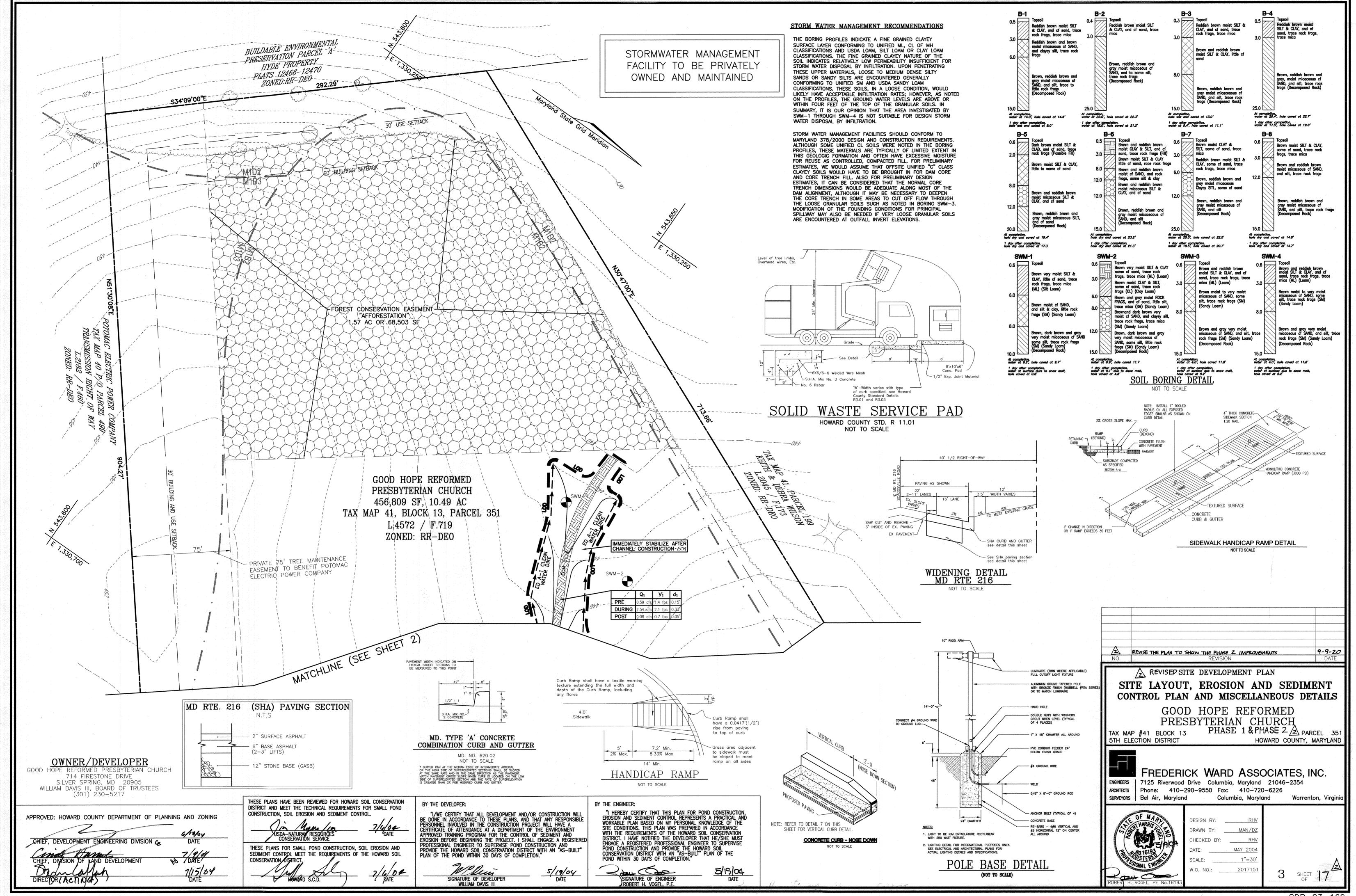
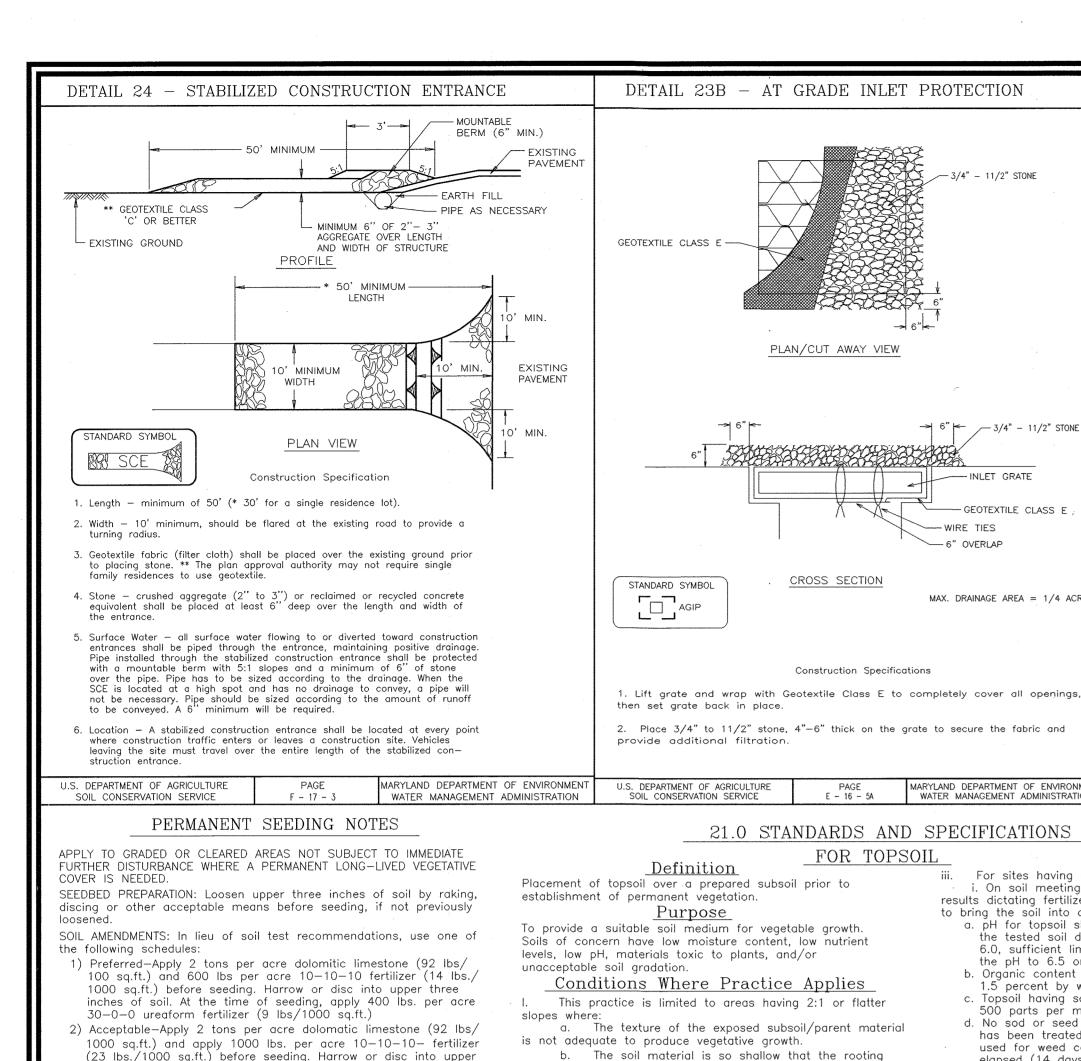


M: \PROJECTS\2017151\ENGR\dwa\cd01.dwg Tue

WILLIAM DAVIS III





three inches of soil.

replacements and reseedings.

(14 lbs./1000 sq.ft).

in the spring, or use sod.

construction (1 week)

(8 gal/1000 sq.ft.) for anchoring.

loosened

SEEDING: For the periods March 1 thru April 30, and August 1 thru

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

October 15, seed with 60 lbs. per acre (1.4 lbs/1000 sq.ft.) of

(.05 lbs./1000 sq.ft.) of weeping lovegrass. During the period of

per acre well anchored straw mulch and seed as soon as possible

in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre

Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored

October 16 thru February 28, protect site by: Option (1) 2 tons

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.

tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified

per acre (8 gal/1000 sq.ft.) for anchoring.

Anchor mulch immediately after application using mulch anchoring

asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons

MAINTENANCE: Inspect all seeded areas and make needed repairs,

TEMPORARY SEEDING NOTES

SEEDBED PREPARATION: Loosen upper three inches of soil by raking,

SEEDING: For periods March 1 thru April 30 and from August 15 thru

November 15, seed with $2 \frac{1}{2}$ bushel per acre of annual rye (3.2)

lbs. per acre of weeping lovegrass (.07 lbs./1000 sq.ft.). For the

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000

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

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR

SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT

EROSION AND SEDIMENT CONTROL

Construction operations will be carried out in such a manner that

control measures to be employed during the construction process.

erosion will be controlled and water and air pollution minimized.

State and local laws concerning pollution abatement will be

SEQUENCE OF CONSTRUCTION

clear and rough grade site.(1 week)

. Construct new building addition. (2 weeks)

2. Fine grade and stabilize the site with topsoi

and seeding (see notes this plan).(4 days)

and permission is granted from Howard County

Sediment Control Inspector, remove sediment

5. After the site is permanently stabilized and

9. Construct storm drain system. (1 week)

. Install final paving (2 days)

. Obtain Howard County Grading permit. (1 week)

4. Conduct pre-construction meeting with the sediment

shown on plan in accordance with details.(3 days)

6. After obtaining permission from inspector to proceed,

Construct septic system & install new well. (1 week)

O. Grade and construct stormwater management (2 weeks)

controls and stabilize any remaining disturbed areas.

CHIEF. DEVELOPMENT ENGINEERING DIVISION C

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Renovate Building (No Site Work) (4 months)

followed. Construction plans shall detail erosion and sediment

5. Notify Howard County at least 48 hours prior to start of

control inspector prior to any land disturbance. (1 week)

Install sediment control devices and sediment basin as

period November 1 thru February 28, protect site by applying 2 tons

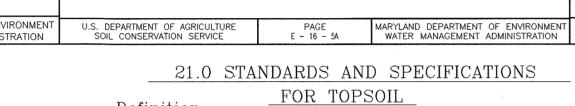
per acre of well anchored straw mulch and seed as soon as possible

sq.ft.) of unrotted small grain straw immediately after seeding. Anchor

lbs./1000 sq.ft.) For the period May 1 thru August 14, seed with 3

discing or other acceptable means before seeding, if not previously

SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 fertilizer



PLAN/CUT AWAY VIEW

CROSS SECTION

Construction Specifications

establishment of permanent vegetation. Purpose To provide a suitable soil medium for vegetable growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies This practice is limited to areas having 2:1 or flatter a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth. b. The soil material is so shallow that the rooting

material toxic to plant growth. d. The soil is so acidic that treatment with limestone is not feasible. II. For the purpose of these Standards and Specifications areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate

Construction and Material Specifications Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland

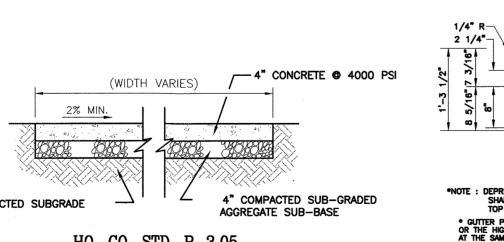
Agricultural Experimental Station. II. Topsoil Specifications — Soil to be used as topsoil must meet the following:

silt loam, sandy clay loam, loamy sand. Other soils may be approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks,

ii. Topsoil must be free of plants or plant parts such ivy, thistle, or others as specified. iii. Where the subsoil is either highly acidic or

feet) prior to the placement of topsoil. Lime shall be the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres: Place topsoil (if required) and apply soil amendments as specified in <u>20.0 Vegetative Stabilization —</u> Section I — Vegetative Stabilization Methods and Materials.



CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND

SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL

HO. CO. STD. R-3.05 <u>TYPICAL SIDEWALK DETAII</u>

bulges occur or when sediment accumulation reaches 50% of the fabric MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE SEDIMENT CONTROL NOTES 1. A minimum of 48 hours notice must be given to the Howard County Department of Inspection, License and Permits Sediment Control Division prior to the start of any construction (313-1855). 2. All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise b. Organic content of topsoil shall be not less than Topsoil having soluble salt content greater than

DETAIL 22 - SILT FENCE

36" MINIMUM FENCE-

POST LENGTH

EMBED GEOTEXTILE CLASS F

INTO THE GROUND

Fence posts shall be a minimum of 36" long, driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood.

teel posts will be standard T or U section weighing not less than 1.00

staples at top and mid-section and shall meet the following requirements

75% (min.)

3. Where ends of geotextile fabric come together, they shall be overlapped

4. Silt Fence shall be inspected after each rainfall event and maintained when

50 lbs/in (min.)

20 lbs/in (min.)

0.3 gal ft /2minute (max.)

2. Geotextile shall be fastened securely to each fence post with wire ties or

SECTION B

A MINIMUM OF 8" VERTICALLY _

Construction Specifications

10' MAXIMUM CENTER TO

PERSPECTIVE VIEW

JOINING TWO ADJACENT SILT

FENCE SECTIONS

pound per linear foot.

for Geotextile Class F:

Tensile Strenath

Tensile Modulus

Filterina Egaeciency

Flow Rate

SECTION A

36" MINIMUM LENGTH FENCE POST,

GEOTEXTILE CLASS F

8" MINIMUM DEPTH IN

FENCE POST SECTION

- MINIMUM 20" ABOVE

- FENCE POST DRIVEN A

UNDISTURBE

— GROUND

GROUND

THE GROUND

----- SF -----

Test: MSMT 509

Test: MSMT 509

Test: MSMT 322

Test: MSMT 322

DRIVEN A MINIMUM OF 16" INTO

GROUND

CROSS SECTION

STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. and revisions thereto. 3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: (a) 3 calendar days for all perimeter sediment control structures, dikes, perimeter slopes, and all slopes greater than 3:1, (b) **7** days as to all other disturbed or graded areas on the project site. 4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 7, HOWARD COUNTY DESIGN MANUAL, Storm Drainage. 5. All disturbed areas must be stabilized within the time period specified above

in accordance with the 20/1 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, sod, temporary seeding, and mulching (Sec. G). Temporary stabilization with mulch alone shall be done when recommended seeding dates do not allow for proper germination and establishment of arasses 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. Site Analysis Total Area s (PHASE 1)/1,32 AC. (PHASE 2 Area Disturbed

Area to be roofed or paved Area to be vegetatively stabilized Total Cut Total Fill Offsite waste/borrow area location

CARE OF WATER DURING CONSTRUCTION

All work on permanent structures shall be carried out in areas

temporary dikes, levees, cofferdams, drainage channels, and

by the permanent works. The contractor shall also furnish,

free from water. The Contractor shall construct and maintain all

stream diversions necessary to protect the areas to be occupied

equipment required for removal of water from the various parts of

install, operate, and maintain all necessary pumping and other

the work and for maintaining the excavations, foundation, and

by the engineer for constructing each part of the work. After

be removed or leveled and graded to the extent required or

having served their purpose, all temporary protective works shall

to the spillway or outlet works and so as not to interfere in any

way with the operation or maintenance of the structure. Stream

diversions shall be maintained until the full flow can be passed

through the permanent works. The removal of water from the

manner and to the extent that will maintain stability of the

other parts of the work free from water as required or directed

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 controls must be provided, if deemed necessary by the Howard County Sediment Control Inspector.

10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made

11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter. To be determined by contractor, with pre—approval of the Sediment Control Inspector with an approved and active grading permit

IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES! <u>nestern Md:</u> March 15 to June 1, August 1 to October 1 (Hardiness Zones: 56,6a) -4" CONC. **©**4000 PSI <u>:entral md:</u> march 1 to may 15, august 15 to october 15 (hardiness zones: Gb) 5'-0" MIN.
WHEN ADJACENT TO CURB 4" COMPACTED GRADED SOUTHERN MD: MARCH I TO MAY IS, AUGUST IS TO OCTOBER IS (HARDINESS ZONES: 7a, 7b) AGGREGATE SUB-BASE - TOP OF SIDEWALK TO BE 1/4" ABOVE TOP OF CURB 1/2" PREFORMED BITUMINOUS ISOLATION JOINT EXPANSION MATERIAL FOR BITUMINOUS PAVEMENT prevent obstruction in any degree whatsoever of the flow of water SEE ARCHITECHTURAL PLANS FO CONNECTION DETAILS AT BUILDING COMPACTED SUB-GRADE -SUB-BASE required excavation and the foundation shall be accomplished in a HO. CO. STD. R-3.05

DETAIL 33 - SUPER SILT FENCE

SHALL NOT EXCEED 10 CENTER TO CENTER

GROUND

CHAIN LINK FENCING-

required except on the ends of the fence.

every 24" at the top and mid section.

FLOW ____ FILTER CLOTH-

EMBED FILTER CLOTH 8"_____

MINIMUM INTO GROUND

* IF MULTIPLE LAYERS ARE

REQUIRED TO ATTAIN 42

THE SHADE

Geotextile Class F:

Tensile Strength

Filtering Efficiency 75% (min.)

Tensile Modulus

U.S. DEPARTMENT OF AGRICULTURE

Flow Rate

GAI VANIZED OR ALUMINUM 10' MAXIMUM

WITH 1 LAYER OF FILTER CLOTH

34" MINIMUM

Construction Specifications

latest Maryland State Highway Details for Chain Link Fencing. The specification

2. Chain link fence shall be fastened securely to the fence posts with wire ties

The lower tension wire, brace and truss rods, drive anchors and post caps are not

5. When two sections of filter cloth adjoin each other, they shall be overlapped

6. Maintenance shall be performed as needed and silt buildups removed when "bulges

0.3 gal/ft ²/minute (max.)

PAGE

7. Filter cloth shall be fastened securely to each fence post with wire ties or

staples at top and mid section and shall meet the following requirements for

50 lbs/in (min.)

20 lbs/in (min.)

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced

Fencing shall be 42" in height and constructed in accordance with the

for a 6' fence shall be used, substituting 42" fabric and 6' length

4. Filter cloth shall be embedded a minimum of 8" into the ground.

develop in the silt fence, or when silt reaches 50% of fence height

FLOW

16" MIN. 1ST LAYER OF FILTER CLOTH *

34" MINIMUM

" MINIMUM

— 8" MINIMUM

STANDARD SYMBO

Test: MSMT 509

Test: MSMT 509

Test: MSMT 322

Test: MSMT 322

MARYLAND DEPARTMENT OF ENVIRONMENT

WATER MANAGEMENT ADMINISTRATION

3/4 "-1 1/2

FILTER CLOTH

drawing.

WIRE MESH

MAX. DRAINAGE AREA = 1/4 ACRE

the weir and the inlet face (max, 4' apart).

entering the inlet under or around the geotextile.

and stone replaced when clogged with sediment.

earth or asphalt dike to direct the flow to the inlet.

both ends of the throat opening.

U.S. DEPARTMENT OF AGRICULTURE

2" X 4" WEIR

Construction Specifications

4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire

. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of

2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall

extend across the inlet top and be held in place by sandbags or alternate weight.

against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2

stone over the wire mesh and geotextile in such a manner to prevent water from

7. This type of protection must be inspected frequently and the filter cloth

8. Assure that storm flow does not bypass the inlet by installing a temporary

6. Form the 1/2 " \times 1/2 " wire mesh and the geotextile fabric to the concrete gutter and

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond

mesh over the wire mesh and securely attach it to the 2" x 4" weir.

TYPICAL SIDEWALK AT BUILDING

Match Building Gates w/6 Hinges, Latch and Gate stop Holders set in slab Top of Curb grade S (PHASE 1)/0,60 AC. (PHASE Z) S (PHASE 1)/0,72 AC. (PHASE Z) P. D . 1'-4" -Concrete Footing

DETAIL 23C - CURB INLET PROTECTION

(COG OR COS INLETS)

- 2" X 4" ANCHORS

2' MINIMUM LENGTH

MARYLAND DEPARTMENT OF ENVIRONMENT

OF 2" X 4"

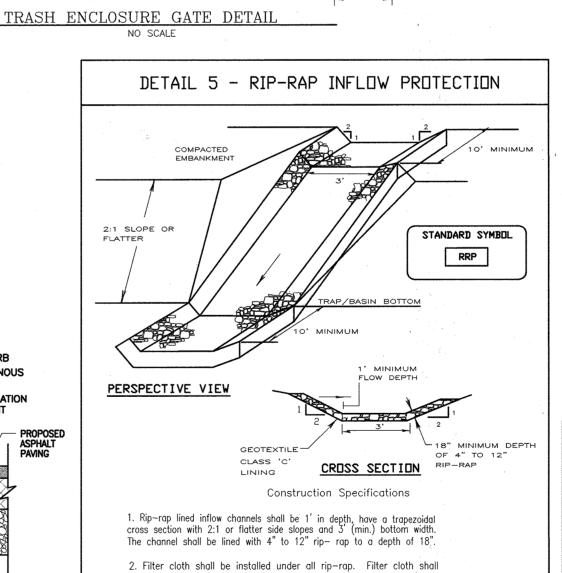
2" X 4" WEIR

3/4 "-1 1/2 " STONE-

FILTER CLOTH

`2" X 4" SPACER

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus



3. Entrance and exit sections shall be installed as shown on the detail 4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management

5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.

6. Rip—rap should blend into existing ground. 7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

PAGE MARYLAND DEPARTMENT OF ENVIRONMEN U.S. DEPARTMENT OF AGRICULTURE B-6-2 WATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE

SURVEYORS | Bel Air, Maryland ER# H. VOGEL, PE No.16

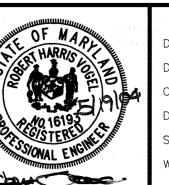
TAX MAP #41 BLOCK 13

5TH ELECTION DISTRICT

ARCHITECTS

FREDERICK WARD ASSOCIATES, INC. ENGINEERS | 7125 Riverwood Drive Columbia, Maryland 21046-2354 Phone: 410-290-9550 Fax: 410-720-6226 Warrenton, Virgini Columbia, Maryland

PRESBYTERIAN CHURCH



DETAIL 30 - EROSION CONTROL MATTING

Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a

narrow trench, 6" in depth. Backfill the trench and tamp firmly to

conform to the channel cross—section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6"

2. Staple the 4" overlap in the channel center using an 18" spacing

3. Before stapling the outer edges of the matting, make sure the

4. Staples shall be placed 2' apart with 4 rows for each strip, 2

5. Where one roll of matting ends and another begins, the end of

the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples

Note: If flow will enter from the edge of the matting then the area

matting is smooth and in firm contact with the soil.

spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly

outer rows, and 2 alternating rows down the center.

secured with 2 double rows of staples

effected by the flow must be keyed-in

PLAN VIEW

FILTER CLOTH LINING

CONSTRUCTION SPECIFICATIONS

UNDISTURBED MATERIA

PERMANENT WORKS

STAPLE OUTSIDE EDGE OF MATTING ON 2' CENTERS

TYPICAL STAPLES NO. 1 GAUGE WIRE

PAGE MARYLAND DEPARTMENT OF ENVIRONMEI
G - 22 - 2 WATER MANAGEMENT ADMINISTRATION

FILTER CLOTH

ELEVATION

EXISTING STABILIZED

1' MINIMUM

FILTER FABRIC LINING SHALL BE

EMBEDDED A MINIMUM OF 4" AND

SHALL EXTEND AT LEAST 6" BEYONI THE EDGE OF THE RIP-RAP

MARYLAND DEPARTMENT OF ENVIRONMEN

NOTE: FILTER CLOTH SHALL BE

GEOTEXTILE CLASS C

WIDTH

DETAIL 27 - ROCK OUTLET PROTECTION III

SECTION A-A

INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER

THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO

BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING

THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL

THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN

G. GEOTEXTILE SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY

COMPLETELY REPLACING THE GEOTEXTILE. ALL OVERLAPS WHETHER FOR REPAIRS

OR FOR JOINING TWO PIECES OF GEOTEXTILE SHALL BE A MINIMUM OF ONE FOO

OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING

MATERIALS. THE STONE FOR RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED

STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT.

THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE

HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS

THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING

OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

UPDATE THE SEDIMENT CONTROL NOTES TO CURRENT STANDARDS

REVISE THE PLAN TO SHOW THE PHASE Z IMPROVEMENTS

REVISED SITE DEVELOPMENT PLAN

BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO

WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE

PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACEMENT

GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED

REVISE THE BUILDING FOOTPRINT PROPOSED UNDER THE PHASE 2 IMPROVEMENTS AND TO 4-28-2

SEDIMENT AND EROSION CONTROL

NOTES AND DETAILS

GOOD HOPE REFORMED

AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY

DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY

PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY

CROSS-SECTION

STAPLE OUTSIDE EDGE OF MATTING ON 2' CENTERS

SCALE: ANSO SHIDWIN

HOWARD COUNTY, MARYLAND

9-9-20

DATE

Definition For sites having disturbed areas over 5 acres: Placement of topsoil over a prepared subsoil prior to i. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following: a. pH for topsoil shall be between 6.0 and 7.5. I

-3/4" - 11/2" STONE

→ 6" ← ____ 3/4" - 11/2" STONE

- INLET GRATE

- 6" OVERLAF

- GEOTEXTILE CLASS F

MAX. DRAINAGE AREA = 1/4 ACRE

the pH to 6.5 or higher.

500 parts per million shall not be used.

d. No sod or seed shall be placed on soil soil which

has been treated with soil sterilants or chemicals

used for weed control until sufficient time has

elapsed (14 days min.) to permit dissipation of

NOTE: Topsoil substitutes or amendments, as recommended

by a qualified agronomist or soil scientist and approved by

the appropriate approval authority, may be used in lieu of

Place topsoil (if required) and apply soil ammendments

specified in 20.0 Vegetative Stabilization-Section I-Vegetative

i. When topsoiling, maintain needed erosion and

ii. Grades on the areas to be topsoiled, which have

iii. Topsoil shall be uniformly distributed in a 4" -

8" layer and lightly compacted to a minimum thickness of 4".

Spreading shall be performed in such a manner that sodding

Stabilization Structures, Earth Dikes, Slope Silt Fence and

been previously established, shall be maintained, albeit 4"

or seeding can proceed with a minimum of additional soil

corrected in order to prevent the formation of depressions

iv. Topsoil shall not be place while the topsoil or

subsoil is in a frozen or muddy condition, when the subsoil

is excessively wet or in a condition that may otherwise be

detrimental to proper grading and seedbed preparation.

P-2 LIGHT DUTY PAVING SECTION

preparation and tillage. Any irregularities in the surface

resulting from topsoiling or other operations shall be

1.5 percent by weight.

phyto-toxic materials.

Stabilization Methods and Materials.

sediment control practices such as diversions

natural topsoil.

V. Topsoil Application

Sediment Traps and Basins

8" higher in elevation.

1 1/2" BIT. CONC. SURFACE

— 5" BIT. CONC. BASE

FULL DEPTH BIT. CONC. ALTERNATE

1"

1" R

or water pockets.

zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients. c. The original soil to be vegetated contains

i. Topsoil shall be a loam, sandy loam, clay loam,

used if recommended by an agronomist or a soil scientist and roots, trash, or other materials larger that 1 and 1/2" in

as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison composed of heavy clays, ground limestone shall be spread a the rate of 4-8 tons/acre (200-400 pounds per 1,000 square distributed uniformly over designated areas and worked into

CONSERVATION DISTRICT.

S.H.A. MIX NO. 2 CONCRETE 1/2** STANDARD COMBINATION CURB AND GUTTER HOWARD COUNTY STANDARD R-3.01

excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped. (NOT TO SCALE) THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION BY THE DEVELOPER: DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND

E Ruis

WILLIAM DAVIS III

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

- 1 1/2" BIT. CONC. SURFACE

2 1/2" BIT. CONC. BASE

- 6" GRADED AGGREGATE

GRANULAR BASE ALTERNATES

BY THE ENGINEER: "I HEREBY 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/SHE MUS ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION." SIGNATURE OF ENGINEER ROBERT H. VOGEL, P.E.

APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE HOWARD COUNTY HEALTH DEPARTMENT C. 98-04 COUNTY HEALTH OFFICER TAR

OWNER/DEVELOPER GOOD HOPE REFORMED PRESBYTERIAN CHURCH 714 FIRESTONE DRIVE SILVER SPRING, MD 20905 WILLIAM DAVIS III, BOARD OF TRUSTEES (301) 230-5217 DATE



CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the

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 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Farth Fill

Material — 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 GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the auality required to prevent erosion of the embankment.

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 permeable 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 heavy 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 formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within $+\-2\%$ 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 (Standard Proctor).

Cut Off Trench — The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with 2. Joints and connections to anti-seep collars shall be completely watertight. construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core — The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction 4. Backfilling shall conform to "Structure Backfill." equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed 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 operated closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pine

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The nixture shall have a 100—200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. t only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil 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 shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of the structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill (flowable fill)zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.

STORMWATER MANAGEMENT FACILITY

ÀND MAINTNANCE SHALL BE MOVED AS NEEDED.

ROUTINE MAINTENANCE

- All of the following criteria shall apply for corrugated metal pipe:

. Materials — (Polymer Coated steel pipe)— Steel pipes with polymeric coating shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the

OPERATION AND MAINTENANCE SCHEDULE FOR

PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5)

SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS

. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS

(2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES

. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE REMOVED A MINIMUM OF TWO

3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOVEING OPERATION AS

requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges. 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. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or

otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are

to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

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 Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. 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 material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at lease

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. 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 rerolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches diameter: flanges on both ends of the pipe with a circular 3/8 inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4(four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8'inch closed cell gaskets the full width of the flange is also acceptable. Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding — The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill." 6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

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 C-361

2. Bedding — Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

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 4 feet from the riser. 4. Backfilling shall conform to "Structure Backfill."

5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings. Plastic Pipe - The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" -10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

Bedding — The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

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

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction Materials, Section 311.

Geotexile shall be placed under all riprap and shall meet requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

All borrow areas shall be graded to provide proper drainage and left to 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 Natural Resources Conservation Service Standards and Specifications for Critical CONTROL STRUCTURE NOTES Area Planting (MD-342) or as shown on the accompanying drawings.

REQUIREMENT

VOLUME (WQv)

RECHARGE VOLUME

CHANNEL PROTECTION

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.

- . MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M 199.
- . WALL REINFORCEMENT FOR BASE UNITS AND RISER UNITS SHALL BE REINFORCEMENT BARS OR WELDED WIRE FABERIC WITH A MINIMUM AREA OF 0.2 in./ft FOR² THE 84" DIAMETER MANHOLES. WELDED WIRE FABERIC

27" RCP

2'-0"

6" TOP SLAB

(1 1/2" CLR TO BOT. OF SLAB)

— 2 #6 CONTINUOUS AT

PERIMETER OF SLAB

6" PVC W/ CAP-

6" (TYP)

POND BOTTOM

EL.=445.00

2" MIN.]

(PROVIDE 1.75"

#6 CORNER BAR WITH

-3'-0" LEGS-TYP

(4) CONCRETE ANCHOR BOLTS

5' OPENING

TOP STRUCTURE EL=450.52

- FABERIC WITH A MINIMUM AREA OF 0.27 in./ft. THE BASE SHALL BE CAST MONOLITHIC WITH THE BASE UNIT OR JOINTED PER MANUFACTURERS DESIGN. 5. THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING (WHERE APPLICABLE) MORTAR. RUBBER
- GASKETS MEETING AASHTO M 198 TYPE B. 6. LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAXIMUM C/C. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARDS
- COST OF THE MANHOLE. 7. WHEN THE DISTANCE BETWEEN MULTIPLE PIPE OPENINGS IN THE BASE UNIT OR ANY RISER UNIT IS LESS THEN 6" ADDITIONAL NO. 3 BARS ARE
- 8. LIFT HOLES OR LIFT EYES SHALL BE PROVIDED IN EACH SECTION FOR
- BY THE ENGINEER. 10. THE DRIP STONE LANDING SHALL BE USED ONLY WHEN THERE ARE PIPES
- CONNECTED TO THE RISER UNITS. SEE STD.MD-384.13 FOR DETAILS. . MINIMUM DEPTH PAYMENT PER EACH SHALL BE 10'-1" MEASURED FROM THE BOTTOM OF THE BASE UNIT TO THE TOP OF THE MANHOLE COVER. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 10'-1" THE COST OF THE DRIP STONE LANDING, NO. 57

BE INCIDENTAL TO THE PRICE BID. BY THE ENGINEER: "I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION "I HEREBY 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/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS—BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

> SIGNATURE OF ENGINEER ROBERT H. VOGEL. P.E.

REVISED SITE DEVELOPMENT PLAN STORMWATER MANAGEMENT NOTES AND DETAILS GOOD HOPE REFORMED PRESBYTERIAN CHURCH, PHASE 1 & PHASE 2 A PARCEL 351 FAX MAP #41 BLOCK 13 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND FREDERICK WARD ASSOCIATES, INC. ENGINEERS | 7125 Riverwood Drive Columbia, Maryland 21046-2354 Phone: 410-290-9550 Fax: 410-720-6226 SURVEYORS | Bel Air, Maryland Columbia, Maryland Warrenton, Virginia DESIGN BY:

_12'Bench

© 2.0%

Chart Caso

DRAWN BY: _____MAN/D: CHECKED BY: SCALE: W.O. NO.:

SHEET 17

POND BOTTOM SOIL CONDITIONS

If broken rock fragments are encountered at finished pondibottom, under cut a minimum of 12" below basin grade and to a horizontal distance of at least 18" beyond each edge of the broken rock and backfill with fine-grained ML or CL soils compacted to a firm condition This procedure should be performed under the supervision of the project Geotechnical Engineer.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

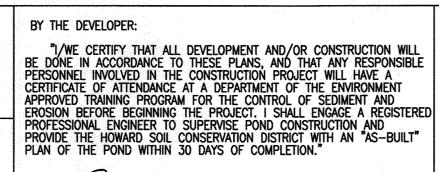
THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL. Myles / B. CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND

SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL

7/4/04

CONSERVATION DISTRICT



Cpv extended detention in pond Wqv wet storage in pond

SUMMARY TABLE-ENTIRE SITE

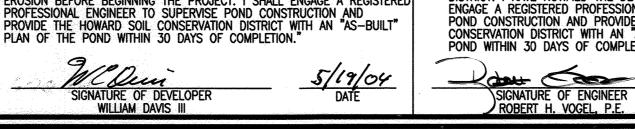
VOLUME

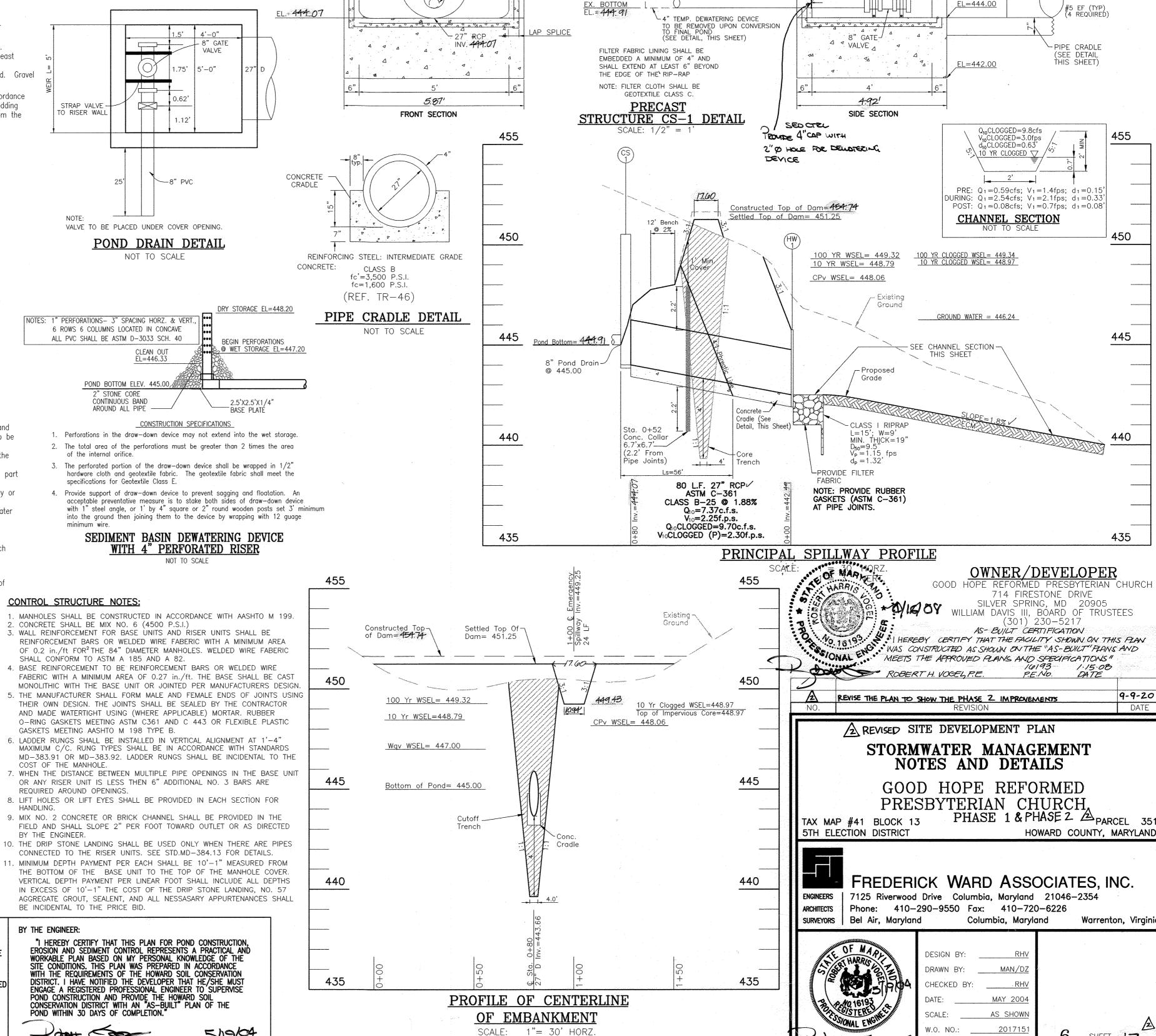
REQUIREMENT PROVIDED

5,633 CU. FT 5,740 CU. FT

1,481 CU. FT | 1,512 CU. FT

6,970 CU. FT | 6,970 CU. FT | 0.08 cfs





1"= 3' VERT.

LOW FLOW ORIFICE DETAIL

EL.=448.20

EL.=447.20

SED CTRL

BLOCK TO

449.C

INV 444.83

NOT TO SCALE

7 100 YR. WSEL=449.32

EL.=450,**52**

EL.=450.00

Tempororily

BLOCKTO

(SEE DETAIL, SHEET 5) /

(SEE HO.CO.STD

DETAIL G 5.21)

TRASH RACK -

<u>Ky . • • • • H</u>

FOR REBAR DESIGN

SEAL

2' MAX. STUB

SEE DETAIL SD-4.39

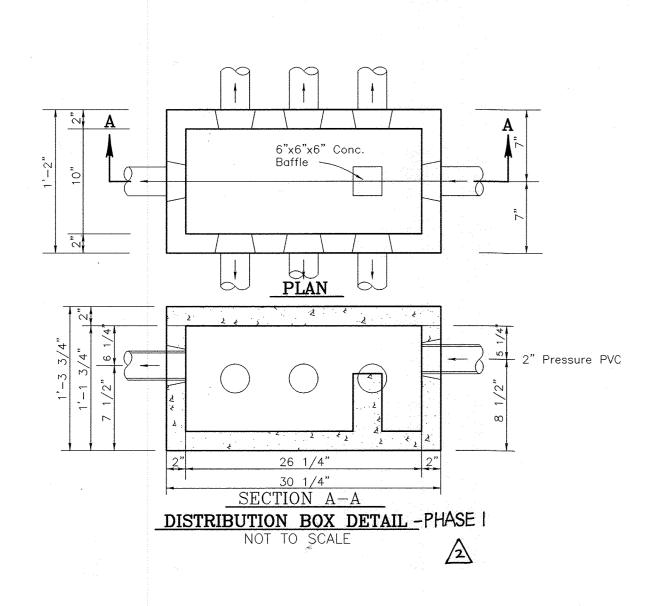
27" RCP ASTM C361

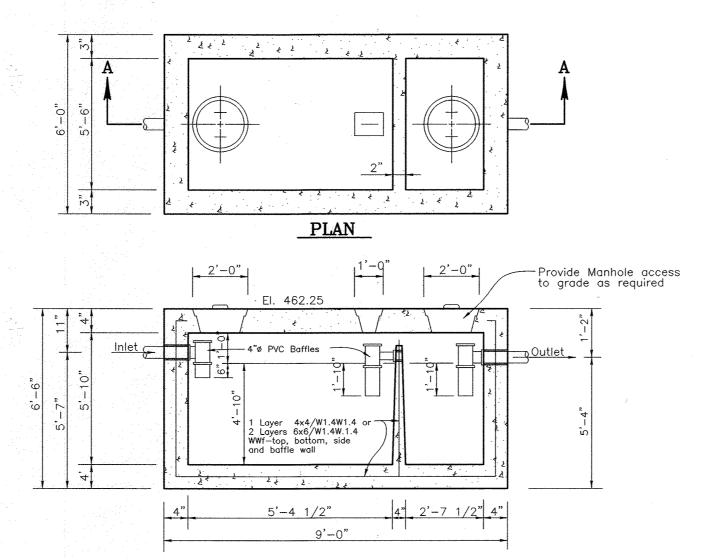
CLASS B-25

PROVIDE WATERTIGHT

8" GATE -

8" PVĆ POND DRAIN

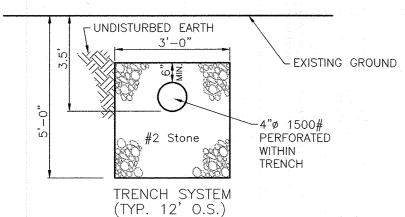




SECTION A-A

- NOTE: This tank is not designed, manufactured, or recommended to be installed under vehicle traffic area
- NOTE: Portland type I/II 4,000 PSI min. concrete

1,500 GALLON SEPTIC TANK TOP SEAM ONLY



TYPICAL SEPTIC SYSTEM TRENCH DETAIL - PHASE I

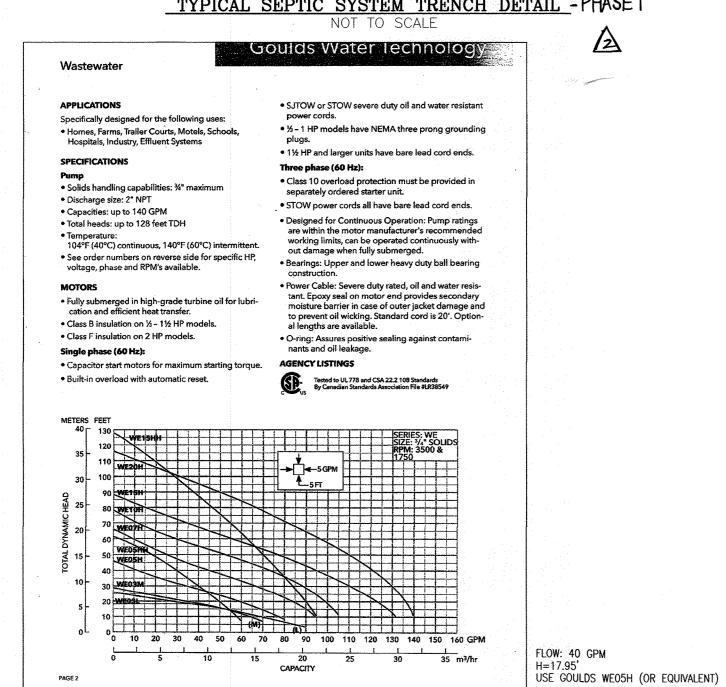
APPROVED : FOR PRIVATE WATER AND PRIVATE SEWERAGE

COUNTY HEALTH OFFICER TOO

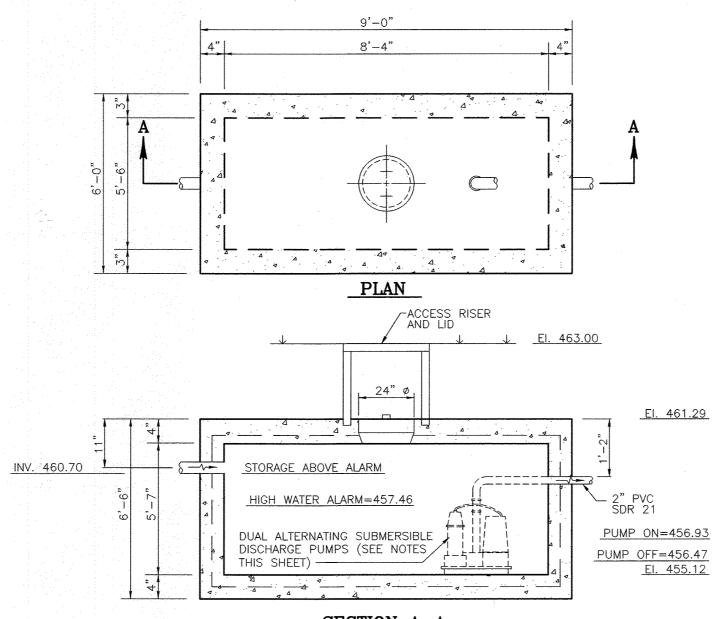
HOWARD COUNTY HEALTH DEPARTMENT

6-28-04

DATE



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING



SECTION A-A

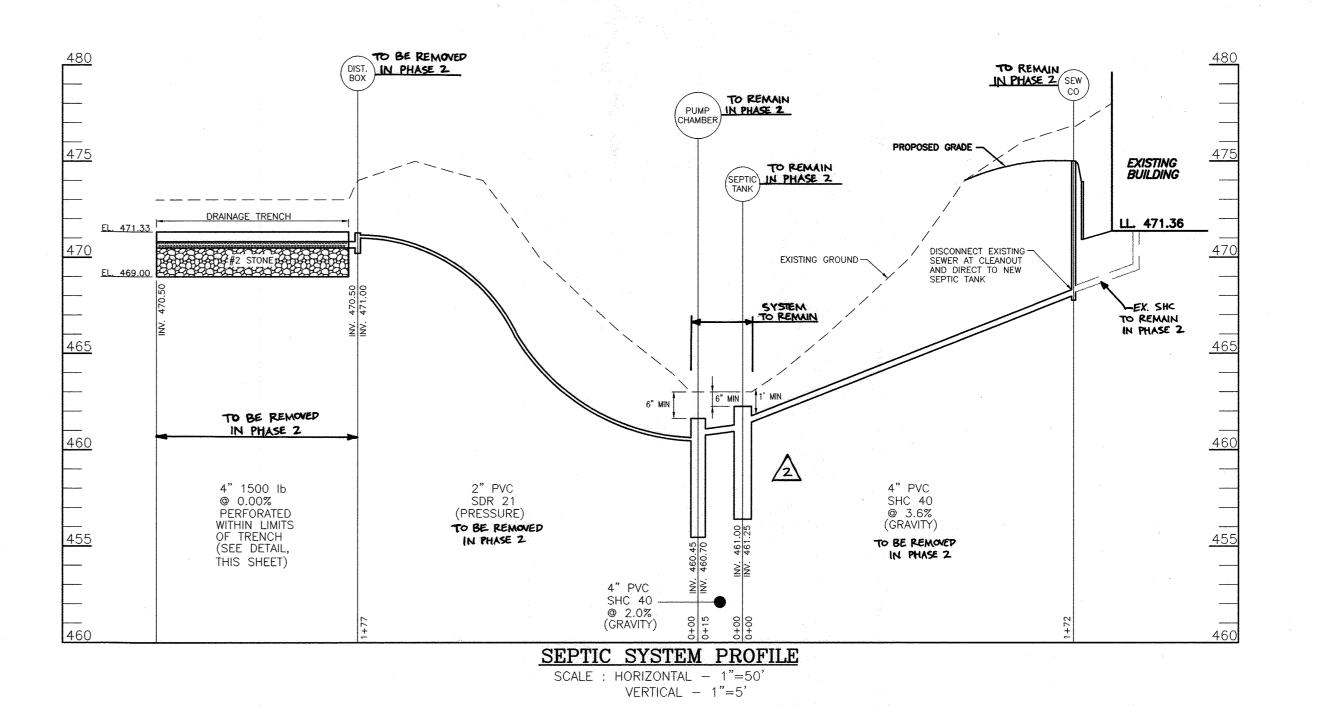
CONCRETE MINIMUM STRENGTH - 6,000 P.S.I. @ 28 DAYS STEEL REINFORCEMENT - ASTM A-615-75, GRADE 60, 1" MIN. COVER

1500 GALLON TOP SEAM PUMP CHAMBER

356 SEATS AT 1,068 GPD (3 GALLONS/SEAT) DOSE: 1/6 DESIGN FLOW = 178 GPD 178 GALLONS/7.48 FT³/GAL. = 23.80 FT³ $23.80 \text{ FT}^3/45.83 \text{ SF} = 0.52$ ONE DAY RESERVE: 1,110 GALLONS/7.48 FT³/GAL. = 148.4 FT³ $148.4 \text{ FT}^3/45.83 = 3.24 \text{ FT}$ TDH (FRICTION + STATIC) FRICTION FITTINGS: 45° ELBOW (H+V): 6x8 = 48 90° ELBOW: 1x7 = 7FITTING EQ. LENGTH: 55 LF

FRICTION LOSS (40 GPM): (2.63)(196)/100 = 5.15STATIC: 469.27-456.47 (PUMP OFF) = 12.80 TDH: 12.80+5.15 = 17.95USE GOULDS WEOSH (OR EQUIVALENT)

PIPE LENGTH: 141 LF TOTAL LENGTH: 196 LF



SEE SHEET 17 FOR PHASE 2 SEPTIC SYSTEM REVISIONS

TRENCH CONSTRUCTION NOTES

- 1. Trenches shall be excavated using a backhoe. Front—end Ploaders or bulldozers should not be used for trench excavations.
- 2. Excavated materials from the trenches shall be placed at a sufficient distance downslope of the trenches to avoid migration of soils back into the trench.
- 3. Work shall be scheduled such that the trenches can be covered in one day to prevent windblown or waterborne sediment from entering the trench. Health department to be notified for inspection
- prior to stone placement in trench. 4. The field engineer shall verify the constructed elevations of the trenches to ensure a minimum 4' cover is provided below pavement
- 5. Upon completion of the trench excavation and prior to placement of paving, heavy construction equipment traffic shall be permanently diverted from the trenches and adjacent area.

NOTE: Contractor to provide alternating electric submersible pumps in seperate pump chamber. Pump to have electronic level with remote alarm located inside building. Pump to be Tsurumi 4-BE2 or equivalent. Minimum requirements: 50 GPM @ 13 ft head. See architectural drawings for electric details. Any proposed modifications to the septic system details will be submitted to the health department through the project engineer.

SEPTIC SYSTEM DESIGN

Phase I 125 Person x 3 GPD = 375 GPD Phase II $300 \text{ Person } \times 3 \text{ GPD} = 900 \text{ GPD}$ Trench loading rate = 0.8 Gal/SF/Day375/0.8=469 SF

Trench Configuration=3'x2' (12'0.C.) Length of trench required: 469 SF/3'=156 LF (260 LF Provided)

Lowest Flore Elevation Served Phase 1: Invert out of building 468.00 Invert into septic tank 461.25 Invert out of septic tank 461.00 463.00 Existing grade at septic tank 463.00 Proposed grade at septic tank Invert into pump chamber 460.70 Invert into distribution box 471.00 470.50 Invert into trench at distribution box 473.00 Grade at distribution box :

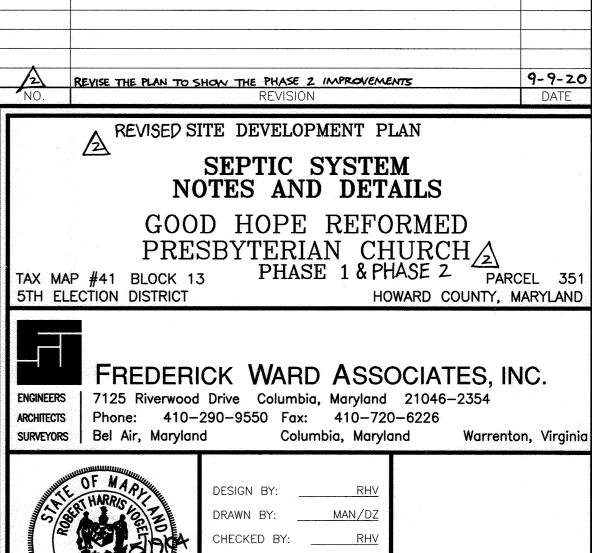
Minimum Dose = 900 gallons/6 = 150 gallonsStorage Above High Water Alarm = 900 + 150 = 1050 gallons

> OWNER/DEVELOPER 714 FIRESTONE DRIVE

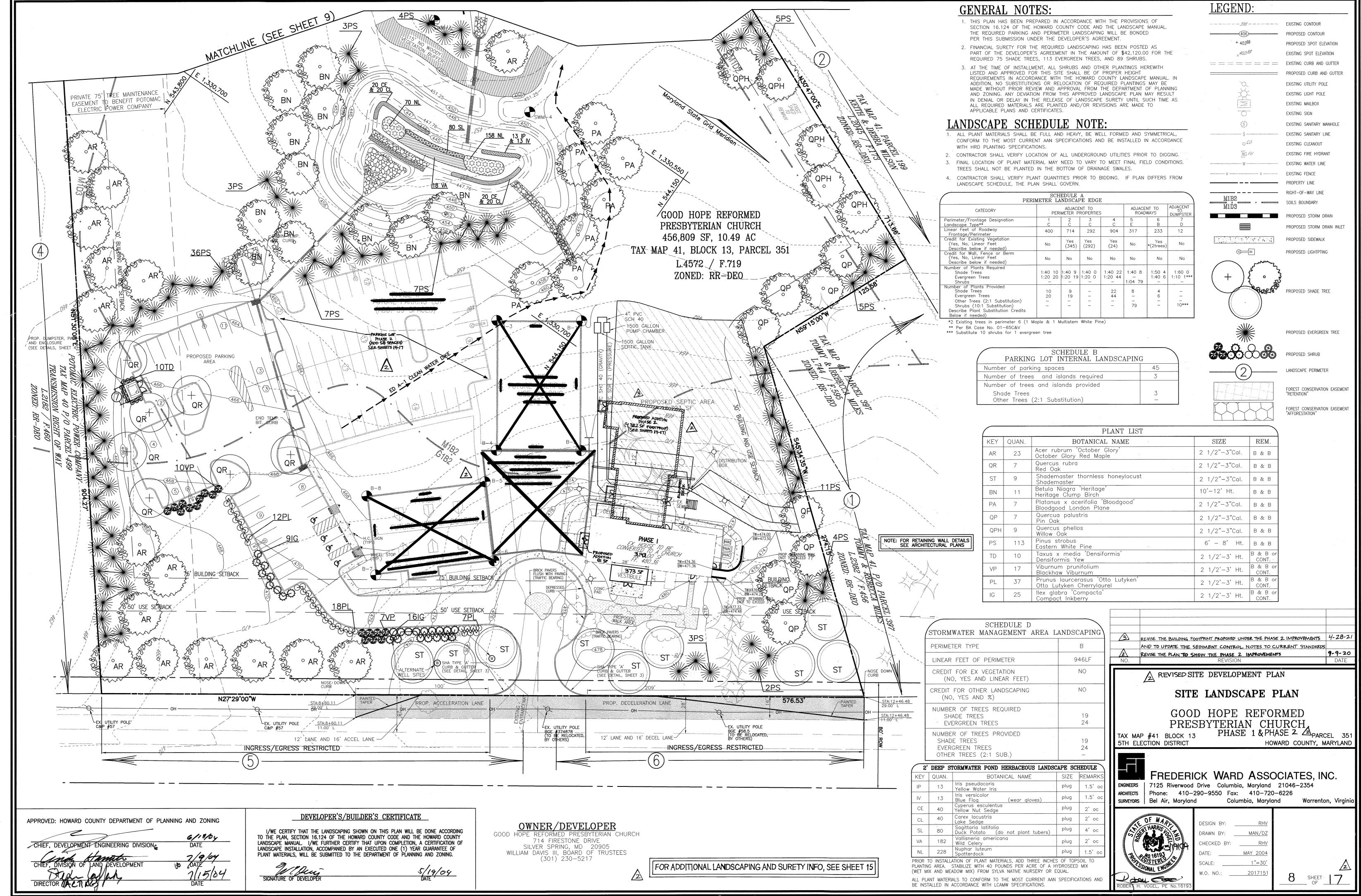
> > (301) 230-5217

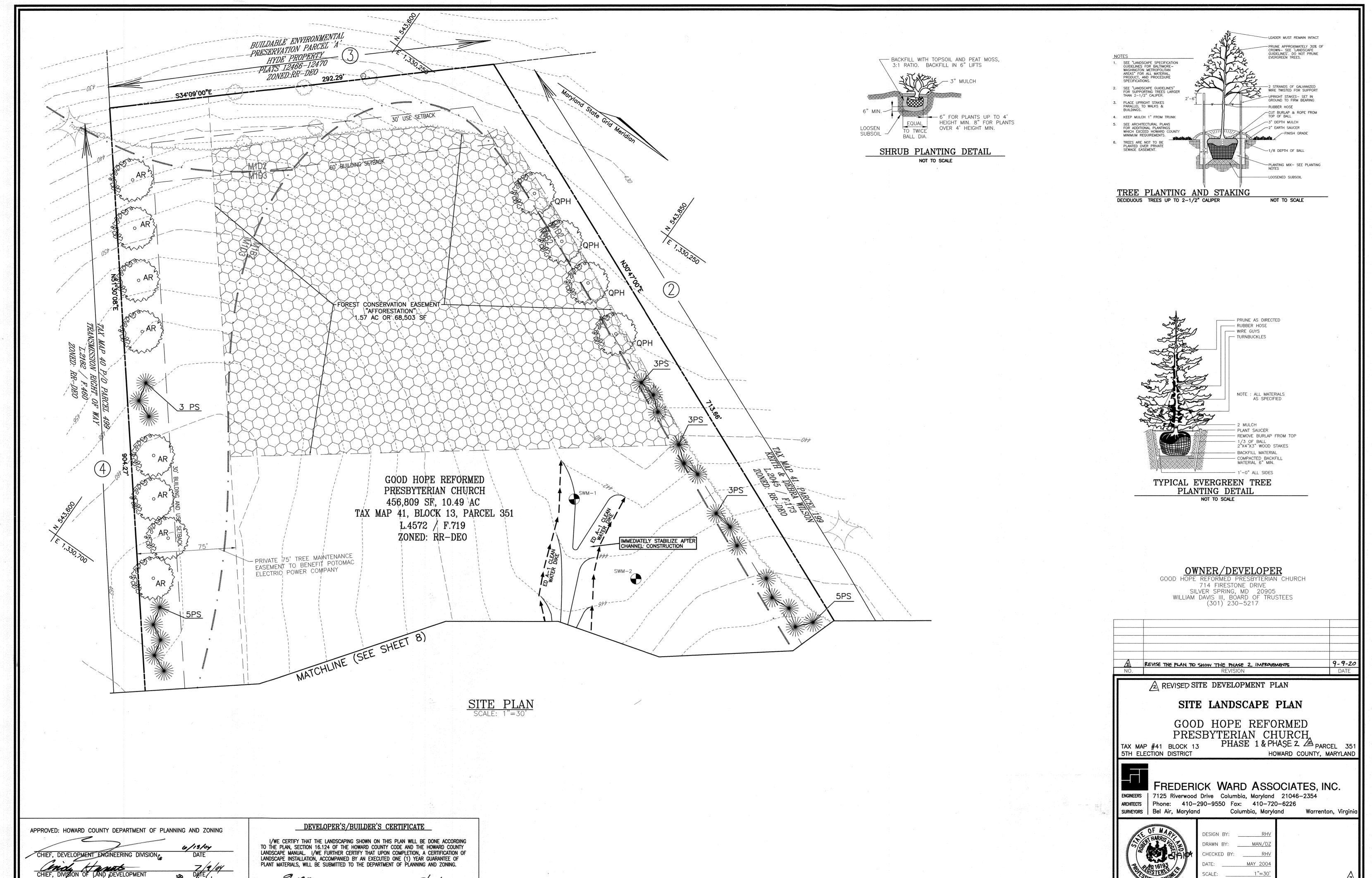
GENERAL NOTES

- 1. A GROUND WATER APPROPRIATION PERMIT MUST BE SUBMITTED PRIOR TO RECORD PLAT SUBMISSION AND/OR PRIOR TO DRILLING WELLS.
- 2. ALL WELLS TO BE ABBANDONED AND SEALED BY A LICENSED WELL DRILLER. 3. THE CURRENTLY PROPOSED PHASE I AND FORCE PHASE II FACILITY TO BE USED ON SUNDAYS FOR WORSHIP. THERE IS NO DAYCARE OR OTHER ACTIVITIES
- 4. REFERENCE PERCULATION CERTIFICATION PLAT APPROVED OCTOBER 2, 2002.



SILVER SPRING, MD 20905 WILLIAM DAVIS III, BOARD OF TRUSTEES

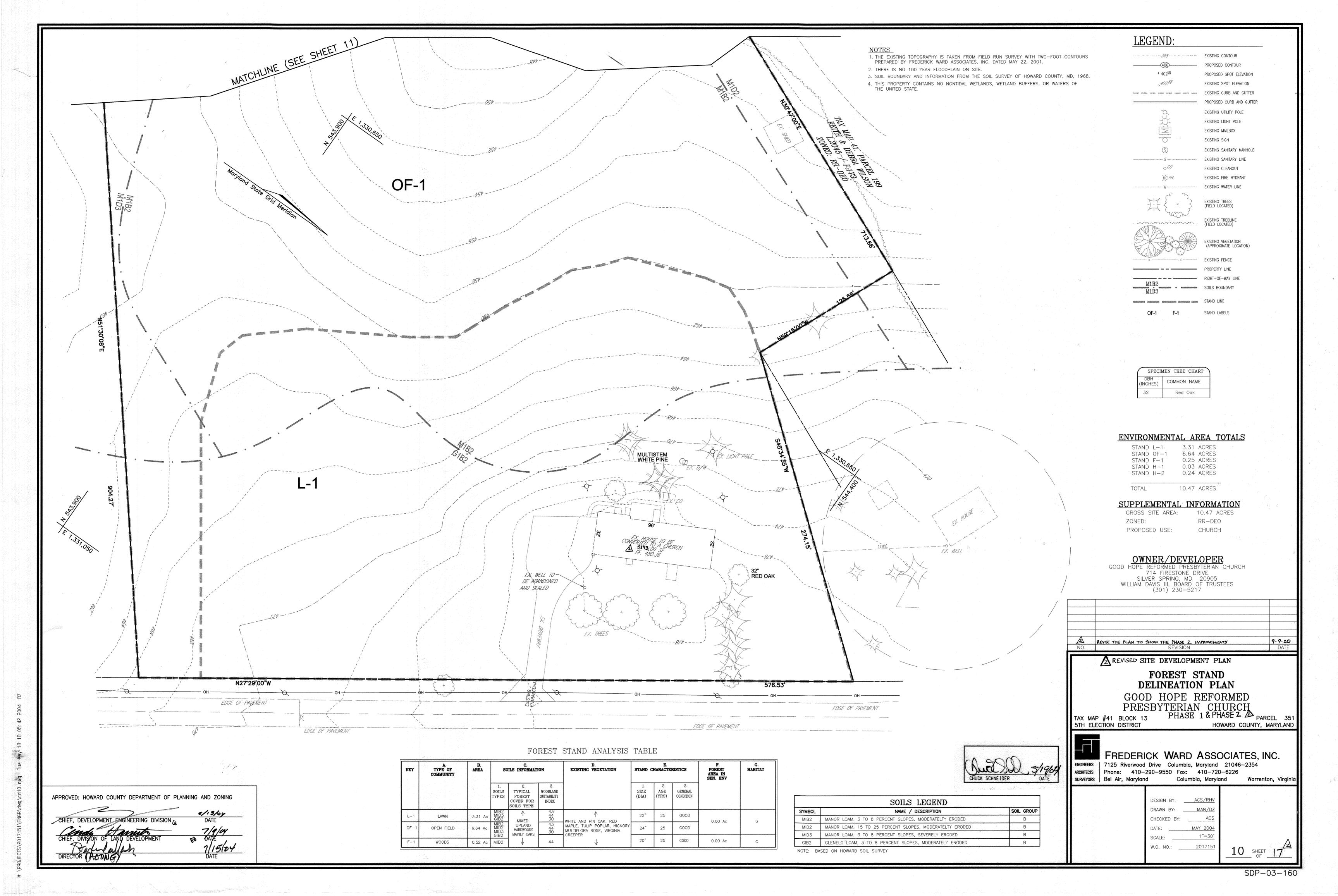


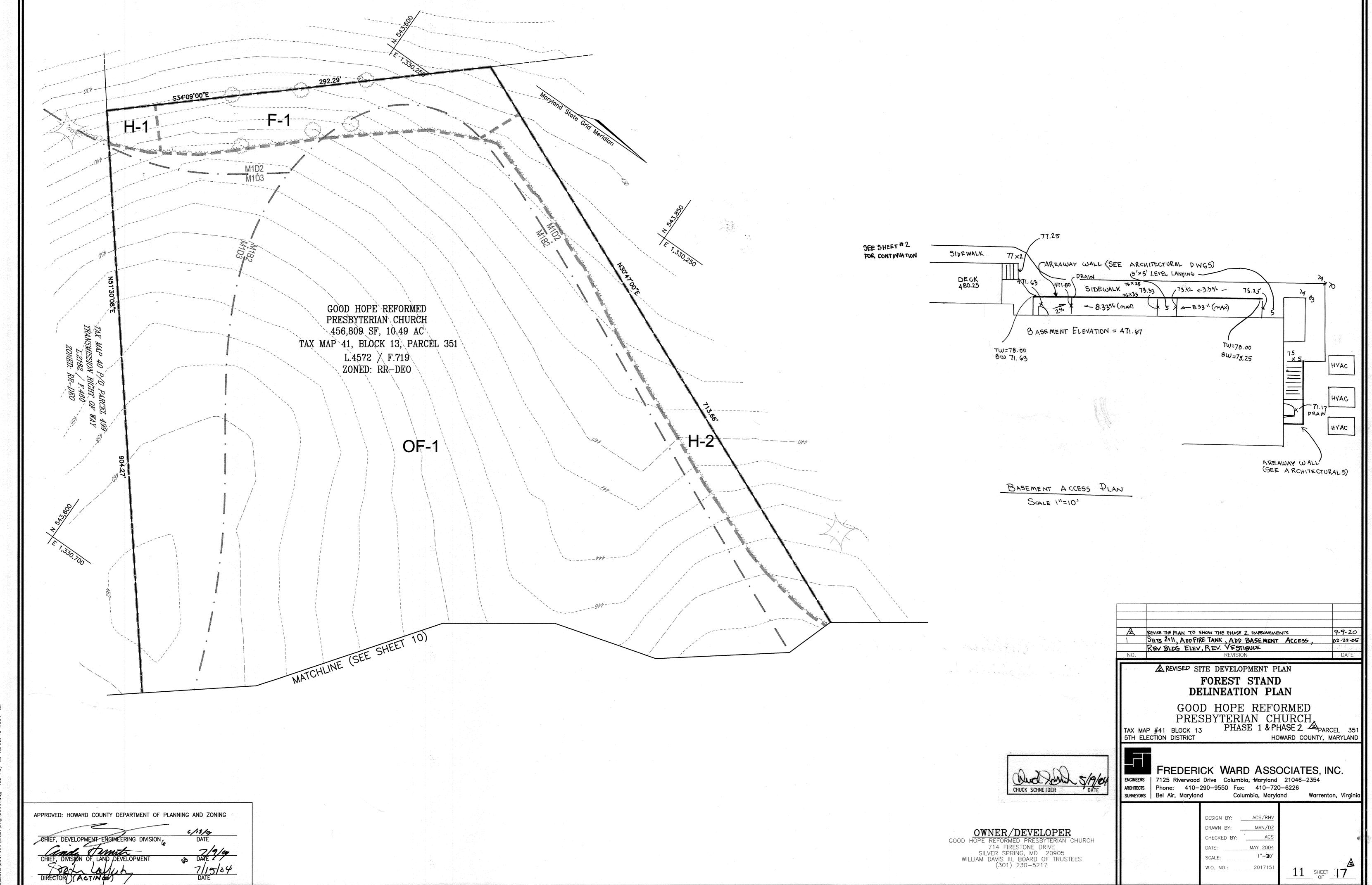


SDP-03-160

SHEET 17

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DD 03 160

