

BENCHMARKS:

HOWARD COUNTY DEODETIC CONTROL #40FA
 ELEVATION: 497.762
 CONCRETE MONUMENT SET 0.25' BELOW SURFACE, APPROXIMATELY 650' SOUTH OF THE MOORLAND DRIVE/BROWNS BRIDGE ROAD INTERSECTION. LOCATED ON THE WEST MARGIN OF BROWNS BRIDGE ROAD, 69.1 FEET FROM THE TELEPHONE POLE MARKED "G&E 371729".

HOWARD COUNTY DEODETIC CONTROL #40FB
 ELEVATION: 505.114
 CONCRETE MONUMENT SET 2'+/- BELOW SURFACE, APPROXIMATELY 100' NORTH OF MD 216 (SCAGGSVILLE ROAD)/HALL SHOP ROAD INTERSECTION, LOCATED 10.5' FROM THE EDGE OF HALL SHOP ROAD PAVEMENT, 39.4' FROM THE "NO TRUCKS OVER 4 TONS" SIGN.

SDP 02-154

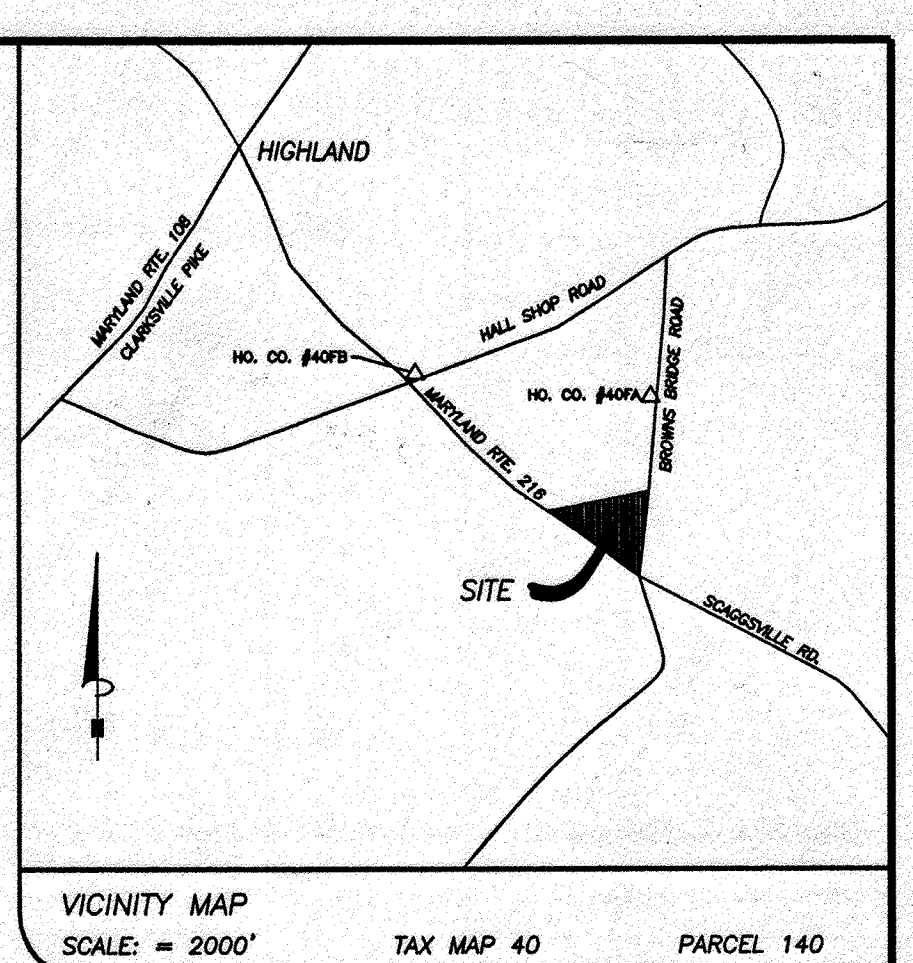
SITE DEVELOPMENT PLANS

for

MT. ZION UNITED METHODIST CHURCH

BUILDING ADDITION

HOWARD COUNTY, MARYLAND



GENERAL NOTES:

- The subject property is zoned RR-DEO. Adjoining zoning is RR-DED (AS NOTED HEREON).
- Total Area of Property: 10,314.6 ac.
- Deed Reference: Liber 5331 Folio 656
- The existing religious facility is served by private water and sewer.
- Local Community: Highland
- Building and use setbacks per Section 105.E.4 of the Howard County Zoning Regulation.
 - Building Front (from Arterial Public Street R/W): 75 Feet
 - Building Side (from Public Street R/W): 60 Feet
 - Building Rear: 60 Feet
 - Use: 50 Feet from Public Street R/W and 30 Feet from all other lot lines (Section 105.E.5)
- Compliance with Conditional Use per Section 131.N.17 for a private academic school of the Howard County Zoning Regulations.
 - Minimum Lot Size: (100 Pupils/oc.) Pupils proposed: 125 Students per session (2 sessions per day). Maximum permitted = 100 Pupils x 10,314.6 ac. = 1031 pupils
- Parking requirements per Section 133 of the Howard County Zoning Regulations.
 - Parking for Religious Facility:
 - 1 spa / 3 seats = 522 seats / 3 = 184 spaces
 - Parking for Private academic school:
 - 1 spa / 6 students = 250 students (2 daily sessions of 125 students) / 6 = 42 spaces
 - Parsonage - 2 spaces 228 required spaces
 - Parking spaces required: 228 spaces
 - Spaces Provided: 233 Total (includes 2 Handicap spaces, 2 spaces for parsonage, 233 LOW INCOME RENTAL UNIT)
- The existing right-of-way line for Maryland Route 216 (105' Ft. R/W) represents the current highway needs inventory of the State Highway Administration.
- Courses and distances of outline boundary lines taken from a Boundary Survey. Prepared by LDE, Inc. Nov. 2001.
- MD 83 Datum by LDE, Inc. Topographic field survey & Assoc. INC.) November, 2001.
- Existing use: Religious facility and day care center.
- Proposed use: The proposed use is for a two story private academic school addition, parking expansion, landscaping, and storm water management facilities.
- Parking facilities will be paved in asphalt with two asphalt connections to each of Scaggsville and Browns Bridge Roads.
- Adjoining uses include single family detached homes to the south and east, and agriculture to the north and south.
- Water and sanitary sewer is proposed to be served by existing well and expansion of septic facilities. Upon approval of the new septic system, the existing sewage disposal system servicing the church and parsonage shall be properly abandoned in accordance with Health Department Requirements.
- Browns Bridge Road is a public road maintained by Howard County. Md. Route 216 - Scaggsville Road is a public road maintained by the State of Maryland.
- Exterior building materials are proposed to be masonry veneer, aluminum trim, and asphalt shingle roof, to match existing building materials.
- 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. See sheet 5 for details.
- In accordance with Section 16.1202 of the Howard County Code and Forest Conservation Manual, forest conservation obligations for this site shall be met by the reforestation of an off-site Forest Conservation Plot of easement for the Chase Property, Lot 2 which shall place 1.8 acres of reforestation in easement area which is sufficient to meet the reforestation requirement of 1.8 acres of afforestation required under SDP 02-154. Surety in amount of \$30,000.00 shall be posted with the developer's agreement for SDP 02-154.
- Landscaping for this site will be provided in accordance with Section 16.124 of the Howard County Code and Landscape Manual. Required financial surety for the required landscaping will be posted as part of the DPZ developer's agreement in the amount of \$36,810.00 for 82 shade trees, 42 evergreen trees and 197 shrubs.
- Applicable DPZ file references:
 - Case No. BA-02-01C - Conditional Use to expand an existing religious facility and existing preschool center. Approved with conditions (see conditions listed this sheet). Approved July 16, 2002.
 - Case No. BA-99-1124V - Special Exception to expand a religious facility and add a child care center. Variances to reduce the 60 foot structure setback to 25 feet for a second story addition, to reduce the 50 foot use setback to 30, 25 and 10 feet, and to reduce the 30 foot use setback to 10 feet for parking and driveways. Approved, September 30, 1999.
 - Case No. BA-03-0024V - Special Exception to construct an education and administration building for additions to an existing religious facility, and to expand the operation of an existing day care center. Variance to reduce the 50 foot setback to 10 feet along a public road right-of-way and to reduce the 30 foot use setback to 2 feet along a rear property line. Approved with conditions, March 8, 1994.
 - Case No. BA-05-0191 - Special Exception to operate a daycare center. Approved with conditions, June 29, 1995.
 - Case No. BA-04-5328V - Variance to reduce the 60 foot side setback to 25 feet for the enlargement of a previously approved Special Exception for a religious facility. Approved with conditions, April 25, 1985.
 - Case No. BA-04-026 - Special Exception to construct two additions to an existing religious facility. Approved with conditions, June 11, 1984 and amended July 12, 1984.
- This plan conforms to the 5th Edition of the Subdivision and Land Development Regulations.
- No cemeteries exist on this site.
- There are no wetlands, stream or flood plain located on this site.
- Groundwater appropriation permit number 03-HO-0012 date issued 1/8/03.
- APFD study was performed by Lee Cunningham & Assoc. and approved July 18, 2002.
- Stormwater management computations approved with this project include management for all phases shown and the future parking lot (41,850 S.F.). Any additional improvements beyond the scope of this approval will require additional stormwater management.
- Additional DPZ file reference (see note 22 above): Case No. BA-23-025CA conditional use to allow the expansion of the religious facility through the construction of a new pavilion. Approved conditions on 3.18.2024

IMPERVIOUS SURFACES ON PROPERTY

EXISTING	PROPOSED
# DRIVEWAY AND PARKING LOT: 94,661 SF	PAVILION: 2,800 SF
# MAIN BUILDING/ATTACHING FACILITIES: 18,169 SF	CONCRETE SLABS AND SIDEWALK: 1,234 SF
# 2-STORY LOW INCOME RENTAL UNIT: 2,116 SF	# Handicap parking spaces does not add to additional impervious area.
# SIDEWALK PATHS: 5,310 SF	Glass Porches not included in computation
# SHED AND OTHER STRUCTURES: 1,700 SF	
TOTAL EX. IMPERVIOUS AREA: 122,560 SF	TOTAL PROP. IMPERVIOUS AREA: 4,034 SF
PERCENT IMPERVIOUS INCREASE:	
[(122,560 SF + 4,034 SF) / (122,560 SF) * 100] - 100 = 3.3%	

CONSTRUCTION NOTES:

- 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.
- 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.
- CONTRACTOR SHALL MEET ALL EXISTING IMPROVEMENTS SMOOTHLY FOR LINE, GRADE, AND FINISH.
- 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.
- 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.
- 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.
- 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 MATERIAL. 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.
- CONTRACTOR SHALL PROTECT ALL EXISTING TREES OUTSIDE THE LIMIT OF DISTURBANCE AT ALL TIMES DURING CONSTRUCTION.
- 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.
- THE CONTRACTOR SHALL CLEAR THE PROJECT SITE OF ALL TREES, PAVING, STRUCTURES, ETC. WITHIN THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED ON THE PLAN.
- 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 COMPACTON SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.
- 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).
- MAXIMUM SLOPE SHALL BE 2 HORIZONTALLY TO 1 VERTICALLY.
- CONTRACTOR SHALL PLACE 4" MINIMUM TOPSOIL IN LANDSCAPE AREAS. TOPSOIL SHALL BE APPROVED BY LANDSCAPE ARCHITECT.
- CONTRACTOR SHALL PLACE A WITNESS POST AT THE TERMINUS OF ALL UTILITY STUBS.
- ALL UTILITIES INSTALLED SHALL RECEIVE FULL TRENCH COMPACTON.
- CONTRACTOR SHALL PROVIDE A MINIMUM OF 1 FOOT OF PROTECTIVE FILL OVER STORM DRAIN PIPES DURING CONSTRUCTION.
- ALL AREAS NOT BEING PAVED OR RECEIVING BUILDING COVERAGE SHALL BE STABILIZED IN ACCORDANCE WITH THE PLANS APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT.

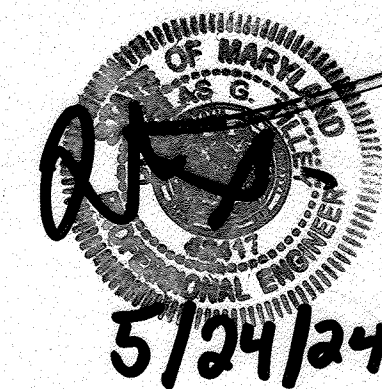
INDEX OF SHEETS

SHEET	TITLE
SHEET 1:	TITLE SHEET
SHEET 2:	EXISTING CONDITIONS & DEMOLITION PLAN
SHEET 3:	SITE PLAN
SHEET 4:	GRADING, SWM & SEDIMENT CONTROL PLAN
SHEET 5:	MISCELLANEOUS DETAILS
SHEET 6:	PRIVATE BIO-RETENTION FACILITY #1 DETAILS
SHEET 7:	PRIVATE BIO-RETENTION FACILITIES #2 & #3 DETAILS
SHEET 8:	STORM DRAIN PROFILES, DETAILS, AND BUILDING PROFILES
SHEET 9:	LANDSCAPE PLAN/SIMPLIFIED FOREST STAND DELINEATION PLAN
SHEET 10:	LANDSCAPE PLAN
SHEET 11:	HANDICAP ACCESS PLAN
SHEET 12:	MD RTE 216 & BROWNS BRIDGE RD IMPROVEMENT PLAN
SHEET 13:	SEPTIC SYSTEM PLAN & DETAILS
SHEET 14:	SEPTIC SYSTEM DETAILS
SHEET 15:	SEPTIC SYSTEM DETAILS
SHEET 16:	DRAINAGE AREA MAPS
SHEET 17:	OFFSITE REFOREST CONSERVATION PLAN
SHEET 18:	OFFSITE REFOREST CONSERVATION DETAILS

REVISION #1
 FOR ADDITION OF NEW PAVILION AND CONCRETE PADS / EGRESS WALK
 - TO ESTABLISH SIGNIFICANT ON-SITE FIELD CONDITIONS AT THE TIME OF THE REVIEW
 - TO ADD ADDITIONAL ADA SPACE AND ACCESS AISLE FOR PAVILION USE
 - TO CONVERT EX. PARSONAGE HOUSE TO LOW INCOME RENTAL UNIT

RED-LINE REVISION DOCUMENTATION PREPARED BY:

O'Connell & Lawrence, Inc.
 O'CONNELL & LAWRENCE, INC.
 Construction Consultants, Engineers, Surveyors
 17904 Georgia Avenue, Suite 302
 Olney, Maryland 20832
 Tel: (301) 924-4570
 Fax: (301) 924-5872



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. 42417, Expiration date: June 6, 2026.
 Design Engineer Signature: Douglas G. Tillye
 MD License #: 42417
 Printed Name: Douglas G. Tillye
 Date: 5/24/24

Landscape cost analysis:
 shrubs: 197 shrubs @ \$30.00 ea. = \$5910.00
 shade trees: 82 trees @ \$300.00 ea. = \$24,600.00
 evergreen trees: 42 trees @ \$150.00 ea. = \$6,300.00
 total landscape cost = \$36,810.00

Site Analysis Data:

Total Project Area: 10,314.6 acres
 Limits of Disturbance: 7.53 acres
 Present Zoning Designation: RR-DEO
 Proposed uses for site and structure: Religious facility and private academic school and low income rental unit
 Number of parking spaces required: 228 (see no. 9 in General Notes this sheet) increase this unit
 Number of parking spaces provided: 233
 Lot Coverage: (shall not exceed 25% of site in accordance with Section 131.N.38.a of the Zoning Regulations); computed lot coverage = 4.44% 4.80 %
 Floor Area Computations: Existing Floor Area = 18,991.4 SF
 Proposed Floor Area = 24,974.4 SF (see F-03-149/Chase Farm, Inc. Plat of Subdiv. of 2,800 S.F. of 2.800 S.F. Plat of Easement, Plat No. 159-04-001 of 32,516 S.F.)
 Total Floor Area = 18,991.4 + 2,800.0 = 21,791.4 SF

These plans for SDP construction, soil erosion and sediment control meet the requirements of Howard Soil Conservation District.
 APPROVED: Howard County Department of Planning and Zoning
 John R. Robertson, CHIEF, DEVELOPMENT ENGINEERING DIVISION, DATE 6/15/03
 Cindy Hammett, CHIEF, DIVISION OF LAND DEVELOPMENT, DATE 6/18/03
 Frank DeLay, DIRECTOR, DATE 6/18/03

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
 Penny Borenstein, M.D., PH.D., COUNTY HEALTH OFFICER, DATE 6/18/03
 HOWARD COUNTY HEALTH DEPARTMENT

ADDRESS CHART

PARCEL NO.	STREET ADDRESS
140	12430 SCAGGSVILLE ROAD, HIGHLAND, MD 20777

SUBDIVISION NAME	SECTION NAME	PARCEL #
N/A	N/A	140

PLAT #	BLOCK #	ZONE	TAX MAP	ELECT. DIST.	CENSUS TRACT
L 22 F. 107	18	RR-DEO	40	05	6051.02

WATER CODE: N/A | SEWER CODE: N/A

MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS
 2001 MEADOW DRIVE
 WESTMINSTER, MARYLAND 21158
 TELEPHONE: (410) 857-0210 FAX: (410) 857-8030
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REVISIONS

NO.	DATE	DESCRIPTION
1	4.17.2024	TO ADD PAVILION/ADA SPACE AND CONVERT PARSONAGE HOUSE TO LOW INCOME RENTAL

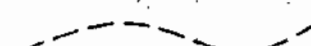
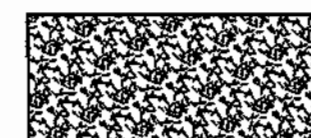
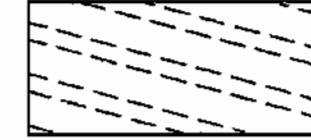



PROJECT OWNER/DEVELOPER:
 MT. ZION METHODIST CHURCH
 12430 SCAGGSVILLE ROAD
 HIGHLAND, MD 20777

PLAN PREPARATION
 DRAWN BY: DAB
 DESIGNED BY: DAB
 CHECKED BY: KDB
 DATE: 10 MAY 2002
 FILE NO. 2002-23
 DRAWING NO.

TITLE SHEET
 MT. ZION METHODIST CHURCH
 SITUATED ON MD 216 - SCAGGSVILLE ROAD
 LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE
 NO SCALE
SHEET NO.
 1 OF 18

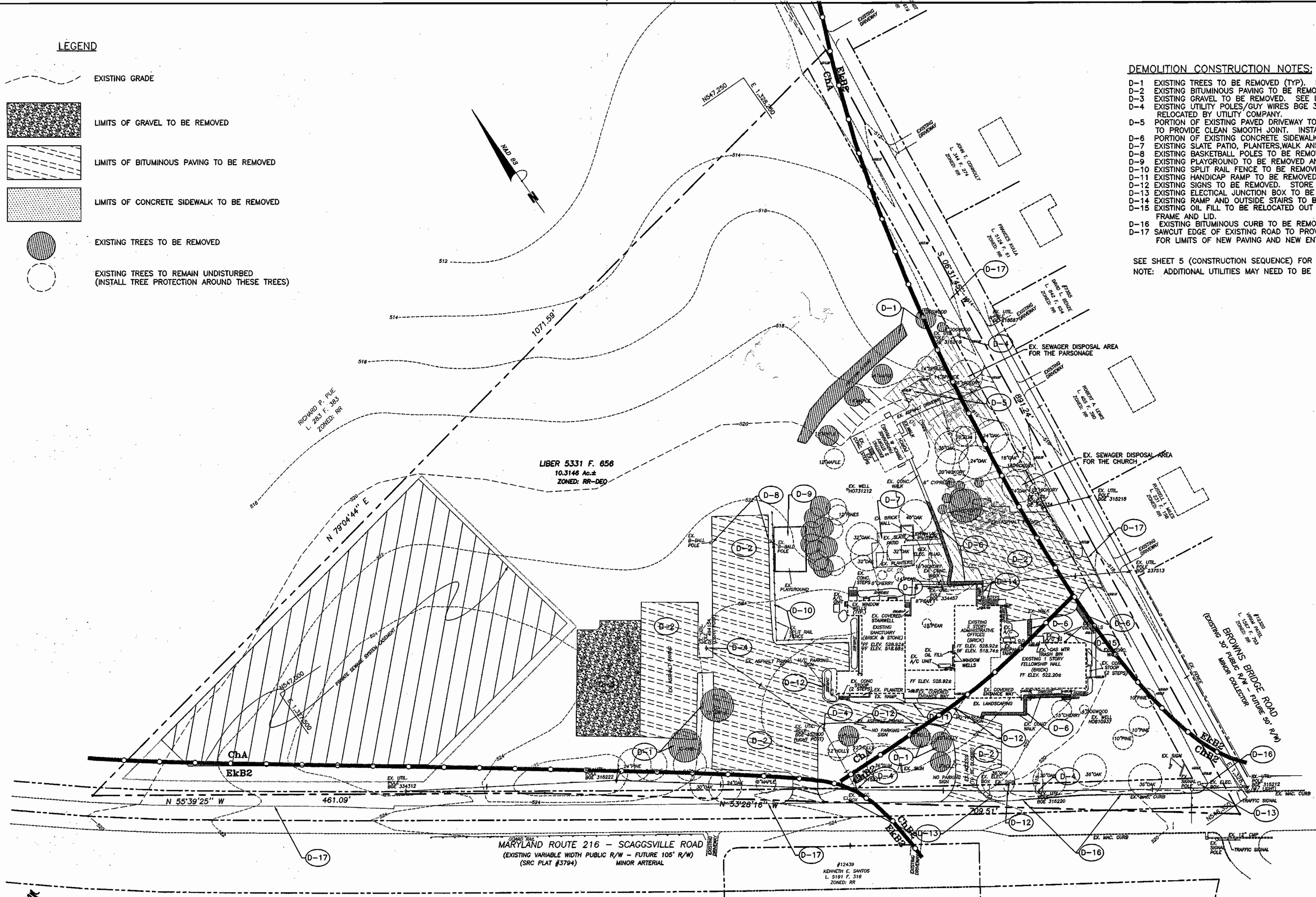
LEGEND

-  EXISTING GRADE
-  LIMITS OF GRAVEL TO BE REMOVED
-  LIMITS OF BITUMINOUS PAVING TO BE REMOVED
-  LIMITS OF CONCRETE SIDEWALK TO BE REMOVED
-  EXISTING TREES TO BE REMOVED
-  EXISTING TREES TO REMAIN UNDISTURBED (INSTALL TREE PROTECTION AROUND THESE TREES)

DEMOLITION CONSTRUCTION NOTES:

- D-1 EXISTING TREES TO BE REMOVED (TYP). SEE LEGEND FOR DESIGNATION.
- D-2 EXISTING BITUMINOUS PAVING TO BE REMOVED (TYP). SEE LEGEND FOR DESIGNATION.
- D-3 EXISTING GRAVEL TO BE REMOVED. SEE LEGEND FOR DESIGNATION.
- D-4 EXISTING UTILITY POLES/GUY WIRES BGE 315216, 315220, 315221, 350900, 494154, & 334457 TO BE RELOCATED BY UTILITY COMPANY.
- D-5 PORTION OF EXISTING PAVED DRIVEWAY TO HOUSE TO BE REMOVED. SAWCUT EDGE OF ROAD PAVING TO PROVIDE CLEAN SMOOTH JOINT. INSTALL MIN. 4" TOPSOIL, SEED AND MULCH.
- D-6 PORTION OF EXISTING CONCRETE SIDEWALK TO BE REMOVED.
- D-7 EXISTING SLATE PATIO, PLANTERS, WALK AND WALL TO BE REMOVED.
- D-8 EXISTING BASKETBALL POLES TO BE REMOVED.
- D-9 EXISTING PLAYGROUND TO BE REMOVED AND RELOCATED.
- D-10 EXISTING SPLIT RAIL FENCE TO BE REMOVED.
- D-11 EXISTING HANDICAP RAMP TO BE REMOVED.
- D-12 EXISTING SIGNS TO BE REMOVED. STORE FOR LATER INSTALLATION IF NECESSARY.
- D-13 EXISTING ELECTRICAL JUNCTION BOX TO BE RELOCATED OUT OF THE PROPOSED PAVEMENT WIDENING AREA.
- D-14 EXISTING RAMP AND OUTSIDE STAIRS TO BE REMOVED FOR CONSTRUCTION OF ADDITION.
- D-15 EXISTING OIL FILL TO BE RELOCATED OUT OF PROPOSED PAVED AREA OR PROVIDE NEW TRAFFIC FRAME AND LID.
- D-16 EXISTING BITUMINOUS CURB TO BE REMOVED.
- D-17 SAWCUT EDGE OF EXISTING ROAD TO PROVIDE CLEAN SMOOTH JOINT FOR NEW PAVING. SEE SHEET 3 FOR LIMITS OF NEW PAVING AND NEW ENTRANCES.

SEE SHEET 5 (CONSTRUCTION SEQUENCE) FOR DIRECTION REGARDING REMOVAL OF EXISTING FEATURES.
NOTE: ADDITIONAL UTILITIES MAY NEED TO BE RELOCATED THAT ARE NOT LABELED ON THIS PLAN.



These plans for **DEMOLITION**, soil erosion and sediment control meet the requirements of Howard Soil Conservation District.

APPROVED: *John P. Robertson*
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 6/10/03

PLAN NUMBER: _____ DATE: 6/10/03

Reviewed for the Howard Conservation District and meets technical requirements.

APPROVED: *Jim Meyer*
 CHIEF, NATURAL RESOURCES CONSERVATION SERVICE
 DATE: 6/10/03

APPROVED: Howard County Department of Planning and Zoning

Chris Hamer
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6/18/03

Mark J. Leight
 DIRECTOR
 DATE: 6/18/03

BUCKS WAGEN MAJOR PRES. PARCEL "A" PLAT #11620 ZONED: RR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

Penny Bonester M.D.
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT
 DATE: 6/18/03

MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS

WESTMINSTER, MARYLAND 21158
 TELEPHONE: (410) 857-0210 FAX: (410) 857-8030

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REVISIONS		
NO.	DATE	DESCRIPTION

PLAN PREPARATION	
DRAWN BY: DAB	DATE: 10 MAY 2002
DESIGNED BY: DAB	FILE NO. 2002-23
CHECKED BY: KDB	

EXISTING CONDITIONS & DEMOLITION PLAN

MT. ZION METHODIST CHURCH
 SITUATED ON MD 216 - SCAGGSVILLE ROAD
 LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE
 1" = 50'

SHEET NO.
 2 OF 18

MARYLAND LAND DESIGN, INC.

SEE ARCHITECTURAL DRAWINGS FOR EXACT UTILITY LOCATIONS.
 SEE SEPTIC SYSTEM DESIGN & DETAILS ON SHEETS 13 & 14.
 SEE BROWNS BRIDGE ROAD IMPROVEMENTS ALONG ROUTE 216 ON SHEET 12.
 SEE MSHA IMPROVEMENTS ALONG ROUTE 216 ON SHEET 12.
 SEE DEMOLITION PLAN (SHEET 2) FOR EXISTING TREES TO BE REMOVED.
 SEE DEMOLITION PLAN (SHEET 2) FOR EXISTING FEATURES TO BE REMOVED OR RELOCATED.
 SEE NEW WATER LINE LOCATION TO EXISTING PARSONAGE ON SHEET 13.

- LEGEND**
- PROPOSED MSHA PAVING SECTION
 - PROPOSED HOWARD COUNTY P-1 PAVING SECTION
 - PROPOSED HOWARD COUNTY P-2 PAVING SECTION
 - PROPOSED P-4 PAVING SECTION
 - PROPOSED SITE LIGHTING (TYP)
 - TRAFFIC FLOW DIRECTIONAL ARROWS (TYP)
 - EXISTING BLDG. ENTRANCE
 - PROP. BLDG. ENTRANCE
 - PROP. ELECTRIC FOR LIGHT POSTS

PROP. IMPROVEMENTS TO BE PERMITTED BY THIS REVISION:

- 40'x70' SINGLE STORY PAVILION
- CONCRETE PADS/EGRESS CONNECTIONS TO PAVILION AS SHOWN HEREON
- ADDITIONAL ADA SPACE WITH ACCESS AISLE FOR PAVILION USE
- CONVERSION OF PARSONAGE HOUSE TO LOW INCOME RENTAL UNIT

PROP. PAVILION SIZING AND LOCATION PER INFORMATION PROVIDED BY PROBUIT CONSTRUCTION, INC. ALL CONSTRUCTION DETAILING AND PLANS BY OTHERS

- LEGEND**
- PROP. LOD (4,926SF)
 - PROP CONCRETE PAD
 - ADA ADA PARKING SPOT

- CONSTRUCTION NOTES:**
- C-1 PROPOSED HOWARD COUNTY P-1 BITUMINOUS PAVING.
 - C-2 PROPOSED HANDICAP PARKING SPACES PER ADA REQUIREMENTS. SEE SHEET 11 FOR DETAILS.
 - C-3 PROPOSED "VAN ACCESSIBLE" PARKING SIGN (TYP) PER ADA REQUIREMENTS.
 - C-4 PAINTSTRIPED PROPOSED PARKING SPACES WITH 4" WIDE PAINT LINE (TYP).
 - C-5 SAWCUT EDGE EXISTING PAVING AT PAINTED WHITE LINE TO PROVIDE A CLEAN JOINT FOR NEW PAVING. SEAL NEW PAVING JOINTS.
 - C-6 PROPOSED MSHA TYPE 'A' COMBINATION CURB AND GUTTER. SEE DETAIL ON SHEET 11.
 - C-7 NOSE DOWN END OF CURB PER MSHA REQUIREMENTS (TYP).
 - C-8 PROPOSED MSHA PAVING. SEE SHEET 11 FOR PAVING SECTION.
 - C-9 PROPOSED SITE LIGHTING (TYP). ALL LIGHTS SHALL BE SHIELDED TO AVOID OFFSITE GLARE. SEE TYPICAL DETAIL ON SHEET 5.
 - C-10 PROPOSED CONCRETE SIDEWALK. SEE TYPICAL SIDEWALK SECTION ON SHEET 5. WIDTH TO BE 5'-FT. UNLESS OTHERWISE SHOWN.
 - C-11 EXISTING UTILITY POLES TO BE REMOVED OR RELOCATED BY UTILITY COMPANY. LOCATION TO BE DETERMINED.
 - C-12 PROPOSED LANDSCAPE/GRASS AREA. SEE LANDSCAPE PLAN FOR DETAILS.
 - C-13 PROPOSED CONCRETE WHEEL STOPS (TYP. WHERE SHOWN). SEE DETAIL ON SHEET 5.
 - C-14 PROPOSED HANDICAP RAMP ACCESS @ 12:1 MAX. SLOPE. SEE SHEET 11 FOR DETAILS.
 - C-15 PROPOSED TRAFFIC DIRECTIONAL ARROWS (TYP. WHERE SHOWN).
 - C-16 PROPOSED P-4, HOWARD COUNTY PAVING. SEE SHEET 5 FOR PAVING SECTION.
 - C-17 SAWCUT AND REMOVE EX. CONCRETE SIDEWALK AT NEAREST JOINT TO CONNECT PROPOSED SIDEWALK. CONTRACTOR TO MATCH EXISTING GRADE IN FIELD.
 - C-18 REMOVE PORTION OF EXISTING PAVING, REGRADE AS NECESSARY.
 - C-19 PROPOSED CONCRETE FILLED BOLLARDS (3 EA) TO PROTECT EXISTING TRANSFORMER.
 - C-20 PROPOSED RELOCATED PLAY GROUND (TYPE OF PLAYGROUND EQUIPMENT TO BE DETERMINED BY OWNER).
 - C-21 PROPOSED RELOCATED MEMORIAL PARK (WORK BY OTHERS).
 - C-22 EXISTING WELL TO BE ABANDONED PER HOWARD COUNTY HEALTH DEPARTMENT REQUIREMENTS.
 - C-23 PROPOSED UNDERGROUND ELECTRICAL SERVICE FROM EXISTING BUILDING TO EXISTING SIGNS. LOCATION TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR. DUSK TO DAWN SENSOR TO BE USED.
 - C-24 PROPOSED 42" HIGH CHAIN LINK FENCE (OR EQUIVALENT) AROUND PLAYGROUND AREA. FENCE TO BE SPLIT RAIL (3 RAILS) 36" - 44" HEIGHT WITH 36" HIGH GREEN (2x3) FENCING PLACED ON THE INSIDE. TWO 3' WIDE SPLIT RAIL GATES TO BE INSTALLED IN A LOCATION TO BE DETERMINED BY CHURCH.
 - C-25 PROPOSED ELECTRICAL TRANSFORMER LOCATION (WORK BY ELECTRIC COMPANY).
 - C-26 PROPOSED 6" CONCRETE CURB AND GUTTER.
 - C-27 PAINTSTRIPED NO PARKING AREA W/ 4" WIDE PAINT LINES 18" O.C.
 - C-28 REMOVE EXISTING OIL TANKS PER COUNTY OR STATE REGULATIONS. CONTACT CHURCH OFFICERS PRIOR TO REMOVAL. CONTRACTOR TO MAINTAIN HEAT SOURCE.
 - C-29 APPROXIMATE LOCATION OF PROPOSED UNDERGROUND ELECTRIC FOR UTILITY POLES. WIRES TO BE IN CONDUIT. FINAL LOCATION TO BE DETERMINED BY ELECTRICAL CONTRACTOR.

THE EXISTING TREES SHOWN HEREON SHALL BE PROTECTED WITH SAFETY FENCE TO PREVENT DAMAGE TO THE TREES.

OBSERVED IMPROVEMENTS PER O&L FIELD VISIT (MAY 2, 2023) SHOWN FOR INFORMATION AND/OR REVIEW OF SDAT RECORD INFORMATION

KEYNOTES:

- KN1 APPROX. LOC., EXISTING STONE PAVILION AREA
- KN2 EX. WOOD FRAME OCTAGONAL GAGA BALL PIT TO BE RELOCATED
- KN3 APPROX. LOC. EX. 12'x16.5' SHEED
- KN4 APPROX. LOC. EX. 15'x18' SCREENED DUMPSTER PAD
- KN5 APPROX. LOC. EX. SIGNAGE
- KN6 EX. SWING SET
- KN7 EX. VOLLEYBALL NET
- KN8 EX. FIRE PIT
- KN9 EX. PARKING PER O&L SITE VISIT

NOTE 1: All parking spaces on-site are constructed as shown. Modified locations near Fellowship Hall are shown. There is no change to the overall No. of permanent parking spaces. The pavilion is considered auxiliary and has no known additional parking requirements per the current Howard County zoning code.

NOTE 2: Field survey work performed on June 07, 2023 to provide data based on original comments. Benchmark as shown established by pipe services as datum.

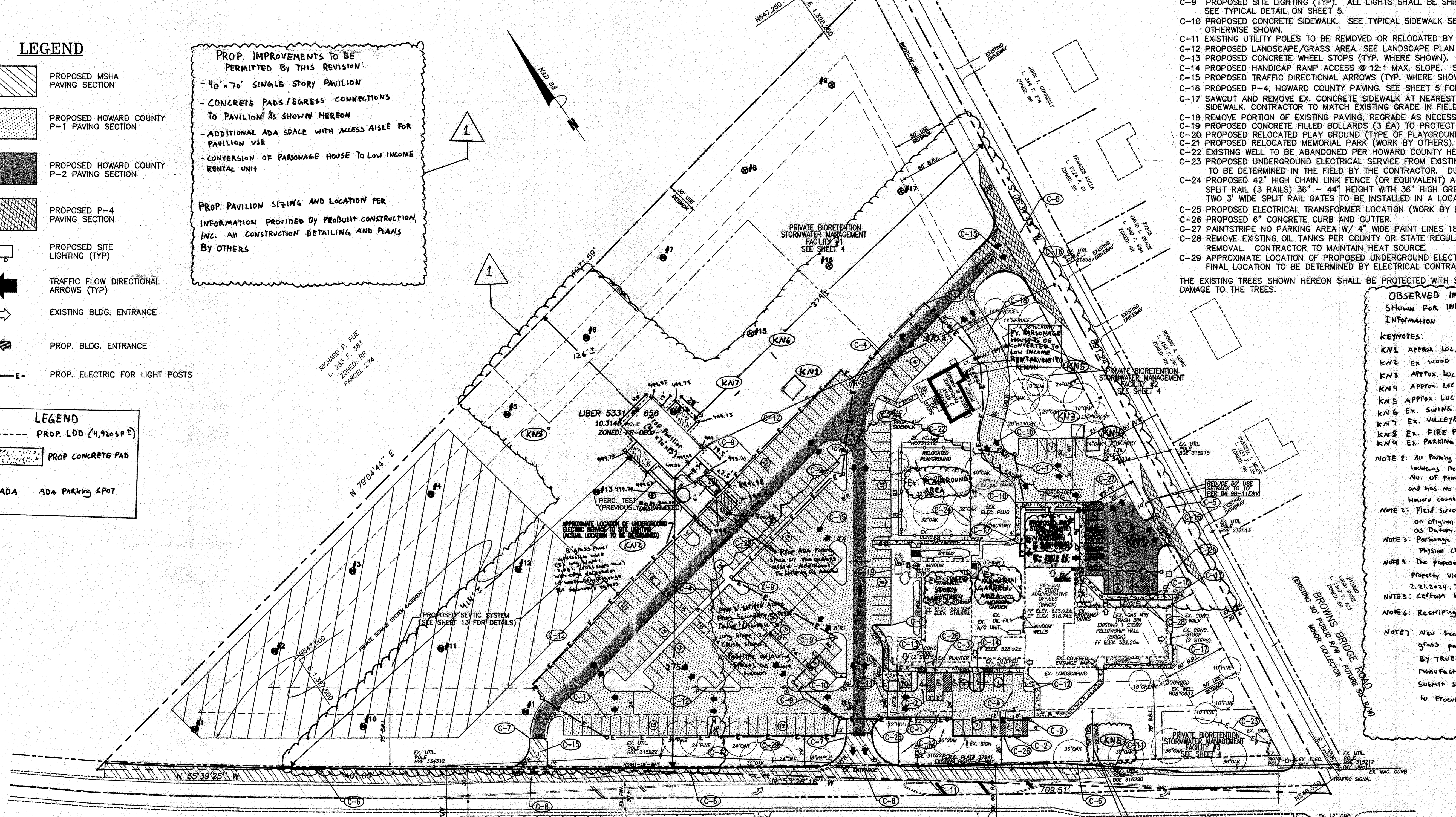
NOTE 3: Parsonage house to be converted to low income rental unit. There are no physical changes proposed as part of this conversion.

NOTE 4: The proposed pavilion was approved as a conditional use on this property via case HBA 23-0284. The hearing was held on 2.21.2024. The opinion was issued 3.18.2024

NOTES: Ceftain building labels on this plan were captured for clarity

NOTE 6: Rectifying is not considered disturbance

NOTE 7: New secondary egress path shall be ADA-accessible grass paver (GRASSPAVE-2 BY INVISIBLE STRUCTURES PRO LITE BY TRUEGRID, of approved equivalent) installed per manufacturer's recommendations for ADA compliance. Submit selected grass paver to Engineer in advance to procurement.



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 _____ DATE _____

Reviewed for the Howard Conservation District and meets technical requirements.

NATURAL RESOURCES CONSERVATION SERVICE _____ DATE _____

APPROVED: Howard County Department of Planning and Zoning

[Signature] 6/16/03
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 6/16/03
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 6/16/03
 DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

[Signature] 6/18/03
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

RED-LINE REVISION DOCUMENTATION PREPARED BY:

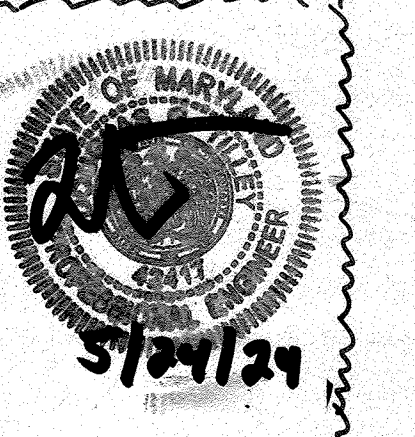
O'CONNELL & LAWRENCE, INC.

CONSTRUCTION CONSULTANTS, ENGINEERS, SURVEYORS
 17901 GEORGIA AVENUE, SUITE 302
 OLNEY, MARYLAND 20832
 TEL: (301) 924-9570
 Fax: (301) 924-5872

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. 42917, Expiration date: June 6, 2026

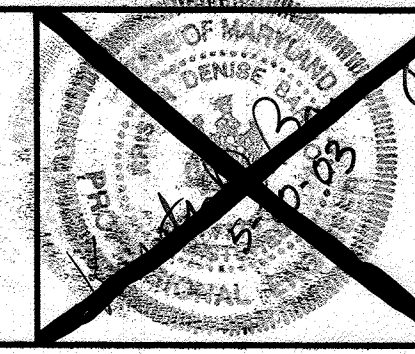
[Signature] 4/24/17
 Design Engineer Signature
 Douglas G. Tilley, MD License # 42917
 Printed Name Date



MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS

WESTMINSTER, MARYLAND 21158
 TELEPHONE: (410) 857-0210 FAX: (410) 857-8030

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REVISIONS		
NO.	DATE	DESCRIPTION
1	4.17.2024	TO ADD PAVILION/ADA SPACE AND CONVERT PARSONAGE HOUSE TO LOW INCOME RENTAL

PLAN PREPARATION	
DRAWN BY: DAB	DATE: 10 MAY 2002
DESIGNED BY: DAB	FILE NO. 2002-23
CHECKED BY: KDB	

SITE PLAN

MT. ZION METHODIST CHURCH
 SITUATED ON MD 216 - SCAGGSVILLE ROAD
 LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE
 1" = 50'

SHEET NO.
 3 OF 18

These plans for **SCAGGSVILLE ROAD** soil erosion and sediment control meet the requirements of Howard Soil Conservation District.

APPROVED: HOWARD SOIL CONSERVATION DISTRICT

PLAN NUMBER _____ DATE 6/10/03

Reviewed for the Howard Conservation District and meets technical requirements.

NATURAL RESOURCES CONSERVATION SERVICE DATE 6/10/03

APPROVED: Howard County Department of Planning and Zoning

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 6/12/03

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 6/18/03

DIRECTOR DATE 6/18/03

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

COUNTY HEALTH OFFICER DATE 6/18/03
HOWARD COUNTY HEALTH DEPARTMENT

UTILITY NOTES:

- A) 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.
- B) PLACE ALL EXCAVATED MATERIAL ON THE UPHILL SIDE OF THE TRENCH.
- C) ANY SEDIMENT CONTROL STRUCTURES DISTURBED BY UTILITY CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY.

STOCKPILE/TOPSOIL NOTES

- 1) Stockpiling will not be allowed on any impervious area.
- 2) 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.

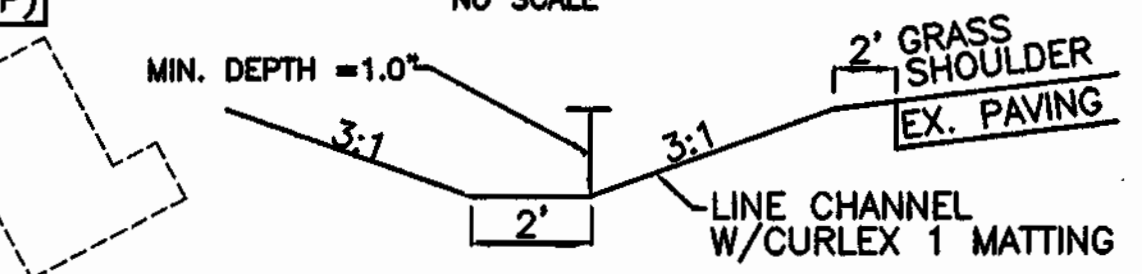
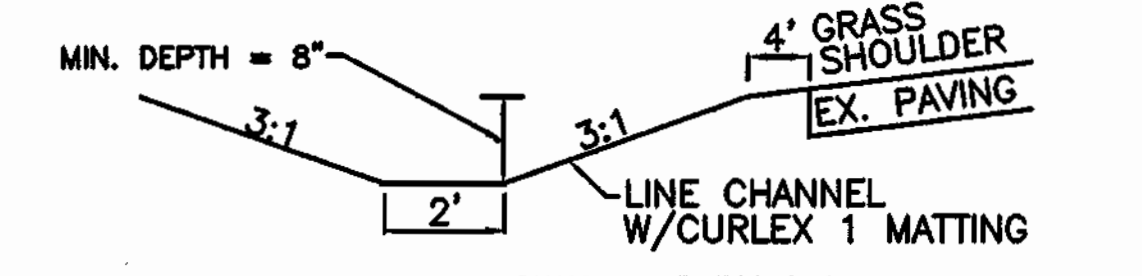
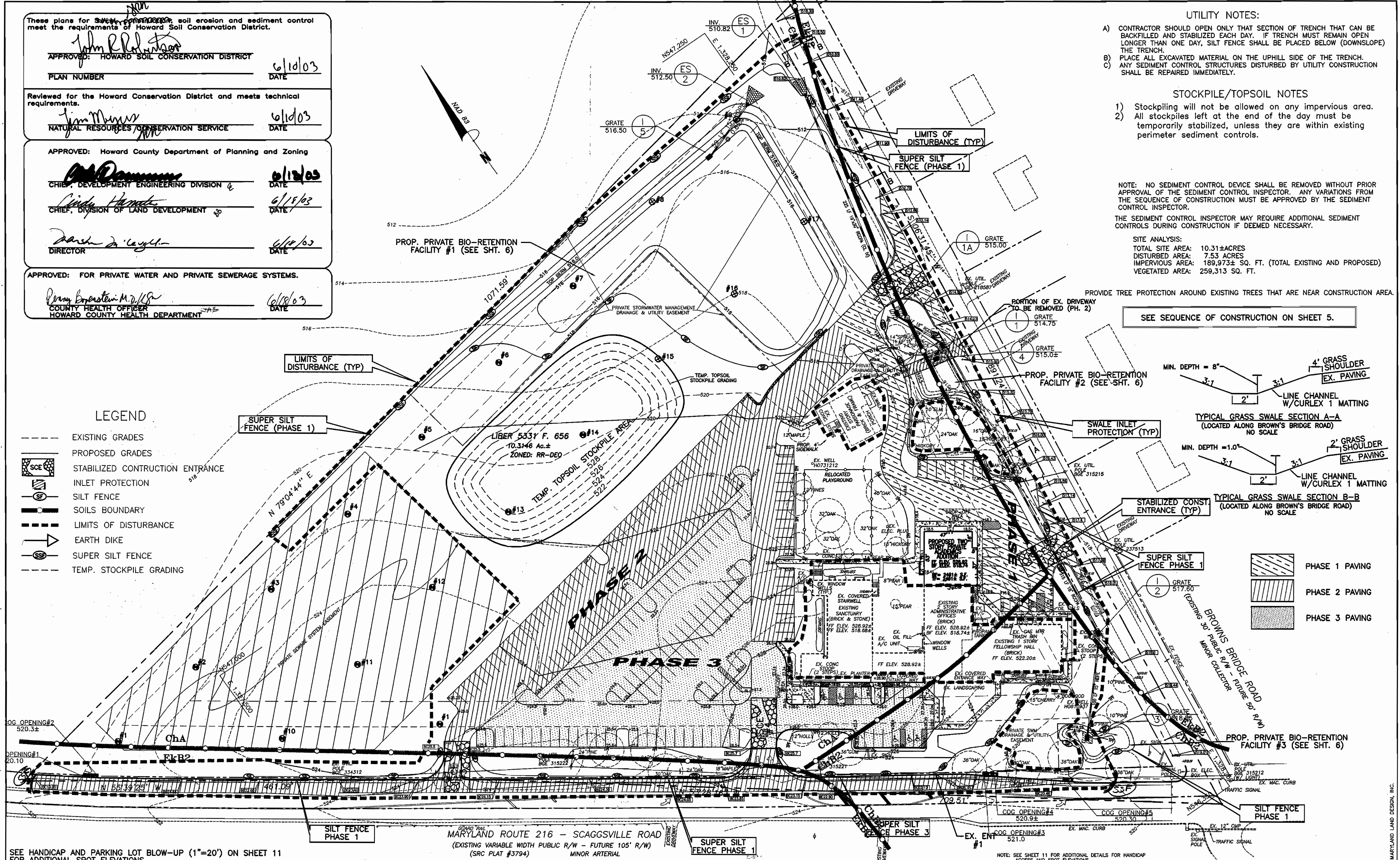
SITE ANALYSIS:
TOTAL SITE AREA: 10.31±ACRES
DISTURBED AREA: 7.53 ACRES
IMPERVIOUS AREA: 189,973± SQ. FT. (TOTAL EXISTING AND PROPOSED)
VEGETATED AREA: 259,313 SQ. FT.

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

SEE SEQUENCE OF CONSTRUCTION ON SHEET 5.

LEGEND

- - - - - EXISTING GRADES
- - - - - PROPOSED GRADES
- [Symbol] STABILIZED CONSTRUCTION ENTRANCE
- [Symbol] INLET PROTECTION
- [Symbol] SILT FENCE
- [Symbol] SOILS BOUNDARY
- - - - - LIMITS OF DISTURBANCE
- [Symbol] EARTH DIKE
- [Symbol] SUPER SILT FENCE
- - - - - TEMP. STOCKPILE GRADING



- [Symbol] PHASE 1 PAVING
- [Symbol] PHASE 2 PAVING
- [Symbol] PHASE 3 PAVING

SEE HANDICAP AND PARKING LOT BLOW-UP (1"=20') ON SHEET 11 FOR ADDITIONAL SPOT ELEVATIONS.

MARYLAND LAND DESIGN, INC.
CONSULTING ENGINEERS AND LAND PLANNERS



WESTMINSTER, MARYLAND 21158
TELEPHONE: (410) 857-0210 FAX: (410) 857-8030

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REVISIONS

NO.	DATE	DESCRIPTION

PLAN PREPARATION

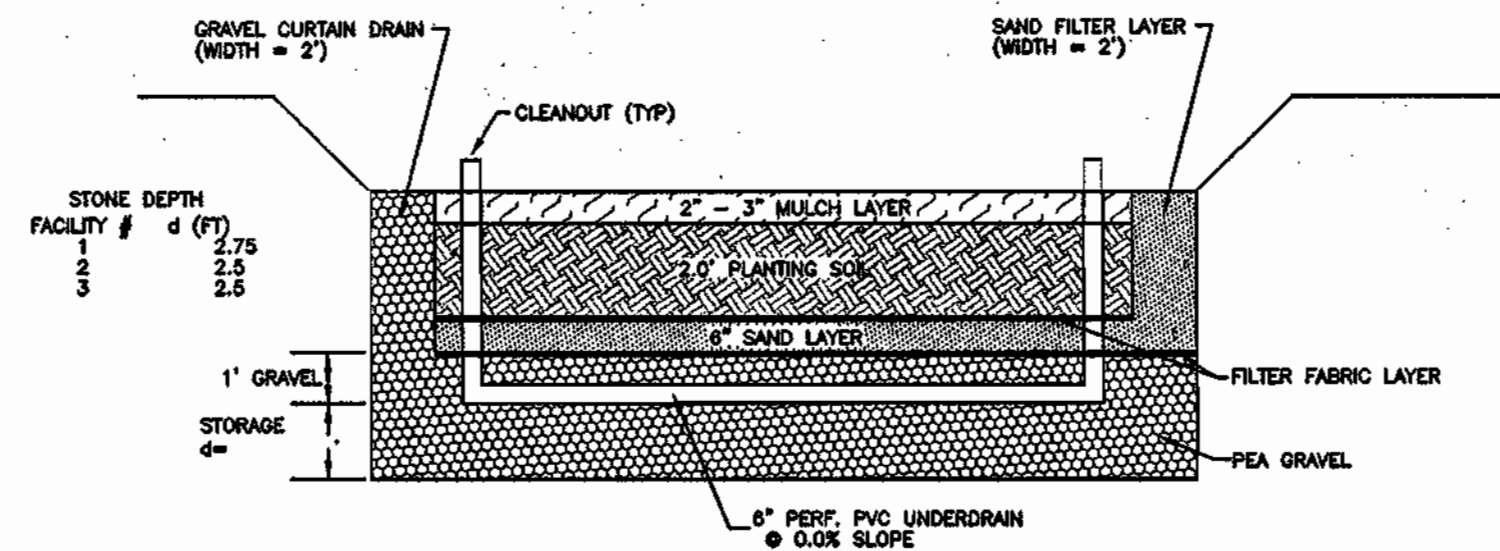
DRAWN BY: DAB	DATE: 10 MAY 2002
DESIGNED BY: DAB	FILE NO. 2002-23
CHECKED BY: KDB	

GRADING, STORMWATER MANAGEMENT AND SEDIMENT CONTROL

MT. ZION METHODIST CHURCH
SITUATED ON MD 216 - SCAGGSVILLE ROAD
LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
1" = 40'
SHEET NO.
4 OF 18

MARYLAND LAND DESIGN, INC.



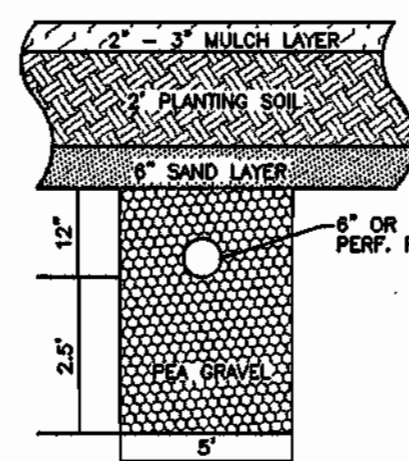
SECTION: TYPICAL BIO-RETENTION FACILITY
SCALE: 1" = 30'

MATERIAL SPECIFICATIONS:

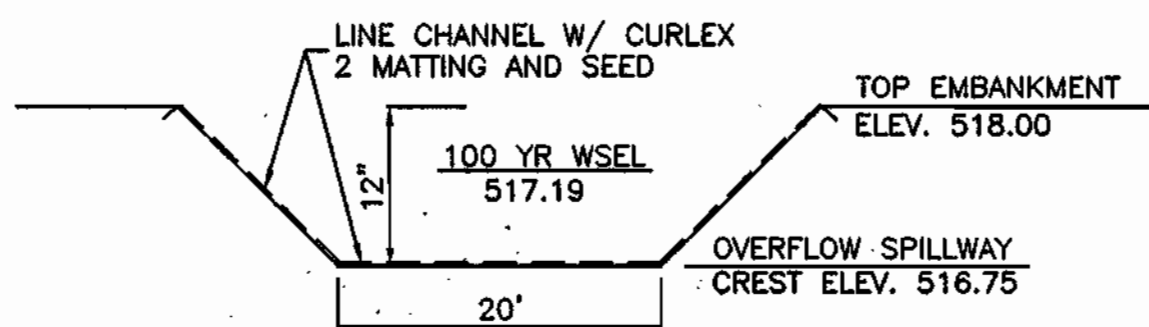
PARAMETER	SPECIFICATION	SIZE	NOTES
PLANTING SOIL	(SEE SPECIFICATIONS THIS SHEET)		
MULCH	SHREDDED HARDWOOD	N/A	AGED 2 TO 12 MONTHS
PEA GRAVEL	ASTM D 448 size no. 6	1/8" - 1/4"	use clean bankrun river pea gravel
UNDERDRAIN GRAVEL	AASHTO M-43	1/2" - 2"	use clean bankrun river pea gravel
HDPE PIPING	AASHTO M252-94	6" SMOOTH INNER WALL	slotted holes 1/8"x7/8" max. drilled holes 3/16"

PLANTED SOIL CHARACTERISTICS
(Adapted from EQR, 1996; ETAB, 1993)

Parameter	Value
pH range	5.2 to 7.0
Organic matter	1.5 to 4.0%
Magnesium	35 lbs per acre min.
Phosphorus	75 lbs per acre min.
Potassium	85 lbs per acre min.
Soluble salts	500 ppm
Clay	10 to 25%
Silt	30 to 55%
Sand	35 to 60%



TYPICAL TRENCH SECTION
NO SCALE



SECTION: OVERFLOW SPILLWAY
NTS

BIO-RETENTION FACILITY #1 SUMMARY TABLE:

TOTAL DRAINAGE AREA: 4.93 ACRES
 IMPERVIOUS AREA FOR MANAGEMENT: 1.91 ACRES
 1-YEAR STORM PEAK DISCHARGE: 4.5 CFS
 REQUIRED CHANNEL PROTECTION VOLUME (Cpv): 0.27 AC/FT
 PROVIDED CHANNEL PROTECTION VOLUME (Cpv): 0.32 AC/FT
 REQUIRED WATER QUALITY VOLUME (WQv): 0.16 AC/FT
 PROVIDED WATER QUALITY VOLUME (WQv): 0.18 AC/FT
 REQUIRED RECHARGE VOLUME (Rev): 1858 AC/FT
 PROVIDED RECHARGE VOLUME (Rev): 1870 AC/FT

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: _____ DATE: _____

Reviewed for the Howard Conservation District and meets technical requirements.
 NATURAL RESOURCES CONSERVATION SERVICE DATE: _____

APPROVED: Howard County Department of Planning and Zoning

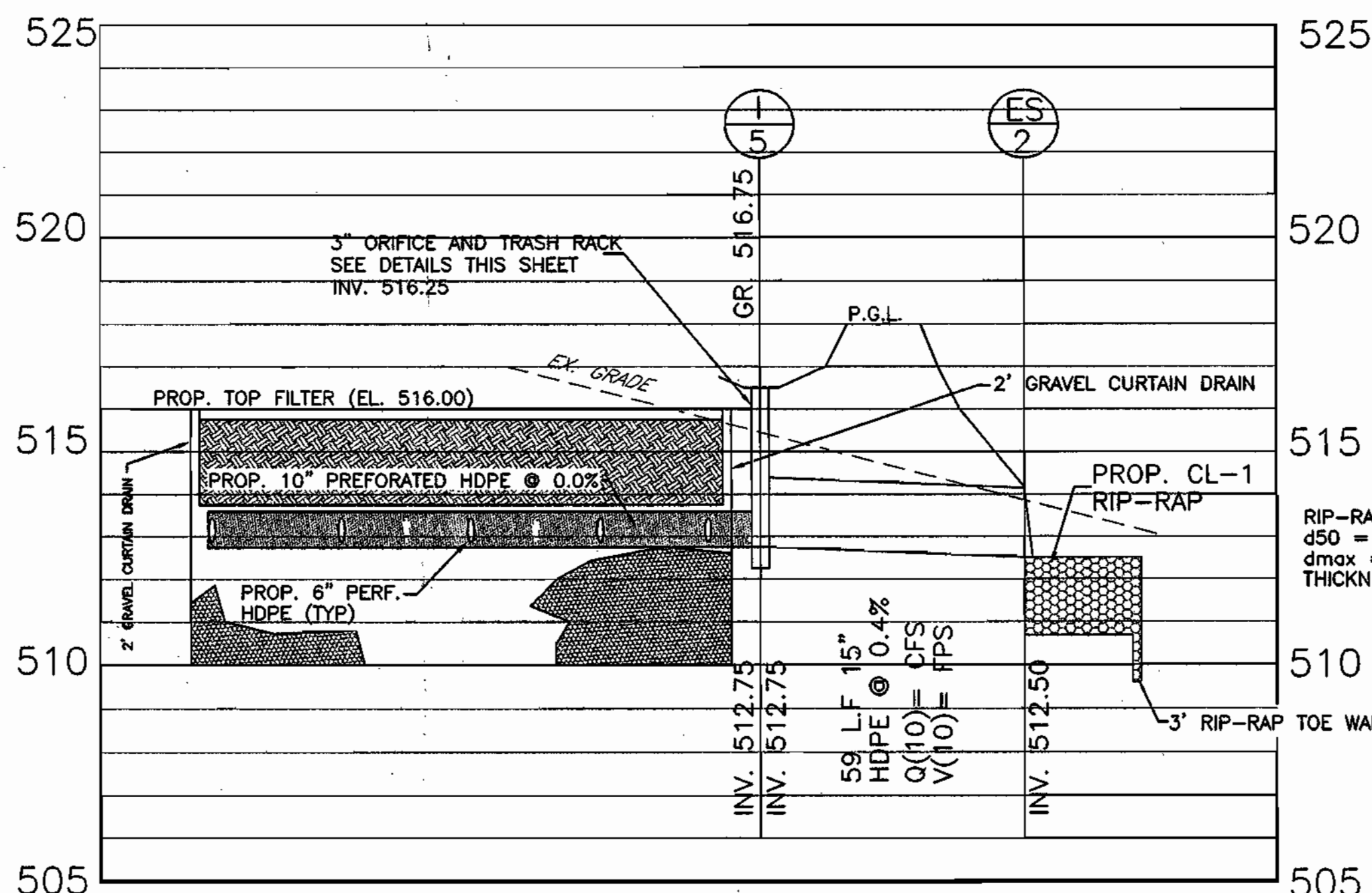
CHIEF, DEVELOPMENT ENGINEERING DIVISION: _____ DATE: 6/18/03

CHIEF, DIVISION OF LAND DEVELOPMENT: _____ DATE: 6/18/03

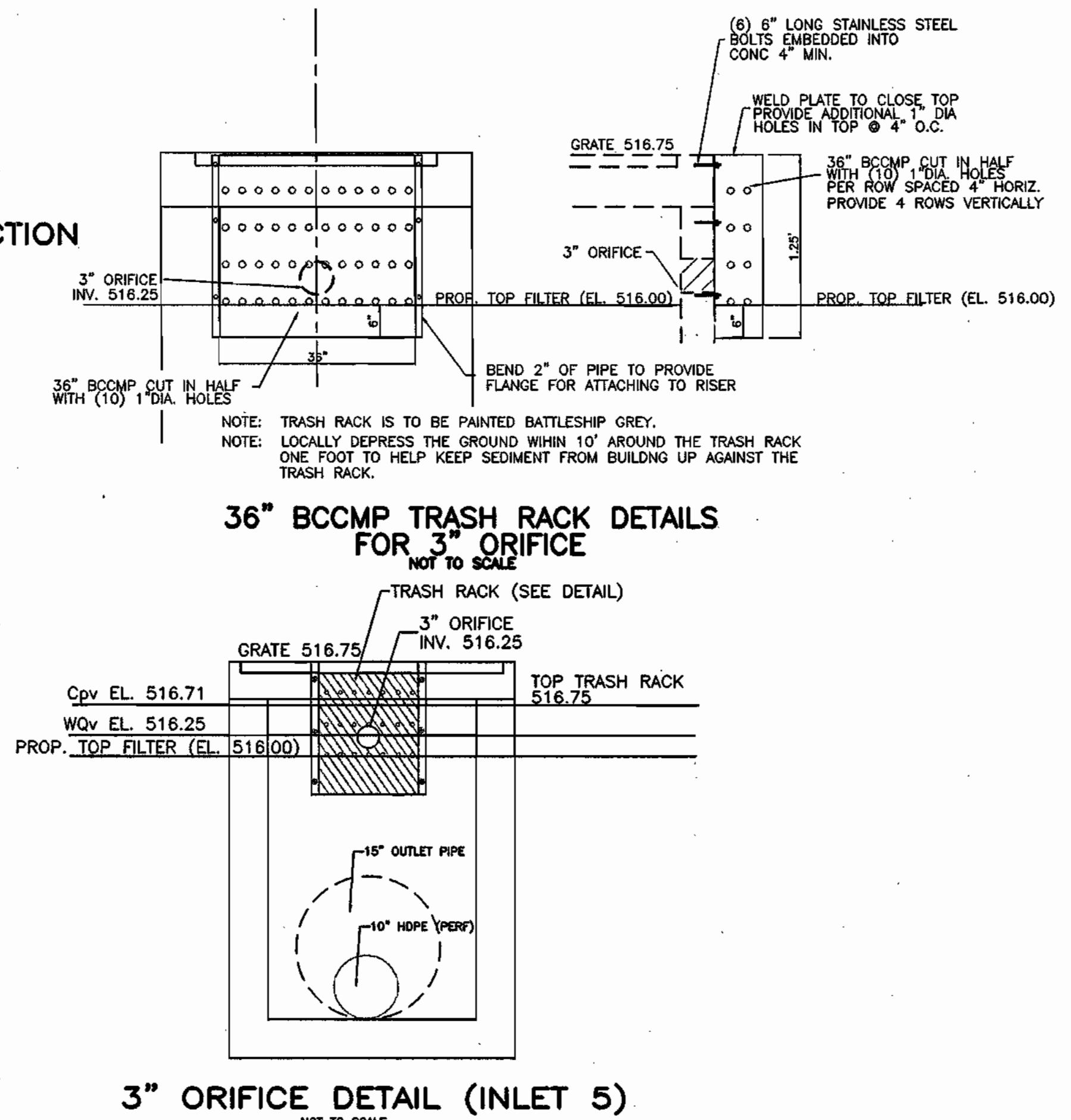
DIRECTOR: _____ DATE: 6/18/03

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

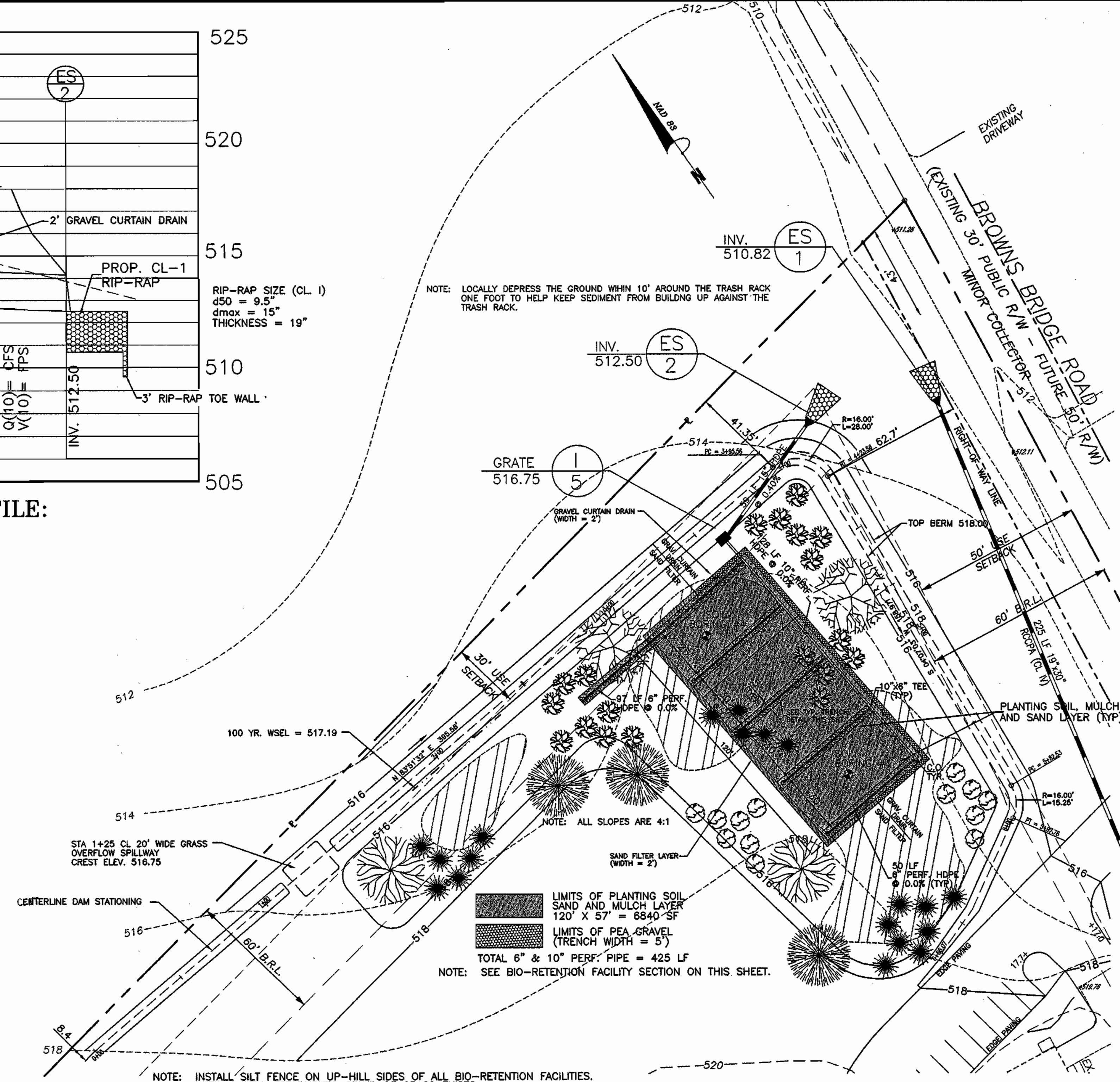
COUNTY HEALTH OFFICER: _____ DATE: 6/18/03



STORM DRAIN PROFILE:
SCALE: 1"=3' VERT.
1"=30' HORIZ.



3" ORIFICE DETAIL (INLET 5)
NOT TO SCALE



PLAN: BIO-RETENTION FACILITY #1
SCALE: 1" = 30'

BIO-RETENTION FACILITY #1 PLANTING SCHEDULE				
QTY.	SYMBOL	BOTANICAL / COMMON NAME	SIZE	COMMENTS
3	(Symbol)	ACER RUBRUM - OCTOBER GLORY	2 1/2" - 3" CAL	
3	(Symbol)	OCTOBER GLORY RED MAPLE	B&B	
13	(Symbol)	NYSSA SYLVATICA BLACK GUM	2 1/2" - 3" CAL	
13	(Symbol)	NYSSA SYLVATICA BLACK GUM	B&B	
19	(Symbol)	ILEX OPACA AMERICAN HOLLY	3-4' HT.	
19	(Symbol)	VIBURNUM DENTATUM ARROW WOOD VIBURNUM	2 1/2" - 3" HT	
19	(Symbol)	ILEX GLATRA / COMPACT INKBERRY	2 1/2" - 3" HT	
250 EA.	(Symbol)	ANDROPOGON VIRGINICUS / BROOMSEDGE EUPATORIUM PERPUREA / JOEY PYLE WEED PANICUM VIRGATUM / SWITCH GRASS	1.0 FT. CLUMP 18" O/C	

MARYLAND LAND DESIGN, INC.
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WESTMINSTER, MARYLAND 21158
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REVISIONS

NO.	DATE	DESCRIPTION

PLAN PREPARATION

DRAWN BY: DAB	DATE: 10 MAY 2002
DESIGNED BY: DAB	FILE NO. 2002-23
CHECKED BY: KDB	

PRIVATE BIO-RETENTION FACILITY #1 DETAILS

MT. ZION METHODIST CHURCH
 SITUATED ON MD 216 - SCAGGSVILLE ROAD
 LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE

1" = 30'

SHEET NO.

6 OF 18

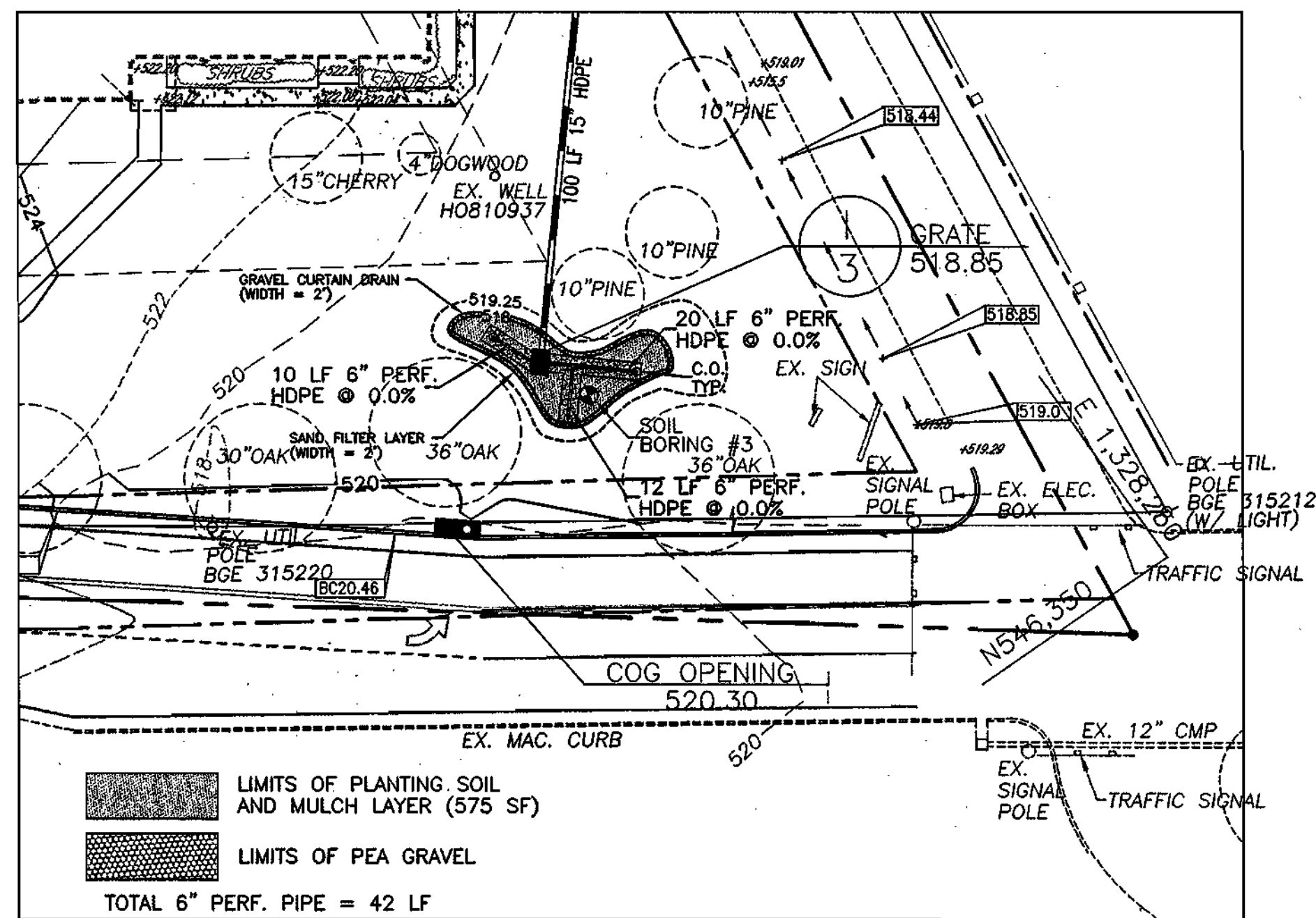
NOTE: SEE BIO-RETENTION FACILITY SECTION ON SHEET 6.

BIO-RETENTION FACILITY #2 SUMMARY TABLE:

TOTAL DRAINAGE AREA: 1.27 ACRES
 IMPERVIOUS AREA FOR MANAGEMENT: 0.153 ACRES
 1-YEAR STORM PEAK DISCHARGE: 1.89 CFS
 REQUIRED CHANNEL PROTECTION VOLUME (Cpv): N/A
 PROVIDED CHANNEL PROTECTION VOLUME (Cpv): N/A
 REQUIRED WATER QUALITY VOLUME (WQV): 656 CF
 PROVIDED WATER QUALITY VOLUME (WQV): 703 CF
 REQUIRED RECHARGE VOLUME (Rev): 170 CF
 PROVIDED RECHARGE VOLUME (Rev): 178 CF

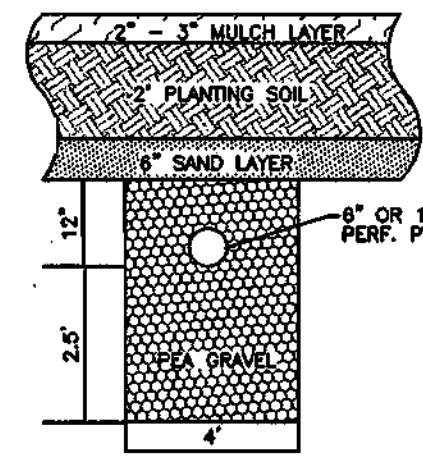
BIO-RETENTION FACILITY #3 SUMMARY TABLE:

TOTAL DRAINAGE AREA: 1.40 ACRES
 IMPERVIOUS AREA FOR MANAGEMENT: 0.132 ACRES
 1-YEAR STORM PEAK DISCHARGE: 1.63 CFS
 REQUIRED CHANNEL PROTECTION VOLUME (Cpv): N/A
 PROVIDED CHANNEL PROTECTION VOLUME (Cpv): N/A
 REQUIRED WATER QUALITY VOLUME (WQV): 633 CF
 PROVIDED WATER QUALITY VOLUME (WQV): 653 CF
 REQUIRED RECHARGE VOLUME (Rev): 165 CF
 PROVIDED RECHARGE VOLUME (Rev): 168 CF

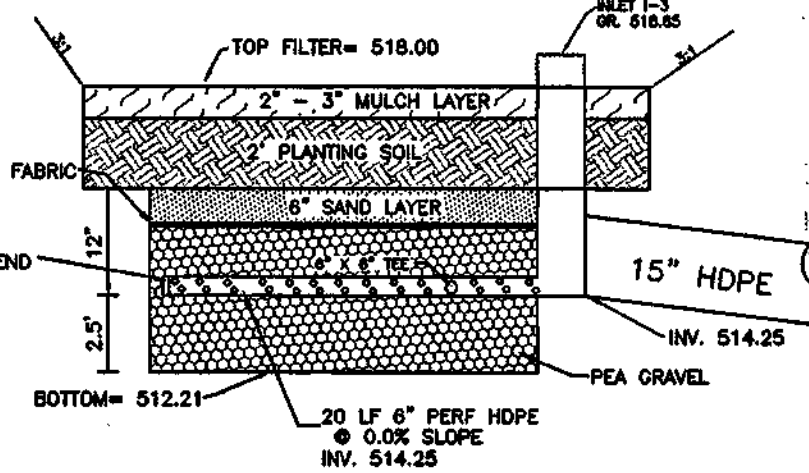


PLAN: BIO-RETENTION FACILITY #3

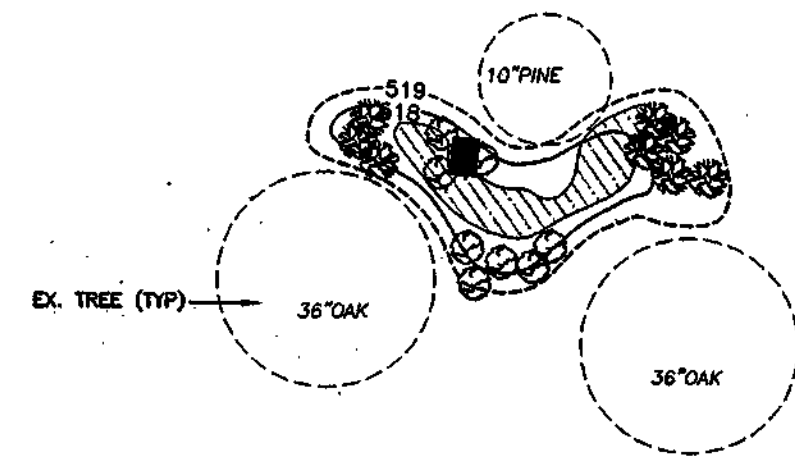
SCALE: 1" = 30'



TYPICAL SECTION NO SCALE



SECTION: TYPICAL BIO-RETENTION FACILITY #3 NO SCALE



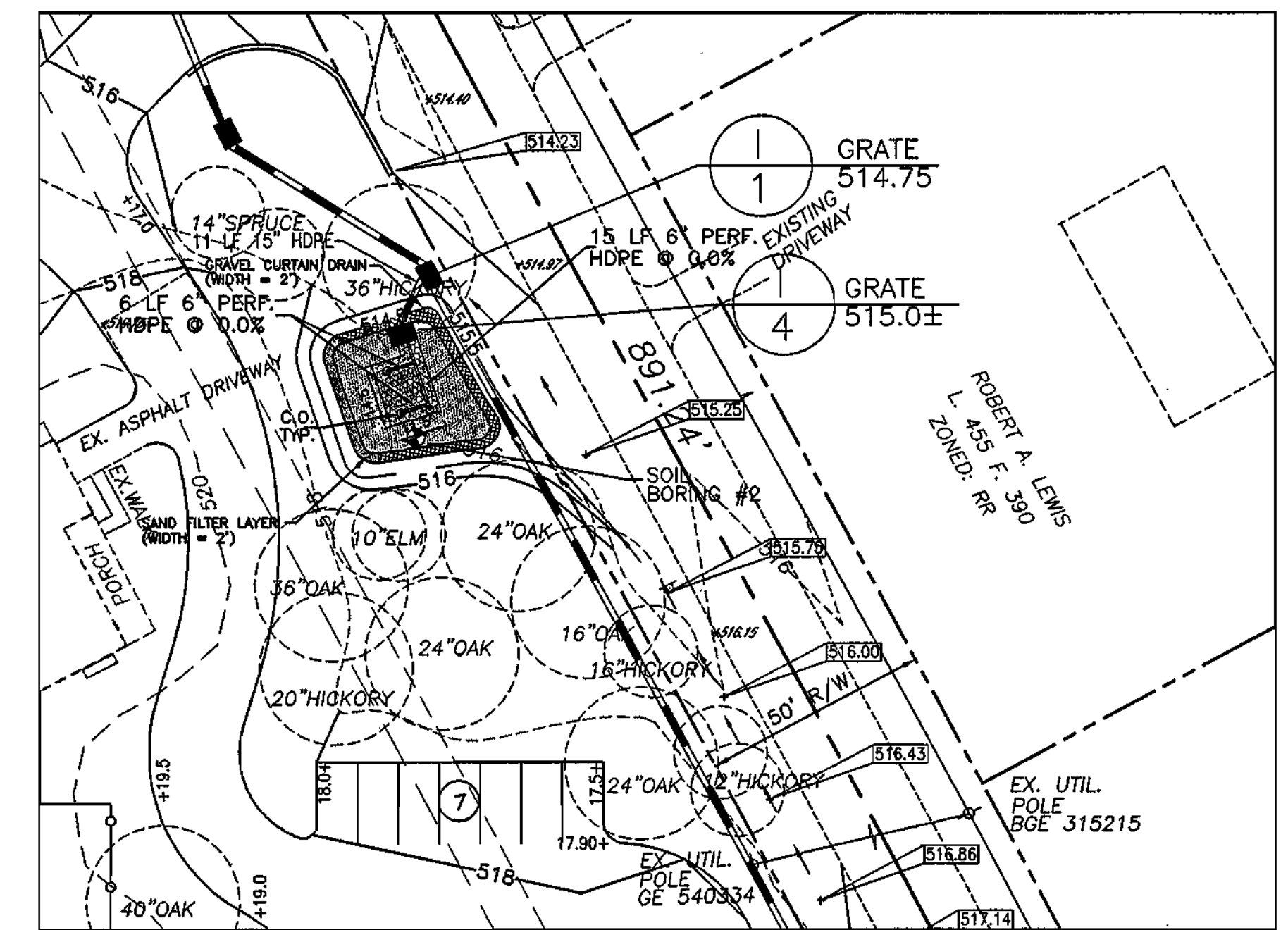
PLANTING PLAN: BIO-RETENTION FACILITY #3

SCALE: 1" = 30'

BIO-RETENTION FACILITY #3 PLANTING SCHEDULE				
QTY.	SYMBOL	BOTANICAL/COMMON NAME	SIZE	COMMENTS
8		ILEX OPACA AMERICAN HOLLY	3-4' HT.	
8		VIBURNUM DENTATUM ARROW WOOD VIBURNUM	2 1/2' - 3' HT	
25 EA.		ANDROPOGON VIRGINICUS / BROOMSEDGE EUPATORIUM PERPUREA / JOEY PYE WEED Panicum virgatum / SWITCH GRASS	1 QT. CLUMP 18" O/C	

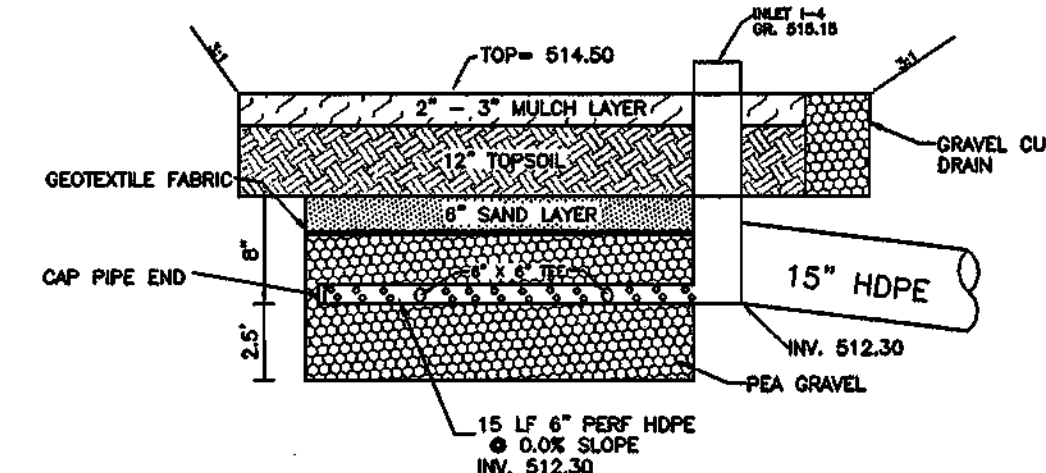
OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS

- ANNUAL MAINTENANCE OF PLANT MATERIALS, MULCH LAYER AND SOILS LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

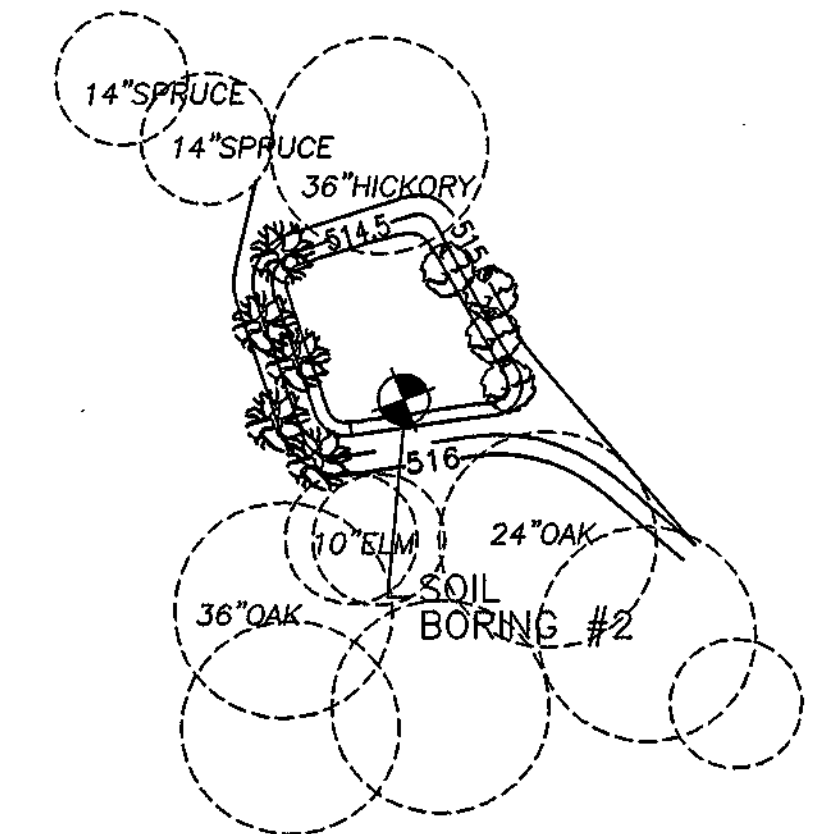


PLAN: BIO-RETENTION FACILITY #2

SCALE: 1" = 30'



SECTION: TYPICAL BIO-RETENTION FACILITY #2 NO SCALE



PLANTING PLAN: BIO-RETENTION FACILITY #2

SCALE: 1" = 30'

BIO-RETENTION FACILITY #2 PLANTING SCHEDULE				
QTY.	SYMBOL	BOTANICAL/COMMON NAME	SIZE	COMMENTS
8		ILEX OPACA AMERICAN HOLLY	3-4' HT.	
7		VIBURNUM DENTATUM ARROW WOOD VIBURNUM	2 1/2' - 3' HT	
25 EA.		ANDROPOGON VIRGINICUS / BROOMSEDGE EUPATORIUM PERPUREA / JOEY PYE WEED Panicum virgatum / SWITCH GRASS	1 QT. CLUMP 18" O/C	

~~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: _____ DATE: _____

Reviewed for the Howard Conservation District and meets technical requirements.

NATURAL RESOURCES CONSERVATION SERVICE DATE: _____

APPROVED: Howard County Department of Planning and Zoning

[Signature] 6/12/02
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 6/18/03
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 6/18/03
 DIRECTOR DATE

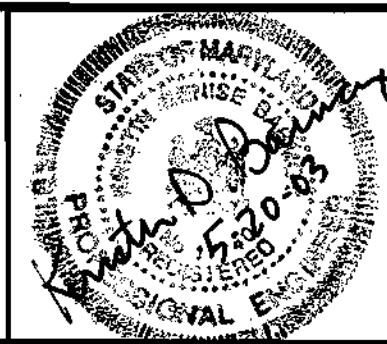
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

[Signature] 6/18/03
 COUNTY HEALTH OFFICER DATE
 HOWARD COUNTY HEALTH DEPARTMENT

MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS

WESTMINSTER, MARYLAND 21158
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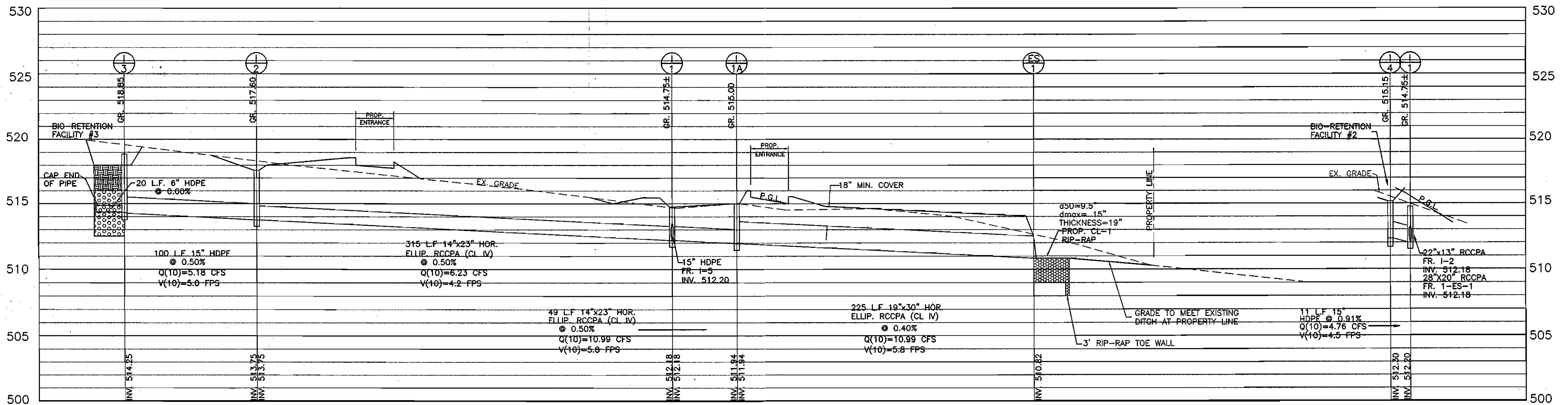


REVISIONS		
NO.	DATE	DESCRIPTION

PLAN PREPARATION	
DRAWN BY: DAB	DATE: 10 MAY 2002
DESIGNED BY: DAB	FILE NO. 2002-23
CHECKED BY: KDB	

PRIVATE BIO-RETENTION FACILITIES #2 & #3 DETAILS	
MT. ZION METHODIST CHURCH	
SITUATED ON MD 216 - SCAGGSVILLE ROAD	
LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT	
HOWARD COUNTY, MARYLAND	

SCALE	
1" = 30'	
SHEET NO. 7 OF 18	



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	514.75±	512.18	512.20	512.18	MOD. TYPE 'K' INLET OPEN END GRATE, SD-4.12)
I-2	517.60	513.75	---	513.75	TYPE 'K' INLET OPEN END GRATE, SD-4.12)
I-3	518.85	514.25	---	514.25	STANDARD YARD INLET
I-4	515.15	512.30	---	512.30	STANDARD YARD INLET
I-5	516.50	513.50	---	513.25	MODIFIED YARD INLET
ES-1	---	---	---	510.82	HDPE END SECTION
ES-2	---	---	---	512.75	HDPE END SECTION
I-1A	515.00	511.94	---	511.94	MODIFIED YARD INLET

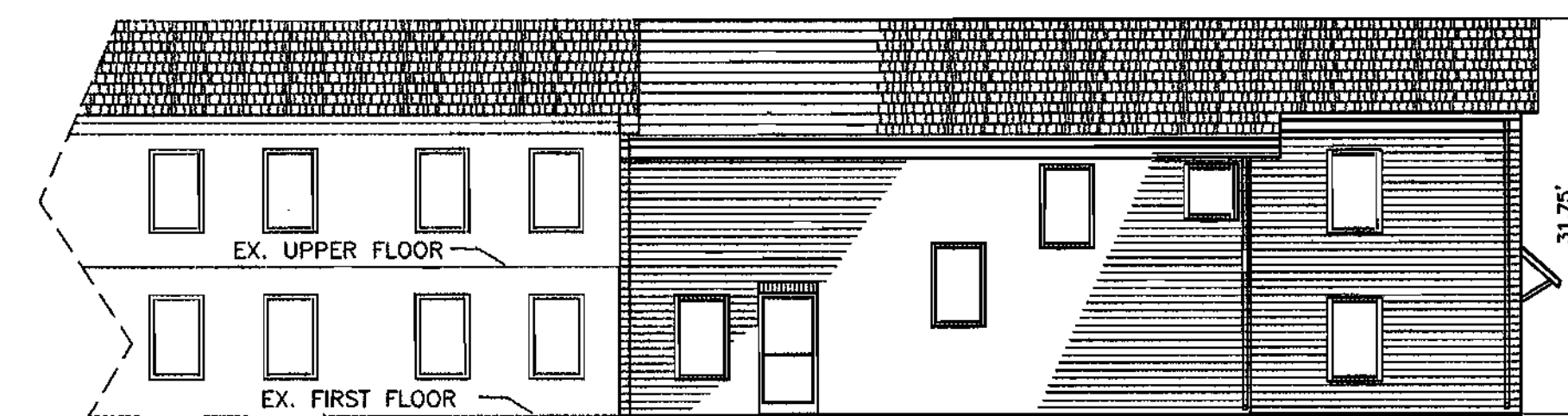
NOTE: SEE I-5 TO ES-2 PROFILE ON SHEET 6.
NOTE: ALL HDPE PIPE SHALL MEET AASHTO-252 TYPES, M294 TYPES AND ASTM D2321, RESPECTIVELY.

PIPE SCHEDULE

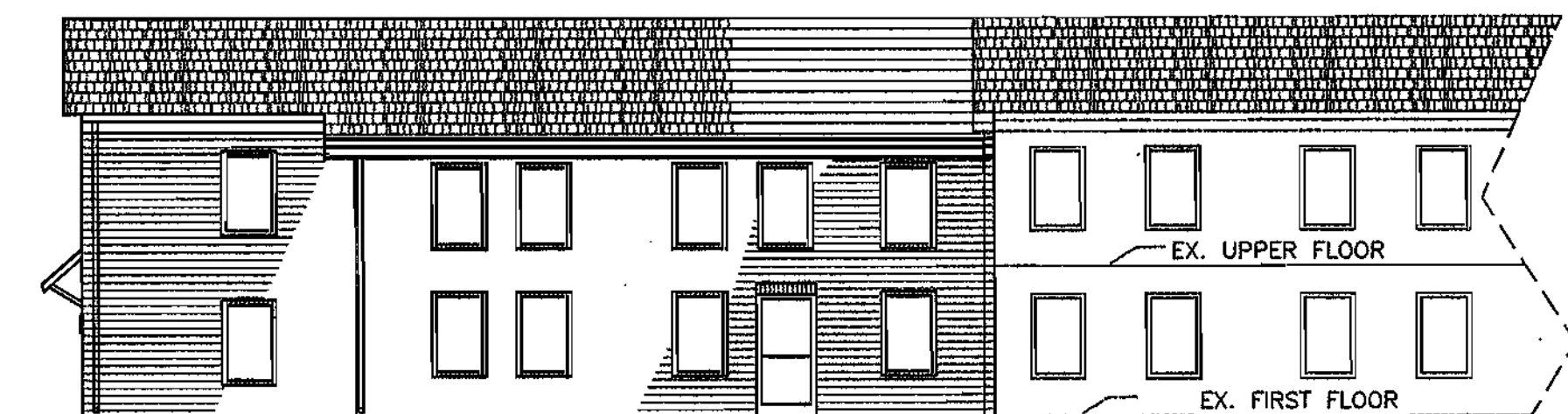
PIPE SIZE	LENGTH (FT)	TYPE
19"x30"	340	HOR. ELLIP. RCCPA (CL IV)
15"	111	HDPE (TYPE SP)
14"x23"	364	HOR. ELLIP. RCCPA (CL IV)



NORTH ELEVATION



EAST ELEVATION



WEST ELEVATION

PROP. ADDITION ELEVATIONS

NO SCALE

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: _____ DATE: _____
Reviewed for the Howard Conservation District and meets technical requirements.
NATURAL RESOURCES CONSERVATION SERVICE DATE: _____

APPROVED: Howard County Department of Planning and Zoning
CHIEF, DEVELOPMENT ENGINEERING DIVISION: _____ DATE: 6/18/03
CHIEF, DIVISION OF LAND DEVELOPMENT: _____ DATE: 6/18/03
DIRECTOR: _____ DATE: 6/10/03

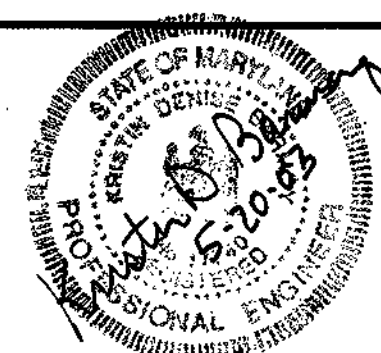
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
COUNTY HEALTH OFFICER: _____ DATE: 6/18/03
HOWARD COUNTY HEALTH DEPARTMENT

MARYLAND LAND DESIGN, INC.

CONSULTING ENGINEERS AND LAND PLANNERS

WESTMINSTER, MARYLAND 21158
TELEPHONE: (410) 857-0210 FAX: (410) 857-8030

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REVISIONS

NO.	DATE	DESCRIPTION

PLAN PREPARATION

DRAWN BY: DAB	DATE: 10 MAY 2002
DESIGNED BY: DAB	FILE NO. 2002-23
CHECKED BY: KDB	

STORM DRAIN PROFILES, DETAILS, AND BUILDING PROFILES

MT. ZION METHODIST CHURCH
SITUATED ON MD 216 - SCAGGSVILLE ROAD
LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS NOTED

SHEET NO. 8 OF 18

ARTLAND LAND DESIGN, INC.

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

Penny Borestein M.D./G.S. 6/18/03
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: Howard County Department of Planning and Zoning
Chad Damm 6/18/03
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
Andy Harts 6/18/03
 CHIEF, DIVISION OF LAND DEVELOPMENT
Mark A. Light 6/18/03
 DIRECTOR

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: In accordance with Section 16.1202 of the Howard County Code and Forest Conservation Manual, forest conservation obligations for this site shall be met by the re-creation of an off-site Forest Conservation Plan of Easement for the Chase Property, Lot 5 which shall place 1.6 acres of afforestation in easement area which is sufficient to meet the break-even requirement of 1.6 acres of afforestation required under SDP 02-154. Surety in amount of \$3,914.00 shall be posted with the Developer's Agreement for SDP 02-154.

BASIC SITE DATA

GROSS SITE AREA	10.31 AC
AREA WITHIN 100 YEAR FLOODPLAIN	0.0 AC
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	n/a
NET TRACT AREA	10.31 AC
LAND USE CATEGORY	RESIDENTIAL

INFORMATION FOR CALCULATIONS

A. NET TRACT AREA	10.31 AC
B. REFORESTATION THRESHOLD (15% X A)	1.55 AC
C. EXISTING FOREST ON NET TRACT AREA	1.55 AC
D. EXISTING FOREST TO BE REMOVED	0.0 AC
E. FOREST AREAS TO BE REPLACED	0.0 AC

AFFORESTATION CALCULATIONS

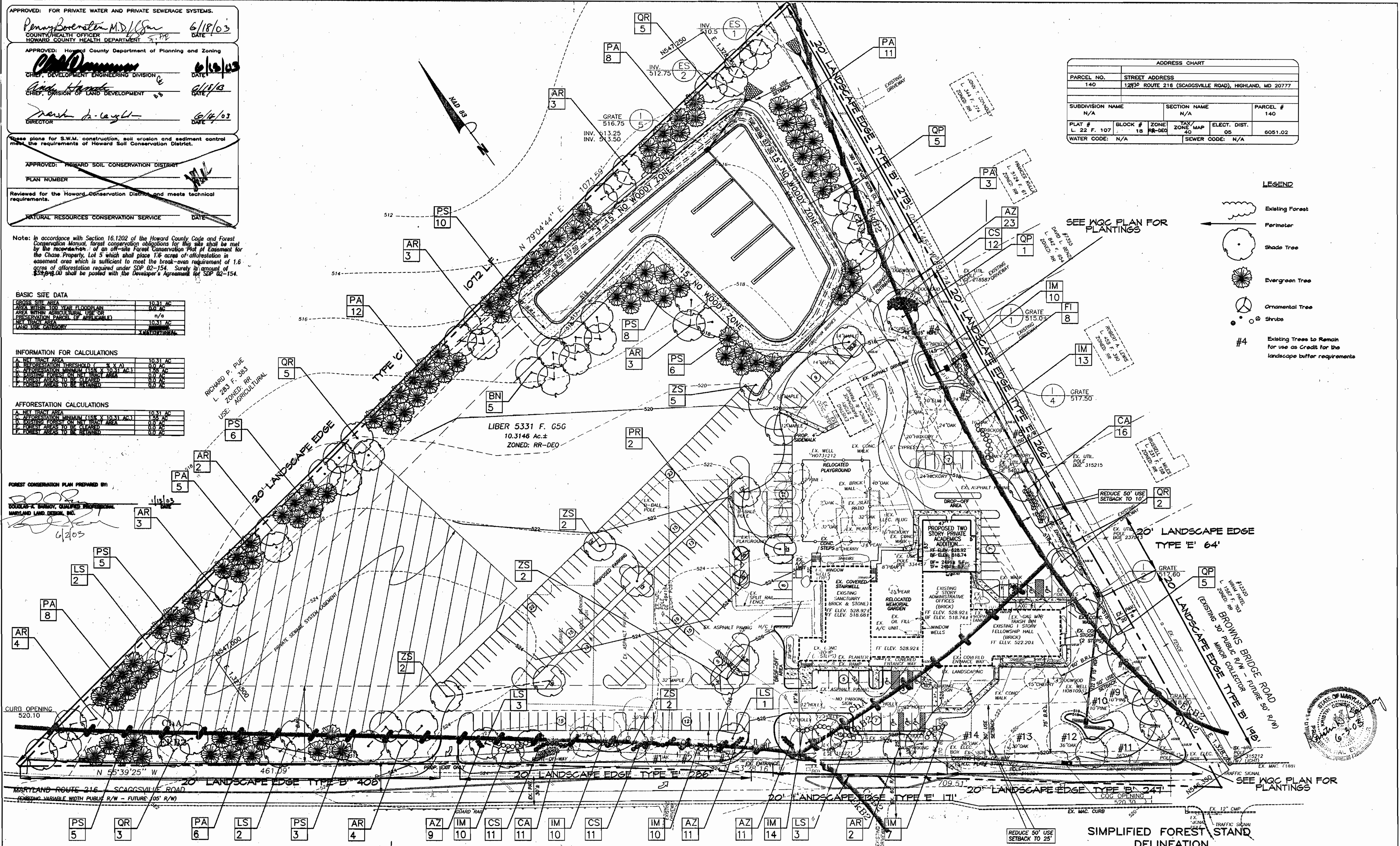
A. NET TRACT AREA	10.31 AC
B. REFORESTATION THRESHOLD (15% X 10.31 AC)	1.55 AC
C. EXISTING FOREST ON NET TRACT AREA	1.55 AC
D. EXISTING FOREST TO BE REMOVED	0.0 AC
E. FOREST AREAS TO BE REPLACED	0.0 AC

FOREST CONSERVATION PLAN PREPARED BY:
DOUGLAS A. BARNBY, QUALIFIED PROFESSIONAL MARYLAND LAND DESIGN, INC.
 6/2/03

ADDRESS CHART

PARCEL NO.	STREET ADDRESS			
140	12130 ROUTE 216 (SCAGGSVILLE ROAD), HIGHLAND, MD 20777			
SUBDIVISION NAME	SECTION NAME	PARCEL #		
N/A	N/A	140		
PLAT #	BLOCK #	ZONE	TAX MAP	ELECT. DIST.
L. 22 F. 107	18	RR-DEO	40	05
WATER CODE:	N/A	SEWER CODE:	N/A	

- LEGEND**
- Existing Forest
 - Perimeter
 - Shade Tree
 - Evergreen Tree
 - Ornamental Tree
 - Shrubs
 - #4 Existing Trees to Remain for use as Credit for the landscape buffer requirements



MARYLAND LAND DESIGN, INC.
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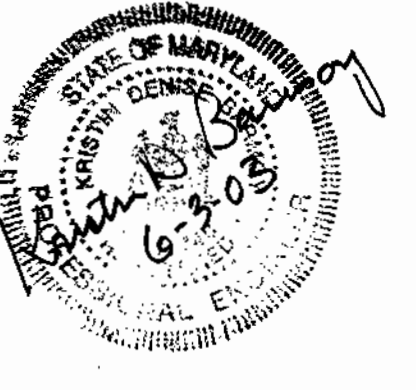
Landscape Plan Designed By
CNA
 campbell & nolan associates, inc.
 (410) 679-7200 • (410) 838-2784 • Fax (410) 838-1811
 E-mail: cna@cna-campbell-nolan.com

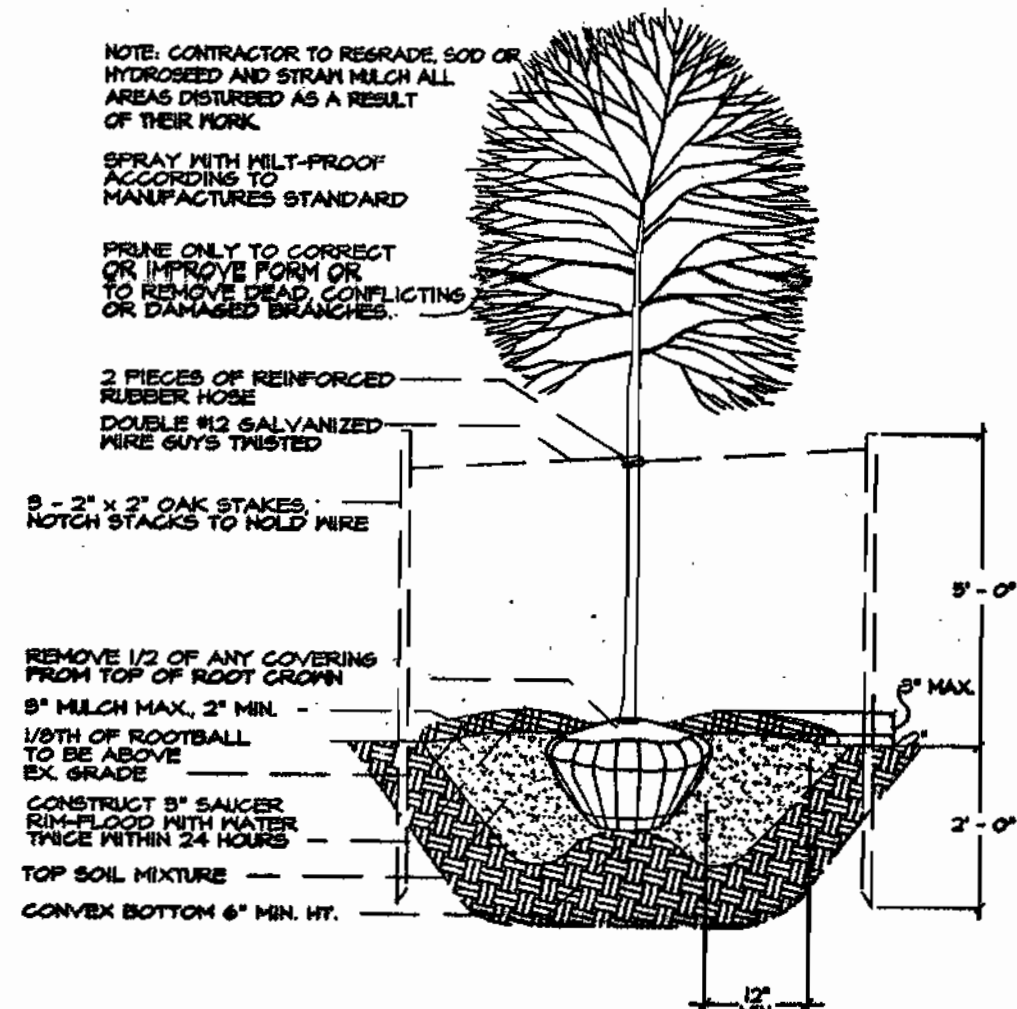
PLAN PREPARATION

DRAWN BY:	ERM	DATE:	16 MAY 2002
DESIGNED BY:	ERM	FILE NO.:	2002-
CHECKED BY:	DRK	CNA JOB #:	02148

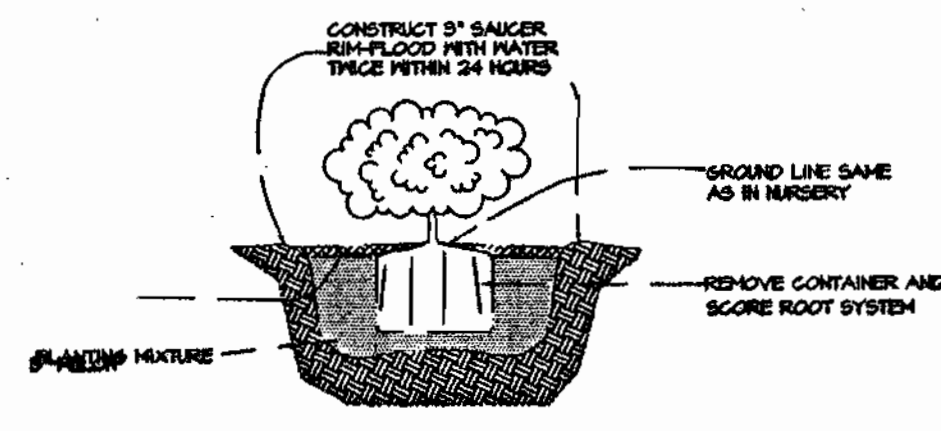
LANDSCAPE PLAN
 MT. ZION METHODIST CHURCH
 SITUATED ON MD 216 - SCAGGSVILLE ROAD
 LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE
 1" = 40'
SHEET NO.
 9 OF 18

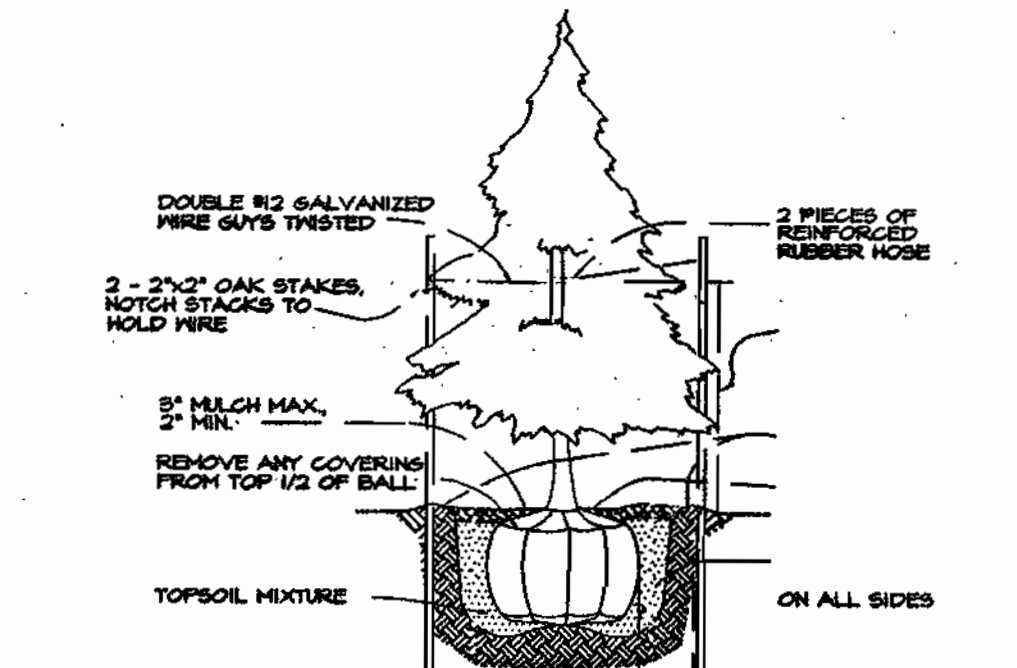




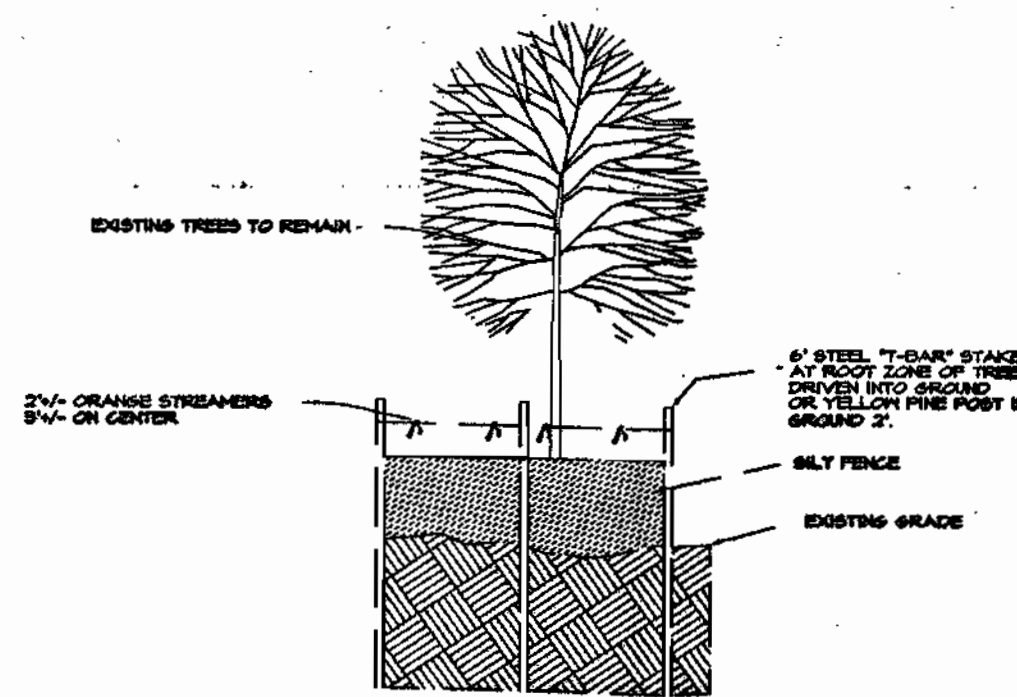
TREE PLANTING DETAIL
NOT TO SCALE



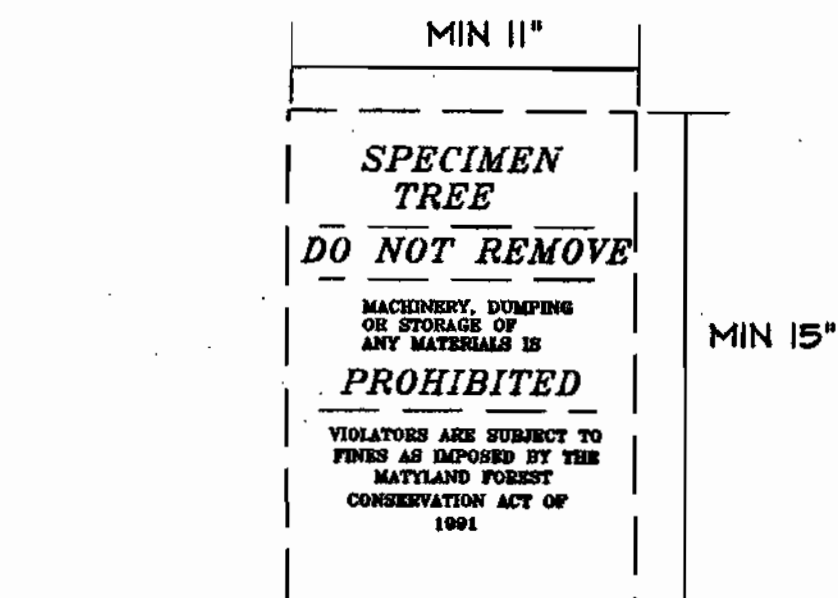
SHRUB PLANTING DETAIL
NO SCALE



EVERGREEN TREE DETAIL
NOT TO SCALE



TREE PROTECTION DETAIL
NOT TO SCALE



SIGN DETAIL
NOT TO SCALE

PLANT MATERIALS AND PLANTING METHODS

A. Plant Materials
 The landscape contractor shall furnish and/or install and/or dig, ball, burlap, and transport 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 "AAS 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 healthy, well-furnished root systems. They shall be free of disease, insect pests and mechanical injuries.

- All plants shall be nursery grown and shall have been grown under the same climate as the location of this project for at least two years before planting. Neither heeled-in plants nor plants from cold storage will be accepted.
- Collected plants or transplanted trees may be called for by the landscape architect and used, provided, however, that locations and soil conditions will permit proper balling.

3. 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 Officer.

- 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.
- Diameter and depth of tree pits shall generally be as follows:

Caliper	Height	Spread	Size of Ball
2 1/2" - 3"	12' - 14'	6' - 8'	28" diameter
3" - 3 1/2"	14' - 18'	6' - 8'	32" diameter
3 1/2" - 4"	14' - 18'	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 "AAS Standards".

4. 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.

5. Plant Inspection
 The Department of Planning and Code Enforcement Reviewing Officer 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.

6. 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:

1. 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. A 20% composition 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.

2. Digging
 All plant material shall be dug, balled and burlapped (B+B) in accordance with the "AAS Standards."

3. 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.

Plant Size	Root Ball Diameter	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"

4. 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".
- Plant Pruning, Edging and Mulching
 a. 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.
 b. 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.
 c. 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 Reviewing Officer shall be responsible for inspecting all planting projects on a periodic 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
 A. 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.

LANDSCAPE PLANT SCHEDULE				
KEY	QUA.	BOTANICAL / COMMON NAME	SIZE	REMARKS
SHADE TREES				
AR	24	Acer rubrum 'Red Sunset'	2 1/2" - 3" cal.	B4B Cal.
BH	7	Betula nigra 'Heritage'	10" - 12" cal.	
LS	11	Liquidambar styraciflua 'American Sweetgum'	2 1/2" - 3" cal.	B4B Cal.
GP	11	Quercus phellos 'Willow Oak'	2 1/2" - 3" cal.	B4B Cal.
QR	15	Quercus rubra 'Red Oak'	2 1/2" - 3" cal.	B4B Cal.
ZS	15	Zelkova serrata 'Village Green'	2 1/2" - 3" cal.	B4B Cal.
ORNAMENTAL TREES				
PR	2	Prunus serotina 'Kwanzan'	1 1/2" - 3" cal.	B4B Cal.
EVERGREEN TREES				
PA	55	Picea abies 'Norfolk Spruce'	6" - 8" Hk.	B4B
PS	48	Pinus strobus 'Eastern White Pine'	6" - 8" Hk.	B4B
SHRUBS				
AZ	54	Azalea 'Hino crimson'	18" - 24"	
CA	21	Clethra alnifolia 'Hummingbird'	2 1/2" - 3" cal.	HT
CS	94	Cornus stolonifera 'Red-Color Dogwood'	2 1/2" - 3" cal.	HT
FI	8	Foraythia x intermedia 'Border Foraythia'	2" - 2 1/2" cal.	HT
HM	74	Ilex x meserveae 'Blue Princess'	2 1/2" - 3" cal.	HT

Note: Landscaping for this site will be provided in accordance with Section 16.124 of the Howard County Code and Landscape Manual. Required financial surety for the required landscaping will be posted as part of the SPA developer's the SPA developer's agreement in the amount of \$36,810.00 for 82 shade trees, 42 evergreen trees, and 197 shrubs.

NOTE: AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT AND SIZE REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.

Note: The Landscape surety of \$36,810.00 for 82 shade trees, 42 evergreen trees, and 197 shrubs shall be posted with the developer's agreement. This surety is based on Howard County landscaping estimates of \$300 per shade tree, \$150 per evergreen tree, and \$30 per shrub.

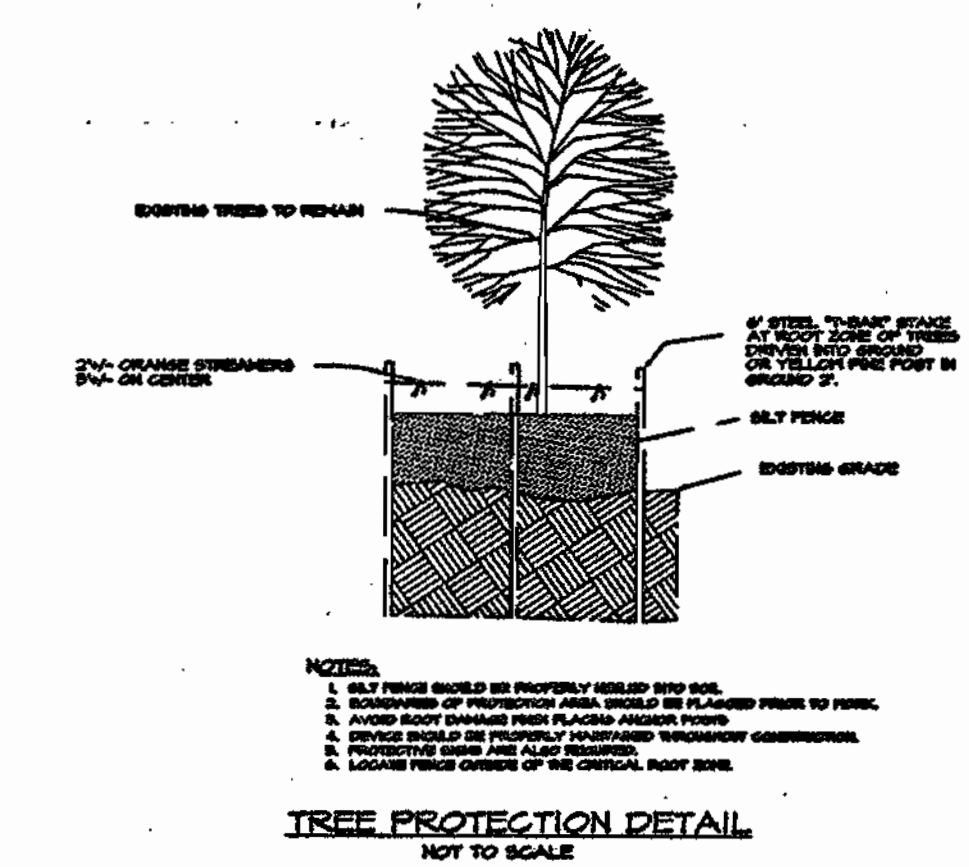
SCHEDULE A PERIMETER LANDSCAPE EDGE			
CATEGORY	PARKING ADJACENT TO ROADWAYS	ADJACENT TO ROADWAYS PERIMETER 5'	ADJACENT TO PERIMETER PROPERTIES 1'
LANDSCAPE TYPE	B	12B	G
LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	187	128	1072
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES	YES	NO
CREDIT FOR HALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO
NUMBER OF PLANTS REQUIRED			
SHADE TREES	140 = 30	150 = 25	140 = 21
EVERGREEN TREES	0	0	0
SHRUBS	14 = 11	0	0
NUMBER OF PLANTS PROVIDED			
SHADE TREES	13 = 7 Existing	15 = 4 Existing	21
EVERGREEN TREES	0	0	0
SHRUBS (ON SUBSTITUTION)	11	0	0
OTHER SHRUBS (ON SUBSTITUTION)	0	0	0

* CREDIT FOR EXISTING TREES NUMBERED 1 THROUGH 1 ARE BEING USED AS CREDIT FOR THE BUFFER PROVIDED BY PARKING ADJACENT TO ROADWAYS. THE EXISTING TREES LABELED B THROUGH 14 ARE BEING USED AS CREDIT FOR THE BUFFER REQUIREMENT OF NON-RESIDENTIAL USE ADJACENT TO A ROADWAY.
 ** CREDIT IS TAKEN FOR 11 EXISTING TREES FROM THE SPW REQUIREMENT. SEE NOTE AT RIGHT.

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	250
NUMBER OF TREES REQUIRED	130 = 8.7
NUMBER OF TREES PROVIDED	11
OTHER TREES (ON SUBSTITUTION)	2

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	124 LF (TYPE G)
NUMBER OF TREES REQUIRED	
SHADE TREES	140 = 25
EVERGREEN TREES	120 = 46
CREDIT FOR EXISTING VEGETATION (NO, YES and LF)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES and LF)	YES
NUMBER OF TREES PROVIDED	
SHADE TREES	15 = 8 CREDIT
EVERGREEN TREES	25 = 15 CREDIT
OTHER SHRUBS (ON SUBSTITUTION)	0

* CREDIT FOR BUFFER ADJACENT TO PROPERTY LINE = 8 SHADE TREES 15 EVERGREENS



TREE PROTECTION DETAIL
NOT TO SCALE



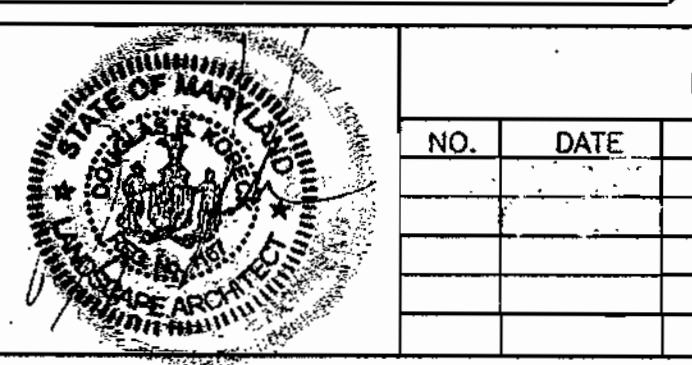
These plans for S.W.M. construction, soil erosion and sediment control meet the requirements of Howard County Conservation District.
 APPROVED: HOWARD COUNTY CONSERVATION DISTRICT
 PLAN NUMBER: _____ DATE: _____
 Reviewed for the Howard County Conservation District and meets technical requirements.
 NATURAL RESOURCES CONSERVATION SERVICE DATE: _____

APPROVED: Howard County Department of Planning and Zoning
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* 6/13/03
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* 6/18/03
 DIRECTOR: *[Signature]* 6/18/03

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.
 COUNTY HEALTH OFFICER: *[Signature]* 6/18/03
 HOWARD COUNTY HEALTH DEPARTMENT

Developer's/Builder's Certification
 I/We certify that the landscaping shown on this plan will be done according to the plan. Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion of Certification of Landscaping Installation, accompanied by a completed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.
 Name: *[Signature]* Date: 6-2-03
 The owner, architect, and/or landscape architect shall be responsible for maintenance of the required landscaping, including both plant material, and barriers, fences and walls. All plant material shall be maintained in good growing condition, and when necessary replaced with new materials to ensure continued compliance with applicable regulations. All other landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS
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 TELEPHONE: (410) 857-0210 FAX: (410) 840-0143
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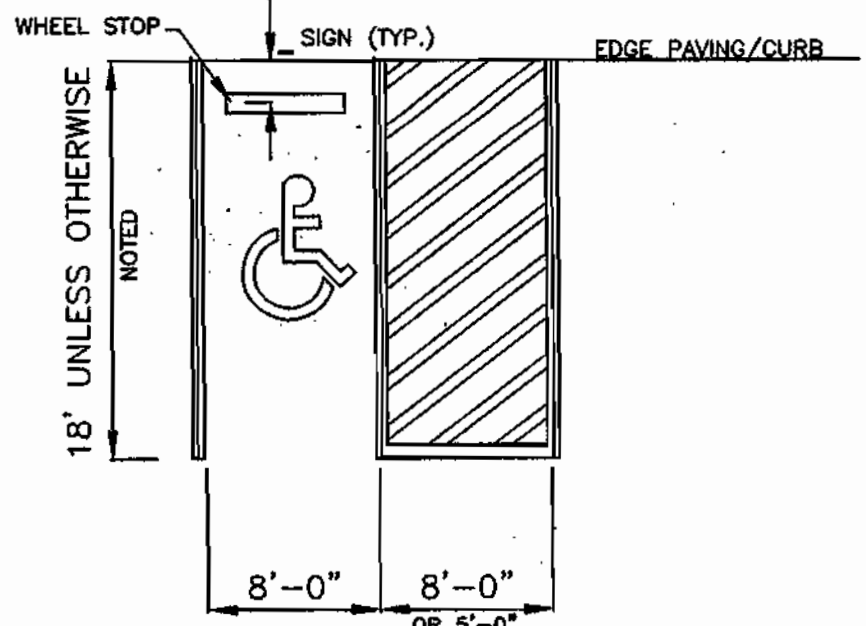
Landscape Plan Designed By
CNA
 campbell & nolan associates, inc.
 (410) 879-7200 • (410) 838-2784 • Fax (410) 838-1811
 E-mail: cna@mail@campbell-nolan.com

PLAN PREPARATION	
DRAWN BY: ERM	DATE: 16 MAY 2002
DESIGNED BY: ERM	FILE NO. 2002-
CHECKED BY: DRK	

LANDSCAPE PLAN
 MT. ZION METHODIST CHURCH
 SITUATED ON MD 216 - SCAGGSVILLE ROAD
 LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

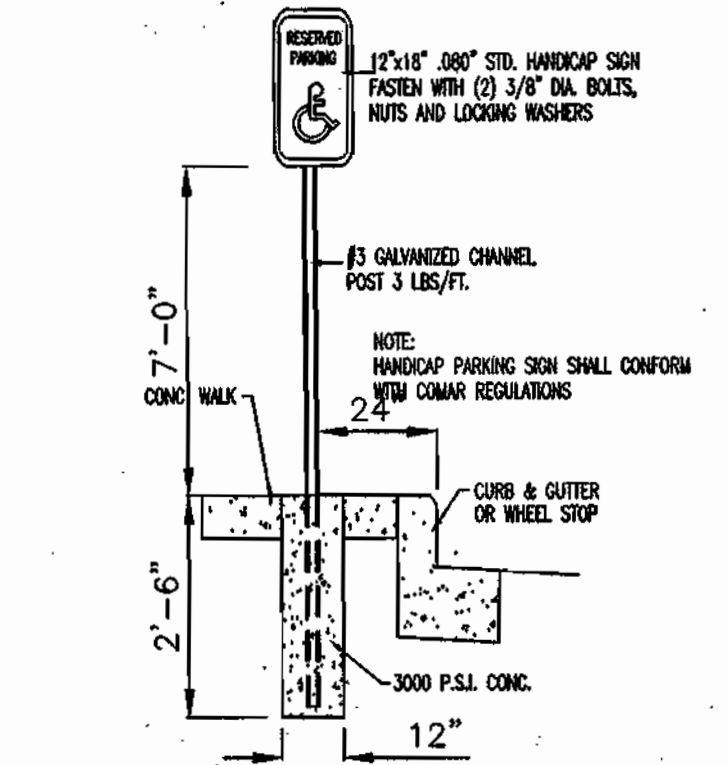
SCALE
 AS NOTED
SHEET NO.
 10 OF 18

PAIN IS TO BE YELLOW OR AS SPECIFIED BY THE LOCAL JURISDICTION APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. (2) TWO COATS REQUIRED.

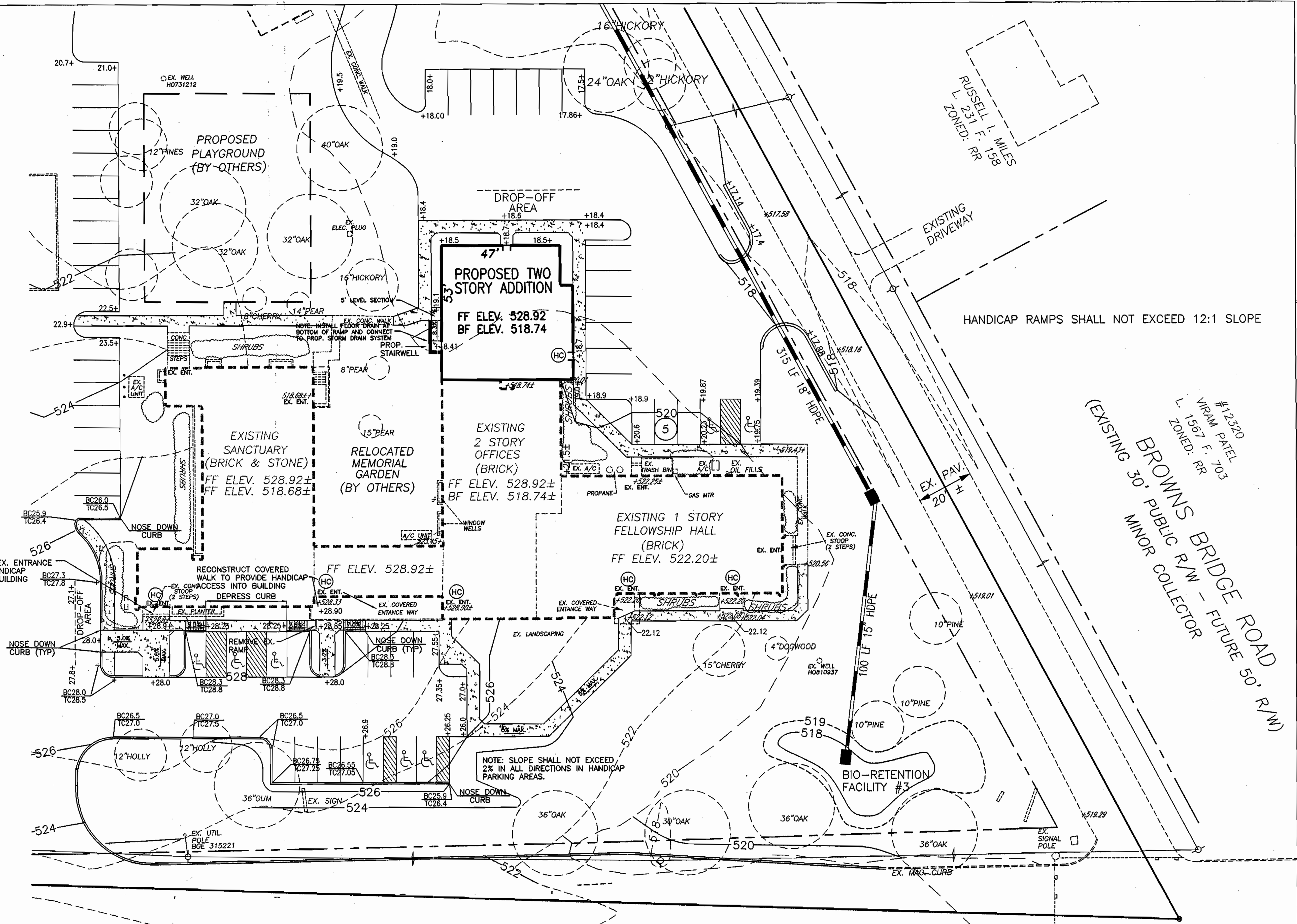


*VAN ACCESSIBLE SPACES SHALL BE 8'0". SEE PLAN FOR EXACT SPACE SIZE. *VAN ACCESSIBLE SPACE TO HAVE SIGNS DENOTING "VAN ACCESSIBLE" AND "NO PARKING IN ACCESS AISLE" SIGNS.

TYPICAL HANDICAP PARKING DETAIL
NOT TO SCALE



HANDICAP PARKING SIGN DETAIL
NOT TO SCALE



HANDICAP RAMPS SHALL NOT EXCEED 12:1 SLOPE

#12320
VIRAM PATEL
L. 1567 F. 705
ZONED: RR
BROWNS BRIDGE ROAD
FUTURE 50' R/W
MINOR COLLECTOR
(EXISTING 30' PUBLIC R/W)

(HC) DENOTES ENTRANCES PROPOSED AS HANDICAP ACCESSIBLE

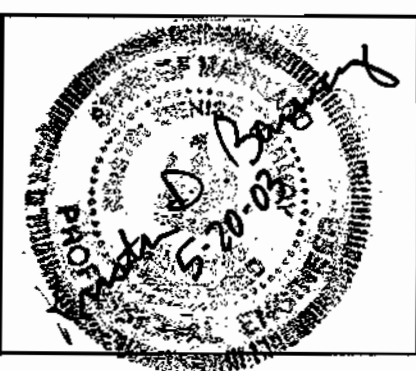
These plans for S.W.M. construction, soil erosion and sediment control meet the requirements of Howard Soil Conservation District.
APPROVED: HOWARD SOIL CONSERVATION DISTRICT
PLAN NUMBER _____ DATE _____
Reviewed for the Howard Conservation District and meets technical requirements.
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APPROVED: 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 ROUTE 216 - SCAGGSVILLE ROAD

MARYLAND LAND DESIGN, INC.
CONSULTING ENGINEERS AND LAND PLANNERS
WESTMINSTER, MARYLAND 21158
TELEPHONE: (410) 857-0210 FAX: (410) 840-0143
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DRAWN BY: DAB	DATE: 10 MAY 2002
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HANDICAP ACCESS PLAN
MT. ZION METHODIST CHURCH
SITUATED ON MD 216 - SCAGGSVILLE ROAD
LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
1" = 20'
SHEET NO.
11 OF 18

TEST PIT TO DETERMINE EXISTENCE, LOCATION AND DEPTH

DESIGN FLOW TABLE

SOURCE	FLOW ALLOWANCE	DAILY	SATURDAY	SUNDAY
SANCTUARY	3 GAL/ SEAT (552 SEATS)	1995	---	1656
SCHOOL	15 GAL/STUDENT/TEACHER (**125 STUDENTS) (8 TEACHERS)	---	---	---
FELLOWSHIP HALL	10 GAL/SEAT (150 SEATS)	---	1500*	1500*
PARSONAGE	150 GAL/BEDROOM (3 BEDROOMS)	450	450	450
VOLUME TO BE MANAGED:		2445	1950*	3606*

* OCCASIONAL
 ** A TOTAL OF 250 STUDENTS ARE ALLOWED 2 SCHOOL SESSIONS. 125 STUDENTS DURING THE MORNING SESSION AND 125 STUDENTS DURING AFTERNOON SESSION. THE SYSTEM WAS DESIGNED FOR 125 STUDENTS AND 8 TEACHERS/STAFF FOR THE ENTIRE SCHOOL DAY.

FIELD TEST DATA: (12-8-2000)

DISPOSAL FIELD AREA	TEST NO.	DEPTH	RATE (MINUTES)	MAXIMUM DEPTH VERIFIED
Y	1	5'	SAME AS #1	13'
Y	2	5'	SAME AS #1	13.25'
Y	3	5'	SAME AS #3	13'
N	4	5.5'	3	13'
N	5	5.5'	8	13'
N	6	VISUAL	---	7.5'
N	7	5.5'	3	13'
Y	10	5.5'	4	13.5'
Y	11	VISUAL	SAME AS #3 & 12	---
Y	12	6.5'	10	13'
N	13	VISUAL	SAME AS #12	13'
N	14	5.5'	46 FAILED	13'
N	15	6.5'	21	13'
N	7, 16, 17	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE

WASTEWATER DISPOSAL:

- ALL LOW PRESSURE PIPING WILL BE PVC SCH 40 PRESSURE PIPING.
- BUILDING SEWER(S) WILL BE (MINIMUM) 4" SCH 40 PVC.
- CLEANOUTS WILL BE PROVIDED ADJACENT TO THE EXIT POINTS OF THE BUILDING SEWER(S).
- 6-GRADE TRACER WIRE SHALL BE WRAPPED AROUND, OR ATTACHED TO ALL PVC PIPE.
- THE COUNTY HEALTH DEPARTMENT WILL BE NOTIFIED AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE 2" PRESSURE HEAD TESTING OF THE DISPOSAL FIELD ZONES AND PUMP OPERATIONS.
- PUMP NOTES:
 - THE LOCABLE EXTERNAL CONTROL PANEL(S) WILL BE MOUNTED ADJACENT TO THE PUMPING CHAMBERS (UNLESS A MORE AGREEABLE, ACCESSIBLE LOCATION IS DETERMINED).
 - CERTIFIED ELECTRICIAN REQUIRED TO INSTALL PANEL(S) AND ELECTRICAL SERVICES. NOTE: A SEPARATE CIRCUIT IS REQUIRED FOR THE INSTALLATION OF EACH HIGH WATER ALARM FLOAT SWITCH (EACH OF THE TWO PUMP CHAMBERS HAS A HIGH WATER ALARM).
 - IN THE EVENT THAT WATER OR DEBRIS COLLECTS IN THE PUMP CHAMBERS BEFORE INSPECTION/TESTING, THE CONTRACTOR IS RESPONSIBLE TO CLEAR/CLEAN THE CHAMBERS OF ALL DEBRIS/DIRT.
- THE INITIAL AND EACH OF THE TWO DISPOSAL AREAS HAVE BEEN SIZED TO ACCOMMODATE AN INCREASE OF 55.5% TO (5606 GAL.) FLOW OVER THAT PROJECTED AS A DAILY MAXIMUM (3606 GAL).

SEPTIC TANK SIZING:

VOLUME REQUIRED (V) = 1125 GAL + .750 (Q = PEAK FLOW OF 3606 GALLONS (DESIGN FLOW))
 V = 1125 GAL + 3606 x .75 = 3830 GALLON CAPACITY
 USE 1 - 2500 GALLON (PRIMARY - 2/3) + 1500 GALLON (SECONDARY - 1/3) = 4000 GALLONS

LIFT AND TRANSPORT TO DISPOSAL SITE (PUMP CHANGER):

USE 6 HOUR SCHOOL DAY (S) AND 12 HOUR PARSONAGE (P) (ACTIVE) DAY AS GUIDE FOR TRANSPORT DOSE
 (S) 1995 GAL / 6 HRS = 332.5 GAL/HR - EXPECTED HOURLY PEAK
 (P) 450 GAL / 12 HRS = 37.5 GAL/HR - 6hr school day + 37.5
 DAILY PEAK FLOW (HOURLY) 370 GAL/HR x 6 HRS = 2200 GPD

SEE SHEETS 14 AND 15 FOR PRIVATE SEWERAGE DETAILS

NOTE: FUTURE SEPTIC ZONES 4 AND 5 ARE FOR FUTURE EXPANSION. THESE ZONES MAY BE INSTALLED DURING THE CONSTRUCTION OF THE SEPTIC SYSTEM AT THE DIRECTION OF THE CHURCH.

SEWERAGE REPLACEMENT AREA #2 (84'x106' = 8904 SF)

PIEZOMETERS #1 AND #2 TO BE INSTALLED (IF) WHEN SEWERAGE REPLACEMENT AREA #1 IS UTILIZED.

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: _____ DATE: _____
 Reviewed for the Howard Conservation District and meets technical requirements.
 NATURAL RESOURCES CONSERVATION SERVICE DATE: _____

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

BUCKS HAVEN MANOR
 PRES. PARCEL "A"
 PLAT #11620
 ZONED: RR

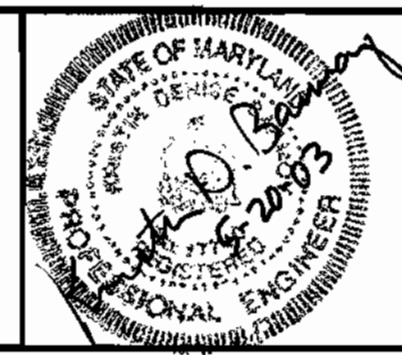
TRENCH CONFIGURATION:

HOWARD COUNTY BUREAU OF ENVIRONMENTAL HEALTH DETERMINED THAT FIELD TESTS (SEE FIELD TEST DATA) AND OBSERVATION PITS CONFIRMED THE USE OF DEEP TRENCH DISPOSAL UTILIZING THE DEPTH OF 5' TO 8' AS ABSORPTIVE ZONE.
 - CONVENTIONAL TRENCH REQUIRED (ft²): ANTICIPATED PEAK FLOW TEST RESULTS LOADING RATE = ft²
 3806 GPCL
 .8 GAL/ft²/day = 4508 ft² disposable surface hence 2 ft wide trench = 2254 linear ft
 - DEEP TRENCH = % OF CONVENTIONAL (LINEAR FOOTAGE)
 W+2 x 100 = %
 W+1+2d
 2 + 2
 2+1+(2x4) x 100 = 36.3%
 2254 x 36.3% = 818 LINEAR FEET DEEP TRENCH REQUIRED
 818 / 102.25 = 8 TRENCHES
 (SEE DESIGN CRITERIA: DISPOSAL SYSTEM DISTRIBUTION (SEE SHEET 14))

MARYLAND LAND DESIGN, INC.
 CONSULTING ENGINEERS AND LAND PLANNERS

WESTMINSTER, MARYLAND 21158
 TELEPHONE: (410) 857-0210 FAX: (410) 857-8030

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REVISIONS

NO.	DATE	DESCRIPTION
1	8-20-02	PER HEALTH DEPARTMENT REQUIREMENTS

PLAN PREPARATION

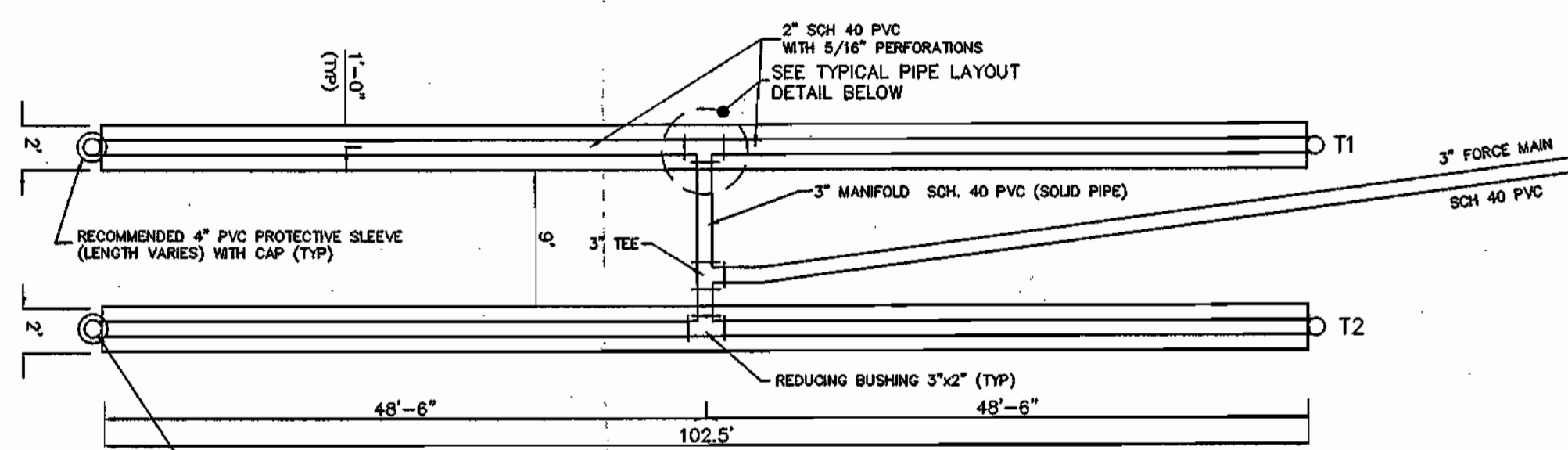
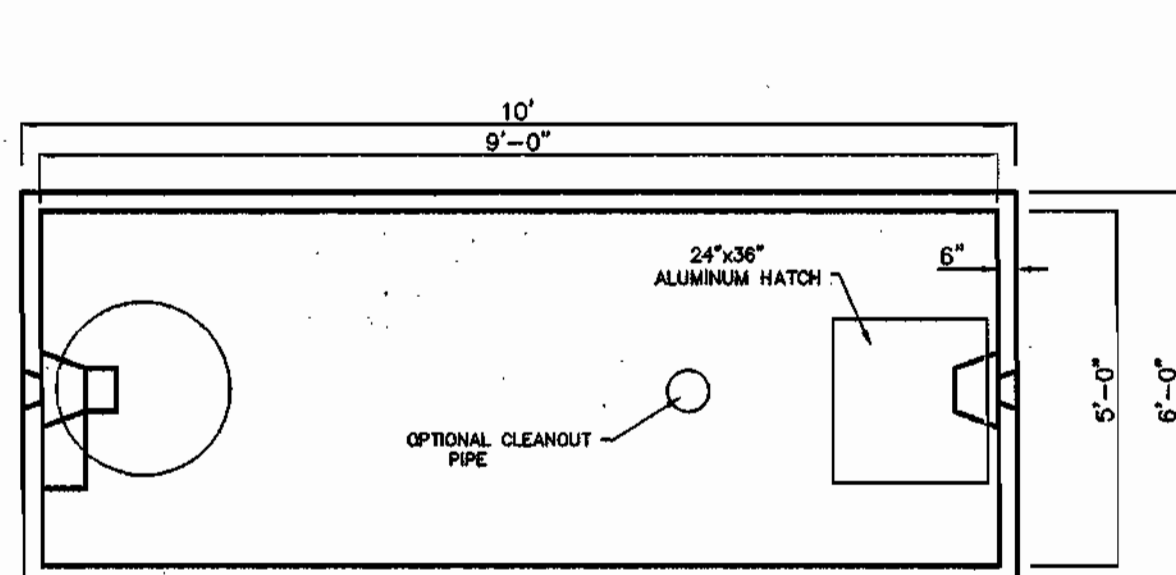
DRAWN BY: DAB	DATE: 10 MAY 2002
DESIGNED BY: DAB	FILE NO. 2002-23
CHECKED BY: KDB	

PLAN - PRIVATE SEWERAGE SYSTEM

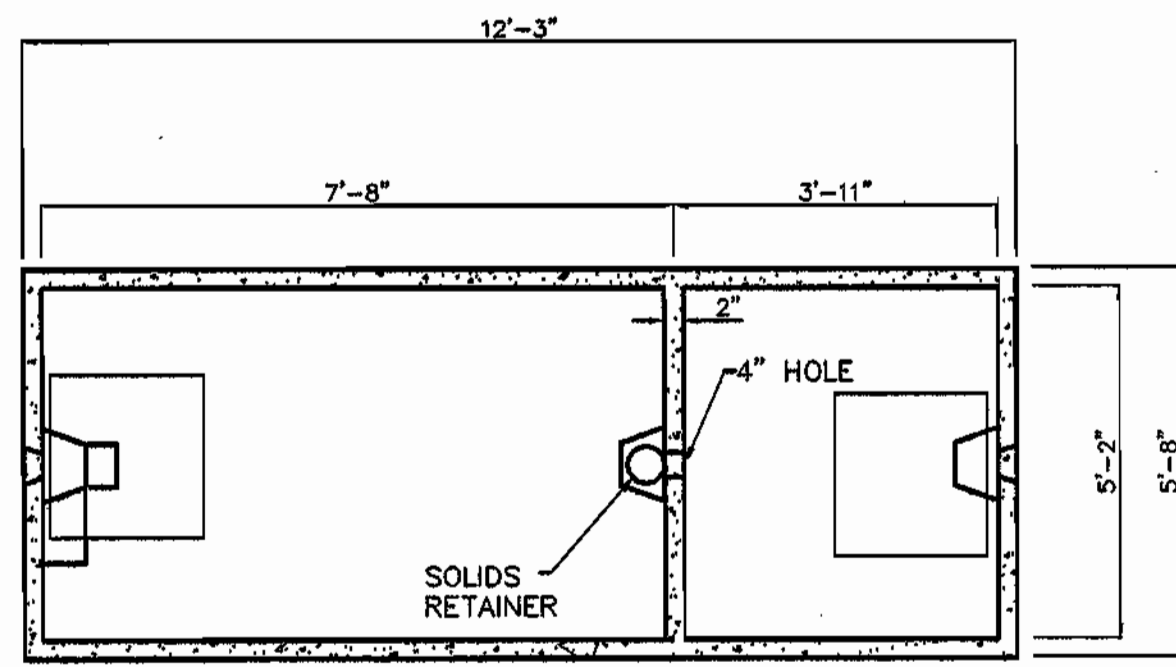
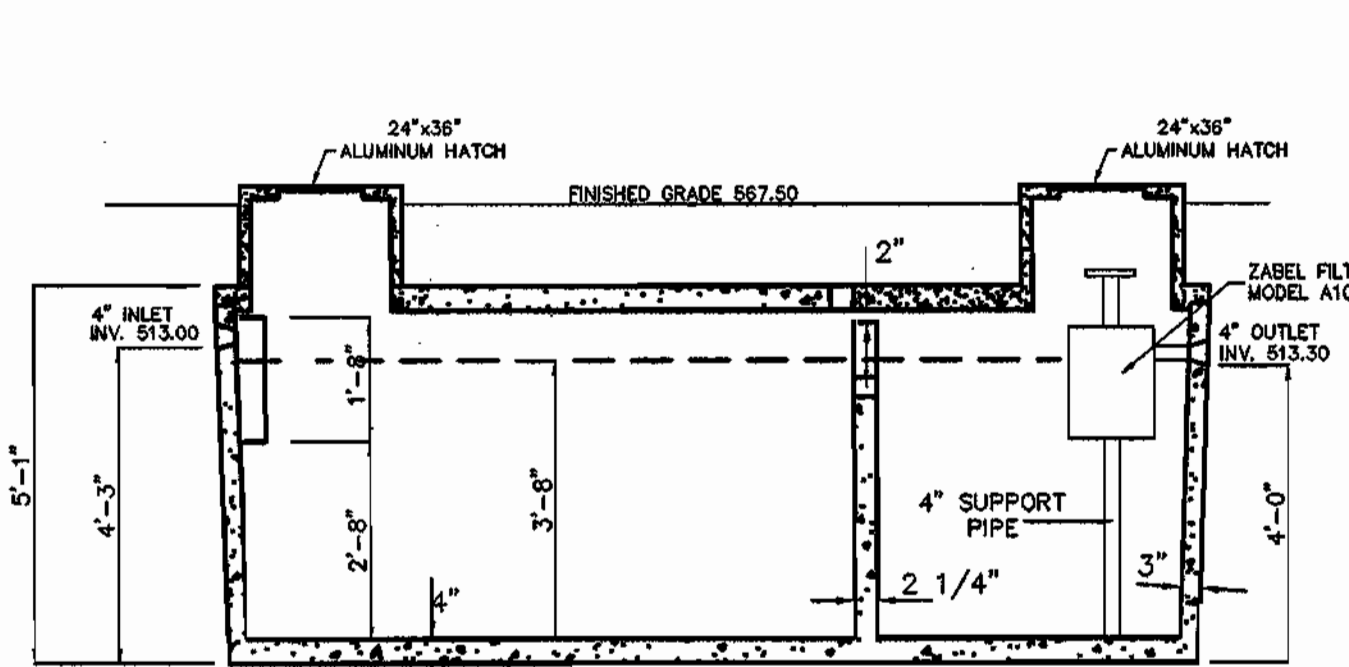
MT. ZION METHODIST CHURCH
 SITUATED ON MD 216 - SCAGGSVILLE ROAD
 LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE

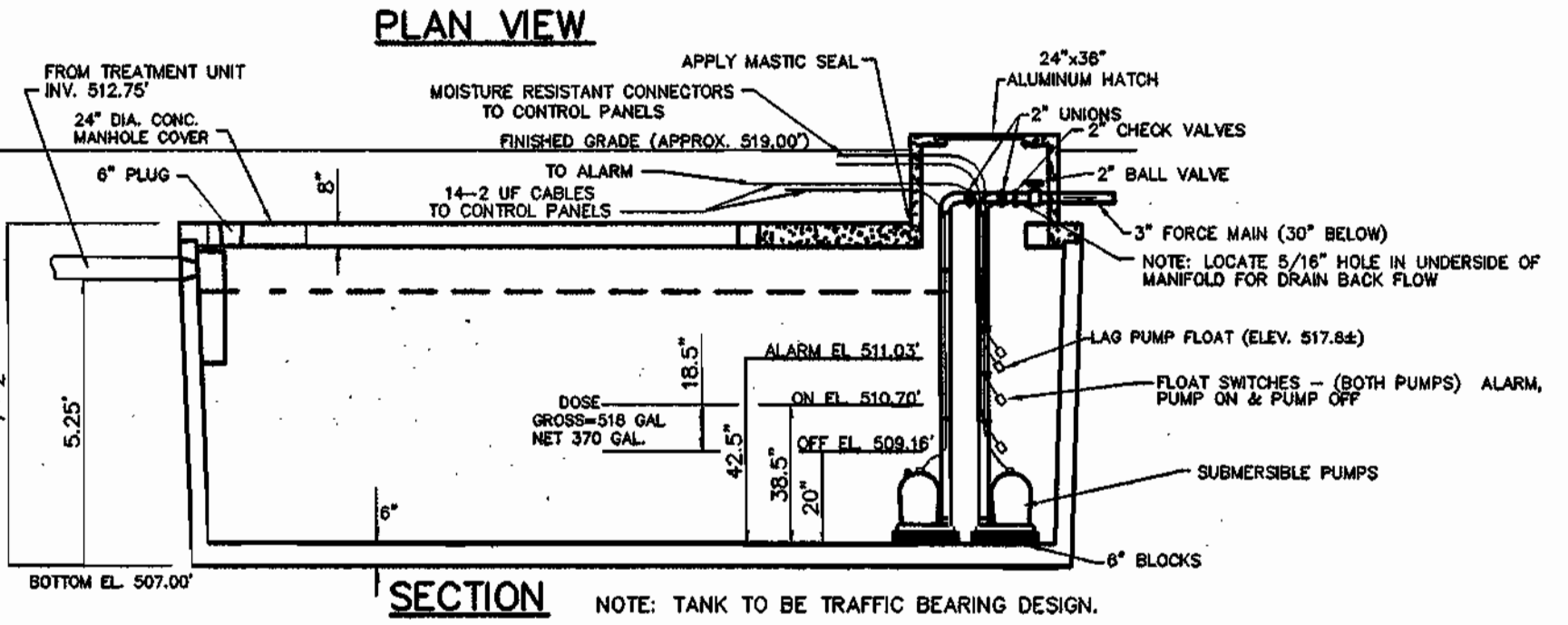
1" = 40'
 SHEET NO.
 13 OF 18



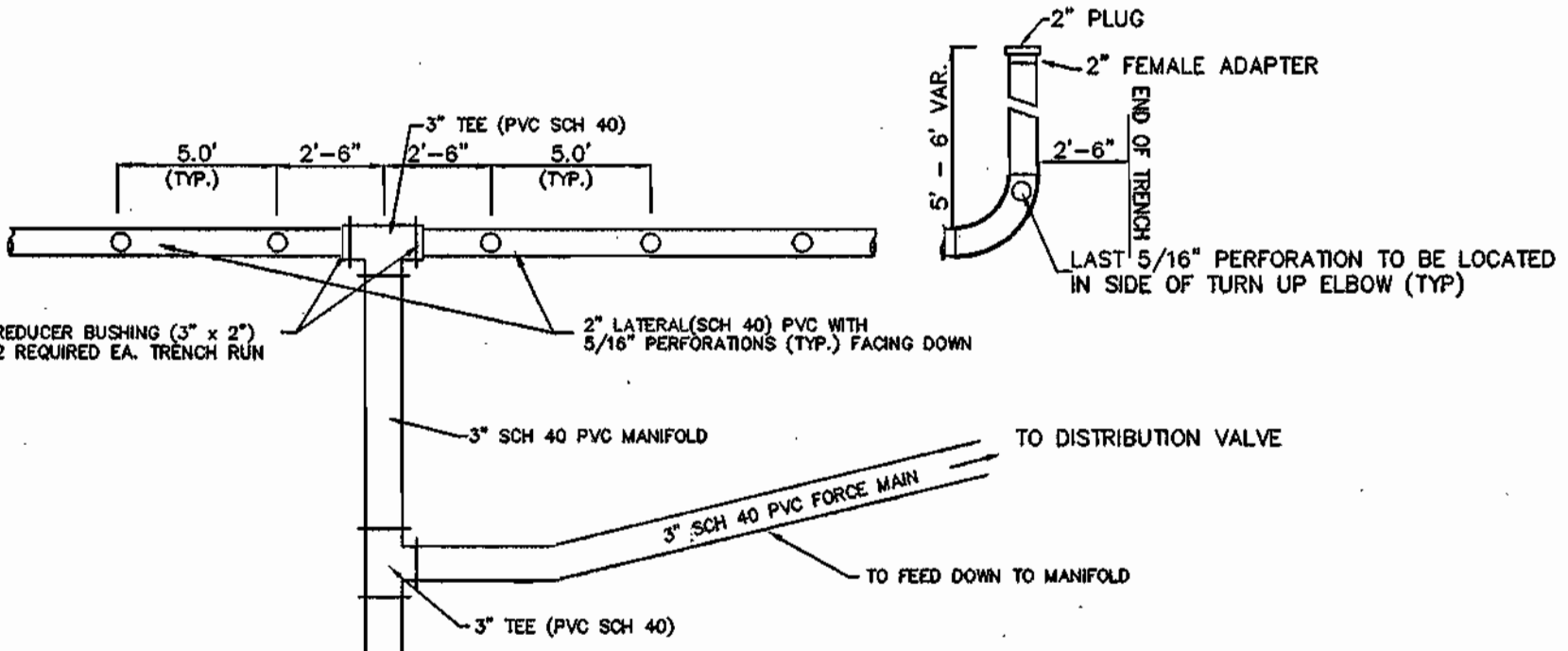
PLAN: TYPICAL ZONE SEWAGE DISPOSAL AREA
NOT TO SCALE



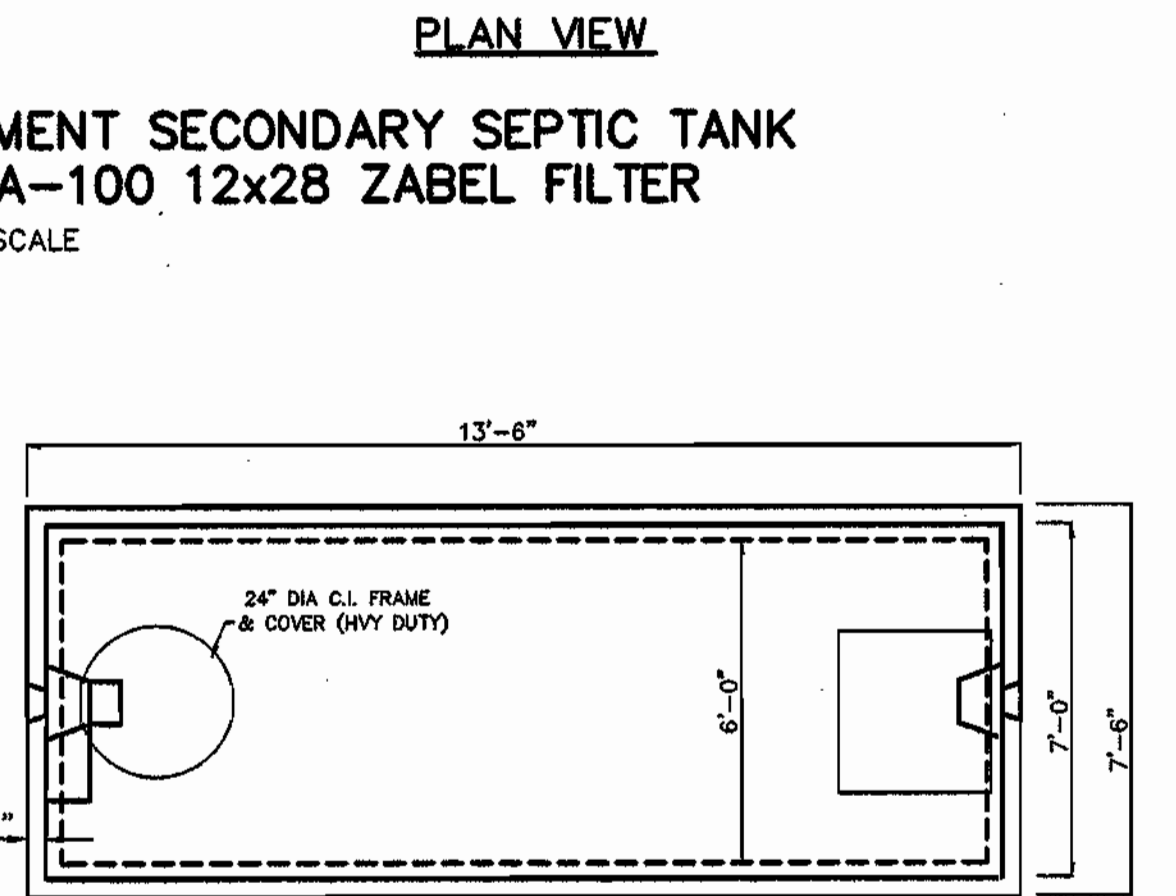
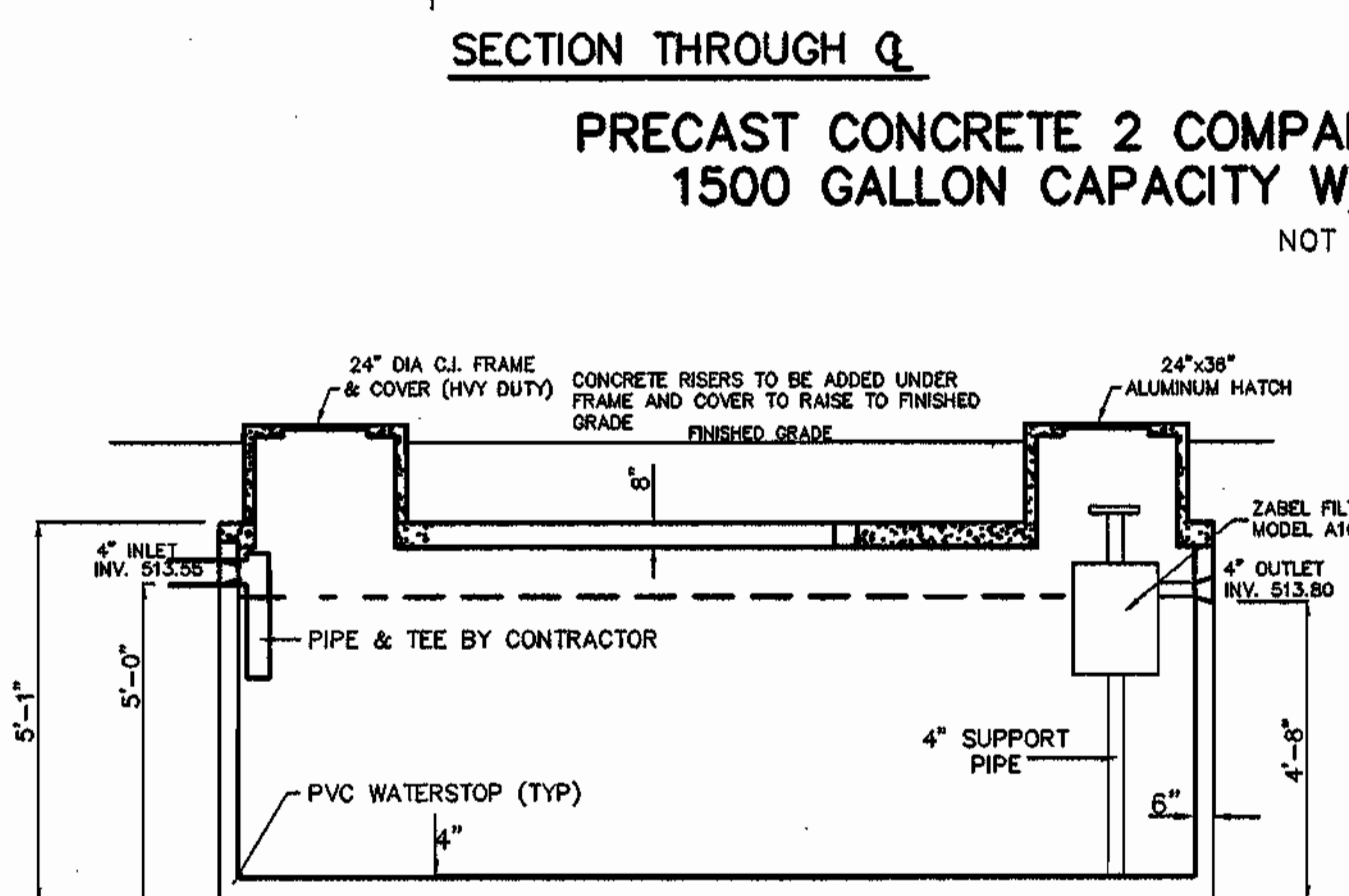
SECTION THROUGH Q
PLAN VIEW
PRECAST CONCRETE 2 COMPARTMENT SECONDARY SEPTIC TANK
1500 GALLON CAPACITY W/ A-100 12x28 ZABEL FILTER
NOT TO SCALE



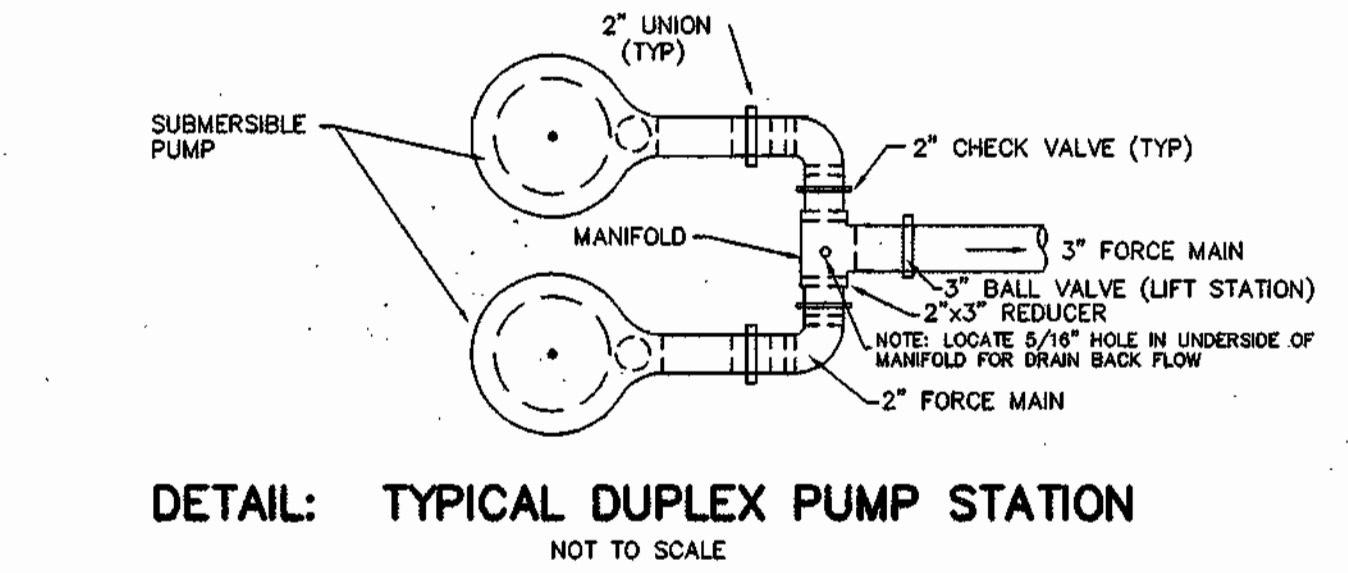
SECTION
TYPICAL 1500 GALLON PUMP TANK & PUMP LIFT/TRANSPORT TO DISTRIBUTION TANK
1' DEPTH = APPROXIMATELY 28 GALLONS (63" DEPTH)
NOT TO SCALE



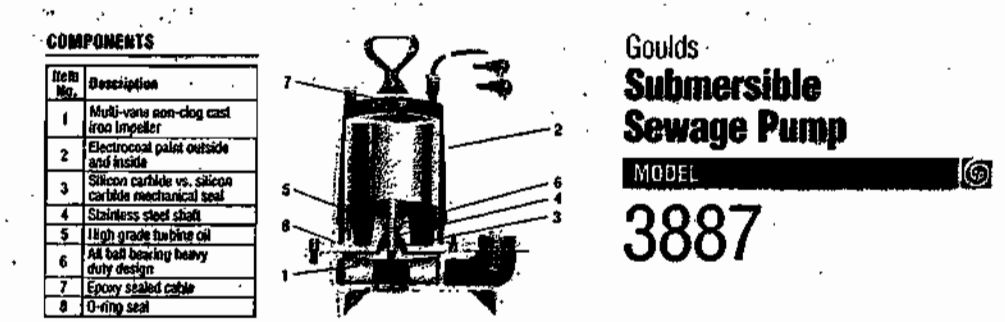
TYPICAL PIPE LAYOUT
NOT TO SCALE



SECTION THROUGH Q
PLAN VIEW
PRECAST CONCRETE 2 COMPARTMENT PRIMARY SEPTIC TANK
2500 GALLON CAPACITY
NOT TO SCALE



DETAIL: TYPICAL DUPLEX PUMP STATION
NOT TO SCALE



Goulds Submersible Sewage Pump
MODEL 3887

COMPONENTS

1. Multi-stage non-choking impeller
2. 2" diameter cast iron inlet
3. 2" diameter cast iron outlet
4. 2" diameter cast iron discharge pipe
5. 2" diameter cast iron discharge pipe
6. 2" diameter cast iron discharge pipe
7. 2" diameter cast iron discharge pipe
8. 2" diameter cast iron discharge pipe

DESCRIPTION

Simplex Ejector Systems are used where drain facilities are below existing sewer lines. Also can be used for septic tank applications where wastewater must be pumped away from tank for treatment or disposal.

OPERATING PRESSURE (SELECTED)

3.1' = 0.54'
2.0' = 2.0'

MODELS AND PERFORMANCE RATINGS

Model	HP	Flow (GPM)	Head (ft)	Efficiency (%)	Weight (lb)
3887	1	100	10	75	15
3887	1	150	15	75	15
3887	1	200	20	75	15
3887	1	250	25	75	15
3887	1	300	30	75	15
3887	1	350	35	75	15
3887	1	400	40	75	15
3887	1	450	45	75	15
3887	1	500	50	75	15
3887	1	550	55	75	15
3887	1	600	60	75	15
3887	1	650	65	75	15
3887	1	700	70	75	15
3887	1	750	75	75	15
3887	1	800	80	75	15
3887	1	850	85	75	15
3887	1	900	90	75	15
3887	1	950	95	75	15
3887	1	1000	100	75	15



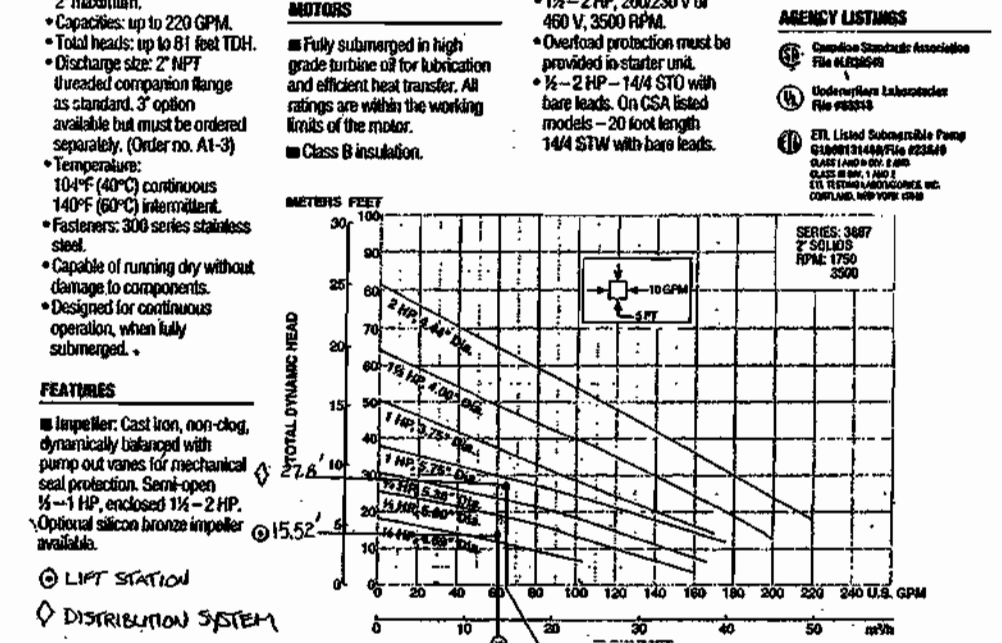
Goulds Submersible Sewage Pump
MODEL 3887

APPLICATIONS

- Specifically designed for the following uses:
 - Sewage systems
 - Water transfer
 - Light industrial
 - Commercial applications

OPERATING PRESSURE (SELECTED)

3.1' = 0.54'
2.0' = 2.0'



DUPLEX LIFT STATION:
TO DELIVER SEPTIC EFFLUENT FROM CENTRAL TANK(S) TO SOIL DISPOSAL DISTRIBUTION PUMP CHAMBER. TANK IS HEAVY DUTY TRAFFIC RATED TO COMPENSATE FOR DEEPER BURIAL THAN NORMAL.

LIFT VOLUME: SEE DESIGN FLOW TABLE

ANTICIPATED DAILY FLOW: SCHOOL 1995 GPD / 6 HOURS OPERATION
PARSONAGE = 450 GPD / 12 HOURS OPERATION

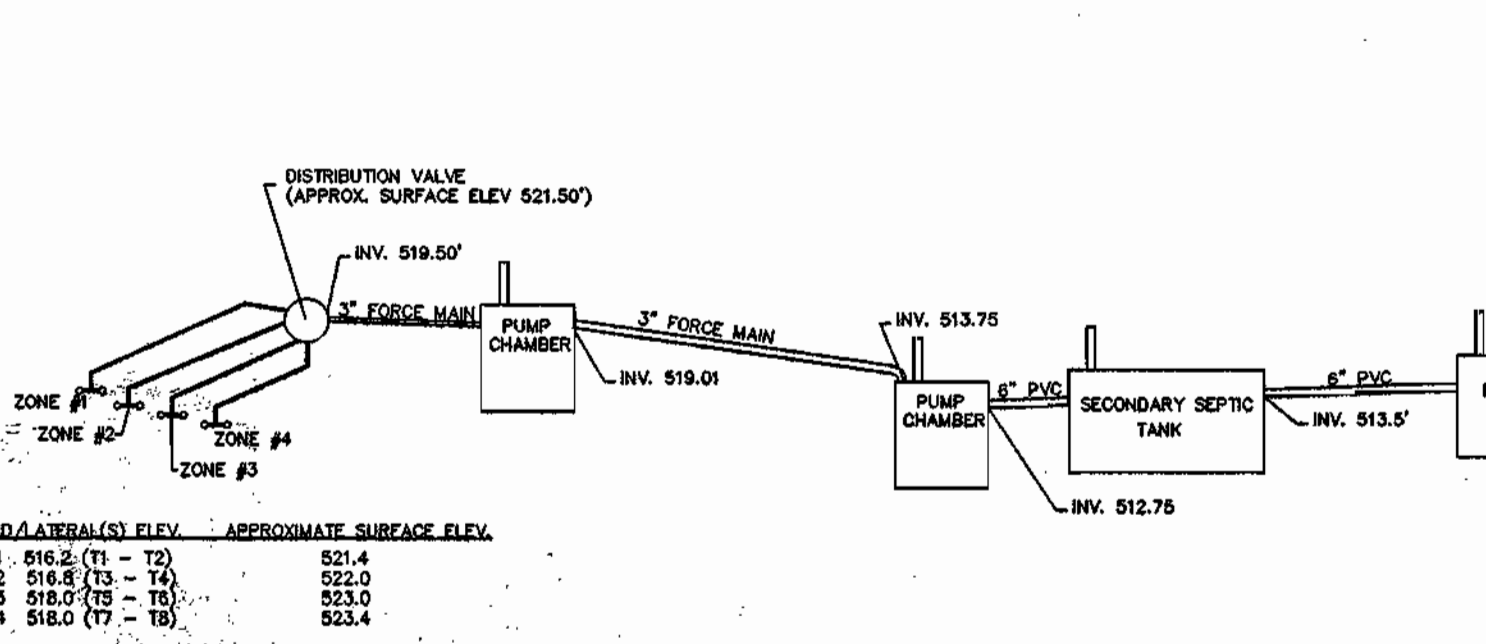
SCHOOL = 1995 / 6 HRS = 332.5 GAL (9am - 3pm)
PARSONAGE = 450 / 12 HRS = 37.5 GAL (7am - 5pm)
365.0 GAL/HR. AVERAGE (9am - 3pm)

THE LIFT STATION IS DESIGNED TO DELIVER (DOSE) 370 GALLONS PER EVENT TO THE DISTRIBUTION TANK. TO COMPENSATE FOR EXPECTED DRAINBACK OF THE FORCE MAIN, 518 GALLONS MUST BE PUMPED TO GET 370 GALLONS DELIVERED (ACTUAL DOSE = 518 GAL. TO NET 370 GAL.)

THE PER MINUTE DELIVERY VOLUME OF 60 GALLONS WAS SELECTED AND PUMP CURVES ENTERED AT 15.52' OF TOTAL DYNAMIC HEAD (TDH): STATIC LIFT: 508.16' (PUMP OFF) TO 519.01' (DISTRIBUTION CHAMBER INLET) = 9.85 FT.
FRICTION HEAD: 3" PIPE @ 60 GPM = 0.81' 100' OF PIPE = 3.13'
= 0.54'
= 2.0'

19 COUPLINGS AND 4 - 90° BENDS
OPERATING PRESSURE (SELECTED)

DELIVERY RATE SELECTED: 60 GPM
SEE PUMP CURVES @ 15.52' TDH AND 60 GPM
EVENT COUNTER AND ELAPSED TIME METER ALLOW MEASUREMENT OF SYSTEM PERFORMANCE.



TYPICAL SYSTEM PROFILE
NOT TO SCALE

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

APPROVED: Howard County Department of Planning and Zoning

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 6/18/03

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 6/18/03

DIRECTOR DATE 6/18/03

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS.

PERRY BOVENSTON M.D./J.M. DATE 6/18/03

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

GROUNDWATER APPROPRIATION PERMIT #

NOTES:

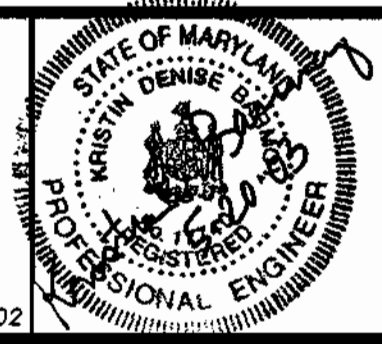
- 1) FEED TO PRIMARY TANK FROM SANCTUARY, PARSONAGE, SCHOOL WING, FELLOWSHIP HALL: 6" SCH. 40 PVC PIPE.
- 2) FEED FROM PRIMARY TANK TO SECONDARY TANK: 4" PVC SCH. 40 PIPE.
- 3) FEED FROM SECONDARY TANK TO LIFT CHAMBER: 4" PVC SCH. 40 PIPE.
- 4) PRIMARY TANK WILL HAVE MANHOLE RISERS WITH 24" ALUMINUM HATCH ABOVE INLET PIPE AND EFFLUENT FILTER LOCATED AT OUTLET.
- 5) SECONDARY TANK WILL HAVE MANHOLE RISERS WITH 24" ALUMINUM HATCH ABOVE INLET PIPE.
- 6) PUMP TANK WILL HAVE MANHOLE RISER WITH 36"x30" CAST IN ALUMINUM HATCH ABOVE PUMP ACCESS OPENING.
- 7) DUPLEX, LIFT/TRANSPORT STATION (1/2 HP, 230 V, 1 PHASE), DUPLEX LOW PRESSURE DISTRIBUTION PUMP STATION (1 HP MOTORS, 230 V, 1 PHASE) WITH FLOAT SWITCHES - HIGH WATER ALARM FLOATS MUST BE WIRED TO AN UNSHARED INDIVIDUAL CIRCUIT.
- 8) ALL TANKS SHOWN HEREON MANUFACTURED BY MONARCH PRODUCTS COMPANY, INC.
- 9) USE NO GRAVEL IN SUPPLY LINE TRENCHES (TAMP BASE IF NEEDED).
- 10) BUREAU OF ENVIRONMENTAL HEALTH REQUIRES MEASUREMENT OF EFFLUENT FLOW.
- 11) THE DISTRIBUTION VALVE SHALL BE LOCATED IN A WATER METER VALVE BOX (GARSON INDUSTRIES - HOPE 19" HIGH, 23" WIDE 36" LONG) OR EQUIVALENT EQUAL.
- 12) SEWAGE DISPOSAL AREA SEPARATION DISTANCES COMPLY WITH COMAR 26.04.02.04.1.
- 13) EACH PUMPING ARRANGEMENT HAS ITS OWN ELECTRICAL CONTROL PANEL.

MARYLAND LAND DESIGN, INC.
CONSULTING ENGINEERS AND LAND PLANNERS

2001 MEADOW DRIVE
WESTMINSTER, MARYLAND 21158
TELEPHONE: (410) 857-0210 FAX: (410) 840-0143

PROFESSIONAL ENGINEER

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REVISIONS

NO.	DATE	DESCRIPTION

PLAN PREPARATION

DRAWN BY:	DATE:
DAB	10 MAY 2002

DESIGNED BY: DAB **FILE NO.:** 2002-23

CHECKED BY: KDB **DRAWING NO.:**

SEWAGE DISPOSAL SYSTEM DETAILS

MT. ZION METHODIST CHURCH
SITUATED ON MD 216 - SCAGGSVILLE ROAD
LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
AS NOTED

SHEET NO.
14 OF 14

MARYLAND LAND DESIGN, INC.

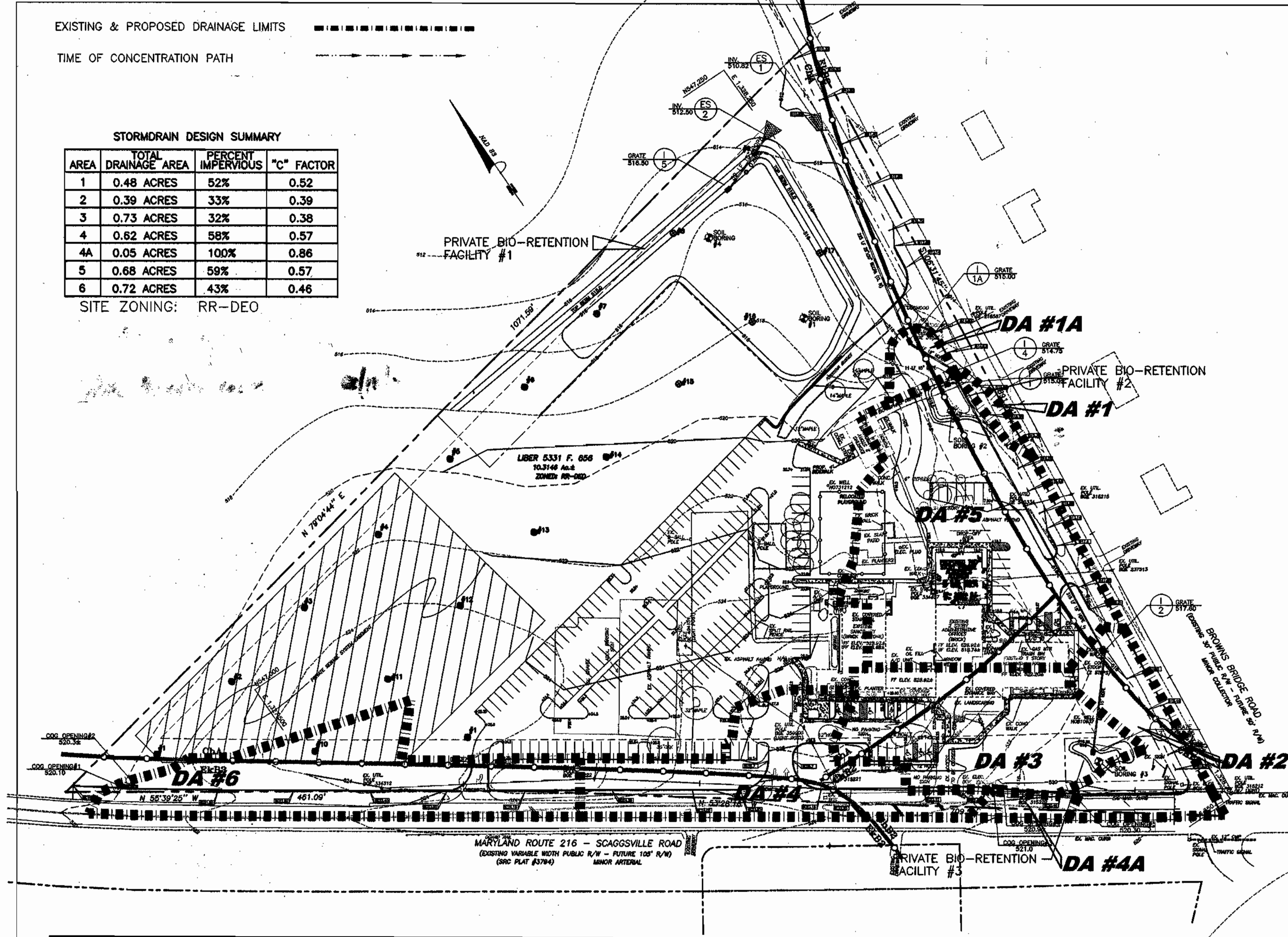
EXISTING & PROPOSED DRAINAGE LIMITS

TIME OF CONCENTRATION PATH

STORMDRAIN DESIGN SUMMARY

AREA	TOTAL DRAINAGE AREA	PERCENT IMPERVIOUS	"C" FACTOR
1	0.48 ACRES	52%	0.52
2	0.39 ACRES	33%	0.39
3	0.73 ACRES	32%	0.38
4	0.62 ACRES	58%	0.57
4A	0.05 ACRES	100%	0.86
5	0.68 ACRES	59%	0.57
6	0.72 ACRES	43%	0.46

SITE ZONING: RR-DEO



STORM DRAIN DRAINAGE AREA MAP
SCALE: 1" = 60'

Plans for S.W.M. construction, soil erosion and sediment control meet 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

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
HOWARD COUNTY HEALTH DEPARTMENT

DATE

PROPOSED DRAINAGE LIMITS

PROPOSED TIME OF CONCENTRATION PATH

SOILS BOUNDARY

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 HYDROLOGIC SOILS GROUP C

BIO-RETENTION FACILITY #1 SUMMARY TABLE:

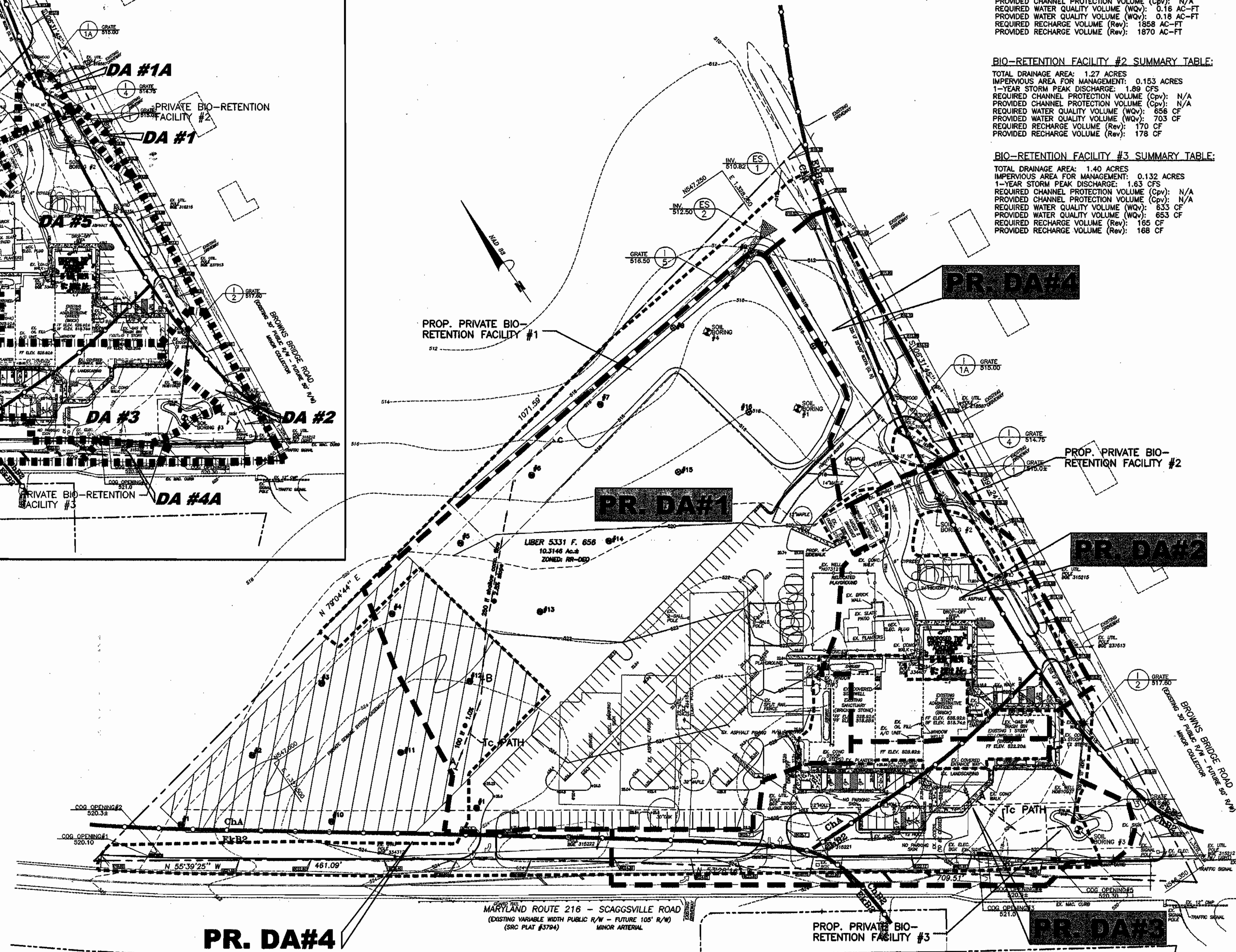
TOTAL DRAINAGE AREA: 4.93 ACRES
IMPERVIOUS AREA FOR MANAGEMENT: 1.91 ACRES
1-YEAR STORM PEAK DISCHARGE: 4.5 CFS
REQUIRED CHANNEL PROTECTION VOLUME (Cpv): N/A
PROVIDED CHANNEL PROTECTION VOLUME (Cpv): N/A
REQUIRED WATER QUALITY VOLUME (WQV): 0.16 AC-FT
PROVIDED WATER QUALITY VOLUME (WQV): 0.18 AC-FT
REQUIRED RECHARGE VOLUME (Rev): 1858 AC-FT
PROVIDED RECHARGE VOLUME (Rev): 1870 AC-FT

BIO-RETENTION FACILITY #2 SUMMARY TABLE:

TOTAL DRAINAGE AREA: 1.27 ACRES
IMPERVIOUS AREA FOR MANAGEMENT: 0.153 ACRES
1-YEAR STORM PEAK DISCHARGE: 1.88 CFS
REQUIRED CHANNEL PROTECTION VOLUME (Cpv): N/A
PROVIDED CHANNEL PROTECTION VOLUME (Cpv): N/A
REQUIRED WATER QUALITY VOLUME (WQV): 656 CF
PROVIDED WATER QUALITY VOLUME (WQV): 703 CF
REQUIRED RECHARGE VOLUME (Rev): 170 CF
PROVIDED RECHARGE VOLUME (Rev): 178 CF

BIO-RETENTION FACILITY #3 SUMMARY TABLE:

TOTAL DRAINAGE AREA: 1.40 ACRES
IMPERVIOUS AREA FOR MANAGEMENT: 0.132 ACRES
1-YEAR STORM PEAK DISCHARGE: 1.63 CFS
REQUIRED CHANNEL PROTECTION VOLUME (Cpv): N/A
PROVIDED CHANNEL PROTECTION VOLUME (Cpv): N/A
REQUIRED WATER QUALITY VOLUME (WQV): 633 CF
PROVIDED WATER QUALITY VOLUME (WQV): 653 CF
REQUIRED RECHARGE VOLUME (Rev): 165 CF
PROVIDED RECHARGE VOLUME (Rev): 168 CF

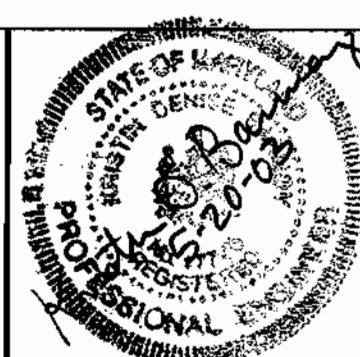


STORMWATER MANAGEMENT DRAINAGE AREA MAP
SCALE: 1" = 50'

MARYLAND LAND DESIGN, INC.
CONSULTING ENGINEERS AND LAND PLANNERS

WESTMINSTER, MARYLAND 21158
TELEPHONE: (410) 857-0210 FAX: (410) 840-0143

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REVISIONS

NO.	DATE	DESCRIPTION

PLAN PREPARATION

DRAWN BY: DAB	DATE: 10 MAY 2002
DESIGNED BY: DAB	FILE NO. 2002-23
CHECKED BY: KDB	

DRAINAGE AREA MAPS

MT. ZION METHODIST CHURCH
SITUATED ON MD 216 - SCAGGSVILLE ROAD
LIBER 5331 FOLIO 656 FIFTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE

as noted

SHEET NO.
16 OF 16

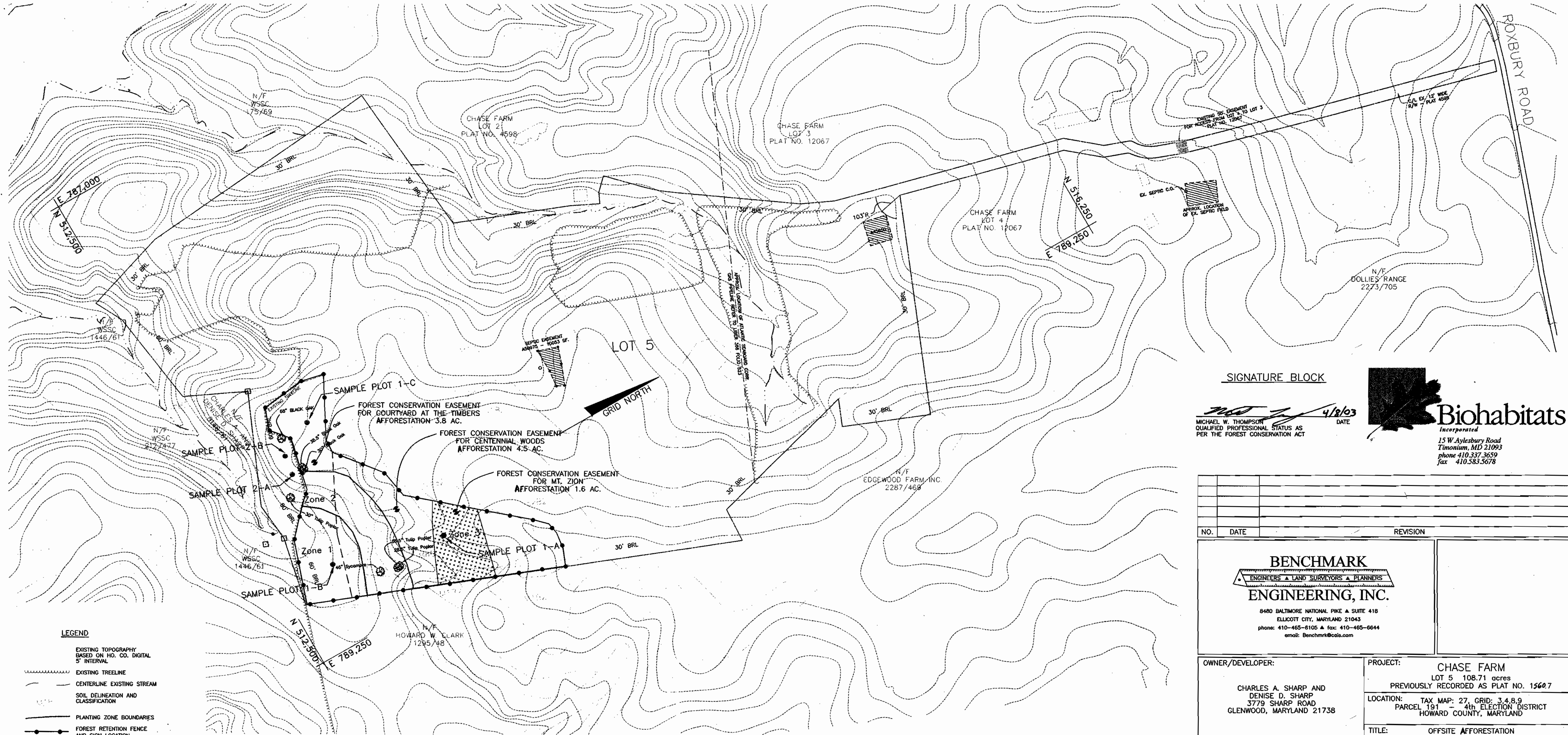
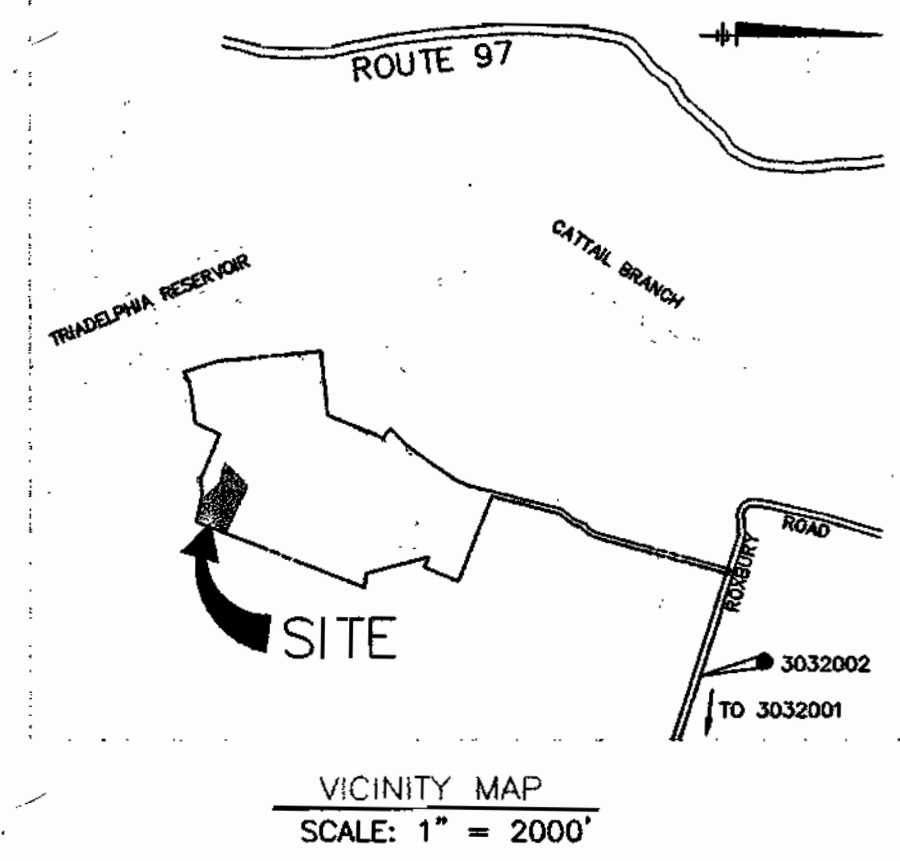
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DIRECTOR, DPZ
Deborah A. Bayliss 4/16/03

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Chris Harman 4/15/03
 CHIEF, DIVISION OF LAND DEVELOPMENT
Mark D. ... 4/16/03
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

SOIL CHART			
SOIL SERIES	Series Abbr.	% SLOPES	K Value >.35
Glenville silt loam	GnB2	3-8%	Yes
Manor very stony loam	MnD	3-25%	Yes
Manor loam	M1B2	3-8%	Yes
Manor loam	M1C2	8-15%	Yes
Manor loam	M1C3	8-15%	Yes
Manor loam	M1D2	15-25%	Yes

LINE TABLE		
LINE	LENGTH	BEARING
L51	213.84	N41°12'17"E
L52	82.94	S65°38'23"E
L53	120.95	S65°23'05"E
L54	84.92	S66°42'49"E
L55	215.95	S21°28'24"W
L56	116.83	N66°42'33"W
L57	149.31	N64°46'23"W
L58	96.05	N59°43'58"W

Afforestation Area	ID #	Area
Mt. Zion Church	SDP-02-154	1.6 acres
Total Afforestation Area		11.6 acres
Afforestation Area Used		1.6 acres
Afforestation Area Remaining		10.0 acres



SIGNATURE BLOCK

Michael W. Thompson 4/16/03
 MICHAEL W. THOMPSON
 QUALIFIED PROFESSIONAL STATUS AS
 PER THE FOREST CONSERVATION ACT

- LEGEND
- EXISTING TOPOGRAPHY BASED ON HO. CO. DIGITAL 5' INTERVAL
 - EXISTING TREELINE
 - CENTERLINE EXISTING STREAM
 - SOIL DELINEATION AND CLASSIFICATION
 - PLANTING ZONE BOUNDARIES
 - FOREST RETENTION FENCE AND SIGN LOCATION
 - SLOPES > 15%
 - PROPOSED REAFFORESTATION EASEMENT

PLAN VIEW
 SCALE: 1" = 200'

NO.	DATE	REVISION

BENCHMARK
 ENGINEERS • LAND SURVEYORS • PLANNERS
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE • SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 phone: 410-465-6105 • fax: 410-465-6644
 email: Benchmark@cois.com

OWNER/DEVELOPER: CHARLES A. SHARP AND DENISE D. SHARP 3779 SHARP ROAD GLENWOOD, MARYLAND 21738	PROJECT: CHASE FARM LOT 5 108.71 acres PREVIOUSLY RECORDED AS PLAT NO. 15607
LOCATION: TAX MAP: 27 GRID: 3,4,8,9 PARCEL 191 4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE: OFFSITE AFFORESTATION FOREST CONSERVATION PLAN FOR MT. ZION CHURCH	
DATE: APRIL 4, 2003	PROJECT NO. 1528
DESIGN: MWT	DRAFT: MWT
CHECK: MWT	SCALE: AS SHOWN
SHEET 17 OF 18	

Mt. Zion Church Off-Site Afforestation										Zone 1	Zone 2	Zone 3		
										0	0	1.6		
Overall Spacing (feet off center)	Quantity per acre	Zone 1		Zone 2		Zone 3		Total Species Quantity	Vegetation Strata/ Species Name	Common Name	Unit	Size	Spacing Type	Individual Spacing (ft.)
		Frequency (%)	Species Quantity	Frequency (%)	Species Quantity	Frequency (%)	Species Quantity							
11	350								TREES					
		25	0	20	0	25	140	140	Acer rubrum	Red maple	CON	2-7 FT	Random	34
		10	0	20	0	10	56	56	Sassafras albidum	Sassafras	CON	2-7 FT	Random	54
		25	0	30	0	35	196	196	Prunus serotina	Black Cherry	CON	2-7 FT	Random	34
		10	0	10	0	10	56	56	Quercus velutina	Black Oak	CON	2-7 FT	Random	54
		10	0		0		0	0	Liriodendron tulipifera	Tulip Poplar	CON	2-7 FT	Random	54
		10	0		0		56	56	Ilex opaca	American Holly	CON	2-7 FT	Random	54
		10	0		0		0	0	Platanus occidentalis	Sycamore	CON	2-7 FT	Random	54
		0	0	10	0	10	56	56	Nyssa sylvatica	Black Gum	CON	2-7 FT	Random	54
		0	0		0		0	0	Cornus florida	Flowering Dogwood	CON	2-7 FT	Random	54
		0	0	10	0	10	0	0	Fagus grandifolia	Beech	CON	2-7 FT	Random	54
		100	0	100	0	100	560	560	= Total					

*Quantities are intended to supplement existing vegetation. Actual numbers and sizes to be determined following initial Multiflora Rosa control efforts.

MT. ZION CHURCH FOREST CONSERVATION CALCULATIONS

BASIC SITE DATA	ACRES
GROSS SITE AREA	10.31
AREA WITHIN 100 YEAR FLOODPLAIN	0.0
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL (IF APPLICABLE)	0.0
NET TRACT AREA	10.31
LAND USE CATEGORY	IDA

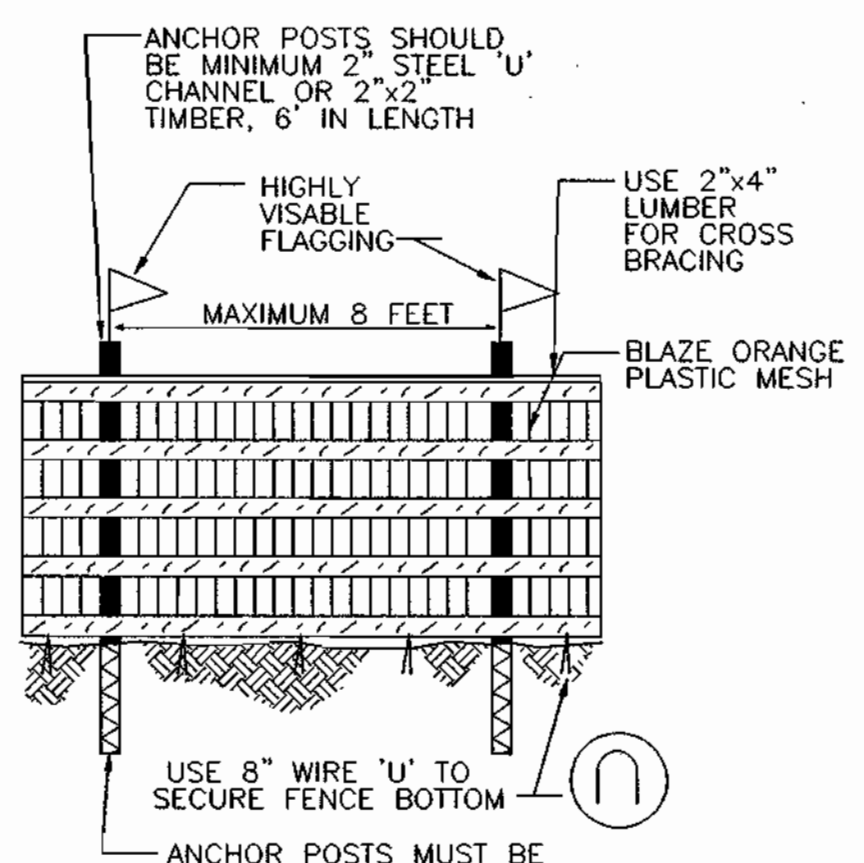
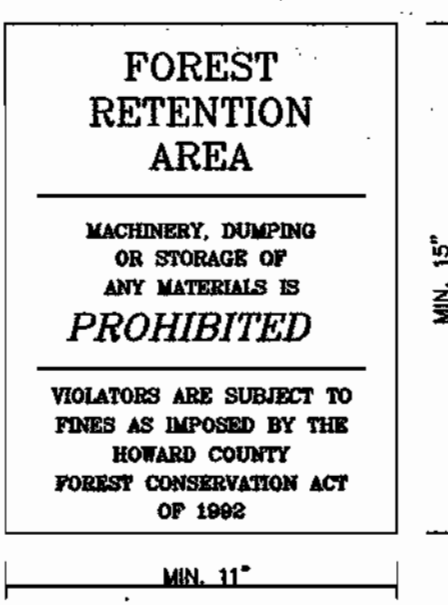
INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	10.31
B. REFORESTATION THRESHOLD (1% x A)	N/A
C. AFFORESTATION MINIMUM (15% x A)	1.55
D. EXISTING FOREST ON NET TRACT AREA	0.0
E. FOREST AREAS TO BE CLEARED	0.0
F. FOREST AREAS TO BE RETAINED	0.0

REFORESTATION CALCULATIONS	
A. NET TRACT AREA	10.31
B. REFORESTATION THRESHOLD (1% x A)	N/A
C. EXISTING FOREST ON NET TRACT AREA	0.0
D. FOREST AREAS TO BE CLEARED	0.0
E. FOREST AREAS TO BE RETAINED	0.0
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	0.0
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	0.0
H. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	0.0

PLANTING REQUIREMENTS	
REFORESTATION REQUIRED	0.0
AFFORESTATION REQUIRED	1.55
TOTAL PLANTING REQUIRED	1.55
PLANTING PROPOSED ON-SITE	0.0
PLANTING PROVIDED FOR OFF-SITE	1.55

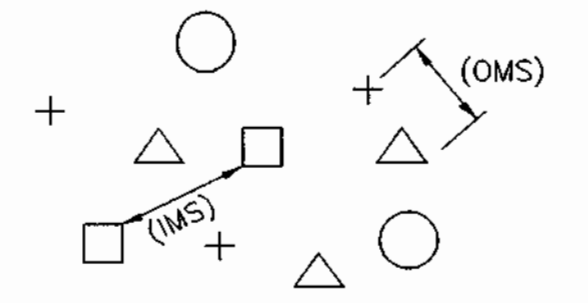
PLANTING NOTES:

- 1.) Prior to planting the site will be treated for the removal of Multiflora Rose. Selective mowing will be utilized to preserve existing whips and seedlings naturally regenerating in the afforestation area. Upon the completion of mowing operations, selective treatment with glyphosate will be conducted to ensure control of the existing Multiflora Rose.
- 2.) Planting stock should be 2' to 7' container grown stock.
- 3.) Only composted mulch may be used.
- 4.) Plant material should be planted an average of 11ft. on center.
- 5.) Site improvements including structures, and driveways, etc., are not located within the afforestation area.
- 6.) Environmentally sensitive areas within the afforestation area consist solely of steep slopes.
- 7.) Care should be taken to avoid damage to existing trees and saplings during planting activities.
- 8.) Due to site constraints at the Mt. Zion Church site, off-site afforestation is being provided at the Chase Farm property.
- 9.) A post construction protection and management program is required to ensure a high probability of survival, necessary for release of surety.
- 10.) Post construction protection will be for a minimum of 2 growing seasons.
- 11.) The survival rate for afforestation areas shall be 75% of the total number of trees per acre planted under the approved plan.
- 12.) The afforestation areas created by an approved plan must be permanently protected and recorded as non-developable conservation easements.
- 13.) The Forest Conservation Easement has been established to fulfill the requirements of Section 16.1200 of the Howard County Code and Forest Conservation Act. No clearing, grading or construction is permitted within the Forest Conservation Easement; however, Forest Management Practices as defined in the Deed of Forest Conservation Easement are allowed.
- 14.) Developer reserves unto itself, its successors and assigns all easements shown on this plan for water, sewer, storm drainage, other public utilities and forest conservation (designated as "Forest Conservation Area"), located in, on, over, and through lots/parcels, any conveyances of the aforesaid lots/parcels shall be subject to the easements herein reserved, whether or not expressly stated in the deed(s) conveying said lot(s)/parcels. Developer shall execute and deliver deeds for the easements herein reserved to Howard County with a metes and bounds description of forest conservation area. Upon completion of the public utilities and their acceptance by Howard County, and in the case of the forest conservation easement(s), upon completion of the developer's obligations under the forest conservation installation and maintenance agreement executed by the developer and the County, and the release of the developer's surety posted with said agreement. The County shall accept the easements and record the deed(s) of easement in the Land Records of Howard County.
- 15.) This plat complies with the requirements of Section 16.1200 of the Howard County Code for Forest Conservation by providing the necessary afforestation requirements and protective devices off-site at the Chase Farm Property.
- 16.) This plat complies with the requirements of Section 16.1200 of the Howard County Code for Forest Conservation. No retention credit can be achieved on-site. Proposed forest clearing generates a afforestation requirement of 1.6 acres to be satisfied off-site within the existing Forest Conservation Easement on Chase Farm, Lot 5. Surety in the amount of \$34,948.00 (1.6 acres X \$50 per sq.ft.) shall be provided with the DPW, Developer's Agreement.



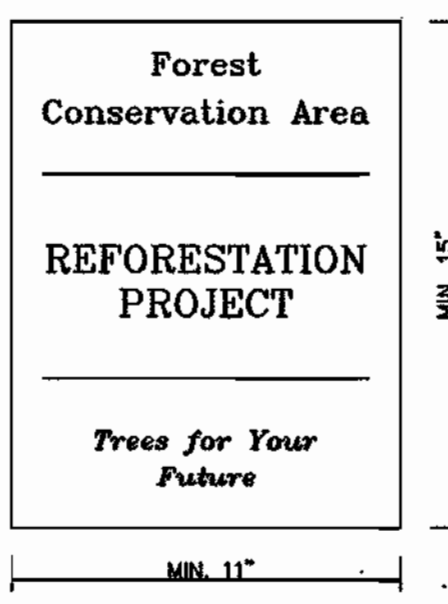
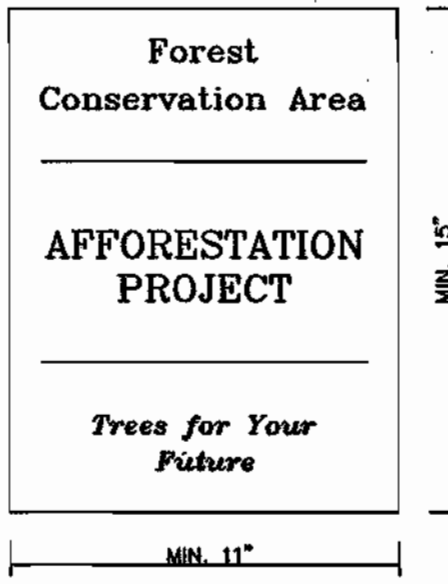
- NOTES:
1. FOREST PROTECTION DEVICE ONLY.
 2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICES.
 4. ROOT DAMAGE SHOULD BE AVOIDED.
 5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION
BLAZE ORANGE PLASTIC FENCE
Not To Scale

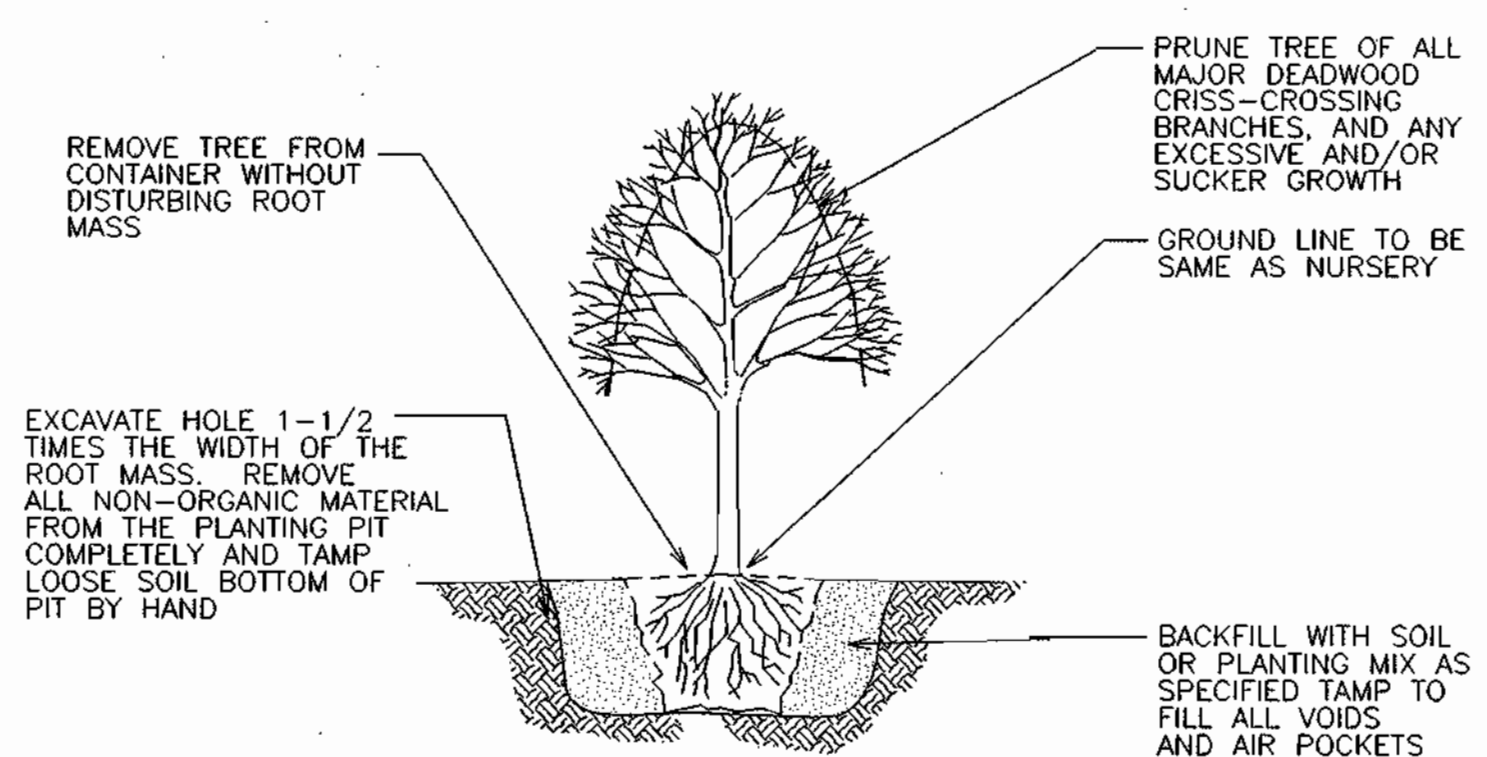


OMS-- AN OVERALL MINIMUM SPACING DISTANCE (OMS) IS ASSIGNED TO THE PLANTING CONFIGURATION (SEE PLANT SCHEDULE)
IMS-- AN INDIVIDUAL MINIMUM SPACING DISTANCES (IMS) IS ASSIGNED TO EACH INDIVIDUAL SPECIES (SEE PLANT SCHEDULE)

PLANT SPACING-- RANDOM
PLAN VIEW
Not To Scale



SIGNAGE
NOT TO SCALE



TREE PLANTING-- CONTAINER GROWN
Not To Scale

MT. ZION CHURCH SITE DATA	ACRES
GROSS AREA:	10.31
EX. LOTS/UNFORESTED PRESERVATION PARCEL/FLOODPLAIN:	0.0
NET TRACT AREA (NTA):	10.31
EXISTING FOREST ON NTA:	0.0
AFFORESTATION THRESHOLD:	1.55
FOREST TO BE CLEARED:	0.0
FOREST TO BE RETAINED (NTA):	0.0
AFFORESTATION REQUIRED:	1.55
AFFORESTATION PROPOSED:	1.55

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Dan S. Cagle 4/10/03

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Chris Harvath 6/13/03
Chris Harvath 6/12/03

SIGNATURE BLOCK

Michael W. Thompson 4/10/03
MICHAEL W. THOMPSON DATE
QUALIFIED PROFESSIONAL STATUS AS PER THE FOREST CONSERVATION ACT

NO.	DATE	REVISION
BENCHMARK ENGINEERS • LAND SURVEYORS • PLANNERS ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE A SUITE 418 ELLICOTT CITY, MARYLAND 21043 phone: 410-465-6105 & fax: 410-465-6644 email: Benchmark@cois.com		
OWNER/DEVELOPER:		PROJECT:
CHARLES A. SHARP AND DENISE D. SHARP 3779 SHARP ROAD GLENWOOD, MARYLAND 21738		CHASE FARM LOT 5 108.71 acres PREVIOUSLY RECORDED AS PLAT NO. 15607
LOCATION:		TITLE:
TAX MAP: 27, GRID: 3,4,8,9 PARCEL 191 - 4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND		OFFSITE AFFORESTATION FOREST CONSERVATION PLAN FOR MT. ZION CHURCH
DATE:	APRIL 4, 2003	PROJECT NO. 1528
DESIGN:	MWT	DRAFT: MWT
CHECK:	MWT	SCALE: N/A
SHEET 18 OF 18		