

FOR CONTINUATION SEE SHEET C-3

PUMP STATION SEE
GENERAL NOTE #30
2-1500 GAL. SEPTIC TANKS
SEE DETAIL SHT. C-12

- LEGEND**
- BITUMINOUS CURB (SEE DETAIL SHEET C-12)
 - DEPRESSIONED CURB
 - X-X-X- HOODEN SCREEN MALL (SEE DETAIL SHEET L-3)
 - CO CLEAN OUT
 - DS DOWN SPOUT / ROOF DRAIN

(TYPICAL ALONG EAST CURB)
SECTION A-A
NO SCALE

PROPOSED LIBRARY
FF= 616.00

SNM SUMMARY CHART SNMF DA. 12.5 AC.

STORM	ALLOWABLE PEAK DISCHARGE*	INFLOW	DISCHARGE	ELEVATION	STORAGE
1 YR.	2.9 CFS	8.0 CFS	0.3 CFS	599.5	0.427 AC*FT
2 YR.	6.7 CFS	11.7 CFS	1.6 CFS	599.7	0.467 AC*FT
10 YR.	23.0 CFS	24.4 CFS	16.9 CFS	600.6	0.664 AC*FT
100 YR.	45.1 CFS	38.9 CFS	36.3 CFS	601.0	0.764 AC*FT

*AT STUDY POINT (EX. 21" CULVERT ENTRANCE)



REVISION #1-BLDG (07/29/16)
MODIFIED EX. PUMPING STATIONS, ADDED NEW PUMPING STATIONS AND INSTALLED NEW 1.5" FORCE MAIN.
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, IVONA ROSTEK-ZARSKA, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21245, EXPIRATION DATE: JUNE 9, 2018.

AS BUILT CERTIFICATE

DATE _____

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF UTILITIES DATE _____

APPROVED: FOR PRIVATE ON SITE WATER AND PRIVATE ON SITE SEWERAGE SYSTEM, HOWARD COUNTY HEALTH DEPARTMENT

James M. Boyd 12/24/98
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James M. Boyd 11/3/99
DIRECTOR DATE

Cheryl Hamstra 1/6/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

MARYLAND ROUTE 97
MINOR ARTERIAL
A MARYLAND STATE HIGHWAY
(SEE SHEET C-13 FOR MSHA IMPROVEMENTS)

A. PROJECT 99011 SITE 1 Thu Dec 10 15:06:46 1999 RIEMER MUEGGE & ASSOCIATES, INC.

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8819 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9282

DATE _____ REVISION _____

DATE _____ NO. _____

11785 Beltsville Drive
Suite 1400
Calverton MD 20705
301.595.1000
301.595.0089 Fax

Grimm and Parker Architects

TAX MAP 14 ZONED RC-DEO
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

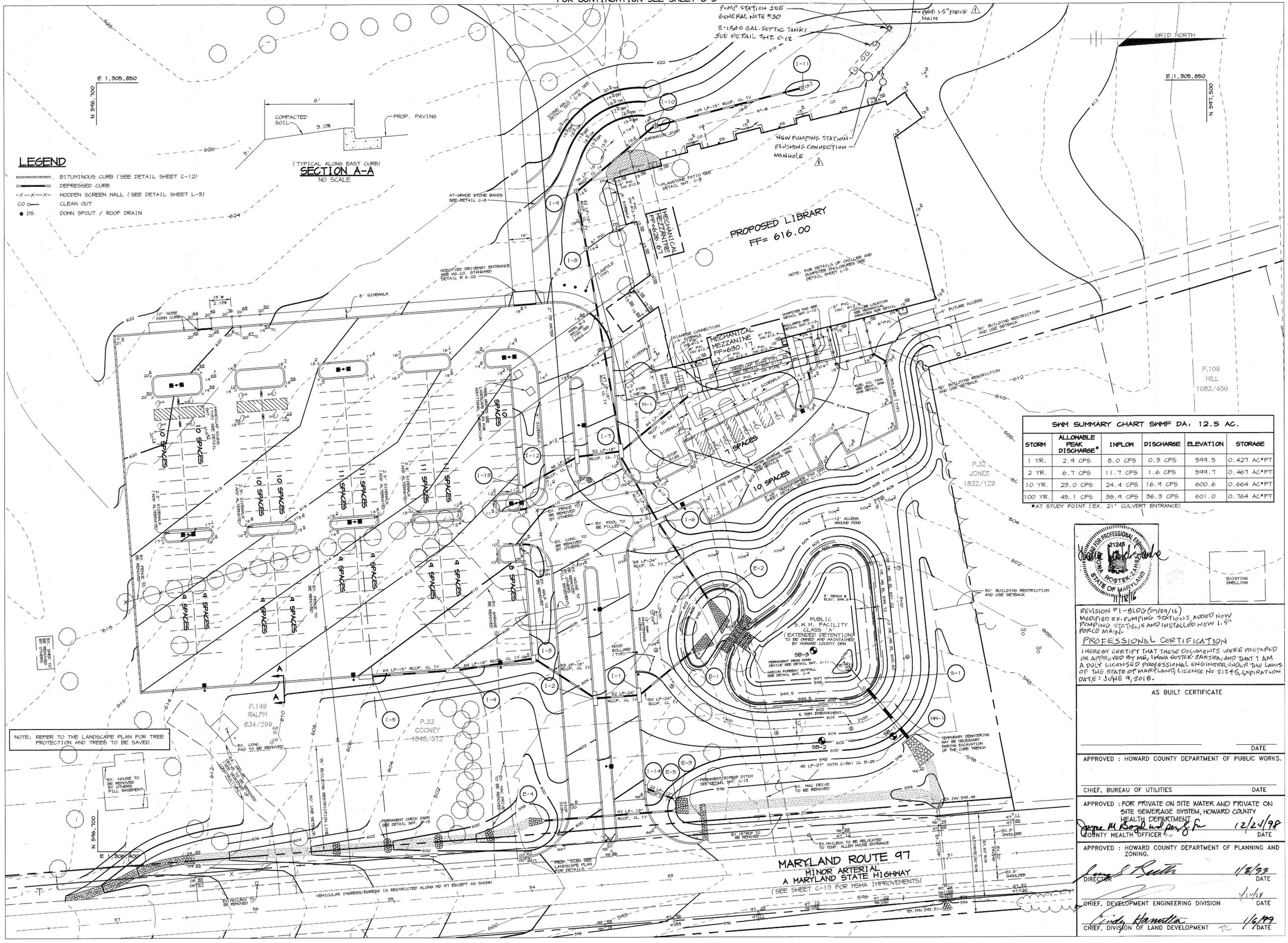
GLENWOOD LIBRARY

SITE DEVELOPMENT PLAN

OWNER / DEVELOPER
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
3450 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

DESIGNED BY: AAP/DCD
DRAWN BY: MAD
PROJECT NO: M\98011\ SITE1.DWG
DATE: DECEMBER 3, 1998
SCALE: 1"=30'
SHT. NO. C-2 OF 16

C-2



SEPTIC FIELD DATA

TRENCH LENGTH DESIGN
 DESIGN FLOW = MCF 1500 GPD
 ABSORPTION RATE = 1.60 GALLON/FT²/DAY
 ABSORPTION AREA = 1500 GPD / 1.60 GALLON/FT²/DAY = 938 FT²
 STANDARD TRENCH LENGTH = 938 FT² / 3 FT = 313 FT
 USING 3 TRENCHES 313/3 = 104.3 FT USE 105 FT EA.

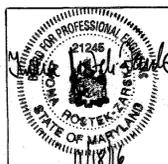
TANK VOLUME DESIGN
 V = 1125 GALLONS + 0.75 (0)
 V = 1125 GALLONS + 0.75 (1500)
 V = 2250 GALLONS USE 5000 GALLON IN 2 - 1500 GALLON TANKS

NOTE
 SEE SDP-02-064 FOR MORE DETAILS
 ABOUT EXISTING STRUCTURES.

EX. SEPTIC FIELD TO BE
 ABANDONED IN PLACE

EXISTING
 ALLEN HOUSE
 TO REMAIN
 F.F. ELEV. = 629.9

FOR CONTINUATION SEE SHEET C-2



REVISION #1 - BLOG(01/29/16)
 MODIFIED BY PUMPING STATIONS, ADDED NEW
 PUMPING STATIONS AND INSTALLED NEW 1.5"
 FORCE MAIN.
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED
 OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, THAT I AM
 A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS
 OF THE STATE OF MARYLAND, LICENSE NO. 21245
 EXPIRATION DATE: JUNE 9, 2018.

AS BUILT CERTIFICATE

DATE _____

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF UTILITIES DATE _____

APPROVED: FOR PRIVATE ON SITE WATER AND PRIVATE ON SITE
 SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH
 DEPARTMENT.
George M. Boyd 12/24/98
 COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND
 ZONING
James R. Smith 11/8/99
 DIRECTOR DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE _____

Charles Hamilton 1/6/99
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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DATE _____ REVISION _____

DATE NO. _____

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 Calverton MD 20705
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Grimm and Parker Architects

TAX MAP 14 ZONED RC-DEO
 4th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

GLENWOOD LIBRARY
 SITE DEVELOPMENT PLAN

OWNER / DEVELOPER
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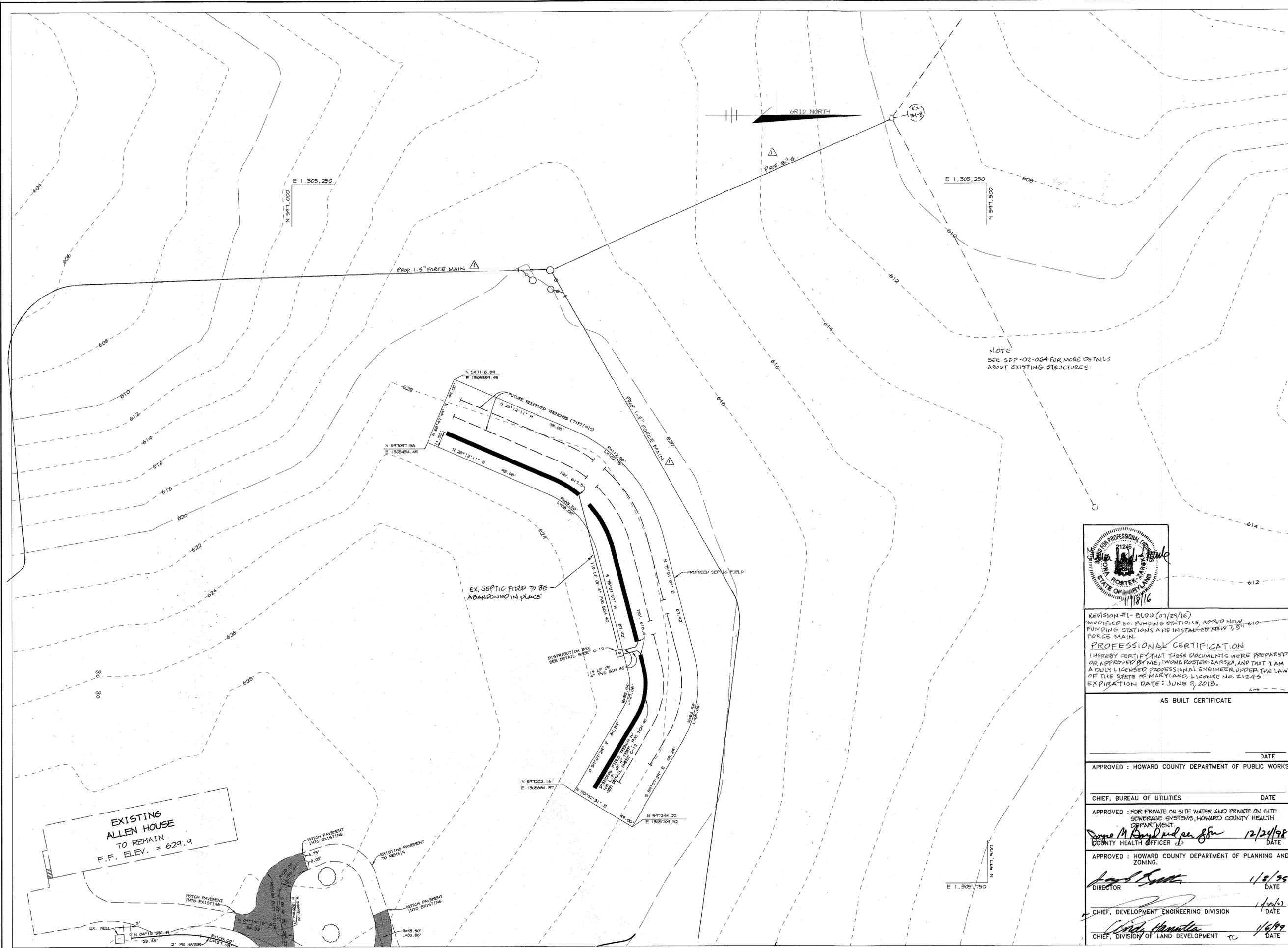
DESIGNED BY: AAP
 DRAWN BY: MAD
 PROJECT NO: M-98011\ SITE2.DWG
 DATE: DECEMBER 3, 1998
 SCALE: AS SHOWN
 SHT. NO. C-3 OF 16

C-3

SDP-99-21

M:\PROJECTS\9801\SITE2 Thu Dec 10 16:15:35 1998 RIEMER MUEGGE & ASSOCIATES, INC.

M:\PROJECT\98011\SITE9 Thu Dec 10 16:33:17 1998 RIEMER MUEGGE & ASSOCIATES, INC.



NOTE
SEE SDP-02-064 FOR MORE DETAILS
ABOUT EXISTING STRUCTURES.



REVISION #1 - BLDG (07/29/16)
MODIFIED EX. PUMPING STATIONS, ADDED NEW
PUMPING STATIONS AND INSTALLED NEW 1.5" 610
FORCE MAIN.
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED
OR APPROVED BY ME, IWONA ROSTEK-ZARSKA, AND THAT I AM
A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS
OF THE STATE OF MARYLAND, LICENSE NO. 21245
EXPIRATION DATE: JUNE 9, 2018.

AS BUILT CERTIFICATE

DATE _____

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF UTILITIES DATE _____

APPROVED : FOR PRIVATE ON SITE WATER AND PRIVATE ON SITE
SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH
DEPARTMENT
James M. Boyd and *per. for* 12/29/98 DATE
COUNTY HEALTH OFFICER

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND
ZONING.
David Smith 1/8/35 DATE
DIRECTOR

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 1/2/03
Cindy Hamilton 1/6/99 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT

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8818 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9382

DATE _____ REVISION _____

DATE NO. _____

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301.595.1000
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Grimm and Parker Architects

TAX MAP 14 ZONED RC-DEO
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AREA

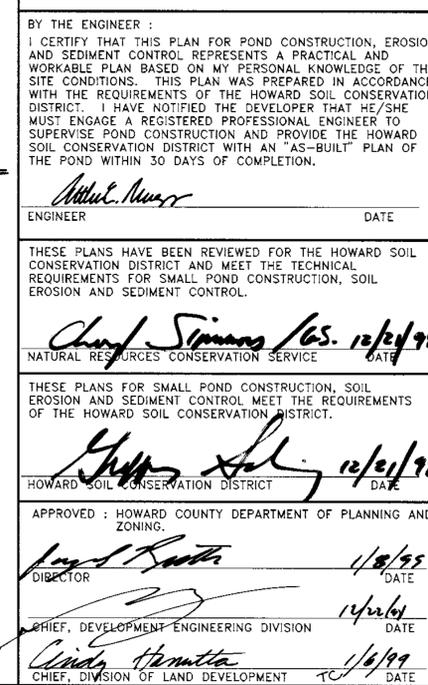
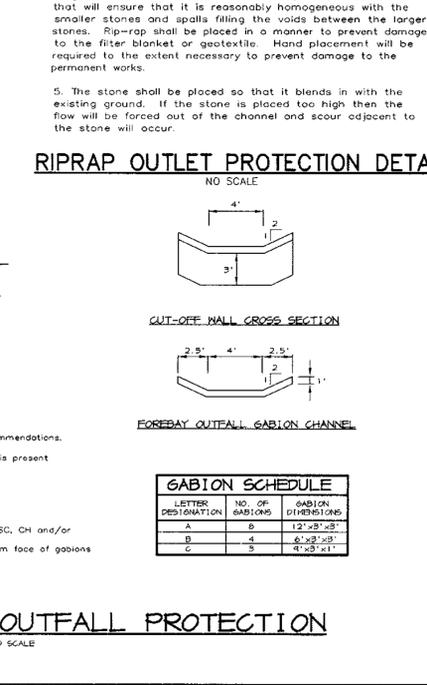
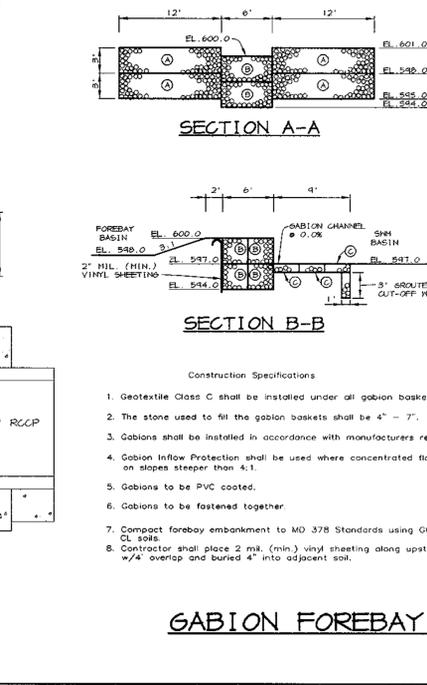
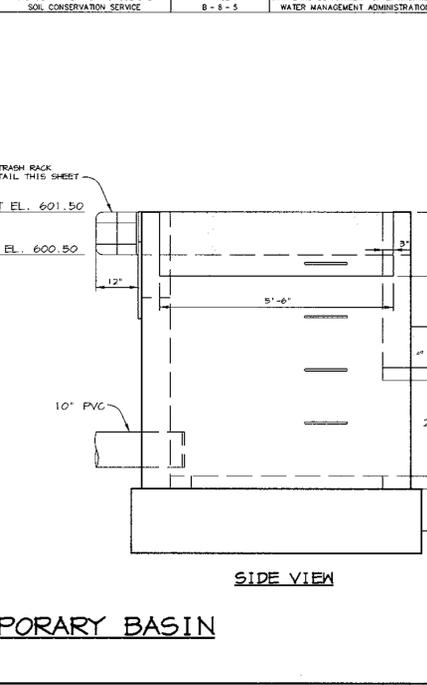
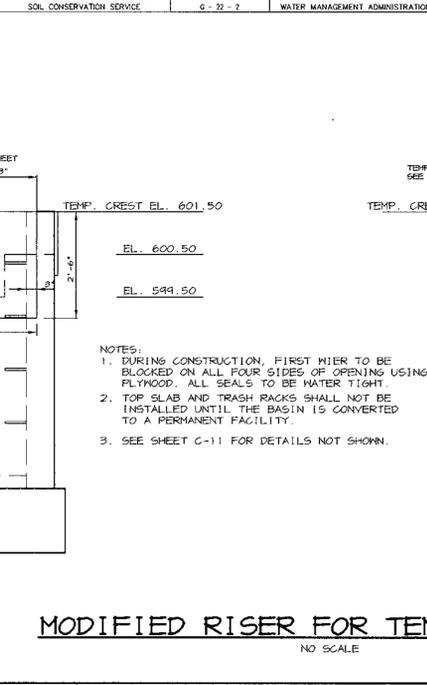
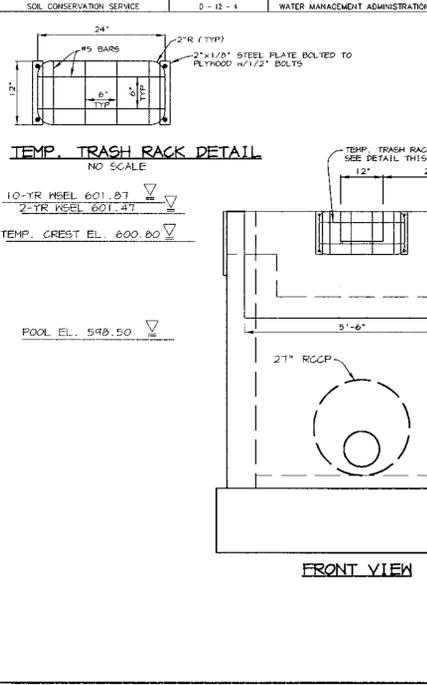
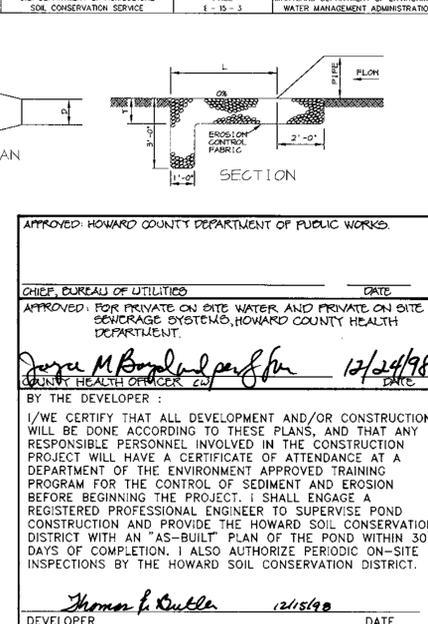
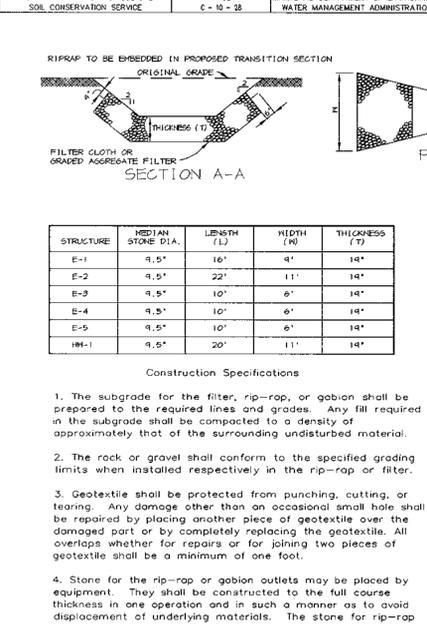
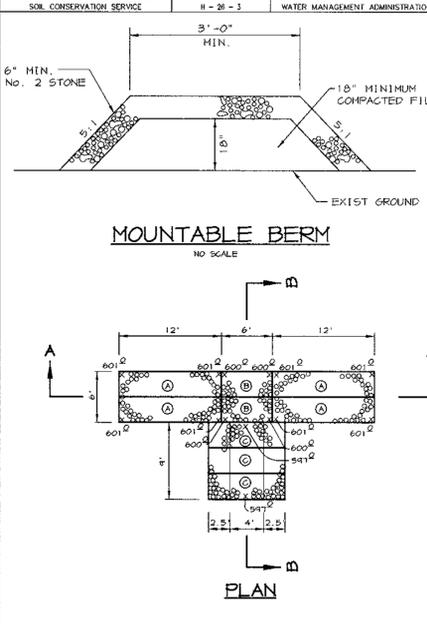
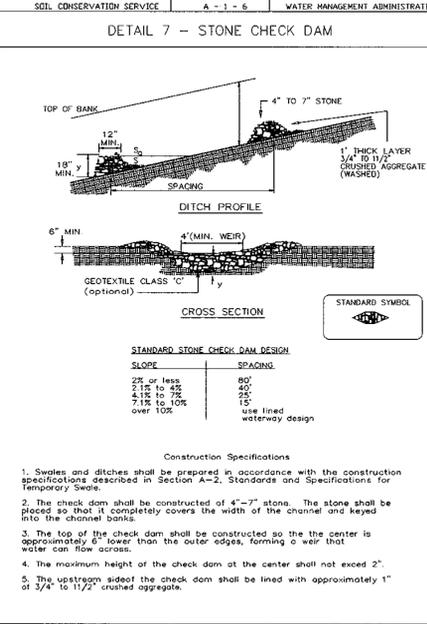
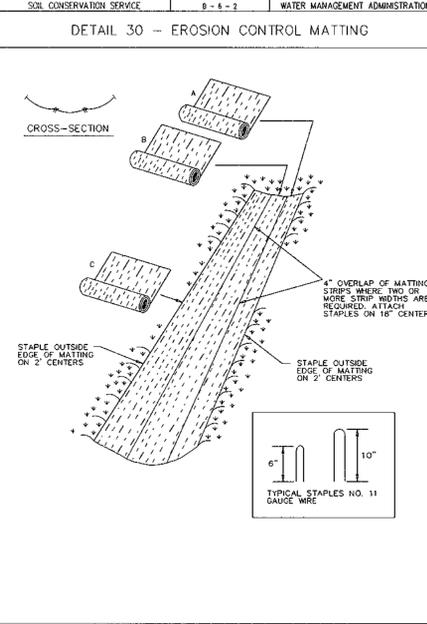
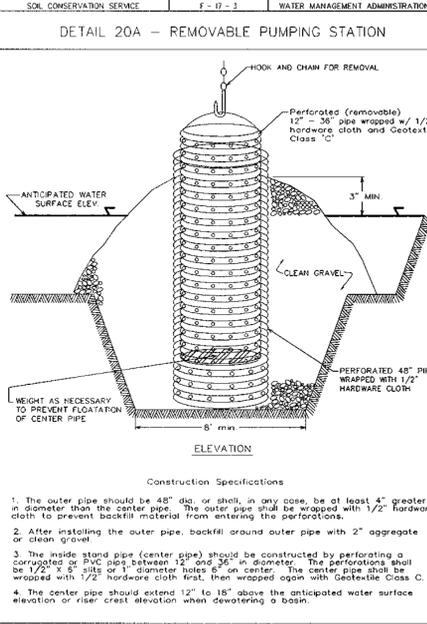
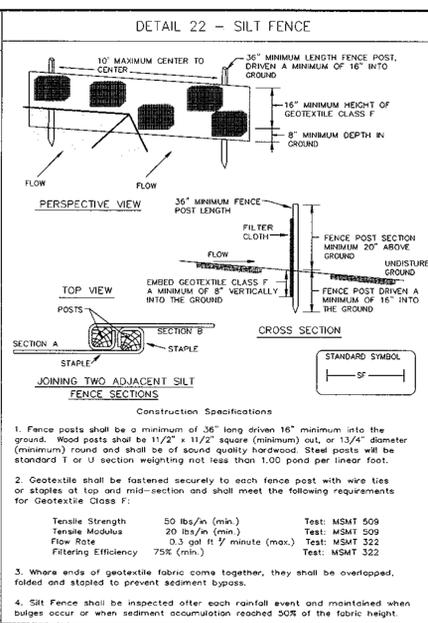
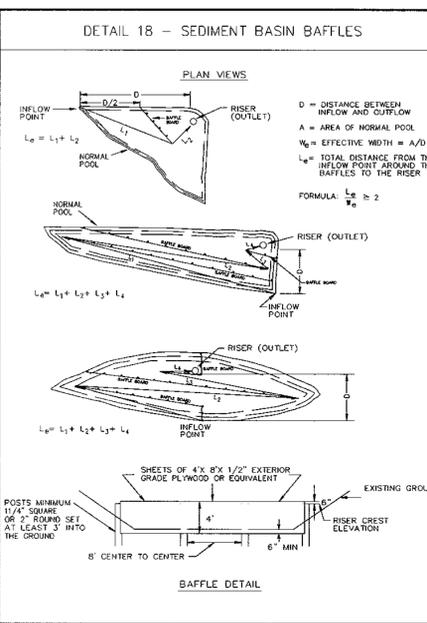
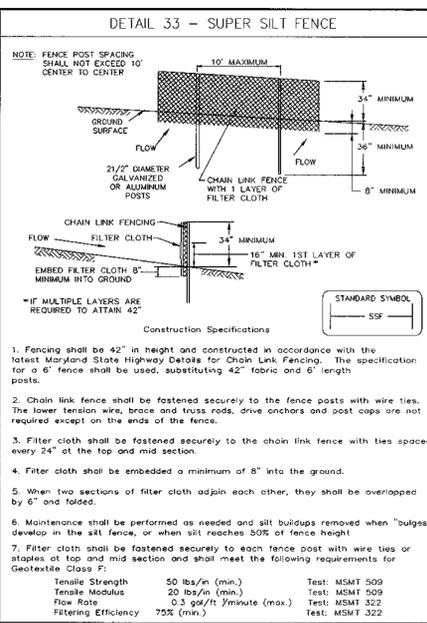
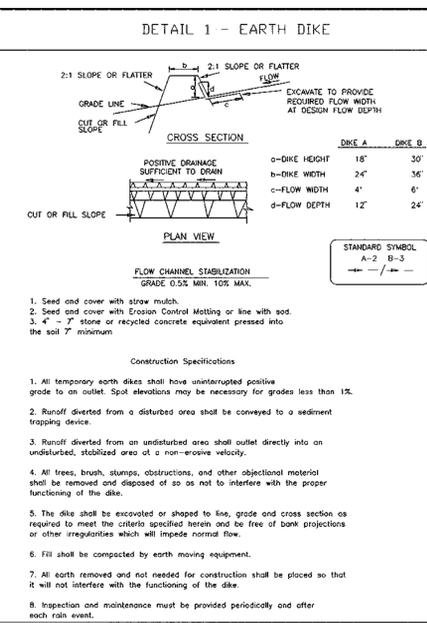
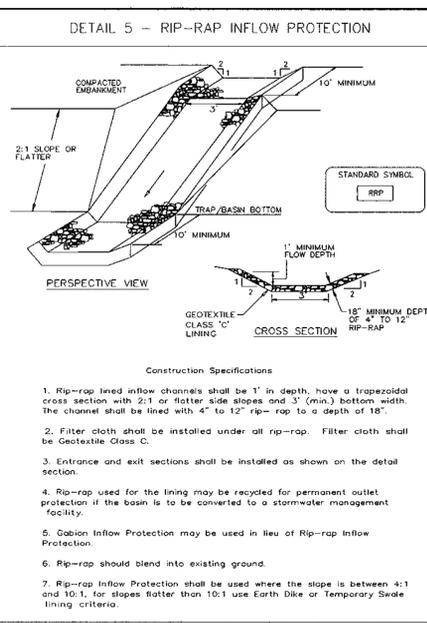
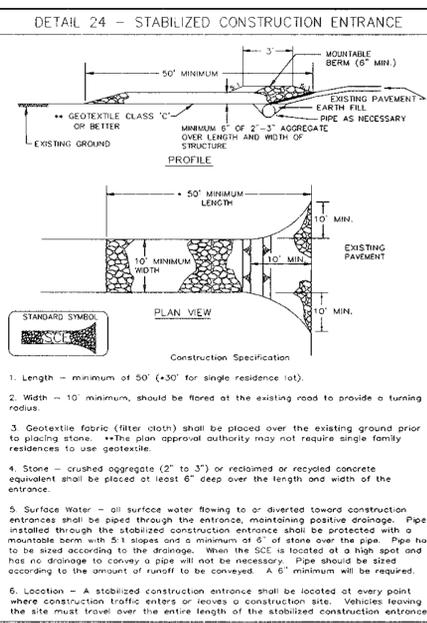
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GEOMETRY AND
PAVING PLAN
OWNER / DEVELOPER

HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
3450 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

DESIGNED BY : AAP
DRAWN BY : MAD
PROJECT NO. 'M: 98011'
SITE9.DWG
DATE : DECEMBER 3, 1998
SCALE : 1" = 30'
SHT. NO. C-5 OF 16

C-5

SDP-99-21



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 tel 410.997.8900 fax 410.997.9282

DATE: _____
 REVISION: _____
 NO. _____

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF UTILITIES
 APPROVED: FOR PRIVATE ON SITE WATER AND PRIVATE ON SITE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.
 Thomas H. Butler 12/24/98
 COUNTY HEALTH OFFICER

BY THE DEVELOPER:
 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 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. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Thomas H. Butler 12/24/98
 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/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.

Arthur E. Muegge 12/24/98
 ENGINEER 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.

Cheryl Simmons 12/24/98
 NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Howard Soil Conservation District 12/24/98
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
 Director 1/8/99
 DATE

Chief, Development Engineering Division 1/2/99
 DATE

Chief, Division of Land Development 1/6/99
 DATE

DESIGNED BY: DCD/AAP
 DRAWN BY: JAP
 PROJECT NO: M-98011 SITE6.DWG
 DATE: DECEMBER 3, 1998
 SCALE: 1"=30'
 SHEET NO. C-9 OF 16
 SDP-99-21

MD-210 STANDARDS AND SPECIFICATIONS

SPECIFICATIONS
These specifications are appropriate to all ponds within the scope of the Standard for practice MD-210. All references to ASTM and AASHTO specifications apply to the most recent version.

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 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 streambed management, a minimum of a 50-foot radius around the inlet structure shall be cleared.

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

EARTH 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 material. Fill material for the center of the embankment and cut-off shall conform to Unified Soil Classification SC, 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 material shall be placed in lifts of 24 inches 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 soil layers 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. The surface shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tire 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.

Where a minimum required density is specified, it shall not be less than 98% 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 ASTM Method 1585.

Cutoff 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 back fill shall be compacted with construction equipment, rollers, or hand tampers to obtain maximum density and minimum permeability.

STRUCTURE BACKFILL
Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the structure. 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 the structure. 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 given any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

PIPE CONDUITS
All pipes shall be circular in cross section.

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. This pipe shall conform to the requirements of AASHTO Specification M-190 Type A with 12 mil zinc coating. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with 12 mil zinc coating 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: Nepon, Fluor-coat, Blac-rod, and Backfilling. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

2. 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.
3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be sealed all around when the pipe in such a manner as to be completely watertight. Dipble 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 reinforced with an adequate number of corrugations to accommodate the band width. The following tube connections are acceptable for pipes less than 48" in diameter: Flanges on both ends of the pipe, a 12" wide standard top type band with 12 mil zinc coating and closed cell circular neoprene gasket, and a 12" wide hugger type band with closed gasket having a minimum diameter of 1/2" greater than the connection 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 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 Designation C-561.
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 side of the pipe at least 10% of its outside diameter with a minimum thickness of 4 inches as shown on the drawings.
3. Laying pipe - Bell and spigot pipe shall be placed with the bell and upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.
4. Backfilling shall conform to Structure Backfill.
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Polyvinyl Chloride (PVC) 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 firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Backfilling shall conform to Structure Backfill.
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

CONCRETE
Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

ROCK RIPRAP
Rock riprap shall meet the requirements of Maryland Department of Transportation State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

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 with the smaller rocks. The riprap shall be placed in layers 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 419.12.

CARE OF WATER DURING CONSTRUCTION

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 the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment for removal of water from the 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. 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 do not 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 excavated area and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of the excavation and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level of the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to pumps from which the water shall be pumped.

STABILIZATION
All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spill 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 Planning (MS-342) or as shown on the drawings.

EROSION AND SEDIMENT CONTROL
Construction operations will be carried out in such a manner that erosion will be controlled by mulch and air pollution minimized. Stable and low concern concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

Refer to the 1994 HANDBOOK STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be reseeded within a short-term vegetative cover is needed.
Seeding Preparation - Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. If not previously loosened.

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

Seeding - For the period March 1 thru April 30 and from August 15 thru November 15 seed with 2-1/2 bushels per acre of Bermuda (3.2 lbs. per 1000 sq. ft.) For the period May 1 thru August 14, seed with 3 lbs. per acre of creeping lovegrass (0.7 lbs. per 1000 sq. ft.). For the period November 16 thru February 26, protect site by applying 2 tons per acre of well-anchored straw mulch and seed as soon as possible in the spring, or use seed.

Mulching - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq. ft.) of crushed mill grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool at 20 gal. per acre (5 gal. per 1000 sq. ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 50 gal. per acre (5 gal. per 1000 sq. ft.) for anchoring.

Refer to the 1994 HANDBOOK STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
Seeding Preparation - Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. If not previously loosened.

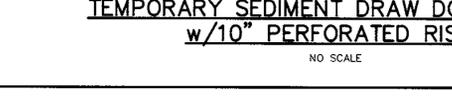
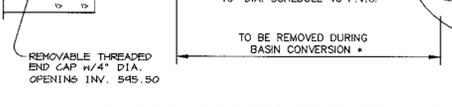
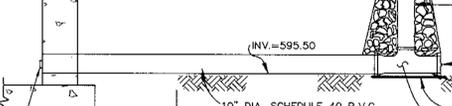
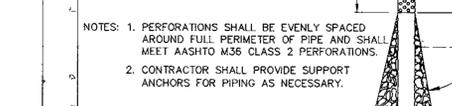
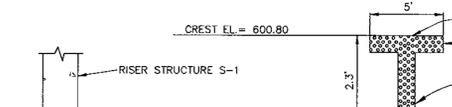
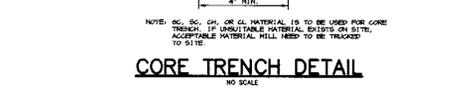
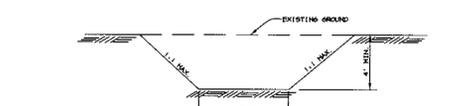
Soil Amendments - In lieu of soil test recommendations, use one of the following schedules:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1000 sq. ft.) and 600 lbs. per acre of 10-10-10 fertilizer (14 lbs. per 1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 urethane fertilizer (4 lbs. per 1000 sq. ft.).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1000 sq. ft.) and 1000 lbs. per acre 10-10-10 fertilizer (28 lbs. per 1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding - For the period March 1 thru April 30 and from August 15 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. per acre of Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq. ft.) of creeping lovegrass. During the period October 16 thru February 26, protect site by one of the following options:
1) 2 tons per acre of well-anchored straw mulch and seed as soon as possible in the spring.
2) Use seed.
3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq. ft.) of crushed mill grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool at 20 gal. per acre (5 gal. per 1000 sq. ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 50 gal. per acre (5 gal. per 1000 sq. ft.) for anchoring.

Maintenance - Inspect all seeded areas and make needed repairs, modifications and seedings.



21.0 STANDARD AND SPECIFICATIONS

FOR TOPSOIL

Definition
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose
To provide a suitable soil medium for vegetative 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
I. This practice is limited to areas having 2:1 or flatter slopes where:
a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
b. The soil moisture is so shallow that the rooting 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 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 stabilization shown on the plans.

Construction and Material Specifications

I. 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 Experimentation Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

1. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and 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, roots, trash, or other materials larger than 1/4" in diameter.
- II. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or other species as specified.
- III. Where subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-9 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

III. For sites having disturbed areas over 5 acres:
1. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:
1. 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. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
b. Organic content of topsoil shall be not less than 1.5 percent by weight.
c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
d. No seed or soil shall be placed on 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 phytotoxic materials.

Note: Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.

II. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

V. Topsoil Application

I. When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.

II. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

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 or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the texture resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

IV. Topsoil shall not be placed 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 seeded preparation.

VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

I. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be limited to prescribed amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1973.

GEOTECHNICAL NOTES

1. PRIOR TO INSTALLATION OF THE CUTOFF TRENCH AND CONSTRUCTION OF THE EMBANKMENT, ALL ORGANICS, TOPSOIL, AND OTHER SURFICIALLY UNSUITABLE SOILS SHOULD BE REMOVED. THE SUBGRADE SOILS SHOULD BE PROOFROLLED WITH LIGHT-WEIGHT EQUIPMENT TO ENSURE A RELATIVELY UNYIELDING SURFACE. ANY EXCESSIVELY SOFT OR YIELDING AREAS SHOULD BE UNDERCUT AND REPLACED WITH SUITABLE ON-SITE MATERIALS, PLACED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
2. PRIOR TO PLACEMENT OF NEW CONTROLLED COMPACTED FILL, THE GROUND SHALL BE CLEARED OF ALL REFUSE, TREES, LARGE STONES, CONCRETE DEBRIS, GRASS, AND ROOTS. ALL CONSTRUCTION AREAS SHOULD BE PROOFROLLED TO DETECT SOFT OR YIELDING CONDITIONS AND TO PROVIDE A SUITABLE SURFACE FOR FILL PLACEMENT, SLAB-ON-GRADE AND PAVEMENT CONSTRUCTION.
3. REFER TO THE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY ROBERT B. BALTER COMPANY DATED MAY 21, 1998 FOR THE ADDITIONAL AND/OR COMPLETE RECOMMENDATIONS.

1. TOPSOIL
- 0.1' REDDISH BROWN MOIST SILT AND CLAY, SOME SF SAND, TR GRAVEL (FILL) ML-CL
- 2' TAN GRAY MOIST HIGACEOUS SILT AND CLAY, SOME HF SAND, ML (FILL) ML-CL
- 5' GRAY MOIST MICACEOUS OF SILT SOME CLAYEY SILT, LITTLE FINE ROCK FRAGMENTS, SH
- 8' BROWN GRAY MOIST MICACEOUS SILT SOME CLAYEY SILT, LITTLE FINE SAND, ML
- 10'

1. TOPSOIL
- 0.2' REDDISH BROWN MOIST SILT AND CLAY, SOME HF SAND, LITTLE GRAVEL, TR ROOTS, (FILL) ML-CL
- 3' TAN GRAY MOIST HIGACEOUS SILT AND CLAY, SOME HF SAND, ML
- 4' GRAY MOIST MICACEOUS OF SILT SOME CLAYEY SILT, LITTLE FINE ROCK FRAGMENTS, SH
- 6' BROWN GRAY MOIST MICACEOUS CLAYEY SILT, LITTLE HF SAND, ML
- 10'

1. TOPSOIL
- 0.2' BROWN MOIST SILT AND CLAY, SOME HF SAND, ML-CL
- 3' BROWN GRAY MOIST MICACEOUS SILT AND CLAY, SOME HF SAND, ML
- 5' BROWN GRAY MOIST MICACEOUS CLAYEY SILT, SOME HF SAND, ML
- 10'

1. TOPSOIL
- 0.2' REDDISH BROWN MOIST SILT AND CLAY, SOME HF SAND, LITTLE GRAVEL, TR ROOTS, (FILL) ML-CL
- 3' TAN GRAY MOIST HIGACEOUS SILT AND CLAY, SOME HF SAND, ML
- 4' GRAY MOIST MICACEOUS OF SILT SOME CLAYEY SILT, LITTLE FINE ROCK FRAGMENTS, SH
- 6' BROWN GRAY MOIST MICACEOUS CLAYEY SILT, LITTLE HF SAND, ML
- 10'

1. TOPSOIL
- 0.2' BROWN MOIST SILT AND CLAY, SOME HF SAND, ML-CL
- 3' BROWN GRAY MOIST MICACEOUS SILT AND CLAY, SOME HF SAND, ML
- 5' BROWN GRAY MOIST MICACEOUS CLAYEY SILT, SOME HF SAND, ML
- 10'

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- 3' TAN GRAY MOIST HIGACEOUS SILT AND CLAY, SOME HF SAND, ML
- 4' GRAY MOIST MICACEOUS OF SILT SOME CLAYEY SILT, LITTLE FINE ROCK FRAGMENTS, SH
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- 4' GRAY MOIST MICACEOUS OF SILT SOME CLAYEY SILT, LITTLE FINE ROCK FRAGMENTS, SH
- 6' BROWN GRAY MOIST MICACEOUS CLAYEY SILT, LITTLE HF SAND, ML
- 10'

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- 3' TAN GRAY MOIST HIGACEOUS SILT AND CLAY, SOME HF SAND, ML
- 4' GRAY MOIST MICACEOUS OF SILT SOME CLAYEY SILT, LITTLE FINE ROCK FRAGMENTS, SH
- 6' BROWN GRAY MOIST MICACEOUS CLAYEY SILT, LITTLE HF SAND, ML
- 10'

STANDARD SEDIMENT CONTROL NOTES

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

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

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 5:1. 5) 14 DAYS AS TO ALL OTHER DISTURBED OR GRABBED AREAS ON THE PROJECT SITE.

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

5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 HANDBOOK STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. 6.) TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHED 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:
TOTAL AREA OF SITE 190 ACRES
AREA DISTURBED 17.7 ACRES
AREA TO BE ROOFED OR PAVED 4.2 ACRES
AREA TO BE VEGETATIVELY STABILIZED 14.3 ACRES
TOTAL CUT 26,000 CU. YARDS
TOTAL FILL 26,000 CU. YARDS

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 FIVE FEET LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

12. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.

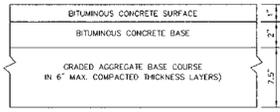
13. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.

14. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL, OR EMBANKMENT MATERIAL. NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTINGS OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.

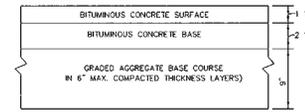
SEQUENCE OF CONSTRUCTION

PHASE I

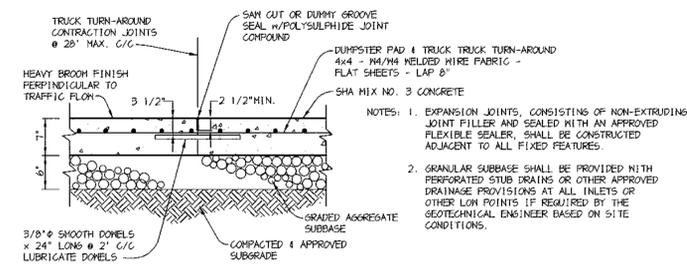
1. OBTAIN A GRADING PERMIT AND OTHER NECESSARY PERMITS PRIOR TO BEGINNING CONSTRUCTION. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE MD STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. (1 DAY)
2. CLEAR AND GRUB FOR INSTALLATION OF PERIMETER SEDIMENT CONTROLS (STABILIZED CONSTRUCTION ENTRANCE) (8" RCPC CULVERT, EARTH DIKE, SILT FENCE, SUPER SILT AND MOUNTABLE BERMS, GRADE DITCH NORTH OF ENTRANCE ALONG MD. RTE 47 (E-4 TO EX. 21) (2W)), INSTALL SILT FENCE AND ECH AS SHOWN ON PLANS, AND PER INSET 'A' CONCURRENTLY, INSTALL TEMPORARY ACCESS ROAD TO THE ALLEN HOUSE. SILT FENCE ALONG EAST SIDE OF RTE 47 AND PHASE II DITCH WILL NOT BE INSTALLED AT THIS TIME. (1 WEEK)
3. THE PHASE I GRADING PER INSET 'A' SHALL REMAIN IN PLACE UNTIL THE MD ROUTE 47 PERMITS BEGIN PHASE II DITCH. THE SILT FENCE ALONG THE EAST SIDE OF MD ROUTE 47 WILL NOT BE INSTALLED AT THIS TIME.
4. INSTALL SEDIMENT BASIN W/REMOVABLE PUMP ST



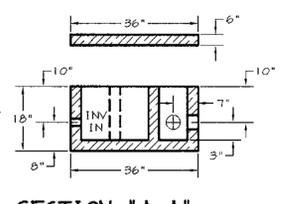
LIGHT DUTY PAVING
NO SCALE



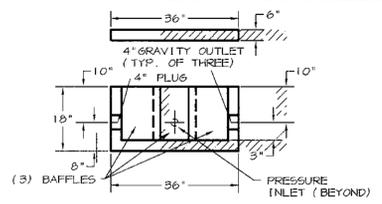
MEDIUM DUTY PAVING
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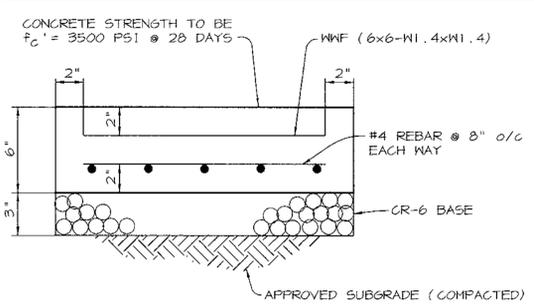
SERVICE AREA CONCRETE PAVING
NO SCALE



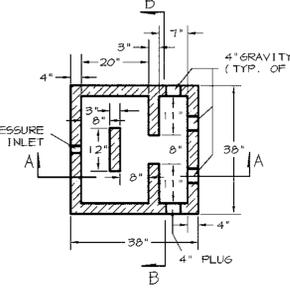
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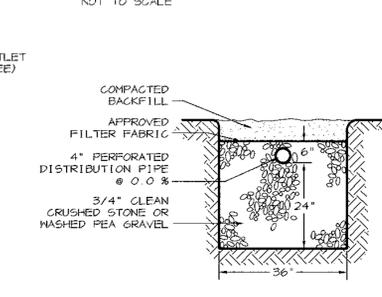
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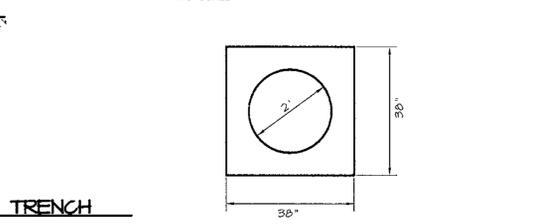
TRANSFORMER PAD DETAIL
NO SCALE



PLAN
NOT TO SCALE



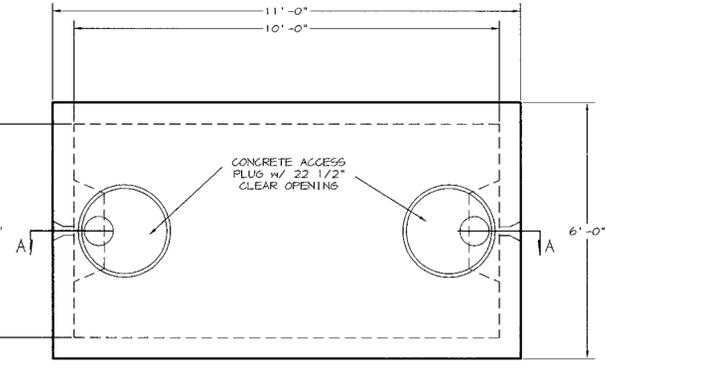
TYPICAL DISPOSAL FIELD TRENCH
NOT TO SCALE



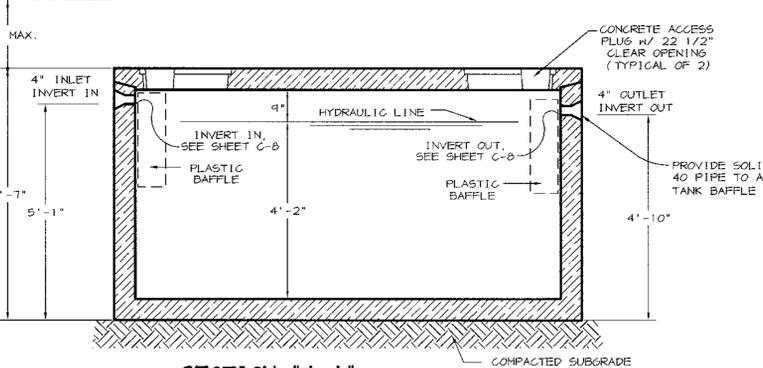
TOP SLAB
NOT TO SCALE

SEPTIC FIELD DISTRIBUTION BOX

1. THIS STRUCTURE TO BE PRECAST CONCRETE.
2. CONCRETE TO HAVE A 4,000 PSI MINIMUM COMPRESSION STRENGTH @ 28 DAYS.
3. WIRE MESH SHALL BE 3" x 5" NO. 8 GAUGE AND CONFORM TO ASTM-25-90 SMOOTH.
4. THIS STRUCTURE TO BE PREFABRICATED. SHOP DRAWINGS FOR THIS PRE-CAST CONCRETE STRUCTURE SHALL MEET THE MINIMUM ASTM REQUIREMENTS FOR PRECAST STRUCTURES AND HS-10 TRAFFIC LOADINGS. A SHOP DRAWING SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND SHALL BE SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER FOR STRUCTURAL CERTIFICATION FOR THE DEPTH AS SHOWN ON THE SITE PLANS.
5. THE TOP SLAB SHALL BE REMOVABLE WITH A STANDARD HOWARD COUNTY MANHOLE FRAME AND COVER ADJUST MANHOLE FRAME AND COVER TO GRADE WITH BRICK OR GRADE RINGS.
6. STRUCTURE SHALL BE PLACED ON A FIRMLY COMPACTED SUBGRADE.
7. ALL DIMENSIONS SHOWN ABOVE ARE MINIMUM.
8. THIS STRUCTURE SHALL BE SET WITH THE STRUCTURE FLOOR @ 0.0% IN ALL DIRECTIONS.
9. TOP SLAB TO HAVE 18" MIN. COVER.

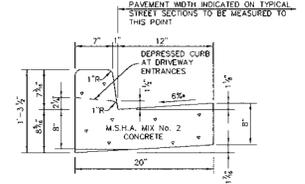


PLAN
NOT TO SCALE

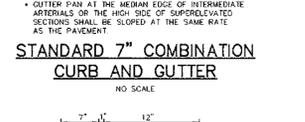


SECTION "A-A"
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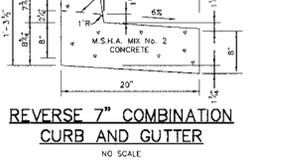
- 1500 GALLON SEPTIC TANK STRUCTURE NOTES:**
1. RISER TO BE PREFABRICATED. SHOP DRAWINGS FOR THIS PRE-CAST CONCRETE STRUCTURE SHALL MEET THE MINIMUM ASTM REQUIREMENTS FOR PRECAST STRUCTURES AND HS-10 TRAFFIC LOADINGS. A SHOP DRAWING SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND SHALL BE SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER FOR STRUCTURAL CERTIFICATION FOR THE DEPTH AS SHOWN ON THE SITE PLANS.
 2. CONCRETE STRENGTH TO BE 4,000 PSI MINIMUM @ 28 DAYS.
 3. SEPTIC TANK SHALL BE PLACED ON A FIRMLY COMPACTED SUBGRADE APPROVED BY A GEOTECHNICAL ENGINEER.
 4. ALL DIMENSIONS SHOWN ABOVE ARE MINIMUM. FABRICATOR SHALL MAINTAIN 1500 GALLON VOLUME.
 5. PLASTIC BAFFLE TO BE PVC SCHEDULE 40 PIPE.
 6. CONTRACTOR TO PROVIDE MANHOLE TO SEPTIC TANK ACCESS LOCATIONS.



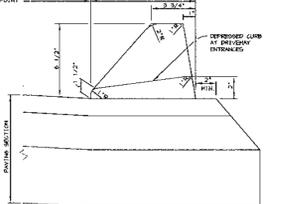
STANDARD 7" COMBINATION CURB AND GUTTER
NO SCALE



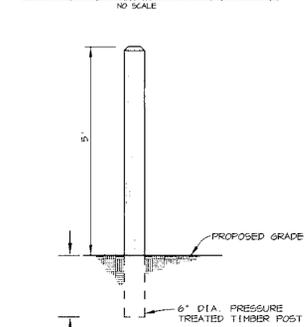
REVERSE 7" COMBINATION CURB AND GUTTER
NO SCALE



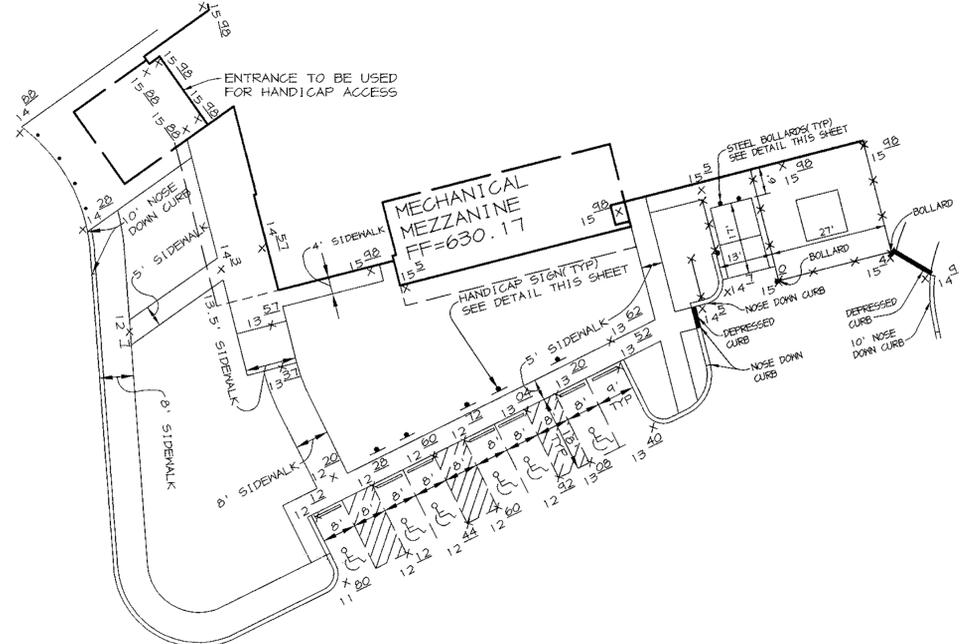
STANDARD BITUMINOUS CURB
NO SCALE



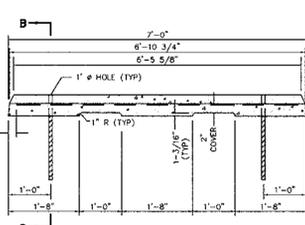
WOOD BOLLARD DETAIL
NO SCALE



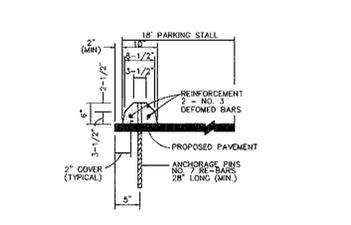
HANDICAP SIGN DETAIL
NO SCALE



HANDICAP PARKING DETAIL AND SERVICE AREA
SCALE: 1"=20'

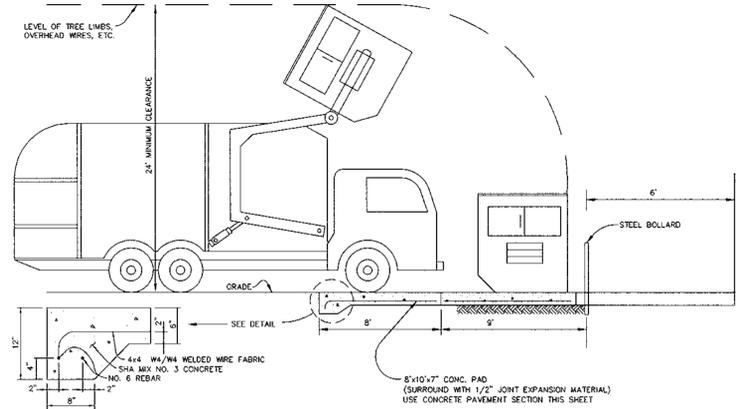


ELEVATION

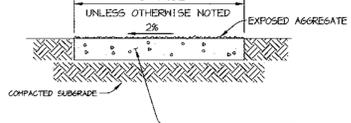


SECTION B-B

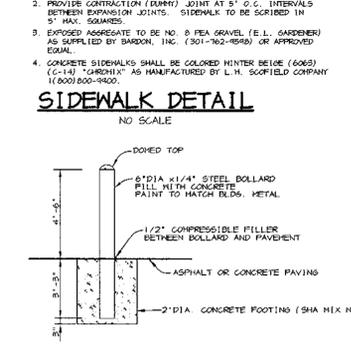
WHEEL STOP DETAIL
NO SCALE



DUMPSTER PAD DETAIL
NO SCALE



SIDEWALK DETAIL
NO SCALE



STEEL BOLLARD DETAIL
NO SCALE (FOR SERVICE AREA ONLY)



1500 GALLON SEPTIC TANK STRUCTURE NOTES

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9282

DATE: _____
REVISION: _____
NO. _____
DATE _____

11783 Beltsville Drive
Suite 1400
Calverton MD 20705
301.595.1000
301.595.0089 Fax

Grimm and Parker Architects
TAX MAP 14 ZONED RC-DEO
4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

GLENWOOD LIBRARY
DETAIL SHEET
OWNER / DEVELOPER
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
3450 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

AS BUILT CERTIFICATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. DATE: _____

CHIEF, BUREAU OF UTILITIES DATE: _____

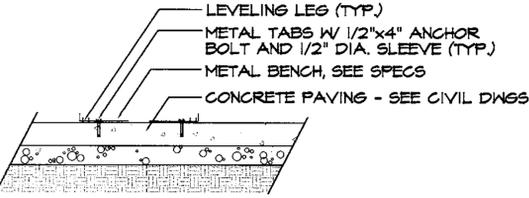
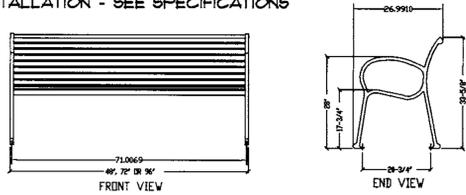
APPROVED: FOR PRIVATE ON SITE WATER AND PRIVATE ON SITE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT. DATE: 12/24/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. DATE: 1/8/99

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 1/8/99

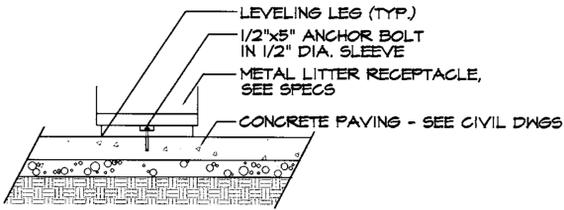
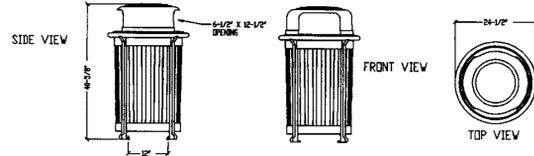
CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 1/8/99

NOTE: FOR MANUFACTURER, FINISH AND INSTALLATION - SEE SPECIFICATIONS



A BENCH DETAIL
N.T.S.

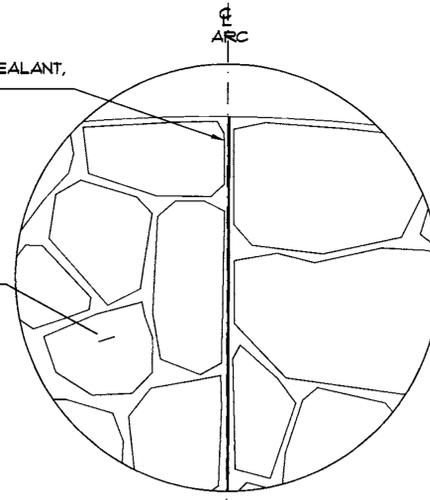
NOTE: FOR MANUFACTURER, FINISH AND INSTALLATION - SEE SPECIFICATIONS



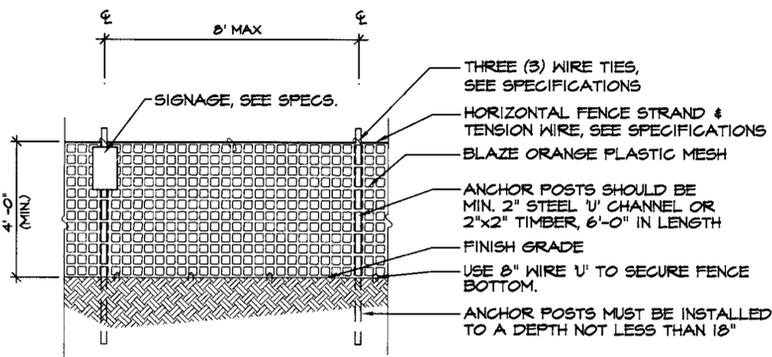
B LITTER RECEPTACLE DETAIL
N.T.S.

1/2" EXP. JOINT WITH EPOXY SEALANT, SEE SPEC.

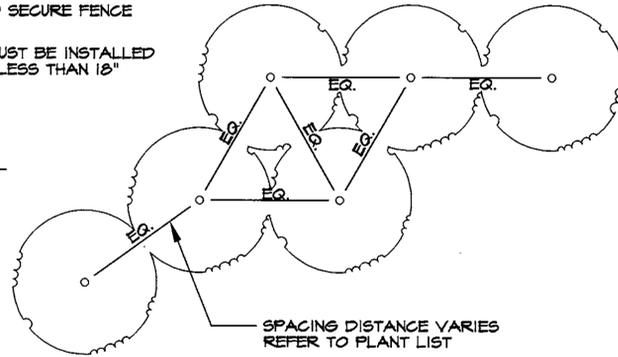
IRREGULAR FLAGSTONE ON MORTAR SETTING BED, SEE SPECS. AND SHEET C-8



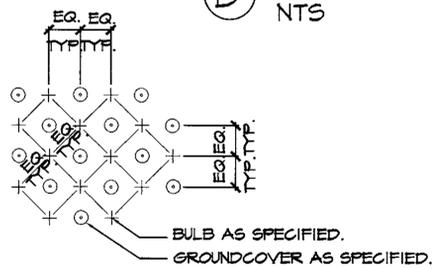
C FLAGSTONE PAVING DETAIL
1/4" = 1'-0"



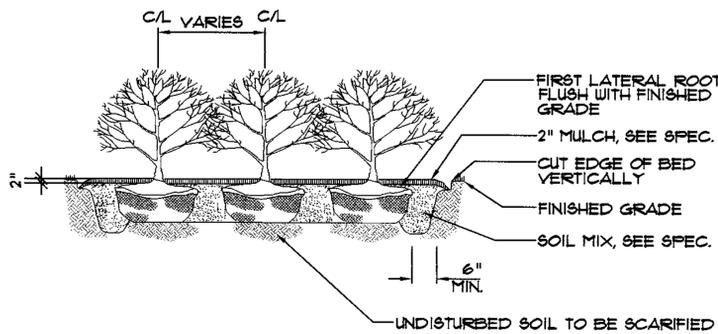
D Orange Tree Protection Fence
N.T.S.



F PLANT SPACING FOR MASS PLANTING
N.T.S.

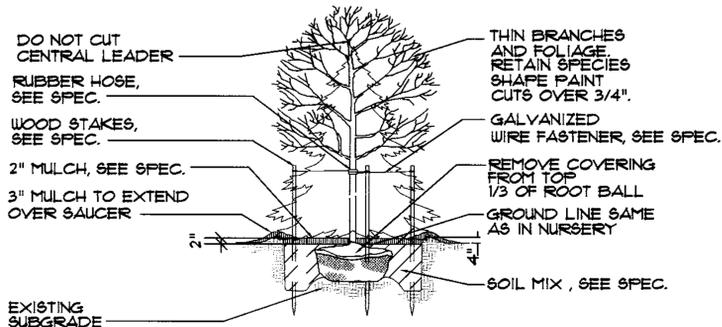


E TYPICAL BULB AND GROUND COVER SPACING
N.T.S.



NOTES:
1. CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL AS SHOWN.
2. SCARIFY SUBSOIL.
3. THIN DECIDUOUS SHRUBS BY 1/3 THE INITIAL BRANCHING, RETAINING NATURAL FORM.

H TYPICAL MASS SHRUB PLANTING DETAIL
N.T.S.



G TYPICAL TREE PLANTING DETAIL
N.T.S.

MASTER PLANT LIST

KEY	QTY.	BOTANICAL NAME/ COMMON NAME	SIZE	ROOT	COMMENTS
TREES					
AR	34	ACER RUBRUM RED SUNSET/ RED SUNSET RED MAPLE	2'-2 1/2" CAL.	B&B	FULL CROWN SINGLE LEADER
AS	4	ACER SACCHARUM LEGACY/ LEGACY SUGAR MAPLE	2'-2 1/2" CAL.	B&B	FULL CROWN SINGLE LEADER
LS	26	LIQUIDAMBAR STYRACIFLUA ROTUNDILOBA/ SEEDLESS SWEETGUM	2'-2 1/2" CAL.	B&B	FULL CROWN SINGLE LEADER MATCHED
QC	2	QUERCUS COCCINEA/ SCARLET OAK	3 1/2"-4" CAL.	B&B	FULL CROWN SINGLE LEADER MATCHED
UP	14	ULMUS PARVIFOLIA/ CHINESE ELM	2'-2 1/2" CAL.	B&B	FULL CROWN SINGLE LEADER MATCHED
EVERGREEN TREES					
IN	8	ILEX X NELLIE R. STEVENS/ NELLIE R. STEVENS HOLLY	6-8' HT.	B&B	15' O.C.
PS	85	PINUS STROBUS/ EASTERN WHITE PINE	5-6' HT.	B&B	15' O.C.
FLOWERING TREES					
AL	5	AMELANCHIER LAEVIS/ ALLEGHENY SERVICEBERRY	6-8' HT.	B&B	SINGLE LEADER TREE FORM
MF	27	MALUS FLORIBUNDA/ JAPANESE FLOWERING CRABAPPLE	2'-2 1/2" CAL.	B&B	SINGLE LEADER MATCHED
PY	2	PRUNUS X YEDOENSIS/ YOSHINO CHERRY	2'-2 1/2" CAL.	B&B	SINGLE LEADER MATCHED
SHRUBS					
DS	6	DEUTZIA GRACILIS NIKKO/ COMPACT DEUTZIA	15-18" HT.	B&B	3' O.C.
BD	25	BUDDLEIA DAVIDII/ BUTTERFLY BUSH	18-24" HT.	B&B	4' O.C.
EA	75	EVONYMUS ALATUS COMPACTUS/ COMPACT BURNING BUSH	18-24" HT.	B&B	4' O.C.
EK	28	EVONYMUS KIAUSCHOVICUS 'MANHATTAN/ MANHATTAN EVONYMUS	18-24" HT.	B&B	4' O.C.
GROUND COVER AND BULBS					
LM	204	LIRIOPE MUSCARI 'BIG BLUE/ BIG BLUE LILYTURF	2 QT.	CONT.	12' O.C.
PH	143	PENNISETUM ALOPECUROIDES 'HAEMEL/ DWARF FOUNTAIN GRASS	1 GAL.	CONT.	18" O.C.
VM	285	VINCA MINOR/ PERIWINKLE	2.25'	FEAT POT	8' O.C.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[Signature] 1/8/99
DIRECTOR DATE

[Signature] 1/2/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
CHIEF, BUREAU OF UTILITIES DATE
APPROVED: FOR PRIVATE ON SITE WATER AND PRIVATE ON SITE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.
[Signature] 12/24/98
HEALTH OFFICER DATE

[Signature] 1/6/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

MAHAN RYKIEL ASSOCIATES, INC. Landscape Architects
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Fax. 410.435.1701



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Calverton, MD 20705
301.595.1000
301.595.0089 Fax

GLENWOOD LIBRARY
LANDSCAPE DETAILS
OWNER / DEVELOPER
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
3450 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

DESIGNED BY: KTM
DRAWN BY: KTM
PROJECT NO.: 9827
DATE: December 3, 1998
SCALE: AS SHOWN
SHT. NO. 15 OF 16

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	PERIMETER 1		PERIMETER 2		PERIMETER 3
	NON-RESIDENTIAL ADJ. TO ROADWAYS	PARKING ADJ. TO ROADWAYS	NON-RESIDENTIAL ADJ. TO PROPERTIES	LOADING AREA ADJ. TO PROPERTIES	NON-RESIDENTIAL ADJ. TO PROPERTIES
LANDSCAPE TYPE	B	E	C	D	D
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	290 FT	450 FT	355 FT	90 FT	290 FT
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	* YES, 200 FT	NO	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET)	NO	** YES, 280 FT	NO	NO	NO
NUMBER OF PLANTS REQUIRED					
SHADE TREES	6	11	9	2	5
EVERGREEN TREES	7	0	18	9	0
SHRUBS	0	112	0	0	0
NUMBER OF PLANTS PROVIDED					
SHADE TREES	6	11	0	2	0
EVERGREEN TREES	7	0	18	9	0
OTHER TREES (2:1 SUBSTITUTION)	0	0	18	0	20
SHRUBS (10:1 SUBSTITUTION)	0	40	0	0	0

COMMENTS

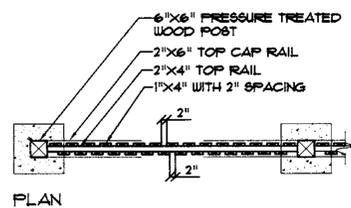
- * THERE ARE SEVERAL MATURE TREES ADJACENT TO THE ROAD THAT HELP TO BUFFER THE SITE FROM THE ROAD.
- ** THE PARKING AREA IS 130 FT AWAY FROM THE ROAD EDGE AND IS 3'-8" HIGHER IN ELEVATION THAN THE ROAD EDGE, THEREFORE REDUCING THE NUMBER OF SHRUBS REQUIRED.

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

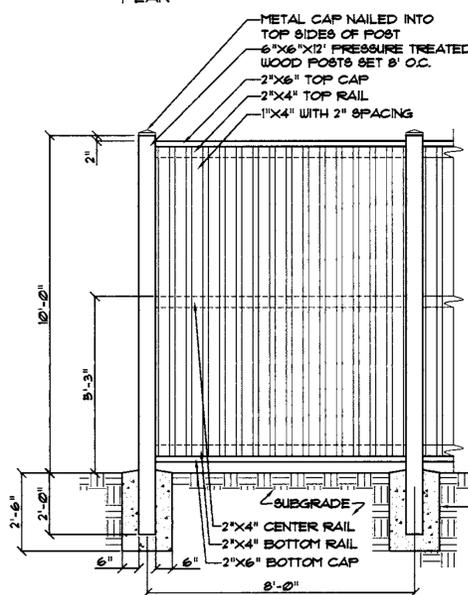
NUMBER OF PARKING SPACES	174	17
NUMBER OF TREES REQUIRED	9	1
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	16 0	1 0
NUMBER OF ISLANDS REQUIRED	9	1
NUMBER OF ISLANDS PROVIDED	9	1

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

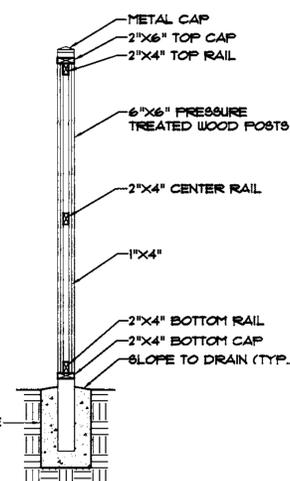
LINEAR FEET OF PERIMETER	516 FT
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	10 13
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	YES, 90%
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	10 24 0



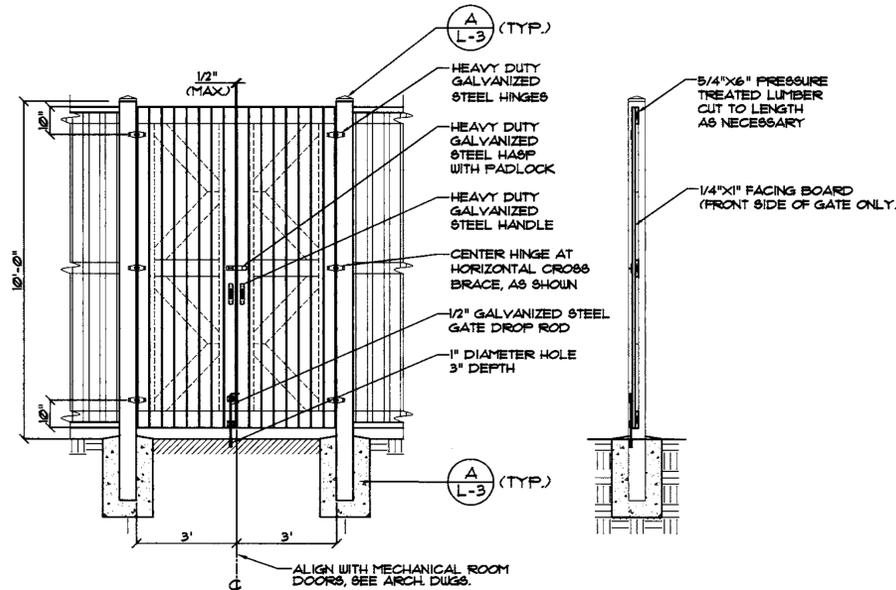
NOTE: ALL LUMBER SHALL BE PRESSURE TREATED SOUTHERN YELLOW PINE. ALL INSTALLATION HARDWARE SHALL BE HOT DIP GALVANIZED.



ELEVATION



SECTION



ELEVATION

SECTION

Ⓐ 10' WOODEN FENCE
SCALE: 1/2" = 1'-0"

Ⓑ 10' WOODEN GATE
SCALE: 1/2" = 1'-0"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF UTILITIES _____ DATE _____

APPROVED: FOR PRIVATE ON SITE WATER AND PRIVATE ON SITE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT.

James M. Bondurpis 12/24/98
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

David S. Smith 1/8/99
DIRECTOR DATE

[Signature] 1/2/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Chris Hunter 1/6/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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Grimm
and
Parker
Architects

TAX MAP 14 ZONED RC-DEO
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

GLENWOOD LIBRARY
LANDSCAPE DETAILS

OWNER / DEVELOPER
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
3450 COURT HOUSE DRIVE
ELLICOTT CITY, MD 21043

DESIGNED BY: KTM
DRAWN BY: KTM
PROJECT NO: 9827

DATE: December 3, 1998

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SHT. NO. 16 OF 16

L-3

SDP-99-21