

**GENERAL NOTES**

1. ALL CONSTRUCTION AS SHOWN ON THESE PLANS IS TO BE CONDUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION VOLUME IV (OCT. 1990 AND ALL ADDENDA THEREON) UNLESS OTHERWISE NOTED.
2. THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THIS PLAN ARE BASED ON FIELD LOCATIONS SUPPLEMENTED WITH EXISTING UTILITY DRAWINGS, AND SHOULD BE VERIFIED BY THE CONTRACTOR TO HIS SATISFACTION PRIOR TO CONSTRUCTION. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING UTILITIES, AND ANY DAMAGE DONE TO THEM DUE TO CONSTRUCTION ACTIVITY SHALL BE REPAIRED IMMEDIATELY AT HIS OWN EXPENSE.
3. CONTRACTOR TO NOTIFY HOWARD COUNTY, DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION (410-313-1880) AT LEAST 24 HOURS P. TO STARTING CONSTRUCTION.
4. CONTRACTOR TO SCHEDULE PRECONSTRUCTION MEETING WITH HOWARD COUNTY, CONSTRUCTION INSPECTION DIVISION (410-313-1880) PRIOR TO STARTING CONSTRUCTION.
5. CONTRACTOR TO NOTIFY MISS UTILITY (1-800-257-7777) AT LEAST 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION WORK.
6. CONTRACTOR IS RESPONSIBLE FOR ALL SITE CONDITIONS, CONSTRUCTION REQUIREMENTS, AND SHALL CONFORM TO ALL STATE, FEDERAL, AND COUNTY CONSTRUCTION REGULATIONS. THE CONTRACTOR IS NOT RELIEVED OF RESPONSIBILITY SHOULD ANY REQUIRED ITEMS PERTAINING TO SITE CONSTRUCTION NOT BE INCLUDED ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR ALL ITEMS NECESSARY TO COMPLETE THE SITE IMPROVEMENTS AS SHOWN ON THESE PLANS.
7. ANY DAMAGE TO EXISTING UTILITIES, PAVEMENT, OR CURB AND GUTTER DUE TO CONSTRUCTION ACTIVITY OUTSIDE THE LIMITS OF DISTURBANCE IS TO BE REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- 7A. WHERE NECESSARY, THE CONTRACTOR SHALL TEST ALL EXISTING UTILITIES AT LEAST FIVE (5) DAYS PRIOR TO STARTING ANY WORK SHOWN ON THESE DRAWINGS.
8. CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY PROPERTY MONUMENTS, MARKERS, SIGNS, LIGHTS, OR ANY OTHER EXISTING SITE FEATURES DISTURBED DURING CONSTRUCTION.
9. ALL WORK SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE 1994 STANDARDS AND SPECIFICATIONS FOR FOUNDATION AND SEWERAGE SYSTEMS PUBLISHED JOINTLY BY THE WATER RESOURCES ADMINISTRATION, SOIL CONSERVATION SERVICE, AND STATE SOIL CONSERVATION COMMITTEE.
10. TOPOGRAPHY IS BASED ON FIELD RUN SURVEYS BY MORRIS & RITCHE ASSOCIATES, INC. DATED JANUARY 2002, AND SUPPLEMENTED WITH EXISTING AVAILABLE DESIGN PLANS.
11. THE SITE BOUNDARY, BEARINGS, AND COORDINATES SHOWN ARE BASED ON ELECTRONIC FILES OBTAINED FROM CLARK FINCHER AND SACKET, INC.
12. HORIZONTAL AND VERTICAL CONTROL BASED ON HOWARD COUNTY MONUMENTS NOS 22A AND 22HA.
13. NO 100-YEAR FLOODPLAIN EXISTS IN OR NEAR THE PROPOSED CONSTRUCTION AREA.
14. WATER IS PRIVATE WELL SUPPLY. SEWER IS PRIVATE ON-SITE SEPTIC.
15. NO WETLANDS EXIST IN OR NEAR THE PROPOSED CONSTRUCTION AREA.
16. SEE PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILES: SDP-02-126, SDP-01-69, SDP-07-07, SDP-85-76, SDP-82-101, SDP-80-144, SDP-78-15, BA 95-46-E, BA 99-51 E & V.
17. THE SUBJECT PROPERTY IS ZONED RR-DEO PER THE OCT. 18, 1993 COMPREHENSIVE ZONING PLAN.
18. FOREST STAND DELINEATION AND FOREST CONSERVATION PLAN APPROVED UNDER SDP-07-007. FOREST CONSERVATION AREAS OF RETENTION ARE 1.168 AC. AND 3.2043 AC FOR A TOTAL OF 4.3723 AC. DEED OF FOREST CONSERVATION EASEMENT AGREEMENT RECORDED IN LIBER 5340 FOLIO 689.
19. FOREST CONSERVATION AREAS WERE REVISED UNDER RED-LINE REVISION TO SDP-01-69, REVISED AREAS OF RETENTION ARE 1.196 AC, 3.891 AC, AND 3.183 AC FOR A TOTAL OF 10.150 AC. DEED OF FOREST CONSERVATION EASEMENT PLAN RECORDED AS PLAT #15007. FOREST CONSERVATION REQUIREMENTS FOR THE ENTIRE PROPERTY HAVE BEEN SATISFIED BY THIS PLAN.
20. NO CLEARING OF EXISTING FOREST CONSERVATION AREAS IS PROPOSED FOR THIS PROJECT.
21. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
22. A GEOTECHNICAL STUDY WAS CONDUCTED FOR THIS PROJECT BY GEO-TECHNOLOGY ASSOCIATES, INC. DATED DECEMBER 16, 2002.
23. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, STANDARD SPECIFICATIONS AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE INSTALLATION OF ANY FINAL PAVING.
24. TRENCH COMPACTOR FOR STORM DRAINS WITHIN ROADWAYS AND PARKING AREAS SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOL. IV, STANDARD NO. G-2.01.
25. ALL COMPACTED FILL SHALL BE IN ACCORDANCE WITH ASHTO T-180 REQUIREMENTS.
26. ALL EXTERIOR LIGHTING SHALL COMPLY WITH ZONING REGULATIONS SECTION 134.
27. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY ZONING AND LANDSCAPE DESIGN FINANCIAL SUPPORT FOR THE REPAIR & SHADE TREES AND 38 EVERGREENS IN THE AMOUNT OF \$8,100.00 IS PART OF THE DEVELOPER'S AGREEMENT.
28. BOARD OF APPEALS BA-99-51 E&V WAS GRANTED ON MAY 18, 2000 FOR THE SPECIAL EXCEPTION. THE SPECIAL EXCEPTION REQUESTED THE ENLARGEMENT OF AN EXISTING PRIVATE SCHOOL, AND A VARIANCE TO REDUCE THE REQUIRED 30' STRUCTURE AND USE SETBACK TO 0'. FOR THE IMPROVEMENTS ASSOCIATED WITH THE PROPOSED NEW PRIMARY SCHOOL, THIS PROJECT IS SUBJECT TO THE FOLLOWING CONDITIONS:
  1. THE SPECIAL EXCEPTION SHALL APPLY TO THE INCLUSION OF PARCEL 345 INTO THE SPECIAL EXCEPTION SITE, AND THE CONSTRUCTION OF IMPROVEMENTS AS DEPICTED ON THE SPECIAL EXCEPTION PLAN DATED NOVEMBER 8, 1999, AND TO NO OTHER STRUCTURES AND/OR USES.
  2. EXISTING VEGETATION SHALL BE AUGMENTED TO CREATE A TYPE C LANDSCAPE BUFFER ALONG THE LOT LINES OF PARCEL 345 THAT DO NOT ADJOIN PARCEL 146.
  3. ALL NEW LIGHTING SHALL COMPLY WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
  4. THE PETITIONER SHALL COMPLY WITH THE REQUIREMENTS OF THE BUREAU OF ENVIRONMENTAL HEALTH REGARDING SEWAGE DISPOSAL.
  5. THE PETITIONER SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, & COUNTY LAWS & REGULATIONS. IT IS THE INTENTION OF THIS PROJECT TO COMPLY WITH ALL APPLICABLE CONDITIONS OF THE SPECIAL EXCEPTION APPROVAL.
29. WATER USAGE FOR THE ENTIRE CAMPUS WILL COMPLY WITH THE STATE OF MARYLAND WATER APPROPRIATION AND USE PERMIT NUMBER 10756009 (04).
30. PER THE DECISION AND ORDER OF BA-99-51E&V, THE MAXIMUM STUDENT CAPACITY IS 782 TOTAL STUDENTS, AND MAXIMUM STAFF ALLOWANCE IS 133 PERSONS.
31. HQ-15 ON THE HOWARD COUNTY HISTORIC SITES INVENTORY IS LOCATED ON THE SITE, BUT IS NOT DIRECTLY IMPACTED BY THIS PLAN.

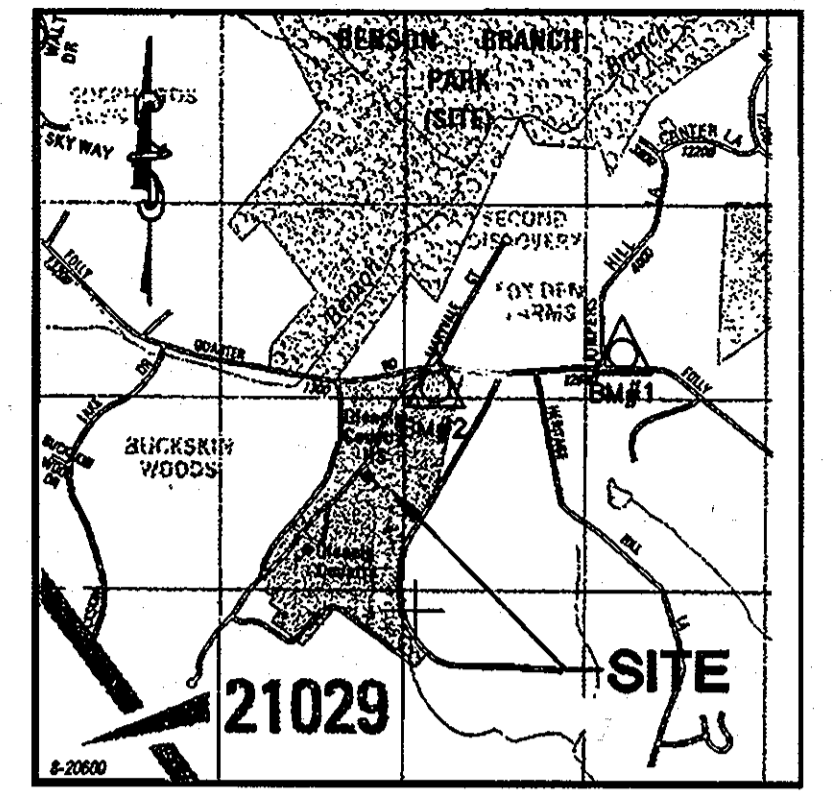
**SITE ANALYSIS**

- A. TOTAL PROJECT AREA (PARCEL 146): 80.67 ± ACRES.
- B. AREA OF PLAN SUBMISSION: SAME AS A.
- C. LIMIT OF DISTURBED AREA: 8.04 ± ACRES.
- D. PRESENT ZONING DESIGNATION IS: RR-DEO.
- E. PROPOSED SITE USE IS: SECONDARY SCHOOL, GYMNASIUM.
- F. GROSS FLOOR SPACE PROPOSED IS: 71,491 S.F.
- G. MAXIMUM NUMBER OF EMPLOYEES, STUDENTS: 366.
- H. NUMBER OF PARKING SPACES REQUIRED: 100 (1 SPACE/2 STUDENTS)
- I. NUMBER OF PARKING SPACES PROVIDED: 143 PAVED (INCLUDING 8 H.C.) (PARKING PROVIDED MEETS THE CONDITIONS OF THE SPECIAL EXCEPTION ORDER.) 28 UNPAVED 169 TOTAL PARKING SPACES
- L. OPEN SPACE ON SITE: 74.00 ACRES OR 91.7% OF GROSS AREA.
- N. BUILDING COVERAGE OF SITE: 0.822 ACRES OR 1.02% OF GROSS AREA.
- O. APPLICABLE DPZ FILE REFERENCES: SDP-02-126, SDP-01-69, SDP-07-07, SDP-85-76, SDP-82-101, SDP-80-144, SDP-78-15, BA 95-46-E, BA 99-51 E & V.
- P. ANY OTHER RELEVANT INFORMATION: N/A.

**GROSS BUILDING SQUARE FOOTAGE TABULATION**

EXISTING GOULD BUILDING	26,615 S.F.
PROPOSED GOULD BUILDING ADDITION	2,534 S.F.
PROPOSED ANNEX	22,856 S.F.
PROPOSED GYMNASIUM	46,101 S.F.
<b>TOTAL NEW PROPOSED BUILDING AREA</b>	<b>71,491 S.F.</b>

# GLENELG COUNTRY SCHOOL UPPER SCHOOL ADDITION SITE DEVELOPMENT PLAN

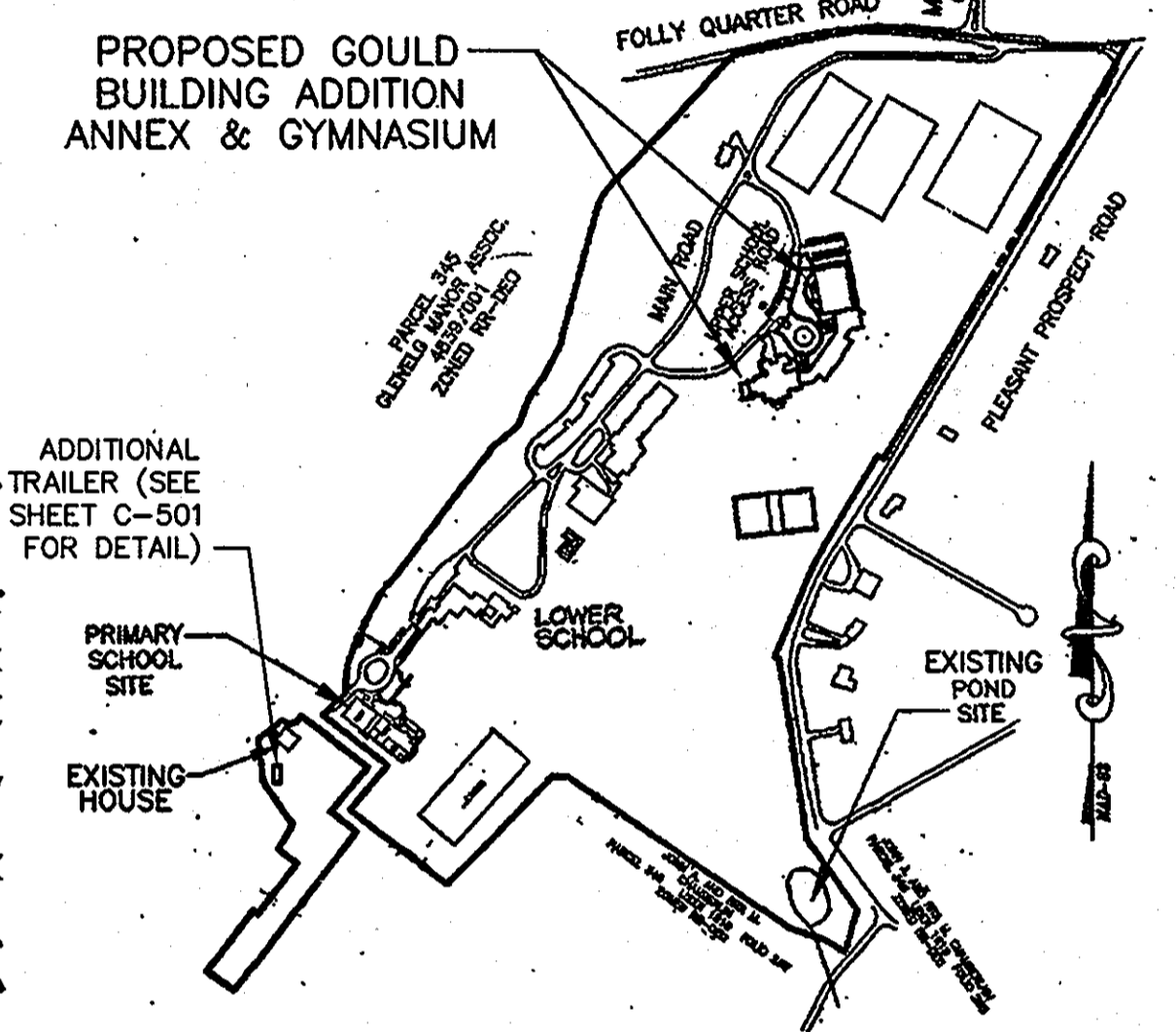
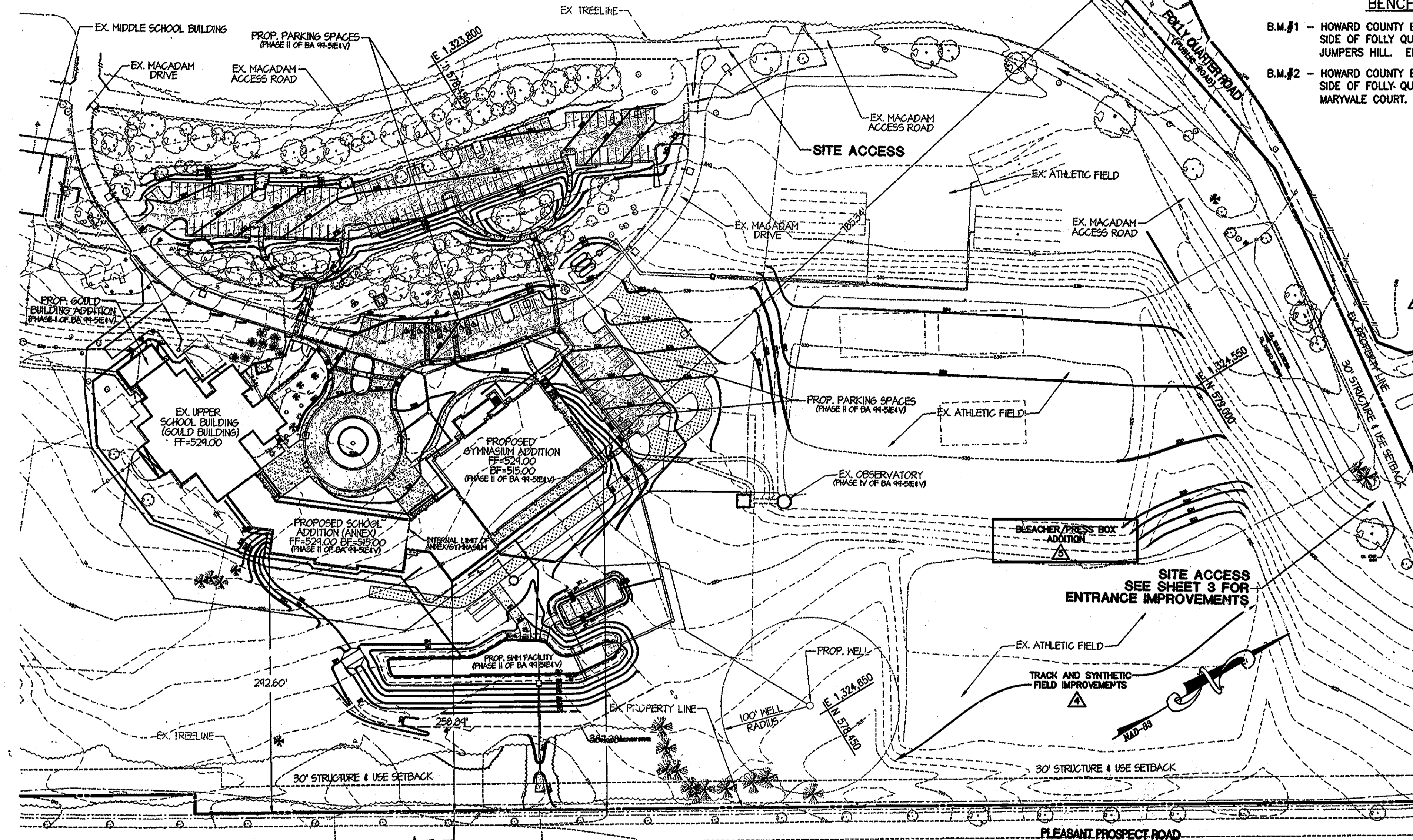


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VICINITY MAP SCALE: 1"=2000'  
MAP BOOK (ADC) PAGE 10 GRID B-12

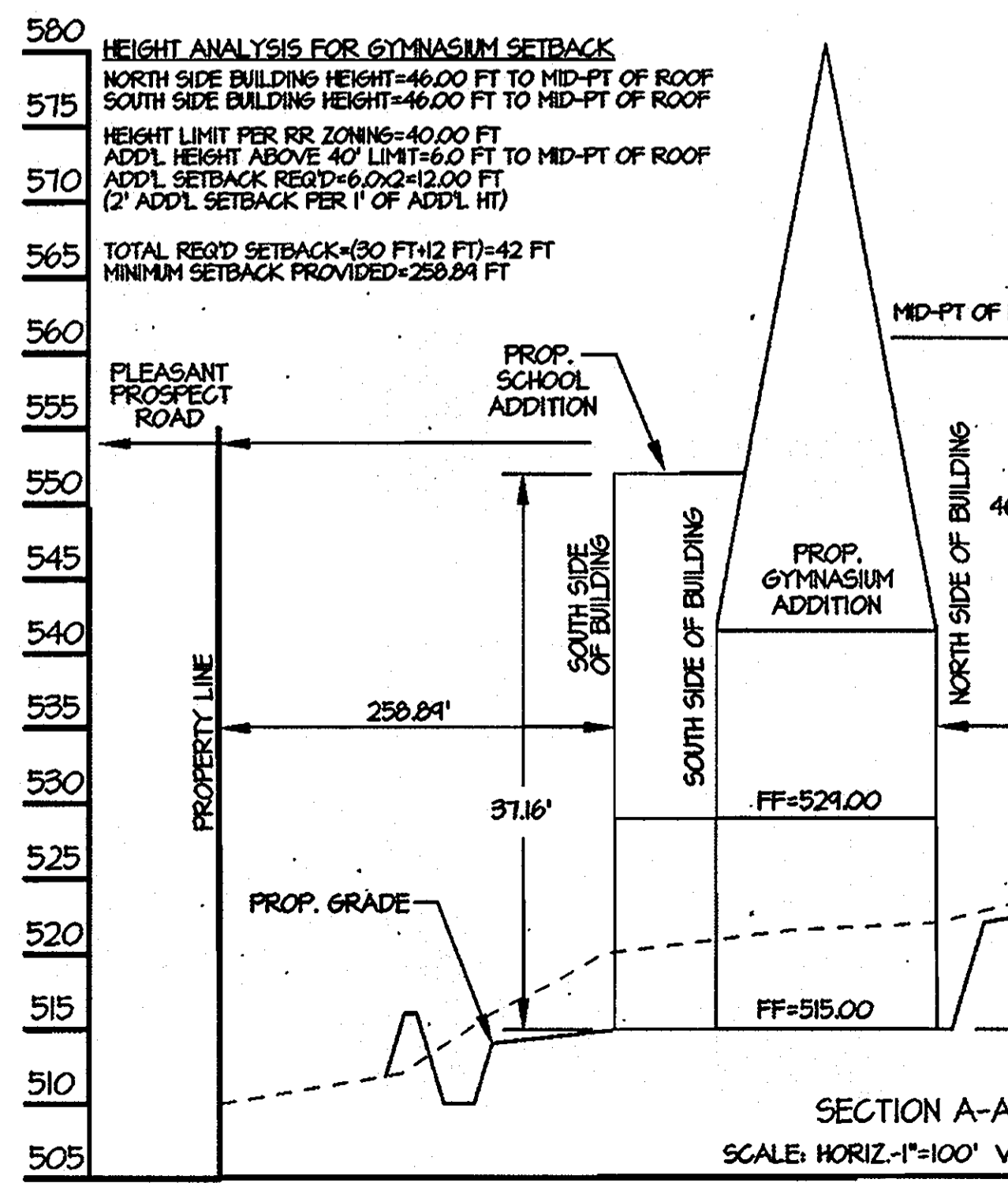
**BENCHMARKS**

- B.M.#1 - HOWARD COUNTY BENCHMARK 221A - NORTH SIDE OF FOLLY QUARTER ROAD 231' EAST OF JUMPERS HILL. ELEV. 496.43
- B.M.#2 - HOWARD COUNTY BENCHMARK 273A - SOUTH SIDE OF FOLLY QUARTER ROAD AT MARYVALE COURT. ELEV. 538.39



SITE LOCATION MAP SCALE: 1"=500'

ADDRESS CHART / OWNER INFORMATION	
GLENELG COUNTRY SCHOOL	
12793 FOLLY QUARTER ROAD	
GLENELG, MD 21737 PHONE: 410-531-2229	
PERMIT INFORMATION CHART	
Subdivision Name: GLENELG COUNTRY SCHOOL	Area: 80.67 AC. Parcel #: 146
Plat #: 1296/245	Zoning: RR-DEO Tax Map: 22 Elec. District: 5TH Census Tract: 8051.01
Water Code: PRIVATE WELL	Sewer Code: PRIVATE SEPTIC



**SITE LOCATION MAP SCALE: 1"=80'**

**SHEET INDEX**

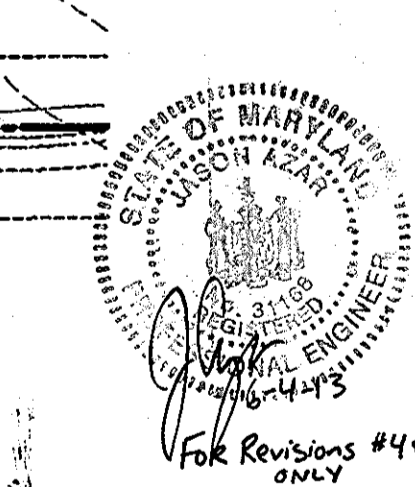
OPTION #	PREVIOUSLY ADDRESSED (Including Use of PC Band)	FOREST CONSERVATION DATA SUMMARY
1	24.25	OF 37
2	26.27	OF 37
3	29	OF 37
4	30	OF 37
5	31.32	OF 37
6	33.34	OF 37
7	35	OF 37
8	36	OF 37
9	37	OF 37

OWNER: RYLAND CHAPMAN, AGENT FOR THE GCS	FAX NO. 410-531-1882
A. NAME: GLENELG COUNTRY SCHOOL	ATELEPHONE 410-531-2229
B. ADDRESS: 12793 FOLLY QUARTER ROAD	
C. CITY: GLENELG STATE: MD ZIP: 21737	
DEVELOPER: JOEL R. CHEWINGTON, AGENT FOR THE GCS	FAX NO. 410-234-1798
A. NAME: GOULD PROPERTY COMPANY	ATELEPHONE 443-604-0808
B. ADDRESS: 1336 SOUTH MANOVER TREET	
C. CITY: BALTIMORE STATE: MD ZIP: 21230	

TITLE SHEET	NO.	OF	TOTAL
DEMOLITION PLAN	1	OF	26 37
SITE LAYOUT & PAVING PLAN	2	OF	26 37
SITE GRADING PLAN	3	OF	26 37
SITE DETAILS	4	OF	26 37
STORM DRAIN PROFILES	5	OF	26 37
STORM DRAIN & UTILITY PROFILES	6	OF	26 37
SWM FACILITY #1 DETAILS	7	OF	26 37
SWM FACILITY #2 DETAILS	8	OF	26 37
SWM NOTES & SPECIFICATIONS	9	OF	26 37
SEDIMENT CONTROL PLAN	10	OF	26 37
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BORING LOGS & GEOTECH RECOMMENDATIONS	12	OF	26 37
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ARCHITECTURAL BUILDING ELEVATIONS	22	OF	26 37
	23	OF	26 37



APPROVED FOR PRIVATE WATER & PRIVATE SEWERAGE SYSTEMS	DATE
<i>[Signature]</i>	8/3/03
COUNTRY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT	
APPROVED DEPARTMENT OF PLANNING AND ZONING	DATE
<i>[Signature]</i>	8/5/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION M&C	
<i>[Signature]</i>	8/12/03
CHIEF, DIVISION OF LAND DEVELOPMENT	
<i>[Signature]</i>	8/15/03
DIRECTOR, DEPARTMENT OF PLANNING AND ZONING	

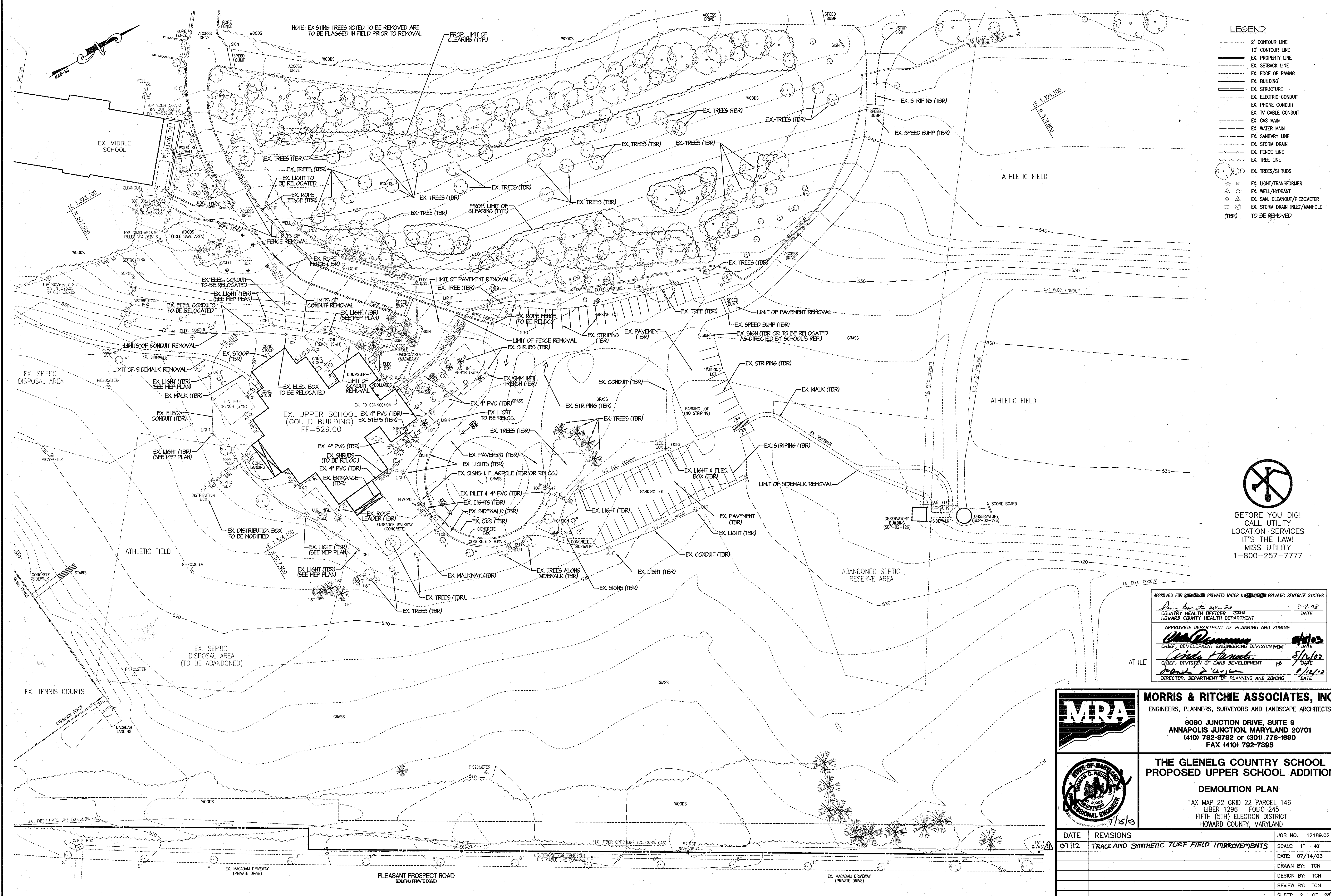


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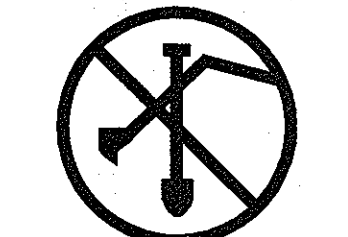


**THE GLENELG COUNTRY SCHOOL  
PROPOSED UPPER SCHOOL ADDITION**  
TITLE SHEET  
TAX MAP 22 GRID 22 PARCEL 146  
LIBER 1296 FOLIO 245  
FIFTH (5TH) ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
10/03	ADDED TRELLIS TO BUILDING FOOTPRINT. EXTENDED	12189.02
07/14/03	STABILIZED TURF FIRE LANE	SCALE: AS SHOWN
04/04	REVISED BUILDING FOOTPRINT TO SHOW ANNEX ADDITION	DATE: 07/14/03
09/06	IRRIGATION LINES FOR FIELD ADDED	DESIGN BY: TCN
07/12	TRACK AND SYNTHETIC FIELD ADDED	REVIEW BY: TCN
03/13	BLEACHER/PRESS BOX AND TRAILER ADDED	SHEET: 1 OF 28



- LEGEND**
- 2' CONTOUR LINE
  - 10' CONTOUR LINE
  - - - EX. PROPERTY LINE
  - - - EX. SETBACK LINE
  - - - EX. EDGE OF PAVING
  - - - EX. BUILDING
  - - - EX. STRUCTURE
  - - - EX. ELECTRIC CONDUIT
  - - - EX. PHONE CONDUIT
  - - - EX. TV CABLE CONDUIT
  - - - EX. GAS MAIN
  - - - EX. WATER MAIN
  - - - EX. SANITARY LINE
  - - - EX. STORM DRAIN
  - - - EX. FENCE LINE
  - - - EX. TREE LINE
  - EX. TREES/SHRUBS
  - ⊗ EX. LIGHT/TRANSFORMER
  - △ EX. WELL/HYDRANT
  - ⊕ EX. SAN. CLEANOUT/PIEZOMETER
  - EX. STORM DRAIN INLET/MANHOLE
  - (TBR) TO BE REMOVED



BEFORE YOU DIG!  
CALL UTILITY  
LOCATION SERVICES  
IT'S THE LAW!  
MISS UTILITY  
1-800-257-7777

APPROVED FOR: **RESIDENTIAL PRIVATE WATER & SEWER PRIVATE SEWERAGE SYSTEMS**

COUNTRY HEALTH OFFICER: *John Howard* DATE: *5-8-03*  
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *John Deane* DATE: *5/15/03*  
CHIEF, DIVISION OF LAND DEVELOPMENT: *John Deane* DATE: *5/15/03*  
DIRECTOR, DEPARTMENT OF PLANNING AND ZONING: *John Deane* DATE: *5/15/03*

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

9090 JUNCTION DRIVE, SUITE 9  
ANNAPOLIS JUNCTION, MARYLAND 20701  
(410) 792-9792 or (301) 776-1690  
FAX (410) 792-7395

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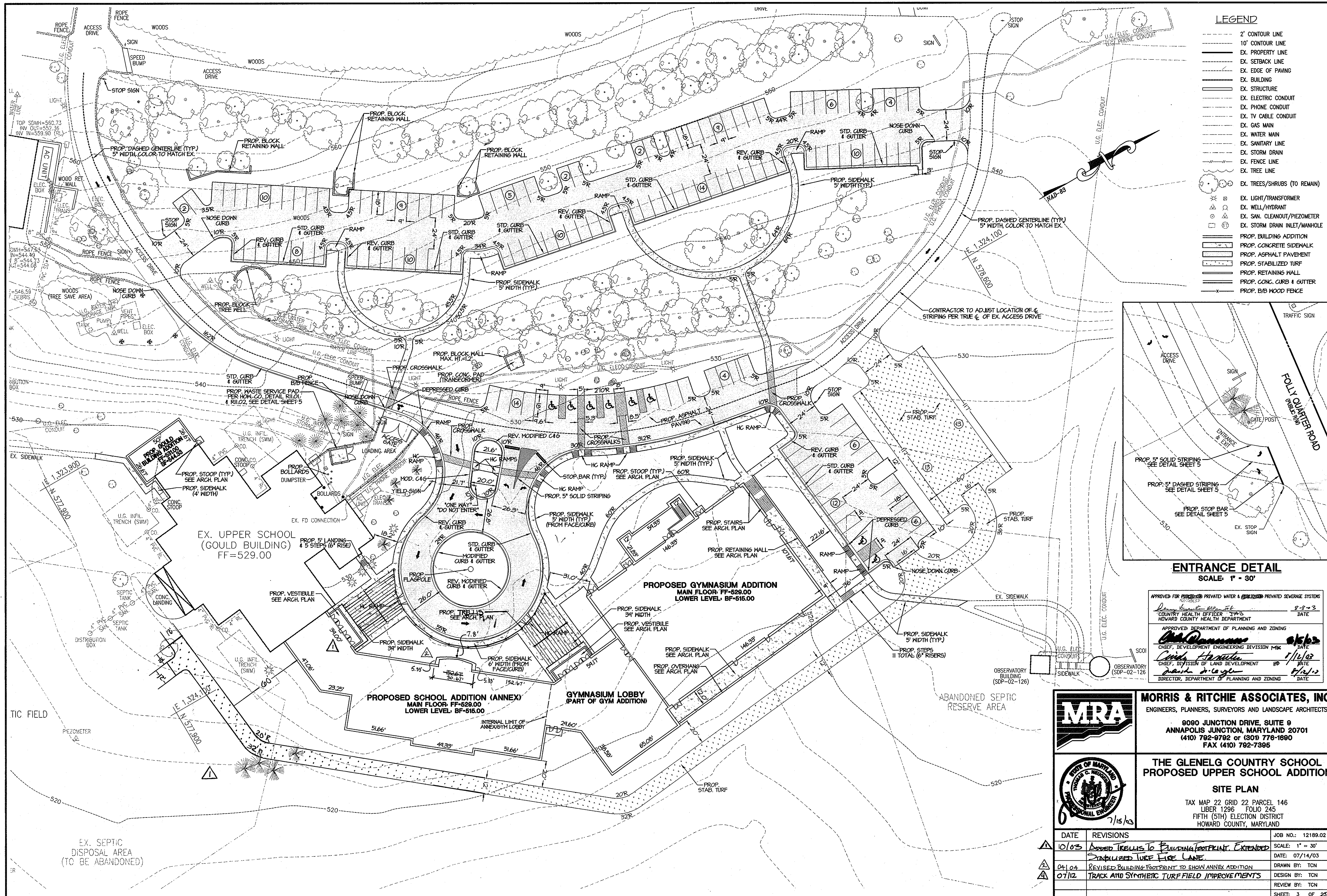
**THE GLENELG COUNTRY SCHOOL  
PROPOSED UPPER SCHOOL ADDITION**

**DEMOLITION PLAN**

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

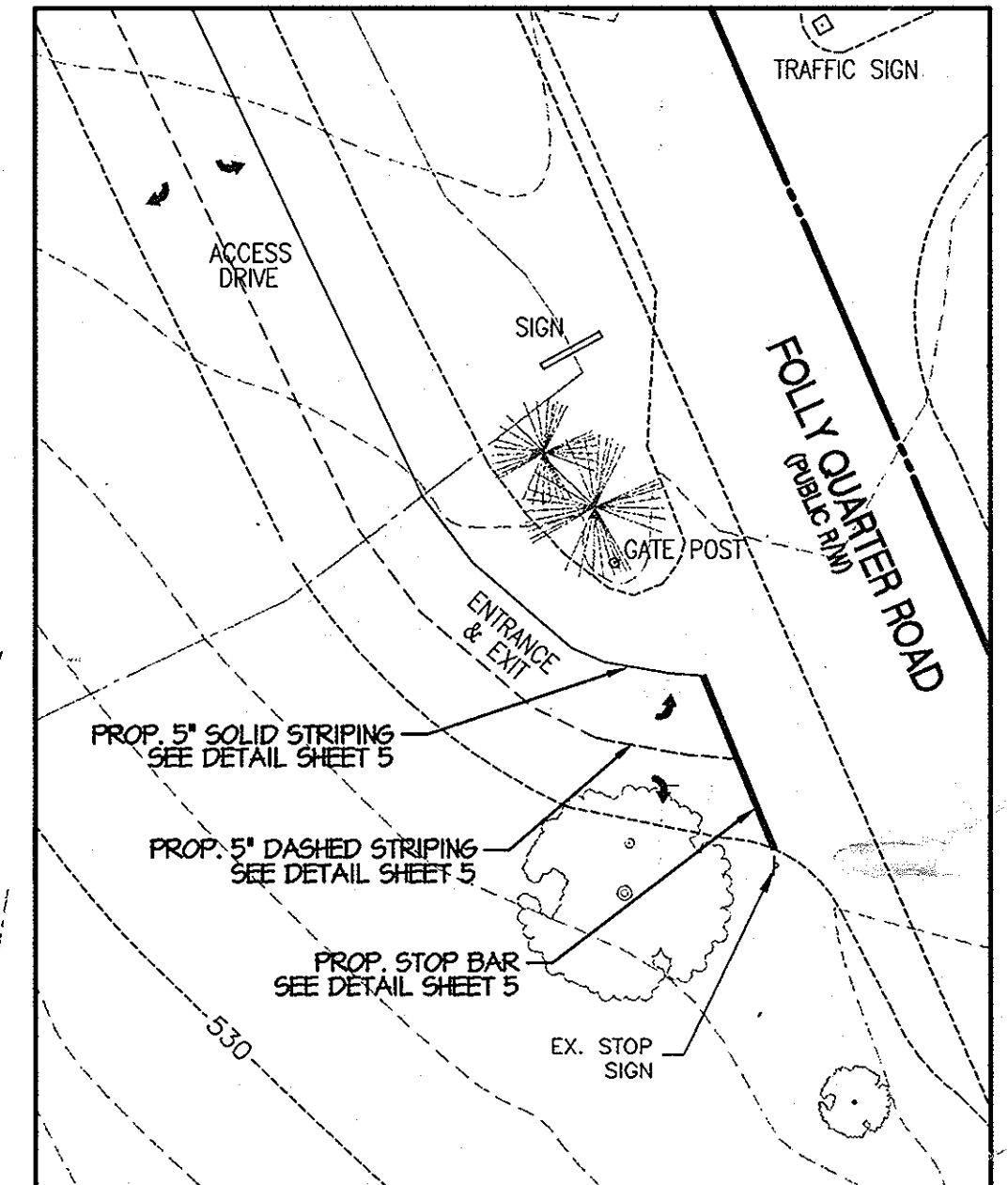
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DATE	REVISIONS	JOB NO.:
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	12189.02
		SCALE: 1" = 40'
		DATE: 07/14/03
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: TCN
		SHEET: 2 OF 2



**LEGEND**

- 2' CONTOUR LINE
- 10' CONTOUR LINE
- EX. PROPERTY LINE
- EX. SETBACK LINE
- EX. EDGE OF PAVING
- EX. BUILDING
- EX. STRUCTURE
- EX. ELECTRIC CONDUIT
- EX. PHONE CONDUIT
- EX. TV CABLE CONDUIT
- EX. GAS MAIN
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- EX. FENCE LINE
- EX. TREE LINE
- EX. TREES/SHRUBS (TO REMAIN)
- ⊗ EX. LIGHT/TRANSFORMER
- ⊕ EX. WELL/HYDRANT
- ⊙ EX. SAN. CLEANOUT/PIEZOMETER
- ⊖ EX. STORM DRAIN INLET/MANHOLE
- PROP. BUILDING ADDITION
- PROP. CONCRETE SIDEWALK
- PROP. ASPHALT PAVEMENT
- PROP. STABILIZED TURF
- PROP. RETAINING WALL
- PROP. CONC. CURB & GUTTER
- PROP. B/B WOOD FENCE

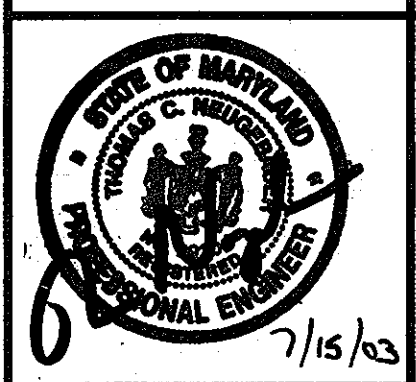


**ENTRANCE DETAIL**  
SCALE: 1" = 30'

APPROVED FOR PRIVATE WATER & SEWER PRIVATE SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER: JAMES HOWARD COUNTY HEALTH DEPARTMENT  
 DATE: 8-8-03  
 APPROVED FOR DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: M.K. [Signature] DATE: 8/16/03  
 CHIEF, DIVISION OF LAND DEVELOPMENT: [Signature] DATE: 7/16/03  
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING: [Signature] DATE: 8/21/03

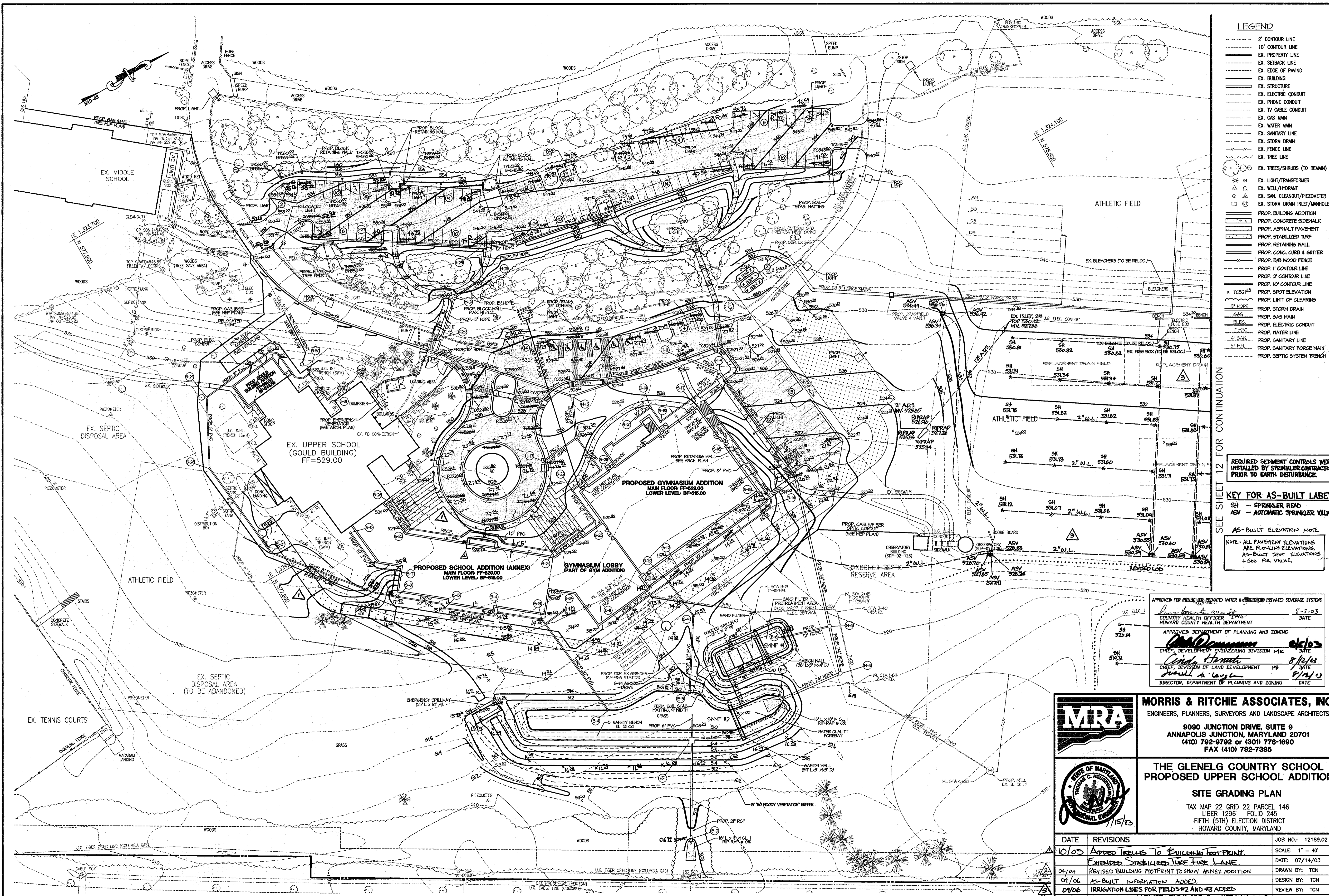


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 ANNAPOLIS JUNCTION, MARYLAND 20701  
 (410) 792-9792 or (301) 776-1890  
 FAX (410) 792-7396



**THE GLENELG COUNTRY SCHOOL**  
**PROPOSED UPPER SCHOOL ADDITION**  
**SITE PLAN**  
 TAX MAP 22 GRID 22 PARCEL 146  
 LIBER 1296 FOLIO 245  
 FIFTH (5TH) ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
10/03	Added KELLIS to BUILDING FOOTPRINT. EXTENDED STABILIZED TURF FIRE LANE.	12189.02
04/04	REVISED BUILDING FOOTPRINT TO SHOW ANNEX ADDITION	SCALE: 1" = 30'
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	DATE: 07/14/03
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: TCN
		SHEET: 3 OF 23



- LEGEND**
- 2' CONTOUR LINE
  - 10' CONTOUR LINE
  - EX. PROPERTY LINE
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  - EX. EDGE OF PAVING
  - EX. BUILDING
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  - PROP. ASPHALT PAVEMENT
  - PROP. STABILIZED TURF
  - PROP. CONC. CURB & GUTTER
  - PROP. BIV. WOOD FENCE
  - PROP. 1' CONTOUR LINE
  - PROP. 2' CONTOUR LINE
  - PROP. 10' CONTOUR LINE
  - PROP. SPOT ELEVATION
  - PROP. LIMIT OF CLEARING
  - 12" HOPE
  - PROP. STORM DRAIN
  - PROP. GAS MAIN
  - PROP. ELECTRIC CONDUIT
  - PROP. WATER LINE
  - PROP. SANITARY LINE
  - PROP. SANITARY FORCE MAIN
  - PROP. SEPTIC SYSTEM TRENCH

REQUIRED SEDIMENT CONTROLS WERE INSTALLED BY SPRINKLER CONTRACTOR PRIOR TO EARTH DISTURBANCE.

**KEY FOR AS-BUILT LABELS**

- SH - SPRINKLER HEAD
- ASV - AUTOMATIC SPRINKLER VALVE

AS-BUILT ELEVATION NOTE

NOTE: ALL PAVEMENT ELEVATIONS ARE FLOW-LINE ELEVATIONS. AS-BUILT SPOT ELEVATIONS +5.00 FILL VALUE.

SEE SHEET 12 FOR CONTINUATION

APPROVED FOR PUBLIC OR PRIVATE WATER & SEWERAGE SYSTEMS

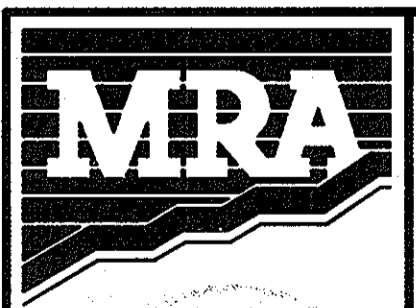
*James Howard* 8-1-03  
 COUNTY HEALTH OFFICER JAS  
 HOWARD COUNTY HEALTH DEPARTMENT DATE

APPROVED DEPARTMENT OF PLANNING AND ZONING

*John J. Smith* 8/12/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MJK DATE

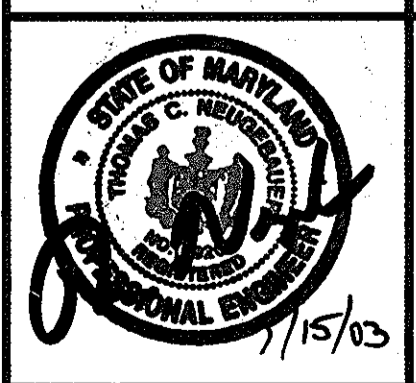
*James A. Lewis* 8/14/03  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*James A. Lewis* 8/14/03  
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING DATE



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 ANNAPOLIS JUNCTION, MARYLAND 20701  
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 FAX (410) 792-7396



**THE GLENELG COUNTRY SCHOOL  
 PROPOSED UPPER SCHOOL ADDITION**

**SITE GRADING PLAN**

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

DATE	REVISIONS	JOB NO.:
10/03	Added trees to building footprint. Extended stabilized turf here line.	12189.02
04/04	REVISED BUILDING FOOTPRINT TO SHOW ANNEX ADDITION.	SCALE: 1" = 40'
04/06	AS-BUILT INFORMATION ADDED.	DATE: 07/14/03
09/06	IRRIGATION LINES FOR FIELDS #2 AND #3 ADDED.	DRAWN BY: TCN
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	DESIGN BY: TCN
		REVIEW BY: TCN
		SHEET: 4 OF 257

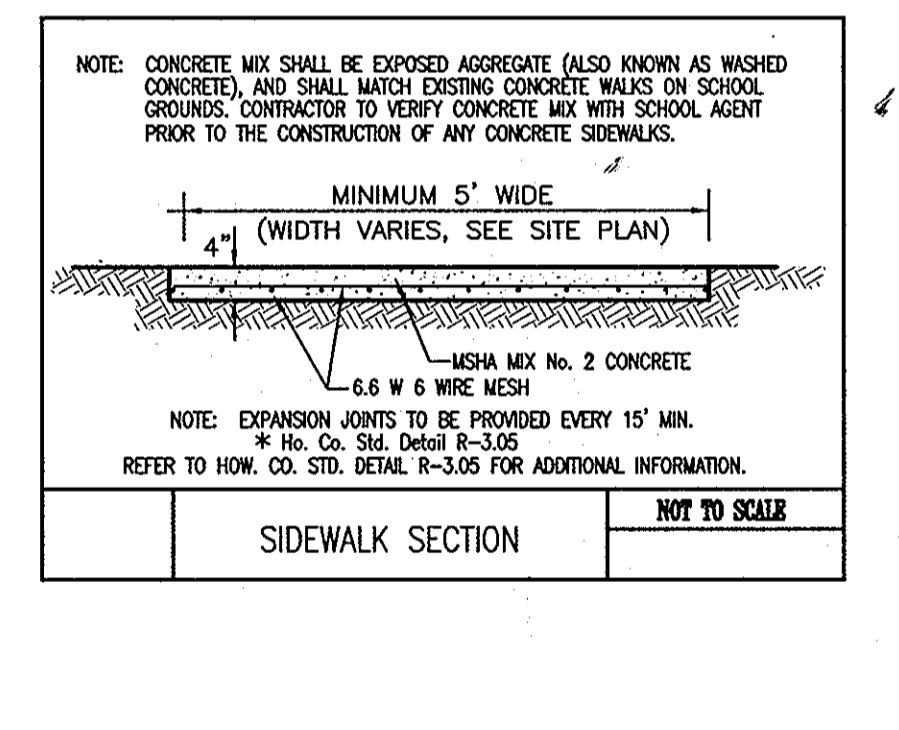
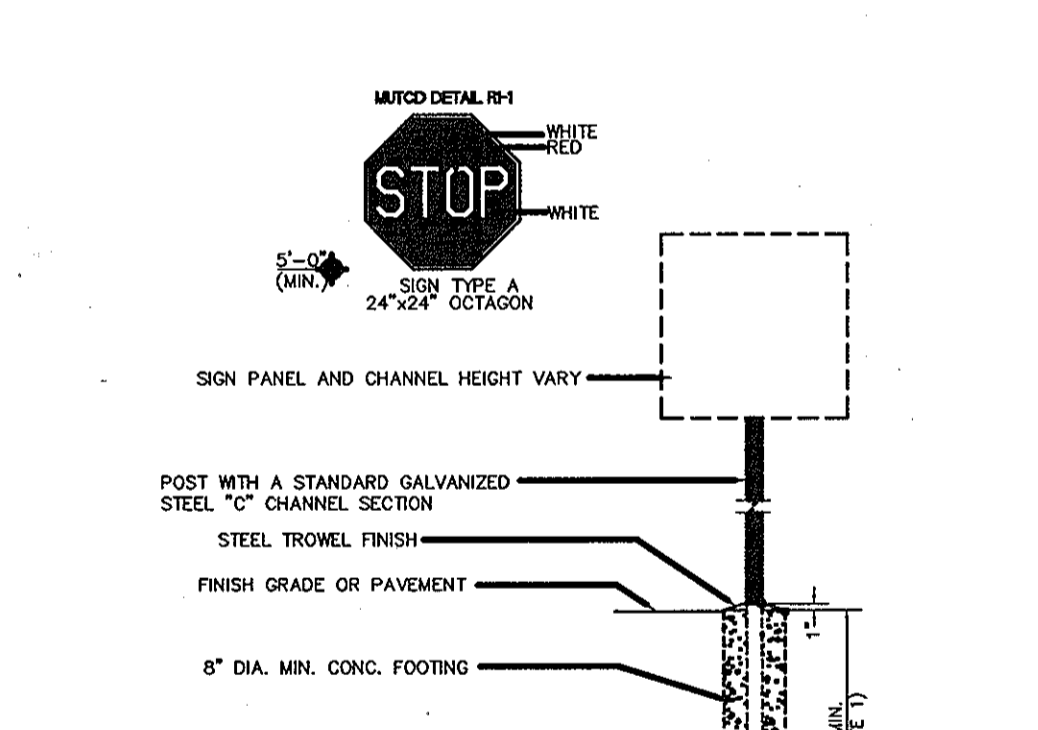
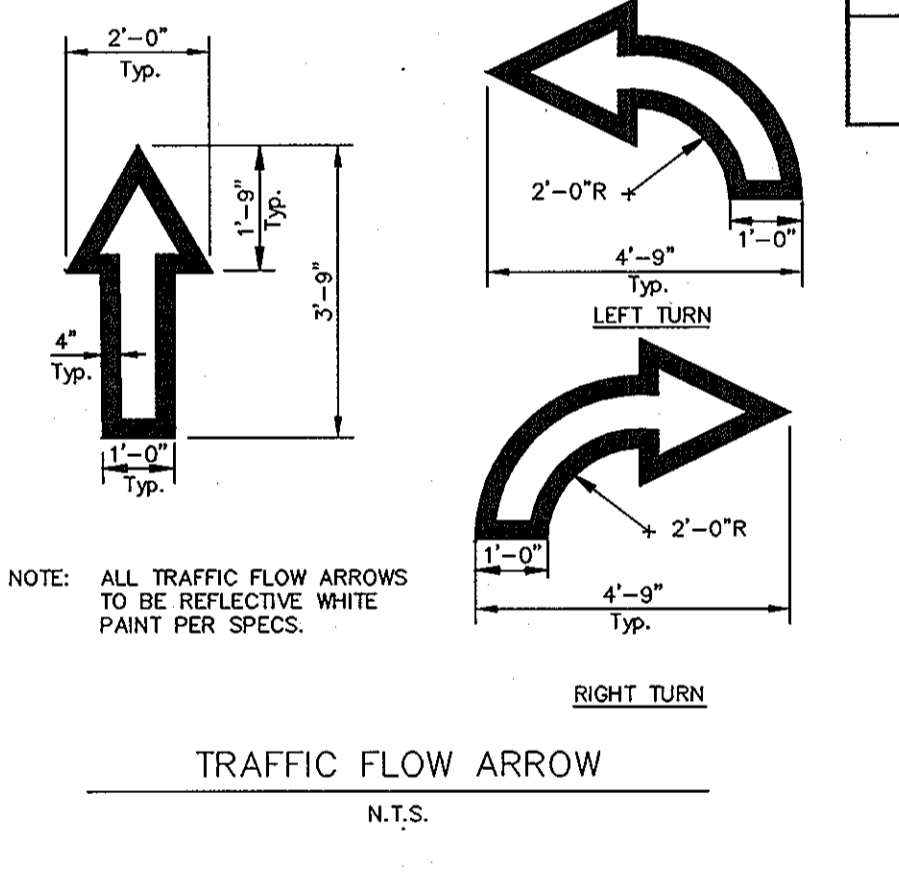
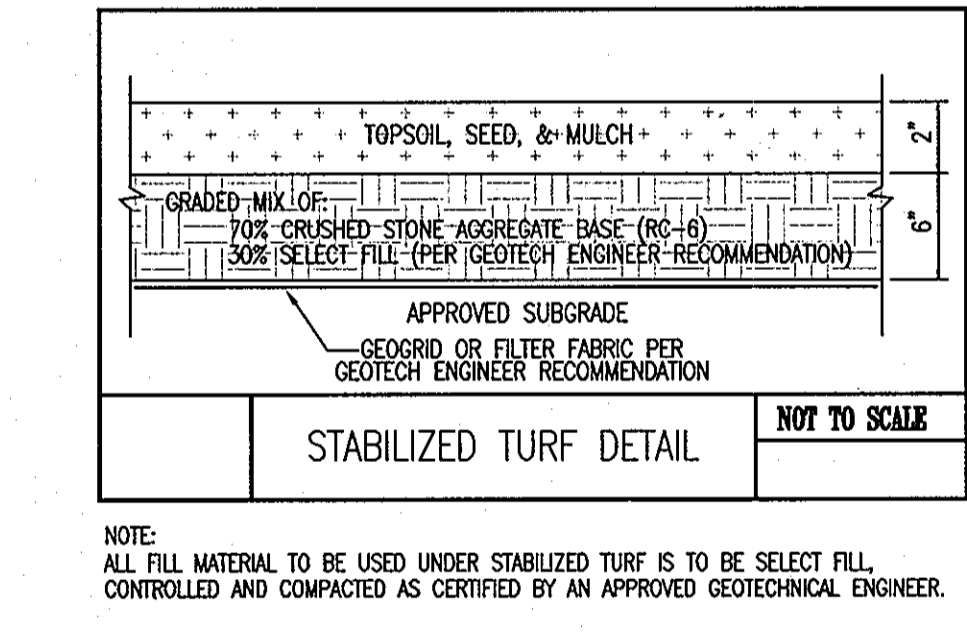
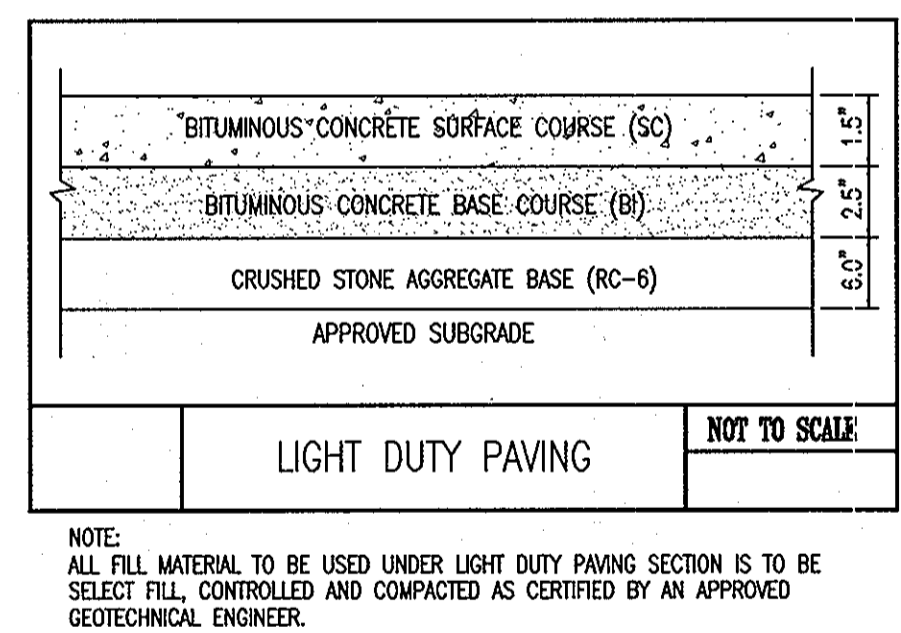
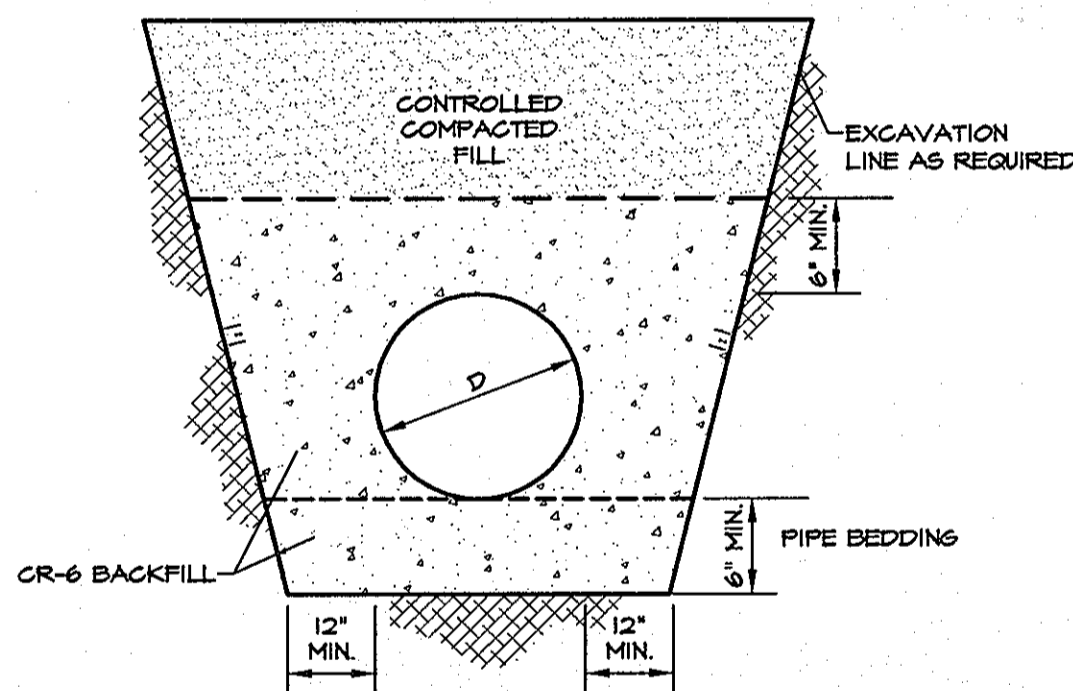
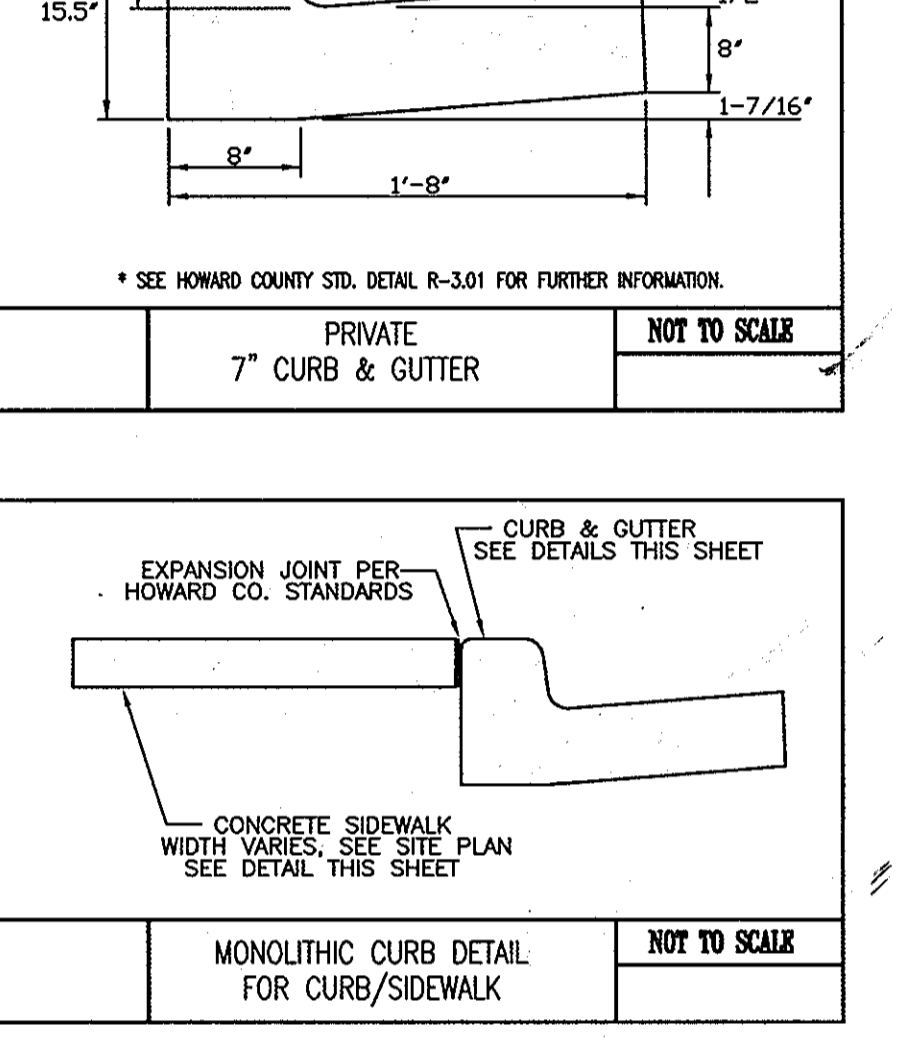
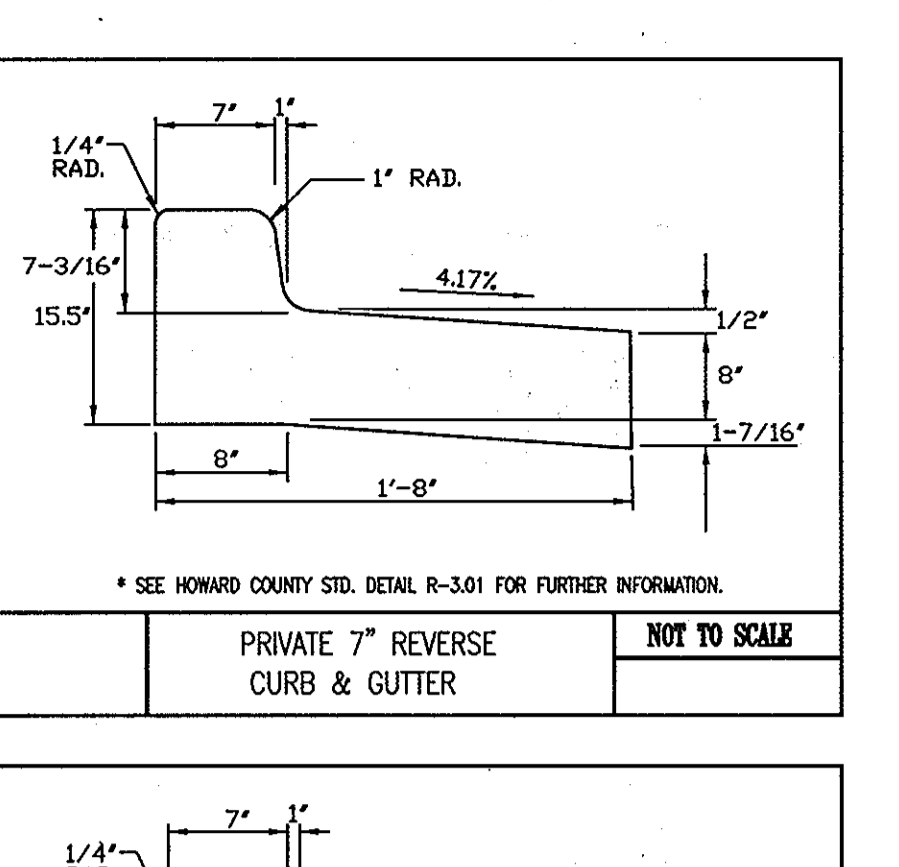
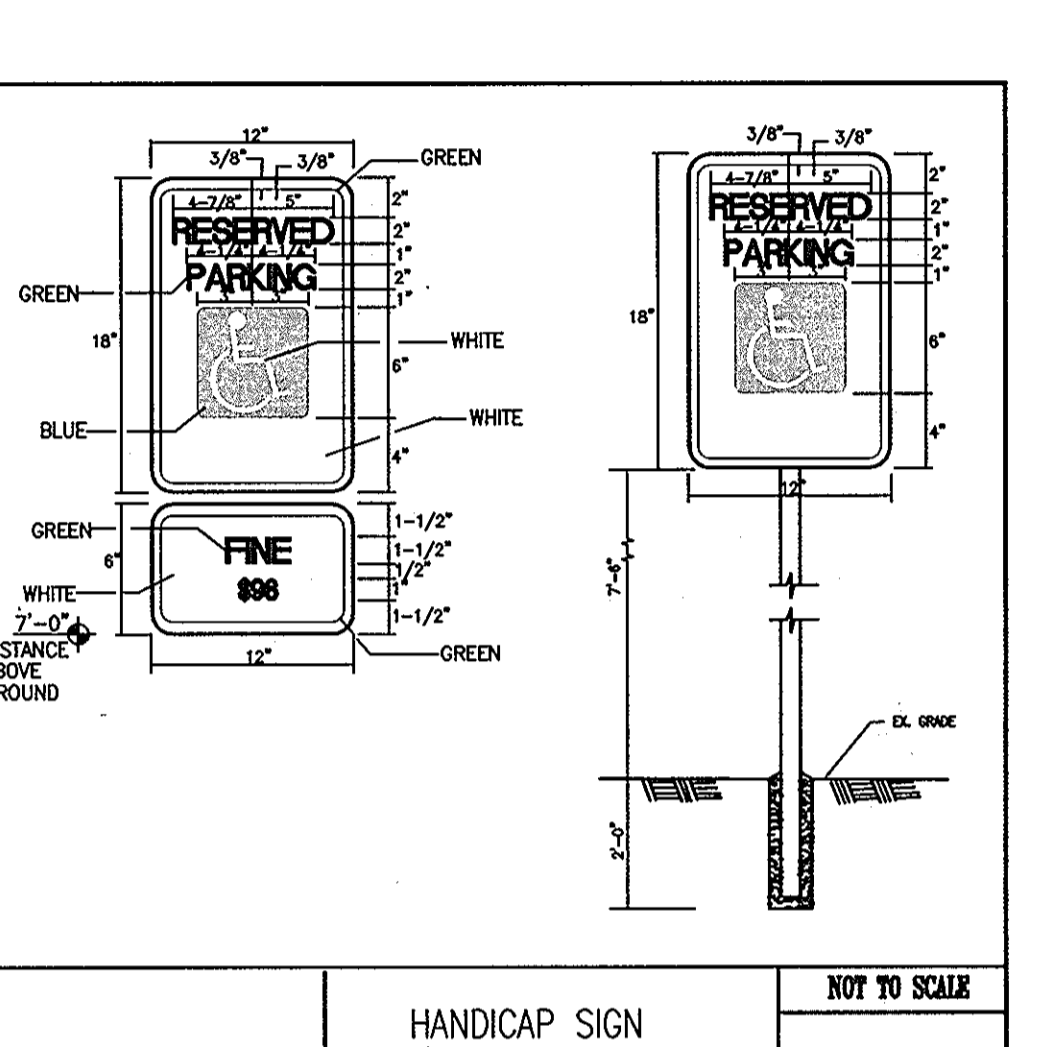
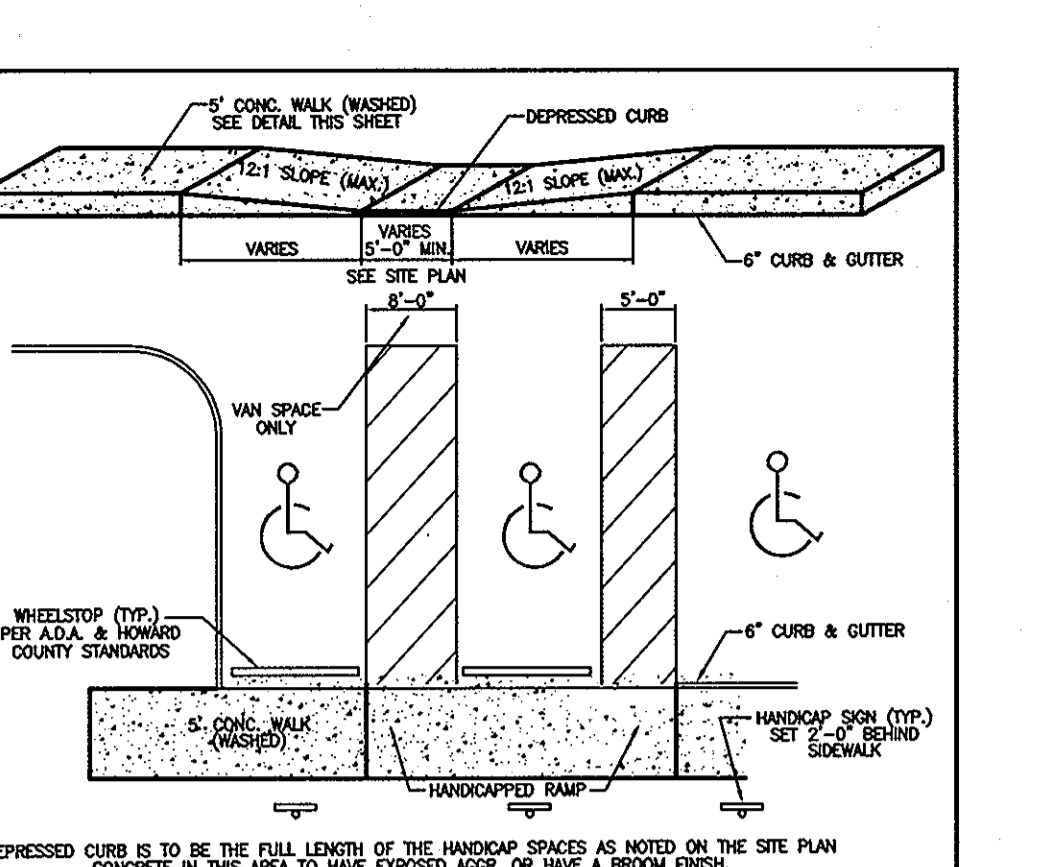
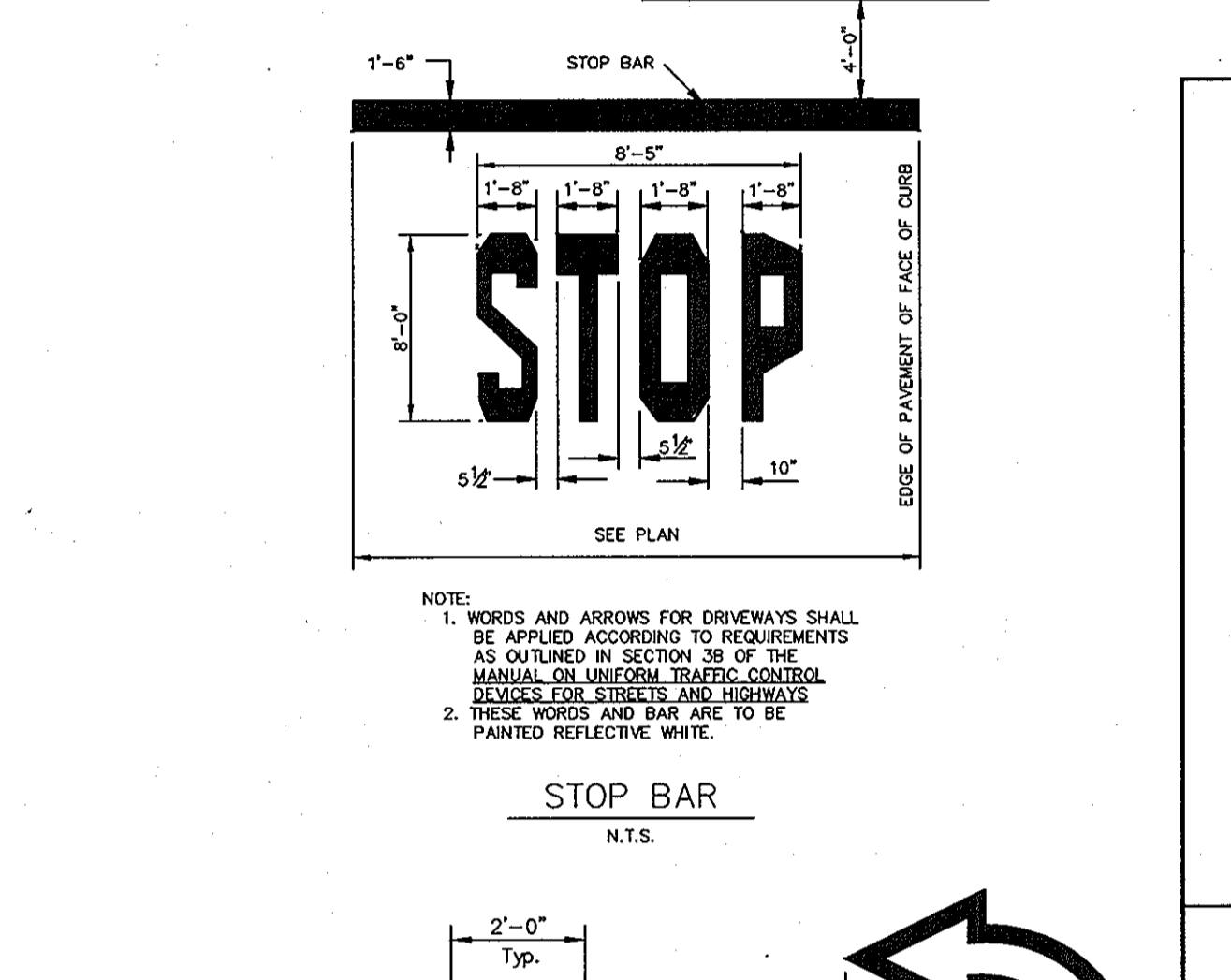
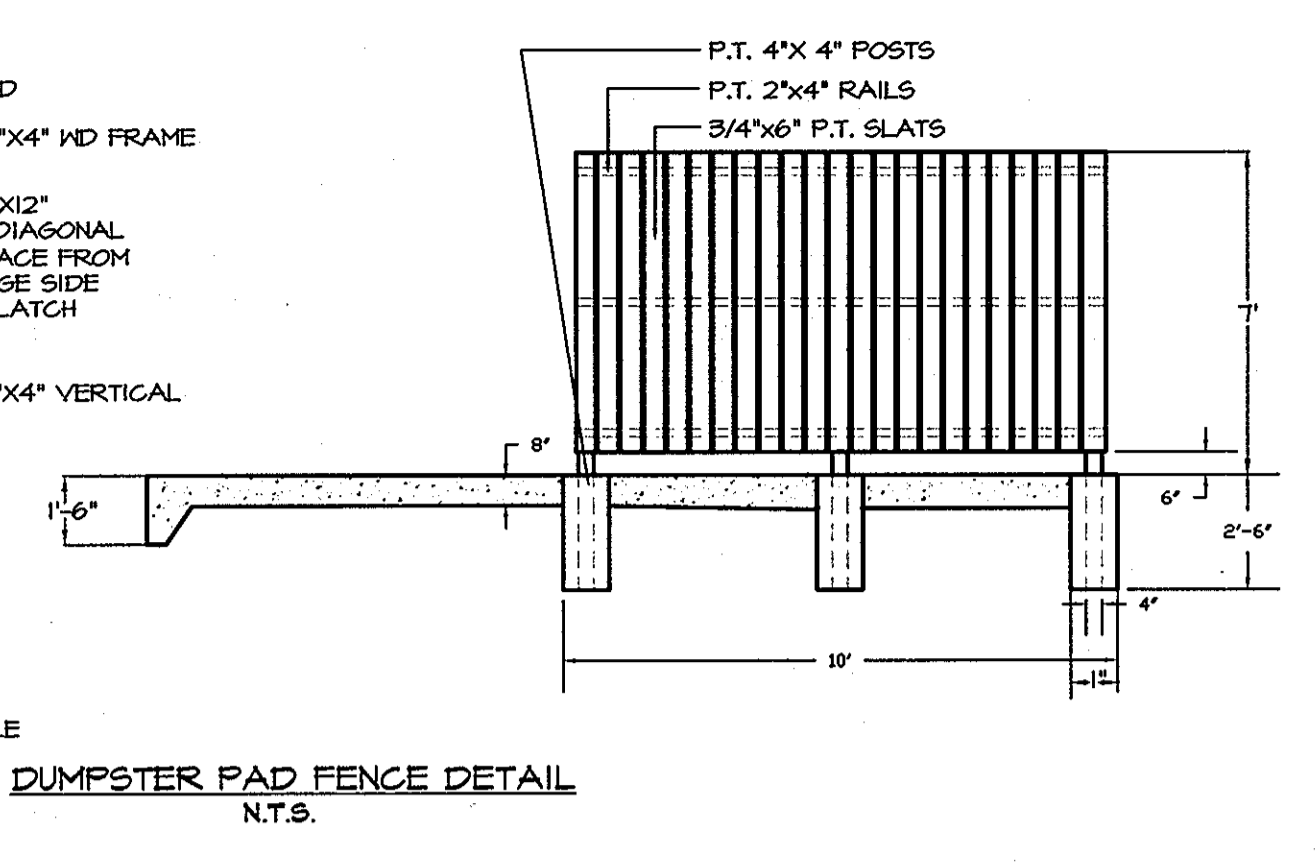
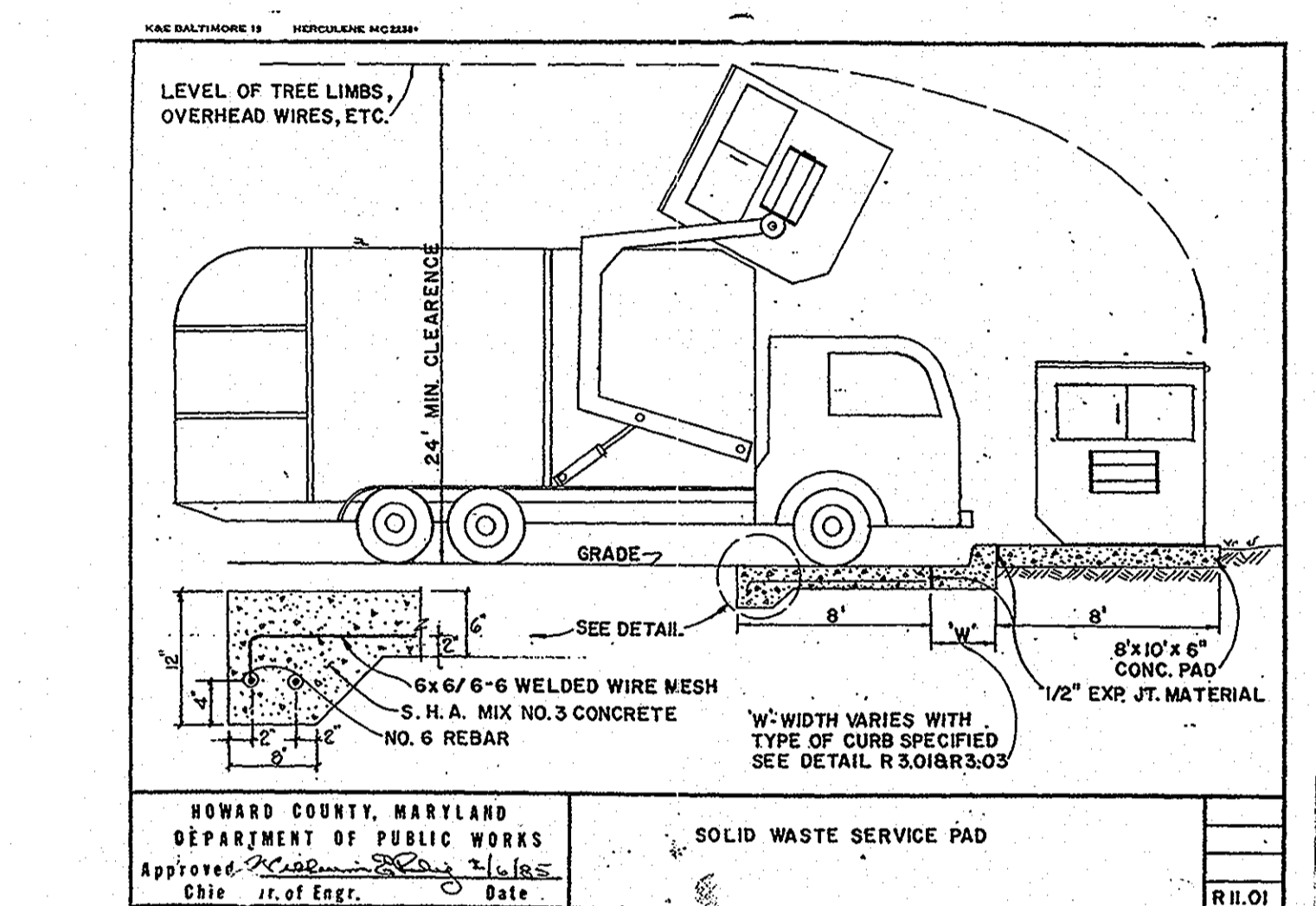
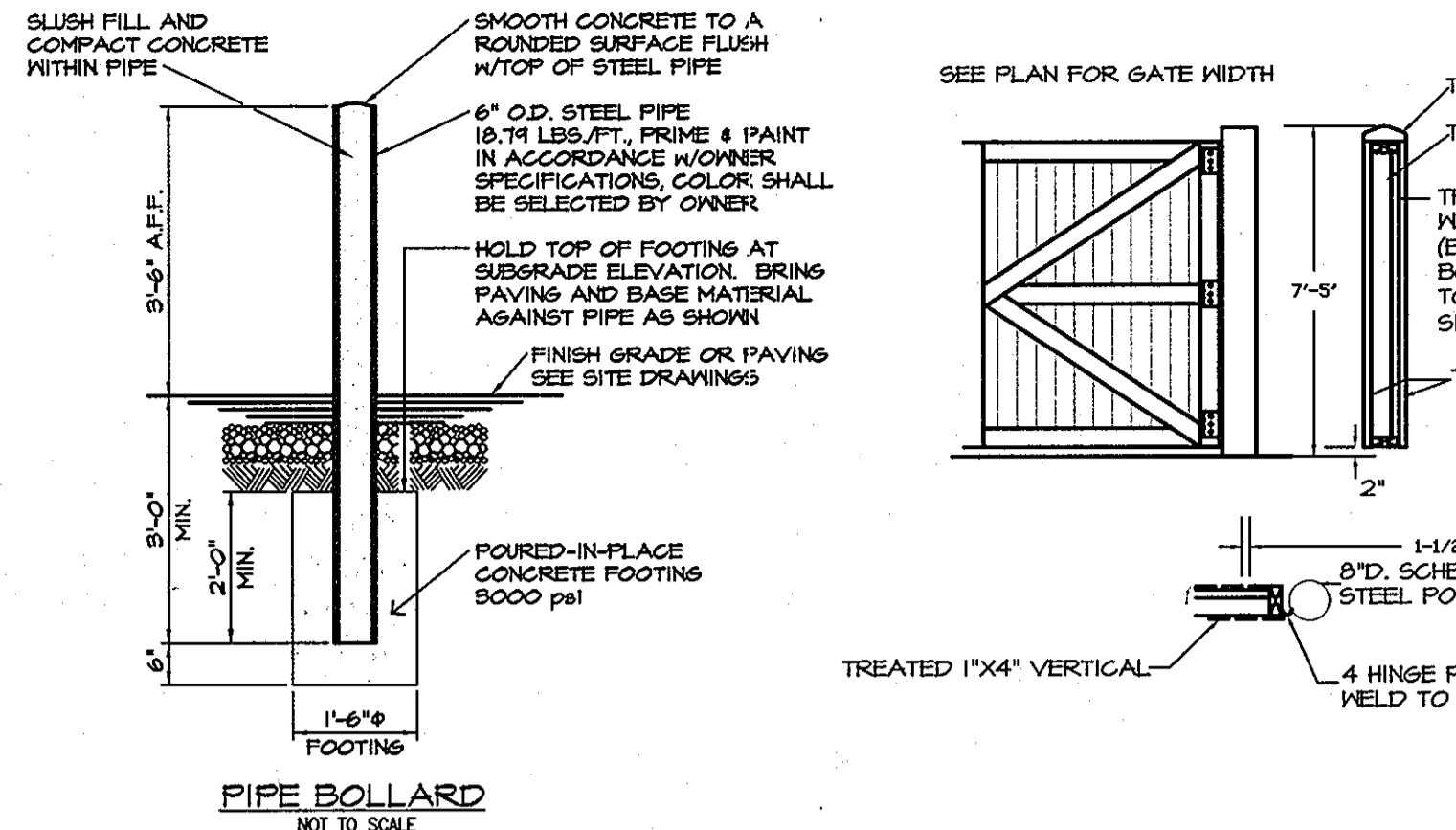
UTILITY TRENCH BACKFILL

- I. Materials
- A. Pipe Bedding Material - pipe bedding material shall consist of CR-6.
- B. Backfill Materials - Use CR-6 as backfill material to the minimum extent shown on the plans. The backfill for the remainder of the trench shall consist of on-site or off-site soils conforming to the requirement of the geotechnical report and City/County specifications. No stones larger than 2 inches should be allowed within 2 feet of the utility. Larger stones, up to 6 inches in the largest dimension can be used in lifts 2 feet above the utility. No organic material shall be allowed. For granular soils (less than 35% passing #200 sieve), the soil moisture should be within 3 percentage points of optimum unless otherwise dictated by project engineer or County specifications. For fine-grained soils (greater than 35% passing #200 sieve), the soil moisture should be within 0 to plus 4 percent of optimum unless otherwise dictated by engineer or County specifications.
- The compaction requirement shall be 92 percent of the Modified Proctor (ASTM D-1557) maximum dry density for material placed below the top 12-inches of roadway subgrade. The top 12 inches should be compacted to 97% unless otherwise recommended by the geotechnical engineer. The top 12 to 24 inches of soil may be required to meet certain material properties for subgrade support for pavements.

- II. Backfilling Procedures
- A. Contractor shall place level lifts of soil adjacent to and above the utility. The lift thickness shall be dependent upon the type of equipment being used for compaction and the materials. The following shall be used as a guide:
1. Fine-Grained Materials - fine-grained materials (materials with more than 35% passing #200 sieve) should be compacted with sheep's-foot type roller. The lift thickness should not exceed 4 inches if hand operated equipment is used. Hand equipment will be required for compaction around manholes, structures and adjacent to and over the utility. If heavy construction sheep's-foot compaction equipment is used, a maximum loose lift thickness should be no greater than the length of the sheep's-foot or a maximum of eight inches. Each lift should be uniformly compacted with a sufficient number of passes to obtain the required degree of compaction.
  2. Granular Soils - granular soils (materials with less than 35% passing #200 sieve) should be compacted with a vibratory type compaction equipment. The loose lift thickness should not exceed 4 inches for hand operated equipment. Hand equipment will be required around manholes, structures and adjacent to and above the utility. If heavy vibratory compaction equipment is used, then the loose lift thickness can be increased to 8 inches. Each lift should be uniformly compacted with a sufficient number of passes to obtain the recommended degree of compaction.
  3. The backfill should be worked using hand tools around pipe haunch to provide uniform and firm support.
- B. If a lift fails to meet the required compaction, then the lift shall be re-compacted and retested. If the material is too wet or too dry, the moisture should be adjusted to within the required range prior to re-compaction.

III. Testing

Each lift of fill should be monitored for stability, lift thickness and compactive effort. A density test should be performed for each lift of fill placed per every 150 feet of trench. This requirement includes the utility lateral connections. The test procedure should be the sand cone method (ASTM D-1556) or the nuclear gauge method (ASTM D-2922). The test results shall be made available to the contractor upon the completion of the test. For each test, the technician shall record the following: Date; test location; test elevation; material type; degree of compaction; one-point results; lift thickness; and moisture content.



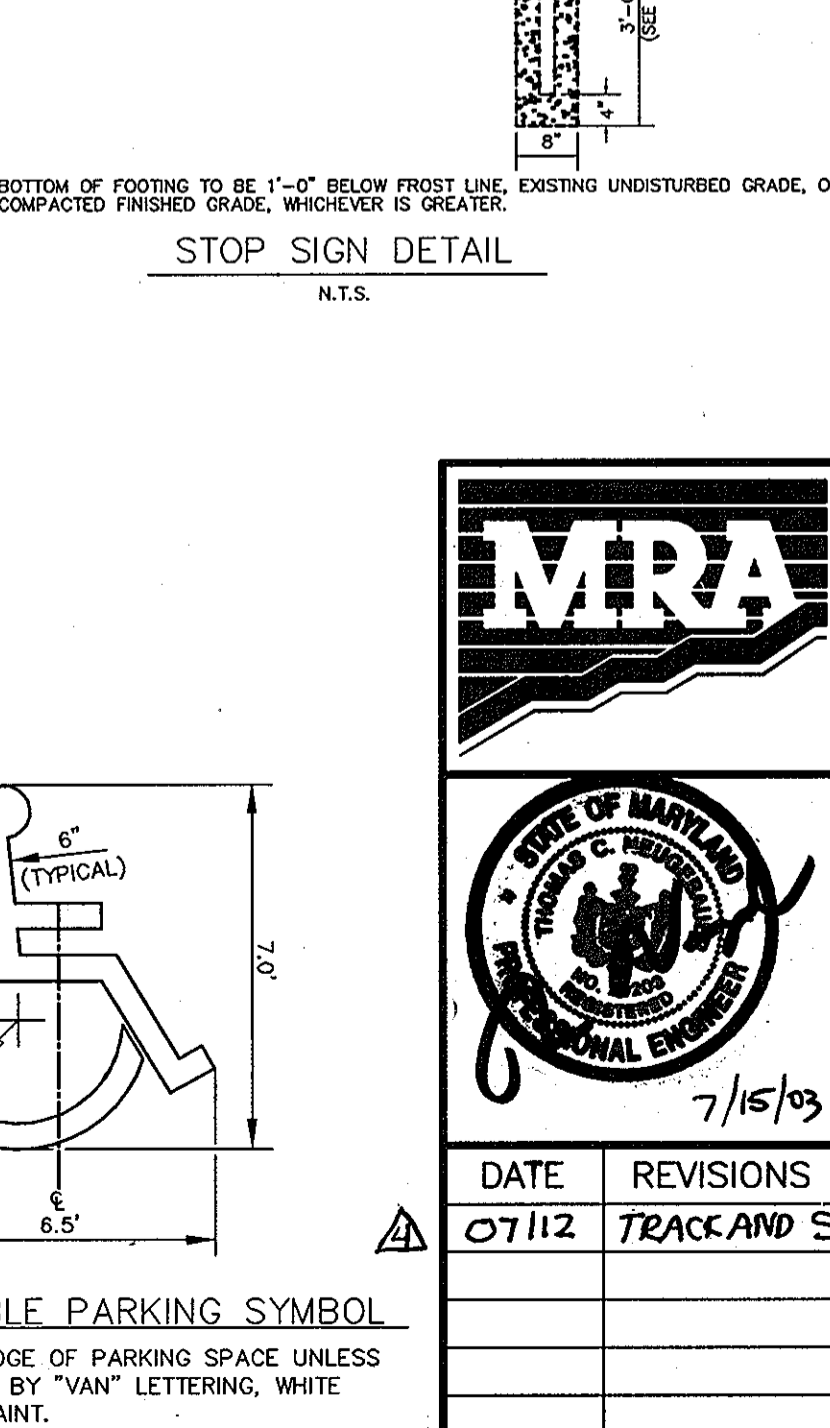
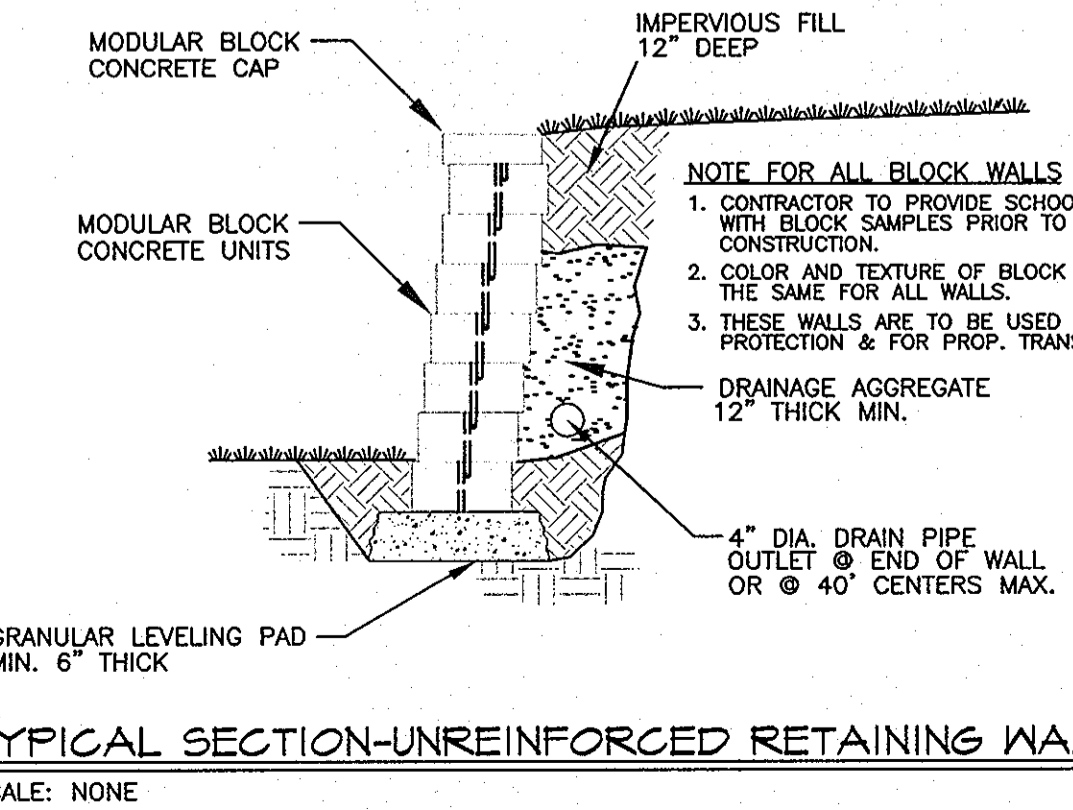
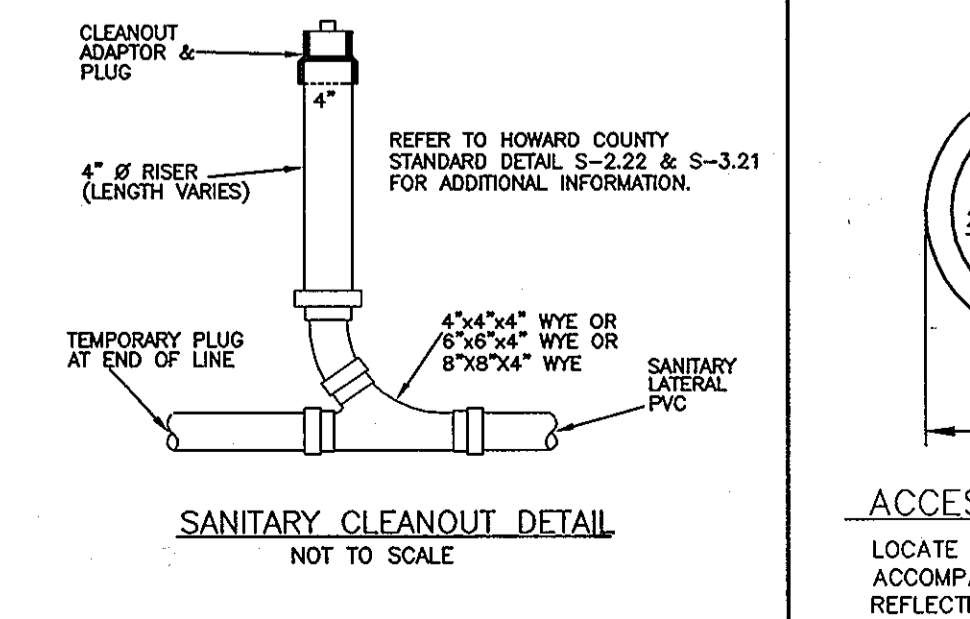
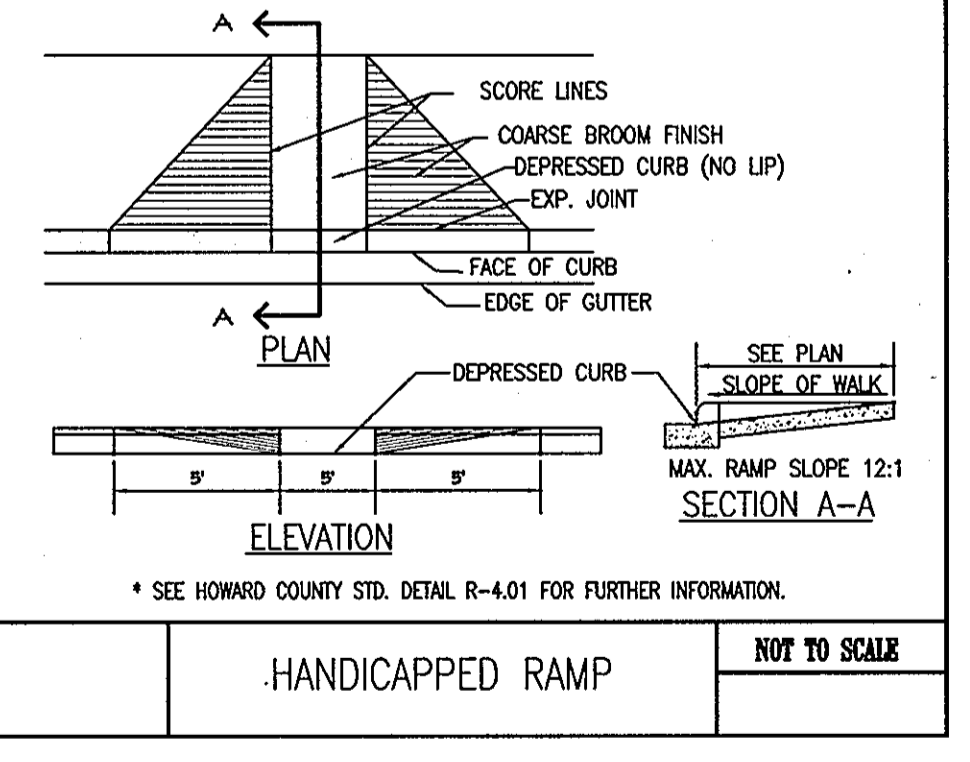
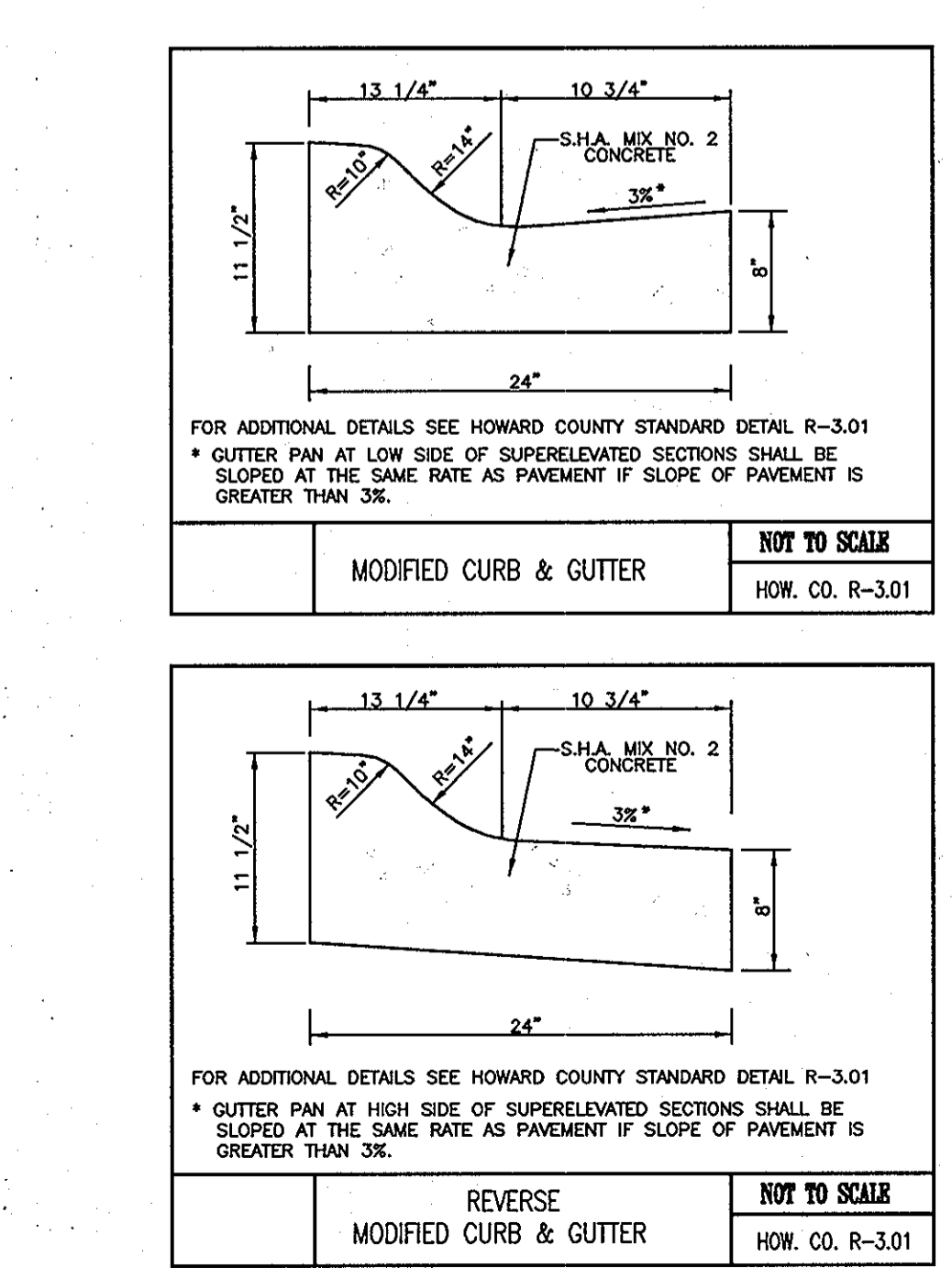
**SITE DETAILS NOTE**

PRIOR TO CONSTRUCTION, CONTRACTOR SHALL REFER TO DRAWINGS ENTITLED "GLENELG COUNTRY SCHOOL, SITE STANDARD DETAILS," SHEETS 1-3, PREPARED BY LDR, INTERNATIONAL, DATED 6/6/01 FOR ADDITIONAL SITE DETAIL INFORMATION. CONTRACTOR SHALL COORDINATE ALL SITE DETAILS WITH SCHOOL REPRESENTATIVES PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTACT FOR LDR, INTERNATIONAL IS AS FOLLOWS:

LDR, INTERNATIONAL (AN HNTB COMPANY)  
 QUARRY PARK PLACE  
 9175 GULFORD ROAD  
 COLUMBIA, MD 21046  
 PHONE: (410) 792-4360

**Architectural Round Vertical Area Lighting KVR**

Designation	Quantity	Description	Notes	Submittals
KVR 1000	1	10\"/>		



APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

*Deborah A. ...* 6-8-03 DATE  
 COUNTRY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED DEPARTMENT OF PLANNING AND ZONING

*Mike ...* 5/12/03 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*Andy Hamilton* 5/12/03 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*Frank A. ...* 5/12/03 DATE  
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING

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

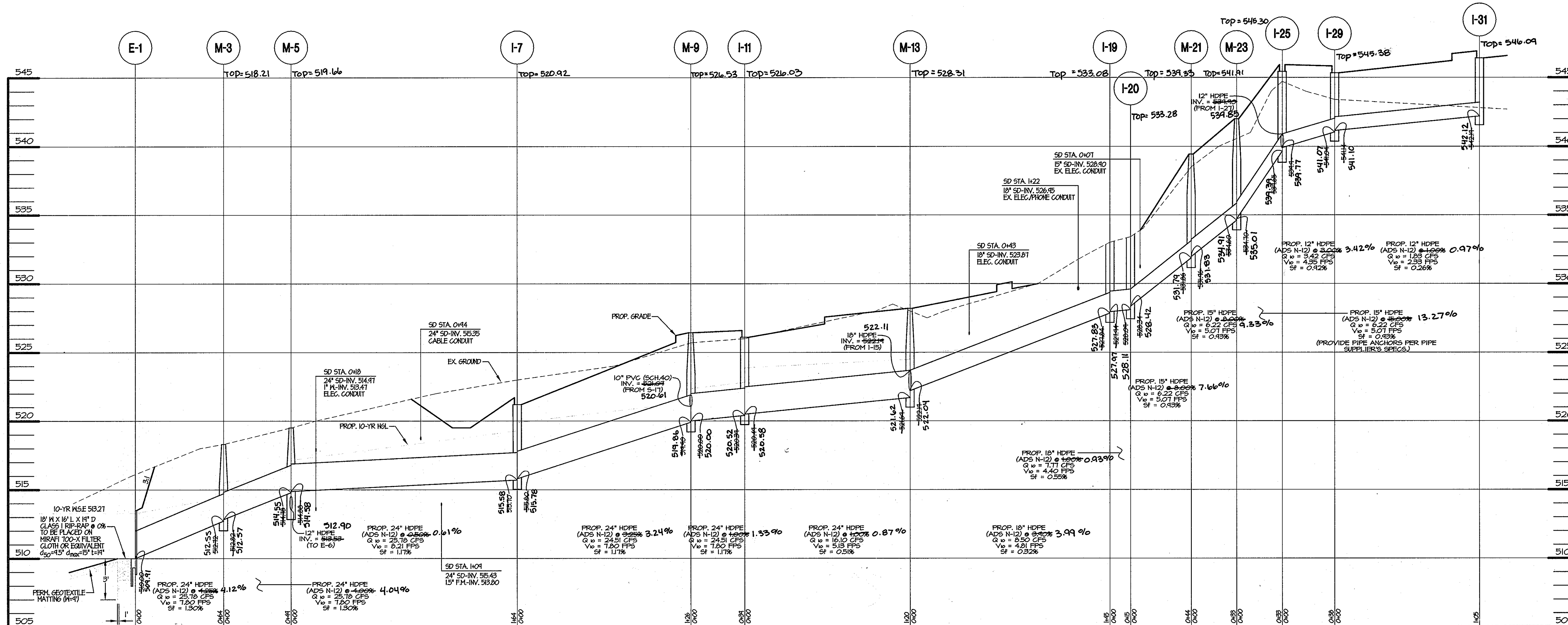
9080 JUNCTION DRIVE, SUITE 9  
 ANNAPOLIS JUNCTION, MARYLAND 20701  
 (410) 792-9792 or (301) 776-1690  
 FAX (410) 792-7395

**THE GLENELG COUNTRY SCHOOL PROPOSED UPPER SCHOOL ADDITION**

**SITE DETAILS**

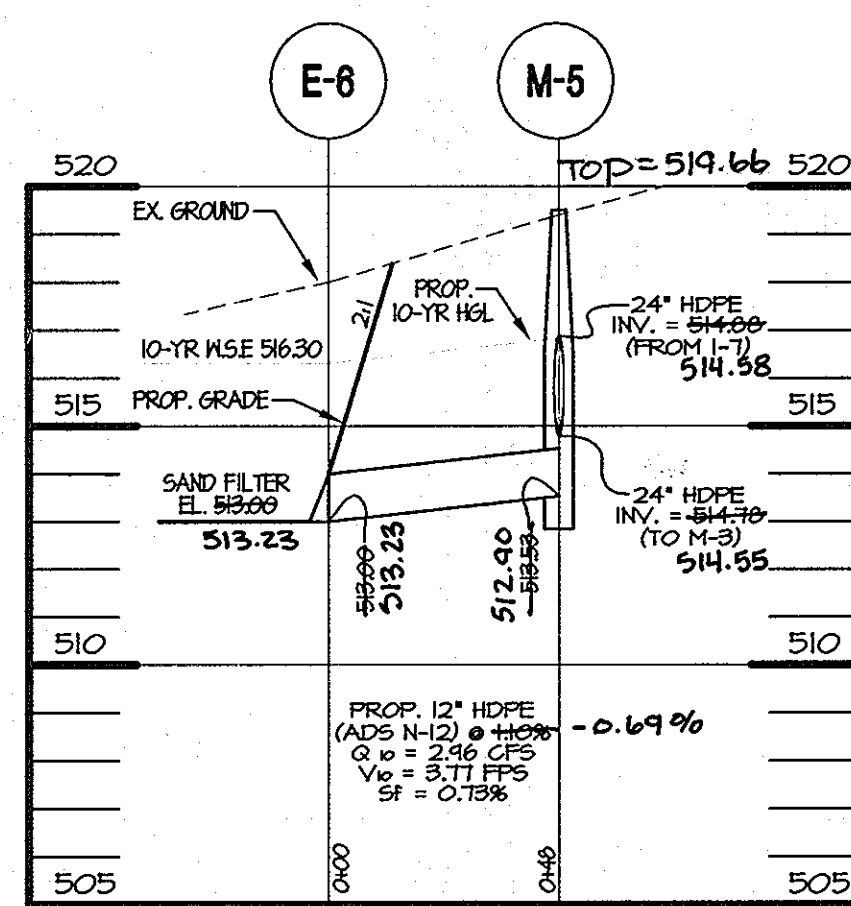
TAX MAP 22 GRID 22 PARCEL 146  
 LIBER 1296 FOLIO 245  
 FIFTH (5TH) ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	12189.02
		SCALE: N.T.S.
		DATE: 07/14/03
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: TCN
		SHEET: 5 OF 23



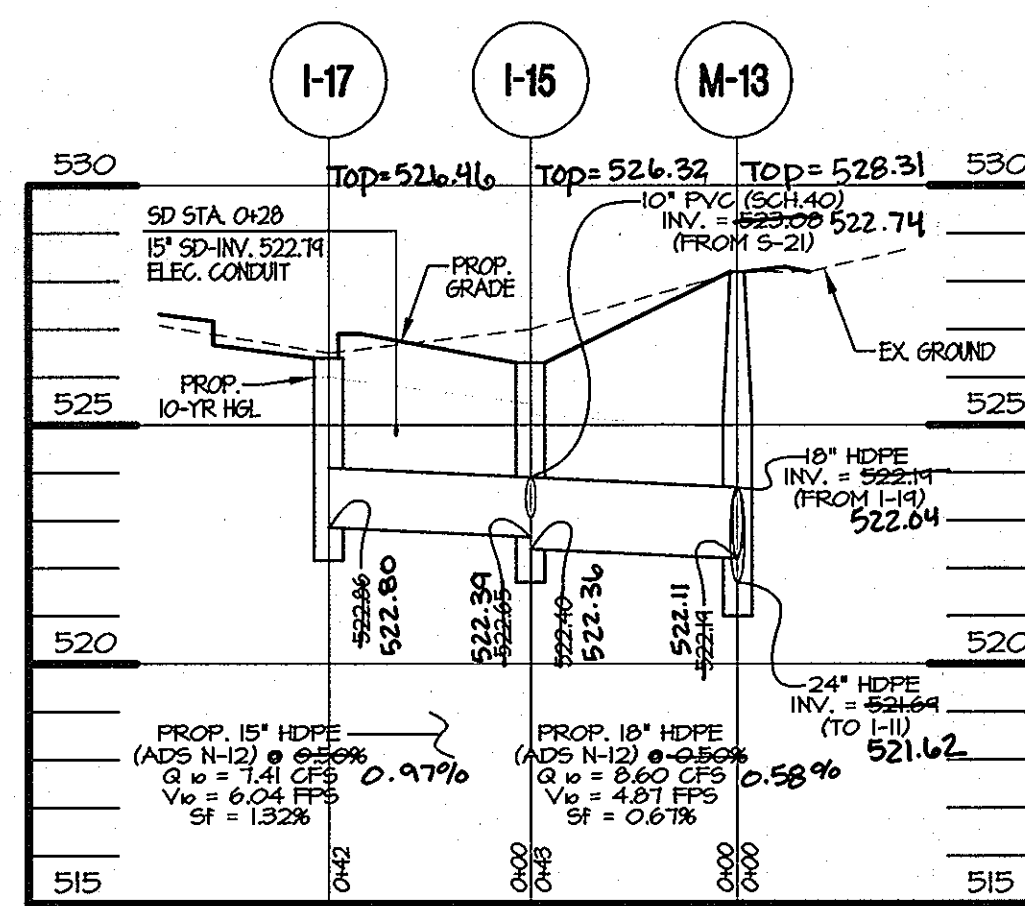
**STORM DRAIN PROFILE**

HOR. 1" = 40'  
VERT. 1" = 4'



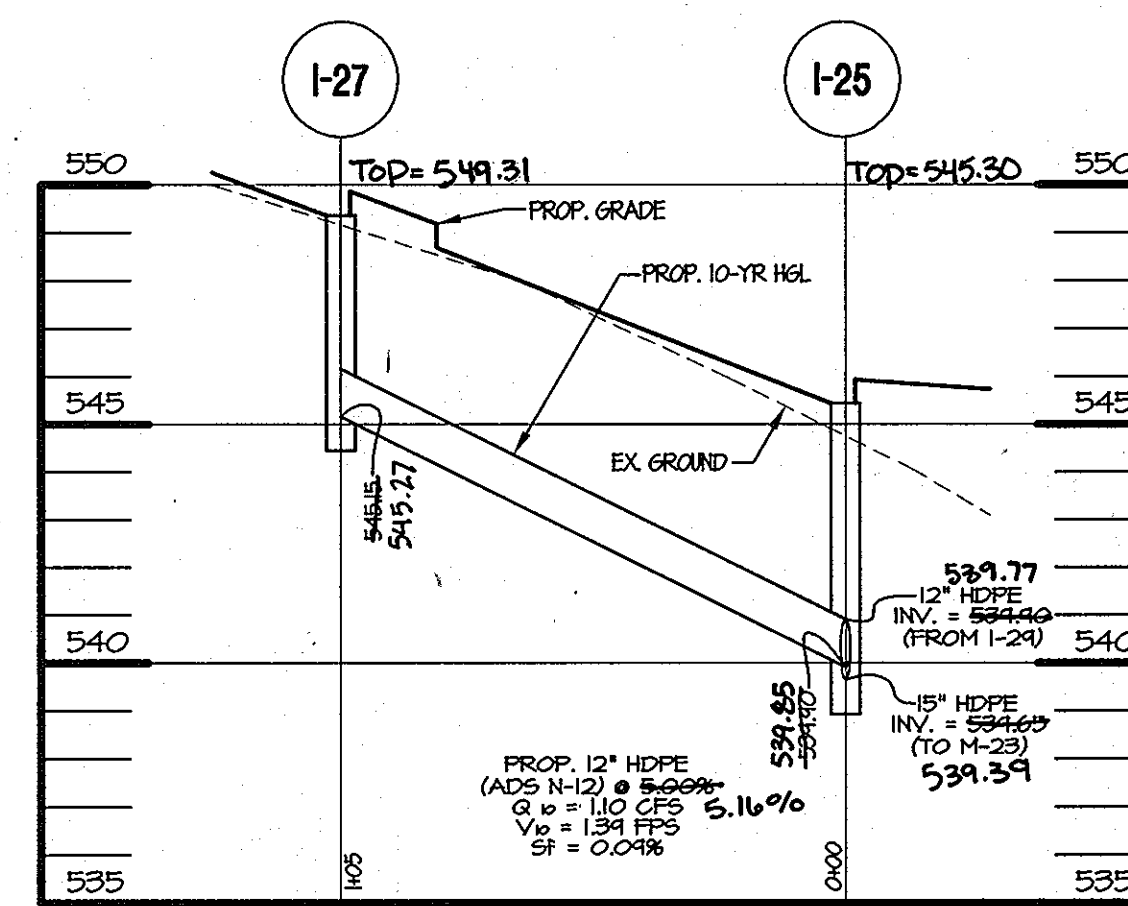
**STORM DRAIN PROFILE**

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VERT. 1" = 4'



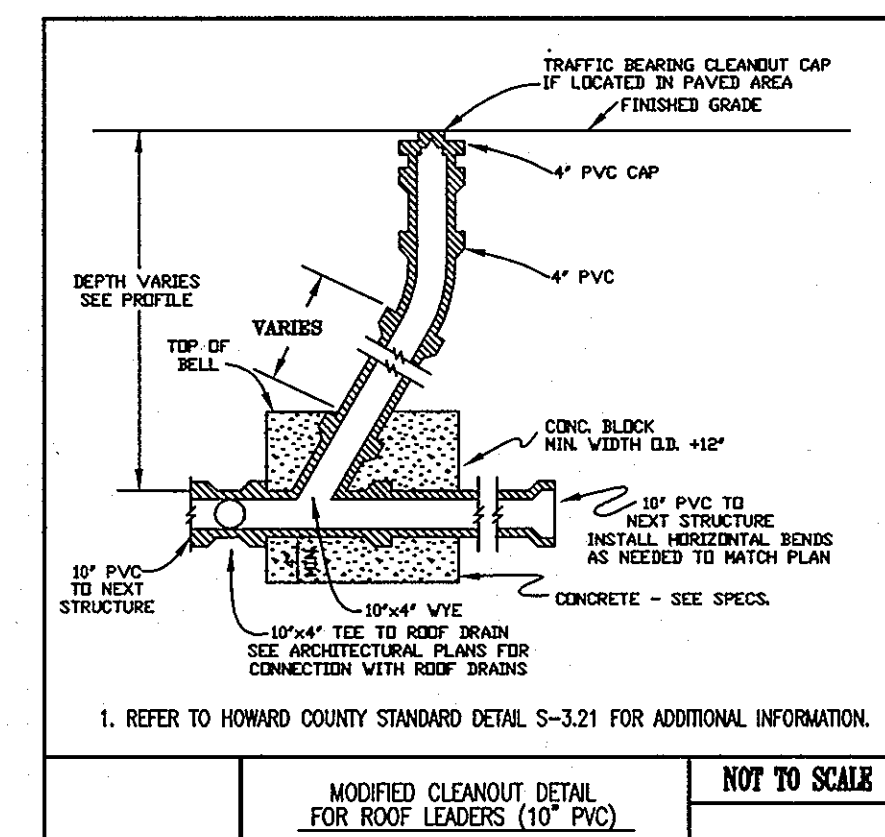
**STORM DRAIN PROFILE**

HOR. 1" = 40'  
VERT. 1" = 4'



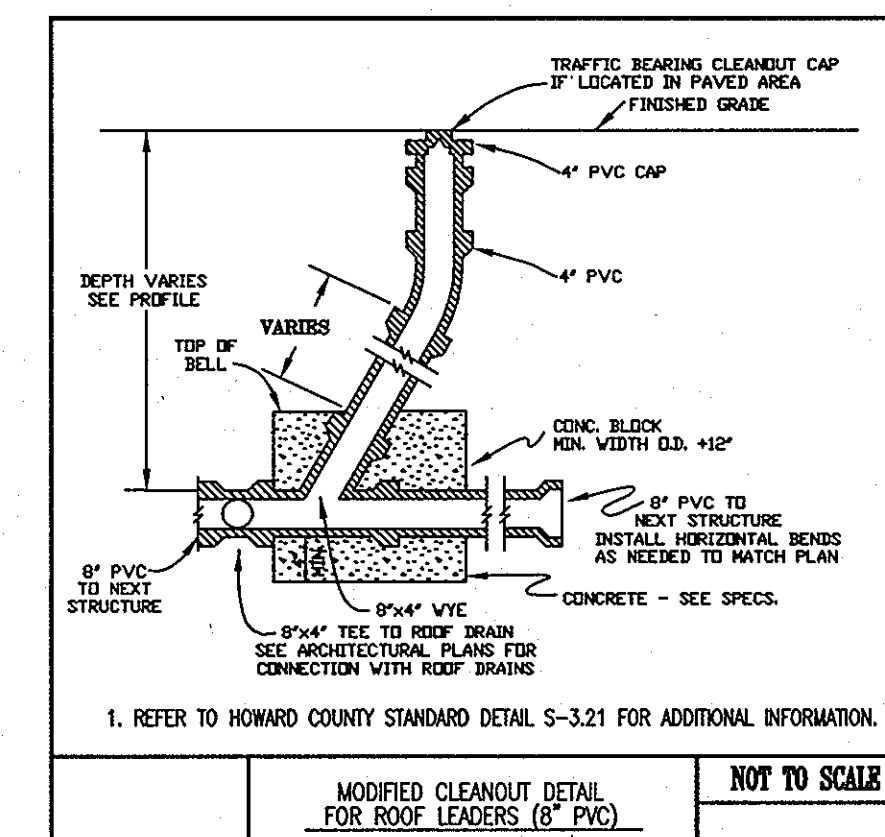
**STORM DRAIN PROFILE**

HOR. 1" = 40'  
VERT. 1" = 4'



**MODIFIED CLEANOUT DETAIL FOR ROOF LEADERS (12" PVC)**

NOT TO SCALE



**MODIFIED CLEANOUT DETAIL FOR ROOF LEADERS (6" PVC)**

NOT TO SCALE

**STORM DRAIN PIPE SCHEDULE**

SIZE	TYPE	LENGTH
12"	HPDE, A.D.S. N-12	248'
15"	HPDE, A.D.S. N-12	152'
18"	HPDE, A.D.S. N-12	203'
24"	HPDE, A.D.S. N-12	562'

NOTE: PIPE INSTALLATION TO BE IN ACCORDANCE WITH ALL SPECIFICATIONS AND RECOMMENDATIONS FROM PIPE SUPPLIER/MANUFACTURER.

APPROVED FOR SUBSTITUTION OF PRIVATE WATER & SEWERAGE SYSTEMS

*Donna J. ...*  
COUNTRY HEALTH OFFICER, MARYLAND  
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED DEPARTMENT OF PLANNING AND ZONING

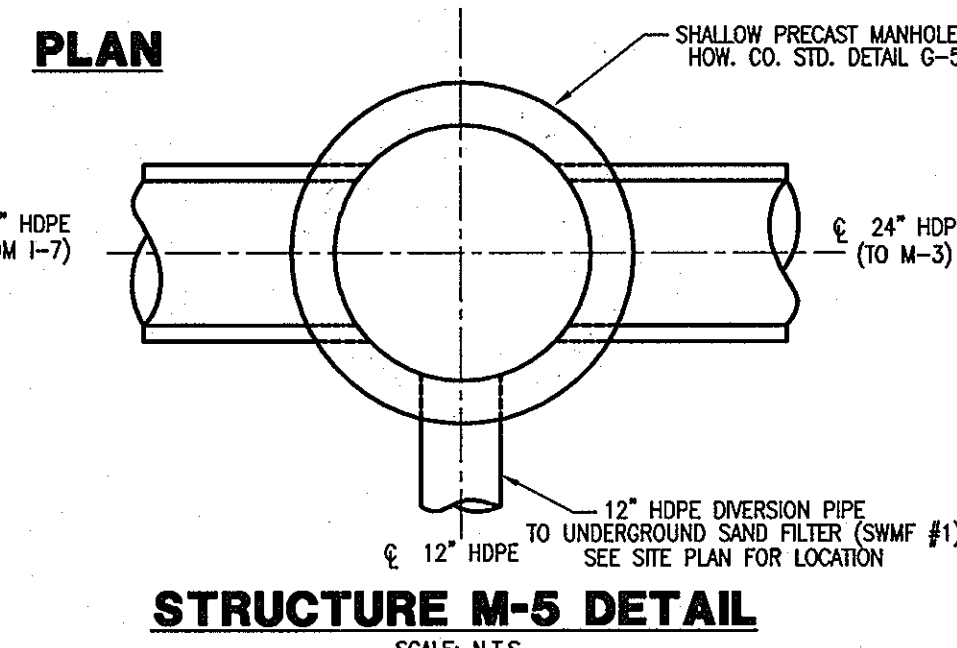
*Paul J. ...*  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Paul J. ...*  
DIRECTOR, DEPARTMENT OF PLANNING AND ZONING

DATE: 8/2/03  
DATE: 8/12/03  
DATE: 8/12/03

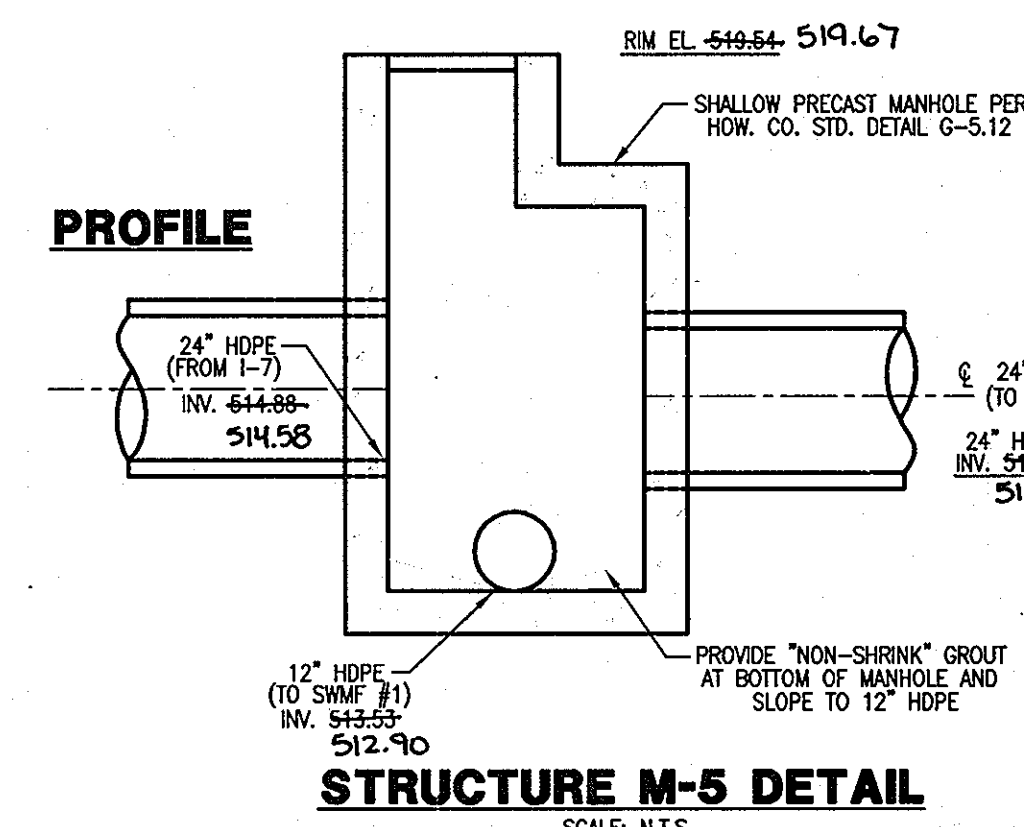
• COORDINATES TO CENTER OF STRUCTURE AT FACE OF CURB FOR INLETS, CENTER OF STRUCTURE FOR MANHOLES  
\* TOP OF GRATE ELEVATION AT CENTER OF STRUCTURE AT FACE OF CURB, MANHOLE ELEVATIONS ARE AT CENTER OF RIM

STR. NO.	TOP ELEV.	INV. IN.	INV. OUT.	TYPE	REMARKS	LOCATION	
						NORTHING	EASTING
E-1	513.50	---	510.00	TYPE 'A' HEADWALL, HOWARD COUNTY STANDARD DETAIL SD-5.11		578,289.59	1,324,466.78
M-3	518.33	512.82	512.72	SHALLOW PRECAST MANHOLE, HOWARD COUNTY STANDARD DETAIL G 5.12		578,353.33	1,324,473.65
M-5	519.54	514.88	514.78	SHALLOW PRECAST MANHOLE, HOWARD COUNTY STANDARD DETAIL G 5.12		578,367.86	1,324,426.77
I-7	521.20	515.80	515.70	PRECAST WR INLET, HOWARD COUNTY STANDARD DETAIL SD-4.35		578,415.79	1,324,272.21
M-9	526.43	520.00	521.07	STANDARD PRECAST MANHOLE, HOWARD COUNTY STANDARD DETAIL G 5.12		578,400.59	1,324,145.53
I-11	526.00	520.49	520.39	PRECAST WR INLET, HOWARD COUNTY STANDARD DETAIL SD-4.35		578,375.79	1,324,116.68
M-13	528.20	522.19	522.19	STANDARD PRECAST MANHOLE, HOWARD COUNTY STANDARD DETAIL G 5.12		578,258.95	1,324,092.00
I-19	533.00	527.94	527.84	PRECAST SINGLE WR INLET, HOWARD COUNTY STANDARD DETAIL SD-4.37		578,161.12	1,323,984.98
I-20	533.33	528.34	528.09	PRECAST SINGLE WR INLET, HOWARD COUNTY STANDARD DETAIL SD-4.37		578,174.10	1,323,973.33
M-21	539.43	531.96	531.86	STANDARD PRECAST MANHOLE, HOWARD COUNTY STANDARD DETAIL G 5.12		578,205.78	1,323,945.10
M-23	542.00	534.70	534.60	STANDARD PRECAST MANHOLE, HOWARD COUNTY STANDARD DETAIL G 5.12		578,238.78	1,323,942.00
I-25	545.30	539.90	539.65	PRECAST WR INLET, HOWARD COUNTY STANDARD DETAIL SD-4.35		578,255.79	1,323,916.08
I-29	545.30	541.14	541.04	PRECAST WR INLET, HOWARD COUNTY STANDARD DETAIL SD-4.35		578,290.80	1,323,931.09
I-31	546.38	---	542.19	PRECAST WR INLET, HOWARD COUNTY STANDARD DETAIL SD-4.35		578,393.83	1,323,951.37
I-15	526.30	522.65	523.08	PRECAST SINGLE WR INLET, HOWARD COUNTY STANDARD DETAIL SD-4.37		578,241.90	1,324,131.42
I-17	526.40	---	522.86	PRECAST SINGLE WR INLET, HOWARD COUNTY STANDARD DETAIL SD-4.37		578,202.42	1,324,134.83
I-27	549.36	---	545.15	PRECAST WR INLET, HOWARD COUNTY STANDARD DETAIL SD-4.35		578,168.05	1,323,858.48
E-6	N/A	---	513.00	12" HDPE END SECTION, A.D.S. STANDARD DETAIL DW-272, PART #1210-NP			



**STRUCTURE M-5 DETAIL**

SCALE: N.T.S.



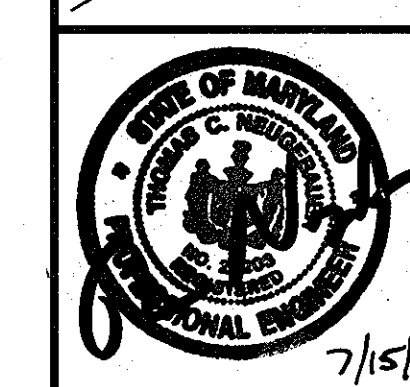
**STRUCTURE M-5 DETAIL**

SCALE: N.T.S.



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

9090 JUNCTION DRIVE, SUITE 9  
ANNAPOLIS JUNCTION, MARYLAND 20701  
(410) 792-9792 or (301) 776-1690  
FAX (410) 792-7395

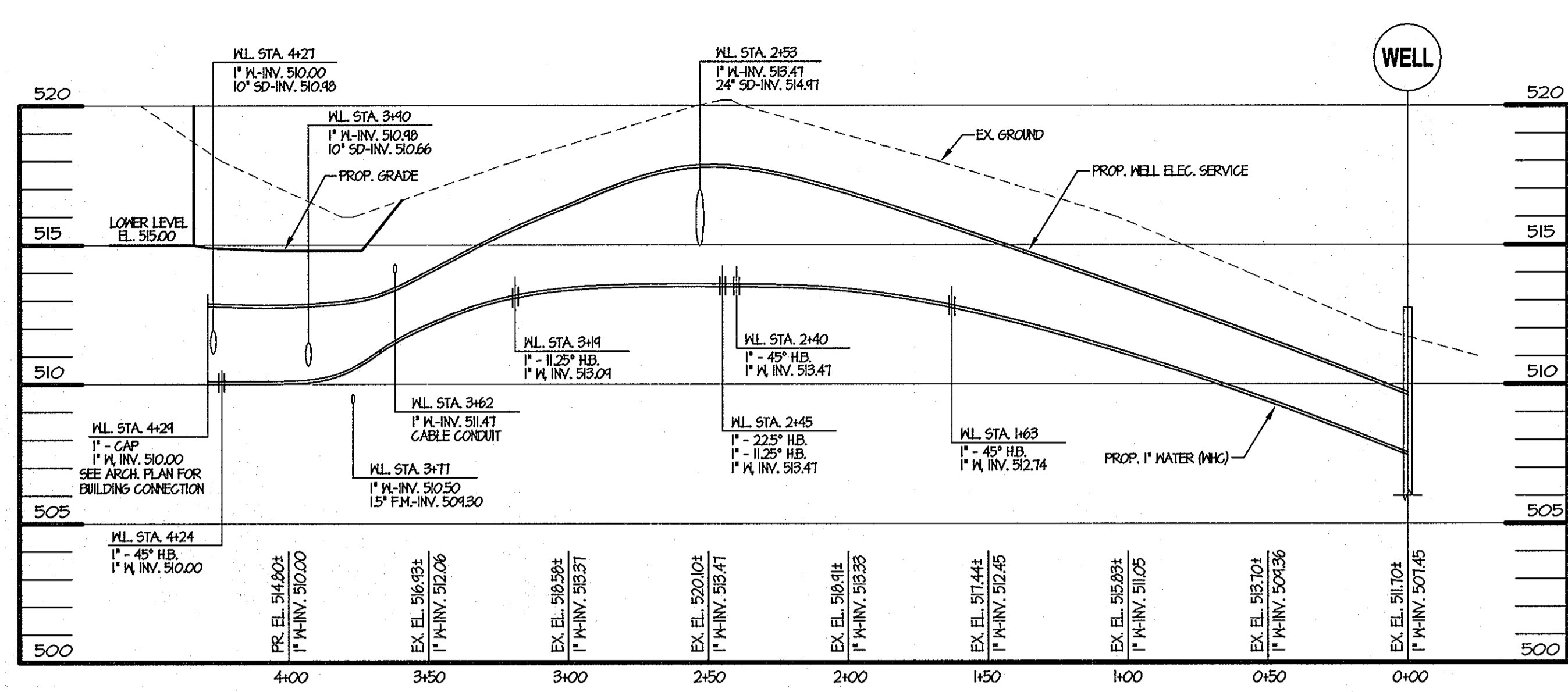


**THE GLENELG COUNTRY SCHOOL  
PROPOSED UPPER SCHOOL ADDITION**

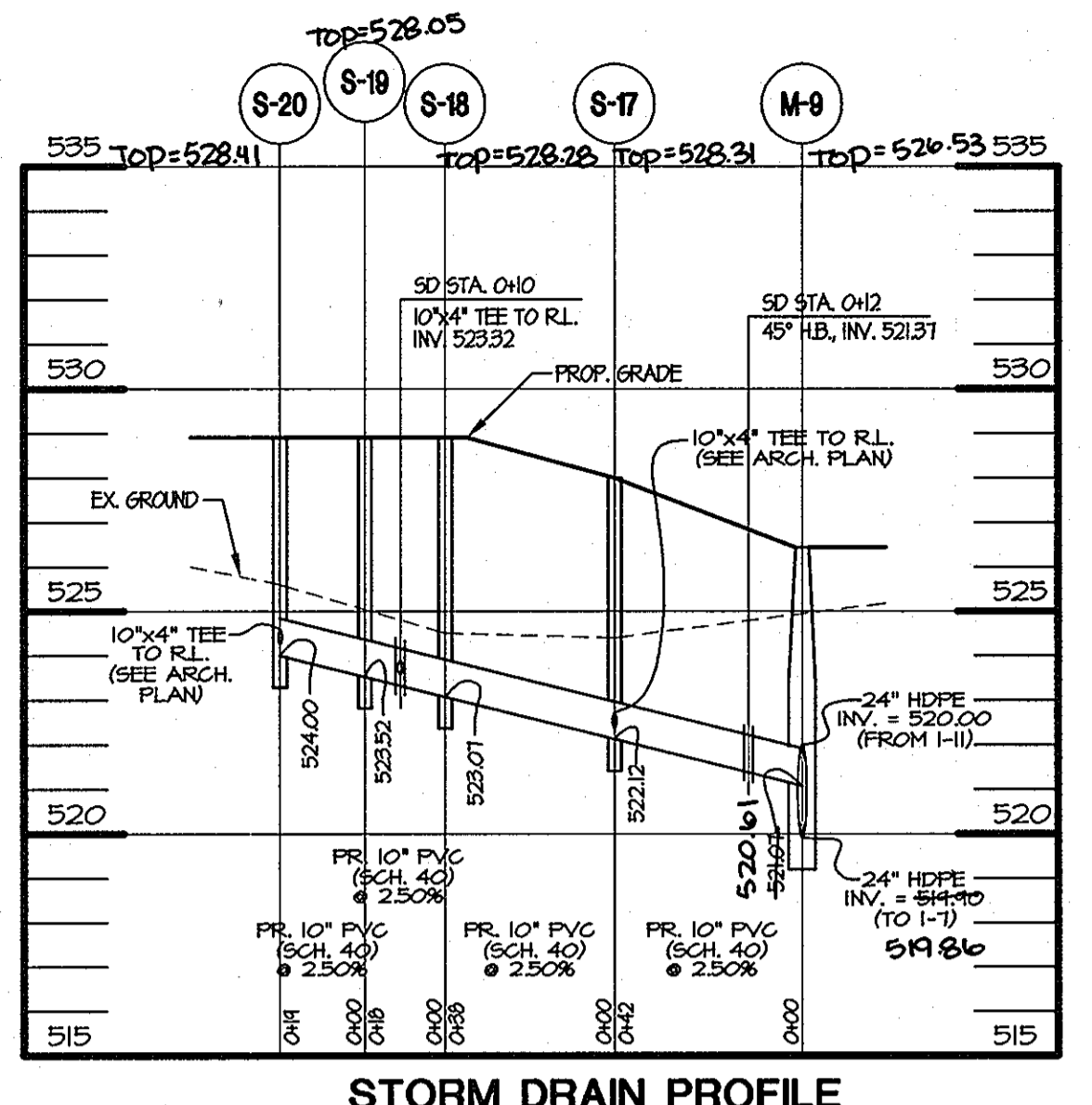
**STORM DRAIN & UTILITY PROFILES**

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

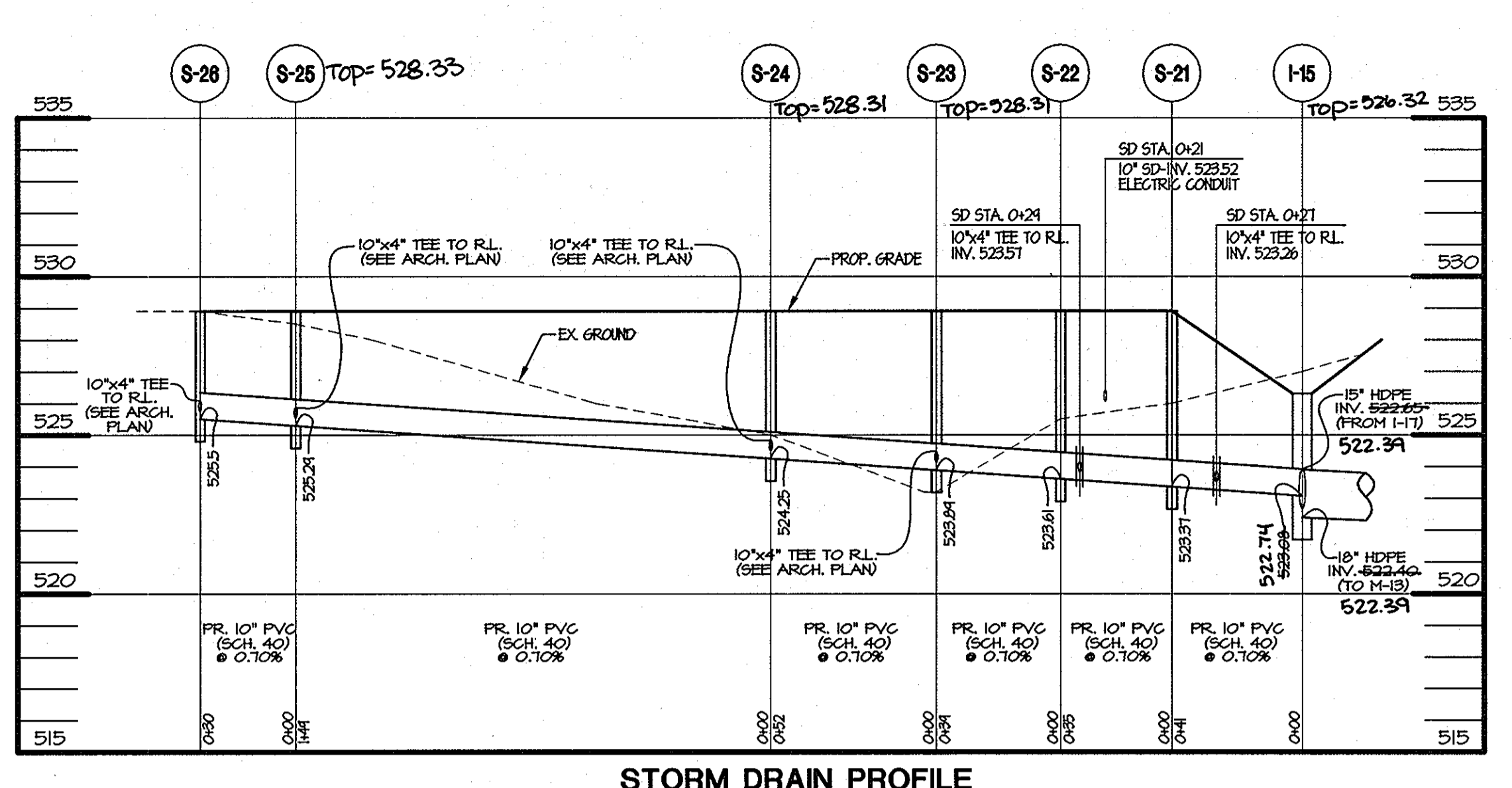
DATE	REVISIONS	JOB NO.:
04/06	AS-BUILT INFORMATION ADDED	12189-02
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	SCALE: AS SHOWN
		DATE: 07/14/03
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: TCN
		SHEET: 6 OF 37



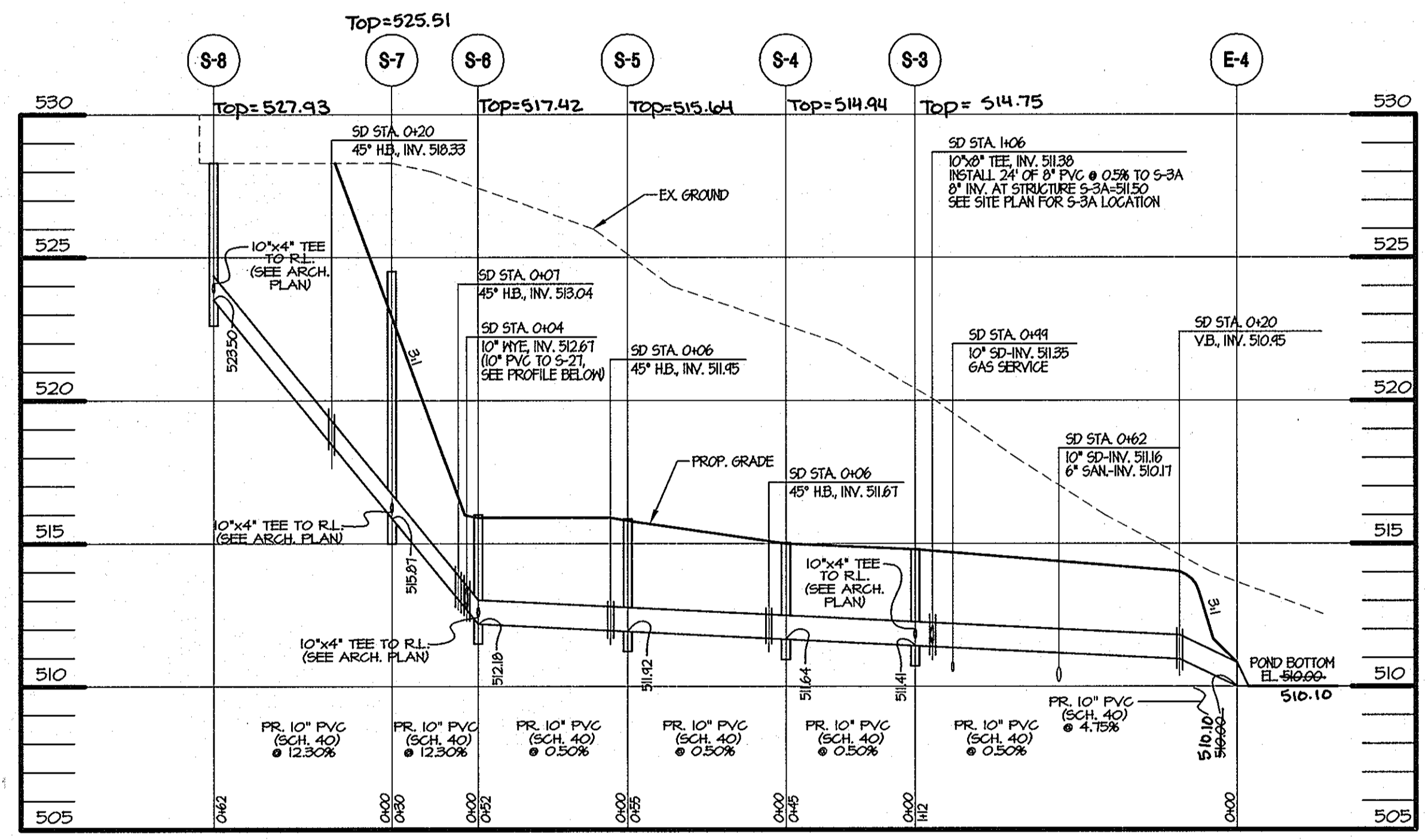
**WATER LINE PROFILE**  
HOR. 1" = 40'  
VERT. 1" = 4'



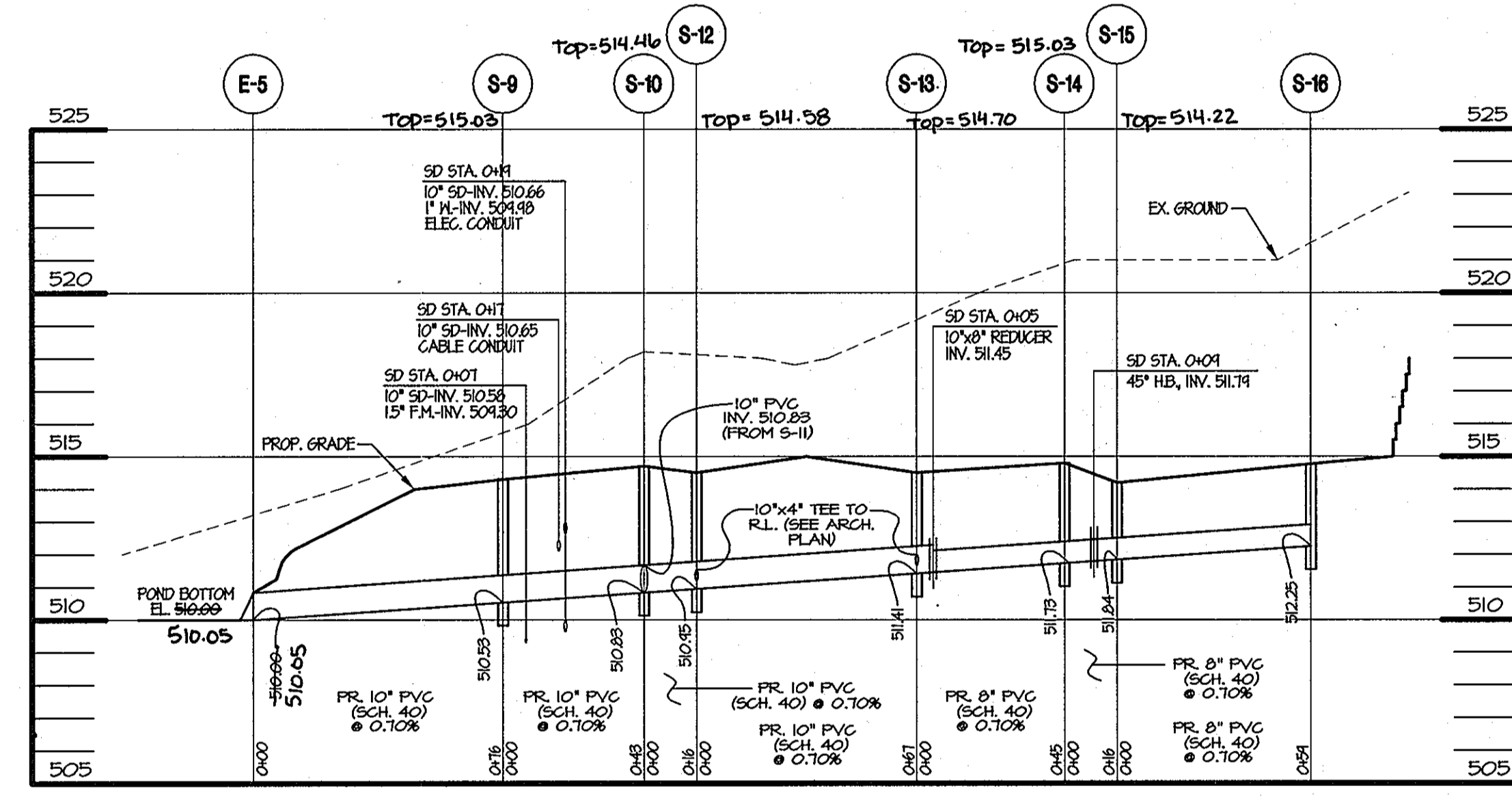
**STORM DRAIN PROFILE**  
HOR. 1" = 40'  
VERT. 1" = 4'



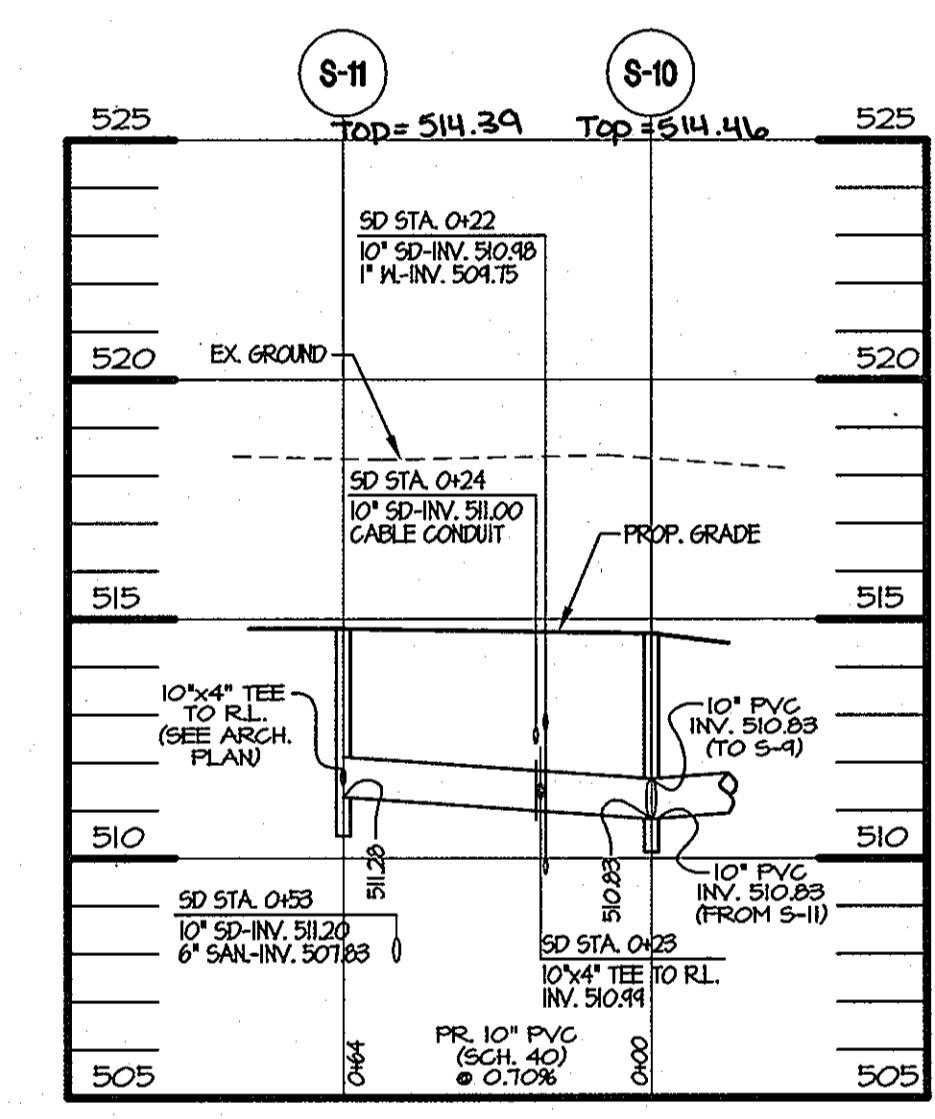
**STORM DRAIN PROFILE**  
HOR. 1" = 40'  
VERT. 1" = 4'



**STORM DRAIN PROFILE**  
HOR. 1" = 40'  
VERT. 1" = 4'



**STORM DRAIN PROFILE**  
HOR. 1" = 40'  
VERT. 1" = 4'



**STORM DRAIN PROFILE**  
HOR. 1" = 40'  
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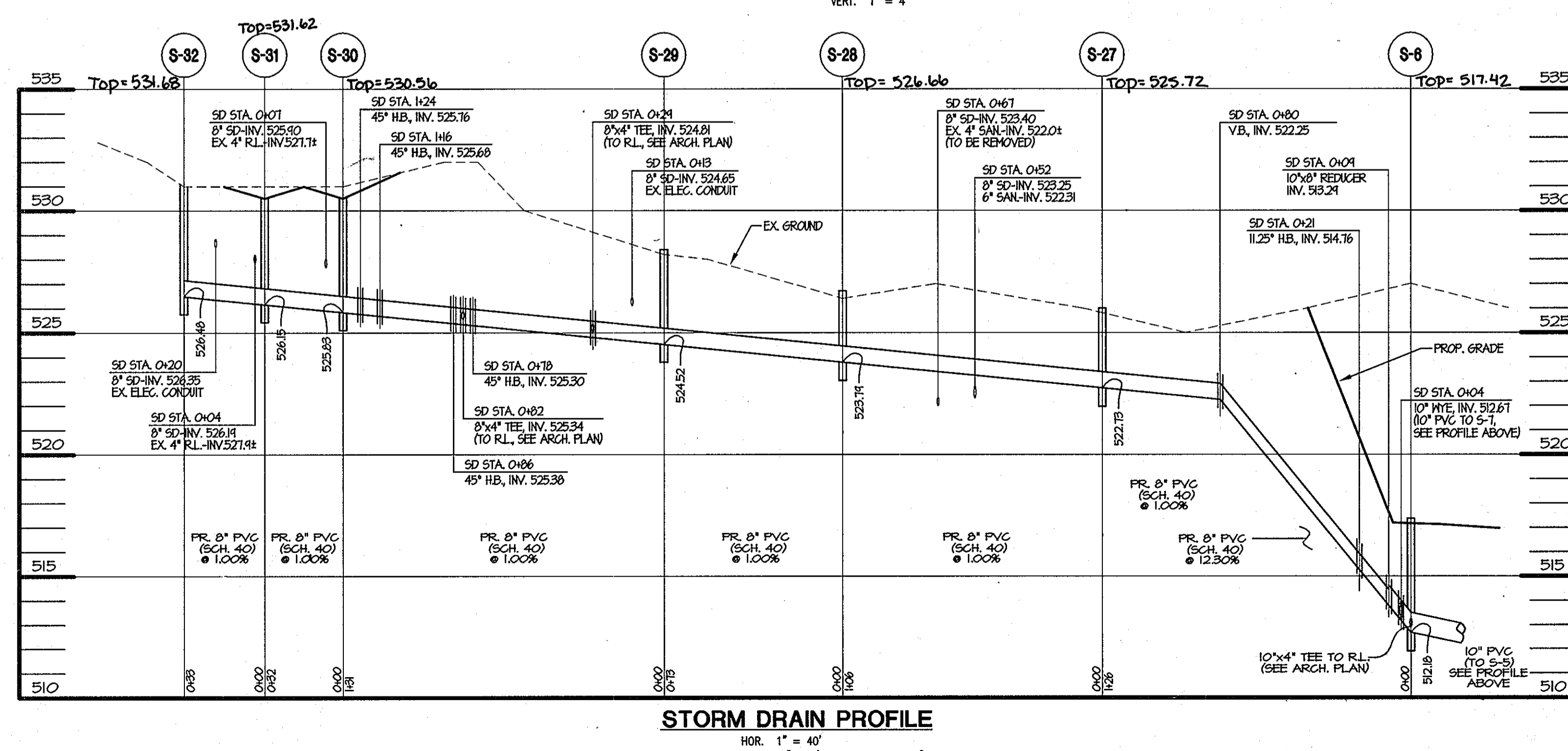
WATER LINE PIPE SCHEDULE		
SIZE	TYPE	LENGTH
1"	1" PVC AWWA C-900	429'

WATER LINE FITTINGS SCHEDULE		
SIZE	TYPE	NUMBER
1"	11.25" H.B.	2
1"	22.5" H.B.	1
1"	45" H.B.	3

ROOF LEADER PIPE SCHEDULE		
SIZE	TYPE	LENGTH
4"	PVC (SCH. 40) (CLEANOUT STACKS)	119'
8"	PVC (SCH. 40)	620'
10"	PVC (SCH. 40)	1125'

ROOF LEADERS FITTINGS SCHEDULE		
SIZE	TYPE	NUMBER
8"	45" H.B. (SCH. 40)	9
10"	10"x8" REDUCER (SCH. 40)	2
10"	45" H.B. (SCH. 40)	11
10"	90" H.B. (SCH. 40)	6
10"	10"x10" TEE (SCH. 40)	3
10"	10"x4" TEE (SCH. 40)	17
8"	8"x4" WYE (SCH. 40)	4
10"	10"x4" WYE (SCH. 40)	19
10"	10"x10" WYE (SCH. 40)	1
10"	10" CAP (SCH. 40)	4
8"	8" CAP (SCH. 40)	2
8"	90" H.B. (SCH. 40)	5
8"	11.25" H.B. (SCH. 40)	2
8"	8"x4" TEE (SCH. 40)	3

ROOF LEADER STRUCTURE SCHEDULE						
STR. NO.	TOP ELEV.	INV. IN.	INV. IN.	TYPE	REMARKS	
E-4	N/A	---	---	10" HDPE END SECTION, A.D.S. STANDARD DETAIL DW-272, PART #1210-NP		
S-3	514.80	---	511.41	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-3A	514.30	---	511.80	10" HDPE INLINE DRAIN, A.D.S. PRODUCT #2710AGBN		
S-4	515.00	---	511.64	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-5	515.80	---	511.92	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-6	515.90	---	512.18	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-7	522.50	---	515.87	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-8	528.30	---	523.50	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
E-5	N/A	---	---	10" HDPE END SECTION, A.D.S. STANDARD DETAIL DW-272, PART #1210-NP		
S-9	514.30	---	510.53	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-10	514.70	---	510.83	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-11	514.80	---	511.28	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-12	514.50	---	510.95	18" HDPE INLINE DRAIN, A.D.S. PRODUCT #2718AG10N		
S-13	514.50	---	511.41	18" HDPE INLINE DRAIN, A.D.S. PRODUCT #2718AG10N		
S-14	514.80	---	511.73	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-15	514.20	---	511.84	10" HDPE INLINE DRAIN, A.D.S. PRODUCT #2710AGBN		
S-16	514.77	---	512.25	10" HDPE INLINE DRAIN, A.D.S. PRODUCT #2710AGBN		
S-17	528.00	---	522.12	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-18	528.90	---	523.07	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-19	528.50	---	523.52	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-20	528.50	---	524.00	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-21	528.90	---	523.37	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-22	528.40	---	523.61	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-23	528.90	---	523.89	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-24	528.90	---	524.25	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-25	528.90	---	525.29	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-26	528.90	---	525.50	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-27	525.80	---	522.73	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-28	526.50	---	523.79	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-29	528.30	---	524.52	MODIFIED CLEANOUT, HOWARD CO. STD. DETAIL S-3.21, & DETAIL SHEET 6		
S-30	530.50	---	525.83	10" HDPE INLINE DRAIN, A.D.S. PRODUCT #2710AGBN		
S-31	530.50	---	526.15	10" HDPE INLINE DRAIN, A.D.S. PRODUCT #2710AGBN		
S-32	531.00	---	526.48	10" HDPE INLINE DRAIN, A.D.S. PRODUCT #2710AGBN		



**STORM DRAIN PROFILE**  
HOR. 1" = 40'  
VERT. 1" = 4'

APPROVED FOR SUBMITTAL FOR PRIVATE WATER & SEWERAGE SYSTEMS  
 COUNTRY HEALTH OFFICER: [Signature] 8-2-03 DATE  
 HOWARD COUNTY HEALTH DEPARTMENT  
 APPROVED DEPARTMENT OF PLANNING AND ZONING  
 [Signature] alsojcs DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK  
 [Signature] 8/12/03 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT WB  
 [Signature] 8/12/03 DATE  
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING

**MRA**  
**MORRIS & RITCHIE ASSOCIATES, INC.**  
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS  
 9080 JUNCTION DRIVE, SUITE 9  
 ANNAPOLIS JUNCTION, MARYLAND 20701  
 (410) 792-9792 or (301) 776-1690  
 FAX (410) 792-7395

**THE GLENELG COUNTRY SCHOOL**  
**PROPOSED UPPER SCHOOL ADDITION**  
**STORM DRAIN & UTILITY PROFILES**  
 TAX MAP 22 GRID 22 PARCEL 146  
 LIBER 1296 FOLIO 245  
 FIFTH (5TH) ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
04/06	AS-BUILT INFORMATION ADDED	12189.02
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	SCALE: AS SHOWN
		DATE: 07/14/03
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: TCN
		SHEET: 7 OF 28

**INFILTRATION TRENCH GENERAL NOTES AND SPECIFICATIONS**

AN INFILTRATION TRENCH MAY NOT RECEIVE RUN-OFF UNTIL THE ENTIRE CONTRIBUTING DRAINAGE AREA TO THE INFILTRATION TRENCH HAS RECEIVED FINAL STABILIZATION.

- HEAVY EQUIPMENT AND TRAFFIC SHALL BE RESTRICTED FROM TRAVELING OVER THE PROPOSED LOCATION OF THE INFILTRATION TRENCH TO MINIMIZE COMPACTION OF THE SOIL.
- EXCAVATE THE INFILTRATION TRENCH TO THE DESIGN DIMENSIONS. EXCAVATED MATERIALS SHALL BE PLACED AWAY FROM THE TRENCH SIDES TO ENHANCE TRENCH WALL STABILITY. LARGE TREE ROOTS MUST BE TRIMMED FAR FROM THE TRENCH SIDES IN ORDER TO PREVENT FABRIC PUNCTURING OR TEARING OF THE FILTER FABRIC DURING SUBSEQUENT INSTALLATION PROCEDURES. THE SIDE WALLS OF THE TRENCH SHALL BE ROUGHENED WHERE SHEARED AND SEALED BY HEAVY EQUIPMENT.
- A CLASS "C" GEOTEXTILE OR BETTER (SEE SECTION 24.0, MATERIAL SPECIFICATIONS, 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, MDE, 1994) SHALL INTERFACE BETWEEN THE TRENCH SIDE WALLS AND BETWEEN STONE RESERVOIR AND GRAVEL FILTER LAYERS. A PARTIAL LIST OF NON-WOVEN FABRICS THAT MEET THE CLASS "C" CRITERIA FOLLOWS. ANY ALTERNATIVE FILTER FABRIC MUST BE APPROVED BY THE PLAN APPROVAL AUTHORITY.  
 AMCO 4552      CARTRIDGE EX-805  
 GEOLON N70      MIRAFIT 180-N  
 WEBTEC N07

THE WIDTH OF GEOTEXTILE MUST INCLUDE SUFFICIENT MATERIAL TO CONFORM THE TRENCH PERIMETER IRREGULARITIES AND FOR A 6-INCH MINIMUM TOP OVERLAP. THE FILTER FABRIC SHALL BE TUCKED UNDER THE SAND LAYER ON THE BOTTOM OF THE INFILTRATION TRENCH FOR A DISTANCE OF 6 TO 12 INCHES. STONES OR OTHER ANCHORING OBJECTS SHOULD BE PLACED ON THE FABRIC AT THE EDGE OF THE TRENCH TO KEEP THE TRENCH OPEN DURING WINDY PERIODS. WHEN OVERLAPS ARE REQUIRED BETWEEN ROLLS, THE UPWIND ROLL SHOULD LAP A MINIMUM OF 2 FEET OVER THE DOWNWIND ROLL IN ORDER TO PROVIDE A SHINGLED EFFECT.

- IF A 6" SAND FILTER LAYER IS PLACED ON THE BOTTOM OF THE INFILTRATION TRENCH, THE SAND FOR THE FILTRATION TRENCH SHALL BE WASHED AND MEET ASHTO-M-43, SIZE NO. 9 OR NO. 10. ANY ALTERNATIVE SAND GRADATION MUST BE APPROVED BY THE PLAN APPROVAL AUTHORITY.
- THE STONE AGGREGATE SHOULD BE PLACED IN A MAXIMUM LOOSE LIFT THICKNESS OF 12 INCHES. THE GRAVEL (ROUNDED "BANK RUN" GRAVEL IS PREFERRED) FOR THE INFILTRATION TRENCH SHALL BE WASHED AND MEET ONE OF THE FOLLOWING ASHTO-M-43, SIZE NO. 2 OR NO. 3.
- FOLLOWING THE STONE AGGREGATE PLACEMENT, THE FILTER FABRIC SHALL BE FOLDED OVER THE STONE AGGREGATE TO FORM A 6-INCH MINIMUM LONGITUDINAL LAP. THE DESIRED FILL SOIL OR STONE AGGREGATE SHALL BE PLACED OVER THE LAP AT SUFFICIENT INTERVALS TO MAINTAIN THE LAP DURING SUBSEQUENT BACKFILLING.
- CARE SHALL BE EXERCISED TO PREVENT NATURAL OR FILL SOILS FROM INTERMIXING WITH THE STONE AGGREGATE. ALL CONTAMINATED STONE AGGREGATE SHALL BE REMOVED AND REPLACED WITH UNCONTAMINATED STONE AGGREGATE.
- VOIDS MAY OCCUR BETWEEN FABRIC AND THE EXCAVATION SIDES SHALL BE AVOIDED. REMOVING BOULDERS OR OTHER OBSTACLES FROM THE TRENCH WALLS IS ONE SOURCE OF SUCH VOID. THEREFORE, NATURAL SOILS SHOULD BE PLACED IN THOSE VOID AT THE MOST CONVENIENT TIME DURING CONSTRUCTION TO ENSURE FABRIC CONFORMITY TO THE EXCAVATION SIDES.
- VERTICALLY EXCAVATED WALLS MAY BE DIFFICULT TO MAINTAIN IN AREAS WHERE SOIL MOISTURE IS HIGH OR WHERE SOFT COHESIVE OR COHESIONLESS SOILS ARE DOMINANT. THESE CONDITIONS MAY REQUIRE LAYING BACK OF THE SIDE SLOPES TO MAINTAIN STABILITY.
- PVC DISTRIBUTION PIPES SHALL BE SCHEDULE 40 AND MEET ASTM-D-1785. ALL FITTINGS SHALL MEET ASTM-D-2729. PERFORATIONS SHALL BE 3/8" IN DIAMETER. A PERFORATED PIPE SHALL BE PROVIDED ONLY WITHIN THE INFILTRATION TRENCH AND SHALL TERMINATE 1 FOOT SHORT OF THE INFILTRATION TRENCH WALL. THE END OF THE PVC PIPE SHALL BE CAPPED. NOTE: PVC PIPE WITH A WALL THICKNESS CLASSIFICATION OF SDR-35 MEETING ASTM-D-3034 IS AN ACCEPTABLE SUBSTITUTE FOR THE SCHEDULE 40 PIPE.
- THE OBSERVATION WELL IS TO CONSIST OF 6-INCH DIAMETER PERFORATED PVC SCHEDULE 40 PIPE (M278 OR F758, TYPE PS 28) WITH A CAP SET FLUSH TO FINAL PAVED SURFACE AND IS TO BE LOCATED NEAR THE LONGITUDINAL CENTER OF THE INFILTRATION TRENCH. THE PIPE SHALL HAVE A PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING THE CAP. THE SCREW TOP LID SHALL BE A CLEANOUT WITH A LOCKING MECHANISM OR SPECIAL BOLT TO DISCOURAGE VANDALISM. THE DEPTH TO THE INVERT SHALL BE MARKED ON THE LID. THE PIPE SHALL BE PLACED VERTICALLY WITHIN THE GRAVEL PORTION OF THE INFILTRATION TRENCH AND A CAP PROVIDED AT THE BOTTOM OF THE PIPE. THE BOTTOM OF THE CAP SHALL REST ON THE INFILTRATION TRENCH BOTTOM.
- CORRUGATED METAL DISTRIBUTION PIPES SHALL CONFORM TO ASHTO-M-36, AND SHALL BE ALUMINIZED IN ACCORDANCE WITH ASHTO-M-274. ALUMINIZED PIPE IN CONTACT WITH CONCRETE SHALL BE COATED WITH AN INERT COMPOUND CAPABLE OF PREVENTING THE DELETERIOUS EFFECT OF ALUMINUM ON THE CONCRETE. PERFORATED DISTRIBUTION PIPES SHALL CONFORM TO ASHTO-M-36, CLASS 2 AND SHALL BE PROVIDED ONLY WITHIN THE INFILTRATION TRENCH AND SHALL TERMINATE 1 FOOT SHORT OF THE INFILTRATION TRENCH WALL. AN ALUMINIZED METAL PLATE SHALL BE WELDED TO THE END OF THE PIPE.
- IF A DISTRIBUTION STRUCTURE WITH A WET WELL IS USED, A 4-INCH DRAIN PIPE SHALL BE PROVIDED AT OPPOSITE ENDS OF THE INFILTRATION TRENCH DISTRIBUTION STRUCTURE. TWO (2) CUBIC FEET OF POROUS BACKFILL MEETING ASHTO-M-43, SIZE NO. 57 SHALL BE PROVIDED AT EACH DRAIN.
- IF A DISTRIBUTION STRUCTURE IS USED, THE MANHOLE COVER SHALL BE BOLTED TO THE FRAME.

**SAND FILTER SPECIFICATIONS**

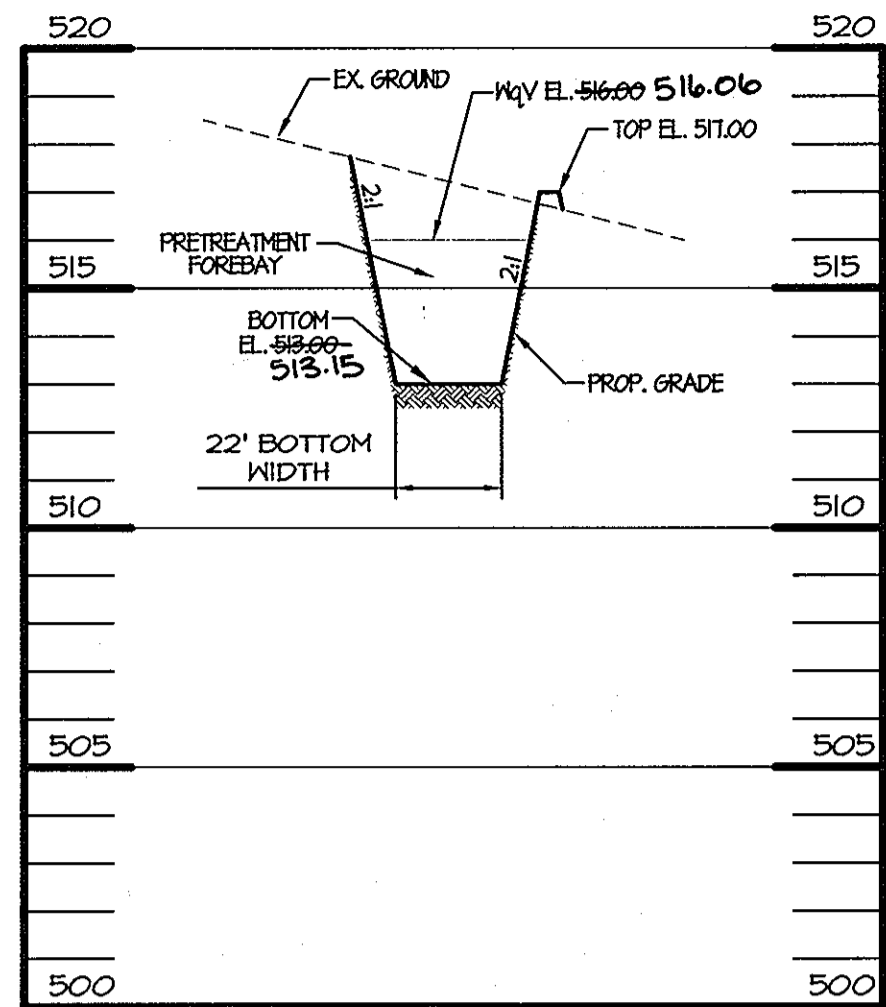
- MATERIAL SPECIFICATIONS FOR SAND FILTER
- THE ALLOWABLE MATERIALS FOR SAND FILTER CONSTRUCTION ARE DETAILED IN TABLE B.3.1. (SEE PAGE SDP-3)
- SAND FILTER TESTING SPECIFICATIONS
- UNDERGROUND SAND FILTERS, FACILITIES WITHIN SENSITIVE GROUNDWATER AQUIFERS, AND FILTERS DESIGNED TO SERVE URBAN HOT SPOTS ARE TO BE TESTED FOR WATER TIGHTNESS PRIOR TO PLACEMENT OF FILTER MEDIA. ENTRANCES AND EXITS SHOULD BE PLUGGED AND THE SYSTEM COMPLETELY FILLED WITH WATER TO DEMONSTRATE WATER TIGHTNESS. WATER TIGHTNESS MEANS NO LEAKAGE FOR A PERIOD OF 8 HOURS.
- ALL OVERFLOW WEIRS, MULTIPLE ORIFICES AND FLOW DISTRIBUTION SLOTS ARE TO BE FIELD-TESTED TO VERIFY ADEQUATE DISTRIBUTION OF FLOWS.
- SAND FILTER CONSTRUCTION SPECIFICATIONS
- PROVIDE SUFFICIENT MAINTENANCE ACCESS (I.E., 12-FOOT-WIDE ROAD WITH LEGALLY RECORDED EASEMENT). VEGETATED ACCESS SLOPES ARE TO BE MAXIMUM OF 10%; GRAVEL SLOPES 10 TO 15%; PAVED SLOPES TO 25%. ABSOLUTELY NO RUNOFF IS TO ENTER THE FILTER UNTIL ALL CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED. SURFACE OR FILTER BED IS TO BE LEVEL.
- ALL UNDERGROUND SAND FILTERS SHOULD BE CLEARLY DELINEATED WITH SIGNS SO THAT THEY MAY BE LOCATED WHEN MAINTENANCE IS DUE. SURFACE SAND FILTERS MAY BE PLANTED WITH APPROPRIATE GRASSES. SEE APPENDIX A.
- "POCKET" SAND FILTERS AND RESIDENTIAL BIORETENTION FACILITIES TREATING AREAS LARGER THAN AN ACRE SHALL BE SIZED WITH A STONE "WINDOW" THAT COVERS APPROXIMATELY 10% OF THE FILTER AREA. THIS "WINDOW" SHALL BE FILLED PEA GRAVEL (3/4 INCH STONE)

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS**

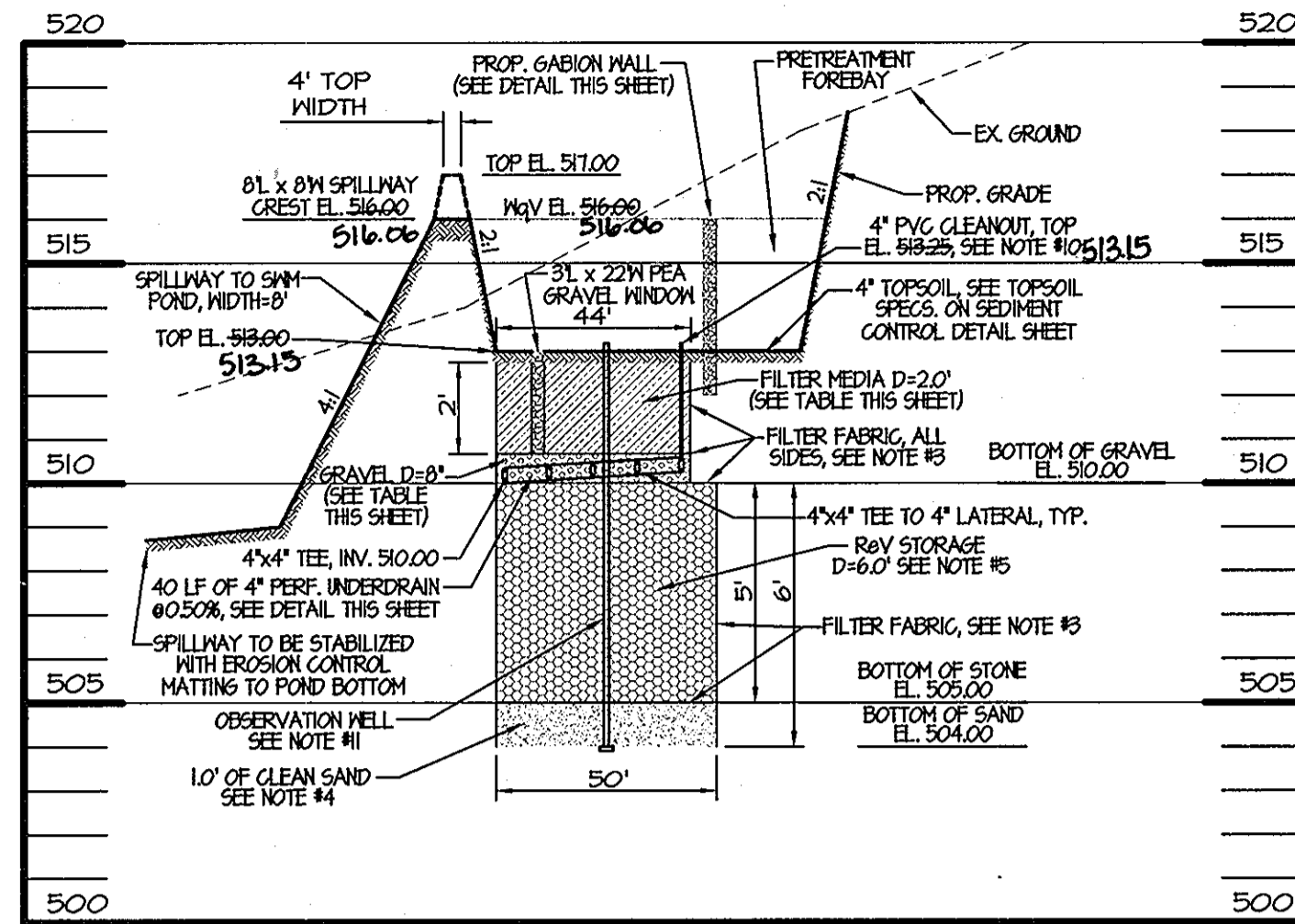
- THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
- THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE A YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
- FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF 3 (THREE) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
- DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATION AND AS NEEDED.
- VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- REMOVE SILT WHEN IT EXCEEDS 4 (FOUR) INCHES DEEP IN THE FOREBAY.
- WHEN WATER POUNDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID MUST BE FOLLOWED BY THE OWNER.
- A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH FACILITY DRAINS.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

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 HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
 7/15/03  
 SIGNATURE OF ENGINEER: THOMAS C. NEUGEBAUER, P.E.      DATE

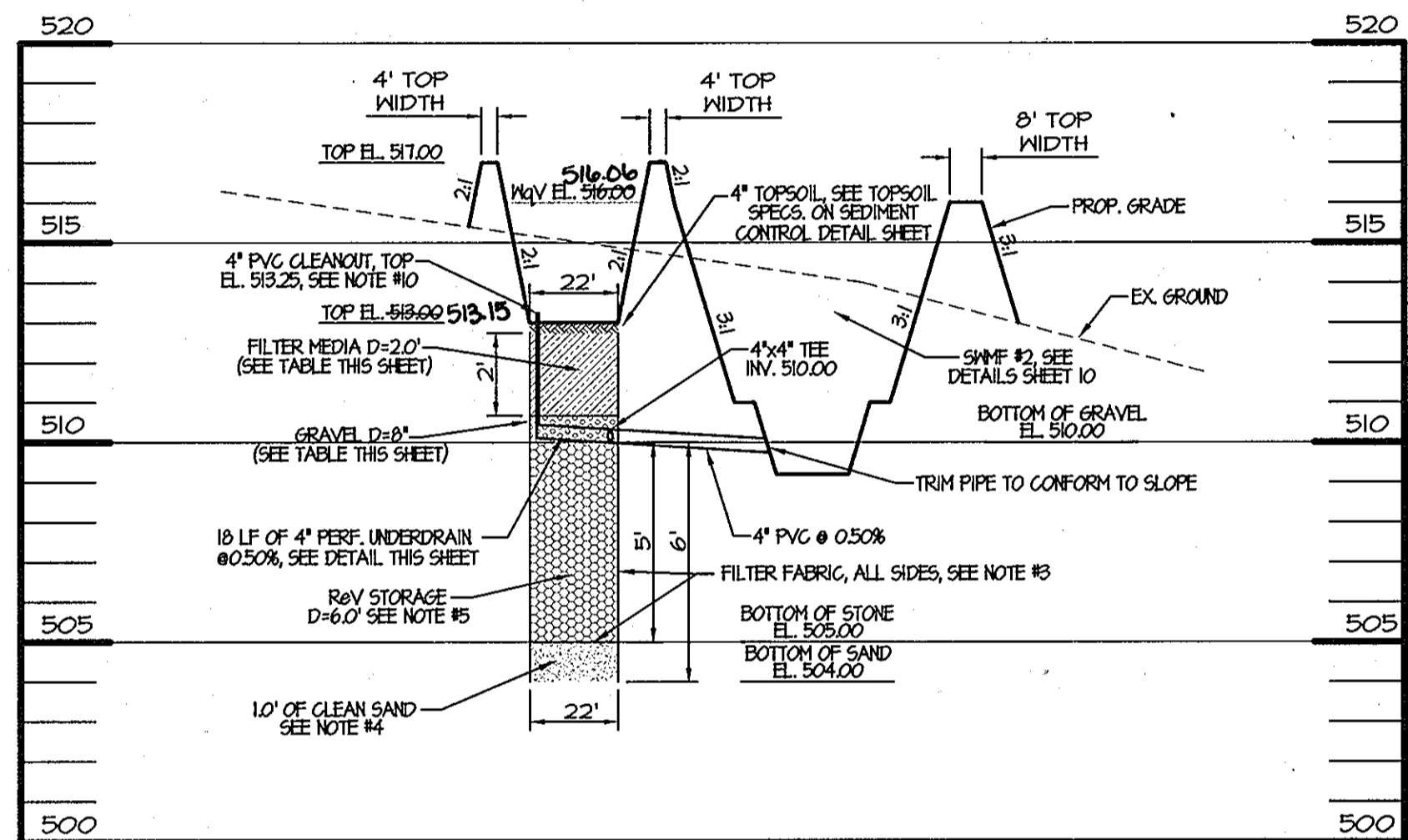
BY THE DEVELOPER  
 I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT 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.  
 7-14-03  
 SIGNATURE OF DEVELOPER: JOEL R. CHERINGTON, AGENT FOR THE GLENELG COUNTRY SCHOOL.      DATE



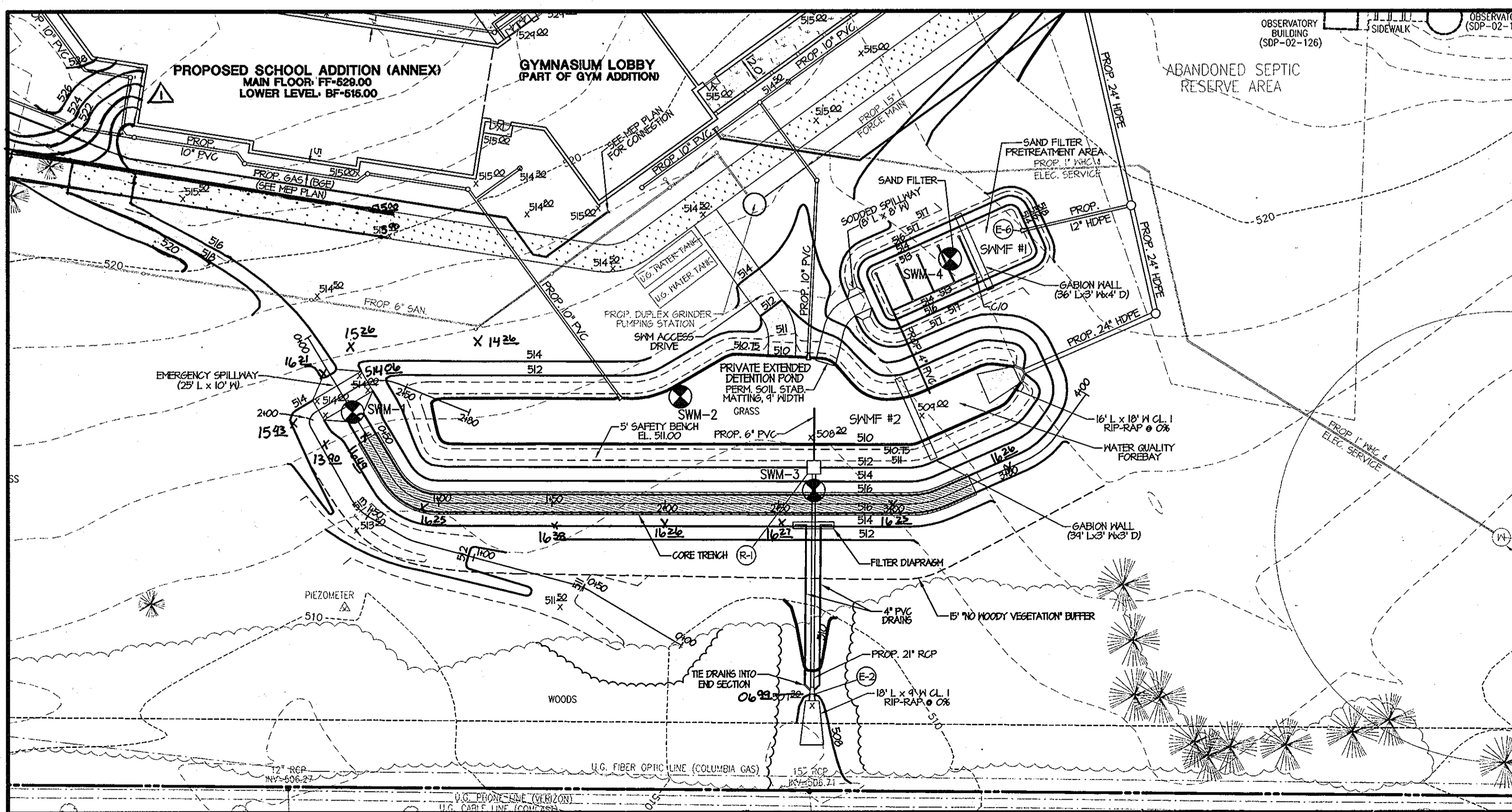
**SAND FILTER SECTION**  
 HOR. 1" = 40'  
 VERT. 1" = 4'



**STORM DRAIN PROFILE**  
 HOR. 1" = 40'  
 VERT. 1" = 4'



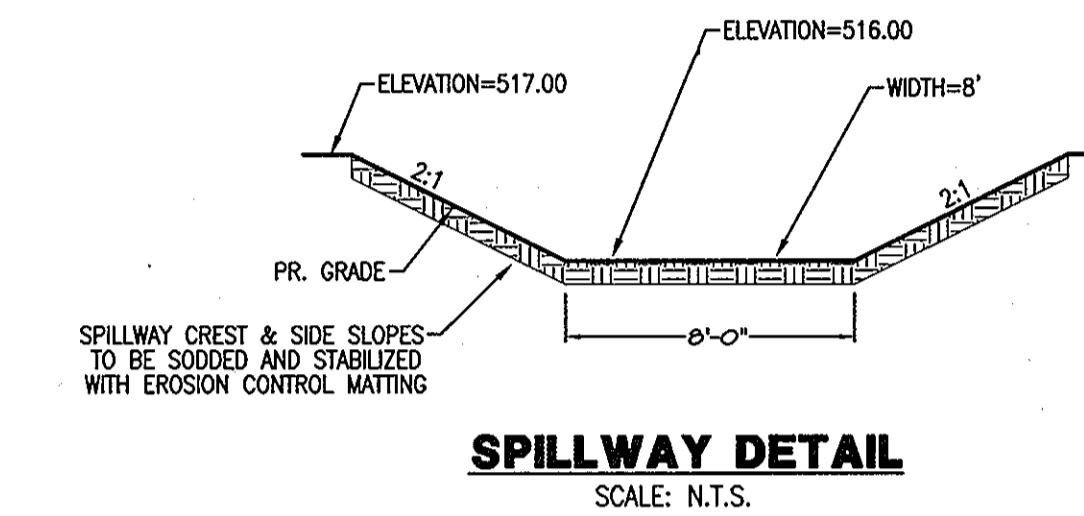
**STORM DRAIN PROFILE**  
 HOR. 1" = 40'  
 VERT. 1" = 4'



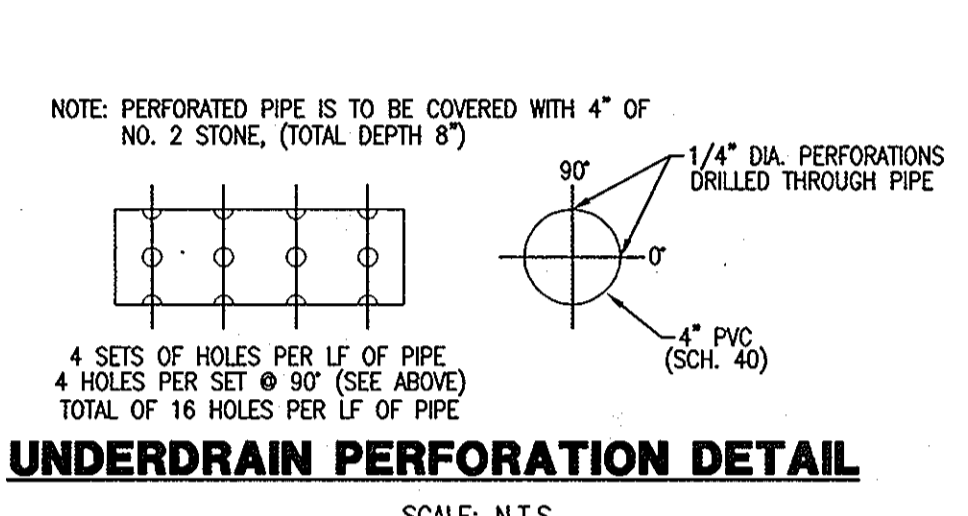
**STORMWATER MANAGEMENT PLAN**  
 SCALE: 1" = 40'

**TABLE B.3.1 MATERIAL SPECIFICATIONS FOR SAND FILTERS**

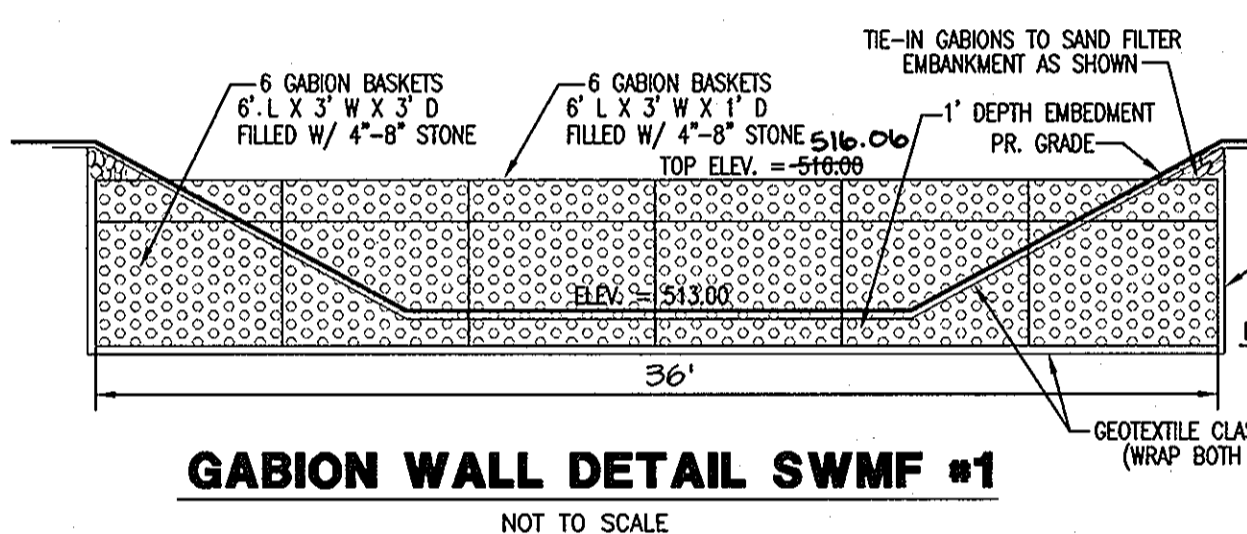
MATERIAL	SPECIFICATION/TEST METHOD	SIZE	NOTES
SAND	CLEAN ASHTO-M-6 OR ASTM-C-33 CONCRETE SAND	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.
PEAT	ASH CONTENT: <15% PH RANGE: 5.2 TO 4.9 LOOSE BULK DENSITY 0.12 TO 0.15 G/CC	N/A	THE MATERIAL MUST BE REED-SOGE HEMIC PEAT, SHREDDED, UNCOMPACTED, UNIFORM, AND CLEAN.
LEAF COMPOST		N/A	
UNDERDRAIN GRAVEL	ASHTO-M-43	0.375" TO 0.75"	
GEOTEXTILE FABRIC (IF REQUIRED)	ASTM-D-4833 (PUNCTURE STRENGTH-125 LB.) ASTM-D-4632 (TENSILE STRENGTH-300 LB.)	0.08" THICK EQUIVALENT OPENING SIZE OF #80 SIEVE	MUST MAINTAIN 125 GPM PER SQ. FT. FLOW RATE. NOTE: A 4" PEA GRAVEL LAYER MAY BE SUBSTITUTED FOR GEOTEXTILES MEANT TO "SEPARATE" SAND FILTER LAYERS.
IMPERMEABLE LINER (IF REQUIRED)	ASTM-D-4833 (THICKNESS) SECTION 902, MIX NO. 3, FC = 3500 PSI, NORMAL WEIGHT, AIR ENTRAINED; REINFORCING TO MEET ASTM-615-60	30 MIL THICKNESS	LINER TO BE ULTRAVIOLET RESISTANT. A GEOTEXTILE FABRIC SHOULD BE USED TO PROTECT THE LINER FROM PUNCTURE.
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR ASHTO-M-278	4" - 8" RIGID SCH. 40 PVC OR SDR35	3/4" PERFOR. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPE; NOT NECESSARY UNDERNEATH PIPES
CONCRETE (CAST-IN-PLACE)	MSHA STANDARDS AND SPECS. SECTION 902, MIX NO. 3, FC = 3500 PSI, NORMAL WEIGHT, AIR ENTRAINED; REINFORCING TO MEET ASTM-615-60	N/A	ON SITE TESTING OF Poured-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND.
CONCRETE (PRECAST)	PER PRE-CAST MANUFACTURER	N/A	SEE ABOVE NOTE
NON-REBAR STEEL	ASTM A-36	N/A	STRUCTURAL STEEL TO BE HOT-DIPPED GALVANIZED ASTM-A-123



**SPILLWAY DETAIL**  
 SCALE: N.T.S.

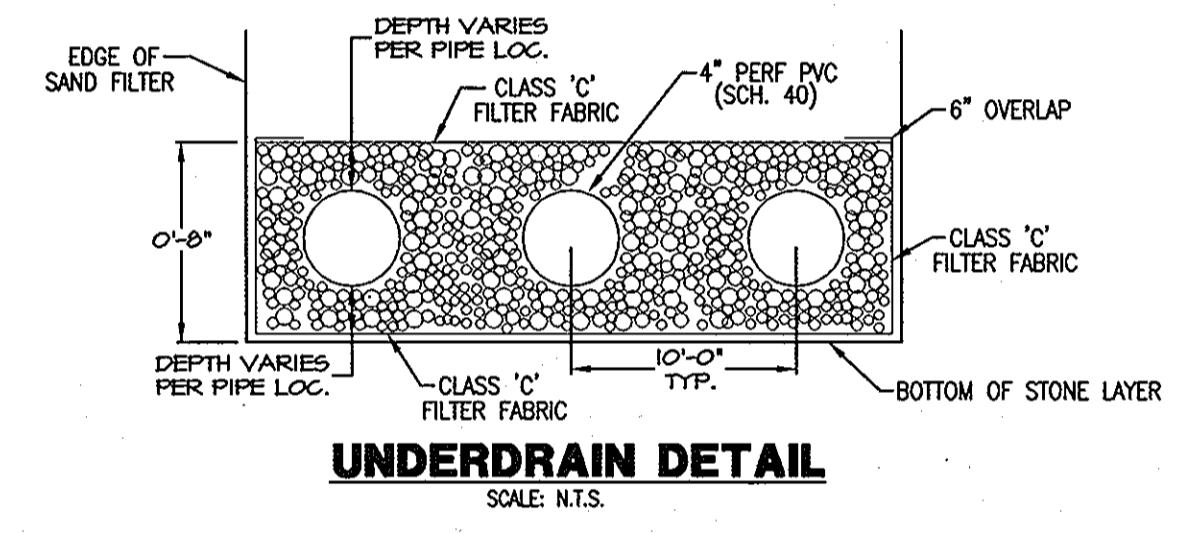


**UNDERDRAIN PERFORATION DETAIL**  
 SCALE: N.T.S.



**GABION WALL DETAIL SWMF #1**  
 NOT TO SCALE

- INSTALLATION NOTES**
- GABION BASKETS SHALL BE CONSTRUCTED OF GALVANIZED US GAUGE 11 MESH WIRE OR APPROVED EQUIVALENT.
  - GABION INSTALLATION SHALL BE PERFORMED ACCORDING TO GABION MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
  - TOP GABION BASKETS TO BE STAGGERED OVER BOTTOM BASKETS PER MANUFACTURER'S RECOMMENDATIONS.
  - TOP GABION BASKETS TO BE FASTENED TO BOTTOM BASKETS PER MANUFACTURER'S RECOMMENDATIONS.



**UNDERDRAIN DETAIL**  
 SCALE: N.T.S.

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 8/11/03  
 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.  
 8/11/03  
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE      DATE

APPROVED FOR PUBLIC OR PRIVATE WATER AND SEWER OR PRIVATE SEWERAGE SYSTEMS  
 8-8-03  
 COUNTY HEALTH OFFICER OFFICE  
 HOWARD COUNTY HEALTH DEPARTMENT      DATE

APPROVED DEPARTMENT OF PLANNING AND ZONING  
 8/15/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MKK      DATE  
 8/12/03  
 CHIEF, DIVISION OF LAND DEVELOPMENT HB      DATE  
 8/14/03  
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING      DATE

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

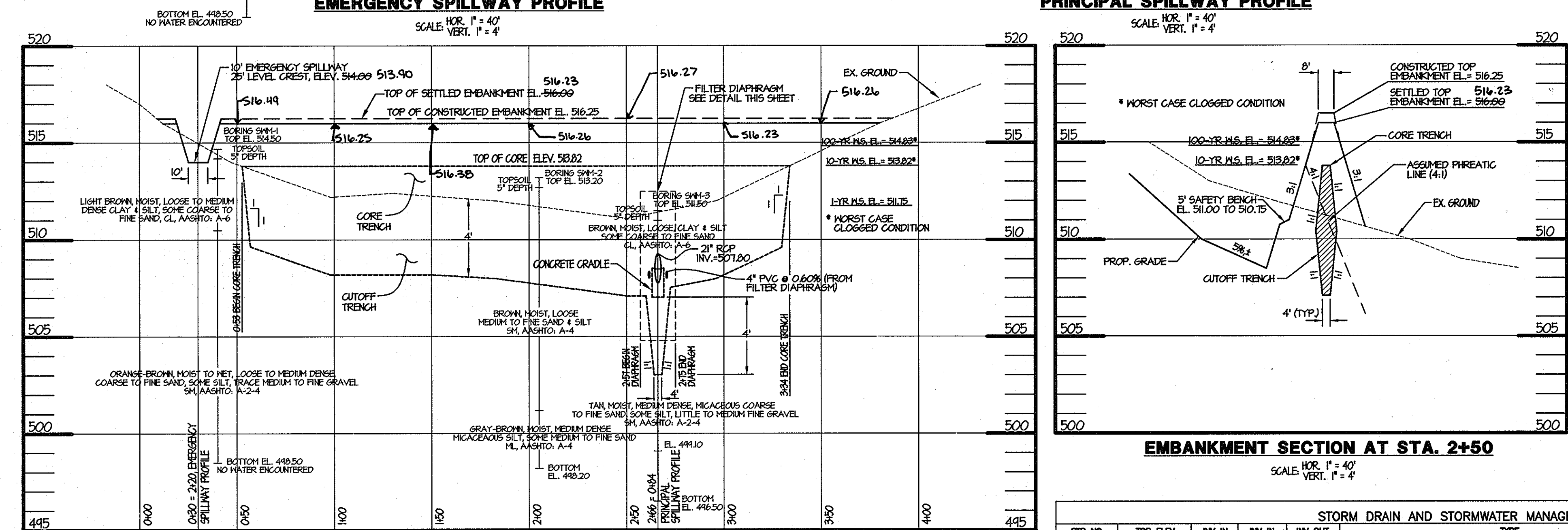
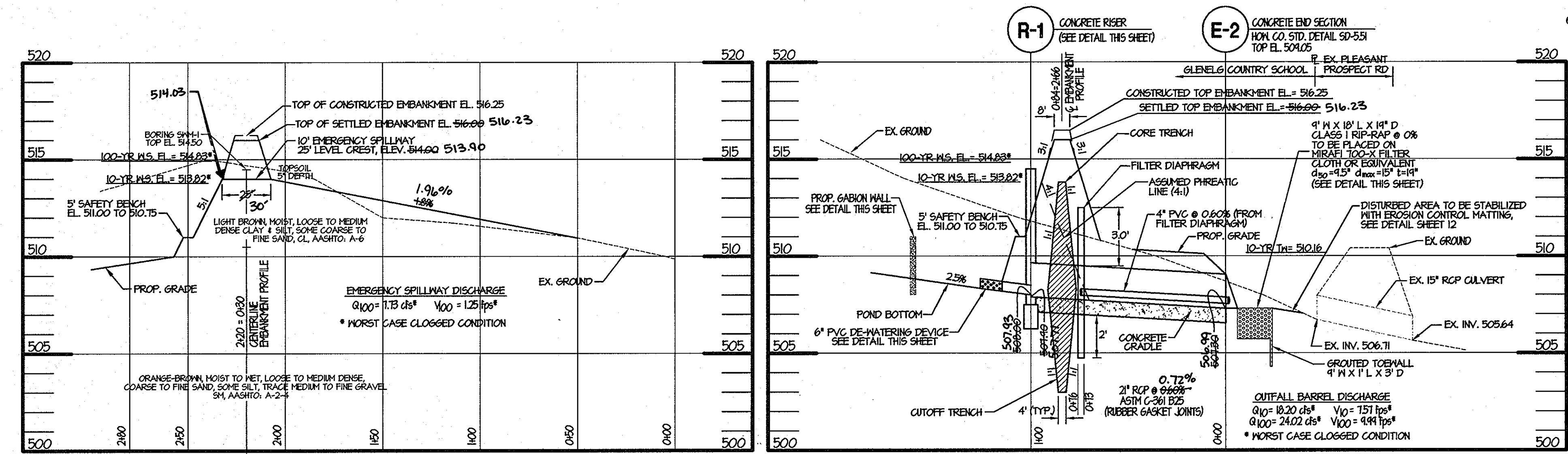
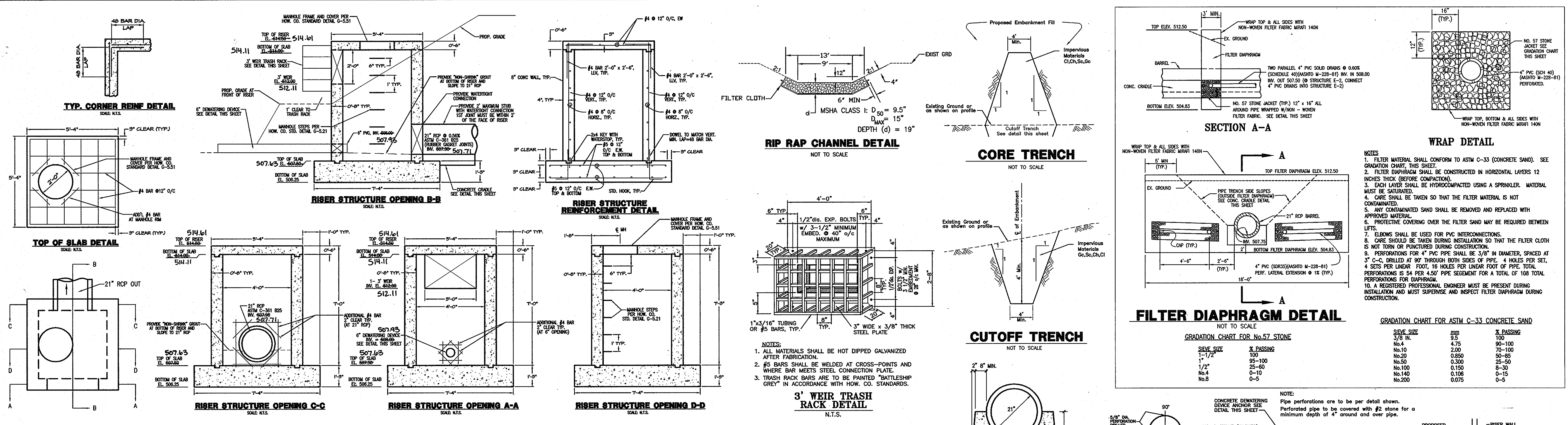
9090 JUNCTION DRIVE, SUITE 9  
 ANNAPOLIS JUNCTION, MARYLAND 20701  
 (410) 792-9792 or (301) 776-1690  
 FAX (410) 792-7395

**THE GLENELG COUNTRY SCHOOL**  
**PROPOSED UPPER SCHOOL ADDITION**  
**SWM FACILITY #1 DETAILS**

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

DATE	REVISIONS	JOB NO.:
10/03	ADDED NOTES TO FOLLOWING FOOTPRINT. EXTENDED STABILIZED LIME FILL LANE	12189.02
04/06	AS-BUILT INFORMATION ADDED	SCALE: AS SHOWN
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	DATE: 07/14/03
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: TCN
		SHEET: 8 OF 23





**STORM DRAIN AND STORMWATER MANAGEMENT STRUCTURE SCHEDULE**

STR. NO.	TOP ELEV.	INV. IN.	INV. OUT.	TYPE	REMARKS	NORTHING	EASTING
E-2	N/A	---	---	CONCRETE END SECTION, HOWARD CO. STD. DETAIL SD-551		578,137.66	1,324,543.75
R-1	514.50	508.00	507.90	RISER STRUCTURE (SEE DETAIL THIS SHEET)		578,188.57	1,324,457.22

**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	6.18	0.20	511.75	0.364
5 year*	28.03	13.69	513.32	0.422
10 year*	39.43	18.20	513.82	0.685
100 year*	67.23	31.75	514.83	1.158

\*WORST CASE CLOGGED CONDITION  
Drainage Area 11.98 acres  
Impervious Area 4.14 acres

**6" PVC DEWATERING DEVICE DETAIL**  
NOT TO SCALE

**DEWATERING DEVICE ANCHOR**  
NOT TO SCALE

**GABION WALL DETAIL SWM #2**  
NOT TO SCALE

**INSTALLATION NOTES:**  
1. GABION BASKETS SHALL BE CONSTRUCTED OF GALVANIZED US GAUGE 11 MESH WIRE OR APPROVED EQUIVALENT.  
2. GABION INSTALLATION SHALL BE PERFORMED ACCORDING TO GABION MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.  
3. TOP GABION BASKETS TO BE STAGGERED OVER BOTTOM BASKETS PER MANUFACTURER'S RECOMMENDATIONS.  
4. TOP GABION BASKETS TO BE FASTENED TO BOTTOM BASKETS PER MANUFACTURER'S RECOMMENDATIONS.

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ANNAPOLIS JUNCTION, MARYLAND 20701  
(410) 792-8792 or (301) 776-1690  
FAX (410) 792-7396

**THE GLENELG COUNTRY SCHOOL PROPOSED UPPER SCHOOL ADDITION**

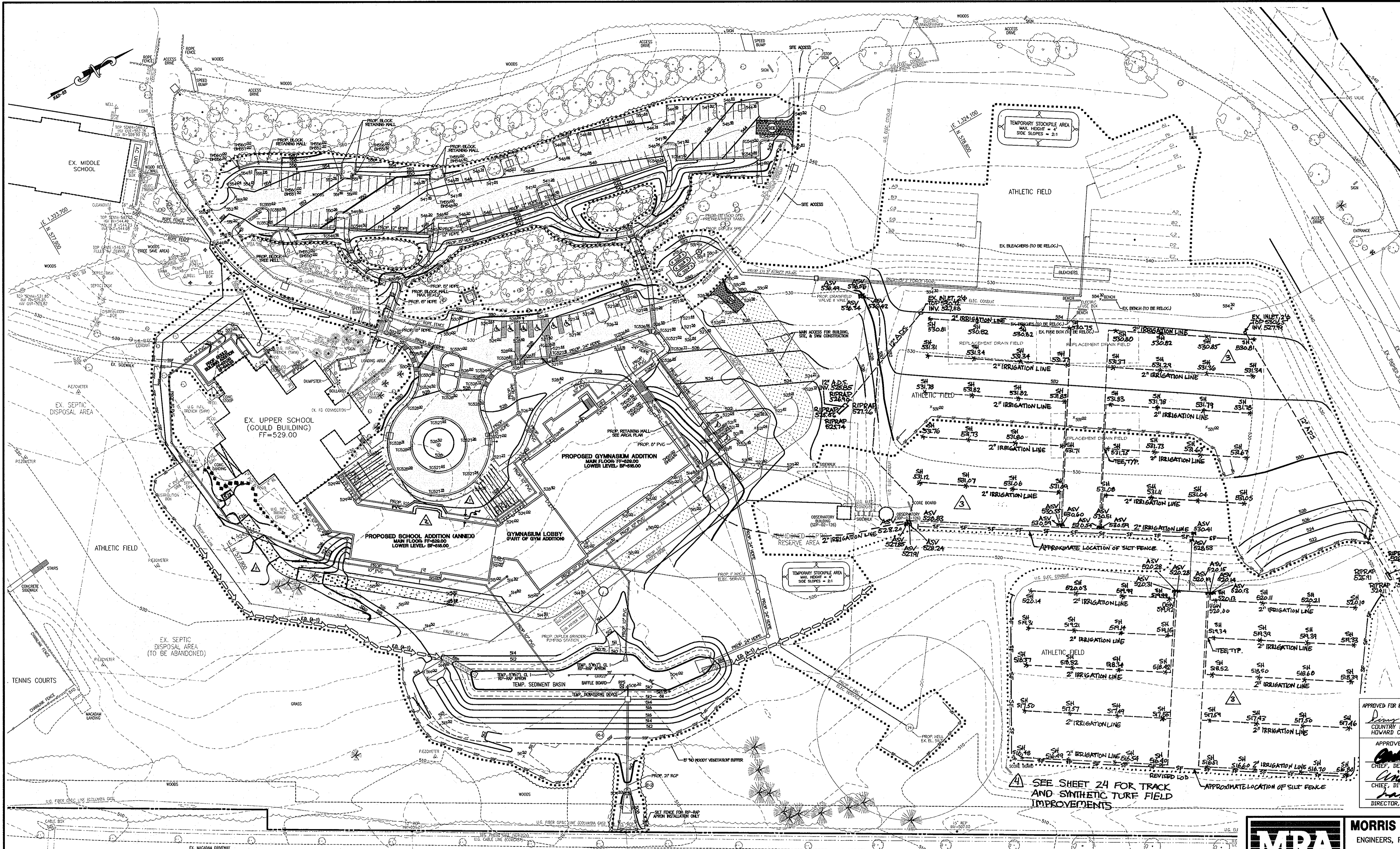
**SWM FACILITY #2 DETAILS**

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

**DATE** 07/15/03  
**REVISIONS**  
04/06 AS-BUILT INFORMATION ADDED  
07/12 TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS

**JOB NO.:** 12189.02  
**SCALE:** AS SHOWN  
**DATE:** 07/14/03  
**DRAWN BY:** TGN  
**DESIGN BY:** TGN  
**REVIEW BY:** TGN  
**SHEET:** 9 OF 23





- LEGEND**
- 2" CONTOUR LINE
  - 10' CONTOUR LINE
  - - - EX. PROPERTY LINE
  - - - EX. SETBACK LINE
  - - - EX. EDGE OF PAVING
  - - - EX. BUILDING
  - - - EX. STRUCTURE
  - - - EX. ELECTRIC CONDUIT
  - - - EX. PHONE CONDUIT
  - - - EX. TV CABLE CONDUIT
  - - - EX. GAS MAIN
  - - - EX. WATER MAIN
  - - - EX. SANITARY LINE
  - - - EX. STORM DRAIN
  - - - EX. FENCE LINE
  - - - EX. TREE LINE
  - EX. TREES/SHRUBS (TO REMAIN)
  - ⊗ EX. LIGHT/TRANSFORMER
  - ⊕ EX. WELL/HYDRANT
  - ⊖ EX. SAN. CLEANOUT/MEZOMETER
  - ⊙ EX. STORM DRAIN INLET/MANHOLE
  - ▭ PROP. BUILDING ADDITION
  - ▭ PROP. CONCRETE SIDEWALK
  - ▭ PROP. ASPHALT PAVEMENT
  - ▭ PROP. STABILIZED TURF
  - ▭ PROP. RETAINING WALL
  - ▭ PROP. CONC. CURB & GUTTER
  - ▭ PROP. B/B MOOD FENCE
  - ▭ PROP. 1" CONTOUR LINE
  - ▭ PROP. 2" CONTOUR LINE
  - ▭ PROP. 10' CONTOUR LINE
  - ▭ PROP. 5'00" ELEVATION
  - ▭ PROP. LIMIT OF CLEARING
  - ▭ PROP. STORM DRAIN
  - ▭ PROP. GAS MAIN
  - ▭ PROP. ELECTRIC CONDUIT
  - ▭ PROP. WATER LINE
  - ▭ PROP. SANITARY LINE
  - ▭ PROP. SANITARY FORCE MAIN
  - ▭ PROP. SEPTIC SYSTEM TRENCH
  - ▭ PROP. LIMIT OF DISTURBANCE
  - ▭ PROP. SILT FENCE
  - ▭ PROP. SUPER SILT FENCE
  - ▭ PROP. EARTH DIKE
  - ▭ PROP. INFLOW PROTECTION
  - ▭ PROP. STABILIZED CONSTRUCTION ENTRANCE

REQUIRED SEDIMENT CONTROLS WERE INSTALLED BY SPRINKLER CONTRACTOR PRIOR TO EARTH DISTURBANCE.

**KEY FOR AS-BUILT LABELS**  
 SH - SPRINKLER HEAD  
 ASV - AUTOMATIC SPRINKLER VALVE

APPROVED FOR HOWARD COUNTY PRIVATE WATER & SEWERAGE SYSTEMS  
*Dennis W. ...* 8-8-03  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED DEPARTMENT OF PLANNING AND ZONING  
*...* 8/10/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*...* 8/10/03  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*...* 8/10/03  
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING

SEE SHEET 24 FOR TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS

AREAS OF CONCENTRATED FLOW ARE TO BE STABILIZED WITH EROSION CONTROL MATTING (ECM). SEE DETAIL ON SHEET 12.

**PR. SEDIMENT BASIN SUMMARY TABLE**

EXISTING DRAINAGE AREA	9.29 ACRES
PROPOSED DRAINAGE AREA	9.29 ACRES
WET STORAGE VOLUME REQ'D 9.29 X 1800	16,722 C.F.
DRY STORAGE VOLUME REQ'D 9.29 X 1800	16,722 C.F.
TOTAL VOLUME REQUIRED	33,444 C.F.
TOTAL VOLUME PROVIDED	33,730 C.F.
WET STORAGE VOLUME PROVIDED	17,146 C.F.
DRY STORAGE VOLUME PROVIDED	16,584 C.F.
WET STORAGE DEPTH	3.25 FT.
DRY STORAGE DEPTH	1.25 FT.
BOTTOM ELEVATION	508.00
CLEANOUT ELEVATION	510.25
LIMIT OF WET STORAGE ELEVATION	511.25
MINIMUM RISER CREST ELEVATION	512.49
PROVIDED RISER CREST ELEVATION	512.50
EMBANKMENT ELEVATION	516.00
DRAW-DOWN DEVICE	6" PVC 4" DRIFED
OUTFALL BARREL TYPE	21" RCP
1-YR PRE-DEVELOPMENT SITE DISCHARGE	2.81 CFS
1-YR POST-DEVELOPMENT SITE DISCHARGE	20.94 CFS
1-YR POST-DEVELOPMENT BASIN DISCHARGE	2.23 CFS
1-YR STORM WATER SURFACE ELEVATION	514.06
10-YR STORM WATER SURFACE ELEVATION	514.52

**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.  
*...* 7/15/03  
 SIGNATURE OF ENGINEER  
 THOMAS C. NEUGEBAUER, P.E. MD LICENSE #29203

**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.  
*...* 7-14-03  
 SIGNATURE OF DEVELOPER  
 JUEL R. CHERINGTON, AGENT FOR THE GLENELG COUNTRY SCHOOL

**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 HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
*...* 7/15/03  
 SIGNATURE OF ENGINEER  
 THOMAS C. NEUGEBAUER, P.E. MD LIC.#29203

**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.  
*...* 7-14-03  
 SIGNATURE OF DEVELOPER  
 JUEL R. CHERINGTON, AGENT FOR THE GLENELG COUNTRY SCHOOL

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.  
*...* 8/10/03  
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL, MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
*...* 8/10/03  
 HOWARD SOIL CONSERVATION DISTRICT

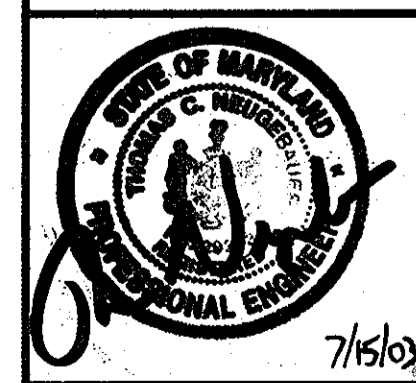
REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.  
 U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE  
 DATE

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



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

9080 JUNCTION DRIVE, SUITE 9  
 ANNAPOLIS JUNCTION, MARYLAND 20701  
 (410) 792-9792 or (301) 776-1690  
 FAX (410) 792-7395



**THE GLENELG COUNTRY SCHOOL  
 PROPOSED UPPER SCHOOL ADDITION**

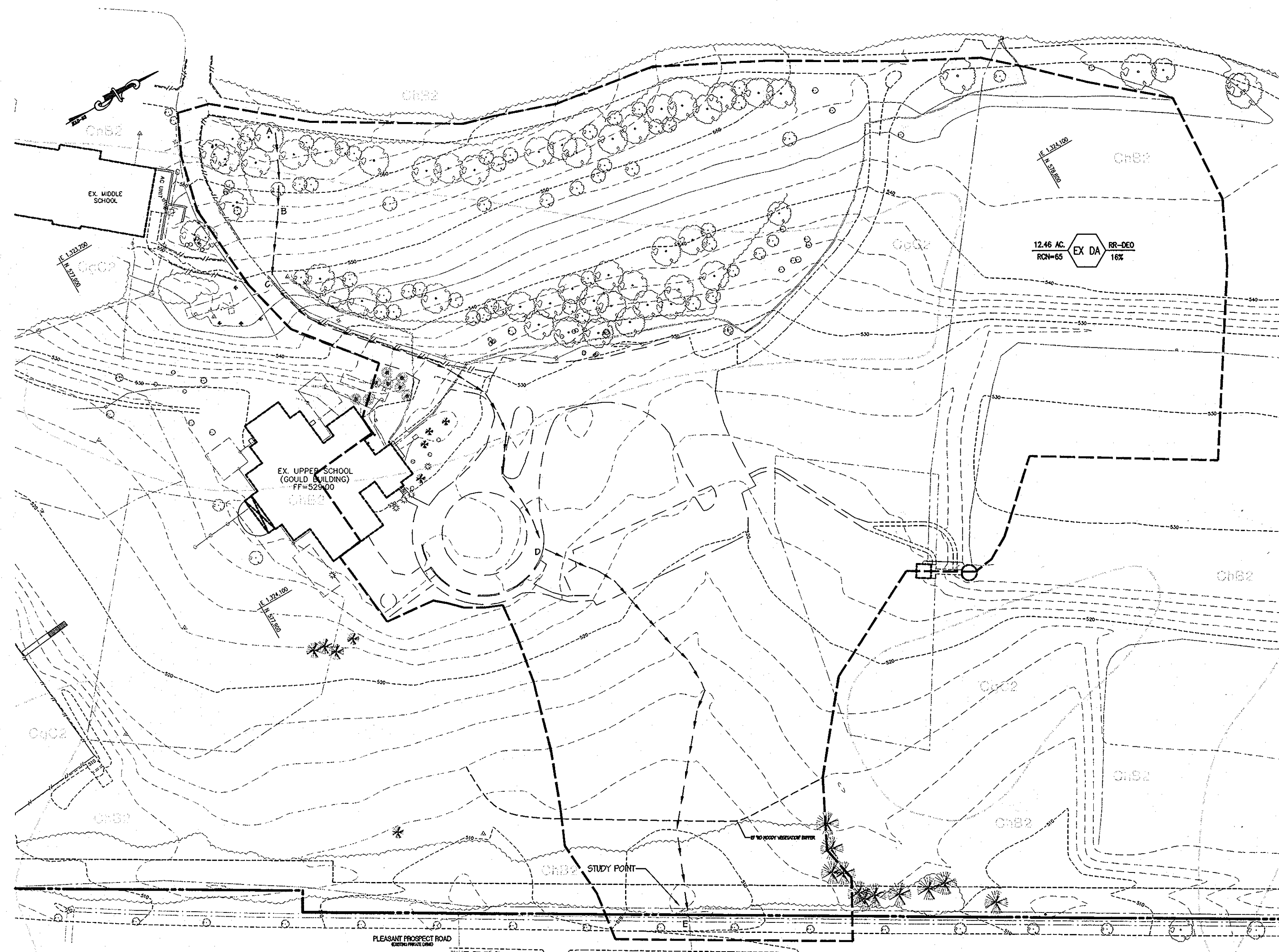
**SEDIMENT CONTROL PLAN**

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

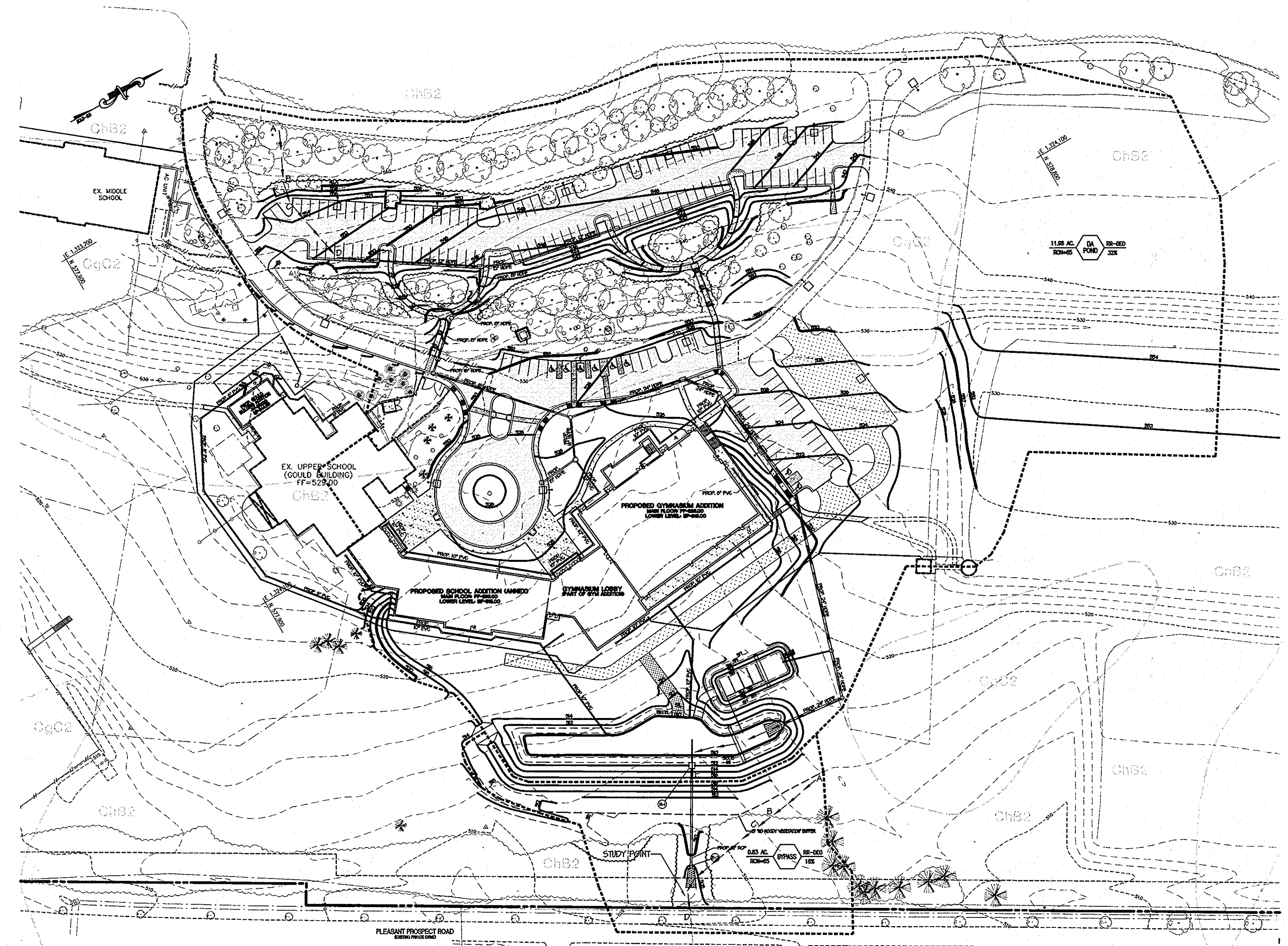
DATE	REVISIONS	JOB NO.:
10/03	ADDED TRENCH TO BUILDING FOOTPRINT EXTENDED	12189.02
01/04	STABILIZED TURF FENCE LINE	SCALE: 1" = 50'
05/06	REVISED BUILDING FOOTPRINT TO SHOW ANNEX ADDITIONS.	DATE: 07/14/03
07/12	IRRIGATION LINES FOR FIELDS #2 AND #3 ADDED	DRAWN BY: TCN
	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	DESIGN BY: TCN
		REVIEW BY: TCN
		SHEET: 11 OF 237



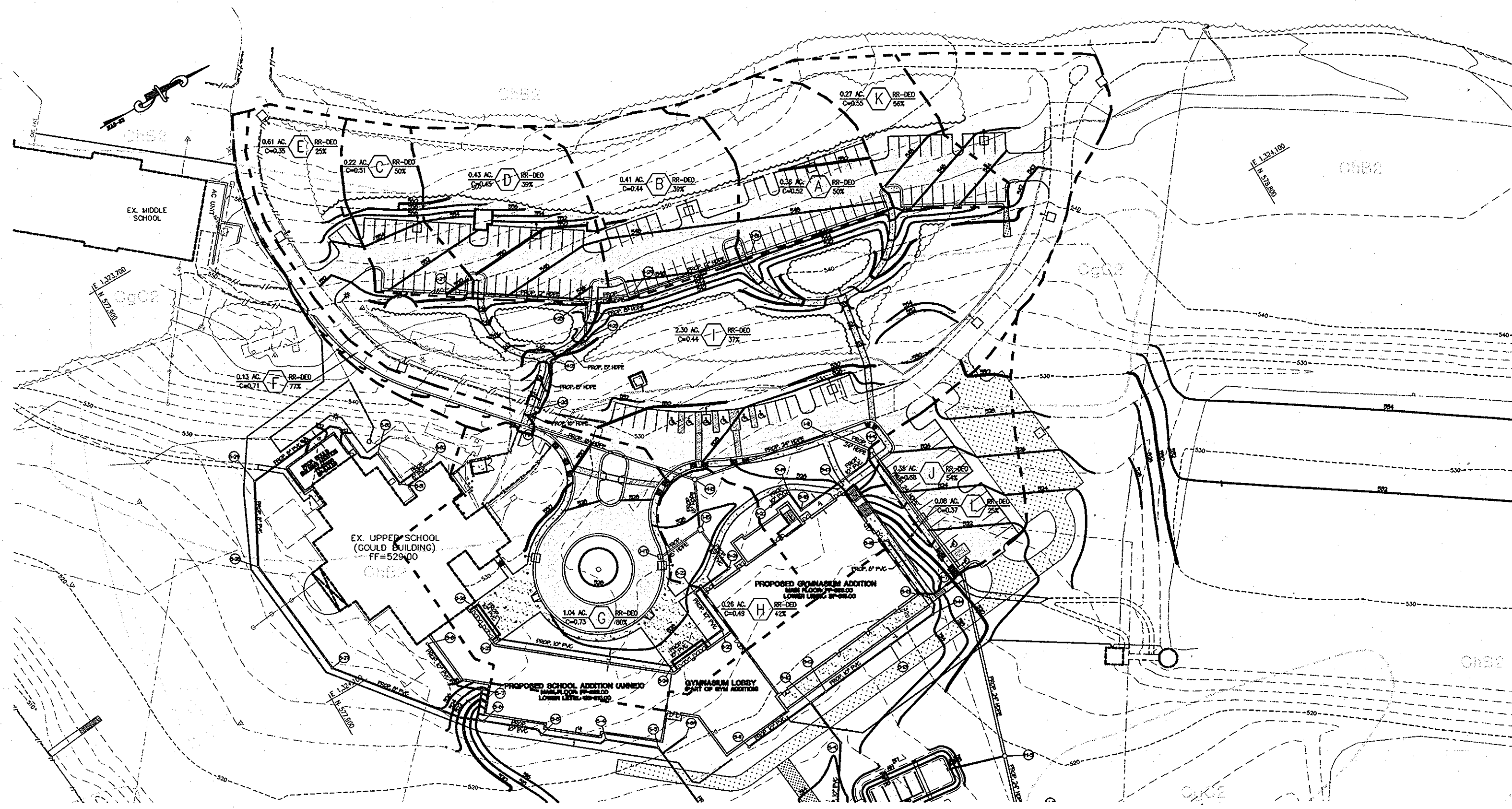




**EXISTING CONDITION DRAINAGE AREA MAP**  
SCALE: 1"=80'



**STORMWATER MANAGEMENT DRAINAGE AREA MAP**  
(PROPOSED CONDITION) SCALE: 1"=80'



**STORM DRAIN DRAINAGE AREA MAP**  
SCALE: 1"=80'

GENERAL SWM POND STORAGE REQUIREMENTS			
STEP	REQUIREMENT	VOLUME REQUIRED (ac.-ft.)	NOTES
1	Water Quality Volume (WqV)	0.2112 ac.-ft.	0.18 ac.-ft. provided with sand filter design (min. requirement: 75% of total WqV)
2	Recharge Volume (Rev)	0.0548 ac.-ft.	0.055 ac.-ft. provided by recharge trench
3	Channel Protection Volume (CpV)	0.40 ac.-ft./0.21 cfs release	CpV release rate is 0.20 cfs WSEL=511.75, 0.4823 ac.-ft. provided at WSEL=512.00
4	Overbank Flood Protection Volume (Op)	N/A	10.38 cfs @ WSEL=513.06, Cp managed for downstream culvert
5	Extreme Flood volume (Qf)	N/A	Provide safe passage for the 100-year event in final design

**EXISTING CONDITION**

**DRAINAGE AREA DATA:**  
SITE AREA: 80.76 AC.  
ZONING: RR-DEE  
DRAINAGE AREA: 12.46 AC  
IMPERVIOUS AREA: 2.00 AC  
% IMPERVIOUS: 16.05% (DA), 2.48% (SITE)

**TR-55 HYDROLOGIC DATA**  
DRAINAGE AREA: 12.46 AC  
RCN: 65  
SOIL TYPE: 'B'  
AREA LAWN: 7.41 AC  
AREA IMPERVIOUS: 2.00 AC  
AREA WOODS: 3.05 AC  
TIME OF CONC.: 0.33 HR

**TIME OF CONCENTRATION PATH**  
A-B 75' SHEET FLOW AT 10%, WOODS, DENSE  
B-C 25' SHEET FLOW AT 33%, GRASS  
C-D 415' SHALLOW CONC. FLOW AT 5%, PAVED  
D-E 810' OF OPEN CHANNEL FLOW AT 6 FPS  
TIME OF CONCENTRATION: 0.33 HR

**PROPOSED CONDITION**

**TR-55 HYDROLOGIC DATA (POND)**  
DRAINAGE AREA: 11.98 AC  
RCN: 73  
SOIL TYPE: 'B'  
AREA LAWN: 6.97 AC  
AREA IMPERVIOUS: 4.14 AC  
AREA WOODS: 0.87 AC

**TR-55 HYDROLOGIC DATA (BYPASS)**  
DRAINAGE AREA: 0.83 AC  
RCN: 61  
SOIL TYPE: 'B'  
AREA LAWN: 0.36 AC  
AREA IMPERVIOUS: 0.06 AC  
AREA WOODS: 0.41 AC

**TIME OF CONCENTRATION PATH (POND)**  
A-B 60' SHEET FLOW AT 10%, WOODS, DENSE  
B-C 25' SHEET FLOW AT 33%, GRASS  
C-D 75' SHALLOW CONC. FLOW AT 5%, PAVED  
D-E 1160' OF OPEN CHANNEL FLOW AT 10 FPS  
TIME OF CONCENTRATION: 0.28 HR

**TIME OF CONCENTRATION PATH (BYPASS)**  
A-B 60' SHEET FLOW AT 5%, GRASS  
B-C 15' SHEET FLOW AT 5%, WOODS, LIGHT  
C-D 120' SHALLOW CONC. FLOW AT 4%, PAVED  
TIME OF CONCENTRATION: 0.17 HR

**WORST CASE POND ROUTING (LOGGED CONDITION)**

DRAINAGE AREA: 11.98 AC  
RCN: 74  
SOIL TYPE: 'B'  
AREA LAWN: 7.84 AC  
AREA IMPERVIOUS: 4.14 AC  
AREA WOODS: 0.00 AC

**TIME OF CONCENTRATION PATH (POND)**  
A-B 60' SHEET FLOW AT 10%, GRASS  
B-C 25' SHEET FLOW AT 33%, GRASS  
C-D 75' SHALLOW CONC. FLOW AT 5%, PAVED  
D-E 1160' OF OPEN CHANNEL FLOW AT 10 FPS  
TIME OF CONCENTRATION: 0.15 HR

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

**PLAN LEGEND**

- STORM DRAIN DRAINAGE DIVIDE
- EX. CONDITION DRAINAGE DIVIDE
- PR. CONDITION DRAINAGE DIVIDE
- TIME OF CONCENTRATION PATH
- SOIL TYPE DIVIDE

APPROVED FOR PRIVATE WATER & SEWER PRIVATE SEWERAGE SYSTEMS

*Denise Brantley* 8-8-03  
COUNTRY HEALTH OFFICER  
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED DEPARTMENT OF PLANNING AND ZONING

*Abd. Damman* 8/15/12  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

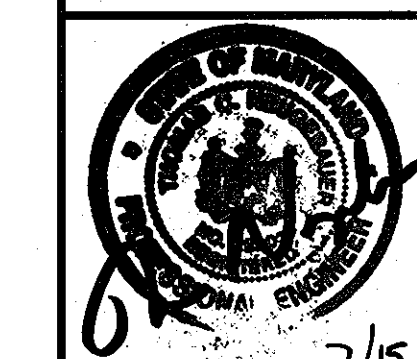
*Andy Stanitta* 8/15/12  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Paul J. Taylor* 8/15/12  
DIRECTOR, DEPARTMENT OF PLANNING AND ZONING



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

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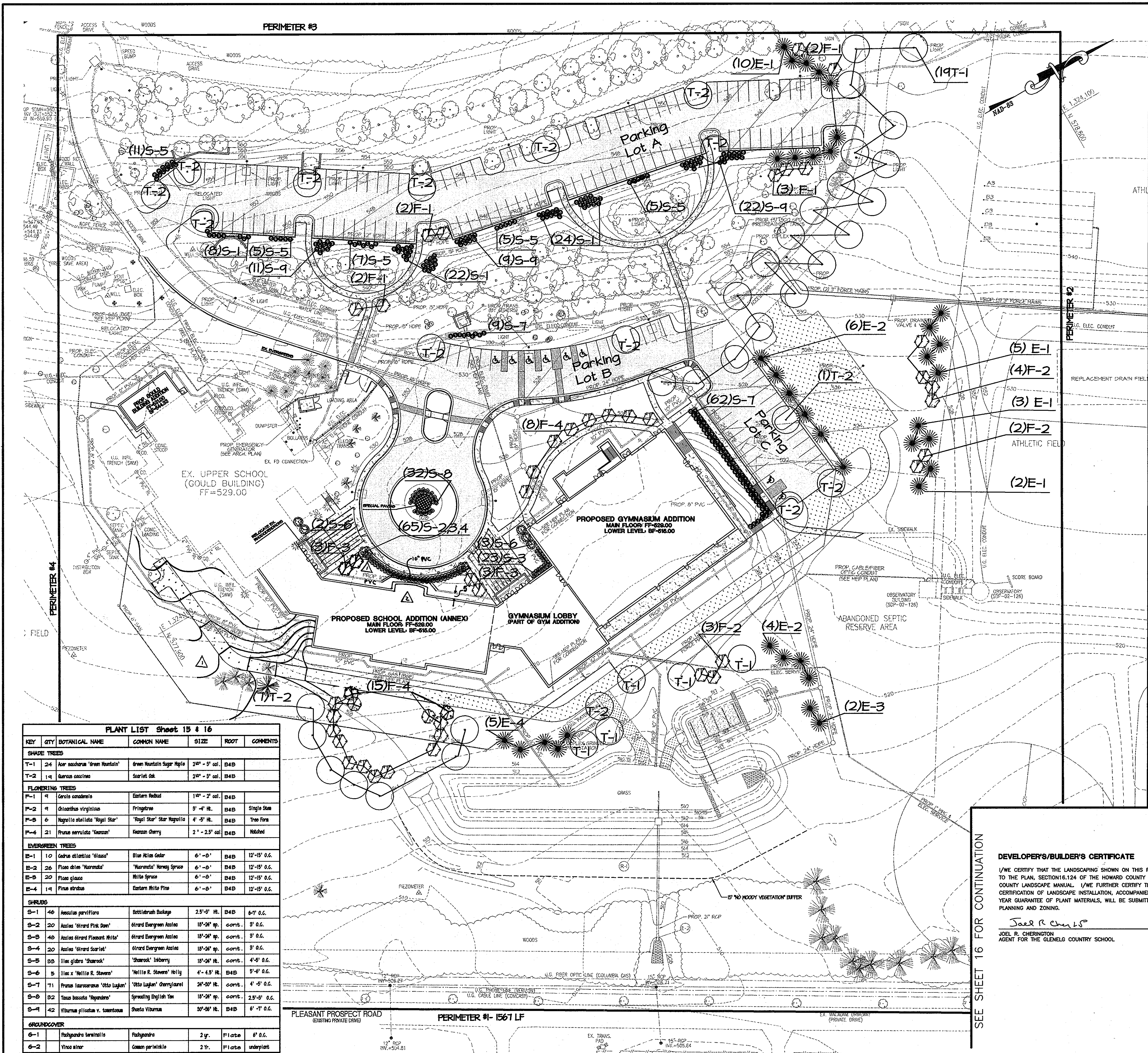


**THE GLENELF COUNTRY SCHOOL**  
**PROPOSED UPPER SCHOOL ADDITION**

**STORM DRAIN & STORMWATER**  
**MANAGEMENT DRAINAGE AREA MAP**

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

DATE	REVISIONS	JOB NO.:
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	12189-02
		SCALE: 1" = 40'
		DATE: 07/14/03
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: TCN
		SHEET: 14 OF 28



SCHEDULE 'B' PARKING LOT A INTERNAL LANDSCAPING				
NUMBER OF PKING SPACES	ISLANDS REQUIRED	ISLANDS PROVIDED	PLANTS REQUIRED	PLANTS PROVIDED
100	5	4	1:20 = 5 SHADE TREES	5 SHADE TREES & 2 FLOWERING TREES

SCHEDULE 'B' PARKING LOT B INTERNAL LANDSCAPING				
NUMBER OF PKING SPACES	ISLANDS REQUIRED	ISLANDS PROVIDED	PLANTS REQUIRED	PLANTS PROVIDED
10	1	1	1:20 = 1 SHADE TREES	2 SHADE TREES

SCHEDULE 'B' PARKING LOT C INTERNAL LANDSCAPING				
NUMBER OF PKING SPACES	ISLANDS REQUIRED	ISLANDS PROVIDED	PLANTS REQUIRED	PLANTS PROVIDED
5	1	1	1:20 = 2 SHADE TREES	4 SHADE TREES

SCHEDULE 'D' STORM WATER MANAGEMENT LANDSCAPE			
PERIMETER	PLANTS REQUIRED	PLANTS PROVIDED	EDGE TYPE
510 L.F. TO RESIDENTIAL	1:50 = 10 SHADE TREES 1:40 = 14 EVERGREEN TREE	640' EXISTING WOODS FULFILL 100% OF REQUIREMENT EXISTING TREES, MINIMUM OF 40' WIDE	(B)

SCHEDULE 'A' PERIMETER LANDSCAPE EDGE				
PERIMETER	PLANT CREDITS	PLANTS REQ'D	PLANTS PROVIDED	EDGE TYPE
(1) 1567 L.F. NON-RESIDENTIAL REAR TO EXISTING PRIVATE DRIVE EAST PROPERTY LINE	100 L.F. EX. WOODS FULFILL 44% OF REQUIREMENT OR 11 SHADE TREES & 94 EVERGREEN TREES 21 SHADE TREES, SHOWN ON APPROVED SFP #7.01 FULFILLS REMAINING SHADE TREE REQUIREMENT. 46 EG = 5 EG + 36 EG 54 SHADES SHOWN ON APPROVED SFP #7.01 FULFILLS 5 EVERGREEN TREE OBLIGATIONS.	861 LF 22 SF - 21 SF+0 SF 0 SHADE TREES	30 EVERGREEN TREES	(C)
(2) NON-RESIDENTIAL SIDE TO ATHLETIC FIELDS NORTH PROPERTY LINE	N/A	N/A	N/A	(B)
(3) NON-RESIDENTIAL FRONT & PARKING TO EXISTING PRIVATE ACCESS DRIVE WEST PROPERTY LINE	N/A	N/A	N/A	(B)
(4) NON-RESIDENTIAL TO NON-RESIDENTIAL	N/A	N/A	N/A	(B)

TOTAL PLANTING OBLIGATION	TOTAL PLANTS PROVIDED
0 SHADE TREES 50 EVERGREEN TREES	13 SHADE TREES 2 FLOWERING TREES 34 EVERGREEN TREES

NOTE:  
THIS PLAN SHALL BE USED FOR LANDSCAPE PURPOSES ONLY.  
REFER TO SITE PLAN, SWM PLAN & SEDIMENT CONTROL PLAN  
FOR ALL OTHER SITE ISSUES.

ADDRESS CHART / OWNER INFORMATION		
GLENELG COUNTRY SCHOOL		
12793 FOLLY QUARTER ROAD		
GLENELG, MD 21737	PHONE: 410-531-2229	
PERMIT INFORMATION CHART		
Subdivision Name: GLENELG COUNTRY SCHOOL	Area: 80.67 AC.	Parcel #: 146
Plot #: 1296/245	Zoning: RR-DEO	Tax Map: 22
Water Code: PRIVATE WELL	Elec. District: 5TH	Census Tract: 6051.01
	Sewer Code: PRIVATE SEPTIC	

APPROVED FOR PRIVATE WATER & SEWER PRIVATE SEWERAGE SYSTEMS  
*Deanna Hester* 8-8-03  
 COUNTRY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT  
 DATE  
*Chad Dammann* 8/5/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE  
*Lynda Hamrick* 8/12/03  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE  
*Mark J. Lopez* 8/12/03  
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING  
 DATE

PLANT LIST Sheet 15 & 16						
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENTS
<b>SHADE TREES</b>						
T-1	24	Acer saccharum 'Green Mountain'	Green Mountain Sugar Maple	2 1/2" - 3" cal.	B&B	
T-2	14	Quercus coccoloba	Scarlet Oak	2 1/2" - 3" cal.	B&B	
<b>FLOWERING TREES</b>						
F-1	9	Cercis canadensis	Eastern Redbud	1 1/2" - 2" cal.	B&B	
F-2	9	Chionodoxa virginiana	Fringing Lily	3" - 4" ht.	B&B	Single Stem
F-3	6	Nymphaea stellata 'Royal Star'	'Royal Star' Star Nymphaea	4" - 5" ht.	B&B	Tree Form
F-4	21	Prunus serrulata 'Kerasan'	Kerasan Cherry	2" - 2 1/2" cal.	B&B	Mulched
<b>EVERGREEN TREES</b>						
E-1	10	Cedrus atlantica 'Glauca'	Blue Atlas Cedar	6" - 8"	B&B	12'-15' O.C.
E-2	26	Pinus strobus 'Nureonata'	'Nureonata' Norway Spruce	6" - 8"	B&B	12'-15' O.C.
E-3	20	Pinus glauca	White Spruce	6" - 8"	B&B	12'-15' O.C.
E-4	14	Pinus strobus	Eastern White Pine	6" - 8"	B&B	12'-15' O.C.
<b>SHRUBS</b>						
S-1	46	Azalea parviflora	Bottlebrush Azalea	2 1/2" - 3" ht.	B&B	6" - 7" O.C.
S-2	20	Azalea 'Grand Pink Rose'	Grand Evergreen Azalea	10" - 20" sp.	cont.	3" O.C.
S-3	40	Azalea 'Grand Pleasant Hill'	Grand Evergreen Azalea	10" - 20" sp.	cont.	3" O.C.
S-4	20	Azalea 'Grand Scarlet'	Grand Evergreen Azalea	10" - 20" sp.	cont.	3" O.C.
S-5	50	Ilex glabra 'Shamrock'	'Shamrock' Holly	10" - 20" ht.	cont.	4" - 5" O.C.
S-6	5	Ilex x 'Nellie R. Stevens'	'Nellie R. Stevens' Holly	4" - 4 1/2" ht.	B&B	5" - 6" O.C.
S-7	71	Prunus laurocerasus 'Otto Luyken'	'Otto Luyken' Cherry Laurel	20" - 30" ht.	cont.	4" - 5" O.C.
S-8	52	Taxus canadensis 'Repens'	Spreading English Yew	10" - 20" sp.	cont.	2 1/2" - 3" O.C.
S-9	42	Viburnum plicatum v. tomentosum	Shedo Viburnum	30" - 40" ht.	B&B	6" - 7" O.C.
<b>GROUNDCOVER</b>						
G-1		Pachyandra terminalis	Pachyandra	2 yr.	Plate	6" O.C.
G-2		Vincetoxicum	Common periwinkle	2 yr.	Plate	underplant

**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 LANDSCAPE 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.  
*Joel R. Cherting* 7-14-03  
 JOEL R. CHERTING DATE  
 AGENT FOR THE GLENELG COUNTRY SCHOOL

**MORRIS & RITCHIE ASSOCIATES, INC.**  
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**THE GLENELG COUNTRY SCHOOL  
 PROPOSED UPPER SCHOOL ADDITION**

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

DATE	REVISIONS	JOB NO.:
10/03	Added Well to Building Footprint. Extended Stabilized Turf Field Lane.	12189.02
04/04	REVISED BUILDING FOOTPRINT TO SHOW ANNEX ADDITION.	SCALE: 1" = 40'
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	DATE: 07/14/03
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: TCN
		SHEET: 15 OF 23

SEE SHEET 16 FOR CONTINUATION

SEE SHEET 16 FOR CONTINUATION

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.

- 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.

- 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.

- 1.04 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.

- 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.

- 1.06 QUANTITIES AND SUBSTITUTIONS
A. Quantities of plant material are based upon the plant lists shown on the Drawings.

- 1.07 PROJECT CONDITIONS
A. Planting Season:
1. Primary planting season: September 15 to May 15.

- 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.

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.

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.

PART 2 PRODUCTS

- 2.01 PLANTS
A. Plant materials shall meet or exceed the requirements of A.A.N. standards, or as amended herein.

- 2.02 DECIDUOUS SHADE TREES
A. Single straight leader, well branched, and symmetrical, without suckers or evidence of suckering, according to their normal habit.

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

- 2.04 SHRUBS
A. 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.

- 2.06 TOPSOIL FOR AMENDING EXISTING SOIL
A. General Requirements (only where required by details on the Drawings):

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

- 2.08 PEAT MOSS
A. Baled sphagnum peat moss, Type 1-A, conforming to Federal Specification Q-P-166.

- 2.09 MULCH
A. Mulch shall be the following as indicated on the Drawings.

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-TRANSPARENT

Shall be the following or approved equal:
"Anti-Prut"
Witt-Prut Products Inc.
P. O. Box 469
Essex, CT 06426
(203) 757-7033
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.

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.

- 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.

- 3.03 EXCAVATION
A. Unclassified: Excavate and remove surplus materials encountered, without additional cost to the Owner.

- B. Underground obstruction, rock or other obstructions too massive to remove: Notify Owner's Representative for further direction. Alternate locations will be selected. Make such relocations without additional compensation.

3.04 PLANTING PROCEDURES

- A. Do not plant when ground is frozen or excessively wet.

- C. When B&B or container plants are set, planting soil shall be carefully tamped around the base of the bolts to prevent voids. All burr, rope, wire, etc., shall be removed from the top of bolts. Plastic/nylon cords or cloths shall not be left in place on balled materials.

- 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.

- 3.06 STAKING, WRAPPING AND GUYING
A. Stake trees, which require staking as shown on the Drawings, during the same day as planting.

- 3.07 PRUNING AND ANTI-TRANSPARENT APPLICATION
A. Pruning: Any broken or damaged branches shall be removed. Damage, removal or pruning of tree leaders shall be cause for rejection.

- 3.08 POST-PLANTING FERTILIZATION
A. Notify Owner's Representative prior to fertilizing operations.

- 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.

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

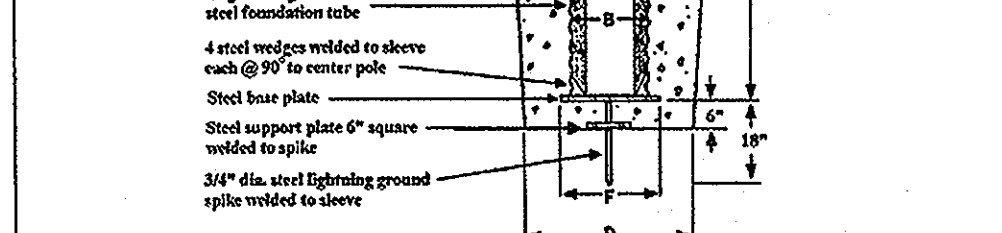
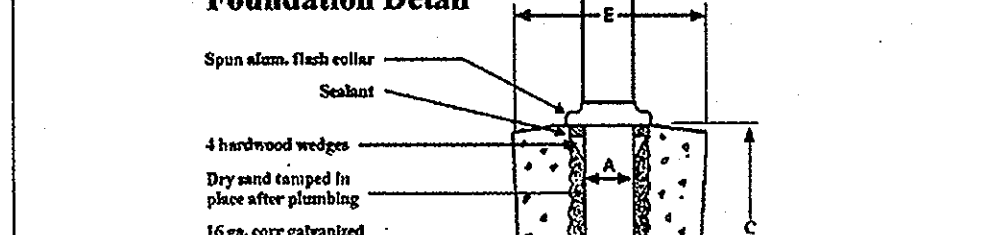
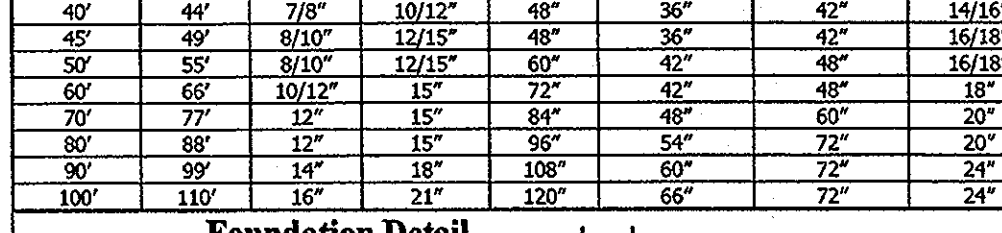
- 3.11 MAINTENANCE
A. Contractor shall inspect and provide necessary services throughout the 12-month maintenance period.

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

Instructions - Ground Sleeve

- INSTALLERS TAKE NOTICE! Overhead electrical lines, buried utility cables, and natural gas lines pose stations that require EXTREME CARE DURING INSTALLATION of foundation and flagpoles.

Table with 6 columns: Flagpole Height, Overall Length, Pole Butt, Sleeve Diameter, Sleeve Length, Foundation Base. Lists specifications for various flagpole heights from 25' to 100'.



FLAG POLE FOUNDATION DETAIL NOT TO SCALE

SHRUB PLANTING DETAIL (BALL & BURLAP OR CONTAINER) NOT TO SCALE

SHADE, FLOWERING OR EVERGREEN TREE PLANTING DETAIL NOT TO SCALE

GENERAL NOTES:
1. NO SUBSTITUTIONS OF PLANT MATERIAL SHALL BE PERMITTED WITHOUT WRITTEN AUTHORIZATION OF THE LANDSCAPE ARCHITECT AND/OR HOWARD COUNTY PLANNING AND ZONING. THIS SHALL APPLY TO SUBSTITUTIONS OF SPECIES, SIZE, QUANTITY, AND LOCATION.

DETAIL PROVIDED BY POLE-TECH TEL: 800-633-6733. IF DIFFERENT MANUFACTURER IS USED, INSTALLATION INSTRUCTIONS MUST BE VERIFIED BY MANUFACTURER.

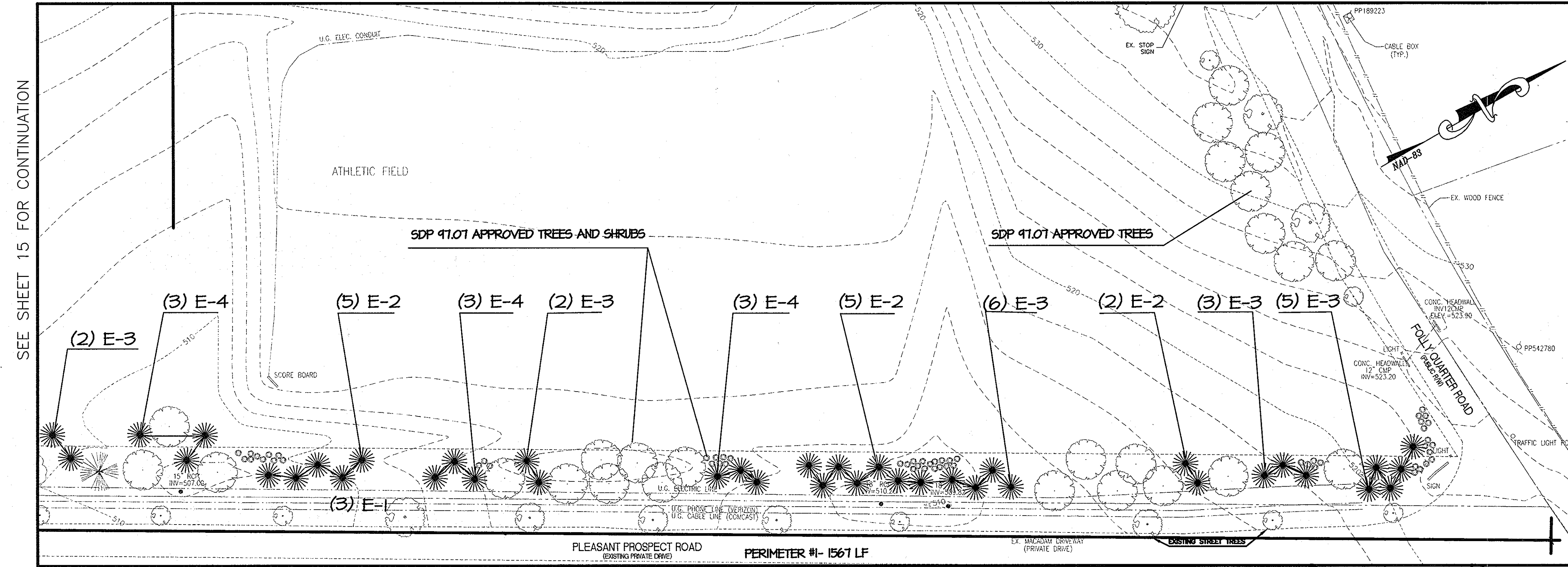
NOTE: IF EXISTING FLAG POLE IS TO BE REUSED ON SITE, FOUNDATION DETAIL MUST BE VERIFIED BY A STRUCTURAL ENGINEER.

ADDRESS CHART / OWNER INFORMATION

Table with owner information for GLENELG COUNTRY SCHOOL, including address (12793 FOLLY QUARTER ROAD, GLENELG, MD 21737), phone (410-531-2229), permit information, and subdivision details.

Approval stamps from the Department of Planning and Zoning, dated 8/8/03, 8/15/03, and 9/16/03, for the proposed upper school addition.

5. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 18-124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
6. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF \$ 110,000. ( 8 SHADE TREES @ \$300.00 ea., 38 EVERGREEN TREES @ \$150.00 ea.)



SEE SHEET 15 FOR CONTINUATION

MORRIS & RITCHIE ASSOCIATES, INC. ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS. 9090 JUNCTION DRIVE, SUITE 9 ANNAPOLIS JUNCTION, MARYLAND 20701

THE GLENELG COUNTRY SCHOOL PROPOSED UPPER SCHOOL ADDITION LANDSCAPE DETAILS. TAX MAP 22 GRID 22 PARCEL 146 LIBER 1296 FOLIO 245 FIFTH (5TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND

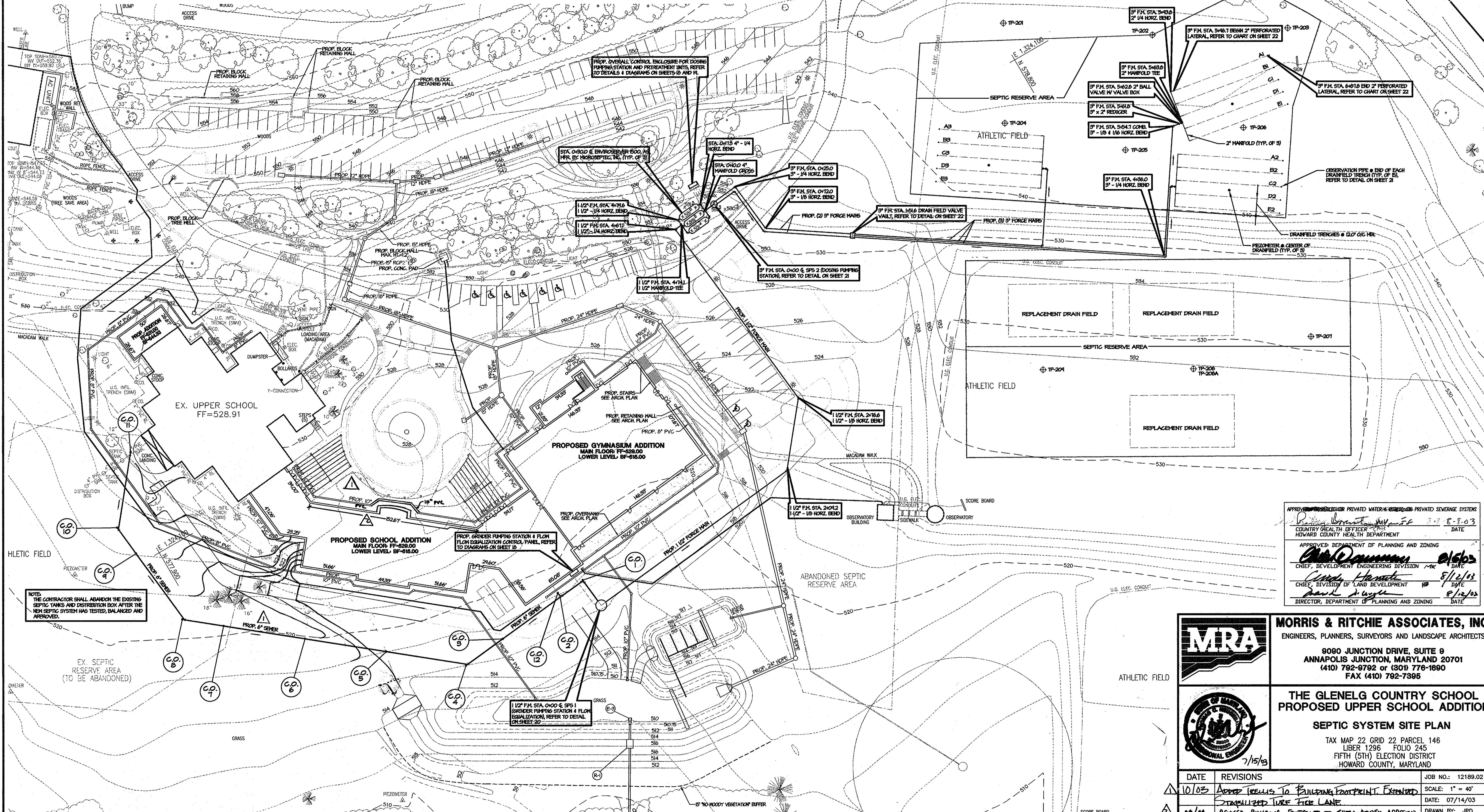
Table with columns: DATE, REVISIONS, JOB NO., SCALE, DATE, DRAWN BY, DESIGN BY, REVIEW BY, SHEET. Includes revision 0711Z TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS.



**NOTE:**

REFER TO ELECTRICAL DRAWINGS, PREPARED BY SPEARS / VOTTA ASSOCIATES, INC., FOR POWER SUPPLY AND CONDUITS FROM THE NEW SCHOOL BUILDING TO THE GRINDERS PUMPING STATION CONTROL PANEL, AND TO THE OVERALL ENCLOSURE FOR THE DOSING PUMPING STATION AND PRETREATMENT UNITS.


PERCOLATION TEST RESULTS				
TEST HOLE I.D.	APPROX. DEPTH TO SUITABLE SOIL (FT.)	DEPTH OF PERC. TEST (FT.)	PERC. TEST RATE (MPH)	TOTAL DEPTH OF TEST HOLE (FT.)
TP-201	1	2	6.5	
TP-202	2.5	3	7.5	
TP-203	4.5	3	13.5	
TP-204	5	5	14.0	
TP-205	6	-	OH	14.0
TP-206	6	6	14.5	
TP-207	2.5	2.5	4	13.5
TP-208	4	5	16.0	
TP-209A	5	-	OH	10.0
TP-209	3	4.5	2	13.0



NOTE: THE CONTRACTOR SHALL ABANDON THE EXISTING SEPTIC TANKS AND DISTRIBUTION BOX AFTER THE NEW SEPTIC SYSTEM HAS TESTED, BALANCED AND APPROVED.

APPROVED FOR PRIVATE WATER & SEWER PRIVATE SEWER SYSTEMS  
 COUNTRY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT  
 DATE: 8/10/03

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING  
 DATE: 8/12/03



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

9080 JUNCTION DRIVE, SUITE 9  
 ANNAPOLIS JUNCTION, MARYLAND 20701  
 (410) 792-8792 or (301) 776-1690  
 FAX (410) 792-7395

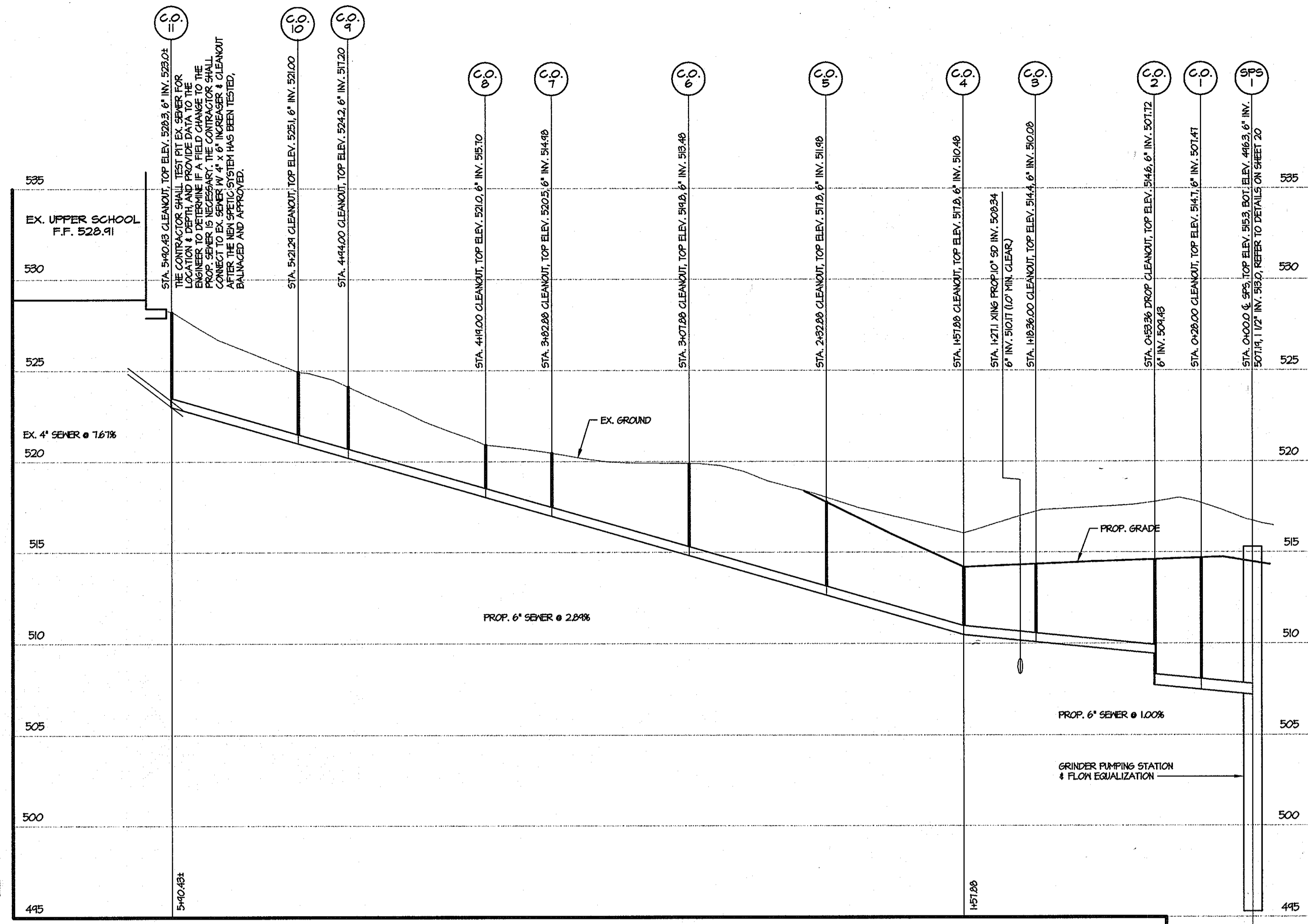
**THE GLENELG COUNTRY SCHOOL  
 PROPOSED UPPER SCHOOL ADDITION**

**SEPTIC SYSTEM SITE PLAN**

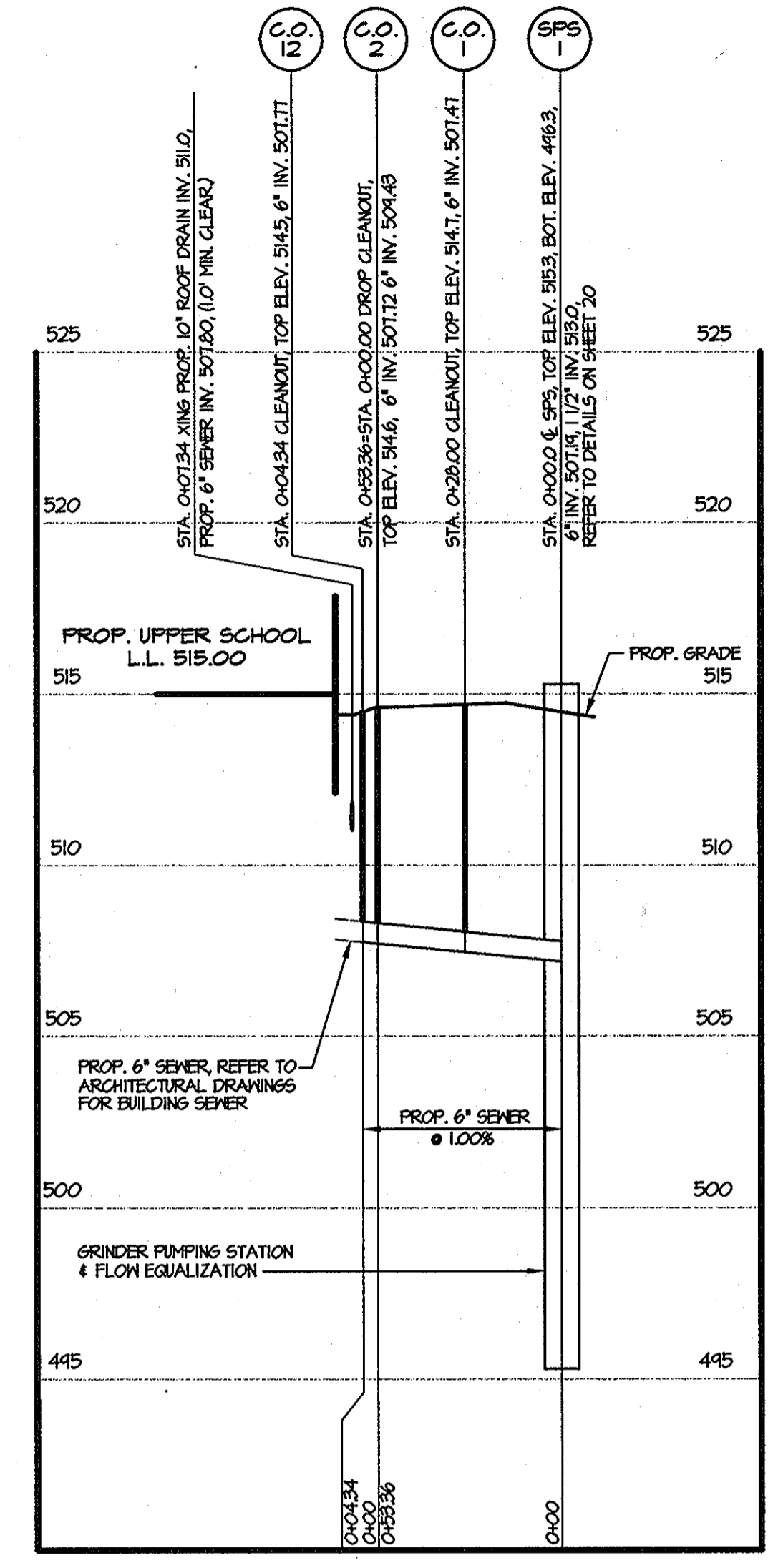
TAX MAP 22 GRID 22 PARCEL 146  
 LIBER 1296 FOLIO 245  
 FIFTH (5TH) ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
10/03	ADDED TRENCHES TO BUILDING FOOTPRINT. EXTENDED STABILIZED TURE FIELD LANE	12189.02
07/04	REVISED BUILDING FOOTPRINT TO SHOW ANNEX ADDITION.	SCALE: 1" = 40'
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	DATE: 07/14/03
		DESIGN BY: JPD
		REVIEW BY: EDL
		SHEET: 17 OF 23

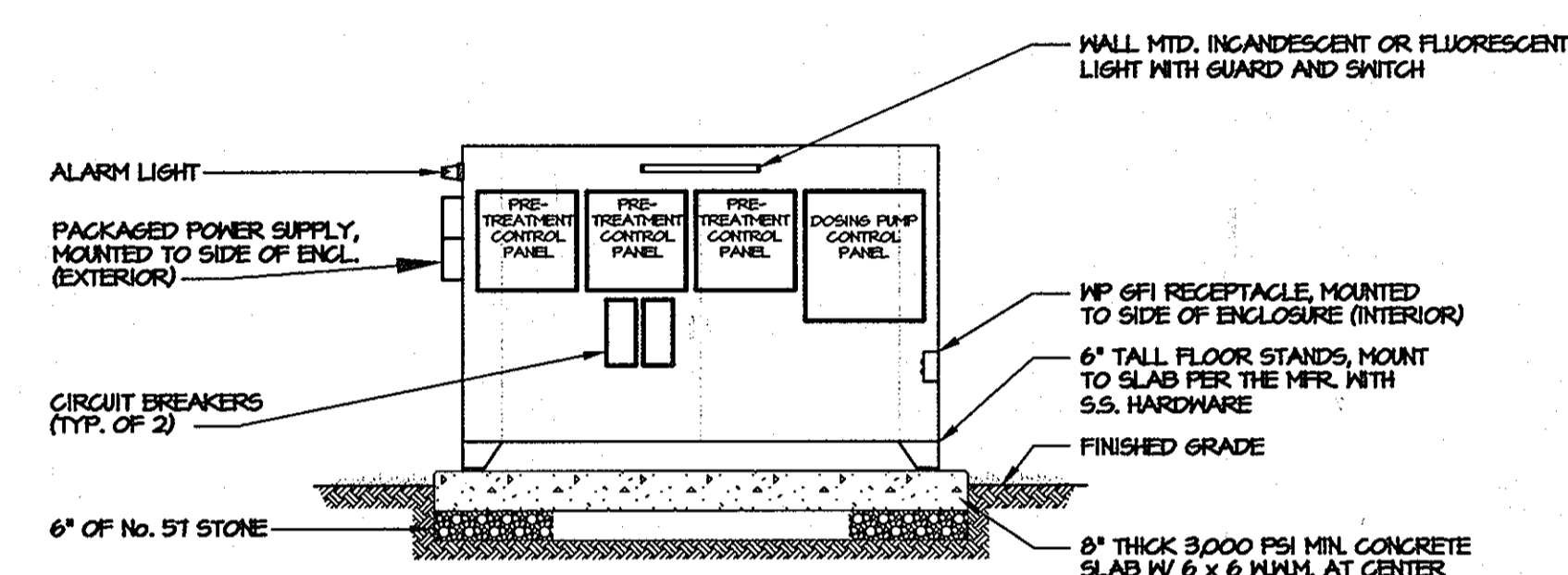
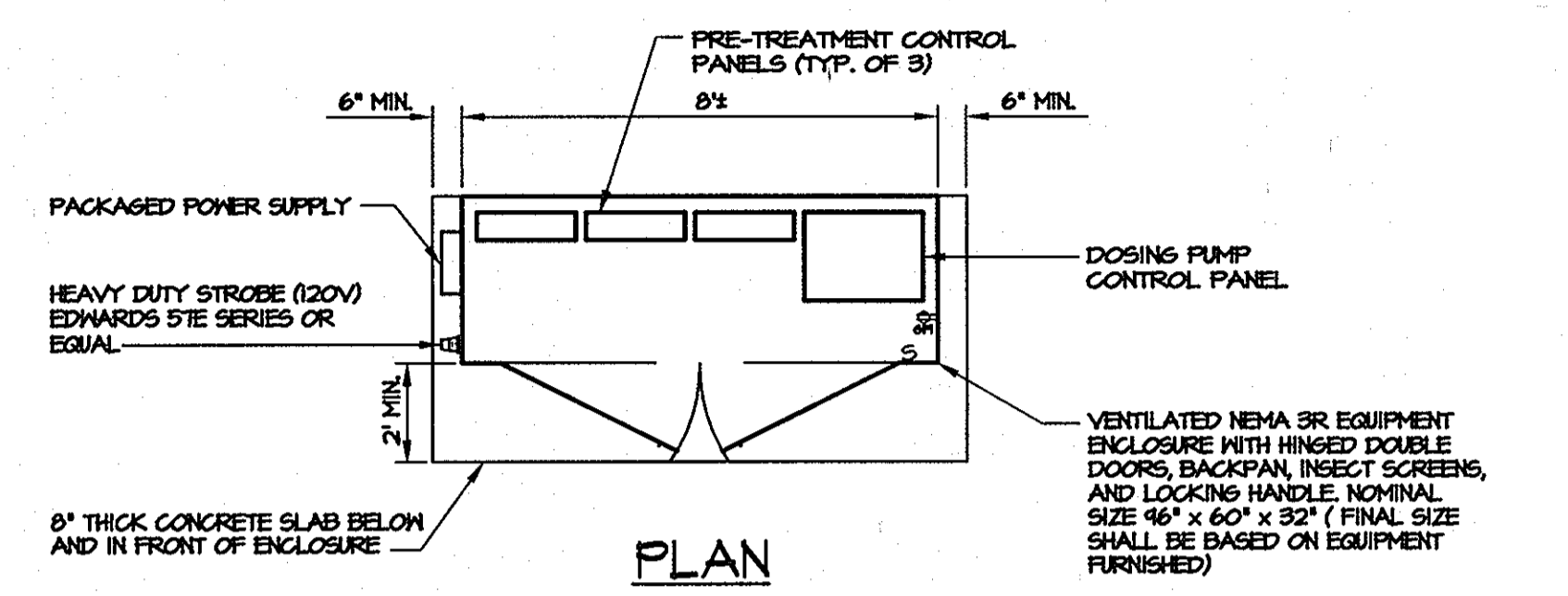
**SEPTIC SYSTEM SITE PLAN**  
 SCALE: 1" = 40'



**SEWER PROFILE**  
 HORZ. 1" = 40'  
 VERT. 1" = 4'



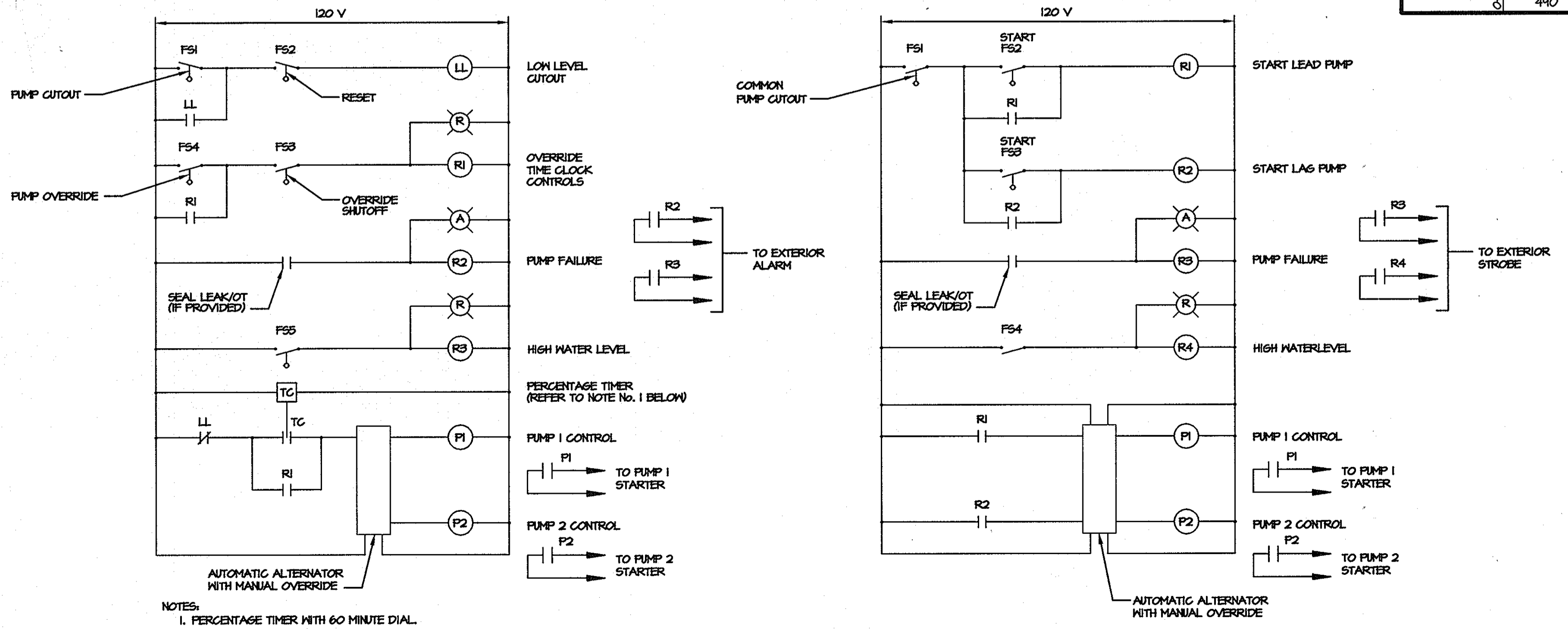
**SEWER PROFILE**  
 HORZ. 1" = 40'  
 VERT. 1" = 4'



**OVERALL CONTROL ENCLOSURE DETAIL**  
 NOT TO SCALE

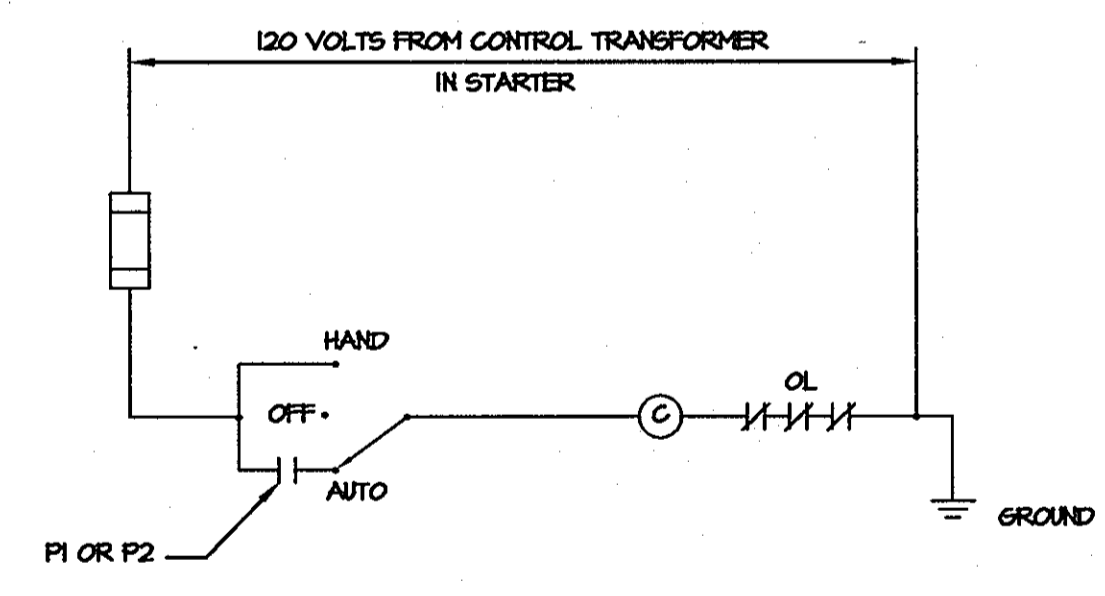
**GENERAL ELECTRICAL NOTES**

1. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL ELECTRICAL PERMITS AND INSPECTION.
2. ALL MATERIALS AND METHOD OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.
3. ALL MATERIALS AND ASSEMBLIES SHALL BEAR THE UNDERWRITERS LABORATORIES, INC. (U.L.) LISTING LABEL.
4. GROUNDING FOR ELECTRIC SERVICE SHALL BE PROVIDED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
5. UNDERGROUND WIRING SHALL BE INSTALLED IN SCH. 40 PVC CONDUIT. CONDUCTORS SHALL BE COPPER WITH XHHW INSULATION.

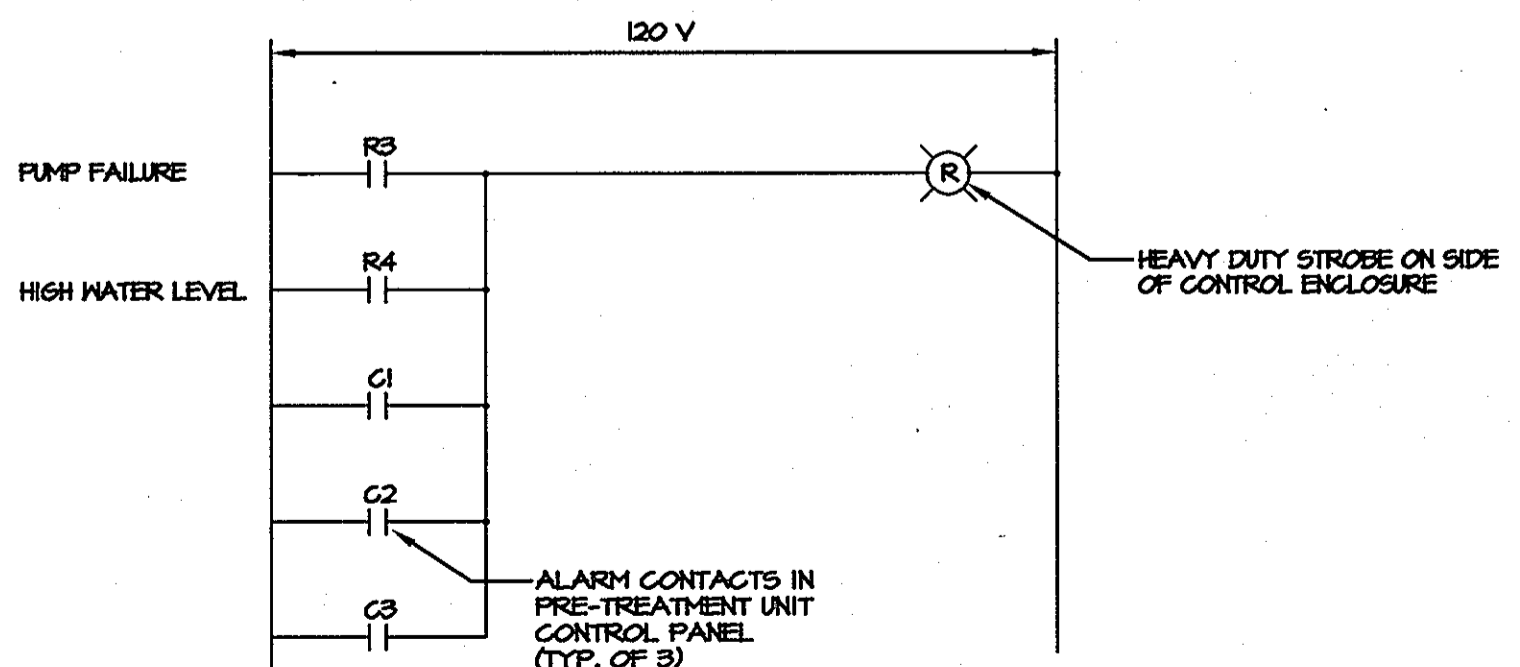


**GRINDER PUMP & FLOW EQUALIZATION CONTROL DIAGRAM**  
 NO SCALE

**DOSING PUMP CONTROL DIAGRAM**  
 NO SCALE



**PUMP STARTER DIAGRAM**  
 NO SCALE



**OVERALL CONTROL ENCLOSURE ALARM STROBE DIAGRAM**  
 NO SCALE

APPROVED FOR PUBLIC OR PRIVATE WATER & PUBLIC OR PRIVATE SEWERAGE SYSTEMS  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT  
 DATE: 8/22/03

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 8/12/03

CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 8/12/03

DIRECTOR, DEPARTMENT OF PLANNING AND ZONING  
 DATE: 8/12/03

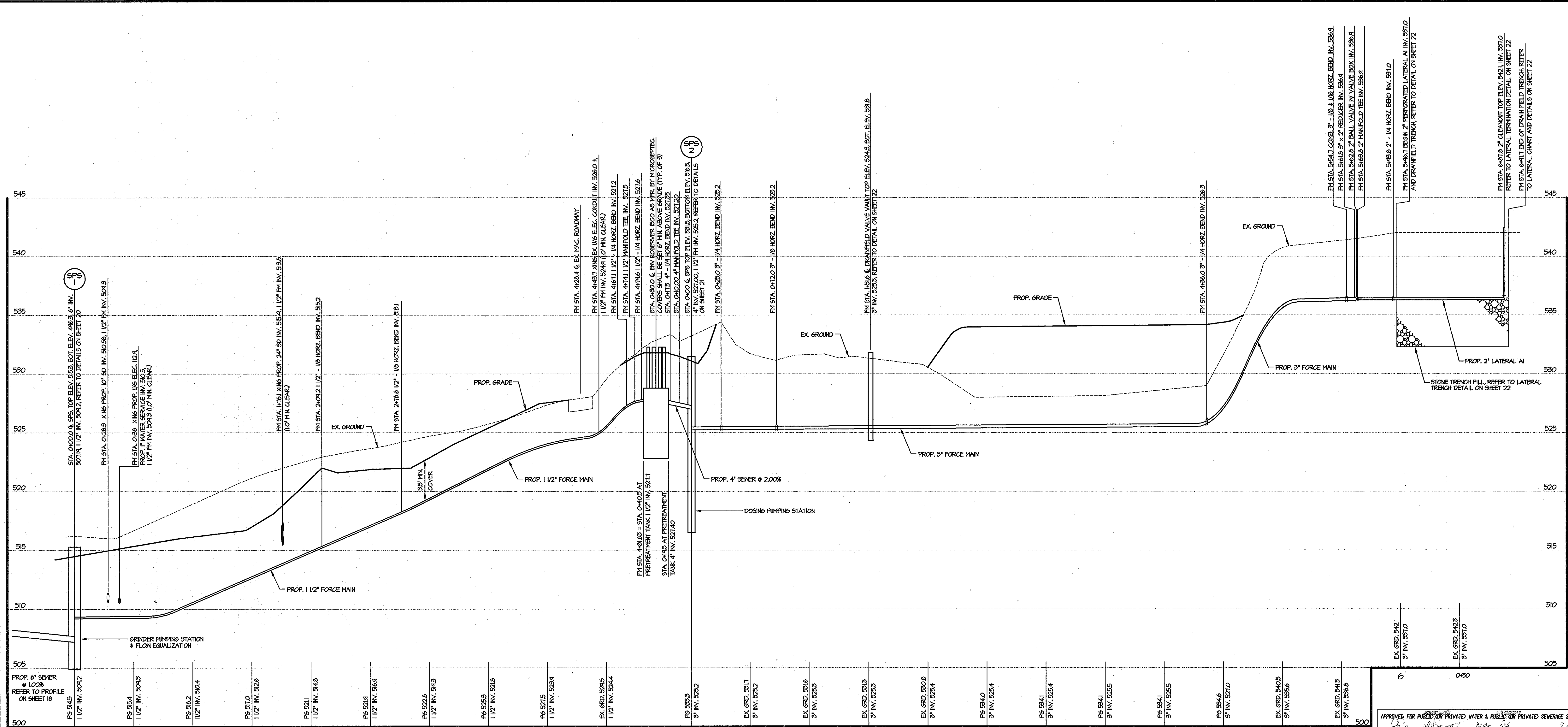
**MRA MORRIS & RITCHIE ASSOCIATES, INC.**  
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS

9080 JUNCTION DRIVE, SUITE 8  
 ANNAPOLIS JUNCTION, MARYLAND 20701  
 (410) 792-9792 or (301) 776-1690  
 FAX (410) 792-7395

**THE GLENELG COUNTRY SCHOOL PROPOSED UPPER SCHOOL ADDITION**  
**SEWER PROFILES**

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

DATE	REVISIONS	JOB NO.:
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	12189.02
		SCALE: AS SHOWN
		DATE: 07/14/03
		DRAWN BY: JPD
		DESIGN BY: JPD
		REVIEW BY: EDL
		SHEET: 18 OF 237

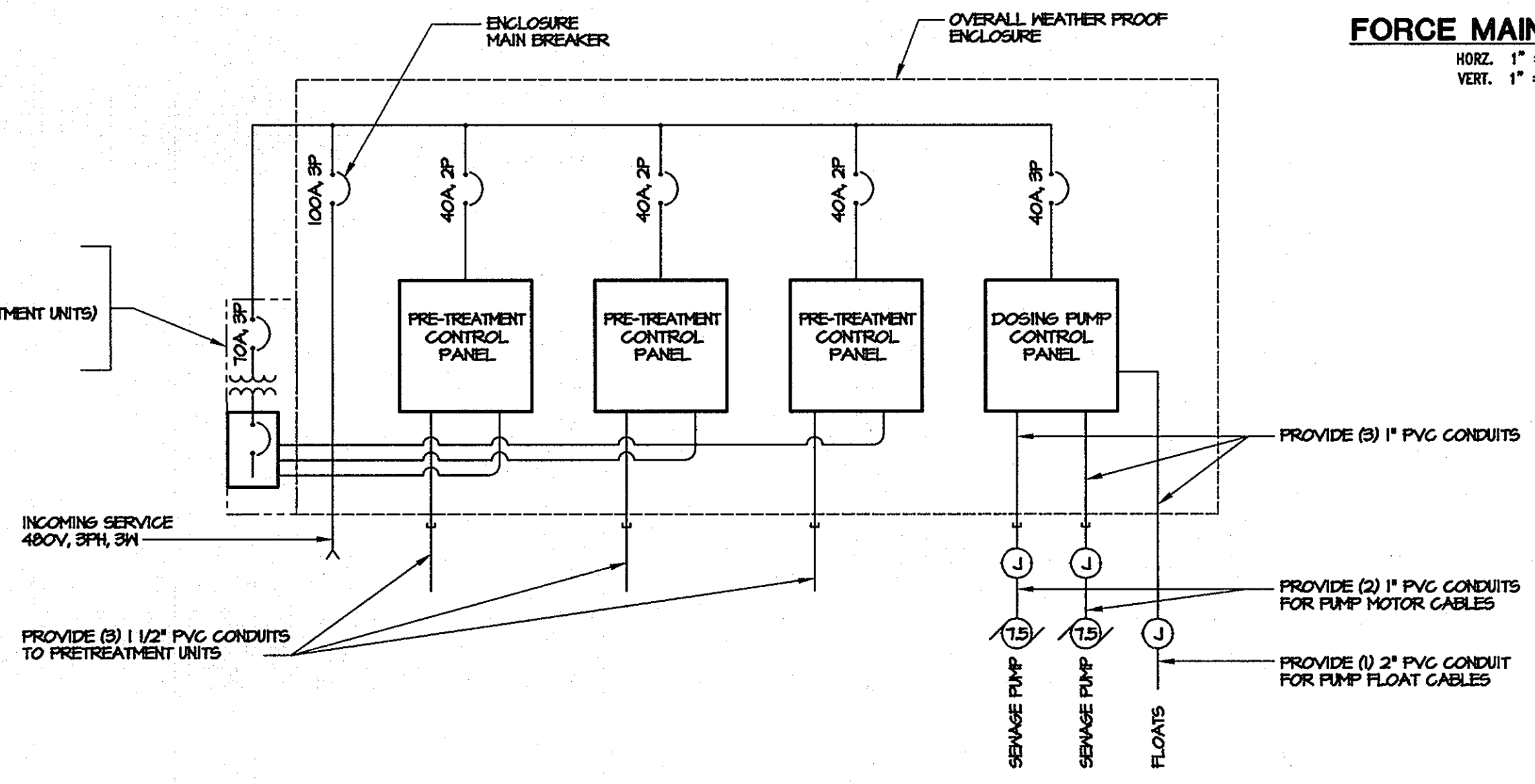


PG 594.5 1 1/2" INV. 504.2	PG 594.4 1 1/2" INV. 504.3	PG 596.2 1 1/2" INV. 504.4	PG 597.0 1 1/2" INV. 504.5	PG 597.1 1 1/2" INV. 504.6	PG 597.4 1 1/2" INV. 504.7	PG 597.5 1 1/2" INV. 504.8	PG 597.5 1 1/2" INV. 504.9	PG 597.5 1 1/2" INV. 505.0	PG 597.5 1 1/2" INV. 505.1	PG 597.5 1 1/2" INV. 505.2	PG 597.5 1 1/2" INV. 505.3	PG 597.5 1 1/2" INV. 505.4	PG 597.5 1 1/2" INV. 505.5	PG 597.5 1 1/2" INV. 505.6	PG 597.5 1 1/2" INV. 505.7	PG 597.5 1 1/2" INV. 505.8	PG 597.5 1 1/2" INV. 505.9	PG 597.5 1 1/2" INV. 506.0	PG 597.5 1 1/2" INV. 506.1	PG 597.5 1 1/2" INV. 506.2	PG 597.5 1 1/2" INV. 506.3	PG 597.5 1 1/2" INV. 506.4	PG 597.5 1 1/2" INV. 506.5	PG 597.5 1 1/2" INV. 506.6	PG 597.5 1 1/2" INV. 506.7	PG 597.5 1 1/2" INV. 506.8	PG 597.5 1 1/2" INV. 506.9	PG 597.5 1 1/2" INV. 507.0
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**FORCE MAIN PROFILES**  
 HORZ. 1" = 40'  
 VERT. 1" = 4'

APPROVED FOR PUBLIC OR PRIVATE WATER & PUBLIC OR PRIVATE SEWERAGE SYSTEMS  
 COUNTRY HEALTH OFFICER DATE  
 HOWARD COUNTY HEALTH DEPARTMENT  
 APPROVED DEPARTMENT OF PLANNING AND ZONING  
 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE  
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING  
 DATE

22.5 KVA PACKAGED POWER SUPPLY  
 480-208/120 V, 3 PH, 4 W, WITH  
 PRIMARY AND SECONDARY MAIN BREAKERS  
 AND (3)-40A, 2P BRANCH BREAKERS (PRE-TREATMENT UNITS)  
 1. (2)-20A, 1P BREAKERS (REC.)  
 2. (4)-1P SPACES

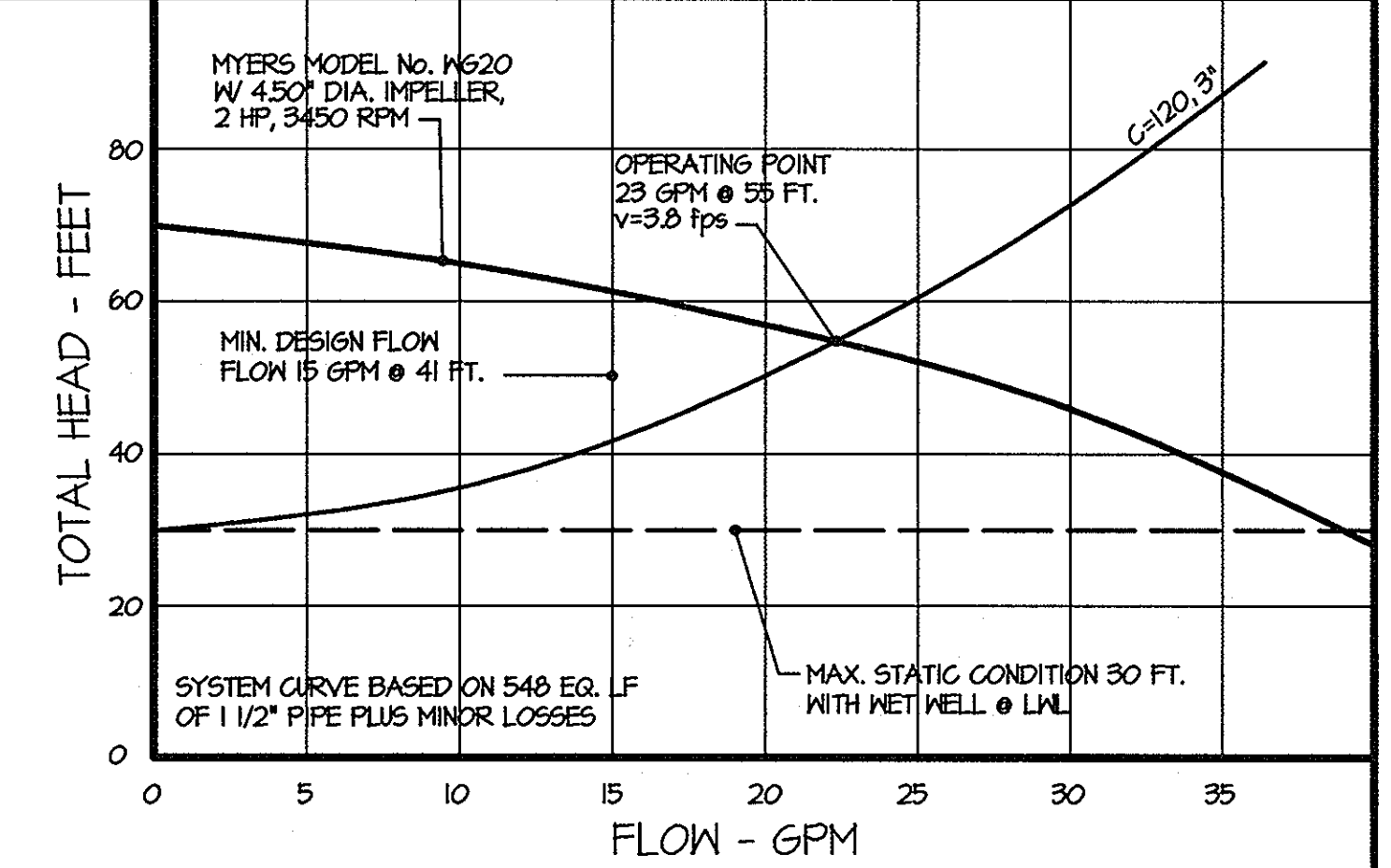
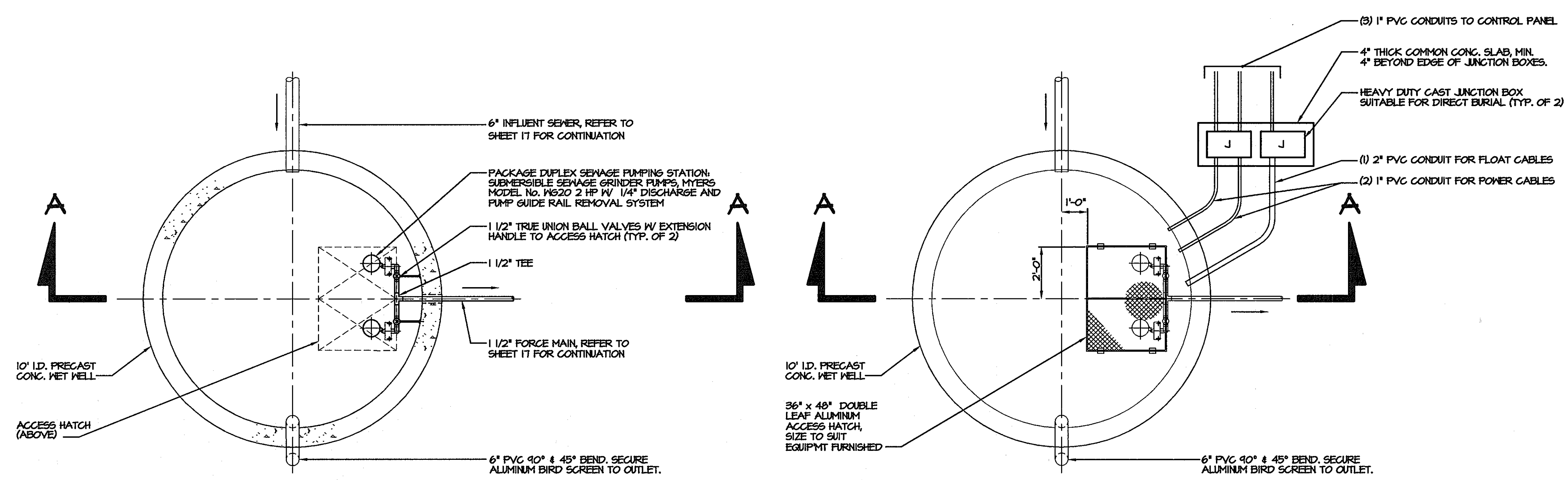


**DOSING PUMPING STATION & PRETREATMENT UNITS  
 POWER SINGLE LINE DIAGRAM**  
 NO SCALE

**MORRIS & RITCHE ASSOCIATES, INC.**  
 ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS  
 9080 JUNCTION DRIVE, SUITE 9  
 ANNAPOLIS JUNCTION, MARYLAND 20701  
 (410) 792-8792 or (301) 776-1690  
 FAX (410) 792-7396

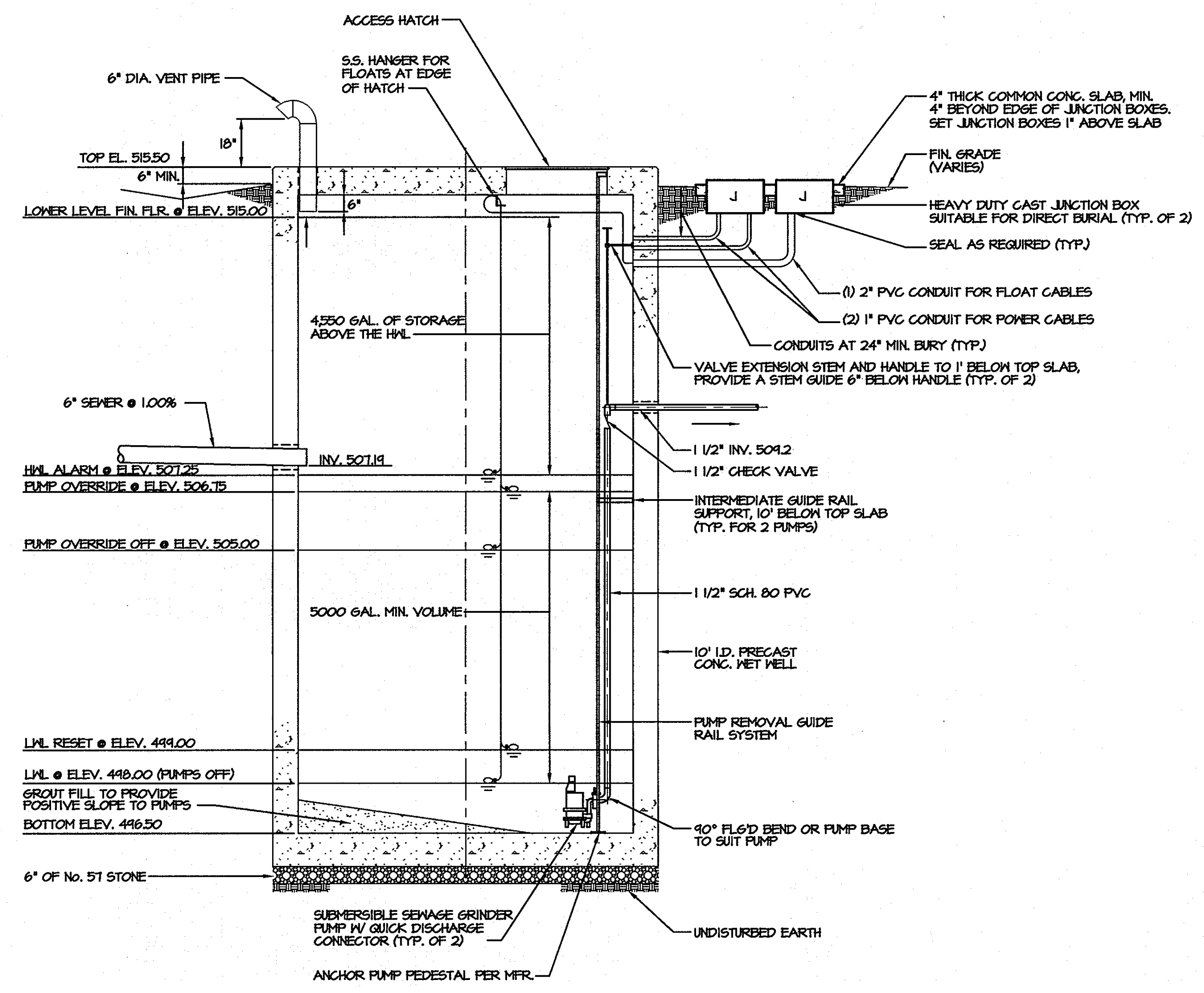
**THE GLENELG COUNTRY SCHOOL  
 PROPOSED UPPER SCHOOL ADDITION**  
**FORCE MAIN PROFILES**  
 TAX MAP 22, GRID 22, PARCEL 146  
 LIBER 1296 - FOLIO 245  
 FIFTH (5TH) ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	12189.02
		SCALE: AS SHOWN
		DATE: 07/14/03
		DRAWN BY: JPD
		DESIGN BY: JPD
		REVIEW BY: EDL
		SHEET: 19 OF 23



**LOWER PLAN**

**TOP PLAN**



**SECTION A-A**

**DETAIL-GRINDER PUMPING STATION & FLOW EQUALIZATION**

SCALE: 3/8"=1'-0"

**PACKAGE GRINDER PUMPING STATION & FLOW EQUALIZATION**

- A. **GENERAL** - Furnish and install a complete duplex grinder pump package consisting of two (2) grinder pumps and motors, internal discharge piping, check valves, shut off valves, quick-disconnect slide rail systems, lift chains, five (5) level controls, stainless steel level control bracket, junction box and control panel.
- All equipment shall be furnished as a package from a single source, and be a product of F.E. Myers.
- B. **RAIL ASSEMBLIES** - Refer to the Dosing Station specification, except guide rails are 1" diameter.
- C. **CHECK VALVES** - A heavy duty spring loaded all rubber flapper type check valve with cast iron body shall be an integral part of the discharge seal assemblies. The valve design shall be such to allow for operation when negative heads, up to five feet, are encountered. The valves shall be designed to operate at all pressures in the sewer system created by the grinder pumps.
- A flat set stainless steel spring, internally molded into the Buna-N rubber flapper, shall be furnished in order to prevent collection of debris in the check valve. All fasteners shall be stainless steel.
- D. **DISCHARGE PIPING** - Schedule 80 PVC.
- E. **SHUT OFF VALVES** - Refer to the drawings.
- F. **LEVEL CONTROLS** - Refer to the Dosing Station specification, except five (5) are required.
- G. **SUBMERSIBLE GRINDER PUMP** - Provide two centrifugal type grinder pumps, Myers Model M5-20, with 4 1/2 inch impeller, 23 gpm @ 55 feet, 3450 rpm submersible motor, suitable for operation in three phase, 480 volts. REFER TO DESIGN CRITERIA FOR OPERATING CONDITIONS.
- H. **CONTROL PANEL** - Refer to the Dosing Station specification, except normal operation of the pumps will be by a repeat cycle timer with an override at H.W.L. Refer to the Control Diagrams for specific requirements.
  1. The pump package manufacturer shall provide a minimum of eight (8) hours of field start-up assistance and training for both installations.
- J. **CONTROL PANEL** - Furnish and install one (1) duplex control panel. The panel shall be a NEMA-4 door in door enclosure, for remote 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
  - (2) Hand-off-automatic selector switch
  - (1) Automatic Electric Alternator
  - (2) Overload Reset Buttons
  - (2) Elapsed Running Time Meters
  - (4) Mercury Float Switches
  - (2) Event counter for each pump
  - (1) Audible alarm with silence push-button and light
  - (1) Control Transformer
  - (1) Percentage timer w/ 60 minute dial

APPROVED FOR PUBLIC OR PRIVATE WATER & PUBLIC OR PRIVATE SEWERAGE SYSTEMS

*[Signature]* 8/22/03  
 COUNTY HEALTH OFFICER  
 HOWARD COUNTY HEALTH DEPARTMENT

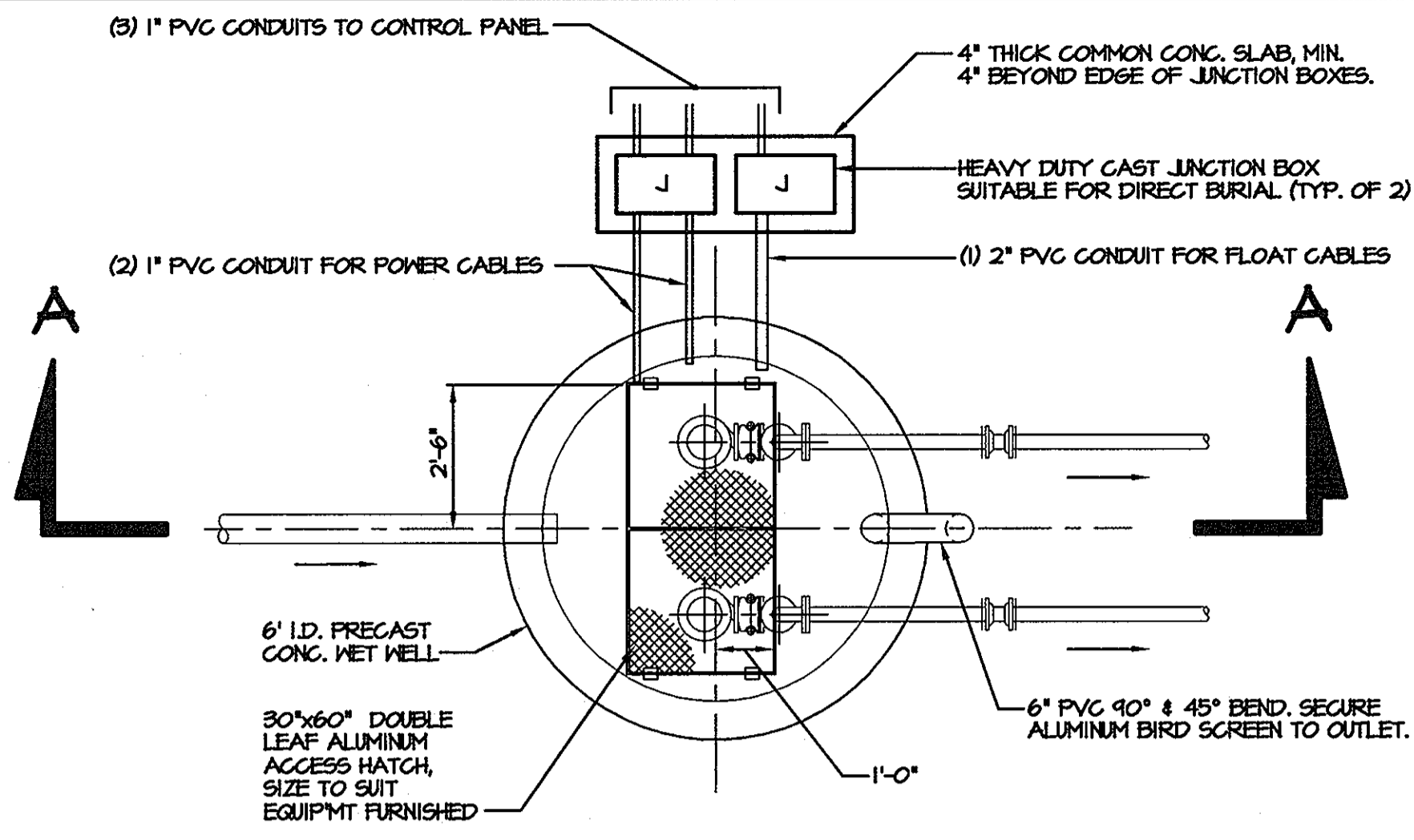
APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8/22/03  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

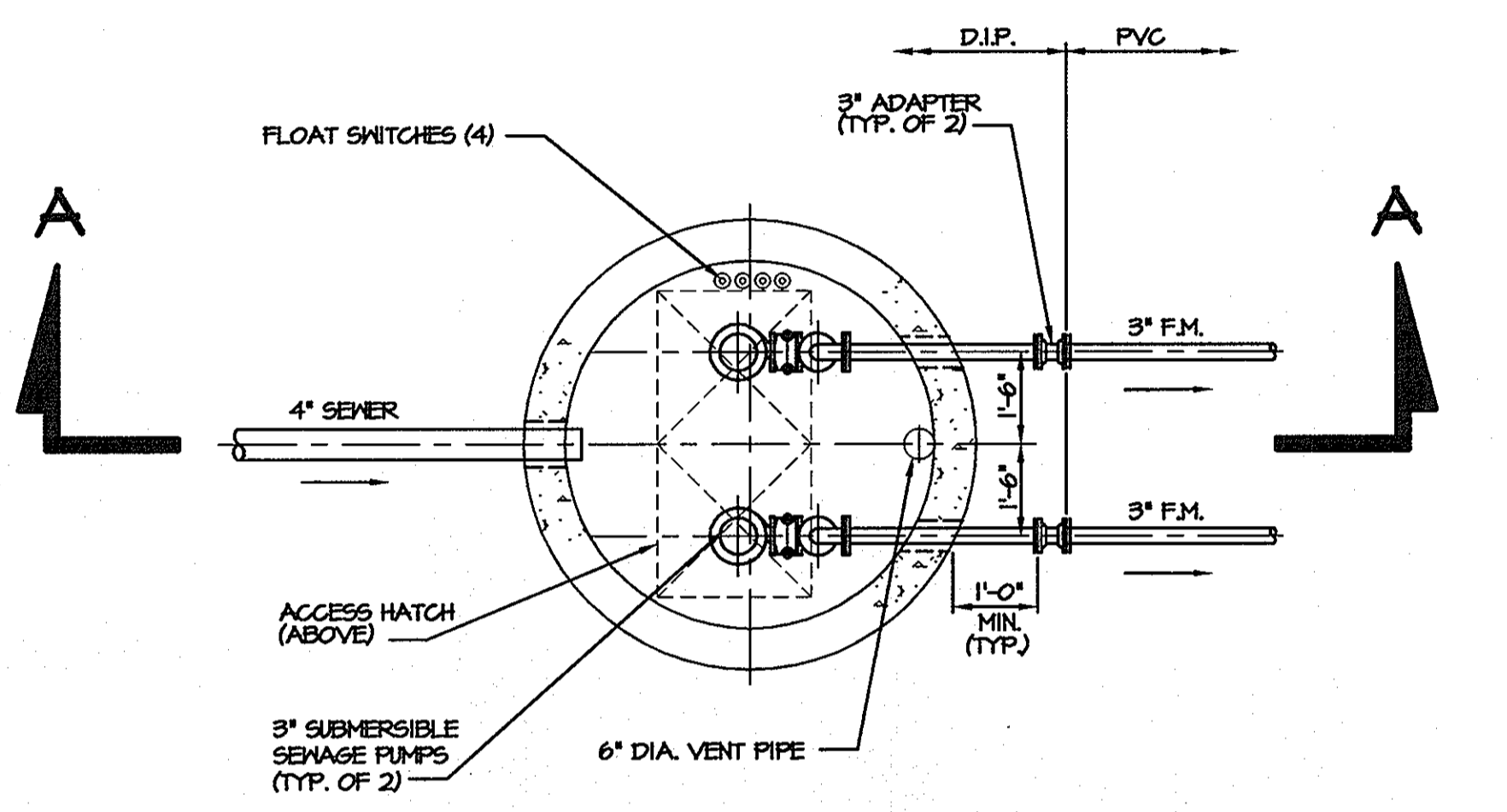
*[Signature]* 8/22/03  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*[Signature]* 7/15/03  
 DIRECTOR, DEPARTMENT OF PLANNING AND ZONING

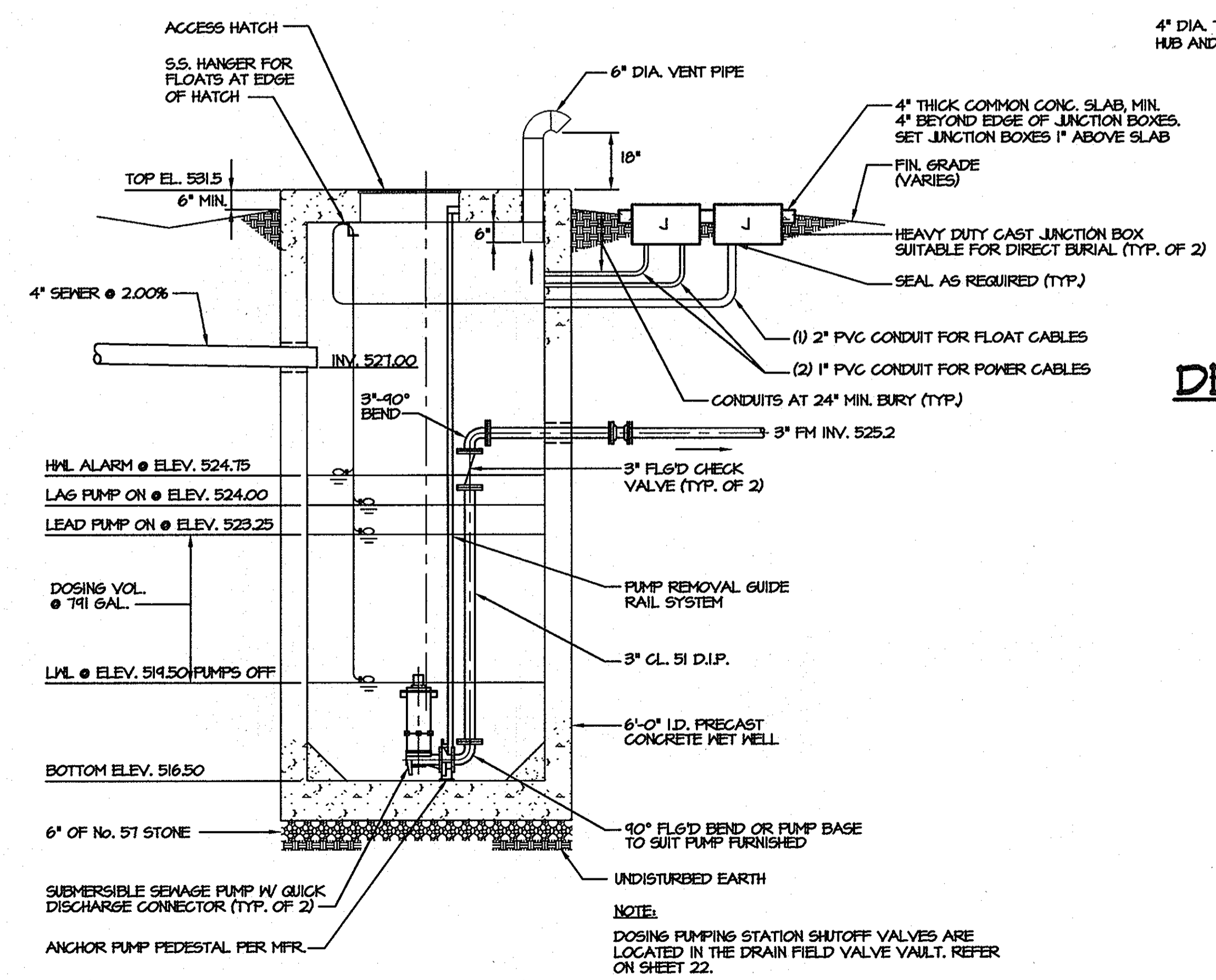
	<b>MORRIS &amp; RITCHIE ASSOCIATES, INC.</b> ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS 9090 JUNCTION DRIVE, SUITE 9 ANNAPOLIS JUNCTION, MARYLAND 20701 (410) 792-9792 or (301) 776-1690 FAX (410) 792-7395	
<b>THE GLENELG COUNTRY SCHOOL          PROPOSED UPPER SCHOOL ADDITION          GRINDER PUMPING STATION, SPECIFICATION,          AND PUMP &amp; SYSTEM CURVE</b> TAX MAP 22, GRID 22, PARCEL 146 LIBER 1298, FOLIO 245 FIFTH (5TH) ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
DATE	REVISIONS	JOB NO.: 12189.02
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	SCALE: AS SHOWN
		DATE: 07/14/03
		DRAWN BY: JPD
		DESIGN BY: JPD
		REVIEW BY: EDL
		SHEET: 20 OF 22



**TOP PLAN**



**LOWER PLAN**



**SECTION A-A  
DETAIL-DOSING PUMPING STATION**

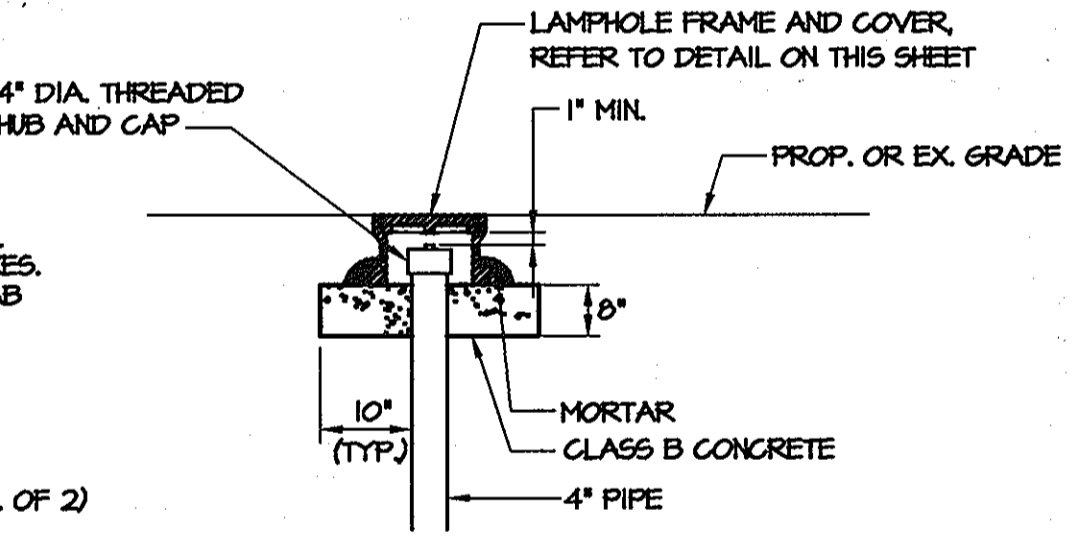
SCALE: 3/8"=1'-0"

**PRECAST CONCRETE STRUCTURES**

- A. PRECAST CONCRETE STRUCTURES** - Precast concrete structures shall be the product of Atlantic Precast Concrete, Inc., Rotondo Precast, A.C. Miller Concrete Products, Monarch Products Company, Inc. or equal as approved.
- B. DESIGN CRITERIA**
- Concrete - 5,000 PSI minimum strength @ 28 days.
  - Steel reinforcement - ASTM A-615, Grade 60.
  - Cover to steel - 1" minimum.
  - Design to meet ASTM C851 and ACI 318 with AASHTO HS-20 loading.
  - Construction joints - sealed with butyl rubber resin or equivalent.
- C. ACCESS HATCHES**
- Provide access hatches cast-in-place of the size and as shown on the drawings. Hatch shall have 1/4 inch thick aluminum checkered plate cover, reinforced for 300 pound per square foot live load, 180 degree swing heavy duty aluminum hinges with stainless steel lift handle, padlock, hasp and aluminum frame.
  - Aluminum frame to be in contact with concrete shall be bituminous coated.
  - Access hatches shall be a product of Washington Aluminum Co., Bilco, Halliday Products, or equal product as approved.
- D. PIPE PENETRATIONS** - All pipe penetrations shall have a cast-in-place compression type flexible gasket, A-LOK type for 4" and larger pipe, or a flexible rubber boot type gasket for pipe less than 4" in diameter.
- E. EXECUTION**
- Installation shall be in accordance with the manufacturer's recommendation.
  - Lifting bars in top slabs and exposed surfaces shall be removed and voids finished smooth with sand cement grout.
  - Watertight testing shall be in accordance with MDE and local requirements.

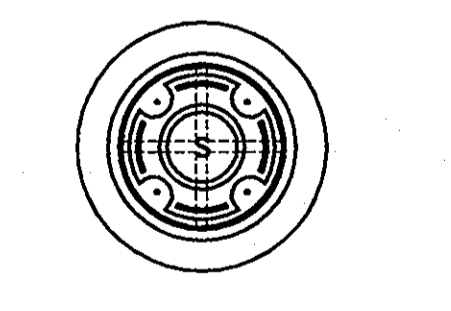
**SEWAGE PRETREATMENT UNITS**

- A. GENERAL** - Furnish and install fully assembled sewage pretreatment units consisting of the tanks, pretreatment unit inserts, blower assemblies, blower controls & alarms (audible with silence push-button and light), and vent piping.
- B. SEWAGE PRETREATMENT UNIT** - Pretreatment units shall be the EnviroServer 1500, a product of MicroSeptec, Inc.
- C. DESIGN CRITERIA**
- The pretreatment units shall reduce the strength of the waste effluent outflow to a maximum of 30 mg/l total suspended solids, 30 mg/l of biological oxygen demand (BOD5), and 10 mg/l of nitrogen.
- D. EXECUTION**
- Installation shall be in accordance with the manufacturer's recommendation.
  - Watertight testing shall be in accordance with MDE and local requirements.



**DETAIL-LAMPHOLE FRAME AND COVER**

NOT TO SCALE

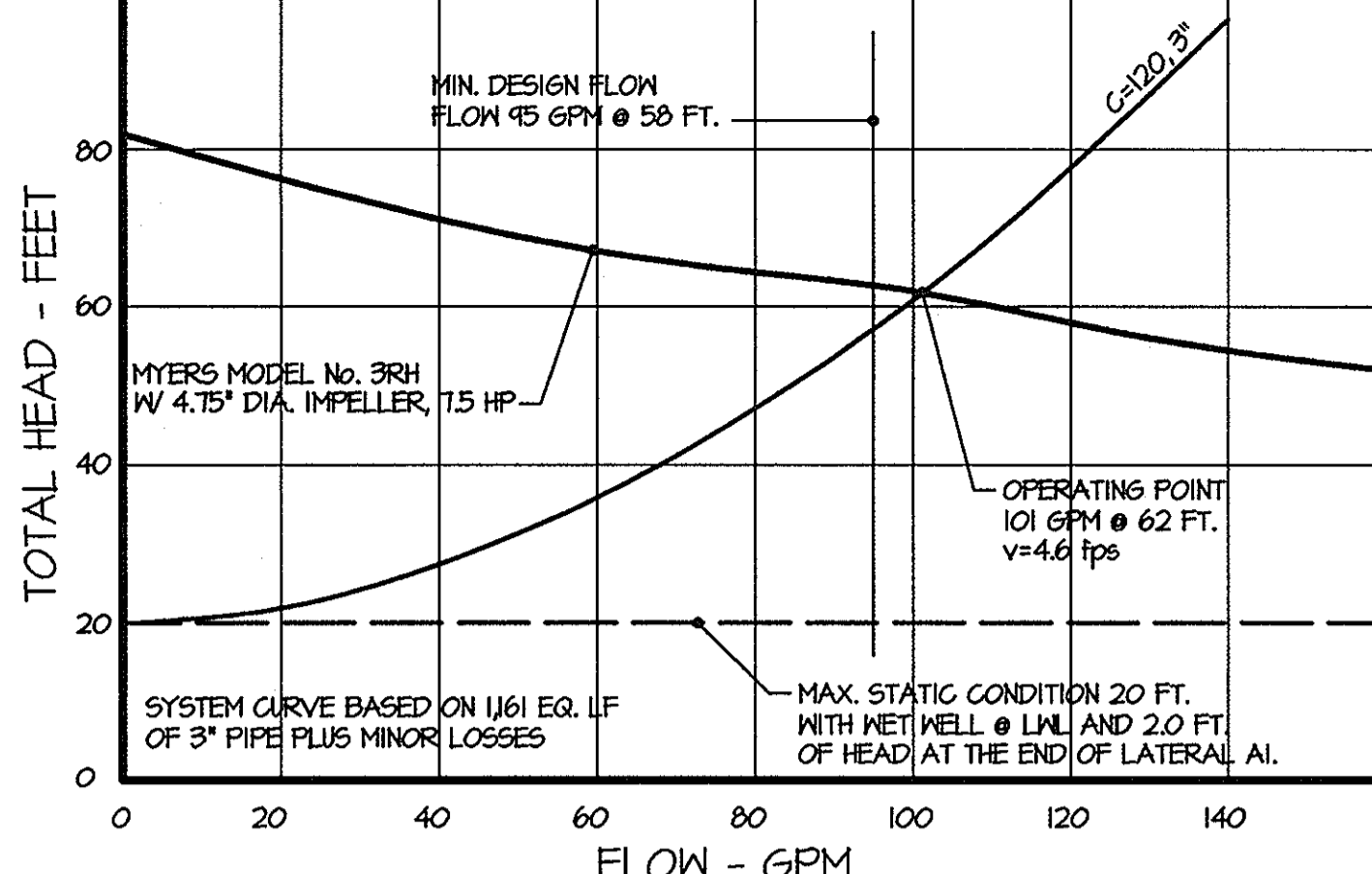


WT FRAMR = 129 lbs  
WT COVER = 34 lbs

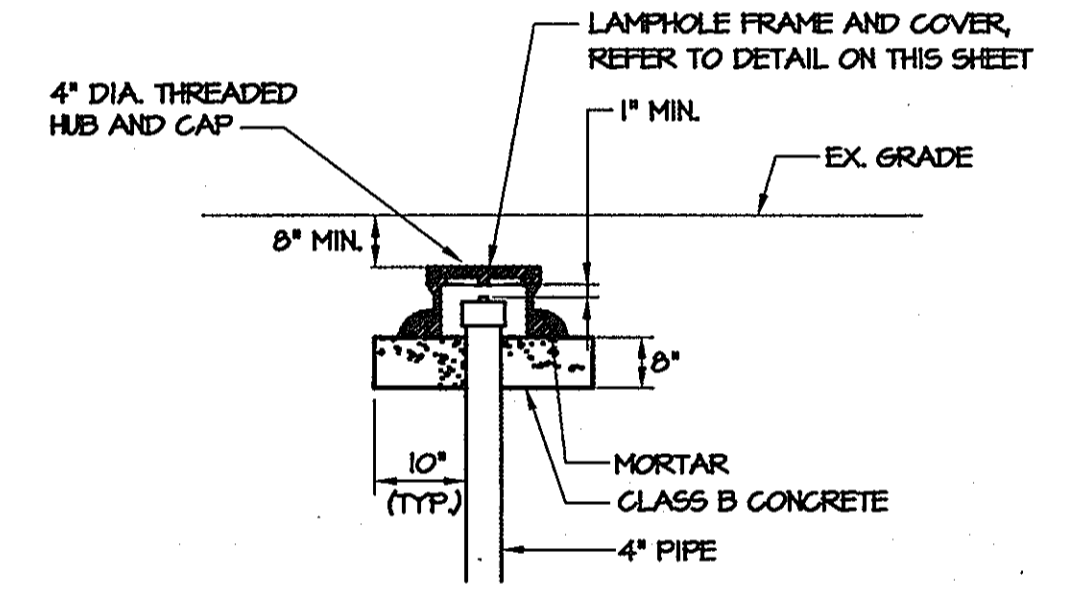
NOT TO SCALE

**PACKAGE DOSING PUMPING STATION**

- A. GENERAL** - Furnish and install a fully assembled duplex sewage pump package consisting of two (2) nonclog pumps and motors, basin assembly, internal discharge piping, check valves, shut off valves, quick-disconnect slide rail systems, lift chains, four (4) level controls, stainless steel level control bracket, junction box, inlet fitting, and control panel.
- All equipment shall be factory installed except for the pumps, inlet fitting and externally mounted control panel. The package station shall be a product of F.E. Myers.
- B. BASIN** - The basin shall be 72" diameter with depth as shown on the drawings. The basin shall be molded of fiberglass reinforced polyester resin or precast concrete. If FRP, the basin shall have a minimum wall thickness of 1/4 inch and a steel anti-flotation plate shall be molded into the bottom of the basin.
- C. BASIN COVER** - Steel basin covers shall be provided with each FRP basin assembly. Each cover shall have a hinged access opening properly sized for installation and removal of pump and check valve assemblies. Precast concrete top slab shall have a cast-in-place aluminum hatch.
- D. RAIL ASSEMBLIES** - The lift-out rail system assemblies shall have structural guide brackets with guide yokes, guide rails of a minimum of 1-1/4 inch galvanized pipe running between an upper rail support and the discharge base, with dual 'O' rings for a hydraulic seal. All cast iron parts shall be coated with corrosion resistant baked on epoxy.
- E. CHECK VALVES** - Check valves shall be of the swing clapper type with rubber facing. A bronze seat bushing shall be mounted in face of valves to provide a corrosion-proof seat. The clapper shall be mounted on a stainless steel shaft and shall be spring loaded to prevent slamming when closing. Valve shall be suitable for operation in the vertical position.
- F. DISCHARGE PIPING** - Class 51 ductile iron pipe as shown on the drawings.
- G. SHUT OFF VALVES** - Refer to the drawings.
- H. INLET FITTING** - A one-piece inlet fitting for 4" SDR 26 plastic pipe shall be shipped loose for field installation for FRP basin, or A-LOK type gasket for precast concrete.
- I. LEVEL CONTROLS** - Pump on, off and alarm levels shall be controlled by four (4) mercury tube float switches. Switches shall consist of a mercury tube switch sealed in a corrosion-resistant polypropylene housing with a minimum of 10 gauge, 2-wire, SJOWA jacketed cable. The cable shall be of sufficient length to reach the junction box with no splices. The level controls shall be suspended from a stainless steel bracket supplied by the float mfr. so that adjustment or replacement may be done without the use of any tools. Level controls shall be UL/CSA listed.
- J. SUBMERSIBLE NON-CLOG PUMP** - Provide two centrifugal type non-clog pumps, Myers Model 3RH with 7.5 HP, 3450 rpm submersible motor, suitable for operation in three phase, 480 volts. REFER TO DESIGN CRITERIA FOR OPERATING CONDITIONS.
- K. CONTROL PANEL** - Furnish and install one (1) duplex control panel. The panel shall be a NEMA-4 door in door enclosure, for remote mounting, to include but not limited to the following:
- Main Disconnect Switch
  - Circuit Breaker
  - Magnetic starters with overload and low voltage protection
  - Hand-off-automatic selector switch
  - Automatic Electric Alternator
  - Pump Running Lights
  - Seal Failure Lights and Relays
  - Overload Reset Buttons
  - Elapsed Running Time Meters
  - Mercury Float Switches
  - Event counter for each pump
  - Audible alarm with silence push-button and light
  - Control Transformer
- L. MISCELLANEOUS** - All fasteners shall be stainless steel.

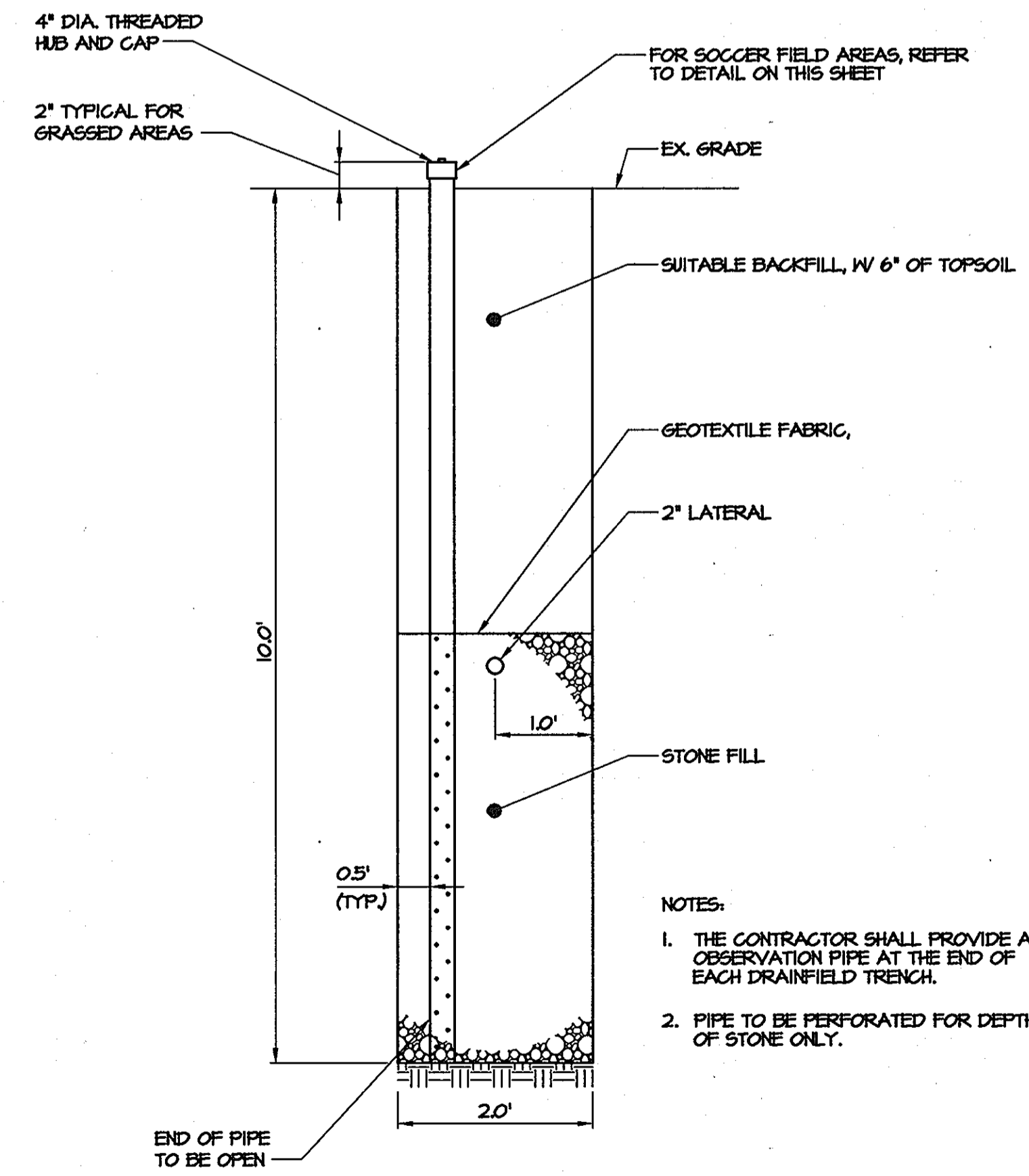


**DOSING STATION  
PUMP AND SYSTEM CURVE**



**(IN SOCCER FIELD)  
DETAIL-OBSERVATION PIPE**

NOT TO SCALE



**(OUTSIDE OF SOCCER FIELD)  
DETAIL-OBSERVATION PIPE**

NOT TO SCALE

APPROVED FOR PRIVATE WATER & PUBLIC PRIVATE SEWERAGE SYSTEMS	DATE
<i>[Signature]</i>	8/2/03
COUNTRY HEALTH OFFICER 337-B	DATE
HOWARD COUNTY HEALTH DEPARTMENT	
APPROVED DEPARTMENT OF PLANNING AND ZONING	DATE
<i>[Signature]</i>	8/2/03
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>[Signature]</i>	8/2/03
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	8/2/03
DIRECTOR, DEPARTMENT OF PLANNING AND ZONING	DATE

**MRA**  
**MORRIS & RITCHIE ASSOCIATES, INC.**  
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS  
9080 JUNCTION DRIVE, SUITE 9  
ANNAPOLIS JUNCTION, MARYLAND 20701  
(410) 792-9792 or (301) 776-1890  
FAX (410) 792-7396

**THE GLENELG COUNTRY SCHOOL  
PROPOSED UPPER SCHOOL ADDITION  
DOSING PUMPING STATION, SPECIFICATION,  
PUMP & SYSTEM CURVE AND DETAILS**  
TAX MAP 22 GRID 22 PARCEL 146  
LIBER 1296 FOLIO 245  
FIFTH (5TH) ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
07/12	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	12189.02
		SCALE: AS SHOWN
		DATE: 07/14/03
		DRAWN BY: JPD
		DESIGN BY: JPD
		REVIEW BY: EDL
		SHEET: 21 OF 23

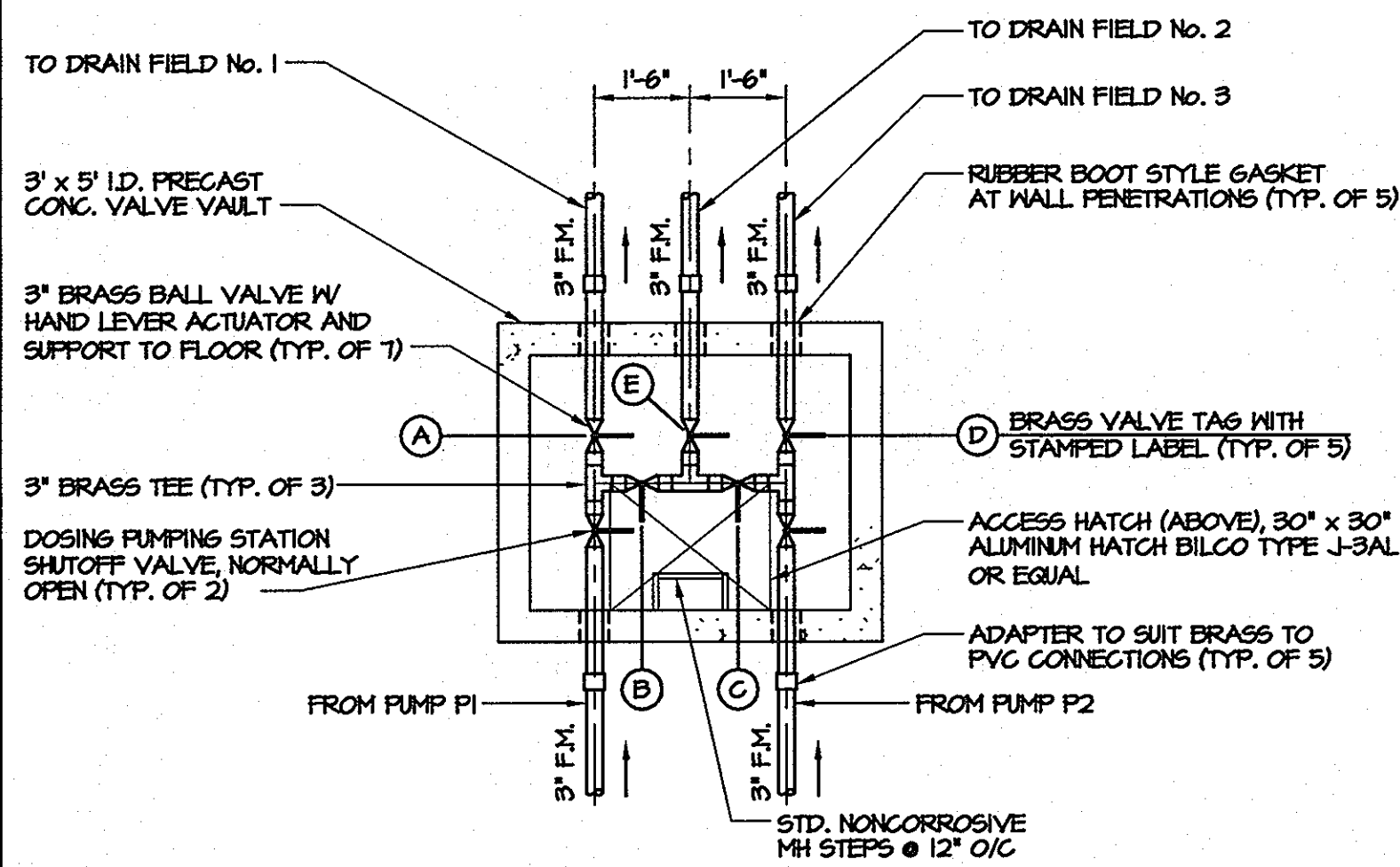
PRESSURE DISTRIBUTION ON SLOPING SITES												
LATERAL	LATERAL INVERT ELEV.	HEAD (FT)	ORIFICE DIA. (IN)	ORIFICE FLOW RATE (GPM)	ORIFICE SPACING (FT/IN)	NUMBER OF ORIFICES	LATERAL FLOW RATE (GPM)	¢ MANIFOLD TO BEGIN OF DRAINFIELD TRENCH (FT/IN)	¢ MANIFOLD TO FIRST ORIFICE (FT/IN)	LATERAL LENGTH (FT/IN)	DRAINFIELD TRENCH LENGTH (FT/IN)	LAST ORIFICE TO END OF TRENCH (FT/IN)
DRAINFIELD No. 1												
A1	537.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
B1	537.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
C1	537.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
D1	537.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
E1	537.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
TOTAL FLOW RATE DRAINFIELD No. 1 = 97.80 GPM												
DRAINFIELD No. 2												
A2	535.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
B2	535.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
C2	535.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
D2	535.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
E2	535.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
TOTAL FLOW RATE DRAINFIELD No. 2 = 97.80 GPM												
DRAINFIELD No. 3												
A3	535.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
B3	535.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
C3	535.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
D3	535.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
E3	535.00	2.0	5/16	1.63	7'-11"	12	19.56	3'-0"	6'-11"	41'-1"	45'-0"	3'-11"
TOTAL FLOW RATE DRAINFIELD No. 3 = 97.80 GPM												

### SEPTIC SYSTEM NOTES

- ALL CONSTRUCTION METHODS AND MATERIALS SHALL BE IN ACCORDANCE WITH THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) PRIVATE WASTEWATER DISPOSAL REGULATIONS AND HOWARD COUNTY HEALTH DEPARTMENT REGULATIONS.
- THE SEPTIC SYSTEM CONTRACTOR MUST BE LICENSED BY HOWARD COUNTY TO INSTALL SEPTIC SYSTEMS, AND CERTIFIED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT TO INSTALL SAND MOUND SYSTEMS.
- STAKE OUT OF THE ENTIRE SEPTIC SYSTEM SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR PRIOR TO SCHEDULING OF THE PRECONSTRUCTION MEETING.
- THE CONTRACTOR SHALL COORDINATE A PRECONSTRUCTION MEETING WITH MDE, HOWARD COUNTY HEALTH DEPARTMENT, THE ENGINEER, AND THE SEPTIC SYSTEM SUBCONTRACTOR.
- THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL, SIX SETS OF SHOP DRAWINGS TO THE ENGINEER. SHOP DRAWING SUBMITTALS SHALL INCLUDE PIPE, FITTINGS, VALVES, VALVE BOXES, STRUCTURES, HATCHES, FRAMES & COVERS, PUMPS, GUIDE RAILS, CONTROLS, PRETREATMENT EQUIP. AND ELECTRICAL EQUIP.
- THE GRINDER PUMPS, DOSING PUMPING STATION AND PRETREATMENT EQUIPMENT ARE LONG LEAD TIME ITEMS. THE CONTRACTOR SHOULD EXPECT A MINIMUM OF 8 WEEKS BETWEEN ORDER AND DELIVERY.
- THE CONTRACTOR IS REQUIRED TO TEST AND BALANCE THE SEPTIC SYSTEM FOR APPROVAL BY MDE. PRELIMINARY TESTING AND BALANCING SHALL BE PERFORMED BY THE CONTRACTOR PRIOR TO THE FINAL WITH MDE. THE CONTRACTOR SHALL PROVIDE CLEAN WATER FOR CONTINUOUS TESTING.
- ALL REQUESTS FOR FIELD CHANGES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- ALL CONSTRUCTION/INSTALLATIONS SHALL BE WITNESSED BY THE INSPECTOR PRIOR TO BACKFILL OPERATIONS.
- ALL FITTINGS SHALL HAVE CONCRETE BUTTRESSES PER THE HOWARD COUNTY D.P.M. WATER & SEWER STANDARDS.
- 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.
- THE CONTRACTOR SHALL COORDINATE ALL PIPE PENETRATIONS IN PRECAST CONCRETE STRUCTURES TO SUIT PIPE MATERIAL AND LOCATIONS.
- THE CONTRACTOR SHALL PROVIDE ONE COPY OF OPERATIONS & MAINTENANCE (O & M) MANUALS FOR THE GRINDER PUMPING STATION, DOSING PUMPING STATION, AND THE PRETREATMENT UNITS TO EACH OF THE FOLLOWING, THE OWNER, MDE, HOWARD COUNTY HEALTH DEPARTMENT, AND THE ENGINEER. THE O & M MANUALS SHALL BE DISTRIBUTED DURING THE PRELIMINARY TESTING AND BALANCING.

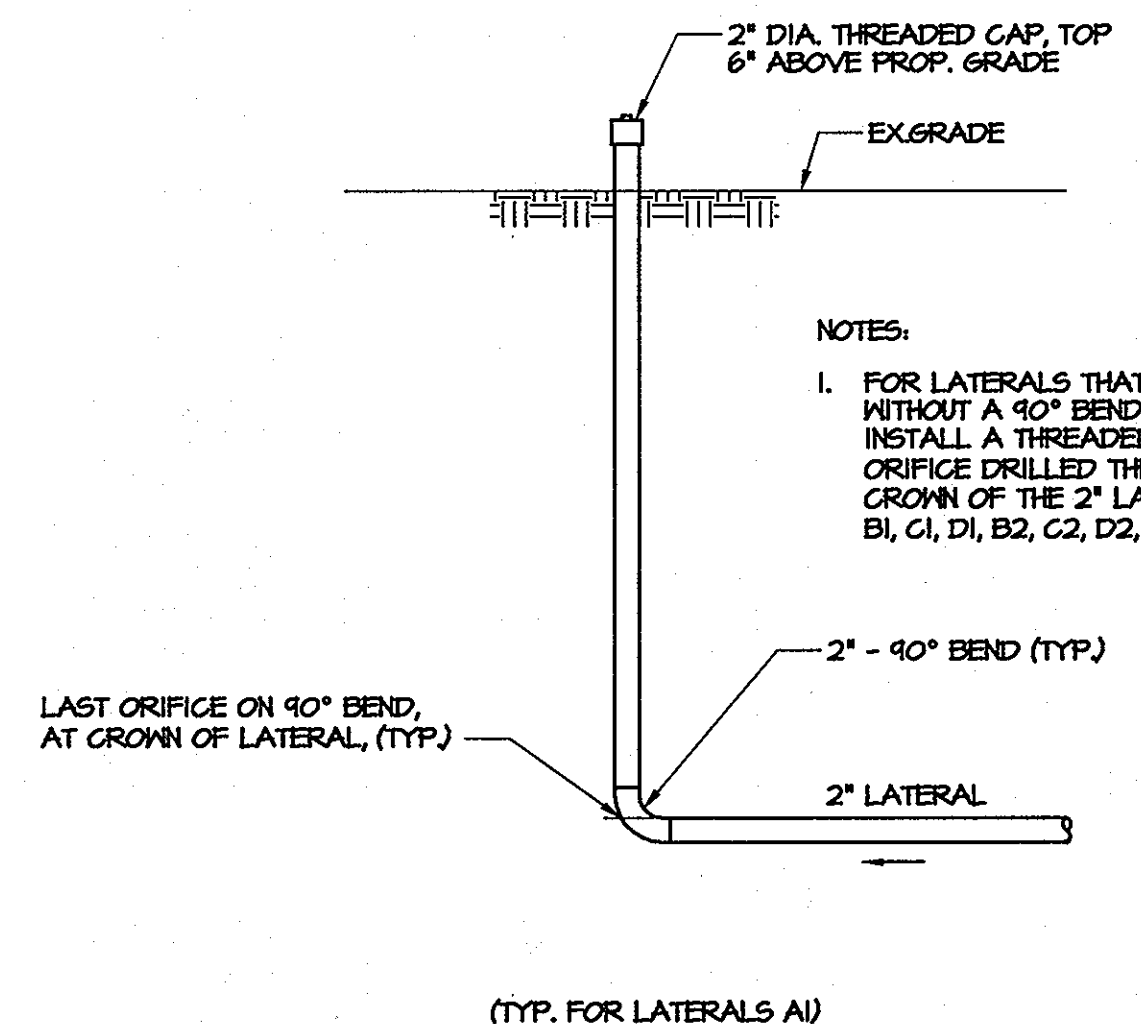
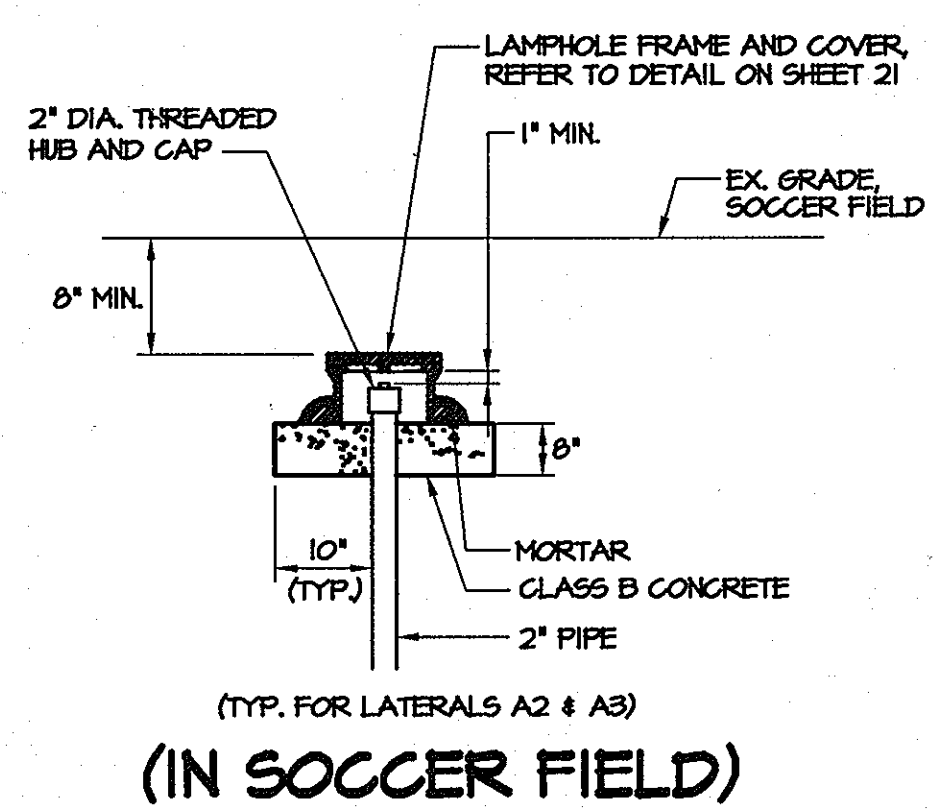
### PIPE SPECIFICATION

- GRAVITY SEWER**
- ALL PIPE AND FITTINGS SHALL BE SDR-26 AND MUST COMPLY WITH ASTM D-3034.
- FORCE MAINS AND DRAINFIELD LATERALS**
- 1 1/2", 2" & 3" PIPE AND FITTINGS SHALL BE SCH. 40 PVC WITH SOLVENT WELD JOINTS UNLESS OTHERWISE NOTED.
  - 1 1/2", 2" & 3" PIPE AND FITTINGS SHALL BE SCH. 80 PVC WITH SOLVENT WELD JOINTS FOR PAVED AREAS.
  - SCHEDULE 80 PVC SHALL BE USED WHERE THREADED FITTINGS ARE REQUIRED.
  - 2" & 3" BALL VALVES SHALL BE BRASS BODIED UNLESS OTHERWISE NOTED.



SCHEDULE No.	DRAIN FIELD ROTATION SCHEDULE				
	A	B	C	D	E
1	O	C	O	C	O
2	C	O	C	O	C
3	O	C	O	C	O

- NOTES:
- REFER TO PROFILE ON SHEET M FOR TOP ELEV., BOTTOM ELEV. AND PIPE INVERT.
  - VALVE 'E' TO BE OPEN NORMALLY. VALVE 'E' TO BE CLOSED ONLY IF IT BECOMES NECESSARY FOR P1 TO PUMP TO DRAIN FIELD No. 3 OR FOR P2 TO PUMP TO DRAIN FIELD No. 1.
  - OPERATE EACH SCHEDULE FOR SIX MONTHS BEFORE ROTATING TO THE NEXT SCHEDULE.



- NOTES:
- FOR LATERALS THAT TERMINATE BELOW GRADE WITHOUT A 90° BEND, THE CONTRACTOR SHALL INSTALL A THREADED END CAP WITH THE LAST ORIFICE DRILLED THROUGH THE CAP AT THE CROWN OF THE 2" LATERAL. TYP. FOR LATERALS B1, C1, D1, B2, C2, D2, B3, C3 & D3.

## DOSING PUMPING STATION DESIGN CRITERIA

#### PROJECTED WASTEWATER FLOW

PROPOSED UPPER SCHOOL EXPANSION (1):  
STUDENTS - 230 x 15 GPD = 3,450 GPD  
FACULTY - 35 x 15 GPD = + 525 GPD  
TOTAL 3,975 GPD

#### DESIGN FLOW

BASED ON 4,500 GPD, (3) 1,500 GPD ENVIROSERVER PRETREATMENT TANKS, AND FLOW EQUALIZATION AT SFS 1.  
INVERT OF LATERAL A1 537.0  
LOW WATER LEVEL = 519.5  
17.5 FT. ~ 10 FT.  
+ 2 FT. AT DISTAL END OF LATERAL A1 = 20 FT. MAX. STATIC HEAD

#### MINOR LOSSES

3" 90° BEND 4 @ 8' = 32'  
3" TEE 1 @ 16' = 16'  
3" CHECK VALVE 1 @ 14' = 14'  
3" BALL VALVE (OPEN) 2 @ 15' = 30'  
3" 45° BEND 2 @ 3.8' = 7.6'  
3" PIPE + 572'  
649.6 LF ~ 650 LF OF 3" PIPE

3" x 2" REDUCER 1 @ 2.5' = 2.5'  
2" 90° BEND 2 @ 5.5' = 11'  
2" TEE 3 @ 12' = 36'  
2" BALL VALVE (OPEN) 1 @ 12' = 12'  
2" PIPE + 125'  
175.7 ~ 176 LF OF 2" PIPE

CONVERT 2" PIPE TO EQUIVALENT (3") 2.63 = 2.405 x 176 = 511 LF  
LF OF 3" PIPE

DESIGN LENGTH = 650 LF + 511 LF = 1,161 EQUIVALENT LF OF 3" PIPE

#### SYSTEM CURVE

GPM	C=120	TOTAL HEAD
20	1.8	21.4
40	6.5	21.5
60	13.7	35.4
80	23.4	41.2
100	35.2	60.9
120	44.7	71.7
140	66.0	96.6

#### PUMPING UNITS

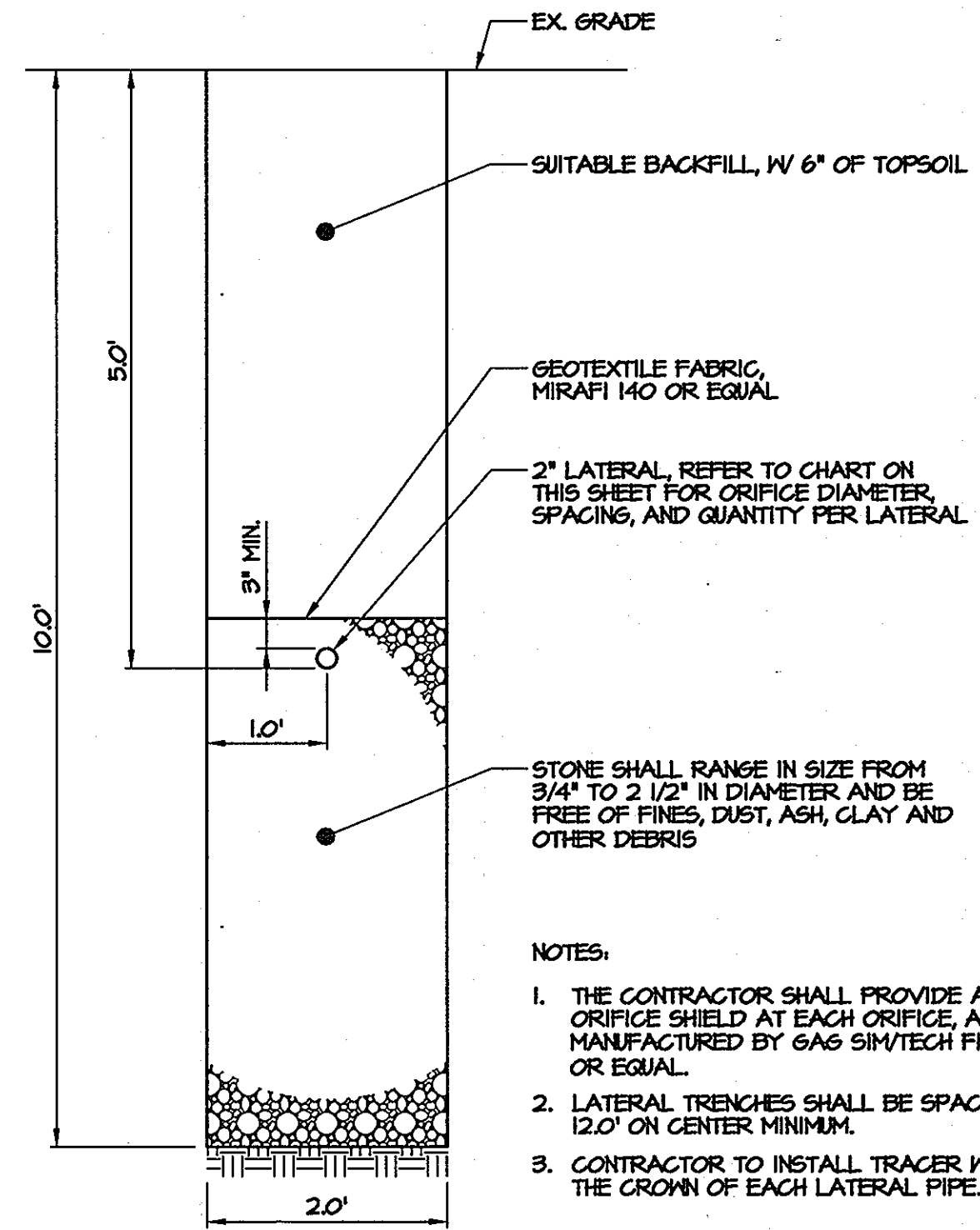
PROVIDED: 2 @ 101 GPM @ 62 FEET EACH  
MOTOR: 1.5 HP, 3450 RPM  
SELECTION FOR PUMP AND SYSTEM CURVE: MYERS MODEL  
No. 394, 3" DISCHARGE, 4.75" DIA. IMPELLER,  
PASSES 2" SOLIDS

#### NET HEAD - 6 FT. I.D.

MINIMUM PUMP CYCLE BASED ON 6 DOSES/DAY, 60/6 DOSES PER DAY=MIN. VOLUME REQUIRED  
MINIMUM VOLUME REQUIRED: 4,500 GPD/6 DOSES=750 GAL.  
VOLUME PROVIDED: 741 GAL.

## SEPTIC DRAINFIELD DEEP TRENCH LENGTH CALCULATIONS

- THE REQUIRED ABSORPTIVE AREA IS GIVEN BY: A=Q/I  
WHERE:  
A=REQUIRED ABSORPTIVE AREA IN SQUARE FEET  
Q=DESIGN FLOW RATE IN GALLONS PER DAY 1,335 GPD  
I=MAXIMUM APPLICATION RATE IN GALLONS PER DAY PER SQUARE FOOT. 1.2 GPD/SQ. FT.  
THIS, 1,335 GPD/1.2 GPD/SQ. FT. = 613 SQ. FT.
- THE STANDARD TRENCH LENGTH IS GIVEN BY: L=A/g  
WHERE:  
L=STANDARD TRENCH LENGTH IN FEET  
g=TRENCH BOTTOM AREA PER LINEAR FOOT OF TRENCH: 2 SQ. FT./FT.  
THIS, L = 613 SQ. FT./2 SQ.FT./FT. = 305.7 FT.
- THE PERCENT OF THE STANDARD TRENCH LENGTH IS GIVEN BY:  
N + 2  
N + 1 + 2d x 100  
WHERE:  
N=TRENCH WIDTH IN FEET: 2 FT.  
d=DEPTH OF USEABLE SIDEWALL: 5 FT.  
THIS, THE APPLICABLE PERCENT OF STANDARD TRENCH LENGTH IS 36.4%
- THE TOTAL TRENCH LENGTH BASED ON 150% OF THE DESIGN FLOW, A 2 FOOT TRENCH WIDTH, 5 FEET OF USEABLE SIDEWALL, AND 30.8% OF THE STANDARD TRENCH LENGTH IS AS FOLLOWS:  
150(306 x 3.057 FT.) = 1,412 FEET  
1,412 FT./3 DRAINFIELDS = 471 FT. OF TRENCH/DRAINFIELD
- PROVIDE A 150% SYSTEM CONSISTING OF 3 DRAINFIELDS AT 50% EACH.  
3 DRAINFIELDS @ 150% OF THE DESIGN FLOW = 15 LATERALS @ 45 FT. EACH = 1,425 FT.



- NOTES:
- THE CONTRACTOR SHALL PROVIDE AN ORIFICE SHIELD AT EACH ORIFICE, AS MANUFACTURED BY GAG SIM/TECH FILTER OR EQUAL.
  - LATERAL TRENCHES SHALL BE SPACED AT 12.0' ON CENTER MINIMUM.
  - CONTRACTOR TO INSTALL TRACER WIRE ALONG THE CROWN OF EACH LATERAL PIPE.

APPROVED FOR SUBCONTRACTOR PRIVATE WATER & PUBLIC PRIVATE SEWERAGE SYSTEMS

COUNTRY HEALTH OFFICER: [Signature] DATE: 8-2-03  
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] DATE: 8/5/03  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] DATE: 8/12/03  
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] DATE: 8/12/03  
DIRECTOR, DEPARTMENT OF PLANNING AND ZONING

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

9080 JUNCTION DRIVE, SUITE 9  
ANNAPOLIS JUNCTION, MARYLAND 20701  
(410) 792-8792 or (301) 776-1890  
FAX (410) 792-7396

**THE GLENELG COUNTRY SCHOOL PROPOSED UPPER SCHOOL ADDITION**  
DETAILS, DESIGN CRITERIA, NOTES AND TABLES  
TAX MAP 22 GRID 22 PARCEL 146  
LIBER 1296 FOLIO 245  
FIFTH (5TH) ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

DATE: 07/12 REVISIONS: TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS JOB NO.: 12189.02  
SCALE: AS SHOWN  
DATE: 07/14/03  
DRAWN BY: JPD  
DESIGN BY: JPD  
REVIEW BY: EDL  
SHEET: 22 OF 257

### DETAIL-RAIN FIELD VALVE VAULT

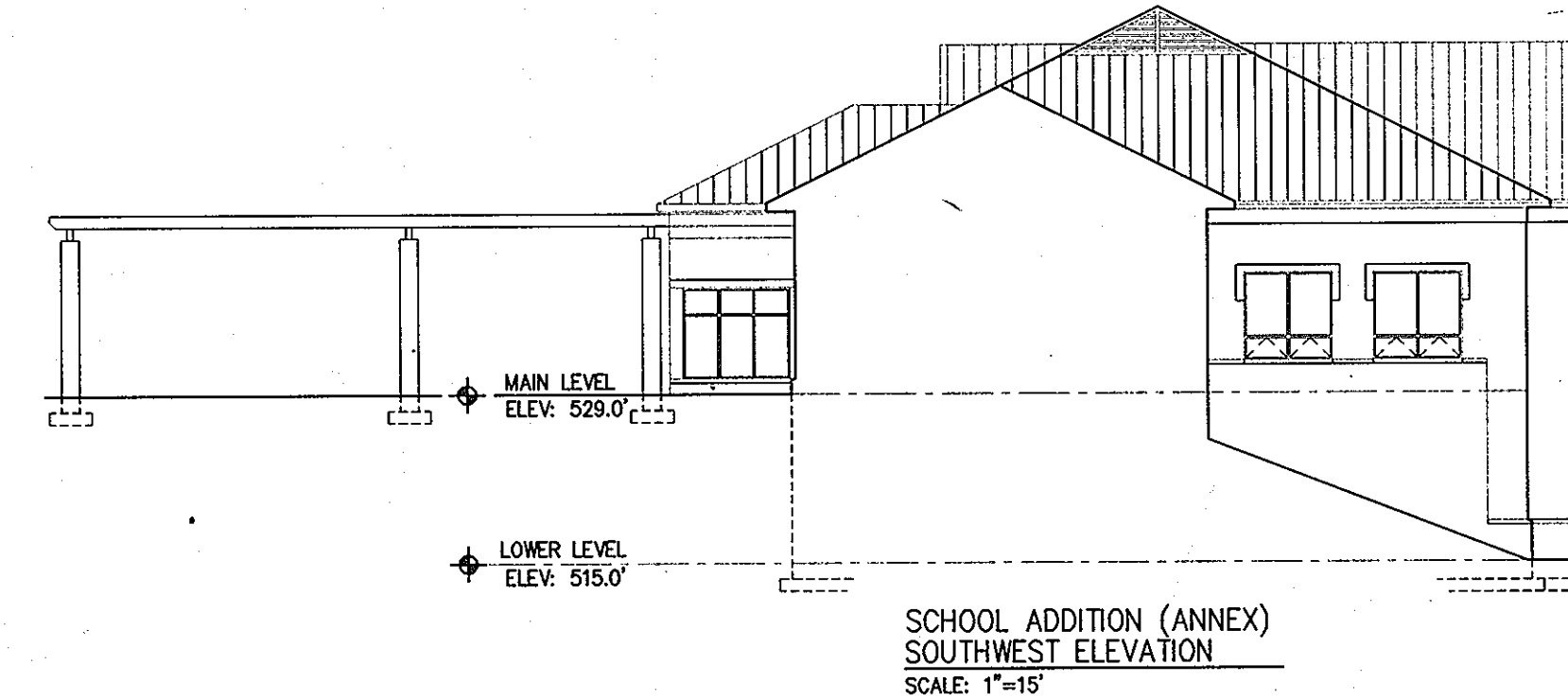
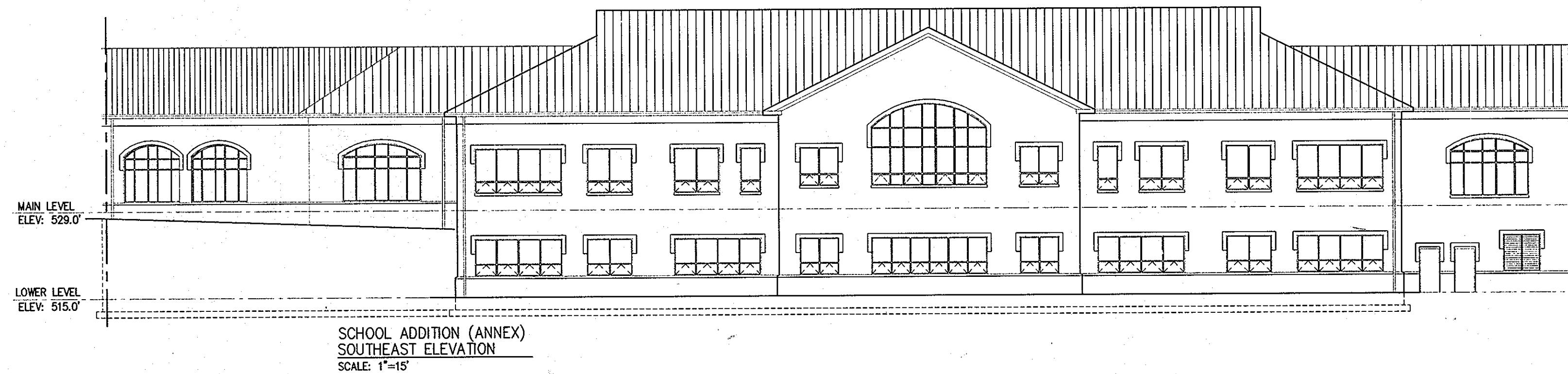
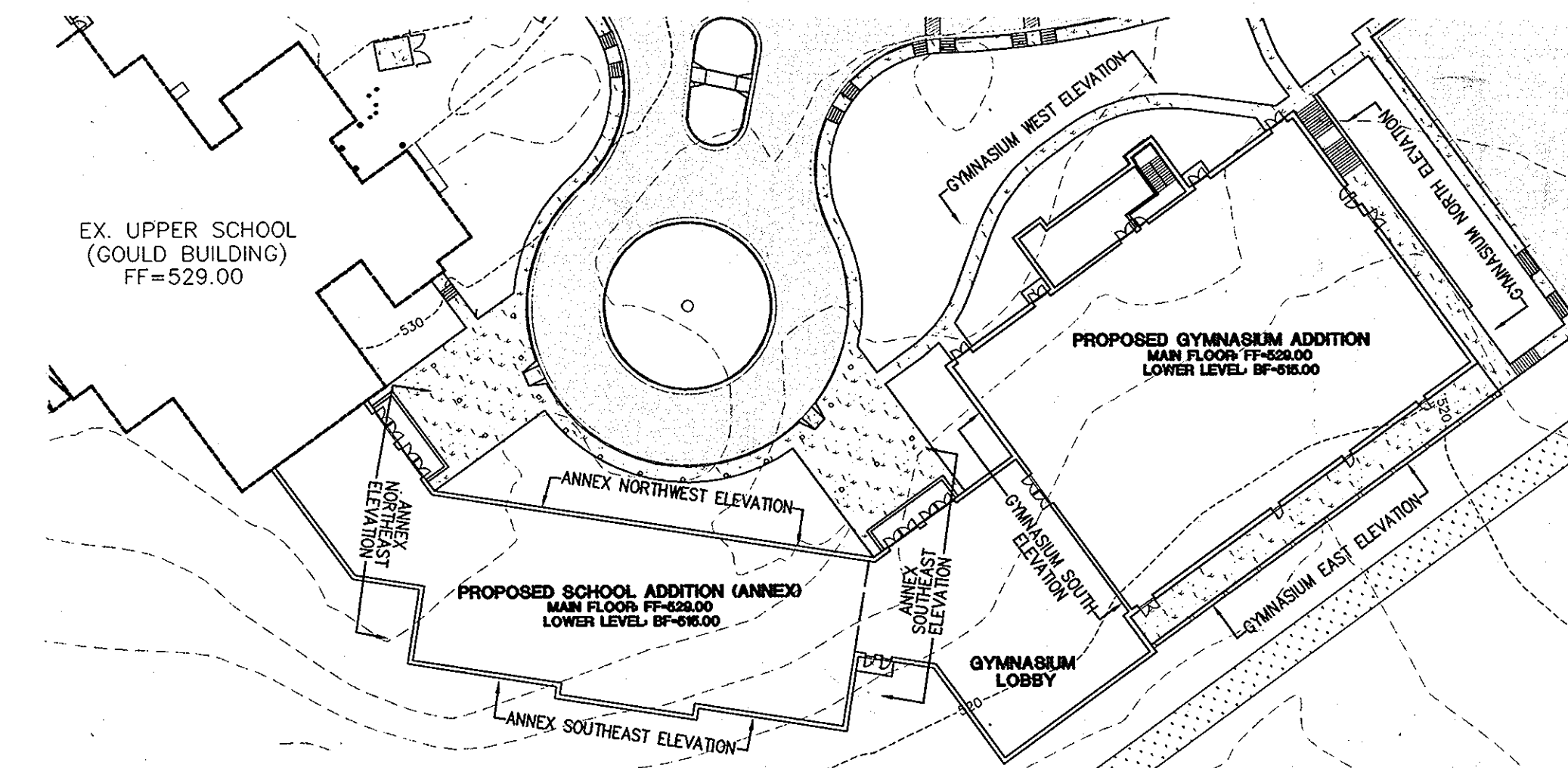
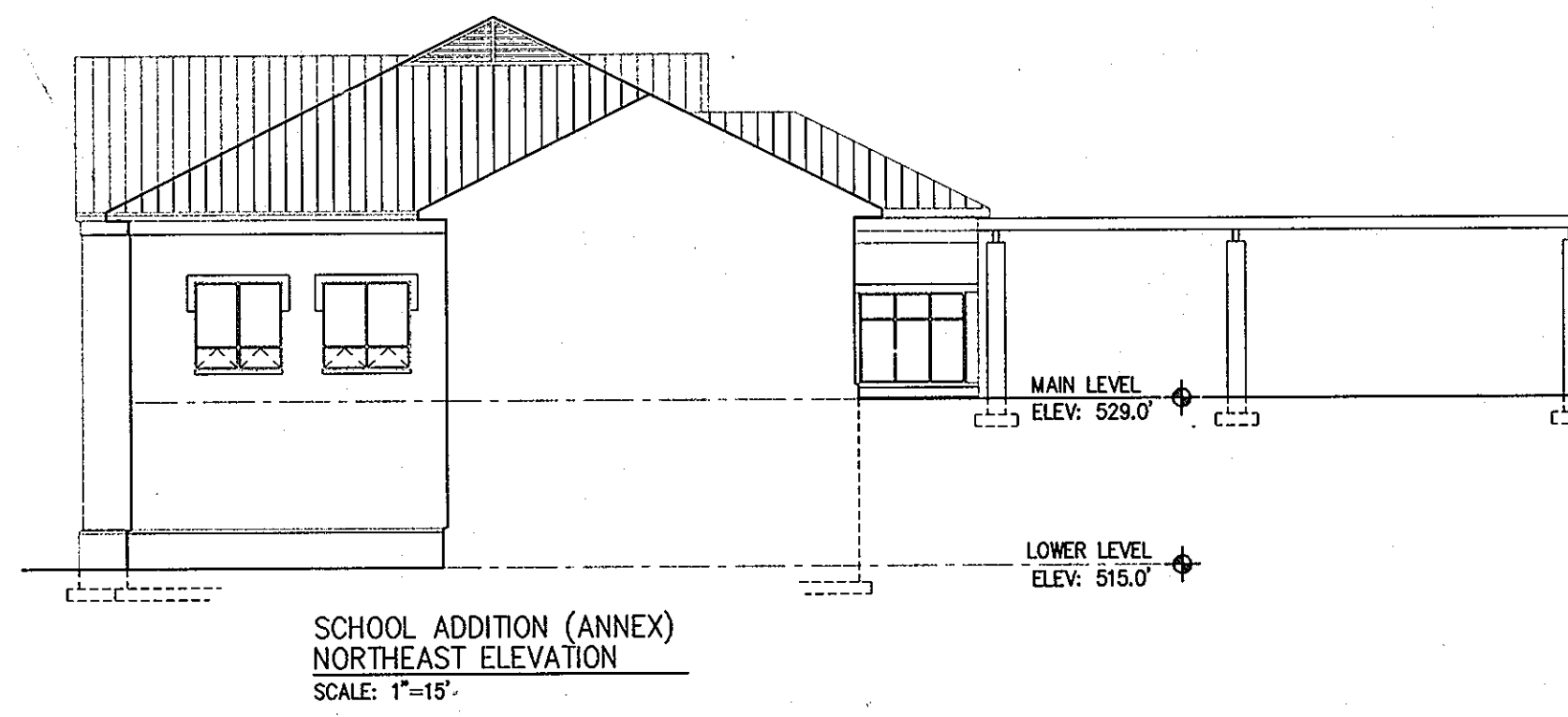
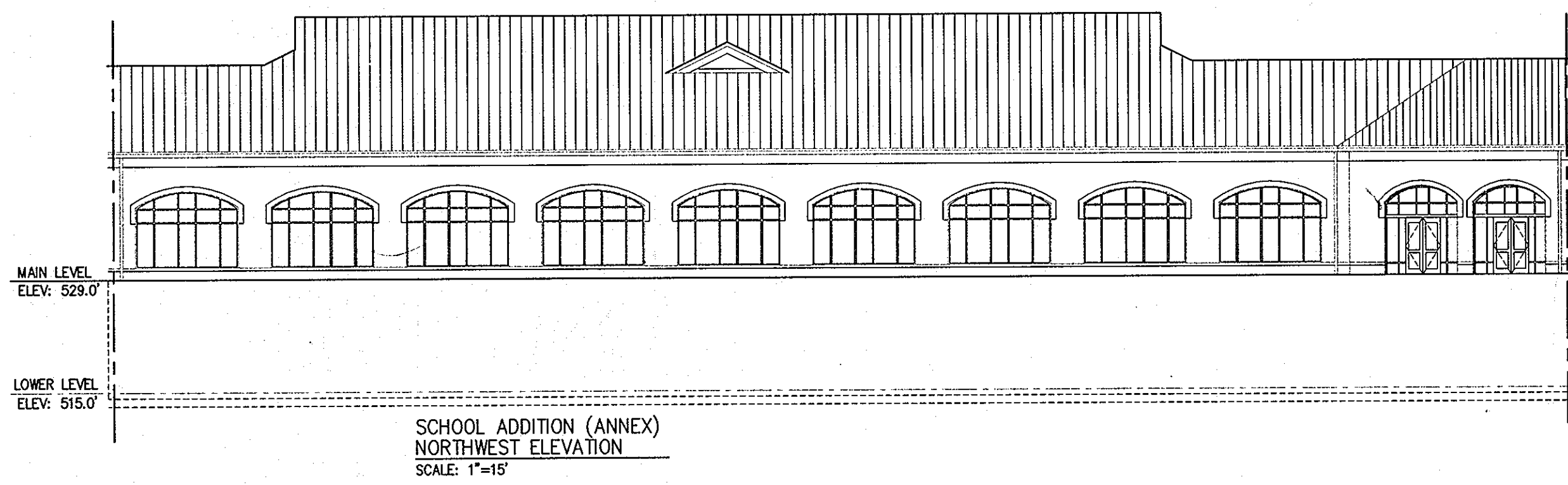
SCALE: 3/8"=1'-0"

### DETAIL-RAIN FIELD LATERAL TERMINATION

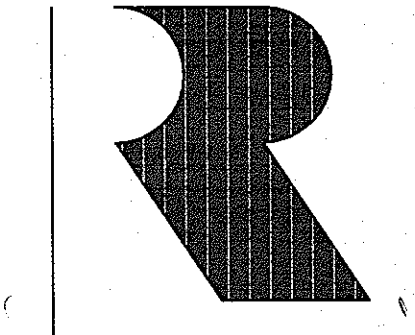
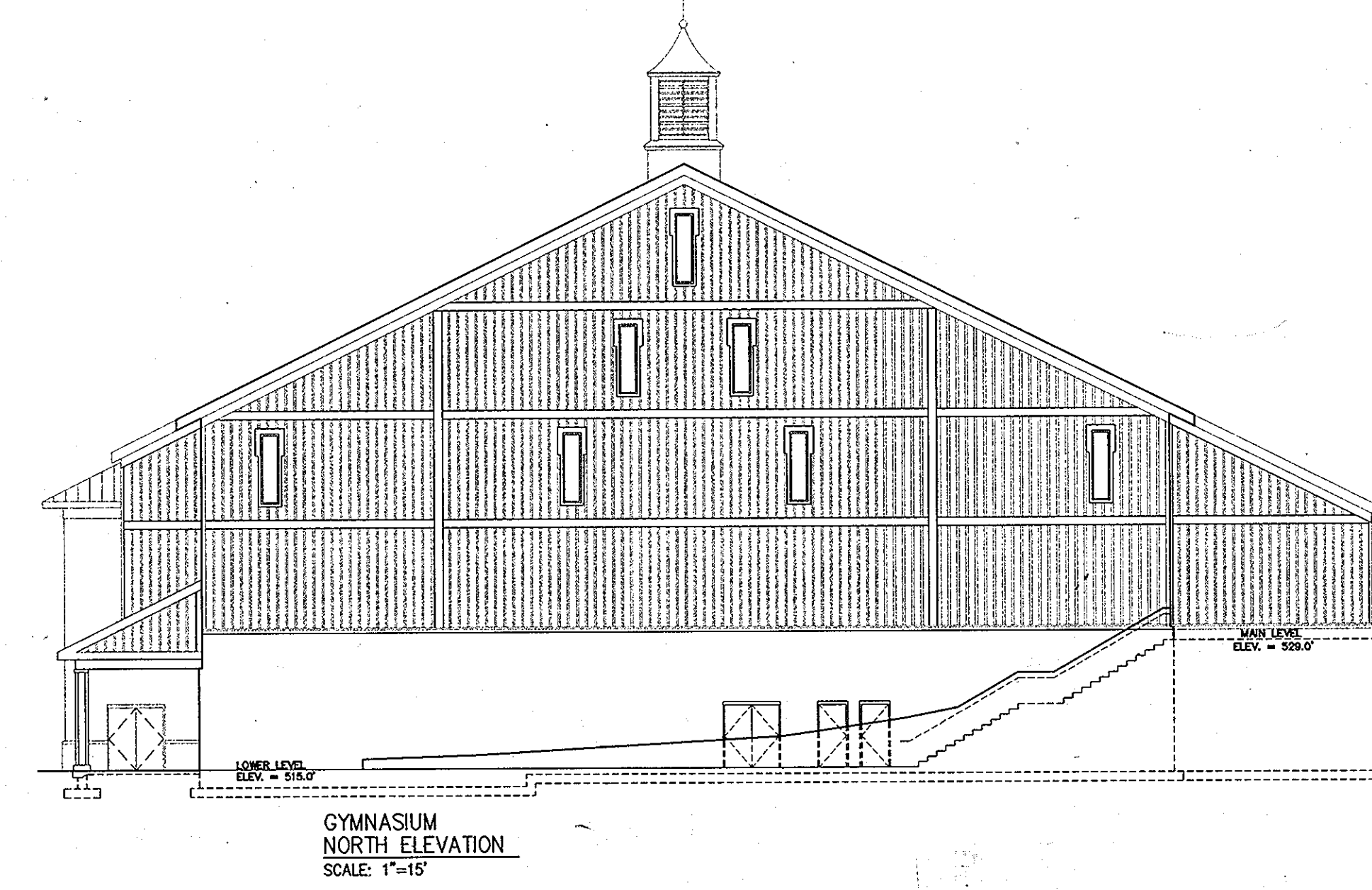
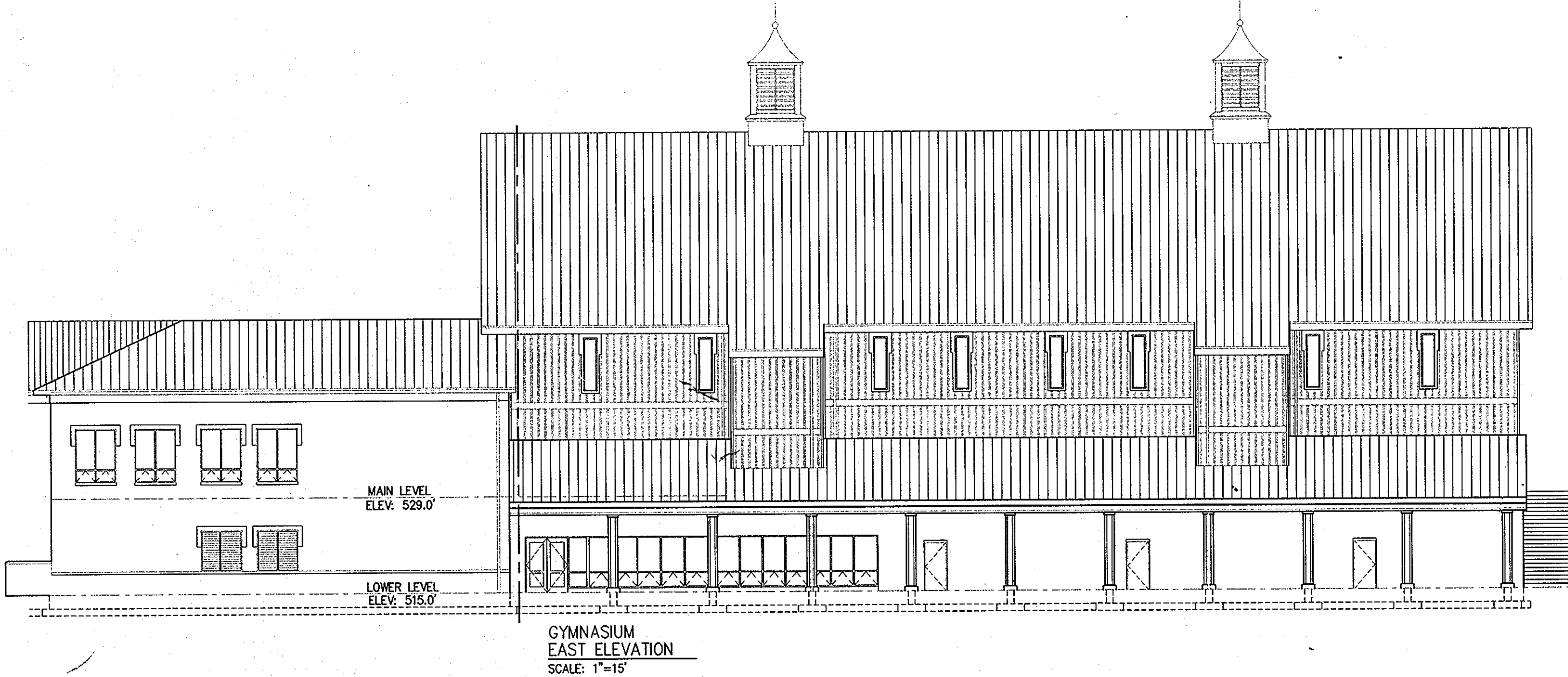
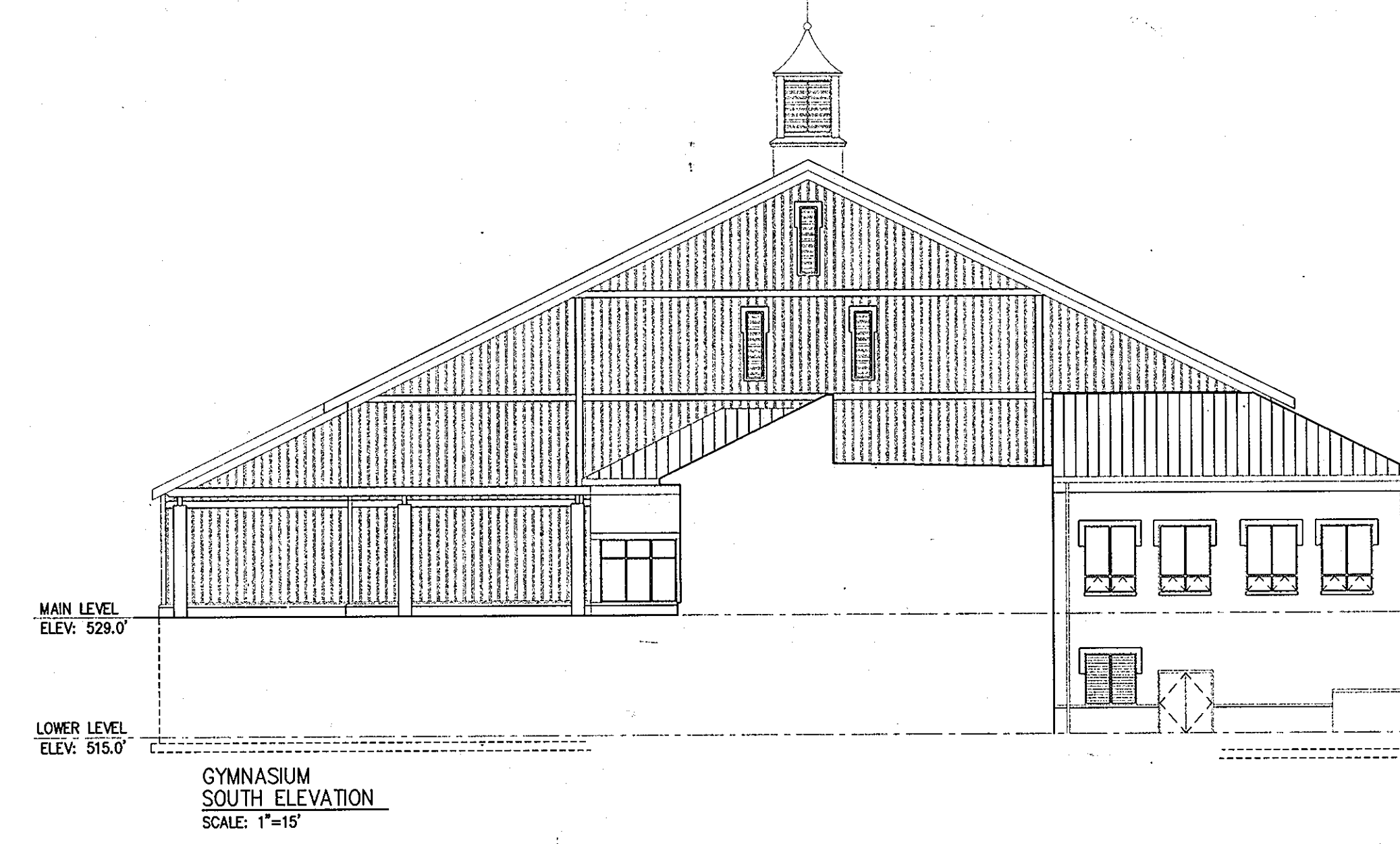
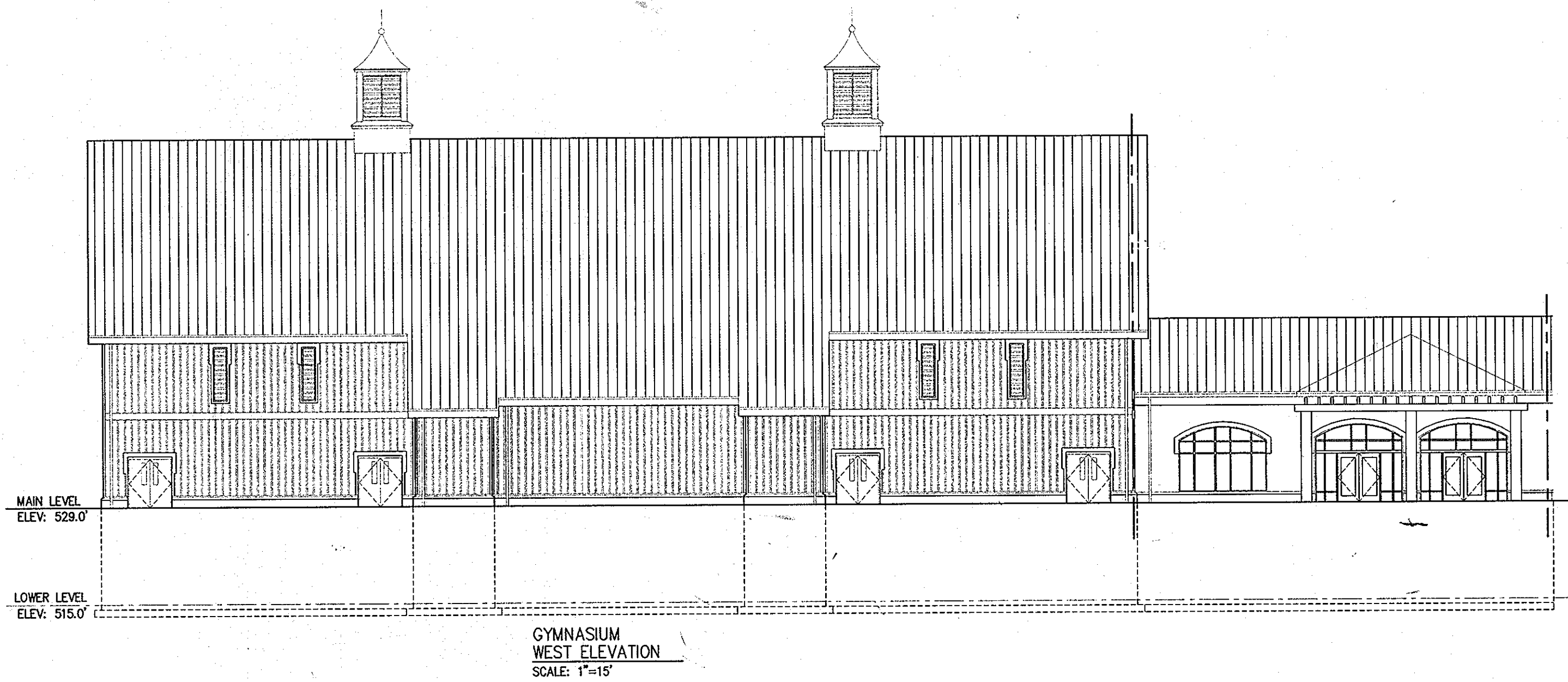
NOT TO SCALE

### DETAIL-RAIN FIELD LATERAL TRENCH

NOT TO SCALE



**ARCHITECTURAL ELEVATION DISCLAIMER**  
THE ENCLOSED ARCHITECTURAL ELEVATIONS ARE SHOWN FOR REFERENCE ONLY. NO CONSTRUCTION WORK IS TO BE PERFORMED BASED ON INFORMATION SHOWN ON THIS PLAN. CONTRACTOR IS TO REFER TO ARCHITECTURAL PLANS FOR ALL BUILDING CONSTRUCTION ITEMS.

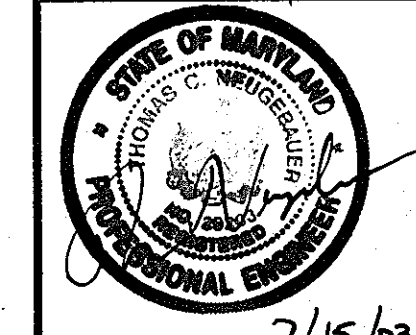


**RUBELING & ASSOCIATES, INC.**  
ARCHITECTURE  
INTERIOR DESIGN  
401 JEFFERSON AVENUE  
TOWSON, MARYLAND 21286-5308  
410-337-2886  
FAX: 410-337-2974

APPROVED FOR PUBLIC OR PRIVATE WATER & PUBLIC OR PRIVATE SEWERAGE SYSTEMS  
COUNTRY HEALTH OFFICER: *[Signature]* DATE: 8/14/03  
HOWARD COUNTY HEALTH DEPARTMENT  
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 8/14/03  
CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 8/14/03  
DIRECTOR, DEPARTMENT OF PLANNING AND ZONING: *[Signature]* DATE: 8/14/03

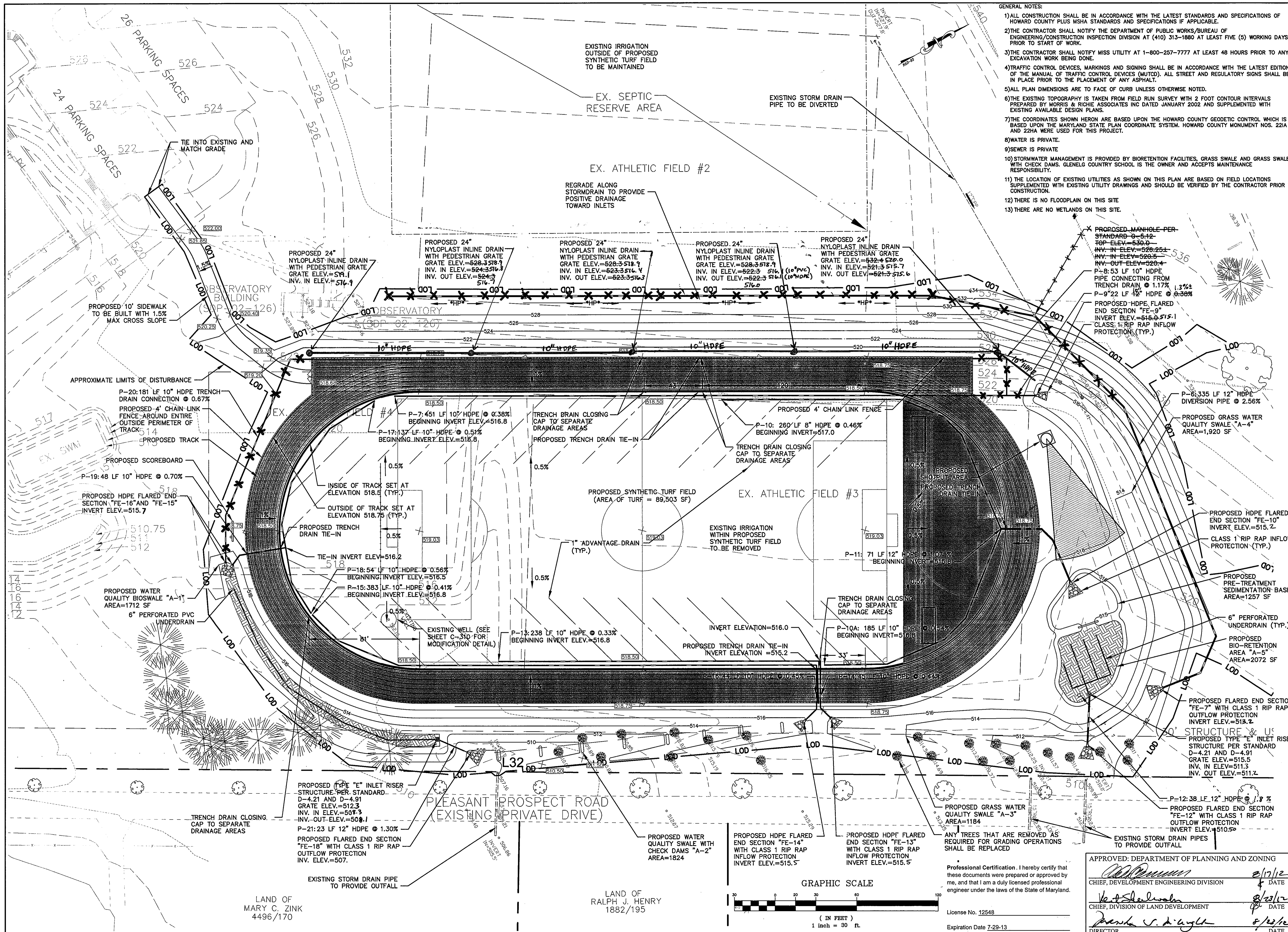


**MORRIS & RITCHIE ASSOCIATES, INC.**  
ENGINEERS, PLANNERS, SURVEYORS AND LANDSCAPE ARCHITECTS  
8090 JUNCTION DRIVE, SUITE 9  
ANNAPOLIS JUNCTION, MARYLAND 20701  
(410) 792-9792 or (301) 776-1690  
FAX (410) 792-7395



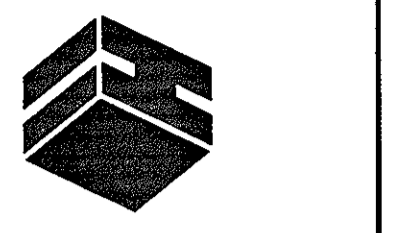
**THE GLENELG COUNTRY SCHOOL  
PROPOSED UPPER SCHOOL ADDITION  
ARCHITECTURAL BUILDING ELEVATIONS**  
TAX MAP 22 GRID 22 PARCEL 146  
LIBER 1296 FOLIO 245  
FIFTH (5TH) ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

DATE	REVISIONS	JOB NO.:
0712	TRACK AND SYNTHETIC TURF FIELD IMPROVEMENTS	12189.02
		SCALE: AS SHOWN
		DATE: 07/14/03
		DRAWN BY: TCN
		DESIGN BY: TCN
		REVIEW BY: TCN
		SHEET: 23 OF 23



- GENERAL NOTES:
- 1) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
  - 2) THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
  - 3) THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
  - 4) TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MANUAL OF TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
  - 5) ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
  - 6) THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH 2 FOOT CONTOUR INTERVALS PREPARED BY MORRIS & RICHIE ASSOCIATES INC DATED JANUARY 2002 AND SUPPLEMENTED WITH EXISTING AVAILABLE DESIGN PLANS.
  - 7) THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 221A AND 221A WERE USED FOR THIS PROJECT.
  - 8) WATER IS PRIVATE.
  - 9) SEWER IS PRIVATE.
  - 10) STORMWATER MANAGEMENT IS PROVIDED BY BIORETENTION FACILITIES, GRASS SWALE AND GRASS SWALE WITH CHECK DAMS. GLENELG COUNTRY SCHOOL IS THE OWNER AND ACCEPTS MAINTENANCE RESPONSIBILITY.
  - 11) THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THIS PLAN ARE BASED ON FIELD LOCATIONS SUPPLEMENTED WITH EXISTING UTILITY DRAWINGS AND SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
  - 12) THERE IS NO FLOODPLAIN ON THIS SITE.
  - 13) THERE ARE NO WETLANDS ON THIS SITE.

**HURON CONSULTING**  
 20410 CENTURY BLVD  
 SUITE 230 ANN ARBOR, MI 48106  
 PHONE: (313) 528-2010  
 FAX: (313) 528-0124  
 www.huroncon.com



DATE	DESCRIPTION

DRW BY: JA  
 CHK BY: JA  
 APP BY: REH

DATE	DESCRIPTION

**GLENELG COUNTRY SCHOOL**  
 12793 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MD 21042

REVISED SHEET  
 STORMWATER MANAGEMENT AND DRAINAGE PLAN

SCALE  
 HORIZONTAL: 1" = 30'  
 VERTICAL: N/A

PROJECT NO.: 900-101  
 DRAWING NO.: C-300  
 SHEET: 24 OF 37  
 DATE: JULY 2012

APPROVED: DEPARTMENT OF PLANNING AND ZONING

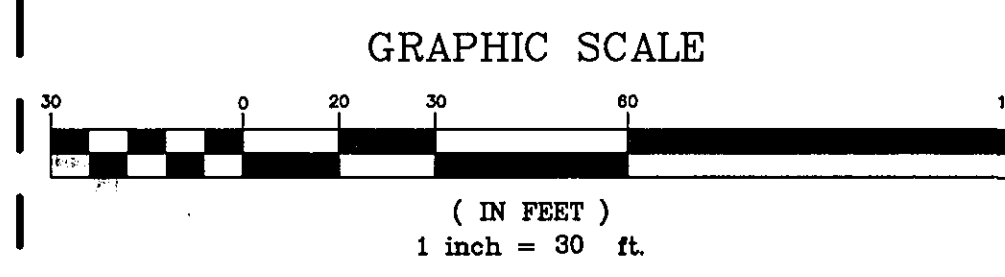
*[Signature]* 8/17/12  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE

*[Signature]* 8/23/12  
 CHIEF, DIVISION OF LAND DEVELOPMENT & DATE

*[Signature]* 8/23/12  
 DIRECTOR & DATE

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 12548  
 Expiration Date 7-29-13

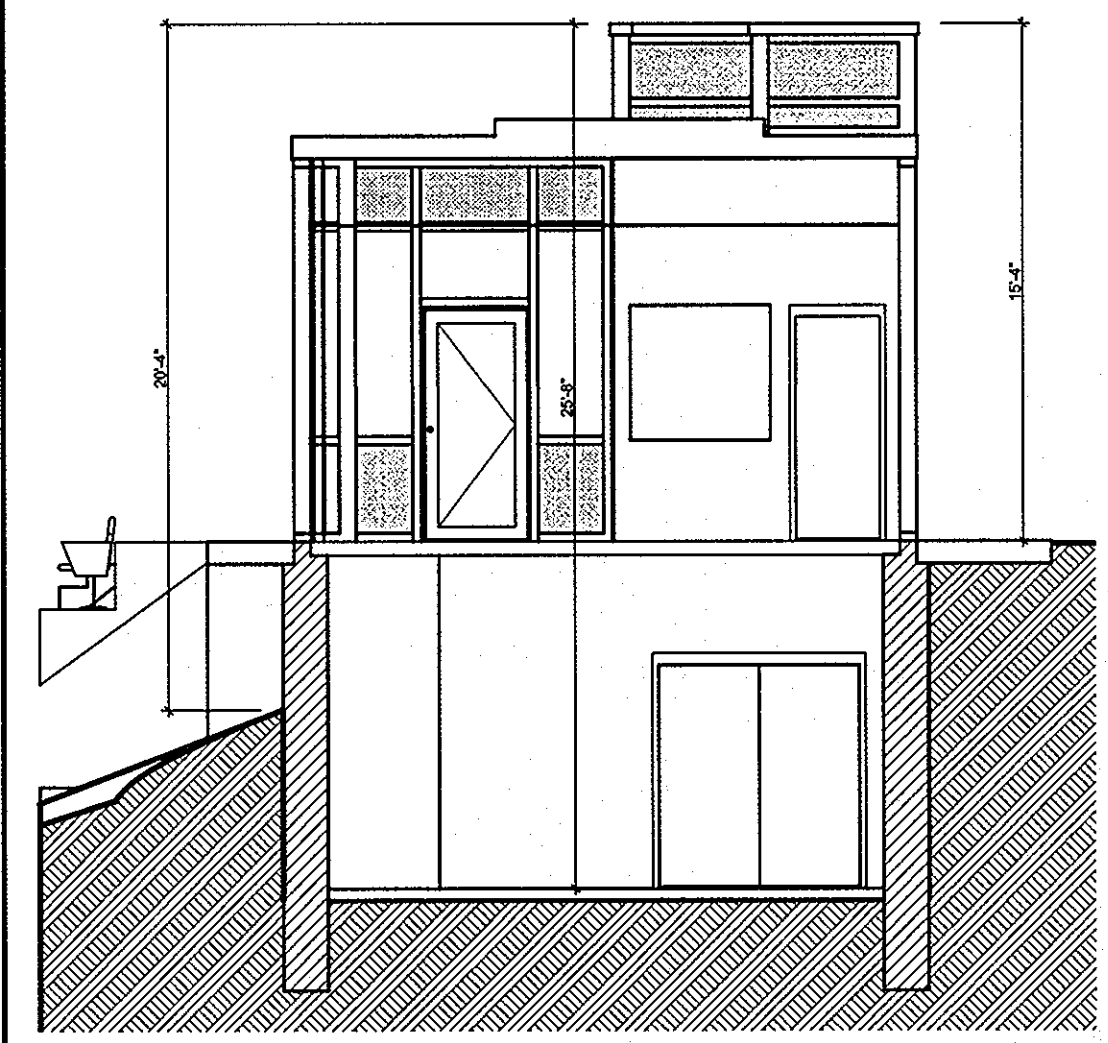
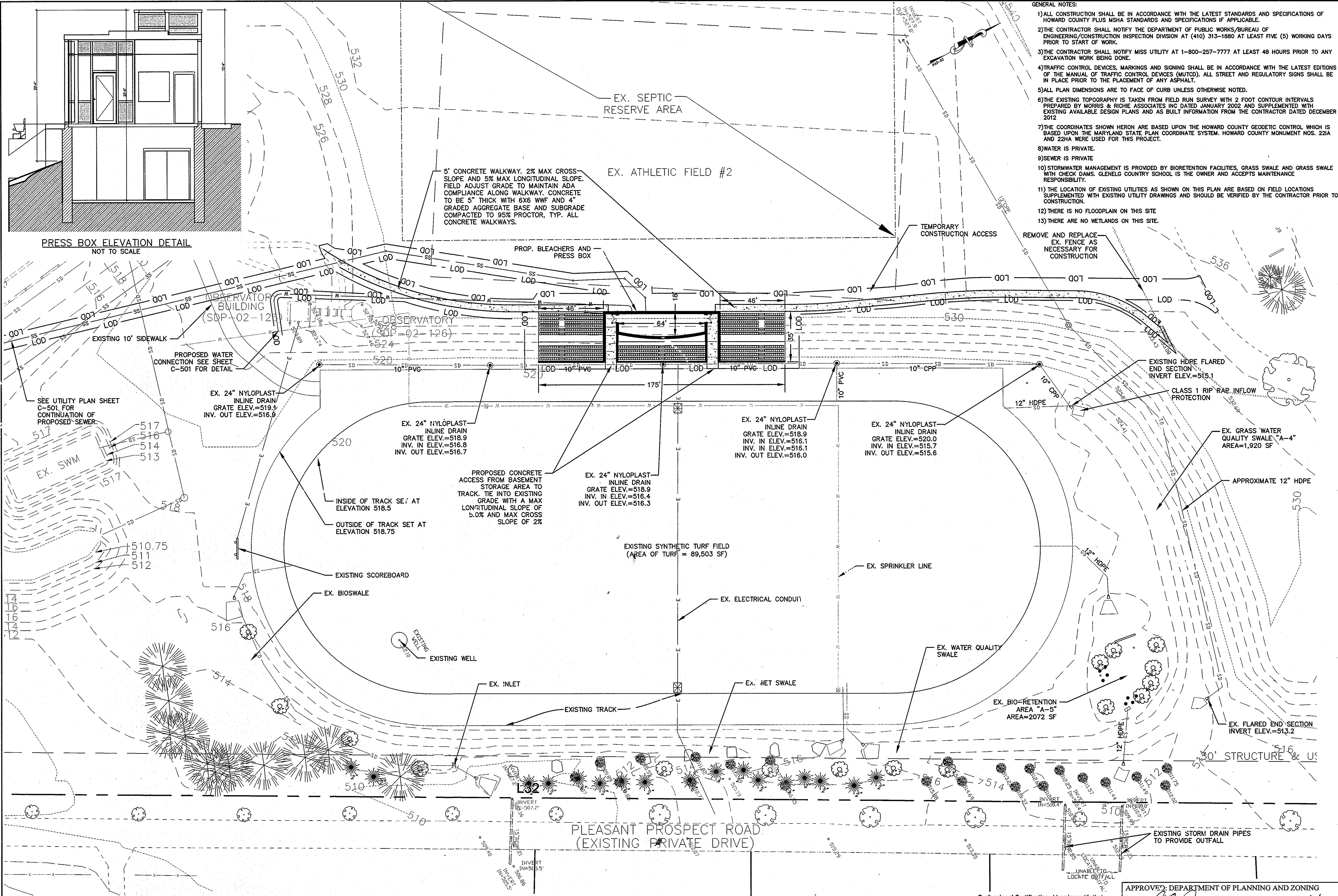


LAND OF MARY C. ZINK  
 4496/170

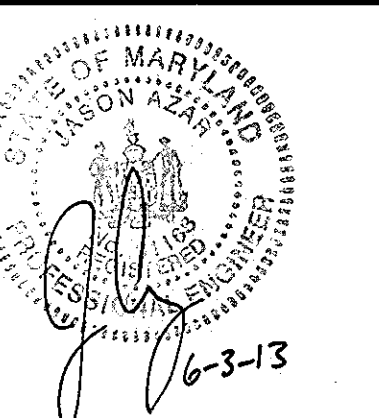
LAND OF RALPH J. HENRY  
 1882/195

SDP-03-084





- GENERAL NOTES:
- 1) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
  - 2) THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
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  - 5) ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
  - 6) THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH 2 FOOT CONTOUR INTERVALS PREPARED BY MORRIS & RICHIE ASSOCIATES INC DATED JANUARY 2002 AND SUPPLEMENTED WITH EXISTING AVAILABLE DESIGN PLANS AND AS BUILT INFORMATION FROM THE CONTRACTOR DATED DECEMBER 2012.
  - 7) THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 221A AND 221A WERE USED FOR THIS PROJECT.
  - 8) WATER IS PRIVATE.
  - 9) SEWER IS PRIVATE.
  - 10) STORMWATER MANAGEMENT IS PROVIDED BY BIORETENTION FACILITIES, GRASS SWALE AND GRASS SWALE WITH CHECK DAMS. GLENELG COUNTRY SCHOOL IS THE OWNER AND ACCEPTS MAINTENANCE RESPONSIBILITY.
  - 11) THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THIS PLAN ARE BASED ON FIELD LOCATIONS SUPPLEMENTED WITH EXISTING UTILITY DRAWINGS AND SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
  - 12) THERE IS NO FLOODPLAIN ON THIS SITE.
  - 13) THERE ARE NO WETLANDS ON THIS SITE.



DRW BY: SL  
CHK BY: JA  
APP BY: REH

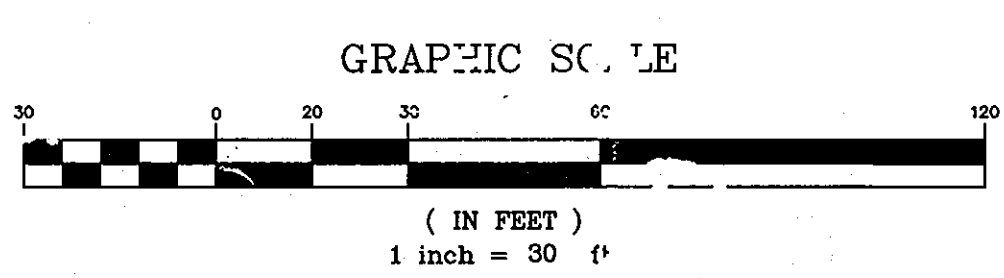
REVISIONS	DESCRIPTION	DATE

**GLENELG COUNTRY SCHOOL**  
12793 FOLLY QUARTER ROAD  
ELLCOTT CITY, MD 21042

REVISION SHEET  
STORMWATER MANAGEMENT AND DRAINAGE PLAN

SCALE  
HORIZONTAL: 1" = 30'  
VERTICAL: N/A

PROJECT NO.: 86860.00  
DRAWING NO.: C-301  
SHEET: 25 OF 37  
DATE: MARCH 2013



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 31168  
Expiration Date 11/2/2015

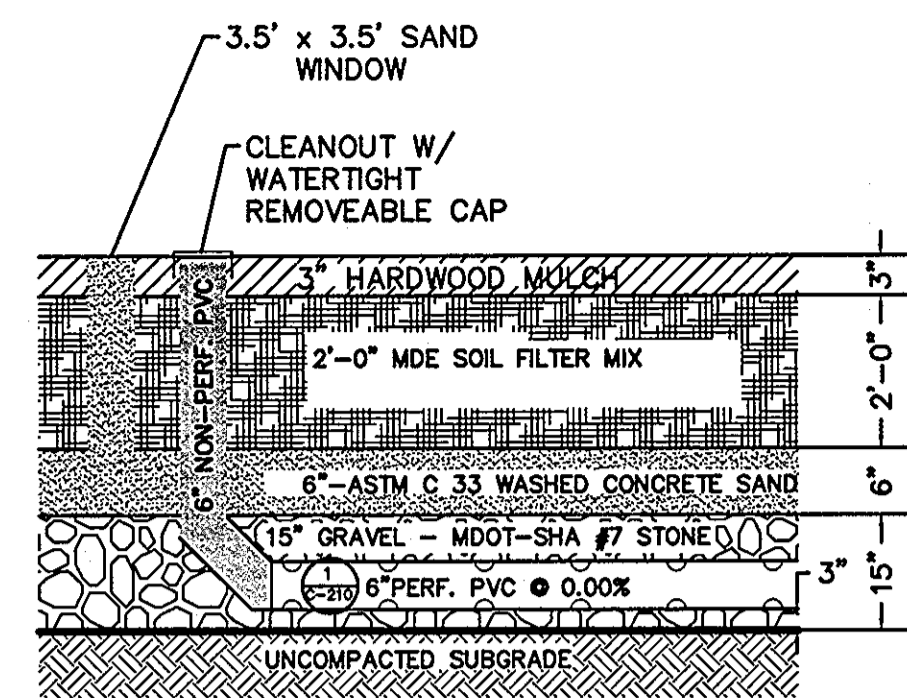
APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 6/16/13  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 6/17/13  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 6/17/13  
DIRECTOR DATE

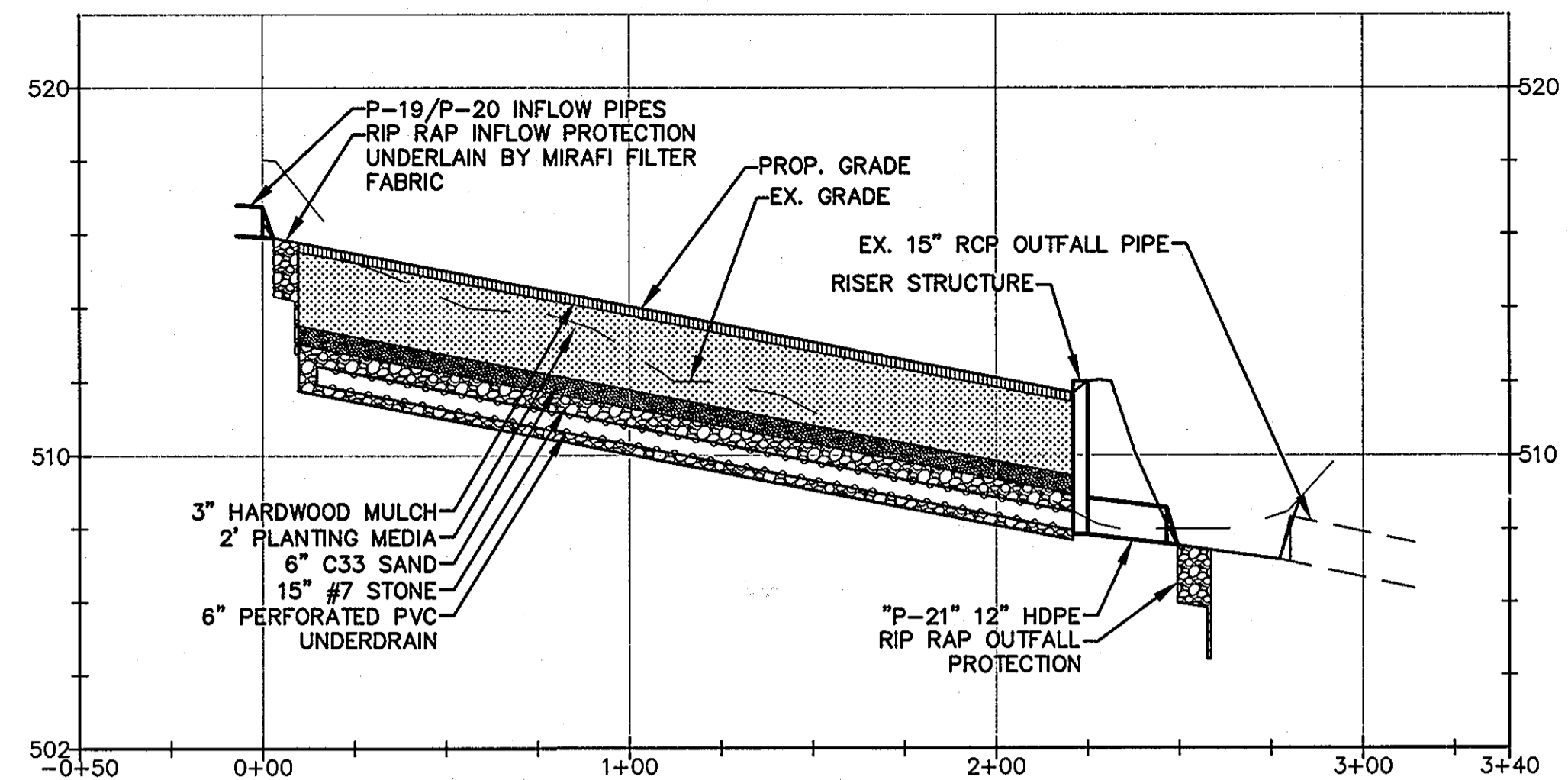
SDP-03-084



\*\*RISER GRATE TO SERVE AS TRASHRACK  
RISER TO BE PRECAST OR  
MONOLITHICALLY Poured

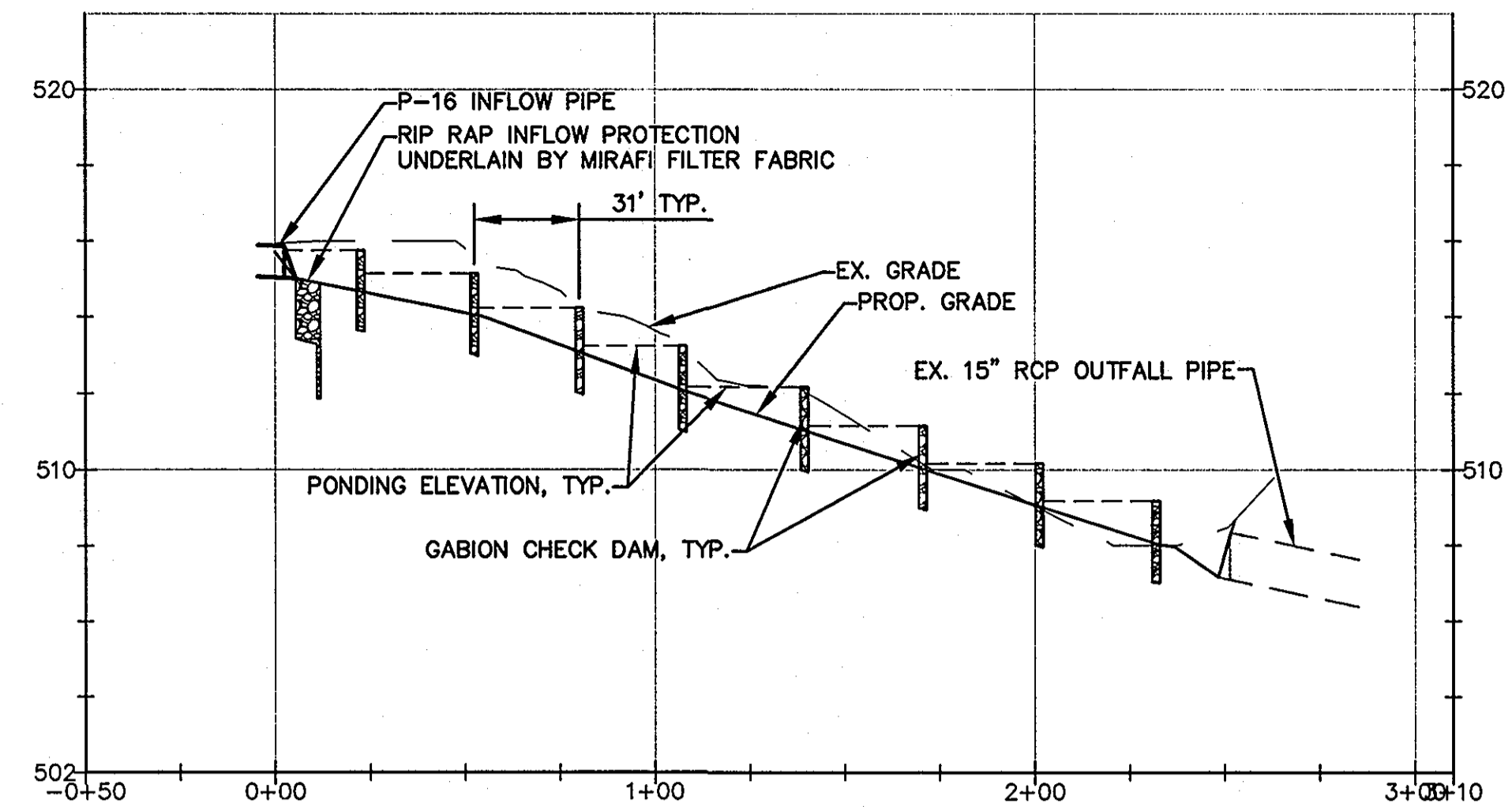
**1** TYPICAL BIO-RETENTION MEDIA SECTION

SCALE: 1" = 20'



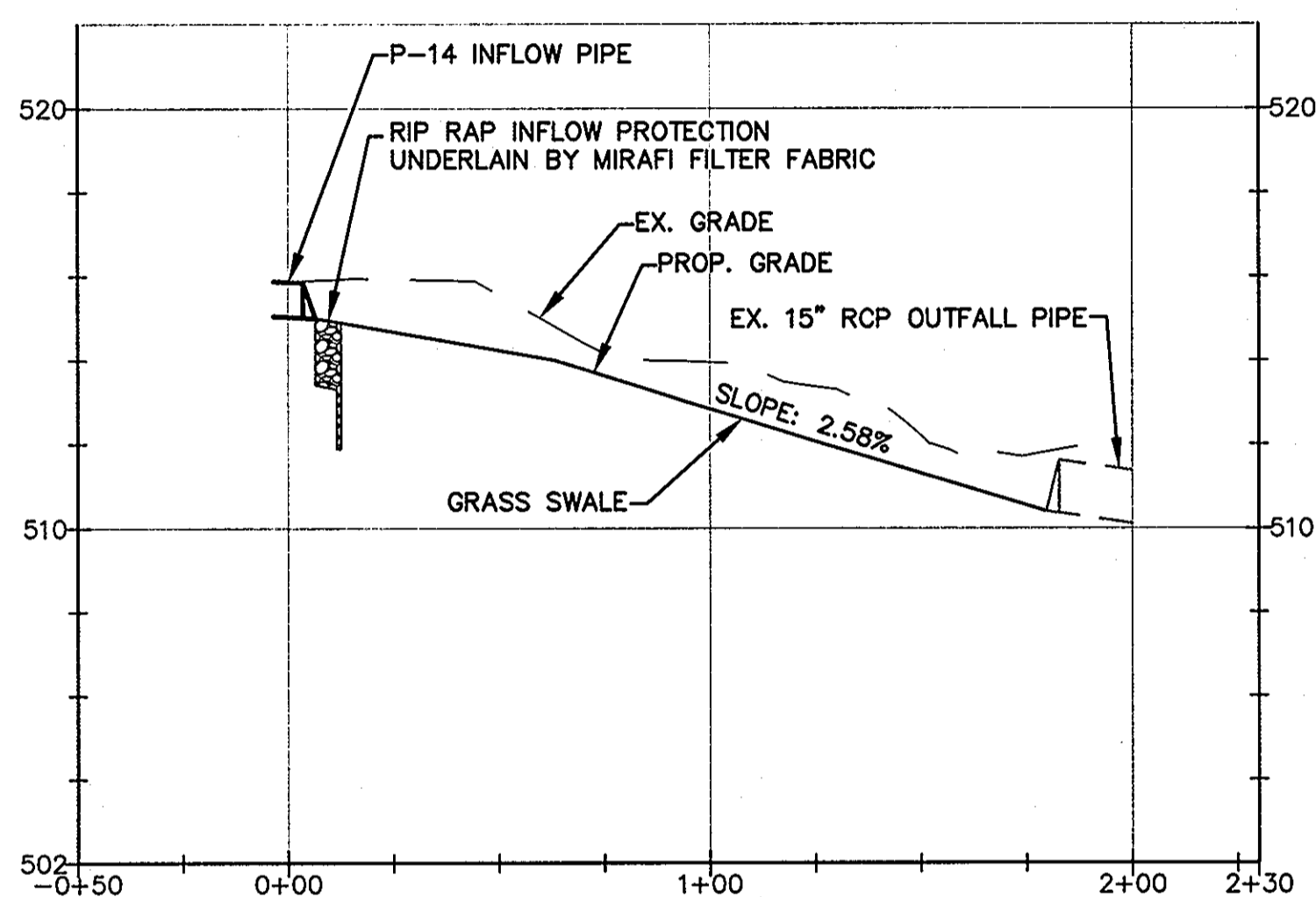
**2** BIO-SWALE A-1 PROFILE

SCALE: 1"=40' (HOR) 1"=4' (VER)



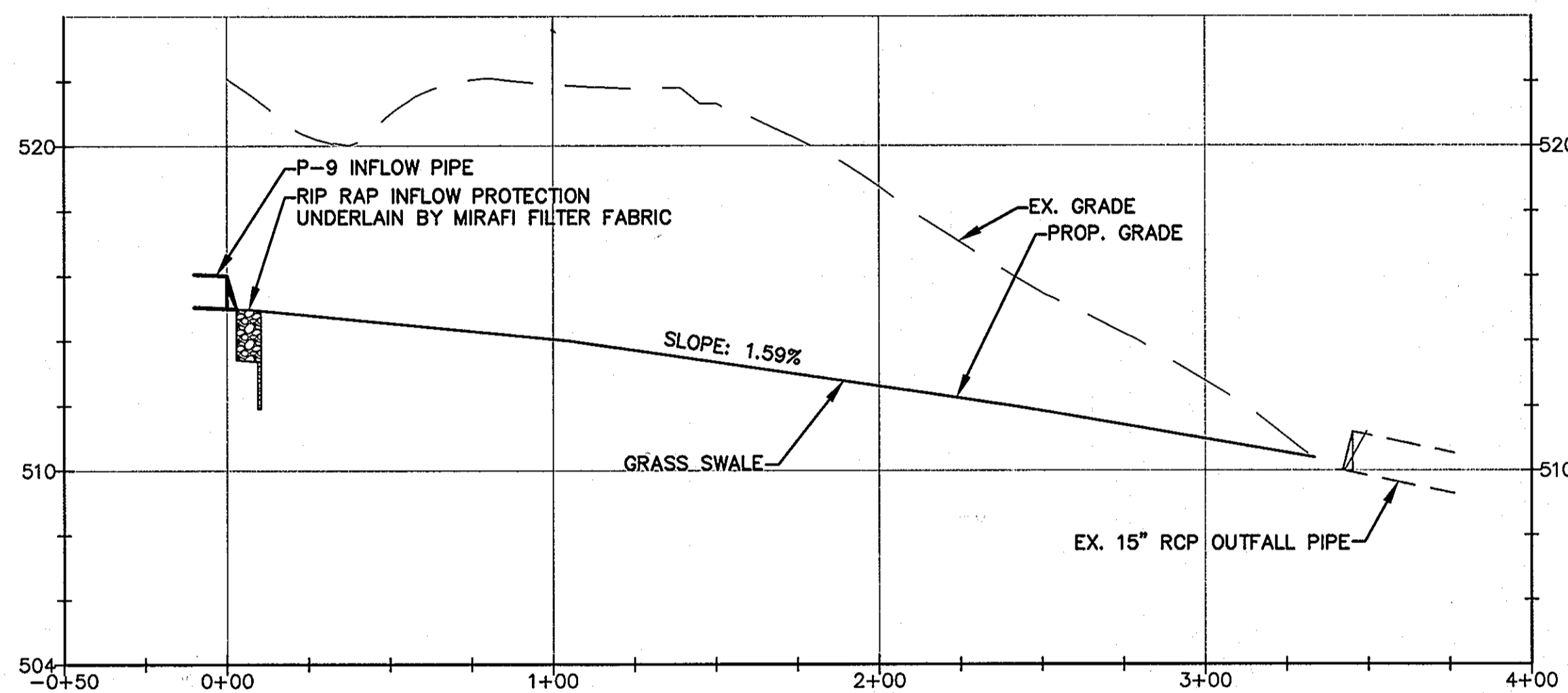
**3** WET-SWALE A-2 PROFILE

SCALE: 1"=40' (HOR) 1"=4' (VER)



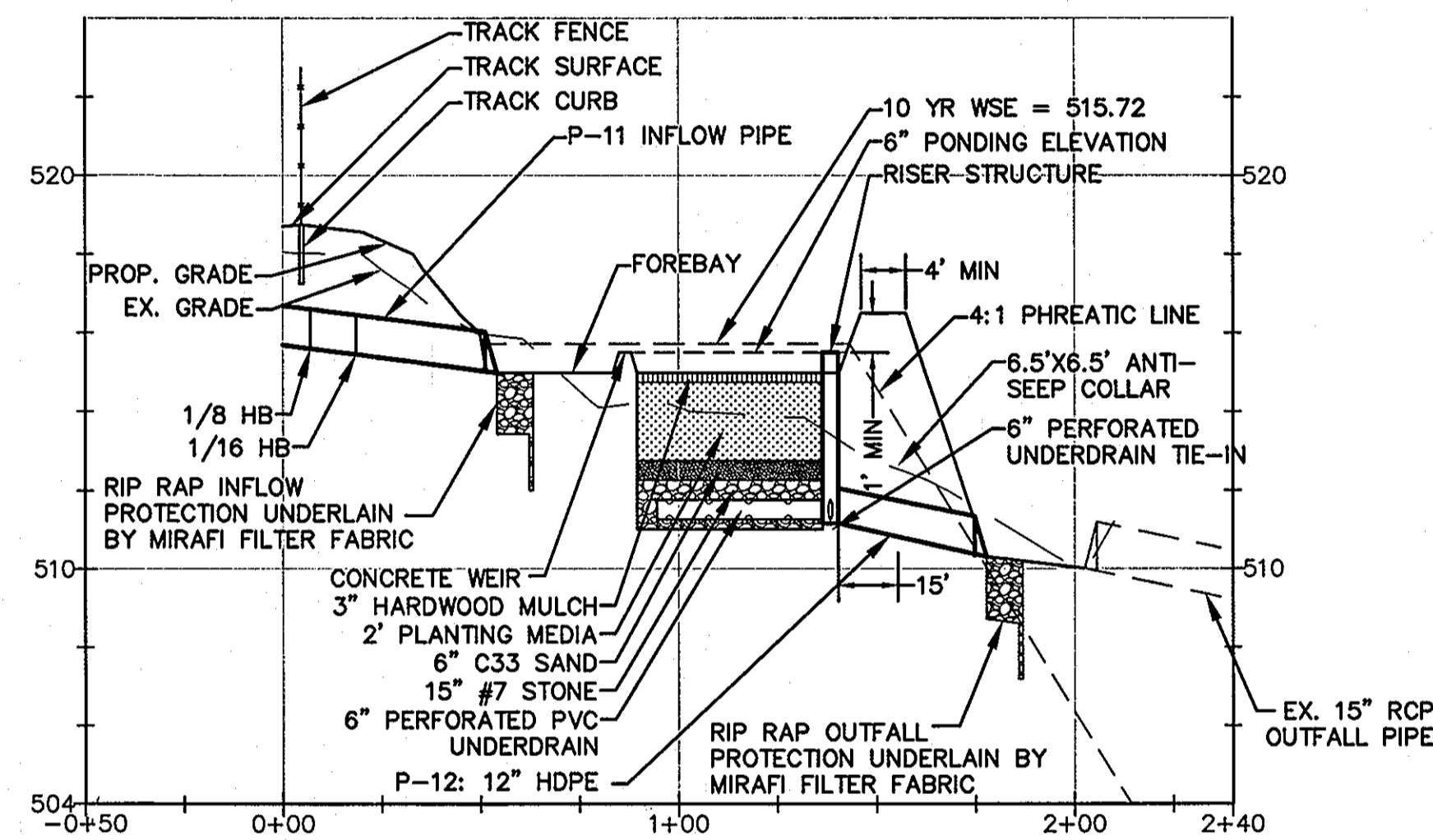
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SCALE: 1"=40' (HOR) 1"=4' (VER)



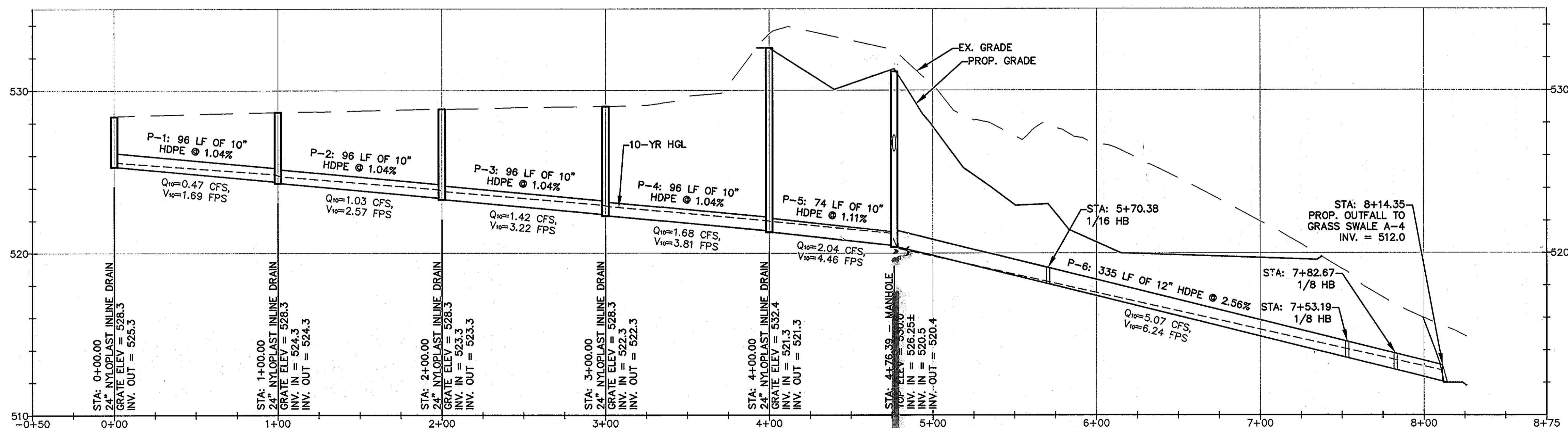
**5** GRASS SWALE A-4 PROFILE

SCALE: 1"=40' (HOR) 1"=4' (VER)



**6** BIO-RETENTION AREA A-5 PROFILE

SCALE: 1"=40' (HOR) 1"=4' (VER)



**7** STORM DRAIN PROFILE  
PIPE "P-1" TO "P-6"

SCALE: 1"=40' (HOR) 1"=4' (VER)

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

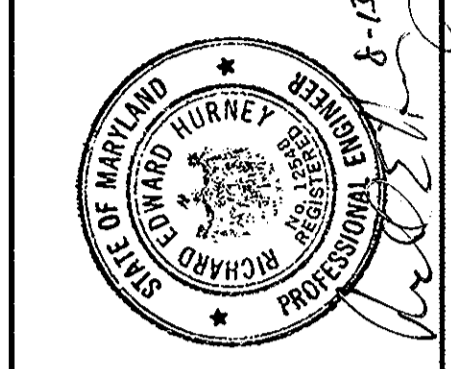
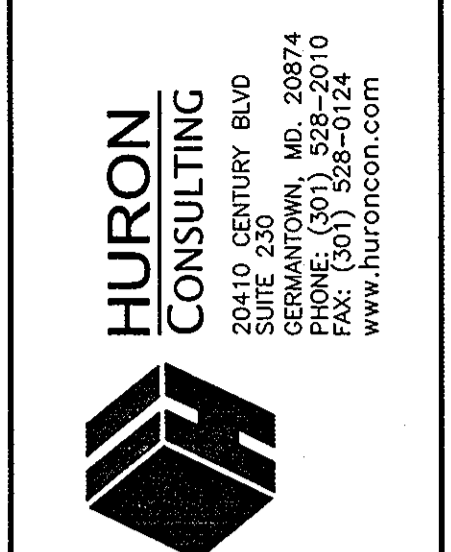
License No. 12548  
Expiration Date 7-29-13

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DIRECTOR

SCALE  
HORIZONTAL: N/A  
VERTICAL: N/A

PROJECT NO.: 900-101  
DRAWING NO.: C-311  
SHEET: 26 OF 37  
DATE: JULY 2012



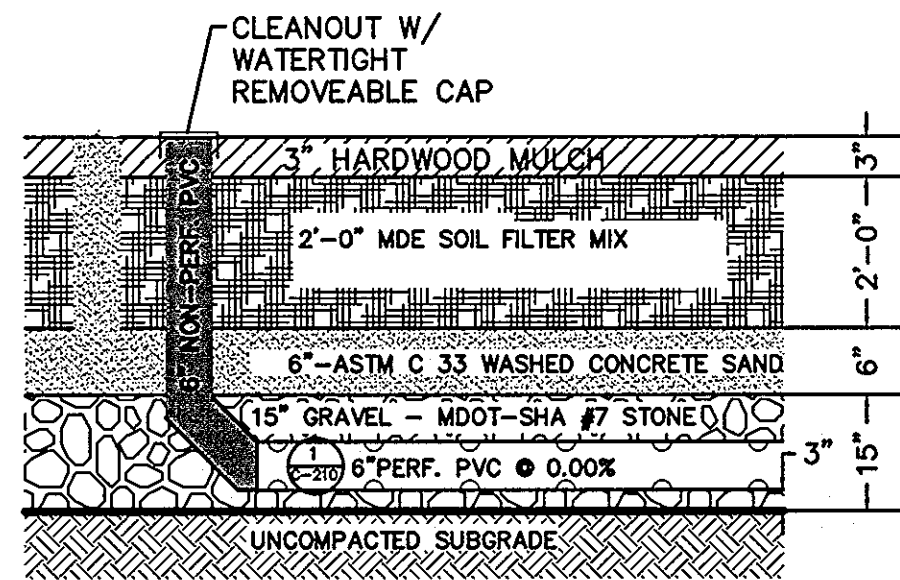
DRW BY: JIA  
CHK BY: JIA  
APP BY: REH

REVISIONS	DESCRIPTION

GLENELG COUNTRY SCHOOL  
12793 FOLLY QUARTER ROAD  
ELLICOTT CITY, MD 21042

REVISION SHEET  
STORMWATER MANAGEMENT AND DRAINAGE DETAILS

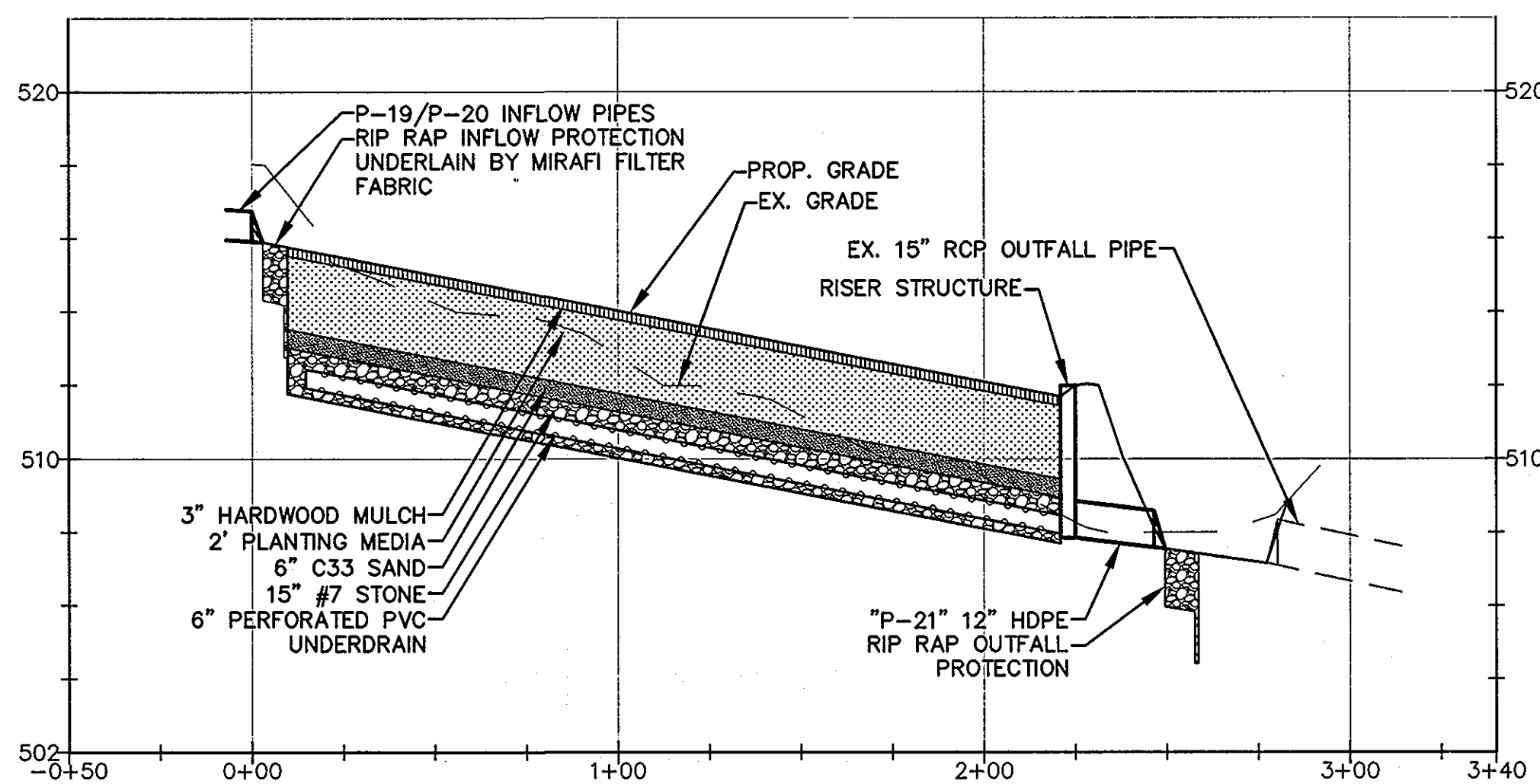
SDP-03-089



\*\*RISER GRATE TO SERVE AS TRASHRACK  
RISER TO BE PRECAST OR  
MONOLITHICALLY POURED

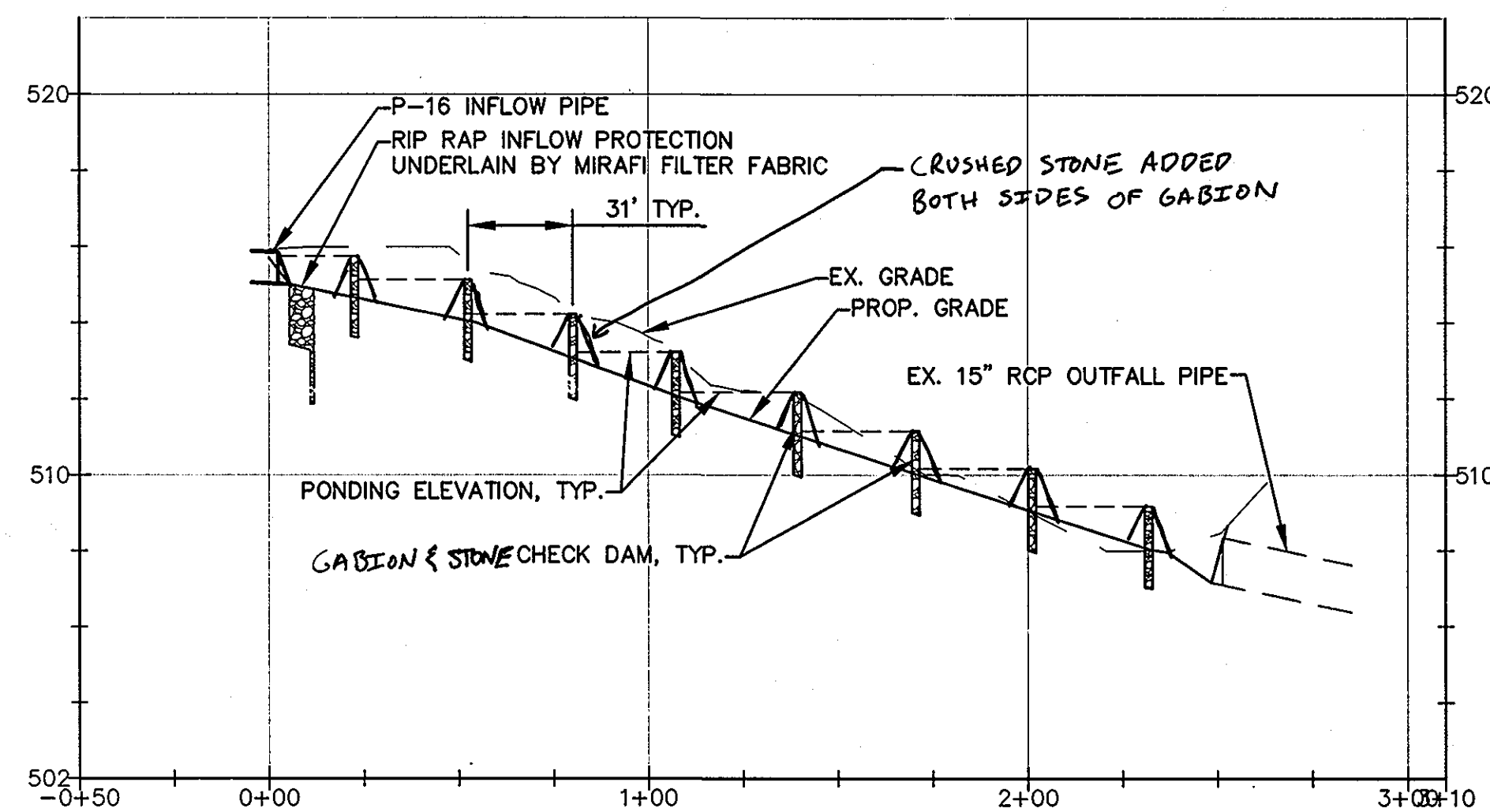
**1** TYPICAL BIO-RETENTION  
MEDIA SECTION

SCALE: 1" = 20'



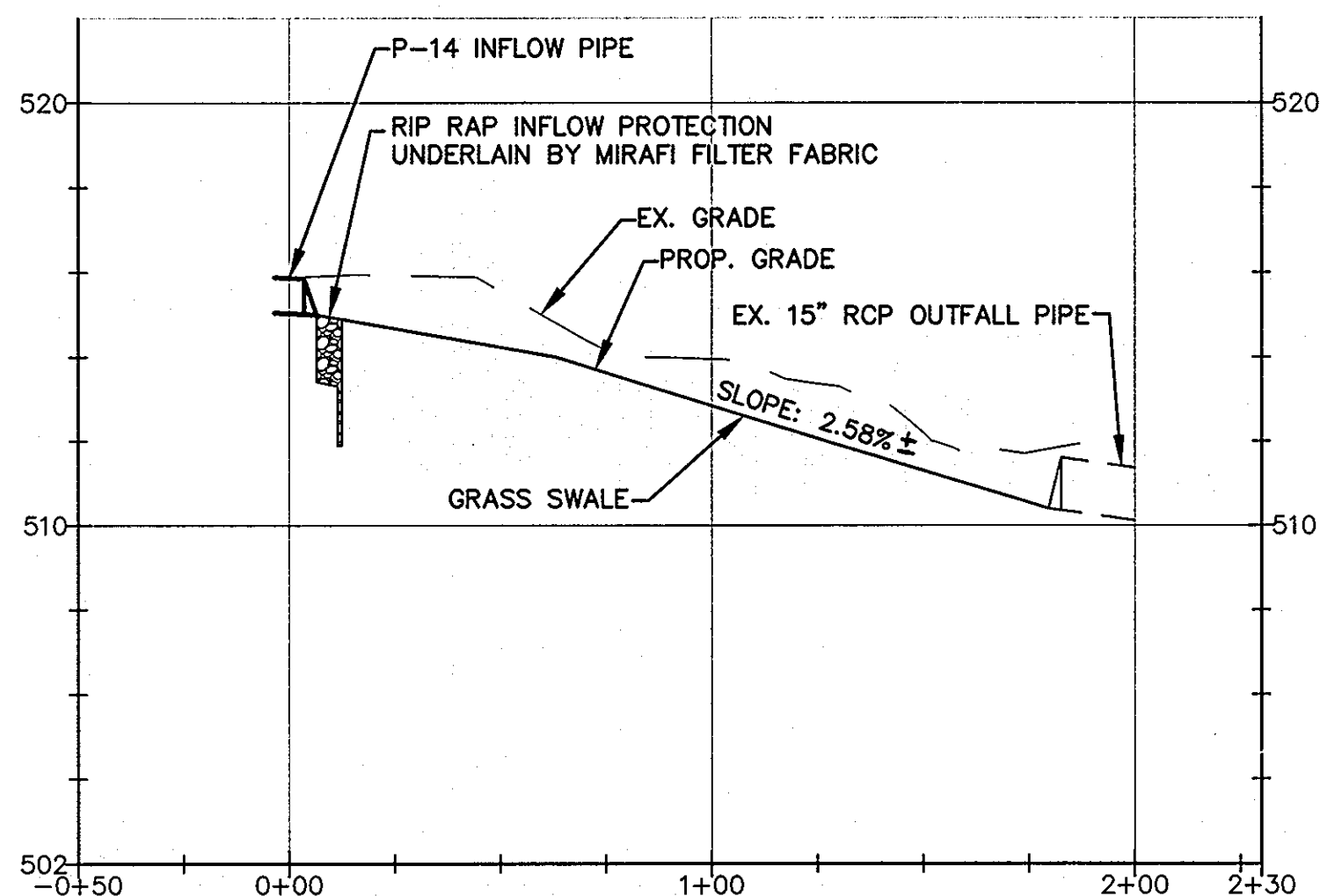
**2** BIO-SWALE A-1 PROFILE

SCALE: 1"=40' (HOR) 1"=4' (VER)



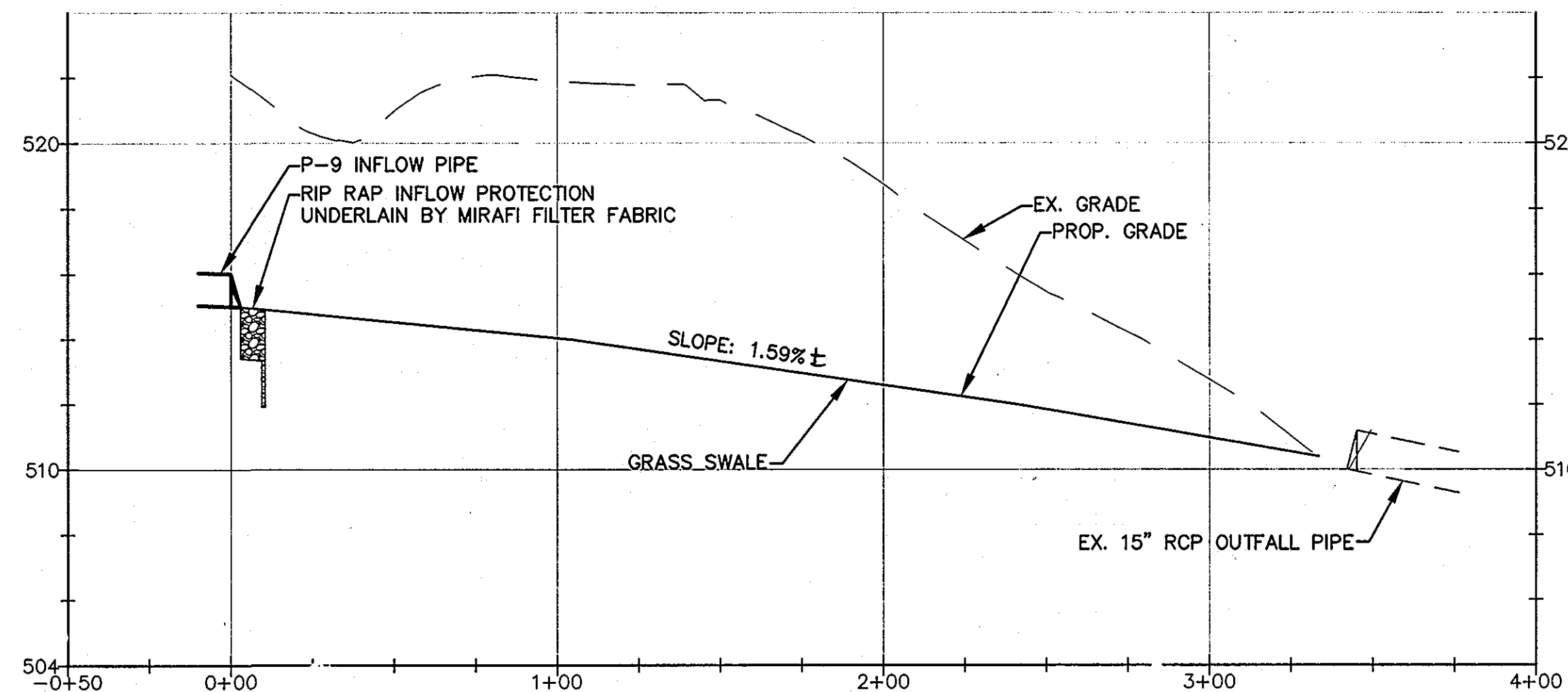
**3** WET-SWALE A-2 PROFILE

SCALE: 1"=40' (HOR) 1"=4' (VER)



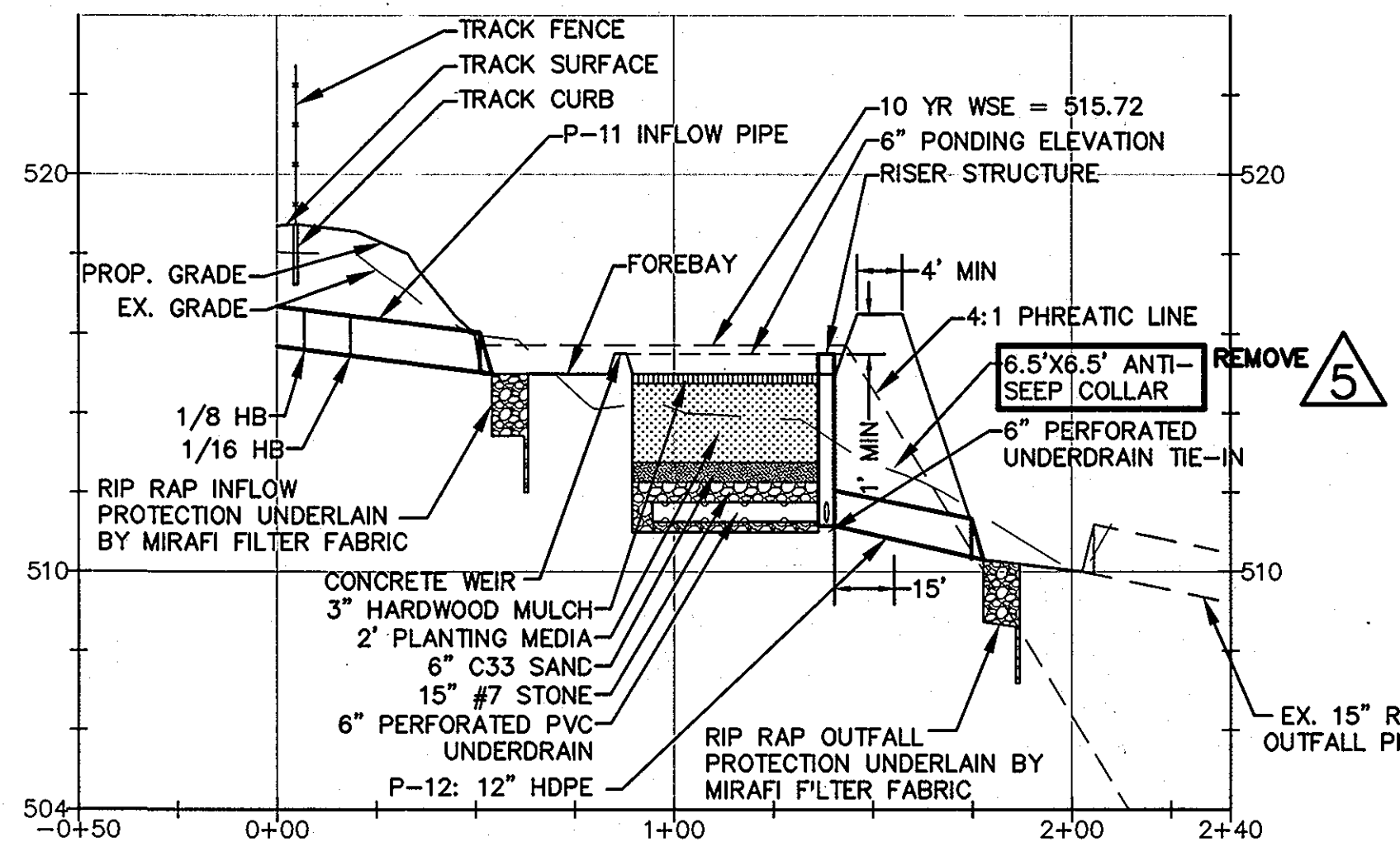
**4** GRASS SWALE A-3 PROFILE

SCALE: 1"=40' (HOR) 1"=4' (VER)



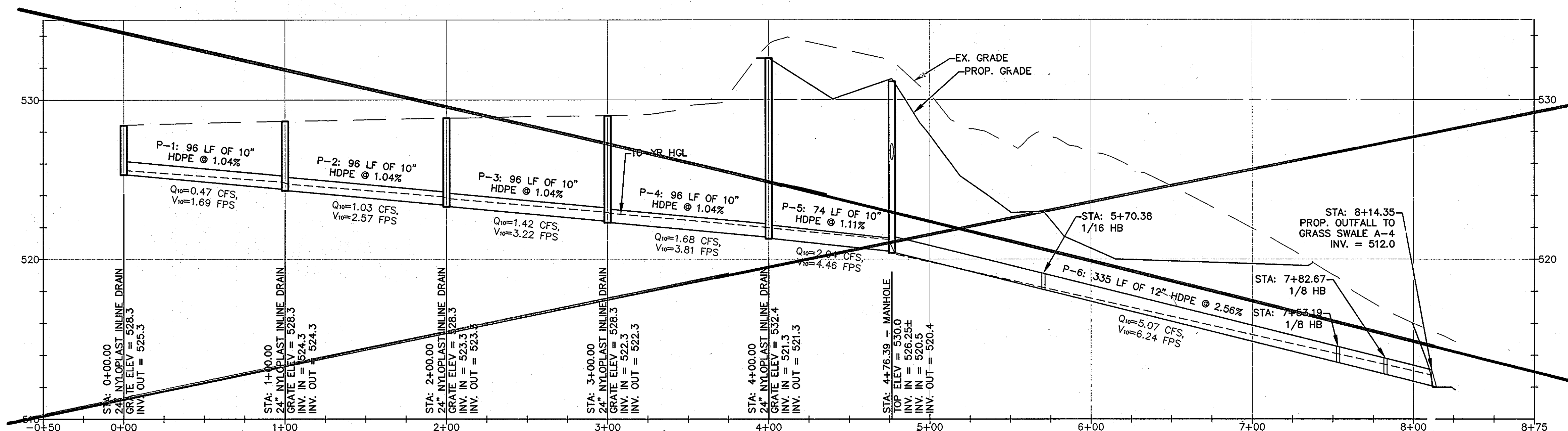
**5** GRASS SWALE A-4 PROFILE

SCALE: 1"=40' (HOR) 1"=4' (VER)



**6** BIO-RETENTION AREA A-5 PROFILE

SCALE: 1"=40' (HOR) 1"=4' (VER)



**7** STORM DRAIN PROFILE  
PIPE "P-1" TO "P-6"

SCALE: 1"=40' (HOR) 1"=4' (VER)

See Sheet 24 For  
LOCATIONS AND ELEVATIONS

Professional Certification. I hereby certify that  
these documents were prepared or approved by  
me, and that I am a duly licensed professional  
engineer under the laws of the State of Maryland.

License No. 31168

Expiration Date 11/2/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

GLENELG COUNTRY SCHOOL  
12793 FOLLY QUARTER ROAD  
ELLICOTT CITY, MD 21042

REVISED SHEET

STORMWATER MANAGEMENT AND DRAINAGE DETAILS

SCALE  
HORIZONTAL: N/A  
VERTICAL: N/A

PROJECT NO.:  
86860 00

DRAWING NO.:

C-311

SHEET:  
27 OF 37

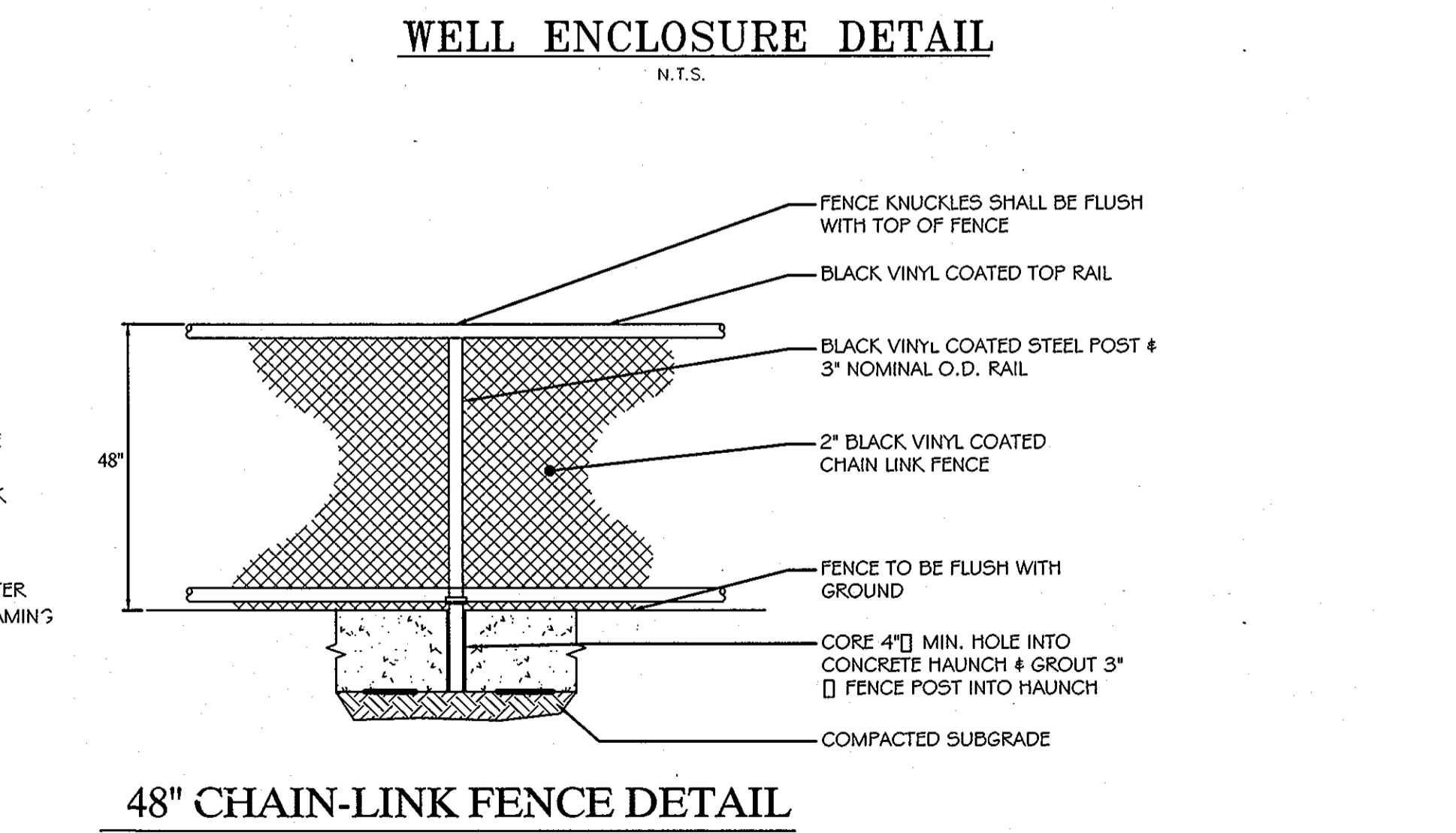
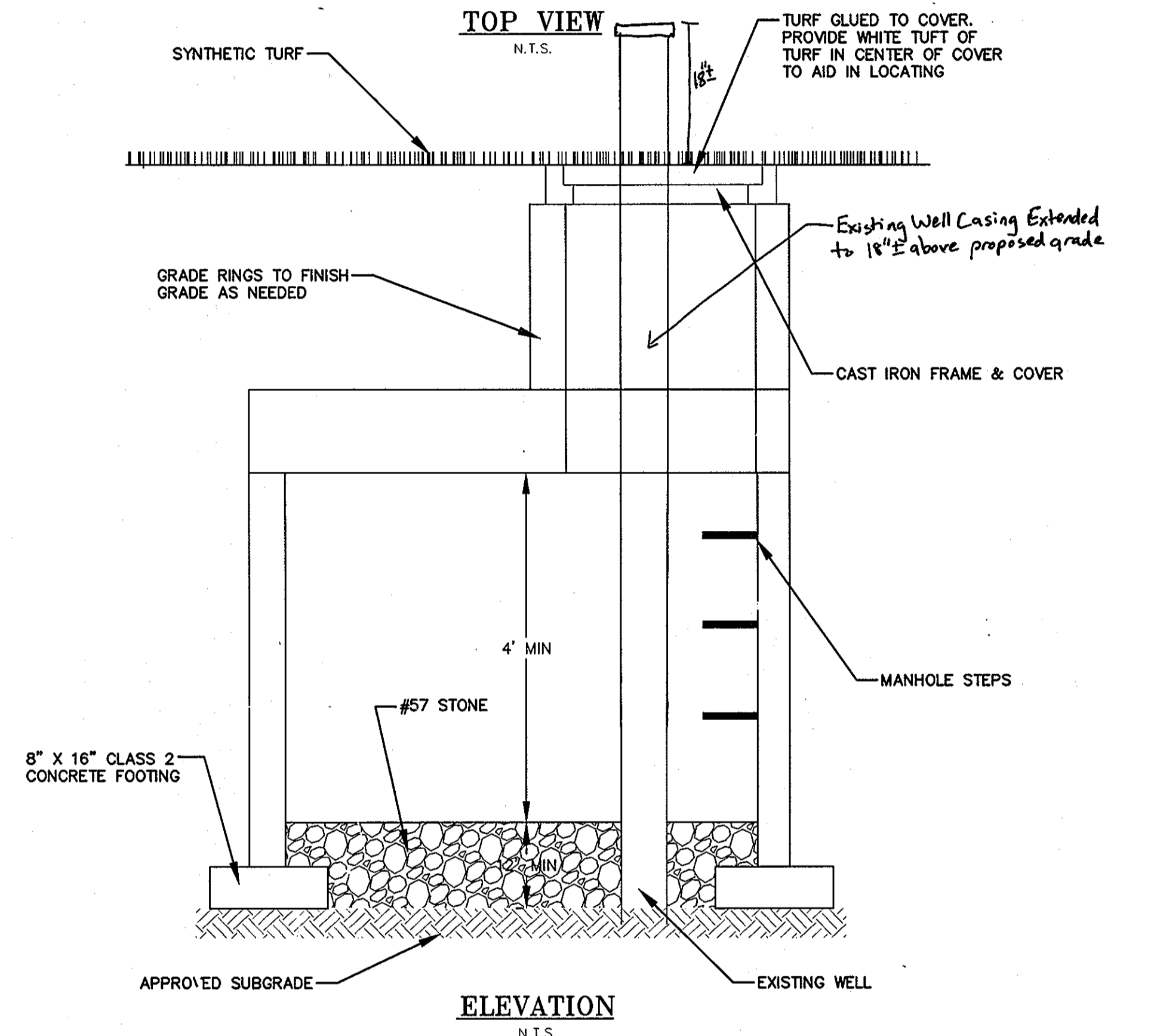
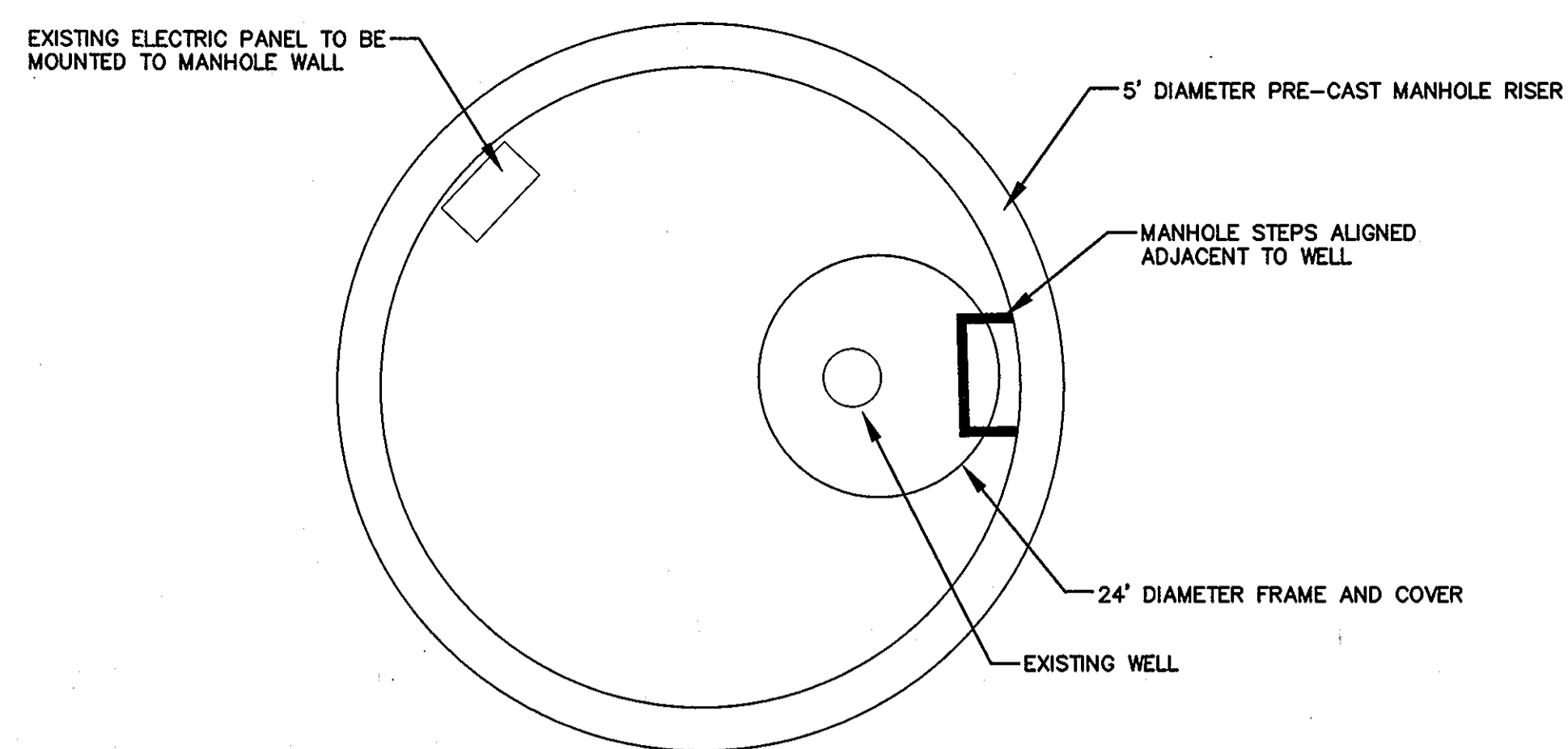
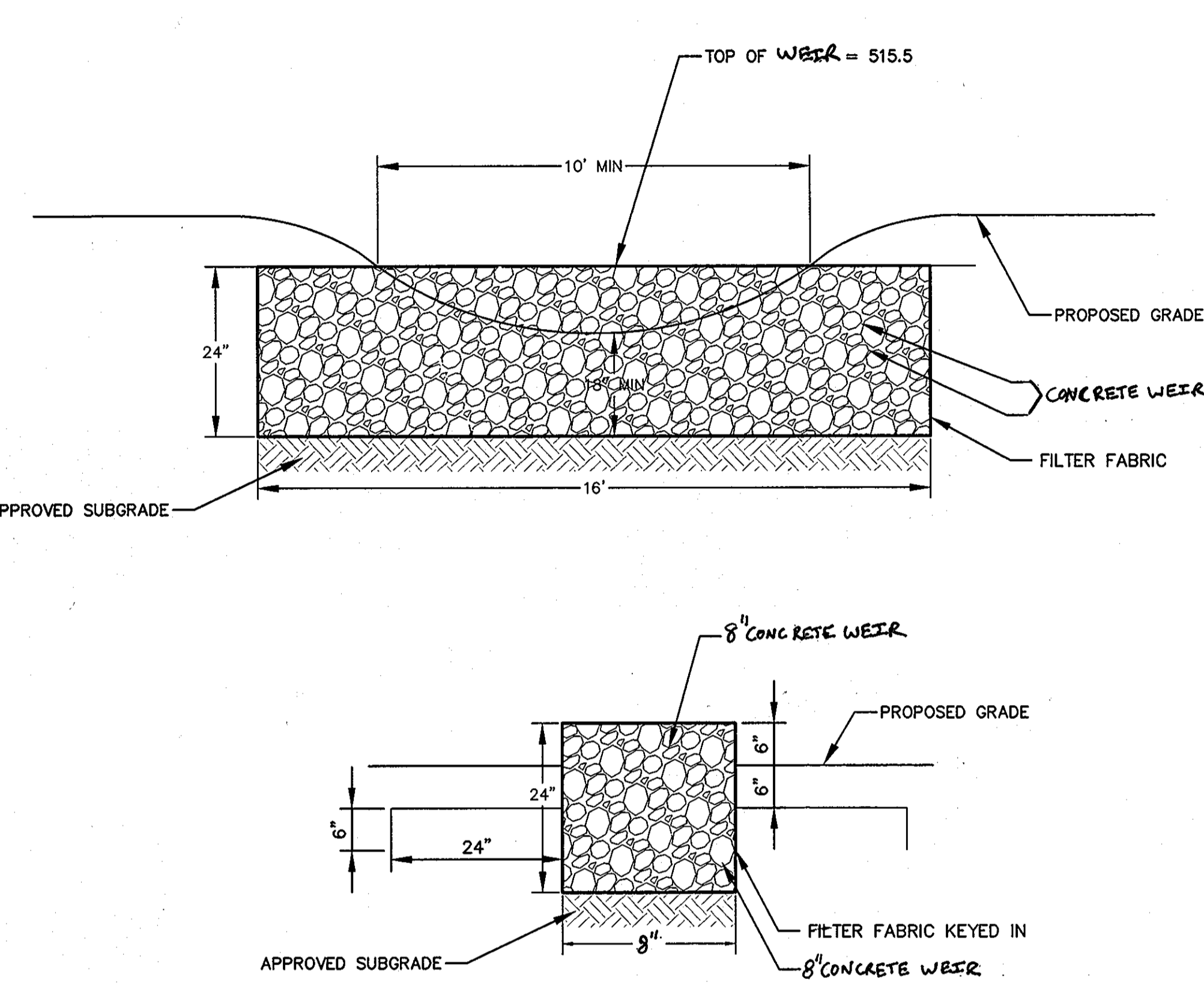
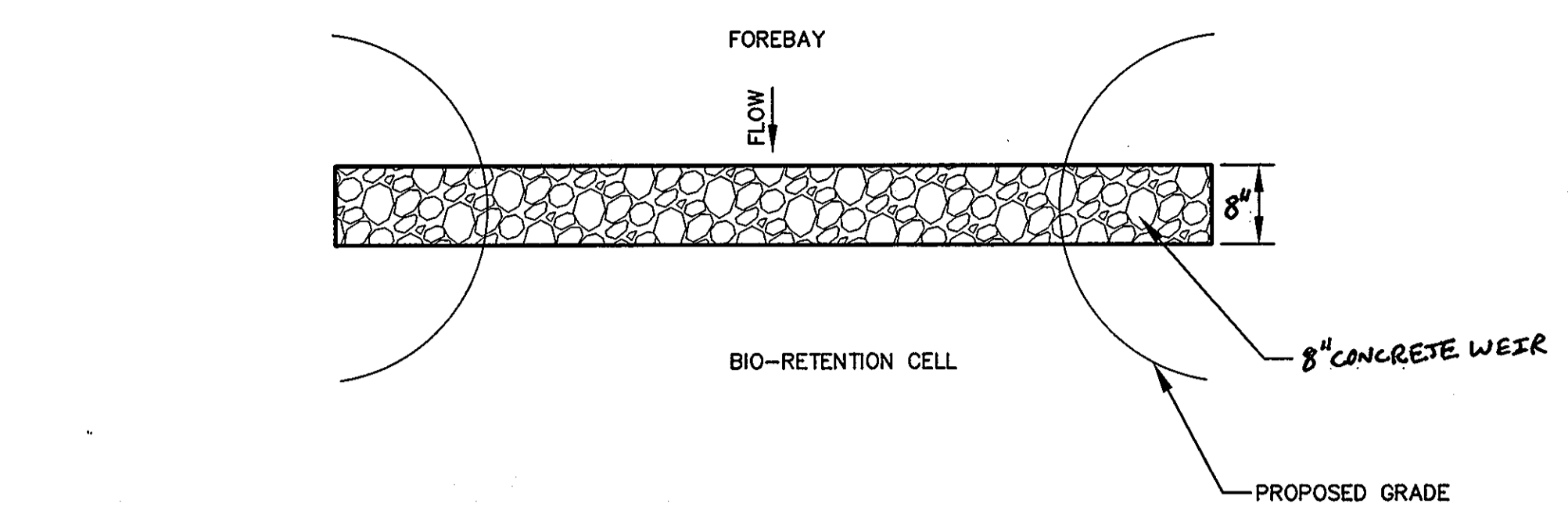
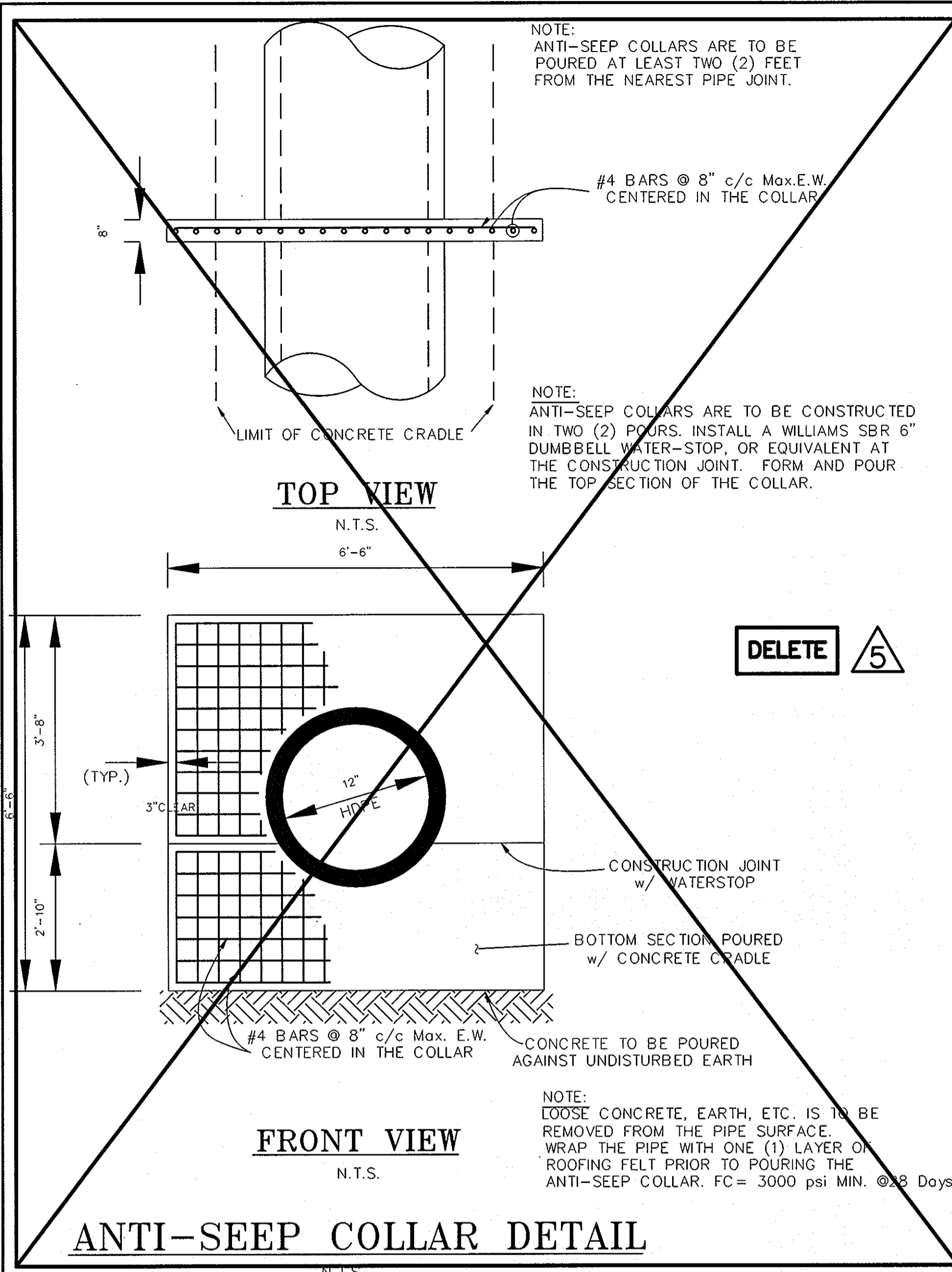
DATE: MARCH 2013

SDP-03-084

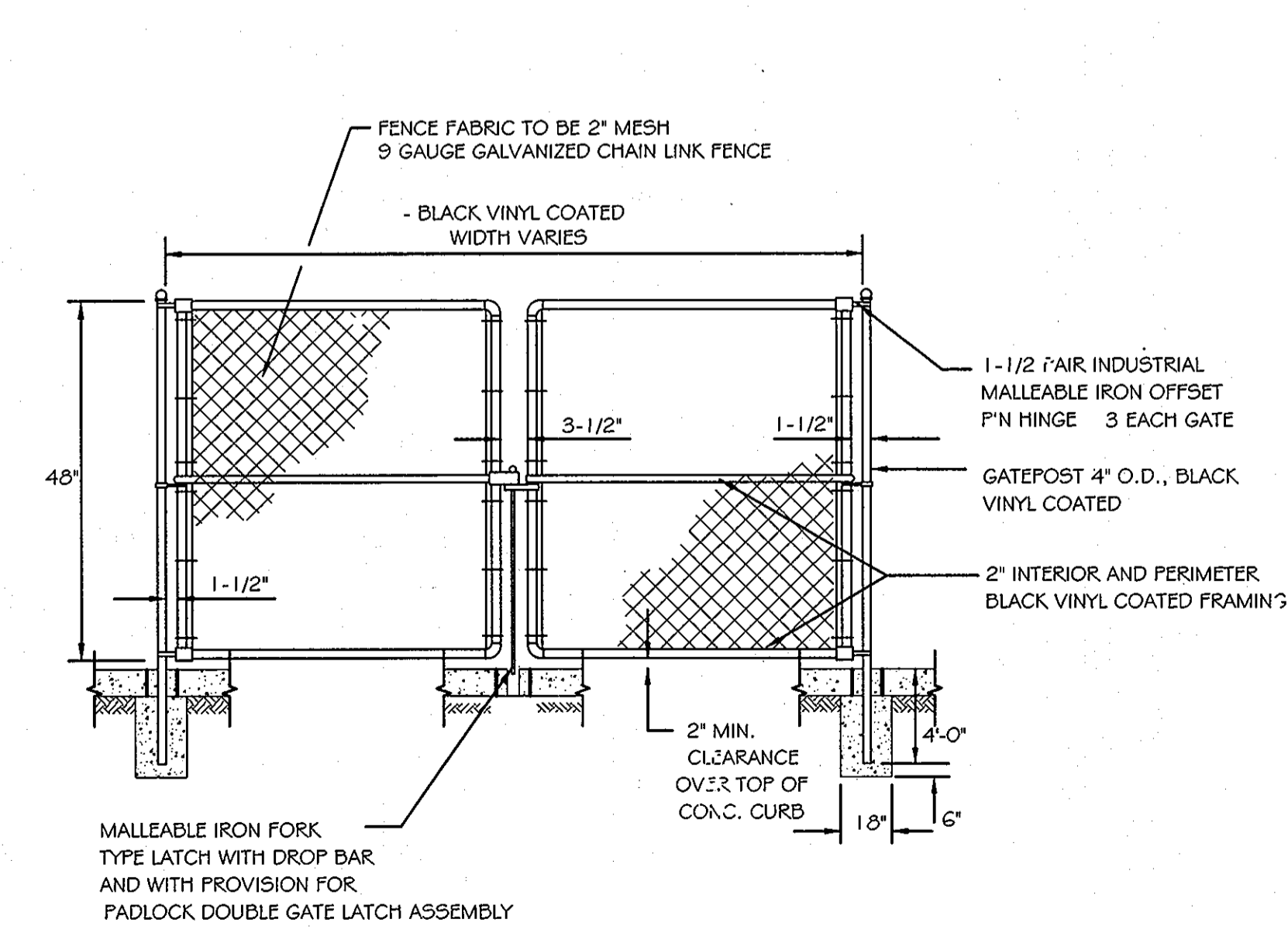
**HURON CONSULTING**  
A Division of Noble Engineering, Inc.  
2010 CENTURY BLVD  
GERMANTOWN, MD 20874  
PHONE: (301) 252-7200  
FAX: (301) 252-7201  
www.huroncon.com

STATE OF MARYLAND  
Professional Engineer  
No. 15867  
6-8-13

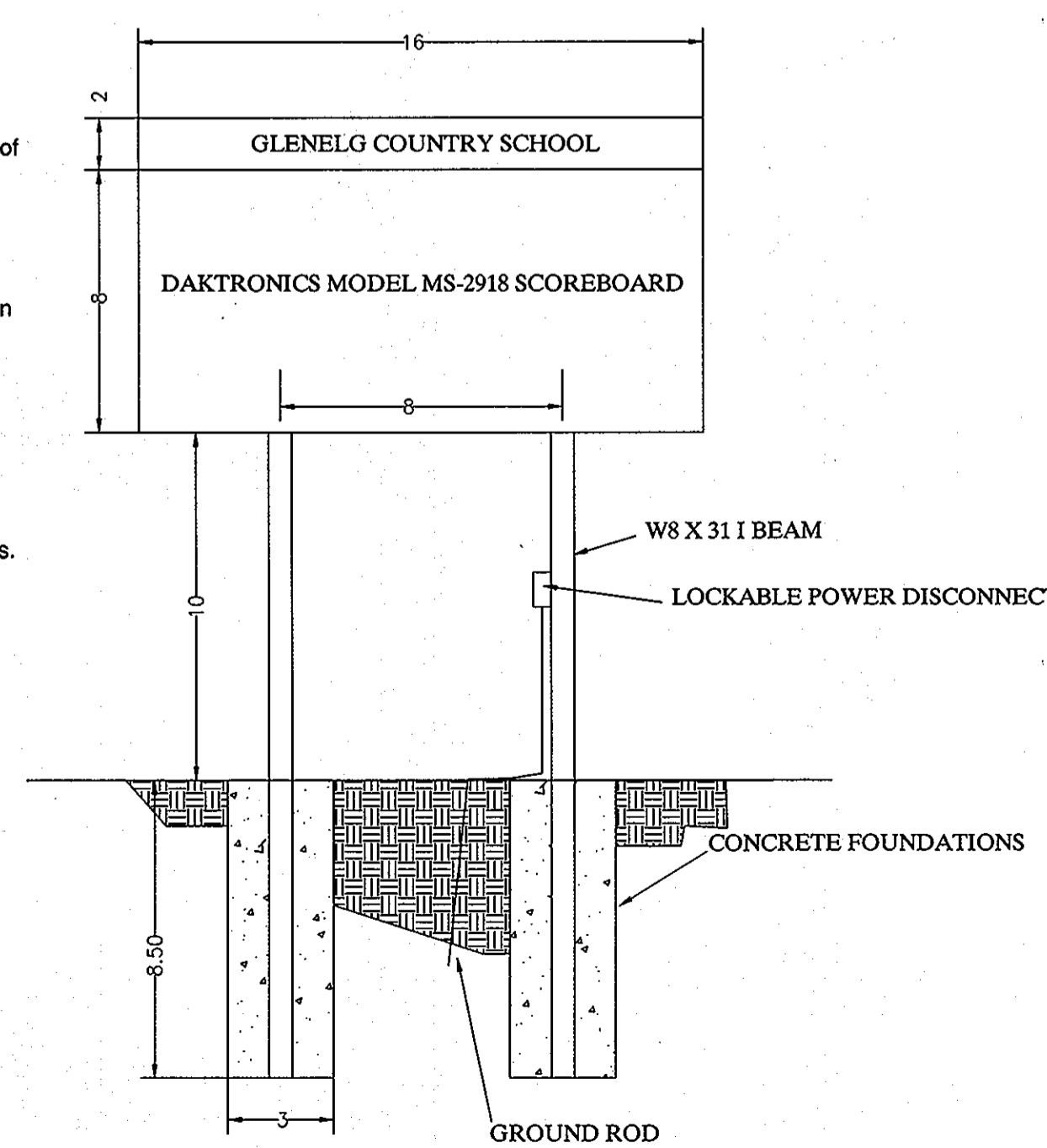
DRW BY: JA  
CHK BY: JA  
APP BY: REH



**FOREBAY GABION DETAIL**  
N.T.S.



**CHAIN-LINK FENCE DOUBLE GATE**  
NOT TO SCALE



**SCOREBOARD DETAIL**  
NOT TO SCALE

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5)**

- Routine Maintenance:**
- The Owner shall inspect the facility annually and after every heavy storm. Inspections shall be performed during wet weather to determine if the pond is functioning properly.
  - The Owner shall mow the top and side slopes of the embankment a minimum of two (2) times per year, once in June and once in September. Other side slopes and maintenance access shall be mowed as needed.
  - The Owner shall remove any debris and litter from the facility.
  - The Owner shall repair any erosion in the pond as well as the rip-rap or gabion outlet area as soon as it is noticed.
  - Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
  - The Owner shall remove sediment from the pond, and forebay, no later than when the capacity of the pond, or forebay, is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.

**OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3) MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), ENHANCED FILTERS (M-9)**

- The Owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and 2.
- The Owner shall perform a plant in the spring and in the fall of each year. During the inspection, the Owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material, treat diseased trees and shrubs, and replace all deficient stakes and wires.
- The Owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.
- The Owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

**Professional Certification.** I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 31168

Expiration Date 11/2/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 6/17/13 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 6/17/13 DATE

DIRECTOR *[Signature]* 6/17/13 DATE

**HURON CONSULTING**  
A Division of Noble Engineering, Inc.  
2010 25th Century Blvd  
Germantown, MD 20874  
Phone: (301) 834-1170  
www.huroncon.com

STATE OF MARYLAND  
Professional Engineer  
6-3-13

DRW BY: JA  
CHK BY: JA  
APP BY: REH

REVISIONS

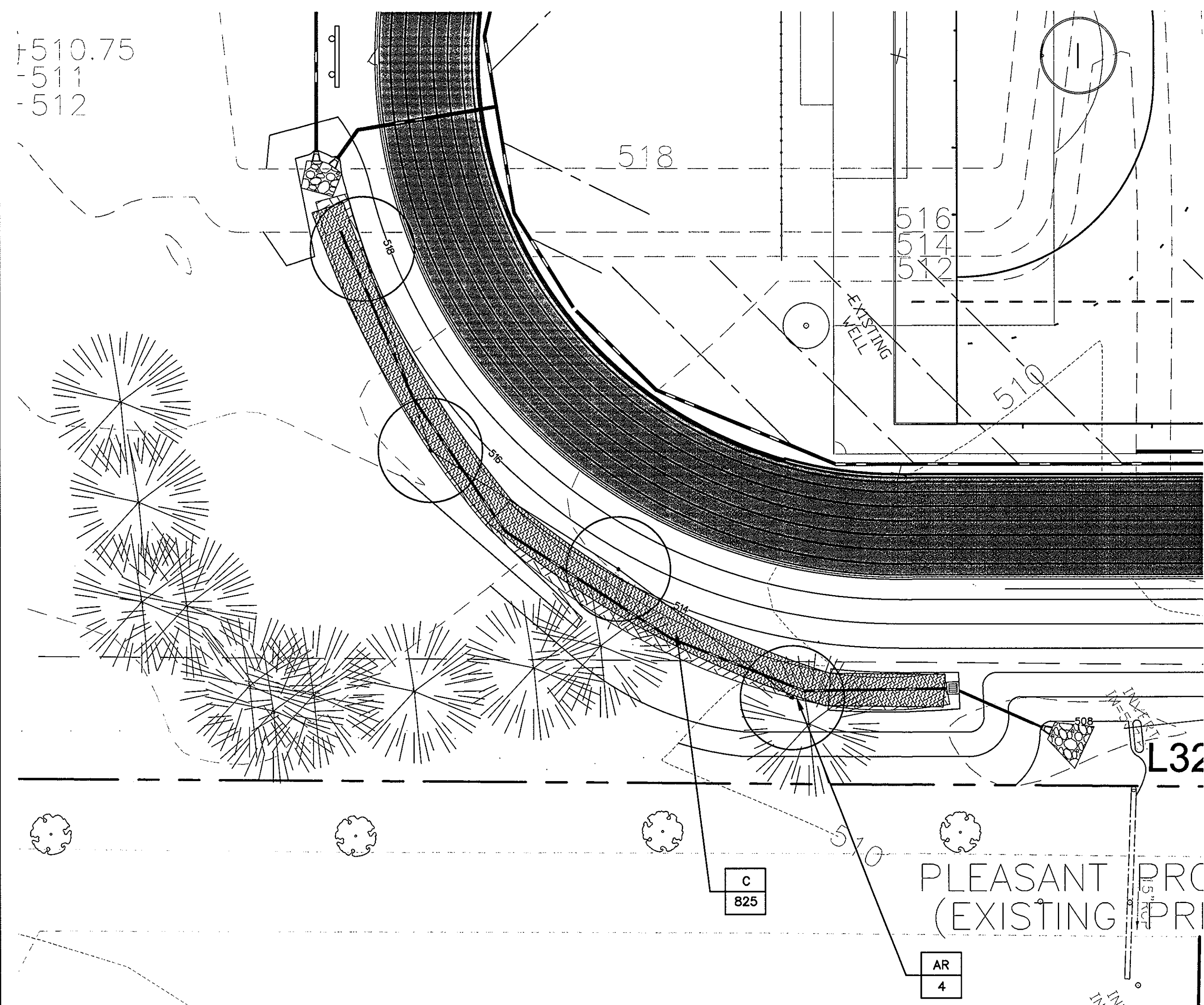
NO.	DATE	DESCRIPTION
5	3/5/13	REMOVED ANTI-SEEP COLLAR

**GLENELG COUNTRY SCHOOL**  
12793 FOLLY QUARTER ROAD  
ELLICOTT CITY, MD 21042

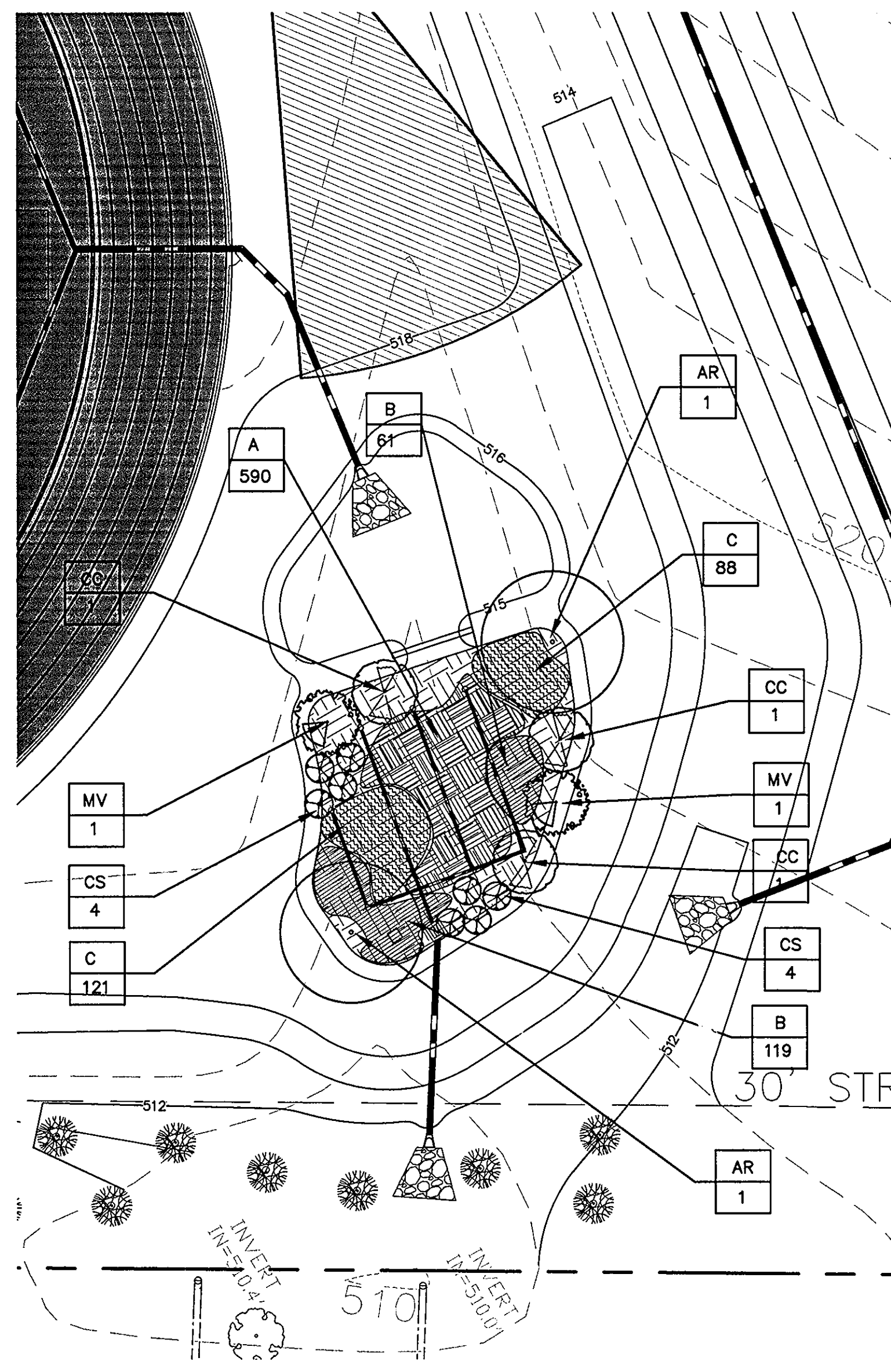
REVISED SHEET  
STORMWATER MANAGEMENT AND DRAINAGE DETAILS

SCALE  
HORIZONTAL: N/A  
VERTICAL: N/A

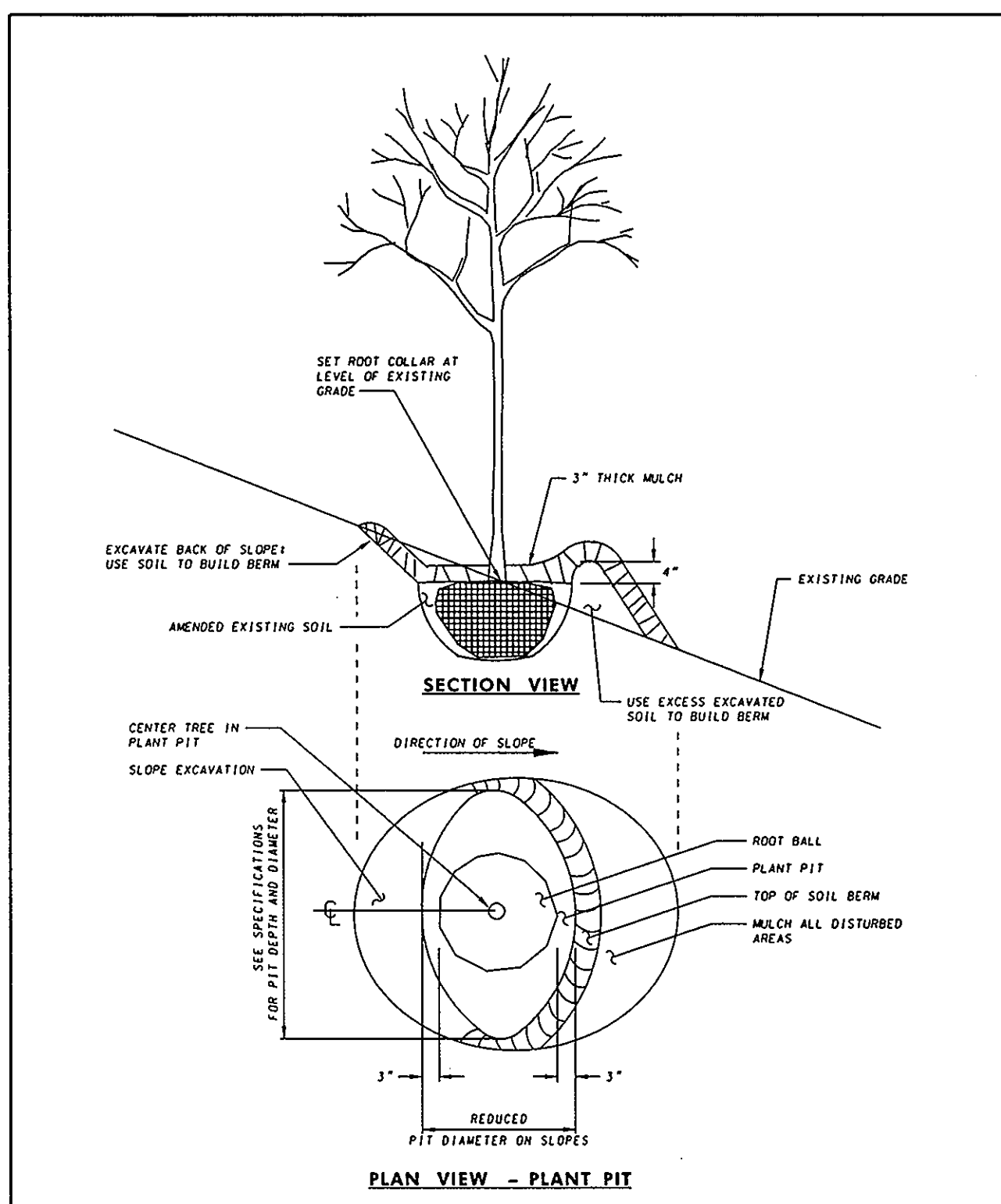
PROJECT NO.: 86860.00  
DRAWING NO.: C-312  
SHEET: 28 OF 37  
DATE: MARCH 2013  
SDP-03-084



BIO-SWALE AREA "A-1"  
SCALE: 1" = 20'



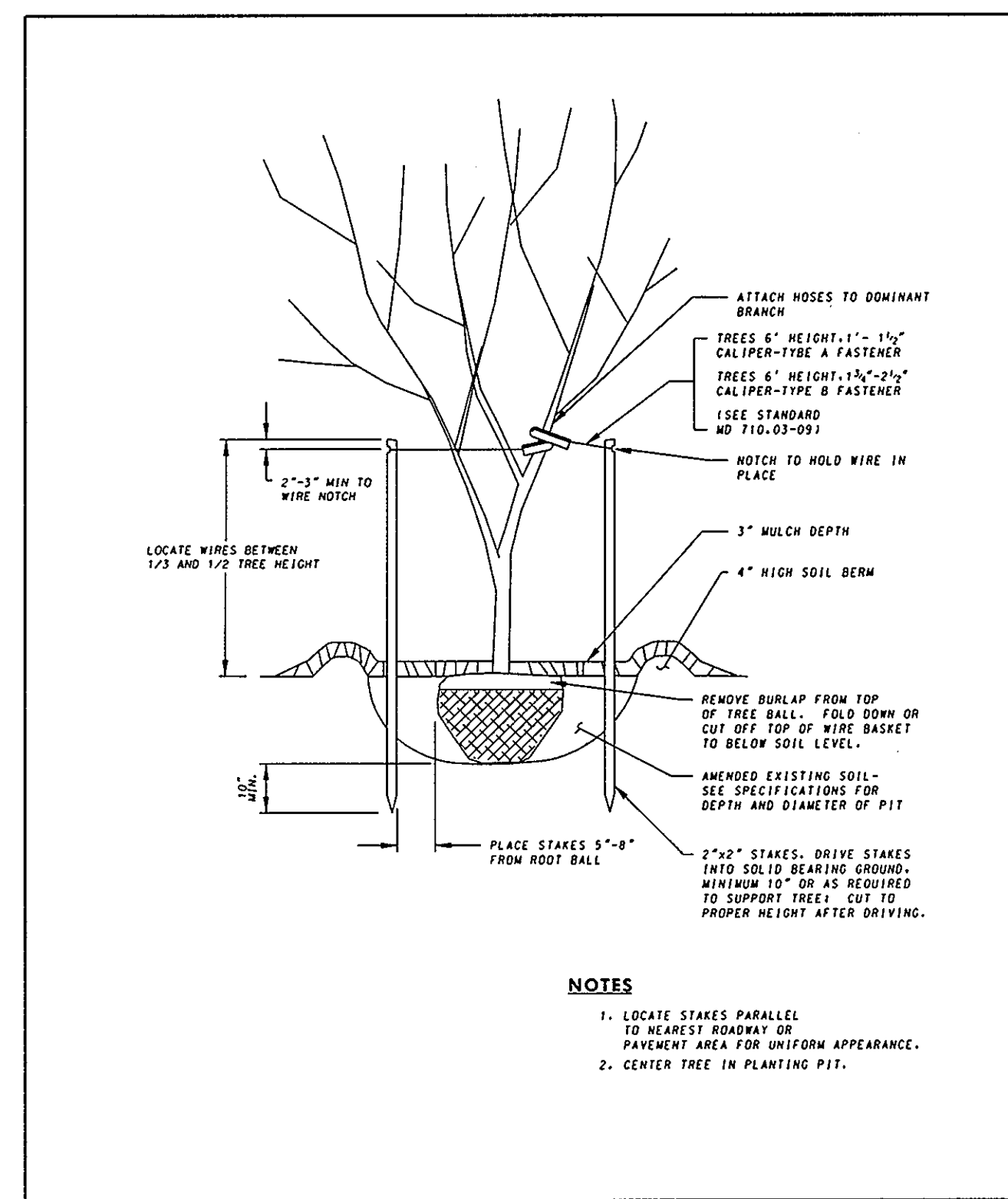
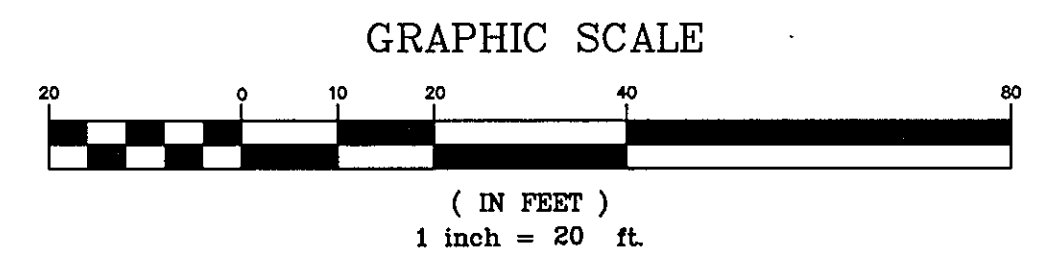
BIO-RETENTION AREA "A-5"  
SCALE: 1" = 20'



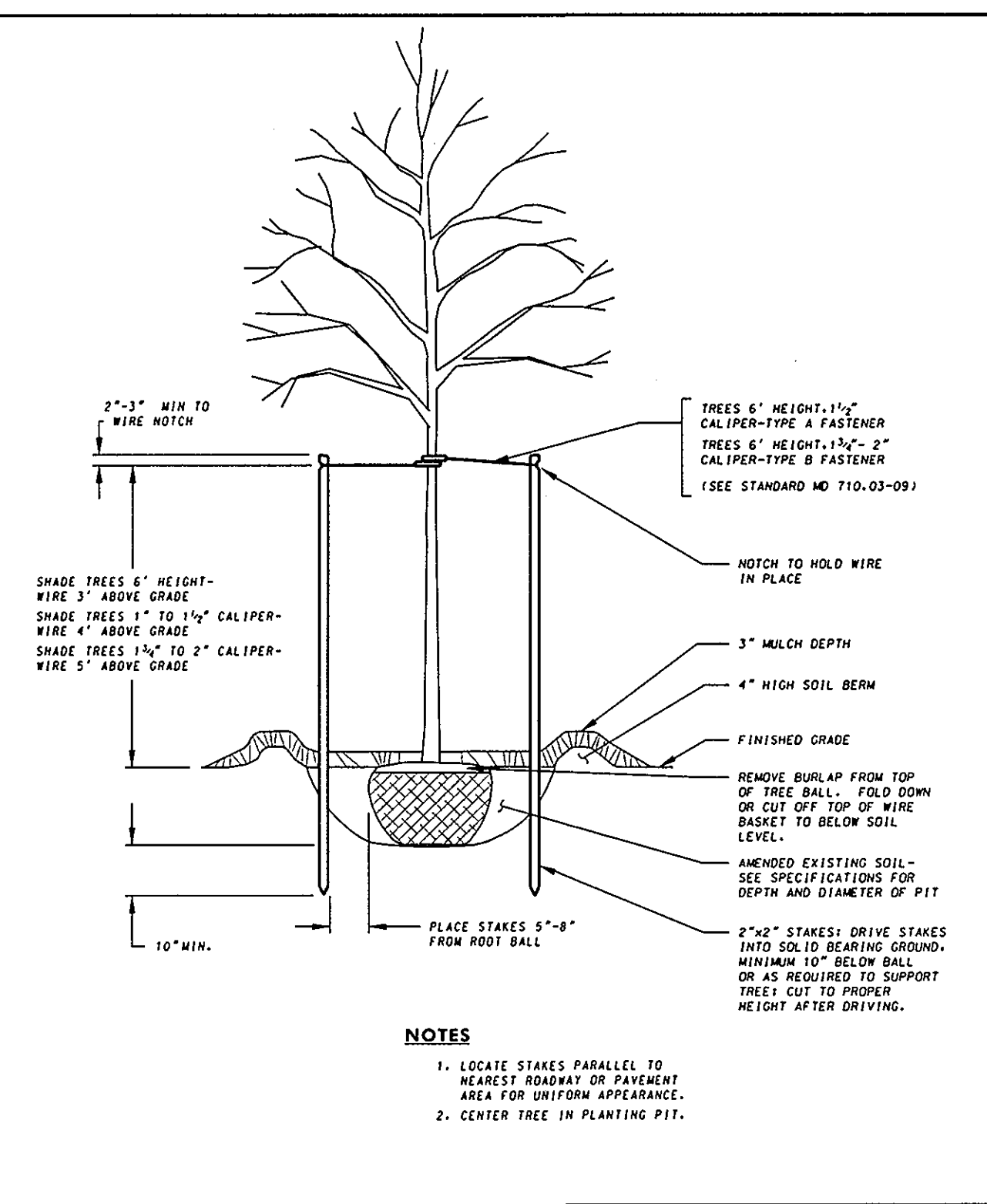
SPECIFICATION 710	CATEGORY CODE ITEMS	<b>Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION</b> STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES <b>PLANTING TREES ON SLOPES FROM 3:1 TO 2:1</b> STANDARD NO. MD 710.03-14
APPROVED	<i>K.G. McCall</i> DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	
APPROVAL	FEDERAL HIGHWAY ADMINISTRATION APPROVAL 10-28-97 REVISION 12-1-01 REVISION 12-1-01 REVISION 12-1-01	
	FEDERAL HIGHWAY ADMINISTRATION APPROVAL 8-18-97 REVISION 12-1-01 REVISION 12-1-01 REVISION 12-1-01	

Key	Symbol	Scientific/Common Name	Qty.	Size	Remarks
AR		Acer Rubrum 'October Glory' October Glory Red Maple	6	2" - 2 1/2" cal	WB
C		**Aster Novae Angliae** New England Aster	517	1 qt	18" O.C.
C		**Solidago Rugosa 'Fireworks** Fireworks Goldenrod	517	1 qt	18" O.C.
CC		Cercis Canadensis Redbud	3	2" - 2 1/2" cal	WB
CS		Cornus Serica Red Twig Dogwood	8	2 1/2" - 3' ht	3 gal
A		Elymus Virginicus Virginia Wild Rye	590	4" plug	12" O.C.
MV		Magnolia Virginia Sweetbay Magnolia	2	8' - 10' ht	WB
B		Panicum Virgatum 'Shenadoah' Shenadoah Switchgrass	180	1 qt	18" O.C.

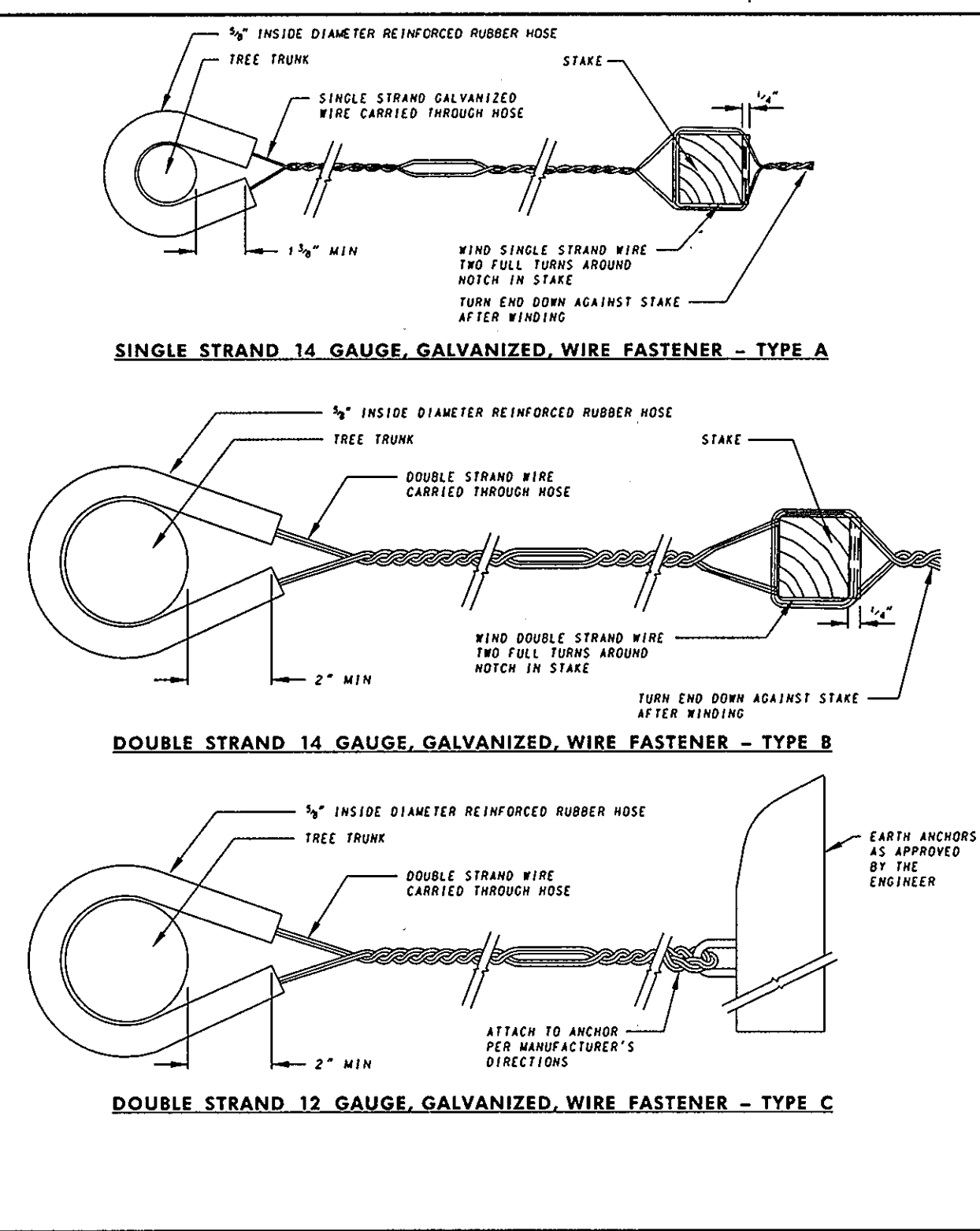
\*\* TO BE PLANTED TOGETHER \*\*



**NOTES**  
 1. LOCATE STAKES PARALLEL TO NEAREST ROADWAY OR PAVEMENT AREA FOR UNIFORM APPEARANCE.  
 2. CENTER TREE IN PLANTING PIT.



**NOTES**  
 1. LOCATE STAKES PARALLEL TO NEAREST ROADWAY OR PAVEMENT AREA FOR UNIFORM APPEARANCE.  
 2. CENTER TREE IN PLANTING PIT.



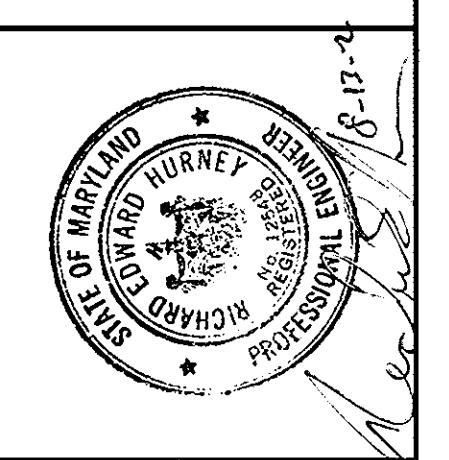
SPECIFICATION 710	CATEGORY CODE ITEMS	<b>Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION</b> STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES <b>STAKING SHADE TREES 6' HIGH TO 2" CALIPER</b> STANDARD NO. MD 710.03-06
APPROVED	<i>K.G. McCall</i> DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	
APPROVAL	FEDERAL HIGHWAY ADMINISTRATION APPROVAL 10-28-97 REVISION 12-1-01 REVISION 12-1-01 REVISION 12-1-01	
	FEDERAL HIGHWAY ADMINISTRATION APPROVAL 8-18-97 REVISION 12-1-01 REVISION 12-1-01 REVISION 12-1-01	

SPECIFICATION 710	CATEGORY CODE ITEMS	<b>Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION</b> STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES <b>STAKING FLOWERING TREES 6 FEET HIGH TO 2 1/2 INCH CALIPER</b> STANDARD NO. MD 710.03-04
APPROVED	<i>K.G. McCall</i> DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	
APPROVAL	FEDERAL HIGHWAY ADMINISTRATION APPROVAL 10-28-97 REVISION 12-1-01 REVISION 12-1-01 REVISION 12-1-01	
	FEDERAL HIGHWAY ADMINISTRATION APPROVAL 8-18-97 REVISION 12-1-01 REVISION 12-1-01 REVISION 12-1-01	

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 12548  
 Expiration Date 7-29-13

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>K.G. McCall</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	8/17/12 DATE
<i>K.G. McCall</i> CHIEF, DIVISION OF LAND DEVELOPMENT	8/23/12 DATE
<i>K.G. McCall</i> DIRECTOR	8/23/12 DATE



DRW BY: JA  
 CHK BY: JA  
 APP BY: REH

REVISIONS	DESCRIPTION	DATE

GLENELG COUNTRY SCHOOL  
 12793 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MD 21042

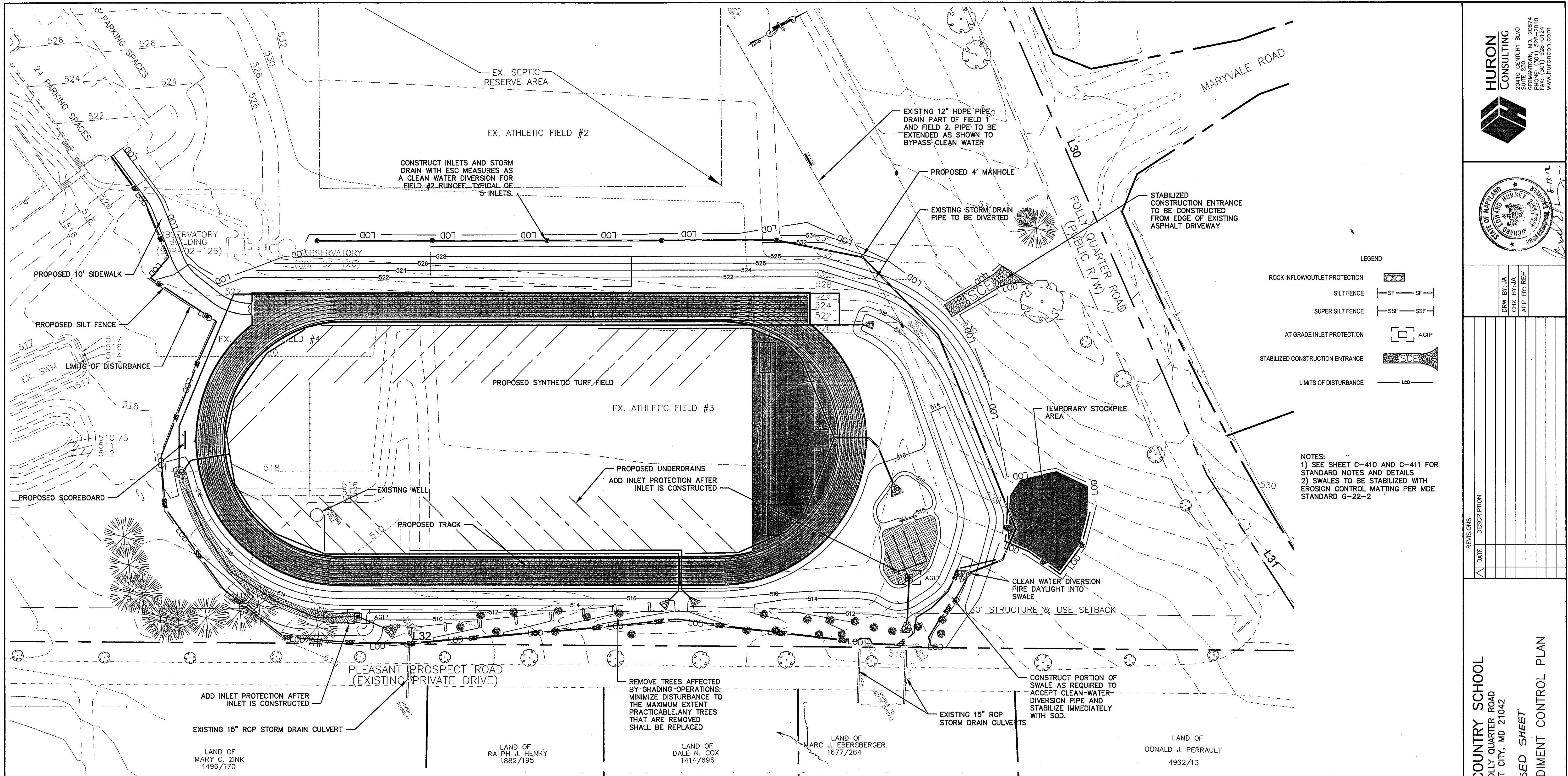
REVISED SHEET  
 BIORETENTION PLANTING PLAN

SCALE  
 HORIZONTAL: N/A  
 VERTICAL: N/A

PROJECT NO.: 900-101  
 DRAWING NO.: C-313  
 SHEET: 29 OF 37  
 DATE: JULY 2012

SDP-03-084





**HURON CONSULTING**  
 20410 CENTURY BLVD  
 SUITE 2000  
 GREENBELT, MD 20814  
 PHONE: (301) 588-0124  
 FAX: (301) 588-0124  
 www.huroncon.com

**LEGEND**

ROCK INFLOW/OUTLET PROTECTION	
SILT FENCE	—SF—SF—
SUPER SILT FENCE	—SSF—SSF—
AT GRADE INLET PROTECTION	AGIP
STABILIZED CONSTRUCTION ENTRANCE	
LIMITS OF DISTURBANCE	—LOD—

**NOTES:**  
 1) SEE SHEET C-410 AND C-411 FOR STANDARD NOTES AND DETAILS  
 2) SWALES TO BE STABILIZED WITH EROSION CONTROL MATTING PER MDE STANDARD G-22-2

REVISIONS	DATE	DESCRIPTION

**GLENELG COUNTRY SCHOOL**  
 12793 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MD 21042

**REVISION SHEET**

**EROSION & SEDIMENT CONTROL PLAN**

LAND OF MARY C. ZINK 4496/170

LAND OF RALPH J. HENRY 1882/195

LAND OF DALE N. COX 1414/696

LAND OF MARC J. EBERSBERGER 1677/264

LAND OF DONALD J. PERRAULT 4962/13

( ) 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 PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

Wm. Barry Shadrach  
 SIGNATURE OF DEVELOPER

7-20-12  
 DATE

Wm. Barry SHADRACH  
 PRINT NAME BELOW SIGNATURE

( ) 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."

Richard E. Huron  
 SIGNATURE OF ENGINEER

8-13-12  
 DATE

RICHARD E. HURON  
 PRINT NAME BELOW SIGNATURE

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 12548  
 Expiration Date 7-29-13

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

John K. Robertson  
 SIGNATURE

8/15/12  
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 8/12/12  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

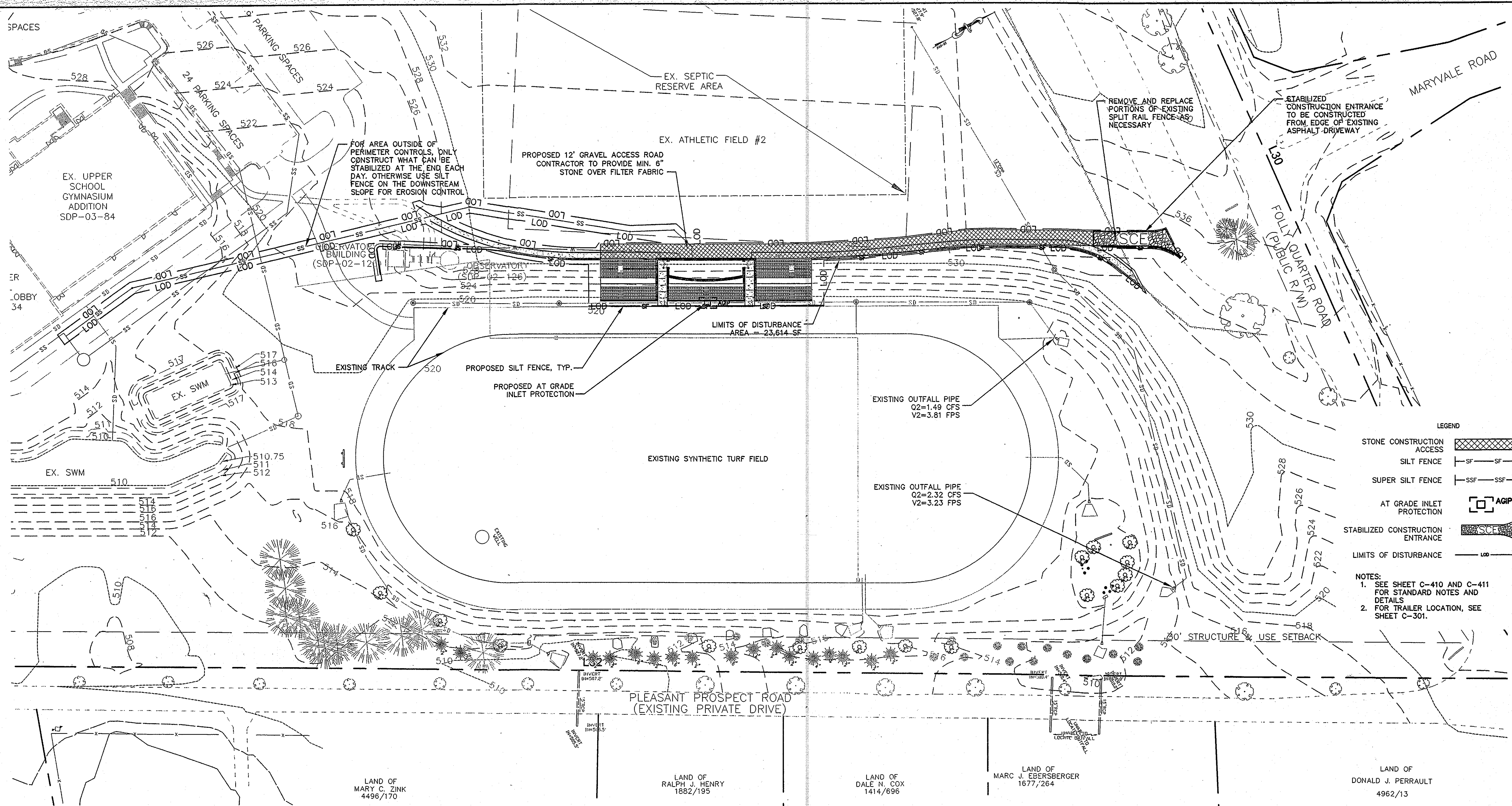
[Signature] 8/23/12  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 8/24/12  
 DIRECTOR DATE

**OWNER / APPLICANT**  
 GLENELG COUNTRY SCHOOL  
 12793 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MD 21042  
 TEL: 410-531-8600

SCALE  
 HORIZONTAL: 1" = 30'  
 VERTICAL: N/A

PROJECT NO.: 900-101  
 DRAWING NO.: C-400  
 SHEET: 31 OF 37  
 DATE: MAY 2012



**LEGEND**

- STONE CONSTRUCTION ACCESS [Symbol]
- SILT FENCE [Symbol]
- SUPER SILT FENCE [Symbol]
- AT GRADE INLET PROTECTION [Symbol]
- STABILIZED CONSTRUCTION ENTRANCE [Symbol]
- LIMITS OF DISTURBANCE [Symbol]

**NOTES:**

- SEE SHEET C-410 AND C-411 FOR STANDARD NOTES AND DETAILS
- FOR TRAILER LOCATION, SEE SHEET C-301.

**SEQUENCE OF CONSTRUCTION**

- OBTAIN A GRADING PERMIT
- STAKEOUT THE ENTIRE LIMITS OF DISTURBANCE FOR THE PROJECT
- PRIOR TO ANY CONSTRUCTION ACTIVITY A PRECONSTRUCTION MEETING SHALL BE HELD ON-SITE WITH HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. PROVIDE 48 HOURS NOTICE TO INSPECTOR. OBTAIN PERMISSION TO INSTALL PERIMETER ESC MEASURES FROM THE SEDIMENT CONTROL INSPECTOR.
- INSTALL PERIMETER SILT FENCE, THE STABILIZED CONSTRUCTION ENTRANCE AND INLET PROTECTION.
- OBTAIN APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR FOR THE ESC MEASURES PRIOR TO PERFORMING ANY FURTHER CONSTRUCTION ACTIVITIES.
- BEGIN TOPSOIL STRIPPING OPERATIONS AND STOCKPILE AS REQUIRED FOR REUSE.
- CONSTRUCT GRAVEL ACCESS ROAD
- BEGIN EXCAVATION AND CONSTRUCTION OF WATER AND SEWER AND BLEACHERS AND PRESS BOX.
- BEGIN CONSTRUCTING PAVED WALKWAYS
- INSTALL NEW TRAILER.
- REMOVE GRAVEL ACCESS ROAD
- CONSTRUCT REMAINING WALKWAYS
- PERMANENTLY STABILIZE ALL DISTURBED AREAS
- OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO REMOVE SEDIMENT CONTROL DEVICES.
- REMOVE SEDIMENT CONTROL DEVICES AND PERMANENTLY STABILIZE AREAS IMMEDIATELY.
- PREPARE AND SUBMIT AS-BUILTS TO HOWARD COUNTY.

TASKS MAY BE PERFORMED OUT OF ORDER OR CONCURRENTLY WITH PRIOR APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. THE SEQUENCE OF CONSTRUCTION MAY NOT BE ALTERED WITHOUT PRIOR HOWARD COUNTY SOIL CONSERVATION DISTRICT APPROVAL.

**DURATION SCHEDULE\***

ESC INSTALLATION & ACCESS ROAD INSTALLATION	4 DAYS
GRADING AND EARTHWORK OPERATIONS	3 DAYS
BLEACHER AND PRESSBOX INSTALLATION	60 DAYS
PAVING	3 DAYS
TRAILER INSTALLATION	1 DAY
PERMANENT STABILIZATION	3 DAYS

\* SOME TASKS MAY OVERLAP. TOTAL CONSTRUCTION DURATION IS ESTIMATED AT 75 DAYS

**STANDARD STABILIZATION NOTE**

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

- A) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SHOALS, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
- B) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING

( ) 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 PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

*[Signature]*  
SIGNATURE OF DEVELOPER

5/28/13  
DATE

( ) 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."

*[Signature]*  
SIGNATURE OF ENGINEER

5/28/13  
DATE

*[Signature]*  
PRINT NAME BELOW SIGNATURE

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 12648  
Expiration Date 7-23-13

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT  
*[Signature]* 5/28/13  
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 6/11/13  
DATE  
CHIEF, DIVISION OF A&D DEVELOPMENT *[Signature]* 6/17/13  
DATE  
DIRECTOR *[Signature]* 6/17/13  
DATE

OWNER / APPLICANT  
GLENELG COUNTRY SCHOOL  
12793 FOLLY QUARTER ROAD  
ELLICOTT CITY, MD 21042  
TEL: 410-531-8600

GLENELG COUNTRY SCHOOL  
12793 FOLLY QUARTER ROAD  
ELLICOTT CITY, MD 21042  
REVISION SHEET  
EROSION & SEDIMENT CONTROL PLAN

SCALE  
HORIZONTAL: 1" = 30'  
VERTICAL: N/A  
PROJECT NO.: 86860.00  
DRAWING NO.: C-401  
SHEET: 32 OF 37  
DATE: MARCH 2013  
SDP-03-084



DRW BY: SL  
CHK BY: JA  
APP BY: REH

REVISIONS	DATE	DESCRIPTION



**DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE** STANDARD SYMBOL

**CONSTRUCTION SPECIFICATIONS**

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL D-3-1 RIPRAP INFLOW PROTECTION** STANDARD SYMBOL

**CONSTRUCTION SPECIFICATIONS**

1. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
2. CONSTRUCT INFLOW CHANNEL WITH CLASS 1 RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D<sub>50</sub>) AND A 1 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
3. INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
4. BLEND RIPRAP INTO EXISTING GROUND.
5. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL E-9-2 AT-GRADE INLET PROTECTION** STANDARD SYMBOL

**CONSTRUCTION SPECIFICATIONS**

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL E-3 SUPER SILT FENCE** STANDARD SYMBOL

**CONSTRUCTION SPECIFICATIONS**

1. INSTALL 2 3/8 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 6 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 3/8 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL E-1 SILT FENCE** STANDARD SYMBOL

**CONSTRUCTION SPECIFICATIONS**

1. USE WOOD POSTS 1 3/4 X 1 3/4 X 3/8 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL E-1 SILT FENCE** STANDARD SYMBOL

**CONSTRUCTION SPECIFICATIONS**

1. USE WOOD POSTS 1 3/4 X 1 3/4 X 3/8 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**PIPE OUTLET TO FLAT AREA**

**CONSTRUCTION SPECIFICATIONS**

1. USE WOOD POSTS 1 3/4 X 1 3/4 X 3/8 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

Outflow Pipe	Pipe Size (in)	10 Year Discharge (cfs)	Tailwater Condition	Rip Rap Length, La (ft)	Rip Rap W <sub>1</sub> (ft)	Rip Rap W <sub>2</sub> (ft)	Rip Rap Depth, d (in)	d <sub>50</sub> (ft)
9	12	2.17	minimum	8	3	9	19	0.2
11	12	3.83	minimum	8	3	9	19	0.2
12	12	3.43	minimum	8	3	9	19	0.2
14	10	1.06	minimum	8	3	9	19	0.2
16	10	1.61	minimum	9	3	9	19	0.2
19	10	1.6	minimum	10	3	9	19	0.2
20	10	1.41	minimum	11	3	9	19	0.2
21	12	2.61	minimum	12	3	9	19	0.2

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 12548  
 Expiration Date 7-29-13

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

*John R. Palatino*  
 SIGNATURE DATE 8/23/12

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 8/23/12  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 8/23/12  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 8/23/12  
 DIRECTOR DATE

OWNER / APPLICANT  
 GLENELG COUNTRY SCHOOL  
 12793 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MD 21042  
 TEL: 410-531-8600

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STATE OF MARYLAND  
 REGISTERED PROFESSIONAL ENGINEER  
 JOHN R. PALATINO  
 LICENSE NO. 12548

REVISIONS  
 DATE DESCRIPTION

DRW BY: JA  
 CHK BY: JA  
 APP BY: REH

GLENELG COUNTRY SCHOOL  
 12793 FOLLY QUARTER ROAD  
 ELLICOTT CITY, MD 21042

REVISOR SHEET  
 EROSION AND SEDIMENT CONTROL DETAILS

SCALE  
 HORIZONTAL: 1" = 30'  
 VERTICAL: N/A

PROJECT NO.: 900-101  
 DRAWING NO.: C-410  
 SHEET: 33 OF 37  
 DATE: JULY 2012

SDP-03-084

### DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE

**CONSTRUCTION SPECIFICATIONS**

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (150 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE. MAINTAIN POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL D-3-1 RIPRAP INFLOW PROTECTION

STANDARD SYMBOL: RRP

**CONSTRUCTION SPECIFICATIONS**

- PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
- CONSTRUCT INFLOW CHANNEL WITH CLASS I RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D<sub>50</sub>) AND A 1 FOOT DEEP FLOW CHANNEL INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
- INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
- BLEND RIPRAP INTO EXISTING GROUND.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE

**CONSTRUCTION SPECIFICATIONS**

- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
- PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
- STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF

**CONSTRUCTION SPECIFICATIONS**

- INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

**CONSTRUCTION SPECIFICATIONS**

- USE WOOD POSTS 1 1/2 x 1 1/2 x 3/8 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

**JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)**

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

### DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

**CONSTRUCTION SPECIFICATIONS**

- USE WOOD POSTS 1 1/2 x 1 1/2 x 3/8 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
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### PIPE OUTLET TO FLAT AREA

Pipe Outlet To Flat Area  
No Well-defined Channel

**CONSTRUCTION SPECIFICATIONS**

- SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 BELOW FOR THE APPROPRIATE PLANT HARDINESS ZONE.
- FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
- WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3A.1b AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Outflow Pipe	Pipe Size (in)	10 Year Discharge (cfs)	Tailwater Condition	Rip Rap Length, L <sub>a</sub> (ft)	Rip Rap W <sub>1</sub> (ft)	Rip Rap W <sub>2</sub> (ft)	Rip Rap Depth, d (in)	d <sub>50</sub> (ft)
9	12	2.17	minimum	8	3	9	19	0.2
11	12	3.83	minimum	8	3	9	19	0.2
12	12	3.43	minimum	8	3	9	19	0.2
14	10	1.06	minimum	8	3	9	19	0.2
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19	10	1.6	minimum	10	3	9	19	0.2
20	10	1.41	minimum	11	3	9	19	0.2
21	12	2.61	minimum	12	3	9	19	0.2

**TEMPORARY SEEDING TABLE B.1**

SEED MIXTURE (HARDINESS ZONE 6b)  
(FROM TABLE B.1)

NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-10-10)	LIME RATE
	BARLEY	96	3/1-5/15 8/1-10/15	1"	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	CEREAL RYE	112	3/1-5/15 8/1-11/15	1"		
	WHEAT	120	3/1-5/15 8/1-10/15	1"		
	FOXTAIL MILLET	30	5/16-7/31	1/2"		

APPLIES TO EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

OWNER / APPLICANT  
GLENELG COUNTRY SCHOOL  
12793 FOLLY QUARTER ROAD  
ELLCOTT CITY, MD 21042  
TEL: 410-531-8600

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DIRECTOR

DATE: 6/17/13  
DATE: 6/17/13  
DATE: 6/17/13

**HURON CONSULTING**  
A Division of Noblis Engineering, Inc.  
20410 CENTURY BLVD  
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FARMERSVILLE, MD 20874  
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STATE OF MARYLAND  
DEPARTMENT OF ENVIRONMENT  
AND NATURAL RESOURCES  
PROFESSIONAL ENGINEER  
5-5-13

DRW BY: JA  
CHK BY: JA  
APP BY: REH

REVISIONS

DATE	DESCRIPTION
5/16/13	REVISED NOTES PER SCD COMMENTS

GLENELG COUNTRY SCHOOL  
12793 FOLLY QUARTER ROAD  
ELLCOTT CITY, MD 21042

REVISION SHEET  
EROSION AND SEDIMENT CONTROL DETAILS

SCALE  
HORIZONTAL: 1" = 30'  
VERTICAL: N/A

PROJECT NO.: 86860.00  
DRAWING NO.: C-410  
SHEET: 34 OF 37  
DATE: MARCH 2013

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 12548  
Expiration Date 7-29-13

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT  
5/28/13

SDP-03-084

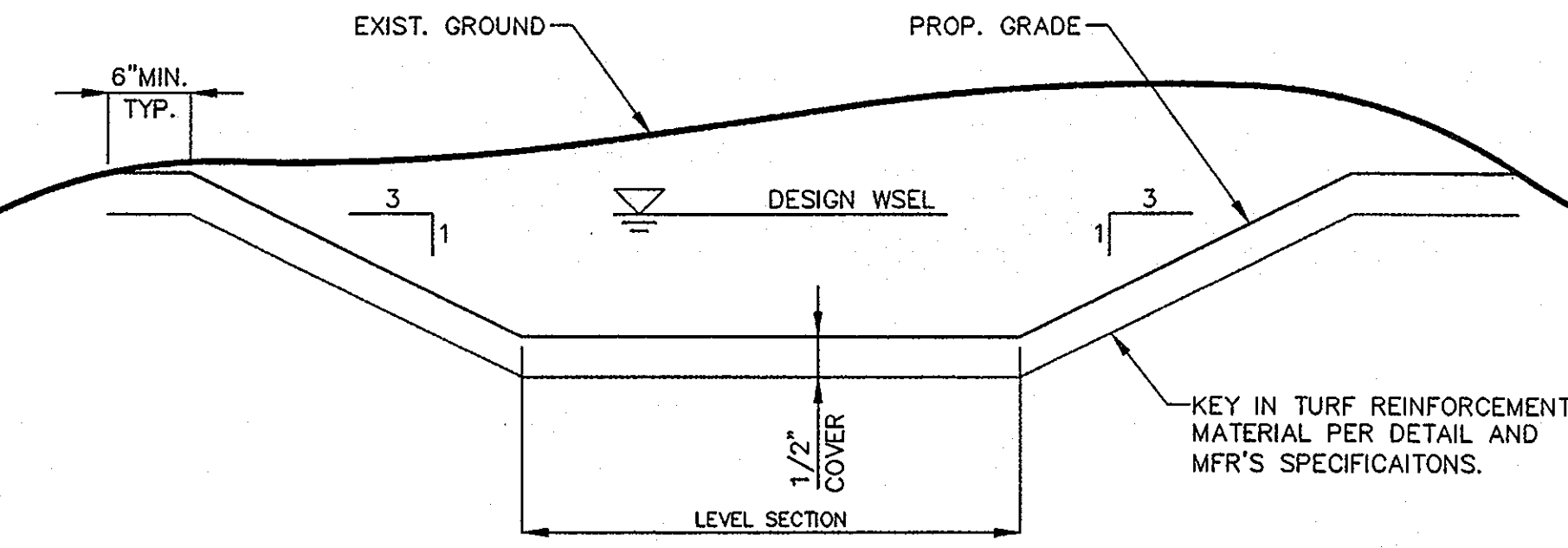
HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
 

TOTAL AREA OF SITE	80.67	ACRES
AREA DISTURBED	0.412	ACRES
AREA TO BE ROOFED OR PAVED	0.223	ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.189	ACRES
TOTAL CUT	500±	CU. YDS.
TOTAL FILL	500±	CU. YDS.

 OFFSITE WASTE/BORROW AREA LOCATION: TBD BY THE CONTRACTOR
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.
- ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
- A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

REV 4/2013



1 TURF REINFORCEMENT TYPICAL SECTION  
NOT TO SCALE

- TURF REINFORCEMENT NOTES:**
- INSTALL THE MATERIAL PER THE MANUFACTURER'S INSTRUCTIONS INCLUDING SURFACE PREPARATION AND STAPLING. IT IS VERY IMPORTANT THAT THE MATERIAL BE INSTALLED IN GOOD CONTACT WITH THE MATERIAL. THE MATERIAL MUST BE PLACED WITH NO WRINKLES OR VOID SPACES BELOW THE FABRIC. STAPLES MUST BE PLACED IN A DIAMOND PATTERN APPROXIMATELY 18" APART.
  - FILL VOIDS IN THE MATERIAL WITH TOPSOIL BEFORE SODDING OR SEEDING. DO NOT PLACE MORE THAN ONE HALF INCH (1/2") OF TOPSOIL OVER THE MATERIAL. THE MATERIAL MUST BE WITHIN THE ROOT ZONE FOR IT TO FUNCTION PROPERLY.
  - MATERIAL MUST BE ENKAMAT 7010, ENKAMAT 7020, TENSAR TM-3000, PYRAMAT, OR OTHER HOWARD COUNTY APPROVED EQUIVALENT. TO BE CONSIDERED AS AN EQUIVALENT, THE MATERIAL MUST BE A SINGLE, BONDED TURF REINFORCEMENT MATERIAL. PROPOSED ALTERNATIVES MUST BE APPROVED BY HOWARD COUNTY IN WRITING PRIOR TO PLACEMENT.
  - TURF REINFORCEMENT IS NOT MEANT TO SERVE AS AN EROSION CONTROL MAT. IF NECESSARY, A BIODEGRADABLE MATERIAL SUCH AS EXCELSIOR MAY BE PLACED OVER THE PREPARED SEED BED TO HOLD THE SEED IN PLACE. THE PURPOSE OF THE TURF REINFORCEMENT MATERIAL IS TO ADD STRENGTH TO THE ROOT SYSTEM AFTER GERMINATION.
  - TURF REINFORCEMENT TO BE USED FOR ALL WATER QUALITY SWALES INDICATED ON PLANS.

- SEQUENCE OF CONSTRUCTION**
- STAKEOUT A GRADING PERMIT
  - STAKEOUT THE ENTIRE LIMITS OF DISTURBANCE FOR THE PROJECT
  - PRIOR TO ANY CONSTRUCTION ACTIVITY A PRECONSTRUCTION MEETING SHALL BE HELD ONSITE WITH HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. PROVIDE 48 HOURS NOTICE TO INSPECTOR. OBTAIN PERMISSION TO INSTALL PERMETER ESC MEASURES FROM THE SEDIMENT CONTROL INSPECTOR.
  - INSTALL PERMETER SUPER SILT FENCE, SILT FENCE, THE STABILIZED CONSTRUCTION ENTRANCE, CLEAN WATER DIVERSION INLETS AND PIPE, AND GRADE PORTION OF SWALE TO RECEIVE CLEAN WATER DIVERSION. STABILIZE PORTION OF THE GRADED SWALE WITH SOD.
  - OBTAIN APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR FOR THE ESC MEASURES PRIOR TO PERFORMING ANY FURTHER CONSTRUCTION ACTIVITIES.
  - BEGIN TOPSOIL STRIPPING OPERATIONS AND STOCKPILE AS REQUIRED FOR REUSE.
  - CONDUCT EARTHWORK OPERATION AND PREPARE TRACK AND SYNTHETIC TURF SUBGRADES
  - INSTALL UNDERDRAINS AND TRENCH DRAINS FOR TRACK AND SYNTHETIC TURF.
  - INSTALL RISER STRUCTURES AT BIORETENTION AREA A-5 AND BIOSWALE A-1. PROVIDE AT-GRADE INLET PROTECTION UPON COMPLETION OF INSTALLATION.
  - INSTALL STONE BASE FOR TRACK AND SYNTHETIC TURF
  - UPON STABILIZATION OF TRACK AND FIELD AREA WITH STONE BASE, FINISH GRADE WATER QUALITY SWALES, BIO-SWALE AND BIORETENTION AREA.
  - INSTALL ASPHALT AT TRACK AND SYNTHETIC TURF
  - INSTALL FENCING AT TRACK
  - INSTALL FILTER MEDIA AT BIOSWALE AND BIORETENTION AREA
  - INSTALL LANDSCAPING AT BIOSWALE AND BIORETENTION AREA.
  - PERMANENT STABILIZE ALL DISTURBED AREAS.
  - OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO REMOVE SEDIMENT CONTROL DEVICES.
  - REMOVE SEDIMENT CONTROL DEVICES AND PERMANENTLY STABILIZE AREAS IMMEDIATELY.
  - PREPARE AND SUBMIT AS-BUILTS TO HOWARD COUNTY.
- TASKS MAY BE PERFORMED OUT OF ORDER OR CONCURRENTLY WITH PRIOR APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

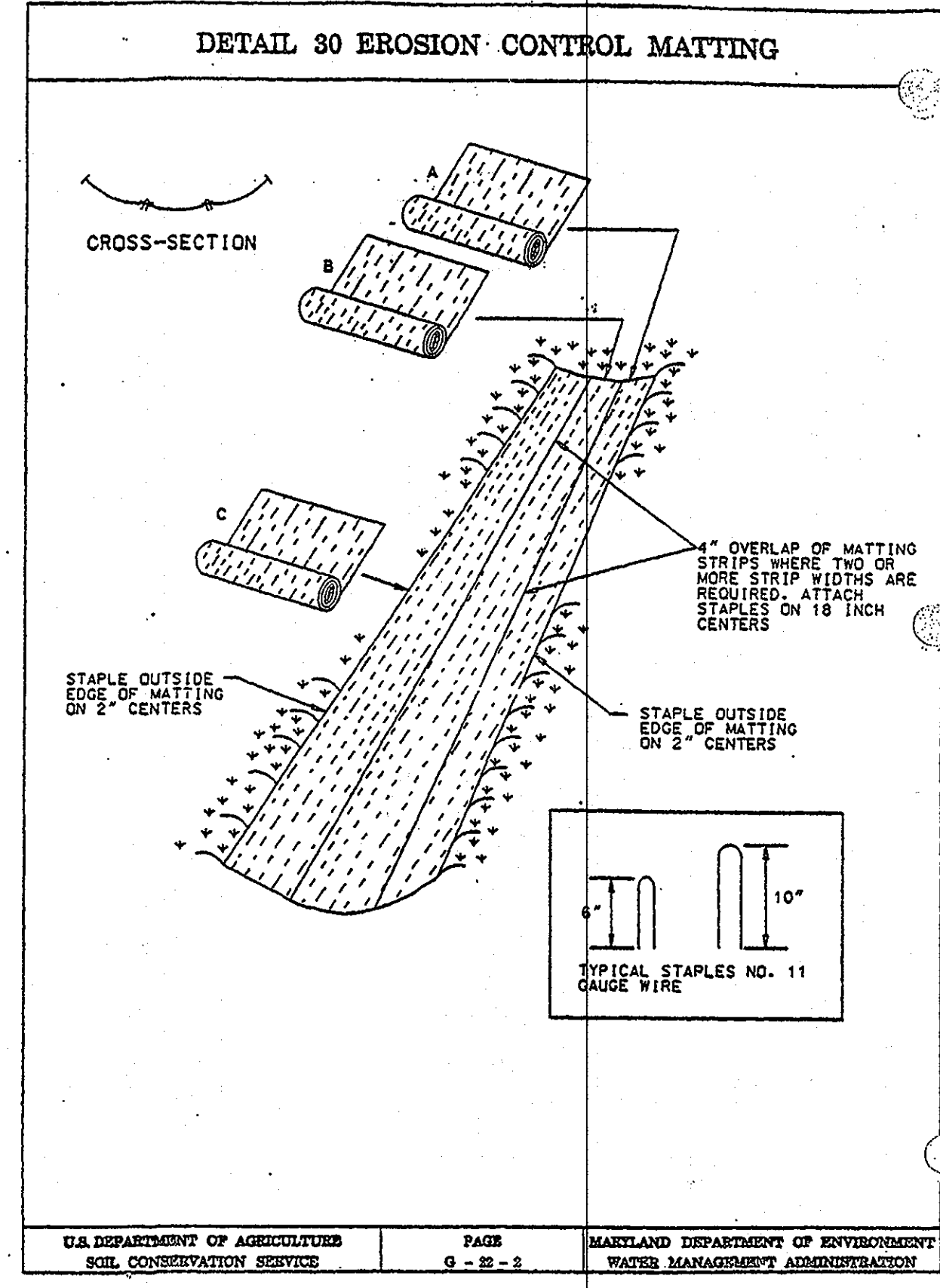
- DURATION SCHEDULE\***
- ESC INSTALLATION & BYPASS INSTALLATION 10 DAYS
  - GRADING AND EARTHWORK OPERATIONS 20 DAYS
  - UTILITIES (STORM DRAINAGE) 15 DAYS
  - STONE BASE 7 DAYS
  - SWM FACILITIES INSTALLATION 15 DAYS
  - SITE AMENITIES INSTALLATION (FENCE, ETC) 15 DAYS
  - PAVING 5 DAYS
  - SYNTHETIC TURF INSTALLATION 15 DAYS
  - PERMANENT STABILIZATION 5 DAYS
- \* SOME TASKS MAY OVERLAP. TOTAL CONSTRUCTION DURATION IS ESTIMATED AT 90 DAYS

- PERMANENT STABILIZATION**
- A. SEED MIXTURES
- GENERAL USE
    - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
    - ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
    - FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
    - FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (450 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
  - TURFGRASS MIXTURES
    - AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
    - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
      - KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1 TO 2 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      - KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      - TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
      - KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREAS. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

PERMANENT SEEDING TABLE B.3

MIX NO.	SEED MIXTURE (HARDINESS ZONE 6b ) (FROM TABLE B.3)		FERTILIZER RATE (10-20-20)			LIME RATE	
	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	N	P2O5		K2O
9	TALL FESCUE(50%)	60	3/1-5/15	45 lb/ac	90 lb/ac	90 lb/ac	2 tons/ac
	PERENNIAL RYEGRASS(15%)	20	8/1-10/15	(1.0 lb/ 1000 sf)	(2 lb/ 1000 sf)	(2 lb/ 1000 sf)	(90 lb/ 1000 sf)
	KENTUCKY BLUEGRASS(25%)	40		1000 sf	1000 sf	1000 sf	1000 sf

APPLIES TO EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.  
SEEDING OR SODDING FOR PLAYING FIELDS SHALL BE PER SPECIFICATIONS ALL OTHER AREAS SHALL RECEIVE THE ABOVE PERMANENT SEED MIX



- EROSION CONTROL MATTING**
- Construction Specifications
- Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
  - Staple the 4" overlap in the channel center using an 18" spacing between staples.
  - Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
  - Staples shall be placed 2' apart with 4 rows for each strip. 2 outer rows, and 2 alternating rows down the center.
  - Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", ship-lap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
  - The discharge end of the matting liner should be similarly secured with 2 double rows of staples.
- Note: If flow will enter from the edge of the matting then the area effected by the flow must be key-in.

- GENERAL SPECIFICATIONS
  - CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
  - SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 1/4 INCH, PLUS OR MINUS 1/8 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
  - STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
  - SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
  - SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
- SOD INSTALLATION
  - DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
  - LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
  - WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
  - WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
- SOD MAINTENANCE
  - IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
  - AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
  - DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

OWNER / APPLICANT  
GLENELG COUNTRY SCHOOL  
12793 FOLLY QUARTER ROAD  
ELLCOTT CITY, MD 21042  
TEL: 410-531-8600

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 6/11/13
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 6/17/13
DIRECTOR	DATE 6/17/13

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No. 12548  
Expiration Date 7-29-13

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT  
DATE 6/28/13

HURON CONSULTING  
A Division of Engineering, Inc.  
11000 Old Orchard Road  
Suite 230  
Germantown, MD, 20874  
Phone: (301) 582-0124  
Fax: (301) 582-0124  
www.huroncon.com

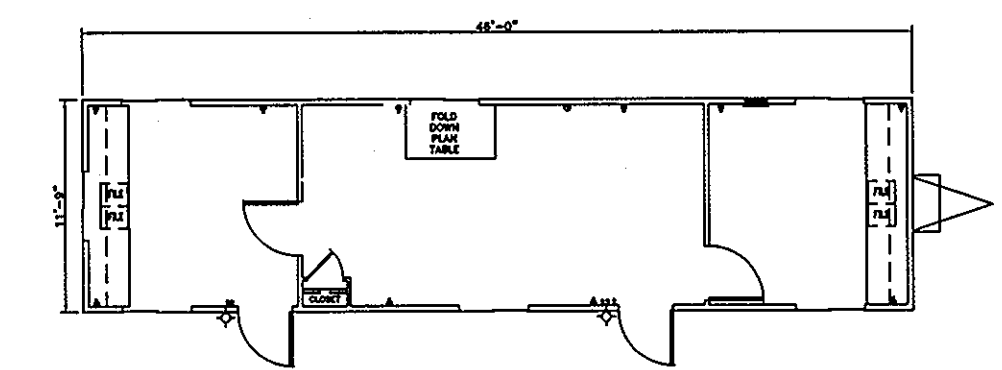
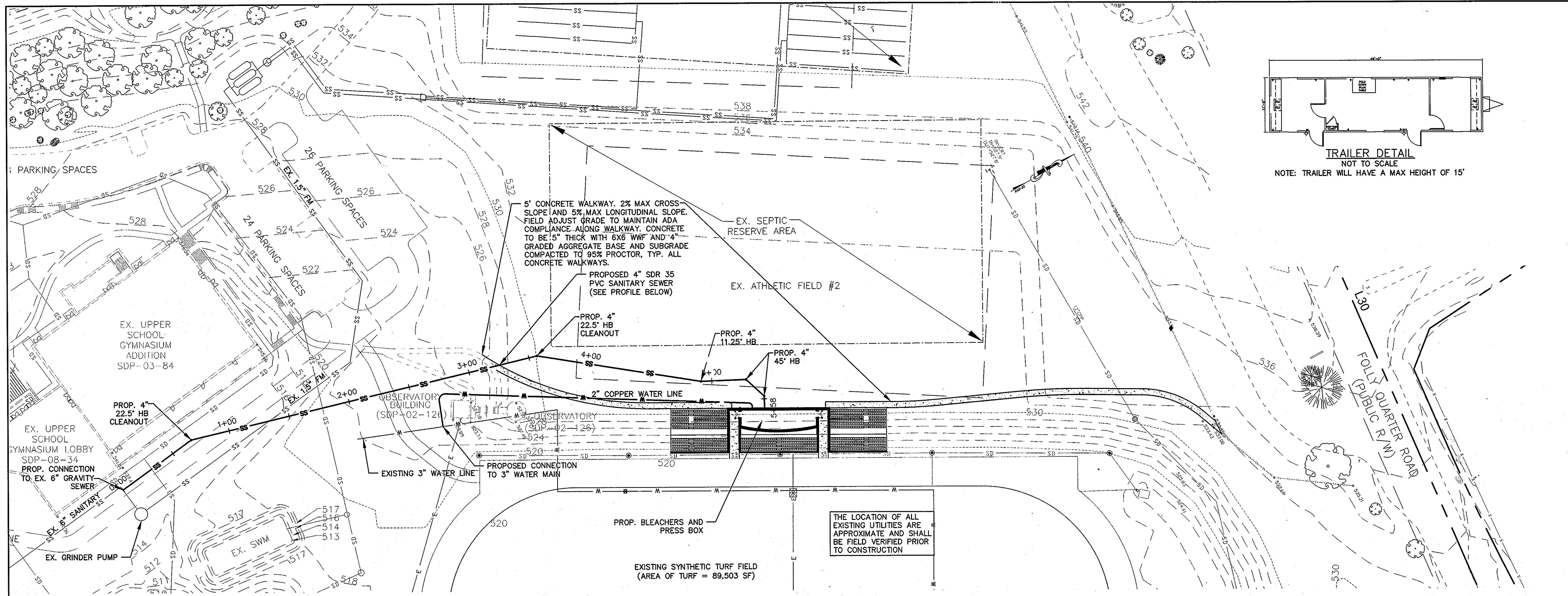
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5/26/13		

GLENELG COUNTRY SCHOOL  
12793 FOLLY QUARTER ROAD  
ELLCOTT CITY, MD 21042  
REVISED SHEET  
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

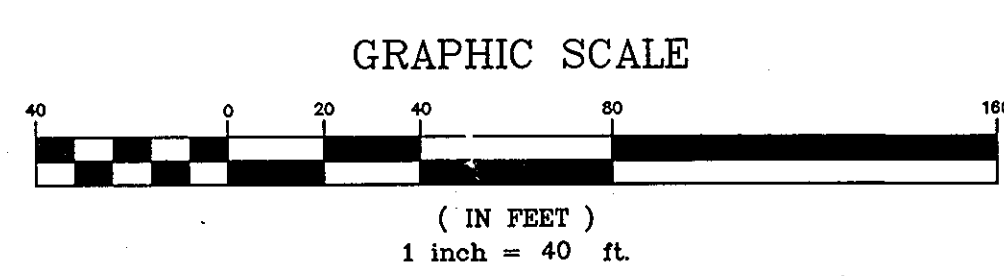
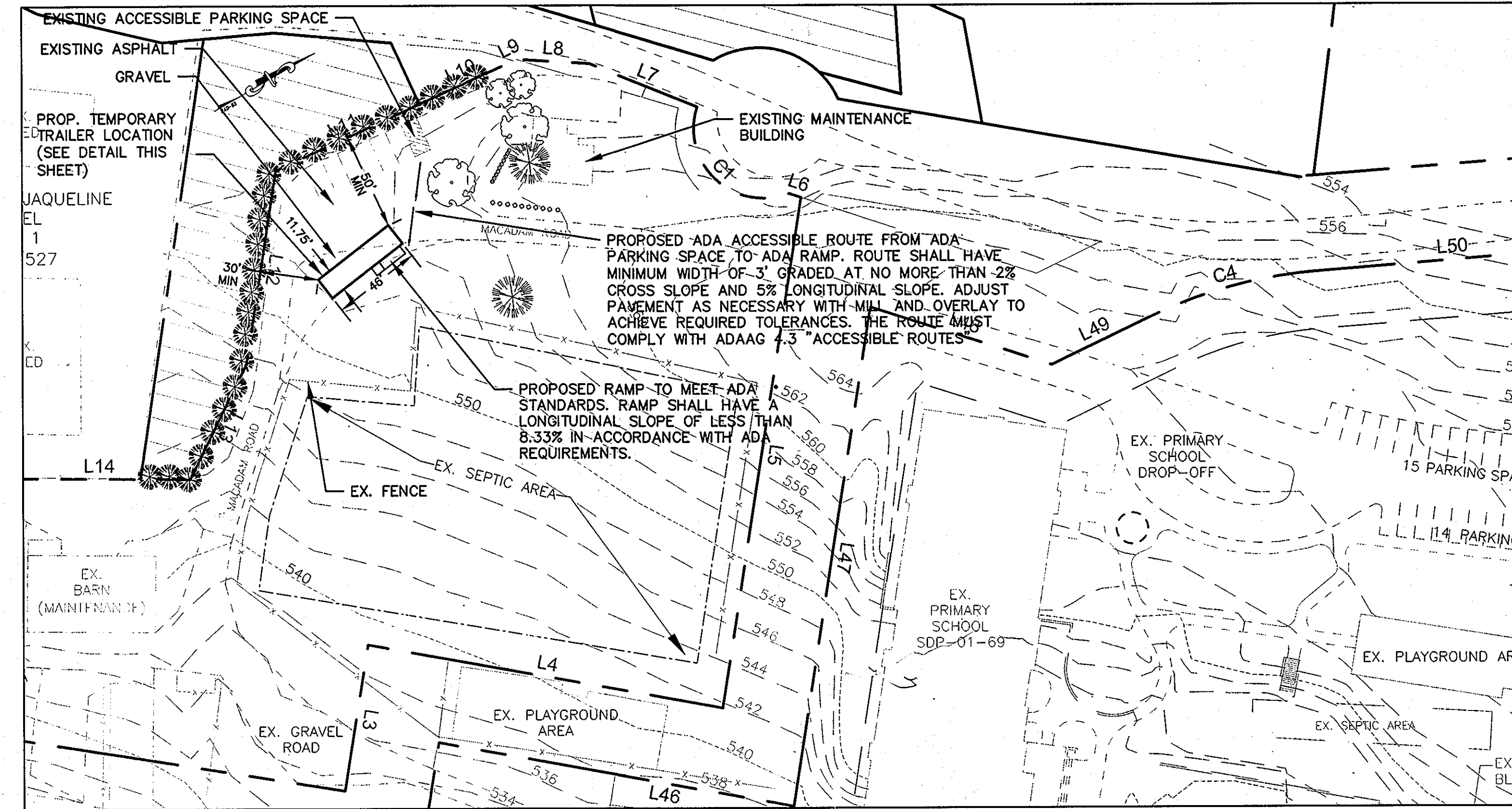
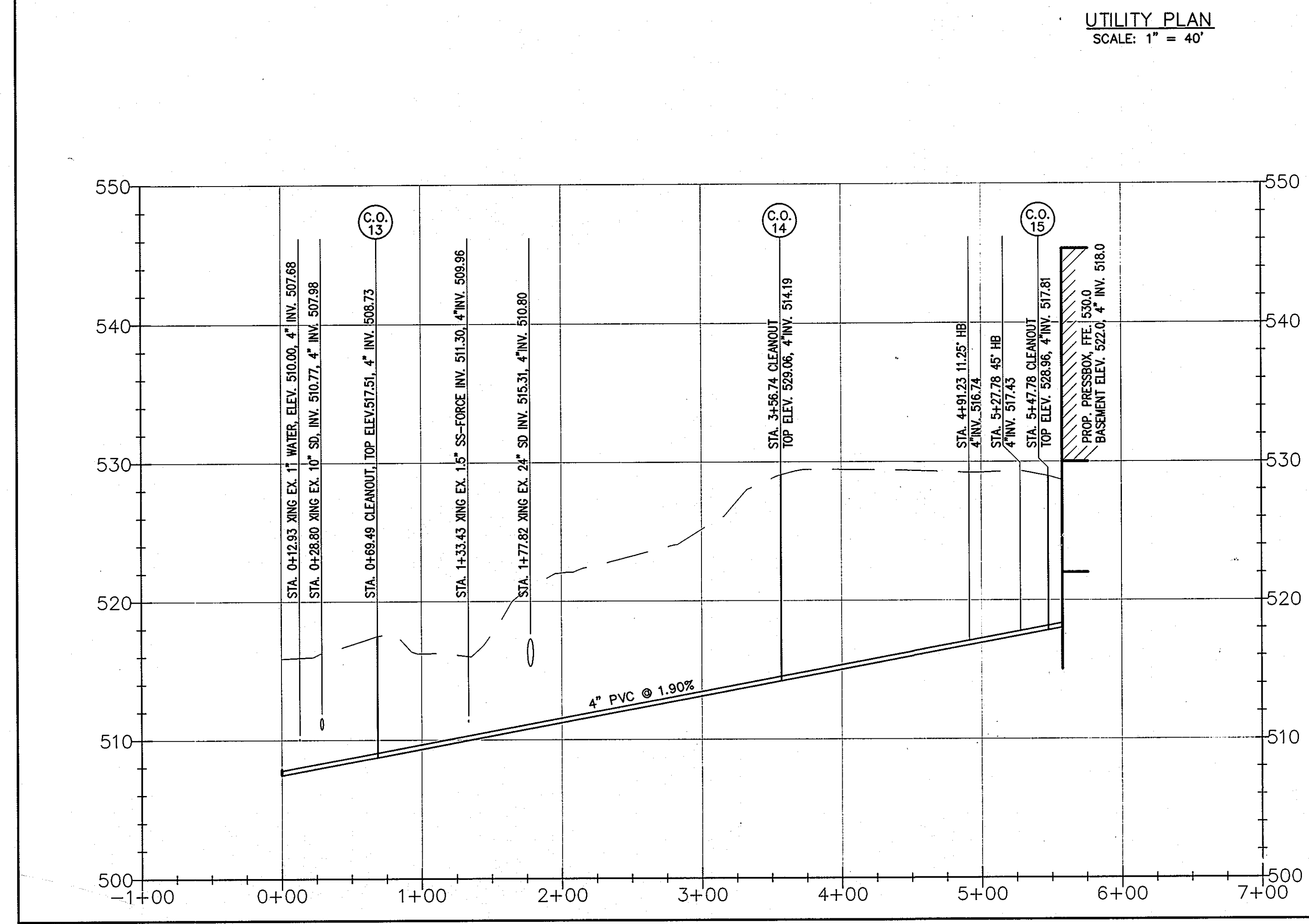
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HORIZONTAL: 1" = 30'  
VERTICAL: N/A

PROJECT NO.: 86860.00  
DRAWING NO.: C-411  
SHEET: 35 OF 37  
DATE: MARCH 2013

SDR-03-084



NOTE: TRAILER WILL HAVE A MAX HEIGHT OF 15'



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 31168

Expiration Date 11/2/2015

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

DIRECTOR

DATE 6/18/13

DATE 6/18/13

DATE 6/21/13

**HURON CONSULTING**  
A Division of Neils Engineering, Inc.  
20410 CENTURY BLVD  
GERMANTOWN, MD, 20874  
PHONE: (301) 229-2010  
WWW.HURONCON.COM

DRW BY: SL  
CHK BY: JA  
APP BY: REH

REVISIONS

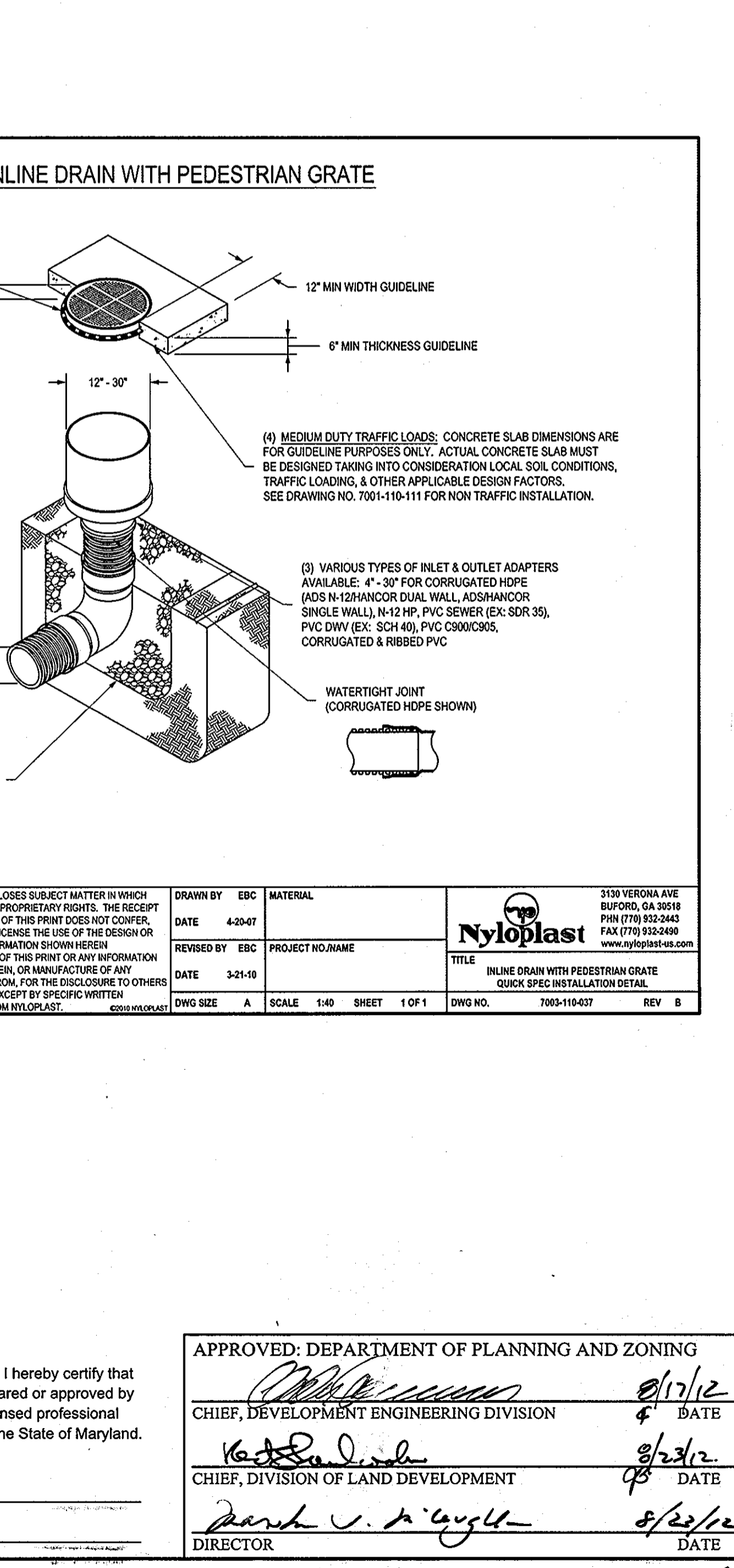
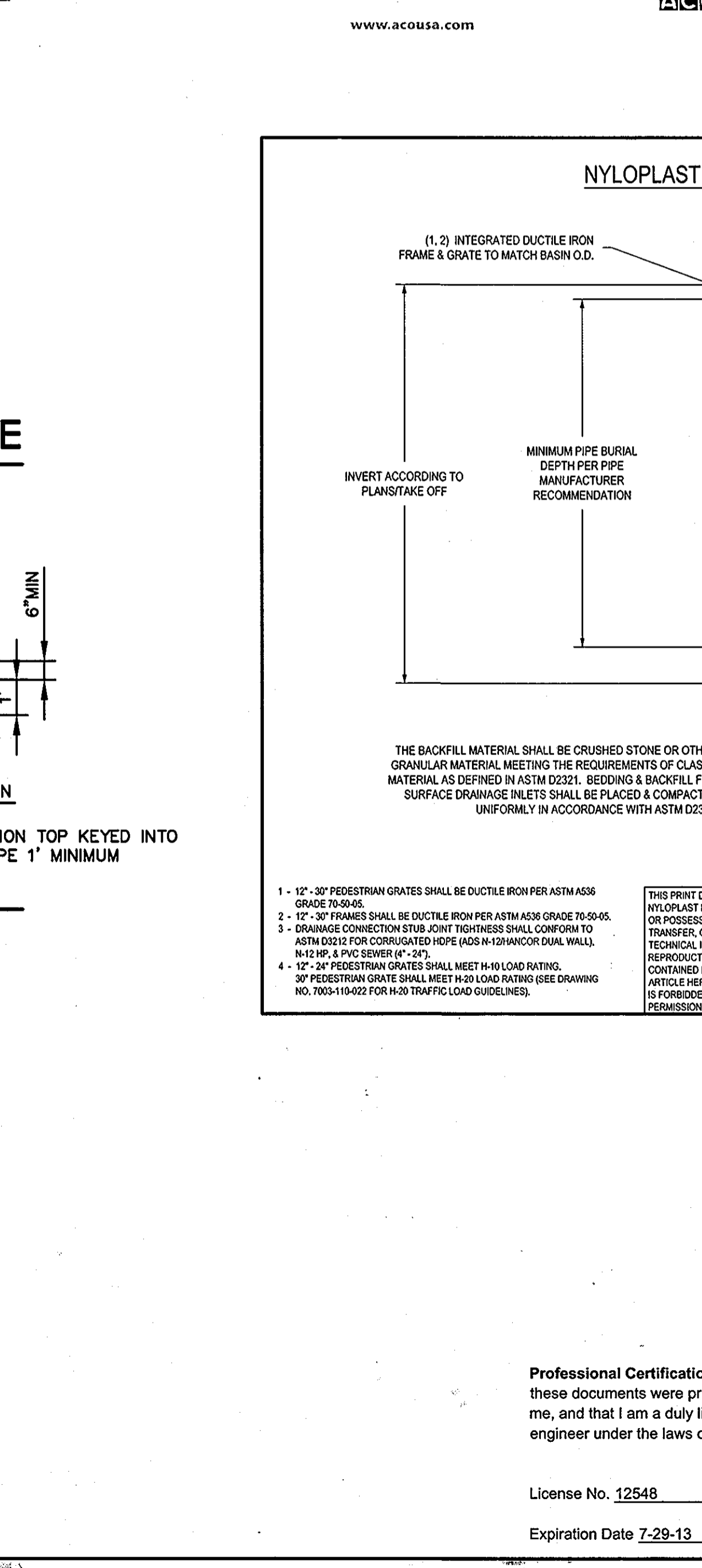
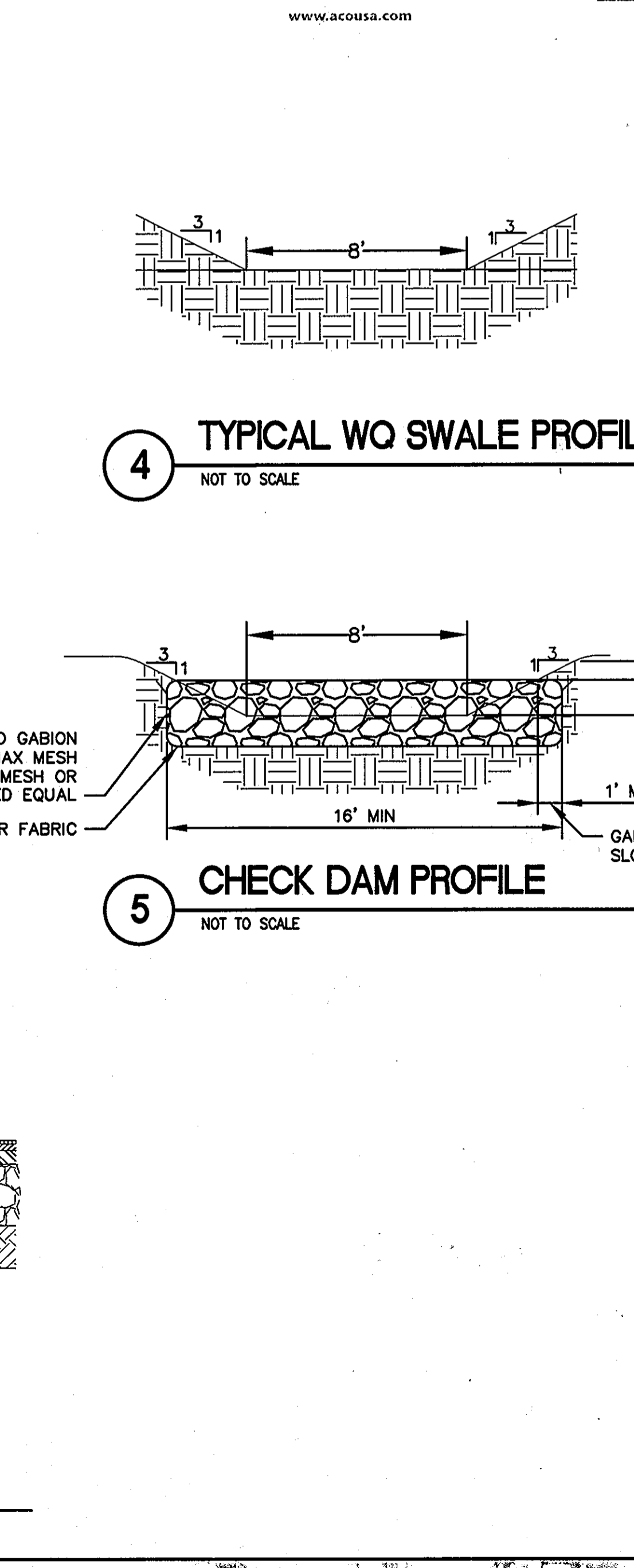
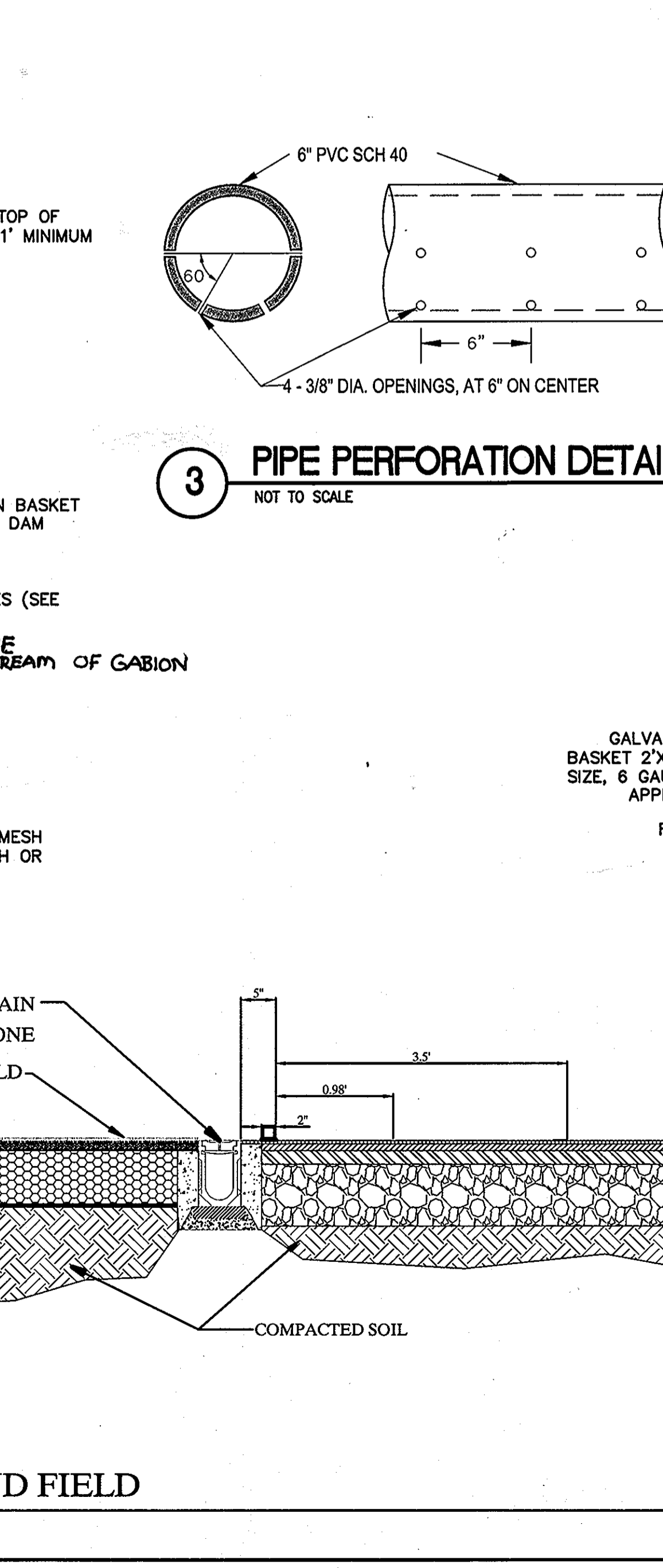
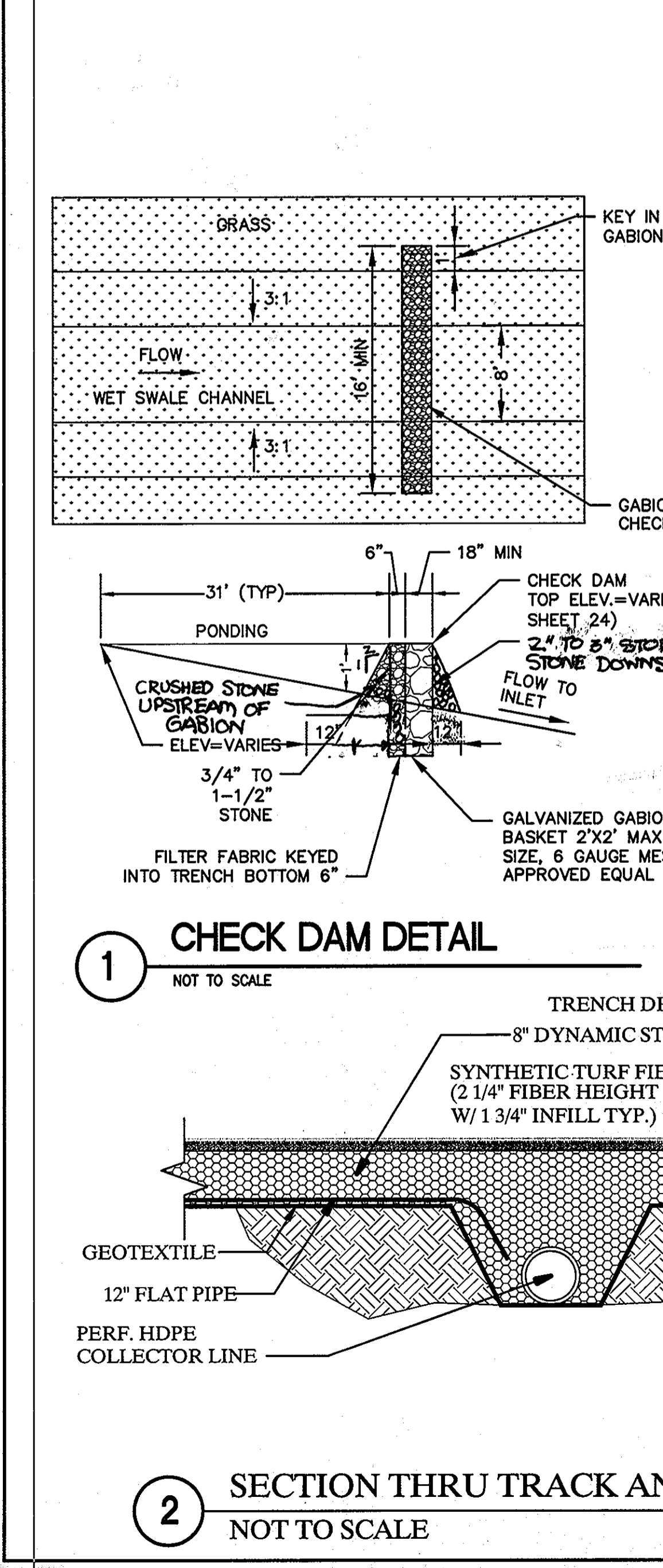
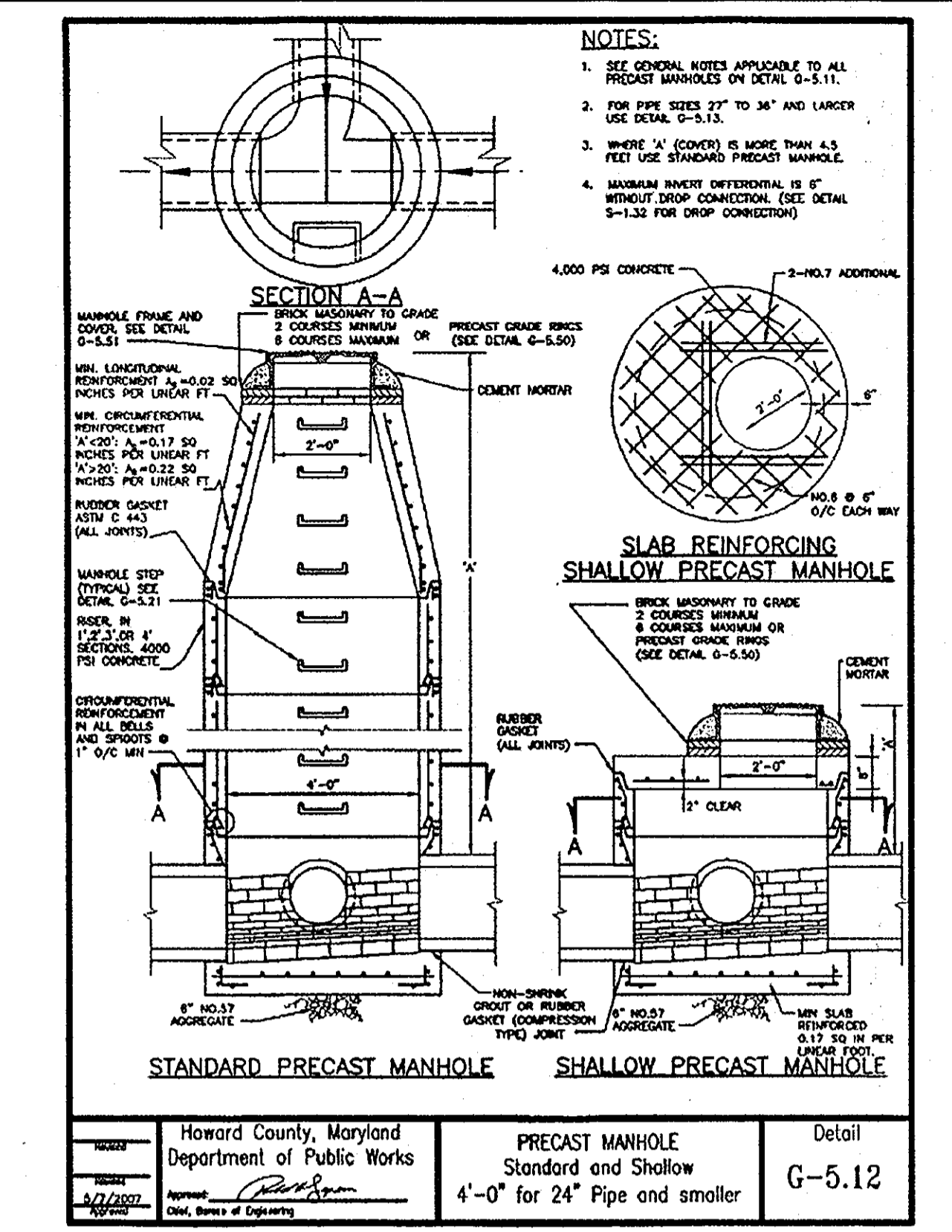
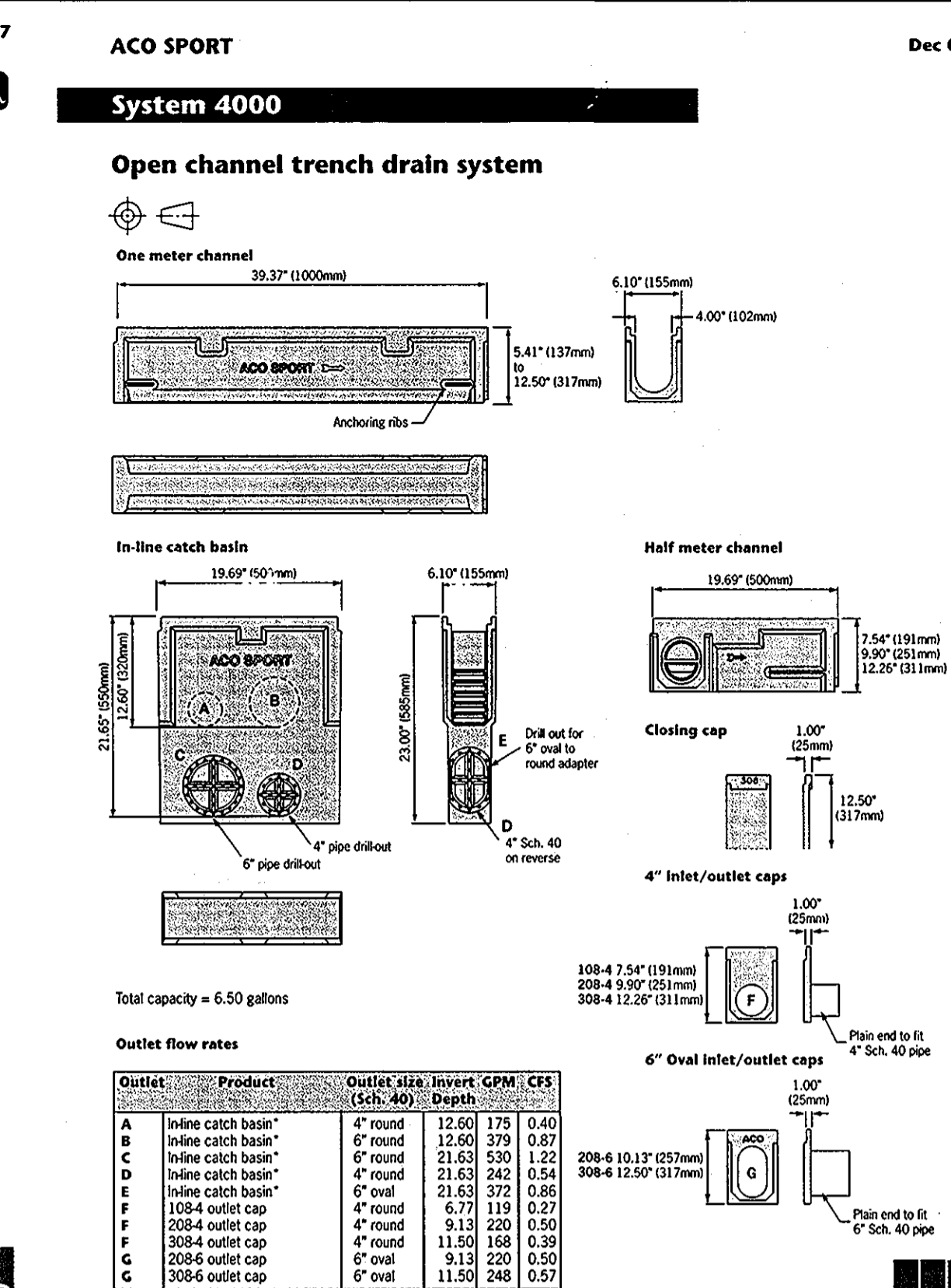
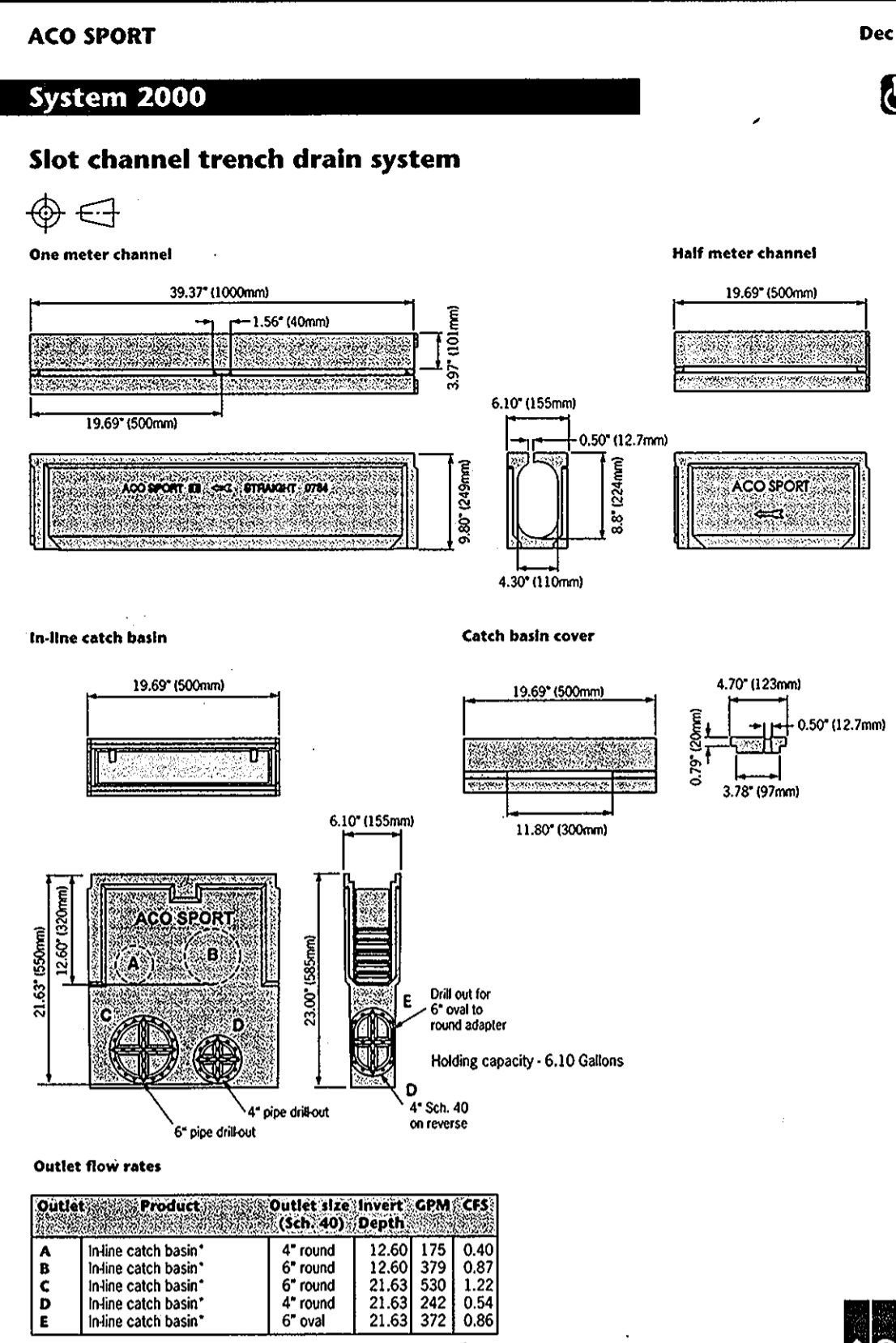
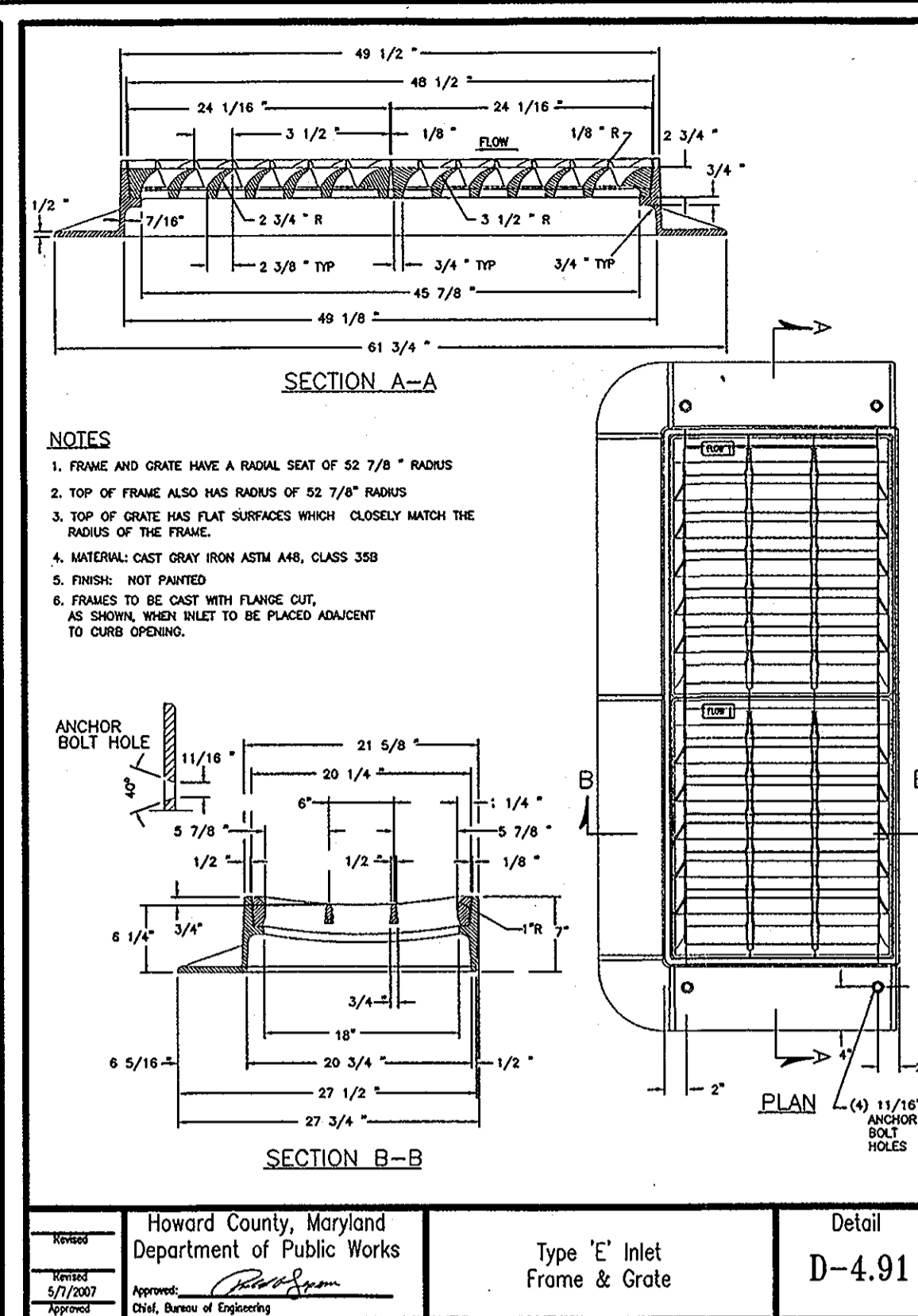
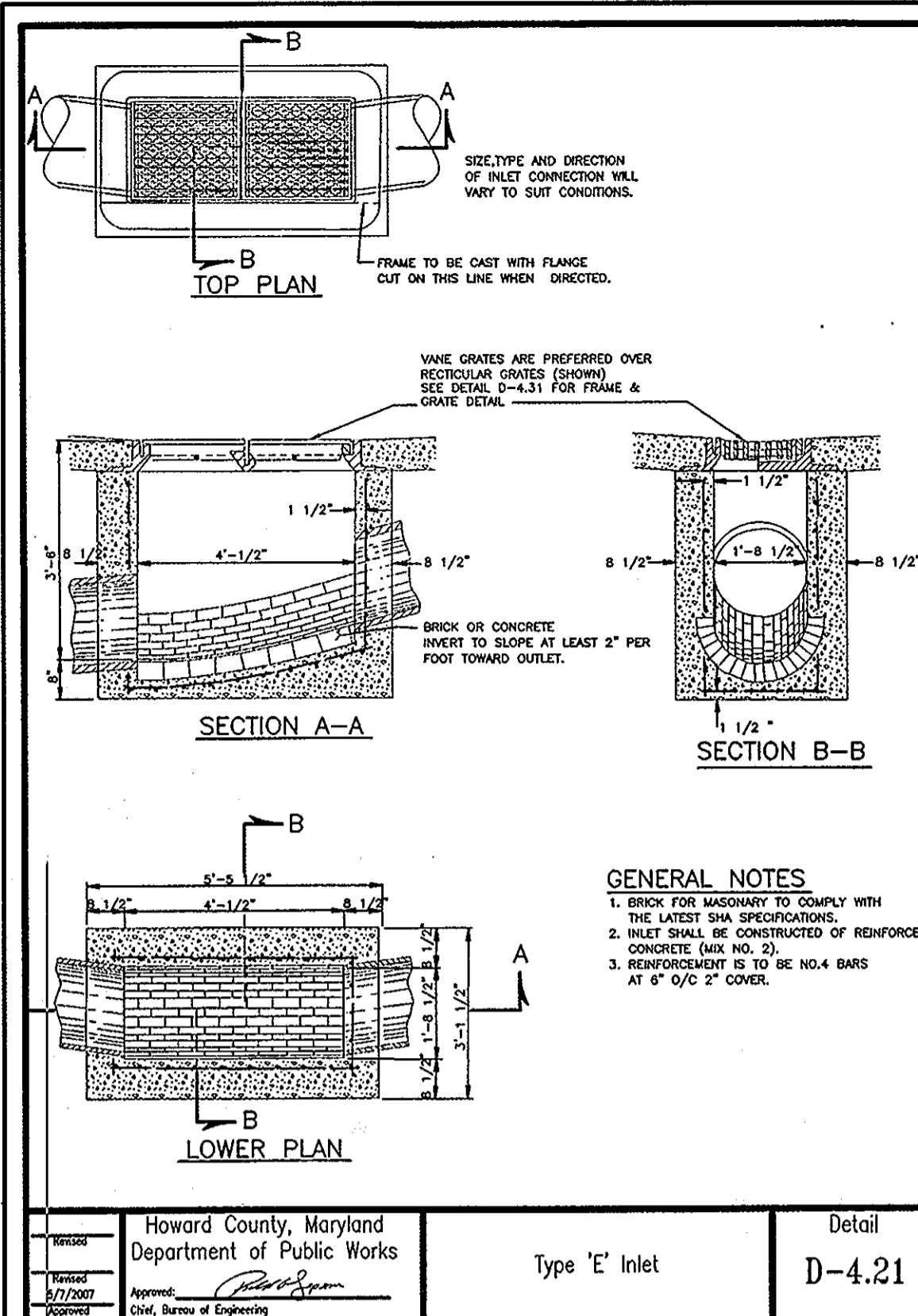
DATE	DESCRIPTION
1-5-27-13	REVISED PER COUNTY COMMENTS ON TEMPORARY TRAILER

**GLENELG COUNTRY SCHOOL**  
12793 FOLLY QUARTER ROAD  
ELLICOTT CITY, MD 21042

SCALE  
HORIZONTAL: AS SHOWN  
VERTICAL: N/A

PROJECT NO.: 86860.00  
DRAWING NO.: C-501  
SHEET: 36 OF 37  
DATE: MARCH 2013

SDP-03-084



**HURON CONSULTING**  
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FAX: (301) 528-0128  
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**STATE OF MARYLAND**  
RICHARD W. BURNETT  
PROFESSIONAL ENGINEER  
DRW BY: LIA  
CHK BY: LIA  
APP BY: REH

**REVISIONS**

NO.	DATE	DESCRIPTION

**GLENELG COUNTRY SCHOOL**  
12793 FOLLY QUARTER ROAD  
ELLICOTT CITY, MD 21042

**REVISOR SHEET**  
STORMWATER MANAGEMENT AND DRAINAGE DETAILS

SCALE:  
HORIZONTAL: N/A  
VERTICAL: N/A

PROJECT NO.: 900-101  
DRAWING NO.: C-310  
SHEET: 37 OF 37  
DATE: JULY 2012

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DIRECTOR

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No. 12548  
Expiration Date 7-29-13

DATE: 8/17/12  
DATE: 8/23/12  
DATE: 8/23/12