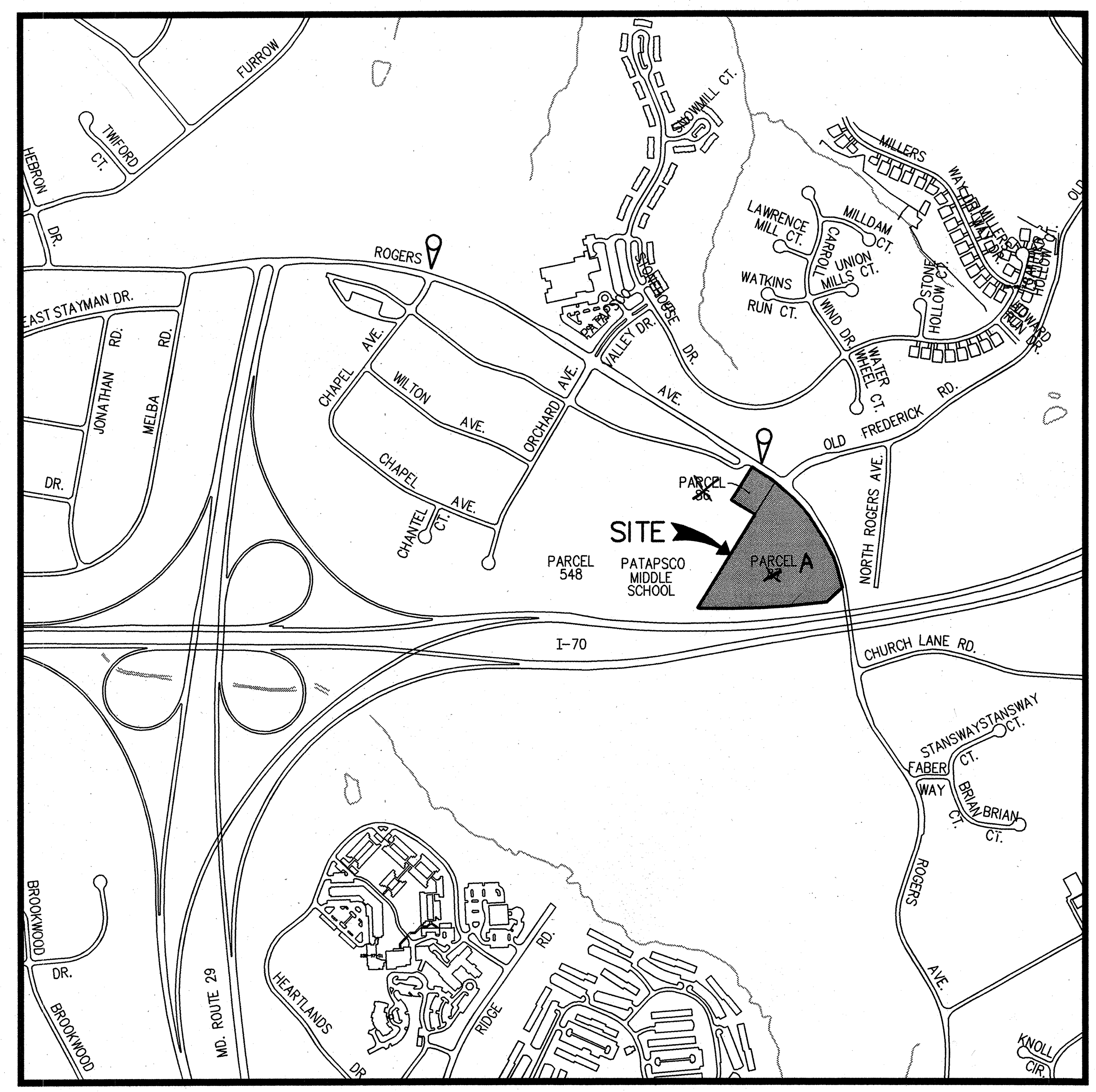
CROSSROADS CHURCH OF THE NAZARENE

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARD AND SPECIFICATIONS IF APPLICABLE.
2. 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.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
4. 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.
5. SITE AREA: 10.35 Ac. ±
6. 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.
7. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
8. EXISTING TOPOGRAPHY REFLECTS FIELD SURVEY BY CENTURY ENGINEERING EXCEPT IN VICINITY OF MOMOPOLE ANTENNA AREA
9. COORDINATES AND BEARING ARE BASED UPON THE MD STATE PLAN SYSTEM (NAD '83).
10. EXISTING WATER AND SEWER SHOWN IS PUBLIC.
11. △ STORMWATER MANAGEMENT: QUANITY 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.
12. ALL EXISTING WATER AND SEWER IS PER CONTRACT #'S: 70-W & 10-3737
13. NO EXISTING PUBLIC STORM DRAIN ON SITE.
14. ALL CURB RADII IS 5' UNLESS NOTED OTHERWISE.
15. UTILITY INFORMATION TAKEN FROM APPROVED FINAL CONSTRUCTION PLANS FOR DEVELOPMENT.
16. ALL SIDEWALKS SHALL BE 4' WIDE EXCEPT WHERE DIMENSIONED OTHERWISE. PROVIDE 3' RADIUS ROUNDING AT ALL ANGLE BREAKS AND INTERSECTIONS.
17. CONTRACTOR SHALL UTILIZE PVC FOR ALL SEWER HOUSE CONNECTIONS. CONTRACTOR SHALL UTILIZE D.I.P. (CL. 51) FOR WATER SERVICE CONNECTION. (FIRE & DOMESTIC)
18. USE HOWARD COUNTY TRENCH BEDDING CLASS "C" FOR STORM DRAINS.
19. PAVED AREAS INDICATED ARE PRIVATE EXCEPT AS NOTED.
20. PROJECT BACKGROUND: SEE DEPT. OF PLANNING & ZONING FILE NUMBERS: SPD 73-89, BA-94-26E & BA01-30C, SDP-95-87
21. 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.
22. 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.
23. FOR GAS, TELEPHONE AND ELECTRIC ROUTING, SEE SEPARATE PLAN.
24. ALL EXISTING UTILITIES WITNIN THE PERIMETER OF PROP. BLDG. TO BE RELOCATED PER DRAWING AS REQUIRED.
25. ALL POTHOLES AND DEPRESSION IN EXISTING PAVED AREAS TO BE REPAIRED. ALL EXISTING PAVED AREAS WHICH ARE TO REMAIN SHALL BE SEALED AND RESTRIPED.
26. 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 NECCESSARY 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 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.
27. TOPOGRAPHY OBTAINED BY CENTURY ENGINEERING ON 1-31-01
28. 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. △
29. THE LANDSCAPE OBLIGATION IS INCLUDED IN THE DEVELOPERS AGREEMENT. THE SURETY IS IN THE AMOUNT OF $15,210.00
30. THIS PROJECT IS EXEMPT FROM APFO BECAUSE THE IMPROVEMENTS DO NOT GENERATE ADDITIONAL TRAFFIC DURING THE DESIGN STUDY HOURS.
31. SEE CAPITAL PROJECT NUMBER T-7076 FOR IMPROVEMENTS TO THE INTERSECTION OF ROGERS AVE. AND FREDERICK ROAD
32. THE PRESSURE SEWER WAIVER WAS OBTAINED ON JULY 26, 2002 FOR THE EXISTING MANHOLE AT THE INTERSECTION OF ROGERS AVE. AND FREDERICK ROAD.
33. THE PROPOSED WATER MAIN EXTENSION WILL BE CONSTRUCTED UNDER AN ADVANCED DEPOSIT ORDER.
34. THE EXISTING 36" PIPE WAS PLACED IN 1982 ALONG WITH THE PERMIT TO CONSTRUCT THE EXISTING GARAGE. THIS WAS DONE UNDER HOWARD COUNTY INSPECTION.
35. 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,
36. LIGHTING FIXTURE DETAILS SHOWN ON SHEET 3 OF 14. △



VICINITY MAP

SCALE: 1"=600'

BENCH MARK

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

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

SITE ANALYSIS

1. TOTAL SITE AREA: 10.35 AC. +/- = 450,846 S.F.
2. TOTAL NUMBER OF PARCELS: 2
3. DEED REFERENCE: 4799/230 & 541/721
4. PRESENT ZONING: R-20
5. TAX MAP: 17 GRID: 18 PARCEL ~~S: 86 & 87~~ A
   ELECTION DISTRICT: 2
6. PARKING TABULATION:
   A. REQUIRED:
   RELIGIOUS ACTIVITIES STRUCTURE
   1 SPACE / 3 SEATS X 325 EX. SEATS = 109 SPACES
   △ B. PROVIDED:
   201 SPACES (INCLUDING 7 HANDICAP SPACES)
7. SITE AREA TABULATION:
   A. PARCEL AREA 10.35 Ac. (PARCEL 86-1.00 Ac. PARCEL 87-9.35 Ac.)
   B. BUILDING AREA 1.55 Ac. 15% COVERAGE
8. OWNER & PETITIONER:
   CROSSROADS CHURCH OF THE NAZERENE
   2750 ROGERS AVE.
   ELLICOTT CITY, MD. 21043
   TEL. 410-465-1103
9. EXISTING AND PROPOSED USE IS RELIGIOUS ACTIVITIES STRUCTURES (CLASSROOMS,KITCHEN AND SOCIAL HALL/GYM) THIS ADDITION IS NOT FOR CHILD DAY CARE
10. △ THE STORMWATER MANAGEMENT FACILITY FOR PHASE 1 IS TO BE GRASS SWALE FOR PRETREATMENT,SAND FILTER FOR WATER QUALITY UNDERGROUND STOREAGE 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 1).
11. TOTAL DISTURBED AREA = 122,345 S.F. = 2.81 Ac±
12. PROPOSED BUILDING ADDITION:
    UPPER LEVEL=4,277 SF
    LOWER LEVEL=13,678 SF
13. ZONING PETITION BA01-30C, FOR A CONDITONAL 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 THE FOLLOWING CONDITIONS.
    1.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 NAZERENE SUBMITTED ON MAY 15, 2001, AND NOT TO ANY OTHER ACTIVITIES, USES OR STRUCTURES ON THE PROPERTY.
    2.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 ABUTTING PROPERTY TO THE WEST.
    3.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)PHASEIII, THE CONSTRUCTION OF A SEPERATE BUILDING TO BE USED FOR THE CHURCH OFFICES, SHALL COMMENCE WITHIN SEVEN YEARS OF THE DATE HEREOF.
    4.THE PETIONER SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND COUNTY LAWS AND REGULATIONS.
14. 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:
    A. 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 1 MEETS THE PHASE III REQUIREMENT.
    TYPE D (SCREEN) LANDSCAPE EDGE ALONG WEST SIDE PARCEL 86.
15. 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)
16. SEE RECORDED PLAT SHOWING THE MERGER OF PARCELS 86 & 87 AND THE FOREST CONSERVATION EASEMENT, F.03.158, #16055
17. THERE ARE NO WETLANDS/WETLANDS BUFFERS WITHIN THE LIMIT OF DISTURBANCE SHOWN FOR DEVELOPMENT ON THIS SITE PLAN.

Developer's Agreement executed on May 12, 2003

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

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF-DEVELOPMENT ENGINEERING DIVISION — DATE 7/23/03

CHIEF-DIVISION OF LAND DEVELOPMENT — DATE 7/16/03

DIRECTOR — DATE 7/21/03

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

COUNTY HEALTH OFFICER — DATE 6-12-03

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 21204
(410) 823-8070

ADDRESS CHART

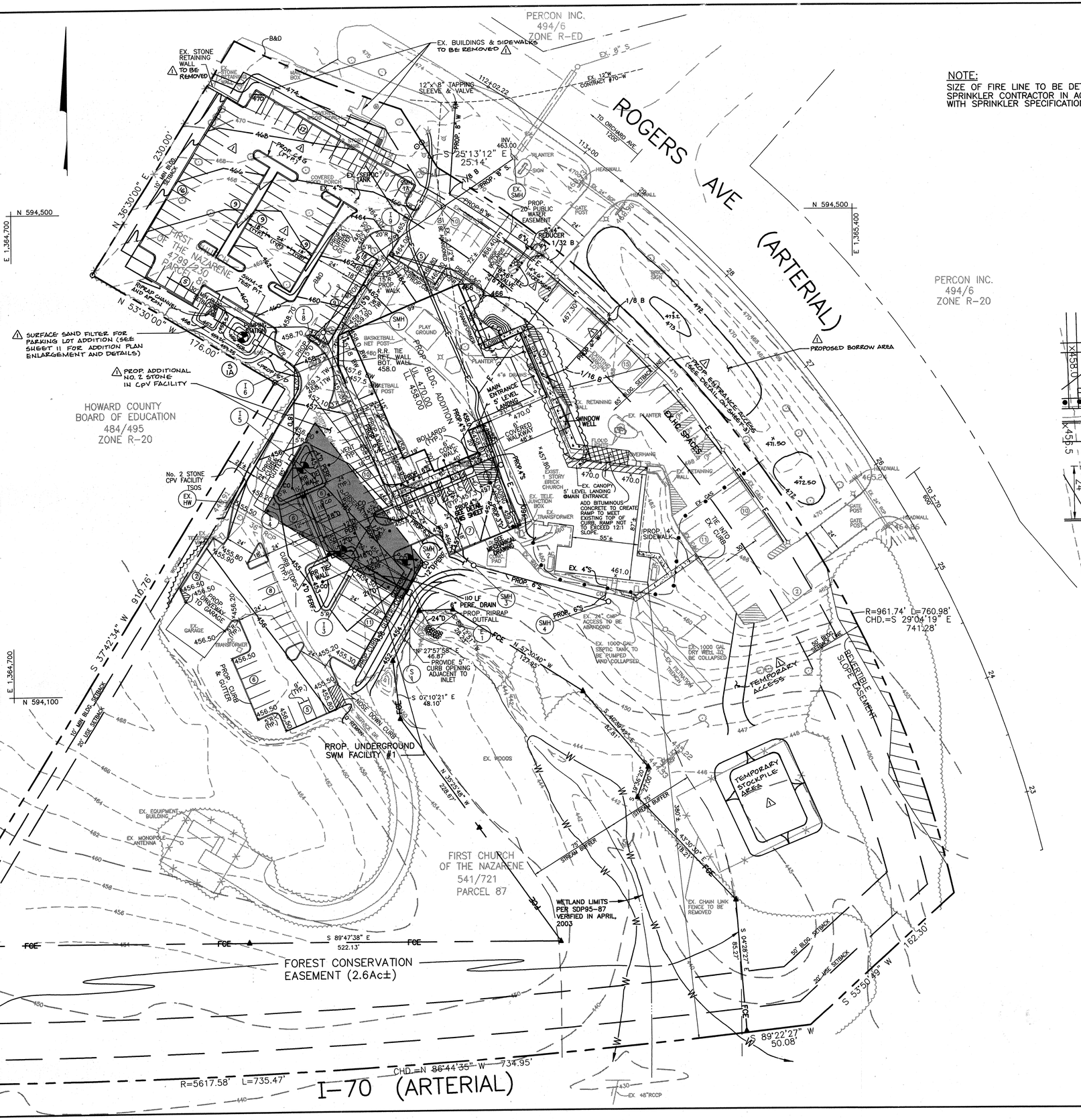
PARCEL NO.	STREET ADDRESS				
~~86 & 87~~ A	2750 ROGERS AVE.				
SUBDIVISION NAME: NA		SECT./AREA: NA		PARCEL NO.: PARCEL A	
PLAT NO.: 16055	BLOCK NO.: 18	ZONE: R-20	TAX: 17	ELECT. DIST.: 2	CENSUS TR.: 602100
WATER CODE: H02			SEWER CODE: 1454850		

4-25-03 — STATE OF MARYLAND, GEORGE LAMBROS, No. 6519, REGISTERED PROFESSIONAL ENGINEER

COVER SHEET

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

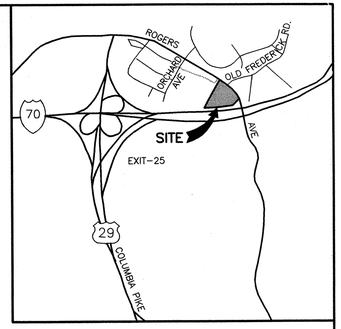
SDP.02.121



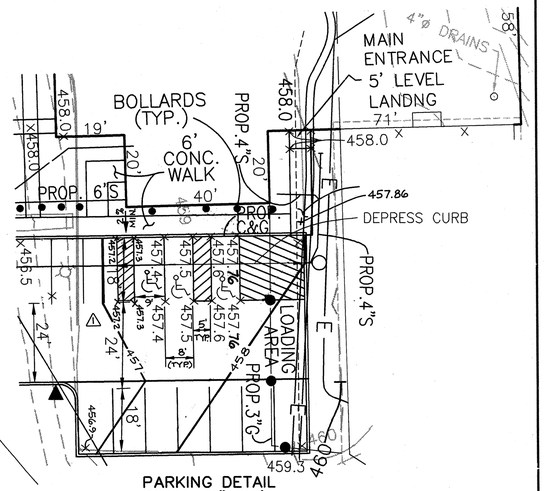
LEGEND

- 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

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



VICINITY MAP
SCALE: 1"=2000'



PARKING DETAIL
SCALE: 1"=20'

Date	No	Revision Description
2/23/04	4	DELETED 3 PARKING SPACES AT ENTRANCE AND
2/23/04	3	ADDED BUILDING ENTRANCE ACCESS;
12/23/03	2	INCREASED WATER LINE SIZE; ADDED TEST PIT
10/7/03	1	ADDED H.C PARKING SPACE
		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 — DATE 5/26/03

CHIEF-DIVISION OF LAND DEVELOPMENT — DATE 7/16/03

DIRECTOR — DATE 7/21/03

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

COUNTY HEALTH OFFICER — DATE 6-12-03

CROSSROADS CHURCH OF THE NAZERENE

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

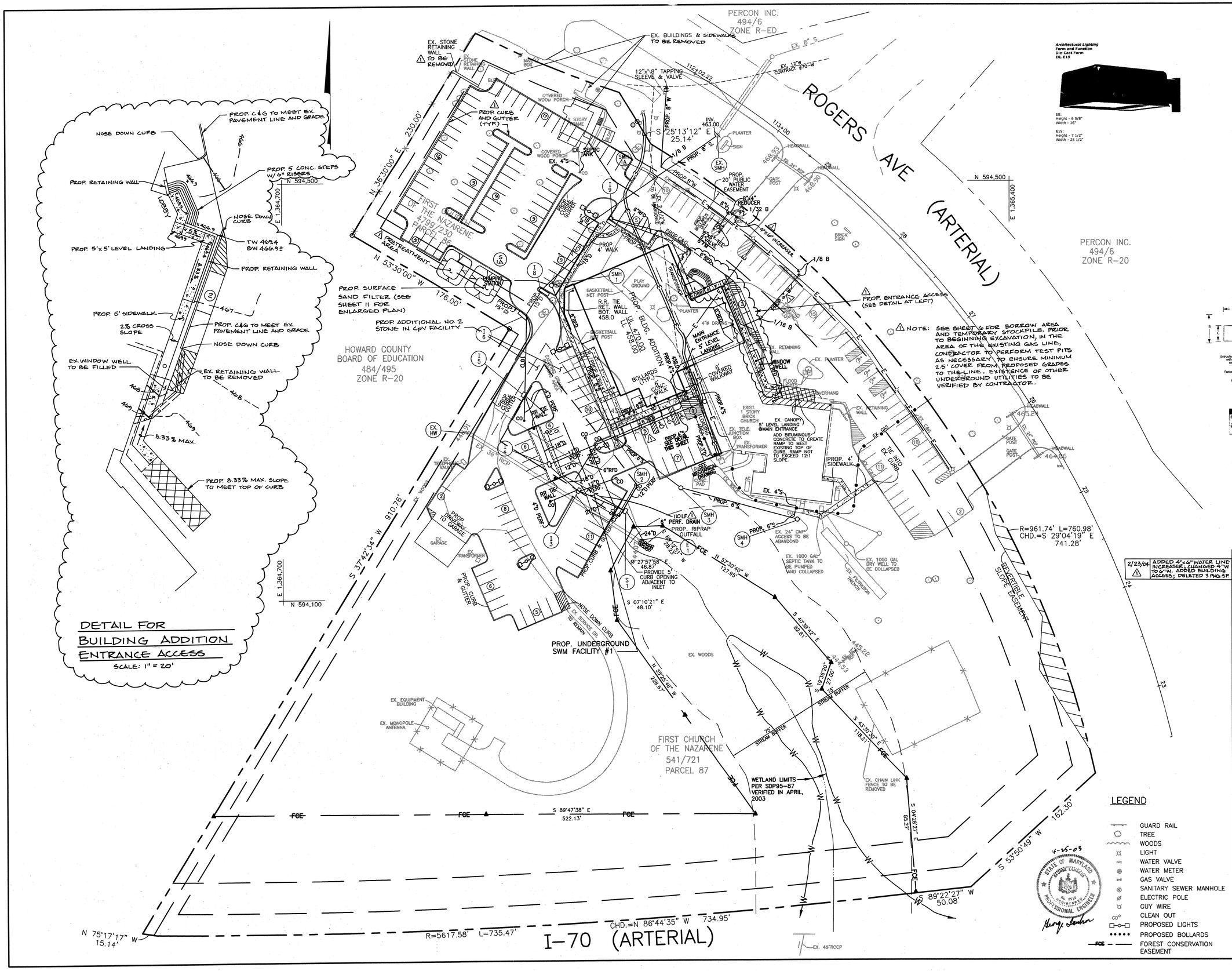
CENTURY ENGINEERING, INC.
CONSULTING ENGINEERS, PLANNERS, SURVEYORS
32 WEST ROAD
TOWSON, MARYLAND 21204
(410) 823-8070

4-25-03
STATE OF MARYLAND
MICHAEL L. ANDERSON
No. 8518
REGISTERED
PROFESSIONAL ENGINEER

SITE GRADING PLAN

Des By	D.W.	Scale 1"=40'	Proj No 21010.00
Drn By	M.L.A.	Date NOVEMBER, 2002	DRAWING NO 4
Chk By		Approved	2 OF 14

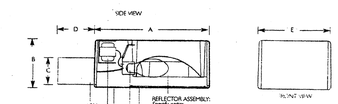
SDP-02-121



Architectural Lighting
Form and Function
Die-Cast Form
E8, E19

E8:
Height - 6 5/8"
Width - 16"

E19:
Height - 7 1/2"
Width - 25 1/2"



WALL/ARM MOUNT

	A	B	C	D	E
E8	8"	6 5/8"	7"	9"	8"
	20.3 cm	16.8 cm	7.6 cm	20.3 cm	20.3 cm
E19	19"	7 1/2"	6"	6 1/2"	14 3/4"
	48.6 cm	19.1 cm	15.2 cm	16.5 cm	37.5 cm

OUTDOOR LIGHTING

HADCO E8,E19 DIE-CAST FORM (OR EQUAL)
SERIES E-19
(A4) ARM MOUNTING (4" POST)
2 @ 180° ARM MTG.
BRONZE FINISH
TYPE III OPTICS
WATTAGE 400H
280V
APPROXIMATE LUMENS
INITIAL 40,000
MEAN (353) 32,000
MOUNTING 25' POLE ON 2'-6" BASE, 27'-6" HIGH

Date	No	Revision Description
2/23/04	4	ADDED 4"x6" WATER LINE INCREASER; CHANGED 4"W TO 6"W. ADDED BUILDING ACCESS; DELETED 3 PROSP
12/23/03	3	ADDED H.C. PARKING SPACE
7/03	2	ADDED SAND FILTER & PARKIN LOT; ENLARGED CPV FACILITY; ADDED NOTE; EXTENDED 6" PERF. DRAIN; REVISED DWG. NO.; DELETED SMHS & 6" SEWER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF-DIVISION OF LAND DEVELOPMENT — 7/16/03 DATE

DIRECTOR — 7/21/03 DATE

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

COUNTY HEALTH OFFICER — 6-12-03 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

4-25-03
STATE OF MARYLAND
MICHAEL L. ALBERT
No. 9121
REGISTERED PROFESSIONAL ENGINEER

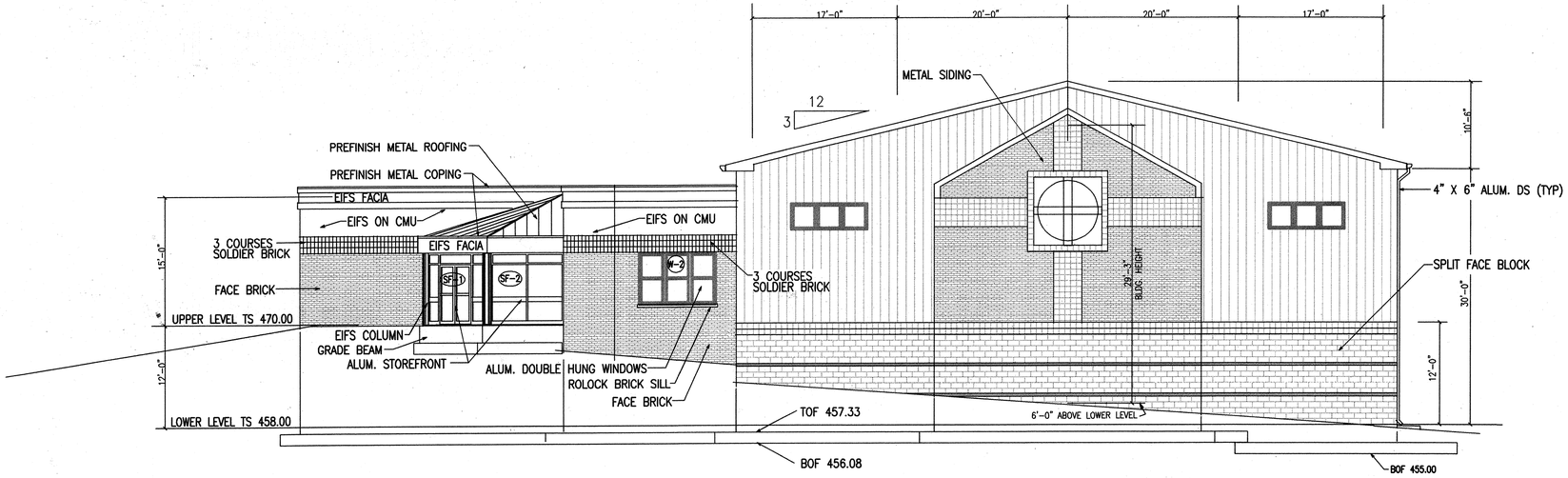
LEGEND

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

SITE UTILITY PLAN

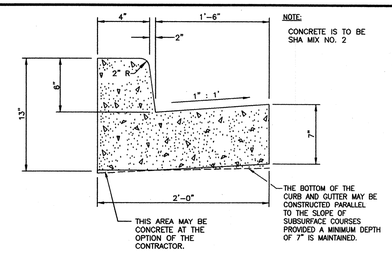
Des By	D.W.	Scale	1"=40'	Proj No	21010.00
Drn By	M.L.A.	Date	NOVEMBER, 2002	DRAWING NO	3 OF 14
Chk By		Approved			

SDP-03-121



NORTH ELEVATION

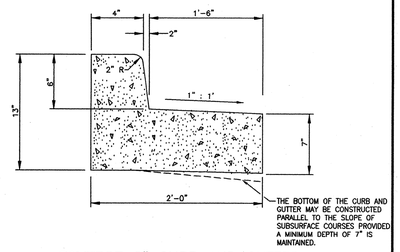
SCALE: 1/8"=1'-0"



NOTE:
CONCRETE IS TO BE SHA MIX NO. 2

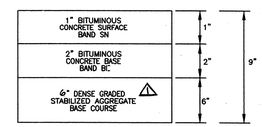
COMBINATION 6" CURB AND GUTTER

N.T.S.



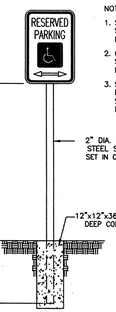
REVERSE 6" CURB AND GUTTER

N.T.S.



TYPICAL PAVING SECTION

N.T.S.



NOTES:

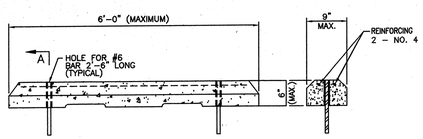
1. SIGN SHALL MEET DESIGN STANDARDS OF THE FEDERAL HIGHWAY ADMINISTRATION.
2. ONE SIGN IS REQUIRED PER SPACE PLACED AS SHOWN ON PLAN.
3. SPACES INDICATED ON SITE PLAN AS "VAN" ACCESSIBLE SHALL BE SIGNED ACCORDINGLY.

HANDICAP PARKING SIGN DETAIL

N.T.S.

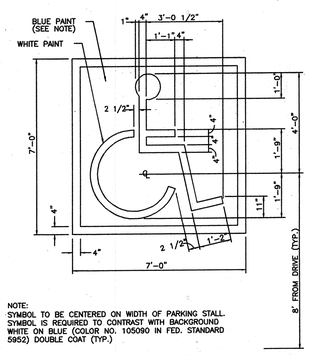
PARKING RESTRICTION SIGN FOR HANDICAPPED PARKING

N.T.S.



FRONT ELEVATION

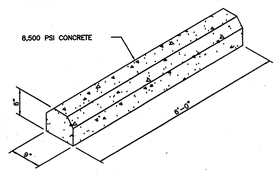
SIDE ELEVATION

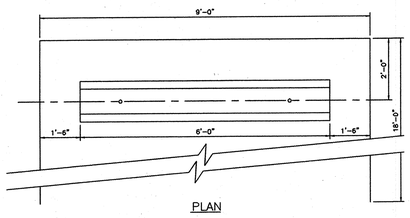


NOTE:
SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL. SYMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND WHITE ON BLUE (COLOR NO. 105090 IN FED. STANDARD 595D) DOUBLE COAT (TYP.)

PAINTED HANDICAP PARKING SYMBOL

N.T.S.



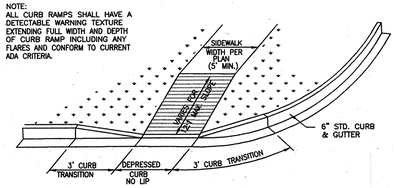


PLAN

PRECAST CONCRETE WHEEL STOP

N.T.S.

NOTE:
ALL CURB RAMPS SHALL HAVE A DETECTABLE WARNING TEXTURE EXTENDING FULL WIDTH AND DEPTH OF CURB RAMP INCLUDING ANY FLARES AND CONFORM TO CURRENT ADA CRITERIA.

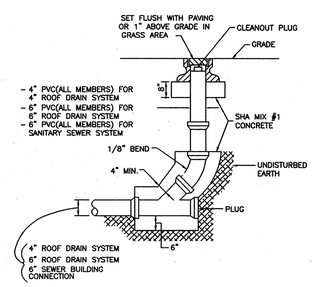


CURB RAMP TYPE "D"

N.T.S.

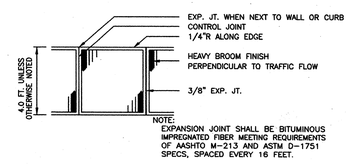
NOTE REGARDING CURB CUT RAMPS

A FIVE FOOT (5') LEVEL LANDING IS REQUIRED AT THE TOP OF ALL CURB CUT RAMPS



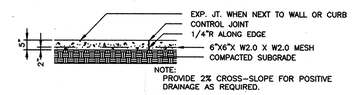
EXTERIOR CLEANOUT

N.T.S.



NOTE:
EXPANSION JOINT SHALL BE BITUMINOUS IMPREGNATED FIBER MEETING REQUIREMENTS OF AASHTO M-213 AND ASTM D-1751 SPECS, SPACED EVERY 16 FEET.

PROFILE
N.T.S.



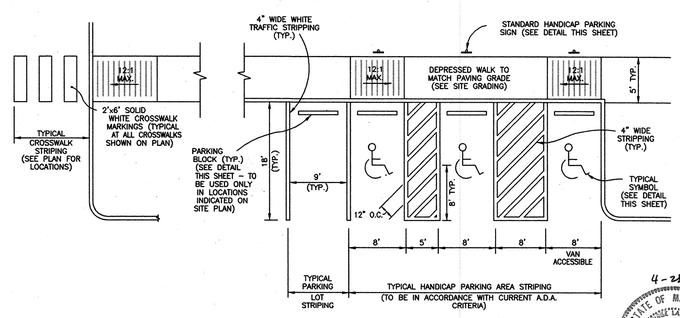
NOTE:
PROVIDE 2% CROSS-SLOPE FOR POSITIVE DRAINAGE AS REQUIRED.

SECTION
N.T.S.

CONCRETE SHALL BE SHA MIX NO. 2

CONCRETE WALK

N.T.S.



TYPICAL STRIPING DETAILS FOR PARKING, HANDICAP SPACES AND CROSSWALKS

N.T.S.

4-25-03

STATE OF MARYLAND
MARY L. ANDERSON
No. 6213
REGISTERED
PROFESSIONAL ENGINEER

Date	No	Revision Description
10/7/03	1	REVISED DRAWING No.; REVISED TYPICAL PAVING SECTION

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF-DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF-DIVISION OF LAND DEVELOPMENT — 7/16/03 DATE

DIRECTOR — 7/21/03 DATE

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

COUNTY HEALTH OFFICER — 6-12-03 DATE

CROSSROADS CHURCH OF THE NAZARENE

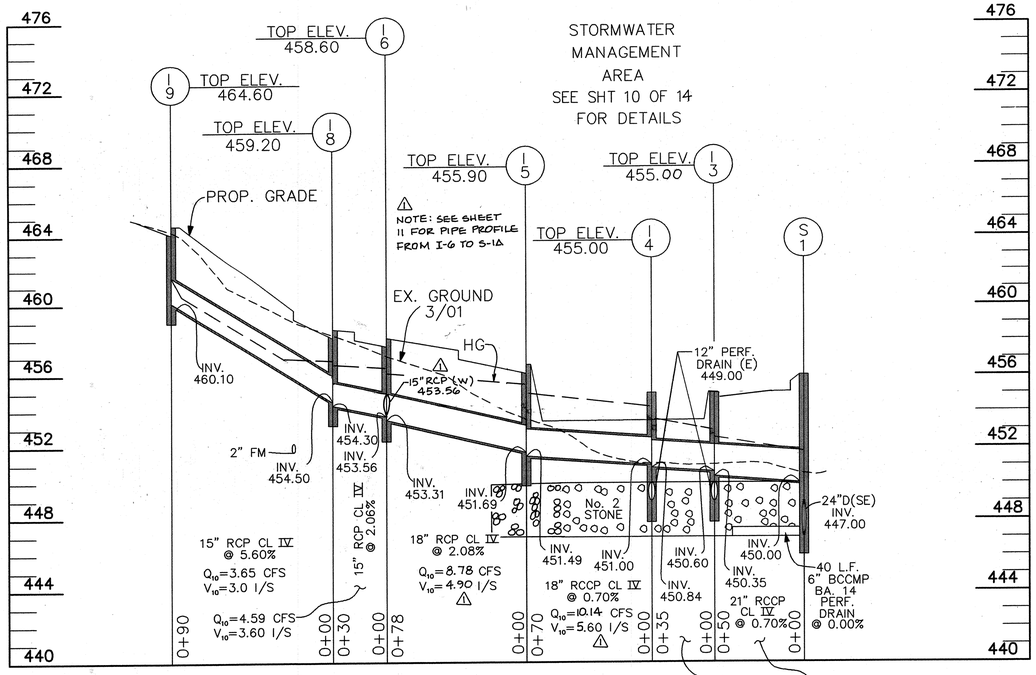
2750 ROGERS AVE.
ELECTION DISTRICT NO. 2 — HOWARD CO. MARYLAND

CENTURY ENGINEERING, INC.
CONSULTING ENGINEERS, PLANNERS, SURVEYORS
32 WEST ROAD
TOWSON, MARYLAND 21204
(410) (301) 823-8070

SITE DETAILS

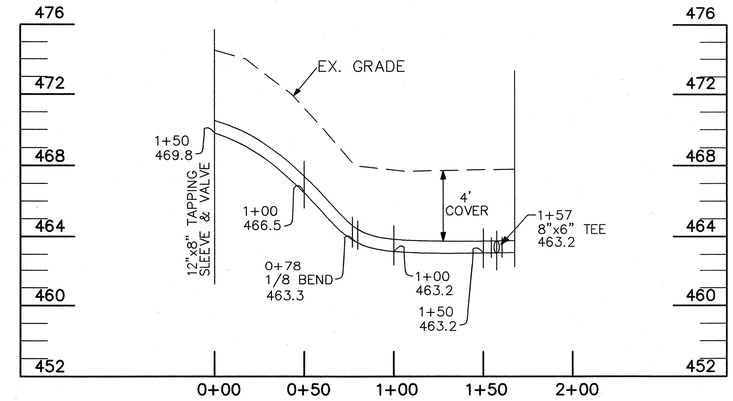
Des By D.W.	Scale 1"=40'	Proj No 21010.00	
Drn By M.L.A.	Date NOVEMBER, 2002	DRAWING NO 4 OF 14	
Chk By	Approved		

SDP-02-121



STORM DRAIN PROFILE

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



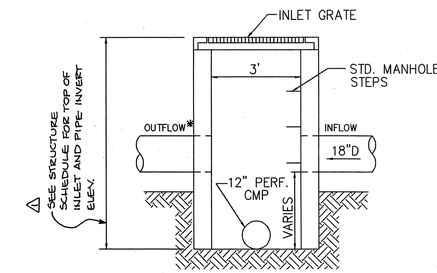
PROP. 8" WATER PROFILE

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

STRUCTURE SCHEDULE				
INLET NO.	TYPE	DEATAIL 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	DEATAIL 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

△1 *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	△1 158 LF	
18" RCCP	IV	183 LF	
21" RCCP	IV	50 LF	

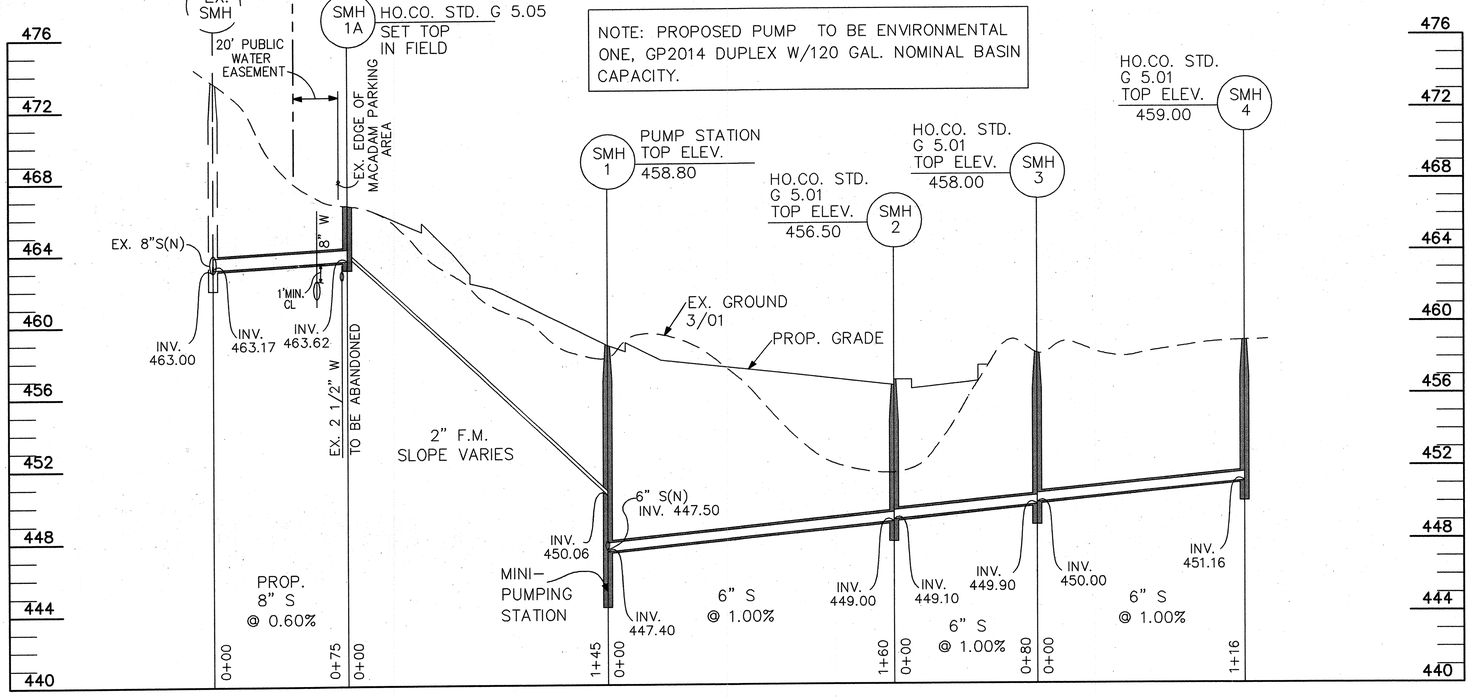


*I-3 OUTFLOW PIPE IS 21"
I-4 OUTFLOW PIPE IS 18"

INLET DETAIL I-3 & I-4

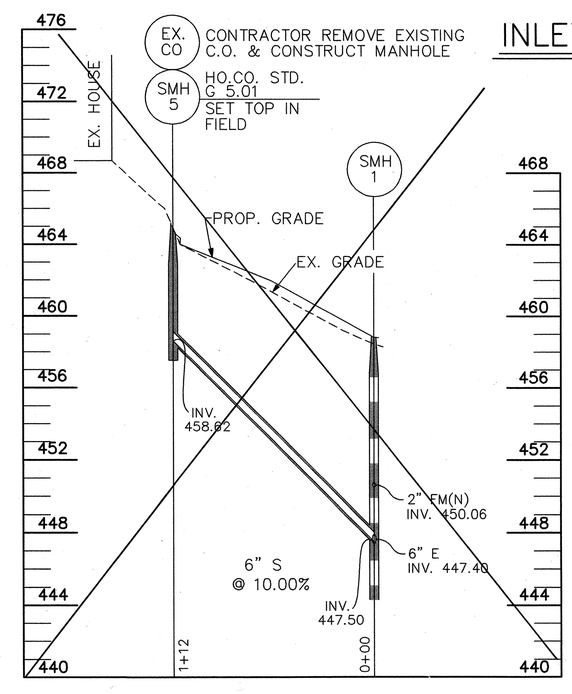
NO SCALE

FOR DETAILS NOT SHOWN SEE HO. CO. STD. DETAIL SD-4.23



SANITARY SEWER PROFILE

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



~~PROP. 6" SANITARY SEWER PROFILE~~

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

6-26-03

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF-DIVISION OF LAND DEVELOPMENT — DATE 7/10/03

DIRECTOR — DATE 7/21/03

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

COUNTY HEALTH OFFICER — DATE 6-12-03

CROSSROADS CHURCH OF THE NAZARENE

2750 ROGERS AVE.
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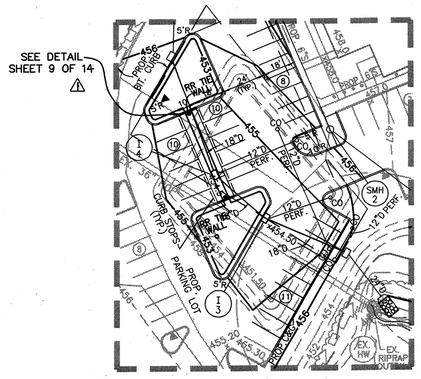
CENTURY ENGINEERING, INC.
CONSULTING ENGINEERS, PLANNERS, SURVEYORS
32 WEST ROAD
TOWSON, MARYLAND 21204
(410) 823-8070

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

PIPE PROFILES

Des By	D.W.	Scale	AS SHOWN	Proj No	21010.00
Drn By	R.U.	Date	NOVEMBER, 2002	DRAWING NO	△1 5 OF 14
Chk By		Approved			

SDP-02-121



INSERT 1

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 DIMMENSIONS	9FT. x 42 FT.
STORAGE DEPTH	3.25 FT.
CLEANOUT ELEVATION, VOL	456.5 FT. = 690 FT³
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

*SEE SHEET 11 FOR FINAL GRADES IN SEDIMENT TRAP #1A AREA. SEE SHEET 12 FOR D.A. TO TRAP.

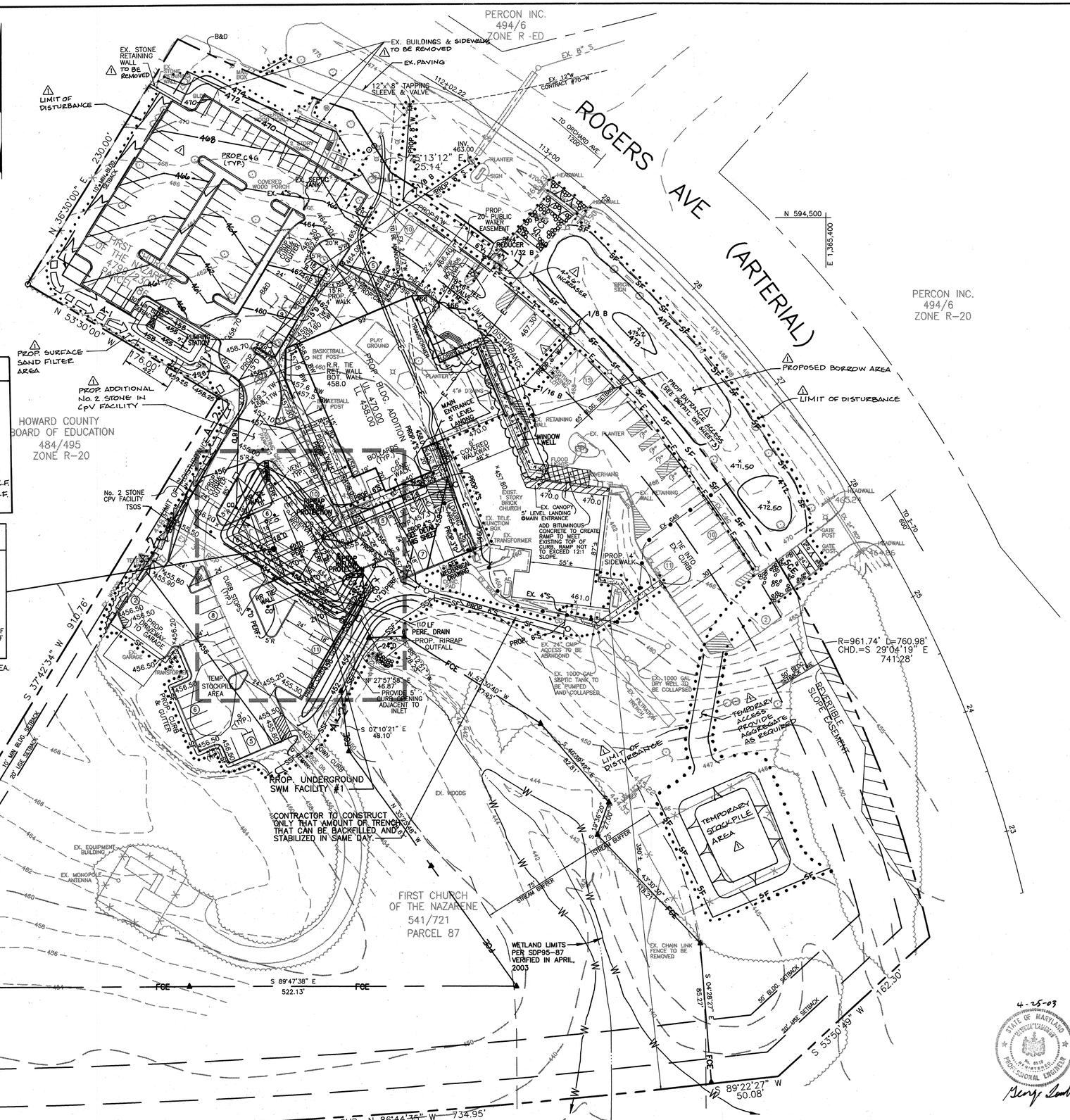
SEDIMENT TRAP #1 STONE OUTLET SEDIMENT TRAP - ST II	
DRAINAGE AREA	= 1.90 AC.±
STORAGE REQUIRED	= 6,840 CF
STORAGE PROVIDED	= 9,143 CF
WEIR ELEVATION	= 454.00 FT.
WEIR LENGTH	= 10.0 FT.
BOTTOM DIMENSIONS	= 40'x76'
STORAGE DEPTH	= 5.5 FT.
CLEANOUT ELEVATION, VOL.	= 452.50 FT., 2,232 CF
EMBANKMENT HEIGHT	= 4.0 FT.
EMBANKMENT ELEVATION	= 454.00 FT.
BOTTOM ELEVATION	= 448.50 FT
WET STORAGE LIMIT, VOL.	= 448.50–451.00 FT., 4,546 CF
DRY STORAGE LIMIT, VOL.	= 452.15–451.00 FT., 4,597 CF
EXISTING GROUND @ WEIR	= 452.75 FT.
SIDE SLOPES	= 2:1

*SEE INSERT 1 FOR FINAL GRADES IN THIS AREA.

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
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- LIMITS OF DISTURBANCE
- A-2 — EARTH DIKE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- SOS
- FCE — FOREST CONSERVATION EASEMENT



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

4-25-03

Date	No.	Revision Description
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."

SIGNATURE OF ENGINEER — DATE 4-24-03

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."

SIGNATURE OF DEVELOPER — DATE 4-24-03

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

U.S. NATURAL RESOURCES CONSERVATION SERVICE — DATE 5-23-03

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

HOWARD S.C.D. — DATE 5-23-03

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF-DEVELOPMENT ENGINEERING DIVISION — DATE 7/9/03

CHIEF-DIVISION OF LAND DEVELOPMENT — DATE 7/16/03

DIRECTOR — DATE 7/15/03

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

COUNTY HEALTH OFFICER — DATE 6-12-03

CROSSROADS CHURCH OF THE NAZARENE

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

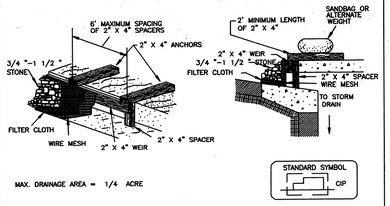
CENTURY ENGINEERING, INC.
CONSULTING ENGINEERS, PLANNERS, SURVEYORS
32 WEST ROAD
TOWSON, MARYLAND 21204
(410) 823-8070

EROSION & SEDIMENT CONTROL PLAN

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

SDP-03-121

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



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

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

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

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

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

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

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

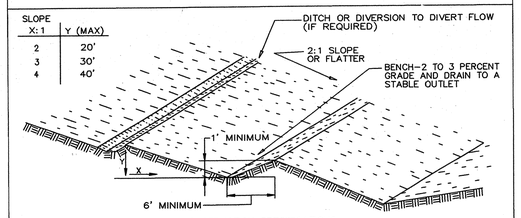
7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

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

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

DETAIL 28 – BENCHED SLOPES

SLOPE X:1	Y (MAX)
2	20'
3	30'
4	40'

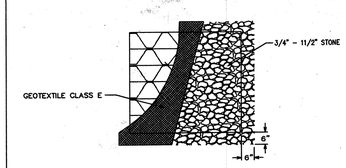


CONSTRUCTION SPECIFICATIONS

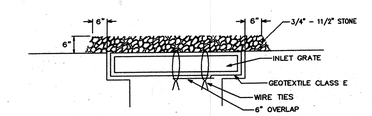
1. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC., SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
2. ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8" IN THICKNESS.
3. 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.
4. 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.
5. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
6. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHODS.
7. 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



PLAN/CUT AWAY VIEW



CROSS SECTION

STANDARD SYMBOL AGIP

MAX. DRAINAGE AREA = 1/4 ACRE

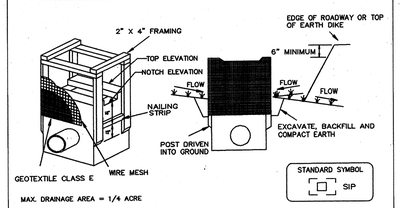
Construction Specifications

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

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

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

DETAIL 23A – STANDARD INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

CONSTRUCTION SPECIFICATIONS

1. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18" BELOW THE NOTCH ELEVATION.
2. 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 (WEIR) MUST BE 6" BELOW ADJACENT ROADWAYS WHERE FLOODING AND SAFETY ISSUES MAY ARISE.
3. 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.
4. STRETCH THE GEOTEXTILE CLASS E TIGHTLY OVER THE WIRE MESH WITH THE GEOTXTILE 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.
5. 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.
6. IF THE INLET IS NOT IN A SUMP, 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.
7. 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

HOWARD SOIL CONSERVATION DISTRICT

STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING AND MULCHING (SEC. 0). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

6. 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.

7. SITE ANALYSIS:

TOTAL AREA OF SITE	=	10.35 Ac.±
AREA DISTURBED	=	4.30 Ac. ± △1
AREA TO BE ROOFED OR PAVED	=	1.86 Ac. ±
AREA TO BE VEGETATIVELY STABILIZED	=	2.44 Ac. ±
TOTAL CUT	=	6,800 C.Y.
TOTAL FILL	=	6,800 C.Y.
OFFSITE WASTE/BORROW AREA LOCATION		N.A.

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

9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY, BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE 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:

1. PREFERRED – APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92,000 LBS/1000 SQ. FT) AND 600 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.).

2. 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 (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY – 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

SEQUENCE OF CONSTRUCTION	TIMETABLE
1. OBTAIN GRADING PERMIT.	
2. NOTIFY HOWARD COUNTY DEPARTMENTS OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL INSPECTIONS @ 313-1855 AT LEAST 48 HOURS PRIOR TO BEGINNING WORK.	1 DAY
3. CLEAR AND GRUB FOR SEDIMENT AND EROSION CONTROL MEASURES.	3 DAYS
4. INSTALL ALL SEDIMENT & EROSION CONTROL MEASURES OR DEVICES ONLY.*	10 DAYS
5. NOTIFY HOWARD COUNTY DEPARTMENT OF PERMITS & LICENSES, GRADING AND SEDIMENT CONTROL INSPETIONS @ 414-313-1855 UPON COMPLETION OF SAID INSTALLATION.	1 DAY
6. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF THE SITE AS REQUIRED.	5 DAYS
7. ROUGH GRADE SITE AS REQUIRED.	10 DAYS
8. BEGIN BUILDING CONSTRUCTION.	90 DAYS
9. INSTALL UTILITIES AND MAINTAIN POSITIVE DRAINAGE TO SEDIMENT TRAPS AS NECESSARY.**	30 DAYS
10. INSTALL PAVING SUBBASE AND MAINTAIN POSITIVE DRAINAGE TO SEDIMENT TRAPS AS NECESSARY.	15 DAYS
11. COMPLETE BUILDING CONSTRUCTION. PAVE PARKING AREAS NORTH OF BUILDING AND PERMANENTLY STABILIZE LAWN AREAS.	10 DAYS
12. WITH THE PERMISSION OF SEDIMENT CONTROL INSPECTOR, CLEAN AND REMOVE SEDIMENT TRAPS.	5 DAYS
△1 13. CONVERT TRAPS TO STORMWATER MANAGEMENT FACILITIES.***	15 DAYS
14. COMPLETE STORM DRAIN CONSTRUCTION.	5 DAYS
15. COMPLETE FINAL GRADING FOR REMAINING PARKING AREA, INSTALL SUBBASE AND PAVE.	5 DAYS
16. STABILIZE ALL REMAINING AREAS.	2 DAYS
17. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT & EROSIONS CONTROLS MEASURES. STABILIZE ANY AREAS DISTURBED BY THIS PROCESS.	3 DAYS
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).

△1 *** 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	△	REVISED SEQUENCE NOTE, PER DED. COMMENT
10/7/03	△	ADDED NOTE UNDER SEQUENCE OF CONTRUCTION; 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."

SIGNATURE OF ENGINEER — DATE 4-24-03

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."

SIGNATURE OF DEVELOPER — DATE 4-24-03

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

U.S. NATURAL RESOURCES CONSERVATION SERVICE — DATE 5-23-03

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

HOWARD S.C.D. — DATE 5-23-03

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF-DEVELOPMENT ENGINEERING DIVISION — DATE 7/16/03

CHIEF-DIVISION OF LAND DEVELOPMENT — DATE 7/16/03

DIRECTOR — DATE 7/21/03

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

COUNTY HEALTH OFFICER — DATE 6-12-03

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

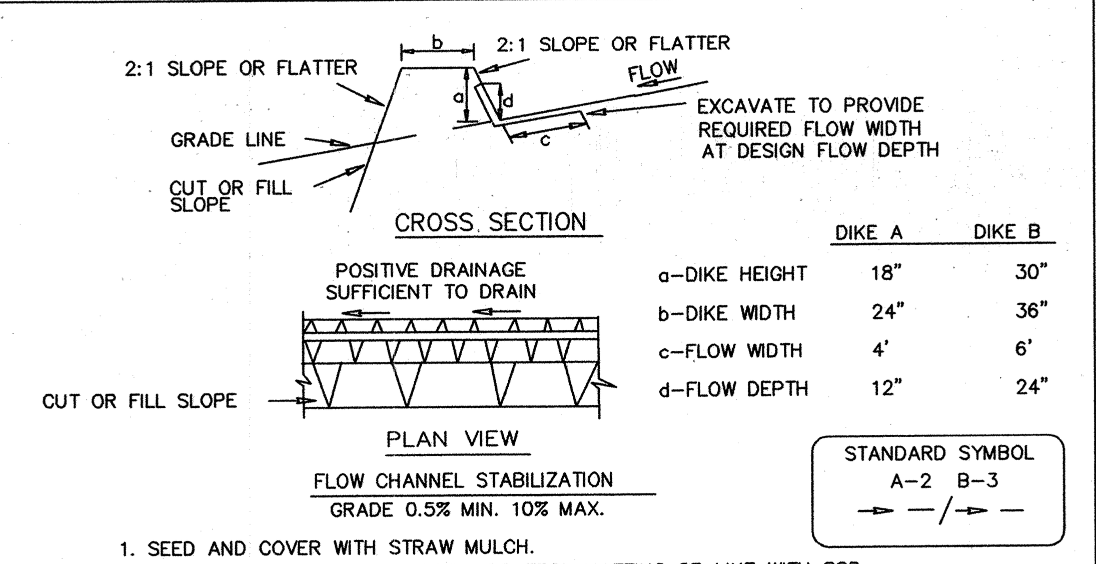
4-25-03
STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

SEDIMENT & EROSION CONTROL NOTES AND DETAILS

Des By	D.W.	Scale	AS SHOWN	Proj No	21010.00
Drn By	R.U.	Date	NOVEMBER, 2002	DRAWING NO	7 OF 14 △1
Chk By		Approved			

SDP-03-131

DETAIL 1 – EARTH DIKE



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

1. SEED AND COVER WITH STRAW MULCH.
2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOD.
3. 4" – 7" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO THE SOIL 7" MINIMUM

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY EARTH DIKES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET. SPOT ELEVATIONS MAY BE NECESSARY FOR GRADES LESS THAN 1%.
2. RUNOFF DIVERTED FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. RUNOFF DIVERTED FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED, STABILIZED AREA AT A NON–EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONAL MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIKE.
5. THE DIKE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILL SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIKE.
8. INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER EACH RAIN EVENT.

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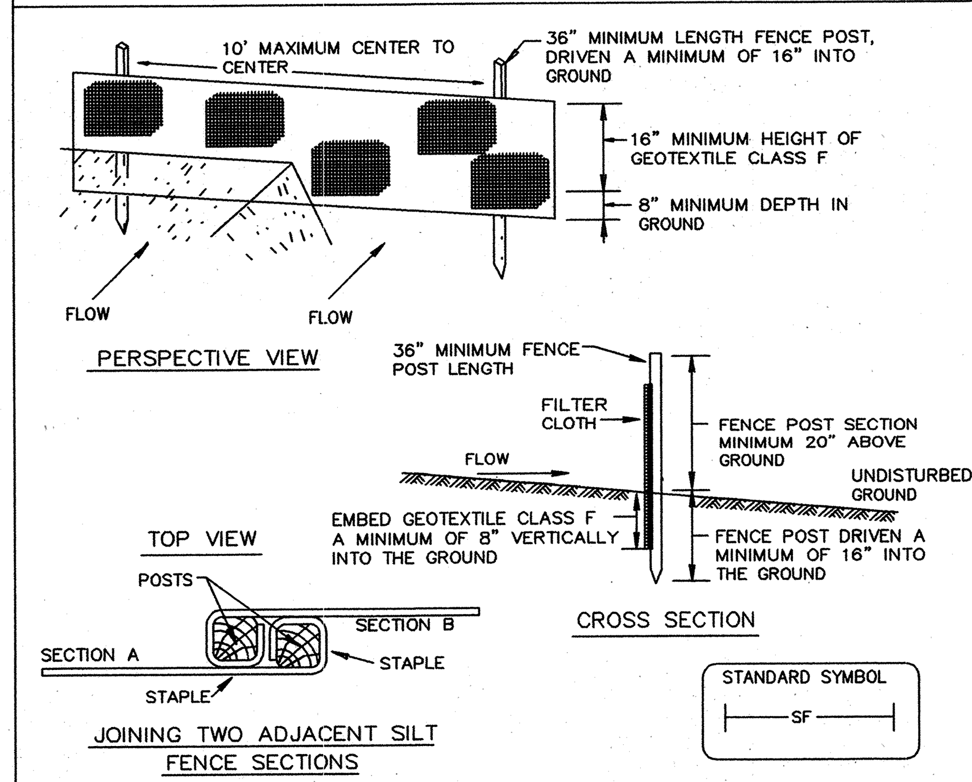
DETAIL 22 – SILT FENCE



CONSTRUCTION SPECIFICATIONS

1. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 11/2" X 11/2" SQUARE (MINIMUM) CUT, OR 13/4" DIAMETER (MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHTING NOT LESS THAN 1.00 POND PER LINEAR FOOT.
2. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID–SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST: MSMT 509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST: MSMT 509
FLOW RATE	0.3 GAL FT²/ MINUTE (MAX.)	TEST: MSMT 322
FILTERING EFFICIENCY	75% (MIN.)	TEST: MSMT 322

3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
4. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.

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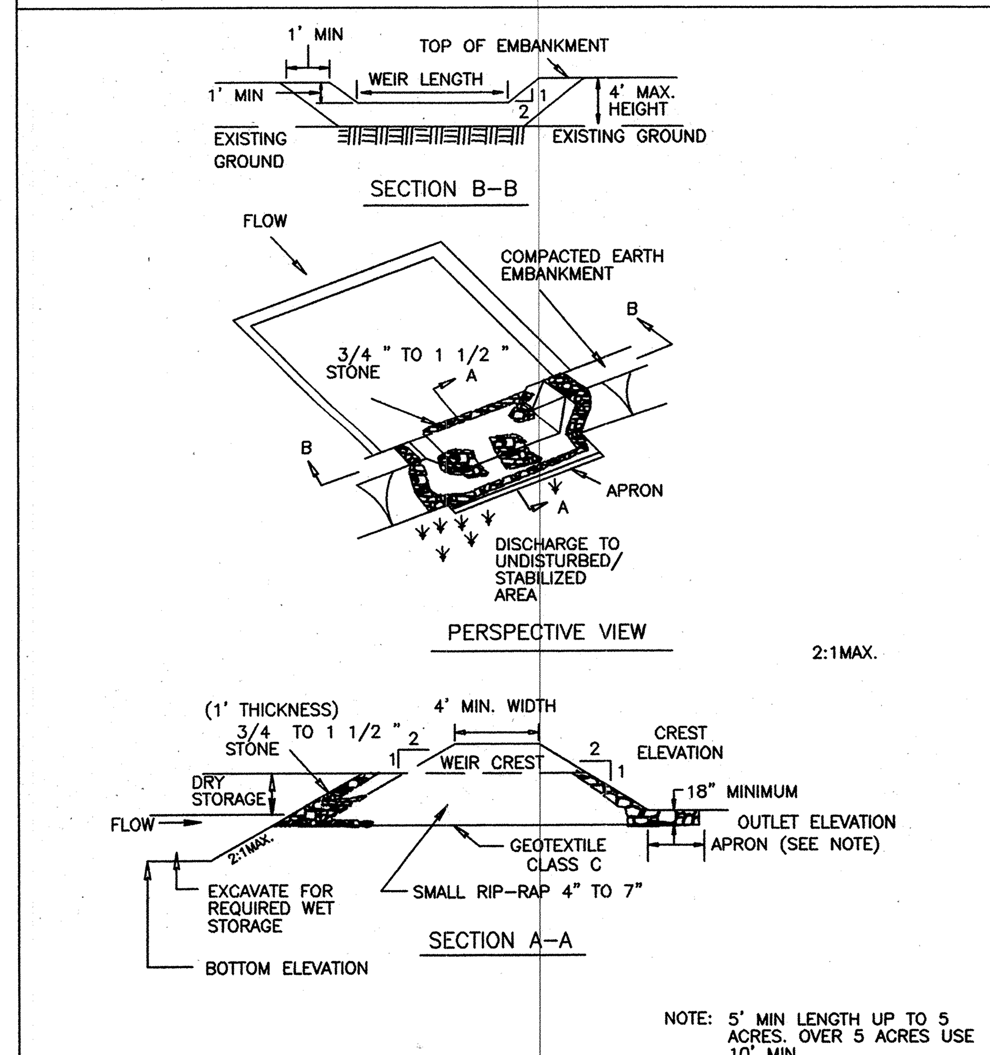
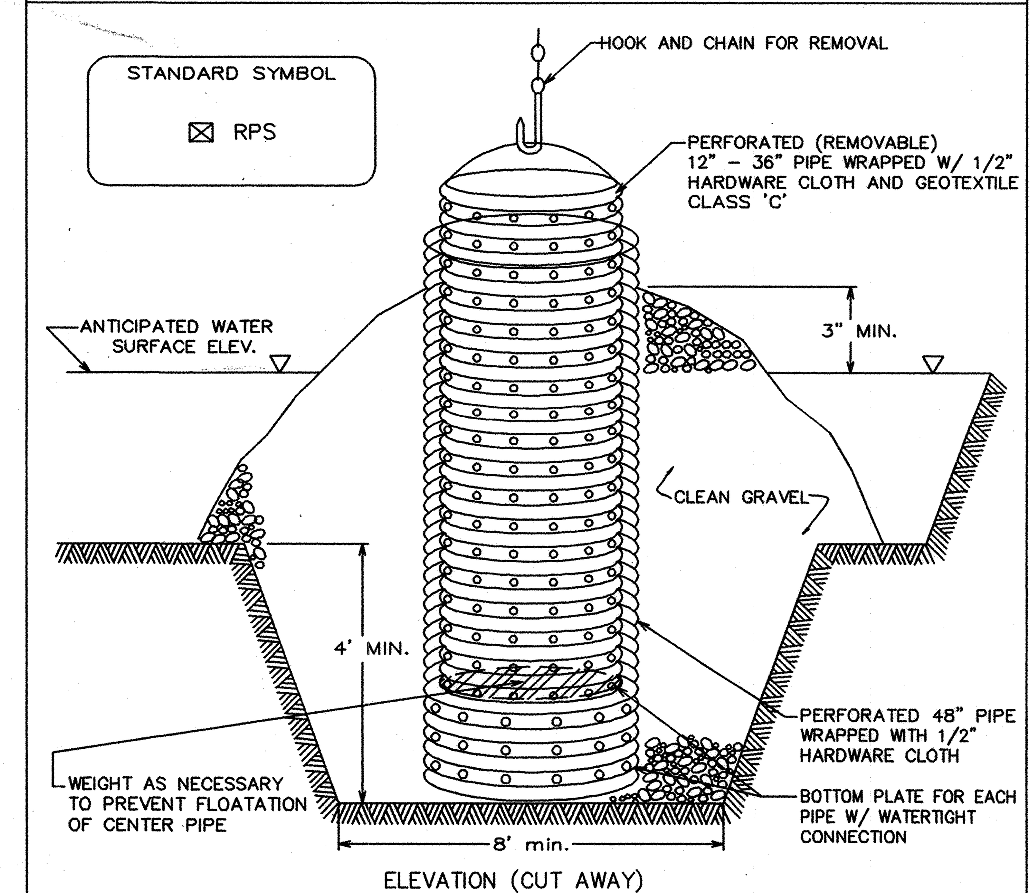
DETAIL 10A – STONE RIP–RAP OUTLET SEDIMENT TRAP – ST IV



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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C – 9 – 16	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 20A – REMOVABLE PUMPING STATION



ELEVATION (CUT AWAY)

CONSTRUCTION SPECIFICATIONS

1. THE OUTER PIPE SHOULD BE 48" DIA. OR SHALL, IN ANY CASE, BE AT LEAST 4" GREATER IN DIAMETER THAN THE CENTER PIPE. THE OUTER PIPE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH TO PREVENT BACKFILL MATERIAL FROM ENTERING THE PERFORATIONS.
2. AFTER INSTALLING THE OUTER PIPE, BACKFILL AROUND OUTER PIPE WITH 2" AGGREGATE OR CLEAN GRAVEL.
3. THE INSIDE STAND PIPE (CENTER PIPE) SHOULD BE CONSTRUCTED BY PERFORATING A CORRUGATED OR PVC PIPE BETWEEN 12" AND 36" IN DIAMETER. THE PERFORATIONS SHALL BE 1/2" X 6" SLITS OR 1" DIAMETER HOLES 6" ON CENTER. THE CENTER PIPE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH FIRST, THEN WRAPPED AGAIN WITH GEOTEXTILE CLASS C.
4. THE CENTER PIPE SHOULD EXTEND 12" TO 18" ABOVE THE ANTICIPATED WATER SURFACE ELEVATION OR RISER CREST ELEVATION WHEN DEWATERING A BASIN.

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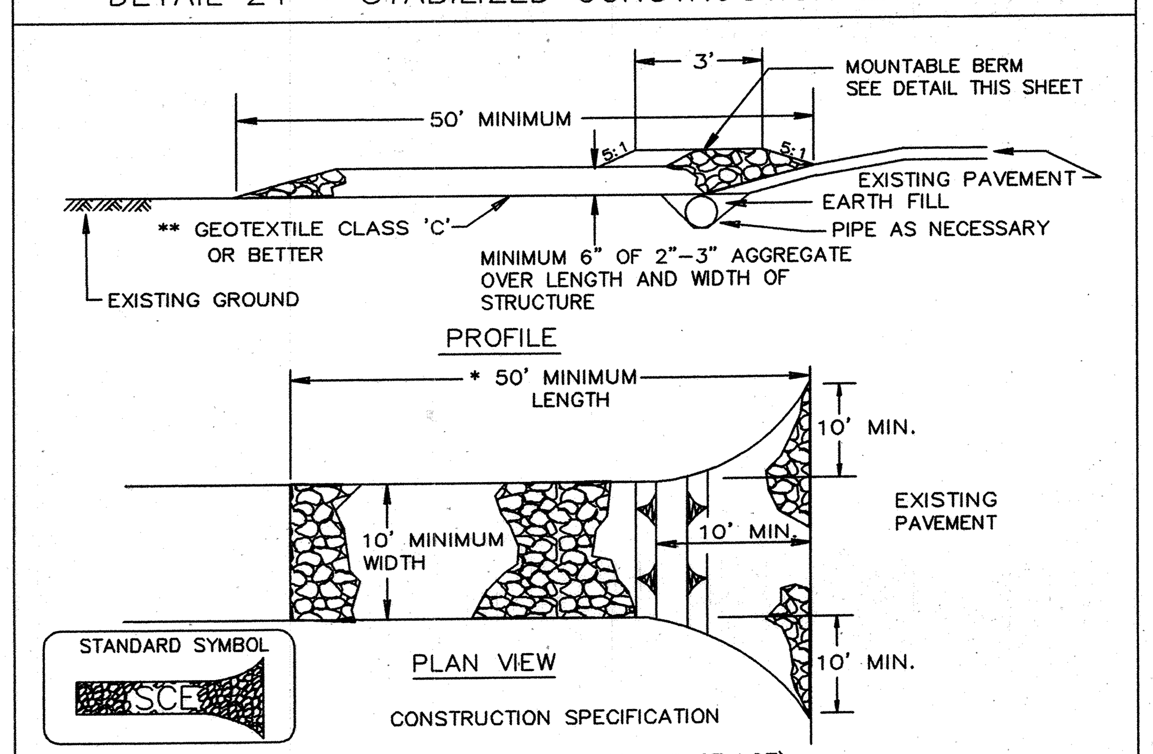
DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



CONSTRUCTION SPECIFICATION

1. LENGTH – MINIMUM OF 50' (*30' FOR SINGLE RESIDENCE LOT).
2. WIDTH – 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. **THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.
4. STONE – CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
5. SURFACE WATER – ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
6. LOCATION – A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

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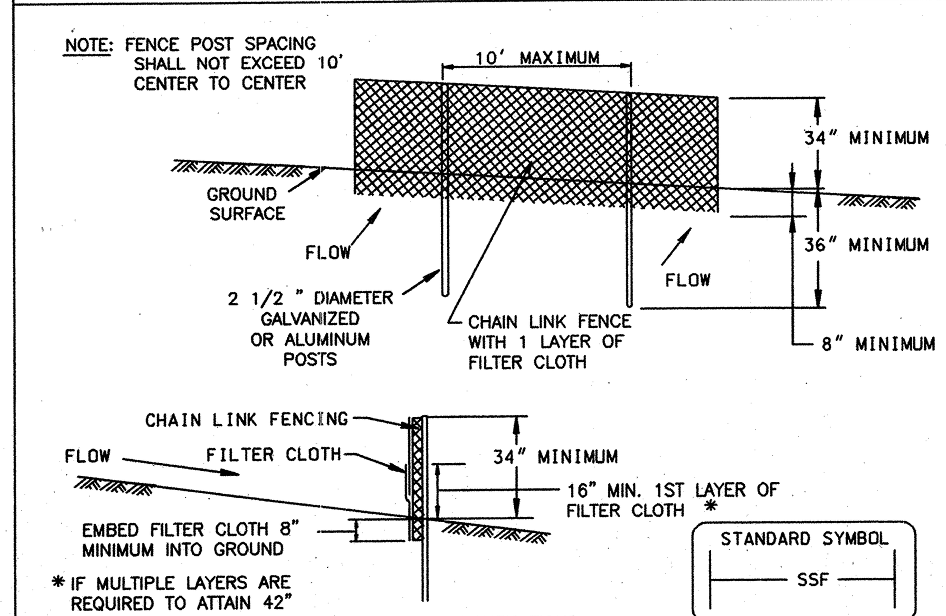
DETAIL 33 – SUPER SILT FENCE



CONSTRUCTION SPECIFICATIONS

1. FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS.
2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
3. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
4. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT
7. FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST: MSMT 509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST: MSMT 509
FLOW RATE	0.3 GAL/FT /MINUTE (MAX.)	TEST: MSMT 322
FILTERING EFFICIENCY	75% (MIN.)	TEST: MSMT 322

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STONE / RIP–RAP OUTLET SEDIMENT TRAP – ST IV

CONSTUCTION SPECIFICATIONS

1. THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER–SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF EMBANKMENT SHALL BE 4', MEASURED AT CENTERLINE OF EMBANKMENT.
3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF TRAP EMBANKMENT.
5. STORAGE AREA PROVIDED SHALL BE FIGURED BY COMPUTING THE VOLUME MEASURED FROM TOP OF EXCAVATION. (FOR STORAGE REQUIREMENTS SEE TABLE 9).
6. GEOTEXTILE CLASS C SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNELPRIOR TO PLACEMENT OF STONE. SECTION OF FABRIC MUST OVERLAP AT LEAST 1' WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST 6" INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
7. 4" – 7" STONE SHALL BE USED TO CONSTRUCT THE WEIR AND 4" – 12" OR CLASS I RIP–RAP SHALL BE USED TO CONSTRUCT THE OUTLET CHANNEL.
8. OUTLET – AN OUTLET SHALL INCLUDE A MEANS OF CONVEYING THE DISCHARGE IN AN EROSION FREE MANNER TO AN EXISTING STABLE CHANNEL. PROTECTION AGAINST SCOUR AT THE DISCHARGE POINT SHALL BE PROVIDED AS NECESSARY.
9. OUTLET CHANNEL MUST HAVE POSITIVE DRAINAGE FROM THE TRAP.
10. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 OF THE WET STORAGE DEPTH OF THE TRAP (900 CF/AC). REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
11. THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AFTER EACH RAIN AND REPAIRED AS NEEDED.
12. CONSTRUCTION OF TRAPS SHALL BE CARRIED OUT IN SUCH A MANNER THAT SEDIMENT POLLUTION IS ABATED. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. POINTS OF CONCENTRATED INFLOW SHALL BE PROTECTED IN ACCORDANCE WITH GRADE STABILIZATION STRUCTURE CRITERIA. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON TRAP COMPLETION AND MONITORED AND MAINTAINED EROSION FREE DURING THE LIFE OF THE TRAP.
13. THE STRUCTURE SHALL BE DEWATERED BY APPROVED METHODS, REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

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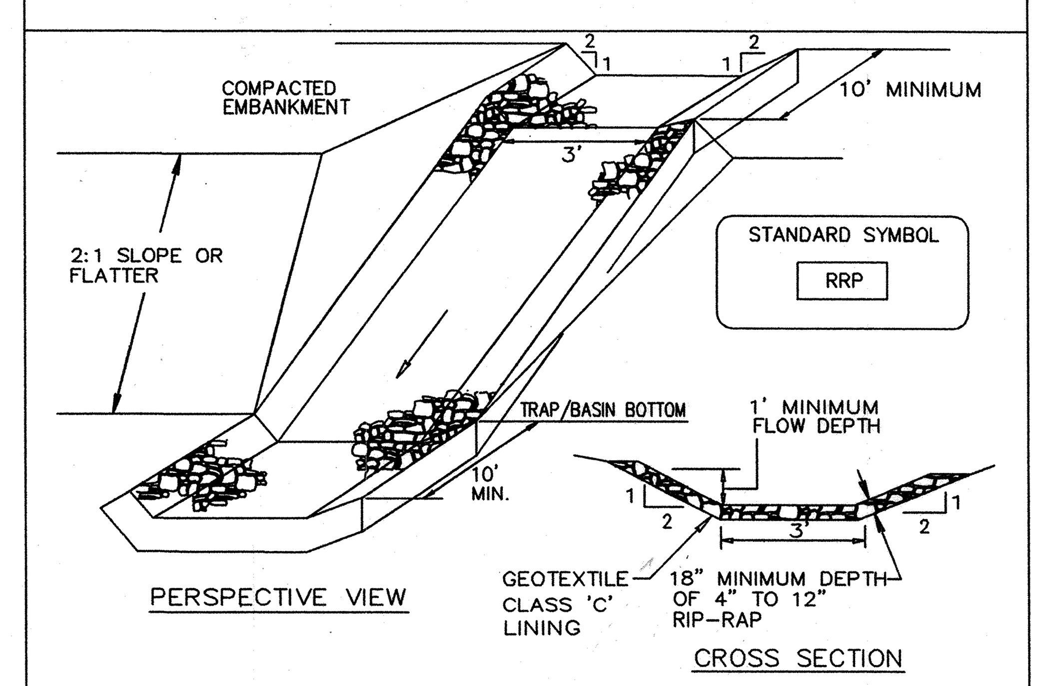
DETAIL 5 – RIP–RAP INFLOW PROTECTION



CONSTRUCTION SPECIFICATIONS

1. RIP–RAP LINED INFLOW CHANNELS SHALL BE 1' IN DEPTH, HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND 3' (MIN.) BOTTOM WIDTH. THE CHANNEL SHALL BE LINED WITH 4" TO 12" RIP– RAP TO A DEPTH OF 18".
2. FILTER CLOTH SHALL BE INSTALLED UNDER ALL RIP–RAP. FILTER CLOTH SHALL BE GEOTEXTILE CLASS C.
3. ENTRANCE AND EXIT SECTIONS SHALL BE INSTALLED AS SHOWN ON THE DETAIL SECTION.
4. RIP–RAP USED FOR THE LINING MAY BE RECYCLED FOR PERMANENT OUTLET PROTECTION IF THE BASIN IS TO BE CONVERTED TO A STORMWATER MANAGEMENT FACILITY.
5. GABION INFLOW PROTECTION MAY BE USED IN LIEU OF RIP–RAP INFLOW PROTECTION.
6. RIP–RAP SHOULD BLEND INTO EXISTING GROUND.
7. RIP–RAP INFLOW PROTECTION SHALL BE USED WHERE THE SLOPE IS BETWEEN 4:1 AND 10:1, FOR SLOPES FLATTER THAN 10:1 USE EARTH DIKE OR TEMPORARY SWALE LINING CRITERIA.

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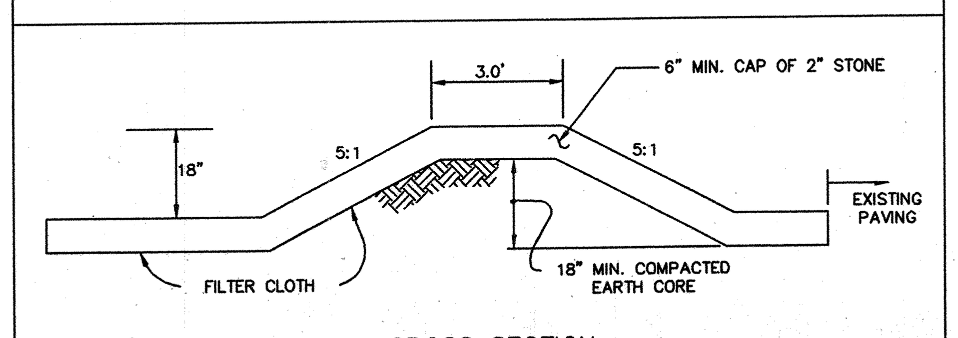
MOUNTABLE BERM DETAIL



CROSS SECTION
N.T.S.

Date	No	Revision Description
10/7/03	⚠	REVISED DRAWING 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."

George Lamlin — SIGNATURE OF ENGINEER — 4-24-03 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."

SIGNATURE OF DEVELOPER — 4-24-03 DATE

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

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

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

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF–DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF–DIVISION OF LAND DEVELOPMENT JA — 7/16/03 DATE

DIRECTOR — 7/21/03 DATE

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

COUNTY HEALTH OFFICER — 6-12-03 DATE

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) (301) 823–8070

SEDIMENT & EROSION CONTROL NOTES AND DETAILS

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

SDP.02.121

PROJECT : Church of the Nazarene
Stormwater Management Facility
Location : #2750 Rogers Ave., Ellicott City, MD

BORING No. : SWM-1
PROJECT No. : 02-194

ELEV 453.2
HAMMER : 140 Lbs
BORING METHOD : HSA
DATE START : 9/23/02
HAMMER DROP : 30 In.
ROCK CORE DIA. :
FINISH : 9/23/02
SPOON O.D. : 2 In.
FOREMAN : T. Oleszczuk

ELEV	DESCRIPTION	DEPTH	SCALE	No.	Blows / 6 in	TYPE	REC	NOTES
453.2	Pavement		0					4" Blacktop 4" Stone
452.5	Dark Gray moist micaceous Clayey SILT, some Sand	0.7						
				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	5					
				S-3	3 - 3 - 3	DS	18"	
			10	S-4	1 - 2 - 2	DS	18"	
			15	S-5	2 - 2 - 2	DS	18"	
438.2	Bottom of Boring at 15.0 feet	15.0						
			20					

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 — CAVED : 11.8 feet
AT 48.0 Hours
WATER : 6.0 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

ELEV 451.4
HAMMER : 140 Lbs
BORING METHOD : HSA
DATE START : 9/23/02
HAMMER DROP : 30 In.
ROCK CORE DIA. :
FINISH : 9/23/02
SPOON O.D. : 2 In.
FOREMAN : T. Oleszczuk

ELEV	DESCRIPTION	DEPTH	SCALE	No.	Blows / 6 in	TYPE	REC	NOTES
451.4	Gray-Brown dry fine Sandy SILT		0					3" Topsoil
				S-1	6 - 5 - 5	DS	12"	
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	5					
				S-3	WOH/18"	DS	10"	
443.4	Red very moist Clayey SILT, trace fine Sand	8.0						
			10	S-4	1 - 2 - 2	DS	16"	
			15	S-5	1 - 2 - 2	DS	12"	
436.4	Bottom of Boring at 15.0 feet	15.0						
			20					

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 — CAVED : 9.5 feet
AT 48.0 Hours
WATER : 6.5 feet — CAVED : 8.5 feet

PROJECT : Church of the Nazarene
Stormwater Management Facility
Location : #2750 Rogers Ave., Ellicott City, MD

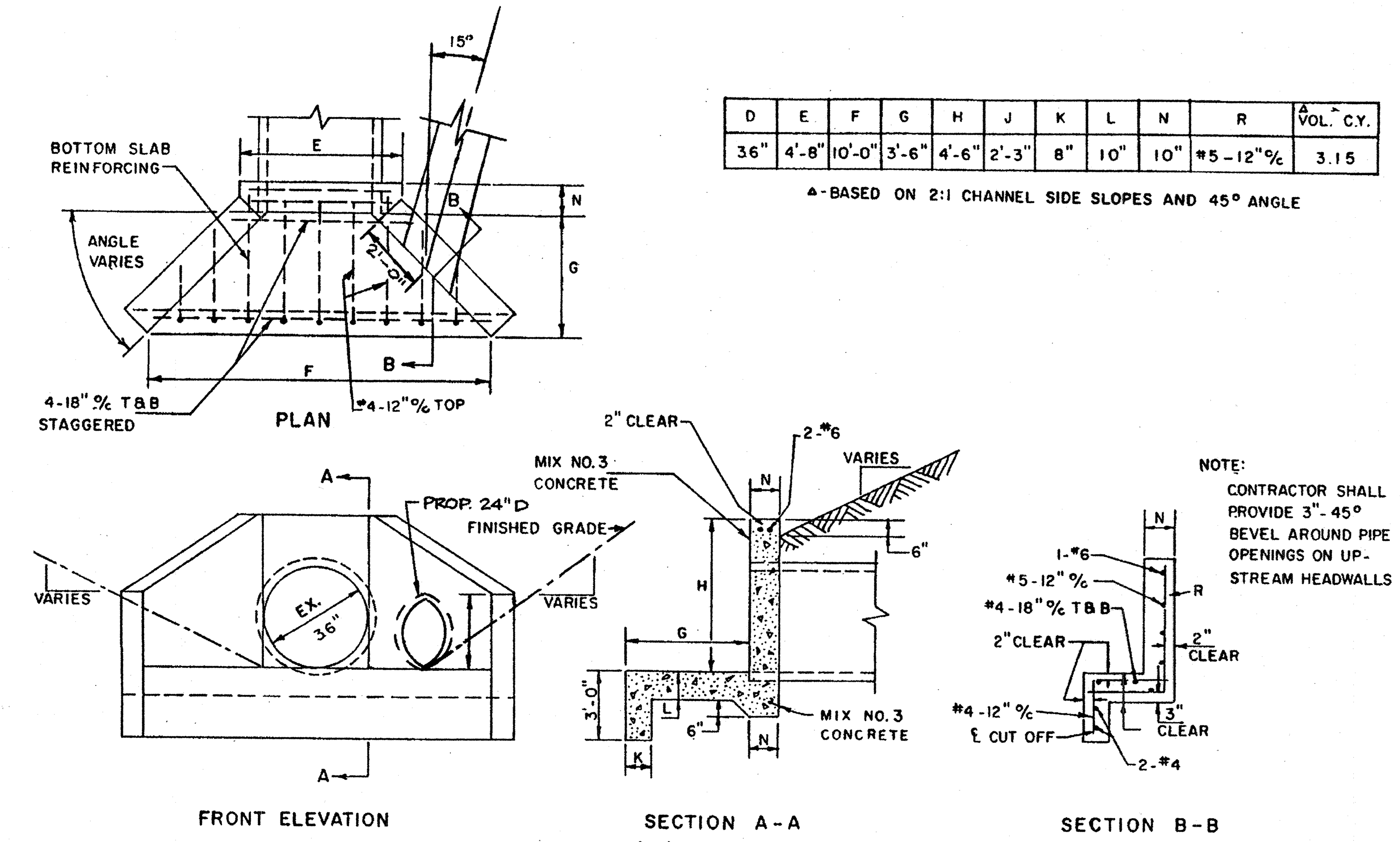
BORING No. : SWM-3
PROJECT No. : 02-194

ELEV 450.7
HAMMER : 140 Lbs
BORING METHOD : HSA
DATE START : 9/23/02
HAMMER DROP : 30 In.
ROCK CORE DIA. :
FINISH : 9/23/02
SPOON O.D. : 2 In.
FOREMAN : T. Oleszczuk

ELEV	DESCRIPTION	DEPTH	SCALE	No.	Blows / 6 in	TYPE	REC	NOTES
450.7	Gray-Brown moist micaceous fine Sandy SILT		0					4" Topsoil
				S-1	4 - 5 - 4	DS	12"	
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						
			15	S-5	1 - 2 - 2	DS	12"	
435.7	Bottom of Boring at 15.0 feet	15.0						
			20					

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 — CAVED : 8.5 feet
AT 48.0 Hours
WATER : 5.5 feet — CAVED : 8.0 feet

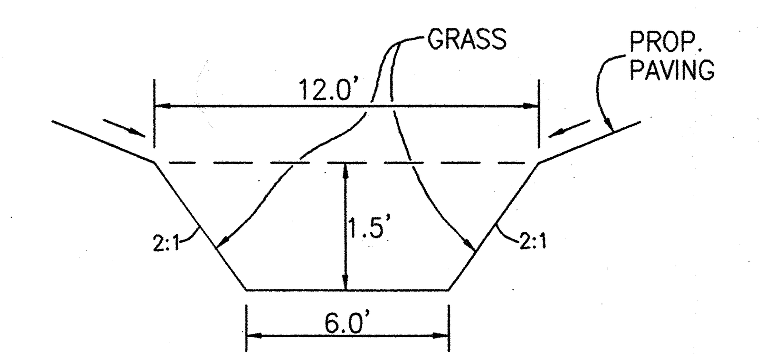


NOTE:
CONTRACTOR SHALL PROVIDE 3"-45° BEVEL AROUND PIPE OPENINGS ON UP-STREAM HEADWALLS

D	E	F	G	H	J	K	L	N	R	△ VOL. C.Y.
36"	4'-8"	10'-0"	3'-6"	4'-6"	2'-3"	8"	10"	10"	#5-12" ℅	3.15

△-BASED ON 2:1 CHANNEL SIDE SLOPES AND 45° ANGLE

TYPE 'A' HEADWALL CIRCULAR

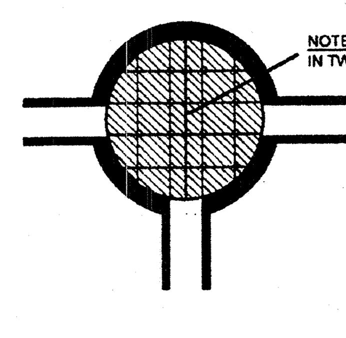


PRETREATMENT TROUGH "A-A"

NOT TO SCALE

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

Detail 6 Isolation Diversion Structure



TYPICAL ISOLATION / DIVERSION MANHOLE

(Source: Bell, 1996)

D.8.7

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.

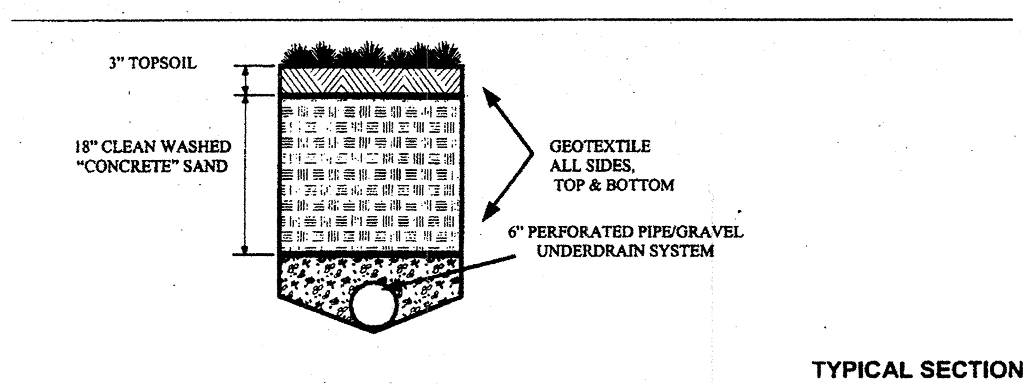
6.REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY.

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.

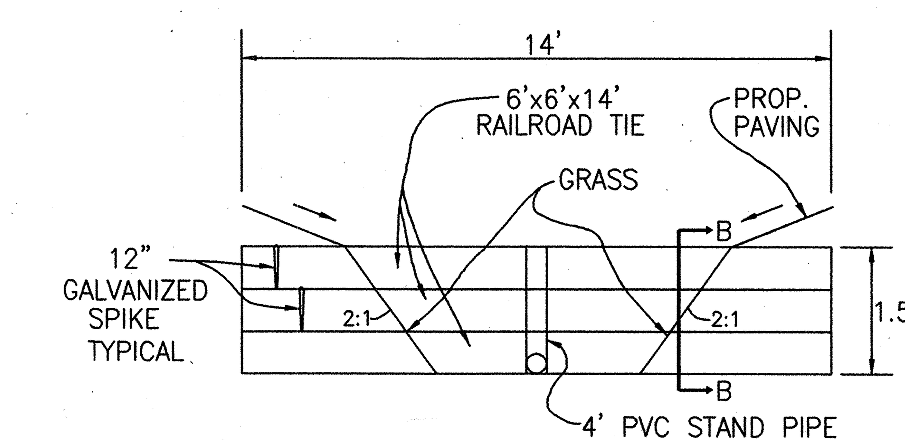
9.THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.

10.ONCE THE PEFORMANCE 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.



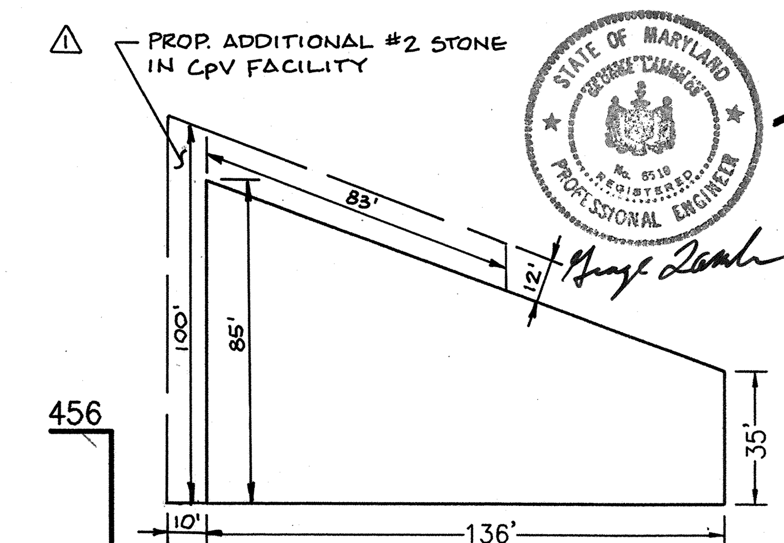
POCKET SAND FILTER

NOT TO SCALE



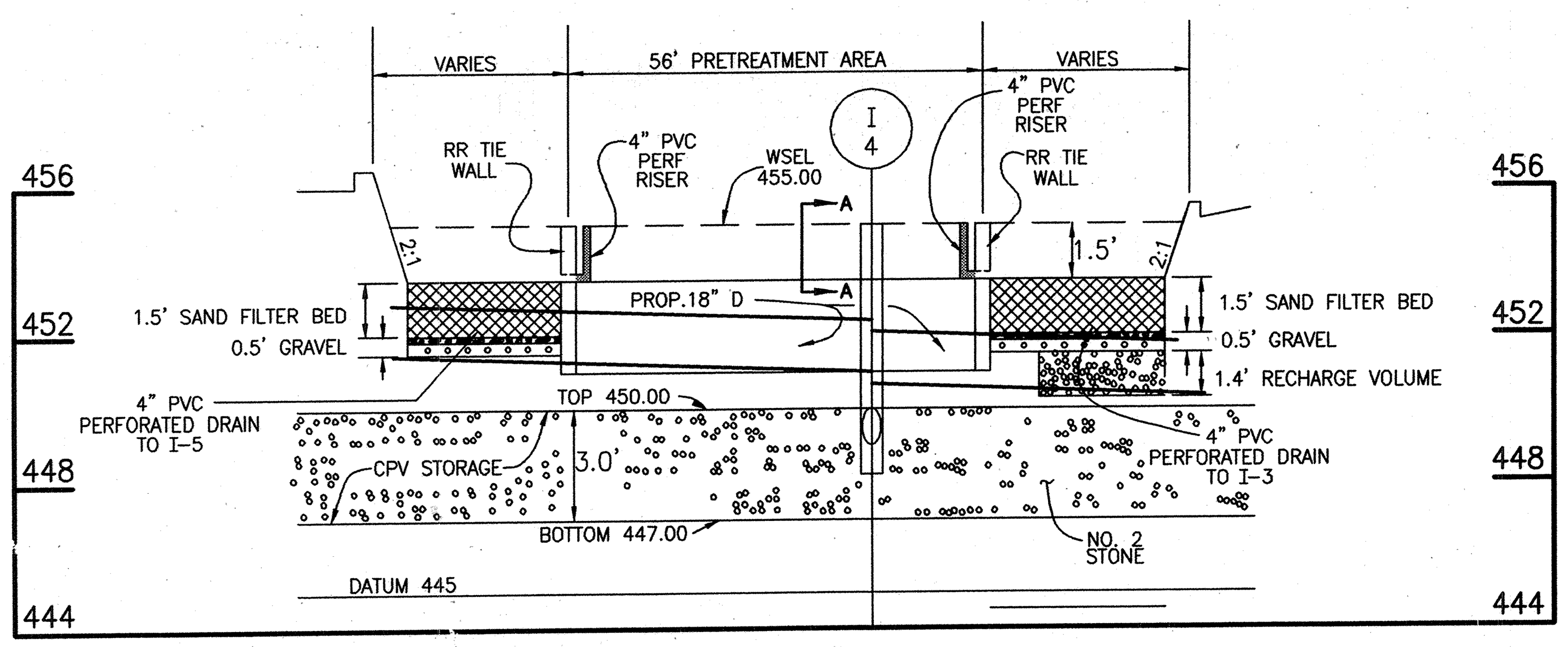
RAILROAD TIE WALL DETAIL

NOT TO SCALE



CPV DIMENSIONS
DEPTH = 3'

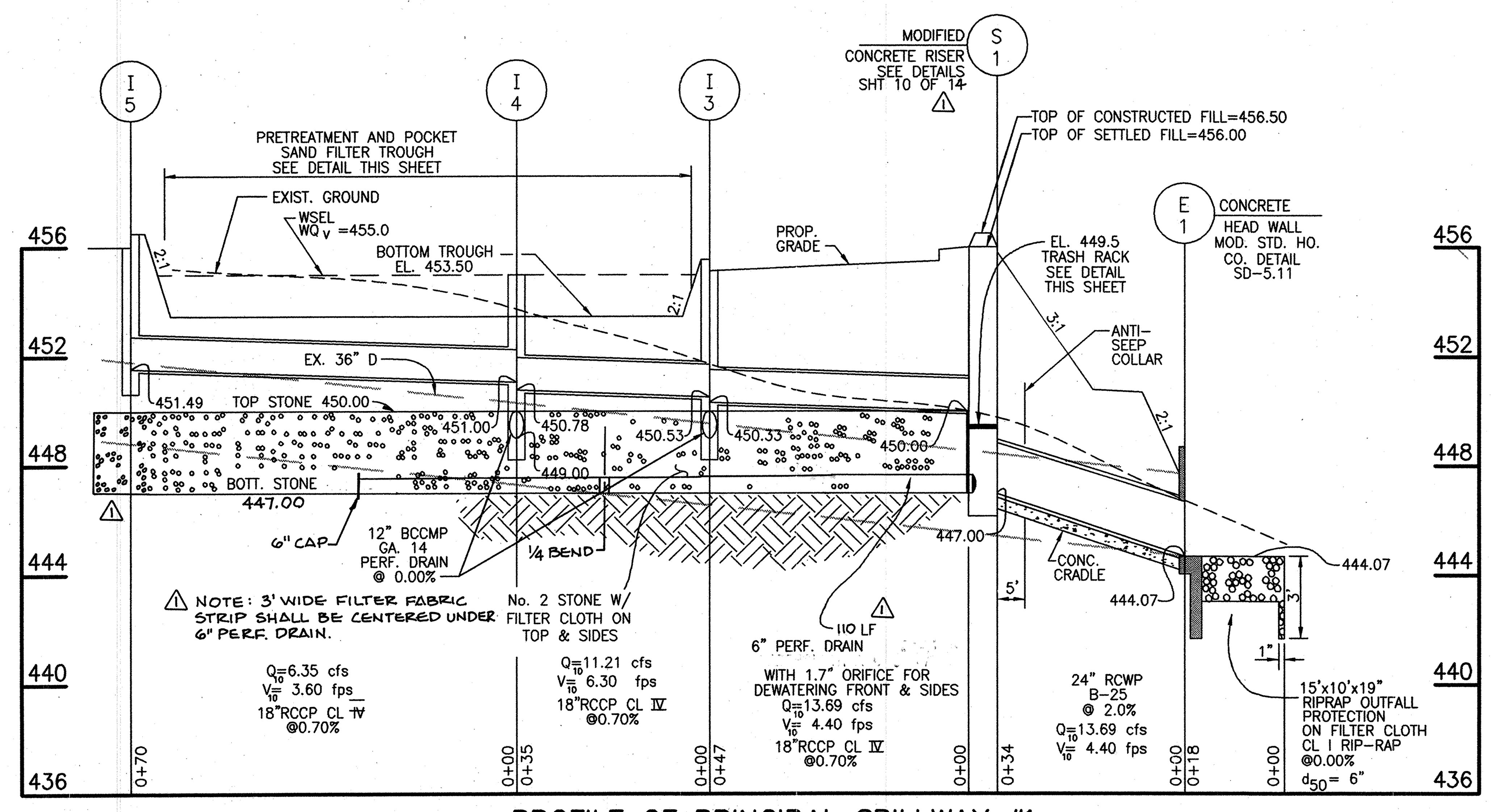
NOT TO SCALE



℄ PROFILE OF POCKET SAND FILTER AREA

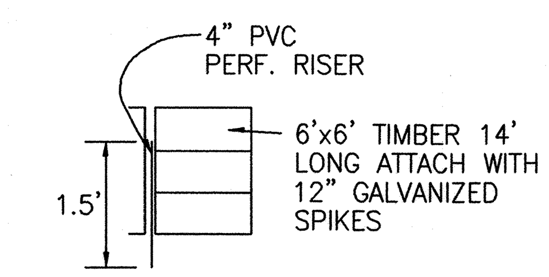
SCALE: 1"=20' HORIZ.
1"=4' VERT.

NOTE:
FILTER FABRIC TOP, SIDES AND BOTTOM OF POCKET SAND FILTERS



PROFILE OF PRINCIPAL SPILLWAY #1

SCALE: 1"=20' HORIZ.
1"=4' VERT.



SECTION B-B

NOT TO SCALE

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

4-25-03

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF-DEVELOPMENT ENGINEERING DIVISION — DATE 5/28/03
CHIEF-DIVISION OF LAND DEVELOPMENT — DATE 7/16/03
DIRECTOR — DATE 7/21/03

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT.
COUNTY HEALTH OFFICER — DATE 6-12-03
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) 823-8070

BORINGS, DRAINAGE AREA MAPS, AND PROFILES

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

SDP-02-121

STORMWATER MANAGEMENT FACILITIES CONSTRUCTION SPECIFICATIONS

1. **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.

2. **INSPECTION BY DESIGNATED ENGINEER:**
THE CONSTRUCTION OF ALL STORMWATER MANAGEMENT FACILITIES SHALL BE UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER. 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.

3. **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.

4. **EROSION CONTROL FACILITIES:**
ALL DISTURBED AREAS SHALL BE CONTROLLED BY EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH A PLAN APPROVED BY BCSCD.

5. **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.

6. **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 SIGHTLY 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.

7. **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 OF 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 5P, DUPONT TYPAR #3341 OR #3401 OR EQUIVALENT.

COMPACTION: SUBGRADE SHALL BE COMPACTED TO NOT LESS THAN 95% OF MAX. DENSITY AS A REQUIREMENT OF AASHTO T180 METHOD C.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

REINFORCED CONCRETE PIPE: ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE.

1. **MATERIALS:**
REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-361.

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

3. **LAYING PIPE:**
BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 2 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

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

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

1. **MATERIALS:**
PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OF ASTM D-2241.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

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

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

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

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 NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND 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

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.
2. CLEAR AND GRUB FOR SEDIMENT & EROSION CONTROL MEASURES OR DEVICES ONLY.
3. INSTALL ALL SEDIMENT & EROSION CONTROL MEASURES AND DEVICES.
4. NOTIFY HOWARD COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT, SEDIMENT CONTROL DIVISION, UPON COMPLETION OF SAID INSTALLATION.
5. WITH THE APPROVAL OF HOWARD COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT AND THE SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB REMAINDER OF SITE.
6. REMOVE EXISTING PAVING WHERE REQUIRED.
7. BEGIN MASS GRADING.
8. AFTER GRADING, BEGIN INSTALLATION OF UTILITIES.
9. BEGIN PLACING SUB-BASE AND INSTALLING CURB AND PAVING.
10. CONSTRUCT UNDERGROUND STORMWATER MANAGEMENT FACILITY.
11. FINISH GRADING AND STABILIZE DISTURBED AREA ACCORDING TO PERMANENT SEEDING SPECIFICATIONS.
12. FINISH PAVING.
13. AFTER OBTAINING PERMISSION FROM SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES.
14. STABILIZE ANY AREAS DISTURBED BY THIS PROCESS.

VOIDS BEHIND FABRIC

VOIDS CAN BE CREATED BETWEEN THE FABRIC AND EXCAVATION SIDES AND SHOULD BE AVOIDED. REMOVING BOULDERS OR OTHER OBSTACLES FROM THE TRENCH WALLS IS ONE SOURCE OF SUCH VOIDS. NATURAL SOILS SHOULD BE PLACED IN THESE VOIDS AT THE MOST CONVENIENT TIME DURING CONSTRUCTION TO ENSURE FABRIC CONFORMITY TO THE EXCAVATION SIDES. SOIL PIPING, 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.

GENERAL NOTES

1. 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 SATISFATION.
2. 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.
3. 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.
4. 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.

SWM DESIGN SUMMARY – FACILITY No. 1 *△1					
DESIGN STORM	ALLOWABLE RELEASE RATE	FACILITY INFLOW	FACILITY DISCHARGE	WATER SURFACE ELEVATION	STORAGE VOLUME (AC. FT.)
CPV	△1 0.17	6.86 CFS △1	4 CFS	452.89 FT.	△1 0.28 AC. FT.
10 YEAR	N.A.	N.A.	N.A.	N.A.	N.A.
100 YEAR	N.A.	N.A.	N.A.	N.A.	N.A.

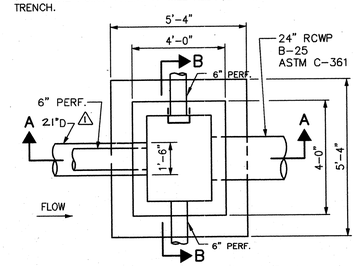
*WATERSHED AREA: △1 3.52 AC.± DRAINAGE AREA ROUTED △1 = 3.52 Ac.±
WATER QUALITY: TO ELEV. 454.50 3010 CF IMPERVIOUS AREA = 1.26 Ac. △1
LEVEL OF MANAGEMENT PROVIDED BY FACILITIES: CPV QUANTITY MANAGEMENT
BIORETENTION SWALE FOR WQv VOLUME PROVIDED
△1 * CPV FACILITY ADJUSTED FOR PARKING LOT ADDITION
STREAM CLASS: RIVER I
FREEBOARD: N/A
WATERSHED:
THESE FACILITIES ARE PRIVATE
MAINTENANCE TO BE PROVIDED BY OWNER
TYPE OF FACILITY: UNDERGROUND SAND/STONE STORAGE –

MAINTENANCE

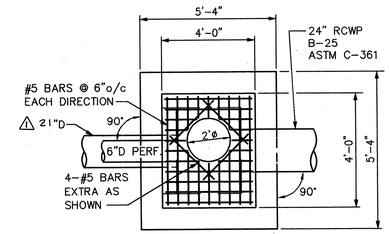
INFILTRATION TRENCHES SHALL BE DESIGNED TO MINIMIZE MAINTENANCE. HOWEVER, IT IS RECOGNIZED THAT ALL INFILTRATION FACILITIES ARE SUBJECT TO CLOGGING BE SEDIMENT, OIL, GREASE, GRIT AND OTHER DEBRIS. IN ADDITION, THE PERFORMANCE AND LONGEVITY OF THESE STRUCTURES IS NOT WELL DOCUMENTED. CONSEQUENTLY, A MONITORING OBSERVATION WELL IS REQUIRED FOR ALL INFILTRATION STRUCTURES.

THE OBSERVATION WELL SHALL BE MONITORED PERIODICALLY. FOR THE FIRST YEAR AFTER COMPLETION OF CONSTRUCTION, THE WELL SHOULD BE MONITORED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM. IT IS RECOMMENDED THAT A LOG BOOK BE MAINTAINED INDICATING THE RATE AT WHICH THE FACILITY DEWATERS AFTER LARGE STORMS AND THE DEPTH OF THE WELL FOR EACH OBSERVATION. ONCE THE PERFORMANCE CHARACTERISTICS OF THE STRUCTURE HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS, UNLESS THE PERFORMANCE DATA INDICATE THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

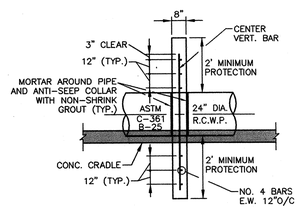
SEDIMENT BUILD-UP IN THE TOP FOOT OF STONE AGGREGATES OR THE SURFACE INLET SHOULD BE MONITORED ON THE SAME SCHEDULE AS THE OBSERVATION WELL. A MONITORING WELL IN THE TOP FOOT OF STONE AGGREGATE WILL BE REQUIRED WHEN THE TRENCH HAS A STONE SURFACE. SEDIMENT DEPOSITED SHALL NOT BE ALLOWED TO BUILD UP TO THE POINT WHERE IT WILL REDUCE THE RATE OF INFILTRATION INTO THE TRENCH.



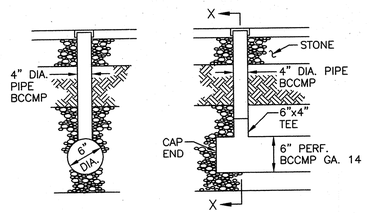
RISER STRUCTURE PLAN S-1
SCALE : 3/8" = 1'-0"



RISER STRUCTURE TOP
SLAB REINFORCING PLAN
SCALE : 3/8" = 1'-0"



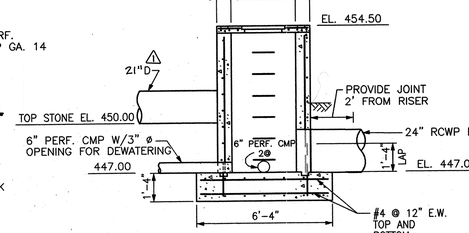
ANTI-SEEP COLLAR
SIDE VIEW
(NOT TO SCALE)



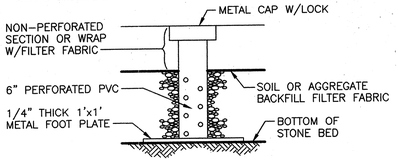
SECTION X-X
(N.T.S.)

CLEANOUT DETAIL
(N.T.S.)

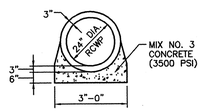
CAP END
ENDS OF ALL UNDERGROUND PIPES TO BE CAPPED AT ENDS WITH A MINIMUM 1/8" THICK METAL PLATE WITH WATERTIGHT WELD AROUND CIRCUMFERENCE OR EQUIVALENT



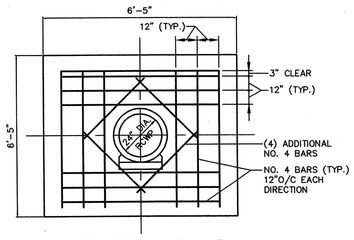
SECTION A – A
(NOT TO SCALE)



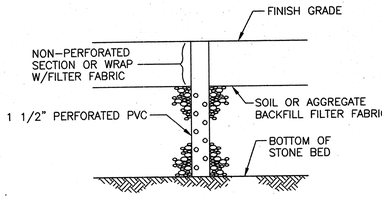
OBSERVATION WELL
(N.T.S.)



CONCRETE CRADLE
(NOT TO SCALE)

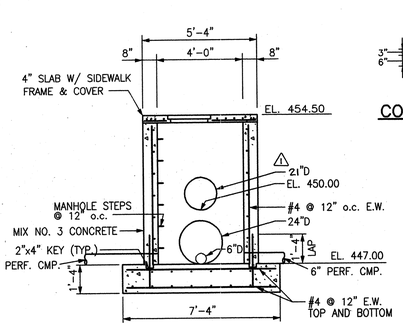


ANTI-SEEP COLLAR
FRONT VIEW
(NOT TO SCALE)



NOTE:
1 1/2" DIAMETER PIPES SHALL BE MAINTAINED IN AN OPEN AND CLEAR CONDITION AT ALL TIMES. SUBSEQUENT PARKING LOT REPAVING WILL REQUIRE EXTENSION, REPAIR AND/OR REPLACEMENT OF VENTS AS REQUIRED TO MAINTAIN THEIR FUNCTION. PLUG VENTS DURING ALL PAVING OPERATIONS. APPLICABLE INFILTRATION MANUAL SPECS.:

VENT PIPE
(N.T.S.)



SECTION B – B
(NOT TO SCALE)

PROVIDE CAP CONSISTING OF SQUARE GAV. WIRE MESH (1/4" HARDWARE FABRIC) (1/2" SQ. OPENNINGS) TO BE CENTERED OVER INLET ENDS OF PIPES AND ANCHORED INTO WALLS WITH CLIPS.

SCREEN PROTECTION DETAIL
NO SCALE

RISER NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SWM POND/SEDIMENT BASIN CONSTRUCTION SPECIFICATIONS AND THE MSHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS SECTIONS 414 AND 416.
2. ALL CONCRETE SHALL BE MIX NO. 3 (fc=3500 psi)
3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM DESIGNATION A615, GRADE 60. ALL REINFORCING STEEL SHALL BE #4 BARS SPACED AT 12". CONCRETE COVER OVER THE REINFORCING STEEL SHALL BE A MINIMUM OF 2" MEASURED FROM THE INSIDE FACE OF WALLS AND FROM THE TOP SURFACE OF THE REINFORCING STEEL IN THE BOTTOM AND SIDES OF THE FOOTING. CUT REINFORCING STEEL AT PIPES AND OPENINGS.
4. CONSTRUCTION JOINTS BETWEEN WALLS AND FOOTING SHALL BE ROUGH FLOATED SUFFICIENTLY TO THOROUGHLY CONSOLIDATE THE SURFACE AND SHALL BE INTENTIONALLY LEFT IN A ROUGENED CONDITION.
5. PROVIDE 1 1/4" CHAMFER FOR ALL CORNERS ABOVE GRADE.
6. ORIFICE PLATE TO BE SHOP FABRICATED AND HOT DIPPED GALVANIZED PRIOR TO FIELD ASSEMBLY.

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 — P.E. NO. 6519
GEORGE LAMBROS
PRINT NAME — DATE 4-24-03

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 — DATE 4/23/03
Kevin T. Hardy
PRINT NAME

Date	No	Revision Description
12/17/03	△1	CHANGED 18" PIPE TO 21" PIPE
10/7/03	△1	REVISED DRAWING NO. AND SWM DESIGN SUMMARY TABLE

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

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

CROSSROADS CHURCH OF THE NAZARENE

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

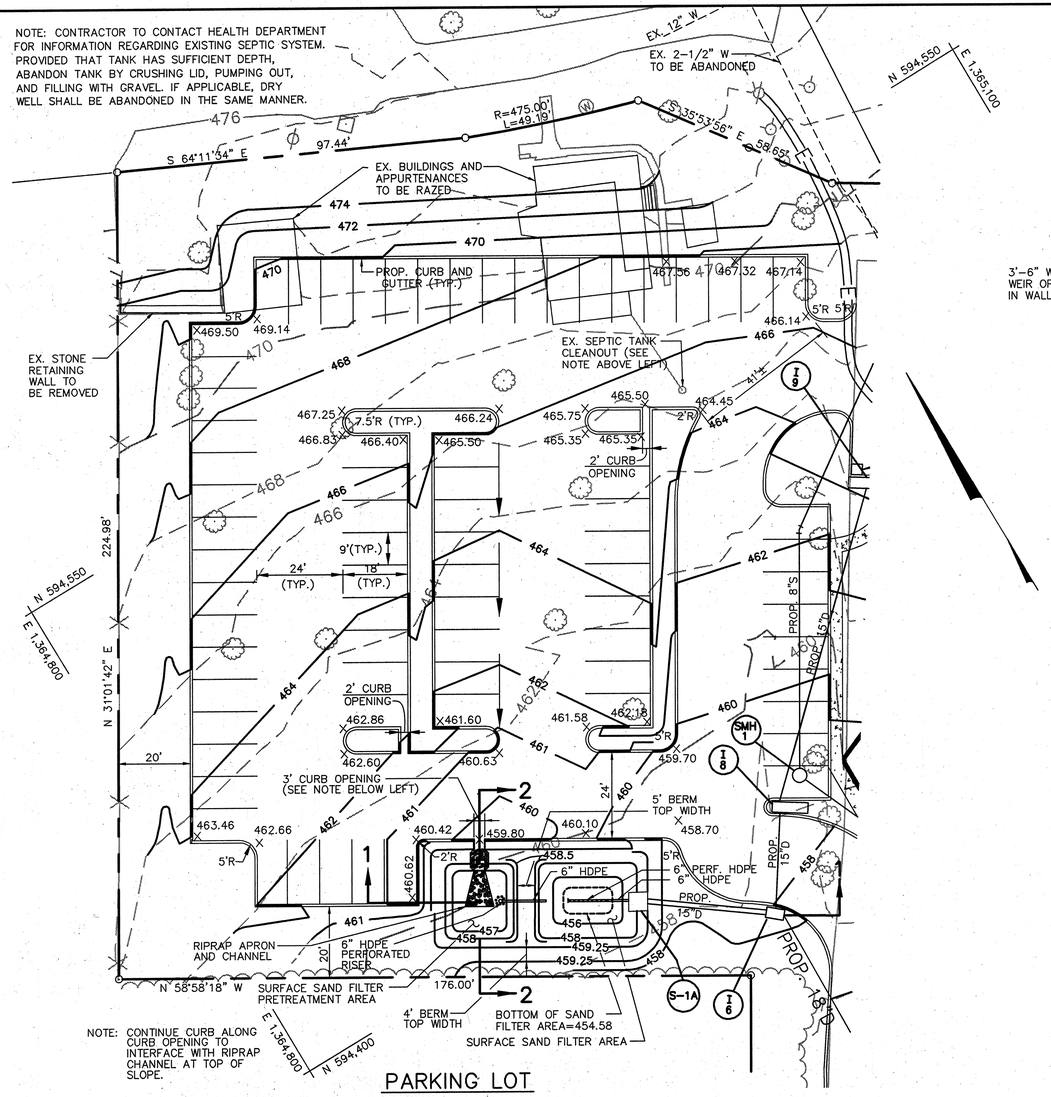
CENTURY ENGINEERING, INC.
CONSULTING ENGINEERS, PLANNERS, SURVEYORS
32 WEST ROAD
TOWSON, MARYLAND 21204
(410) 823-8070

4-25-03
STATE OF MARYLAND — GEORGE LAMBROS — No. 6519 — REGISTERED PROFESSIONAL ENGINEER

STORM WATER MANAGEMENT NOTES AND DETAILS FACILITY #1

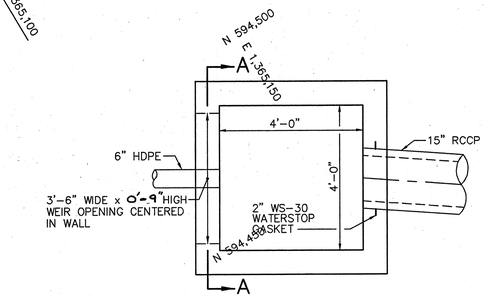
Des By	D.W.	Scale	AS SHOWN	Proj No	21010.00
Drn By	R.U.	Date	NOVEMBER, 2002	DRAWING NO	△1 10 OF 14
Chk By		Approved			

SDP-02-121



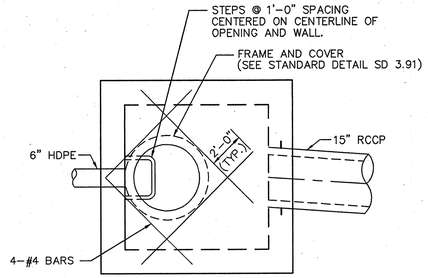
PARKING LOT ADDITION PLAN

SCALE: 1"=20'



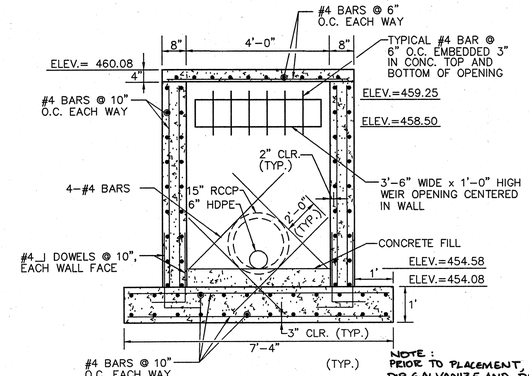
STRUCTURE S-1A PLAN

SCALE: 1/2"=1'-0"



STRUCTURE S-1A SLAB DETAIL

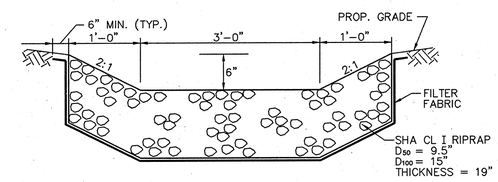
SCALE: 1/2"=1'-0"



NOTE: PRIOR TO PLACEMENT, HOT DIP GALVANIZE AND PAINT TRASH RACK BATTLESHIP GREY.

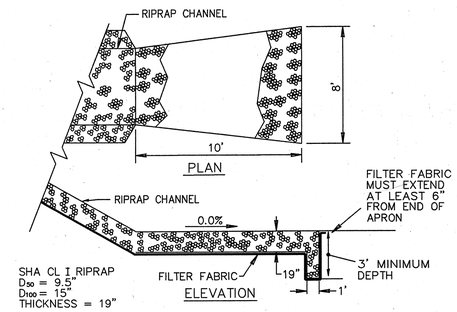
SECTION A-A

SCALE: 1/2"=1'-0"



RIPRAP CHANNEL CROSS SECTION

NOT TO SCALE



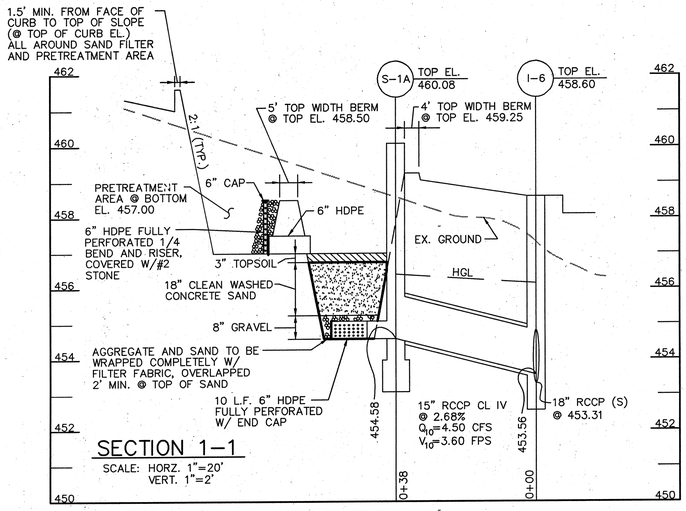
RIPRAP APRON DETAIL

NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE SAND FILTER

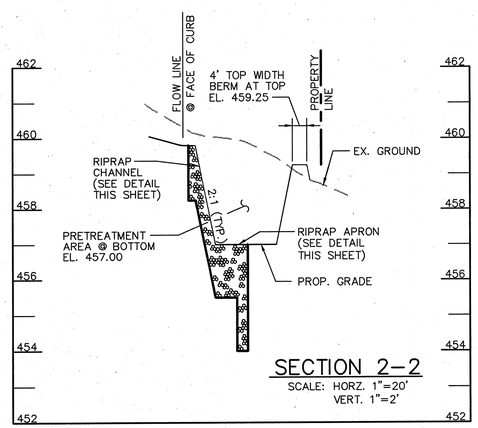
1. THE SURFACE SAND FILTER AND PRETREATMENT AREA SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PREFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
2. THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
3. FILTERS THAT HAVE 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 PRETREATMENT AREA.
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 AVAILIABLE 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 SCHEDILE IS REQUIRED.

NOTE: THE PURPOSE OF THIS SHEET ADDITION (TO THE SET OF 13 SHEETS ORIGINALLY APPROVED BY HOWARD COUNTY) IS TO SHOW A PARKING LOT ADDITION AND STORM WATER MANAGEMENT WATER QUALITY DEVICE PLAN AND DETAILS, UNDER REDLINE REVISION 1.



SECTION 1-1

SCALE: HORZ. 1"=20' VERT. 1"=2'



SECTION 2-2

SCALE: HORZ. 1"=20' VERT. 1"=2'

Date	No	Revision Description
12/17/03	1	ADDED THIS SHEET

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF-DEVELOPMENT ENGINEERING DIVISION — DATE 4/9/04

CHIEF-DIVISION OF LAND DEVELOPMENT — DATE 4/9/04

DIRECTOR — DATE 4/26/04

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

COUNTY HEALTH OFFICER — DATE

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 21204
(301) 823-8070

STATE OF MARYLAND — MICHAEL NORMAN ARMSTRONG — NO. 16195 — REGISTERED PROFESSIONAL ENGINEER

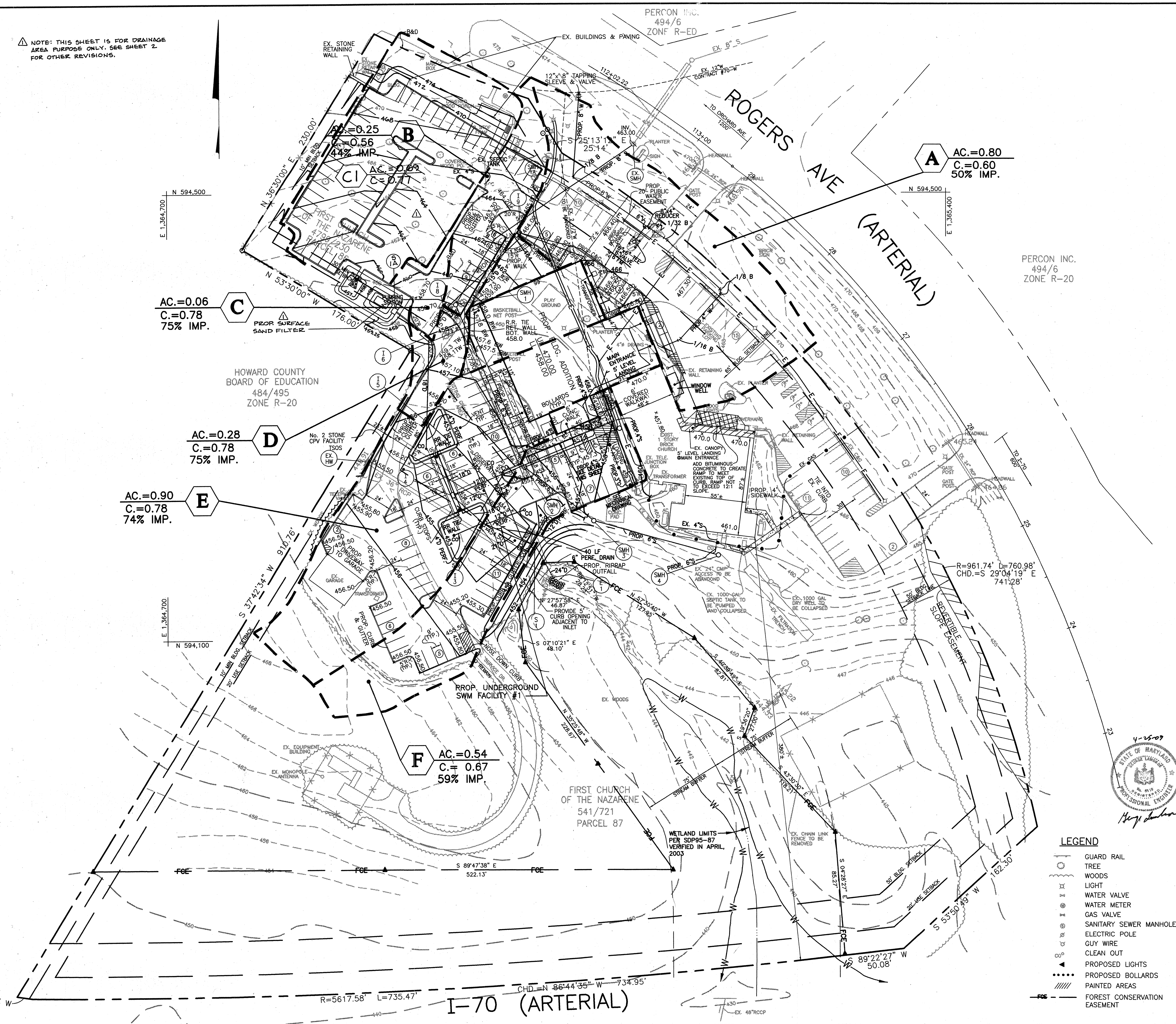
Michael N. Armstrong 4/1/04

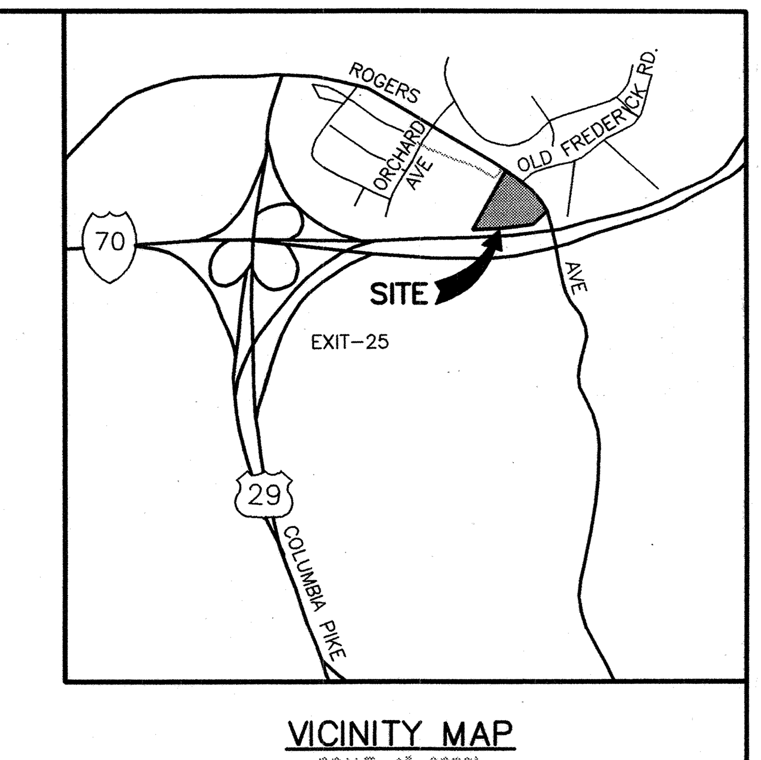
"REVISED SITE DEVELOPMENT PLAN" PARKING LOT ADDITION PLAN AND DETAILS

Des By	M.N.A.	Scale	1"=20'	Proj No	21010.00
Drn By	M.C.A.	Date	APRIL, 2004	DRAWING NO	11 OF 14
Chk By		Approved			

SDP-02-121

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





VICINITY MAP

SCALE: 1"=2000'

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

Date	No	Revision Description
10/7/03	⚠	ADDED PARKING LOT AND ASSOCIATED DRAINAGE DATA, AND NOTE; REVISED DRAWING No.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF–DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF–DIVISION OF LAND DEVELOPMENT — 7/16/03 DATE

DIRECTOR — 7/21/03 DATE

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

COUNTY HEALTH OFFICER — 6-12-03 DATE

4-25-09

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

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) ~~(301)~~ 823-8070

DRAINAGE AREA MAP

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

SDP.00.121

Schedule "A" - Perimeter Landscape Edge

	Adjacent to Perimeter Property					Adjacent to Roadways		
Perimeter	1A	1B	2	3	4	1A & 1B	2	3
Landscape Type	B	A	A	A	C	E / E	E	B
Linear Feet of Roadway Frontage/ Perimeter	913'	445'	230'	176'	230'	210' / 110'	315'	300'
Credit for Existing Vegetation	913'	445'	230'**		NO	NO / NO	NO	300'
Credit for Wall, Fence, or Berm (yes, no, linear feet)	NO	NO	NO	NO	NO	NO / NO	YES, BERM 315 LF, MIN. 5' GRADE CHANGE	NO
Number of Plants Required								
Shade Trees	0	0	2**	3	4	6 / 3	8	0
Evergreen Trees	0	0	0	0	11	0 / 0	0	0
Shrubs	0	0	0		0	54/ 28	0	0
Number of Plants Provided								
Shade Trees	0	0	0	1	4	6 / 3	8	0
Evergreen Trees (sub. @ 2:1)	0	0	0	4	11	0 / 0	0	0
Small Flwng. Trees (sub. @ 2:1)	0	0	0	0	5	0 / 0	0	0
Shrubs (sub. @ 10:1)	0	0	20**	0	0	54/ 14*	14*	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.

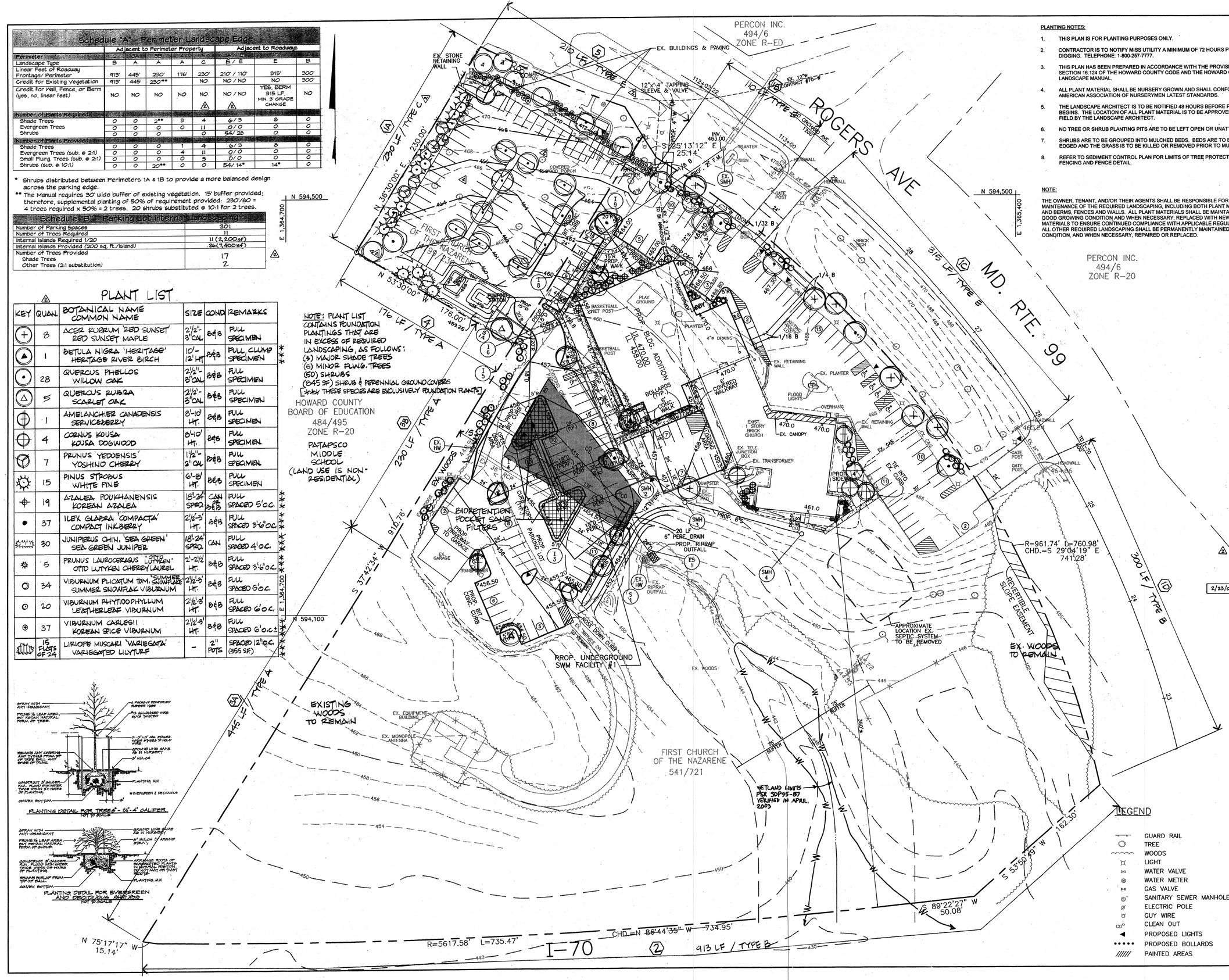
Schedule "B" - Parking Lot Internal Landscaping

Number of Parking Spaces	201
Number of Trees Required	11
Internal Islands Required 1/20	11 (2,200sf)
Internal Islands Provided (200 sq. ft./island)	26(7,400 sf)
Number of Trees Provided	
Shade Trees	17
Other Trees (2:1 substitution)	2

PLANT LIST

KEY	QUAN.	BOTANICAL NAME / COMMON NAME	SIZE	COND.	REMARKS
	8	ACER RUBRUM 'RED SUNSET' / RED SUNSET MAPLE	2½"-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	2½"-3" CAL.	B&B	FULL SPECIMEN
	5	QUERCUS RUBRA / SCARLET OAK	2½"-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 'YEDOENSIS' / YOSHINO CHERRY	11½"-2" CAL.	B&B	FULL SPECIMEN
	15	PINUS STROBUS / WHITE PINE	6'-8' HT.	B&B	FULL SPECIMEN
	19	AZALEA POUKHANENSIS / KOREAN AZALEA	18"-24" SPRD.	CAN & B&B	FULL SPACED 5'O.C.
	37	ILEX GLABRA 'COMPACTA' / COMPACT INKBERRY	2½'-3' HT.	B&B	FULL SPACED 3'-6'O.C.
	30	JUNIPERUS CHIN. 'SEA GREEN' / SEA GREEN JUNIPER	18"-24" SPRD.	CAN	FULL SPACED 4'O.C.
	5	PRUNUS LAUROCERASUS 'OTTO LUYKEN' / OTTO LUYKEN CHERRY LAUREL	2'-2½ HT.	B&B	FULL SPACED 3'-6'O.C.
	34	VIBURNUM PLICATUM TOM. 'SUMMER SNOWFLAKE' / SUMMER SNOWFLAK VIBURNUM	2½'-3' HT.	B&B	FULL SPACED 6'O.C.
	20	VIBURNUM RHYTIDOPHYLLUM / LEATHERLEAF VIBURNUM	2½'-3' HT.	B&B	FULL SPACED 6'O.C.
	37	VIBURNUM CARLESII / KOREAN SPICE VIBURNUM	2½'-3' HT.	B&B	FULL SPACED 6'O.C.
	15 FLATS OF 24	LIRIOPE MUSCARI 'VARIEGATA' / VARIEGATED LILYTURF	-	2" POTS	SPACED 12"O.C. (355 SF)

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

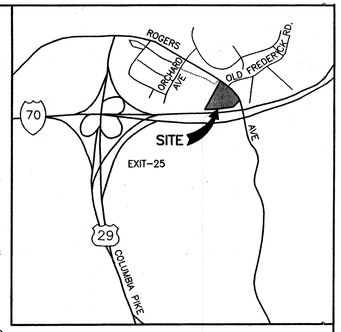


PLANTING NOTES:

1. THIS PLAN IS FOR PLANTING PURPOSES ONLY.
2. CONTRACTOR IS TO NOTIFY MISS UTILITY A MINIMUM OF 72 HOURS PRIOR TO DIGGING. TELEPHONE: 1-800-257-7777.
3. 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.
4. ALL PLANT MATERIAL SHALL BE NURSERY GROWN AND SHALL CONFORM TO AMERICAN ASSOCIATION OF NURSERYMEN LATEST STANDARDS.
5. 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.
6. NO TREE OR SHRUB PLANTING PITS ARE TO BE LEFT OPEN OR UNATTENDED.
7. SHRUBS ARE TO BE GROUPED INTO MULCHED BEDS. BEDS ARE TO BE EDGED AND THE GRASS IS TO BE KILLED OR REMOVED PRIOR TO MULCHING.
8. 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"=2000'

NOTE:

FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF:

△2 $ 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
TOTAL:	$15,210

LANDSCAPE PLAN PREPARED BY:

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

STATE OF MARYLAND No. 393 LANDSCAPE ARCHITECT

DEVELOPER'S / BUILDER'S CERTIFCATE:

"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 LANDCAPE MANUAL. I / WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING."

NAME — DATE 4/24/03

△2 NOTE: THIS PLAN IS FOR LANDSCAPE PURPOSE ONLY. SEE SHEET 2 REVISION 1 FOR SITE REVISIONS OTHER THAN PARKING LOT ADDITION.

Date	No	Revision Description
7-18-02	1	HOWARD COUNTY COMMENTS
10/1/03	△2	ADDED PARKING LOT, REVISED PERIMETERS 1A & B AND PLANT QUANTITIES
2/23/04		

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF-DIVISION OF LAND DEVELOPMENT — DATE 7/18/03

DIRECTOR — DATE 7/21/03

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

COUNTY HEALTH OFFICER — DATE 6-12-03

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 21204
(410) 823-8070

LANDSCAPE PLAN

Des By	D.W.	Scale	1"=40'	Proj No	21010.00
Drn By	M.L.A.	Date	MARCH, 2002	DRAWING NO	△3 13 OF 14
Chk By		Approved			

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

SDP-06-121

SOILS DATA

KEY	SOIL NAME	SLOPE	K-FACTOR	REMARKS
ChB2	CHESTER SILT LOAM	3-8%	0.32	
EIC3	ELIOAK SILTY CLAY LOAM	8-15%	0.28	
EkB2	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
LeB2	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

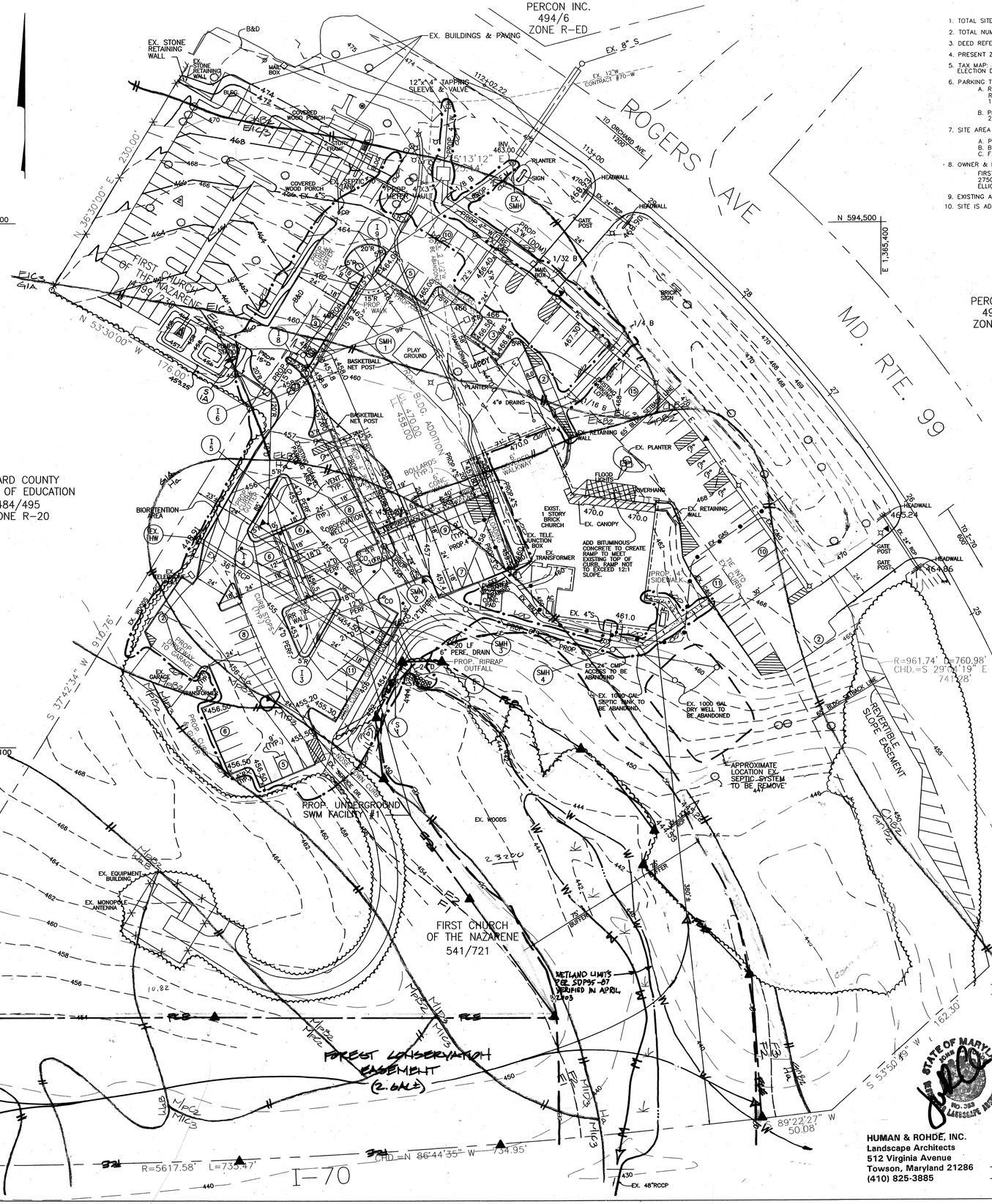
1. Contractor is to stake and flag the sediment control measures, limit of disturbance, limit of clearing, and forest retention area.
2. Notify Howard County Department of Planning and Zoning at (410) 313-3245 to view the flagged limits.
3. Install protective fencing and signage
4. Call Howard County 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.
5. Install all sediment control devices.
6. Begin clearing and grading.
7. 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.
8. After construction is completed, remove protective fencing. Signage for retention areas shall remain in place.
9. 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

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

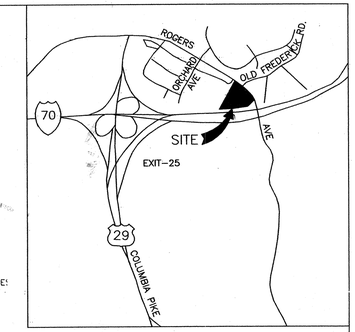
KEY

- PROTECTIVE SIGNAGE (TYP.)
- USE I TRIBUTARY/EXISTING AS SLIKER BRANCH
- EXISTING FOREST - (5.0AC±)
- LIMITS OF DISTURBANCE
- FOREST CONSERVATION EASEMENT (2.6AC±)
- SOILS BOUNDARY
- FOREST STAND BOUNDARY
- 75' STREAM BUFFER
- WETLAND LIMITS



SITE ANALYSIS

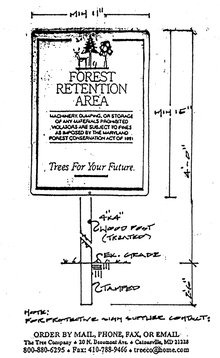
1. TOTAL SITE AREA: 10.35 AC. +/-
2. TOTAL NUMBER OF LOTS:
3. DEED REFERENCE: 4799/230 & 541/721
4. PRESENT ZONING: R-20
5. TAX MAP: 17 GRID: 18 PARCELS: 86 & 87
   ELECTION DISTRICT: 2
6. PARKING TABULATION:
   A. REQUIRED:
      RELIGIOUS ACTIVITIES STRUCTURE
      1 SPACE / 3 SEATS X 400 SEATS = 134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



VICINITY MAP
SCALE: 1"=2000'

The Forest Conservation Easement has been established to fulfill the requirements of Section 16.1200 of the Howard County Code Forest Conservation Act. No clearing, grading, or construction is permitted within the Forest Conservation Easement; however, forest management practices as defined in the Deed of Forest Conservation Easement are allowed.

For Information: Howard County Department of Planning and Zoning
3430 Court House Drive
Ellicott City, Maryland 21043
(410) 313-2354



NOTE: FOR ALTERNATIVE WAYS TO UTILIZE CONTOUR:

ORDER BY MAIL, PHONE, FAX, OR EMAIL:
The Tree Company • 20 N. Desoto Ave. • Catonsville, MD 21228
800-880-6295 • Fax: 410-788-9466 • treeco@home.com

⚠2 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.

Net Tract Area		
A. *Total Tract Area*		A= 10.4
B. *Deductions* (Critical Area, area restricted by local ordinance or program)		B=
C. *Net Tract Area* Net Tract Area = Total Tract (A) - Deductions (B)		C= 10.4
Land Use Category: Institutional		
D. *Afforestation Threshold* (Net Tract Area (C) x .15%)	.15 x 10.4	D= 1.6
E. *Conservation Threshold* (Net Tract Area (C) x .20%)	.2 x 10.4	E= 2.1
Existing Forest Cover		
F. *Existing Forest Cover within the Net Tract Area*		F= 5.0
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		G= 2.6
Breakeven Point		
H. *Breakeven Point* (Amount of forest that must be retained so that no mitigation is required)		
(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 x 2.6 + 2.1		H= 2.6
(2) If the Area of Forest Above the Conservation Threshold (G) is equal to 0, then H = Existing Forest Cover (F).		
I. *Forest Clearing Permitted Without Mitigation* I = Existing Forest Cover (F) – Breakeven point (H) 5.0 - 2.6		I= 2.4
Proposed Forest Clearing		
J. *Total Area of Forest to be Cleared*		J=
K. *Total Area of Forest to be Retained* K = Existing Forest Cover (F) – Forest to be Cleared (J). 5.0 - 0		K= 5.0
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:		L=
L. *Reforestation for Clearing Above the Conservation Threshold*		
(1) If the Total Area of Forest to be Retained (K) is greater than the Conservation Threshold (E), then L = the Area of Forest to be Cleared (J) 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		
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 (Conservation Threshold (E) – Forest to be Retained (K))		M=
(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 (J).		
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		N=
P. *Total Reforestation Required* P = L + M – N		P=
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)		Q=
R. *Total Planting Requirement* R = P + Q		R=

Forest Conservation Worksheet C.5

Date	No	Revision Description
10/7/03	⚠2	ADDED PARKING LOT; REVISED DRAWING NO.
7-15-02	1	REVISED FCE LIMITS/SIGNAGE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF-DEVELOPMENT ENGINEERING DIVISION — DATE 6

CHIEF-DIVISION OF LAND DEVELOPMENT — DATE 7/21/03

DIRECTOR — DATE 7/21/03

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

COUNTY HEALTH OFFICER — DATE 6-12-03

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

FOREST CONSERVATION PLAN

Des By D.W.	Scale 1"=40'	Proj No 21010.00	
Drn By M.L.A.	Date 4-24-02	⚠2 DRAWING NO 14 OF 14	
Chk By	Approved		

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

SDP-02-121