

# CROSSROADS CHURCH OF THE NAZARENE

## GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARD AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, BUREAU OF UTILITIES AT (410) 313-4900 AT LEAST FIVE WORKING DAYS PRIOR TO STARTING ANY EXCAVATION WORK.
- SITE AREA: 10.35 Ac. ±
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- EXISTING TOPOGRAPHY REFLECTS FIELD SURVEY BY CENTURY ENGINEERING EXCEPT IN VICINITY OF MONOPOLE ANTENNA AREA
- COORDINATES AND BEARING ARE BASED UPON THE MD STATE PLAN SYSTEM (NAD '83).
- EXISTING WATER AND SEWER SHOWN IS PUBLIC.
- STORMWATER MANAGEMENT: QUANTITY AND QUALITY MANAGEMENT IS PROVIDED BY ON-SITE FACILITIES. THE FACILITIES CONSIST OF POCKET AND SURFACE SAND FILTERS FOR WATER QUALITY AND UNDERGROUND STONE STORAGE FOR THE CPV VOLUME.
- ALL EXISTING WATER AND SEWER IS PER CONTRACT #S: 70-W & 10-3787
- NO EXISTING PUBLIC STORM DRAIN ON SITE.
- ALL CURB RADII IS 5' UNLESS NOTED OTHERWISE.
- UTILITY INFORMATION TAKEN FROM APPROVED FINAL CONSTRUCTION PLANS FOR DEVELOPMENT.
- ALL SIDEWALKS SHALL BE 4' WIDE EXCEPT WHERE DIMENSIONED OTHERWISE. PROVIDE 3" RADIUS ROUNDING AT ALL ANGLE BREAKS AND INTERSECTIONS.
- CONTRACTOR SHALL UTILIZE PVC FOR ALL SEWER HOUSE CONNECTIONS. CONTRACTOR SHALL UTILIZE D.I.P. (CL. 51) FOR WATER SERVICE CONNECTION. (FIRE & DOMESTIC)
- USE HOWARD COUNTY TRENCH BEDDING CLASS "C" FOR STORM DRAINS.
- PAVED AREAS INDICATED ARE PRIVATE EXCEPT AS NOTED.
- PROJECT BACKGROUND: SEE DEPT. OF PLANNING & ZONING FILE NUMBERS: SPD 73-89, BA-94-26E & BA01-30C, *SPD 95-87*
- ALL PROPOSED RAMPS SHALL BE IN ACCORDANCE WITH CURRENT A.D.A. STANDARDS. MAXIMUM SIDEWALK CROSS SLOPE SHALL BE TWO PERCENT. PROVIDE A FIVE-FOOT BY FIVE-FOOT LEVEL (2 PERCENT MAX.) LANDING AT THE TOP AND BOTTOM OF ALL RAMPS AND BUILDING ENTRANCES AND EXITS.
- ALL PROPOSED SITE UTILITIES ARE TO TERMINATE 5' FROM THE BUILDING. THE BUILDING PLUMBER SHALL CONNECT TO AND EXTEND THESE UTILITIES TO THE INSIDE OF THE BUILDING.
- FOR GAS, TELEPHONE AND ELECTRIC ROUTING, SEE SEPARATE PLAN.
- ALL EXISTING UTILITIES WITHIN THE PERIMETER OF PROP. BLDG. TO BE RELOCATED PER DRAWING AS REQUIRED.
- ALL POTHoles AND DEPRESSION IN EXISTING PAVED AREAS TO BE REPAIRED. ALL EXISTING PAVED AREAS WHICH ARE TO REMAIN SHALL BE SEALED AND RESTRIPTED.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS AND FOREST CONSERVATION EASEMENT AREAS EXCEPT TO INSTALL THE PROPOSED 24" OUTFALL ENDWALL AND RIP-RAP AT EXISTING 36" OUTFALL. THE DISTURBANCE IS NECESSARY TO CONSTRUCT THE PROPOSED OUTFALL TO PROVIDE A SINGLE DISCHARGE POINT AT THE EXISTING OUTFALL LOCATION AND SHALL BE CONSTRUCTED IN A MANNER SO AS TO DISTURB ONLY THE AREA REQUIRED TO INSTALL THE PROPOSED STORM DRAIN OUTFALL. THE DEPARTMENT OF PLANNING AND ZONING HAS DETERMINED THE INTRUSION INTO THE STREAM BUFFER FOR CONSTRUCTION OF THE RIPRAP OUTFALL ONLY TO BE ESSENTIAL PER SECTION 16.116(C) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- TOPOGRAPHY OBTAINED BY CENTURY ENGINEERING ON 1-31-01
- FOREST CONSERVATION REQUIREMENT TO BE PROVIDED IN AN EASEMENT CONTAINING 2.6 ACRES AS PER THE FOREST CONSERVATION RETENTION OBLIGATION, THE SURETY AMOUNT IS \$22,651.00 (\$0.20 PER S.F.), PLAN SHOWN ON SHEET 14 OF 14.
- THE LANDSCAPE OBLIGATION IS INCLUDED IN THE DEVELOPERS AGREEMENT. THE SURETY IS IN THE AMOUNT OF \$15,210.00
- THIS PROJECT IS EXEMPT FROM APFO BECAUSE THE IMPROVEMENTS DO NOT GENERATE ADDITIONAL TRAFFIC DURING THE DESIGN STUDY HOURS.
- SEE CAPITAL PROJECT NUMBER T-7076 FOR IMPROVEMENTS TO THE INTERSECTION OF ROGERS AVE. AND FREDERICK ROAD
- THE PRESSURE SEWER WAIVER WAS OBTAINED ON JULY 26, 2002 FOR THE EXISTING MANHOLE AT THE INTERSECTION OF ROGERS AVE. AND FREDERICK ROAD.
- THE PROPOSED WATER MAIN EXTENSION WILL BE CONSTRUCTED UNDER AN ADVANCED DEPOSIT ORDER.
- THE EXISTING 36" PIPE WAS PLACED IN 1982 ALONG WITH THE PERMIT TO CONSTRUCT THE EXISTING GARAGE. THIS WAS DONE UNDER HOWARD COUNTY INSPECTION.
- AN ALTERNATIVE COMPLIANCE TO THE 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUMES I & II HAS BEEN APPROVED BY LETTER DATED 10/21/02. AN ADDITIONAL 0.78 ACRES OF EXISTING IMPERVIOUS AREA NOT REQUIRED TO BE TREATED IS TREATED BY THE DESIGN TO OFFSET THE 0.12 ACRES OF PROPOSED IMPERVIOUS WHICH WILL NOT BE MANAGED. LIGHTING FIXTURE DETAILS SHOWN ON SHEET 3 OF 14.

## SITE ANALYSIS

- TOTAL SITE AREA: 10.35 AC. +/- = 450,846 S.F.
- TOTAL NUMBER OF PARCELS: 2
- DEED REFERENCE: 4799/230 & 541/721
- PRESENT ZONING: R-20
- TAX MAP: 17 GRID: 18 PARCELS: ~~18 & 17~~ ELECTION DISTRICT: 2
- PARKING TABULATION:
  - REQUIRED: RELIGIOUS ACTIVITIES STRUCTURE 1 SPACE / 3 SEATS X 325 EX. SEATS = 109 SPACES
  - PROVIDED: 201 SPACES (INCLUDING 7 HANDICAP SPACES)
- SITE AREA TABULATION:
  - PARCEL AREA 10.35 AC. (PARCEL 86-1.00 AC. PARCEL 87-9.35 AC.)
  - BUILDING AREA 1.55 AC. 15% COVERAGE

- OWNER & PETITIONER: CROSSROADS CHURCH OF THE NAZARENE 2750 ROGERS AVE. ELLICOTT CITY, MD. 21043 TEL. 410-465-1103
- EXISTING AND PROPOSED USE IS RELIGIOUS ACTIVITIES STRUCTURES (CLASSROOMS, KITCHEN AND SOCIAL HALL/GYM) THIS ADDITION IS NOT FOR CHILD DAY CARE
- THE STORMWATER MANAGEMENT FACILITY FOR PHASE I IS TO BE GRASS SWALE FOR PRETREATMENT, SAND FILTER FOR WATER QUALITY UNDERGROUND STORAGE FOR CHANNEL PROTECTION AND RECHARGE VOLUME. STORMWATER MANAGEMENT FOR THE IMPROVEMENTS SHOWN ON THIS PLAN ARE BASED ON MEASURED IMPERVIOUS AREAS USING REDEVELOPMENT CRITERIA. ANY ADDITIONAL CONSTRUCTION ON THIS SITE SHALL REQUIRE FURTHER EVALUATION OF THE STORMWATER MANAGEMENT PROVISIONS. SURFACE SAND FILTER AND CPV ENLARGEMENT (REVISION I).
- TOTAL DISTURBED AREA = 122,345 S.F. = 2.81 AC ±
- PROPOSED BUILDING ADDITION: UPPER LEVEL=4,277 SF LOWER LEVEL=4,421 SF
- ZONING PETITION BA01-30C, FOR A CONDITIONAL USE FOR A NONCONFORMING EXISTING RELIGIOUS FACILITY AND FOR AN ENLARGEMENT TO THAT FACILITY IN AN R-20 (RESIDENTIAL: SINGLE) ZONING DISTRICT WAS GRANTED ON 11-29-01 SUBJECT TO THE FOLLOWING CONDITIONS.
  - THE CONDITIONAL USE SHALL APPLY ONLY TO THE EXISTING AND PROPOSED RELIGIOUS FACILITY AS DESCRIBED IN THE PETITION, AND AS DEPICTED ON THE CONDITIONAL USE PLAN FOR BALTIMORE FIRST CHURCH OF THE NAZARENE SUBMITTED ON MAY 15, 2001, AND NOT TO ANY OTHER ACTIVITIES, USES OR STRUCTURES ON THE PROPERTY.
  - THE PETITIONER SHALL INSTALL A TYPE D (SCREEN) LANDSCAPE EDGE ALONG THE WEST SIDE OF THE NEW PARKING LOT ON PARCEL 86 TO SCREEN THE PARKING LOT FROM THE ADJUTING PROPERTY TO THE WEST.
  - THE PHASING PLAN FOR THE CONSTRUCTION OF THE IMPROVEMENTS IS APPROVED AS FOLLOWS: (a) PHASE I, THE CONSTRUCTION OF THE FAMILY LIFE CENTER, SHALL COMMENCE WITHIN THREE YEARS OF THE DATE HEREOF; (b) PHASE II, THE SANCTUARY EXPANSION, WITHIN FIVE YEARS OF THE DATE HEREOF; (c) PHASE III, THE CONSTRUCTION OF A SEPARATE BUILDING TO BE USED FOR THE CHURCH OFFICES, SHALL COMMENCE WITHIN SEVEN YEARS OF THE DATE HEREOF.
  - THE PETITIONER SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND COUNTY LAWS AND REGULATIONS.
- PREVIOUSLY APPROVED SITE DEVELOPMENT PLANS - SDP 73-89, SDP 95-87 & BA-94-26E MONOPOLE PLAN. CONDITIONAL USE SHALL APPLY ONLY TO EXISTING AND PROPOSED RELIGIOUS FACILITY AS DEPICTED ON CONDITIONAL USE PLAN DATED 5-15-01. THERE ARE THREE PHASES FOR THE PROPOSED IMPROVEMENTS AS FOLLOWS:
  - PHASE I - LIFE CENTER (WITHIN THREE YEARS OF 11-29-01)
  - PHASE II - SANCTUARY EXPANSION (WITHIN FIVE YEARS OF 11-29-01)
  - PHASE III - CHURCH OFFICE BUILDING (WITHIN SEVEN YEARS OF 11-29-01) REVISION I MEETS THE PHASE III REQUIREMENT TYPE-D (SCREEN) LANDSCAPE EDGE ALONG WEST SIDE PARCEL 86.
- BUILDING HEIGHT IS 29'-3" < 34' MAX. ALLOWED PER ZONING, SECTION 131.N.38(b). HEIGHT CALCULATED AS PER ZONING DEFINITION SECTION 103.A(18)
- SEE RECORDED PLAT SHOWING THE MERGER OF PARCELS 86 & 87 AND THE FOREST CONSERVATION EASEMENT, *F-02-158, F-1055*
- THERE ARE NO WETLANDS/WETLANDS BUFFERS WITHIN THE LIMIT OF DISTURBANCE SHOWN FOR DEVELOPMENT ON THIS SITE PLAN.

## SITE ANALYSIS CONTD:

- THE LIMIT OF DISTURBANCE (LOD) FOR REVISION #2 IS 1000 SF. AT SUCH TIME AS THE ACCUMULATED LOD FOR THIS REVISION AND FUTURE REVISIONS EXCEEDS 5,000 SF, STORMWATER MANAGEMENT WILL BE REQUIRED.
- REFERENCE BA 15-005 APPROVED JUNE 15, 2015 HEARING EXAMINER GRANTED THE PETITION OF CROSSROADS CHURCH OF THE NAZARENE TO ENLARGE AN EXISTING RELIGIOUS FACILITY WITH TWO BUILDING ADDITIONS IN AN R-20 (RESIDENTIAL: SINGLE) ZONING.



## VICINITY MAP

SCALE: 1"=600'

## BENCH MARK

NO. 17FA-CONC. MON. @ SURFACE 24.7' N. OF OLD FREDERICK RD RT. 99 (ROGERS AVE) W. OF OLD FREDERICK RD. ELEV.= 477.482'

NO. 17F7-CONC. MON. @ SURF. 20' N. OF OLD RD. 66' E. OF CHAPEL AVENUE. ELEV.= 470.162'

FOR REVISION #3 ONLY



ROBERT H. VOGEL  
PE. NO 16193

## SHEET INDEX

SHEET NUMBER	DRAWING TITLE
1	COVER SHEET
2	SITE GRADING PLAN
3	SITE UTILITY PLAN
4	SITE DETAILS
5	PIPE PROFILES
6	SEDIMENT & EROSION CONTROL PLAN
7	SEDIMENT & EROSION CONTROL NOTES & DETAILS
8	SEDIMENT & EROSION CONTROL NOTES
9	SWM DETAILS & D.A. MAPS
10	SWM DETAILS & SPECIFICATIONS
11	PARKING LOT ADDITION PLAN AND DETAILS
12	DRAINAGE AREA MAP
13	LANDSCAPE PLAN
14	FOREST CONSERVATION PLAN

Date	No	Revision Description
2/23/04	12/17/03	REVISED DWGS. PER DED COMMENTS
10/7/03	10/7/03	REVISED PLANS FOR PARKING LOT AND BORROW AREAS, ADDED SHEET 11 AND RENUMBERED SHEETS 11 THROUGH 13.

APPROVED:	DATE
DEPARTMENT OF PLANNING AND ZONING	
DEVELOPMENT ENGINEERING DIVISION	7/16/02
DIVISION OF LAND DEVELOPMENT	7/21/03
DIRECTOR	

APPROVED:	DATE
FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS	
HOWARD COUNTY HEALTH DEPARTMENT	6-12-03
COUNTY HEALTH OFFICER	

PHASE I - FAMILY LIFE CENTER  
CROSSROADS CHURCH OF THE NAZARENE  
BUILDING ADDITION  
2750 ROGERS AVE.  
ELECTION DISTRICT NO. 2 HOWARD CO. MARYLAND

CENTURY ENGINEERING, INC.  
CONSULTING ENGINEERS, PLANNERS, SURVEYORS  
32 WEST ROAD  
TOWSON, MARYLAND 21284  
(410) 304-823-8070

## COVER SHEET

NO.	REVISION	DATE
3	REMOVE EXISTING 6' COVERED WALKWAY AND REPLACE WITH AN ENCLOSED LOBBY	4/24/17

PARCEL NO.	STREET ADDRESS
A	2750 ROGERS AVE.

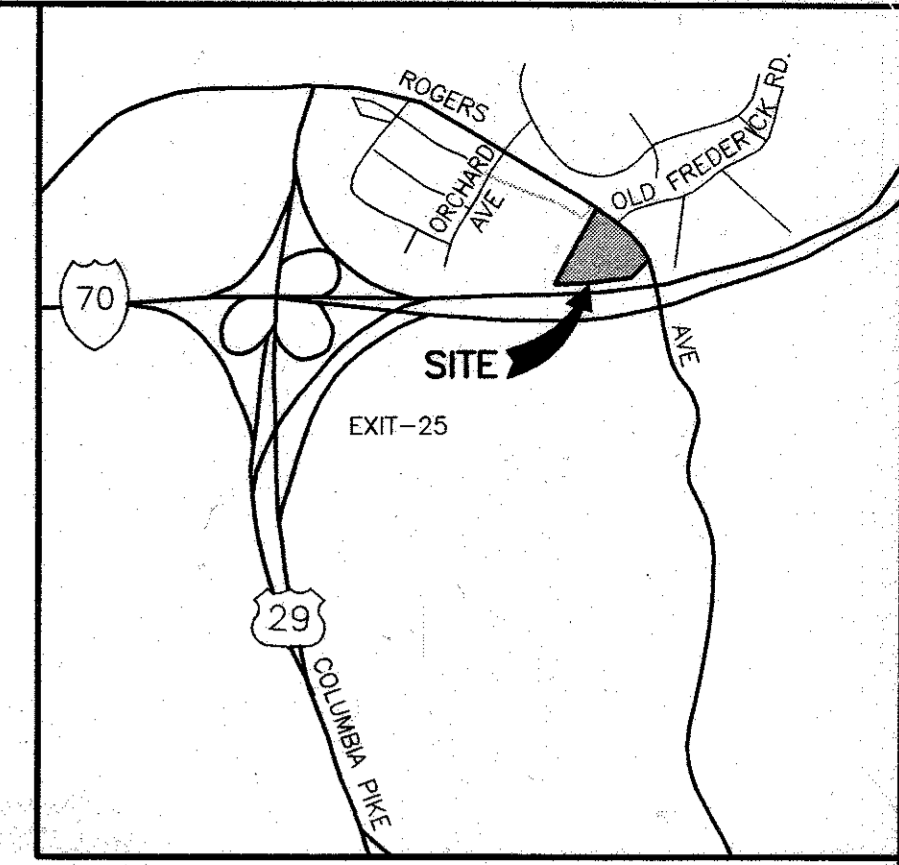
PLAT NO.	BLK/ZONE	ZONE	TAX/ZONE	ELECT. DIST.	GENSUS TR.
14055	18	R-20	17	2	102100

WATER CODE	SEWER CODE
H03	1454550

Des By	D.W.	Scale	AS SHOWN	Proj No	21010.00
Dwn By	M.L.A.	Date	NOVEMBER, 2002	DRAWING NO	1 OF 14
CHK By		Approved			

4-25-03

PERCON INC.  
494/6  
ZONE R-ED



VICINITY MAP  
SCALE: 1"=200'

NOTE:  
SIZE OF FIRE LINE TO BE DETERMINED BY  
SPRINKLER CONTRACTOR IN ACCORDANCE  
WITH SPRINKLER SPECIFICATIONS.

PERCON INC.  
494/6  
ZONE R-20

LEGEND

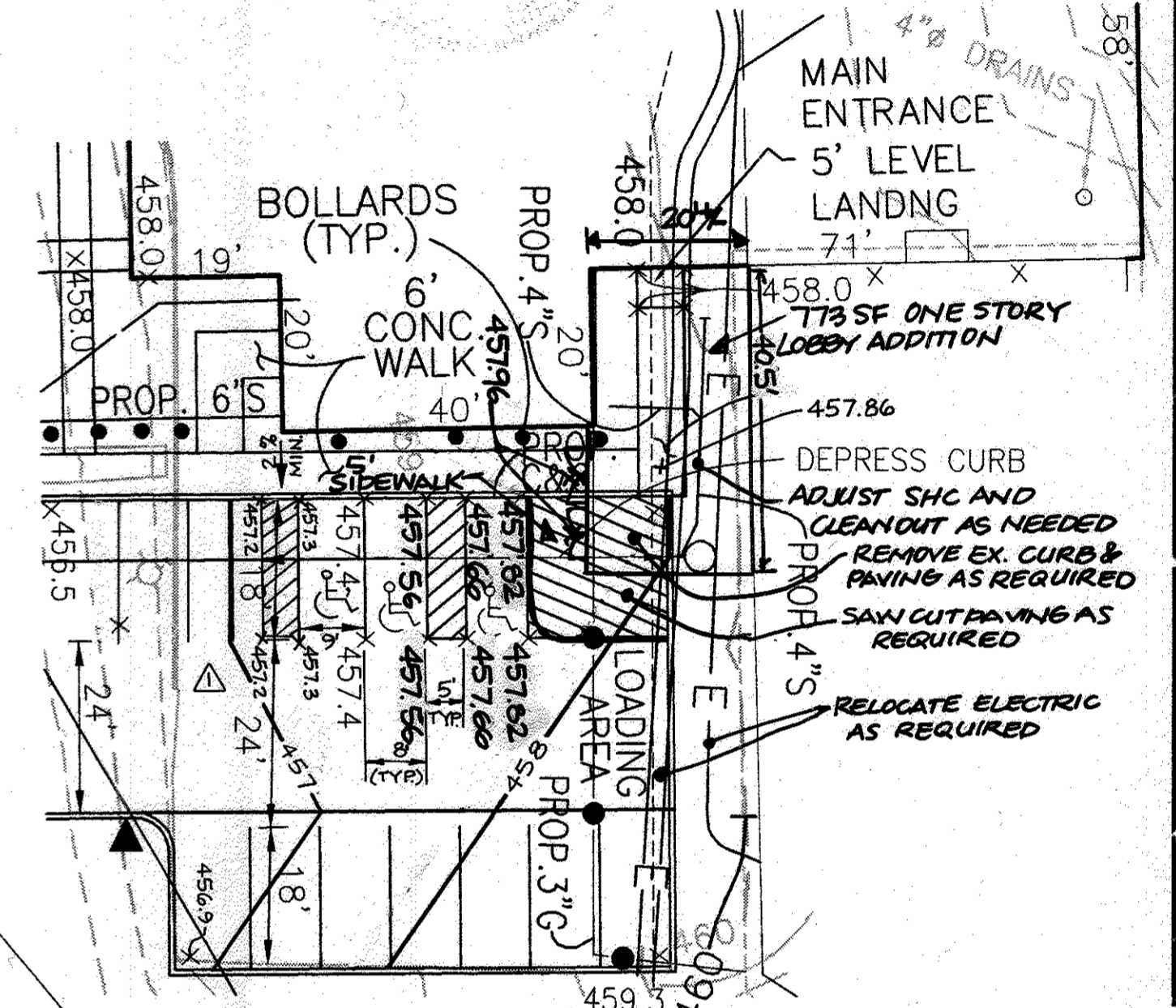
- EX. GROUND
- PROP. GRADE
- GUARD RAIL
- TREE
- WOODS
- LIGHT
- WATER VALVE
- WATER METER
- GAS VALVE
- SANITARY SEWER MANHOLE
- ELECTRIC POLE
- GUY WIRE
- CLEAN OUT
- PROPOSED LIGHTS
- PROPOSED BOLLARDS
- PAINTED AREAS
- EX. ELEC.
- EX. GAS
- #2 STONE CPV FACILITY
- EX. PARKING
- PROPOSED PARKING
- SIL BORING LOCATION
- WETLANDS
- FOREST CONSERVATION EASEMENT

△ SURFACE SAND FILTER FOR  
PARKING LOT ADDITION (SEE  
SHEET 11 FOR ADDITION PLAN  
ENLARGEMENT AND DETAILS)

△ PROP. ADDITIONAL  
NO. 2 STONE  
IN CPV FACILITY

HOWARD COUNTY  
BOARD OF EDUCATION  
484/495  
ZONE R-20

NEW 12'-0" x 17'-4" MASONRY  
ENCLOSURE FOR NEW HVAC  
UNIT. WALL IS 6'-8" TALL w/  
A 4'-0" WIDE GORE



PARKING DETAIL  
SCALE: 1"=20'

Date	No.	Revision Description
2/23/04	1	DELETED 3 PARKING SPACES AT ENTRANCE AND ADDED BUILDING ENTRANCE ACCESS; INCREASED WATER LINE SIZED TEST PIT
12/23/03	2	ADDED H.C. PARKING SPACE
10/7/03	3	ADDED PARKING LOT AND SAND FILTER; ENLARGED CPV FACILITY; ADDED BORROW AND STOCKPILE AREAS; REVISED DRAWING NO.

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF - DEVELOPMENT ENGINEERING DIVISION: *Shabaz* DATE: *7/16/03*  
 CHIEF - DIVISION OF LAND DEVELOPMENT: *Janice M. Vagler* DATE: *7/20/03*  
 DIRECTOR: *Janice M. Vagler* DATE: *7/20/03*

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT.  
*Dany Brantley, M.D.* DATE: *6-11-03*  
 COUNTY HEALTH OFFICER

CROSSROADS CHURCH  
OF THE NAZERENE

2750 ROGERS AVE.  
ELECTION DISTRICT NO. 2 HOWARD CO. MARYLAND

CENTURY ENGINEERING, INC.  
CONSULTING ENGINEERS, PLANNERS, SURVEYORS  
32 WEST ROAD  
TOWSON, MARYLAND 21284  
(410) 282-8233

SITE GRADING PLAN

Des By	D.W.	Scale	1"=40'	Proj No	21010.00
Des By	M.L.A.	Date	NOVEMBER, 2002	DRAWING NO	2 OF 14
Chk By		Approved			

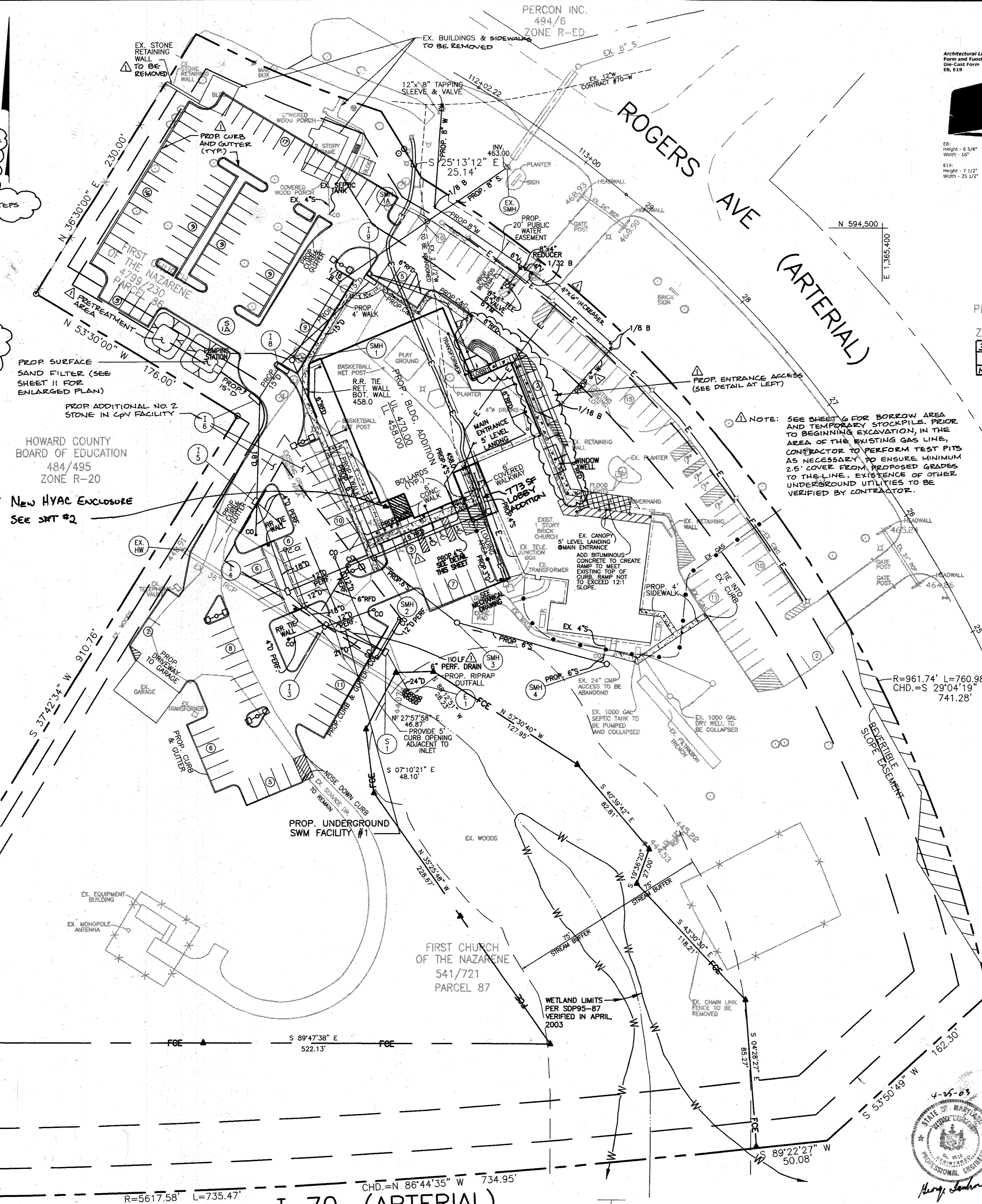
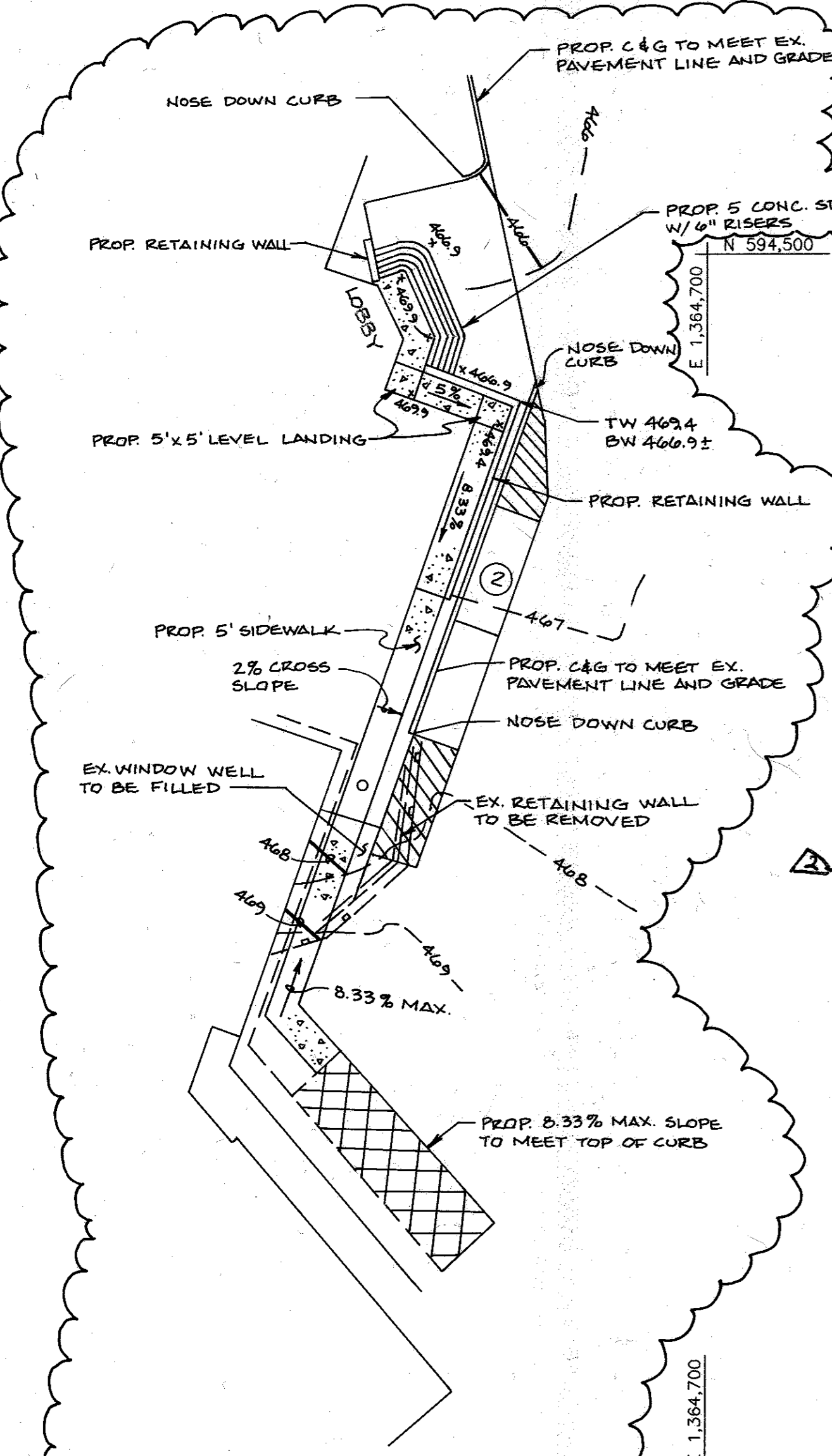
FOR REVISION #3 ONLY

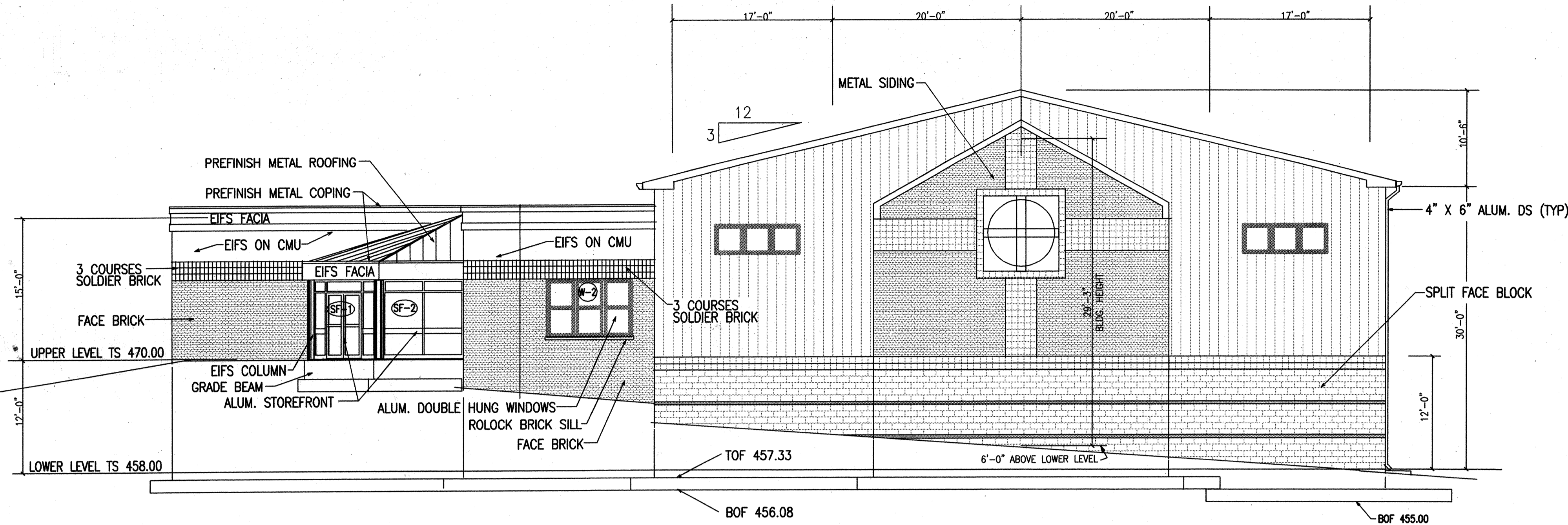
STATE OF MARYLAND  
ROBERT H. VOGEL  
PROFESSIONAL ENGINEER  
RE. NO 16193

STATE OF MARYLAND  
ARCHITECT  
4-25-03

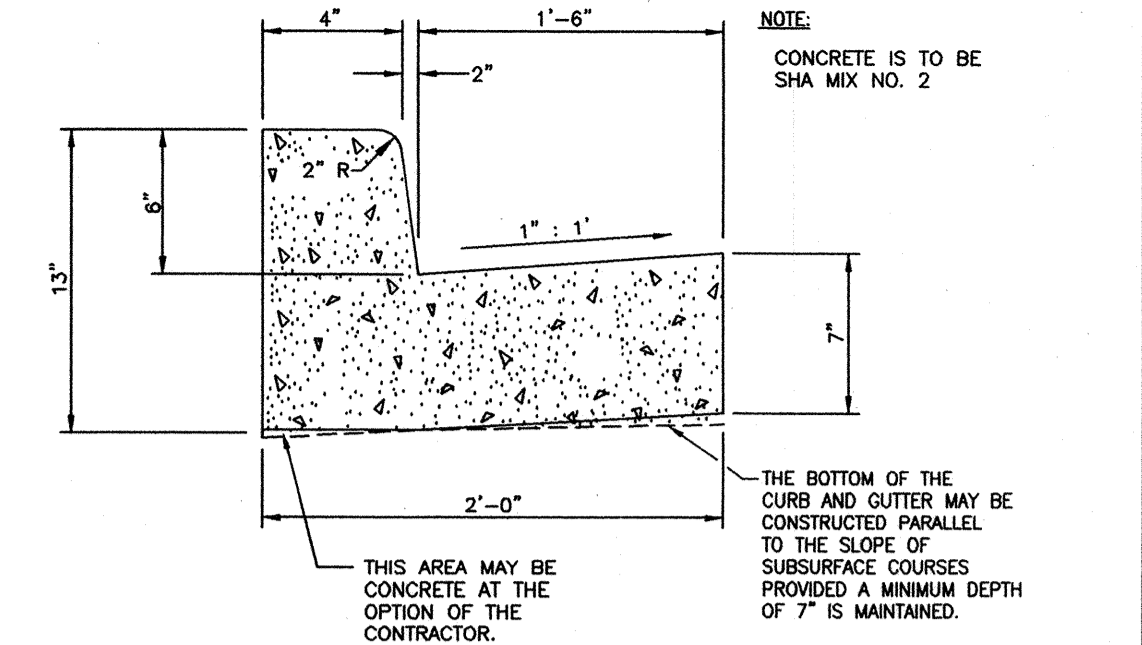
3	REMOVE EXISTING 6' COVERED WALKWAY AND REPLACE WITH AN ENCLOSED LOBBY	4/24/17
NO	REVISION	DATE

SIP.03.121

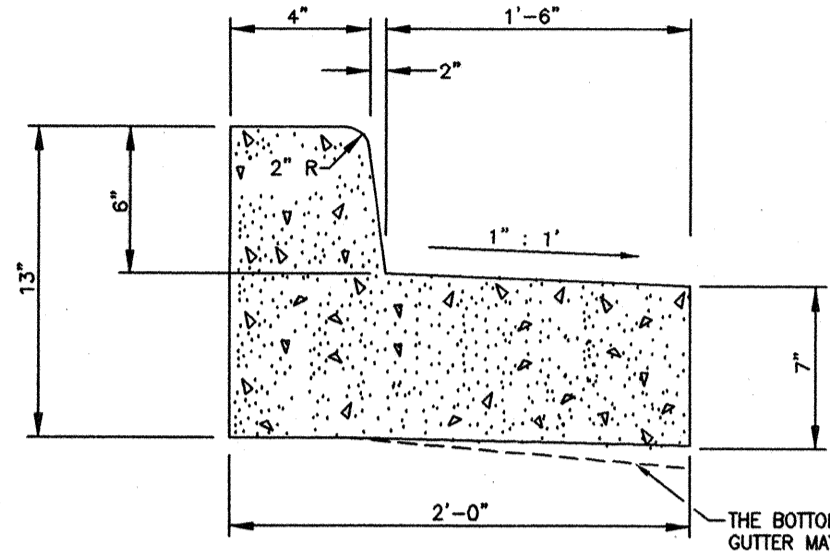




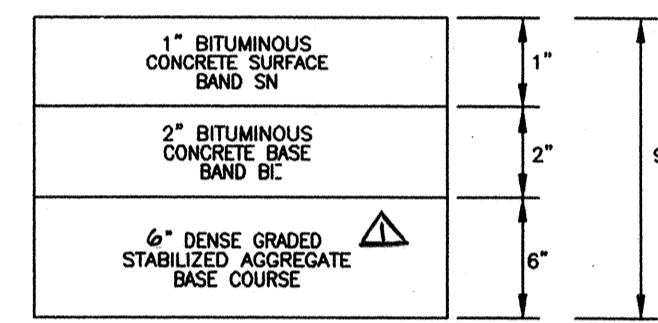
**NORTH ELEVATION**  
SCALE: 1/8"=1'-0"



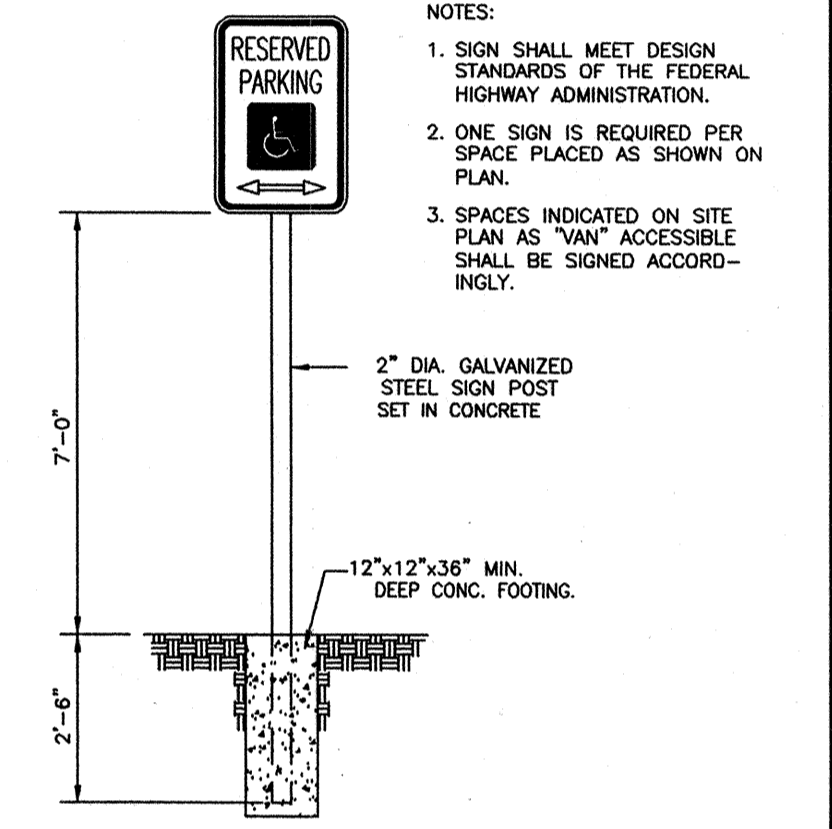
**COMBINATION 6" CURB AND GUTTER**



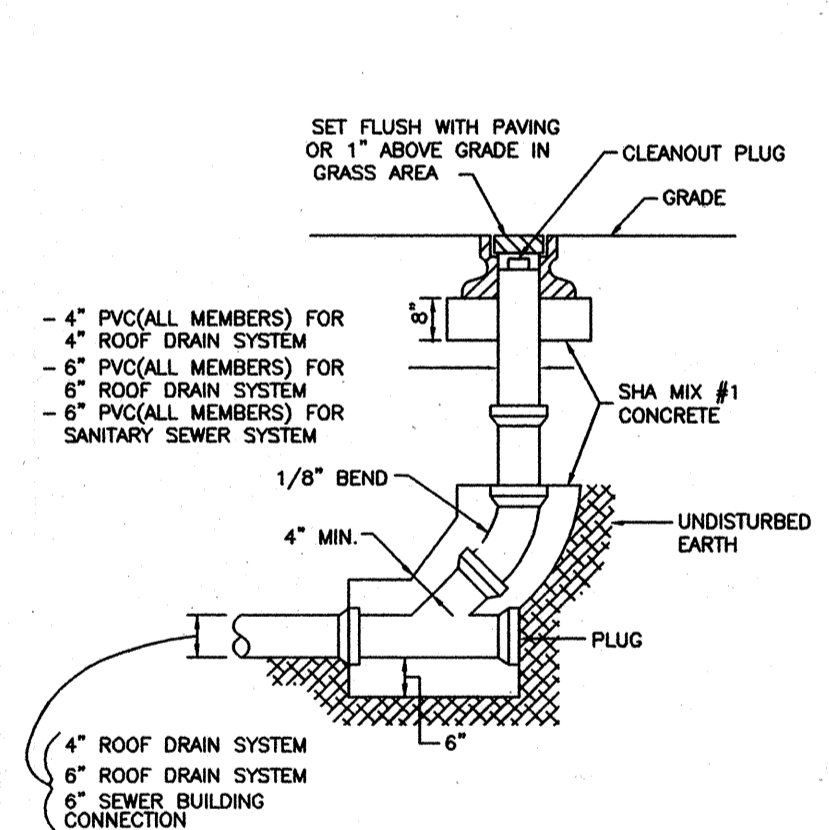
**REVERSE 6" CURB AND GUTTER**



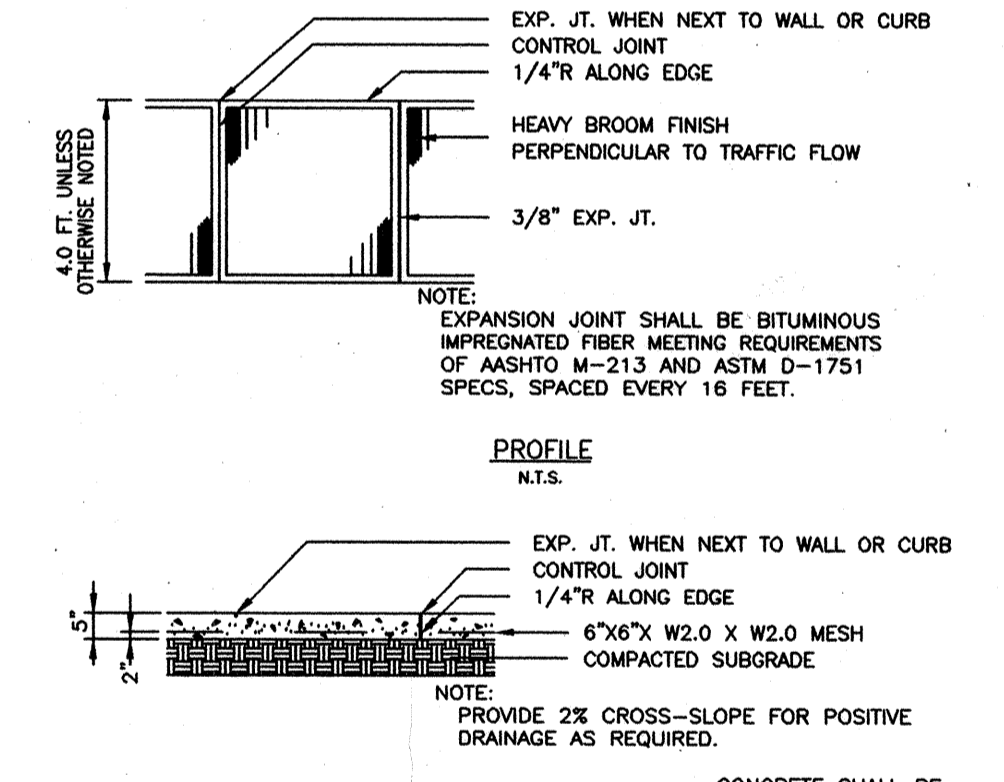
**TYPICAL PAVING SECTION**



**HANDICAP PARKING SIGN DETAIL**



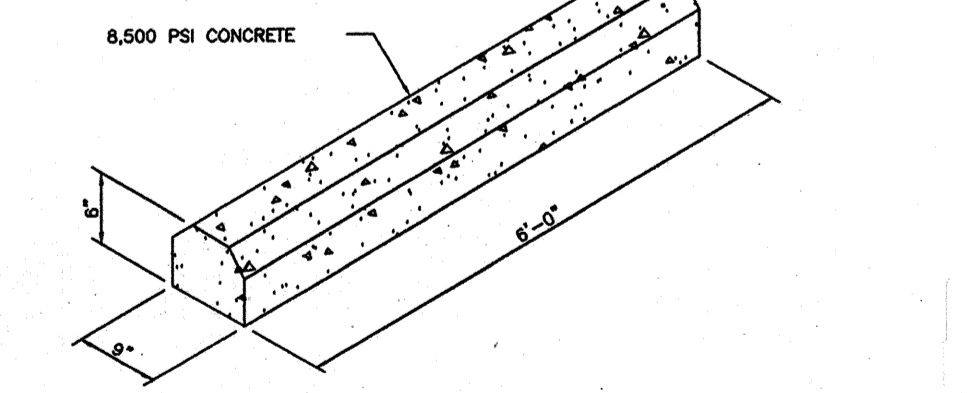
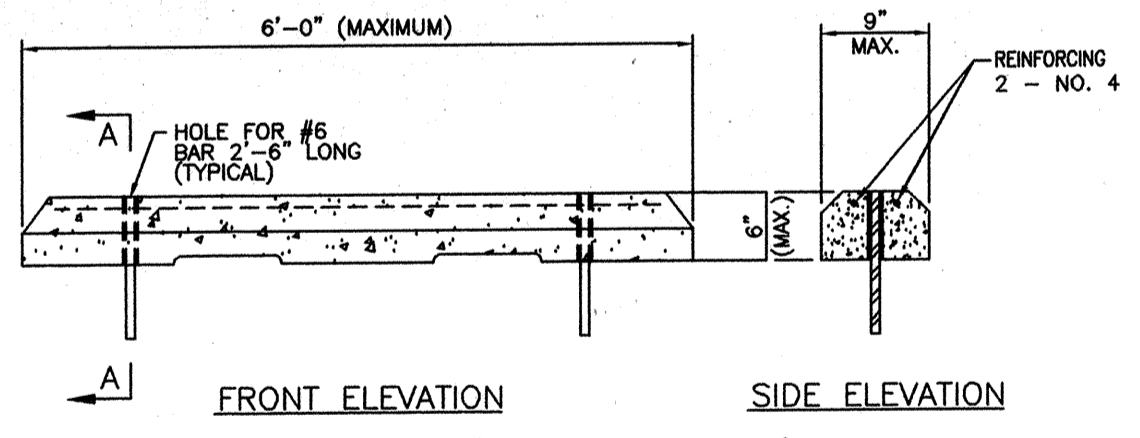
**EXTERIOR CLEANOUT**



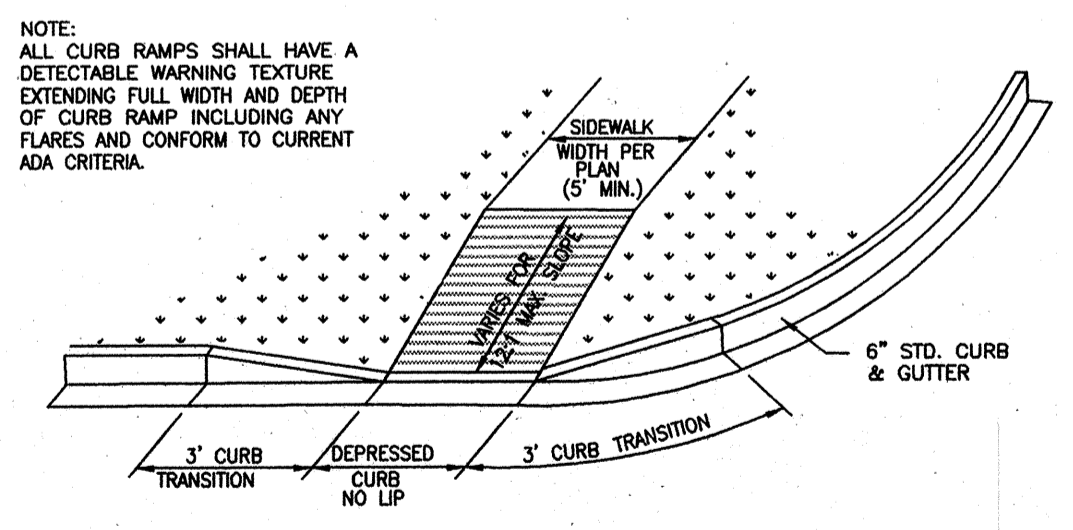
**CONCRETE WALK**



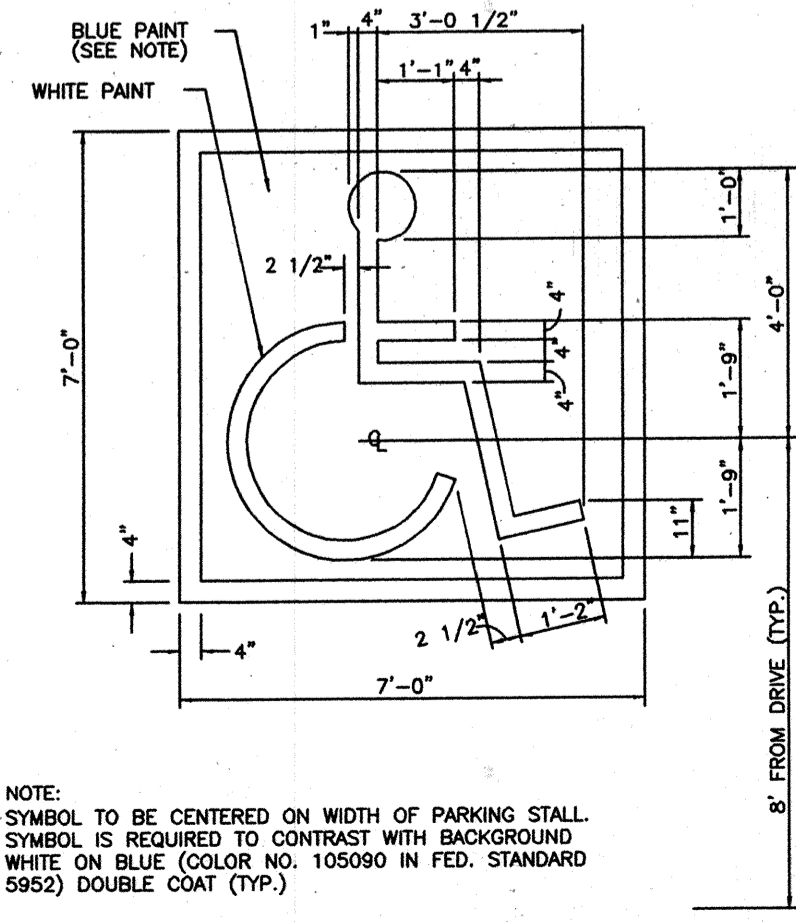
**PARKING RESTRICTION SIGN FOR HANDICAPPED PARKING**



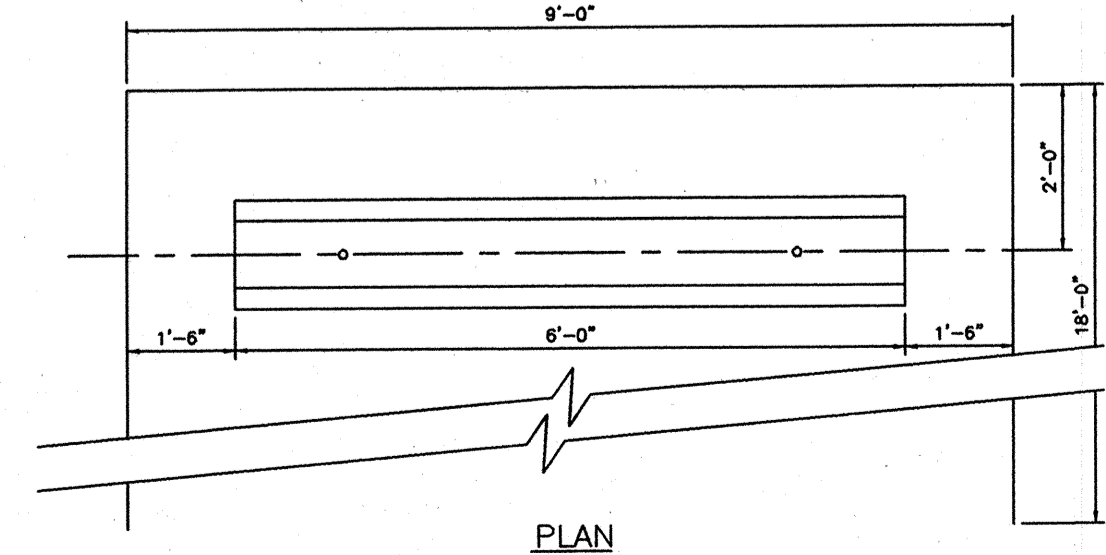
**CURB RAMP TYPE \"D\"**



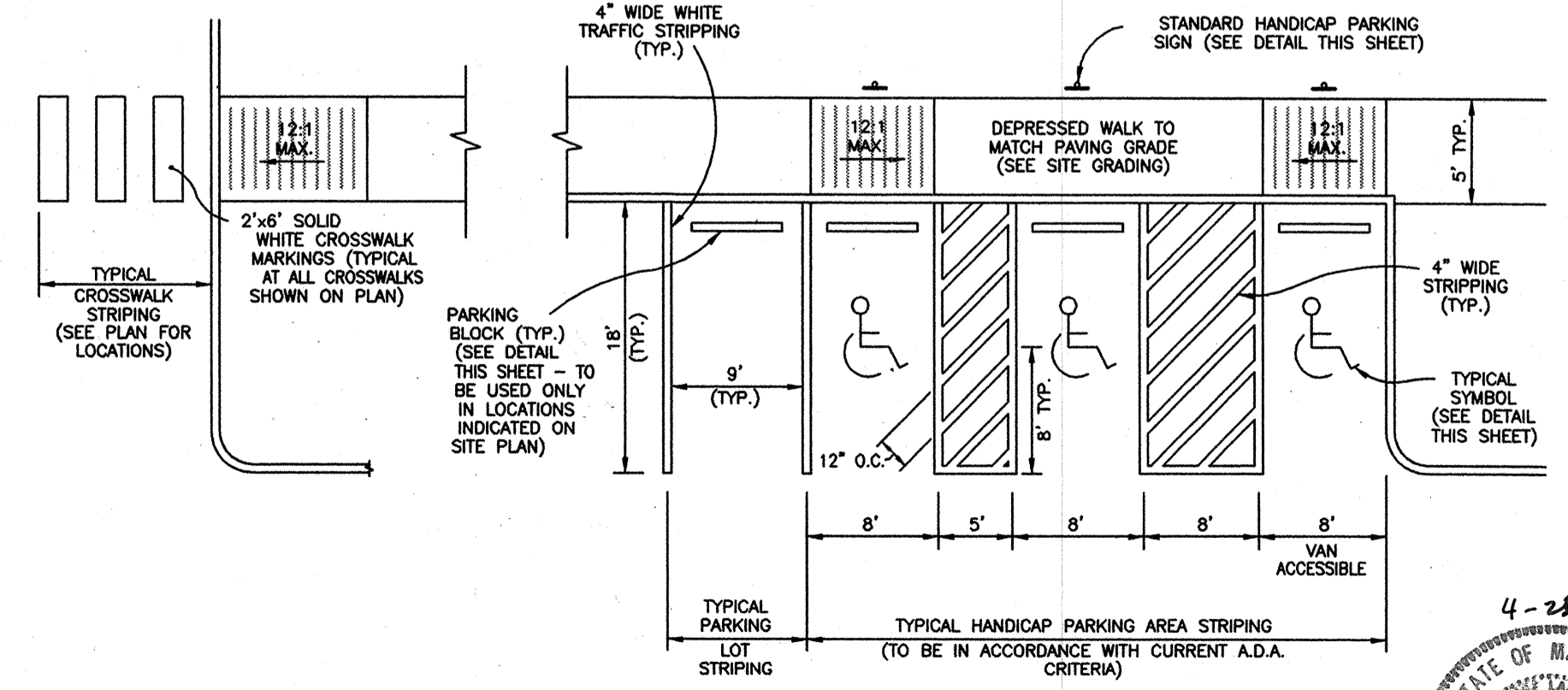
**NOTE REGARDING CURB CUT RAMP**  
A FIVE FOOT (5') LEVEL LANDING IS REQUIRED AT THE TOP OF ALL CURB CUT RAMP



**PAINTED HANDICAP PARKING SYMBOL**



**PRECAST CONCRETE WHEEL STOP**



**TYPICAL STRIPING DETAILS FOR PARKING, HANDICAP SPACES AND CROSSWALKS**

Date	No.	Revision Description
10/7/03	1	REVISED DRAWING NO. ; REVISED
		TYPICAL PAVING SECTION
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
DEVELOPMENT ENGINEERING DIVISION		
<i>[Signature]</i>		DATE
<i>[Signature]</i>		7/16/02
CHIEF-DIVISION OF LAND DEVELOPMENT		
<i>[Signature]</i>		DATE
<i>[Signature]</i>		7/21/03
DIRECTOR		
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS		
HOWARD COUNTY HEALTH DEPARTMENT.		
<i>[Signature]</i>		DATE
<i>[Signature]</i>		6/20/03
COUNTY HEALTH OFFICER		
Date	No.	Revision Description

**CROSSROADS CHURCH OF THE NAZARENE**

2750 ROGERS AVE.  
ELECTION DISTRICT NO. 2 HOWARD CO. MARYLAND

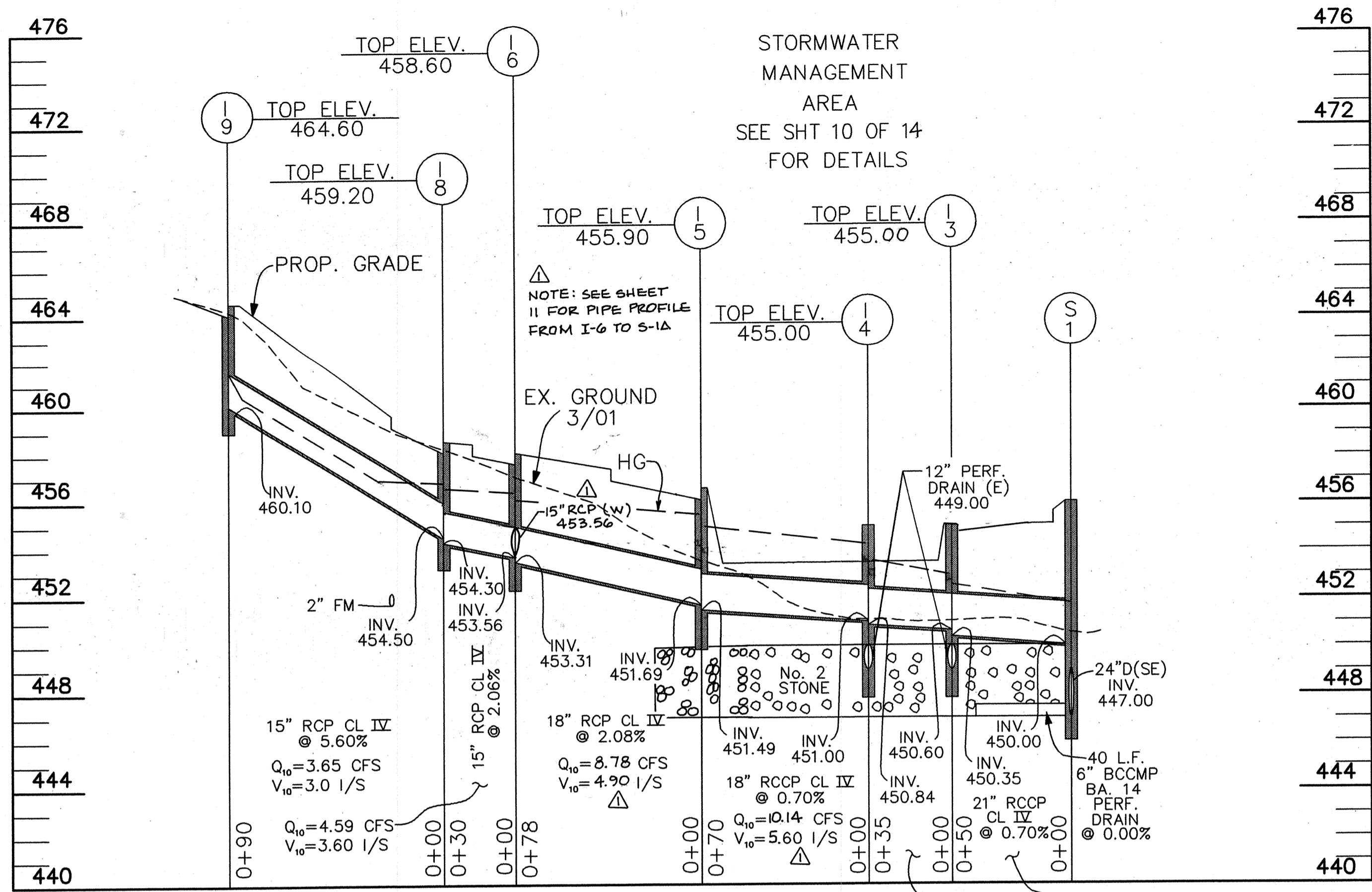
**CENTURY ENGINEERING, INC.**  
CONSULTING ENGINEERS, PLANNERS, SURVEYORS  
32 WEST ROAD  
TOWSON, MARYLAND 21204  
(410) 282-8070

**SITE DETAILS**

Des By	D.W.	Scale	1"=40'	Proj No	21010.00
Dwn By	M.L.A.	Date	NOVEMBER, 2002	DRAWING NO	4 OF 14
Chk By		Approved			



JDP 02.121



**STORM DRAIN PROFILE**

SCALE: HORIZ. 1"=40'  
VERT. 1"=4'

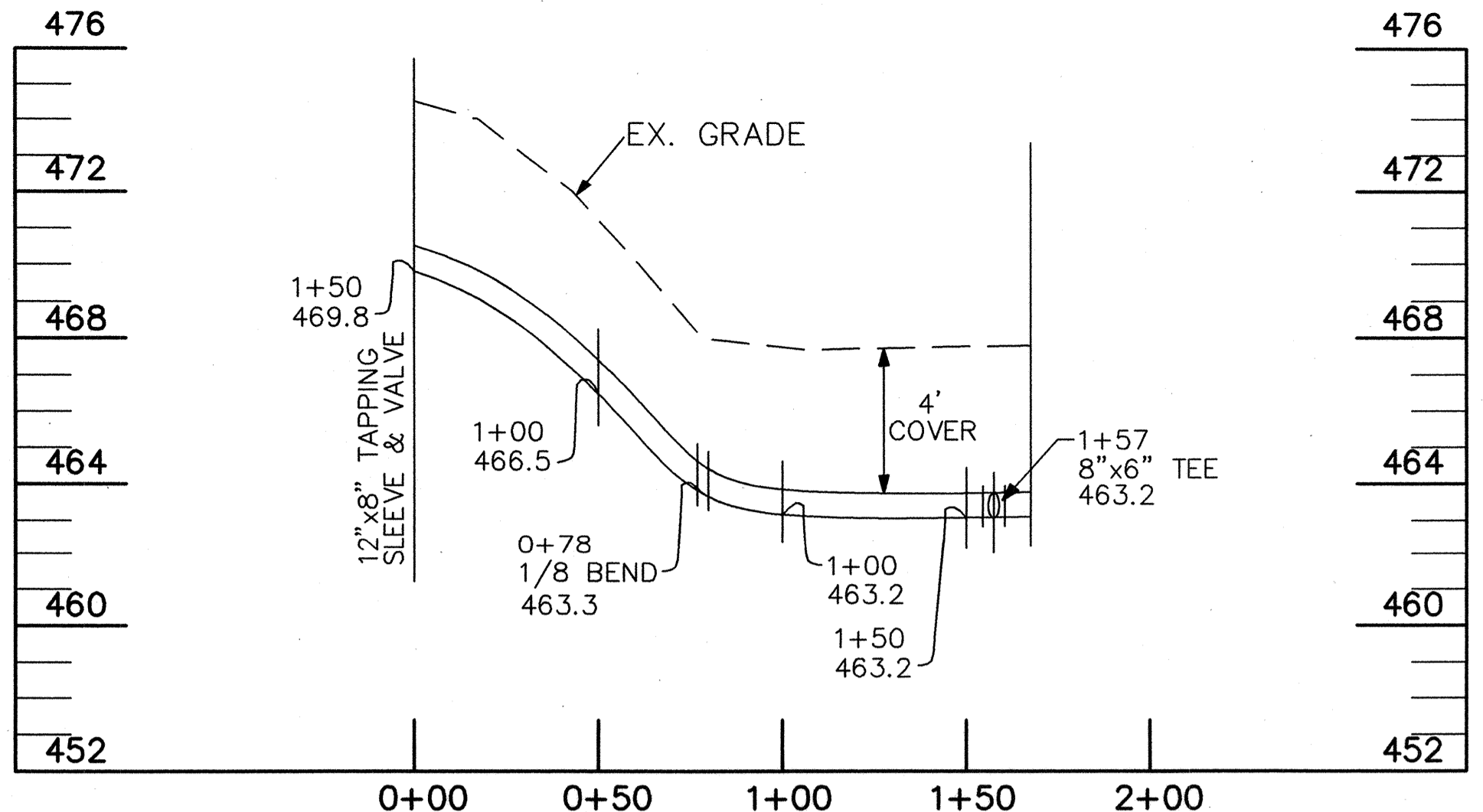
**STRUCTURE SCHEDULE**

INLET NO.	TYPE	DETAILED No.	TOP ELEV.*	INV. OUT
3	MOD DBL "S"	SD 4.23	455.00	450.35
4	MOD DBL "S"	SD 4.23	455.00	450.84
5	DBL "S" COMB	SD 4.34	455.90	451.49
6	A-5	SD 4.40	458.60	453.31
8	A-10	SD 4.41	459.20	454.30
9	A-10	SD 4.41	464.60	460.10
END NO.	TYPE	DETAILED No.	TOP ELEV.	INV. OUT
ES-1	24" CONC. END SECTION	SD 5.51	---	446.32
S-1	SEE DETAIL SHEET 10 OF 14		456.00	447.00

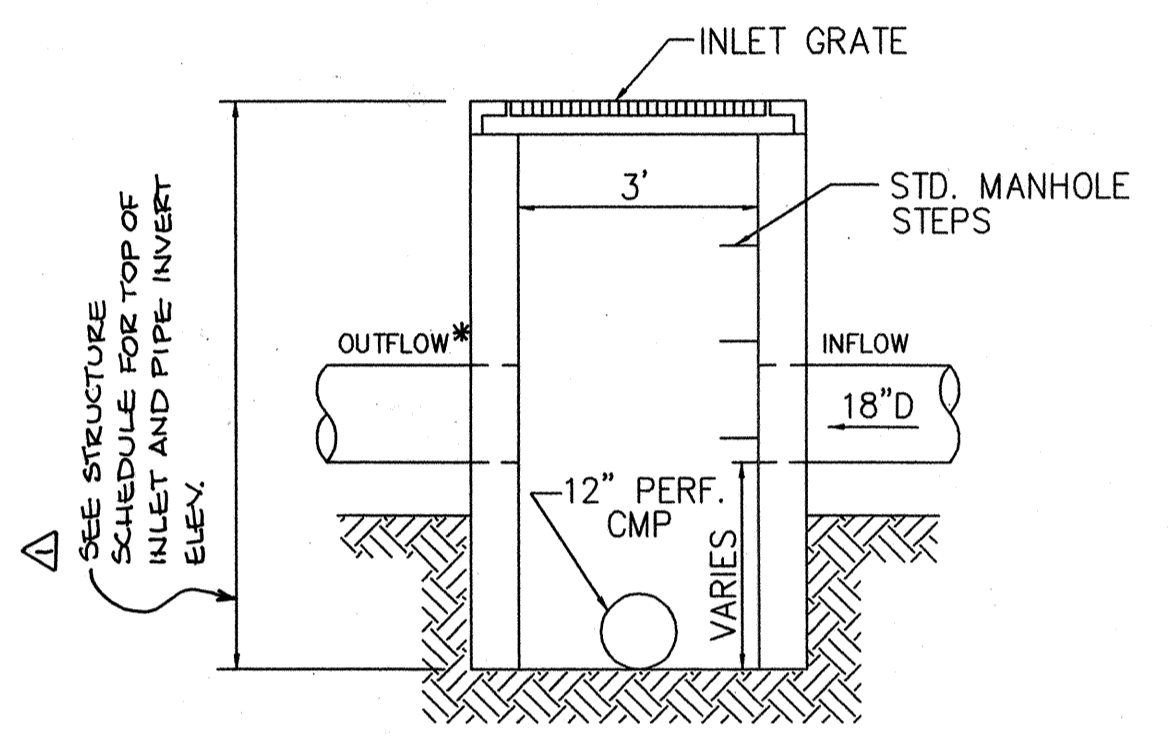
\*TOP ELEVATIONS ARE TOP OF GRATE FOR I-3, I-4 AND I-5. SEE SHEET 11 FOR S-1A DETAILS.

**PIPE SCHEDULE**

TYPE & SIZE	CLASS	QUANTITY	REMARKS
15" RCCP	IV	158 LF	
18" RCCP	IV	183 LF	
21" RCCP	IV	50 LF	



**PROP. 8" WATER PROFILE**



**INLET DETAIL I-3 & I-4**

NO SCALE  
FOR DETAILS NOT SHOWN SEE HO. CO. STD. DETAIL SD-4.23

Date	No	Revision Description
12/17/03	1	CROSSED OUT SANITARY PROFILE REVISED I-3 & I-4 INLET DETAIL
10/7/03	2	REVISED STORM DRAIN PROFILES, STRUCTURE AND PIPE SCHEDULES; REVISED DWG. NO.

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF DEVELOPMENT ENGINEER DIVISION  
 [Signature] 7/16/13 DATE  
 CHIEF-DIVISION OF LAND DEVELOPMENT [Signature] 7/31/13 DATE  
 DIRECTOR

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT.  
 [Signature] 6-12-03 DATE  
 COUNTY HEALTH OFFICER

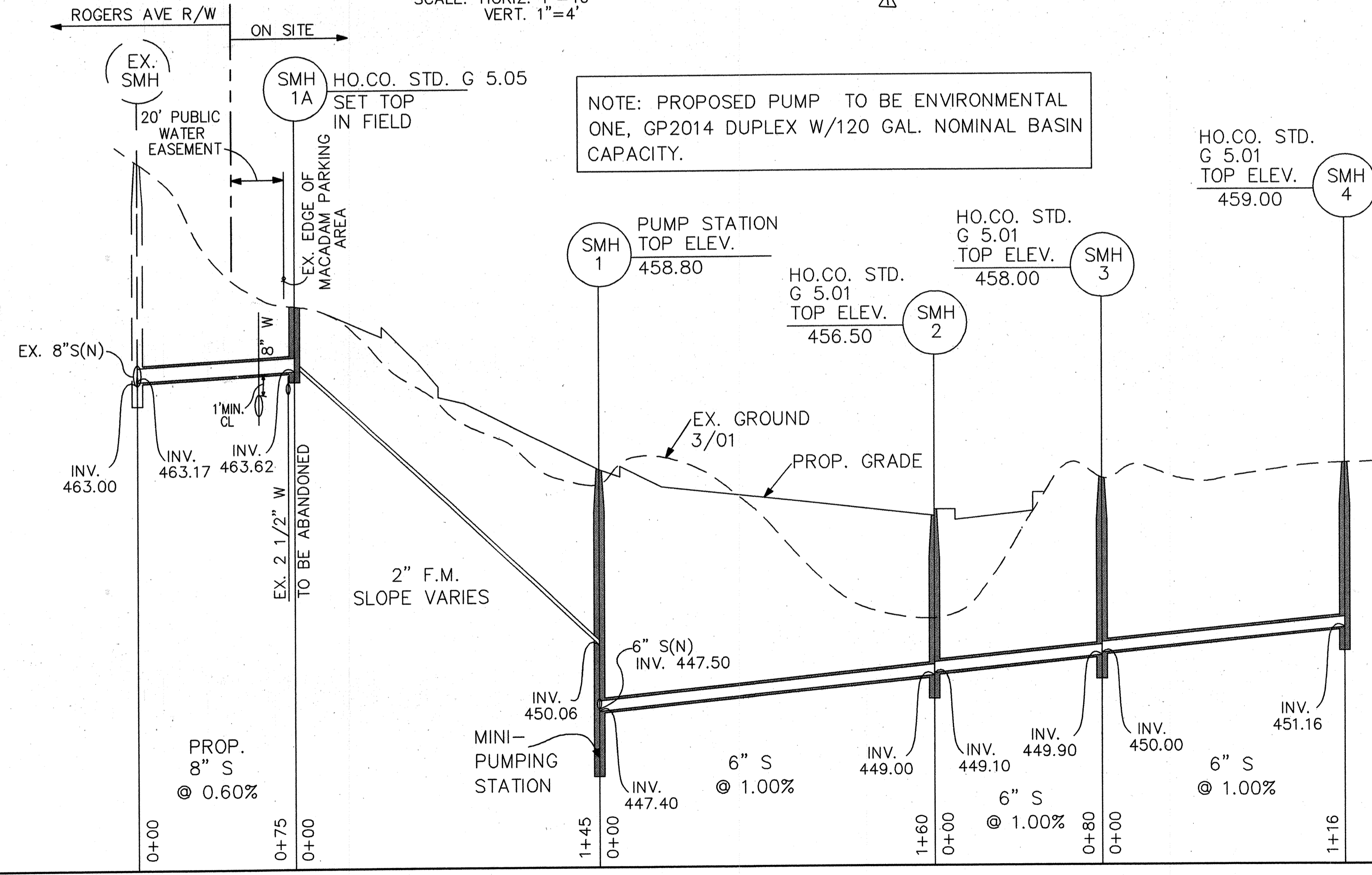
**CROSSROADS CHURCH OF THE NAZARENE**

2750 ROGERS AVE.  
ELECTION DISTRICT NO. 2 HOWARD CO. MARYLAND

**CENTURY ENGINEERING, INC.**  
CONSULTING ENGINEERS, PLANNERS, SURVEYORS  
32 WEST ROAD  
TOWSON, MARYLAND 21204  
(410) 326-823-8070

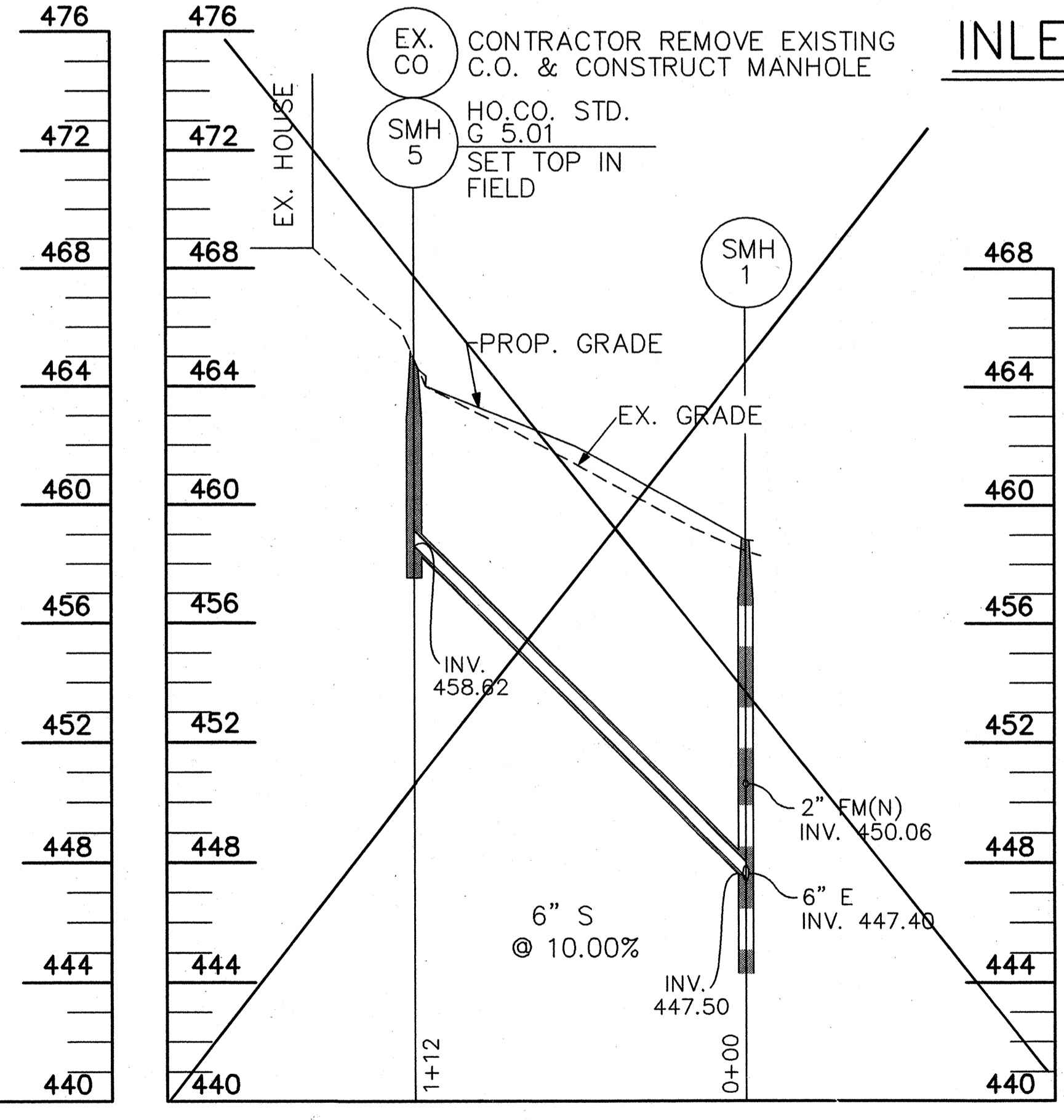
PIPE PROFILES

Des By	D.W.	Scale	AS SHOWN	Proj No	21010.00
Dm By	R.U.	Date	NOVEMBER, 2002	DRAWING NO	5 OF 14
Chk By		Approved			



**SANITARY SEWER PROFILE**

SCALE: HORIZ. 1"=40'  
VERT. 1"=4'

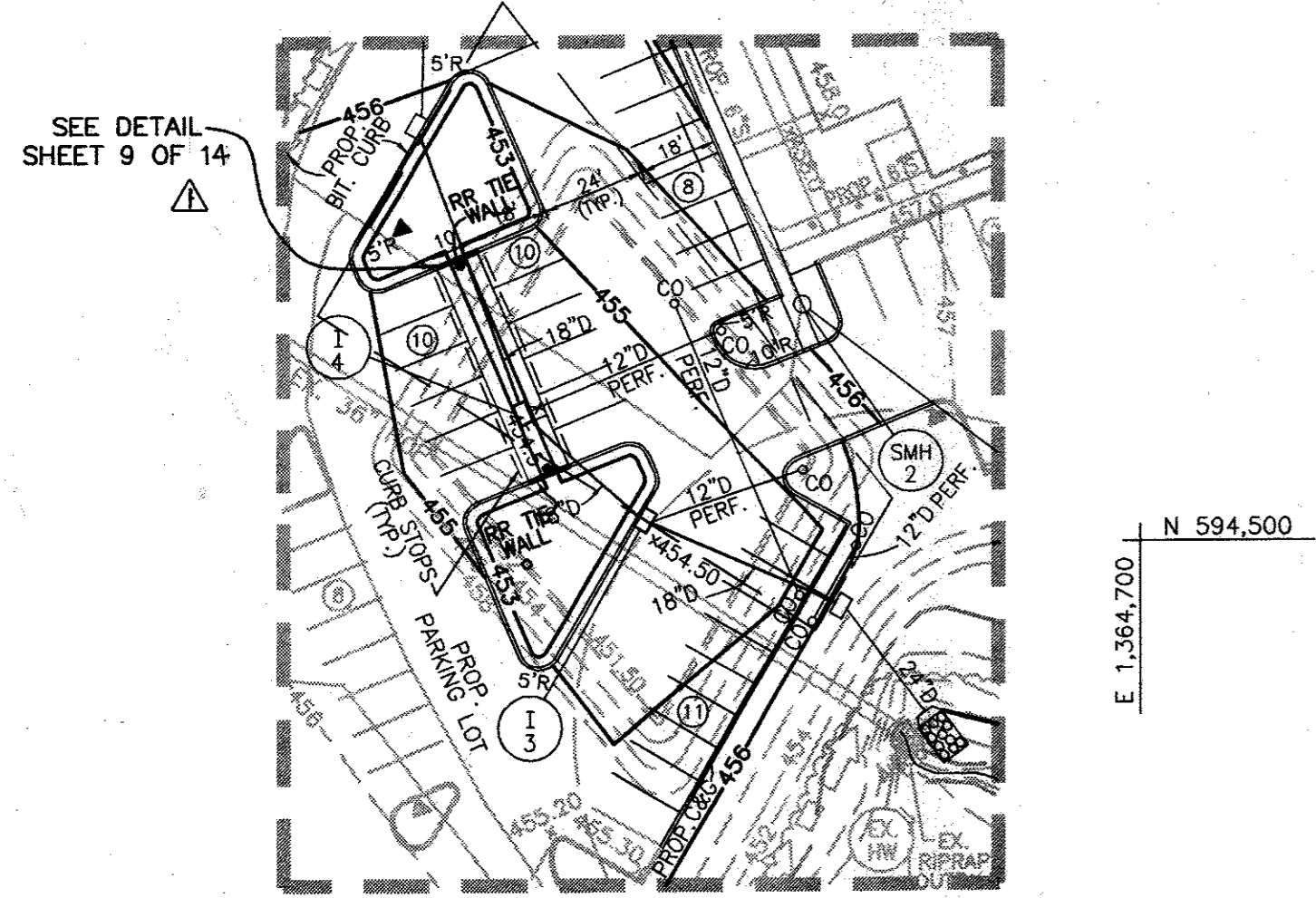


**PROP. 6" SANITARY SEWER PROFILE**

SCALE: HORIZ. 1"=40'  
VERT. 1"=4'



4-21-13



**SEDIMENT TRAP #1A  
STONE OUTLET SEDIMENT TRAP - ST II**

DRAINAGE AREA	0.69 AC
STORAGE REQUIRED	2,484 C.F.
STORAGE PROVIDED	2,779 C.F.
WEIR ELEVATION	458.25 FT.
WEIR LENGTH	8.0 FT.
BOTTOM DIMENSIONS	9 FT. x 42 FT.
STORAGE DEPTH	3.25 FT.
CLEANOUT ELEVATION, VOL.	456.5 FT. = 690 FT <sup>3</sup>
EMBANKMENT HEIGHT	4.25 FT.
EMBANKMENT ELEVATION	459.25 FT.
BOTTOM ELEVATION	455.00 FT.
WET STORAGE LIMIT, VOL.	455.0 FT.-457.2 FT. = 1,380 C.F.
DRY STORAGE LIMIT, VOL.	457.2 FT.-458.25 FT. = 1,399 C.F.
EXISTING GROUND @ WEIR	458.50 FT.
SIDE SLOPES	2:1

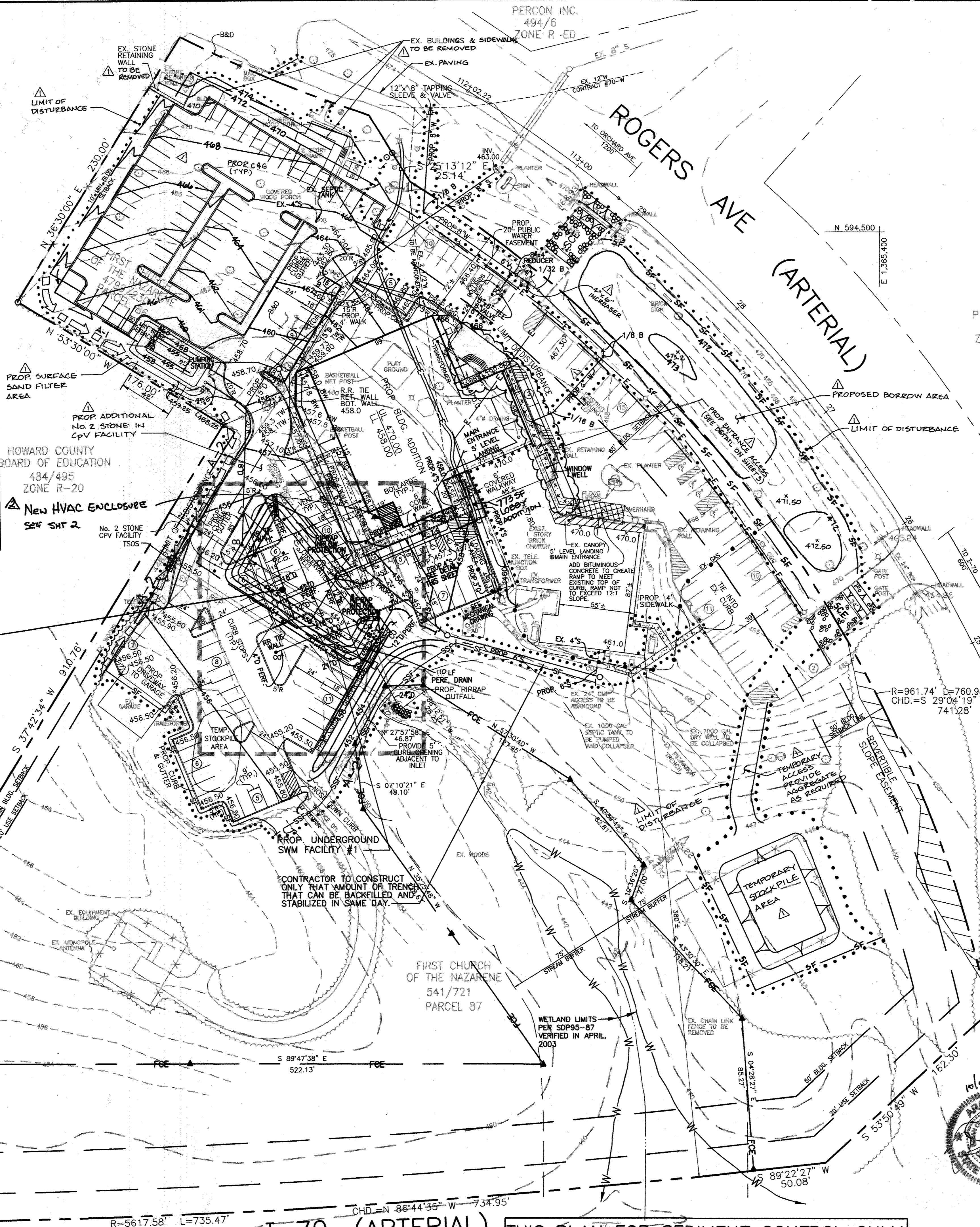
**SEDIMENT TRAP #1  
STONE OUTLET SEDIMENT TRAP - ST II**

DRAINAGE AREA	1.90 AC ±
STORAGE REQUIRED	6,840 C.F.
STORAGE PROVIDED	9,143 C.F.
WEIR ELEVATION	454.00 FT.
WEIR LENGTH	10.0 FT.
BOTTOM DIMENSIONS	40' x 76'
STORAGE DEPTH	3.5 FT.
CLEANOUT ELEVATION, VOL.	452.50 FT., 2,232 C.F.
EMBANKMENT HEIGHT	4.0 FT.
EMBANKMENT ELEVATION	454.00 FT.
BOTTOM ELEVATION	448.50 FT.
WET STORAGE LIMIT, VOL.	448.50-451.00 FT., 4,546 C.F.
DRY STORAGE LIMIT, VOL.	452.15-451.00 FT., 4,597 C.F.
EXISTING GROUND @ WEIR	452.75 FT.
SIDE SLOPES	2:1

NOTE: CONTRACTOR TO ENSURE THAT, DURING CONSTRUCTION, THE ENTIRE PARKING LOT ADDITION AREA DRAINS TO SEDIMENT TRAP #1A, AS INDICATED BY PROPOSED GRADES.

- LEGEND**
- GUARD RAIL
  - TREE
  - WOODS
  - LIGHT
  - WATER VALVE
  - WATER METER
  - GAS VALVE
  - SANITARY SEWER MANHOLE
  - ELECTRIC POLE
  - GUY WIRE
  - CLEAN OUT
  - SILT FENCE
  - SUPER SILT FENCE
  - LIMITS OF DISTURBANCE
  - EARTH DIKE
  - STABILIZED CONSTRUCTION ENTRANCE
  - SOS
  - FOREST CONSERVATION EASEMENT

\*SEE INSERT 1 FOR FINAL GRADES IN THIS AREA.



PERCON INC.  
494/6  
ZONE R-20

FOR REVISION #3 ONLY

ROBERT H. VOGEL  
P.E. NO. 16193

Date	No.	Description
4/24/17	3	REMOVE EXISTING 6' COVERED WALKWAY REPLACE W/ ENCLOSED LOBBY
9/24/11	1	HVAC ENCLOSURE
2/23/04	1	DELETED 3 PKG. SP AT BLDG. ENTRANCE & ADDED ENTRANCE ACCESS, ADDED 4" / 16" WATER LINE INCREASER, CHANGED 4" W TO 6" W
10/7/03	1	ADDED PARKING LOT, SEDIMENT TRAP #1A BORROW AND STOCKPILE AREAS; REVISED EARTH DIKE AND LOD LOCATIONS, ADDED SEDIMENT TRAP TABLE; REVISED DWG. NO.

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.

*Mary Louder* 4-24-03  
SIGNATURE OF ENGINEER DATE

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 THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John S. Hays* 4-24-03  
SIGNATURE OF DEVELOPER DATE

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

*Jim Myers* 5-23-03  
S.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John R. Robertson* 5-23-03  
HOWARD S.C.D. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
DEVELOPMENT ENGINEERING DIVISION  
*Chris Hanna* 7/16/04  
CHIEF-DIVISION OF LAND DEVELOPMENT DATE

*Marsha D. Ayers* 7/16/02  
DIRECTOR DATE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS  
HOWARD COUNTY HEALTH DEPARTMENT.  
*Penny Brantley* 6-12-03  
COUNTY HEALTH OFFICER DATE

**CROSSROADS CHURCH OF THE NAZARENE**

2750 ROGERS AVE.  
ELECTION DISTRICT NO. 2 HOWARD CO. MARYLAND

**CENTURY ENGINEERING, INC.**  
CONSULTING ENGINEERS, PLANNERS, SURVEYORS  
32 WEST ROAD  
TOWSON, MARYLAND 21204  
(410) 823-8070

**EROSION & SEDIMENT CONTROL PLAN**

Des By	D.W.	Scale	1"=40'	Proj No	21010.00
Dn By	M.L.A.	Date	SEPTEMBER, 2002	DRAWING NO	6 OF 14
CHK By	Approved				

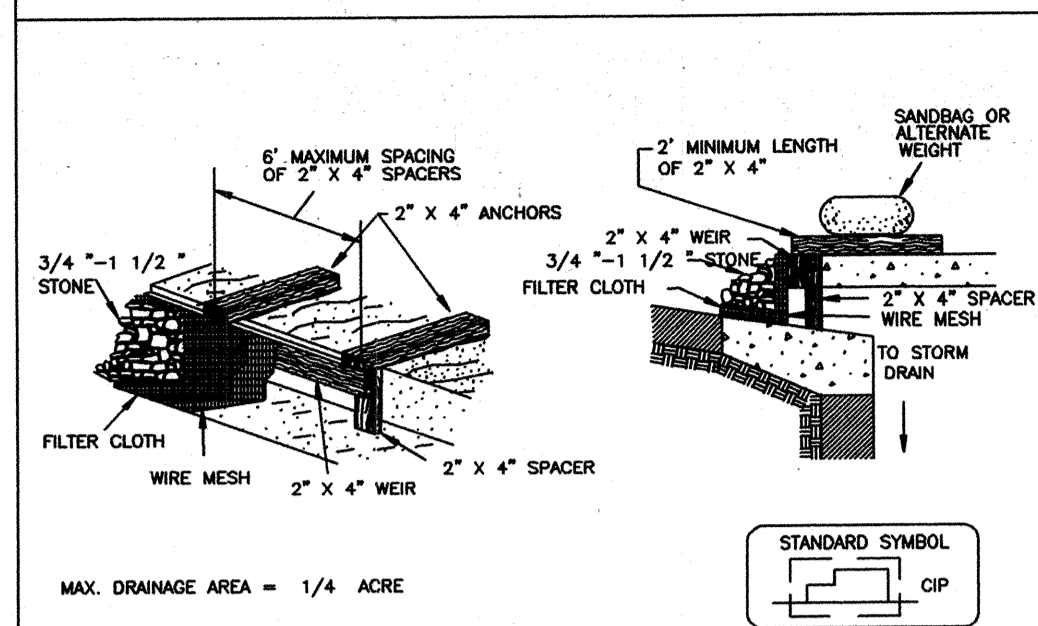
ROBERT H. VOGEL  
P.E. NO. 16193

TOTAL DISTURBED AREA  
187,308 SQ. FT. 4.30 AC +/-

I-70 (ARTERIAL) THIS PLAN FOR SEDIMENT CONTROL ONLY

SDP 02-121

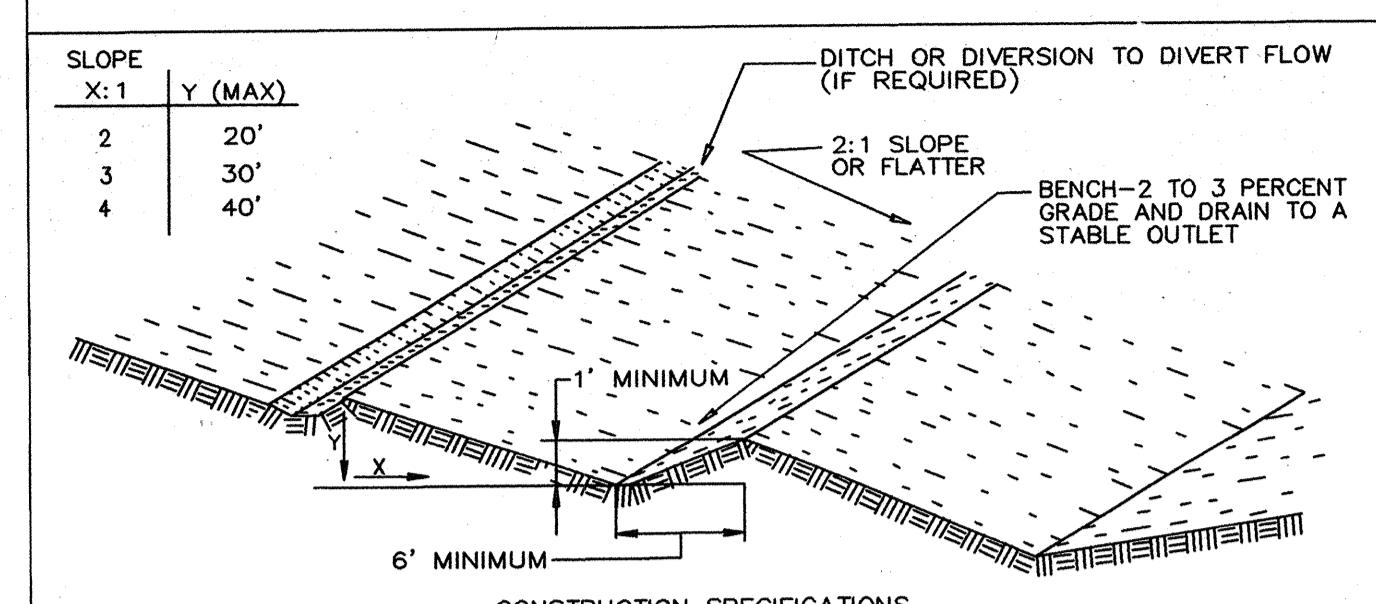
DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)



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

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

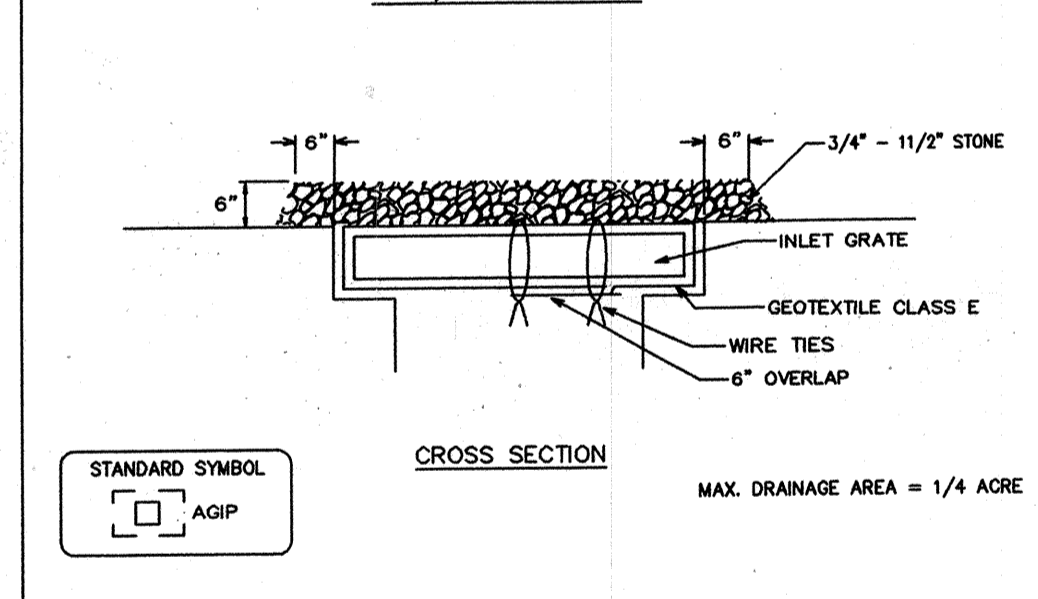
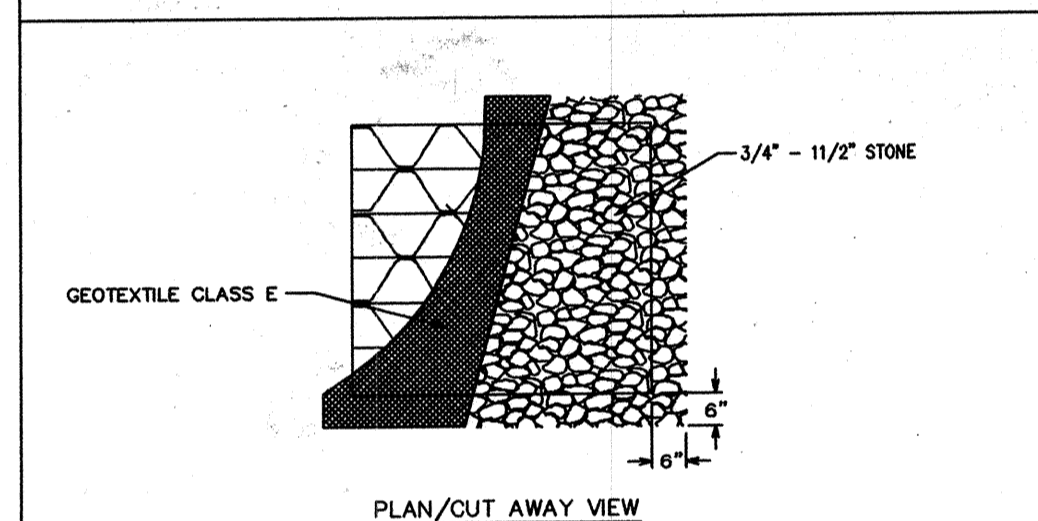
DETAIL 28 - BENCHED SLOPES



- CONSTRUCTION SPECIFICATIONS
- ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC., SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
  - ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8" IN THICKNESS.
  - EXCEPT FOR APPROVED LANDFILLS OR NONSTRUCTURAL FILLS, FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
  - FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.
  - ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
  - SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHODS.
  - ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-19-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

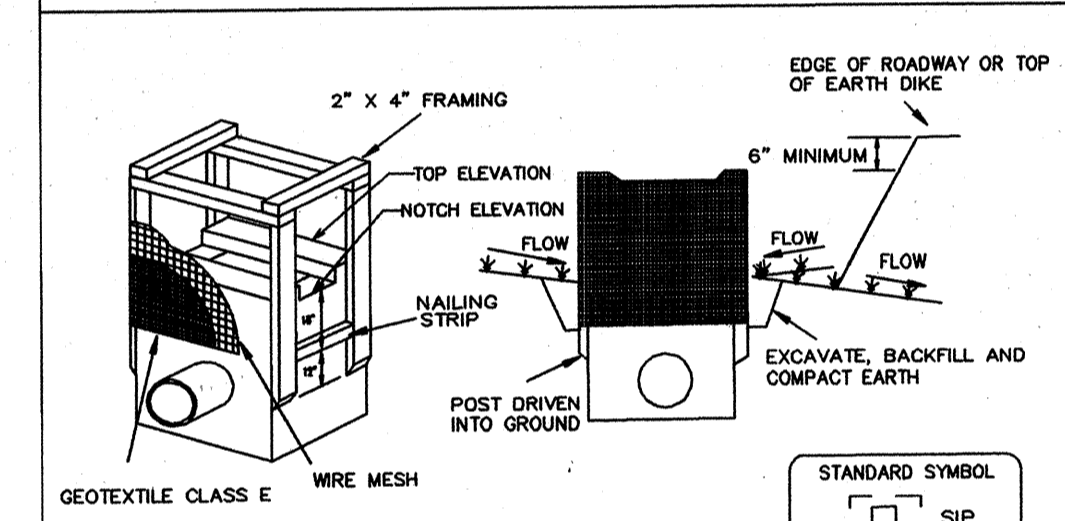
DETAIL 23B - AT GRADE INLET PROTECTION



- Construction Specifications
- Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
  - Place 3/4" to 1 1/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

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

DETAIL 23A - STANDARD INLET PROTECTION



- CONSTRUCTION SPECIFICATIONS
- EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18" BELOW THE NOTCH ELEVATION.
  - DRIVE THE 2" x 4" CONSTRUCTION GRADE LUMBER POSTS 1" INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2" x 4" FRAME USING THE OVERLAP JOINT SHOWN ON DETAIL 23A. THE TOP OF THE FRAME (NER) MUST BE 6" BELOW ADJACENT ROADWAYS WHERE FLOODING AND SAFETY ISSUES MAY ARISE.
  - STRETCH THE 1/2" x 1/2" WIRE MESH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. THE ENDS MUST MEET AND OVERLAP AT A POST.
  - STRETCH THE GEOTEXTILE CLASS E TIGHTLY OVER THE WIRE MESH WITH THE GEOTEXTILE EXTENDING FROM THE TOP OF THE FRAME TO 18" BELOW THE INLET NOTCH ELEVATION. FASTEN THE GEOTEXTILE FIRMLY TO THE FRAME. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED DOWN.
  - BACKFILL AROUND THE INLET IN COMPACTED 6" LAYERS UNTIL THE LAYER OF EARTH IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
  - IF THE INLET IS NOT IN A SWMP, CONSTRUCT A COMPACTED EARTH DIKE ACROSS THE DITCH LINE DIRECTLY BELOW IT. THE TOP OF THE EARTH DIKE SHOULD BE AT LEAST 6" HIGHER THAN THE TOP OF THE FRAME.
  - THE STRUCTURE MUST BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND THE GEOTEXTILE REPLACED WHEN IT BECOMES CLOGGED.

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

INLET PROTECTION NOTE:

THE CONTRACTOR IS REQUIRED TO INSTALL INLET PROTECTION ON ALL STORM DRAIN INLETS WITH THE EXCEPTION OF THE FOLLOWING:

- ANY INLET OUTFALLING DIRECTLY INTO A SEDIMENT TRAPPING DEVICE.
- INLETS ON PRIVATE OR PUBLIC PAVED ROADWAYS OPEN TO THE PUBLIC.

ALL INLET PROTECTION WILL BE INSTALLED AS DIRECTED BY THE INSPECTOR IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, PAGE E-16-1 (OR AS MAY BE AMENDED). THE REMOVAL OF ANY INLET PROTECTION DEVICES WILL REQUIRE APPROVAL FROM THE INSPECTOR.

\*STORM DRAINS TO BE FLUSHED PRIOR TO TRAPPING DEVICE REMOVAL.

UTILITY NOTE:

- CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE) THE TRENCH.
- PLACE ALL EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
- ANY SEDIMENT CONTROLS DISTURBED BY UTILITY CONSTRUCTION ARE TO BE REPAIRED IMMEDIATELY.

HOWARD SOIL CONSERVATION DISTRICT

STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
- 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 AND REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOIL, TEMPORARY SEEDING AND MULCHING (SEC. G). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE 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	= 10.35 AC ±
AREA DISTURBED	= 4.30 AC ±
AREA TO BE ROOFED OR PAVED	= 1.82 AC ±
AREA TO BE VEGETATIVELY STABILIZED	= 2.24 AC ±
TOTAL CUT	= 6.800 C.Y.
TOTAL FILL	= 6.800 C.Y.
OFFSITE WASTE/BORROW AREA LOCATION	N/A
- 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 CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY, BY THE HOWARD COUNTY 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.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

HOWARD SOIL CONSERVATION DISTRICT

PERMANENT SEEDING NOTES

- APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.
- SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
- PREFERRED - APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92,000 LBS/1000 SQ. FT.) AND 800 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS/ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.).
  - ACCEPTABLE - APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS/ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.
- SEEDING - FOR THE PERIODS MARCH 1 - APRIL 30 AND AUGUST 1 - OCTOBER 15, SEED WITH 60 LBS/ACRE (14 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 - JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS/ACRE (.05 LBS/1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 - FEBRUARY 28, PROTECT SITE BY: OPTION 1 - TWO TONS PER ACRE OF 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 30 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 SLOPE 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.
- MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- SEEDBED PREPARATION - LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS - APPLY 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.).
- SEEDING - FOR PERIOD MARCH 1 - APRIL 30 FROM AUGUST 15 - OCTOBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 - AUGUST 14, SEED WITH 3 LBS/ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 - FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.
- MULCHING - APPLY 1 1/2 TONS/ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, 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 SLOPE 8 FT. OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

SEQUENCE OF CONSTRUCTION

NO.	REVISION DESCRIPTION	DATE	NO.	REVISION DESCRIPTION	DATE
1.	OBTAIN GRADING PERMIT.		1.	OBTAIN GRADING PERMIT.	1 DAY
2.	NOTIFY HOWARD COUNTY DEPARTMENTS OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL INSPECTIONS @ 313-1855 AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.		2.	NOTIFY HOWARD COUNTY DEPARTMENTS OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL INSPECTIONS @ 313-1855 AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.	3 DAYS
3.	CLEAR AND GRUB FOR SEDIMENT AND EROSION CONTROL MEASURES.		3.	CLEAR AND GRUB FOR SEDIMENT AND EROSION CONTROL MEASURES.	10 DAYS
4.	INSTALL ALL SEDIMENT & EROSION CONTROL MEASURES OR DEVICES ONLY.*		4.	INSTALL ALL SEDIMENT & EROSION CONTROL MEASURES OR DEVICES ONLY.*	1 DAY
5.	NOTIFY HOWARD COUNTY DEPARTMENT OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL INSPECTIONS @ 414-313-1855 UPON COMPLETION OF SAID INSTALLATION.		5.	NOTIFY HOWARD COUNTY DEPARTMENT OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL INSPECTIONS @ 414-313-1855 UPON COMPLETION OF SAID INSTALLATION.	5 DAYS
6.	WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF THE SITE AS REQUIRED.		6.	WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF THE SITE AS REQUIRED.	10 DAYS
7.	ROUGH GRADE SITE AS REQUIRED.		7.	ROUGH GRADE SITE AS REQUIRED.	90 DAYS
8.	BEGIN BUILDING CONSTRUCTION.		8.	BEGIN BUILDING CONSTRUCTION.	30 DAYS
9.	INSTALL UTILITIES AND MAINTAIN POSITIVE DRAINAGE TO SEDIMENT TRAPS AS NECESSARY.**		9.	INSTALL UTILITIES AND MAINTAIN POSITIVE DRAINAGE TO SEDIMENT TRAPS AS NECESSARY.**	15 DAYS
10.	INSTALL PAVING SUBBASE AND MAINTAIN POSITIVE DRAINAGE TO SEDIMENT TRAPS AS NECESSARY.		10.	INSTALL PAVING SUBBASE AND MAINTAIN POSITIVE DRAINAGE TO SEDIMENT TRAPS AS NECESSARY.	10 DAYS
11.	COMPLETE BUILDING CONSTRUCTION, PAVE PARKING AREAS NORTH OF BUILDING AND PERMANENTLY STABILIZE LAWN AREAS.		11.	COMPLETE BUILDING CONSTRUCTION, PAVE PARKING AREAS NORTH OF BUILDING AND PERMANENTLY STABILIZE LAWN AREAS.	5 DAYS
12.	WITH THE PERMISSION OF SEDIMENT CONTROL INSPECTOR, CLEAN AND REMOVE SEDIMENT TRAPS.		12.	WITH THE PERMISSION OF SEDIMENT CONTROL INSPECTOR, CLEAN AND REMOVE SEDIMENT TRAPS.	15 DAYS
13.	CONVERT TRAPS TO STORMWATER MANAGEMENT FACILITIES.***		13.	CONVERT TRAPS TO STORMWATER MANAGEMENT FACILITIES.***	5 DAYS
14.	COMPLETE STORM DRAIN CONSTRUCTION.		14.	COMPLETE STORM DRAIN CONSTRUCTION.	5 DAYS
15.	COMPLETE FINAL GRADING FOR REMAINING PARKING AREA, INSTALL SUBBASE AND PAVE.		15.	COMPLETE FINAL GRADING FOR REMAINING PARKING AREA, INSTALL SUBBASE AND PAVE.	5 DAYS
16.	STABILIZE ALL REMAINING AREAS.		16.	STABILIZE ALL REMAINING AREAS.	2 DAYS
17.	WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT & EROSION CONTROL MEASURES & STABILIZE ANY AREAS DISTURBED BY THIS PROCESS.		17.	WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT & EROSION CONTROL MEASURES & STABILIZE ANY AREAS DISTURBED BY THIS PROCESS.	3 DAYS
18.	INSTALL LANDSCAPE MATERIALS.		18.	INSTALL LANDSCAPE MATERIALS.	5 DAYS

\*NOTE: THE DIVERSION IS TO BE REMOVED/REPLACED OR RELOCATED AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR WITH SILT FENCE DIVERSION.

\*\*NOTE: REPLACE OR REPAIR ANY SEDIMENT CONTROL MEASURE DISTURBED BY UTILITY INSTALLATION. STORMDRAINS THAT ARE SHOWN IN THE SEDIMENT TRAP TO BE INSTALLED AFTER THE SEDIMENT CONTROL INSPECTOR HAS AUTHORIZED REMOVAL OF THE TRAP (SEE 12 & 14).

\*\*\*NOTE: IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT PRIOR TO PLACING STONE IN THE CPV FACILITY, OR MATERIAL IN SAND FILTER AREAS, THAT UPSTREAM DRAINAGE AREAS ARE STABILIZED, AND MATERIAL IS PLACED IN A MANNER THAT PREVENTS CONTAMINATION. CONTAMINATED MATERIAL SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

Date	No.	Revision Description
12/17/03	Δ	REVISED SEQUENCE NOTE, PER DED COMMENT
10/7/03	Δ	ADDED NOTE UNDER SEQUENCE OF CONSTRUCTION, REVISED DRAWING NO.; REVISED SITE ANALYSIS.

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.

*Angela Ambler* 4-24-03  
SIGNATURE OF ENGINEER DATE

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 THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

*OK S. Healy* 4-24-03  
SIGNATURE OF DEVELOPER DATE

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

*Jim Myers* 5-23-03  
U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John L. Robertson* 5-23-03  
HOWARD S.C.D. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Frank*  
CHIEF-DEVELOPMENT ENGINEERING DIVISION

*Chris Harnett* 7/16/03  
CHIEF-DIVISION OF LAND DEVELOPMENT DATE

*Frank A. Cagle* 7/21/03  
DIRECTOR DATE

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

*Penny* 6-12-03  
COUNTY HEALTH OFFICER DATE

CROSSROADS CHURCH OF THE NAZARENE

2750 ROGERS AVE.  
ELECTION DISTRICT NO. 2 HOWARD CO. MARYLAND

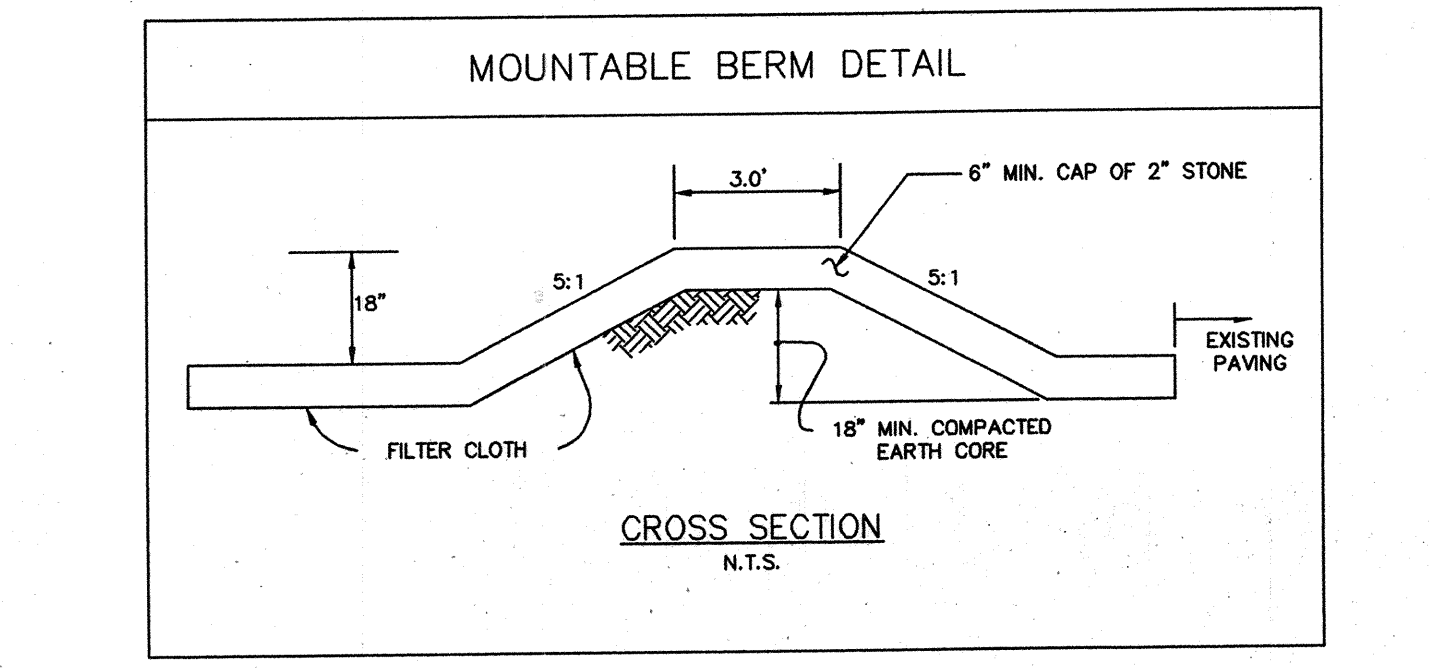
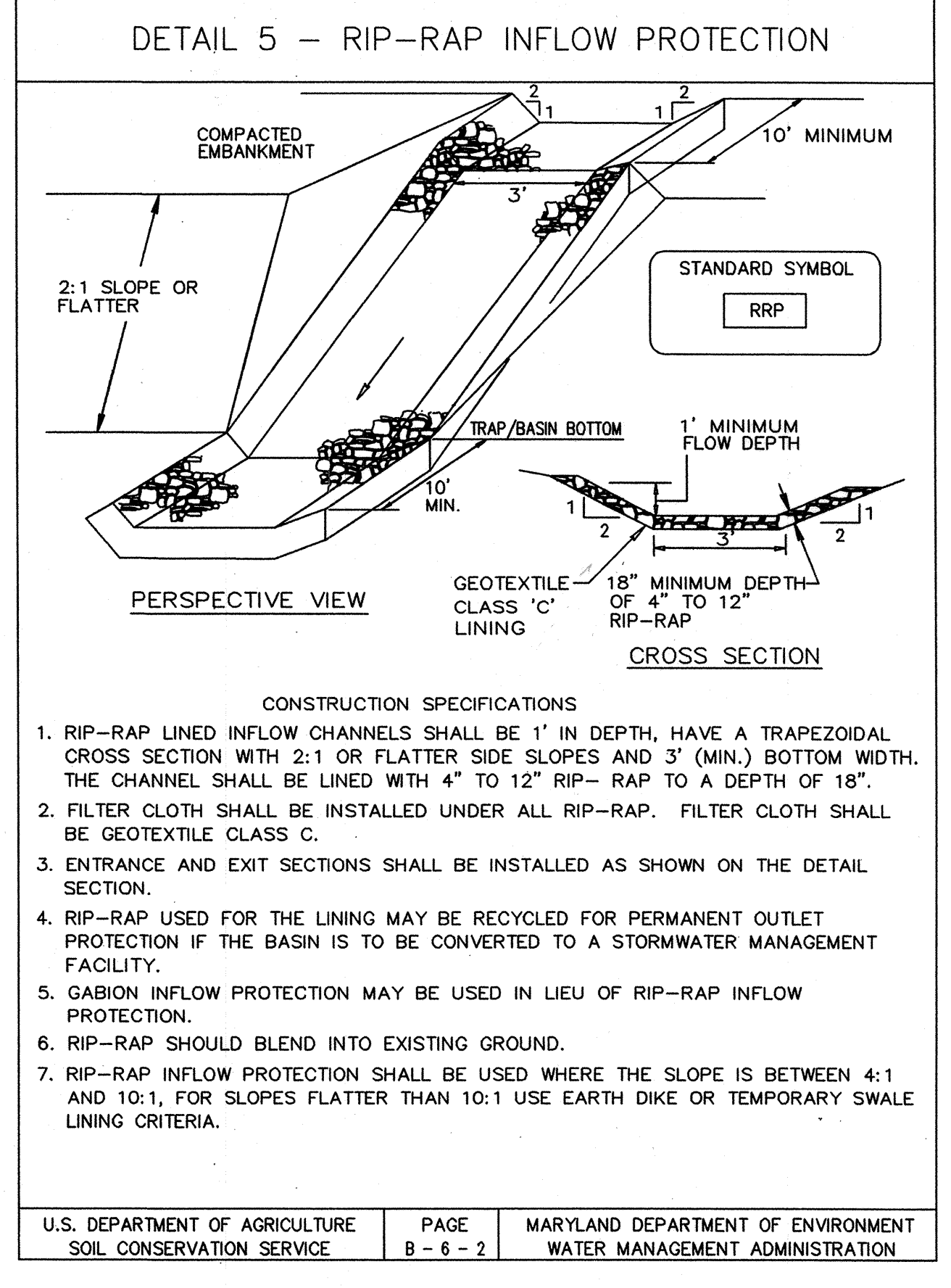
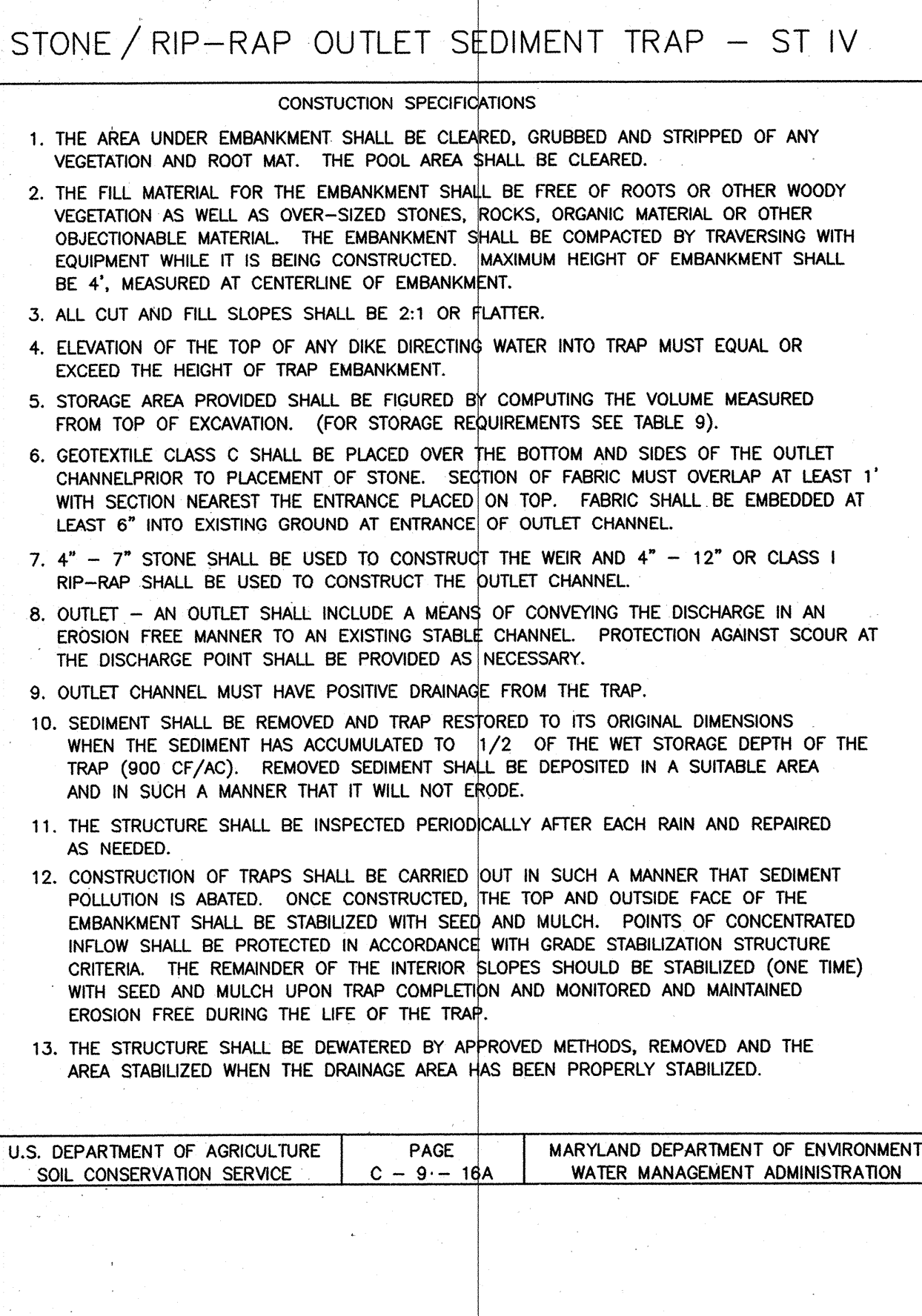
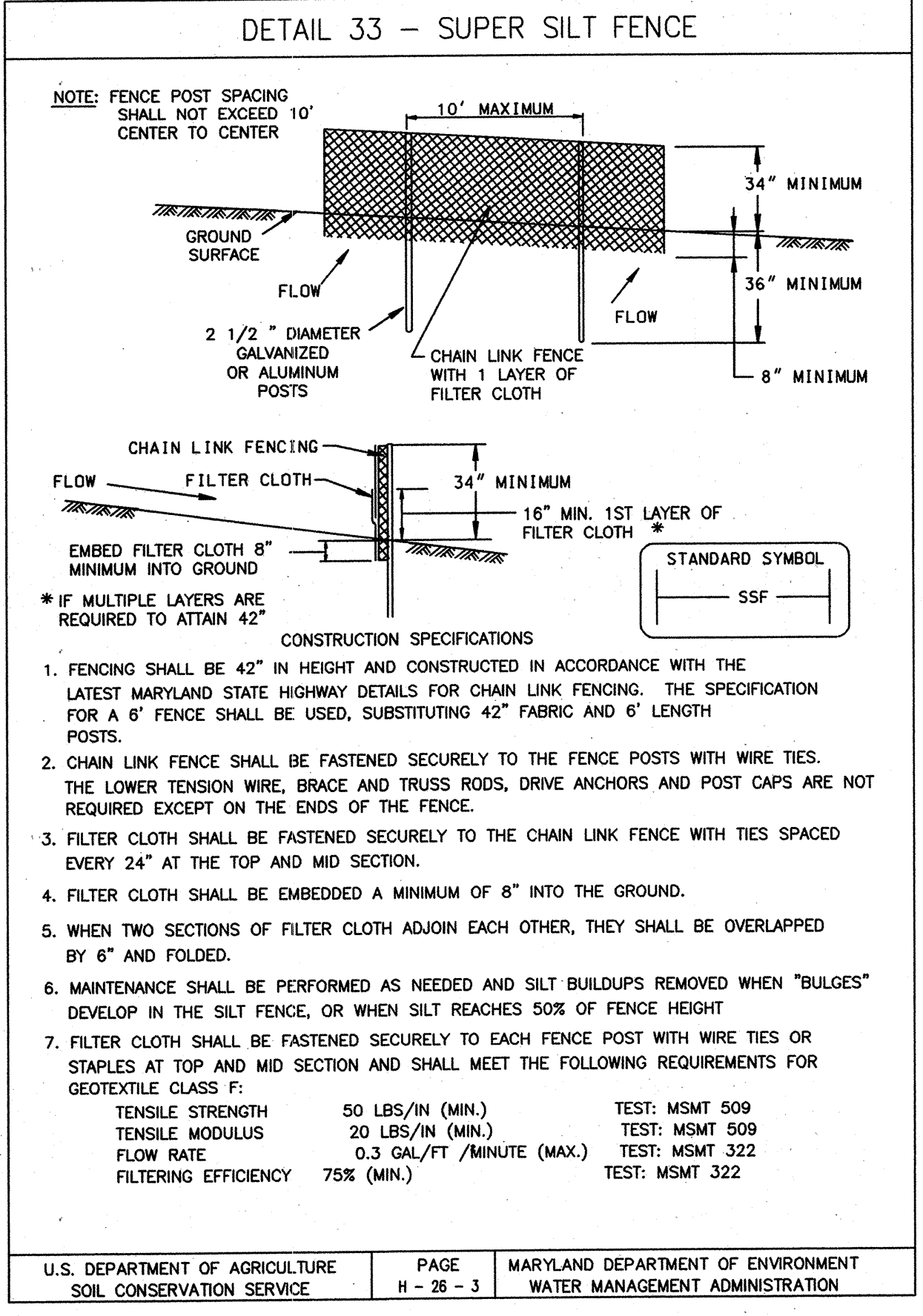
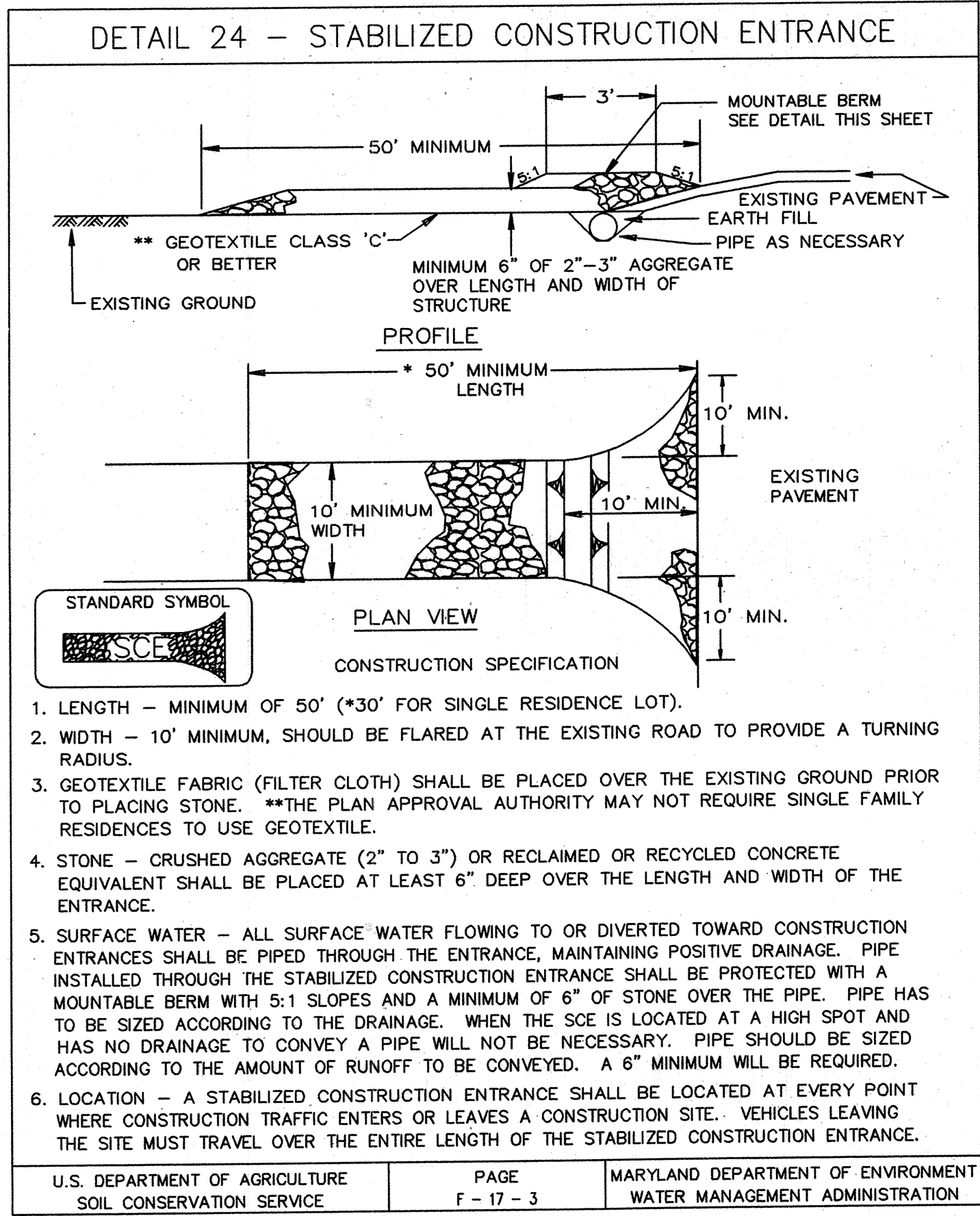
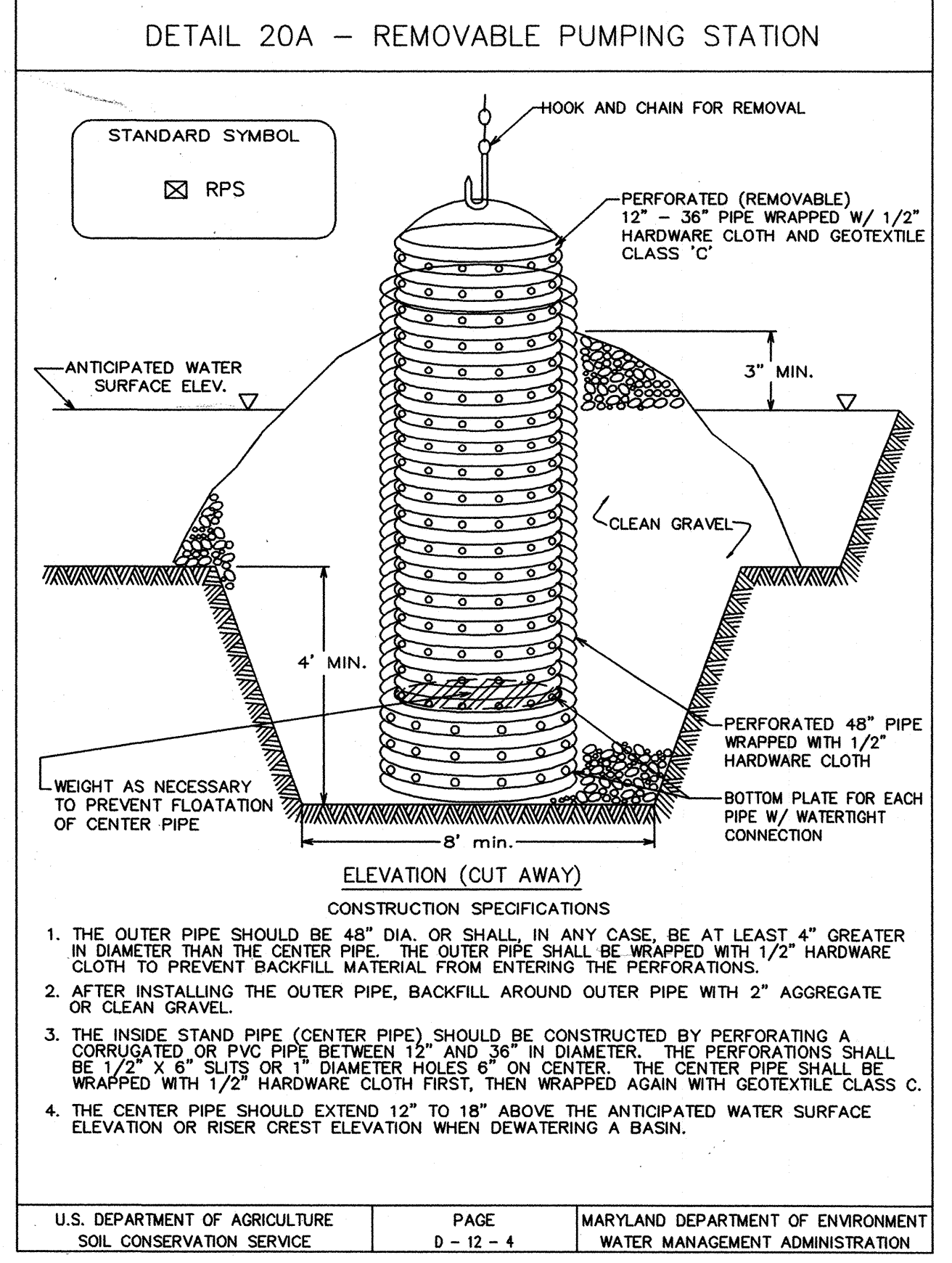
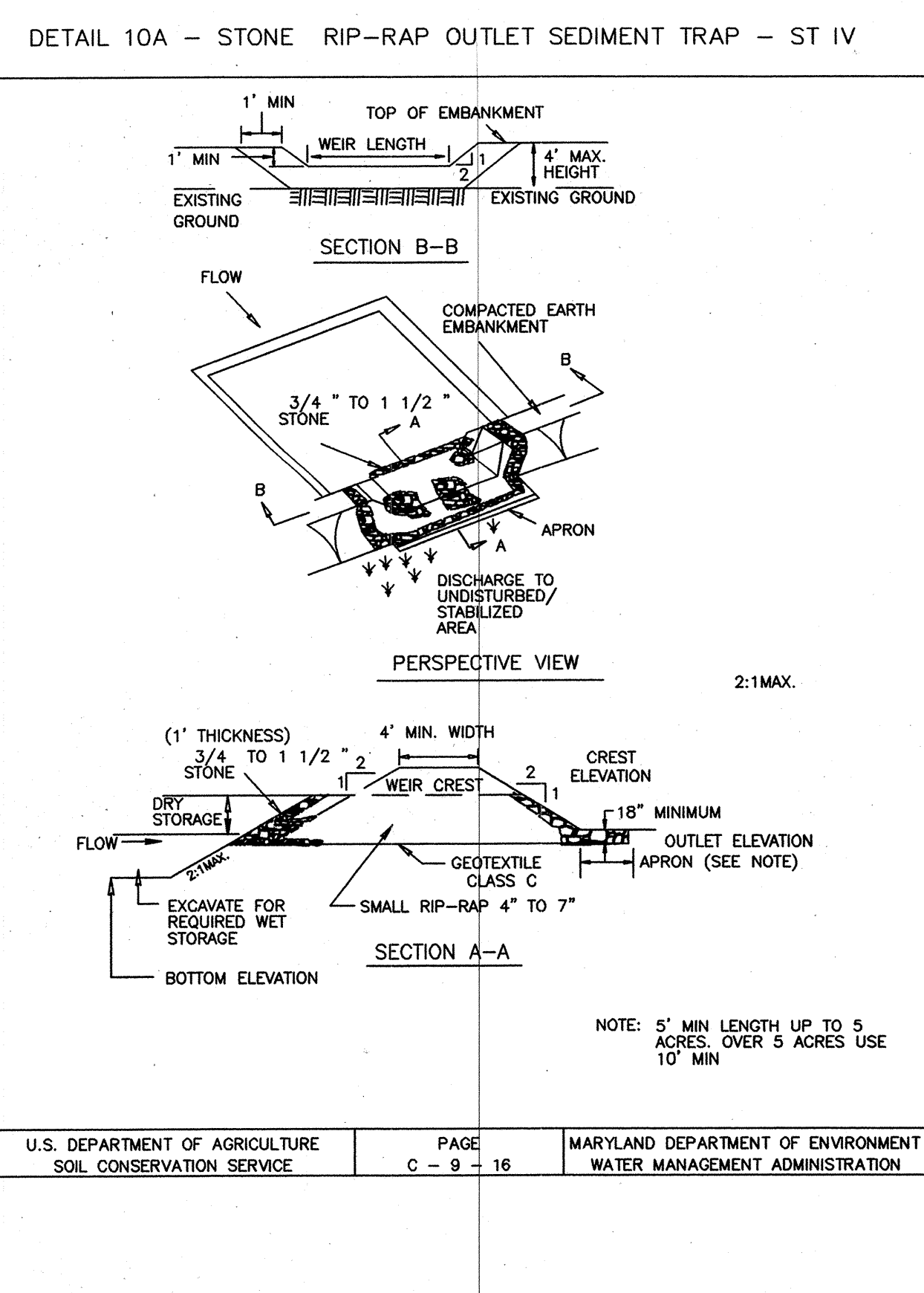
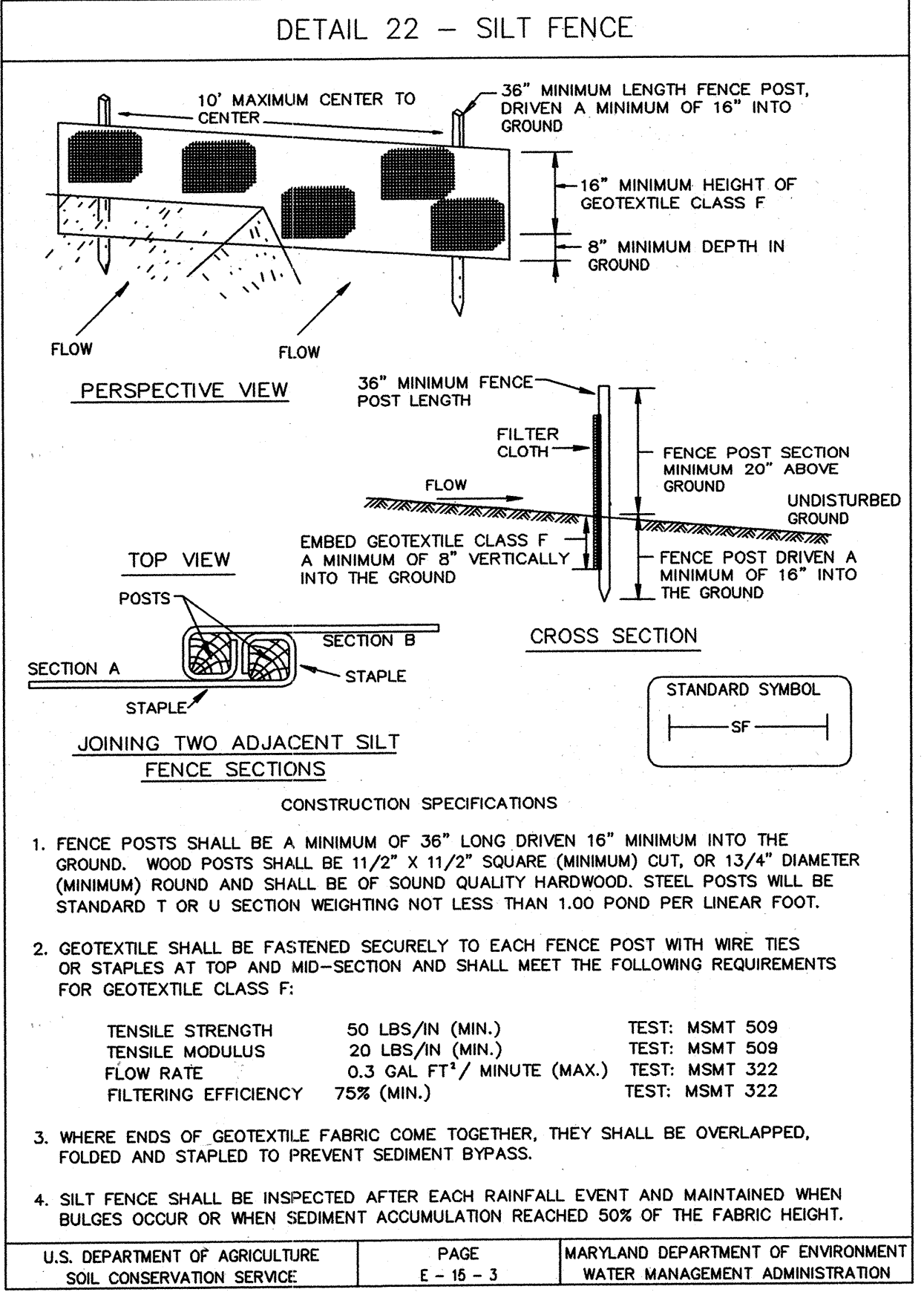
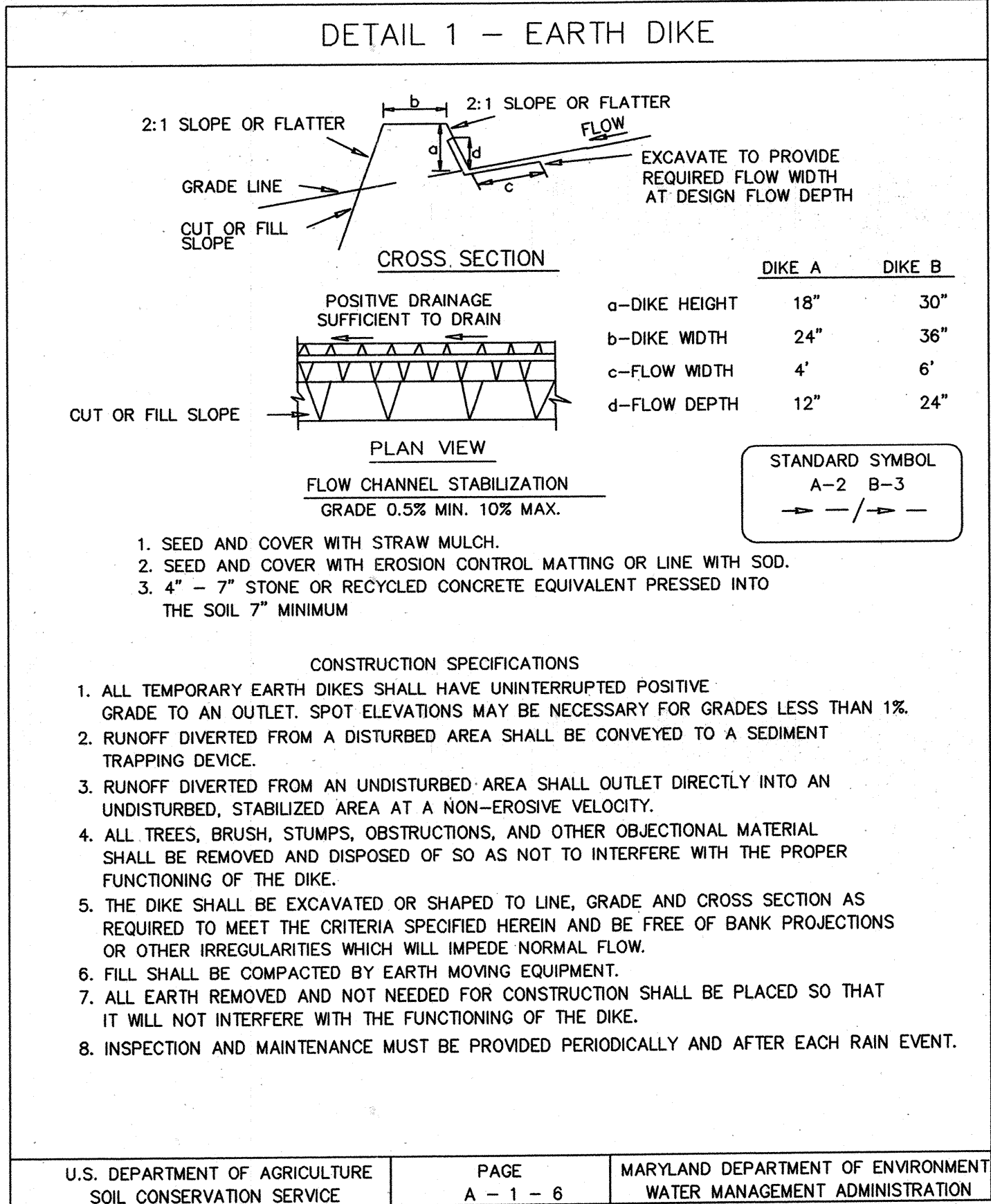
CENTURY ENGINEERING, INC.  
CONSULTING ENGINEERS, PLANNERS, SURVEYORS  
32 WEST ROAD  
TOWSON, MARYLAND 21284  
(410) 284-823-8070

SEDIMENT & EROSION CONTROL NOTES AND DETAILS

Des By	D.W.	Scale	AS SHOWN	Proj No	21010.00
Dwn By	R.U.	Date	NOVEMBER, 2002	DRAWING NO	7 OF 14
Chk By		Approved			



SDP.06.121



Date	No	Revision Description
10/7/03	Δ	REVISED DRAWING NO.

BY THE ENGINEER:

*Mark J. Smith* 4-24-03  
SIGNATURE OF ENGINEER DATE

BY THE DEVELOPER:

*OK S. Hester* 4-24-03  
SIGNATURE OF DEVELOPER DATE

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

*Jim Myrus* 5-23-03  
U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John R. Robertson* 5-23-03  
HOWARD S.C.D. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF DEVELOPMENT ENGINEERING DIVISION *J. Hester* 7/16/03 DATE

CHIEF DIVISION OF LAND DEVELOPMENT *J.A.* 7/16/03 DATE

DIRECTOR *Donna D. Anglen* 7/16/03 DATE

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

*Donna D. Anglen* 6-12-03  
COUNTY HEALTH OFFICER DATE

**CROSSROADS CHURCH OF THE NAZARENE**

2750 ROGERS AVE.  
ELECTION DISTRICT NO. 2 HOWARD CO. MARYLAND

**CENTURY ENGINEERING, INC.**  
CONSULTING ENGINEERS, PLANNERS, SURVEYORS  
32 WEST ROAD  
TOWSON, MARYLAND 21204  
(410) (940) 823-8070

**SEDIMENT & EROSION CONTROL NOTES AND DETAILS**

Des By D.W. Scale AS SHOWN Proj No 21010.00  
Dm By R.U. Date NOVEMBER, 2002 DRAWING NO Δ  
Chk By Approved 8 OF 14

4-24-03  
STATE OF MARYLAND  
PROFESSIONAL ENGINEER

*Mark J. Smith*

4-24-03



PROJECT: Church of the Nazarene Stormwater Management Facility  
 Location: #2750 Rogers Ave., Ellicott City, MD  
 BORING No.: SWM-1  
 PROJECT No.: 02-194  
 DATE START: 9/23/02 FINISH: 9/23/02  
 HAMMER: 140 Lbs HAMMER DROP: 30 in. SPOON O.D.: 2 in. FOREMAN: T. Oleszczuk  
 BORING METHOD: HSA ROCK CORE DIA.:

ELEV	DESCRIPTION	DEPTH SCALE	No.	Blows / 6 in	TYPE REC	NOTES
453.2	Pavement	0.7				4" Blacktop 4" Stone
452.9	Dark Gray moist micaceous Clayey SILT, some Sand		S-1	2-2-2	DS 18"	
450.7	Gray moist micaceous Clayey SILT, trace fine Sand	2.5	S-2	2-3-3	DS 18"	
448.2	Gray-Brown moist micaceous Silty fine SAND	5.0	S-3	3-3-3	DS 18"	
		10	S-4	1-2-2	DS 18"	
438.1	Bottom of Boring at 15.0 feet	15.0	S-5	2-2-2	DS 18"	

LEGEND  
 DS DRIVEN SPOON  
 ST SHELBY TUBE  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER  
 DC DRIVEN CASING  
 MD MUD DRILLING

GROUND WATER  
 WATER ON RODS: 13.0 feet  
 AT COMPLETION: Dry  
 WATER: 6.0 feet  
 CAVED: 11.8 feet  
 CAVED: 6.5 feet

PROJECT: Church of the Nazarene Stormwater Management Facility  
 Location: #2750 Rogers Ave., Ellicott City, MD  
 BORING No.: SWM-2  
 PROJECT No.: 02-194  
 DATE START: 9/23/02 FINISH: 9/23/02  
 HAMMER: 140 Lbs HAMMER DROP: 30 in. SPOON O.D.: 2 in. FOREMAN: T. Oleszczuk  
 BORING METHOD: HSA ROCK CORE DIA.:

ELEV	DESCRIPTION	DEPTH SCALE	No.	Blows / 6 in	TYPE REC	NOTES
451.4	Gray-Brown dry fine Sandy SILT	0	S-1	6-5-5	DS 12"	3" Topsoil
449.4	Gray wet Silty fine-coarse SAND, trace Clay	2.0	S-2	1-1-1	DS 16"	
446.4	Gray-Olive moist Clayey SILT, trace Sand	5.0	S-3	WOH/18"	DS 10"	
443.4	Red very moist Clayey SILT, trace fine Sand	8.0	S-4	1-2-2	DS 16"	
436.4	Bottom of Boring at 15.0 feet	15.0	S-5	1-2-2	DS 12"	

LEGEND  
 DS DRIVEN SPOON  
 ST SHELBY TUBE  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER  
 DC DRIVEN CASING  
 MD MUD DRILLING

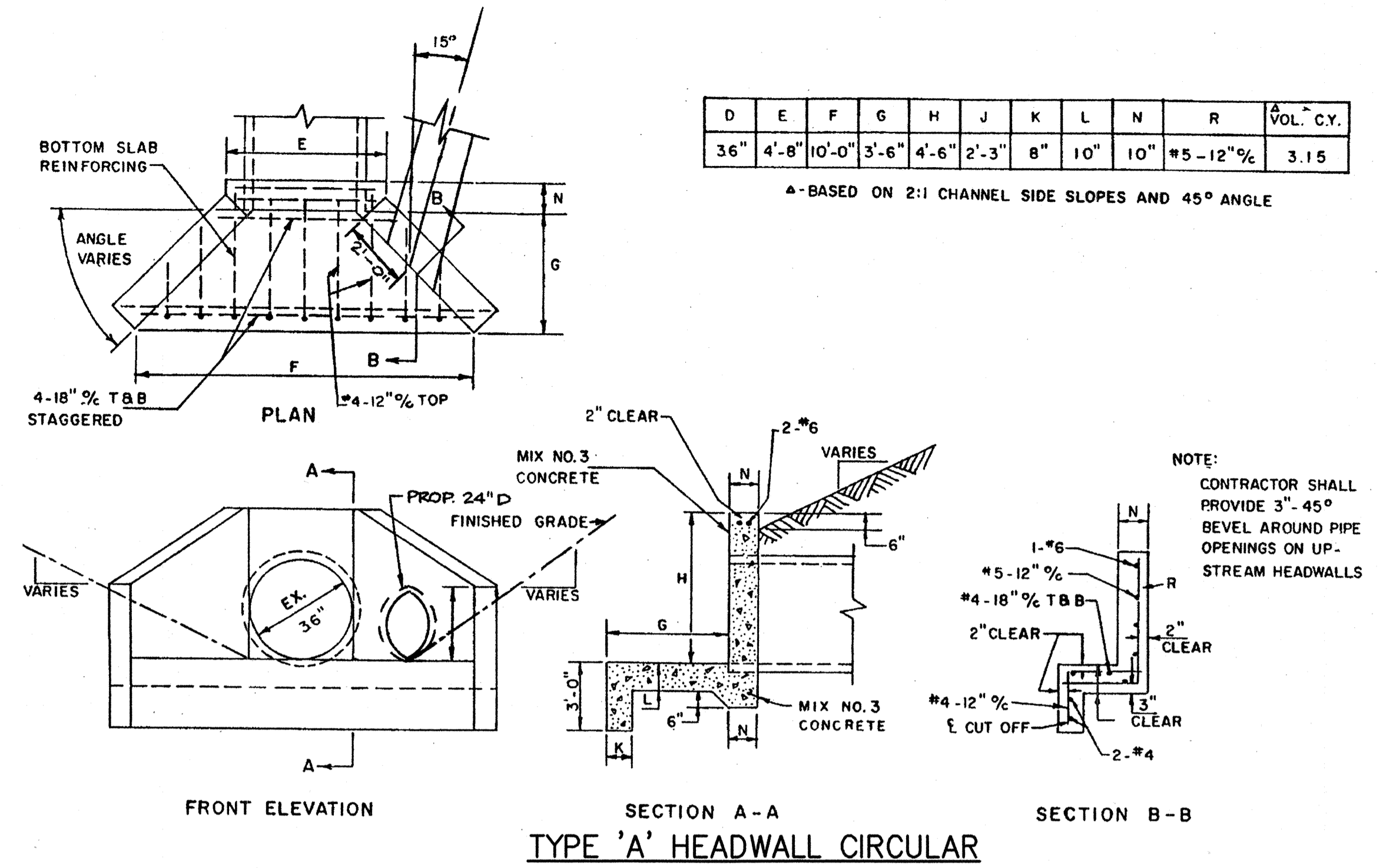
GROUND WATER  
 WATER ON RODS: 13.0 feet  
 AT COMPLETION: 8.5 feet  
 WATER: 6.5 feet  
 CAVED: 9.5 feet  
 CAVED: 8.5 feet

PROJECT: Church of the Nazarene Stormwater Management Facility  
 Location: #2750 Rogers Ave., Ellicott City, MD  
 BORING No.: SWM-3  
 PROJECT No.: 02-194  
 DATE START: 9/23/02 FINISH: 9/23/02  
 HAMMER: 140 Lbs HAMMER DROP: 30 in. SPOON O.D.: 2 in. FOREMAN: T. Oleszczuk  
 BORING METHOD: HSA ROCK CORE DIA.:

ELEV	DESCRIPTION	DEPTH SCALE	No.	Blows / 6 in	TYPE REC	NOTES
450.7	Gray-Brown moist micaceous fine Sandy SILT	0	S-1	4-5-4	DS 12"	4" Topsoil
448.2	Gray-Olive moist Clayey SILT, trace fine Sand	2.5	S-2	1-2-3	DS 16"	
		5	S-3	2-2-3	DS 16"	
		10	S-4	5-7-7	DS 18"	
438.7	Brown-Gray moist micaceous Silty fine SAND	12.0				
435.7	Bottom of Boring at 15.0 feet	15.0	S-5	1-2-2	DS 12"	

LEGEND  
 DS DRIVEN SPOON  
 ST SHELBY TUBE  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER  
 DC DRIVEN CASING  
 MD MUD DRILLING

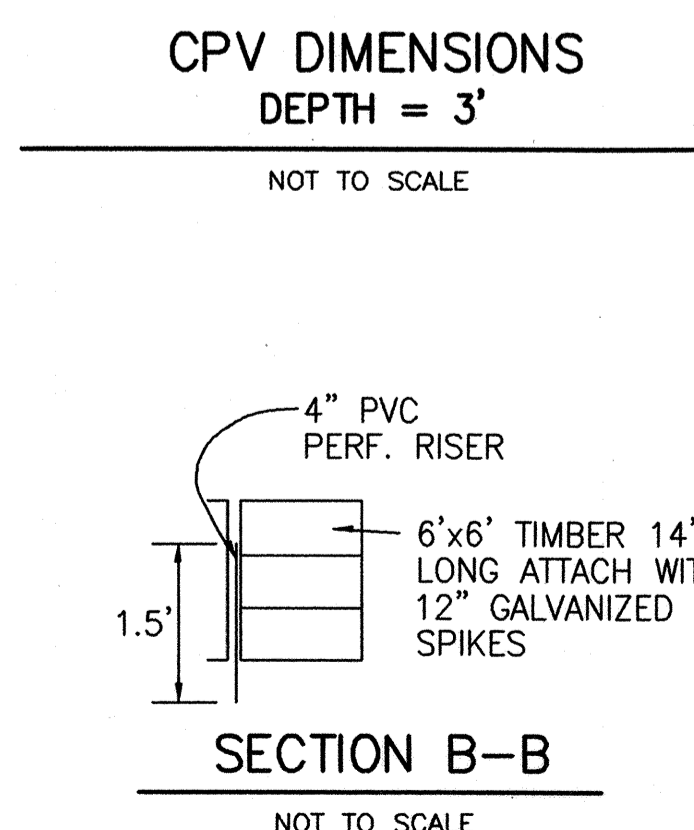
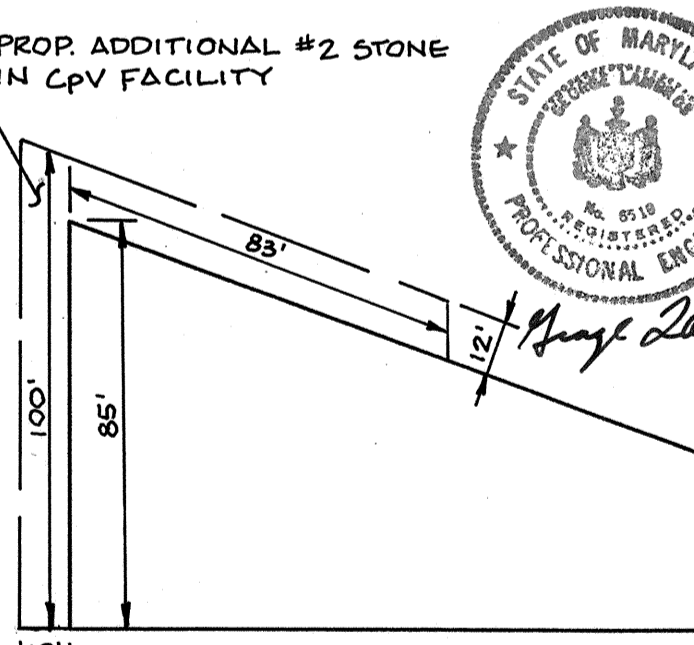
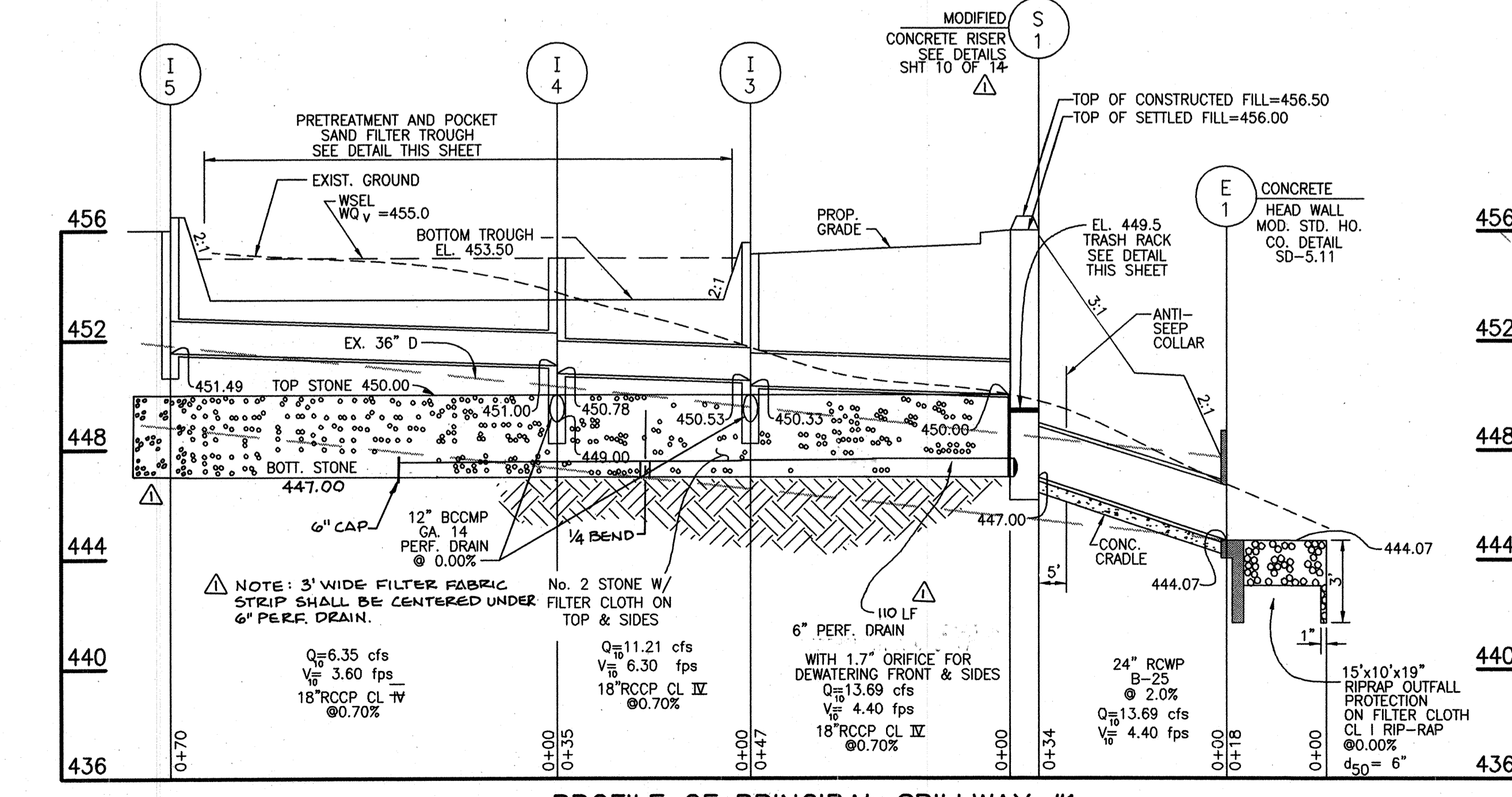
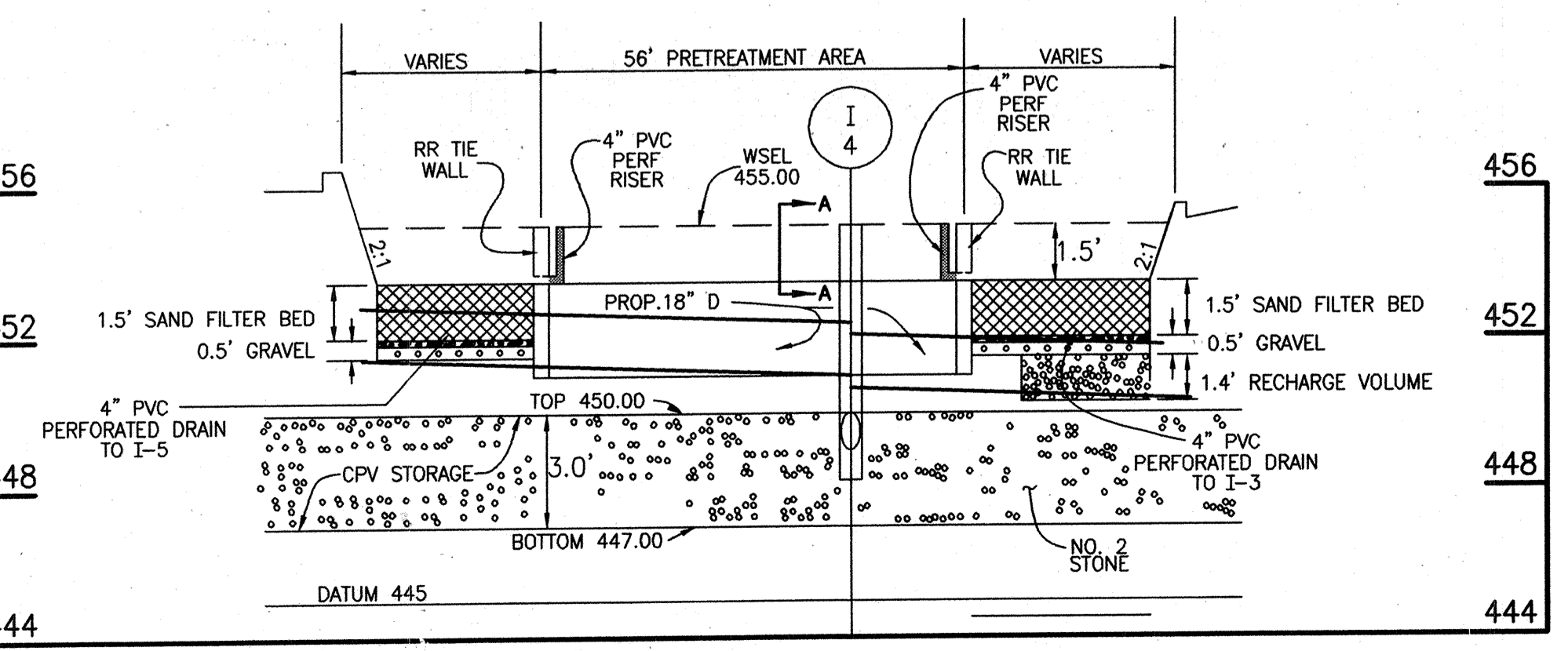
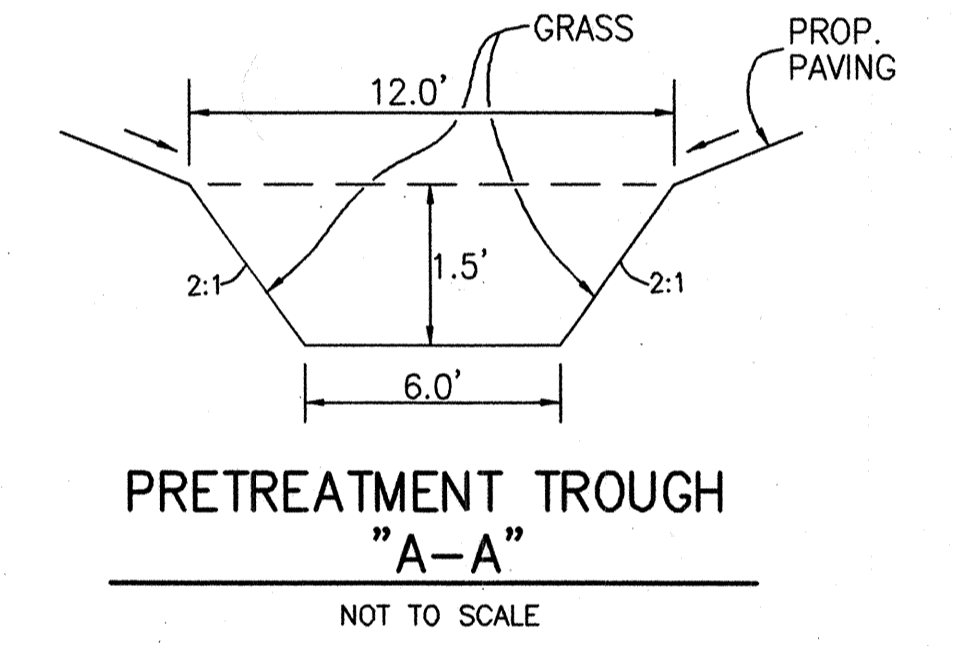
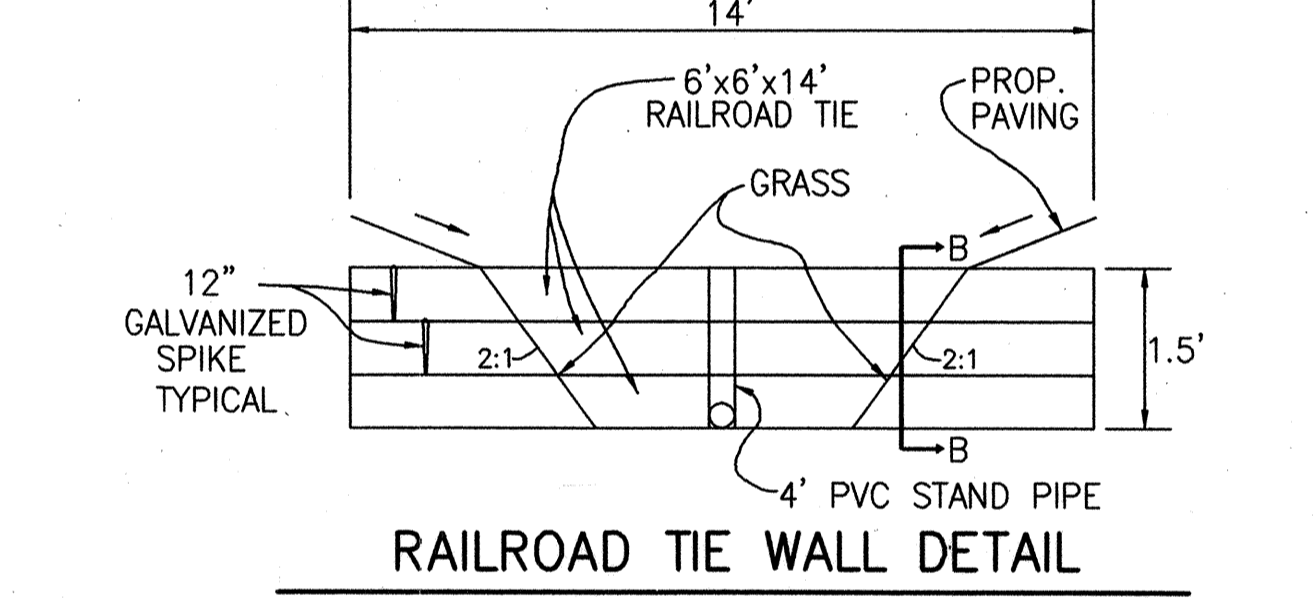
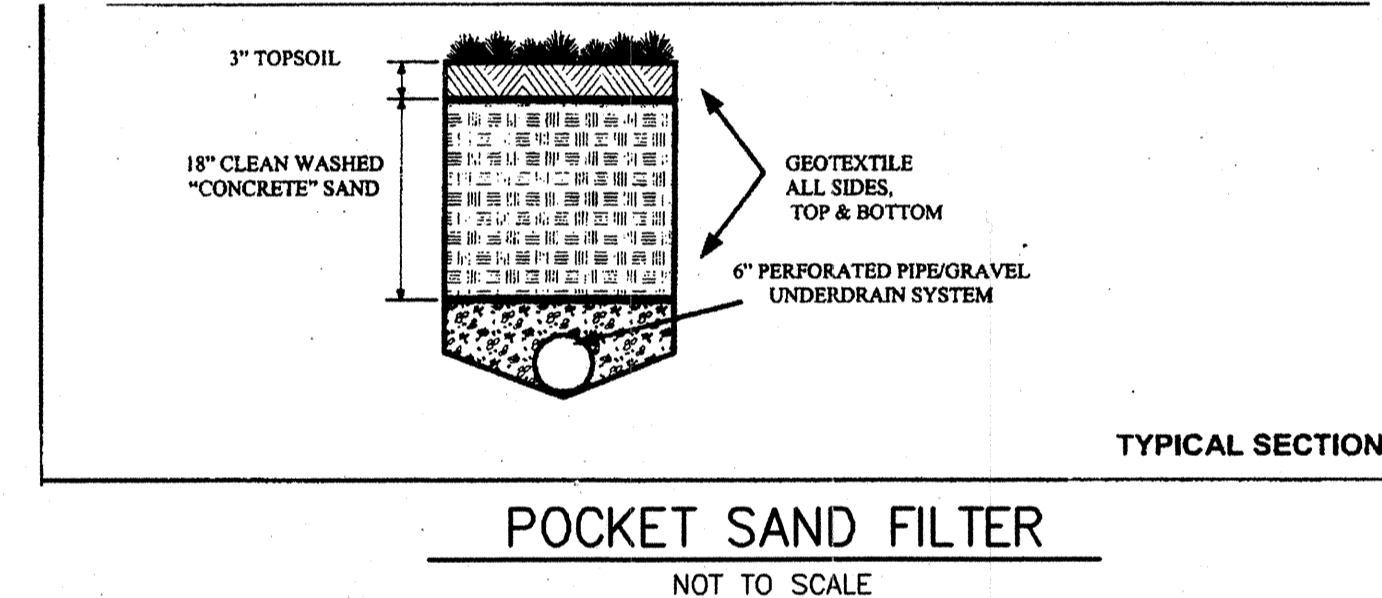
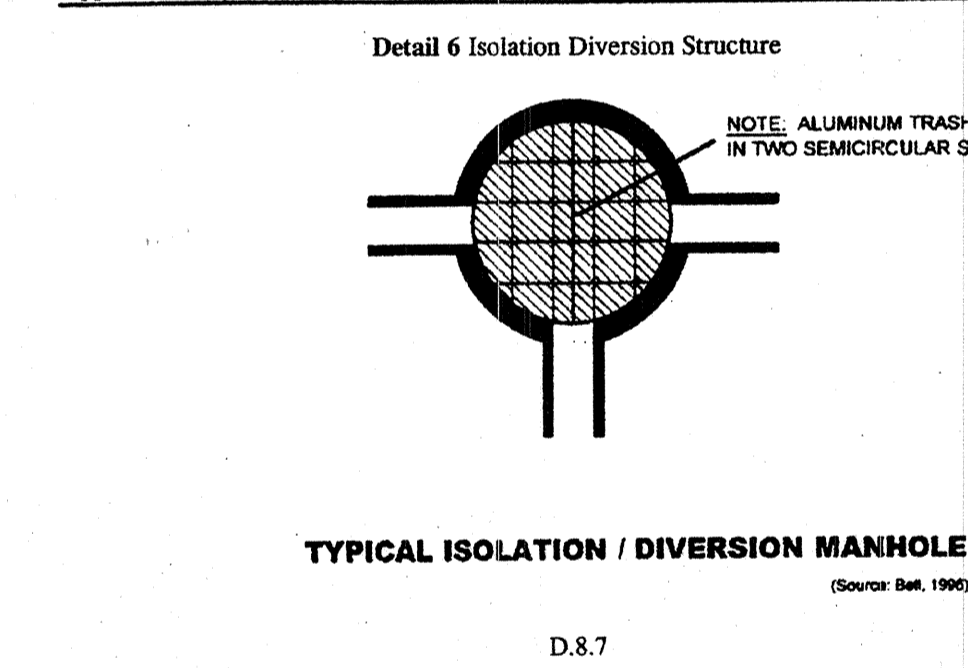
GROUND WATER  
 WATER ON RODS: 13.0 feet  
 AT COMPLETION: 7.6 feet  
 WATER: 5.5 feet  
 CAVED: 8.5 feet  
 CAVED: 8.0 feet



**OPERATION AND MAINTENANCE SCHEDULE**

1. THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
2. THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
3. FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
4. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
5. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
6. REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY.
7. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE OWNER.
8. A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
9. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
10. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

Appendix D.8. Miscellaneous Details for Compliance with Performance Criteria.



Date	No.	Revision Description
12/17/03		EXTENDED 6" PERF PIPE; ENLARGED CPV DIMENSIONS.
10/7/03		REVISED DRAWING NO. & SPILLWAY PROFILE

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

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

**CROSSROADS CHURCH OF THE NAZARENE**

2750 ROGERS AVE.  
 ELECTION DISTRICT NO. 2  
 HOWARD CO. MARYLAND

**CENTURY ENGINEERING, INC.**  
 CONSULTING ENGINEERS, PLANNERS, SURVEYORS  
 32 WEST ROAD  
 TOWSON, MARYLAND 21204  
 (410) 284-823-8070

**BORINGS, DRAINAGE AREA MAPS, AND PROFILES**

Des By: D.W. Scale: AS SHOWN Proj No: 21010.00  
 Dwn By: R.U. Date: NOVEMBER, 2002 DRAWING NO: 9 OF 14  
 Chk By: Approved

**STORMWATER MANAGEMENT FACILITIES CONSTRUCTION SPECIFICATIONS**

**PIPE CONDUITS**

**VOIDS BEHIND FABRIC**

DESIGN STORM	ALLOWABLE RELEASE RATE	FACILITY INFLOW	FACILITY DISCHARGE	WATER SURFACE ELEVATION	STORAGE VOLUME (AC. FT.)
CPV	0.17	4.85 CFS	4 CFS	422.89 FT.	0.226 AC. FT.
10 YEAR	NA	NA	NA	NA	NA
100 YEAR	NA	NA	NA	NA	NA

\*WATERSHED AREA:  $\Delta$  3.52 AC.±  
 WATER QUALITY: TO ELEV. 454.50 3010 CF  
 LEVEL OF MANAGEMENT PROVIDED BY FACILITIES: CPV QUANTITY MANAGEMENT  
 BIORETENTION SWALE FOR MQV VOLUME PROVIDED  
 \*CPV FACILITY ADJUSTED FOR PARKING LOT ADDITION  
 DRAINAGE AREA ROUTED  $\Delta$  3.52 AC.±  
 IMPERVIOUS AREA = 1.26 AC.±  
 RIVER I

- SPECIFICATIONS AND DETAILS:**  
 STORMWATER MANAGEMENT FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION UNLESS OTHERWISE INDICATED.
- INSPECTION BY DESIGNATED ENGINEER:**  
 THE CONSTRUCTION OF ALL STORMWATER MANAGEMENT FACILITIES SHALL BE UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER OR A REGISTERED PROFESSIONAL ENGINEER IN TRAINING. THE ENGINEER MUST CERTIFY THAT THE FACILITIES HAVE BEEN BUILT IN ACCORDANCE WITH THE PLANS AND SUBMIT WRITTEN CERTIFICATION IMMEDIATELY FOLLOWING THE COMPLETION OF THE PROJECT.

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.  
**REINFORCED CONCRETE PIPE:** ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE.

VOIDS CAN BE CREATED BETWEEN THE FABRIC AND EXCAVATION SIDES AND SHOULD BE AVOIDED. REMOVING BOUNDERS OR OTHER OBSTACLES FROM THE TRENCH WALLS IS ONE SOURCE OF SUCH VOIDING. NATURAL SOILS SHOULD BE PLACED IN THESE VOIDS AT THE MOST CONVENIENT TIME DURING CONSTRUCTION TO ENSURE FABRIC CONFORMITY TO THE EXCAVATION SIDES. SOIL PILING, FABRIC CLOGGING, AND POSSIBLE SURFACE SUBSIDENCE WILL BE AVOIDED BY THIS REMEDIAL PROCESS. AS-BUILT PLANS AND CERTIFICATION ARE REQUIRED FOR THIS STORMWATER MANAGEMENT FACILITY. THESE MUST BE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. BALTIMORE COUNTY WILL NOT PERFORM THE INSPECTION OR PREPARE THE AS-BUILT PLANS OF CERTIFICATION. THE STORMWATER MANAGEMENT PERMIT SECURITY WILL NOT BE RELEASED UNTIL THE AS-BUILT PLANS AND CERTIFICATION ARE APPROVED BY BALTIMORE COUNTY.

- MATERIALS:**  
 REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-361.
- 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 INCHES, OR AS SHOWN ON THE DRAWINGS.
- 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. THE FIRST JOINT MUST BE LOCATED WITHIN 2 FEET FROM THE RISER.
- BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."
- OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

**GENERAL NOTES**

- UTILITIES AND TOPOGRAPHICAL FEATURES SHOWN ON THESE PLANS ARE ONLY FOR THE CONVENIENCE OF THE USER AND THERE IS NO WARRANTY OR GUARANTEE OF THE CORRECTNESS OF THE COMPLETENESS OF THE INFORMATION GIVEN. THE USER OF THESE DRAWINGS MUST VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION.
- AS-BUILT PLANS AND CERTIFICATION ARE REQUIRED FOR THIS STORMWATER MANAGEMENT FACILITY. THESE MUST BE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. HOWARD COUNTY WILL NOT PERFORM THE INSPECTION OR PREPARE THE AS-BUILT PLANS OR CERTIFICATION. THE STORMWATER MANAGEMENT PERMIT SECURITY WILL NOT BE RELEASED UNTIL THE AS-BUILT PLANS AND CERTIFICATION ARE APPROVED BY HOWARD COUNTY.
- IN ORDER TO PREPARE THE REQUIRED AS-BUILT PLANS AND CERTIFICATION, THIS STORMWATER MANAGEMENT FACILITY MUST BE INSPECTED BY THE ENGINEER AT SPECIFIC STAGES DURING CONSTRUCTION AS REQUIRED BY THE CURRENT BALTIMORE COUNTY STORMWATER MANAGEMENT POLICY AND DESIGN MANUAL. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ANY WORK SHOWN ON THESE PLANS.
- UNLESS OTHERWISE NOTED, ALL CONSTRUCTION AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION 1976, ERRATA AND ADDENDA. SOIL CONSERVATION SERVICE MARYLAND STANDARDS AND SPECIFICATIONS POND CODE 378 NOVEMBER, 1992. MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, JANUARY, 1982, STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIAL.

**POLYVINYL CHLORIDE (PVC):** ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR POLYVINYL CHLORIDE (PVC) PIPE.

- MATERIALS:**  
 PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OF ASTM D-2241.
- JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.
- 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.
- BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."
- OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

- TIMING:**  
 RUNOFF SHALL NOT BE DISCHARGED TO UNDERGROUND SWM FACILITIES UNTIL ALL UPSTREAM DRAINAGE AREAS HAVE BEEN STABILIZED. DISCHARGE PIPES FROM THE CONTROL STRUCTURE TO THE STONE STORAGE BED SHALL BE PLUGGED UNTIL ALL AREAS ARE STABILIZED.
- EROSION CONTROL FACILITIES:**  
 ALL DISTURBED AREAS SHALL BE CONTROLLED BY EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH A PLAN APPROVED BY BCSCD.

- CARE OF WATER DURING CONSTRUCTION:**  
 ALL WORK SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, BERMS AND DRAINAGE STRUCTURES NECESSARY TO PROTECT THE WORK AREAS, AND SHALL FURNISH, OPERATE AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE WORK, AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY FACILITIES AND EQUIPMENT SHALL BE REMOVED.

- MATERIALS:**  
**CONCRETE:** CONCRETE SHALL BE MIX NO. 3 CONCRETE, ART. 20.07 REINFORCING STEEL SHALL BE ASTM A-615, GRADE 60.  
**CORRUGATED STEEL PIPE:** PIPE SHALL BE FULLY GALVANIZED AND FULLY BITUMINOUS COATED AND SHALL CONFORM TO AASHTO M-190, TYPE A. THE CLEAR AREA OF EACH PERFORATION IN PERFORATED PIPE AFTER THE APPLICATION OF THE BITUMINOUS COATING SHALL BE AT LEAST 75 PERCENT OF THE CLEAR AREA BEFORE COATING. PIPE SHALL BE SUPPLIED WITH WATERTIGHT CONNECTING BANDS.  
**STONE FILL:** STONE SHALL BE MSHA SIZE #2.  
**BACKFILL MATERIAL:** FILL SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, OVERSIZE STONES, FROZEN OR OTHER OBJECTIONABLE MATERIALS, AND SHALL MEET THE REQUIREMENTS FOR SUBGRADE MATERIALS.  
**STABILIZATION:** ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONDITION. 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 OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

- INSTALLATION:**  
**EXCAVATION:** PREPARE EXCAVATIONS TO DESIGN DIMENSIONS. EXCAVATED MATERIALS SHALL BE PLACED AWAY FROM THE EXCAVATED SIDES TO ENHANCE WALL STABILITY. LARGE TREE ROOTS SHALL BE TRIMMED FLUSH WITH THE SIDES TO PREVENT FABRIC TEARING OR PUNCTURING DURING SUBSEQUENT INSTALLATION PROCEDURES. THE SIDE WALLS OF EXCAVATIONS WHICH HAVE BEEN SHEARED AND SEALED BY EXCAVATING EQUIPMENT SHALL BE ROUGHENED BEFORE FABRIC IS PLACED.  
**FABRIC LAYDOWN:** THE FILTER FABRIC ROLL SHALL BE CUT TO THE PROPER WIDTH PRIOR TO INSTALLATION. FABRIC SHALL BE PLACED TO COMPLETELY LINE THE TRENCH AND TO CONFORM TO ANY IRREGULARITIES IN THE EXCAVATION. FABRIC SHALL BE ANCHORED WITH METAL STAPLES OR OTHER APPROVED METHODS. WHERE OVERLAPS BETWEEN TWO ROLLS ARE REQUIRED, THE UPSTREAM ROLL SHALL LAP A MINIMUM OF 2 FEET OVER THE DOWNSTREAM ROLL IN ORDER TO PROVIDE A SHINGLE EFFECT. OVERLAPS ON THE TOP OF TRENCHES AND BEDS SHALL BE A MINIMUM OF 6 INCHES.  
**STONE PLACEMENT:** STONE SHALL BE PLACED WITH CARE TO AVOID TEARING OR DISPLACING FILTER FABRIC. STONE FILL SHALL BE PLACED IN LIFTS AND COMPACTED USING PLATE COMPACTORS OR OTHER APPROVED EQUIPMENT. MAXIMUM LOOSE LIFT THICKNESS SHALL BE 12 INCHES.  
**CONTAMINATION:** CARE SHALL BE EXERCISED TO PREVENT NATURAL OR FILL SOILS FROM INTERMIXING WITH THE STONE FILL. ALL CONTAMINATED STONE FILL SHALL BE REMOVED AND REPLACED WITH UNCONTAMINATED STONE.  
**BACKFILL:** AFTER STONE FILL HAS BEEN PLACED, THE TOP OF THE STONE STORAGE BED SHALL BE COVERED WITH FILTER CLOTH. BACKFILL SHALL BE PLACED IN LIFTS WITH A MAXIMUM THICKNESS OF 6 INCHES AND THOROUGHLY COMPACTED USING HAND OPERATED VIBRATORY TAMPERS OR OTHER APPROVED EQUIPMENT TO 95 PERCENT OF AASHTO T-99 MAXIMUM DENSITY. BACKFILL MATERIALS SHALL MEET THE SPECIFICATIONS FOR PAVEMENT SUBGRADE.  
**OBSERVATION WELL:** AN OBSERVATION WELL SHALL BE CONSTRUCTED FOR EACH FACILITY WHERE INDICATED ON THE DRAWINGS. THE DEPTH OF THE WELL AT THE TIME OF INSTALLATION SHALL BE MARKED ON THE CAP.  
**FILTER CLOTH:** FILTER CLOTH AS APPROVED BY COUNTY MATERIALS LAB: MIRAFI 140S, SUPAC SP, DUPONT TYPAR #3341 OR #3401 OR EQUIVALENT.  
**COMPACTING:** SUBGRADE SHALL BE COMPACTED TO NOT LESS THAN 95% OF MAX. DENSITY AS A REQUIREMENT OF AASHTO T180 METHOD C.

**STRUCTURE BACKFILL**

BACKFILL ADJACENT TO PIPES OR STRUCTURES 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 4 INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL ADJACENT TO THE PIPE AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR 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 24 INCHES OR GREATER OVER THE STRUCTURE OR PIPE.

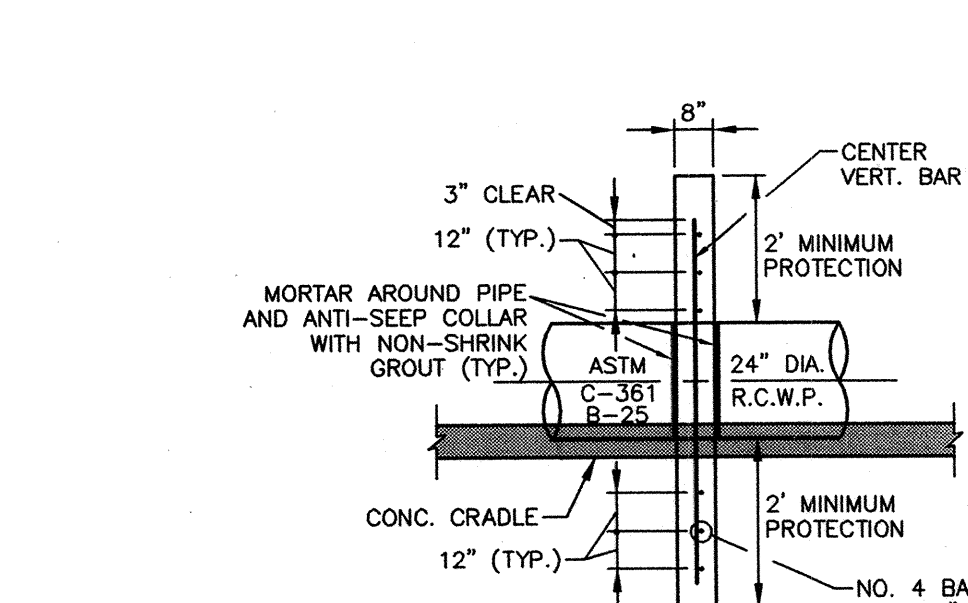
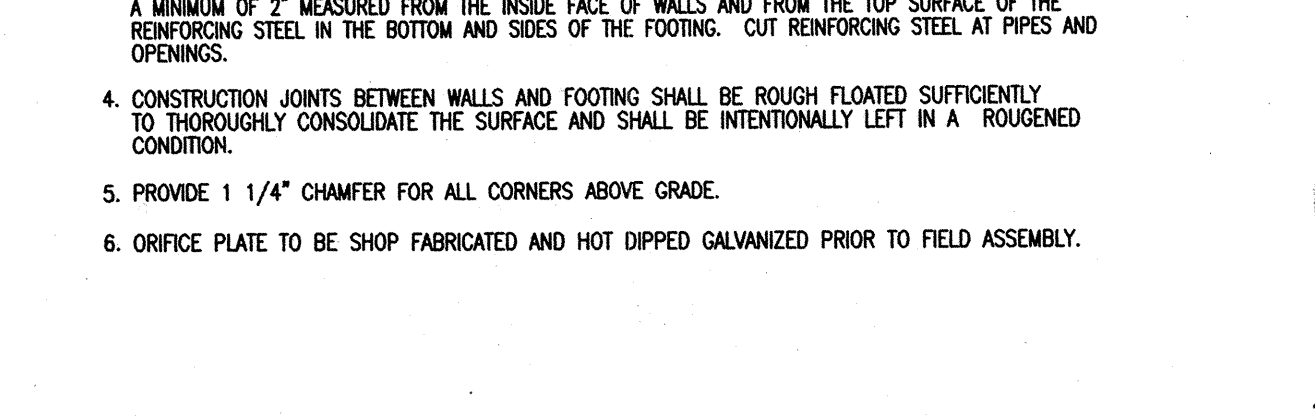
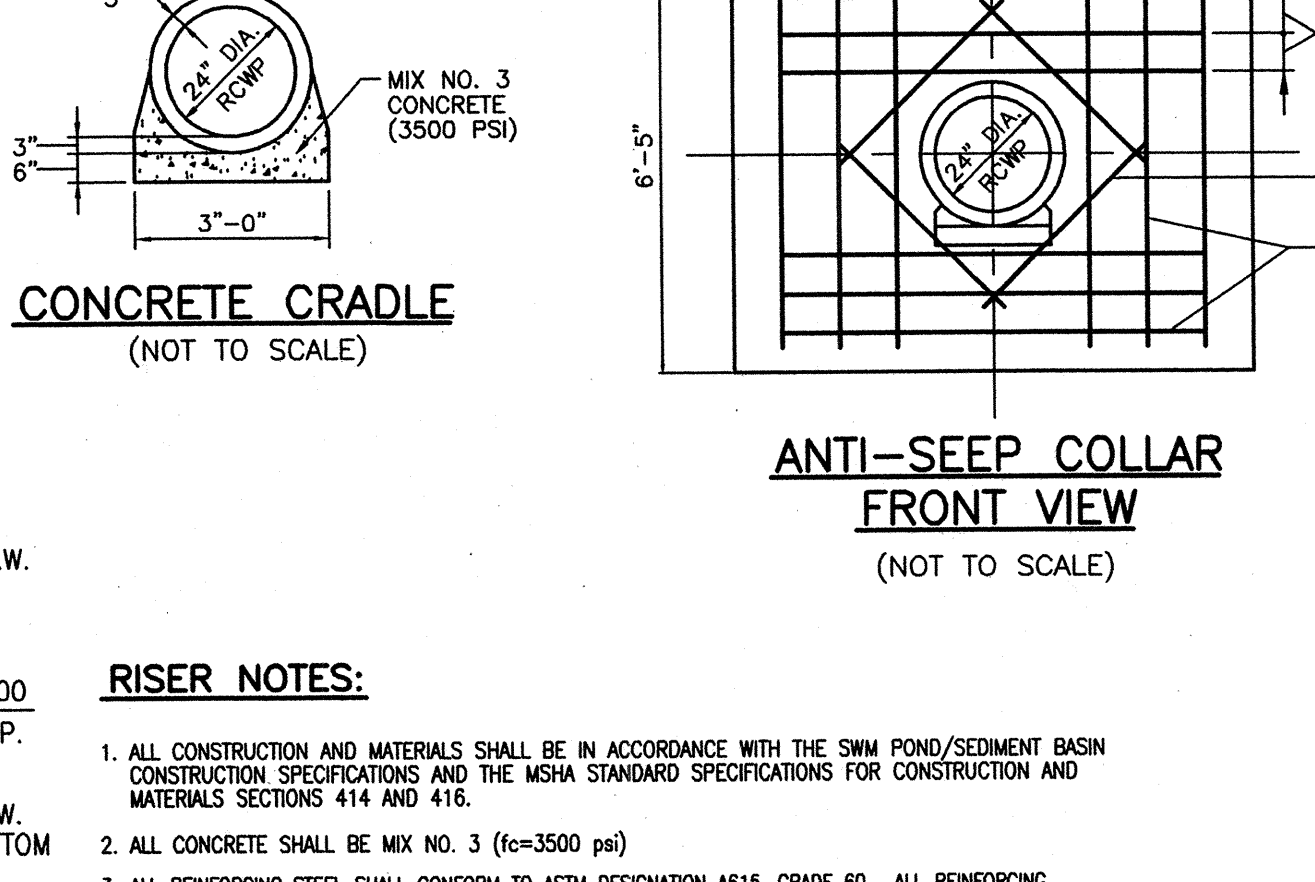
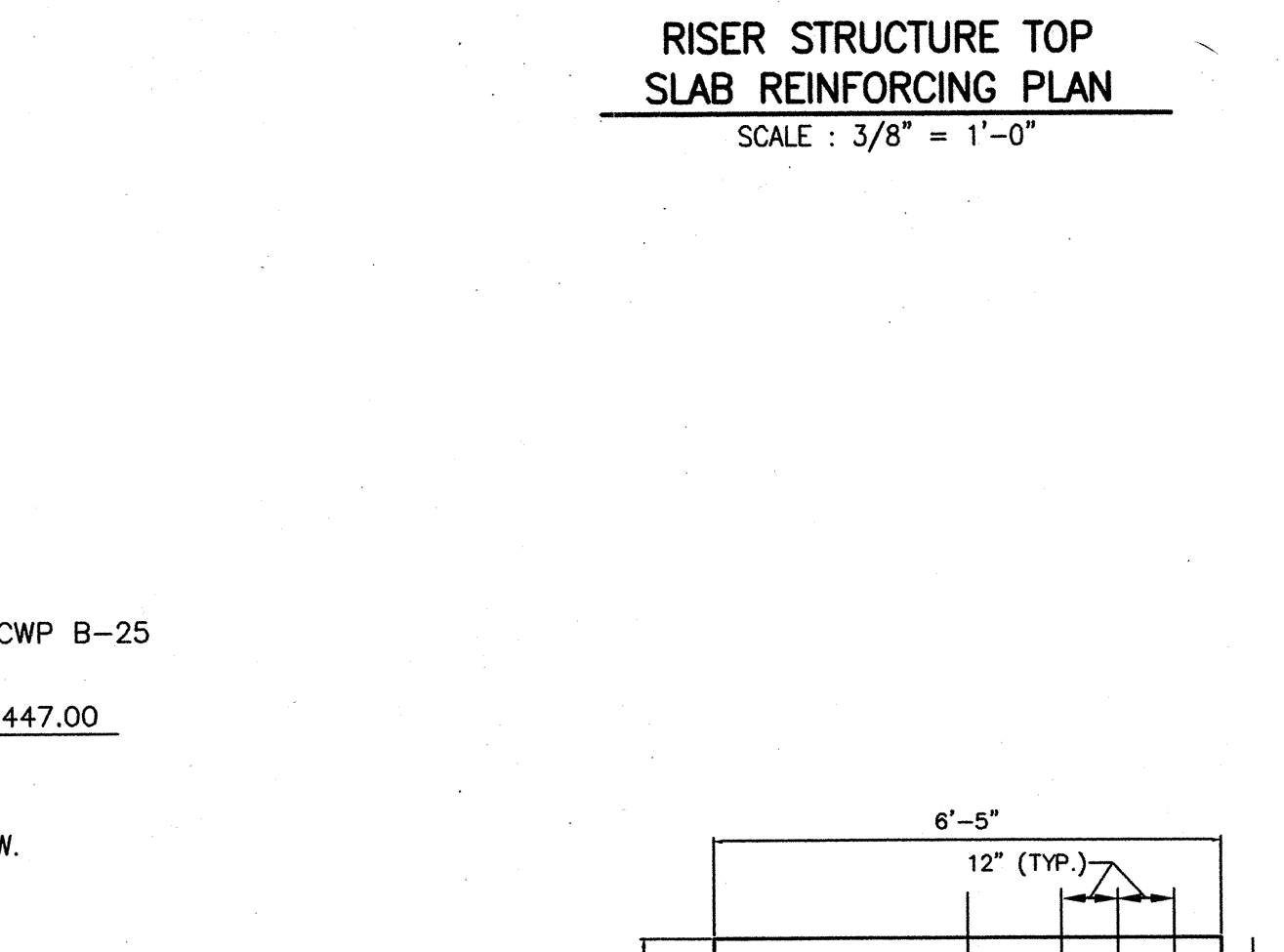
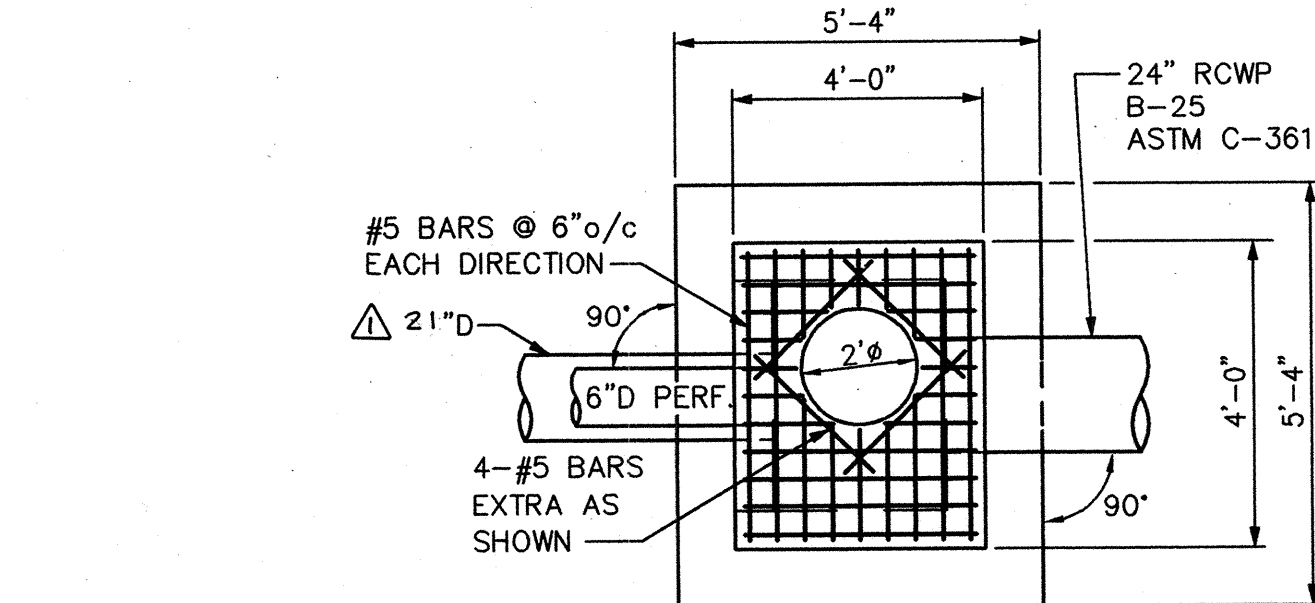
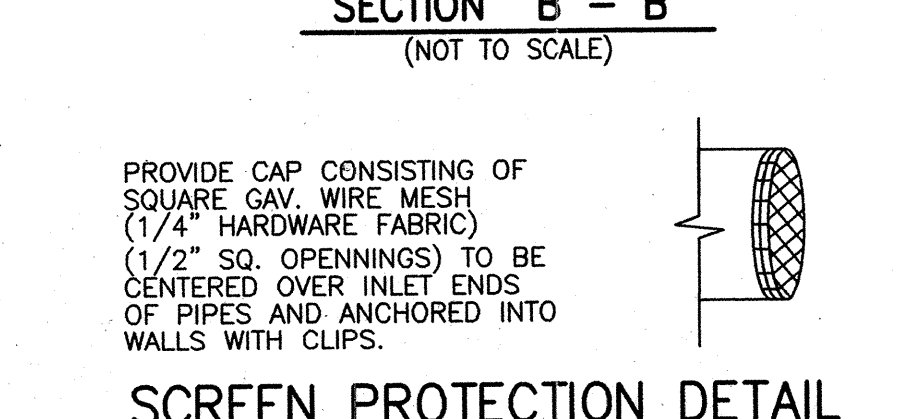
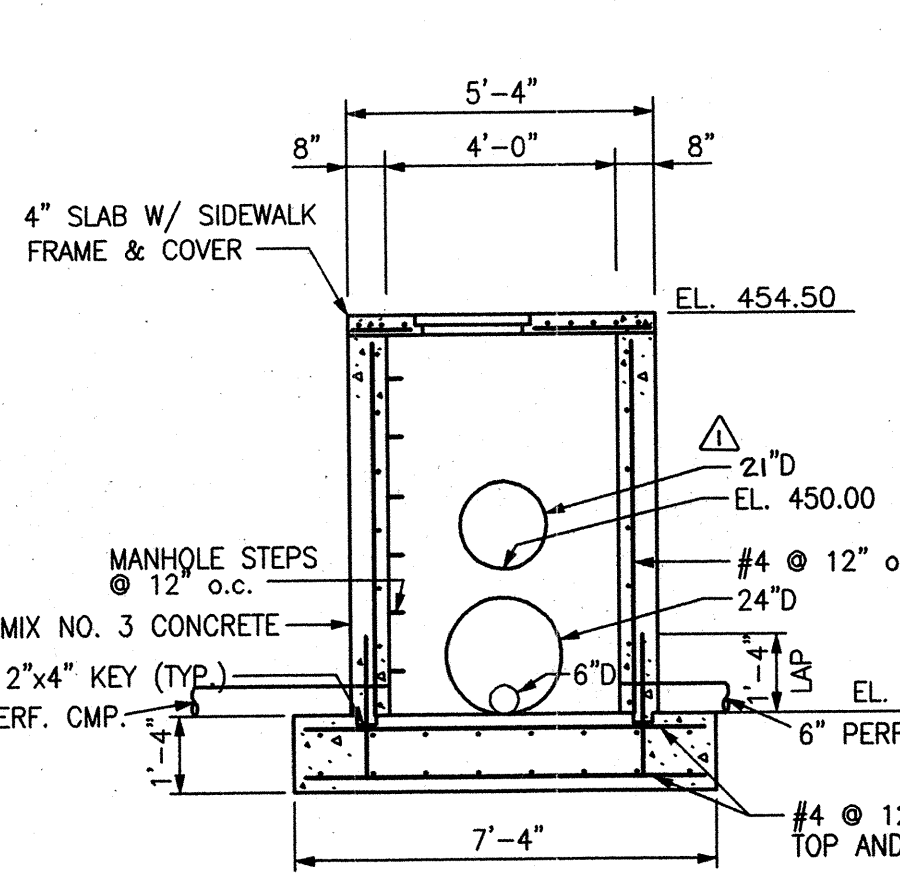
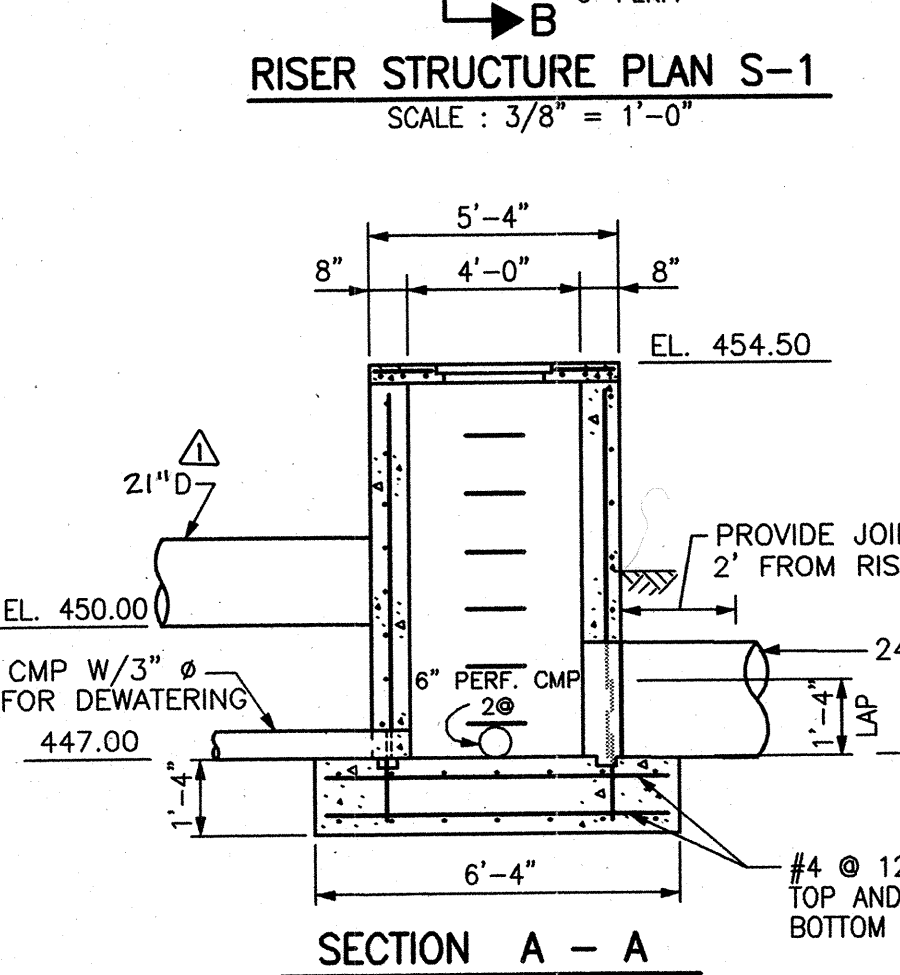
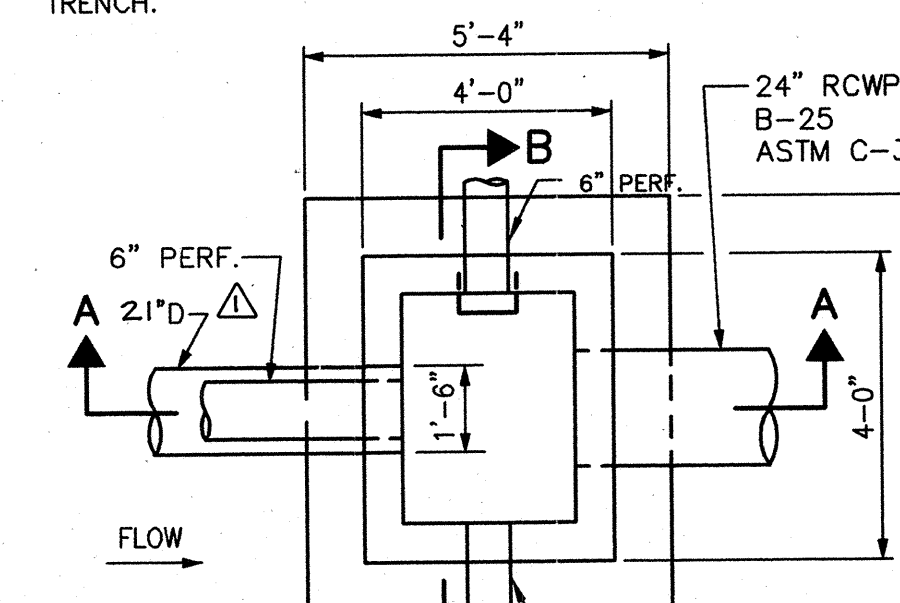
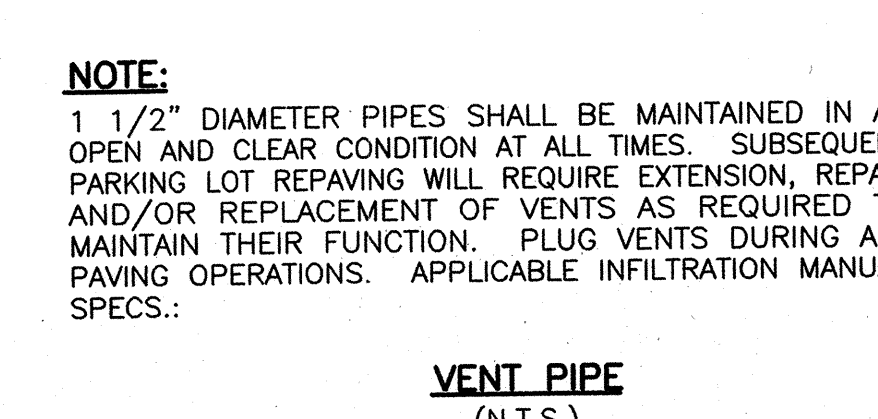
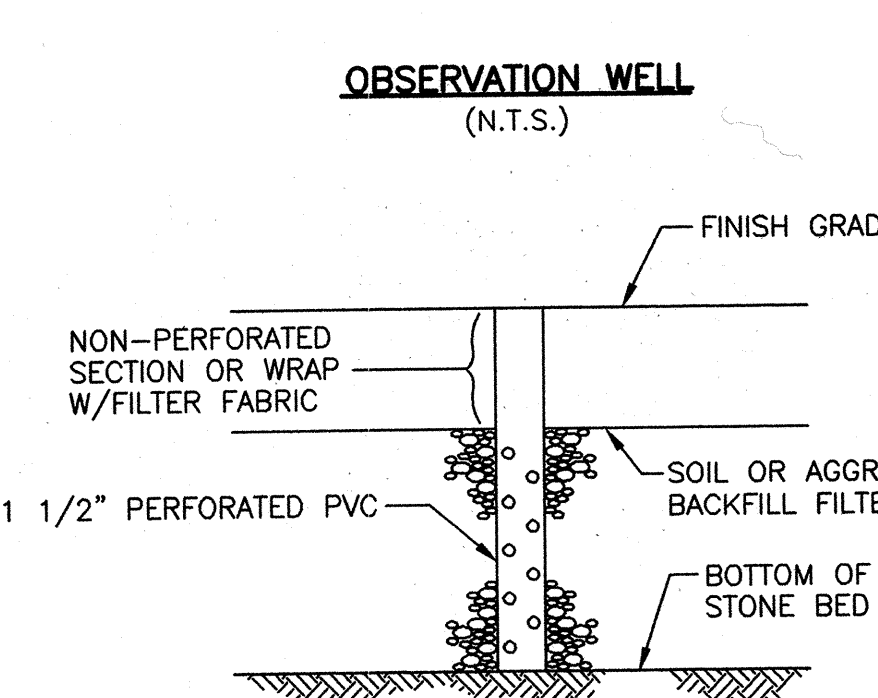
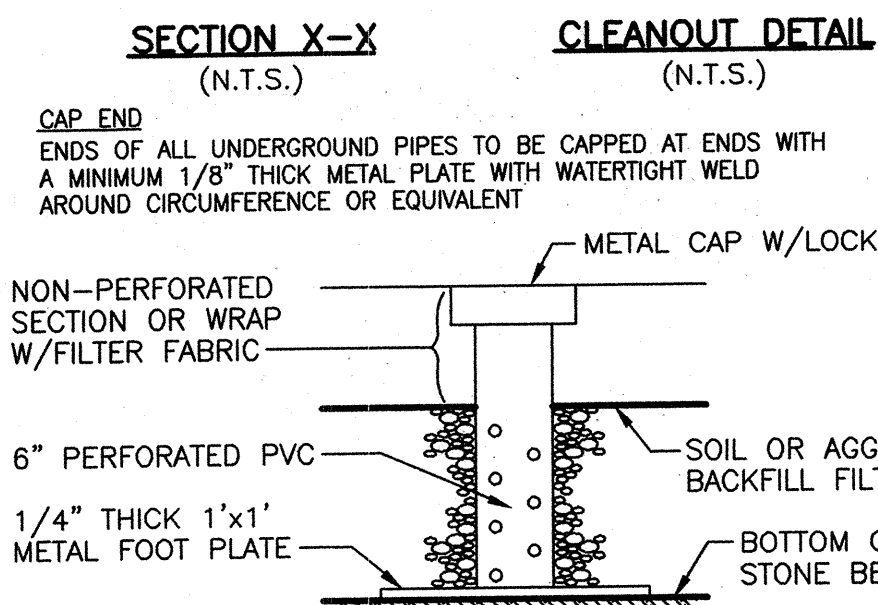
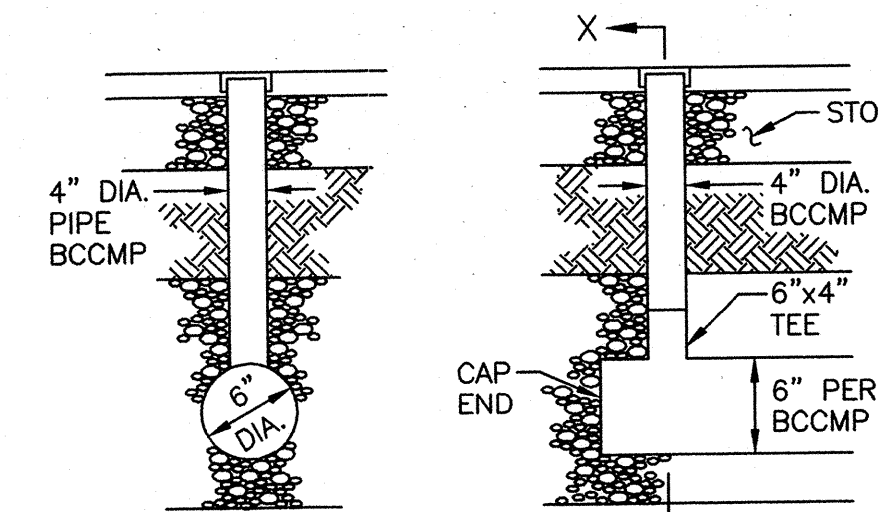
**SITE PREPARATION**

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 NO STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 50 FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED. 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.

**SEQUENCE OF OPERATIONS FOR SWM FACILITY #1**

- NOTIFY HOWARD COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT, SEDIMENT CONTROL DIVISION (410)887-3226 AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.
- CLEAR AND GRUB FOR SEDIMENT & EROSION CONTROL MEASURES OR DEVICES ONLY.
- INSTALL ALL SEDIMENT & EROSION CONTROL MEASURES AND DEVICES.
- NOTIFY HOWARD COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT, SEDIMENT CONTROL DIVISION, UPON COMPLETION OF SAID INSTALLATION.
- WITH THE APPROVAL OF HOWARD COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT AND THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF SITE.
- REMOVE EXISTING PAVING WHERE REQUIRED.
- BEGIN MASS GRADING.
- AFTER GRADING, BEGIN INSTALLATION OF UTILITIES.
- BEGIN PLACING SUB-BASE AND INSTALLING CURB AND PAVING.
- CONSTRUCT UNDERGROUND STORMWATER MANAGEMENT FACILITY.
- FINISH GRADING AND STABILIZE DISTURBED AREA ACCORDING TO PERMANENT SEEDING SPECIFICATIONS.
- FINISH PAVING.
- AFTER OBTAINING PERMISSION FROM SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES.
- STABILIZE ANY AREAS DISTURBED BY THIS PROCESS.



**ENGINEER'S CERTIFICATION:**

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED BY ME OR UNDER MY SUPERVISION AND MEETS THE MINIMUM STANDARDS OF THE HOWARD COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT AND THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

Signature: *George Lambros* P.E. No. 4-24-03  
 Print Name: GEORGE LAMBROS DATE

**AS-BUILT CERTIFICATION:**

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

Signature: \_\_\_\_\_ P.E. No. \_\_\_\_\_  
 Print Name: \_\_\_\_\_ DATE

**LANDOWNER'S/DEVELOPER'S CERTIFICATION:**

I/WE HEREBY CERTIFY THAT ALL WORK SHOWN ON THESE CONSTRUCTION DRAWINGS WILL BE ACCOMPLISHED PURSUANT TO THESE PLANS. I/WE ALSO UNDERSTAND THAT IT IS MY/OUR RESPONSIBILITY TO HAVE THE CONSTRUCTION SUPERVISED AND CERTIFIED, INCLUDING THE SUBMITTAL OF 'AS-BUILT' PLANS WITHIN THIRTY (30) DAYS OF COMPLETION, BY A REGISTERED PROFESSIONAL ENGINEER.

Signature: *Kevin J. Hardy* DATE: 4/23/02  
 Print Name: KEVIN J. HARDY

Date	No.	Revision Description
12/17/03	Δ	CHANGED 18" PIPE TO 21" PIPE
10/7/03	Δ	REVISED DRAWING NO. AND SWM DESIGN SUMMARY TABLE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF-DEVELOPMENT ENGINEERING DIVISION  
*Chris Hamstra* 7/16/02  
 CHIEF-DIVISION OF LAND DEVELOPMENT  
*Marcus D. Rygg* 7/21/02  
 DIRECTOR

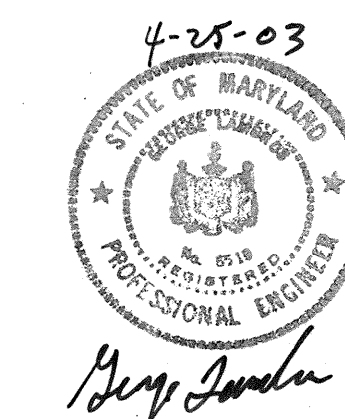
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT.  
*Darryl B. ...* 6-12-03  
 COUNTY HEALTH OFFICER

**CROSSROADS CHURCH OF THE NAZARENE**  
 2750 ROGERS AVE.  
 ELECTION DISTRICT NO. 2 HOWARD CO. MARYLAND

**CENTURY ENGINEERING, INC.**  
 CONSULTING ENGINEERS, PLANNERS, SURVEYORS  
 32 WEST ROAD  
 TOWSON, MARYLAND 21284  
 (410) 284-8232-8070

**STORM WATER MANAGEMENT NOTES AND DETAILS FACILITY #1**

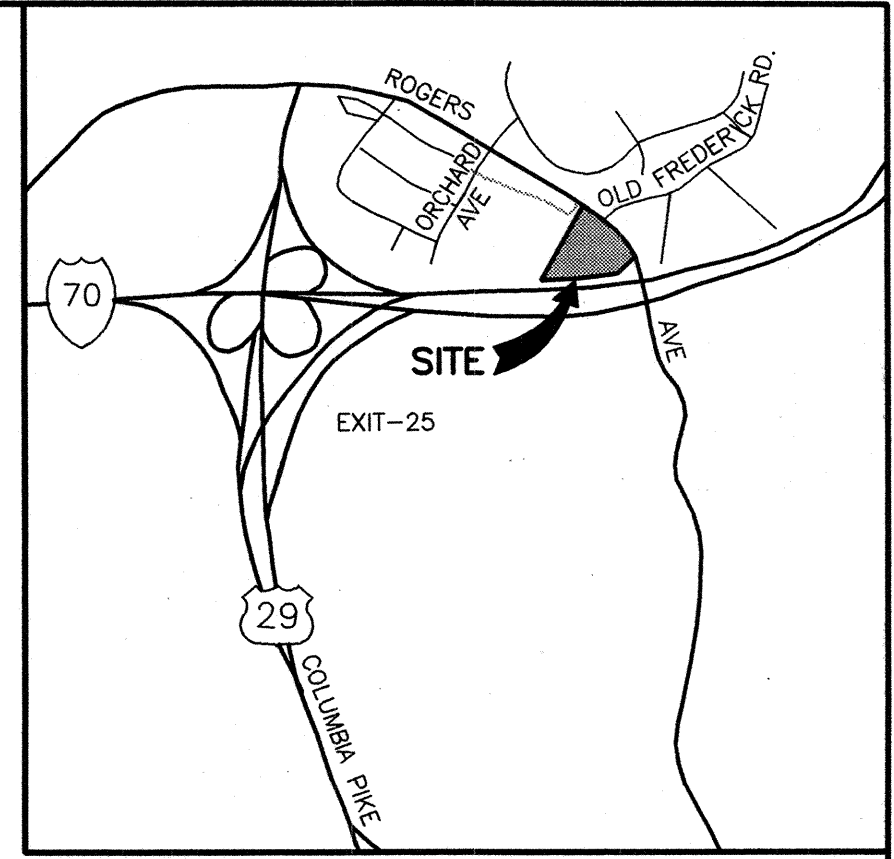
Des By	D.W.	Scale	AS SHOWN	Proj No	21010.00
Dm By	R.U.	Date	NOVEMBER, 2002	DRWING NO	Δ
Chk By		Approved			10 OF 14



SP-02.121

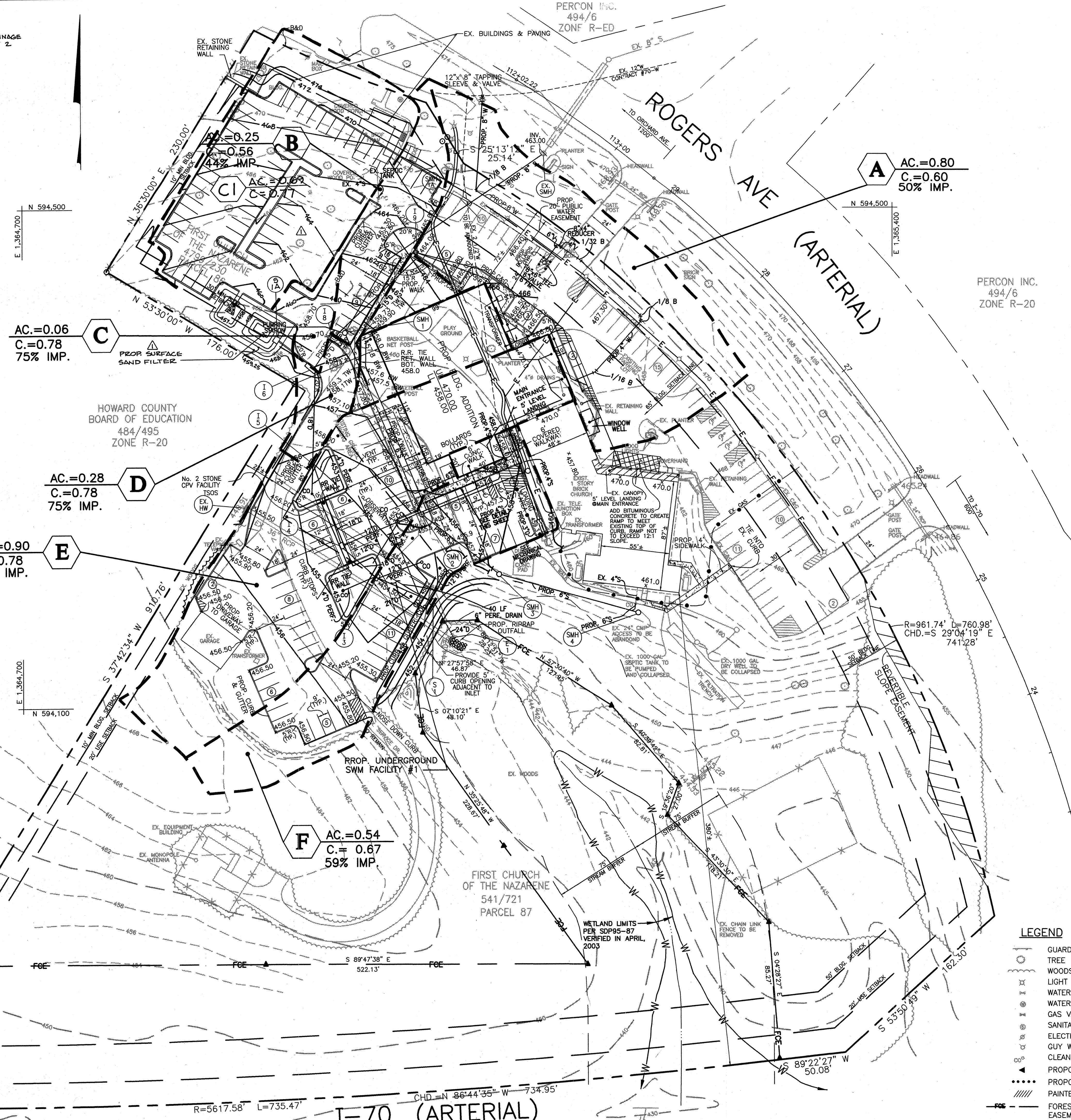


NOTE: THIS SHEET IS FOR DRAINAGE AREA PURPOSE ONLY. SEE SHEET 2 FOR OTHER REVISIONS.



VICINITY MAP  
SCALE: 1"=2000'

PERCON INC.  
494/6  
ZONE R-20



- A** AC.=0.80  
C.=0.60  
50% IMP.
- B** AC.=0.25  
C.=0.56  
44% IMP.
- C** AC.=0.06  
C.=0.78  
75% IMP.
- D** AC.=0.28  
C.=0.78  
75% IMP.
- E** AC.=0.90  
C.=0.78  
74% IMP.
- F** AC.=0.54  
C.=0.67  
59% IMP.

10/1/03	ADDED PARKING LOT AND ASSOCIATED DRAINAGE DATA, AND NOTE; REVISED DRAWING NO.	
Date	No	Revision Description
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
CHIEF-DEVELOPMENT ENGINEERING DIVISION		
<i>Walter Hamet</i>	7/16/02	DATE
CHIEF-DIVISION OF LAND DEVELOPMENT		
<i>David K. Weger</i>	7/21/02	DATE
DIRECTOR		
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT.		



**CROSSROADS CHURCH OF THE NAZARENE**

2750 ROGERS AVE.  
ELECTION DISTRICT NO. 2 HOWARD CO. MARYLAND

**CENTURY ENGINEERING, INC.**  
CONSULTING ENGINEERS, PLANNERS, SURVEYORS  
32 WEST ROAD  
TOWSON, MARYLAND 21284  
(410) 281-823-8070

**DRAINAGE AREA MAP**

- LEGEND**
- GUARD RAIL
  - TREE
  - WOODS
  - LIGHT
  - WATER VALVE
  - WATER METER
  - GAS VALVE
  - SANITARY SEWER MANHOLE
  - ELECTRIC POLE
  - GUY WIRE
  - CLEAN OUT
  - PROPOSED LIGHTS
  - PROPOSED BOLLARDS
  - PAINTED AREAS
  - FOREST CONSERVATION EASEMENT

Des By	D.W.	Scale	1"=40'	Proj No	21010.00
Dwn By	M.L.A.	Date	NOVEMBER, 2002	DRAWING NO	12 OF 14
Chk By		Approved			

SDP.00.131

Schedule A - Perimeter Landscape Edge									
Perimeter	Adjacent to Perimeter Property					Adjacent to Roadways			
	B	A	A	A	C	E/E	E	E	B
Landscape Type									
Linear Feet of Roadway	415'	445'	230'	176'	230'	210' / 110'	315'	300'	
Frontage/ Perimeter	415'	445'	230'	176'	230'	NO / NO	NO	NO	300'
Credit for Existing Vegetation									
Credit for Mail Fence, or Berm (yes, no, linear feet)	NO	NO	NO	NO	NO	NO / NO	YES, BERM 315 LF, MIN. 3' GRADE CHANGE	NO	
Number of Plants Required									
Shade Trees	0	0	2**	3	4	6/3	0	0	0
Evergreen Trees	0	0	0	0	11	0/0	0	0	0
Shrubs	0	0	0	0	0	54/28	0	0	0
Number of Plants Provided									
Shade Trees	0	0	0	1	4	6/3	0	0	0
Evergreen Trees (sub. @ 2:1)	0	0	0	0	11	0/0	0	0	0
Small Flung Trees (sub. @ 2:1)	0	0	0	0	0	0/0	0	0	0
Shrubs (sub. @ 10:1)	0	0	20**	0	0	54/14*	14*	0	0

\* Shrubs distributed between Perimeters 1A & 1B to provide a more balanced design across the parking edge.  
 \*\* The Manual requires 30' wide buffer of existing vegetation. 15' buffer provided; therefore, supplemental planting of 50% of requirement provided. 230/60 = 4 trees required x 50% = 2 trees. 20 shrubs substituted @ 10:1 for 2 trees.

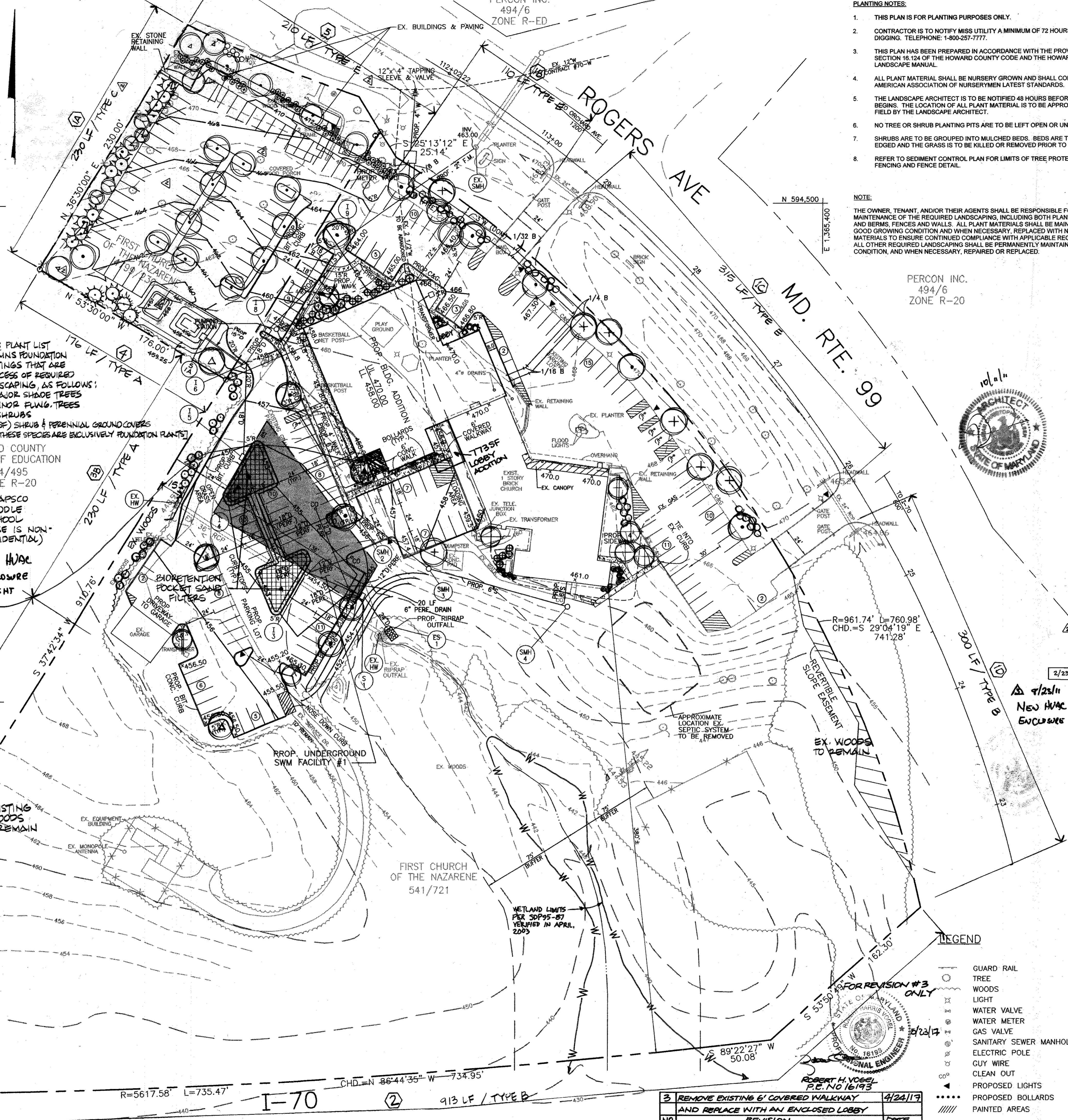
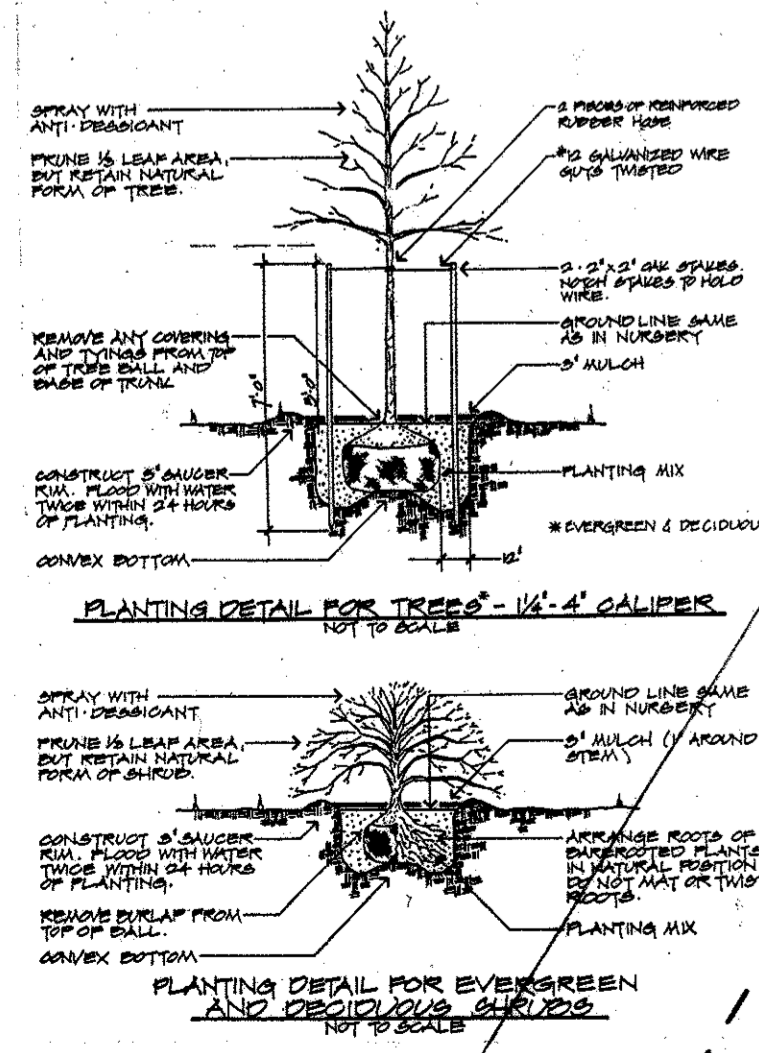
Schedule B - Parking Lot Internal Landscaping	
Number of Parking Spaces	201
Number of Trees Required	11
Internal Islands Required 1/20	11 (2,200sqft)
Internal Islands Provided (200 sq. ft./island)	20 (1,400sqft)
Number of Trees Provided	
Shade Trees	17
Other Trees (2:1 substitution)	2

KEY	QUAN	BOTANICAL NAME COMMON NAME	SIZE	COND	REMARKS
+	8	ACER RUBRUM 'RED SUNSET' RED SUNSET MAPLE	2 1/2'-3' CAL	B&B	FULL SPECIMEN
▲	1	BETULA NIGRA 'HERITAGE' HERITAGE RIVER BIRCH	10'-12' HT	B&B	FULL CLUMP SPECIMEN
○	28	QUERCUS PHELLOS WILLOW OAK	2 1/2'-3' CAL	B&B	FULL SPECIMEN
△	5	QUERCUS RUBRA SCARLET OAK	2 1/2'-3' CAL	B&B	FULL SPECIMEN
⊕	1	AMELANCHIER CANADENSIS SERVICEBERRY	8'-10' HT	B&B	FULL SPECIMEN
⊕	4	CORNUS KOUSA KOUSA DOGWOOD	8'-10' HT	B&B	FULL SPECIMEN
⊕	7	PRUNUS YEDDENSIS YOSHINO CHERRY	1 1/2'-2' CAL	B&B	FULL SPECIMEN
☀	15	PINUS STROBUS WHITE PINE	6'-8' HT	B&B	FULL SPECIMEN
⊕	19	STALEA POUKHANENSIS KOREAN AZALEA	18"-24" SPREAD	CAN	FULL SPACED 5' O.C.
●	37	ILEX GLABRA 'COMPACTA' COMPACT INK BERRY	2 1/2'-3' HT	B&B	FULL SPACED 3' O.C.
☀	30	JUNIPERUS CHIN. 'SEA GREEN' SEA GREEN JUNIPER	18"-24" SPREAD	CAN	FULL SPACED 4' O.C.
☀	5	PRUNUS LAUROCERASUS 'OTTOTYDEN' OTTOTYDEN CHERRY LAUREL	2'-2 1/2' HT	B&B	FULL SPACED 3' O.C.
○	34	VIBURNUM Plicatum TOM. 'SUMMERBERRY' SUMMER SNOWFLAKE VIBURNUM	2 1/2'-3' HT	B&B	FULL SPACED 6' O.C.
○	20	VIBURNUM PHYTODOPHYLLUM LEATHERLEAF VIBURNUM	2 1/2'-3' HT	B&B	FULL SPACED 6' O.C.
⊕	37	VIBURNUM CARLESII KOREAN SPICE VIBURNUM	2 1/2'-3' HT	B&B	FULL SPACED 6' O.C.
☀	15 FLATS OF 24	LIRIOPE MUSCARI 'VARIEGATA' VARIEGATED LILY TURF	2" POTS		(265 SF)

NOTE: PLANT LIST CONTAINS FOUNDATION PLANTINGS THAT ARE IN EXCESS OF REQUIRED LANDSCAPING, AS FOLLOWS:  
 (3) MAJOR SHADE TREES  
 (6) MINOR PLANT TREES  
 (50) SHRUBS  
 (245 SF) SHRUB & PERENNIAL GROUND COVERS  
 [\*\*\* THESE SPECIES ARE EXCLUSIVELY FOUNDATION PLANTS ]

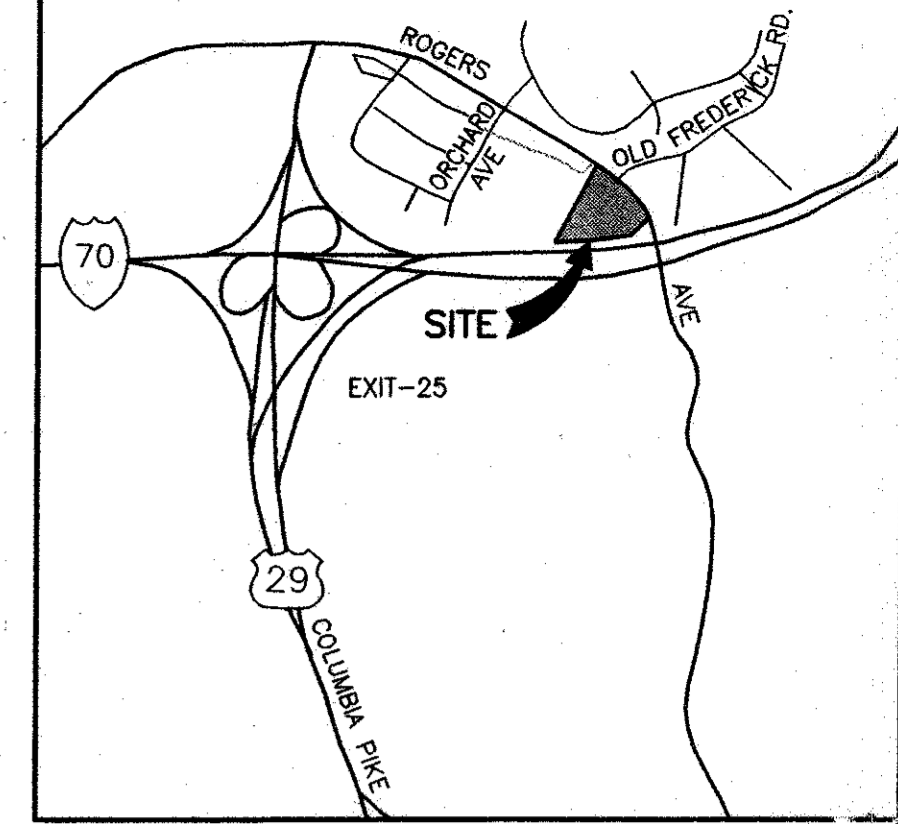
HOWARD COUNTY BOARD OF EDUCATION  
 484/495  
 ZONE R-20  
 PATAPSCO MIDDLE SCHOOL  
 (LAND USE IS NON-RESIDENTIAL)

A New HVAC Enclosure SEE SHT 2



- PLANTING NOTES:**
- THIS PLAN IS FOR PLANTING PURPOSES ONLY.
  - CONTRACTOR IS TO NOTIFY MISS UTILITY A MINIMUM OF 72 HOURS PRIOR TO DIGGING. TELEPHONE: 1-800-257-7777.
  - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
  - ALL PLANT MATERIAL SHALL BE NURSERY GROWN AND SHALL CONFORM TO AMERICAN ASSOCIATION OF NURSERYMEN LATEST STANDARDS.
  - THE LANDSCAPE ARCHITECT IS TO BE NOTIFIED 48 HOURS BEFORE PLANTING BEGINS. THE LOCATION OF ALL PLANT MATERIAL IS TO BE APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT.
  - NO TREE OR SHRUB PLANTING PITS ARE TO BE LEFT OPEN OR UNATTENDED.
  - SHRUBS ARE TO BE GROUPED INTO MULCHED BEDS. BEDS ARE TO BE EGGED AND THE GRASS IS TO BE KILLED OR REMOVED PRIOR TO MULCHING.
  - REFER TO SEDIMENT CONTROL PLAN FOR LIMITS OF TREE PROTECTION FENCING AND FENCE DETAIL.

**NOTE:**  
 THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.



VICINITY MAP  
 SCALE: 1"=200'

**NOTE:**  
 FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF:  
 \$ 15,210 (FIFTEEN THOUSAND TWO HUNDRED TEN)

**LANDSCAPING SURETY CALCULATION:**

(37) SHADE TREES @ \$300 EACH:	\$11,100
(0) ORNAMENTAL TREES @ \$150 EACH:	\$0
(11) EVERGREEN TREES @ \$150 EACH:	\$1,650
(82) SHRUBS @ \$30 EACH:	\$2,460
<b>TOTAL:</b>	<b>\$15,210</b>

**LANDSCAPE PLAN PREPARED BY:**  
**HUMAN & ROHDE, INC.**  
 Landscape Architects  
 512 Virginia Avenue  
 Towson, Maryland 21286  
 (410) 825-3885

**DEVELOPER'S / BUILDER'S CERTIFICATE:**  
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE, AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Date	No	Revision Description
1-18-02	1	HOWARD COUNTY COMMENTS
10/1/03	2	ADDED PARKING LOT, REVISED PERIMETERS 1A & 5 AND PLANT QUANTITIES
2/23/04	3	ADDED NEW HVAC ENCLOSURE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF - DEVELOPMENT ENGINEERING DIVISION  
 CHIEF - DIVISION OF LAND DEVELOPMENT  
 DIRECTOR  
 APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER

**BALTIMORE FIRST CHURCH OF THE NAZARENE**  
 2750 ROGERS AVE.  
 ELECTION DISTRICT NO. 2  
 HOWARD CO. MARYLAND

**CENTURY ENGINEERING, INC.**  
 CONSULTING ENGINEERS, PLANNERS, SURVEYORS  
 32 WEST ROAD  
 TOWSON, MARYLAND 21284  
 (410) 825-8070

**LANDSCAPE PLAN**

Des By	D.W.	Scale	1"=40'	Proj No	21010.00
Des By	M.L.A.	Date	MARCH, 2002	DRWING NO	13 OF 14
Chk By		Approved			

STEP 02.121

KEY	SOIL NAME	SLOPE	K-FACTOR	REMARKS
ChB2	CHESTER SILT LOAM	3-8%	0.32	
EIC3	ELIOAK SILTY CLAY LOAM	8-15%	0.28	
EK2	ELIOAK SILT LOAM	3-8%	0.32	
GIA	GLENELG LOAM	0-3%	0.32	
GIB2	GLENELG LOAM	3-8%	0.32	
GnB2	GLENVILLE SILT LOAM	3-8%	0.32	BAILE INCL.
Ha	HATBORO SILT LOAM	0.49		HYDRIC
LaB2	LEGORE SILT LOAM	3-8%	0.24	
MIC3	MANOR LOAM	8-15%	0.37	
MID3	MANOR LOAM	15-25%	0.37	
MpC2	MONTALTO SILT LOAM	8-15%	0.32	
MpB2	MONTALTO SILT LOAM	3-8%	0.32	
WaB	WATCHUNG SILT LOAM	3-8%	0.43	HYDRIC

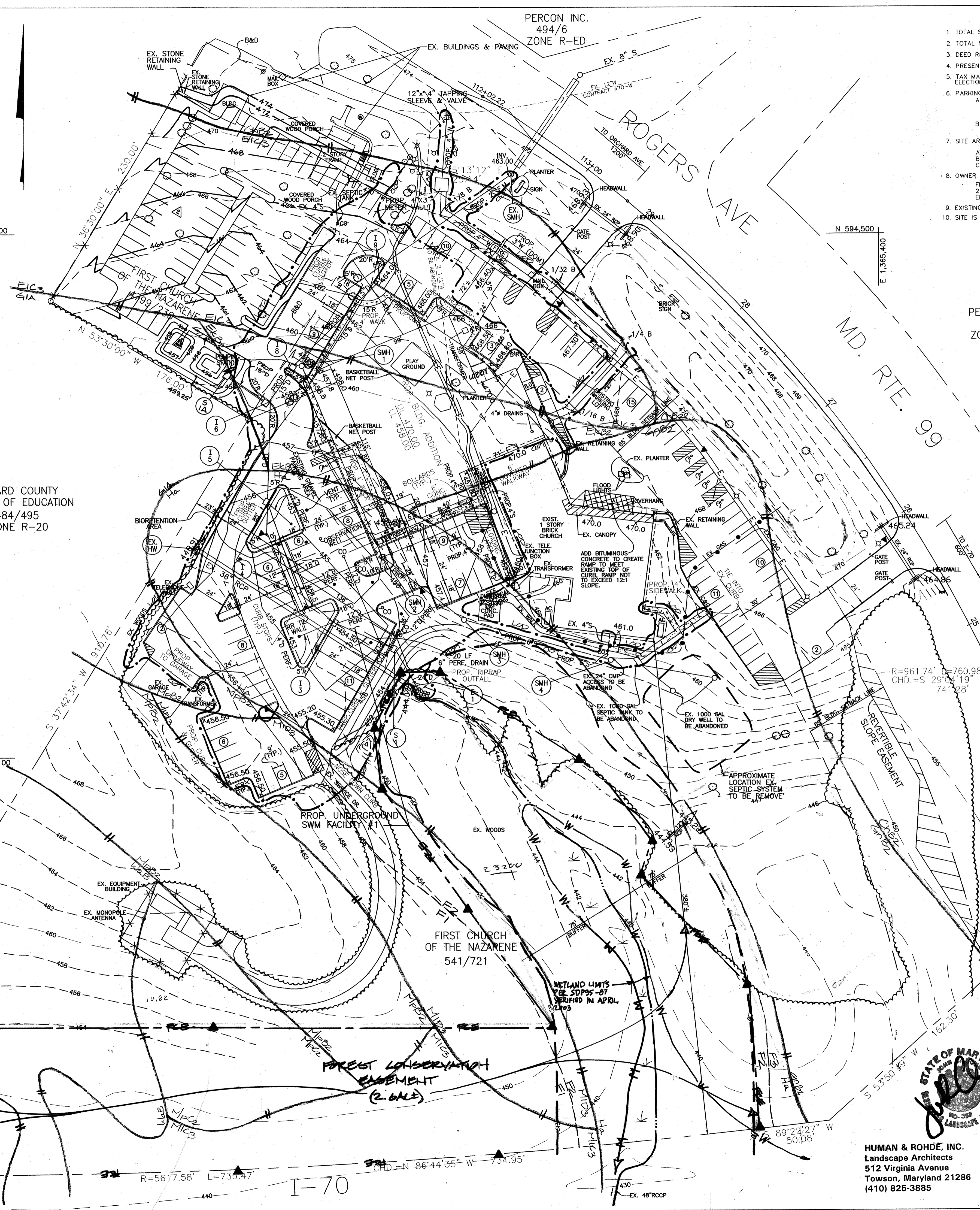
NOTE:  
- THE WETLANDS ARE SHOWN AS DELINEATED BY OTHERS.

- CONSTRUCTION SEQUENCE**
- Contractor to stake and flag the sediment control measures, limit of disturbance, limit of clearing, and forest retention area.
  - Notify Howard County Department of Planning and Zoning at (410) 313-3245 to view the flagged limits.
  - Install protective fencing and signage.
  - Call Howard County Department of Planning and Zoning and Human & Rohde, Inc. to schedule a pre-construction meeting after protective devices are in place and before any disturbance occurs.
  - Install all sediment control devices.
  - Begin clearing and grading.
  - Monitor conditions of trees to be retained during construction and make corrective measures when appropriate. Decisions are to be made with the approval of Howard County Department of Planning and Zoning and Human & Rohde, Inc.
  - After construction is completed, remove protective fencing. Signage for retention areas shall remain in place.
  - Following completion of construction, prior to use, Howard County shall inspect the site to ascertain condition of trees in retention areas. If necessary, implement corrective measures for stress reduction, repair of tree damage, and removal of dead or dying trees that pose a safety hazard.

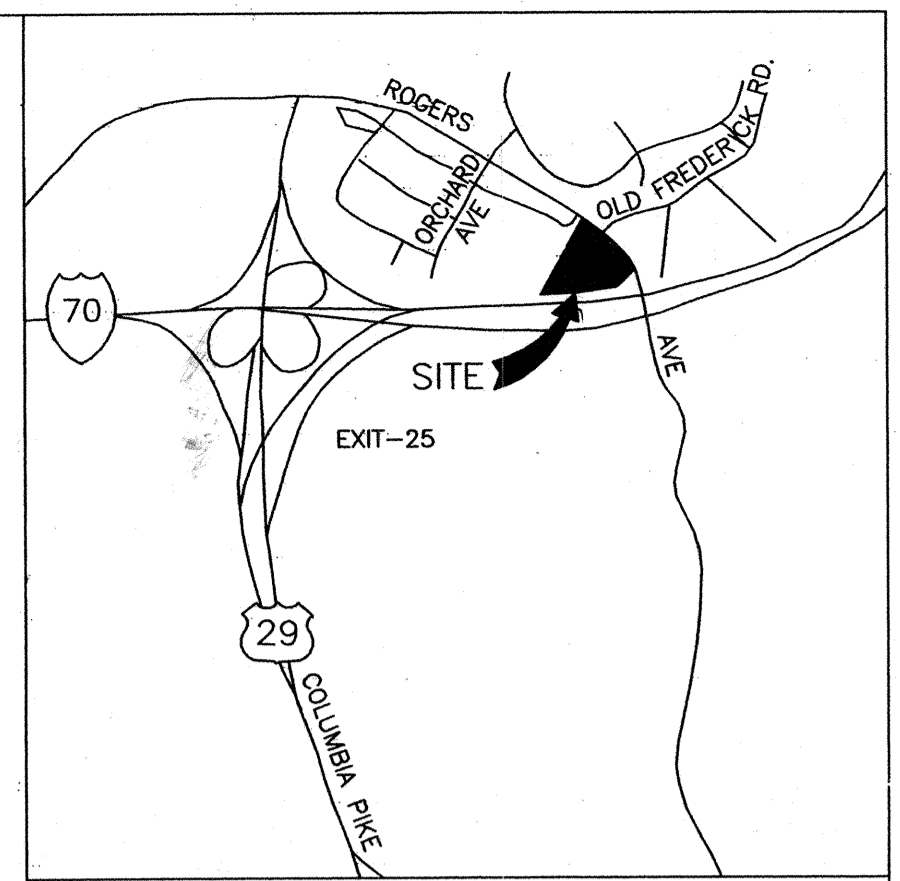
- NOTES**
- No equipment, machinery, vehicles, material, or excessive pedestrian traffic shall be allowed within protected areas.
  - All protective fencing shall be maintained throughout the construction period and shall remain in place until all construction has ceased.
  - Attachment of signs or any other objects to trees is prohibited.

- KEY**
- ▲ PROTECTIVE SIGNAGE (17EA)
  - USE I TRIPLINARY KNOWS AS SICKER BRANCH
  - EXISTING FOREST - (50ACT)
  - LIMITS OF DISTURBANCE
  - FOREST CONSERVATION EASEMENT (2.6AC)
  - SOILS BOUNDARY
  - FOREST STAND BOUNDARY
  - 75' STREAM BUFFER
  - WETLAND LIMITS

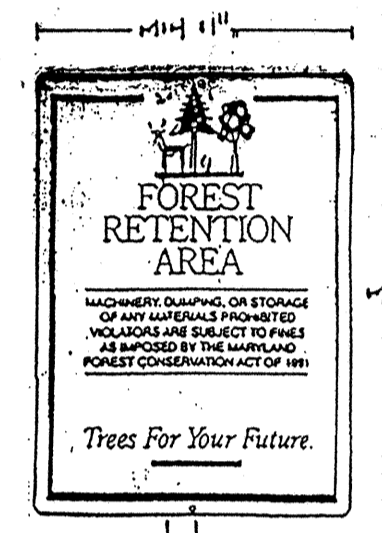
HOWARD COUNTY BOARD OF EDUCATION  
484/495  
ZONE R-20



- SITE ANALYSIS**
- TOTAL SITE AREA: 10.35 AC +/-
  - TOTAL NUMBER OF LOTS: 1
  - DEED REFERENCE: 4799/230 & 541/721
  - PRESENT ZONING: R-20
  - TAX MAP: 17 GRID, 18 PARCELS: 86 & 87
  - ELECTION DISTRICT: 2
  - PARKING TABULATION:
    - A. REQUIRED: RELIGIOUS ACTIVITIES STRUCTURE 1 SPACE / 3 SEATS X 400 SEATS = 134 SPACES
    - B. PROVIDED: 211 SPACES (INCLUDING 12 HANDICAP SPACES)
  - SITE AREA TABULATION:
    - A. PARCEL AREA
    - B. BUILDING AREA
    - C. F.A.R. -
  - OWNER & PETITIONER: FIRST CHURCH OF THE NAZARENE, 2750 ROGERS AVE, ELICOTT CITY, MD. 21043
  - EXISTING AND PROPOSED USE IS RELIGIOUS ACTIVITIES STRUCTURE!
  - SITE IS ADJACENT TO WILTON FARM ACRES



PERCON INC.  
494/6  
ZONE R-20



ORDER BY MAIL, PHONE, FAX OR EMAIL:  
The Tree Company • 20 K. Pleasant Ave. • Columbia, MD 21032  
800-880-0255 • Fax: 410-715-9466 • treeco@treeco.com

NOTE: THIS PLAN IS FOR FOREST CONSERVATION ONLY. SHEET 2 REVISION 1 FOR SITE CONSTRUCTION REVISIONS OTHER THAN PARKING LOT ADDITION.

Forest Conservation Worksheet 2.1

Note: Use 0 for all negative numbers that result from the calculations.

Item	Description	Value
A	Total Tract Area	10.35
B	Deductions (Critical Area, area restricted by local ordinance or program)	0.00
C	Net Tract Area (Net Tract Area = Total Tract Area - Deductions (B))	10.35
D	Land Use Category	Religious Activities Structure
E	Conservation Threshold (Net Tract Area (C) x 2.0%)	2.07
F	Existing Forest Cover	5.00
G	Area of Forest Above Conservation Threshold (If the Existing Forest Cover (F) is greater than the Conservation Threshold (E), then G = F - E. Otherwise G = 0. 4.7 - 2.1 = 2.6)	2.6
H	Breakeven Point (Amount of forest that must be retained so that no mitigation is required)	2.6
I	Forest Clearing Permitted Without Mitigation (1) If the Area of Forest Above the Conservation Threshold (G) is greater than 0, then H = (0.2 x the Area of Forest Above Conservation Threshold (G)) + the Conservation Threshold (E). 2.6 x 0.2 = 0.52 + 2.1 = 2.62	2.62
J	Proposed Forest Clearing (2) If the Area of Forest Above the Conservation Threshold (G) is equal to 0, then I = 0.00	0.00
K	Total Area of Forest to be Cleared (J) = Breakeven point (H) - Existing Forest Cover (F) = 2.6 - 5.0 = -2.4	-2.4
L	Planting Requirements (If the Total Area of Forest to be Cleared (K) is at or above the Breakeven Point (H), no planting is required and no further calculations are necessary (L=0, M=0, N=0, P=0). Otherwise, calculate the planting requirement(s) as follows: (1) If the Total Area of Forest to be Cleared (K) is greater than the Conservation Threshold (E), then L = the Area of Forest to be Cleared (K) x 0.25. (2) If the Forest to be Retained (K) is less than or equal to the Conservation Threshold (E), then L = Area of Forest Above Conservation Threshold (G) x 0.25	0.00
M	Reforestation for Clearing Below the Conservation Threshold (1) If Existing Forest Cover (F) is greater than the Conservation Threshold (E) and the Forest to be Retained (K) is less than or equal to the Conservation Threshold (E), then M = 2.0 x Forest to be Cleared (K) (2) If Existing Forest Cover (F) is less than or equal to the Conservation Threshold (E), then M = 2.0 x Forest to be Cleared (K)	0.00
N	Credit for Retention Above the Conservation Threshold (If the Area of Forest to be Retained (K) is greater than the Conservation Threshold (E), then N = K - E	0.00
P	Total Reforestation Required P = L + M - N	0.00
Q	Total Afforestation Required (If Existing Forest Cover (F) is less than the Afforestation Threshold (D), then Q = Afforestation Threshold (D) - Existing Forest Cover (F)	0.00
R	Total Planting Requirement R = P + Q	0.00

Forest Conservation Worksheet

Date	Revision	Description
10/7/03	1	ADDED PARKING LOT; REVISED DRAWING NO. 7-15-02
7-15-02	1	REVISED FE LIMITS/SURVANCE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF-DEVELOPMENT ENGINEERING DIVISION

CHIEF-DIVISION OF LAND DEVELOPMENT

DIRECTOR

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

COUNTY HEALTH OFFICER

CROSSROADS CHURCH OF THE NAZARENE

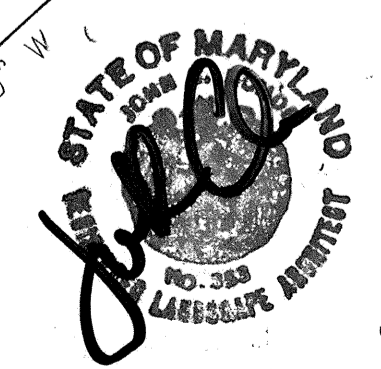
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FOREST CONSERVATION PLAN

Des By	D.W.	Scale	1"=40'	Proj No	21010.00
Drn By	M.L.A.	Date	4-24-02	DRAWING NO	14 OF 14
Chk By		Approved			

HUMAN & ROHDE, INC.  
Landscape Architects  
512 Virginia Avenue  
Towson, Maryland 21286  
(410) 825-3885



- LEGEND**
- EX. GROUND
  - PROP. GRADE
  - GUARD RAIL
  - TREE
  - WOODS
  - LIGHT
  - WATER VALVE
  - WATER METER
  - GAS VALVE
  - SANITARY SEWER MANHOLE
  - ELECTRIC POLE
  - GUY WIRE
  - CLEAN OUT
  - PROPOSED LIGHTS
  - PROPOSED BOLLARDS
  - PAINTED AREAS
  - EX. ELEC.
  - EX. GAS

SDF.02.121