

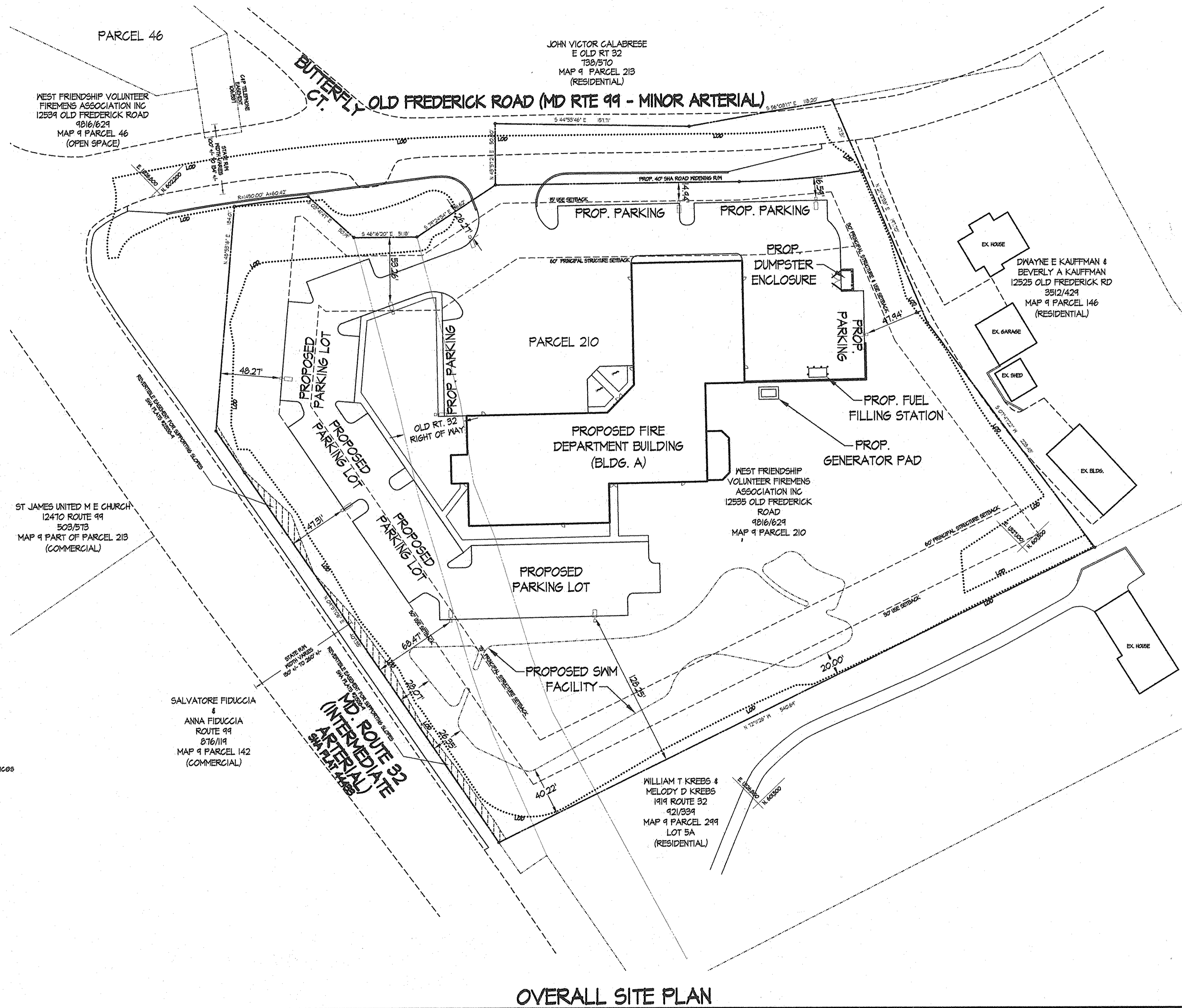
**GENERAL NOTES**

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
  - The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1850 at least five (5) working days prior to the start of work.
  - The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
  - Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
  - All plan dimensions are to face of curb unless otherwise noted.
  - The existing topography was obtained from a field run survey with 2 foot contour intervals on May 5, 2006 and revised May 24, 2006 performed by Shanabarger and Lane.
  - The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 15CA and 0911 were used for this project.
  - Water is private.
  - Sewer is private.
  - Stormwater Management is provided by an on-site infiltration basin (Rev, Mqy, CFV, Op, and Gf management). This facility is publicly maintained.
  - Existing utilities are based on surveys performed by Shanabarger and Lane and record drawings; the contractor must determine the exact location of utilities by digging test pits, by hand, at all crossings prior to construction.
  - There are no floodplains on this site based on the FEMA National Flood Insurance Program, Flood Insurance Rate Map, Howard County, Maryland, Panel 4 of 45, Map Number 24004-HC-4 B. (Map not printed by FEMA)
  - There are no wetlands, wetland buffers, streams or stream buffers located on this site.
  - No traffic study is required for this project.
  - This site is exempt from the APFO test in accordance with DMV III, Section 4-11.B.2.
  - The property boundaries shown on these plans have been recorded in deed liber 4916, folio 624.
  - No grading, removal of vegetative cover or trees, or placement of new structures is permitted within the limits of wetlands, streams, or their required buffers and forest conservation assessment areas.
  - This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual.
  - This site is exempt from the requirements of Section 16.1200 of the Howard County Code and the Forest Conservation Manual, based on Appendix O of the Howard County Forest Conservation Manual. This appendix exempts Capital Projects being constructed on a single lot where there will be no more than 40,000 square feet of forest clearing.
  - All exterior light fixtures shall be oriented to direct light downward on-site, away from adjoining residential properties and public roads in accordance with Section 134.D of the Howard County Zoning Regulations. Light trespass onto adjoining properties shall be limited to 0.1 foot candles.
  - There are no cemeteries or grave sites on the subject property.
  - This project is subject to the amended fifth edition of the Subdivision and Land Development Regulations and the Zoning Regulations as amended under council bill #45-2003. Development or construction must comply with setback and buffer regulations in effect at the time of submission of the Site Development Plan, waiver petition application or building/grading permit.
  - All utilities constructed within fill material must be installed in accordance with AASHTO-T180.
  - Building "A" shall have a sprinkler system installed in accordance with applicable code. It is the intention of the County, should the Council enact Council Resolution CR10-2006, that the public water system be extended to the site for fire-fighting capabilities only. At such time as the Council enacts this resolution, the public water line extension will be designed and the SDP will be red-lined to reflect this fire fighting water supply service (including a fire hydrant).
- ABBREVIATIONS:**
- |      |                       |        |   |
|------|-----------------------|--------|---|
| PROP | Proposed              | DIP    | Ductile iron pipe, class 54 unless otherwise noted          |
| EX   | Existing              | PVC    | Polyvinyl chloride pipe, schedule 40 unless otherwise noted |
| BIT  | Bituminous            | HDPE   | High Density Polyethylene Pipe                              |
| CONC | Concrete              | CMP    | Corrugated Metal Pipe, aluminum unless otherwise noted      |
| MH   | Manhole               | RCP    | Reinforced concrete pipe, class III unless otherwise noted  |
| SD   | Storm Drain           | C&G    | Concrete curb & gutter, as detailed                         |
| I    | Inlet                 | INV    | Invert elevation  |
| SAN  | Sanitary Sewer        | FTE    | Finished floor elevation                                    |
| TC   | Top of curb           | BC     | Bottom of curb  |
| TS   | Top of step           | BS     | Bottom of step  |
| PS   | Parking space         | HC     | Handicapped parking space                                   |
| PC   | Point of Curvature    | TYP    | Typical   |
| PT   | Point of Tangency     | L.O.D. | Limit of Disturbance  |
| TM   | Top of Wall           | BN     | Bottom of Wall  |
| TPF  | Tree Protection Fence | R.O.W. | Right-of-way  |
- The subject property is zoned RR-DEO per the 02/02/04 comprehensive zoning plan.
  - No wetlands, wetland buffers, streams, stream buffers, and/or steep slopes 25% or greater are proposed to be disturbed as part of this project.
  - Trash will be picked-up from a proposed on-site dumpster.
  - There are steep slopes on this site, however they are located within a Reversible Easement for Supporting Slopes. The reversible easement for supporting slopes was in force during relocation of MD Route 32 and is recorded on SHA Plat Nos. 21538-4 and therefore shown on these plans. Since construction on MD Route 32 is complete and the slopes stable, the easement should have reverted back to the property owner. Site Resources, Inc. could not verify the reversion back to the property owner. This reversible easement for supporting slopes has no effect on this development.
  - A Knox box has been shown on these plans for reference only. See architectural plans for specifications & details.
  - Any additional impervious surfaces added to this plan will require Stormwater management to be reevaluated.
  - Howard County Council Resolution No. 123-2006, allowing the principal structure setback to be reduced from 75' to 60' and allowing the use setback from public street rights-of-way to be reduced from 50' to 15' was approved on October 3, 2006. Howard County Council Resolution No. 110-2006, allowing the extension of a water line to the site for fire suppression use only was approved on October 3, 2006. See copies of approved resolutions on sheet C0.03.
  - Parking requirements were determined using the following methodology:  
 Typical 30 personnel fire station @ 1 space per person = 30 spaces  
 Full classroom seating in training room 2,110 sf / 20 sf / 2 seats per space = 60 spaces  
 Miscellaneous spaces = 10 spaces  
 Rounded up to 110 spaces

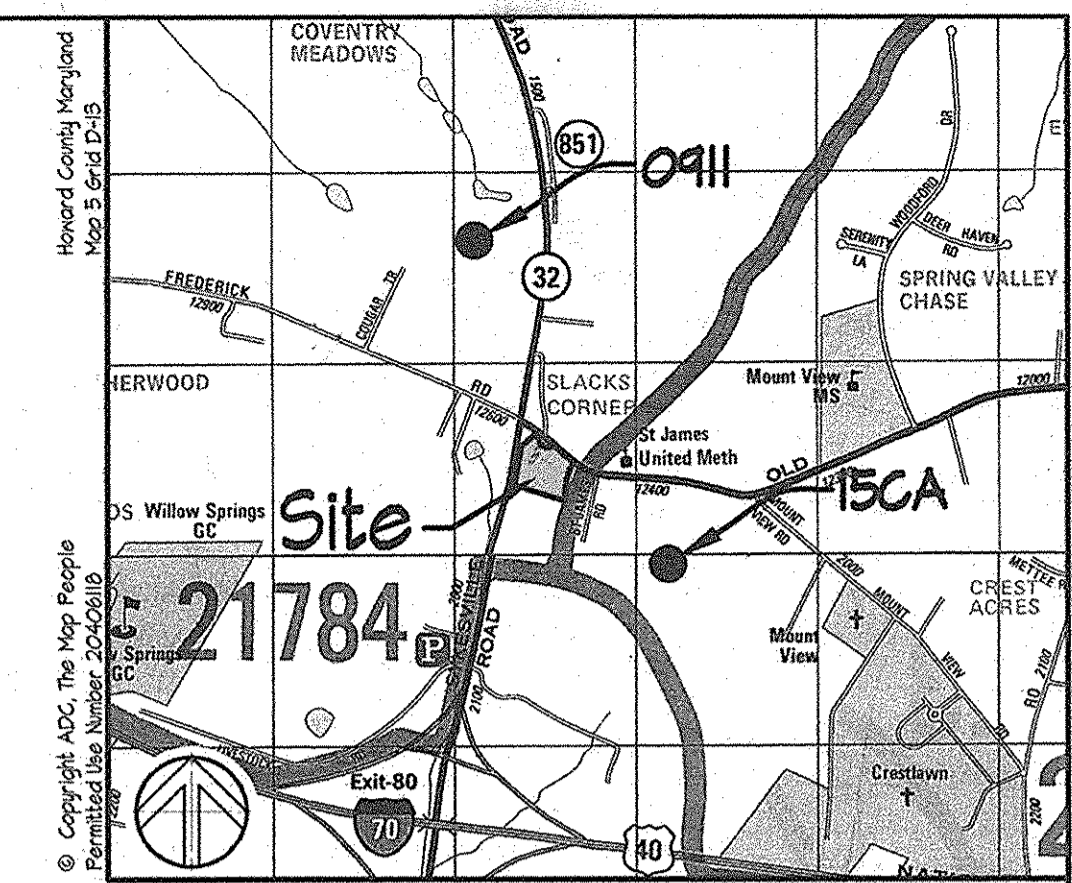
**SITE ANALYSIS DATA CHART**

a. Total Project Area =	6.08 Ac / 264,125 SF
b. Limit of Disturbed Area =	5.81 Ac / 253,228 SF
c. Present Zoning Designation =	RR-DEO
d. Proposed Use for Site and Structures =	Volunteer Fire Station
e. Total Square Feet of Floor Area by Use:	
Administration/Office =	0 sf / 3,146 sf / 3,146 sf
Bunk/Dormitory =	0 sf / 2,465 sf / 2,465 sf
Training/Classroom =	0 sf / 2,582 sf / 2,582 sf
Storage/Mechanical =	0 sf / 4,642 sf / 4,642 sf
Apparatus Parking =	0 sf / 9,243 sf / 9,243 sf
Other (Halls, Kitchen, Dining, Library, Activity, Circulation) =	0 sf / 13,633 sf / 13,633 sf
Total =	36,361 sf
f. Maximum Number of Users at full build-out =	30 typ. 136 max.
g. Parking Spaces: (per fire dept.)	REQUIRED 110 PROVIDED 121
h. Handicap Parking Spaces:	5 6
i. Building Coverage on Site =	0.54 Ac and 4.70% of gross area

# CAPITAL PROJECT #F-5965



**OVERALL SITE PLAN**



**Vicinity Map** Scale: 1" = 2000'

BENCHMARKS					
MONUMENT	NORTHING	EASTING	ELEVATION	HORIZ. DATUM	VERT. DATUM
15CA	548862.63	1325413.75	515.45	NAD83(91)	NAVD83
0911	602694.30	1326821.46	652.65	NAD83(91)	NAVD83

**DRAWING INDEX**

SHEET #	DRAWING #	DRAWING TITLE
1 OF 21	C0.01	COVER SHEET
2 OF 21	C0.02	GENERAL NOTES & BUILDING ELEVATIONS
3 OF 21	C0.03	HOWARD COUNTY COUNCIL RESOLUTIONS
4 OF 21	C1.01	EXISTING CONDITIONS & DEMOLITION PLAN
5 OF 21	C2.01	LAYOUT/DETAIL REFERENCE PLAN
6 OF 21	C3.01	SITE DETAILS
7 OF 21	C3.02	RETAINING WALL DETAILS
8 OF 21	C3.03	RETAINING WALL DETAILS
9 OF 21	C4.01	PLANTING PLAN
10 OF 21	C4.02	PLANTING PLAN DETAILS
11 OF 21	C5.01	PROPOSED STORM DRAIN/WALE DRAINAGE AREA
12 OF 21	C5.02	STORM DRAIN PROFILES
13 OF 21	C5.03	SANITARY PROFILES
14 OF 21	C6.01	GRADING & SEDIMENT CONTROL PLAN
15 OF 21	C6.02	SEDIMENT CONTROL DETAILS
16 OF 21	C6.03	SEDIMENT CONTROL DETAILS
17 OF 21	C6.11	EXISTING TEMPORARY SWM DRAINAGE AREA MAP
18 OF 21	C6.12	PROPOSED TEMPORARY SWM DRAINAGE AREA MAP
19 OF 21	C7.01	EXISTING CONDITIONS DRAINAGE AREA MAP
20 OF 21	C7.02	PROPOSED DRAINAGE AREA MAP
21 OF 21	C7.10	STORMWATER MANAGEMENT POND PLAN
22 OF 21	C7.11	STORMWATER MANAGEMENT POND PROFILES
23 OF 21	C7.12	SWM POND PLANTING PLAN
24 OF 21	C7.13	SWM POND PLANTING PLAN DETAILS & NOTES
25 OF 21	C7.20	STORMWATER MANAGEMENT SPECIFICATIONS & GENERAL STORMWATER MANAGEMENT DETAILS
26 OF 21	C7.30	STORMWATER MANAGEMENT DETAILS / SOIL BORINGS
27 OF 21	C8.01	PAVING STRIPING & PROFILE PLAN
28 OF 28	C8.02	CROSS SECTIONS

**BUILDING INDEX**

PROPOSED STRUCTURES	IDENTIFIER
FIRE STATION BUILDING	A

**OWNERSHIP HISTORY**

MAP 9 PARCEL 46  
 NOVEMBER 24, 1941 172/390  
 KATIE E. SLACK TO SAMUEL D. SLACK & ETHEL L. SLACK

APRIL 11, 1972 549/7  
 ETHEL L. SLACK TO L. LOUISE SLACK, DORIS T. SLACK, AND MAYRENE H. SLACK

FEBRUARY 10, 2006 4816/624  
 L. LOUISE SLACK, DORIS T. SLACK, AND MAYRENE H. SLACK TO WEST FRIENDSHIP VOLUNTEER FIREMENS ASSOCIATION INC.

MAP 9 PARCEL 210  
 MARCH 5, 1970 521/124  
 JOHN L. CLARK TO ETHEL L. SLACK

NOVEMBER 15, 1981 1074/336  
 GEORGE W. SLACK TO L. LOUISE SLACK, DORIS T. SLACK, AND MAYRENE H. SLACK

FEBRUARY 10, 2006 4816/624  
 L. LOUISE SLACK, DORIS T. SLACK, AND MAYRENE H. SLACK TO WEST FRIENDSHIP VOLUNTEER FIREMENS ASSOCIATION INC.

**PERMIT INFORMATION CHART**

Subdivision Name	Section/Area	Lot/Parcel No.
West Friendship Volunteer Fire Station		210
Plat No. or L.P.	Grid #	Zoning
4816/624	23	RR-DEO
Water Code	Private	Sewer Code
	Private	Private

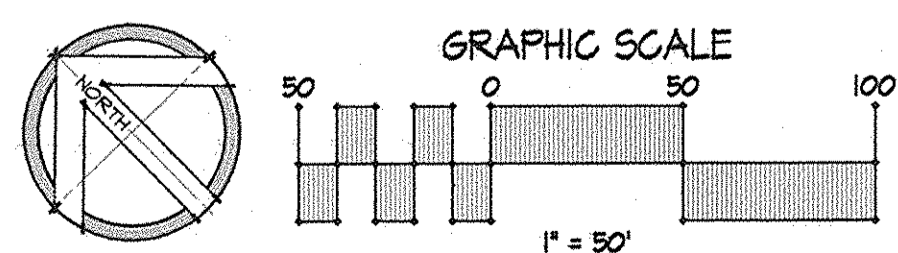
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

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

APPROVED: DEPARTMENT OF PLANNING & ZONING

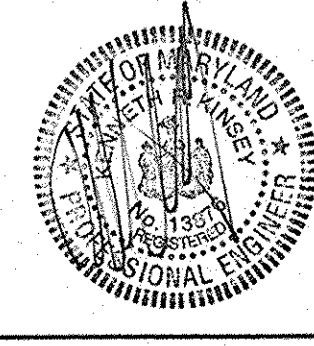
**PURPOSE AND INTENT**

This project will provide a fire station for the West Friendship Volunteer Fire Company. The station will consist of offices, training classrooms, bunk and dormitory rooms, and apparatus parking.



**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

**SITE RESOURCES, INC.**  
 LAND PLANNING / SITE DESIGN  
 14315 Jarrettsville Pike Phoenix, Maryland 21131  
 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com



DES. CRW	BY	NO.	REVISION	DATE
DRN: AM				
CHK: REM/KRK				
DATE: 12/08/06				

Cover Sheet

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5965, Howard County, Maryland

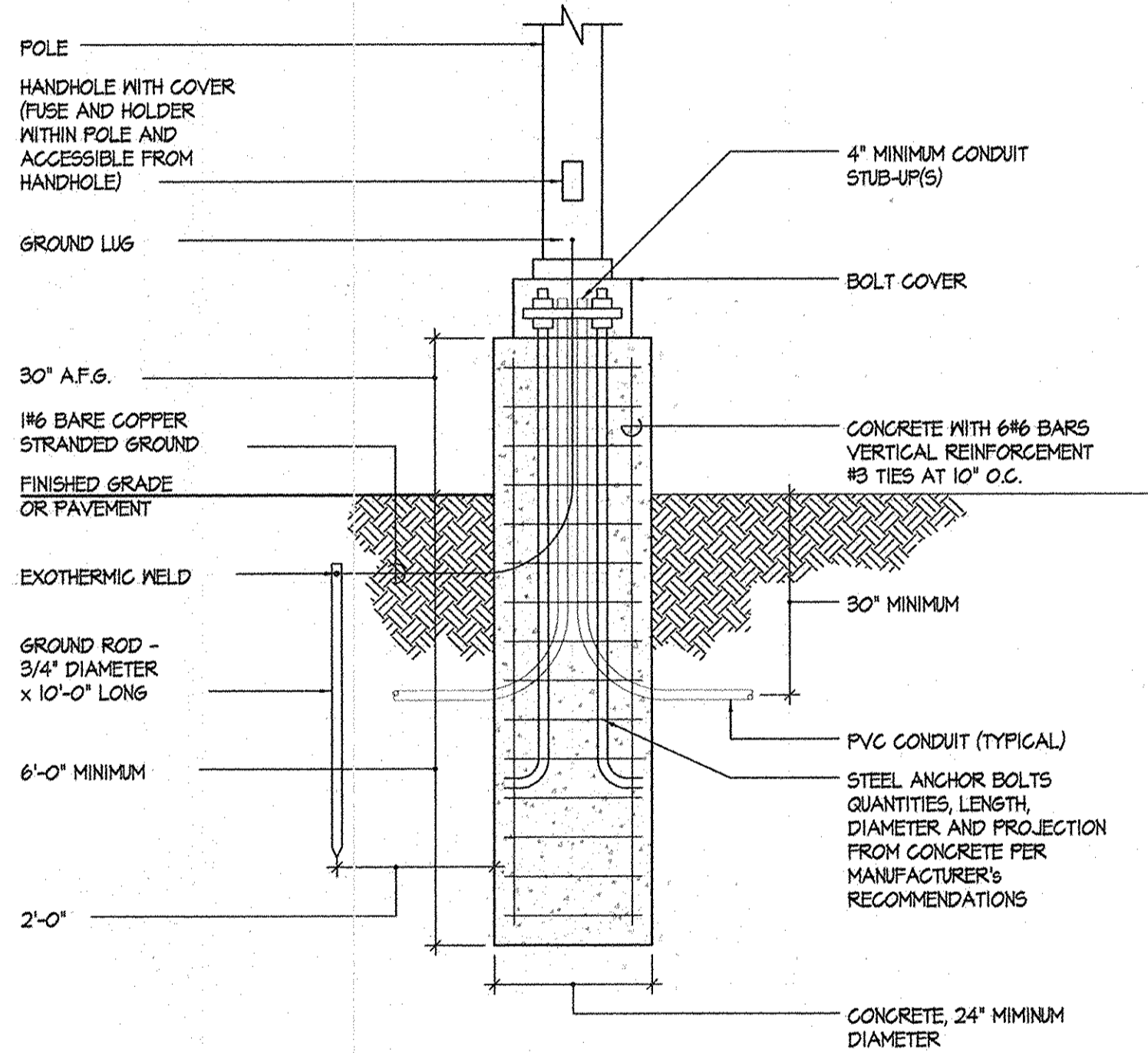
OWNER:  
 West Friendship Volunteer Firemens Association Inc.  
 12460 Frederick Rd  
 West Friendship, MD 21794  
 Phone: (410) 745-1234

ADDRESS / PERMIT INFORMATION:  
 12525 Old Frederick Rd., Sykesville MD 21784  
 PARCEL: 210  
 L: 4816 / F: 624  
 GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract 6030  
 WATER CODE: Private, SEWER CODE: Private

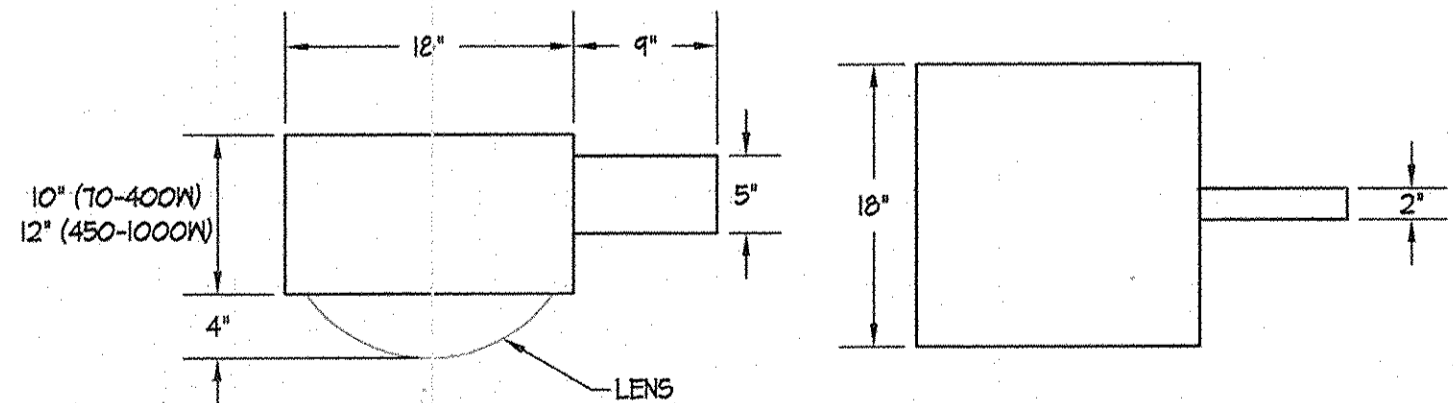
**LIGHTING FIXTURE SCHEDULE**

NOTE: VERIFY CEILING AND WALL CONSTRUCTION AND FINISHES WITH THE ARCHITECT'S DRAWINGS AND FINISH SCHEDULES FURNISH PROPER MOUNTING FRAMES, BRACKETS AND HARDWARE AS REQUIRED TO BE COMPATIBLE WITH ARCHITECTURAL FINISHES. MOUNTING HEIGHTS INDICATED ARE TO BOTTOM OF FIXTURE

TYPE	DESCRIPTION	LAMPS		MAX W.	MOUNTING	MANU. / MODEL NO. (OR APPROVED EQUAL)	
		VOLTS	NO.				
S1	MINI STYLE, H.I.D. WALL PACK WITH QUARTZ RESTRIKE SYSTEM. FINISH TO BE SELECTED BY ARCHITECT. U.L. LISTED FOR NET LOCATIONS.	277	1	50 WATT COATED METAL HALIDE	105	WALL MOUNTED AT 7'-6" A.F.S.	LITHONIA TRAC SERIES
S2	NOMINAL 8"x16" SEMI-CURVED SHAPE FLUORESCENT WALL SCONCE W/ ONE-PIECE DIE-CAST ALUM. HOUSING, 5/32" THICK IMPACT RESISTANT FLAT GLASS LENSES (UP AND DOWN), TYPE "356" DISTRIBUTION, HINGED FACEPLATE, SLOTTED FRONT AND INTEGRAL ELECTRONIC BALLAST. FINISH TO BE SELECTED BY ARCHITECT. U.L. LISTED FOR NET LOCATIONS.	277	2	28 WATT QUARTZ	75	WALL MOUNTED	COOPER LIGHTING INVUE, ENTRI SERIES ENV-L6
S3	15"x4"x5" QUARTZ FLOOD LIGHT WITH DIE-CAST ALUM. BODY, SILICONE GASKETING (LENS TO BODY), SPRING LOADED SOCKETS, ANODIZED ALUM. REFLECTOR (WIDE DISTRIBUTION) AND 1/2" THREADED ARM MOUNT. FINISH TO BE SELECTED BY ARCHITECT.	120	1	1500 WATT	1500	WALL MOUNTED	STONCO EQX SERIES
S4	SHOE BOX STYLE H.I.D. LUMINAIRE WITH FORMED ALUMINUM SHEET METAL HOUSING, TEMPER GLASS LENS AND TYPE III DISTRIBUTION. FINISH TO BE SELECTED BY ARCHITECT. U.L. LISTED FOR NET LOCATIONS.	277	1	400 WATT COATED METAL HALIDE	450	POLE	WIDE LITE ALM SERIES
S5	SAME AS TYPE 'S' EXCEPT WITH TYPE V DISTRIBUTION.	277	1	400 WATT COATED METAL HALIDE	450	POLE	WIDE LITE ALM SERIES
S6	H.I.D. WALL PACK. FINISH TO BE SELECTED BY ARCHITECT. U.L. LISTED FOR NET LOCATIONS.	277	1	70 WATT COATED METAL HALIDE	100	WALL MOUNTED AT 10'-0" A.F.S.	LITHONIA TRAC SERIES
POLE	POLE SHALL BE 20'-0" SQUARE STRAIGHT ALUMINUM WITH WALL THICKNESS TO ACCOMMODATE 80 MPH WIND AND 120 MPH GUSTS. HAND HOLE AT BASE. FINISH TO MATCH ATTACHED TYPE 'S4' AND 'S5' LUMINAIRE(S).	-	-	-	-	REFER TO POLE BASE DETAIL	WIDE LITE



**POLE BASE DETAIL**  
NOT TO SCALE



**S4 & S5 LIGHT DETAIL**  
NOT TO SCALE

**BUILDING INFORMATION TABLE**

PROPOSED STRUCTURE	TYPE	MEAN HEIGHT	STREET ADDRESS
FIRE STATION BUILDING	PERMANENT BUILDING	40'	12535 OLD FREDERICK RD.

**PROJECT TIMELINE**

REFERENCE	ACTION	DATE APPROVED	APPROVED BY
WRITTEN APPROVAL	ALLOWS STORMWATER MANAGEMENT OUTLET STRUCTURE FOR POND TO BE LESS THAN 25' FROM PROPERTY LINE. DMV I; SECT 10N 5.2.4. (I) WAIVER	SEPTEMBER 20, 2006	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
WRITTEN APPROVAL	ALLOWS ACCESS RAMP WIDTH TO BE REDUCED FROM 12' TO 10' AND TO ALLOW THE RAMP TO BE REDUCED IN ORDER TO GO AROUND HALF OF THE FACILITY WITH AN APPROVED TURNAROUND AREA INSTEAD OF SURROUNDING THE WHOLE FACILITY. DMV I; SECTION 5.2.6. D.	SEPTEMBER 20, 2006	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

**EXISTING VEGETATIVE COMMUNITIES**

Note: There are no Forest Stands on the site.

**Stand #1**  
280 SF. Stand #1 is a small clump of (5) 12"-14" Black Locust trees. The understory consists of Greenbriar, Poison Ivy and Poke Weed.  
Significant Trees: none  
Specimen Trees: none  
Large Trees: none

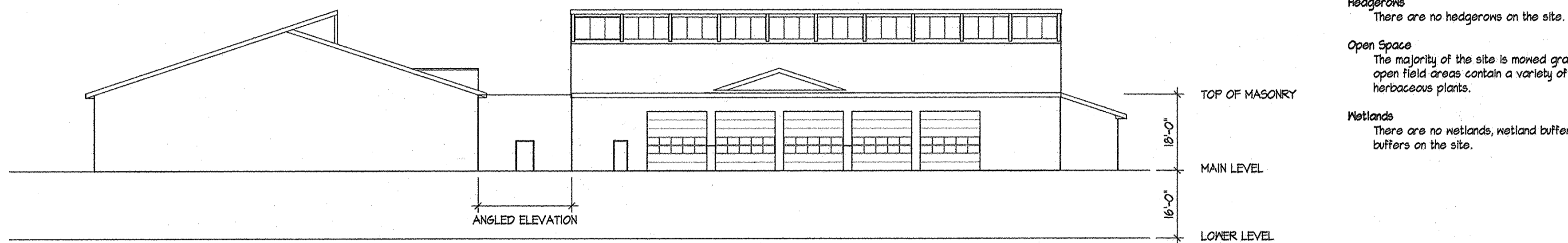
**Stand #2**  
2,106 SF. Stand #2 is a dense thicket of juvenile Black Locust and Sassafras trees. The canopy species are largely 6"-8" Black Locust with a few 4"-6" Black Locust and Sassafras. The mid-story and understory is very dense with offspring from the larger trees.  
Significant Trees: none  
Specimen Trees: none  
Large Trees: none

**Stand #3**  
11,562 SF. Stand #3 is the largest on the site. It is a disturbed stand having been partially cleared in the past with a variety of invasive species. The canopy is largely 12"-14" Tree of Heaven and 8"-10" Black Locust. The mid-story is mostly Black Locust with some Asian Cherry and Sassafras. The understory is a mix of Multiflora Rose, Poke Weed, Raspberry, Kudzu and Juvenile Tree of Heaven. There is one 38"-40" White Oak on the southwestern edge of this stand. It appears to be in a damaged state with a large portion of the upper structure killed by wind or lightning.  
Significant Trees: 38"-40" White Oak  
Specimen Trees: none  
Large Trees: none

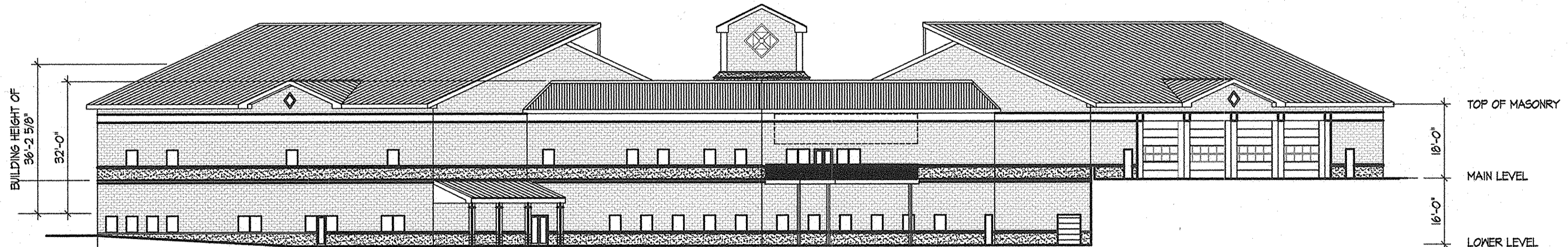
**Hedgerows**  
There are no hedgerows on the site.

**Open Space**  
The majority of the site is mowed grass and open field. The open field areas contain a variety of grasses, vines and herbaceous plants.

**Wetlands**  
There are no wetlands, wetland buffers, streams or stream buffers on the site.



**NORTH EAST ELEVATION**  
SCALE: 1" = 20'



**SOUTH ELEVATION**  
SCALE: 1" = 20'



**NORTH ELEVATION**  
SCALE: 1" = 20'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 [Signature] 12/6/06 DATE  
 JAMES H. IRVIN, DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 [Signature] 11/17/07 DATE  
 COUNTY HEALTH OFFICER

APPROVED: DEPARTMENT OF PLANNING & ZONING  
 [Signature] 1/16/08 DATE  
 DIRECTOR

[Signature] 1/16/08 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION &

[Signature] 1/18/07 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

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DES: CRW				
DRN: AM				
CHK: REM/KRK				
DATE: 12/06/06	BY	NO.	REVISION	DATE

**Site Notes & Building Elevations**

600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland

**OWNER:**  
 West Friendship Volunteer Firemens Association Inc.  
 12460 Frederick Rd  
 West Friendship, MD 21794  
 Phone: (410) 765-1254

**ADDRESS / PERMIT INFORMATION:**  
 ADDRESS: 12535 Old Frederick Rd., Sykesville MD 21784  
 PARCEL: 9210  
 L8016 / F 629  
 GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
 Sub Elevation District, Census Tract 6092  
 WATER CODE: Private, SEWER CODE: Private

CO.02  
 SCALE: AS SHOWN  
 SHEET 2 OF 28

County Council Of Howard County, Maryland

2006 Legislative Session

Legislative Day No. 12

Resolution No. 123 -2006

Introduced by: The Chairman at the request of the County Executive

A RESOLUTION pursuant to Section 16.301 of the Howard County Code granting a variance from the front building and use restriction lines at the location for the new West Friendship Volunteer Fire Station, 12535 Old Frederick Road, Sykesville MD 21784.

Introduced and read first time Sept 5, 2006.

By order Sheila M. Tolliver, Administrator

Read for a second time at a public hearing on Sept 15, 2006.

By order Sheila M. Tolliver, Administrator

This Resolution was read the third time and was Adopted, Adopted with amendments, Failed, Withdrawn, by the County Council on Oct 3, 2006.

Certified By Sheila M. Tolliver, Administrator

NOTE: [text in brackets] indicates deletions from existing law; TEXT IN ALL CAPITALS indicates additions to existing law; Strike-out indicates material deleted by amendment; Underlining indicates material added by amendment

Introduced: 9/5/06
Public Hearing: 9/15/06
Council Action: 10/3/06
Executive Action: 10/3/06
Effective Date: 10/3/06

County Council of Howard County, Maryland

2006 Legislative Session

Legislative Day No. 12

Resolution No. 110 -2006

Introduced by: Charles C. Feaga, Councilman

A RESOLUTION approving a Special Amendment to the Howard County Master Plan for Water and Sewerage.

Introduced and read first time Sept 5, 2006. Ordinal posted and hearing scheduled.

By order Sheila M. Tolliver, Administrator

Having been posted and notice of time & place of hearing & title of Bill having been published according to Charter, the Bill was read for a second time at a public hearing on Sept 15, 2006.

By order Sheila M. Tolliver, Administrator

This Bill was read the third time on Oct 3, 2006 and Passed, Failed with amendments, Failed

By order Sheila M. Tolliver, Administrator

Scaled with the County Seal and presented to the County Executive for approval this 5th day of Oct, 2006 at 11:30 a.m.

By order Sheila M. Tolliver, Administrator

Approved/Amended by the County Executive Oct 5, 2006

James N. Roboy, County Executive

NOTE: [text in brackets] indicates deletions from existing law; TEXT IN ALL CAPITALS indicates additions to existing law; Strike-out indicates material deleted by amendment; Underlining indicates material added by amendment

WHEREAS, Section 16.301 of the Howard County Code provides that variances for governmental uses from the strict application of the zoning regulations are granted by the County Council by Resolution following a public hearing; and

WHEREAS, the West Friendship Volunteer Firemen's Association Incorporated purchased a 6.08 acre parcel of land at the intersection of Route 32 and Old Frederick Road (12535 Old Frederick Road, Sykesville MD, 21784) for the construction of a new state-of-the-art Volunteer Fire Station (Capital Project F-5965); and

WHEREAS, the site is zoned RR-DEO, a category that imposes certain building line restrictions for certain uses and structures; and

WHEREAS, the West Friendship Volunteer Firemen's Association Incorporated, based on preliminary design analysis, has proposed:

- 1. A 60-foot primary structure setback along the entire front (northern) edge of the property; and,
2. A 15-foot use setback along the setback along the entire front (northern) edge of the property;

WHEREAS, all the preliminary design analysis has indicated the critical need to keep the building structure and associated parking lots located towards the front of the property (fronting on Old Frederick Road) due to the extensive amount of the rear property needed for the septic system and the storm water management system; and

WHEREAS, the building line restrictions affect the appropriate placement of the new West Friendship Volunteer Fire Station and its parking lot on the site; and

WHEREAS, the Friendship Volunteer Firemen's Association Incorporated has requested a variance from the strict application of the building line restriction requirements for the construction of the new West Friendship Volunteer Fire Station within the 75-foot primary

structure setback and within the 50-foot use setback along the front (northern) edge of the property; and

WHEREAS, the County Council finds that the proposed variance from the building line restrictions of the RR-SEO district for this governmental purpose is in the public interest.

NOW, THEREFORE, BE IT RESOLVED by the County Council of Howard County, Maryland, this 3rd day of Oct, 2006 that it grants a variance from the 75-foot building restriction line requirement and from the 50-foot use restriction line along the front (northern) edge of the property.

WHEREAS, Section 9-503(b) of the Environment Article of the Annotated Code of Maryland requires each county governing body to adopt a Master Plan for Water and Sewerage and to revise this plan from time to time; and

WHEREAS, the County Council adopted the most recent amendment to the County Master Plan for Water and Sewerage in May, 2006; and

WHEREAS, the West Friendship Volunteer Fire Station, in conjunction with the Howard County Department of Fire and Rescue Services, will be relocating its fire station to a new location at the southeastern corner of the intersection of MD Route 32 and MD Route 99; and

WHEREAS, the proposed fire site does not have public water and sewer; and

WHEREAS, a dedicated water supply is critical for water suppression and other public safety uses; and

WHEREAS, the County will be providing a water line extension to the West Friendship Fire Station site for fire suppression use only; and

WHEREAS, other parcels, outside of the Planned Service Area for Water and Sewerage, located along the connection route will be prohibited from connection; and

WHEREAS, this special amendment to the Master Plan for Water and Sewerage was prepared to keep the plan up to date;

NOW, THEREFORE, BE IT RESOLVED by the County Council of Howard County, this \_\_\_ day of \_\_\_, 2006, that the Howard County Master Plan for Water and Sewerage be and it is hereby amended by revising the text for Chapter 1, Objective and Organization, as

NOW, THEREFORE, BE IT RESOLVED by the County Council of Howard County, this 3rd day of October, 2006, that the Howard County Master Plan for Water and Sewerage be and it is hereby amended by revising the text for Chapter 1, Objective and Organization, as attached hereto and incorporated herein.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

James M. Irvin, Director 12/16/06 DATE

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

Roberta J. Weber, County Health Officer 1/17/07 DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

Manuel K. Gough, Director 1/16/07 DATE

Chief, Development Engineering Division 1/16/07 DATE

Cindy Hammett, Chief, Division of Land Development 1/16/07 DATE

EDMEADES & STROMDAHL, LTD. ARCHITECTS / PLANNERS 11 North Main Street Bel Air, Maryland 21014 Phone: 410.879.0388 Fax: 410.879.4785 E-mail: mcs@edmeades-stromdahl.com

SITE RESOURCES, INC. LAND PLANNING / SITE DESIGN 14315 Jarrettsville Pike Phoenix, Maryland 21131 Phone: 410.683.3388 Fax: 410.683.3389 www.siteresourcesinc.com

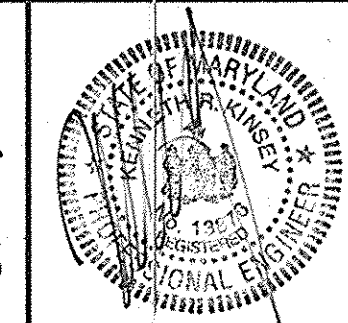
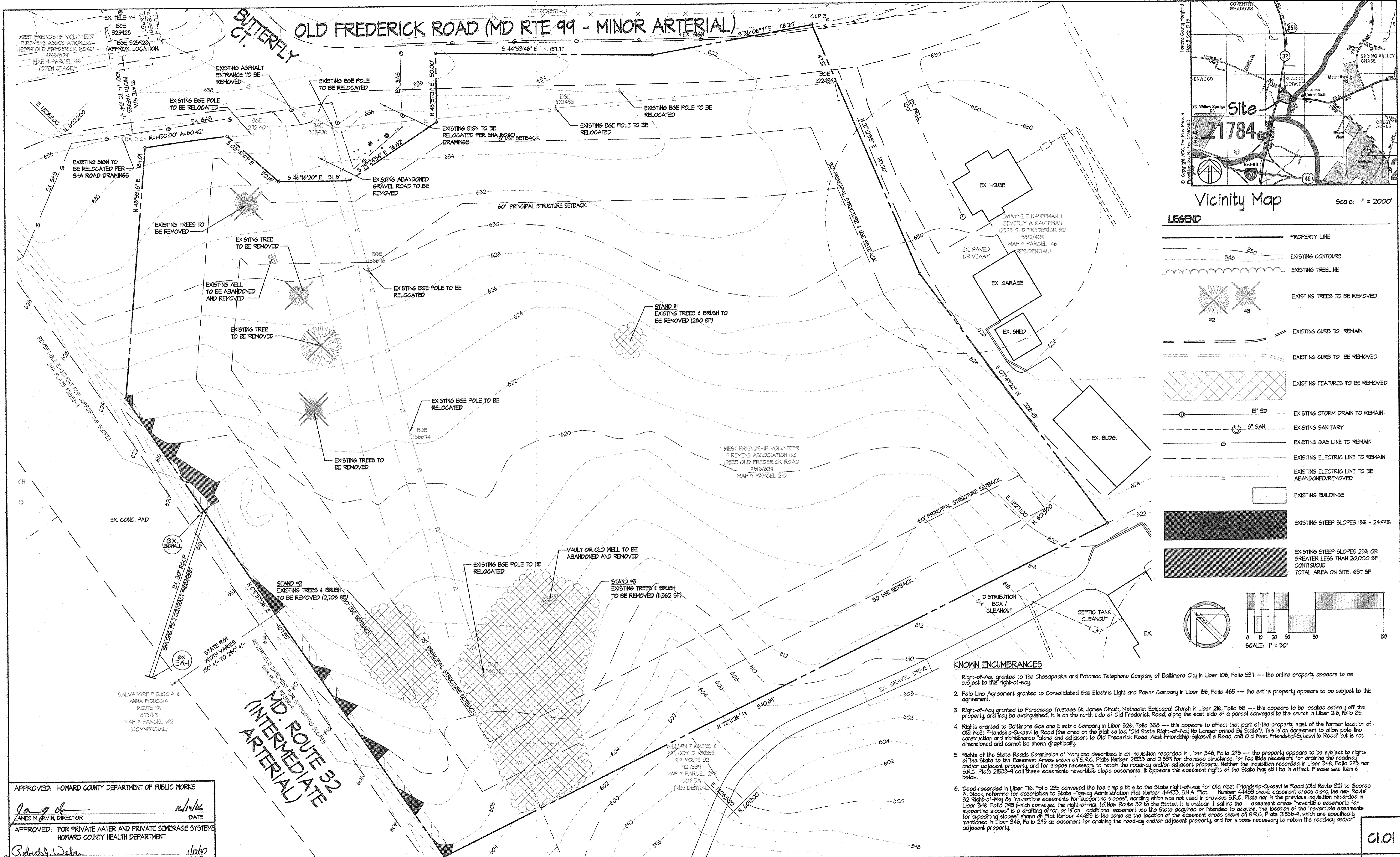


Table with columns: DES: CRW, DRN: AM, CHK: REM/KRK, DATE: 12/06/06, BY, NO., REVISION, DATE

Howard County Council Resolutions 600' SCALE MAP NO. 9 BLOCK NO. 23

WEST FRIENDSHIP VOLUNTEER FIRE CO. Capital Project No. F-5965, Howard County, Maryland. ADDRESS / PERMIT INFORMATION: 12535 Old Frederick Rd, Sykesville MD 21784

CO.03 SCALE: AS SHOWN SHEET 3 OF 28



**LEGEND**

- PROPERTY LINE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING TREES TO BE REMOVED
- EXISTING CURB TO REMAIN
- EXISTING CURB TO BE REMOVED
- EXISTING FEATURES TO BE REMOVED
- EXISTING STORM DRAIN TO REMAIN
- EXISTING SANITARY
- EXISTING GAS LINE TO REMAIN
- EXISTING ELECTRIC LINE TO REMAIN
- EXISTING ELECTRIC LINE TO BE ABANDONED/REMOVED
- EXISTING BUILDINGS
- EXISTING STEEP SLOPES 15% - 24.99%
- EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 631 SF

Scale: 1" = 30'

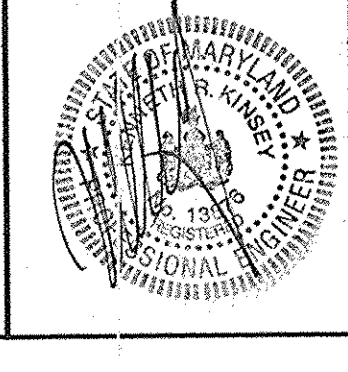
**KNOWN ENCUMBRANCES**

- Right-of-Way granted to The Chesapeake and Potomac Telephone Company of Baltimore City in Liber 106, Folio 531 --- the entire property appears to be subject to this right-of-way.
- Pole Line Agreement granted to Consolidated Gas Electric Light and Power Company in Liber 156, Folio 465 --- the entire property appears to be subject to this agreement.
- Right-of-Way granted to Parsonage Trustees St. James Church, Methodist Episcopal Church in Liber 216, Folio 06 --- this appears to affect that part of the property east of the former location of Old West Friendship-Sykesville Road (the area on the plat called "Old State Right-of-Way No Longer owned by State"). This is an agreement to allow pole line construction and maintenance along and adjacent to Old Frederick Road, West Friendship-Sykesville Road, and Old West Friendship-Sykesville Road but is not dimensioned and cannot be shown graphically.
- Rights granted to Baltimore Gas and Electric Company in Liber 326, Folio 330 --- this appears to affect that part of the property east of the former location of Old West Friendship-Sykesville Road (the area on the plat called "Old State Right-of-Way No Longer owned by State"). This is an agreement to allow pole line construction and maintenance along and adjacent to Old Frederick Road, West Friendship-Sykesville Road, and Old West Friendship-Sykesville Road but is not dimensioned and cannot be shown graphically.
- Rights of the State Roads Commission of Maryland described in an Inquisition recorded in Liber 346, Folio 245 --- the property appears to be subject to rights of the State to the Easement Areas shown on S.R.C. Plats Number 21530 and 21534 for drainage structures, for facilities necessary for draining the roadway and/or adjacent property, and for slopes necessary to retain the roadway and/or adjacent property. Neither the Inquisition recorded in Liber 346, Folio 245, nor S.R.C. Plats 21530-4 call these easements revertible slope easements. It appears the easement rights of the State may still be in effect. Please see Item 6 below.
- Deed recorded in Liber 716, Folio 235 conveyed the fee simple title to the State right-of-way for Old West Friendship-Sykesville Road (Old Route 32) to George N. Slack, referring for description to State Highway Administration Plat Number 44433, S.H.A. Plat Number 44433 shows easement areas along the new Route 32 Right-of-Way as "revertible easements for supporting slopes", wording which was not used in previous S.R.C. Plats nor in the previous Inquisition recorded in Liber 346, Folio 245 (which conveyed the right-of-way to New Route 32 to the State). It is unclear if calling the easement areas "revertible easements for supporting slopes" is a drafting error, or is an additional easement use the State acquired or intended to acquire. The location of the "revertible easements for supporting slopes" shown on Plat Number 44433 is the same as the location of the easement areas shown on S.R.C. Plats 21530-4, which are specifically mentioned in Liber 346, Folio 245 as easement for draining the roadway and/or adjacent property, and for slopes necessary to retain the roadway and/or adjacent property.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES H. ARVIN, DIRECTOR  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER  
 APPROVED: DEPARTMENT OF PLANNING & ZONING  
 DIRECTOR  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
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 www.siteresourcesinc.com



DES: GRM					
DRN: AM					
CHK: REM/KRK					
DATE: 12/08/06	BY: NO.		REVISION	DATE	

**Existing Conditions & Demolition Plan**

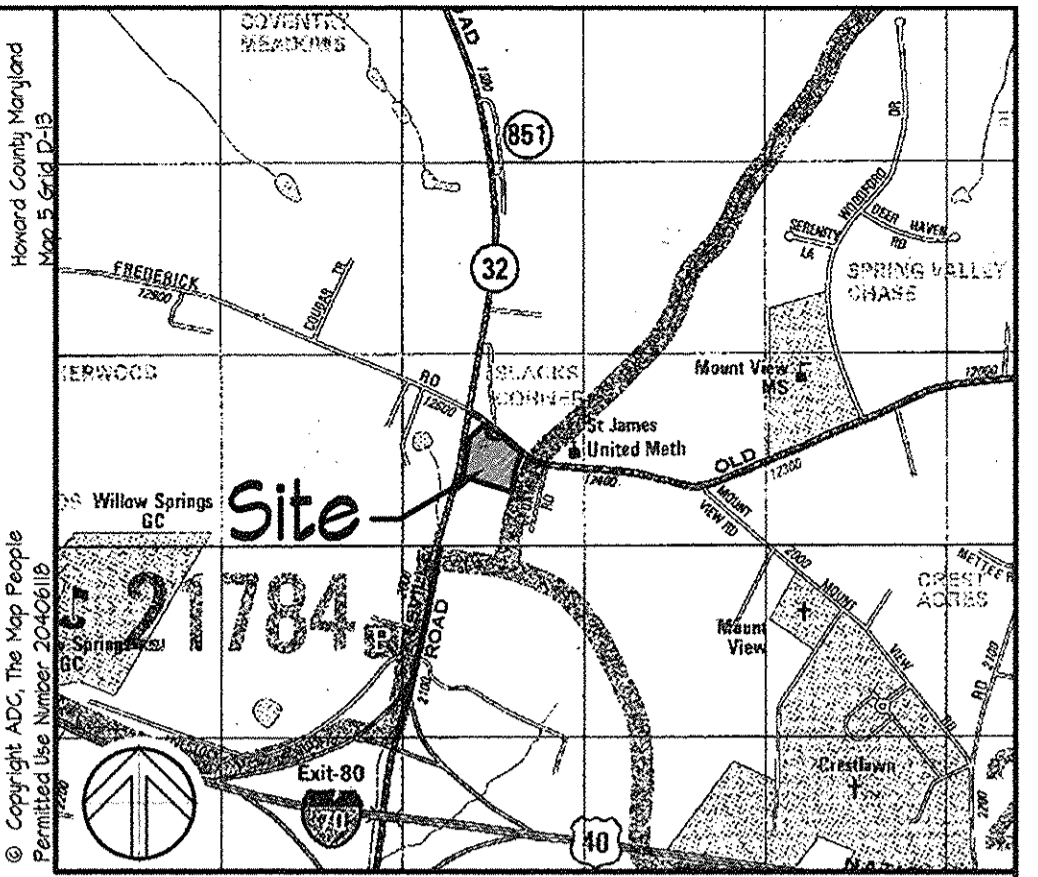
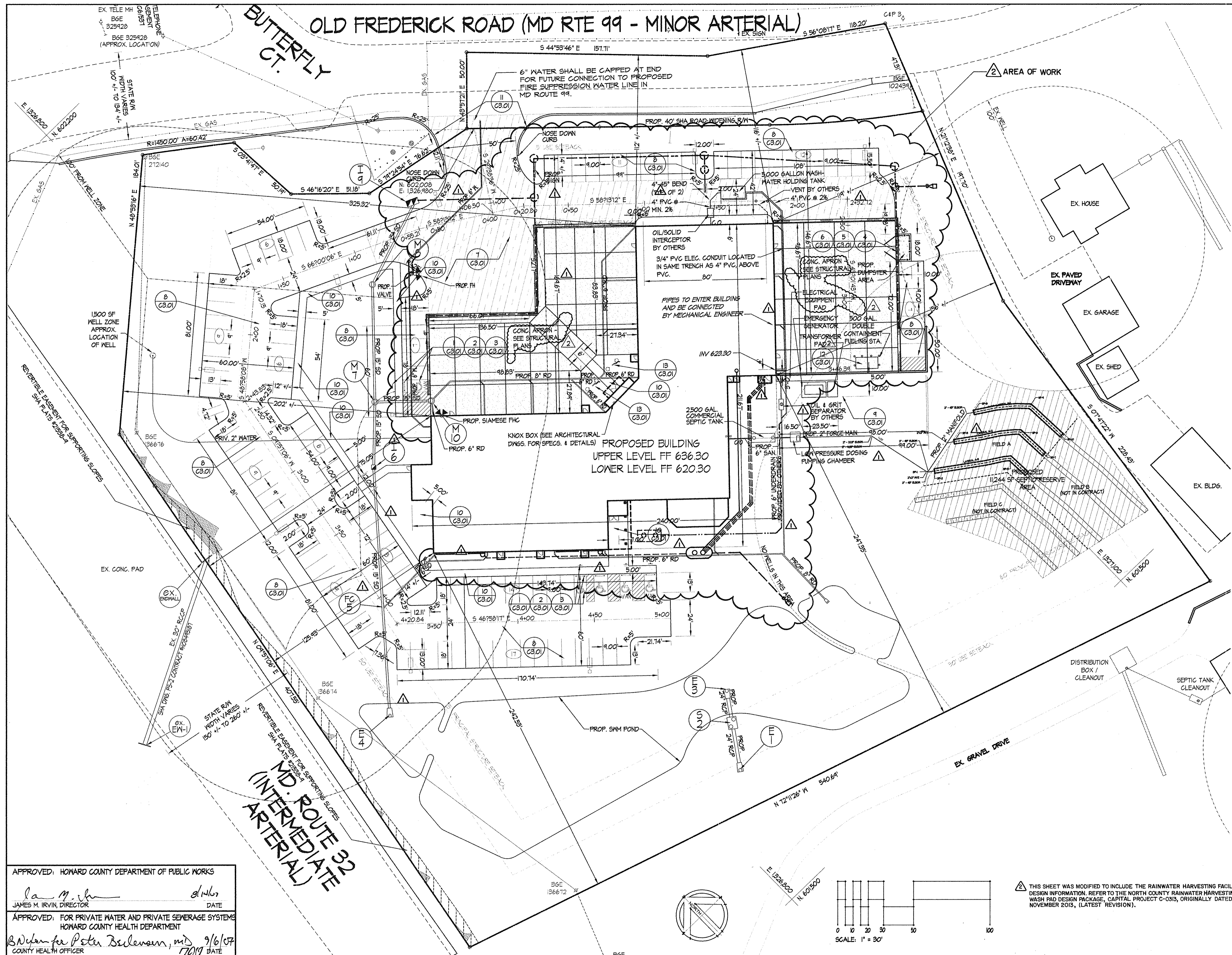
600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland

OWNER:  
 West Friendship Volunteer Firemen Association, Inc.  
 12460 Frederick Rd  
 West Friendship, MD 21794  
 Phone (410) 785-1234

ADDRESS / PERMIT INFORMATION:  
 ADDRESS: 12535 Old Frederick Rd., Sykesville MD 21784  
 PARCEL #210  
 L#498 / F#624  
 GRID No. 23, ZONE: RR-DEQ, TAX MAP No. 9  
 West Friendship, MD 21794  
 3rd Election District, Census Tract 6290  
 WATER CODE: Private, SEWER CODE: Private

SCALE: 1" = 30'  
 SHEET 4 OF 28  
 SDP - 07-017

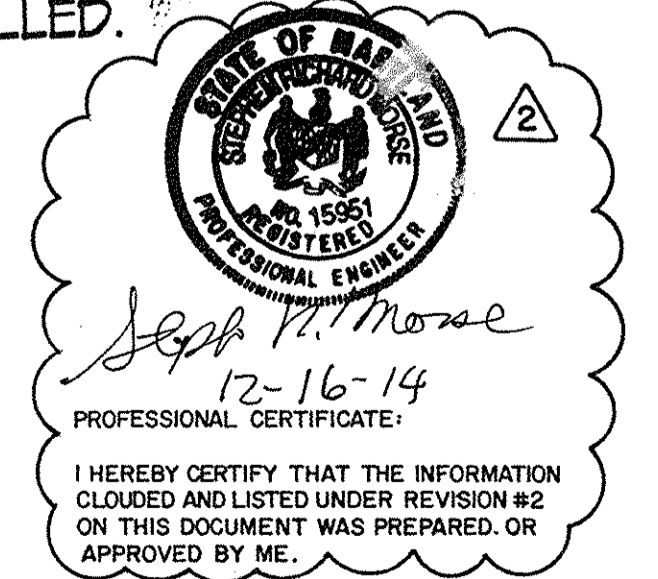


Vicinity Map Scale: 1" = 200'

**LEGEND**

	PROPERTY LINE
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	EXISTING STORM DRAIN
	PROPOSED STORM DRAIN
	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
	EXISTING WATER
	PROPOSED WATER
	PROPOSED ELECTRIC LINE
	EXISTING ELECTRIC LINE TO REM.
	EXISTING GAS LINE
	EXISTING BUILDINGS
	PROPOSED BUILDINGS
	HEAVY DUTY CONCRETE
	HEAVY DUTY ASPHALT
	DETAIL REFERENCE
	PROPOSED SITE LIGHTING
	PROPOSED SIDEWALK
	EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 637 SF
	PRIMARY DRAINAGE FIELD
	BACKUP DRAINAGE FIELD
	2ND BACKUP DRAINAGE FIELD

NOTE: ALL PARKING SPACES ARE TO HAVE WHEELSTOPS INSTALLED.



THIS SHEET WAS MODIFIED TO INCLUDE THE RAINWATER HARVESTING FACILITIES DESIGN INFORMATION. REFER TO THE NORTH COUNTY RAINWATER HARVESTING AND WASH PAD DESIGN PACKAGE, CAPITAL PROJECT C-0315, ORIGINALLY DATED, NOVEMBER 2013, (LATEST REVISION).

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES M. IRVIN, DIRECTOR  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 B. Nolan for Peter Belevans, MD  
 COUNTY HEALTH OFFICER  
 APPROVED: DEPARTMENT OF PLANNING & ZONING

**EDMEADES & STROMDAHL, LTD.**  
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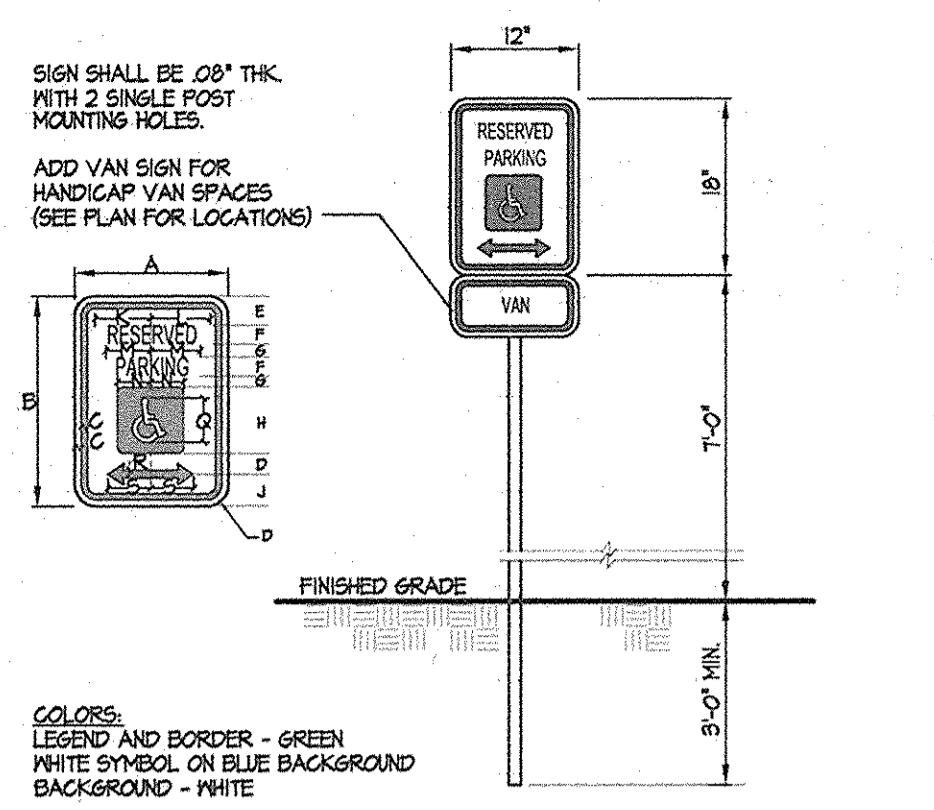
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DRN: AM			
CHK: REM/KRK	JEB	REDLINE REVISION - SEE NOTE ABOVE	11/19/14
DATE: 12/08/06	SRI	REDLINE REVISION	5/25/07
	BY NO.	REVISION	DATE

**Layout/Detail Reference Plan**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-59465, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Fire Association Inc.  
 12460 Frederick Rd  
 West Friendship, MD 21794  
 Phone (410) 785-1284

C2.01  
 SCALE: 1"=30'  
 SHEET 5 OF 28

21080001 West Friendship VFD - New 2013/02/21 - Layout/Detail Reference Plan.dwg, 8/10/2017 2:38:59 PM - Copyright, Site Resources, Inc.

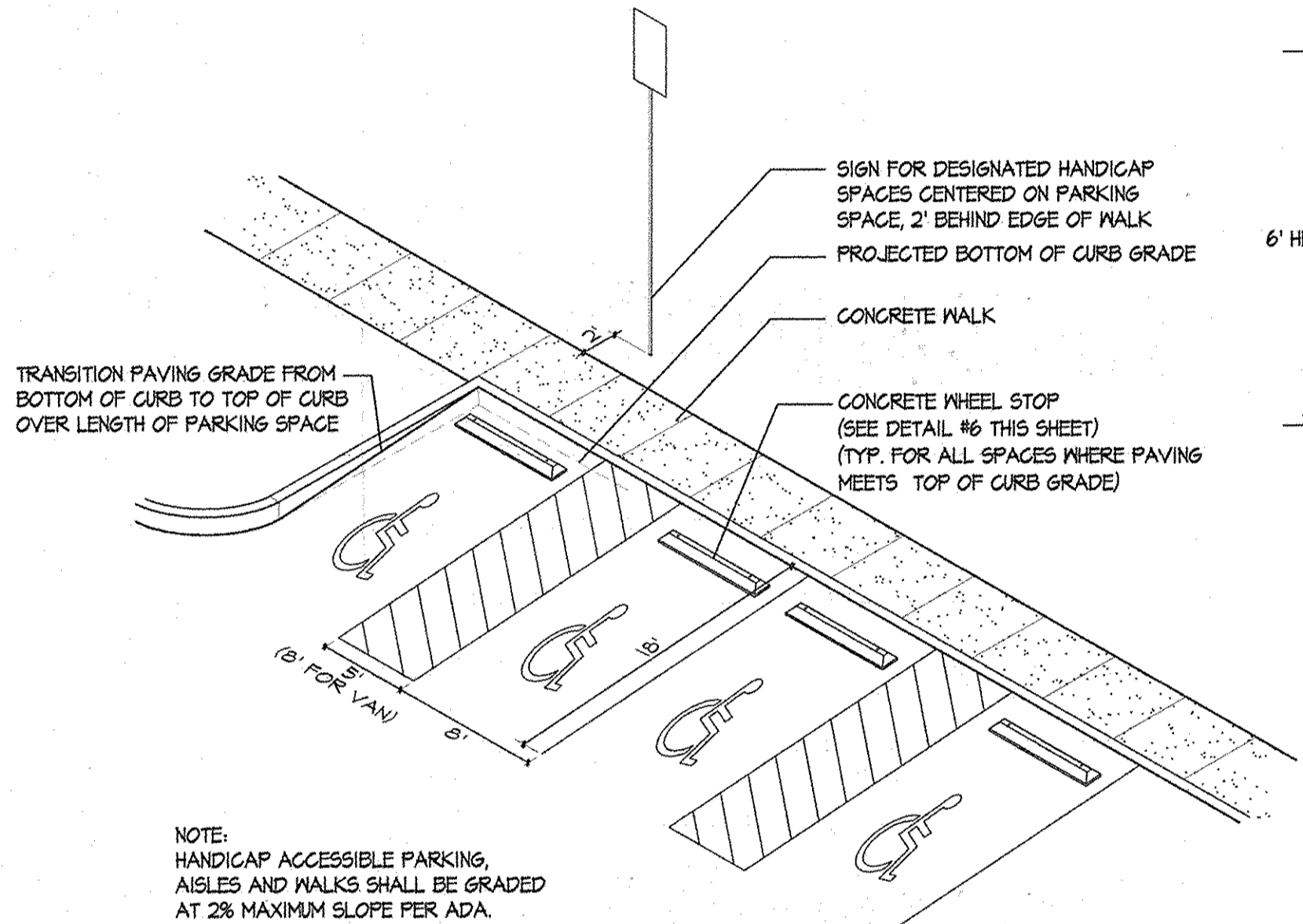


SIGN SIZE	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	
STD	12	18	1/2	1-1/2	2	2	1	6	2-1/2	4-7/8	

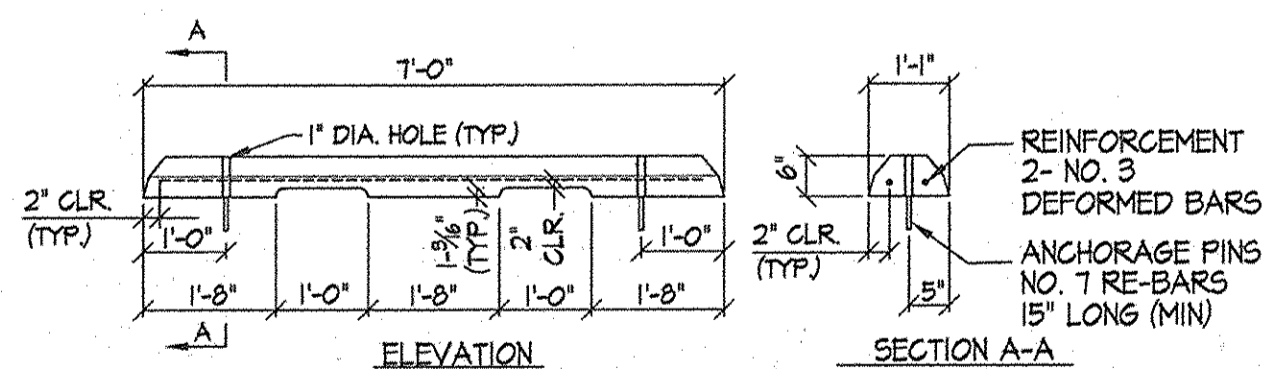
  

SIGN SIZE	DIMENSIONS (INCHES)							
	L	M	N	P	Q	R	S	
STD	5	4-1/4	3	1/2	4	3/4	3-7/8	

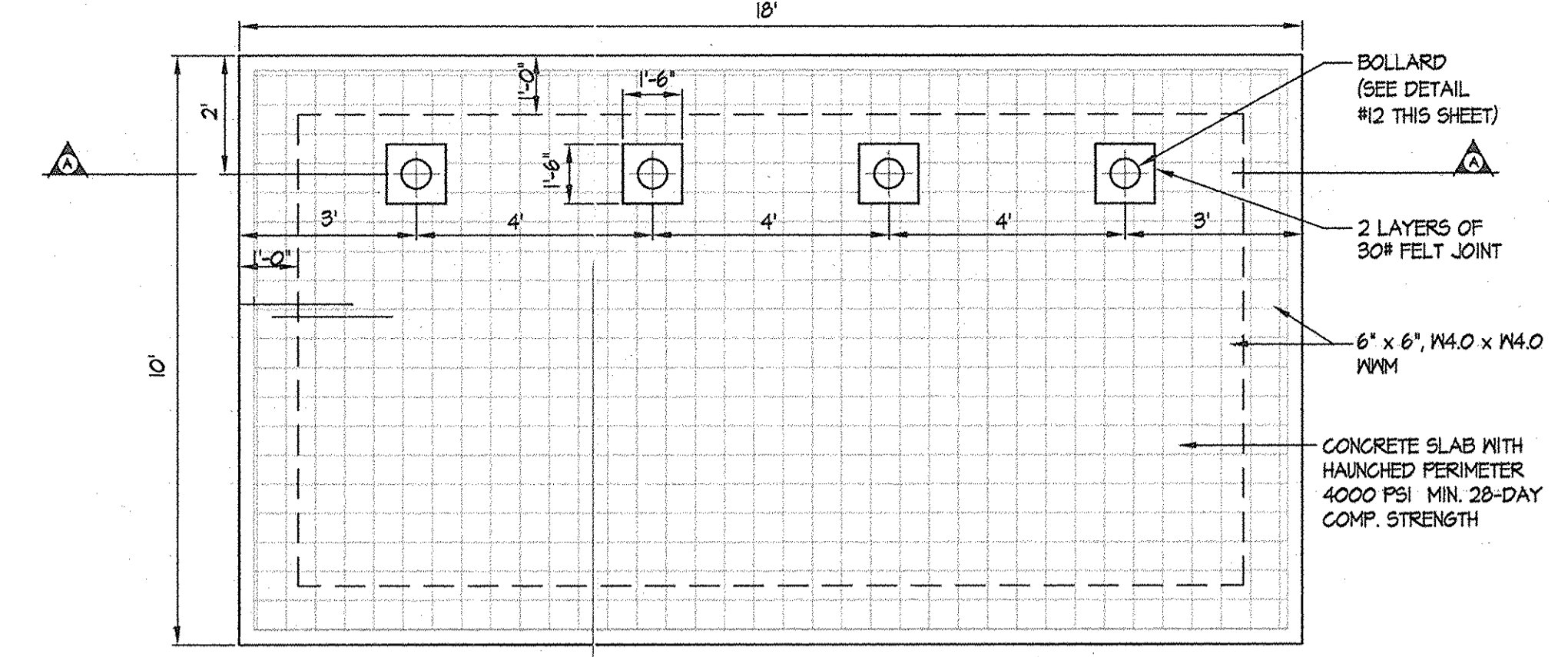
**1 HANDICAP PARKING SIGN**  
NOT TO SCALE



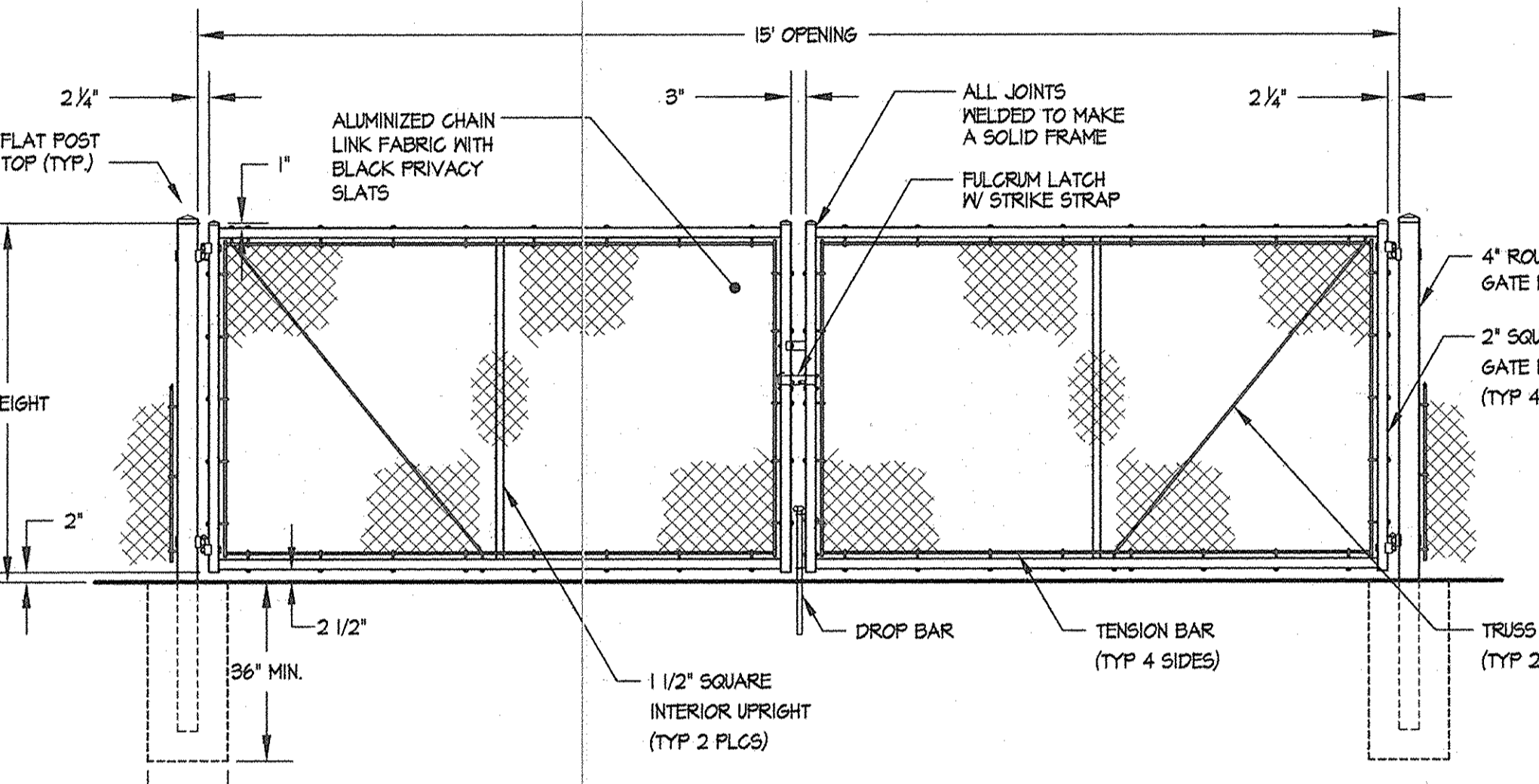
**2 HANDICAP PARKING DETAIL**  
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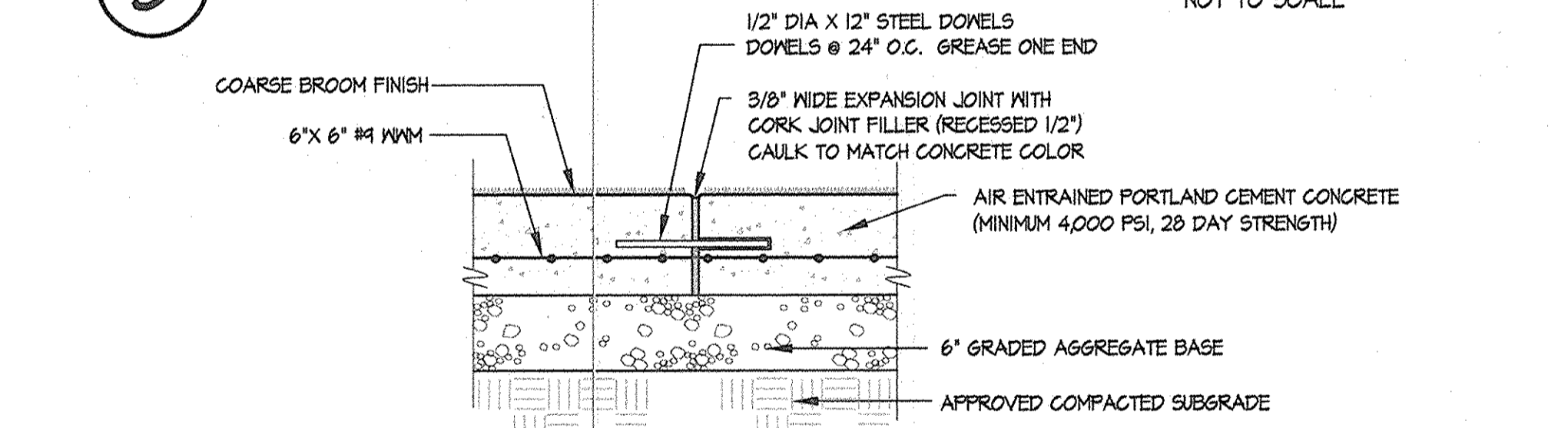
**3 CONCRETE WHEEL STOP DETAIL**  
NOT TO SCALE



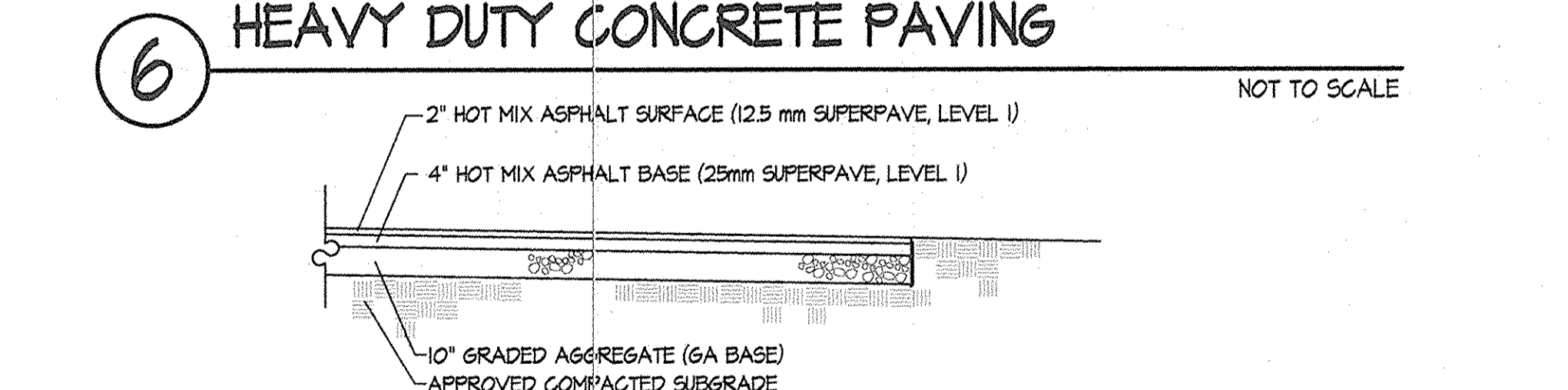
**4 DUMPSTER PAD DETAIL**  
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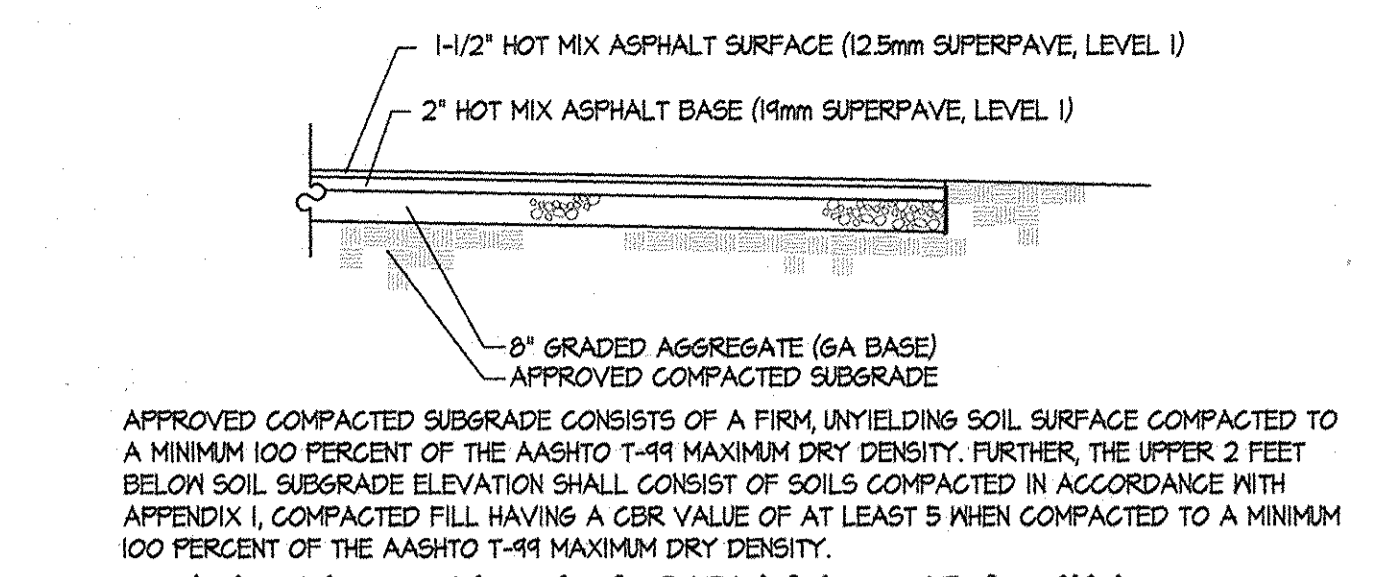
**5 DUMPSTER ENCLOSURE DETAIL**  
NOT TO SCALE



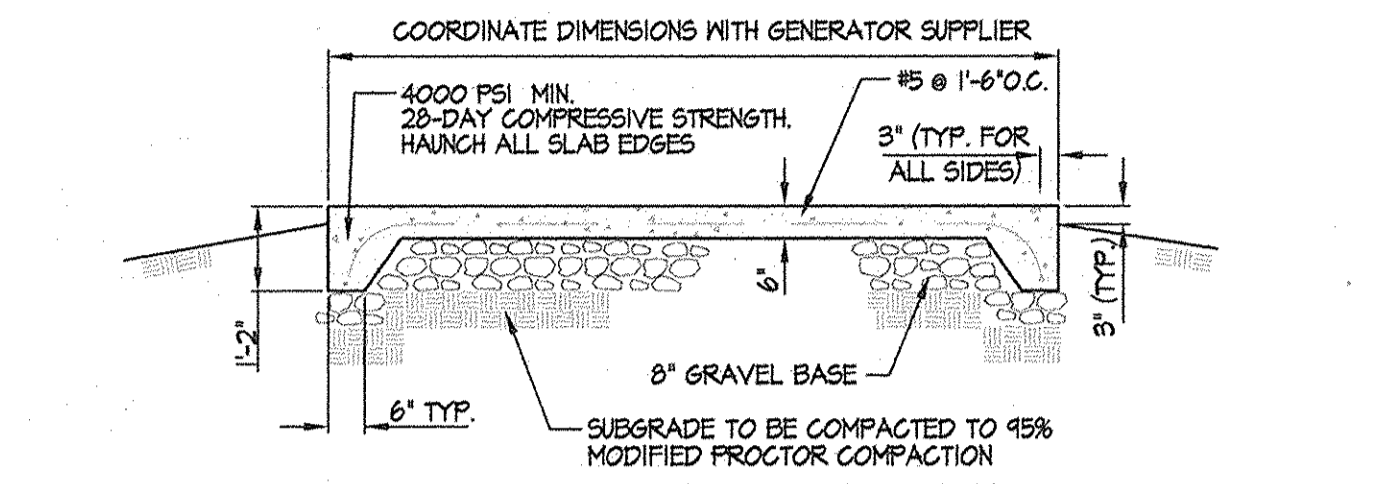
**6 HEAVY DUTY CONCRETE PAVING**  
NOT TO SCALE



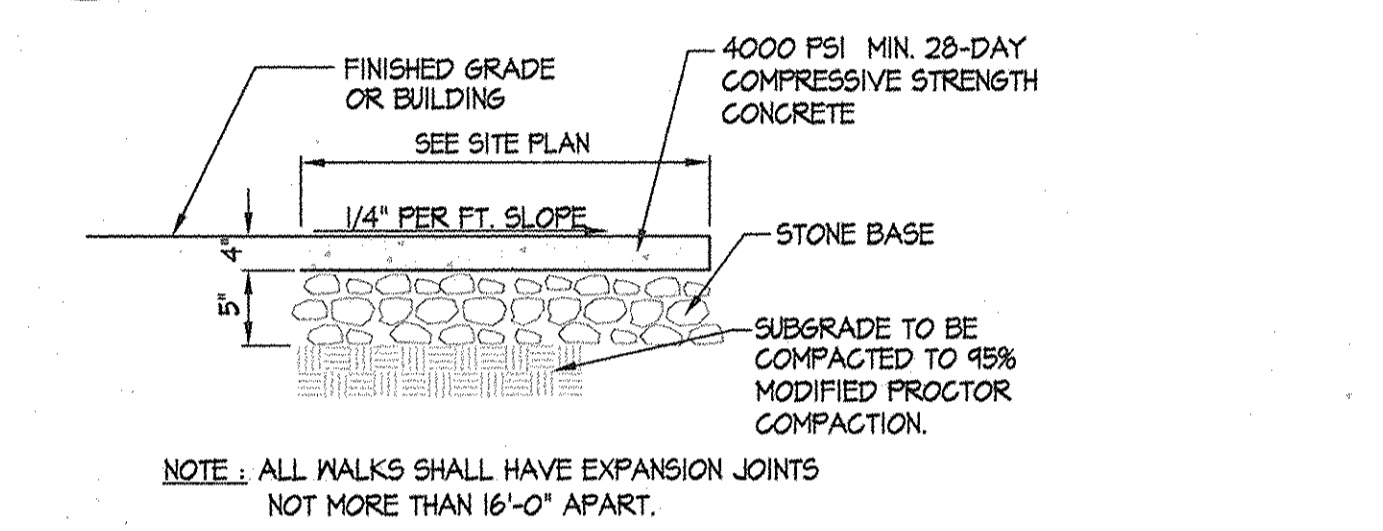
**7 HEAVY DUTY ASPHALT PAVING**  
NOT TO SCALE



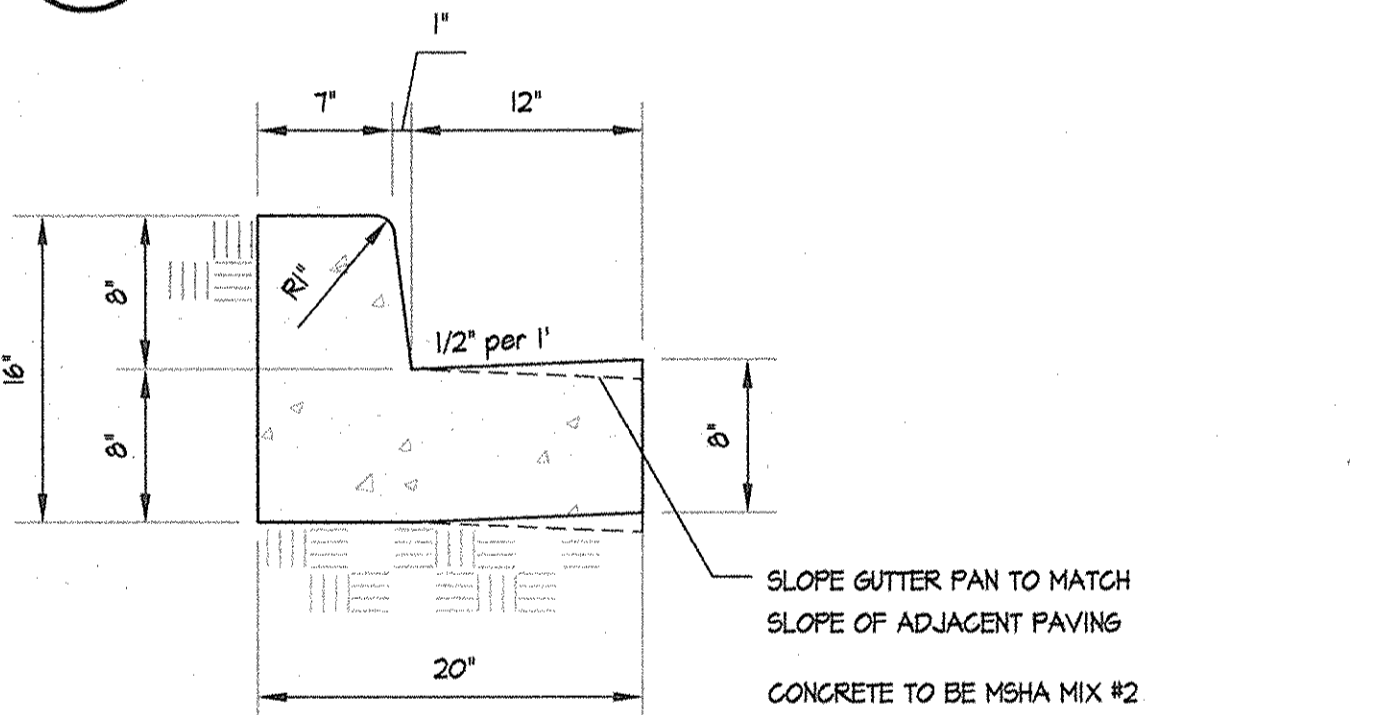
**8 LIGHT DUTY ASPHALT PAVING**  
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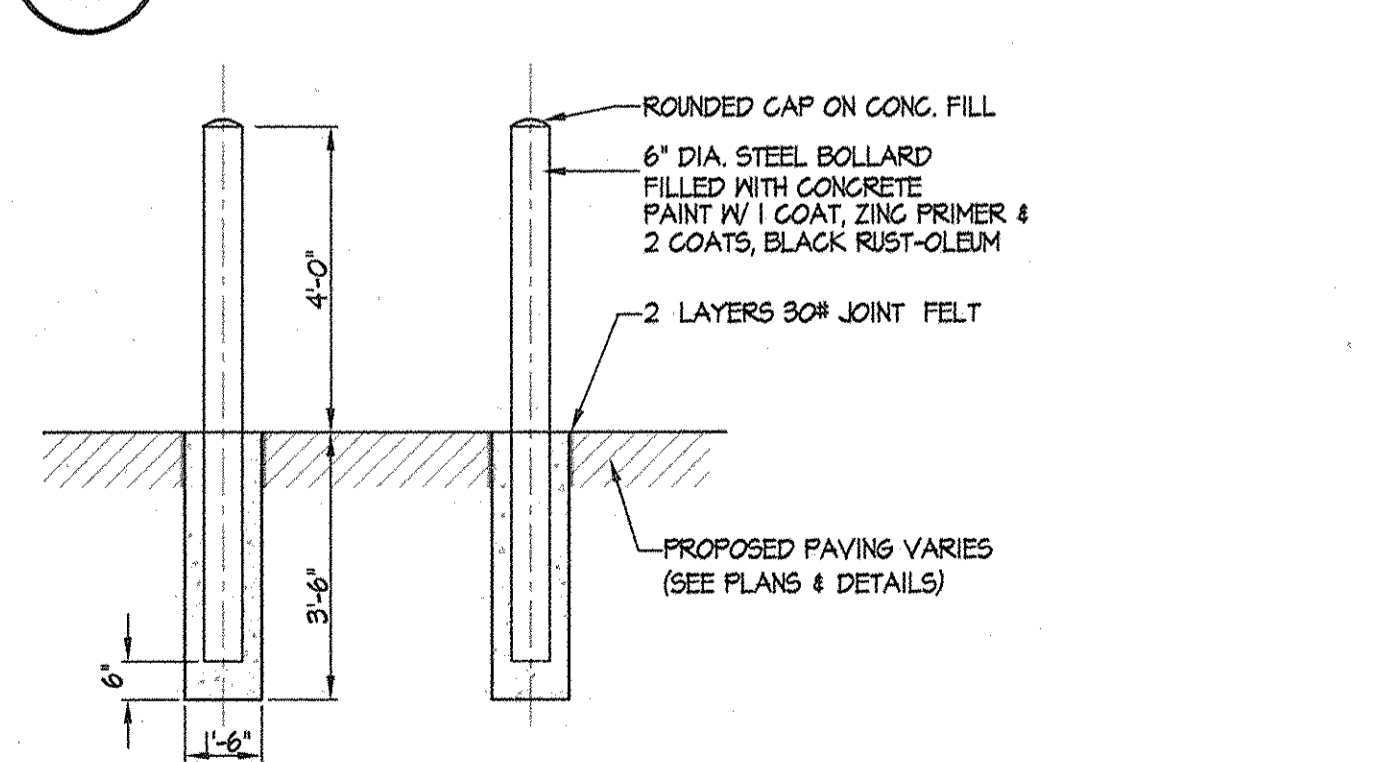
**9 GENERATOR PAD DETAIL**  
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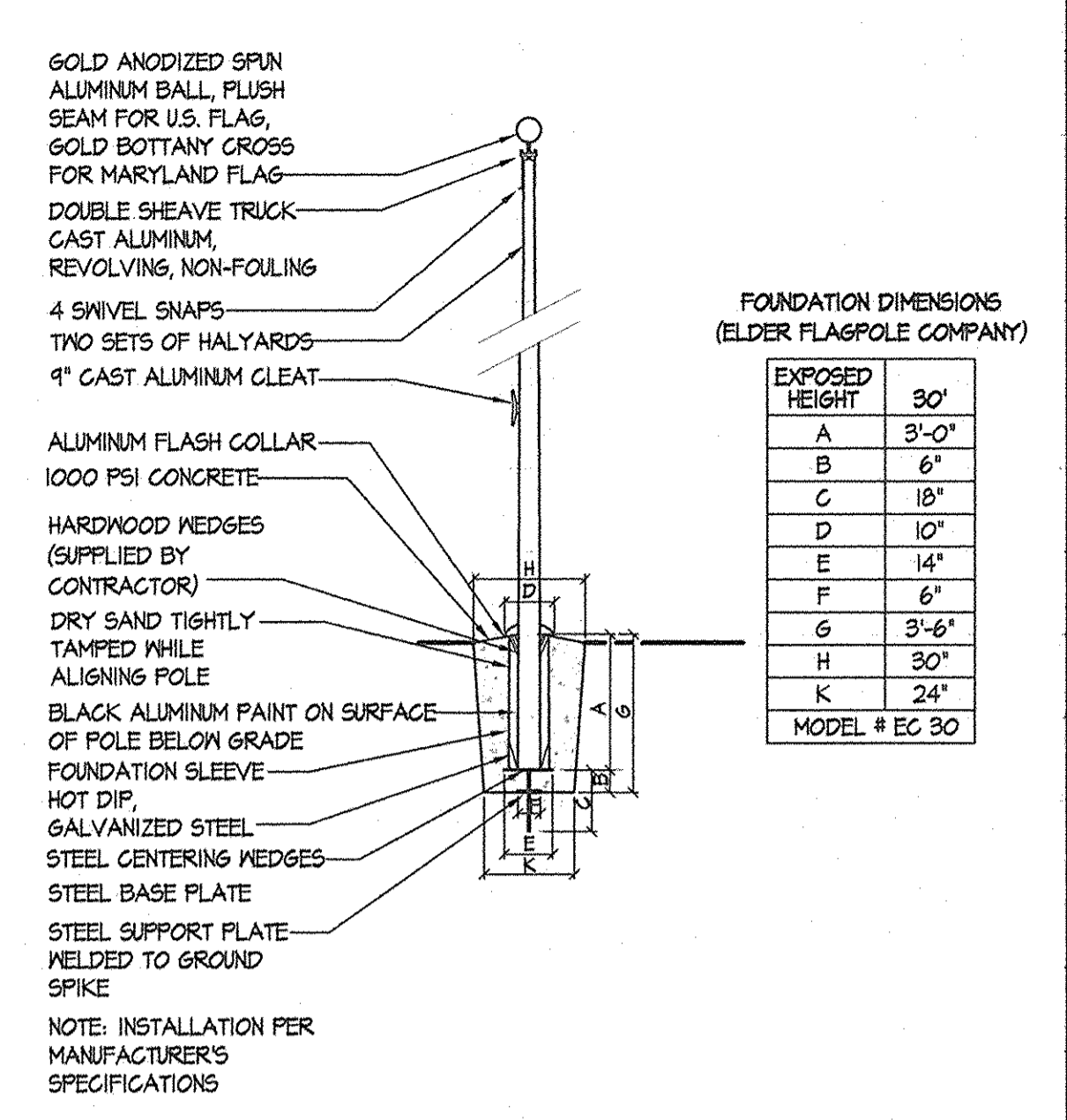
**10 SIDEWALK DETAIL**  
NOT TO SCALE



**11 CURB & GUTTER DETAIL**  
MSHA TYPE 'A' CURB & GUTTER NOT TO SCALE



**12 BOLLARD DETAIL**  
NOT TO SCALE

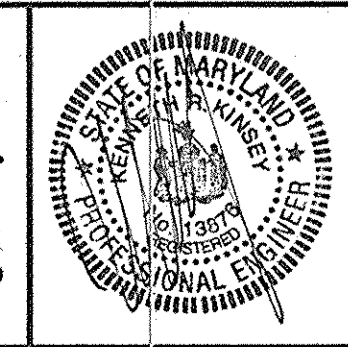


**13 FLAG POLE DETAIL**  
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES H. IRVIN, DIRECTOR  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 ROBERT J. WEBER, COUNTY HEALTH OFFICER  
 APPROVED: DEPARTMENT OF PLANNING & ZONING  
 DIRECTOR  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT

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DES. CRW	DRN. AM	CHK. REM/KRK	DATE: 12/06/06	BY	NO.	REVISION	DATE

**Site Details**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Firemen Association, Inc.  
 12460 Frederick Rd.  
 West Friendship, MD 21154  
 Phone: (410) 785-1234  
 ADDRESS / PERMIT INFORMATION:  
 ADDRESS: 12535 Old Frederick Rd., Sykesville MD 21784  
 PARCEL: #210  
 L88/6 / F624  
 GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
 Bra Election District, Census Tract 6020  
 WATER CODE: Private, SEWER CODE: Private

C3.01  
 SCALE: AS SHOWN  
 SHEET 6 OF 28

**CONTROLLED FILL AND BACKFILL:** SAMPLES OF ALL MATERIALS THAT THE CONTRACTOR PROPOSES TO USE FOR COMPACTED FILL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER AND STRUCTURAL ENGINEER. COMPACTED FILL SHALL CONSIST OF LOCAL MATERIAL FREE OF DELETERIOUS MATTER AND CLASSIFIED CL, SC, GC, GM, OR SM PER ASTM D-2487. THE CONTROL OF THE MOISTURE FOR PLACING THE FILL WILL BE BASED ON THE RESULTS OF COMPACTION TESTS PER ASTM D-698. ALL COMPACTED FILL SHALL HAVE A DENSITY OF AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698. PRIOR TO PLACEMENT OF ANY FILLS, THE SITE SHALL BE STRIPPED OF ALL TOPSOIL, VEGETATION, ROCKS, AND ORGANIC MATERIALS AND THE EXPOSED SUBGRADE SHALL BE COMPACTED IN PLACE TO A CONFIRMED DENSITY OF 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. FILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8" IN THICKNESS AND SHALL BE MOIST, SPREAD AND PLACED IN SUCH A WAY AS TO PRODUCE A UNIFORM THICKNESS OF MATERIAL AFTER PLACING. EACH LAYER OF FILL SHALL BE COMPACTED WITH A MINIMUM OF 6 COMPLETE PASSES ON ALL PORTIONS OF THE SURFACE OF EACH LIFT OF FILL BY RUBBER-TIRED ROLLERS, SHEEPS-FOOT ROLLERS OR OTHER MECHANICAL EQUIPMENT APPROVED BY THE GEOTECHNICAL ENGINEER AND THE STRUCTURAL ENGINEER. COMPACTED FILL PLACED WITHIN 4 FEET OF STRUCTURES AND PIPES SHOULD BE PLACED IN HORIZONTAL LIFTS NOT TO EXCEED 4 INCHES THICKNESS AND COMPACTED WITH HAND TAMPER OR LIGHT COMPACTION EQUIPMENT TO THE SAME STANDARD. HEAVY COMPACTION EQUIPMENT SHOULD NOT BE ALLOWED WITHIN 4 FEET OF STRUCTURES UNLESS A MINIMUM 2 FEET DEPTH OF FILL COVERS THE STRUCTURES. WHENEVER IN PLACE DENSITIES ARE FOUND BELOW ACCEPTABLE LIMITS, ADDITIONAL ROLLING TO PRODUCE THE SPECIFIED DENSITIES SHALL BE REQUIRED. THE CONTRACTOR SHALL TAKE ALL MEASURES REQUIRED TO PROVIDE FOR FREE DRAINAGE OF THE SITE AND TO PREVENT PONDING OF WATER. SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. PLACING OF FILL CONTAINING ORGANIC MATTER, PLACING OF FILL WITH MOISTURE CONTENT TOO HIGH OR TOO LOW FOR PROPER COMPACTION, PLACING OF FILL WHEN FREE WATER IS STANDING ON THE EXISTING FILL SURFACE, PLACING OF FILL IN A FROZEN CONDITION OR ON TOP OF FROZEN MATTER WILL NOT BE PERMITTED. THE SOILS ENGINEER SHALL SUPERVISE THE PLACING OF THE COMPACTED FILL AND ALL THE MATERIAL AND EQUIPMENT USED FOR THIS PURPOSE AND SHALL MAKE SUCH SOILS TESTS AS MAY BE REQUIRED FOR THE COMPLETION OF THE WORK PERFORMING AT LEAST 6 IN PLACE DENSITY TESTS DURING EACH EIGHT HOUR SHIFT.

**FOUNDATIONS-SPREAD FOOTINGS:** BOTTOM OF ALL FOOTINGS SHALL BE A MINIMUM OF 2'-0" BELOW ORIGINAL GRADE OR PLACED IN APPROVED COMPACTED FILL. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 2'-6" BELOW FINISHED GRADE. A SOIL BEARING CAPACITY OF 3000 PSF WAS USED IN THE FOUNDATION DESIGN, AND MUST BE FIELD VERIFIED BY A REGISTERED GEOTECHNICAL ENGINEER. IF SOIL OF THIS BEARING CAPACITY IS NOT ENCOUNTERED AT THE ELEVATIONS INDICATED ON THE CONTRACT DRAWINGS, FOOTINGS SHALL BE LOWERED OR INCREASED IN SIZE AS DIRECTED BY THE STRUCTURAL ENGINEER. ELEVATIONS SHOWN ON PLAN ARE TO THE BOTTOM OF THE FOOTINGS.

**CONCRETE:** ALL CONCRETE WORK SHALL CONFORM TO ALL THE PROVISIONS OF THE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 308-R8S) AND TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-89). ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS NOTED OTHERWISE. ADDITIONALLY, THE CONCRETE SHALL CONFORM TO ALL THE PROVISIONS OF "RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING" (ACI 308-R82) AND "RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING" (ACI 308-R83). ALL FORMWORK SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "FORMWORK FOR CONCRETE" SPECIAL PUBLICATION NO. 4 AND ACI'S "STANDARD RECOMMENDED PRACTICE FOR CONCRETE FORMWORK" (ACI 347-LATEST EDITION). ALL CONCRETE EXPOSED TO THE WEATHER SHALL HAVE AN AIR ENTRAINMENT OF 6% ± 1%. NO ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL BE PERMITTED. THE MAXIMUM SLUMP OF ALL CONCRETE SHALL BE 4". FLOOR SLABS SHALL BE FINISHED TO A MINIMUM FINISHES F-NUMBER F1 = 20 AND A MINIMUM LEVELNESS F-NUMBER F1 = 17 IN ANY DIRECTION. ALL CONCRETE SHALL BE CURED WITH LIQUID SEALING COMPOUND CONFORMING TO ASTM C-309, TYPE I AND FEDERAL SPECIFICATION TT-C-80880 OR OTHER APPROVED METHOD WHICH IS COMPATIBLE WITH FLOORING ADHESIVES AND OTHER SURFACE TREATMENTS. ALL CONCRETE LEFT EXPOSED AT THE COMPLETION OF THE PROJECT SHALL BE TREATED WITH A CLEAR, PENETRATING ACRYLIC BASE POLYMER CAPABLE OF PREVENTING INFILTRATION OF WATER BORNE CHLORIDES SUCH AS CONSPEC (P) BY CONSPEC MARKETING & MANUFACTURING COMPANY OR APPROVED EQUAL. LOADS GREATER THAN THE DESIGN LIVE LOADS SHALL NOT BE PLACED ON THE STRUCTURE. A CONCRETE STRUCTURE MAY NOT SUPPORT ITS DESIGN LIVE LOAD FOR 28 DAYS. CONTRACTOR SHALL SUPPORT ADJACENT STRUCTURES, UTILITIES, AND EXCAVATIONS AS REQUIRED FOR COMPLETION OF WORK. ONE SET OF COMPRESSIVE TEST CYLINDERS FOR EACH 100 CUBIC YARDS POURED, BUT NOT LESS THAN ONE SET FOR EACH DAY'S POUR AND EACH CLASS OF CONCRETE, ALONG WITH SLUMP TESTS SHALL BE PERFORMED BY A TESTING LABORATORY APPROVED BY THE STRUCTURAL ENGINEER.

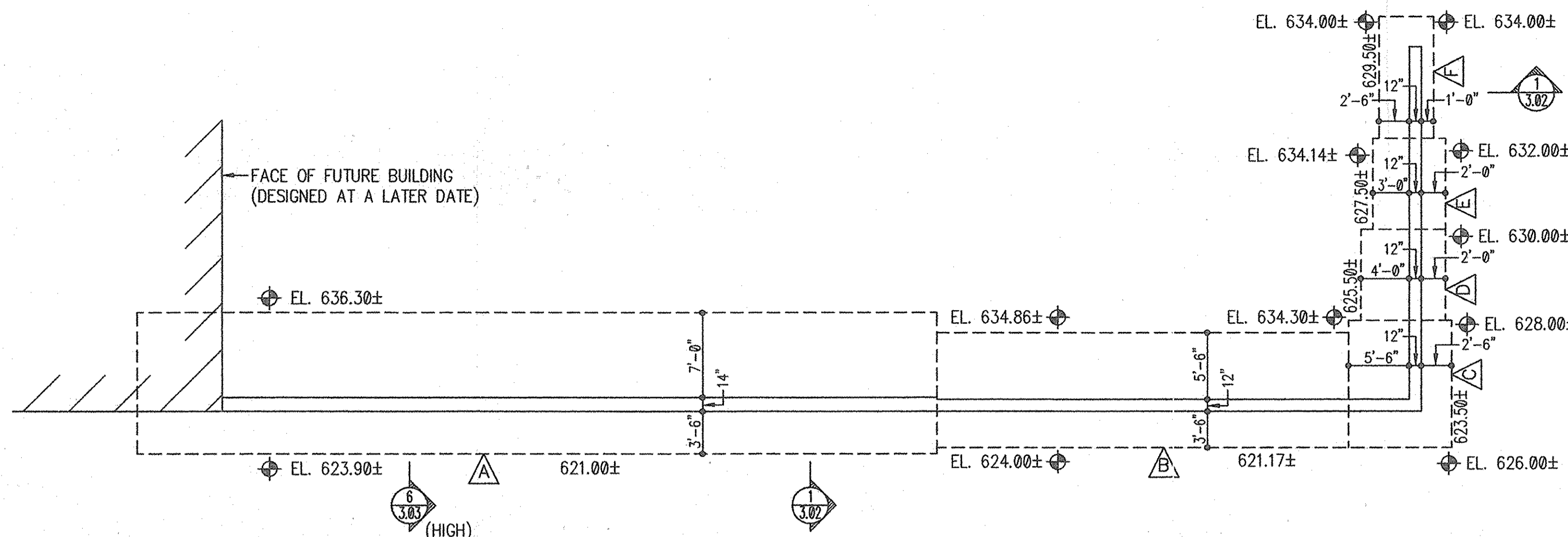
**REINFORCING STEEL:** REINFORCING STEEL SHALL BE DEFORMED BARS IN ACCORDANCE WITH ASTM A-615, GRADE 60. BENDS ARE TO BE FABRICATED AS PER DETAILS. PLACE MAIN REINFORCING STEEL SO AS TO PROVIDE 3" MINIMUM COVER FOR FOUNDATIONS POURED ON EARTH, 2" MINIMUM COVER FOR BEAMS AND COLUMNS, 3/4" MINIMUM COVER FOR SLABS AND 1 1/2" FOR ALL REBAR EXPOSED EXCEPT AS OTHERWISE DETAILED. ALL BEAM AND SLAB STEEL SHALL HAVE A MINIMUM EXTENSION INTO THE SUPPORTS IN ACCORDANCE WITH THE LATEST ADDITION OF THE ACI CODE, PROVIDE ACCESSORIES AND BAR SUPPORTS IN ACCORDANCE WITH THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 315-89). WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-105, GRADE 60 UNLESS OTHERWISE NOTED. WIRE REINFORCING SHALL BE PLACED AT MID-DEPTH OF SLABS ON GRADE AND DRAPED OVER SUPPORTS IN CONCRETE SLABS ON CENTERING. END LAPS OF ALL WIRE REINFORCING SHALL BE LAPPED 8" MINIMUM. CONCRETE ENGINEERED REINFORCING FIBERS SHALL BE POLYPROPYLENE, COLLATED, FIBRILLATED FIBERS FROM FIBERMESH, INC. INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

**SHOP DRAWINGS:** SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS MUST BE SUBMITTED BY GENERAL CONTRACTOR AND REVIEWED BY THE ENGINEER. ALL CONTRACTOR MODIFICATIONS (INCLUDING PRODUCTS SUBMISSION) MUST BE IDENTIFIED IN WRITING AS A PROPOSED "AS EQUAL" CHANGES AT TIME OF SUBMISSION. IF A CONTRACTOR OR OWNER FAILS TO SUBMIT THE SHOP DRAWINGS OR FAILS TO FOLLOW THE ABOVE "AS EQUAL" PROCEDURE, THE FIRM MORABITO CONSULTANTS, INC. WILL NOT BE RESPONSIBLE FOR THE STRUCTURAL CERTIFICATION AND DESIGN OF THE PROJECT. SHOP DRAWINGS ARE REVIEWED BY THE ENGINEER AS A CONVENIENCE TO THE CONTRACTOR AND ARE NOT A CONTRACT DOCUMENT.

**INSPECTION:** ALL WORK SPECIFIED HEREIN SHALL BE INSPECTED IN ACCORDANCE WITH THE BUILDING CODE AND ALL LOCAL ORDINANCES. THE OWNER OR CONTRACTOR SHALL HIRE AN EXPERIENCED QUALIFIED INSPECTOR TO PERFORM ALL REQUIRED INSPECTION WORK. INSPECTION SHALL CONSIST OF VISUAL OBSERVATIONS OF MATERIALS, EQUIPMENT OR CONSTRUCTION WORK FOR THE PURPOSE OF ASCERTAINING THAT THE WORK IS IN SUBSTANTIAL CONFORMANCE WITH THE CONTRACT DOCUMENTS AND WITH THE DESIGN INTENT. THE ENGINEER WILL NOT PERFORM THE REQUIRED INSPECTION AS PART OF THIS PRESENT CONTRACT WITH THE ARCHITECT/OWNER. UNDER THIS PRESENT CONTRACT, THE ENGINEER MAY VISIT THE SITE TO ASCERTAIN GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS. HOWEVER, SUCH VISITS SHALL NOT BE RELIED UPON BY OTHERS AS ACCEPTANCE OF THE WORK, NOR SHOULD IT BE CONSTRUED TO RELIEVE THE CONTRACTOR IN ANY WAY FROM HIS OBLIGATIONS AND RESPONSIBILITIES UNDER THE CONSTRUCTION CONTRACT. HOWEVER, IF DESIRED, MORABITO CONSULTANTS, INC. MAY BE HIRED UNDER A SEPARATE CONTRACT TO PERFORM THIS INSPECTION WORK.

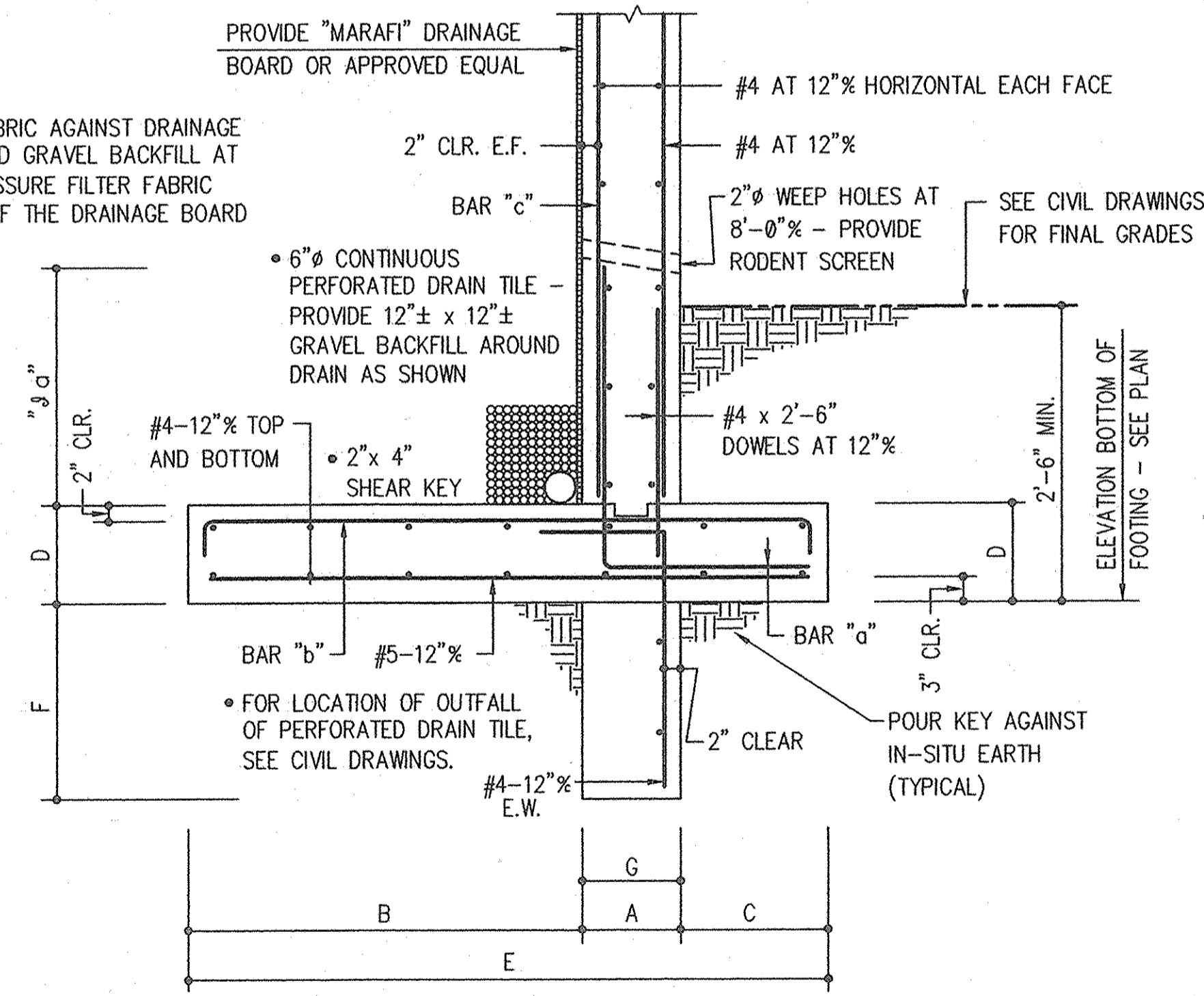
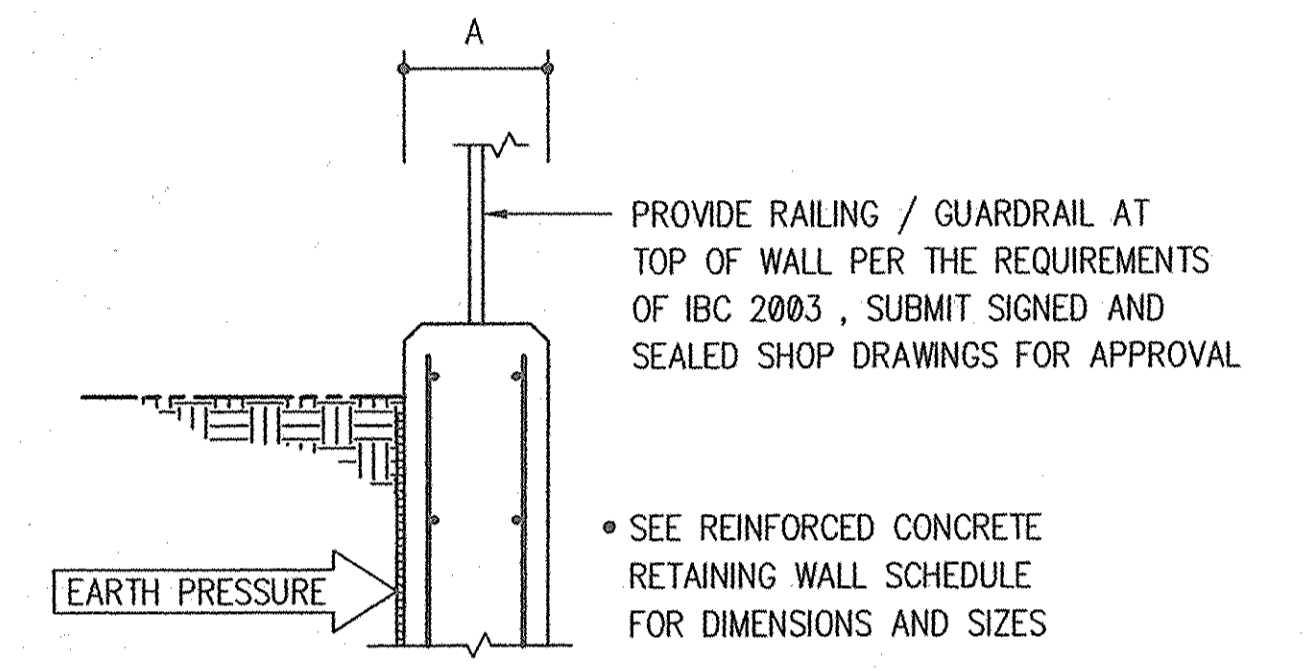
**OWNERSHIP OF DOCUMENTS:** THE CONTRACTOR ACKNOWLEDGES THESE PLANS AND SPECIFICATIONS PREPARED BY MORABITO CONSULTANTS, INC. AS INSTRUMENTS OF PROFESSIONAL SERVICE. NEVERTHELESS, THE PLANS AND SPECIFICATIONS PREPARED UNDER THIS AGREEMENT SHALL REMAIN THE PROPERTY OF MORABITO CONSULTANTS, INC. UPON COMPLETION OF THE WORK. THE CONTRACTOR AGREES TO HOLD HARMLESS AND INDEMNIFY MORABITO CONSULTANTS, INC. AGAINST ALL DAMAGES, CLAIMS, AND LOSSES, INCLUDING DEFENSE COSTS, ARISING OUT OF ANY REUSE OF THE PLANS AND SPECIFICATIONS WITHOUT THE WRITTEN AUTHORIZATION OF MORABITO CONSULTANTS, INC.

**DESIGN DATA:**  
fc = 4000 PSI  
fy = 60,000 PSI  
EQUIVALENT ACTIVE FLUID PRESSURE = 43.33 PCF  
SOIL BEARING VALUE = 3000 PSF



- PLAN - SITE RETAINING WALL** SCALE: 1/8" = 1'-0"
- SEE CIVIL DRAWINGS AS PREPARED BY SITE RESOURCES, INC. FOR EXACT DIMENSIONS FOR WALL LENGTH, LOCATION, AND FINAL GRADES.
  - ELEVATIONS NOTED THUS:  $\ominus$  ARE FINAL FINISH GRADES AT WALL.
  - REINFORCED CONCRETE ( $f_c = 4000$  PSI) RETAINING WALL INDICATED ON PLAN AND IN SCHEDULE THUS:  $\triangle$
  - DESIGN SOIL PARAMETERS USED FOR RETAINING WALL DESIGN AS FURNISHED BY HERBST/BENSON ASSOC. INC. ARE AS FOLLOWS:  
EQUIVALENT ACTIVE FLUID PRESSURE = 43.33 PCF (SEE NOTE 8)  
SOIL BEARING VALUE = 3000 PSF  
ASSUMED SOIL BEARING PRESSURE SHALL BE VERIFIED IN FIELD BY REGISTERED GEOTECHNICAL PROFESSIONAL ENGINEER
  - PROVIDE RAILING / GUARDRAIL AT TOP OF WALL PER THE REQUIREMENTS OF IBC - 2003. SUBMIT SIGNED AND SEALED SHOP DRAWINGS PREPARED BY MARYLAND PROFESSIONAL ENGINEER FOR REVIEW.
  - WALL TYPES ARE INDICATED ON PLAN THUS:  
 $\square$  REINFORCED CONCRETE RETAINING WALLS ( $f_c = 4000$  PSI)
  - ELEVATION BOTTOM OF FOOTING IS SHOWN ON PLAN.
  - PROVIDE FREE DRAINAGE GRANULAR MATERIAL AS BACKFILL AGAINST ALL BELOW GRADE WALLS. SEE GEOTECHNICAL REPORT PREPARED BY HERBST/BENSON & ASSOCIATES DATED AUGUST 9, 2006 FOR SPECIFIC REQUIREMENTS CONCERNING BACKFILL OF BELOW GRADE RETAINING WALLS.
  - AS PER THE REQUIREMENTS OF HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING DEVELOPMENT ENGINEERING DIVISION THE CONSTRUCTION OF REINFORCED CONCRETE WALL AND BACKFILL SHALL BE OBSERVED BY A PROFESSIONAL ENGINEER.

- PROVIDE FREE DRAINAGE GRANULAR MATERIAL AS BACKFILL AGAINST ALL BELOW GRADE WALLS. SEE GEOTECHNICAL REPORT PREPARED BY HERBST/BENSON & ASSOCIATES INC. DATED AUGUST 9, 2006 FOR SPECIFIC REQUIREMENTS CONCERNING BACKFILL OF BELOW GRADE RETAINING WALLS.
- PROVIDE FILTER FABRIC AGAINST DRAINAGE BOARD AND AROUND GRAVEL BACKFILL AT BASE OF WALL. ASSURE FILTER FABRIC COVERS THE TOP OF THE DRAINAGE BOARD



**1 TYPICAL CONCRETE SITE RETAINING WALL**  
SCALE: 3/4" = 1'-0"

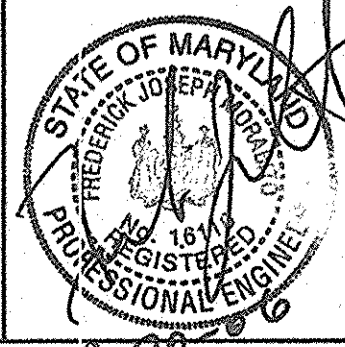
MARK	WALL		FOOTING					REINFORCING				REMARKS
	A	E x D	B	C	F	G	BAR "a"	s a	BAR "b"	BAR "c"		
A	1'-2"	11'-8" x 2'-0"	7'-0"	3'-6"	4'-6"	1'-2"	#10-12"	5'-0"	#9-10"	#7-12"	SEE (1/307)	
B	1'-0"	9'-6" x 1'-10"	5'-6"	3'-0"	4'-0"	1'-0"	#9-10"	4'-0"	#7-9"	#6-10"	SEE (1/307)	
C	1'-0"	9'-0" x 1'-4"	5'-6"	2'-6"	3'-6"	1'-0"	#8-12"	3'-0"	#7-9"	#6-12"	SEE (1/307)	
D	1'-0"	7'-0" x 1'-2"	4'-0"	2'-0"	3'-0"	1'-0"	#6-12"	3'-0"	#6-9"	#6-12"	SEE (1/307)	
E	1'-0"	6'-0" x 1'-0"	3'-0"	2'-0"	2'-6"	1'-0"	#6-12"	3'-0"	#5-9"	#4-12"	SEE (1/307)	
F	1'-0"	4'-6" x 1'-0"	2'-6"	1'-0"	2'-0"	1'-0"	#4-12"	2'-0"	#5-9"	#4-12"	SEE (1/307)	

- ALL CONCRETE FOR RETAINING WALLS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.
- DO NOT BACKFILL WALLS UNTIL CONCRETE HAS ATTAINED DESIGN STRENGTH.

**APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS**  
 12/14/06  
 JAMES M. IRVIN, DIRECTOR  
**APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS**  
 HOWARD COUNTY HEALTH DEPARTMENT  
 1/17/07  
 COUNTY HEALTH OFFICER  
**APPROVED: DEPARTMENT OF PLANNING & ZONING**  
 1/18/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 34 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: lw@edmeades-stromdahl.com

**MORABITO CONSULTANTS INC.**  
 STRUCTURAL ENGINEERS  
 2526 SAINT PAUL STREET  
 BALTIMORE, MARYLAND 21218-4609  
 (410) 467-2377  
 FAX (410) 467-4132  
 www.morabitoconsultants.com  
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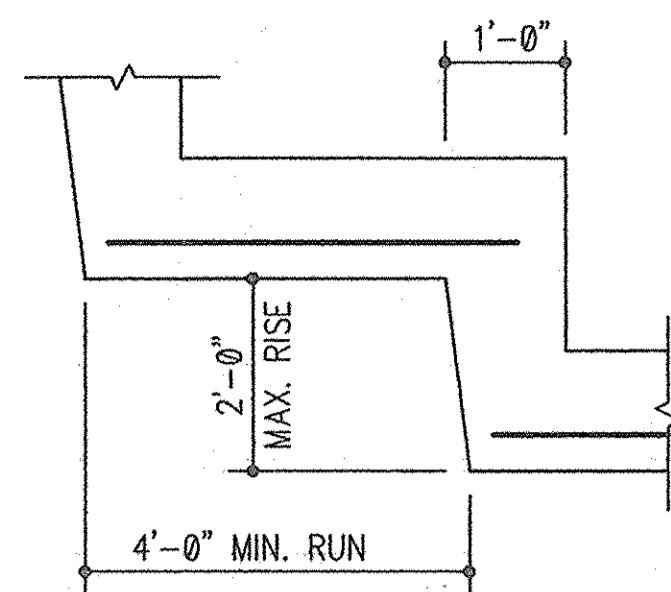


DES.	DRN.	CHK.	DATE	BY	NO.	REVISION	DATE
			04/22/06				

**Retaining Wall Plan & Details**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

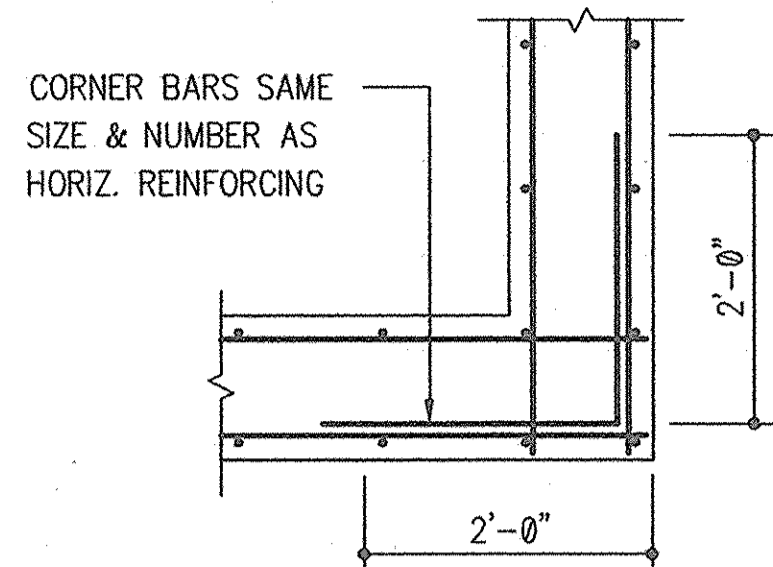
**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Fire Association Inc.  
 12460 Frederick Rd  
 West Friendship, MD 21154  
 Phone (410) 785-1254  
**ADDRESS / PERMIT INFORMATION:**  
 12225 Old Frederick Rd, Sykesville MD 21154  
 PARCEL 1210  
 L 0010 11/294  
 GRID No. 23, ZONE RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract 6020  
 Private Code Private, Sewer Code Private

C3.02  
 SCALE: 1/8" = 1'-0"  
 SHEET  
 7 OF 20

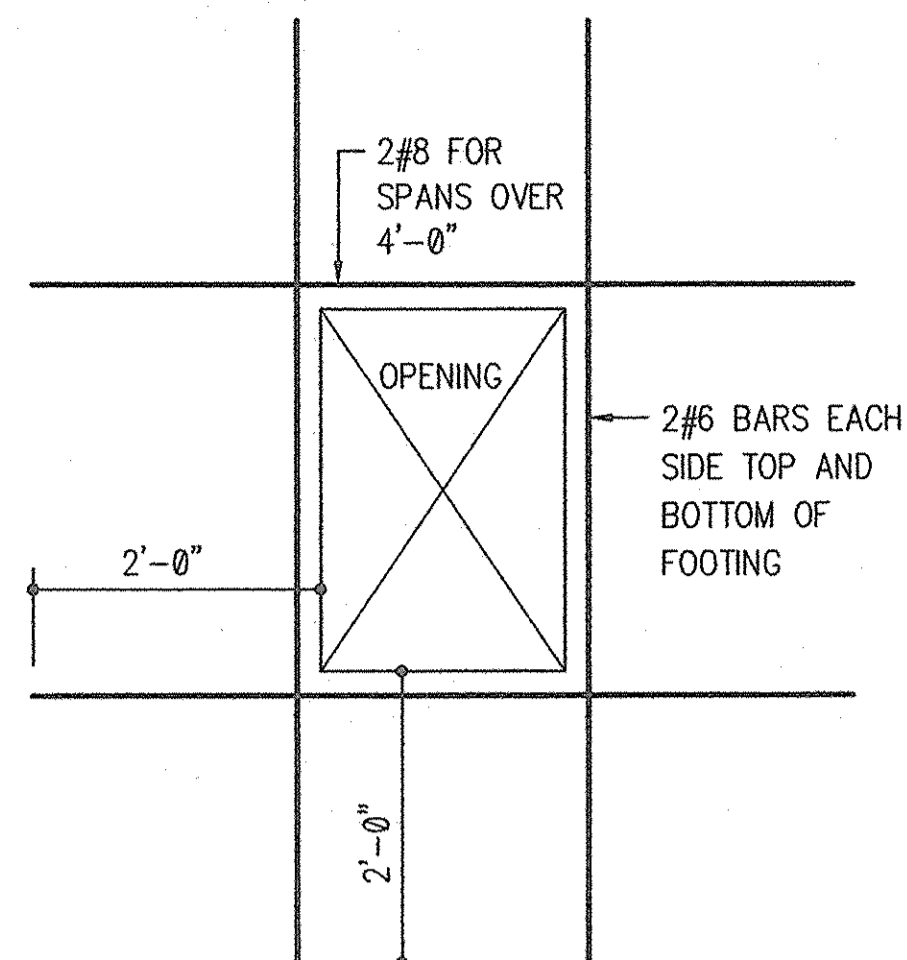


\* SEE SECTION FOR SIZE OF REINF. BARS

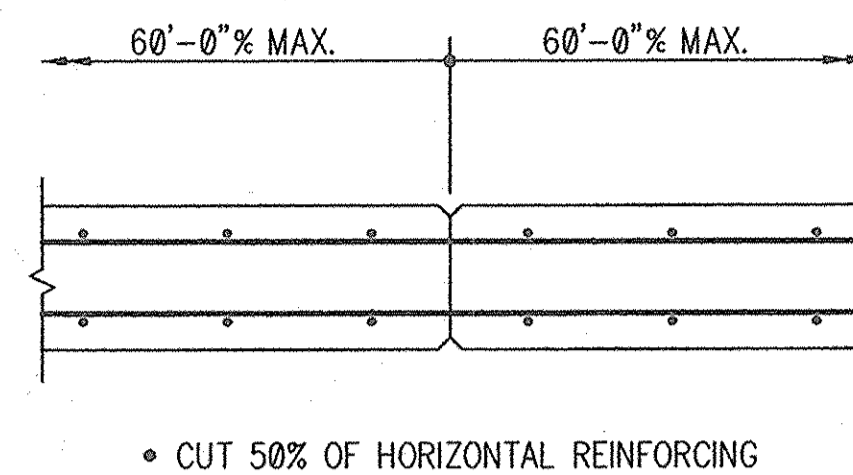
1 TYP. STEPPED FOOTING  
SCALE: 3/4" = 1'-0"



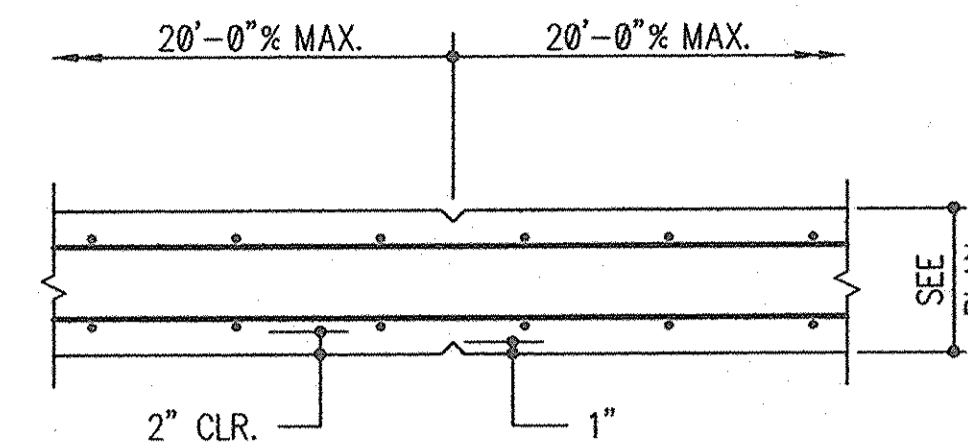
2 TYP. CORNER BARS  
SCALE: 3/4" = 1'-0"



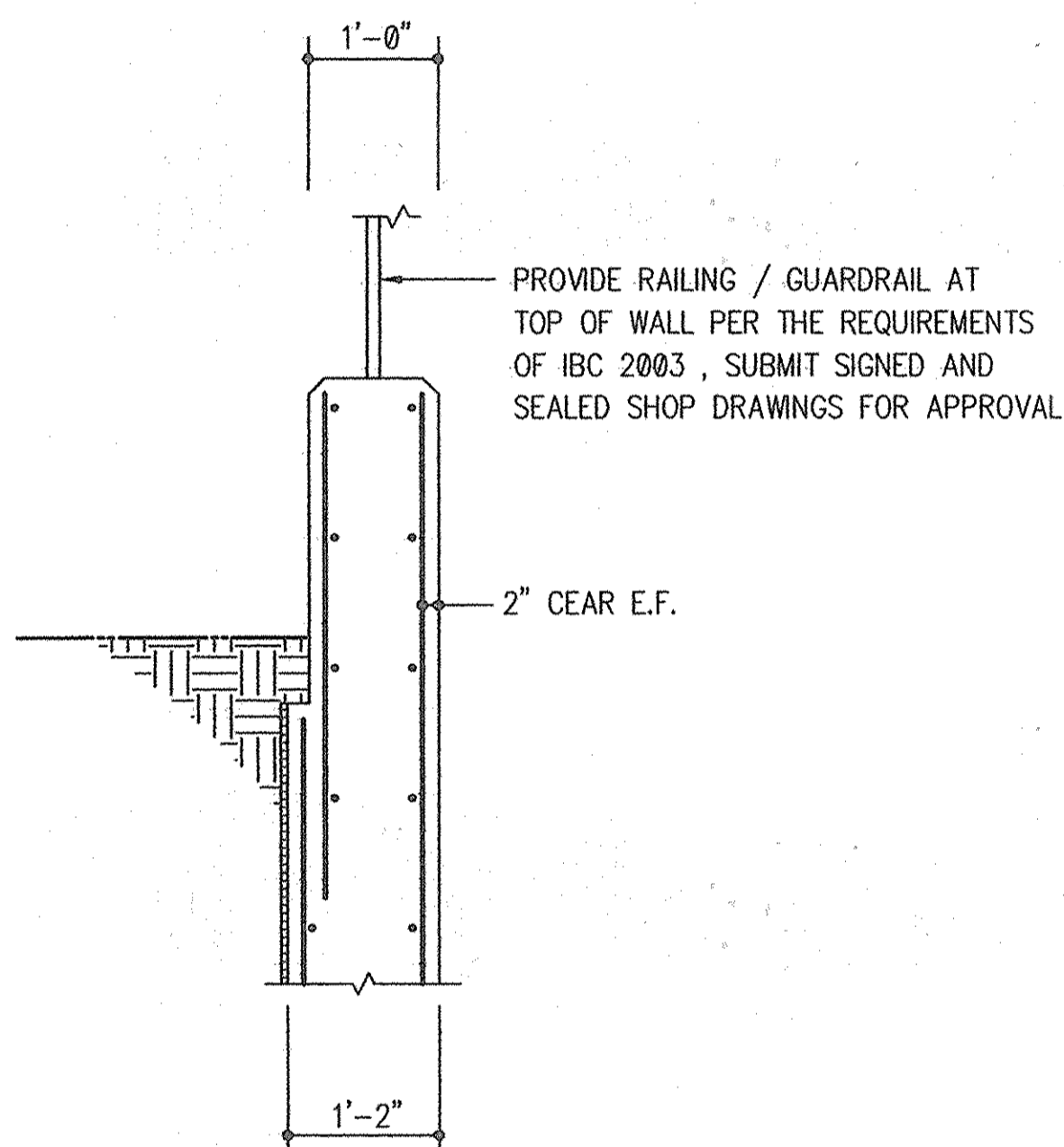
3 TYP. OPENING IN CONCRETE WALL  
SCALE: 3/4" = 1'-0"



4 CONSTRUCTION JOINT IN CONCRETE WALLS  
SCALE: 3/4" = 1'-0"



5 CONTROL JOINT IN CONCRETE WALLS  
SCALE: 3/4" = 1'-0"



\* SEE SECTION FOR SIZE OF REINF. BARS

6 KNOTCH AT TOP OF WALL TYPE A  
SCALE: 3/4" = 1'-0"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*James M. Irwin* 12/14/06  
JAMES M. IRWIN, DIRECTOR DATE

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

*Robert J. Walden* 1/17/07  
COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

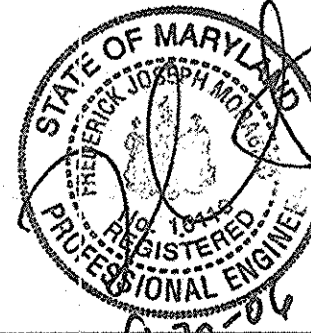
*Paula K. Leyle* 1/16/07  
DIRECTOR DATE

*Michael J. ...* 1/16/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Chris ...* 1/15/07  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**EDMEADES & STROMDAHL, LTD.**  
ARCHITECTS / PLANNERS  
34 North Main Street Bel Air, Maryland 21014  
Phone: 410.879.0388 Fax: 410.879.4785  
E-mail: bw@edmeades-stromdahl.com

**MORABITO CONSULTANTS INC.**  
STRUCTURAL ENGINEERS  
2526 SAINT PAUL STREET  
BALTIMORE, MARYLAND 21218-4609  
(410) 467-2377  
FAX (410) 467-4132  
www.morabitoconsultants.com  
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DES:	
DRN:	
CHK:	
DATE 01/22/06	BY NO. REVISION

Retaining Wall  
Details

600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
Howard County, Maryland

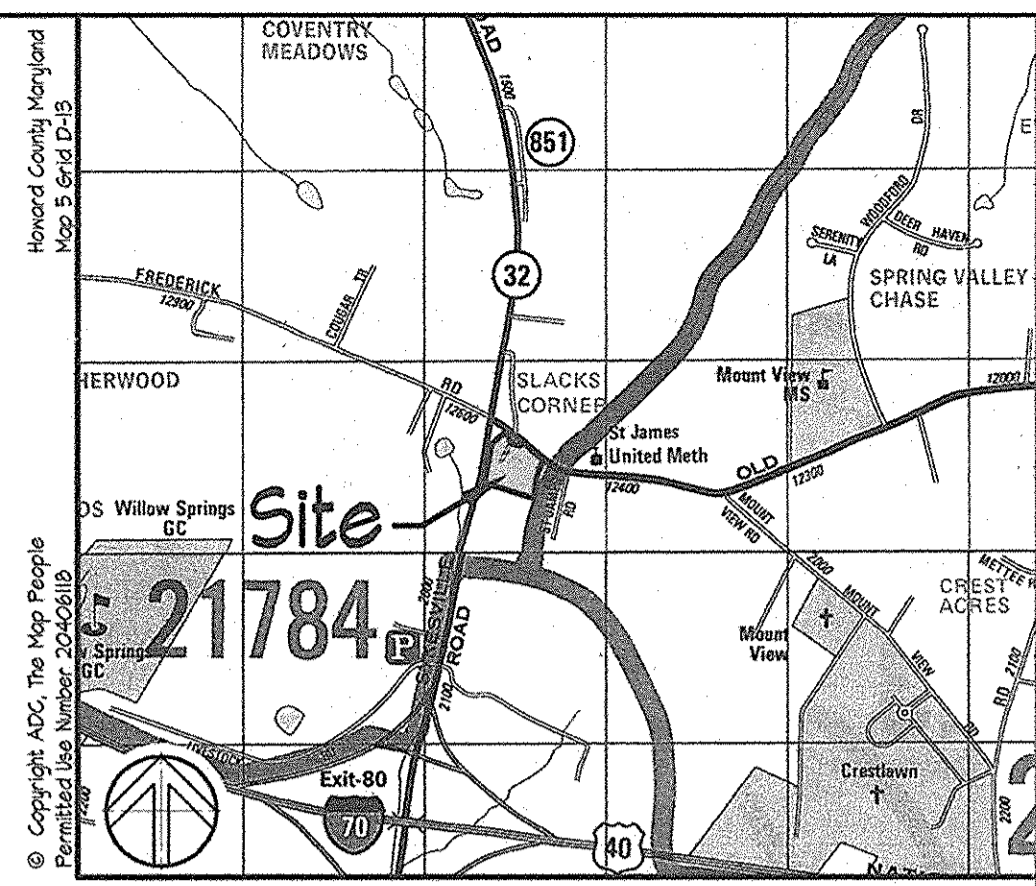
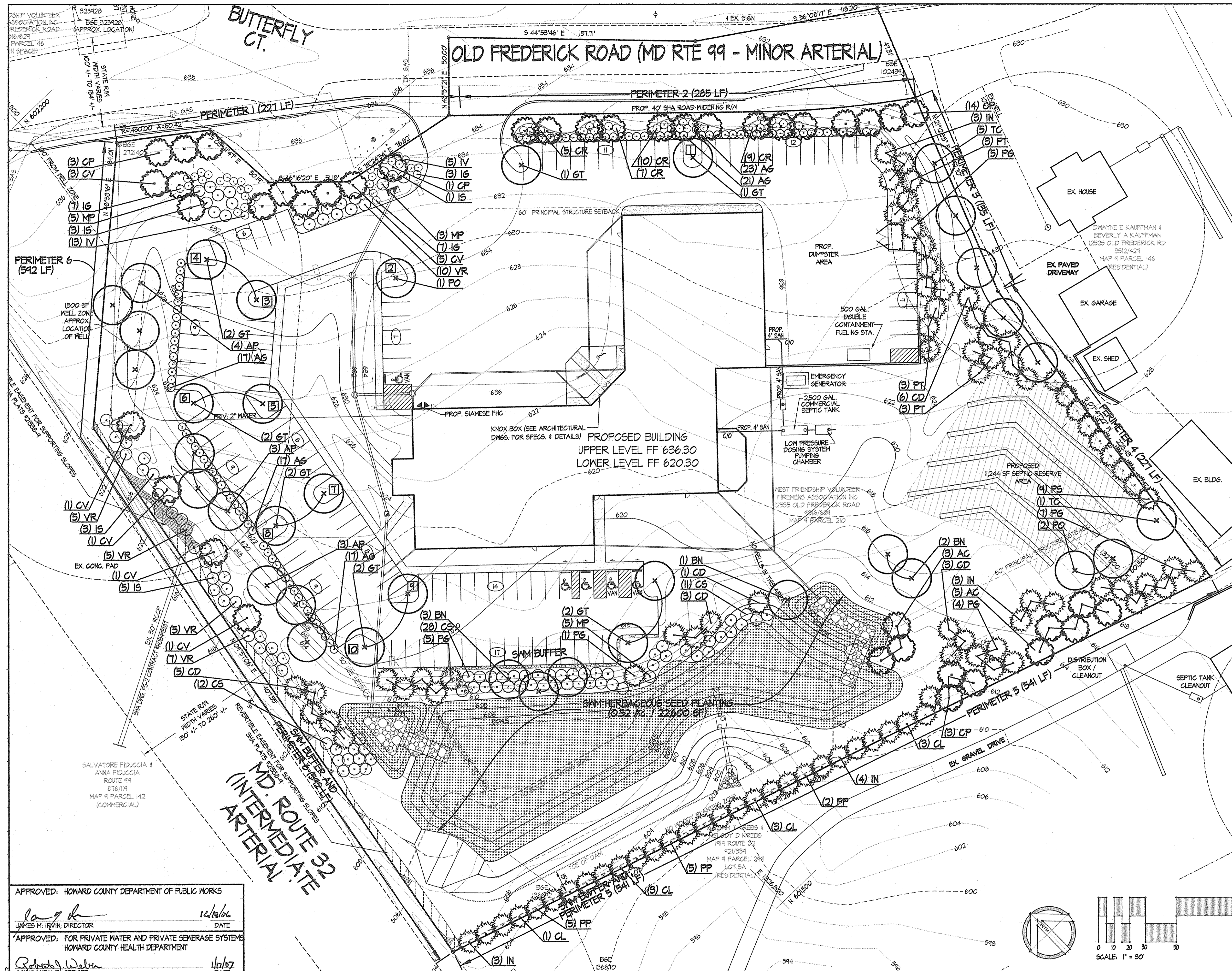
OWNER:  
West Friendship Volunteer  
Fire Association Inc.  
ADDRESS / PERMIT INFORMATION:  
ADDRESS: 12255 Old Frederick Rd., Sykesville MD 21784  
PARCELS: 9250  
L 9216 / F 521  
GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
3rd Election District, Census Tract 5050  
WATER CODE: Private, SEWER CODE: Private  
Phone (410) 755-1234

C3.03

SCALE:  
3/4" = 1'-0"

SHEET  
8 OF 28





Vicinity Map Scale: 1" = 2000'

- LEGEND**
- PROPERTY LINE
  - - - - - EXISTING CONTOURS
  - - - - - PROPOSED CONTOURS
  - - - - - EXISTING TREELINE
  - - - - - PROPOSED TREELINE
  - - - - - EXISTING CURB & GUTTER
  - - - - - PROPOSED CURB & GUTTER
  - ○ ○ ○ ○ PROPOSED PLANTING
  - □ □ □ □ PROPOSED SITE LIGHTING STANDARDS
  - ■ ■ ■ ■ EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 631 SF

PREPARED BY: KEVIN P. RILEY, RLA  
 STATE OF MARYLAND  
 REGISTERED LANDSCAPE ARCHITECT  
 REGISTRATION NO. 3291  
 NAME: *K. P. Riley* DATE: 12/8/06

DEVELOPER'S/BUILDER'S CERTIFICATE  
 I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Subdivision and Land Development Regulations and the Landscape Manual. I/We further certify that upon completion a letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.  
 Name: *H. Mitchell Day, Chief* DATE: 12/14/06

NOTES:  
 1. SEE SHEET C4.02 FOR PLANTING CALCULATIONS, NOTES AND SCHEDULE.

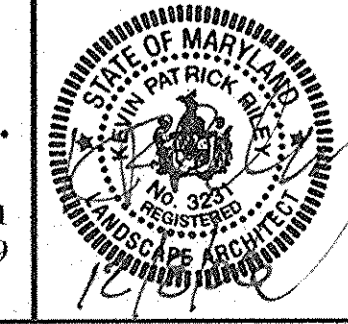
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 DATE: 12/16/06  
 JAMES M. IRVIN, DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 DATE: 1/17/07  
 COUNTY HEALTH OFFICER

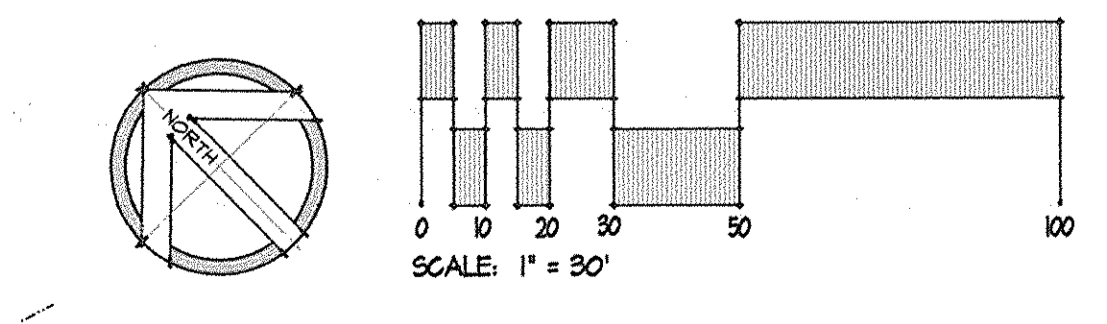
APPROVED: DEPARTMENT OF PLANNING & ZONING  
 DATE: 1/18/07  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

**SITE RESOURCES, INC.**  
 LAND PLANNING / SITE DESIGN  
 14315 Jarettsville Pike Phoenix, Maryland 21131  
 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com



DES: KPR					
DRN: AM					
CHK: REM					
DATE: 12/08/06	BY: NO.	REVISION	DATE	600' SCALE MAP NO. 9	BLOCK NO. 23



**Planting Plan**

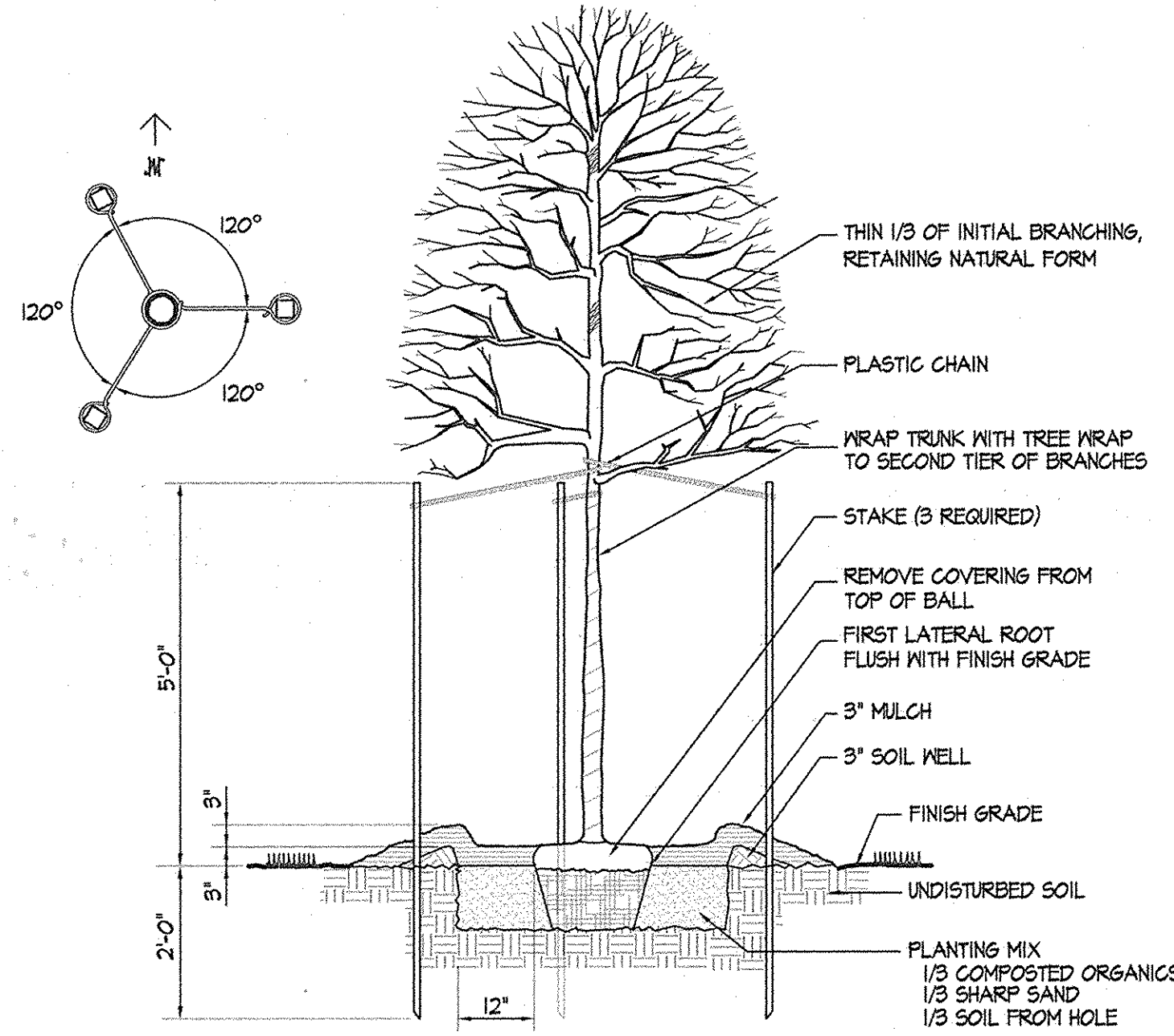
**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5965, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Firemen's Association Inc.  
 12460 Frederick Rd  
 West Friendship, MD 21784  
 Phone (410) 795-1234

ADDRESS / PERMIT INFORMATION:  
 ADDRESS: 12595 Old Frederick Rd., Sykesville MD 21784  
 PARCEL: 1210  
 L 0816 / F 624  
 GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract 6030  
 WATER CODE: Private, SEWER CODE: Private

**C4.01**  
 SCALE: 1"=30'  
 SHEET 9 OF 28  
 SDP-07-017

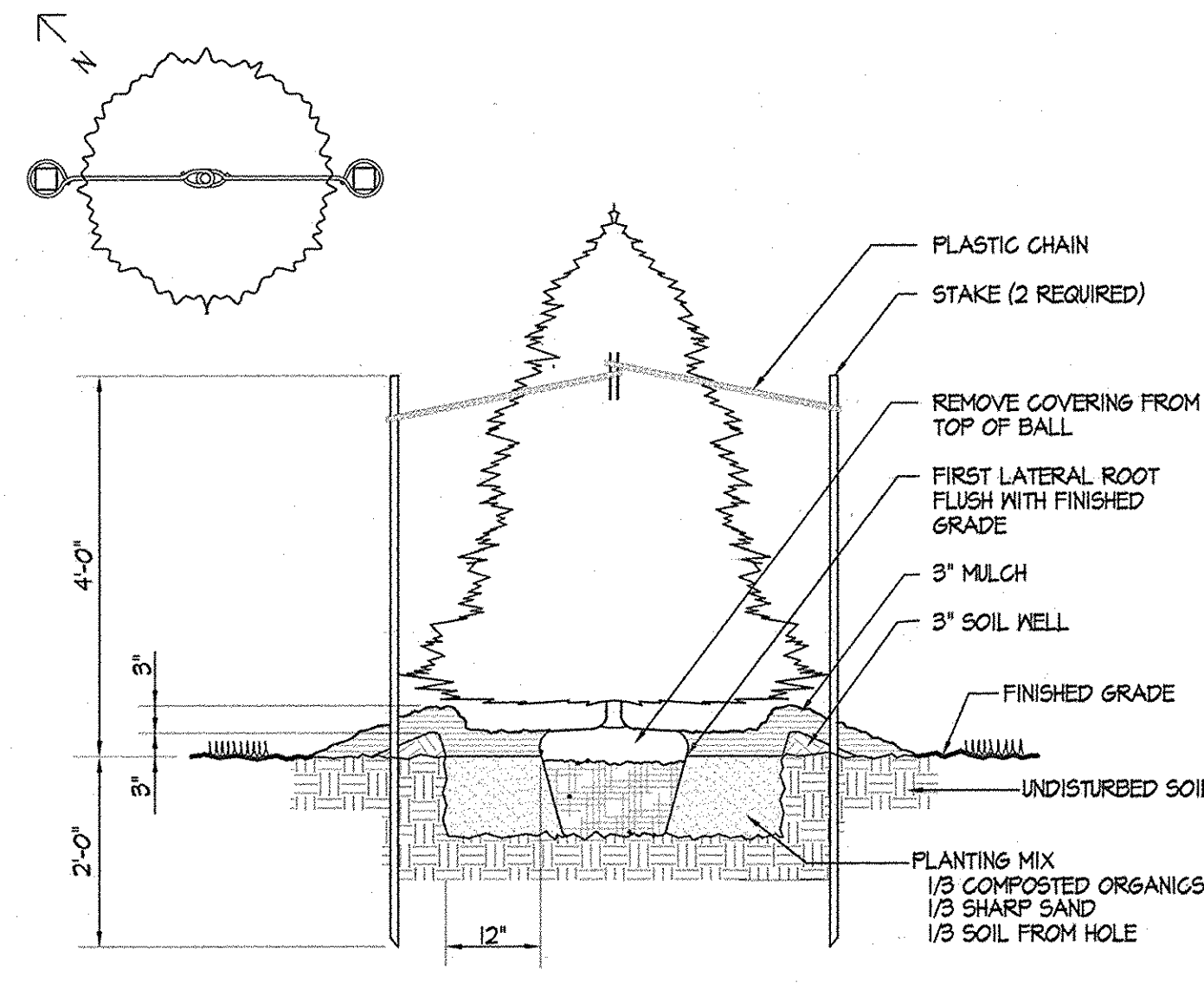
**GENERAL PLANTING NOTES:**

1. PLANT MATERIAL SUBSTITUTIONS ARE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT.
2. PLANT MATERIAL SHALL BE TAGGED AT THE SOURCE BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE UNLESS THE REQUIREMENT IS SPECIFICALLY WAIVED.
3. LOCATIONS OF ALL PLANT MATERIAL SHALL BE STAKED FOR APPROVAL BY THE OWNER'S REPRESENTATIVE.
4. ALL SHRUB AND GROUND COVER AREAS SHALL BE PLANTED IN CONTINUOUS PREPARED BEDS, MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILED AND SPECIFIED.
5. PLANTING BEDS SHALL HAVE POSITIVE DRAINAGE WITH A MINIMUM 2 PERCENT SLOPE.
6. CONTRACTOR SHALL VERIFY ACCURACY OF BASE INFORMATION AND EXISTING CONDITIONS IN THE FIELD TO HIS OWN SATISFACTION. BID SHALL BE BASED ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.
7. ALL PLANT MATERIAL SHALL BE NURSERY GROWN AND SHALL CONFORM TO AMERICAN NURSERYMEN ASSOCIATION STANDARDS.
8. ALL PLANTING PROCEDURES SHALL CONFORM TO THE LATEST EDITION OF LANDSCAPE CONTRACTOR ASSOCIATION GUIDELINES FOR THE BALTIMORE/WASHINGTON METROPOLITAN AREA AND THE PROJECT SPECIFICATIONS.
9. SEE GRADING & UTILITY DRAWINGS FOR EXISTING & PROPOSED GRADES AND UTILITIES. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS TO HIS OWN SATISFACTION.
10. SEE SHEET C4.01 FOR PLANTING PLAN.
11. SEE SHEET C7.12 & C7.13 FOR STORMWATER MANAGEMENT AREA PLANTING PLAN & DETAILS.
12. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREBY LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING 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.
13. SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN DIE, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
14. THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES, AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
15. SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED, AS NEEDED, IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS. STABILIZE ALL DISTURBED AREAS AS SOON AS FINAL GRADING HAS BEEN COMPLETED. ALL DISTURBED AREAS SHALL BE SEEDDED WITH THE EXCEPTION OF PLANTING BEDS.
16. INSTALL TREE PROTECTION FENCING ALONG THE LIMITS OF DISTURBANCE (LOD) OF THE EXISTING WOODS. ALL SITE GRADING, PLANTING BED PREPARATION AND TREE AND SHRUB PLANTING MUST BE DONE OUTSIDE OF THE DRIP LINE OF EXISTING TREES TO BE PRESERVED IN ORDER TO MAINTAIN AND PROTECT THE ROOT SYSTEM.
17. TREES ARE NOT TO BE INSTALLED CLOSER THAN 6' TO ANY EDGE OF PAVEMENT, CURB OR SIDEWALK.
18. PLANTING FOR BUFFERS ALONG PERIMETERS 5 & 6 HAVE BEEN PARTIALLY PROVIDED FOR BY SWM BUFFER PLANTINGS DUE TO THE CLOSE PROXIMITY OF THE SWM POND TO THE PROPERTY LINE.



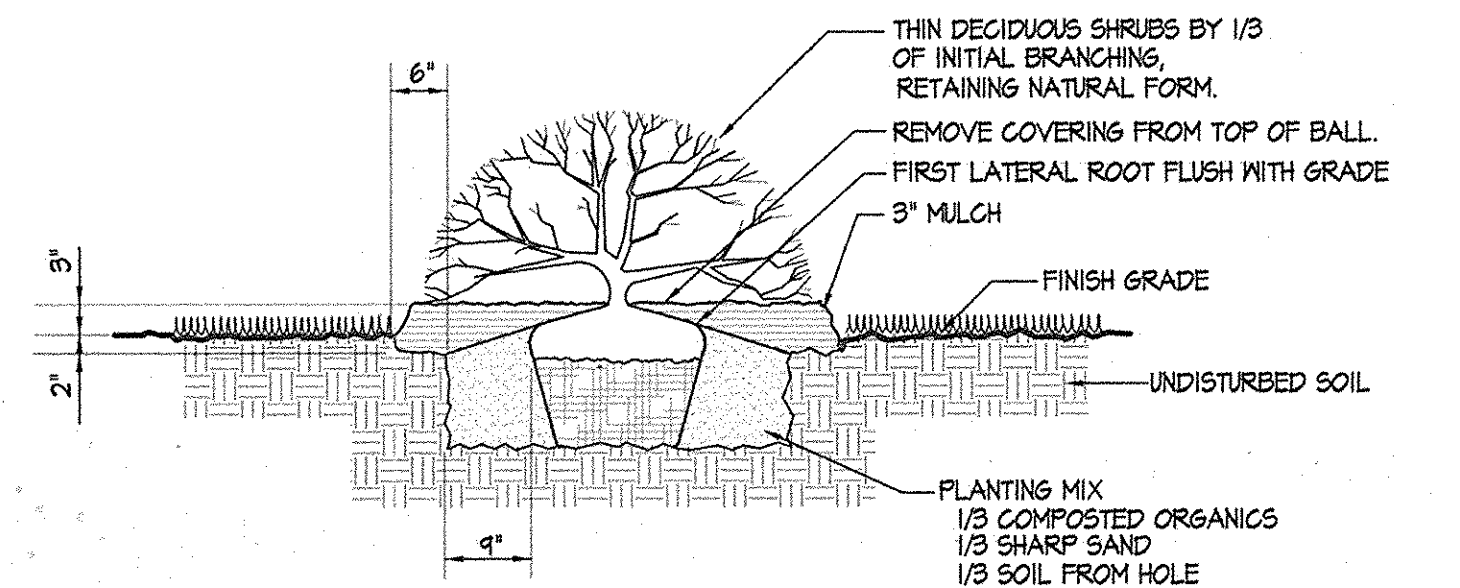
**DECIDUOUS TREE DETAIL**

N.T.S.



**EVERGREEN TREE DETAIL**

N.T.S.



**SHRUB DETAIL**

N.T.S.

NOTE: FOR USE ONLY WHEN PLANTS ARE SPACED EQUIDISTANT FROM EACH OTHER AS SHOWN, AND SPECIFIED IN THE PLANT LIST.

SPACING 'D'	ROW 'A'	NO. OF PLANTS / S.F.
6' O.C.	5.20'	4.61
8' O.C.	6.93'	2.60
10' O.C.	8.66'	1.66
12' O.C.	10.40'	1.15
15' O.C.	13.00'	.78
18' O.C.	15.60'	.52
24' O.C.	20.80'	.29
30' O.C.	26.00'	.19
36' O.C.	30.00'	.12

**PLANT SPACING CHART**

**PERIMETER PLANTING**

- PERIMETER 1 - TYPE E BUFFER (227 LF)**  
 REQUIRED: 6 SHADE TREES @ 1/40 LF; 51 SHRUBS @ 1/4 LF  
 PROVIDED: 12 ORNAMENTAL TREES (2/1 SHADE TREE); 51 SHRUBS
- PERIMETER 2 - TYPE E BUFFER (285 LF)**  
 REQUIRED: 7 SHADE TREES @ 1/40 LF; 71 SHRUBS @ 1/4 LF  
 PROVIDED: 14 ORNAMENTAL TREES (2/1 SHADE TREES); 75 SHRUBS
- PERIMETER 3 - TYPE D BUFFER (135 LF)**  
 REQUIRED: 3 SHADE TREES @ 1/60 LF; 14 EVERGREEN TREES @ 1/10 LF  
 PROVIDED: 3 SHADE TREES; 14 EVERGREEN TREES
- PERIMETER 4 - TYPE C BUFFER (221 LF)**  
 REQUIRED: 6 SHADE TREES @ 1/40 LF; 12 EVERGREEN TREES @ 1/20 LF  
 PROVIDED: 3 SHADE TREES; 10 EVERGREEN TREES (2/1 SHADE TREE)
- PERIMETER 5 - TYPE C BUFFER (180 LF)**  
 (341 LF - 361 LF SWM BUFFER) SEE GENERAL PLANTING NOTE II THIS SHEET  
 REQUIRED: 5 SHADE TREES @ 1/40 LF; 4 EVERGREEN TREES @ 1/20 LF  
 PROVIDED: 2 SHADE TREES; 5 ORNAMENTAL TREES (2/1 SHADE TREE); 10 EVERGREEN TREES (2/1 SHADE TREE)
- PERIMETER 6 - TYPE E BUFFER (400 LF)**  
 (342 LF - 192 LF SWM BUFFER) SEE GENERAL PLANTING NOTE I0 THIS SHEET  
 REQUIRED: 10 SHADE TREES @ 1/40 LF; 100 SHRUBS @ 1/4 LF  
 PROVIDED: 10 SHADE TREES; 4 ORNAMENTAL TREES (1/5 SHRUBS); 81 SHRUBS

**PARKING LOT PLANTING**

- NUMBER OF PARKING SPACES: 121  
 INTERNAL ISLANDS @ 1/20 SPACES  
 REQUIRED: 6  
 PROVIDED: 10  
 SHADE TREES @ 1/20 SPACES  
 REQUIRED: 6  
 PROVIDED: 13

**SWM AREA PLANTING**

- PERIMETER 10/10 LF**  
 TYPE B BUFFER (649 LF)  
 REQUIRED: 13 SHADE TREES @ 1/50 LF; 17 EVERGREEN TREES @ 1/40 LF  
 PROVIDED: 6 SHADE TREES; 10 EVERGREEN TREES (2/1 SHADE TREE); 56 SHRUBS (10/1 SHADE TREE); 3 ORNAMENTAL TREES (2/1 SHADE TREE)
- TYPE C BUFFER (361 LF)**  
 REQUIRED: 4 SHADE TREES @ 1/40 LF; 10 EVERGREEN TREES @ 1/20 LF  
 PROVIDED: 33 EVERGREEN TREES (2/1 SHADE TREE); 3 ORNAMENTAL TREES (2/1 SHADE TREE)

**PLANTING SCHEDULE** NOTE: SWM PLANTINGS ARE INCLUDED IN THIS PLANTING SCHEDULE.

KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY	COMMENTS
<b>SHADE TREES</b>						
AP	ACER GRiseum x NIKOENSE 'GINZAM'	GINGERBREAD PAPERBARK MAPLE	2' - 2 1/2' CAL.	AS SHOWN	10	
AS	AESCULUS x CARNEA 'BRIOTTI'	RED HORSECHESTNUT	2' - 2 1/2' CAL.	AS SHOWN	10	
BN	BETULA NIGRA 'DURA-HEAT'	DURA-HEAT RIVER BIRCH	12-14'	AS SHOWN	6	MULTI-STEMMED
GT	GLEDITSIA TRIACANTHOS VAR. INRIMIS 'SHADEMASTER'	SHADEMASTER THORNLESS HONEYLOCUST	2' - 2 1/2' CAL.	AS SHOWN	12	
FO	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	2' - 2 1/2' CAL.	AS SHOWN	3	
TC	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	2' - 2 1/2' CAL.	AS SHOWN	6	
<b>ORNAMENTAL TREES</b>						
AC	AMALANCHIER CANADENSIS	SHADELOW SERVICEBERRY	8-10 FT. H.	AS SHOWN	8	MULTI-STEMMED
CV	CHIONANTHUS VIRGINICUS	FRINGE TREE	15'-2"	AS SHOWN	12	
CP	CRATAEGUS PHAENOPYRUM	WASHINGTON HAWTHORN	15'-2"	AS SHOWN	21	
<b>EVERGREEN TREES</b>						
CD	CEDRUS DEODARA 'AUREA'	GOLDEN HIMALAYAN CEDAR	8-10 FT. H.	AS SHOWN	18	
CL	x CUPRESSOCYPARIS LEYLANDII	LEYLAND CYPRESS	8-10 FT. H.	AS SHOWN	10	
IN	ILEX x NELLIE R STEVENS'	NELLIE STEVENS HOLLY	8-10 FT. H.	AS SHOWN	13	
PG	PICEA GLAUGA	WHITE SPRUCE	8-10 FT. H.	AS SHOWN	22	
PP	PICEA PENSILS 'HOOPSII'	HOOPSII BLUE SPRUCE	8-10 FT. H.	AS SHOWN	12	
PT	PINUS THUNDERGIANA	JAPANESE BLACK PINE	8-10 FT. H.	AS SHOWN	4	
PS	PINUS STROBUS 'FASTIGIATA'	COLUMNAR WHITE PINE	8-10 FT. H.	AS SHOWN	4	
<b>SHRUBS</b>						
AG	ABELIA GRANDIFLORA 'EDWARD GOUCHER'	EDWARD GOUCHER GLOSSY ABELIA	18-24 IN H.	AS SHOWN	45	
CS	CORNUS SERICEA	REDOSIER DOGWOOD	3-4 FT H.	AS SHOWN	51	
CR	COTONEASTER DAMMERI 'ROYAL BEAUTY'	ROYAL BEAUTY COTONEASTER	3 GAL.	AS SHOWN	31	
IG	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY HOLLY	2-3 FT H.	AS SHOWN	11	
IS	ILEX VERTICILLATA 'SPARKLEBERRY'	SPARKLEBERRY HOLLY	3-4 FT H.	AS SHOWN	12	
IV	ITEA VIRGINIANA 'HENRY'S GARNET'	HENRY'S GARNET VIRGINIA SWEETSPIRE	2-3 FT H.	AS SHOWN	13	
MP	MYRICA PENNSYLVANICA	NORTHERN BAYBERRY	3-4 FT H.	AS SHOWN	13	
VR	VIBURNUM RHYTIDOPHYLLUM	LEATHERLEAF VIBURNUM	3-4 FT H.	AS SHOWN	32	

**SWM PLANTING SCHEDULE** NOTE: THIS SWM PLANTING SCHEDULE PROVIDED ON THIS SHEET FOR CONTRACTOR'S CONVENIENCE ONLY. SEE SHEETS C7.12 AND C7.13 FOR ACTUAL STORMWATER MANAGEMENT PLANTING PLAN, SCHEDULE, NOTES AND DETAILS.

KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY	COMMENTS
<b>SHADE TREES</b>						
BN	BETULA NIGRA 'DURA-HEAT'	DURA-HEAT RIVER BIRCH	12-14' H.	AS SHOWN	6	MULTI-STEMMED
<b>ORNAMENTAL TREES</b>						
AC	AMALANCHIER CANADENSIS	SHADELOW SERVICEBERRY	8-10 FT. H.	AS SHOWN	3	MULTI-STEMMED
CP	CRATAEGUS PHAENOPYRUM	WASHINGTON HAWTHORN	15'-2"	AS SHOWN	3	
<b>EVERGREEN TREES</b>						
CD	CEDRUS DEODARA 'AUREA'	GOLDEN HIMALAYAN CEDAR	8-10 FT. H.	AS SHOWN	12	
CL	x CUPRESSOCYPARIS LEYLANDII	LEYLAND CYPRESS	8-10 FT. H.	AS SHOWN	10	
IN	ILEX x NELLIE R STEVENS'	NELLIE STEVENS HOLLY	8-10 FT. H.	AS SHOWN	6	
PG	PICEA GLAUGA	WHITE SPRUCE	8-10 FT. H.	AS SHOWN	10	
PP	PICEA PENSILS 'HOOPSII'	HOOPSII BLUE SPRUCE	8-10 FT. H.	AS SHOWN	12	
<b>SHRUBS</b>						
CS	CORNUS SERICEA	REDOSIER DOGWOOD	3-4 FT H.	AS SHOWN	51	
MP	MYRICA PENNSYLVANICA	NORTHERN BAYBERRY	3-4 FT H.	AS SHOWN	5	

**SWM SEED SCHEDULE**

SWM HERBACEOUS SEED PLANTING SHALL BE ERNST CONSERVATION SEEDS - FACM WETLAND MEADOW MIX ERNWX-122 OR APPROVED EQUAL. CONTRACTOR SHALL PREPARE AND FERTILIZE SITE AREA AND APPLY SEED PER MANUFACTURER'S SPECIFICATIONS. SEED APPLICATION RATE SHALL BE 15 LBS. PER ACRE.

**DEVELOPER'S/BUILDER'S CERTIFICATE**

I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Subdivision and Land Development Regulations and the Landscape Manual. I/We further certify that upon completion a letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Name: M. Mitchell Day, Chief Date: 12/14/06

PREPARED BY: KEVIN P. RILEY, RLA  
 STATE OF MARYLAND  
 REGISTERED LANDSCAPE ARCHITECT  
 REGISTRATION NO. 5231

Name: KPRiley Date: 12/8/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Name: [Signature] Date: 12/8/06  
 JAMES H. BEVIN, DIRECTOR

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

Name: [Signature] Date: 1/17/07  
 COUNTY HEALTH OFFICER

APPROVED: DEPARTMENT OF PLANNING & ZONING

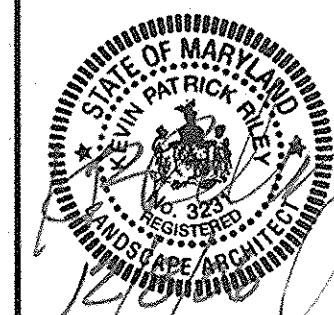
Name: [Signature] Date: 1/18/07  
 DIRECTOR

Name: [Signature] Date: 1/18/07  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Name: [Signature] Date: 1/18/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mes@edmeades-stromdahl.com

**SITE RESOURCES, INC.**  
 LAND PLANNING / SITE DESIGN  
 14315 Jarettsville Pike Phoenix, Maryland 21131  
 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com



DES:	KPR						
DRW:	KPR						
CHK:	REM						
DATE:	12/08/06	BY:	NO.	REVISION	DATE	600' SCALE MAP NO.	9

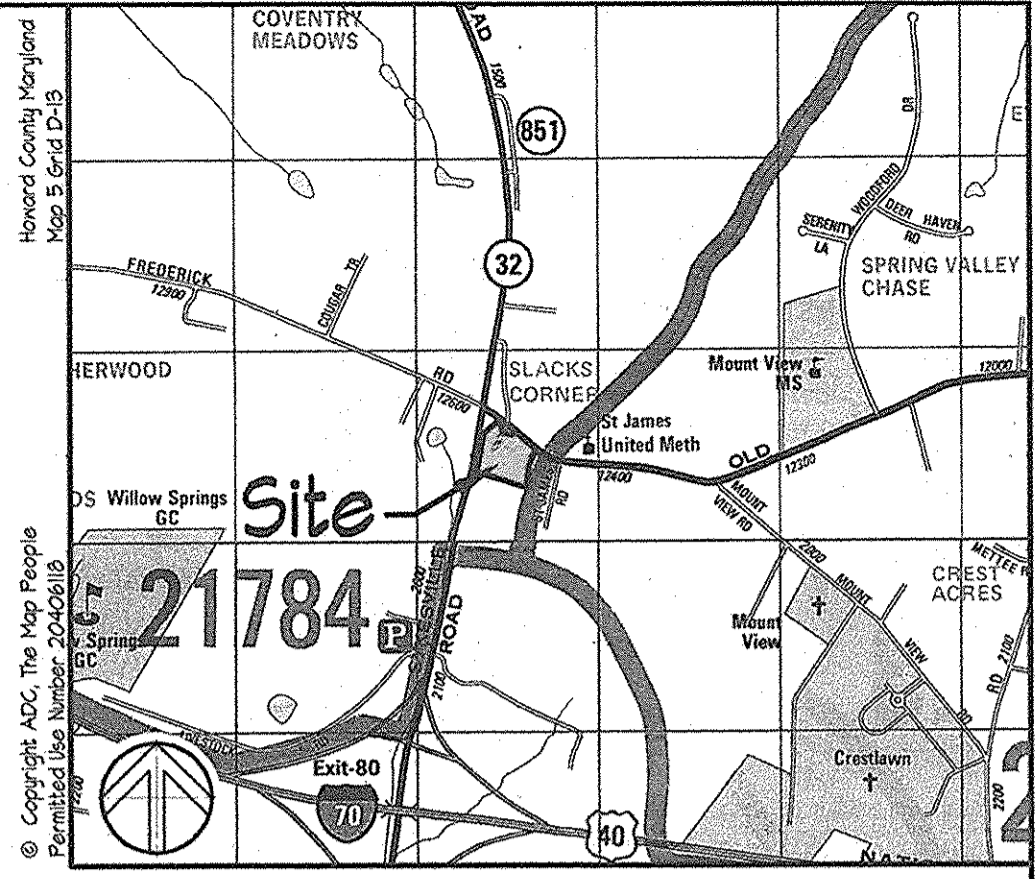
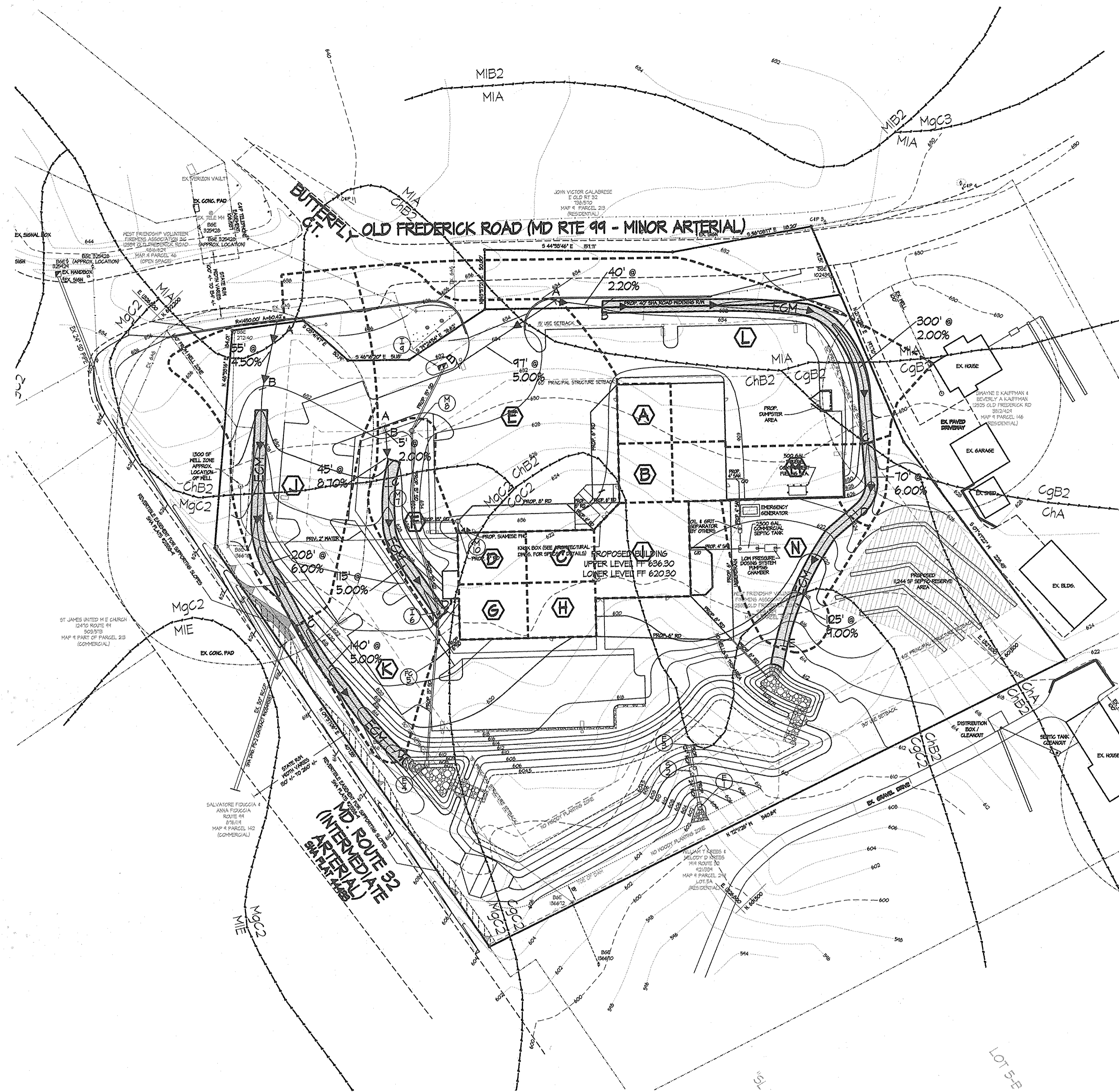
**Planting Plan Details**

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER: West Friendship Volunteer Fire Association Inc.  
 ADDRESS / PERMIT INFORMATION: 12535 Old Frederick Rd., Sykesville MD 21784  
 PARCEL #210 L 8916 / 11838  
 GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract 6030  
 WATER CODE: Private, SEWER CODE: Private

C4.02

SCALE: AS SHOWN

SHEET 10 OF 28



Vicinity Map Scale: 1" = 2000'

**LEGEND**

- PROPERTY LINE
- - - EXISTING CONTOURS
- - - PROPOSED CONTOURS
- - - EXISTING CURB & GUTTER
- - - PROPOSED CURB & GUTTER
- NeB2  
GcB2 SOILS LINE
- 15" SD EXISTING STORM DRAINS
- 30" RCCP PROPOSED STORM DRAIN
- - - DRAINAGE AREA
- TcPATH TIME OF CONCENTRATION PATH
- EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 631 SF
- ECM EROSION CONTROL MATTING

AREA DESIGNATION	TOTAL AREA (ACRES)	IMPERVIOUS AREA (ACRES)	% IMPERVIOUS	WEIGHTED C <sub>i</sub> FACTOR
A	0.05	0.05	100.00	0.96
B	0.05	0.05	100.00	0.96
C	0.06	0.06	100.00	0.96
D	0.06	0.06	100.00	0.96
E	0.11	0.61	74.22	0.30
F	0.18	0.02	11.11	0.28
G	0.06	0.06	100.00	0.96
H	0.06	0.06	100.00	0.96
I	0.14	0.14	100.00	0.96
SWALES				
J	0.64	0.26	31.68	75*
K	1.02	0.44	43.14	71*
L	0.90	0.63	70.00	81*
M	1.11	0.75	67.57	86*
N	1.36	0.71	56.62	82*

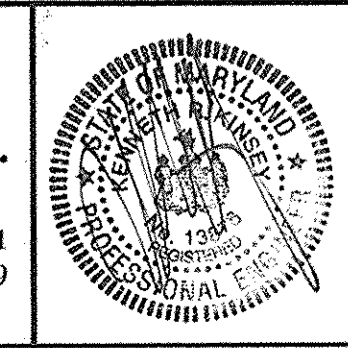
\* FROM TR-55

NOTE: EROSION CONTROL MATTING SHALL BE PLACED IN EACH SWALE TO A FLOW DEPTH OF 1.00' FEET MINIMUM.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES H. IRVIN, DIRECTOR 12/14/06 DATE  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 ROBERT J. WELCH, COUNTY HEALTH OFFICER 1/17/07 DATE  
 APPROVED: DEPARTMENT OF PLANNING & ZONING  
 DIRECTOR 1/14/07 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 1/19/07 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT 1/15/07 DATE

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mes@edmeades-stromdahl.com

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 LAND PLANNING / SITE DESIGN  
 14315 Jarrettsville Pike Phoenix, Maryland 21131  
 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com



DES: CRM					
DRN: AM					
CHK: REMKRC					
DATE: 12/08/06	BY: NO.	REVISION	DATE	600' SCALE MAP NO. 9	BLOCK NO. 23

**Proposed Storm Drain/Swale Drainage Areas**

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Firefighters Association Inc.  
 12460 Frederick Rd  
 West Friendship, MD 21794  
 Phone (410) 795-1234  
 ADDRESS / PERMIT INFORMATION:  
 Address: 12535 Old Frederick Rd., Sykesville, MD 21784  
 PARCEL: 920  
 L 98/6 / F 628  
 GRID No. 25, ZONE: RR-25C, TAX MAP No. 9  
 3rd Election District, Census Tract 6030  
 WATER CODE: Private, SEWER CODE: Private

C5.01  
 SCALE: 1"=50'  
 SHEET 11 OF 28

**PROPOSED STORM DRAIN STRUCTURES SCHEDULE**

STRUC. NO.	TYPE	TOP/GRADE ELEVATION	INVERT IN	INVERT OUT	COMMENTS
E-1	STD. 24" RCCP END SECTION C-361	-----	-----	601.50	
S-2	SNM RISER STRUCTURE SEE SHEET C1.20	-----	604.50	602.00	
E-3	STD. 24" RCCP END SECTION C-361	-----	604.50	-----	
E-4	STD. 15" RCCP END SECTION	-----	-----	601.00	
FC-5	STANDARD CUT IN 6" W/5'	-----	615.75	619.26	FIELD CUT
M-6	HOWARD COUNTY TYPE 'S' INLET	623.54	628.24	619.06	
M-7	HOWARD COUNTY TYPE 'A' MANHOLE	632.00	625.84	624.54	
M-8	HOWARD COUNTY TYPE 'A' MANHOLE	632.44	626.81	626.61	
M-9	HOWARD COUNTY TYPE DOUBLE 'S' INLET	631.80	-----	627.41	
M-10	HOWARD COUNTY TYPE 'A' MANHOLE	636.07	621.30 / 621.18 / 621.30	626.55	

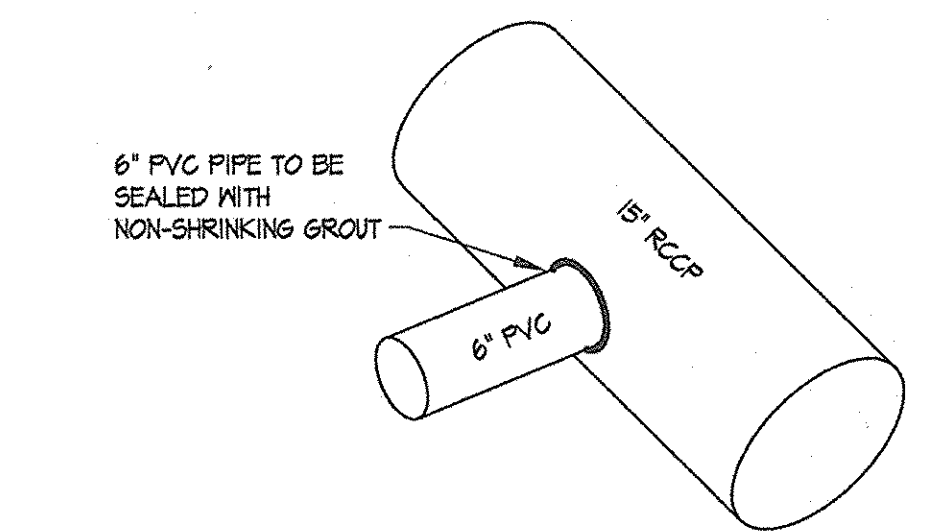
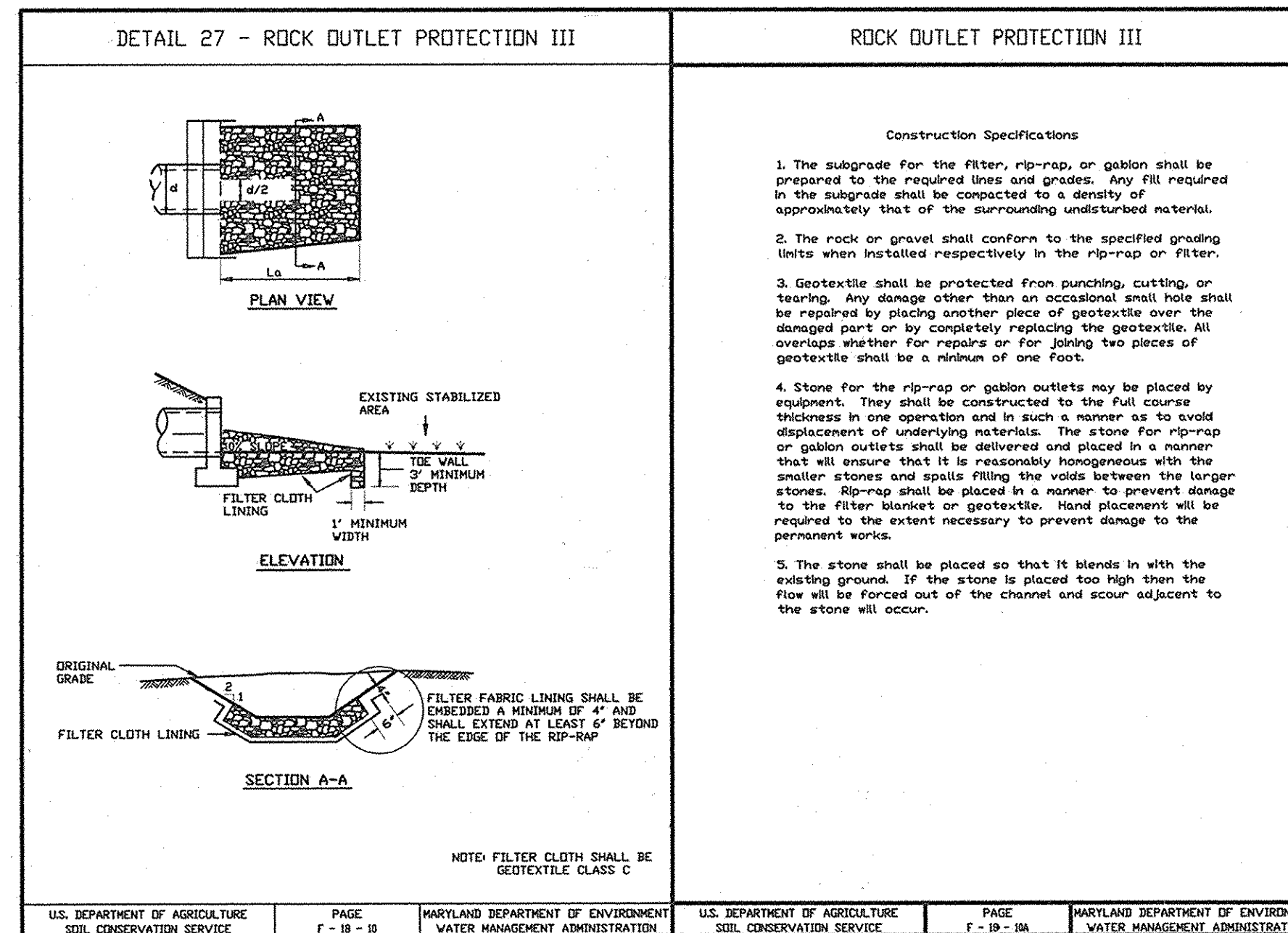
**PROPOSED ROOF DRAIN SCHEDULE**

ITEM	QTY.	DESIGNATION
6" 45° BEND	2	-
6" 45° BEND	1	-
6" x 6" x 8" WYE	1	RD-WYE 23
6" x 6" x 8" WYE	3	RD-WYE 21, RD-WYE 21A & RD-WYE 22
8" END SECTION	1	RD-E-20
8" PVC	218'	-
8" PVC	212'	-

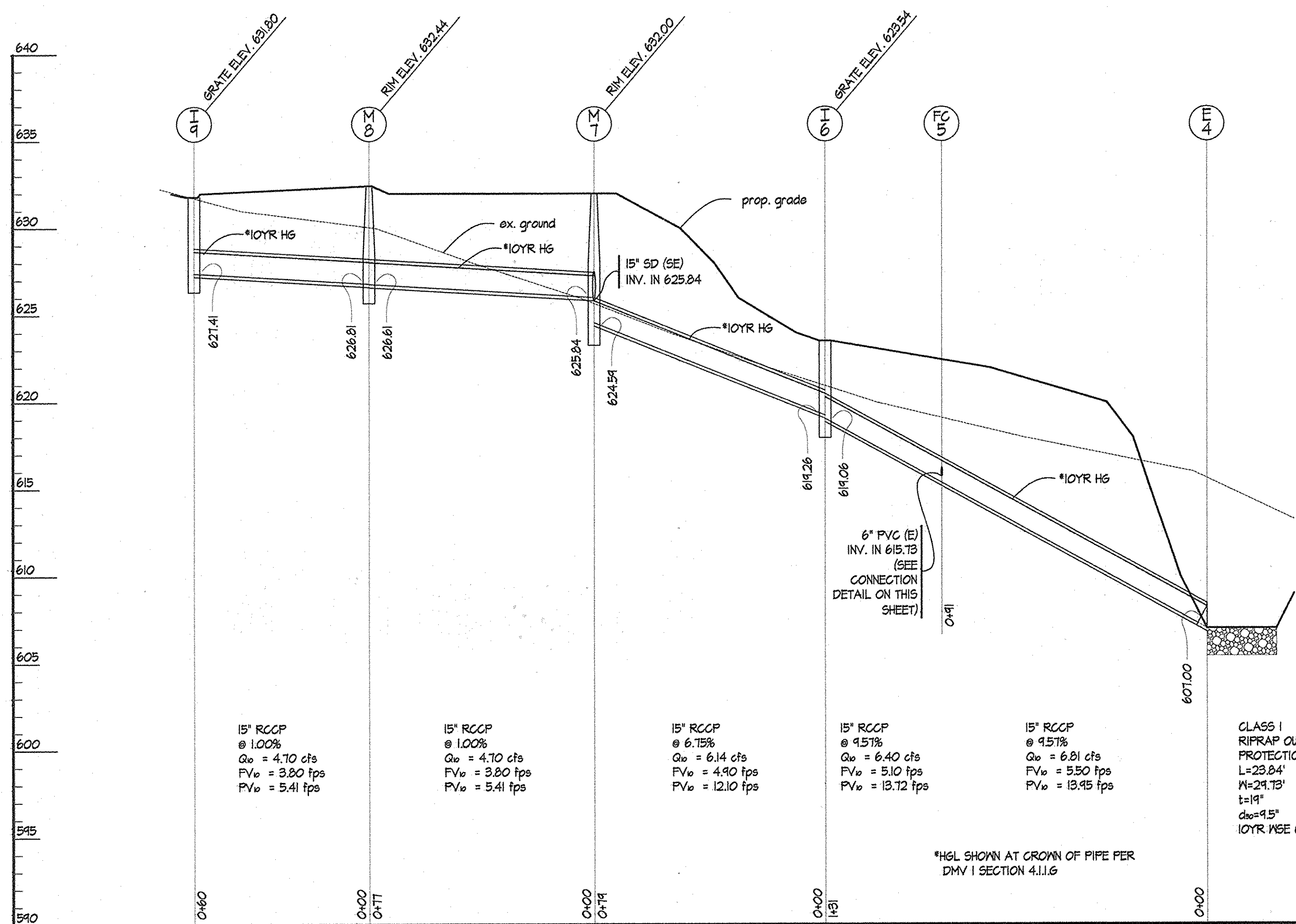
**PROPOSED STORM DRAIN PIPE SCHEDULE**

SIZE	TYPE	LENGTH
15"	RCCP	384'
24"	RCCP	46'
6"	PVC SCH. 40	395'
8"	PVC SCH. 40	204'

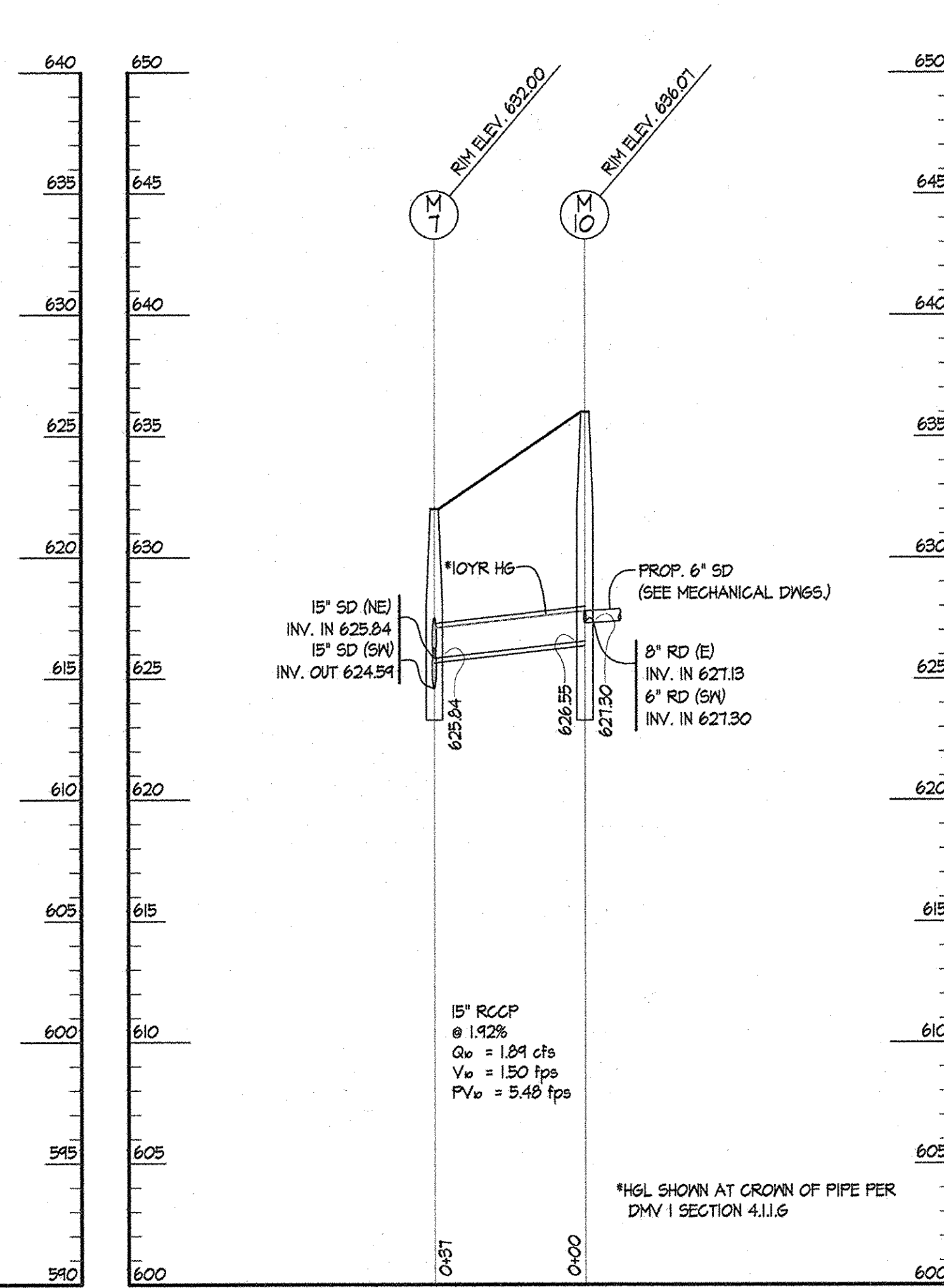
\* ROOF DRAINS SHALL BE A MINIMUM 30" BELOW GRADE  
 \* RD-E-20 SHALL OUTFALL AT ELEVATION 607.00.



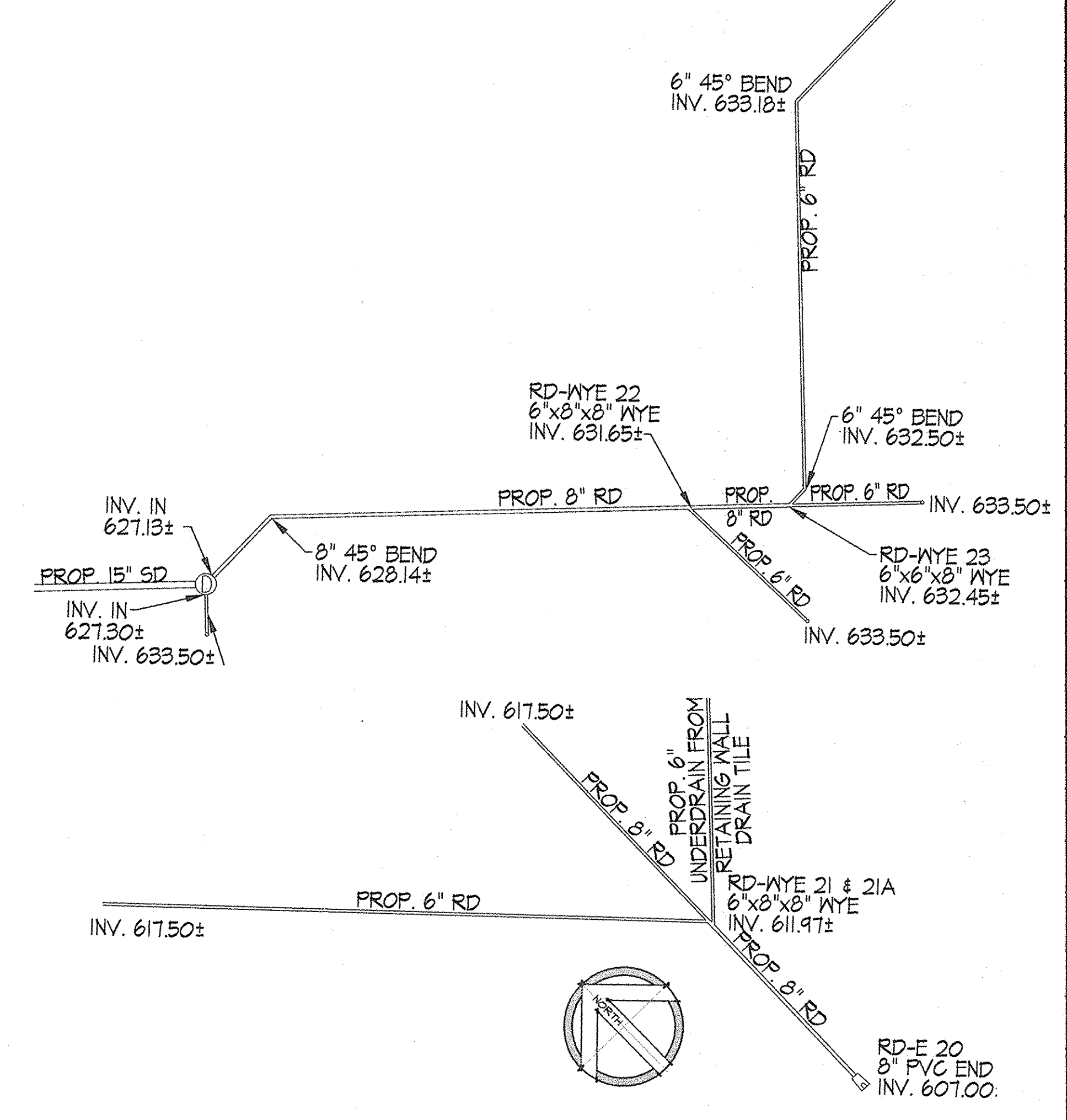
**6" PVC TO 15" RCCP CONNECTION DETAIL**  
 SCALES: NOT TO SCALE



**1 PROFILE 1-1 TO E-4**  
 SCALES: HORIZ. 1" = 30'  
 VERT. 1" = 5'



**2 PROFILE 1-1 TO E-7**  
 SCALES: HORIZ. 1" = 30'  
 VERT. 1" = 5'



**ROOF DRAIN SCHEMATIC PLAN**  
 SCALES: 1" = 20'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES M. IRVIN, DIRECTOR  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER  
 APPROVED: DEPARTMENT OF PLANNING & ZONING  
 DIRECTOR  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT

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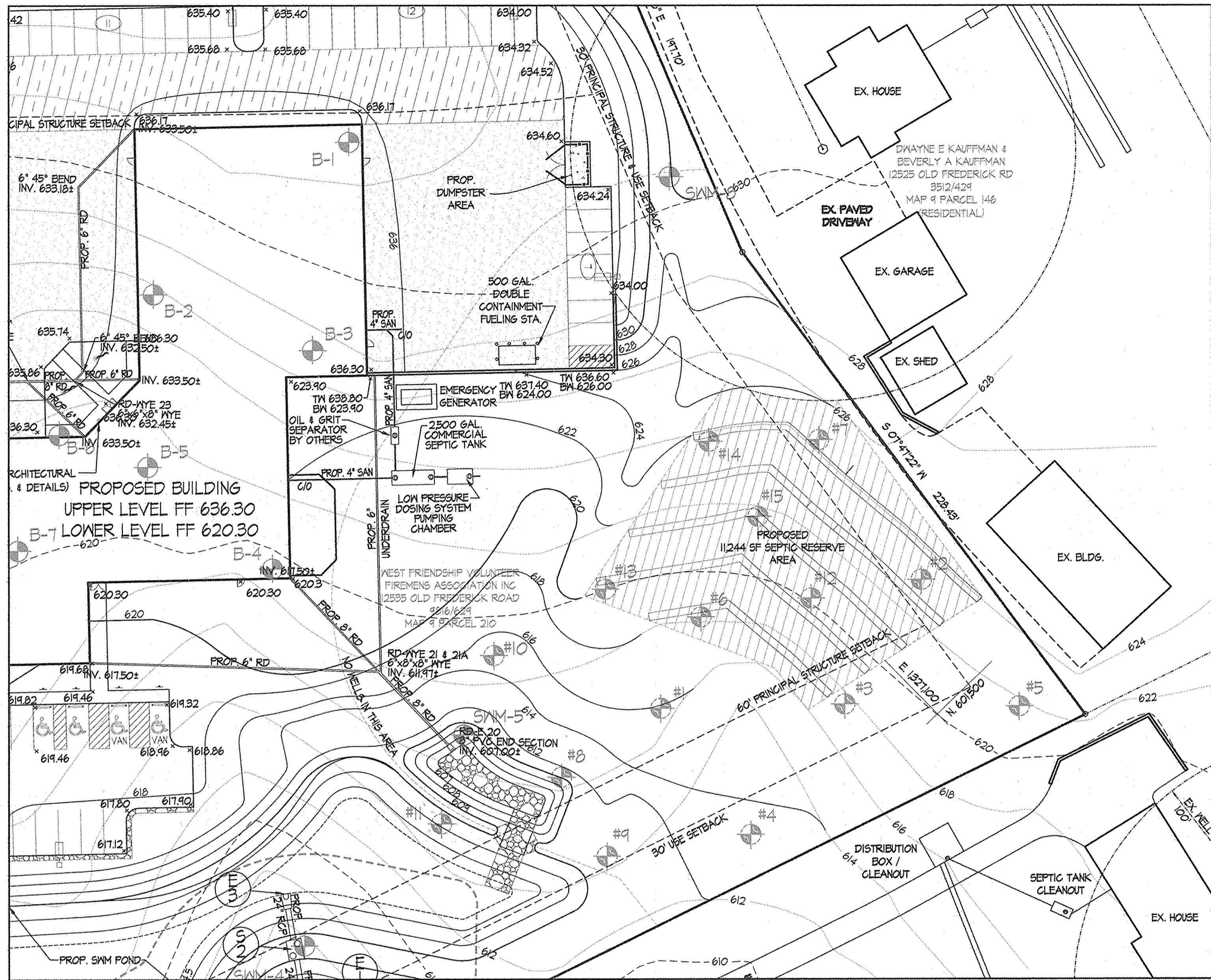
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 LAND PLANNING / SITE DESIGN  
 14315 Jarettsville Pike Phoenix, Maryland 21131  
 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com

DES: CRW				
DRN: AM				
CHK: REM/KRK				
DATE: 12/06/06	BY: NO.	REVISION	DATE	

**Storm Drain Profiles**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Fire Association Inc.  
 ADDRESS / PERMIT INFORMATION:  
 12555 Old Frederick Rd., Sykesville MD 21784  
 PARCELS: 4210  
 LOTS: 1, 2, 3  
 GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract 6020  
 WATER CODE: Private, SEWER CODE: Private

**C5.02**  
 SCALE: AS SHOWN  
 SHEET 12 OF 28



**SEPTIC CALCULATIONS**

\*SEPTIC TANK AND LOW PRESSURE DOSING SYSTEM TO BE DESIGNED AND APPROVED PRIOR TO INSTALLATION PERMIT. PUMPING CHAMBER SHALL BE DESIGNED TO PROVIDE ADEQUATE STORAGE TO ACCOMMODATE A DESIGN BASED ON AVERAGE DAILY FLOW. SEE SUPPLEMENTAL PLAN FOR DETAILS AND LOW PRESSURE DOSING SYSTEM COMPUTATIONS.

**GALLONS PER DAY**  
DATA FROM SIMILAR FIRE STATIONS (METERED READINGS)  
STATION 6 = 11,200 CF PER QUARTER - HALL USED EACH WEEK 6 VOL. LIVE INS & 7 CAREER EACH NIGHT MIN.  
STATION 7 = 1,200 CF PER QUARTER - NO HALL  
STATION 9 = 16,800 CF PER QUARTER - NO HALL  
STATION 10 = 15,800 CF PER QUARTER - NO HALL  
USE STATION 6 (COMPARATIVE EQUAL COMPARISON)  
11,200 CF PER QUARTER X 1,4805 GALLONS/CF = 128,664.6 GALLONS  
128,664.6 GALLONS PER QUARTER ÷ 91.25 DAY/QUARTER = 1,410.02 G.P.D.

**SEPTIC TANK SIZING**  
INDIVIDUAL SEWAGE DISPOSAL SYSTEMS SECTION 16.6.2.1 REVISED 08/01/06  
V = 1/25 GALLONS + (0.75 X Q) Q = ESTIMATED PEAK FLOW  
V = 1/25 GALLONS + (0.75 X 1410) = 2,025 GALLONS  
USE 1 2500 GALLON TANK

**DRAIN FIELD SIZING**  
DETERMINE PERC RATE  
WITHIN SDA  
PIT #3 - 5 MIN. NEAR SDA  
PIT #4 - 10 MIN.  
PIT #7 - 6 MIN.  
PIT #12 - VISUAL OK  
29 MIN.  
+ 3  
9.61 MIN.  
PIT #2 - 5 MIN.  
PIT #8 - 3 MIN.  
PIT #10 - 2 MIN.  
PIT #15 - VISUAL OK  
44 MIN.  
+ 7  
6.29 MIN.

**ABSORPTIVE RATE**  
PER COMAR 26.04.02.05.J1 MAXIMUM APPLICATION FOR SITE IS 16 GALLONS PER SQ FT PER DAY.  
PER HOWARD COUNTY USE 0.8 GALLONS PER SQ FT PER DAY

**TRENCH SIZING**

1,410 GPD ÷ 0.8 GALLONS = 1,762.5 SQ FT ABSORPTIVE AREA  
USE 1,762.5 SQ FT ABSORPTIVE AREA  
1,762.5 SQ FT ÷ 3' TRENCH WIDTH = 587.5 LF WITHOUT SIDEWALL  
SAY 588 LF

**USING SIDEWALLS**

PIT 3 BREAK @ 3.0' PIT 2 BREAK @ 4.0'  
PIT 6 BREAK @ 4.5' PIT 8 BREAK @ 1.5'  
PIT 7 BREAK @ 2.0' PIT 10 BREAK @ 2.0'  
PIT 12 BREAK @ SURFACE PIT 15 BREAK @ 2.0'  
4.5' 23  
4 9  
2.375' 2.556'

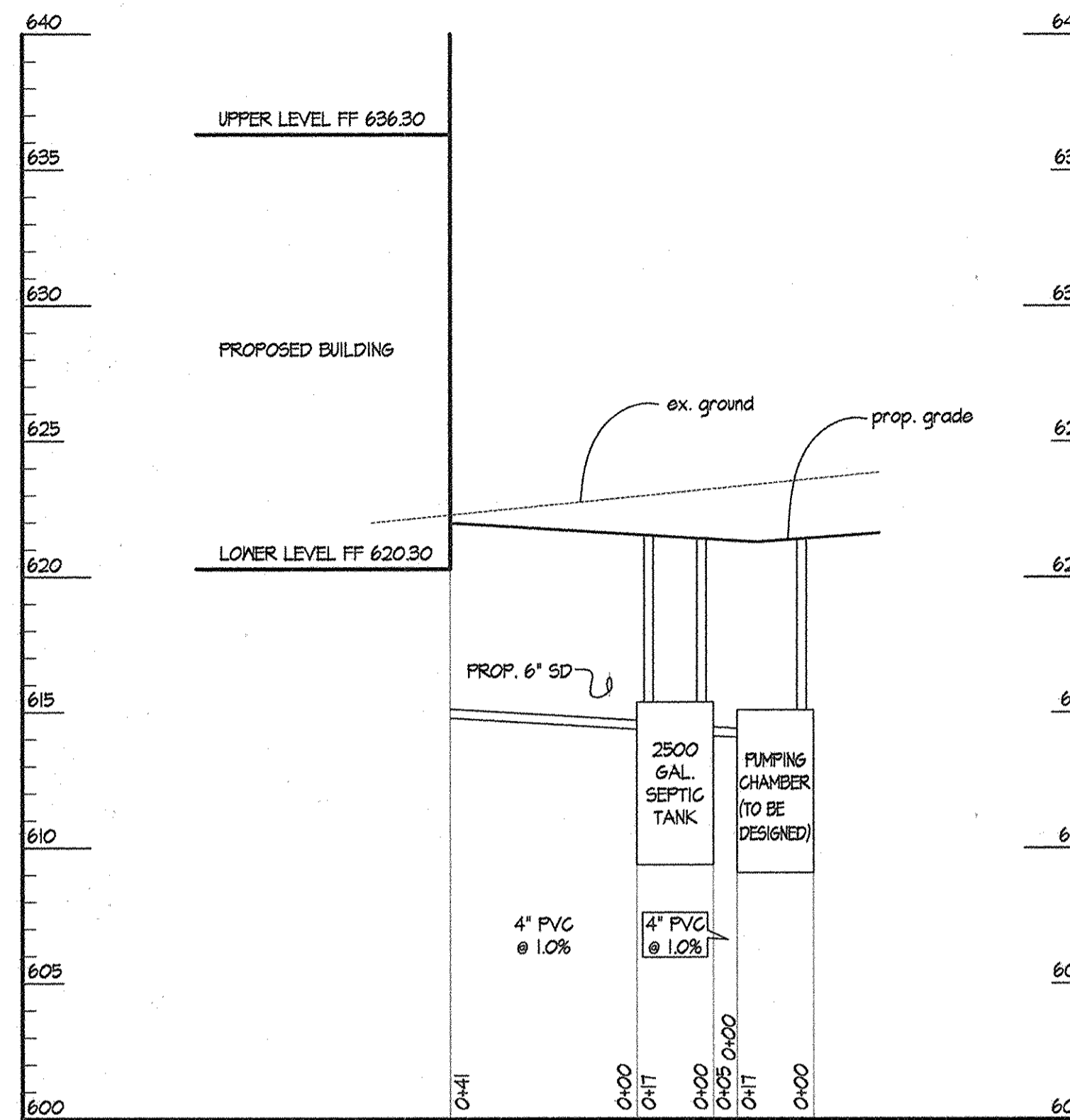
USING 8' TRENCH (PER MIKE DAVIS 04-21-06)

8 - 25' SIDEWALL USAGE  
PERCENT LENGTH W+2 = 3+2 = 0.33  
W+2d 3+(2x5.5)

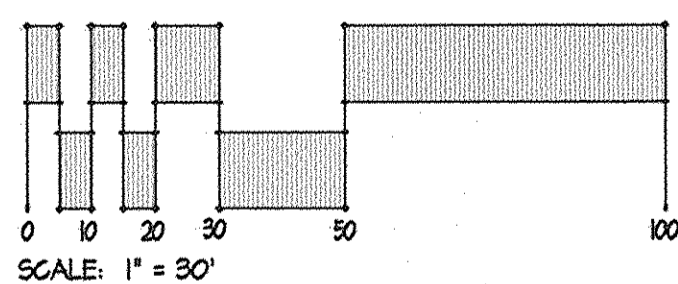
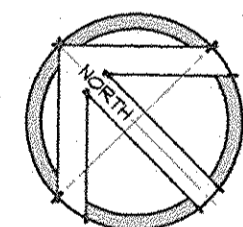
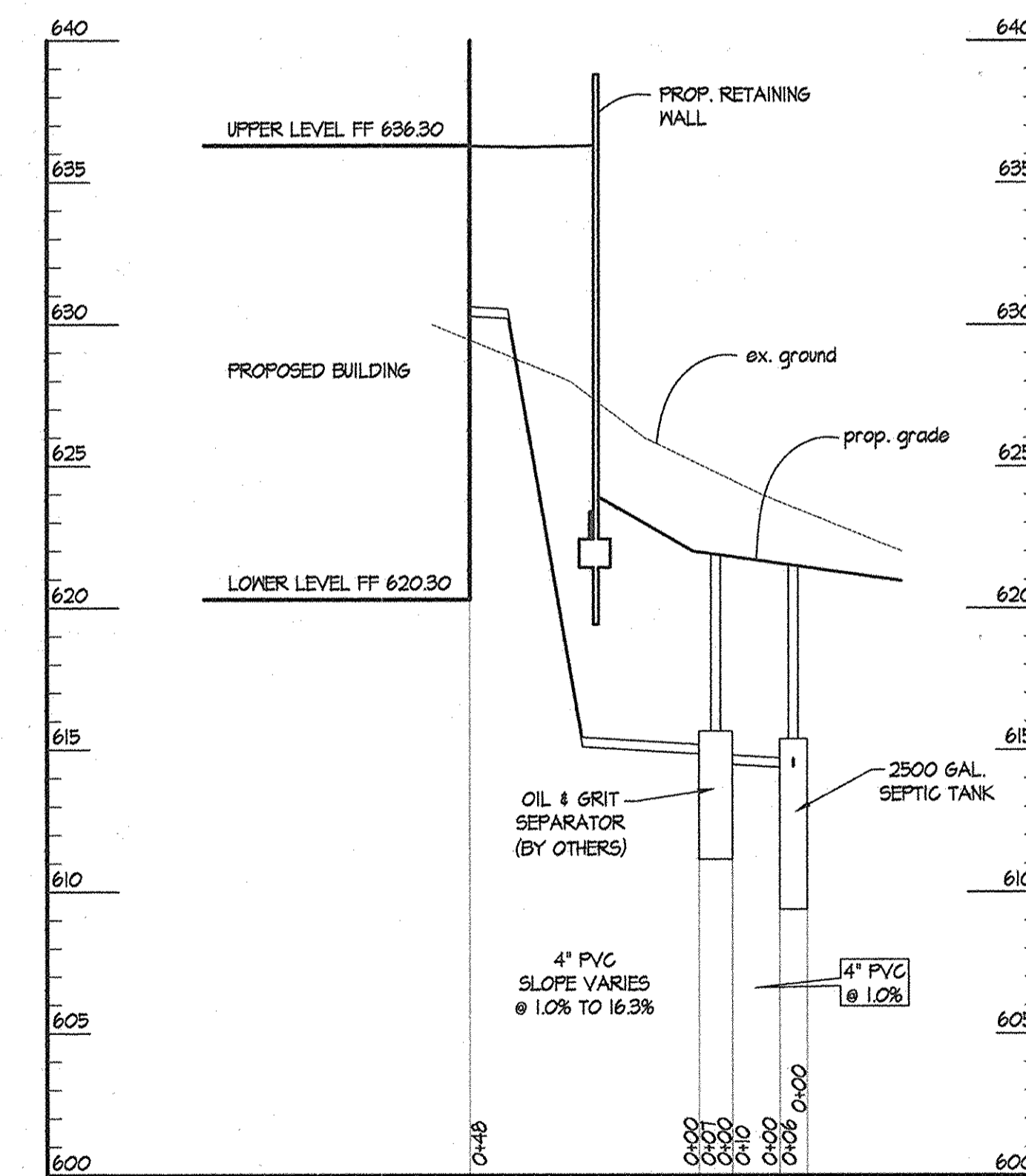
588 x 0.33 = 194.04 LF REQUIRED WITH SIDEWALL  
SAY 195 LF

SEPERATION 2 x + N = (2x5.5)+3 = 14' SEPERATION

195 LF X 3 SYSTEMS = 585 LF FOR FULL SYSTEM + 2 BACKUP



**PROFILE BUILDING THROUGH OIL & GRIT SEPARATOR TO SEPTIC TANK**



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

JAMES M. IRVING, DIRECTOR DATE: 12/16/06

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

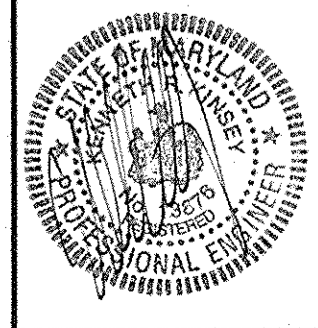
ROBERT W. WELLS, COUNTY HEALTH OFFICER DATE: 1/16/07

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE: 1/16/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION & CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 1/16/07

**EDMEADES & STROMDAHL, LTD.**  
ARCHITECTS / PLANNERS  
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www.siteresourcesinc.com

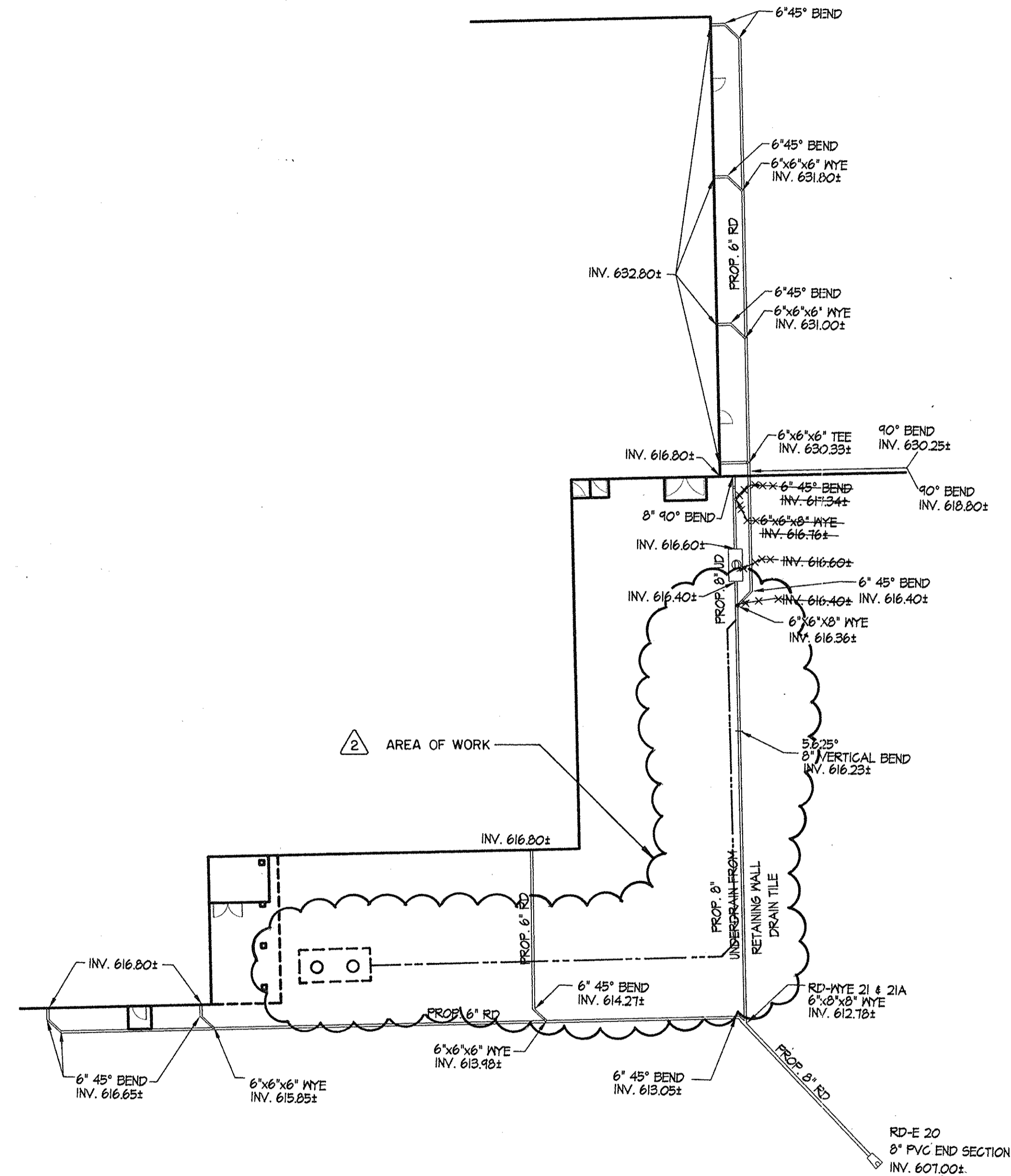
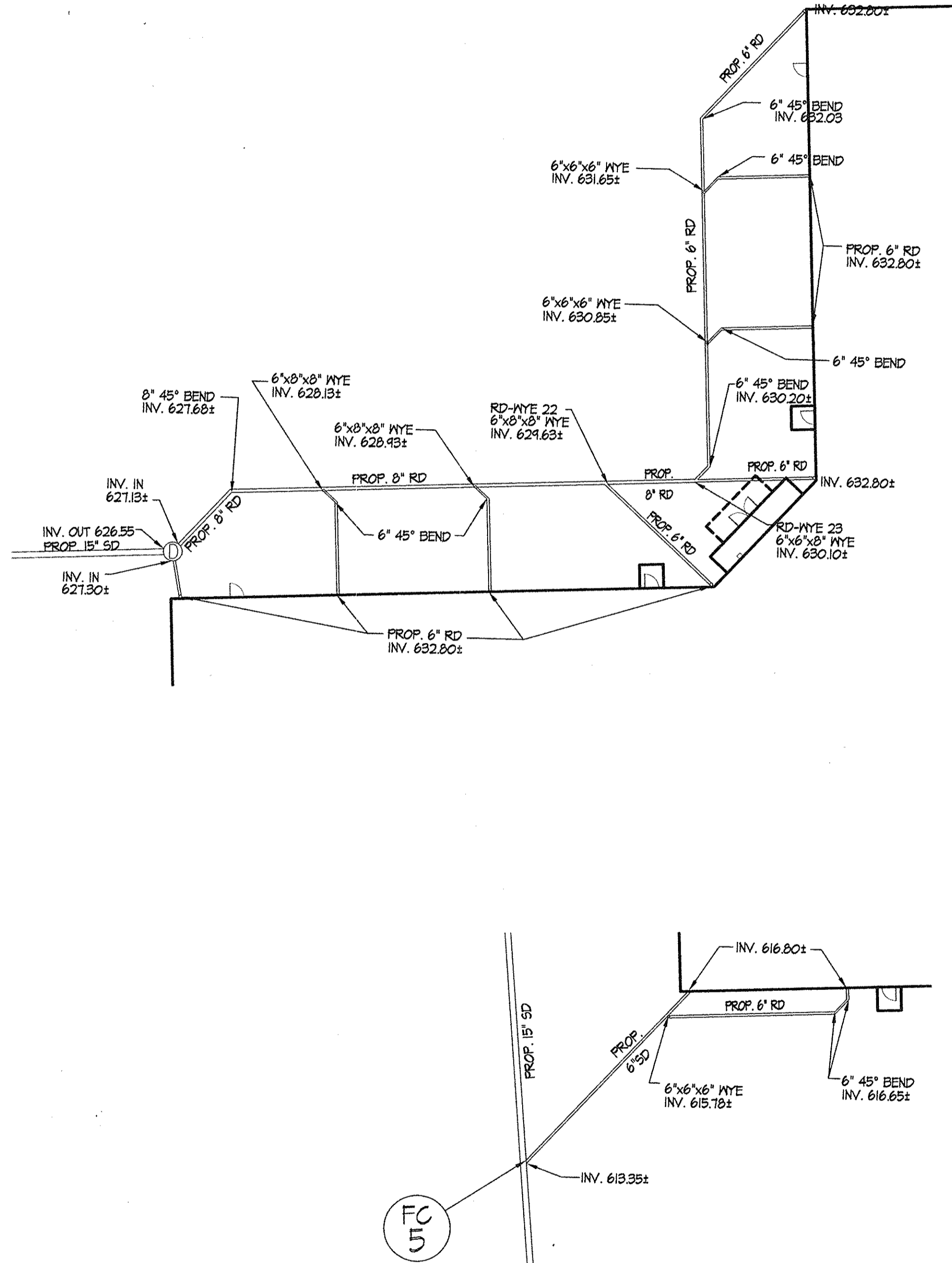
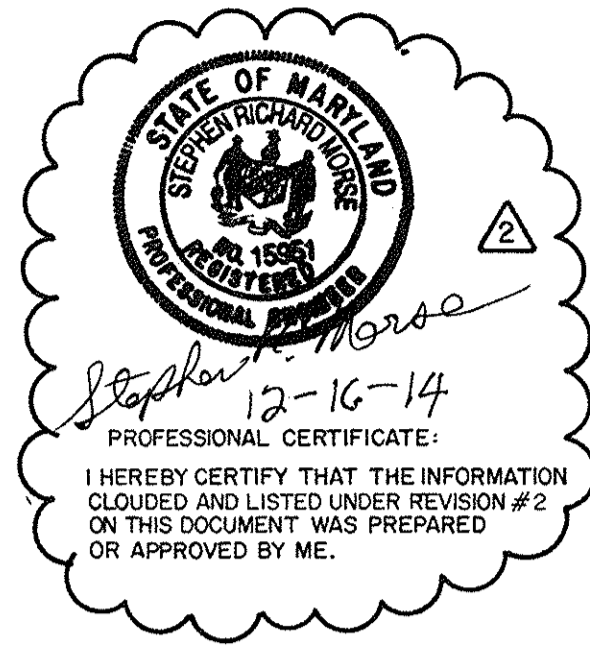


DES: CRW					
DRN: AM					
CHK: REM/KRK					
DATE: 12/08/06	BY	NO.	REVISION	DATE	

**Sanitary Plan & Profiles**  
600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
Capital Project No. F-5465, Howard County, Maryland  
OWNER: West Friendship Volunteer Firemens Association Inc.  
ADDRESS / PERMIT INFORMATION: 12460 Frederick Rd, West Friendship, MD 21794  
Parcel #210 L2816 / F 629  
GRID No. 23, ZONE RR-DEO, TAX MAP No. 9  
3rd Election District, Census Tract 6050  
WATER CODE: Private, SEWER CODE: Private

05.03  
SCALE: AS SHOWN  
SHEET 13 OF 23



ROOF DRAIN SCHEMATIC PLAN

SCALE: 1" = 20'

THIS SHEET WAS MODIFIED TO INCLUDE THE RAINWATER HARVESTING FACILITIES DESIGN INFORMATION. REFER TO THE NORTH COUNTY RAINWATER HARVESTING AND WASH PAD DESIGN PACKAGE, CAPITAL PROJECT C-0313, ORIGINALLY DATED NOVEMBER 2013, (LATEST REVISION).

ENTIRE SHEET ADDED

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

8/14/17  
JAMES M. IRVIN, DIRECTOR DATE

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

9/6/07  
COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

7/6/17  
DIRECTOR DATE

8/13/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

7/6/17  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**EDMEADES & STROMDAHL, LTD.**  
ARCHITECTS / PLANNERS  
11 North Main Street Bel Air, Maryland 21014  
Phone: 410.879.0388 Fax: 410.879.4785

**SITE RESOURCES, INC.**  
LAND PLANNING / SITE DESIGN  
14315 Jarettville Pike Phoenix, Maryland 21131  
Phone: 410.683.3388 Fax: 410.683.3389  
www.siteresourcesinc.com



DES: CRW				
DRN: AM				
CHK: REM/KRK	JEB		REDLINE REVISION - SEE NOTE ABOVE	11/18/14
	SRI		REDLINE REVISION	5/25/07
DATE: 12/08/06	BY: NO.		REVISION	DATE

600' SCALE MAP NO. 9 BLOCK NO. 23

Storm Drain Profiles

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
Capital Project No. F-5965, Howard County, Maryland

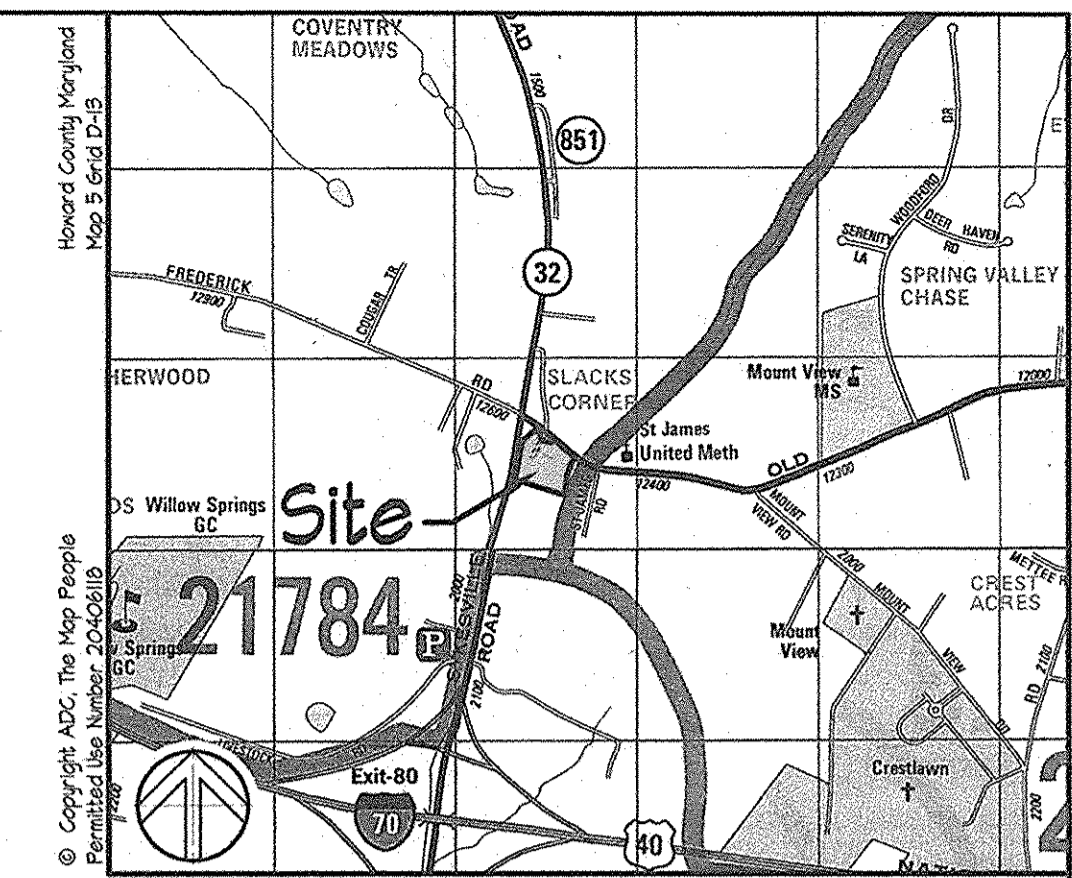
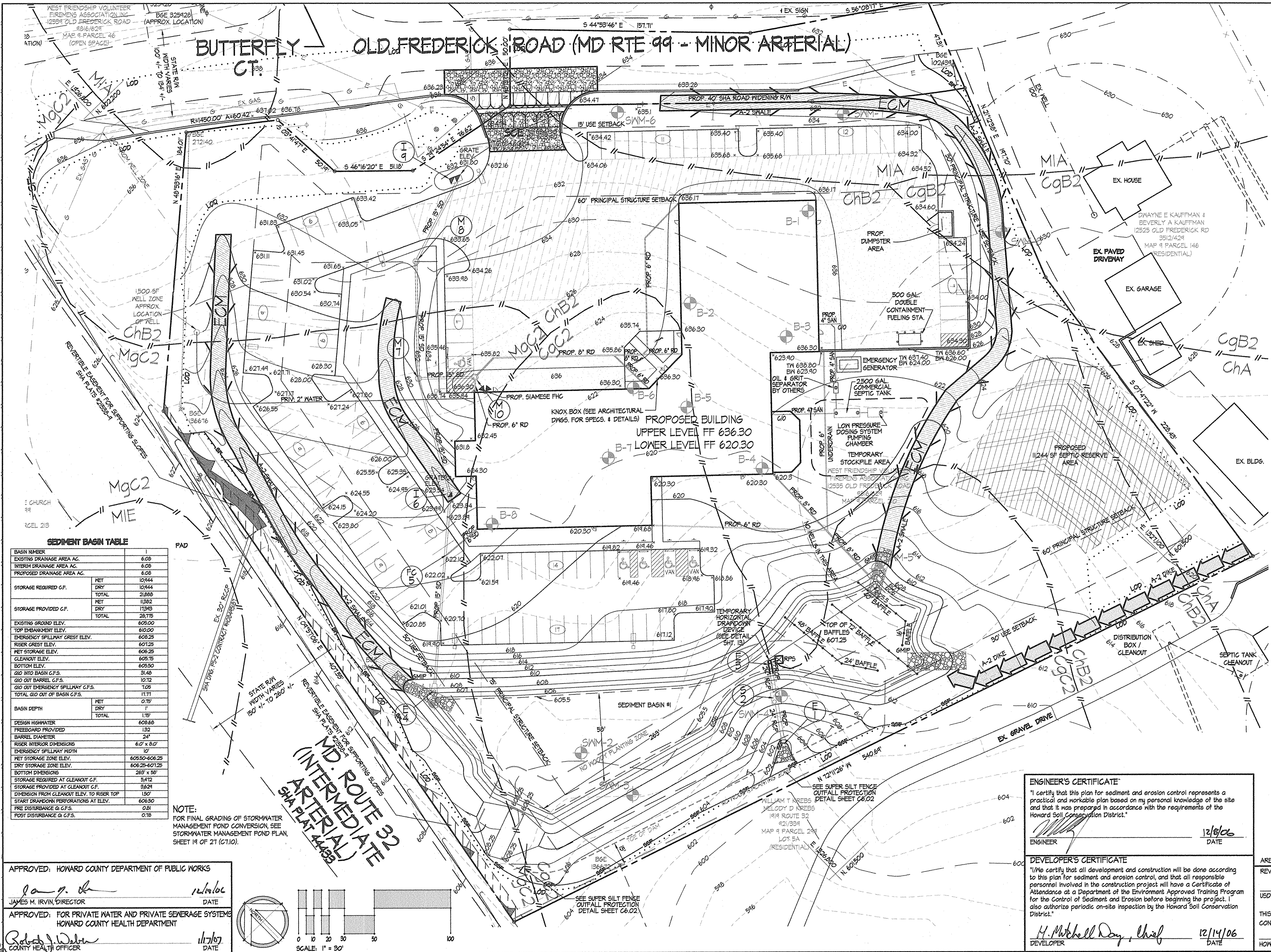
OWNER:  
West Friendship Volunteer Firemen Association Inc.  
12460 Frederick Rd  
West Friendship, MD 21194  
Phone (410) 788-1234

ADDRESS / PERMIT INFORMATION:  
ADDRESS: 12535 Old Frederick Rd, Sykesville MD 21784  
PARCEL: 4210  
L: 8816 / F: 629  
GRID NO. 23, ZONE: RR-D20, TAX MAP No. 9  
3rd Election District, Census Tract 6030  
WATER CODE: Private, SEWER CODE: Private

C5.02  
A

SCALE:  
AS SHOWN

SHEET  
12A OF 28



Vicinity Map Scale: 1" = 2000'

**LEGEND**

	PROPERTY LINE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	EXISTING STORM DRAINS
	PROPOSED STORM DRAIN
	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
	EXISTING WATER
	PROPOSED WATER
	EXISTING ELECTRIC
	PROPOSED ELECTRIC LINE
	EXISTING GAS
	HEAVY DUTY BIT PAVING
	HEAVY DUTY CONCRETE PAVING
	EARTH DIKE
	RIPRAP INFLOW PROTECTION
	GABION INFLOW PROTECTION
	STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM
	SUPER SILT FENCE
	BAFFLE
	REMOVABLE PUMPING STATION
	SPOT ELEVATIONS
	LIMIT OF DISTURBANCE
	EROSION CONTROL MATTING
	EXISTING STEEP SLOPES 25% OR GREATER
	TEMPORARY/PERMANENT SWALE

**SEDIMENT BASIN TABLE**

BASIN NUMBER	EXISTING DRAINAGE AREA AC.	PROPOSED DRAINAGE AREA AC.	STORAGE REQUIRED C.F.	STORAGE PROVIDED C.F.	EXISTING GROUND ELEV.	EMERGENCY SPILLWAY GREST ELEV.	RISER GREST ELEV.	NET STORAGE ELEV.	CLEANOUT ELEV.	BOTTOM ELEV.	GIO INTO BASIN C.F.S.	GIO OUT BARREL C.F.S.	GIO OUT EMERGENCY SPILLWAY C.F.S.	TOTAL GIO OUT OF BASIN C.F.S.	BASIN DEPTH	DESIGN HIGHWATER	FRESHWATER PROVIDED	BARREL DIAMETER	RISER INTERIOR DIMENSIONS	EMERGENCY SPILLWAY WIDTH	NET STORAGE ZONE ELEV.	DRY STORAGE ZONE ELEV.	BOTTOM DIMENSIONS	STORAGE REQUIRED AT CLEANOUT C.F.	STORAGE PROVIDED AT CLEANOUT C.F.	DIMENSION FROM CLEANOUT ELEV. TO RISER TOP	START DRAINAGE PERFORATIONS AT ELEV.	PRE DISTURBANCE @ C.F.S.	POST DISTURBANCE @ C.F.S.
1	6.28	6.28	10944	10944	608.25	608.25	607.25	608.25	608.25	607.25	10.72	10.72	11.11	11.11	1.00	608.60	152	24"	6.0' x 8.0'	10'	608.25-608.25	606.25-607.25	28' x 30'	5472	5624	150'	608.50	0.81	0.78

NOTE: FOR FINAL GRADING OF STORMWATER MANAGEMENT POND CONVERSION, SEE STORMWATER MANAGEMENT POND PLAN, SHEET 14 OF 21 (C7.10).

**ENGINEER'S CERTIFICATE**  
 I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.  
 12/6/06 DATE  
 ENGINEER

**DEVELOPER'S CERTIFICATE**  
 I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance as a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.  
 12/14/06 DATE  
 DEVELOPER

AREA OF DISTURBANCE: 253,020 SF +/- 5.81 AC +/-  
 REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.  
 USDA - NATURAL RESOURCE CONSERVATION SERVICE 1/4/07 DATE  
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 HOWARD SOIL CONSERVATION DISTRICT 1/4/07 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 12/6/06 DATE  
 JAMES H. IRVIN, DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 1/17/07 DATE  
 COUNTY HEALTH OFFICER

APPROVED: DEPARTMENT OF PLANNING & ZONING  
 1/18/07 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

**SITE RESOURCES, INC.**  
 LAND PLANNING / SITE DESIGN  
 14315 Jarrettsville Pike Phoenix, Maryland 21131  
 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com

DES. CRW	DRN. AM	CHK. REM/KRK	DATE: 12/08/06	BY NO.	REVISION	DATE

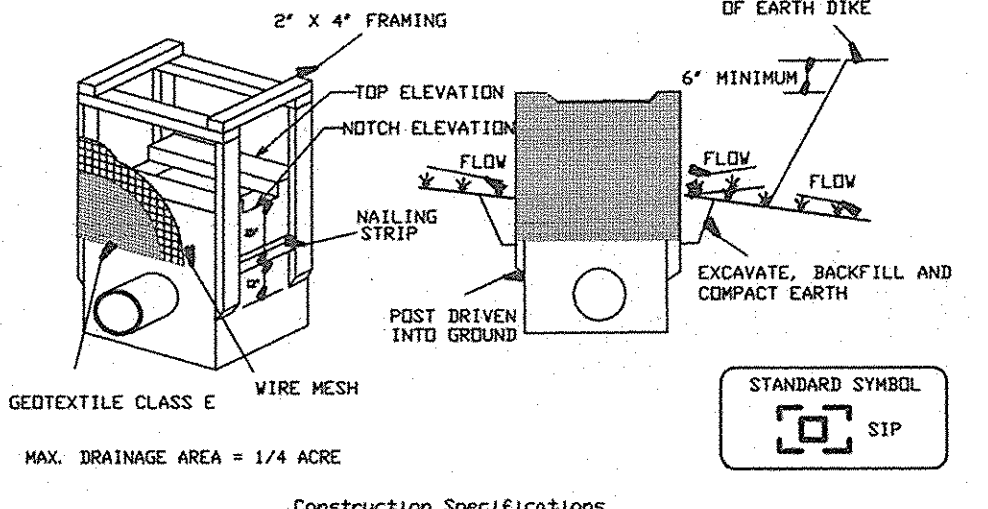
**Grading and Sediment Control Plan**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland

OWNER:  
 West Friendship Volunteer Firemen's Association Inc.  
 ADDRESS / PERMIT INFORMATION:  
 PARCEL: 910 12460 Frederick Rd, Sykesville MD 21784  
 GRID: 123, ZONE: RR-DEO, TAX MAP NO. 9  
 West Election District, Census Tract 6050  
 WATER CODE: Private, SEWER CODE: Private

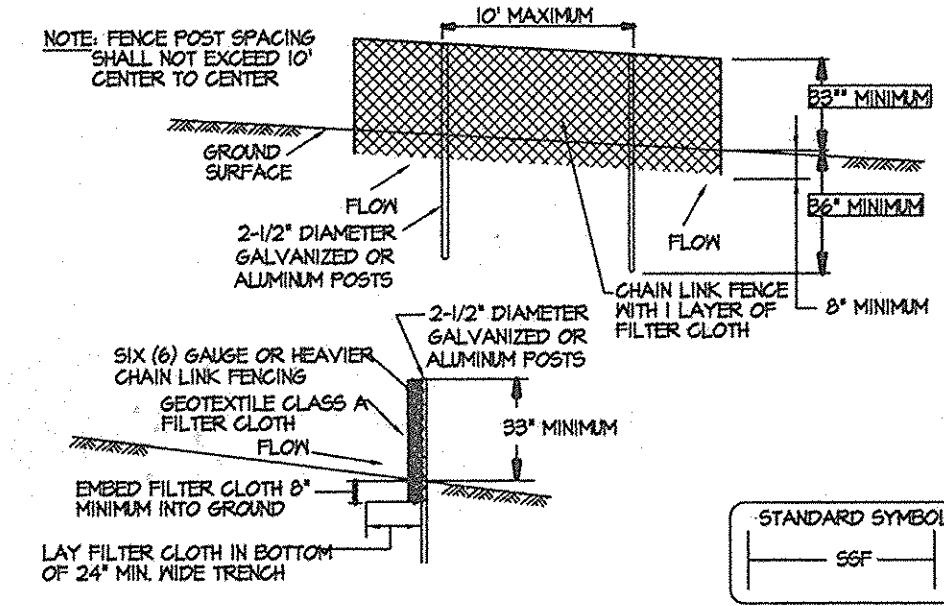
SCALE: 1"=30'  
 SHEET 14 OF 28

DETAIL 23A - STANDARD INLET PROTECTION



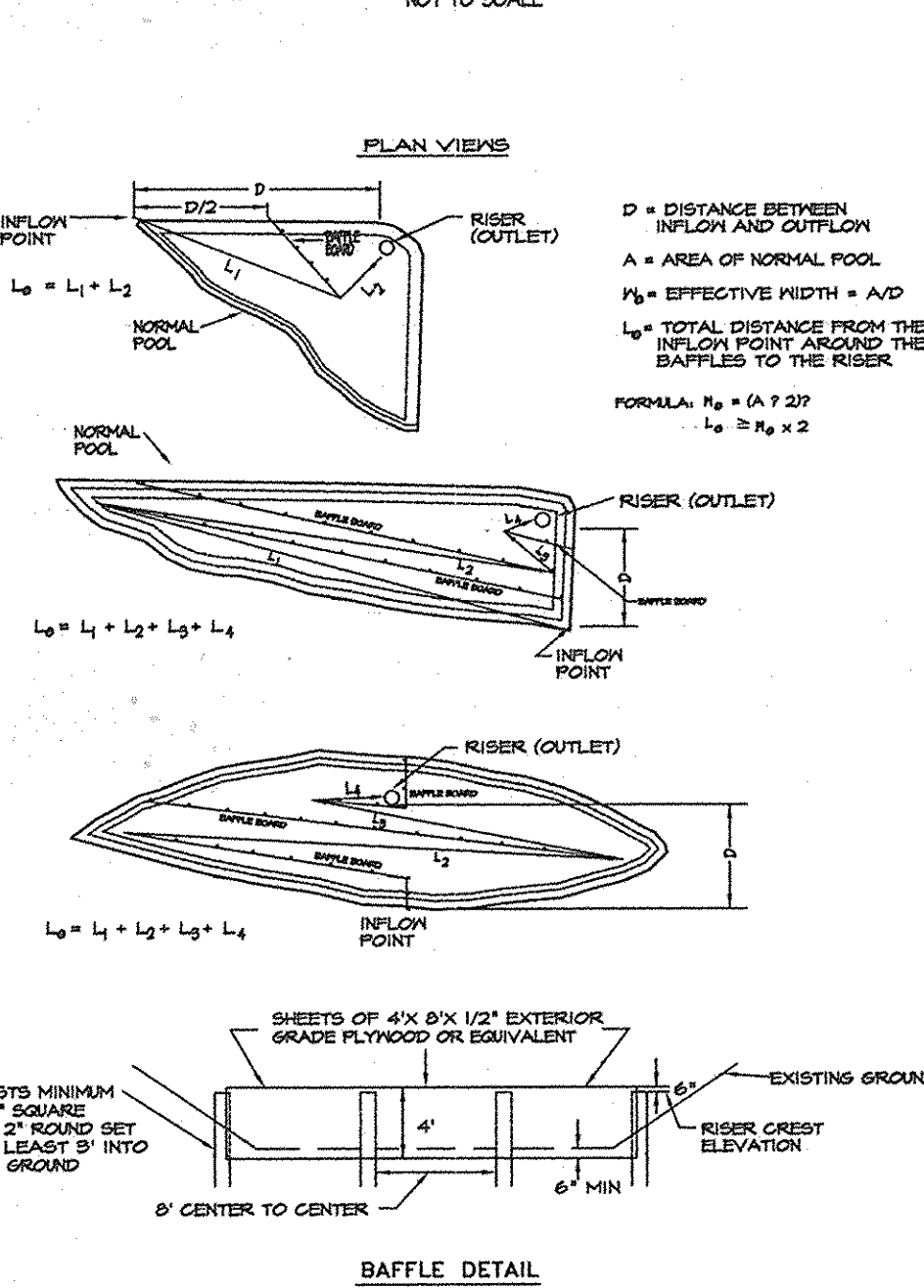
- 1. Excavate completely around the inlet to a depth of 18" below the notch elevation... 2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet...

Table with 4 columns: U.S. Department of Agriculture, Page (1 of 3), Maryland Department of Environment, and Water Management Administration.



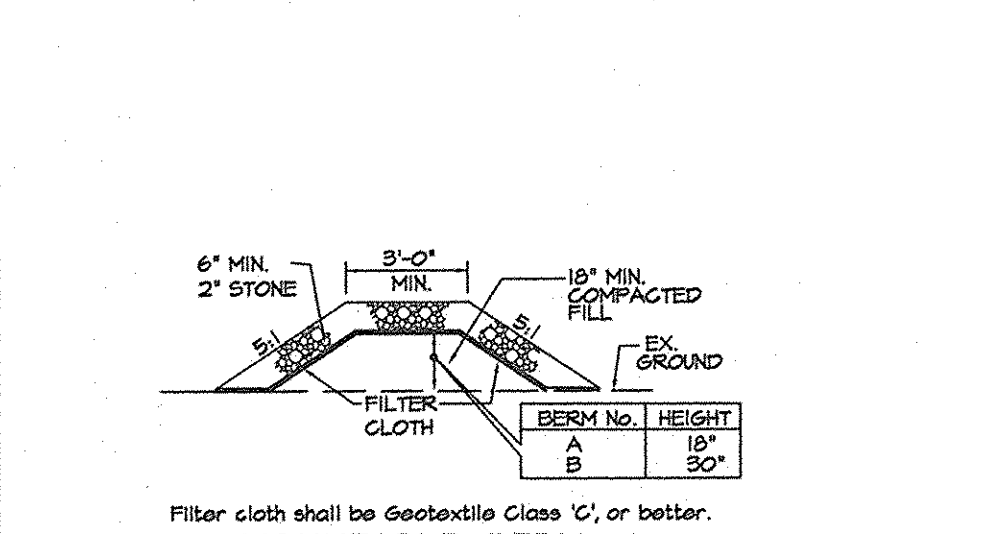
- 1. FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING... 2. THE POSTS DO NOT NEED TO BE SET IN CONCRETE...

DETAIL H-26-3 SUPER SILT FENCE

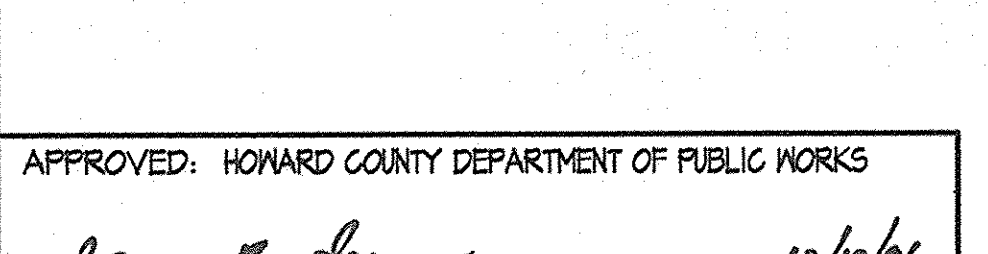


SEDIMENT BASIN BAFFLES

RIP-RAP INFLOW PROTECTION



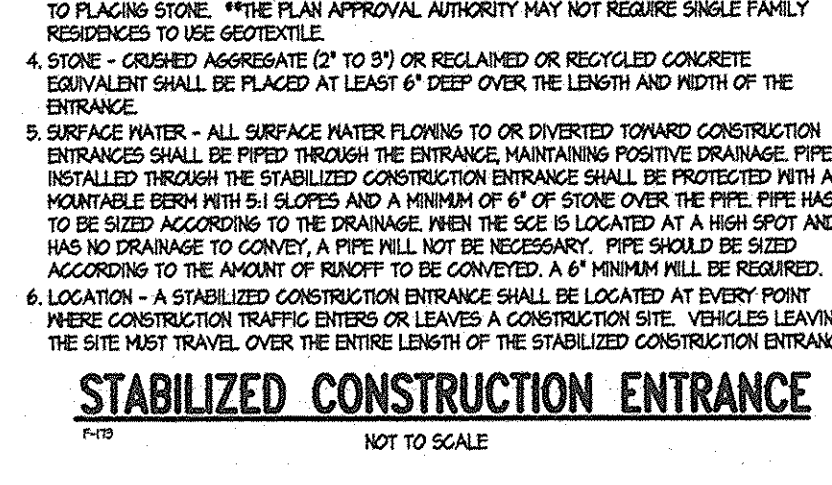
MOUNTABLE BERM



CONSTRUCTION SPECIFICATIONS

- 1. RIP-RAP LINED INFLOW CHANNELS SHALL BE 1" IN DEPTH, HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SLOPES AND 9" MIN. BOTTOM WIDTH... 2. FILTER CLOTH SHALL BE INSTALLED UNDER ALL RIP-RAP...

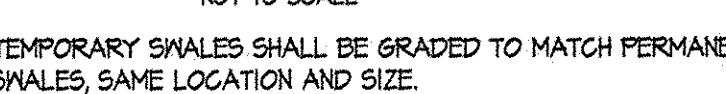
STABILIZED CONSTRUCTION ENTRANCE



CONSTRUCTION SPECIFICATIONS

- 1. LENGTH - MINIMUM OF 50' (80' FOR SINGLE RESIDENCE LOT)... 2. WIDTH - 12" MINIMUM WIDTH SHOULD BE MAINTAINED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS...

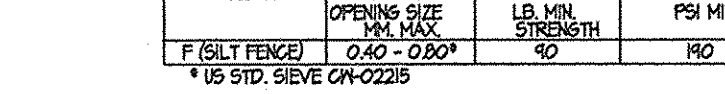
TEMPORARY SWALE



CONSTRUCTION SPECIFICATIONS

- 1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET... 2. RANOFF DIVERTED FROM AN UNDISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE...

SILT FENCE

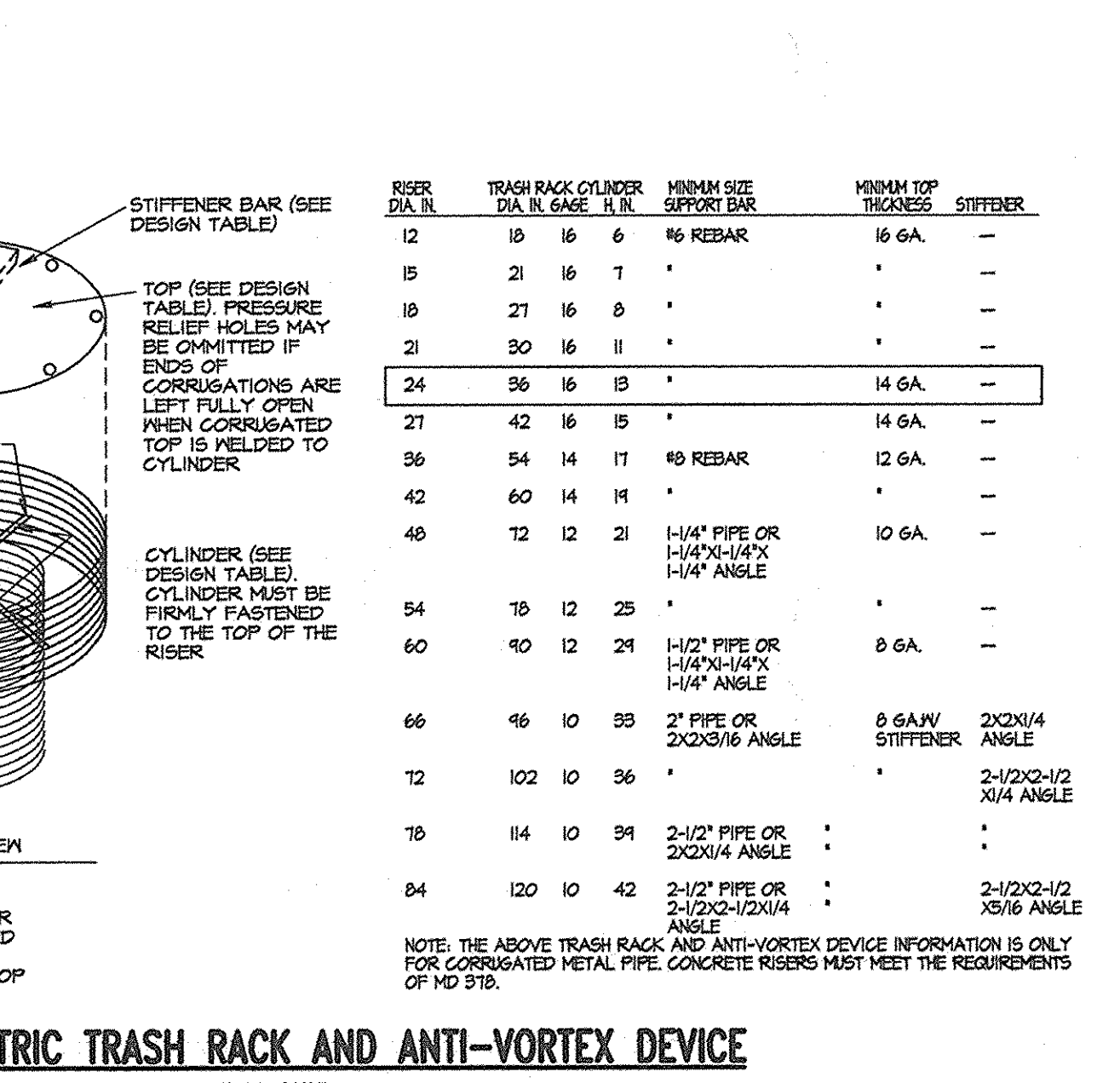


CONSTRUCTION SPECIFICATIONS

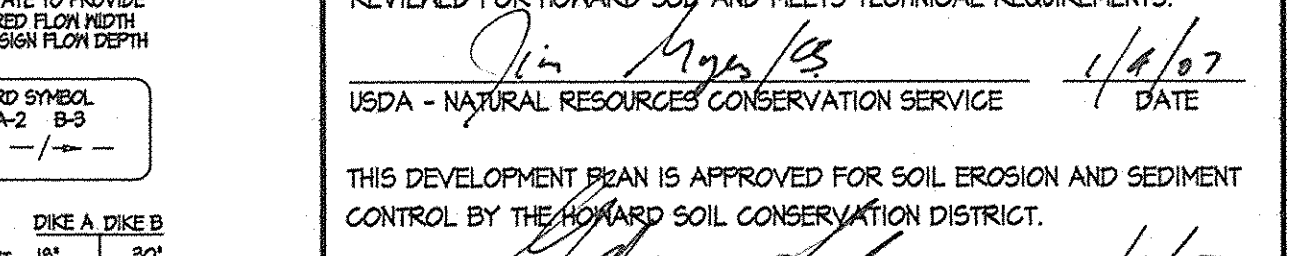
- 1. FENCE POSTS SHALL BE A MINIMUM OF 3/4" LONG DRIVEN 16" MINIMUM INTO THE GROUND... 2. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH NINE TIES OR STAPLES...

Table with 4 columns: Class, Apparent Opening Size, Geotextile Burst Strength, and Filter Efficiency. Includes rows for Filt Fence, Stone, and Filter Cloth.

REMOVABLE PUMPING STATION



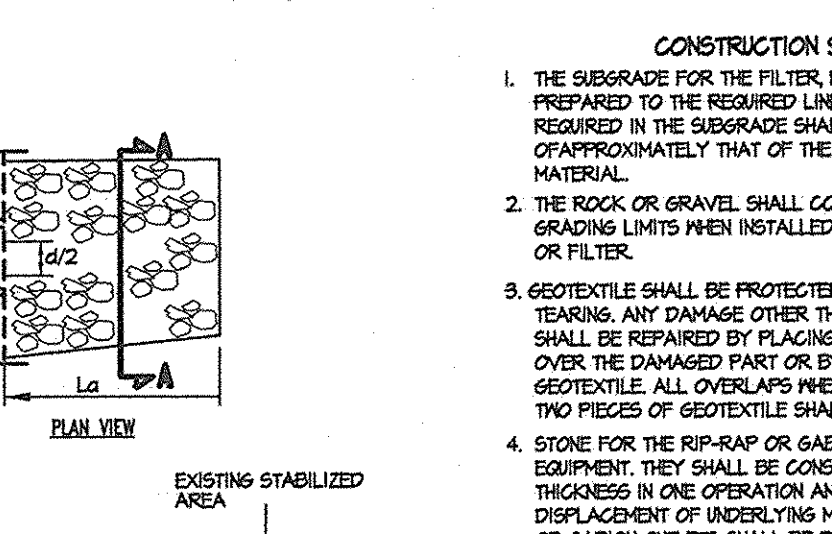
CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE



CONSTRUCTION SPECIFICATIONS

- 1. SEED AND COVER WITH STRAW MULCH... 2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOIL... 3. 4" - 12" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO SOIL...

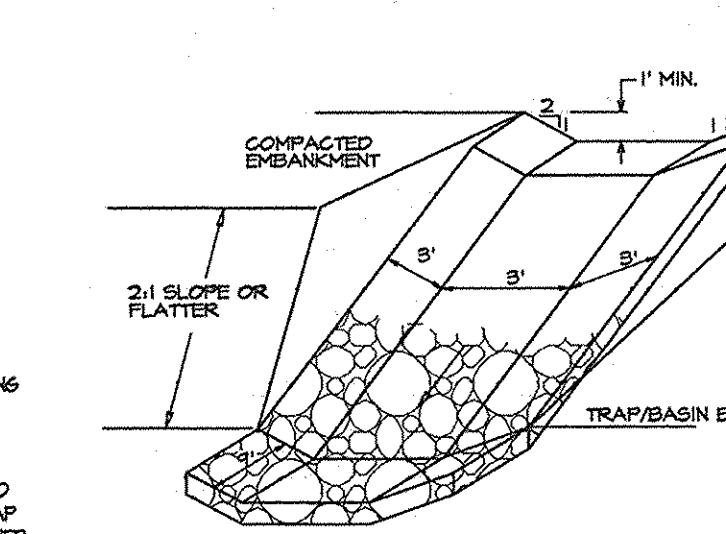
EROSION CONTROL MATTING



CONSTRUCTION SPECIFICATIONS

- 1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH 1" IN DEPTH... 2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES...

HORIZONTAL DRAW-DOWN DEVICE



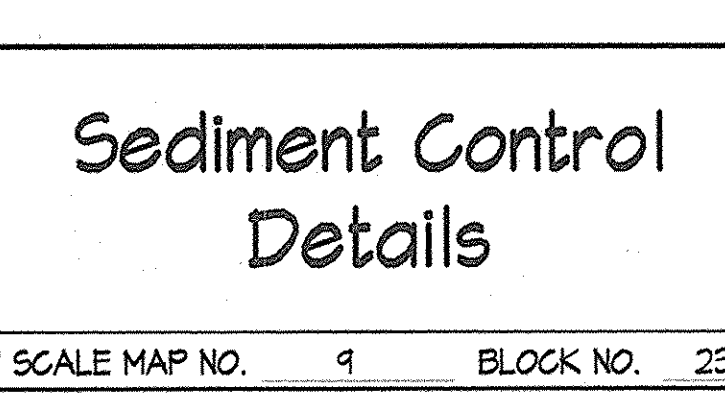
CONSTRUCTION SPECIFICATIONS

- 1. The total area of the perforations must be greater than 4 times the area of the internal orifice... 2. The perforated portion of the draw-down device shall be wrapped with 1/2" hardware cloth and geotextile fabric...

CONSTRUCTION SPECIFICATIONS

- 1. ALL TEMPORARY EARTH DIKES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET... 2. RANOFF DIVERTED FROM AN UNDISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE...

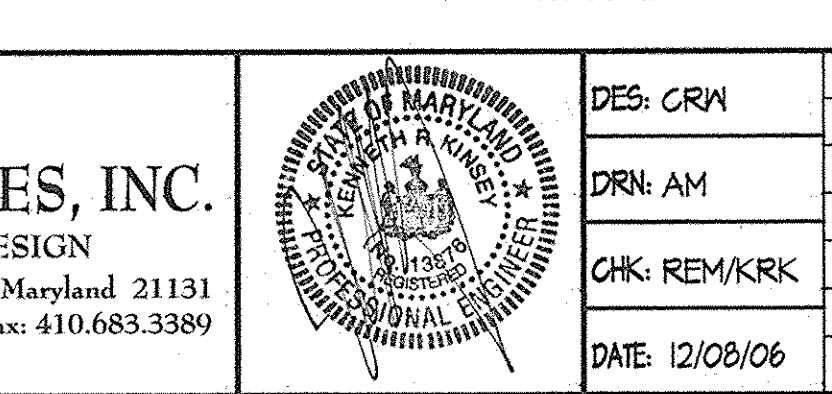
EARTH DIKE



CONSTRUCTION SPECIFICATIONS

- 1. SEED AND COVER WITH STRAW MULCH... 2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOIL...

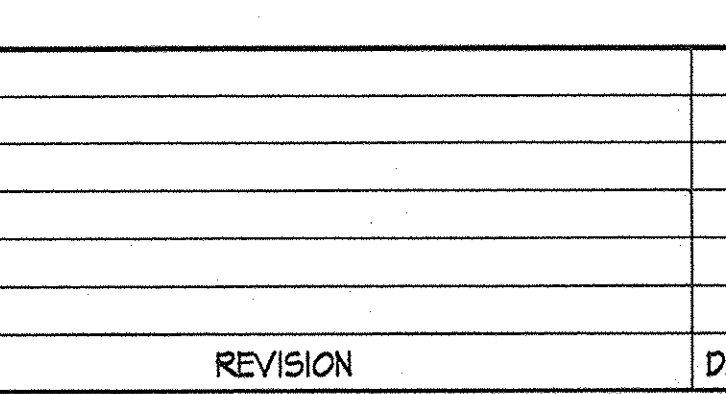
ROCK OUTLET PROTECTION III



CONSTRUCTION SPECIFICATIONS

- 1. GABION INFLOW PROTECTION SHALL BE CONSTRUCTED OF 1' X 3' X 4' GABION BASKETS FORMING A TRAPEZOIDAL CROSS SECTION...

GABION INFLOW PROTECTION



CONSTRUCTION SPECIFICATIONS

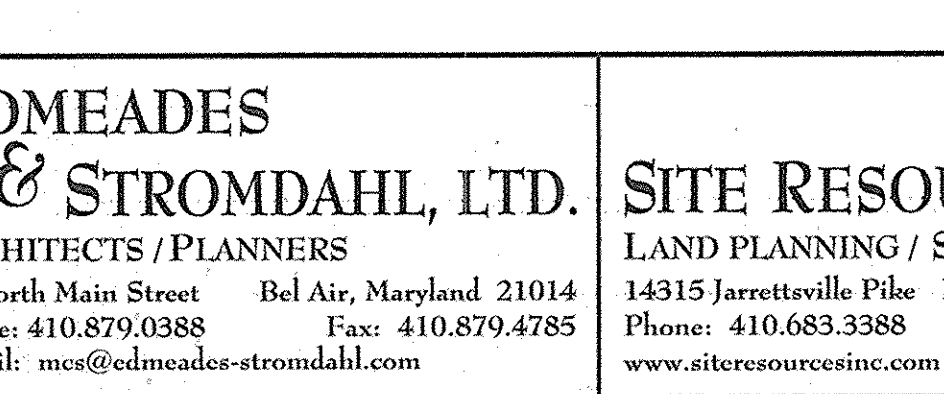
- 1. SEED AND COVER WITH STRAW MULCH... 2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOIL...

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James M. Irvin, Director

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
Howard County Health Department

APPROVED: DEPARTMENT OF PLANNING & ZONING
Director

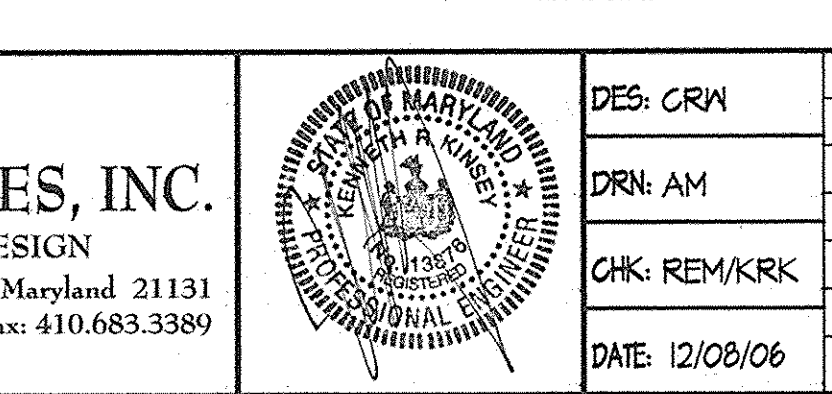
SUPER SILT FENCE OUTFALL PROTECTION



CONSTRUCTION SPECIFICATIONS

- 1. FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING...

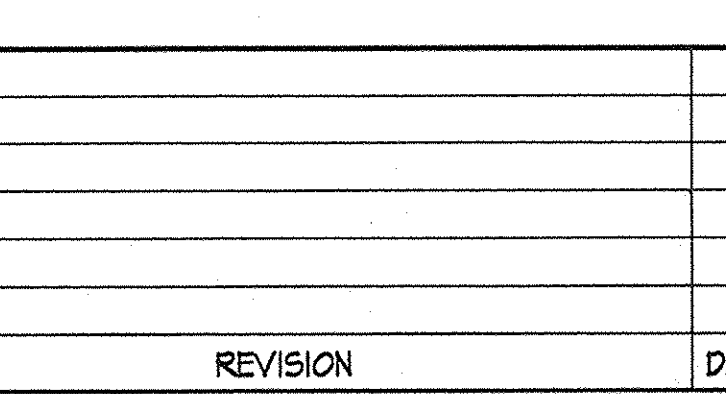
ROCK OUTLET PROTECTION III



CONSTRUCTION SPECIFICATIONS

- 1. GABION INFLOW PROTECTION SHALL BE CONSTRUCTED OF 1' X 3' X 4' GABION BASKETS FORMING A TRAPEZOIDAL CROSS SECTION...

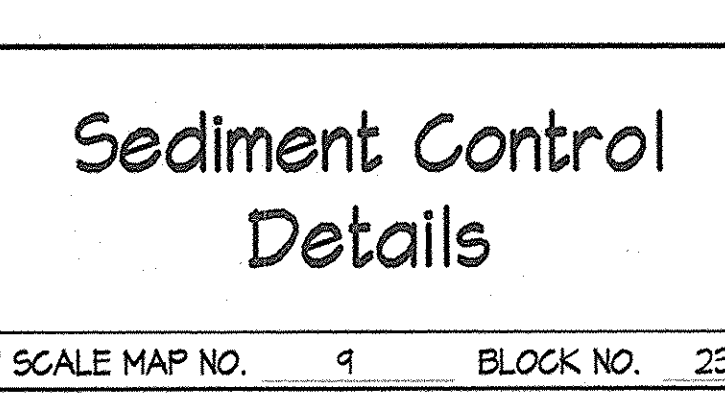
GABION INFLOW PROTECTION



CONSTRUCTION SPECIFICATIONS

- 1. SEED AND COVER WITH STRAW MULCH... 2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOIL...

EARTH DIKE



CONSTRUCTION SPECIFICATIONS

- 1. SEED AND COVER WITH STRAW MULCH... 2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOIL...

REVIEWED FOR HOWARD SOU AND MEETS TECHNICAL REQUIREMENTS.
USDA - NATURAL RESOURCES CONSERVATION SERVICE

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

HOWARD SOIL CONSERVATION DISTRICT

ENGINEER'S CERTIFICATE
I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site...

DEVELOPER'S CERTIFICATE
I certify that all development and construction will be done according to this plan for sediment and erosion control...

WEST FRIENDSHIP VOLUNTEER FIRE CO.
Capital Project No. F-5465, Howard County, Maryland

EDMEADES & STROMDAHL, LTD. ARCHITECTS / PLANNERS
11 North Main Street Bel Air, Maryland 21014

SITE RESOURCES, INC. LAND PLANNING / SITE DESIGN
14315 Jarrettsville Pike Phoenix, Maryland 21131

Sediment Control Details
600' SCALE MAP NO. 9 BLOCK NO. 23

OWNER: West Friendship Volunteer Firemen Association Inc.
ADDRESS / PERMIT INFORMATION: 12835 Old Frederick Rd., Sykesville MD 21784



SEDIMENT AND EROSION CONTROL NOTES

- 1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (410-318-1055).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.

PERMANENT SEEDING NOTES

- Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:
1. Preferred -- Apply 2 tons/acre dolomitic limestone (42 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding.

TEMPORARY SEEDING NOTES

- Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.
Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.)
Seeding -- For the periods March 1 -- April 30, and August 1 -- October 15, seed with 2-1/2 bushel per acre of annual ryegrass (32 lbs/1000 sq. ft.).

DUST CONTROL

- 1. Mulches - See standards for vegetative stabilization with mulches only. Mulch should be crimped or backed to prevent blowing.
2. Vegetative Cover - See standards for temporary vegetative cover.
3. Tillage - To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts.

- Permanent Methods
1. Permanent Vegetation - See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
2. Topsoiling - Covering with less erosive soil materials. See standards for topsoiling.
3. Stone - Cover surface with crushed stone or coarse gravel.

2.0 STANDARD AND SPECIFICATIONS

FOR TOPSOIL

- Definition: Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.
Purpose: To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
Conditions Where Practice Applies: This practice is limited to areas having 2:1 or flatter slopes where:
a. The texture of the exposed subsoil/parent materials not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

Construction And Material Specifications

- I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given type of soil can be found in the representative soil profile section in the Soil Survey published by USDA in cooperation with Maryland Agricultural Experimental Station.
II. Topsoil Specifications - Soil to be used must meet the following:
1. Topsoil shall be a loam, sandy loam, clay loam, silty loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority.
2. Topsoil must be free of plants or plant parts such as bermuda grass, quack grass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
3. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons per acre (200-400 pounds per 1000 square feet) prior to the placement of topsoil.

STONE SIZE AND MATERIAL SPECIFICATIONS

Table with columns: SIZE RANGE, D 30, D 100, AASHTO, WEIGHT. Rows include NUMBER 5\*, NUMBER 1, RIP-RAP\*\*, CLASS I, CLASS II, CLASS III.

\* This classification is to be used on the inside face of stone outlets and check dams.
\*\* This classification is to be used whenever small rip-rap is required. The State Highway Administration designation for this stone is Stone For Gabions (A05.01.04).

Table with columns: BASKET THICKNESS, SIZE OF INDIVIDUAL STONES. Rows include 6, 9, 12, 18, 36 inches.

NOTE: Recycled concrete equivalent may be substituted for all stone classifications. Recycled concrete equivalent shall be concrete broken into the sizes meeting the appropriate classification, shall contain no steel reinforcement, and shall have a density of 150 pounds per cubic foot.

SEQUENCE OF CONSTRUCTION

- 1. Obtain grading permits. 2 DAYS
2. Contact Miss Utility at 1-800-281-TTTT at least three days in advance of starting work shown on plans. 1 DAY
3. Clear and grub for and install erosion and sediment control measures or devices. Construction of the sediment basins may not begin until stabilized construction entrance and silt fence below sediment basin installation is complete. 6 WEEKS

NUMBER OF DAYS

MATERIALS SPECIFICATIONS

Geotextile Fabrics

Table with columns: CLASS, APPARENT OPENING SIZE MM. MAX., GRAB TENSILE STRENGTH LB. MIN., BURST STRENGTH PSI. MIN. Rows include A, B, C, D, E, F (SILT FENCE).

\*\*50 mm. max. for Super Silt Fence

The properties shall be determined in accordance with the following procedures:

- Apparent opening size MSMT 323
-Grab tensile strength ASTM D 1682: 4x8" specimen, 1x2" clamps, 12"/min. strain rate in both principal directions of geotextile fabric.
-Burst strength ASTM D 3786

The fabric shall be inert to commonly encountered chemicals and hydrocarbons, and will be rot and mildew resistant. It shall be manufactured from fibers consisting of long chain synthetic polymers, and composed of a minimum of 25% by weight of polyolefins, polyesters, or polyamides. The geotextile fabric shall resist deterioration from ultraviolet exposure.

In addition, Classes A through E shall have a 0.01 cm/sec. minimum permeability when tested in accordance with MSMT 507, and an apparent minimum elongation of 20 percent (20%) when tested in accordance with the grab tensile strength requirements listed above.

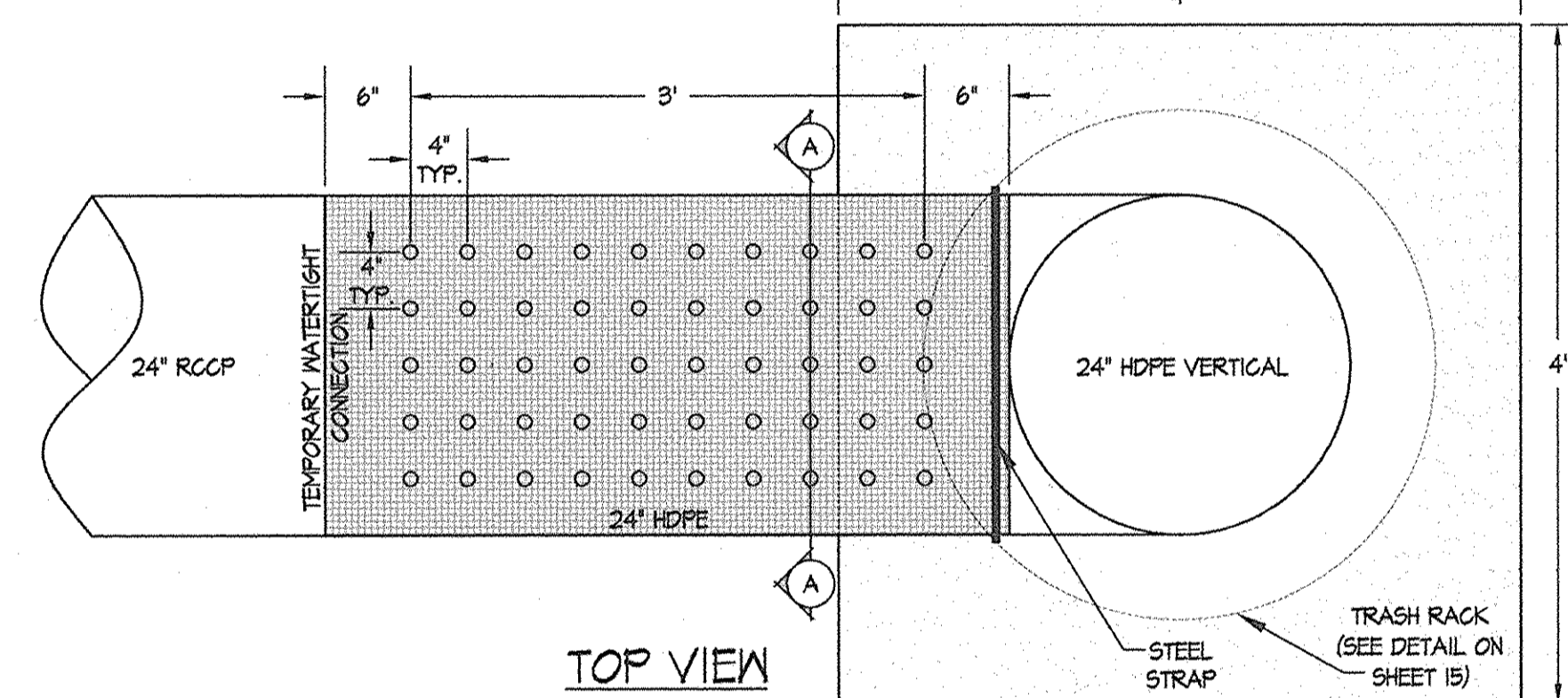
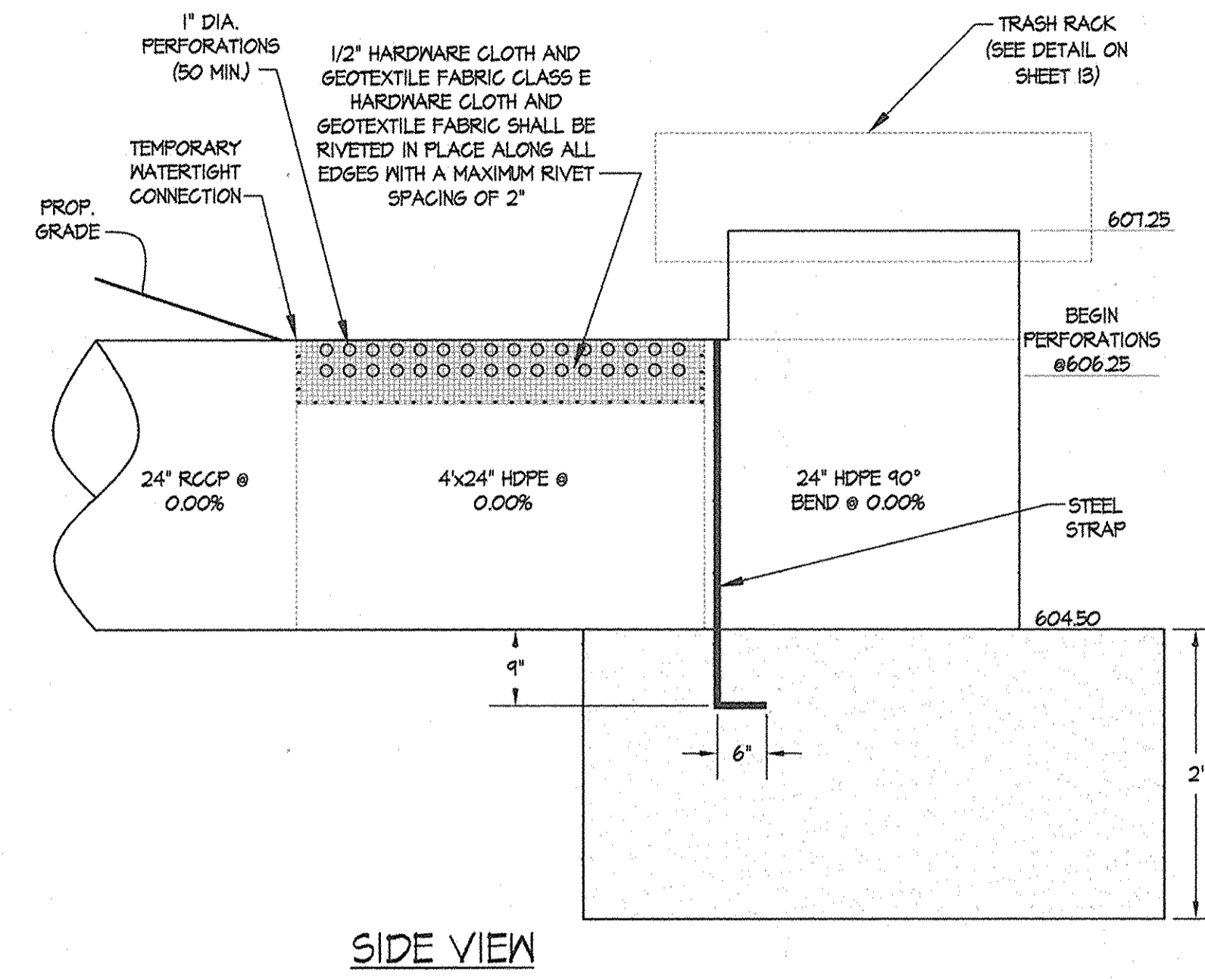
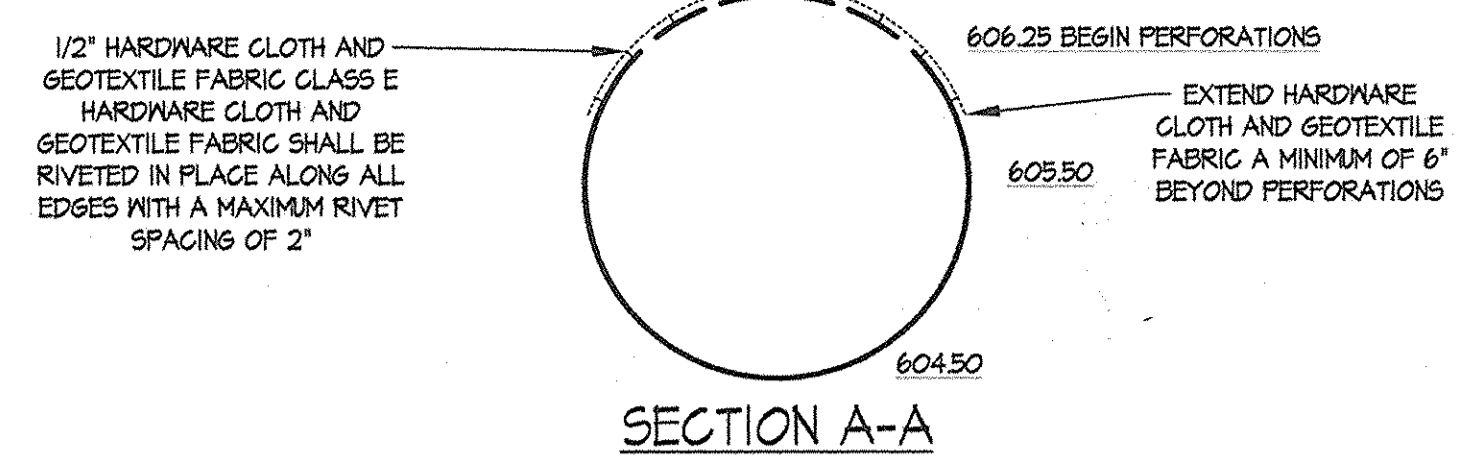
Silt Fence Class F geotextile fabrics for silt fence shall have a 50 lb./in. minimum tensile strength and a 20 lb./in. minimum tensile modulus when tested in accordance with MSMT 509. The material shall also have a 0.3 gal./sq. min. flow rate and seventy-five percent (75%) minimum filtering efficiency when tested in accordance with MSMT 322.

Geotextile fabrics used in the construction of silt fence shall resist deterioration from ultraviolet exposure. The fabric shall contain sufficient amounts of ultraviolet ray inhibitors and stabilizers to provide a minimum of 12 months of expected usable construction life at a temperature range of 0 to 120 degrees F.

TEMPORARY STOCKPILE NOTE

Additional Temporary Stockpiles may be added with the approval of the Sediment Control Inspector. Additional Temporary Stockpiles shall:

- 1. Be Located within the Limit of Disturbance.
2. Drain to a functioning Sediment Control Device.
3. Be positioned to not impede upon or impair the function of said device.
4. Be positioned not to alter drainage divides.



HORIZONTAL DRAWDOWN DEVICE PERFORATION DETAIL

NOT TO SCALE

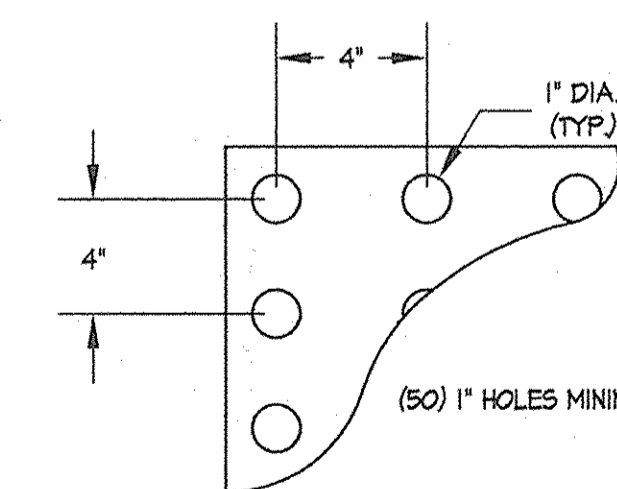
REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
USDA - NATURAL RESOURCES CONSERVATION SERVICE 1/4/07 DATE
HOWARD SOIL CONSERVATION DISTRICT 1/4/07 DATE

ENGINEER'S CERTIFICATE
I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
12/08/06 DATE
H. Mitchell Day, Chief DEVELOPER

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.
12/14/06 DATE
H. Mitchell Day, Chief DEVELOPER

PERFORATED PVC DETAIL

NOT TO SCALE



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James M. Irvin, DIRECTOR 12/06 DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Robyn G. Wale, COUNTY HEALTH OFFICER 1/13/07 DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING
Director 1/13/07 DATE
Chief, Development Engineering Division 1/9/07 DATE
Chief, Division of Land Development 1/10/07 DATE

EDMEADES & STROMDAHL, LTD. ARCHITECTS / PLANNERS
11 North Main Street Bel Air, Maryland 21014
Phone: 410.879.0388 Fax: 410.879.4785
E-mail: mes@edmeades-stromdahl.com

SITE RESOURCES, INC. LAND PLANNING / SITE DESIGN
14315 Jarrettsville Pike Phoenix, Maryland 21131
Phone: 410.683.3388 Fax: 410.683.3389
www.siteresourcesinc.com

DES: CRW
DRN: AM
CHK: REM/KRK
DATE: 12/06/06

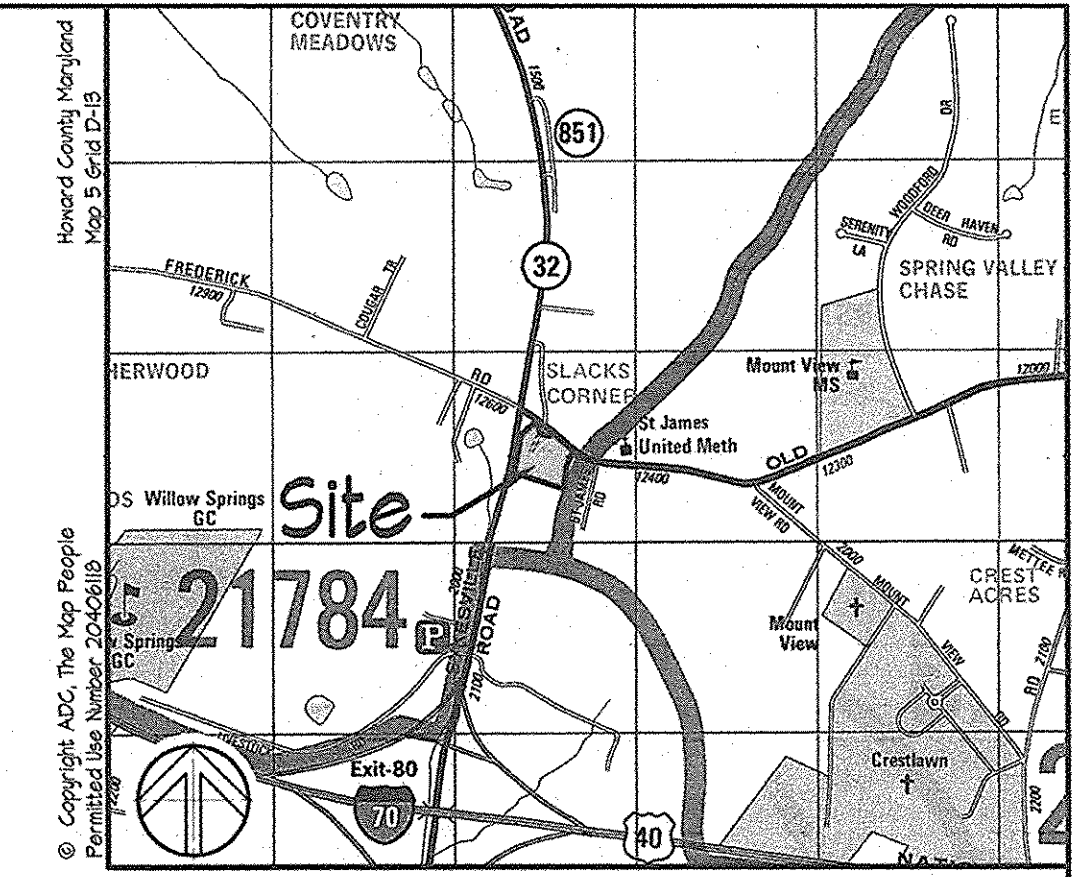
Table with columns: BY, NO., REVISION, DATE. Row 1: 600' SCALE MAP NO. 9, BLOCK NO. 23.

Sediment Control Details
600' SCALE MAP NO. 9 BLOCK NO. 23

WEST FRIENDSHIP VOLUNTEER FIRE CO.
Capital Project No. F-5465, Howard County, Maryland
ADDRESS / PERMIT INFORMATION: 12635 Old Frederick Rd., Sykesville MD 21784

C6.03

SCALE: AS SHOWN SHEET 16 OF 28



Vicinity Map Scale: 1" = 2000'

**LEGEND**

- PROPERTY LINE
- - - EXISTING CONTOURS
- - - EXISTING CURB & GUTTER
- NoB2 SOILS LINE
- GcB2
- 15" SD EXISTING STORM DRAINS
- - - DRAINAGE AREA
- TcPATH TIME OF CONCENTRATION PATH
- EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS
- TOTAL AREA ON SITE: 637 SF



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

*Jin Hyn/03* 1/4/07  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*[Signature]* 1/4/07  
 HOWARD SOIL CONSERVATION DISTRICT DATE

**ENGINEER'S CERTIFICATE**

"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

*[Signature]* 12/22/06  
 ENGINEER DATE

**DEVELOPER'S CERTIFICATE**

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

*H. Mitchell Doy Chief* 12/14/06  
 DEVELOPER DATE

**APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS**

*[Signature]* 12/18/06  
 JAMES W. IRVIN, DIRECTOR DATE

**APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS**

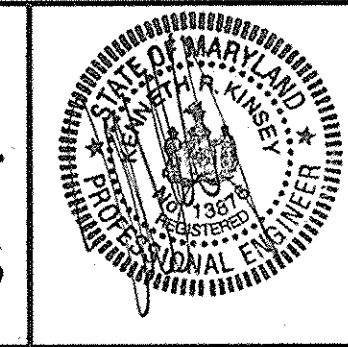
HOWARD COUNTY HEALTH DEPARTMENT  
*[Signature]* 1/18/07  
 COUNTY HEALTH OFFICER DATE

**APPROVED: DEPARTMENT OF PLANNING & ZONING**

*[Signature]* 1/18/07  
 DIRECTOR DATE  
*[Signature]* 1/18/07  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*[Signature]* 1/18/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

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 www.siteresourcesinc.com



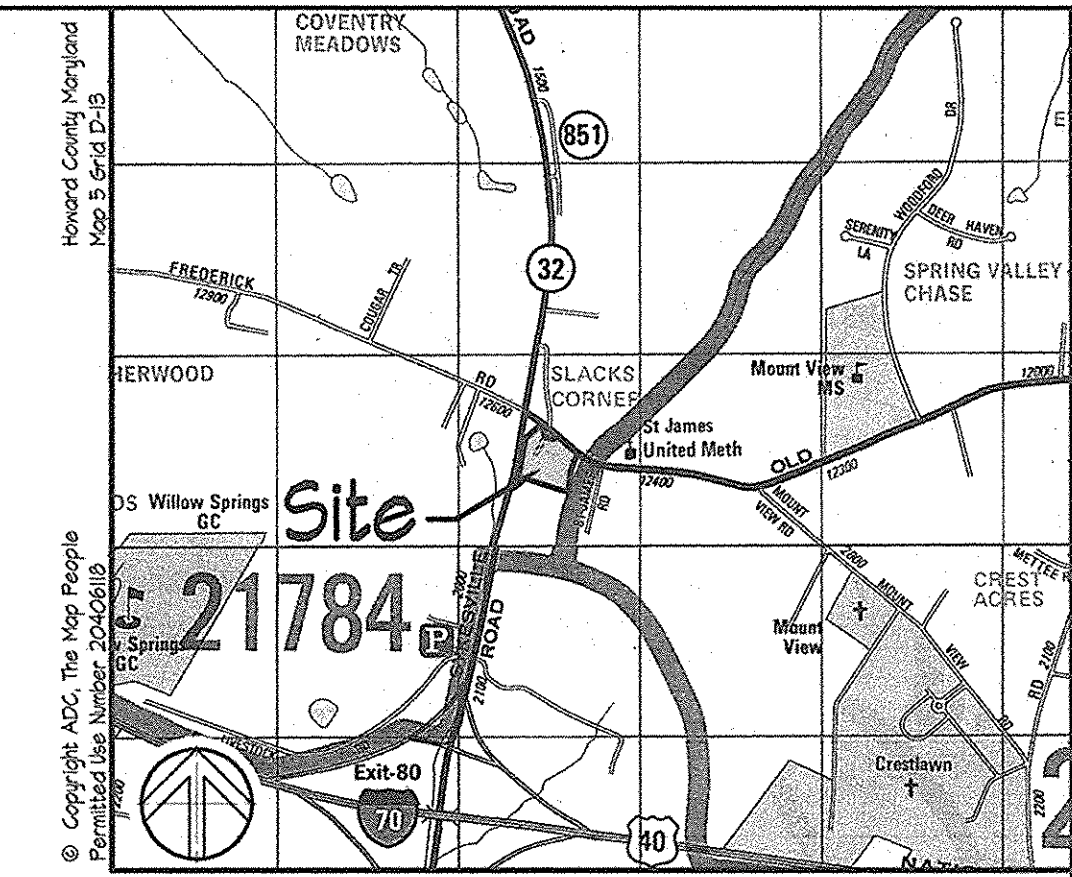
DES: CRW	BY	NO.	REVISION	DATE
DRN: AM				
CHK: REM/KRK				
DATE: 12/06/06				

**Existing Temporary Stormwater Management Drainage Area Map**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Fire Association Inc.  
 ADDRESS / PERMIT INFORMATION:  
 12460 Frederick Rd  
 West Friendship, MD 21794  
 Parcel No. 23, ZONE: RR-250, TAX MAP No. 9  
 Soil Erosion Dist. No. 6090  
 WATER CODE: Private, SEWER CODE: Private

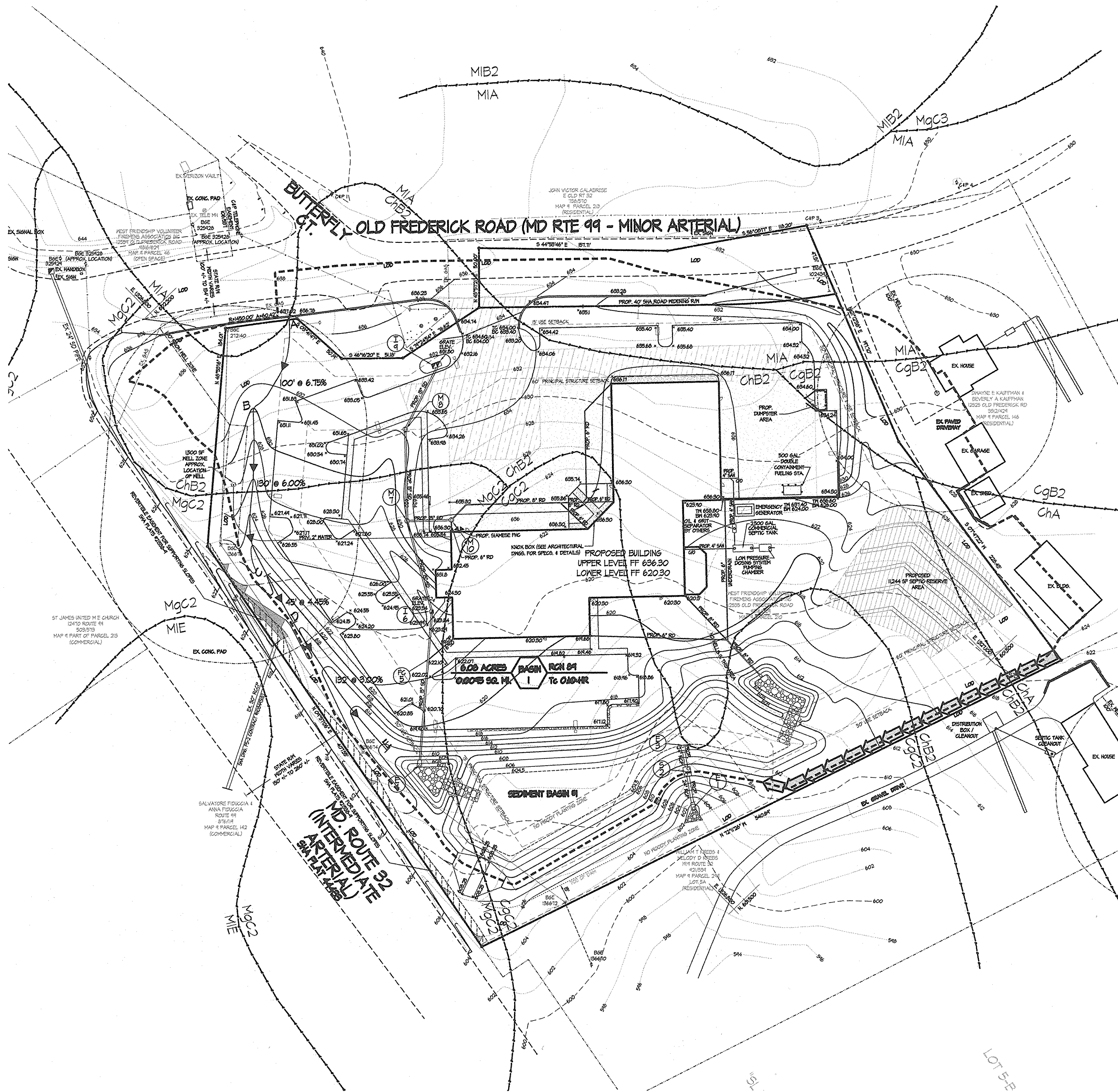
SOILS CHART		
SYMBOL	NAME	HYDROLOGIC SOIL GROUP
CgB2	CHESTER GRAVELLY SILT LOAM	B
CgC2	CHESTER GRAVELLY SILT LOAM	B
ChA	CHESTER SILT LOAM	B
ChB2	CHESTER SILT LOAM	B
MIA	MANOR LOAM	B
MgC2	MANOR GRAVELLY LOAM	B

**C6.11**  
 SCALE: 1"=50'  
 SHEET 17 OF 28



Vicinity Map Scale: 1" = 2000'

- LEGEND**
- PROPERTY LINE
  - EXISTING CONTOURS
  - PROPOSED CONTOURS
  - EXISTING CURB & GUTTER
  - PROPOSED CURB & GUTTER
  - SOILS LINE
  - SOILS LINE
  - EXISTING STORM DRAIN
  - PROPOSED STORM DRAIN
  - DRAINAGE AREA
  - TIME OF CONCENTRATION PATH
  - EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 631 SF



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.  
*Jin May 16* 1/4/07  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*[Signature]* 1/4/07  
 HOWARD SOIL CONSERVATION DISTRICT DATE

ENGINEER'S CERTIFICATE  
 "I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."  
*[Signature]* 12/3/06  
 ENGINEER DATE

DEVELOPER'S CERTIFICATE  
 "I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."  
*H. Mitchell Day Chief* 12/14/06  
 DEVELOPER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 12/19/06  
 JAMES M. IRVIN, DIRECTOR DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
*[Signature]* 1/17/07  
 COUNTY HEALTH OFFICER DATE

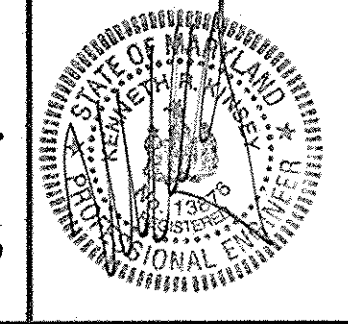
APPROVED: DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 1/10/07  
 DIRECTOR DATE

*[Signature]* 1/10/07  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 1/15/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

**SITE RESOURCES, INC.**  
 LAND PLANNING / SITE DESIGN  
 14315 Jarrettsville Pike Phoenix, Maryland 21131  
 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com



DES: CRW					
DRN: AM					
CHK: REMKRK					
DATE: 12/06/06	BY	NO.	REVISION	DATE	

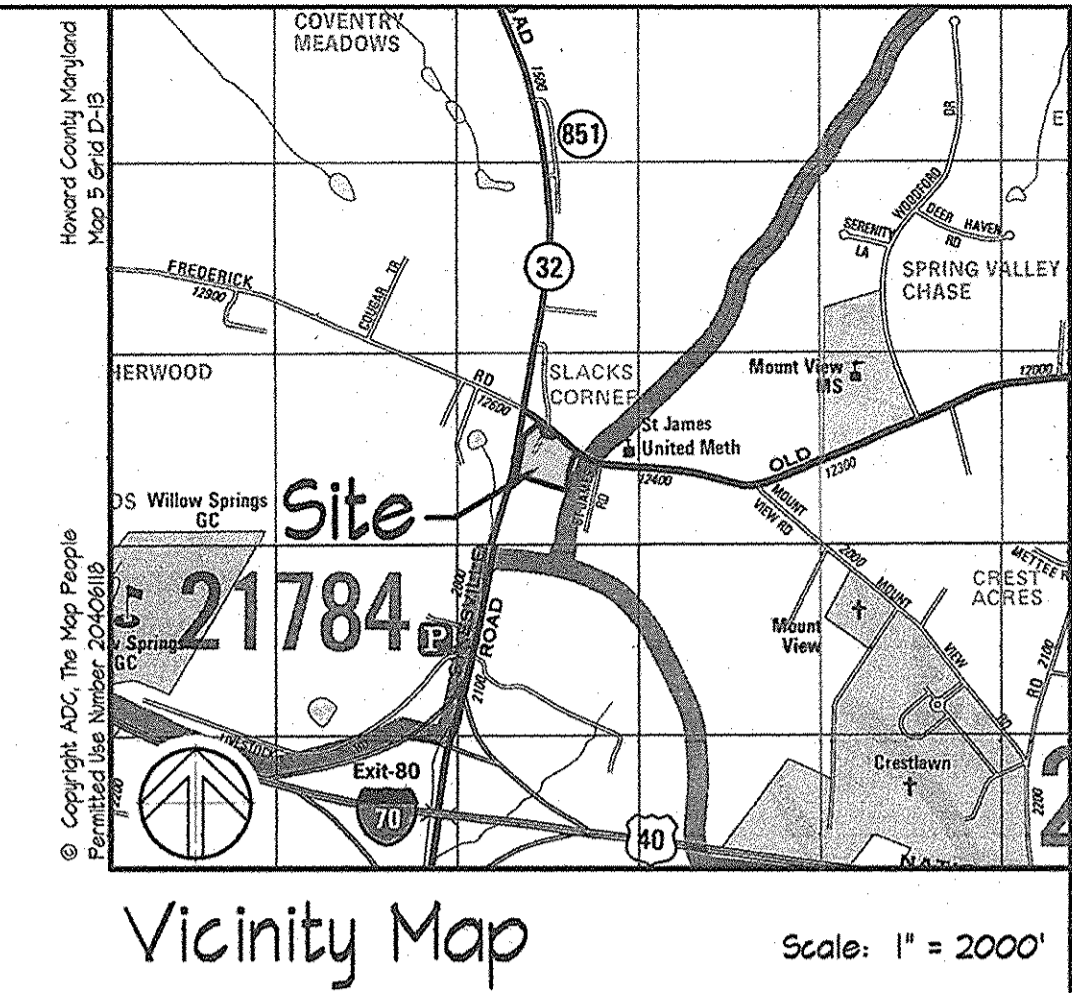
**Proposed Temporary Stormwater Management Drainage Area Map**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Fire Association Inc.  
 ADDRESS / PERMIT INFORMATION:  
 ADDRESS: 12355 Old Frederick Rd., Sykesville MD 21784  
 PARCEL: 410  
 L916 / F 624  
 GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract 6020  
 WATER CODE: Private, SEWER CODE: Private

C6.12  
 SCALE: 1"=50'  
 SHEET 18 OF 28

**LEGEND**

---	PROPERTY LINE
- - - -	EXISTING CONTOURS
- - - -	EXISTING CURB & GUTTER
---	SOILS LINE
---	15" SD EXISTING STORM DRAINS
- - - -	DRAINAGE AREA
→	TIME OF CONCENTRATION PATH
█	EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 631 SF



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

*Jin Ma* 1/4/07  
USDA - Natural Resources Conservation Service Date

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

*Paul S. ...* 1/4/07  
Howard Soil Conservation District Date

**BY THE ENGINEER:**

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

*Kenneth R. Kinsey* 12/8/06  
Signature of Engineer Date

**KENNETH R. KINSEY**  
Printed Name of Engineer

**BY THE DEVELOPER:**

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an 'as-built' plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

*H. Mitchell Day, Chief* 12/14/06  
Signature of Developer Date

**H. MITCHELL DAY, Chief**  
Printed Name of Developer

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*James H. Irvin* 12/8/06  
JAMES H. IRVIN, DIRECTOR DATE

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

*Robert J. Wain* 1/17/07  
COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

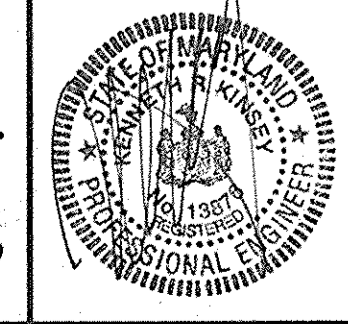
*Paul S. ...* 1/4/07  
DIRECTOR DATE

*...* 1/4/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*...* 1/15/07  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**EDMEADES & STROMDAHL, LTD.**  
ARCHITECTS / PLANNERS  
11 North Main Street Bel Air, Maryland 21014  
Phone: 410.879.0388 Fax: 410.879.4785  
E-mail: mcs@edmeades-stromdahl.com

**SITE RESOURCES, INC.**  
LAND PLANNING / SITE DESIGN  
14315 Jarrettsville Pike Phoenix, Maryland 21131  
Phone: 410.683.3388 Fax: 410.683.3389  
www.siteresourcesinc.com



DES: CRW					
DRN: AM					
CHK: REM/KRK					
DATE: 12/08/06	BY: NO.		REVISION	DATE	

**Existing Conditions Drainage Area Map**

600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
Capital Project No. F-5465, Howard County, Maryland

OWNER:  
West Friendship Volunteer Firemen Association Inc.  
12460 Frederick Rd  
West Friendship, MD 21784  
Phone (410) 785-2954

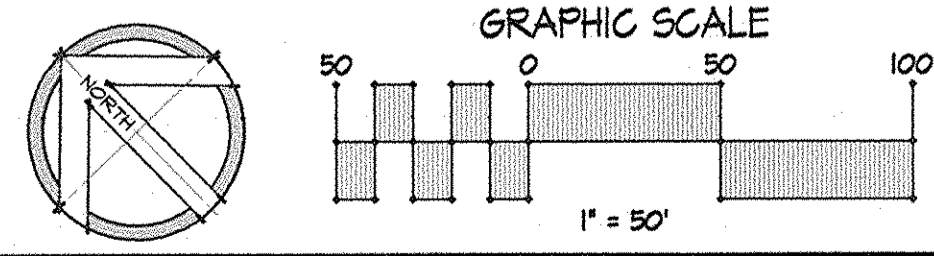
ADDRESS / PERMIT INFORMATION:  
ADDRESS: 12555 Old Frederick Rd, Sykesville MD 21784  
PARCEL: #210  
L 8016 / F 624  
GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
3rd Election District, Census Tract 6020  
WATER CODE: Private, SEWER CODE: Private

**SOILS CHART**

SYMBOL	NAME	HYDROLOGIC SOIL GROUP
CgB2	CHESTER GRAVELLY SILT LOAM	B
CgC2	CHESTER GRAVELLY SILT LOAM	B
ChA	CHESTER SILT LOAM	B
ChB2	CHESTER SILT LOAM	B
MIA	MANOR LOAM	B
MgC2	MANOR GRAVELLY LOAM	B

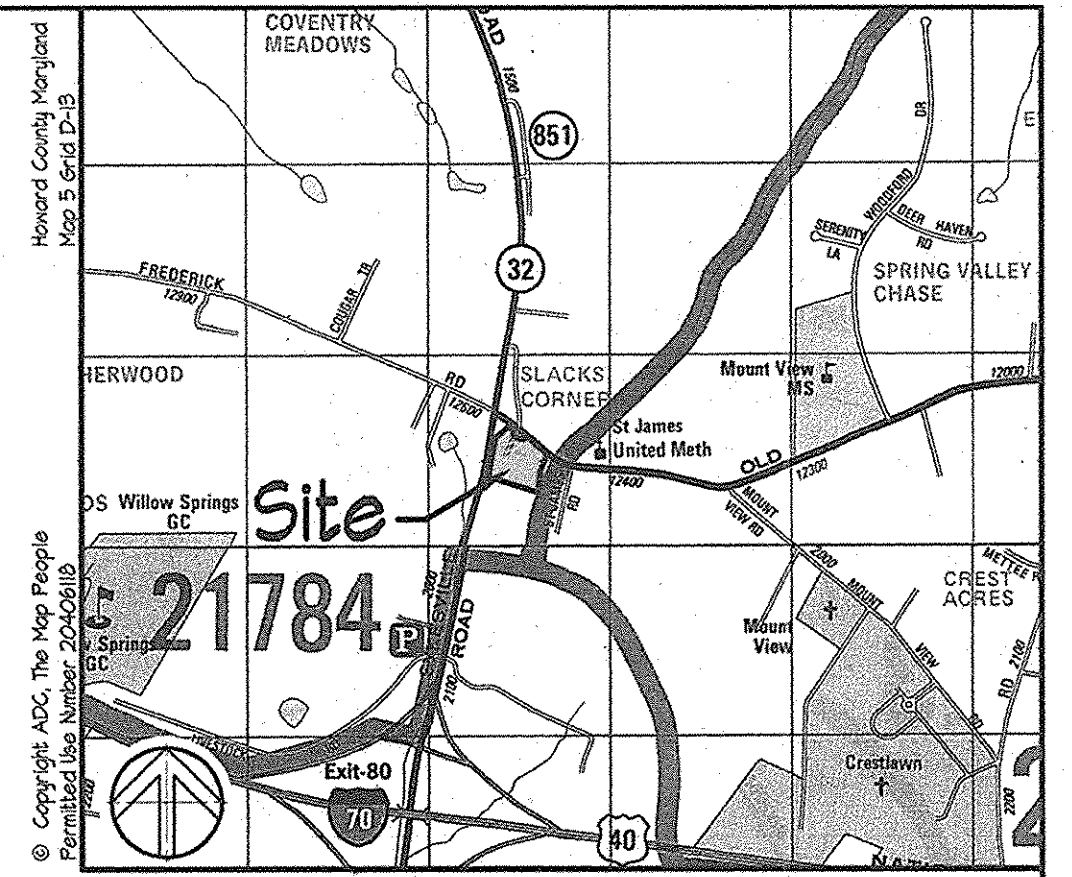
SYMBOL	CAPABILITY UNIT	EROSION HAZARD	BUILDINGS	STREETS (3)	PARKING	LAWN	SEWAGE DISPOSAL AREAS
CgB2	Ile-4	MODERATE (1)	SLIGHT	SLIGHT	MODERATE (2)	SLIGHT	SLIGHT
CgC2	Ile-4	SEVERE (1)	MODERATE (1)	MODERATE (2)	SEVERE (2)	MODERATE (2)	MODERATE (2)
ChA	I-4	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT
ChB2	Ile-4	MODERATE (1)	SLIGHT	SLIGHT	MODERATE (2)	SLIGHT	SLIGHT
MgC2	Ile-25	SEVERE (1)	MODERATE (2)	MODERATE (2)	SEVERE (2)	MODERATE (2)	MODERATE (2)
MIA	Ile-25	SEVERE (1)	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT

(1) WITHOUT PROTECTIVE COVER  
(2) SLOPES  
(3) SLIGHT=0%-8% MODERATE=8%-15% SEVERE=15%+



C7.01

SCALE: 1"=50'  
SHEET 19 OF 28



Vicinity Map Scale: 1" = 2000'

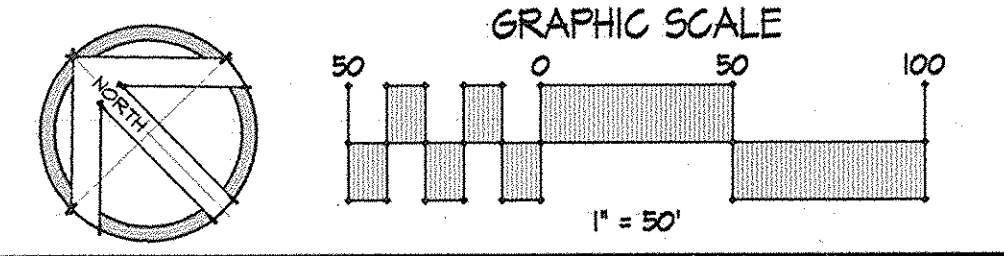
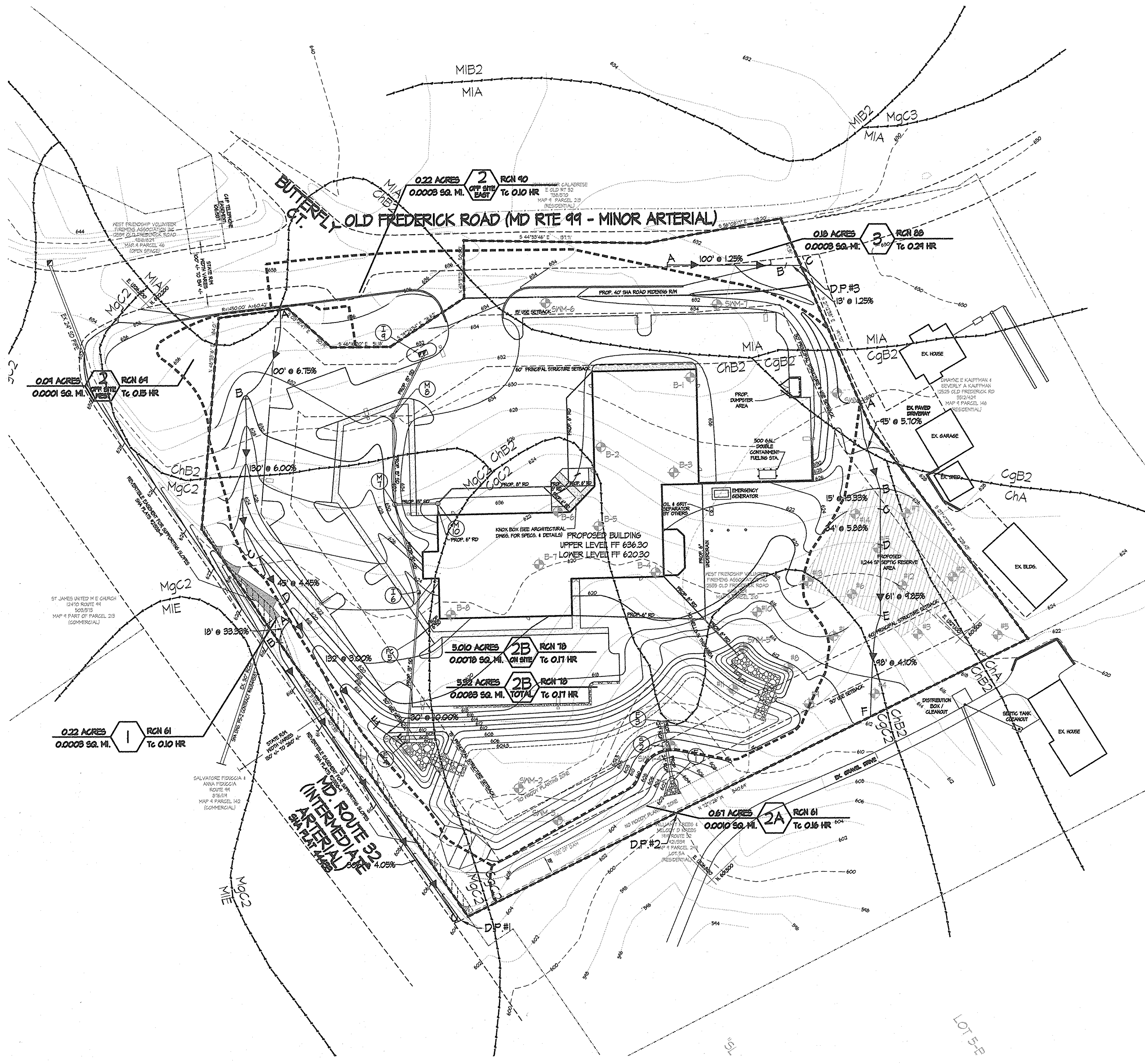
**LEGEND**

---	PROPERTY LINE
---	EXISTING CONTOURS
---	PROPOSED CONTOURS
---	EXISTING CURB & GUTTER
---	PROPOSED CURB & GUTTER
---	SOILS LINE
---	EXISTING STORM DRAINS
---	PROPOSED STORM DRAIN
---	DRAINAGE AREA
---	TIME OF CONCENTRATION PATH
---	EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 637 SF

**NOTE:**  
ANY ADDITIONAL IMPERVIOUS ADDED TO THIS PLAN WILL REQUIRE STORMWATER MANAGEMENT TO BE REEVALUATED.

**SOILS CHART**

SYMBOL	NAME	HYDROLOGIC SOIL GROUP
CgB2	CHESTER GRAVELLY SILT LOAM	B
CgC2	CHESTER GRAVELLY SILT LOAM	B
ChA	CHESTER SILT LOAM	B
ChB2	CHESTER SILT LOAM	B
MIA	MANOR LOAM	B
MgC2	MANOR GRAVELLY LOAM	B



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

*[Signature]* 1/6/17  
USDA - Natural Resources Conservation Service  
Date

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

*[Signature]* 1/6/17  
Howard Soil Conservation District  
Date

**BY THE ENGINEER:**

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

*[Signature]* 12/18/17  
Signature of Engineer  
Date

**KEVIN R. KASBY**  
Printed Name of Engineer

**BY THE DEVELOPER:**

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

*[Signature]* 12/14/16  
Signature of Developer  
Date

**H. Mitchell Day, Chief**  
Printed Name of Developer

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*[Signature]* 12/14/16  
JAMES M. IRVIN, DIRECTOR  
DATE

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

*[Signature]* 1/17/17  
ROBERT J. WALSH  
COUNTY HEALTH OFFICER  
DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

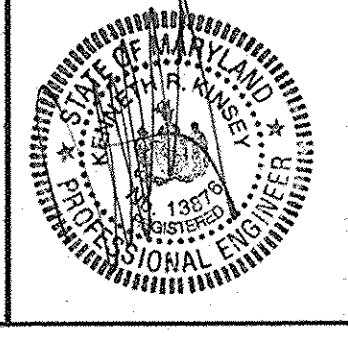
*[Signature]* 1/16/17  
DIRECTOR  
DATE

*[Signature]* 1/16/17  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE

*[Signature]* 1/16/17  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE

**EDMEADES & STROMDAHL, LTD.**  
ARCHITECTS / PLANNERS  
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E-mail: mcs@edmeades-stromdahl.com

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14315 Jarrettsville Pike Phoenix, Maryland 21131  
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www.siteresourcesinc.com



DES: CRM				
DRN: AM				
CHK: REM/KRK				
DATE: 12/08/06	BY: NO.	REVISION	DATE	

**Proposed Drainage Area Map**

600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
Capital Project No. F-5465, Howard County, Maryland

**OWNER:**  
West Friendship Volunteer Firemen's Association Inc.  
12460 Frederick Rd  
West Friendship, MD 21794  
Phone: (410) 755-1254

**ADDRESS / PERMIT INFORMATION:**  
ADDRESS: 12595 Old Frederick Rd, Skyline MD 21784  
PARCEL: 210  
L: 9816 / F: 29  
GRID: No. 23, ZONE: RR-DIED, TAX MAP No. 9  
3rd Election District, Census Tract 6030  
WATER CODE: Private, SEWER CODE: Private

C7.02

SCALE: 1"=50'

SHEET 20 OF 28

DESIGN SUMMARY

Table with 4 columns: Item, 1 YEAR, 10 YEAR, 100 YEAR. Rows include EXISTING D.P. (c.f.s.), DEVELOPED BYPASS (c.f.s.), ALLOWABLE RELEASE (c.f.s.), etc.

OPERATION, MAINTENANCE, AND INSPECTION

INSPECTIONS OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS 'STANDARDS AND SPECIFICATIONS FOR PONDS' (MD-31B), THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF.

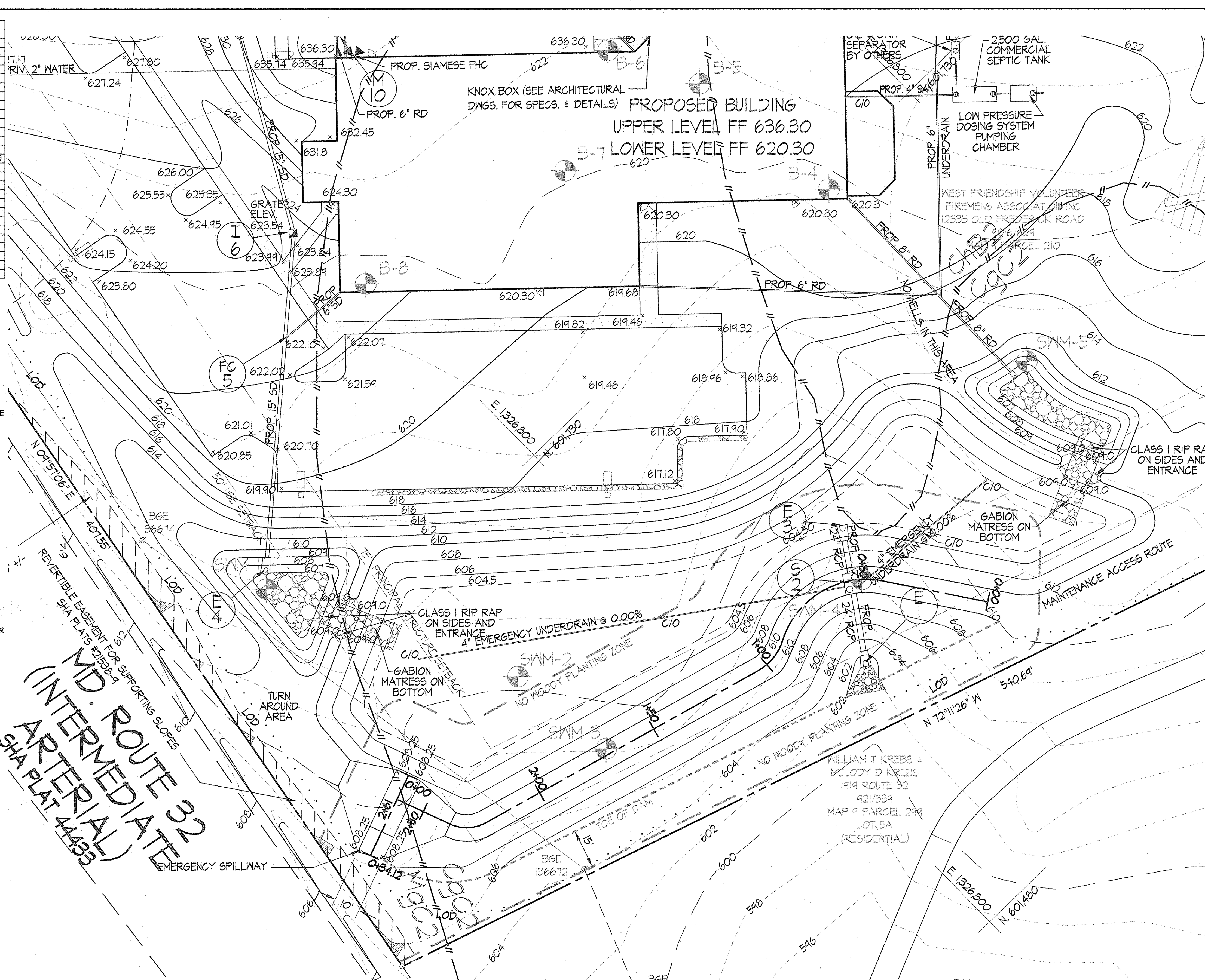
INSPECTION SCHEDULE

- 1. PRIOR NOTIFICATION SHALL BE GIVEN TO THE ENGINEER SO THAT INSPECTIONS MAY BE MADE AT THE FOLLOWING STAGES: A. UPON COMPLETION OF EXCAVATION TO SUB FOUNDATION AND WHERE REQUIRED, INSTALLATION OF STRUCTURAL SUPPORTS OR REINFORCEMENT FOR STRUCTURES, INCLUDING BUT NOT LIMITED TO: I. CORE TRENCHES FOR STRUCTURAL EMBANKMENTS. II. INLET-OUTLET STRUCTURES AND ANTI-SLEEP STRUCTURES, WATERTIGHT CONNECTORS ON PIPES, AND TRENCHES FOR ENCLOSED STORM DRAINAGE FACILITIES.

MAINTENANCE SCHEDULE

- 1. THE POND IS PUBLIC AND SHALL BE MAINTAINED BY HOWARD COUNTY. 2. THE FACILITY SHALL BE INSPECTED TWICE ANNUALLY, MARCH AND SEPTEMBER, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS 'STANDARDS AND SPECIFICATIONS FOR PONDS' (MD-31B), THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF.

MD ROUTE 32 (INTERMEDIATE) SHA PLAT 44433



Vicinity Map Scale: 1" = 2000'

LEGEND table with symbols for PROPERTY LINE, EXISTING CONTOURS, PROPOSED CONTOURS, EXISTING CURB & GUTTER, PROPOSED CURB & GUTTER, EXISTING STORM DRAINS, PROPOSED STORM DRAIN, PROPOSED SANITARY SEWER, PROPOSED WATER, PROPOSED SOIL BORINGS, and EXISTING STEEP SLOPES.

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control. Signed: [Signature] Date: 1/4/07

BY THE ENGINEER: I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. Signed: Kenneth R. Kinsey Date: 12/18/06

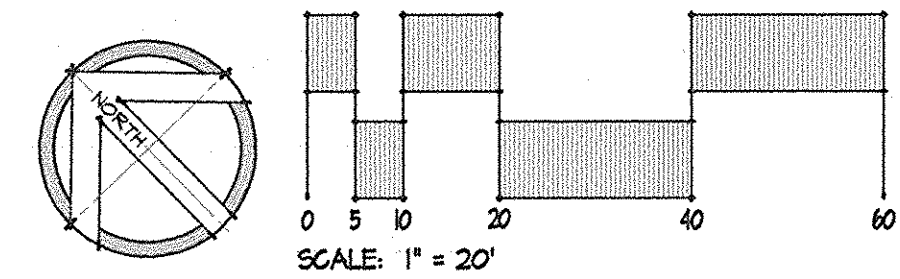
BY THE DEVELOPER: I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. Signed: H. Mitchell Day, Chief Date: 12/14/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. Signed: James M. Irvin, Director Date: 12/18/06

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT. Signed: [Signature] Date: 1/17/07

APPROVED: DEPARTMENT OF PLANNING & ZONING. Signed: [Signature] Date: 1/18/07

NOTE: TREES, SHRUBS, AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN FIFTY (50) FEET OF THE INLET STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT.



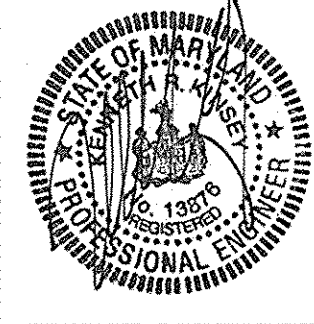
CONSULTANT'S HAZARD CLASS CERTIFICATION. I certify that this pond meets all requirements for hazard class (A). Signed: Kenneth R. Kinsey MD License No. 13876 Date: 12/18/06

Revision table with columns: BY, NO., REVISION, DATE. Entries include CRW, AM, REM/KRK on 12/08/06.

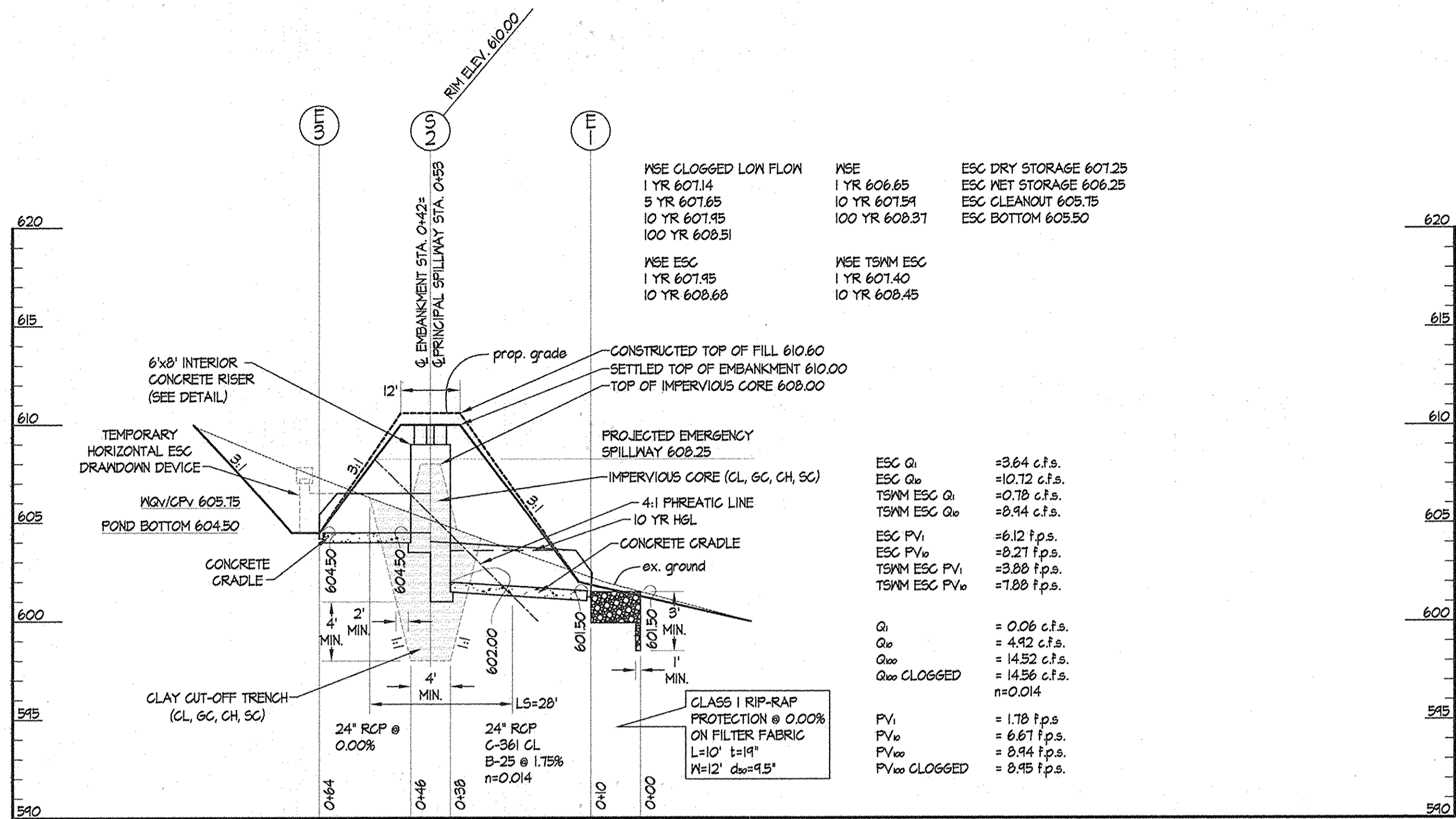
Stormwater Management Pond Plan. 600' SCALE MAP NO. 9 BLOCK NO. 23

WEST FRIENDSHIP VOLUNTEER FIRE CO. Capital Project No. F-5465, Howard County, Maryland. OWNER: West Friendship Volunteer Firemens Association, Inc. ADDRESS: 12535 Old Frederick Rd., Sparksville MD 21784

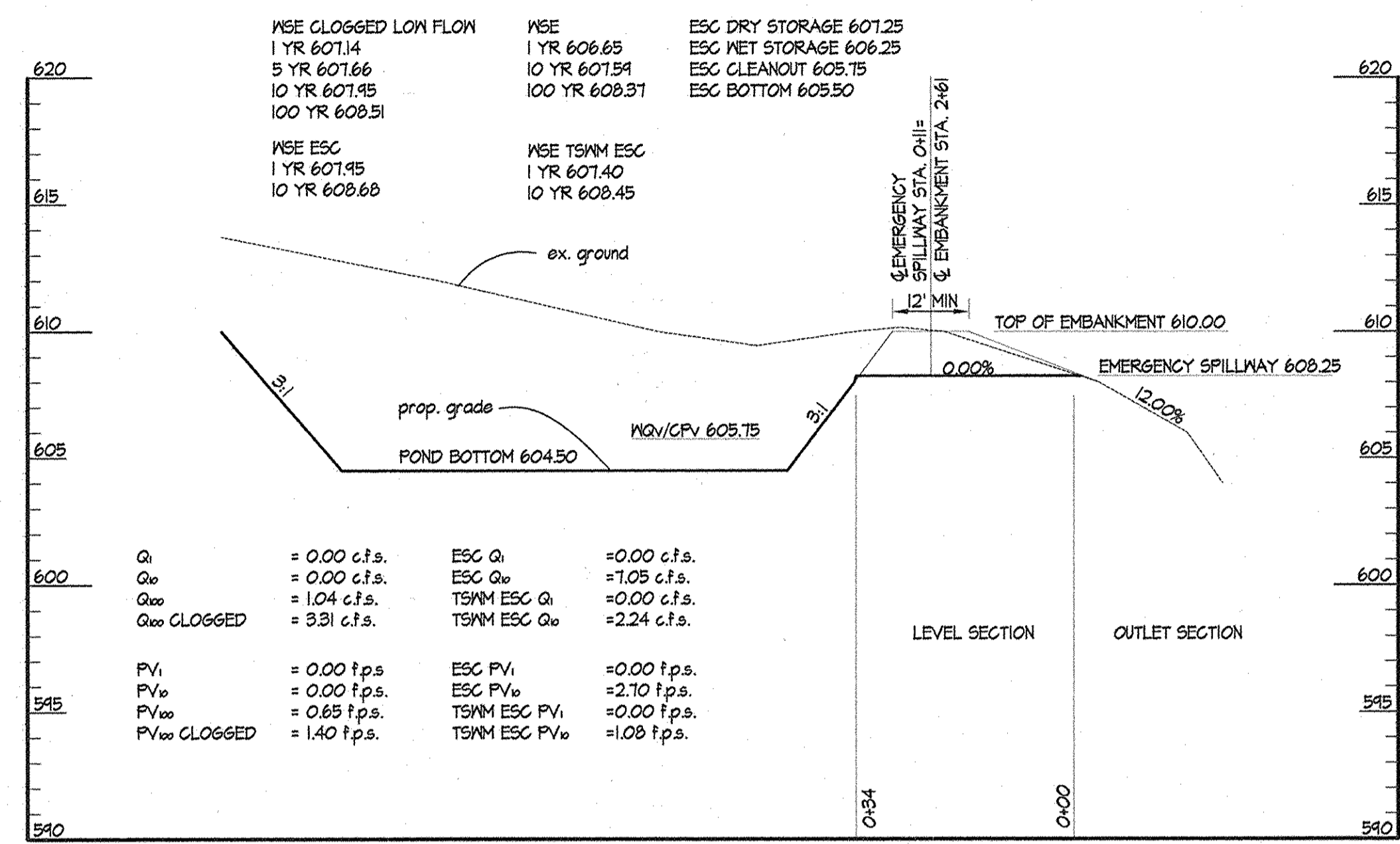
EDMEADES & STROMDAHL, LTD. ARCHITECTS / PLANNERS. 11 North Main Street Bel Air, Maryland 21014. Phone: 410.879.0388 Fax: 410.879.4785



SITE RESOURCES, INC. LAND PLANNING / SITE DESIGN. 14315 Jarrettsville Pike Phoenix, Maryland 21131. Phone: 410.683.3388 Fax: 410.683.3389

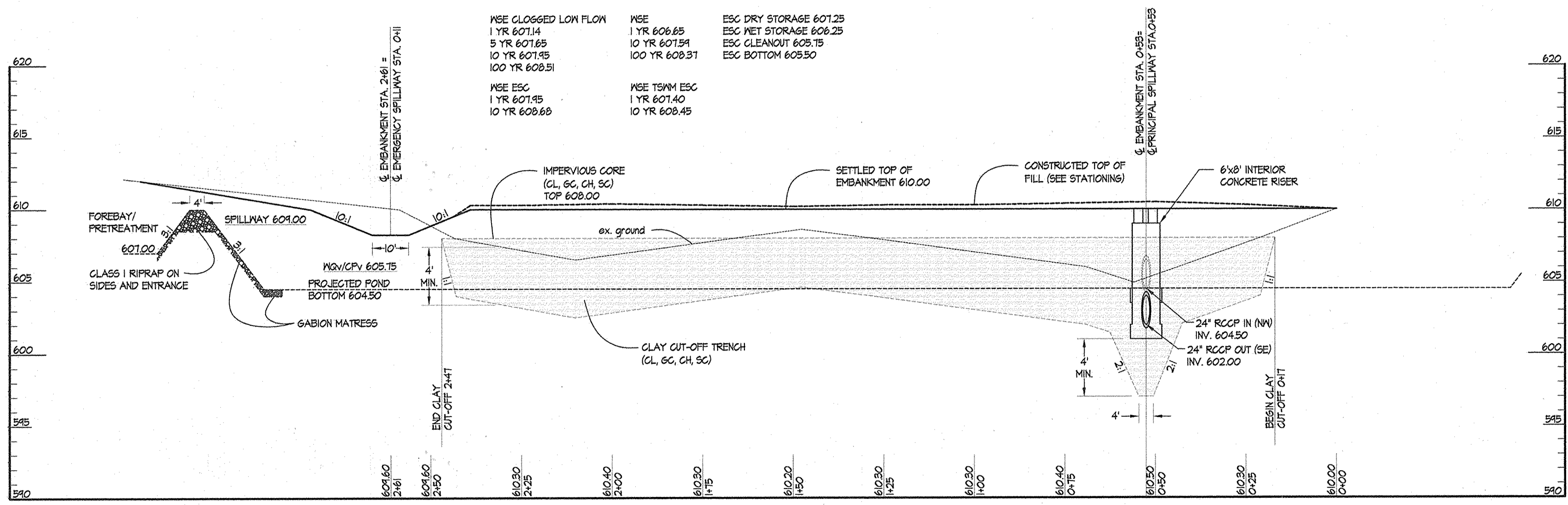
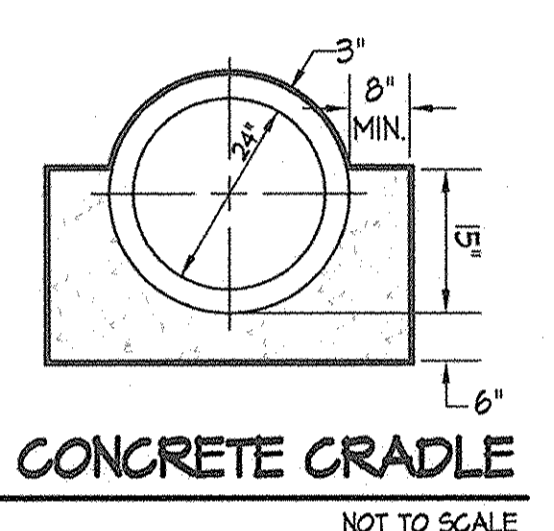


**1 PROFILE ALONG CENTERLINE OF PRINCIPAL SPILLWAY**  
 SCALES: HORIZ.: 1" = 20'  
 VERT.: 1" = 5'



**2 PROFILE ALONG CENTERLINE OF EMERGENCY SPILLWAY**  
 SCALES: HORIZ.: 1" = 20'  
 VERT.: 1" = 5'

**NOTE:**  
 1. IF UNSUITABLE (PERVIOUS) MATERIAL IS ENCOUNTERED AT TIME OF CUTOFF TRENCH INSTALLATION DEEPER THAN (4) FOUR FEET, IT WILL BE NECESSARY TO EXTEND THE CUTOFF TRENCH DOWN UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY A GEOTECHNICAL ENGINEER. FILL MATERIAL FOR THE CUTOFF TRENCH AND IMPERVIOUS CORE SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION CL, GC, CH OR SC. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.



**3 PROFILE ALONG CENTERLINE OF EMBANKMENT**  
 SCALES: HORIZ.: 1" = 20'  
 VERT.: 1" = 5'

**STORMWATER MANAGEMENT FACILITIES**  
 FROM PAGES 10-12 OF GEOTECHNICAL REPORT PREPARED BY HERBST/BENSON AND ASSOCIATES, DATED AUGUST 9, 2006  
 STORMWATER MANAGEMENT

- a. Infiltration Potential**  
 Four borings investigated subsurface suitability for stormwater disposal by infiltration. The Maryland Department of Environment requires that infiltration occur only in undisturbed native soils with an infiltration rate of at least 0.52 in./hr. Howard County has a more stringent requirement of a minimum 1.02 in./hr. Both jurisdictions require that stormwater management basin and infiltration trench be at least 4 feet above the groundwater table or rock (i.e. impermeable material).  
 The results of the borehole infiltrometer tests shown on TABLE 2 indicate that the use of standard 1.02 in./hr. design infiltration rate will be acceptable. Neither groundwater nor rock were encountered within the depths penetrated by the test borings and will not effect infiltration potential.  
 It is our opinion that infiltration rates will decrease with time as fine sediments wash in with the initial runoff and cover the infiltrating surface. We thus recommend that all infiltration structures be equipped with a gravity daylighted overflow directed so as not to adversely affect adjacent structures or properties.
- b. Pond Construction**  
 We are assuming that a pond will be constructed in the vicinity of borings 5N+1 through 5N+5. The invert of the principal spillway should be selected such that it will penetrate beneath very loose soils and into materials with standard penetration resistances of at least 8 blows per foot. The core trench should extend to a sufficient depth so as to penetrate at least 2 feet into the #8 blow count material or to a minimum of 4 feet below stripped existing grade, whichever is deeper. Although a lens of CL material was encountered in one of the test borings, it has been our experience that, in this geologic area, CL deposits are of limited volume. We would assume that the majority of "C" soils suitable for core trench and dam core construction will have to be brought in from off site.
- c. Earthwork Recommendations**  
 Stormwater management earthwork construction should meet the requirements of MD 318/2000 specifications.

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.  
 USDA - Natural Resources Conservation Service  
 Date: 1/6/07  
 These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.  
 Howard Soil Conservation District  
 Date: 1/14/07

**BY THE ENGINEER:**  
 "I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."  
 Signature of Engineer: [Signature]  
 Date: 12/15/06  
 Printed Name of Engineer: KENNETH R. KIRBY

**BY THE DEVELOPER:**  
 "I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."  
 Signature of Developer: H. Mitchell Day, Chief  
 Date: 12/15/06  
 Printed Name of Developer: H. Mitchell Day, Chief

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 James M. Irvine, Director  
 DATE: 12/15/06

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 Robert W. Wain, County Health Officer  
 DATE: 1/17/07

APPROVED: DEPARTMENT OF PLANNING & ZONING  
 Director  
 DATE: 1/18/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 1/16/07

CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 1/16/07

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

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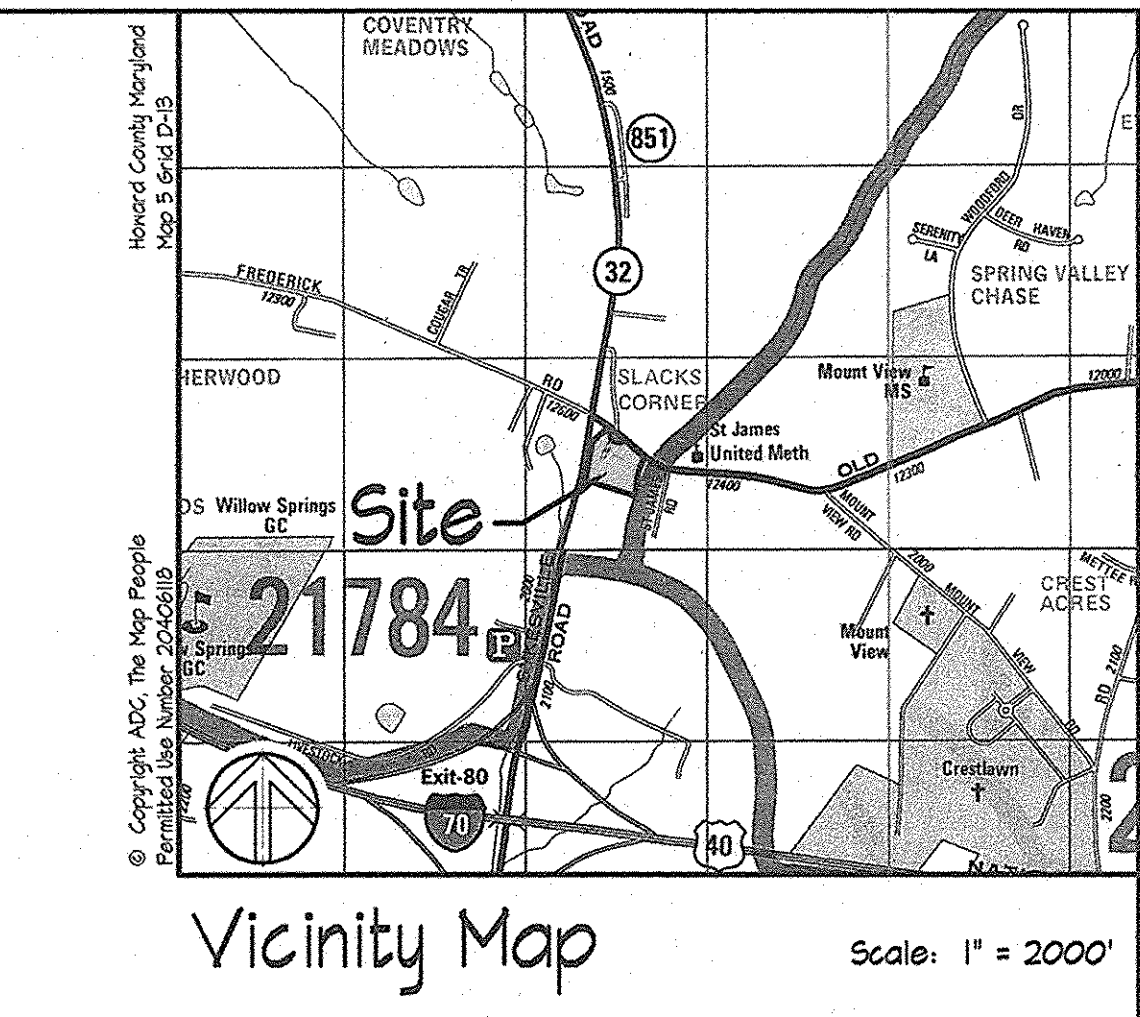
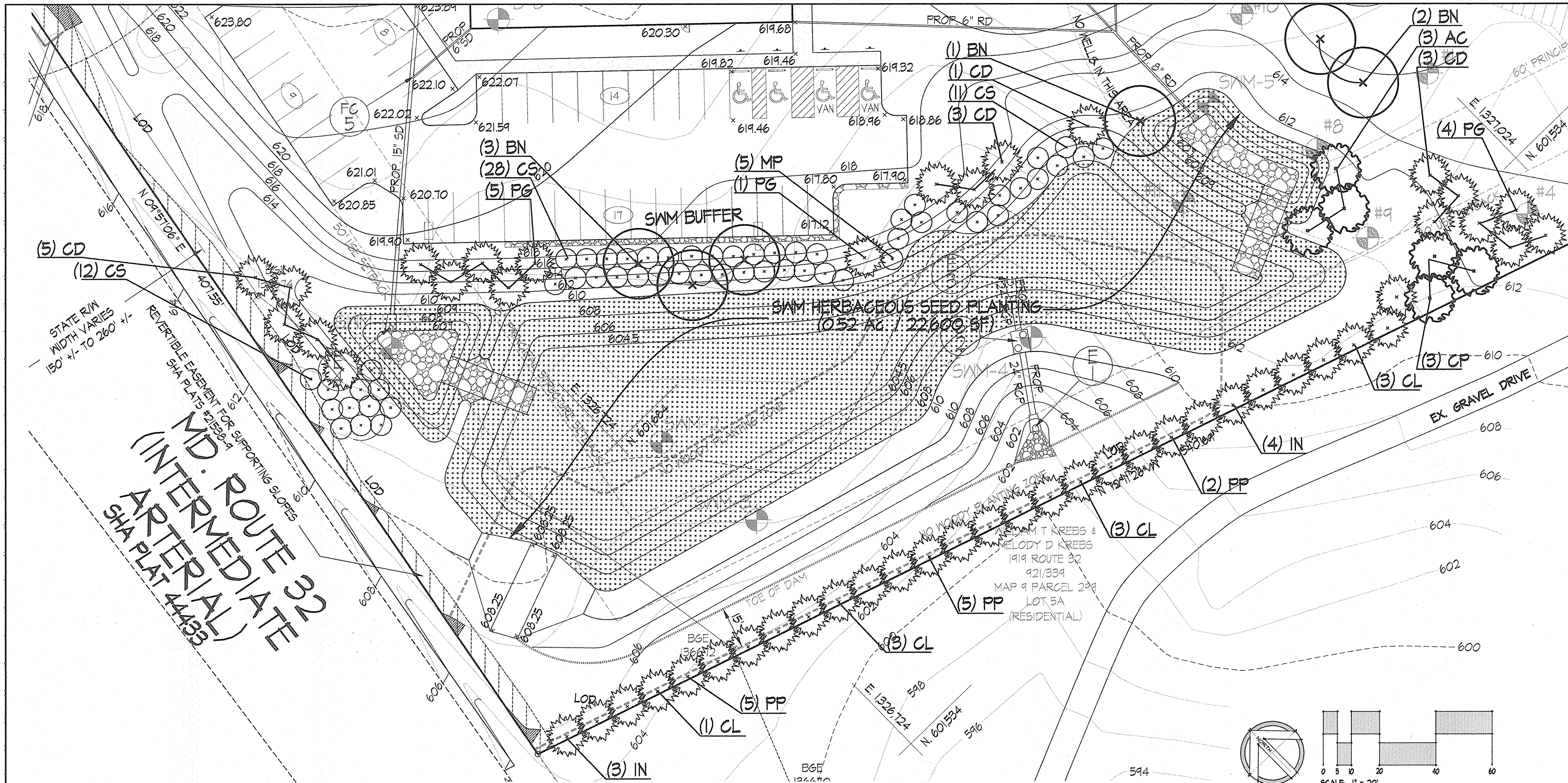


DES: CRW				
DRN: AM				
CHK: REM/KRK				
DATE: 12/08/06	BY	NO.	REVISION	DATE

**Stormwater Management Pond Profiles**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Fire Association Inc.  
 ADDRESS / PERMIT INFORMATION:  
 12460 Frederick Rd.  
 West Friendship, MD 21794  
 Phone: (410) 785-1234

C7.11  
 SCALE: AS SHOWN  
 SHEET 22 OF 28



**LEGEND**

	PROPERTY LINE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	15" SD
	30" RGGP
	8" SAN
	8" WATER
	PROPOSED SOIL BORINGS
	EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 637 SF

**SWM PLANTING SCHEDULE**

KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY	COMMENTS
<b>SHADE TREES</b>						
BN	BETULA NIGRA 'DURA-HEAT'	DURA-HEAT RIVER BIRCH	12'-14" H	AS SHOWN	6	MULTI-STEMMED
<b>ORNAMENTAL TREES</b>						
AC	AMALANCHIER CANADENSIS	SHADELON SERVICEBERRY	8-10 FT. H	AS SHOWN	3	MULTI-STEMMED
CP	CRATAEGUS PHAENOPYRUM	WASHINGTON HAWTHORN	15'-2'	AS SHOWN	3	
<b>EVERGREEN TREES</b>						
CD	CEDRUS DEODARA 'AUREA'	GOLDEN HIMALAYAN CEDAR	8-10 FT. H	AS SHOWN	12	
CL	X CUPRESSOCYPARIS LEYLANDII	LEYLAND CYPRESS	8-10 FT. H	AS SHOWN	10	
IN	ILEX X 'NELLIE R STEVENS'	NELLIE STEVENS HOLLY	8-10 FT. H	AS SHOWN	6	
PG	PICEA GLAUCA	WHITE SPRUCE	8-10 FT. H	AS SHOWN	10	
PP	PICEA FUNGENS 'HOOPSI'	HOOPSI BLUE SPRUCE	8-10 FT. H	AS SHOWN	12	
<b>SHRUBS</b>						
CS	CORNUS SERICEA	REDOSIER DOGWOOD	3-4 FT H	AS SHOWN	51	
MP	MYRTICA PENNSYLVANICA	NORTHERN BAYBERRY	3-4 FT H	AS SHOWN	5	

**SWM SEED SCHEDULE**

SWM HERBACEOUS SEED PLANTING SHALL BE ERNST CONSERVATION SEEDS - FACM NETLAND MEADOW MIX ERNMX-122 OR APPROVED EQUAL. CONTRACTOR SHALL PREPARE AND FERTILIZE SITE AREA AND APPLY SEED PER MANUFACTURER'S SPECIFICATIONS. SEED APPLICATION RATE SHALL BE 15 LBS. PER ACRE.

**SWM AREA PLANTING**

**PERIMETER 1/210 LF**  
**TYPE B BUFFER (644 LF)**  
 REQUIRED  
 13 SHADE TREES @ 1/50 LF  
 17 EVERGREEN TREES @ 1/40 LF  
 PROVIDED  
 6 SHADE TREES  
 18 EVERGREEN TREES (2/1 SHADE TREE)  
 56 SHRUBS (10/1 SHADE TREE)  
 3 ORNAMENTAL TREES (2/1 SHADE TREE)  
**TYPE C BUFFER (361 LF)**  
 REQUIRED  
 4 SHADE TREES @ 1/40 LF  
 19 EVERGREEN TREES @ 1/20 LF  
 PROVIDED  
 33 EVERGREEN TREES (2/1 SHADE TREE)  
 3 ORNAMENTAL TREES (2/1 SHADE TREE)

**LANDSCAPE NOTES:**

- Quantities shown on the plant list are estimates only; the contractor is required to install the quantities labeled in plan view. Contractor shall notify Site Resources if any discrepancy between the quantities listed in the chart and quantities shown in plan view.
- Plant material substitutions are subject to approval by the owner's representative.
- Locations of all plant material shall be staked for approval by the owner's representative. Owner reserves the right to shift stakeout locations.
- All shrub and groundcover areas shall be planted in continuous prepared beds, mulched with composted hardwood mulch as detailed and specified.
- Planting beds shall have positive drainage with a minimum 2 percent slope.
- Contractor shall verify accuracy of base information and existing conditions in the field to his own satisfaction. Bid shall be based on actual site conditions. No extra shall be made for work arising from site conditions differing from those indicated on drawings and specifications.
- The contractor shall notify Miss Utility at 1-800-251-TTT7 a minimum of two working days prior to beginning planting and construction.
- Damage to existing conditions and utilities shall be repaired and restored at the expense of the contractor.
- All plant material shall be nursery grown and shall conform to American Association of Nurserymen, Inc. standards.
- All planting procedures shall conform to the latest edition of Landscape Contractor Association Guidelines for the Baltimore/Washington metropolitan area, latest edition.
- A minimum of 46" headroom is required for all handicap accessible spaces per ADA64.65.
- At the time of installation, all shrubs and other plantings herewith listed and approved for this site, shall be of the proper height 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.
- Should any tree designated for preservation for which landscaping credit is given, the owner will be required to replace the tree with the equivalent species or with a tree which will obtain the same height, spread, and growth characteristics. The replacement tree must be a minimum of 3 inches in caliper and installed as required in the Howard County Landscape Manual.
- The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences, and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.
- Sediment control devices shall be installed and maintained, as needed, in accordance with local jurisdiction requirements. Stabilize all disturbed areas as soon as final grading has been completed. All disturbed areas shall be seeded with the exception of planting beds.
- Install tree protection fencing along the limits of disturbance (LOD) of the existing woods. All site grading, planting bed preparation, and tree and shrub planting must be done outside of the drip line of existing trees to be preserved in order to maintain and protect the root system.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES H. JEVIN, DIRECTOR  
 12/14/06 DATE

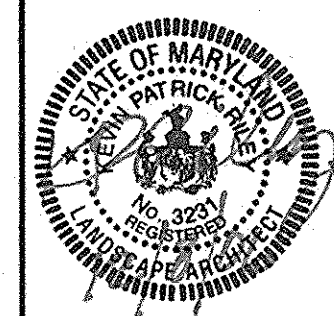
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 ROBERT WELB, COUNTY HEALTH OFFICER  
 1/17/07 DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING  
 JAMES M. WILSON, DIRECTOR  
 1/18/07 DATE  
 JAMES M. WILSON, CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 1/18/07 DATE  
 JAMES M. WILSON, CHIEF, DIVISION OF LAND DEVELOPMENT  
 1/18/07 DATE

NOTE: TREES, SHRUBS, AND OTHER WOODY VEGETATION NOT ALLOWED WITHIN FIFTY (50) FEET OF THE INLET STRUCTURE AND NOT ALLOWED WITHIN FIFTEEN (15) FEET OF ANY PORTION OF THE EMBANKMENT.

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 www.siteresourcesinc.com



DES: KPR					
DRN: AM					
CHK: REM					
DATE: 12/08/06	BY: NO.		REVISION	DATE	

**CONSULTANT'S HAZARD CLASS CERTIFICATION**  
 I certify that this pond meets all requirements for hazard class (A). [Requirements as stated in the USDA NATURAL RESOURCES CONSERVATION SERVICE - MARYLAND CONSERVATION PRACTICE STANDARD FOR POND, CODE 318, JANUARY 2000.] All necessary investigations and computations have been performed to verify this finding. A copy of said information has been supplied to N.R.C./H.S.C.D.  
 Signature: KEVIN P. RILEY, P.L.A. MD License No. 13876 Date: 12/18/06  
 Print Name: KEVIN P. RILEY

**DEVELOPER'S CERTIFICATE**  
 I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.  
 H. Mitchell Day, Chief, 12/14/06 DATE  
 DEVELOPER

**Stormwater Management Pond Planting Plan**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER: West Friendship Volunteer Firemens Association Inc.  
 ADDRESS / PERMIT INFORMATION: 12460 Frederick Rd, West Friendship, MD 21784  
 GRID No. 23, ZONE RR-DED, TAX MAP No. 9  
 Bra Election District, Census Tract 6050  
 WATER CODE: Private, SINKER CODE: Private

SCALE: 1"=20'  
 SHEET 23 OF 28  
 CT.12



**PLANT MATERIALS AND PLANTING METHODS**

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

**1. Plant Names**  
 Plant names used in the Plant Schedule shall conform with "Standardized Plant Names," latest edition.

**2. Plant Standards**  
 All plant material shall be equal to or better than the requirements of the "USA Standard for Nursery Stock," latest edition, as published by the American Association of Nurserymen (hereafter referred to as AAN Standards). All plants shall be typical of their species and variety, shall have a normal habit of growth and shall be first quality, sound, vigorous, well-branched and with 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 conditions 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.

**3. Plant Measurements**  
 All plants shall conform to the measurements specified in the Plant Schedule as approved by the ARC.

**a. Caliper measurements shall be taken** six inches (6") above grade for trees under four-inch (4") caliper and twelve (12") above grade for trees four inches (4") in caliper and over.

**b. Minimum branching height for all shade trees shall be** six feet (6'), maximum eight feet (8').

**c. Caliper, height, spread and size of ball shall be generally as follows:**

CALIPER HEIGHT	SPREAD	SIZE OF BALL
3" - 3.5"	14"-16"	6"-8" diameter
3.5" - 4"	14"-16"	8"-10" diameter
4" - 4.5"	16"-18"	8"-10" diameter
4.5" - 5"	16"-17"	10"-12" diameter
5" - 5.5"	16"-20"	10"-12" diameter
5.5" - 6"	18"-20"	12"-14" diameter

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

**4. Plant Identification**  
 Legible labels shall be attached to all shade trees, minor trees, specimen shrubs and 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 ARC 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.

**B. Planting Methods**  
 All proposed plant materials that meet the specifications in Section A are to be planted in accordance with the following 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.

**2. 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:

**a. 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.**

**b. 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.**

**c. 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.**

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

PLANT SIZE	ROOT BALL	PIT DIAMETER	PIT DEPTH
3" - 3.5" cal.	32"	64"	28"
3.5" - 4" cal.	36"	72"	32"
4" - 4.5" cal.	40"	80"	36"
4.5" - 5" cal.	44"	88"	40"
5" - 5.5" cal.	48"	96"	44"
5.5" - 6" cal.	52"	104"	48"

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

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

**a. Stakes:** Shall be sound wood 2" x 2" rough sawn oak or similar durable woods, or lengths, minimum 1'-0" for major trees and 5'-0" minimum for minor trees.

**b. Wire and Cable:** Wire shall be #10 galvanized or bethonized annealed steel wire. For trees over 3" caliper, provide 5/16" turn buckles, eye and eye with 4" take-up. 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.

**c. Hose:** Shall be new, 2 ply reinforced rubber hose, minimum 1/2" I.D. "Plastic Lock Ties" or "Faul's Trees Braces" may be used in place of wire and hose on trees up to 3" in caliper.

**d. All trees under 3" in caliper are to be planted and staked in accordance with the attached "Typical Tree Staking Detail".**

**5. 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 next 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 2" layer of fine, shredded pine bark, peat moss, or another approved material over the entire area of the bed or saucer.**

**6. Plant Inspection and Acceptance**  
 The ARC 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.

**a. 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.**

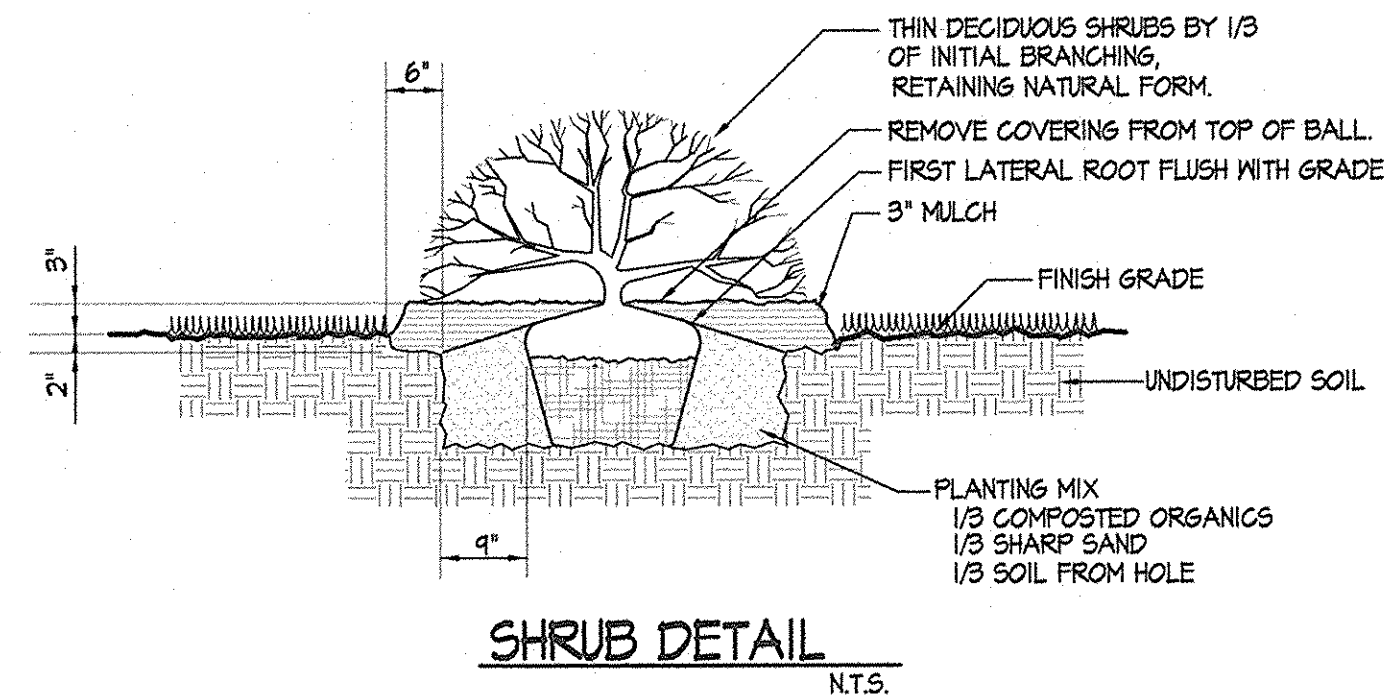
**b. Guarantee for planting performed after the specified end of the "Spring" planting season, shall be extended through the end of the next following "Spring" planting season.**

**SODDING**  
 All sodding shall be in accordance to the "Landscape Specification Guidelines for Baltimore-Nashington Metropolitan Areas" latest edition, approved by the Landscape Contractors Association of Metropolitan Washington and the American Society of Landscape Architects.

All sod shall be strongly rooted sod, not less than two years old and free of weeds and undesirable native grasses. Provide only sod capable of growth development when planted and in strips not more than 18" wide x 4" long. Provide sod composed principally of improved strain Kentucky bluegrass, such as, Columbia, Vista, or Escort.

**LANDSCAPING NOTES**

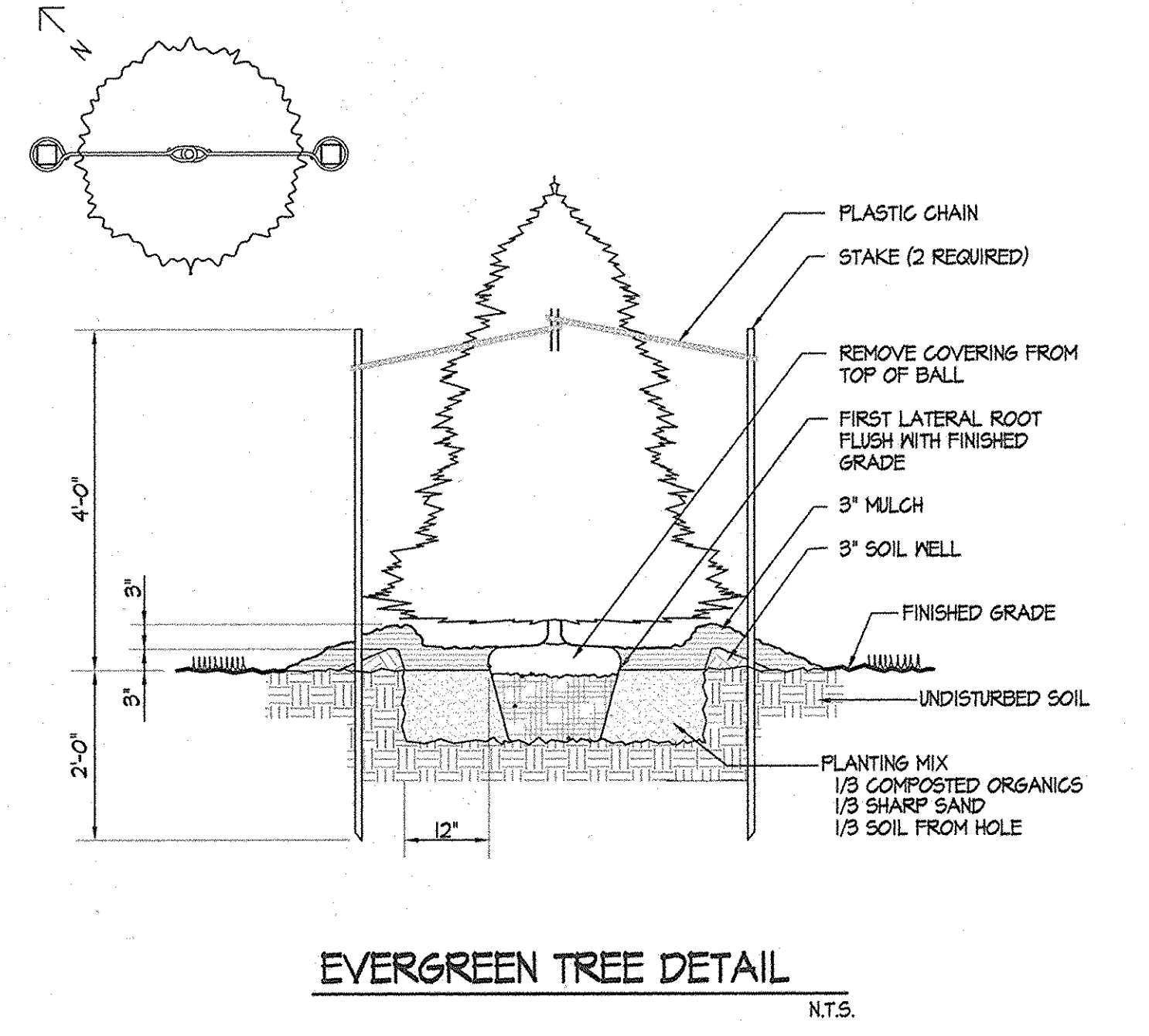
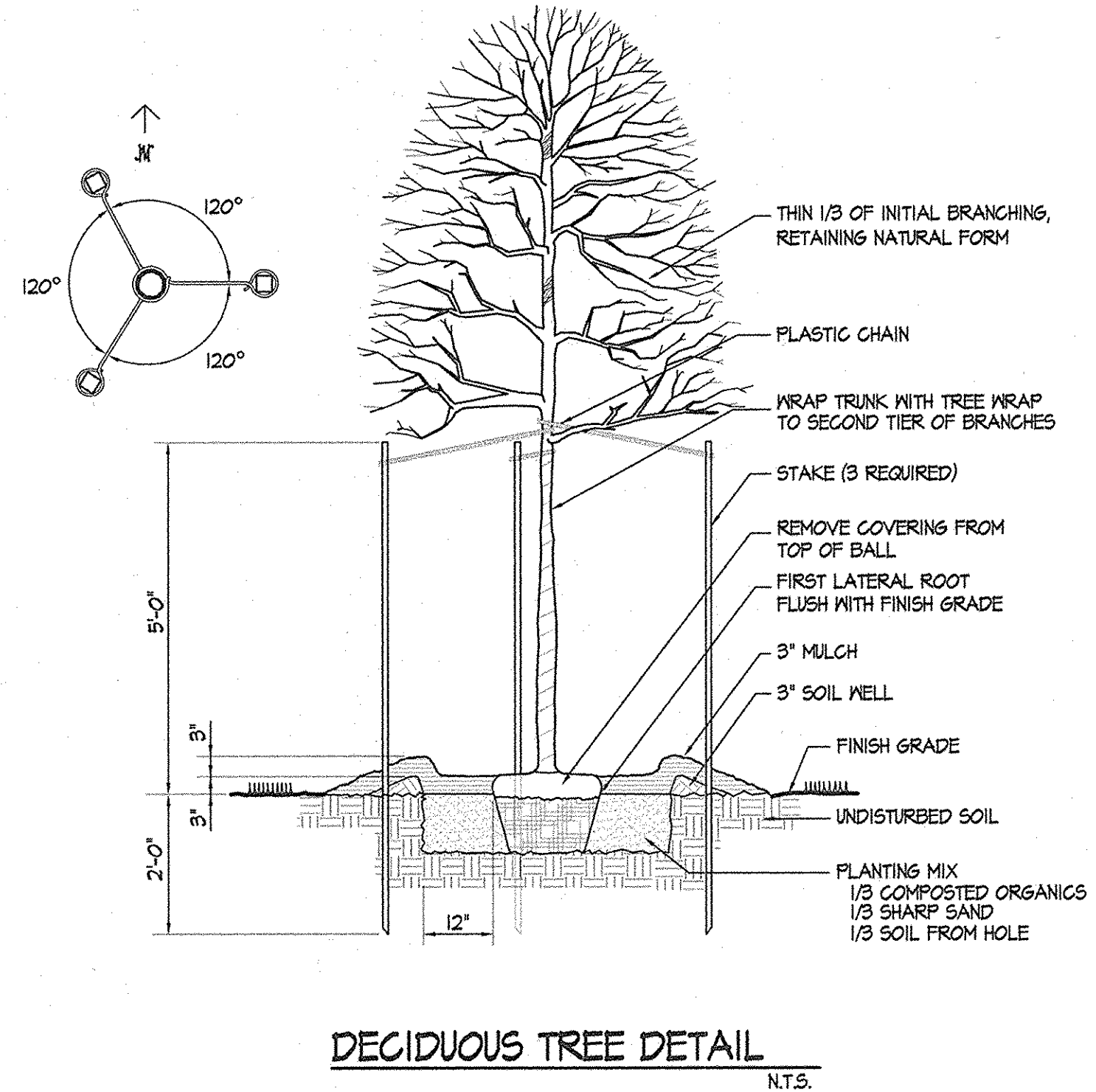
- This plan has been prepared in accordance with the New Town Alternative Compliance provisions of Section 16.124 of the Howard County Code and the Howard County Landscape Manual.
- Contractor shall notify all utilities at least (5) five days before starting work. All General Notes, especially those regarding utilities, on sheet 1 shall apply.
- Field verify underground utility locations and existing conditions before starting planting work. Contact engineer / landscape architect if any relocations are required.
- Plant quantities shown on Plant List are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on the plan and those shown on the plant list, the quantities on the plan shall take precedence.
- All plant material shall be full, heavy, well formed, and symmetrical, and conform to the A.A.N. Specifications, and be installed in accordance with project specifications.
- No substitution shall be made without written consent of the owner or his representative.
- All areas disturbed by construction activities but not otherwise planted, paved, or mulched shall be seeded or sodded in accordance with the project specifications.
- The contractor shall notify the owner in writing if he/she encounters soil drainage conditions which may be detrimental to the growth of the plants.
- All exposed earth within limits of planting beds shall be mulched with shredded hardwood mulch per Planting Details.
- The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.



**PLANT SPACING CHART**

NOTE: FOR USE ONLY WHEN PLANTS ARE SPACED EQUIDISTANT FROM EACH OTHER AS SHOWN AND SPECIFIED IN THE PLANT LIST.

SPACING "D"	ROW "A"	NO. OF PLANTS / S.F.
6" O.C.	5.20'	4.61
8" O.C.	6.93'	2.60
10" O.C.	8.66'	1.66
12" O.C.	10.40'	1.15
15" O.C.	13.00'	.73
18" O.C.	15.60'	.52
24" O.C.	20.80'	.29
30" O.C.	26.00'	.19
36" O.C.	30.00'	.12



PREPARED BY: KEVIN P. RILEY, RLA  
 STATE OF MARYLAND  
 REGISTERED LANDSCAPE ARCHITECT  
 REGISTRATION NO. 3231  
 NAME: *K. Riley* DATE: 12/8/06

DEVELOPER'S/BUILDER'S CERTIFICATE  
 I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Subdivision and Land Development Regulations and the Landscape Manual. I/We further certify that upon completion a letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.  
 Name: *H. Mitchell Day, Chief* Date: 12/14/06

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.  
 USDA - Natural Resources Conservation Service Date: 1/4/07  
 These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.  
 Howard Soil Conservation District Date: 1/4/07

BY THE ENGINEER:  
 I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.  
 Signature of Engineer: *Kevin P. Riley* Date: 12/8/06  
 Printed Name of Engineer: KEVIN P. RILEY

BY THE DEVELOPER:  
 I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.  
 Signature of Developer: *H. Mitchell Day, Chief* Date: 12/14/06  
 Printed Name of Developer: H. Mitchell Day, Chief

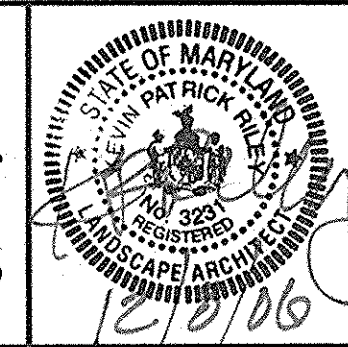
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 DATE: 12/9/06  
 JAMES M. IRVIN, DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 DATE: 11/17/07  
 COUNTY HEALTH OFFICER

APPROVED: DEPARTMENT OF PLANNING & ZONING  
 DATE: 1/18/07  
 DATE: 1/18/07  
 DATE: 1/18/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street - Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

**SITE RESOURCES, INC.**  
 LAND PLANNING / SITE DESIGN  
 14315 Jarrettsville Pike Phoenix, Maryland 21131  
 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com



DES: KPR	BY	NO.	REVISION	DATE
DRN: AM				
CHK: REM				
DATE: 12/08/06				

**Stormwater Management Pond Planting Details & Notes**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5965, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Firemens Association Inc.  
 ADDRESS / PERMIT INFORMATION:  
 ADDRESS: 12595 Old Frederick Rd., Sykesville MD 21784  
 PARCEL: 9210  
 LRB# / F#24  
 SRD No. 23, ZONE RR-DEO, TAX MAP No. 9  
 3rd Election District, Genesee Tract 6050  
 WATER CODE: Private, SEWER CODE: Private

CT.13  
 SCALE: AS SHOWN  
 SHEET 24 OF 28

# SWM POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for Practice MD-512. All references to ASTM and AASHTO specifications apply to the most recent version.

## Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to be steeper than 1:1. All trees shall be cleared and grubbed within 20 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50-foot radius around the inlet structure shall be cleared.

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

## Earth Fill

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

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

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

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

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

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

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

## Structure Backfill

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

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

## Removal and Replacement of Defective Fill

Fill placed at densities lower than specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable fill. The bottoms of such excavations shall be finished flat or gently curving and at the sides of such excavations the adjacent sound fill shall be trimmed to a slope not steeper than 3 feet horizontally to 1 foot vertically extending from the bottom of the excavation to the fill surface.

## Pipe Conduits

All pipes shall be circular in cross section.

## Reinforced Concrete Pipe

All of the following criteria shall apply for reinforced concrete pipe:

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

## Plastic Pipe

All of the following criteria shall apply for all plastic pipe:

1. Materials: PVC pipe shall be PVC-120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4-10 inch pipe shall meet the requirements of AASHTO M252 Type 5, and 12-24 inch shall meet the requirements of AASHTO M294 Type 5.
2. Joints and connections to anti-seep collars shall be completely watertight.
3. Bedding: The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Backfilling shall conform to "Structure Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

## Concrete

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

## Rock Rip Rap

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

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 421.09, Class C.

## Care of Water during Construction

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

## Stabilization

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

## Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

## Seeding

Seeding, fertilizing and mulching shall be as follows:

- |             |   |
|-------------|---|
| Seed Mix:   | 50% Kentucky Bluegrass<br>40% Pennlawn Creeping Red Fescue<br>10% Streaker Ryegrass<br>Applied at a rate of 150 lbs. per acre.  |
|             | or<br>Rabel II Tall Fescue (125 lbs. per acre)<br>Pennlawn Perennial Ryegrass (15 lbs. per acre)<br>Kentucky Bluegrass (10 lbs. per acre)<br>or<br>Pennlawn Creeping Red Fescue (10 lbs. per acre)<br>Aurora Hard Fescue (50 lbs. per acre)<br>Common White Clover (6 lbs. per acre)<br>Winter Rye (45 lbs. per acre)<br>or<br>10% Forager Tall Fescue<br>30% Chemung Crownvetch, inoculated<br>Applied at a rate of 55 lbs. per acre<br>Optimum seeding dates: March 1 to April 30 |
| Lime:       | 2 tons/acre Dolomitic Limestone   |
| Fertilizer: | 600 lbs./acre 10-10-10 fertilizer before seeding.<br>400 lbs./acre 30-0-0 urea fertilizer at time of seeding.   |
| Mulch:      | Straw at 4,000 lbs. per acre.   |
| Anchoring:  | Mulching tool or wood cellulose fiber binder at a net dry binder rate of 750 lbs. per acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water or at rates recommended by the manufacturer.   |

## Filter Cloth

All filter cloth shall conform to the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control, or the latest edition.

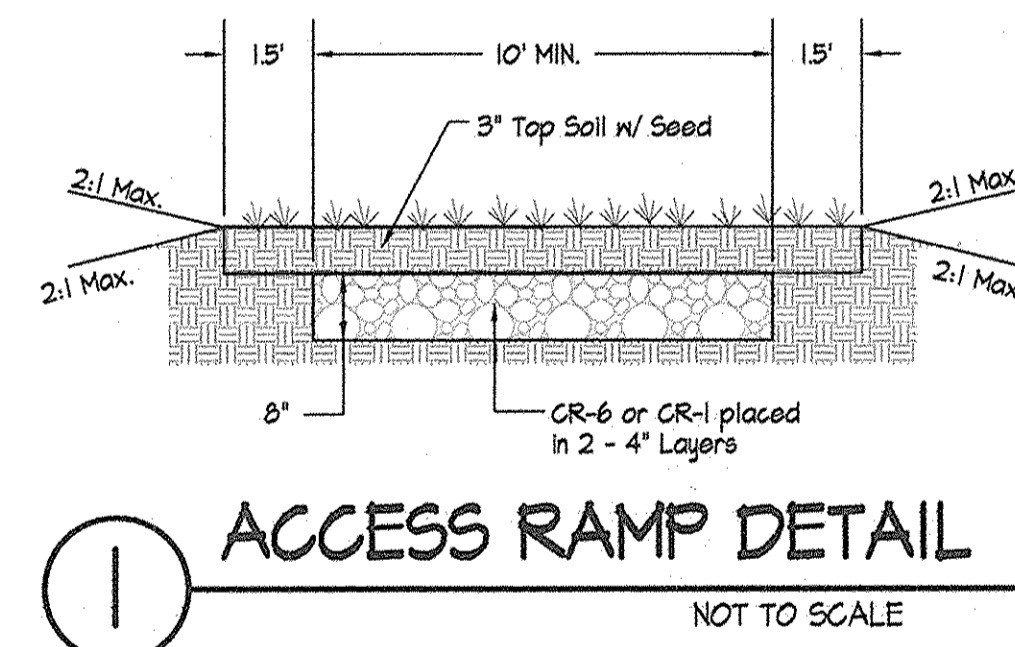
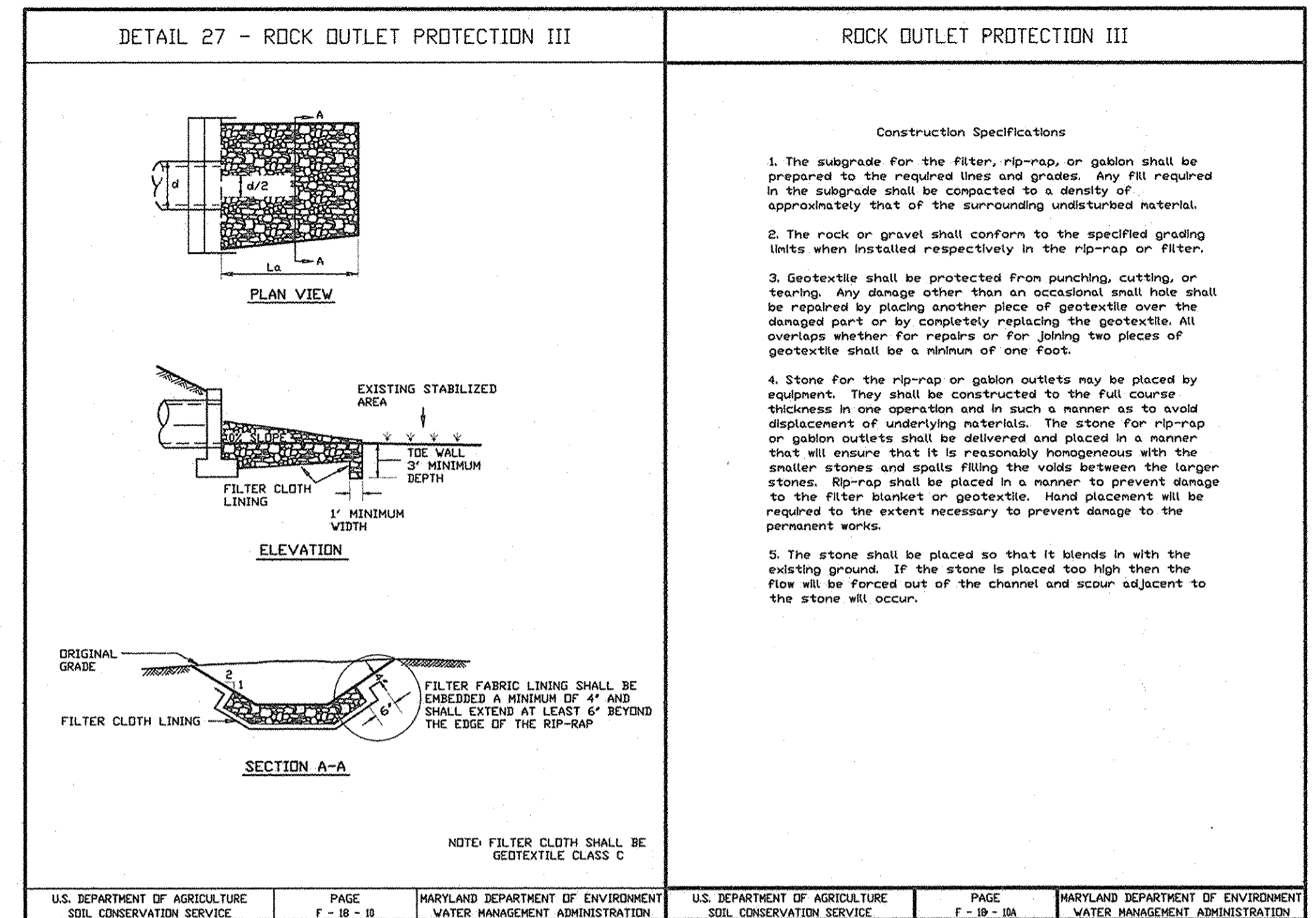
## Gabions

All gabions shall be PVC coated woven wire baskets. Stone size shall be 4 inches to 7 inches. (Class IV gabions)

## Construction Inspection by Designated Engineers

The construction of the pond and embankment and certification that the pond and embankment have been built in accordance with the plans shall be under the supervision of a Registered Professional Engineer. The Engineer shall be notified sufficiently in advance of construction in order that arrangements can be made for (1) inspection of pipe trench and bedding, (2) inspection of riser and anti-seep collars and (3) supervision of embankment construction, minor changes not affecting the integrity of the dam in order to compensate for unusual soil conditions, and the removal and replacement of defective fill.

NOTE: IT IS THE CONTRACTOR'S RESPONSIBILITY, ON BEHALF OF THE OWNER, TO ENGAGE A LICENSED PROFESSIONAL ENGINEER TO CERTIFY THE STORMWATER MANAGEMENT FACILITY AND TO PREPARE AND SUBMIT AS-BUILT DRAWINGS.



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

*Jim Meyer*  
USDA - Natural Resources Conservation Service  
Date: 1/4/07

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

*John S. ...*  
Howard Soil Conservation District  
Date: 1/4/07

## BY THE ENGINEER:

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

*William R. ...*  
Signature of Engineer  
Date: 1/2/07

*William R. ...*  
Printed Name of Engineer

## BY THE DEVELOPER:

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

*M. Mitchell Day, Chief*  
Signature of Developer  
Date: 1/14/06

*M. Mitchell Day, Chief*  
Printed Name of Developer

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*James M. Irvin*  
JAMES M. IRVIN, DIRECTOR  
Date: 1/2/06

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

*Robert G. Welton*  
COUNTY HEALTH OFFICER  
Date: 1/17/07

APPROVED: DEPARTMENT OF PLANNING & ZONING

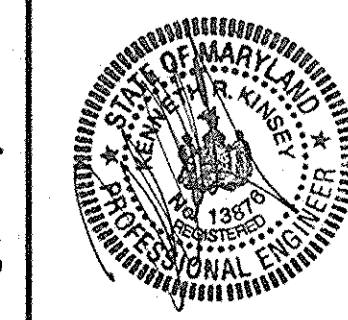
*M. ...*  
DIRECTOR  
Date: 1/18/06

*...*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
Date: 1/18/07

*...*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
Date: 1/18/07

**EDMEADES & STROMDAHL, LTD.**  
ARCHITECTS / PLANNERS  
11 North Main Street Bel Air, Maryland 21014  
Phone: 410.879.0388 Fax: 410.879.4785  
E-mail: mes@edmeades-stromdahl.com

**SITE RESOURCES, INC.**  
LAND PLANNING / SITE DESIGN  
14315 Jarrettsville Pike Phoenix, Maryland 21131  
Phone: 410.683.3388 Fax: 410.683.3389  
www.siteresourcesinc.com



DES: CRW				
DRN: AM				
GK: REM/KRK				
DATE: 12/08/06	BY	NO.	REVISION	DATE

**Stormwater Management Specifications & General SWM Details**

600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
Capital Project No. F-5465, Howard County, Maryland

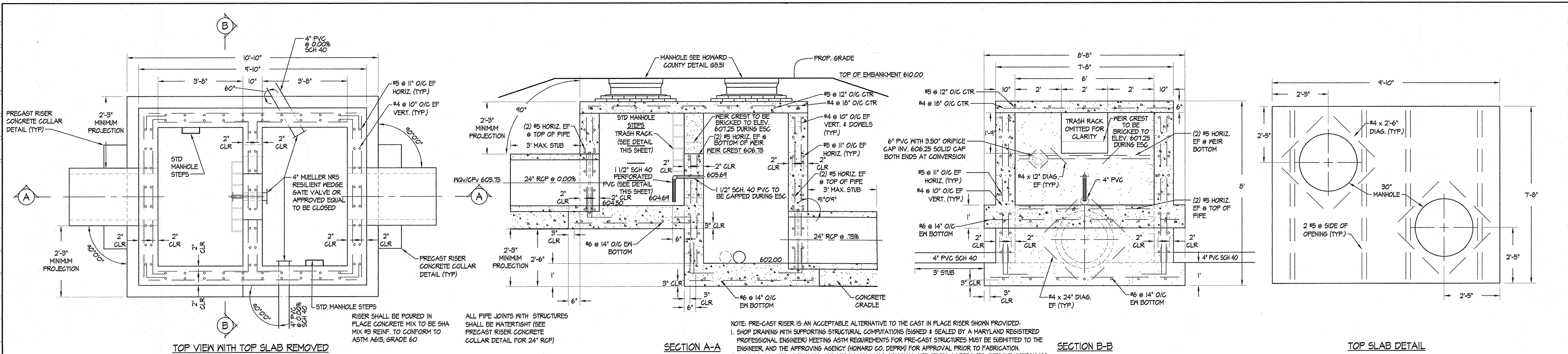
OWNER:  
West Friendship Volunteer Fire Association Inc.  
12460 Frederick Rd.  
GRID No. 23, ZONE RR-DEO, TAX MAP No. 9  
West Friendship, MD 21794  
Phone: (410) 769-1234

ADDRESS / PERMIT INFORMATION:  
ADDRESS: 12535 Old Frederick Rd., Sykesville MD 21784  
PARCEL: 12-1-12  
L: 9816 / F: 629  
GRID No. 23, ZONE RR-DEO, TAX MAP No. 9  
West Friendship, MD 21794  
OWNER CODE: Private, OWNER CODE: Private

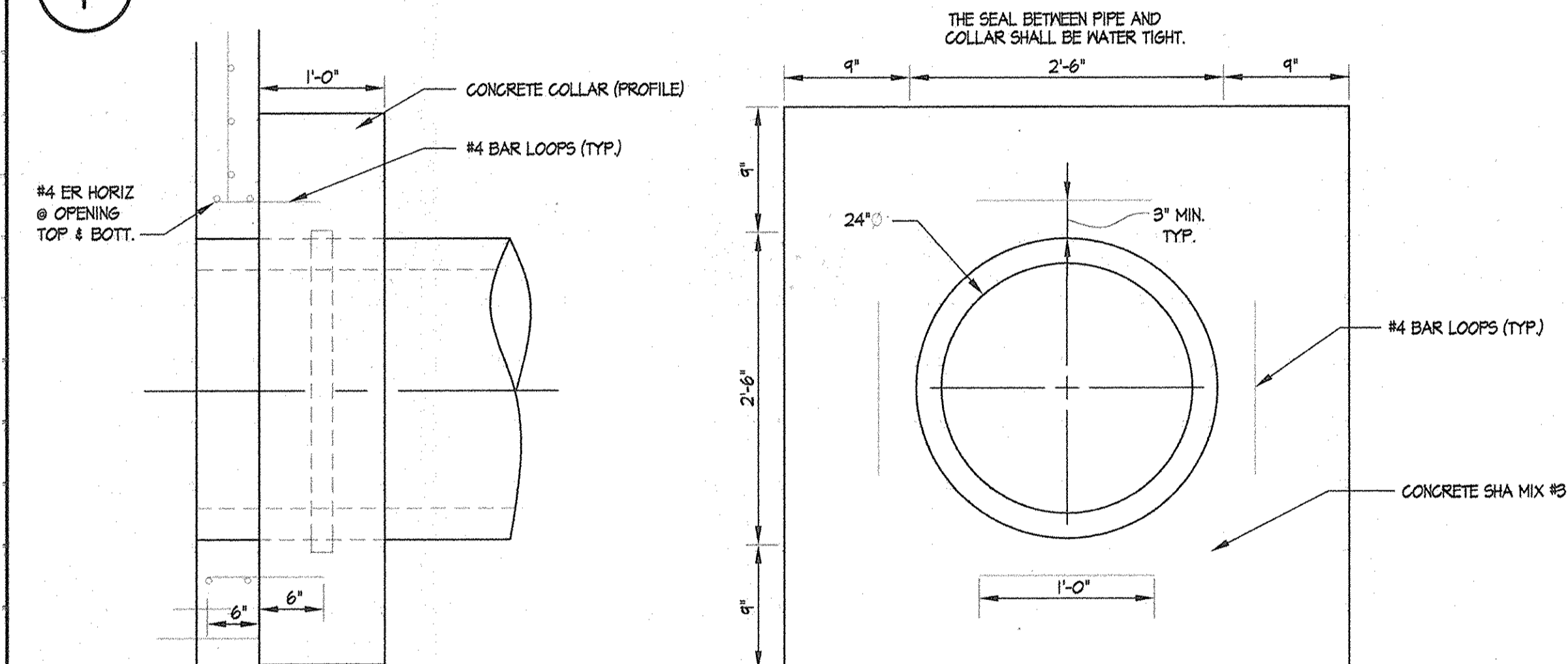
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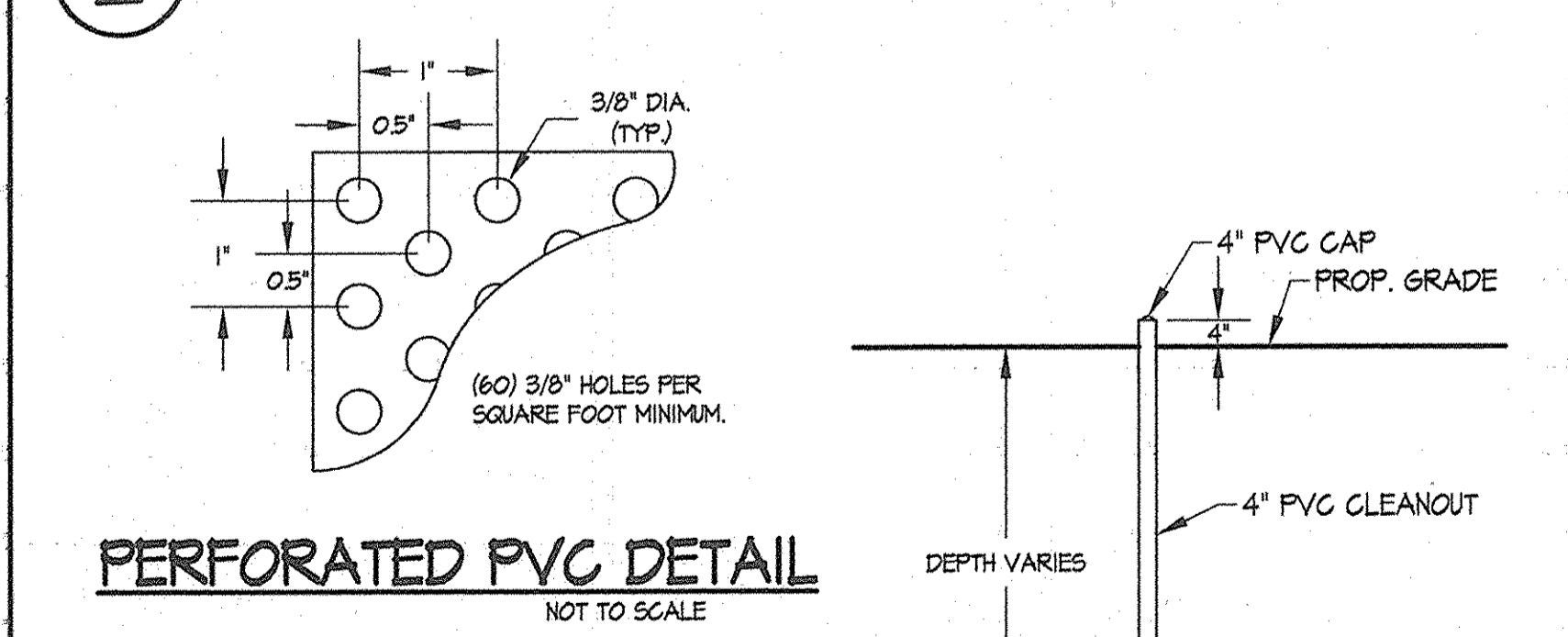
SHEET 25 OF 28



**1 RISER STRUCTURE DETAIL**



**2 PRECAST RISER CONCRETE COLLAR DETAIL**



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*James H. Irwin* 12/4/06  
 JAMES H. IRWIN, DIRECTOR DATE

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

*Robert J. Welton* 1/16/07  
 COUNTY HEALTH OFFICER DATE

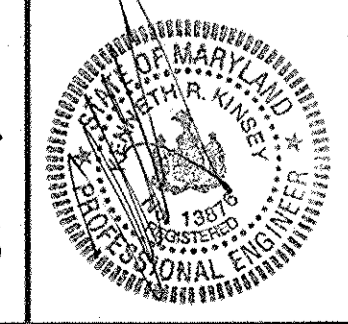
APPROVED: DEPARTMENT OF PLANNING & ZONING

*David M. Wyle* 1/16/07  
 DIRECTOR DATE

*Condy Hanna* 1/16/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

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DES: CRW			
DRN: AM			
CHK: REM/KRK			
DATE: 12/06/06	BY: NO.	REVISION	DATE

**Stormwater Management Details & Soil Borings**

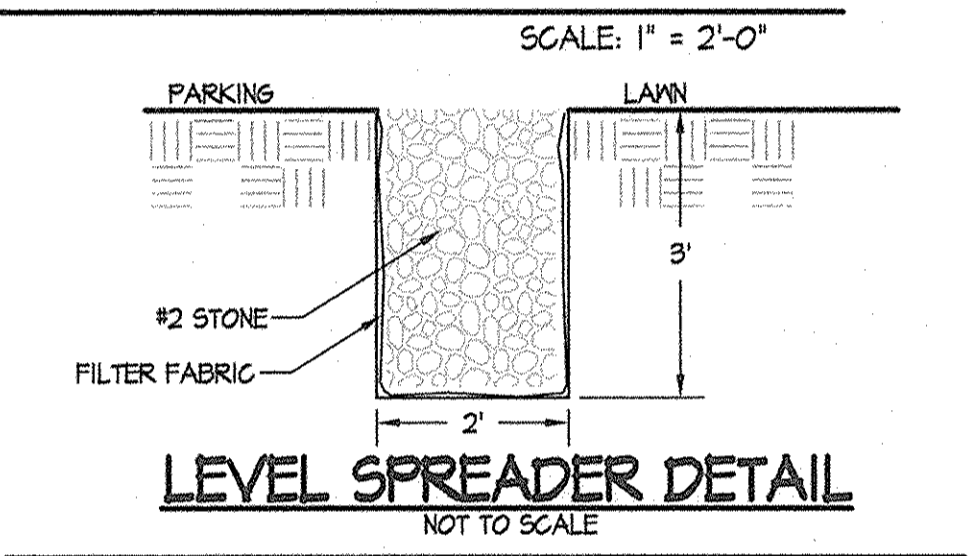
600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland

**OWNER:**  
 West Friendship Volunteer Firemens Association Inc.  
 ADDRESS / PERMIT INFORMATION:  
 PARCEL #210  
 L816 / F 629  
 GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
 12460 Frederick Rd  
 West Friendship, MD 21794  
 Phone: (410) 785-2324

SCALE: AS SHOWN  
 SHEET 26 OF 28

SECTION D-D		SECTION E-E	
WEST FRIENDSHIP VFD HOWARD COUNTY, MARYLAND	06111MD AUG. 2006	WEST FRIENDSHIP VFD HOWARD COUNTY, MARYLAND	06111MD AUG. 2006
SWM-1	SWM-5	SWM-6	SWM-8
SWM-2	SWM-3	SWM-7	
SWM-4			



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

*Jim Meyer* 1/4/07  
 USDA - Natural Resources Conservation Service DATE

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

*John A. ...* 1/4/07  
 Howard Soil Conservation District DATE

**BY THE ENGINEER:**

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

*Kevin R. Kinsey* 1/16/06  
 Signature of Engineer DATE  
 Kevin R. Kinsey  
 Printed Name of Engineer

**BY THE DEVELOPER:**

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an 'as-built' plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

*H. Mitchell Day* 1/14/06  
 Signature of Developer DATE  
 H. Mitchell Day, Chief  
 Printed Name of Developer

C7.30

**NOTE:**  
CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL DURING CONSTRUCTION.

**UTILITY NOTE:**  
1. 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.  
2. Place all excavated material on uphill side of trench.  
3. Any sediment control disturbed by utility construction is to be repaired immediately.

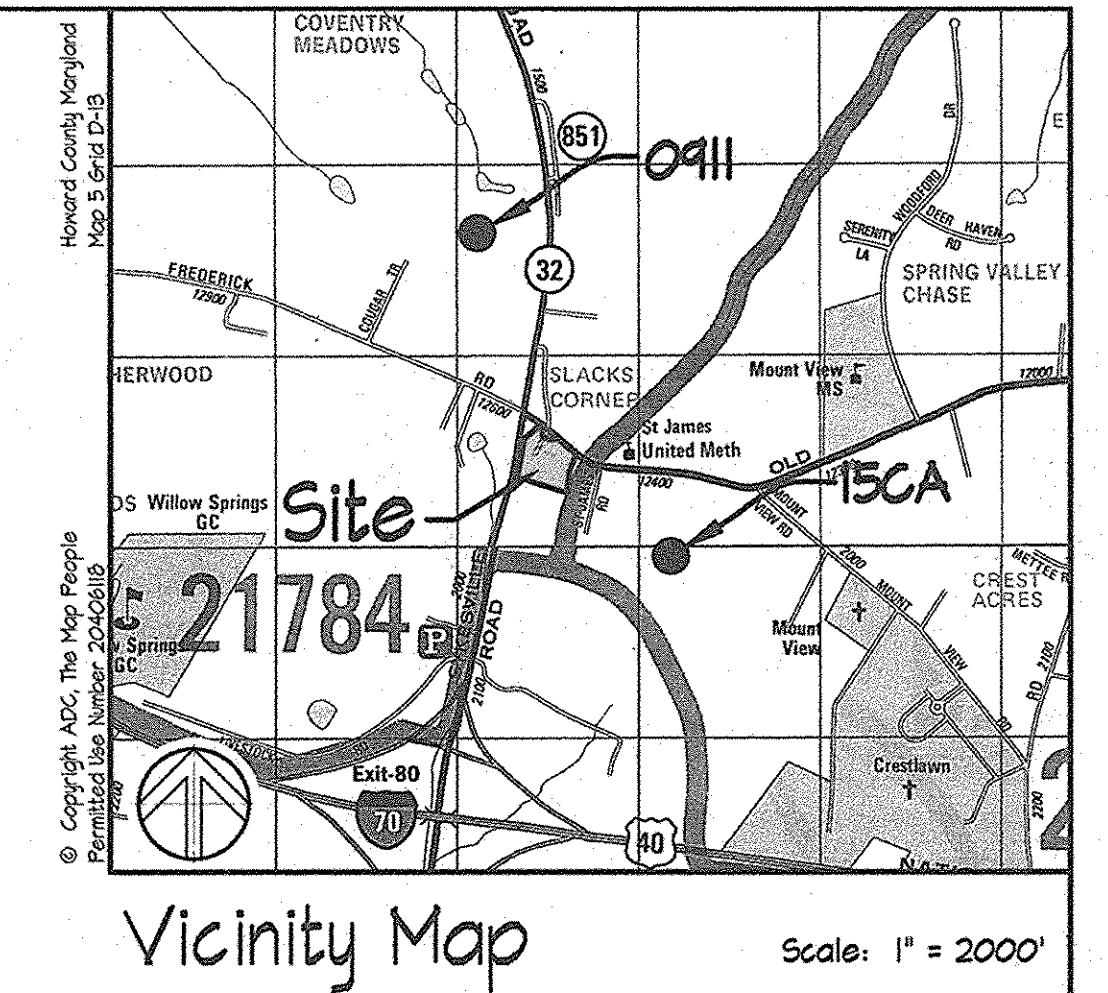
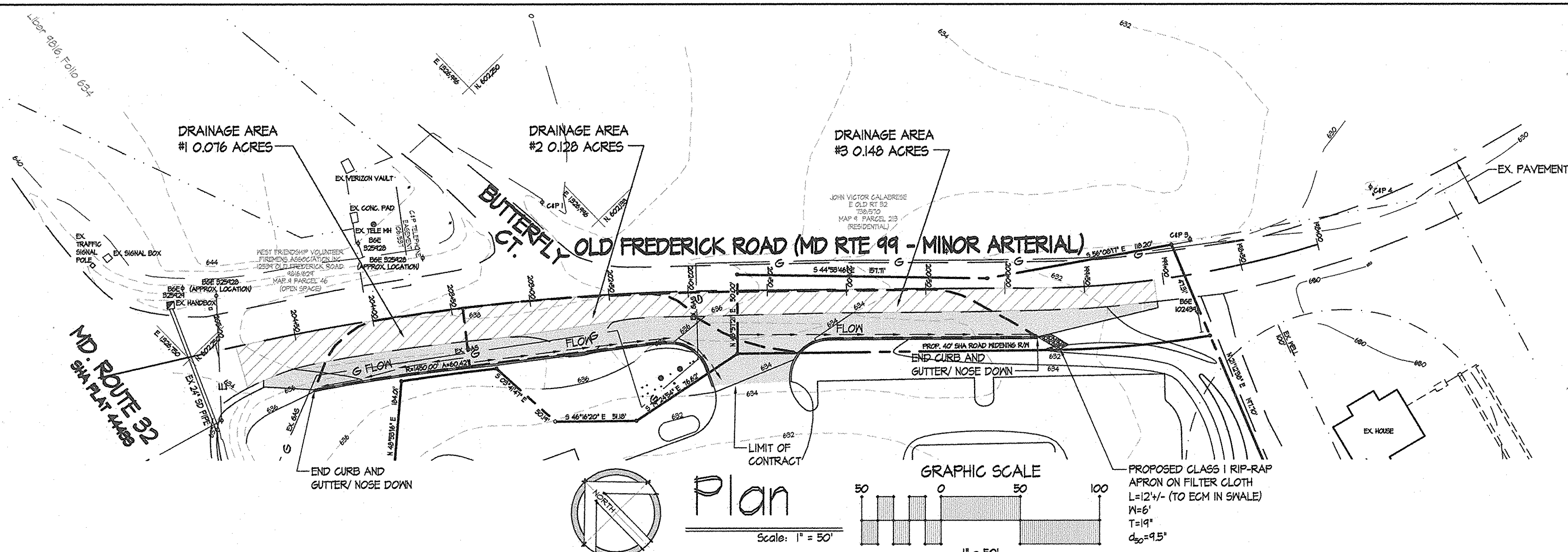
**INLET PROTECTION NOTE:**  
The contractor is required to install inlet protection on all storm drain inlets with the exception of the following:

- Any inlet outfalling directly into a sediment trapping device.
- Inlets on private or public paved roadways open to the public.

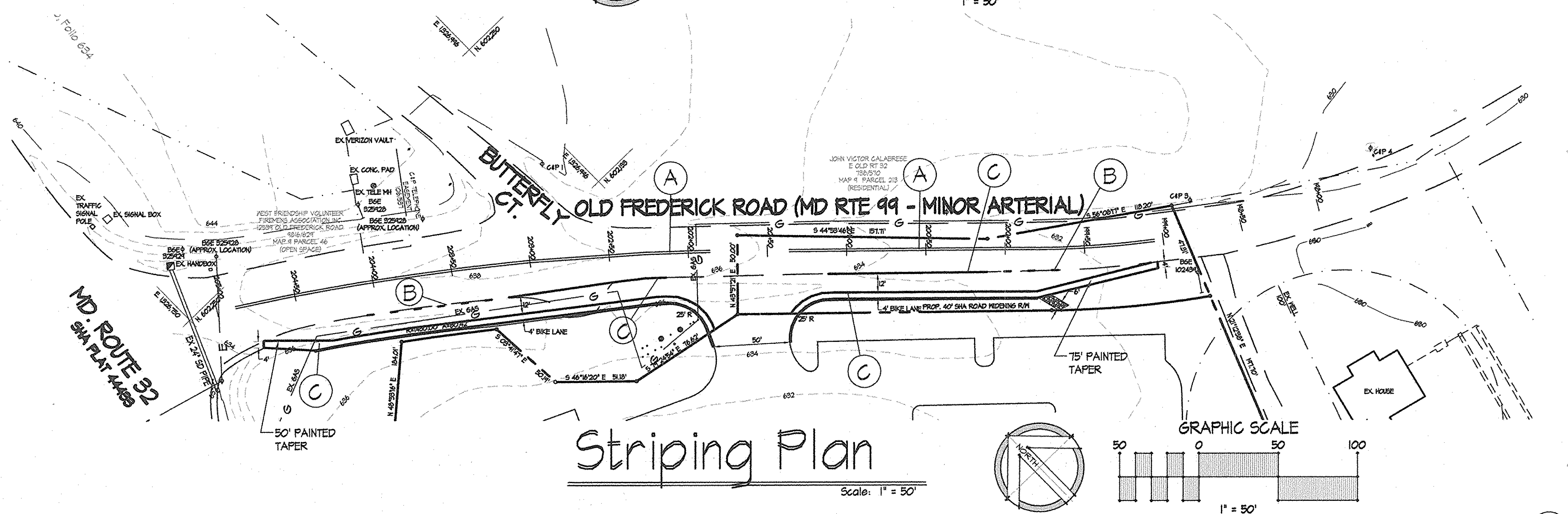
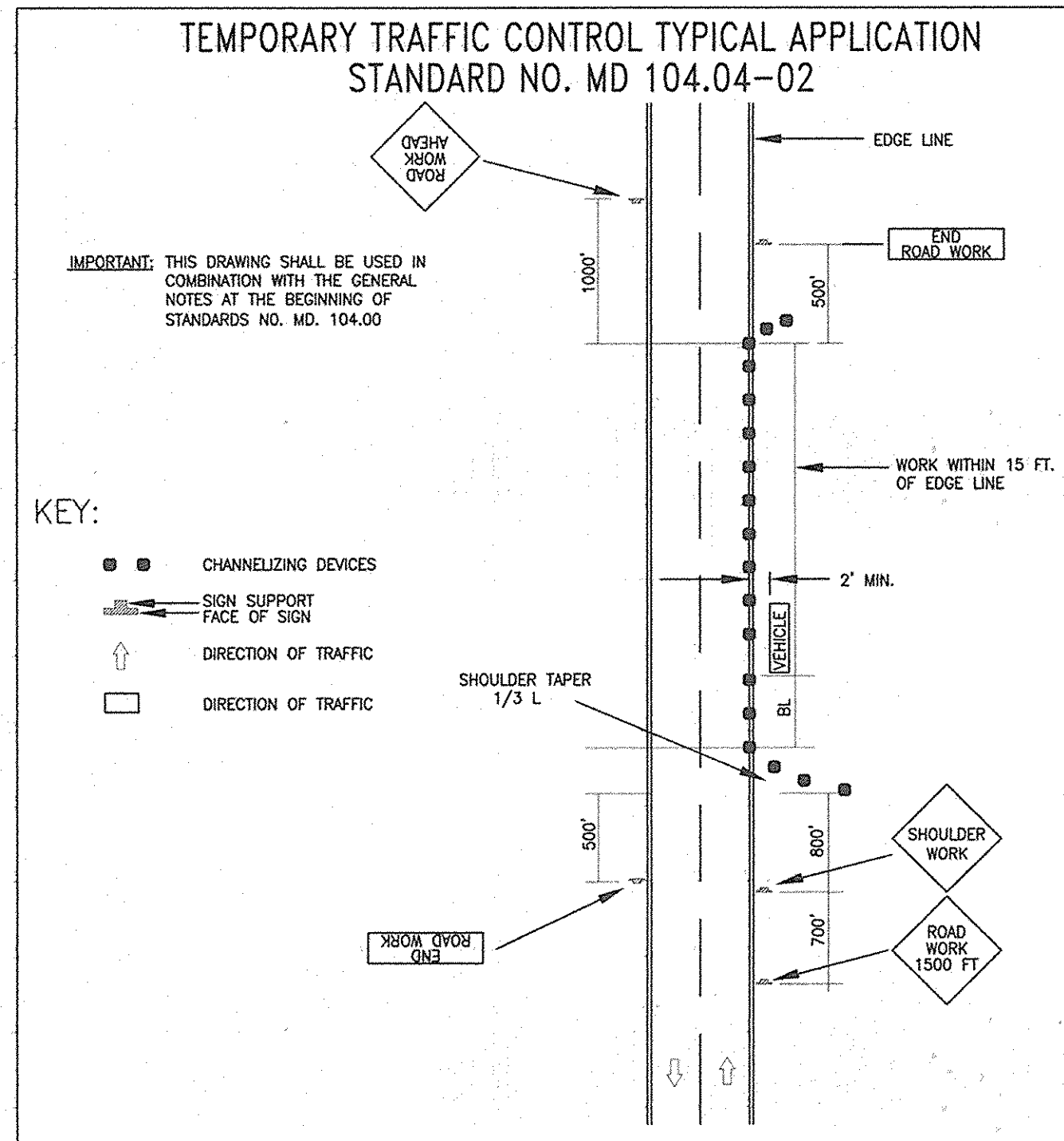
All inlet protection will be installed as directed by the inspector in accordance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control, (See Pages E-16-1 through E-16-5C) Pages E-16-5, 5A, 5B and 5C (or as may be amended). The removal of any inlet protection devices will require approval from the inspector.

\*Storm Drains to be flushed prior to trapping device removal.

**SEDIMENT CONTROL TRAFFIC NOTE**  
Any travel land closed before 9:00 AM or after 3:30 PM, must be approved by the Maryland State Highway Administration.

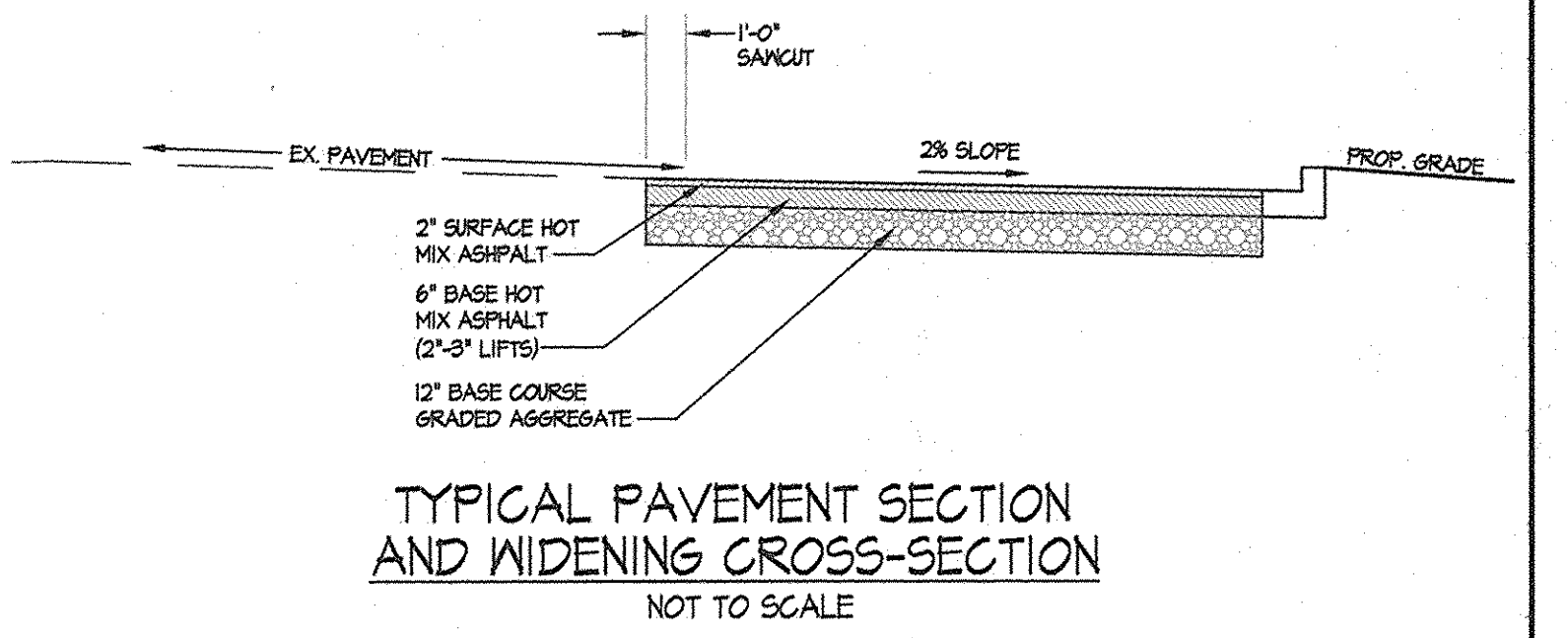
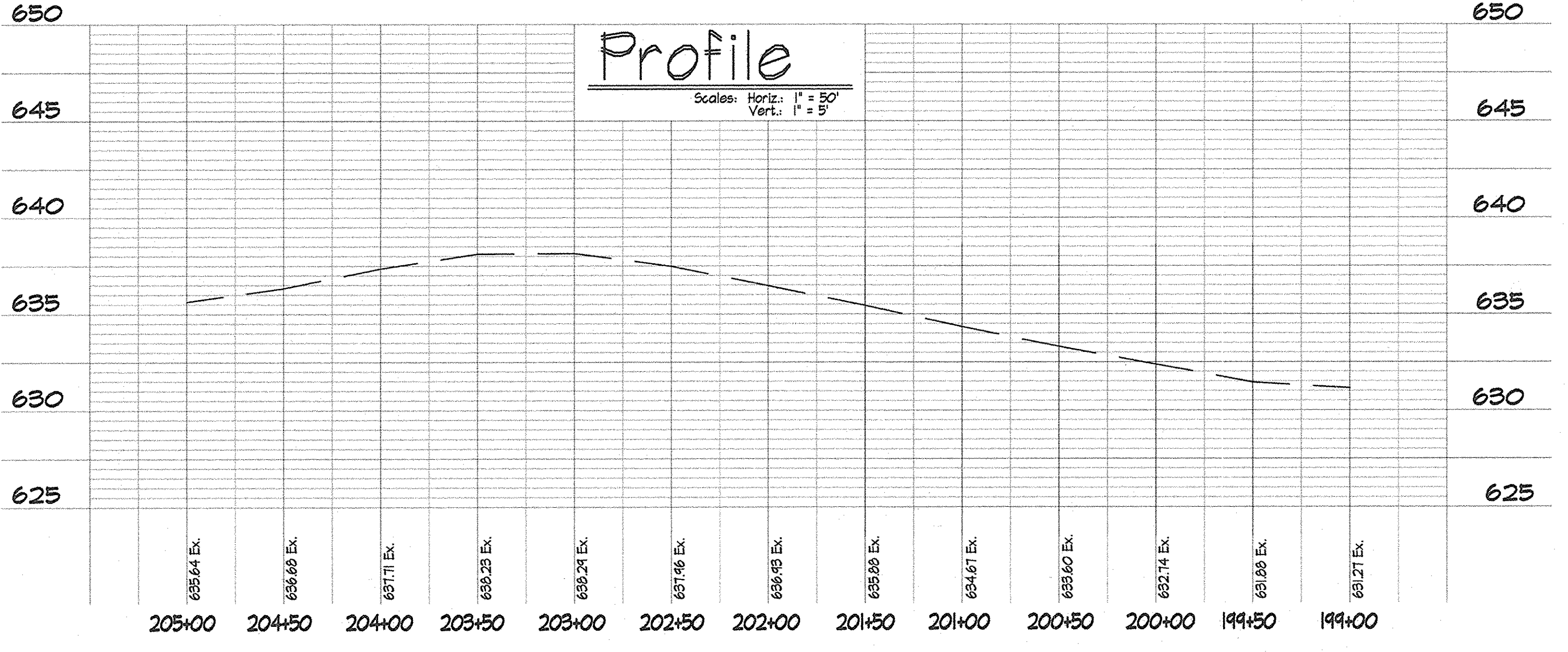
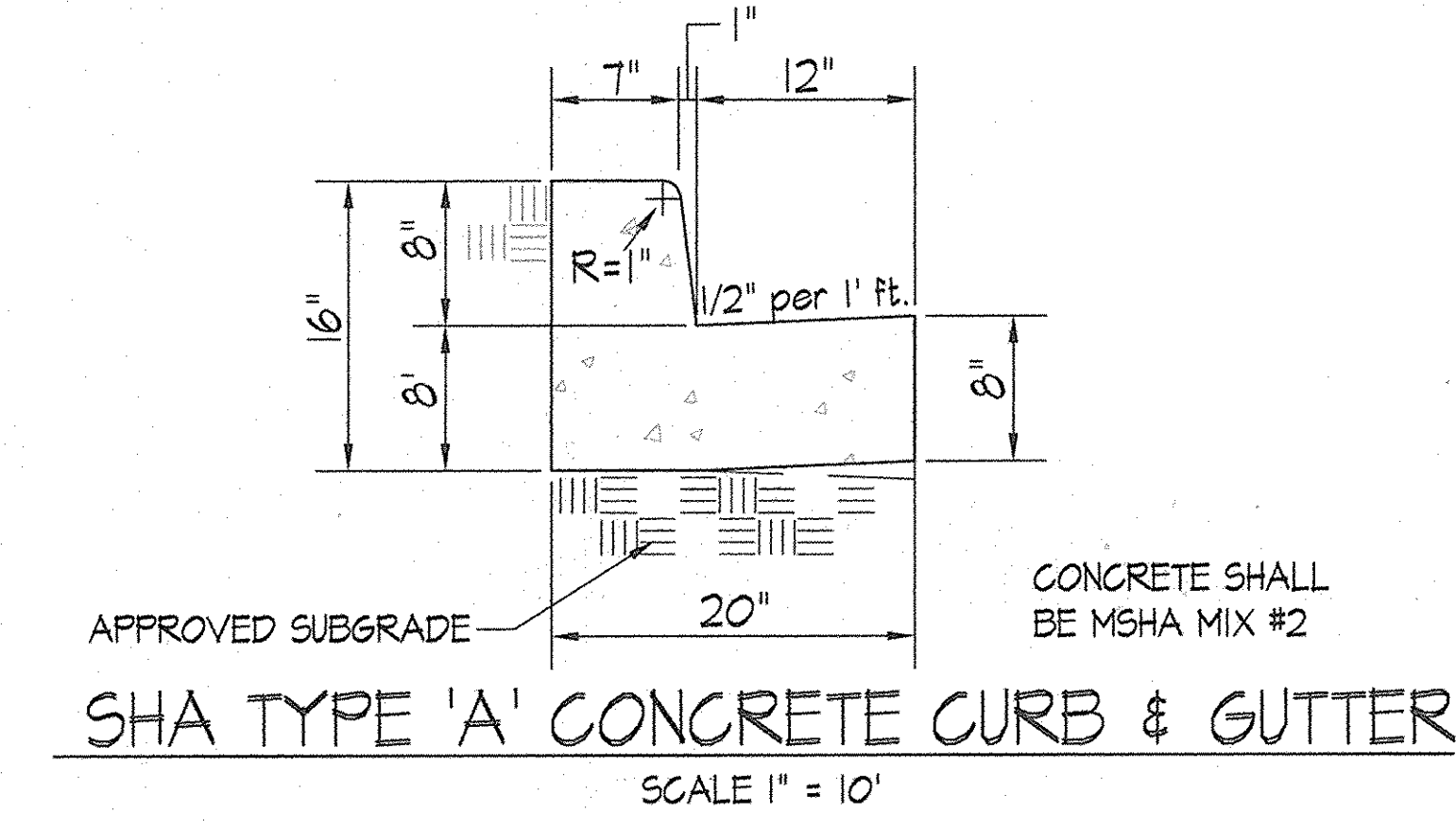


BENCHMARKS					
MONUMENT	NORTHING	EASTING	ELEVATION	HORIZ. DATUM	VERT. DATUM
15CA	540862.63	132543.75	515.45	NAD83(91)	NAVD83
0911	602684.30	132621.46	652.65	NAD83(91)	NAVD83



**LEGEND**

	PROPERTY LINE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	EXISTING TREELINE
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	MILL 2" SURFACE AND REPLACE WITH 2" HOT MIX ASPHALT SUPERPAVE 12.5mm FOR SURFACE, PG 64-22, LEVEL 2
	PAVEMENT TO BE REMOVED AND REPLACED
	NEW PAVEMENT 2" HOT MIX ASPHALT SUPERPAVE 12.5mm FOR SURFACE, PG 64-22, LEVEL 2 6" HOT MIX ASPHALT SUPERPAVE 25.0mm FOR BASE PG 64-22, LEVEL 2 (2'-3" LIFTS) 12" BASE COURSE USING GRADED AGGREGATE (2'-6" LIFTS)
	SOLID DOUBLE STRIPE 5" WIDE THERMO PLASTIC REFLECTIVE PAVEMENT MARKING YELLOW (5" PAINT, 5" SPACE, 5" PAINT)
	SKIP LINES 5" WIDE THERMO PLASTIC REFLECTIVE PAVEMENT MARKING WHITE (3" PAINT, 1" SPACE, 3" PAINT TYP.)
	SOLID STRIPE 5" WIDE THERMO PLASTIC REFLECTIVE PAVEMENT MARKING WHITE



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES M. IRVIN, DIRECTOR 12/16/06  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER 11/17/07

APPROVED: DEPARTMENT OF PLANNING & ZONING  
 DIRECTOR 1/16/07  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 1/10/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT 1/18/07

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

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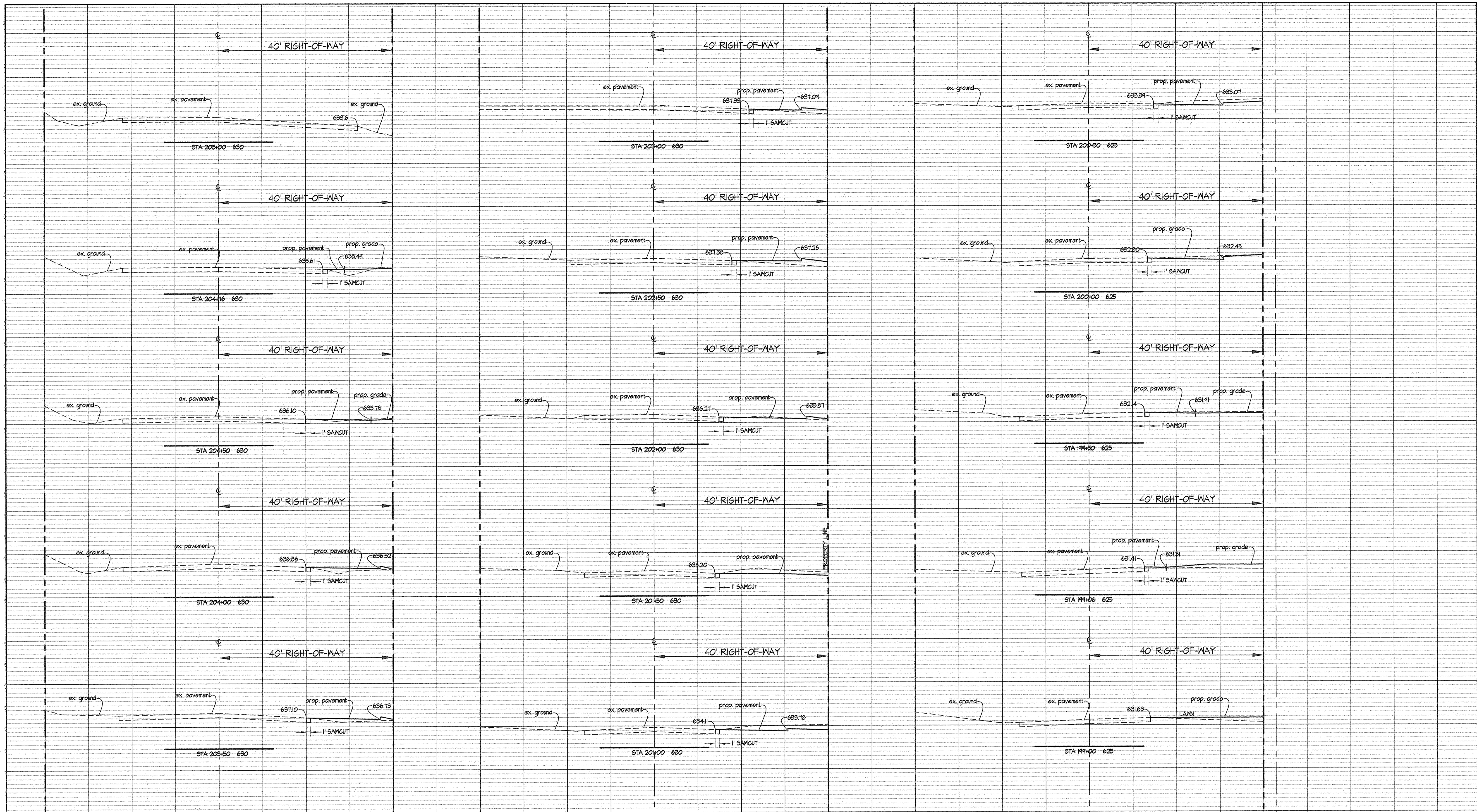
DES. CRW	BY	NO.	REVISION	DATE
DRN: GLK				
CHK: REM/KRK				
DATE: 12/08/06				

**Paving, Striping & Profile Plan**  
 Old Frederick Road  
 MD Rte. 99  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Fire Association, Inc.  
 ADDRESS / PERMIT INFORMATION:  
 12460 Frederick Rd  
 West Friendship, MD 21794  
 PHONE: (410) 745-1234

CB.01

SCALE: 1"=50'  
 SHEET 27 OF 28



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*James M. Irwin* 12/19/06  
 JAMES M. IRWIN, DIRECTOR DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
*Robert J. Wilson* 1/17/07  
 COUNTY HEALTH OFFICER DATE

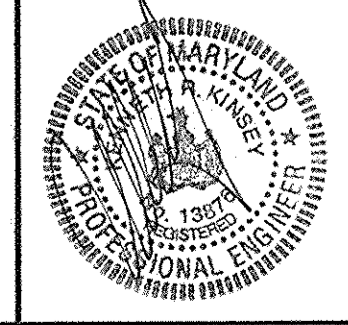
APPROVED: DEPARTMENT OF PLANNING & ZONING  
*Mark D. Jell* 1/18/07  
 DIRECTOR DATE

*Michelle Williams* 1/18/07  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Hammett* 1/18/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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DES: CRM	BY	NO.	REVISION
DRN: GLK			
CHK: REM/KRK			
DATE: 12/08/06			

**Cross Sections**  
**Old Frederick Road**  
**MD Rte. 99**

DATE: 12/08/06 BY: NO. REVISION

600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5965, Howard County, Maryland

OWNER:  
 West Friendship Volunteer Firemen Association Inc.  
 12460 Frederick Rd  
 West Friendship, MD 21794  
 Phone: (410) 745-1234

ADDRESS / PERMIT INFORMATION:  
 ADDRESS: 12595 Old Frederick Rd, Sykesville MD 21784  
 PARCEL: 9702  
 L9316 / F629  
 GRID No. 25 ZONE: RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract: 8080  
 WATER CODE: Private, SEWER CODE: Private

C8.02

SCALE: 1"=10'

SHEET 28 OF 28

**NOTE:**  
CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL DURING CONSTRUCTION.

**UTILITY NOTE:**  
1. 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.  
2. Place all excavated material on uphill side of trench.  
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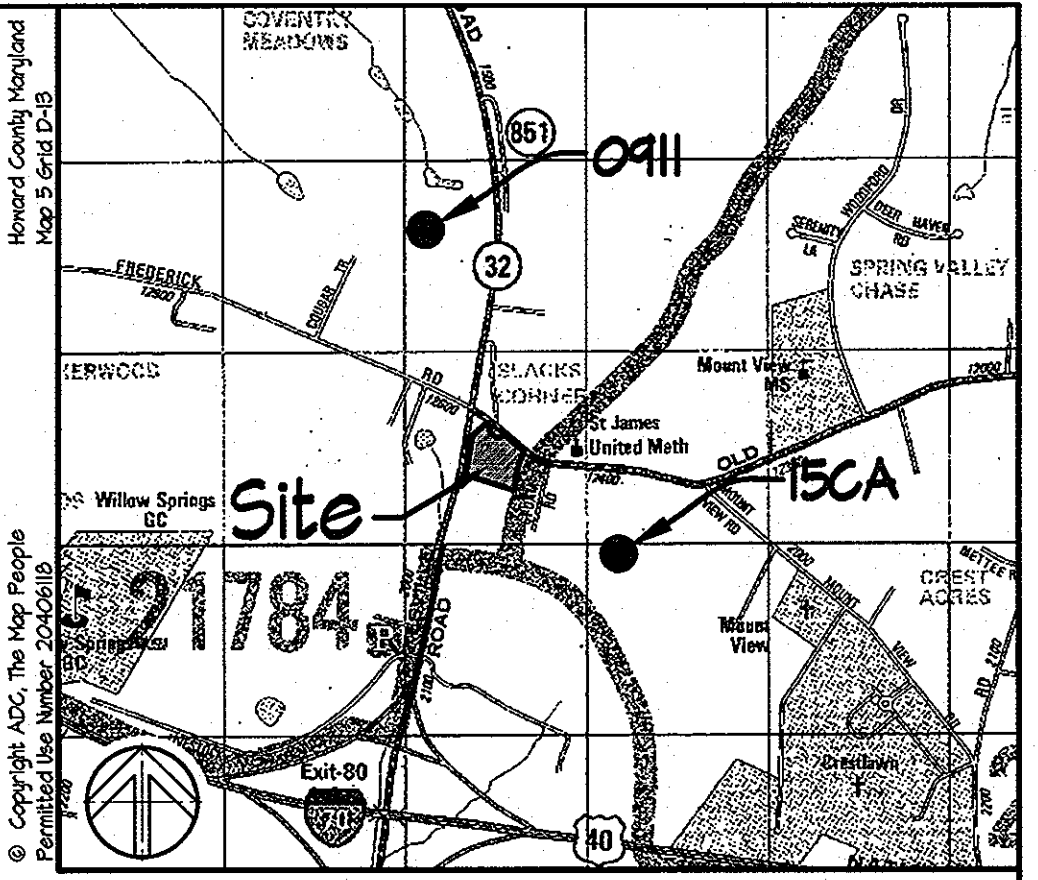
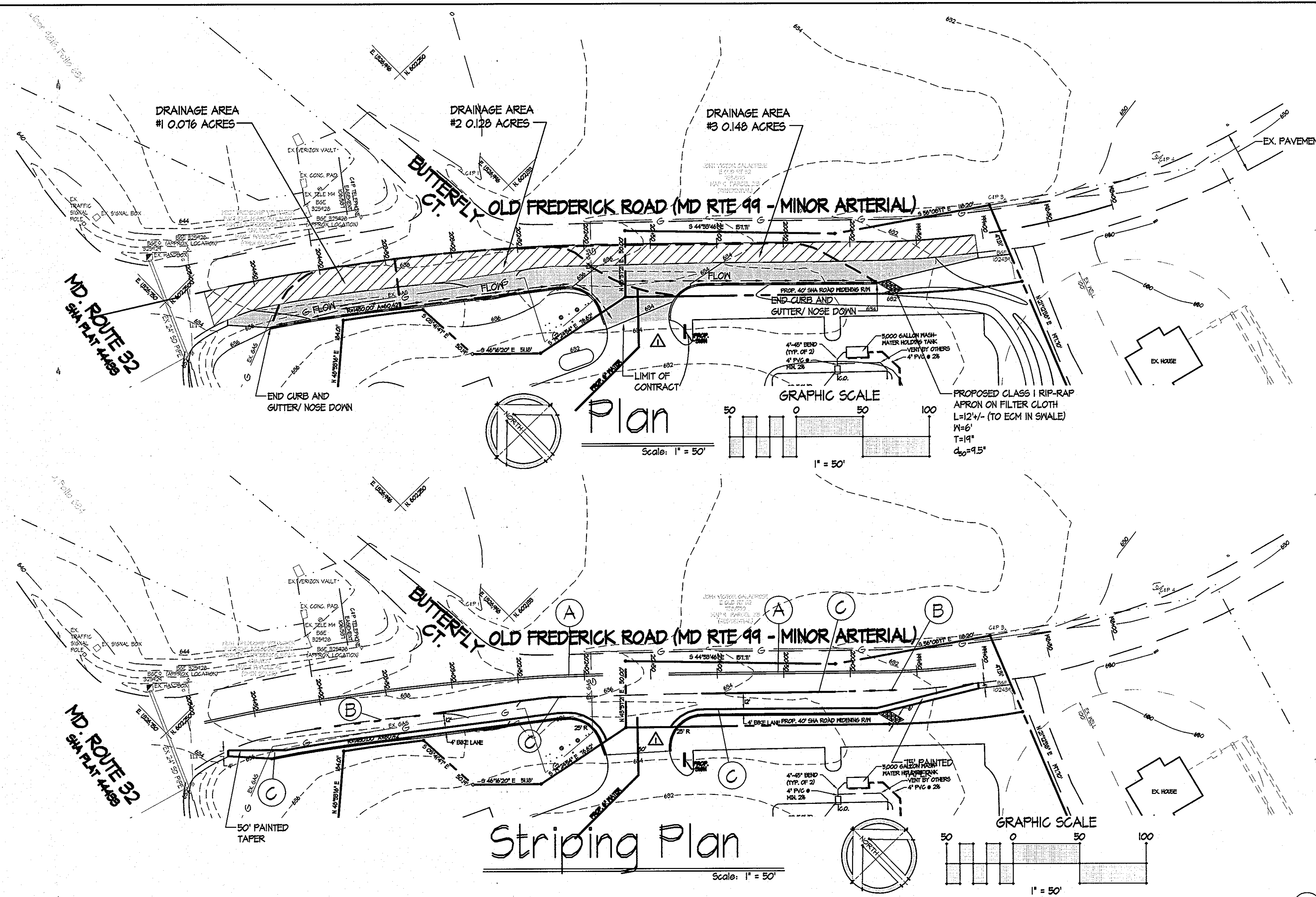
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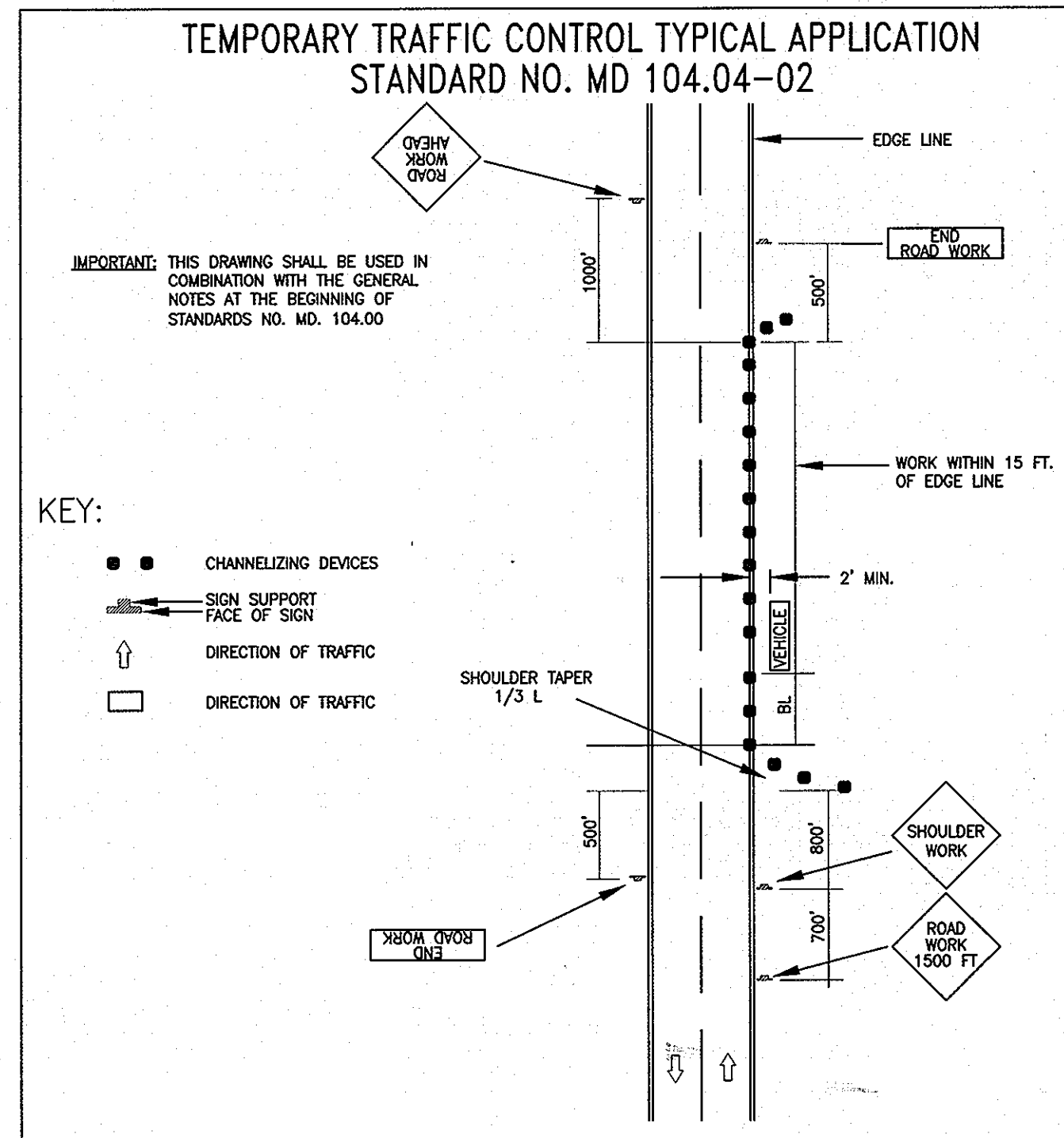
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\*Storm Drains to be flushed prior to trapping device removal.

**SEDIMENT CONTROL TRAFFIC NOTE**  
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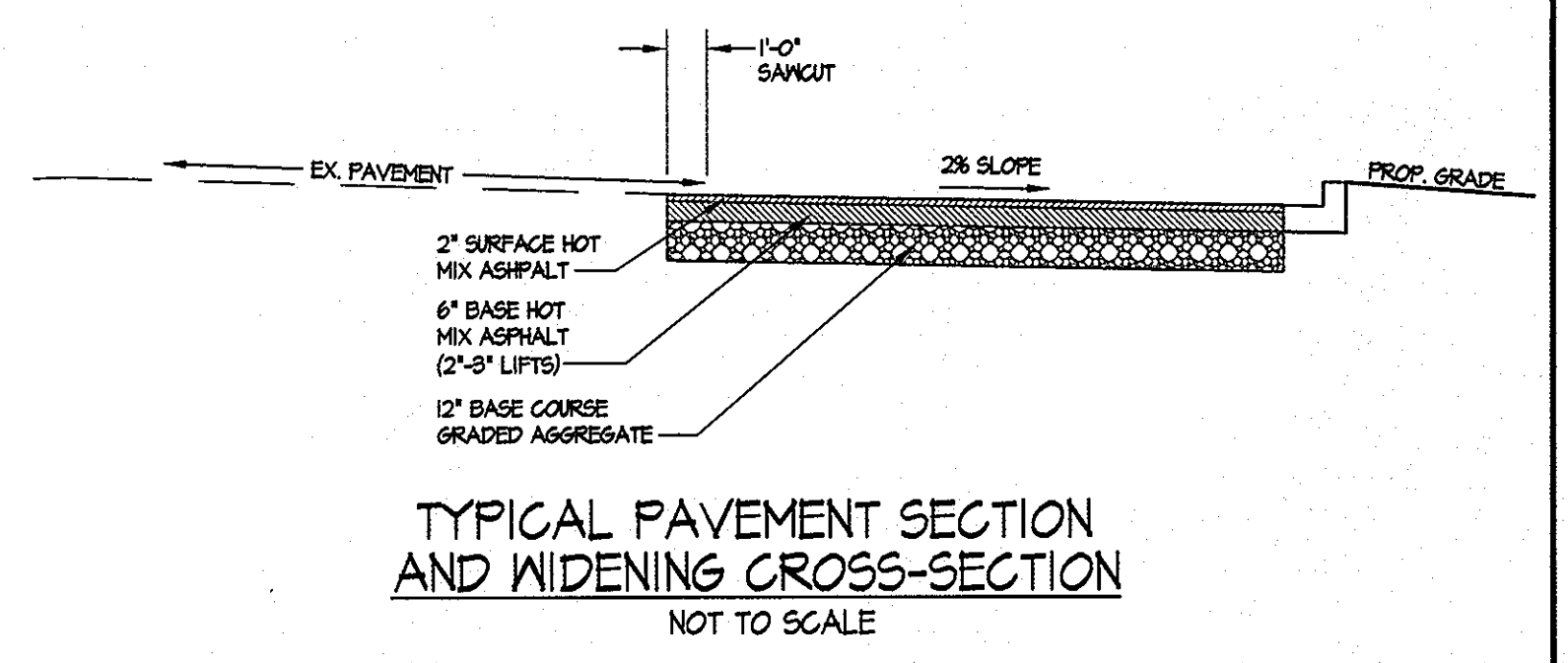
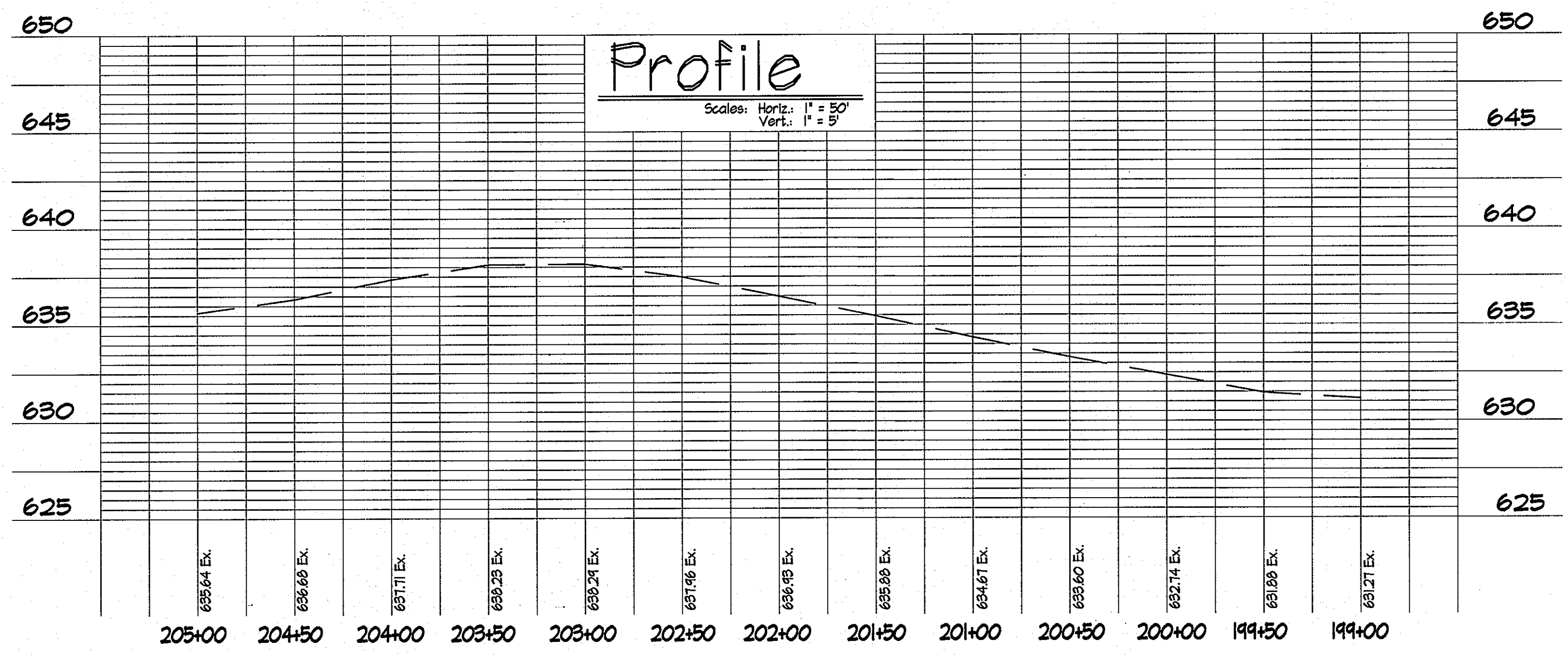
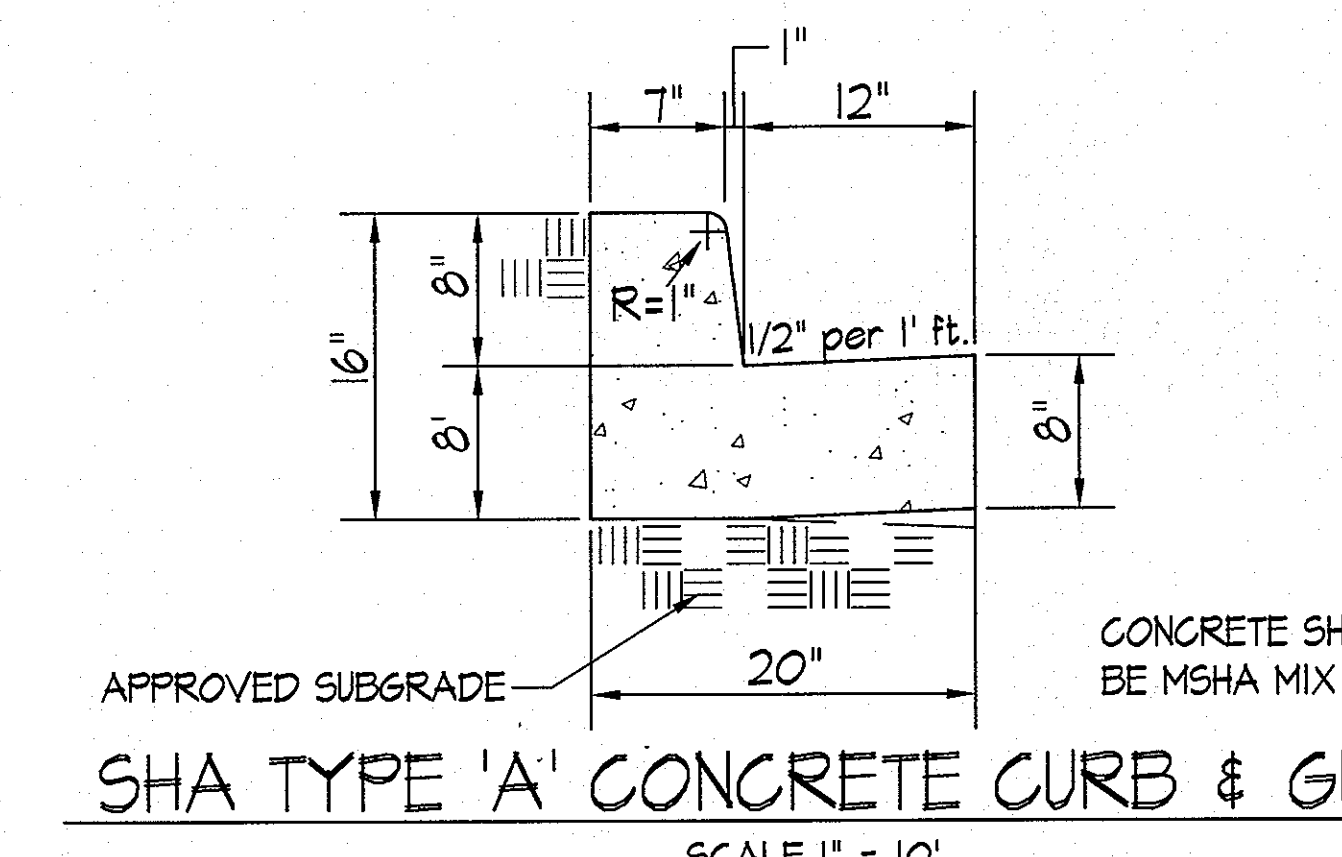


MONUMENT	BENCHMARKS				
	NORTHING	EASTING	ELEVATION	HORIZ. DATUM	VERT. DATUM
15CA	548862.63	1325413.75	515.45	NAD83(91)	NAVD88
0911	602684.30	1326821.46	652.65	NAD83(91)	NAVD88



**LEGEND**

	PROPERTY LINE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	EXISTING TREELINE
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	MILL 2" SURFACE AND REPLACE WITH 2" HOT MIX ASPHALT SUPERPAVE (12.5mm FOR SURFACE, PG 64-22, LEVEL 2)
	PAVEMENT TO BE REMOVED AND REPLACED
	NEW PAVEMENT 2" HOT MIX ASPHALT SUPERPAVE (12.5mm FOR SURFACE, PG 64-22, LEVEL 2)
	6" HOT MIX ASPHALT SUPERPAVE (25.0mm FOR BASE, PG 64-22, LEVEL 2 (2'-3" LIFTS))
	12" BASE COURSE USING GRADED AGGREGATE (2'-6" LIFTS)
	SOLID DOUBLE STRIPE 5" WIDE THERMO PLASTIC REFLECTIVE PAVEMENT MARKING YELLOW (5" SPACE, 5" PAINT)
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APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES M. IRVIN, DIRECTOR  
 8/14/07 DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 BRUCE FORSTER, COUNTY HEALTH OFFICER  
 9/6/07 DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING  
 DANIEL W. WYLLIE, DIRECTOR  
 9/13/07 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT

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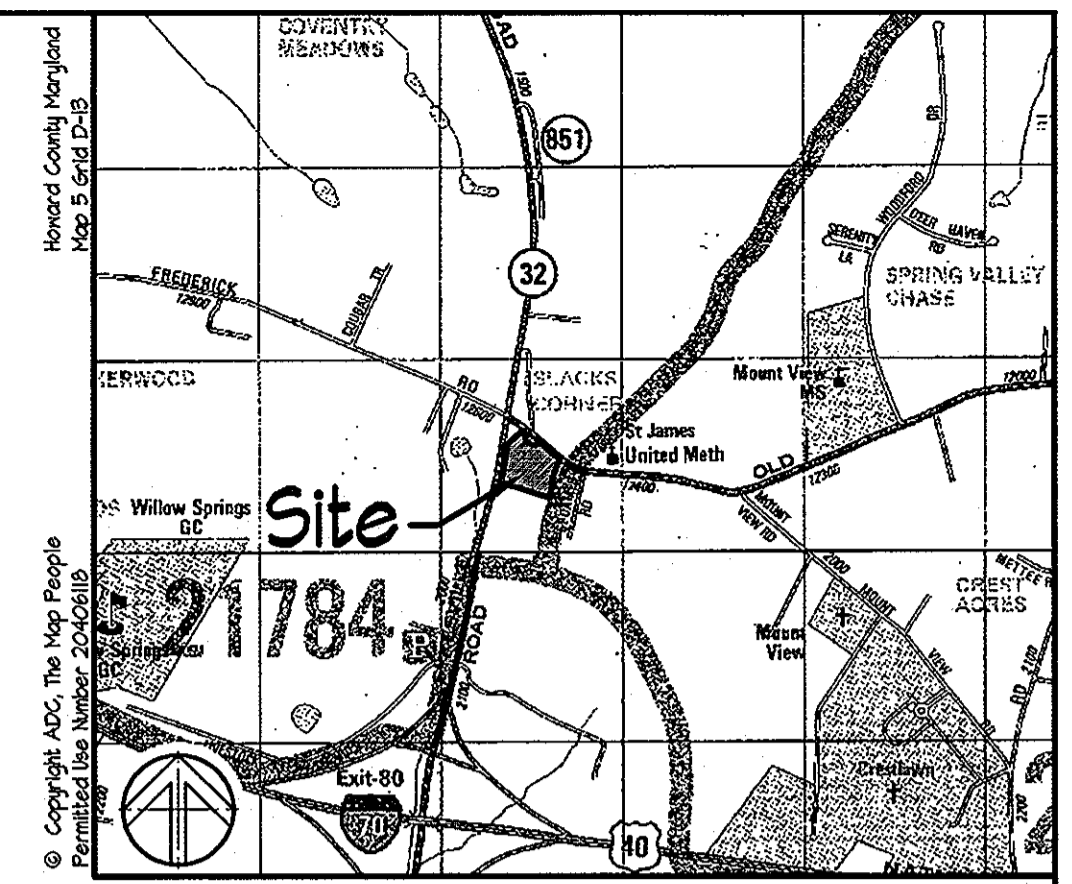
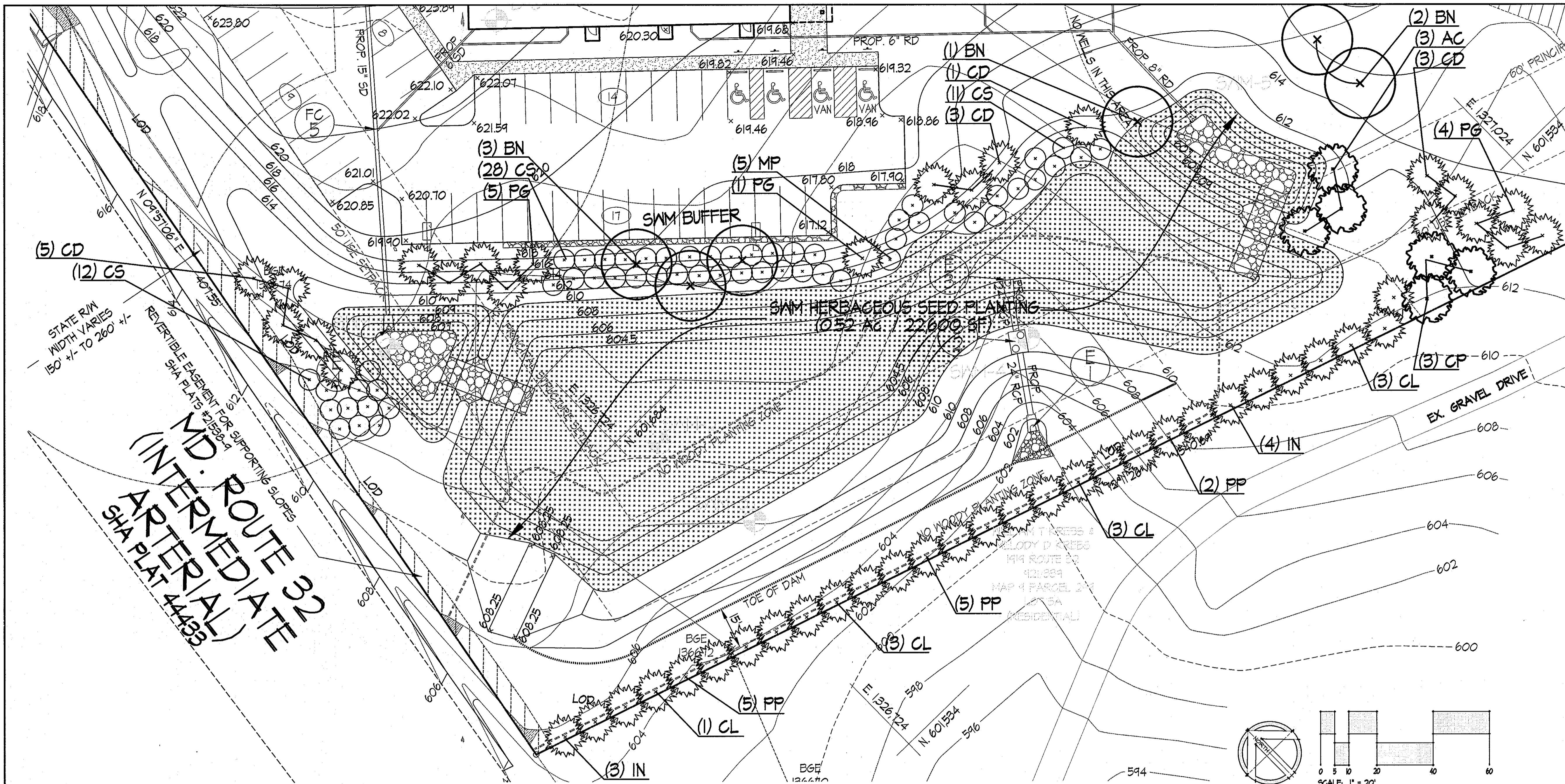


DES: CRM					
DRN: GLK					
CHK: REM/CRK					
DATE: 12/08/06	BY: NO.	REVISION	REVISION	DATE: 5/25/07	

**Paving, Striping & Profile Plan**  
 Old Frederick Road  
 MD Rte. 99  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5965, Howard County, Maryland  
 OWNER: West Friendship Volunteer Firemen Association Inc.  
 ADDRESS / PERMIT INFORMATION: 12460 Frederick Rd, West Friendship, MD 21154  
 GRID No. 25, ZONE RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract 6080  
 WATER CODE: Private, SEWER CODE: Private

08.01  
 SCALE: 1"=50'  
 SHEET 27 OF 28  
 SDP-01-017



Vicinity Map Scale: 1" = 2000'

**LEGEND**

	PROPERTY LINE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	EXISTING STORM DRAINS
	PROPOSED STORM DRAIN
	PROPOSED SANITARY SEWER
	PROPOSED WATER
	PROPOSED SOIL BORINGS
	EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 637 SF

**SWM PLANTING SCHEDULE**

KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY	COMMENTS
BN	BETULA NIGRA 'DURA-HEAT'	DURA-HEAT RIVER BIRCH	12'-14" H	AS SHOWN	6	MULTI-STEMMED
AC	AMALANCHIER CANADENSIS	SHADELON SERVICEBERRY	8-10 FT. H	AS SHOWN	3	MULTI-STEMMED
CP	CRATAEGUS PHAENOPYRUM	WASHINGTON HAWTHORN	15"-2"	AS SHOWN	3	
CD	CEDRUS DEODARA 'AUREA'	GOLDEN HIMALAYAN CEDAR	8-10 FT. H	AS SHOWN	12	
CL	CUPRESSOCYPARIS LEYLANDII	LEYLAND CYPRESS	8-10 FT. H	AS SHOWN	10	
IN	ILEX x NELLIE R STEVENS'	NELLIE STEVENS HOLLY	8-10 FT. H	AS SHOWN	6	
PG	PICEA SRAUNGA	WHITE SPRUCE	8-10 FT. H	AS SHOWN	10	
PP	PICEA MUGENS 'HOOPSII'	HOOPSII BLUE SPRUCE	8-10 FT. H	AS SHOWN	12	
CS	CORNUS SERICEA	REDOSIER DOGWOOD	3-4 FT H	AS SHOWN	31	
MP	MYRICA PENNSYLVANICA	NORTHERN BAYBERRY	3-4 FT H	AS SHOWN	5	

**SWM SEED SCHEDULE**

SWM HERBACEOUS SEED PLANTING SHALL BE ERNST CONSERVATION SEEDS - FACM WETLAND MEADOW MIX ERNMX-122 OR APPROVED EQUAL. CONTRACTOR SHALL PREPARE AND FERTILIZE SITE AREA AND APPLY SEED PER MANUFACTURER'S SPECIFICATIONS. SEED APPLICATION RATE SHALL BE 15 LBS. PER ACRE.

**LANDSCAPE NOTES:**

- Quantities shown on the plant list are estimates only; the contractor is required to install the quantities labeled in plan view. Contractor shall notify Site Resources of any discrepancy between the quantities listed in the chart and quantities shown in plan view.
- Plant material substitutions are subject to approval by the owner's representative.
- Locations of all plant material shall be staked for approval by the owner's representative. Owner reserves the right to shift stakeout locations.
- All shrub and groundcover areas shall be planted in continuous prepared beds, mulched with composted hardwood mulch as detailed and specified.
- Planting beds shall have positive drainage with a minimum 2 percent slope.
- Contractor shall verify accuracy of base information and existing conditions in the field to his own satisfaction. Bid shall be based on actual site conditions. No extra shall be made for work arising from site conditions differing from those indicated on drawings and specifications.
- The contractor shall notify Miss Utility at 1-800-251-TTTT a minimum of two working days prior to beginning planting and construction.
- Damage to existing conditions and utilities shall be repaired and restored at the expense of the contractor.
- All plant material shall be nursery grown and shall conform to American Association of Nurserymen, Inc. standards.
- All planting procedures shall conform to the latest edition of Landscape Contractor Association Guidelines for the Baltimore/Washington metropolitan area, latest edition.
- A minimum of 96" headroom is required for all handicap accessible spaces per ADA64.65.
- At the time of installation, all shrubs and other plantings herewith listed and approved for this site, shall be of the proper height requirements in accordance with the Howard County Landscaping 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.
- Should any tree designated for preservation for which landscaping credit is given, the owner will be required to replace the tree with the equivalent species or with a tree which will obtain the same height, spread, and growth characteristics. The replacement tree must be a minimum of 3 inches in caliper and installed as required in the Howard County Landscaping Manual.
- The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences, and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.
- Sediment control devices shall be installed and maintained, as needed, in accordance with local jurisdiction requirements. Stabilize all disturbed areas as soon as final grading has been completed. All disturbed areas shall be seeded with the existing grass seed.
- Install tree protection fencing along the limits of disturbance (lod) of the existing woods. All site grading, planting bed preparation, and tree and shrub planting must be done outside of the drip line of existing trees to be preserved in order to maintain and protect the root system.

**SWM AREA PLANTING**

PERIMETER 1010 LF

**TYPE B BUFFER (644 LF) REQUIRED**

13 SHADE TREES @ 1/30 LF  
11 EVERGREEN TREES @ 1/40 LF

PROVIDED

6 SHADE TREES  
10 EVERGREEN TREES (2/1 SHADE TREE)  
36 SHRUBS (10/1 SHADE TREE)  
36 ORNAMENTAL TREES (2/1 SHADE TREE)

**TYPE C BUFFER (361 LF) REQUIRED**

4 SHADE TREES @ 1/40 LF  
10 EVERGREEN TREES @ 1/20 LF

PROVIDED

33 EVERGREEN TREES (2/1 SHADE TREE)  
3 ORNAMENTAL TREES (2/1 SHADE TREE)

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*James M. Irvin* 8/14/07  
JAMES M. IRVIN, DIRECTOR DATE

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

*Barton Peter Beilerman* 9/6/07  
COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

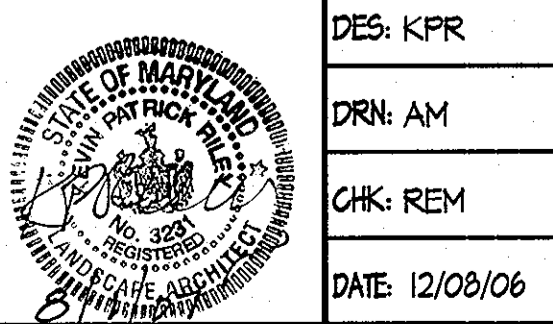
*Mark D. Wright* 9/16/07  
DIRECTOR DATE

*Michael J. Williams* 9/13/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Charles H. Hames* 9/16/07  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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www.siteresourcesinc.com



DES: KPR	
DRN: AM	
CHK: REM	
DATE 12/09/06	BY NO. REVISION
	8/25/07

**CONSULTANT'S HAZARD CLASS CERTIFICATION**

I certify that this pond meets all requirements for hazard class (A). [Requirements as stated in the USDA NATURAL RESOURCES CONSERVATION SERVICE - MARYLAND CONSERVATION PRACTICE STANDARD FOR POND, CODE 918, JANUARY 2000.] All necessary investigations and computations have been performed to verify this finding. A copy of said information has been supplied to N.R.C.S./H.S.C.D.

Signature: *Kevin P. Riley* MD License No.: 13876 Date: 8/1/07  
Print Name: KEVIN P. RILEY

**Stormwater Management Pond Planting Plan**

600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
Capital Project No. F-5465, Howard County, Maryland

OWNER: West Friendship Volunteer Firemen Association Inc.  
ADDRESS: 12835 Old Frederick Rd, Sykesville MD 21154  
PARCEL: 4210 L 9316 / F 624  
GRID NO. 23, ZONE: RR-DEO, TAX MAP NO. 9  
3rd Election District, Census Tract 6030  
WATER CODE: Private, SEWER CODE: Private

SCALE: 1" = 20'  
SHEET 23 OF 28

PREPARED BY: KEVIN P. RILEY, RLA  
STATE OF MARYLAND  
REGISTERED LANDSCAPE ARCHITECT  
REGISTRATION NO. 3231

*K. Riley* 8/1/07  
NAME DATE

**DEVELOPER'S/BUILDER'S CERTIFICATE**

I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Subdivision and Land Development Regulations and the Landscape Manual. I/We further certify that upon completion a letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

*H. Mitchell Day* 8/3/07  
Name Date

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

*Jim M... 8/9/07*  
USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*... 8/9/07*  
HOWARD SOIL CONSERVATION DISTRICT DATE

**ENGINEER'S CERTIFICATE**

"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

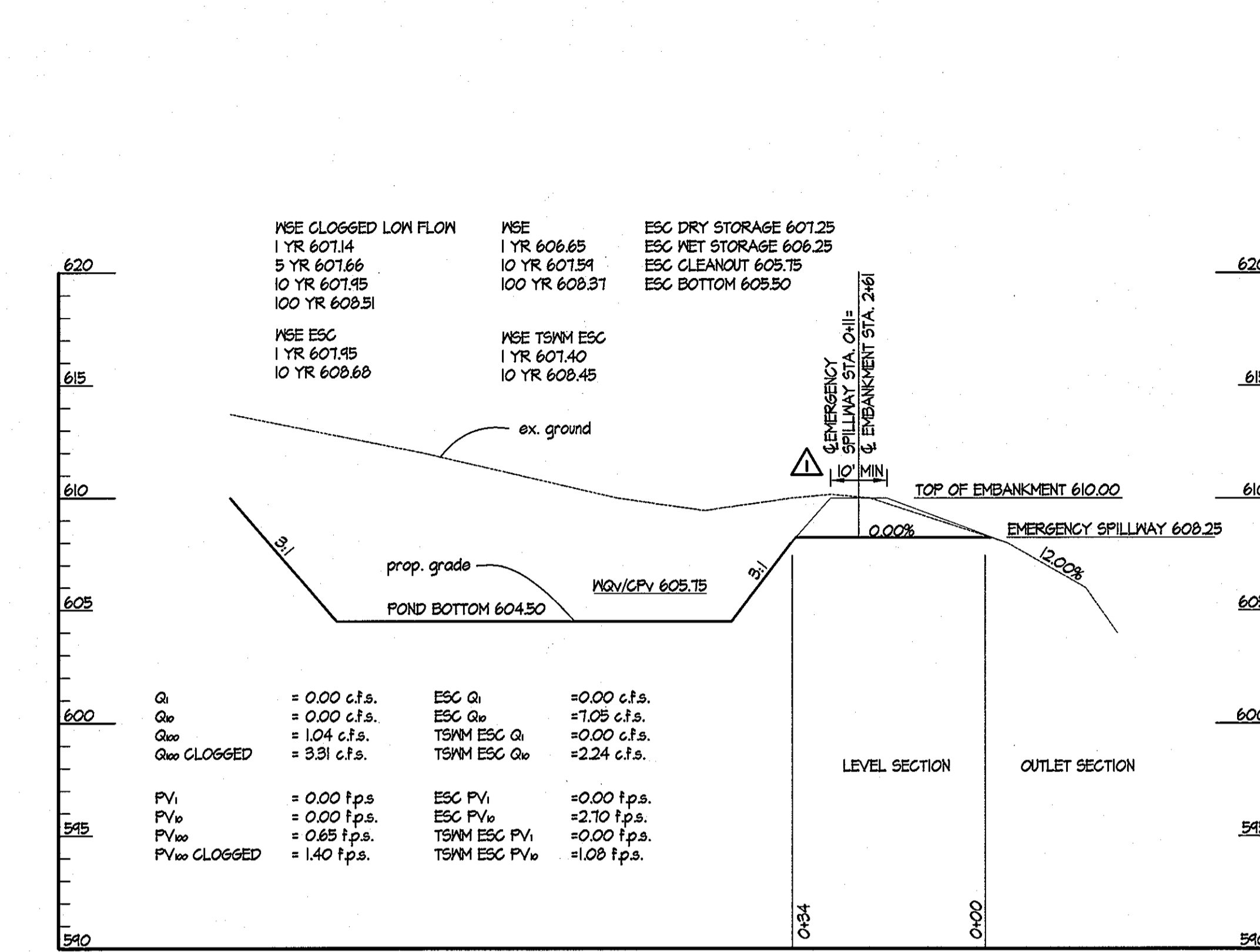
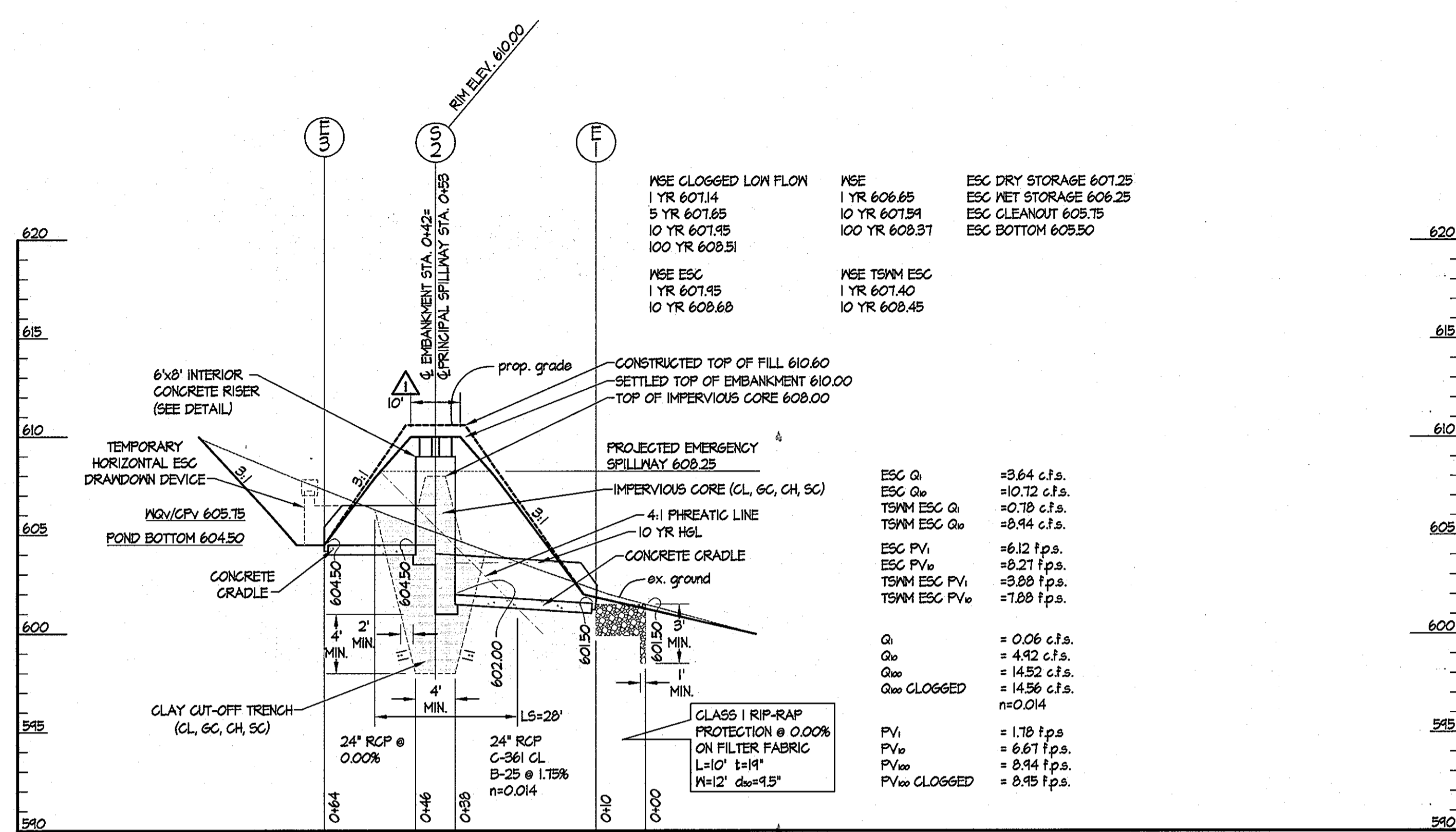
*... 8/1/07*  
ENGINEER DATE

**DEVELOPER'S CERTIFICATE**

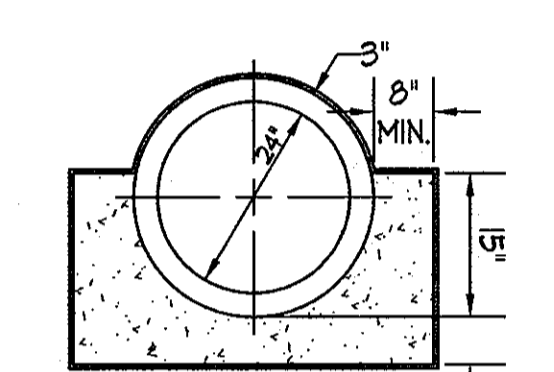
"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the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

*H. Mitchell Day* 8/3/07  
DEVELOPER DATE

67.12

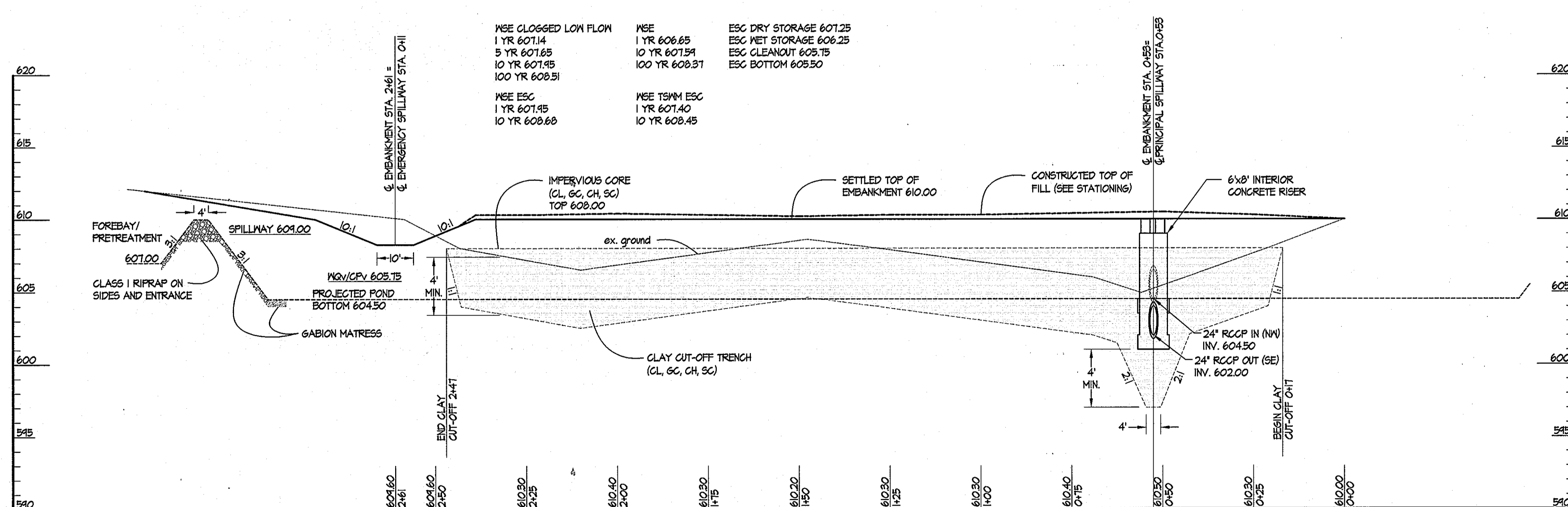


**NOTE:**  
1. IF UNSUITABLE (PERVIOUS) MATERIAL IS ENCOUNTERED AT TIME OF CUTOFF TRENCH INSTALLATION DEEPER THAN (4) FOUR FEET, IT WILL BE NECESSARY TO EXTEND THE CUTOFF TRENCH DOWN UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY A GEOTECHNICAL ENGINEER. FILL MATERIAL FOR THE CUTOFF TRENCH AND IMPERVIOUS CORE SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION CL, GC, CH OR SC. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.



**1 PROFILE ALONG CENTERLINE OF PRINCIPAL SPILLWAY**  
SCALES: HORIZ. 1" = 20'  
VERT. 1" = 5'

**2 PROFILE ALONG CENTERLINE OF EMERGENCY SPILLWAY**  
SCALES: HORIZ. 1" = 20'  
VERT. 1" = 5'



**3 PROFILE ALONG CENTERLINE OF EMBANKMENT**  
SCALES: HORIZ. 1" = 20'  
VERT. 1" = 5'

**STORMWATER MANAGEMENT FACILITIES**  
FROM PAGES 10-12 OF GEOTECHNICAL REPORT PREPARED BY HERBST/BENSON AND ASSOCIATES, DATED AUGUST 9, 2006  
STORMWATER MANAGEMENT

- a. Infiltration Potential
- Four borings investigated subsol suitability for stormwater disposal by infiltration. The Maryland Department of Environment requires that infiltration occur only in undisturbed native soils with an infiltration rate of at least 0.52 in/hr. Howard County has a more stringent requirement of a minimum 1.02 in/hr. Both jurisdictions require that stormwater management basin and infiltration trench be at least 4 feet above the groundwater table or rock (i.e. impermeable material).
- The results of the borehole infiltrometer tests shown on TABLE 2 indicate that the use of standard 1.02 in/hr. design infiltration rate will be acceptable. Neither groundwater nor rock were encountered within the depths penetrated by the test borings and will not effect infiltration potential.
- It is our opinion that infiltration rates will decrease with time as the sediments wash in with the initial runoff and cover the infiltrating surface. We thus recommend that all infiltration structures be equipped with a gravity daylighted overflow directed so as not to adversely affect adjacent structures or properties.
- b. Pond Construction
- We are assuming that a pond will be constructed in the vicinity of borings 5YM-1 through 5YM-5. The invert of the principal spillway should be selected such that it will penetrate beneath very loose soils and into materials with standard penetration resistances of at least 8 blows per foot. The core trench should extend to a sufficient depth so as to penetrate at least 2 feet into the +8 blow count material or to a minimum of 4 feet below stripped existing grade, whichever is deeper. Although a lens of CL material was encountered in one of the test borings, it has been our experience that, in this geologic area, CL deposits are of limited volume. We would assume that the majority of "C" soils suitable for core trench and dam core construction will have to be brought in from off site.
- c. Earthwork Recommendations
- Stormwater management earthwork construction should meet the requirements of MD 37B/2000 specifications.

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

*Jim Lynn Lee* 8/9/07  
USDA - Natural Resources Conservation Service  
Date

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

*John St...* 8/9/07  
Howard Soil Conservation District  
Date

**BY THE ENGINEER:**

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

*VENESSA R. KIMMEL* 8/1/07  
Signature of Engineer  
Printed Name of Engineer  
Date

**BY THE DEVELOPER:**

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

*H. Mitchell Day* 8/3/07  
Signature of Engineer  
*H. Mitchell Day*  
Printed Name of Engineer  
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*James M. Irvin* 8/14/07  
JAMES M. IRVIN, DIRECTOR DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
HOWARD COUNTY HEALTH DEPARTMENT  
*Peter Brileman* 9/6/07  
COUNTY HEALTH OFFICER DATE

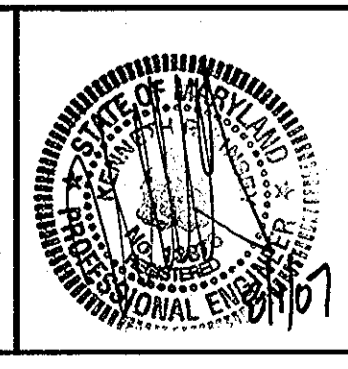
APPROVED: DEPARTMENT OF PLANNING & ZONING  
*David L. Wynn* 9/1/07  
DIRECTOR DATE

*Michael J. ...* 8/13/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Wanda ...* 9/6/07  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**EDMEADES & STROMDAHL, LTD.**  
ARCHITECTS / PLANNERS  
11 North Main Street Bel Air, Maryland 21014  
Phone: 410.879.0388 Fax: 410.879.4785  
E-mail: mce@edmeades-stromdahl.com

**SITE RESOURCES, INC.**  
LAND PLANNING / SITE DESIGN  
14315 Jarrettville Pike Phoenix, Maryland 21131  
Phone: 410.683.3388 Fax: 410.683.3389  
www.siteresourcesinc.com



DES: CRM			
DRN: AM			
CHK: REM/KRK			
DATE: 12/08/06			
BY: NO.			
REVISION			
DATE: 8/28/07			

**Stormwater Management Pond Profiles**

600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
Capital Project No. F-5465, Howard County, Maryland

OWNER:  
West Friendship Volunteer Firemen Association, Inc.  
12460 Frederick Rd.  
West Friendship, MD 21794  
Phone (410) 785-1294

ADDRESS / PERMIT INFORMATION:  
ADDRESS: 12835 Old Frederick Rd., Sykesville MD 21784  
PARCEL #210  
L 8316 / F 624  
GRID NO. 23, ZONE: RR-DEO, TAX MAP No. 9  
3rd Election District, Census Tract 6020  
WATER CODE: Private, SEWER CODE: Private

SCALE: AS SHOWN  
SHEET 22 OF 28



DESIGN SUMMARY

Table with columns for 1 YEAR, 10 YEAR, 100 YEAR and rows for various engineering metrics like EXISTING D.P. (c.f.s.), STORAGE PROVIDED, etc.

\* NO BENCHES ARE REQUIRED FOR THIS FACILITY BECAUSE THE CPM ELEVATION IS LESS THAN 15'

OPERATION, MAINTENANCE, AND INSPECTION

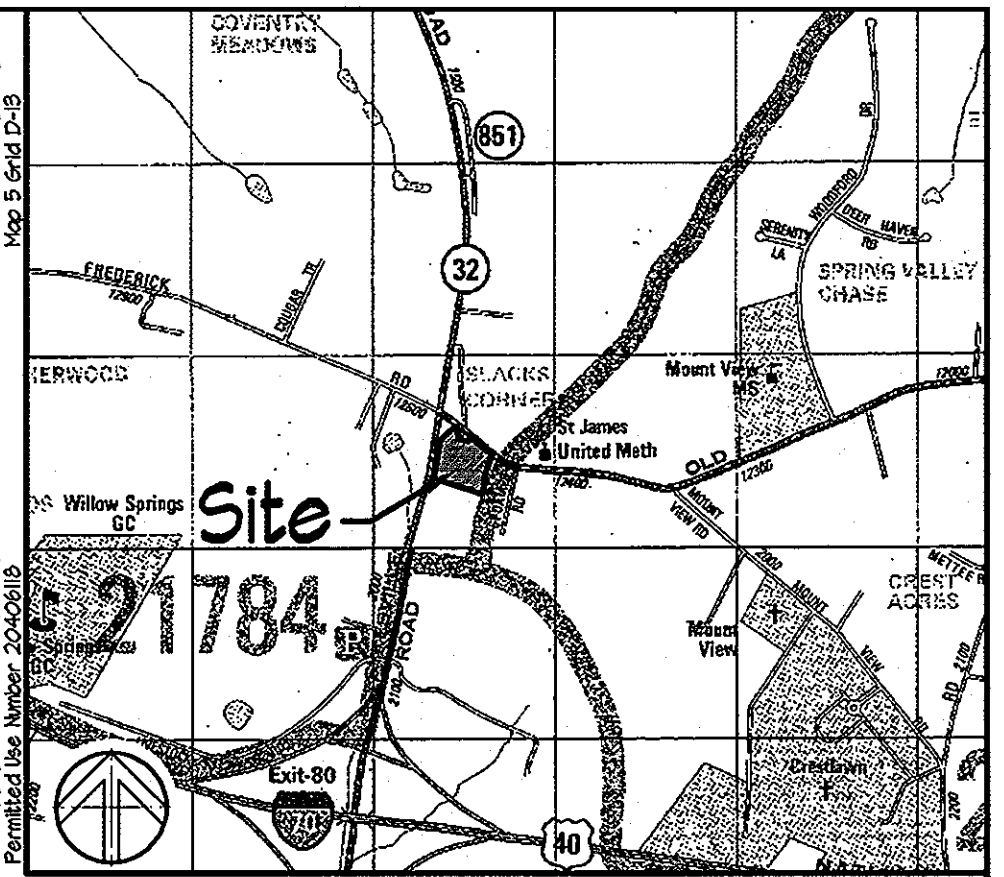
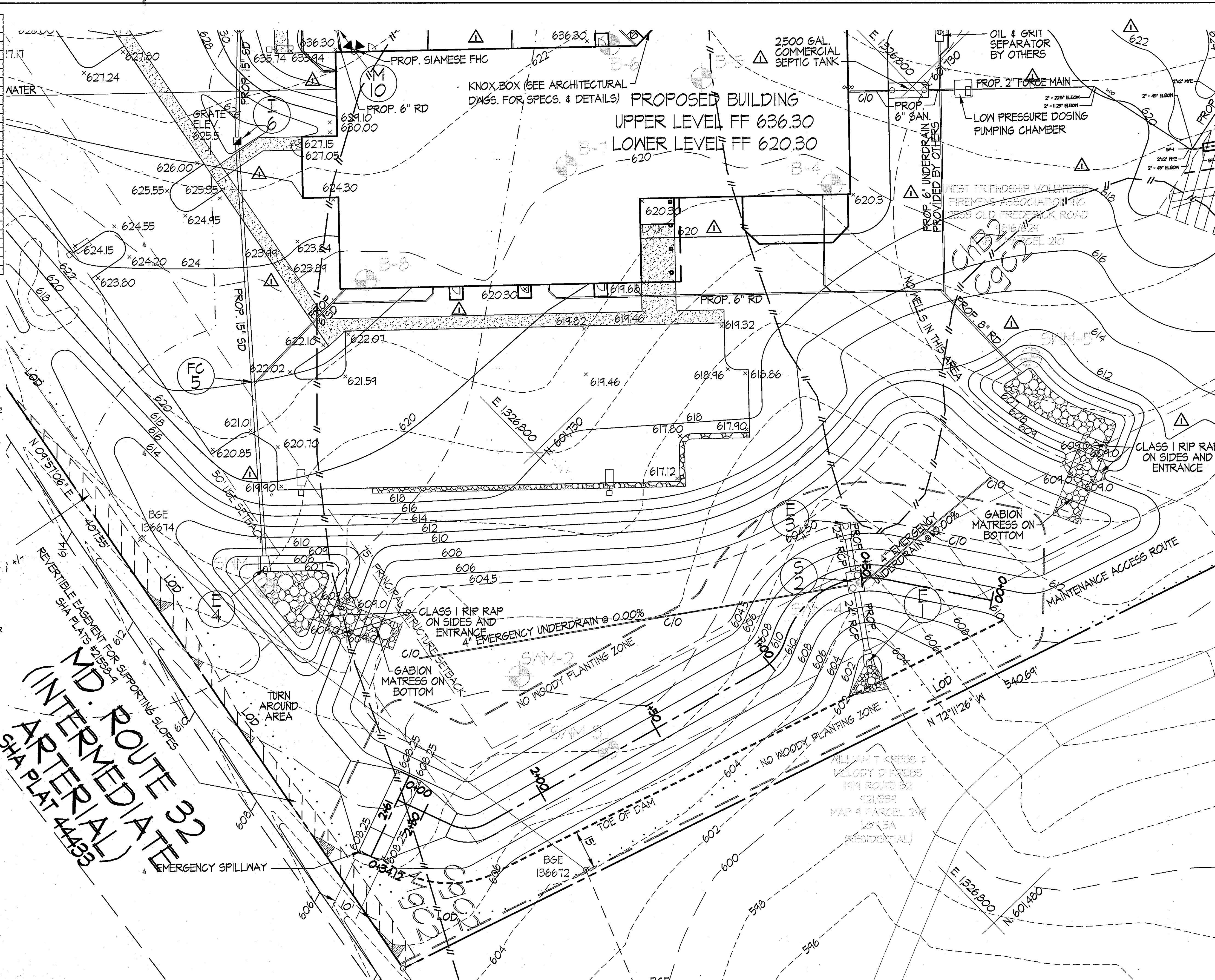
INSPECTIONS OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS STANDARDS AND SPECIFICATIONS FOR PONDS (MD-318), THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF.

INSPECTION SCHEDULE

- I. PRIOR NOTIFICATION SHALL BE GIVEN TO THE ENGINEER SO THAT INSPECTIONS MAY BE MADE AT THE FOLLOWING STAGES:
A. UPON COMPLETION OF EXCAVATION TO SUB FOUNDATION AND WHERE REQUIRED, INSTALLATION OF STRUCTURAL SUPPORTS OR REINFORCEMENT FOR STRUCTURES, INCLUDING BUT NOT LIMITED TO: CORE TRENCHES FOR STRUCTURAL EMBANKMENTS.
II. INLET-OUTLET STRUCTURES AND ANTI-SHEEP STRUCTURES, WATERTIGHT CONNECTORS ON PIPES, AND TRENCHES FOR ENCLOSED STORM DRAINAGE FACILITIES.

MAINTENANCE SCHEDULE

- 1. THE POND IS PUBLIC AND SHALL BE MAINTAINED BY HOWARD COUNTY.
2. THE FACILITY SHALL BE INSPECTED TWICE ANNUALLY, MARCH AND SEPTEMBER, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS STANDARDS AND SPECIFICATIONS FOR PONDS (MD-318).
3. VEGETATED COVER SHALL BE MAINTAINED AT ALL TIMES.
4. RILLS ON THE SLOPES OF THE DAM AND WASHED IN THE EARTH SPILLWAY SHALL BE FILLED WITH SUITABLE MATERIAL AND THOROUGHLY COMPACTED.
5. ALL APPURTENANCES SHALL BE KEPT FREE OF TRASH.



LEGEND table with symbols for PROPERTY LINE, EXISTING CONTOURS, PROPOSED CONTOURS, EXISTING CURB & GUTTER, PROPOSED CURB & GUTTER, EXISTING STORM DRAINS, PROPOSED STORM DRAIN, PROPOSED SANITARY SEWER, PROPOSED WATER, PROPOSED SOIL BORINGS, EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 631 SF

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
USDA - Natural Resources Conservation Service
8/9/07 Date

BY THE ENGINEER:
I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions.
Signature of Engineer: KEVIN R. KINSEY
Printed Name of Engineer

BY THE DEVELOPER:
I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project.
Signature of Engineer: H. MITCHELL DA
Printed Name of Engineer

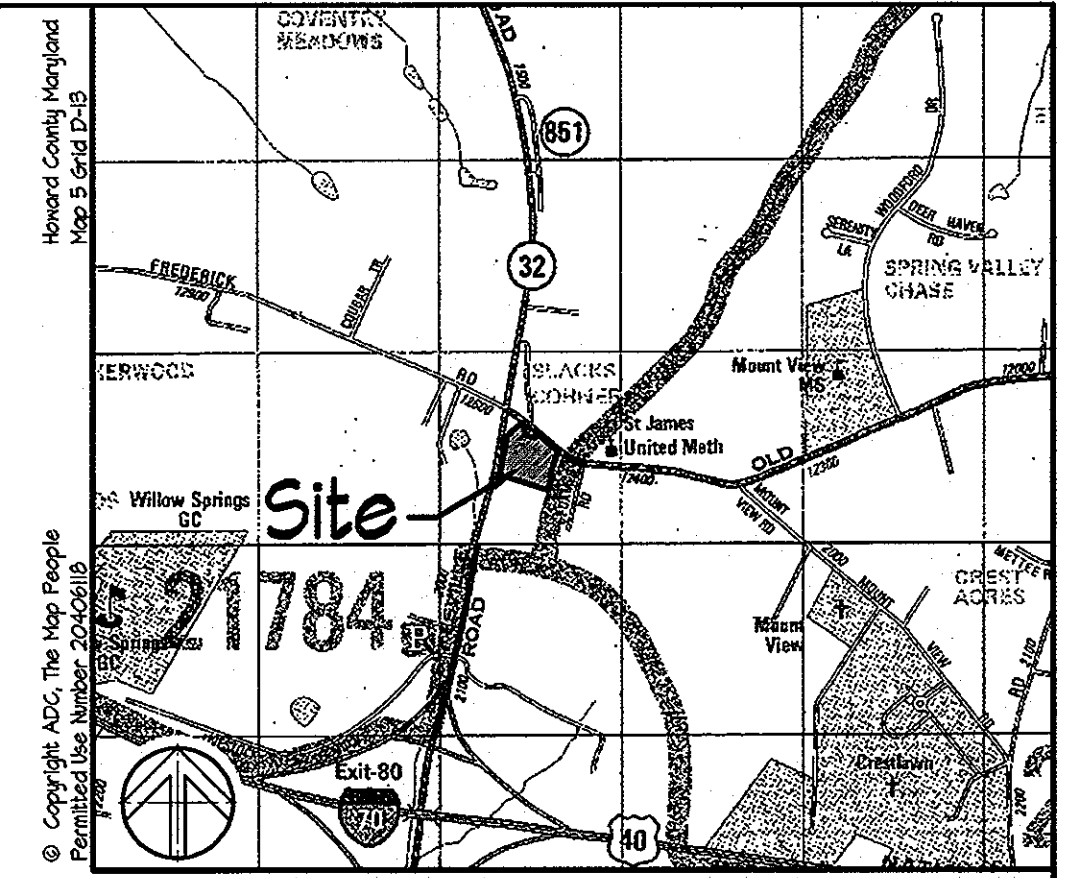
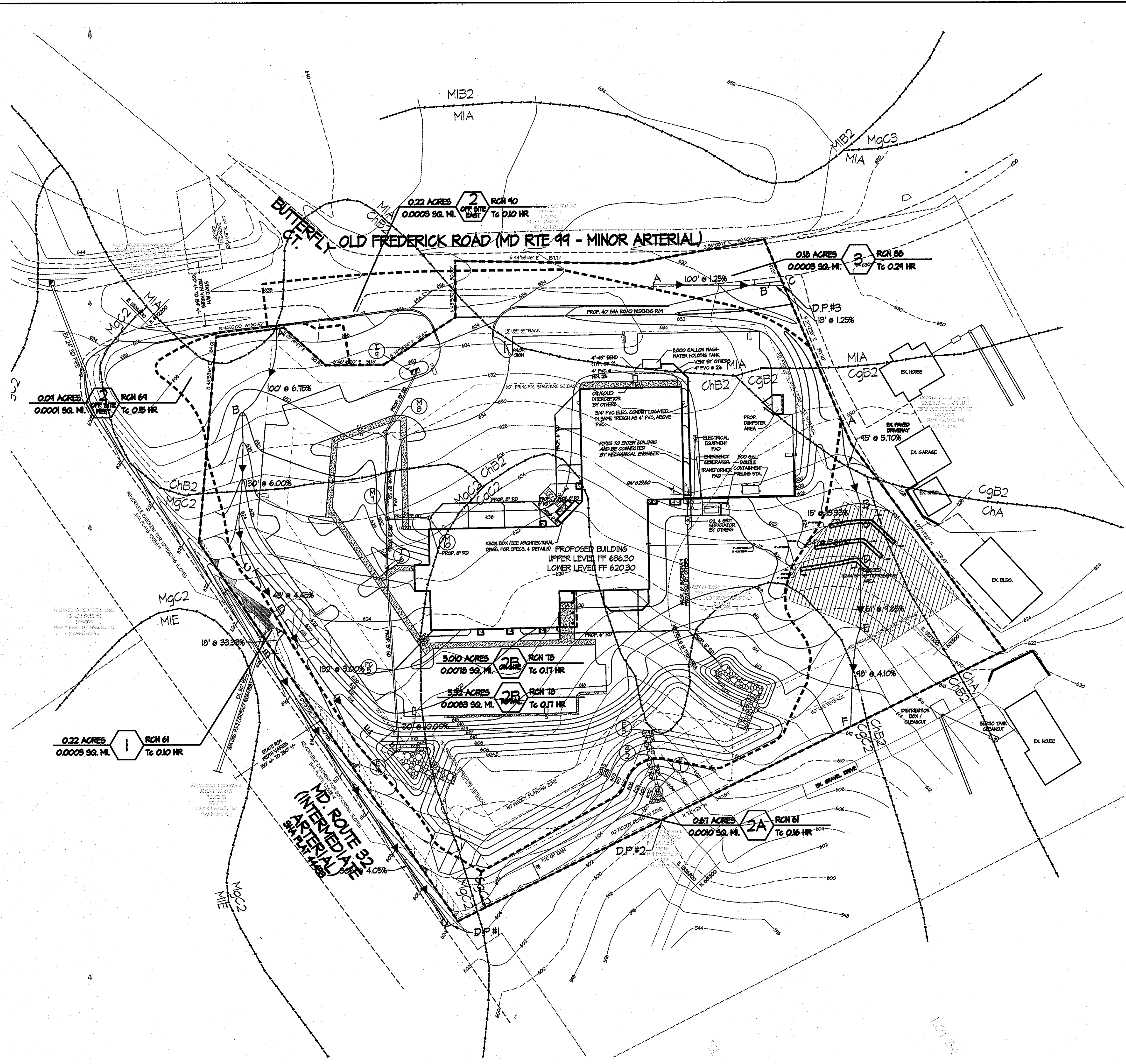
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
JAMES M. IRVIN, DIRECTOR 8/14/07 DATE
APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
B. Wilson for Peter Badenoch, MD 9/6/07 DATE
APPROVED: DEPARTMENT OF PLANNING & ZONING
DIRECTOR 9/10/07 DATE

EDMEADES & STROMDAHL, LTD. ARCHITECTS / PLANNERS
11 North Main Street Bel Air, Maryland 21014
Phone: 410.879.0388 Fax: 410.879.4785
E-mail: mcr@edmeades-stromdahl.com
SITE RESOURCES, INC. LAND PLANNING / SITE DESIGN
14315 Jarrettsville Pike Phoenix, Maryland 21131
Phone: 410.683.3388 Fax: 410.683.3389
www.siteresourcesinc.com

Table with columns for DES, DRN, CHK, SRI, and rows for GRM, AM, REM/KRK, and a revision table with columns for BY, NO., REVISION, DATE.

CONSULTANT'S HAZARD CLASS CERTIFICATION
I certify that this pond meets all requirements for hazard class (A). [Requirements as stated in the USDA NATURAL RESOURCES CONSERVATION SERVICE - MARYLAND CONSERVATION PRACTICE STANDARD FOR POND, CODE 318, JANUARY 2000.] All necessary investigations and computations have been performed to verify this finding. A copy of said information has been supplied to N.R.C.S./H.S.C.D.
Signature: Kevin R. Kinsey MD License No. 13876 Date:
Print Name: Kevin R. Kinsey

Stormwater Management Pond Plan
WEST FRIENDSHIP VOLUNTEER FIRE CO. Capital Project No. F-5965, Howard County, Maryland
OWNER: West Friendship Volunteer Firemens Association Inc.
ADDRESS / PERMIT INFORMATION: 12355 Old Frederick Rd., Sykesville MD 21784
SCALE: 1"=20' SHEET 21 OF 28



Vicinity Map Scale: 1" = 2000'

**LEGEND**

- PROPERTY LINE
- - - EXISTING CONTOURS
- - - PROPOSED CONTOURS
- - - EXISTING CURB & GUTTER
- - - PROPOSED CURB & GUTTER
- NeB2
- GcB2
- 15" SD
- 30" RCCP
- - - DRAINAGE AREA
- Tc PATH
- EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS

TOTAL AREA ON SITE: 631 SF

**NOTE:**  
ANY ADDITIONAL IMPERVIOUS ADDED TO THIS PLAN WILL REQUIRE STORMWATER MANAGEMENT TO BE REEVALUATED.

**NOTE:**  
CHANGES HAVE OCCURRED TO THIS PLAN. THESE CHANGES DO NOT AFFECT DRAINAGE AREAS, TC PATHS, RCN, OR QS. SEE OTHER SHEETS IN THIS PLAN SET FOR THESE CHANGES.

SOILS CHART		HYDROLOGIC SOIL GROUP
SYMBOL	NAME	
GcB2	CHESTER GRAVELLY SILT LOAM	B
CgC2	CHESTER GRAVELLY SILT LOAM	B
ChA	CHESTER SILT LOAM	B
ChB2	CHESTER SILT LOAM	B
MIA	MANOR LOAM	B
MgC2	MANOR GRAVELLY LOAM	B

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

*[Signature]* 8/6/07  
USDA - Natural Resources Conservation Service Date

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

*[Signature]* 8/9/07  
Howard Soil Conservation District Date

**BY THE ENGINEER:**

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

*[Signature]* 8/16/07  
Signature of Engineer Date

**KENNETH R. KUBSEY**  
Printed Name of Engineer

**BY THE DEVELOPER:**

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

*[Signature]* 8/3/07  
Signature of Engineer Date

**H. Mitchell Day**  
Printed Name of Engineer

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*[Signature]* 8/14/07  
JAMES M. IRVIN, DIRECTOR DATE

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

*[Signature]* 9/6/07  
COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

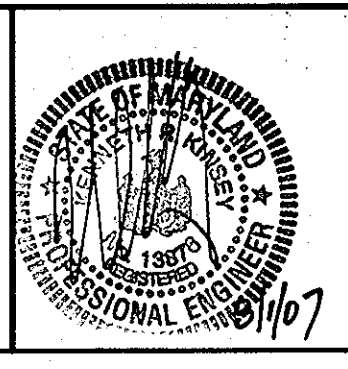
*[Signature]* 9/16/07  
DIRECTOR DATE

*[Signature]* 9/13/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 9/16/07  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**EDMEADES & STROMDAHL, LTD.**  
ARCHITECTS / PLANNERS  
11 North Main Street Bel Air, Maryland 21014  
Phone: 410.879.0388 Fax: 410.879.4785  
E-mail: mce@edmeades-stromdahl.com

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LAND PLANNING / SITE DESIGN  
14315 Jarrettsville Pike Phoenix, Maryland 21131  
Phone: 410.683.3388 Fax: 410.683.3389  
www.siteresourcesinc.com



DES: CRM			
DRN: AM			
CHK: REM/KRK			
DATE 12/08/06	BY NO.	REVISION	DATE
		REDLINE REVISION	8/25/07

**Proposed Drainage Area Map**

600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
Capital Project No. F-5465, Howard County, Maryland

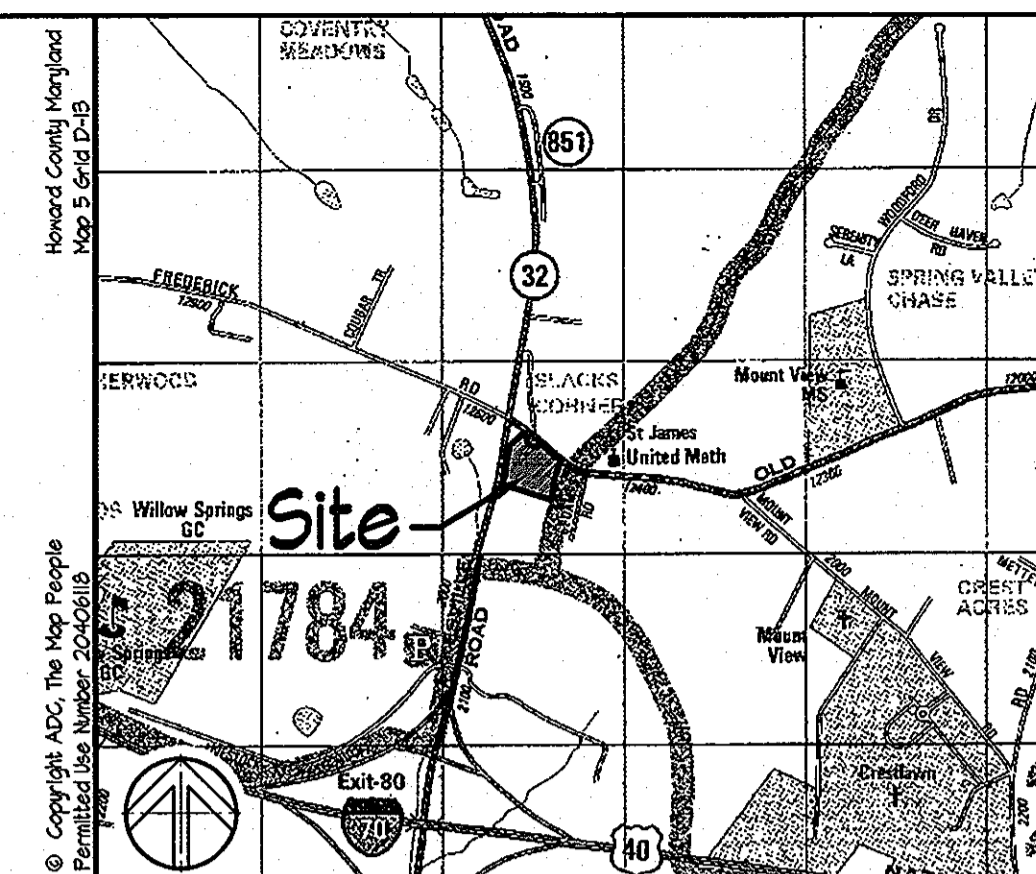
**OWNER:**  
West Friendship Volunteer Firemens Association Inc.  
12460 Frederick Rd  
West Friendship, MD 21794  
Phone (410) 745-1294

**ADDRESS / PERMIT INFORMATION:**  
PARCEL #210  
L 89B / F 624  
GRID No. 25, ZONE RR-DEO, TAX MAP No. 9  
3rd Election District, Census Tract 6030  
WATER CODE: Private, SEWER CODE: Private

**CT.02**

SCALE: 1" = 50'

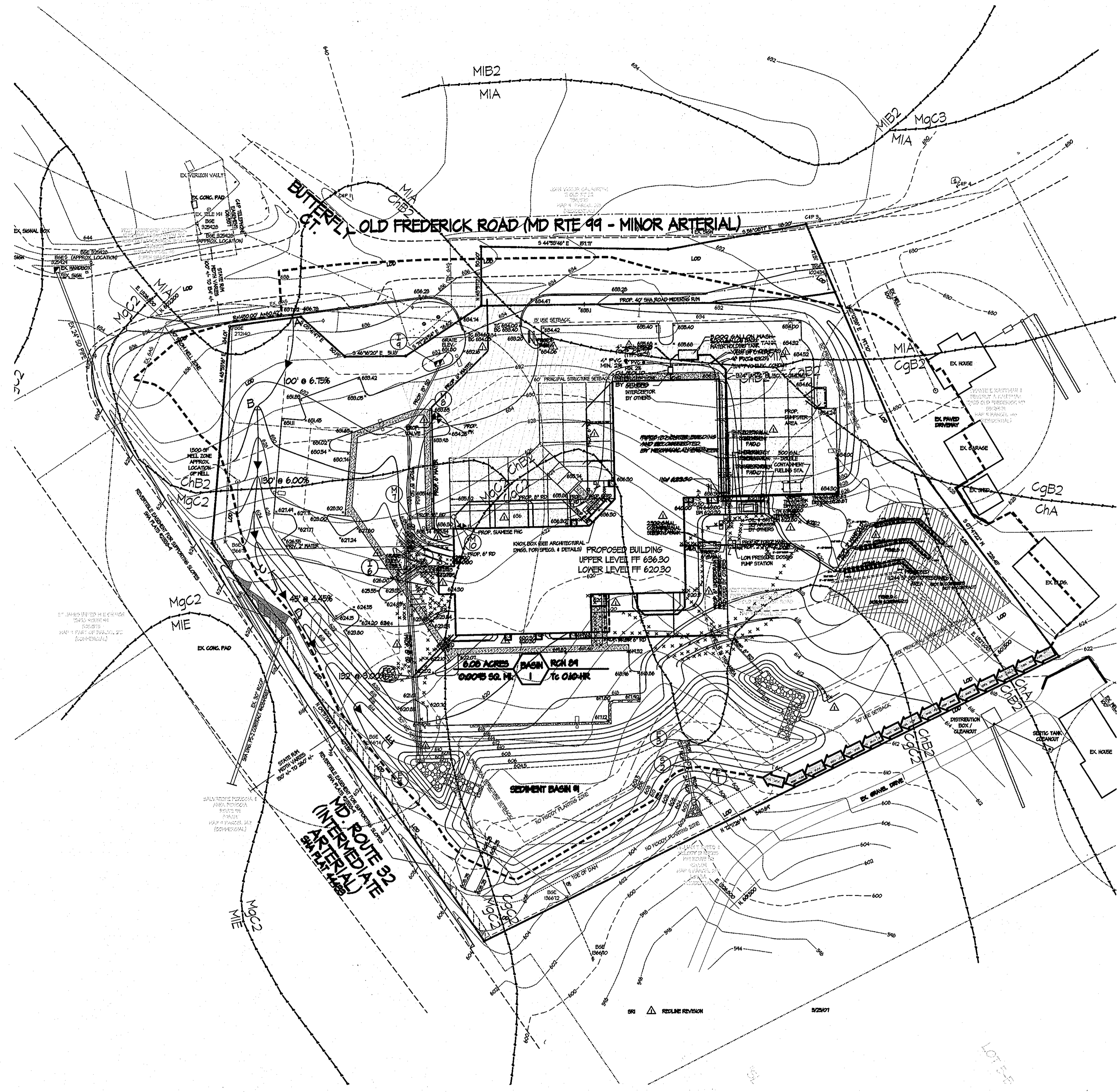
SHEET 20 OF 28



Vicinity Map Scale: 1" = 2000'

**LEGEND**

	PROPERTY LINE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	SOILS LINE
	SOILS LINE
	EXISTING STORM DRAINS
	PROPOSED STORM DRAIN
	DRAINAGE AREA
	TIME OF CONCENTRATION PATH
	EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 697 SF



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.  
*[Signature]* 8/9/07  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*[Signature]* 8/9/07  
 HOWARD SOIL CONSERVATION DISTRICT DATE

**ENGINEER'S CERTIFICATE**  
 I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.  
*[Signature]* 8/16/07  
 ENGINEER DATE

**DEVELOPER'S CERTIFICATE**  
 I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.  
*[Signature]* 8/13/07  
 DEVELOPER DATE

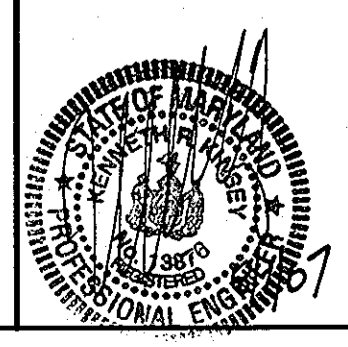
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 8/14/07  
 JAMES M. IRVIN, DIRECTOR DATE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
*[Signature]* 9/6/07  
 COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING  
*[Signature]* 7/19/07  
 DIRECTOR DATE  
*[Signature]* 8/13/07  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*[Signature]* 9/6/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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DRN: AM			
CHK: REMKRC			
DATE: 12/08/06	BY: NO.	REVISION	DATE
		RELINE REVISION	5/25/07

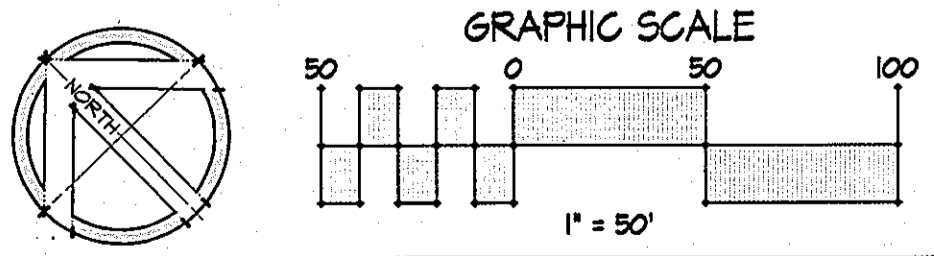
**Proposed Temporary Stormwater Management Drainage Area Map**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5965, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Fireman's Association, Inc.  
 12460 Frederick Rd  
 West Friendship, MD 21784  
 Phone (410) 745-1294

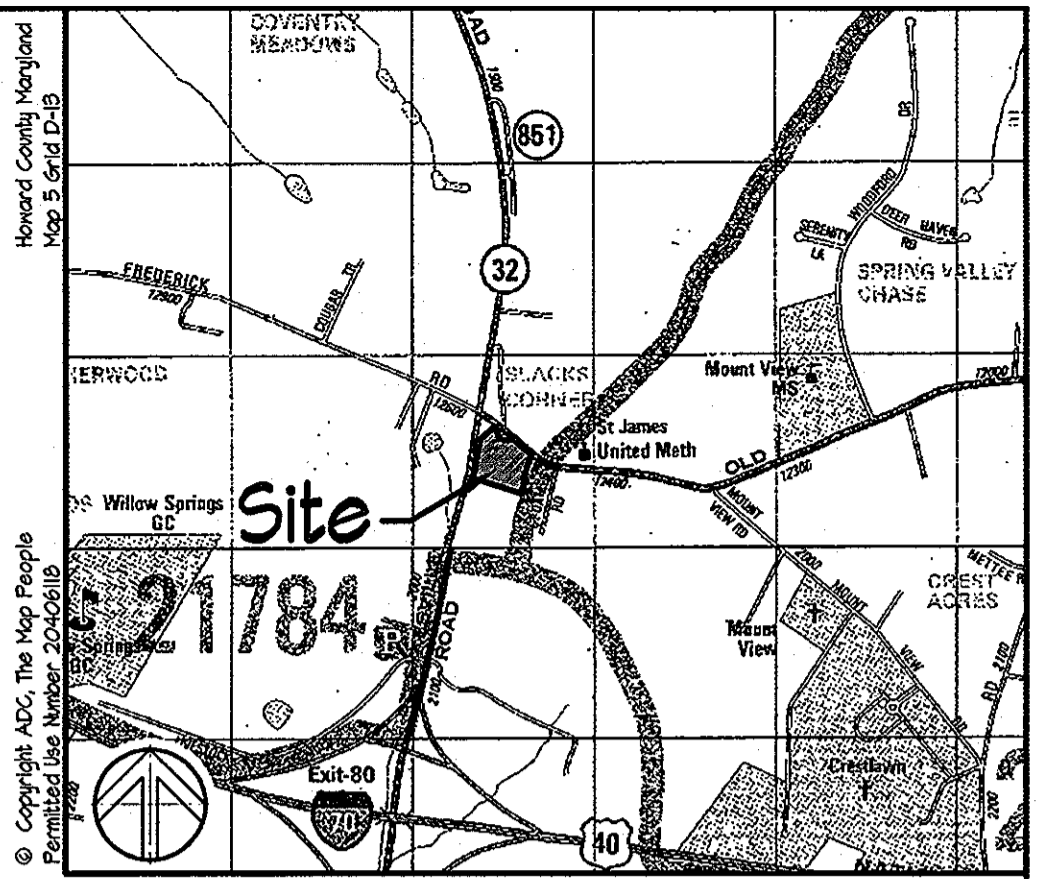
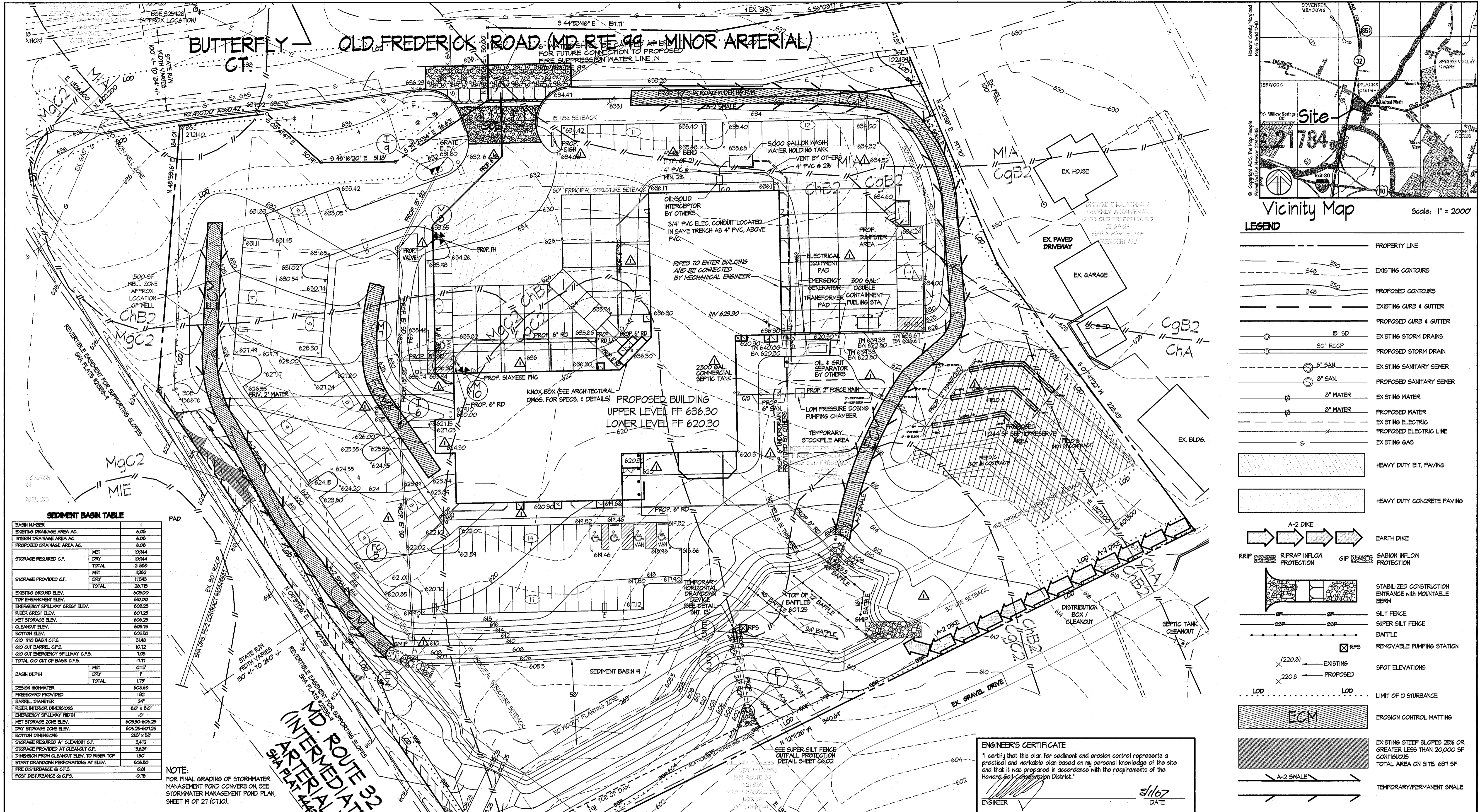
**SOILS CHART**

SYMBOL	NAME	HYDROLOGIC SOIL GROUP
GcB2	CHESTER GRAVELLY SILT LOAM	B
GcC2	CHESTER GRAVELLY SILT LOAM	B
ChA	CHESTER SILT LOAM	B
ChB2	CHESTER SILT LOAM	B
MIA	MANOR LOAM	B
MgC2	MANOR GRAVELLY LOAM	B

**NOTE**  
 CHANGES HAVE OCCURRED TO THIS PLAN. THESE CHANGES DO NOT AFFECT DRAINAGE AREAS, TC PATHS, RCH, OR Q'S. SEE OTHER SHEETS IN THIS PLAN SET FOR THESE CHANGES.



C6.12  
 SCALE: 1"=50'  
 SHEET 18 OF 28



Vicinity Map Scale: 1" = 2000'

**LEGEND**

	PROPERTY LINE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	EXISTING STORM DRAINS
	PROPOSED STORM DRAIN
	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
	EXISTING WATER
	PROPOSED WATER
	EXISTING ELECTRIC LINE
	PROPOSED ELECTRIC LINE
	EXISTING GAS
	HEAVY DUTY BIT. PAVING
	HEAVY DUTY CONCRETE PAVING
	EARTH DIKE
	RIPRAP INFLOW PROTECTION
	GABION INFLOW PROTECTION
	STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM
	SUPER SILT FENCE
	BAFFLE
	REMOVABLE PUMPING STATION
	SPOT ELEVATIONS
	LIMIT OF DISTURBANCE
	EROSION CONTROL MATTING
	EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 631 SF
	TEMPORARY/PERMANENT SWALE

**SEDIMENT BASIN TABLE**

BASIN NUMBER	I
EXISTING DRAINAGE AREA AC.	6.09
INTERNAL DRAINAGE AREA AC.	6.09
PROPOSED DRAINAGE AREA AC.	6.09
STORAGE REQUIRED C.F.	
NET	10.944
DRY	10.944
TOTAL	21.888
STORAGE PROVIDED C.F.	
NET	13.82
DRY	13.82
TOTAL	27.64
EXISTING GROUND ELEV.	605.00
TOP EMBANKMENT ELEV.	610.00
EMERGENCY SPILLWAY CREST ELEV.	608.25
RISER CREST ELEV.	607.25
NET STORAGE ELEV.	606.25
CLEANOUT ELEV.	605.75
BOTTOM ELEV.	605.50
6"O INTD BASIN C.F.S.	91.49
6"O OIT BARREL C.F.S.	10.12
6"O OIT EMERGENCY SPILLWAY C.F.S.	1.25
TOTAL 6"O OIT OF BASIN C.F.S.	11.11
TOTAL 6"O OIT OF BASIN C.F.S.	0.19
BASIN DEPTH	
NET	1.75
DRY	1.75
TOTAL	1.75
DESIGN HIGHWATER	608.89
FREESD PROVIDED	132
BARREL DIAMETER	24"
RISER INTERIOR DIMENSIONS	6'0" x 8'0"
EMERGENCY SPILLWAY WIDTH	10'
NET STORAGE ZONE ELEV.	605.50-606.25
DRY STORAGE ZONE ELEV.	606.25-607.25
BOTTOM DIMENSIONS	28' x 50'
STORAGE REQUIRED AT CLEANOUT C.F.	9.42
STORAGE PROVIDED AT CLEANOUT C.F.	9.21
DIMENSION FROM CLEANOUT ELEV. TO RISER TOP	150"
START DRANDOWN PERFORMANCES AT ELEV.	606.50
FIRE DISTURBANCE @ C.F.S.	0.81
POST DISTURBANCE @ C.F.S.	0.19

NOTE: FOR FINAL GRADING OF STORMWATER MANAGEMENT POND CONVERSION, SEE STORMWATER MANAGEMENT POND PLAN, SHEET 14 OF 27 (C11.0).

**ENGINEER'S CERTIFICATE**  
 I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.  
 DATE: 8/16/07  
 ENGINEER: [Signature]

**DEVELOPER'S CERTIFICATE**  
 I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.  
 DATE: 8/3/07  
 DEVELOPER: M. Mitchell Day

AREA OF DISTURBANCE: 259,020 SF +/- 1.581 AC +/-  
 REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.  
 DATE: 8/19/07  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE  
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 DATE: 8/3/07  
 HOWARD SOIL CONSERVATION DISTRICT

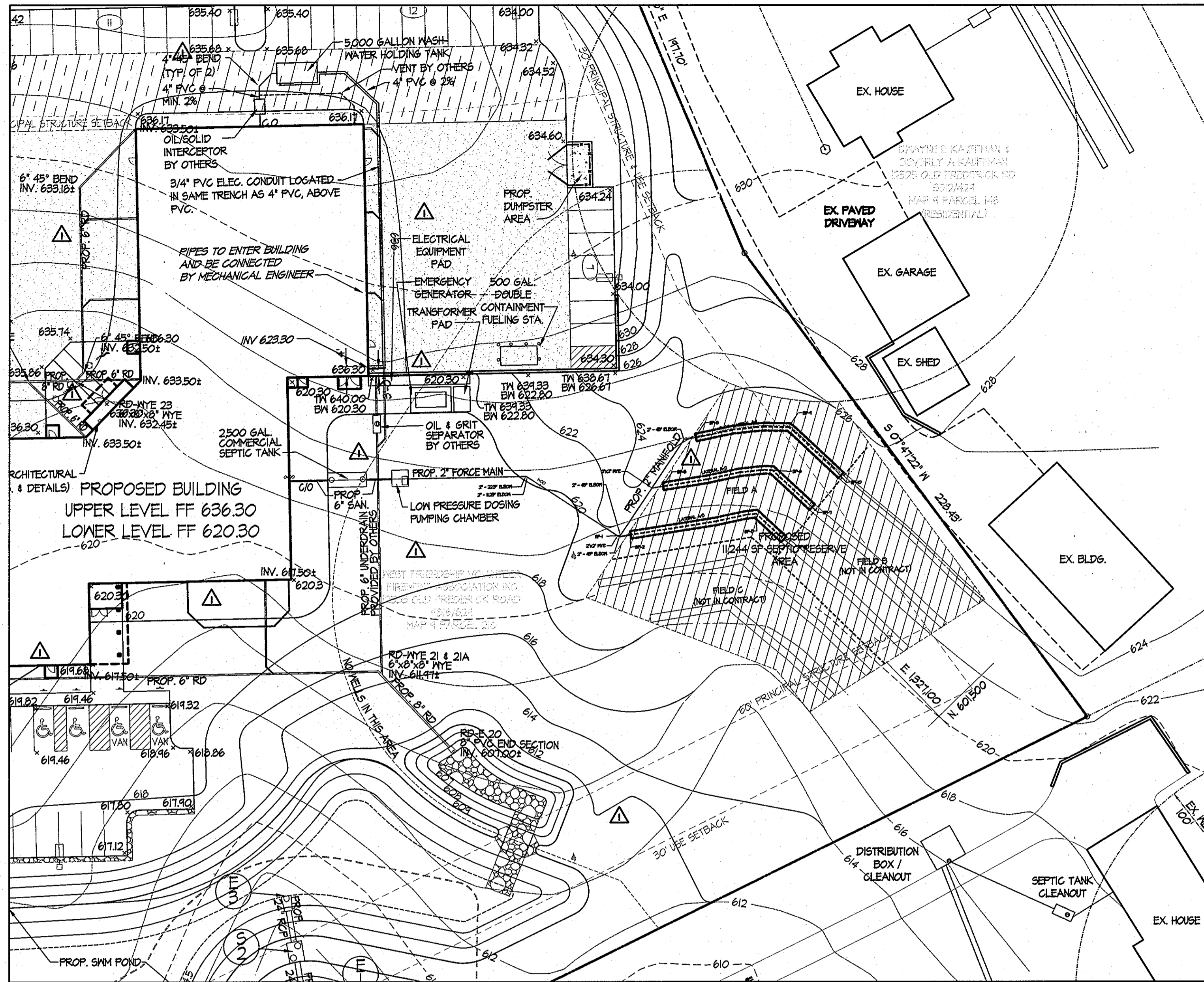
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 DATE: 8/14/07  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 DATE: 9/6/07  
 APPROVED: DEPARTMENT OF PLANNING & ZONING  
 DATE: 9/16/07

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 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mce@edmeades-stromdahl.com

**SITE RESOURCES, INC.**  
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 14315 Jarrettville Pike Phoenix, Maryland 21131  
 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com

**Grading and Sediment Control Plan**  
 DES: CRM  
 DRN: AM  
 CHK: REM/KRK  
 DATE: 12/08/06  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER: West Friendship Volunteer Firemens Association Inc.  
 ADDRESS / PERMIT INFORMATION:  
 12460 Frederick Rd, Sykesville MD 21154  
 ADDRESS: 12595 Old Frederick Rd, Sykesville MD 21154  
 PARCEL #210  
 L 8916 / F 1624  
 GRID No. 23, ZONE: RR-DO, TAX MAP No. 9  
 3rd Election District, Census Tract 6080  
 WATER CODE: Private, SEWER CODE: Private  
 SCALE: 1" = 30'  
 SHEET 14 OF 28  
 SDP-07-017



**PLAN**  
SCALE: 1" = 30'

**SEPTIC CALCULATIONS**

\*SEPTIC TANK AND LOW PRESSURE DOSING SYSTEM TO BE DESIGNED AND APPROVED PRIOR TO INSTALLATION PERMIT. PUMPING CHAMBER SHALL BE DESIGNED TO PROVIDE ADEQUATE STORAGE TO ACCOMMODATE A DESIGN BASED ON AVERAGE DAILY FLOW. SEE SUPPLEMENTAL PLAN FOR DETAILS AND LOW PRESSURE DOSING SYSTEM COMPUTATIONS.

**GALLONS PER DAY**  
DATA FROM SIMILAR FIRE STATIONS (METERED READINGS)  
STATION 6 = 17,200 CF PER QUARTER - HALL USED EACH WEEK 6 VOL. LIVE INS & 1 CAREER EACH NIGHT MIN.  
STATION 7 = 1,200 CF PER QUARTER - NO HALL  
STATION 9 = 16,800 CF PER QUARTER - NO HALL  
STATION 10 = 13,800 CF PER QUARTER - NO HALL  
USE STATION 6 (COMPARATIVE EQUAL COMPARISON)  
17,200 CF PER QUARTER X 7,480 GALLONS/CF = 128,664.6 GALLONS  
128,664.6 GALLONS PER QUARTER ÷ 91.25 DAY/QUARTER = 1,410.02 G.P.D.

**SEPTIC TANK SIZING**  
INDIVIDUAL SEWAGE DISPOSAL SYSTEMS SECTION 16.6.2.a.i REVISED 08/07/06  
 $V = 1125 \text{ GALLONS} + (0.75 \times Q)$  Q = ESTIMATED PEAK FLOW  
 $V = 1125 \text{ GALLONS} + (0.75 \times 1,410) = 2,182.5 \text{ GALLONS}$   
USE 1 2500 GALLON TANK

**DRAIN FIELD SIZING**  
DETERMINE PERC RATE  
WITHIN SDA  
PIT #3 - 5 MIN. NEAR SDA  
PIT #6 - 10 MIN.  
PIT #7 - 6 MIN.  
PIT #12 - VISUAL OK  
24 MIN.  
+ 3  
4.67 MIN.  
PIT #2 - 5 MIN.  
PIT #8 - 3 MIN.  
PIT #10 - 2 MIN.  
PIT #15 - VISUAL OK  
44 MIN.  
+ 7  
6.29 MIN.

**ABSORPTIVE RATE**  
PER COMAR 26.04.02.05.11 MAXIMUM APPLICATION FOR SITE IS 1.6 GALLONS PER SQ FT PER DAY.  
PER HOWARD COUNTY USE 0.8 GALLONS PER SQ FT PER DAY

**TRENCH SIZING**

1410 GPD ÷ 0.8 GALLONS = 1,762.5 SQ FT ABSORPTIVE AREA  
USE 1,763 SQ FT ABSORPTIVE AREA  
1,763 SQ FT ÷ 3' TRENCH WIDTH = 587.67 LF WITHOUT SIDEWALL  
SAY 588 LF

**USING SIDEWALLS**

PIT 3 BREAK @ 3.0' PIT 2 BREAK @ 4.0'  
PIT 6 BREAK @ 4.5' PIT 8 BREAK @ 1.5'  
PIT 7 BREAK @ 2.0' PIT 10 BREAK @ 2.0'  
PIT 12 BREAK @ SURFACE PIT 15 BREAK @ 2.0'  
45' + 4' = 49' ÷ 2.55' = 19.22  
USE 25' AVG.

**USING 6" TRENCH (PER MIKE DAVIS 04-21-06)**

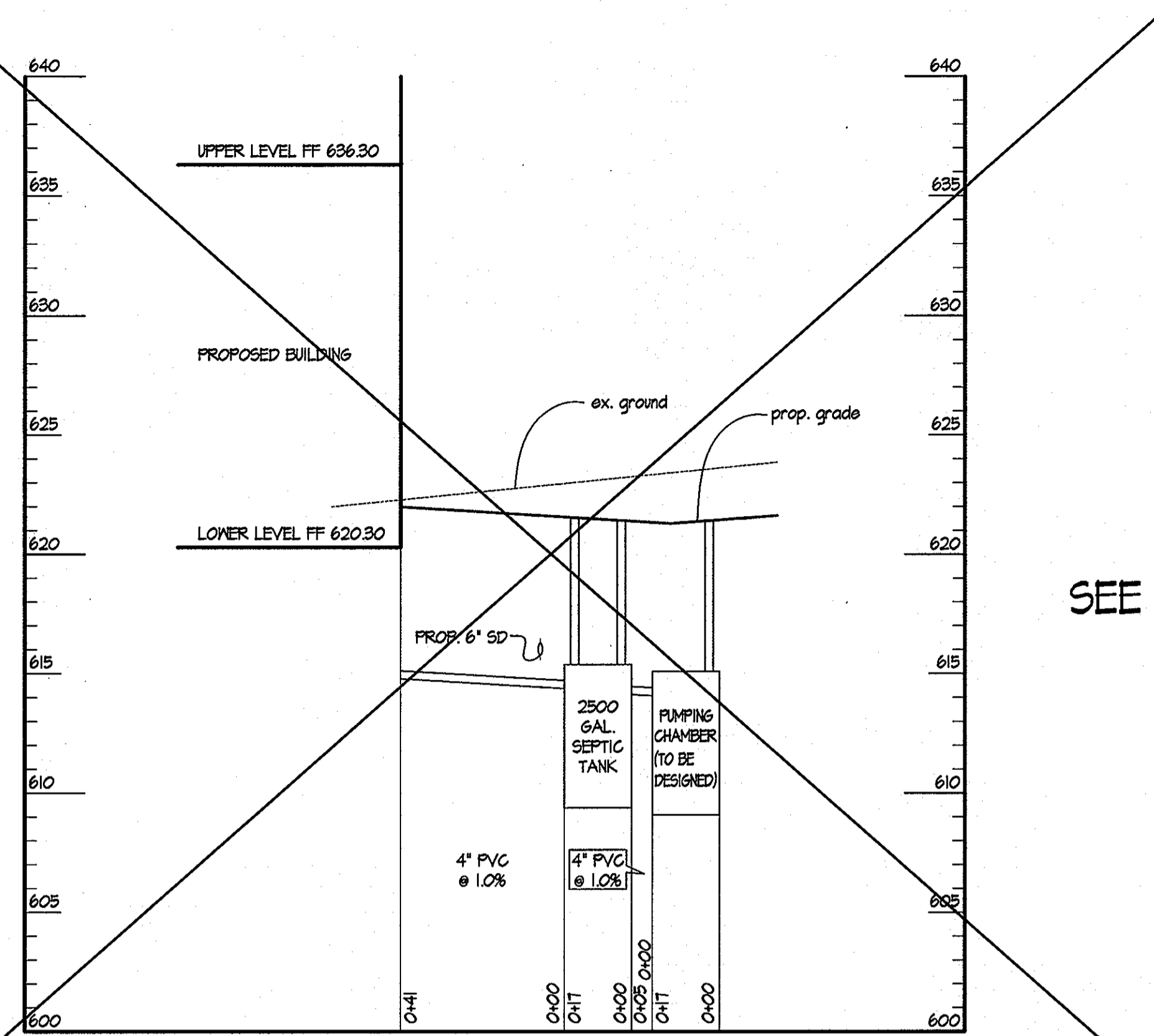
6" - 2.5 = 5.5" SIDEWALL USAGE

PERCENT LENGTH  $\frac{W \times 2}{W \times 2 + 2.5} = \frac{3 \times 2}{3 \times 2 + 2.5} = 0.33$

588 × 0.33 = 194.04 LF REQUIRED WITH SIDEWALL  
SAY 195 LF

SEPERATION  $2 \times W + 1 = (2 \times 3) + 1 = 7'$  SEPERATION

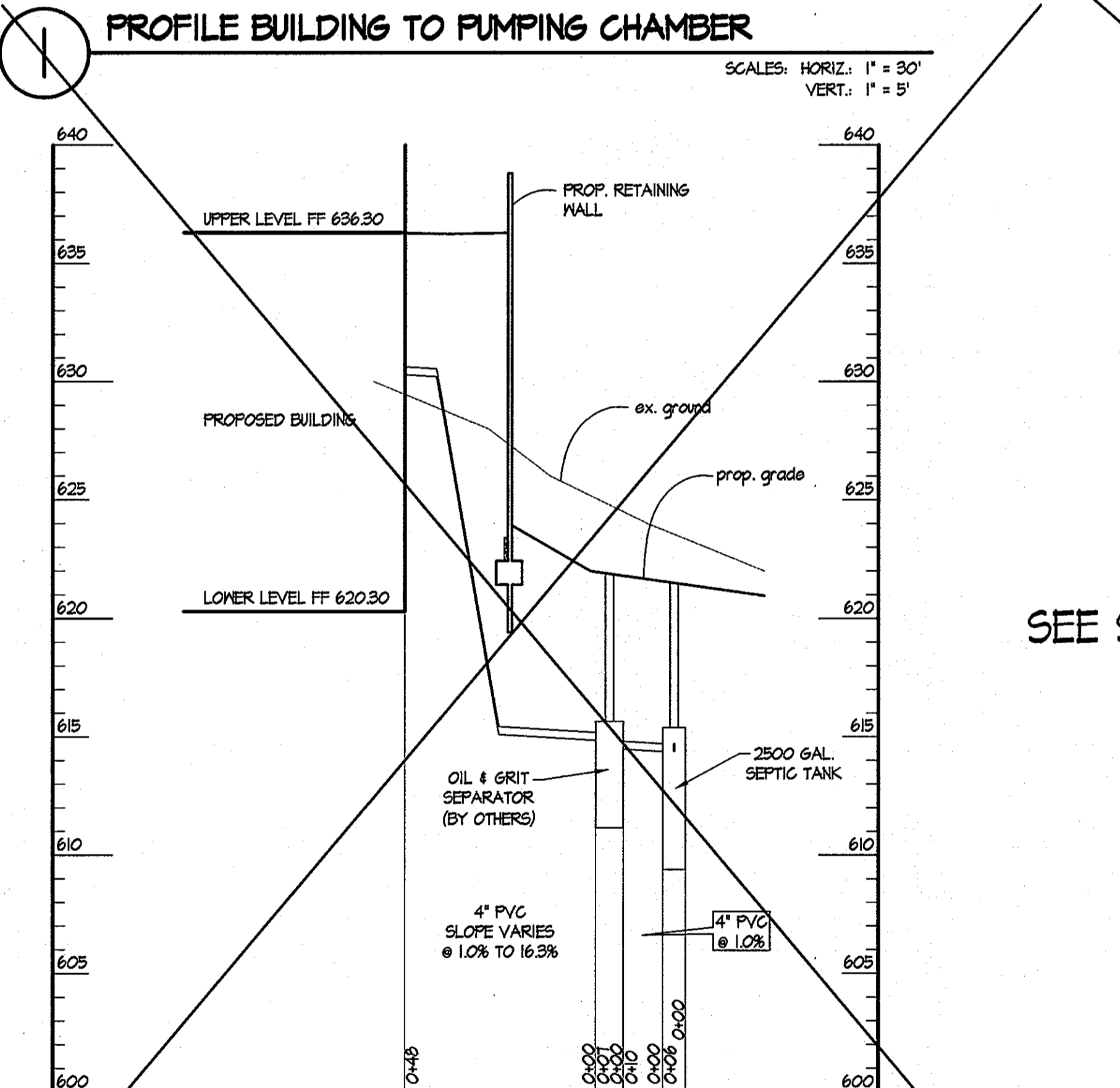
195 LF X 3 SYSTEMS = 585 LF FOR FULL SYSTEM + 2 BACKUP



**PROFILE BUILDING TO PUMPING CHAMBER**

SCALE: HORIZ. 1" = 30'  
VERT. 1" = 5'

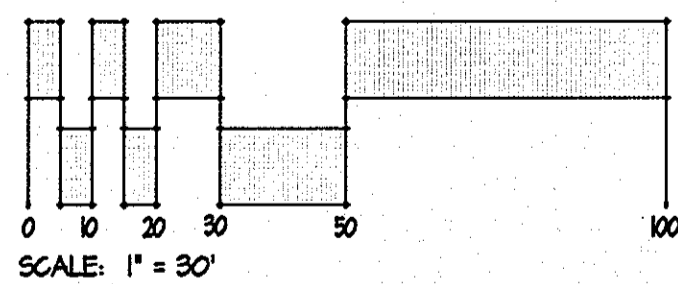
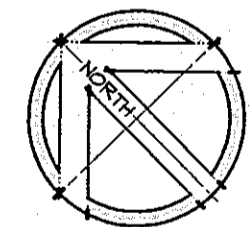
SEE SUPPLEMENTAL PLANS



**PROFILE BUILDING THROUGH OIL & GRIT SEPARATOR TO SEPTIC TANK**

SCALE: HORIZ. 1" = 30'  
VERT. 1" = 5'

SEE SUPPLEMENTAL PLANS



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*James M. Irvin*  
JAMES M. IRVIN, DIRECTOR DATE

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

*Brian M. Peter Belavon, MD*  
BRIAN M. PETER BELAVON, MD DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

*David A. Boyle*  
DIRECTOR DATE  
*Michael J. ...*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Chris ...*  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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ARCHITECTS / PLANNERS  
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E-mail: mce@edmeades-stromdahl.com

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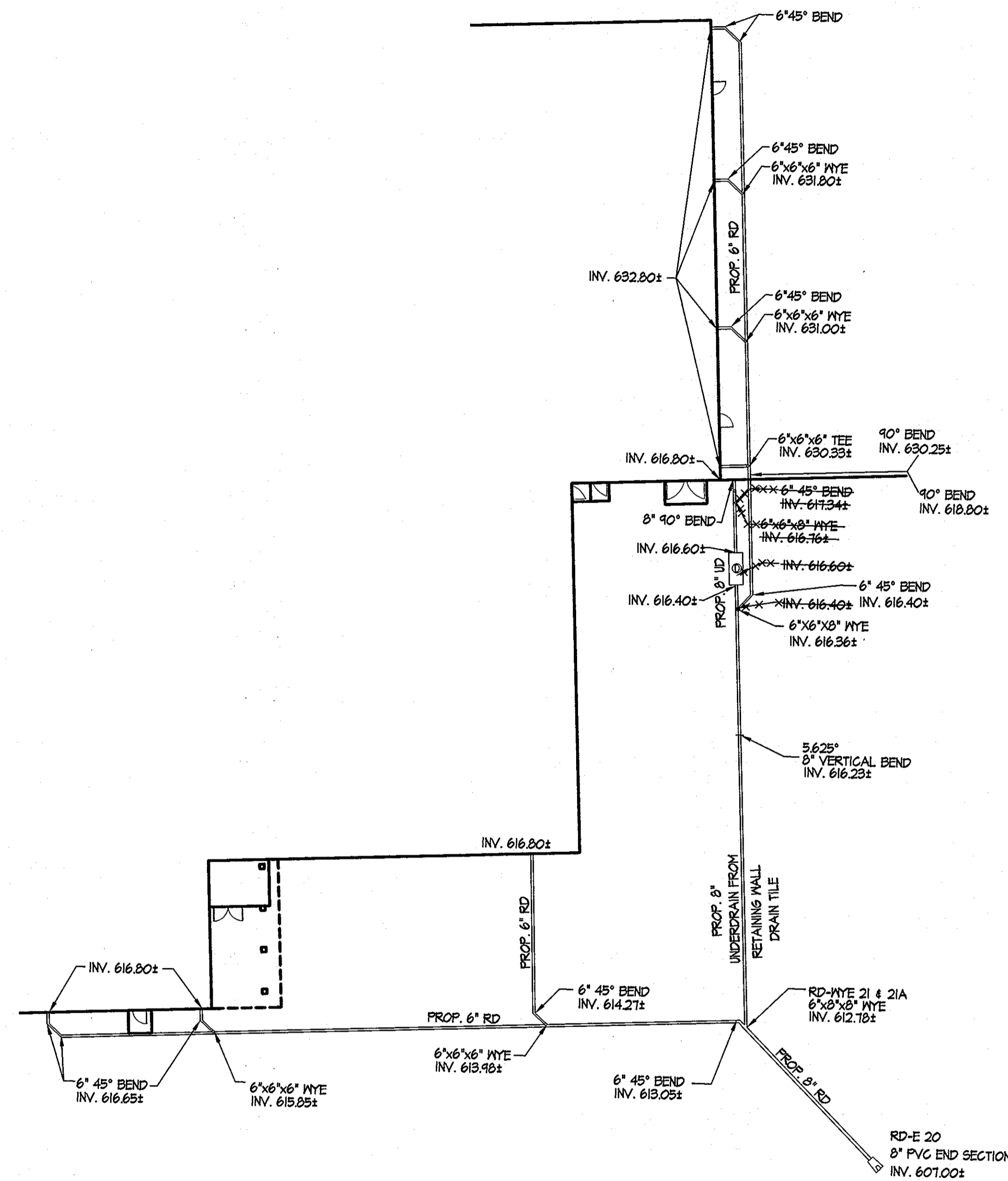
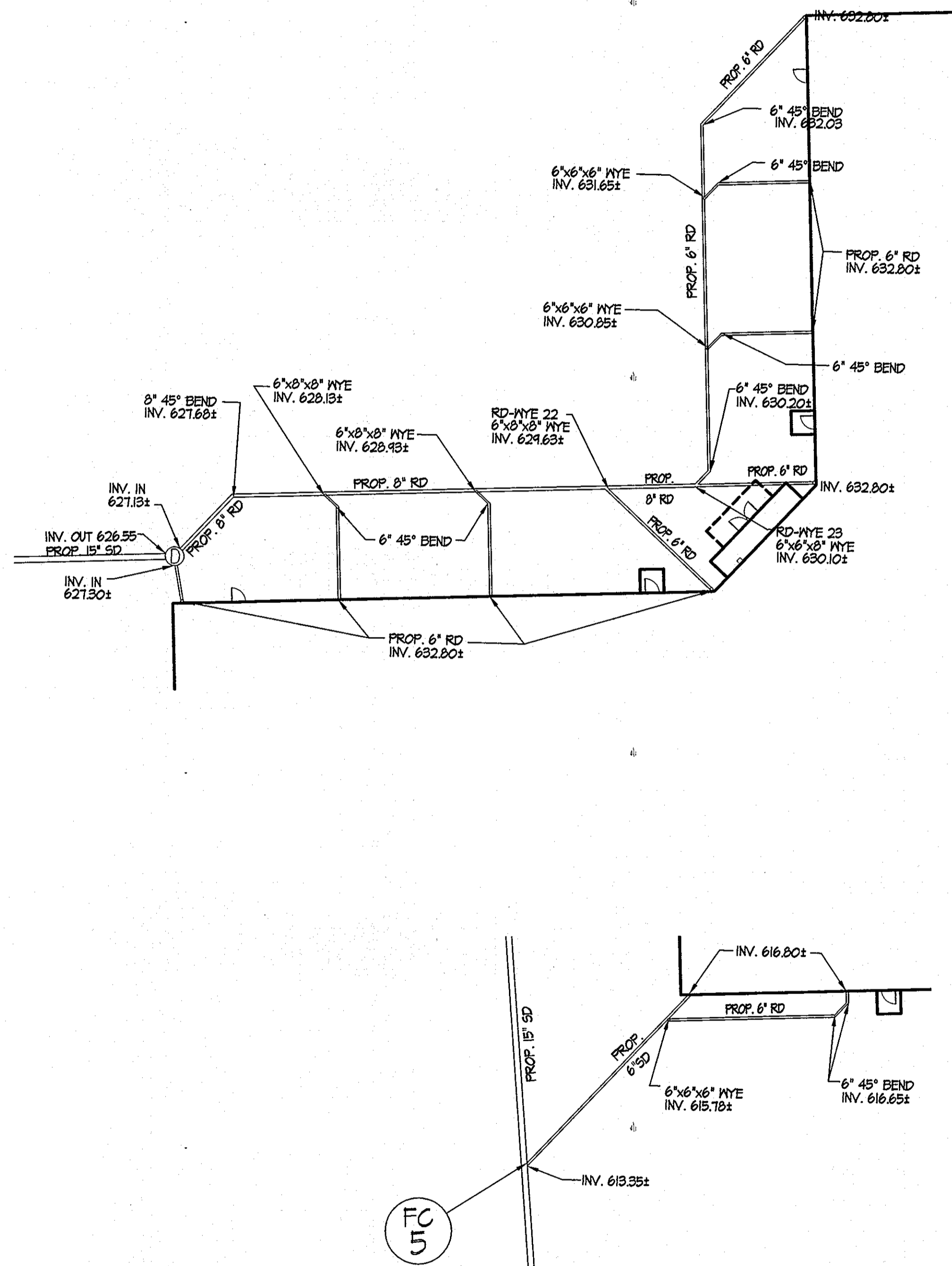
DES: CRM			
DRN: AM			
CHK: REM/KRK			
DATE 12/08/06	BY NO.	REVISION	DATE

**Sanitary Plan & Profiles**  
600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
Capital Project No. F-5965, Howard County, Maryland  
OWNER:  
West Friendship Volunteer Firemen's Association Inc.  
12460 Frederick Rd.  
West Friendship, MD 21794  
Phone (410) 785-1294  
ADDRESS / PERMIT INFORMATION:  
ADDRESS: 12935 Old Frederick Rd., Sykesville MD 21784  
PARCEL #210  
L:8916 / F:524  
GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
3rd Election District, Census Tract 6030  
WATER CODE: Private, SEWER CODE: Private

C5.03

SCALE: AS SHOWN  
SHEET 13 OF 28



ROOF DRAIN SCHEMATIC PLAN ▲

SCALE: 1" = 20'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*James M. Irvin* 8/14/07  
 JAMES M. IRVIN, DIRECTOR DATE

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

*Peter Beileman, MD* 9/6/07  
 COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

*David H. Lytle* 7/6/07  
 DIRECTOR DATE  
*William J. Deane* 8/13/07  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*David H. Lytle* 7/6/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**EDMEADES & STROMDAHL, LTD.**  
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 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

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 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com



DES: CRM				
DRN: AM				
CHK: REM/KRK				
DATE: 12/08/06	BY: SRI	NO. 1	REVISION	DATE: 5/25/07

600' SCALE MAP NO.	1	BLOCK NO.	23
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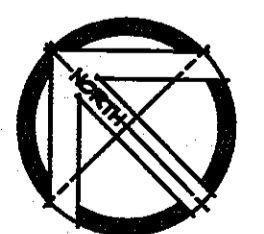
Storm Drain Profiles

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Firemen Association Inc.  
 12460 Frederick Rd  
 West Friendship, MD 21794  
 Phone (410) 795-1234  
 ADDRESS / PERMIT INFORMATION:  
 ADDRESS: 12585 Old Frederick Rd, Sykesville MD 21784  
 PARCEL: 4210  
 L9816 / F.624  
 GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract 6030  
 WATER CODE: Private, SEWER CODE: Private

C5.02  
 A

SCALE:  
 AS SHOWN  
 SHEET  
 12A OF 28

ENTIRE SHEET ADDED



Z:\060501-West Friendship VFD - New S&P\060501\_Revision\03\_02A\_RED.dwg, 8/10/07 12:18:46 PM, Copyright, Site Resources, Inc.

**PROPOSED STORM DRAIN STRUCTURES SCHEDULE**

STRUC. NO.	TYPE	TOP/GRATE ELEVATION	INVERT IN	INVERT OUT	COMMENTS
E-1	STD. 24" RCCP END SECTION C-361	-----	601.50	601.50	
S-2	SPM RISER STRUCTURE SEE SHEET C1.20	-----	604.50	602.00	
E-3	STD. 24" RCCP END SECTION C-361	-----	604.50	602.00	
E-4	STD. 15" RCCP END SECTION	-----	607.00	607.00	
FC-5	STANDARD CUT IN 6"x15"	-----	615.73	618.90	FIELD CUT
M-6	HOWARD COUNTY TYPE 'S' INLET	623.54	619.26	621.30	
M-7	HOWARD COUNTY TYPE 'A' MANHOLE	632.00	625.84	625.84	
M-8	HOWARD COUNTY TYPE 'A' MANHOLE	632.44	626.81	626.81	
M-9	HOWARD COUNTY TYPE DOUBLE 'S' INLET	631.80	621.41	621.41	
M-10	HOWARD COUNTY TYPE 'A' MANHOLE	636.01	621.50 / 621.18 / 621.30	626.55	

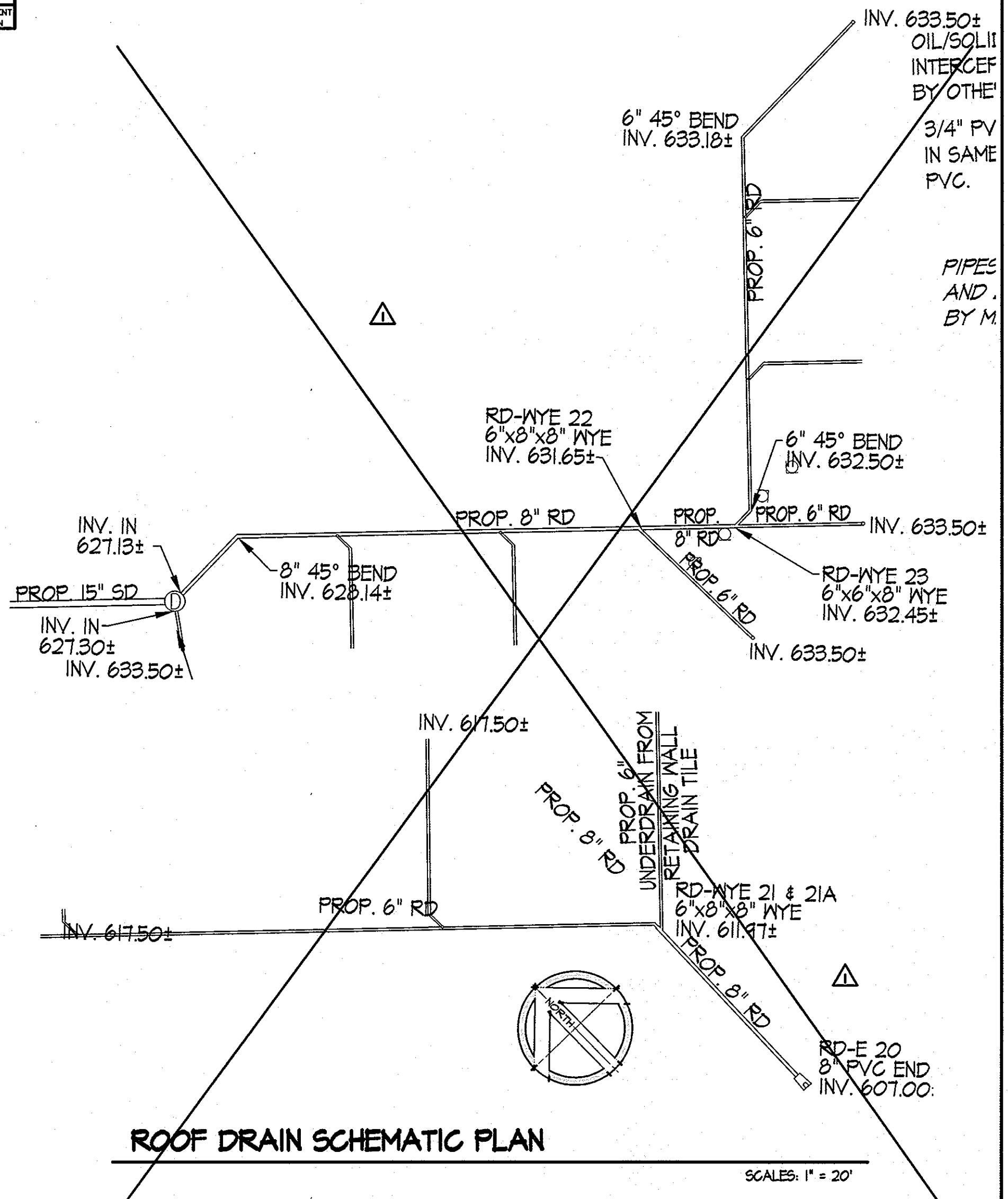
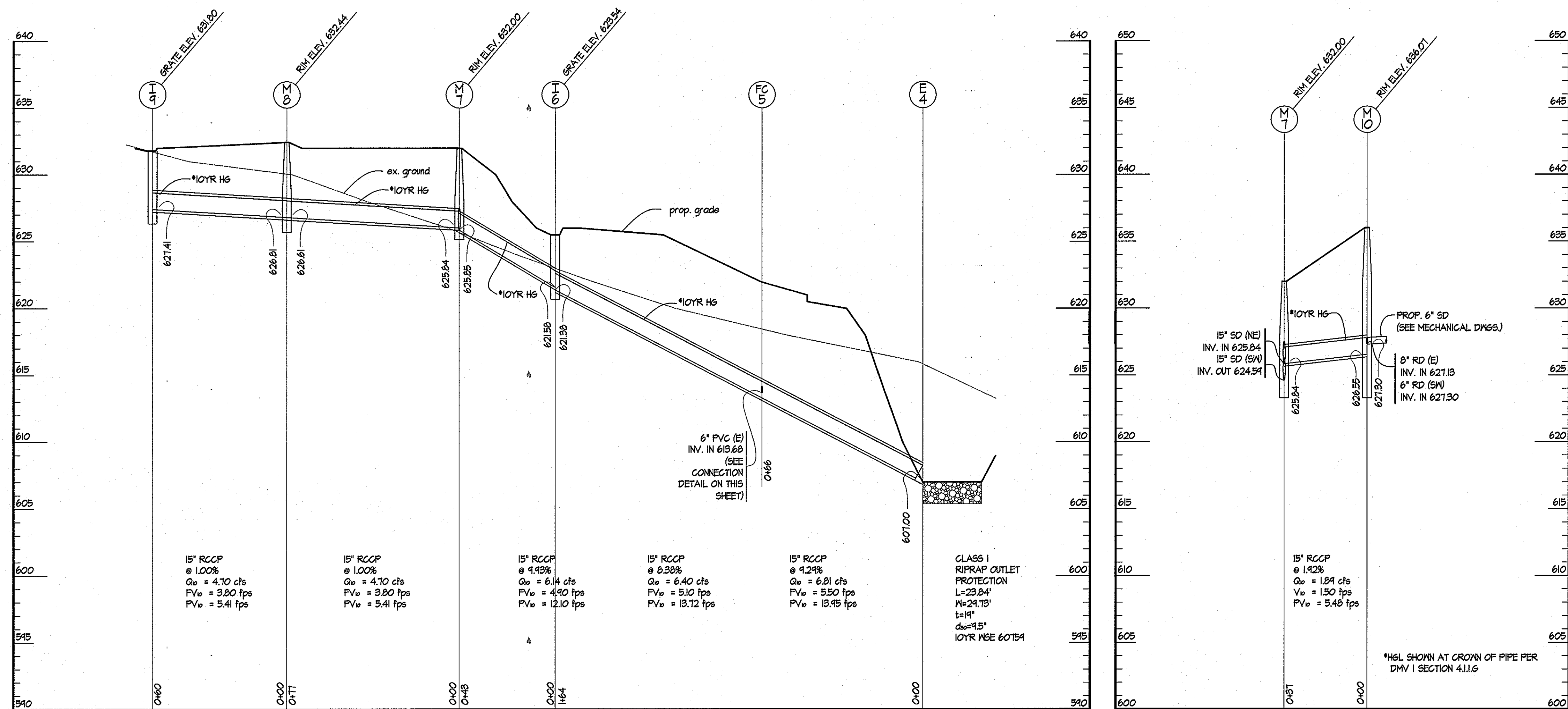
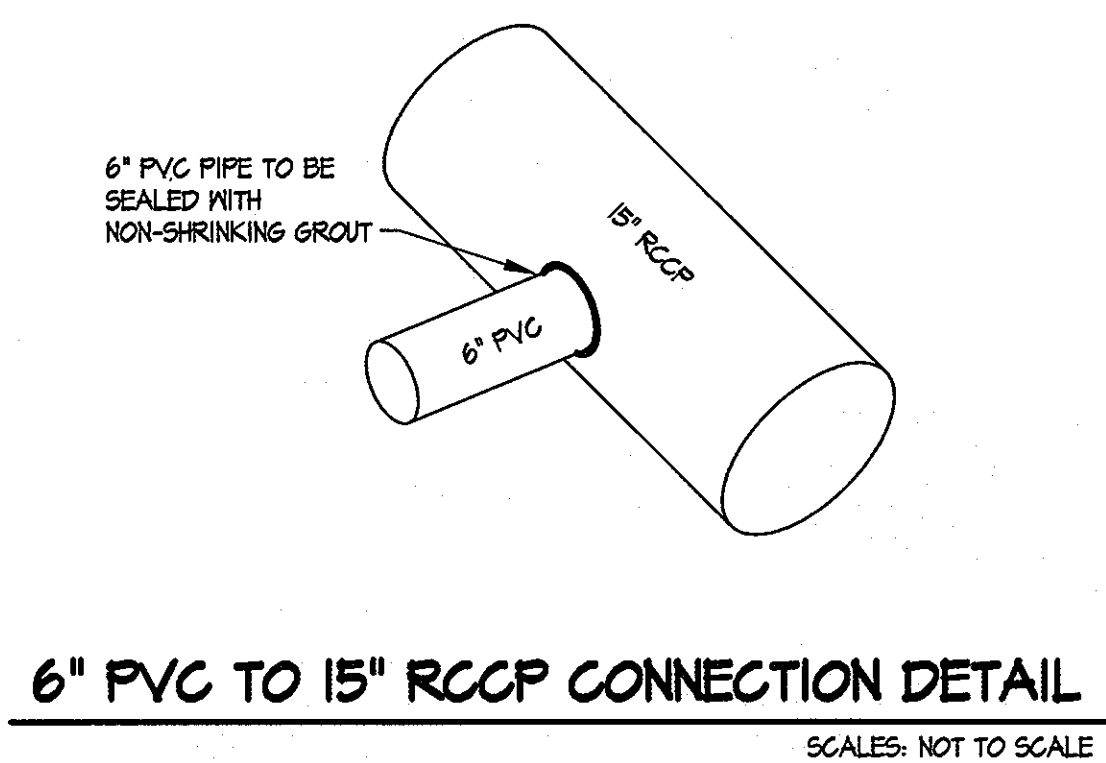
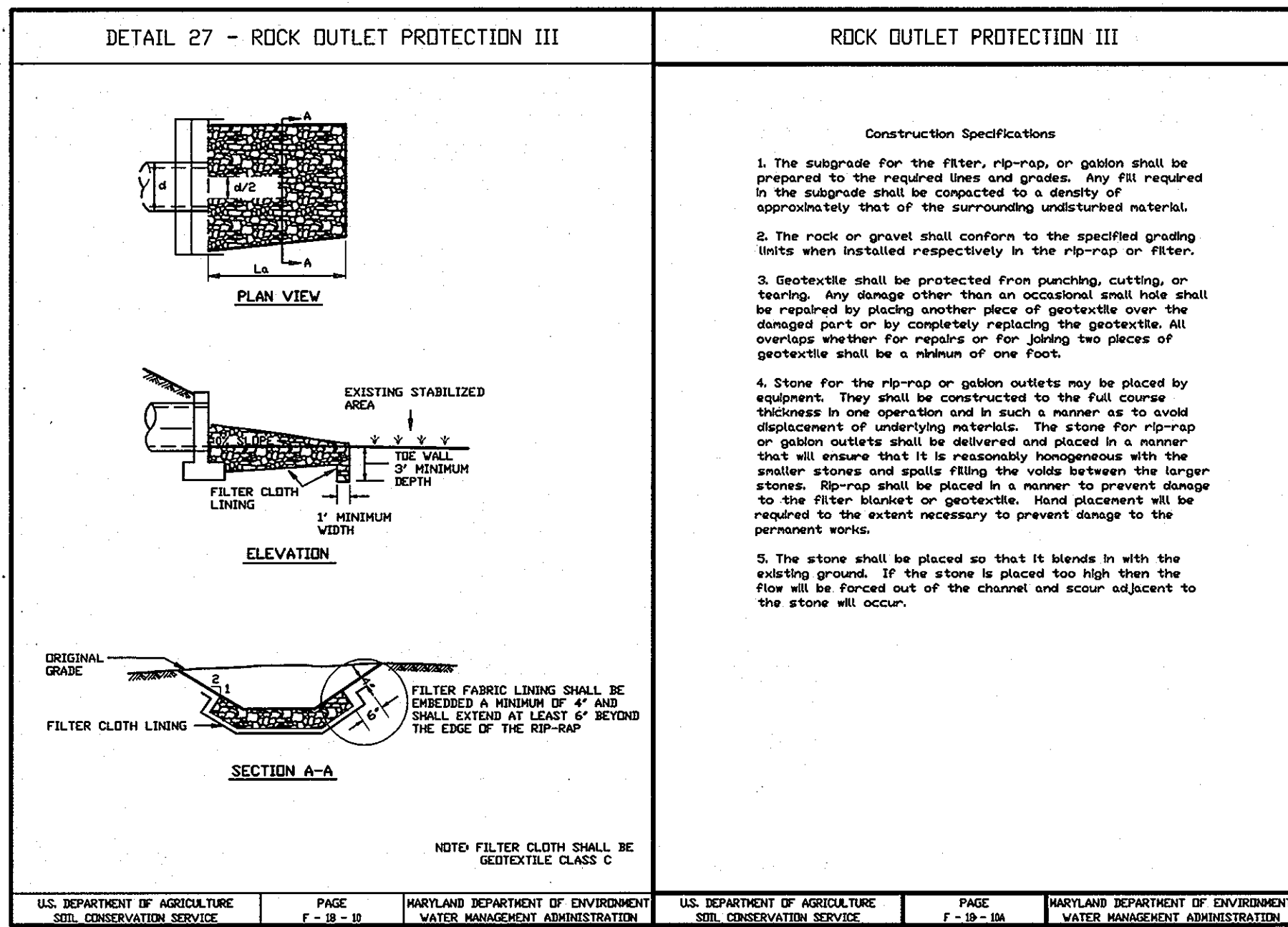
**PROPOSED ROOF DRAIN SCHEDULE**

ITEM	QTY.	DESIGNATION
6" 45° BEND	2	
6" 45° BEND	1	
6" x 6" x 8" WYE	1	RD-NYE 23
6" x 8" x 8" WYE	3	RD-NYE 21, RD-NYE 21A & RD-NYE 22
8" END SECTION	1	RD-E-20
6" PVC	278'	
8" PVC	268'	

**PROPOSED STORM DRAIN PIPE SCHEDULE**

SIZE	TYPE	LENGTH
15"	RCCP	334.30'
24"	RCCP	46'
6"	PVC SCH. 40	345'
8"	PVC SCH. 40	209'

\* ROOF DRAINS SHALL BE A MINIMUM 30" BELOW GRADE  
 \*\* RD-E-20 SHALL OUTFALL AT ELEVATION 607.00



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES M. IRVIN, DIRECTOR  
 DATE: 8/14/07

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 B. J. PETER, COUNTY HEALTH OFFICER  
 DATE: 9/6/07

APPROVED: DEPARTMENT OF PLANNING & ZONING  
 M. R. LEEGHE, DIRECTOR  
 DATE: 9/6/07  
 C. J. DEAN, CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 8/23/07  
 W. J. HART, CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 9/6/07

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 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
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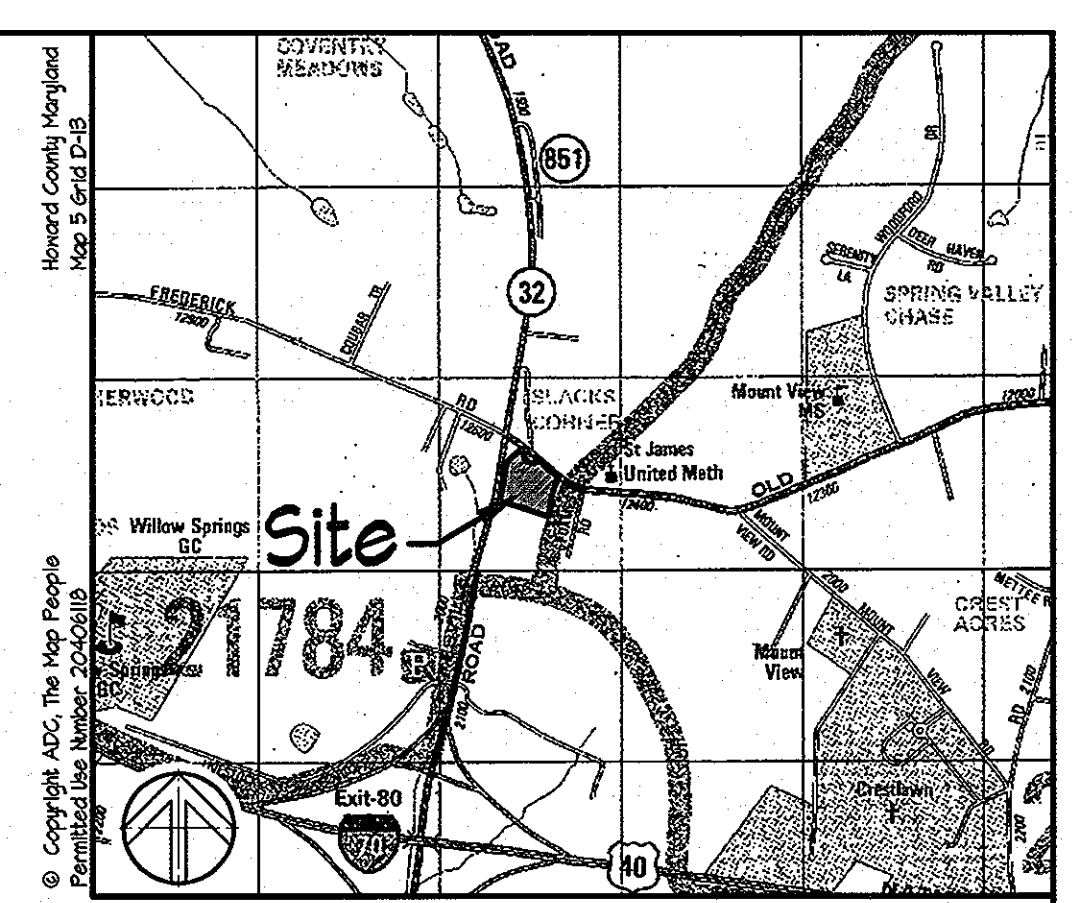
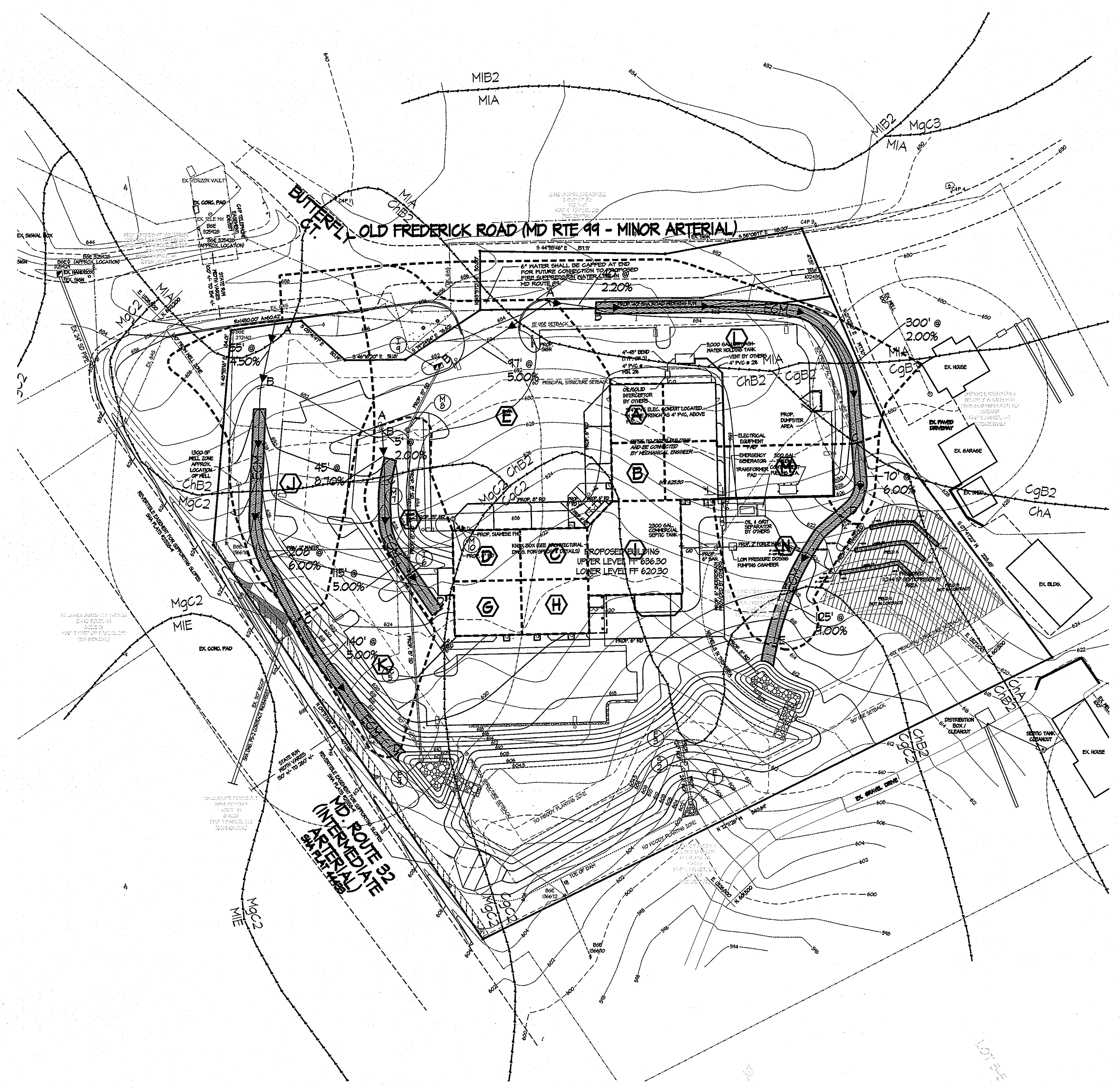


DES: CRM	
DRN: AM	
CHK: REM/KRK	
DATE: 12/08/06	
BY	NO.

**Storm Drain Profiles**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER: West Friendship Volunteer Fireman Association Inc.  
 ADDRESS / PERMIT INFORMATION: 12955 Old Frederick Rd., Sykesville MD 21784  
 PARCEL #210 L10316 / F1624  
 GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract 6030  
 WATER CODE: Private, SEWER CODE: Private

C5.02  
 SCALE: AS SHOWN  
 SHEET 12 OF 28



Vicinity Map Scale: 1" = 2000'

**LEGEND**

- PROPERTY LINE
- - - EXISTING CONTOURS
- - - PROPOSED CONTOURS
- - - EXISTING CURB & GUTTER
- - - PROPOSED CURB & GUTTER
- NeB2
- GcB2
- 15" SD
- 30" RCGP
- - - DRAINAGE AREA
- T<sub>CP</sub> PATH
- EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 637 SF
- EGM
- EROSION CONTROL MATTING

AREA DESIGNATION	TOTAL AREA (ACRES)	IMPERVIOUS AREA (ACRES)	% IMPERVIOUS	WEIGHTED C FACTOR
A	0.05	0.05	100.00	0.96
B	0.05	0.05	100.00	0.96
C	0.06	0.06	100.00	0.96
D	0.06	0.06	100.00	0.96
E	0.77	0.61	74.22	0.80
F	0.08	0.02	11.11	0.28
G	0.06	0.06	100.00	0.96
H	0.06	0.06	100.00	0.96
I	0.14	0.14	100.00	0.96
SWALES				
J	0.64	0.26	37.68	15*
K	1.02	0.44	43.14	17*
L	0.90	0.63	70.00	27*
M	1.11	0.75	67.57	26*
N	1.36	0.77	56.62	22*

\* FROM TR-55

- NOTES:**
- EROSION CONTROL MATTING SHALL BE PLACED IN EACH SWALE TO A FLOW DEPTH OF 1.00' FEET MINIMUM.
  - CHANGES HAVE OCCURRED TO THIS PLAN. THESE CHANGES DO NOT AFFECT DRAINAGE AREAS, EXCEPTING 1-6 WHICH WAS REDUCED IN AREA AND IMPERVIOUS AREA. WEIGHTED C FACTORS AND RESULTING Q'S HAVE NOT CHANGED. SEE OTHER SHEETS IN THIS PLAN SET FOR THESE CHANGES.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES M. IRVIN, DIRECTOR  
 DATE: 8/14/06

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER  
 DATE: 9/6/07

APPROVED: DEPARTMENT OF PLANNING & ZONING  
 DIRECTOR  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 9/16/07

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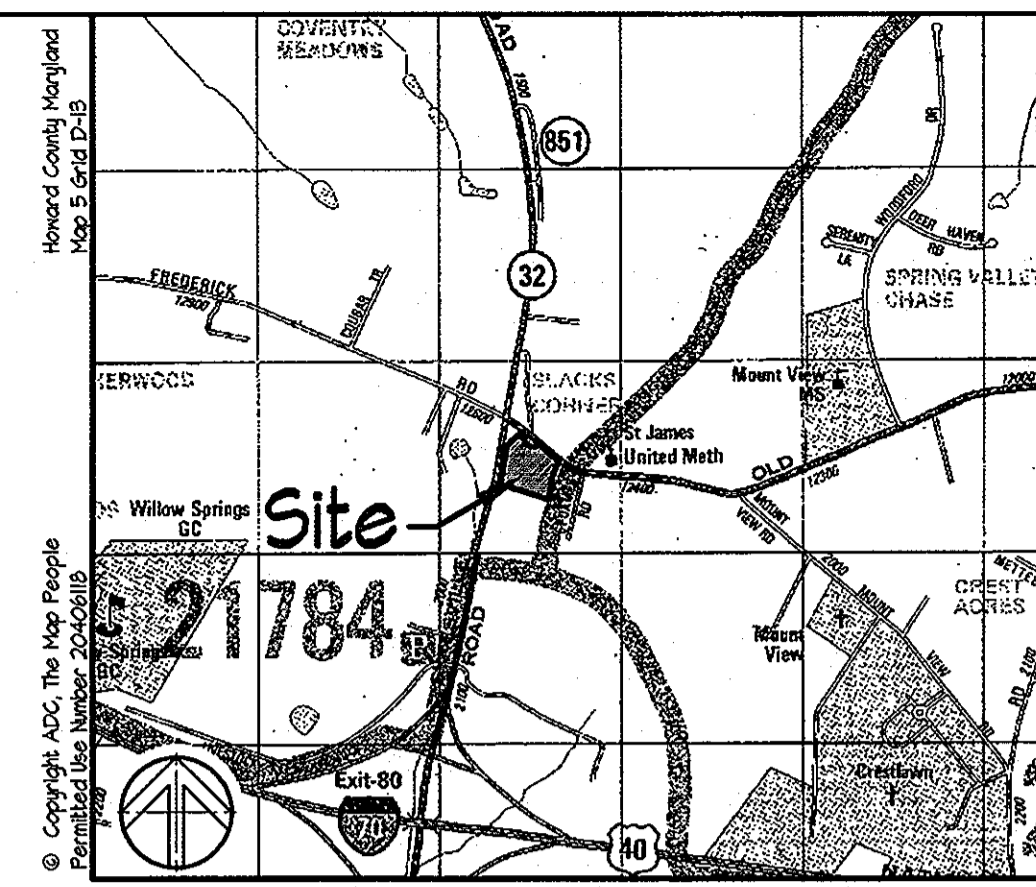
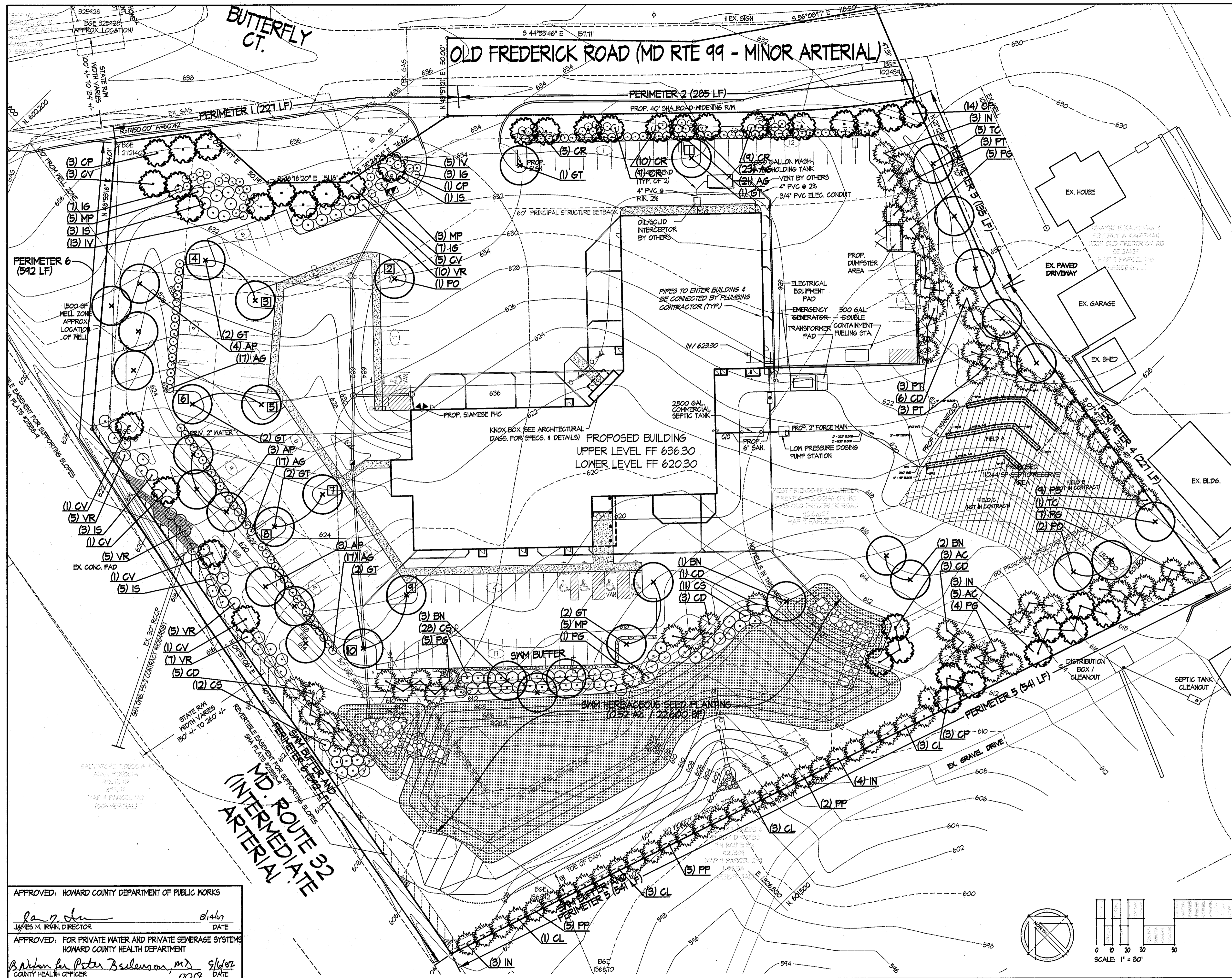
DES: CRM	
DRN: AM	
CHK: REMKRK	
DATE: 12/08/06	
BY: [Signature]	
NO.:	
REVISION:	
DATE: 8/28/07	

**Proposed Storm Drain/Swale Drainage Areas**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

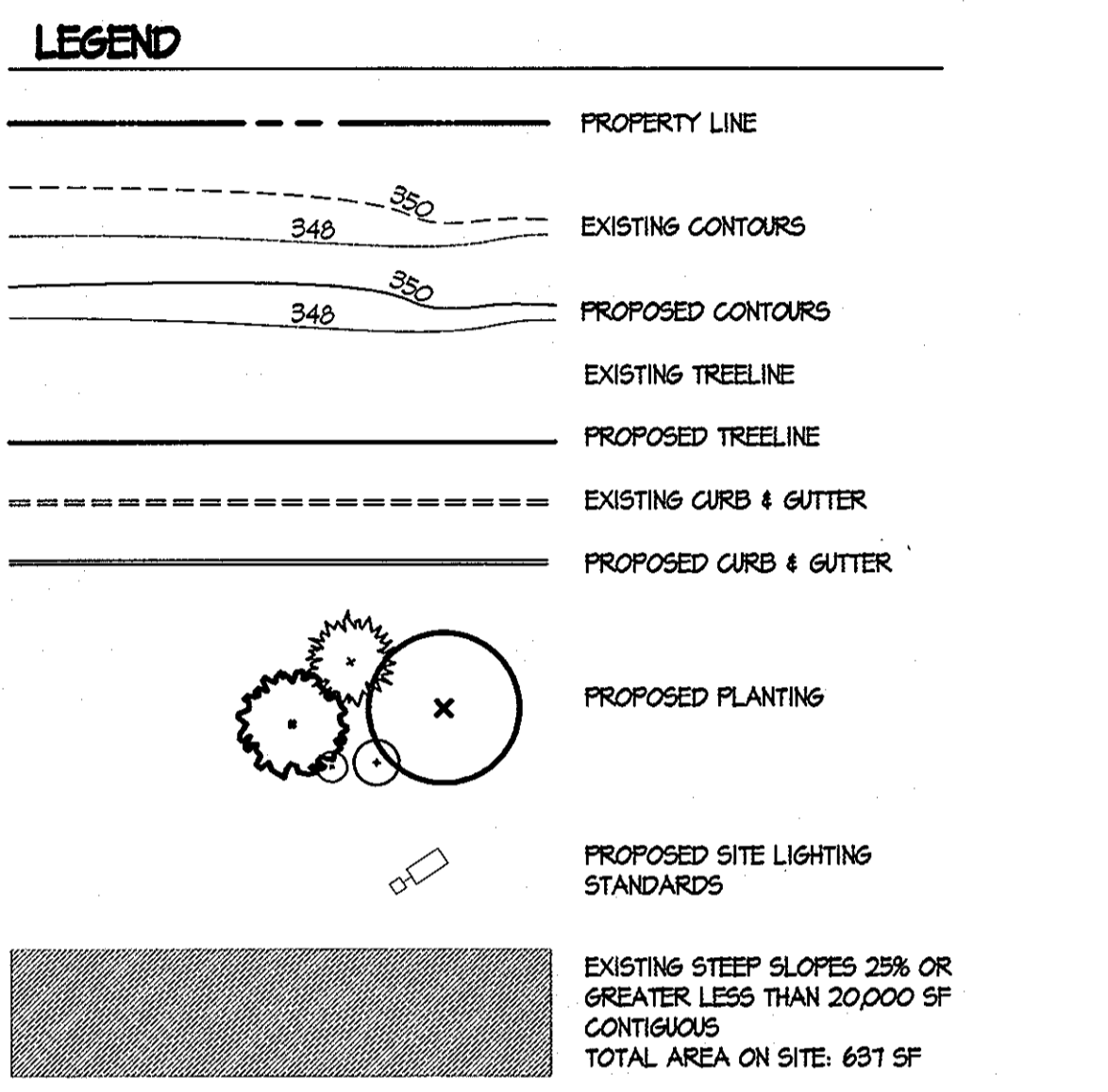
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 Capital Project No. F-5965, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Firemen's Association Inc.  
 ADDRESS / PERMIT INFORMATION:  
 ADDRESS: 12835 Old Frederick Rd, Sykesville MD 21784  
 PARCEL #210  
 L: 816 / F: 629  
 GRID NO. 23, ZONE: RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract 6030  
 WATER CODE: Private, SEWER CODE: Private

**C5.01**  
 SCALE: 1"=50'  
 SHEET 11 OF 28





Vicinity Map Scale: 1" = 2000'



PREPARED BY: KEVIN P. RILEY, RLA  
 STATE OF MARYLAND  
 REGISTERED LANDSCAPE ARCHITECT  
 REGISTRATION NO. 9291  
 Name: K. Riley Date: 8/1/07

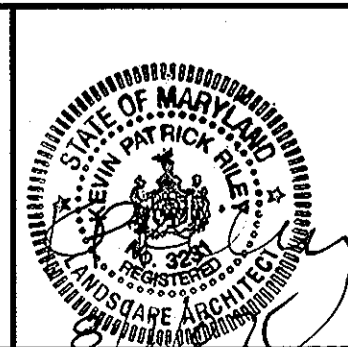
DEVELOPER'S/BUILDER'S CERTIFICATE  
 I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Subdivision and Land Development Regulations and the Landscapes Manual. I/We further certify that upon completion a letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.  
 Name: H. Mitchell Day Date: 8/3/07

NOTES:  
 1. SEE SHEET C4.02 FOR PLANTING CALCULATIONS, NOTES AND SCHEDULE.  
 2. CHANGES HAVE OCCURRED TO THIS PLAN. THESE CHANGES DO NOT AFFECT LANDSCAPE PLANTING SHOWN ON THIS SHEET. SEE OTHER SHEETS IN THIS PLAN SET FOR THESE CHANGES.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 James M. Irwin, Director 8/1/07  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 Barton for Peter Brulewson, MD, County Health Officer 9/16/07  
 APPROVED: DEPARTMENT OF PLANNING & ZONING  
 David J. Wright, Director 9/10/07  
 Chief, Development Engineering Division 9/13/07  
 Chief, Division of Land Development 9/16/07

**EDMEADES & STROMDAHL, LTD.**  
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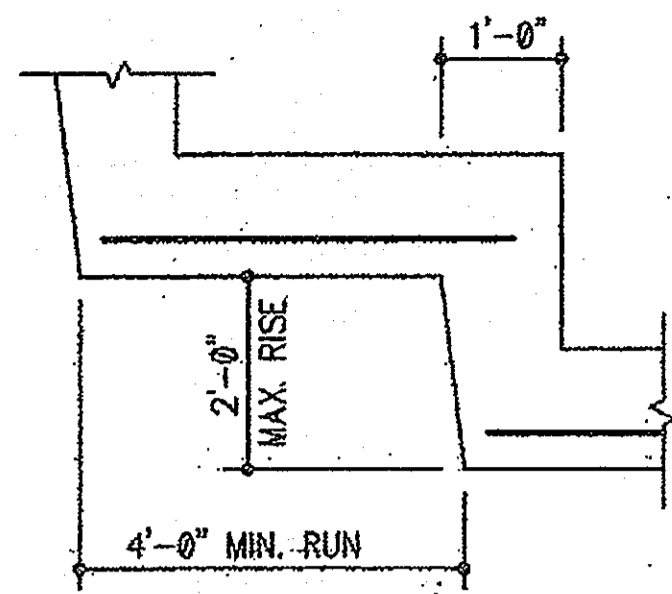


DES: KPR					
DRN: AM					
CHK: REM					
DATE 12/08/06	BY	NO.	REVISION	DATE	

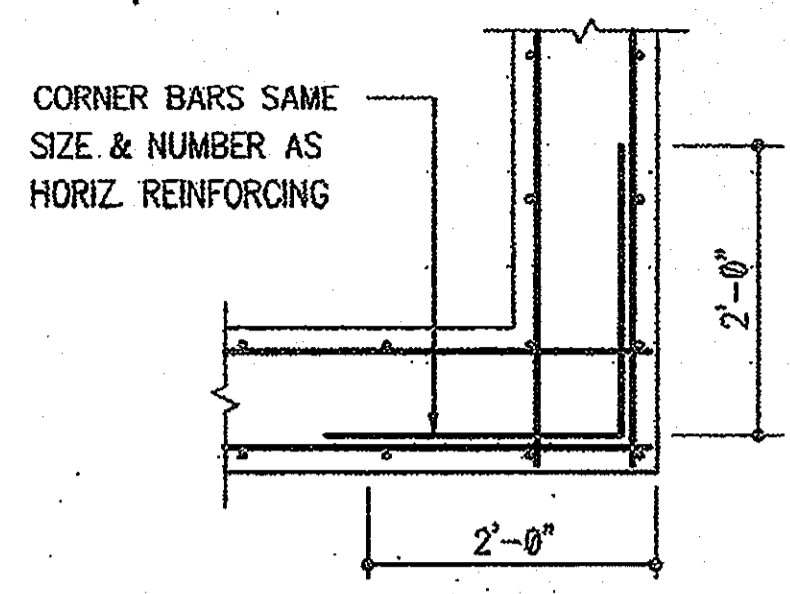
**Planting Plan**  
 SCALE: 1" = 30'  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER: West Friendship Volunteer Firemen Association Inc.  
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 L-8916 / F-624  
 GRID NO. 23, ZONE: RR-DEO, TAX MAP NO. 9  
 3rd Election District, Census Tract 6030  
 WATER CODE: Private, SEWER CODE: Private

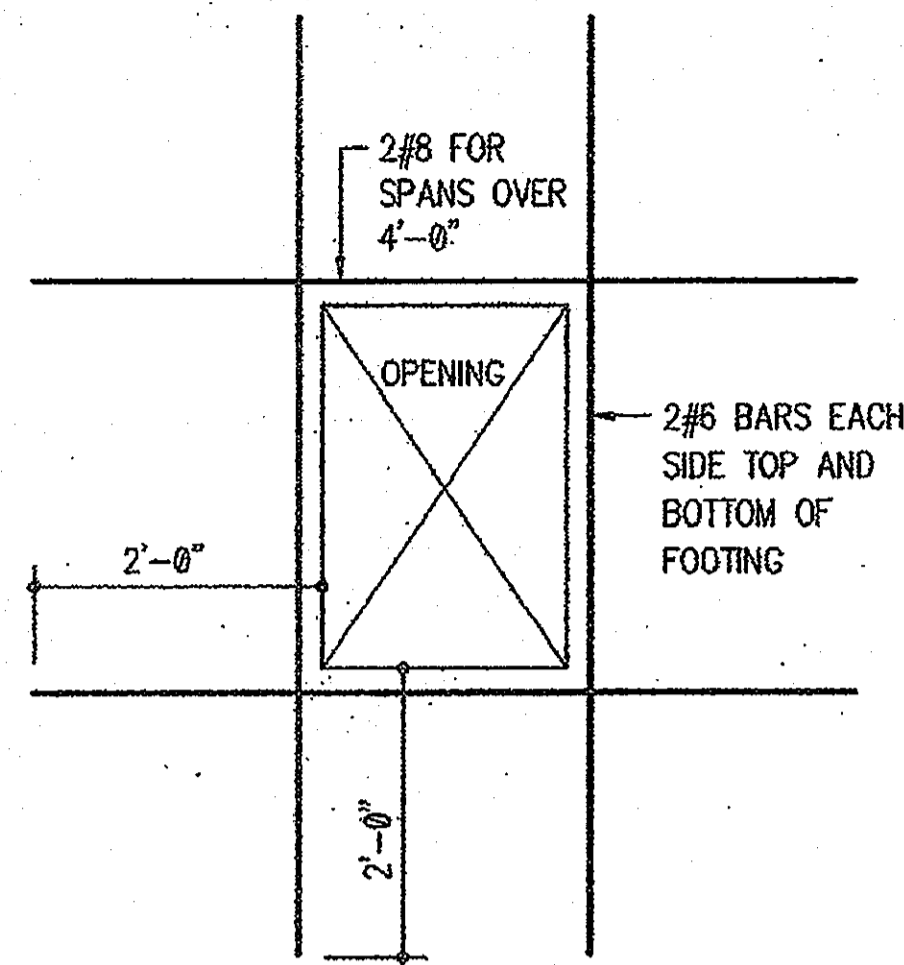
C4.01  
 SCALE: 1" = 30'  
 SHEET 4 OF 28



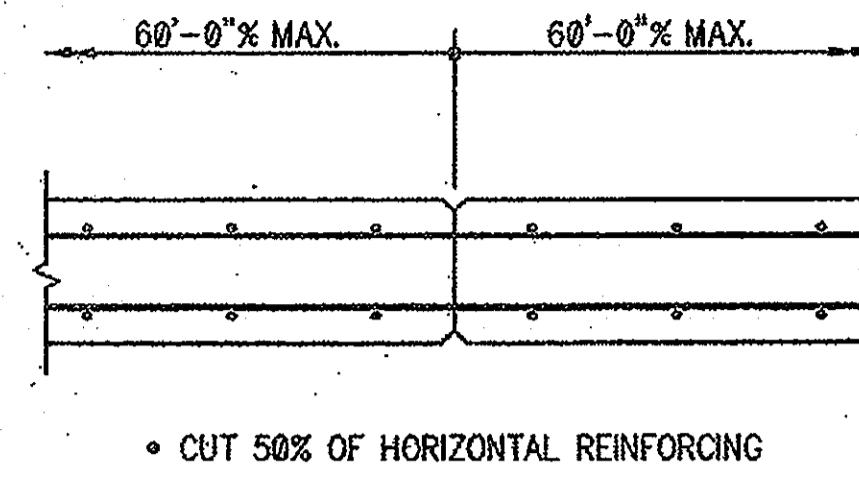
① TYP. STEPPED FOOTING  
SCALE: 3/4" = 1'-0"



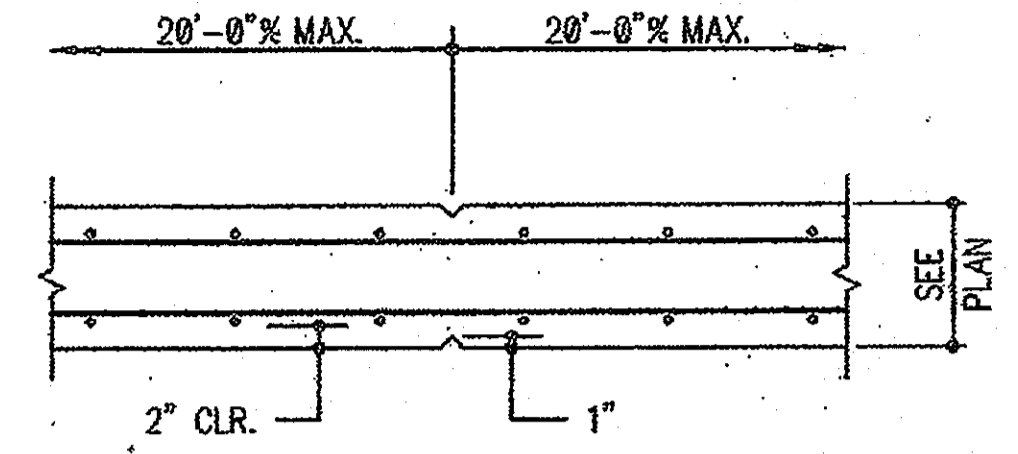
② TYP. CORNER BARS  
SCALE: 3/4" = 1'-0"



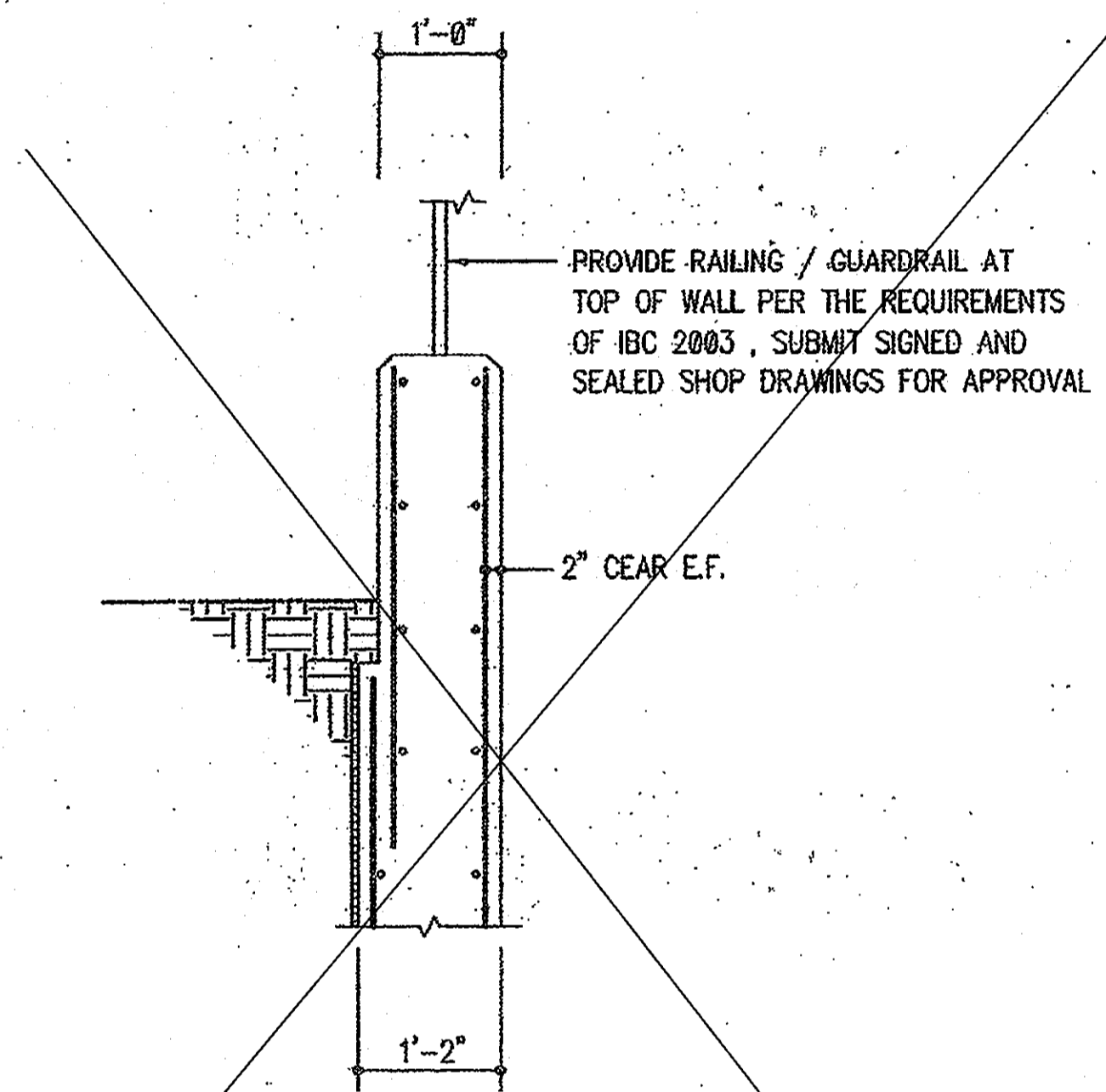
③ TYP. OPENING IN CONCRETE WALL  
SCALE: 3/4" = 1'-0"



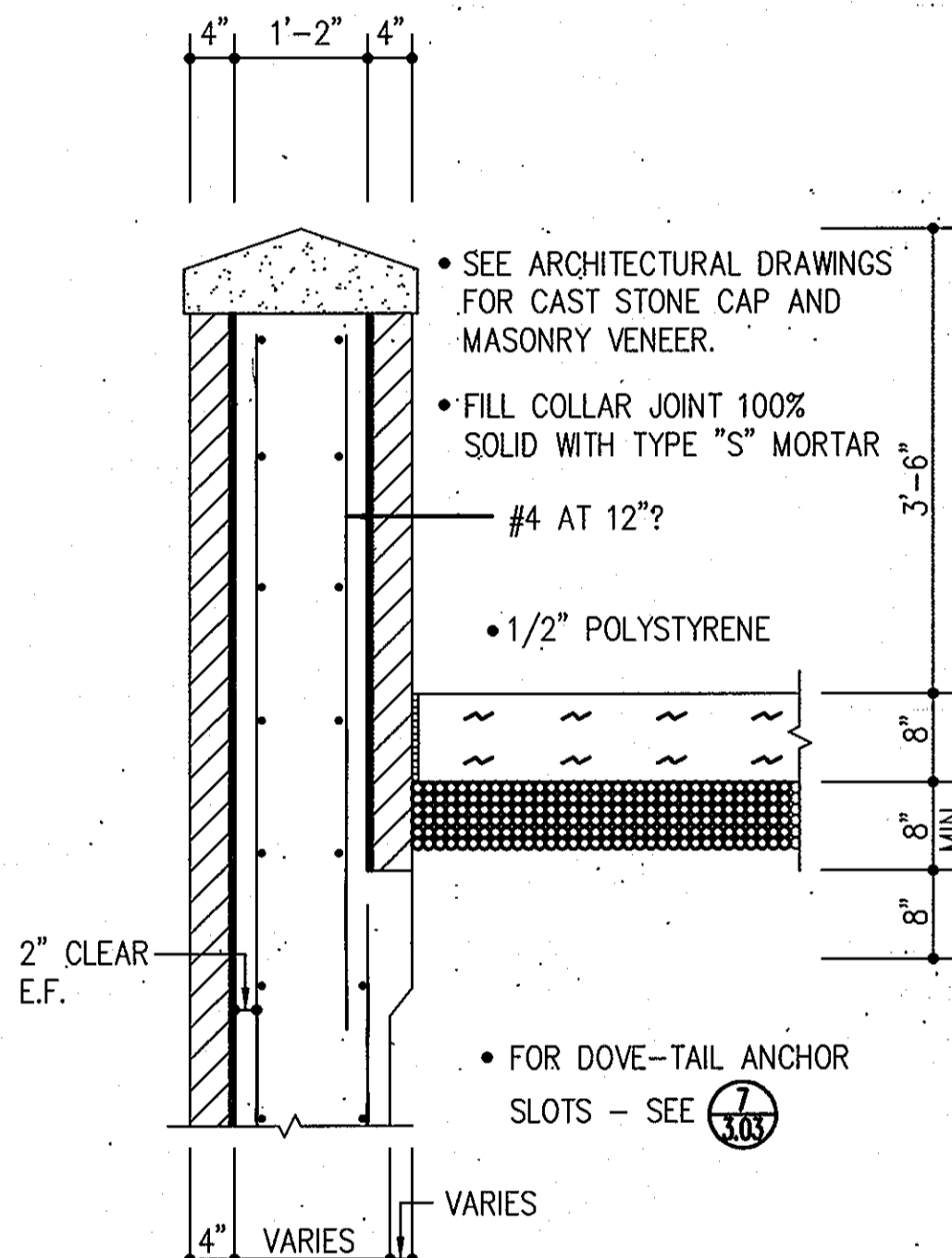
④ CONSTRUCTION JOINT IN CONCRETE WALLS  
SCALE: 3/4" = 1'-0"



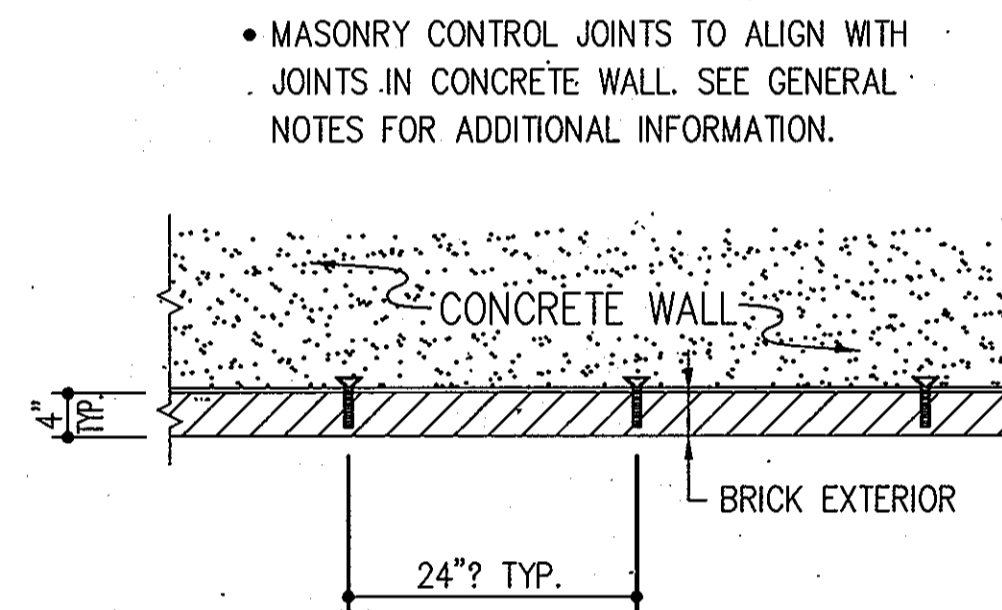
⑤ CONTROL JOINT IN CONCRETE WALLS  
SCALE: 3/4" = 1'-0"



⑥ KNOTCH AT TOP OF WALL TYPE A  
SCALE: 3/4" = 1'-0"



⑥ SITE RETAINING WALL



⑦ DOVETAIL ANCHOR SLOTS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*James M. Irwin* 8/14/11  
JAMES M. IRWIN, DIRECTOR DATE

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

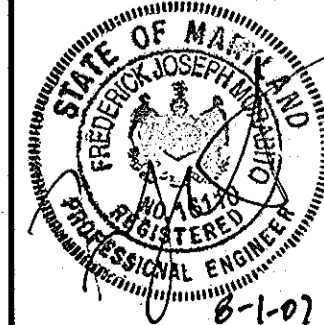
*Peter Beilenson, MD* 9/6/07  
COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

*David P. Egan* 9/12/07  
DIRECTOR DATE  
*Michael J. ...* 8/15/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Chris ...* 9/6/07  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**EDMEADES & STROMDAHL, LTD.**  
ARCHITECTS / PLANNERS  
34 North Main Street Bel Air, Maryland 21014  
Phone: 410.879.0388 Fax: 410.879.4785  
E-mail: bw@edmeades-stromdahl.com

**MORABITO CONSULTANTS INC.**  
STRUCTURAL ENGINEERS  
2526 SAINT PAUL STREET  
BALTIMORE, MARYLAND 21218-4609  
(410) 467-2377  
FAX (410) 467-4132  
www.morabitoconsultants.com  
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DES:					
DRN:					
CHK:					
DATE: 12/08/06	MCI	REDLINE REVISION	5/25/07		
	BY	NO.	REVISION	DATE	

Retaining Wall Details

600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
Howard County, Maryland

OWNER:  
West Friendship Volunteer Firemen Association, Inc.  
12460 Frederick Rd.  
West Friendship, MD 21194  
Phone (410) 755-1254

ADDRESS / PERMIT INFORMATION:  
ADDRESS: 12505 Old Frederick Rd., Sykesville MD 21154  
PARCEL: 1210  
L 8216 / F 623  
GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
3rd Election District, Genes Tract 6030  
WATER CODE: Private, SEWER CODE: Private

C3.03

SCALE:  
3/4" = 1'-0"

8 SHEET  
8 OF 26

GENERAL NOTES

**CONTROLLED FILL AND BACKFILL:** SAMPLES OF ALL MATERIALS THAT THE CONTRACTOR PROPOSES TO USE FOR COMPACTED FILL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER AND STRUCTURAL ENGINEER. COMPACTED FILL SHALL CONSIST OF LOCAL MATERIAL FREE OF DELETERIOUS MATTER AND CLASSIFIED CL, SC, GC, GM, OR SM PER ASTM D-2487. THE CONTROL OF THE MOISTURE FOR PLACING THE FILL WILL BE BASED ON THE RESULTS OF COMPACTION TESTS PER ASTM D-698. ALL COMPACTED FILL SHALL HAVE A DENSITY OF AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698. PRIOR TO PLACEMENT OF ANY FILLS, THE SITE SHALL BE STRIPPED OF ALL TOPSOIL, VEGETATION, ROCKS, AND ORGANIC MATERIALS AND THE EXPOSED SUBGRADE SHALL BE COMPACTED IN PLACE TO A COMPACTION DENSITY OF 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. FILL MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 12" IN THICKNESS AND SHALL BE LAID, SPREAD AND PLACED IN SUCH A MANNER AS TO PRODUCE A UNIFORM THICKNESS OF MATERIAL AFTER PLACING. EACH LAYER OF FILL SHALL BE COMPACTED WITH A MINIMUM OF 6 COMPLETE PASSES ON ALL PORTIONS OF THE SURFACE OF EACH LIFT OF FILL BY RUBBER-TIRED ROLLERS, SHEEPS-FOOT ROLLERS OR OTHER MECHANICAL EQUIPMENT APPROVED BY THE GEOTECHNICAL ENGINEER AND THE STRUCTURAL ENGINEER. COMPACTED FILL PLACED WITHIN 4 FEET OF STRUCTURES AND PIPES SHOULD BE PLACED IN HORIZONTAL LIFTS NOT TO EXCEED 4 INCHES THICKNESS AND COMPACTED WITH HAND TAMPERS OR LIGHT COMPACTION EQUIPMENT TO THE SAME STANDARD. HEAVY COMPACTION EQUIPMENT SHOULD NOT BE ALLOWED WITHIN 4 FEET OF STRUCTURES UNLESS A MINIMUM 2 FEET DEPTH OF FILL COVERS THE STRUCTURES. WHENEVER IN PLACE DENSITIES ARE FOUND BELOW ACCEPTABLE LIMITS, ADDITIONAL ROLLING TO PRODUCE THE SPECIFIED DENSITIES SHALL BE REQUIRED. THE CONTRACTOR SHALL TAKE ALL MEASURES REQUIRED TO PROMOTE FREE DRAINAGE OF THE SITE AND TO PREVENT FLOWING OF WATER. SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. PLACING OF FILL CONTAINING ORGANIC MATTER; PLACING OF FILL WITH MOISTURE CONTENT TOO HIGH OR TOO LOW FOR PROPER COMPACTION; PLACING OF FILL WHEN FREE WATER IS STANDING ON THE EXISTING FILL SURFACE; PLACING OF FILL IN A FROZEN CONDITION OR ON TOP OF FROZEN MATTER WILL NOT BE PERMITTED. THE SOILS ENGINEER SHALL SUPERVISE THE PLACING OF THE COMPACTED FILL AND ALL THE MATERIAL AND EQUIPMENT USED FOR THIS PURPOSE AND SHALL BE RESPONSIBLE FOR THE FILL. A MAY BE REQUIRED FOR THE COMPLETION OF THE WORK PERFORMING AT LEAST 6 IN PLACE DENSITY TESTS DURING EACH EIGHT HOUR SHIFT.

**FOUNDATIONS-SPREAD FOOTINGS:** BOTTOM OF ALL FOOTINGS SHALL BE A MINIMUM OF 2'-0" BELOW ORIGINAL GRADE OR PLACED ON APPROVED COMPACTED FILL. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 2'-0" BELOW ORIGINAL GRADE. A SIX PERCENT SLOPE OF 3000 LBS PER SQ YD SHALL BE MAINTAINED AT THE FOUNDATION DESIGN, AND MUST BE FIELD VERIFIED BY A REGISTERED GEOTECHNICAL ENGINEER. IF SOIL OF THIS BEARING CAPACITY IS NOT ENCOUNTERED AT THE ELEVATIONS INDICATED ON THE CONTRACT DRAWINGS, FOOTINGS SHALL BE LOWERED OR INCREASED IN SIZE AS DIRECTED BY THE STRUCTURAL ENGINEER. ELEVATIONS SHOWN ON PLAN ARE TO THE BOTTOM OF THE FOOTINGS.

**CONCRETE:** ALL CONCRETE WORK SHALL CONFORM TO ALL THE PROVISIONS OF THE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 308-88) AND TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-88). ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS NOTED OTHERWISE. ADDITIONALLY, THE CONCRETE SHALL CONFORM TO ALL THE PROVISIONS OF "RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING" (ACI 305-88) AND "RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING" (ACI 306-88). ALL FORMWORK SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "FORMWORK FOR CONCRETE" SPECIAL PUBLICATION NO. 4 AND ACI'S "STANDARD RECOMMENDED PRACTICE FOR CONCRETE FORMWORK" (ACI-347-LATEST EDITION). ALL CONCRETE EXPOSED TO THE WEATHER SHALL HAVE AN AIR ENTRAINMENT OF 8% ± 1%. NO AD mixtures CONTAINING CALCIUM CHLORIDE SHALL BE PERMITTED. THE MAXIMUM SLUMP OF ALL CONCRETE SHALL BE 4". FLOOR SLABS SHALL BE FINISHED TO A MINIMUM FINISH FLOOR FINISH (FF) = 20 AND A MINIMUM LEVELNESS F-FINISH (FF) = 17 IN ANY DIRECTION. ALL CONCRETE SHALL BE CURED WITH LIQUID SEALING COMPOUND CONFORMING TO ASTM D-593, TYPE I AND FEDERAL SPECIFICATION TT-C-98988 OR OTHER APPROVED METHOD WHICH IS COMPATIBLE WITH FLOORING, ADHESIVES AND OTHER SURFACE TREATMENTS. ALL CONCRETE LEFT EXPOSED AT THE COMPLETION OF THE PROJECT SHALL BE TREATED WITH A CLEAR, PENETRATING ACRYLIC BASE POLYMER CAPABLE OF PREVENTING INfiltration OF WATER BORNE CONTAMINANTS SUCH AS CONCRETE #1 BY CORPSE MARKETING & MANUFACTURING COMPANY OR APPROVED EQUAL. LOADS GREATER THAN THE DESIGN LIVE LOADS SHALL NOT BE PLACED ON THE STRUCTURE. A CONCRETE STRUCTURE MAY NOT SUPPORT ITS DESIGN LIVE LOAD FOR 28 DAYS. CONTRACTOR SHALL SUPPORT ADJACENT STRUCTURES, UTILITIES, AND EXCAVATIONS AS REQUIRED FOR COMPLETION OF WORK. ONE SET OF COMPRESSIVE TEST CYLINDERS FOR EACH 100 CUBIC YARDS POURED, BUT NOT LESS THAN ONE SET FOR EACH DAY'S POUR AND EACH CLASS OF CONCRETE, ALONG WITH SLUMP TESTS SHALL BE PERFORMED BY A TESTING LABORATORY APPROVED BY THE STRUCTURAL ENGINEER.

**REINFORCING STEEL:** REINFORCING STEEL SHALL BE DEFORMED BARS IN ACCORDANCE WITH ASTM A-615, GRADE 60. BARS ARE TO BE FABRICATED AS PER DETAILS. PLACE MAIN REINFORCING STEEL SO AS TO PROVIDE 3" MINIMUM COVER FOR FOUNDATIONS POURED ON EARTH, 2" MINIMUM COVER FOR BEAMS AND COLUMNS, 5/8" MINIMUM COVER FOR SLABS AND 1 1/2" FOR ALL REBAR IN EXPOSED CONCRETE (EXCEPT AS OTHERWISE DETAILED). ALL BEAM AND SLAB STEEL SHALL HAVE A MINIMUM EXTENSION INTO THE SUPPORTS IN ACCORDANCE WITH THE LATEST ADDITION OF THE A.C.I. CODE, PROVIDE ACCESSORIES AND BAR SUPPORTS IN ACCORDANCE WITH THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI-315-88). WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-705, GRADE 60, UNLESS OTHERWISE NOTED. WIRE REINFORCING SHALL BE PLACED AT MID-DEPTH OF SLABS ON GRADE AND DRAPPED OVER SUPPORTS IN CONCRETE SLABS ON GROUND. END LAPS OF ALL WIRE REINFORCING SHALL BE LAPPED BY MINIMUM CONCRETE ENHANCED REINFORCING FIBERS SHALL BE POLYPROPYLENE, COLLATED, FIBRILLATED FIBERS FROM FREEMER, INC. INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

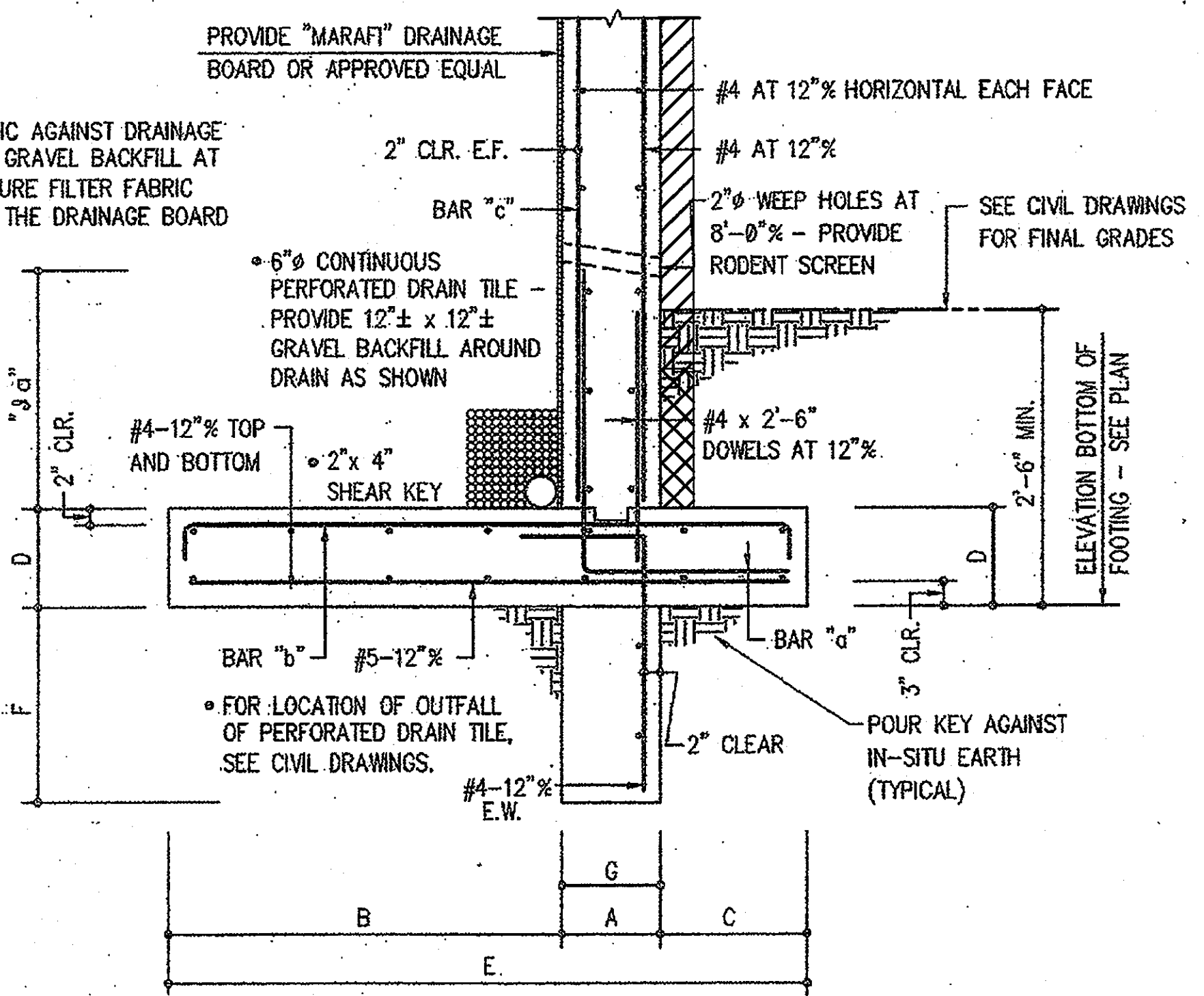
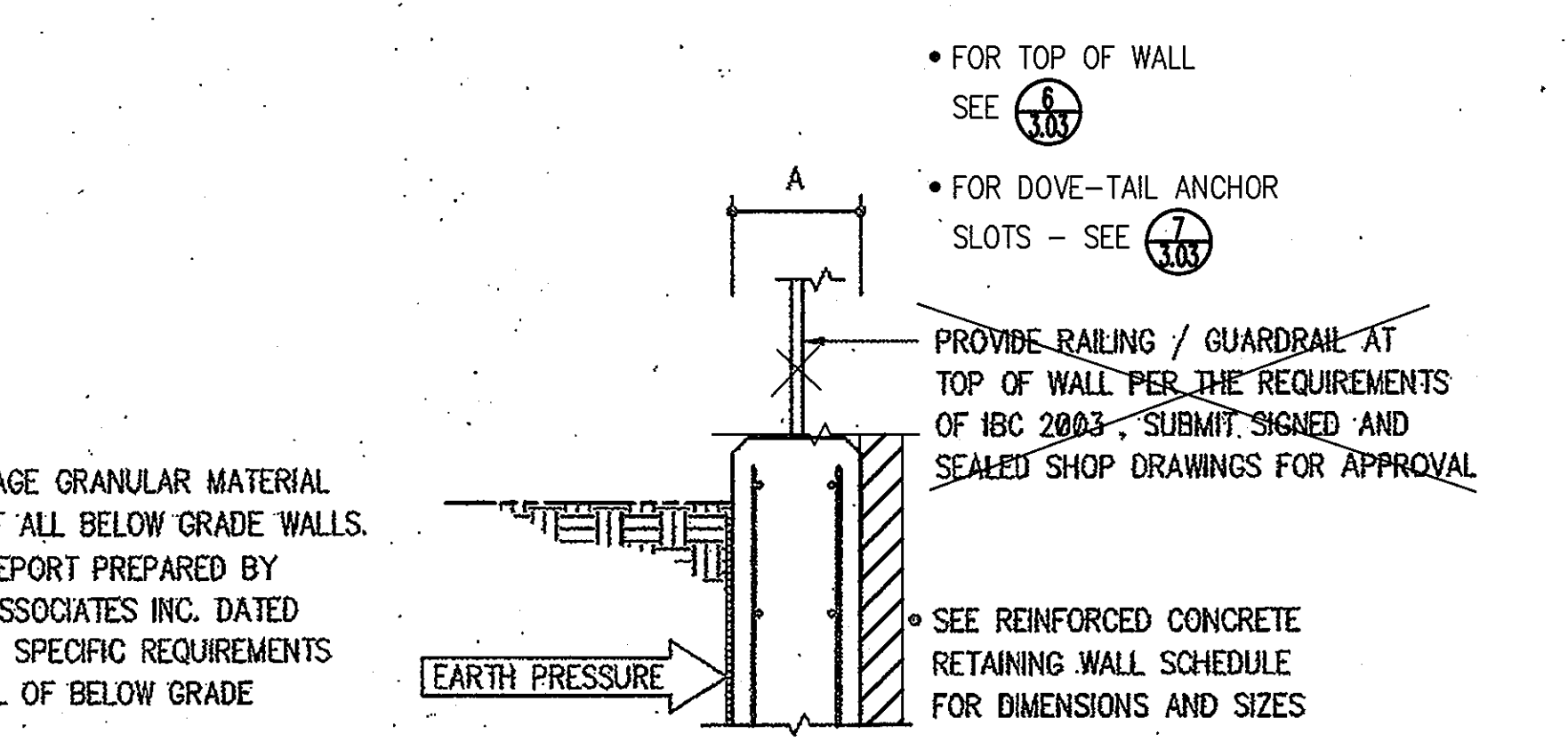
**SHOP DRAWINGS:** SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS MUST BE SUBMITTED BY GENERAL CONTRACTOR AND REVIEWED BY THE ENGINEER. ALL CONTRACTOR MODIFICATIONS (INCLUDING PRODUCTS SUBSTITUTION) MUST BE IDENTIFIED IN WRITING AS A PROPOSED "AS EQUAL" CHANGES AT THE TIME OF SUBMISSION. IF A CONTRACTOR OR OWNER FAILS TO SUBMIT THE SHOP DRAWINGS OR FAILS TO FOLLOW THE ABOVE "AS EQUAL" PROCEDURE, THE FIRM MORABITO CONSULTANTS, INC. WILL NOT BE RESPONSIBLE FOR THE STRUCTURAL CONSTRUCTION AND DESIGN OF THE PROJECT. SHOP DRAWINGS ARE REVIEWED BY THE ENGINEER AS A CONVENIENCE TO THE CONTRACTOR AND ARE NOT A CONTRACT DOCUMENT.

**INSPECTION:** ALL WORK SPECIFIED HEREIN SHALL BE INSPECTED IN ACCORDANCE WITH THE BUILDING CODE AND ALL LOCAL ORDINANCES. THE OWNER OR CONTRACTOR SHALL HIRE AN EXPERIENCED QUALIFIED INSPECTOR TO PERFORM ALL REQUIRED INSPECTION WORK. INSPECTION SHALL CONSIST OF VISUAL OBSERVATIONS OF MATERIALS, EQUIPMENT OR CONSTRUCTION WORK FOR THE PURPOSE OF ASCERTAINING THAT THE WORK IS IN SUBSTANTIAL CONFORMANCE WITH THE CONTRACT DOCUMENTS AND WITH THE DESIGN INTENT. THE ENGINEER WILL NOT PERFORM THE REQUIRED INSPECTION AS PART OF THIS PRESENT CONTRACT WITH THE ARCHITECT/ENGINEER. UNDER THIS PRESENT CONTRACT, THE ENGINEER MAY VISIT THE SITE TO ASCERTAIN GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS. HOWEVER, SUCH VISITS SHALL NOT BE RELIED UPON BY OTHERS AS ACCEPTANCE OF THE WORK, NOR SHOULD IT BE CONSTRUED TO RELIEVE THE CONTRACTOR IN ANY WAY FROM HIS OBLIGATIONS AND RESPONSIBILITIES UNDER THE CONTRACT. HOWEVER, IF DESIRED, MORABITO CONSULTANTS, INC. MAY BE HIRED UNDER A SEPARATE CONTRACT TO PERFORM THIS INSPECTION WORK.

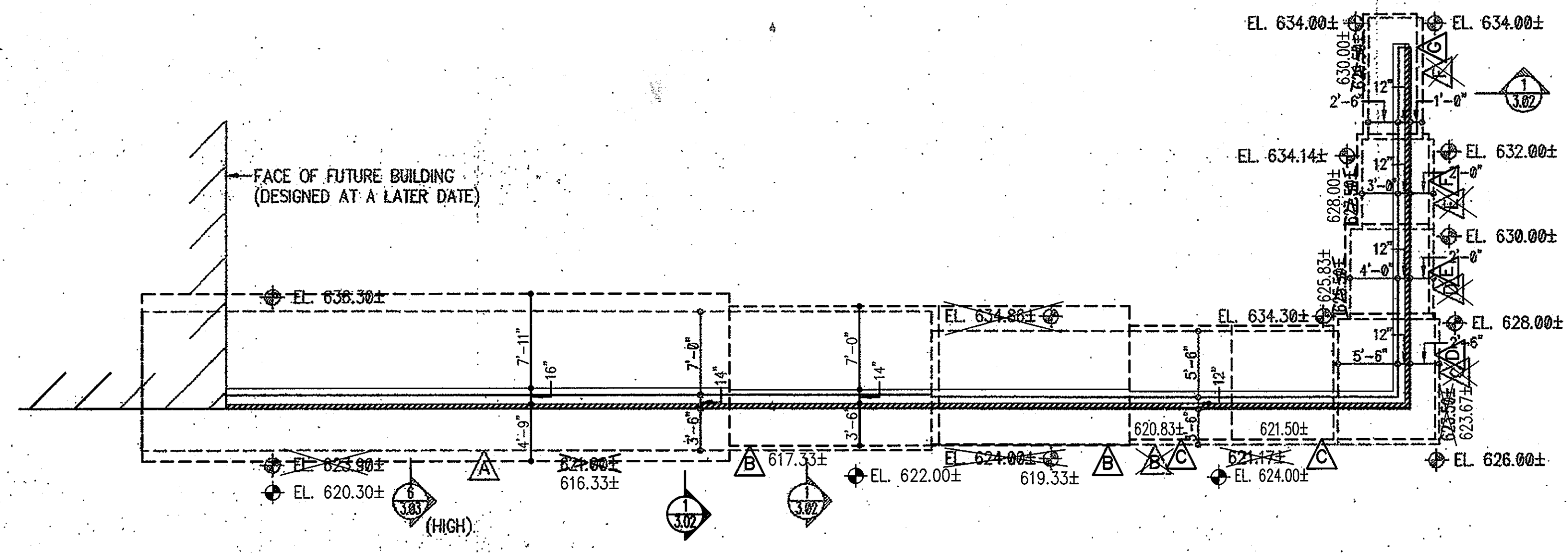
**OWNERSHIP OF DOCUMENTS:** THE CONTRACTOR ACKNOWLEDGES THESE PLANS AND SPECIFICATIONS PREPARED BY MORABITO CONSULTANTS, INC. AS INSTRUMENTS OF PROFESSIONAL SERVICE. NEVERTHELESS, THE PLANS AND SPECIFICATIONS PREPARED UNDER THIS AGREEMENT SHALL REMAIN THE PROPERTY OF MORABITO CONSULTANTS, INC. UPON COMPLETION OF THE WORK. THE CONTRACTOR AGREES TO HOLD HARMLESS AND INDEMNIFY MORABITO CONSULTANTS, INC., AGAINST ALL DAMAGES, CLAIMS, AND LOSSES, INCLUDING DEFENSE COSTS, ARISING OUT OF ANY REUSE OF THE PLANS AND SPECIFICATIONS WITHOUT THE WRITTEN AUTHORIZATION OF MORABITO CONSULTANTS, INC.

**DESIGN DATA:**  
 fc = 4000 PSI  
 fy = 60,000 PSI  
 EQUIVALENT ACTIVE FLUID PRESSURE = 43.33 PCF  
 SOIL BEARING VALUE = 3000 PSF

MARK	WALL						FOOTING				REINFORCING				REMARKS
	A	ExD	B	C	F	G	BAR "a"	Ja	BAR "b"	BAR "c"	BAR "a"	Ja	BAR "b"	BAR "c"	
A	1'-4"	14'-0" x 3'-0"	7'-11"	4'-9"	5'-0"	1'-4"	#10-12"	5'-0"	#9-9"	#10-12"	SEE (C3.02)				
B	1'-2"	11'-8" x 2'-0"	7'-0"	3'-6"	4'-6"	1'-2"	#10-12"	5'-0"	#9-9"	#7-12"	SEE (C3.02)				
C	1'-0"	9'-6" x 1'-10"	5'-6"	3'-0"	4'-0"	1'-0"	#9-10"	4'-0"	#7-9"	#6-10"	SEE (C3.02)				
D	1'-0"	9'-0" x 1'-4"	5'-6"	2'-6"	3'-6"	1'-0"	#8-12"	3'-0"	#7-9"	#6-12"	SEE (C3.02)				
E	1'-0"	7'-0" x 1'-2"	4'-0"	2'-0"	3'-0"	1'-0"	#6-12"	3'-0"	#6-9"	#6-12"	SEE (C3.02)				
F	1'-0"	6'-0" x 1'-0"	3'-0"	2'-0"	2'-6"	1'-0"	#6-12"	3'-0"	#5-9"	#4-12"	SEE (C3.02)				
G	1'-0"	4'-6" x 1'-0"	2'-6"	1'-0"	2'-0"	1'-0"	#4-12"	2'-0"	#5-9"	#4-12"	SEE (C3.02)				



1 TYPICAL CONCRETE SITE RETAINING WALL  
 SCALE: 3/4" = 1'-0"



- PLAN - SITE RETAINING WALL** SCALE: 1/8" = 1'-0"
- SEE CIVIL DRAWINGS AS PREPARED BY SITE RESOURCES, INC. FOR EXACT DIMENSIONS FOR WALL LENGTH, LOCATION, AND FINAL GRADES.
  - ELEVATIONS NOTED THUS: (E) ARE FINAL FINISH GRADES AT WALL.
  - REINFORCED CONCRETE (fc = 4000, psi) RETAINING WALL INDICATED ON PLAN AND IN SCHEDULE THUS: (A-G)
  - DESIGN SOIL PARAMETERS USED FOR RETAINING WALL DESIGN AS FURNISHED BY HERBST/BENSON ASSOC. INC. ARE AS FOLLOWS:  
 EQUIVALENT ACTIVE FLUID PRESSURE = 43.33 PCF (SEE NOTE 8).  
 SOIL BEARING VALUE = 3000 PSF  
 ASSUMED SOIL BEARING PRESSURE SHALL BE VERIFIED IN FIELD BY REGISTERED GEOTECHNICAL PROFESSIONAL ENGINEER.
  - PROVIDE RAILING / GUARDRAIL AT TOP OF WALL PER THE REQUIREMENTS OF IBC 2003. SUBMIT SIGNED AND SEALED SHOP DRAWINGS PREPARED BY MARYLAND PROFESSIONAL ENGINEER FOR REVIEW.
  - WALL TYPES ARE INDICATED ON PLAN THUS:  
 (A-G) REINFORCED CONCRETE RETAINING WALLS (fc = 4000 PSI)
  - ELEVATION BOTTOM OF FOOTING IS SHOWN ON PLAN.
  - PROVIDE FREE DRAINAGE GRANULAR MATERIAL AS BACKFILL AGAINST ALL BELOW GRADE WALLS. SEE GEOTECHNICAL REPORT PREPARED BY HERBST/BENSON & ASSOCIATES DATED AUGUST 9, 2006 FOR SPECIFIC REQUIREMENTS CONCERNING BACKFILL OF BELOW GRADE RETAINING WALLS.
  - AS PER THE REQUIREMENTS OF HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING DEVELOPMENT ENGINEERING DIVISION THE CONSTRUCTION OF REINFORCED CONCRETE WALL AND BACKFILL SHALL BE OBSERVED BY A PROFESSIONAL ENGINEER.

MARK	WALL						FOOTING				REINFORCING				REMARKS
	A	ExD	B	C	F	G	BAR "a"	Ja	BAR "b"	BAR "c"	BAR "a"	Ja	BAR "b"	BAR "c"	
A	1'-2"	11'-8" x 2'-0"	7'-0"	3'-6"	4'-6"	1'-2"	#10-12"	5'-0"	#9-10"	#7-12"	SEE (C3.02)				
B	1'-0"	9'-6" x 1'-10"	5'-6"	3'-0"	4'-0"	1'-0"	#9-10"	4'-0"	#7-9"	#6-10"	SEE (C3.02)				
C	1'-0"	9'-0" x 1'-4"	5'-6"	2'-6"	3'-6"	1'-0"	#8-12"	3'-0"	#7-9"	#6-12"	SEE (C3.02)				
D	1'-0"	7'-0" x 1'-2"	4'-0"	2'-0"	3'-0"	1'-0"	#6-12"	3'-0"	#6-9"	#6-12"	SEE (C3.02)				
E	1'-0"	6'-0" x 1'-0"	3'-0"	2'-0"	2'-6"	1'-0"	#6-12"	3'-0"	#5-9"	#4-12"	SEE (C3.02)				
F	1'-0"	4'-6" x 1'-0"	2'-6"	1'-0"	2'-0"	1'-0"	#4-12"	2'-0"	#5-9"	#4-12"	SEE (C3.02)				

- ALL CONCRETE FOR RETAINING WALLS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.
- DO NOT BACKFILL WALLS UNTIL CONCRETE HAS ATTAINED DESIGN STRENGTH.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES M. IRVIN, DIRECTOR  
 DATE: 8/14/06

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 B. W. ...  
 COUNTY HEALTH OFFICER  
 DATE: 8/16/06

APPROVED: DEPARTMENT OF PLANNING & ZONING  
 ...  
 DATE: 8/16/06

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 34 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: bw@edmeades-stromdahl.com

**MORABITO CONSULTANTS INC.**  
 STRUCTURAL ENGINEERS  
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 (410) 467-2377  
 FAX (410) 467-4132  
 www.morabitoconsultants.com  
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STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 MORABITO CONSULTANTS, INC.  
 DATE: 12/08/06

DES:	
DRN:	
CHK:	
DATE:	12/08/06
BY:	MCI
NO.:	1
REVISION:	REDLINE REVISION
DATE:	5/25/07

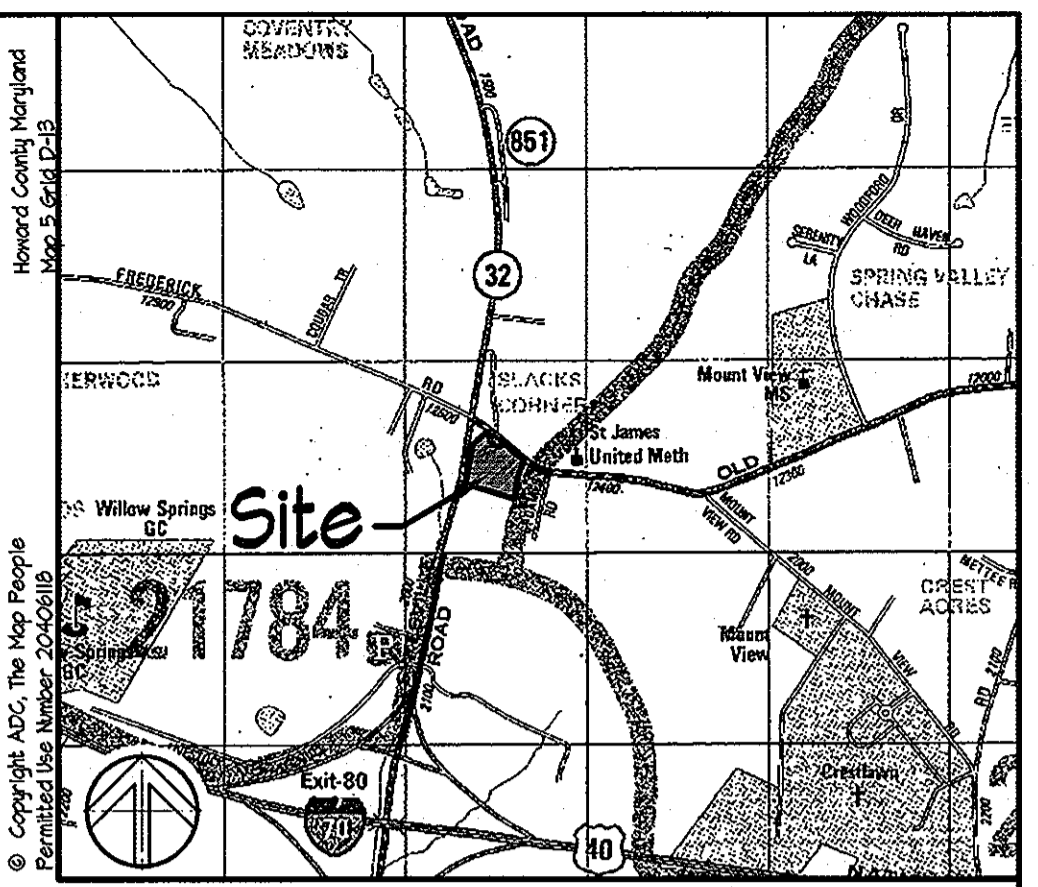
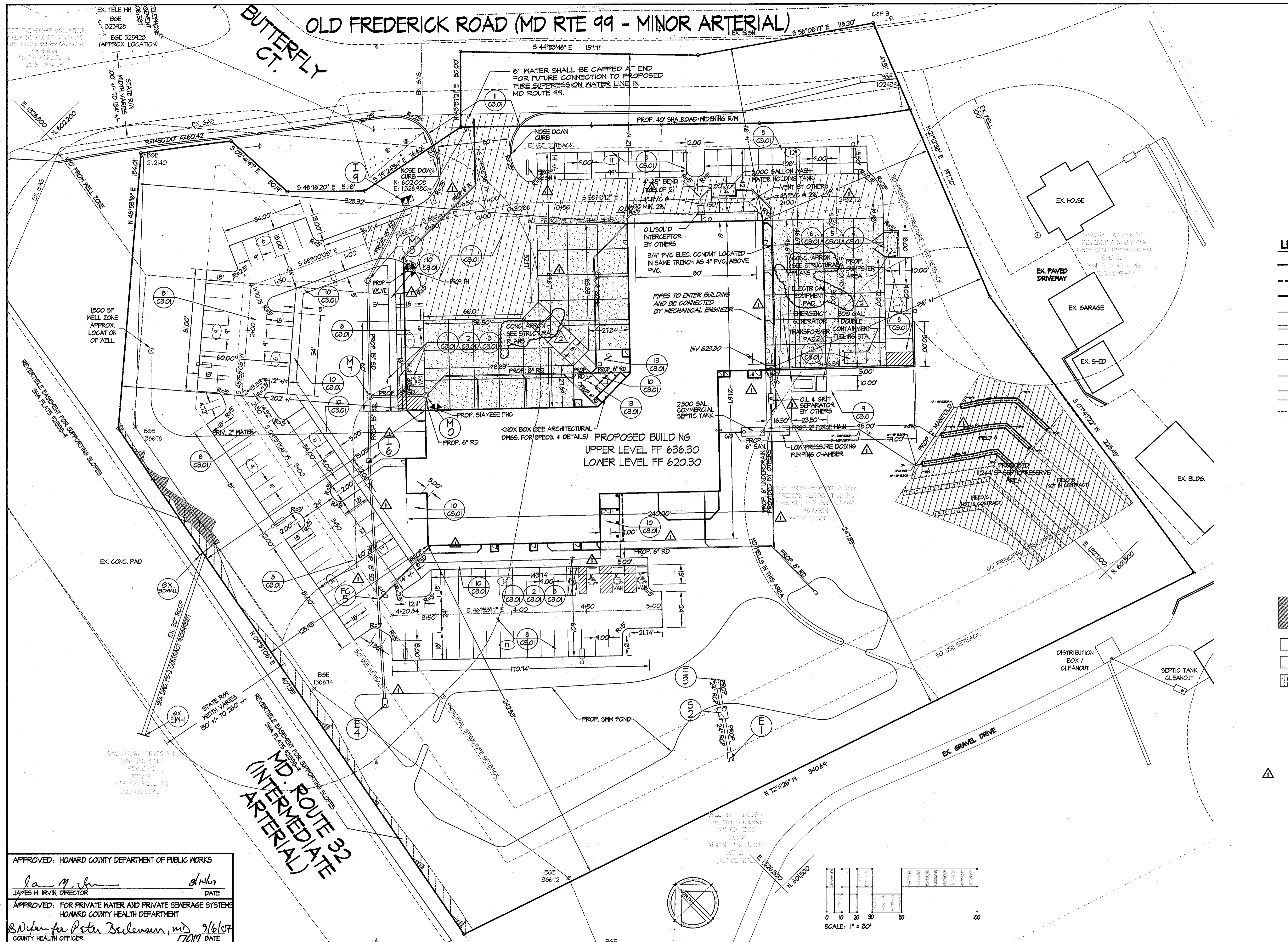
**Retaining Wall Plan & Details**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Howard County, Maryland

OWNER:  
 West Friendship Volunteer Firemen Association, Inc.  
 12460 Frederick Rd.  
 West Friendship, MD 21794  
 Phone (410) 785-1294

ADDRESS / PERMIT INFORMATION:  
 ADDRESS: 12505 Old Frederick Rd, Sykesville MD 21784  
 PARCEL ID: L0216 / F.624  
 GRID NO. 23, ZONE: RR-DEO, TAX MAP NO. 9  
 3rd Election District, Census Tract 62502  
 WATER CODE: Private, SEWER CODE: Private

C3.02  
 SCALE: 1/8" = 1'-0"  
 SHEET 9 OF 26



Vicinity Map  
Scale: 1" = 2000'

**LEGEND**

	PROPERTY LINE
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	15" SD EXISTING STORM DRAIN
	30" RCCP PROPOSED STORM DRAIN
	8" SAN EXISTING SANITARY SEWER
	8" SAN PROPOSED SANITARY SEWER
	8" WATER EXISTING WATER
	8" WATER PROPOSED WATER
	PROPOSED ELECTRIC LINE
	EXISTING ELECTRIC LINE TO REMAIN
	EXISTING GAS LINE
	EXISTING BUILDINGS
	PROPOSED BUILDINGS
	HEAVY DUTY CONCRETE
	HEAVY DUTY ASPHALT
	DETAIL NO. / DRAWING NO.
	PROPOSED SITE LIGHTING
	PROPOSED SIDEWALK
	EXISTING STEEP SLOPES 25% OR GREATER LESS THAN 20,000 SF CONTIGUOUS TOTAL AREA ON SITE: 631 SF
	PRIMARY DRAINAGE FIELD
	BACKUP DRAINAGE FIELD
	2ND BACKUP DRAINAGE FIELD

NOTE:  
ALL PARKING SPACES  
ARE TO HAVE WHEELSTOPS  
INSTALLED.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 JAMES M. IRVIN, DIRECTOR  
 APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS  
 HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER  
 APPROVED: DEPARTMENT OF PLANNING & ZONING

**EDMEADES & STROMDAHL, LTD.**  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mcs@edmeades-stromdahl.com

**SITE RESOURCES, INC.**  
 LAND PLANNING / SITE DESIGN  
 14315 Jarrettsville Pike Phoenix, Maryland 21131  
 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com



DES: CRM	
DRN: AM	
CHK: REM/KRK	
DATE: 12/08/06	
SRI	REVISION
BY NO.	REVISION
DATE: 5/25/07	

**Layout/Detail Reference Plan**  
 600' SCALE MAP NO. 9 BLOCK NO. 23

**WEST FRIENDSHIP VOLUNTEER FIRE CO.**  
 Capital Project No. F-5465, Howard County, Maryland  
 OWNER:  
 West Friendship Volunteer Firemens Association Inc.  
 12460 Frederick Rd  
 West Friendship, MD 21794  
 Phone (410) 785-1234  
 ADDRESS / PERMIT INFORMATION:  
 ADDRESS: 12935 Old Frederick Rd, Sykesville MD 21784  
 PARCEL #210  
 L 1819 / F 624  
 GRID No. 23, ZONE: RR-DEO, TAX MAP No. 9  
 3rd Election District, Census Tract 6030  
 WATER CODE: Private, SEWER CODE: Private

C2.01  
 SCALE: 1"=30'  
 SHEET 5 OF 28

# GENERAL NOTES

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 319-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-251-TT11 at least 48 hours prior to any excavation work being done.
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- All plan dimensions are to face of curb unless otherwise noted.
- The existing topography was obtained from a field run survey with 2 foot contour intervals on May 5, 2006 and revised May 24, 2006 performed by Shanabarger and Lane.
- The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System, Howard County Monument Nos. 15CA and 0911 were used for this project.
- Water is private.
- Sewer is private.
- Stormwater Management is provided by an on-site infiltration basin (Rev, Nqv, CPV, Qp, and Gf management). This facility is publicly maintained.
- Existing utilities are based on surveys performed by Shanabarger and Lane and record drawings, the contractor must determine the exact location of utilities by digging test pits, by hand, at all crossings prior to construction.
- There are no floodplains on this site based on the FEMA National Flood Insurance Program, Flood Insurance Rate Map, Howard County, Maryland, Panel 4 of 45, Map Number 24004404 B. (Map not printed by FEMA)
- There are no wetlands, wetland buffers, streams or stream buffers located on this site.
- No traffic study is required for this project.
- This site is exempt from the AFPO test in accordance with DMV III, Section 4.11B.2.
- The property boundaries shown on these plans have been recorded in deed liber 4916, folio 624
- No grading, removal of vegetative cover or trees, or placement of new structures is permitted within the limits of wetlands, streams, or their required buffers and forest conservation easement areas.
- This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and the Landscape Manual.
- This site is exempt from the requirements of Section 16.1200 of the Howard County Code and the Forest Conservation Manual, based on Appendix C of the Howard County Forest Conservation Manual. This appendix exempts Capital Projects being constructed on a single lot where there will be no more than 40,000 square feet of forest clearing. All exterior light fixtures shall be oriented to direct light downward on-site, away from adjoining residential properties and public roads in accordance with Section 134-D of the Howard County Zoning Regulations. Light trespass onto adjoining properties shall be limited to 0.1 foot candles.
- There are no cemeteries or grave sites on the subject property.
- This project is subject to the amended fifth edition of the Subdivision and Land Development Regulations and the Zoning Regulations as amended under council bill #45-2003. Development or construction must comply with setback and buffer regulations in effect at the time of submission of the Site Development Plan, waiver petition application or building/grading permit.
- All utilities constructed within fill material must be installed in accordance with AASHTO-T180.
- Building 'A' shall have a sprinkler system installed in accordance with applicable code. It is the intention of the County, should the Council enact Council Resolution CR10-2006, that the public water system be extended to the site for fire-fighting capabilities only. At such time as the Council enacts this resolution, the public water line extension will be designed and the SDP will be red-lined to reflect this fire fighting water supply service (including a fire hydrant).

# SITE ANALYSIS DATA CHART

a. Total Project Area =	6.08 Ac / 264,125 SF
b. Limit of Disturbed Area =	5.81 Ac / 253,228 SF
c. Present Zoning Designation =	RR-DEO
d. Proposed Use for Site and Structures =	Volunteer Fire Station
e. Total Square Feet of Floor Area by Use:	EXISTING      PROPOSED      TOTAL
Administration/Office =	0 sf      3,746 sf      3,746 sf
Bunk/Dormitory =	0 sf      2,465 sf      2,465 sf
Training/Classroom =	0 sf      2,582 sf      2,582 sf
Storage/Mechanical =	0 sf      4,642 sf      4,642 sf
Apparatus Parking =	0 sf      4,243 sf      4,243 sf
Other (Halls, Kitchen, Dining, Library, Activity, Circulation) =	0 sf      13,633 sf      13,633 sf
Total =	36,361 sf
f. Maximum Number of Users at full build-out =	30 typ. 136 max.
g. Parking Spaces: (per fire dept.)	REQUIRED      PROVIDED
	110      121
h. Handicap Parking Spaces:	5      6
i. Building Coverage on Site =	0.54 Ac and 9.70% of gross area

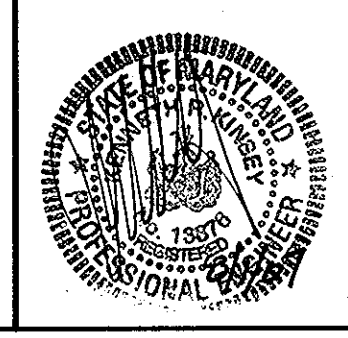
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

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

APPROVED: DEPARTMENT OF PLANNING & ZONING

EDMEADES & STROMDAHL, LTD.  
 ARCHITECTS / PLANNERS  
 11 North Main Street Bel Air, Maryland 21014  
 Phone: 410.879.0388 Fax: 410.879.4785  
 E-mail: mce@edmeades-stromdahl.com

SITE RESOURCES, INC.  
 LAND PLANNING / SITE DESIGN  
 14315 Jarrettsville Pike Phoenix, Maryland 21131  
 Phone: 410.683.3388 Fax: 410.683.3389  
 www.siteresourcesinc.com



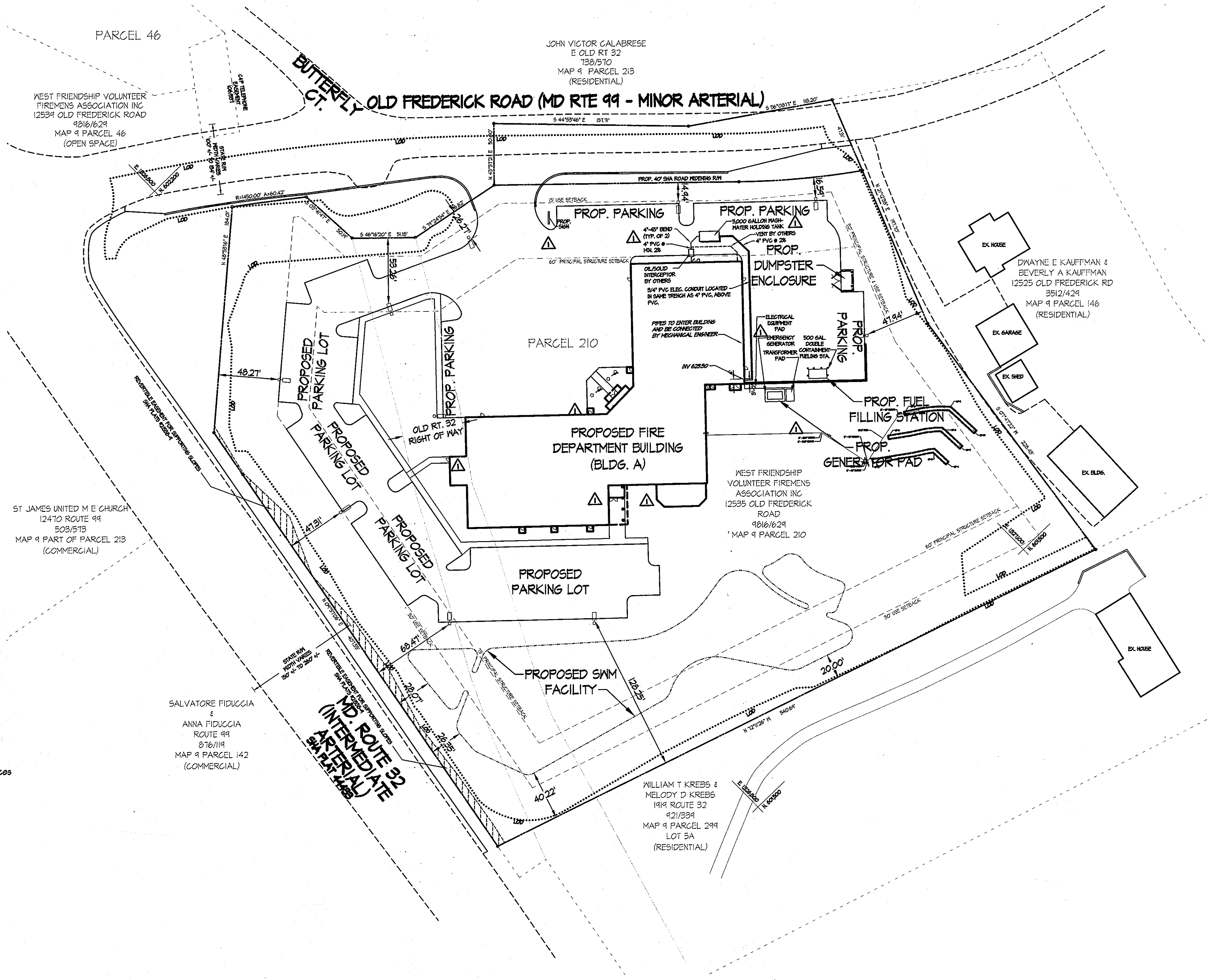
DES: CRM	DATE: 12/08/06
DRN: AM	
CHK: REM/KRK	
BY: NO.	REVISION
	5/25/07

600' SCALE MAP NO. 9 BLOCK NO. 23

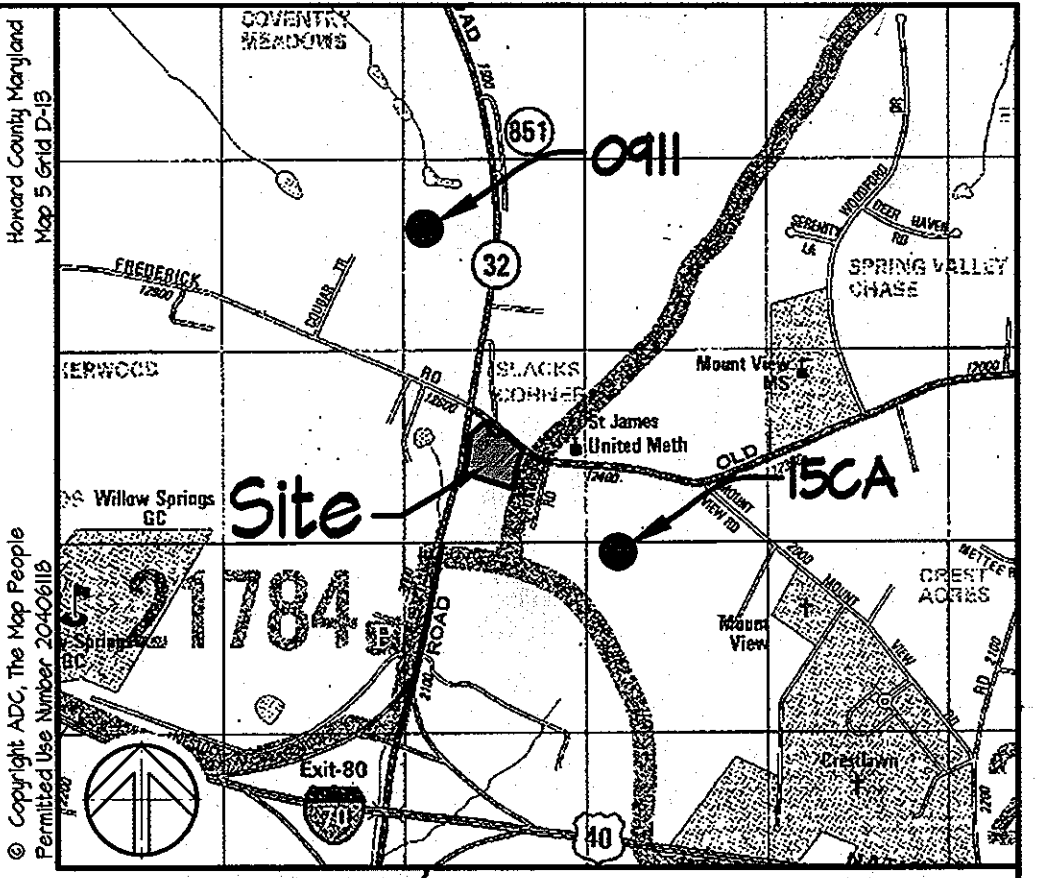
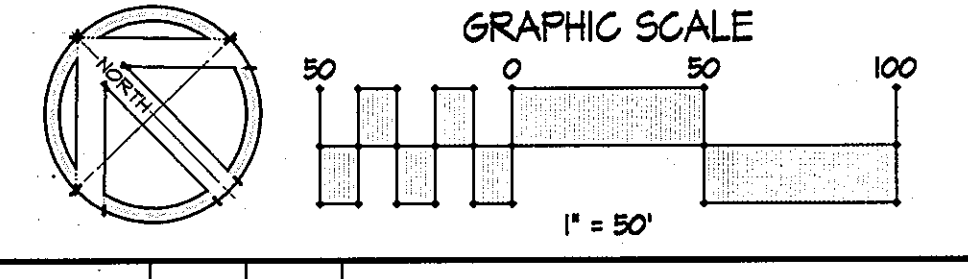
WEST FRIENDSHIP VOLUNTEER FIRE CO.  
 Capital Project No. F-5965, Howard County, Maryland

OWNER:	ADDRESS / PERMIT INFORMATION:
West Friendship Volunteer Firemen's Association Inc. 12460 Frederick Rd West Friendship, MD 21794 Phone (410) 745-1294	ADDRESS: 12535 Old Frederick Rd, Sykesville MD 21184 PARCEL: #210 GRID NO. 23, ZONE: RR-DEO, TAX MAP NO. 9 3rd Election District, Census Tract 6030 WATER CODE: Private, SEWER CODE: Private

# CAPITAL PROJECT #F-5965



OVERALL SITE PLAN



Vicinity Map Scale: 1" = 2000'

MONUMENT	BENCHMARKS				
	NORTHING	EASTING	ELEVATION	HORIZ. DATUM	VERT. DATUM
15CA	548062.63	132943.75	915.45	NAD83(91)	NAVD83
0911	602689.30	1326821.46	652.65	NAD83(91)	NAVD83

# DRAWING INDEX

SHEET #	DRAWING #	DRAWING TITLE
1 OF 21	CO.01	COVER SHEET
2 OF 21	CO.02	GENERAL NOTES & BUILDING ELEVATIONS
3 OF 21	CO.03	HOWARD COUNTY COUNCIL RESOLUTIONS
4 OF 21	CO.01	EXISTING CONDITIONS & DEMOLITION PLAN
5 OF 21	CO.01	LAYOUT/DETAIL REFERENCE PLAN
6 OF 21	CO.01	SITE DETAILS
7 OF 21	CO.02	RETAINING WALL DETAILS
8 OF 21	CO.03	RETAINING WALL DETAILS
9 OF 21	CO.01	PLANTING PLAN
10 OF 21	CO.02	PLANTING PLAN DETAILS
11 OF 21	CO.01	PROPOSED STORM DRAIN/SWALE DRAINAGE AREA
12 OF 21	CO.02	STORM DRAIN PROFILES
12A OF 21	CO.02A	STORM DRAIN PROFILES
13 OF 21	CO.05	SANITARY CONTROL PLAN
14 OF 21	CO.01	GRADING & SEDIMENT CONTROL PLAN
15 OF 21	CO.02	SEDIMENT CONTROL DETAILS
16 OF 21	CO.03	SEDIMENT CONTROL DETAILS
17 OF 21	CO.11	EXISTING TEMPORARY SWM DRAINAGE AREA MAP
18 OF 21	CO.12	PROPOSED TEMPORARY SWM DRAINAGE AREA MAP
19 OF 21	CO.01	EXISTING CONDITIONS DRAINAGE AREA MAP
20 OF 21	CO.02	PROPOSED DRAINAGE AREA MAP
21 OF 21	CO.10	STORMWATER MANAGEMENT POND PLAN
22 OF 21	CO.11	STORMWATER MANAGEMENT POND PROFILES
23 OF 21	CO.12	SWM POND PLANTING PLAN
24 OF 21	CO.13	SWM POND PLANTING PLAN DETAILS & NOTES
25 OF 21	CO.12	STORMWATER MANAGEMENT SPECIFICATIONS & GENERAL STORMWATER MANAGEMENT DETAILS
26 OF 21	CO.13	STORMWATER MANAGEMENT DETAILS / SOIL BORINGS
27 OF 21	CO.01	PAVING, STRIPING & PROFILE PLAN
28 OF 21	CO.02	CROSS SECTIONS

# BUILDING INDEX

PROPOSED STRUCTURES	IDENTIFIER
FIRE STATION BUILDING	A

# OWNERSHIP HISTORY

MAP # PARCEL 46  
 NOVEMBER 24, 1941 112/880  
 KATIE E. SLACK TO SAMUEL D. SLACK & ETHEL L. SLACK  
 APRIL 11, 1912 591/7  
 ETHEL L. SLACK TO L. LOUISE SLACK, DORIS T. SLACK, AND MAYRENE H. SLACK  
 FEBRUARY 10, 2006 9816/624  
 L. LOUISE SLACK, DORIS T. SLACK, AND MAYRENE H. SLACK TO WEST FRIENDSHIP VOLUNTEER FIREMEN'S ASSOCIATION INC.  
 MAP # PARCEL 210  
 MARCH 5, 1970 527/124  
 JOHN L. CLARK TO ETHEL L. SLACK  
 NOVEMBER 15, 1981 1074836  
 GEORGE M. SLACK TO L. LOUISE SLACK, DORIS T. SLACK, AND MAYRENE H. SLACK  
 FEBRUARY 10, 2006 9816/624  
 L. LOUISE SLACK, DORIS T. SLACK, AND MAYRENE H. SLACK TO WEST FRIENDSHIP VOLUNTEER FIREMEN'S ASSOCIATION INC.

PERMIT INFORMATION CHART				
Subdivision Name	Section/Area	Lot/Parcel No.	Water Code	Private
West Friendship Volunteer Fire Station		210		
Plot No. or L.P.	1326/F624	9	RR-DEO	3rd
Water Code	Private	Sewer Code	Private	

CO.01

SCALE: 1"=50'  
 SHEET 1 OF 28