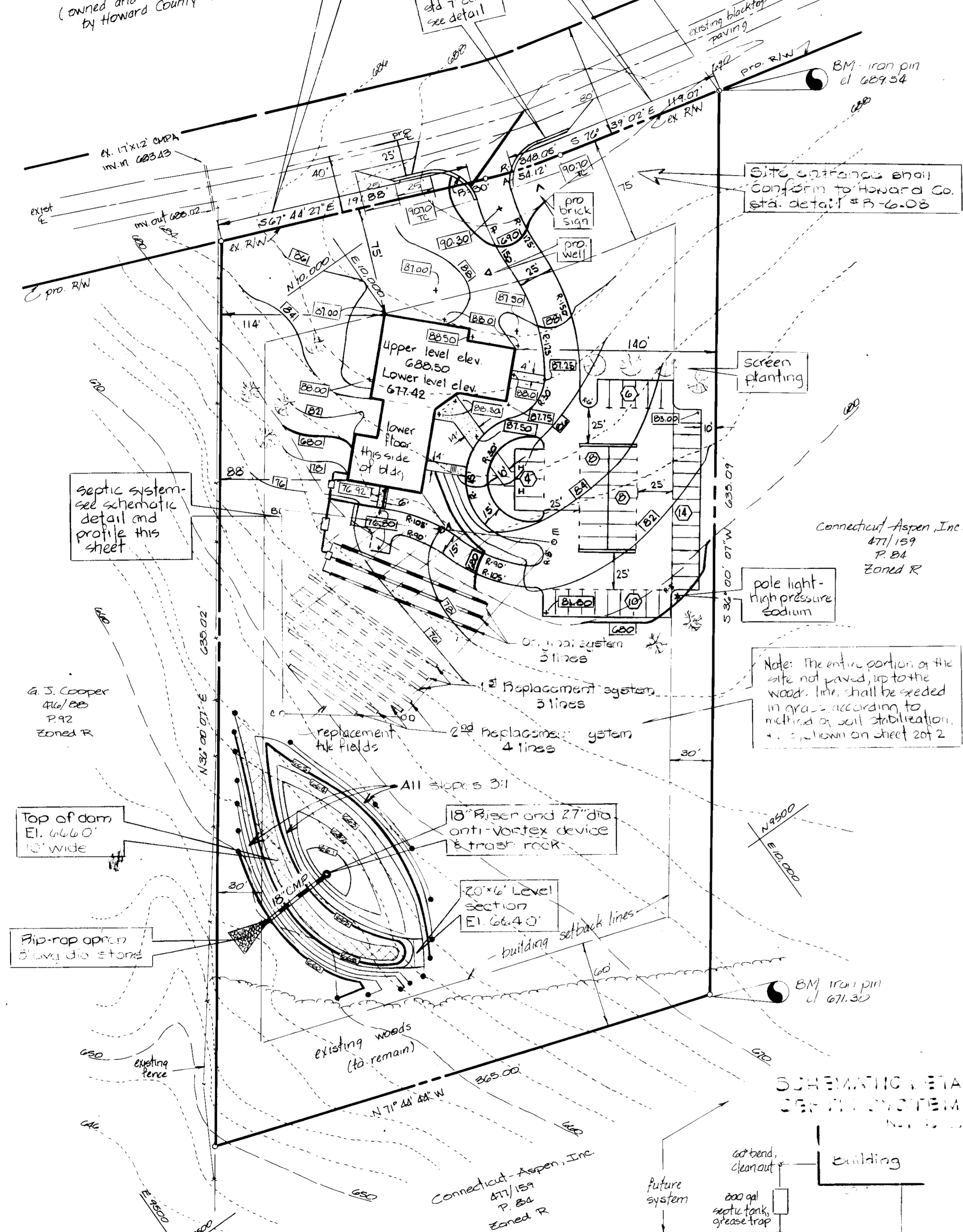


**Old Frederick Road**  
(owned and maintained by Howard County)

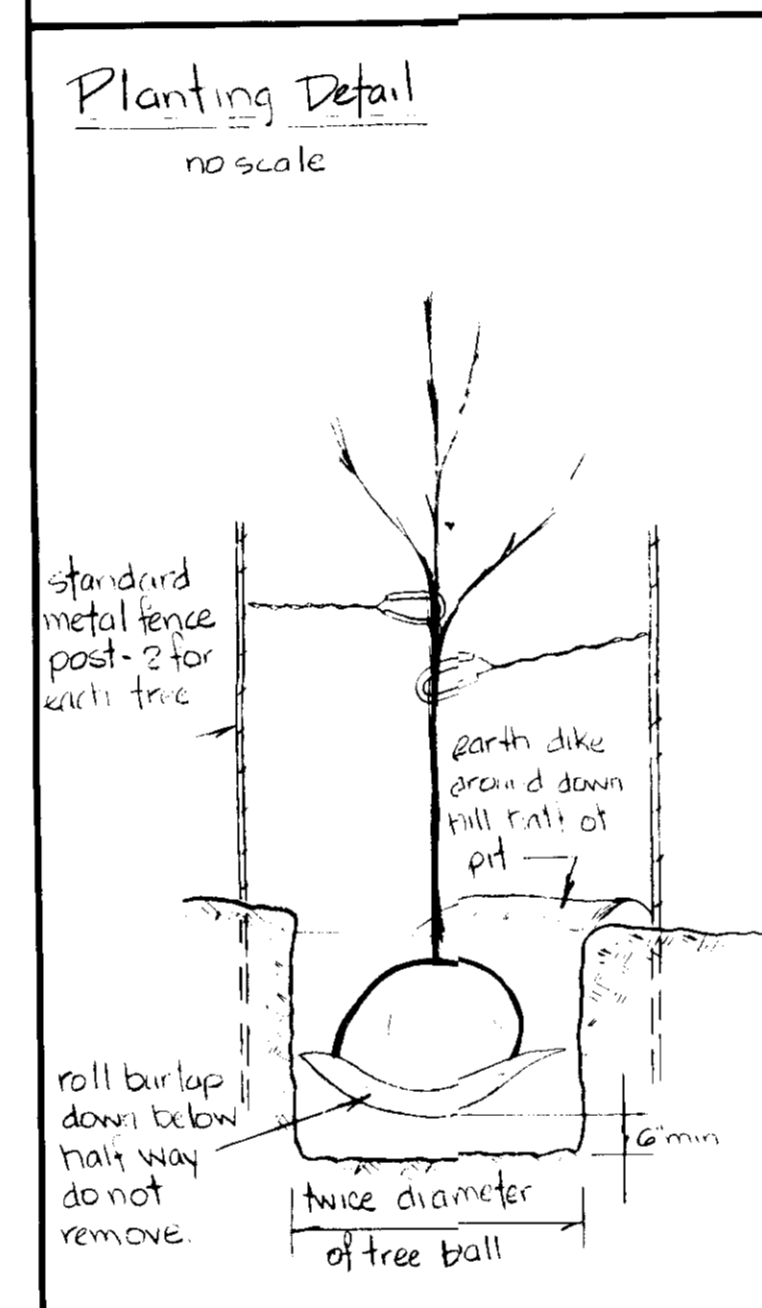
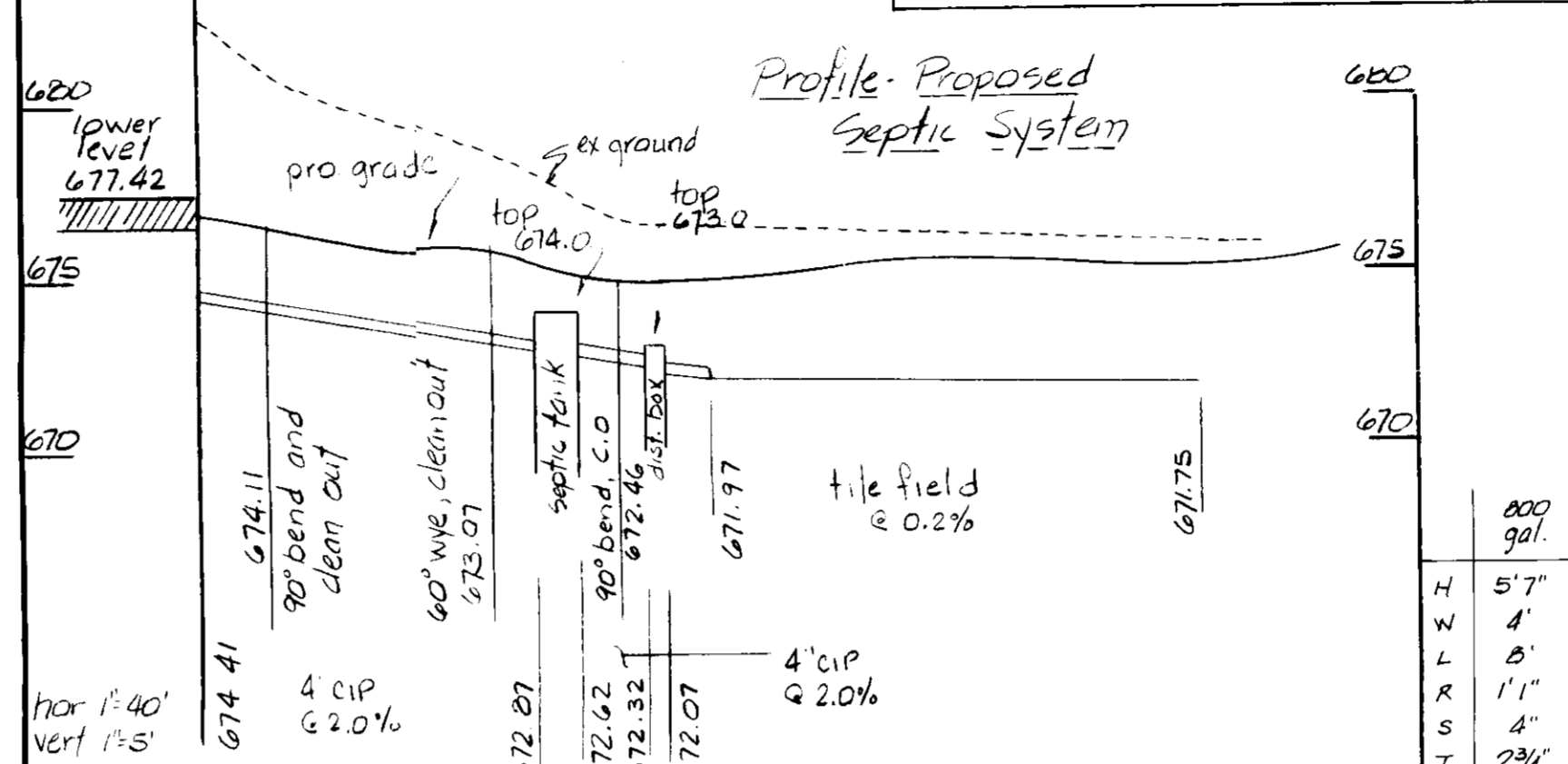
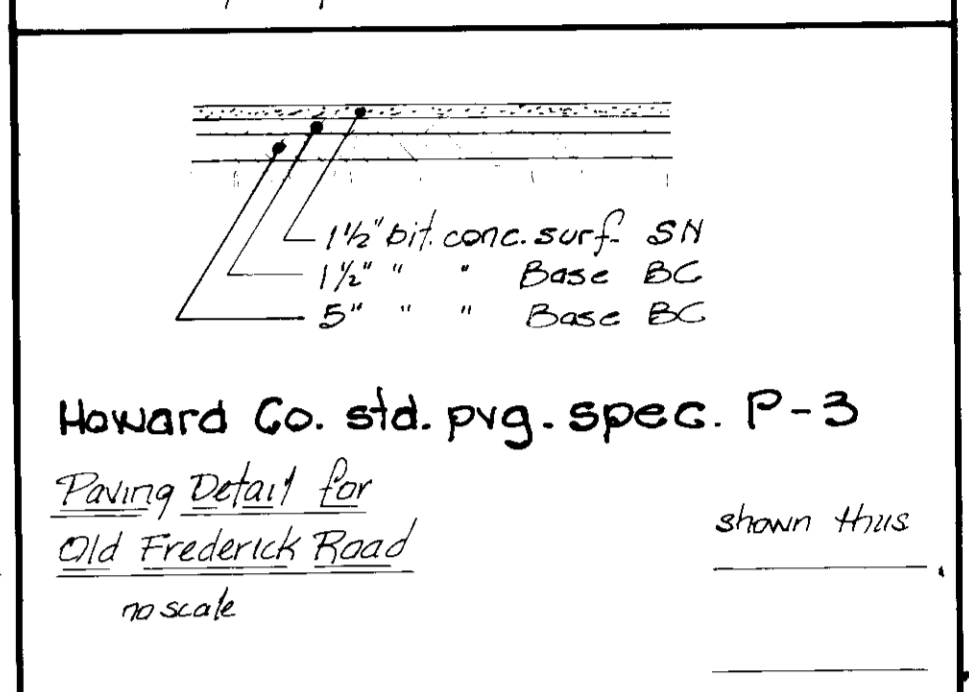
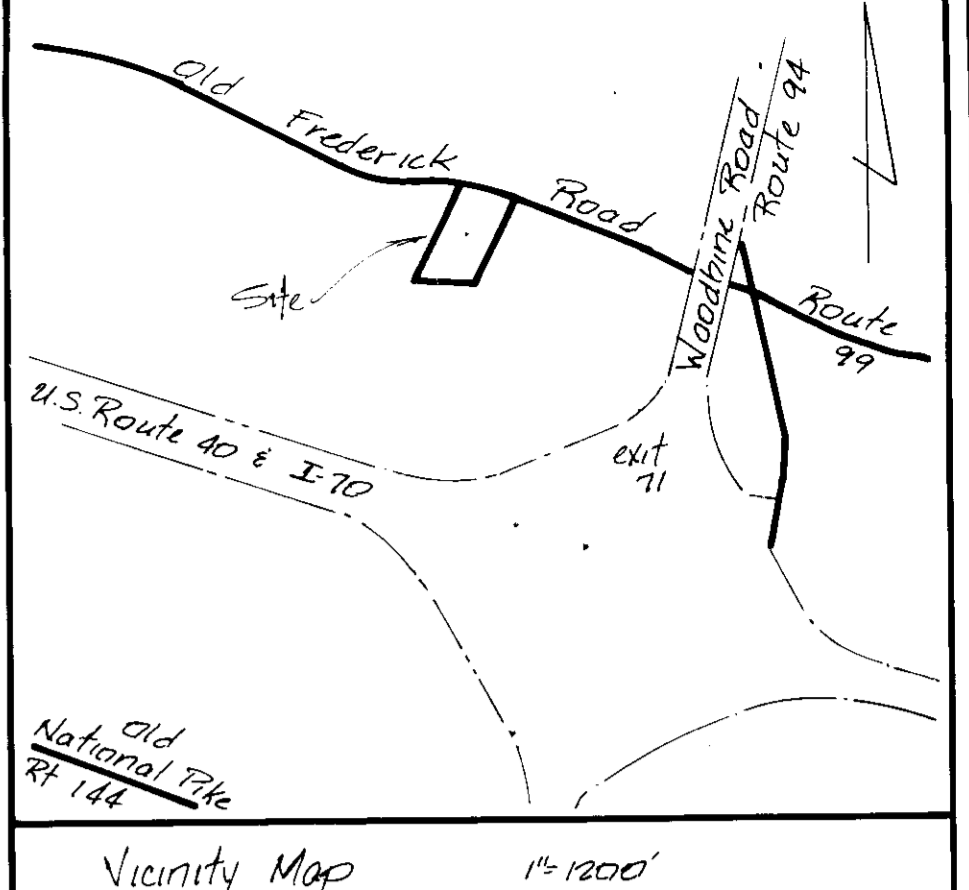
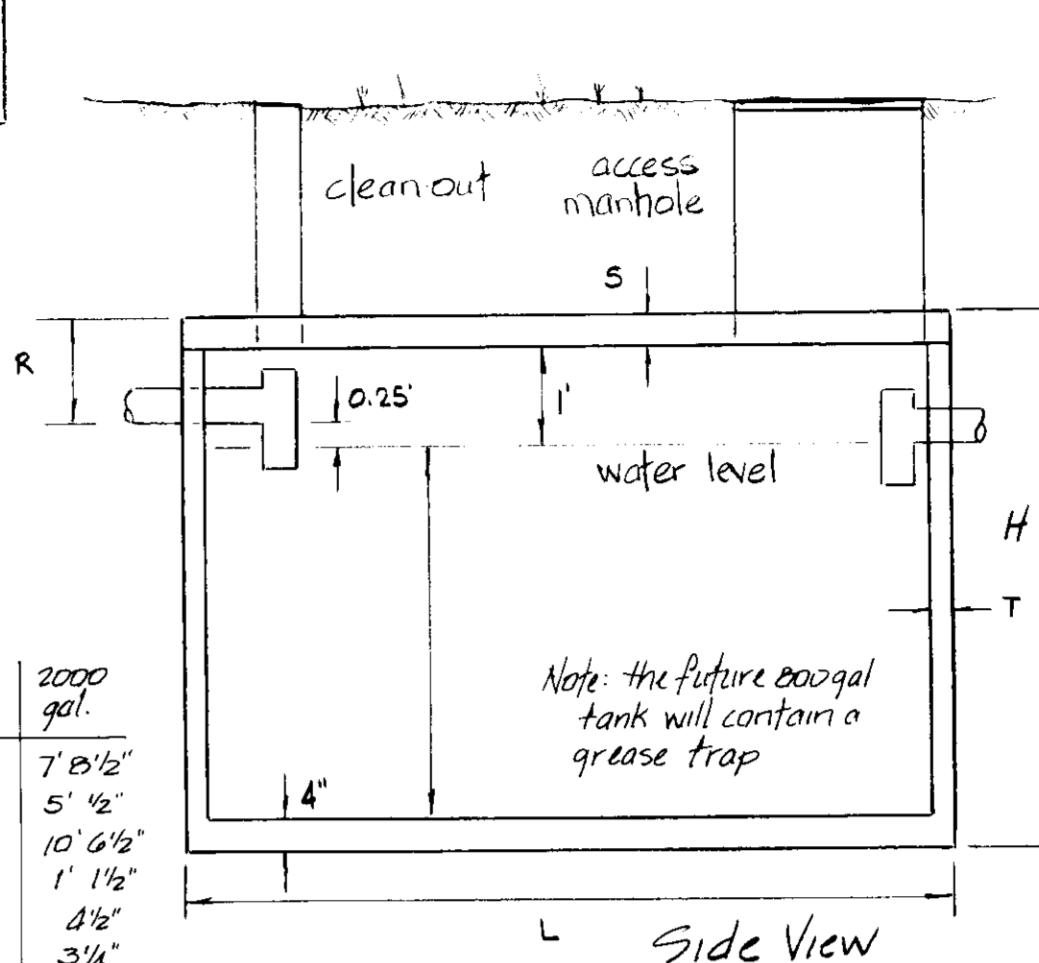
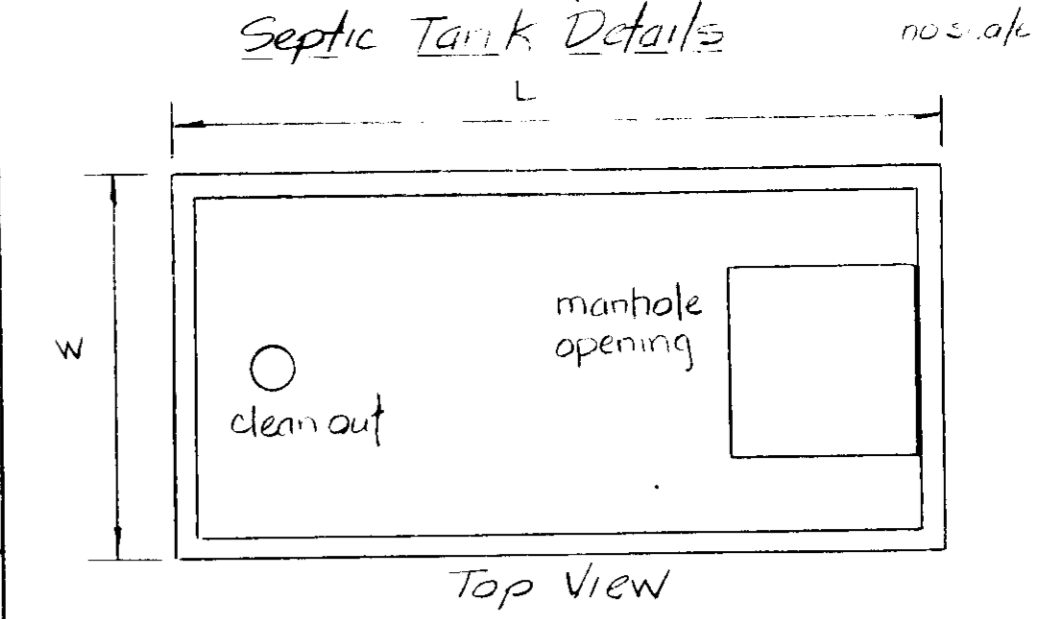
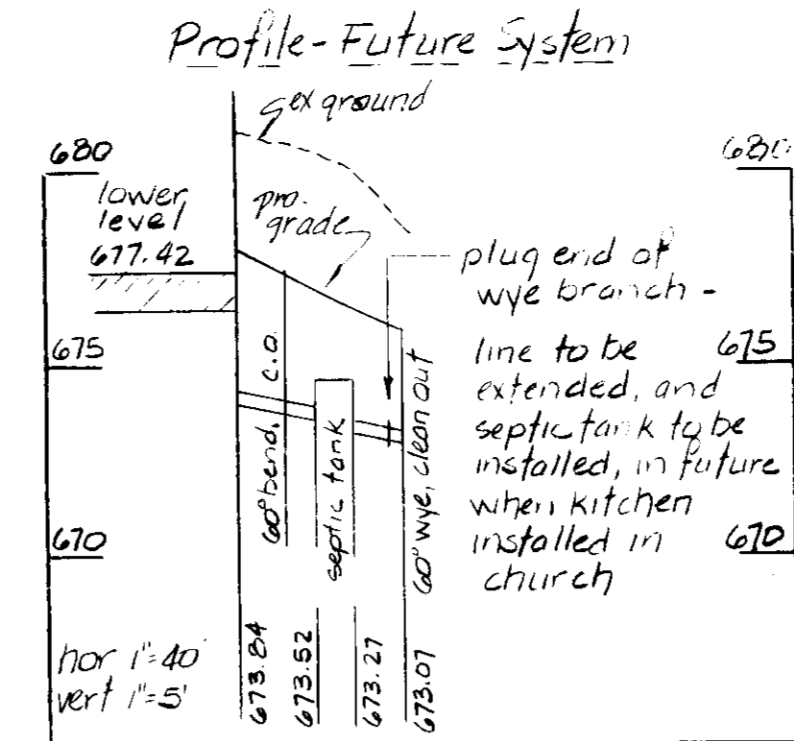


**Septic System Information**

seating capacity of sanctuary - 150  
seating capacity of dining area (future) - 150

Per. tests: A6 (4') 3 min A4 (12') 23 min  
B5 (3') 15 min Bm (7') 7 min  
C6 (4') 1 min Cm (7') 10 min  
D6 (3') 6 min Dm (6-6') 8 min

Septic System:  
2000 gallon septic tank, 1000 sq ft absorption area in tile fields (3 wide) separate 800 gal septic tank and grease trap for kitchen waste (future) (note: any future kitchen use would be sporadic)



**Landscape Planting Specifications**

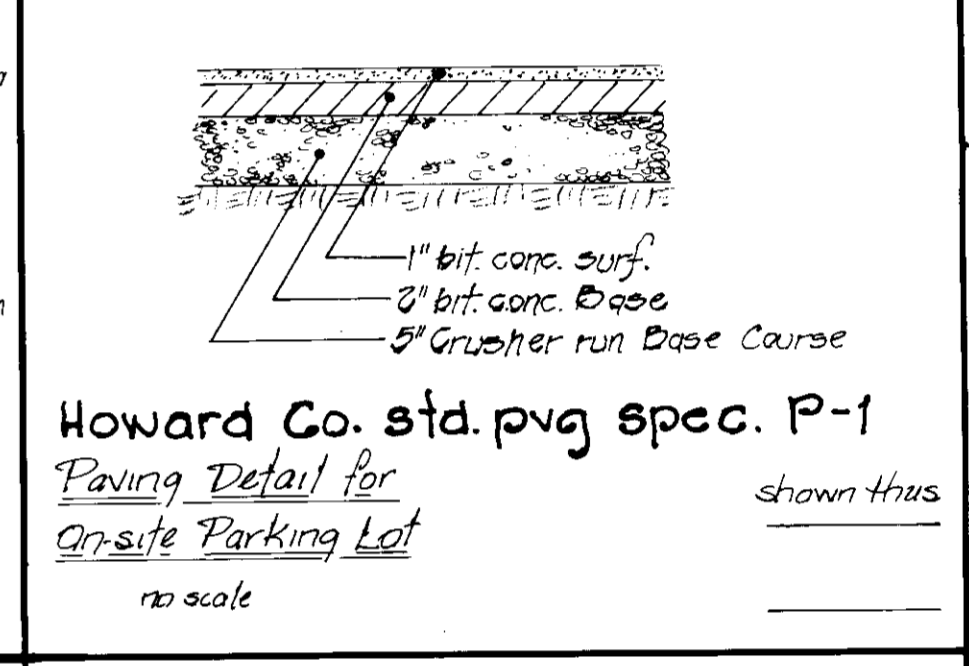
- Plant materials shall conform to American Standard for Nursery Stock sponsored by American Association of Nurserymen, Inc.
- Balled and burlapped plants shall be dug with solid balls of adequate size, the balls securely wrapped with burlap or canvas, tightly bound with rope or wire.
- Planting and backfill mix shall consist of 5 parts topsoil, 1 part humus and 1/2 part 1-20 commercial fertilizer.
- Plant holes shall be backfilled with soil mix specified above placed in layers around the root or ball. Each layer shall be carefully tamped to avoid injury to plants and roots. When balls are approximately two-thirds full, the hole shall be filled with water and the soil allowed to settle around the roots. After the water has been absorbed, the hole shall be filled with backfill mix and lightly tamped. Berms, 4" high, shall then be formed around the hole as shown on the planting detail.
- Trees shall be staked and wrapped according to the following: wrapping material shall be first quality, four inch bituminous impregnated tape, corrugated or crepe paper, specifically manufactured for tree wrapping and having qualities to resist insect infestation. Wire shall be 12-gauge annealed galvanized wire. Hose shall be 1/2 inch diameter, 2-ply reinforced hose. Stakes shall be sound, uniform 2x2" redwood or oak, length as shown on planting details.

**Suggested Trees**

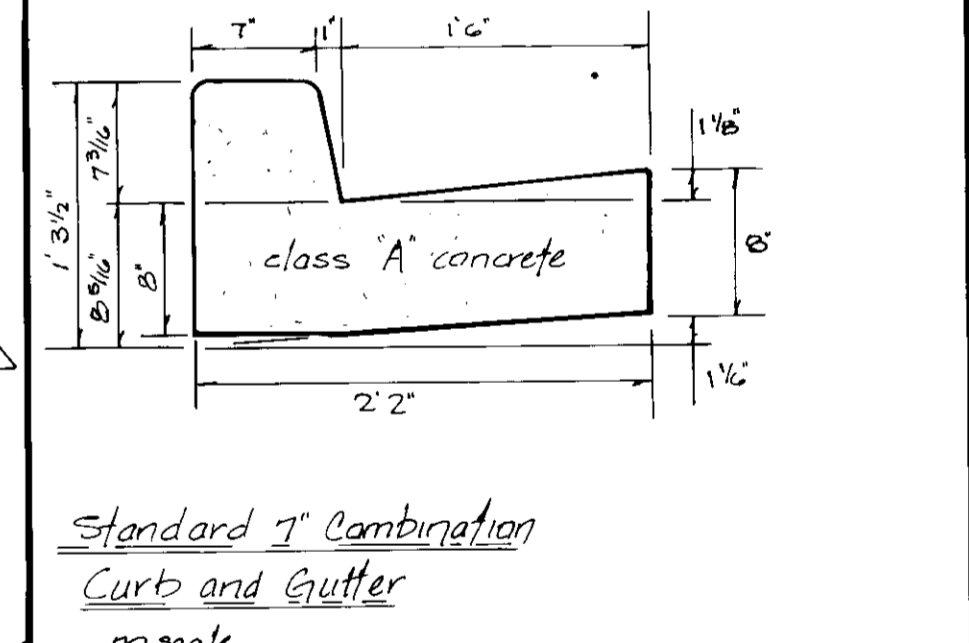
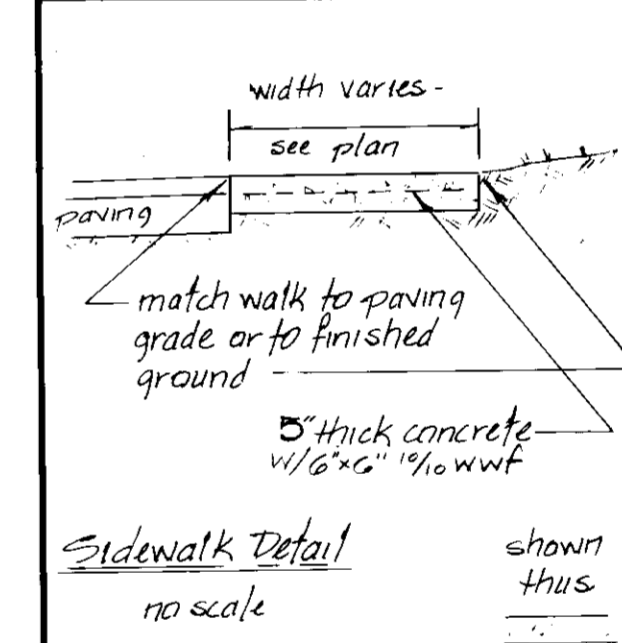
- Fraxinus Pennsylvania Lanceolata
- Marshall's Seedless Ash
- Liquidamba styraciflua Sweet Gum
- Tilia Cordata Greenspire
- Greenspire Little Leaf Linden

Note: all trees shall be 6" minimum height, and balled & burlapped.

Planting Season:  
Oct 15 - Dec 15  
April 1 - May 15

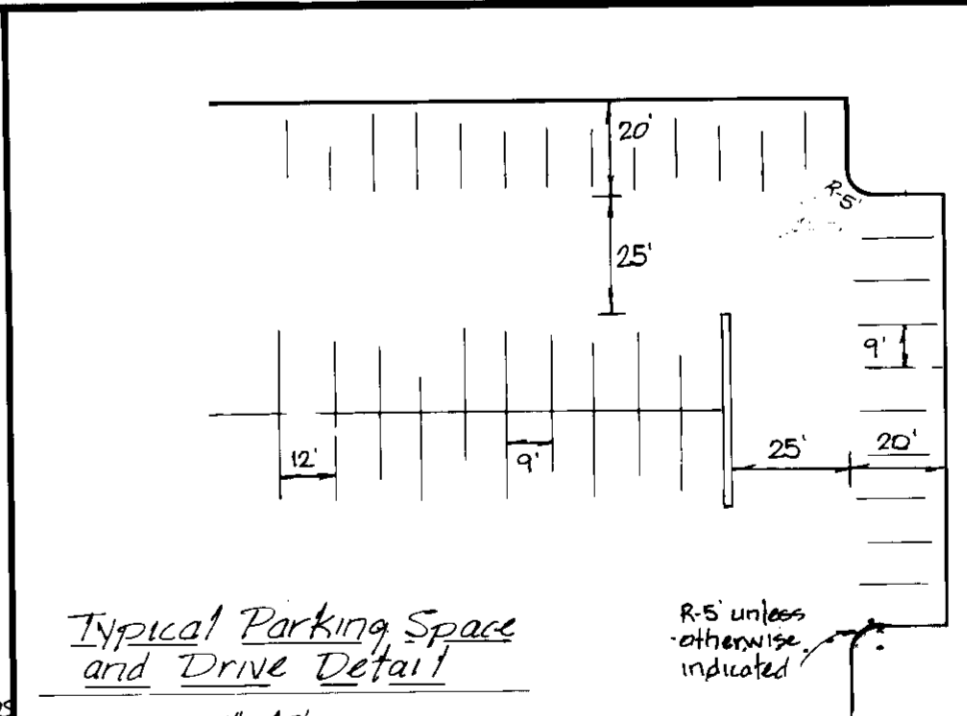


APPROVED  
DIVISION OF LAND DEVELOPMENT & PLANNING  
HOWARD COUNTY, MARYLAND  
DATE 5-6-83  
M/S / JFD



**General Notes**

- Site: tax map 2 block 23 parcel 92 4th election district Howard County, Maryland area - 5.00 ac Lot 1 Connecticut-Aspen, Inc. Property Platbook 4795
- Zoning: R - residential special exception BA case # 80-41
- Building: gross floor area upper level 2147 sq ft lower level 2842 sq ft total 4989 sq ft architect: Melvin A. Arbaugh - Architect, Inc. 102 East Main Street Westminster, Maryland 21157
- Parking: required - 50 spaces - 150 seats @ 1 space for each 3 seats provided - 50 spaces including 2 spaces for handi capped persons
- Topography: field run, based on Howard County control stations 291004 and 291005; topography furnished by Baender Associates, March 1982
- The contractor or developer shall contact the construction inspection/survey division of Howard County 24 hours in advance of commencement of work at 992-2417 or 992-2418.



**Connecticut - Aspen, Inc. Property, Lot 1**  
**Site Development Plan**  
for  
**Calvary Lutheran Church**  
on Old Frederick Road  
4th election district Howard County, Maryland

Owner: Calvary Lutheran Church  
7717 Woodbine Road  
Woodbine, Maryland 21797

Contact: Rev Gilroy

**REV. - 2/20/83 - CHANGED P-3 PAVING SECTION TO P-1 FOR ON SITE PARKING LOT.**

Charles J. Conroy, Jr. 1/30/83  
DATE

Approved: For private water and private sewerage systems  
Howard County Health Department

Joseph B. Jones 7-14-83  
County Health Officer P.S. Date

Approved: Howard County Office of Planning and Zoning

Thomas S. Harty 7-15-83  
Planning Director date

Approved: For Storm Drainage Systems and Public Roads  
Howard County Department of Public Works

Director 7-15-83  
date

Approved: For Storm Drainage Systems and Public Roads  
Howard County Department of Public Works

Director 7-15-83  
date

Approved: For Storm Drainage Systems and Public Roads  
Howard County Department of Public Works

Director 7-15-83  
date

Sheet 1 of 3  
**Grading Plan** SP-1

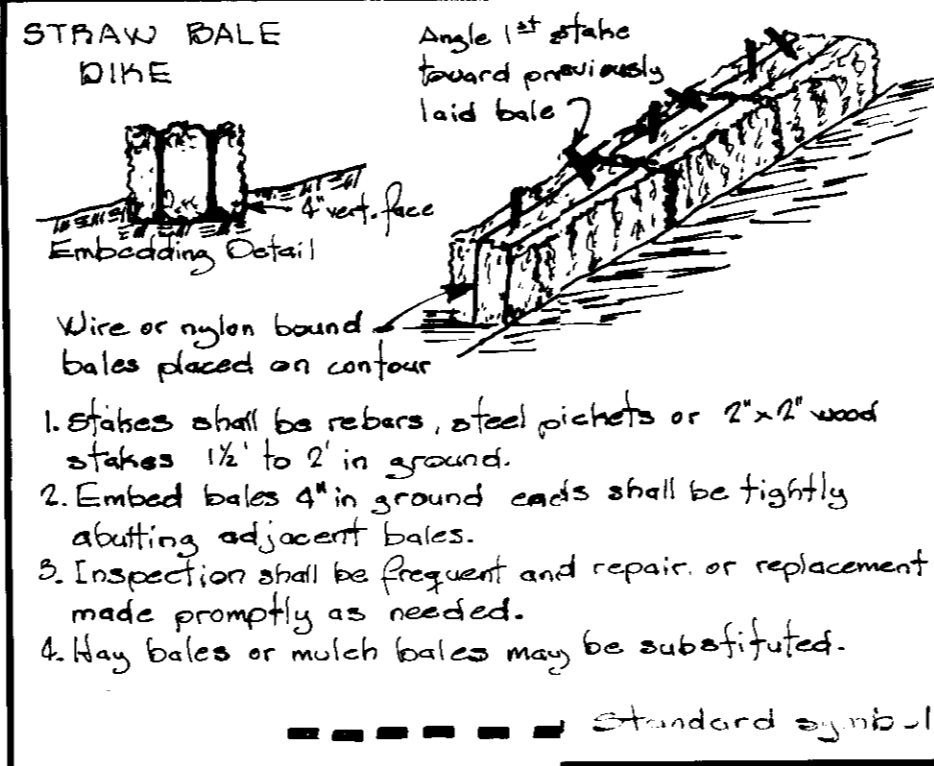
**EVANS, HAGAN & HOLDEFER, INC**  
SURVEYORS & CIVIL ENGINEERS  
111 John Street Westminister, Maryland 21157  
(301) 248-1740 816-2017

2015 Cedar Road Baltimore, Md 21284 668-1501  
654 Poplar Street Cantonville, Md 21013 228-3950  
105 Wilminton Street Easton, Md 21041 822-5433

Drawn by: [Signature]  
Checked by: [Signature]  
Date: 1-7-83 scale: as shown

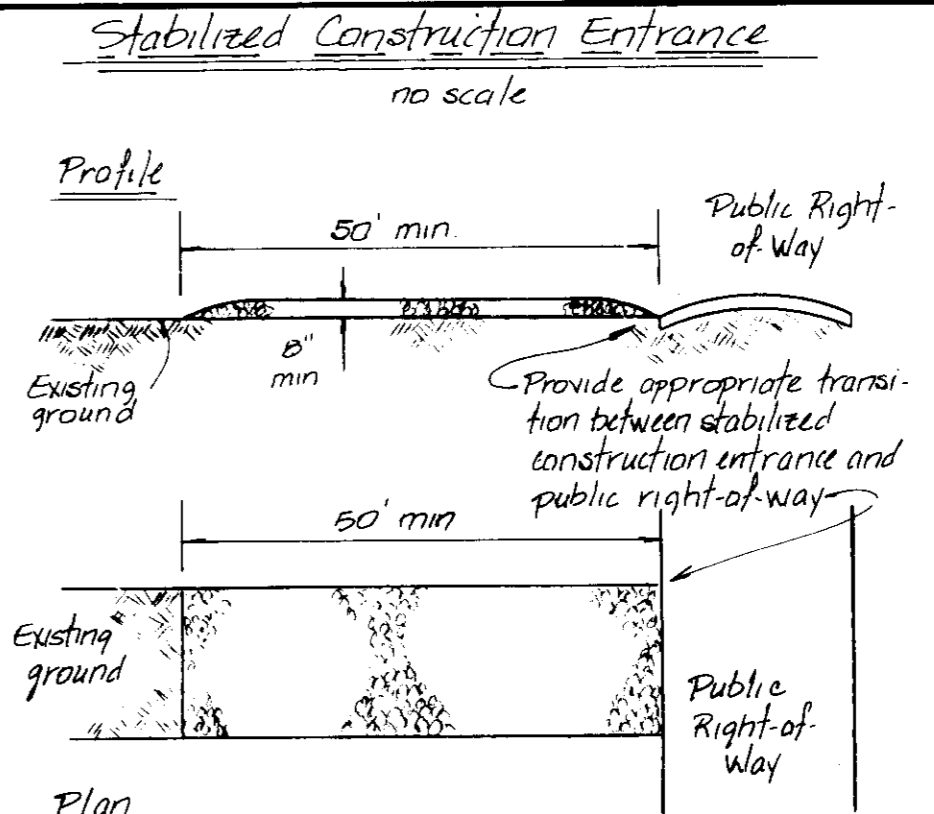
Plan  
1"=50'

Note: For storm water management analysis, the property lines form the boundary of the drainage area.

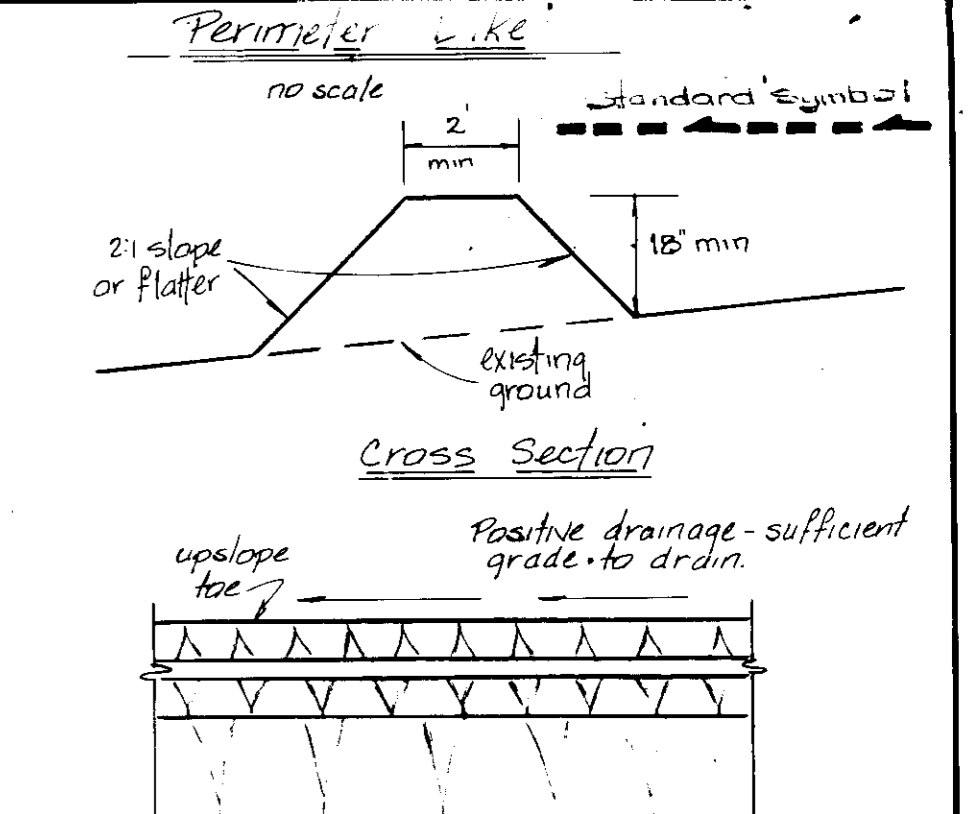


- ### Method of Soil Stabilization
1. Spread stockpiled topsoil over all disturbed areas.
  2. Spread seedbed preparation consisting of the following:
    - a. pulverized dolomitic limestone at the rate of 2000 lbs/acre
    - b. 0.20 super phosphate or its equivalent at a rate of 500 to 1000 lbs/acre
    - c. 10-10-10 fertilizer or its equivalent at a rate of 1000 lbs/acre
  3. Seed using Kentucky-31 tall fescue at a rate of 60 lbs/acre and firm up seed bed by cultipacker, roller, or light drag.
  4. Mulch immediately after seeding using unweathered small grain straw (preferably wheat) at a rate of 15 to 2 tons/acre.

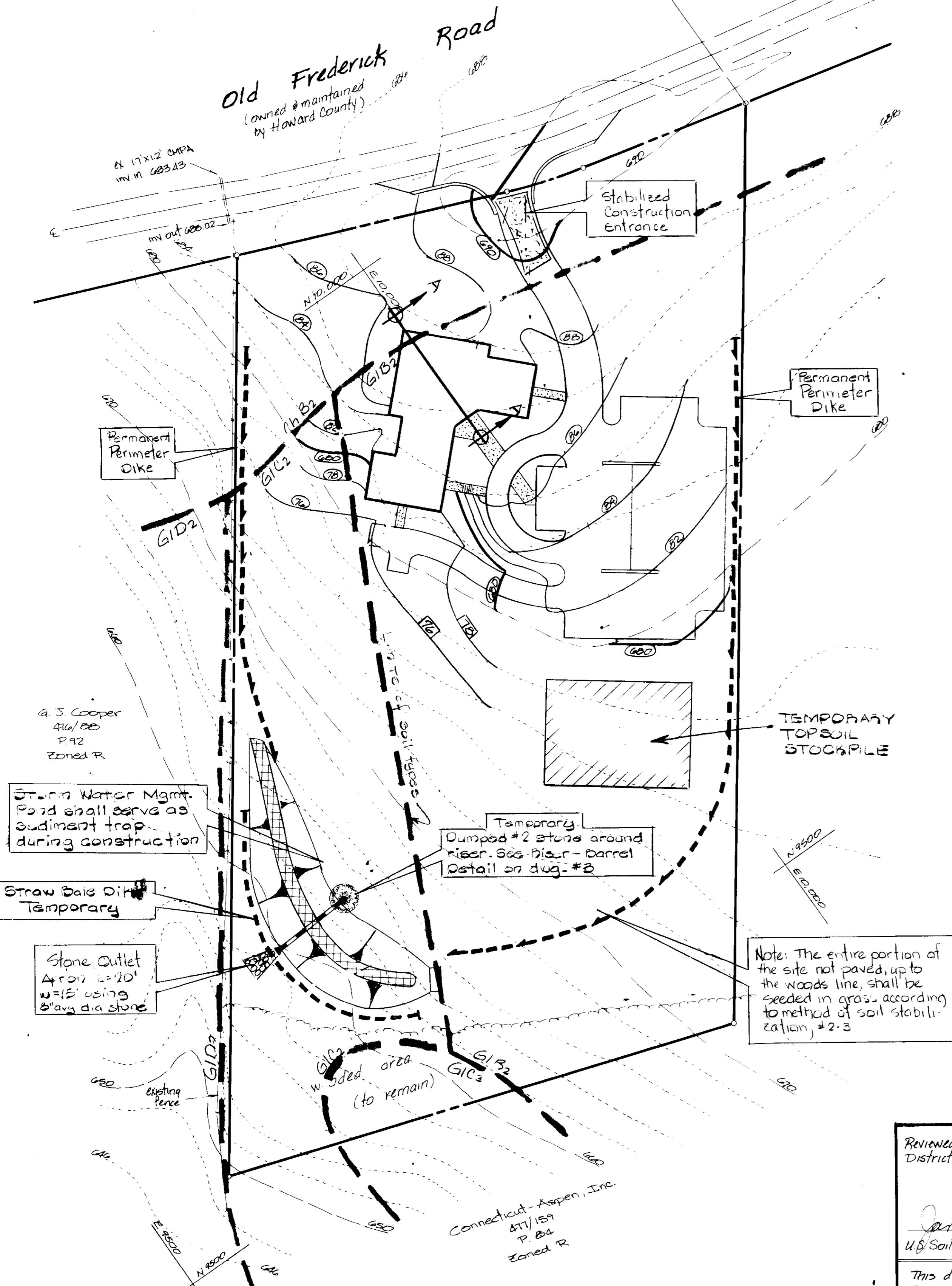
- ### SEQUENCE OF OPERATIONS
1. Install Strip Constr. Entrance (SCE) and Straw Bale Dike (SBD)
  2. Begin stripping of topsoil and excavation of cut-off trench. Use excavated mat'l immediately to construct perm. perimeter dikes. Stabilize dikes immediately.
  3. Begin excavation in pond area and placing of dam embankment.
  4. Install riser-barrel assembly complete with hood, anti-seep collar, 8" stub and concrete base. Place random dumped #2 stone around riser. See dwg. #3 for detail.
  5. Begin work on building, grading, parking areas and other site work items.
  6. Upon completion of sitework items immediately stabilize all remaining disturbed areas.
  7. Remove silt and sediment from pond, shape up inside of pond to planned grades. Stabilize immediately.
  8. Remove stone berm from riser assembly, remove straw bale dikes and stabilize constr. entrances. Stabilize the areas immediately.



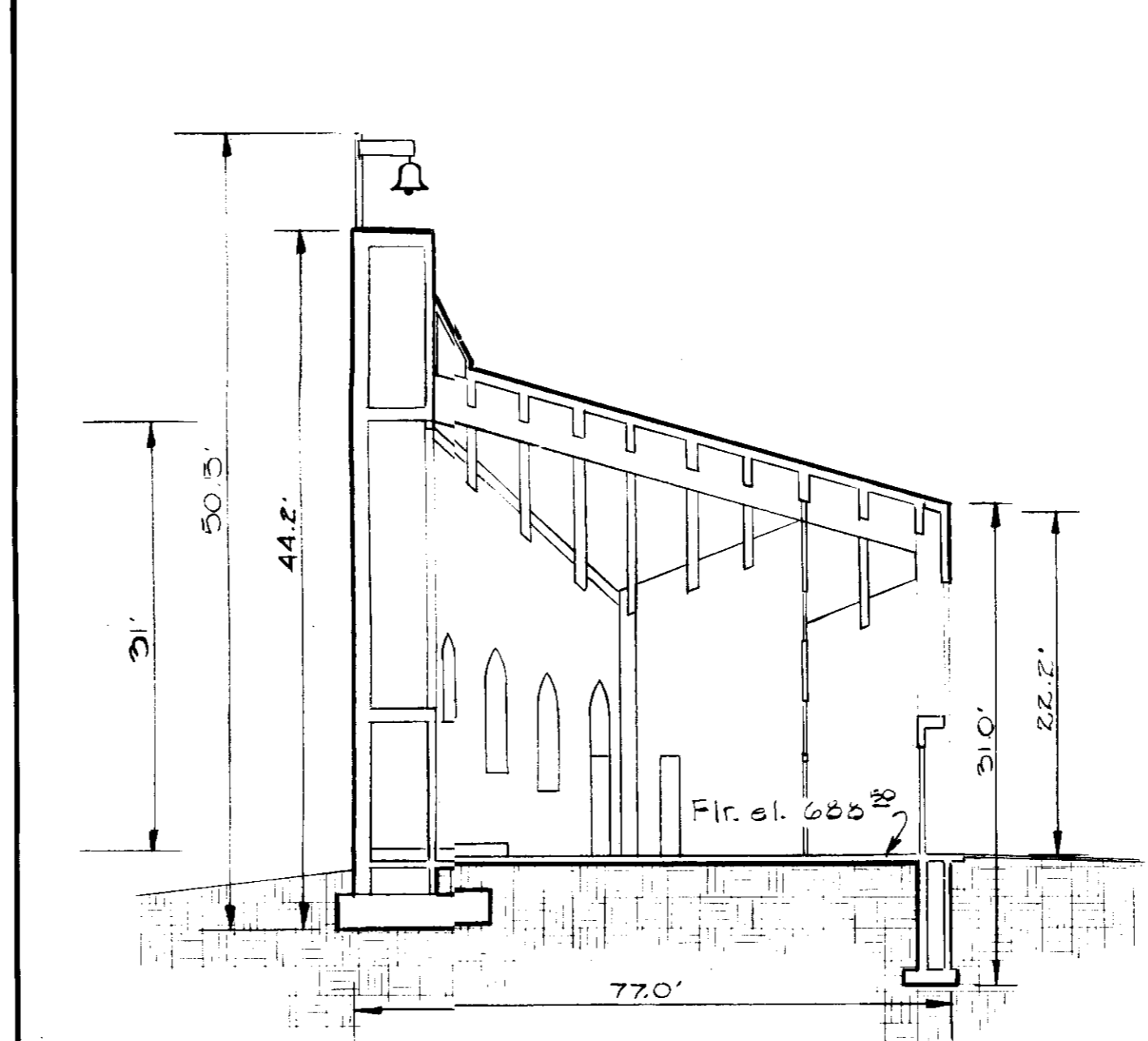
- ### Construction Specifications
1. Stone size - Use MSHA size No. 2 (2 1/2" to 1") or AASHTO designation M20, size No. 2 (2 1/2" to 1 1/2"). Use crushed stone.
  2. Length - as effective, but not less than 50 feet.
  3. Thickness - not less than eight (8) inches.
  4. Width - Not less than full width of all points of ingress and egress.
  5. Washing - when necessary, wheels shall be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required, it shall be done on an area stabilized with crushed stone which drains into an approved sediment trap or sediment basin. All sediment shall be prevented from entering any storm drain, ditch, or watercourse through use of sand bags, gravel, boards, or other approved methods.
  6. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or plowing 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.



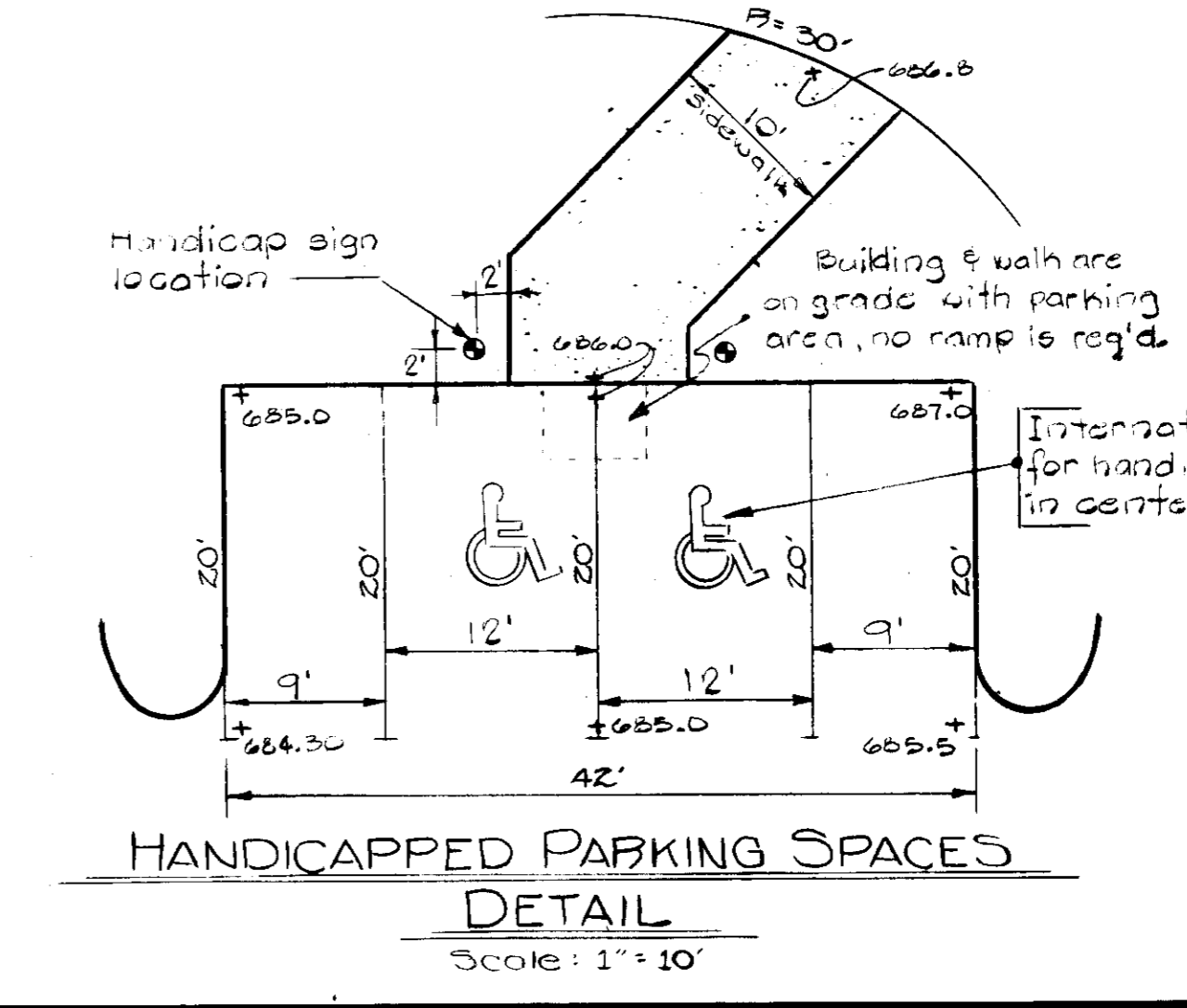
- ### Construction Specifications
1. All dikes shall be machine compacted.
  2. All perimeter dikes shall have positive drainage to an outlet.
  3. A. Diverted runoff from a protected or stabilized upland area shall outlet directly into an undisturbed stabilized area or into a level spreader or grade stabilization structure. B. Diverted runoff from disturbed or exposed upland shall be conveyed to a sediment trapping device such as sediment trap or a sediment basin or to an area protected by any of these practices.
  4. Stabilization, when required, shall be done in accordance with Standard Specifications for Eroded Waterway. The minimum area to be stabilized shall be the channel flow area.
  5. Periodic inspection and required maintenance shall be provided.
- PERIMETER DIKES shall be established immediately and left in place permanently.



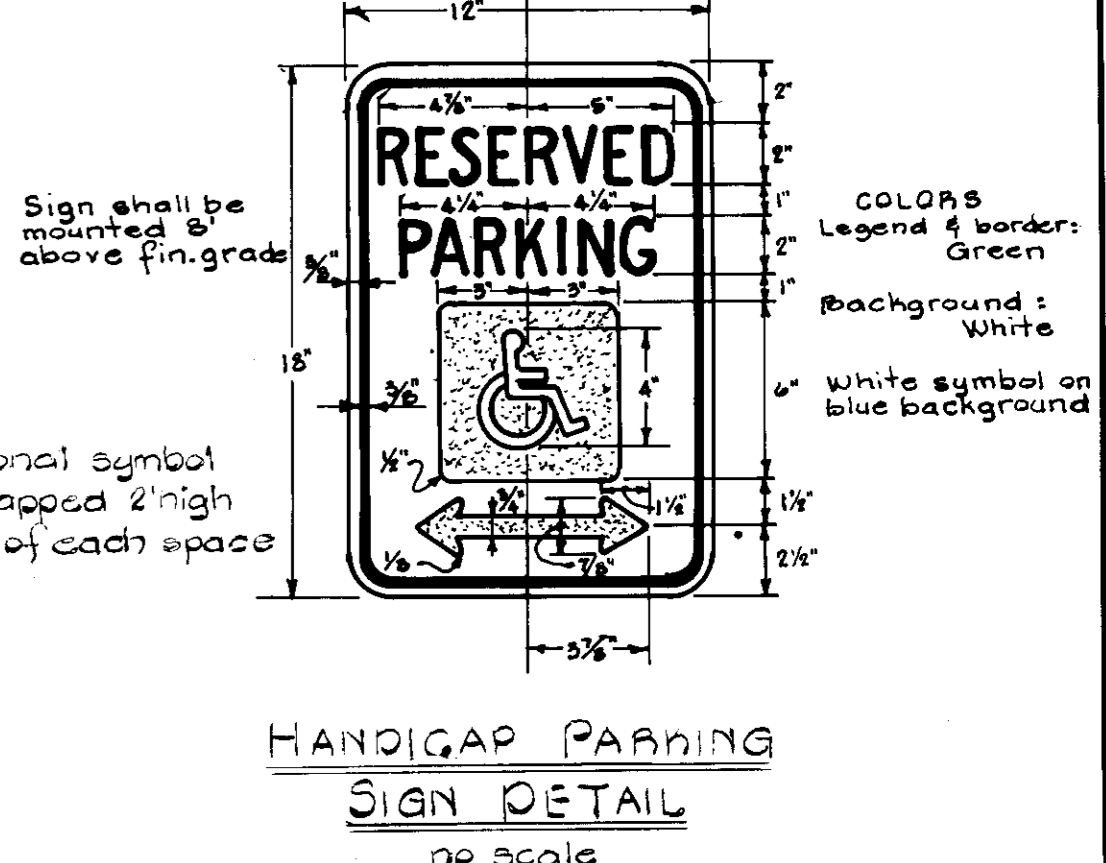
Plan  
1"=50'



Profile Tribu Building  
SECTION A-A  
Scale: Hor. 1"=20', Vert. 1"=10'



HANDICAPPED PARKING SPACES  
DETAIL  
Scale: 1"=10'



HANDICAPPED PARKING SIGN DETAIL  
no scale

APPROVED  
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION  
HOWARD COUNTY, MARYLAND  
DATE 5-6-83  
[Signature]

Connecticut-Aspen, Inc. Property Lot 1  
Sediment Control Plan  
for  
**Calvary Lutheran Church**  
on Old Frederick Road  
4th election district, Howard County, Maryland

Owner: Calvary Lutheran Church  
7117 Woodbine Road  
Woodbine, Maryland 21797

Reviewed for Howard Soil Conservation District and meets technical requirements

Jane M. Helmer 6/27/83  
US Soil Conservation District date

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Jim Thorne 6/27/83  
Howard Soil Conservation District date

Engineer

I certify that this plan of sediment control is designed with my personal knowledge of the site conditions and has been designed to the standards and specifications adopted by the Howard Soil Conservation District.

Donny P. Schumann April 11, 1983  
signature date

Developer

I certify that the plan of sediment control will be implemented to the fullest extent, and all structures will be installed to the design & specifications as spelled out in this plan. I also authorize periodic on-site evaluation by the Howard Soil Conservation District personnel and cooperating agencies.

William F. R. [Signature] 4/11/83  
signature date

Approved For private water and private sewerage systems  
Howard County Health Department

[Signature] 7-14-83  
County Health Officer date

Approved Howard County Office of Planning and Zoning

[Signature] 7-15-83  
Planning Director date

Approved [Signature] 7-15-83  
Acting Chief, Division of Land Development and Zoning Administration date

Approved For Storm Drainage Systems and Public Roads  
Howard County Department of Public Works

[Signature] 7-12-83  
Director date

[Signature] 7-12-83  
Chief, Bureau of Engineering date

Sheet 2 of 3  
Drainage and Sediment Control Plan SP-2

EVANS, HAGAN & HOLDEFER, INC  
SURVEYORS & CIVIL ENGINEERS  
111 John Street, Westminster, Maryland 21157  
(301) 268-1190 (301) 268-2071

2015 Cedar Road, Baltimore, Md. 21286 (410) 1501  
551 Poplar Street, Cambridge, Md. 21613 (202) 395-500  
150 Washington Street, Capitol Hill, Md. 20540 (301) 546-3333

[Signature] 1-7-83 scale as shown

Drawn by  
Checked by  
Date 2/7/83  
Drawn No. 2770B

# CONSTRUCTION SPECIFICATIONS & STANDARD DETAILS FOR SEDIMENT BASINS & STORM WATER MANAGEMENT PONDS

**GENERAL**

All construction materials, procedures, standards and specifications shall be in accordance with the "Storm Water Management Pond Design Manual" published by the Md. Assoc. of Soil Conservation Districts, June 1975 and any addenda thereto. These standards shall apply to permanent storm water management ponds and to temporary sediment basins.

Where storm water management ponds are being used as sediment basins during construction contractors attention is directed to those methods which are temporary and to the clean-out elevation. If and when sediment accumulates in the pond or basin up to the clean-out level it shall be removed and the pond shaped to planned dimensions. Removed sediment shall be placed in non-critical areas and spread out. This sediment must be placed in an area which is protected by sediment control devices. Contractors attention is directed to the "Sequence of Construction" and "Pond Conversion Notes" which specify procedures for converting the sediment basin to a permanent storm water management pond.

The embankment and emergency spillway areas shall be stabilized immediately upon completion of their grading see "Method of Soil Stabilization."

**SITE PREPARATION**

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

Areas to be covered by the pond or 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.

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.

**EARTH FILL**

**Material**

The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversize stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.

**Placement**

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of 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 sheepfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction can be obtained with the equipment used.

All embankments shall be compacted in layers not exceeding thickness specified above. Each layer shall be compacted to not less than 95% of maximum density value as determined by A.A.S.H.T.O. Method T-99.

**Cutoff Trench**

Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be as shown on the drawings, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

**STRUCTURAL BACKFILL**

Backfill material 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 tamper or other compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe unless there is a compacted fill of twenty-four inches or greater over the structure or pipe.

**PIPE CONDUITS**

All pipes shall be circular in cross section.

**A. 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 Specification M-190 Type A with watertight coupling bands. Any bituminous 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. Coupling bands, anti-seep collars, end sections, etc. must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness. 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 less than 9 and greater than 4.

Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings are commercially available: Nexon, Plasti-Cote, Blac-Klad, and Beth-Co-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

**Materials - (Aluminized Steel Pipe)** - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274-791 with watertight coupling bands or flanges.

**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. Watertight coupling bands or flanges 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.

**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.

**Laying pipe** - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.

Backfilling shall conform to structural backfill as shown above.

**Anti-vortex device and trash rack** - An anti-vortex device and trash rack shall be securely installed on top of the riser and shall be the concentric type as shown in the Appendix.

**Base** - The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers ten feet or less in height are: (1) A concrete base 18" thick with the riser imbedded 6" in the base. (2) A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2.5 feet of stone, gravel, or tamped earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

**EMERGENCY SPILLWAY**

Where an excavated emergency spillway is proposed it shall be entirely within existing ground and no portion may be on fill material. The spillway shall be an open channel of a minimum width of 6'. It shall be trapezoidal in shape with 3:1 side slopes. The approach channel and exit channel shall be indicated on plans by spot elevations and of the same cross-section as the control section. The control section shall be 20' long and shall be level at the elevation shown on the plan.

**ANTI-SEEP COLLARS**

All pipe conduits through the embankment shall have anti-seep collars installed on them. These collars shall be completely coated with bituminous material and shall be attached watertight to the barrel. If corrugated metal collars are used they shall be installed with the corrugations vertical. For additional information see detail on this sheet.

**STABILIZATION**

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching (if required) in accordance with the vegetative treatment specifications or as shown on the accompanying drawings.

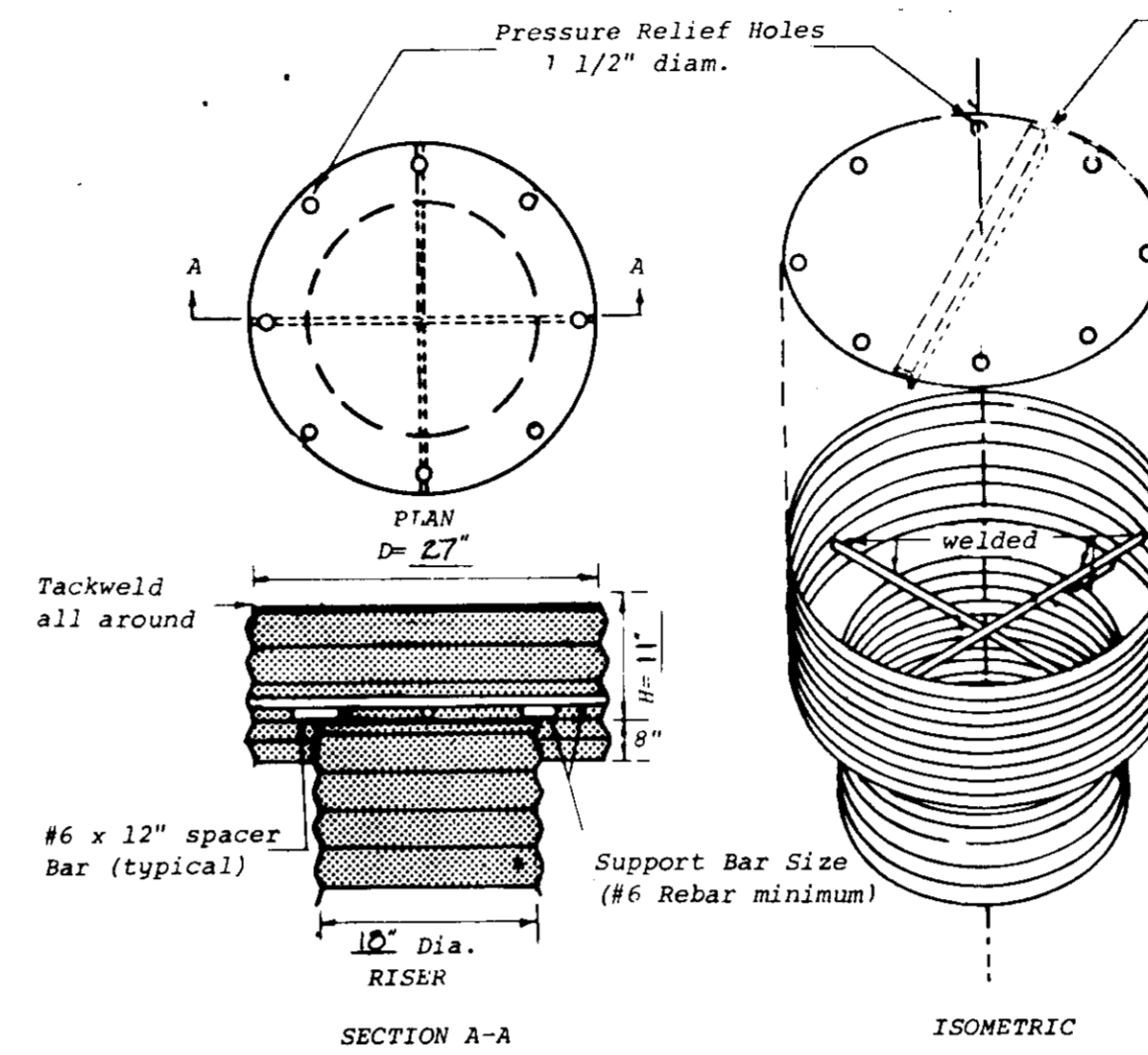
**EROSION AND SEDIMENT CONTROL**

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.

**Note:**

All pipe used for construction on the storm water management facility shall be 16 gage Aluminized Corrugated metal pipe. All fittings, bands, couplings etc. shall be watertight.

**APPROVED**  
**DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION**  
**HOWARD COUNTY, MARYLAND**  
DATE **5-6-83**

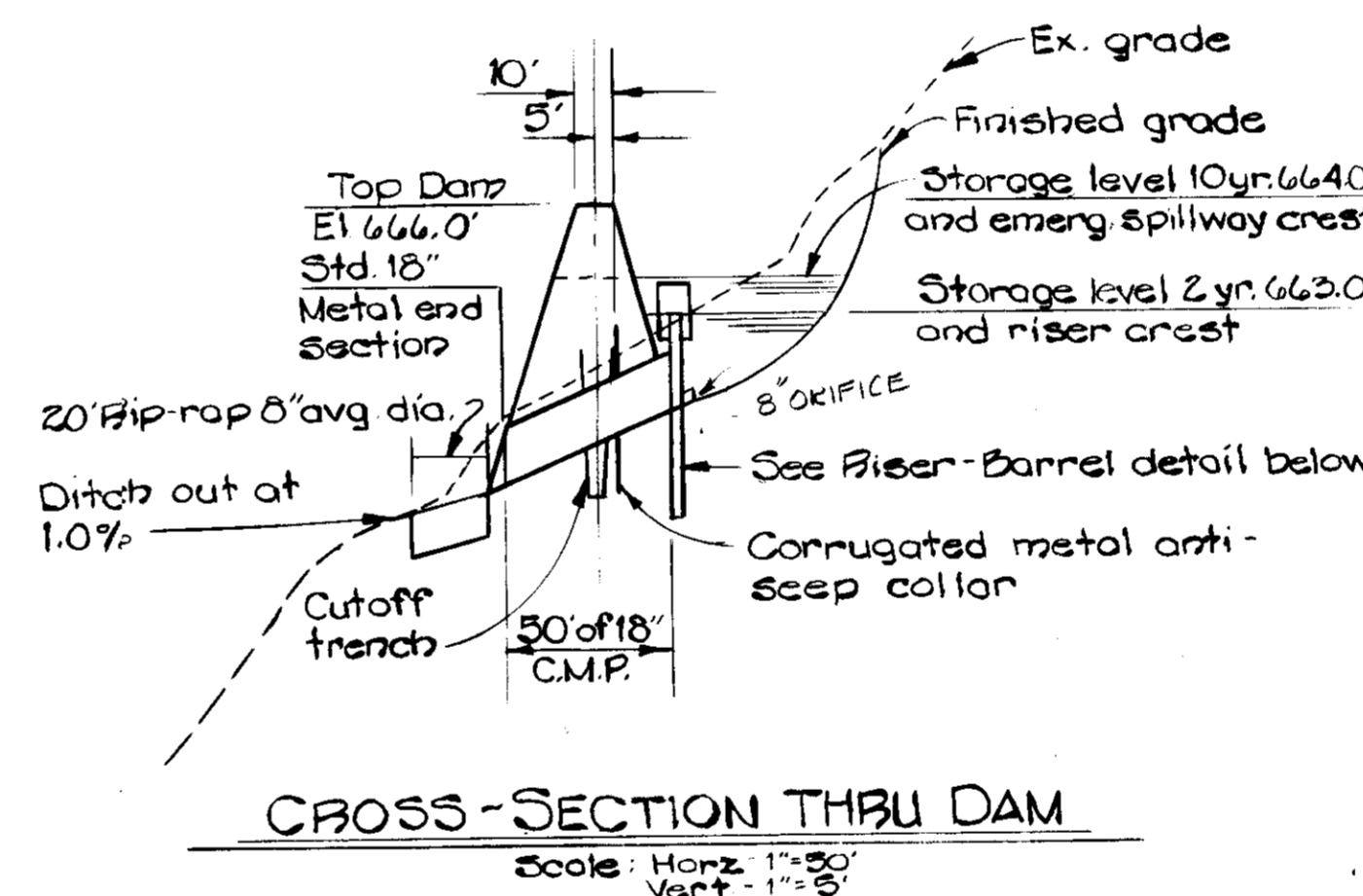


CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

Top is 1/6 gage corrugated metal or 1/8" steel plate. Pressure relief holes may be omitted, if ends of corrugations are left fully open when corrugated top is welded to cylinder.

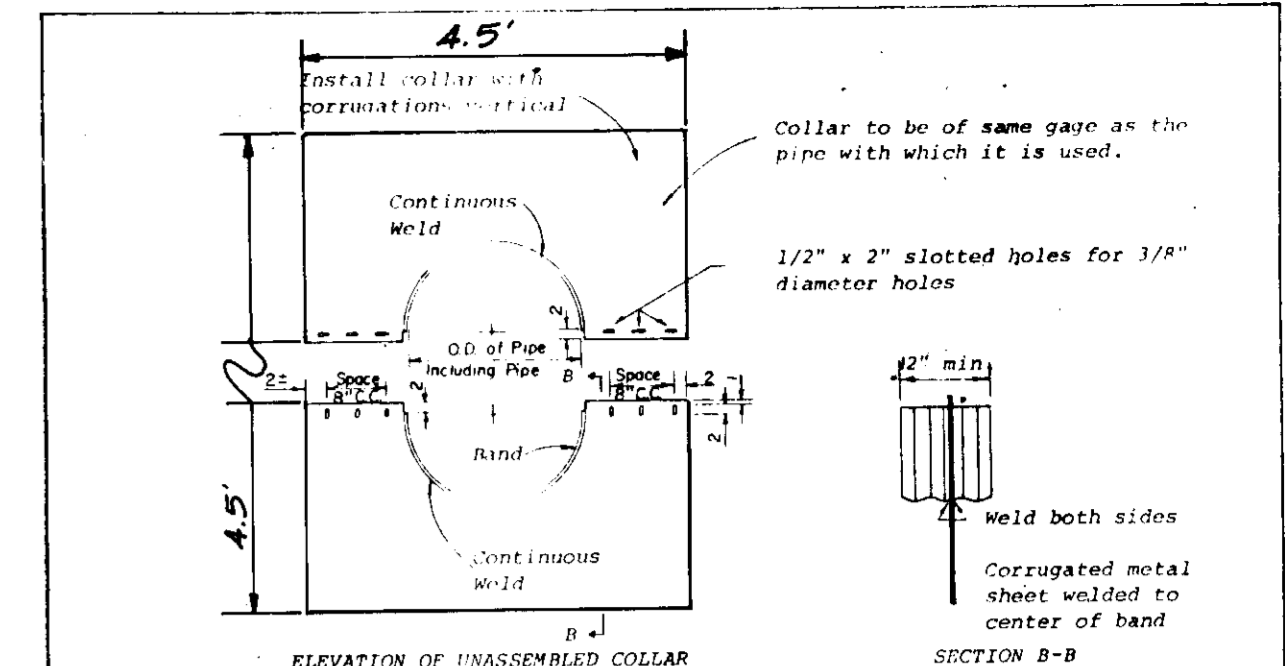
Cylinder is 1/6 gage corrugated metal pipe or fabricated from 1/8" steel plate.

- Notes:
- 1) The cylinder must be firmly fastened to the top of the riser.
  - 2) Support bars are welded to the top of the riser or attached by straps bolted to top of riser.



CROSS-SECTION THRU DAM

Scale: Horiz. 1"=30'  
Vert. 1"=5'



- NOTES FOR COLLARS:
1. All materials to be in accordance with construction and construction material specifications.
  2. When specified on the plans, coating of collars shall be in accordance with construction and construction material specifications.
  3. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
  4. The lap between the two half sections and between the pipe and connecting band shall be caulked with asphalt mastic at time of installation.
  5. Each collar shall be furnished with two 1/2" diameter rods with standard tank lugs for connecting collars to pipe.

DETAILS OF CORRUGATED METAL ANTI-SEEP COLLAR

Size and spacing of slotted openings shall be the same as shown for CW collar.

Use rods and lugs to clamp bands securely to pipe.



Metal collar to be welded to center of helical pipe band.

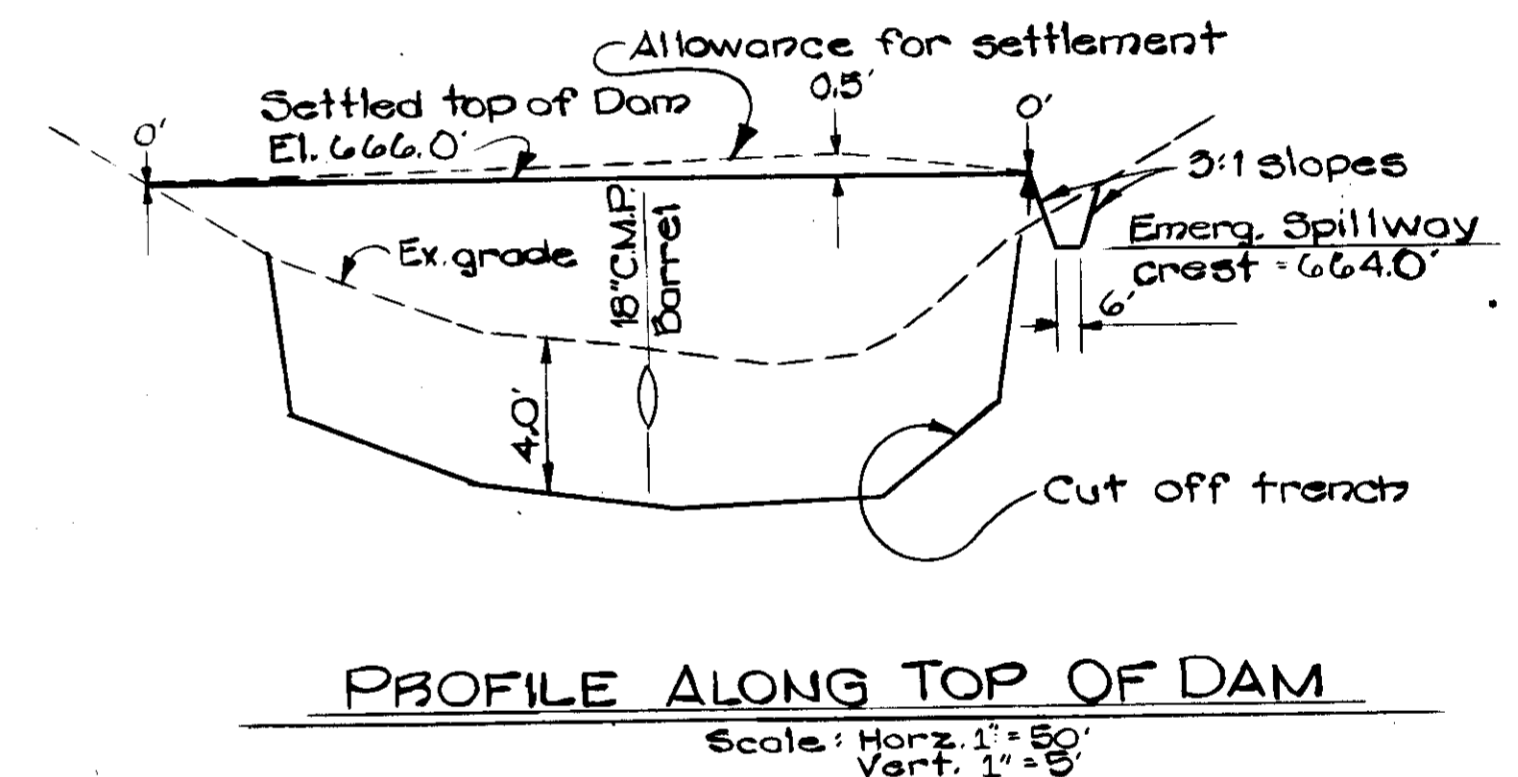
NOTE: For details of fabrication dimensions, minimum sizes, slotted holes, and notes, see detail above.

DETAILS OF HELICAL PIPE ANTI-SEEP COLLAR

- NOTE: Two other types of anti-seep collars are:
1. Corrugated metal, similar to upper detail, except shop welded to a short (4 ft.) section of the pipe and connected with connecting bands to the pipe.
  2. Concrete, six inches thick formed around the pipe with #3 rebar spaced 12" horizontally and vertically.

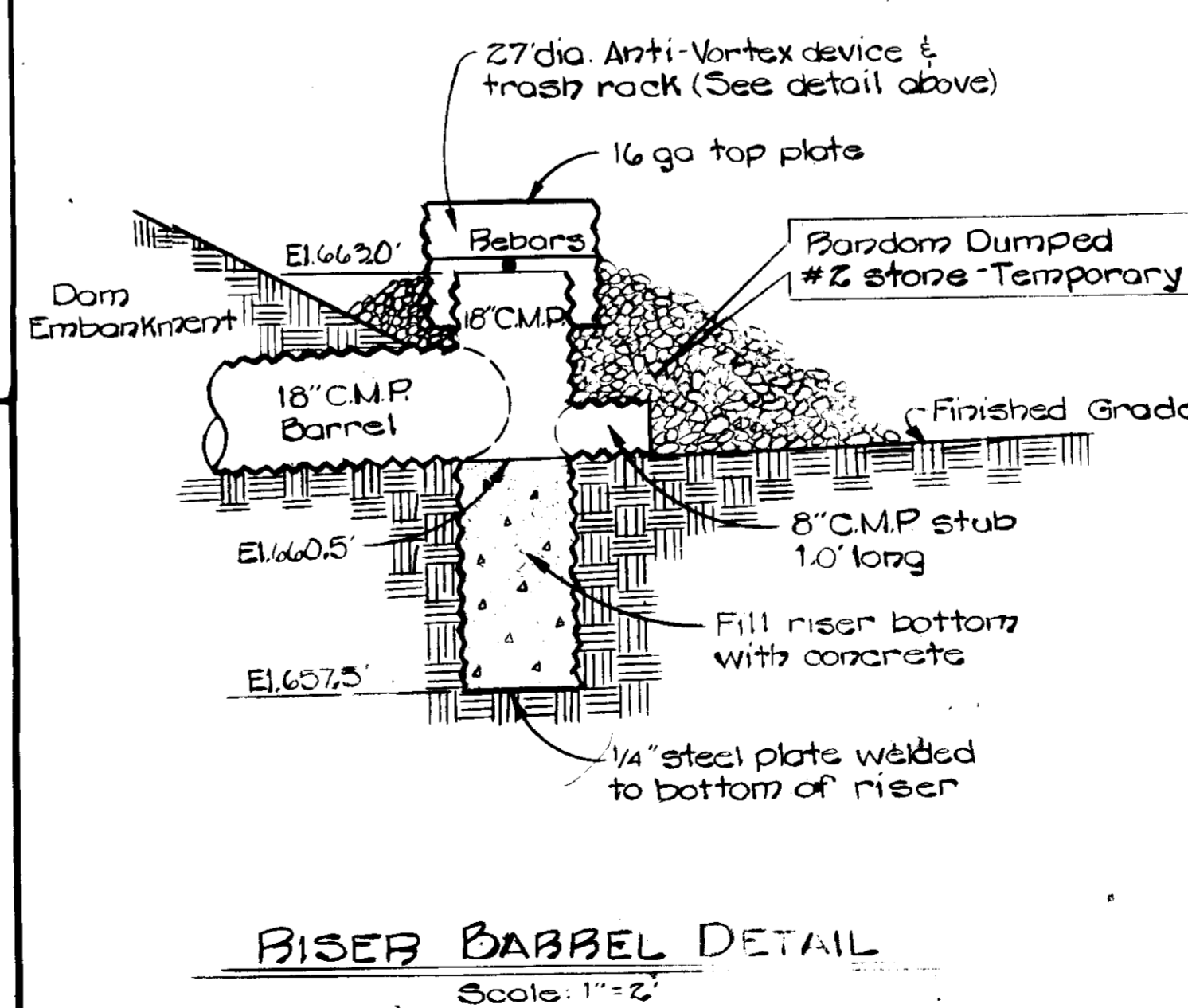
PARTIAL ELEVATION

Ref: Engr. Field Manual



PROFILE ALONG TOP OF DAM

Scale: Horiz. 1"=50'  
Vert. 1"=5'



RISER BARREL DETAIL

Scale: 1"=2'

Approved: For private water and private sewerage systems  
Howard Co. Health Dept.

*[Signature]* 7-14-83  
County Health Officer's Date

Approved: Howard County Office of Planning and Zoning

*[Signature]* 7-15-83  
Planning Director's Date

*[Signature]* 7-15-83  
Chief, Div of Land Development and Zoning Admin

Approved: For Storm Drainage systems and Public Ponds  
Howard County Department of Public Works

*[Signature]* 7-12-83  
Director's Date

*[Signature]* 7-12-83  
Chief, Bureau of Engineering

Connecticut - Aspen, Inc. Property, Lot 1

Site Development Plan for

Calvary Lutheran Church

on Old Frederick Road 4th election district Howard County, Maryland

Owner: Calvary Lutheran Church 777 Woodbine Road Woodbine, Maryland 21797  
Contact: Rev. Gilroy

Sheet 3 of 3  
Grading Plan

SP-3

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date April 11, 1983 scale As Shown

Drwg. No. 277BC

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