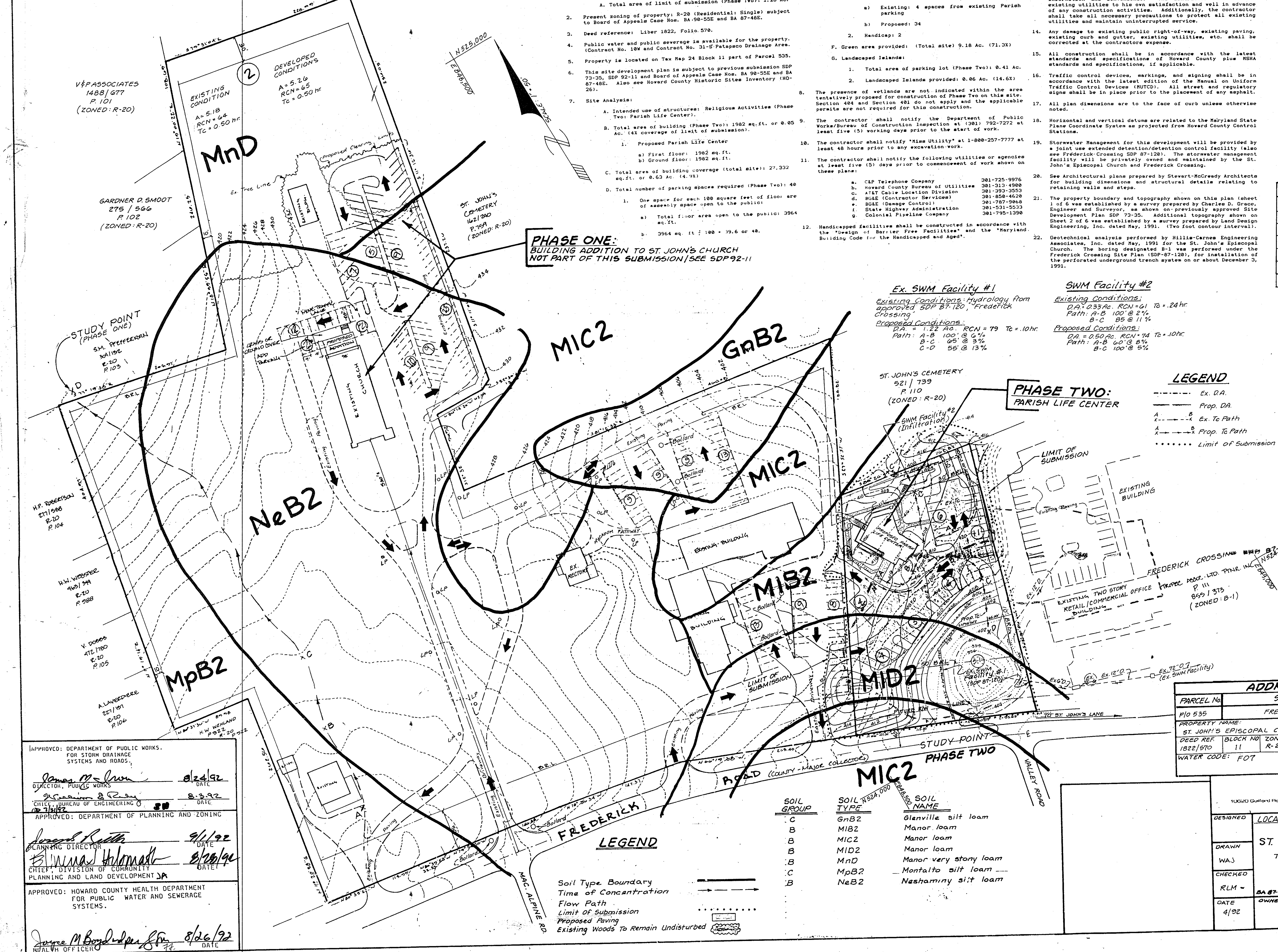
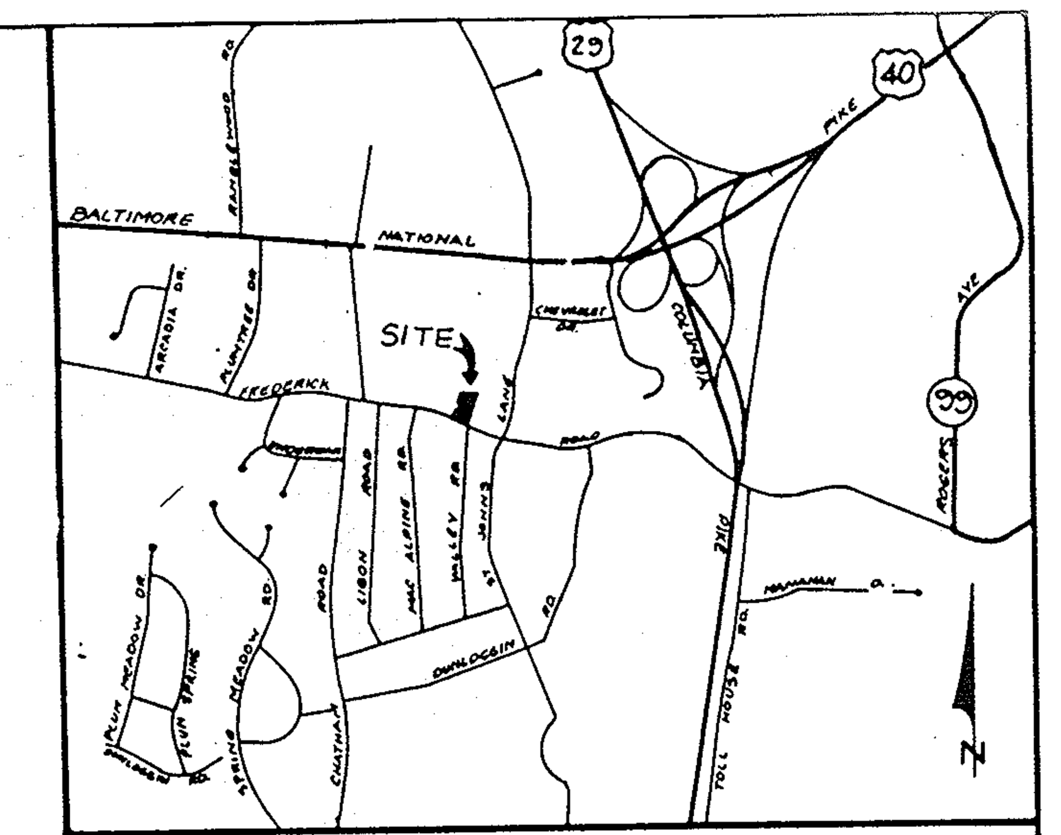




VICINITY MAP
SCALE: 1" = 2000'

General Notes:

1. Total area of property: 12.87 Ac.

   A. Total area of limit of submission (Phase Two): 1.28 Ac.

2. Present zoning of property: R-20 (Residential: Single) subject to Board of Appeals Case Nos. BA 90-55E and BA 87-48E.

3. Deed reference: Liber 1822, Folio 570.

4. Public water and public severage is available for the property. (Contract No. 10W and Contract No. 31-S Patapsco Drainage Area.

5. Property is located on Tax Map 24 Block 11 part of Parcel 535.

6. This site development plan is subject to previous submission SDP 73-35, SDP 92-11 and Board of Appeals Case Nos. BA 90-55E and BA 87-48E. Also see Howard County Historic Sites Inventory (HO-26).

7. Site Analysis:

   A. Intended use of structures: Religious Activities (Phase Two: Parish Life Center).

   B. Total area of building (Phase Two): 1982 sq.ft. or 0.05 Ac. (4% coverage of limit of submission).

      1. Proposed Parish Life Center

         a) First floor: 1982 sq.ft.
         b) Ground floor: 1982 sq.ft.

   C. Total area of building coverage (total site): 27,332 sq.ft. or 0.63 Ac. (4.9%)

   D. Total number of parking spaces required (Phase Two): 40

      1. One space for each 100 square feet of floor are of assembly space open to the public:

         a) Total floor area open to the public: 3964 sq.ft.

         b) 3964 sq. ft ÷ 100 = 39.6 or 40.

   E. Total number of parking spaces proposed (Phase Two): 40

      1. Standard spaces: 38

         a) Existing: 4 spaces from existing Parish parking

         b) Proposed: 34

      2. Handicap: 2

   F. Green area provided: (Total site) 9.18 Ac. (71.3%)

   G. Landscaped Islands:

      1. Total area of parking lot (Phase Two): 0.41 Ac.

      2. Landscaped Islands provided: 0.06 Ac. (14.6%)

8. The presence of wetlands are not indicated within the area tentatively proposed for construction of Phase Two on this site. Section 404 and Section 401 do not apply and the applicable permits are not required for this construction.

9. The contractor shall notify the Department of Public Works/Bureau of Construction Inspection at (301) 792-7272 at least five (5) working days prior to the start of work.

10. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.

11. The contractor shall notify the following utilities or agencies at least five (5) days prior to commencement of work shown on these plans:

a.	C&P Telephone Company	301-725-9976
b.	Howard County Bureau of Utilities	301-313-4900
c.	AT&T Cable Location Division	301-393-3553
d.	BG&E (Contractor Services)	301-850-4620
e.	BG&E (Damage Control)	301-787-9068
f.	State Highway Administration	301-531-5533
g.	Colonial Pipeline Company	301-795-1390

12. Handicapped facilities shall be constructed in accordance with the "Design of Barrier Free Facilities" and the "Maryland Building Code for the Handicapped and Aged".

13. The existing utilities shown hereon are located from field surveys and construction drawings of record. The approximate location of existing utilities are shown for the contractors information and convenience. The contractor shall locate existing utilities to his own satisfaction and well in advance of any construction activities. Additionally, the contractor shall take all necessary precautions to protect all existing utilities and maintain uninterrupted service.

14. Any damage to existing public right-of-way, existing paving, existing curb and gutter, existing utilities, etc. shall be corrected at the contractors expense.

15. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications, if applicable.

16. 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.

17. All plan dimensions are to the face of curb unless otherwise noted.

18. Horizontal and vertical datums are related to the Maryland State Plane Coordinate System as projected from Howard County Control Stations.

19. Stormwater Management for this development will be provided by a joint use extended detention/detention control facility (also see Frederick Crossing SDP 87-120). The stormwater management facility will be privately owned and maintained by the St. John's Episcopal Church and Frederick Crossing.

20. See Architectural plans prepared by Stewart-McCready Architects for building dimensions and structural details relating to retaining walls and steps.

21. The property boundary and topography shown on this plan (sheet 1 of 6 was established by a survey prepared by Charles D. Grace, Engineer and Surveyor, as shown on previously approved Site Development Plan SDP 73-35. Additional topography shown on Sheet 2 of 6 was established by a survey prepared by Land Design Engineering, Inc. dated May, 1991. (Two foot contour interval).

22. Geotechnical analysis performed by Hillis-Carnes Engineering Associates, Inc. dated May, 1991 for the St. John's Episcopal Church. The boring designated B-1 was performed under the Frederick Crossing Site Plan (SDP-87-120), for installation of the perforated underground trench system on or about December 3, 1991.

Ex. SWM Facility #1

Existing Conditions: Hydrology from approved SDP 87-120, "Frederick Crossing"

Proposed Conditions:
D.A. = 1.22 Ac. RCN = 79 Tc = .10 hr.
Path: A-B 100' @ 6%
B-C 65' @ 3%
C-D 55' @ 13%

SWM Facility #2

Existing Conditions:
D.A. = 0.33 Ac. RCN = 61 Tc = .24 hr.
Path: A-B 100' @ 2%
B-C 85 @ 11%

Proposed Conditions:
D.A. = 0.50 Ac. RCN = 74 Tc = .10 hr.
Path: A-B 60' @ 8%
B-C 100' @ 5%

LEGEND

- Ex. D.A.
- Prop. D.A.
- Ex. Tc Path
- Prop. Tc Path
- Limit of Submission

INDEX OF SHEETS

SHEET	TITLE
1	LOCATION AND SWM DRAINAGE AREA MAP
2	SITE DEVELOPMENT PLAN
3	SEDIMENT CONTROL PLAN & DRAINAGE AREA MAP
4	LANDSCAPE PLAN
5	SEDIMENT CONTROL AND SITE DETAILS
6	SWM PROFILES AND DETAILS

IN THE MATTER OF ST. JOHN'S EPISCOPAL CHURCH Petitioner : BEFORE THE HOWARD COUNTY BOARD OF APPEALS Case No. BA 90-55E

ORDER

Based upon the foregoing Findings of Fact and Conclusions of Law, it is this 12th day of March, 1991, by the Howard County Board of Appeals, ORDERED:

That the petition of St. John's Episcopal Church for a special exception to expand an existing religious facility be, and the same is hereby GRANTED, subject to the following conditions:

1. The Petitioner shall comply with all applicable Federal, State and County laws and regulations.

2. The location and layout of all proposed parking areas shall be designed to meet the minimum standards for parking and access lanes.

3. The Petitioner shall insure that no headlights from automobiles in driveways or parking areas shall shine or reflect onto adjacent residential properties as well as residential properties across Frederick Road, by planting where necessary, sufficient evergreen vegetative screening.

4. Outdoor lighting shall be directed inward so as not to shine or reflect onto adjacent properties, and shall be the minimum necessary for directional and security lighting, and may not exceed three (3) feet in height.

5. The Petitioner shall comply with testimony presented and construct the proposed addition to the church building and the proposed parish life center with slate roofs.

LEGEND

- Soil Type Boundary
- Time of Concentration
- Flow Path
- Limit Of Submission
- Proposed Paving
- Existing Woods To Remain Undisturbed

SOIL GROUP	SOIL TYPE	SOIL NAME
C	GnB2	Glenville silt loam
B	MIB2	Manor loam
B	MIC2	Manor loam
B	MID2	Manor loam
B	MnD	Manor very stony loam
C	MpB2	Montalto silt loam
B	NeB2	Neshaminy silt loam

APPROVED: DEPARTMENT OF PUBLIC WORKS. FOR STORM DRAINAGE SYSTEMS AND ROADS.

James M. Irvin — 8/24/92
DIRECTOR, PUBLIC WORKS — DATE

William E. Riley — 8.3.92
CHIEF, BUREAU OF ENGINEERING — DATE
7/31/92

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Joseph Rutter — 9/1/92
PLANNING DIRECTOR — DATE

[signature] — 8/28/92
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

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

Joyce M Boyd — 8/26/92
HEALTH OFFICER — DATE

ADDRESS CHART

PARCEL No.	STREET ADDRESS				
P/O 535	FREDERICK ROAD				
PROPERTY NAME: ST. JOHN'S EPISCOPAL CHURCH			SECT./AREA —	PARCEL P/O 535	
DEED REF. 1822/570	BLOCK NO 11	ZONE R-20	TAX MAP NO. 24	ELEC. DIST. 2nd	CENSUS TR. 6023.01
WATER CODE: F07			SEWER CODE: 1402800		

STATE OF MARYLAND — RUDOLPH L. MAYER, JR. — NO. 8700 — REGISTERED PROFESSIONAL ENGINEER

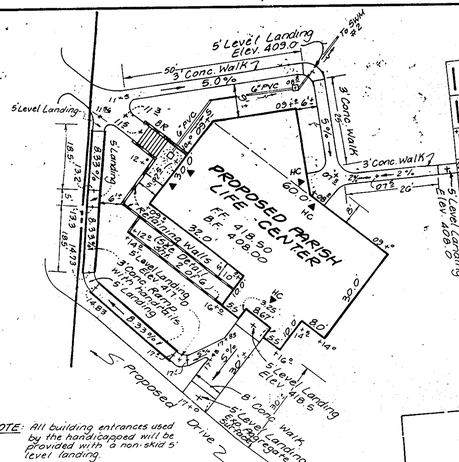
LAND DESIGN ENGINEERING, INC.
10620 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6284 • (301) 800-0034

LOCATION / SWM DRAINAGE AREA MAP
PARISH LIFE CENTER
ST. JOHN'S EPISCOPAL CHURCH
PHASE TWO
TAX MAP 24 BLOCK 11 P/O PARCEL 535
LIBER 1822 FOLIO 570
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
PREVIOUS FILE NO. SDP 73-35, SDP 92-11, BA 87-48E, BA 90-55E

OWNER / DEVELOPER
ST. JOHN'S EPISCOPAL CHURCH
9120 FREDERICK RD.
ELLICOTT CITY, MD 21043
Phone: 465-9531

DESIGNED	DRAWN	CHECKED	DATE	SCALE	DRAWING	JOB NO.	FILE NO.
	WAJ	RLM	4/92	1" = 50'	1 OF 6	90-202.8	

SDP-92-93



NOTE: All building entrances used by the handicapped will be provided with a non-skid 5' level landing.

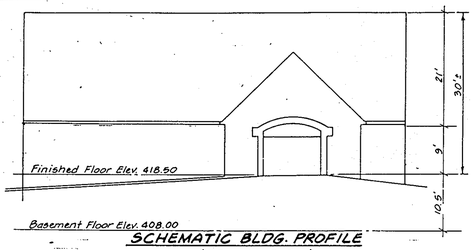
CONC. WALK DETAIL

SCALE : 1" = 20'

RETAINING WALL DETAIL

NOT TO SCALE

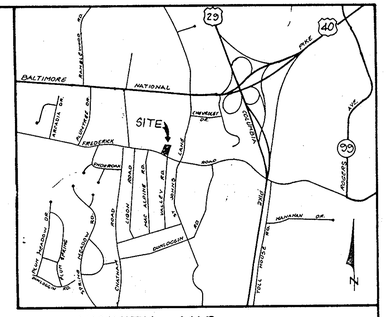
* Note: For Construction - refer to the Architectural Plans prepared by Stewart McCready Architects dated May 18, 1992.



SCHEMATIC BLDG. PROFILE

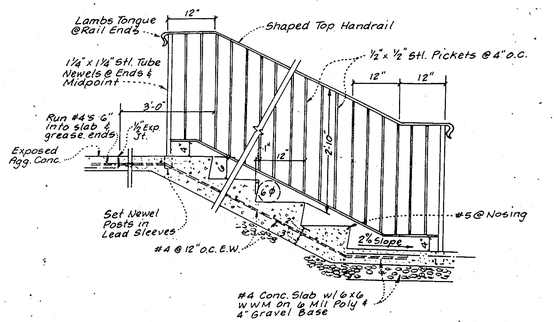
(FRONT ELEV.)

Not To Scale



VICINITY MAP

SCALE: 1" = 2000'



EXTERIOR STEPS & HANDRAIL DETAIL

NOT TO SCALE

* Note: For Construction, refer to Architectural Plans prepared by Stewart McCready Architects dated May 18, 1992.

LEGEND

Existing Contours	400
Proposed Contours	400
Existing Spot Elev.	401.5
Proposed Spot Elev.	+01.5
Contour Interval	2 Feet
Proposed Wall Mounted Exterior Light	
Drainage Direction	
Existing Conc. Sidewalk	
Proposed Conc. Sidewalk	
Building Access Point	
Handicap Building Access Point	H.C.
Existing Paving	
Proposed Paving	
Existing Paving (to be removed)	
One Way Traffic Direction	
Existing Concrete Curb	
Existing Concrete Curb (to be removed)	

APPROVED: DEPARTMENT OF PUBLIC WORKS. FOR STORM DRAINAGE SYSTEMS AND ROADS.

DIRECTOR, PUBLIC WORKS — DATE 8/24/92

CHIEF, BUREAU OF ENGINEERING — DATE 8-3-92

APPROVED: DEPARTMENT OF PLANNING AND ZONING

PLANNING DIRECTOR — DATE 9/11/92

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 8/20/92

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

REAL M. OFFICER — DATE 8/26/92

STATE OF MARYLAND — JOHN L. McCREADY, JR. — NO. 8700 — REGISTERED PROFESSIONAL ENGINEER

LAND DESIGN ENGINEERING, INC.

10320 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301) 604-6264 • (301) 880-0034

DESIGNED	SITE DEVELOPMENT PLAN	SCALE 1" = 30'
DRAWN WAS	PARISH LIFE CENTER ST. JOHN'S EPISCOPAL CHURCH PHASE TWO	DRAWING 2 OF 6
CHECKED RLM	TAX MAP 24 BLOCK 11 PARCEL 535 LIBER 1822 FOLIO 570 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND PREVIOUS FILE NO. SDP 73-35 BA 90-55E SDP 92-11 BA 87-46E	JOB NO. 90-202.8
DATE 4/92	OWNER/DEVELOPER ST. JOHN'S EPISCOPAL CHURCH 9120 FREDERICK RD. ELLICOTT CITY, MD. 21043 Phone: 465-0551	FILE NO. —

SDP-92-93

SEDIMENT TRAP #1

TYPE OF TRAP	STONE OUTLET
DRAINAGE AREA (Ac.)	0.45
STORAGE REQUIRED (C.F)	810
STORAGE PROVIDED (C.F.) (@1' BELOW CREST)	850 C.F.
STORAGE ELEVATION (FT.)	406.0.
STORAGE DEPTH (FT)	1
WEIR WIDTH (FT.)	4
BOTTOM ELEVATION (FT.)	405.0
CLEANOUT ELEVATION (FT.)	405.5
CREST ELEVATION (FT.)	407.0
TOP ELEVATION (FT.)	408.5

NOTE: Rip-Rap Outfall to be constructed at a later time. See note # 10 - Construction Sequence.

ST. JOHN'S CEMETERY
L. 521 F. 739
ZONING R-20
PARCEL 110.

TRAP #1

SILT FENCE

Temporary Grading Easement

SWM Facility #2 (Infiltration)

EARTH DIKE (a-2)

Ex. Play Ground

Existing Building

ST. JOHN'S EPISCOPAL CHURCH
L. 166 F. 732
L. 170 F. 92
L. 301 F. 531
ZONING R-20
PARCEL 535

Existing Building

Ex. White Pines

Ex. Transformer

Ex. 1" Honey Locust

Existing Macadam Parking Lot

Ex. Dumpster Enclosure

FREDERICK CROSSING
L. 555 F. 373
PARCEL 111
SDP 87-120
ZONING B-1

Ex. Conc. Walk

A = .49 Ac.
C = .80

EX. R-20
P1 = 78%

Existing Commercial Office Building

SILT FENCE

TRAP #3

STOCKPILE AREA

SILT FENCE

(Not to be disturbed) Ex. SWM Pond #1 (SDP 87-120)

TRAP #2

LIMIT OF DISTURBANCE

Ex. Fire Hydrant

Existing 10'x10' Emergency Spillway Crest El. 401.00' Contractor to reconstruct Spillway to original design dimensions and elevations (SDP 87-120) if required.

Ex. Top of Dam El. 402.0 Minimum Width - Contractor to reconstruct Top of dam to design dimensions and elevations (SDP 87-120) if required.

FREDERICK ROAD (HOWARD COUNTY PUBLIC ROAD)

VALLEY ROAD

N 524,250 E 849,000

N 524,000

SEDIMENT TRAP #3

TYPE OF TRAP	Stone Outlet
DRAINAGE AREA (Ac.±)	0.29
STORAGE REQUIRED (C.F.)	522
STORAGE PROVIDED (C.F.) (@1' below crest)	586
STORAGE ELEVATION (FT.)	400.0
STORAGE DEPTH (FT.)	1
WEIR WIDTH (FT.)	4
BOTTOM ELEVATION (FT.)	399.0
CLEANOUT ELEVATION (FT.)	399.5
CREST ELEVATION (FT.)	401.0
TOP ELEVATION (FT.)	402.0

SEDIMENT TRAP #2

TYPE OF TRAP	Stone Outlet
DRAINAGE AREA (Ac.±)	0.37
STORAGE REQUIRED (C.F.)	667
STORAGE PROVIDED (C.F.) (@1' below crest)	720
STORAGE ELEVATION (FT.)	400.0
STORAGE DEPTH (FT.)	1
WEIR WIDTH (FT.)	4
BOTTOM ELEVATION (FT.)	399.0
CLEANOUT ELEVATION (FT.)	399.5
CREST ELEVATION (FT.)	401.0
TOP ELEVATION (FT.)	402.0

Construction Sequence

1. Obtain grading permit.
2. Construct stabilized construction entrance. Install tree protection fence and silt fence in location indicated on the plan. *Install sediment traps.*
3. *Clear* and grub site to subgrade. Remove ornamental landscaping, and existing paving, etc. as required. Stockpile stripped topsoil in area indicated on plan.
4. Excavate foundation for building. Begin construction of building and utilities.
5. Install base course of parking lot.
6. Remove sediment from roadways and dress stabilized construction entrance as required.
7. The contractor shall inspect and provide necessary maintenance on the sediment and erosion control measures shown hereon, after each rainfall and on a daily basis.
8. Complete building and utility construction. Remove stabilized construction entrance, clean base course, apply tack coat and lay surface course.
9. Fine grade site and stabilize all disturbed areas using permanent seeding mixture and straw mulch.
10. After all areas draining to the existing stormwater management pond have been stabilized, with approval of sediment control inspector, remove traps 2 and 3 and construct bench channel area. Stabilize disturbed areas using permanent seeding mixture and straw mulch. After areas draining to trap #1 have been stabilized, grade to SWM #2 pond bottom at 404.0, *and provide rip-rap outfall to specifications shown on sheet 2 - Site Development Plan.*
11. After permission has been given by the sediment control inspector, remove remaining sediment control measures and stabilize all areas using permanent seeding mixture and straw mulch.

* NOTE: SEE LANDSCAPE PLAN FOR SPECIAL SITE STABILIZATION AREAS AND TREE PROTECTION FENCE LOCATIONS. SEE SHEET 4 OF 6.

LEGEND

EXISTING CONTOUR	----400----
PROPOSED CONTOUR	400
CONTOUR INTERVAL	2 feet
SILT FENCE	S——S——S
EARTH DIKE	→——→
LIMIT OF DISTURBANCE	•••••••••
TRAP DRAINAGE DIVIDE	—·—·—
STORM DRAIN DRAINAGE DIVIDE	———
SOIL BORING	●
INLET PROTECTION	▣
STABILIZED CONSTRUCTION ENTRANCE	SCE

NOTE: FOR SOIL BORING B-1 LOG SEE FREDERICK CROSSING, SDP 87-120. SEE GEOTECHNICAL REPORT IN SWM STUDY FOR B-2 & B-3

NOTE: SEDIMENT TRAP SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND ITS PERIMETER IN ACCORDANCE WITH VOLUME I., CHAPTER 12, OF HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

STATE OF MARYLAND — RUDOLPH L. MAY, JR. — NO. 9700 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PUBLIC WORKS. FOR STORM DRAINAGE SYSTEMS AND ROADS.

DIRECTOR, PUBLIC WORKS — DATE 8/24/92

CHIEF, BUREAU OF ENGINEERING — DATE 8-3-92

APPROVED: DEPARTMENT OF PLANNING AND ZONING

PLANNING DIRECTOR — DATE 8/1/92

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 8/20/92

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

HEALTH OFFICER — DATE 8/26/92

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

U.S. Soil Conservation Service — Date 7/27/92

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — Date 7/27/92

DEVELOPER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

SIGNATURE OF DEVELOPER — DATE 4/20/91

BY THE ENGINEER:

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

SIGNATURE OF ENGINEER — DATE 11-20-91

STATE OF MARYLAND — RUDOLPH L. MAY, JR. — NO. 9700 — REGISTERED PROFESSIONAL ENGINEER

STATE OF MARYLAND — NO. 9700 — REGISTERED PROFESSIONAL ENGINEER

LAND DESIGN ENGINEERING, INC.
10320 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301)830-0134

DESIGNED	SEDIMENT CONTROL PLAN & DRAINAGE AREA MAP	SCALE 1"=30'
DRAWN WAJ	PARISH LIFE CENTER	DRAWING 3 OF 6
CHECKED RLM	ST. JOHN'S EPISCOPAL CHURCH PHASE TWO	JOB NO. 90-202.B
DATE 4/92	TAX MAP 24 BLOCK 11 P/O PARCEL 535 LIBER 1822 FOLIO 570 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND PREVIOUS FILE NO. SDP 73-35 BA 90-55E BA 87-48E SDP 82-11	FILE NO.
	OWNER/DEVELOPER ST. JOHN'S EPISCOPAL CHURCH 9120 FREDERICK RD. ELLICOTT CITY, MD. 21043 Phone: 465-9531	

SDP-92-93

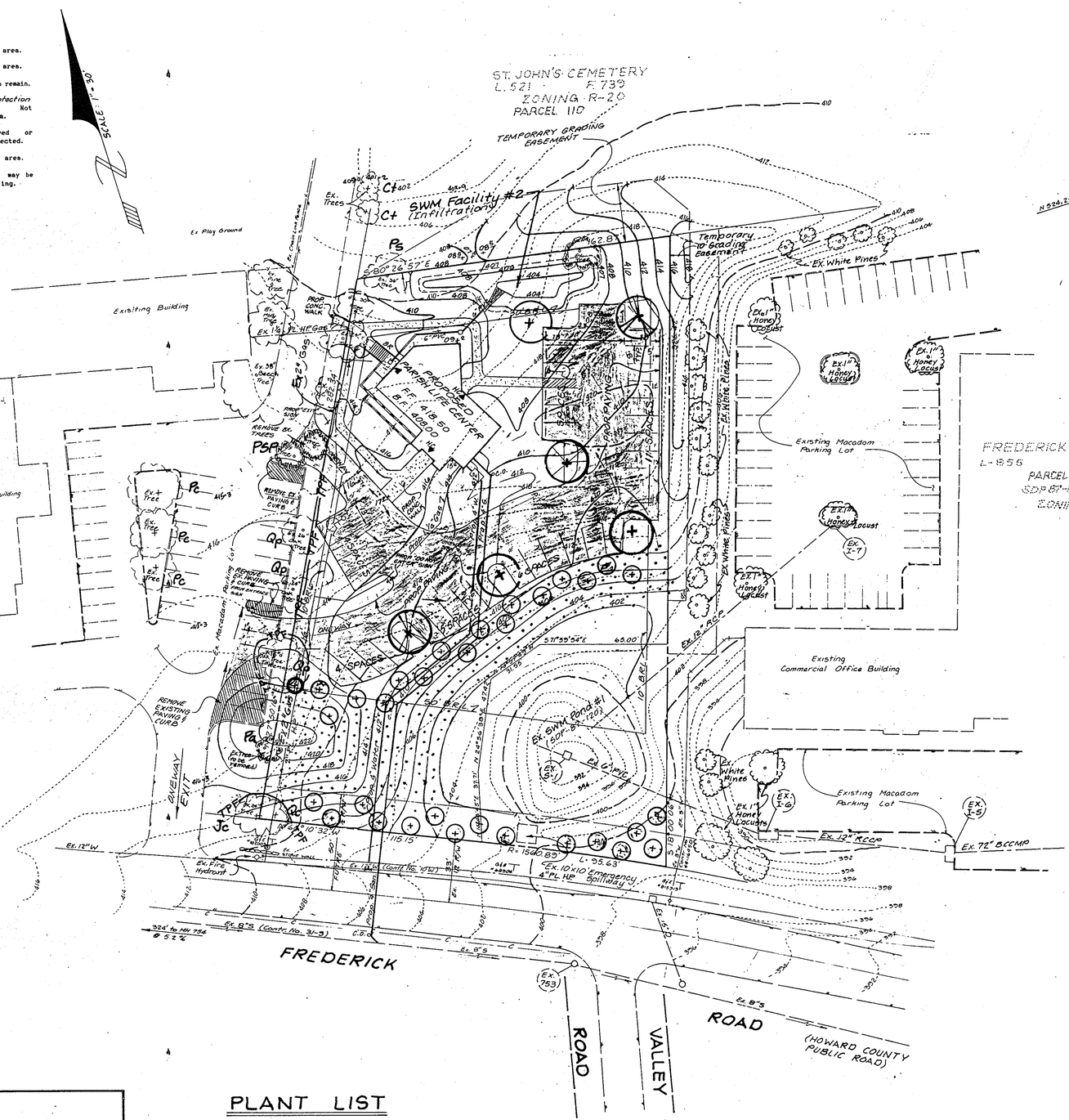
Plant Key - Existing Plant Material

Symbol	Botanical Name	Common Name	Remarks
Ct	Chamaecyparus Thyoides	White Cypress	Not in disturbed area.
Jc	Prunus Serrulata	Japanese Cherry	Not in disturbed area.
Qc	Quercus Coccinea	Scarlet Oak	Individual tree to remain.
Qp	Quercus Palustris	Pin Oak	*Provide Tree Protection as indicated.* Not in disturbed area.
Pa	Picea Abies	Norway Spruce	To be removed or relocated as directed.
Pc	Pyrus Calleryana	Callery Pear	Not in disturbed area.
PSP	Prunus Subhirtella Pendula	Weeping Cherry	Not exceptional, may be worth transplanting.

Landscape Legend

Ex. Plant Material to Remain

Ex. Plant Material to be Removed or Transplanted

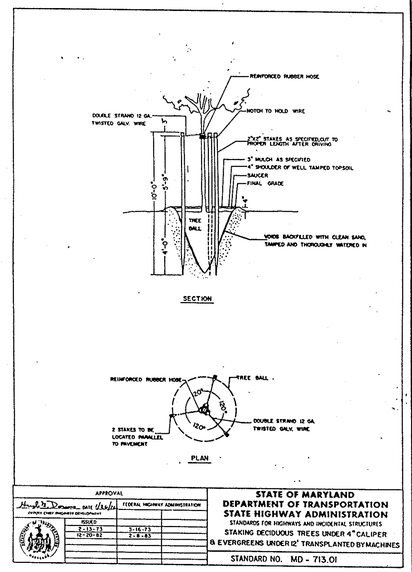


PLANT LIST

SYMBOL	QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
	32	WHITE PINE	PINUS STROBUS	5' TO 6' H	B&B
	3	REDSPIRE PEAR	PYRUS CALLERYANA BRADFORD 'REDSPIRE	1½" to 2" CAL.	B&B
	3	RED MAPLES	ACER RUBRUM	2" CAL.	B&B
	3600	CROWN VETCH	CORONILLA VARIA	3" to 4"	SPACE 18" O.C.

SPECIAL SLOPE STABILIZATION : ALL SLOPES 3:1 OR STEEPER SHALL BE STABILIZED BY A PERMANENT GROUND COVER ('CROWN VETCH / CORONILLA VARIA OR APPROVED EQUAL)

TPF——TPF TREE PROTECTION FENCE



APPROVAL

Howard County Department of Public Works	DATE 10/8/92	FEDERAL HIGHWAY ADMINISTRATION
ROAD	R-13-73	S-14-73
	M-170-83	S-8-83

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STAKING DECIDUOUS TREES UNDER 4" CALIPER & EVERGREENS UNDER 12' TRANSPLANTED BY MACHINES
STANDARD NO. MD - 713.01

APPROVED: DEPARTMENT OF PUBLIC WORKS. FOR STORM DRAINAGE SYSTEMS AND ROADS.

DIRECTOR, PUBLIC WORKS — DATE 8/24/92

CHIEF, BUREAU OF ENGINEERING — DATE 8.3.92

APPROVED: DEPARTMENT OF PLANNING AND ZONING

PLANNING DIRECTOR — DATE 9/1/92

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT JA — DATE 8/28/92

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

HEALTH OFFICER — DATE 8/26/92

STATE OF MARYLAND — RANDOLPH L. LAND — No. 6196 — REGISTERED PROFESSIONAL ENGINEER

LAND DESIGN ENGINEERING, INC.
10320 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880-0034

DESIGNED	LANDSCAPE PLAN PARISH LIFE CENTER ST. JOHN'S EPISCOPAL CHURCH PHASE TWO TAX MAP 24 BLOCK 11 C/O PARCEL 535 LIBER 1822 FOLIO 570 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND BA 87-48E PREVIOUS FILE NO. SDP 73-33 BA 90-55E SDP 92-21
DRAWN WAJ	
CHECKED RLM	
DATE 4/92	OWNER/DEVELOPER ST. JOHN'S EPISCOPAL CHURCH 9120 FREDERICK RD. ELLICOTT CITY, MD. 21043 Phone: 465-3531
SCALE	1" = 30'
DRAWING	4 OF 6
JOB NO.	90-202.8
FILE NO.	

SDP-92-93

STANDARD AND SPECIFICATIONS
FOR
VEGETATIVE STABILIZATION
TEMPORARY SEEDING

Definition

Planting short-term vegetation on critical areas.

Purpose

To temporarily stabilize the soil; to reduce damages from sediment and runoff to downstream areas; improve wildlife habitat; enhance natural beauty.

Conditions Where Practice Applies

Graded or cleared areas which are subject to erosion for a period of 14 days or more.

SPECIFICATIONS

I. Site Preparation

A. Prior to seeding, install needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways, and sediment basins.

B. Final grading and shaping has usually not been completed for temporary seedings.

II. Soil Amendments

For temporary seedings, fertilizer shall be applied at the rate of 600 lbs/ac. or 15 lbs/1,000 sq. ft., using 10-10-10 or equivalent. Soils which are highly acid should be limed.

III. Seedbed Preparation

When the area to be seeded has been recently loosened to the extent that an adequate seedbed exists, no additional treatment is required.

However, when the area to be seeded is packed, crusted, and hard, the top layer of soil shall be loosened by discing, raking or other acceptable means before seeding.

IV. Seeding

A. Select a mixture from Table 50-1.

B. Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder or hydroseeder (slurry includes seed and fertilizer).

V. Mulching

When seedings are made on critical sites or adverse soil conditions, mulch material will be applied immediately after seeding. Seedings made during optimum seeding dates and with favorable soils on very flat areas may not need to be mulched. Mulch materials are listed in order of their effectiveness.

A. Materials and Amounts

1. Mulch mattings - such as jute or excelsior blanket shall be stapled to the surface in waterways and on steep slopes. Lighter materials of paper, plastic and cotton mulch mattings may be used where erosion hazard is not severe. If the area is to be mowed, do not use metal staples.

2. Straw - Material shall be unrotted small grain straw applied at the rate of 1½ to 2 tons per acre, or 70 to 90 (two bales) pounds per 1,000 sq. ft. Mulch materials shall be relatively free of all kinds of weeds and shall be free of prohibited noxious weeds such as: thistles, Johnsongrass and quackgrass.

Spread uniformly by hand or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1,000 sq. ft. section and place 70-90 lbs. of mulch in each section.

3. Wood chips - at the rate of approximately 6 tons per acre or 275 lbs. per 1,000 sq. ft. may be used when available and when feasible to use.

4. Wood cellulose fiber - mulch at the rate of 1,500 pounds per acre or 35 pounds per 1,000 sq. ft. may be applied by hydroseeding.

B. Mulch anchoring shall be accomplished immediately after mulch placement to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area, erosion hazard, and cost. On sloping land, practice No. 1 below, should be done on the contour wherever possible, except "tracking" should be done up and down the slope with 1½ inch cleat marks running across the slope.

1. Mulch Anchoring Tool and Tracking. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the surface 2 inches of soil. This practice affords maximum erosion control but is limited to flatter slopes where equipment can operate safely. Tracking is primarily used on steeper than 3:1 cut and fill slopes to cut the mulch into the soil with cleated bulldozer tracks.

2. Mulch Nettings - Staple lightweight biodegradable paper, plastic or cotton nettings over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4-feet wide and up to 300-feet long.

3. Liquid Mulch Binders
Application of liquid binders should be heavier at edges where wind catches mulch, in valleys, and at crests of banks. Remainder of area should be uniform in appearance. Caution should be used with asphalt in residential and similar areas.

a. Cutback asphalt - rapid curing (RC-70, RC-250, and RC-800) or medium curing (MC-250 or MC-800). Apply 5 gallons per 1,000 square feet or 218 gallons per acre on flat areas, and on slopes less than 8-feet high. On slopes 8-feet or more high, use 8 gallons per 1,000 square feet or 348 gallons per acre.

b. Emulsified asphalt - (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, and CRS-2). Apply 5 gallons per 1,000 square feet or 218 gallons per acre on flat areas and on slopes less than 8-feet high. On slopes 8-feet or more high, use 8 gallons per 1,000 square feet or 348 gallons per acre.

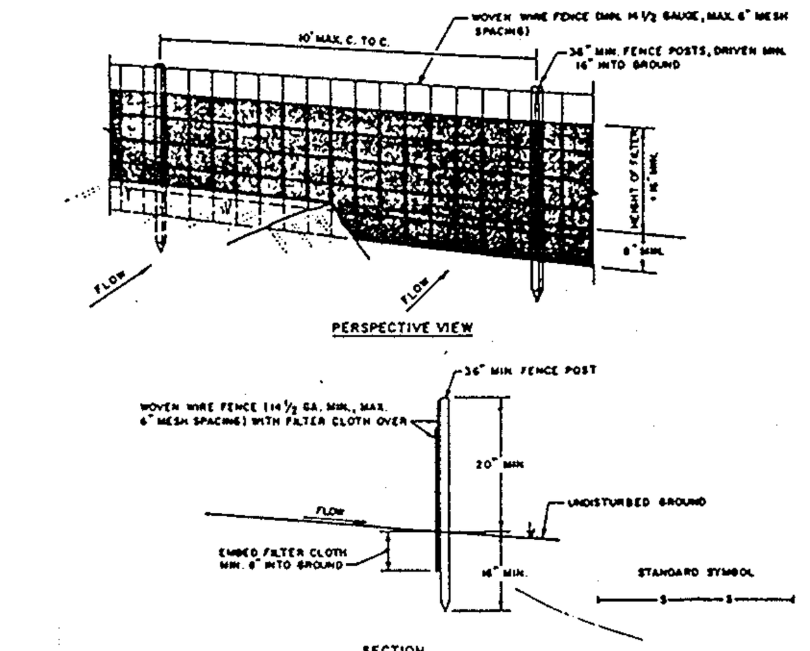
All asphalt designations are from the Asphalt Institute Specifications.

c. Synthetic binders - Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset or Terra Tack may be used at rates recommended by the manufacturer to anchor mulch material.

4. Wood cellulose fiber - Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood fiber per 100 gallons.

5. Peg and Twine - Drive 8-to 10-inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss-cross within a square pattern. Secure twine around each peg with two or more round turns.

SILT FENCE



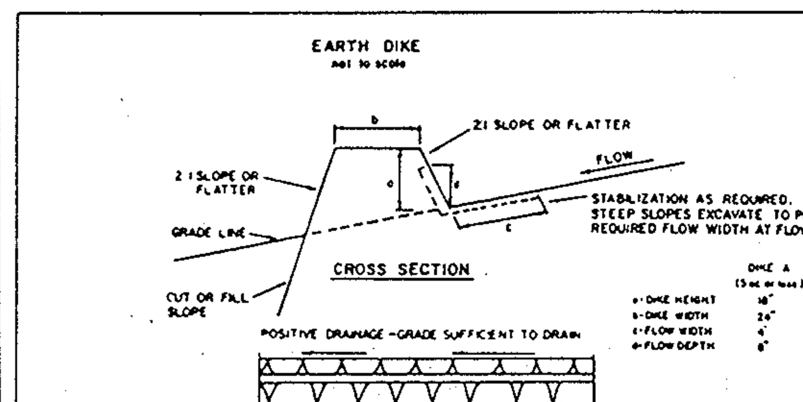
CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD
FENCE: WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING
FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	SILT FENCE	STANDARD DRAWING SF-1

EARTH DIKE
not to scale



CONSTRUCTION SPECIFICATIONS

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

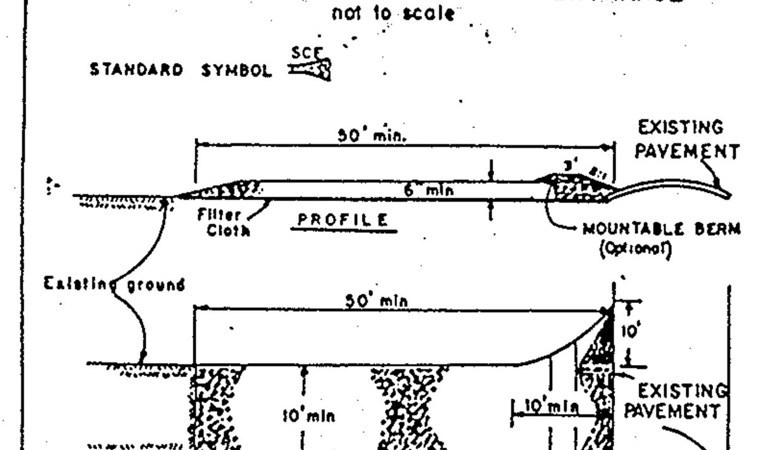
FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4-8"
4	8.1-20%	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	EARTH DIKE	STANDARD DRAWING ED-1

STABILIZED CONSTRUCTION ENTRANCE
not to scale



CONSTRUCTION SPECIFICATIONS

1. Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness - Not less than six (6) inches.
4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STABILIZED CONSTRUCTION ENTRANCE	Standard Drawing SCE-1

STANDARD AND SPECIFICATIONS
FOR
VEGETATIVE STABILIZATION
PERMANENT SEEDINGS

Definition

Planting vegetation such as grasses and legumes on critical areas.

Purpose

To stabilize the soil; to reduce damages from sediment and runoff to downstream areas; improve wildlife habitat; enhance natural beauty.

Conditions Where Practices Apply

Graded or cleared areas subject to erosion and where a permanent, long-lived vegetative cover is needed.

SPECIFICATIONS

Vegetation cannot be expected to provide an erosion control cover and prevent soil slippage on a soil that is not stable due to its texture, structure, water movement or excessivly steep slope.

Minimum soil conditons needed for the establishment and maintenance of a long-lived vegetative cover:

A. Enough fine-grained materials (over 30 percent silt plus clay) to provide the capacity to hold at least a moderate amount of available moisture. Noticeable exception would be planting lovegrass and serecia lespedeza which can be planted on a sandy soil.

B. Sufficient pore space to permit adequate root penetration.

C. The soil shall be free from any material harmful to plant growth.

D. If these conditions cannot be met, see specification, Topsoiling (57.01).

I. Site Preparation

A. Install needed erosion and sediment control practices such as dikes, contour ripping, erosion stops, channel liners, sediment basins, or other practices.

B. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, anchoring and maintenance.

II. Soil Preparation

Flat areas and slopes up to 3 to 1 grade shall be loose and friable to a depth of at least 3 inches. The top layer of soil shall be loosened by raking, discing or other acceptable means before seeding.

Slopes steeper than 3 to 1 shall have the top 1-3 inches of soil loose and friable before seeding.

III. Soil Amendments

Lime and fertilize according to soil tests. Lime and fertilizer needs can be determined by a soil testing laboratory, such as the University of Maryland's Soil Testing Laboratory.

In lieu of soil test results, apply two tons dolomitic limestone per acre and one of the following rates of fertilizer: 1,000 pounds 10-10-10 or equivalent per acre. For a longer lasting fertilizer treatment apply 600 pounds 10-10-10 or equivalent per acre and disk in and at time of seeding apply an additional 400 pounds of a ureaform fertilizer of a grade of at least 30-0-0 per acre. Apply the lime and fertilizer before seeding and harrow or disk uniformily into the soil to a minimum depth of 3 inches on slopes flatter than 3:1. On slopes steeper than 3:1 grade, the lime and fertilizer shall be worked the best way possible. On sloping land, the final harrowing or discing operation should be on the contour wherever feasible. No attempt should be made to drag any disked area to make the soil surface smooth after disking.

Note. The slow release ureaform fertilizer will supply nitrogen over a longer period of time.

IV. Seeding

A. Select a mixture from table 51-1.

B. Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder or hydroseeder (slurry includes seed and fertilizer) on a firm, moist seedbed. Maximum seeding depth should be 1/4 inch on clayey soils and 1/2 inch on sandy soils, when using other than hydroseeder method of application. Note: If hydroseeding is used and the seed and fertilizer is mixed, they will be mixed on site and the seeding shall be immediate without interruption.

V. Mulching

Mulch materials are listed in order of their effectiveness. Mulch mattings are normally only used on critical areas such as waterways or steep slopes.

A. Materials and Amounts

1. Mulch mattings - such as jute or excelsior blanket shall be stapled to the surface in waterways and on steep slopes. Lighter materials of paper, plastic and cotton mulch mattings may be used where erosion hazard is not severe. If the area is to be mowed, do not use metal staples.

2. Straw - Straw shall be unrotted small grain applied at the rate of 1½ to 2 tons per acre, or 70 to 90 (two bales) pounds per 1,000 square foot. Mulch materials shall be relatively free of all kinds of weeds and shall be free of prohibited noxious weeds such as: thistles, Johnsongrass and quackgrass.

Spread uniformly by hand or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1,000 square feet section and place 70-90 pounds of mulch in each section.

3. Wood chips - at the rate of approximately 6 tons per acre or 275 pounds per 1,000 square foot may be used when available and when feasible. These are particularly well-suited for utility and road rights-of-way. If wood chips are used, increase the application rate of nitrogen fertilizer by 20 pounds (200 pounds 10-10-10 or 66 pounds 30-0-0).

4. Wood cellulose fiber - mulch at the rate of 1,500 pounds per acre or 35 pounds per 1,000 square foot may be applied by hydroseeding.

B. Mulch anchoring shall be accomplished immediately after mulch placement to minimize loss by wind or water. This may be done by one of the following methods, (listed by preference) depending upon size of area, erosion hazard, and cost. On sloping land, practice No. 1 below, should be done on the contour whenever possible. Contouring of all operations applies to all straw and wood chip practices on more critical sites, except "tracking" should be done up and down the slope with 1½ inch cleat marks running across the slope.

1. Mulch Anchoring Tool and Tracking. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the surface 2 inches of soil. This practice affords maximum erosion control but is limited to flatter slopes where equipment can operate safely. "Tracking" is primarily used on 3:1 or steeper cut and fill slopes to cut the mulch into the soil by 1½" track cleats of a bulldozer making groves across the slope.

2. Mulch Nettings - Staple lightweight biodegradable paper, plastic or cotton nettings over the mulch according to manufacturer's recommendations. Netting is usually avaialble in rolls 4 feet wide and up to 300 feet long.

3. Liquid Mulch Binders - Applications of liquid binders should be heavier at edges where wind catches mulch, in valleys, and at crests of banks. Remainder of area should be uniform in appearance. Caution should be used with asphalt in residential and similar areas.

a. Cutback asphalt - rapid curing (RC-70, RC-250, and RC-800) or medium curing (MC-250 or MC-800). Apply 5 gallons per 1,000 square feet or 200 gallons per acre on flat areas and on slopes less than 8 feet high. On slopes 8 feet or more high, use 8 gallons per 1,000 square feet or 348 gallons per acre.

b. Emulsified asphalt - (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, and CRS-2). Apply 5 gallons per 1,000 square feet or 200 gallons per acre on flat areas and on slopes less than 8 feet high. On slopes 8 feet or more high, use 8 gallons per 1,000 square feet or 348 gallons per acre.

All asphalt designations are from the asphalt Institute Specifications.

c. Synthetic binders - Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset or Terra Tac II or Terra Tack AR may be used at rates recommended by the manufacturer to anchor mulch material.

4. Wood cellulose fiber - Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons.

5. Peg and Twine - Drive 8-to 10-inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a criss-cross within a square pattern. Secure twine around each peg with two or more complete turns.

Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products.

VI. Irrigation

If soil moisture is deficient, supply new seedings with adequate water for plant growth until they are firmly established, if feasible. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

VII. Maintenance

Maintenance is a vital factor in maintaining an adequate vegetative erosion control cover.

A. Irrigation - If soil moisture becomes deficient, irrigate to prevent loss of stand of protective vegetation, if feasible.

B. Repairs - Inspect all seeded areas for failures and make necessary repairs, replacements, and reseedings within the planting season, if possible.

1. If stand is inadequate for erosion control, overseed and fertilize using half of the rates originally applied.

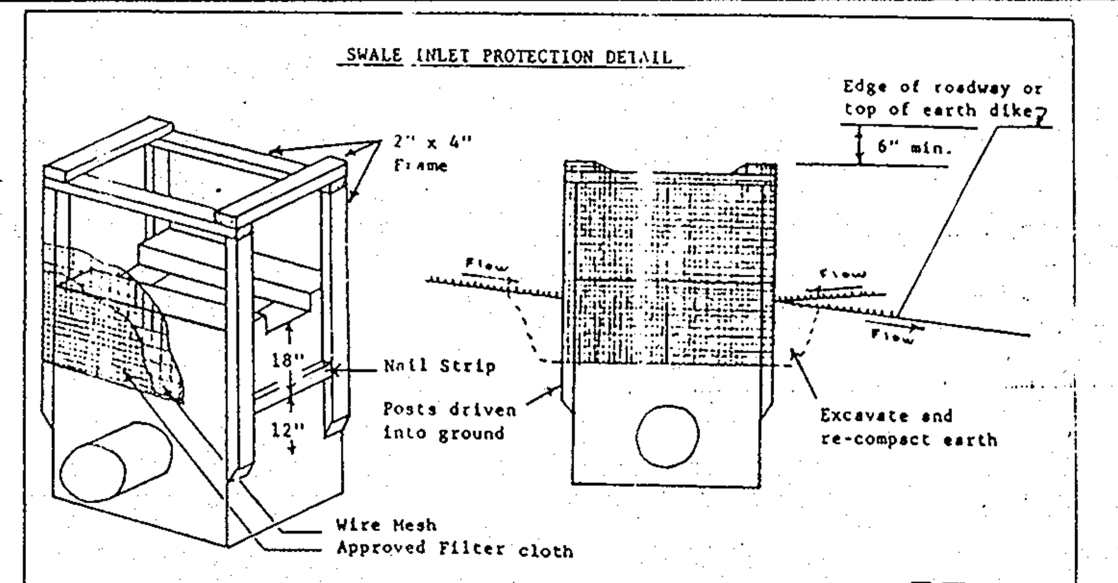
2. If stand is over 60% damaged, reestablish following original lime, fertilizer, seedbed preparation and seeding recommendations.

References

1. Lawn Care in Maryland, Bulletin 171; Cooperative Extension Service, University of Maryland, College Park, Maryland.
2. Maryland Agronomy Memo #72.
3. Maryland Highway Administration Specifications for Materials.
4. USDA-Soil Conservation Service Field Office Technical Guides.

Note: Maryland Department of Water Resources has developed an audiovisual training program, "Plant-Materials and Vegetative Soil Stabilization," which relates to this practice.

SWALE INLET PROTECTION DETAIL



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	INLET PROTECTION DETAIL	STANDARD DRAWING IPD-1

SEDIMENT CONTROL NOTES:

1. A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction. (992-2437).

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 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within a) 7 Calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1
b) 14 days as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol.1, Chapter 12; of the Howard County Design Manual, Storm Drainage.

5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 Maryland Standards and Specifications for Soil Erosion Control for permanent seedings (Sec.51) sod (Sec.54) temporary seeding (Sec.50) and mulching (Sec.52) Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

7. Site Analysis:
a) Total Area of Site 12.87 Acres
b) Area Disturbed 1.38 Acres
c) Area to be roofed or paved 0.45 Acres
d) Area to be vegetatively stabilized 0.93
e) Total Cut 5700 cu.yds. (+includes 10% compaction)
f) Total Fill 2100 cu.yds.
g) Offsite waste/borrow area location 3600 cu. yds.±

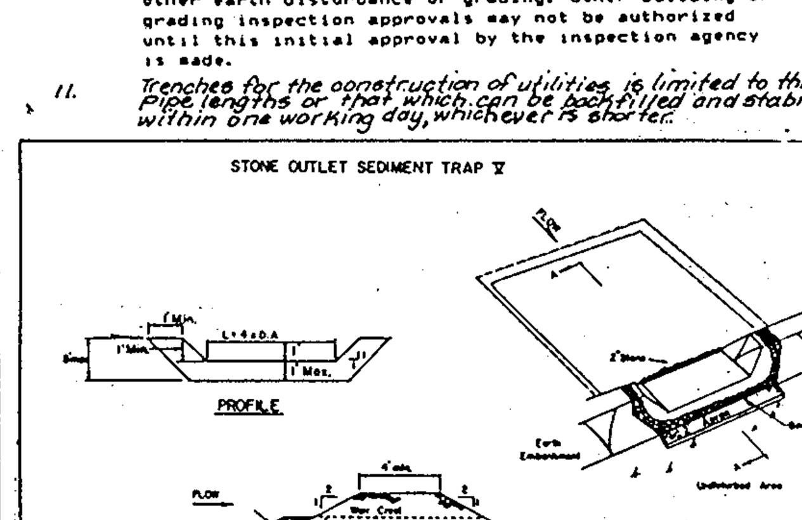
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment control must be provided if deemed necessary by the Howard County DPW 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 can be backfilled and stabilized within one working day, whichever is shorter.

STONE OUTLET SEDIMENT TRAP V



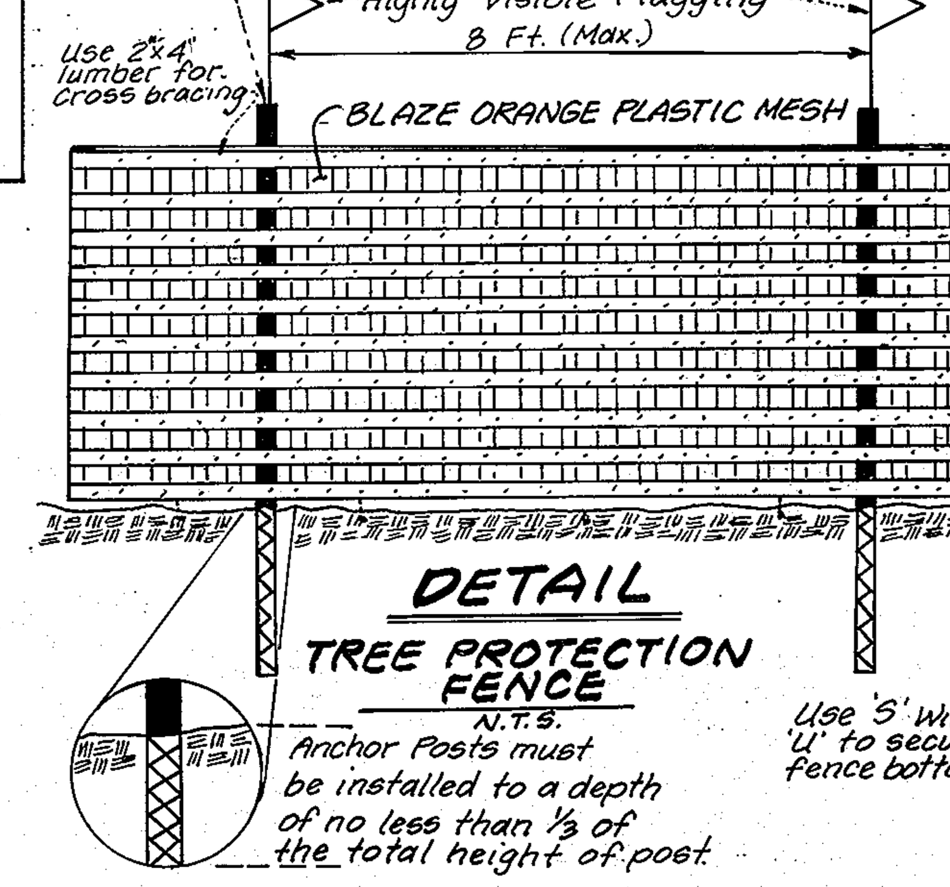
OPTION: A one foot layer of 2" stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.

CONSTRUCTION SPECIFICATIONS FOR ST-V

1. 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 and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
3. All cut and fill slopes shall be 2:1 or flatter.
4. The stone used in the outlet shall be small riprap 4"-8" along with a 1' thickness of 2" aggregate placed on the up-grade side on the small riprap or embedded filter cloth in the riprap.
5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to ½ the design depth of the trap.
6. The structure shall be inspected after each rain and repairs made as needed.
7. Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
8. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

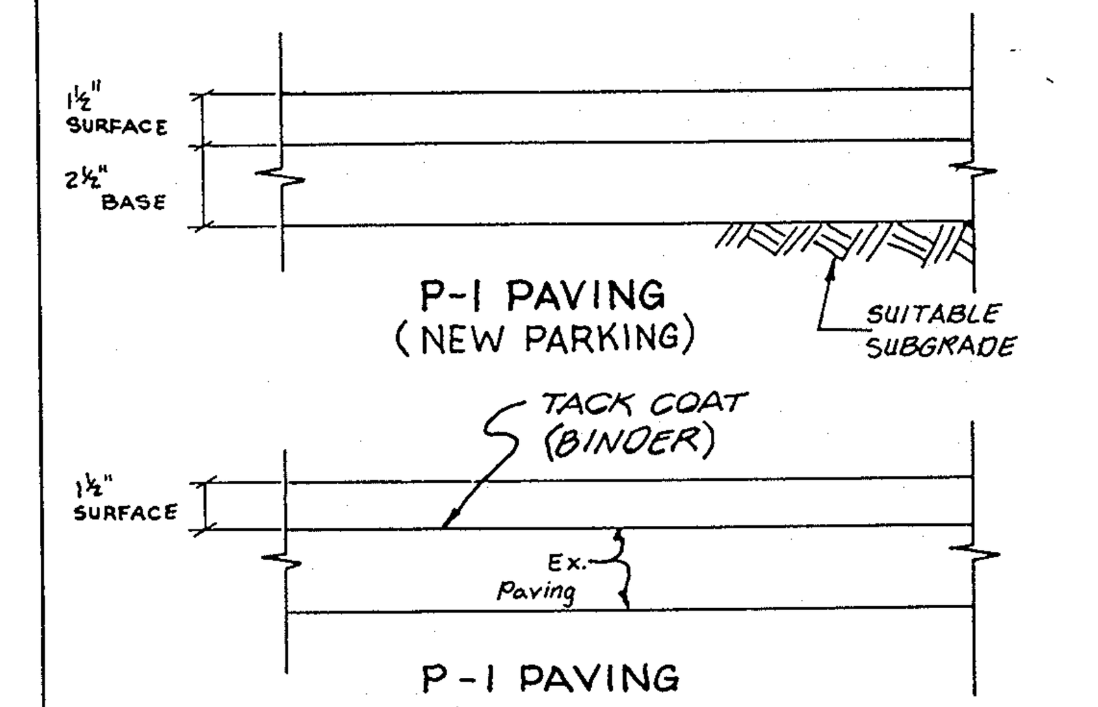
Maximum Drainage Area: 5 Acres

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	STONE OUTLET SEDIMENT TRAP	STANDARD DRAWING ST-V

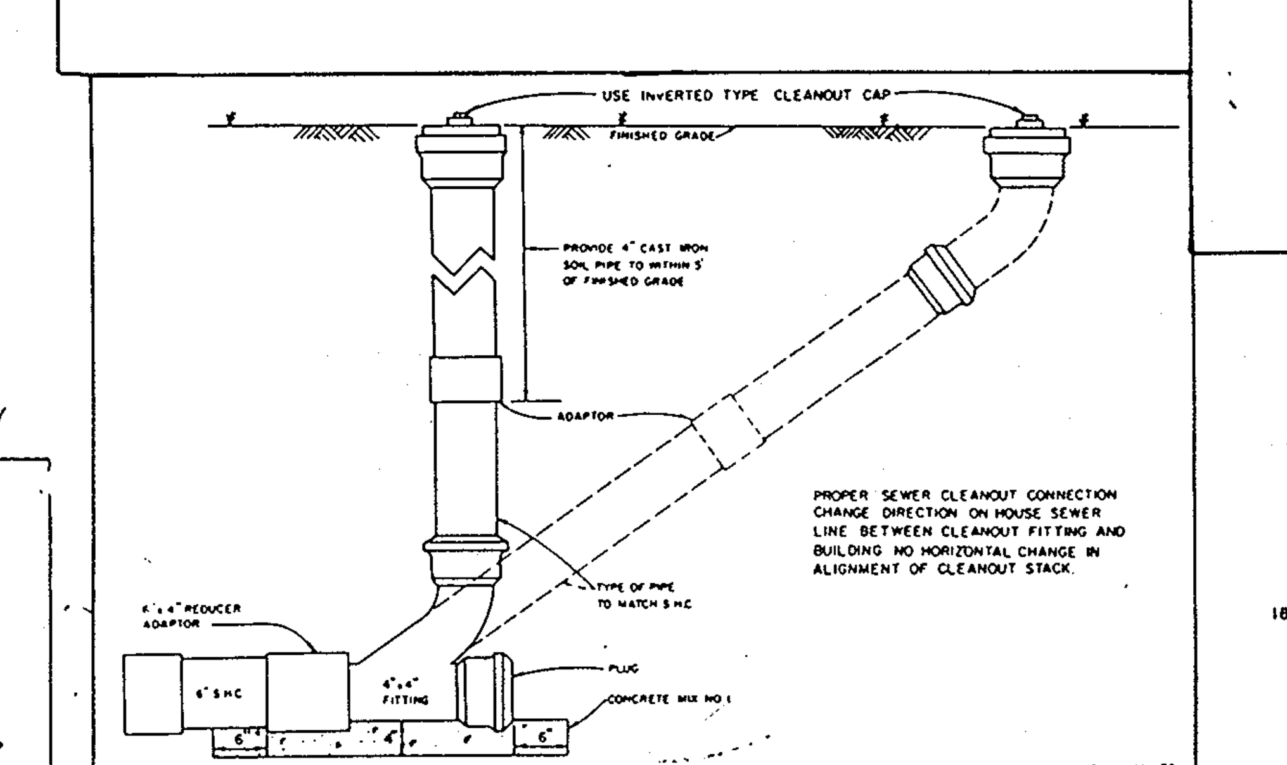


DETAIL
TREE PROTECTION FENCE
N.T.S.

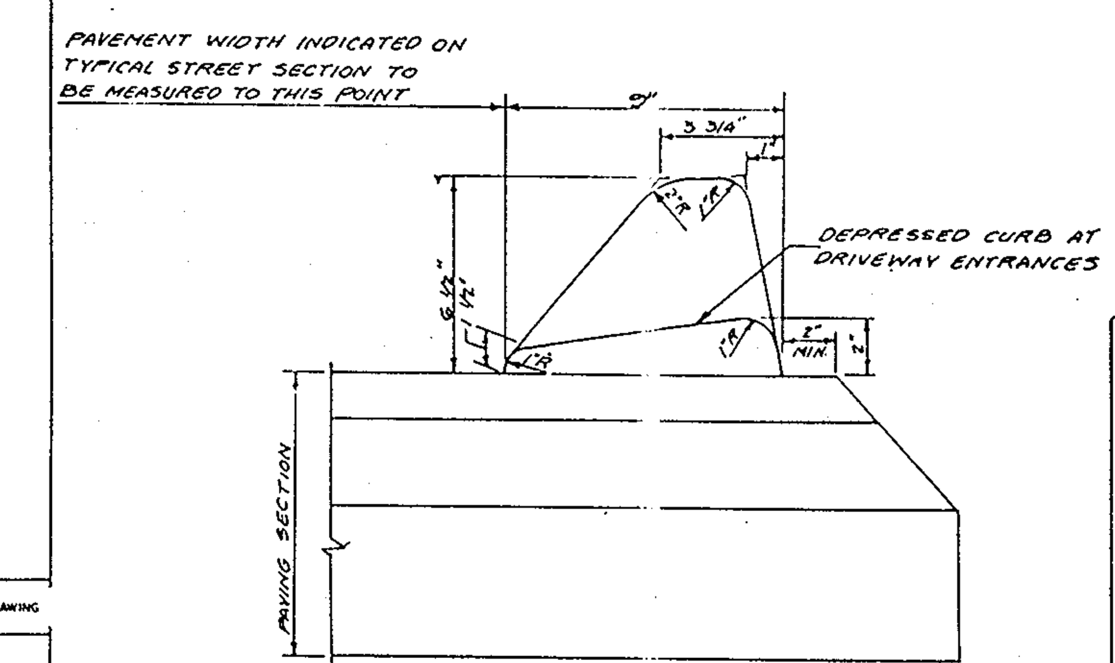
NOTES:
1. Forest Protection device only.
2. Retention area will be set as part of review process.
3. Boundaries of Retention area should be staked and flagged prior to installing device.
4. Root damage should be avoided.
5. Protective signage may also be used.
6. Device should be maintained throughout construction.



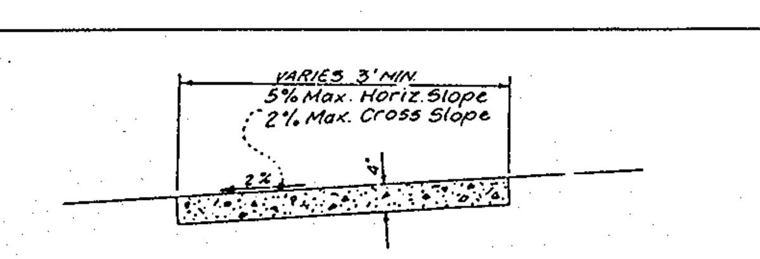
PAVING DETAIL
NOT TO SCALE



HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Approved ... Chief-Bur. of Engr. Date	CLEANOUT FOR SEWER HOUSE CONNECTION	BAL JLR NO SCALE 5.222



BITUMINOUS CURB
NOT TO SCALE



NOTE:
1. SIDEWALK TO BE SCRIBED IN 5' MAXIMUM SQUARES
2. EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO BE MORE THAN 15' APART.
3. 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK.
4. CONCRETE TO BE MIX NO. 2.

CONCRETE SIDEWALK
NOT TO SCALE

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 per acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs per 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 per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.)
2) Acceptable -- Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding -- For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) - 2 tons per acre 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 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

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

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

TEMPORARY SEEDING NOTES

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

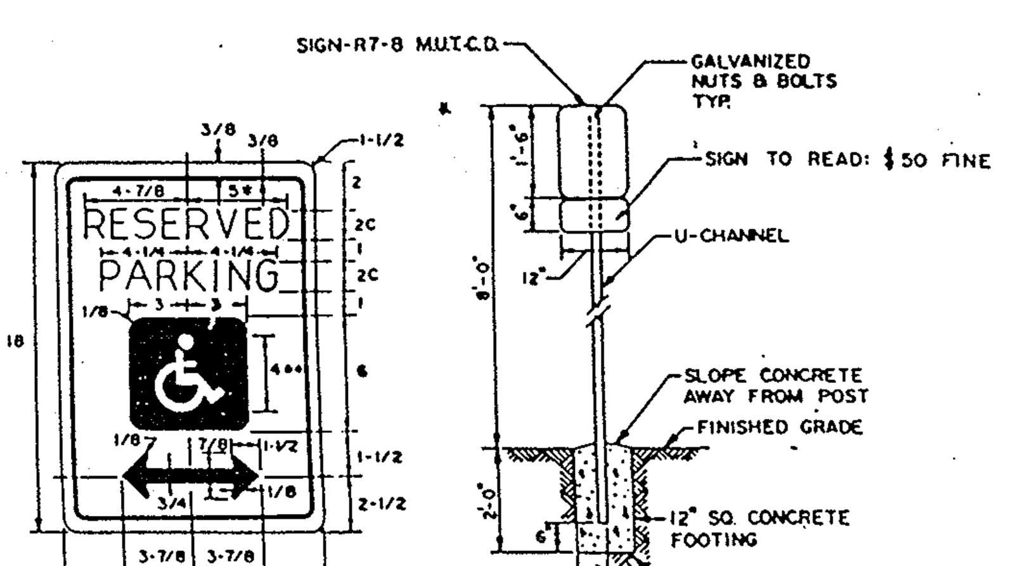
Seedbed preparation -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

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

Seeding: -- For periods March 1 thru April 30 and from August 15 thru October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

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

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

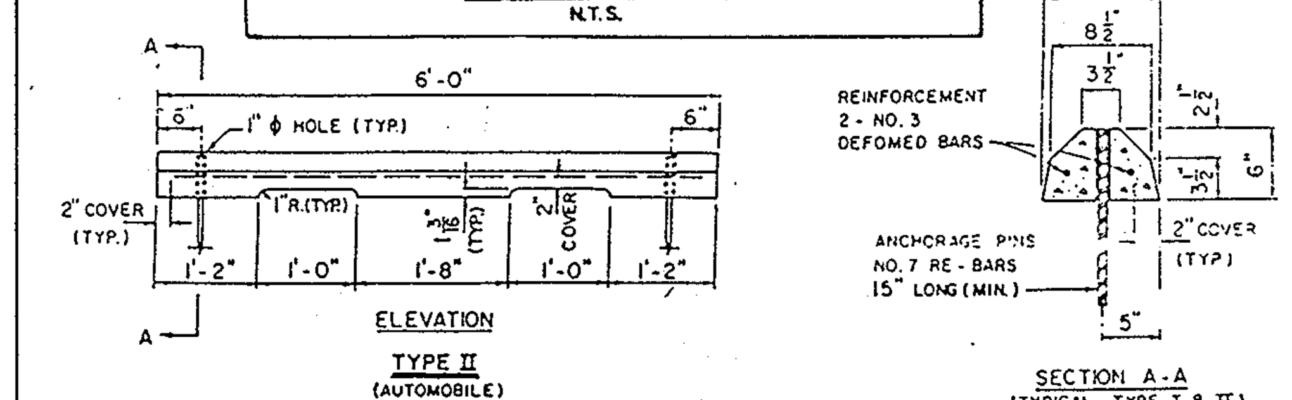


* REDUCE SPACING 50%
** SEE SYMBOL 1860 FOR SYMBOL DESIGN
(ALL DIMENSIONS FOR SIGN IN INCHES)

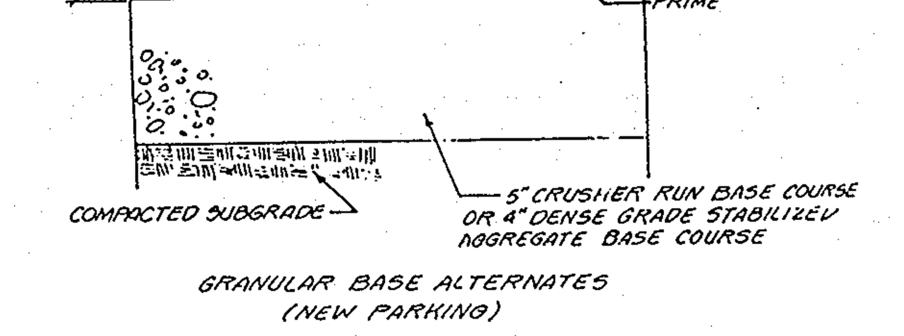
COLORS:
LEGEND & BORDER - GREEN
WHITE SYMBOL ON BLUE BACKGROUND
BACKGROUND - WHITE

REFERENCE: STATE OF MARYLAND STANDARD HIGHWAY SIGNS BOOKLET
MARYLAND DEPARTMENT OF TRANSPORTATION

HANDICAP SIGN
N.T.S.



TYPICAL CONCRETE WHEEL STOP
NOT TO SCALE



TYPICAL PAVING SECTION (P-1)
NOT TO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS.
FOR STORM DRAINAGE SYSTEMS AND ROADS.

[signature] 8/24/92
DIRECTOR, PUBLIC WORKS DATE

[signature] 8.3.92
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 9/1/92
PLANNING DIRECTOR DATE

[signature] 8/20/92
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

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

[signature] 8/26/92
HEALTH OFFICER DATE

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

[signature] 7/27/92
U.S. Soil Conservation Service Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

[signature] 7/27/92
Howard Soil Conservation District Date

DEVELOPER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

[signature] 11/20/91
SIGNATURE OF DEVELOPER DATE

BY THE ENGINEER:

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

[signature] 11-20-91
SIGNATURE OF ENGINEER DATE

STATE OF MARYLAND RODOLPH L. MAY, JR. NO. 8700 REGISTERED PROFESSIONAL ENGINEER

LAND DESIGN ENGINEERING, INC.
10020 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880-0034

DESIGNED	SEDIMENT CONTROL & SITE DETAILS	SCALE AS SHOWN
DRAWN WAJ	PARISH LIFE CENTER ST. JOHN'S EPISCOPAL CHURCH PHASE TWO TAX MAP 24 BLOCK 11 P/O PARCEL 535 LIBER 1822 FOLIO 570	DRAWING 5 OF 6
CHECKED RLM	2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND PREVIOUS FILE NO. SDP 73-35 BA 87-48E SDP 92-11 BA 90-55E	JOB NO. 90-202.8
DATE 4/92	OWNER/DEVELOPER: ST. JOHN'S EPISCOPAL CHURCH 9120 FREDERICK RD. ELLICOTT CITY, MD. 21043 Phone: 465-9531	FILE NO.

SDP-92-93

STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

I. Site Preparation

Areas designated for borrow areas, embankment, pond and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the 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. A sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other areas to be seeded.

II. Earth Fill

Materials: The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GL, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement: Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most pervasable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction: The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if forced into a ball it will not crumble yet not be so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within plus/minus 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

III. Structural 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 four 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 the equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of twenty-four inches or greater over the structure or pipe.

IV. Pipe Conduits

All pipes shall be circular in cross section.

A. Corrugated Metal Pipe All of the following criteria shall apply for corrugated metal pipe:

1. Materials: (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specifications M-190 Type "A" with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polyseric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

   Materials-(Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

   Materials-(Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same materials as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections: All connections with pipes must be completely watertight. Watertight coupling bands shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

   All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accomodate the band width. The following type connections are acceptable for pipes less than 48" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene basket; and a 12" wide hugger type bank with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 48" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24". Helically corrugated pipe shall have either continuously welded seams or have lock seams.

4. Bedding: The pipe shall be finely 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.

5. Backfilling shall conform to "Structural Backfill".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

B. 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. An approved equivalent is AWWA Specification C-302.

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 20% 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 confore to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

C. Polyvinyl Chloride (PVC) Pipe

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 or ASTM D-2241.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding: The pipe shall be finely 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 confore to "Structural Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

V. Rock Riprap

All rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. The rock fragments shall be angular to subrounded in shape. The least dimension of an individual rock fragment shall be not less than one-third the greatest dimension of the fragment.

The rock shall have the following properties:

1. Bulk specific gravity (saturated surface-dry basis) not less than 2.5.

2. Absorption not more than three percent.

3. Soundness: Weight loss in five cycles not more than 20 percent when solidum sulfate is used.

Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.

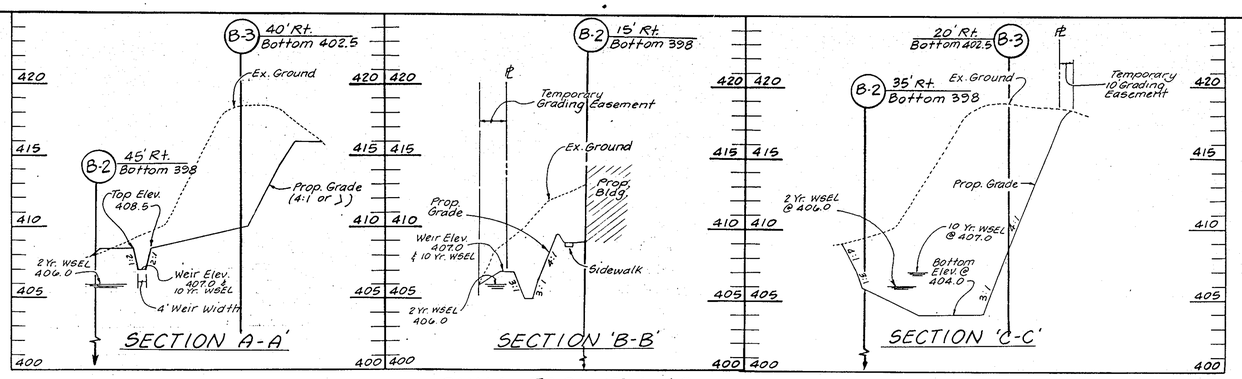
The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

VI. 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 in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

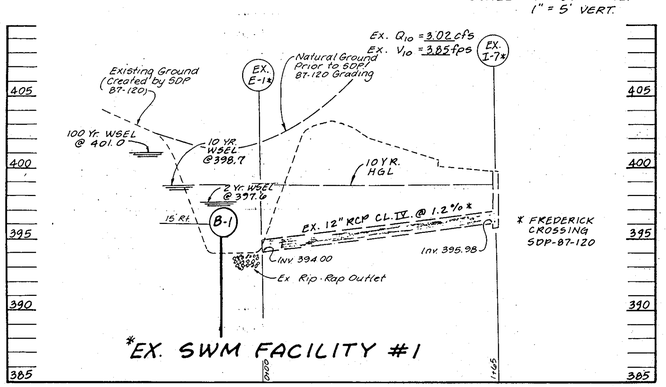
VII. Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

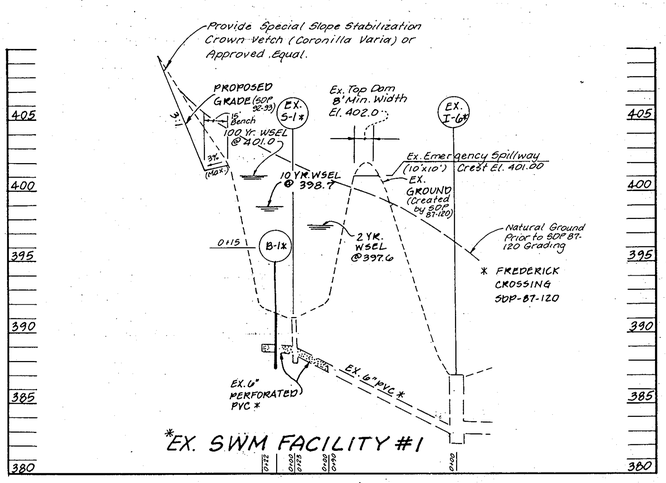


SWM FACILITY #2

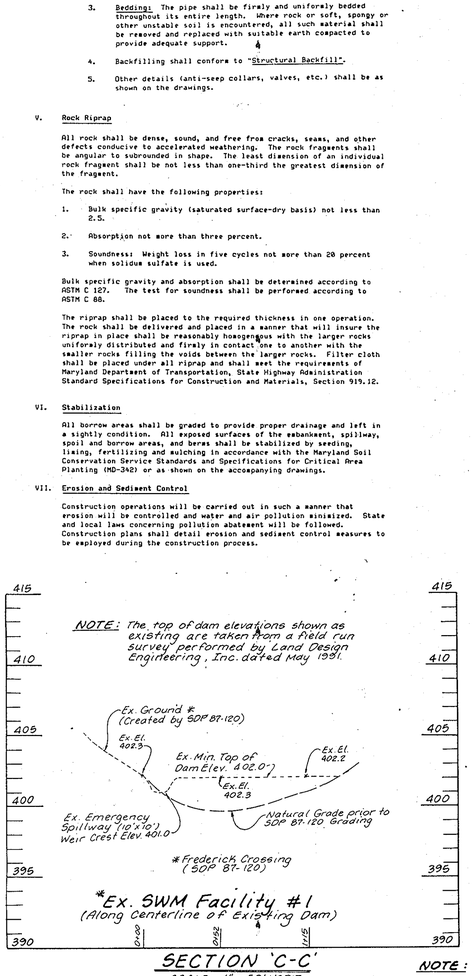
SCALE: 1" = 50' HORZ.
1" = 5' VERT.



SECTION 'A-A'
SCALE: 1"=50' HORIZ.
1"=5' VERT.

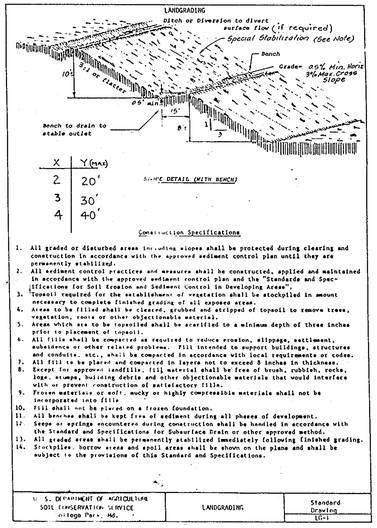


SECTION 'B-B'
SCALE: 1"=50' HORIZ.
1"=5' VERT.



SECTION 'C-C'
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

NOTE: Contractor to reconstruct Emergency Spillway and top of dam to original design dimensions and elevations as shown on SDP 87-120, if required.



X	Y (max)
2	20'
3	30'
4	40'

Construction Specifications

1. All graded or disturbed areas including slopes shall be protected during clearing and construction in accordance with the approved sediment control plan until they are permanently stabilized.
2. All sediment control practices and measures shall be constructed, applied and maintained in accordance with the approved sediment control plan and the "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas".
3. Topsoil required for the establishment of vegetation shall be stockpiled in amount necessary to complete finished grading of all exposed areas.
4. Areas to be filled shall be cleared, grubbed and stripped of topsoil to remove trees, vegetation, roots or other objectionable material.
5. Areas which are to be topsoiled shall be scarified to a minimum depth of three inches prior to placement of topsoil.
6. 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.
7. All fill to be placed and compacted in layers not to exceed 9 inches in depth.
8. Except for approved landfills, 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.
9. Frozen materials or soft, mucky or highly compressible materials shall not be incorporated into fills
10. Fill shall not be placed on a frozen foundation.
11. All benches shall be kept free of sediment during all phases of development.
12. Seeps or springs encountered during construction shall be handled in accordance with Standard and Specifications for Subsurface Drain or other approved method.
13. All graded areas shall be permanently stabilized immediately following finished grading.
14. Stockpiles, borrow areas and spoil areas shall be shown on the plans and shall be subject to the provisions of this Standard and Specifications.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE Anytown Para., Md.	LANDGRADING	Standard Drawing No.

APPROVED: DEPARTMENT OF PUBLIC WORKS.
FOR STORM DRAINAGE SYSTEMS AND ROADS.

DIRECTOR, PUBLIC WORKS — DATE 8/24/92

CHIEF, BUREAU OF ENGINEERING — DATE 8-3-92
CD 7/21/92 JH

APPROVED: DEPARTMENT OF PLANNING AND ZONING

PLANNING DIRECTOR — DATE 9/11/92

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 8/26/92

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

HEALTH OFFICER — DATE 8/26/92

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

U.S. Soil Conservation Service — Date 7/27/92

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Howard Soil Conservation District — Date 7/28/92

DEVELOPER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

SIGNATURE OF DEVELOPER — DATE 11/20/91

BY THE ENGINEER:

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

STATE OF MARYLAND — ROBERT LEE MAIR JR. — NO. 8700 — REGISTERED PROFESSIONAL ENGINEER

SIGNATURE OF ENGINEER — DATE 11-20-91

STATE OF MARYLAND — ROBERT LEE MAIR JR. — NO. 8700 — REGISTERED PROFESSIONAL ENGINEER

LAND DESIGN ENGINEERING, INC.
10620 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880-0034

DESIGNED L.M.	SWM PROFILES AND DETAILS PARISH LIFE CENTER ST. JOHN'S EPISCOPAL CHURCH PHASE TWO TAX MAP 24 BLOCK 11 P/O PARCEL 535 LIBER 1822 FOLIO 570 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND PREVIOUS FILE NO. SDP 73-35 BA 80-55E SDP 92-11 BA 87-48E	SCALE AS SHOWN
DRAWN E.D.B.		DRAWING 6 OF 6
CHECKED R.L.M		JOB NO. 90-207.B
DATE 4/92	OWNER/DEVELOPER ST. JOHN'S EPISCOPAL CHURCH 9120 FREDERICK RD. ELLICOTT CITY, MD. 21043 Phone: 465-9931	FILE NO.

SDP-92-93

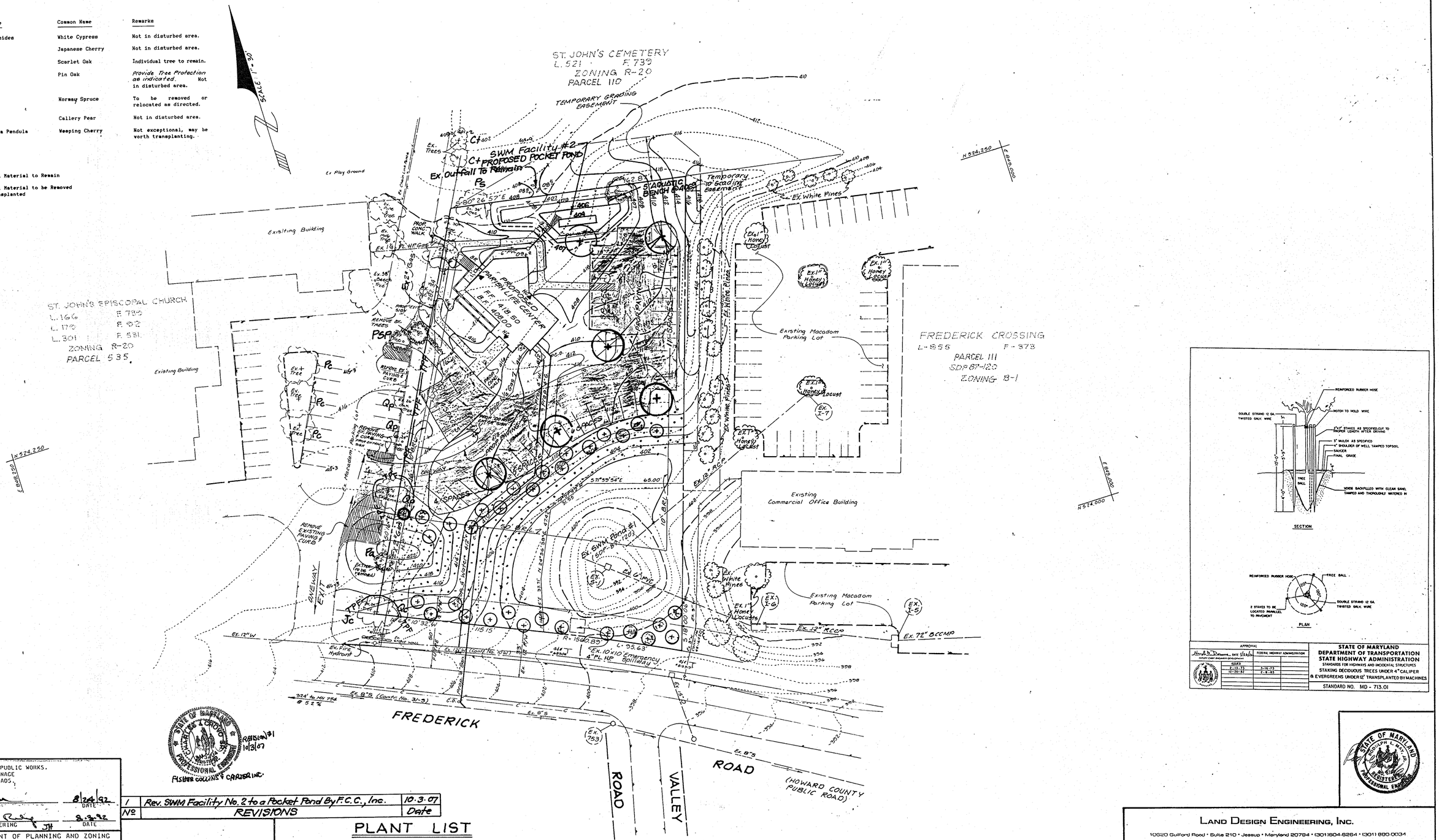
Plant Key - Existing Plant Material

Symbol	Botanical Name	Common Name	Remarks
Ct	Chamaecyparus Thyoides	White Cypress	Not in disturbed area.
Jc	Prunus Serrulata	Japanese Cherry	Not in disturbed area.
Qc	Quercus Coccinea	Scarlet Oak	Individual tree to remain.
Qp	Quercus Palustris	Pin Oak	Provide Tree Protection as indicated. Not in disturbed area.
Pa	Picea Abies	Normay Spruce	To be removed or relocated as directed.
Pc	Pyrus Calleryana	Callery Pear	Not in disturbed area.
PSP	Prunus Subhirtella Pendula	Weeping Cherry	Not exceptional, may be worth transplanting.

Landscape Legend

Ex. Plant Material to Remain

Ex. Plant Material to be Removed or Transplanted



APPROVAL

Howard County Department of Public Works	date 12/6/92	Federal Highway Administration	
Howard County Department of Planning & Zoning			
10/2/92	8-13-93	3-14-95	
	12-20-93	2-3-95	

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STAKING DECIDUOUS TREES UNDER 4" CALIPER & EVERGREENS UNDER 12' TRANSPLANTED BY MACHINES
STANDARD NO. MD - 713.01

APPROVED: DEPARTMENT OF PUBLIC WORKS.
FOR STORM DRAINAGE SYSTEMS AND ROADS.

DIRECTOR, PUBLIC WORKS — DATE 8/24/92

CHIEF, BUREAU OF ENGINEERING — DATE 8-31-92

APPROVED: DEPARTMENT OF PLANNING AND ZONING

PLANNING DIRECTOR — DATE 8/11/92

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 8/28/92

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

HEALTH OFFICER — DATE 8/26/92

No	REVISIONS	Date
1	Rev. SWM Facility No. 2 to a Pocket Pond By F.C.C., Inc.	10.3.07

STATE OF MARYLAND — CHARLES L. CROOKS — No. 6167 — REGISTERED PROFESSIONAL ENGINEER

REVISION #1 10/3/07

FISHER COLLINS & CARTER, INC.

PLANT LIST

SYMBOL	QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
	32	WHITE PINE	PINUS STROBUS	5' TO 6' H	B&B
	3	REDSPIRE PEAR	PYRUS CALLERYANA BRADFORD 'REDSPIRE	1½" to 2" CAL.	B&B
	3	RED MAPLES	ACER RUBRUM	2" CAL.	B&B
	3600	CROWN VETCH	CORONILLA VARIA	3" to 4"	SPACE 18" O.C.

SPECIAL SLOPE STABILIZATION : ALL SLOPES 3:1 OR STEEPER SHALL BE STABILIZED BY A PERMANENT GROUND COVER (CROWN VETCH / CORONILLA VARIA OR APPROVED EQUAL)

TPF —— TPF TREE PROTECTION FENCE

STATE OF MARYLAND — JOSEPH L. MASON — No. 6167 — REGISTERED PROFESSIONAL ENGINEER

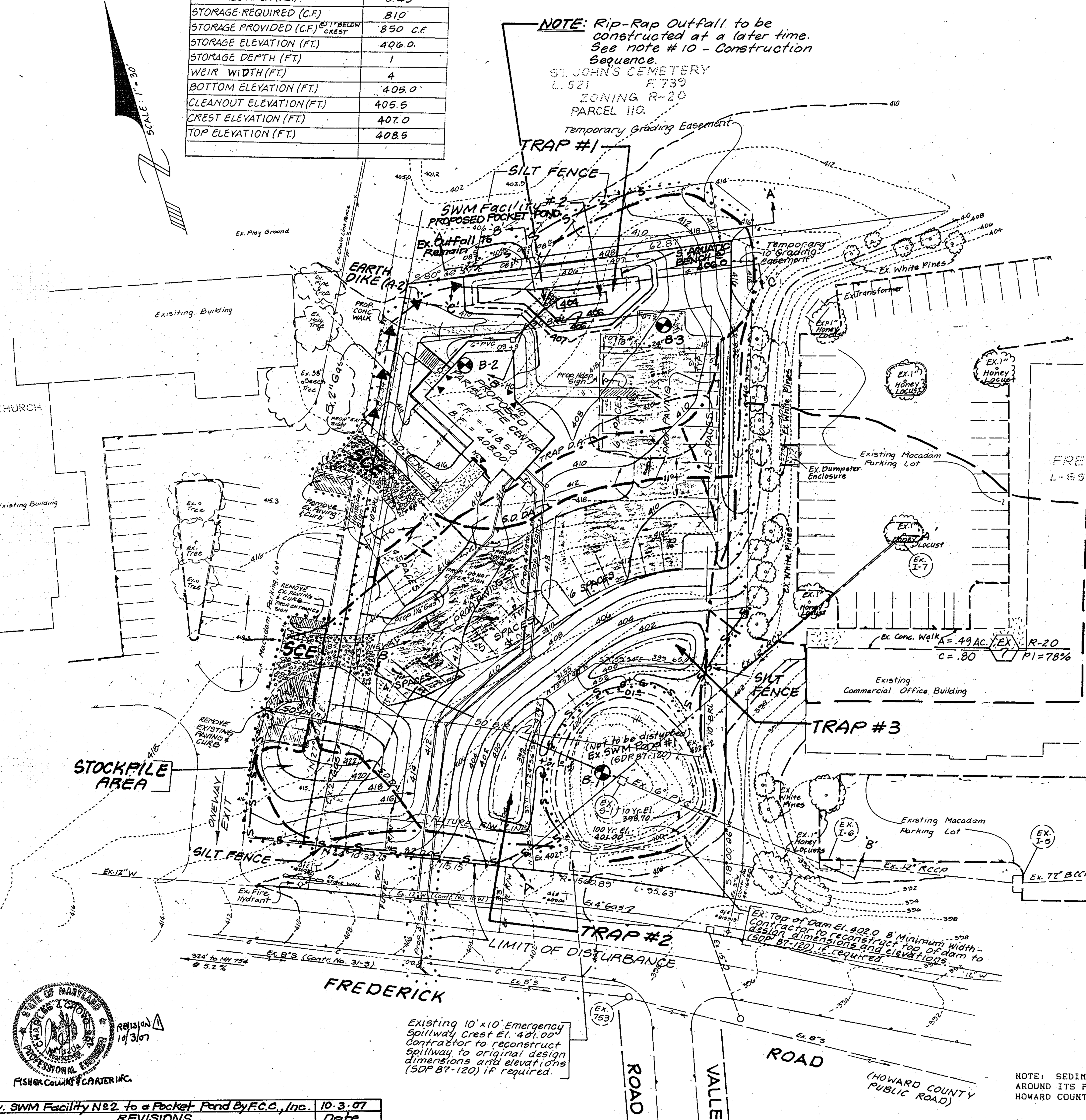
LAND DESIGN ENGINEERING, INC.
10320 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880-0034

DESIGNED	LANDSCAPE PLAN PARISH LIFE CENTER ST. JOHN'S EPISCOPAL CHURCH PHASE TWO TAX MAP 24 BLOCK 11 P/O PARCEL 535 LIBER 1822 FOLIO 570 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND PREVIOUS FILE NO. SDP 73-35 BA 90-55E SDP 92-11 BA 87-18E	SCALE 1"=30'
DRAWN WAJ		DRAWING 4 OF 6
CHECKED RLM		JOB NO. 90-202.B
DATE 4/92	OWNER/DEVELOPER ST. JOHN'S EPISCOPAL CHURCH 9120 FREDERICK RD. ELLICOTT CITY, MD. 21043 Phone: 465-9531	FILE NO.

SDP-92-93

SEDIMENT TRAP #1

TYPE OF TRAP	STONE OUTLET
DRAINAGE AREA (Ac.)	0.45
STORAGE REQUIRED (C.F.)	810
STORAGE PROVIDED (C.F.) @ 1' BELOW CREST	850 C.F.
STORAGE ELEVATION (FT.)	406.0
STORAGE DEPTH (FT.)	1
WEIR WIDTH (FT.)	4
BOTTOM ELEVATION (FT.)	405.0
CLEANOUT ELEVATION (FT.)	405.5
CREST ELEVATION (FT.)	407.0
TOP ELEVATION (FT.)	408.5



SEDIMENT TRAP #2

TYPE OF TRAP	Stone Outlet
DRAINAGE AREA (Ac.±)	0.37
STORAGE REQUIRED (C.F.)	667
STORAGE PROVIDED (C.F.) 1' Below Crest	720
STORAGE ELEVATION (FT.)	400.0
STORAGE DEPTH (FT.)	1
WEIR WIDTH (FT.)	4
BOTTOM ELEVATION (FT.)	399.0
CLEANOUT ELEVATION (FT.)	399.5
CREST ELEVATION (FT.)	401.0
TOP ELEVATION (FT.)	402.0

SEDIMENT TRAP # 3

TYPE OF TRAP	Stone Outlet
DRAINAGE AREA (Ac.±)	0.29
STORAGE REQUIRED (C.F.)	522
STORAGE PROVIDED (C.F.) 1' Below Crest	585
STORAGE ELEVATION (FT.)	400.0
STORAGE DEPTH (FT.)	1
WEIR WIDTH (FT.)	4
BOTTOM ELEVATION (FT.)	399.0
CLEANOUT ELEVATION (FT.)	399.5
CREST ELEVATION (FT.)	401.0
TOP ELEVATION (FT.)	402.0

Construction Sequence

1. Obtain grading permit.
2. Construct stabilized construction entrance. Install tree protection fence and silt fence in location indicated on the plan. *Install sediment traps.*
3. *Clear* and grub site to subgrade. Remove ornamental landscaping, and existing paving, etc. as required. Stockpile stripped topsoil in area indicated on plan.
4. Excavate foundation for building. Begin construction of building and utilities.
5. Install base course of parking lot.
6. Remove sediment from roadways and dress stabilized construction entrance as required.
7. The contractor shall inspect and provide necessary maintenance on the sediment and erosion control measures shown hereon, after each rainfall and on a daily basis.
8. Complete building and utility construction. Remove stabilized construction entrance, clean base course, apply tack coat and lay surface course.
9. Fine grade site and stabilize all disturbed areas using permanent seeding mixture and straw mulch.
10. After all areas draining to the existing stormwater management pond have been stabilized, with approval of sediment control inspector, remove traps 2 and 3 and construct bench channel area. Stabilize disturbed areas using permanent seeding mixture and straw mulch. After areas draining to trap #1 have been stabilized, grade to SWM #2 pond bottom of 404.0, *and provide rip-rap outfall to specifications shown on sheet 2 - Site Development Plan.*
11. After permission has been given by the sediment control inspector, remove remaining sediment control measures and stabilize all areas using permanent seeding mixture and straw mulch.

*NOTE: SEE LANDSCAPE PLAN FOR SPECIAL SITE STABILIZATION AREAS AND TREE PROTECTION FENCE LOCATIONS. SEE SHEET 4 OF 6.

LEGEND

EXISTING CONTOUR	----- 400 -----
PROPOSED CONTOUR	400
CONTOUR INTERVAL	2 feet
SILT FENCE	S —— S —— S
EARTH DIKE	→ - →
LIMIT OF DISTURBANCE	• • • • • • • • •
TRAP DRAINAGE DIVIDE	—·—·—
STORM DRAIN DRAINAGE DIVIDE	———
SOIL BORING	⊕
INLET PROTECTION	⊡
STABILIZED CONSTRUCTION ENTRANCE	SCE

NOTE: FOR SOIL BORING B-1 LOG SEE FREDERICK CROSSING, SDP 87-120. SEE GEOTECHNICAL REPORT IN SWM STUDY FOR B-2 & B-3.

NOTE: SEDIMENT TRAP SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND ITS PERIMETER IN ACCORDANCE WITH VOLUME I., CHAPTER 12, OF HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

STATE OF MARYLAND — CHARLES E. CHOW — No. 13204 — REGISTERED PROFESSIONAL ENGINEER
REVISION 1 10/3/07
FISHER COLLINS & CARTER INC.

Nº	REVISIONS	Date
1	Rev. SWM Facility Nº2 to a Pocket Pond By F.C.C., Inc.	10.3.07

APPROVED: DEPARTMENT OF PUBLIC WORKS. FOR STORM DRAINAGE SYSTEMS AND ROADS.

James M. Irvin — DIRECTOR, PUBLIC WORKS — DATE 8/24/92

CHIEF, BUREAU OF ENGINEERING — JH — DATE 8-3-92
CD 7/31/92

APPROVED: DEPARTMENT OF PLANNING AND ZONING

PLANNING DIRECTOR — DATE 9/1/92

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT JA — DATE 8/20/92

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

Joyce M Boyd and per — HEALTH OFFICER — DATE 8/26/92

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

U.S. Soil Conservation Service — Date 7/27/92

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert W. Ziehm — Howard Soil Conservation District — Date 7/27/92

DEVELOPER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

C. L. Connor III — SIGNATURE OF DEVELOPER — DATE 4/20/91

BY THE ENGINEER:

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

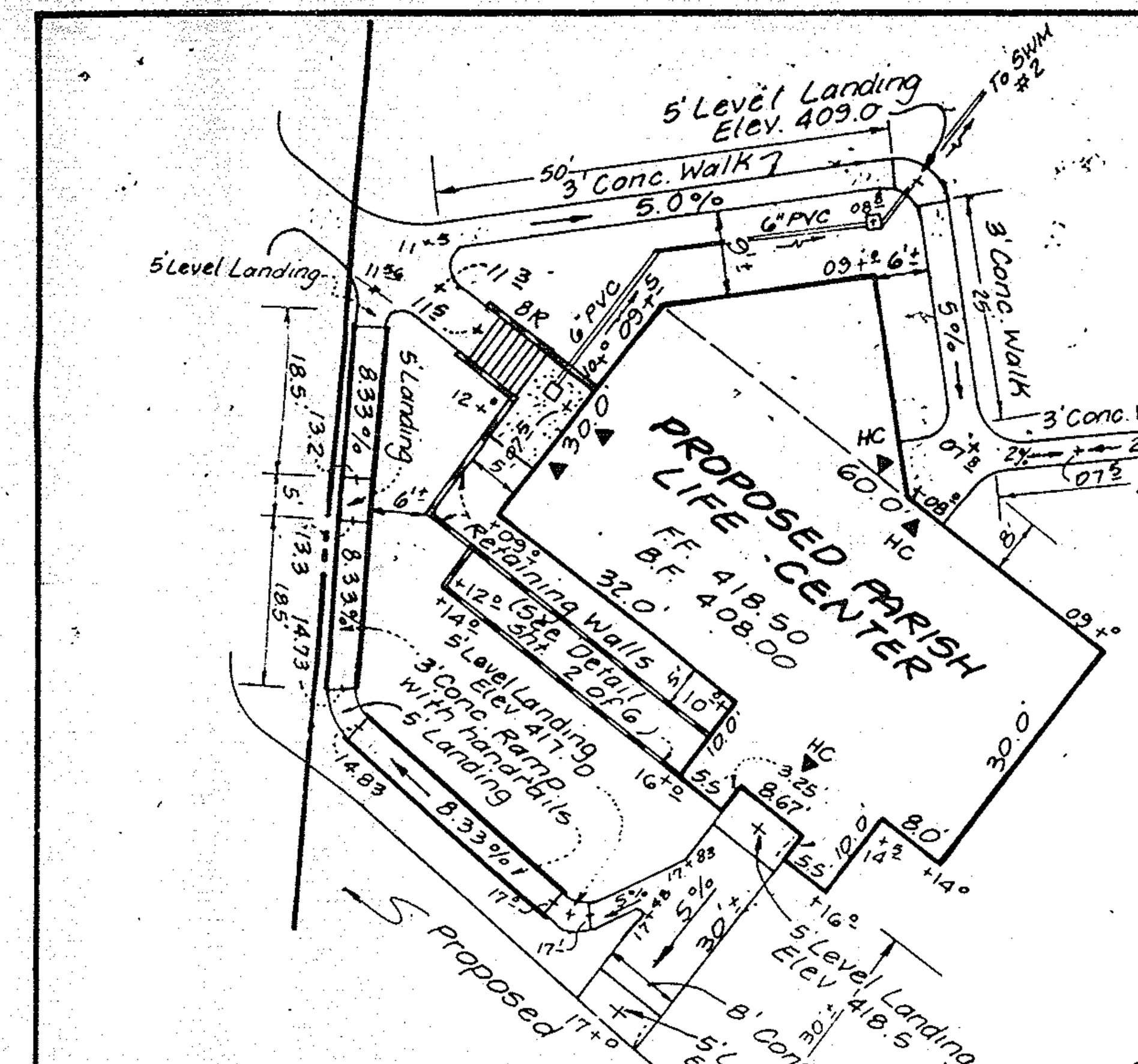
Rodolph May Jr. — SIGNATURE OF ENGINEER — DATE 11-20-91

STATE OF MARYLAND — RODOLPH L. MAY, JR. — NO. 8700 — REGISTERED PROFESSIONAL ENGINEER

LAND DESIGN ENGINEERING, INC.
10620 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880-0034

DESIGNED	SEDIMENT CONTROL PLAN & DRAINAGE AREA MAP PARISH LIFE CENTER ST. JOHN'S EPISCOPAL CHURCH PHASE TWO TAX MAP 24 BLOCK 11 P/O PARCEL 535 LIBER 1822 FOLIO 570 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND BA 87-48E PREVIOUS FILE NO. SDP 73-35 SDP 92-11 BA 90-55E	SCALE 1"=30'
DRAWN WAJ		DRAWING 3 OF 6
CHECKED RLM		JOB NO. 90-202.8
DATE 4/92	OWNER/DEVELOPER ST. JOHN'S EPISCOPAL CHURCH 9120 FREDERICK RD. ELLICOTT CITY, MD. 21043 Phone: 465-9531	FILE NO.

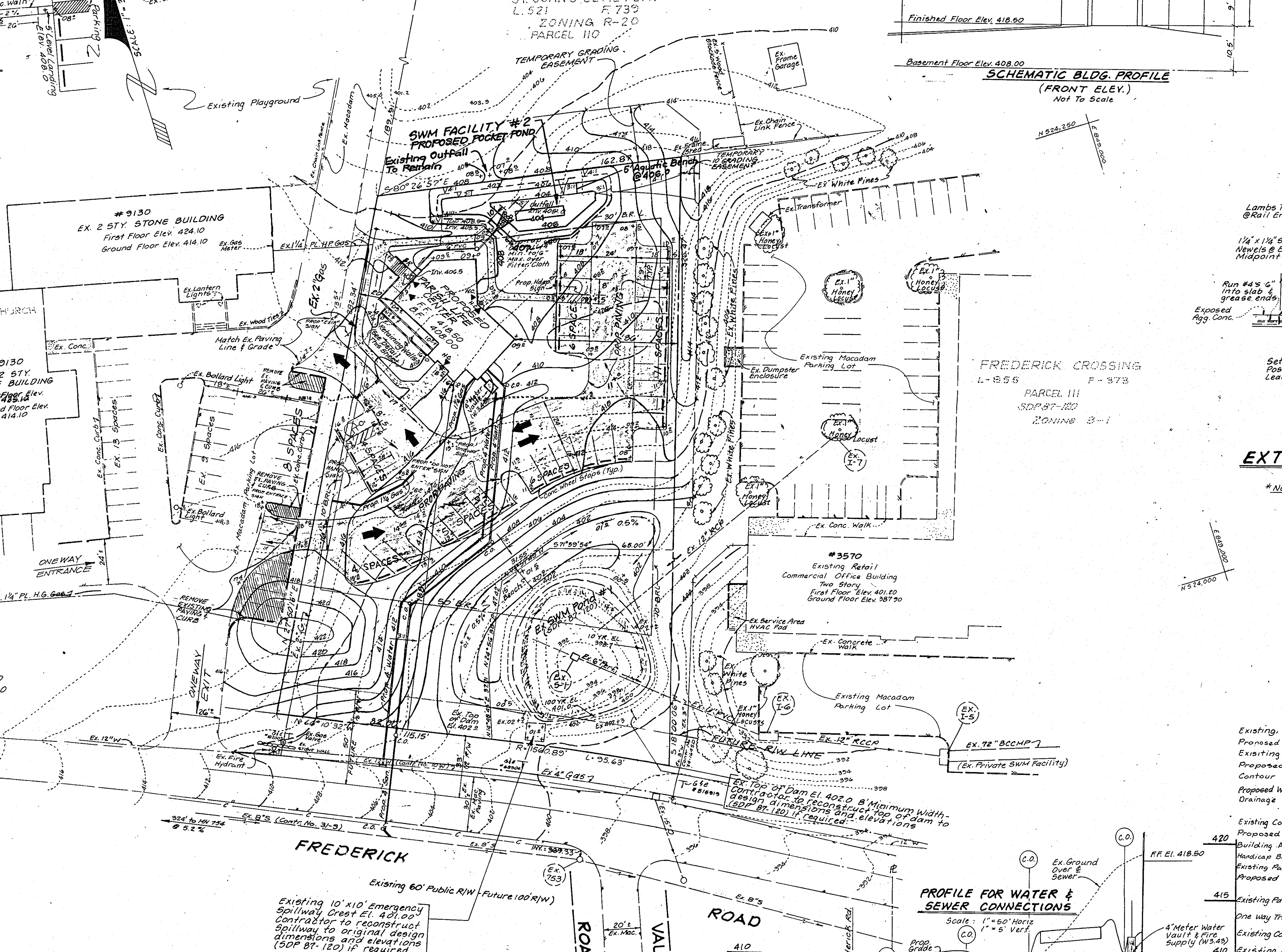
SDP-92-93

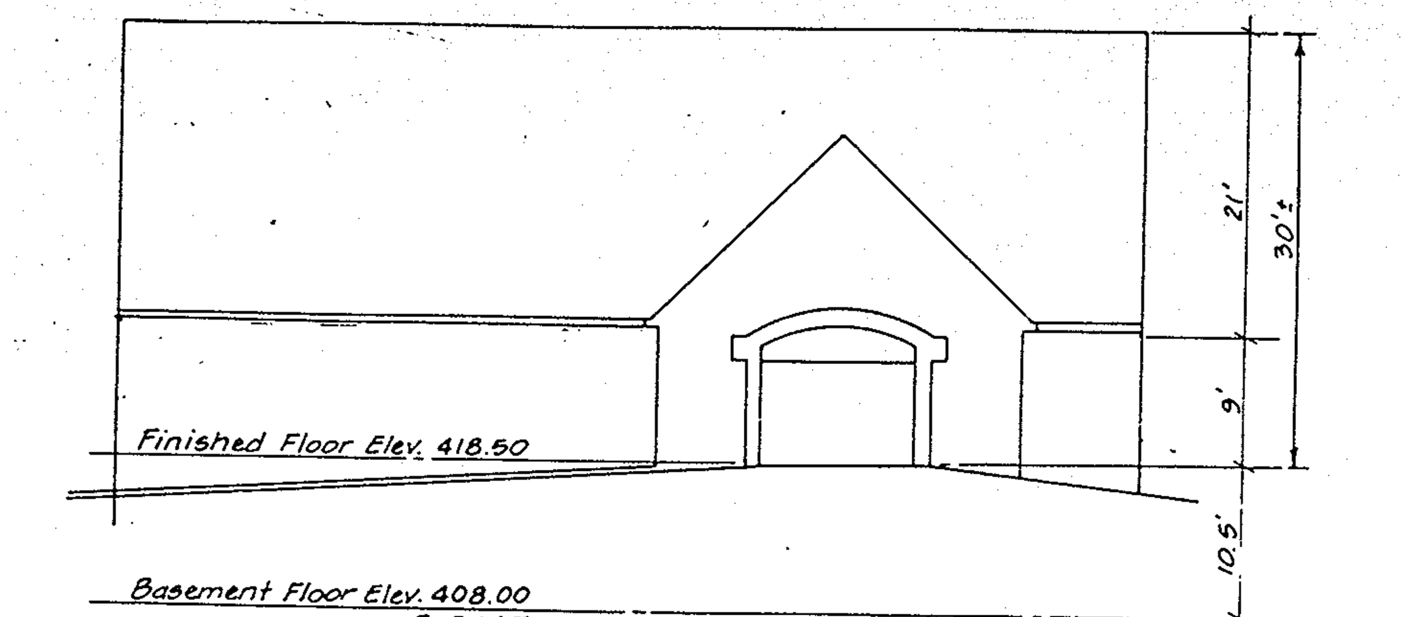


NOTE: All building entrances used by the handicapped will be provided with a non-skid 5' level landing.

CONC. WALK DETAIL

SCALE : 1" = 20'

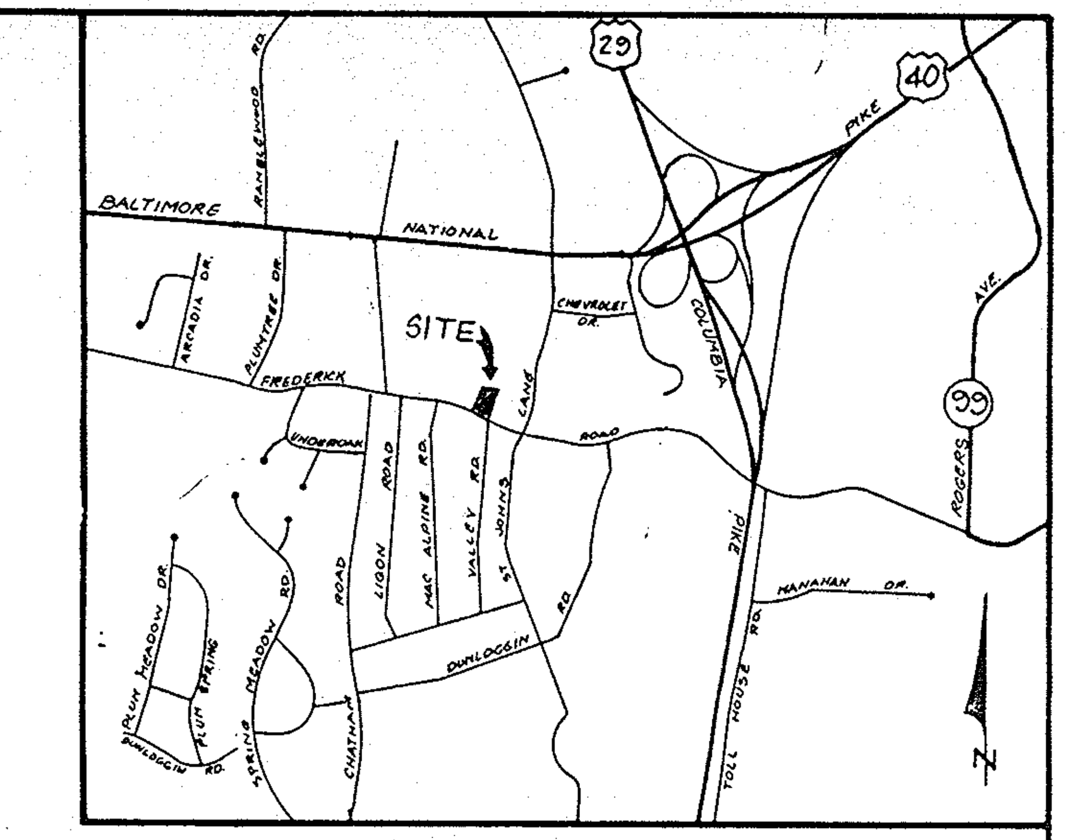




SCHEMATIC BLDG. PROFILE

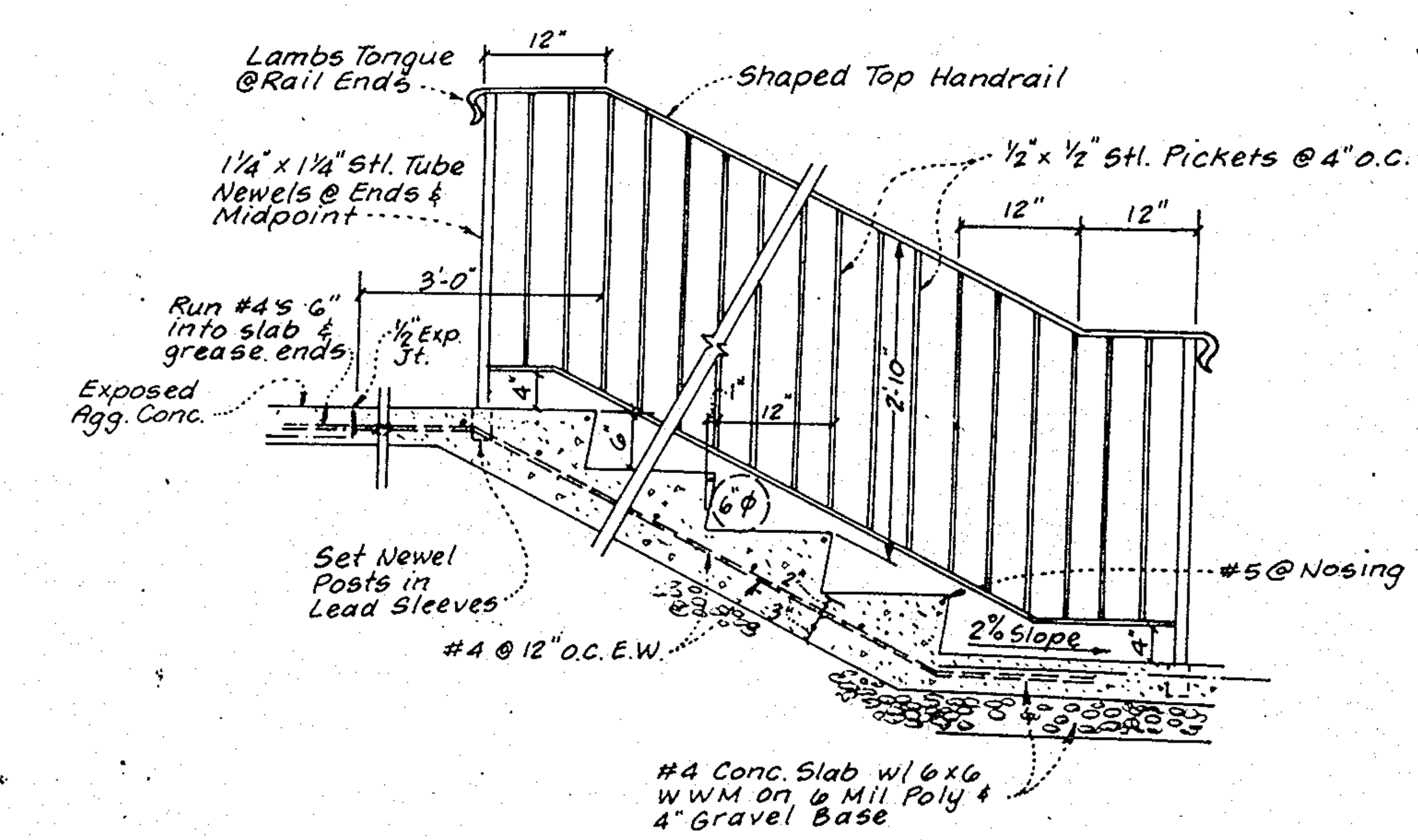
(FRONT ELEV.)

Not To Scale



VICINITY MAP

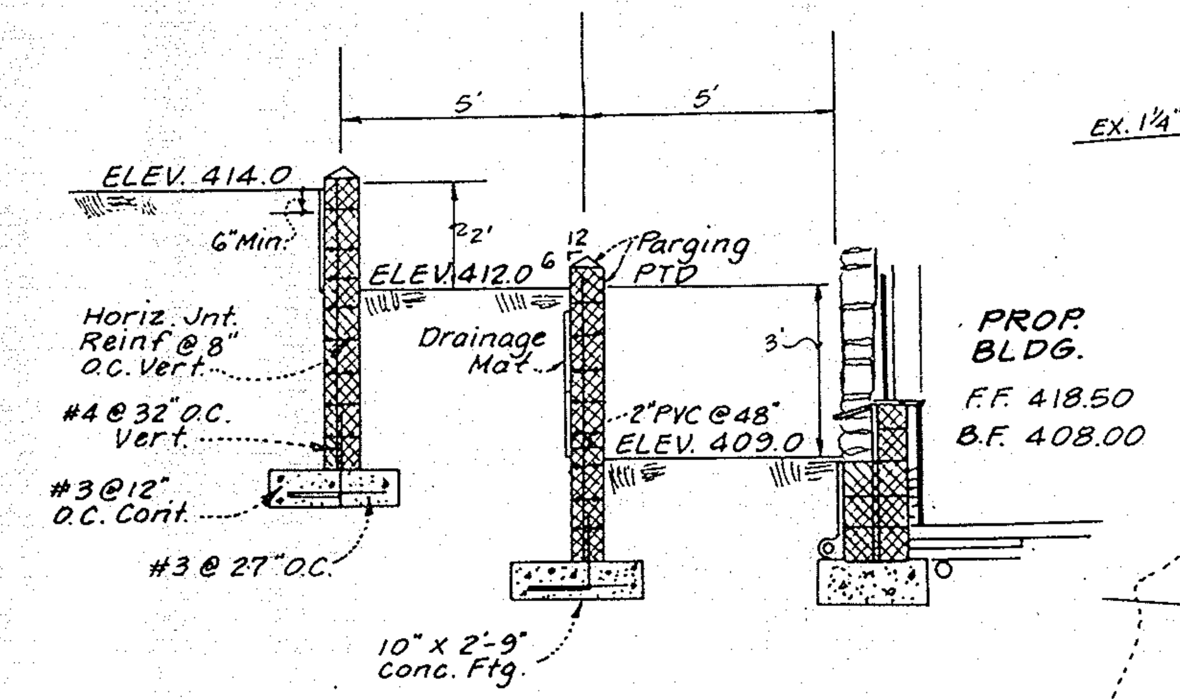
SCALE: 1" = 2000'



EXTERIOR STEPS & HANDRAIL DETAIL

NOT TO SCALE

*Note: For Construction, refer to Architectural Plans prepared by Stewart McCready Architects dated May 18, 1992.



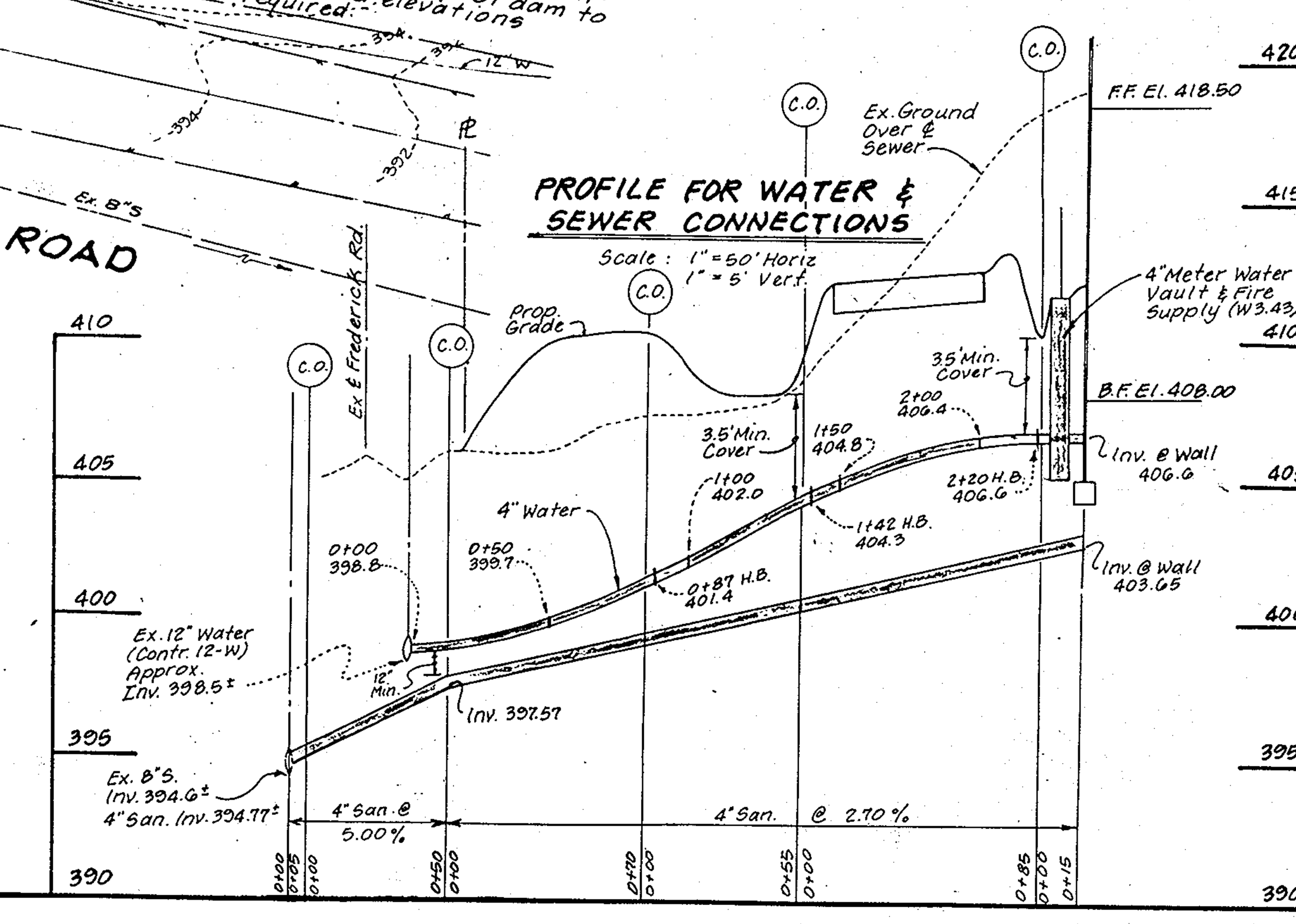
RETAINING WALL DETAIL

NOT TO SCALE

*Note: For Construction-refer to the Architectural Plans prepared by Stewart McCready Architects dated May 18, 1992.

LEGEND

Existing Contours	400 (dashed)
Proposed Contours	400 (solid)
Exisiting Spot Elev.	401.5
Proposed Spot Elev.	+01.5
Contour Interval	2 feet
Proposed Wall Mounted Exterior Light	
Drainage Direction	
Existing Conc. Sidewalk	
Proposed Conc. Sidewalk	
Building Access Point	
Handicap Building Access Point	H.C.
Existing Paving	
Proposed Paving	
Existing Paving (to be removed)	
One Way Traffic Direction	
Existing Concrete Curb	
Existing Concrete Curb (to be removed)	



STATE OF MARYLAND — CHARLES J. CROAO, JR. — No. 13200 — REGISTERED PROFESSIONAL ENGINEER
REVISION 1 10/3/07
FISHER COLLINS AND CARTER INC.

STATE OF MARYLAND — RUDOLPH L. MAY, JR. — No. 8700 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PUBLIC WORKS. FOR STORM DRAINAGE SYSTEMS AND ROADS.

DIRECTOR, PUBLIC WORKS	DATE 8/24/92
CHIEF, BUREAU OF ENGINEERING JH	DATE 8-3-92

APPROVED: DEPARTMENT OF PLANNING AND ZONING

PLANNING DIRECTOR	DATE 9/1/92
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT JA	DATE 8/20/92

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

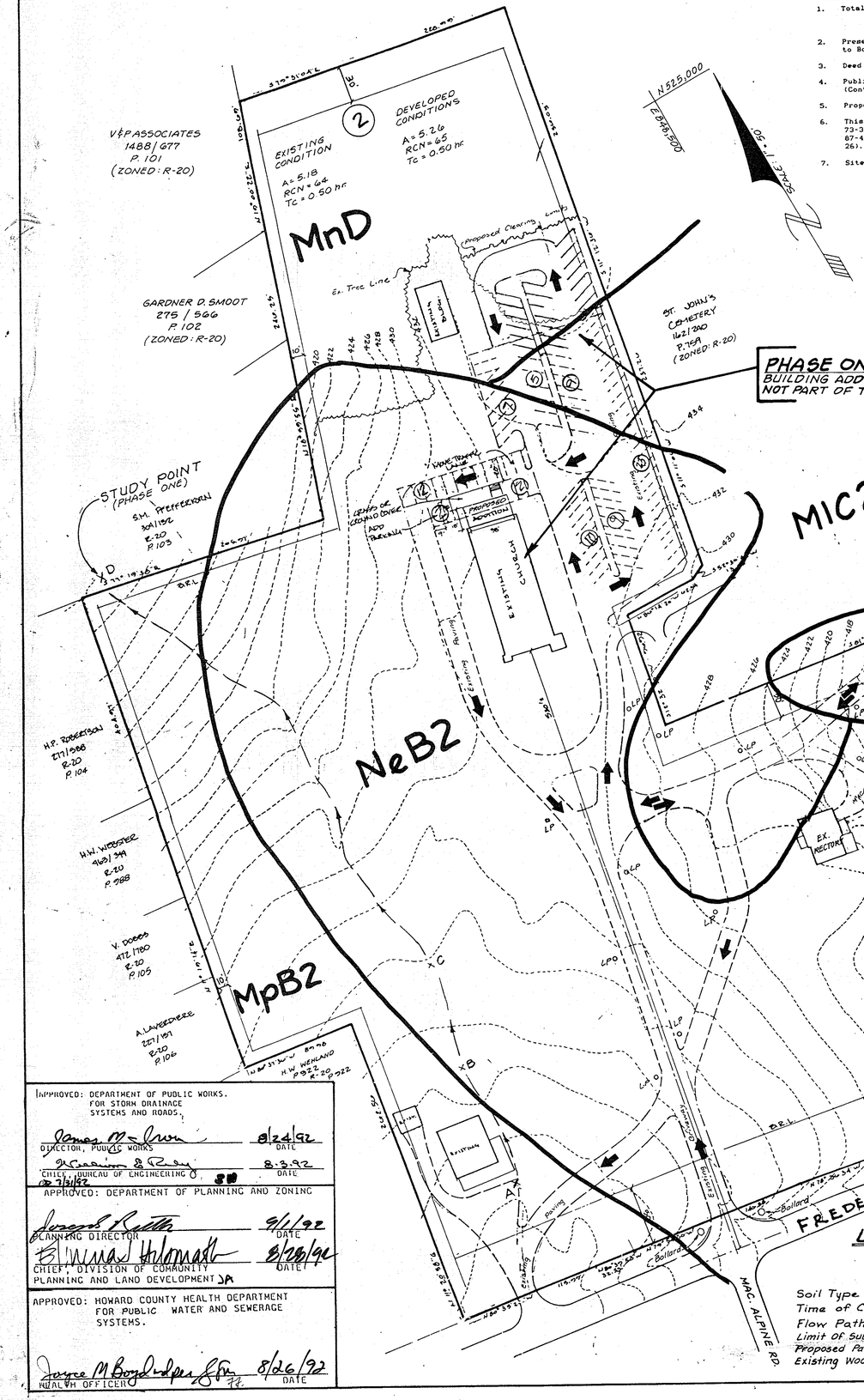
Joyce M Boyd per [signature] HEALTH OFFICER	DATE 8/26/92

NO	REVISIONS	Date
1	Rev. SWM Facility No 2 to a Pocket Pond By F.C.C., Inc.	10-2-07

LAND DESIGN ENGINEERING, INC.

10620 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880-0034

DESIGNED	SITE DEVELOPMENT PLAN PARISH LIFE CENTER ST. JOHN'S EPISCOPAL CHURCH PHASE TWO TAX MAP 24 BLOCK 11 PARCEL 535 LIBER 1822 FOLIO 570	SCALE 1" = 30'
DRAWN WAJ		DRAWING 2 OF 6
CHECKED RLM	2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND BA 87-48E PREVIOUS FILE NO. SDP 73-35 SDP 92-11 BA 90-55E	JOB NO. 90-202.8
DATE 4/92	OWNER/DEVELOPER ST. JOHN'S EPISCOPAL CHURCH 9120 FREDERICK RD. ELLICOTT CITY, MD. 21043 Phone: 465-9531	FILE NO.



General Notes:

1. Total area of property: 12.87 Ac.

   A. Total area of limit of submission (Phase Two): 1.28 Ac.

2. Present zoning of property: R-20 (Residential: Single) subject to Board of Appeals Case Nos. BA 98-55E and BA 87-48E.

3. Deed reference: Liber 1822, Folio 570.

4. Public water and public sewerage is available for the property. (Contract No. 10W and Contract No. 31-S Patapsco Drainage Area.

5. Property is located on Tax Map 24 Block 11 part of Parcel 535.

6. This site development plan is subject to previous submission SDP 73-35, SDP 92-11 and Board of Appeals Case Nos. BA 98-55E and BA 87-48E. Also see Howard County Historic Sites Inventory (HO-26).

7. Site Analysis:

   A. Intended use of structures: Religious Activities (Phase Two: Parish Life Center).

   B. Total area of building (Phase Two): 1982 sq.ft. or 0.05 Ac. (4% coverage of limit of submission).

      1. Proposed Parish Life Center

         a) First floor: 1982 sq.ft.
         b) Ground floor: 1982 sq.ft.

   C. Total area of building coverage (total site): 27,332 sq.ft. or 0.63 Ac. (4.9%)

   D. Total number of parking spaces required (Phase Two): 40

      1. One space for each 100 square feet of floor area of assembly space open to the public:

         a) Total floor area open to the public: 3964 sq.ft.

         b) 3964 sq. ft ÷ 100 = 39.6 or 40.

   E. Total number of parking spaces proposed (Phase Two): 40

      1. Standard spaces: 38

         a) Existing: 4 spaces from existing Parish parking

         b) Proposed: 34

      2. Handicap: 2

   F. Green area provided: (Total site) 9.18 Ac. (71.3%)

   G. Landscaped Islands:

      1. Total area of parking lot (Phase Two): 0.41 Ac.

      2. Landscaped Islands provided: 0.06 Ac. (14.6%)

8. The presence of wetlands are not indicated within the area tentatively proposed for construction of Phase Two on this site. Section 404 and Section 401 do not apply and the applicable permits are not required for this construction.

9. The contractor shall notify the Department of Public Works/Bureau of Construction Inspection at (301) 792-7272 at least five (5) working days prior to the start of work.

10. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.

11. The contractor shall notify the following utilities or agencies at least five (5) days prior to commencement of work shown on these plans:

a.	C&P Telephone Company	301-725-9976
b.	Howard County Bureau of Utilities	301-313-4900
c.	AT&T Cable Location Division	301-393-3553
d.	BG&E (Contractor Services)	301-850-4620
e.	BG&E (Damage Control)	301-787-9068
f.	State Highway Administration	301-531-5533
g.	Colonial Pipeline Company	301-795-1390

12. Handicapped facilities shall be constructed in accordance with the "Design of Barrier Free Facilities" and the "Maryland Building Code for the Handicapped and Aged".

13. The existing utilities shown hereon are located from field surveys and construction drawings of record. The approximate location of existing utilities are shown for the contractors information and convenience. The contractor shall locate existing utilities to his own satisfaction and well in advance of any construction activities. Additionally, the contractor shall take all necessary precautions to protect all existing utilities and maintain uninterrupted service.

14. Any damage to existing public right-of-way, existing paving, existing curb and gutter, existing utilities, etc. shall be corrected at the contractors expense.

15. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications, if applicable.

16. 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.

17. All plan dimensions are to the face of curb unless otherwise noted.

18. Horizontal and vertical datums are related to the Maryland State Plane Coordinate System as projected from Howard County Control Stations.

19. Stormwater Management for this development will be provided by a joint use extended detention/detention control facility (also see Frederick Crossing SDP 87-120). The stormwater management facility will be privately owned and maintained by the St. John's Episcopal Church and Frederick Crossing.

20. See Architectural plans prepared by Stewart-McCready Architects for building dimensions and structural details relating to retaining walls and steps.

21. The property boundary and topography shown on this plan (sheet 1 of 6 was established by a survey prepared by Charles D. Grace, Engineer and Surveyor, as shown on previously approved Site Development Plan SDP 73-35. Additional topography shown on Sheet 2 of 6 was established by a survey prepared by Land Design Engineering, Inc. dated May, 1991. (Two foot contour interval).

22. Geotechnical analysis performed by Willis-Carnes Engineering Associates, Inc. dated May, 1991 for the St. John's Episcopal Church. The boring designated B-1 was performed under the Frederick Crossing Site Plan (SDP-87-120), for installation of the perforated underground trench system on or about December 3, 1991.

Ex. SWM Facility #1

Existing Conditions: Hydrology from approved SDP 87-120, Frederick Crossing

Proposed Conditions:
DA = 1.22 Ac. RCN = 79 Tc = .10 hr.
Path: A-B 100' @ 6%
B-C 65 @ 3%
C-D 55 @ 13%

SWM Facility #2

Existing Conditions:
DA = 033 Ac. RCN = 61 Tc = .24 hr.
Path: A-B 100' @ 2%
B-C 85 @ 11%

Proposed Conditions:
DA = 0.50 Ac. RCN = 74 Tc = .10 hr.
Path: A-B 60' @ 8%
B-C 100' @ 5%

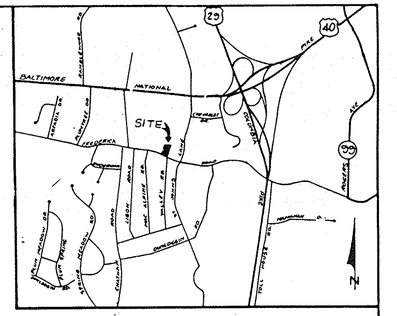
LEGEND

- Ex. D.A.
- Prop. D.A.
- Ex. Tc Path
- Prop. Tc Path
- Limit of Submission

SOIL GROUP	SOIL TYPE	SOIL NAME
C	GnB2	Glenville silt loam
B	MIB2	Manor loam
B	MIC2	Manor loam
B	MID2	Manor loam
B	MnD	Manor very stony loam
C	MpB2	Montalto silt loam
B	NeB2	Neshaminy silt loam

LEGEND

- Soil Type Boundary
- Time of Concentration
- Flow Path
- Limit of Subdivision
- Proposed Paving
- Existing Woods To Remain Undisturbed



VICINITY MAP
SCALE: 1" = 2000'

INDEX OF SHEETS

IN THE MATTER OF ST. JOHN'S EPISCOPAL CHURCH Petitioner : BEFORE THE HOWARD COUNTY BOARD OF APPEALS : Case No. BA 90-55E

ORDER

Based upon the foregoing Findings of Fact and Conclusions of Law, it is this 12th day of March, 1991, by the Howard County Board of Appeals, ORDERED:

That the petition of St. John's Episcopal Church for a special exception to expand an existing religious facility be, and the same is hereby GRANTED, subject to the following conditions:

1. The Petitioner shall comply with all applicable Federal, State and County laws and regulations.

2. The location and layout of all proposed parking areas shall be designed to meet the minimum standards for parking and access lanes.

3. The Petitioner shall insure that no headlights from automobiles in driveways or parking areas shall shine or reflect onto adjacent residential properties as well as residential properties across Frederick Road, by planting where necessary, sufficient evergreen vegetative screening.

4. Outdoor lighting shall be directed inward so as not to shine or reflect onto adjacent properties, and shall be the minimum necessary for directional and security lighting, and may not exceed three (3) feet in height.

5. The Petitioner shall comply with testimony presented and construct the proposed addition to the church building and the proposed parish life center with slate roofs.

APPROVED: DEPARTMENT OF PUBLIC WORKS. FOR STORM DRAINAGE SYSTEMS AND ROADS.

James M. Irvin — DIRECTOR, PUBLIC WORKS — 8/24/92 DATE

[illegible] — CHIEF, BUREAU OF ENGINEERING — 8.3.92 DATE

8/24/92

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[illegible] — PLANNING DIRECTOR — 9/1/92 DATE

[illegible] — CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT JA — 8/28/92 DATE

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

[illegible] — HEALTH OFFICER — 8/26/92 DATE

NOTE: The landscape planting affected by revision no.1 shall be replaced using similar plant type and in the same general area.

No.	REVISIONS	Date
1	Rev. SWM Facility No 2 to a Pocket Pond By F.C.C., Inc.	10:3:07

ADDRESS CHART

PARCEL No.	STREET ADDRESS				
P/O 535	FREDERICK ROAD				
PROPERTY NAME: ST. JOHN'S EPISCOPAL CHURCH		SECT./AREA ——	PARCEL P/O 535		
DEED REF. 1822/570	BLOCK NO. 11	ZONE R-20	TAX MAP NO. 24	ELEC. DIST. 2nd	CENSUS TR. 6023.01
WATER CODE: F07			SEWER CODE: 1402800		

STATE OF MARYLAND — RICHARD L. MATZKO — No. 12211 — REGISTERED PROFESSIONAL ENGINEER — FISHER COLLINS & CARTER, INC. — REVISION 1 10/3/07

STATE OF MARYLAND — RANDOLPH W. BAKER — No. 8100 — REGISTERED PROFESSIONAL ENGINEER

LAND DESIGN ENGINEERING, INC.
10320 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301)610-0034

DESIGNED	LOCATION & SWM DRAINAGE AREA MAP PARISH LIFE CENTER ST. JOHN'S EPISCOPAL CHURCH PHASE TWO TAX MAP 24 BLOCK 11 P/O PARCEL 535 LIBER 1822 FOLIO 570 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND PREVIOUS FILE NO. SDP 73-35 BA 90-55E SDP 92-11 BA 87-48E	SCALE 1"=50'	
DRAWN WAJ		DRAWING 1 OF 6	
CHECKED RLM -		JOB NO. 90-202.B	
DATE 4/92	OWNER/DEVELOPER ST. JOHN'S EPISCOPAL CHURCH 2120 FREDERICK RD. ELLICOTT CITY, MD. 21043 Phone: 465-2531	FILE NO.	

SDP-92-93