

BENCHMARKS:

HOWARD COUNTY GEODETIC CONTROL #02HD
ELEVATION: 746.299
CONCRETE MONUMENT SET @ EDGE OF ROAD, SOUTH WEST CORNER OF OLD FREDERICK RD. (RT. 99) & WATERSVILLE RD. EAST. APPROXIMATELY 96' SOUTH OF C OF RT. 99 & 1.0' OFF GUARD RAIL.

HOWARD COUNTY GEODETIC CONTROL #02HB
ELEVATION: 736.511
CONCRETE MONUMENT SET 3.1' FROM SOUTHERN EDGE OF OLD FREDERICK RD. APPROXIMATELY 1/2 MILE EAST OF WATERSVILLE RD. EAST. LOCATED 40.3' FROM TELEPHONE POLE MARKED P&E #F7852, 6.2' FROM FENCE CORNER.

- GENERAL NOTES:
1. THE SUBJECT PROPERTY IS ZONED RC-DEO. ADJOINING ZONING IS RR (RURAL RESIDENTIAL); RC-DEO
2. TOTAL AREA OF PROPERTY: 43.7742 AC ± 14.2303
3. DEED REFERENCE: LIBER 95+ FOLIO 300 9597/266
4. THE EXISTING RELIGIOUS FACILITY IS SERVED BY PRIVATE WATER AND SEWER.
5. LOCAL COMMUNITY: MT-AIRY LISBON
6. BUILDING AND USE SETBACKS PER SECTION 105.E.4 OF THE HOWARD COUNTY ZONING REGULATION.

- 7. COMPLIANCE WITH CONDITIONAL USE PER SECTION 131.N.17 FOR A PRIVATE ACADEMIC SCHOOL OF THE HOWARD COUNTY ZONING REGULATIONS.
A. MINIMUM LOT SIZE: (100 PUPILS/AC.)
PUPILS PROPOSED: 280 STUDENTS PER SESSION, 480 1423
MAXIMUM PERMITTED = 100 PUPILS X 43.7742 AC. = 4377 PUPILS
8. PARKING REQUIREMENTS PER SECTION 133 OF THE HOWARD COUNTY ZONING REGULATIONS.
A. PARKING FOR RELIGIOUS FACILITY (EXISTING FACILITY):
1 SPA / 3 SEATS = 386 SEATS / 3 = 127 SPACES 167
B. PARKING FOR PRIVATE ACADEMIC SCHOOL:
1 SPA / 6 STUDENTS = 280 STUDENTS / 6 = 47 SPACES
C. PARSONAGE: 2 SPACES
D. PARKING SPACES REQUIRED: 176 SPACES 167 + 2 = 169 (FOR MOST INTENSIVE PARKING REQUIREMENT)
E. SPACES PROVIDED: 244 TOTAL (INCLUDES 10 HANDICAP SPACES, 2 SPACES FOR PARSONAGES)
281: 1 garage, and 1 exterior space.

- 9. COMPLIANCE WITH CONDITIONAL USE PER SECTION 131.N.45 (RELIGIOUS ACTIVITIES) OF THE HOWARD COUNTY ZONING REGULATIONS.
A. PERCENTAGE OF OPEN SPACE WITHIN THE BUILDING ENVELOPE: (20% REQUIRED)
1. AREA OF BUILDING ENVELOPE: 0.75± ACRES
2. 20% OPEN SPACE REQUIREMENT: 2.75± ACRES
3. OPEN SPACE PROVIDED: 75.9% (10.45± ACRES)
B. HEIGHT: EXISTING STRUCTURES DO NOT EXCEED 32'. PROPOSED STRUCTURES DO NOT EXCEED 34' (MEAN HEIGHT).

- 10. COURSES AND DISTANCES OF OUTLINE BOUNDARY LINES TAKEN FROM A BOUNDARY SURVEY. PREPARED BY RAYMOND DAY, PLS, JUNE 2003 THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RUN SURVEY WITH TWO FT. CONTOUR INTERVALS PREPARED BY MARYLAND LAND DESIGN INC. DATED OCTOBER, 2004.
11. THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RUN SURVEY WITH TWO FT. CONTOUR INTERVALS PREPARED BY MARYLAND LAND DESIGN INC. DATED JAN, 2004.
12. EXISTING USE: RELIGIOUS FACILITY AND SCHOOL.
13. PROPOSED USE: THE PROPOSED USE IS FOR A TWO STORY PRIVATE ACADEMIC SCHOOL ADDITION AND RELIGIOUS FACILITY ADDITION WITH BASEMENT, PARKING EXPANSION, LANDSCAPING, AND STORM WATER MANAGEMENT FACILITIES.

- 14. PARKING FACILITIES WILL BE PAVED IN ASPHALT WITH TWO ASPHALT CONNECTIONS TO OLD FREDERICK RD.
15. ADJOINING USES INCLUDE SINGLE FAMILY DETACHED HOMES TO THE WEST, AGRICULTURAL USE TO THE EAST, COMMERCIAL USE TO THE NORTH AND INTERSTATE 70 TO THE SOUTH.
16. WATER AND SANITARY SEWER IS PROPOSED TO BE SERVED BY EXISTING WELL AND EXPANSION OF SEPTIC FACILITIES.
17. OLD FREDERICK ROAD IS A PUBLIC ROAD OWNED AND MAINTAINED BY HOWARD COUNTY.
18. EXTERIOR BUILDING MATERIALS ARE PROPOSED TO BE MASONRY VENEER, ALUMINUM TRIM, AND ASPHALT SHINGLE ROOF, TO MATCH EXISTING BUILDING MATERIALS.

- 19. ALL PROPOSED OUTDOOR LIGHTING WILL BE IN ACCORDANCE WITH SECTION 134 OF THE ZONING REGULATIONS FOR HOWARD COUNTY AND SHALL BE DIRECTED AWAY FROM ADJOINING RESIDENTIAL PROPERTY AND PUBLIC ROADS. SEE SHEET 5 FOR DETAILS.
20. IN ACCORDANCE WITH SECTION 16.1202 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL, FOREST CONSERVATION OBLIGATIONS FOR THIS SITE HAS BEEN MET BY AN AFFORESTATION EASEMENT OF 2.52 ACRES ON SITE.
21. LANDSCAPING FOR THIS SITE HAS BEEN PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. REQUIRED FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$ 64,050.00 FOR 149 SHADE TREES, 93 EVERGREEN TREES AND 180 SHRUBS.
22. APPLICABLE DPZ FILE REFERENCES:
CASE NO. BA-09-032C: CONDITIONAL USE TO INCREASE NUMBER OF STUDENTS FROM 280 TO 480.
CONDITIONAL USES FOR A STRUCTURE USED PRIMARILY FOR RELIGIOUS ACTIVITIES AND A PRIVATE SCHOOL. VARIANCES TO REDUCE THE REQUIRED 50' USE SETBACK FROM OLD FREDERICK ROAD TO 24 FEET FOR PARKING, AND THE 50' USE SETBACK FROM WATERSVILLE ROAD TO 25' FOR THE FUTURE SOCCER FIELD, AS APPROVED MAY 17, 2004.
CASE NO. BA-03-68W&V
CASE NO. 00-42-E - MODIFY CONDITION NO. 1 OF BA-99-28E FOR RELOCATION OF TWO PORTABLE CLASSROOMS. APPROVED FEB. 27, 2001.
CASE NO. BA-99-28E - SPECIAL EXCEPTION FOR ENLARGEMENT OF AN EXISTING RELIGIOUS FACILITY AND PRIVATE SCHOOL. APPROVED NOV. 23, 1999.
CASE NO. BA-98-22E - SPECIAL EXCEPTION TO ENLARGE AN EXISTING PRIVATE SCHOOL FACILITY BY ADDING THREE TEMPORARY CLASSROOM TRAILERS. APPROVED JUNE 16, 1998.
CASE NO. BA-90-18E - SPECIAL EXCEPTION TO ENLARGE AN EXISTING CHURCH & SCHOOL FACILITY. APPROVED SEPT. 4, 1990.
CASE NO. BA-79-19E - SPECIAL EXCEPTION FOR A RELIGIOUS FACILITY & PRIVATE SCHOOL. APPROVED JUNE 4, 1979.

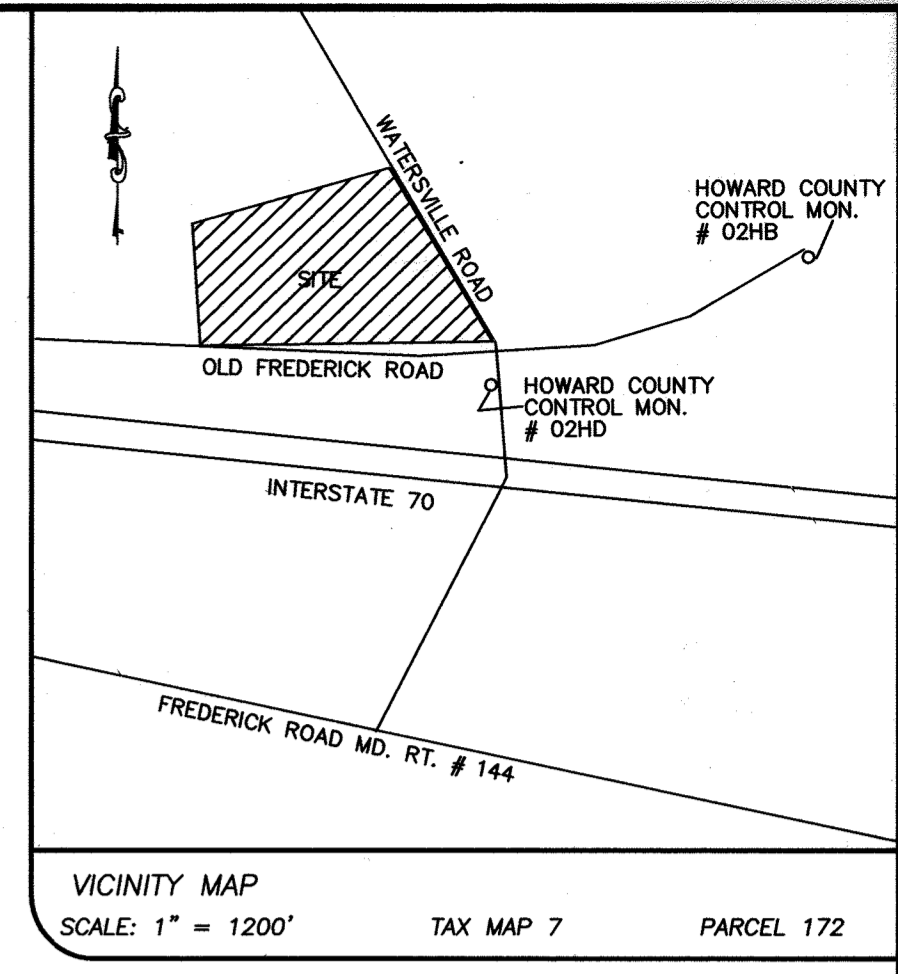
- 23. THIS PLAN CONFORMS TO THE 5TH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
24. NO CEMETERIES EXIST ON THIS SITE.
25. NO REMOVAL OF VEGETATIVE COVER, CLEARING, GRADING OR CONSTRUCTION OR DUMPING IS PERMITTED WITHIN THE WETLANDS 25' WETLANDS BUFFER, 50' STREAM/BUFFER OR THE FOREST BUFFERS AND FOREST CONSERVATION EASEMENT AREAS.
26. GROUNDWATER APPROPRIATION PERMIT NUMBER: HQ19290005
27. THE TRAFFIC STUDY FOR THIS PROJECT WAS PERFORMED BY LEE CUNNINGHAM AND ASSOCIATES DATED APRIL, 2004 AND APPROVED ON JUNE 24, 2004 AN UPDATED STUDY WAS PREPARED BY TRAFFIC CONCEPTS, INC. FEB. 2006 & APPROVED JULY 31, 2006.
28. STORMWATER MANAGEMENT COMPUTATIONS APPROVED WITH THIS PROJECT INCLUDE A SURFACE SAND FILTER AND A MICROPOOL EXTENDED DETENTION POND AS SHOWN HEREON. THE STORMWATER MANAGEMENT FACILITIES ARE PRIVATELY OWNED & MAINTAINED.
29. SURETY IN THE AMOUNT OF \$ 54,885.60 HAS BEEN POSTED AS A PART OF THE DEVELOPERS AGREEMENT FOR THE 2.52 ACRE ONSITE AFFORESTATION FOREST CONSERVATION EASEMENT. (SDP-04-150 FC P.N. 17634)
30. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 02BD AND 02HB WERE USED FOR THIS PROJECT.

MARYLAND LAND DESIGN, INC. CONSULTING ENGINEERS AND LAND PLANNERS
MARYLAND OFFICE: 2007 MEADOW DRIVE, WESTMINSTER, MARYLAND 21158
PENNSYLVANIA OFFICE: 585 McALLISTER STREET, HANOVER, PENNSYLVANIA 17331
REVISIONS: NO. DATE DESCRIPTION
1. 5-20-06 ADDED SHEET 18A
2. 10/17/06 REVISE PROpane TANK - see sheet 3
3. 10/19/06 ADDED 2ND FLOOR BUILDING ADDITION AND REVISED SEPTIC DESIGN
4. 6/10/10 RELOCATE PORTABLES EP-2, EP-4

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

SDP 04-150
SITE DEVELOPMENT PLANS

for
MT. AIRY BIBLE CHURCH
BUILDING ADDITION
HOWARD COUNTY, MARYLAND



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. 22390 Expiration Date: 6-30-23

PURPOSE OF REVISED SITE DEVELOPMENT PLAN (REVISION #7):
TO INCREASE STUDENT POPULATION FROM 280 TO 480 STUDENTS AND TO UPGRADE PRIVATE SEWAGE DISPOSAL SYSTEM ACCORDINGLY IN ACCORDANCE WITH HEARING EXAMINER CASE NO. BA-09-032C; TO UPDATE EX. PARKING LAYOUT AND COUNT; TO UPDATE EX. SITE LIGHTS HEIGHT INFORMATION.
NOTE: SUPPLEMENTAL COMPLETE DETAILED SET OF PRIVATE SEWAGE DISPOSAL SYSTEM UPGRADE PLANS IS KEPT BY HOWARD COUNTY HEALTH DEPT.
REVISION #7 BY KCW ENGINEERING TECHNOLOGIES, INC.

INDEX OF SHEETS
SHEET 1: TITLE SHEET
SHEET 2: EXISTING CONDITIONS AND DEMOLITION PLAN
SHEET 3: SITE PLAN
SHEET 4: GRADING, STORMWATER MANAGEMENT & SEDIMENT CONTROL PLAN
SHEET 5: MISCELLANEOUS DETAILS
SHEET 6: PRIVATE STORMWATER MANAGEMENT FACILITIES DETAILS
SHEET 7: PRIVATE STORMWATER MANAGEMENT PROFILES & DETAILS
SHEET 8: DRAINAGE AREA MAPS
SHEET 9: STORM DRAIN PROFILES AND DETAILS
SHEET 10: STORM DRAIN PROFILES AND BUILDING PROFILES
SHEET 11: OLD FREDERICK ROAD IMPROVEMENT PLAN
SHEET 12: HANDICAP ACCESS PLAN
SHEET 13: LANDSCAPE PLAN
SHEET 14: LANDSCAPE DETAILS
SHEET 15: FOREST STAND DELINEATION
SHEET 16: FOREST CONSERVATION PLAN
SHEET 17: PLAN - PRIVATE SEWAGE SYSTEM
SHEET 18: SEWAGE DISPOSAL SYSTEM DETAILS
SHEET 19: DETAILS - PRIVATE SEWAGE SYSTEM FOR PROPOSED BLDG. ADDITION
SHEET 20: PRIVATE SEWAGE DISPOSAL SYSTEM UPGRADE PLAN
SHEET 21: CONCRETE PATHWAY AND STAIR PLAN
SHEET 22: PROPOSED BUILDING ADDITION

- 31. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
32. THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY CAMPBELL NOLAN AND ASSOCIATES, INC. DATED OCT, 2003 AND WAS APPROVED ON JUNE 24, 2004.
33. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
34. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
35. THERE IS NO FLOODPLAIN ON THE SITE.
36. THE PLAN OF FOREST CONSERVATION EASEMENT FOR THIS PROJECT, SDP-04-150FC, HAS BEEN RECORDED AS PLAT NO. 17634
37. MDE STATE GROUNDWATER DISCHARGE PERMIT NO. 10-DP-3691 HAS BEEN ISSUED ON JUNE 1, 2011.

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY 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. 17740, EXPIRATION DATE 4/1/12.

LANDSCAPE SURETY BOND
SHRUBS: 180 SHRUBS @ \$ 30.00 EA. = \$ 5400.00
SHADE TREES: 149 TREES @ \$ 300.00 EA. = \$ 44,700.00
EVERGREEN TREES: 93 TREES @ \$ 150.00 EA. = \$ 13,950.00

- CONSTRUCTION NOTES:
1. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST 24 HOURS PRIOR TO STARTING ANY OF THE WORK SHOWN HEREON.
2. THE CONTRACTOR SHALL NOTE THAT IN CASE OF DISCREPANCY BETWEEN ANY SCALED DIMENSIONS AND THE FIGURED DIMENSIONS SHOWN ON THESE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN.
3. CONTRACTOR SHALL MEET ALL EXISTING IMPROVEMENTS SMOOTHLY FOR LINE, GRADE, AND FINISH.
4. ALL WORK SHOWN ON THESE PLANS SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS AND OF THE MARYLAND STATE HIGHWAY ADMINISTRATION AND THE HOWARD COUNTY PLUMBING CODE. UNLESS OTHERWISE NOTED.
5. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THIS PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO PERFORM SUCH WORK. THE COST OF SUCH WORK SHALL BE INCLUDED IN THE BASE BID.
6. THE CONTRACTOR SHALL INSPECT THE SITE TO DETERMINE IF ANY TREES, PAVING, ETC. ARE TO BE REMOVED PRIOR TO PLACING A BID ON SUCH ITEMS.
7. THE LOCATIONS OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE LOCATIONS ARE TAKEN FROM EXISTING RECORDS AND DO NOT REPRESENT FIELD-VERIFIED LOCATIONS. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 A MINIMUM OF 5 WORKING DAYS PRIOR TO DIGGING. THE CONTRACTOR SHALL CONFIRM TO HIS OWN SATISFACTION THE LOCATION OF ALL UTILITIES PRIOR TO ANY EXCAVATION OR PLACEMENT OF MATERIALS. IF ANY CONFLICT IS FOUND BETWEEN UNDERGROUND UTILITIES AND THE PROPOSED LOCATION OF ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT MARYLAND LAND DESIGN, INC. AND THE OWNER OF THE UTILITY IMMEDIATELY. ANY DAMAGE OR DISRUPTION OF SERVICE SHALL BE AT THE EXPENSE OF THE CONTRACTOR. RELOCATION OF ANY EXISTING UTILITIES, SHALL BE AT THE EXPENSE OF THE OWNER. THE CONTRACTOR SHALL COORDINATE RELOCATION OF THESE FACILITIES, IF NECESSARY.
8. CONTRACTOR SHALL PROTECT ALL EXISTING TREES OUTSIDE THE LIMIT OF DISTURBANCE AT ALL TIMES DURING CONSTRUCTION.
9. CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS NOT SCHEDULED FOR REMOVAL OR DEMOLITION COST OF REPAIR TO EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE BASE BID. ALL EXISTING SITE FEATURES NOT BEING RETAINED SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED LOCATION. ANY DAMAGE TO OFF SITE ROADS, RIGHTS OF WAY, OR ADJACENT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT THE EXPENSE OF THE CONTRACTOR.
10. THE CONTRACTOR SHALL CLEAR THE PROJECT SITE OF ALL TREES, PAVING, STRUCTURES, ETC. WITHIN THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED ON THE PLAN.
11. ONLY SUITABLE MATERIAL SHALL BE USED AS FILL AND ALL FILL SHALL BE PLACED AND COMPACTED AS SPECIFIED IN THE SOILS REPORT PREPARED FOR THIS SITE OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER. ALL 2:1 SLOPES SHOWN HEREON, EXCEPTING THOSE ASSOCIATED WITH LANDSCAPE BERMING, ALL GRADING UNDER PROPOSED PAVING, AND ALL FILL AND COMPACTION SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.
12. CONTRACTOR SHALL PROVIDE MINIMUM 4 FOOT BENCH AT EDGE OF PAVING IN FILL AREAS. MAXIMUM SLOPE OF BENCH SHALL BE 4% (1/4 IN. PER FOOT).
13. MAXIMUM SLOPE SHALL BE 2 HORIZONTALLY TO 1 VERTICALLY.
14. CONTRACTOR SHALL PLACE 4" MINIMUM TOPSOIL IN LANDSCAPE AREAS. TOPSOIL SHALL BE APPROVED BY LANDSCAPE ARCHITECT.
15. CONTRACTOR SHALL PLACE A WITNESS POST AT THE TERMINUS OF ALL UTILITY STUBS.
16. UTILITIES INSTALLED SHALL RECEIVE FULL TRENCH COMPACTION.
17. CONTRACTOR SHALL PROVIDE A MINIMUM OF 1 FOOT OF PROTECTIVE FILL OVER STORM DRAIN PIPES DURING CONSTRUCTION.
18. ALL AREAS NOT BEING PAVED OR RECEIVING BUILDING COVERAGE SHALL BE STABILIZED IN ACCORDANCE WITH THE PLANS APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT.

FLOOR AREA COMPUTATIONS
EXISTING BUILDINGS TO REMAIN:
DESIGNATION DESCRIPTION NO. OF STORIES FLOOR AREA
EB#1S.F. FELLOWSHIP HALL 1 7295 S.F.
EB#2 CHURCH 2 7632 S.F.
EB#3 HOUSE 1+BASEMENT 2000 S.F.
TOTAL EXISTING FLOOR AREA TO REMAIN 16,927 S.F.
TOTAL EXISTING & TEMPORARY FLOOR AREA 20,287 S.F.
PROPOSED BUILDINGS
PB#1 ADDITION 3 34,874 S.F.
ADDITION 4 6,250 S.F.
TOTAL 40,124 S.F.
MISCELLANEOUS:
PROPOSED UNDERGROUND SPRINKLER WATER STORAGE TANK
PROPOSED GROUND PROPANE TANKS ABOVE

EXISTING TEMPORARY BUILDINGS:
EP#1 PORTABLE CLASSROOM 1 700 S.F.
EP#2 PORTABLE CLASSROOM 1 700 S.F.
EP#3 PORTABLE CLASSROOM 1 700 S.F.
EP#4 PORTABLE CLASSROOM 1 630 S.F.
EP#5 PORTABLE CLASSROOM 1 630 S.F.
TOTAL TEMPORARY FLOOR AREA 3,360 S.F.
7.8.20 ADD CONCRETE PATHWAY + STAIR, ADD SHEET 21 TO SET.
11.1.21 ADD PROPOSED BUILDING ADDITION AND ADD SHEET 22 TO SET.

ADDRESS CHART
PARCEL NO. STREET ADDRESS
172 16700 OLD FREDERICK ROAD
SUBDIVISION NAME SECTION NAME PARCEL #
N/A N/A 172
PLAT # 266 BLOCK # 3 ZONE RC-DEO TAX MAP 7 ELECT. DIST. 04 CENSUS TRACT L98+ F.300 6040.01
WATER CODE: N/A SEWER CODE: N/A

MARYLAND LAND DESIGN, INC. CONSULTING ENGINEERS AND LAND PLANNERS
MARYLAND OFFICE: 2007 MEADOW DRIVE, WESTMINSTER, MARYLAND 21158
PENNSYLVANIA OFFICE: 585 McALLISTER STREET, HANOVER, PENNSYLVANIA 17331
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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
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PROJECT OWNER/DEVELOPER:
MT. AIRY BIBLE CHURCH
16700 OLD FREDERICK ROAD
MT. AIRY, MD 21771
(410)-489-4321

PLAN PREPARATION
DRAWN BY: DAB DATE: JULY 28, 2005
DESIGNED BY: DAB FILE NO. 3486
CHECKED BY: KDB DRAWING NO. E-152

TITLE SHEET
MT. AIRY BIBLE CHURCH
PROPOSED BUILDING ADDITION
16700 ON OLD FREDERICK ROAD
LIBER 951 FOLIO 300 4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
TAX MAP 7, PARCEL # 172
SDP-04-150

SCALE
NO SCALE
SHEET NO.
1 OF 22
SDP-04-150

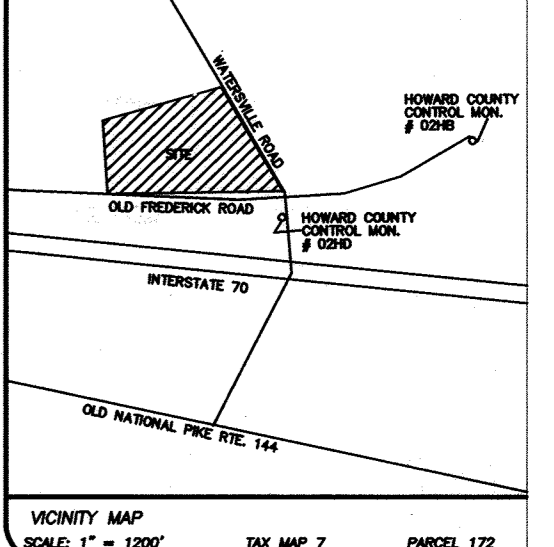
Reviewed for Howard SCD and meets Technical Requirements
Jim Meyer 8/16/05
 DATE
 This development plan is prepared for soil erosion and sediment control by the HOWARD COUNTY DISTRICT
Jim K. Lawson 8/16/05
 DATE

APPROVED: Howard County Department of Planning and Zoning
Chris Williams 8/16/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
Chris Williams 8/26/05
 CHIEF, DIVISION OF LAND DEVELOPMENT
Martin A. Cough 7/22/05
 DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
Richard W. Wain 9/23/05
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

LEGEND

---	EX. GRADES
---	WETLANDS BUFFERS
---	TREE LINE
---	STREAM
---	WETLANDS
---	STREAM BUFF.
●	APPROVED PERC. TEST
●	FAILED PERC. TEST



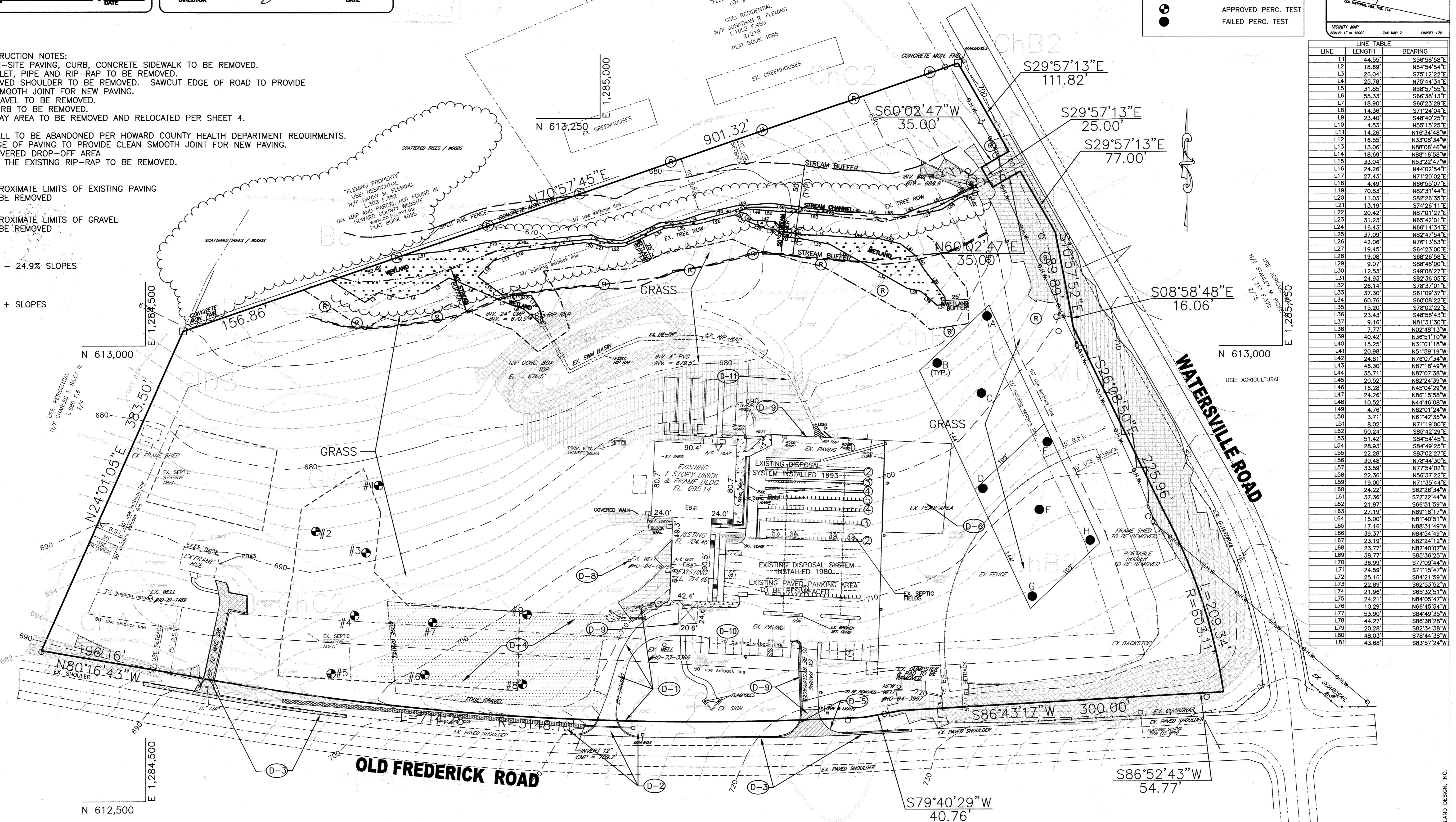
DEMOLITION CONSTRUCTION NOTES:

- D-1 EXISTING ON-SITE PAVING, CURB, CONCRETE SIDEWALK TO BE REMOVED.
- D-2 EXISTING INLET, PIPE AND RIP-RAP TO BE REMOVED.
- D-3 EXISTING PAVED SHOULDER TO BE REMOVED. SAWCUT EDGE OF ROAD TO PROVIDE A CLEAN SMOOTH JOINT FOR NEW PAVING.
- D-4 EXISTING GRAVEL TO BE REMOVED.
- D-5 EXISTING CURB TO BE REMOVED.
- D-6 EXISTING PLAY AREA TO BE REMOVED AND RELOCATED PER SHEET 4.
- D-8 EXISTING WELL TO BE ABANDONED PER HOWARD COUNTY HEALTH DEPARTMENT REQUIREMENTS.
- D-9 SAWCUT EDGE OF PAVING TO PROVIDE CLEAN SMOOTH JOINT FOR NEW PAVING.
- D-10 EXISTING COVERED DROP-OFF AREA
- D-11 PORTION OF THE EXISTING RIP-RAP TO BE REMOVED.

- APPROXIMATE LIMITS OF EXISTING PAVING TO BE REMOVED
- APPROXIMATE LIMITS OF GRAVEL TO BE REMOVED
- 15% - 24.9% SLOPES
- 25% + SLOPES

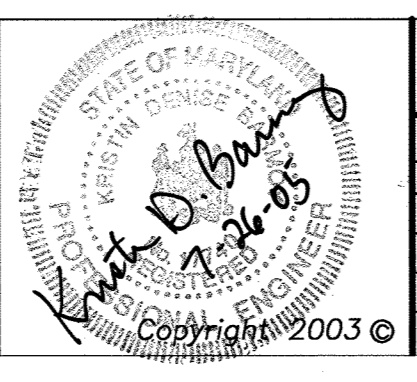
LINE TABLE

LINE	LENGTH	BEARING
L1	44.55'	S56°58'58"E
L2	18.69'	N54°54'54"E
L3	26.04'	S75°12'22"E
L4	25.78'	N75°44'34"E
L5	31.85'	N89°57'55"E
L6	55.33'	S68°38'37"E
L7	18.90'	S62°23'29"E
L8	14.36'	S71°24'04"E
L9	23.40'	S48°40'25"E
L10	4.53'	N55°15'25"E
L11	14.26'	N16°34'48"W
L12	16.55'	N33°08'34"W
L13	13.06'	N85°06'46"W
L14	18.69'	N81°16'58"W
L15	33.04'	N53°22'47"W
L16	24.26'	N44°02'54"E
L17	27.43'	N71°20'02"E
L18	44.89'	N66°55'07"E
L19	70.83'	N82°11'44"E
L20	11.03'	S82°26'35"E
L21	13.19'	S74°26'11"E
L22	20.42'	N87°01'27"E
L23	31.23'	N65°42'01"E
L24	18.43'	N81°14'34"E
L25	27.09'	N82°17'54"E
L26	42.08'	N78°13'53"E
L27	19.45'	S64°23'00"E
L28	19.08'	S68°26'58"E
L29	9.07'	S88°48'00"E
L30	12.53'	S49°08'27"E
L31	24.93'	S82°36'05"E
L32	28.14'	S78°37'01"E
L33	37.30'	S61°09'37"E
L34	60.76'	S60°08'22"E
L35	15.20'	S78°02'22"E
L36	23.43'	S48°56'43"E
L37	9.16'	N81°31'30"E
L38	7.77'	N02°48'33"W
L39	40.42'	N36°51'10"W
L40	15.25'	N31°01'18"W
L41	20.98'	N51°58'19"W
L42	24.81'	N76°07'34"W
L43	46.30'	N87°18'48"W
L44	35.71'	N87°03'38"W
L45	20.52'	N82°24'39"W
L46	16.28'	N45°04'28"W
L47	24.26'	N86°15'58"W
L48	10.52'	N44°46'08"W
L49	4.76'	N82°01'24"W
L50	3.71'	N61°42'35"W
L51	8.02'	N71°19'00"E
L52	50.24'	S85°42'29"E
L53	51.42'	S84°54'45"E
L54	28.93'	S84°49'25"E
L55	22.28'	S83°02'27"E
L56	30.48'	N78°44'30"E
L57	33.59'	N75°49'02"E
L58	22.36'	N56°37'22"E
L59	19.00'	N71°35'44"E
L60	24.22'	S82°26'34"W
L61	37.36'	S72°22'44"W
L62	21.97'	S66°51'59"W
L63	27.19'	N89°18'17"W
L64	15.00'	N81°40'51"W
L65	17.16'	N88°31'49"W
L66	39.37'	N84°54'49"W
L67	23.19'	N82°24'12"W
L68	23.77'	N82°40'07"W
L69	38.77'	S83°36'25"W
L70	36.98'	S77°09'44"W
L71	24.59'	S71°15'47"W
L72	25.16'	S84°21'59"W
L73	22.89'	S82°53'52"W
L74	21.96'	S63°32'51"W
L75	24.21'	N84°08'47"W
L76	10.29'	N86°45'44"W
L77	53.90'	S84°49'35"W
L78	44.27'	S88°38'28"W
L79	20.28'	S82°34'38"W
L80	48.03'	S78°44'38"W
L81	43.68'	S83°57'24"W



NOTE:
 A LICENSED WELL DRILLER MUST ABANDON & SEAL THE EXISTING WELL #HO-94-0675 AND SUBMIT AN ABANDONMENT REPORT.
 EXISTING GROUND WATER APPROPRIATION PERMIT #HO19796005(04)

MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS
 MARYLAND OFFICE:
 2001 MEADOW DRIVE
 WESTMINSTER, MARYLAND 21158
 TELEPHONE: (410) 857-0210
 FAX: (410) 857-8030
 PENNSYLVANIA OFFICE: (CONTACT OFFICE)
 585 McALLISTER STREET
 HANOVER, PENNSYLVANIA 17331
 TELEPHONE: (717) 637-8746
 FAX: (717) 633-1987



REVISIONS

NO.	DATE	DESCRIPTION

PROJECT OWNER/DEVELOPER:
 MT. AIRY BIBLE CHURCH
 16700 OLD FREDERICK ROAD
 MT. AIRY, MD 21771
 (410)-489-4321

PLAN PREPARATION
 DRAWN BY: DWS
 DESIGNED BY: DWS
 CHECKED BY: DAB
 DATE: JULY 28, 2005
 FILE NO. 3466
 DRAWING NO. E-152

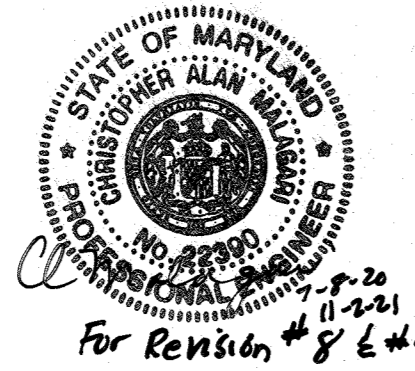
EXISTING CONDITIONS AND DEMOLITION PLAN
 MT. AIRY BIBLE CHURCH
 PROPOSED BUILDING ADDITION
 16700 ON OLD FREDERICK ROAD
 LIBER 951 FOLIO 300 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 TAX MAP 7, PARCEL # 172

SCALE
 1" = 50'
SHEET NO.
 2 OF 2
 SDP-04-150

H:\mld\projects\MD LAND\MT. AIRY BIBLE CHURCH\SITE PLANS\conditions.dwg, 7/22/2005 12:53:25 PM, HP, Designated, 1056CDRDB.pc3

MARYLAND LAND DESIGN, INC.

- CONSTRUCTION NOTES:
- C-1. Limits of proposed Howard County P-1 paving
 - C-2. Install Howard County P-1 paving in all drive aisles.
 - C-3. Proposed SHA type "A" curb and gutter. See Typical Section on Sheet 5 of 18
 - C-4. Sawcut edge of existing paving to provide clean smooth joint for new paving.
 - C-5. Seal all new paving joints.
 - C-6. Proposed concrete sidewalk, walk to be 5' wide unless otherwise noted. See Typical Section on Sheet 5 of 18
 - C-7. Proposed site lighting (typical). See Typical Light Detail on Sheet
 - C-8. Proposed wheel stop (typical). See detail on Sheet 5 of 18
 - C-9. Nose down end of proposed curb.
 - C-10. Proposed 20' x 15' trash enclosure. See detail on Sheet 5 of 18
 - C-11. Proposed vehicle concrete pad. See Typical Section on Sheet 5 of 18
 - C-12. Proposed underground sprinkler tank. See mechanical drawings.
 - C-13. Paint stripe parking stalls with 4" wide white paint line (typical).
 - C-14. Painted directional arrows (typical). See Typical Detail on Sheet 5 of 8
 - C-15. Proposed handicap parking spaces. Paint stripe according to ADA requirements. See Typical Detail on Sheet 12 of 18.
 - C-16. Proposed handicap parking sign per ADA requirements. See detail sheet 12 of 18
 - C-17. Proposed "Van Accessible" handicap parking sign per ADA requirements.
 - C-18. Proposed covered "Drop-Off" area. See Architectural Drawings
 - C-19. Widen existing drive to 24' wide.
 - C-20. Relocate existing play area and fence.
 - C-21. Relocate existing driveway to house and install new drive in location shown.
 - C-22. Remove existing frame sheds to be relocated.
 - C-23. Existing frame sheds to be relocated.
 - C-24. Remove paving from 1 existing parking space. Install min. 4" topsoil, seed and mulch.
 - C-25. Exist. dumpster to be relocated.



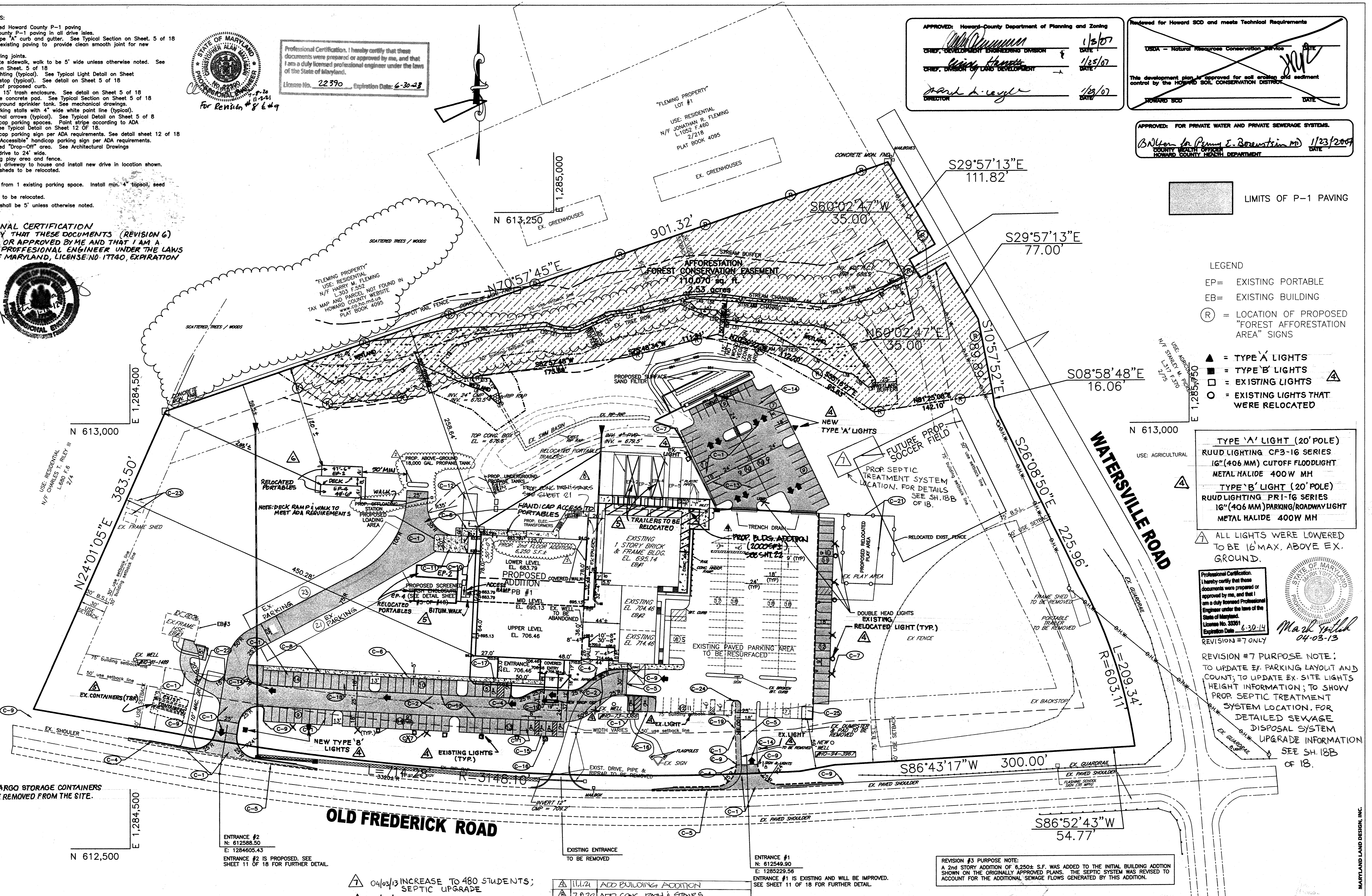
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 22390 Expiration Date: 6-30-13

APPROVED: Howard County Department of Planning and Zoning
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DIRECTOR

Reviewed for Howard SCD and meets Technical Requirements
 USA - Natural Resources Conservation Service
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
 William E. Rose, M.D.
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS (REVISION 6) 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. 17140, EXPIRATION DATE: 4/1/2012



- LEGEND
- EP= EXISTING PORTABLE
 - EB= EXISTING BUILDING
 - (R) = LOCATION OF PROPOSED "FOREST AFFORESTATION AREA" SIGNS
 - ▲ = TYPE 'A' LIGHTS
 - = TYPE 'B' LIGHTS
 - = EXISTING LIGHTS
 - = EXISTING LIGHTS THAT WERE RELOCATED

- TYPE 'A' LIGHT (20' POLE)
 RUUD LIGHTING CF3-16 SERIES
 16" (406 MM) CUTOFF FLOODLIGHT
 METAL HALIDE 400W MH
- TYPE 'B' LIGHT (20' POLE)
 RUUD LIGHTING PR1-16 SERIES
 16" (406 MM) PARKING/ROADWAY LIGHT
 METAL HALIDE 400W MH

ALL LIGHTS WERE LOWERED TO BE 16' MAX. ABOVE EX. GROUND.

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. 33301
 Expiration Date: 6-30-14
 REVISION #7 ONLY
 Mark J. Leight
 04-03-13

REVISION #7 PURPOSE NOTE:
 TO UPDATE EX. PARKING LAYOUT AND COUNT; TO UPDATE EX. SITE LIGHTS HEIGHT INFORMATION; TO SHOW PROP. SEPTIC TREATMENT SYSTEM LOCATION. FOR DETAILED SEWAGE DISPOSAL SYSTEM UPGRADE INFORMATION SEE SH. 18B OF 18.

NOTE: THE 3 CARGO STORAGE CONTAINERS SHALL BE REMOVED FROM THE SITE.

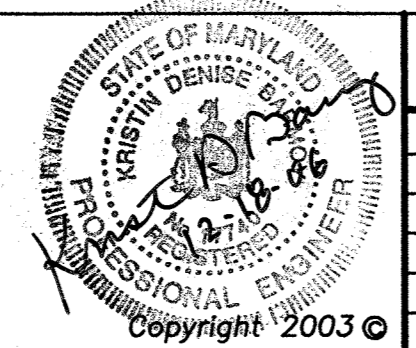
- ▲ 04/03/13 INCREASE TO 480 STUDENTS; SEPTIC UPGRADE
- ▲ 12/23/11 RELOCATE PORTABLES EP-2 & EP-4

NO.	DATE	REVISION
1	11/12/11	ADD BUILDING ADDITION
2	7/8/12	ADD CONC. PATH & STAIRS

ENTRANCE #1
 N: 612549.90
 E: 1285229.56
 SEE SHEET 11 OF 18 FOR FURTHER DETAIL.

REVISION #3 PURPOSE NOTE:
 A 2nd STORY ADDITION OF 6,250± S.F. WAS ADDED TO THE INITIAL BUILDING ADDITION SHOWN ON THE ORIGINALLY APPROVED PLANS. THE SEPTIC SYSTEM WAS REVISED TO ACCOUNT FOR THE ADDITIONAL SEWAGE FLOWS GENERATED BY THIS ADDITION.

MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS
 MARYLAND OFFICE:
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 585 McALLISTER STREET
 HANOVER, PENNSYLVANIA 17331
 TELEPHONE: (717) 637-8746
 FAX: (717) 633-1987



NO.	DATE	DESCRIPTION
1	5-30-06	ADDED SHEET 18-A
2	10-17-06	REV. PROpane TANK AND ADDED OFF-LOADING STATION
3	12-3-06	ADDED 2ND FLOOR ADDITION TO BUILDING
4	9-11-07	REDLINE PLANS FOR LIGHT LOCATIONS
5	6-10-10	RELOCATE PORTABLE TRAILERS

PROJECT OWNER/DEVELOPER:
 MT. AIRY BIBLE CHURCH
 16700 OLD FREDERICK ROAD
 MT. AIRY, MD 21771
 (410)-489-4321

PLAN PREPARATION
 DRAWN BY: DWS
 DESIGNED BY: DWS
 CHECKED BY: DAB
 DATE: JULY 28, 2005
 FILE NO. 3466
 DRAWING NO. E-152

"REVISED SITE DEVELOPMENT PLAN"
 MT. AIRY BIBLE CHURCH
 PROPOSED BUILDING ADDITION
 16700 ON OLD FREDERICK ROAD
 LIBER 951 FOLIO 300 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 TAX MAP 7, PARCEL # 172
 SDP-04-150

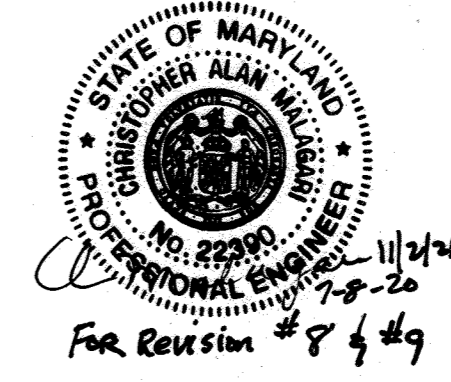
SCALE
 1" = 50'
 SHEET NO.
 3 OF 22

Reviewed for Howard SCD and meets Technical Requirements
Jim Meyer 8/10/05
 USA - Natural Resources Conservation Service
 DATE

APPROVED: Howard County Department of Planning and Zoning
Chief, Development Engineering Division 8/10/05
Chief, Division of Land Development 9/26/05
 DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
Robert W. White 9/23/05
 HOWARD COUNTY HEALTH DEPARTMENT
 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. 22370 Expiration Date: 6-30-23



- UTILITY NOTES:
- CONTRACTOR SHOULD OPEN ONLY THAT SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED EACH DAY. IF TRENCH MUST REMAIN OPEN LONGER THAN ONE DAY, SILT FENCE SHALL BE PLACED BELOW (DOWNSLOPE) THE TRENCH.
 - PLACE ALL EXCAVATED MATERIAL ON THE UPHILL SIDE OF THE TRENCH.
 - ANY SEDIMENT CONTROL STRUCTURES DISTURBED BY UTILITY CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY.

- STOCKPILE/TOPSOIL NOTES
- Stockpiling will not be allowed on any impervious area.
 - All stockpiles left at the end of the day must be temporarily stabilized, unless they are within existing perimeter sediment controls.

NOTE: NO SEDIMENT CONTROL DEVICE SHALL BE REMOVED WITHOUT PRIOR APPROVAL OF THE SEDIMENT CONTROL INSPECTOR. ANY VARIATIONS FROM THE SEQUENCE OF CONSTRUCTION MUST BE APPROVED BY THE SEDIMENT CONTROL INSPECTOR.
 THE SEDIMENT CONTROL INSPECTOR MAY REQUIRE ADDITIONAL SEDIMENT CONTROLS DURING CONSTRUCTION IF DEEMED NECESSARY.

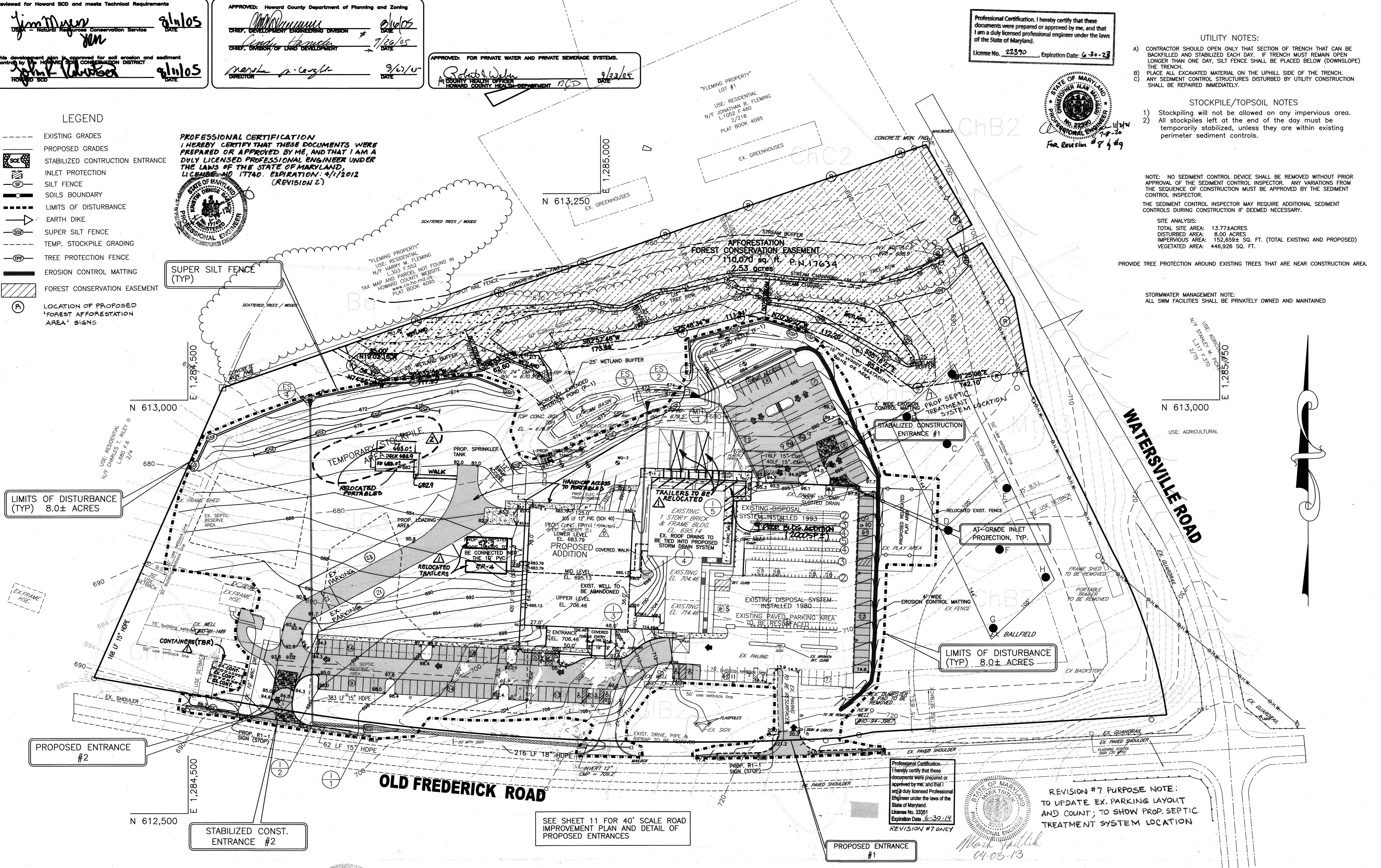
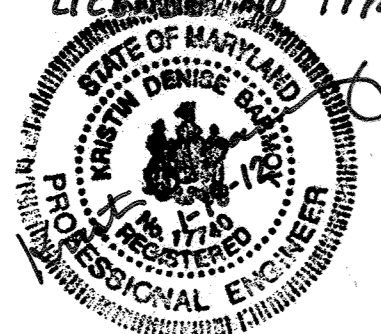
SITE ANALYSIS:
 TOTAL SITE AREA: 13.77± ACRES
 DISTURBED AREA: 8.00 ACRES
 IMPERVIOUS AREA: 152,559± SQ. FT. (TOTAL EXISTING AND PROPOSED)
 VEGETATED AREA: 446,926 SQ. FT.

PROVIDE TREE PROTECTION AROUND EXISTING TREES THAT ARE NEAR CONSTRUCTION AREA.

STORMWATER MANAGEMENT NOTE:
 ALL SWM FACILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED

- LEGEND
- EXISTING GRADES
 - - - PROPOSED GRADES
 - ▭ STABILIZED CONSTRUCTION ENTRANCE
 - ▭ INLET PROTECTION
 - ▭ SILT FENCE
 - ▭ SOILS BOUNDARY
 - LIMITS OF DISTURBANCE
 - ▭ EARTH DIKE
 - ▭ SUPER SILT FENCE
 - TEMP. STOCKPILE GRADING
 - ▭ TREE PROTECTION FENCE
 - ▭ EROSION CONTROL MATTING
 - ▭ FOREST CONSERVATION EASEMENT
 - (P) LOCATION OF PROPOSED 'FOREST AFFORESTATION AREA' SIGNS

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. 17740. EXPIRATION: 4/1/2012 (REVISION 2)

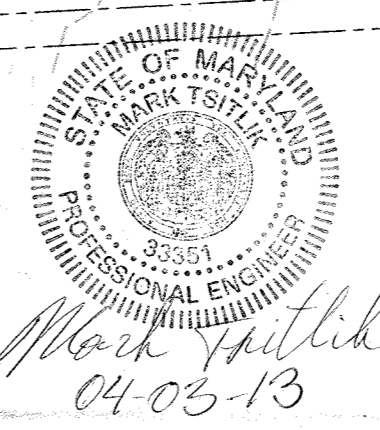


LIMITS OF DISTURBANCE (TYP) 8.0± ACRES

LIMITS OF DISTURBANCE (TYP) 8.0± ACRES

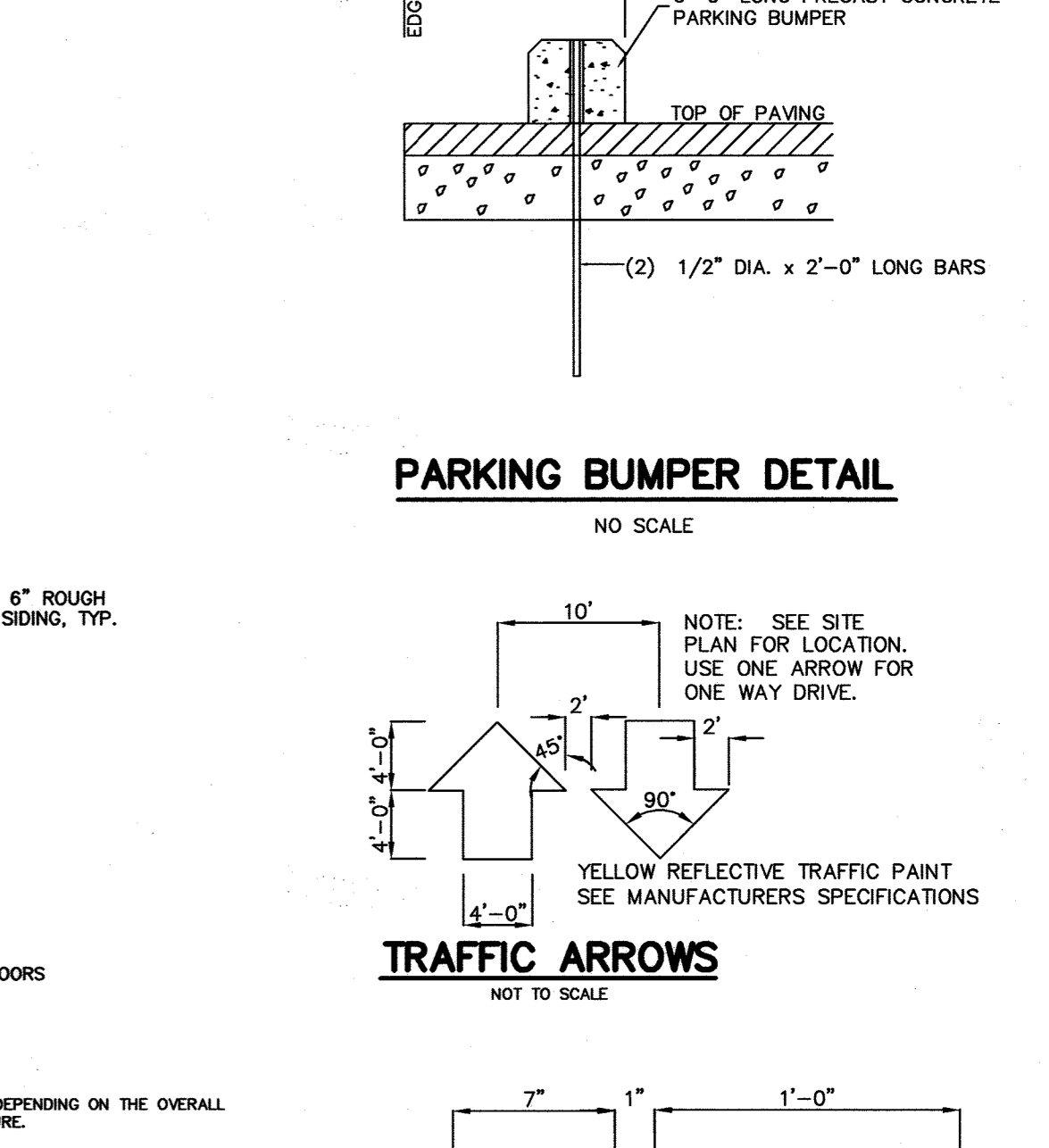
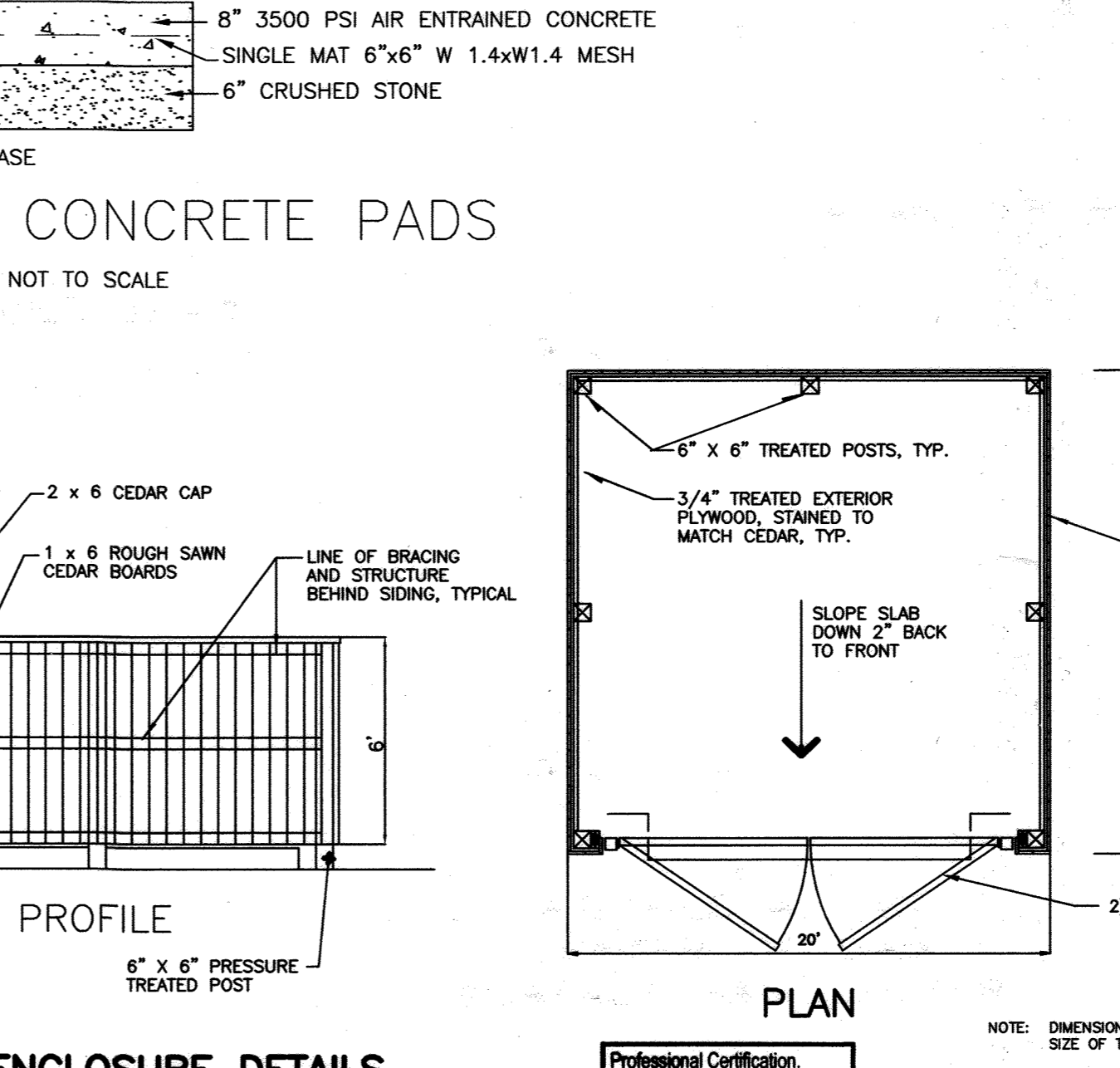
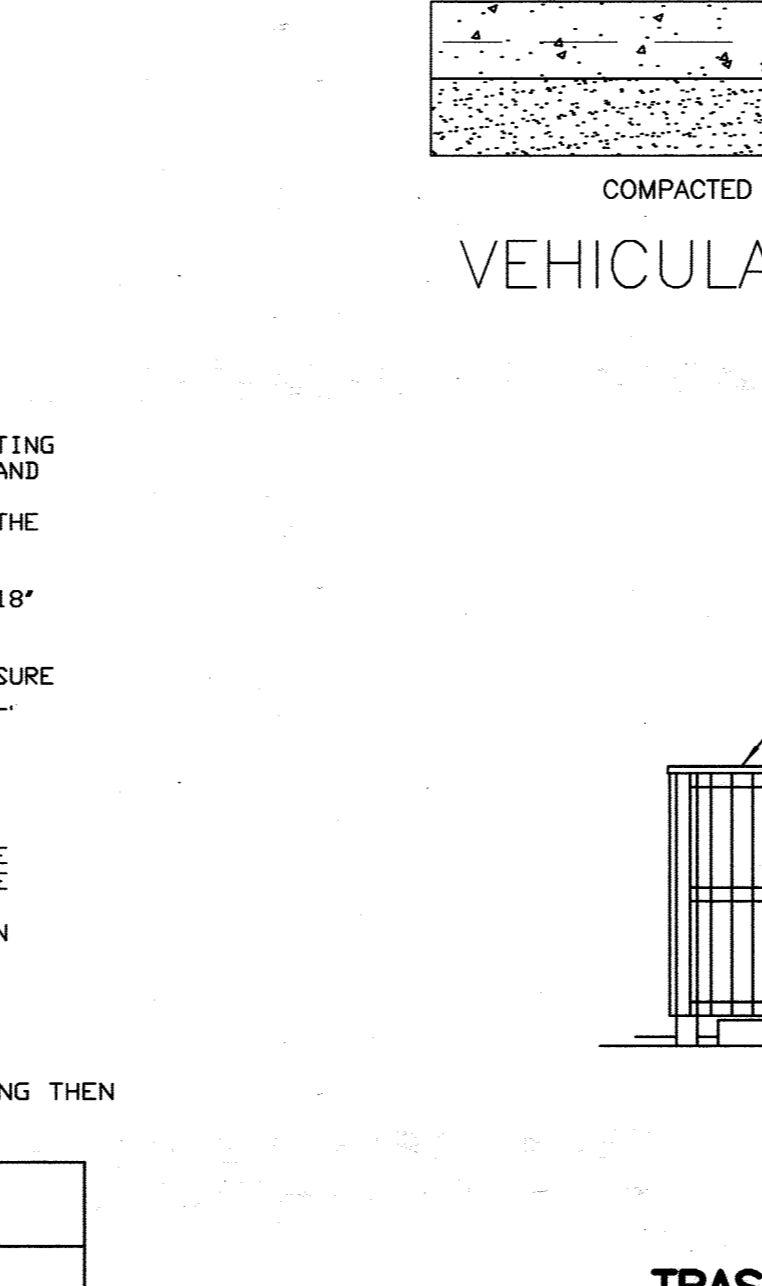
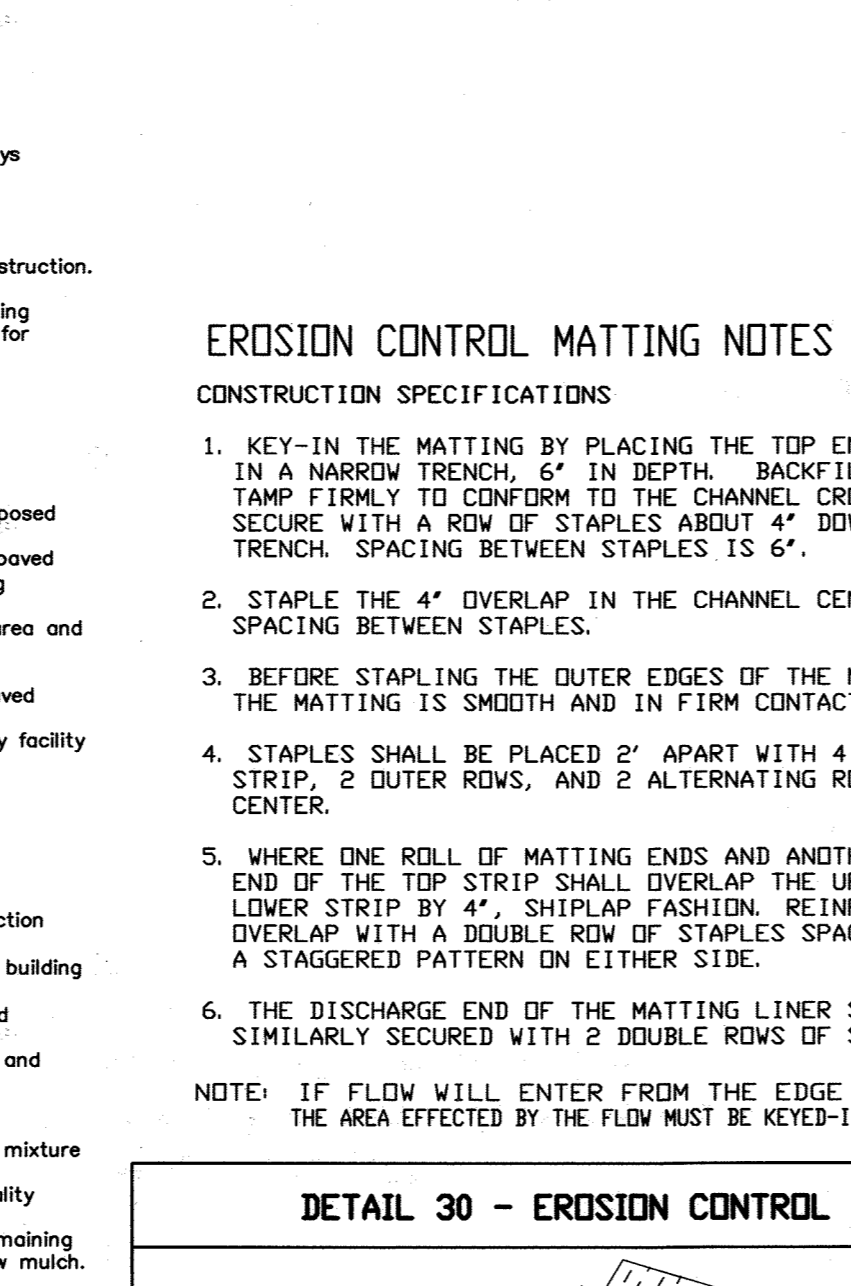
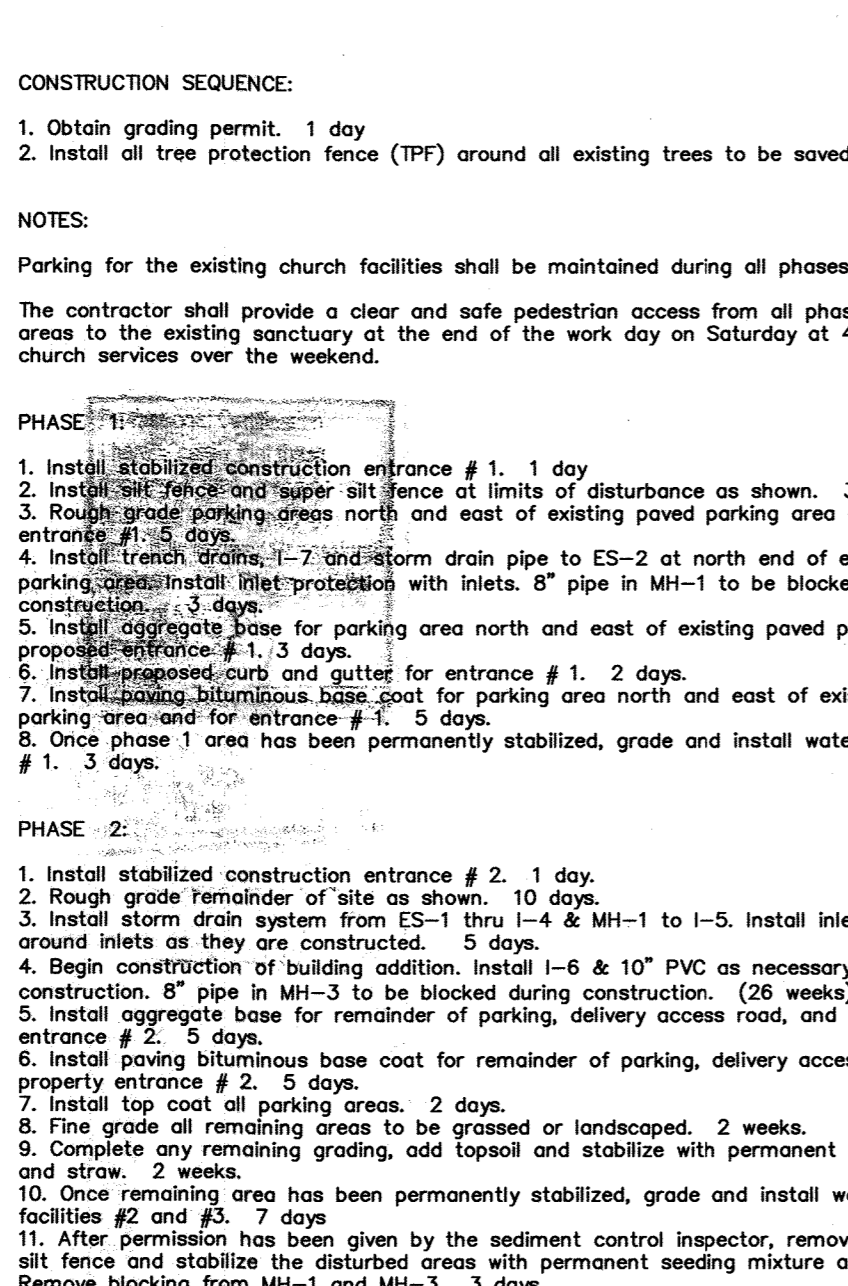
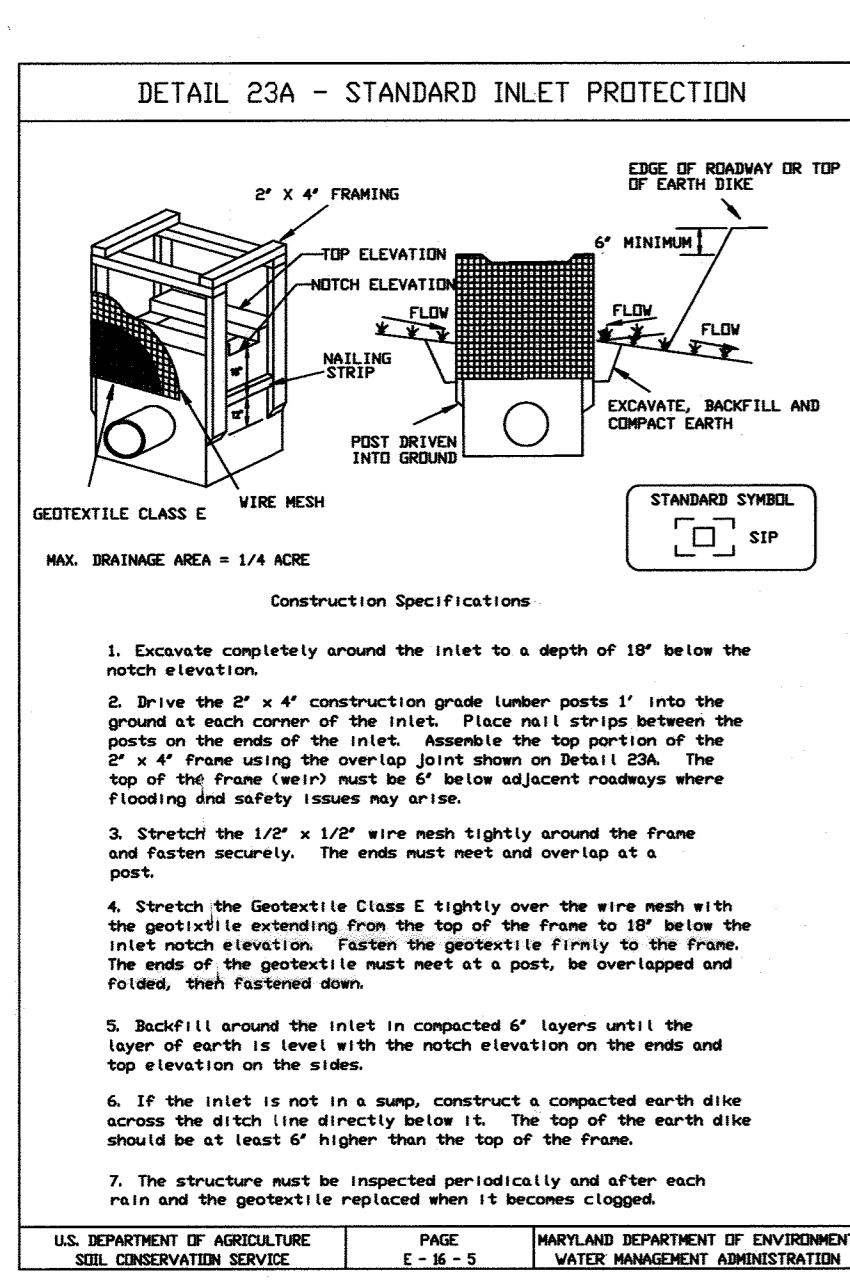
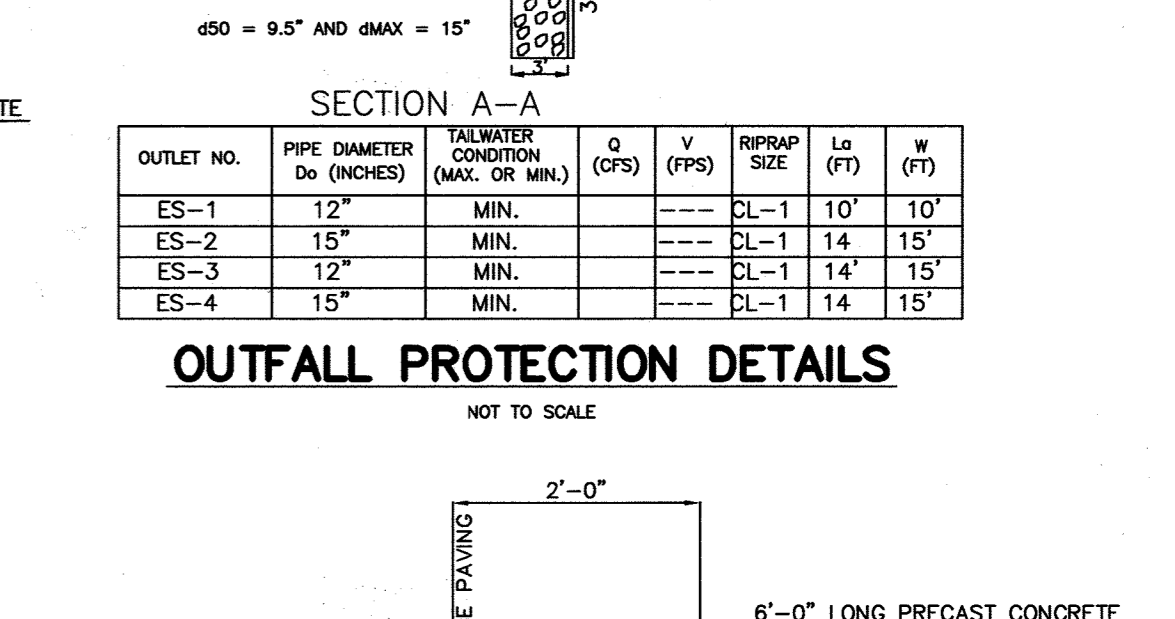
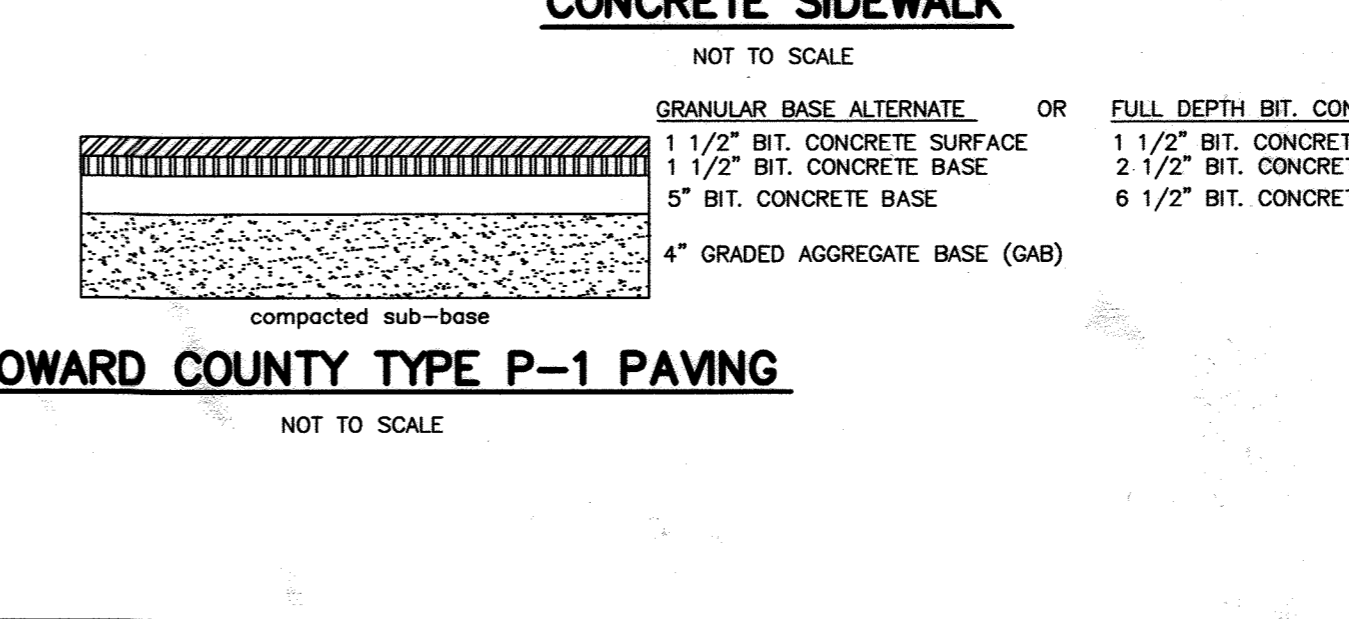
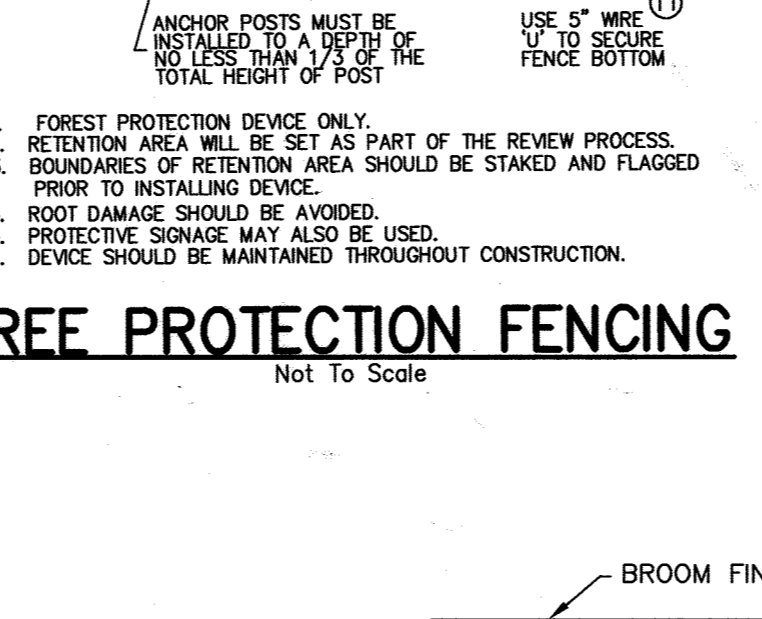
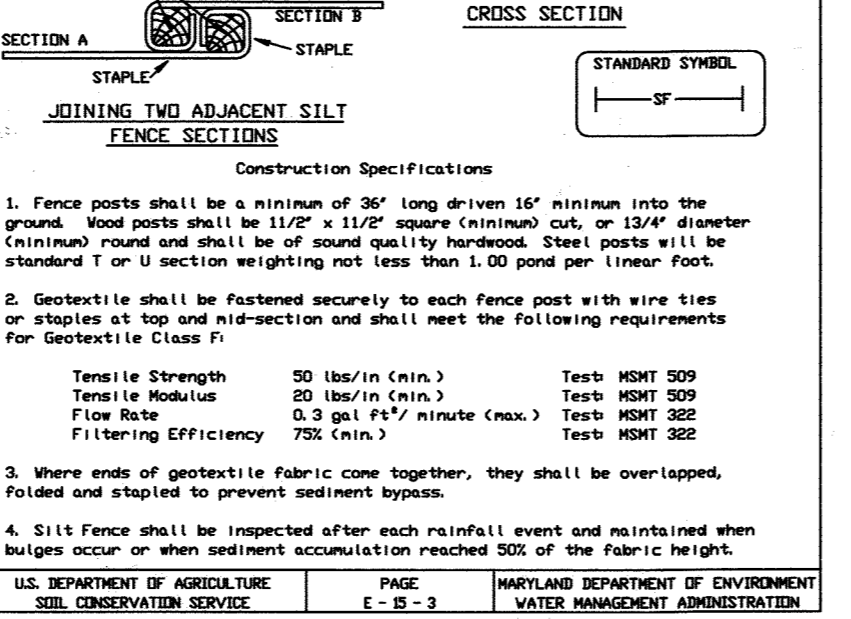
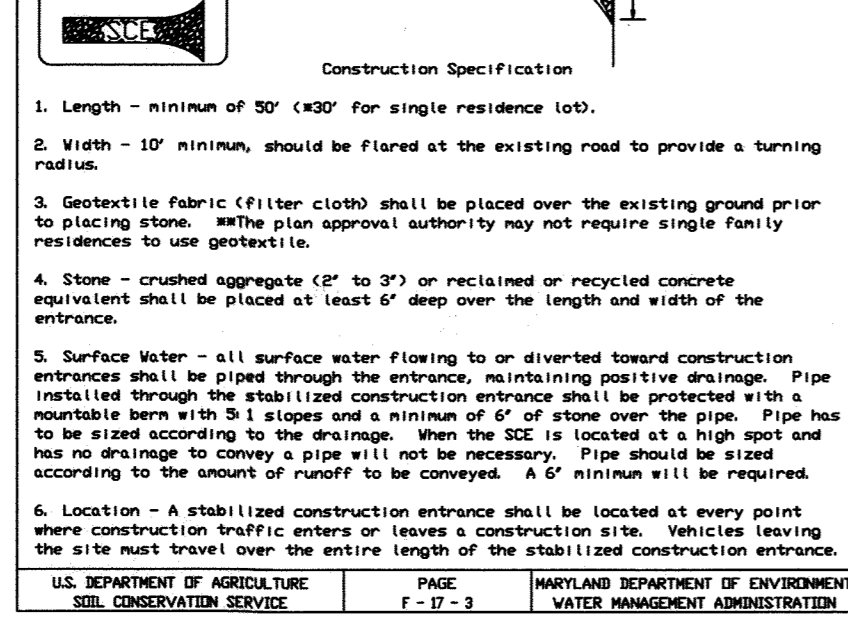
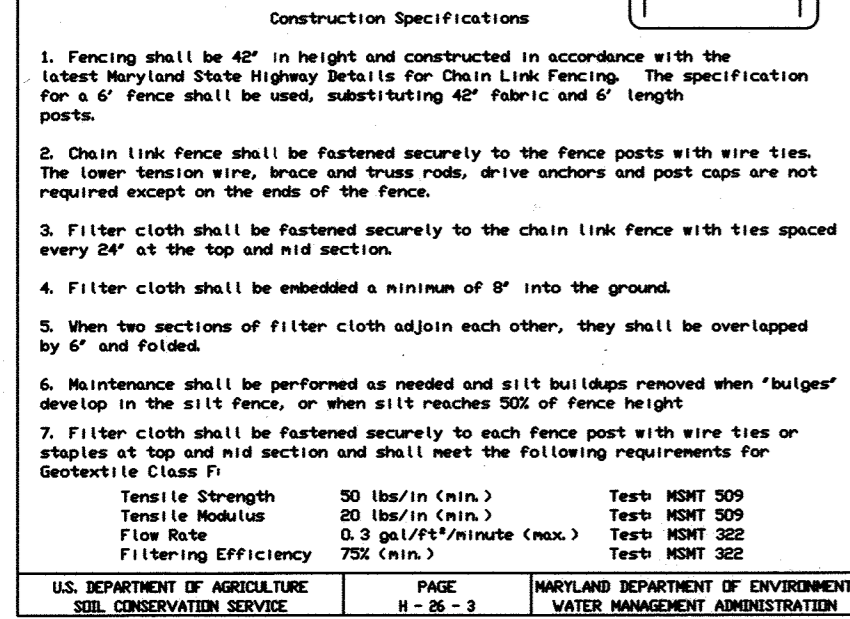
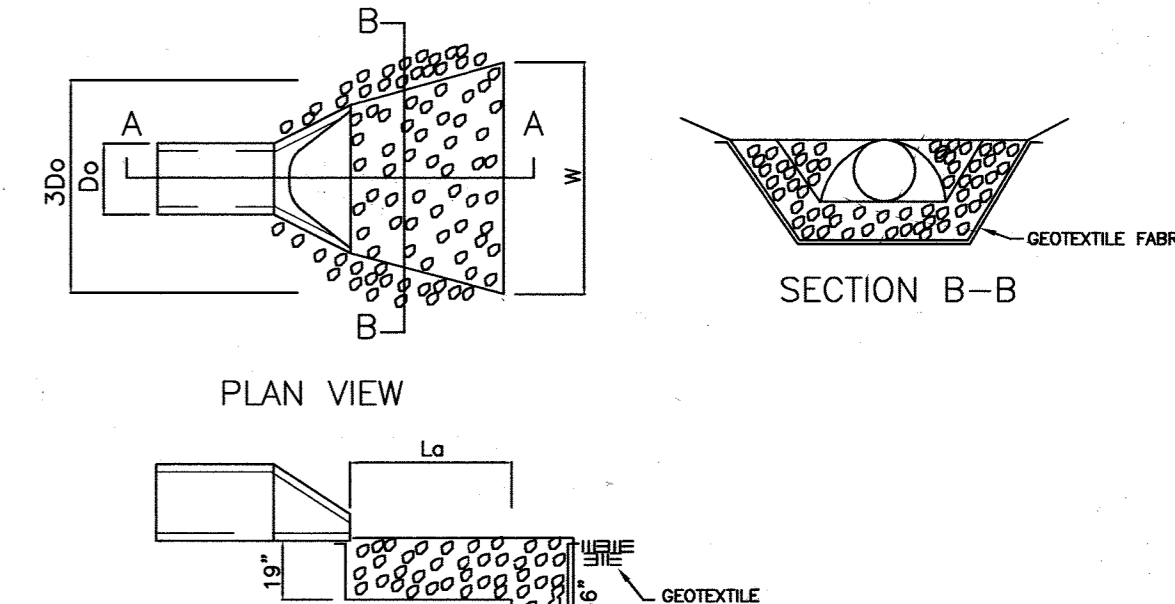
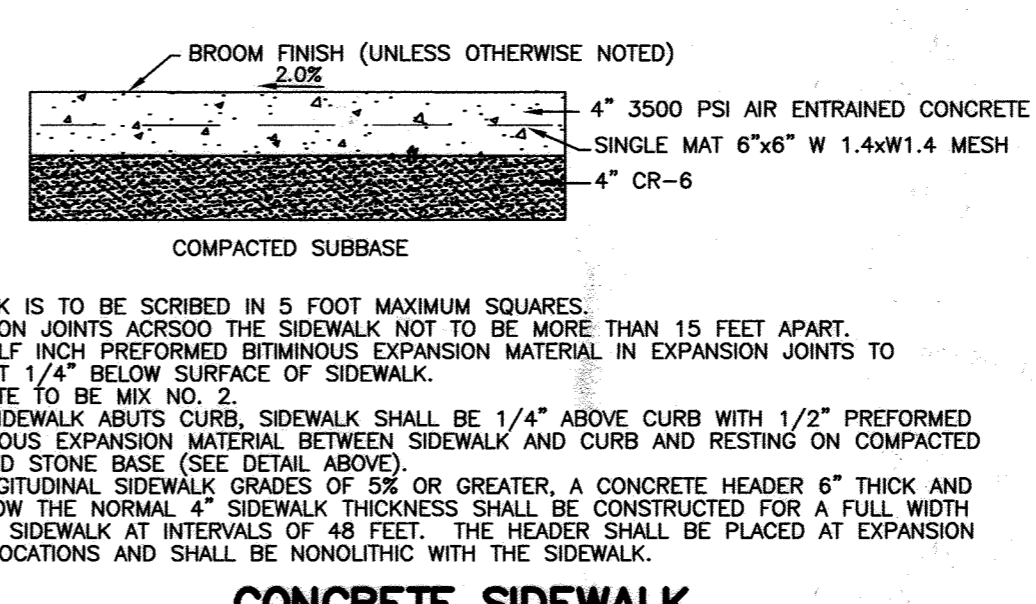
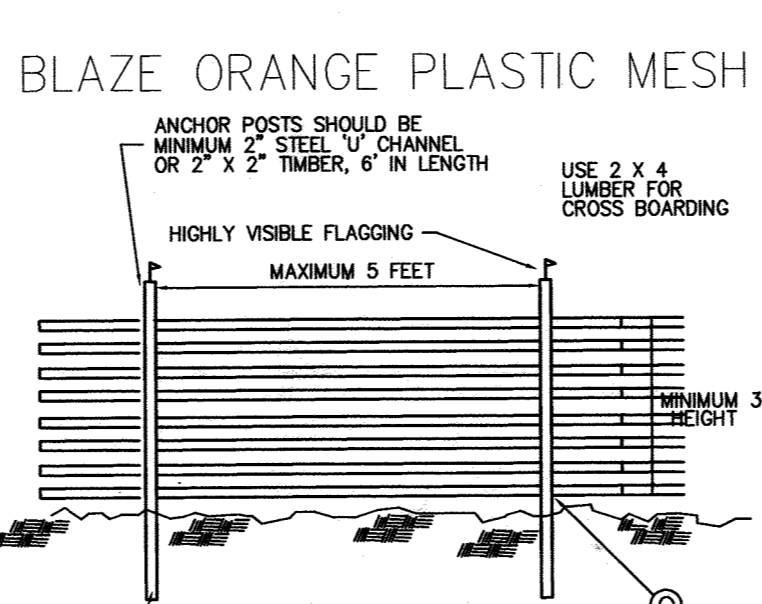
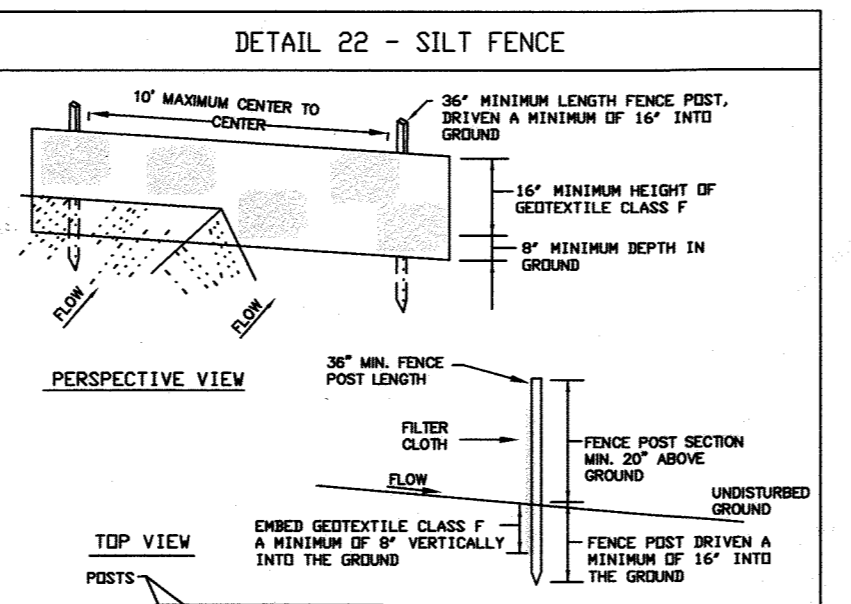
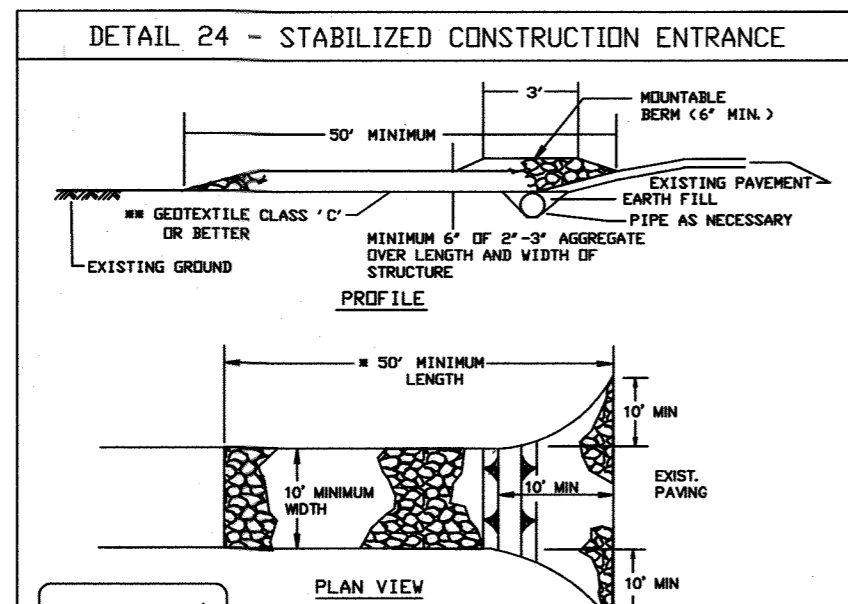
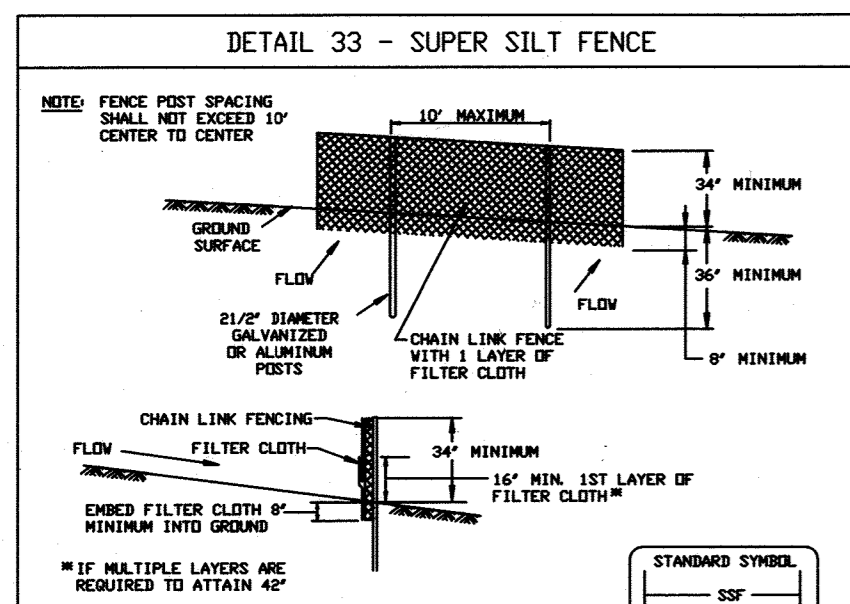
SEE SHEET 11 FOR 40' SCALE ROAD IMPROVEMENT PLAN AND DETAIL OF PROPOSED ENTRANCES

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. 33351 Expiration Date: 6-30-14
 REVISION #7 ONLY



REVISION #7 PURPOSE NOTE:
 TO UPDATE EX. PARKING LAYOUT AND COUNT; TO SHOW PROP. SEPTIC TREATMENT SYSTEM LOCATION

MARYLAND LAND DESIGN, INC. CONSULTING ENGINEERS AND LAND PLANNERS MARYLAND OFFICE: 2001 MEADOW DRIVE WESTMINSTER, MARYLAND 21158 TELEPHONE: (410) 857-0210 FAX: (410) 857-8030 PENNSYLVANIA OFFICE: (CONTACT OFFICE) 585 MALLISTER STREET HANOVER, PENNSYLVANIA 17331 TELEPHONE: (717) 637-8746 FAX: (717) 633-1987	REVISIONS <table border="1"> <tr><th>NO.</th><th>DATE</th><th>DESCRIPTION</th></tr> <tr><td>01/10/10</td><td></td><td>RELOCATE PORTABLE TRAILERS</td></tr> <tr><td>12/01/11</td><td></td><td>RELOCATE PORTABLES CP-2 & EP-4</td></tr> <tr><td>04/03/13</td><td></td><td>INCREASE TO 480 STUDENTS; SEPTIC UPGRADE</td></tr> <tr><td>7.8.20</td><td></td><td>ADD CONC. PATH STAIRS</td></tr> <tr><td>11.1.21</td><td></td><td>ADD BUILDING ADDITION</td></tr> </table>	NO.	DATE	DESCRIPTION	01/10/10		RELOCATE PORTABLE TRAILERS	12/01/11		RELOCATE PORTABLES CP-2 & EP-4	04/03/13		INCREASE TO 480 STUDENTS; SEPTIC UPGRADE	7.8.20		ADD CONC. PATH STAIRS	11.1.21		ADD BUILDING ADDITION	PROJECT OWNER/DEVELOPER: MT. AIRY BIBLE CHURCH 16700 OLD FREDERICK ROAD MT. AIRY, MD 21771 (410)-489-4321	PLAN PREPARATION DRAWN BY: DWS DESIGNED BY: DWS CHECKED BY: DAB DATE: JULY 28, 2005 FILE NO. 3466 DRAWING NO. E-152	GRADING, STORMWATER MANAGEMENT AND SEDIMENT CONTROL PLAN MT. AIRY BIBLE CHURCH PROPOSED BUILDING ADDITION 16700 ON OLD FREDERICK ROAD LIBER 951 FOLIO 300 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND TAX MAP 7, PARCEL # 172	SCALE 1" = 50' SHEET NO. 4 OF 22 SDP-04-150
	NO.	DATE	DESCRIPTION																				
01/10/10		RELOCATE PORTABLE TRAILERS																					
12/01/11		RELOCATE PORTABLES CP-2 & EP-4																					
04/03/13		INCREASE TO 480 STUDENTS; SEPTIC UPGRADE																					
7.8.20		ADD CONC. PATH STAIRS																					
11.1.21		ADD BUILDING ADDITION																					



Reviewed for Howard SOD and meets Technical Requirements

Jim Meyer 9/16/05
John W. ... 9/20/05
John W. ... 9/23/05

APPROVED: Howard County Department of Planning and Zoning

Robert J. ... 9/16/05
Robert J. ... 9/20/05
Robert J. ... 9/23/05

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

Robert J. ... 9/23/05

NO.	DATE	DESCRIPTION
1	9/11/07	REVISED TYPICAL SIGHT LIGHT DETAIL
2	04/03/13	REVISED TYPICAL SITE LIGHT DETAIL

PROJECT OWNER/DEVELOPER:
 MT. AIRY BIBLE CHURCH
 16700 OLD FREDERICK ROAD
 MT. AIRY, MD 21771
 (410)-489-4321

PLAN PREPARATION
 DRAWN BY: DAB
 DESIGNED BY: DAB
 CHECKED BY: KDB

DATE: JULY 28, 2005
 FILE NO. 3466
 DRAWING NO. E-152

MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS

MARYLAND OFFICE:
 555 MALLISTER STREET
 WESTMINSTER, MARYLAND 21158
 TELEPHONE: (410) 857-0210
 FAX: (410) 857-8030

REVISIONS

NO. DATE DESCRIPTION

PROJECT OWNER/DEVELOPER:

MT. AIRY BIBLE CHURCH
 16700 OLD FREDERICK ROAD
 MT. AIRY, MD 21771
 (410)-489-4321

PLAN PREPARATION

DRAWN BY: DAB
 DESIGNED BY: DAB
 CHECKED BY: KDB

DATE: JULY 28, 2005
 FILE NO. 3466
 DRAWING NO. E-152

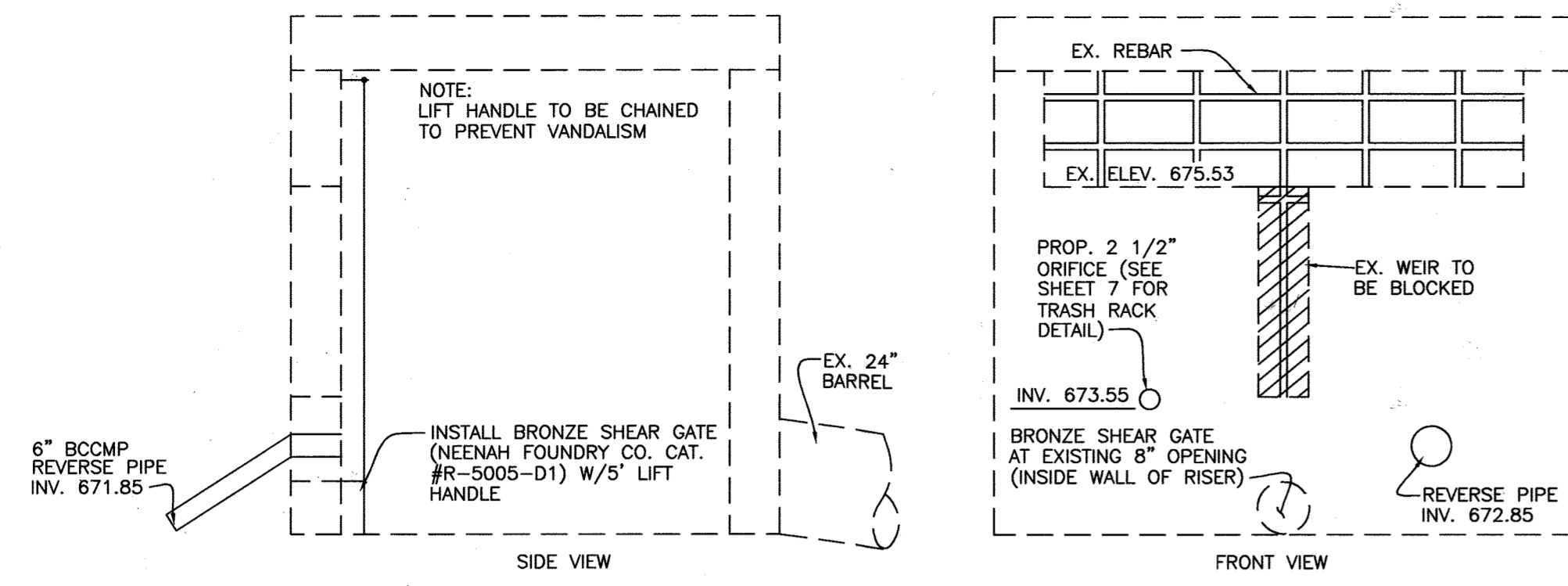
MISCELLANEOUS DETAILS

MOUNT AIRY BIBLE CHURCH
 SITUATED ON OLD FREDERICK ROAD
 4th ELECTION DISTRICT, LIBER 951 FOLIO 300
 HOWARD COUNTY, MARYLAND

SCALE
 NO SCALE

SHEET NO.
 5 OF 22

SDP-04-150



PROPOSED MODIFICATIONS TO EXISTING RISER
NO SCALE

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

- ROUTINE MAINTENANCE:**
- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF POND IS FUNCTIONING PROPERLY.
 - TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED 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.
 - DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
 - VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIPRAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- NON-ROUTINE MAINTENANCE:**
- 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.
 - SEDIMENT SHALL BE REMOVED 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.

NOTES:
ALL DEBRIS IS TO BE KEPT OUT OF THE FACILITIES DURING AND AFTER CONSTRUCTION.
THE HAZARD CLASSIFICATION FOR THE EXISTING FACILITY IS 'A'.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1, F-4 AND F-5)

- 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 PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
- FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
- DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
- VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY.
- WHEN WATER POND 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 LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- THE MAINTENANCE LOGBOOK 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 PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

CONSTRUCTION SPECIFICATIONS FOR SAND FILTERS

THE ALLOWABLE MATERIALS FOR SAND FILTER CONSTRUCTION ARE DETAILED IN TABLE B.3.1.

UNDERGROUND SAND FILTERS 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.

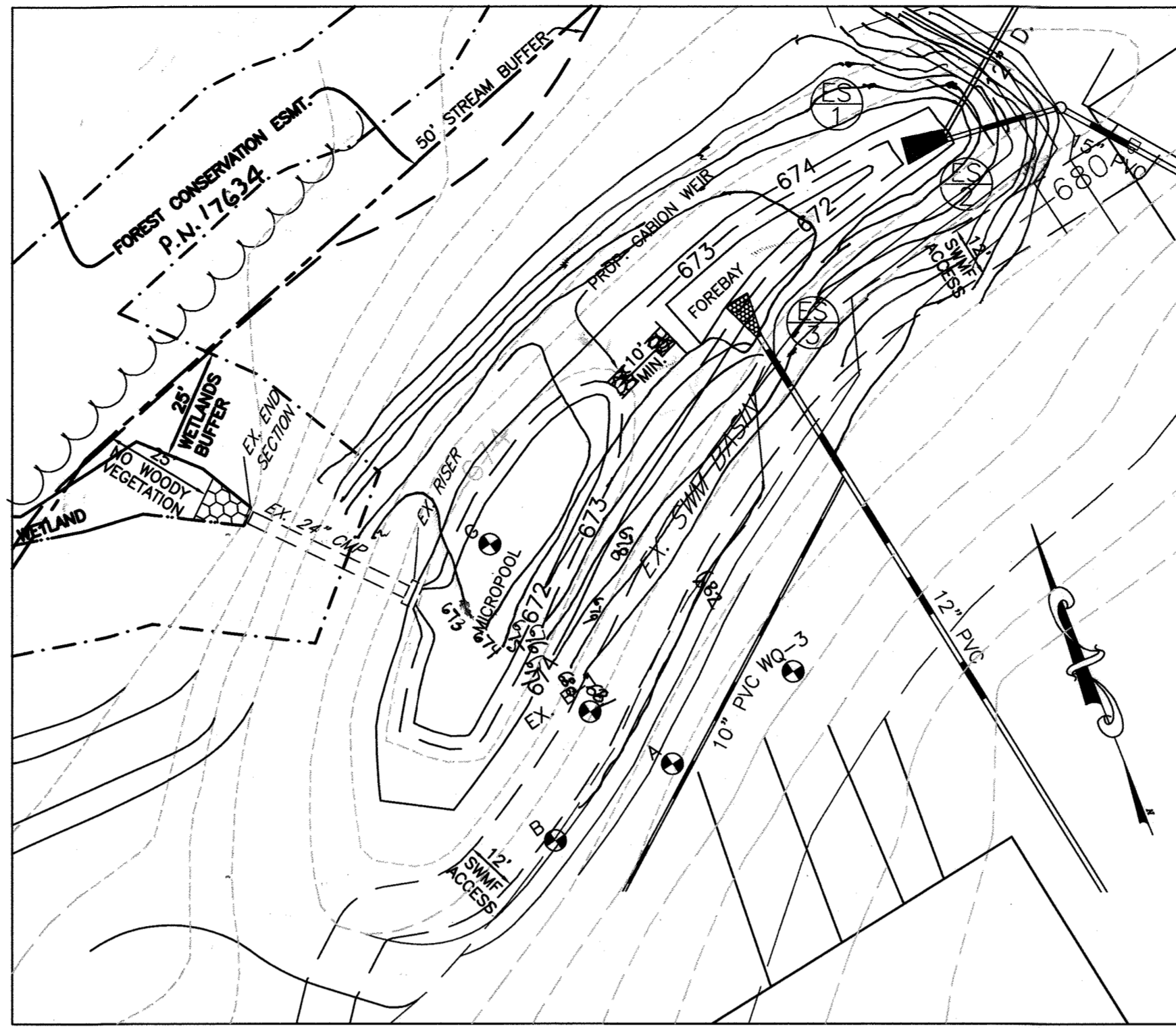
ALL OVERFLOW WEIRS, MULTIPLE ORIFICES AND FLOW DISTRIBUTION SLOTS ARE TO BE FIELD-TESTED TO VERIFY ADEQUATE DISTRIBUTION OF FLOWS.

ABSOLUTELY NO RUNOFF IS TO ENTER THE FILTER UNTIL ALL CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.

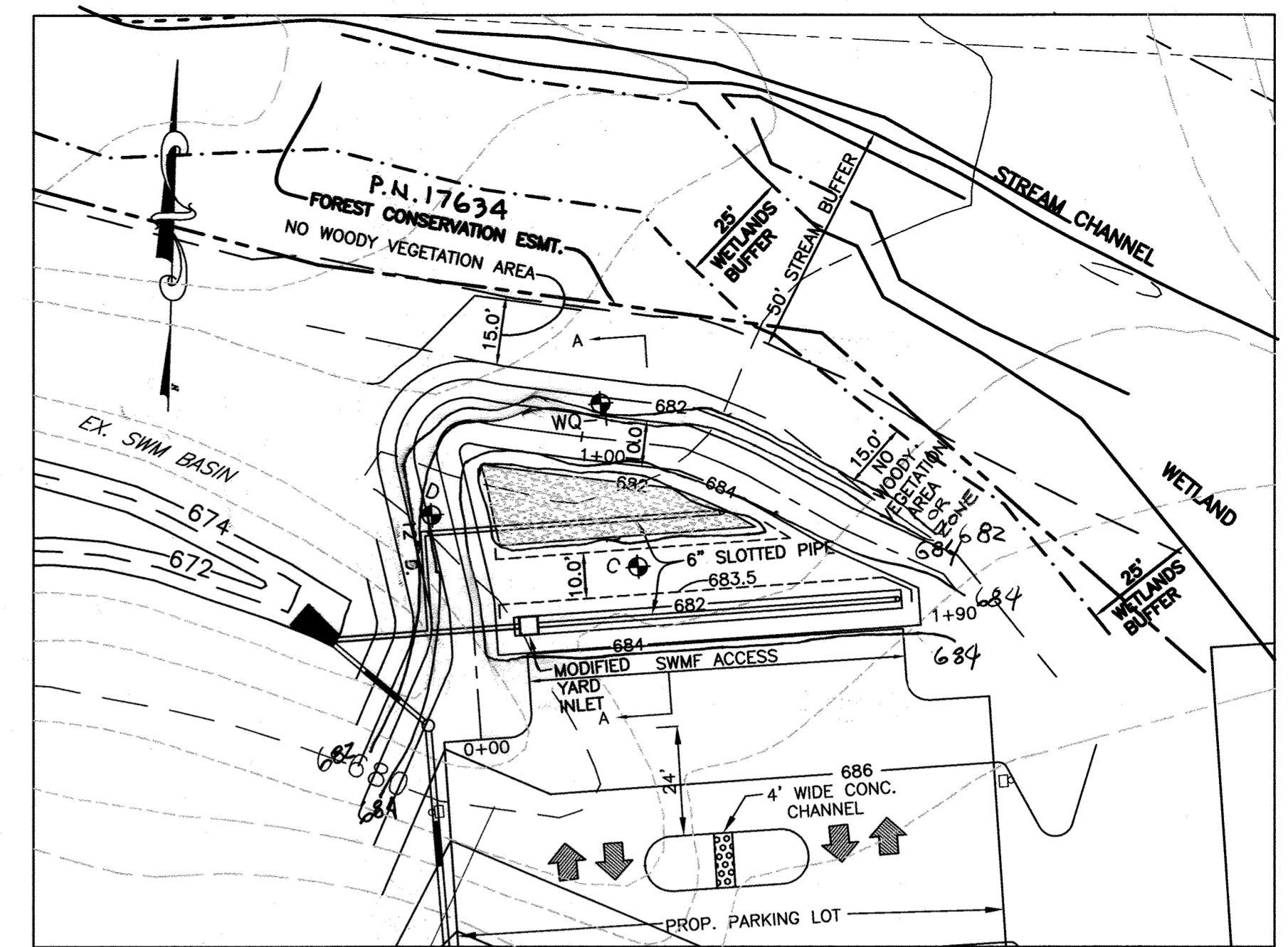
SURFACE OF FILTER BED IS TO BE LEVEL.

ALL UNDERGROUND SAND FILTERS SHOULD BE CLEARLY DELINEATED WITH SIGNS SO THAT THEY MAY BE LOCATED WHEN MAINTENANCE IS DUE.

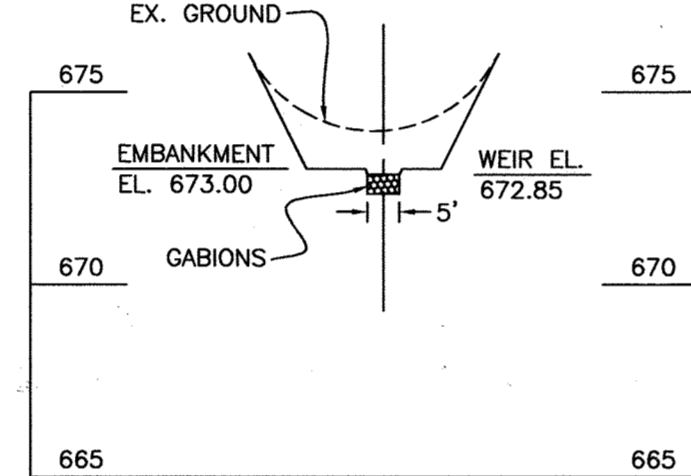
SURFACE SAND FILTERS MAY BE PLANTED WITH APPROPRIATE GRASSES; SEE APPENDIX A.



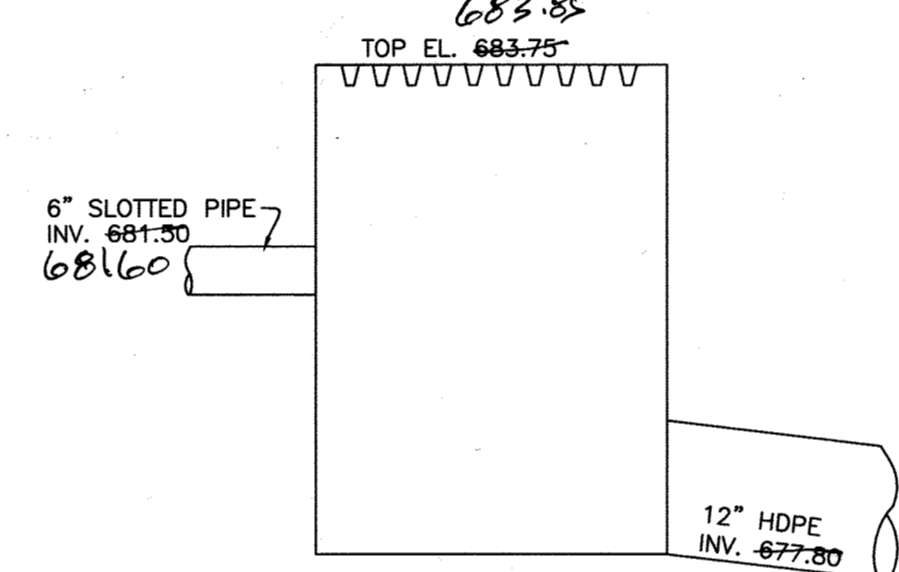
PLAN: MICROPOOL EXTENDED DETENTION POND (P-1)
SCALE: 1" = 30'



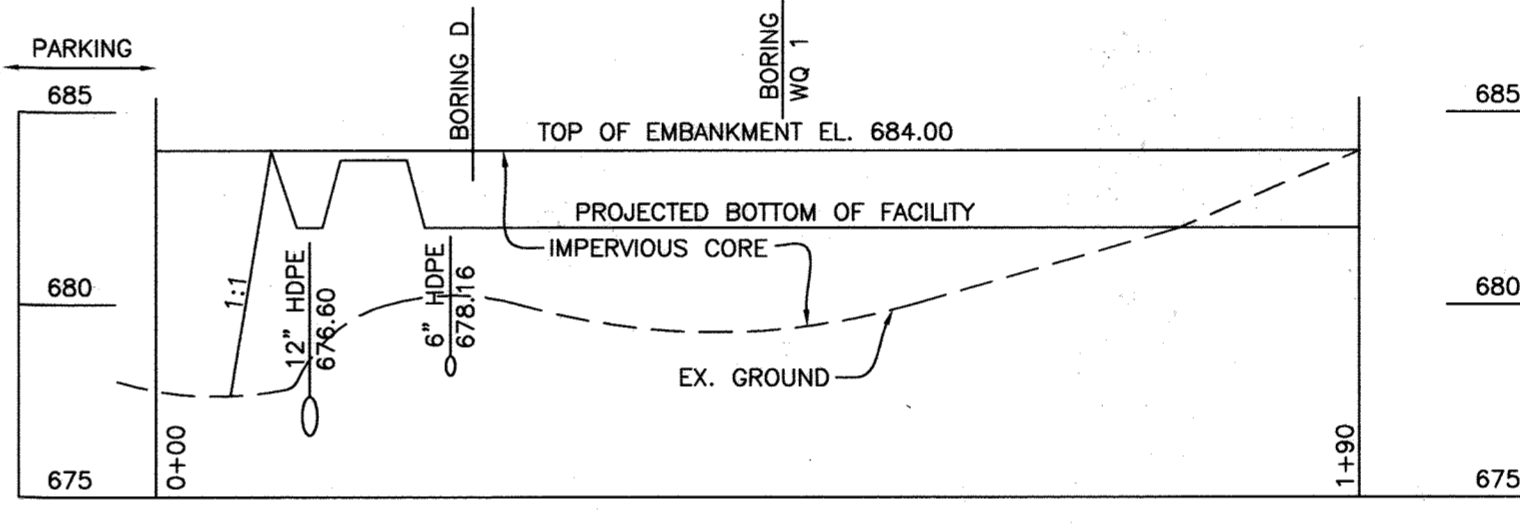
PLAN: SURFACE SAND FILTER (F-1)
SCALE: 1" = 30'



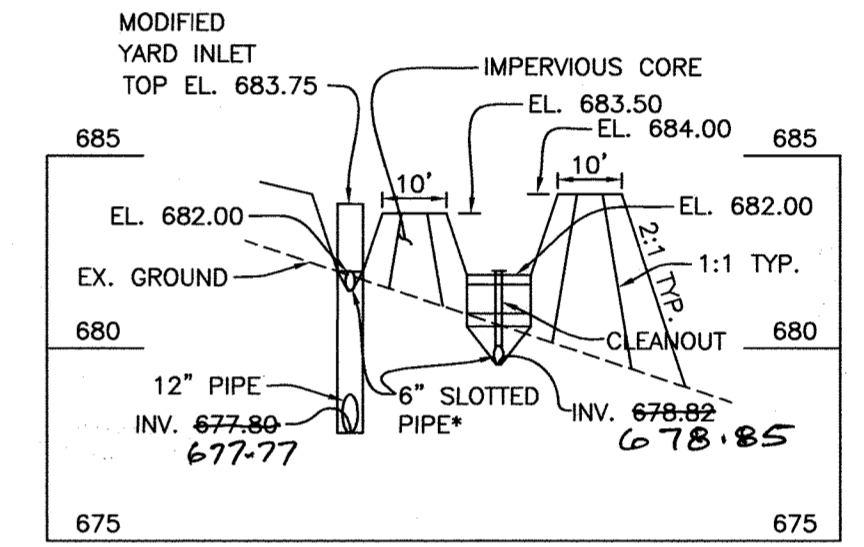
SECTION THROUGH FOREBAY EMBANKMENT MICROPOOL POND
SCALE: 1"=30' H.
1"=5' V.



MODIFIED YARD INLET (CO. DETAIL SD-4.14)
NO SCALE

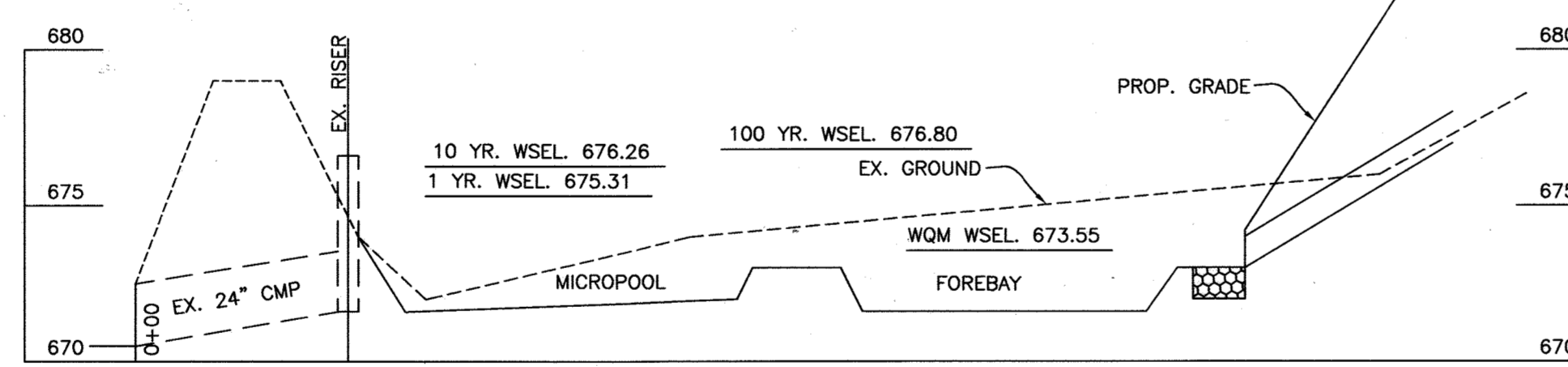


PROFILE ALONG CENTER OF DAM SURFACE SAND FILTER
SCALE: 1"=30' H.
1"=5' V.

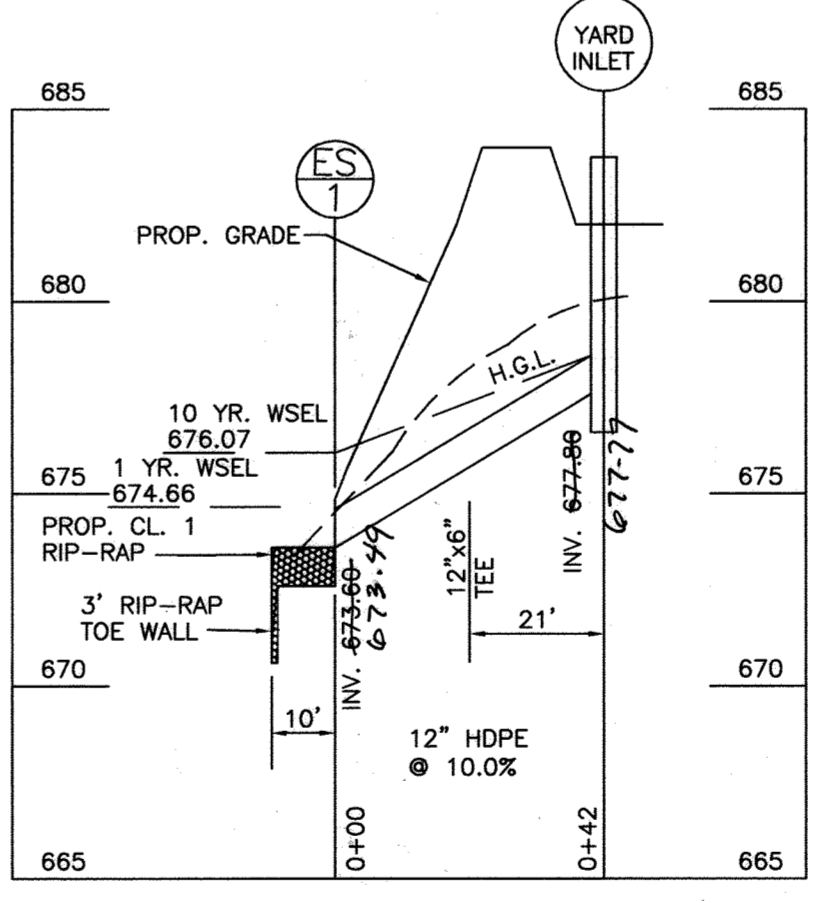


SECTION A-A SURFACE SAND FILTER DETAILS
SCALE: 1"=30' H.
1"=5' V.

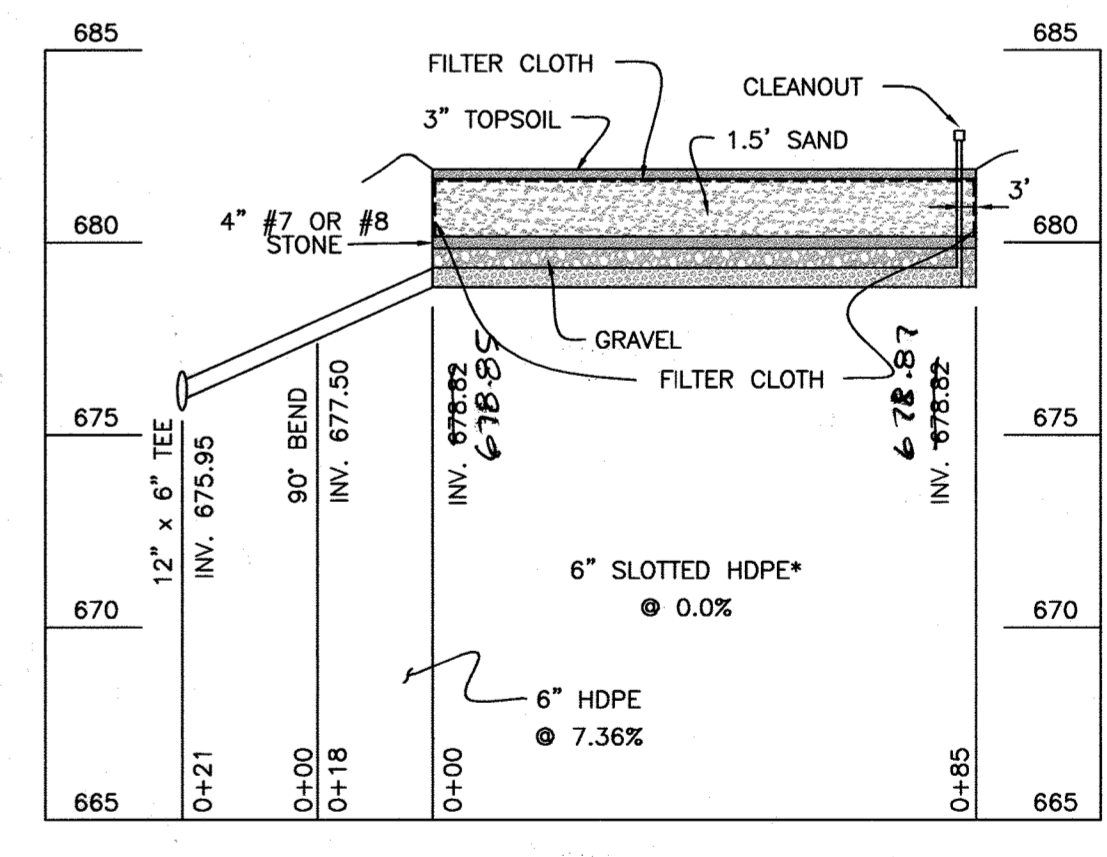
* - IF SLOTTED PIPE IS UNAVAILABLE, WRAP A PERFORATED PIPE WITH 4" MESH (4x4) OR SMALLER GALVANIZED CLOTH.



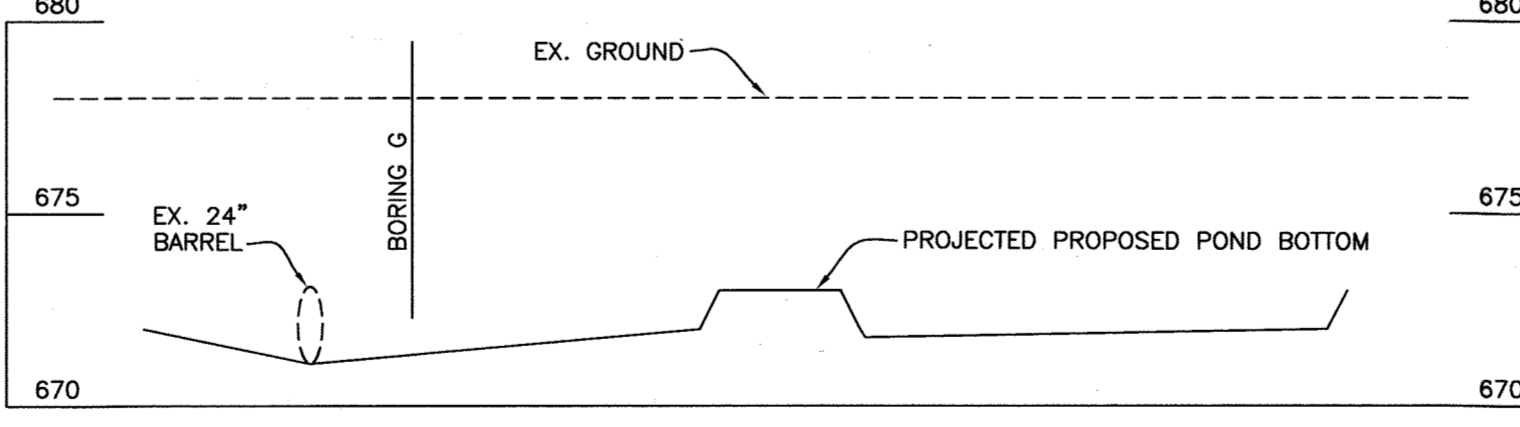
SECTION THROUGH PRINCIPLE SPILLWAY MICROPOOL POND
SCALE: 1"=30' H.
1"=5' V.



OUTFALL PROFILE OF SURFACE SAND FILTER
SCALE: 1"=30' H.
1"=5' V.



PROFILE THROUGH SURFACE SAND FILTER TREATMENT CHAMBER
SCALE: 1"=30' H.
1"=5' V.



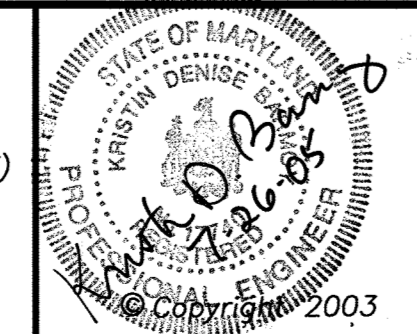
PROFILE ALONG CENTER OF DAM MICROPOOL POND
SCALE: 1"=30' H.
1"=5' V.

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
Robert J. Dale 9/23/05
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

~~Reviewed for Howard SCD and meets Technical Requirements~~
~~USDA - Natural Resources Conservation Service~~
~~This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT~~
~~HOWARD SCD~~

APPROVED: Howard County Department of Planning and Zoning
John D. ... 9/23/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Cindy ... 9/23/05
CHIEF, DIVISION OF LAND DEVELOPMENT
Mark ... 9/23/05
DIRECTOR

MARYLAND LAND DESIGN, INC.
CONSULTING ENGINEERS AND LAND PLANNERS
MARYLAND OFFICE: 2001 MEADOW DRIVE, WESTMINSTER, MARYLAND 21158
PENNSYLVANIA OFFICE: (CONTACT OFFICE) 585 McALLISTER STREET, HANOVER, PENNSYLVANIA 17331



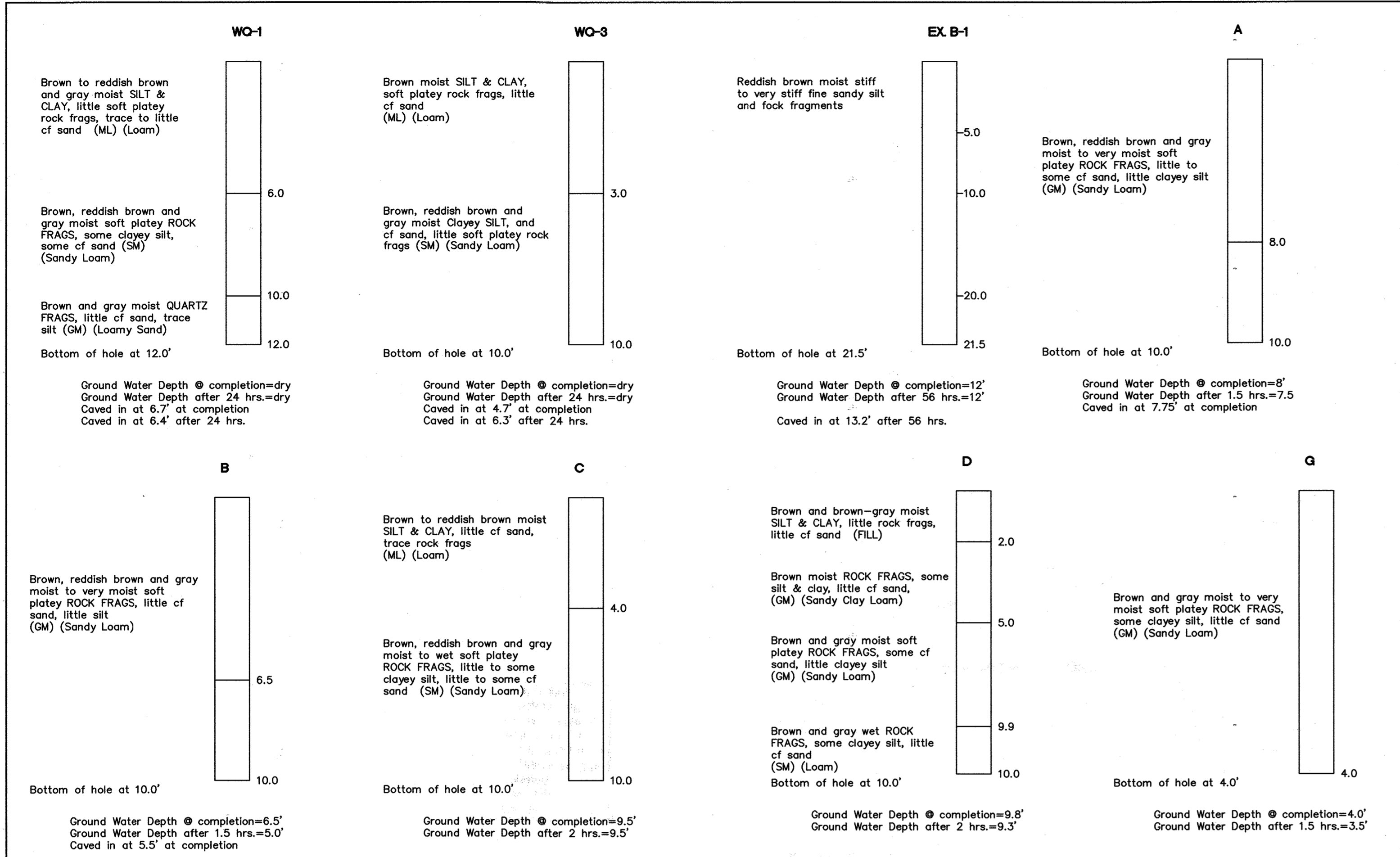
REVISIONS		
NO.	DATE	DESCRIPTION
1	9/23/05	REVISED PER COMMENTS

PROJECT OWNER/DEVELOPER:
MT. AIRY BIBLE CHURCH
16700 OLD FREDERICK ROAD
MT. AIRY, MD 21771
(410)-489-4321

PLAN PREPARATION
DRAWN BY: DAB/DRB
DESIGNED BY: DAB/DRB
CHECKED BY: KDB
DATE: JULY 28, 2005
FILE NO. 3466
DRAWING NO. E-152

PRIVATE STORMWATER MANAGEMENT FACILITIES & DETAILS
MT. AIRY BIBLE CHURCH
PROPOSED BUILDING ADDITION
16700 OLD FREDERICK ROAD
LIBER 951 FOLIO 300 4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
TAX MAP 7, PARCEL # 172

SCALE
1" = 30'
SHEET NO.
6 OF 22



BORING LOG
N.T.S.

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

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

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25 foot radius around the inlet structure shall be cleared.

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

Earth Fill
 Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

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

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

The minimum required density shall not be less than 95% of maximum dry density with a moisture content within ±2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

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

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

Structure Backfill
 Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi, 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Materials shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipes shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of the structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structure backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits
 All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:
 1. Materials - (Polymer Coated Steel Pipe) - Steel pipes with polymeric coatings shall have a minimum thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.
 Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipes, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specifications M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.
 Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-195 or M-211 with watertight coupling bands or flanges. Aluminum Pipes, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

 2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.
 3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.
 All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter: flanges on both ends of pipe with a circular 3/8" closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide hugger type band with o-ring gaskets having a minimum diameter of 1/2" greater than the corrugatic depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using a minimum of 4 rods and lugs, 2 on each connecting pipe end. A 24" wide by 3/8" thick closed cell circular neoprene gasket will be installed with 12" on the end of each pipe. Flanged joints with 3/8" closed cell gaskets the full width of the flange is also acceptable.
 4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
 5. Backfilling shall conform to "Structure Backfill".
 6. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:
 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.
 2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches, or as shown on the drawings. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.
 3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.
 4. Backfilling shall conform to "Structure Backfill".
 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Plastic Pipe - The following criteria shall apply for plastic pipe:
 1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4"-10" inch pipe shall meet the requirements of AASHTO M-294 Type S, and 12" through 24" shall meet the requirements of AASHTO M294 Type S.
 2. Joints and connections to anti-seep collars shall be completely watertight.
 3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
 4. Backfilling shall conform to "Structure Backfill".
 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

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

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

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

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

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

Stabilization
 All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Basin to be planted with crownvetch. Seeding, fertilizing and mulching shall be as follows:
 Seed Mix: 70% Kentucky 31 Tall Fescue, 15% Kentucky Bluegrass, 15% Chemming Crownvetch, inoculated, applied at a rate of 150 lbs. per acre. Optimum seeding dates: February 1 to April 30 and August 15 to October 15.
 Lime: 2 tons/acre dolomitic limestone.
 Fertilizer: 600 lbs./acre 10-10-10 fertilizer before seeding, 400lbs/acre 30-0-0
 Mulch: Straw at 4,000 lbs per acre.
 Anchoring: Mulching tool or emulsified asphalt binder at a rate of 8 gal. per 1000 sq. ft.

Erosion and Sediment Control
 Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process. shall detail erosion and sediment control measures to be employed during the construction process.

Filter Fabric
 Non-woven filter fabric shall be Mirafi 140N or approved equivalent. Woven filter fabric shall be Amoco 2006 or approved equivalent.

Reinforcement
 Reinforcing steel shall conform to the specifications of ASTM A615, Grade 60.

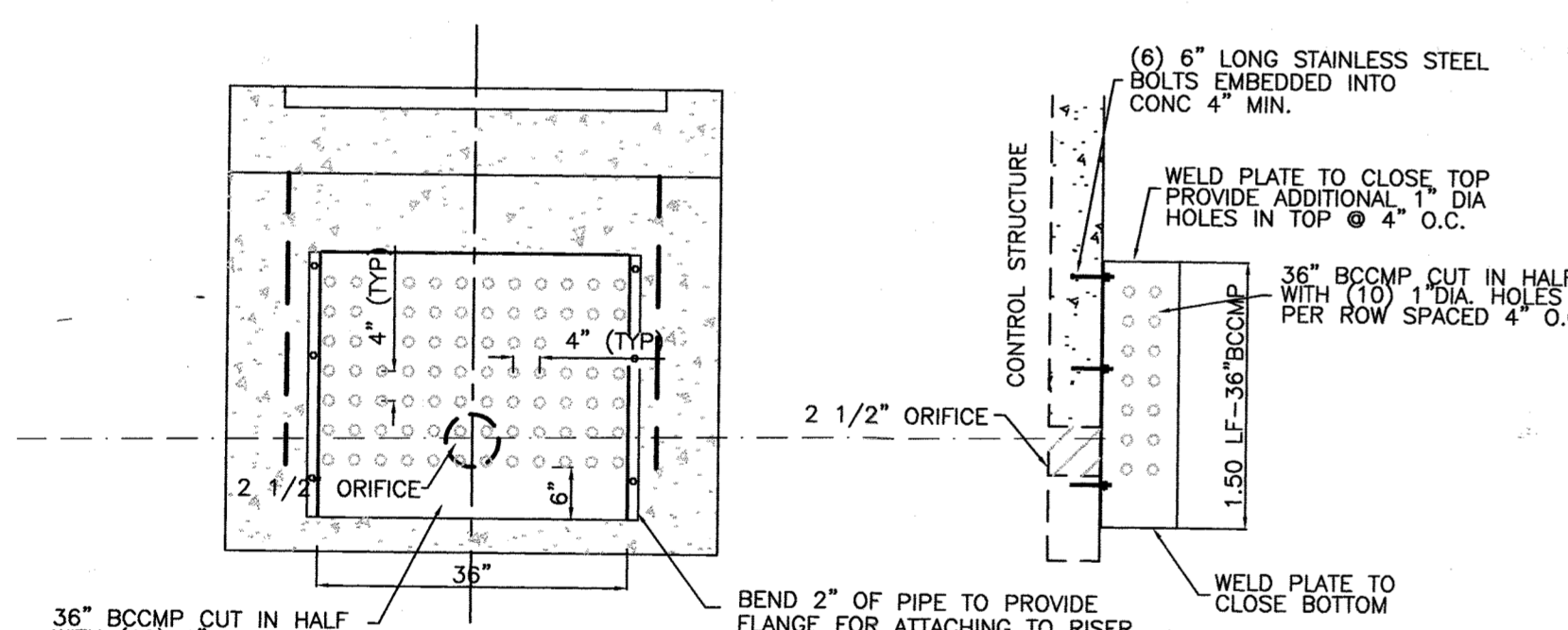
Fencing
 Fencing shall be constructed in accordance with State Highway Administration Details 690.01 and 690.02. The specifications for a 6'-0" fence shall be used, substituting 42" fabric and 6'-8" line posts. The gate shall be constructed in accordance with S.H.A. Standard Detail 692.01 with 42" fabric. The fabric used for the fence and gate shall conform to A.S.H.T.O. Designation MBI-74. Dark vinyl coating is required for the fence posts and wire fabric in accordance with the LANDSCAPE MANUAL, adopted by Resolution 56-90, October 1, 1990.

As-Built Plans and Certifications are required for this Stormwater Management Facility. These must be prepared and sealed by a REGISTERED PROFESSIONAL ENGINEER, Baltimore County will not perform the INSPECTION or prepare the AS-BUILT Plans or Certification. The STORMWATER MANAGEMENT PERMIT SECURITY will not be released until the As-Built Plans and Certifications are approved by Baltimore County.

In order to prepare the required As-Built Plans and Certification, this Stormwater Management Facility must be INSPECTED by the ENGINEER at specific stages during construction as required by the current Baltimore County STORMWATER MANAGEMENT POLICY AND DESIGN MANUAL. The Contractor shall notify the Engineer at least five (5) Working Days prior to starting any work shown on these plans.

Maintenance Schedule
 All stormwater management facilities shall be inspected every three months and after every major storm during the first year of operation. Thereafter, facilities shall be inspected semi-annually.

Construction Inspection Schedule
 The stormwater management facility shall be inspected, at a minimum, at the following stages of construction:
 Upon completion of excavation of the core trench, principal spillway barrel and dewatering device.
 During the installation of the principal spillway and dewatering device.
 During embankment construction.
 Upon completion of final grading and establishment of permanent stabilization.

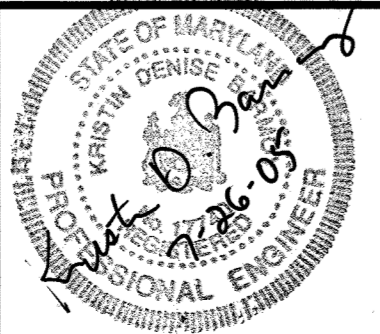


Reviewed for Howard SCD and meets Technical Requirements
 USDA - Natural Resources Conservation Service
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT
 HOWARD SCD
 DATE

APPROVED: Howard County Department of Planning and Zoning
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DIRECTOR
 DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT
 DATE

MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS
 MARYLAND OFFICE:
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 WESTMINSTER, MARYLAND 21158
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 585 McALLISTER STREET
 HANOVER, PENNSYLVANIA 17331
 TELEPHONE: (717) 637-8746
 FAX: (717) 633-1987



REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT OWNER/DEVELOPER:
 MT. AIRY BIBLE CHURCH
 16700 OLD FREDERICK ROAD
 MT. AIRY, MD 21771
 (410)-489-4321

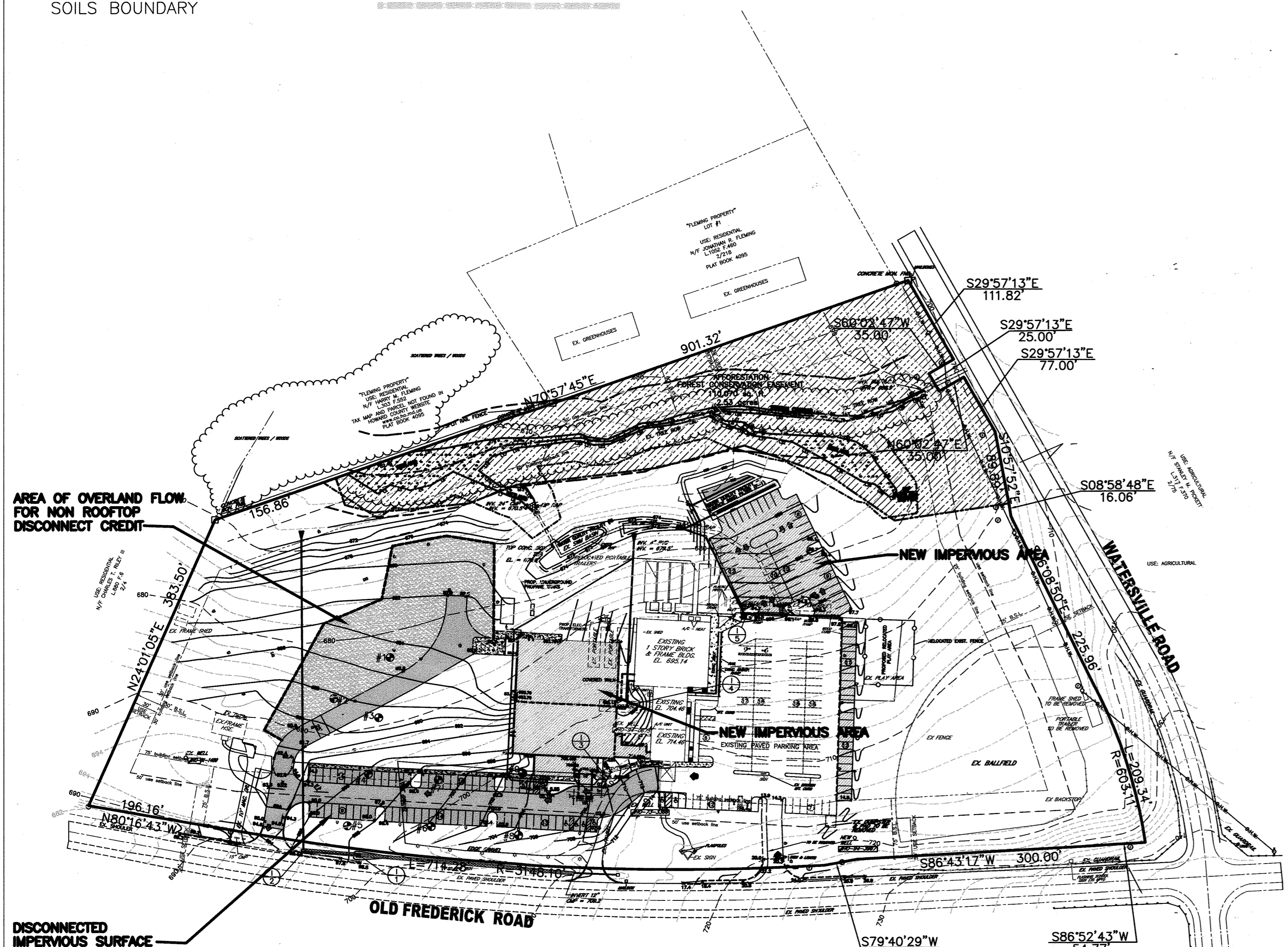
PLAN PREPARATION
 DRAWN BY: DAB
 DESIGNED BY: DAB
 CHECKED BY: KDB
 DATE: JULY 28, 2005
 FILE NO. 3466
 DRAWING NO. E-152

PRIVATE STORMWATER MANAGEMENT PROFILES AND DETAILS
 MT. AIRY BIBLE CHURCH
 PROPOSED BUILDING ADDITION
 16700 ON OLD FREDERICK ROAD
 LIBER 951 FOLIO 300 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 TAX MAP 7, PARCEL # 172
 SDP-04-150

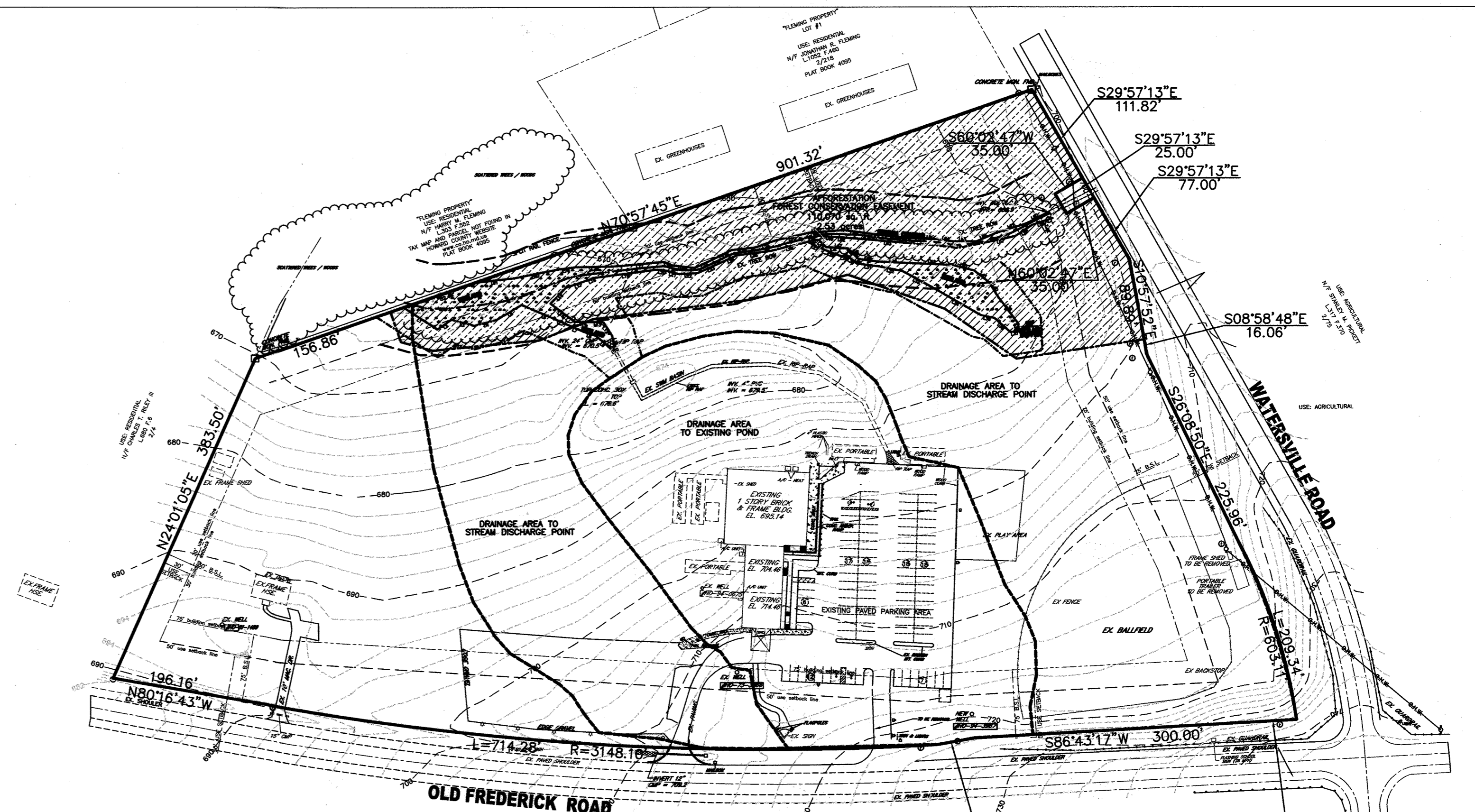
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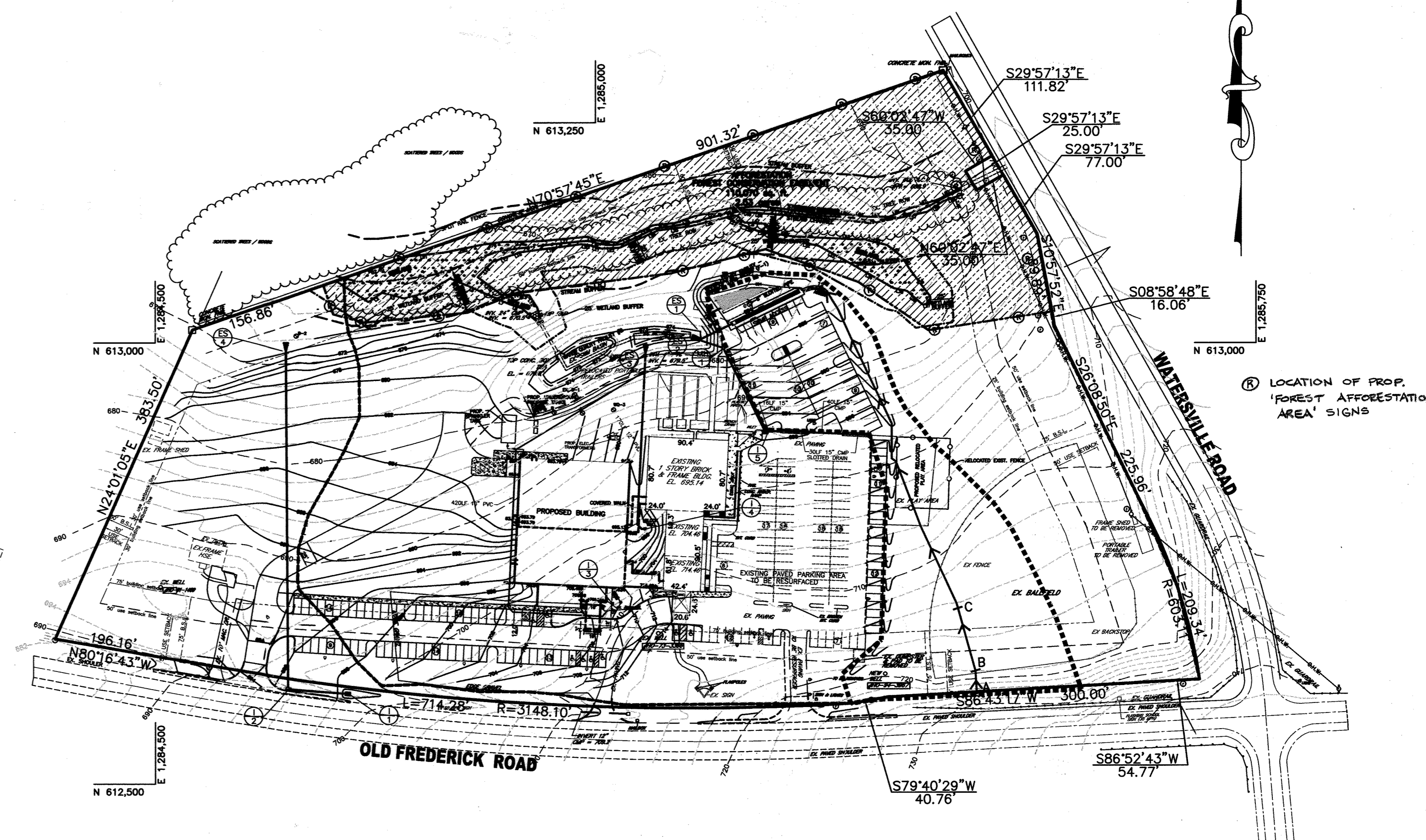
EXISTING & PROPOSED DRAINAGE LIMITS
 TIME OF CONCENTRATION PATH
 SOILS BOUNDARY



STORMWATER MANAGEMENT REDEVELOPMENT DRAINAGE AREA MAP
 SCALE: 1" = 100'



STORMWATER MANAGEMENT EXISTING DRAINAGE AREA MAP
 SCALE: 1" = 100'



STORMWATER MANAGEMENT PROPOSED DRAINAGE AREA MAP
 SCALE: 1" = 100'

Reviewed for Howard SCD and meets Technical Requirements

~~USDA - Natural Resources Conservation Service~~

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT

HOWARD SCD DATE

APPROVED: Howard County Department of Planning and Zoning

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DIRECTOR DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

COUNTY HEALTH OFFICER DATE

HOWARD COUNTY HEALTH DEPARTMENT

SOIL TYPES

ChA Chester Silt Loam, 0 - 3% slopes
 ChB2 Chester Silt Loam, 3 - 8% slopes, moderately eroded
 EkB2 Elioak Silt Loam, 3 - 8% slopes, moderately eroded

CHESTER SOILS ARE IN HYDROLOGIC SOILS GROUP B
 ELIOAK SOILS ARE IN HYROLOGIC SOILS GROUP C

SURFACE SAND FILTER FACILITY SUMMARY TABLE:

TOTAL DRAINAGE AREA: 1.94 ACRES
 IMPERVIOUS AREA FOR MANAGEMENT: 0.52 ACRES
 1-YEAR STORM PEAK DISCHARGE: N/A
 REQUIRED CHANNEL PROTECTION VOLUME (Cpv): N/A
 PROVIDED CHANNEL PROTECTION VOLUME (Cpv): N/A
 REQUIRED WATER QUALITY VOLUME (WQv): 0.035 AC-FT
 PROVIDED WATER QUALITY VOLUME (WQv): 0.042 AC-FT
 REQUIRED RECHARGE VOLUME (Rev): N/A
 PROVIDED RECHARGE VOLUME (Rev): N/A

MICROPOOL EXTENDED DETENTION POND SUMMARY TABLE:

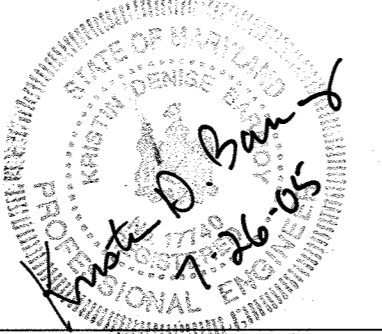
TOTAL DRAINAGE AREA: 4.57 ACRES
 IMPERVIOUS AREA FOR MANAGEMENT: 2.48 ACRES
 1-YEAR STORM PEAK DISCHARGE: 3.27 CFS
 REQUIRED CHANNEL PROTECTION VOLUME (Cpv): 0.329 AC. FT.
 PROVIDED CHANNEL PROTECTION VOLUME (Cpv): 0.4984 AC. FT.
 REQUIRED WATER QUALITY VOLUME (WQv): 4824 CF
 PROVIDED WATER QUALITY VOLUME (WQv): 5181 CF
 REQUIRED RECHARGE VOLUME (Rev): N/A
 PROVIDED RECHARGE VOLUME (Rev): N/A

MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS

MARYLAND OFFICE: 2001 MEADOW DRIVE WESTMINSTER, MARYLAND 21158 TELEPHONE: (410) 857-0210 FAX: (410) 857-8030

PENNSYLVANIA OFFICE: (CONTACT OFFICE) 585 McALLISTER STREET HANOVER, PENNSYLVANIA 17331 TELEPHONE: (717) 637-8746 FAX: (717) 633-1987

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REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT OWNER/DEVELOPER:

MT. AIRY BIBLE CHURCH
 16700 OLD FREDERICK ROAD
 MT. AIRY, MD 21771
 (410)-489-4321

PLAN PREPARATION

DRAWN BY: DAB DATE: JULY 28, 2005

DESIGNED BY: DAB FILE NO. 2002-23

CHECKED BY: KDB DRAWING NO. E-152

DRAINAGE AREA MAPS

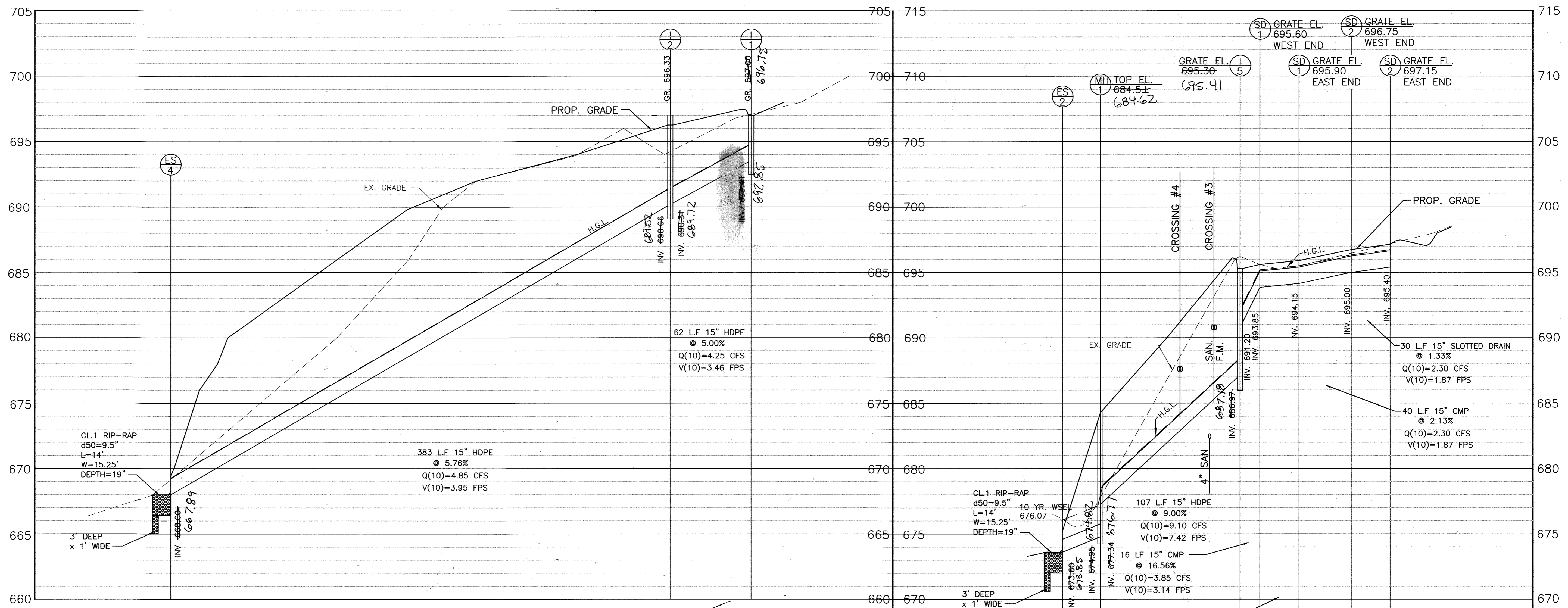
MT. AIRY BIBLE CHURCH
 PROPOSED BUILDING ADDITION
 16700 ON OLD FREDERICK ROAD
 LIBER 951 FOLIO 300 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 TAX MAP 7, PARCEL # 172

SCALE
 1" = 100'

SHEET NO.
 8 OF 22

SDP-04-150

H:\mld\projects\MD LAND\MT. AIRY BIBLE CHURCH\SITE PLANS\SSD-DRAIN-AREA.dwg, 7/22/2005 12:01:38 PM, HP Designer 1050CDR8.pc3



STORM DRAIN PROFILE:
SCALE: 1"=4' VERT.
1"=40' HORIZ.

STORM DRAIN STRUCTURE SCHEDULE

STRUCT NO	GRATE/RIM EL.	INV. IN	INV. IN	INV. OUT	STRUCTURE TYPE
I-1	697.00	-----	-----	693.41	PRECAST STANDARD TYPE 'D' INLET SD-4.39 (THROAT 1 SIDE ONLY)
I-2	696.33	-----	690.31	690.06	TYPE 'A-5' CAST-IN-PLACE 2'-6" WIDE SD-4.01
I-3	694.50	-----	-----	690.00	TYPE 'S' INLET SD-4.22
I-4	706.20	-----	-----	703.20	TYPE 'S' INLET SD-4.22
I-5	695.30	-----	691.20	686.97	MODIFIED PRECAST SINGLE WR INLET SD-4.37
	705.76			703.08	
MH-1	684.5±	-----	677.34	674.95	STANDARD MANHOLE G-5.12
ES-1		-----	-----	673.60	HDPE END SECTION
ES-2		-----	-----	673.60	HDPE END SECTION
ES-3		-----	-----	673.60	HDPE END SECTION
ES-4		-----	-----	668.00	HDPE END SECTION
SLOTTED DRAIN #1	EAST- 695.90 WEST- 695.60	-----	-----	EAST- 694.15 WEST- 693.85	LANE DRAINAGE PRODUCTS - OPEN TOP
SLOTTED DRAIN #2	EAST- 697.15 WEST- 696.75	-----	-----	EAST- 695.40 WEST- 695.00	SLOTTED DRAIN W/ MESH HEEL GUARD

NOTE: ALL HDPE PIPE SHALL MEET AASHTO-252 TYPES, M294 TYPES AND ASTM D2321, RESPECTIVELY.
- SEE SHEET 10 FOR SLOTTED DRAIN DETAIL AND MODIFIED STRUCTURE FOR I-5.

NOTE:
SEE SHEET 5 OF 18 FOR DETAILS AND SECTIONS FOR THE OUTFALL PROTECTION.

PIPE SIZE	LENGTH (FT)	TYPE
10"	474	PVC
12"	205	PVC
15"	581	HDPE (TYPE SP)
15"	60	SLOTTED DRAIN
15"	56	CMP

Reviewed for Howard SCD and meets Technical Requirements
USDA - Natural Resource Conservation Service
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT
HOWARD SCD

APPROVED: Howard County Department of Planning and Zoning
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

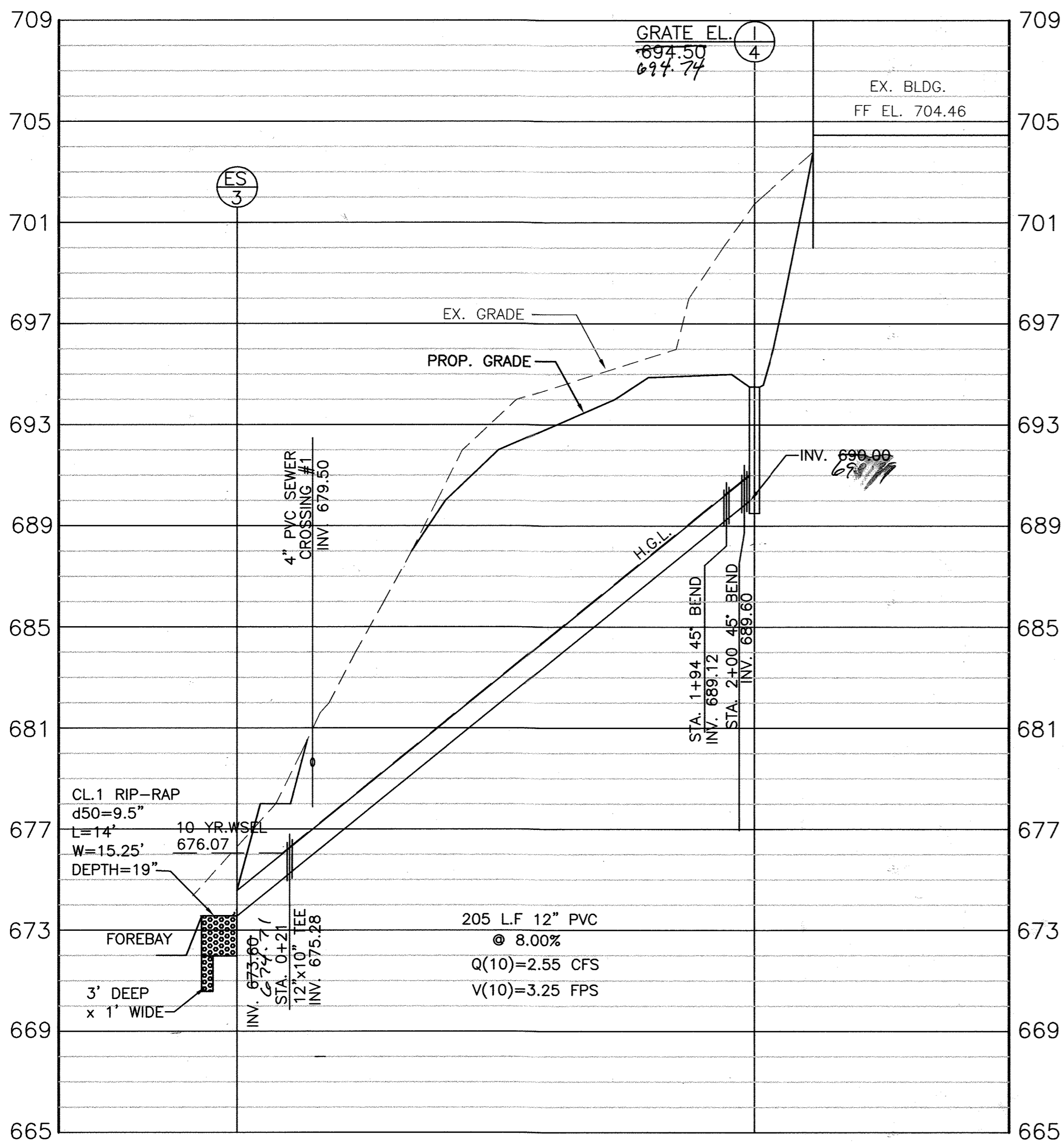
I have by certifying this red line allowed it to be correct as shown



MARYLAND LAND DESIGN, INC. CONSULTING ENGINEERS AND LAND PLANNERS MARYLAND OFFICE: 2001 MEADOW DRIVE WESTMINSTER, MARYLAND 21158 PENNSYLVANIA OFFICE: (CONTACT OFFICE) 585 McALLISTER STREET HANOVER, PENNSYLVANIA 17331	REVISIONS NO. DATE DESCRIPTION 9 7/21/05 Redline 15 min	PROJECT OWNER/DEVELOPER: MT. AIRY BIBLE CHURCH 16700 OLD FREDERICK ROAD MT. AIRY, MD 21771 (410)-489-4321	PLAN PREPARATION DRAWN BY: DAB DATE: JULY 28, 2005 DESIGNED BY: DAB FILE NO. 3466 CHECKED BY: KDB DRAWING NO. E-152		STORM DRAIN PROFILES AND DETAILS MT. AIRY BIBLE CHURCH PROPOSED BUILDING ADDITION 16700 ON OLD FREDERICK ROAD LIBER 951 FOLIO 300 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND TAX MAP 7, PARCEL # 172 SDP-04-150	SCALE AS NOTED SHEET NO. 9 OF 22 SDP-04-150

H:\mtd\projects\MD LAND\MT. AIRY BIBLE CHURCH\SITE PLANS\SD-PROFILES.dwg, 7/22/2005 11:59:18 AM, HP Designer: 1050CDDB, p3

MARYLAND LAND DESIGN, INC.



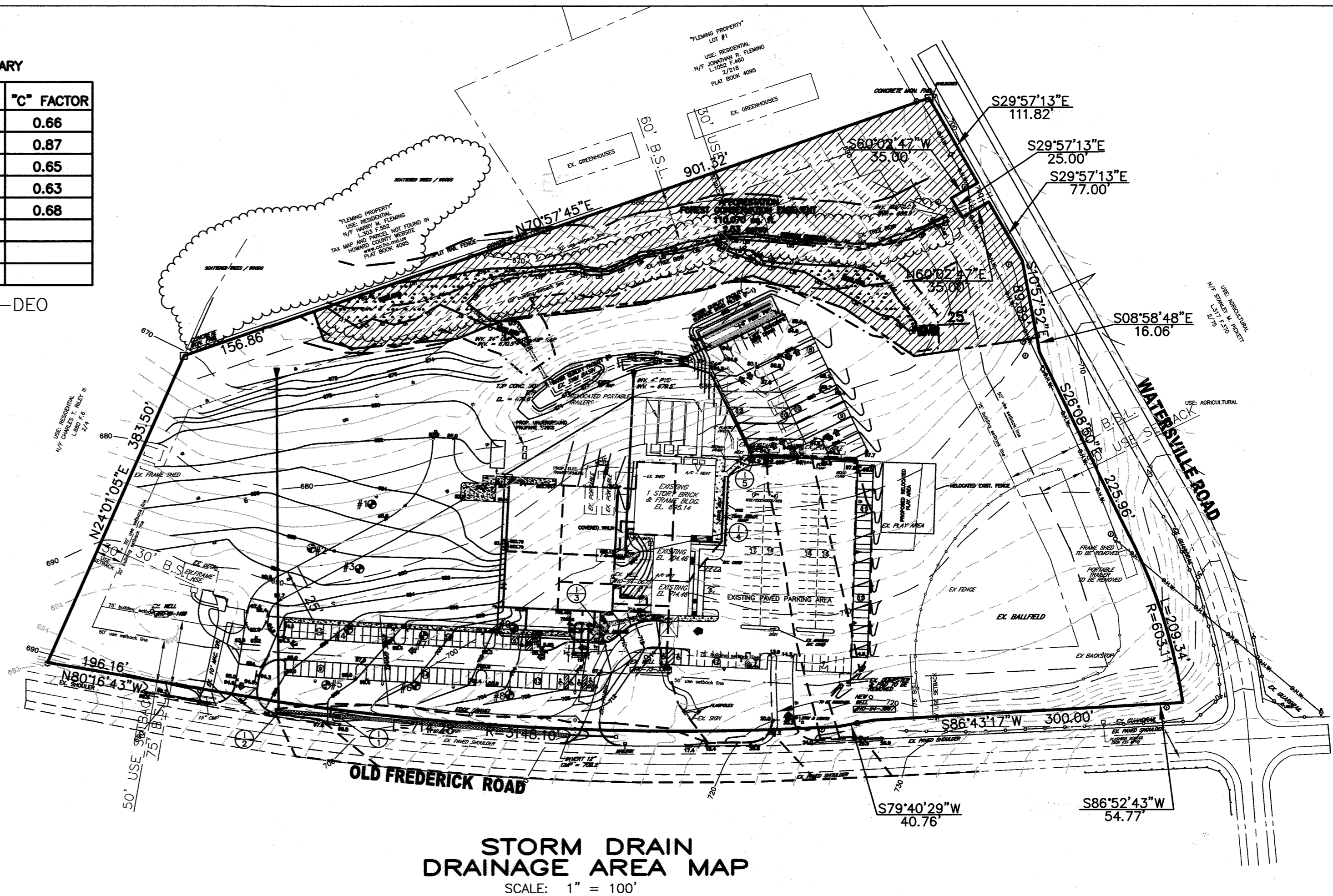
PROFILE SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

*I have corrected this red cone
As it is to be correct as shown*

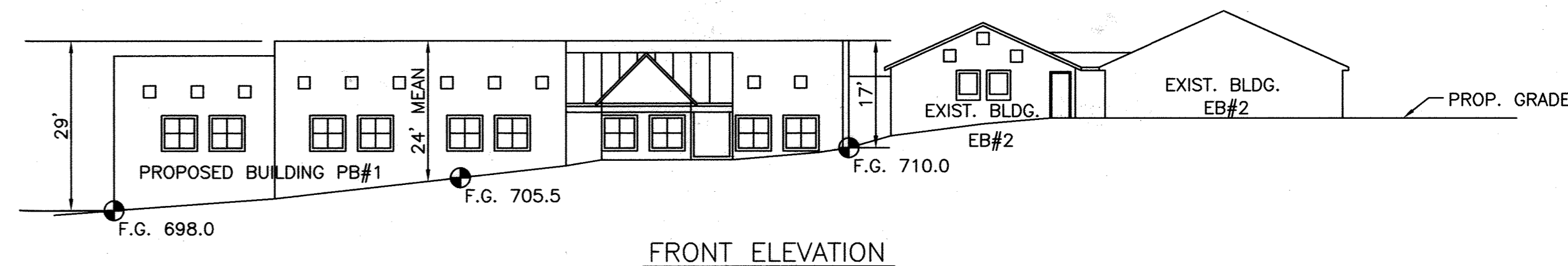
STORM DRAIN DESIGN SUMMARY

AREA	TOTAL DRAINAGE AREA	PERCENT IMPERVIOUS	"C" FACTOR
1	0.75 ACRES	68%	0.66
2	0.08 ACRES	100%	0.87
3	0.15 ACRES	67%	0.65
4	0.11 ACRES	64%	0.63
5	0.91 ACRES	71%	0.68

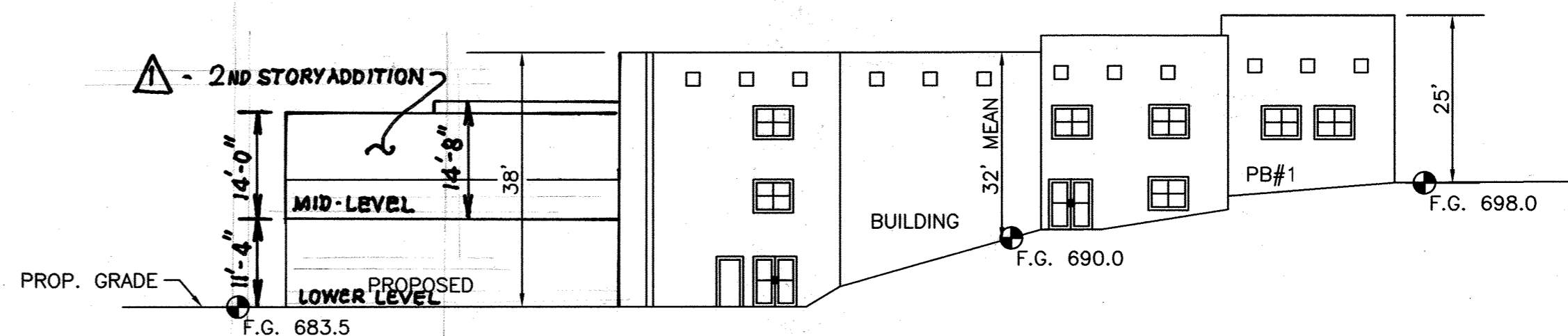
SITE ZONING: RR-DEO



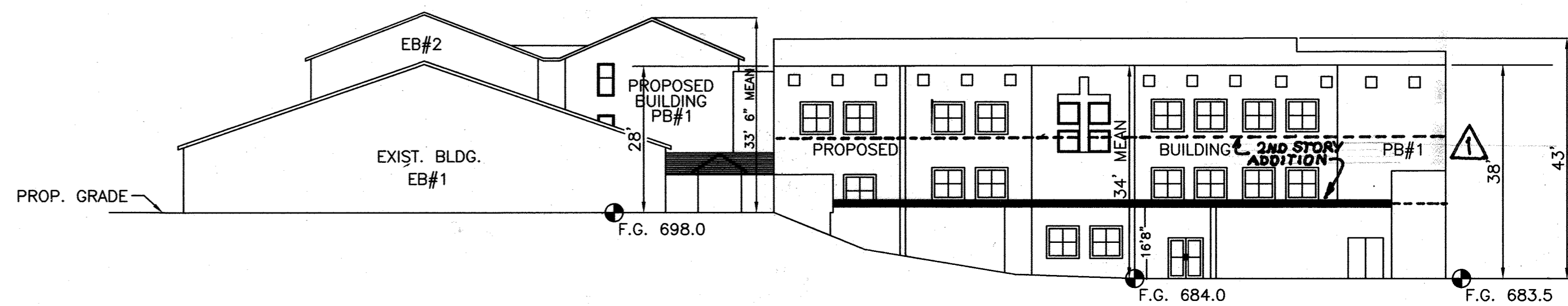
STORM DRAIN DRAINAGE AREA MAP
SCALE: 1" = 100'



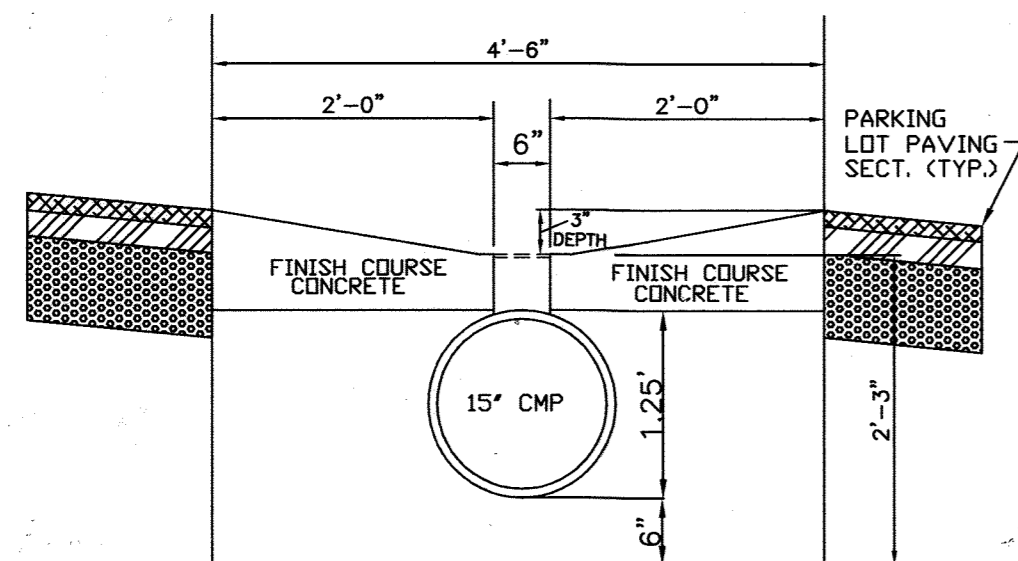
FRONT ELEVATION



WEST ELEVATION

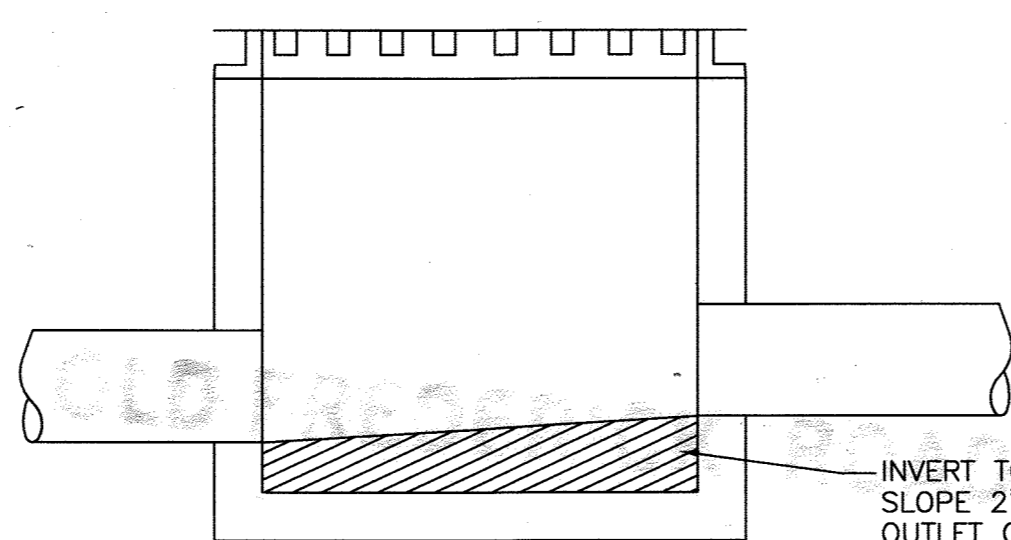


REAR ELEVATION
BUILDING SECTION
NTS



SLOTTED DRAIN DETAIL

NOT TO SCALE



MODIFIED SINGLE WR INLET

NOT TO SCALE

INVERT TO BE CONCRETE OR BRICK.
SLOPE 2" PER FOOT TOWARD
OUTLET OR AS DIRECTED.

Reviewed for Howard SCD and meets Technical Requirements
USDA - Natural Resources Conservation Service
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT
HOWARD SCD

APPROVED: Howard County Department of Planning and Zoning

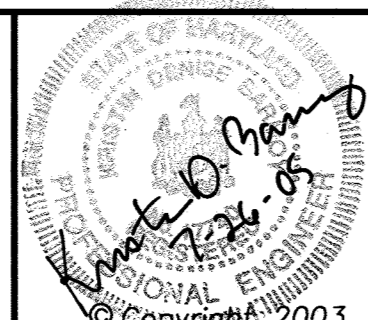
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

MARYLAND LAND DESIGN, INC.

CONSULTING ENGINEERS AND LAND PLANNERS
MARYLAND OFFICE: 2007 MEADOW DRIVE, WESTMINSTER, MARYLAND 21158
PENNSYLVANIA OFFICE: (CONTACT OFFICE) 585 McALLISTER STREET, HANOVER, PENNSYLVANIA 17331



REVISIONS

NO.	DATE	DESCRIPTION
1	10/24/06	ADDED BUILDING ADDITION TO BUILDING SECTIONS
2	2/16/07	Redline to permit

PROJECT OWNER/DEVELOPER:
MT. AIRY BIBLE CHURCH
16700 OLD FREDERICK ROAD
MT. AIRY, MD 21771
(410)-489-4321

PLAN PREPARATION
DRAWN BY: DAB
DESIGNED BY: DAB
CHECKED BY: KDB
DATE: JULY 28, 2005
FILE NO. 3466
DRAWING NO. E-152

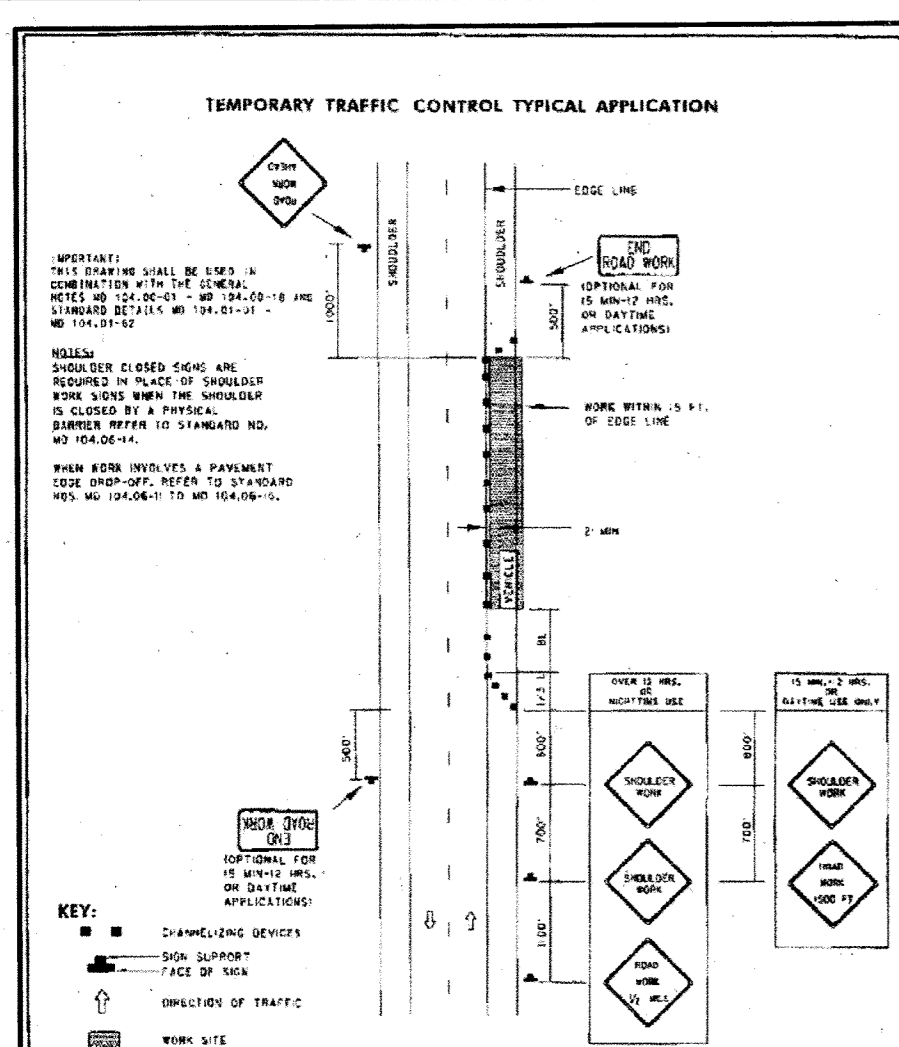
STORM DRAIN PROFILES, DETAILS, AND BUILDING PROFILES
MT. AIRY BIBLE CHURCH
PROPOSED BUILDING ADDITION
16700 ON OLD FREDERICK ROAD
LIBER 951 FOLIO 300 4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
TAX MAP 7, PARCEL # 172

SCALE
AS NOTED
SHEET NO.
10 OF 22

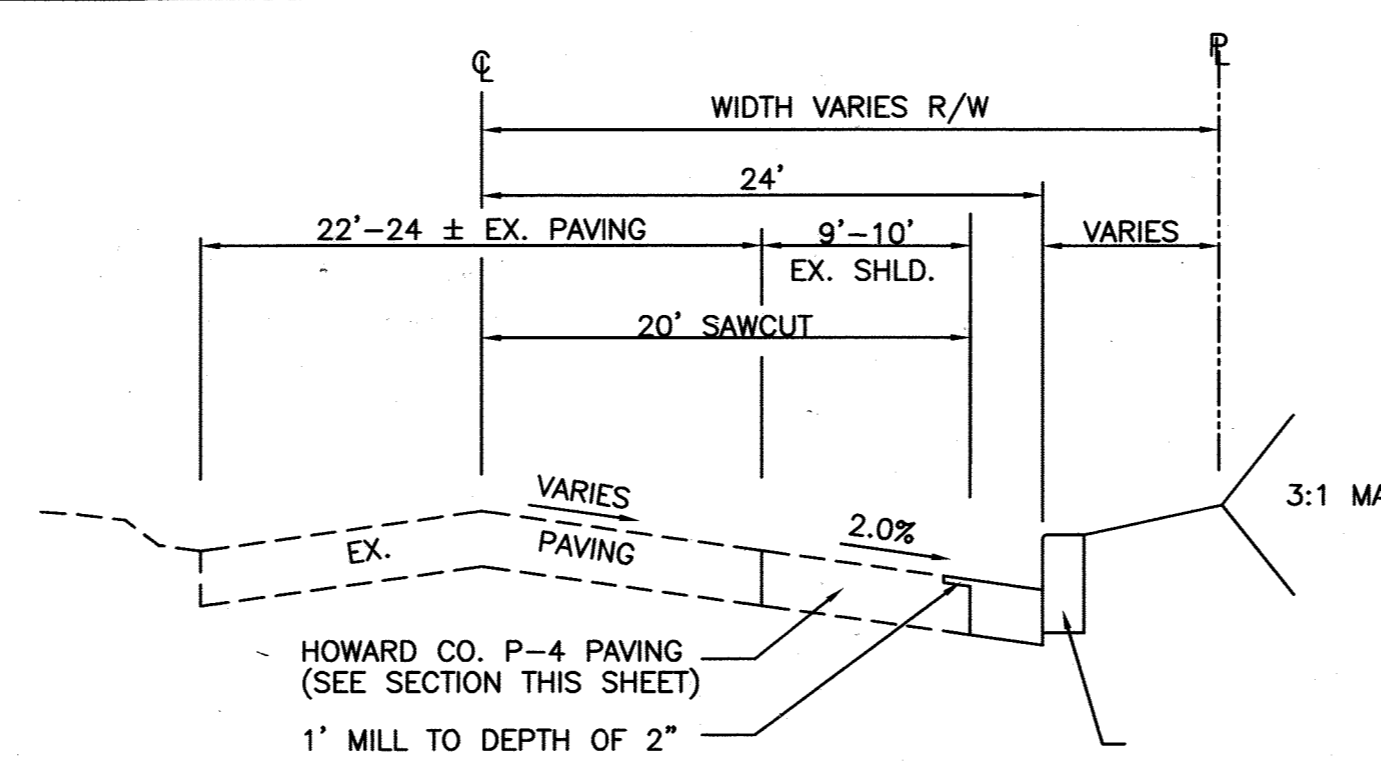
SDP-04-150

SDP-04-150

MARYLAND LAND DESIGN, INC.

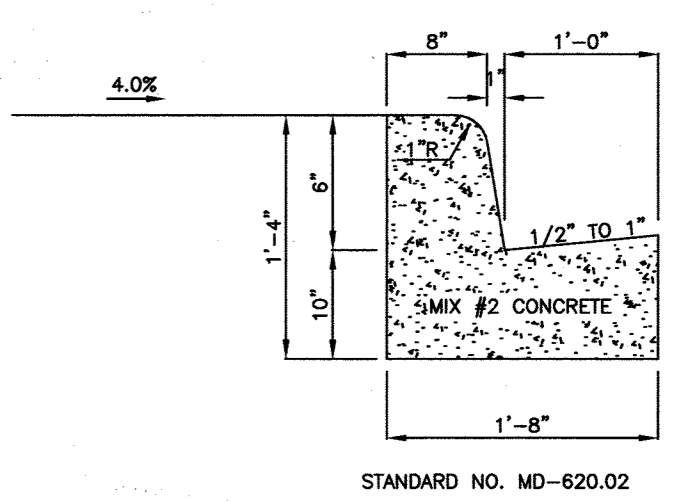


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
SHOULDER WORK / 2-LANE, 2-WAY
GREATER THAN 40 MPH
STANDARD NO. MD 104.02-01



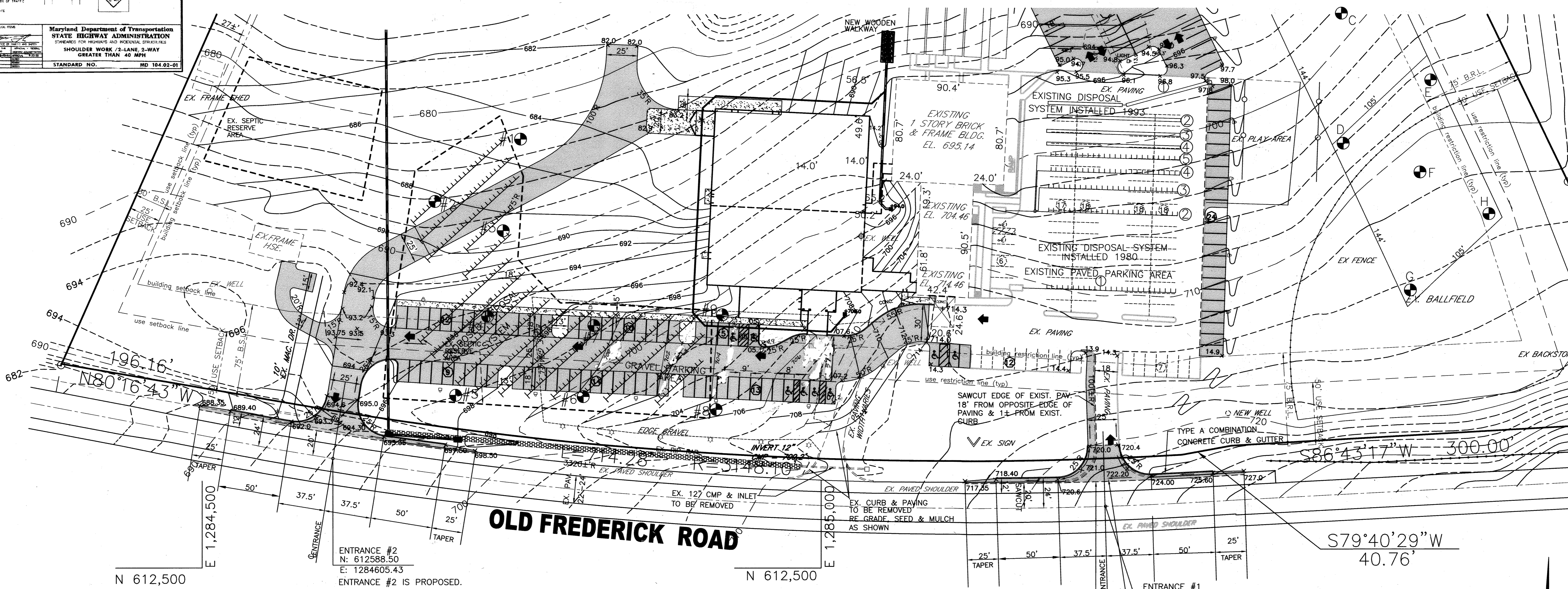
1' BITUMINOUS CONC. SURFACE
2' BITUMINOUS CONC. BASE
4' GRADED AGGREGATE BASE (GAB)

P-1 PAVING SECTION
NOT TO SCALE



TYPE 'A' COMBINATION
CONCRETE CURB AND GUTTER
NO SCALE

OLD FREDERICK RD. WIDENING SECTION
NOT TO SCALE

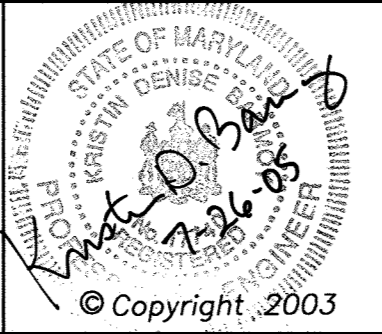


APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
Robert D. Williams
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT MGD
9/23/05
DATE

Reviewed for Howard SCD and meets Technical Requirements
USDA - Natural Resources Conservation Service
DATE
AWK
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT
HOWARD SCD
DATE

APPROVED: Howard County Department of Planning and Zoning
John J. Williams
CHIEF, DEVELOPMENT ENGINEERING DIVISION
9/16/05
DATE
Wanda Harris
CHIEF, DIVISION OF LAND DEVELOPMENT
9/26/05
DATE
Mark A. Wynn
DIRECTOR
9/21/05
DATE

MARYLAND LAND DESIGN, INC.
CONSULTING ENGINEERS AND LAND PLANNERS
MARYLAND OFFICE:
2001 MEADOW DRIVE
WESTMINSTER, MARYLAND 21158
TELEPHONE: (410) 857-0210
FAX: (410) 857-8030
PENNSYLVANIA OFFICE (CONTACT OFFICE):
585 McALLISTER STREET
HANOVER, PENNSYLVANIA 17331
TELEPHONE: (717) 637-8746
FAX: (717) 633-1987
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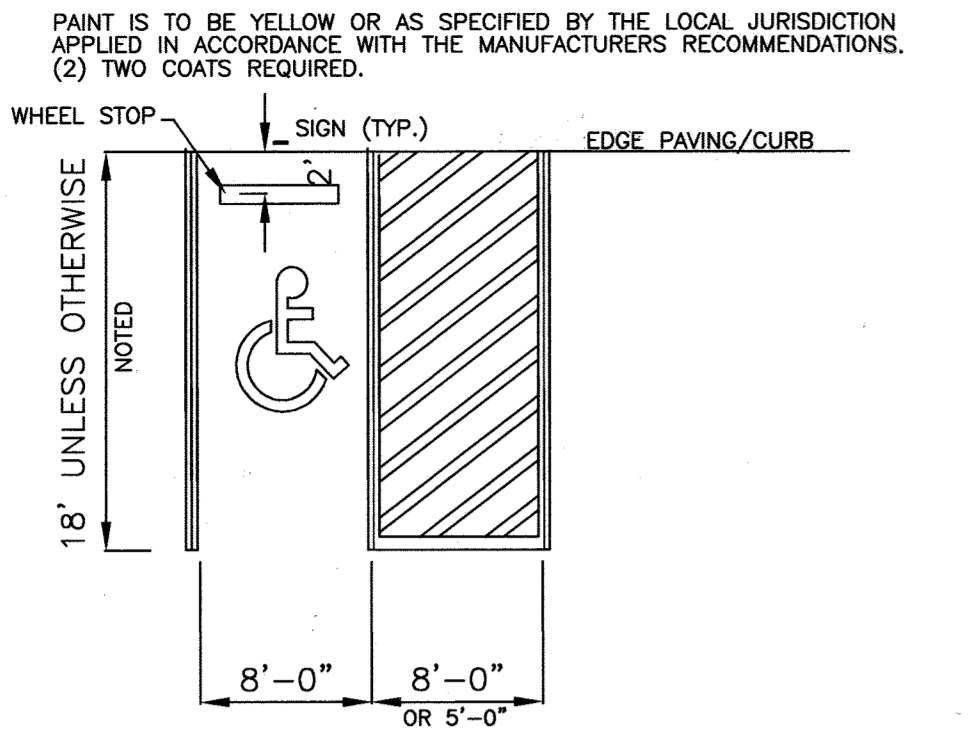
REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT OWNER/DEVELOPER:
MT. AIRY BIBLE CHURCH
16700 OLD FREDERICK ROAD
MT. AIRY, MD 21771
(410)-489-4321

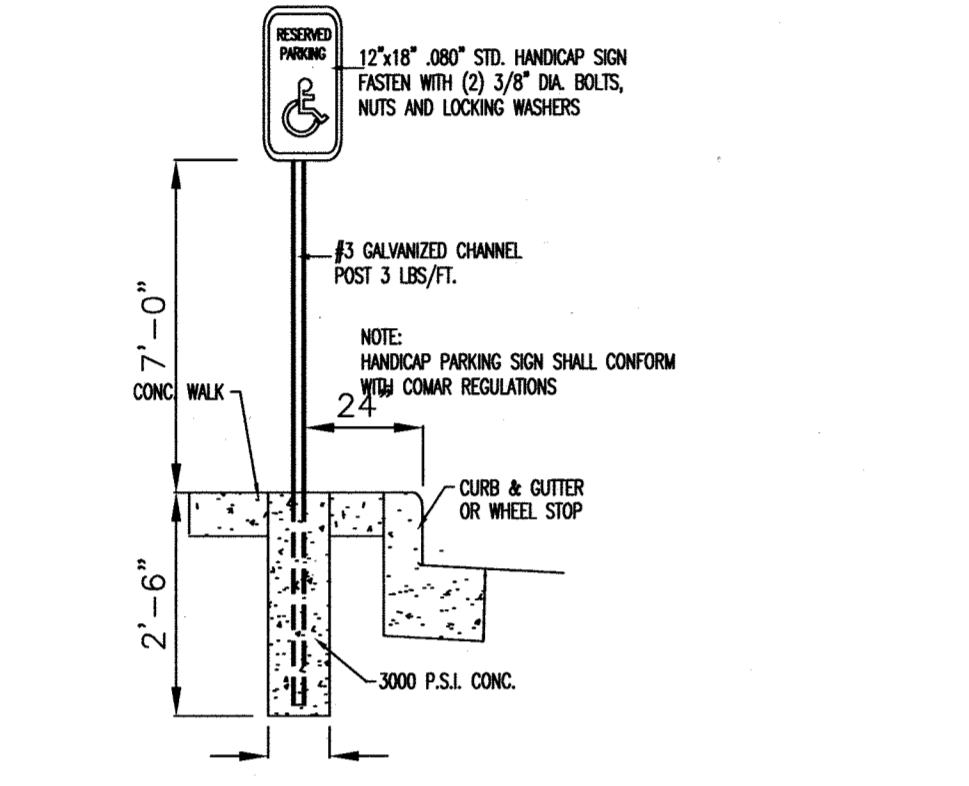
PLAN PREPARATION
DRAWN BY: DAB
DESIGNED BY: DAB
CHECKED BY: KDB
DATE: JULY 28, 2005
FILE NO. 3466
DRAWING NO. E-152

OLD FREDERICK ROAD
IMPROVEMENT PLAN
MT. AIRY BIBLE CHURCH
PROPOSED BUILDING ADDITION
16700 ON OLD FREDERICK ROAD
LIBER 951 FOLIO 300 4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
TAX MAP 7, PARCEL # 172
SDP-04-150

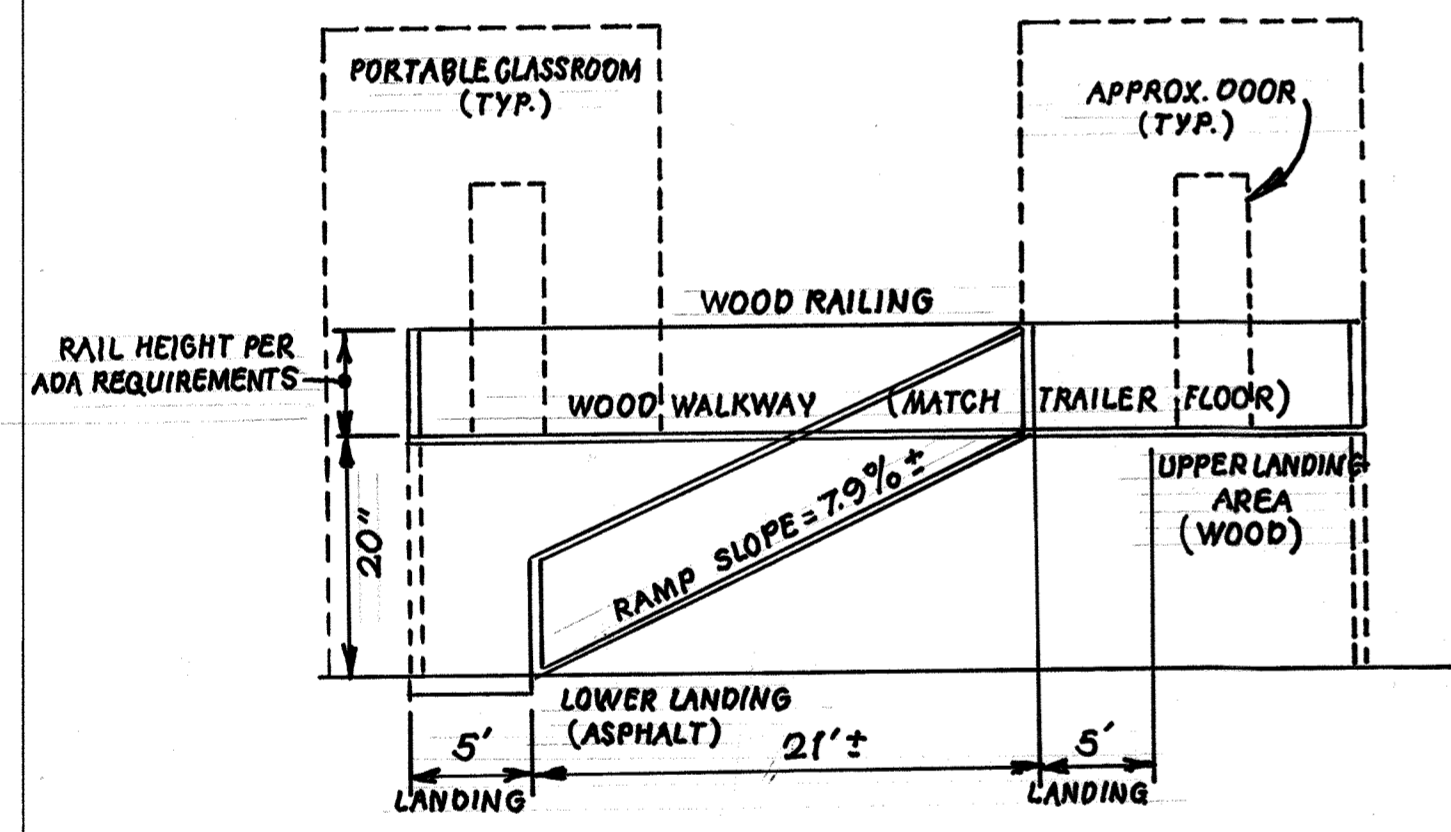
SCALE
1" = 40'
SHEET NO.
11 OF 22



TYPICAL HANDICAP PARKING DETAIL
NOT TO SCALE

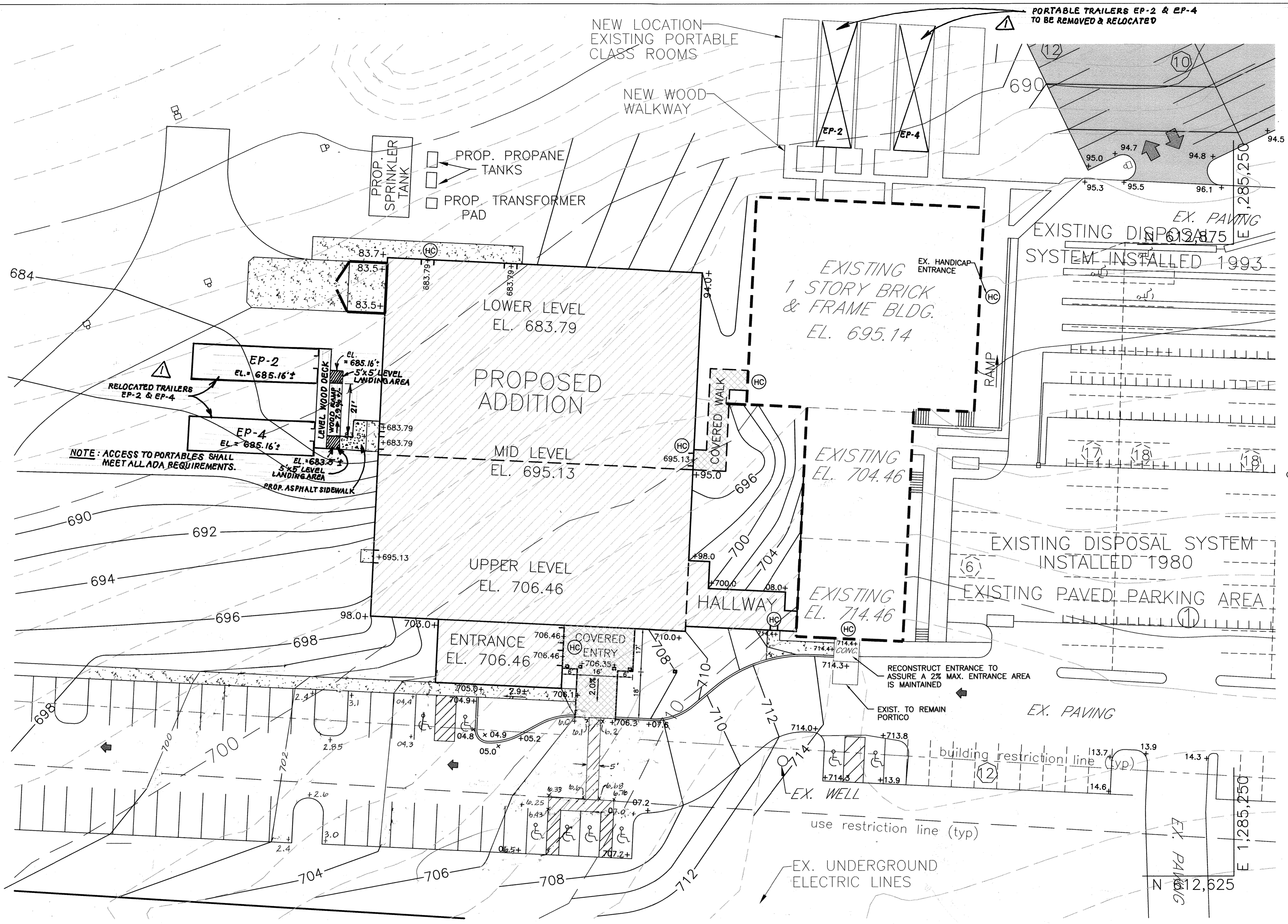


HANDICAP PARKING SIGN DETAIL
NOT TO SCALE



RELOCATED PORTABLES HANDICAP RAMP SECTION (NTS)

HC DENOTES ENTRANCES PROPOSED AS HANDICAP ACCESSIBLE



~~Reviewed for Howard SCD and meets Technical Requirements~~
USDA - Natural Resources Conservation Service
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT
HOWARD SCD

APPROVED: Howard County Department of Planning and Zoning
CHIEF, DEVELOPMENT ENGINEERING DIVISION
CHIEF, DIVISION OF LAND DEVELOPMENT
DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

MARYLAND LAND DESIGN, INC.
CONSULTING ENGINEERS AND LAND PLANNERS
MARYLAND OFFICE: 2001 MEADOW DRIVE, WESTMINSTER, MARYLAND 21158
PENNSYLVANIA OFFICE: 585 McALLISTER STREET, HANOVER, PENNSYLVANIA 17331



REVISIONS		
NO.	DATE	DESCRIPTION
1	6-10-10	RELOCATE PORTABLE TRAILERS

PROJECT OWNER/DEVELOPER:
MT. AIRY BIBLE CHURCH
16700 OLD FREDERICK ROAD
MT. AIRY, MD 21771
(410)-489-4321

PLAN PREPARATION
DRAWN BY: DAB
DESIGNED BY: DAB
CHECKED BY: KDB
DATE: JULY 28, 2005
FILE NO. 3466
DRAWING NO. E-152

HANDICAP ACCESS PLAN
MT. AIRY BIBLE CHURCH
PROPOSED BUILDING ADDITION
16700 ON OLD FREDERICK ROAD
LIBER 951 FOLIO 300 4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
TAX MAP 7, PARCEL # 172

SCALE
1" = 20'
SHEET NO.
12 OF 22

SDP-04-150

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

for *Robert W. Walker* 9/23/05
 COUNTY HEALTH OFFICER HOWARD COUNTY HEALTH DEPARTMENT 11075 DATE

APPROVED: Howard County Department of Planning and Zoning
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 9/23/05
 CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 9/23/05
 DIRECTOR *[Signature]* 9/23/05 DATE

These plans for S.W.M., construction soil erosion and sediment control meet the requirements of Howard Soil Conservation District.

APPROVED: HOWARD SOIL CONSERVATION DISTRICT
 PLAN NUMBER _____

Reviewed for the Howard Conservation District and meets technical requirements.

NATURAL RESOURCES CONSERVATION SERVICE DATE _____

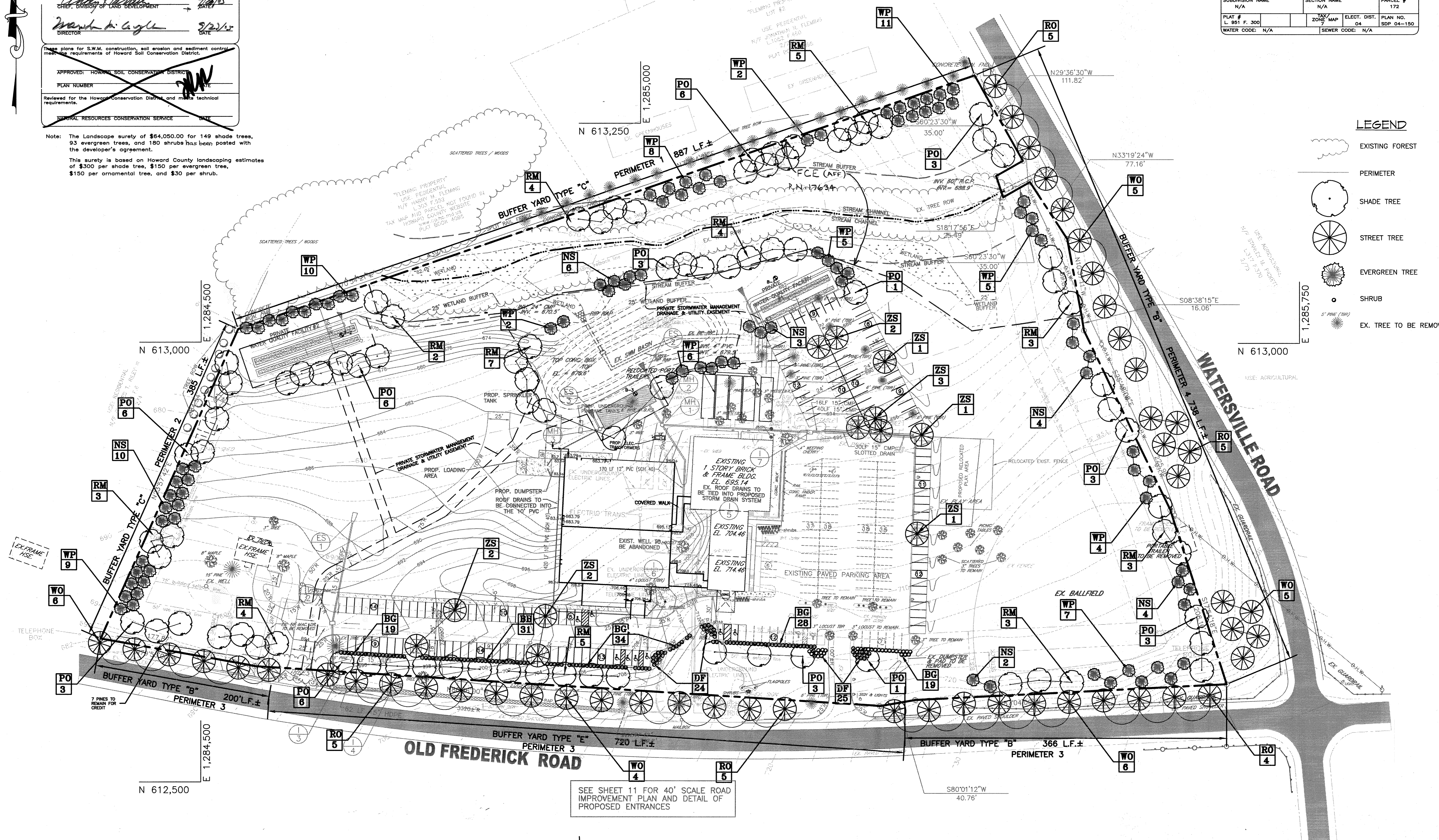
Note: The Landscape surety of \$64,050.00 for 149 shade trees, 93 evergreen trees, and 180 shrubs has been posted with the developer's agreement.

This surety is based on Howard County landscaping estimates of \$300 per shade tree, \$150 per evergreen tree, \$150 per ornamental tree, and \$30 per shrub.

ADDRESS CHART			
TAX MAP NO.	STREET ADDRESS		
7	16700 OLD FREDERICK ROAD		
PARCEL NO.	MT. AIRY, MD 21771		
172	410-488-4321		
SUBDIVISION NAME	SECTION NAME	PARCEL #	
N/A	N/A	172	
PLAT #	TAX MAP	ELECT. DIST.	PLAN NO.
L 951 F. 300	7	04	SDP 04-150
WATER CODE: N/A	SEWER CODE: N/A		

LEGEND

- EXISTING FOREST
- PERIMETER
- SHADE TREE
- STREET TREE
- EVERGREEN TREE
- SHRUB
- EX. TREE TO BE REMOVED



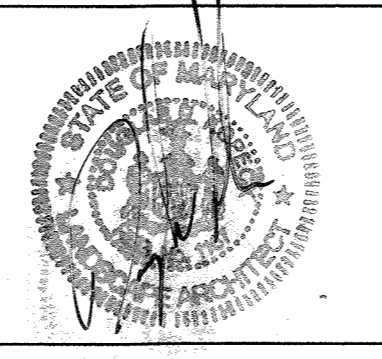
SEE SHEET 11 FOR 40' SCALE ROAD IMPROVEMENT PLAN AND DETAIL OF PROPOSED ENTRANCES

MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS

MARYLAND OFFICE:
 2001 MEADOW DRIVE
 WESTMINSTER, MARYLAND 21158
 TELEPHONE: (410) 857-0210
 FAX: (410) 857-8030

PENNSYLVANIA OFFICE:
 585 McALLISTER STREET
 HANOVER, PENNSYLVANIA 17331
 TELEPHONE: (717) 637-8746
 FAX: (717) 633-1987

REVISIONS		
NO.	DATE	DESCRIPTION



CNA
 engineers, surveyors & landscape architects

Civil Engineers • Land Surveyors • Landscape Architects
 Planners • Geotechnical Engineers • Environmental Engineers

215 Bynum Road
 Forest Hill, Maryland 21059
 Phone (410) 878-7200 • Fax (410) 838-1811
 E-mail: ena@mail@campbell-nolan.com

PLAN PREPARATION

DRAWN BY: JMB DATE: JULY 28, 2005
 DESIGNED BY: ERM FILE NO. 03319
 CHECKED BY: DRK DRAWING NO.

LANDSCAPING PLAN

MOUNT AIRY BIBLE CHURCH
 16700 OLD FREDERICK ROAD
 4th ELECTION DISTRICT, LIBER 951 FOLIO 300 TM 7 PAR 172
 MT. AIRY, HOWARD COUNTY, MARYLAND

SCALE
 1" = 50'

SHEET NO.
 13 OF 22

PLANT MATERIALS AND PLANTING METHODS

A. Plant Materials

The landscape contractor shall furnish and install and/or dig, ball, burlap, and transplant all of the plant materials called for on drawings and/or listed in the Plant Schedule.

- Plant Names**
Plant names used in the Plant Schedule shall conform to "Standardized Plant Names", latest edition.
- Plant Standards**
All plant material shall be equal to or better than the requirements of the "USA Standard for Nursery Stock", latest edition, as published by the American Association of Nurserymen (hereafter referred to as AAN Standards). All plants shall be typical of their species and variety, shall have a normal habit of growth, and shall be first quality, sound, vigorous, well-branched and with health, well-furnished root systems. They shall be free of disease, insect pests and mechanical injuries.
- Plant Measurements**
All plants shall conform to the measurements specified in the Plant Schedule as approved by the Department of Planning and Code Enforcement Reviewing Official.
 - Caliper measurements shall be taken six inches (6") above grade for trees under four-inch (4") caliper and twelve inches (12") above grade for trees four inches (4") in caliper and over.
 - Minimum branching height for all trees shall be six feet (6'), maximum eight feet (8').
 - Minimum size for planting shade trees 2 1/2" - 3" caliper 12' - 14' in height.
 - Caliper, height, spread and size of ball shall be generally as follows:

Caliper	Height	Spread	Size of Ball
2 1/2" - 3"	12' - 14'	6' - 8'	28" diameter
3" - 3 1/2"	14' - 16'	6' - 8'	32" diameter
3 1/2" - 4"	14' - 16'	8' - 10'	36" diameter
4" - 4 1/2"	16' - 18'	8' - 10'	40" diameter
4 1/2" - 5"	16' - 18'	10' - 12'	34" diameter
5" - 5 1/2"	16' - 20'	10' - 12'	48" diameter
5 1/2" - 6"	18' - 20'	12' - 14'	52" diameter

All plant material shall generally average the median for the size ranges indicated above as indicated in the "AAN Standards".

- Plant Identification**
Legible labels shall be attached to all shade trees, minor trees, specimen shrubs and bundles or boxes of other plant material giving the botanical and common names, size and quantity of each. Each shipment of plants shall bear certificates of inspection as required by Federal, State and County authorities.

- Plant Inspection**
The Department of Planning and Code Enforcement Reviewing Official may, upon request by the builder or developer, at least ten (10) days prior to the installation of any proposed plant material, inspect all proposed plant material at the source of origin.
- Planting Methods**
All proposed plant material that meet the specifications in Section A (preceding page) are to be planted in accordance with the following planting methods during the proper planting seasons as described in the following:

- Planting Seasons**
The planting of deciduous trees, shrubs and vines shall be from March 1st to June 15th and from September 15th to December 15th. Planting of deciduous material may be continued during the winter months providing there is no frost in the ground and frost-free topsoil planting mixtures are used.
The planting of evergreen material shall be from March 15th to June 15th and from August 15th to December 1st. No planting shall be done when ground is frozen or excessively moist. No frozen or wet topsoil shall be used at any time.
- Digging**
All plant material shall be dug, balled and burlapped (B+B) in accordance with the "AAN Standards."
- Excavation of Plant Pits**
The landscaping contractor shall excavate all plant pits, vine pits, hedge trenches and shrub beds in accordance with the following schedule:
 - Locations of all proposed plant material shall be staked and approved in the field by the landscape architect before any of the proposed plant material is installed by the landscape contractor.
 - All pits shall be generally circular in outline, vertical sides; depth shall not be less than 6" deeper than the root ball, diameter shall not be less than two times the diameter of the root ball as set forth in the following schedule.
 - If areas are designated as shrub beds or hedge trenches, they shall be excavated to at least 18" depth minimum. Areas designated for ground covers and vines shall be excavated to at least 12" in depth minimum.
 - Diameter and depth of tree pits shall generally be as follows:

Pit Plant Size	Pit Root Ball Diameter	Pit Depth
2 1/2" - 3" cal.	28"	56" 24"
3" - 3 1/2" cal.	32"	64" 28"
3 1/2" - 4" cal.	36"	72" 32"
4" - 4 1/2" cal.	40"	80" 36"
4 1/2" - 5" cal.	44"	88" 40"
5" - 5 1/2" cal.	48"	96" 44"
5 1/2" - 6" cal.	52"	104" 48"

A 20% compaction figure of the soil to be removed is assumed and will be allowed in calculation of extra topsoil. The tabulated pit sizes are for purposes of uniform calculation and shall not override the specified depths below the bottoms of the root balls.

- Staking, Guying and Wrapping**
All plant material shall be staked or guyed, and wrapped in accordance with the following specifications:

- Stakes: Shall be sound wood 2" x 2" rough sawn oak or similar durable woods, or lengths, minimum 7' - 0" for major trees and 5' - 0" minimum for minor trees.
- Wire and Cable: Wire shall be #10 ga. galvanized or bethanized annealed steel wire. For trees over 3" caliper, provide 5/16" turn buckles, eye and eye with 4" takeup. For trees over 5" caliper, provide 3/16", 7 strand cable cadmium plated steel, with galvanized "eye" thimbles of wire and hose on trees up to 3" in caliper.
- Hose: Shall be new, 2 ply reinforced rubber hose, minimum 1/2" I.D. "Plastic Lock Ties" or "Paul's tree Braces" may be used in place of wire and hose on trees up to 3" in caliper.
- All trees under 3" in caliper are to be planted and staked in accordance with the attached "Typical Tree Staking Detail". All trees over 3" in caliper are to be planted and guyed in accordance with the attached "Typical Tree Guying Detail."

5. Plant Pruning, Edging and Mulching

- Each tree, shrub or vine shall be pruned in an appropriate manner to its particular requirements, in accordance with accepted standard practice. Broken or bruised branches shall be removed with clean cuts flush with the adjacent trunk or branches. All cuts over 1" in diameter shall be painted with an approved antiseptic tree wound dressing.
- All Trenches and shrub beds shall be edged and cultivated to the lines shown on the drawing. The areas around isolated plants shall be edged and cultivated to the full diameter of the pit. Sod which has been removed and stacked shall be used to trim the edges of all excavated areas to the neat lines of the plant pit saucers, the edges of shrub areas, hedge trenches and vine pockets.
- After cultivation, all plant materials shall be mulched with a 4" layer of tan bark, peat moss, or another approved material over the entire area of the bed or saucer.

6. Plant Inspection and Acceptance

The Department of Planning and Code Enforcement Review Official shall be responsible for inspecting all planting projects on a period basis to assure that all work is proceeding in accordance with the approved plans and specifications.

7. Plant Guarantee

All Plant material shall be guaranteed for the duration of one full growing season, after final inspection and acceptance of the work in the planting project. Plants shall be alive and in satisfactory growing condition at the end of the guarantee period.

- For this purpose, the "growing season" shall be that period between the end of the "Spring" planting season, and the commencement of the "Fall" planting season.
- Guarantee for planting performed after the specified end of the "Spring" planting season, shall be extended through the end of the next following "Spring" planting season.

SEEDING AND SODDING

- All seeding and sodding shall be as per "Standards and Specifications for Soil Erosion and Sediment Control in Urbanized Areas" as published by the Department of Natural Resources.

GENERAL NOTES

- All plant materials shall be nursery grown and shall conform to American Association of Nurserymen, Inc. standards.
- All planting procedures and specifications shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Area" latest edition.

PLANT SCHEDULE

SHADE TREES	SIZE	COMMENT
PO 44	QUERCUS PALUSTRIS PIN OAK	2 1/2" - 3" Cal B+B
RM 43	ACER RUBRUM RED MAPLE	2 1/2" - 3" Cal B+B
RO 24	QUERCUS RUBRA RED OAK	2 1/2" - 3" Cal B+B
WO 26	QUERCUS BICOLOR SWAMP WHITE OAK	2 1/2" - 3" Cal B+B
ZS 12	ZELKOVA SERRATA GREEN VASE	2 1/2" - 3" Cal B+B
EVERGREENS		
NS 29	PICRA ABIES NORWAY SPRUCE	6" - 8" HL B+B
WP 64	FINUS STROBUS EASTERN WHITE PINE	6" - 8" HL B+B
SHRUBS		
BB 31	EUONYMUS ALATUS DWARF BURNING BUSH	2" - 2 1/2" HL B+B
BG 100	ILEX X NEROPHYLLA "BLUE GIRL" BLUE GIRL HOLLY	2 1/2" - 4" HL B+B
DF 49	FOXYSTHIA X ARNOLD DWARF DWARF FOXYSTHIA	2" - 2 1/2" HL B+B

Note: The Landscape surety of \$64,050.00 for 149 shade trees, 93 evergreen trees, and 180 shrubs has been posted with the developer's agreement.

This surety is based on Howard County landscaping estimates of \$300 per shade tree, \$150 per evergreen tree, \$150 per ornamental tree, and \$30 per shrub.

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	PARKING ADJACENT TO ROADWAYS	ADJACENT TO ROADWAYS PERIMETER 3 & 4	ADJACENT TO PERIMETER PROPERTIES 1
LANDSCAPE TYPE	B	B	C
LINEAR FEET OF FRONTAGE PERIMETER	720	1,304	1,000
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	YES 240 L.F.
CREDIT FOR WALL, FENCE BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO
NUMBER OF PLANTS REQUIRED	1:40 = 18 0	1:50 = 26 1:40 = 33	1:40 = 22 1:20 = 62 0
NUMBER OF PLANTS PROVIDED	18 (3 EXISTING) 0	26 (1 EXISTING) 33 (7 EXISTING) 0	22 62 0
SHRUBS (10:1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	180	0	0

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING

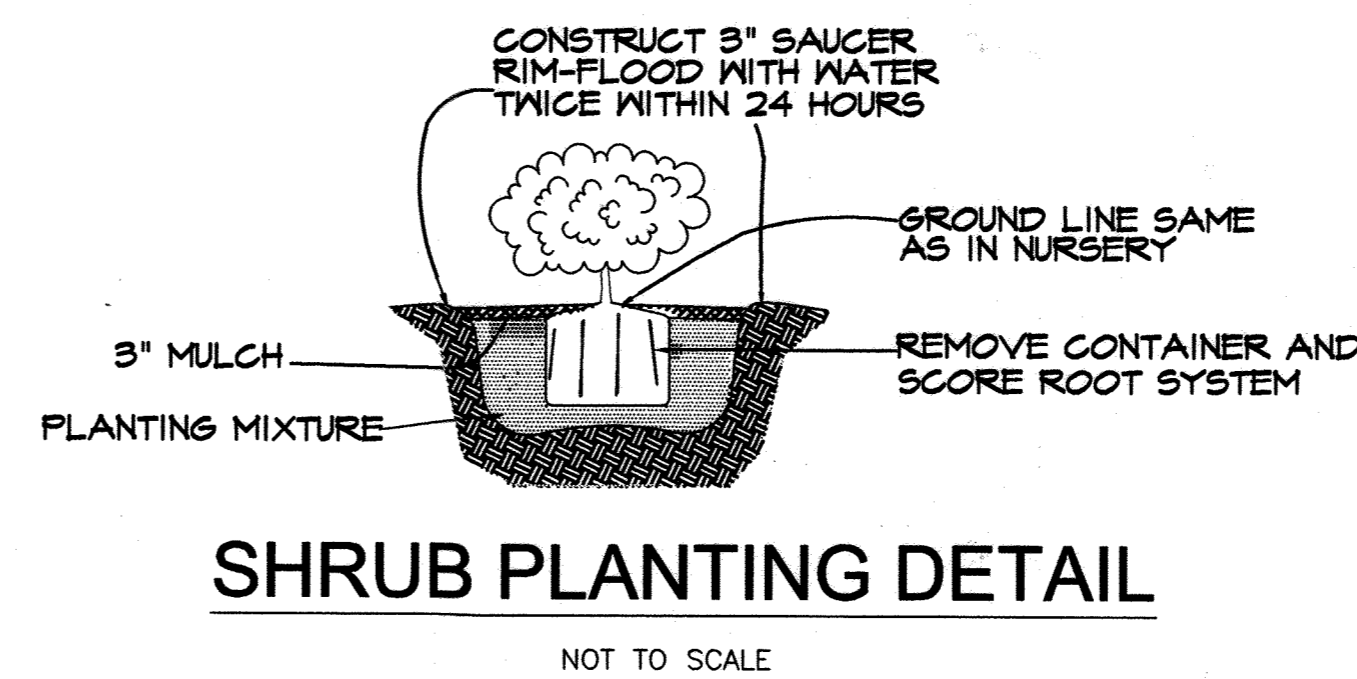
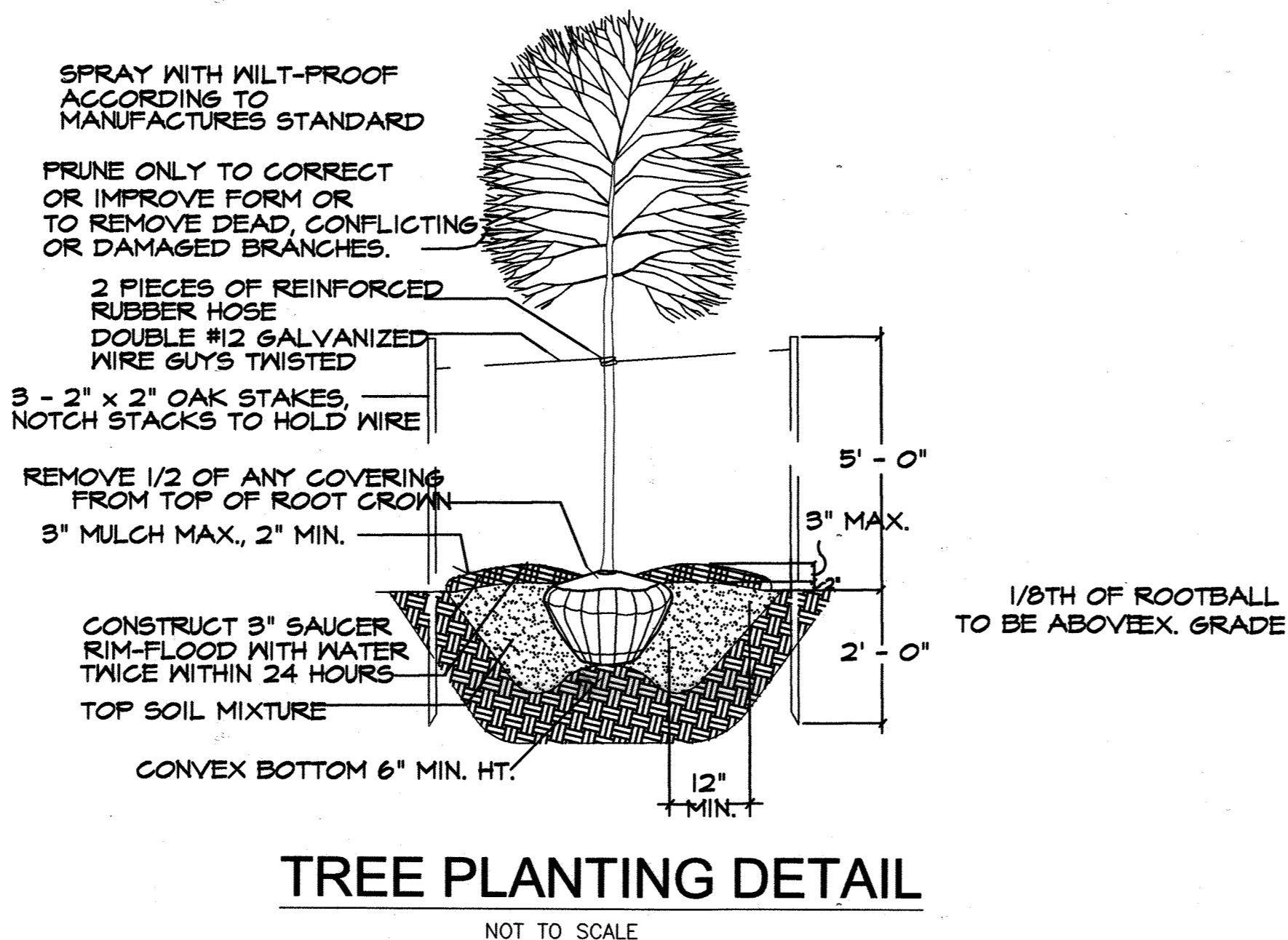
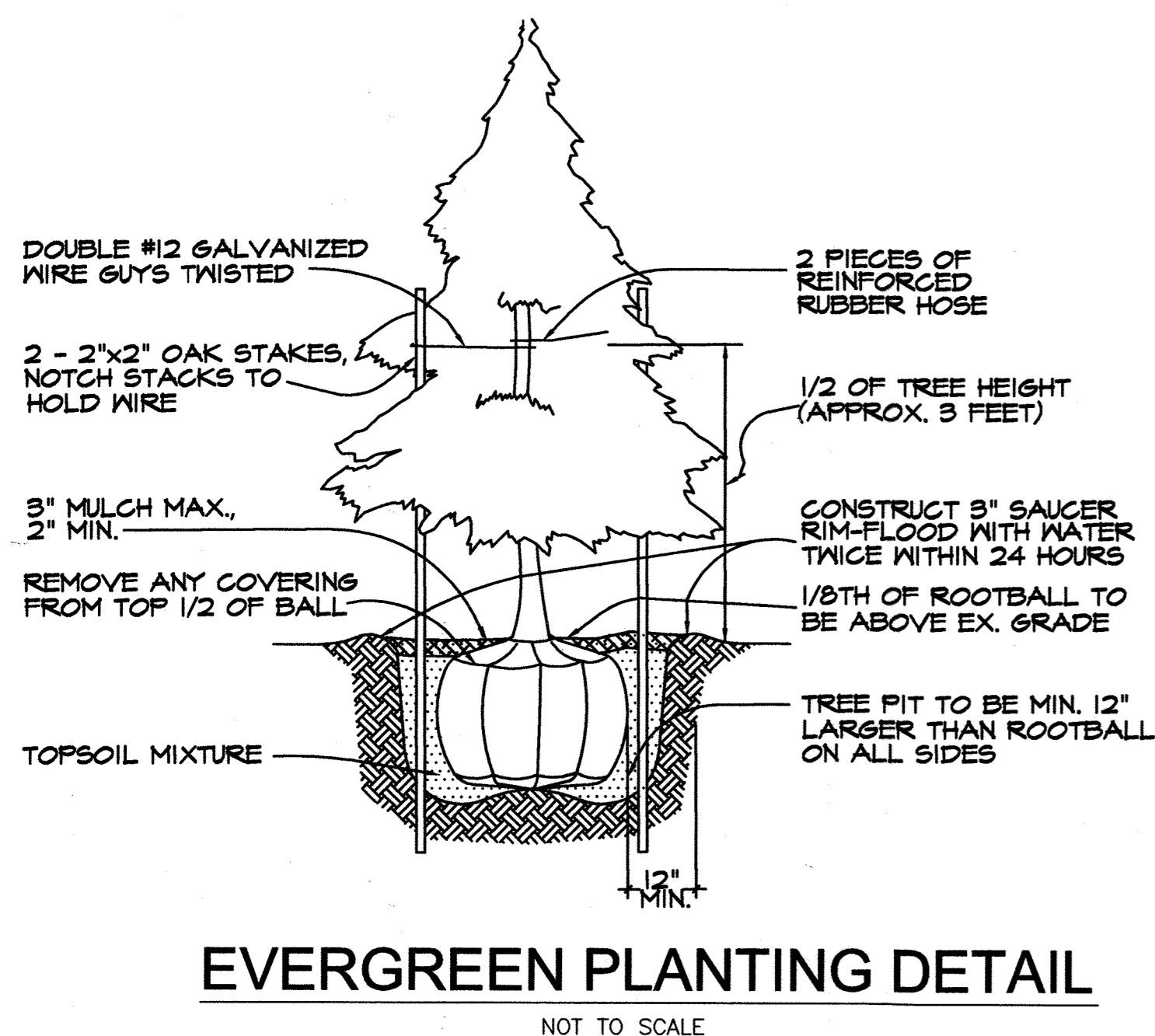
NUMBER OF PARKING SPACES	242
INTERNAL ISLANDS REQUIRED 1:20 SPACES	12
INTERNAL ISLANDS PROVIDED	12
NUMBER OF TREES REQUIRED	120 = 12
NUMBER OF TREES PROVIDED	12
SHADE TREES	0
OTHER TREES (2:1 SUBSTITUTION)	0

SCHEDULE C STREET TREE LANDSCAPING

LINEAR FEET OF ROAD FRONTAGE	1,161 L.F. (TYPE B)
NUMBER OF TREES REQUIRED	1:40 = 50
SHADE TREES	0
CREDIT FOR EXISTING VEGETATION (NO, YES AND %) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	NO
CREDIT FOR EXISTING LANDSCAPING* (NO, YES AND %) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	NO
NUMBER OF TREES PROVIDED	50
SHADE TREES	0
EVERGREEN TREES	0
OTHER SHRUBS (10:1 SUBSTITUTION)	0

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	1,161 L.F. (TYPE B)
NUMBER OF TREES REQUIRED	1:50 = 23
SHADE TREES	1:40 = 29
EVERGREEN TREES	0
CREDIT FOR EXISTING VEGETATION (NO, YES AND %) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	NO
CREDIT FOR EXISTING LANDSCAPING* (NO, YES AND %) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	YES
NUMBER OF TREES PROVIDED	23 (1 EXISTING)
SHADE TREES	29 (1 EXISTING)
EVERGREEN TREES	0
OTHER SHRUBS (10:1 SUBSTITUTION)	0



These plans for S.W.M. construction, soil erosion and sediment control meet the requirements of Howard Soil Conservation District.

APPROVED: HOWARD SOIL CONSERVATION DISTRICT

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

APPROVED: Howard County Department of Planning and Zoning

ADDRESS CHART

TAX MAP NO.	STREET ADDRESS
7	16700 OLD FREDERICK ROAD
PARCEL NO.	MT. AIRY, MD 21771
172	410-489-43221
SUBDIVISION NAME	SECTION NAME
N/A	N/A
PARCEL #	PLAN NO.
172	04-150
FLAT #	TAX ZONE
L 951 F. 300	04
WATER CODE: N/A	SEWER CODE: N/A

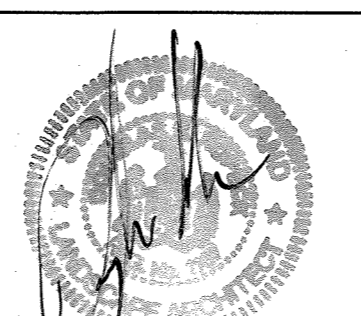
MARYLAND LAND DESIGN, INC.
CONSULTING ENGINEERS AND LAND PLANNERS

MARYLAND OFFICE:
2001 MEADOW DRIVE
WESTMINSTER, MARYLAND 21158
TELEPHONE: (410) 857-0210
FAX: (410) 857-8030

PENNSYLVANIA OFFICE:
551 BALTIMORE STREET
HANOVER, PENNSYLVANIA 17331
TELEPHONE: (717) 637-8746
FAX: (717) 633-1987

REVISIONS

NO.	DATE	DESCRIPTION



CNA
engineers, surveyors & landscape architects

Civil Engineers • Land Surveyors • Landscape Architects
Planners • Geotechnical Engineers • Environmental Engineers
215 Bynum Road
Forest Hill, Maryland 21050
Phone (410) 879-7200 • Fax (410) 838-1811
E-mail: cna@mail@campbell-nolan.com

PLAN PREPARATION

DRAWN BY: JMB	DATE: JULY 28, 2005
DESIGNED BY: ERM	FILE NO. 03319
CHECKED BY: DRK	DRAWING NO.

PLANTING DETAIL PLAN

MOUNT AIRY BIBLE CHURCH
16700 OLD FREDERICK ROAD
4th ELECTION DISTRICT, LIBER 951 FOLIO 300 TM 7 PAR 172
MT. AIRY, HOWARD COUNTY, MARYLAND

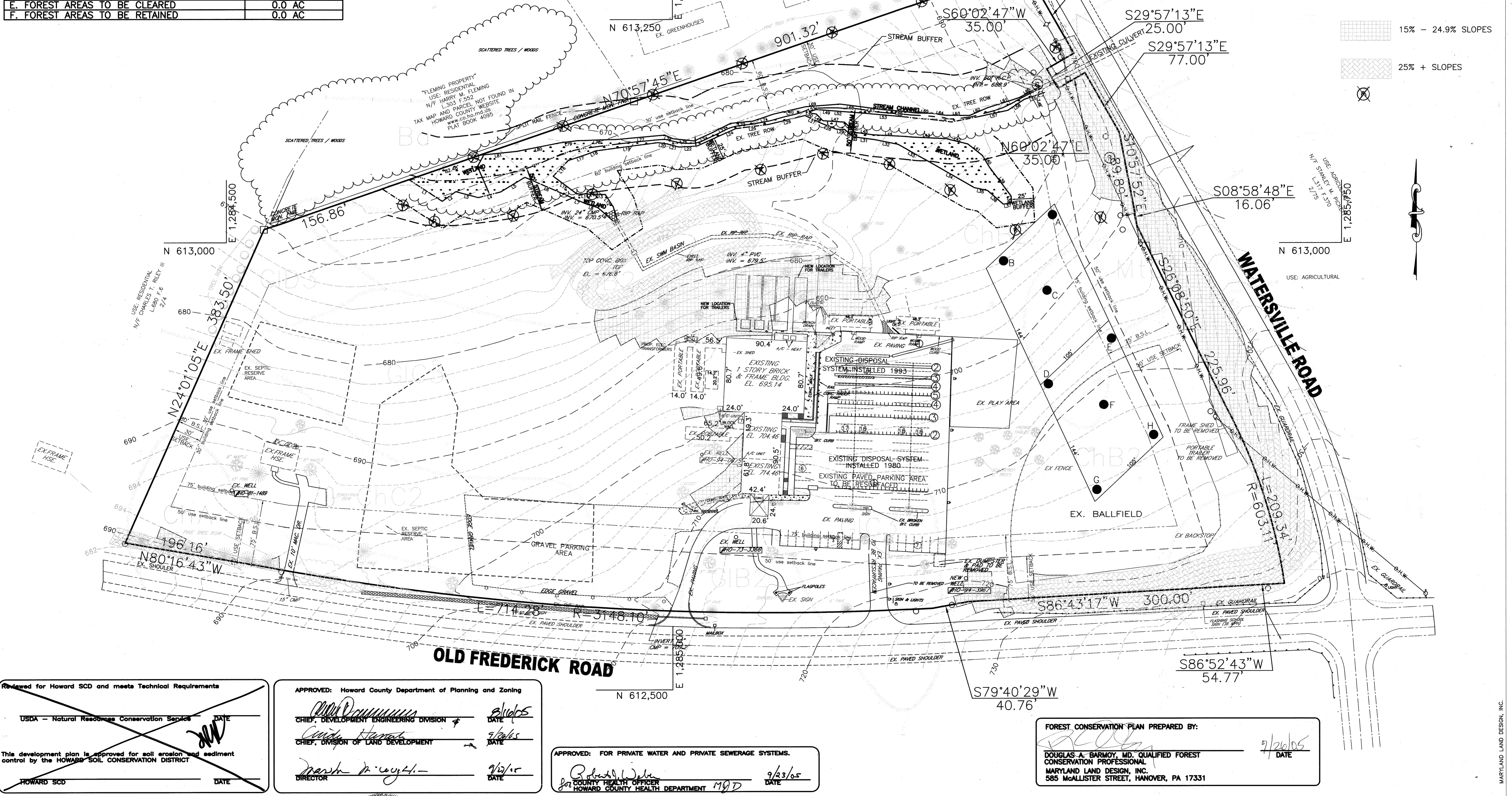
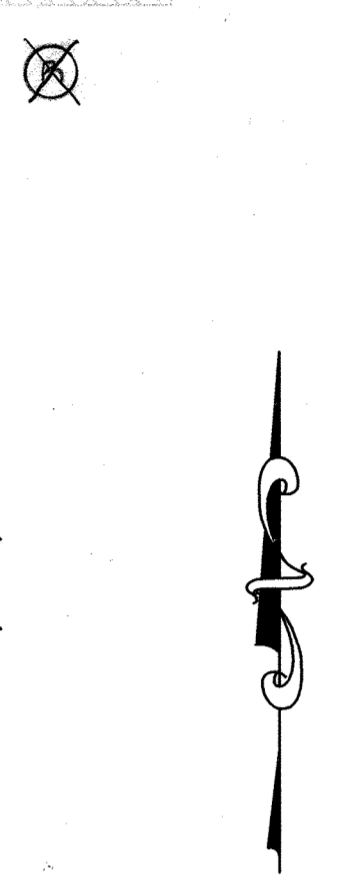
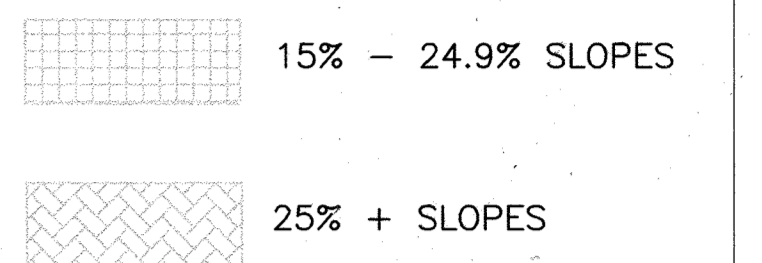
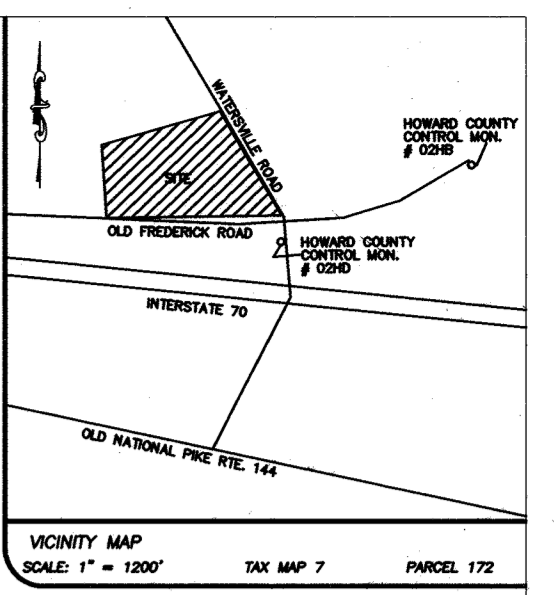
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AS SHOWN
SHEET NO.
14 OF 22

BASIC SITE DATA

GROSS SITE AREA	13.77 AC
AREA WITHIN 100 YEAR FLOODPLAIN	0.0 AC
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	n/a
NET TRACT AREA	13.77 AC
LAND USE CATEGORY	INSTITUTIONAL

INFORMATION FOR CALCULATIONS

A. NET TRACT AREA	13.77 AC
B. REFORESTATION THRESHOLD (% X A)	0.0 AC
C. AFFORESTATION MINIMUM (15% X 13.77 AC.)	2.07 AC
D. EXISTING FOREST ON NET TRACT AREA	0.0 AC
E. FOREST AREAS TO BE CLEARED	0.0 AC
F. FOREST AREAS TO BE RETAINED	0.0 AC



Reviewed for Howard SCD and meets Technical Requirements

USDA - Natural Resource Conservation Service

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT

HOWARD SCD

APPROVED: Howard County Department of Planning and Zoning

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMENT

DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

COUNTY HEALTH OFFICER

FOREST CONSERVATION PLAN PREPARED BY:

DOUGLAS A. BARMON, MD, QUALIFIED FOREST CONSERVATION PROFESSIONAL

MARYLAND LAND DESIGN, INC.

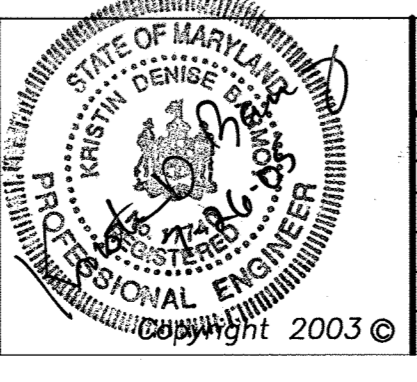
585 McALLISTER STREET, HANOVER, PA 17331

MARYLAND LAND DESIGN, INC.

CONSULTING ENGINEERS AND LAND PLANNERS

MARYLAND OFFICE: 2001 MEADOW DRIVE WESTMINSTER, MARYLAND 21158

PENNSYLVANIA OFFICE: (CONTACT OFFICE) 585 McALLISTER STREET HANOVER, PENNSYLVANIA 17331



REVISIONS		
NO.	DATE	DESCRIPTION

PROJECT OWNER/DEVELOPER:

MT. AIRY BIBLE CHURCH
16700 OLD FREDERICK ROAD
MT. AIRY, MD 21771
(410)-489-4321

PLAN PREPARATION

DRAWN BY: DWS
DESIGNED BY: DWS
CHECKED BY: DAB

DATE: JULY 28, 2005
FILE NO. 3466
DRAWING NO. E-152

FOREST STAND DELINEATION PLAN

MT. AIRY BIBLE CHURCH
PROPOSED BUILDING ADDITION
16700 ON OLD FREDERICK ROAD
LIBER 951 FOLIO 300 4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
TAX MAP 7, PARCEL # 172

SCALE

1" = 50'

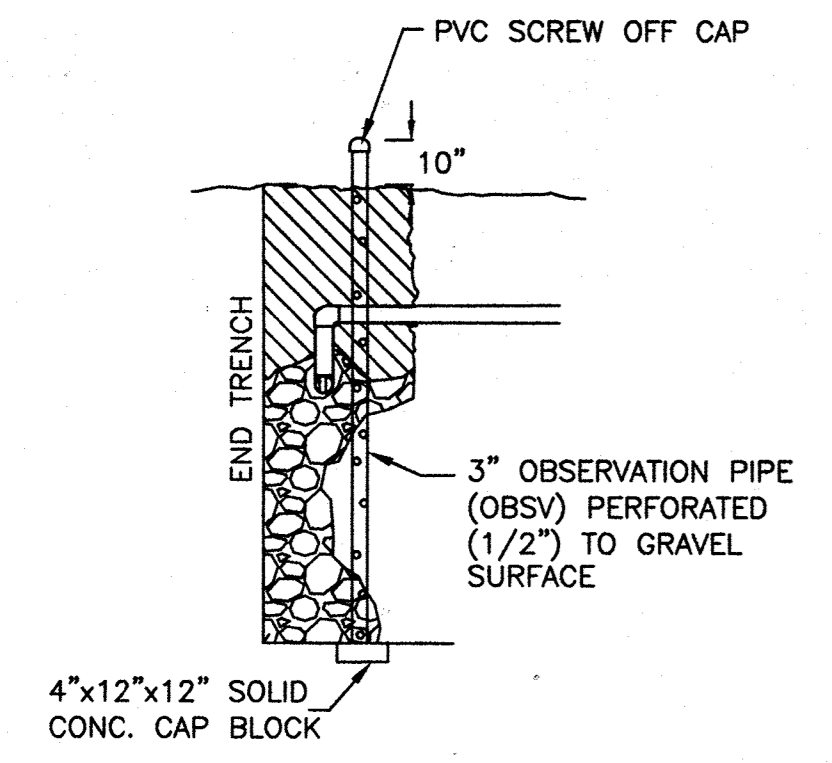
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15 OF 22

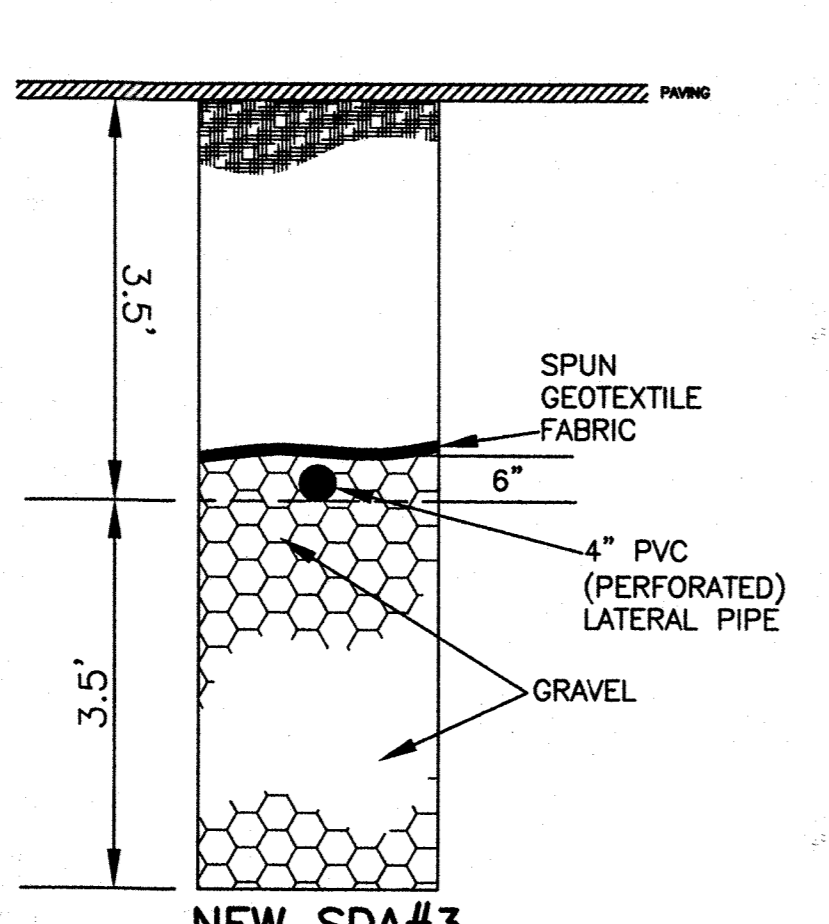
SDP-04-150

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MARYLAND LAND DESIGN, INC.

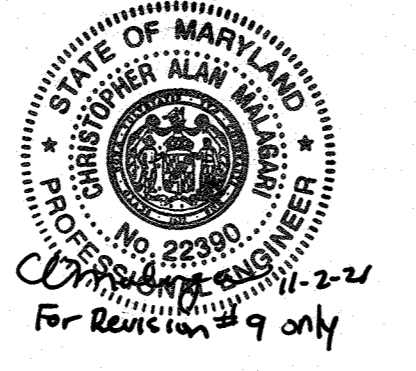


MONITORING WELL DETAIL
GRASS CONDITIONS



MONITORING WELL DETAIL
PAVED CONDITIONS

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. 22390, Expiration Date: 6-30-23



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. 33281, Expiration Date: 6-30-14
REVISION #7 ONLY
04-03-13



REVISION #7 PURPOSE NOTE:
TO SHOW PROP. SEPTIC TREATMENT SYSTEM LOCATION.
FOR DETAILED SEWAGE DISPOSAL SYSTEM UPGRADE
INFORMATION SEE SH. 18B OF 18.

PROPOSED TRENCH INFORMATION (SDA#3)

700 LF TRENCH - 3.5' STONE DEPTH

TRENCH	FLOW TYPE	PIPE INV.	TRENCH BOTTOM	STONE
T1A	GRAVITY	704.00	700.50	3.5'
T1B	GRAVITY	704.00	700.50	3.5'
T2	GRAVITY	701.50	698.00	3.5'
T3	GRAVITY	700.70	697.20	3.5'
T4	GRAVITY	699.50	696.00	3.5'
T5	GRAVITY	699.00	695.50	3.5'
T6	GRAVITY	698.50	695.00	3.5'
T7	GRAVITY	698.20	694.70	3.5'

EXISTING TRENCH INFORMATION

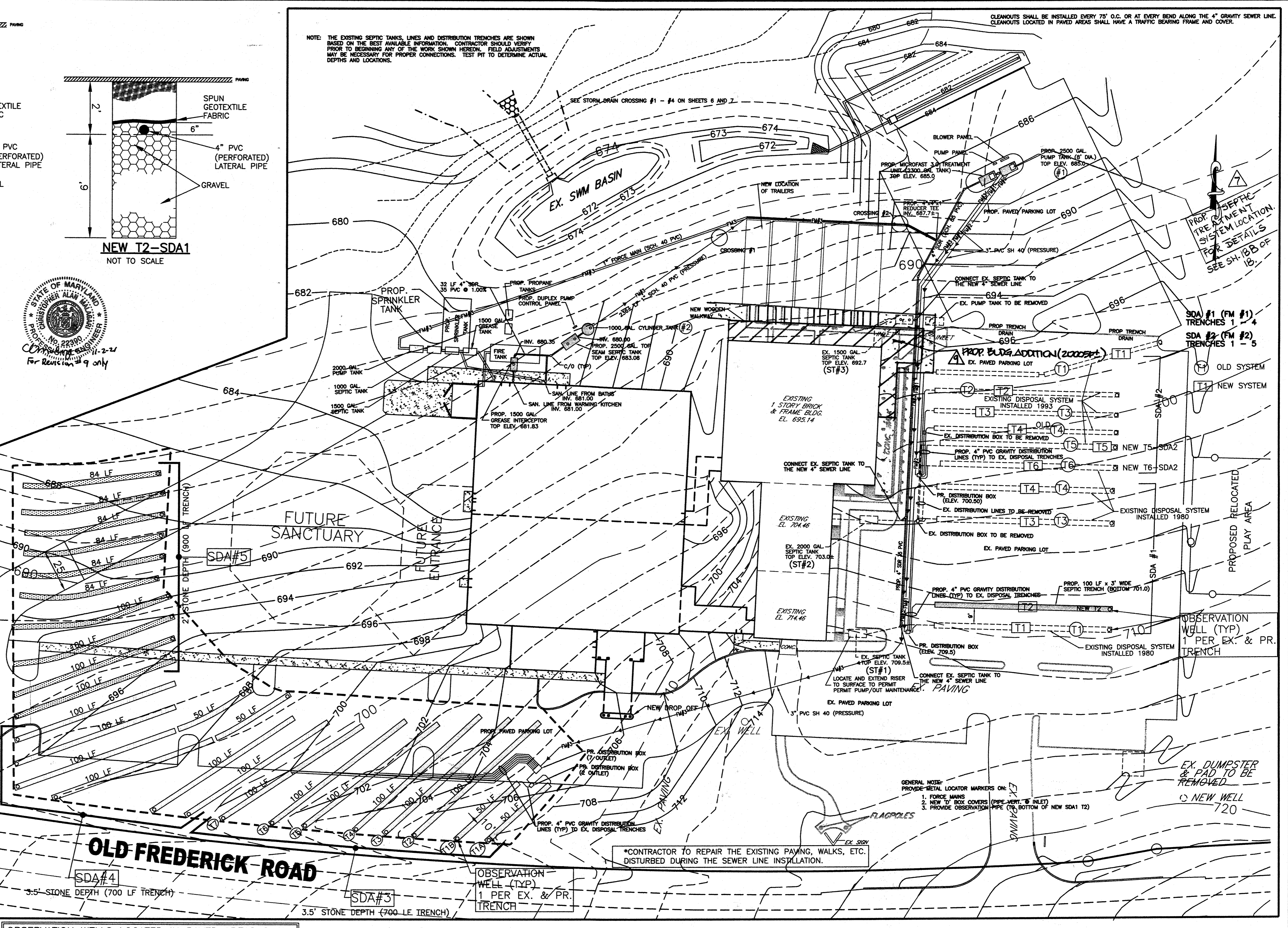
1980 SYSTEM (5 TRENCHES)

TRENCH	FLOW TYPE	PIPE INV.	TRENCH BOTTOM	WIDTH
T1	GRAVITY (NO TO BOX)	708.00	701.50	2'
T2	GRAVITY	701.40	695.40	2'
T3	GRAVITY	700.25	694.25	2'
T4	GRAVITY	700.00	694.00	2'
T5	GRAVITY	698.00	692.00	2'

1993 SYSTEM (4 TRENCHES)

TRENCH	FLOW TYPE	PIPE INV.	TRENCH BOTTOM	WIDTH
T4	PUMPED TO GRAVITY	697.50'	695.50'	3'
T3	PUMPED TO GRAVITY	696.50'	694.50'	3'
T2	PUMPED TO GRAVITY	695.50'	693.50'	3'
T1	PUMPED TO GRAVITY	694.30'	692.30'	3'

* ALL ELEVATIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY ALL ELEVATIONS PRIOR TO BEGINNING CONSTRUCTION



OBSERVATION WELLS LOCATED IN PAVED AREAS SHALL UTILIZE A TRAFFIC BEARING FRAME AND COVER.

REVISION PLAN - PRIVATE SEWAGE SYSTEM

SCALE: 1" = 30'

PURPOSE OF REVISED SITE DEVELOPMENT PLAN:
TO CHANGE THE SEWER LINE FROM A 4" GRAVITY SEWER SYSTEM TO A 1" FORCE MAIN.

NOTE: TRENCH LOCATIONS, DATA AND TEST DATA ARE BASED ON HOWARD COUNTY HEALTH DEPARTMENT FIELD NOTES DATED 10/28/80, 4/29/93, AND 10/1/97. CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
B. Niten for Penny E. Borinstein MD, 1/23/2007
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

- NOTES:
- TOTAL FLOW/DAY = 1246 GALS.
 - MAX. CAPACITY OF SEPTIC SYSTEM = 4984 G.P.D.
 - OWNER WILL CONTINUE TO METER AND RECORD ACTUAL WATER CONSUMPTION.
 - GROUND WATER APPROPRIATION PERMIT #H01979G005; WELL TAG #733366.

EXISTING SEPTIC INFORMATION:
1980 SYSTEM (ALL ELEVATIONS ESTIMATED - CONTRACTOR SHALL CONFIRM)
S.T.#1 (ESTIMATED TO BE 1500 GALLONS INFORMATION NOT AVAILABLE) NO "D" BOX USED
INV. IN 708.87 TOP EL. = 709.54
INV. OUT 708.42 BASE EL. = 703.44

1992 SYSTEM
S.T.#2 (ESTIMATED TO BE 2500 GALLONS, INFO. NOT AVAILABLE) "D" BOX ELEV. 701.56'
INV. IN 702.17 TOP EL. = 703.02
INV. OUT 701.92 BASE EL. = 695.44

1993 SYSTEM
S.T.#3 (1500 GALLON PER HEAD, PLANS NOT AVAILABLE)
INV. IN 691.87 TOP EL. = 692.7
INV. OUT 691.62 BASE EL. = 686.7

EX. PUMP TANK (1000 GALLON, DUPLEX (PUMP SIZE UNKNOWN))
INLET EL. = 691.3 * TO BE REMOVED

PROPOSED ADDITION (2004)
GREASE INTERCEPTOR (1500 GAL.)
SE: 689.00 INV. IN 680.41 TOP EL. = 681.83
INV. OUT 680.35 BASE EL. = 675.16

2500 GAL. TANK
SE: 688.20 INV. IN 680.25 TOP EL. = 683.08
INV. OUT 680.00 BASE EL. = 675.25

MICROFAST 3.0 (2300 GAL. TANK)
S.T.#1 (1500 GALLON PER HEAD, PLANS NOT AVAILABLE)
INV. IN 677.00 TOP EL. = 685.00
INV. OUT 676.75 BASE EL. = 670.00

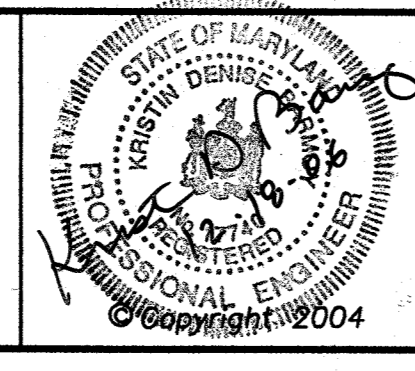
PUMP TANK (2500 GAL.)#1
SE: 682.00 INV. IN 676.5 TOP EL. = 685.00
FLOOR EL. = 669.00

PUMP TANK (1000 GAL.)#2
SE: 682.00 INV. IN 676.5 TOP EL. = 674.14
FLOOR EL. = 674.39

MARYLAND LAND DESIGN, INC.
CONSULTING ENGINEERS AND LAND PLANNERS

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2001 MEADOW DRIVE
WESTMINSTER, MARYLAND 21158
TELEPHONE: (410) 857-0210
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585 McALLISTER STREET
HANOVER, PENNSYLVANIA 17331
TELEPHONE: (717) 637-8746
FAX: (717) 633-1987



REVISIONS

NO.	DATE	DESCRIPTION
1	5-30-06	CHANGE SEPTIC LINE FROM BODG. ADDITION
2	12-3-06	REVISED THIS SHEET PER HEALTH DEPT. REQUIREMENTS FOR SEPTIC S.C. BUILDING ADDITION - ADD SDA #3 & OBSERV. WELLS
3	04/03/13	INCREASE TO 480 STUDENTS; SEPTIC UPGRADE
4	11.1.21	ADD BUILDING ADDITION

PROJECT OWNER/DEVELOPER:
MT. AIRY BIBLE CHURCH
16700 OLD FREDERICK ROAD
MT. AIRY, MD 21771
(410)-489-4321

PLAN PREPARATION

DRAWN BY: DAB DATE: MAY 18, 2004
DESIGNED BY: DAB FILE NO. 3466
CHECKED BY: KDB DRAWING NO. E-152

REVISION PLAN - PRIVATE SEWAGE SYSTEM
MT. AIRY BIBLE CHURCH
PROPOSED BUILDING ADDITION
16700 ON OLD FREDERICK ROAD
LIBER 951 FOLIO 300 4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
TAX MAP 7, PARCEL # 172 SDP-04-150

SCALE
1" = 30'
SHEET NO.
17 OF 22
SDP-04-150

WASTEWATER FLOWS

Based on agreement between the Church and the Health Department the Maximum Daily Flow of waste water from the system will not exceed 4995 gallons per day. This is equivalent to 15 gallons per capita, daily from the population of Students and Staff. This volume is used to calculate the disposal area required for the discharge of the treated wastewater from the system.

The Average Daily Sewage Flow [used by the authorities to calculate hydrologic balance] is defined by the Department of the Environment as 50% of the Maximum Daily Flow and is used as a basis to size the Treatment facilities, and daily pumping requirements. Actual daily flow is monitored by the well water log maintained by the school and is used to adjust pumping rates. Use (as recorded) on weekends and holidays is substantially less than the daily average through the week.

Church Administration has opted to use higher, weekday average as the base figure. Maximum Daily Sewage Flow: 4995 g.p.d. 303 Students, 30 Staff (333 capita) Average Daily Sewage Flow: 2498 g.p.d.

Disposal Areas Current Septic Disposal Area (SDA #1, SDA #2 (combined = 5000 g.p.d.)) will be taken off line and rested. A third area, SDA #3 is installed for immediate use as shown on the drawings. Reserve Area (as shown on drawings), providing two future disposal fields is set aside. The total Septic Disposal Area, available to the Church is four full size (4995 g.p.d.) disposal areas.

SDA Sizing, SDA #3 (Initial Field) (based on tests 'A', 'B', and 'D') - set back from 'D' used, test notes show check @ 7' 4995 gal. + 1.2 gpd/ft² (avg. infiltration rate: 6.0 min./hr.) = 4163 ft² area

463ft² x 3' wide trench = 1388 linear feet (conventional tile field trench) Deep Trench Sizing from County Trench Design Calculation Sheet, Table B) 3' wide trench, 3.5' sidewall = .45 (45%) of conventional tile field length

1388 X 45% = 625 linear feet of trench, 3.5' stone depth Trench separation (min.) 2x stone depth = 3' 7 1/2" (eg. leg.), 13' (ctr. ctr.)

(Tests A, B, D @ 97 @ 3.5' and 7' bottom verification @ 11') SDA #4, Replacement Field 1, [tests B2, E1 and C1] - set back from E, same as D 4995 gal. + 1.2 gpd/ft² (avg. infiltration rate: 6.0 min./hr.) = 4163 ft² area

4163 ft² x 3' wide trench = 1388 linear feet (conventional tile field trench) Deep Trench Sizing from County Trench Design Calculation Sheet, Table B) 3' wide trench, 3.5' sidewall = .45 (45%) of conventional tile field length

1388 X 45% = 625 linear feet of trench, 3.5' stone depth Trench separation: 10' (eg. leg.) 13' (ctr. ctr.) SDA#5, Replacement Field 2, [tests F, J, and M] 4995 gal. + 1.2 gpd/ft² (avg. infiltration rate: 6.0 min./hr.) = 4263 ft² area

4163 ft² x 3' wide trench = 1388 linear feet (conventional tile field trench) Deep Trench Sizing from County Tech Design Calculation Sheet, Table B) 3' wide trench, 2.0' sidewall = .62 (62%) of conventional tile field length

1388 X 62% = 861 linear feet of trench, 2.0' stone depth Trench separation: 2X2' + 3' = 7' (eg. leg.), 10' (ctr. ctr.)

Tank Requirement: Determination - V = 1125 + 75% of Q (average daily peak) flow V = minimum tank volume Q = estimated peak daily flow V = 1125 + 75% (2498 gal. / 24 hrs) = 1125 + 1874, or 2999 gal. Available tankage: 1250 gal. (church) 2000 gal. (school, side entrance) 2500 gal. (rear of new addition) 2300 gal. (treatment tank) 8050 gal. Total (adequate)

Treatment - adequate The existing, Fixed Activated Sludge Treatment arrangement was predicated on a flow of 2500 gallons per day and an analyzed waste water strength of 215 mg/L BOD₅, solids (TSS) 97 mg/L, AND Total Nitrogen 80.3 mg/L. Nitrate-Nitrite <0.10 mg/L. At the estimated average daily flow (2498 gallons), projected for 2010: Expected treatment: BOD reduction from 4.7 lbs. to .62 lbs. (residual) Nitrogen reduction (70%) from 1.75 lbs. to .52 lbs. (residual) The current system is capable of managing the flow at the stated strength levels without revision, or addition. Further changes in wastewater strength, and, flow volumes could require additional, and must be reviewed.

Wastewater Pump Transport requirement Average Daily Flow: 2498 g.p.d. Gal. Per minute: using run time of 600 minutes (10 hrs.) 2498 ÷ 600 = 4.16 GPM Peak Factor: 4.16 X 4 = 16.64 16.64 X 110% = 18.3 GPM basic Flow rate

Minimum Cycle Volume: 10 minute retention V = ?? ? Min. time minutes V = 10 X 18.3 = 46.5 gal. 4 ? Pump capacity gpm 4 V required volume

Dose Volume Present (2005 - 2006): 2500 gal. + 6 (events) = 416.6 gal. Dose / event Proposed: (for 2498 gal.) add 30.7 gallons to dose volume to allow for the 200' drain back to pump chamber manifold weep hole, from the high elevation point. The revised dose is 447 gallons per event

Force Main Schedule 40 plastic (pressure rated) Flow velocity should be between 2 and 5 ft/sec. Check 2" pipe @ 20 gpm - too slow (1.95 fps) Check 1 1/2" @ 20 gpm - 3.23 fps, acceptable rate, used volume/100' of 1 1/2" pipe = 10.6 gallons

Pump Selection/Verification Total Dynamic Head (TDH) Elevation (static) Head Maximum elevation before discharge 709.0' Pump off (float) 676.1' Static Lift 32.9' Friction Head (1 1/2" pipe @ 20 gpm: 2.61/100' pipe

555' of force main run pump to 'D' box (5.55X2.61) 14.48' Friction 1.50' @ 5' (pipe equiv.) 5' 1-HP gate valv. 1.10' 1.45' @ 3' 1.2' 1-hp (gate) @ 7' 28-couplings @ 1.5' 4.2' 67.3X2.16 = 1.45' Field Operating Head 20' Total Dynamic Head (TDH) 50.84'

Minimum Pump Required (BHP) 18.3 gpm rate @ 50.84' TDH GPM (TDH) = 18.3 (50.84) = 930.37 ÷ 42 HP (12) 3960 (EP - 55%) 2178 2178 Present Pumps (duplex) Gould model 3889#4 HP are more than adequate see Pump curves/specs

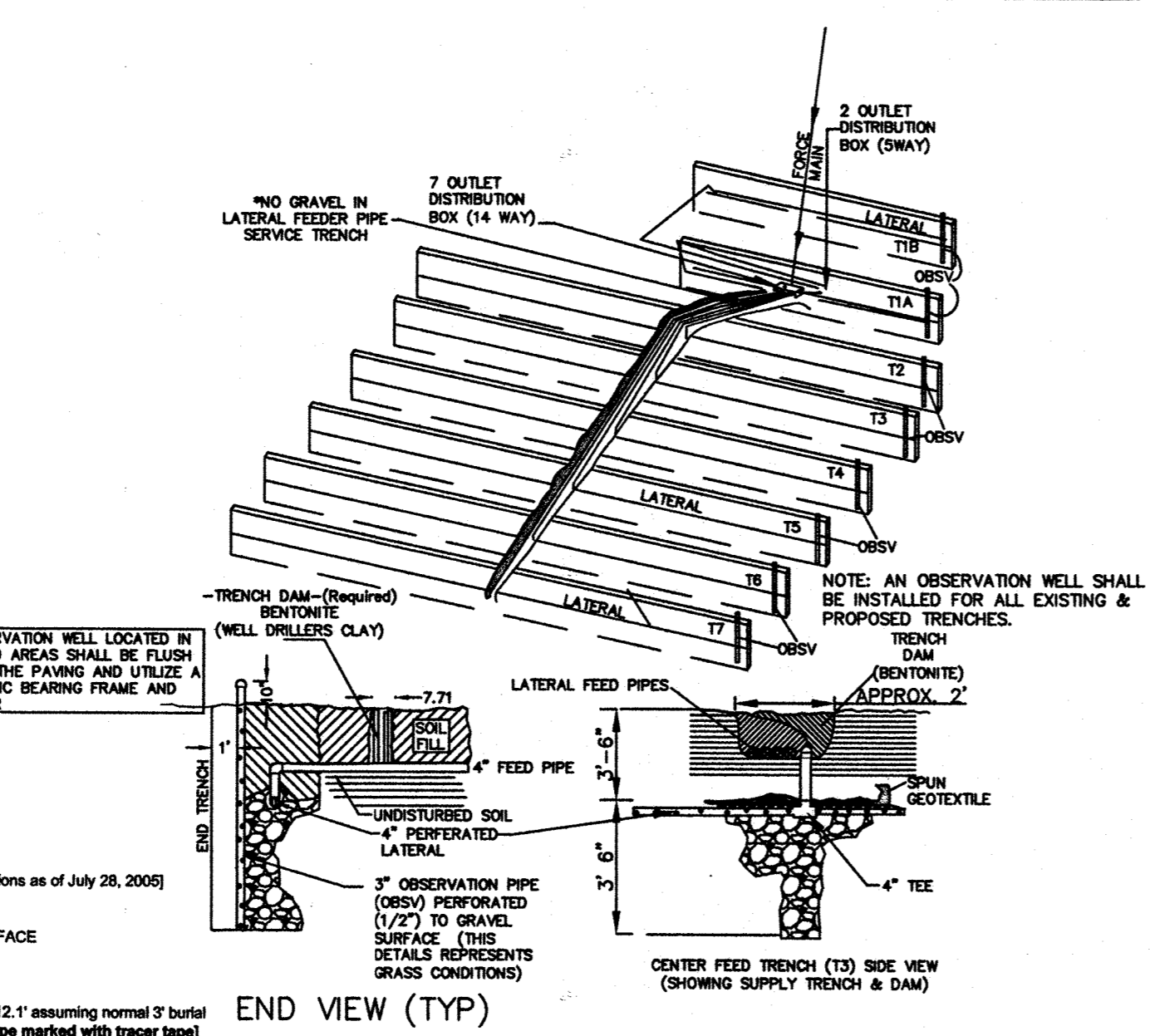
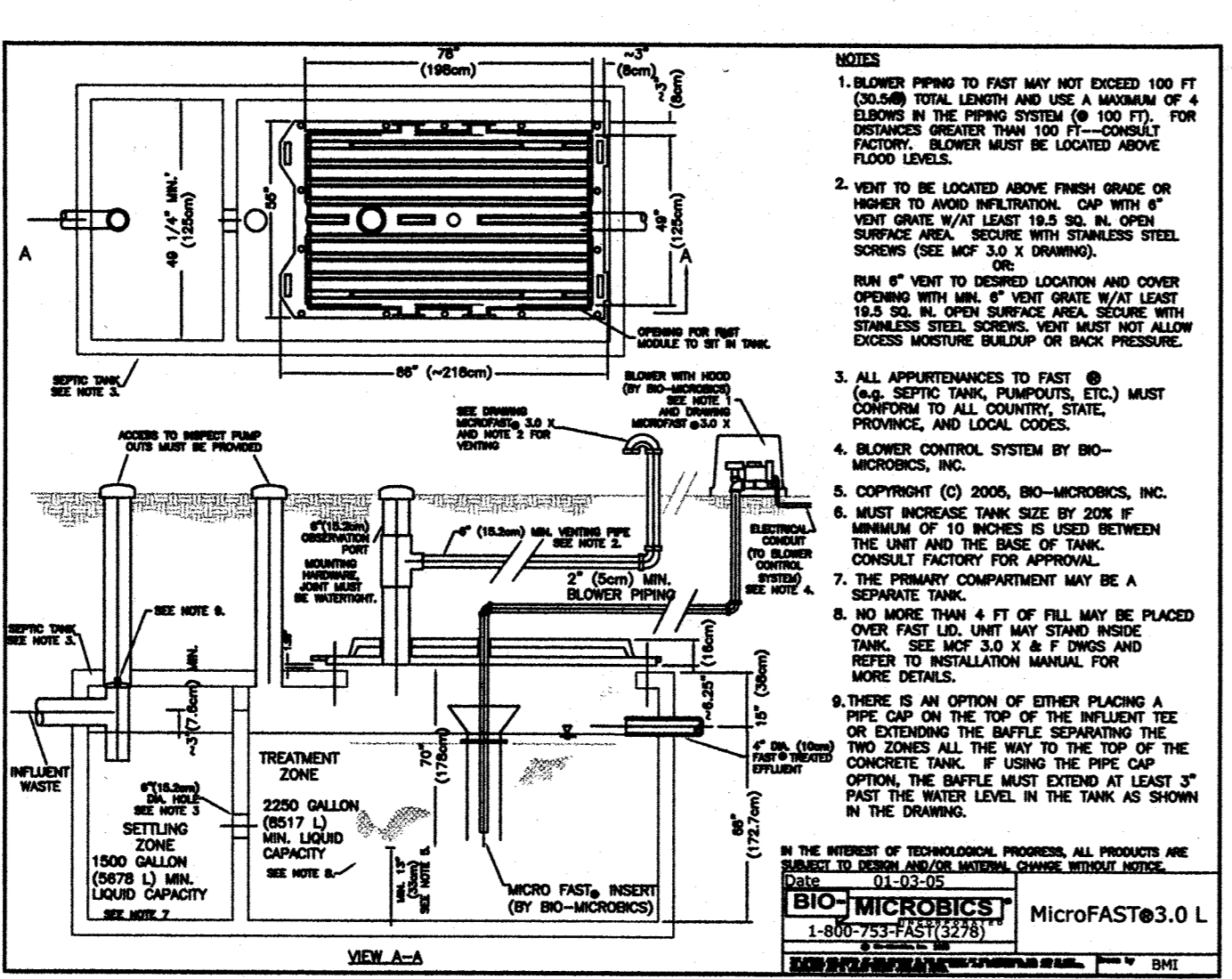
Pump Run Time @ 18.3 gpm / 447 gallons/event 24.4 minutes per dose - System Time: 2hrs. 28 minutes per day. Pumps are duplex and will alternate delivery.

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS. By: [Signature] DATE: 1/23/2007

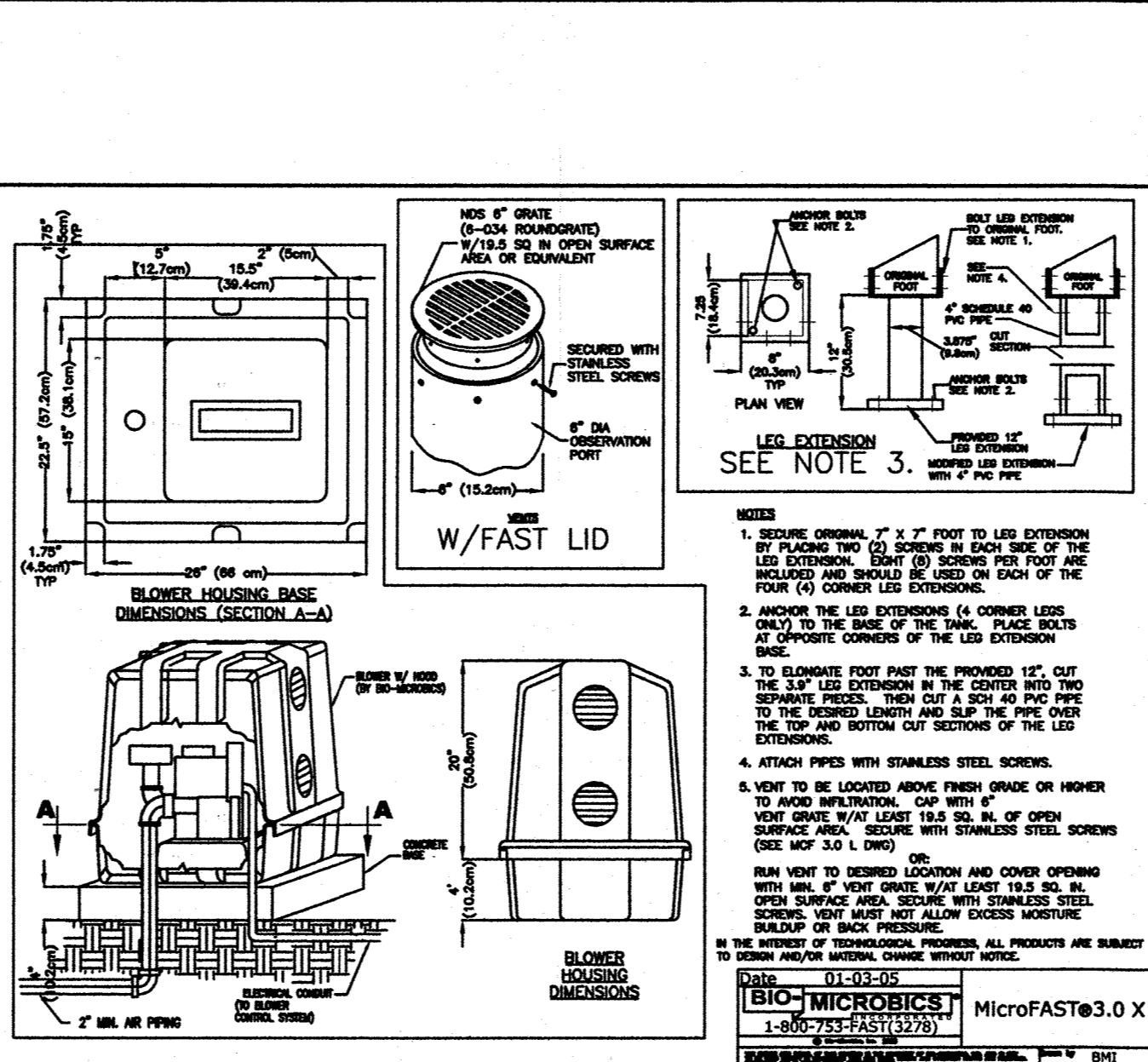
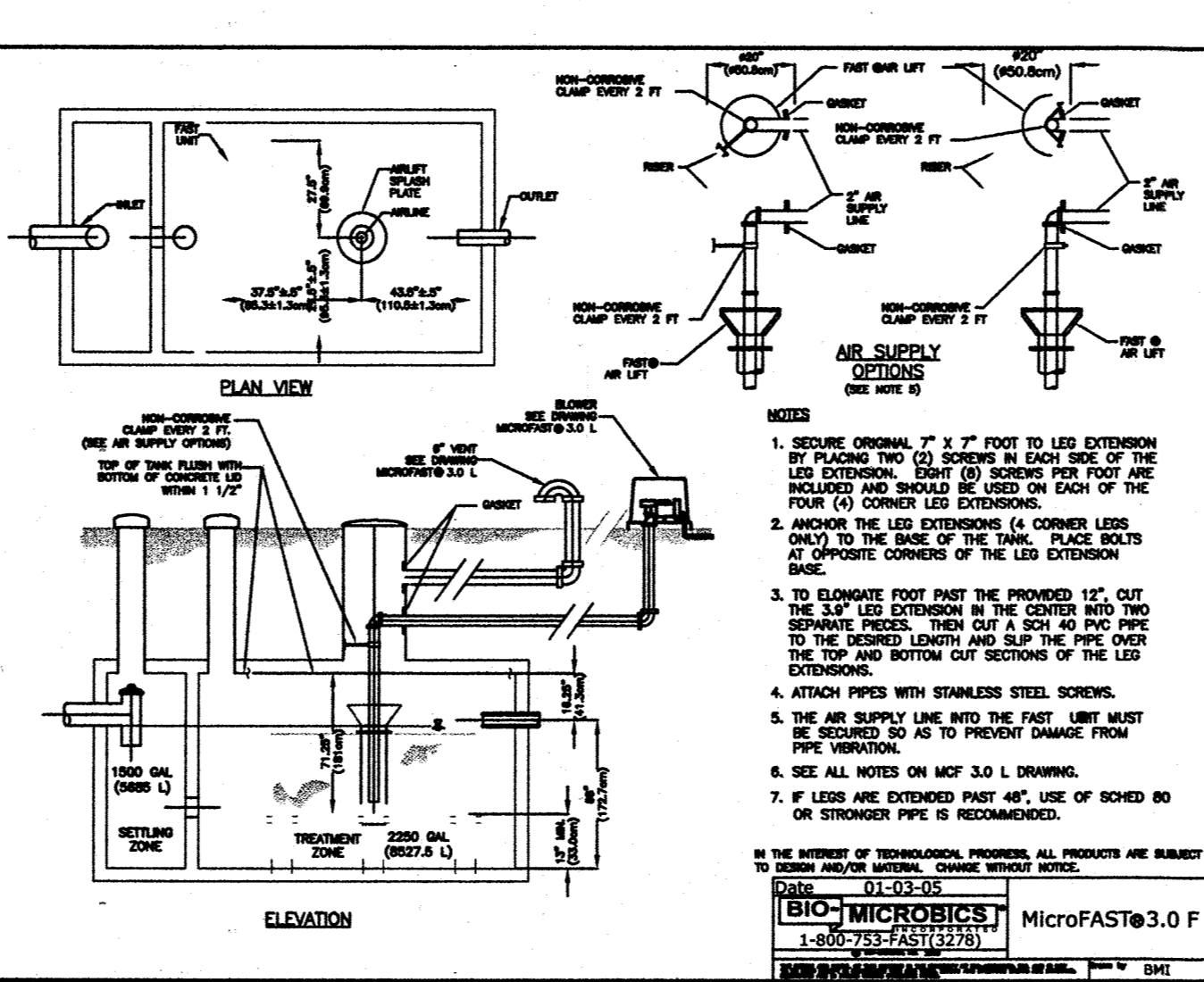
Reviewed for Howard SCD and meets Technical Requirements. By: [Signature] DATE: 1/23/07

APPROVED: Howard County Department of Planning and Zoning. By: [Signature] DATE: 1/15/07

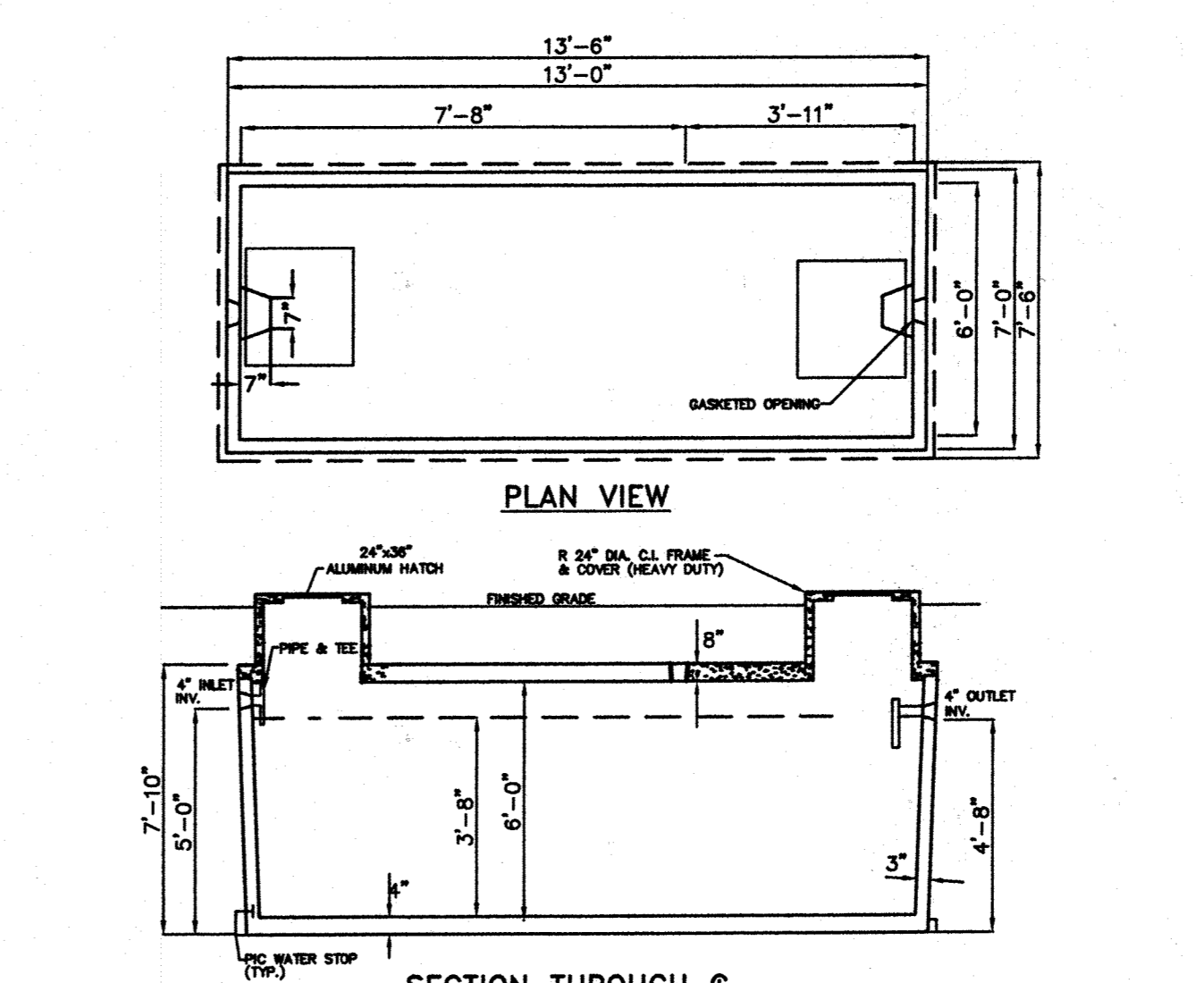
This development plan is approved for soil erosion and sediment control by the Howard County CONSERVATION DISTRICT. By: [Signature] DATE: 1/23/07



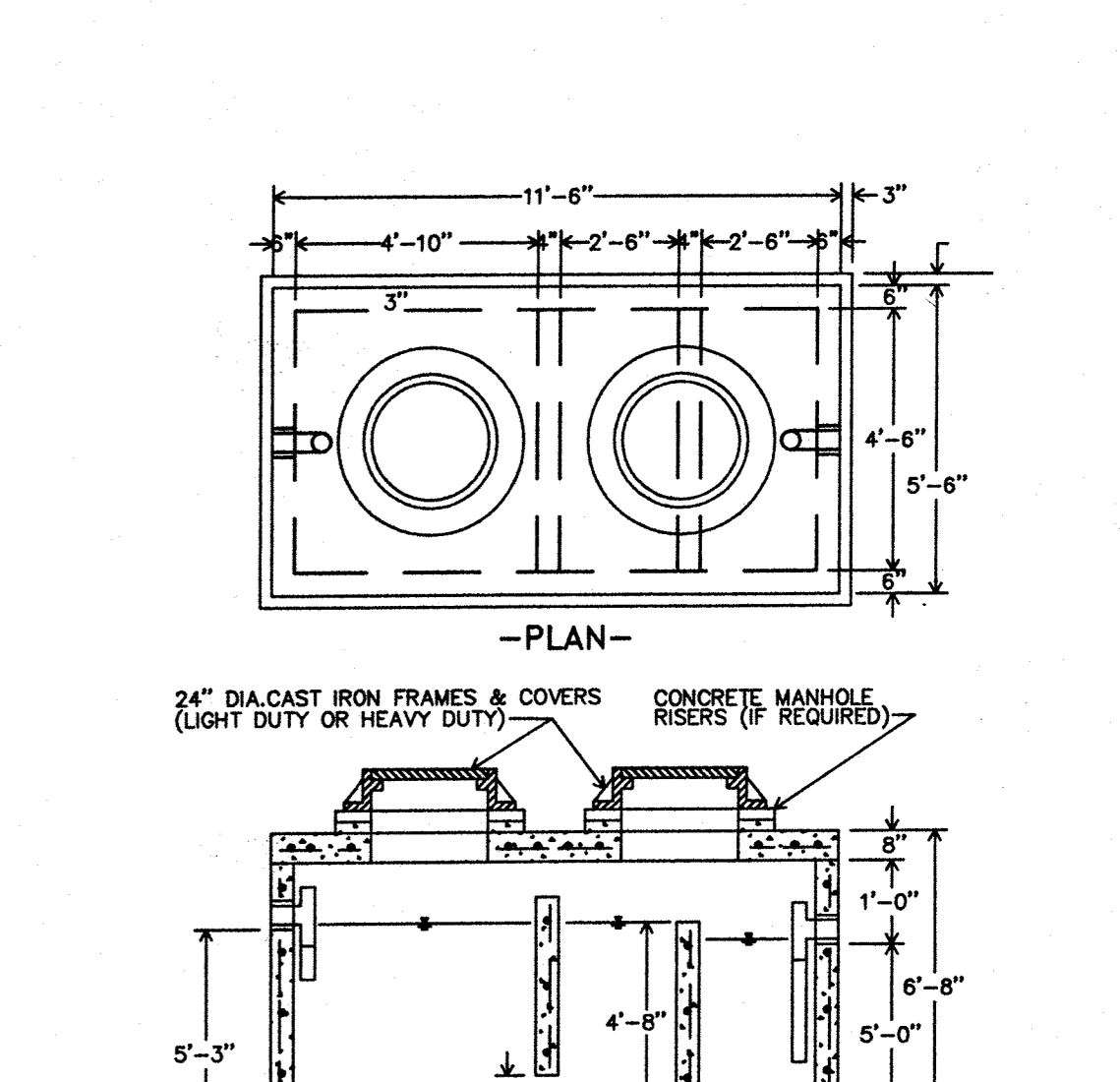
SDA#3 TRENCH SCHEMATIC (nts)



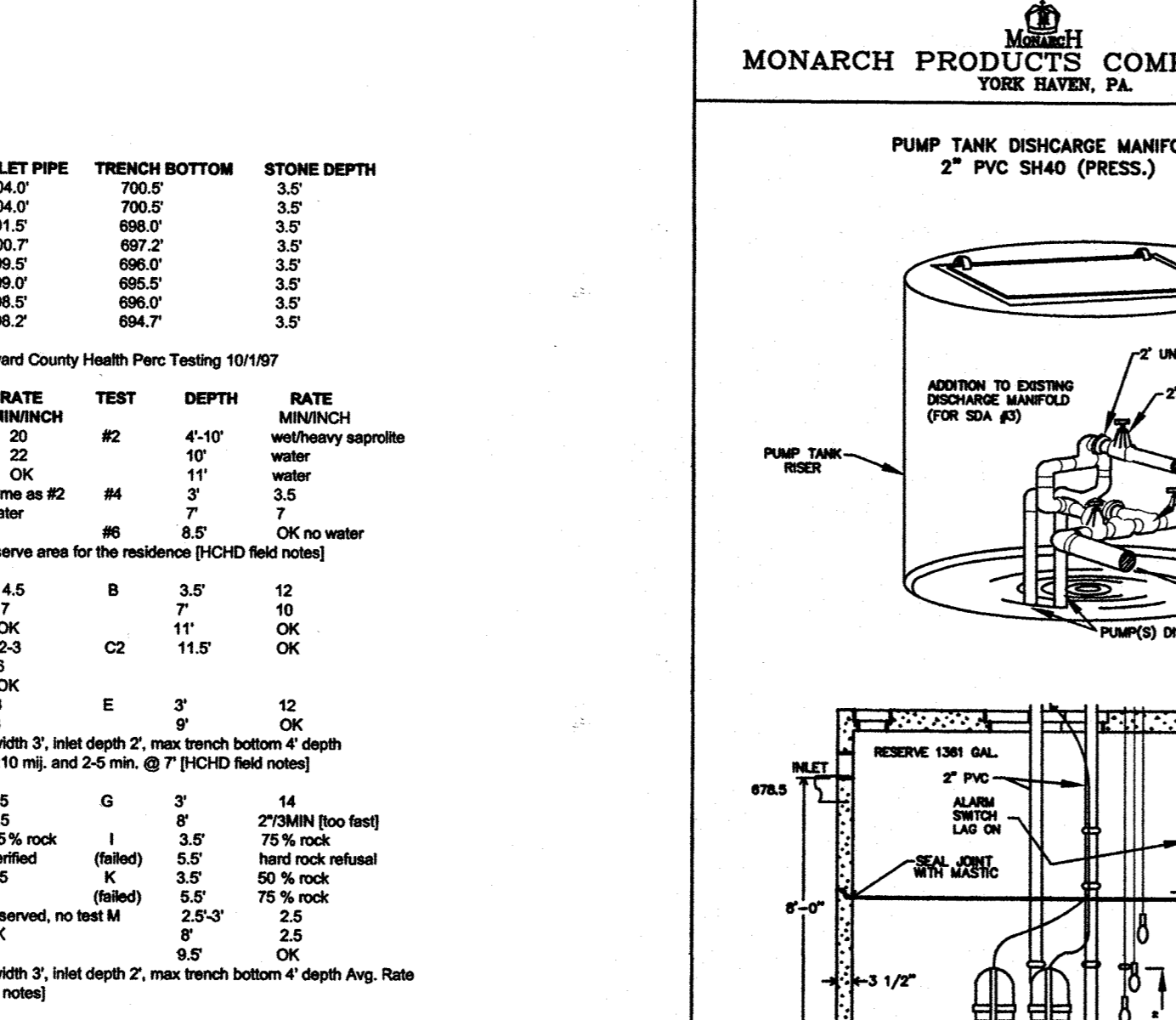
Blower housing base details and dimensions



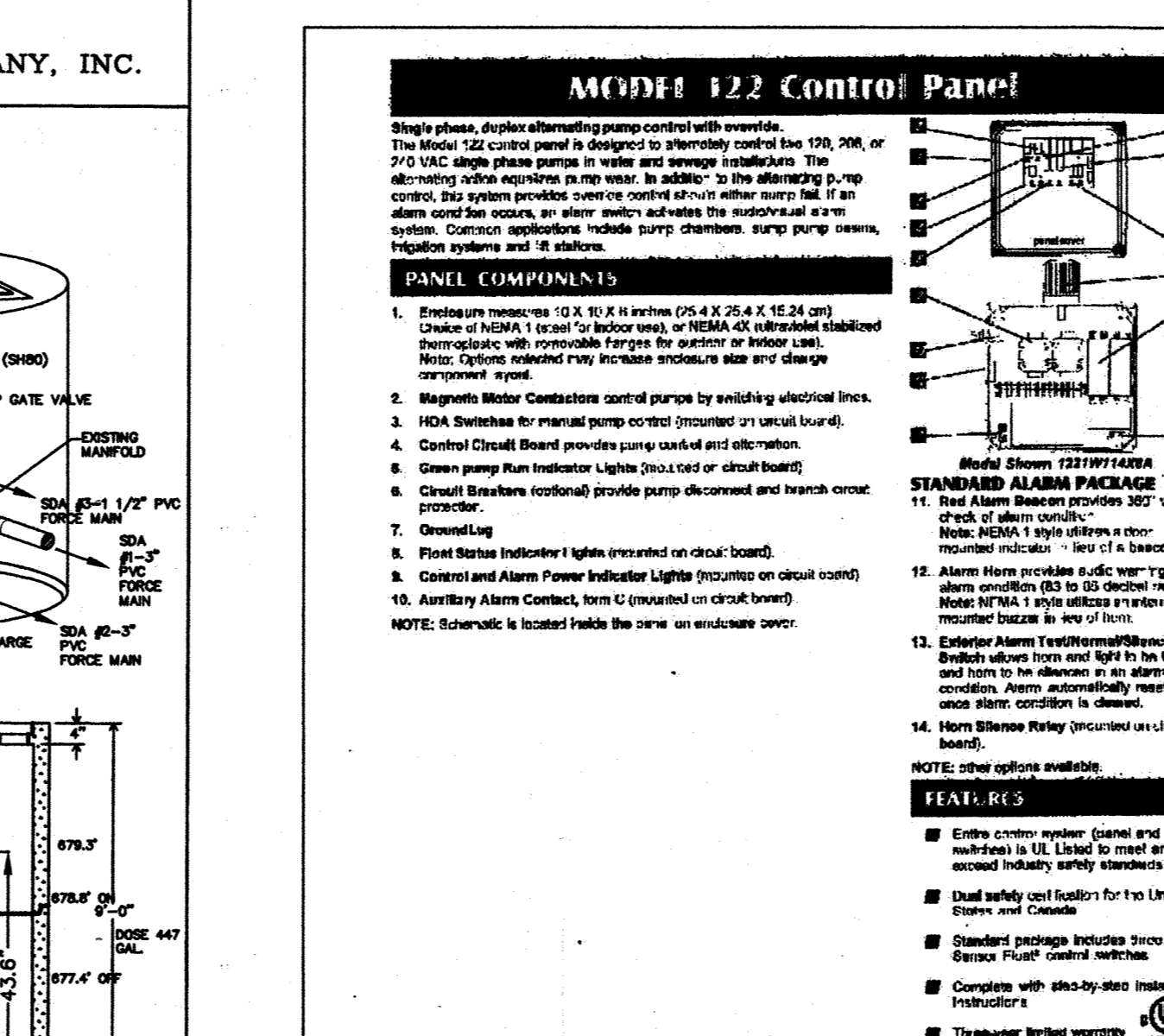
PRECAST CONCRETE 2500 GALLON HEAVY DUTY SEPTIC TANK NOT TO SCALE



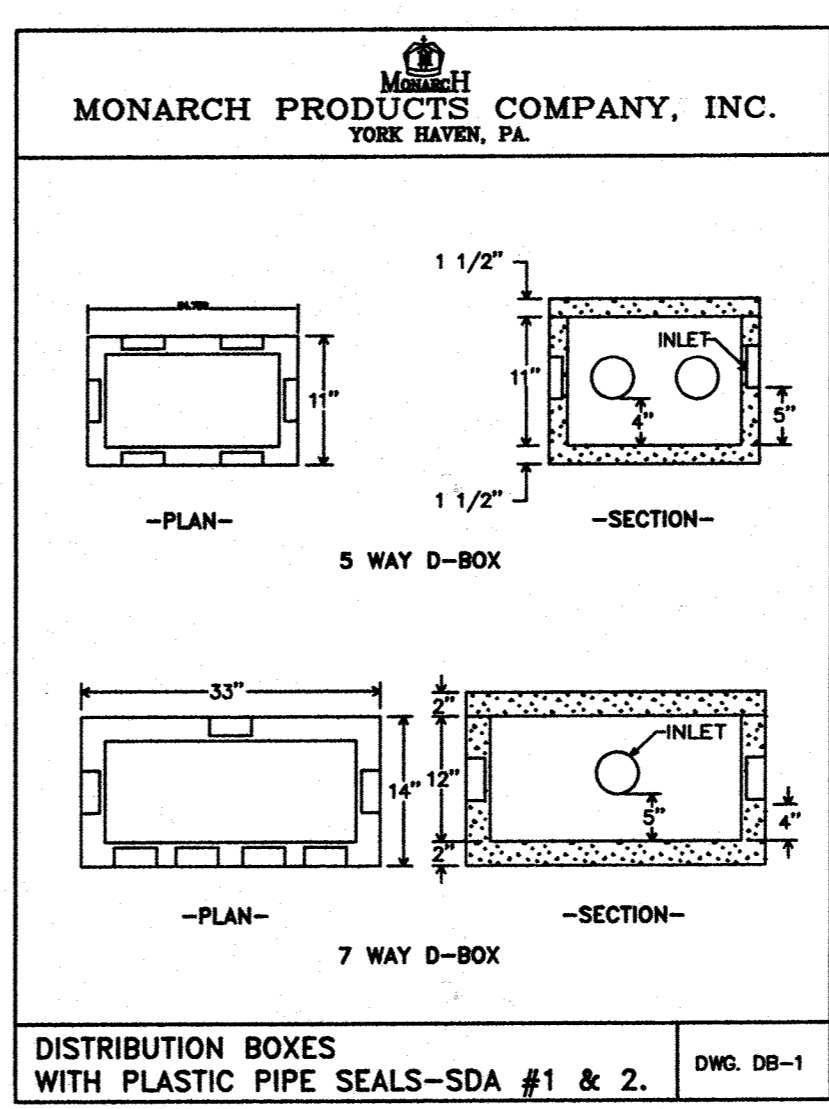
1500 GALL GREASE INTERCEPTOR NOT TO SCALE



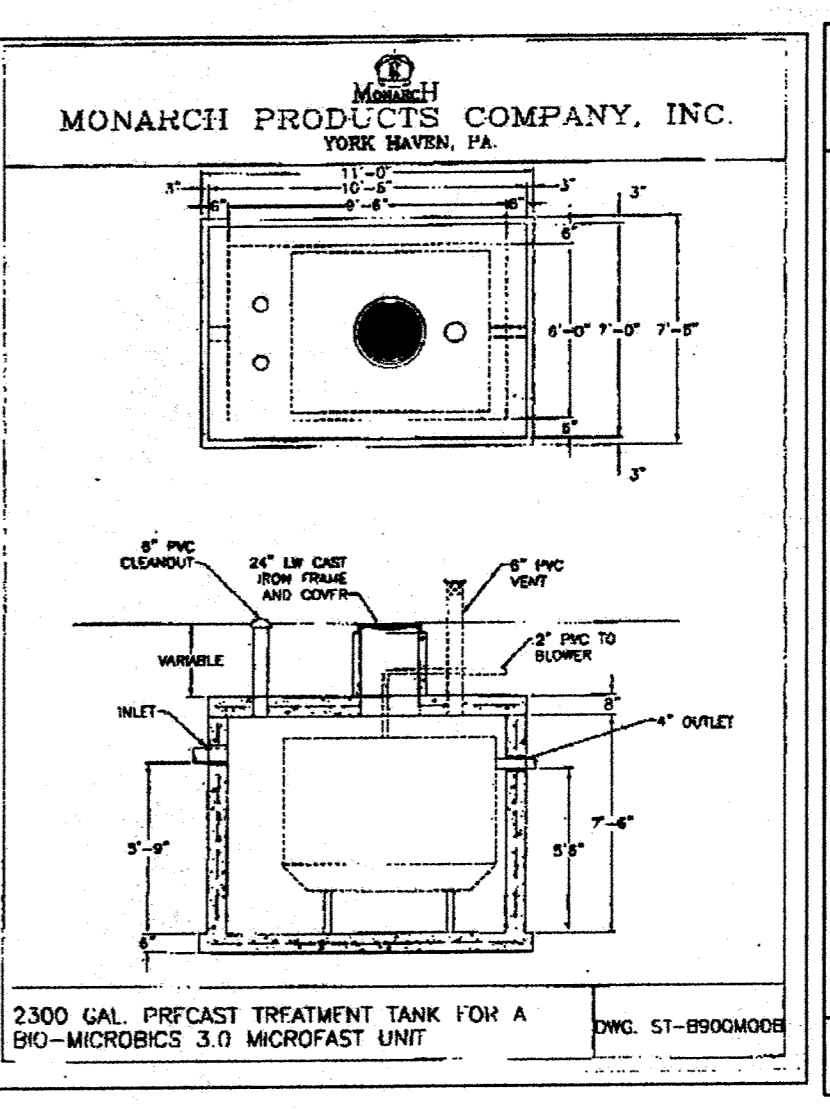
PUMP TANK DISCHARGE MANIFOLD 2" PVC SH40 (PRESS.)



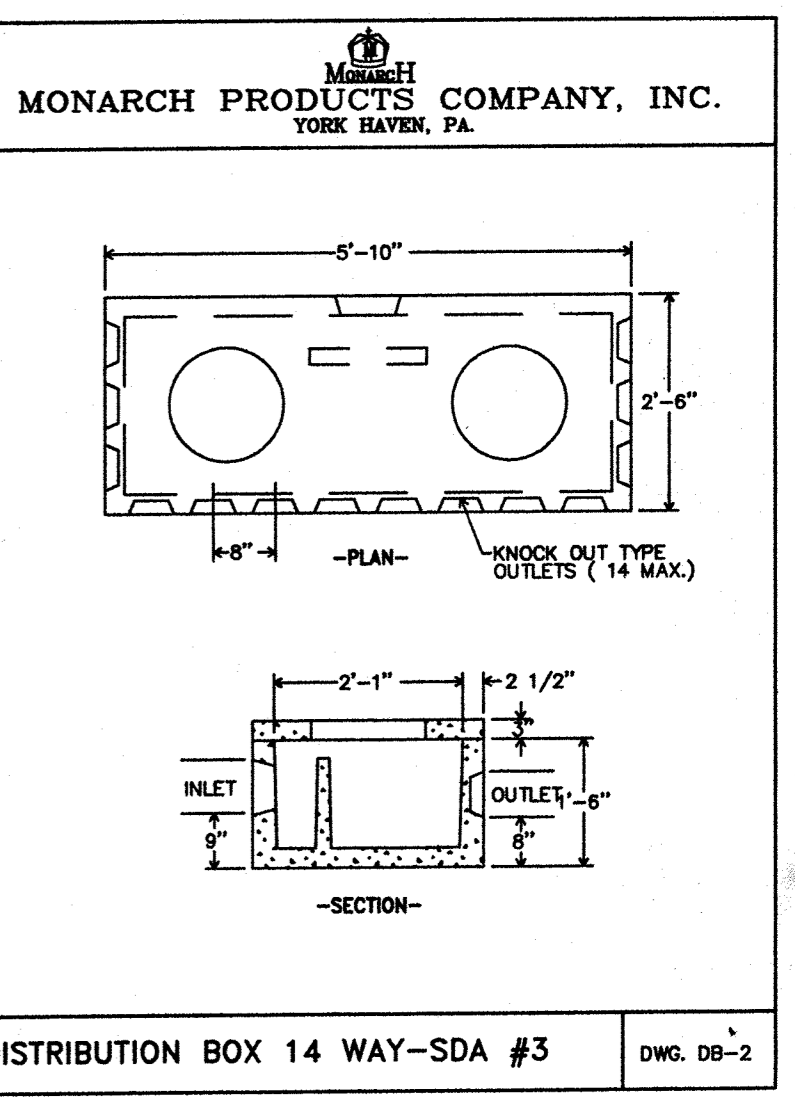
MONARCH PRODUCTS COMPANY, INC. MODEL 122 Control Panel



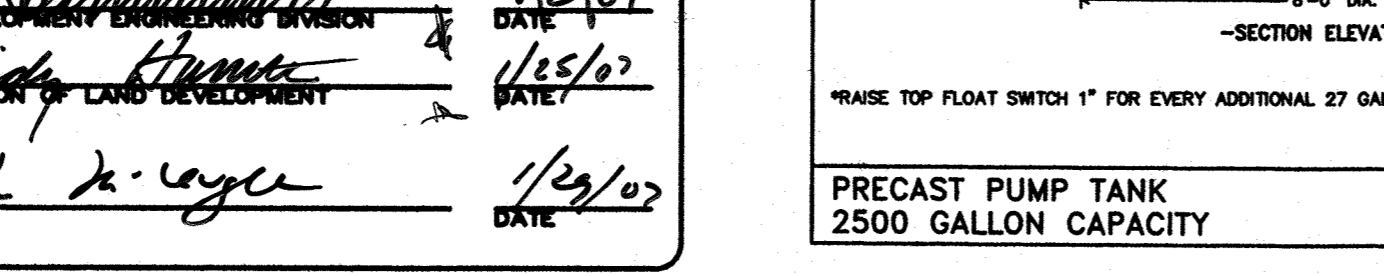
DISTRIBUTION BOXES WITH PLASTIC PIPE SEALS - SDA #1 & 2. DWG. DB-1



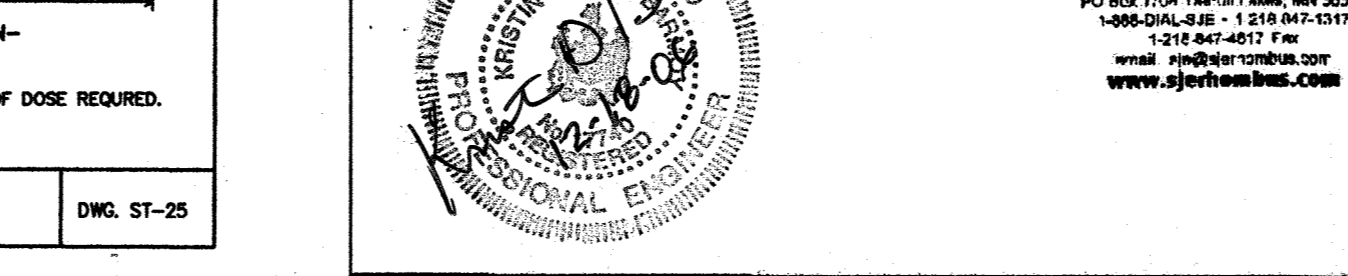
2300 GAL. PRECAST TREATMENT TANK FOR A BIO-MICROBIOS 3.0 MICROFAST UNIT. DWG. ST-89000008



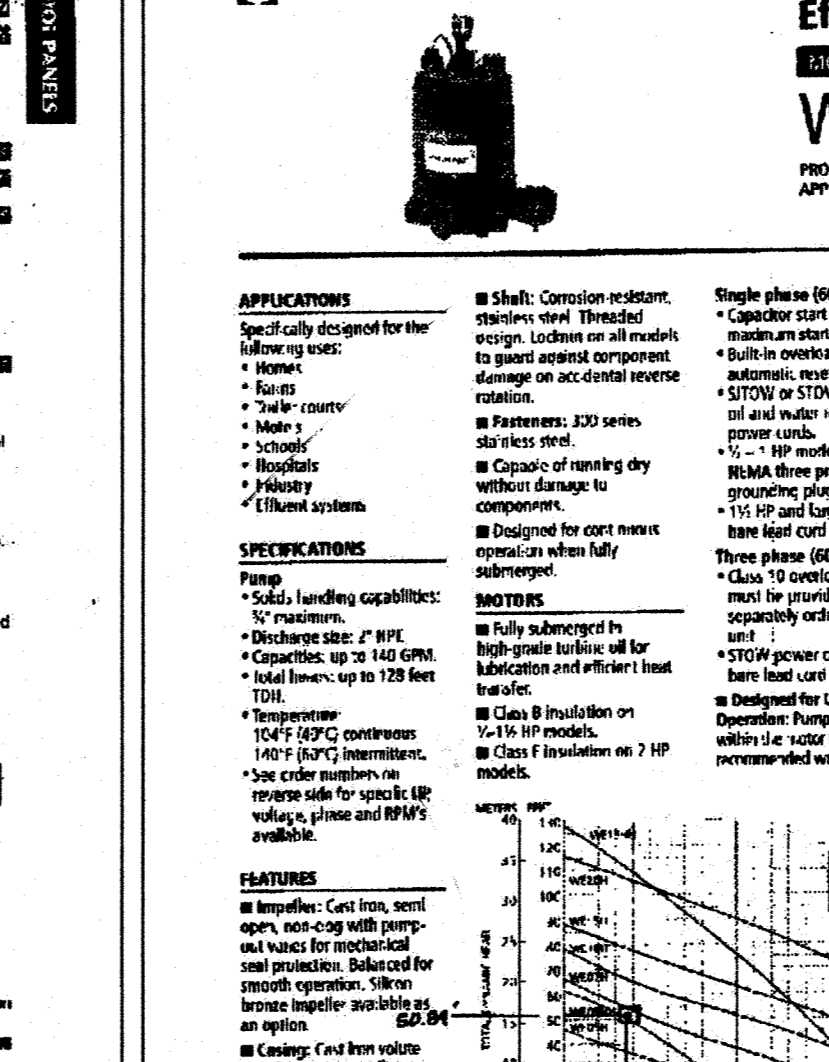
DISTRIBUTION BOX 14 WAY - SDA #3. DWG. DB-2



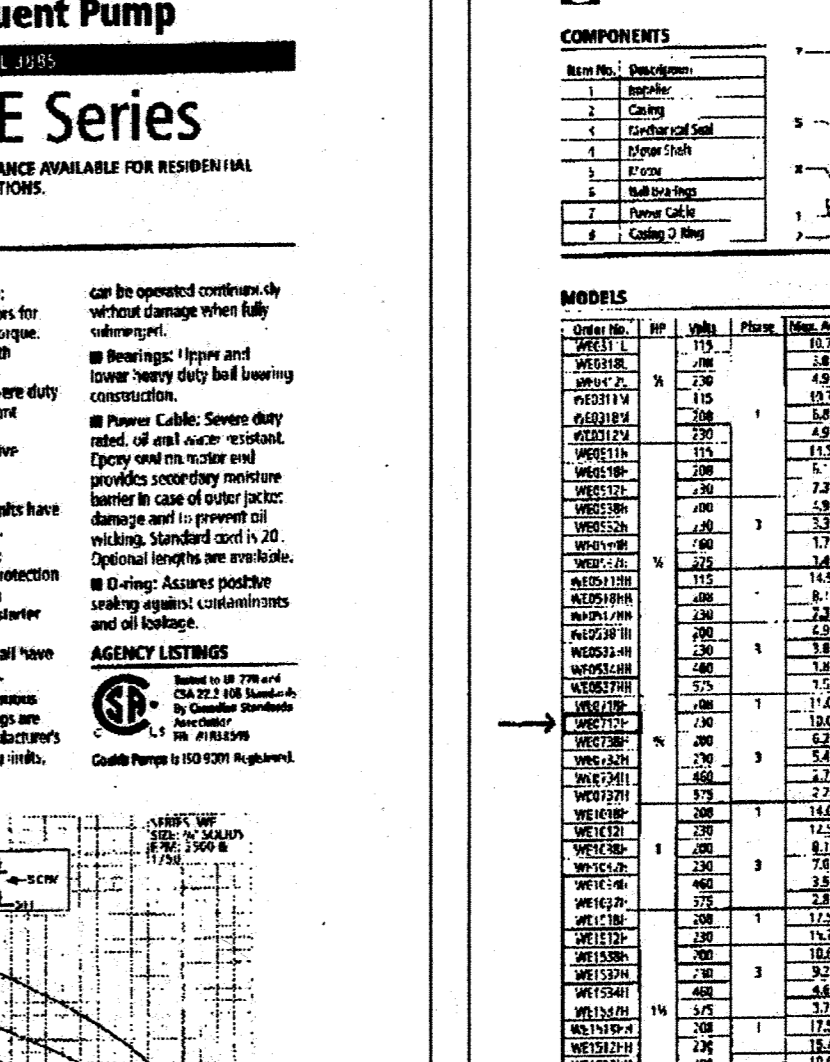
PRECAST PUMP TANK 2500 GALLON CAPACITY. DWG. ST-25



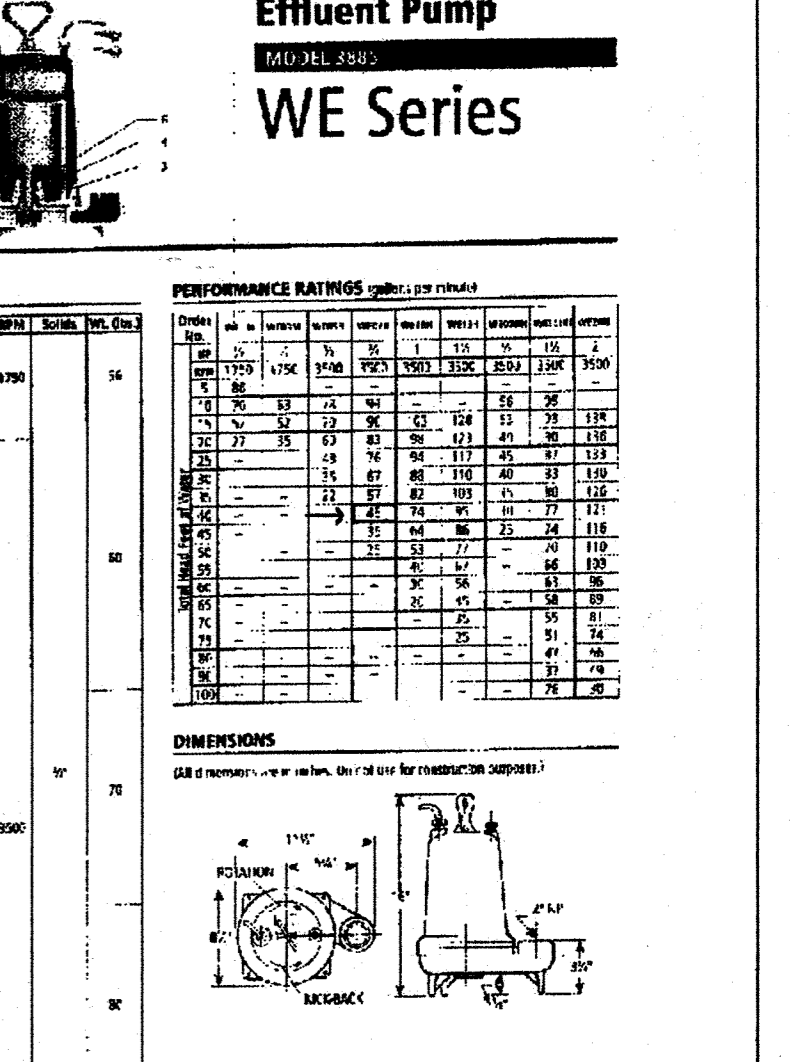
MONARCH PRODUCTS COMPANY, INC. MODEL 122 Control Panel



GOULDS PUMPS Submersible Effluent Pump WE Series



GOULDS PUMPS Submersible Effluent Pump WE Series performance curves



GOULDS PUMPS Submersible Effluent Pump WE Series performance curves

MARYLAND LAND DESIGN, INC. CONSULTING ENGINEERS AND LAND PLANNERS

MARYLAND OFFICE: 2001 MEADOW DRIVE WESTMINSTER, MARYLAND 21158 TELEPHONE: (410) 857-0210 FAX: (410) 857-8030

PENNSYLVANIA OFFICE: (CONTACT OFFICE) 585 MALLISTER STREET HANOVER, PENNSYLVANIA 17331 TELEPHONE: (717) 637-8746 FAX: (717) 633-1987

REVISIONS

Table with columns: NO., DATE, DESCRIPTION. Revision 1: 12-3-06 REVISED THIS SHEET PER HEALTH DEPT. REQUIREMENTS FOR 8250 3/17 BUILDING ADDITION.

PROJECT OWNER/DEVELOPER:

MT. AIRY BIBLE CHURCH 16700 OLD FREDERICK ROAD MT. AIRY, MD 21771 (410)-489-4321

PLAN PREPARATION

DRAWN BY: DAB DATE: MAY 18, 2004 FILE NO. 3466 CHECKED BY: KDB DRAWING NO. E-152

REV. SEWAGE DISPOSAL SYSTEM #1 DETAILS

SCALE NO SCALE SHEET NO. 18 OF 22 SDP-04-150

GENERAL NOTES:

- This area designates a private sewage area as required by the Maryland State Department of the Environment for individual sewage disposal. Improvements of any nature in this area are restricted until public sewerage is available. These areas shall become null and void upon connection to a public sewerage system. The county Health Officer shall have the authority to grant adjustments to the private sewage area. Recordation of a modified sewage area shall not be necessary.
- Topography shown is at two-foot contour intervals and has been field verified or field run.
- Any changes to a private sewage area shall require a revised perc certification plan.
- Existing wells, septic systems, and sewage disposal areas within 100' of the property and those within 200' downgradient of existing or proposed septic systems or sewage disposal areas have been shown.
- The purpose of this plan is to accommodate owner's proposal to increase existing church school population to 480 students. Capacity of the septic area proposed is able to support this proposal. The septic system is not adequate to support a food service in the school kitchen. Student capacity is subject to further review for the discharge permit.
- There is no food preparation in the existing school kitchen and none is proposed. There is no stove or oven. Students bring their own meals to school. They can also buy milk and juice in the vending machine.
- The lot shown hereon complies with the minimum ownership, width, and lot area as required by the Maryland State Department of the Environment.
- The existing house on the property will be connected to the new pretreatment system, as required by the groundwater discharge permit, and the existing septic system for the house will be abandoned.
- Existing Sewage Disposal Areas #1 and 2 located under parking lot east of the existing church building are currently resting and shall not be used. They could be used only as a temporary solution when the new system begins to fail.
- The proposed system is a low pressure dose system.
- The Subject property is zoned RC-DEO. Adjoining zoning is RC-DEO.
- Total Area of Property: 14.2383 Ac±
- Deed Reference: Liber 9597, Folio 266
- Courses and distances of outline boundary lines are as shown on the Plat No. 17634 recorded among the Land Records of Howard County on 8-5-05, which is based on a field run Boundary Survey prepared by Raymond Day, PLS, June 2003, and supplemented by field survey information obtained by Worley Surveying between 2004 and 2005.
- Topographic survey based on NAD 83.
- Existing use: Religious facility and School.
- MDE State Groundwater Discharge Permit No. 10-DP-3691 has been issued on June 1, 2011.
- In order to comply with MDE State GQP No. 10-DP-361 effluent limitations it is proposed to install 15,000 GPD HOOT MTS + ANR SYSTEM designed by HOOT SYSTEMS, LLC.
- In order to achieve equal distribution of discharge of treated effluent to absorption trenches it is proposed to utilize AMERICAN "PERC-RITE" Wastewater Drip System as designed by AMERICAN MANUFACTURING COMPANY, INC. It is proposed to place drip tubing inside perforated PVC pipe along entire trench length.
- MDE Construction Permit for wastewater treatment plant No. 12-25-1126 has been issued on January 8, 2013.
- Supplemental complete detailed set of Private Sewage System Upgrade Plans is kept by Howard County Health Department.

DESIGN CALCULATIONS:

Application Rate with advanced pretreatment:
 1.2 GPD/SF where average percolation rate is less or equal 15 minutes/inch; and
 0.9 GPD/SF where average percolation rate is more than 15 minutes/inch.

Design Flow = 480 student X 15 GPD per student + 3 bedroom X 150 GPD per bedroom = 7,650 GPD
 Initial System capacity = 150% Design Flow = 11,475 GPD
 Approximate size of one Absorption Cell (AC) = 50% Design Flow = 3,825 GPD

It is proposed to provide 3 Initial Absorption Cells (IAC) and 3 Replacement Absorption Cells (RAC).

In order to achieve equal distribution it is proposed to utilize AMERICAN "PERC-RITE" Wastewater Drip System. It is proposed to split 3 IAC into 7 drip zones. It is proposed to place drip tubing inside perforated PVC pipe along entire trench length.

APPROVED FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

Signature for Mauna Rossman 5/1/2013
 HEALTH OFFICER, HOWARD COUNTY HEALTH DEPT. DATE 198

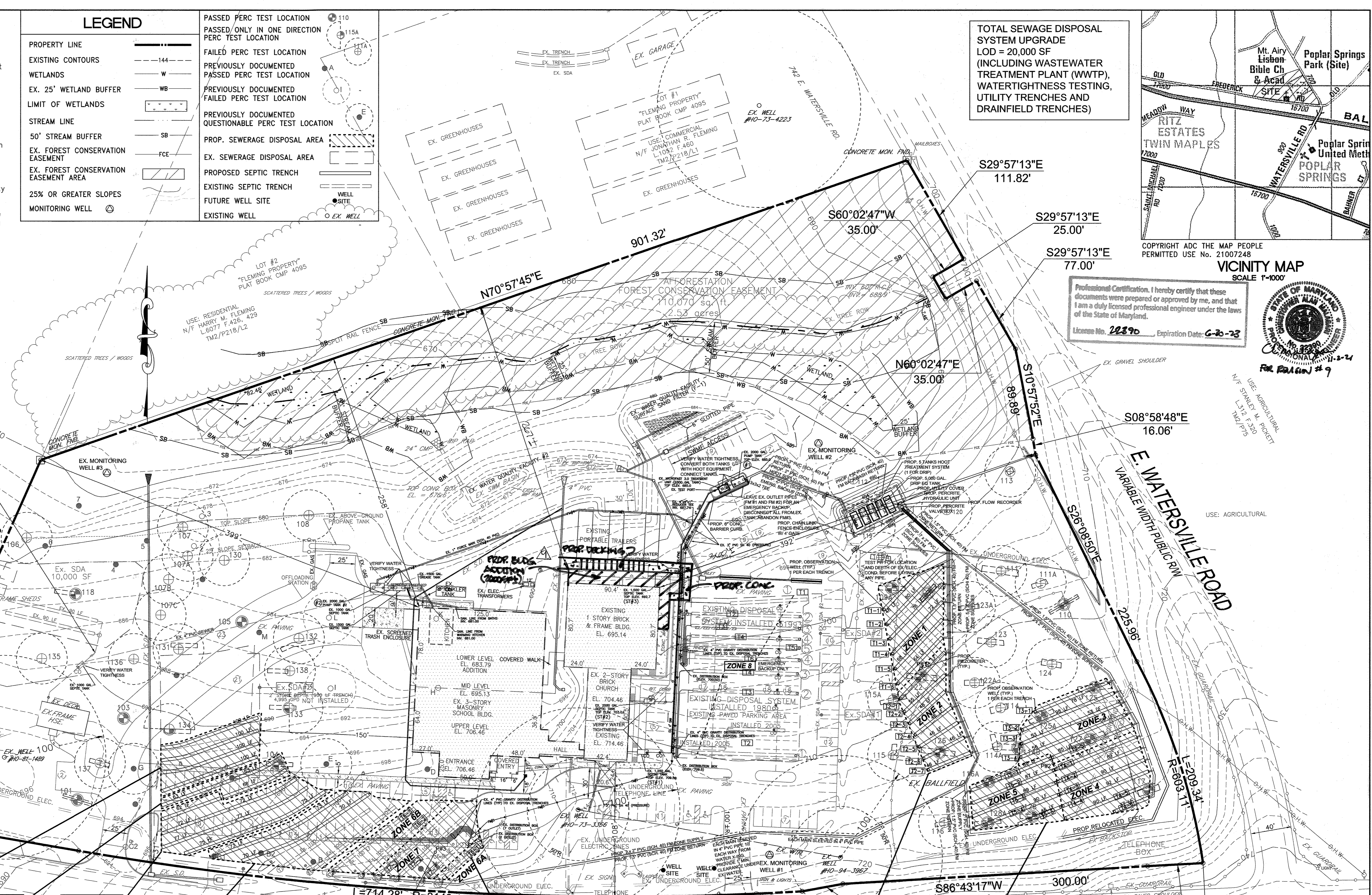
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 5/3/13 Date
 Chief, Division of Land Development 5/6/13 Date
 Director 5/7/13 Date

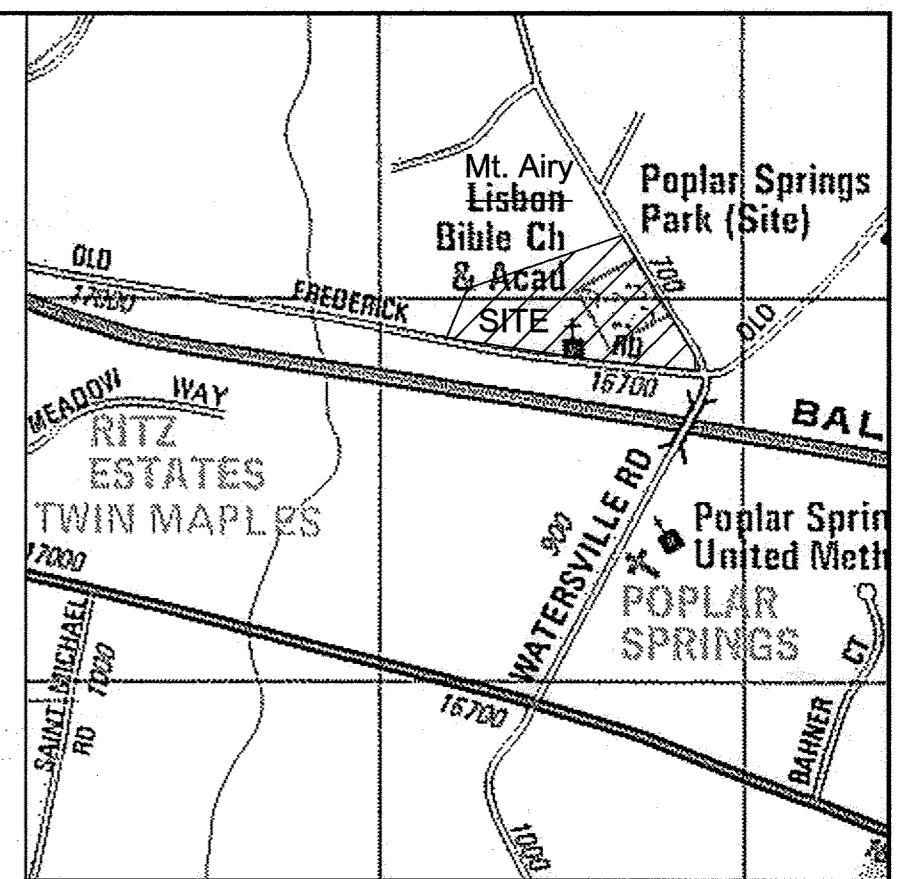
LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- WETLANDS
- EX. 25' WETLAND BUFFER
- LIMIT OF WETLANDS
- STREAM LINE
- 50' STREAM BUFFER
- EX. FOREST CONSERVATION EASEMENT
- EX. FOREST CONSERVATION EASEMENT AREA
- 25% OR GREATER SLOPES
- MONITORING WELL

- PASSED PERC TEST LOCATION
- PASSED ONLY IN ONE DIRECTION PERC TEST LOCATION
- FAILED PERC TEST LOCATION
- PREVIOUSLY DOCUMENTED PASSED PERC TEST LOCATION
- PREVIOUSLY DOCUMENTED FAILED PERC TEST LOCATION
- PREVIOUSLY DOCUMENTED QUESTIONABLE PERC TEST LOCATION
- PROP. SEWERAGE DISPOSAL AREA
- EX. SEWERAGE DISPOSAL AREA
- PROPOSED SEPTIC TRENCH
- EXISTING SEPTIC TRENCH
- FUTURE WELL SITE
- EXISTING WELL

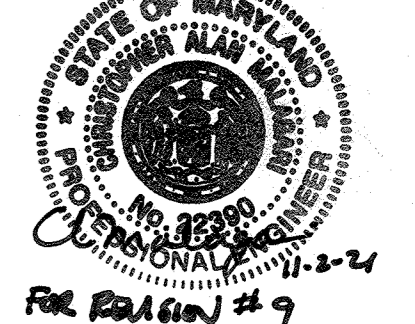


TOTAL SEWAGE DISPOSAL SYSTEM UPGRADE
 LOD = 20,000 SF
 (INCLUDING WASTEWATER TREATMENT PLANT (WWTP),
 WATERTIGHTNESS TESTING,
 UTILITY TRENCHES AND
 DRAINFIELD TRENCHES)



COPYRIGHT ADC THE MAP PEOPLE
 PERMITTED USE No. 21007248
 VICINITY MAP
 SCALE 1"=100'

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. 28890, Expiration Date: 6-20-23



RAC #3B
 2.0' EFF. STONE DEPTH (400 LF TRENCH)
 AR=1.2
 CAPACITY: 2,304 GPD

RAC #3A
 3.5' EFF. STONE DEPTH (194 LF TRENCH)
 AR=1.2
 CAPACITY: 1,536 GPD

RAC #2
 3.5' EFF. STONE DEPTH (486 LF TRENCH)
 AR=1.2
 CAPACITY: 4,039 GPD
 PROP. LOAD: 3,825 GPD

RAC #1
 3.5' EFF. STONE DEPTH (200 LF EXISTING)
 AR=1.2
 CAPACITY: 3,849 GPD
 PROP. LOAD: 3,825 GPD

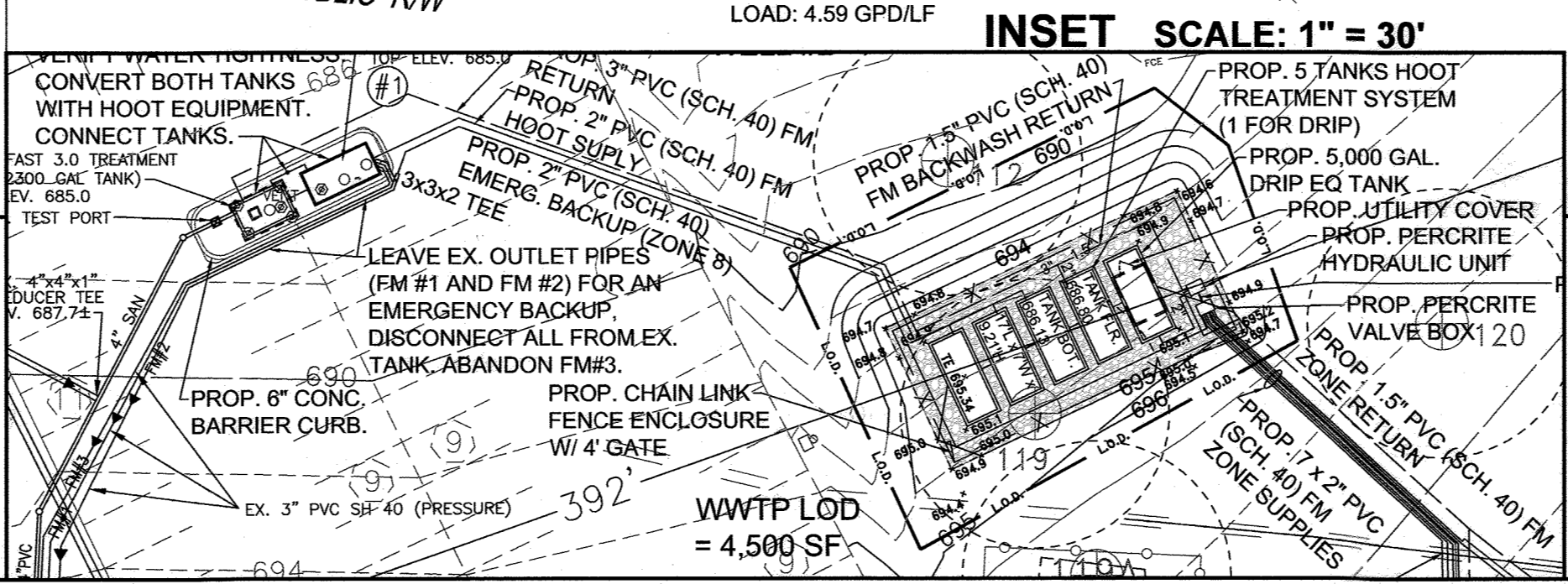
RAC #3
 TOTAL CAPACITY: 3,840 GPD
 PROP. LOAD: 3,825 GPD

OLD FREDERICK ROAD
 VARIABLE WIDTH PUBLIC R/W

ZONES 6, 7
 3.5' EFF. STONE DEPTH AR=1.2
 ZONE 6: 250 LF TRENCH CAPACITY: 1,880 GPD LOAD: 4.59 GPD/LF
 ZONE 7: 250 LF TRENCH CAPACITY: 1,880 GPD LOAD: 4.59 GPD/LF

ZONES 1, 2
 1.0' EFF. STONE DEPTH AR=1.2
 ZONE 1: 408 LF TRENCH CAPACITY: 1,763 GPD LOAD: 2.59 GPD/LF
 ZONE 2: 351 LF TRENCH CAPACITY: 1,516 GPD LOAD: 2.59 GPD/LF

ZONES 3, 4, 5
 1.0' EFF. STONE DEPTH AR=0.9
 ZONE 3: 479 LF TRENCH CAPACITY: 1,552 GPD LOAD: 1.93 GPD/LF
 ZONE 4: 485 LF TRENCH CAPACITY: 1,572 GPD LOAD: 1.93 GPD/LF
 ZONE 5: 397 LF TRENCH CAPACITY: 1,286 GPD LOAD: 1.93 GPD/LF



PLAN SCALE: 1" = 50'

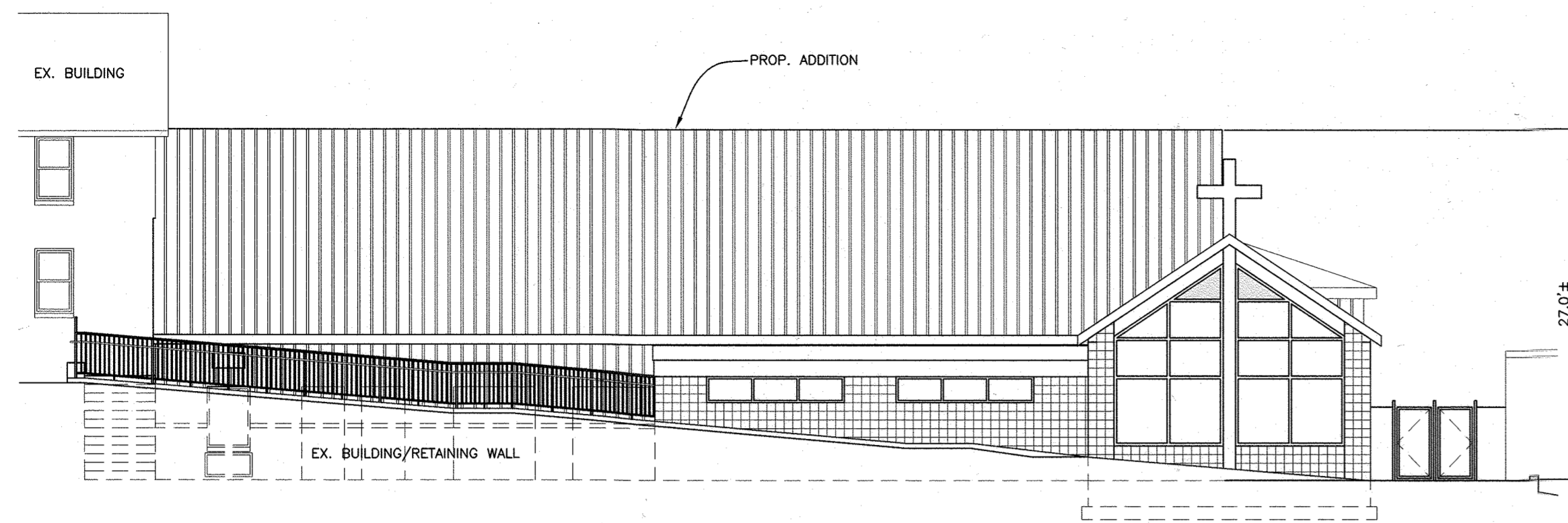
OWNER/PETITIONER:
 MT. AIRY BIBLE CHURCH
 16700 OLD FREDERICK ROAD
 MT. AIRY, MD 21711
 ATTN: MARVIN PATRICK, ASSOCIATE PASTOR
 Phone: (410) 489-4321
 Fax: (410) 489-4492
 E-Mail: marvin.patrick@mabcemd.org

KCW J.O.: 2080052
 SCALE: AS SHOWN
 DESIGNED: MT
 DRAWN: MT
 CHECKED: KCA
 DATE: APRIL 3, 2013
 DRAWING NO. 20 OF 22

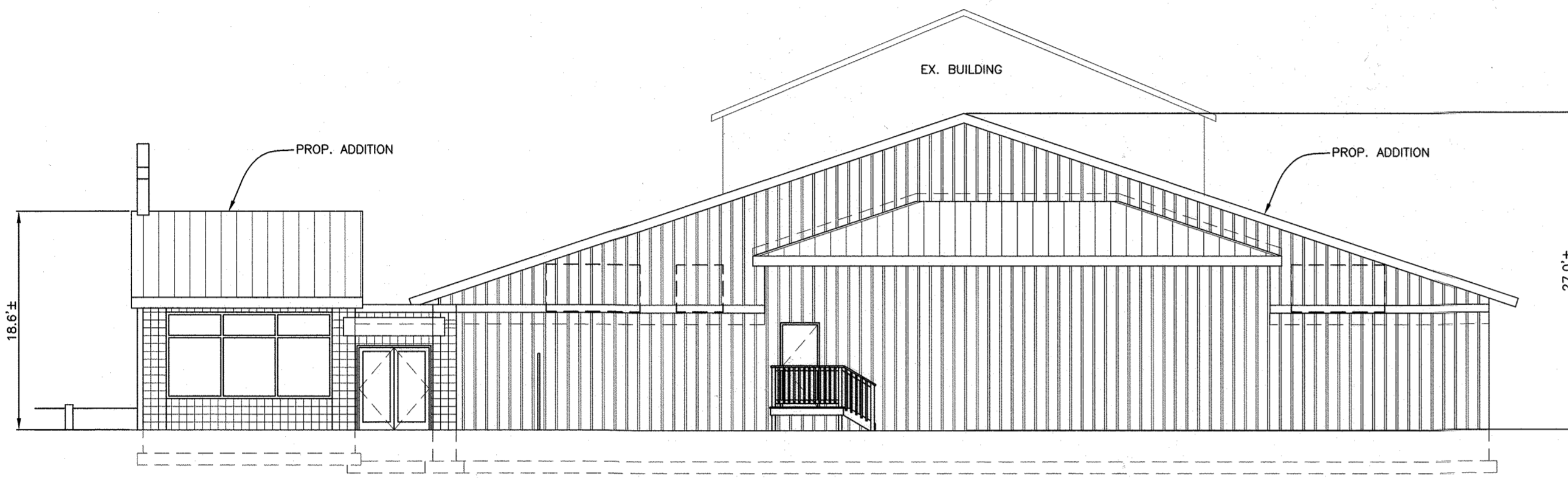
PRIVATE SEWAGE DISPOSAL SYSTEM UPGRADE PLAN

MT. AIRY BIBLE CHURCH
 PROPOSED PRIVATE SEWAGE DISPOSAL SYSTEM UPGRADE
 16700 OLD FREDERICK ROAD

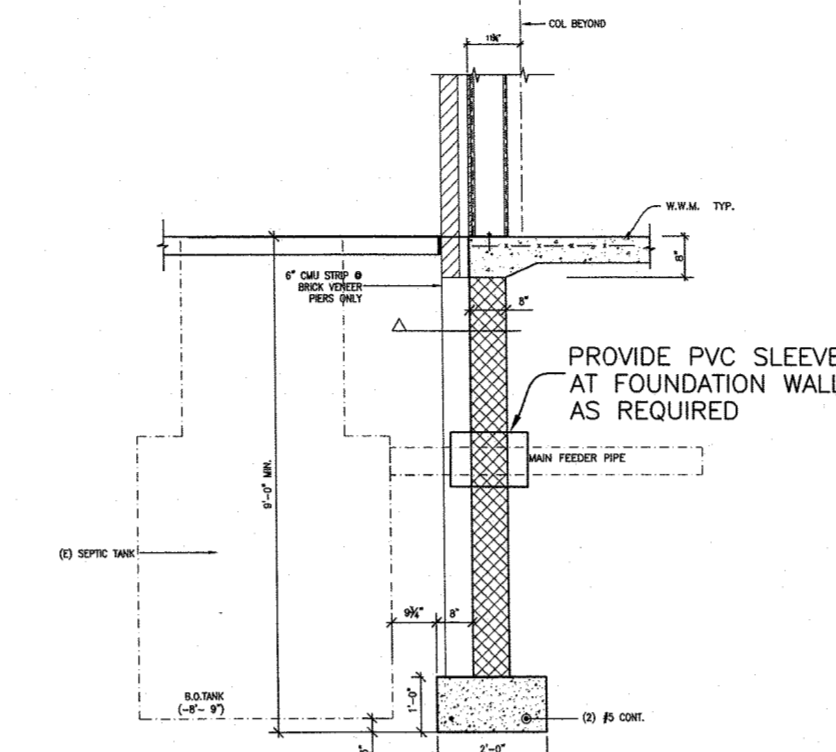
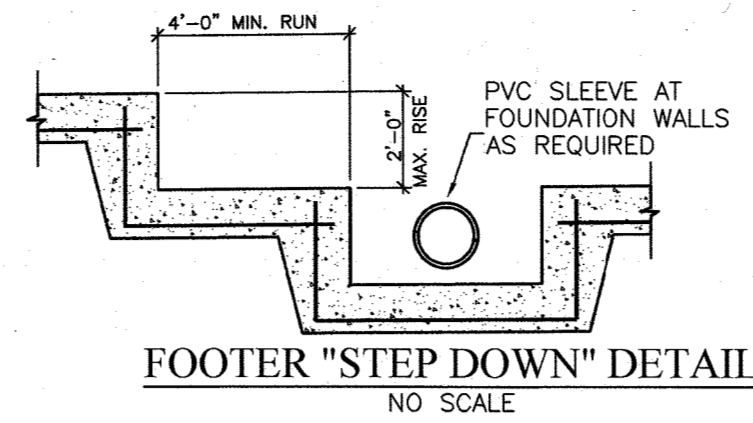
ZONING: RC-DEO
 ELECTION DISTRICT - 4
 HOWARD COUNTY, MARYLAND
 SDP-04-150



ELEVATION LOOKING WEST
SCALE: 1"=10'

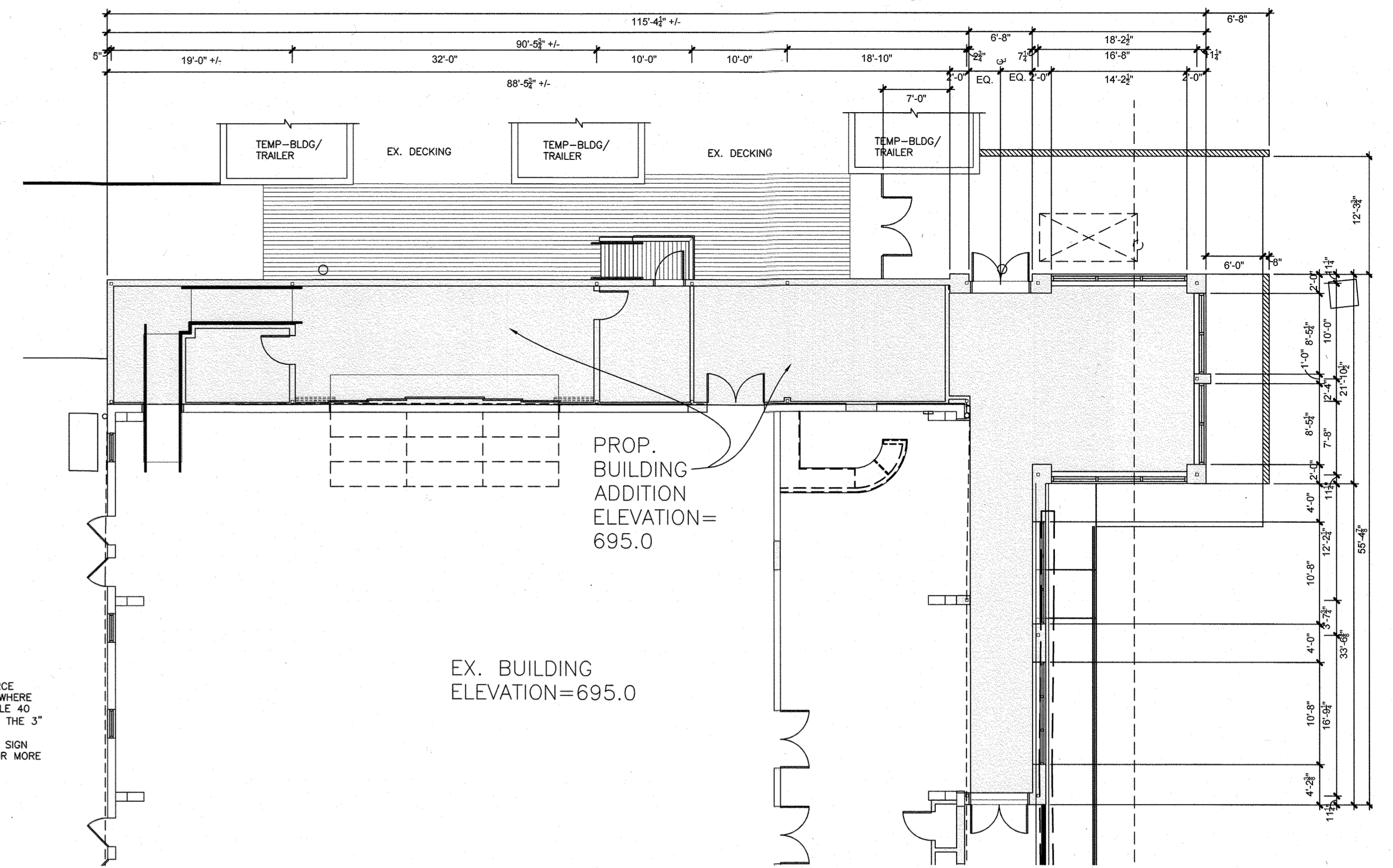


SEE ARCHITECTURAL PLANS FOR ALL DIMENSION AND ELEVATIONS.
ELEVATION LOOKING SOUTH
SCALE: 1"=10'



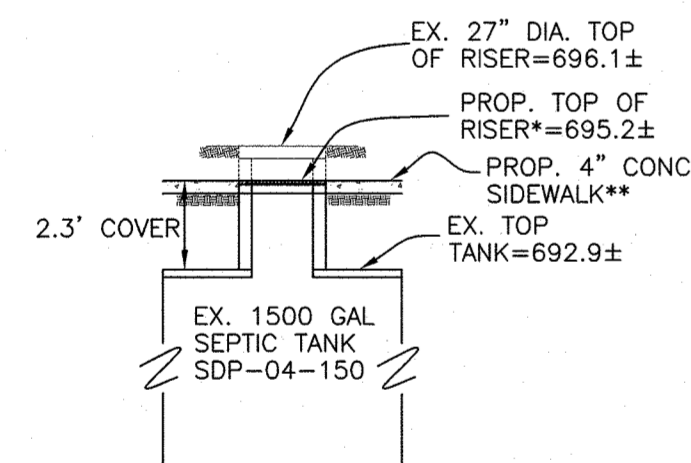
CONTRACTOR NOTE:
WHERE BUILDING FOOTER IS IN CONFLICT WITH EXISTING SEPTIC PIPES AND/OR FORCE MAINS THE FOOTER SHALL BE STEPPED DOWN BELOW THE PIPES PER THE DETAIL WHERE PIPE PENETRATES THE FOUNDATION WALL. PIPES SHALL BE SLEEVED USING SCHEDULE 40 PVC PIPE UTILIZING A 4" SLEEVE FOR THE 4" SEWER PIPES AND A 6" SLEEVE FOR THE 3" FORCEMAIN PIPES. A STRUCTURAL ENGINEER SHALL BE ON SITE DURING THE DIGGING/FOUNDATION WORK NEAR THE EXISTING SEPTIC TANK AND SEPTIC LINES TO SIGN OFF ON THE INSTALL MEETING THEIR REQUIREMENTS. SEE ARCHITECTURAL PLANS FOR MORE DETAILS.

'CONTRACTOR SHALL PULL A MINOR SEPTIC REPAIR PERMIT TO CUT THE EXISTING SEWER PIPES AND INSTALL SLEEVES'

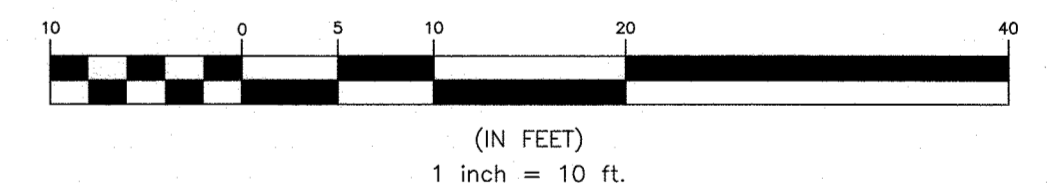
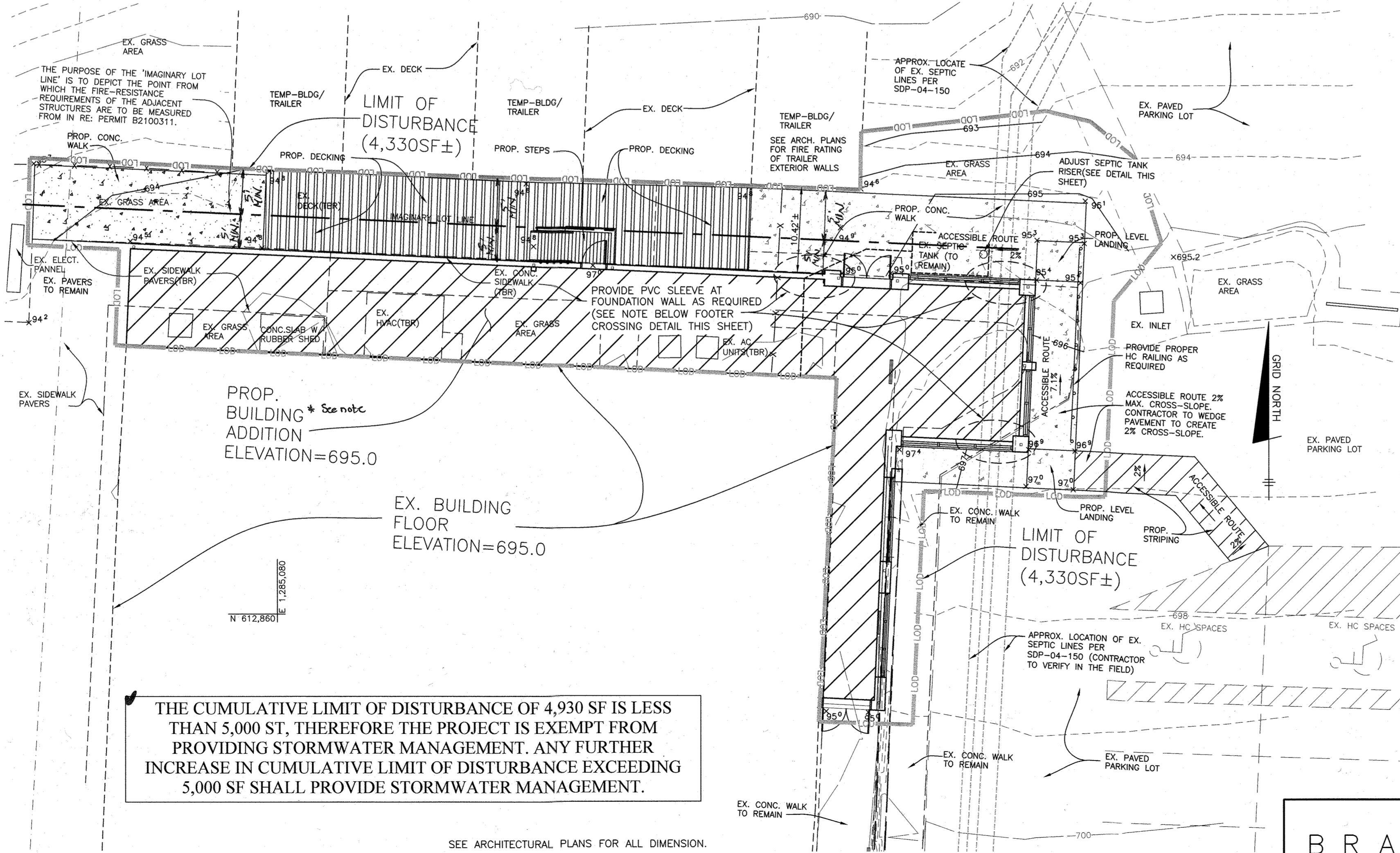


SEE ARCHITECTURAL PLANS FOR ALL DIMENSION.
PROPOSED BUILDING ADDITION DIMENSIONS
SCALE: 1"=10'

NOTE
*The DPZ Director determined a revised conditional use would not be required since the building addition will not add additional seats or require additional parking.



* RISER SIDEWALK FRAME & COVER TO BE PER STANDARD HOWARD COUNTY DETAIL D-3.91
** 4" CONCRETE SIDEWALK PER STANDARD HOWARD COUNTY DETAIL R-3.05



THIS SHEET IS TO BE ADDED TO SDP-04-150 FOR THE CONSTRUCTION OF THE BUILDING ADDITION

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT
DATE: 1/6/21

CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 1/27/22

CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 1-19-22

DIRECTOR
DATE: 1/27/22

NO.		DATE		REVISION	
10.14.21		ADD ADDITIONAL SHEET FOR BUILDING ADDITION			
BENCHMARK ENGINEERING, INC. ENGINEERS & LAND SURVEYORS & PLANNERS 8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043 (P) 410-465-6105 (F) 410-465-6644 WWW.BEI-CVLENGINEERING.COM					
OWNER/DEVELOPER:			MT. AIRY BIBLE CHURCH 16700 OLD FREDERICK ROAD MOUNT AIRY, MD 21771 410-489-4321		
DESIGN: JCO			DRAFT: JCO		
DATE: DECEMBER 2021			BEI PROJECT NO. 2982		
SCALE: 1" = 10'			SHEET 22 OF 22		

BRASHER DESIGN
ARCHITECTURE DESIGN PLANNING INTERIORS
5560 STERRETT PLACE, SUITE 300 COLUMBIA, MARYLAND 21044
410.995.0015 MD 301.621.6020 DC 410.995.0350 Fx
email: brasher.intelligent.design@gmail.com