

LEGEND

- CONTOUR INTERVAL 2 FT.
- EXISTING CONTOUR
- PROPOSED CONTOUR
- DIRECTION OF DRAINAGE
- WALK OUT BASEMENT
- SPOT ELEVATION
- ENTRANCE
- STABILIZED CONSTRUCTION
- EROSION CONTROL MATTING
- SILT FENCE
- LIMIT OF DISTURBED AREA
- TREE PROTECTION FENCE
- EXISTING TREES TO REMAIN
- SLOPES 25% OR GREATER
- SLOPES 15-24.9%
- HANDICAPPED MAIN ENTRANCE
- HCME

PRIVATE WATER AND SEWER NOTES

1. ALL CONSTRUCTION METHODS AND MATERIALS FOR ON-SITE SEWER SYSTEMS SHALL FOLLOW THE CURRENT EDITIONS OF THE HOWARD COUNTY PLUMBING CODE, SUPPLEMENTED BY THE HOWARD COUNTY STANDARD DETAILS AND SPECIFICATIONS, WHERE NECESSARY.
2. 6" SEWER HOUSE CONNECTIONS SHALL BE BUILT TO WITHIN 5' OF THE BUILDING AT A MINIMUM SLOPE OF 2.00%.
3. 4" AND 6" P.V.C. PIPE SHALL MEET THE REQUIREMENTS OF ASTM D 3034, WALL THICKNESS CLASSIFICATION SDR-35.
5. PROVIDE THRUST BLOCKS ON ALL PRESSURE SEWER BENDS IN ACCORDANCE WITH THE DRAWINGS AND STANDARD DETAILS. THE ENTIRE FACE OF EARTH AGAINST WHICH THE THRUST BLOCK WILL BEAR SHALL BE FIRM BEARING, FLAT, AND AT THE PROPER ANGLE TO COUNTERACT THE THRUST. CONCRETE THRUST BLOCKS SHALL BE CURED FOR A MINIMUM OF TWO DAYS BEFORE TESTING.
6. THE OWNERS AND OPERATORS OF GLENELG COUNTRY SCHOOL AGREE UPON RECEIPT OF THE BUILDING PERMIT FOR THE FOLLOWING:
 - a. MAKE APPLICATION FOR GROUNDWATER DISCHARGE PERMIT AT THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
 - b. CONDUCT ALL PERCOLATION TESTING, OBSERVATION TRENCHES, ANY STUDIES AND COMPLIANCE SCHEDULES FOR A GROUNDWATER DISCHARGE PERMIT FOR THE ENTIRE SITE OF THE GLENELG COUNTRY SCHOOL.
 - c. CONDUCT ALL PUBLIC HEARINGS, OR ANY OTHER HEARINGS OR MEETINGS NECESSARY.
 - d. COMPLETE ALL THE ABOVE REQUIREMENTS OR ANY OTHER NECESSARY REQUIREMENTS AND OBTAIN A FINAL DISCHARGE PERMIT FROM MDE FOR THE GLENELG COUNTRY SCHOOL.
 - e. ALL THE ABOVE WILL BE COMPLETED WITHIN ONE YEAR OF THE BUILDING PERMIT APPROVAL DATE.
7. AREA WHERE WATER HOUSE CONNECTION IS TO BE BUILT SHALL BE AT FINAL GRADE, AND WATER HOUSE CONNECTION SHALL BE LAID WITH A MINIMUM OF 3% OF COVER.
8. WATER HOUSE CONNECTION SHALL BE 2" DIAMETER, COPPER TYPE K.
9. FOR THE EXISTING EASEMENT L. 11343/F. 604 AND F. 634 THERE WILL BE NO OTHER ADDITIONAL DISBURSABLES OR IMPAIRMENTS THOSE APPROVED WITH THIS SDP.
10. MAINTAIN AT LEAST 6" MIN. CLEARANCE AT ALL UTILITY CROSSINGS.
11. PROPOSED WATER LINE TO BE SLEEVED WITH SCHEDULE 40 W.P.C. THE ENTIRE LENGTH TO THE NEW WASTEWATER TREATMENT BUILDING.

REFER TO SHEET 16 FOR DRAINFIELD PLAN AND DETAILS. SHOW ON APPROVED SHEET 24.

NOTE: SEE SHEET 24 FOR ADDED SITE PLAN & SHEET 25 FOR ADDED DETAILS REFLECTED ON PARCEL 345.

EASEMENT AREA CONSISTING OF PIPELINES SERVING PARCELS 214 TO 219 (OWNED IN FEE SIMPLE BY OTHERS PER EASEMENT AGREEMENT LIBER. 11343 F. 604 AND AMENDED TO EASEMENT AGREEMENT LIBER. 11343 FOLIO 634 GRANTING GLENELG COUNTRY SCHOOL AN EXCLUSIVE EASEMENT AND RIGHT-OF-WAY TOTAL ESMT AREA IS 3.53649 AC.

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:
 SIGN: [Signature] DATE: 5-29-01
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING & ZONING
 SIGN: [Signature] DATE: 5/29/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 SIGN: [Signature] DATE: 5/29/01
 CHIEF, DIVISION OF LAND DEVELOPMENT
 SIGN: [Signature] DATE: 5/30/01
 DIRECTOR

REV. NO.	DATE	BY	REVISION
6	11/21/08	MRA	ADDED WWT TREATMENT BLDG. #2 PER D&O 16-634C
7	10-02	MRA	PLAN, ADD EASEMENT LINE WORK, LIMITS REMOVED FROM ACUTE PRIMARY TRENCH

REV. NO.	DATE	BY	REVISION
1	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS REVISED SWM FACILITY, ADDED FIELD & REVISED FOREST CONSERVATION AREAS.



THIS AS-BUILT IS BASED ON A FIELD RUN SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES, INC. DATED 7/16/04 & 8/26/06

REVISION #4
 TCW 3-10-09
 REVISION #5
 TCW 4-14-11
 REVISION #6
 TCW 11-5-18
 REVISION #2 ONLY
 THOMAS NEUGEBAUER, P.E. #29203

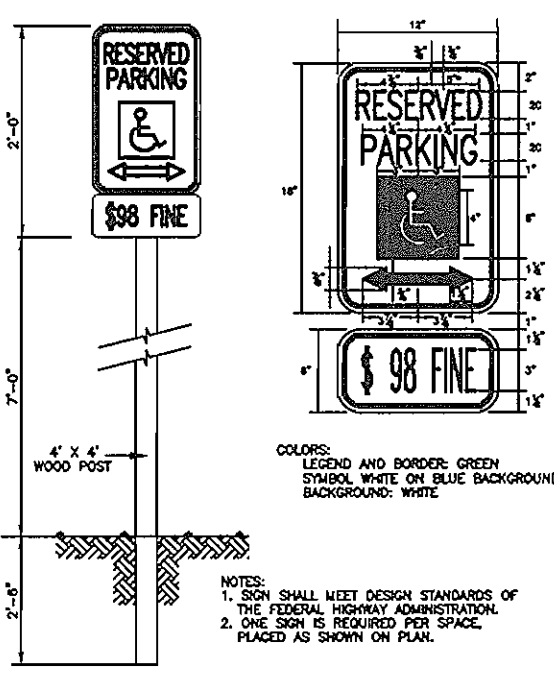
REV. NO.	DATE	BY	REVISION
7	105	MRA	ADDED DUMPSTER PAD & LANDSCAPING SCREENING WALL TO PARCEL 345.
9	106	MRA	AS-BUILT INFORMATION ADDED TO PLAN
2	109	MRA	REVISED PARKING
3	111	MRA	REVISED FOREST CONSERVATION AREAS

CLARK · FINEFROCK & SACKETT, INC.
 ENGINEERS · PLANNERS · SURVEYORS
 7135 MINSTREL WAY · COLUMBIA, MD 21045 · (410) 381-7500 BALT. · (301) 621-8100 WASH.

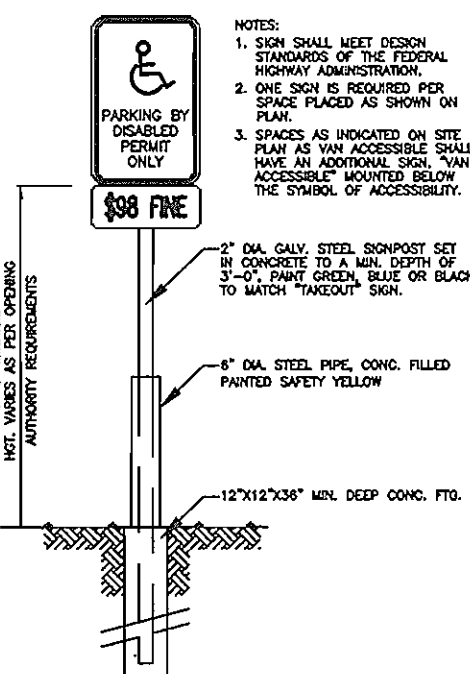
DESIGNED: TD
 DRAWN: ZAH/LAI
 CHECKED: TD
 DATE: 5-16-01

SITE DEVELOPMENT PLAN
GLENELG COUNTRY SCHOOL PRIMARY SCHOOL
 TAX MAP 22, GRID 22, PARCEL 146
 LIBER. 1296 FOLIO 245
 FIFTH (5th) ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

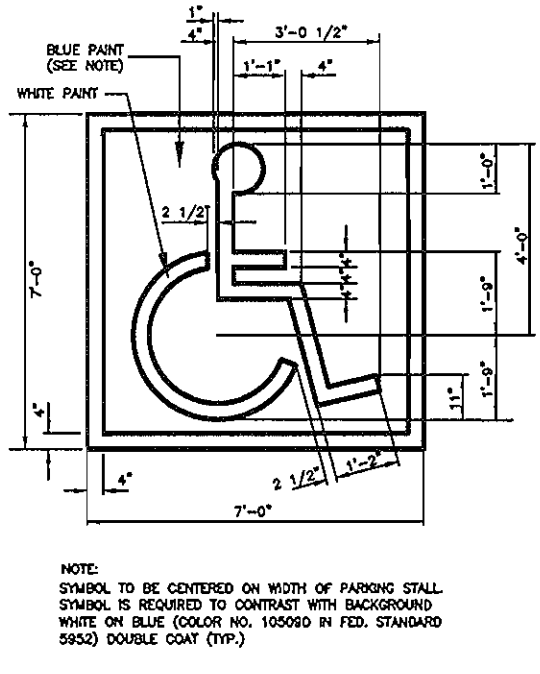
SCALE: 1" = 30'
 DRAWING: 2 of 25
 JOB NO.: 99-174
 FILE NO.: 99-174 X



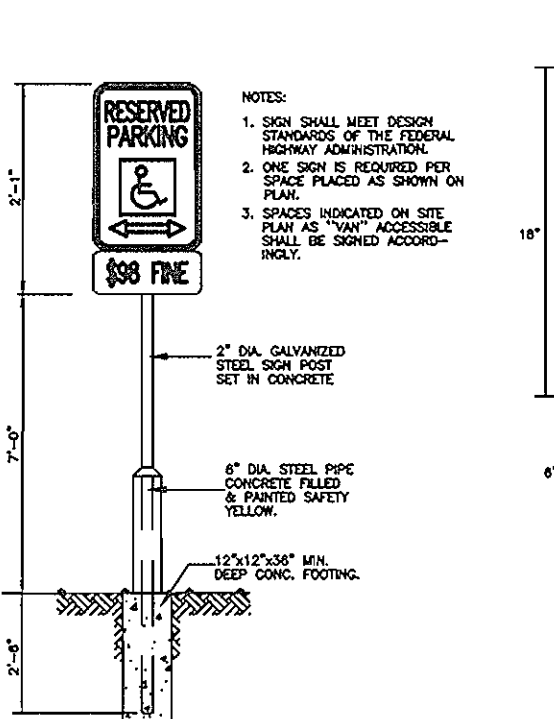
HANDICAP PARKING SIGN DETAIL
NO SCALE



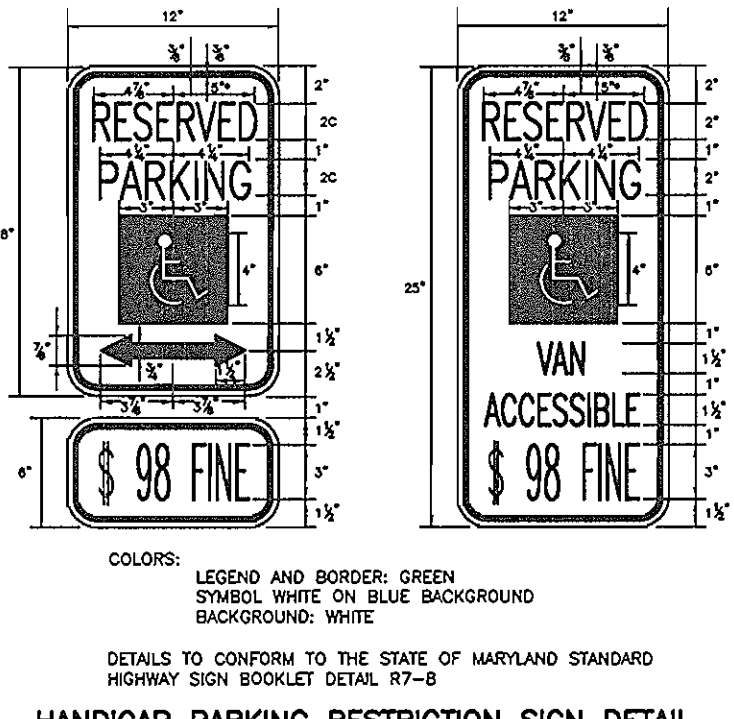
HANDICAP PARKING SIGN DETAIL
NO SCALE



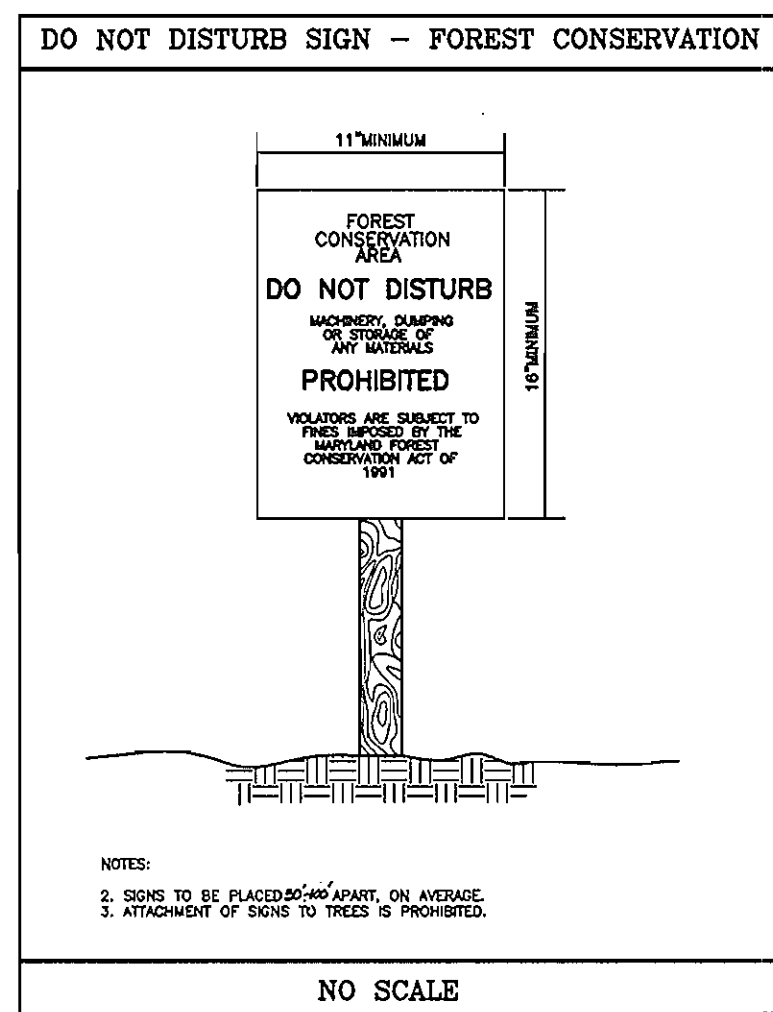
PAINTED SYMBOL
NO SCALE



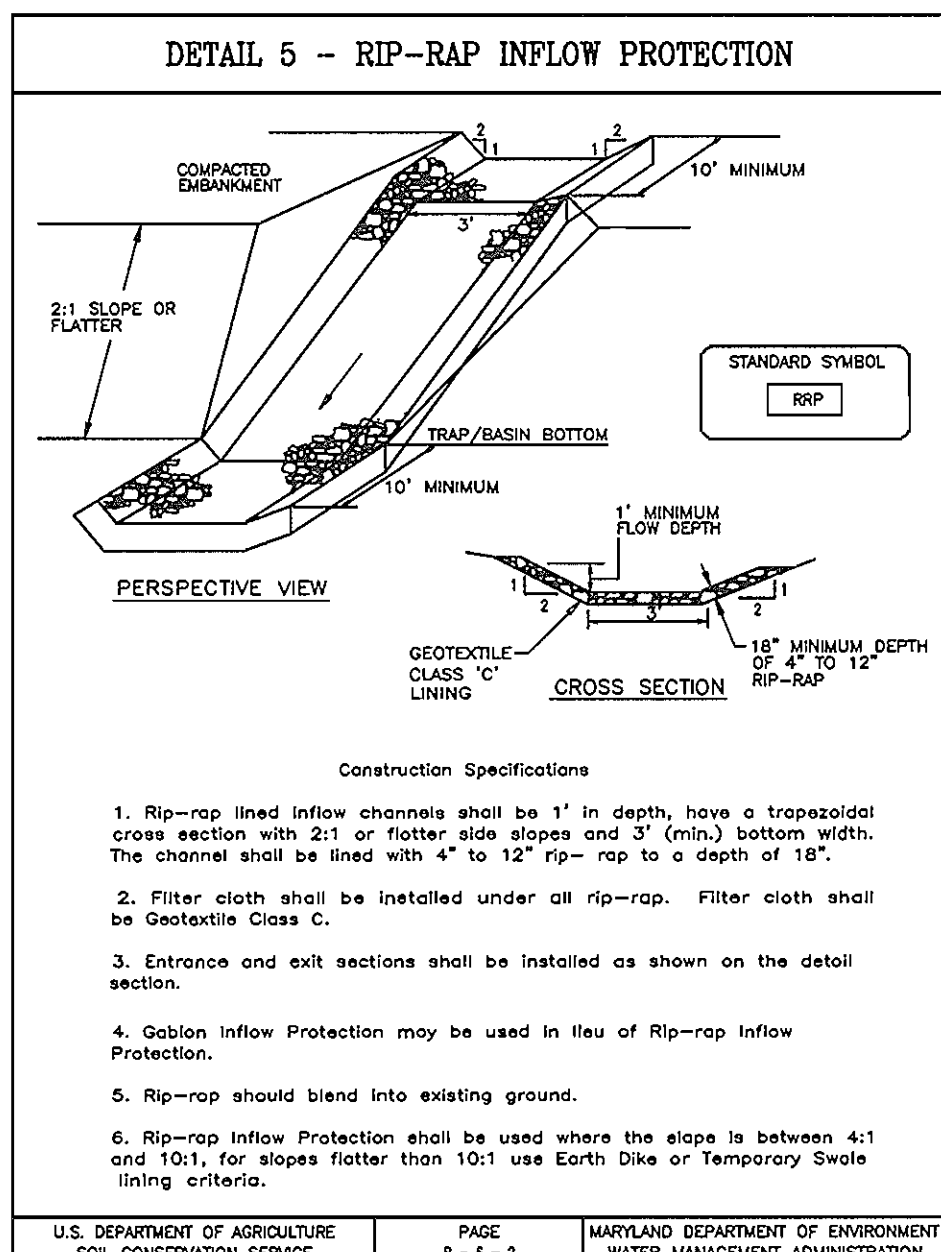
HANDICAP PARKING SIGN DETAIL
NO SCALE



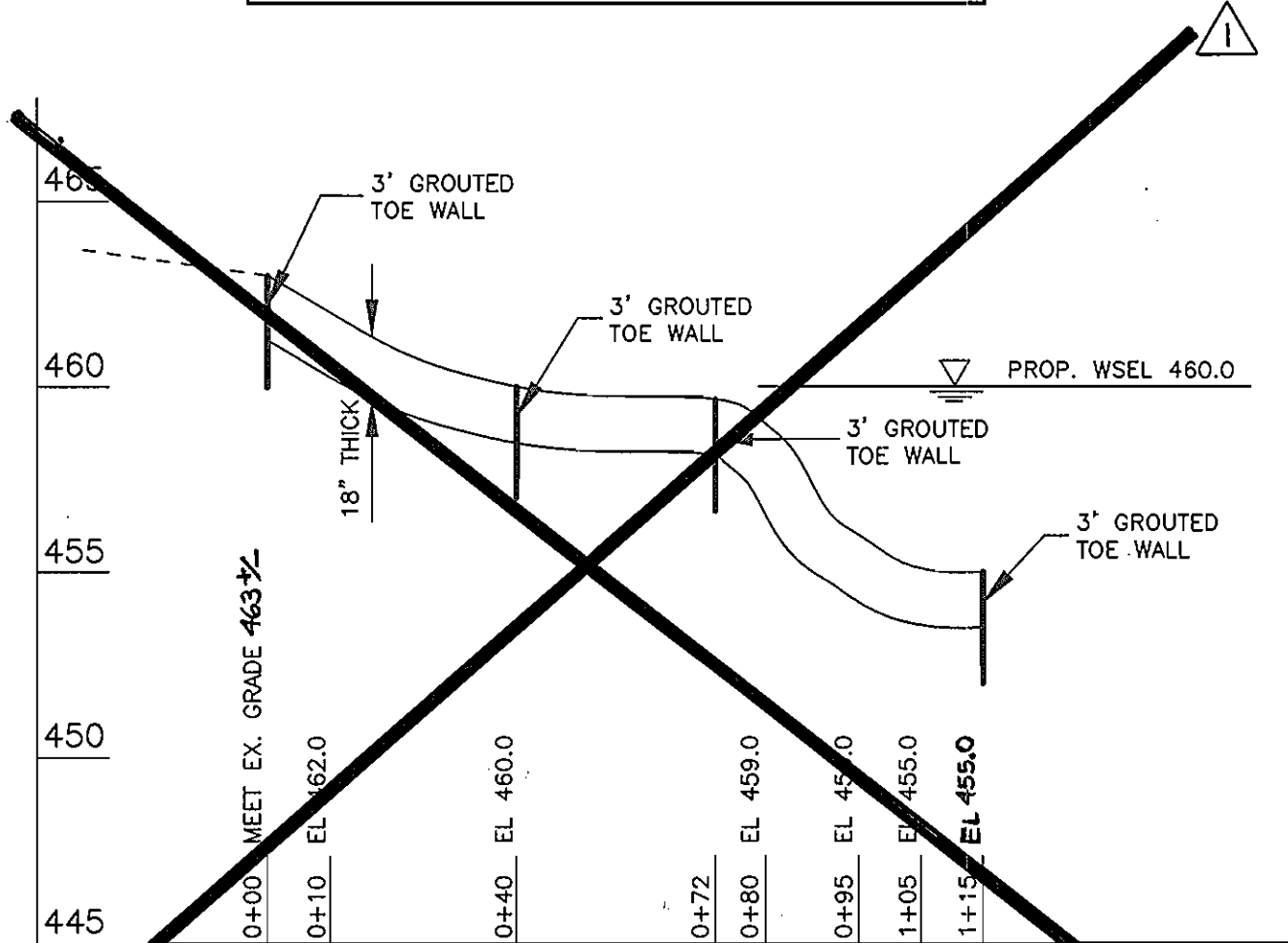
HANDICAP PARKING RESTRICTION SIGN DETAIL
NO SCALE



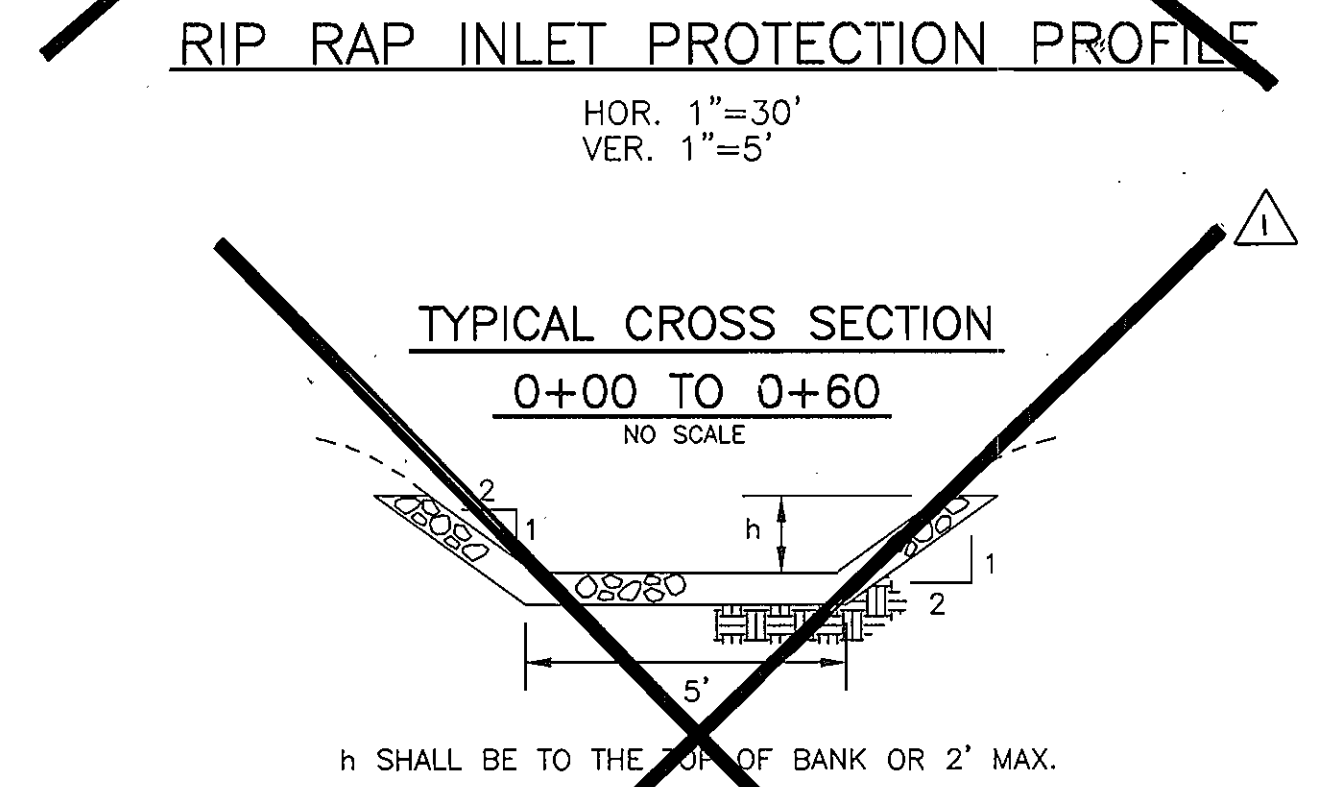
NO SCALE



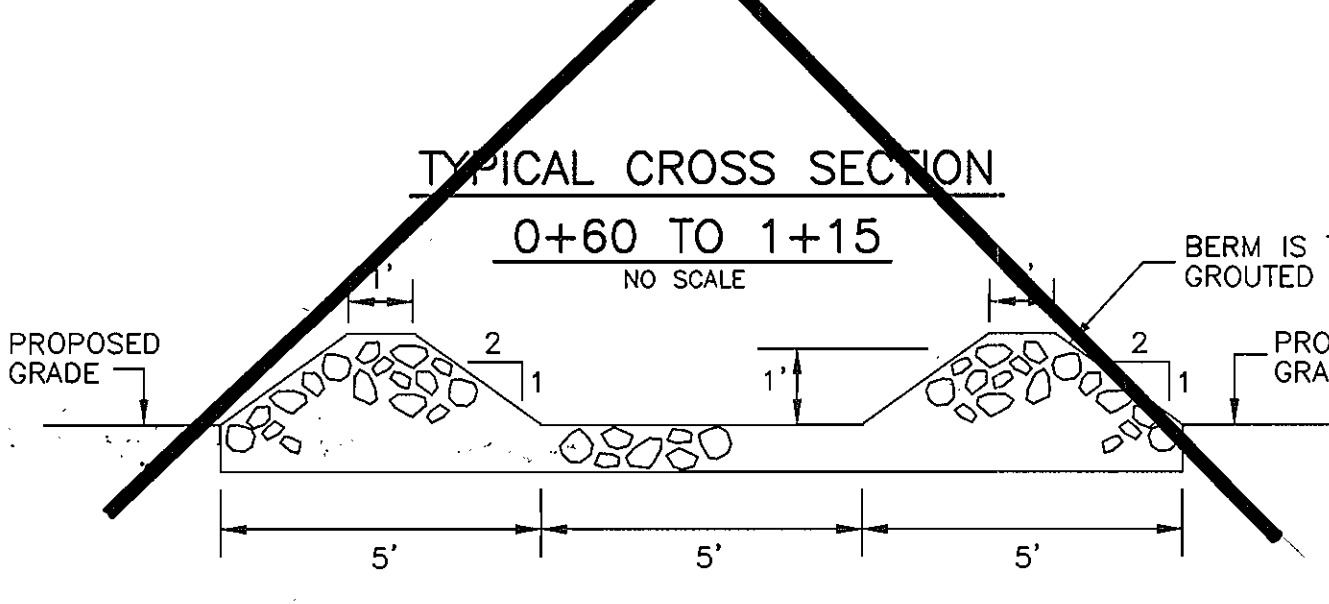
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 8 - 6 - 2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



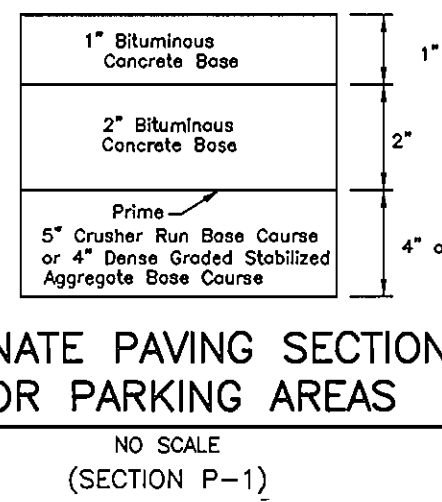
RIP RAP INLET PROTECTION PROFILE
HOR. 1"=30'
VER. 1"=5'



TYPICAL CROSS SECTION
0+00 TO 0+60
NO SCALE



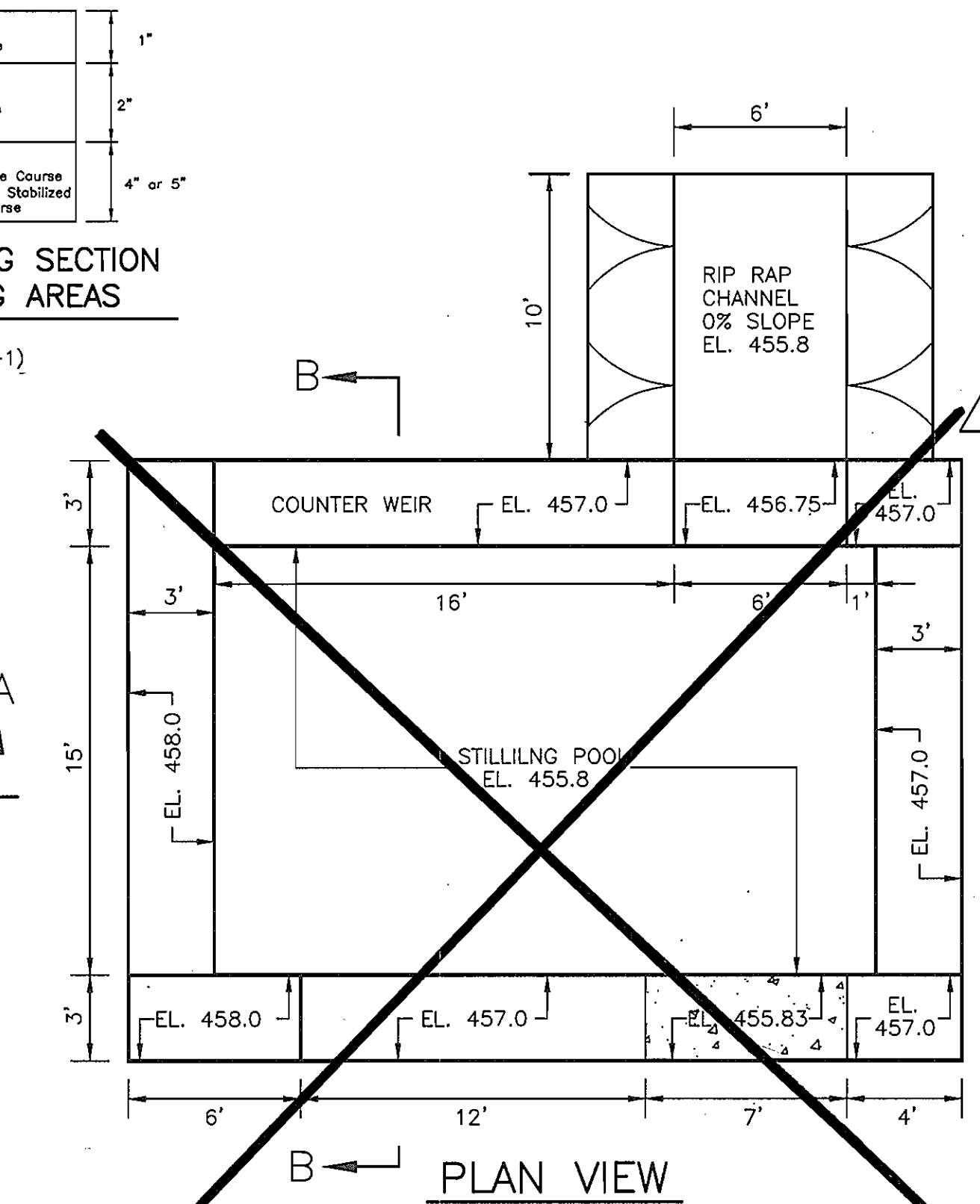
TYPICAL CROSS SECTION
0+60 TO 1+15
NO SCALE



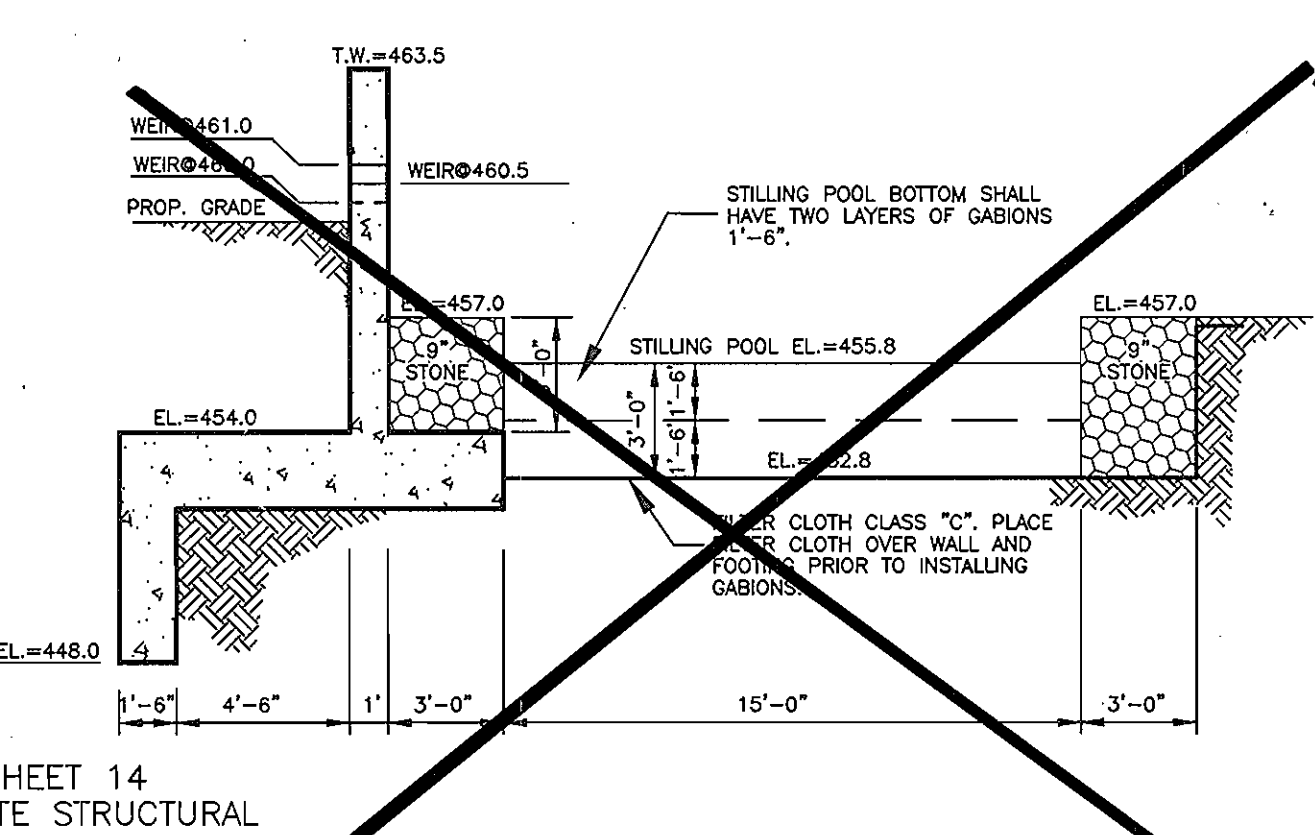
ALTERNATE PAVING SECTION FOR PARKING AREAS
NO SCALE (SECTION P-1)

TYPICAL SIDEWALK DETAIL
NOT TO SCALE

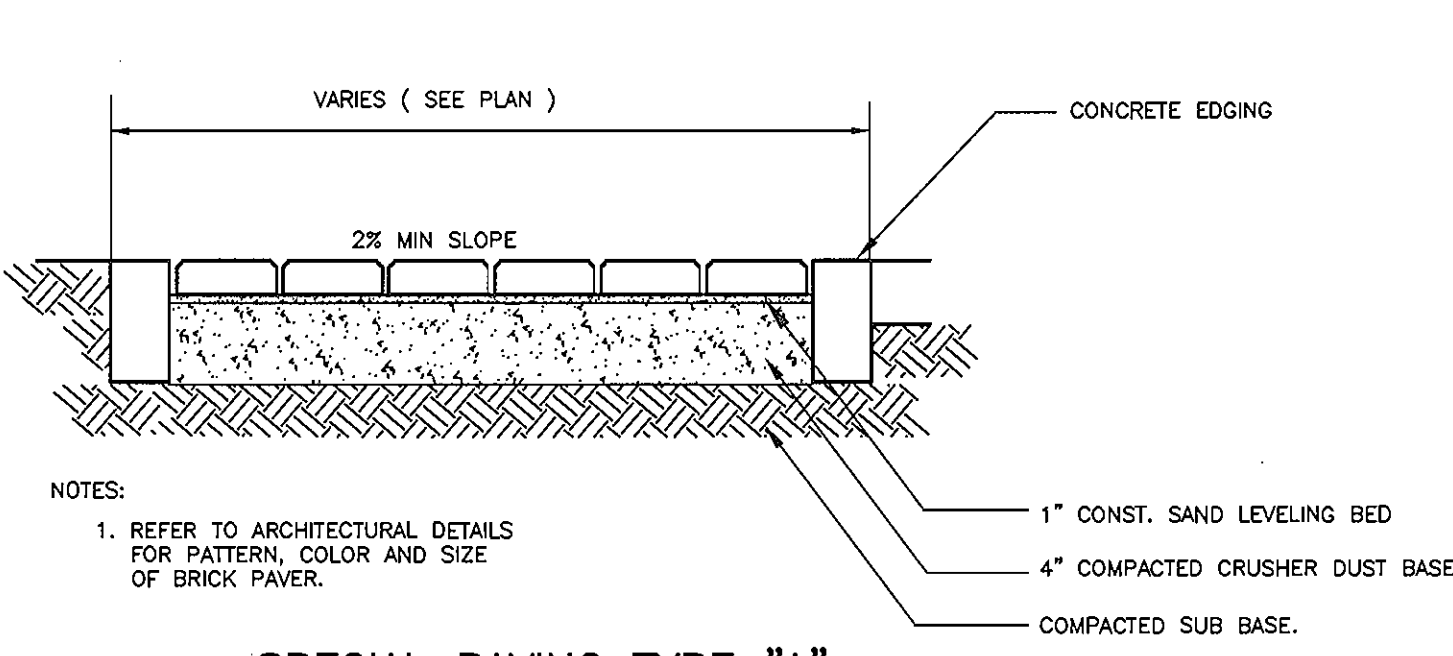
- GENERAL NOTES
- REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.
 - EXPANSION JOINT MATERIAL SHALL BE PLACED AROUND POLES, HYDRANTS, ETC. AND ALONG THE PROPERTY LINE WHEN THE SIDEWALK ABUTS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE.
 - EXPANSION JOINT MATERIAL SHALL HAVE A MAXIMUM LONGITUDINAL SPACING OF 100 FEET. THE MATERIAL SHALL BE 1/2 INCH PREFORMED CORK, TRIMMED AND SEALED WITH NON-STAINING, TWO-COMPONENT POLYSULFIDE OR POLYURETHANE ELASTOMERIC TYPE SEALANT COMPLYING WITH FS TT-S-00227.
 - SCORE THE CONCRETE TO A DEPTH OF 1/3 THE SLAB THICKNESS TO PROVIDE WEAKEND PLANE TRANSVERSE JOINTS AT 5'-0" INTERVALS PARALLEL WITH AND PERPENDICULAR TO THE CURBING.



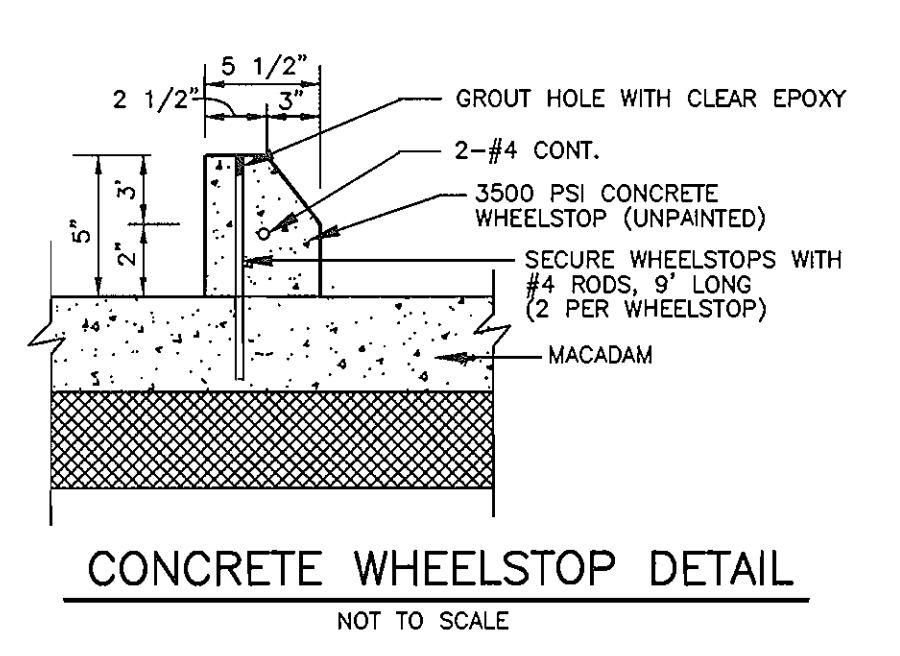
GABION STILLING POOL AND COUNTER/WEIR
STONE SIZE FOR STILLING POOL AND COUNTER/WEIR GABIONS SHALL BE 9".



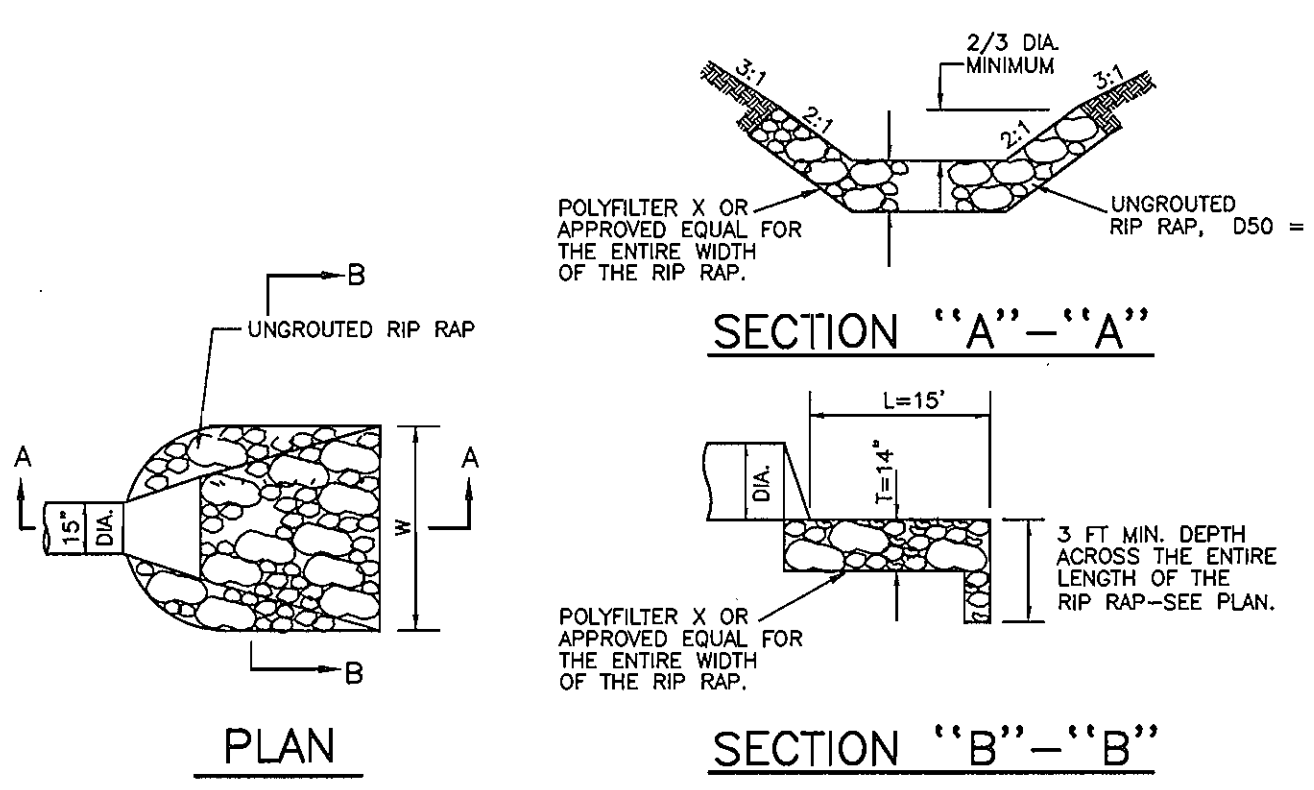
GABION STILLING POOL AND COUNTER/WEIR
SECTION B-B



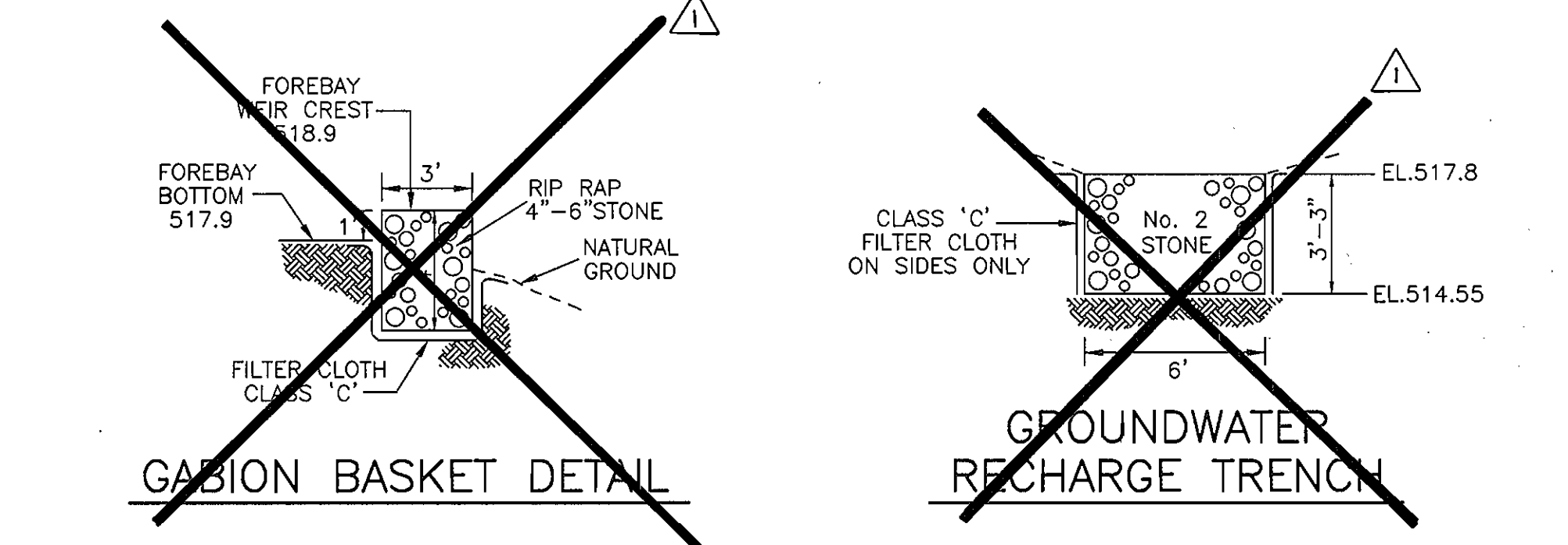
SPECIAL PAVING TYPE "A"
NOT TO SCALE



CONCRETE WHEELSTOP DETAIL
NOT TO SCALE

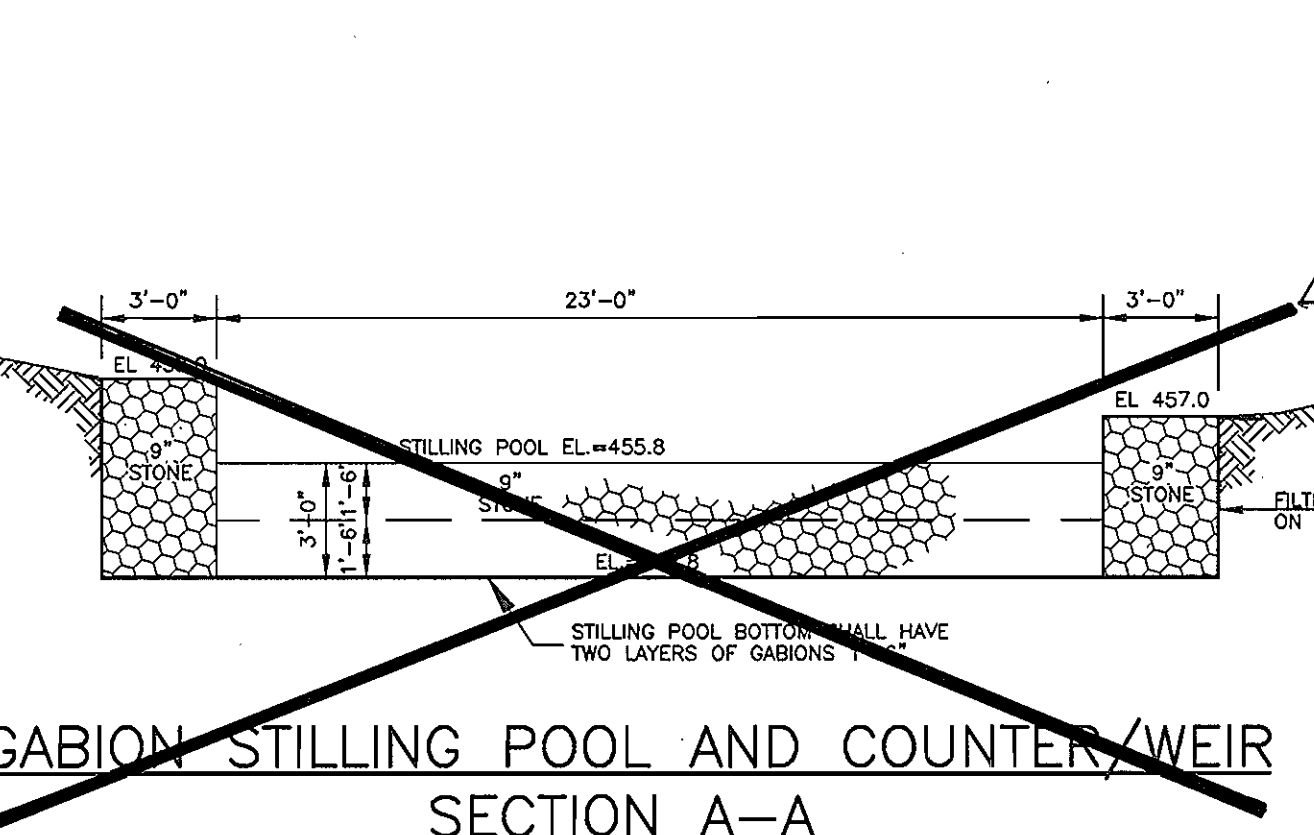


UNGROUTED RIP RAP DETAIL
NO SCALE



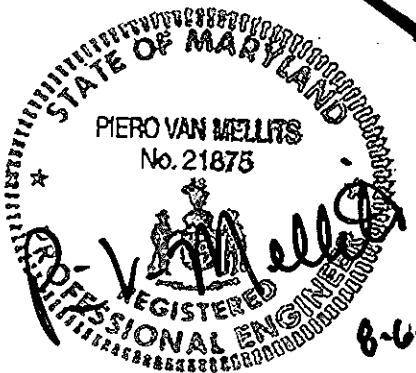
GABION BASKET DETAIL

GROUNDWATER RECHARGE TRENCH



GABION STILLING POOL AND COUNTER/WEIR
SECTION A-A

*REFER TO SHEET 14 FOR COMPLETE STRUCTURAL DETAILS.



REV. NO.	DATE	BY	REVISION
1	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY, ADDED FIELD & REVISED FOREST CONSERVATION AREAS.

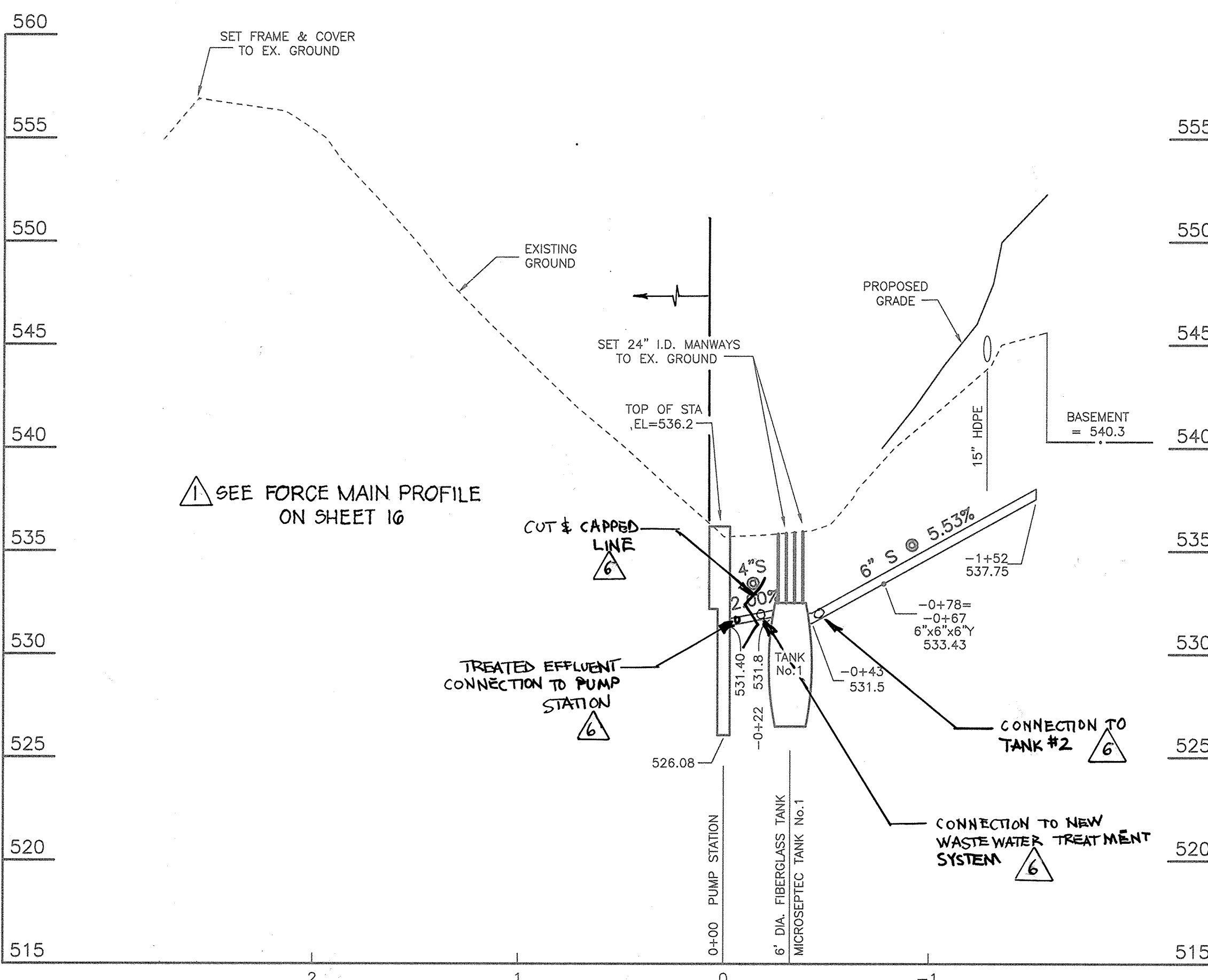
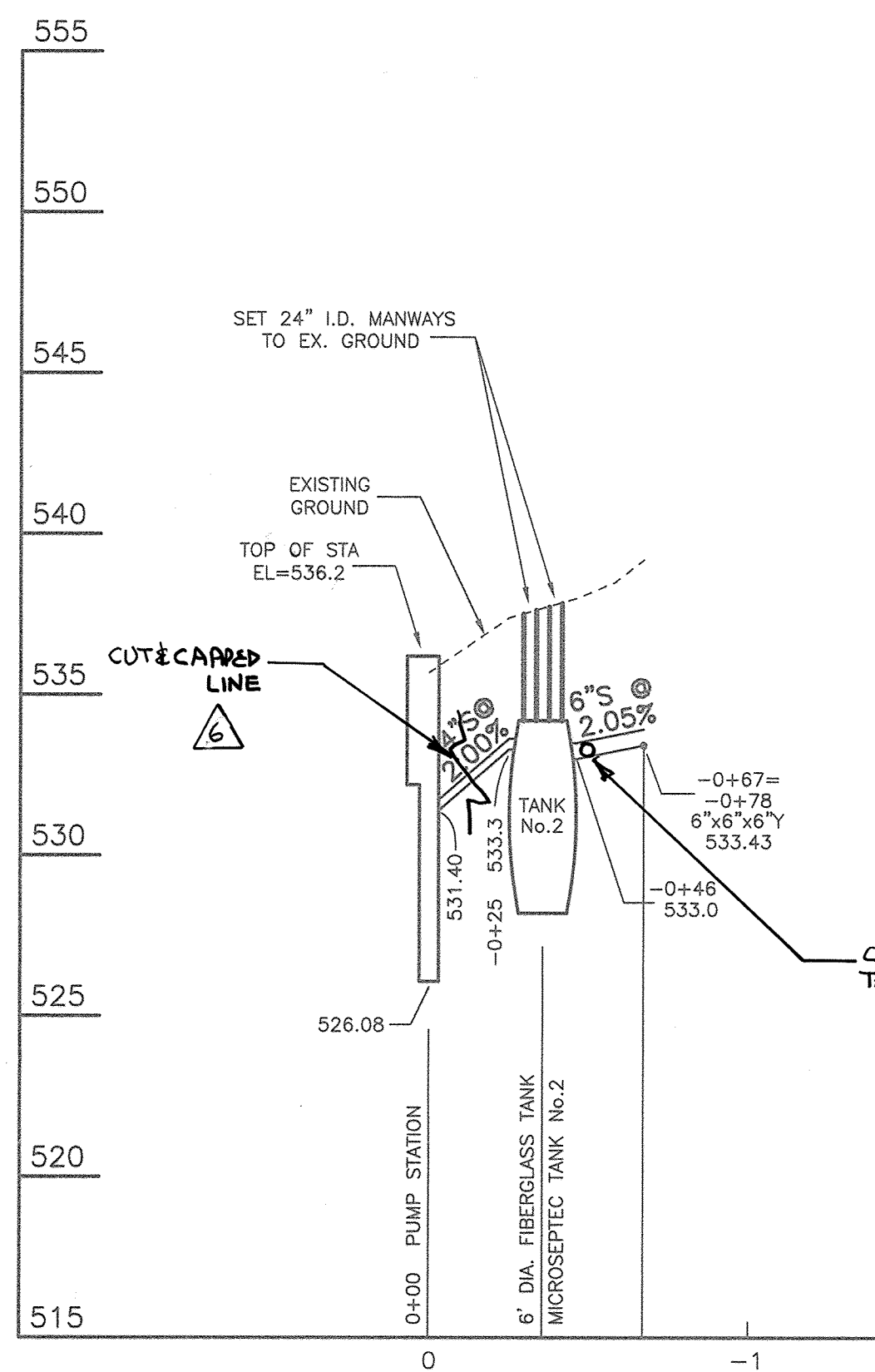


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ENGINEERS · PLANNERS · SURVEYORS
7135 MINSTREL WAY · COLUMBIA, MD 21045 · (410) 381-7500 BALT. · (301) 621-8100 WASH.

DESIGNED PC	CONSTRUCTION DETAILS	SCALE AS SHOWN
DRAWN ZAH	GLENELG COUNTRY SCHOOL PRIMARY SCHOOL	DRAWING 3 of 25
CHECKED TD	TAX MAP 22, GRID 22, PARCEL 146 LIBER 1296 FOLIO 245 FIFTH (5TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 99-174
DATE 5-16-01	FOR: GOULD PROPERTY COMPANY 1332 SOUTH CHARLES STREET BALTIMORE, MARYLAND 21230	FILE NO. 99-174 D

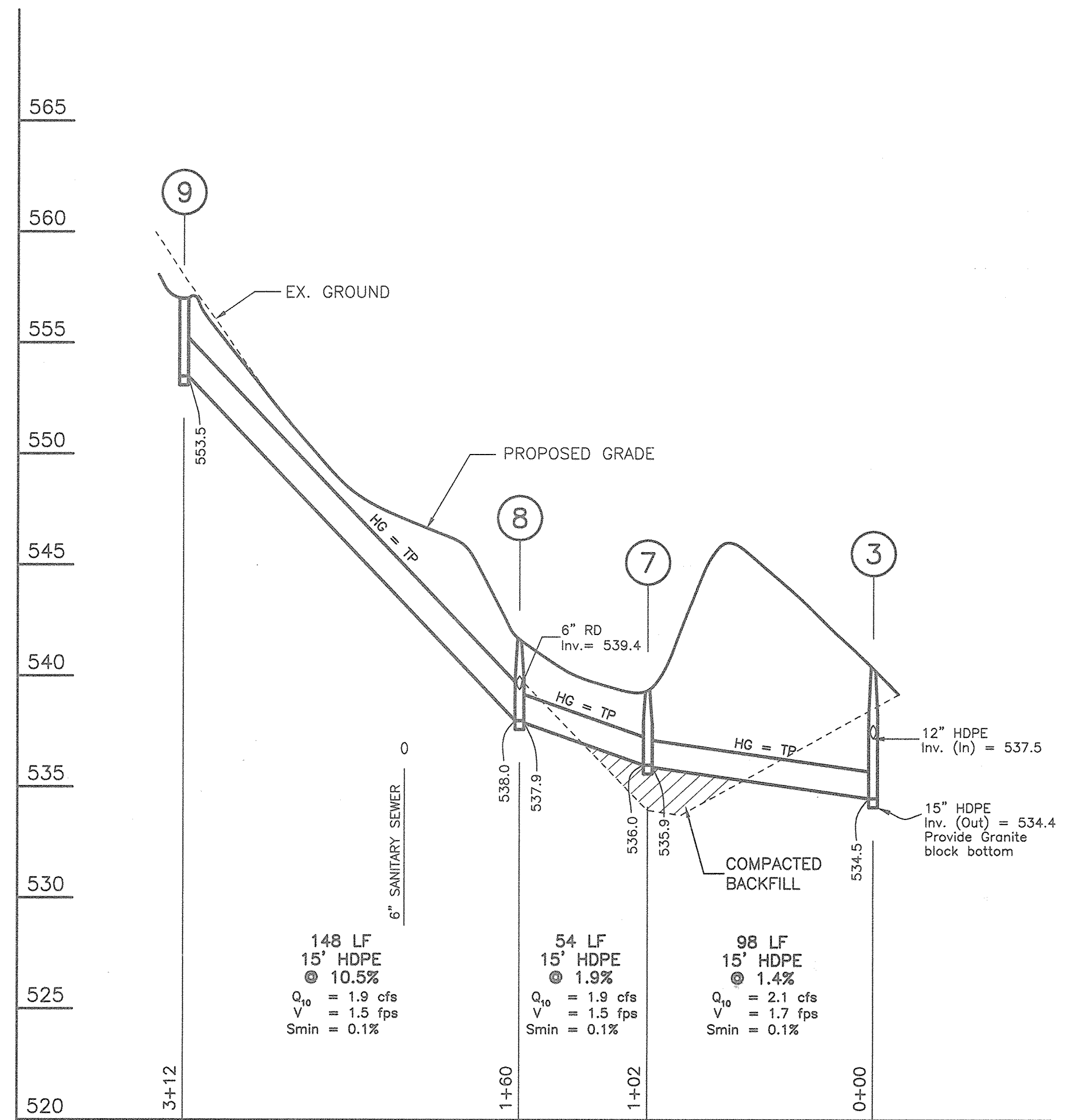
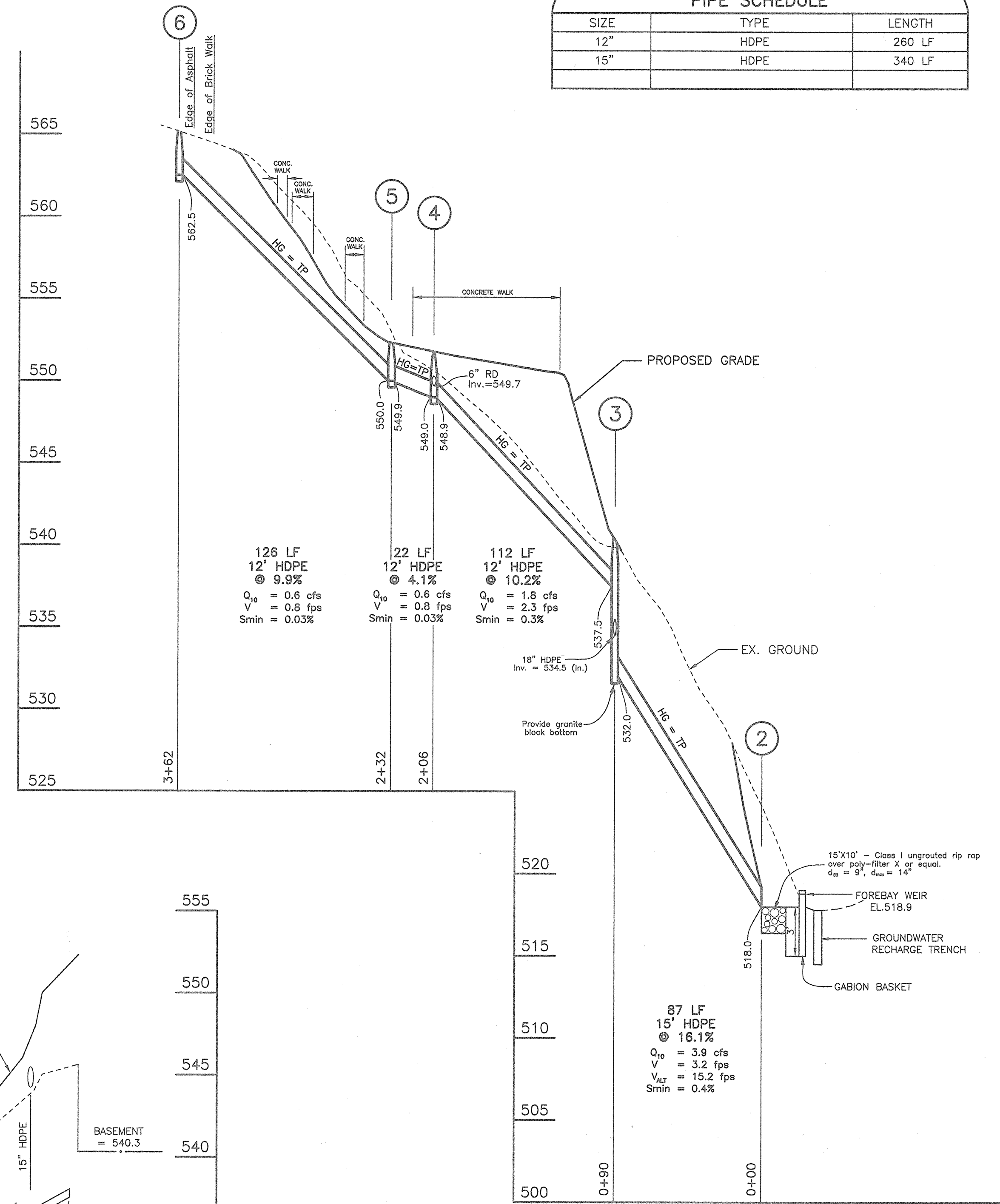
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:
Diana L. Matney M.D., P.E. 5-29-01
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING & ZONING
Chris Damann 5/29/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Conrad Hamilton 5/29/01
CHIEF, DIVISION OF LAND DEVELOPMENT
Leah K. Smith 5/30/01
DIRECTOR



PIPE SCHEDULE		
SIZE	TYPE	LENGTH
12"	HDPE	260 LF
15"	HDPE	340 LF

STRUCTURE SCHEDULE					
NO.	TYPE	INVERTS		REMARKS	LOCATION
		IN	OUT		
2	TYPE 'E' HEADWALL		518.0	HO. CO. STD. SD 5.31	N. 516153.0532, E. 810553.4099
3	MANHOLE 48" DIA.	537.5/534.5	532.0	HO. CO. STD. S 1.32	N. 516129.8329, E. 810514.7136
4	MANHOLE 48" DIA.		548.9	HO. CO. STD. S 1.32	N. 516203.3089, E. 810425.7661
5	MANHOLE 48" DIA.	550.0	549.9	HO. CO. STD. S 1.32	N. 516225.5303, E. 810439.2647
6	MANHOLE 48" DIA.		562.5	HO. CO. STD. S 1.32	N. 516296.7609, E. 810330.5164
7	MANHOLE 48" DIA.	537.4/536.0	535.9	HO. CO. STD. S 1.32	N. 516058.1287, E. 810442.7104
8	MANHOLE 48" DIA.	539.4/538.0	537.9	HO. CO. STD. S 1.32	N. 516059.2214, E. 810384.1804
9	SQUARE INLET TYPE "D" SLOTS ON 3 SIDES	SLOTS=556.7	553.5	HO. CO. STD. SD 4.11	N. 516149.7442, E. 810262.0780



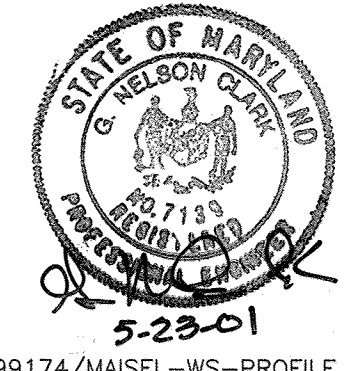
APPROVED: DEPARTMENT OF PLANNING & ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK
 DATE 5/20/01
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE 5/30/01

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:
 DATE 5-26-01
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

REVISION # 6
 THOMAS NEUGEBAUR, P.E. #29203
 11-5-18

REVISION # 1 ONLY
 PIERO V. MELLITS, P.E. #2875
 8-6-02

REV. NO.	DATE	BY	REVISION
1	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS. REVISED SWM FACILITY. ADDED FIELD & REVISED FOREST CONSERVATION AREAS.

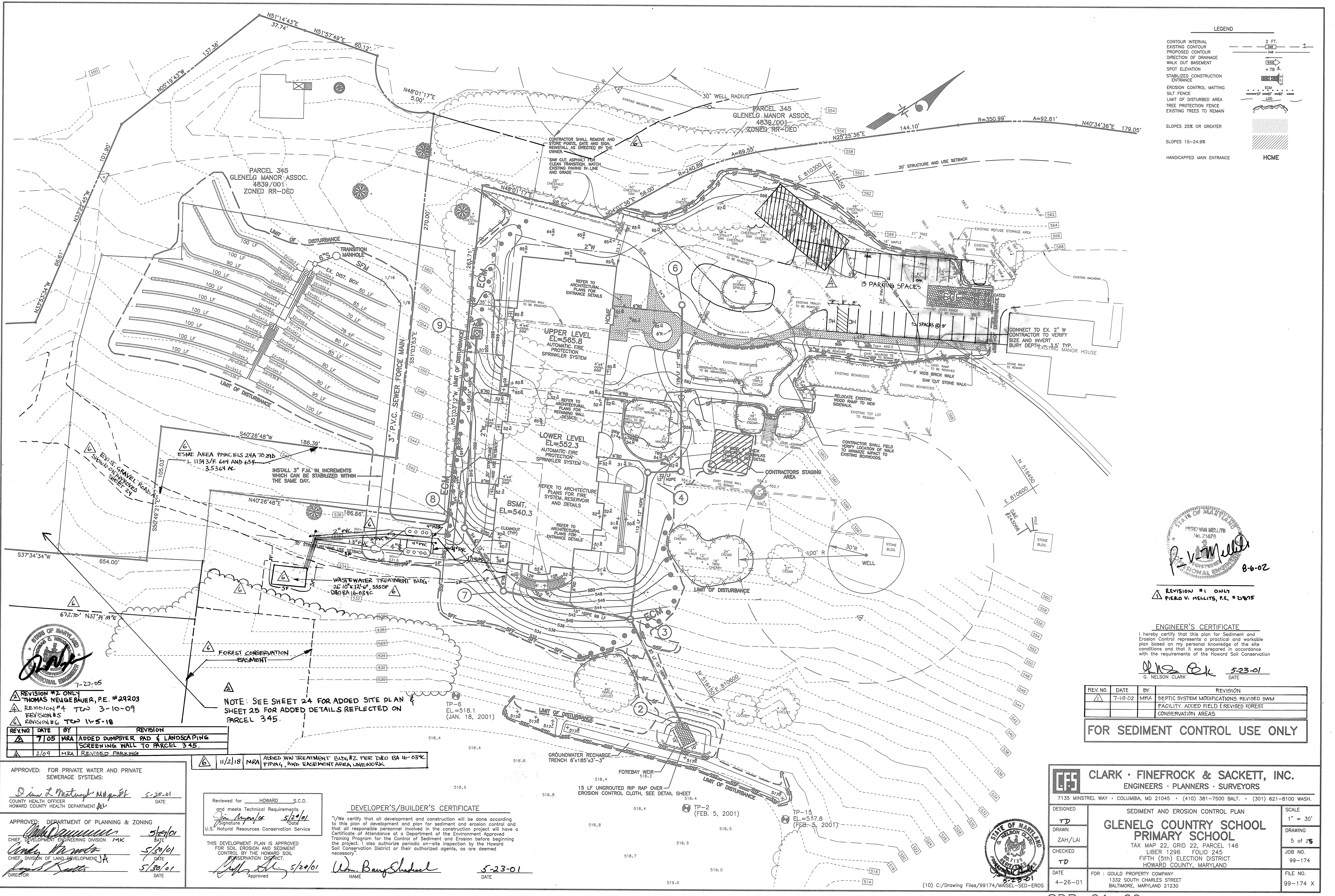


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 ENGINEERS · PLANNERS · SURVEYORS
 7135 MINSTREL WAY · COLUMBIA, MD 21045 · (410) 381-7500 BALT. · (301) 621-8100 WASH.

DESIGNED: PC/CM
 DRAWN: KQL/LAI
 CHECKED: TD
 DATE: 5-8-01

SCALE: AS SHOWN
 DRAWING: 4 of 25
 JOB NO.: 99-174
 FILE NO.: 99-174-D

STORM DRAINAGE, WATER AND SEWER PROFILES
PARCEL 345
TAX MAP 22 GRID 22
 LIBER 1296 FOLIO 245
 FIFTH (5th) ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 FOR: GOULD PROPERTY COMPANY
 1332 SOUTH CHARLES STREET
 BALTIMORE, MARYLAND 21230



LEGEND

CONTOUR INTERVAL	2 FT.
EXISTING CONTOUR	---
PROPOSED CONTOUR	- - -
DIRECTION OF DRAINAGE	→
WALK OUT BASEMENT	▭
SPOT ELEVATION	±
STABILIZED CONSTRUCTION ENTRANCE	▭
EROSION CONTROL MATTING	▭
SILT FENCE	▭
LIMIT OF DISTURBED AREA	---
TREE PROTECTION FENCE	▭
EXISTING TREES TO REMAIN	○
SLOPES 25% OR GREATER	▨
SLOPES 15-24.9%	▨
HANDICAPPED MAIN ENTRANCE	▭
HCME	▭



REVISION #1 ONLY
 PIERO V. MELITS, P.E. #21875

ENGINEER'S CERTIFICATE

I hereby certify that this plan for Sediment and Erosion Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation

G. NELSON CLARK
 DATE 5-23-01

REV. NO.	DATE	BY	REVISION
1	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY, ADDED FIELD & REVISED FOREST CONSERVATION AREAS

FOR SEDIMENT CONTROL USE ONLY

7-27-05

REVISION #2 ONLY
 THOMAS NEUGEBAUER, P.E. #29203

REVISION #4 TO 3-10-09

REVISION #5

REVISION #6 TO 11-5-18

REV. NO.	DATE	BY	REVISION
1	7/05	MRA	ADDED DUMPSTER PAD & LANDSCAPING SCREENING WALL TO PARCEL 345.
2	2/09	MRA	REVISED PARKING

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:

Dianna L. McIntyre 5-25-01
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING & ZONING

John J. ... 5/24/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK
... 5/30/01
 CHIEF, DIVISION OF LAND DEVELOPMENT JA
 DIRECTOR

Reviewed for HOWARD S.C.D. and meets Technical Requirements U.S. Natural Resources Conservation Service

Signature: *...* Date: 5/24/01

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

Signature: *...* 5/24/01
 Approved

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

Signature: *Wm. Barry Shudach*
 NAME
 DATE 5-23-01

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 ENGINEERS · PLANNERS · SURVEYORS

7135 MINSTREL WAY · COLUMBIA, MD 21045 · (410) 381-7500 BALT. · (301) 621-8100 WASH.

DESIGNED	TD	SCALE	1" = 30'
DRAWN	ZAH/LAI	DRAWING	5 of 25
CHECKED	TD	JOB NO.	99-174
DATE	4-26-01	FILE NO.	99-174 X

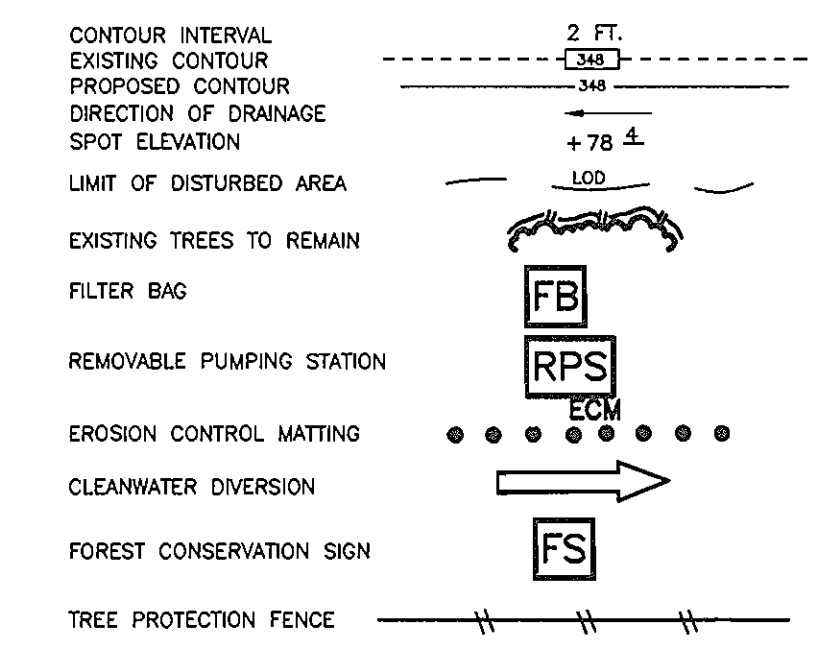
SEDIMENT AND EROSION CONTROL PLAN

GLENELG COUNTRY SCHOOL PRIMARY SCHOOL

TAX MAP 22, GRID 22, PARCEL 146
 LIBER 1296 FOLIO 245
 FIFTH (5th) ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

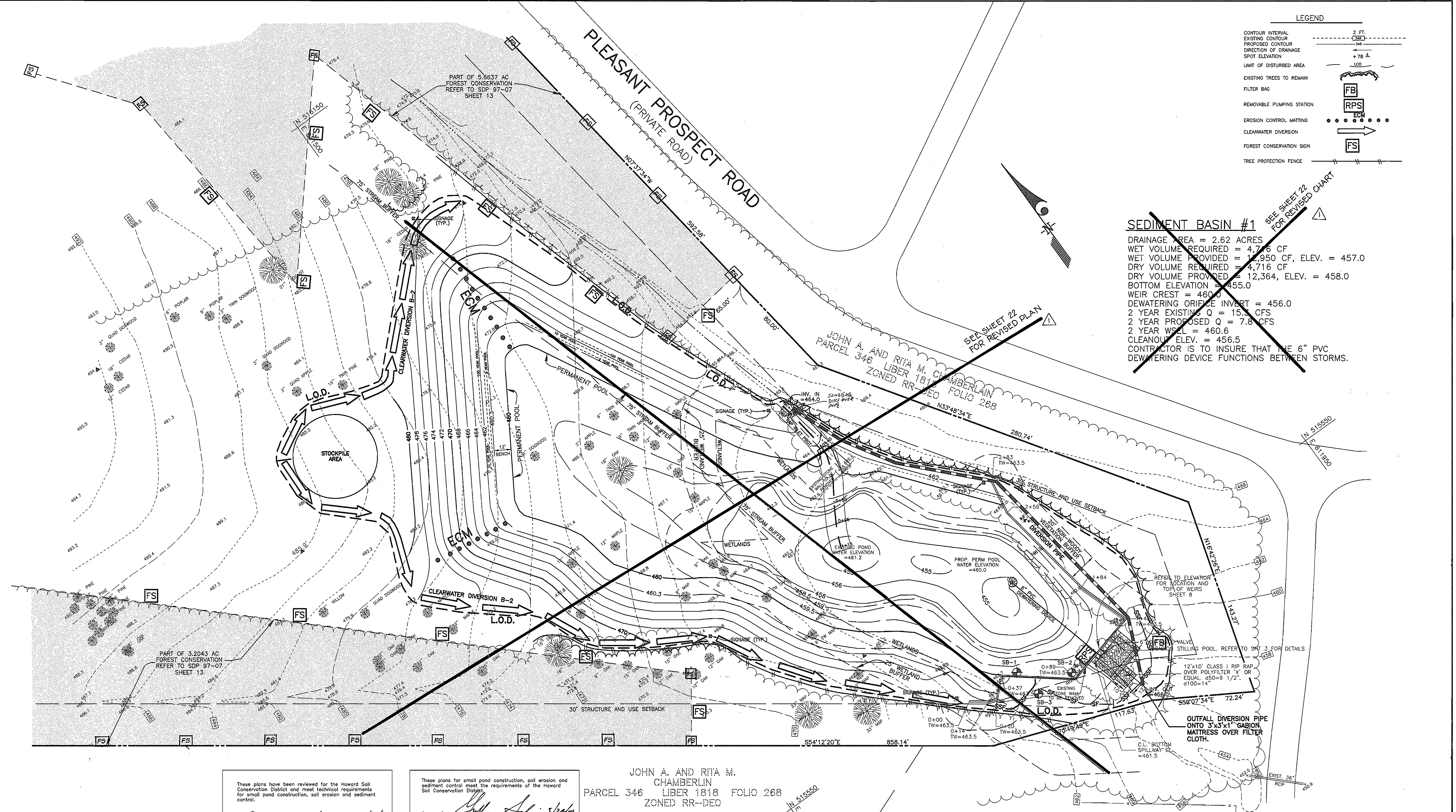
FOR: GOULD PROPERTY COMPANY
 1332 SOUTH CHARLES STREET
 BALTIMORE, MARYLAND 21230

LEGEND



SEDIMENT BASIN #1

DRAINAGE AREA = 2.62 ACRES
 WET VOLUME REQUIRED = 4,776 CF
 WET VOLUME PROVIDED = 12,950 CF, ELEV. = 457.0
 DRY VOLUME REQUIRED = 4,716 CF
 DRY VOLUME PROVIDED = 12,364, ELEV. = 458.0
 BOTTOM ELEVATION = 455.0
 WEIR CREST = 460.0
 DEWATERING ORIFICE INVERT = 456.0
 2 YEAR EXISTING Q = 15.3 CFS
 2 YEAR PROPOSED Q = 7.8 CFS
 2 YEAR WSEL = 460.6
 CLEANOUT ELEV. = 456.5
 CONTRACTOR IS TO INSURE THAT THE 6" PVC DEWATERING DEVICE FUNCTIONS BETWEEN STORMS.



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

Juan Morales 5/24/01
U.S. Natural Resource Conservation Service Date

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

Approved: *[Signature]* 5/24/01
Howard S.C.D. Date

JOHN A. AND RITA M. CHAMBERLIN
PARCEL 346 LIBER 1818 FOLIO 268
ZONED RR-DEO

FOR SEDIMENT CONTROL USE ONLY

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:

[Signature] 5-29-01
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING & ZONING

[Signature] 5/29/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 5/30/01
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 5/30/01
DIRECTOR

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."

[Signature] 5-23-01
Signature of Developer Date



REVISIONS ONLY

PIERO V. MELLITS, P.E., #21875

REV. NO.	DATE	BY	REVISION
1	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY, ADDED FIELD & REVISED FOREST CONSERVATION AREAS.

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."

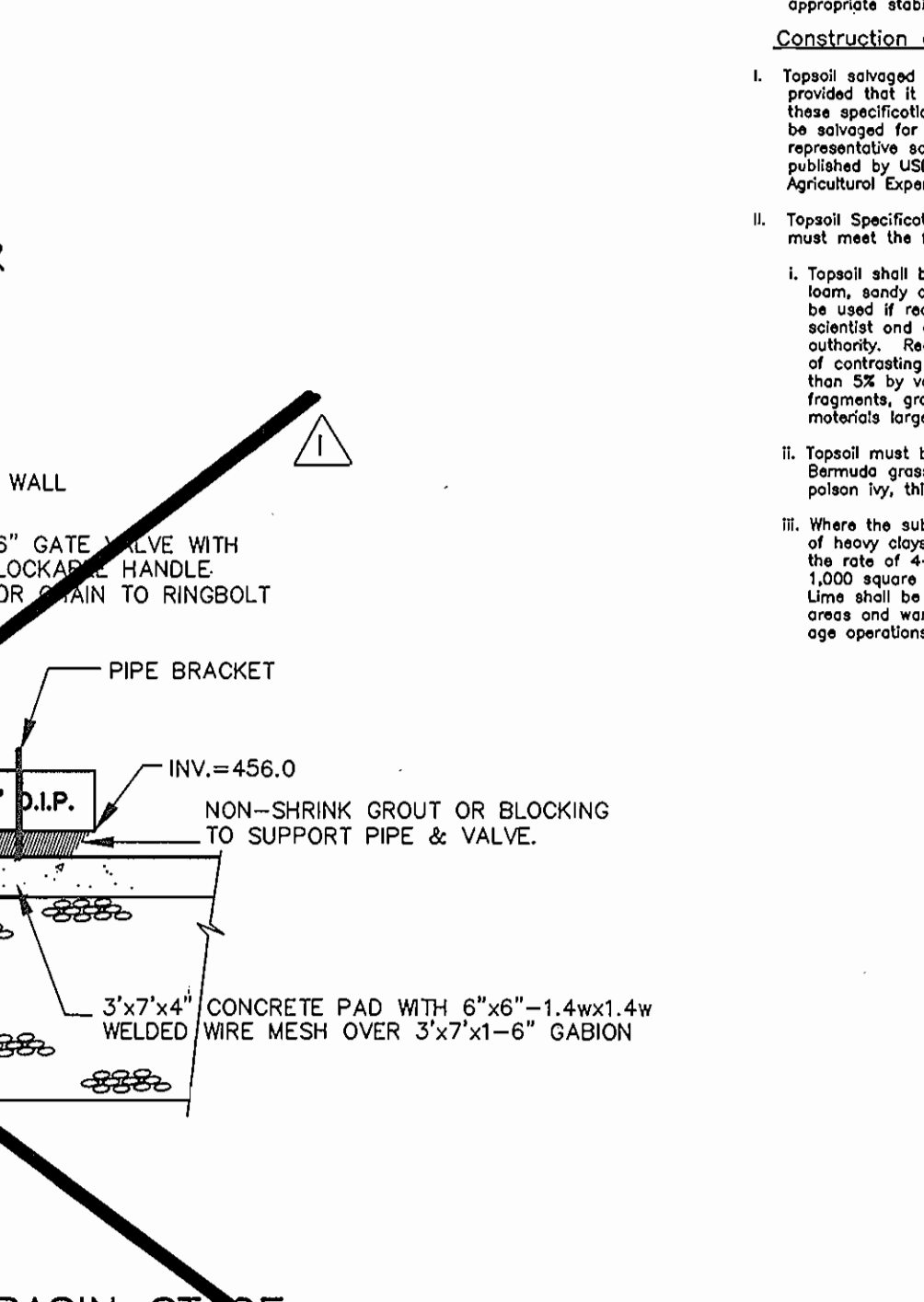
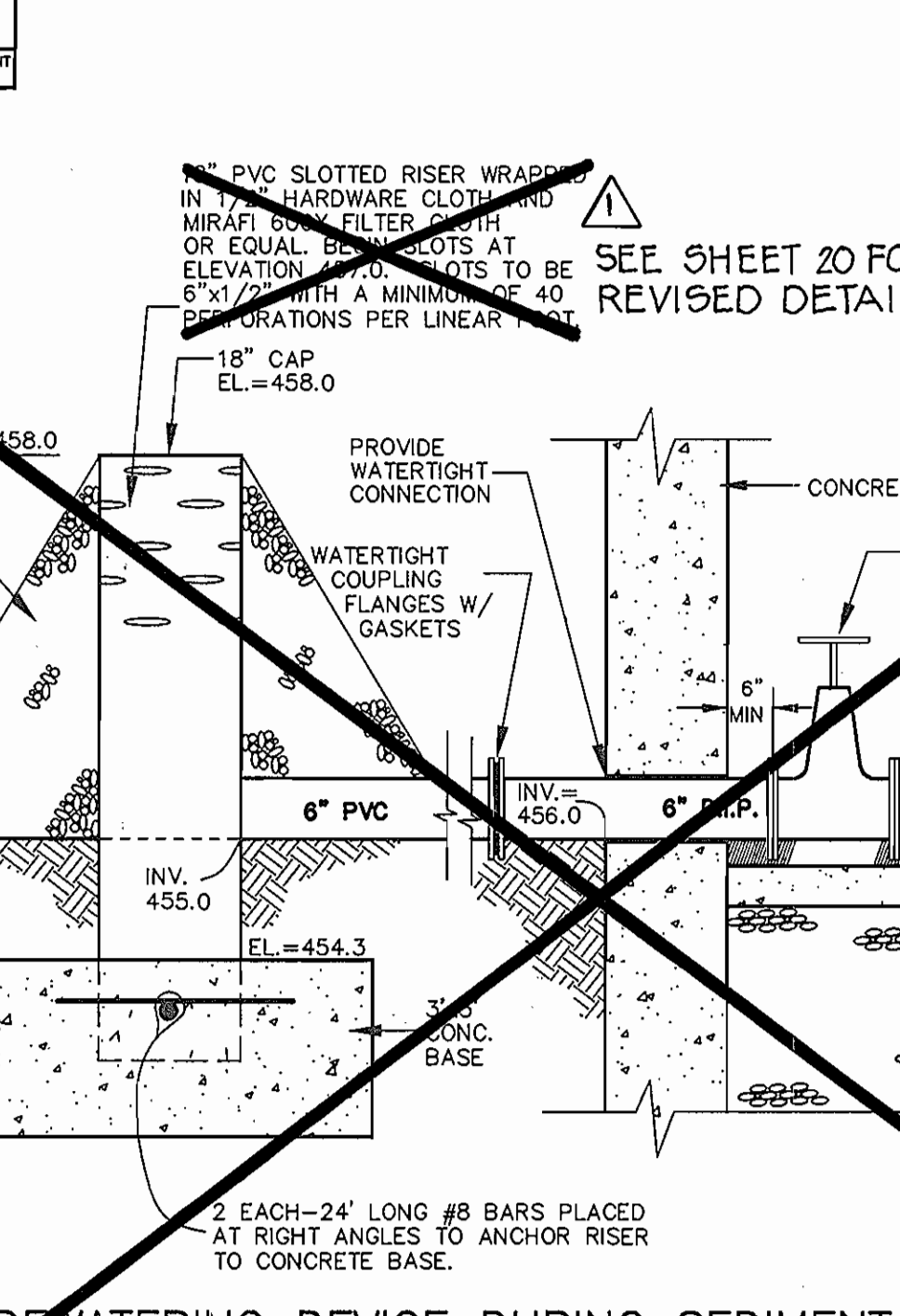
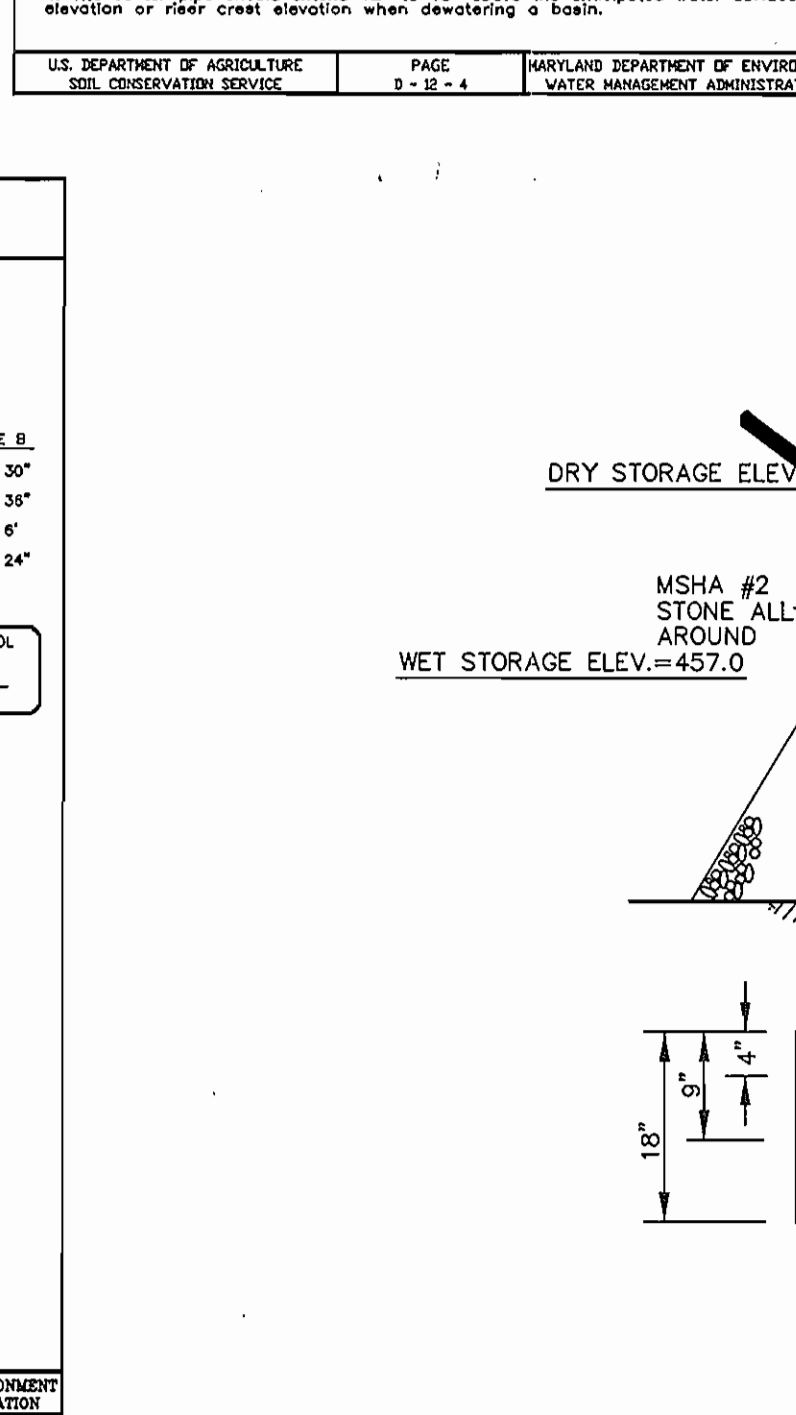
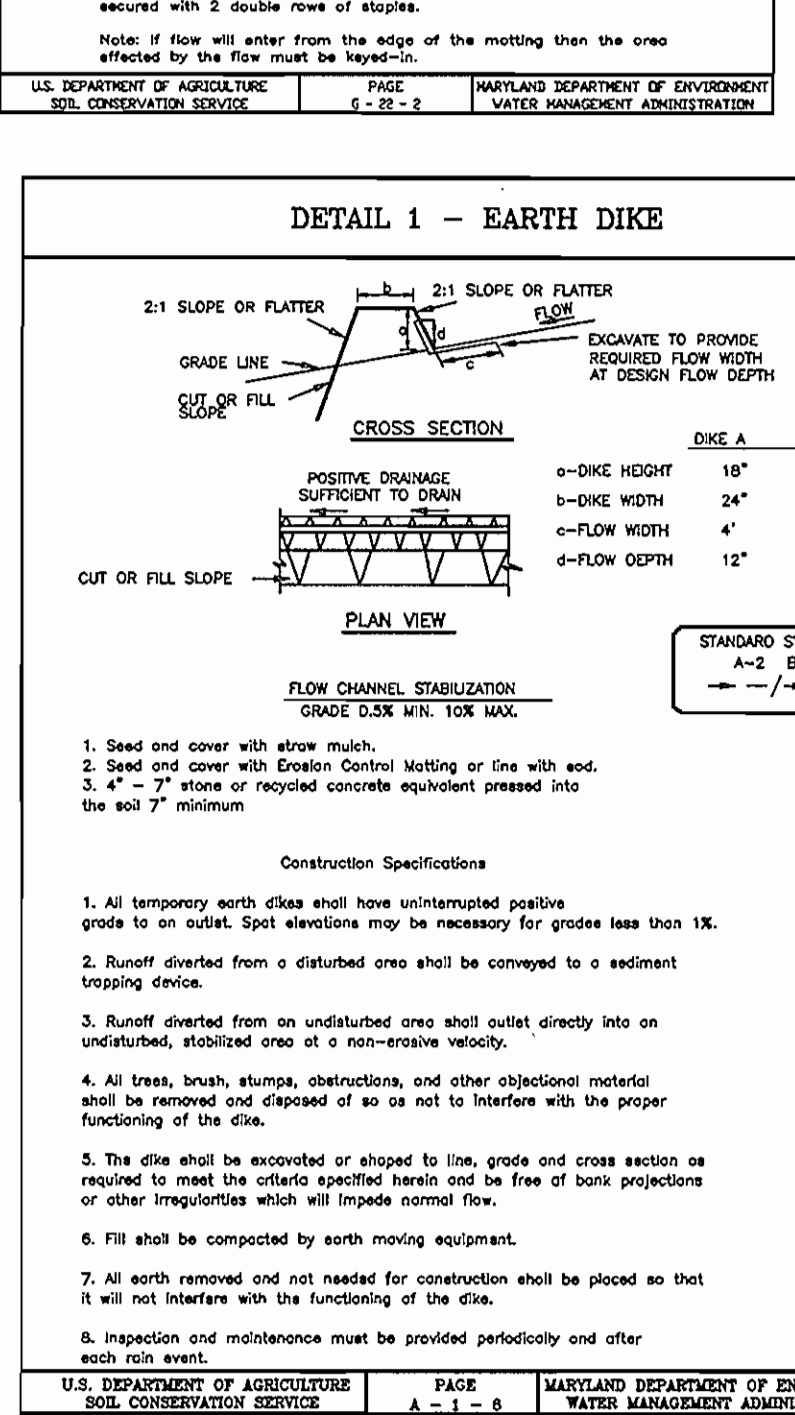
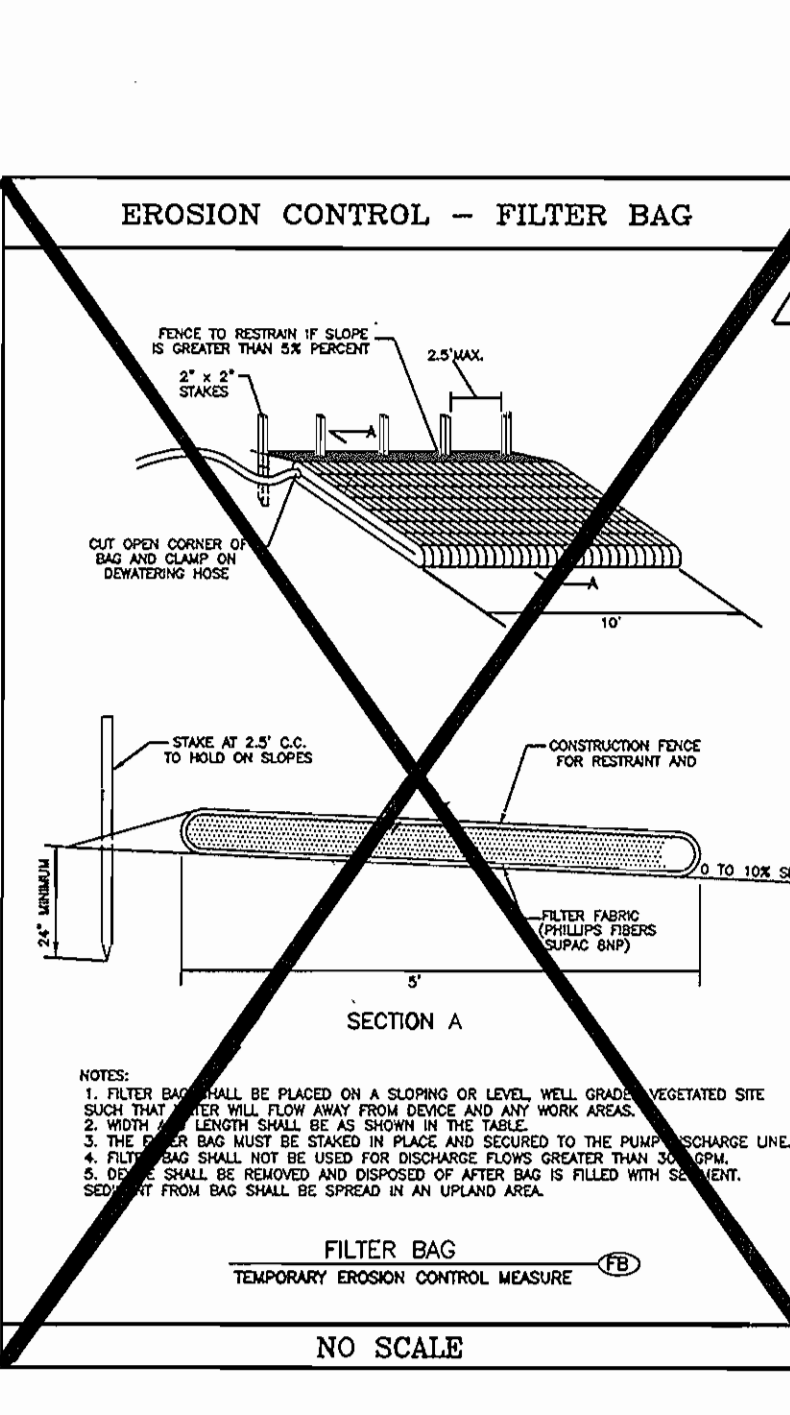
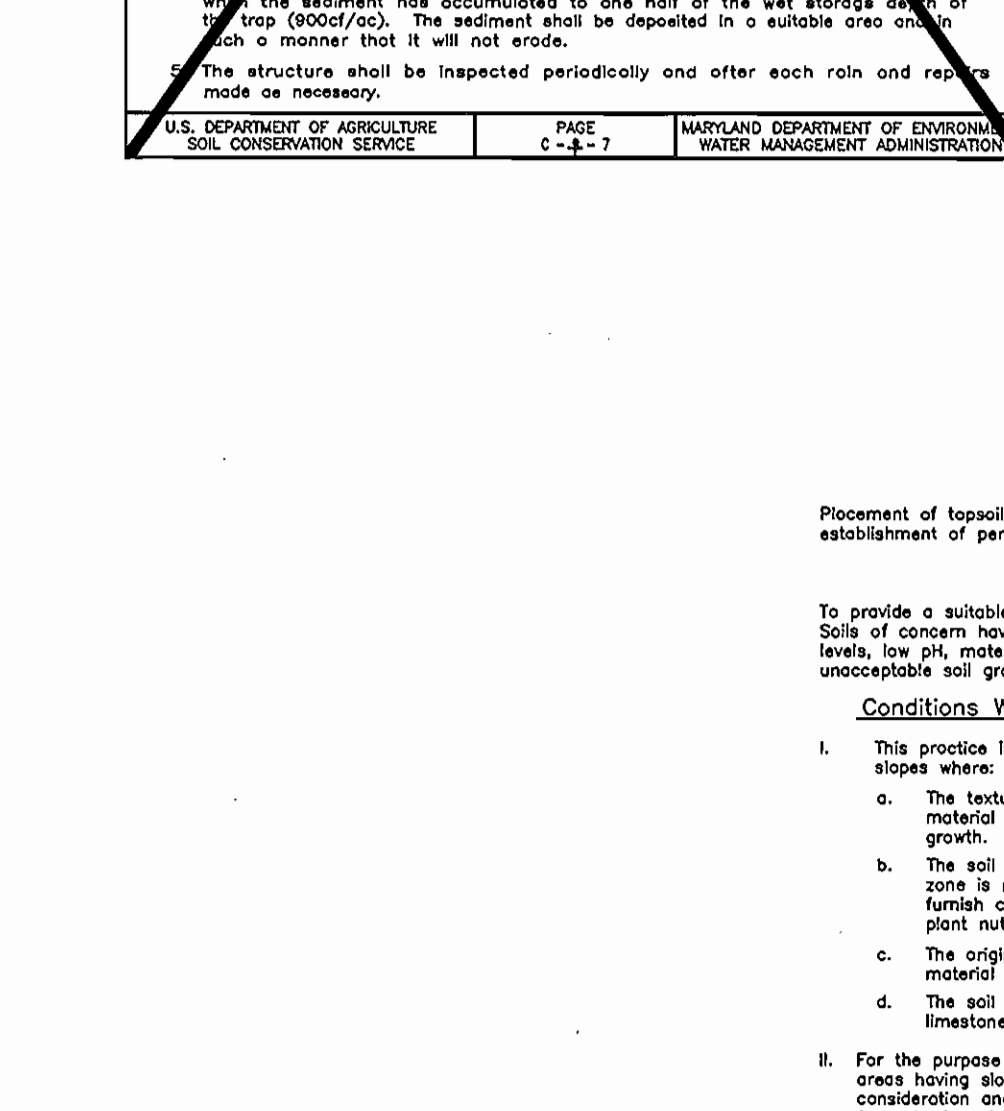
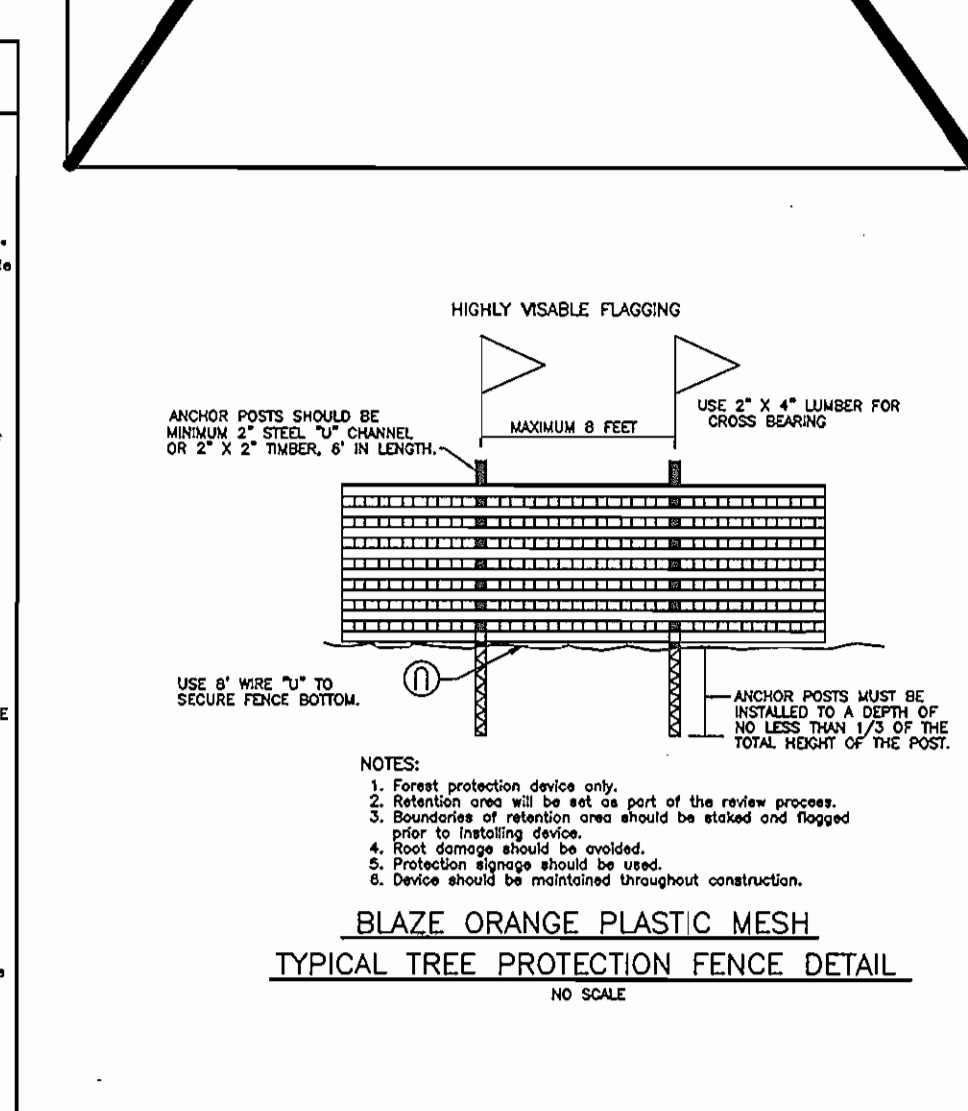
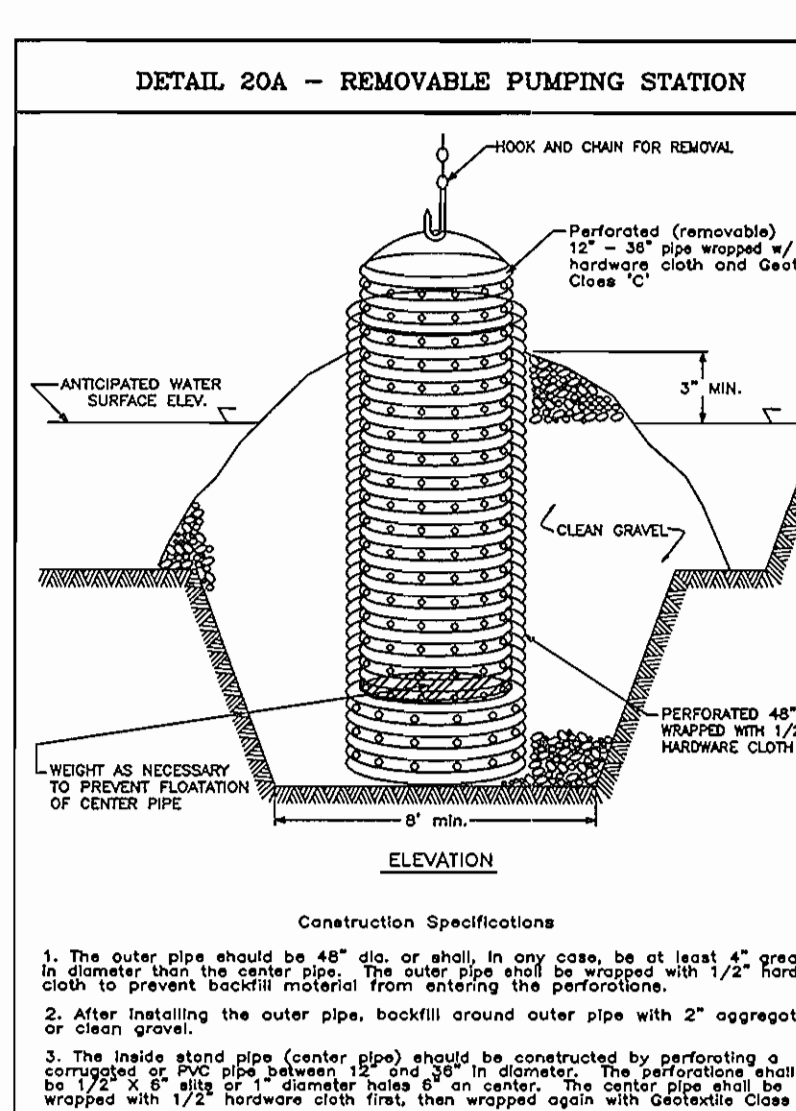
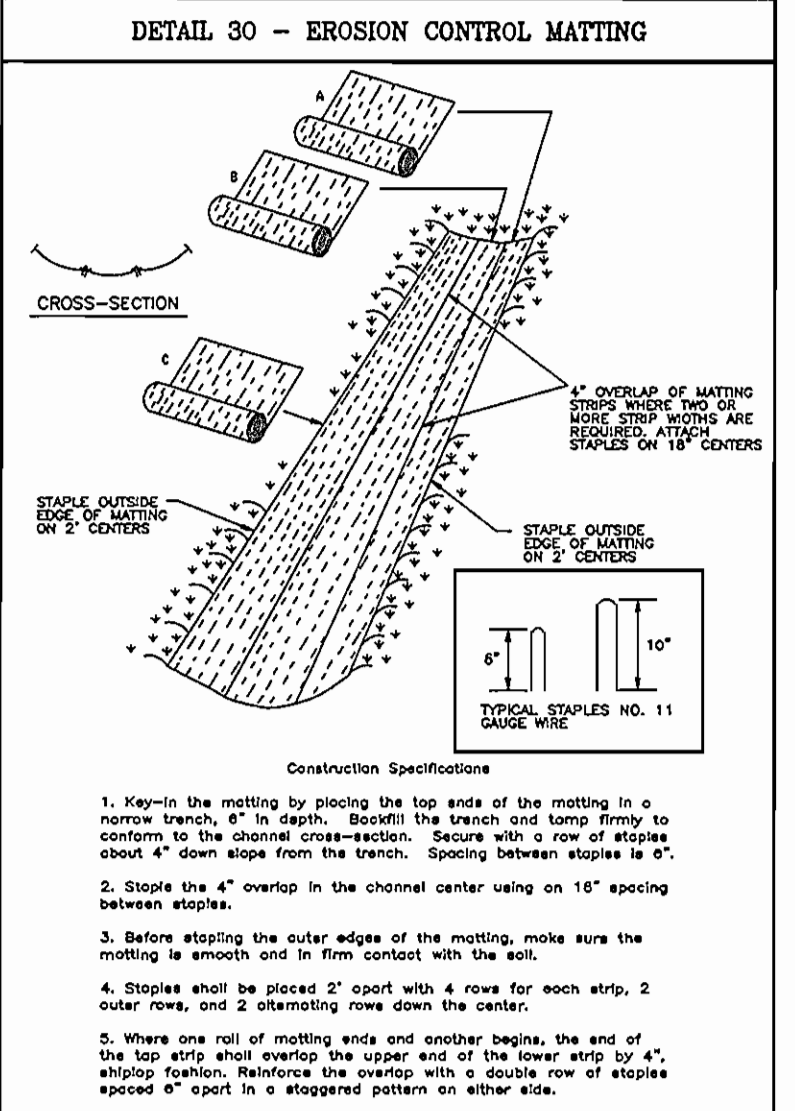
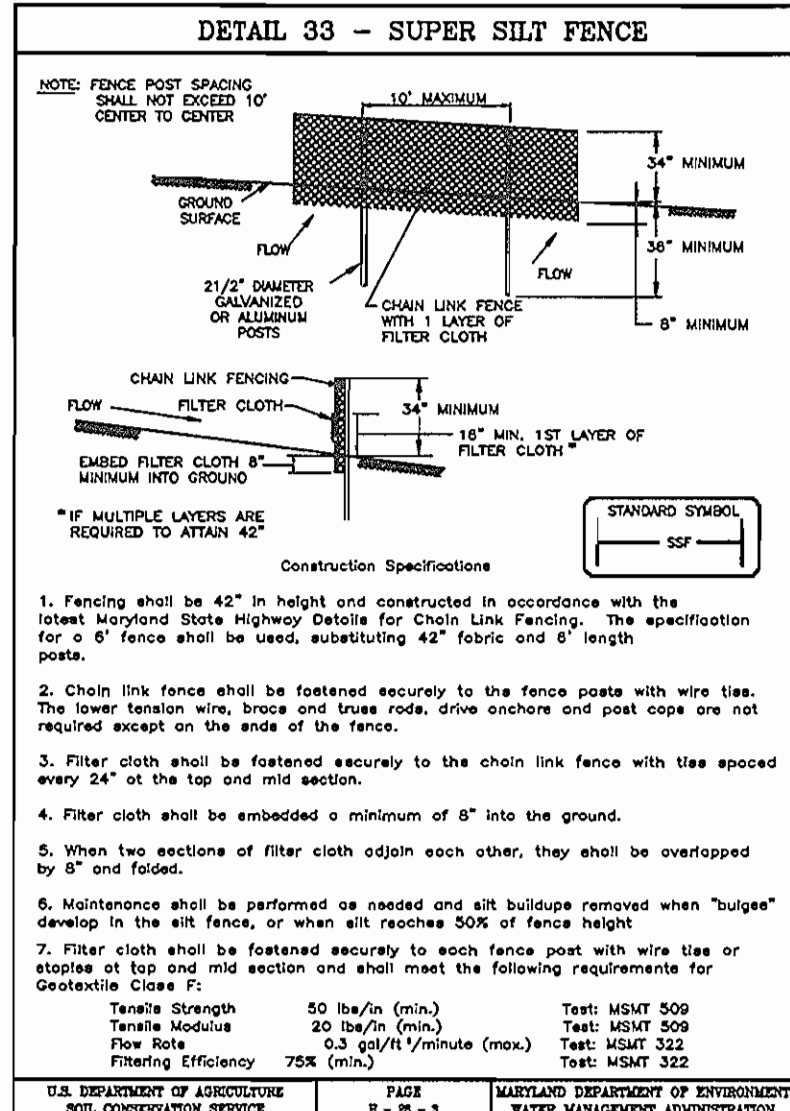
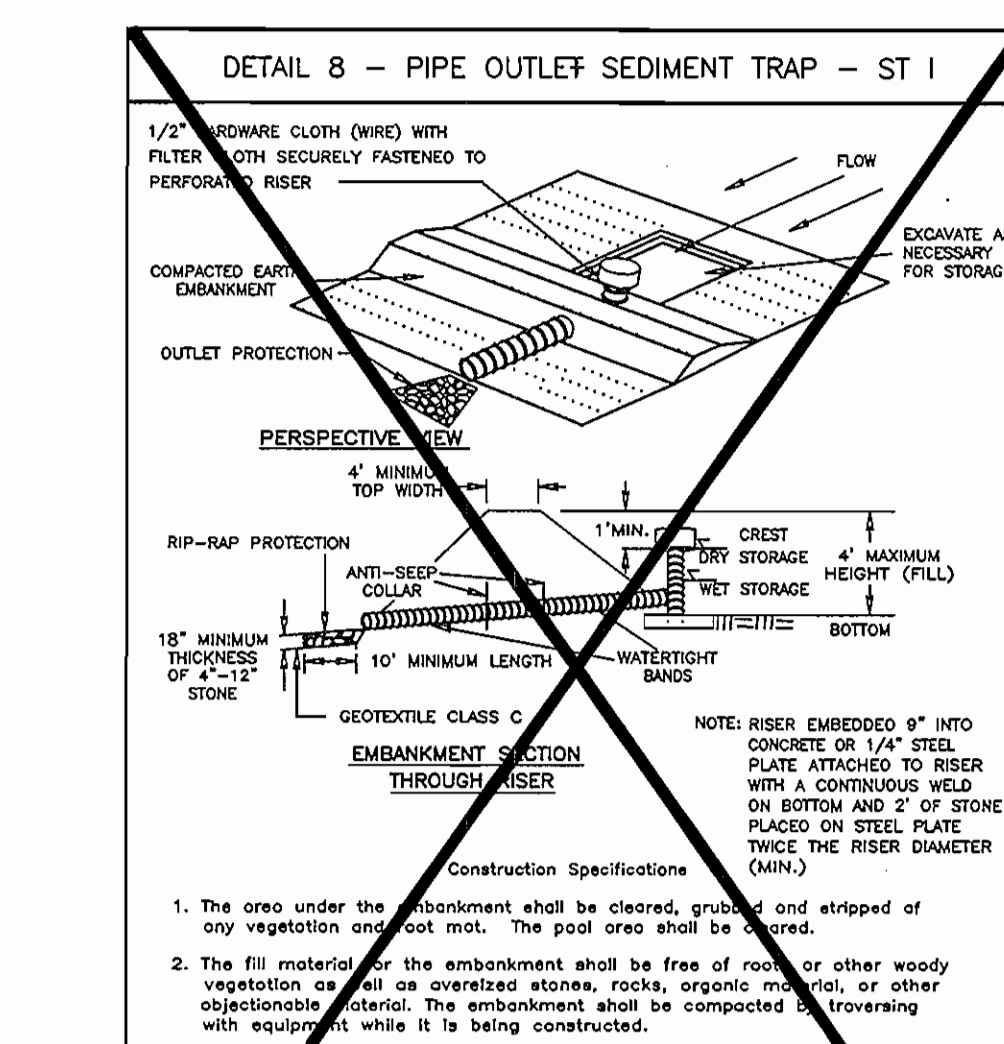
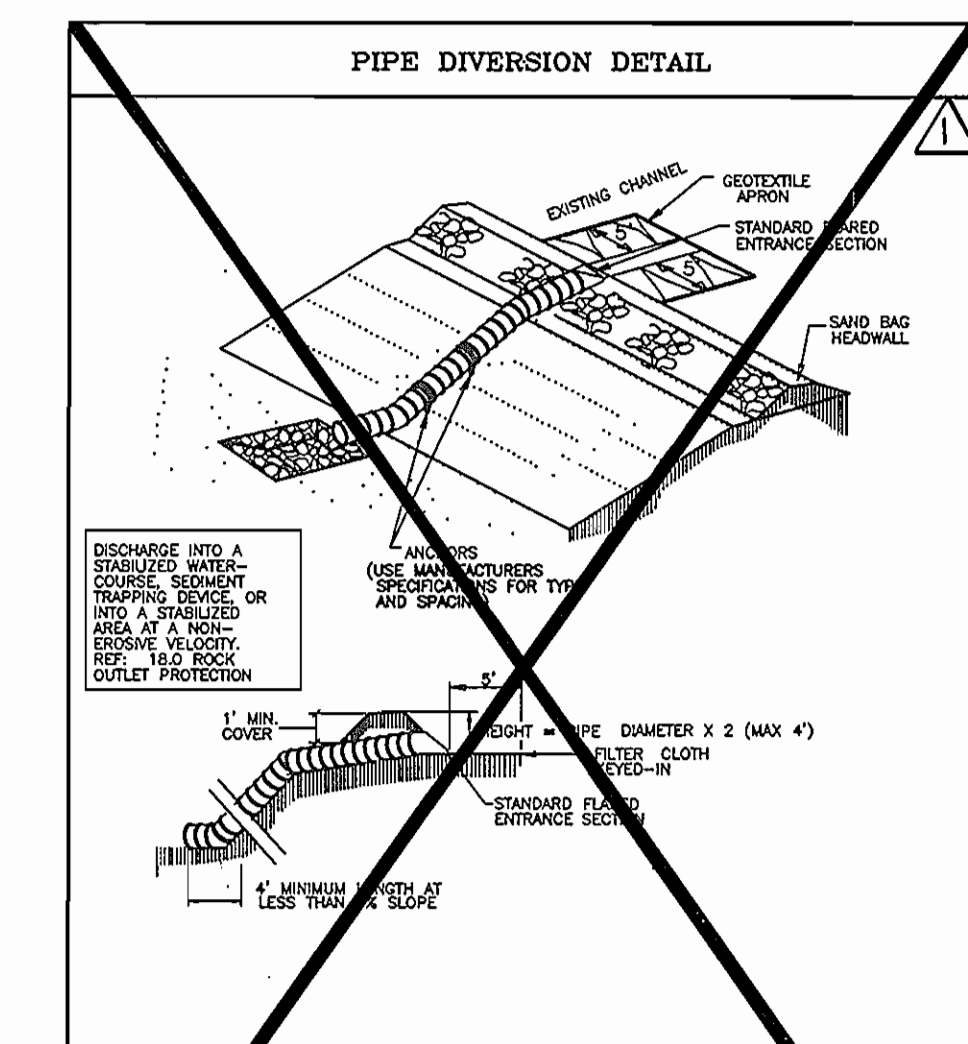
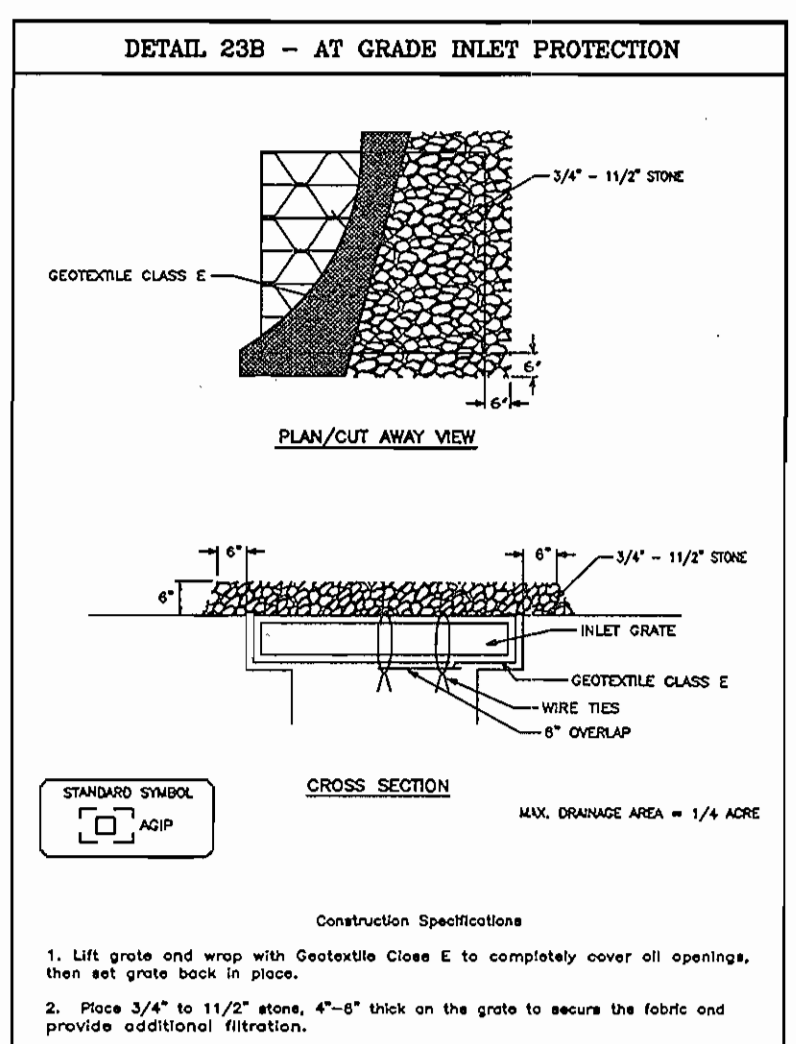
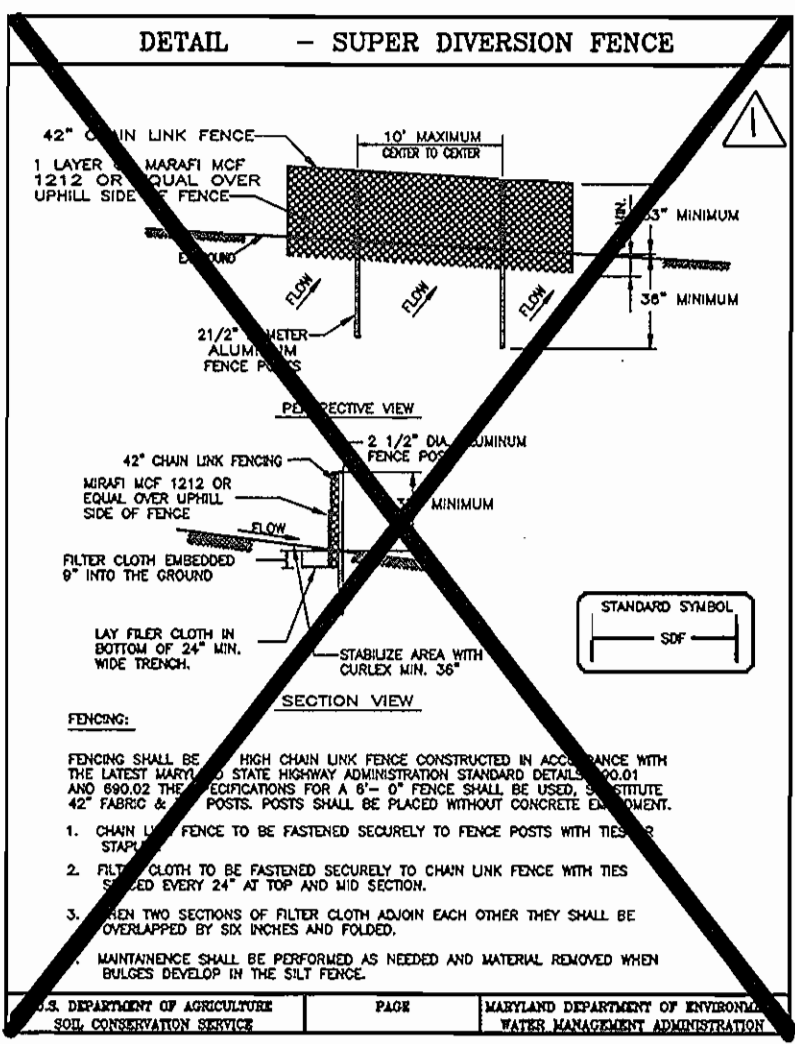
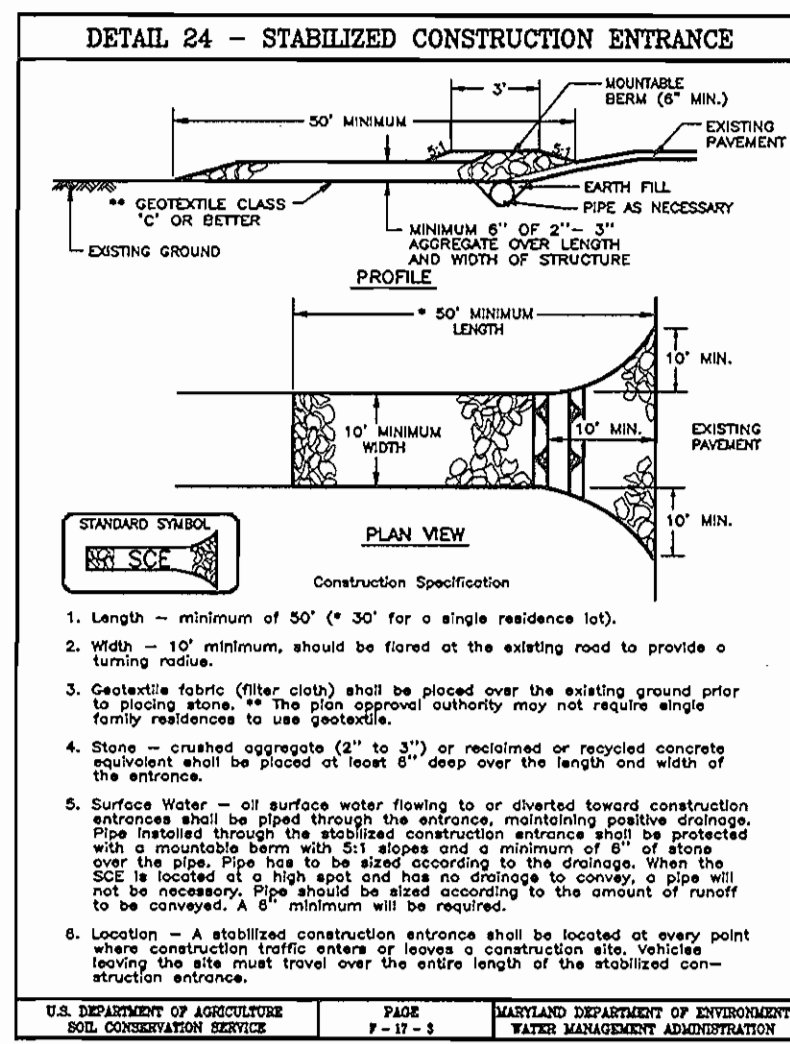
[Signature] 5-23-01
Signature of Engineer Date



CLARK · FINEFROCK & SACKETT, INC.
ENGINEERS · PLANNERS · SURVEYORS

7135 MINSTREL WAY · COLUMBIA, MD 21045 · (410) 381-7500 BALT. · (301) 621-8100 WASH.

DESIGNED PC	GRADING, SEDIMENT AND EROSION CONTROL PLAN GLENELG COUNTRY SCHOOL PRIMARY SCHOOL TAX MAP 22, GRID 22, PARCEL 146 LIBER 1296 FOLIO 245 FIFTH (5th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE 1"=30'
DRAWN ZAH		DRAWING 6 of 25
CHECKED PC		JOB NO. 99-174
DATE 5-16-01	FOR: GOULD PROPERTY COMPANY 1332 SOUTH CHARLES STREET BALTIMORE, MARYLAND 21230	FILE NO. 99-174 SE



APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:
 County Health Officer
 DATE: 5-29-01

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DATE: 5/29/01

APPROVED: DEPARTMENT OF ENVIRONMENT & NATURAL RESOURCES
 DATE: 5/29/01

Reviewed for HOWARD S.C.D. and meets Technical Requirements
 Signature: [Signature]
 Date: 5/29/01

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: [Signature]
 Date: 5/29/01

STATE OF MARYLAND
 PIERO VAN MELLITS
 No. 21876
 REGISTERED PROFESSIONAL ENGINEER

REVISION #1 ONLY
 PIERO V. MELLITS, P.E. #21995

REV. NO.	DATE	BY	REVISION
1	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY, ADDED FIELD & REVISED FOREST CONSERVATION AREAS.

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.
 Signature: [Signature]
 Date: 5-23-01

ENGINEER'S CERTIFICATE
 I hereby certify that this plan for Sediment and Erosion Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature: [Signature]
 Date: 5-23-01

PERMANENT SEEDING NOTES
 APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURNISHING OF VEGETATION WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS DESIRED.
 SEEDING PREPARATION: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
 SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following schedules:
 1) Prepare/Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil at the time of seeding. Apply 600 lbs. per acre 50-0-0 urea-form fertilizer (9 lbs./1000 sq.ft.)
 2) Acceptable-Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.
 SEEDING: For the periods March 1 thru April 30, and August 1 thru October 31, use 14 lbs./1000 sq.ft. of seed (14 lbs./1000 sq.ft.) of Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (20 lbs./1000 sq.ft.) of seedling lespedeza. For the period November 1 thru February 28, protect site by covering 2 tons per acre of well-anchored straw mulch and seed as soon as possible in the spring. Option (2) Use seed. Option (3) Seed with 60 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well-anchored straw.
 MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor straw mulch immediately after application using anchor posts (14 lbs./1000 sq.ft.) of unrotted small grain straw (0.7 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by covering 2 tons per acre of well-anchored straw mulch and seed as soon as possible in the spring, or use sod.
 MAINTENANCE: Inspect all seeded areas and make needed repairs, replacements and reseeding.
TEMPORARY SEEDING NOTES
 SEEDING PREPARATION: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
 SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding.
 SEEDING: For the periods March 1 thru April 30, and August 1 thru November 15, seed with 2 1/2 bushel per acre of annual ryegrass (3.3 lbs./1000 sq.ft.) of seedling lespedeza (0.7 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by covering 2 tons per acre of well-anchored straw mulch and seed as soon as possible in the spring, or use sod.
 MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor straw mulch immediately after application using anchor posts (14 lbs./1000 sq.ft.) of unrotted small grain straw (0.7 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by covering 2 tons per acre of well-anchored straw mulch and seed as soon as possible in the spring, or use sod.
 MAINTENANCE: Inspect all seeded areas and make needed repairs, replacements and reseeding.

21.0 STANDARDS 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 vegetable growth. Soils of concern have low nutrient content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies:
 1. This practice is limited to areas having 21' or flatter slopes where:
 a. The texture of the exposed subsoil/parent material is not adequate to produce vegetable growth.
 b. The soil material 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 lime or other materials is not feasible.

Construction and Material Specifications:
 1. Topsoil salvaged from the existing site may be used provided that it meets the standards 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 Experiment Station.
 2. Topsoil Specifications - Soil to be used as topsoil must meet the following:
 I. 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 a 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 clays, stones, slag, coarse fragments, gravel, sticks, rocks, trash, or other materials larger than 1 1/2" in diameter.
 II. Topsoil must be free of plants or plant parts such as Bermuda grass, cograss, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
 III. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (2000-4000 pounds per 1000 square feet) prior to the placement of topsoil. Limestone shall be distributed uniformly over designated areas and shall be incorporated into the subsoil in operations as described in the following procedures.
 IV. Topsoil shall not be placed where 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.

CONSTRUCTION SEQUENCE:

NO.	DESCRIPTION	NO. OF DAYS
1	Obtain grading permit.	7
2	Install tree protection fence.	7
3	Install sediment and erosion control devices and stabilize. With prior approval of Sediment Control Inspector proceed with sequence of construction.	7
4	Excavate for foundations, rough grade and temporarily stabilize.	30
5	Construct structures, sidewalks and paving, install utilities.	60
6	Upon completion of new septic system, backfill or remove all septic system structures serving trailers, disconnect utilities that serve trailers, and remove trailers.	7
7	Final grade, install Erosion Control Matting and stabilize in accordance with standards and specifications.	20
8	Upon approval of the sediment control inspector, remove sediment and erosion control devices and stabilize.	7

NOISE SEQUENCE: (TO RUN CONCURRENT WITH BUILDING)

NO.	DESCRIPTION	NO. OF DAYS
1	Install noise barrier.	7
2	Install clear zone diversion dikes.	7
3	Demolish noise barrier, prep pit and filter bag. With prior approval of Sediment Control Inspector proceed with sequence of construction.	7
4	Excavate or remove noise barrier.	5
5	Construct well outlet protection devices. With prior approval of Sediment Control Inspector proceed with sequence of construction.	20
6	Excavate balance of noise control Matting and stabilize in accordance with standards and specifications.	20
7	Final grade, install noise control Matting and stabilize in accordance with standards and specifications.	20
8	With approval of sediment control inspector, remove sediment and erosion control devices and stabilize.	7

RESTRICTIONS:
 Stream closure dates for fish spawning or migration within watersheds are as follows:
 USE I and II: March 1 - June 15
 USE III: October 1 - April 30
 USE IV: May 1 - May 31
 SAV (All flowing streams): April 15 - October 15
 Stream closure dates for this project will be per use I or as indicated within MDC Permit # CDMS-01-063, 2001-0720-15.

CLARK · FINEFROCK & SACKETT, INC.
 ENGINEERS · PLANNERS · SURVEYORS
 7135 MINSTREL WAY · COLUMBIA, MD 21045 · (410) 381-7500 BALT. · (301) 621-8100 WASH.

DESIGNED	SCALE
PAC	AS SHOWN

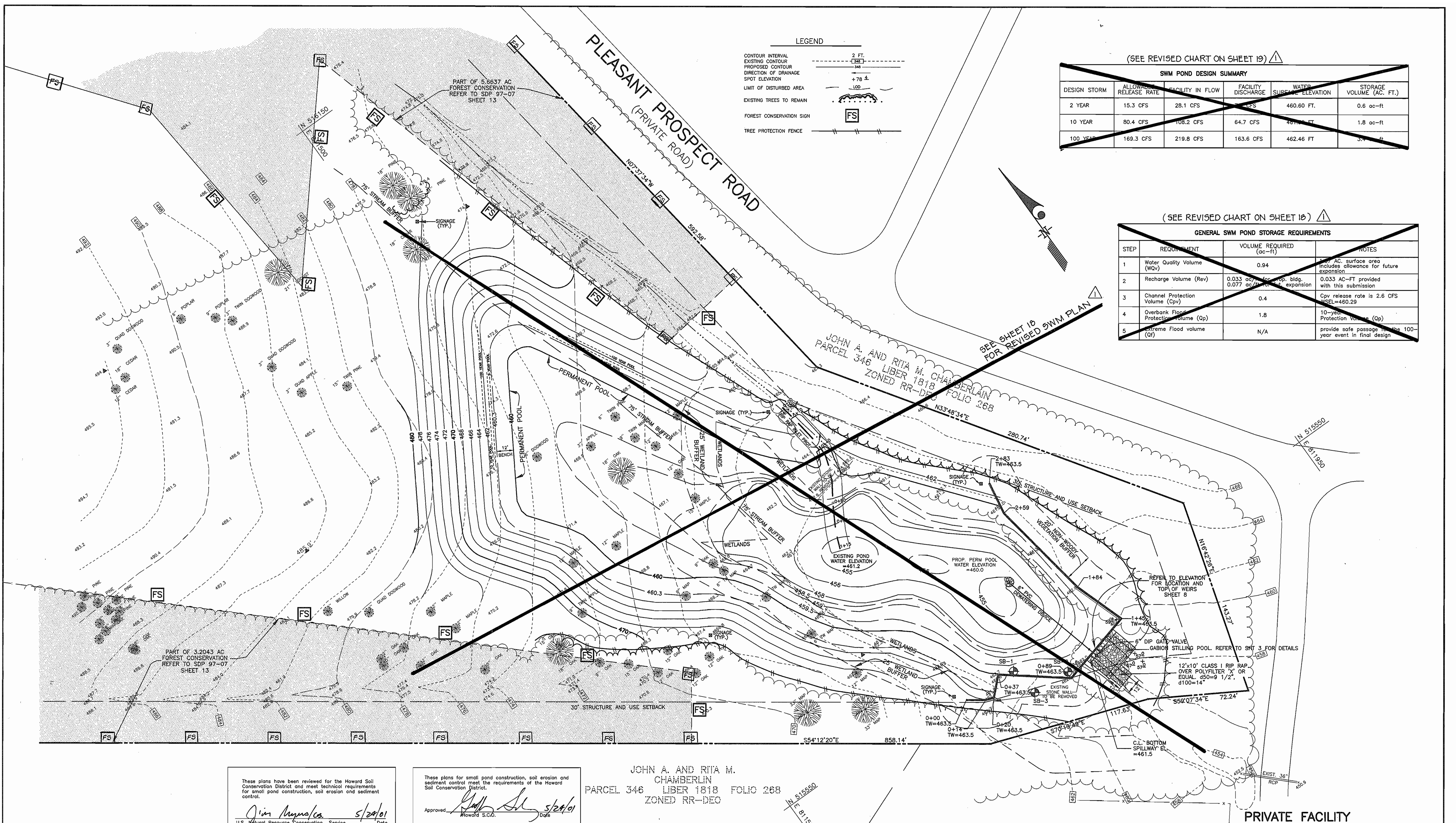
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CHECKED	JOB NO.
TD	99-174

DATE	FILE NO.
2-12-01	99-174SE

FOR: GLOUD PROPERTY COMPANY
 1332 SOUTH CHARLES STREET
 BALTIMORE, MARYLAND 21230

SDP-01-69



LEGEND

CONTOUR INTERVAL	2 FT.
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
DIRECTION OF DRAINAGE	→
SPOT ELEVATION	+78 ±
LIMIT OF DISTURBED AREA	---
EXISTING TREES TO REMAIN	(Tree Symbol)
FOREST CONSERVATION SIGN	FS
TREE PROTECTION FENCE	--- --- ---

(SEE REVISED CHART ON SHEET 10) ⚠

SWM POND DESIGN SUMMARY					
DESIGN STORM	ALLOWED RELEASE RATE	FACILITY IN FLOW	FACILITY DISCHARGE	WATER SURFACE ELEVATION	STORAGE VOLUME (AC. FT.)
2 YEAR	15.3 CFS	28.1 CFS	15.3 CFS	460.60 FT.	0.6 ac-ft
10 YEAR	80.4 CFS	108.2 CFS	64.7 CFS	461.10 FT.	1.8 ac-ft
100 YEAR	169.3 CFS	219.8 CFS	163.6 CFS	462.46 FT.	3.7 ac-ft

(SEE REVISED CHART ON SHEET 10) ⚠

GENERAL SWM POND STORAGE REQUIREMENTS			
STEP	REQUIREMENT	VOLUME REQUIRED (ac-ft)	NOTES
1	Water Quality Volume (WQv)	0.94	0.033 AC surface area includes allowances for future expansion
2	Recharge Volume (Rev)	0.033 ac/ft for prop. bldg. 0.077 ac/ft for future expansion	0.033 AC-FT provided with this submission
3	Channel Protection Volume (Cpv)	0.4	Cpv release rate is 2.6 CFS USEL=460.29
4	Overbank Flood Protection Volume (Op)	1.8	10-year Protection Volume (Op)
5	Extreme Flood volume (Of)	N/A	provide safe passage for the 100-year event in final design

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

Jim Munnica 5/29/01
U.S. Natural Resource Conservation Service Date

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

Approved: *[Signature]* 5/29/01
Howard S.C.D. Date

JOHN A. AND RITA M. CHAMBERLIN
PARCEL 346 LIBER 1818 FOLIO 268
ZONED RR-DEO

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:

Diana L. Matney 5-29-01
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING & ZONING

[Signature] 5/29/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 5/30/01
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 5/30/01
DIRECTOR

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.

Wm. Barry Shadwell 5-23-01
Signature of Developer Date

PIERO VAN MELLITS
No. 21873
REGISTERED PROFESSIONAL ENGINEER

REVISION #1 ONLY
PIERO V. MELLITS, P.E. #21873

REV NO	DATE	BY	REVISION
1	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY, ADDED FIELD & REVISED FOREST CONSERVATION AREAS.

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.

[Signature] 5-23-01
Signature of Engineer Date



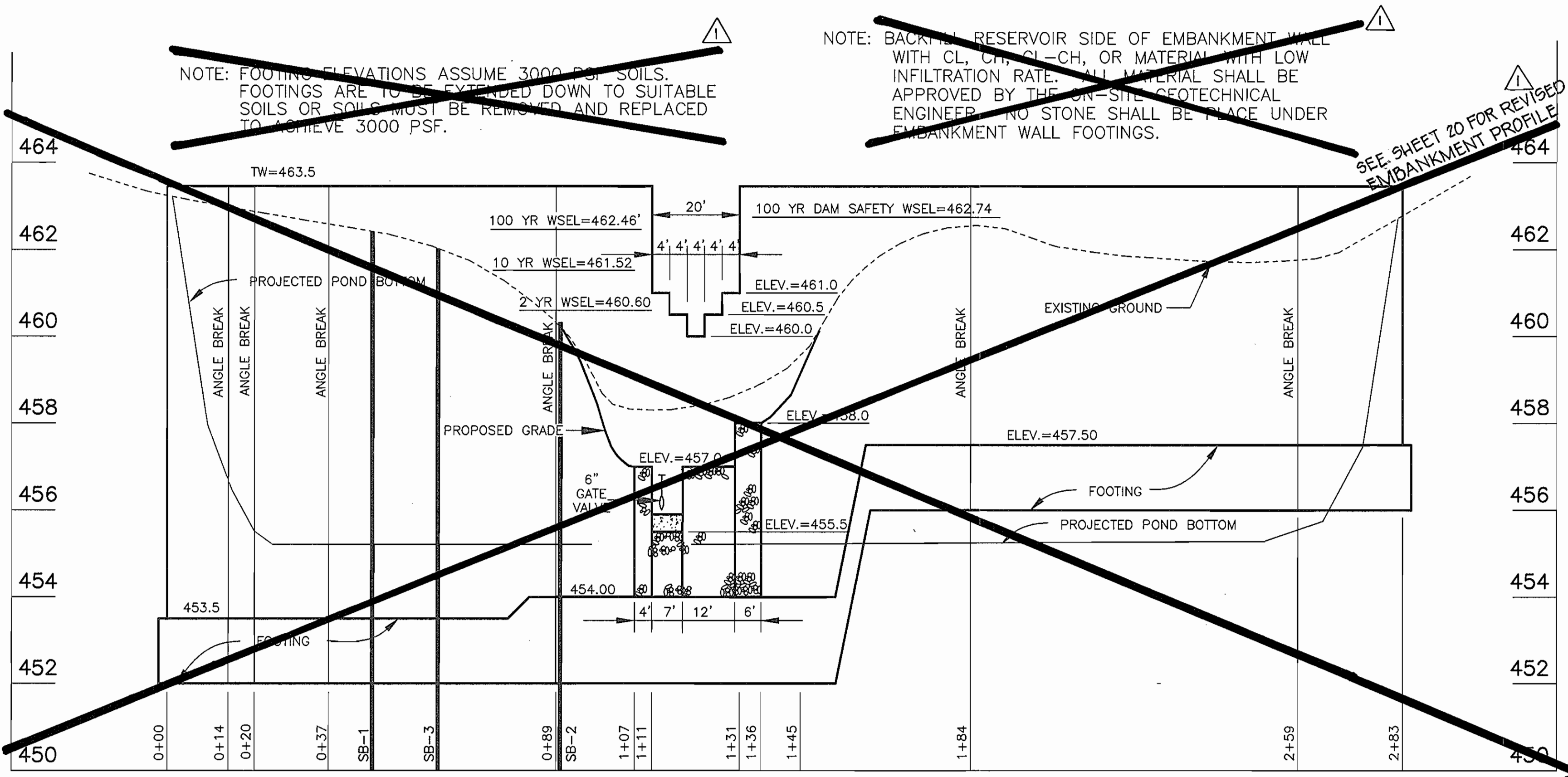
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ENGINEERS · PLANNERS · SURVEYORS
7135 MINSTREL WAY · COLUMBIA, MD 21045 · (410) 381-7500 BALT. · (301) 621-8100 WASH.

DESIGNED: PAC
DRAWN: ZAH
CHECKED: PAC
DATE: 2-12-01

RETENTION FACILITY RECONSTRUCTION PLAN
GLENELG COUNTRY SCHOOL PRIMARY SCHOOL
TAX MAP 22, GRID 22, PARCEL 146
LIBER 1296 FOLIO 245
FIFTH (5th) ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: 1"=30'
DRAWING: 8 of 25
JOB NO.: 99-174
FILE NO.: 99-174 D

FOR: GOULD PROPERTY COMPANY
1332 SOUTH CHARLES STREET
BALTIMORE, MARYLAND 21230



EMBAKMENT WALL ELEVATION

SCALE: HOR. 1"=20'
VER. 1"=2'

NOTE: BACKFILL RESERVOIR SIDE OF EMBANKMENT WALL WITH CL, CH, CI, OR MATERIAL WITH LOW INFILTRATION RATE. ALL MATERIAL SHALL BE APPROVED BY THE ON-SITE GEOTECHNICAL ENGINEER. NO STONE SHALL BE PLACED UNDER EMBANKMENT WALL FOOTINGS.

order to achieve the recommended design bearing capacity, we recommend that the foundations be extended through the very soft alluvial material encountered at boring locations SB-1, SB-2 and SB-3 and embedded in at least one foot into the underlying competent residual soils. This would require that the bottom of the foundations be extended to elevations ranging from EL. 452.52 to 452.02 at borings SB-1, SB-2 and SB-3, respectively. However, the test borings did not extend along the complete length of the retaining wall and due to the variable soil conditions, the elevations of suitable bearing soils can vary along the length of the wall. Therefore, lowering of footings may be required to reach suitable bearing soils.

Based on the test boring results, very dense and extremely dense residual materials were encountered in the test borings near anticipated founding levels. In general, the very dense and extremely dense residual materials were encountered at planned footing levels. The subgrade must be properly prepared to prevent the formation of "hard spots". The extremely dense bedrock materials should be removed and replaced with compacted soil to a depth of at least 12 inches below founding levels to minimize the differential settlements which can occur below footings bearing on rock soil. Where it is not desirable to remove bedrock materials, the footing may be rigidly reinforced to resist differential movement between those portions of the footing bearing on rock and the portions bearing on soil.

All footing excavations should be observed and approved by the Geotechnical Engineer or authorized representative in order to confirm the actual conditions at each footing location and the availability of the design bearing capacity prior to the placement of foundation concrete.

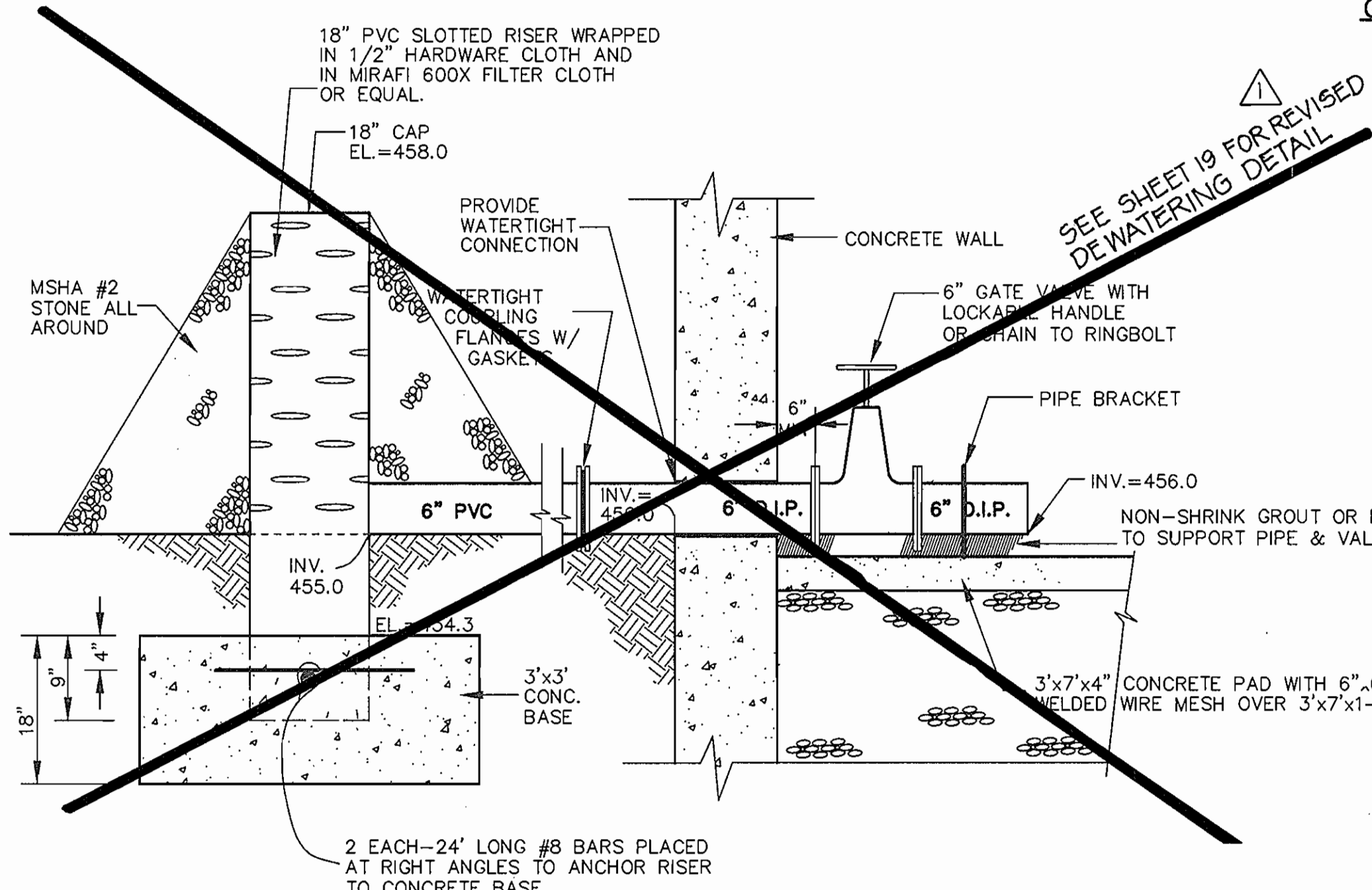
SEE SHEET 20 FOR REVISED EMBANKMENT PROFILE

MAINTENANCE SCHEDULE FOR GROUNDWATER RECHARGE TRENCH

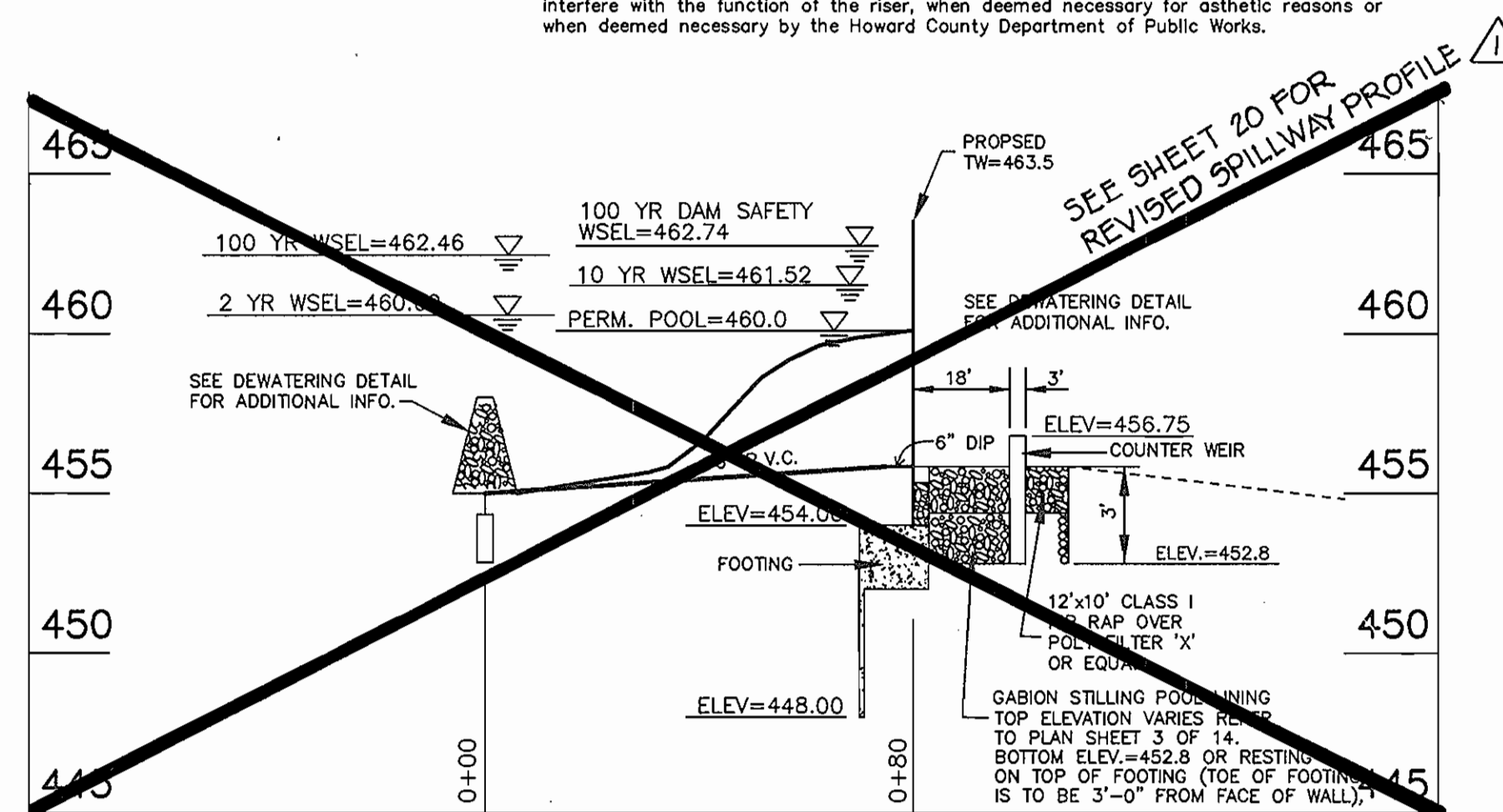
- Facility is to be inspected once a month.
- Corrective maintenance is to be done as needed if the trench is found to be non-functional.

MAINTENANCE SCHEDULE FOR SWM FACILITY

- Facility is to be inspected once a month and excessive growth cut or mowed as required. No growth above 18" allowed during growing season.
- Pond slopes, top & bench are to be mowed every month during growing season.
- Trash to be removed after each major storm or every month, and during regular mowing operations.
- An annual inspection of the pond is to be done.
- Corrective maintenance is to be done as needed if the pond is found to be non-functional. Inspections should be performed during wet weather to determine if the pond is functioning properly.
- Visible signs of erosion in the pond as well as rip rap outlet area shall be repaired as soon as it is noticed.



DEWATERING DEVICE NOT TO SCALE



DEWATERING DEVICE PROFILE

SCALE: HOR. 1"=30'
VER. 1"=5'

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."

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

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

SPECIFICATIONS

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

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 stormwater management ponds, a minimum of 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 materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification Gc, Sc, Cl, or Cc. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

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

Compaction- The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if 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 95 % of maximum dry density with a moisture content within + 2 % of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cut Off Trench- The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure 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 adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or 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:

- 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. 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 or an approved equal may be used: Nexon, Plast-O-Crete, Blue-Klad, and Bath-Cu-Lay. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M246.
- Materials- (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.
- Materials- (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-198 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be primed with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, and 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 welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight. All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following types connections are acceptable for pipes less than 24" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by

3/8" thick closed cell circular neoprene gasket; and a 12" wide hanger type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 24" 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".

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:

- Materials- Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.
- Bedding- All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10" of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.
- 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 length, 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.
- Backfilling shall conform to "Structure Backfill."
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Polyvinyl Chloride (PVC) Pipe- All of the following criteria should apply for polyvinyl chloride (PVC) pipe:

- Materials- PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.
- Joints and connections to anti-seep collars shall be completely watertight.
- Bedding- The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soils is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- Backfilling shall conform to "Structure Backfill."
- 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 Specification for Construction and Materials, Section 905.

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

Core of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain 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 required 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 so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

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 in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) 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.

REV. NO	DATE	BY	REVISION
1	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS; REVISED SWM FACILITY; ADDED FIELD & REVISED FOREST CONSERVATION AREAS.

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS

7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.

DESIGNED PC	RETENTION FACILITY DETAILS	SCALE AS SHOWN
DRAWN ZAH	GLENELG COUNTRY SCHOOL PRIMARY SCHOOL	DRAWING 9 of 25
CHECKED PC	FIFTH MAP 22, GRID 22, PARCEL 146 LIBERTY 245 TAX MAP 245 FIFTH (5th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 99-174
DATE 5-17-01	FOR: GOULD PROPERTY COMPANY 1332 SOUTH CHARLES STREET BALTIMORE, MARYLAND 21230	FILE NO. 99-174 D

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:
Don L. Mays 5-26-01
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING & ZONING
Steve D. Miller 5/24/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Cynthia D. Smith 5/24/01
CHIEF, DIVISION OF LAND DEVELOPMENT

Wm. Barry Shindler 5-23-01
Signature of 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 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."

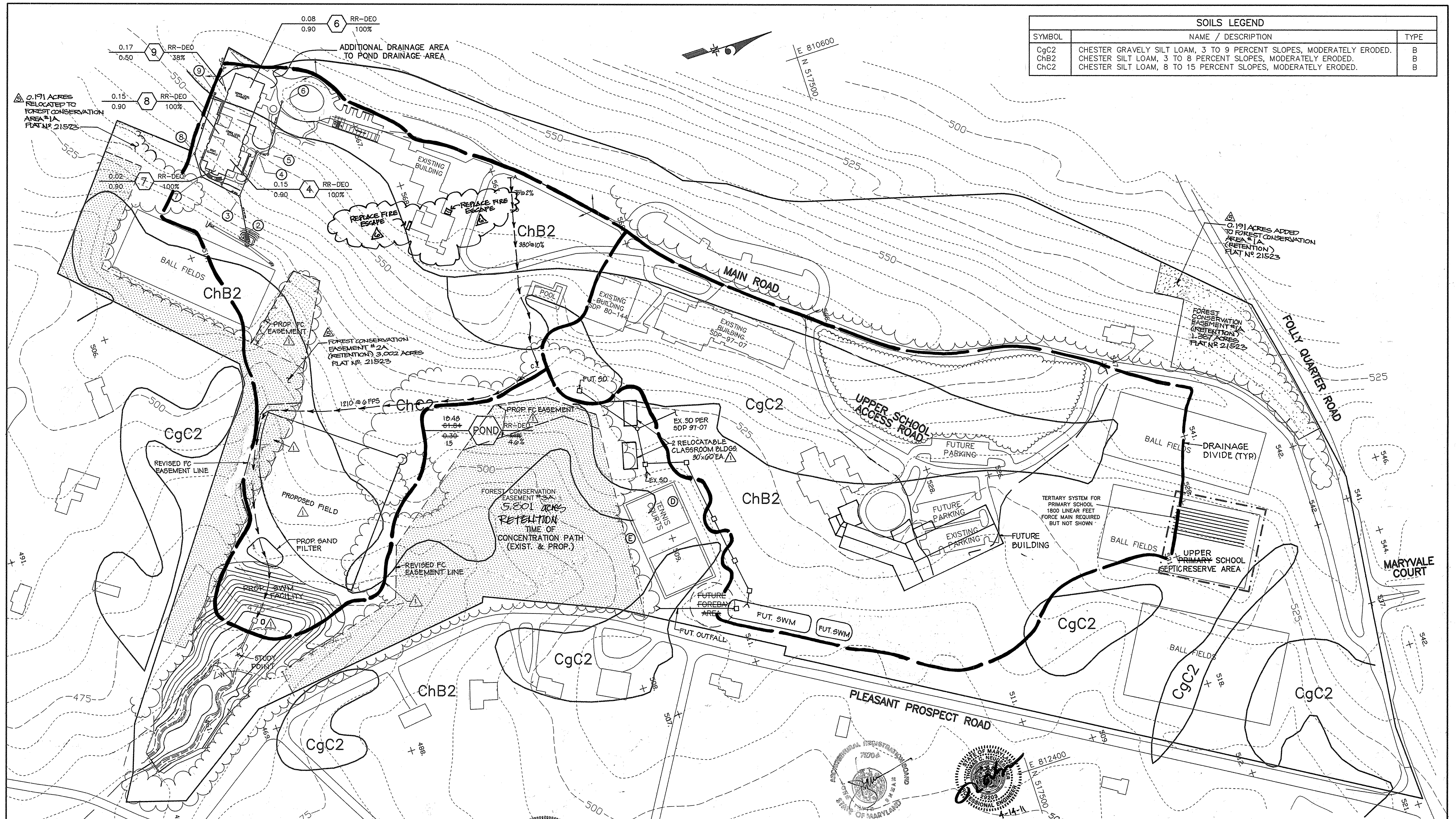
These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

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

STATE OF MARYLAND
PIERO VAN MELLITS, P.E. #21875
REGISTERED PROFESSIONAL ENGINEER
5-23-01

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER
5-23-01

SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	TYPE
CgC2	CHESTER GRAVELY SILT LOAM, 3 TO 9 PERCENT SLOPES, MODERATELY ERODED.	B
ChB2	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED.	B
ChC2	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED.	B



APPROVED DEPARTMENT OF PLANNING & ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK 5/29/01
 CHIEF, DIVISION OF LAND DEVELOPMENT JA 5/29/01
 DIRECTOR 5/30/01

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:
 COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT 5-29-01

REV. NO.	DATE	BY	REVISION
1	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY, ADDED FIELD & REVISED FOREST CONSERVATION AREAS.

DRAINAGE AREA CHART				
DRAINAGE AREA	AREA	RCN	Tc	
EXISTING	57.47 AC	62	0.29	
PROPOSED	64.31 AC	63	0.29	

REV. NO.	DATE	BY	REVISION
1	3/11	MRA	REVISED FOREST CONSERVATION AREAS.
2	10-20-15	JIL	REPLACE FIRE ESCAPES

TOPO SOURCE: HOWARD COUNTY, MARYLAND
 CONTOUR INTERVAL: 5 FEET
 SOILS SOURCE: HOWARD COUNTY SOIL SURVEY 1968

CLARK · FINEFROCK & SACKETT, INC.
 ENGINEERS · PLANNERS · SURVEYORS
 7135 MINSTREL WAY · COLUMBIA, MD 21045 · (410) 381-7500 BALT. · (301) 621-8100 WASH.

DESIGNED: PC
 DRAWN: ZAH
 CHECKED: TD
 DATE: 5-16-01

DRAINAGE AREA MAP AND TERTIARY SEPTIC SYSTEM LOCATION
GLENELG COUNTRY SCHOOL PRIMARY SCHOOL
 TAX MAP 22, GRID 22, PARCEL 146
 LIBER 1295 FOLIO 245
 FIFTH (5th) ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

FOR: GOULD PROPERTY COMPANY
 1332 SOUTH CHARLES STREET
 BALTIMORE, MARYLAND 21230

SCALE: 1" = 100'
 DRAWING: 10 OF 25
 JOB NO.: 99-174
 FILE NO.: 99-174 D

(10) C:\DrawingFiles\99174\DA-Map

LOG OF BORING NO. B-1

Sheet 1 of 1

PROJECT: Glenelg Country School
 PROJECT NO: 01299
 PROJECT LOCATION: Howard County, Maryland
 DATE STARTED: September 27, 2001
 DATE COMPLETED: September 27, 2001
 DRILLING CONTRACTOR: Free State Drilling, Inc.
 DRILLER: Free State Drilling, Inc.
 DRILLING METHOD: HSA
 SAMPLING METHOD: Split Spoon
 WATER LEVEL: 6.0
 DATE: 9/27/01
 CAVED (F): 3.7
 GROUND SURFACE ELEVATION: 475.5
 DATUM: MSL
 EQUIPMENT: CME 55 ATV
 LOGGED BY: JDS
 CHECKED BY: S. Rowe

SAMPLE NUMBER	DATE SAMPLED	DEPTH (ft)	USCS	DESCRIPTION	REMARKS
1	10/15/01	0-3.7	CL	Brown, moist, medium stiff, CLAY (SILT) and coarse to fine SAND	Topsoil 4 in.
2	3.5	12	SM	Brown to gray, moist, loose, micaceous SAND, little silt.	
3	6.0	19	SM	Brown to gray, moist, medium dense, micaceous, coarse to fine SAND, little silt.	
4	8.5	12	SM	Brown to gray, moist, medium dense, micaceous, coarse to fine SAND, little silt.	
5	12.5	15	SM	Brown to gray, moist, medium dense, micaceous, coarse to fine SAND, little silt.	
Bottom of hole at 15.0 ft.					

NOTES:
 GEO-TECHNOLOGY ASSOCIATES, INC.
 3090 Junction Drive, Suite 9
 Annapolis Junction, MD 20710

SEE SHEET 22 FOR BORING LOCATIONS

LOG OF BORING NO. B-2

Sheet 1 of 1

PROJECT: Glenelg Country School
 PROJECT NO: 01299
 PROJECT LOCATION: Howard County, Maryland
 DATE STARTED: September 27, 2001
 DATE COMPLETED: September 27, 2001
 DRILLING CONTRACTOR: Free State Drilling, Inc.
 DRILLER: Free State Drilling, Inc.
 DRILLING METHOD: HSA
 SAMPLING METHOD: Split Spoon
 WATER LEVEL: 2.9
 DATE: 9/27/01
 CAVED (F): 10.2
 GROUND SURFACE ELEVATION: 463.5
 DATUM: MSL
 EQUIPMENT: CME 55 ATV
 LOGGED BY: JDS
 CHECKED BY: S. Rowe

SAMPLE NUMBER	DATE SAMPLED	DEPTH (ft)	USCS	DESCRIPTION	REMARKS
1	10/7/01	0-4.0	SM	Medium gray to brown, moist to wet, loose to very dense, coarse to fine SAND, little to trace silt.	Topsoil 4 in.
2	3.5	12	SM	Brown to gray, moist, loose, micaceous SAND, little silt.	
3	6.0	7	SM	Brown to gray, moist, medium dense, micaceous, coarse to fine SAND, little silt.	
4	8.5	10	SM	Brown to gray, moist, medium dense, micaceous, coarse to fine SAND, little silt.	
5	12.5	5	SM	Brown to gray, moist, medium dense, micaceous, coarse to fine SAND, little silt.	
Bottom of hole at 15.0 ft.					

NOTES:
 GEO-TECHNOLOGY ASSOCIATES, INC.
 3090 Junction Drive, Suite 9
 Annapolis Junction, MD 20710

LOG OF BORING NO. B-3

Sheet 1 of 1

PROJECT: Glenelg Country School
 PROJECT NO: 01299
 PROJECT LOCATION: Howard County, Maryland
 DATE STARTED: September 27, 2001
 DATE COMPLETED: September 27, 2001
 DRILLING CONTRACTOR: Free State Drilling, Inc.
 DRILLER: Free State Drilling, Inc.
 DRILLING METHOD: HSA
 SAMPLING METHOD: Split Spoon
 WATER LEVEL: 5.0
 DATE: 9/27/01
 CAVED (F): 8.8
 GROUND SURFACE ELEVATION: 470.5
 DATUM: MSL
 EQUIPMENT: CME 55 ATV
 LOGGED BY: JDS
 CHECKED BY: S. Rowe

SAMPLE NUMBER	DATE SAMPLED	DEPTH (ft)	USCS	DESCRIPTION	REMARKS
1	10/12/01	0-2.2	CL	Light gray, moist to wet, loose to very stiff, CLAY (SILT) and coarse to fine SAND.	Topsoil 4 in.
2	3.5	0	SM	Brown to gray, moist, loose, micaceous SAND, little silt.	
3	8.0	15	SM	Brown, moist, medium dense to very dense, micaceous, coarse to fine SAND, little silt.	
4	8.5	14	SM	Brown, moist, medium dense to very dense, micaceous, coarse to fine SAND, little silt.	
5	12.5	4	SM	Brown, moist, medium dense to very dense, micaceous, coarse to fine SAND, little silt.	
Bottom of hole at 15.0 ft.					

NOTES:
 GEO-TECHNOLOGY ASSOCIATES, INC.
 3090 Junction Drive, Suite 9
 Annapolis Junction, MD 20710

LOG OF BORING NO. B-4

Sheet 1 of 1

PROJECT: Glenelg Country School
 PROJECT NO: 01299
 PROJECT LOCATION: Howard County, Maryland
 DATE STARTED: September 27, 2001
 DATE COMPLETED: September 27, 2001
 DRILLING CONTRACTOR: Free State Drilling, Inc.
 DRILLER: Free State Drilling, Inc.
 DRILLING METHOD: HSA
 SAMPLING METHOD: Split Spoon
 WATER LEVEL: 7.0
 DATE: 9/27/01
 CAVED (F): 3.1
 GROUND SURFACE ELEVATION: 476.0
 DATUM: MSL
 EQUIPMENT: CME 55 ATV
 LOGGED BY: JDS
 CHECKED BY: S. Rowe

SAMPLE NUMBER	DATE SAMPLED	DEPTH (ft)	USCS	DESCRIPTION	REMARKS
1	10/12/01	0-3.5	SM	Brown to gray, moist, loose to dense, micaceous, coarse to fine SAND, little silt.	Topsoil 4 in.
2	3.5	11	SM	Brown to gray, moist, loose to dense, micaceous, coarse to fine SAND, little silt.	
3	6.0	8	SM	Brown to gray, moist, loose to dense, micaceous, coarse to fine SAND, little silt.	
4	8.5	8	SM	Brown to gray, moist, loose to dense, micaceous, coarse to fine SAND, little silt.	
5	13.5	15	SM	Brown to gray, moist, loose to dense, micaceous, coarse to fine SAND, little silt.	
Bottom of hole at 15.0 ft.					

NOTES:
 GEO-TECHNOLOGY ASSOCIATES, INC.
 3090 Junction Drive, Suite 9
 Annapolis Junction, MD 20710

LOG OF BORING NO. B-5

Sheet 1 of 1

PROJECT: Glenelg Country School
 PROJECT NO: 01299
 PROJECT LOCATION: Howard County, Maryland
 DATE STARTED: September 27, 2001
 DATE COMPLETED: September 27, 2001
 DRILLING CONTRACTOR: Free State Drilling, Inc.
 DRILLER: Free State Drilling, Inc.
 DRILLING METHOD: HSA
 SAMPLING METHOD: Split Spoon
 WATER LEVEL: 5.1
 DATE: 9/27/01
 CAVED (F): 8.2
 GROUND SURFACE ELEVATION: 479.0
 DATUM: MSL
 EQUIPMENT: CME 55 ATV
 LOGGED BY: JDS
 CHECKED BY: S. Rowe

SAMPLE NUMBER	DATE SAMPLED	DEPTH (ft)	USCS	DESCRIPTION	REMARKS
1	10/15/01	0-2.0	SM	Brown, moist to wet, loose to dense, micaceous, coarse to fine SAND and SILT.	Topsoil 5 in.
2	3.5	10	SM	Brown to gray, moist, loose, micaceous SAND, little silt.	
3	6.0	0	SM	Brown to gray, moist, medium dense, micaceous, coarse to fine SAND, little silt.	
4	8.5	15	SM	Brown to gray, moist, medium dense, micaceous, coarse to fine SAND, little silt.	
5	13.5	12	SM	Brown to gray, moist, medium dense, micaceous, coarse to fine SAND, little silt.	
Bottom of hole at 15.0 ft.					

NOTES:
 GEO-TECHNOLOGY ASSOCIATES, INC.
 3090 Junction Drive, Suite 9
 Annapolis Junction, MD 20710

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:
 [Signature] 5-29-01
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

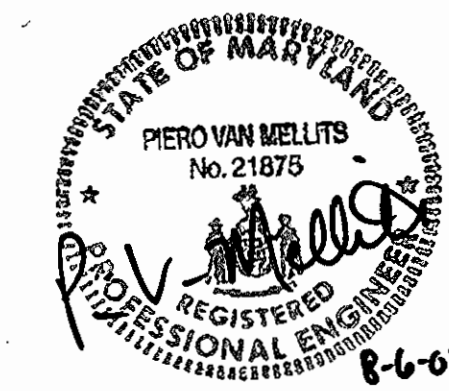
APPROVED: DEPARTMENT OF PLANNING & ZONING
 [Signature] 5/29/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 5/29/01
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 5/30/01
 DIRECTOR

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
 Approved: [Signature] 5/29/01
 Howard S.C.D. Date

These plans have been reviewed for the Howard Soil Conservation District and meet technical requirements of small pond construction, soil erosion and sediment control.
 [Signature] 5/29/01
 U.S. Natural Resource Conservation Service Date

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."
 [Signature] 5-23-01
 Signature of Developer Date

By The Engineer:
 "I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."
 [Signature] 5-23-01
 Signature of Engineer Date



REVISION #1 ONLY
 PIERO V. MELLITS, P.E. 021875

REV. NO.	DATE	BY	REVISION
1	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY, ADDED FIELD, REVISED FOREST CONSERVATION AREAS.

CLARK · FINEFROCK & SACKETT, INC.
 ENGINEERS · PLANNERS · SURVEYORS
 7135 MINSTREL WAY · COLUMBIA, MD 21045 · (+10) 381-7500 BALT. · (301) 621-8100 WASH.

BORING LOGS

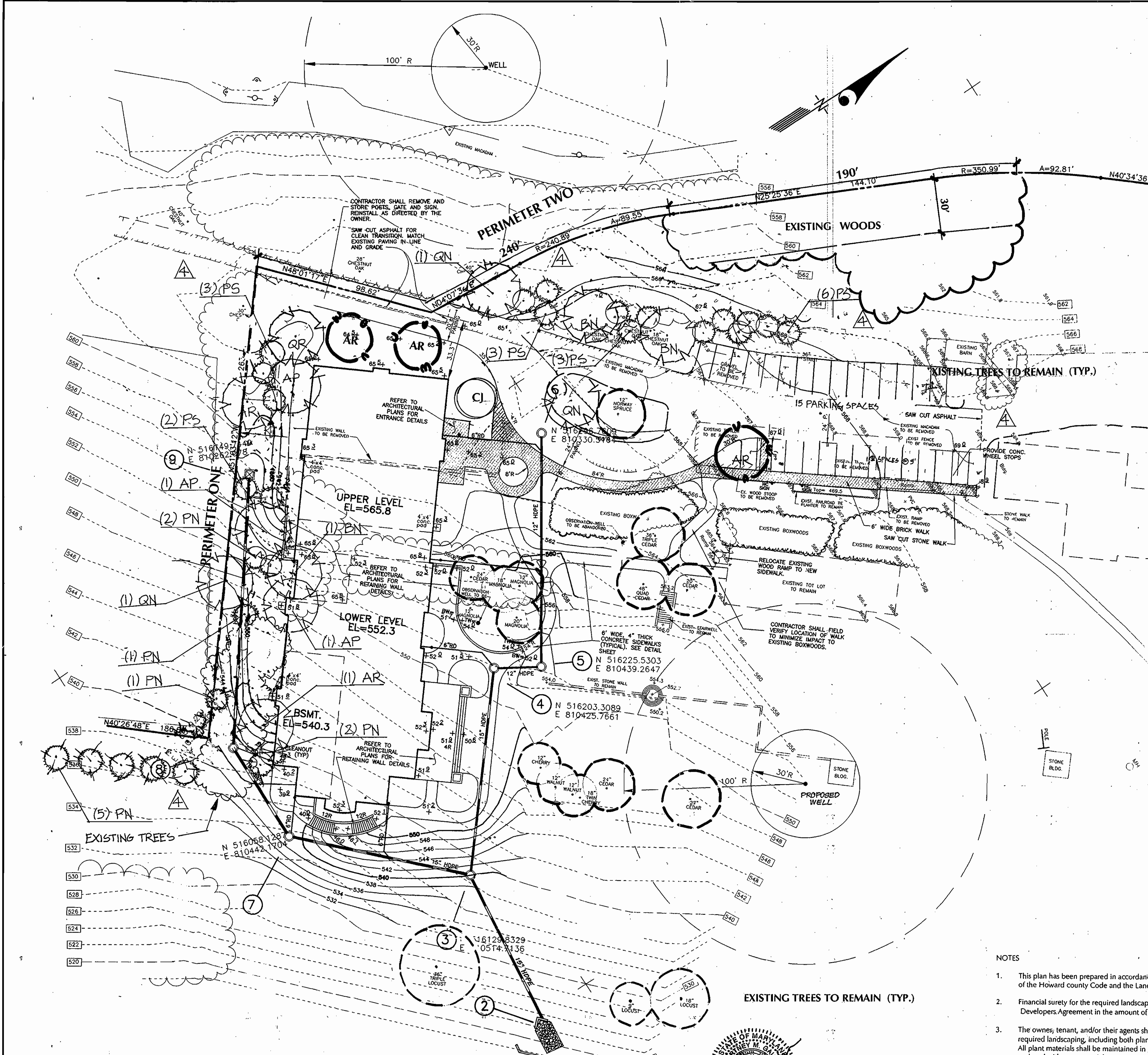
GLENELG COUNTRY SCHOOL PRIMARY SCHOOL
 TAX MAP 22, GRID 22, PARCEL 146
 LIBER 1296 FOLIO 245
 FIFTH (5th) ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

FOR: GOULD PROPERTY COMPANY
 1332 SOUTH CHARLES STREET
 BALTIMORE, MARYLAND 21230

SCALE: As Shown
 DRAWING: 11 of 25
 JOB NO.: 99-174
 FILE NO.: 99-174 X

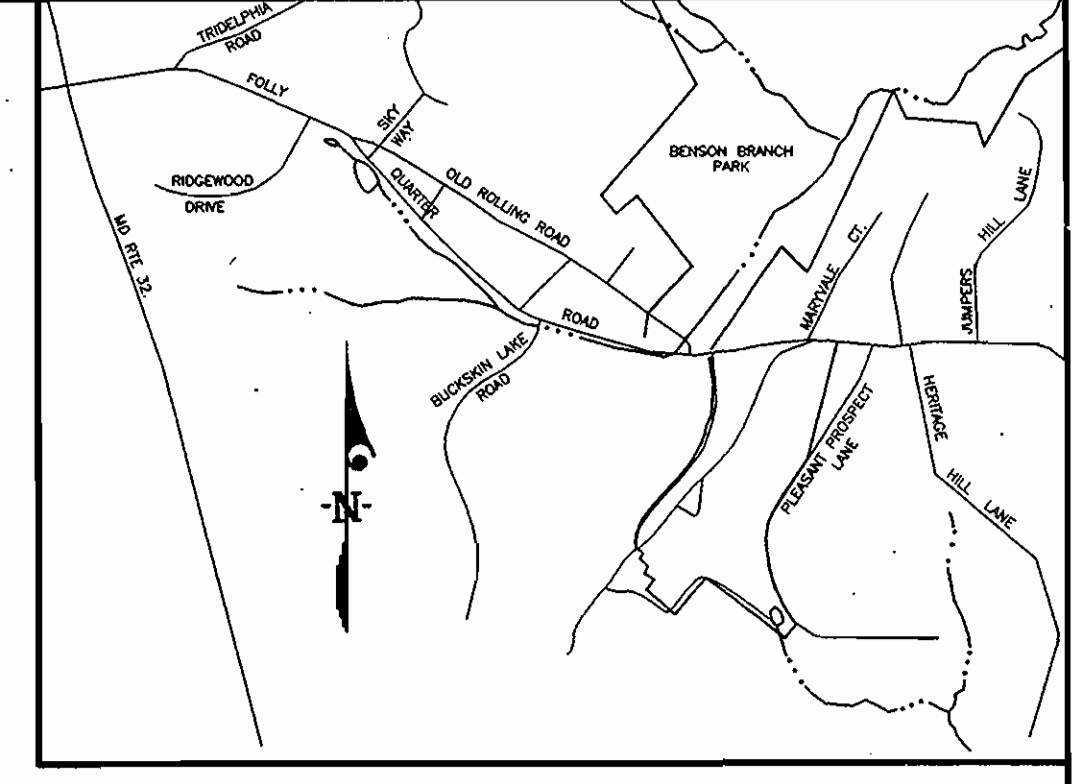


SDP 01.69



LEGEND

CONTOUR INTERVAL	2 FT.
EXISTING CONTOUR	(---)
PROPOSED CONTOUR	(- - -)
DIRECTION OF DRAINAGE	(--->)
WALK OUT BASEMENT	(---)
SPOT ELEVATION	(+ 78.5)
STABILIZED CONSTRUCTION ENTRANCE	(---)
EROSION CONTROL MATTING	(---)
SILT FENCE	(---)
LIMIT OF DISTURBED AREA	(---)
TREE PROTECTION FENCE	(---)
EXISTING TREES TO REMAIN	(---)



VICINITY MAP
Scale: 1" = 2000'

SCHEDULE A
PERIMETER LANDSCAPE EDGE

	ADJACENT TO PERIMETER PROPERTIES	ADJACENT TO ROADWAYS
PERIMETER	1	2
LANDSCAPE TYPE	C	C
LENGTH OF PERIMETER	260 LF	430 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	YES 190 LF EXISTING WOODS 30' OR GREATER
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO	NO
NUMBER OF PLANTS REQUIRED		
SHADE TREES	260/40 = 7	430 - 190 = 240 240/40 = 6
EVERGREEN TREES	260/20 = 13	240/20 = 12
NUMBER OF PLANTS PROVIDED		
SHADE TREES	7	6
EVERGREEN TREES	16	12
SMALL FLOWERING SHRUBS	0	0
SHRUBS	0	0
TOTAL SHADE TREES	13	12
TOTAL EVERGREEN TREES	13	12

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	20
NUMBER OF SHADE TREES REQUIRED	1 SHADE TREE PER 20 SPACES
NUMBER OF TREES PROVIDED	2
NUMBER OF ISLANDS REQUIRED	1 ISLAND PER 20 SPACES
NUMBER OF ISLANDS PROVIDED	2
TOTAL SHADE TREES	2

PLANT LIST

QTY	KEY	BOTANICAL/COMMON NAME	SIZE
5	AR	Acer rubrum 'October Glory' October Glory Maple	13-15' ht. 2 1/2-3" cal.
1	CJ	Cercidiphyllum japonicum Katsura Tree (ORNAMENTAL)	10-12' ht. 2 1/2-3" cal.
3	AP	Platanus x acerifolia 'Bloodgood' Bloodgood London Planetree	13-15' ht. 2 1/2-3" cal.
1	QR	Quercus rubra Red Oak	13-15' ht. 2 1/2-3" cal.
11	PN	Picea abies Norway Spruce	6-8' ht.
17	PS	Pinus strobus Eastern White Pine (Natural)	6-8' ht.
3	BN	Betula nigra River Birch	13-15' ht. 2 1/2-3" cal.
3	QN	Quercus nuttallii Nuttall Oak	13-15' ht. 2 1/2-3" cal.

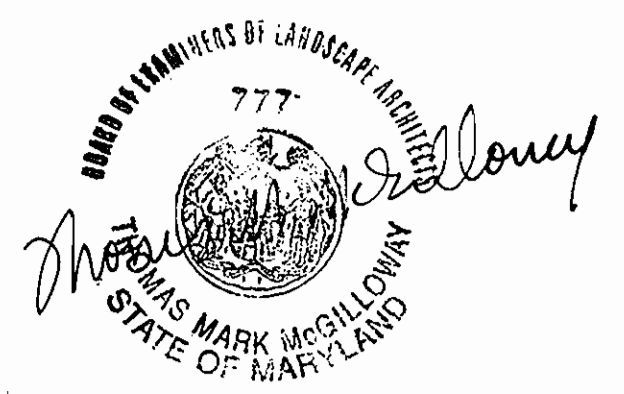
NOTES

- This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual.
- Financial surety for the required landscaping has been posted as part of the DPW Developers Agreement in the amount of \$7600.00.
- The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences, and walls. All plant materials shall be maintained in good growing condition and then necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

DEVELOPER'S / BUILDER'S CERTIFICATE

I/We certify that the landscaping shown on this plan will be done according to the plan section 16.124 of the Howard County Code and the Howard County Landscaping Manual. I/We further certify that upon completion a certification of landscape installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the department of planning and zoning.

Name: W. Barry Shickel Date: 5-23-01



LANDSCAPE PLAN
LDR International Inc.,
an HNTB Company

CLARK · FINEFROCK & SACKETT, INC.
ENGINEERS · PLANNERS · SURVEYORS

7135 MINSTREL WAY · COLUMBIA, MD 21045 · (410) 381-7500 BALT. · (301) 621-8100 WASH.

DESIGNED	LANDSCAPE PLAN	SCALE
DRAWN	GLENELG	1" = 30'
CHECKED	COUNTRY SCHOOL	DRAWING
DATE	TAX MAP 22, PARCEL 146	12 of 25
	FIFTH (5th) ELECTION DISTRICT	JOB NO.
	HOWARD COUNTY, MARYLAND	99-174
		FILE NO.
		99-174-15

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:

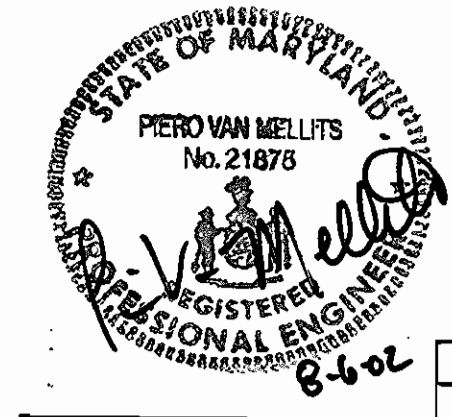
Dean J. Montague 5-27-01
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING & ZONING

W. Barry Shickel 5/23/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION

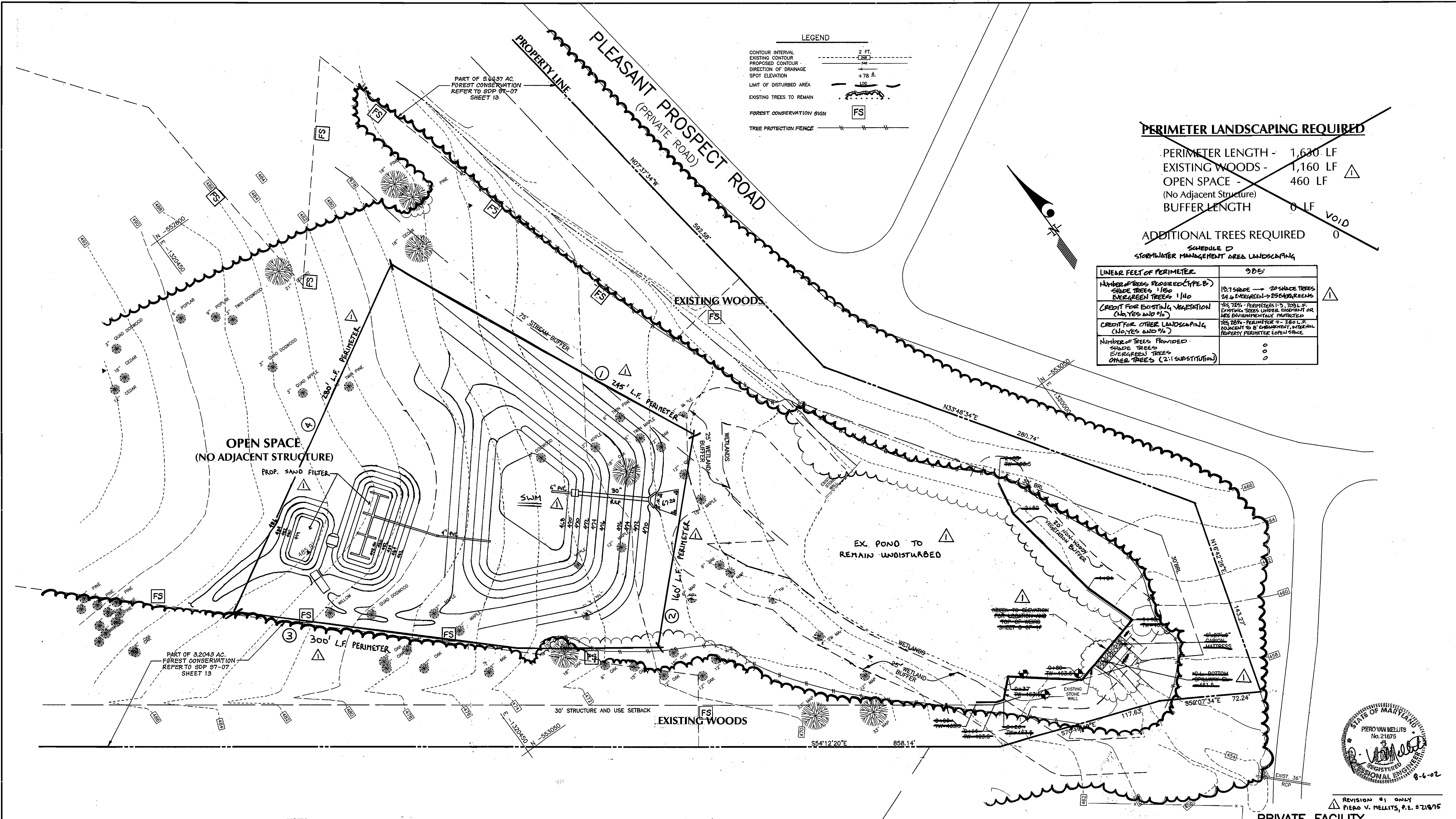
Andy Kammiller 5/23/01
CHIEF, DIVISION OF LAND DEVELOPMENT

Scott Smith 5/23/01
DIRECTOR



REVISION #4 ONLY
COURTNEY GALIBER, RLA 175457

REV. NO.	DATE	BY	REVISION
A	2/09	MRA	REVISED LANDSCAPING AND PARKING
A	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY, ADDED FIELD & REVISED FOREST CONSERVATION AREAS.



LEGEND

CONTOUR INTERVAL	2 FT.
EXISTING CONTOUR	
PROPOSED CONTOUR	
DIRECTION OF DRAINAGE	
SPOT ELEVATION	+78 ±
LIMIT OF DISTURBED AREA	
EXISTING TREES TO REMAIN	
FOREST CONSERVATION SIGN	FS
TREE PROTECTION FENCE	

PERIMETER LANDSCAPING REQUIRED

PERIMETER LENGTH -	1,630 LF
EXISTING WOODS -	1,160 LF
OPEN SPACE -	460 LF
(No Adjacent Structure)	
BUFFER LENGTH	0 LF
	VOID

ADDITIONAL TREES REQUIRED 0

**SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING**

LINEAR FEET OF PERIMETER	985'
NUMBER OF TREES REQUIRED (TYPE B)	19.1 SHADE → 20 SHADE TREES
SHADE TREES 1150	24.6 EVERGREEN → 25 EVERGREENS
EVERGREEN TREES 1140	
CREDIT FOR EXISTING VEGETATION (No, YES AND %)	YES 70% - PERIMETER 1-D, 70% L.F. - EXISTING TREES UNDER EASEMENT OR ARE ENVIRONMENTALLY PROTECTED
CREDIT FOR OTHER LANDSCAPING (No, YES AND %)	YES 20% - PERIMETER 4 - 280 L.F. SUBJECT TO 8' EASEMENT, INTERNAL PROPERTY PERIMETER OPEN SPACE
NUMBER OF TREES PROVIDED -	
SHADE TREES	0
EVERGREEN TREES	0
OTHER TREES (2:1 SUBSTITUTION)	0

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:

[Signature] 5-29-01
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING & ZONING

[Signature] 5/29/01
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 5/30/01
 CHIEF, DIVISION OF LAND DEVELOPMENT

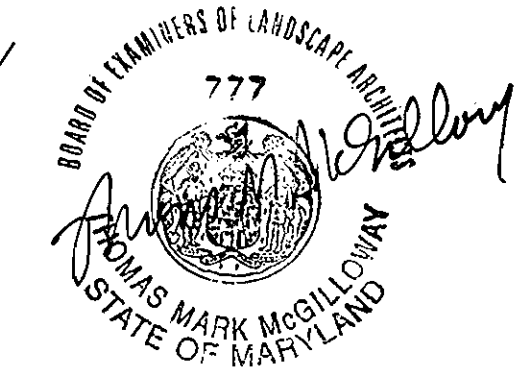
[Signature] 5/30/01
 DIRECTOR

- NOTES**
- This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual.
 - Financial surety for the required landscaping has been posted as part of the DPW Developers Agreement in the amount of \$ _____.
 - The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences, and walls. All plant materials shall be maintained in good growing condition and then necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

DEVELOPER'S / BUILDER'S CERTIFICATE

I/We certify that the landscaping shown on this plan will be done according to the plan section 16.124 of the Howard County Code and the Howard County Landscaping Manual. I/We further certify that upon completion a certification of landscape installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the department of planning and zoning.

[Signature] 5-28-01
 Name Date



LANDSCAPE PLAN

LDR International Inc.,
 an HNTB Company

11-09-00

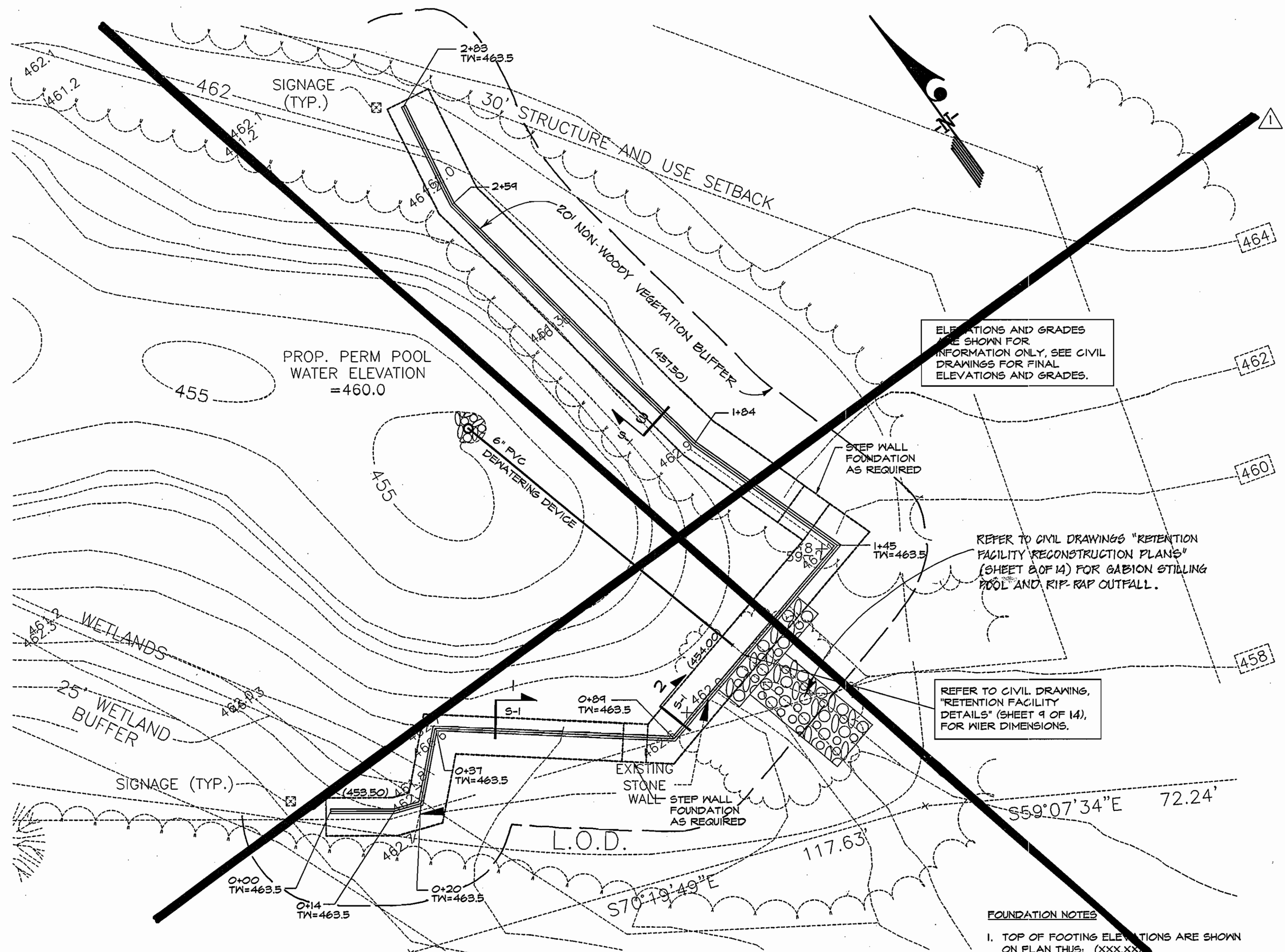
CLARK · FINEFROCK & SACKETT, INC.
 ENGINEERS · PLANNERS · SURVEYORS

7135 MINSTREL WAY · COLUMBIA, MD 21045 · (410) 381-7500 BALT. · (301) 621-8100 WASH.

DESIGNED	LANDSCAPE PLAN	SCALE	1"=30'
DRAWN	ZAH	DRAWING	13 OF 25
CHECKED		JOB NO.	99-174
DATE	10-20-00	FILE NO.	99-174 X

FOR : GOULD PROPERTY COMPANY
 1332 SOUTH CHARLES STREET
 BALTIMORE, MARYLAND 21230

(7F/Drawings/Glen Elg/SWM-Plan)



ELEVATIONS AND GRADES ARE SHOWN FOR INFORMATION ONLY, SEE CIVIL DRAWINGS FOR FINAL ELEVATIONS AND GRADES.

REFER TO CIVIL DRAWINGS "RETENTION FACILITY RECONSTRUCTION PLANS" (SHEET 8 OF 14) FOR GABION STILLING POOL AND RIP-RAP OUTFALL.

REFER TO CIVIL DRAWINGS, "RETENTION FACILITY DETAILS" (SHEET 9 OF 14), FOR WIER DIMENSIONS.

FOUNDATION NOTES
I. TOP OF FOOTING ELEVATIONS ARE SHOWN ON PLAN THUS: (XXX.XX)

PART. RETAINING WALL PLAN
SCALE: 1/8" = 1'-0"

SEE SHEET 19 & 20 FOR REVISED STRUCTURE & EMBANKMENT DETAILS

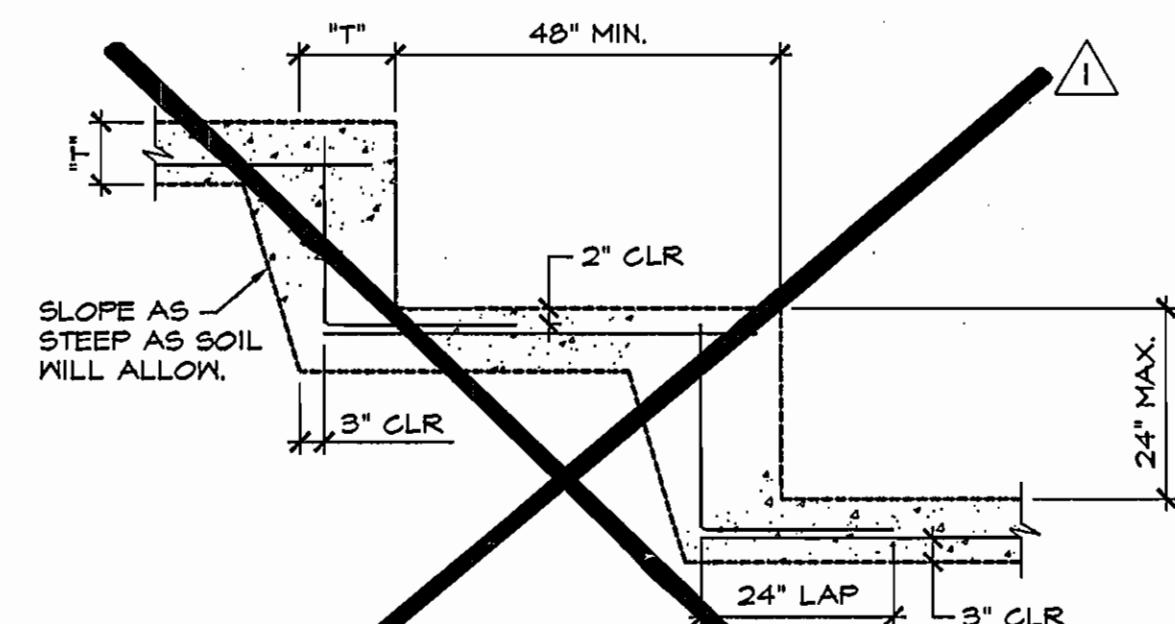
STRUCTURAL NOTES

- I. RETAINING WALLS
 - A. FOOTINGS FOR ALL RETAINING WALLS HAVE BEEN DESIGNED FOR AN ASSUMED NET ALLOWABLE SOIL BEARING PRESSURE OF 3000 PSF. THE ALLOWABLE SOIL BEARING PRESSURE SHALL BE FIELD VERIFIED BY A REGISTERED GEOTECHNICAL ENGINEER AND APPROVED PRIOR TO PLACING FOOTINGS. SHOULD THE ACTUAL SOIL BEARING PRESSURE BE LESS THAN 3000 PSF, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
 - B. RETAINING WALLS HAVE BEEN DESIGNED WITH BACKFILL MATERIAL HAVING THE FOLLOWING CHARACTERISTICS:
SAT. UNIT WEIGHT = 120 PCF
K_a = 0
K_p = 2.5
COEF. OF FRICTION = 0.45
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE THE BACK FILL MATERIAL MEETS THESE CHARACTERISTICS.
 - C. RETAINING WALLS HAVE BEEN DESIGNED FOR THE FOLLOWING MINIMUM FACTORS OF SAFETY:
SLIDING 1.5
OVERTURNING 2.0
 - D. CONSTRUCTION OF ALL RETAINING WALLS SHALL BE PERFORMED UNDER THE SUPERVISION OF A REGISTERED GEOTECHNICAL ENGINEER.
 - E. ALL RETAINING WALLS SHALL BE BRACED AND SHORED AS REQUIRED DURING BACKFILLING. THE RETAINING WALLS SHOULD BE BACKFILLED ON BOTH SIDES SIMULTANEOUSLY. THE DIFFERENCE BETWEEN THE TOP OF BACKFILL ON THE TWO SIDES OF THE WALL SHOULD BE NO MORE THAN 1.5 FEET DURING BACKFILLING.
- II. STRUCTURAL FILL
 - A. NEW FILL MATERIAL AND EXISTING BASE MATERIAL SHALL BE FREE OF ALL REFUSE, DEBRIS, AND ORGANIC MATTER AND SHALL BE APPROVED FOR USE BY A REGISTERED GEOTECHNICAL ENGINEER.
 - B. FILL MATERIAL SHALL BE DEPOSITED IN 8 INCH MAXIMUM LOOSE LIFTS AND COMPACTED TO A DRY DENSITY OF AT LEAST 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698. FILL SHALL BE PLACED AND COMPACTED IN 8 INCH LOOSE LIFTS TO DESIRED FINISHED GRADE UNDER THE GUIDANCE AND OBSERVATION OF A PROFESSIONAL GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF MARYLAND.
 - C. WHEN WORK IS INTERRUPTED BY RAIN, FILL OPERATIONS SHALL NOT RESUME UNTIL FIELD TESTS INDICATE THAT THE MOISTURE CONTENT AND SOIL DENSITY OF THE TOP 8 INCHES OF FILL IS WITHIN THE LIMITS SPECIFIED.
 - D. ALL FILL MATERIAL SHALL BE PLACED IN SUCH A MANNER THAT THE SURFACE IS SLOPED TO PREVENT THE PONDING OF WATER.
- III. CAST IN PLACE CONCRETE
 - A. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301)", AND TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318)".

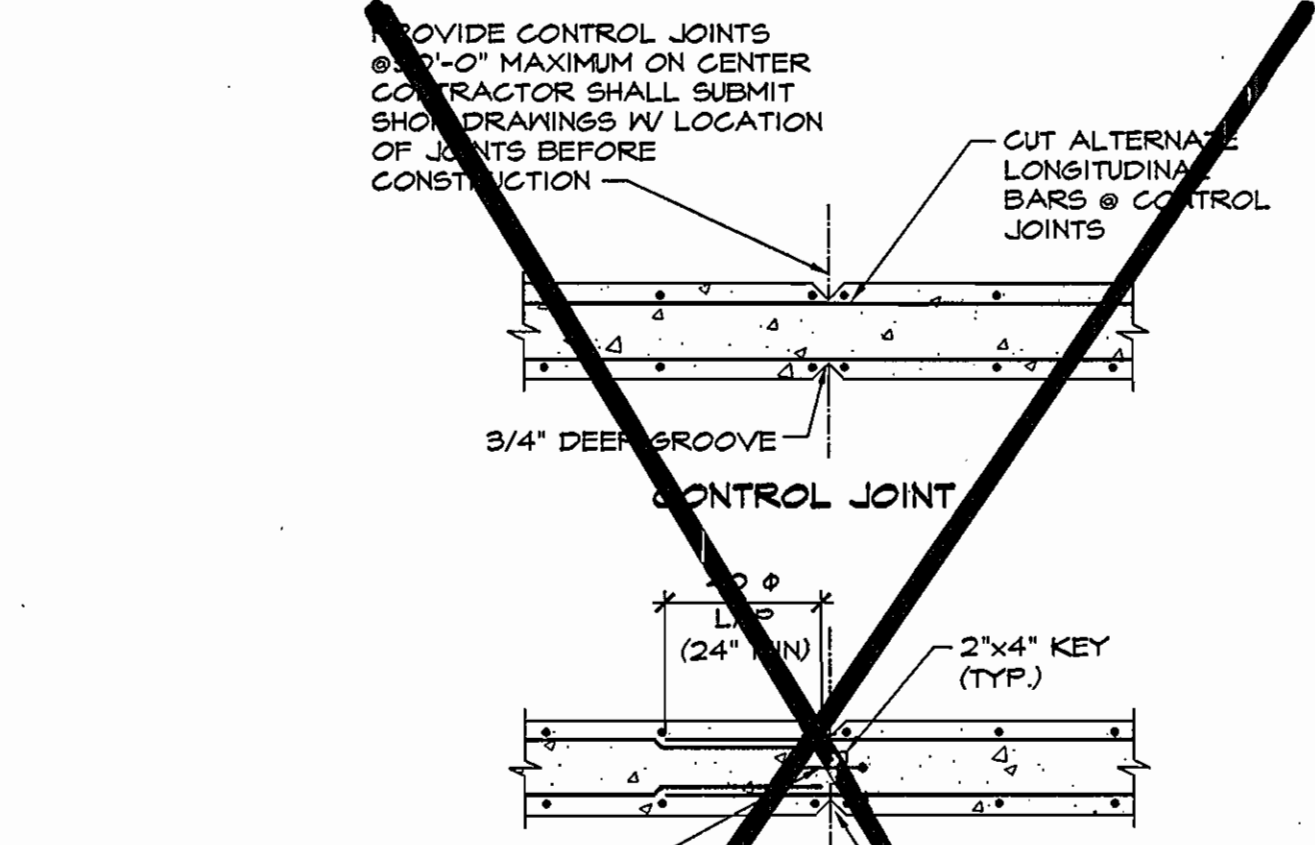
- B. IN ADDITION TO THE ABOVE, ALL CONCRETE WORK SHALL CONFORM TO THE FOLLOWING:
 1. RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING (ACI 305).
 2. RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING (ACI 306).
 3. RECOMMENDED PRACTICE FOR CONCRETE FORMWORK (ACI 347).
- C. ALL CONCRETE EXPOSED TO PUBLIC VIEW SHALL CONFORM TO THE REQUIREMENTS FOR ARCHITECTURAL CONCRETE CONTAINED IN ACI 301.
- D. ALL CONCRETE, UNLESS NOTED OTHERWISE, SHALL BE STONE AGGREGATE CONCRETE HAVING THE FOLLOWING MINIMUM 28 DAY COMPRESSIVE STRENGTHS:

FOUNDATIONS	3000 PSI
RETAINING WALLS	3000 PSI

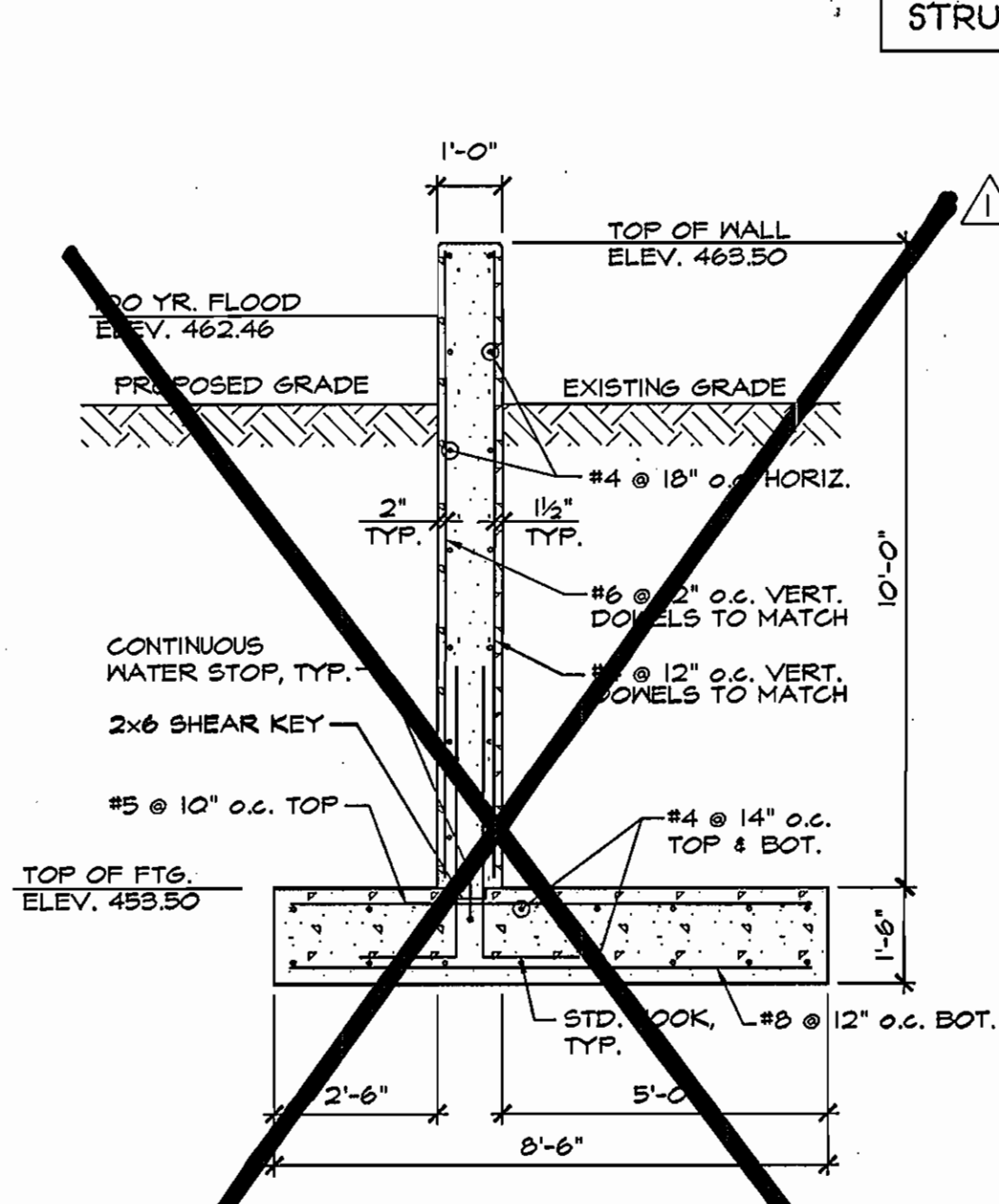
 ALL CONCRETE EXPOSED TO WEATHER SHALL HAVE AN AIR ENTRAINMENT OF 6% ± 1%. NO ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL BE PERMITTED. MAXIMUM AGGREGATE SIZE SHALL BE 1", AND MAXIMUM SLUMP SHALL BE 4", 3" FOR SLABS ON GRADE. ALL CONCRETE, EXCEPT FOOTINGS, SHALL CONTAIN A WATER REDUCING ADMIXTURE. WATER CEMENT RATIO SHALL BE BETWEEN 0.45 AND 0.48 FOR 4000 PSI CONCRETE, 0.50 FOR 3000 PSI CONCRETE. PORTLAND CEMENT SHALL CONFORM TO ASTM C 150 AND NORMAL WEIGHT AGGREGATES SHALL CONFORM TO ASTM C 33.



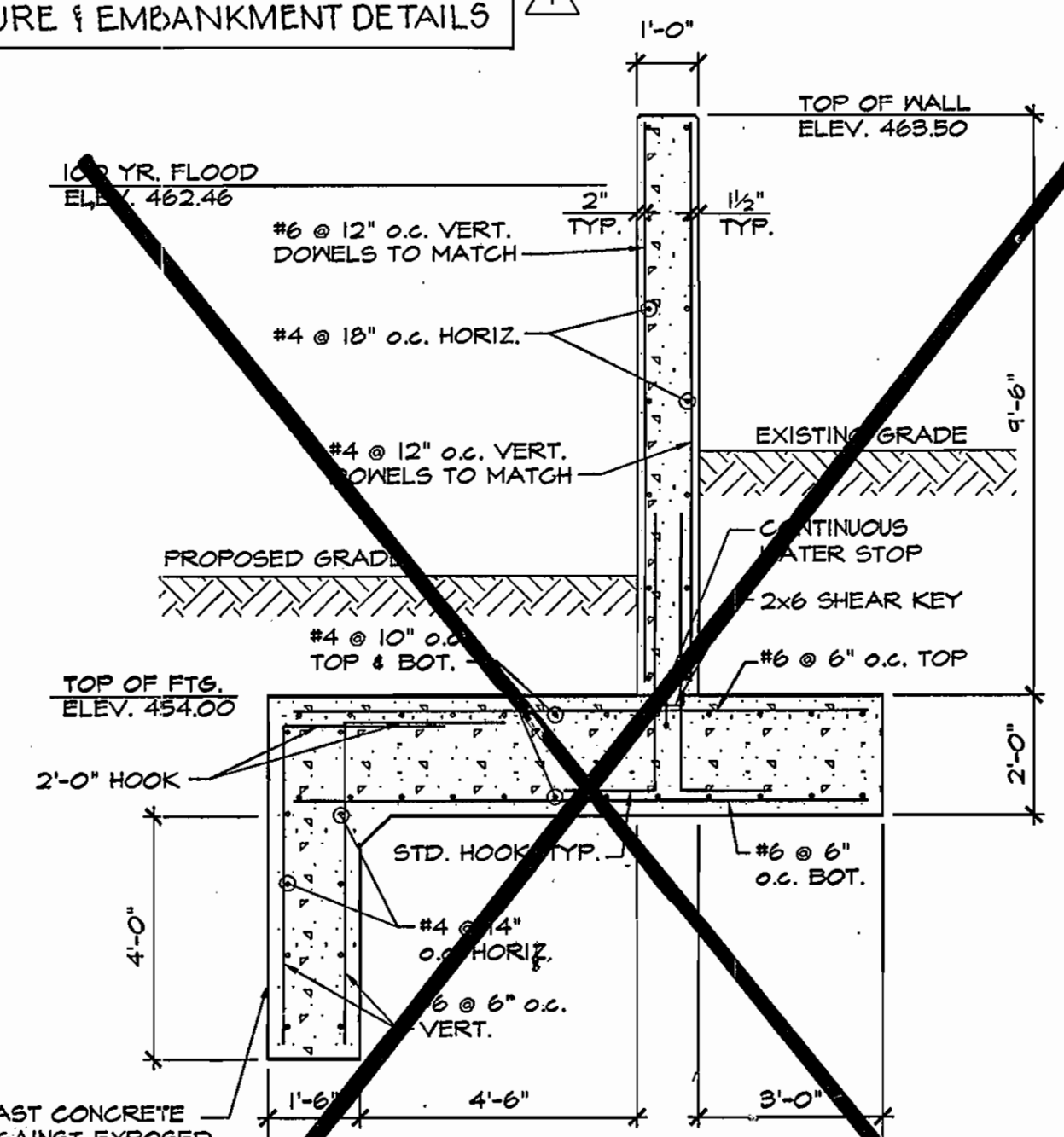
TYPICAL STEPPED FOOTING DETAIL B/TYP
NOT TO SCALE



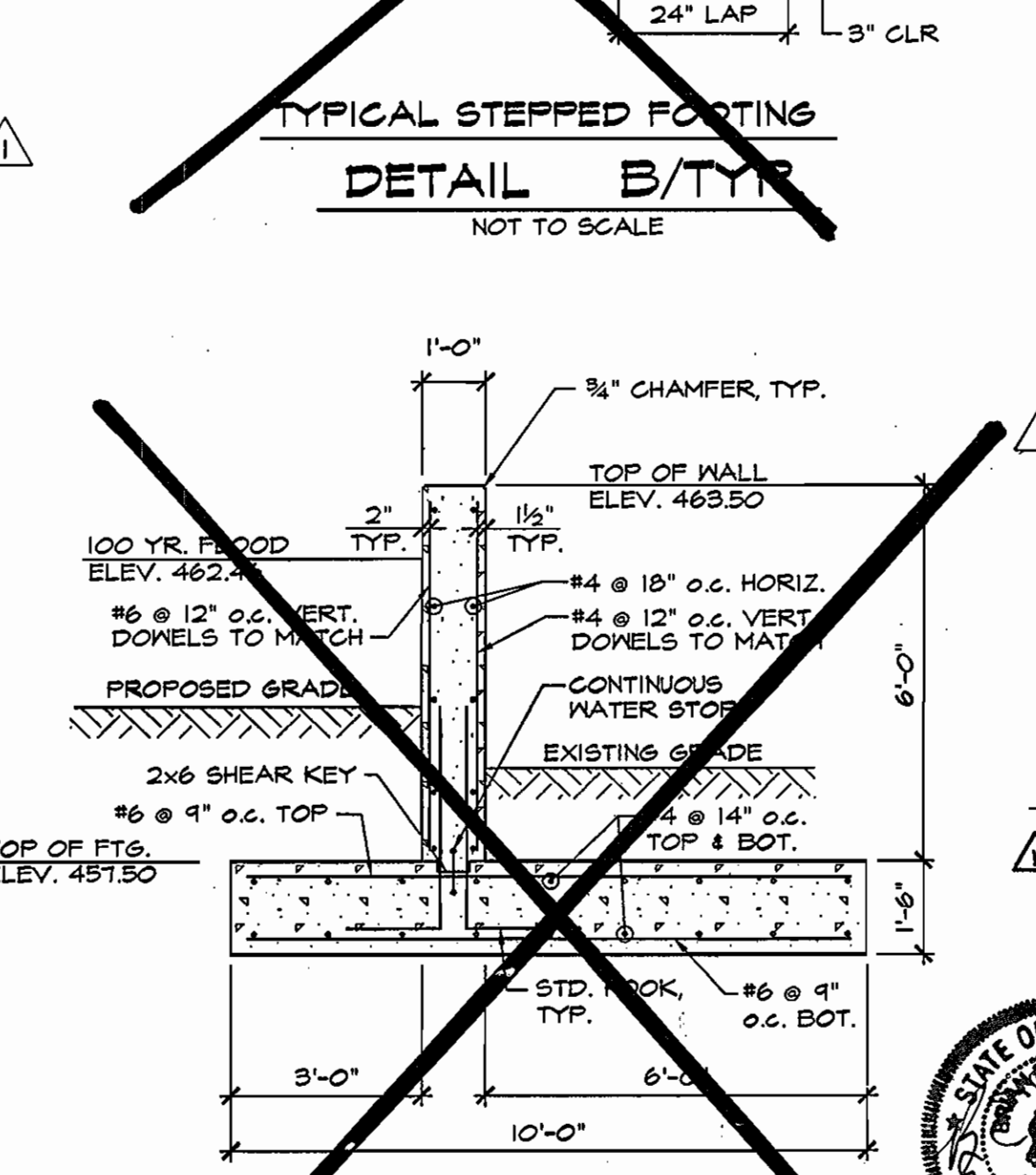
CONCRETE WALL JOINT WITH WATERSTOPS DETAIL C/TYP
NOT TO SCALE



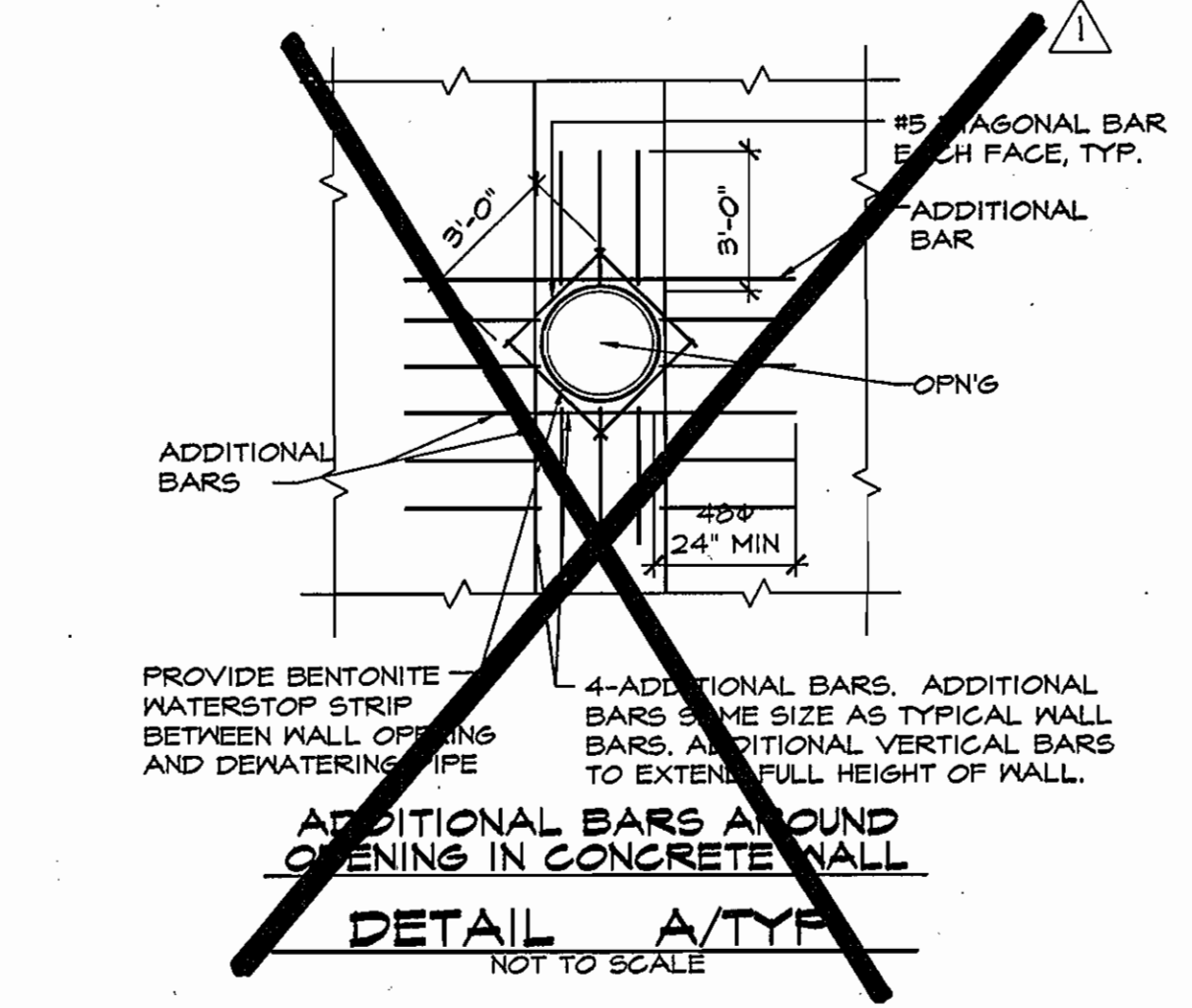
SECTION 1/3-1 RET. WALL - STA 0+00 TO 0+89
SCALE: 3/8" = 1'-0"



SECTION 2/3-1 RET. WALL - STA 0+89 TO 1+45
SCALE: 3/8" = 1'-0"



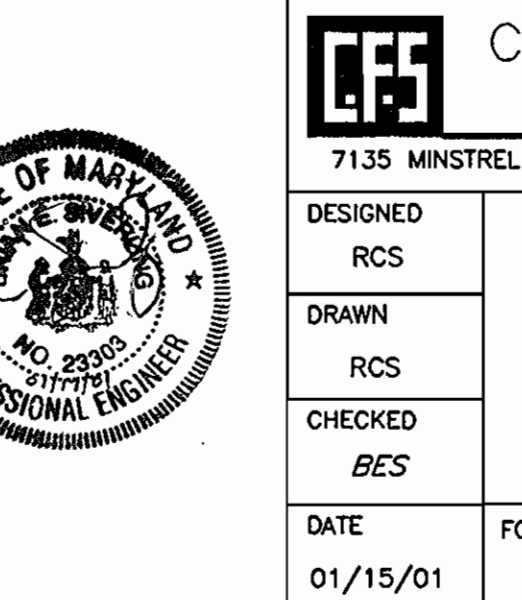
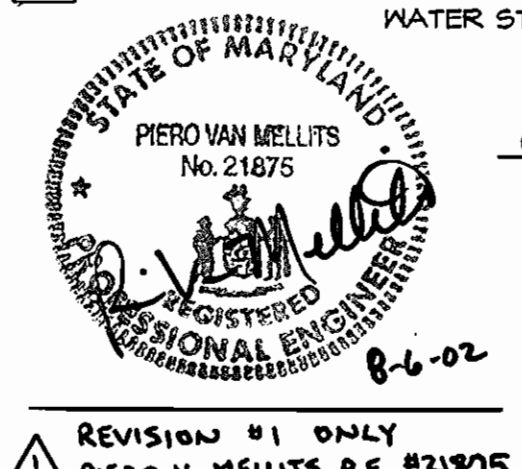
SECTION 3/3-1 RET. WALL - STA 1+45 TO 2+83
SCALE: 3/8" = 1'-0"



DETAIL A/TYP
NOT TO SCALE

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:
[Signature] 5/29/01
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED DEPARTMENT OF PLANNING & ZONING:
[Signature] 5/29/01
CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 5/31/01
CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] 5/31/01
DIRECTOR



REV. NO.	DATE	BY	REVISION
1	7-19-02	MRA	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY, ADDED FIELD REVISSED FOREST CONSERVATION AREAS.

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD 21045 • (410) 381-7500 BALT. • (301) 621-8100 WASH.

DESIGNED RCS	RETAINING WALL CONSTRUCTION DETAILS	SCALE AS SHOWN
DRAWN RCS	GLENELG COUNTRY SCHOOL PRIMARY SCHOOL	DRAWING 14 OF 25
CHECKED BES	TAX MAP 22, GRID 22, PARCEL 146 LIBER 1295 FOLIO 245 FIFTH (5th) ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 11941 9/1-17/4 X FILE NO. 11941-S1
DATE 01/15/01	FOR: GOULD PROPERTY COMPANY 1332 SOUTH CHARLES STREET BALTIMORE, MARYLAND 21230	SDP 01.69

DUPLEX SUBMERSIBLE SEWAGE PUMP STATION

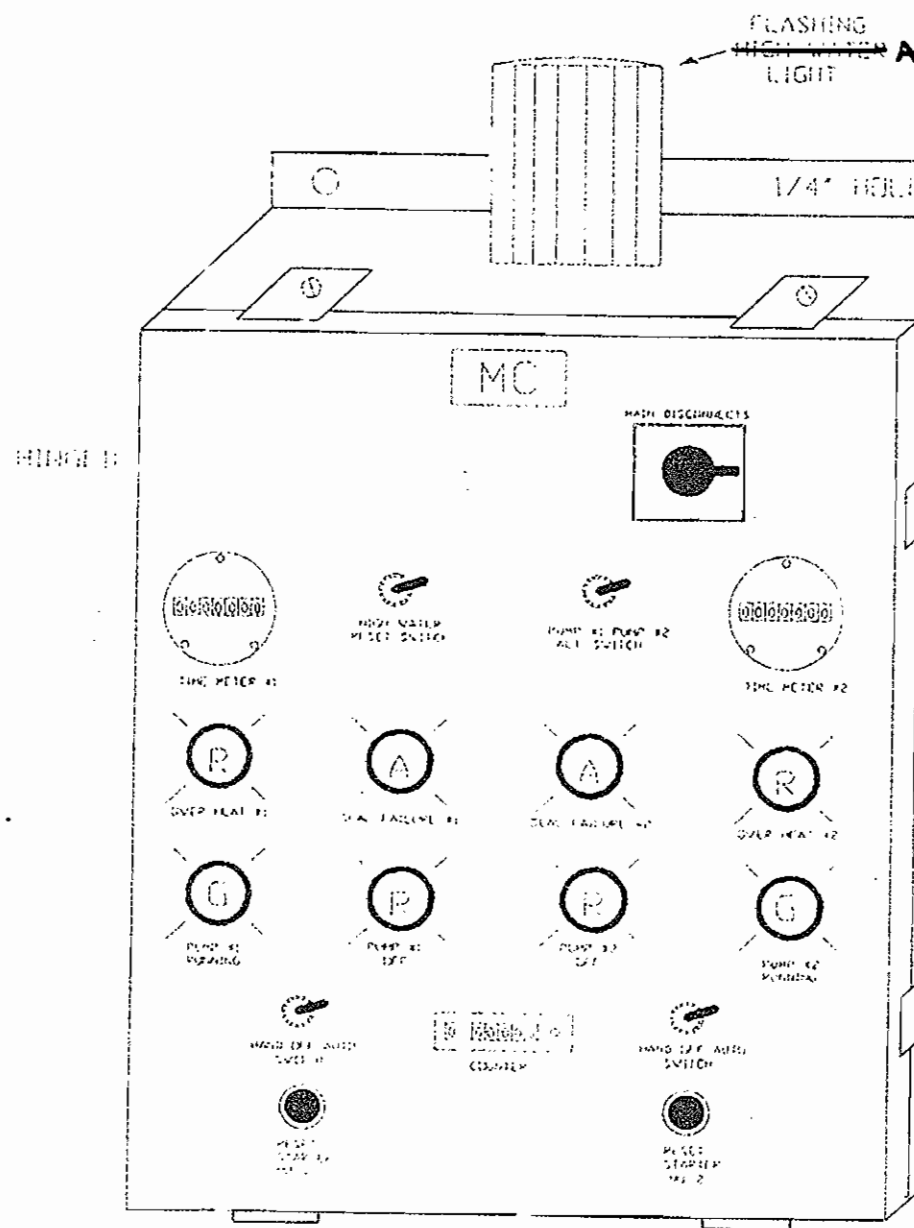
GENERAL
 THE CONTRACTOR SHALL FURNISH AND INSTALL AN EFFLUENT PUMP STATION AS DESCRIBED BY THIS DRAWING. THIS SYSTEM SHALL INCLUDE TWO (2) WELL MODEL 1607 PUMPS WITH QUICK REMOVAL FITTINGS, STAINLESS STEEL GUIDE RAILS, DISCHARGE ELBOWS AND BOTTOM GUIDE RAIL SUPPORTS. STATION MOUNTED AMES-MESSCO NEMA IV CONTROL PANEL ALL TO BE FACTORY ASSEMBLED IN A FIBERGLASS BASIN WITH AN INTERNALLY ATTACHED VALVE BOX TO INCLUDE ALL NECESSARY DISCHARGE PIPING, VALVES AND FITTINGS. STATION SHALL BE A **RYEAS PACKAGE STATION OR EQUAL PRODUCT.**

PUMP BASIN
 THE PUMP BASIN SHALL BE CONSTRUCTED OF FIBERGLASS, 72" DIAMETER X 122" DEEP. THE PUMP MOUNTING BASE SHALL BE BOLTED TO THE STEEL ANTIPLATE ON THE BOTTOM OF THE FIBERGLASS BASIN. THE STATION COVER AND ENTRY HATCH SHALL BE MANUFACTURED OF DIAMOND PATTERN ALUMINUM.

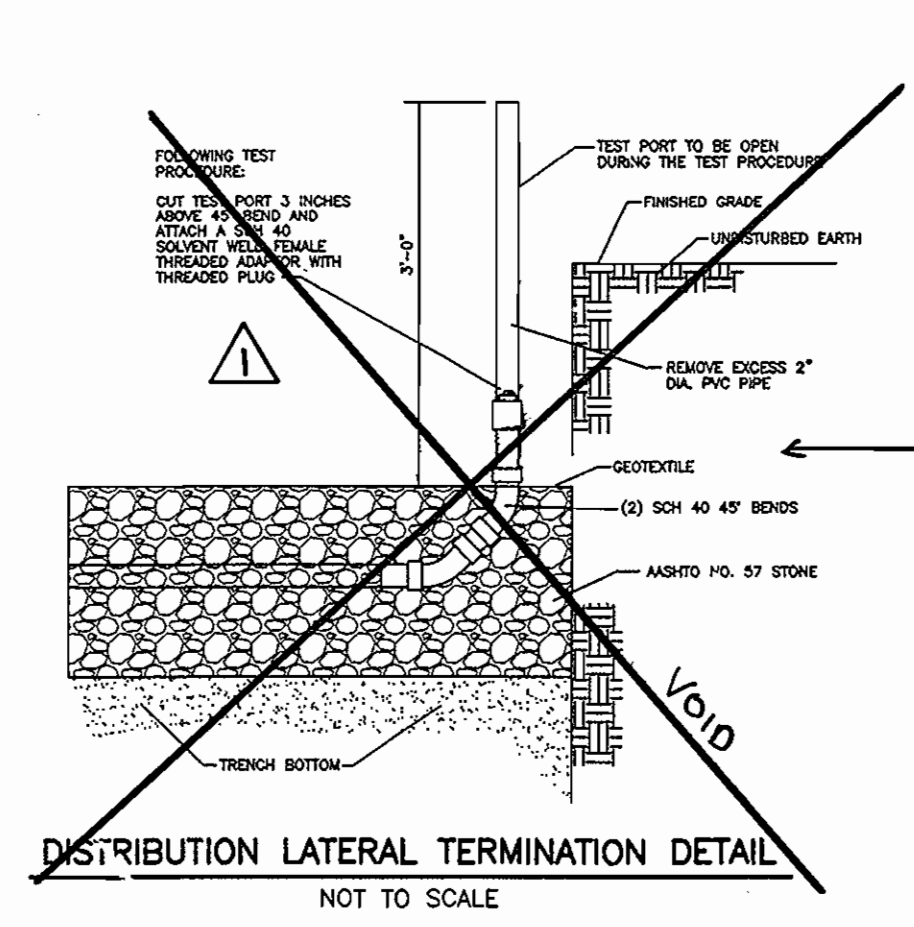
PIPING
 THE DISCHARGE PIPING FROM THE PUMPS SHALL BE 3" GATE AND CHECK VALVES, ALL CONNECTED TO COMMON 3" DISCHARGE THROUGH THE SIDE OF THE STATION.

SUBMERSIBLE PUMPS
 THE PUMPS SHALL BE MANUFACTURED OF CAST IRON. THE IMPELLERS SHALL BE MADE OF CLOSE GRAIN CAST IRON, ACCURATELY MACHINED TO THE PROPER DIAMETER. IMPELLERS SHALL BE STATICALLY AND DYNAMICALLY BALANCED.

MOTORS
 THE MOTORS SHALL BE OF AN AIR FILLED DESIGN. OIL FILLED MOTOR SHELLS SHALL NOT BE CONSIDERED EQUAL. MOTORS SHALL BE IN A WATERIGHT CAST IRON SHELL WITH EXTENDED COOLING FINS AND SHALL HAVE CLASS "F" INSULATION AND SHALL HAVE PERMANENTLY LUBRICATED DOUBLE SEAL BALL BEARINGS THAT HAVE A RATED LIFE OF 17,500 HOURS. MOTORS USING SLEEVE TYPE BEARINGS WILL NOT BE CONSIDERED EQUAL. MOTOR SHAFTS SHALL BE 300 SERIES STAINLESS STEEL WITH KEYWAY FOR POSITIVE POSITIONING OF THE IMPELLER. CARBON STEEL SHAFTS ARE NOT CONSIDERED EQUAL.



CONTROL PANEL DETAIL
 NOT TO SCALE



DISTRIBUTION LATERAL TERMINATION DETAIL
 NOT TO SCALE

MECHANICAL SEAL
 A DOUBLE MECHANICAL SEAL SYSTEM SHALL BE FURNISHED. THE ENTIRE DOUBLE MECHANICAL SEAL ASSEMBLY SHALL BE HOUSED IN AN OIL SEAL CHAMBER FILLED WITH CLEAN DIELECTRIC OIL. SEAL SURFACES SHALL BE OF SOLID SILICON CARBON. CARBON GRAPHITE, TUNGSTEN CARBIDE OR SYSTEMS THAT ALLOW THE LOWER SEAL MECHANISM TO COME IN CONTACT WITH THE PUMPED MEDIA SHALL NOT BE CONSIDERED AN EQUAL.

MOISTURE SENSOR
 A MOISTURE SENSOR SHALL BE INSTALLED AS A MEANS OF DETECTING A MECHANICAL SEAL FAILURE AND THE ENTRY OF MOISTURE INTO THE OIL CHAMBER. THE SYSTEM SHALL CONSIST OF A MOISTURE SENSING ELECTRODE PROBE INSTALLED IN THE MECHANICAL SEAL CHAMBER, AND SUFFICIENT SENSOR CABLE TO CONNECT TO THE STATION ELECTRICAL CONTROL PANEL.

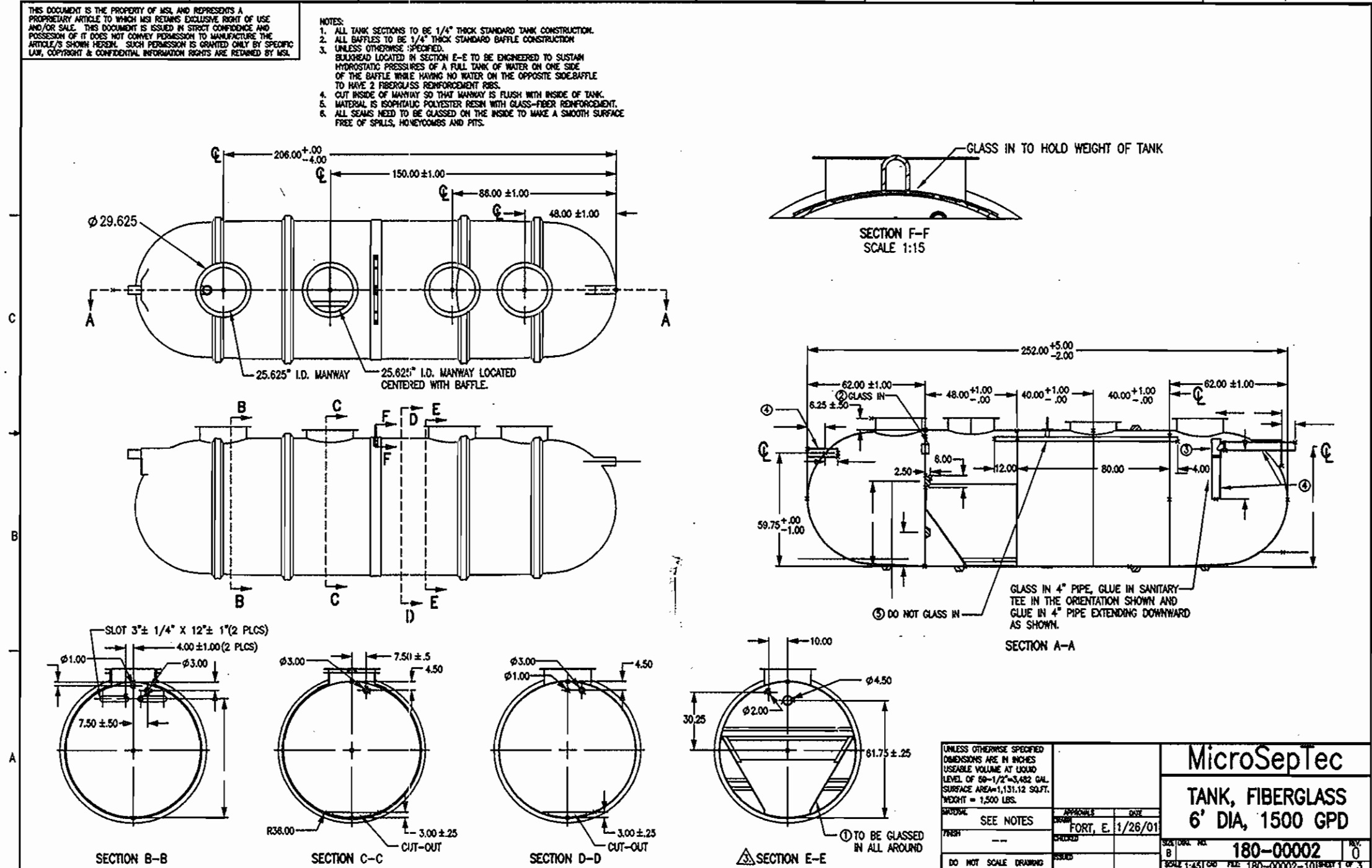
TEMPERATURE SENSOR
 AN AUTOMATIC RESET TEMPERATURE SENSOR SHALL BE INSTALLED ON THE MOTOR STATOR WINDINGS TO STOP THE MOTOR WHEN THE INTERNAL MOTOR TEMPERATURE EXCEEDS THE INSULATION RATING. THE SENSOR SHALL BE WIRED TO THE MOTOR STARTERS IN THE STATION CONTROL PANEL.

QUICK REMOVAL SYSTEM
 THE PUMPS SHALL BE MOUNTED ON WELL-BORED QUICK REMOVAL SYSTEM WITH 2" SCHEDULE 40 STAINLESS STEEL GUIDE RAILS. SYSTEM SHALL INCLUDE: (2) 3" CAST IRON LONG RADIUS BASE ELBOWS WITH (4) BOLT HOLES, UPPER, LOWER AND INTERMEDIATE GUIDE RAIL SUPPORTS.

COATINGS
 THE PUMP VOLUTE, MOTOR AND PUMP BASE SHALL BE COATED WITH **WEL-BLUE ACRYLIC** MANUFACTURER'S **STC COATING** SUITABLE FOR SUBMERSIBLE SERVICE.

CONTROL PANEL
 FURNISH AND INSTALL ONE (1) AMES-MESSCO DUPLEX CONTROL PANEL AS DESCRIBED BY THIS DRAWING. THE PANEL SHALL BE A NEMA-IV DOOR IN DOOR ENCLOSURE, FOR STATION MOUNTING TO INCLUDE BUT NOT LIMITED TO THE FOLLOWING:
 (1) MAIN DISCONNECT SWITCH
 (2) CIRCUIT BREAKER
 (3) MAGNETIC STARTERS WITH OVERLOAD AND LOW VOLTAGE PROTECTION
 (4) HANDS-OFF-AUTOMATIC SELECTOR SWITCHES
 (1) LOSS ELECTRO ALTERNATOR
 (2) PUMP RUNNING LIGHTS
 (3) SEAL FAILURE LIGHT AND RELAYS
 (2) OVERLOAD RESET BUTTONS
 (2) ELAPSED RUNNING TIME METERS
 (4) MERCURY FLOAT SWITCHES
 (1) TWENTY FOUR HOUR PROGRAMMABLE PUMP DOWN TIMER
 (1) SET DRY CONTACTS FOR REMOTE HIGH WATER ALARM SIGNAL
 (1) ALARM LIGHT - NEMA 4 TO INDICATE PUMP FAILURE AND ALARM CONDITIONS.

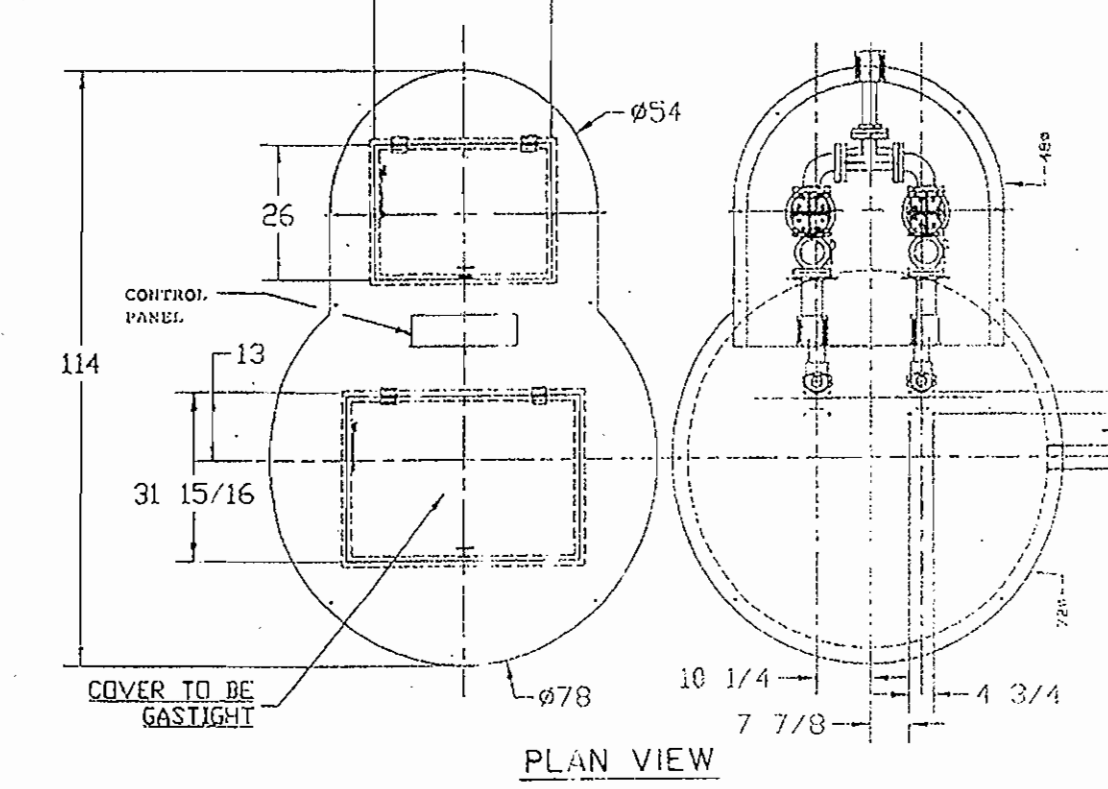
Glenelg Country School
 Flow (given) 3000 G.P.D.
 Use 6 hr. Daily Basis & Peak of 6
 Thus 500 = 6.25 GPM x 6 Peak = 37.5 GPM
 Use Design Rate of 50 GPM
 1810 ft. of Lateral x 2 ft. wide = 3620 Sq.Ft.
 Use 6 cycle day (600) @ 500 gal/cycle
 Thus 500 = 0.138 Gal per Sq. Ft./cycle
 3620
 Use a 6" Dia. Station
 Static Head 550.90
 Outfall Elevation 528.08
 Pump Stop Elevation 528.08
 Static Head 22.82 ft.
 F/Main Friction
 Use 3" PVC Velocity = 2.27 Sec
 Lg. = 256' + (45EI) 3.9' (1/8th bend) 1.4' = Total of 261'
 2.61 x 1.38 (c=100) = 3.60' .47(=150)=1.7 Ft. F/M Friction
 Station Losses
 8.0' of 3" pipe +
 1.6' 3" gate valve
 7.7' 3" all
 13.5' 3" tee side
 19.8' 3" swing check valve
 52.6' Total
 Thus 526 1.38 = 0.73'
 RECAP
 Static 22.82 ft.
 F/M Fric 1.70
 Station Losses .80
 Total Head 25.32 ft.
 Use 26.0 ft.



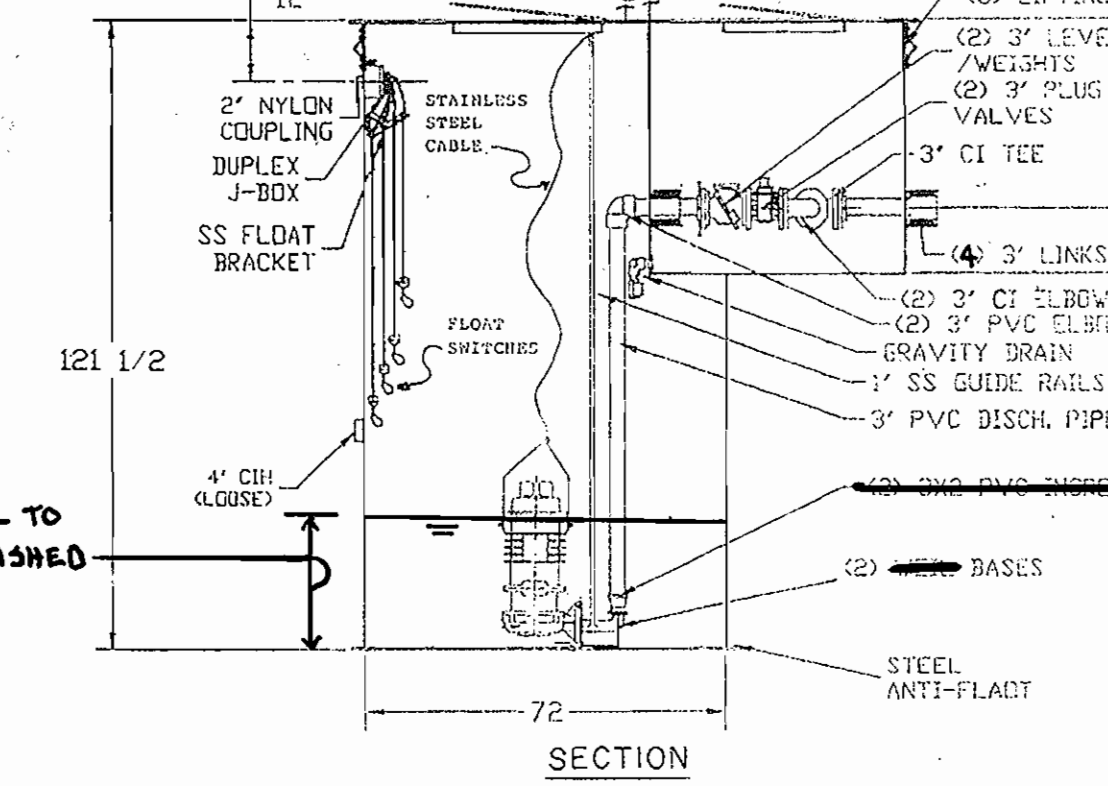
MicroSepTec TANK, FIBERGLASS 6' DIA, 1500 GPD

SEPTIC FIELD DESIGN CALCULATION
 PROPOSED USE PRIMARY SCHOOL
 PROPOSED STUDENT POPULATION 288 STUDENTS
 ESTIMATED DAILY FLOWS 2790 GALLONS DAILY DESIGN FLOW
 INITIAL AND RESERVE SEPTIC FIELD SIZE:
 SHALLOW FIELD PROPOSED PER PERCOLATION TESTING.
 DEPTH AND SIZE OF INITIAL SEPTIC FIELD
 INLET DEPTH 4.5', BOTTOM OF TRENCH 6.0', TRENCH WIDTH 2',
 AVERAGE PERCOLATION RATE TO MINUTES
 INITIAL SYSTEM DESIGN = 2200 GPD / 700 GPD/SF = 3488 SF ABSORPTION AREA
 3488 SF ABSORPTION AREA / 2' TRENCH WIDTH = 1800 LINEAL FEET OF 2' WIDE INITIAL SYSTEM REQUIRED.
 RECOVERY AREA REQUIRED = 2 x 1800 LINEAL FEET OF 2' WIDE RECOVERY AREA.

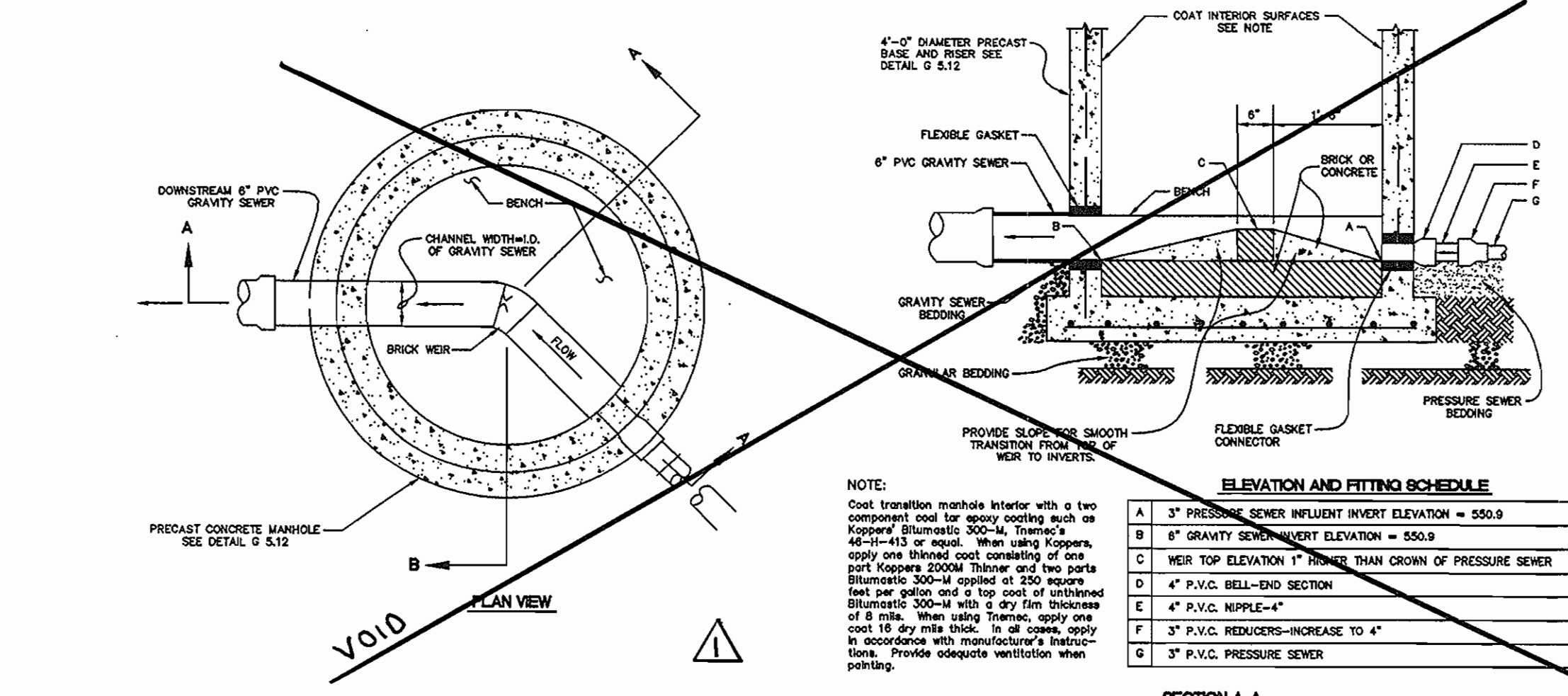
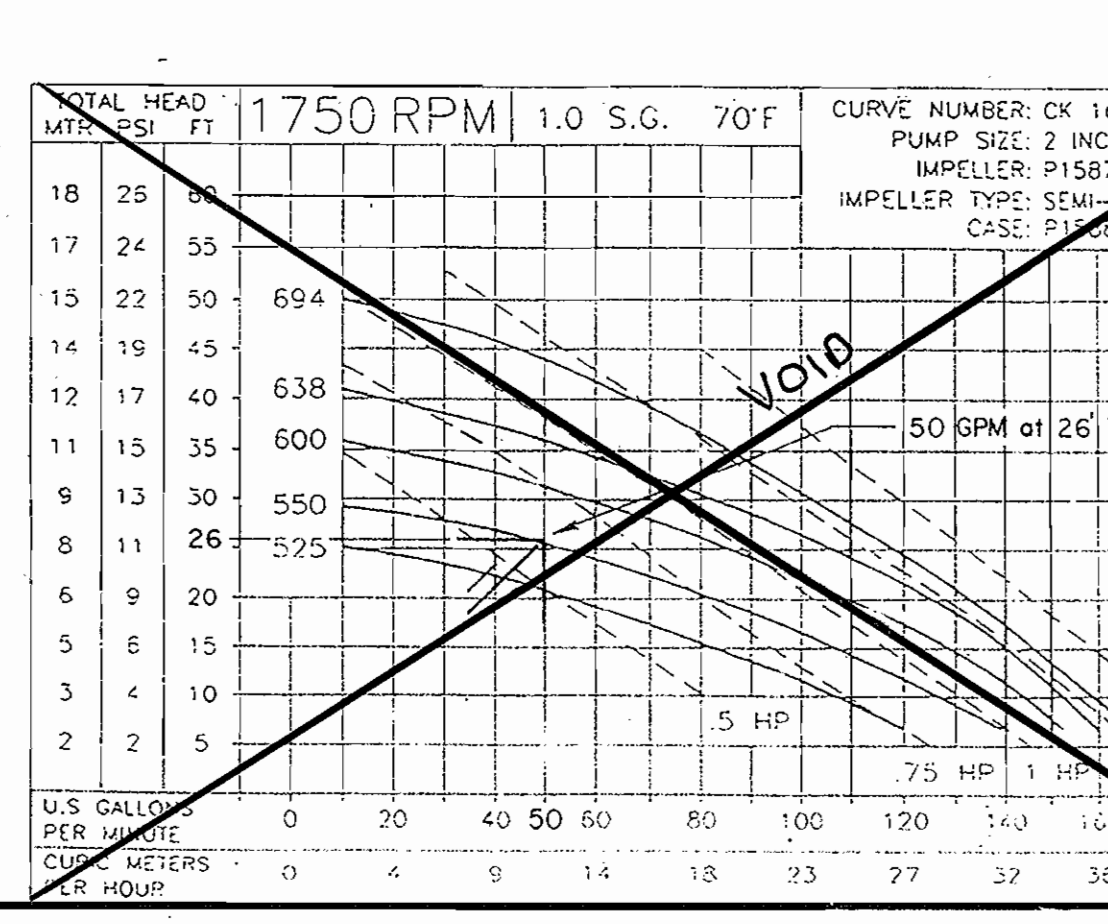
SEPTIC SYSTEM NOTES
 PRIOR TO STARTING WORK, THE CONTRACTOR IS TO VERIFY THE ELEVATION AND LOCATION OF THE SEWER CONNECTION AT THE BUILDING AND NOTIFY THE ENGINEER OF ANY PROBLEMS OR DISCREPANCIES.
 ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY HEALTH REGULATIONS AND IN ACCORDANCE WITH APPLICABLE PERMITS.
 THE CONTRACTOR IS TO NOTIFY "MISS UTILITY" AT 1-800-257-7777, 48 HOURS IN ADVANCE OF ANY CONSTRUCTION FOR THE LOCATION OF ALL UTILITIES.



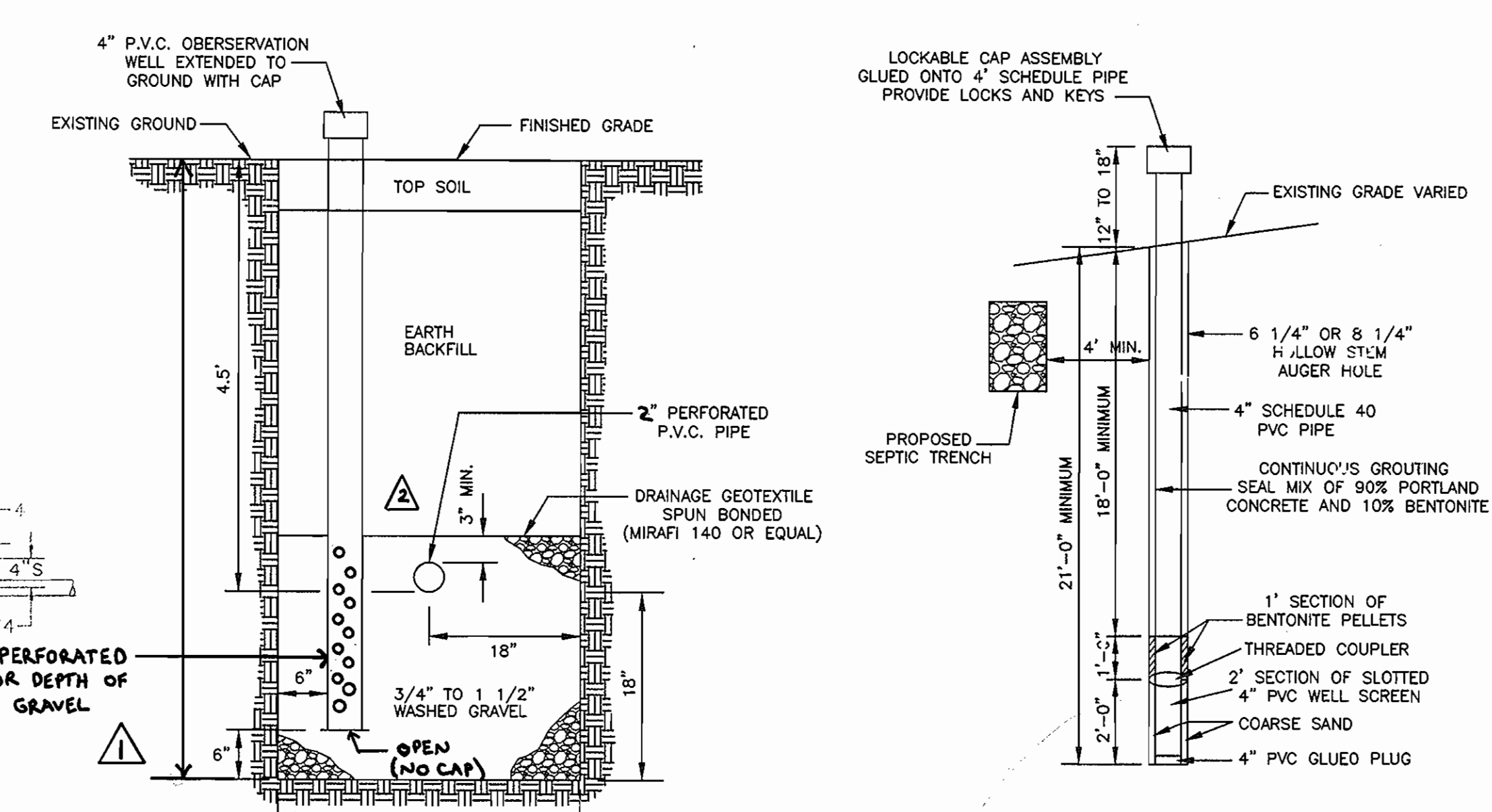
PLAN VIEW



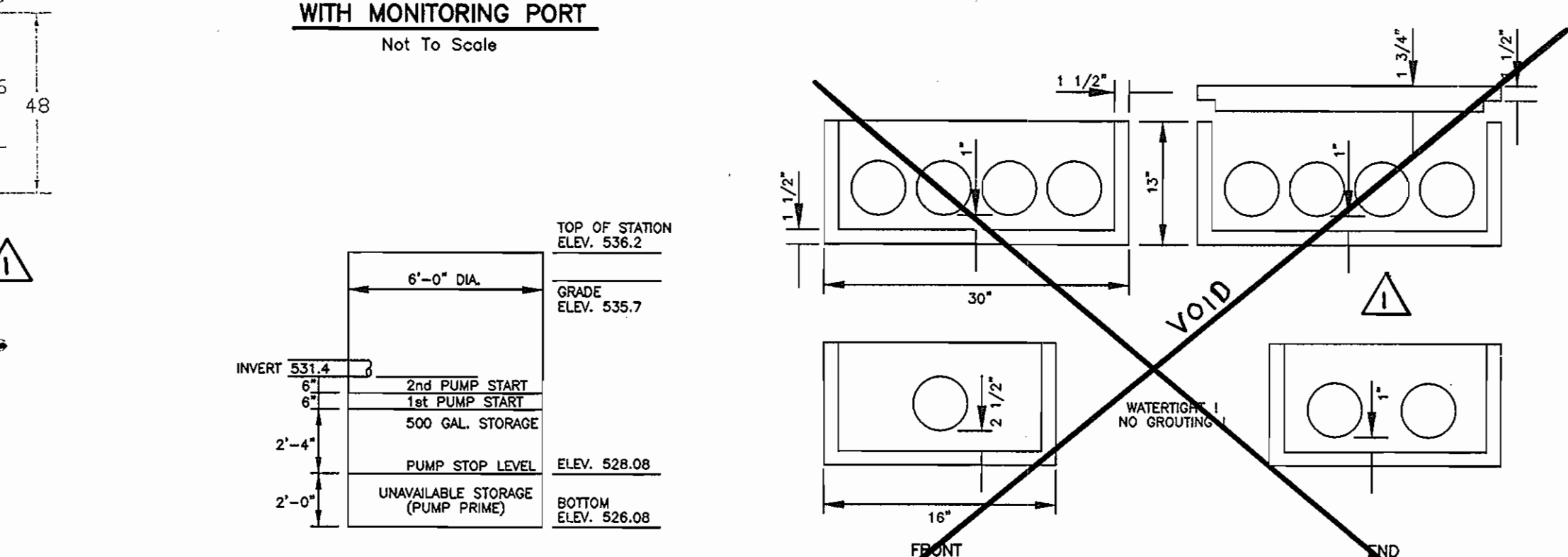
PUMP CHAMBER DETAIL
 NOT TO SCALE



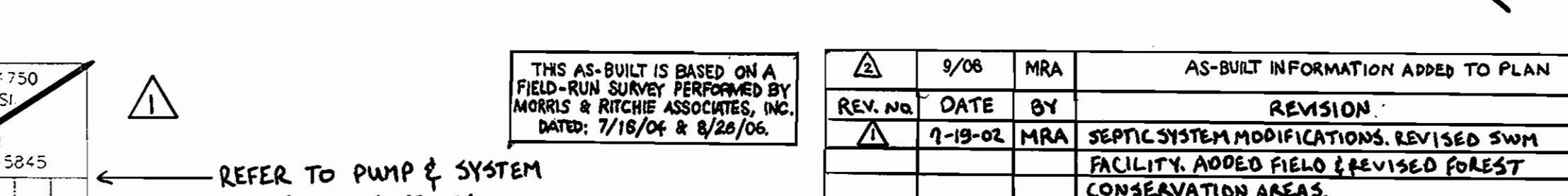
TRANSITION MANHOLE
 Not To Scale



DISPOSAL TRENCH DETAIL WITH MONITORING PORT
 Not To Scale



PIEZOMETER DETAIL
 Not To Scale



10 OUTLET DISTRIBUTION BOX DETAIL
 Not To Scale

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWORAGE SYSTEMS:
 Director, *Michael J. ...* 5-29-07
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING & ZONING
 Chief, Development Engineering Division *...* 5/29/07
 Chief, Division of Land Development *...* 5/30/07
 Director

APPROVED: *...* 5-29-07
 DATE

APPROVED: *...* 5-29-07
 DATE

APPROVED: *...* 5-29-07
 DATE

THIS AS-BUILT IS BASED ON A FIELD-RUN SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES, INC. DATED: 7/16/04 & 8/28/06.

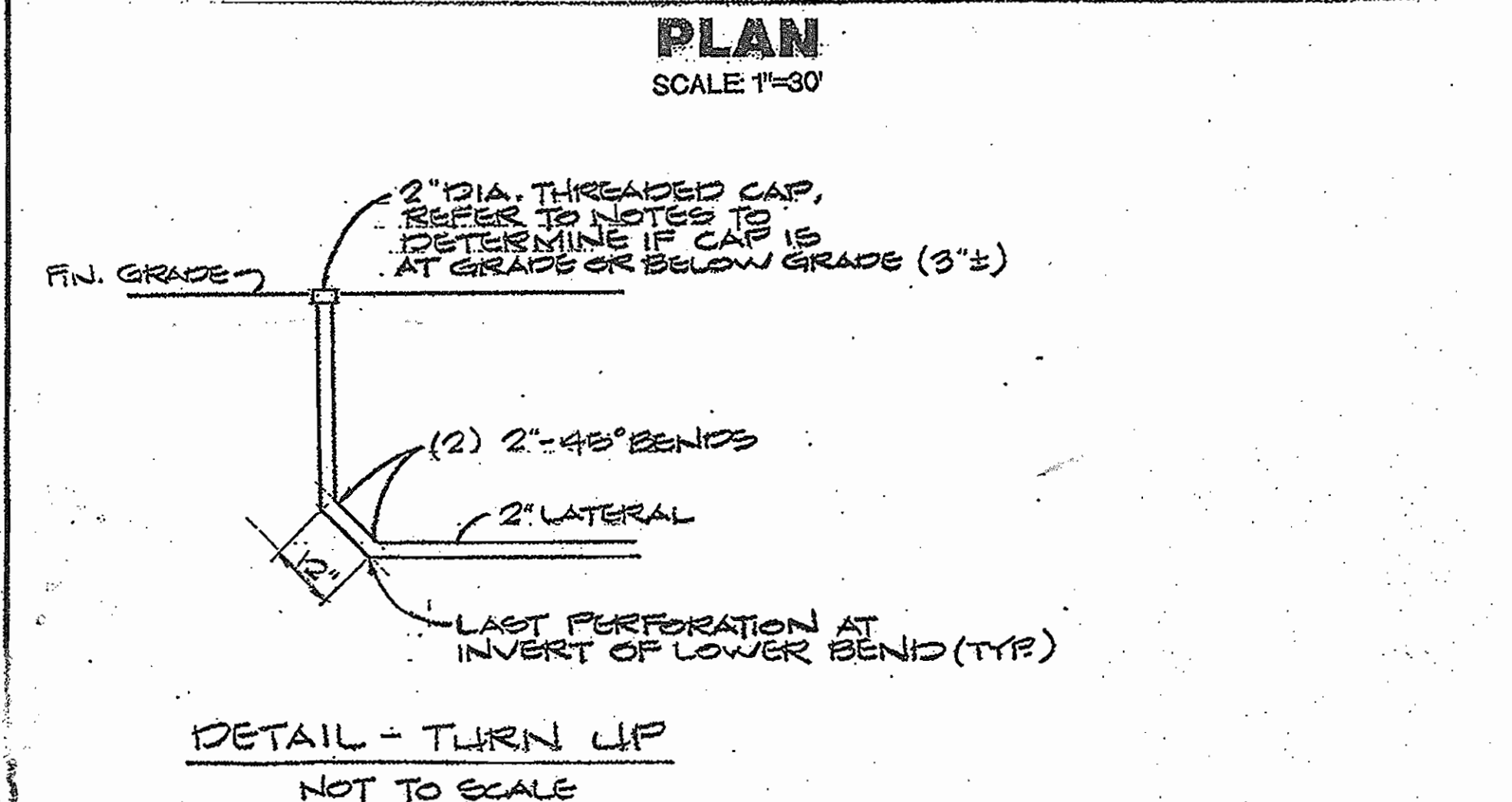
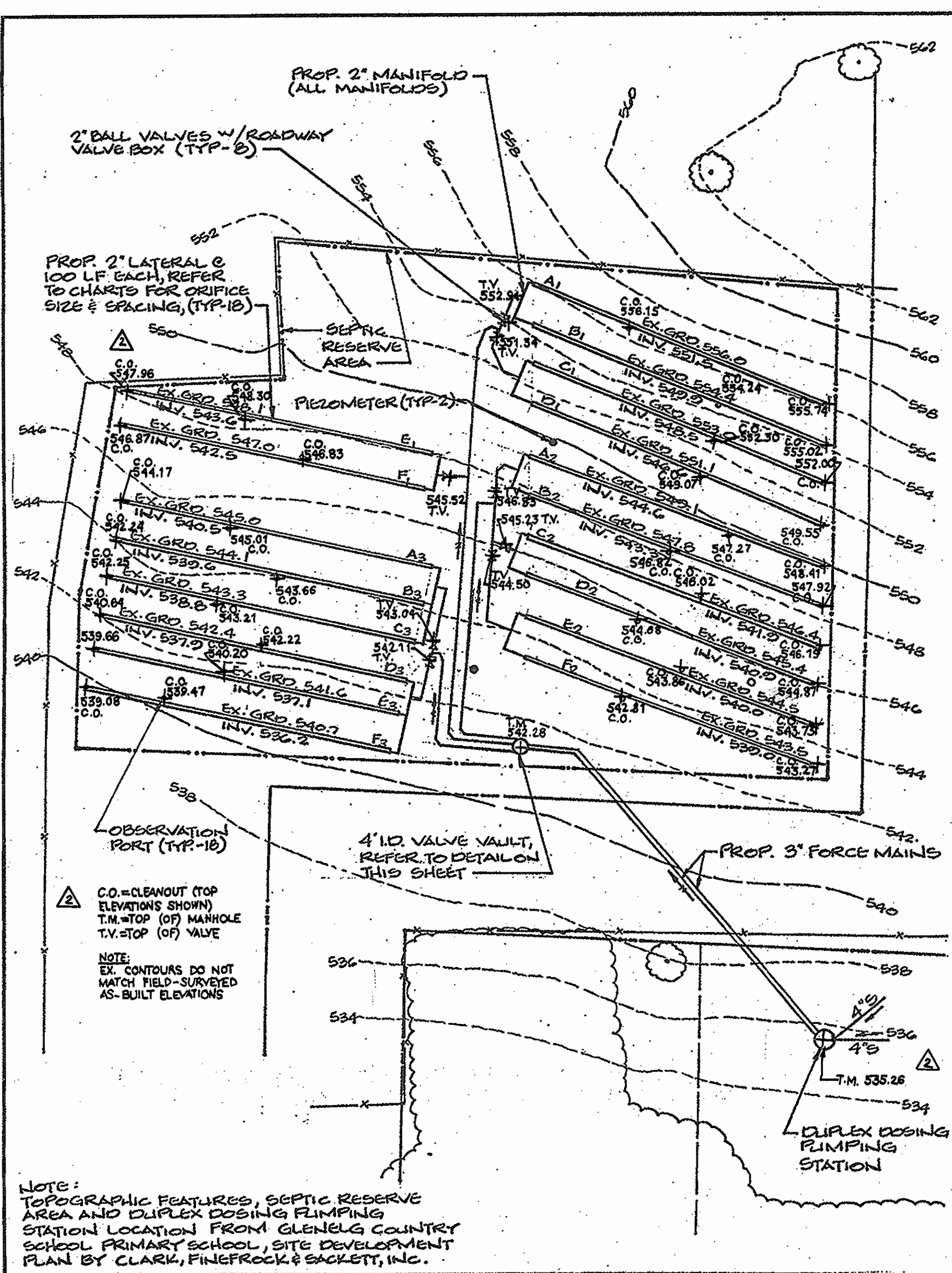
REVISION #1 ONLY
 PIERO V. MELLITS, P.E. #21875
 (10) C:/Drawing Files/99174/MAISEL-SEPTIC-DETAILS

CLARK · FINEFROCK & SACKETT, INC.
 ENGINEERS · PLANNERS · SURVEYORS
 7135 MINSTREL WAY · COLUMBIA, MD 21045 · (410) 381-7500 BALT. · (301) 621-8100 WASH.

DESIGNED: JTR
 DRAWN: ZAH/LAI
 CHECKED: JTR

SCALE: AS SHOWN
 DRAWING: 15 OF 25
 JOB NO.: 99-174
 FILE NO.: 99-174 X

DATE: 5-16-01
 FOR: GOULD PROPERTY COMPANY
 1332 SOUTH CHARLES STREET
 BALTIMORE, MARYLAND 21230



APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS:

[Signature] 9/16/02
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING:

[Signature] 9/16/02
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK

[Signature] 10/2/02
 CHIEF, DIVISION OF LAND DEVELOPMENT JA

[Signature] 10/2/02
 DIRECTOR

SEPTIC DRAINFIELD DESIGN CRITERIA

PROPOSED USE:
 Primary School
 186 students
 Daily flow = 2790 GPD (Design Flow)

INITIAL & RESERVE SEPTIC DRAINFIELDS:
 Shallow trench drainfield per percolation test.

Lateral depth to invert = 4.5'
 Depth of trench = 6.0'
 Trench width = 3.0'
 Clearance between trenches (edge of trench to edge of trench) = 9.0' minimum

DRAINFIELDS:
 Provide 3 cells @ 150% of design flow
 Trenches total 1800 LF x 3' wide x 0.8 GPD/SF = 4,320 GPD
 2 cells active @ 2880 GPD = 100% Design Flow, and 1 cell offline

DOSING PUMP:
 500 gallons per dose alternating between 2 cells
 Pump design point = 88 GPM @ 42 FT (TDH)
 Pumping unit - Myers nonlog wastewater pump
 Model 3RHX, SHP, 3450 RPM, 230 volt, 3 phase with 4.25" dia. impeller

NOTES:

- ALL 2" AND 3" PIPE AND FITTINGS DOWNSTREAM OF THE PUMPING STATION SHALL BE SCH. 40 PVC WITH SOLVENT WELD JOINTS.
- ALL FITTINGS SHALL BE BUTTRESSED IN ACCORDANCE WITH MANUFACTURER.
- ALL PERFORATIONS SHALL BE 1/4" DIAMETER. PROVIDE ORIFICE SHIELD AT EACH PERFORATION, AS MANUFACTURED BY GAG SIM/TECH FILTER OR EQUAL.
- THE 2" BALL VALVES SHALL BE ADJUSTED TO PROVIDE 2.0 FEET OF HEAD TO THE DISTAL END OF THE HIGHEST ELEVATION LATERAL IT SERVES.
- USE SCH. 80 PVC WHERE THREADED FITTINGS ARE REQUIRED.
- THE TURN-UP FOR LATERALS A₁, E₁, A₂, C₂, A₃ AND D₃ SHALL HAVE THE THREADED CAP AT GRADE AND THE OTHERS SHALL HAVE THE THREADED CAP BELOW GRADE.

Pressure Distribution on Sloping Sites

Cell #1	Trench	Relative Elevation (ft)	Trench Length (ft)	Head (ft)	Orifice Diameter (in)	Orifice Flow Rate (gpm)	Orifice Spacing (ft)	Number of Orifices	Trench Flow Rate (gpm)
Cell #1	A1	551.5	100'	2.0'	1/4"	1.04	7.1	14	14.56
	B1	549.9	100'	3.6'	1/4"	1.40	10.0	10	14.00
	C1	548.5	100'	2.0'	1/4"	1.04	7.1	14	14.56
	D1	549.8	100'	3.9'	1/4"	1.46	10.0	10	14.60
	E1	543.6	100'	2.0'	1/4"	1.04	7.1	14	14.56
	F1	542.5	100'	3.1'	1/4"	1.30	9.0	11	14.30
									TOTAL FLOW RATE CELL #1 = 86.58 GPM

FLOW PER ORIFICE (GPM) = 11.797 d² H^{1/2}
 d = ORIFICE DIAMETER IN INCHES
 H = HEAD IN FEET

(LAT B) @ 14.00 GPM + (LAT D) 14.60 GPM = 0.95 OR 5.0%

CELL #1 AND #2 @ 86.58 GPM + CELL #3 @ 87.40 GPM = 0.99 OR 1%

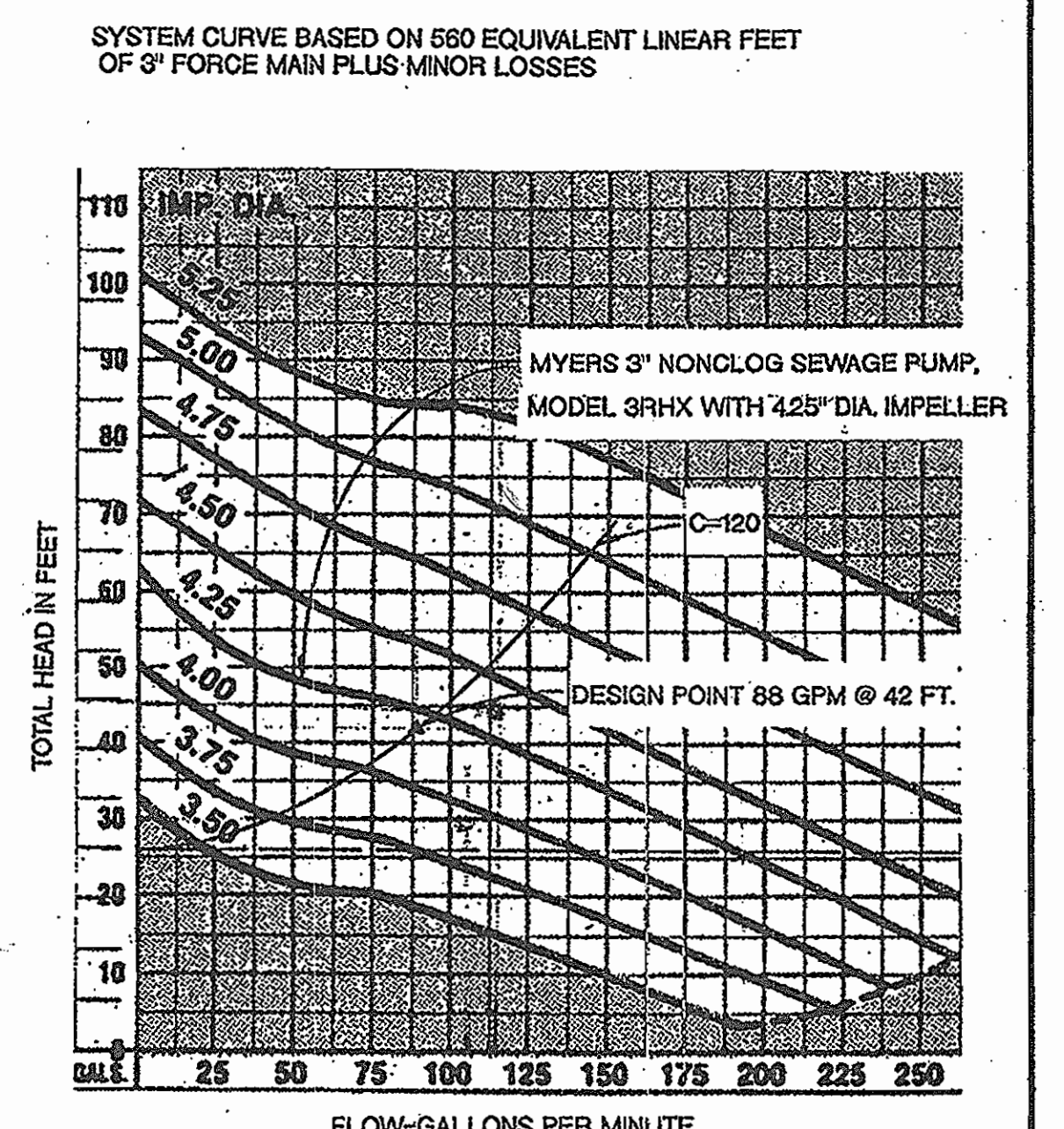
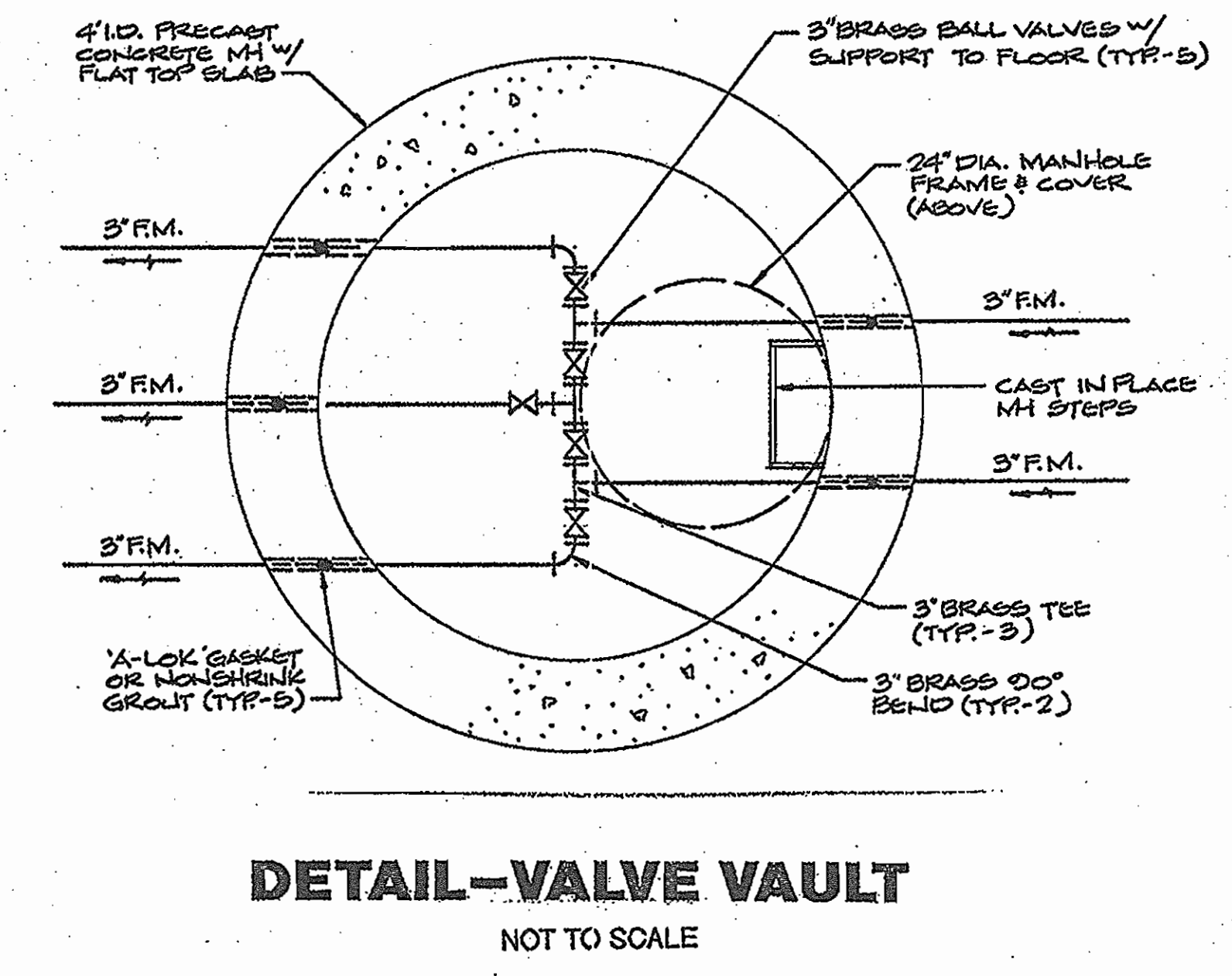
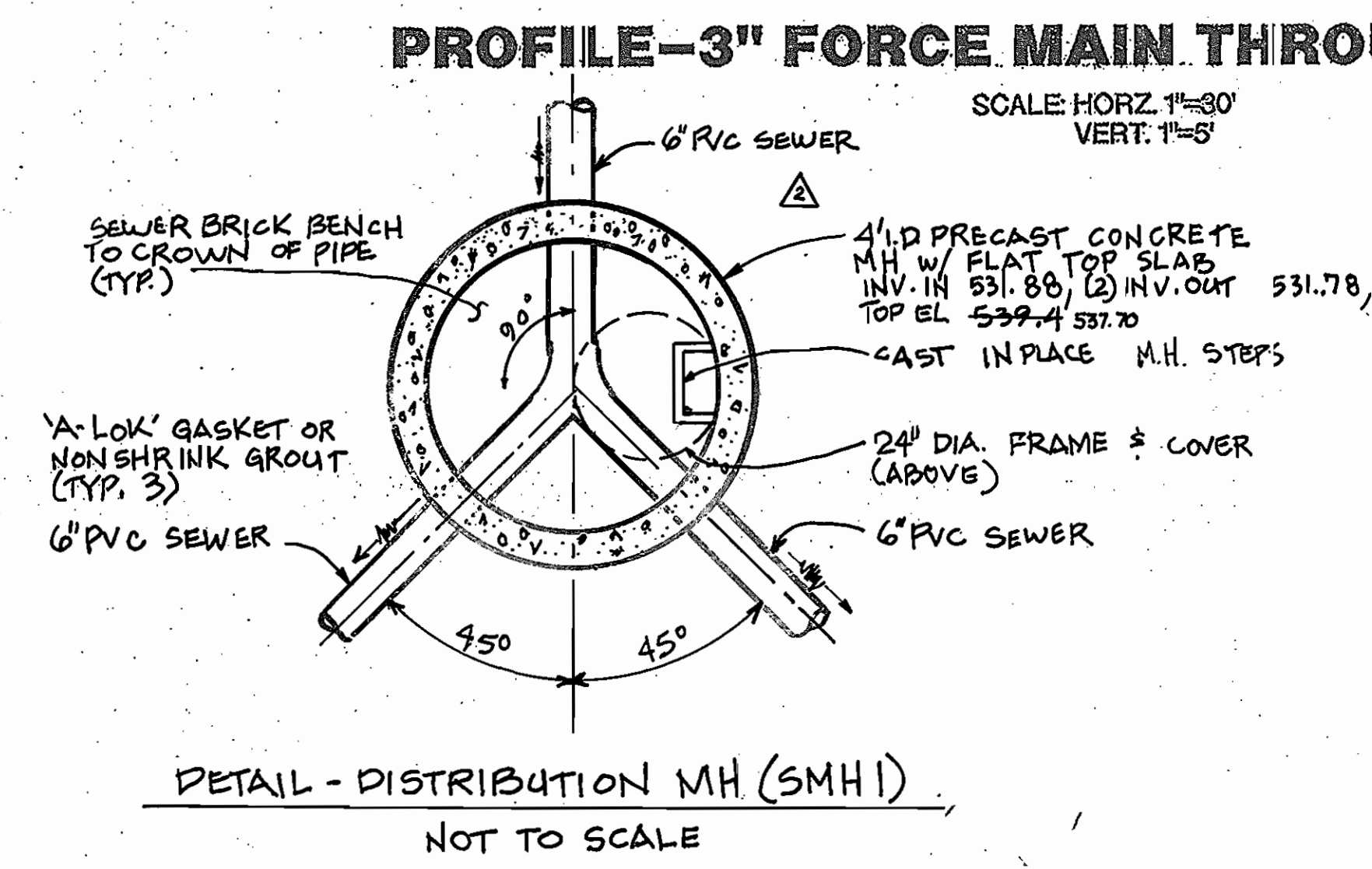
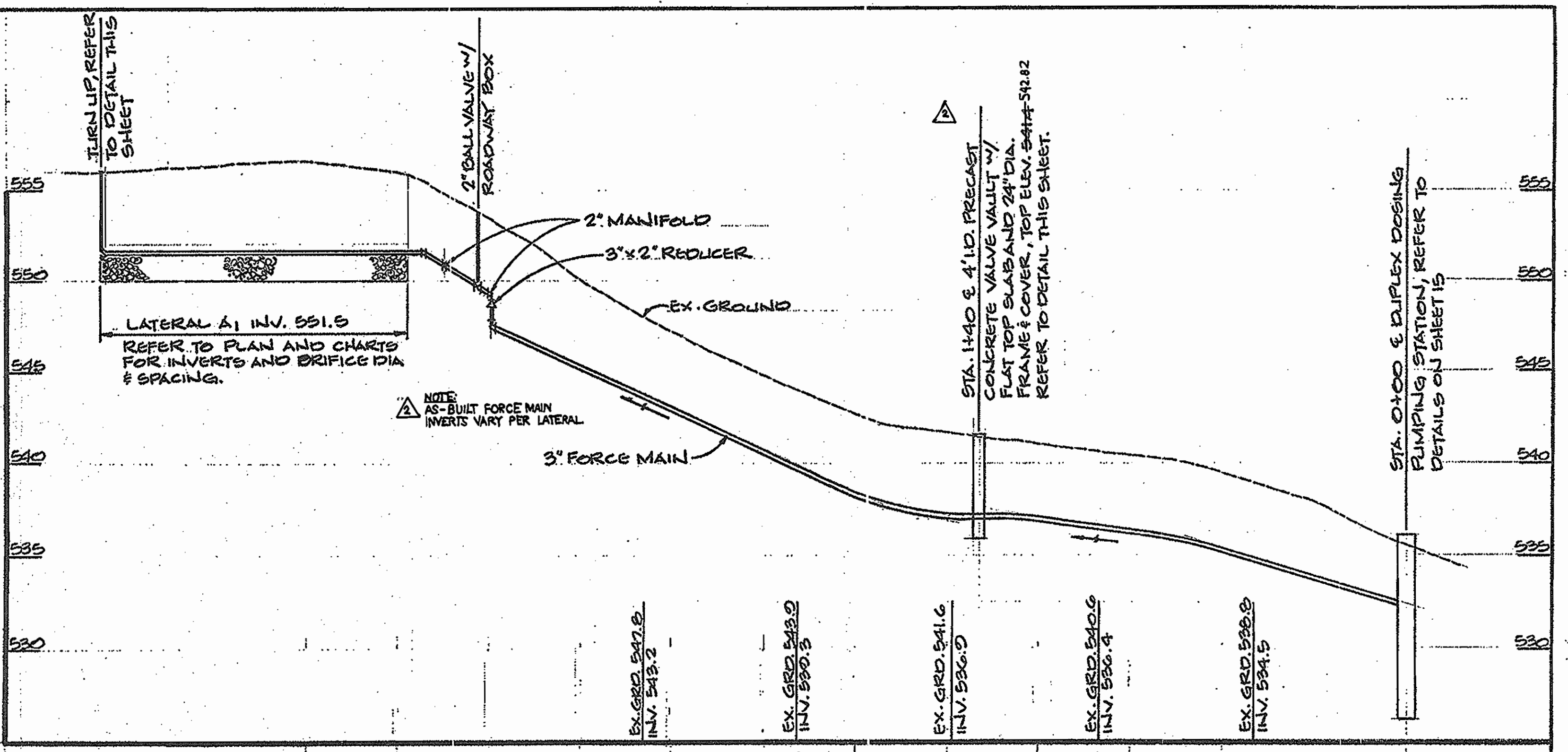
Cell #2	Trench	Relative Elevation (ft)	Trench Length (ft)	Head (ft)	Orifice Diameter (in)	Orifice Flow Rate (gpm)	Orifice Spacing (ft)	Number of Orifices	Trench Flow Rate (gpm)
Cell #2	A2	544.6	100'	2.0'	1/4"	1.04	7.1	14	14.56
	B2	543.3	100'	3.3'	1/4"	1.34	9.0	11	14.74
	C2	541.9	100'	2.0'	1/4"	1.04	7.1	14	14.56
	D2	540.9	100'	3.0'	1/4"	1.28	9.0	11	14.58
	E2	540.0	100'	2.0'	1/4"	1.04	7.1	14	14.56
	F2	538.0	100'	3.0'	1/4"	1.28	9.0	11	14.63
									TOTAL FLOW RATE CELL #2 = 86.58 GPM

(LAT'S D & F) @ 14.08 GPM + (LAT B) @ 14.74 GPM = 0.98 OR 4.0%

CELL #3

Trench	Relative Elevation (ft)	Trench Length (ft)	Head (ft)	Orifice Diameter (in)	Orifice Flow Rate (gpm)	Orifice Spacing (ft)	Number of Orifices	Trench Flow Rate (gpm)	
A3	540.5	100'	2.0'	1/4"	1.04	7.1	14	14.56	
B3	539.6	100'	2.5'	1/4"	1.26	8.3	12	15.12	
C3	538.8	100'	3.7'	1/4"	1.42	10.0	10	14.20	
D3	537.9	100'	2.0'	1/4"	1.04	7.1	14	14.56	
E3	537.1	100'	2.9'	1/4"	1.28	8.3	12	14.76	
F3	536.2	100'	3.7'	1/4"	1.42	10.0	10	14.20	
									TOTAL FLOW RATE CELL #3 = 87.40 GPM

(LAT C & F) @ 14.20 GPM + (LAT B) @ 15.12 GPM = 0.94 OR 6.0%



THIS AS-BUILT IS BASED ON A FIELD-RUN SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES, INC. DATED: 7/16/04 & 9/26/05

OWNER/DEVELOPER
 GOULD PROPERTY COMPANY
 1332 SOUTH CHARLES STREET
 BALTIMORE, MARYLAND 21230

MORRIS & RITCHIE ASSOCIATES, INC.
 ENGINEERS, ARCHITECTS, PLANNERS, SURVEYORS & LANDSCAPE ARCHITECTS
 3445-A BOX HILL CORPORATE CENTER DRIVE
 ABINGDON, MARYLAND 21009
 (410) 515-9000
 FAX (410) 515-9002

SEPTIC DRAINFIELD PLAN AND DETAILS
 FOR
 REVISED SITE DEVELOPMENT PLAN
**GLENELG COUNTRY SCHOOL
 PRIMARY SCHOOL**

TAX MAP 22, GRID 22, PARCEL 146
 LIBER 1296 FOLIO 245
 FIFTH (5th) ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO:	12189
7/19/02	SEPTIC SYSTEM MODIFICATIONS. REVISED SWM FACILITY.	SCALE:	AS SHOWN
	ADDED FIELD & REVISED FOREST CONSERVATION AREAS.	DATE:	8-07-01
9/06	AS-BUILT INFORMATION ADDED TO PLAN.	DRAWN BY:	JPD
		DESIGN BY:	JPD
		REVIEW BY:	EDL
		SHEET:	16 OF 25

SDP-01-69

SDP.01.69

SEGMENTAL RETAINING WALL SPECIFICATIONS

PART 1 - GENERAL

1.1 Work includes furnishing and installing segmental retaining wall units, geogrid reinforcement, wall fill, and backfill to the lines and grades shown on the construction drawings and as specified herein. The contractor shall be responsible for the furnishing and installing of all equipment, equipment, and labor required for construction of the geogrid reinforced, segmental retaining wall.

1.2 REFERENCE STANDARDS

- A. ASTM C90-75 (1981 rev) - Hollow Load Bearing Masonry Units
- B. ASTM C140-75 (1981 rev) - Sampling and Testing Concrete Masonry Units
- C. ASTM C145-75 (1981 rev) - Solid Load Bearing Concrete Masonry Units
- D. Geosynthetic Research Institute (GRI), GRI-GG4 - Determination of Long Term Design Strength of Geogrids
- E. ASTM D 638 - Test Method for Tensile Properties of Plastic
- F. ASTM D 1248 - Specification of Polyethylene Plastics Molding and Extrusion Materials
- G. ASTM D 4218 - Test Method for Carbon Black Content in Polyethylene Compounds by the Muffle Furnace Technique
- H. ASTM D 3034 - Specification for Polyvinyl Chloride (PVC) Pipe

1.3 DELIVERY, STORAGE AND HANDLING

- A. Contractor should check the materials upon delivery to assure that proper material has been received.
- B. Contractor should prevent excessive mud, wet cement, epoxy, and like materials which may affix themselves, from coming in contact with the materials.
- C. Geogrids should be stored above -20 degrees F.
- D. Contractor should protect the materials from damage. Damaged material should not be incorporated into the reinforced retaining wall.

PART 2 - PRODUCTS

2.1 DEFINITIONS

- A. Geogrid is a high density polyethylene grid, specifically fabricated for use as a soil reinforcement.
- B. Concrete retaining wall units are as detailed on the drawings and as specified herein.
- C. Geosynthetic Drainage Composites are polyethylene net structure with non-woven geotextiles bonded to both sides.
- D. Erosion Control Blankets consist of a web of polyolefin fibers securely bound by polyolefin threads between two high strength polyolefin nets.
- E. Backfill is the soil which is used as fill for the reinforced soil mass.
- F. Foundation soil is the in-situ soil or controlled compacted fill placed below the bottom of the retaining wall and geogrid zone.

2.2 MATERIALS

The contractor should submit manufacturer's catalog and samples of the proposed materials for approval by the project geotechnical engineer a minimum of seven days before the start of construction. Materials should be transported to the site only after approval of the proposed materials by the project geotechnical engineer.

A. Concrete Units

- 1. Masonry units should be Keystone Standard Retaining Wall Units. Substitution of other concrete units including Mesa Standard Units may be allowed with the prior approval of the Geotechnical Engineer.
- 2. Concrete wall units should have a minimum 28 day compressive strength of 3000 psi, in accordance with ASTM C-90. The concrete should have adequate freeze/thaw protection with a maximum moisture absorption of 8 to 9 percent.
- 3. Exterior dimensions may vary. Units are required to have a minimum of one square foot of face area each.
- 4. Units should have angled sides and be capable of attaining concave and convex alignment curves in accordance with manufacturer's recommendations.
- 5. Units should be interlocked with non-corrosive reinforced fiberglass pins.
- 6. Units should be interlocked as to provide a maximum of 1-1/4 inch of setback per block.

B. Leveling Pad

Material for leveling pad/footing should consist of compacted free-draining coarse aggregates meeting the requirements of ASTM #57 or Graded Aggregate Base (GAB) per Maryland State Highway Administration Standard Specifications for Construction and Materials. A minimum of 6 inches deep and 36 inches wide compacted leveling pad is required.

C. Fiberglass Connecting pins

- 1. Thermoset isophthalic polyester resin pultruded fiberglass reinforcements rods, minimum one-half inch in diameter.
- 2. Pins should have a minimum flexural strength of 128,000 psi and short beam shear of 6400 psi.
- 3. For substitute concrete units, use of other compatible connector system may be allowed with the prior approval of the Geotechnical Engineer.

D. Geogrid

Geogrid should be Tensar UX 1400SB or equivalent as approved by the geotechnical engineer. The geogrid should have a long term design strength of 1,334 pounds/foot for UX 1400SB geogrid.

E. Reinforced Backfill

Reinforced backfill soils should be non-plastic, controlled fill meeting the requirements of AASHTO A-2-4 or more granular. The geotechnical report for the project indicates that A-2-4 material is available on site. However, the material may not be readily available and also may be wet of optimum moisture. Contractor should be prepared to dry the on-site soils or import suitable AASHTO A-2-4 materials if these materials are not readily available from an on-site source at the time of construction.

F. Controlled Fill

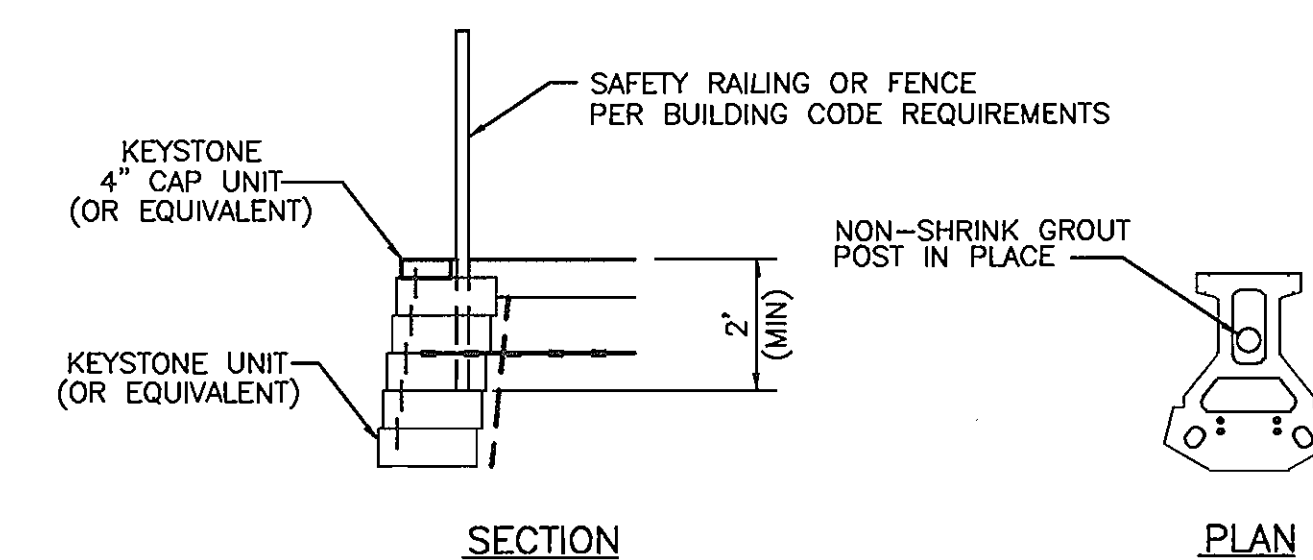
Controlled Fill soils to be placed outside the Reinforced Backfill area and where specified should be soils meeting the requirements of AASHTO A-2-4 or more granular.

G. Drainage Pipe

The drainage pipes should be perforated or slotted PVC pipe manufactured in accordance with ASTM D-3034.

H. Filter Fabric

Filter Fabric should be non-woven, polypropylene geotextile, 140 N manufactured by Nicolon Mirafi Group or approved equivalent.



SAFETY RAILING DETAIL

PART 3 - EXECUTION

A. Excavation

- 1. The contractor should excavate to the lines and grades shown on the construction drawings. Under no circumstances should the excavation lines and grades be exceeded, except with owner's approval. The contractor should protect the excavation from sloughing by placing a membrane over the face of the excavation.
- 2. Excavations should be sloped or otherwise supported in accordance with Occupation Safety and Health Administration (OSHA) and other local and state regulations.

B. Foundation Subgrade Preparation

- 1. Foundation soil should be excavated as required for installation of leveling pad, geogrid and other elements and as shown on the construction drawings.
- 2. Foundation soil should be examined by the Engineer to assure that the actual foundation soil strength meets or exceeds assumed design strength. Soils not meeting required strength should be removed and replaced with controlled, compacted material.
- 3. Over-excavated areas should be filled with select and approved material and compacted to 92 percent of maximum dry density in accordance with the Modified Proctor, ASTM D-1557.
- 4. Allowable bearing pressure for natural and controlled, compacted fill soils should be at least 2,000 psf for the retaining wall.
- 5. The exposed foundation subgrade should be proffed with a loaded dump truck. Any soft or unstable areas identified during proffing should be overexcavated and backfilled with Controlled Fill.
- 6. Fill required to establish the sloping surface in front of the wall should consist of Controlled Fill and should be placed, compacted and field tested in accordance with the requirements specified herein.

C. Leveling Pad

- 1. The leveling pad should be placed as shown on the construction drawings with a minimum thickness of 6 inches.
- 2. Leveling pad materials should be installed upon undisturbed in-situ soils or controlled, compacted backfill.
- 3. Leveling Pad should be prepared to insure complete contact of retaining wall unit with base. Gaps should not be allowed.

D. Unit Installation

- 1. First course of concrete wall units should be placed on the footing. The units should be checked for level and alignment. The first course is the most important to insure accurate and acceptable results.
- 2. Insure that units are in full contact with base.
- 3. Units are placed side by side for full length of wall alignment. Alignment may be done by means of a string line or offset from base line.
- 4. Install fiberglass connecting pin.
- 5. Lay up each course insuring that the connecting pins are inserted through front slot of the unit, and into the receiving slot in the course beneath. Repeat procedure to the extent of wall height.
- 6. At the end of each course where the wall changes elevation, units should be turned into the backfill. Units should be laid as to create the minimum radius possible. Unless otherwise shown on the drawings, a minimum of one unit should be installed into the grade. Only the front face of the units should be visible from the side of the wall.
- 7. Standard Units should be used to make convex and concave curves in accordance with manufacturer's recommendations.
- 8. Cap units should be installed and bonded with construction adhesive or epoxy cement as required by manufacturer.
- 9. Contractor should provide positive drainage for the back of the retaining wall during construction.

E. Geogrid Installation

- 1. All utilities in the vicinity of any retaining wall or geogrid reinforcement must be installed and properly backfilled prior to placing the geogrid soil reinforcement or constructing the wall.
- 2. The geogrid soil reinforcement should be laid horizontally on compacted backfill, connected to the concrete wall units. Hook grid over the fiberglass connecting pin, pull taut, and anchor before backfill is placed on the geogrid.
- 3. Slack in the geogrid at the wall unit connections should be removed in a manner, and to such a degree, as approved by the Engineer.
- 4. Geogrid should be laid at the proper elevation and orientation as shown on the construction drawings or as directed by the Engineer.
- 5. Correct orientation (roll direction) of the geogrid should be verified by the Contractor.
- 6. Geogrid should be secured in-place with staples, pins, sand bags, or backfill as required by fill properties, fill placement procedures, or weather conditions, or as directed by the Engineer.
- 7. Overlaps
 - a. Uniaxial geogrid does not need to be overlapped in the across the roll direction, except to contain the fill at the slope face when wrap-around facing is used. Uniaxial grid should be overlapped 48" in the rolled direction.
 - b. A layer of soil a minimum of 4 inches in thickness should be spread between uniaxial geogrid layers in the area to be overlapped, or as directed.

F. Fill Placement

- 1. Wall backfill material should be placed in no more than 8-inch lifts and compacted to 92 percent of the Modified Proctor (ASTM D-1557).
- 2. Backfill should be placed, spread, and compacted in such a manner that minimizes the development of wrinkles in and/or movement of the geogrid.
- 3. Only hand-operated compaction equipment should be allowed within 4 feet of the wall face.
- 4. Backfill should be placed from the wall outward to insure that the geogrid remains taut.
- 5. Tracked construction equipment should not be operated behind or above the wall.
- 6. Rubber-tired equipment may pass over the geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning should be avoided.
- 7. Place filter fabric between the unit core fill and the reinforced backfill as shown on plans. The filter fabric should be embedded a minimum of two feet into the reinforced fill.
- 8. The finished sloping surface on the toe side of Retaining Walls A and B should be protected by installing the permanent erosion control blanket and seeding in accordance with project requirements.

G. DRAINAGE

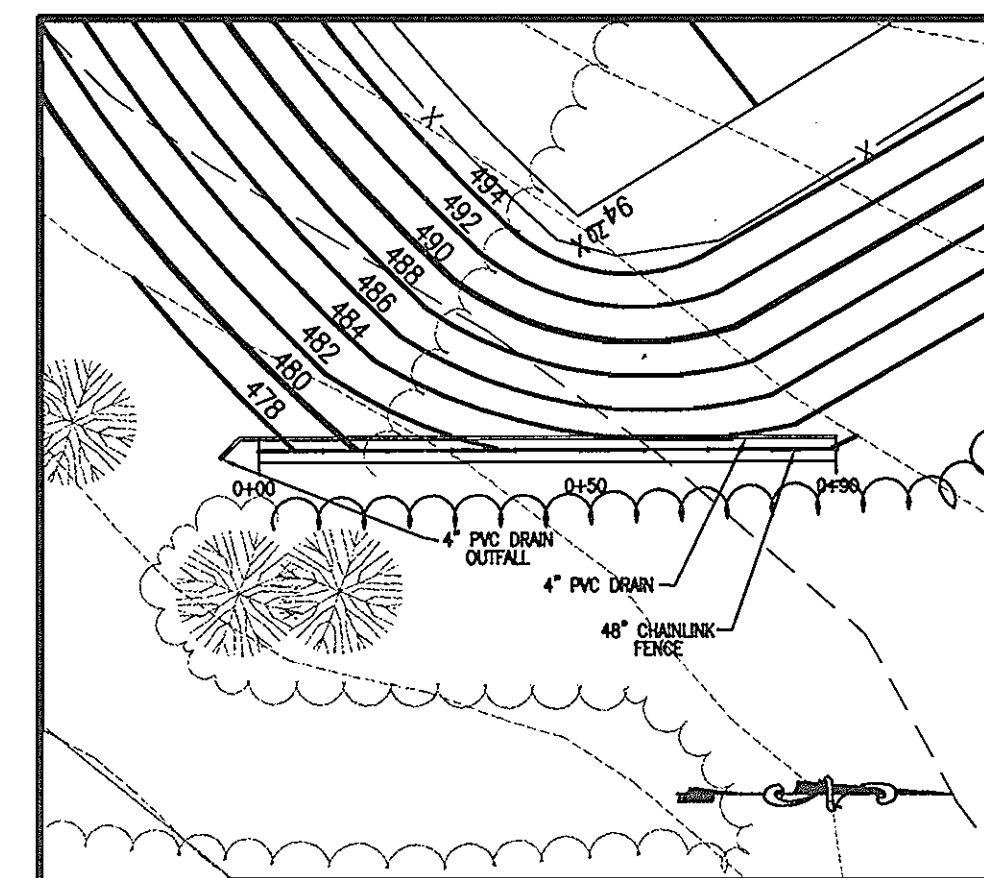
- 1. Drainage fill should be placed behind the wall to the limits shown. The drainage fill should be a minimum of 12-inches thick. The drainage fill should be ASTM #57 stone. The drainage fill should be wrapped in filter fabric (Mirafi 140N or equal) as shown on the drawings.
- 2. Positive drainage should be maintained during and after construction. Soils within the reinforced zone that become wet during construction should be dried to optimum moisture or removed.
- 3. Install the perforated drainage pipes and lateral drainage pipes incrementally along with installation of concrete units and placement of fill.

PART 4 - CONSTRUCTION OBSERVATION AND TESTING

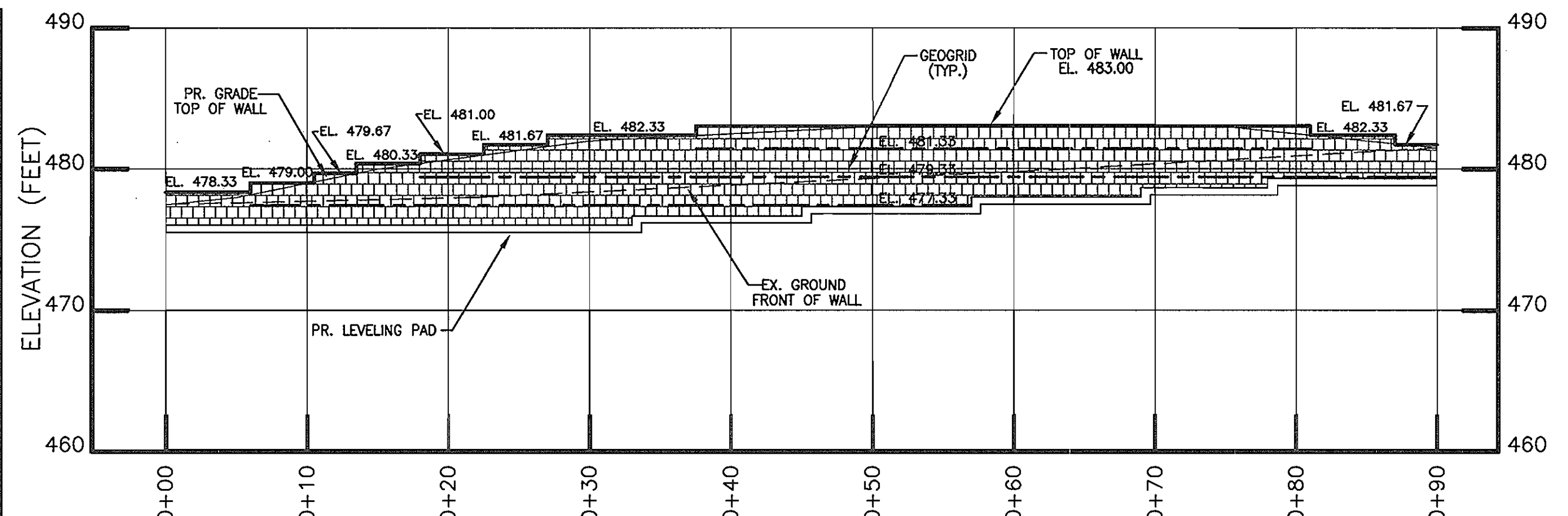
- A. The required leveling pad subgrade bearing capacity should be certified by a Maryland Registered Professional Geotechnical Engineer prior to footing placement.
- B. Construction of retaining wall should be performed under the observations of a Maryland Professional Engineer. Conformance testing should be performed to verify material engineering properties. Upon completion of the work, the engineer should submit a signed and sealed report stating that the retaining wall was constructed in accordance with the plans, specifications, and accepted modifications (if applicable).

PART 5 - DESIGN CRITERIA

- 1. Required minimum allowable foundation bearing pressure is 2,000 psf.
- 2. Design internal friction angle = 30 degrees.
- 3. Design moist unit weight = 130 pcf.
- 4. Retaining walls are not designed to resist hydrostatic pressure.
- 5. Foundation soil internal friction angle = 30 degrees and cohesion = 0 pcf.

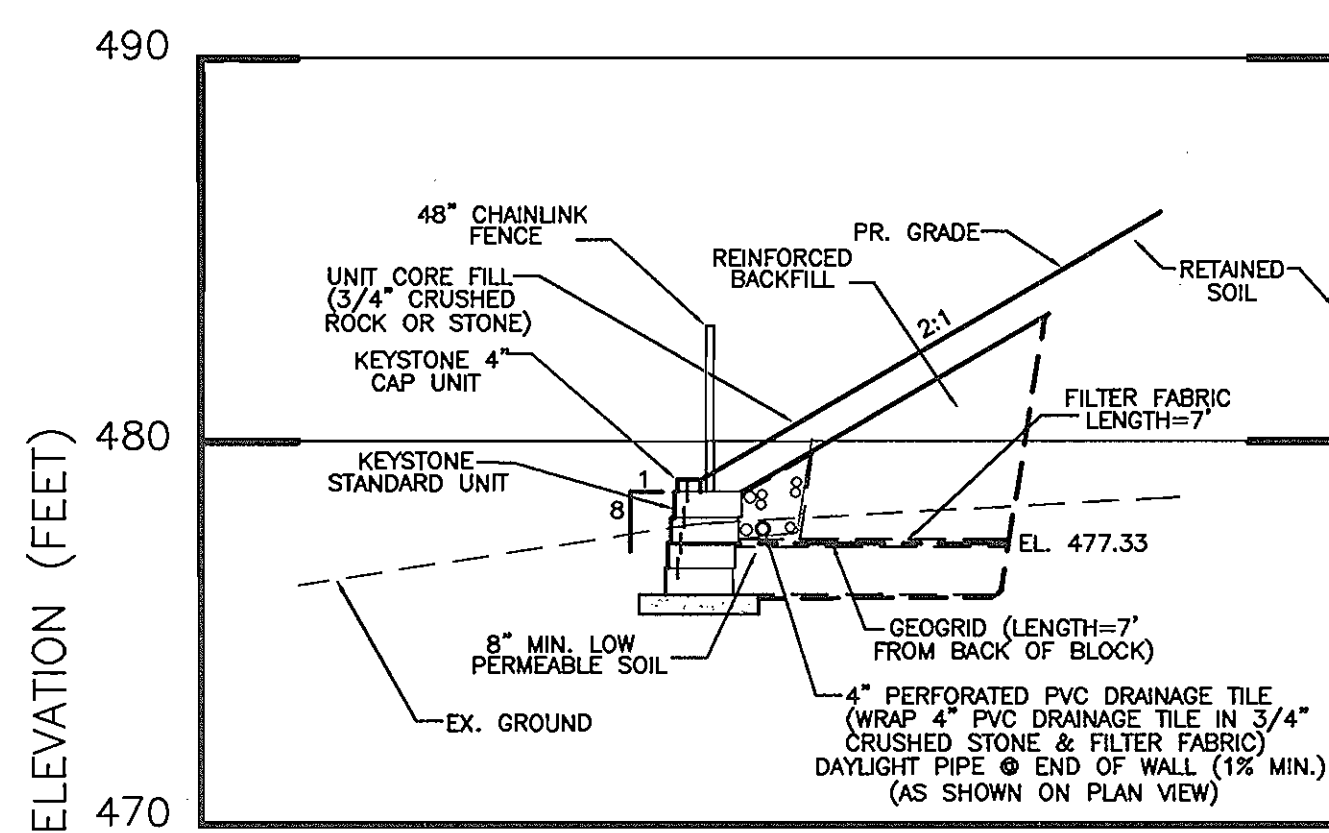


RETAINING WALL PLAN VIEW - 1" = 30'



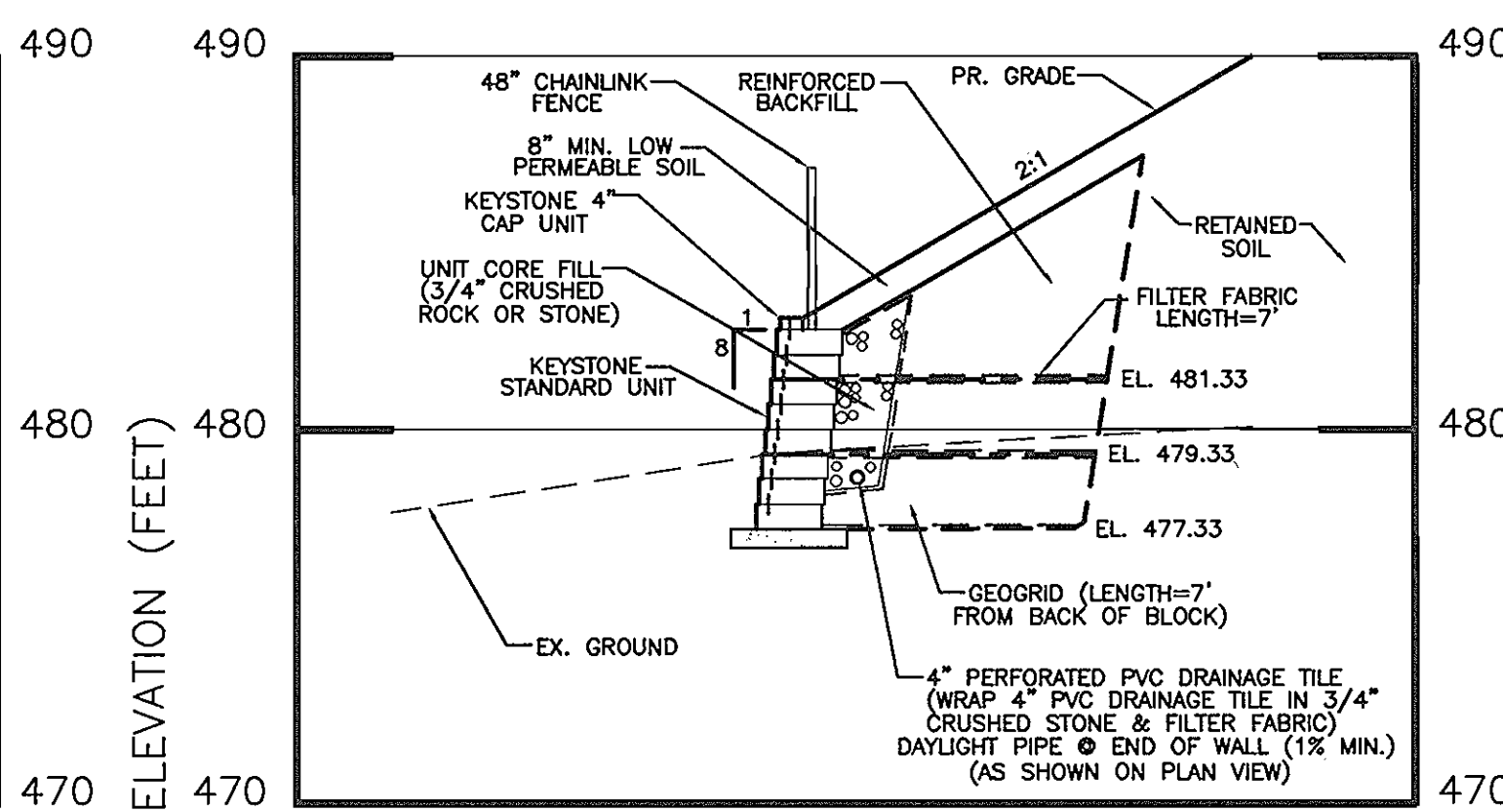
RETAINING WALL PROFILE

HORIZONTAL SCALE: 1" = 8'
VERTICAL SCALE: 1" = 8'



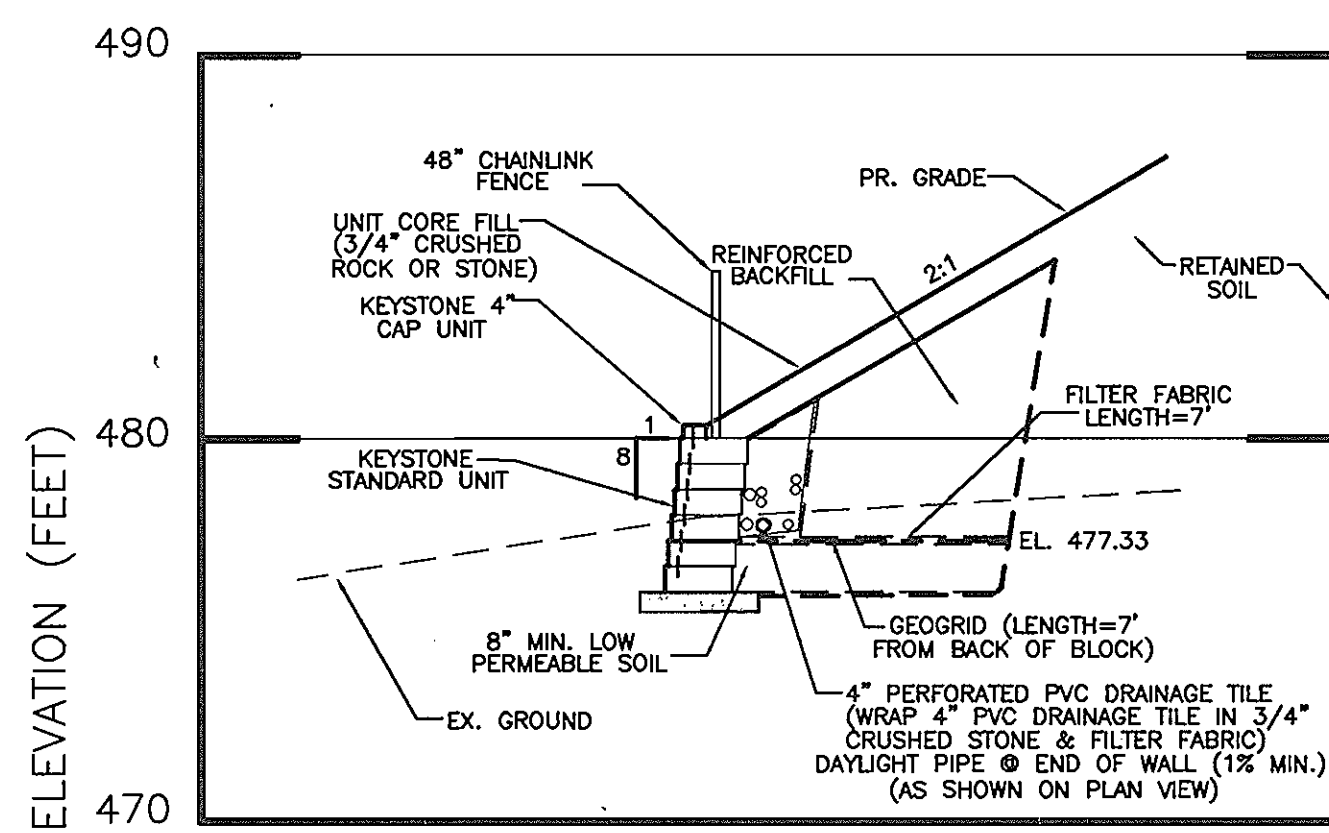
RETAINING WALL SECTION STATION 0+10

HORIZONTAL SCALE: 1" = 5'
VERTICAL SCALE: 1" = 5'



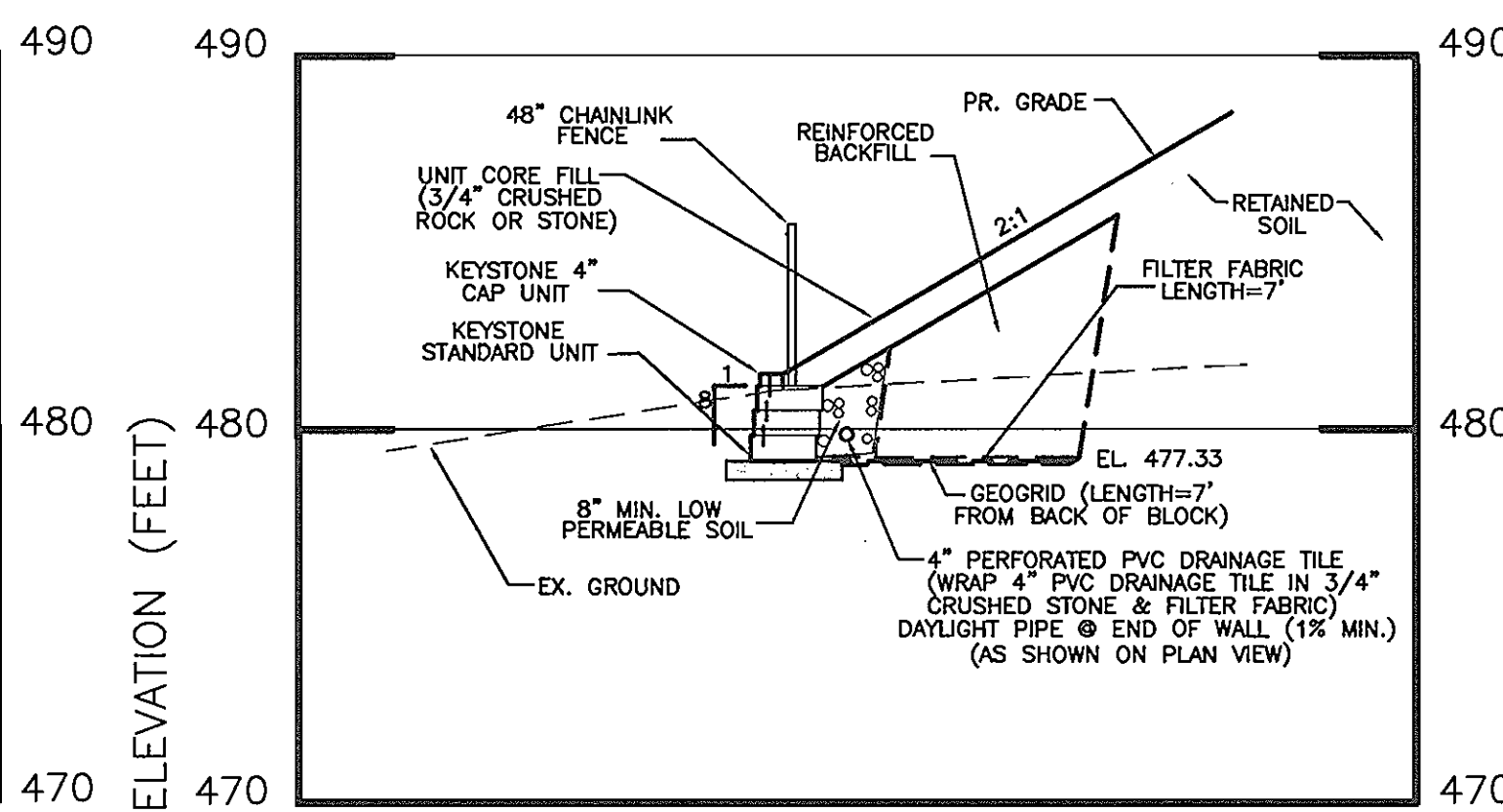
RETAINING WALL SECTION STATION 0+50

HORIZONTAL SCALE: 1" = 5'



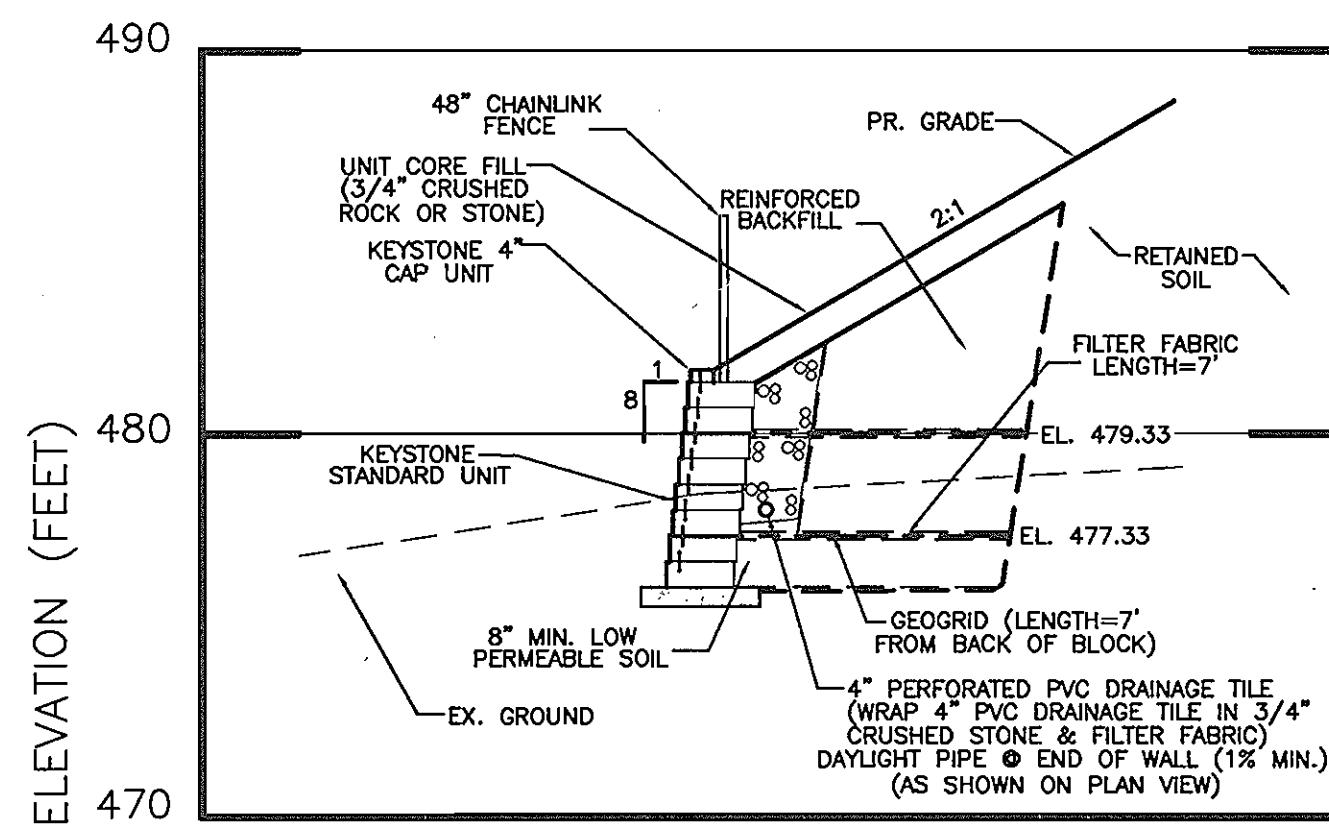
RETAINING WALL SECTION STATION 0+15

HORIZONTAL SCALE: 1" = 5'
VERTICAL SCALE: 1" = 5'



RETAINING WALL SECTION STATION 0+88

HORIZONTAL SCALE: 1" = 5'
VERTICAL SCALE: 1" = 5'



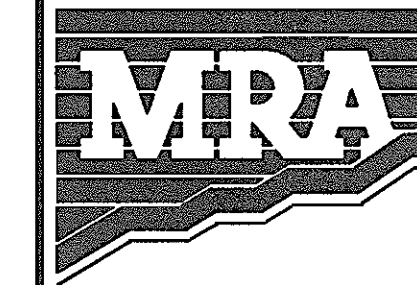
RETAINING WALL SECTION STATION 0+25

HORIZONTAL SCALE: 1" = 5'
VERTICAL SCALE: 1" = 5'

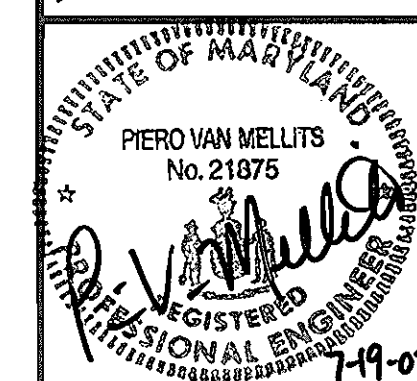
NOTE: RETAINING WALL WAS NOT CONSTRUCTED. ATHLETIC FIELD SHORTENED TO REMOVE WALL.

THIS AS-BUILT IS BASED ON A FIELD RUN SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES, INC. DATED 7/16/02 & 8/26/02

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 8/1/02
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MKR DATE
 [Signature] 10/1/02
 CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE
 [Signature] 10/2/02
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING DATE



MORRIS & RITCHIE ASSOCIATES, INC.
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
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 ANNAPOLIS JUNCTION, MARYLAND 20701
 (410) 792-9792 or (301) 776-1690
 FAX (410) 792-7395



GLENELG COUNTRY SCHOOL
 STORMWATER MANAGEMENT
 REVISED SITE DEVELOPMENT PLAN
RETAINING WALL DETAILS
 TAX MAP 22, GRID 22, PARCEL 146
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
7/19/02	SEPTIC SYSTEM MODIFICATIONS. REVISED SWM FACILITY.	12189
	ADDED FIELD & REVISED FOREST CONSERVATION AREAS.	SCALE: AS SHOWN
9/02	AS-BUILT INFORMATION ADDED TO PLAN	DATE: 07/19/02
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: PVM
		SHEET: 17 OF 25

SDP-01-69

SDP-01-69

LEGEND

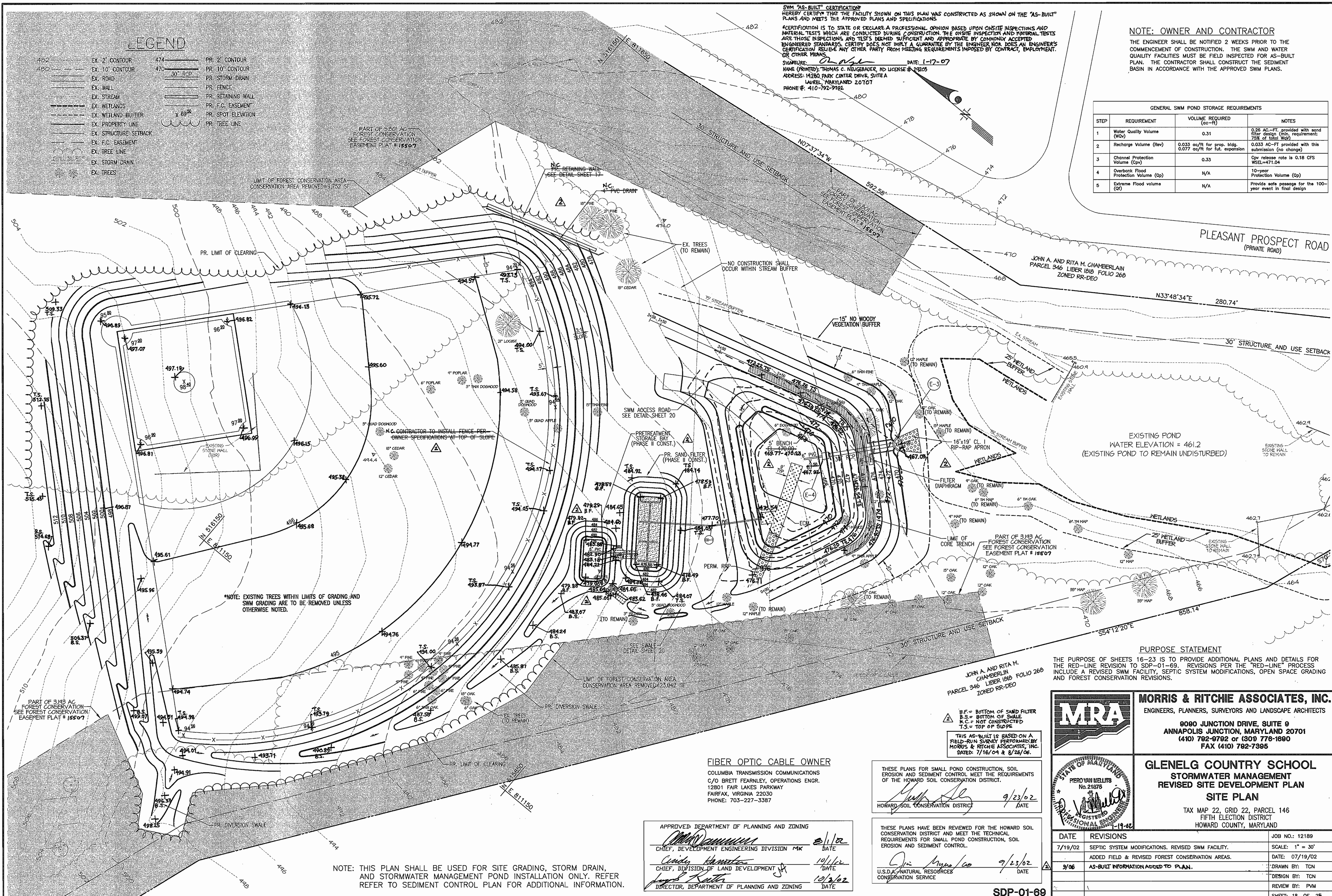
- 452 --- EX. 2' CONTOUR
- 460 --- EX. 10' CONTOUR
- EX. ROAD
- EX. WALL
- EX. STREAM
- EX. WETLANDS
- EX. WETLAND BUFFER
- EX. PROPERTY LINE
- EX. STRUCTURE SETBACK
- EX. F.C. EASEMENT
- EX. TREE LINE
- EX. STORM DRAIN
- EX. TREES
- 474 --- PR. 2' CONTOUR
- 470 --- PR. 10' CONTOUR
- PR. STORM DRAIN
- PR. FENCE
- PR. RETAINING WALL
- PR. F.C. EASEMENT
- PR. SPOT ELEVATION
- PR. TREE LINE

SWM "AS-BUILT" CERTIFICATION
 HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 CERTIFICATION IS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTION AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS.
 SIGNATURE: *[Signature]* DATE: 1-17-07
 NAME (PRINTED): THOMAS C. NEUGEBAUER, ND LICENSE # 23205
 ADDRESS: 14280 PARK CENTER DRIVE, SUITE A
 LAUREL, MARYLAND 20707
 PHONE #: 410-792-7792

NOTE: OWNER AND CONTRACTOR

THE ENGINEER SHALL BE NOTIFIED 2 WEEKS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE SWM AND WATER QUALITY FACILITIES MUST BE FIELD INSPECTED FOR AS-BUILT PLAN. THE CONTRACTOR SHALL CONSTRUCT THE SEDIMENT BASIN IN ACCORDANCE WITH THE APPROVED SWM PLANS.

GENERAL SWM POND STORAGE REQUIREMENTS			
STEP	REQUIREMENT	VOLUME REQUIRED (ac-ft)	NOTES
1	Water Quality Volume (WQV)	0.31	0.26 AC-FT, provided with sand filter design (min. requirement: 75% of total WQV)
2	Recharge Volume (Rev)	0.033 ac/ft for prop. bldg. 0.077 ac/ft for fut. expansion	0.033 AC-FT provided with this submission (no change)
3	Channel Protection Volume (Cp)	0.33	Cp release rate is 0.18 CFS WSEL=471.04
4	Overbank Flood Protection Volume (Op)	N/A	10-year Protection Volume (Op)
5	Extreme Flood volume (Of)	N/A	Provides safe passage for the 100-year event in final design



*NOTE: EXISTING TREES WITHIN LIMITS OF GRADING AND SWM GRADING ARE TO BE REMOVED UNLESS OTHERWISE NOTED.

PURPOSE STATEMENT

THE PURPOSE OF SHEETS 16-23 IS TO PROVIDE ADDITIONAL PLANS AND DETAILS FOR THE RED-LINE REVISION TO SDP-01-69. REVISIONS PER THE "RED-LINE" PROCESS INCLUDE A REVISED SWM FACILITY, SEPTIC SYSTEM MODIFICATIONS, OPEN SPACE GRADING AND FOREST CONSERVATION REVISIONS.



MORRIS & RITCHE ASSOCIATES, INC.

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GLENELG COUNTRY SCHOOL

STORMWATER MANAGEMENT

REVISED SITE DEVELOPMENT PLAN

SITE PLAN

TAX MAP 22, GRID 22, PARCEL 146
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
7/19/02	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY.	12189
	ADDED FIELD & REVISED FOREST CONSERVATION AREAS.	SCALE: 1" = 30'
9/06	AS-BUILT INFORMATION ADDED TO PLAN.	DATE: 07/19/02
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: PVM
		SHEET: 18 OF 25

FIBER OPTIC CABLE OWNER

COLUMBIA TRANSMISSION COMMUNICATIONS
 C/O BRETT FEARNLEY, OPERATIONS ENGR.
 12801 FAIR LAKES PARKWAY
 FAIRFAX, VIRGINIA 22030
 PHONE: 703-227-3387

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 9/23/02
 HOWARD SOIL CONSERVATION DISTRICT DATE

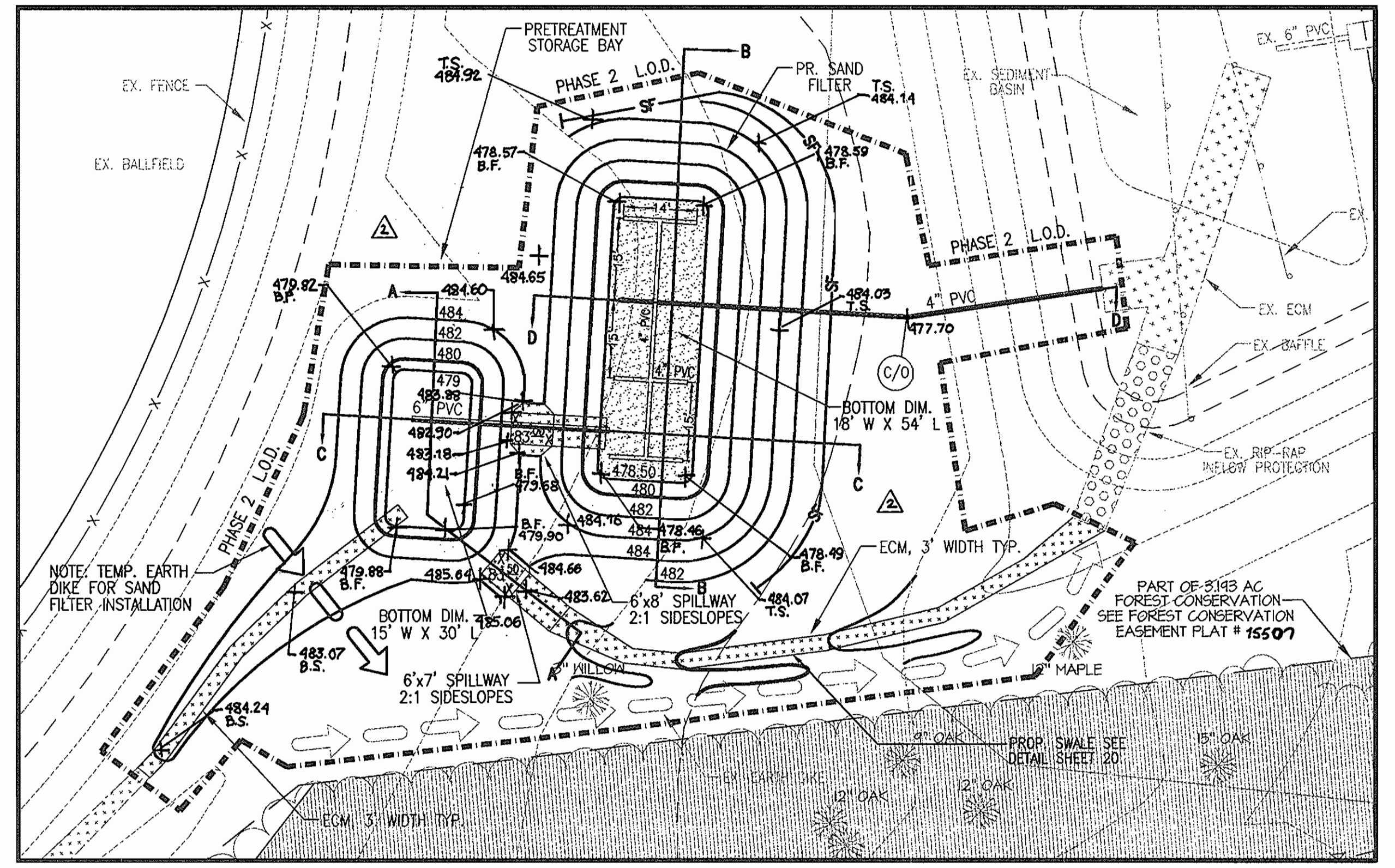
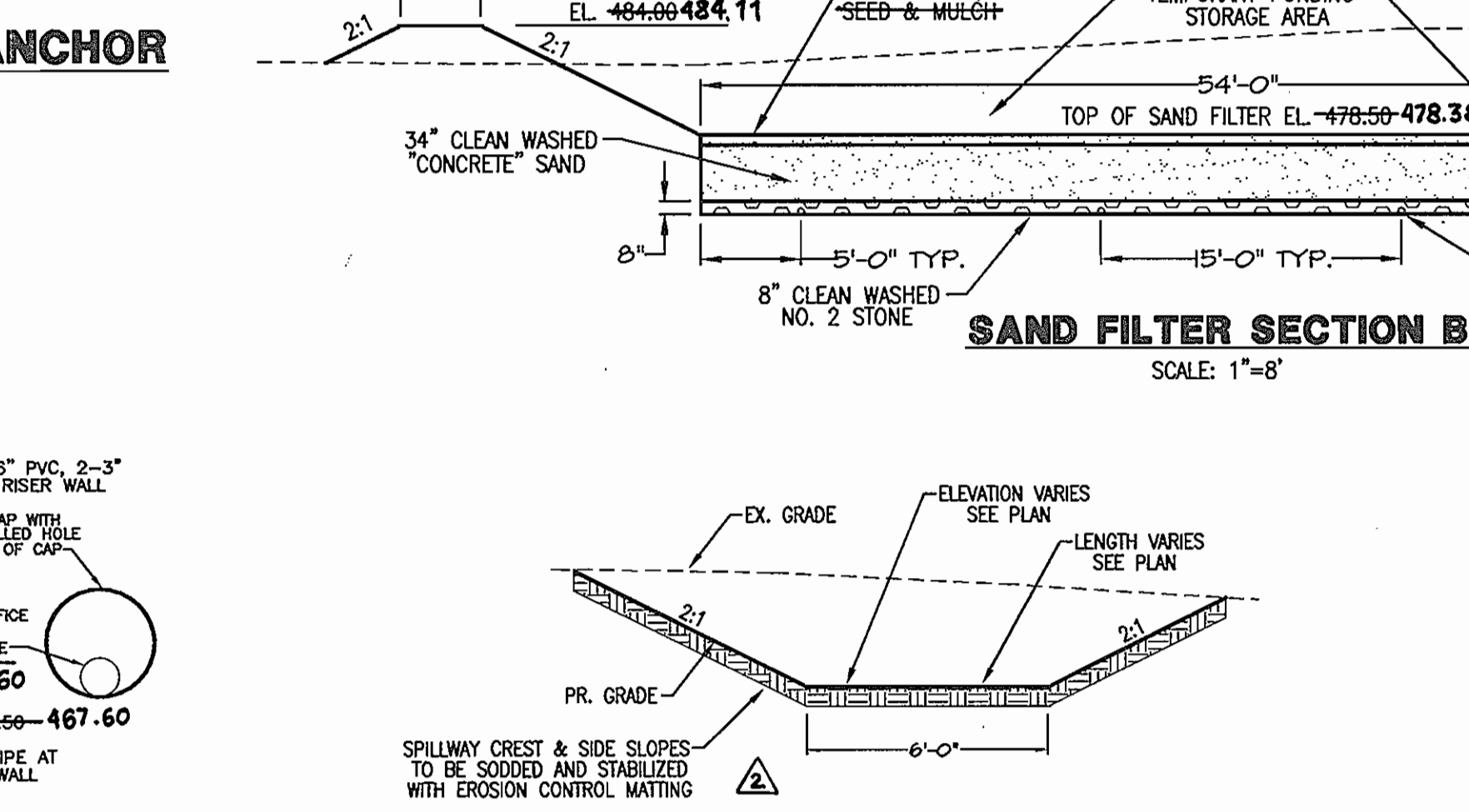
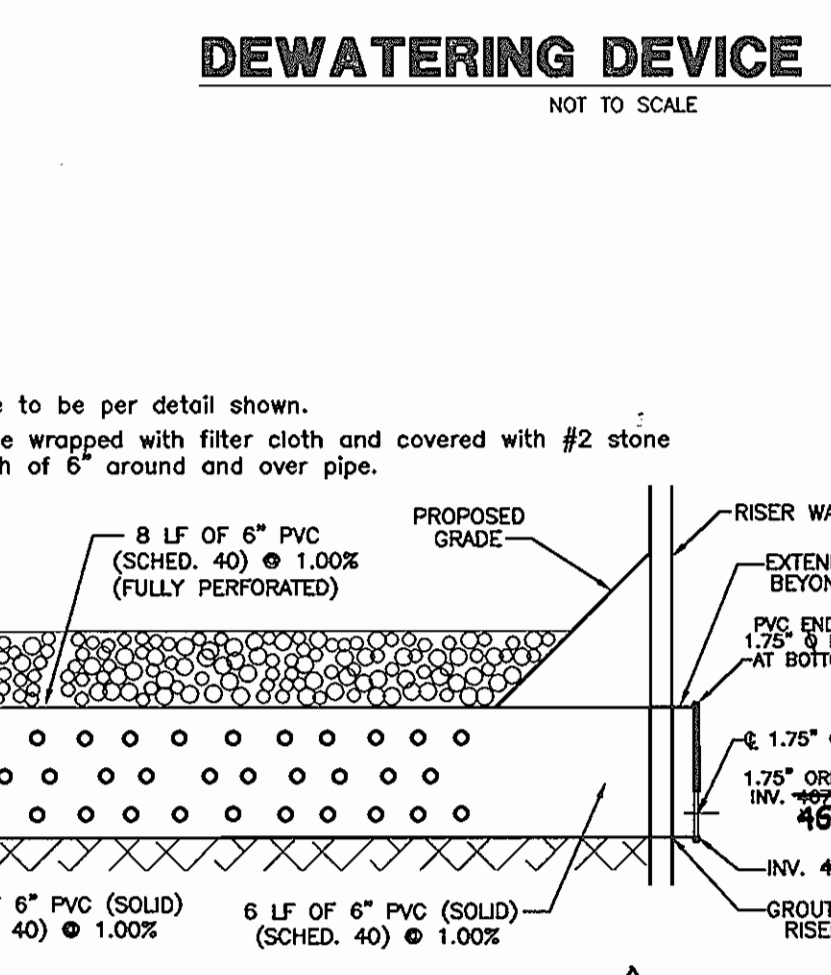
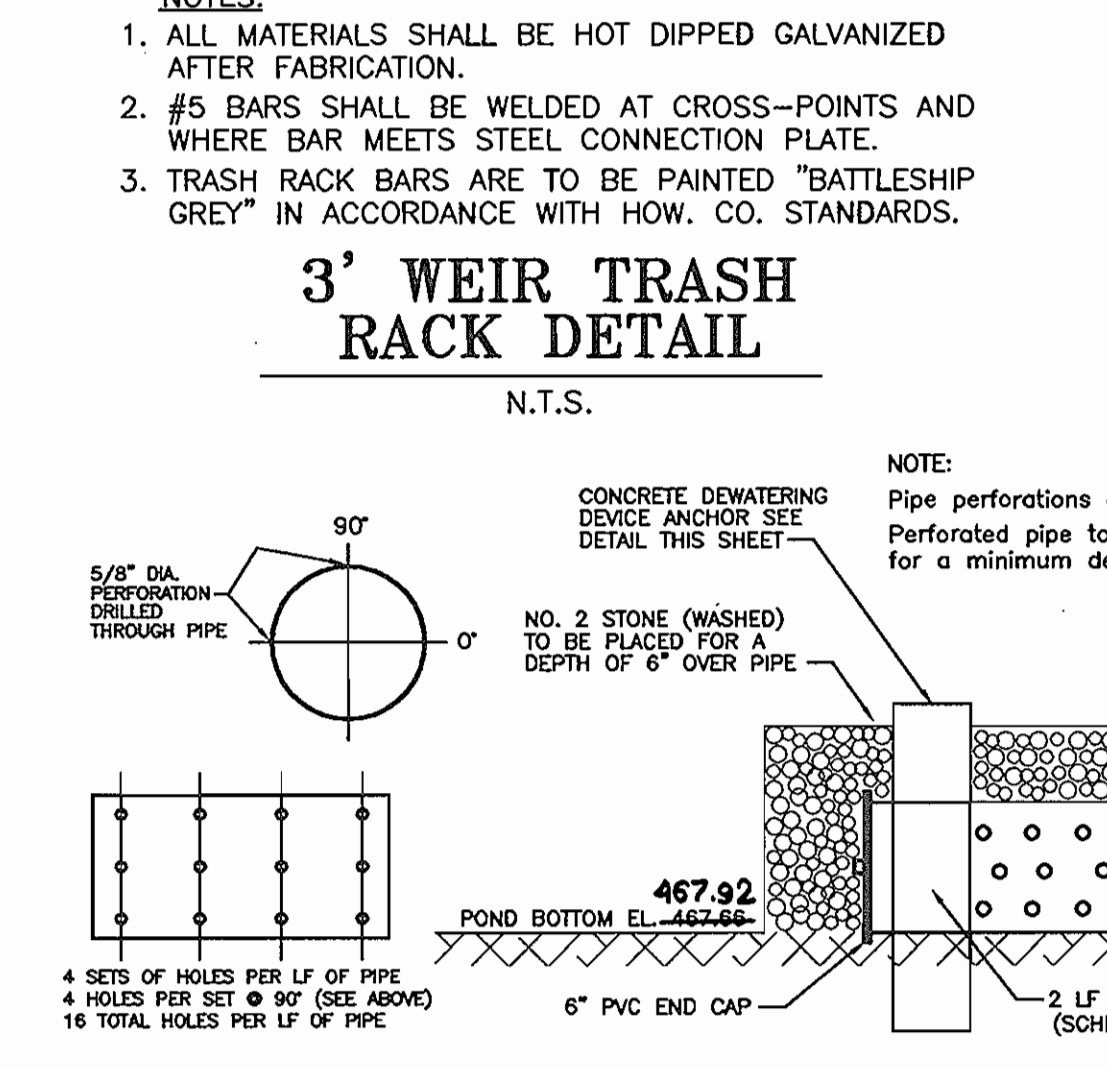
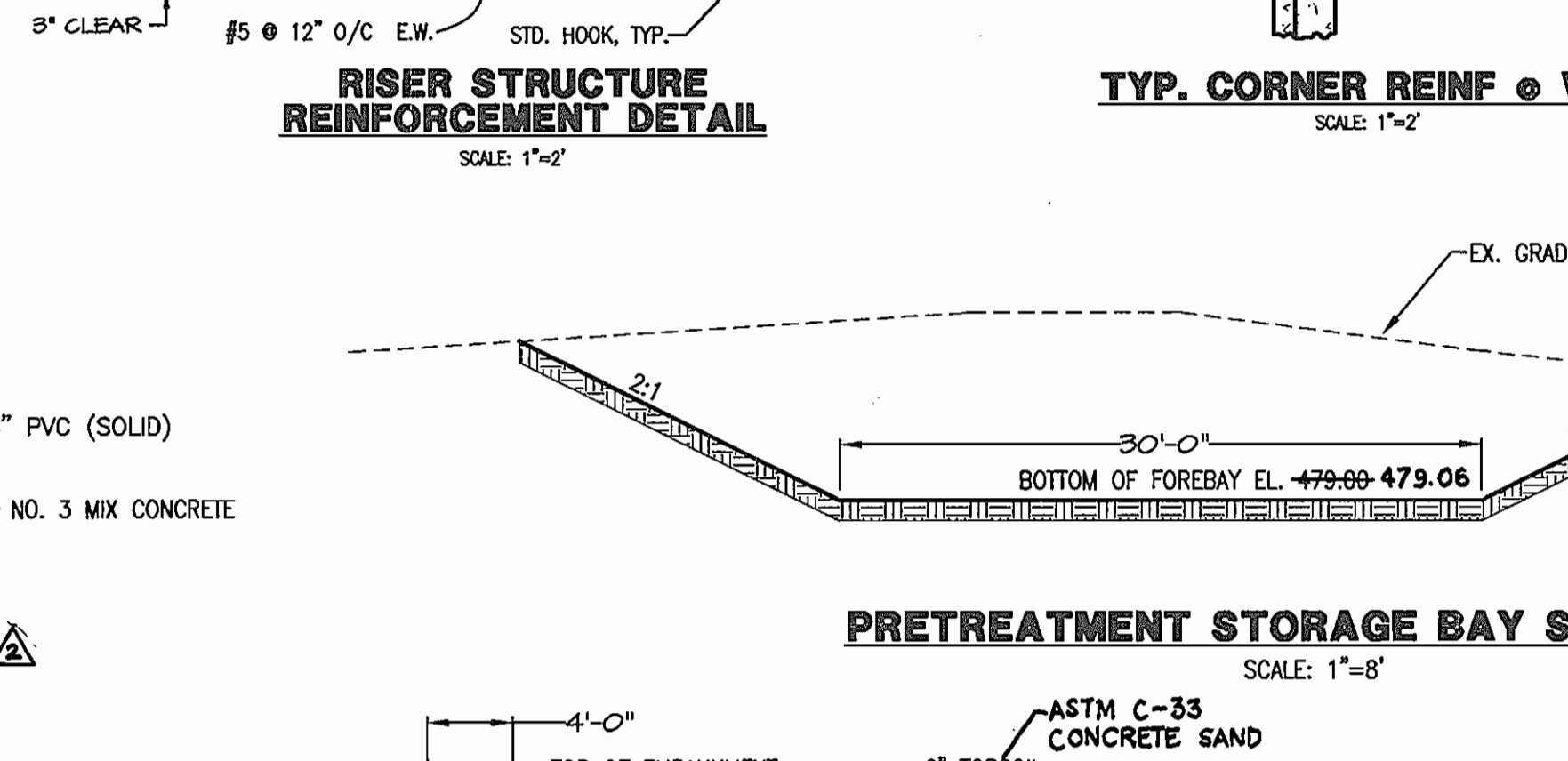
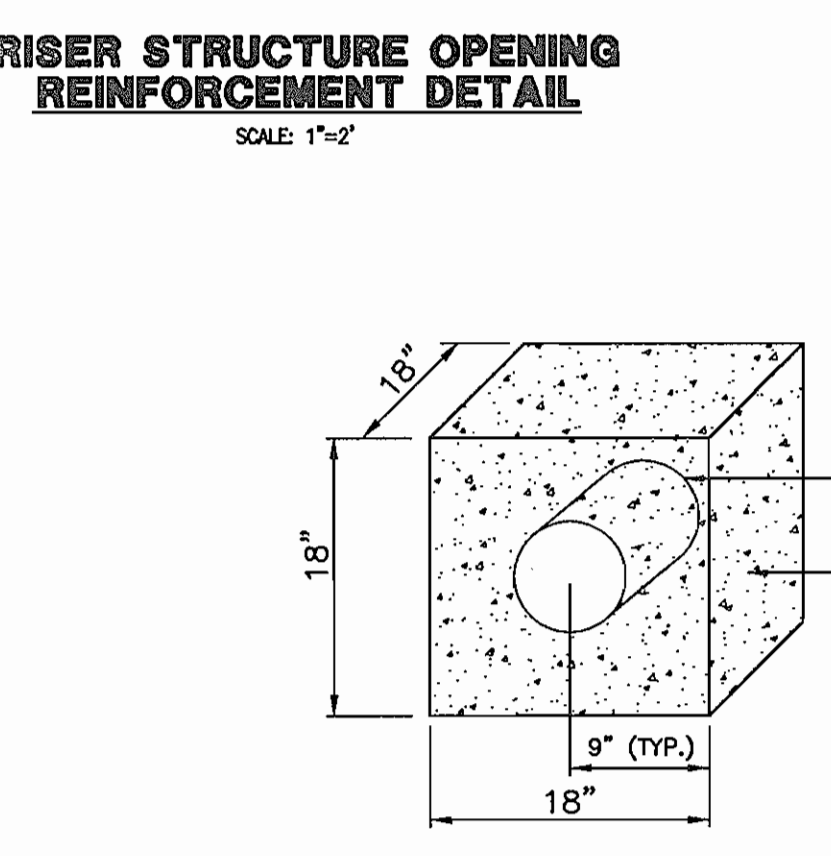
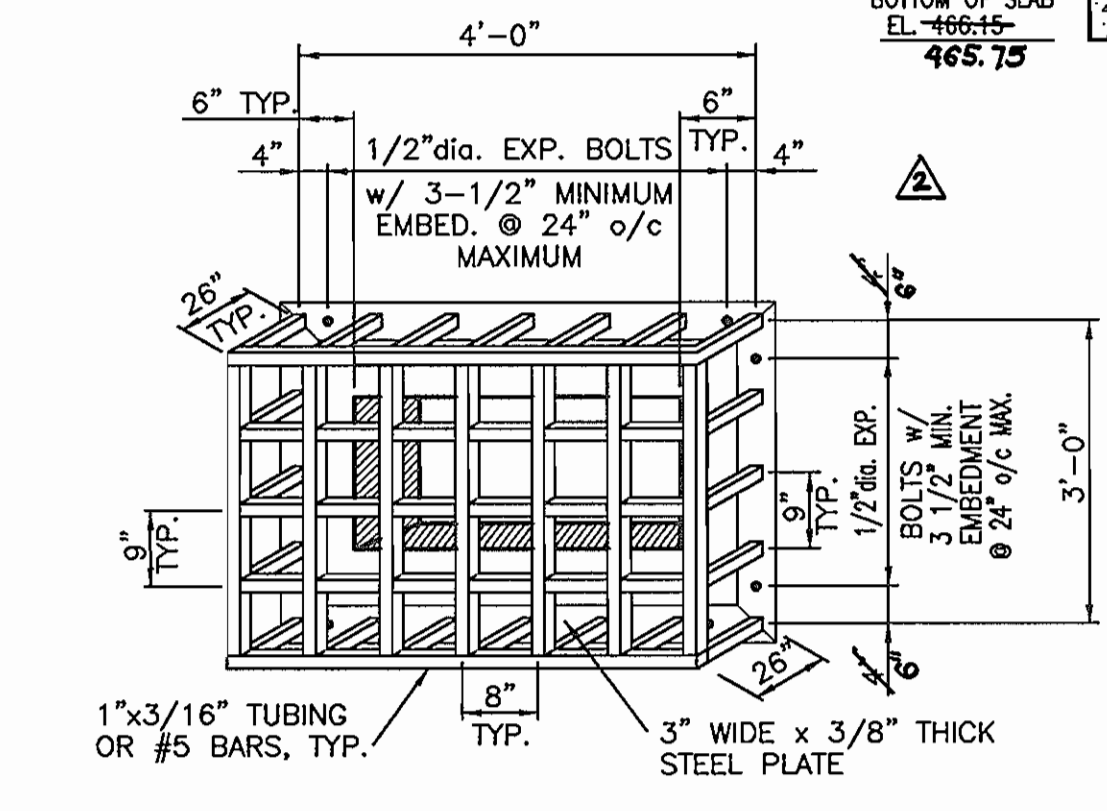
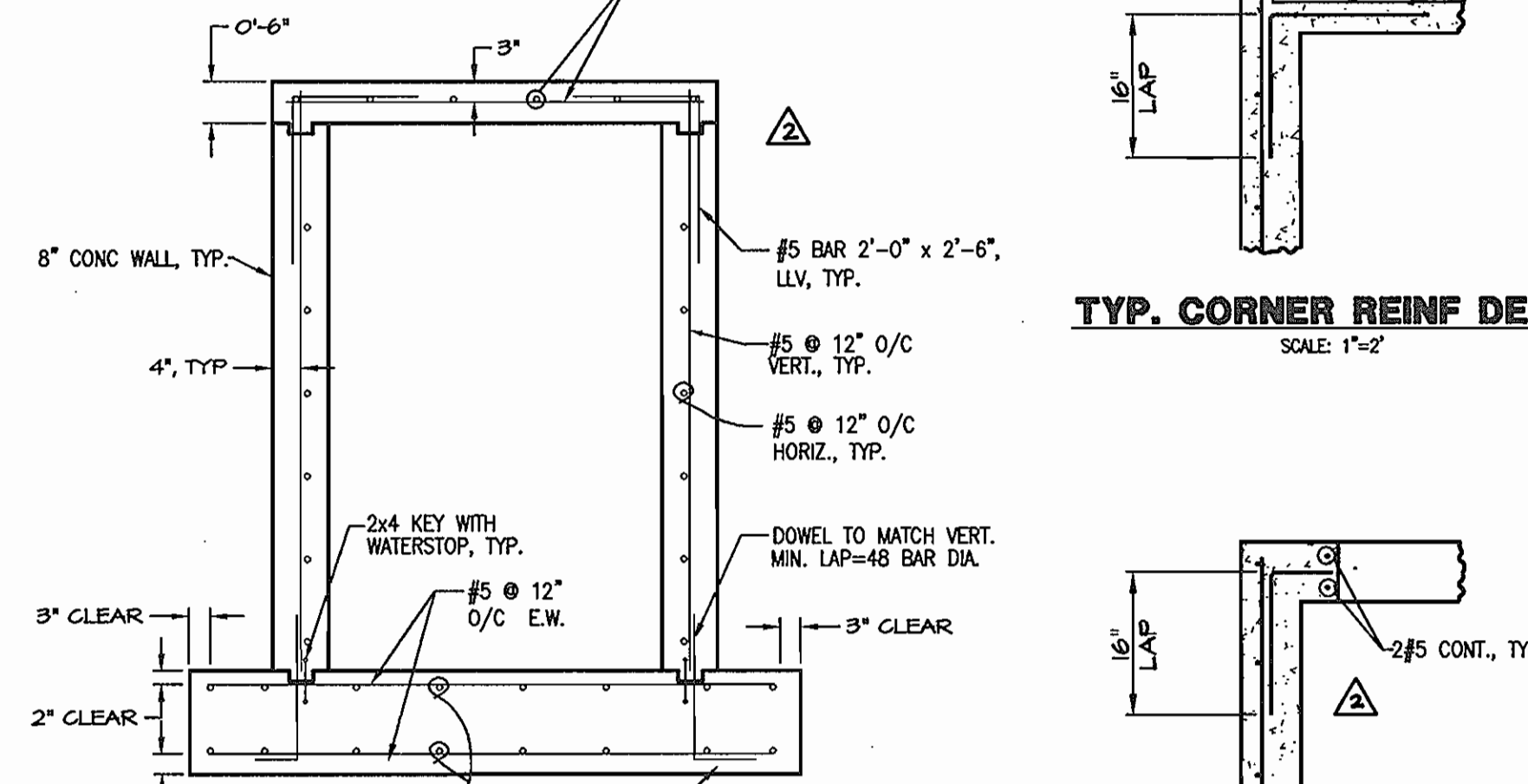
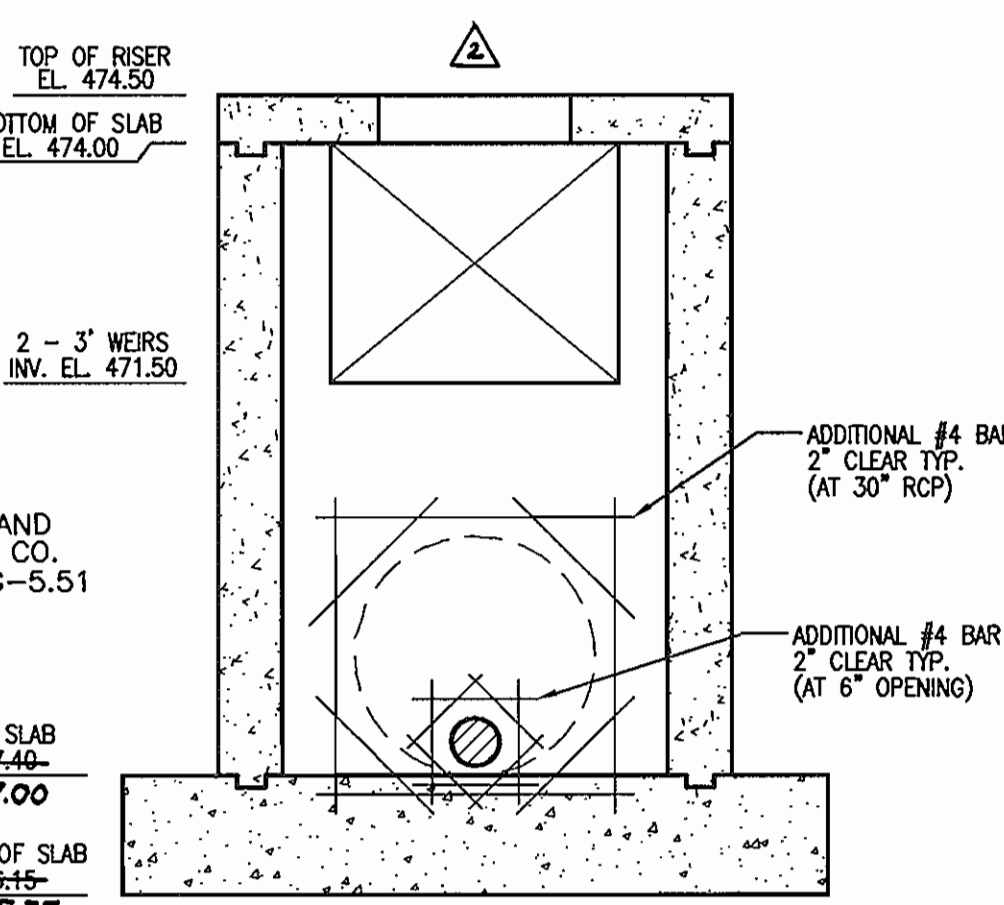
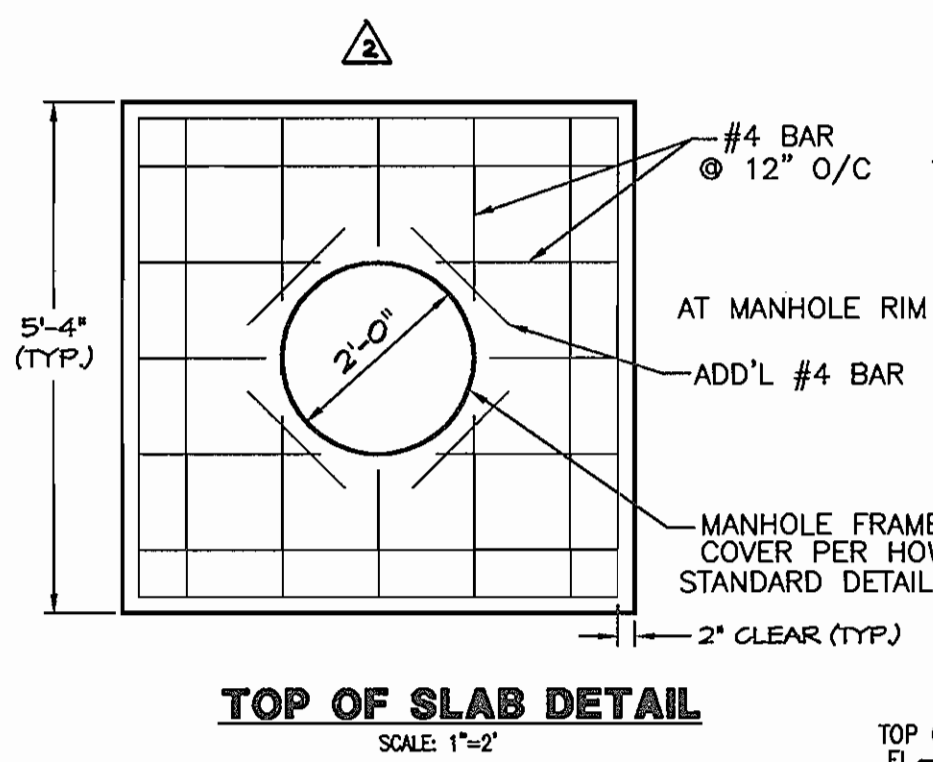
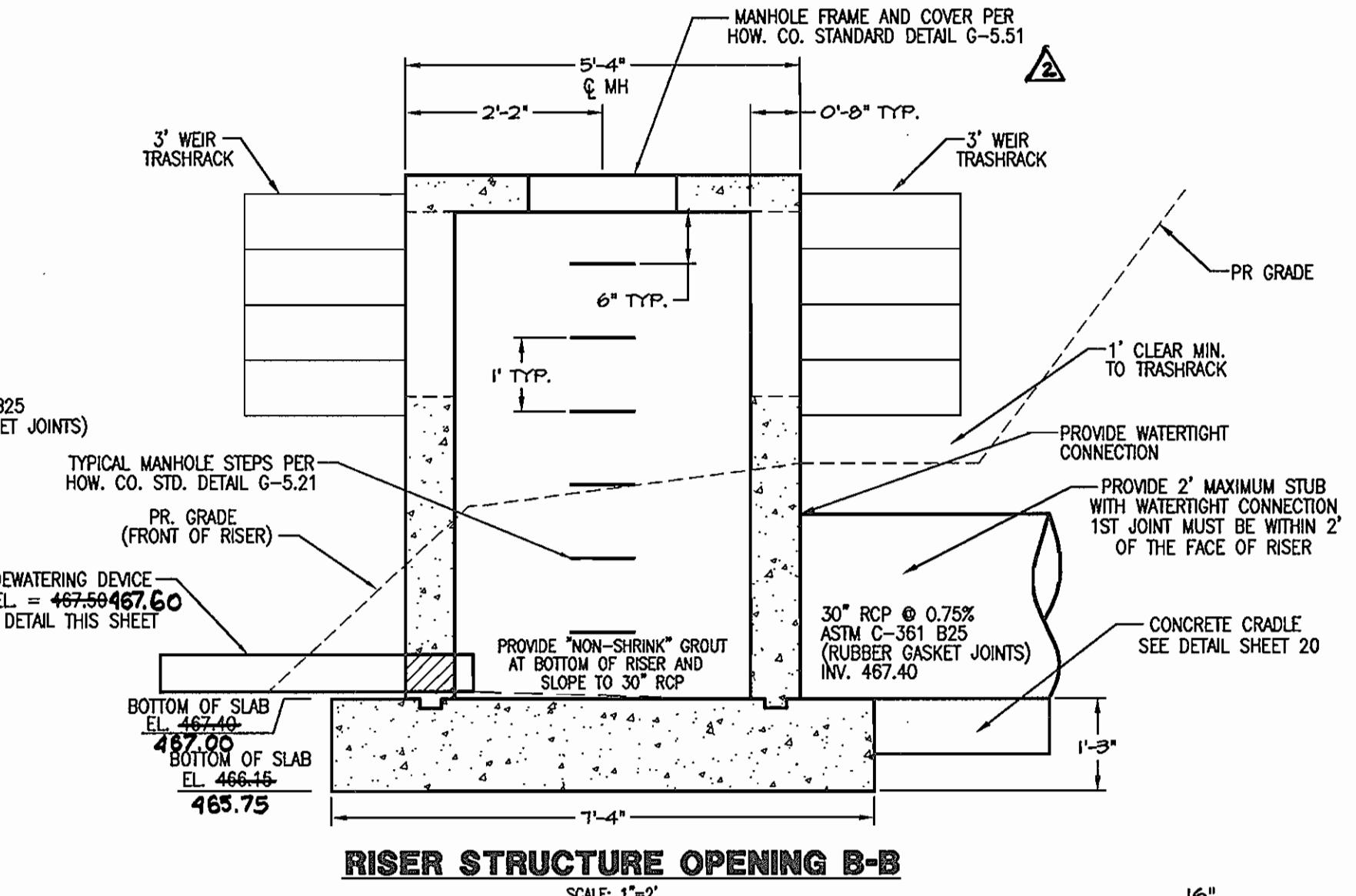
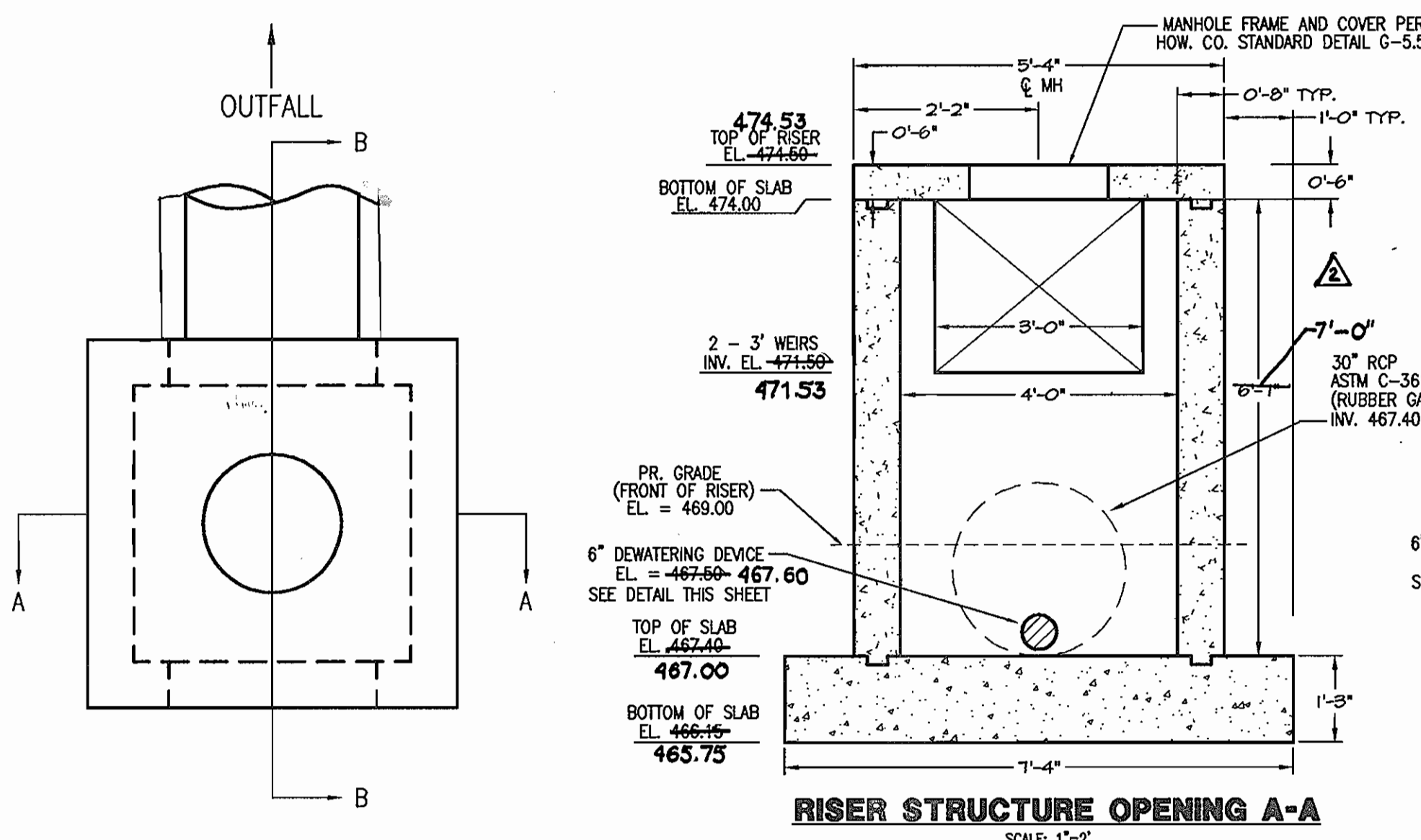
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
[Signature] 9/23/02
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 8/1/02
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE
[Signature] 10/1/02
 CHIEF, DIVISION OF LAND DEVELOPMENT SA DATE
[Signature] 10/2/02
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING DATE

NOTE: THIS PLAN SHALL BE USED FOR SITE GRADING, STORM DRAIN, AND STORMWATER MANAGEMENT POND INSTALLATION ONLY. REFER TO SEDIMENT CONTROL PLAN FOR ADDITIONAL INFORMATION.

SDP-01-69

SDP.01.69



PLAN VIEW SAND FILTER - 1' x 20'

STORM DRAIN AND STORMWATER MANAGEMENT STRUCTURE SCHEDULE

STR. NO.	TOP ELEV.	INV. IN.	INV. IN.	INV. OUT.	TYPE	REMARKS	NORTHING	EASTING
E-3	471.00	---	---	467.00	TYPE 'A' HEADWALL	HOW. CO. STD. DETAIL SD-5.11	515,791.45	811,544.72
E-4	474.00	---	---	467.40	RISER STRUCTURE	SEE DETAIL THIS SHEET	515,826.48	811,504.47

SUMMARY OF PROP. FACILITY

DESIGN STORM	Proposed Facility Inflow (cfs)	Proposed Facility Discharge (cfs)	Facility Water Surface Elevation (ft)	Facility Storage Volume (acre-ft)
1 year	4.91	0.15	471.05	0.364
2 year	10.64	1.05	471.57	0.452
10 year	34.98	24.55	472.65	0.654
10 year*	34.98	29.73	472.86	0.317
100 year	67.62	53.55	473.95	1.008
100 year*	67.62	54.32	473.98	0.566

*WORST CASE CLOGGED CONDITION

Drainage Area 18.48 acres
Impervious Area 2.28 acres

STORM DRAIN & SWM PIPE SCHEDULE

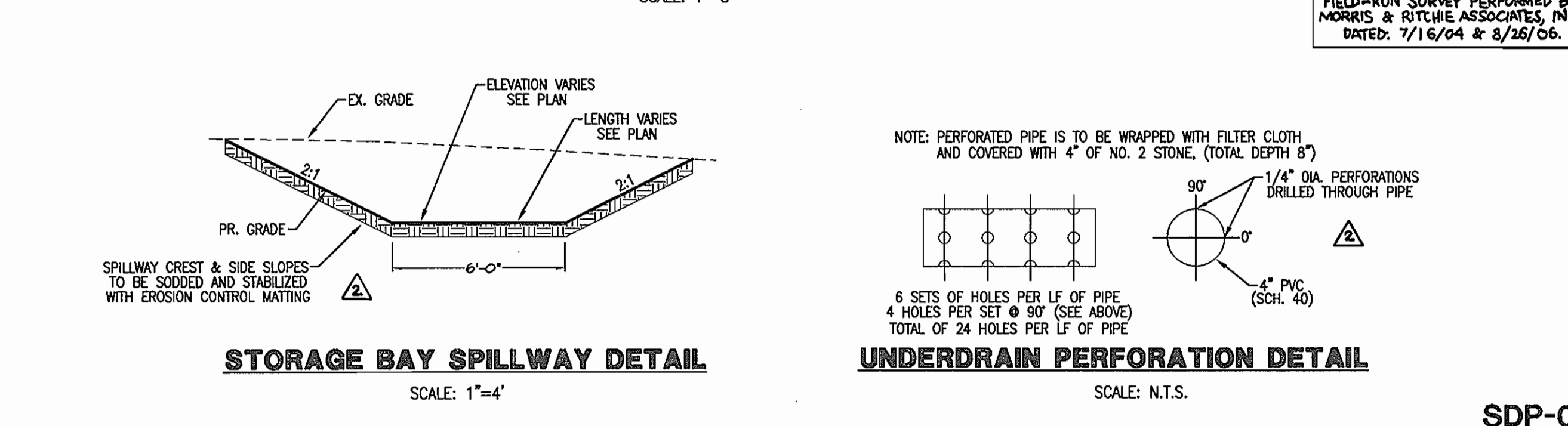
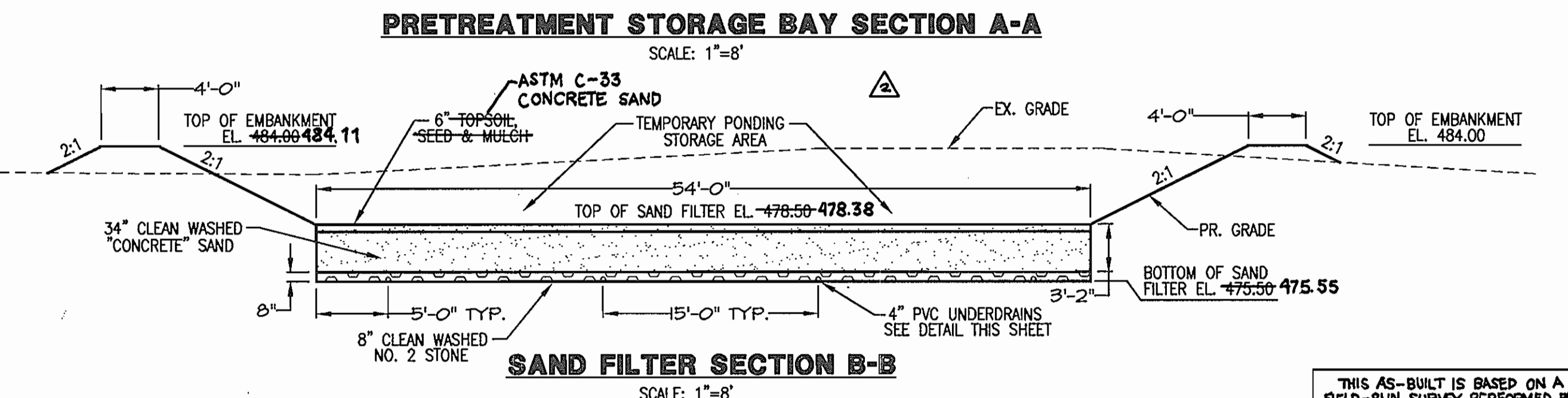
SIZE	TYPE	LENGTH
30"	ASTM C-361 B25	53'
4"	SCHEDULE 40	180'
6"	SCHEDULE 40	37'

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

HOWARD SOIL CONSERVATION DISTRICT 9/23/02 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.

U.S.D. NATURAL RESOURCES CONSERVATION SERVICE 9/23/02 DATE



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 8/1/02 DATE

Chief, Division of Land Development 10/1/02 DATE

Director, Department of Planning and Zoning 10/2/02 DATE

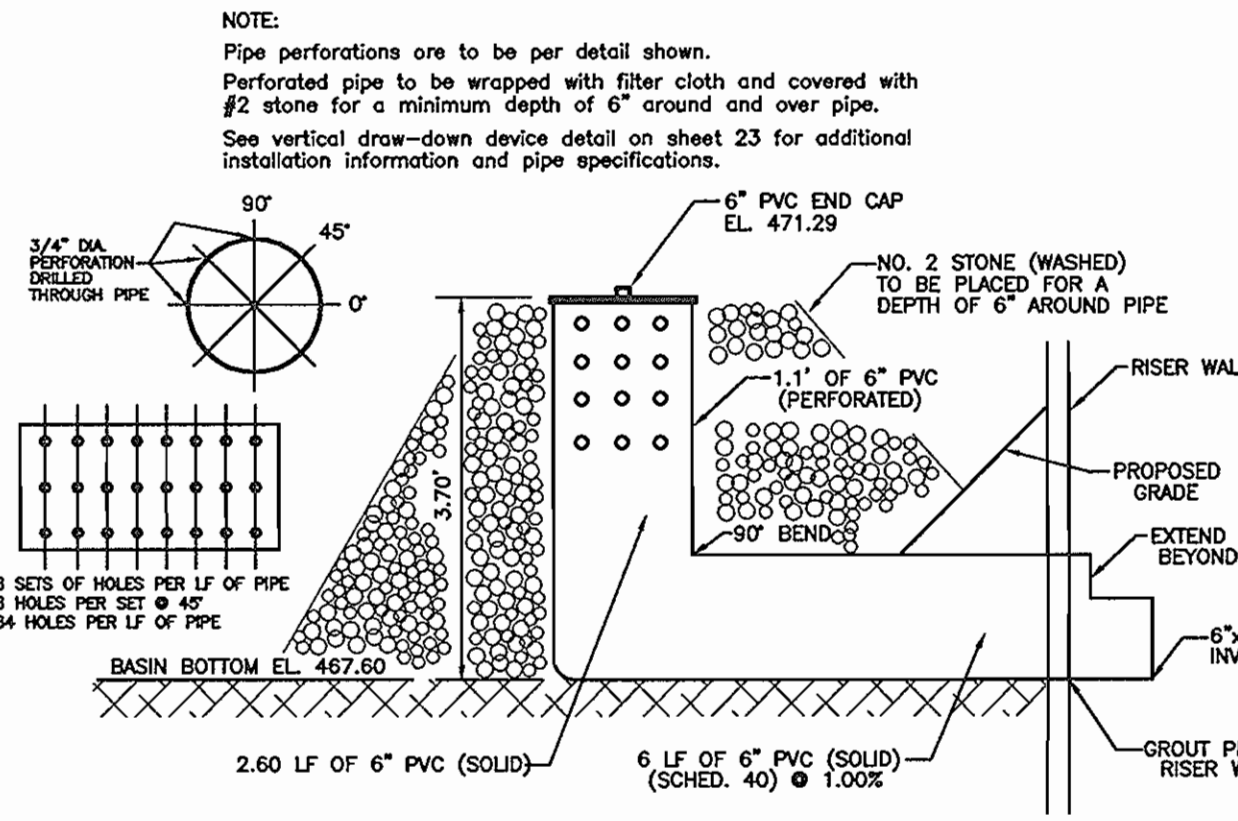
MORRIS & RITCHE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS

9060 JUNCTION DRIVE, SUITE 9
ANNAPOLIS JUNCTION, MARYLAND 20701
(410) 792-9792 or (301) 776-1890
FAX (410) 792-7395

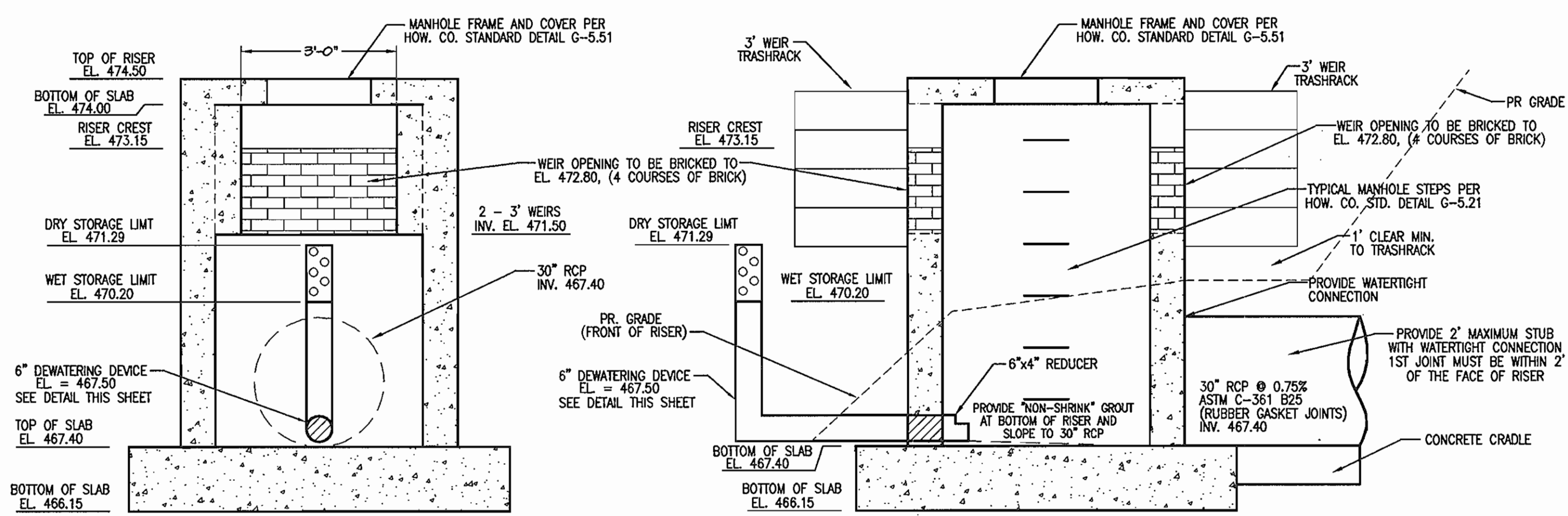
GLENELG COUNTRY SCHOOL
STORMWATER MANAGEMENT
REVISED SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT DETAILS

TAX MAP 22, GRID 22, PARCEL 146
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
7/19/02	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY.	12189
9/06	ADDED FIELD & REVISED FOREST CONSERVATION AREAS.	SCALE: 1" = 30'
	AS-BUILT INFORMATION ADDED TO PLAN.	DATE: 07/19/02
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: PVM
		SHEET: 19 OF 25



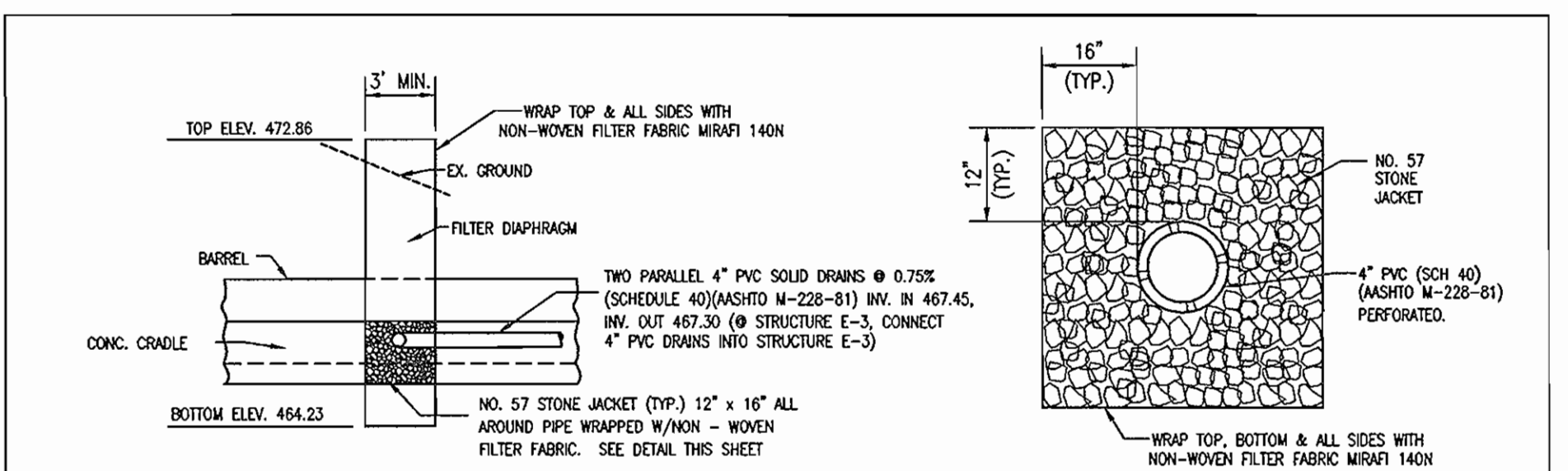
SEDIMENT BASIN DEWATERING DEVICE DETAIL
N.T.S.



RISER STRUCTURE DETAIL MODIFIED FOR SEDIMENT CONTROL
SCALE: 1"=2'

RISER STRUCTURE DETAIL MODIFIED FOR SEDIMENT CONTROL
SCALE: 1"=2'

SEE AS-BUILT INFORMATION ON SHEET 19

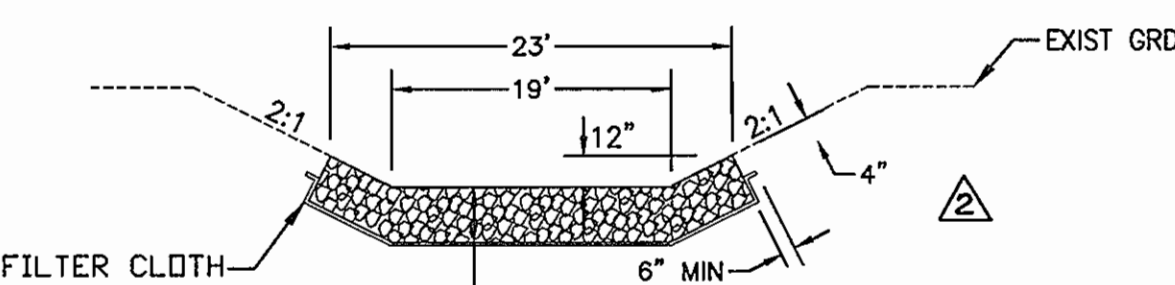


SECTION A-A
NOT TO SCALE

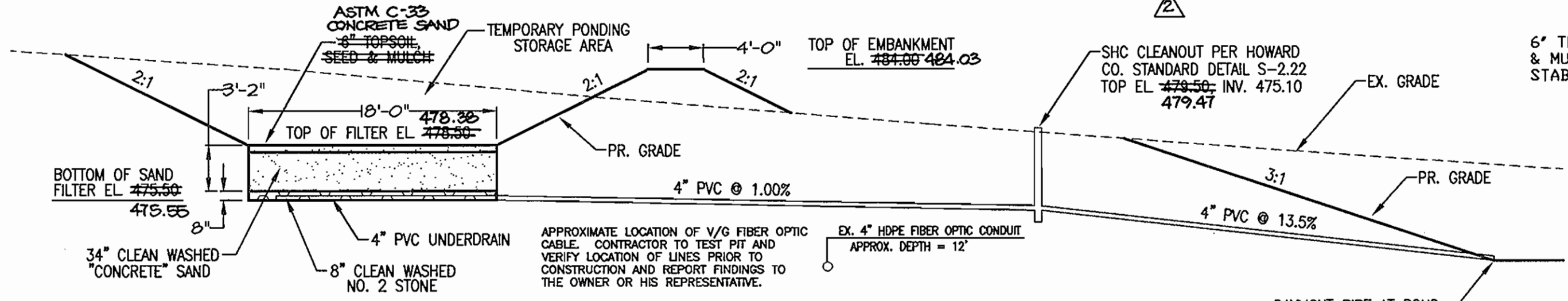
FILTER DIAPHRAGM DETAIL
NOT TO SCALE

WRAP DETAIL

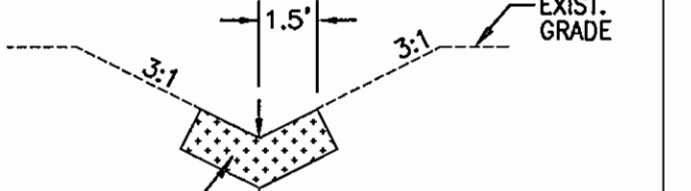
- NOTES:
1. FILTER MATERIAL SHALL CONFORM TO ASTM C-33 (CONCRETE SAND).
 2. FILTER DIAPHRAGM SHALL BE CONSTRUCTED IN HORIZONTAL LAYERS 12 INCHES THICK (BEFORE COMPACTION).
 3. EACH LAYER SHALL BE HYDROCOMPACTED USING A SPRINKLER. MATERIAL MUST BE SATURATED.
 4. CARE SHALL BE TAKEN SO THAT THE FILTER MATERIAL IS NOT CONTAMINATED.
 5. ANY CONTAMINATED SAND SHALL BE REMOVED AND REPLACED WITH APPROVED MATERIAL.
 6. PROTECTIVE COVERING OVER THE FILTER SAND MAY BE REQUIRED BETWEEN LIFTS.
 7. ELBOWS SHALL BE USED FOR PVC INTERCONNECTIONS.
 8. CARE SHOULD BE TAKEN DURING INSTALLATION SO THAT THE FILTER CLOTH IS NOT TORN OR PUNCTURED DURING CONSTRUCTION.
 9. PERFORATIONS FOR 4" PVC PIPE SHALL BE 3/8" IN DIAMETER, SPACED AT 3" O-C, DRILLED AT 90° THROUGH BOTH SIDES OF PIPE. 4 HOLES PER SET, 4 SETS PER LINEAR FOOT, 16 HOLES PER LINEAR FOOT OF PIPE. TOTAL PERFORATIONS IS 64 PER 6.00' PIPE SEGMENT FOR A TOTAL OF 192 TOTAL PERFORATIONS FOR DIAPHRAGM.
 10. A REGISTERED PROFESSIONAL ENGINEER MUST BE PRESENT DURING INSTALLATION AND MUST SUPERVISE AND INSPECT FILTER DIAPHRAGM DURING CONSTRUCTION.



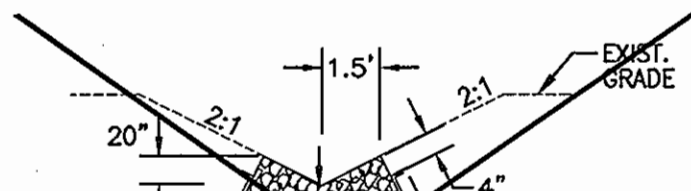
RIP RAP CHANNEL DETAIL
NOT TO SCALE



SAND FILTER AND PIPE OUTFALL SECTION D-D
SCALE: 1"=8'

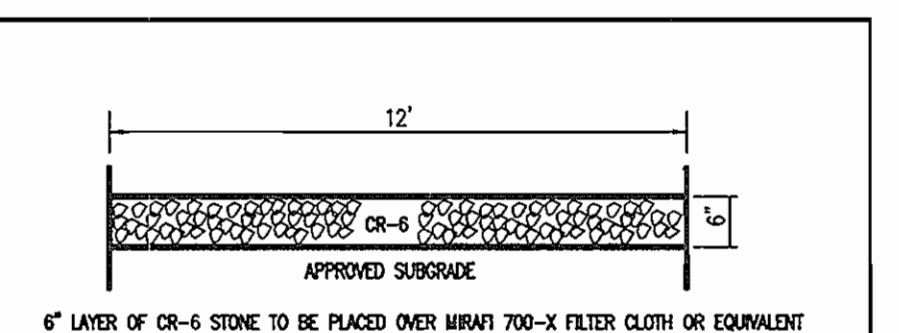


MATTED/SEEDED GRASS SWALE DETAIL
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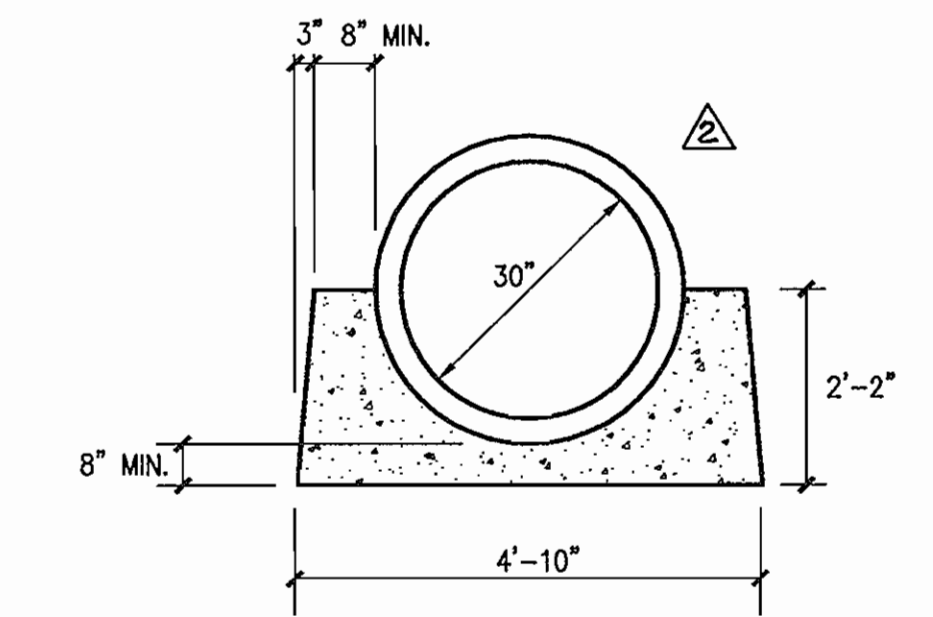


STONE SWALE DETAIL
NOT TO SCALE

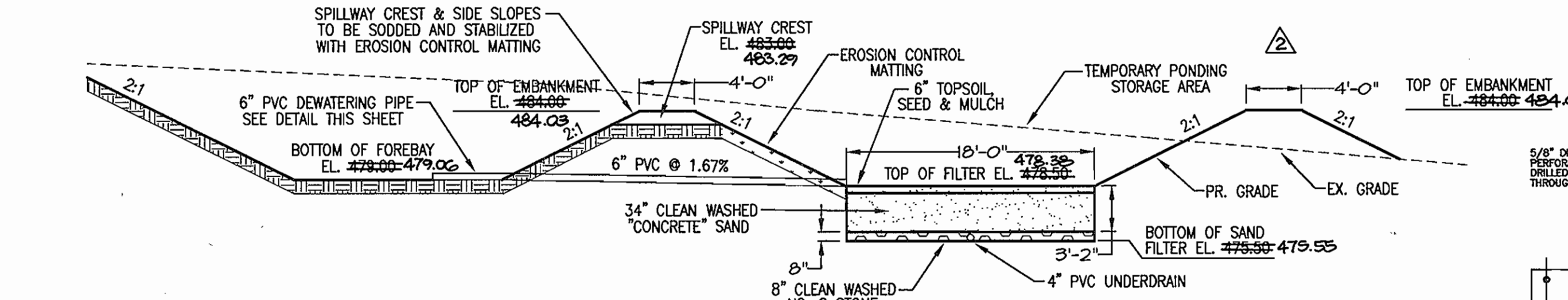
PR. SEDIMENT BASIN SUMMARY TABLE	
EXISTING DRAINAGE AREA	5.02 ACRES
PROPOSED DRAINAGE AREA	5.02 ACRES
VOLUME REQUIRED	5.02 X 1800
WET STORAGE	9,036 CF.
DRY STORAGE	9,036 CF.
TOTAL VOLUME REQUIRED	18,072 CF.
TOTAL VOLUME PROVIDED	35,241 CF.
WET STORAGE VOLUME PROVIDED	9,690 CF.
DRY STORAGE VOLUME PROVIDED	25,551 CF.
WET STORAGE DEPTH	2.70 FT.
BOTTOM ELEVATION	467.50
CLEANOUT ELEVATION	469.50
LIMIT OF WET STORAGE ELEVATION	470.20
MINIMUM RISER CREST ELEVATION	471.29
PROVIDED RISER CREST ELEVATION	473.15
EMBANKMENT ELEVATION	476.00
DRAW-DOWN DEVICE	6" PVC (4" DRIFICE)
OUTFALL BARREL TYPE	30" RCP



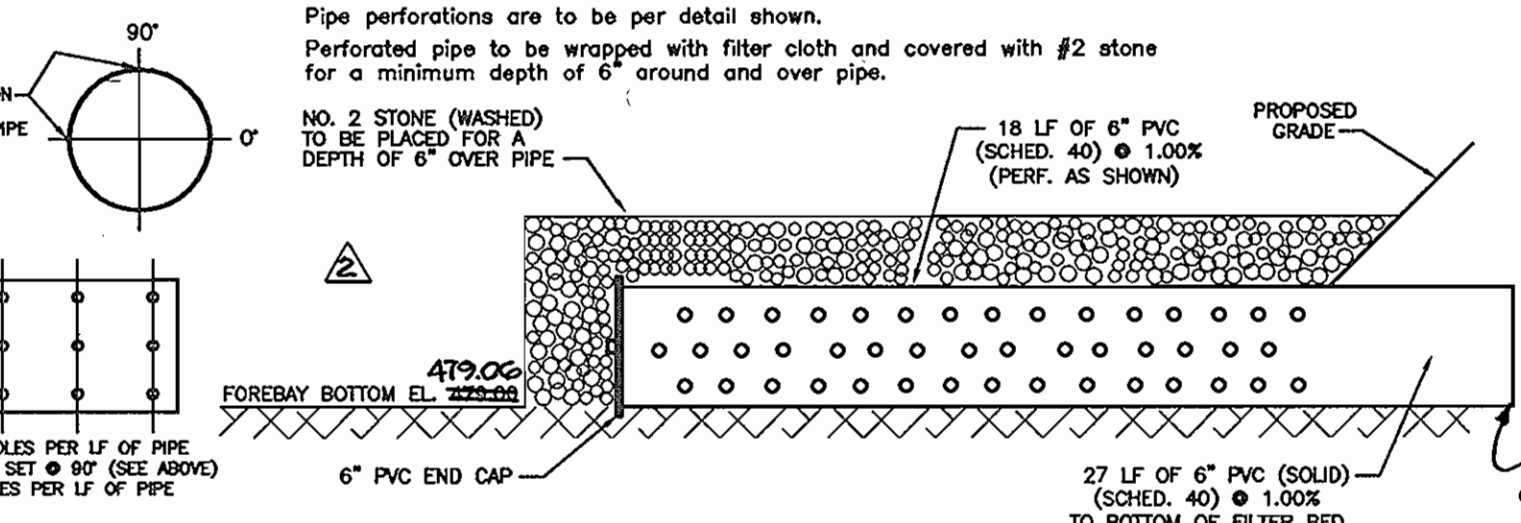
SWM POND ACCESS DRIVE TYPICAL SECTION
NOT TO SCALE



CONCRETE CRADLE DETAIL
NOT TO SCALE



STORAGE FOREBAY AND SAND FILTER SECTION C-C
SCALE: 1"=8'



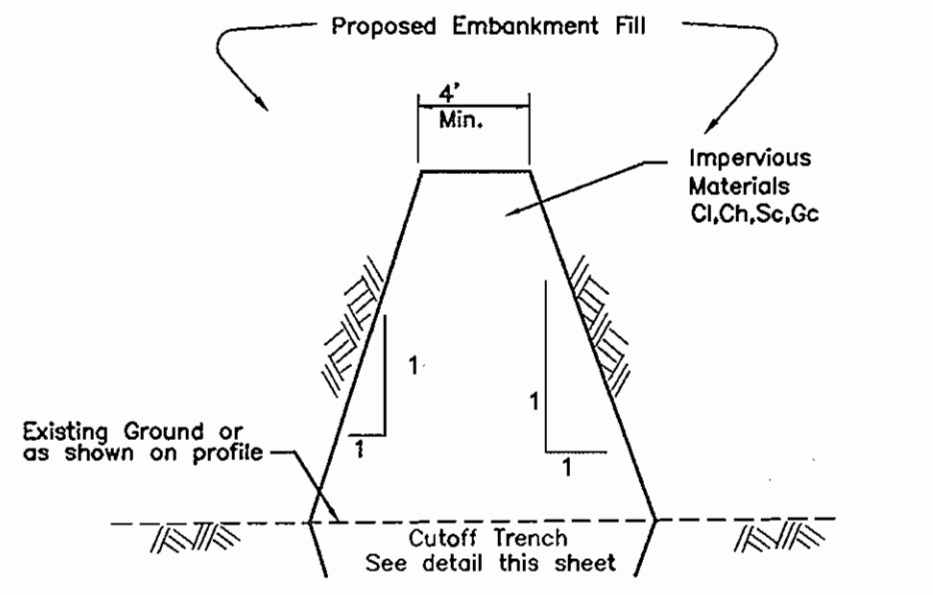
6" PVC DEWATERING DEVICE DETAIL
N.T.S.

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

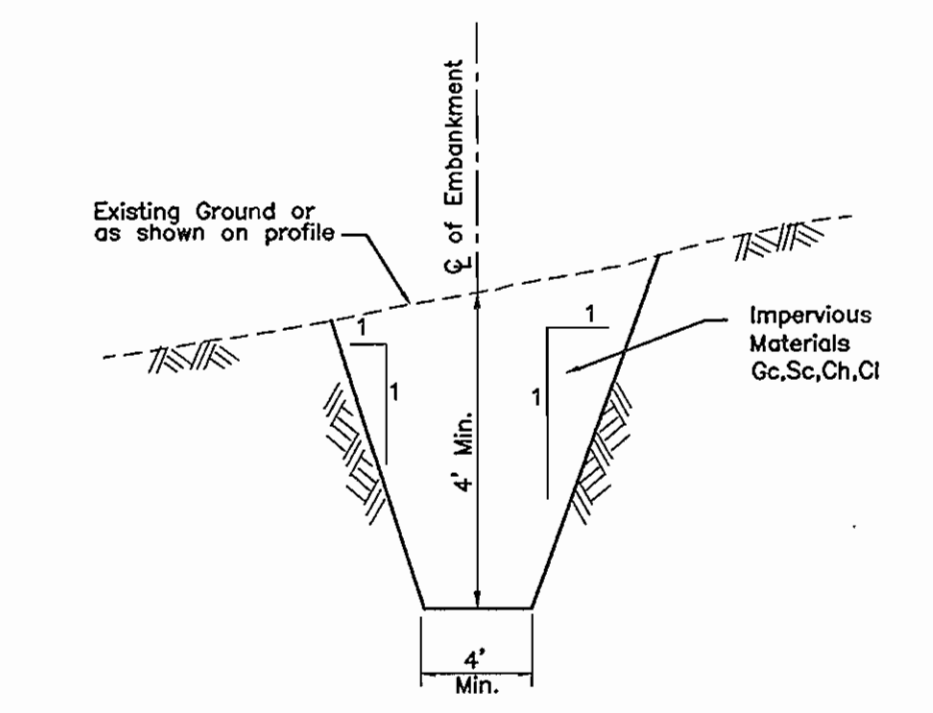
[Signature] 9/23/02
HOWARD SOIL CONSERVATION DISTRICT DATE

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.

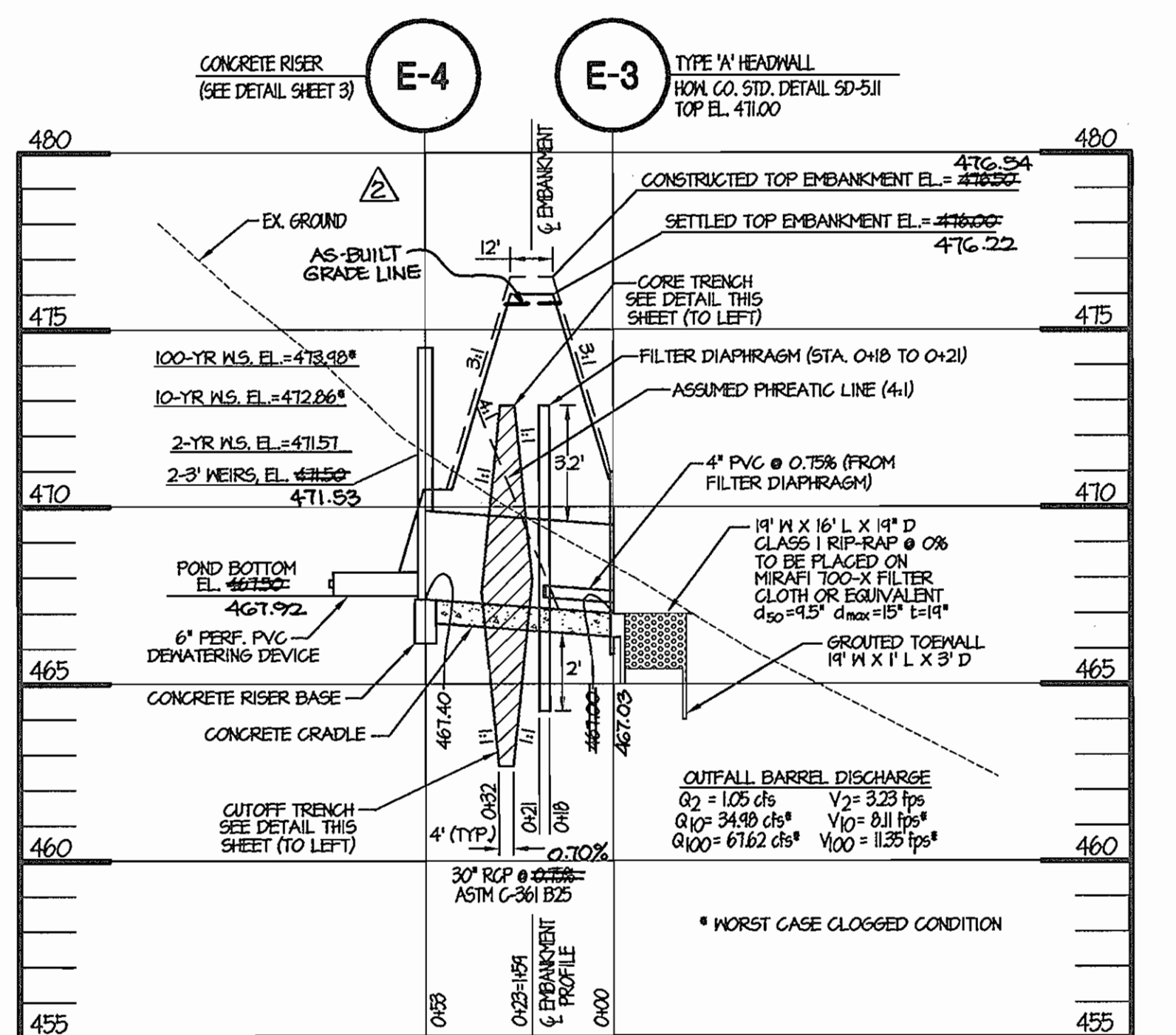
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U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE



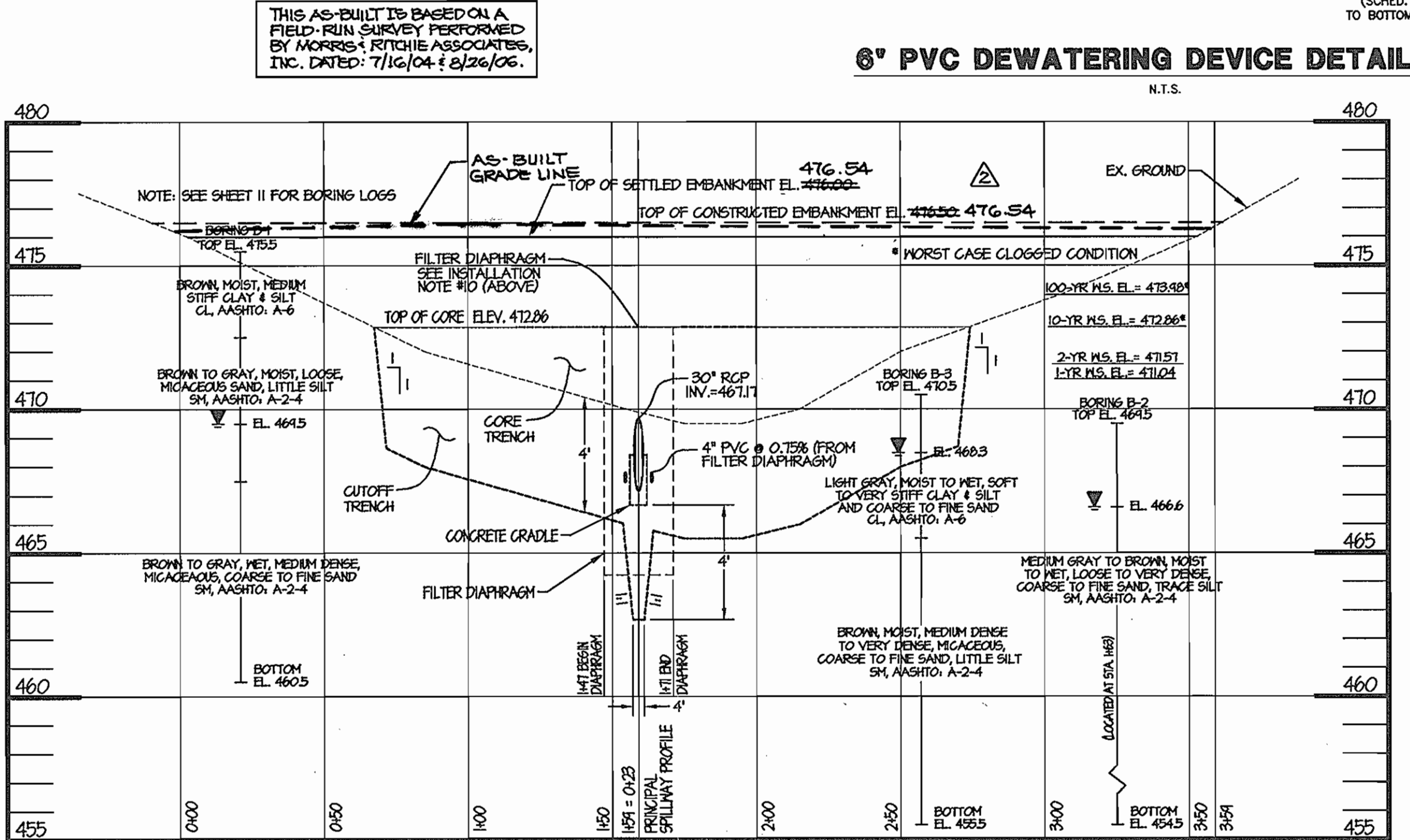
CORE TRENCH
NOT TO SCALE



CUTOFF TRENCH
NOT TO SCALE



PRINCIPAL SPILLWAY PROFILE
SCALE: HOR. 1" = 40' VERT. 1" = 4'



POND CENTERLINE OF EMBANKMENT PROFILE
SCALE: HOR. 1" = 40' VERT. 1" = 4'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 8/1/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

[Signature] 10/1/02
CHIEF, DIVISION OF LAND DEVELOPMENT A DATE

[Signature] 10/2/02
DIRECTOR, DEPARTMENT OF PLANNING AND ZONING DATE

MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS

9090 JUNCTION DRIVE, SUITE 9
ANNAPOLIS JUNCTION, MARYLAND 20701
(410) 792-8792 or (301) 776-1690
FAX 410 792-7395

GLENELG COUNTRY SCHOOL
STORMWATER MANAGEMENT
REVISED SITE DEVELOPMENT PLAN
STORMWATER MANAGEMENT DETAILS

TAX MAP 22, GRID 22, PARCEL 146
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
7/19/02	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY.	12189
	ADDED FIELD & REVISED FOREST CONSERVATION AREAS.	SCALE: AS SHOWN
9/02	AS-BUILT INFORMATION ADDED TO PLAN.	DATE: 07/19/02
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: PVM
		SHEET: 20 OF 25

SDP-01-69

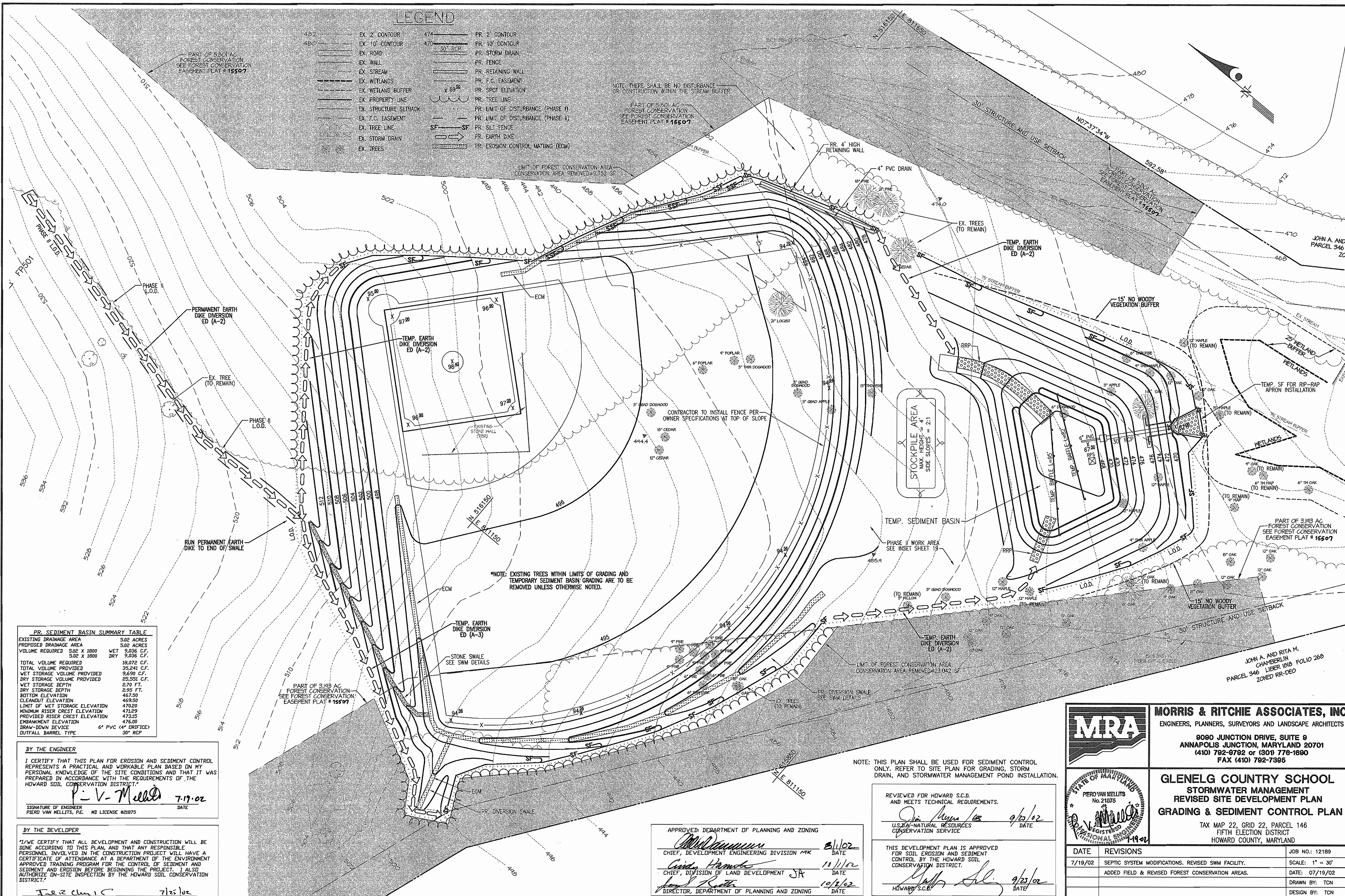
LEGEND

- EX. 2' CONTOUR
- EX. 10' CONTOUR
- EX. ROAD
- EX. WALL
- EX. STREAM
- EX. WETLANDS
- EX. WETLAND BUFFER
- EX. PROPERTY LINE
- EX. STRUCTURE SETBACK
- EX. F.C. EASEMENT
- EX. TREE LINE
- EX. STORM DRAIN
- EX. TREES
- PR. 2' CONTOUR
- PR. 10' CONTOUR
- PR. STORM DRAIN
- PR. FENCE
- PR. RETAINING WALL
- PR. F.C. EASEMENT
- PR. SPOT ELEVATION
- PR. TREE LINE
- PR. LIMIT OF DISTURBANCE (PHASE I)
- PR. LIMIT OF DISTURBANCE (PHASE II)
- PR. SILT FENCE
- PR. EARTH DIKE
- PR. EROSION CONTROL MATTING (ECM)

NOTE: THERE SHALL BE NO DISTURBANCE OR CONSTRUCTION WITHIN THE STREAM BUFFER.

PART OF 5.20 AC FOREST CONSERVATION EASEMENT PLAT # 15507

LIMIT OF FOREST CONSERVATION AREA CONSERVATION AREA REMOVED=3,752 SF



PR. SEDIMENT BASIN SUMMARY TABLE

EXISTING DRAINAGE AREA	5.02 ACRES
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VOLUME REQUIRED 5.02 X 1800	WET 9,036 C.F.
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PROVIDED RISER CREST ELEVATION	473.15
EMBANKMENT ELEVATION	476.00
DRAW-DOWN DEVICE	6" PVC (4" DRIFTERS)
OUTFALL BARREL TYPE	30" RCP

BY THE ENGINEER

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

P. V. Mellis 7-19-02
 SIGNATURE OF ENGINEER DATE
 PIERO VAN MELLITS, P.E. MD LICENSE #21875

BY THE DEVELOPER

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Juel R. Chervakov 7-12-02
 SIGNATURE OF DEVELOPER DATE
 PRINT NAME BELOW SIGNATURE JUEL R. CHERVAKOV

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Michael J. ... 8/1/02
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Cindy ... 10/1/02
 CHIEF, DIVISION OF LAND DEVELOPMENT JK DATE

James ... 10/2/02
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING DATE

NOTE: THIS PLAN SHALL BE USED FOR SEDIMENT CONTROL ONLY. REFER TO SITE PLAN FOR GRADING, STORM DRAIN, AND STORMWATER MANAGEMENT POND INSTALLATION.

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

John ... 9/23/02
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John ... 9/23/02
 HOWARD S.C.D. DATE

MRA

MORRIS & RITCHIE ASSOCIATES, INC.
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS

8080 JUNCTION DRIVE, SUITE 9
 ANNAPOLIS JUNCTION, MARYLAND 20701
 (410) 792-9792 or (301) 776-1690
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GLENELG COUNTRY SCHOOL
 STORMWATER MANAGEMENT
 REVISED SITE DEVELOPMENT PLAN
 GRADING & SEDIMENT CONTROL PLAN

TAX MAP 22, GRID 22, PARCEL 146
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
7/19/02	SEPTIC SYSTEM MODIFICATIONS. REVISED SWM FACILITY.	12189
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		SHEET: 22 OF 25

SDP-01-69

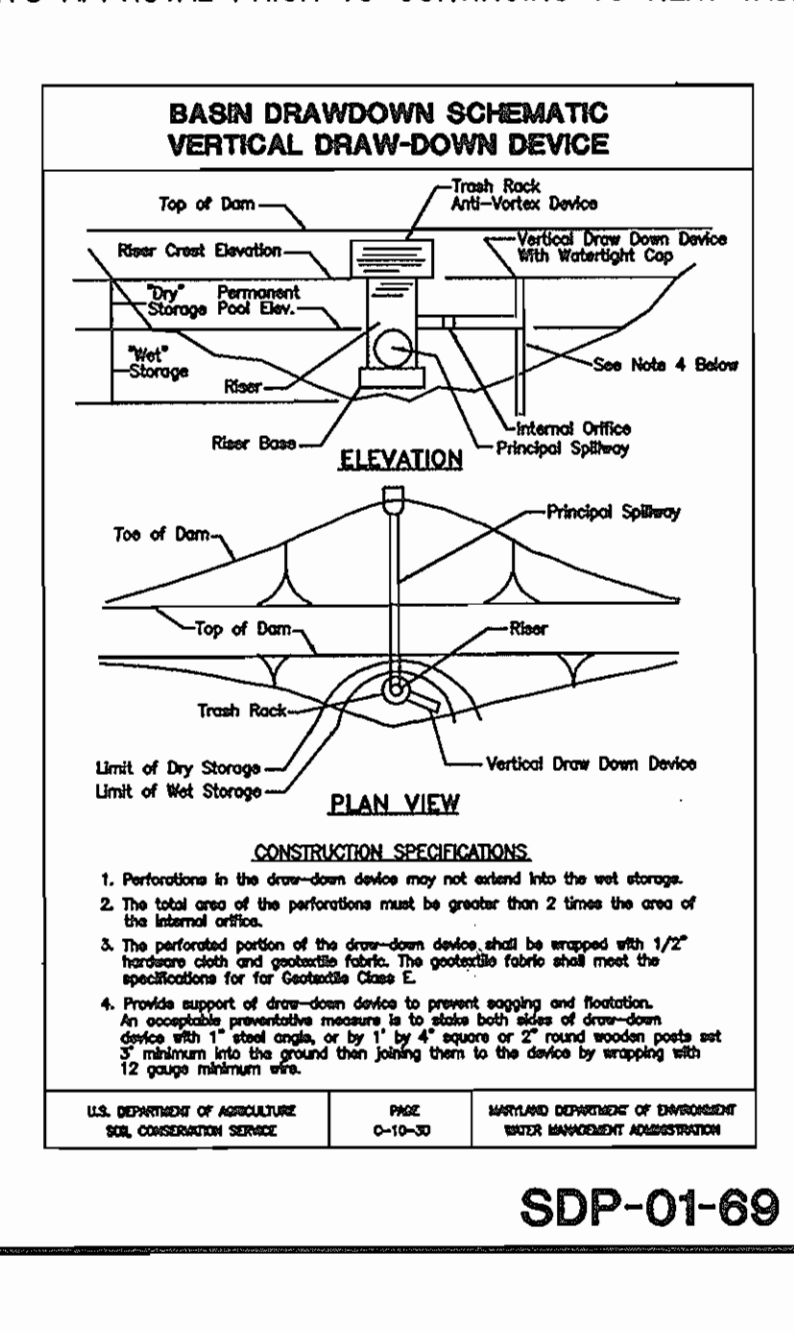
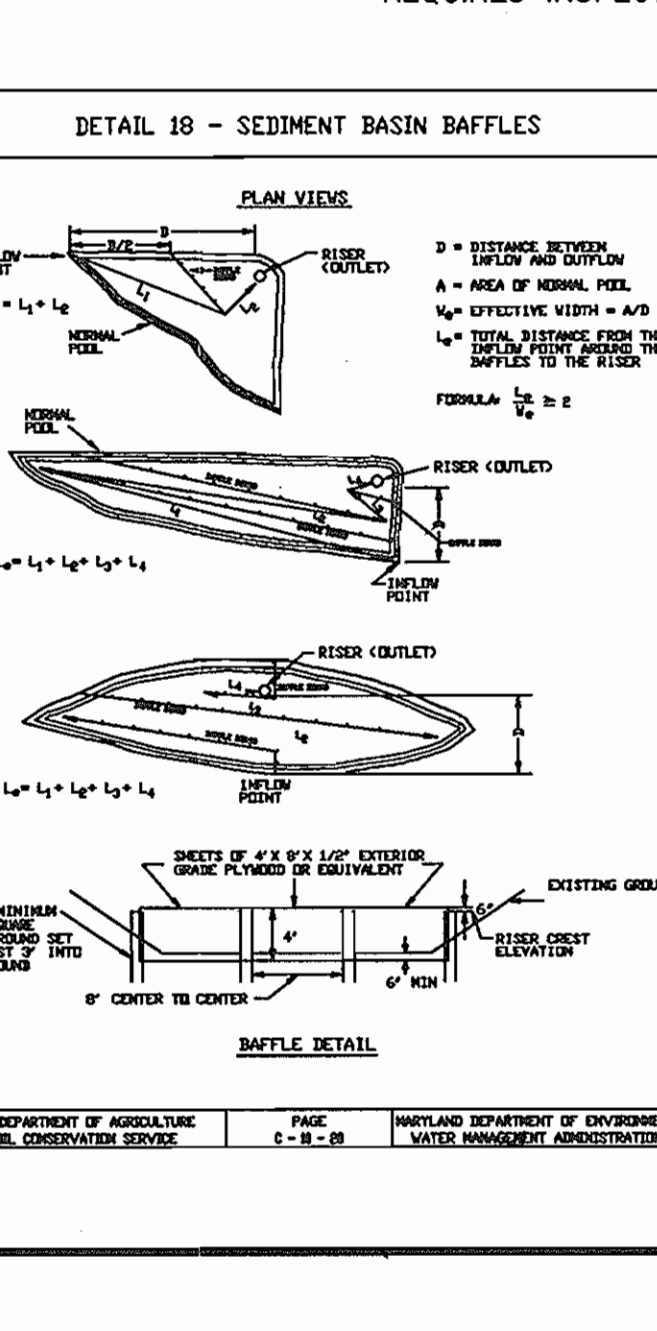
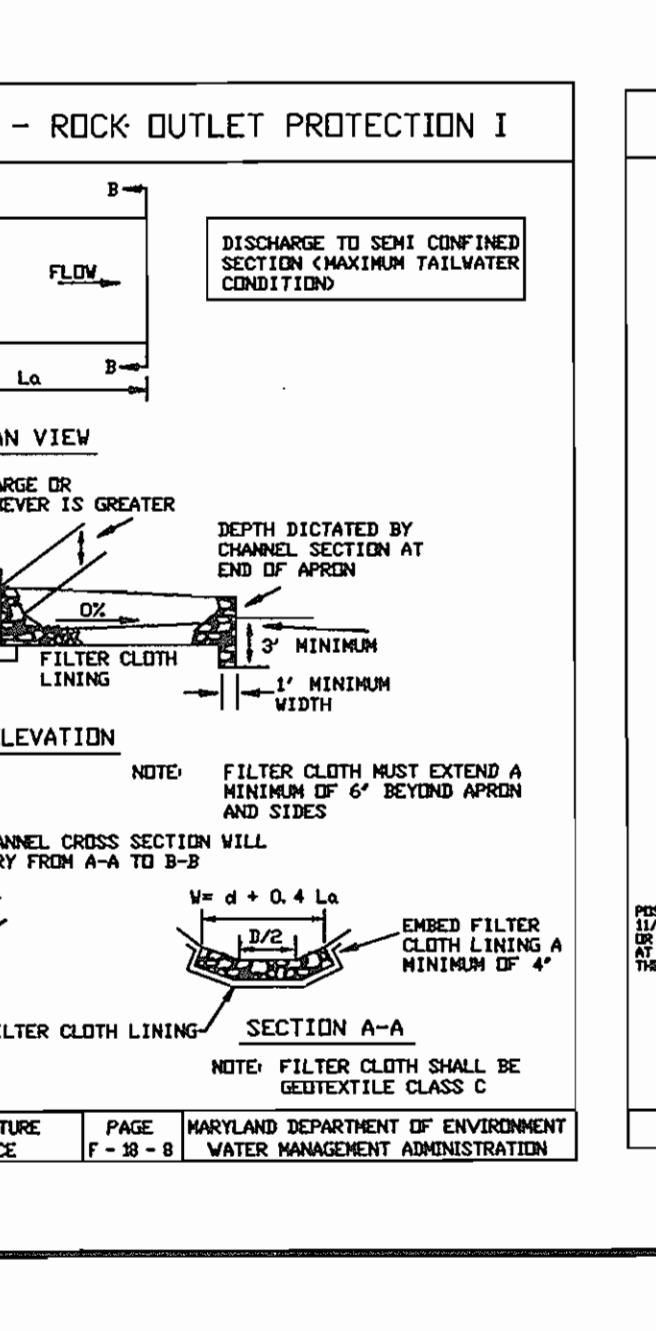
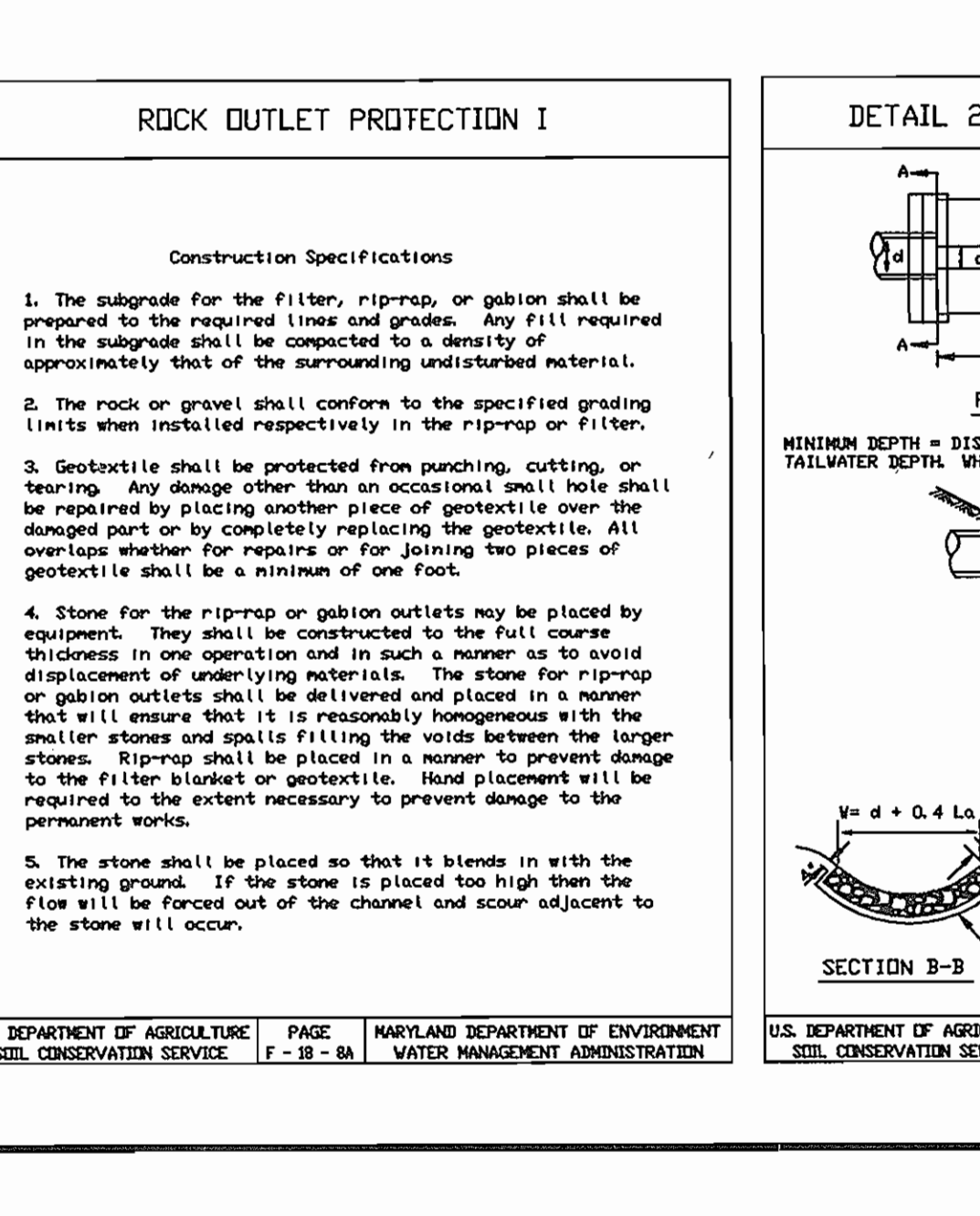
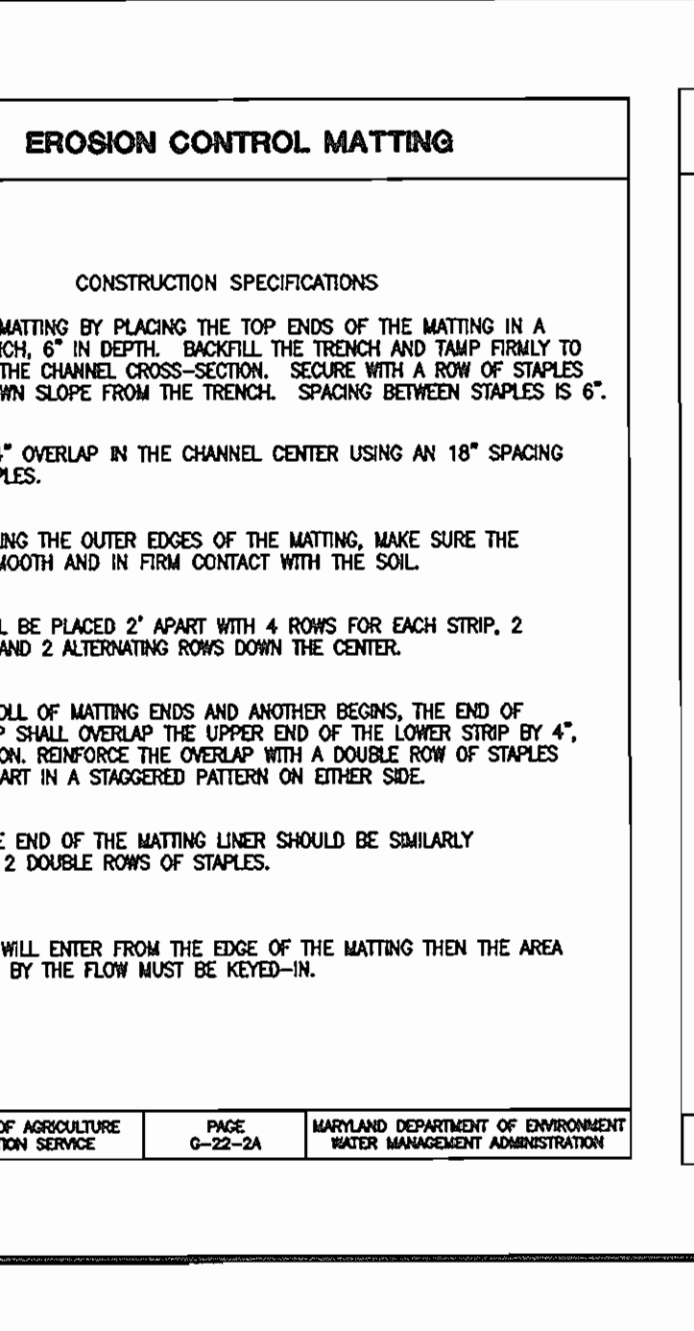
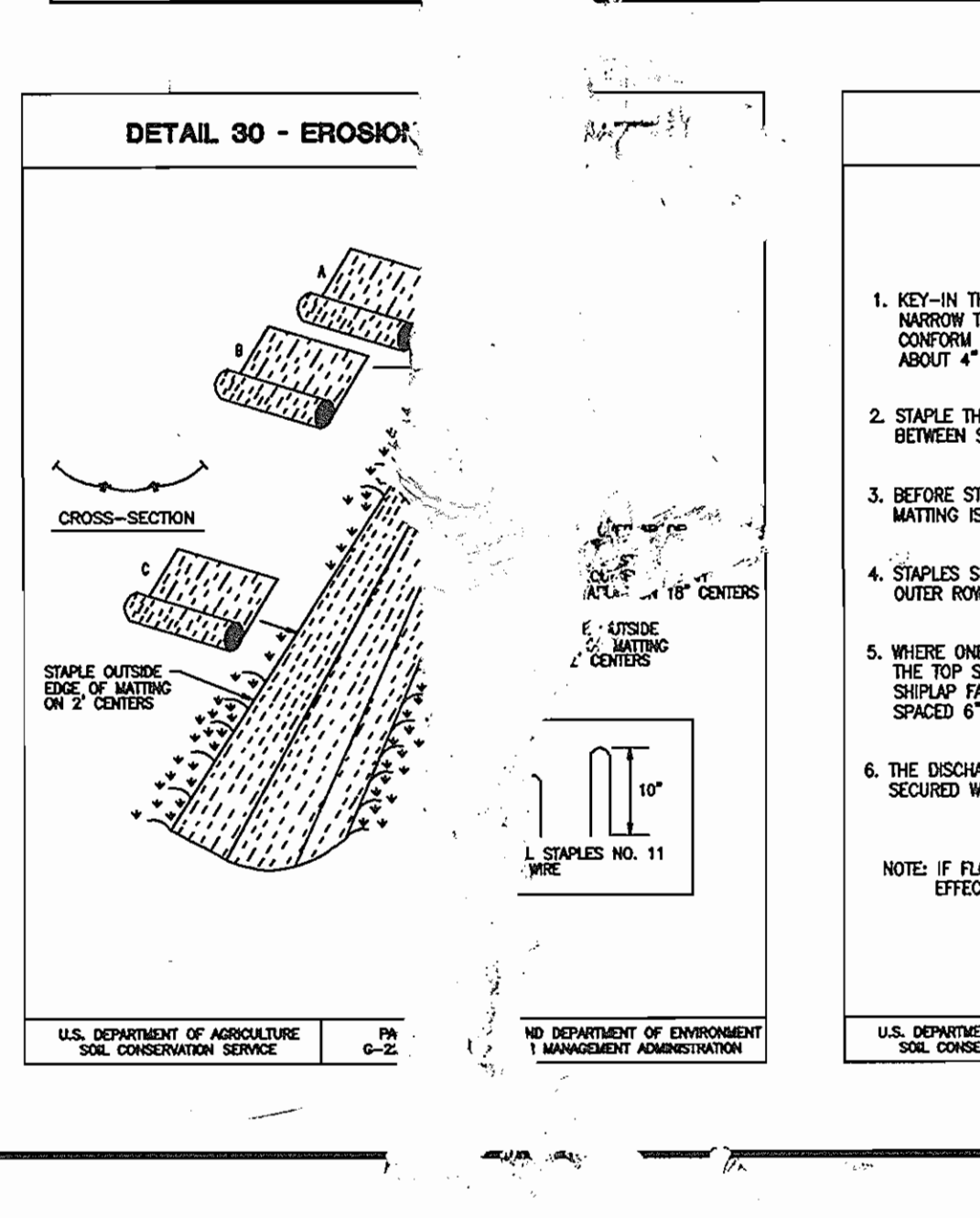
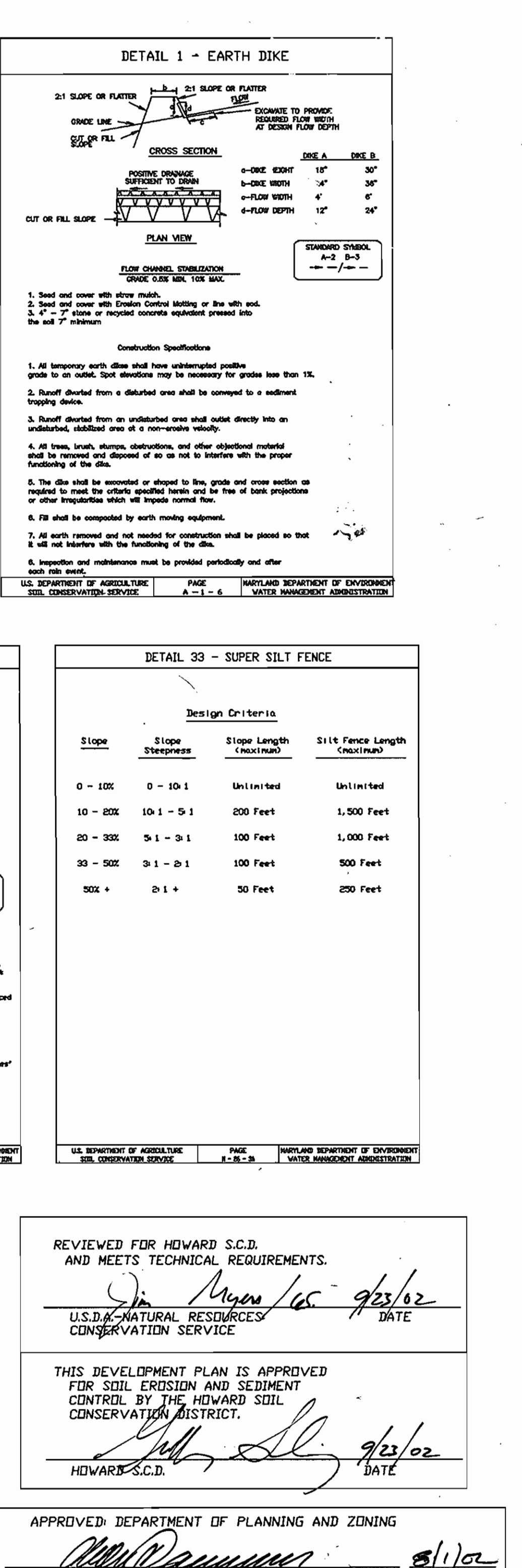
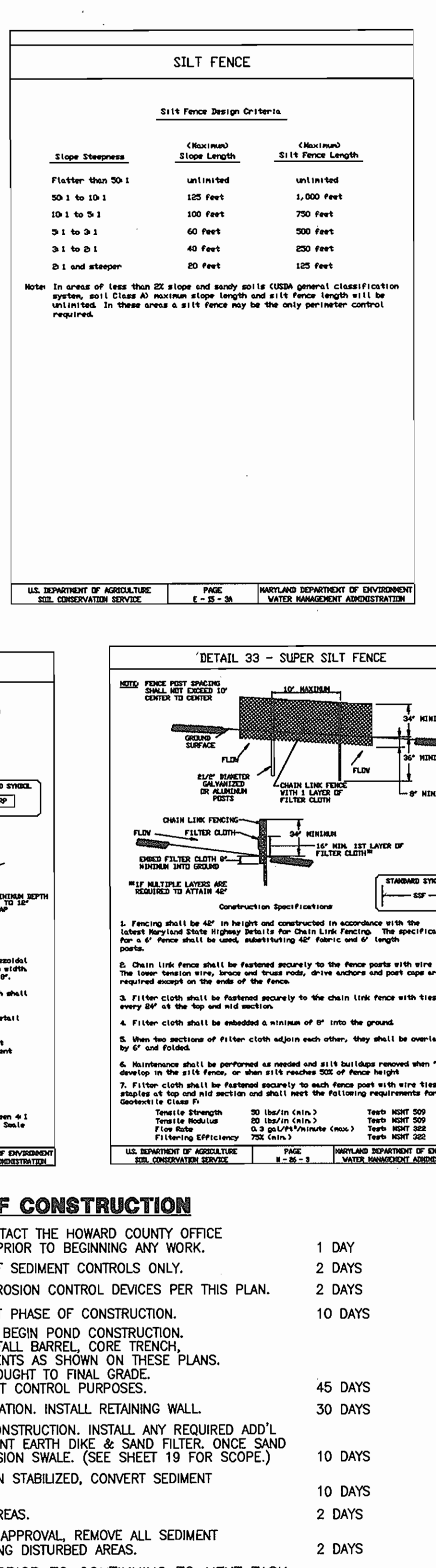
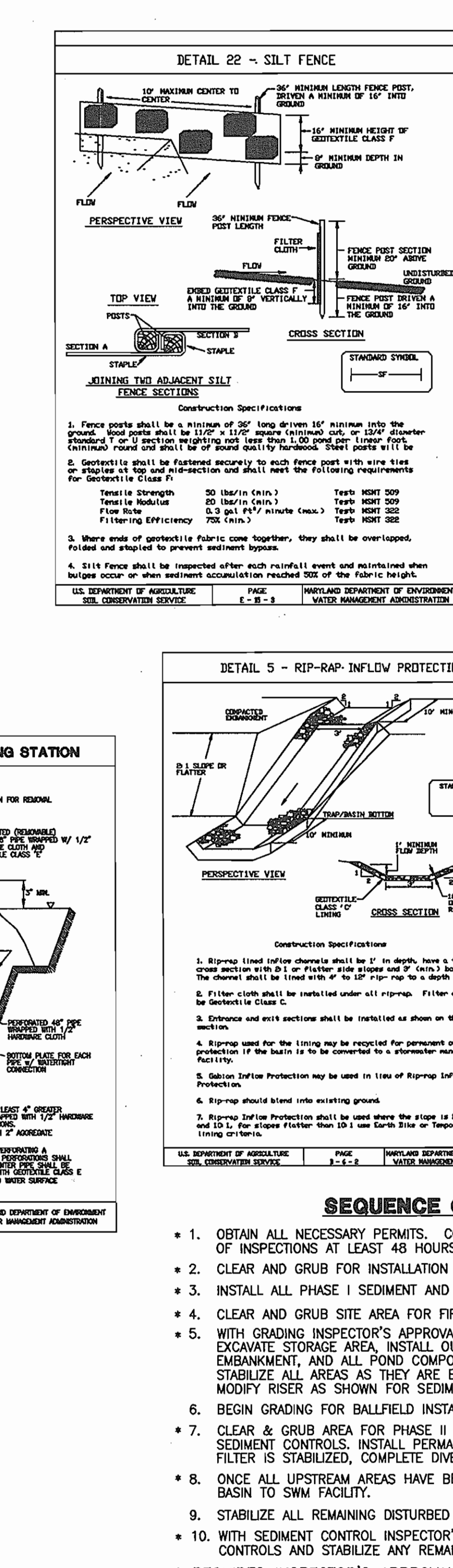
SDP-01-69

STANDARDS AND SPECIFICATIONS FOR TOPSOIL DEPOSITION. PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF VEGETATIVE COVER. PURPOSE: TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH...

STANDARDS AND SPECIFICATIONS FOR LAND GRADING. DEPOSITION: RESHAPING OF THE EXISTING LAND SURFACE IN ACCORDANCE WITH A PLAN AS DETERMINED BY ENGINEERING SURVEY AND LAYOUT. PURPOSE: THE PURPOSE OF A LAND GRADING SPECIFICATION IS TO PROVIDE FOR EROSION CONTROL AND VEGETATIVE ESTABLISHMENT...

VEGETATIVE STABILIZATION. PERMANENT AND TEMPORARY EROSION CONTROL. I. SITE PREPARATION: PERMANENT OR TEMPORARY VEGETATION SHALL BE ESTABLISHED WITHIN SEVEN (7) DAYS OF THE SURFACE OF ALL SEEDING CONTROL PRACTICES...

VEGETATIVE STABILIZATION. II. SOIL TESTS AND ANALYSIS: SOIL TESTS SHALL BE MADE ON SITES OVER FIVE ACRES TO DETERMINE THE EXACT REQUIREMENTS FOR BOTH LIME AND FERTILIZER...



SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	PERIMETER A	PERIMETER B
LANDSCAPE TYPE- NON-RESIDENTIAL	C	D
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	477'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	N/A	N/A
NUMBER OF PLANTS REQUIRED		
PERIMETER A	477 L.F.	
SHADE TREES	12 SHADE TREES	
EVERGREEN TREES	24 EVERGREENS	
PERIMETER B		30 L.F.
SHADE TREES		03 SHADE TREES
EVERGREEN TREES		9 EVERGREENS
NUMBER OF PLANTS PROVIDED		
SHADE TREES	12 SHADE TREES	5 EVERGREEN TREES
EVERGREEN TREES	24 EVERGREEN TREES	SEE NOTE*
SHRUBS (0:1 SUBSTITUTION)		

PLANT LIST THIS SHEET ONLY						
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENTS
SHADE TREES						
T-1	12	Acer saccharum 'Green Mountain'	Green Mountain Sugar Maple	5'-6" Ht.	Cont.	
EVERGREEN TREES						
E-1	24	Pinus strobus	Eastern White Pine	6"-7" Ht.	B&B	

CURVE TABLE- PARCEL 345						
C5	15°09'01"	350.99'	92.81'	S32°54'05"W	92.54'	46.68'

LINE TABLE- PARCEL 345		
LINE	LENGTH	BEARING
L1	62.04	S52°24'42"E
L2	652.38	N39°04'39"E
L3	77.38	N50°55'21"W
L4	186.48	N40°20'47"E
L5	269.17	N51°09'13"W
L6	6.41	S48°01'17"W
L7	60.12	S51°57'49"W
L8	37.74	S33°22'46"W
L9	1.63	S03°54'31"W
L10	53.62	S05°19'43"W
L11	82.13	S05°19'43"W
L12	101.90	S51°14'44"E
L13	66.61	S33°53'34"E
L14	94.11	S30°35'15"W
L15	76.79	S51°19'34"E
L16	98.80	S38°06'47"W
L17	109.45	S38°06'47"W
L18	16.86	N53°00'15"W
L19	107.44	S37°00'51"W
L20	104.87	S37°00'15"W
L21	36.18	S37°00'15"W

*NOTE: 1 EVERGREEN TREE HAS BEEN SUBSTITUTED IN-LIEU OF THE 03 SHADE TREE REQUIRED.

CAROL LYN JOHNSON
LOT 5
6271/519

ROBERT & DEBRA THURMAN
LOT 4
5466/367

DALE MAISEL
LOT 3
6271/513

JEFFREY & JAQUELINE MAISEL
LOT 2
6271/527

JEFFREY & JAQUELINE MAISEL
LOT 1
6271/527

EX. PRIMARY SCHOOL
SDP-01-69

LAND OF
GECS, LLC
6099/395
TAX MAP 28 PARCEL 345
(3.62 ACRES)

PRESERVATION PARCEL "B" 89,028 SQ.FT.
EASEMENT TO BE HELD BY
HOWARD COUNTY, MARYLAND AND MAISEL
PROPERTY HOMEOWNERS ASSOCIATION
PLAT F-00-117

FOREST CONSERVATION
EASEMENT #2
(3.193 ACERS) PLAT #15507

LEGEND

- 2' CONTOUR LINE
- 10' CONTOUR LINE
- - - EX. PROPERTY LINE
- - - EX. ADJACENT PROPERTY LINE
- - - EX. BUILDING
- - - EX. EDGE OF PAVING
- - - EX. FENCE LINE
- - - EX. TREE LINE
- - - EX. TREES/SHRUBS
- - - EX. SEPTIC RESERVE AREA
- - - EX. STREAM CENTER LINE
- - - EX. EASEMENT LINE
- - - EX. WETLAND LINE

NOTES:

1. [Symbol] EXISTING GRAVEL TO BE REMOVED 2,771 ± S.F.
2. [Symbol] PROPOSED GRAVEL (INCLUDES ENCLOSURE) 1,836 ± S.F.

PURPOSE STATEMENT

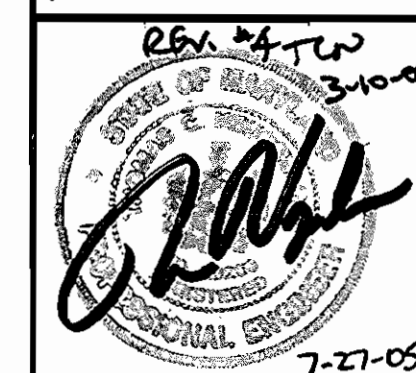
THE PURPOSE OF SHEETS 24 & 25 IS TO PROVIDE ADDITIONAL PLANS AND DETAILS FOR RED-LINE REVISION #2 TO SDP-01-69. REVISIONS PER THE RED-LINE INCLUDE AN ADDITIONAL DUMPSTER PAD WITH SCREENING WALL, ADDITIONAL GRAVEL FOR TRUCK MOVEMENT AND ADDITIONAL PERIMETER LANDSCAPING FOR PARCEL 345.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 7/19/02
DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK
[Signature] 7/19/02
DATE
CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] 7/19/02
DATE
DIRECTOR, DEPARTMENT OF PLANNING AND ZONING



MORRIS & RITCHIE ASSOCIATES, INC.
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS
9090 JUNCTION DRIVE, SUITE 9
ANNAPOLIS JUNCTION, MARYLAND 20701
(410) 782-8782 or (301) 778-1690
FAX (410) 782-7395



GLENELG COUNTRY SCHOOL
STORMWATER MANAGEMENT
REVISED SITE DEVELOPMENT PLAN
SITE PLAN-PARCEL 345
TAX MAP 22, GRID 22, PARCEL 146
FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
7/19/02	SEPTIC SYSTEM MODIFICATIONS. REVISED SWM FACILITY.	12189
	ADDED FIELD & REVISED FOREST CONSERVATION AREAS.	SCALE: 1" = 30'
7/05	ADDED DUMPSTER PAD & LANDSCAPING SCREENING WALL TO PARCEL 345.	DATE: 07/19/02
2/09	REVISED LANDSCAPING & ADDED 12 SHADE TREES FOR PERIMETER A LANDSCAPE REQUIREMENTS.	DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: TFM
		SHEET: 24 OF 25

PLANTING SPECIFICATIONS

PART 1 GENERAL:

- 1.01 DESCRIPTION:**
- A. Work consists of all labor, materials, equipment and services necessary for and incidental to the execution and completion of THE FINAL LANDSCAPE PLAN as indicated on the Drawings and specified herein.
 - B. Include:
 1. Layout.
 2. Furnishing of tree protection and planting materials.
 3. Preparation, planting operations, mulching and staking.
 4. Maintenance.
- 1.02 REFERENCES AND QUALITY ASSURANCE:**
- A. Landscape Contractors Association MD-DC-VA (LCA), Landscape Specification Guidelines, latest edition except where superseded by specific requirements herein.
 - B. American Association of Nurserymen (A.A.N.): American Standard for Nursery Stock, A.N.S.I. Z60.1, latest edition.
 - C. Nomenclature: In accordance with Hortus Third, latest edition, by the staff of the L. H. Bailey Hortorium, Cornell University.
 - D. Federal Specification: Q-P-166 as applicable to Pest Moss.
 - E. National Arborist Association, Standard for Pruning of Shade Trees, Guying of Shade Trees, Fertilizing Shade and Ornamental Trees and Pesticides Application Operations, latest edition.
 - F. Maryland Department of Transportation, State Highway Administration (MSHA) Standard Specifications for Construction and Materials, October 1993, as amended to date. Delete references to "Measurement and Payment".

- 1.03 STANDARD OF COMPARISON:**
- A. When requested by the Owner's Representative, the Contractor shall obtain approval of a "standard" of comparison, prior to the delivery of plant material to the site.
 1. Contact the Owner's Representative to schedule an inspection for approval of the "standards" for plant material to be installed at the project site.
 2. "Standards" shall be assembled at the project site for review and approval, or at the Contractor's principal business location, as determined by the Owner's Representative. Approved "standards" may be planted at the project site.

- 1.04 SUBMITTALS:**
- A. Source: Notify the Owner's Representative, in writing, of the source of all material at least ten (10) working days prior to delivery at the project site.
 - B. Samples and Certifications:
 1. If requested, a mulch sample shall be provided at the site for approval by the Owner's Representative (1 C.F. minimum).
 2. Submit certification of peat moss compliance with referenced specifications.

- 1.05 DELIVERY, STORAGE AND HANDLING:**
- A. Store plants that cannot be planted within 8 hours in a sheltered place. Water and maintain as required until planted.
 - B. Transport and handle plants so that foliage and roots are protected from breakage, sun and wind. Tops or roots of plants allowed to dry out or which have been damaged or disturbed root systems may be rejected.
 - C. B & B (balled and burlapped) plants: Firm, natural balls of soil, with size and depth of ball in accordance with A.A.N. Standards.

- 1.06 QUANTITIES AND SUBSTITUTIONS:**
- A. Quantities of plant material are based upon the plant lists shown on the Drawings.
 - B. Substitutions
 1. Bidders shall notify the Owner's Representative if specified plants are not available from sources within 100 miles of the project site, giving the names of all sources contacted.
 2. If an acceptable source cannot be located for the specified plants, the Owner's Representative will select a substitute and notify the Bidders of the approved substitution for the Bid to be based upon, or provide a source for the originally specified plant.
 3. Substituted plants shall be of the same size and condition as the original plant specified.

- 1.07 PROJECT CONDITIONS:**
- A. Planting Season:
 1. Primary planting season: September 15 to May 15.
 2. Other periods with written approval from the Owner's Representative.
 - B. Existing Conditions: Notify M&R Utility (1-800-257-7777), and the Owner's Representative prior to planting operations. Verify the location of underground utilities.

- 1.08 DEFINITIONS:**
- A. Diameter at Breast Height (DBH): The diameter of a tree measured at a point on the trunk 4.5 feet above the ground.
 - B. Initial Acceptance: Occurs when all plant material is in place in accordance with the specifications and approved by the Owner's Representative.
 - C. Maintenance Period: From initial acceptance of the plantings, and continuing thereafter for a period of 12 months.
 - D. Owner's Representative: The Landscape Architect or other Qualified Professional designated by the Owner or Developer of the Project.
 - E. Retention: The deliberate holding and protecting of existing trees, shrubs or herbaceous plants on the site.
 - F. Specimen Tree: A tree which exists on the project site prior to construction or planting having a 30 inch or greater DBH, or tree having 75 percent or more of the diameter of the current state or county champion tree of that same species.
 - G. Start of Planting: Installation of plant material into excavated pits or beds.
 - H. Final Acceptance: Occurs after Contractor has completed all outstanding items, as determined by the Owner's Representative, at the end of the maintenance period.

- 1.09 SURVIVAL REQUIREMENT AND REPLACEMENTS:**
- A. The minimum survival rate shall be 100 percent of the total number of trees and shrubs planted at the end of the 12-month maintenance period.
 - B. Replacement materials shall be the same size as the original plant material taking into account any growth that has occurred since original installation.
 - C. Methods of installation shall be identical to the original.

- 1.10 PENALTY FOR VIOLATION:**
- A. Immediately following the completion of construction and installation of the plantings, the owner or owner's representative will be notified for an inspection of the entire project site.
 - B. If, upon Final Acceptance Inspection, trees and other vegetation designated as retention plant material are found to be damaged or dead due to mechanical intrusion or construction activities associated with the landscape contractors installation and maintenance of the solid plan, then replacement equivalent will be required.

PART 2 PRODUCTS:

- 2.01 PLANTS:**
- A. Plant materials shall meet or exceed the requirements of A.A.N. standards, or as amended herein.
 - B. Plants shall be typical of the species and variety, and have a normal habit of growth with well established root systems.
 - C. Sound, healthy, vigorous, free from plant diseases, insect pests or their eggs and without suckers or evidence of suckering.
 - D. Trees and shrubs shall be freshly dug and nursery grown. They shall have been grown under climatic conditions similar to those in the locality of the project or properly acclimated to conditions of the project locality.
 - E. Plants cut back from larger sizes or pruned prior to delivery will not be accepted. All container grown plants shall be well rooted & established in the container in which they are sold.
 - F. Measurements: The caliper of deciduous trees (except seedlings and whips) shall be measured 6-inches above ground level for trees up to and including 4 inch caliper and 12 inches above ground level for material larger than 4 inch caliper. Seedlings and whips shall be measured at the root collar.

- 2.02 DECIDUOUS SHADE TREES:**
- A. Single straight leader, well branched, and symmetrical, without suckers or evidence of suckering, according to their normal habit.
 - B. Trees planted within five (5) feet of pedestrian ways, parking lots or roads shall be free from branches up to eight (8) feet in height from finish grade.

- 2.03 EVERGREENS:**
- Sheared evergreen plant material shall not be acceptable.

- 2.04 SHRUBS:**
- At least 75% of the individual branches or cones of a shrub shall be to the height specified.

- 2.05 HERBICIDES:**
- A. Contact herbicide shall be "Round-up" or approved equal.
 - B. Pre-emergence herbicide shall be "Snapshot" or approved equal.

- 2.06 TOPSOIL FOR AMENDING EXISTING SOIL:**
- A. General Requirements (only where required by details on the Drawings):
 1. Natural, friable sand loam topsoil which is free of subsoil, clay lumps, stones, stumps, roots or similar objects larger than 1-inch.
 2. Free of brush, objectionable weeds and litter or other substance which is harmful to plant growth.
 - B. In accordance with M.S.H.A. Item 920.01.02 for Furnished Topsoil if borrow topsoil is required from an off-site location.

- 2.07 FERTILIZER FOR POST PLANTING:**
- A. 5-10-5 (Plant food by minimum percentages.)

Total Nitrogen (N)	5
Available Phosphoric Acid (P2O5)	10
Soluble Potash (K2)	5
 - B. Fertilizer shall be slow release over a minimum 3 year period. Fertilizer shall be delivered to the site with formulas attached.

- 2.08 PEAT MOSS:**
- Baled sphagnum peat moss, Type I-A, conforming to Federal Specification Q-P-166a.

- 2.09 MULCH:**
- A. Mulch shall be the following as indicated on the Drawings.
 1. Shredded hardwood.
 2. Pine Straw.
 - B. Mulch shall have been prepared within the last four (4) months.

- 2.10 WATER:**
- Potable; if not available at the site from a public water supply, the Contractor shall provide water at no additional cost to the Owner.

- 2.11 ANTI-TRANSPIRANT:**
- Shall be the following or approved equal:
 - "Wit-Pruf"
 - Wit-Pruf Products Inc.
 - P. O. Box 469
 - Essex, CT 06426
 - (203) 767-7033
 - or approved equal.

- 2.12 ACCESSORIES:**
- A. Tree guying:
 1. Stakes: 2 inch x 2 inch rough sawn oak stakes, notched to hold wire, length as required to secure the tree.
 2. Wire: Galvanized steel wire, doubled.
 3. Sleeves: Nylon reinforced green vinyl hose.
 - B. Tree shelters, netting and stakes: Extruded two-walled polypropylene with ultra-violet stabilizer and anti-abrasion rim as manufactured by:
 - Tabex
 - P.O. Box 7097
 - Saint Paul, MN 55107
 - (612) 228-0535
 - or approved equal.
 - 1. Stake shall be oak, pointed, 1 inch x 1 inch x 3 feet nominal.
 - 2. Protective netting: Flexible plastic mesh capable of covering the top opening of the tube to prevent entry by birds.

PART 3 EXECUTION:

- 3.01 INITIAL INSPECTIONS:**
- A. Pre-construction meeting:
 1. Prior to the beginning of any clearing, grading or disturbance of the site, a meeting at the project site shall be held with the Contractor and Owner's Representative.
 2. The following items, and others as deemed necessary, will be reviewed as applicable to the Project:
 - a) Staked limits of required retention areas and protection fencing, proposed limits of clearing and grubbing, the proposed location of sediment control devices, and the sequence of operations.
 - b) Staking and flagging shall be completed by the Contractor prior to the pre-construction meeting.
 - c) Designated adjustments to the proposed limits and locations of items reviewed in the field during the pre-construction meeting shall be incorporated prior to beginning construction.
 - B. Pre-planting meeting:
 1. Prior to the beginning of planting operations, a meeting shall be held at the project site with the Contractor and Owner's Representative to review the following, as applicable to the project:
 - a) Staked limits, of proposed planting areas, completed prior to the meeting.
 - b) Areas to receive selective application of herbicides prior to planting, if applicable.
 - c) Proposed location of temporary and permanent fencing.
 - d) Proposed schedule, sequence of planting operations and other requirements.

- 3.02 PREPARATION:**
- A. Tree protection fencing, signage and other pre-construction activities noted on the Drawings for retention areas shall be installed prior to any on-site clearing or grading operations.
 - B. Additional temporary, and permanent fencing, shall be installed in conjunction with or prior to planting operations as shown on the Drawings.
 - C. Plant Locations: As shown on the Drawings, to dimensions if shown, or as detailed if not specifically labeled. Locations subject to review by the Owner's Representative prior to planting.
 - D. Utilities: The Contractor shall locate existing and proposed utilities prior to excavation of planting holes.

- 1. If a conflict is identified between the location of utilities and proposed planting locations, the Owner's Representative shall establish an alternate location for plants as required to avoid the conflict.
- 2. Bidders shall notify the Owner's Representative of potential conflicts identified prior to submission of a Bid.
- E. No plant material shall be installed until the Owner's Representative has approved the finish grade of areas to receive planting.

- 3.03 EXCAVATION:**
- A. Undersized: Excavate and remove surplus materials encountered, without additional cost to the Owner. Retain only sufficient soil to form soil wells as shown on the Drawings. Disposal of surplus material may be on-site if approved by the Owner's Representative.

- 3.04 PLANTING PROCEDURES:**
- A. Do not plant when ground is frozen or excessively wet.
 - B. Set plants straight and plumb and at such a level that after settlement the first lateral root is flush with the adjacent ground surface.
 - C. When B&B or container plants are set, planting soil shall be carefully tamped around the base of the balls to prevent voids. All burlap, rope, wires, etc., shall be removed from the tops of balls. Plastic/nylon cords or cloth shall not be left in place on balled materials.
 - D. Backfill plants and tamp to two-thirds depth of pit and thoroughly water before bringing backfill up to proper grade. Thoroughly water the plant again after the soil well has been completely formed in-place.
 - E. Wells Around Trees and Shrubs: After planting is complete, form a soil well around designated plants, extending to the outer limit of the plant pit in accordance with the planting details shown on the Drawings.
 - F. Designated Planting Beds: All vegetative growth shall be removed to a sufficient depth to insure a weed-free bed. Till the existing soil to a depth of 8-inches throughout the designated bed areas. The edge of all planting beds shall be cut vertically and the soil recessed within 1 foot of the bed edge so that the mulch is flush with adjacent grade when the installation has been completed.

- 3.05 MULCHING:**
- A. Plants and beds shall receive a 2 to 4 inch cover of mulch. Mulch shall be installed within 8 hours after planting has been completed.
 - B. Mulch, surrounding planting mass areas, shall provide a uniform and contiguous surface, and appearance between and around all plant material, buildings and paved areas.

- 3.06 STAKING, WRAPPING AND GUYING:**
- A. Stake trees, which require staking as shown on the Drawings, during the same day as planting.
 1. Guying shall be in accordance with the Details.
 2. Stakes shall be securely driven in ground and plants guyed to provide and maintain adequate support.

- 3.07 PRUNING AND ANTI-TRANSPIRANT APPLICATION:**
- A. Pruning: Any broken or damaged branches shall be removed. Damage, removal or pruning of tree leaders shall be cause for rejection.
 - B. Anti-transpirant: Deciduous plants, installed from May 1st to September 15th shall receive application in accordance with the manufacturer's recommendations.

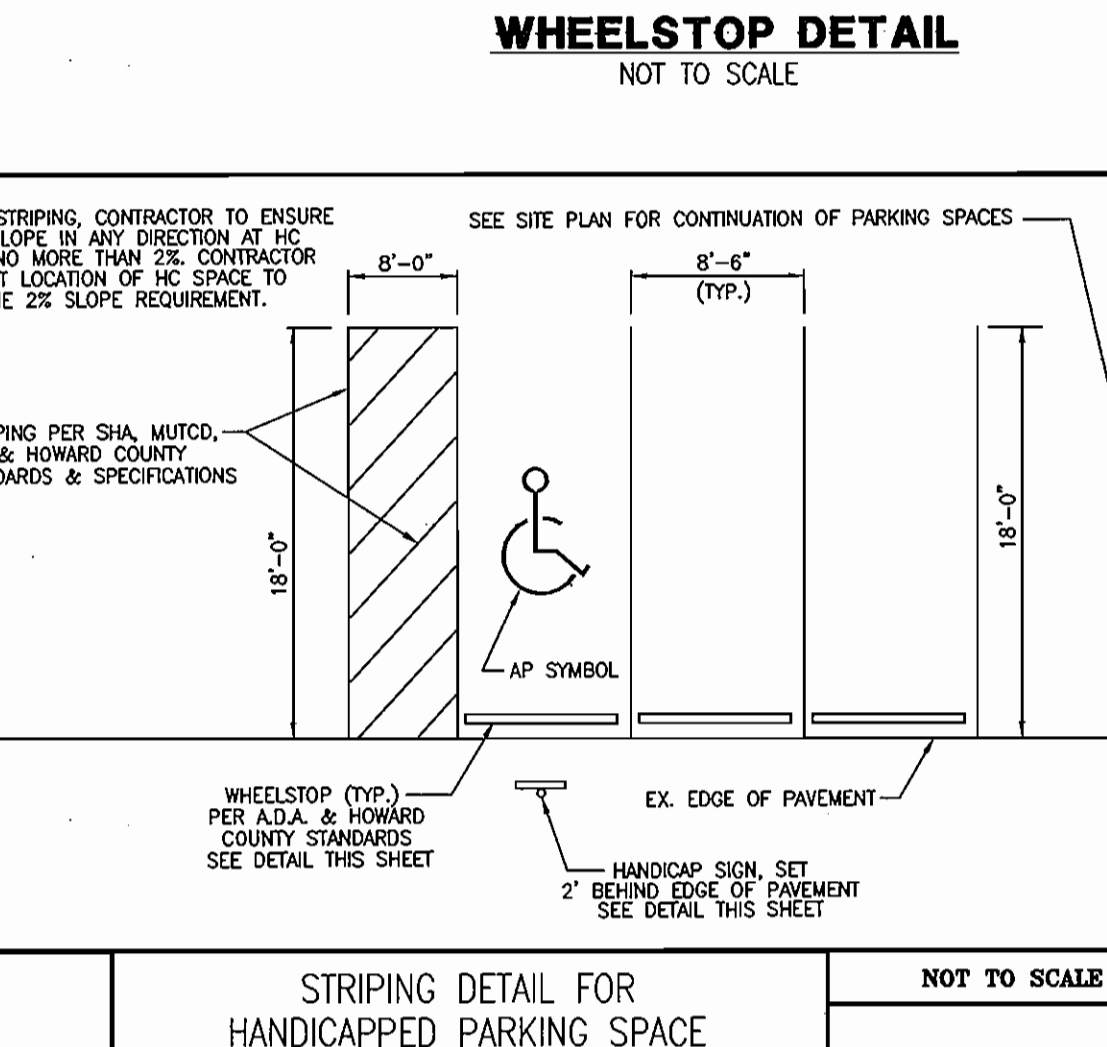
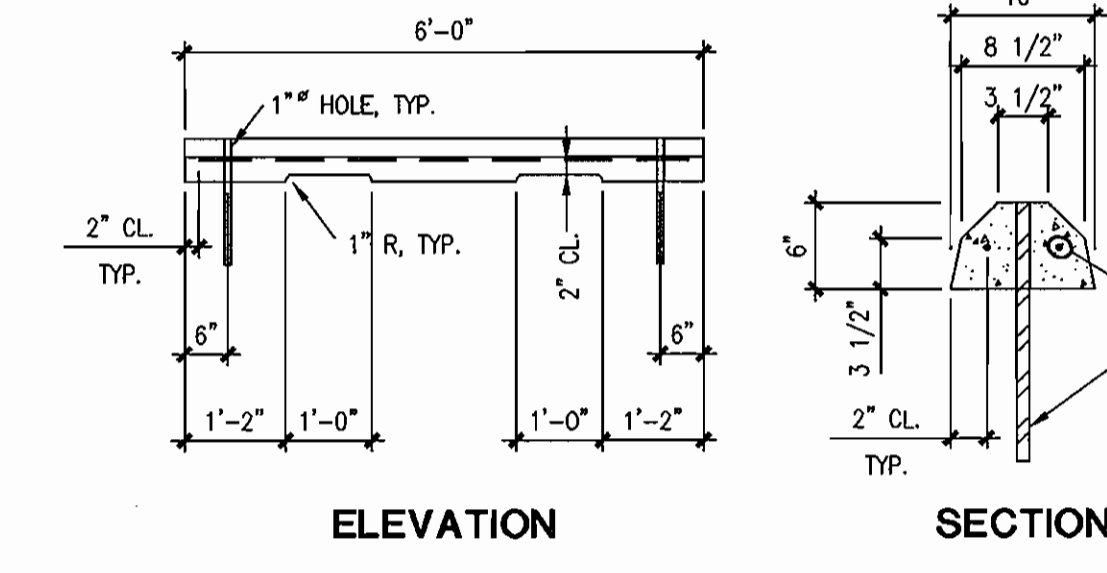
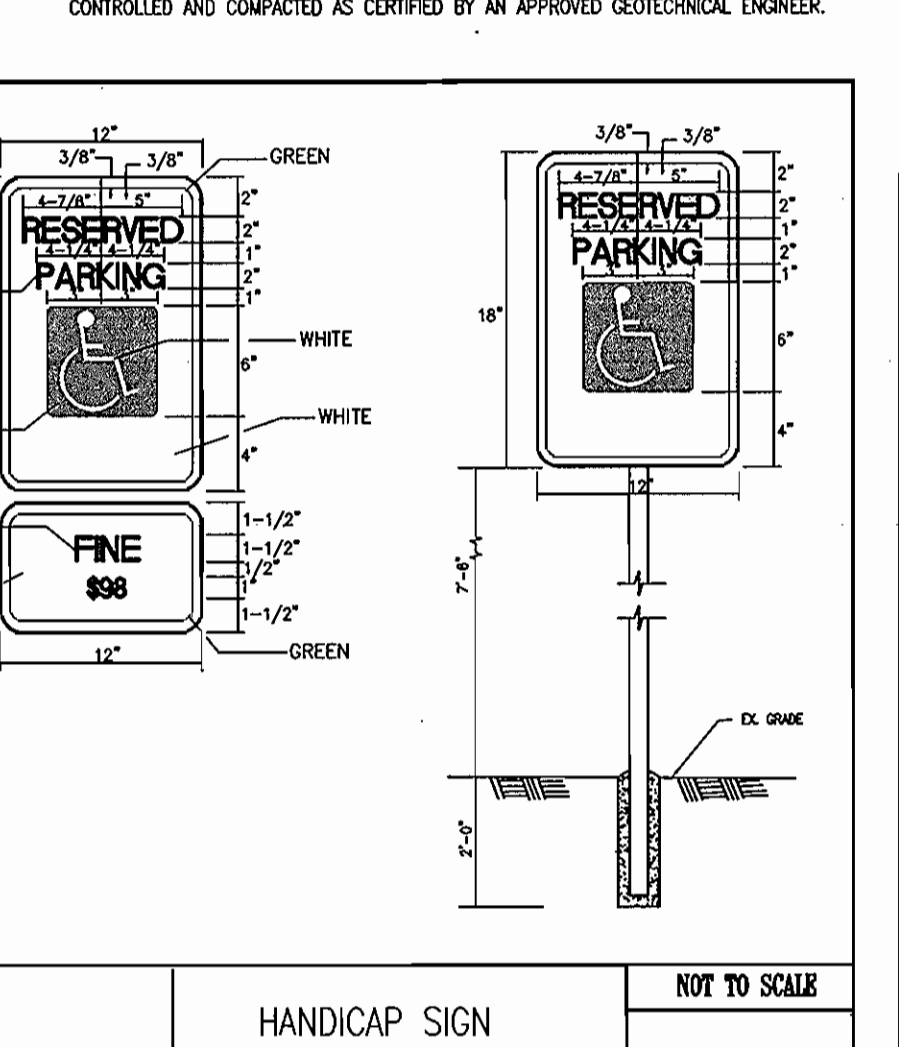
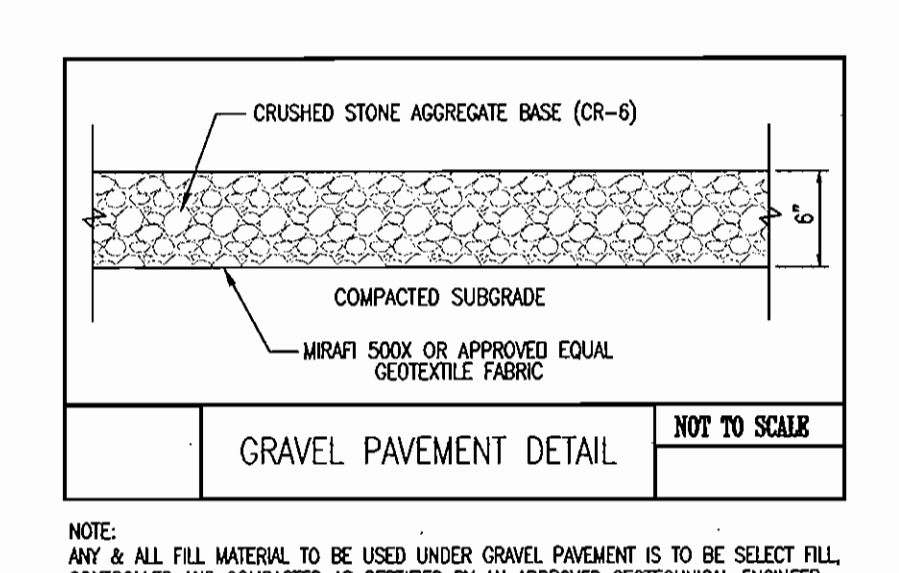
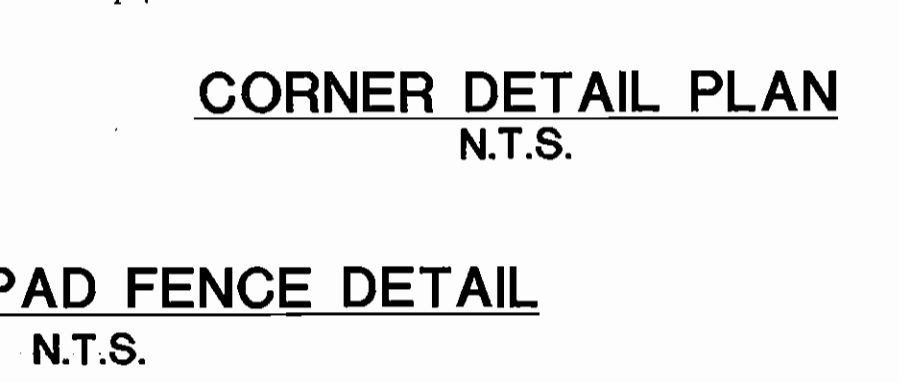
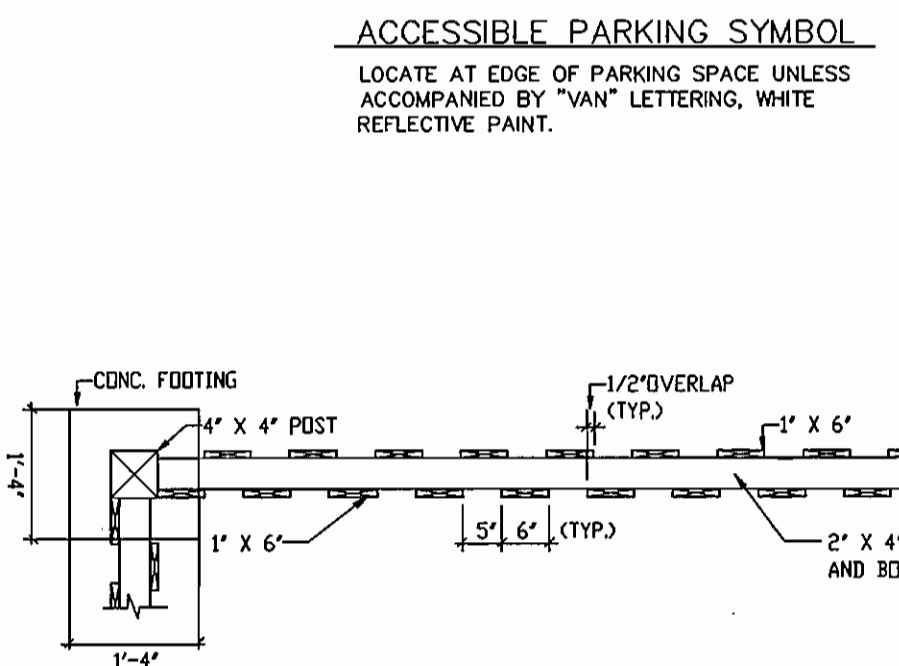
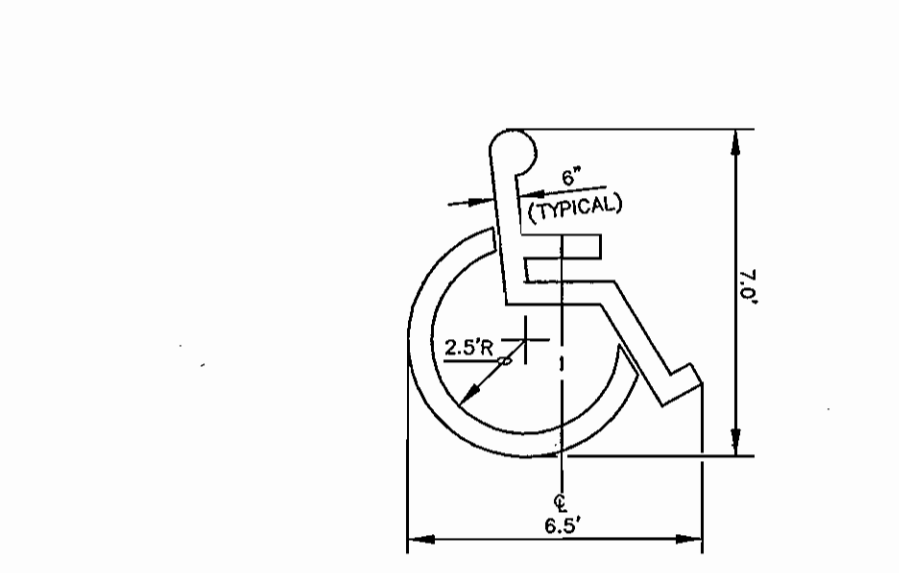
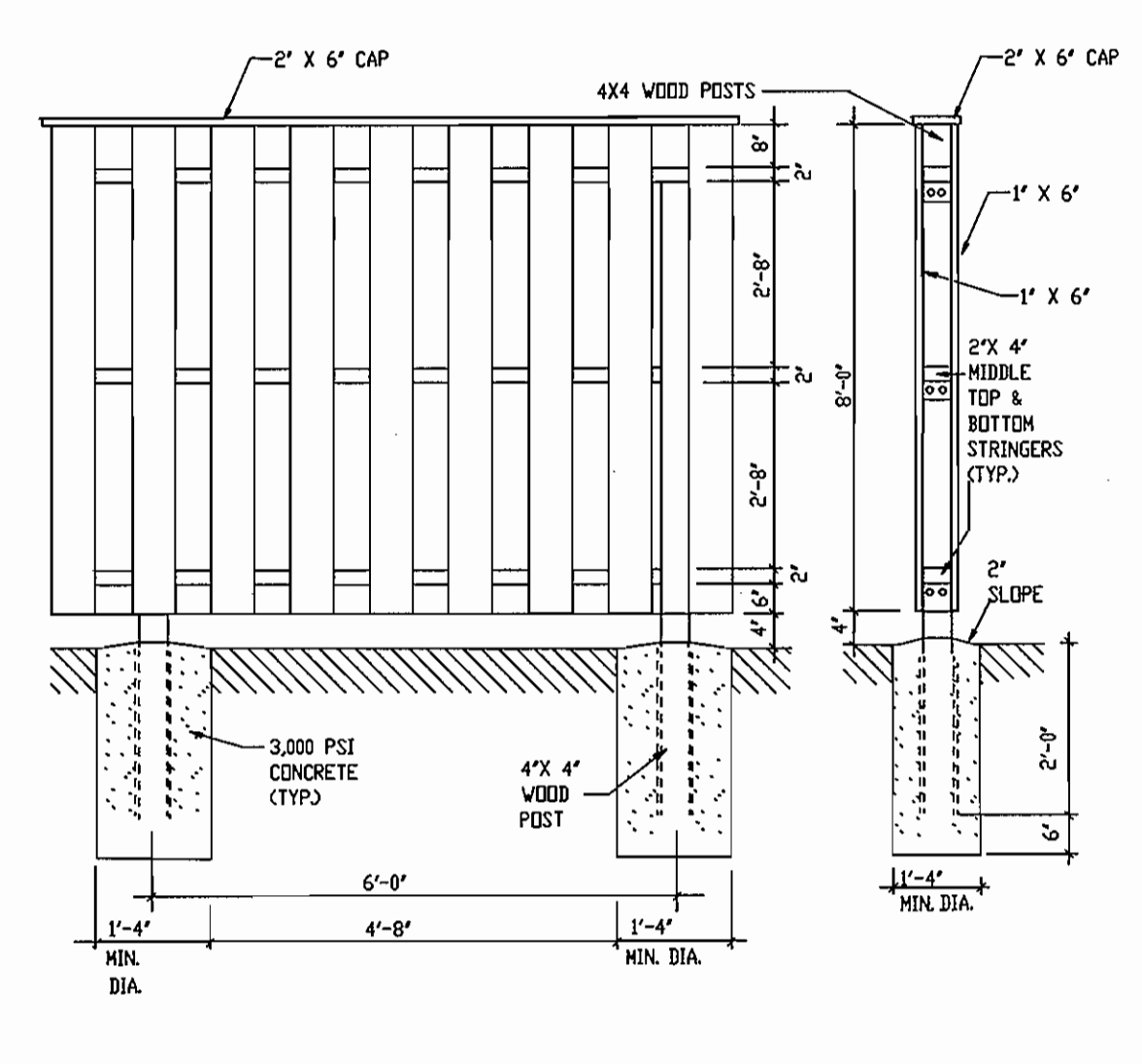
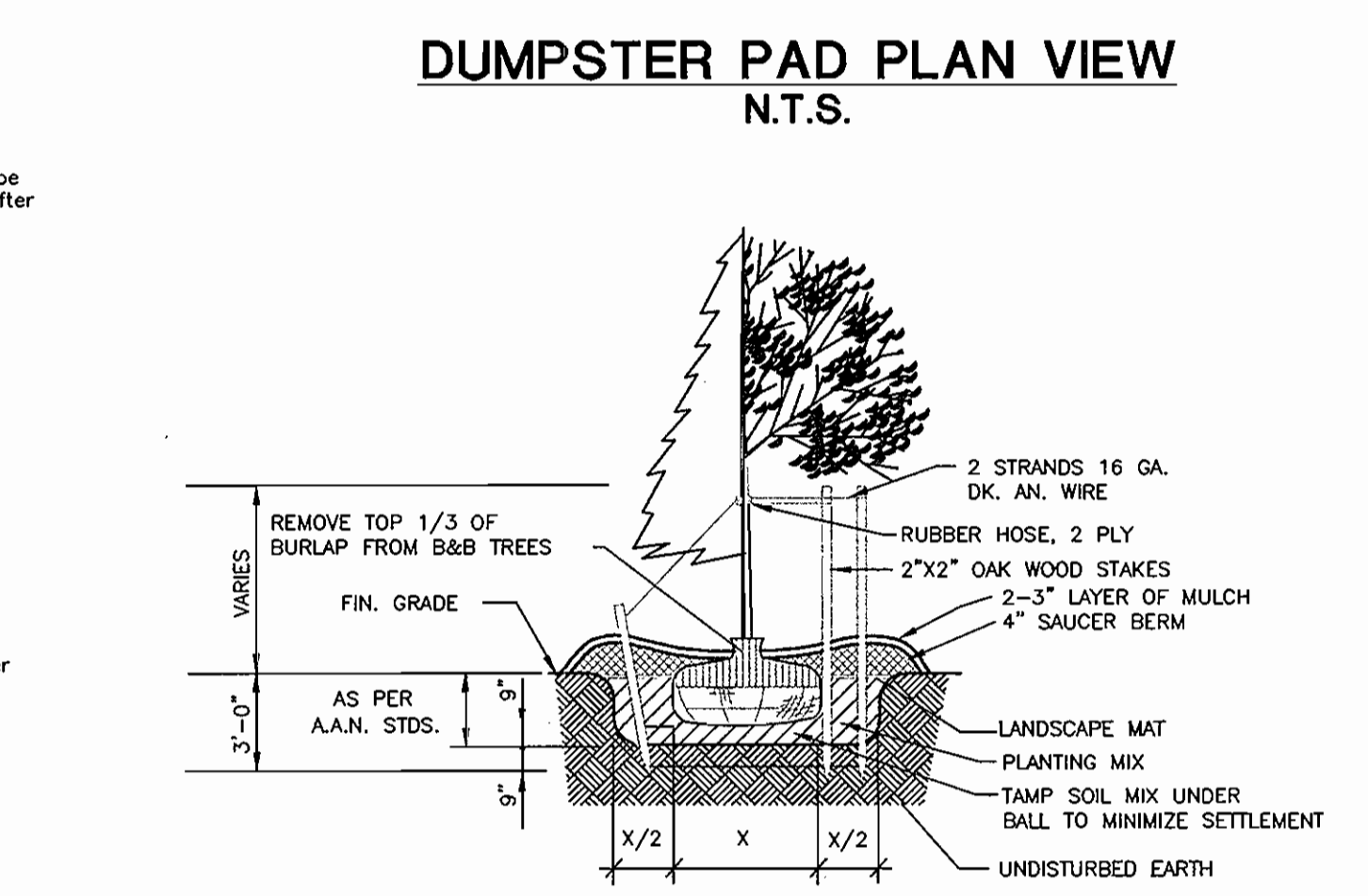
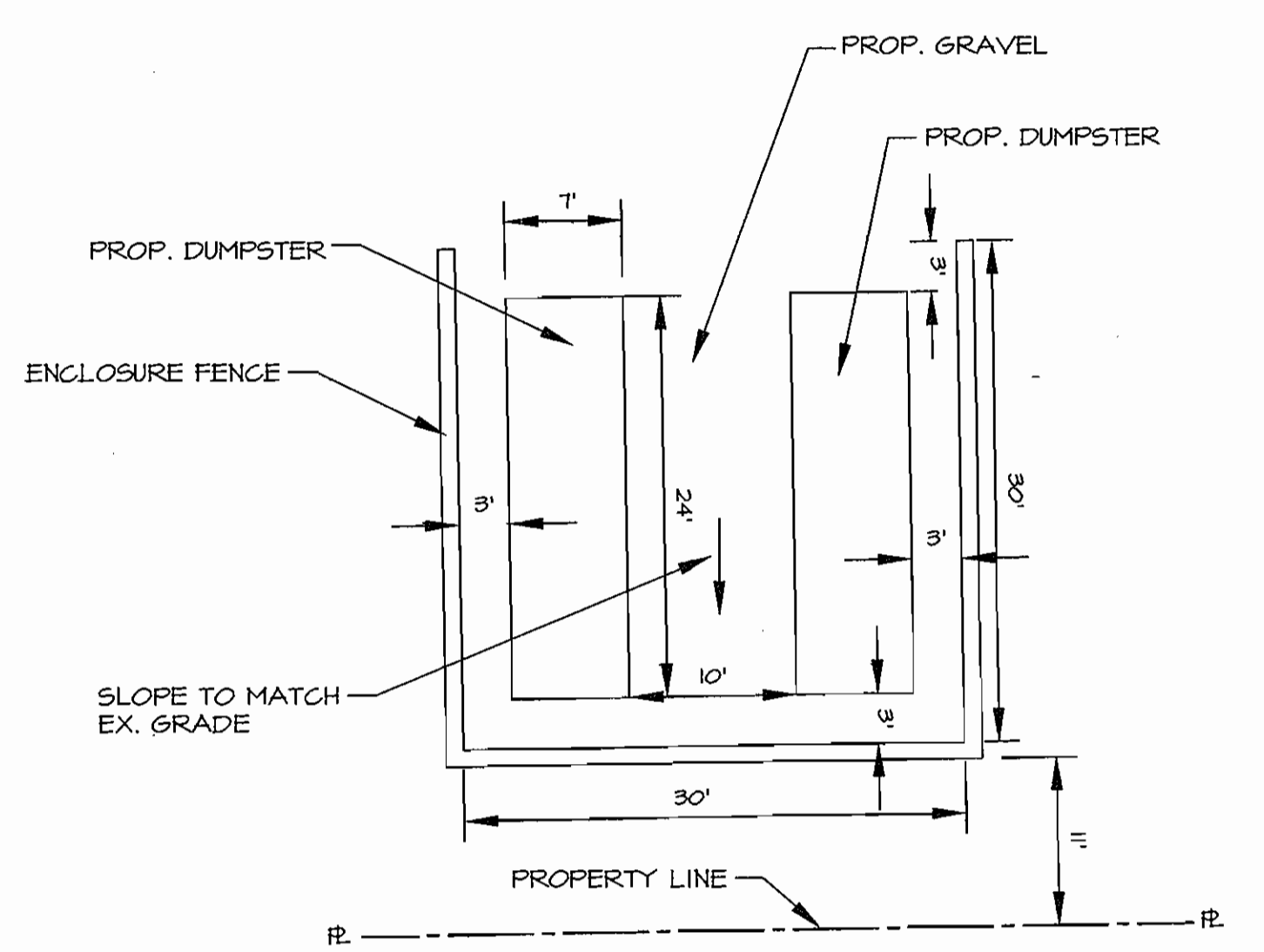
- 3.08 POST-PLANTING FERTILIZATION:**
- A. Notify Owner's Representative prior to fertilizing operations.
 - B. Approximately 1 year after planting, but prior to the maintenance agreement's expiration, the Contractor shall fertilize all plant material. Plant foliage shall be completely dry at the time of application. Fertilizer adhering to plant foliage after application shall be removed. Water thoroughly after application.
 - C. Rate of application shall be in accordance with the fertilizer manufacturer's recommendations of the following:
 1. Shrubs: 4 pounds of 5-10-5 per 100 square feet.
 2. Trees: 2 pounds of 5-10-5 per inch of caliper distributed uniformly in planting well.

- 3.09 CLEAN-UP:**
- A. Excess and waste materials shall be removed from the site before or upon completion of planting operations, or daily if required by the Owner's Representative.
 - B. Repair turf areas and other existing conditions damaged during planting operations, including regrading, seeding and mulching to the satisfaction of the Owner's Representative.

- 3.10 WARRANTY:**
- A. Contractor shall warranty all plant material for a period of one (1) full year after the date of substantial completion against defects, unsatisfactory growth, disease or death.

- 3.11 MAINTENANCE:**
- A. Contractor shall inspect and provide necessary services throughout the 12-month maintenance period.
 1. Watering as required for local conditions.
 2. Inspection for pests and disease shall be performed a minimum of two (2) times within the initial year, after spring leaf-out and at mid-summer, or more frequently if necessary to control problems.
 3. Weeding and removal of invasive plants shall be performed a minimum of four (4) times per year, during the first two weeks of the months of May, June, July and August.
 4. Plant material shall be re-mulched, just prior to the maintenance agreement's expiration, with a minimum 1-inch depth of new mulch.
 5. Fencing, signs, stakes and guys shall be tightened, repaired or replaced as necessary throughout the maintenance period in accordance with original details and installation requirements. Ensure trees to remain plumb and upright.
 - B. Remove and replace dead or damaged plant material to comply with the Minimal Survival requirement in accordance with item 1.09 above.
 - C. Notify Owner's Representative prior to initiating maintenance operations.

- 3.12 ACCEPTANCE:**
- Contractor must contact the Owner at least ten working days in advance to schedule acceptance inspection(s).



APPROVED: DEPARTMENT OF PLANNING AND ZONING

John Dammann 9/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

Mark A. Coyle 9/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark A. Coyle 9/20/05
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING DATE

PURPOSE STATEMENT

THE PURPOSE OF SHEETS 24 & 25 IS TO PROVIDE ADDITIONAL PLANS AND DETAILS FOR THE RED-LINE REVISION TO SDP-01-69. REVISIONS PER THE "RED-LINE" PROCESS INCLUDE AN ADDITIONAL DUMPSTER PAD AND LANDSCAPING SCREENING WALL FOR PARCEL 345.

MORRIS & RITCHIE ASSOCIATES, INC.
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS

9090 JUNCTION DRIVE, SUITE 9
 ANNAPOLIS JUNCTION, MARYLAND 20701
 (410) 792-9792 or (301) 776-1680
 FAX (410) 792-7395

GLENELG COUNTRY SCHOOL
 STORMWATER MANAGEMENT
 REVISED SITE DEVELOPMENT PLAN
 DETAILS-PARCEL 345

TAX MAP 22, GRID 22, PARCEL 146
 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
7/19/02	SEPTIC SYSTEM MODIFICATIONS, REVISED SWM FACILITY.	12189
	ADDED FIELD & REVISED FOREST CONSERVATION AREAS.	SCALE: 1" = 30'
07/05	ADDED DUMPSTER PAD & LANDSCAPING SCREENING WALL TO PARCEL 345.	DATE: 07/19/02
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: TFM
		SHEET: 25 OF 25