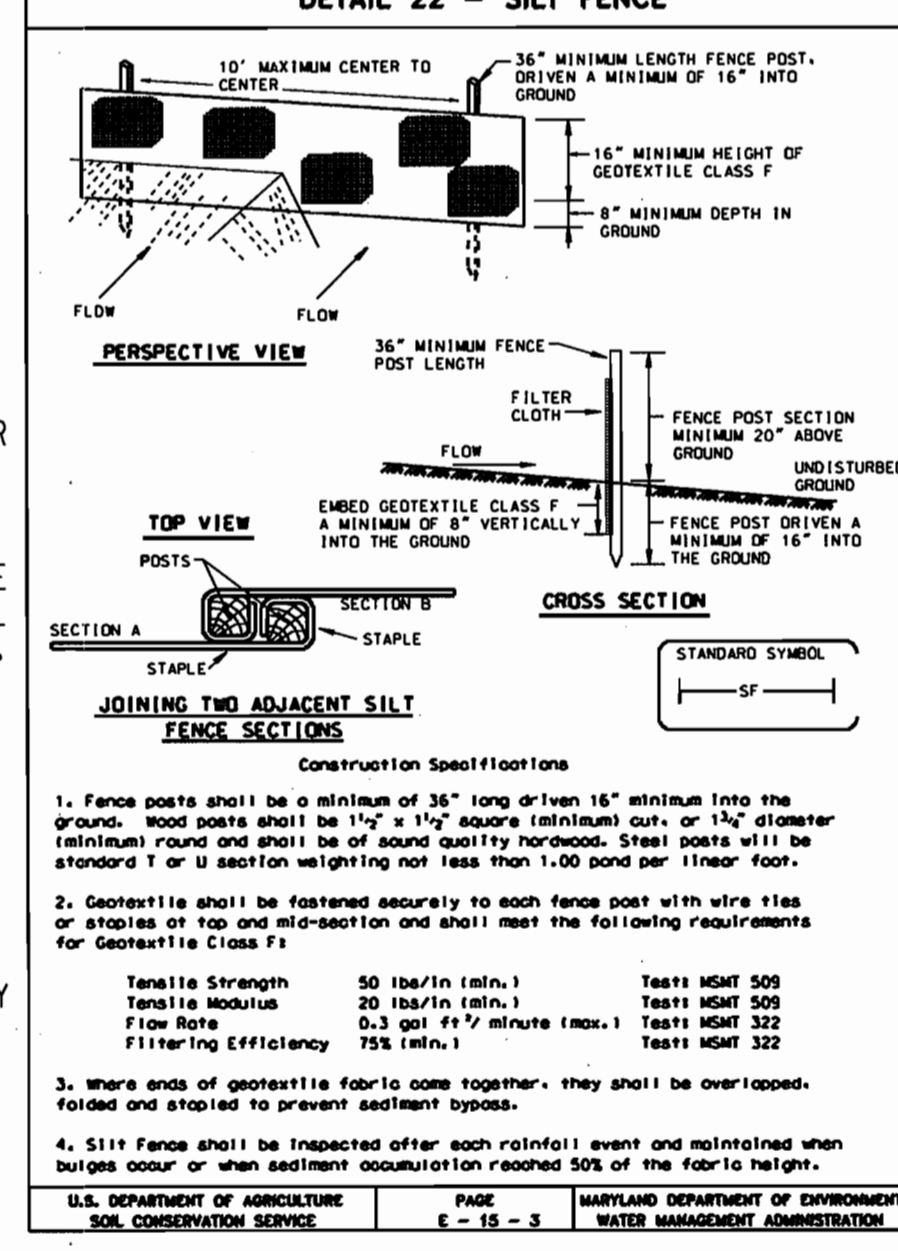


U.S. DEPARTMENT OF AGRICULTURE PAGE 6-18-2A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

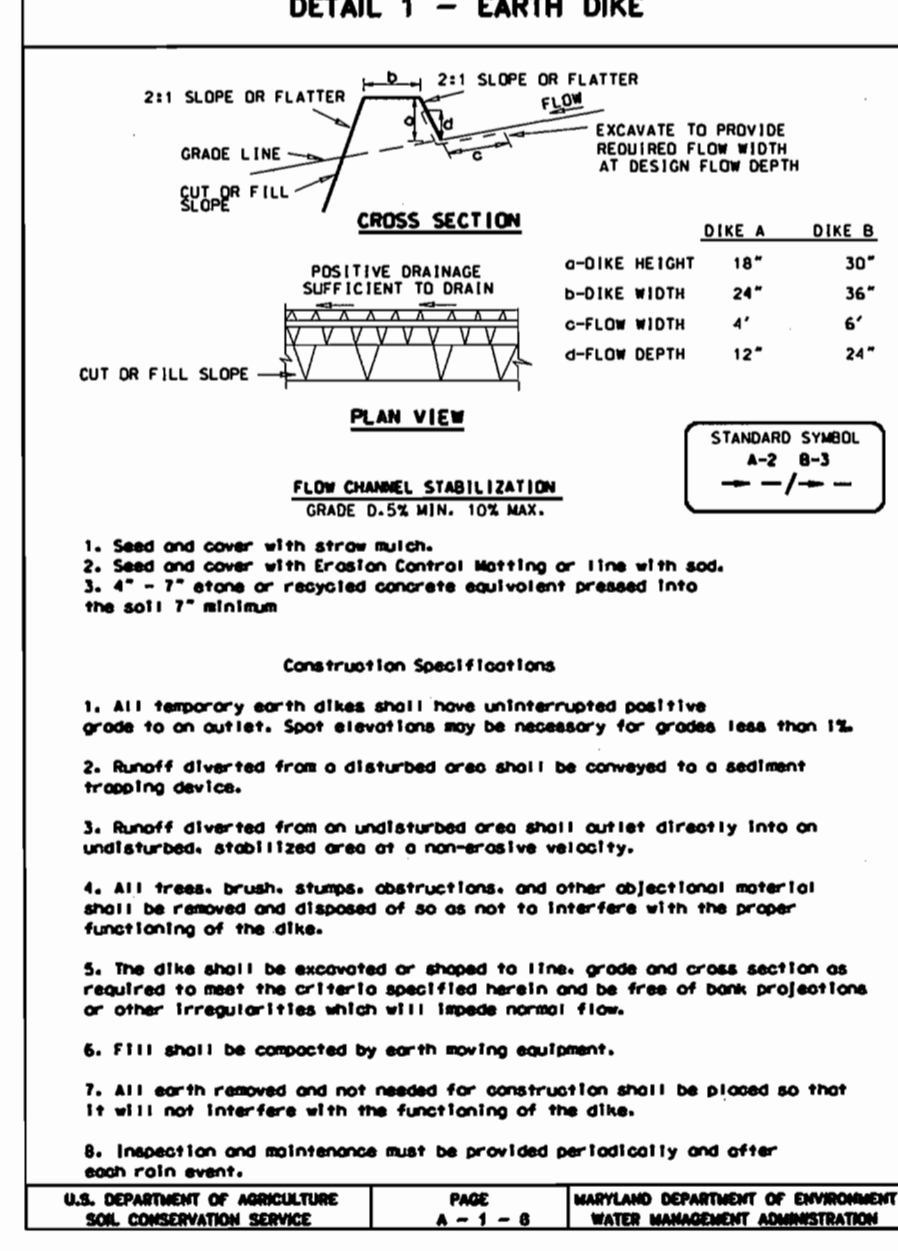
SEDIMENT CONTROL NOTES

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTION AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION. (410-313-2437)
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES GREATER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 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.
- SITE ANALYSIS:

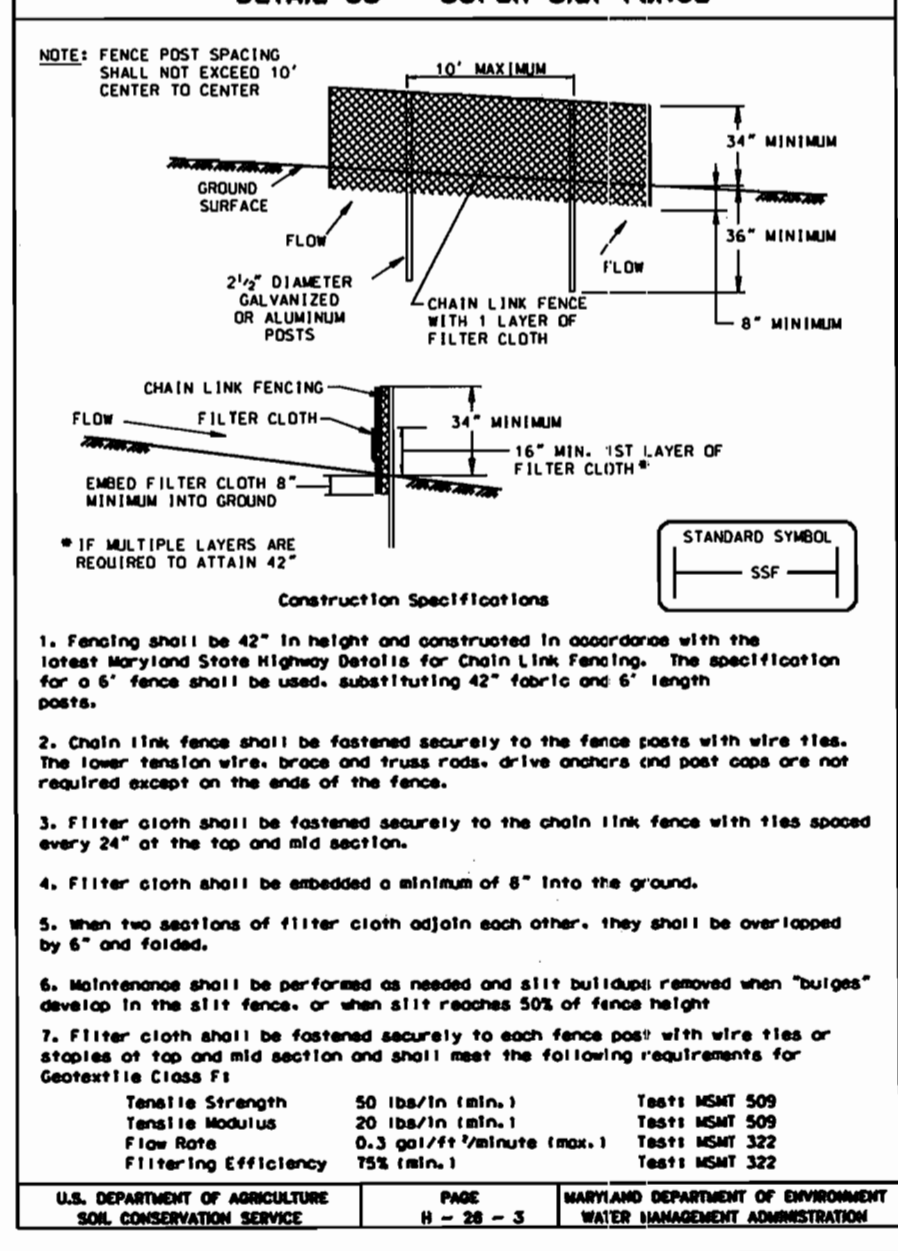
TOTAL AREA OF SITE	ACRES	2.2
AREA DISTURBED	ACRES	2.2
AREA TO BE ROOFED OR PAVED	ACRES	1.1
AREA TO BE VEGETATIVELY STABILIZED	ACRES	1.1
TOTAL CUT	CU. YDS.	3000
TOTAL FILL	CU. YDS.	100
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY HOWARD COUNTY DPW SEDIMENT CONTROL INSPECTOR.
- 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.
- STABILIZE ALL 2:1 SLOPES WITH EROSION CONTROL MATTING.
- FOR ALL UTILITY CONSTRUCTION, LIMIT DAILY TRENCHING. INSTALLATION AND BACKFILLING TO THAT WHICH CAN BE COMPLETED IN A DAY. EXCAVATED MATERIAL SHALL BE PLACED UPGRADE OF THE TRENCH AND POSITIVE DRAINAGE SHALL BE MAINTAINED AROUND THE WORK AREA. ALL UTILITY SITE WORK SHALL BE STABILIZED AT THE END OF EACH WORK DAY.



U.S. DEPARTMENT OF AGRICULTURE PAGE E-18-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



U.S. DEPARTMENT OF AGRICULTURE PAGE A-18-8 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



U.S. DEPARTMENT OF AGRICULTURE PAGE E-18-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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 COUNTY SOIL CONSERVATION DISTRICT.
 [Signature] DATE 12/10/02

BY THE DEVELOPER:
 I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
 [Signature] DATE 12/11/02

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
 [Signature] DATE 12/17/02
 [Signature] DATE 12/17/02
 [Signature] DATE 12/17/02

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

STATE OF MARYLAND
 DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
 SOIL CONSERVATION DISTRICT

APPROVED: AS SHOWN SDP SHEET 10 OF 12
 CHECK: A.U.C. DATE: 12/06/02

REVISIONS	

APPROVALS	
REGISTERED PROFESSIONAL ENGINEER	[Signature]
REGISTERED PROFESSIONAL SURVEYOR	[Signature]
REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT	
REGISTERED PROFESSIONAL CIVIL ENGINEER	
REGISTERED PROFESSIONAL ELECTRICAL ENGINEER	
REGISTERED PROFESSIONAL MECHANICAL ENGINEER	
REGISTERED PROFESSIONAL CHEMICAL ENGINEER	
REGISTERED PROFESSIONAL METALLURGICAL ENGINEER	
REGISTERED PROFESSIONAL AERONAUTICAL AND NAUTICAL ENGINEER	
REGISTERED PROFESSIONAL INDUSTRIAL ENGINEER	
REGISTERED PROFESSIONAL NUCLEAR ENGINEER	
REGISTERED PROFESSIONAL AGRICULTURAL ENGINEER	
REGISTERED PROFESSIONAL MINING ENGINEER	
REGISTERED PROFESSIONAL METALS ENGINEER	
REGISTERED PROFESSIONAL POLYMER ENGINEER	
REGISTERED PROFESSIONAL TRANSPORTATION ENGINEER	
REGISTERED PROFESSIONAL ENVIRONMENTAL ENGINEER	
REGISTERED PROFESSIONAL FOOD ENGINEER	
REGISTERED PROFESSIONAL FIBER ENGINEER	
REGISTERED PROFESSIONAL CHEMICAL ENGINEER	
REGISTERED PROFESSIONAL METALLURGICAL ENGINEER	
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REGISTERED PROFESSIONAL TRANSPORTATION ENGINEER	
REGISTERED PROFESSIONAL ENVIRONMENTAL ENGINEER	
REGISTERED PROFESSIONAL FOOD ENGINEER	
REGISTERED PROFESSIONAL FIBER ENGINEER	



THE JOHNS HOPKINS UNIVERSITY
 APPLIED PHYSICS LABORATORY
 JOHNS HOPKINS ROAD
 LAUREL MARYLAND 20723-0999

Henry Adams, Inc.
 Consulting Engineers
 600 Baltimore Avenue
 Baltimore, MD 21204-4079
 410.296.6500
 Fax 410.296.3566

Architect
 PEOPLE ARCHITECTURE
 C S I D

Structural
 MINCIN, PATEL, MILANO, INC.
 Consulting Structural Engineers
 Mincin, Patel, Milano, Inc.
 6511 Harford Road
 Baltimore, MD 21214

Civil
 WR&A
 Whitman, Regardt and Associates, LLP
 601 South Caroline Street
 Baltimore, MD 21231

TAX MAP A1, PARCEL 1
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MARYLAND

EROSION & SEDIMENT CONTROL NOTES & DETAILS

DRAWING NO. C-9

DATE: 12/06/02

20.0 STANDARDS AND SPECIFICATIONS

FOR VEGETATIVE STABILIZATION

DEFINITION

Using vegetation to cover for barren soil to protect it from forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil...

CONDITIONS Where Practice Applies

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas...

EFFECTS on Water Quality and Quantity

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff...

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters...

Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment...

Section I - Vegetative Stabilization Methods and Materials

A. Site Preparation

- 1. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
2. Perform all grading operations at right angles to the slope.
3. Schedule required soil tests to determine soil amendment composition and application rates...

B. Soil Amendments

- 1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres.
2. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment.
3. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total calcium oxide plus magnesium oxide...

C. Seeded Preparation

- 1. Temporary Seeding
a. Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment.
b. Apply fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3" - 5" of soil by disking or other suitable means.

D. Permanent Seeding

- 1. Minimum soil conditions required for permanent vegetative establishment:
a. Soil pH shall be between 6.0 and 7.0.
b. Soluble salts shall be less than 500 parts per million (ppm).
c. The soil shall contain less than 40% clay but enough fine grained material (60% silt plus clay) to provide the ability to hold a moderate amount of moisture...

E. Methods of Seeding

- 1. Hydroseeding: Apply seed uniformly with hydroseeder slurry (includes seed and fertilizer), broadcast or drop seeder, or a cut/packer seeder.
a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen maximum of 100 lbs. per acre total of soluble nitrogen P205 (phosphorus) 200 (phosphorus) 120 (potassium) 200 (lbs/acre).
b. Lime - use only ground agricultural limestone.
c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
2. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
a. Seed sown dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 25 or 26.
b. Where practical, seed should be applied in two directions perpendicular to each other.
3. Drill or Cut/Packer Seeding: Mechanized seeders that apply and cover seed with soil.
a. Cut/packer seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering.
b. Where practical, seed should be applied in two directions perpendicular to each other.

F. Mulch Specifications

- 1. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be rusty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.

- ii. Wood Cellulose Fiber Mulch (WCFM)
a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformity spread slurry.
c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will slake with seed, fertilizer and other additives to form a homogeneous slurry.
e. WCFM material shall contain no elements or compounds of concentration levels that will be phytotoxic.
f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.5% maximum and water holding capacity of 90% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.

- 1. If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
2. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre.
3. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre.
4. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water.

H. Securing Straw Mulch (Mulch Anchoring):

- 1. A mulch anchoring tool is a tractor-drawn implement designed to punch and anchor mulch into the soil surface to a minimum of two (2) inches.
2. Wood cellulose fiber may be used for anchoring straw.
3. Application of liquid binders should be heavier at the edges where wind catches mulch.
4. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations.

I. Incremental Stabilization - Cut Slopes

- 1. All cut slopes shall be dressed, prepared, seeded and mulched as the work progresses.
2. Construction sequence (Refer to Figure 4 below):
a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
b. Perform phase 1 excavation, dress, and stabilize.
c. Perform phase 2 excavation, dress, and stabilize.
d. Perform final phase excavation, dress, and stabilize.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch.

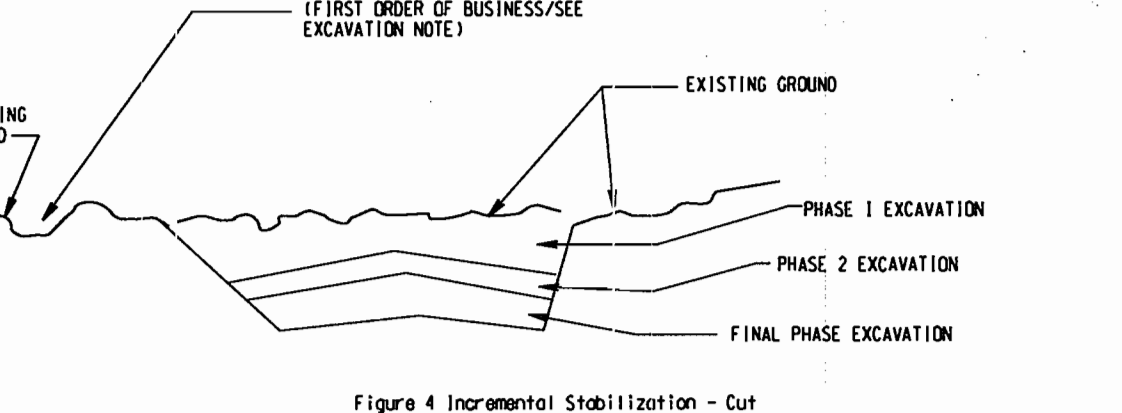


Figure 4 Incremental Stabilization - Cut

J. Incremental Stabilization of Embankments - Fill Slopes

- 1. Embankments shall be constructed in lifts as prescribed on the plans.
2. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15', or when the grading operation ceases as prescribed in the plans.
3. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
4. Construction sequence: Refer to Figure 5 below.
a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill.
b. Place phase 1 embankment, dress and stabilize.
c. Place phase 2 embankment, dress and stabilize.
d. Place final phase embankment, dress and stabilize.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch.

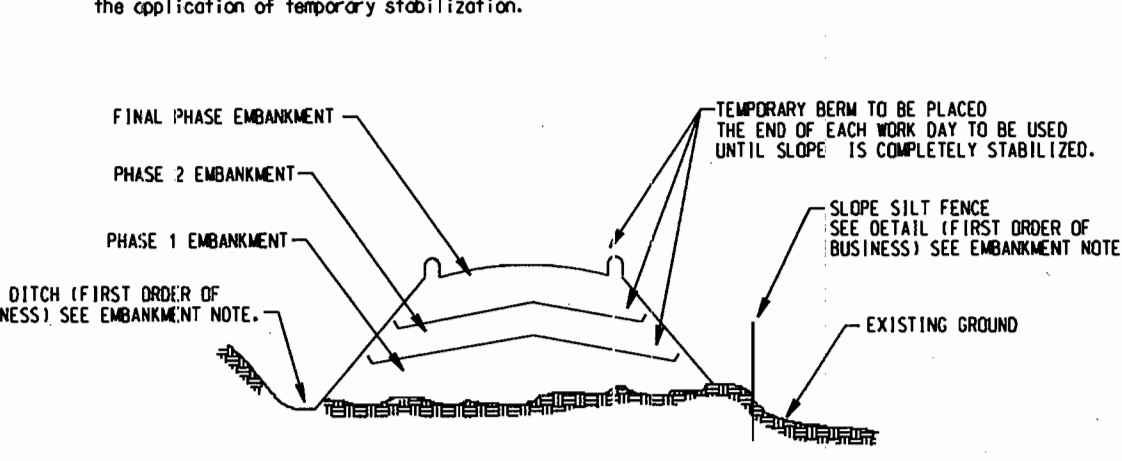


Figure 5. Incremental Stabilization - Fill

Section II - Temporary Seeding

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed Mixtures - Temporary Seeding

- 1. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary Seeding Summary below, along with application rates, seeding dates and seeding depths.
2. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

TEMPORARY SEEDING SUMMARY

Table with columns: SEED MIXTURE HARDINESS ZONE FROM TABLE 26, APPLICATION RATE (lb/oc), SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE (10-10-10), LIME RATE. Includes rows for Annual Ryegrass and Weeping Lovegrass.

Section III - Permanent Seeding

Seeding grass and legumes to establish ground cover for a minimum period of one year on disturbed areas generally receiving low maintenance.

A. Seed Mixtures - Permanent Seeding

- 1. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates.
2. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in.
3. For areas receiving low maintenance, apply uniform fertilizer (46-0-0) at 3/4 lbs/1000 sq. ft. (150 lbs/oc.).

PERMANENT SEEDING SUMMARY

Table with columns: NO., Species, Application Rate (lb/oc), Seeding Dates, Seeding Depths, Fertilizer Rate (10-10-10), Lime Rate. Includes rows for Tall Fescue and Weeping Lovegrass.

Table 24 Maintenance fertilization for Permanent Seedings

Table with columns: Seeding Mixture, Type, lb/oc, lb/1000 sf, Time, Mowing. Lists maintenance fertilization schedules for various seed mixtures like Tall fescue, Crownvetch, and Weeping lovegrass.

Section IV - Sod

To provide quick cover on disturbed areas (2:1 grade or flatter).

A. General Specifications

- 1. Class of turfgrass sod shall be Maryland or Virginia State Certified or Approved.
2. Sod shall be machine cut of a uniform soil thickness of 3/4" plus or minus 1/8", at the time of cutting.
3. Sod shall be harvested, delivered, and installed within a period of 36 hours.
4. Sod shall be installed during periods of excessively high temperature or in areas having dry subsoil.

B. Sod Installation

- 1. During periods of excessively high temperature or in areas having dry subsoil, the subsoil shall be lightly irrigated immediately prior to laying the sod.
2. The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly wedged against each other.
3. Sod shall be watered immediately following rolling or tamping until the underside of the new sod and soil surface below the sod are thoroughly wet.

C. Sod Maintenance

- 1. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a depth of 4".
2. After the first week, sod watering is required as necessary to maintain adequate moisture content.
3. The first mowing of sod should not be attempted until the sod is firmly rooted.

SECTION IV - TURFGRASS ESTABLISHMENT

Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

NOTE: Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

A. Turfgrass Mixtures

- 1. Kentucky Bluegrass - Full sun mixture - For use in areas that receive intensive management.
2. Kentucky Bluegrass/Perennial Ryegrass - Full sun mixture - For use in full sun areas where rapid establishment is necessary.
3. Tall Fescue/Kentucky Bluegrass - Full sun mixture - For use in drought prone areas and/or for areas receiving low to medium maintenance.
4. Kentucky Bluegrass/Fine Fescue - Shade mixture - For use in areas with shade in Bluegrass lawns.

NOTE: Turfgrass varieties should be selected from those listed in the most current University of Maryland Publication, Agronomy Misc0 #71, "Turfgrass Cultivar Recommendations for Maryland".

B. Ideal times of seeding

- Western MD: March 15 - June 1, August 1 - October 1
Central MD: March 1 - May 15, October 15
Southern MD, Eastern Shore: March 1 - May 15, August 15 - October 15

C. Irrigation

If soil moisture is deficient, apply new seedlings with adequate water for plant growth (1/2" - 1" every 3 to 4 days depending on soil texture) until they are firmly established.

D. Repair and Maintenance

- 1. Inspect all seeded areas for failures and make necessary repairs, replacements, and reseeding within the planting season.
2. Once the vegetation is established, the site shall have 95% groundcover to be considered adequately stabilized.
3. If the stand provides less than 40% ground cover, reestablish follow original line, fertilizer, seeded preparation and seeding recommendation.
4. If the stand provides between 40% and 94% ground cover, seeding and fertilizing using half of the rates originally applied may be necessary.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. Includes signatures and dates for Howard County officials.

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.

BY THE DEVELOPER: I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. Includes signatures and dates for developer and engineer.

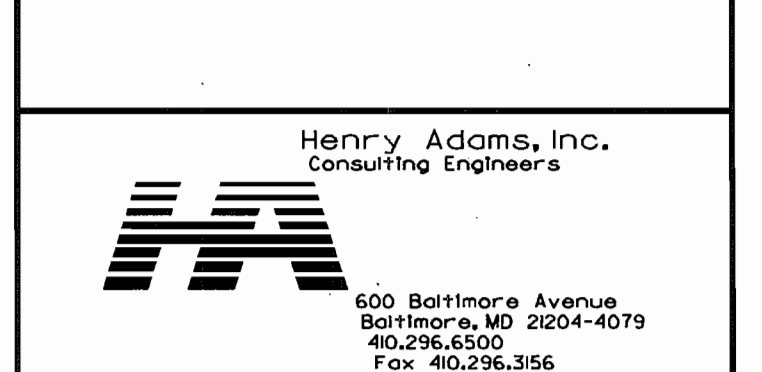
REVISIONS table with columns for revision number, description, and date.

APPROVALS table with columns for role, name, and date. Includes signatures for Project Manager, Chief Engineer, and others.

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



BUILDING 20: DISTRICT UTILITY PLANT. Henry Adams, Inc. Consulting Engineers. 600 Baltimore Avenue, Baltimore, MD 21201.



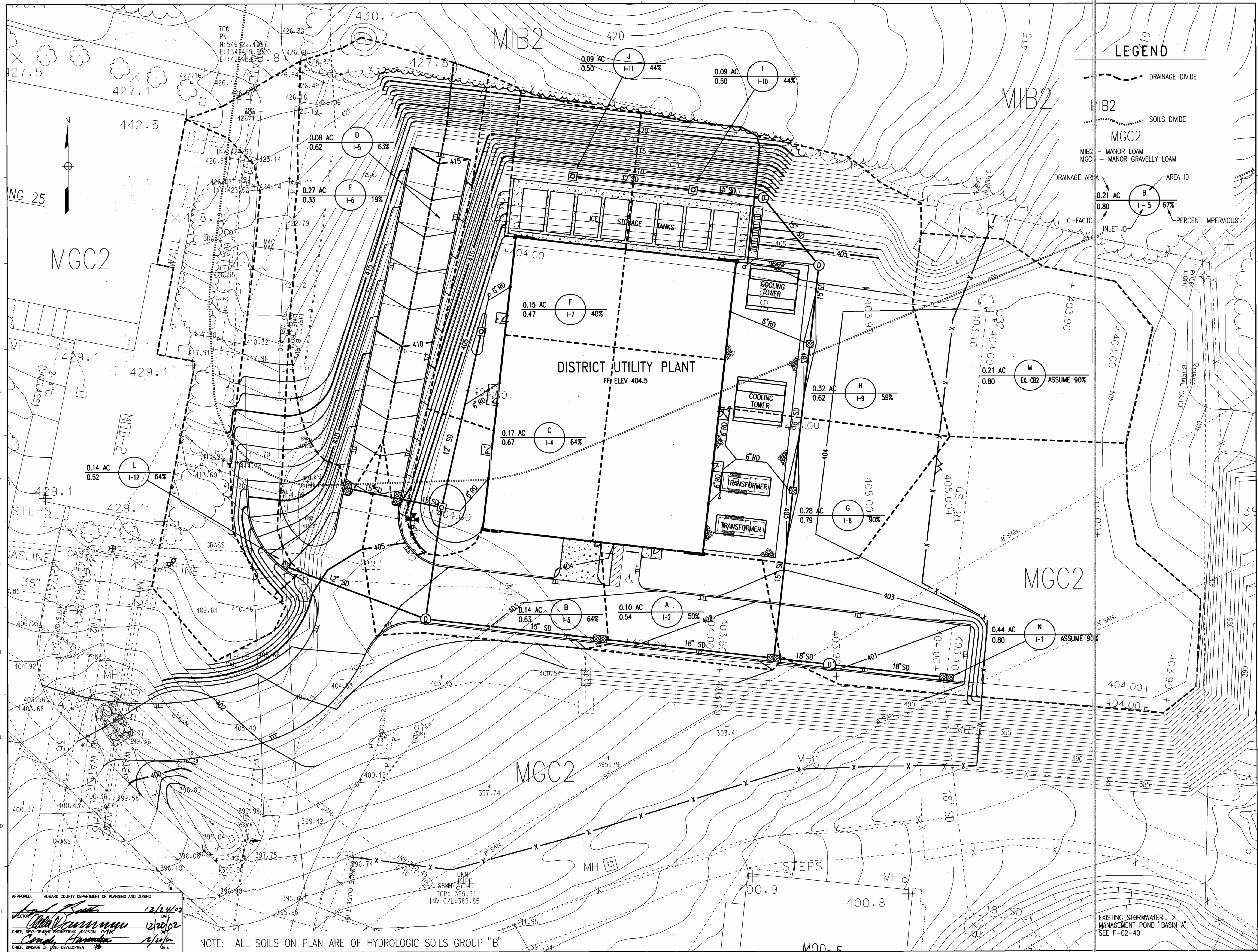
Mincin, Patel, Milano, Inc. Consulting Structural Engineers. 6511 Harford Road, Baltimore, MD 21214.

Whitman, Reardon and Associates, LLP. 601 South Caroline Street, Baltimore, MD 21231.

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

EROSION & SEDIMENT CONTROL NOTES. Includes notes on seeding, maintenance, and groundcover requirements.

Professional Engineer seal for Howard S.C.D. and drawing information: DRAWING NO. C-10, SDP SHEET 11 OF 12, DATE: 12/06/02.



LEGEND

---	DRAINAGE DIVIDE
---	SOILS DIVIDE
MIB2	MANOR LOAM
MGC2	MANOR GRAVELLY LOAM
---	DRAINAGE AREA
---	INLET ID
---	AREA ID
---	PERCENT IMPERVIOUS

REVISIONS


APPROVALS


REQUESTER	
DESK FACILITATOR	
CHIEF ENGINEER	<i>J.E. Leach</i>
CODE COMPLIANCE REVIEW	12/14/02
TSC GROUP	
TSP GROUP	
SAFETY OFFICER	
DIRECTOR'S OFFICE	
COORDINATOR	
SENIOR LEADER	

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



**BUILDING 20:
 DISTRICT
 UTILITY
 PLANT**

Henry Adams, Inc.
 Consulting Engineers

 600 Baltimore Avenue
 Baltimore, MD 21204-4079
 410.236.8500
 Fax: 410.236.3556

Architect

PEOPLE ARCHITECTURE
 C S D

Cochran, Stephenson, & Donkervoet, Inc.
 THE WAREHOUSE @ CAMDEN YARDS
 323 West Camden St. #700, Baltimore, MD 21201

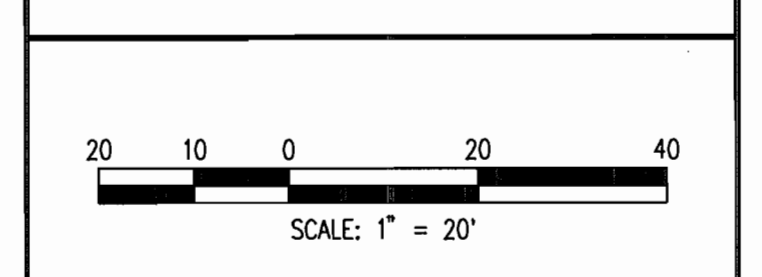
Structural

MPMC
 Mincin, Patel, Milano, Inc.
 6511 Harford Road
 Baltimore, MD 21214


Civil

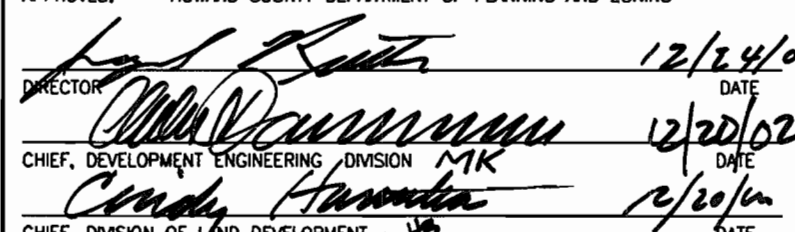
WR&A
 Whitman, Reardon, and Associates, LLP
 601 South Caroline Street
 Baltimore, MD 21231

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



DRAINAGE AREA PLAN

	DRAWING NO.
	C-11
SCALE: 1" = 20'	SDP SHEET 12 OF 12
DES: C.Y.H.	CHECK: AUQ. DATE: 12/06/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 12/24/02
 12/20/02
 12/20/02

NOTE: ALL SOILS ON PLAN ARE OF HYDROLOGIC SOILS GROUP "B"