

GENERAL NOTES

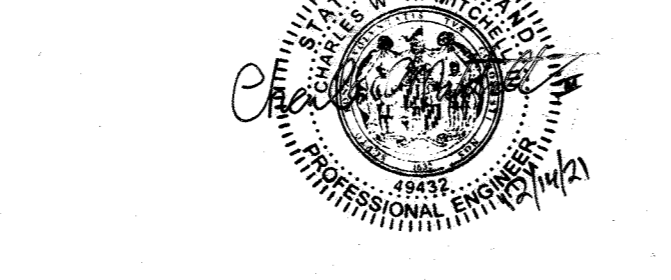
- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-251-TT71 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 flown aerial survey taken with 2 foot contour intervals on March 20, 2005 performed by Hartford Aerial Survey.
- 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. 165A and 162C were used for this project.
- Water is public. See Contract No. 44-4072. This project is in the Little Patuxent drainage area (109F.5).
- Plumbing code indicates an average flow rate of 15 gal. per day per person for day workers at schools and offices. At this rate, the 324 projected users would produce 4,860 gal. per day. The three existing storage tanks each have a capacity of 14,000 gal., totaling a total of 42,000 gal. maximum capacity. At maximum use, the system would reach maximum capacity after 8 days of use. Currently, projected plans are to empty the tanks once per week. Each tank includes an alarm alerting maintenance that the tank is approaching capacity.
- Stormwater Management is provided by a combination of an on-site P-5 pocket pond (quality/CV management), a stormceptor (quality pretreatment), infiltration structures (recharge), grass channel (quality & recharge), non-rooftop and rooftop disconnection (quality & recharge). These facilities are publicly maintained.
- Existing utilities are based on the Site Development Plans for Phase I development of the Public Safety Training Center (SDP-03-36) prepared by Whitman Requardt & Associates L.L.P., dated 12/16/02, without the benefit of as-built surveys. No as-built information is available, so 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 16 of 45, Map Number 24004416 B, effective December 4, 1986. Floodplain shown on these plans are from an approved floodplain study by Bernard Johnson, Inc., dated 1986.
- The wetland delineation study for this site was prepared by Whitman Requardt & Associates L.L.P., dated 7/22/02.
- No traffic study is required for this project.
- This site is exempt from the AFPO test requirements as stated in Sections 16.1107-(2)-(1) and 16.110-(h)-(2) of the Howard County Code.
- A waiver (WP-02-02) from section 16.147 of the Howard County Subdivision and Land Development Regulations was approved on April 23, 2002 to allow recording of adjoining deeds to reconfigure 3 county owned parcels of land to establish revised Parcel 255.
- Use of a sewage holding tank was approved by the Howard County Health Department on March 25, 2002.
- The property boundaries shown on these plans have been recorded in deed libro 6684, folio 614, in a Plat of Land Acquisition to an Adjoiner, reference number 15716, and in a Plat of Forest Conservation Easements, reference number 15834.
- 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 except as approved by Waiver Petition WP-06-127, approved June 12, 2006.
- 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 has complied with the requirements of Section 16.1200 of the Howard County Code and the Forest Conservation Manual. The total forest conservation obligation of 1.37 acres was offset with 6.45 acres of forest retention and 0.42 acres of reforestation as shown on the Plat for Grant of Forest Conservation Easement, reference number 15818.
- 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 of the Howard County Zoning Regulations. The light intensity at the property line will not exceed 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.
- Buildings 'A' and 'E' shall have sprinkler systems installed in accordance with applicable codes.

BUILDING/STRUCTURE INDEX

EXISTING STRUCTURES	IDENTIFIER
ADMINISTRATION/CLASSROOM BUILDING	(1)
POLICE RANGE TRAILER	(2)
VEHICLE STORAGE BUILDING	(3)
PROPOSED STRUCTURES	IDENTIFIER
FIRE GROUNDS BUILDING	STRUCTURE 'A'
STORAGE/MAZE STRUCTURE	STRUCTURE 'B'
PUMP BUILDING	STRUCTURE 'C'
FIRE FIGHTING PROP	STRUCTURE 'D'
POLICE SIMULATION PROP	STRUCTURE 'E'
HOGAN'S ALLEY TRAINING PROP	STRUCTURE 'F'
EXPOSURE TRAINING BUILDING	BUILDING 'G'
K-4 TRAINING BUILDING	BUILDING 'H'
ARMORY (12'x45' 8" x 45' PND)	STRUCTURE 'I'
SNIPER DECK (12'x18')	STRUCTURE 'J'

36. WP-22-011 for Alternative Compliance with respect to Section 16.116(b)(1) of the subdivision and land development regulations was approved on November 3, 2021, subject to the following conditions: The applicant shall comply with all applicable County, State and Federal regulations and obtain all necessary permits for lead remediation and construction.

37. A Stormwater Management Plan was approved by DPW on October 27, 2021 for the modifications to the safety berm for the firing range, dated November 1st, 2021.

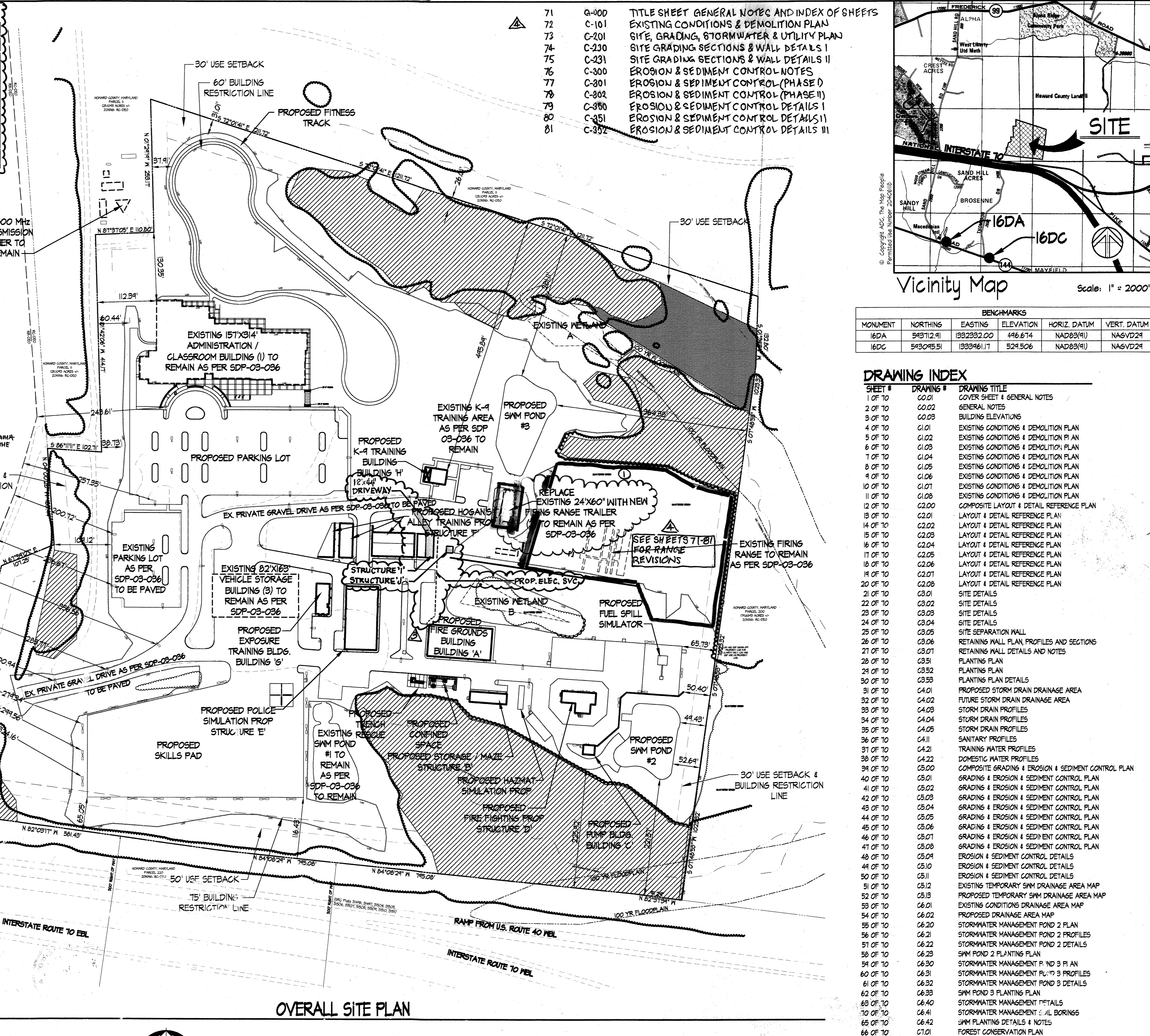


PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, CHARLES W. MITCHELL, III, LICENSE NO. 49422. EXPIRATION DATE: MAY 31, 2022

THIS SEAL IS FOR REVISIONS MADE BY SITE RESOURCES, INC.

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 23165. Expiration Date: 07-18-2017.

Professional Certification: I hereby certify that the information provided and listed under revision #1 on this document was prepared or approved by me.



PROJECT TIMELINE

REFERENCE	ACTION	DATE APPROVED	APPROVED BY
WRITTEN APPROVAL	APPROVED THE USE OF A SEWAGE HOLDING TANK	MARCH 25, 2002	HOWARD COUNTY HEALTH DEPARTMENT
WP-02-102	ALLOWS RECORDING OF ADJACENT DEEDS TO RECONFIGURE PARCELS 253, 220, AND 11.	APRIL 23, 2002	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
WRITTEN APPROVAL	DEFER PLACEMENT OF BITUMINOUS PAVING UNTIL A LATER PHASE OF WORK ON THIS SITE.	JULY 16, 2002	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
WRITTEN APPROVAL	ALLOWS THE USE OF A STORMCEPTOR	OCTOBER 7, 2002	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
WRITTEN APPROVAL	WAIVES THE REQUIREMENT FOR A 12' BENCH, 1' ABOVE THE NORMAL POOL ELEVATION, WITHIN THE SWM POND AS DESCRIBED UNDER SECTION 5.2.1A.2 OF THE HOWARD COUNTY DESIGN MANUAL, VOLUME 1.	OCTOBER 15, 2002	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
WP-03-36	ALLOWS DISTURBANCE WITHIN THE STREAM BUFFER ON THE SOUTH EAST PORTION OF THE SITE IN THE VICINITY OF THE SWM POND AND FUTURE BURN BUILDING.	DECEMBER 9, 2002	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
44-4021	CAPITAL PROJECT WATER DRAWINGS	DECEMBER 12, 2002	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
44-4021	CAPITAL PROJECT WATER DRAWINGS	DECEMBER 12, 2002	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
SDP-03-036	HCPSTC PHASE I IMPROVEMENTS	MARCH 18, 2003	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
SDP-03-036	REDLINE REVISION: REMOVE 'FUTURE' ADDED PARKING AND 10' X 5' CONCRETE PAD	JULY 23, 2004	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
SDP-03-036	REDLINE REVISION: REMOVED OFFICE TRAILER, ADDED 24' X 60' DOUBLE WIDE TRAILER	OCTOBER 26, 2004	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
SDP-03-036	REDLINE REVISION: REVISED ADMIN/CLASSROOM BUILDING WITH WALKWAY AND PARKING AREA WITH 5 HANDICAPPED SPACES.	JULY 13, 2005	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
WRITTEN APPROVAL	ALLOWS A BREAK IN 12' BENCH REQUIRED BY SECTION 5.2.1A.2 IN SWM POND #2	FEBRUARY 7, 2006	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
WP-06-127	(1) ALLOWS DISTURBANCE OF STEEP SLOPES IN EXCESS OF 25% & IN A CONTIGUOUS AREA GREATER THAN 20,000 SF AND (2) EXTENDS APPROVAL OF WP-03-036 AND DEFERRED PLACEMENT OF BITUMINOUS DESCRIBED ABOVE ALLOWING A MAXIMUM OF 1200 SF OF DISTURBANCE AND A MAXIMUM OF 85 SF OF PAVING WITHIN THE 50' INTERMITTENT STREAMBANK BUFFER PROVIDED THAT BEST MANAGEMENT PRACTICES ARE USED BY THE CONTRACTOR AND ALL NECESSARY PERMITS ARE OBTAINED FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE).	JUNE 12, 2006	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
WRITTEN APPROVAL	ALLOWS STORMWATER MANAGEMENT OUTLET STRUCTURE FOR POND #2 TO BE LESS THAN 25' FROM PROPERTY LINE	MAY 30, 2006	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
SDP-06-110	SDP APPROVAL	OCTOBER 30, 2006	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
	SDP revision to add armory and sniper deck	OCTOBER 17, 2016	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

BUILDING INFORMATION TABLE

EXISTING STRUCTURE	TYPE	MEAN HEIGHT	STREET ADDRESS	AGE
ADMINISTRATION/CLASSROOM BUILDING	PERMANENT BUILDING	34' +/-	2200	11 YRS
POLICE RANGE TRAILER	TEMPORARY MODULAR BUILDING	12' +/-	2260	2 YRS
VEHICLE STORAGE BUILDING	PERMANENT BUILDING	24' +/-	2280	12 YRS
PROPOSED STRUCTURE	TYPE	MEAN HEIGHT	STREET ADDRESS	AGE
K-9 TRAINING BUILDING	PERMANENT BUILDING	12' +/-	2204	10 YRS
HOGAN'S ALLEY TRAINING PROP 1	PERMANENT STRUCTURE	18' +/-	2208	10 YRS
HOGAN'S ALLEY TRAINING PROP 2	PERMANENT STRUCTURE	20' +/-	2208	10 YRS
HOGAN'S ALLEY TRAINING PROP 3	PERMANENT STRUCTURE	22' +/-	2208	10 YRS
EXPOSURE TRAINING BUILDING	PERMANENT BUILDING	18' +/-	2222	10 YRS
POLICE SIMULATION PROP	PERMANENT BUILDING	24' +/-	2230	10 YRS
FIRE GROUNDS BUILDING	PERMANENT BUILDING	24' +/-	2260	10 YRS
STORAGE/MAZE	PERMANENT BUILDING	12' +/-	2272	10 YRS
FIRE FIGHTING PROP	PERMANENT STRUCTURE	26' +/-	2268	10 YRS
PUMP BUILDING	PERMANENT BUILDING	18' +/-	2264	10 YRS
ARMORY	PERMANENT STRUCTURE	12' +/-		
SNIPER DECK	PERMANENT STRUCTURE	12' +/-		

EXISTING VEGETATIVE COMMUNITIES

Forest Stand 1
3.26 ac. FS1 is a Maple and Oak stand. The stand is the largest associated stand and the onsite portions are approximately 4.6 acres of a much larger stand. The onsite canopy species include Red Oak, Red Maple, Black Oak, and Tulip Poplar. This stand contains some large maple trees including a 36 inch dba Red Maple. The understory is shrubby and viney and dense. Species include Greenbrier, Multiflora Rose, Poison Ivy, Japanese Honeysuckle and grape. One of two separate stream branches run through each of the two onsite portions of FS1. The stream branch running through the southern, onsite portion of FS1 is dry. The stream branch running through the northern, onsite portion of FS1 is a perennial tributary of the Little Patuxent River. The canopy is approximately 70 to 90 percent closed.

The adjacent tree line running along Interstate Route 70 is a stand of Tree of Heaven.

Significant Trees:
Specimen Tree: 36" Red Maple
Large Trees: 28" Red Maple, 28" Red Maple, 28" Red Maple

Forest Stand 2
3.24 ac. FS2 is a Red Maple stand. The canopy species include Red Maple, Red Oak, Tulip Poplar and a few American Elm trees. In some areas of the stand, Red Maple is the only canopy species. The canopy is approximately 90 percent closed in the western portion of the stand and is as low as 65 percent closed in the eastern portion of the stand. The eastern portion of the stand is in closer proximity to Wetland A. The shrub layer consists of Multiflora Rose which is concentrated in the eastern portion of the stand. The dominant herbaceous species consist of Poison Ivy, Virginia Creeper, and Japanese Honeysuckle. Groundcover is at approximately 70 percent. This stand has moderately good forest structure, but has limited habitat due to its small size and disconnection from FS1. A corridor linking FS1 and FS2 would improve the value.

Significant Trees:
Specimen Trees: 33" Tulip Poplar, 35" White Oak

Forest Stand 3
0.41 ac. FS3 is a disturbed, low quality stand of Tree of Heaven. Some Tulip Poplar, Red Maple, Black Cherry, and Red Oak are also growing in this stand. This stand has been subject to much disturbance from Interstate Route 70, the unnamed access road, and the clearing and grading of the site.

Hedgerows
A few hedgerows exist periodically throughout the site. They are small stands of trees and brush narrower than 35' and smaller than 10,000 sf in area. These stands are comprised of mostly Red Maple, Tree of Heaven and a mix of both Asian and Black Cherry. Understory is dominated by Greenbrier, Multiflora Rose, Poison Ivy, Japanese Honeysuckle and grape.

Open Space
The majority of the site is mowed grass and open field. The open field areas contain a variety of grasses and herbaceous plants with scattered larger shrubs Greenbrier and Multiflora Rose. The edges of the open field areas are dense with the larger shrubs.

Wetlands
There are two wetlands on the site, neither is to be disturbed during this work. Wetland A to the north-east of the site is mostly grass but is surrounded by Red Maple and will most likely become wooded in the future. Wetland B is in the center of the site. Wetland B was created due to a poorly graded swale on the south side of the existing freing range. It contains a few juvenile Willows, Cattails and other herbaceous plants.

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 H.	MOUNTING AFF.	MANU. / MODEL No. (OR APPROVED EQUIV.)
		VOLTS	NO.	TYPE			
D	INDUSTRIAL INCANDESCENT FIXTURE WITH CAST ALUMINUM HOUSING, CAST ALUMINUM GUARD AND GLASS GLOBE.	120	1	200 WATT A-21	200	SURFACE WALL OR CEILING MTD.	STONCO 'VCKL' SERIES
D1	SAME AS TYPE 'D' EXCEPT WALL MOUNTED.	120	1	60 WATT A-19 RED	60	WALL MOUNTED AT 7'-6" A.F.F.	STONCO 'VCKL' SERIES
D2	SAME AS TYPE 'D' EXCEPT WALL MOUNTED.	120	1	60 WATT A-19 GREEN	60	WALL MOUNTED AT 7'-6" A.F.F.	STONCO 'VCKL' SERIES
H	ROUGH SERVICE GRADE COMPACT FLOURESCENT WALL SCENCE WITH INTEGRAL PHOTOCELL.	120/277	1	32 TRT	35	WALL MTD. AT 7'-0" A.F.F.	LITHONIA 'VRBV' SERIES
J	REMOTE WEATHERPROOF EMERGENCY LIGHT HEAD WITH FIBERGLASS HOUSING AND SEALED & GASKETED LAMP.	6 VOLT D.C.	1	HALOGEN	-	WALL MTD. AT 7'-0" A.F.F.	LITHONIA 'ELANK' SERIES
M	H.I.D. WALL PACK WITH DIE CAST ALUMINUM HOUSING, IMPACT RESISTANT BOROSILIGATE GLASS LENS AND INTEGRAL PHOTOCELL.	120	1	150 WATT M.H.	175	WALL MTD. AT 10'-0" A.F.F.	LUMARK 'P' SERIES
M1	SAME AS TYPE 'M'.	120	1	70 WATT M.H.	100	WALL MTD. AT 10'-0" A.F.F.	LUMARK 'P' SERIES
P	2X4 FLOURESCENT TROFFER WITH 3" DEEP, 18 CELL LOW IRIDESCENT PARABOLIC LOUVER AND 2 ELECTRONIC BALLAST.	120	3	F32T8	105	RECESSED MOUNTED.	LITHONIA 'FMB' SERIES
Q	2X2 FLOURESCENT TROFFER WITH 3" DEEP, 9 CELL LOW IRIDESCENT PARABOLIC LOUVER AND SINGLE ELECTRONIC BALLAST.	120	3	F11T8	70	RECESSED MOUNTED.	LITHONIA '2FMB' SERIES
R	POLE MOUNTED H.I.D. FIXTURE WITH FLAT GLASS LENS AND GOLD WEATHER H.P.F. BALLAST. UL LISTED FOR WET LOCATIONS. SHALL HAVE TYPE 3 LIGHT DISTRIBUTION OPTICS. POLE SHALL BE 20' SQUARE ALUMINUM WITH EPA WITH STANDRATING OF 100 MPH WINDS FOR ATTACHED FIXTURES. COLOR OF POLE AND FIXTURE TO BE EQUIPPED BY ARCHITECT. FIXTURE TO BE SELECTED BY ARCHITECT WITH INTEGRAL PHOTOCELL.	208V, 1 PH.	1	400 WATT M.H.	450	POLE	LITHONIA 'KSF2' SERIES
R1	SAME AS TYPE 'R' EXCEPT WITH TYPE V LIGHT DISTRIBUTION OPTICS.	208V, 1 PH.	1	400 WATT M.H.	450	POLE	LITHONIA 'KSF2' SERIES
S1	35' CLASS B WOODEN POLE WITH 4' CROSS ARM AND 2 QUARTZ FLOOD LIGHTS. POLE TO BE SET IN GROUND 6'-0". FLOOD LIGHTS TO BE MOUNTED TO CROSS ARMS. CROSS ARMS TO BE BOLTED TO BRACE AT 6' BELOW POLE TOP. CROSS ARM TO BE WOOD. BRACINGS TO BE ZINC-COATED STRUCTURAL STEEL. PROVIDE FUSING AT BASE FOR FIXTURES.	120	2	1500 WATT QUARTZ	3000	POLE	BAY-BRITE 'NGF' SERIES
S2	SAME AS TYPE 'S1' EXCEPT WITH 35' CLASS B WOODEN POLE AND POLE SET IN GROUND 7'-6".	120	2	1500 WATT QUARTZ	3000	POLE	BAY-BRITE 'NGF' SERIES

THIS SEAL IS FOR REVISIONS MADE BY SITE RESOURCES, INC.



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 23165, Expiration Date: 10/17/2017.

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Robert J. Weber 10/30/06
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James M. Irvin 10/26/06
JAMES M. IRVIN, DIRECTOR DATE

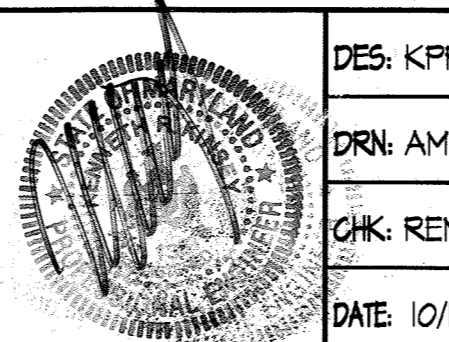
APPROVED: DEPARTMENT OF PLANNING & ZONING
Mark A. Ayala 10/16/06
DIRECTOR DATE

William J. ... 10/24/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Cindy ... 10/20/06
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

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



DES: KFR	
DRN: AM	
CHK: REM	
DATE: 10/11/06	
SRI	REVISION: APPD ARMORY AND SNIPER DECK 10/17/16
BY	NO.
DATE	REVISION

600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

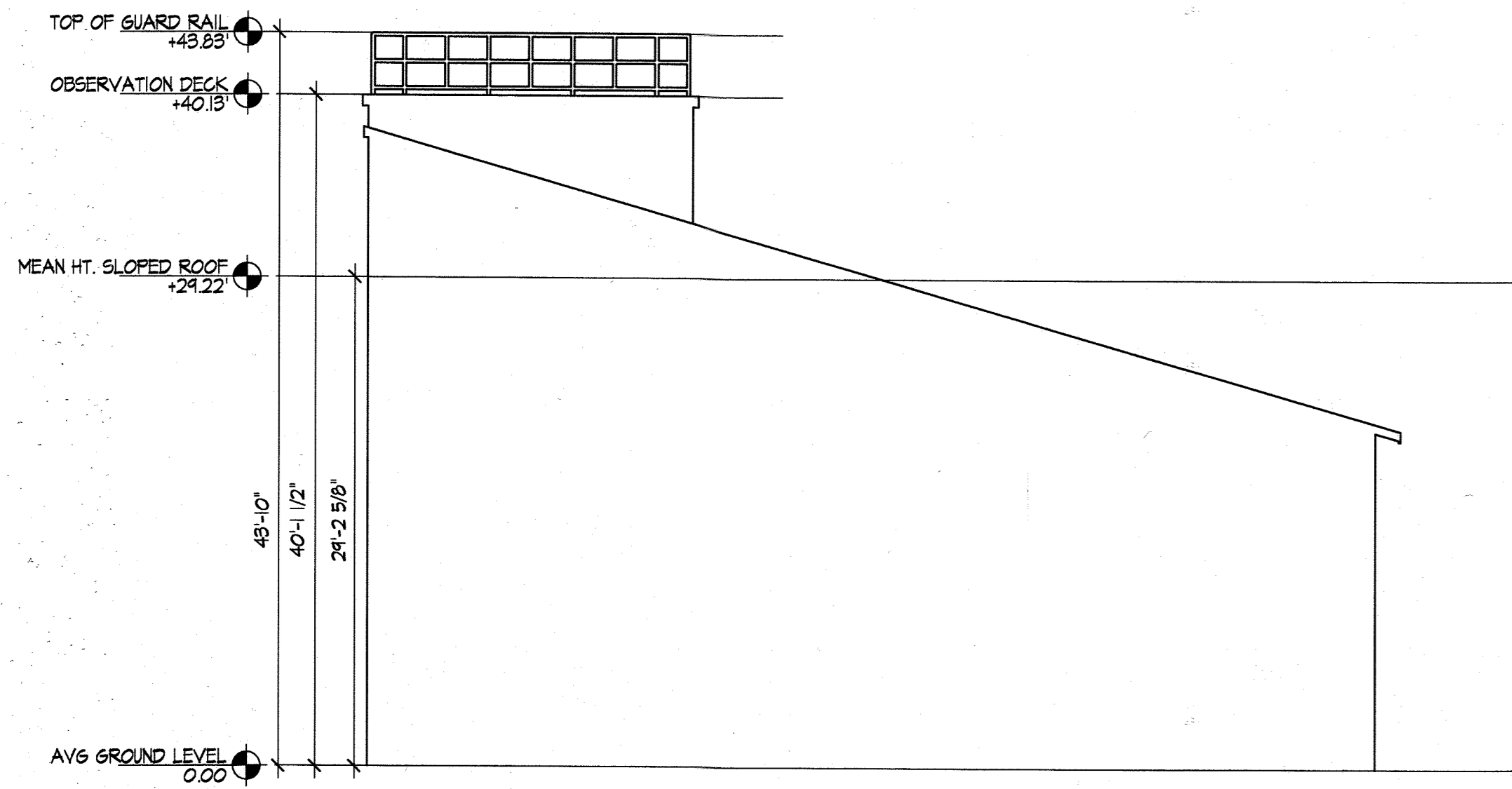
OWNER: Howard County
Department of Public Works
3430 Courthouse Drive
Ellicott City, Maryland, 21043
Phone (410) 313-2700

ADDRESS / PERMIT INFORMATION:
PARCEL #253 ADDRESS: 2200 Alpha Center Drive
FLAT No. 1516, L6688 / F618
GRID No. 218, ZONE: RC-DEO, TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: 130, SEWER CODE: Private - Holding Tank

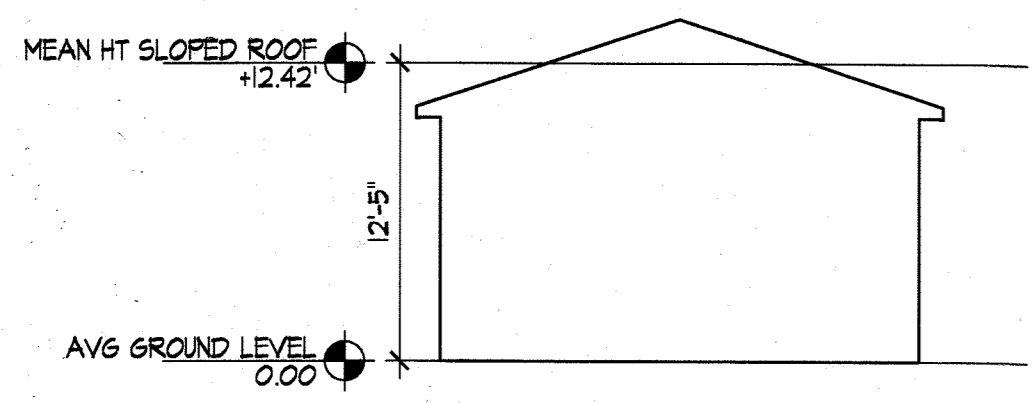
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SHEET 2 OF 8

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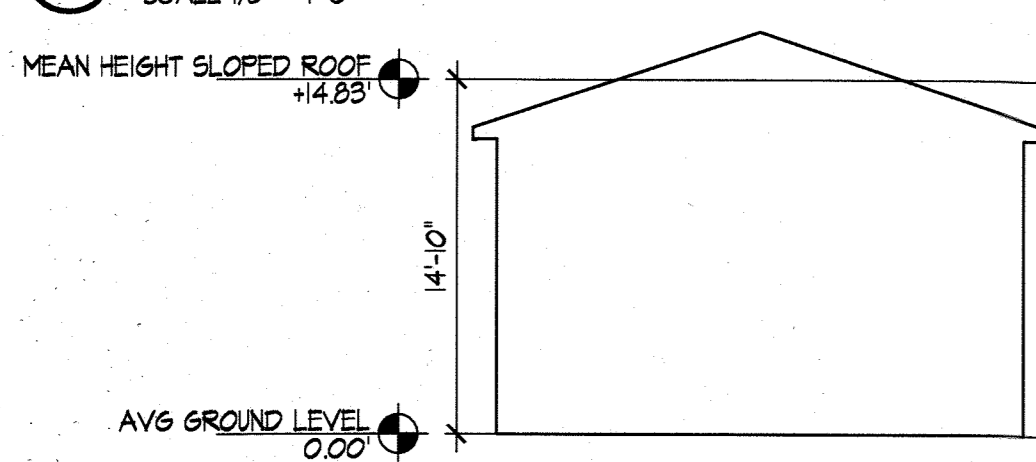
Site Notes



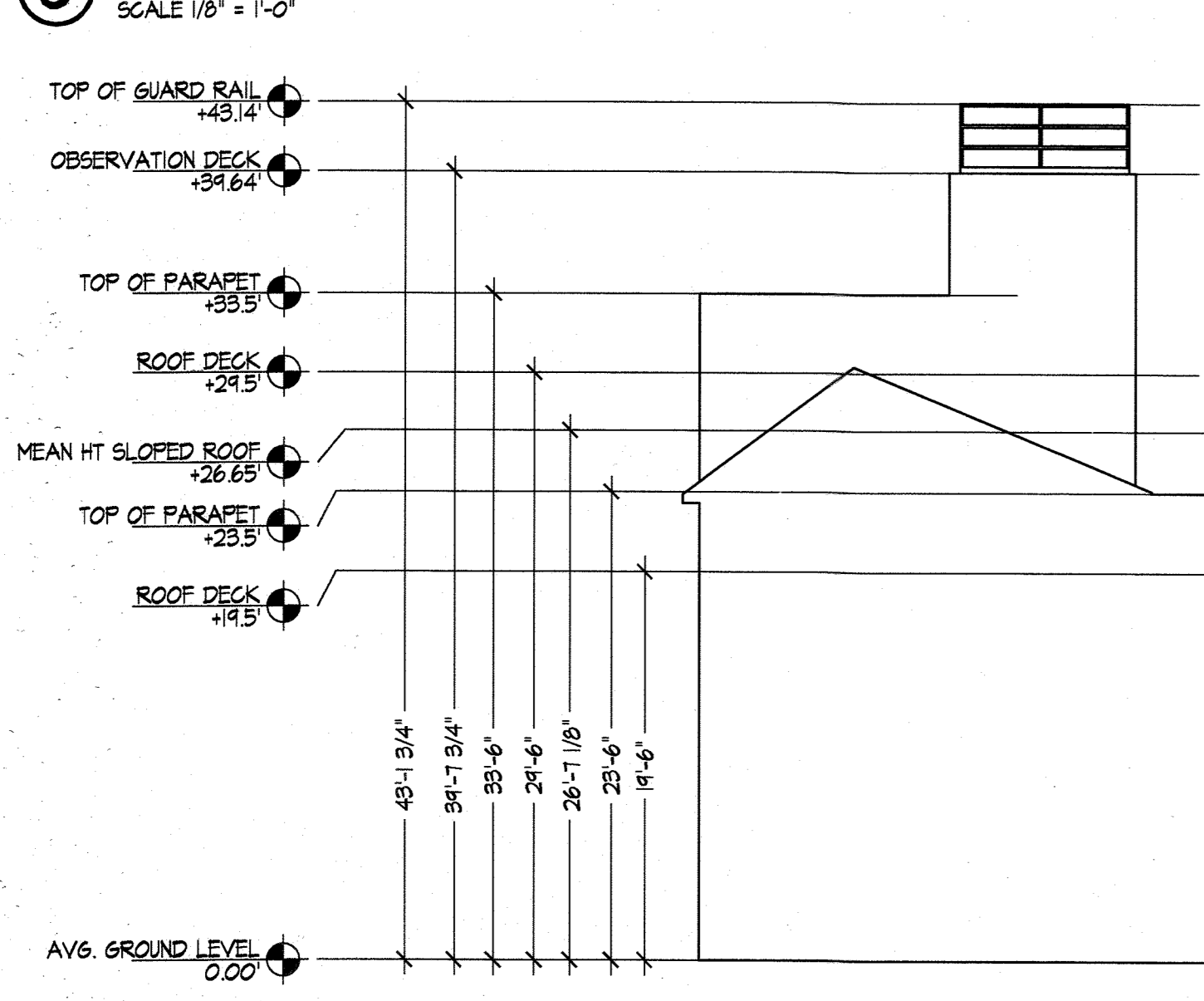
A FIRE GROUNDS BUILDING HEIGHT DIAGRAM
SCALE 1/8" = 1'-0"



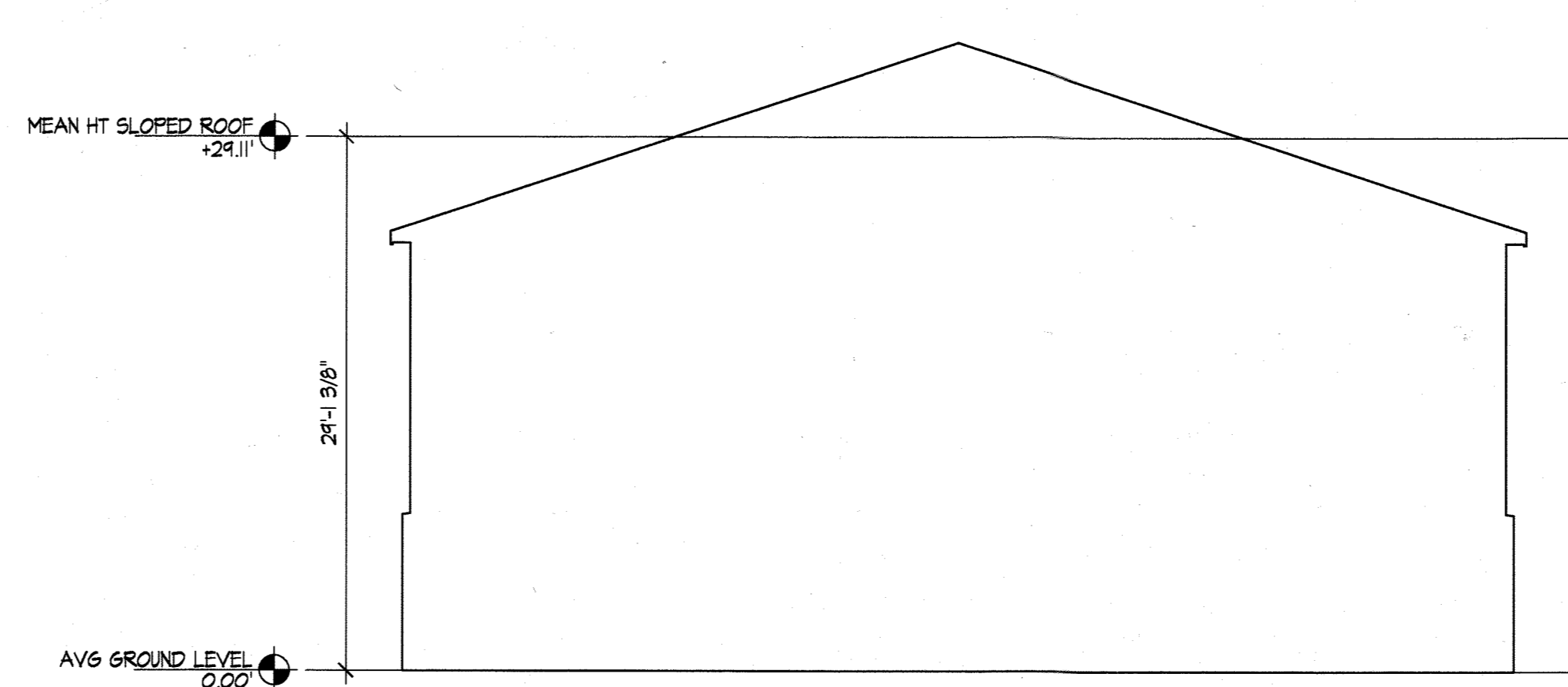
B STORAGE/MAZE STRUCTURE BUILDING HEIGHT DIAGRAM
SCALE 1/8" = 1'-0"



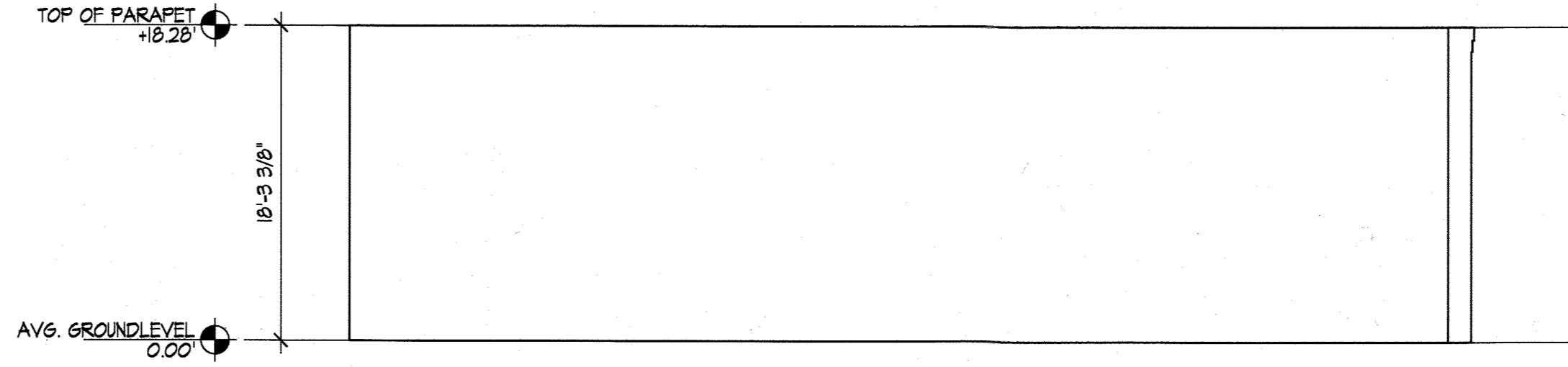
C PUMP HOUSE BUILDING HEIGHT DIAGRAM
SCALE 1/8" = 1'-0"



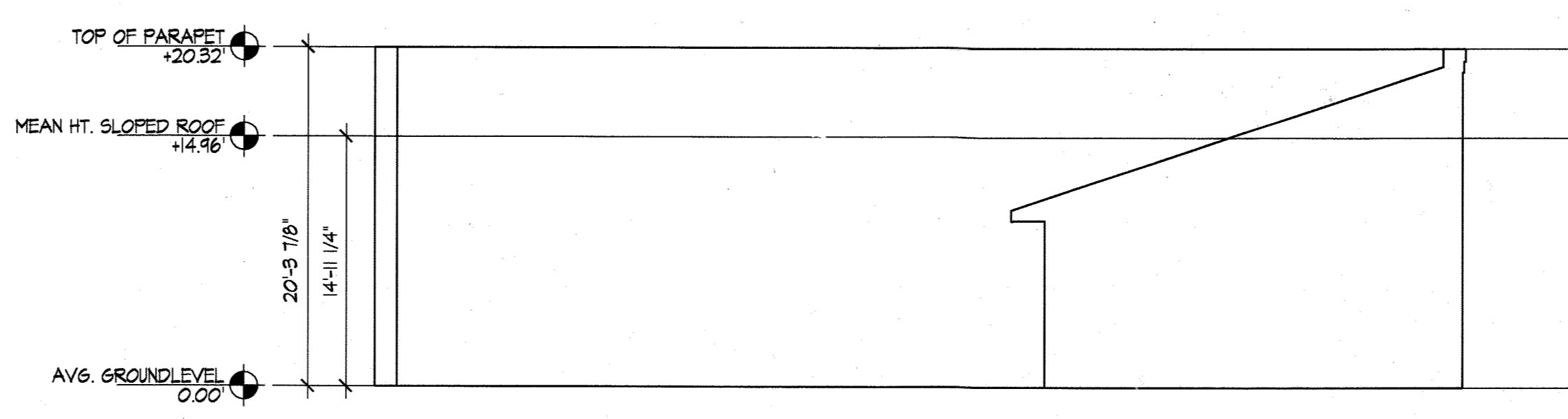
D STRUCTURAL FIRE FIGHTING PROP HEIGHT DIAGRAM
SCALE 1/8" = 1'-0"



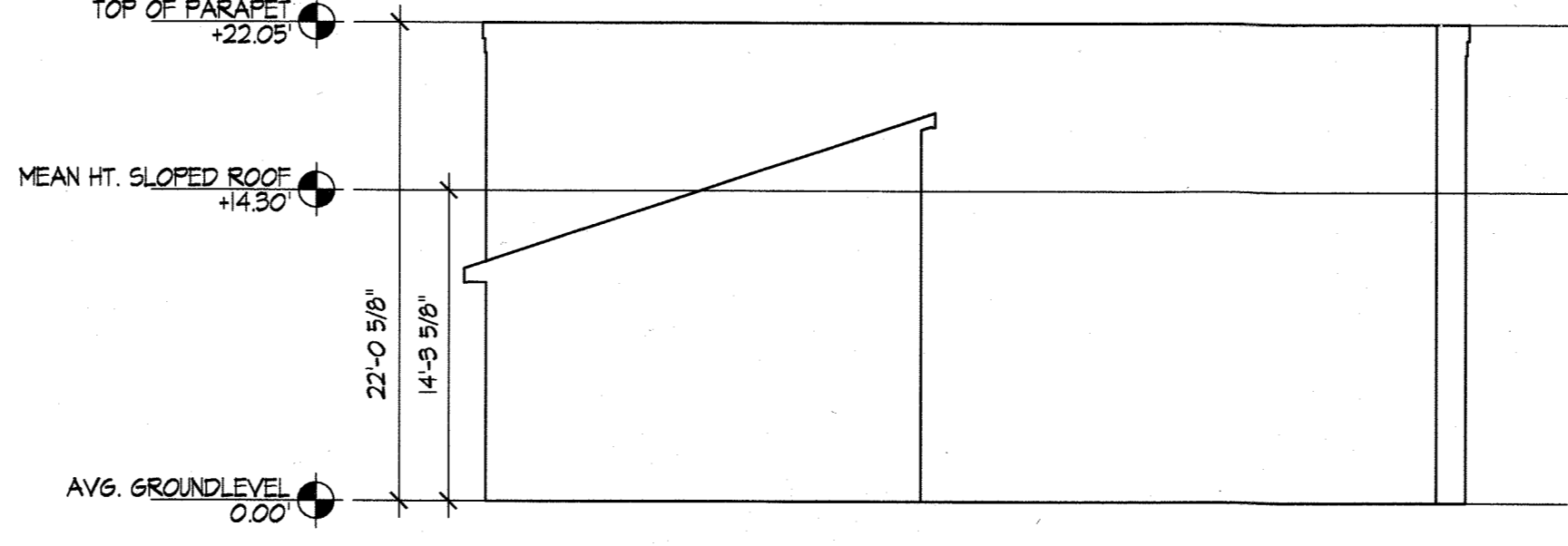
E POLICE SIMULATION BUILDING HEIGHT DIAGRAM
SCALE 1/8" = 1'-0"



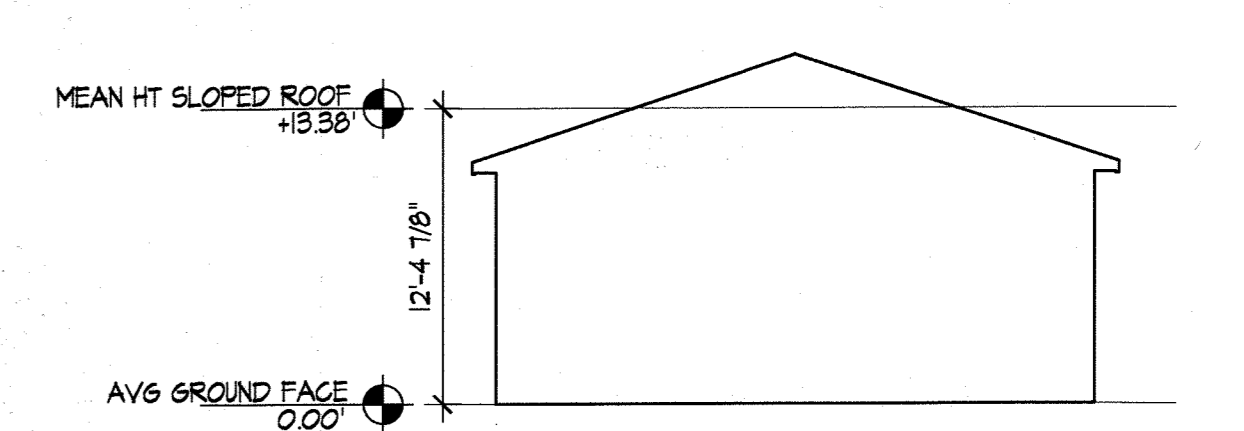
F HOGANS ALLEY STRUCTURE 1 HEIGHT DIAGRAM
SCALE 1/8" = 1'-0"



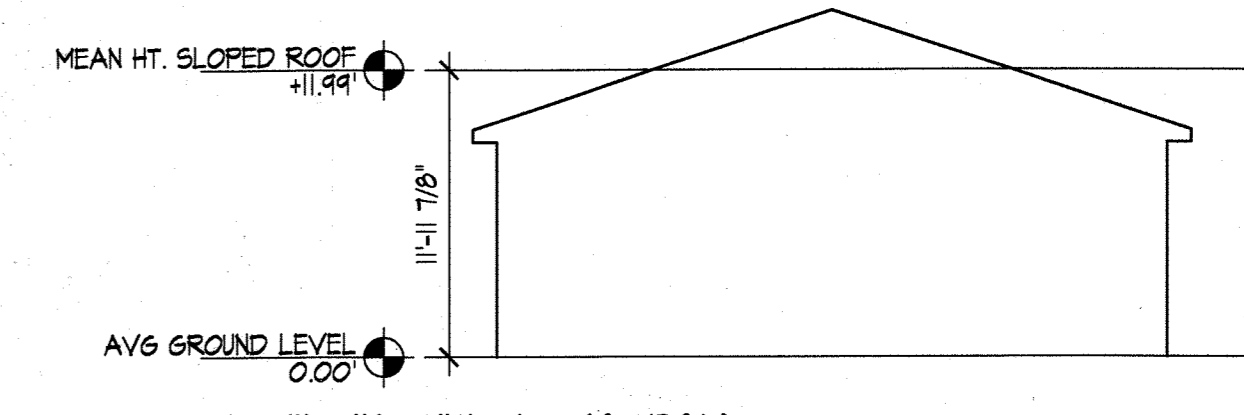
F HOGANS ALLEY STRUCTURE 2 HEIGHT DIAGRAM
SCALE 1/8" = 1'-0"



F HOGANS ALLEY STRUCTURE 3 HEIGHT DIAGRAM
SCALE 1/8" = 1'-0"



G EXPOSURE TRAINING BUILDING HEIGHT DIAGRAM
SCALE 1/8" = 1'-0"



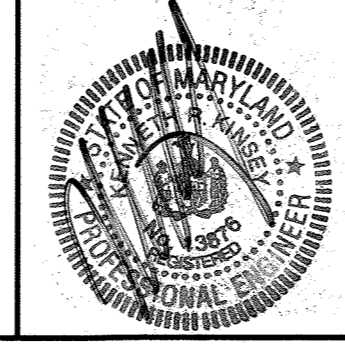
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SCALE 1/8" = 1'-0"

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Robert L. Wynn
DIRECTOR
DATE: 10/30/06
John P. ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 10/30/06
... ..
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: bw@edmeades-stromdahl.com



DES: KPR				
DRN: AM				
CHK: REM				
DATE: 10/11/06	BY	NO.	REVISION	DATE

Building Elevations
600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

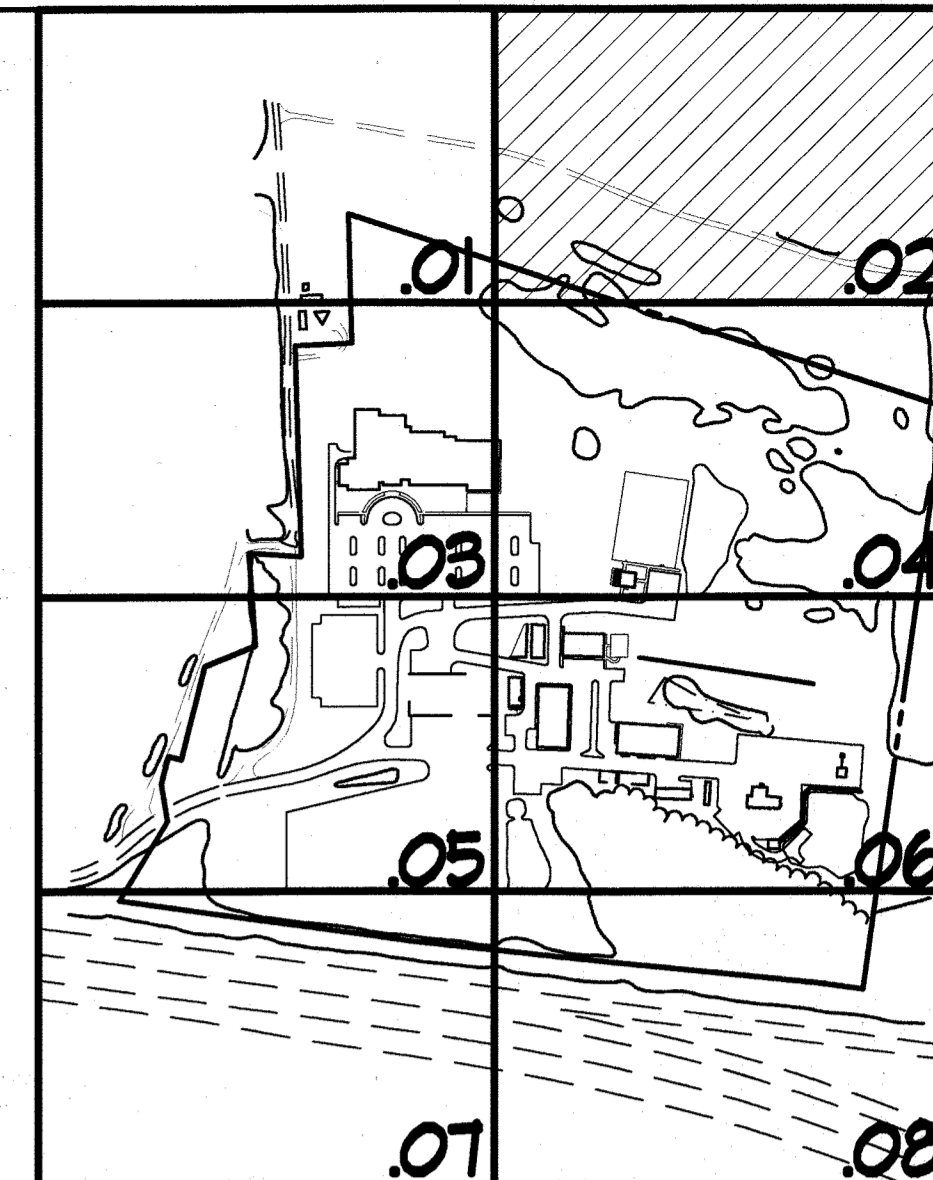
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WATER CODE: 730, SEWER CODE: Private - Holding Tank

CO.03
SCALE: AS SHOWN
SHEET 3 OF 8

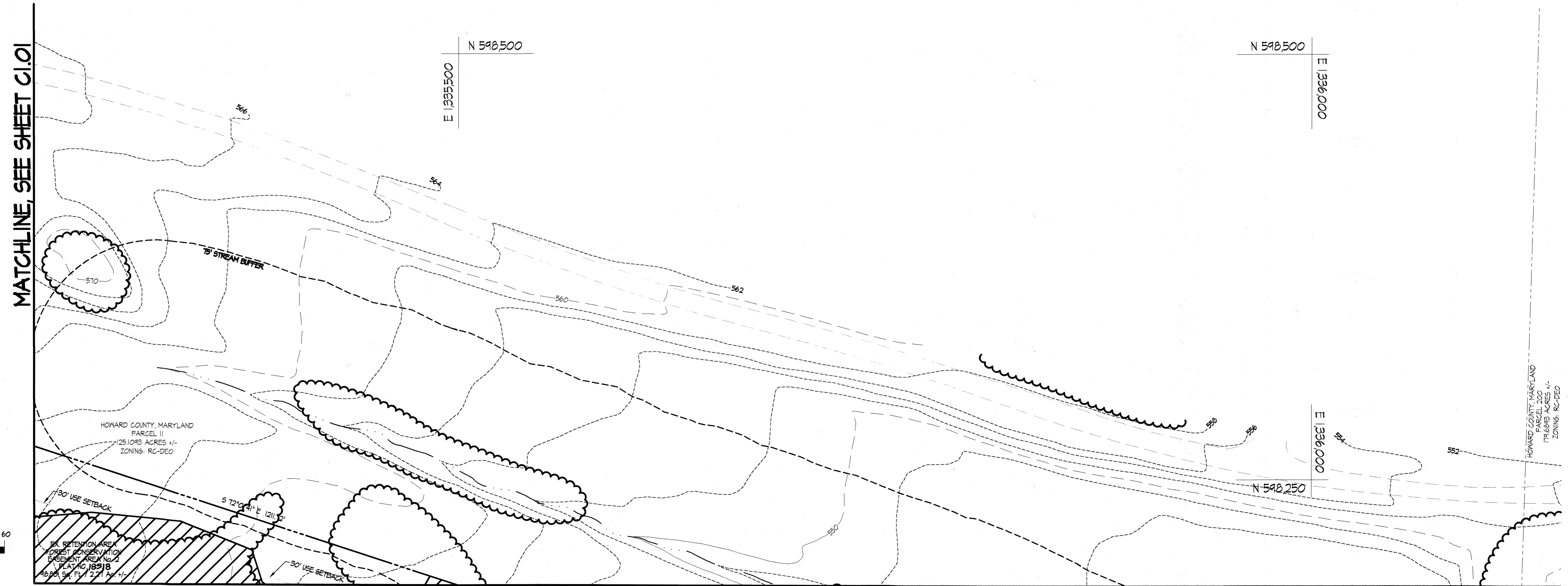
Z:\2006\03\103-HowardCo-PublicSafetyTrainingCenter\03_Bldg_Elevations.dwg, 10/30/2006 11:08:26 AM - Copyright, Site Resources, Inc.

LEGEND - EXISTING CONDITIONS & DEMOLITION PLAN

	PROPERTY LINE		TO REMAIN
	EXISTING CONTOURS		EXISTING ELECTRIC/PHONE/COMMUNICATIONS LINE TO BE REMOVED
	EXISTING TREELINE		EXISTING GAS LINE TO REMAIN
	EXISTING TREES		EXISTING GAS LINE TO BE REMOVED
	EXISTING ROAD TO REMAIN		EXISTING BUILDINGS
	EXISTING ROAD TO BE REMOVED		EXISTING FENCE
	EXISTING FEATURES TO BE REMOVED		EXISTING FENCE TO BE REMOVED
	EXISTING SANITARY LINE TO REMAIN		EXISTING UTILITY POLE
	EXISTING SANITARY LINE TO BE REMOVED		EXISTING STEEP SLOPES 15% - 25%
	EXISTING STORM DRAIN TO REMAIN		EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA LESS THAN 20,000 SF
	EXISTING STORM DRAIN TO BE REMOVED		EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF
	EXISTING WATER LINE TO REMAIN		
	EXISTING WATER LINE TO BE REMOVED		
	EXISTING ELECTRIC/PHONE/COMMUNICATIONS LINE		



KEY MAP



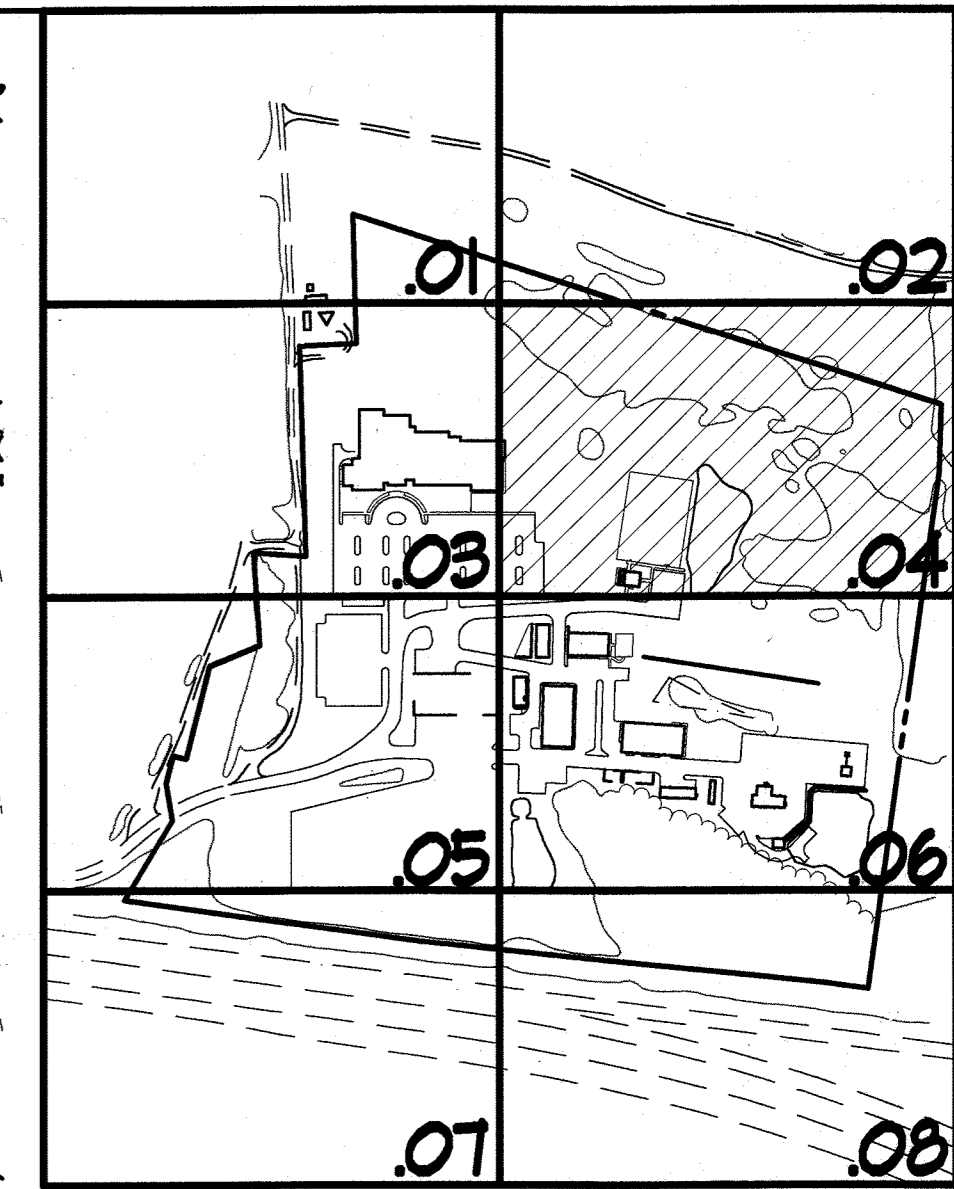
MATCHLINE, SEE SHEET C1.01

MATCHLINE, SEE SHEET C1.04

<p>APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT</p> <p><i>Robert J. Walker</i> COUNTY HEALTH OFFICER DATE: 10/30/06</p>	<p>APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS</p> <p><i>James M. Irvin</i> DIRECTOR DATE: 10/26/06</p>	<p>APPROVED: DEPARTMENT OF PLANNING & ZONING</p> <p><i>Mark J. Lough</i> DIRECTOR DATE: 10/26/06</p> <p><i>Michelle Deane</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 10/26/06</p> <p><i>Cindy Harmon</i> CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 10/26/06</p>	<p>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</p>	<p>SITE RESOURCES, INC. LAND PLANNING / SITE DESIGN 14315 Jarrettsville Pike Phoenix, Maryland 21131 Phone: 410.683.3388 Fax: 410.683.3389</p>	<p>DES: KPR DRN: AM CHK: REM DATE: 10/11/06</p>	<p style="text-align: center;">Existing Conditions & Demolition Plan</p> <p>600' SCALE MAP NO. 16 BLOCK NO. 2 / B</p>	<p>Phase II Improvements: four buildings, eight training props and associated infrastructure PUBLIC SAFETY TRAINING CENTER at Alpha Ridge Landfill, Capital Project No. C-01B2, Howard County, Maryland</p> <p><small>OWNER: Howard County Department of Public Works 3450 Courthouse Drive Ellicott City, Maryland 21043 Phone 1410 313-2700</small></p> <p><small>ADDRESS / PERMIT INFORMATION: PARCEL #253, ADDRESS: 2200 Alpha Center Drive PLAT No. 15116, L 6684 / F 614 GRID No. 218, ZONE: RC-DEO, TAX MAP No. 16 3rd Election District, Census Tract 6030 WATER CODE: 130, SEWER CODE: Private - Holding Tank</small></p>	
						C1.02	SCALE: 1"=30'	SHEET 5 OF 8

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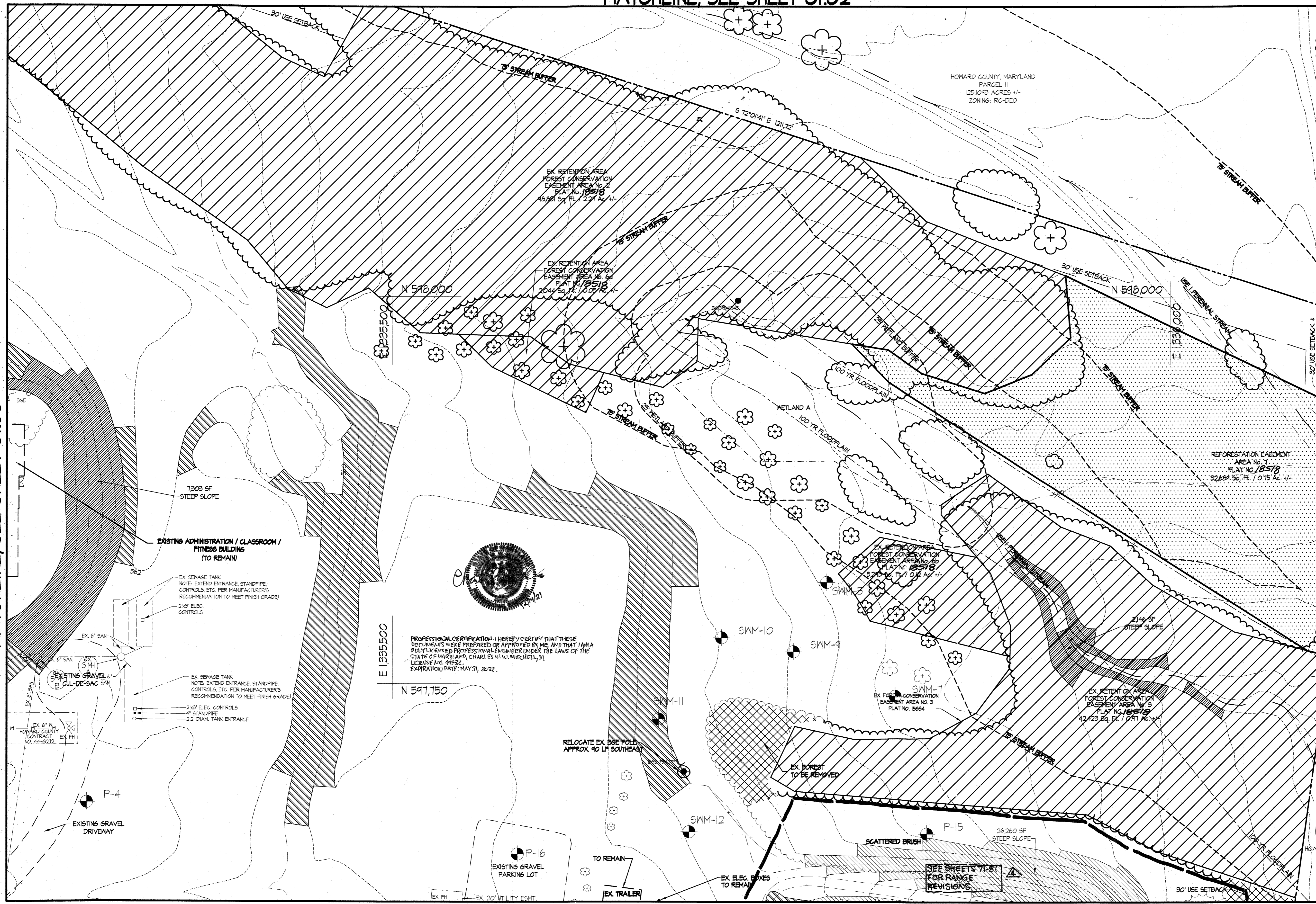
MATCHLINE, SEE SHEET C1.02



KEY MAP
LEGEND - EXISTING CONDITIONS & DEMOLITION PLAN

- PROPERTY LINE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING TREES
- EXISTING ROAD TO REMAIN
- EXISTING ROAD TO BE REMOVED
- EXISTING FEATURES TO BE REMOVED
- EXISTING SANITARY LINE TO REMAIN
- EXISTING SANITARY LINE TO BE REMOVED
- EXISTING STORM DRAIN TO REMAIN
- EXISTING STORM DRAIN TO BE REMOVED
- EXISTING WATER LINE TO REMAIN
- EXISTING WATER LINE TO BE REMOVED
- EXISTING ELECTRIC/PHONE/COMMUNICATIONS LINE TO REMAIN
- EXISTING ELECTRIC/PHONE/COMMUNICATIONS LINE TO BE REMOVED
- EXISTING GAS LINE TO REMAIN
- EXISTING GAS LINE TO BE REMOVED
- EXISTING BUILDINGS
- EXISTING FENCE
- EXISTING FENCE TO BE REMOVED
- EXISTING UTILITY POLE
- EXISTING STEEP SLOPES 15% - 25%
- EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA LESS THAN 20,000 SF
- EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF

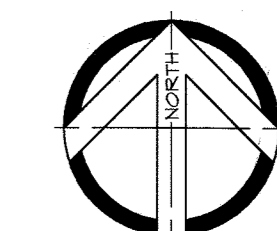
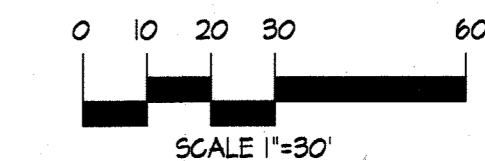
MATCHLINE, SEE SHEET C1.03



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, CHARLES W. MITCHELL, II, LICENSE NO. 44522, EXPIRATION DATE: MAY 31, 2022.

MATCHLINE, SEE SHEET C1.06

PURPOSE STATEMENT: THE REDLINE REVISION OF THIS SHEET IS TO REVISE THE GRADES OF THE PROTECTION BERM AT THE FIRING RANGE.



C1.04

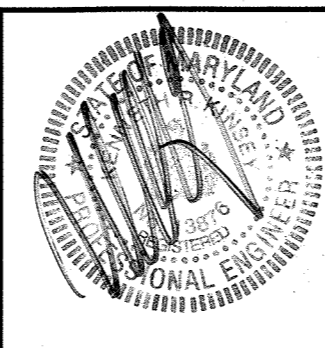
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Robert J. Water
COUNTY HEALTH OFFICER
DATE: 10/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James M. Irvin
DIRECTOR
DATE: 10/26/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
Mark D. Wyle
DIRECTOR
DATE: 10/30/06
John J. ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 10/30/06
...
CHIEF, DIVISION OF LAND DEVELOPMENT

EDMEADES & STROMDAHL, LTD.
ARCHITECTS / PLANNERS
34 North Main Street Bel Air, Maryland 21014
Phone: 410.879.0388 Fax: 410.879.4285
E-mail: hw@edmeades-stromdahl.com

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



DES: KPR			
DRN: AM	RK&K	REVISE THE GRADES OF THE PROTECTION BERM AT THE FIRING RANGE	11/1/21
CHK: REM			
DATE: 10/11/06	BY: NO.	REVISION	DATE

Existing Conditions & Demolition Plan

600' SCALE MAP NO. 16 BLOCK NO. 2 / B

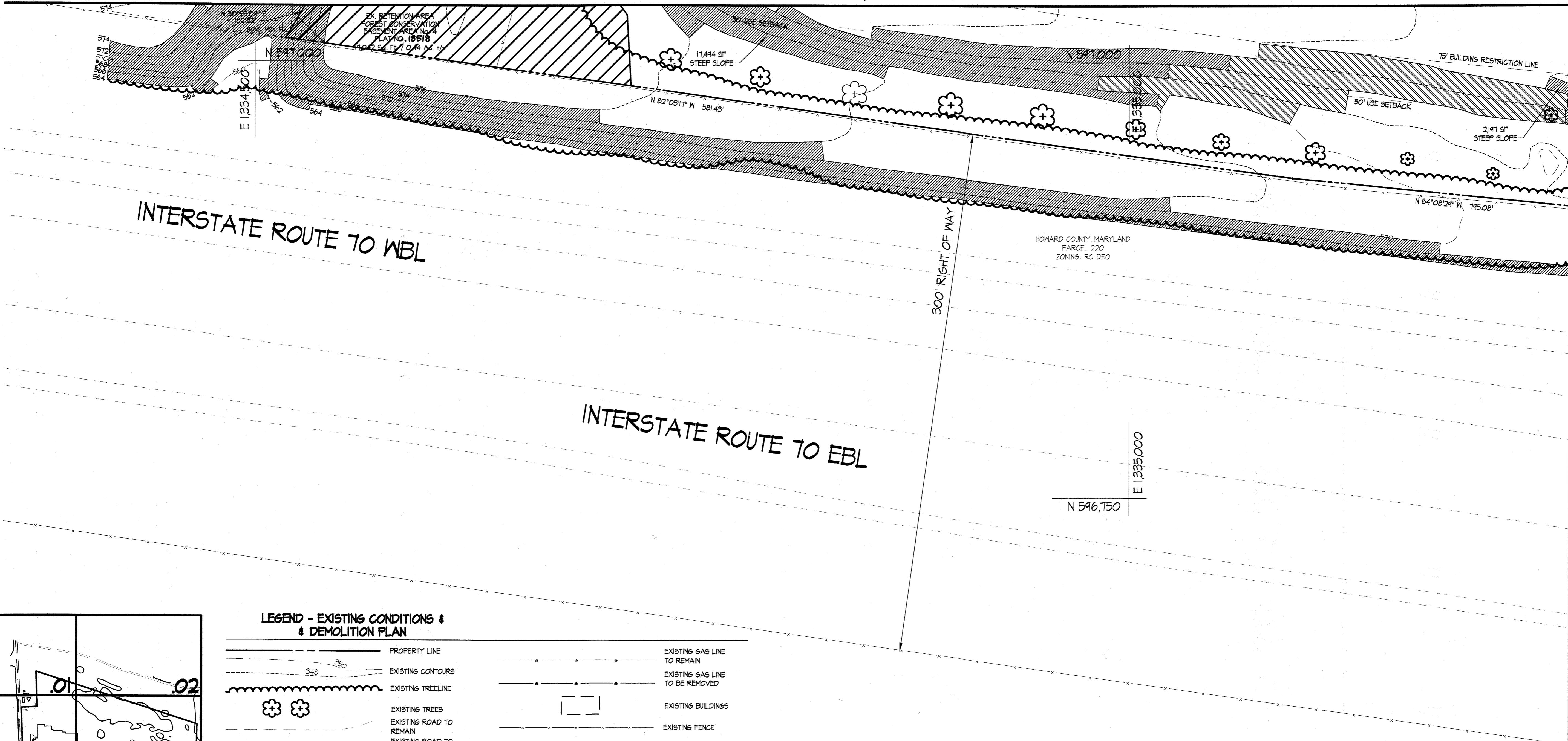
Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

OWNER:
Howard County
Department of Public Works
3450 Conestoga Drive
Elliott City, Maryland 21043
Phone (410) 313-2100

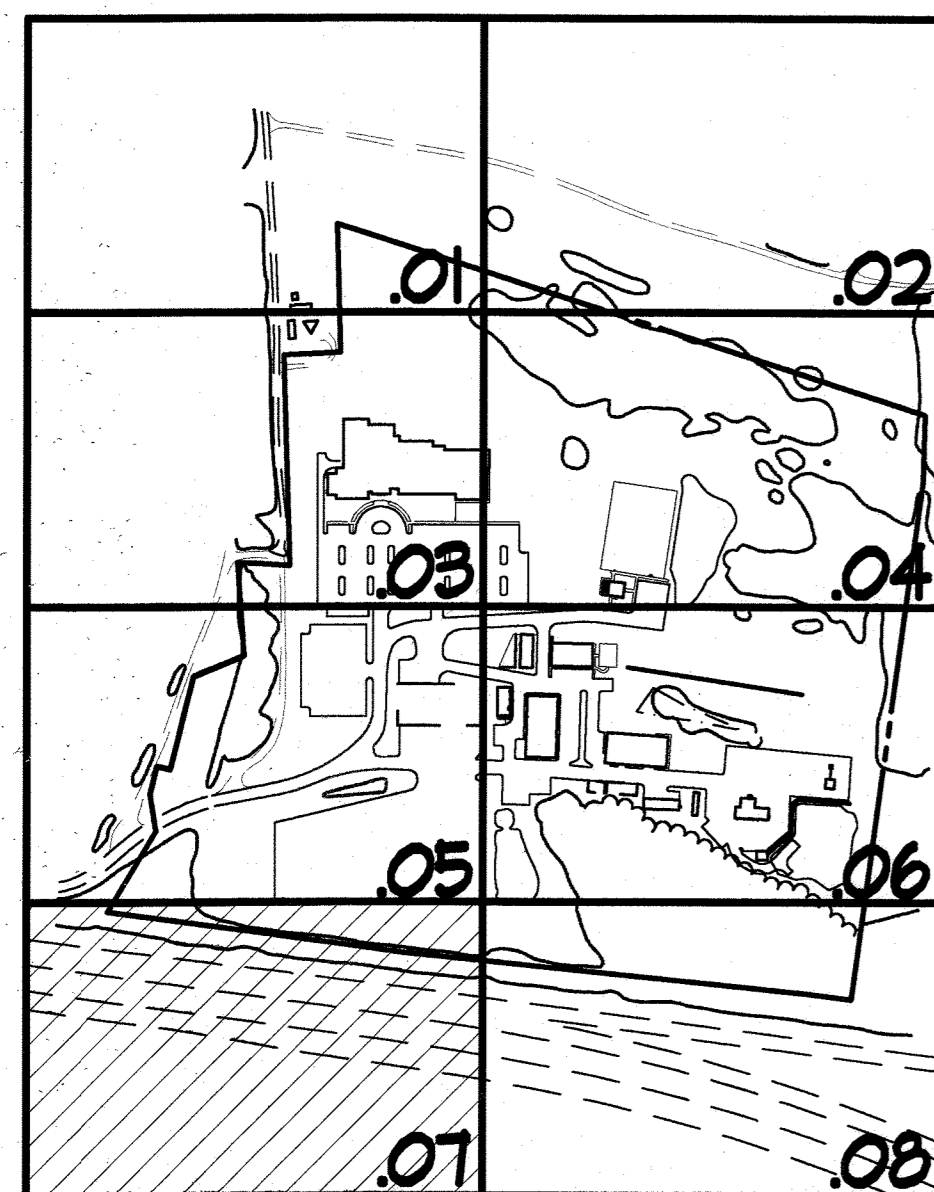
ADDRESS / PERMIT INFORMATION:
PARCEL #253 ADDRESS: 2200 Alpha Center Drive
PLAT No. 1576, L&E89 / F&H
GRID No. 218 ZONE: RC-DEO, TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: 130, SEWER CODE: Private - Holding Tank

SCALE: 1"=30'
SHEET 7 OF 8

MATCHLINE, SEE SHEET C1.05



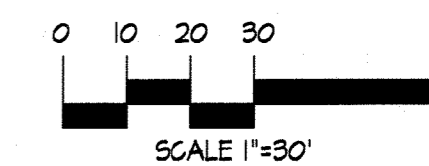
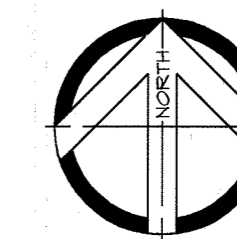
MATCHLINE, SEE SHEET C1.08



KEY MAP

LEGEND - EXISTING CONDITIONS & DEMOLITION PLAN

	PROPERTY LINE		EXISTING GAS LINE TO REMAIN
	EXISTING CONTOURS		EXISTING GAS LINE TO BE REMOVED
	EXISTING TREELINE		EXISTING BUILDINGS
	EXISTING TREES		EXISTING FENCE
	EXISTING ROAD TO REMAIN		EXISTING FENCE TO BE REMOVED
	EXISTING ROAD TO BE REMOVED		EXISTING UTILITY POLE
	EXISTING FEATURES TO BE REMOVED		EXISTING STEEP SLOPES 15% - 25%
	8" SAN EXISTING SANITARY LINE TO REMAIN		EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA LESS THAN 20,000 SF
	8" SAN EXISTING SANITARY LINE TO BE REMOVED		EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF
	15" RCOF EXISTING STORM DRAIN TO REMAIN		
	15" RCOF EXISTING STORM DRAIN TO BE REMOVED		
	8" W EXISTING WATER LINE TO REMAIN		
	8" W EXISTING WATER LINE TO BE REMOVED		
	EXISTING ELECTRIC/PHONE/COMMUNICATIONS LINE TO REMAIN		
	EXISTING ELECTRIC/PHONE/COMMUNICATIONS LINE TO BE REMOVED		



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

Robert J. Walker
COUNTY HEALTH OFFICER
DATE: 10/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

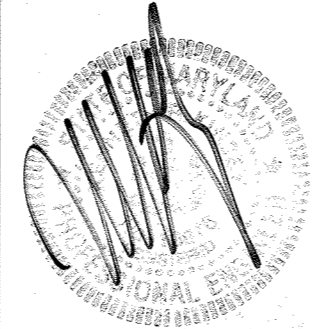
James M. Irvin
DIRECTOR
DATE: 10/26/06

APPROVED: DEPARTMENT OF PLANNING & ZONING

Charles H. Gault
DIRECTOR
DATE: 10/26/06
Michael J. ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 10/26/06
...
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 10/26/06

EDMEADES & STROMDAHL, LTD.
ARCHITECTS / PLANNERS
34 North Main Street Bel Air, Maryland 21114
Phone: 410.879.0388 Fax: 410.879.4785
E-mail: hw@edmeades-stromdahl.com

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



DES:	KPR			
DRN:	AM			
CHK:	REM			
DATE:	10/11/06			
BY:	NO.	REVISION	DATE	

Existing Conditions & Demolition Plan

600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

OWNER: Howard County Department of Public Works
3450 Courthouse Drive
Elliott City, Maryland 21048
Phone (410) 313-2100
ADDRESS / PERMIT INFORMATION:
PARCEL #255, ADDRESS: 2200 Alpha Center Drive
FLAT No. 15116, L6604 / F618
GRID No. 218, ZONE: RC-DEO, TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: 130, SEWER CODE: Private - Holding Tank

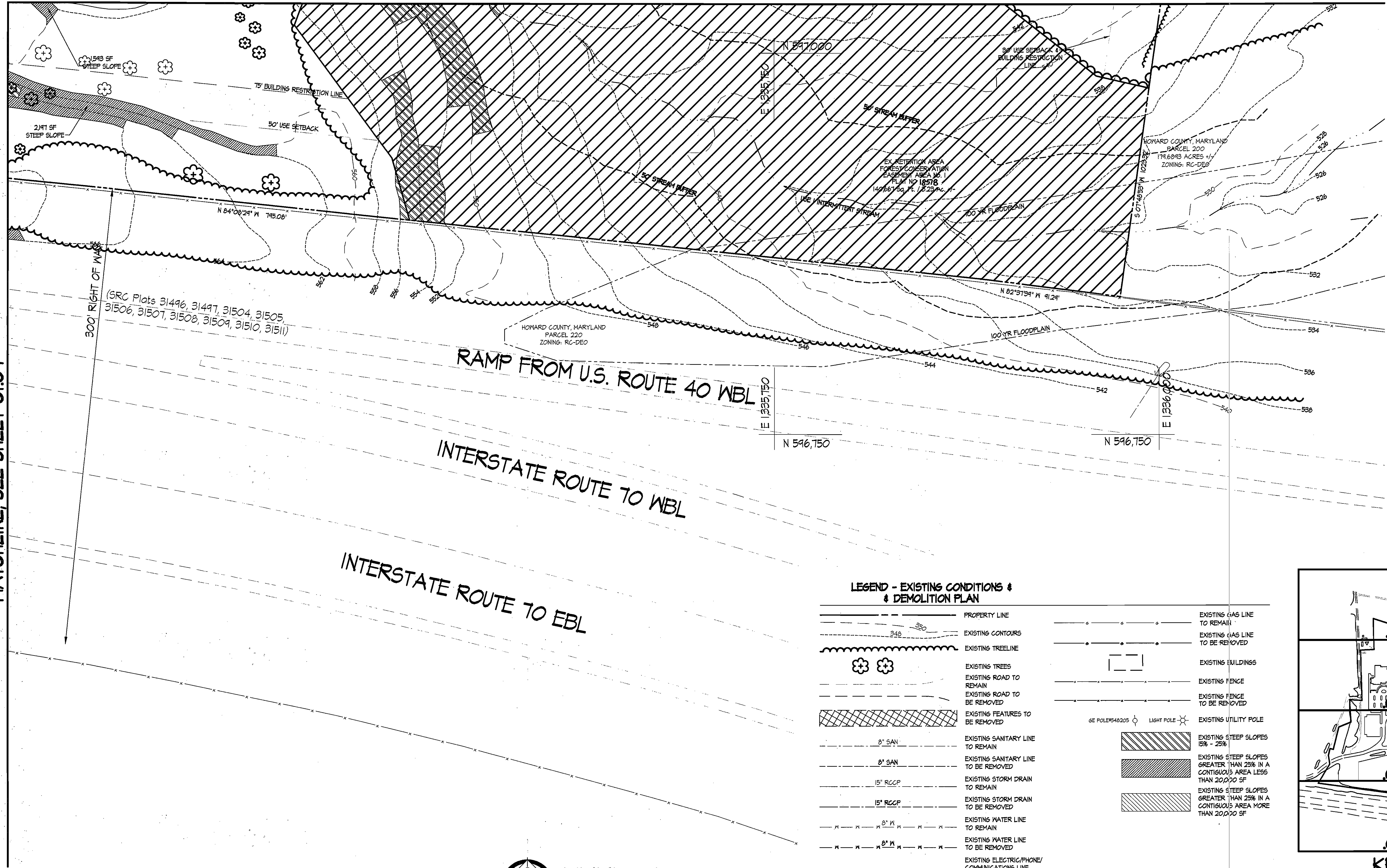
C1.07

SCALE: 1"=30'

SHEET 10 OF 81

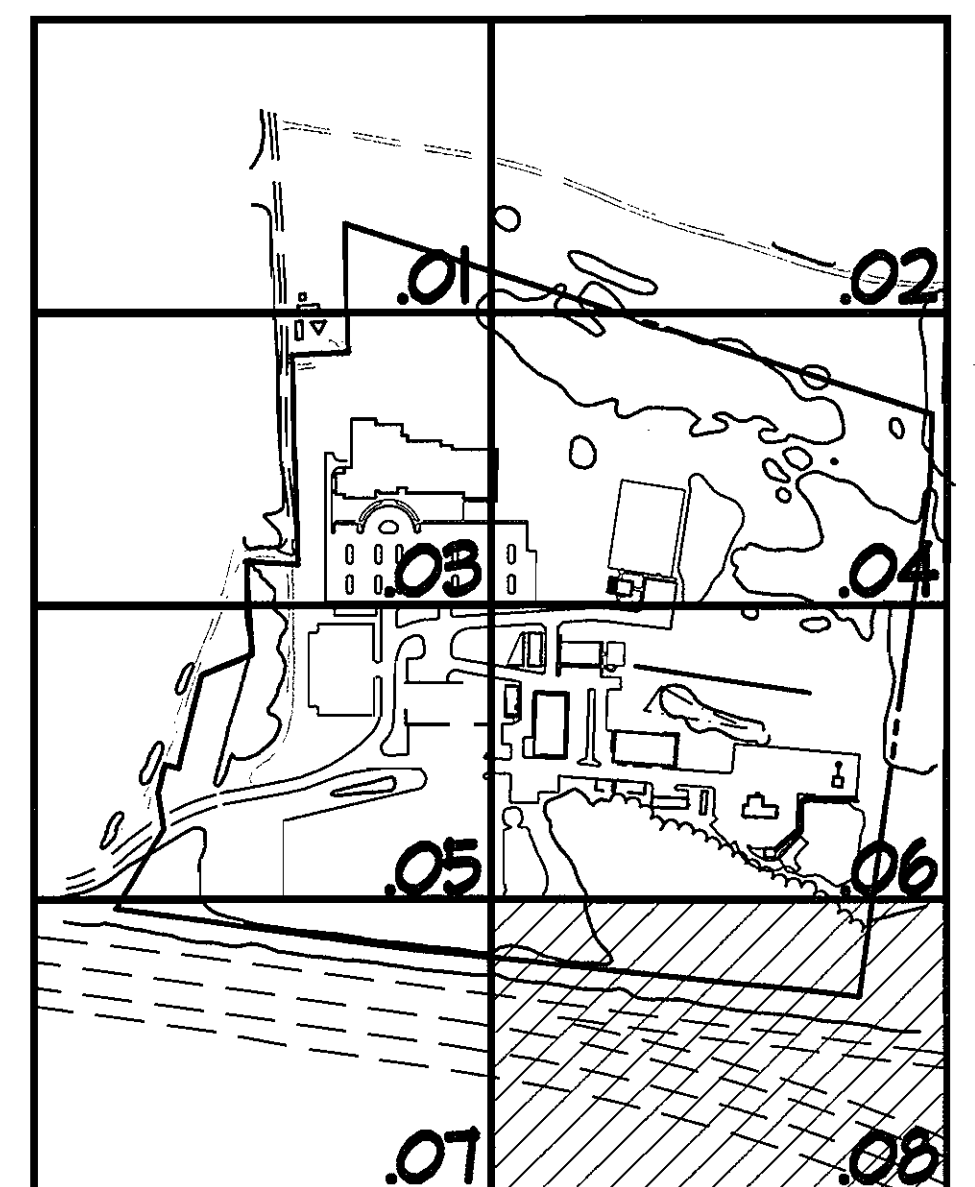
MATCHLINE, SEE SHEET C1.06

MATCHLINE, SEE SHEET C1.07



LEGEND - EXISTING CONDITIONS & DEMOLITION PLAN

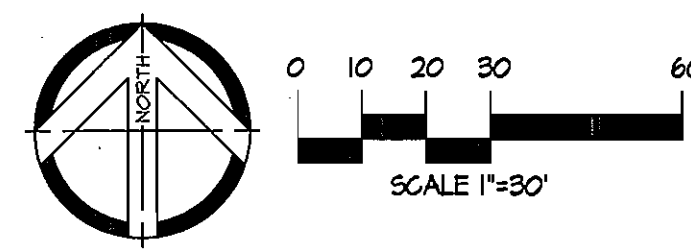
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	EXISTING CONTOURS		EXISTING GAS LINE TO BE REMOVED
	EXISTING TREELINE		EXISTING BUILDINGS
	EXISTING TREES		EXISTING FENCE
	EXISTING ROAD TO REMAIN		EXISTING FENCE TO BE REMOVED
	EXISTING ROAD TO BE REMOVED		EXISTING UTILITY POLE
	EXISTING FEATURES TO BE REMOVED		EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA LESS THAN 20,000 SF
	EXISTING SANITARY LINE TO REMAIN		EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF
	EXISTING SANITARY LINE TO BE REMOVED		
	EXISTING STORM DRAIN TO REMAIN		
	EXISTING STORM DRAIN TO BE REMOVED		
	EXISTING WATER LINE TO REMAIN		
	EXISTING WATER LINE TO BE REMOVED		
	EXISTING ELECTRIC/PHONE/COMMUNICATIONS LINE TO REMAIN		
	EXISTING ELECTRIC/PHONE/COMMUNICATIONS LINE TO BE REMOVED		



KEY MAP

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER
 DATE 10/23/06

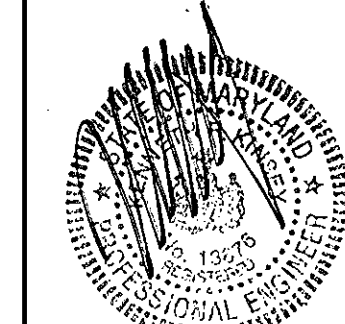
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DIRECTOR
 DATE 10/23/06



APPROVED: DEPARTMENT OF PLANNING & ZONING
 DIRECTOR
 DATE 10/23/06

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

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



DES: KPR			
DRN: AM			
CHK: REM			
DATE 10/11/06	BY	NO.	REVISION

Existing Conditions & Demolition Plan
 600' SCALE MAP NO. 16 BLOCK NO. 2/B

Phase II Improvements: Four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No.C-0182, Howard County, Maryland
 OWNER: Howard County, Department of Public Works, 3430 Courthouse Drive, Ellicott City, Maryland 21043, Phone (410) 913-2100
 ADDRESS / PERMIT INFORMATION: PARCEL #253, ADDRESS: 2200 Alpha Center Drive, PLAT No. 1516, L&B# 7 F&B# 4, GRID No. 218, ZONE: RC-DEO, TAX MAP No. 16, 3rd Election District, Census Tract 6030, WATER CODE: T30, SEWER CODE: Private - Holding Tank

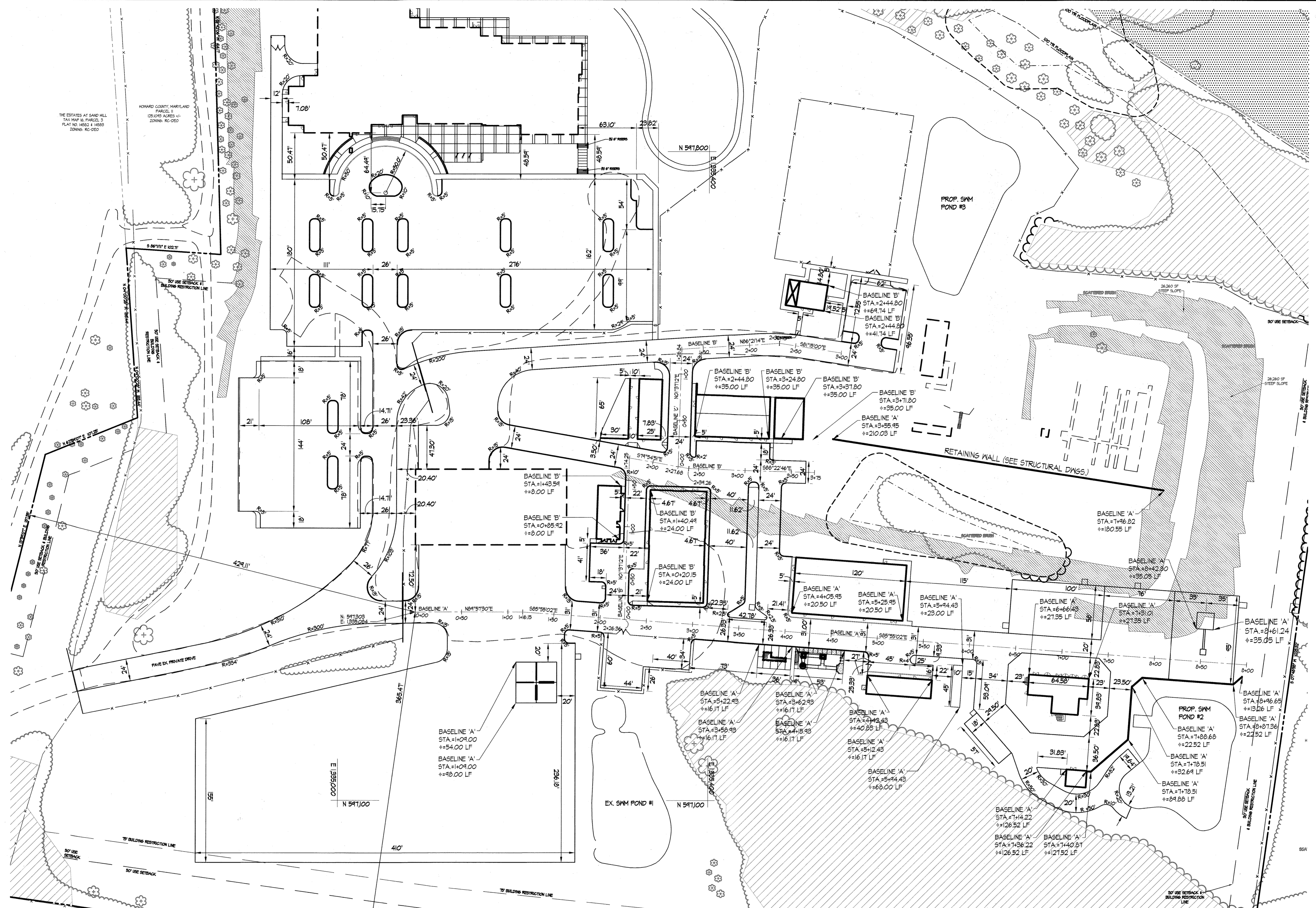
C1.08

SCALE: 1"=30'
 SHEET 11 OF 70

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LEGEND - LAYOUT & DETAIL REFERENCE PLANS

- PROPERTY LINE
- EXISTING ROADS
- PROPOSED ROADS
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPOSED FENCE
- EXISTING FENCE
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- PROPOSED FOREST CONSERVATION EASEMENT
- EXISTING FOREST CONSERVATION EASEMENT
- 75' BUILDING RESTRICTION LINE
- BUILDING SETBACK
- 50' USE SETBACK
- EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF



APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 Robert J. Walen
 COUNTY HEALTH OFFICER
 10/30/06
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 James M. Irvin
 DIRECTOR
 10/26/06
 DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING
 Mark A. Leight
 DIRECTOR
 10/24/06
 DATE
 Chief, Development Engineering Division
 Linda Haman
 CHIEF, DIVISION OF LAND DEVELOPMENT
 10/20/06
 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

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



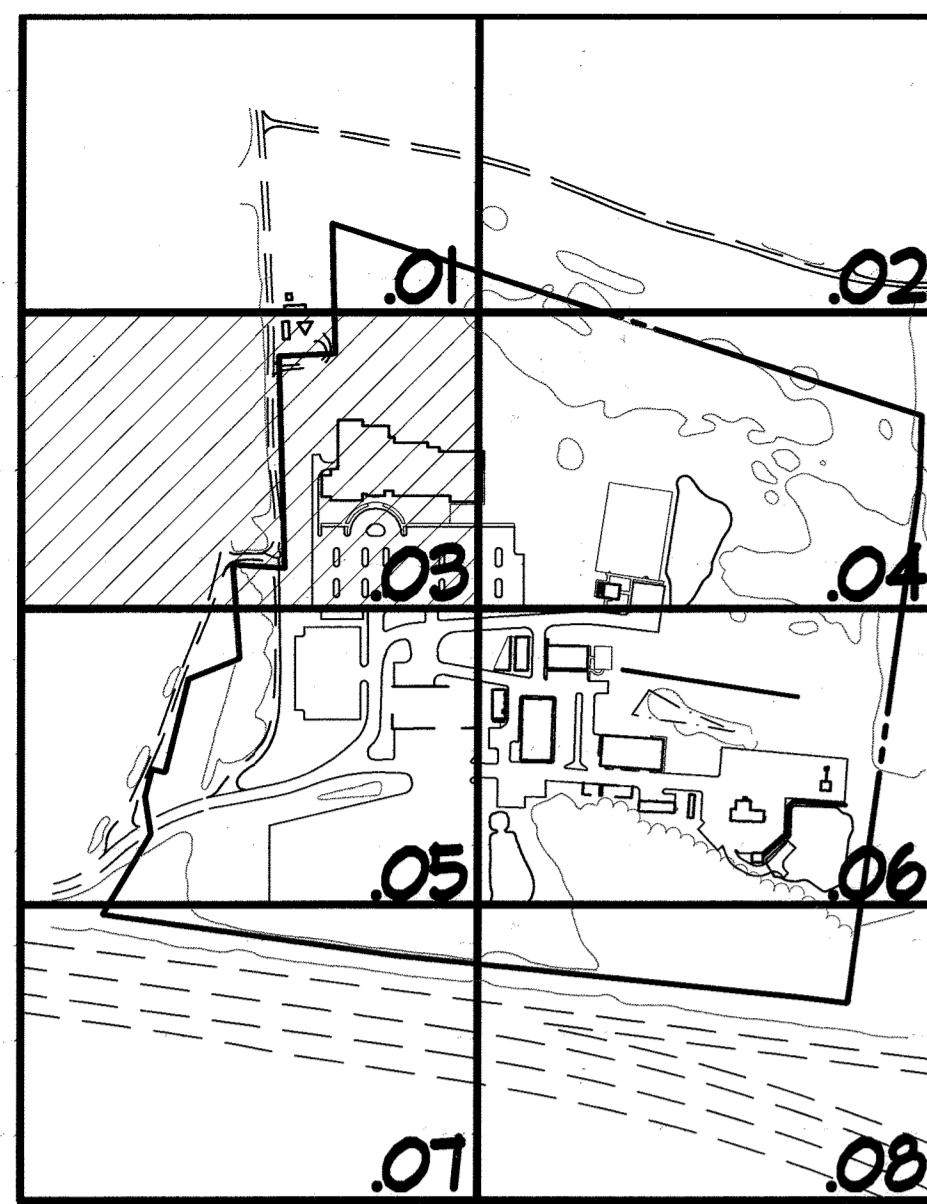
DES: KPR	BY	NO.	REVISION	DATE
DRN: AM				
CHK: REM				
DATE: 10/11/06				

Layout Composite Plan
 600' SCALE MAP NO. 16
 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training traps and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. G-0182, Howard County, Maryland
 OWNER: Howard County, Department of Public Works, 3430 Courthouse Drive, Ellicott City, Maryland 21043, Phone (410) 313-2100
 ADDRESS / PERMIT INFORMATION: PARCEL #253, ADDRESS: 2200 Alpha Center Drive, 3430 Courthouse Drive, L6684 / F618, GRID No. 219, ZONE: RC-DEO, TAX MAP No. 16, 3rd Election District, Census Tract 6030, WATER CODE: 150, SEWER CODE: Private - Holding Tank

C2.00
 SCALE: 1"=50'
 SHEET 12 OF 81

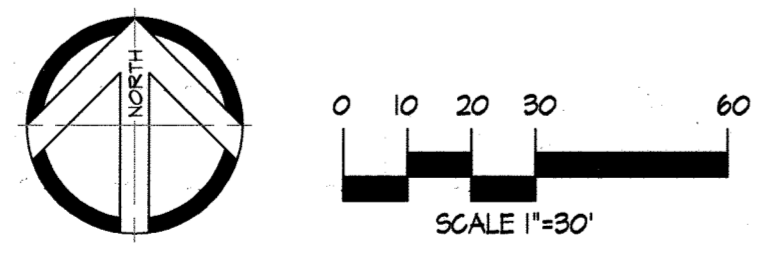
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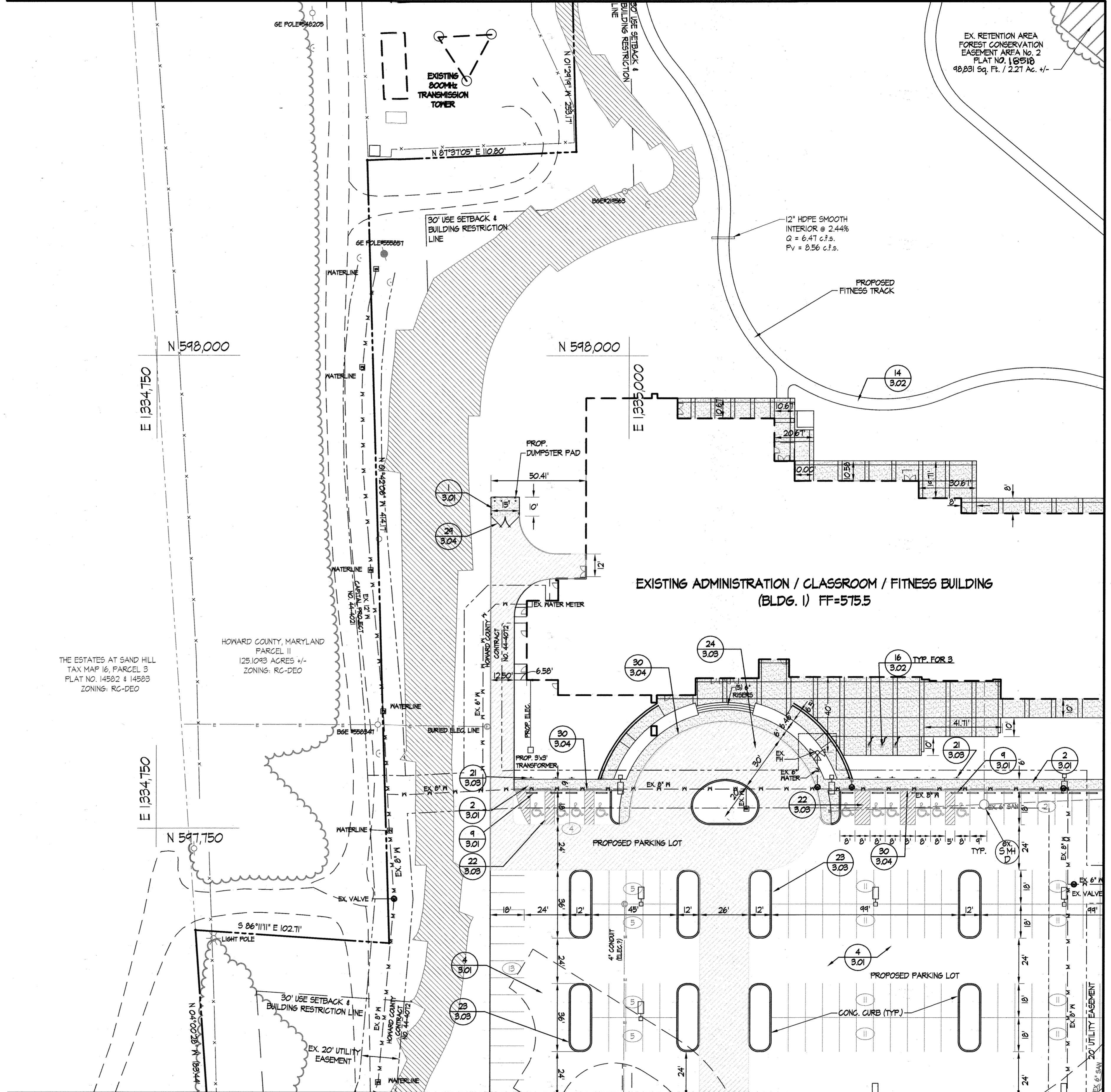
KEY MAP

LEGEND - LAYOUT & DETAIL REFERENCE PLANS

- — — — — PROPERTY LINE
- — — — — EXISTING ROADS
- — — — — PROPOSED ROADS
- — — — — EX. S.D. EXISTING STORMDRAINS
- — — — — 24" R.C.P. PROPOSED STORMDRAINS
- — — — — EX. S.A.N. EXISTING SANITARY SEWER
- — — — — PROP. 8" S.A.N. PROPOSED SANITARY SEWER
- — — — — EX. 4" W. EXISTING WATER
- — — — — PROP. 4" WATER PROPOSED WATER
- — — — — PROPOSED FENCE
- — — — — EXISTING FENCE
- — — — — EXISTING ELECTRIC
- — — — — EXISTING GAS
- — — — — EXISTING STREAM
- [] EXISTING BUILDINGS
- [] PROPOSED BUILDINGS
- [] EXISTING FIRE HYDRANT
- [] PROPOSED FIRE HYDRANT
- [] HEAVY DUTY ASPHALT
- [] HEAVY DUTY CONCRETE
- [] CONCRETE SIDEWALK
- [] PROPOSED FOREST CONSERVATION EASEMENT
- [] EXISTING FOREST CONSERVATION EASEMENT
- [] EXISTING WOODS LINE
- [] PROPOSED WOODS LINE
- DETAIL NO. 4
- DRAWING NO. C-203
- [] PROPOSED LIGHTING (SEE MECHANICAL DRAWINGS)
- [] EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF



MATCHLINE, SEE SHEET C2.01



MATCHLINE, SEE SHEET C2.04

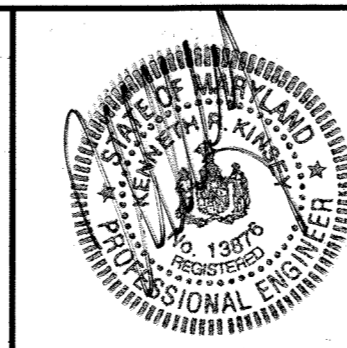
MATCHLINE, SEE SHEET C2.05

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER: *Robert J. Weber* DATE: 10/30/06
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DIRECTOR: *James M. Irvin* DATE: 10/26/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DIRECTOR: *David A. Layton* DATE: 10/24/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 10/30/06

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

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



DES: KPR			
DRN: AM			
CHK: REM			
DATE: 10/11/06	BY NO.	REVISION	DATE

Layout & Detail Reference Plan

600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No.C-0182, Howard County, Maryland

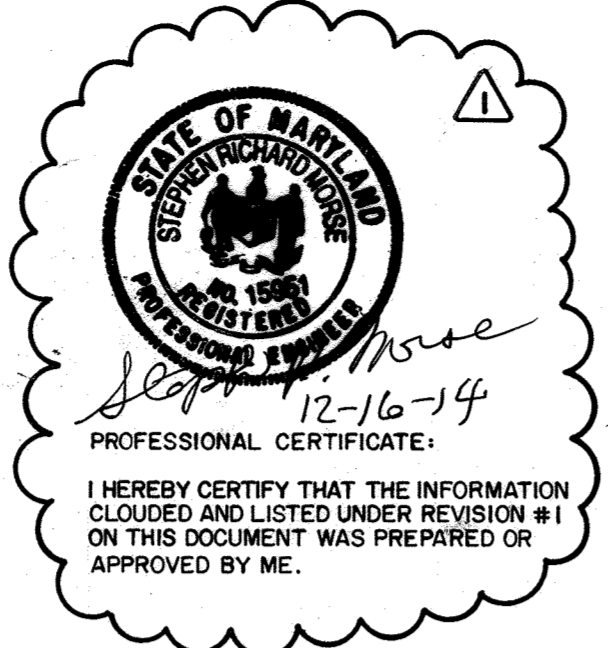
OWNER: Howard County Department of Public Works
 3450 Courthouse Drive
 Ellicott City, Maryland 21043
 Phone (410) 318-2100

ADDRESS / PERMIT INFORMATION:
 PARCEL #253 ADDRESS: 2200 Alpha Center Drive
 PLAT No. 15116, L&P84 / F&P
 GRID No. 218 ZONE: RC-DEO TAX MAP No. 16
 3rd Election District, Census Tract 6030
 WATER CODE: 730 SEWER CODE: Private - Holding Tank

C2.03
 SCALE: 1"=30'
 SHEET 15 OF 81

Z:\030313\HowardCo PublicSafetyTrainingC2.03_Layout\Plan.dwg, 10/30/06 11:08:17 AM, Copyright, Site Resources, Inc.

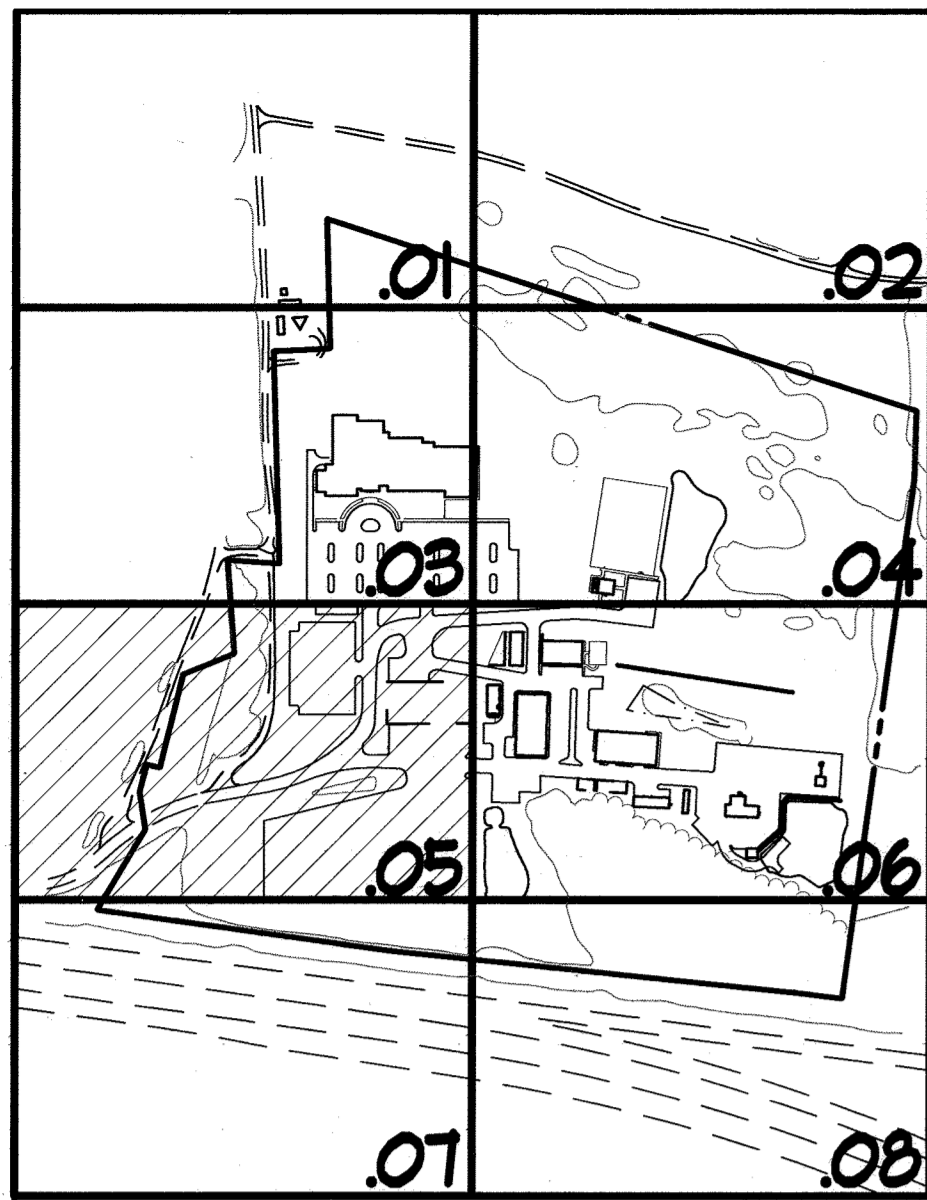
MATCHLINE, SEE SHEET C2.03



THE ESTATES AT SAND HILL
TAX MAP 16, PARCEL 3
PLAT NO. 14502 & 14503
ZONING: RC-DEO

EX. RETENTION AREA
FOREST CONSERVATION
EASEMENT AREA NO. 5
PLAT NO. 18518
11,805 SQ. FT. / 0.28 AC. +/-

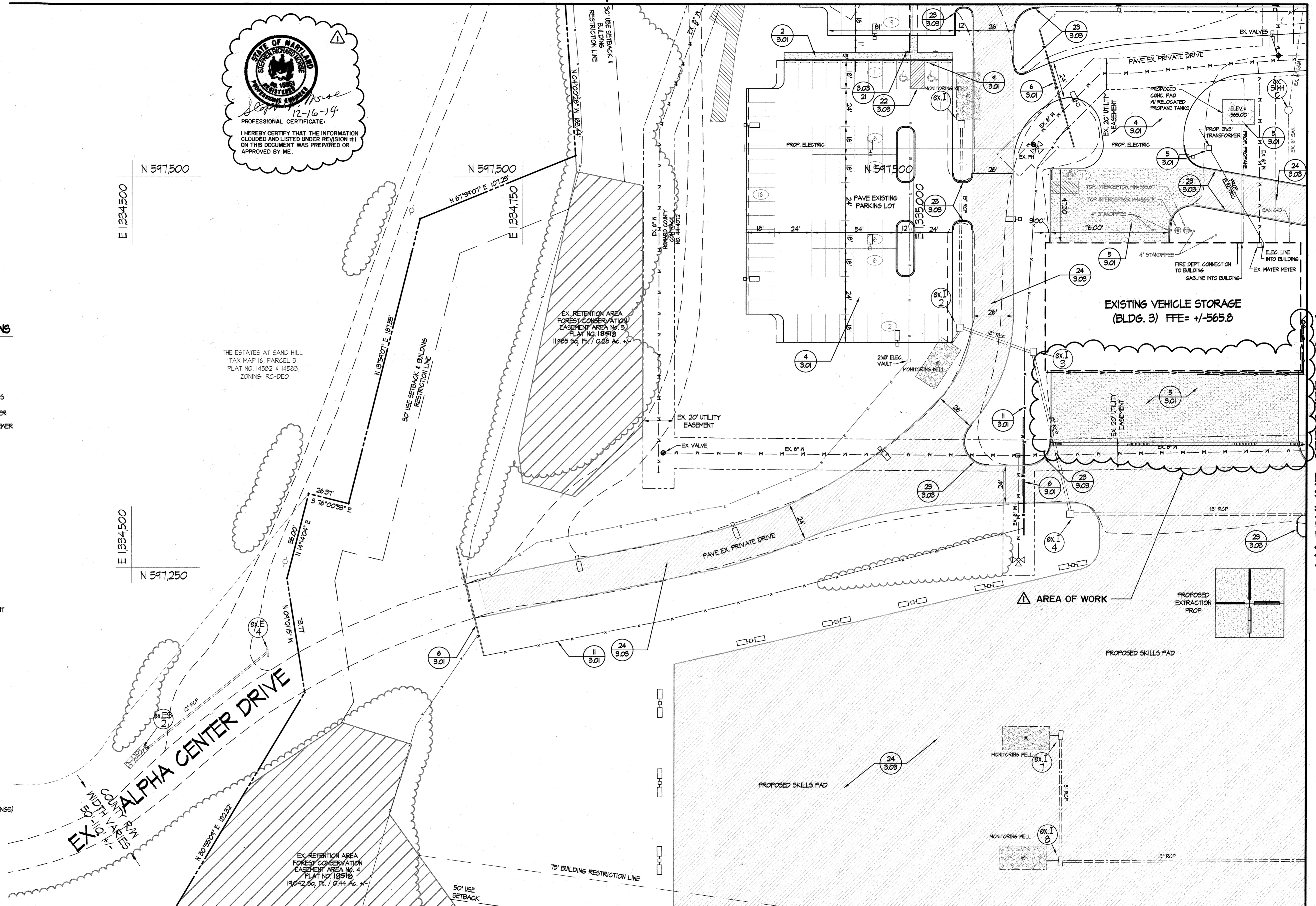
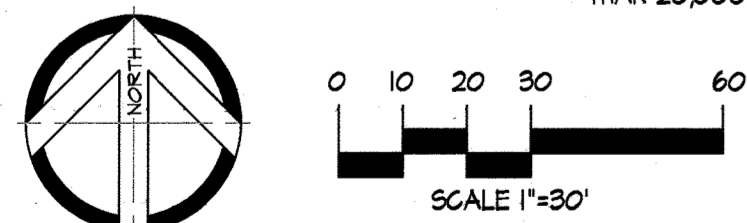
EX. RETENTION AREA
FOREST CONSERVATION
EASEMENT AREA NO. 4
PLAT NO. 18518
19,042 SQ. FT. / 0.44 AC. +/-



KEY MAP

LEGEND - LAYOUT & DETAIL REFERENCE PLANS

- PROPERTY LINE
- EXISTING ROADS
- PROPOSED ROADS
- EX. S.D. 24" RCCP
- EXISTING STORMDRAINS
- PROPOSED STORMDRAINS
- EX. SAN
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EX. 4" W. PROP. 4" WATER
- EXISTING WATER
- PROPOSED WATER
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING ELECTRIC
- EXISTING GAS
- EXISTING STREAM
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- HEAVY DUTY ASPHALT
- HEAVY DUTY CONCRETE
- CONCRETE SIDEWALK
- PROPOSED FOREST CONSERVATION EASEMENT
- EXISTING FOREST CONSERVATION EASEMENT
- EXISTING WOODSLINE
- PROPOSED WOODSLINE
- DETAIL NO. 4 (C-201)
- DETAIL REFERENCE
- PROPOSED LIGHTING (SEE MECHANICAL DRAWINGS)
- EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF



MATCHLINE, SEE SHEET C2.06

MATCHLINE, SEE SHEET C2.07

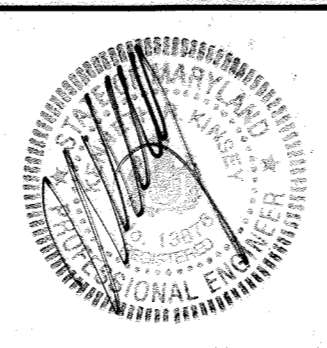
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Robert J. Weber
COUNTY HEALTH OFFICER
DATE: 10/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James M. Irvin
DIRECTOR
DATE: 10/26/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
Mark A. Lynch
DIRECTOR
DATE: 10/30/06
John D. ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 10/30/06
Linda ...
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: bw@edmeades-stromdahl.com

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



DES: KPR			
DRN: AM			
CHK: REM			
JEB	REDLINE REVISIONS - SEE NOTE ABOVE	12/5/14	
DATE: 10/11/06	BY NO.	REVISION	DATE

Layout & Detail Reference Plan
600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland
OWNER: Howard County Department of Public Works
3450 Courthouse Drive, Ellicott City, Maryland 21043
Phone (410) 313-2100
ADDRESS / PERMIT INFORMATION:
PARCEL #253 ADDRESS: 2200 Alpha Center Drive
PLAT No. 15716, L16684 / F618
GRID No. 218 ZONE: RC-DEO TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: 730, SEWER CODE: Private - Holding Tank

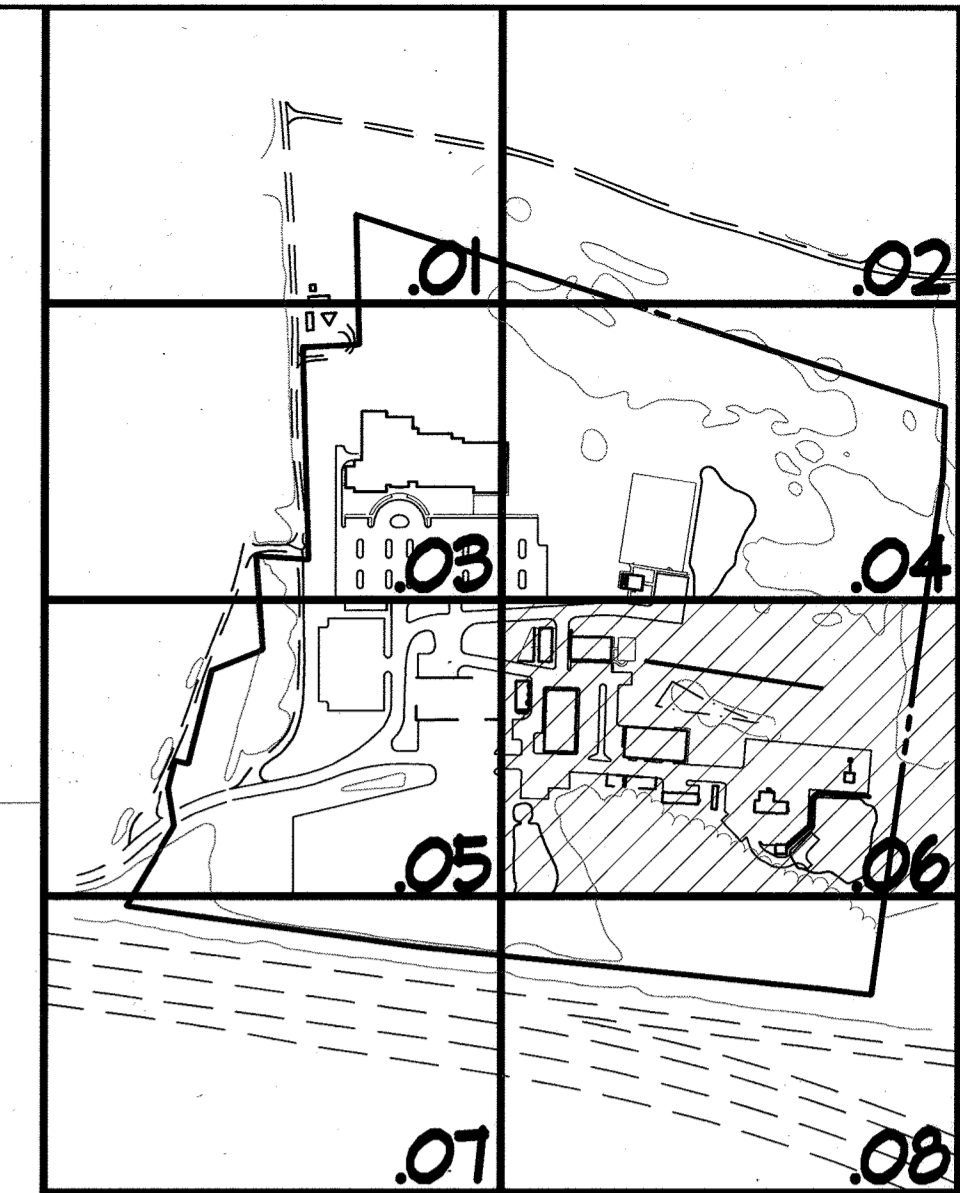
C2.05
SCALE: 1"=30'
SHEET 17 OF 81

Z:\030313-HowardCo PublicSafetyTrainingC2.05_Layout\Plan.dwg, 10/30/06 10:47:39 AM, Copyright, Site Resources, Inc.

MATCHLINE, SEE SHEET C2.04

MATCHLINE SEE SHEET C2.05

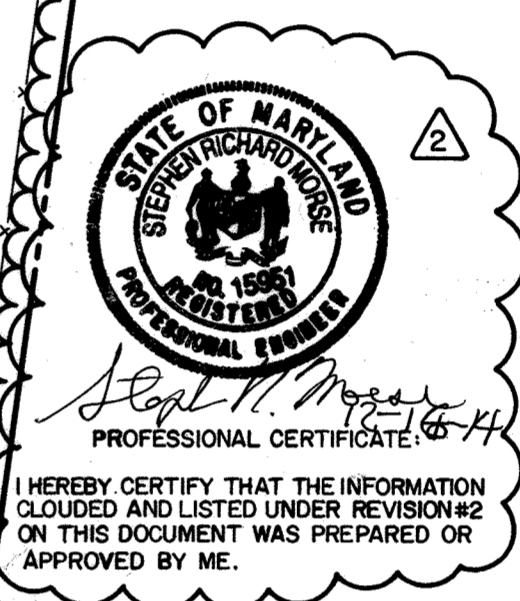
MATCHLINE, SEE SHEET C2.08



KEY MAP

LEGEND - LAYOUT & DETAIL REFERENCE PLANS

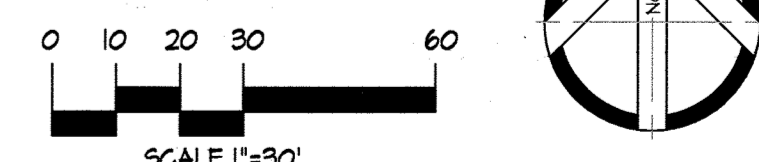
- PROPERTY LINE
- EXISTING ROADS
- PROPOSED ROADS
- EX. S.D. EXISTING STORMDRAINS
- 24" RSCP PROPOSED STORMDRAINS
- EX. SAN EXISTING SANITARY SEWER
- PROP. 8" SAN PROPOSED SANITARY SEWER
- EX. 4" W. EXISTING WATER
- PROP. 4" WATER PROPOSED WATER
- X X EXISTING FENCE
- X X EXISTING FENCE
- EXISTING ELECTRIC
- EXISTING GAS
- EXISTING STREAM
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- HEAVY DUTY ASPHALT
- HEAVY DUTY CONCRETE
- CONCRETE SIDEWALK
- PROPOSED FOREST CONSERVATION EASEMENT
- EXISTING FOREST CONSERVATION EASEMENT
- EXISTING WOODLINE
- PROPOSED WOODLINE
- DETAIL NO. 4 DETAIL REFERENCE
- DRAWING NO. C-201
- PROPOSED LIGHTING (SEE MECHANICAL DRAWINGS)
- EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF



HOWARD COUNTY, MARYLAND
PARCEL 200
179.6843 ACRES +/-
ZONING: RC-DEO
THIS SEAL IS FOR REVISIONS
MADE BY SITE RESOURCES, INC.



Professional Certification. I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 23165
Expiration Date: 7/18/2017



C2.06

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

Robert J. Weber
COUNTY HEALTH OFFICER
10/30/06 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

James M. Irvin
DIRECTOR
10/26/06 DATE

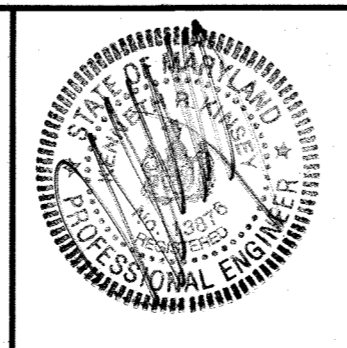
APPROVED: DEPARTMENT OF PLANNING & ZONING

Mark A. Wright
DIRECTOR
10/24/06 DATE

Wendy R. Harnan
CHIEF, DIVISION OF LAND DEVELOPMENT
10/30/06 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

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



DES:	KPR	DATE:	10/11/06
DRN:	AM	DATE:	10/11/06
CHK:	REM	DATE:	10/11/06
BY:	NO.	REVISION:	
SRJ	1	REDLINE REVISION: ADD ARMORY AND SNIPER DECK	10/17/16
SEB	2	REDLINE REVISIONS - SEE NOTE 1 ON DRAWING C2.05 (17 OF 70)	12/11/14
AFE	3	NEW TRAILER WITH WATER AND SEWER CONNECTION	11/12/09

Layout & Detail Reference Plan

600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

OWNER:
Howard County
Department of Public Works
3450 Courthouse Drive
Ellicott City, Maryland 21043
Phone (410) 318-2100

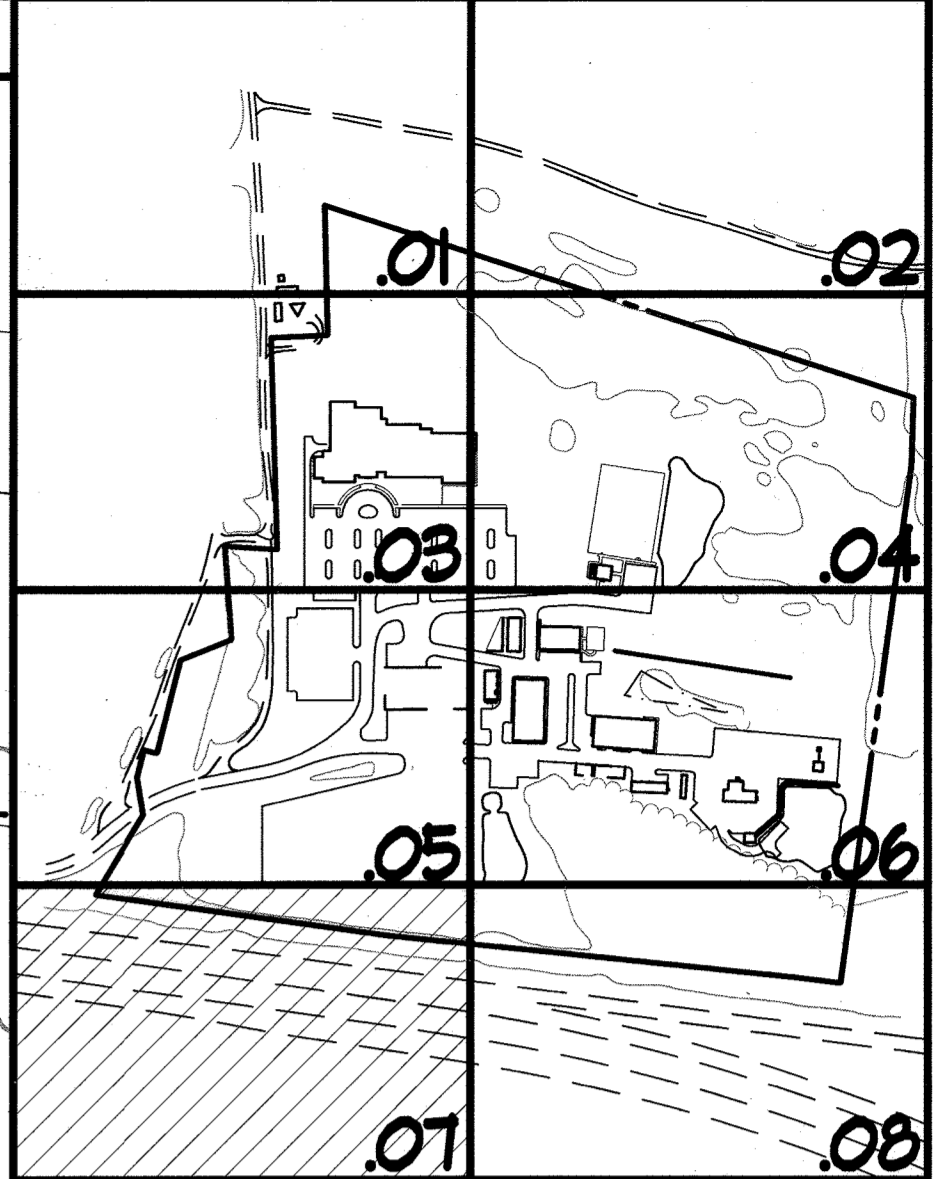
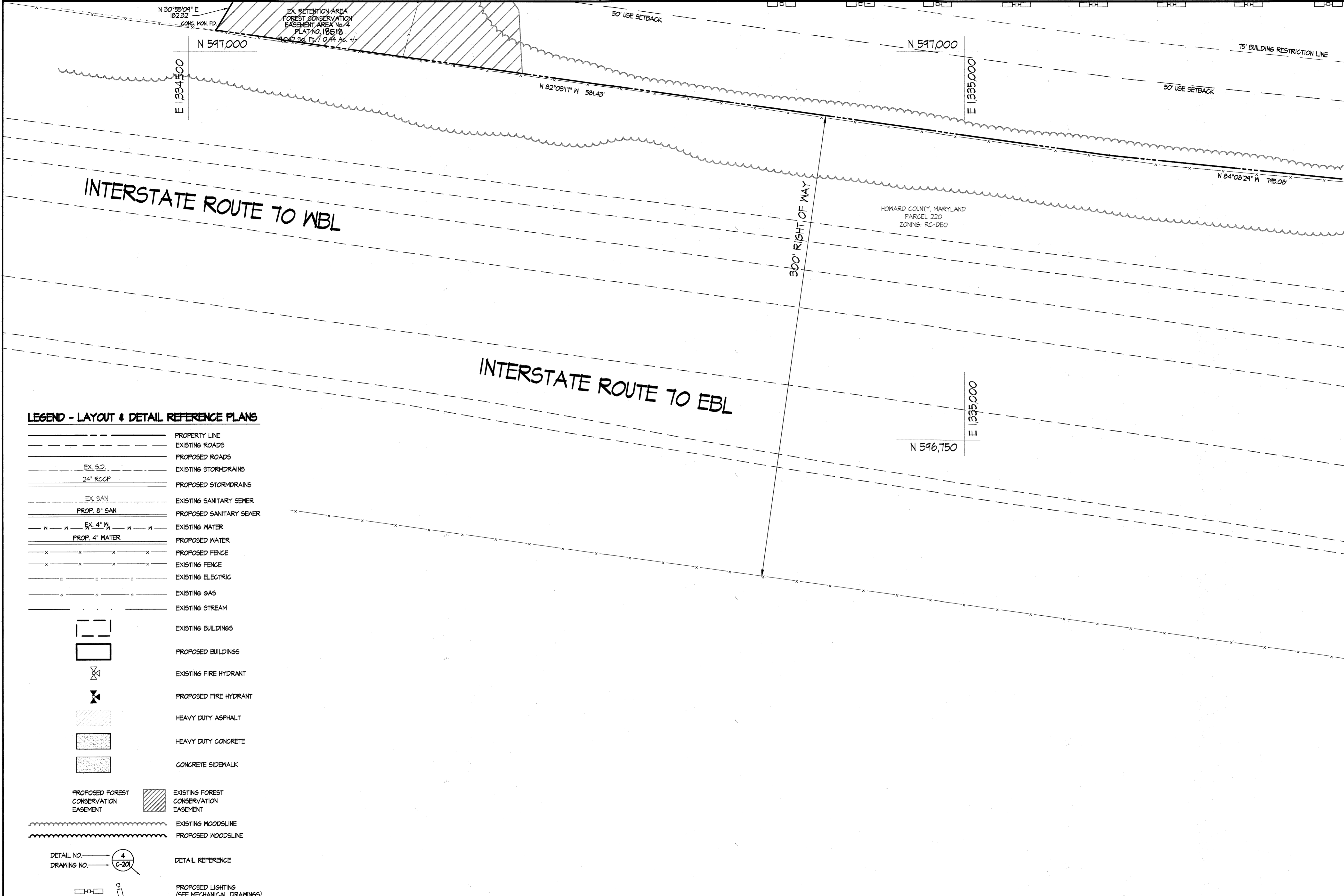
ADDRESS / PERMIT INFORMATION:
PARCEL #253 ADDRESS: 2200 Alpha Center Drive
PLAT No. 1516, L&E89 / F&E11
GRID No. 218 ZONE: RC-DEO TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: 730, SEWER CODE: Private - Holding Tank

SCALE: 1"=30'

SHEET 18 OF 81

2/10/2013 10:24:50 AM - Copyright, Site Resources, Inc.

MATCHLINE, SEE SHEET C2.05

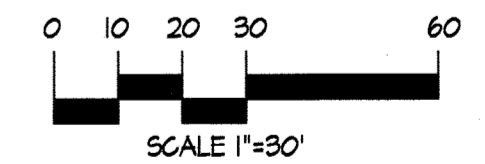
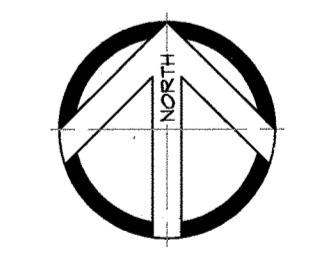


KEY MAP

MATCHLINE, SEE SHEET C2.08

LEGEND - LAYOUT & DETAIL REFERENCE PLANS

- PROPERTY LINE
- EXISTING ROADS
- PROPOSED ROADS
- EXISTING STORMDRAINS
- PROPOSED STORMDRAINS
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING WATER
- PROPOSED WATER
- PROPOSED FENCE
- EXISTING FENCE
- EXISTING ELECTRIC
- EXISTING GAS
- EXISTING STREAM
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- HEAVY DUTY ASPHALT
- HEAVY DUTY CONCRETE
- CONCRETE SIDEWALK
- PROPOSED FOREST CONSERVATION EASEMENT
- EXISTING FOREST CONSERVATION EASEMENT
- EXISTING WOODSLINE
- PROPOSED WOODSLINE
- DETAIL NO. 4, DRAWING NO. C-201
- DETAIL REFERENCE
- PROPOSED LIGHTING (SEE MECHANICAL DRAWINGS)



APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
Robert J. Walker 10/30/06
 COUNTY HEALTH OFFICER DATE

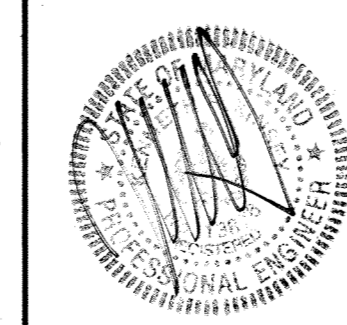
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James M. Irvin 10/26/06
 DIRECTOR DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING
M. L. Gyle 10/24/06
 DIRECTOR DATE

Chris Hanna 10/30/06
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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

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



DES: KPR					
DRN: AM					
CHK: REM					
DATE: 10/11/06	BY:	NO.	REVISION	DATE	

Layout & Detail Reference Plan

600' SCALE MAP NO. 16 BLOCK NO. 2 / B

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No.C-0182, Howard County, Maryland

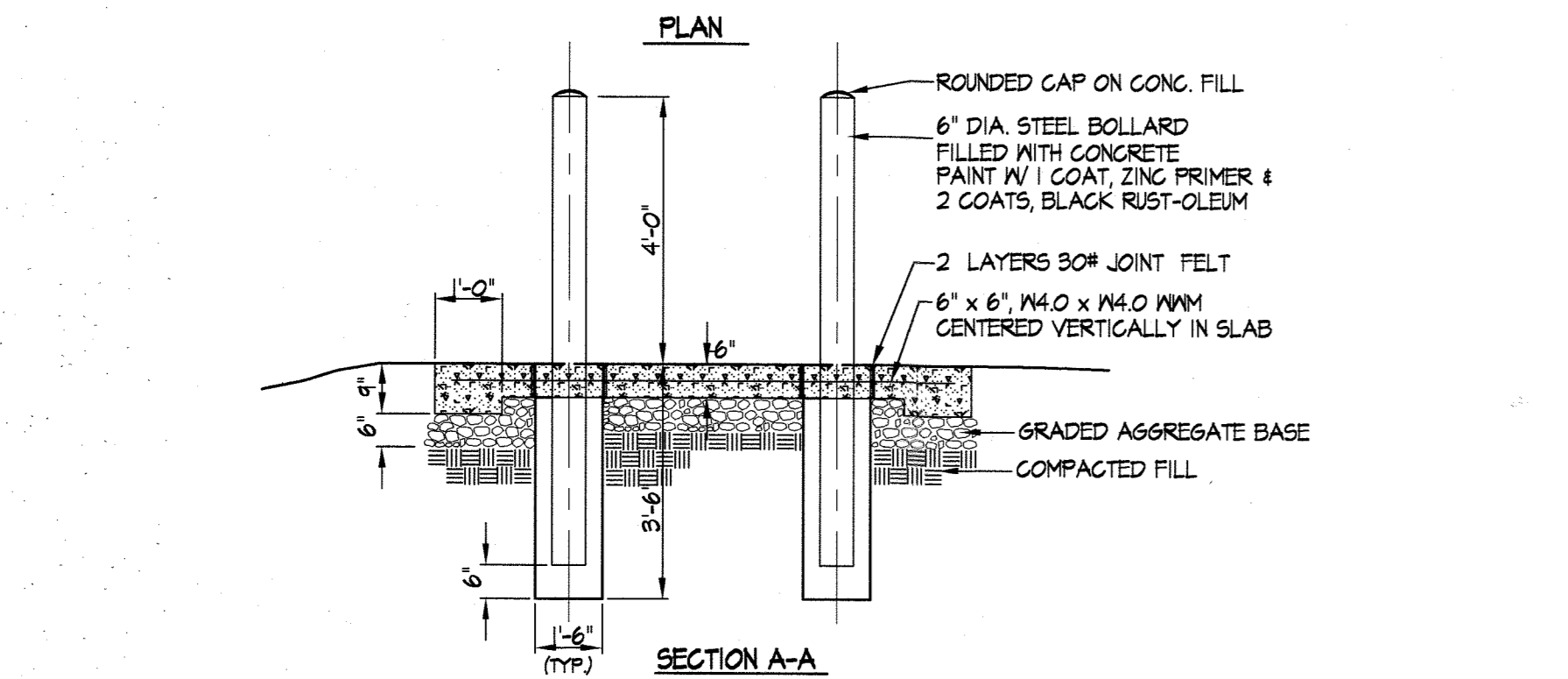
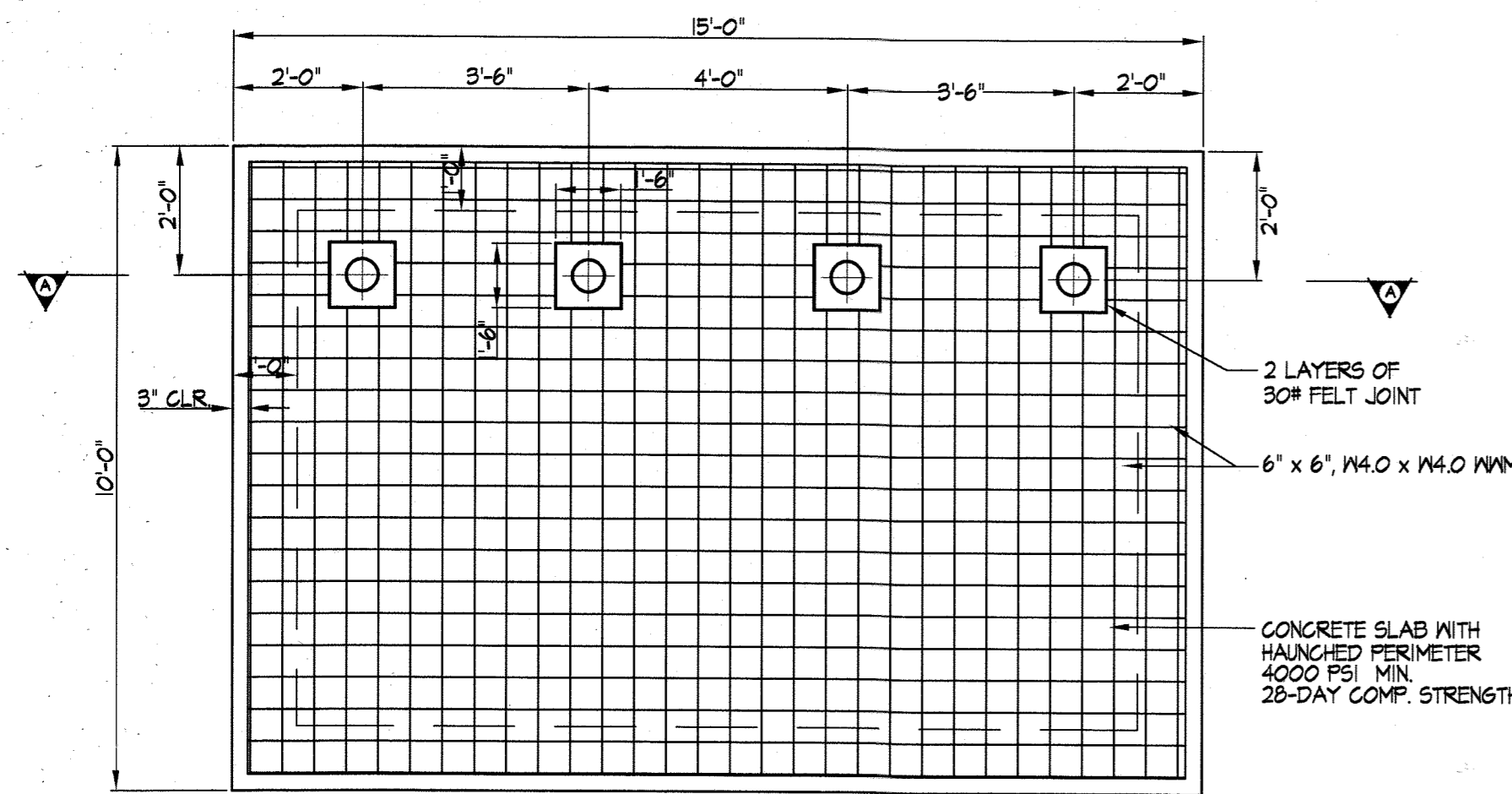
OWNER:
 Howard County
 Department of Public Works
 3430 Courthouse Drive
 Ellicott City, Maryland 21043
 Phone (410) 313-2100

ADDRESS / PERMIT INFORMATION:
 PARCEL #253, ADDRESS: 2200 Alpha Center Drive
 PLAT No. 15716, L66/94 / F6/94
 GRID No. 2/B, ZONE: RC-DEO, TAX MAP No. 16
 3rd Election District, Census Tract 6030
 WATER CODE: 'B0, SEWER CODE: Private + Holding Tank

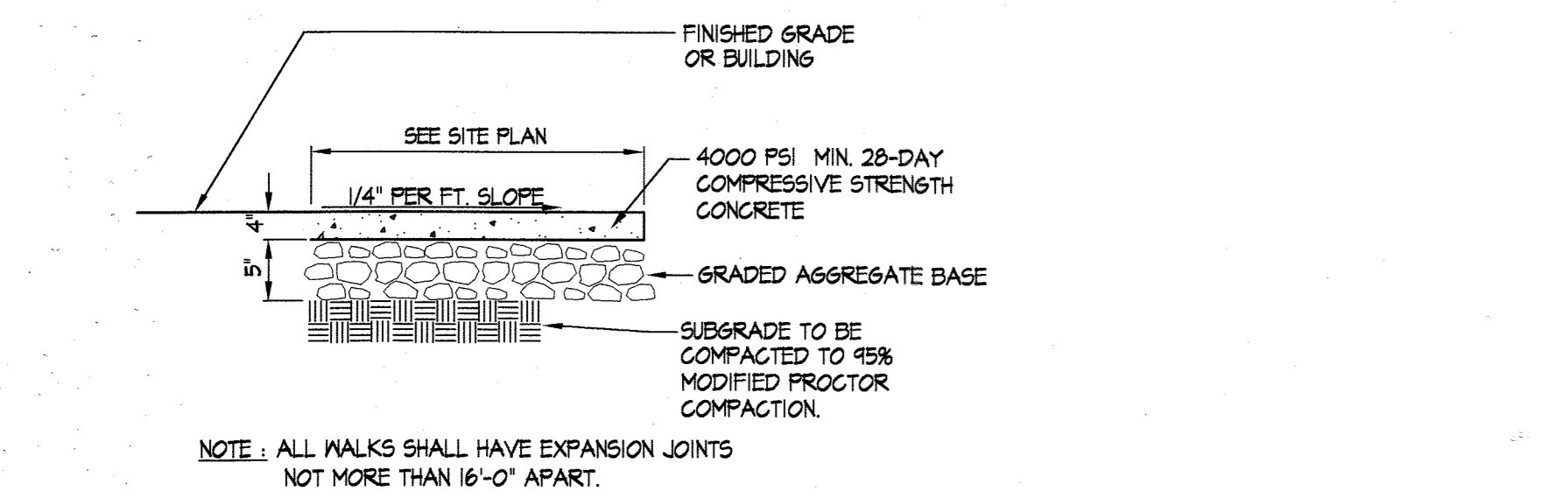
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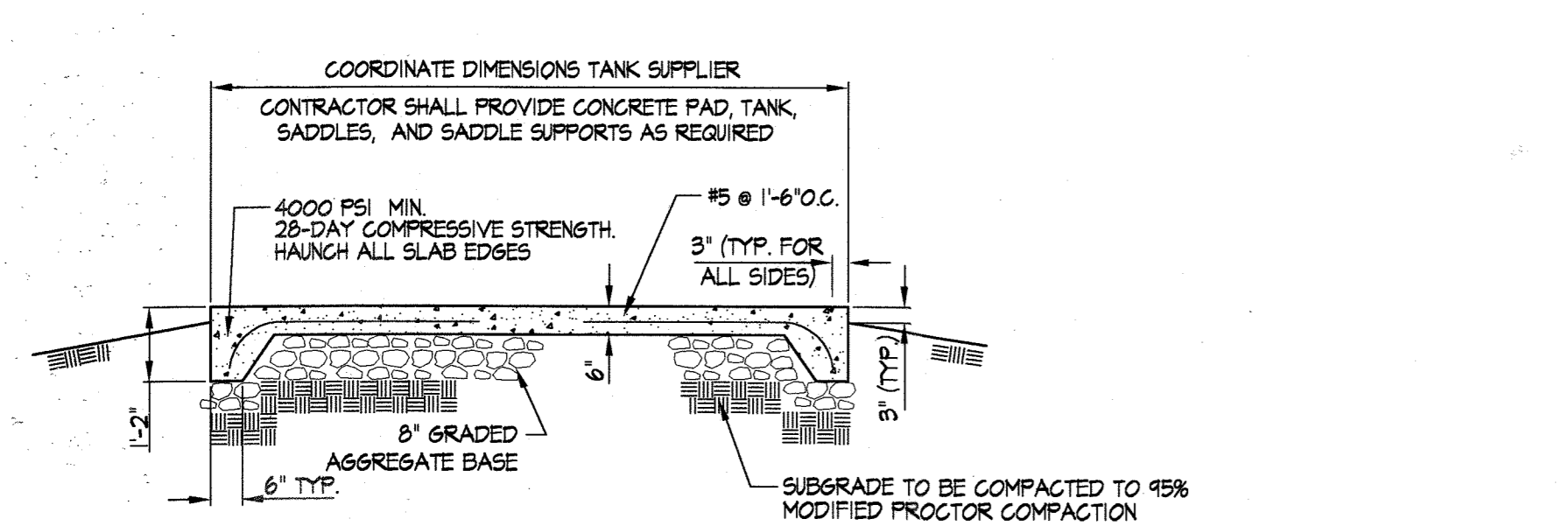
SHEET 19 OF 81



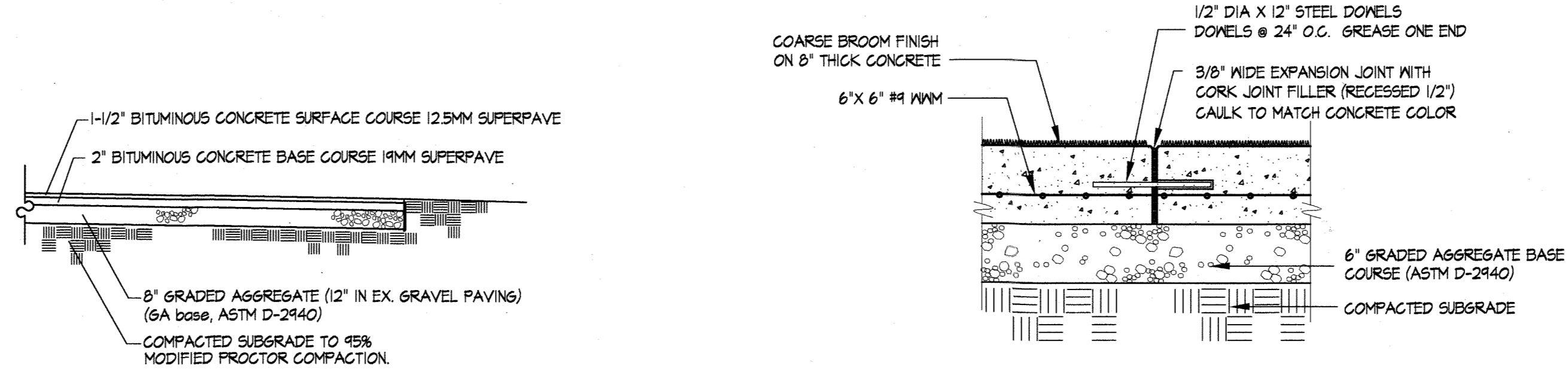
1 DUMPSTER PAD
NOT TO SCALE



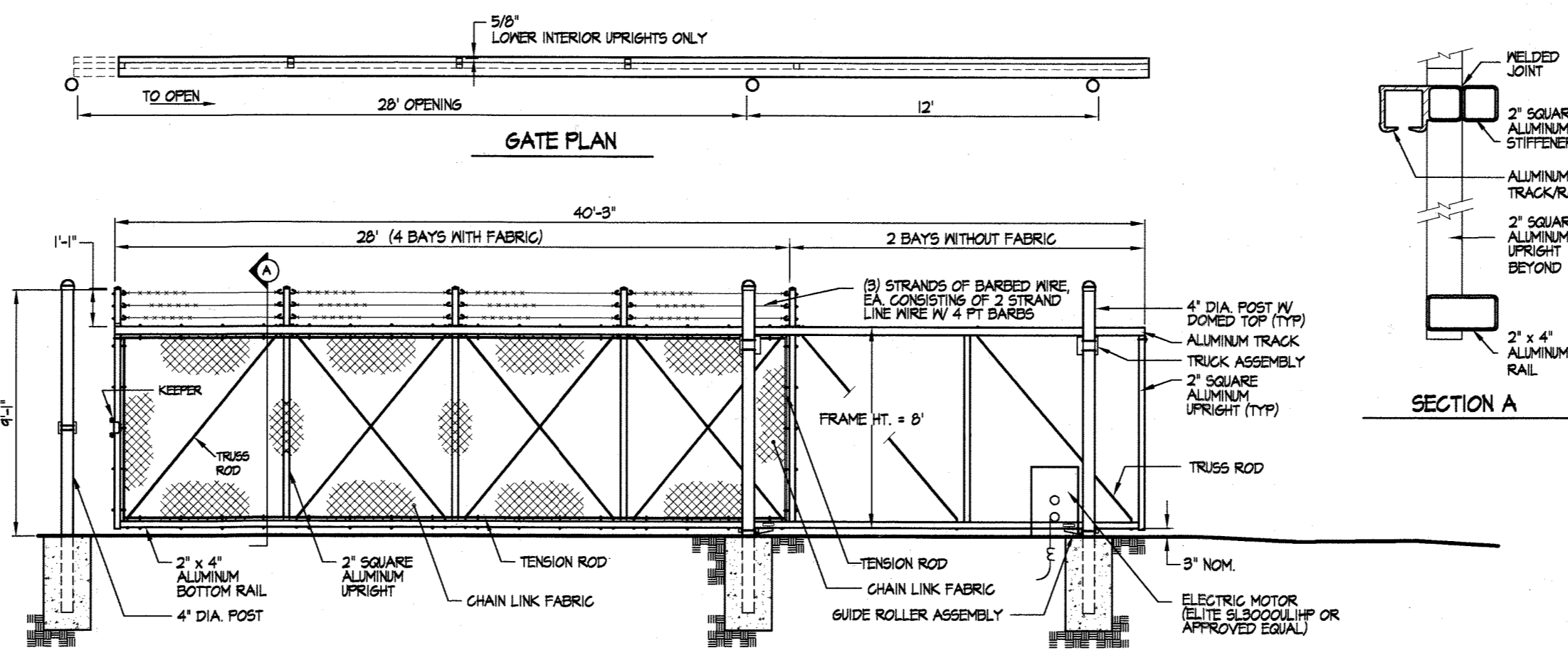
2 SIDEWALK DETAIL
NOT TO SCALE



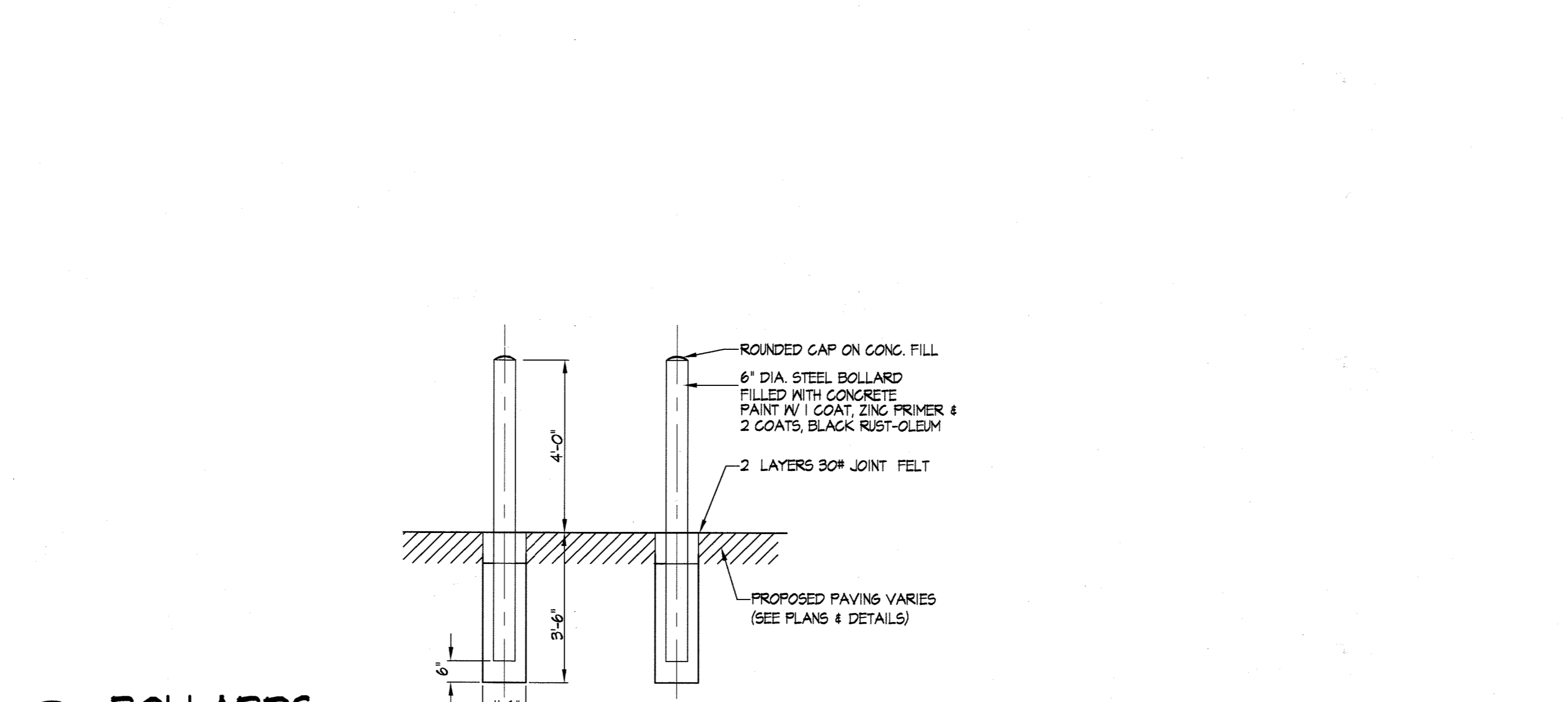
3 PROPANE TANK PAD
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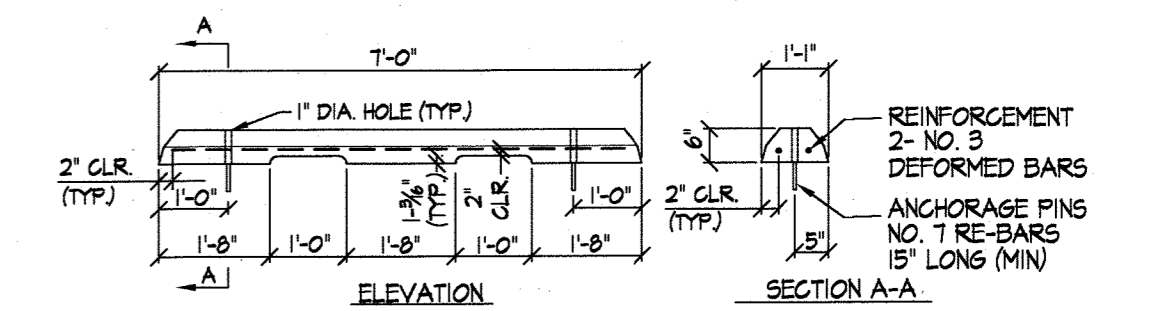
4 LIGHT DUTY ASPHALT PAVING NOT TO SCALE
5 HEAVY DUTY CONCRETE PAVING NOT TO SCALE



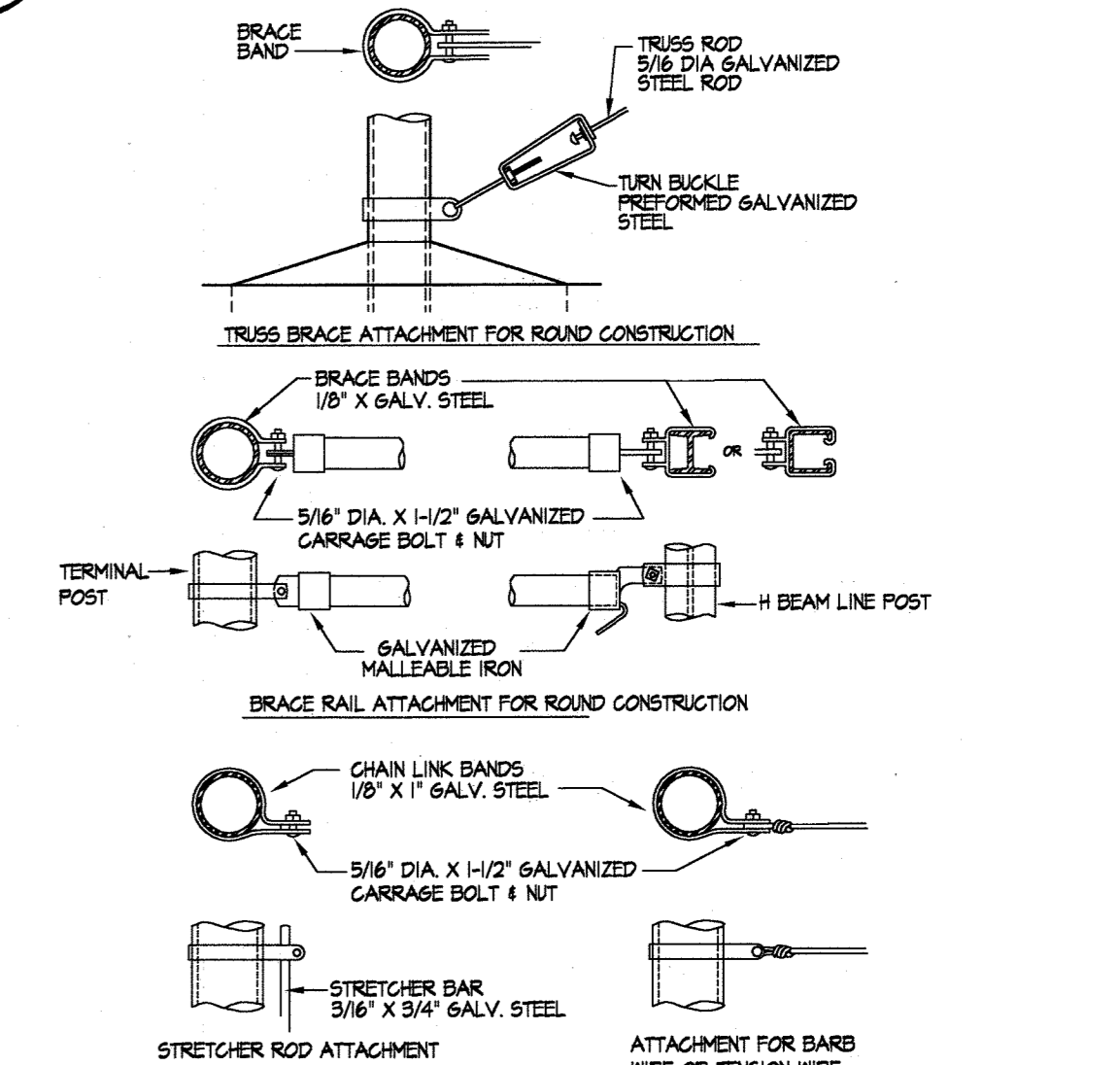
6 SLIDING CHAIN LINK GATE DETAILS
NOT TO SCALE



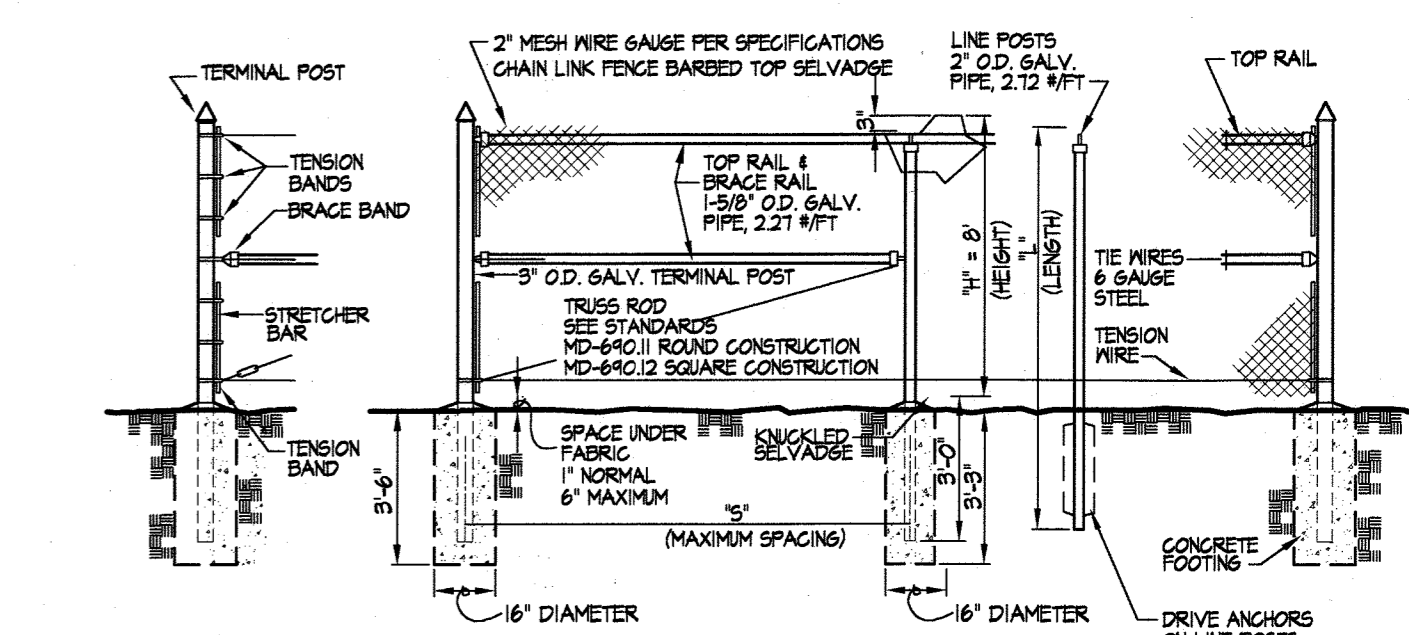
8 BOLLARDS
NOT TO SCALE



9 PRECAST CONCRETE WHEEL STOPS
NOT TO SCALE



10 CHAIN LINK FENCE BRACE & ROD ATTACHMENTS - ROUND CONSTRUCTION
NOT TO SCALE



11 CHAIN LINK FENCE DETAIL
NOT TO SCALE

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Robert J. Weber 10/30/06
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James M. Irvin 10/26/06
DIRECTOR DATE

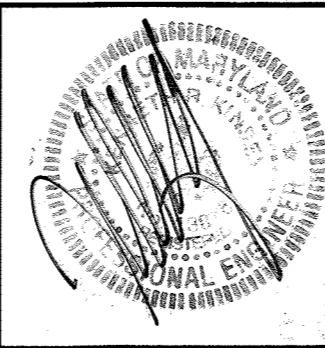
APPROVED: DEPARTMENT OF PLANNING & ZONING
Mark A. Leyle 10/24/06
DIRECTOR DATE

W.D. Dammann 10/24/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION CE DATE

Cindy Hamant 10/30/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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E-mail: hw@edmeades-stromdahl.com

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



DES: KPR				
DRN: AM				
CHK: REM				
DATE: 10/11/06	BY: NO.	REVISION	DATE	600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

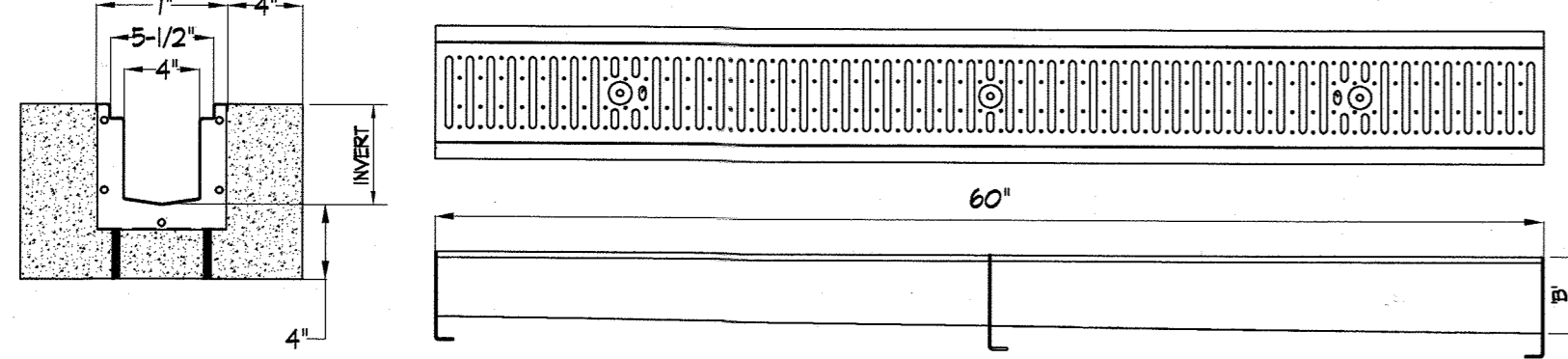
Site Details

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No.C-01B2, Howard County, Maryland

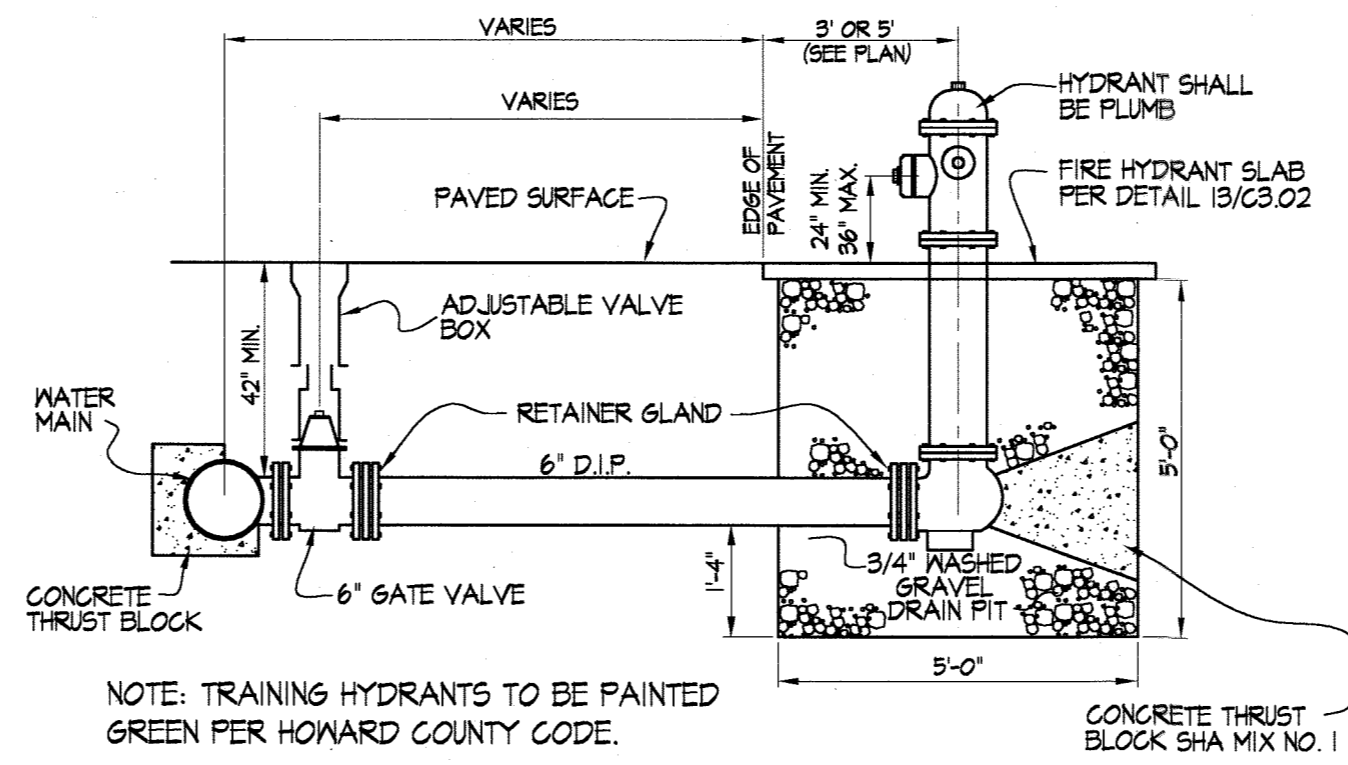
OWNER:
Howard County
Department of Public Works
3450 Conroy Drive
Ellicott City, Maryland 21043
Phone (410) 313-3100

ADDRESS / PERMIT INFORMATION:
PARCEL #255 ADDRESS: 2200 Alpha Center Drive
PLAT No. 2518, L&P#11/F#14
GRID No. 218, ZONE: RC-DEO, TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: 750, SEWER CODE: Private - Holding Tank

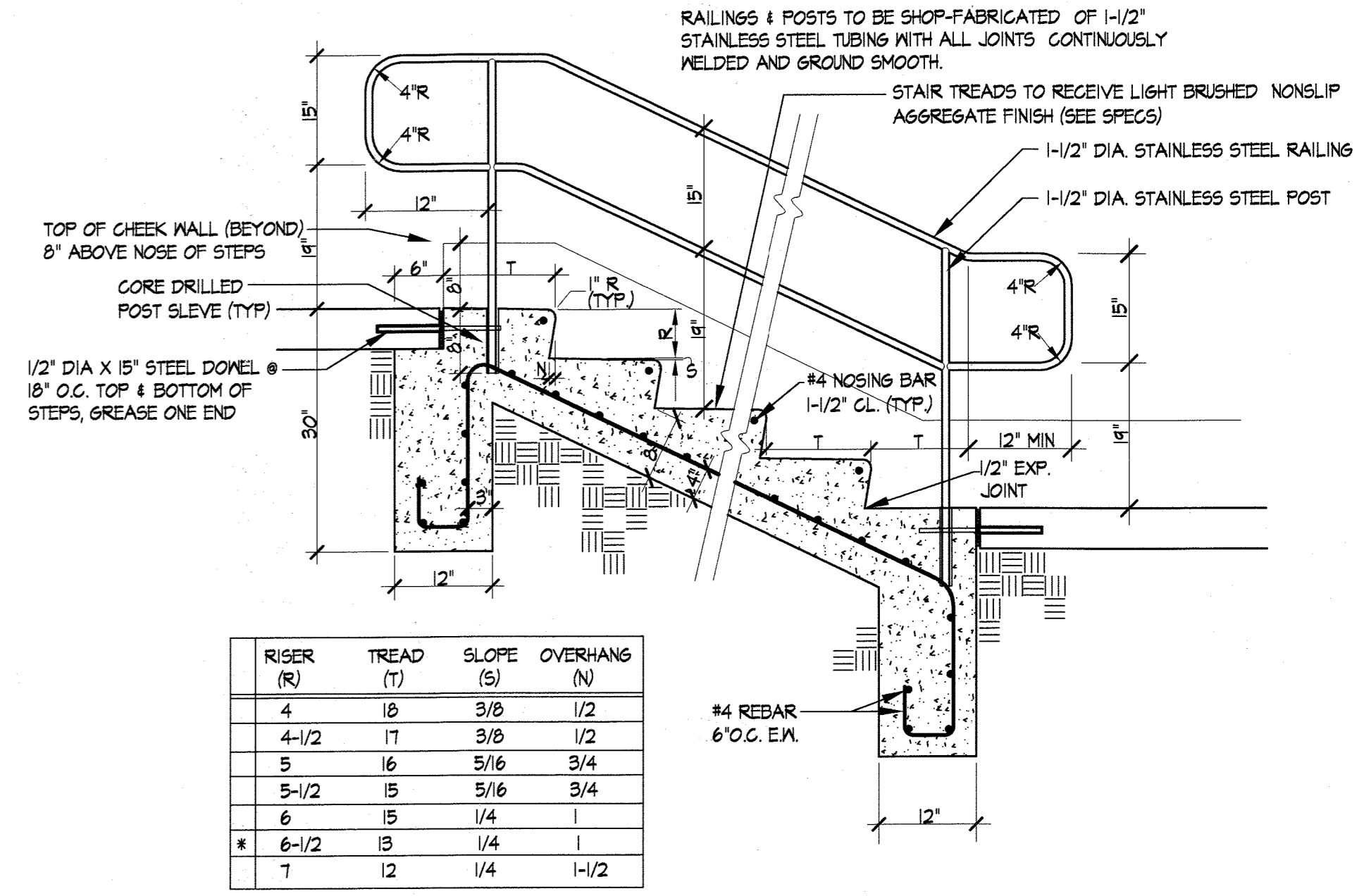
C3.01
SCALE: AS SHOWN
SHEET 21 OF 81



12 TRENCH DRAIN CHANNEL DETAIL
NOT TO SCALE

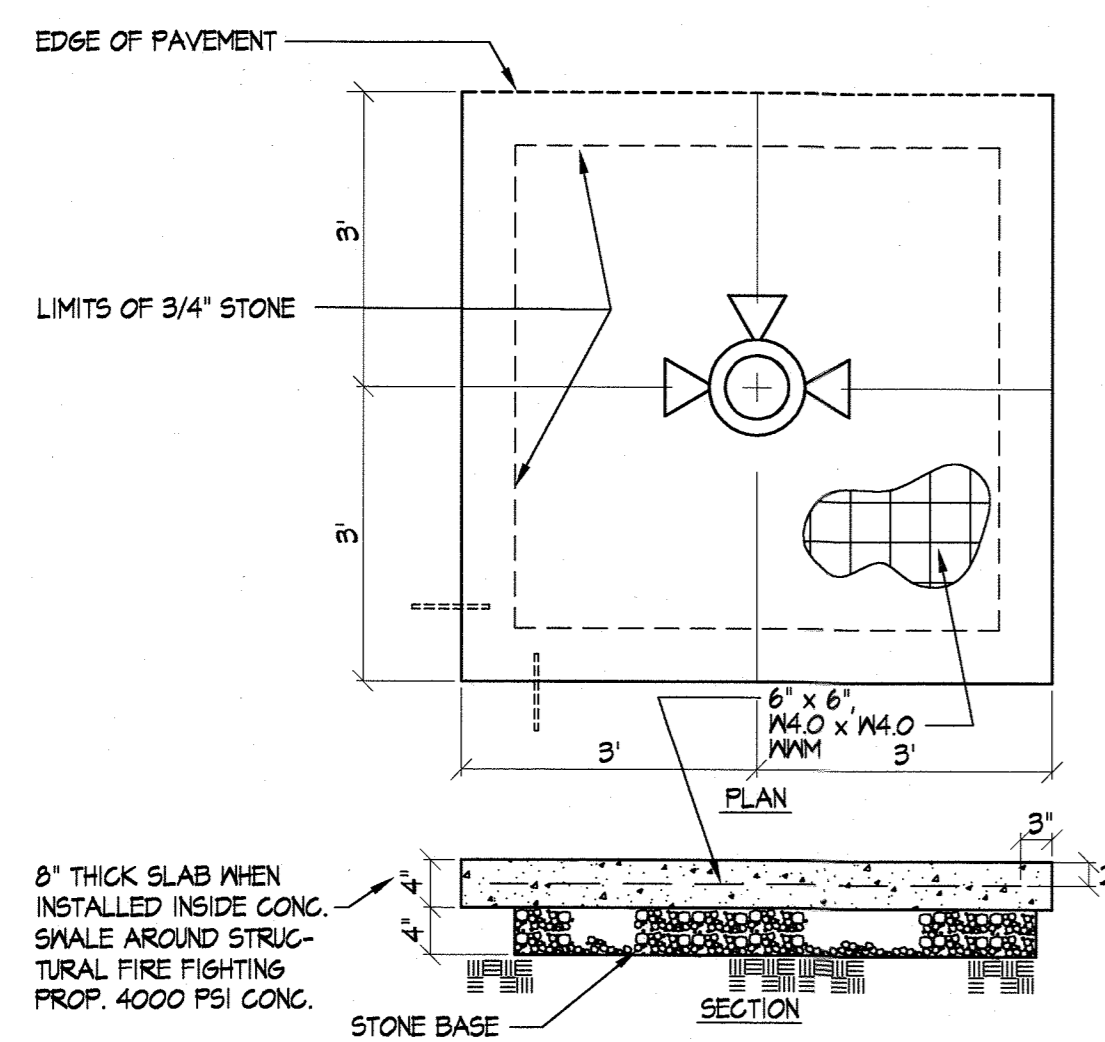


15 FIRE TRAINING WATER SUPPLY HYDRANT & ASSEMBLY DETAIL
NOT TO SCALE

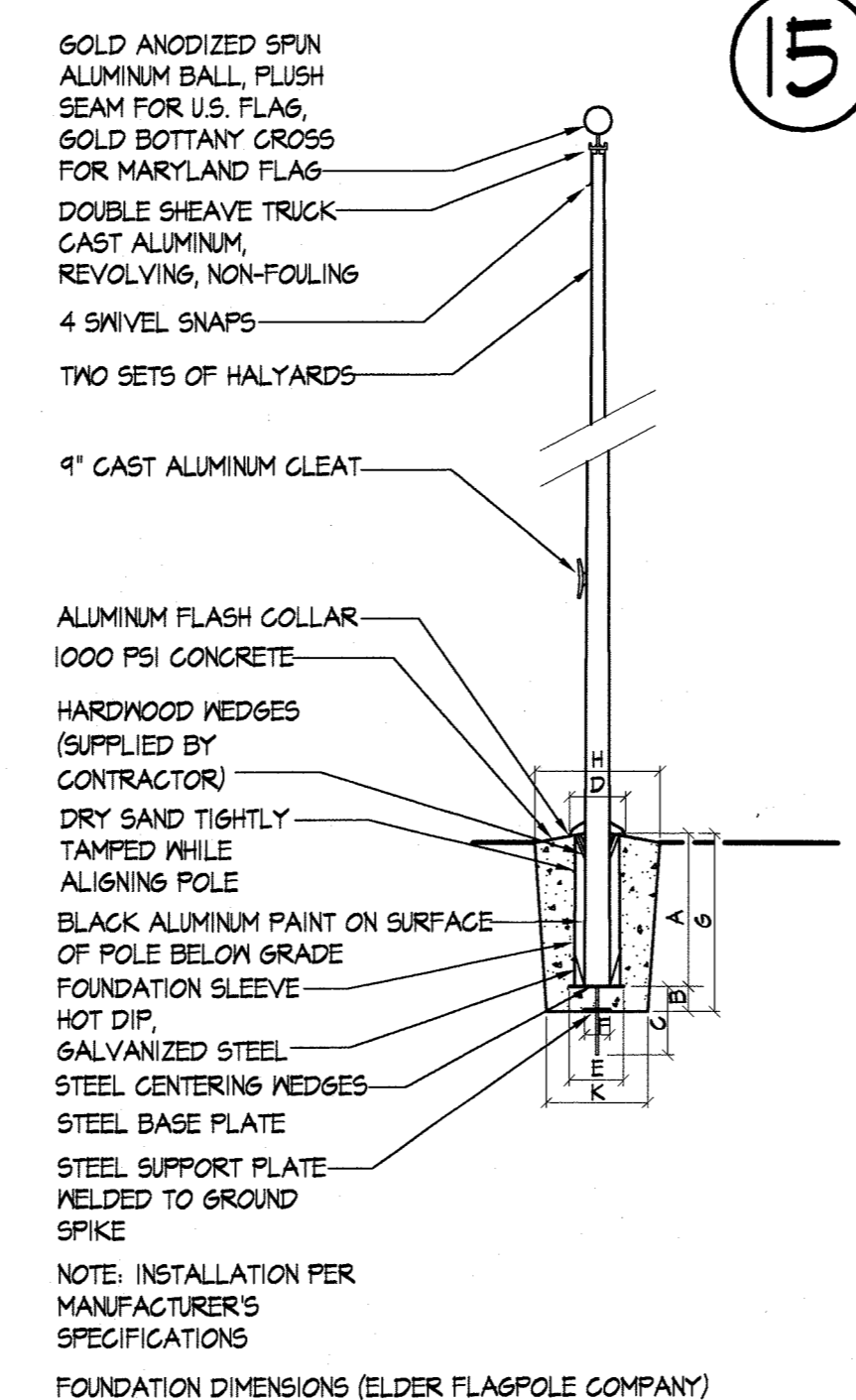


SIZE	RISE (R)	TREAD (T)	SLOPE (S)	OVERHANG (N)
4	4	16	3/8	1/2
4-1/2	4-1/2	17	3/8	1/2
5	5	16	5/16	3/4
5-1/2	5-1/2	15	5/16	3/4
6	6	15	1/4	1
6-1/2	6-1/2	13	1/4	1
7	7	12	1/4	1-1/2

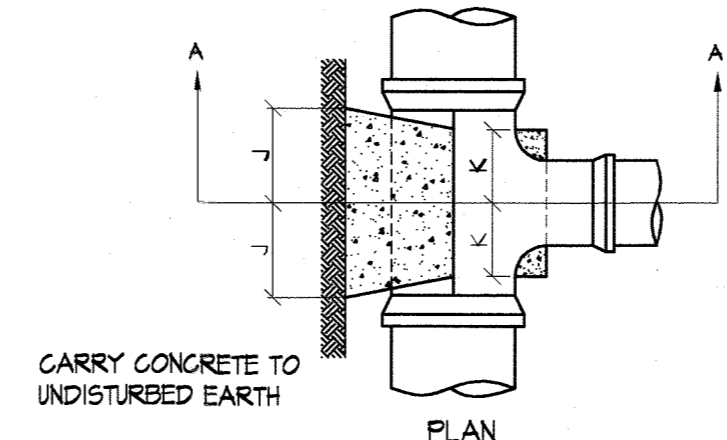
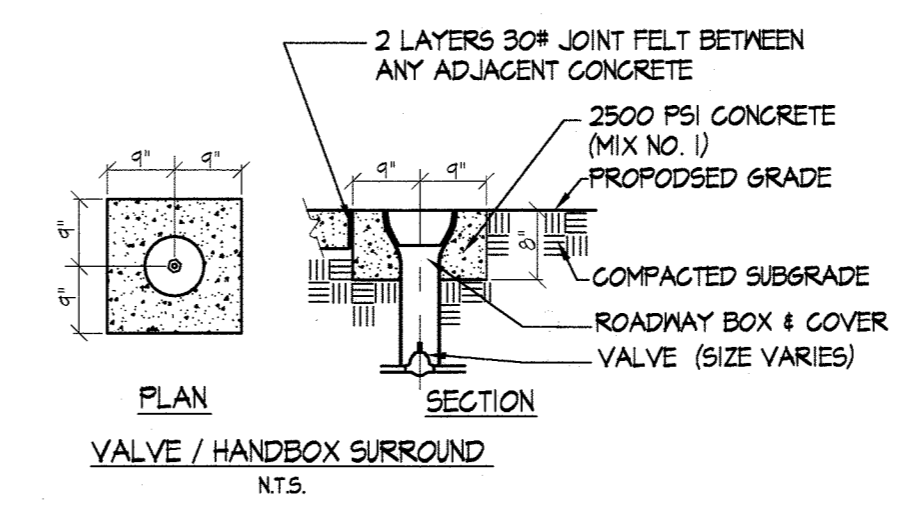
18 CONCRETE STAIRS & RAILING
NOT TO SCALE



13 FIRE TRAINING WATER SUPPLY HYDRANT SLAB DETAIL
NOT TO SCALE

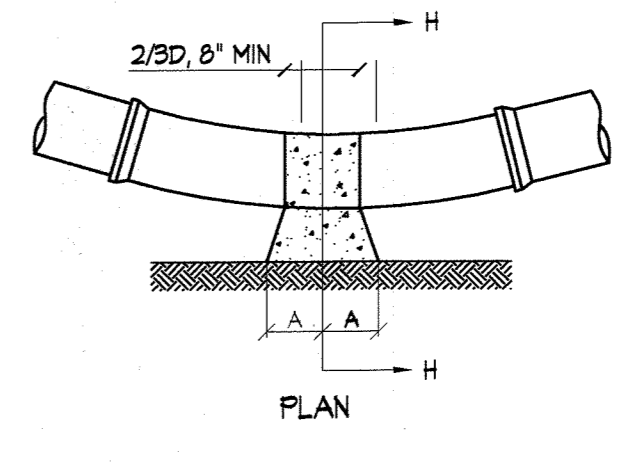


16 FLAG POLE DETAIL
NOT TO SCALE

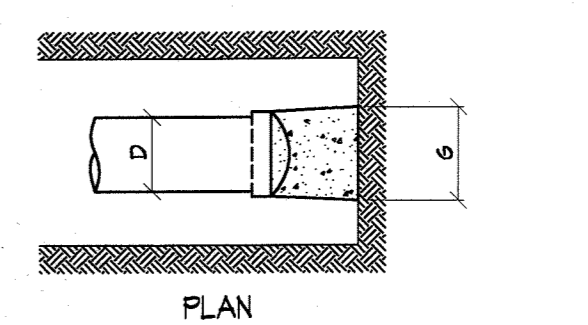


SIZE OF BRANCH	D	H	J	K
4"	4"	5"	5"	6"
6"	6"	7"	7"	8"
8"	8"	9"	9"	10"
10"	10"	11"	11"	12"
12"	12"	13"	13"	14"
14"	14"	15"	15"	16"
16"	16"	17"	17"	18"
18"	18"	19"	19"	20"
20"	20"	21"	21"	22"
24"	24"	25"	25"	26"
30"	30"	31"	31"	32"
36"	36"	37"	37"	38"

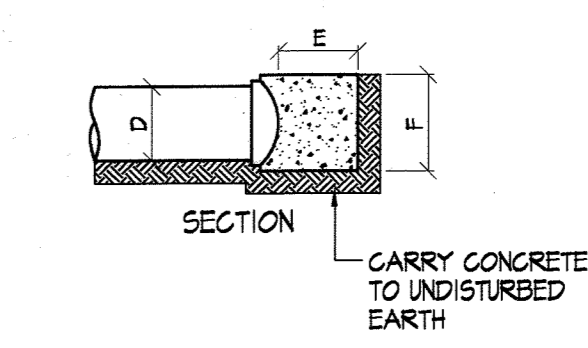
BUTTRESS FOR TEES



BEND	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"
1/4"										
1/2"										
3/4"										
1"										
1 1/4"										
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1 3/4"										
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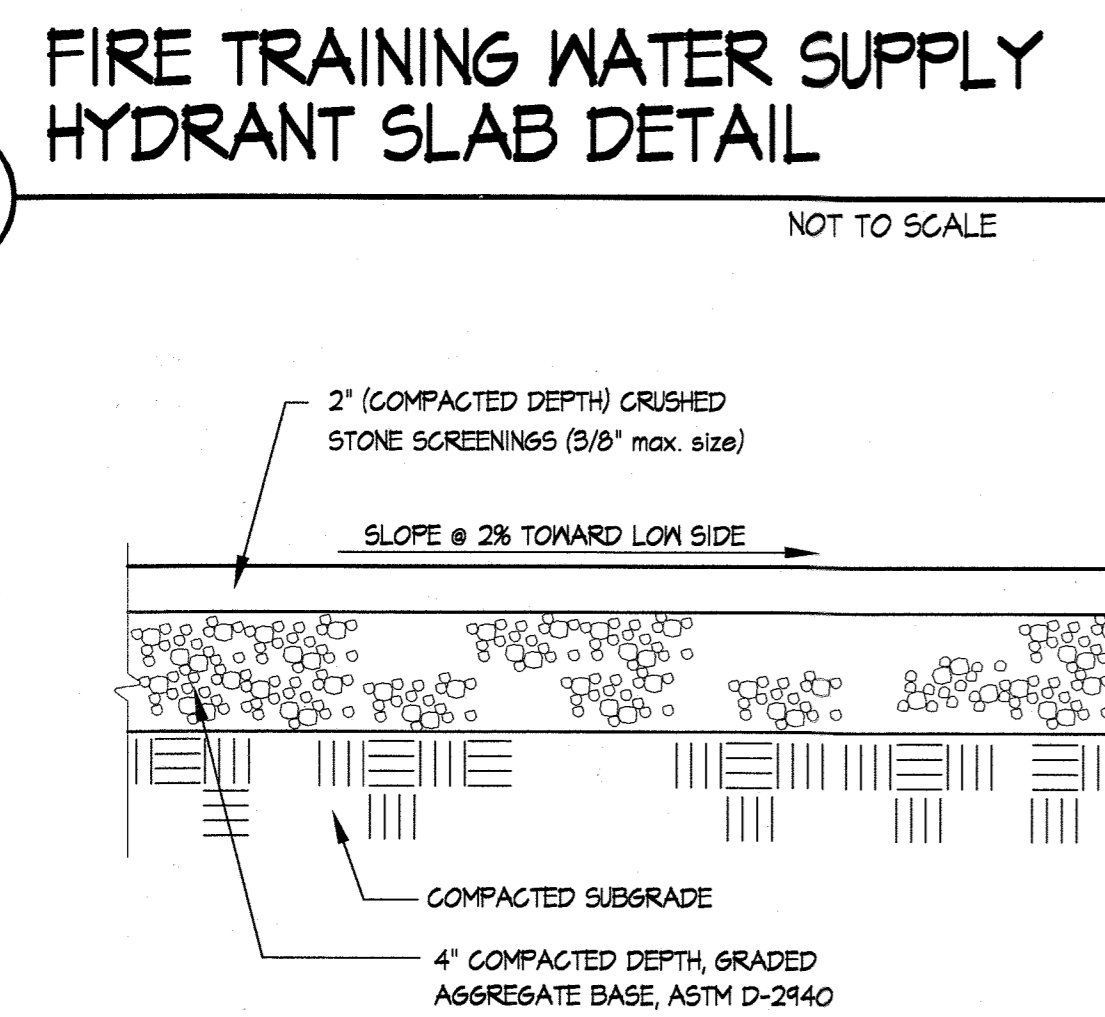


BUTTRESSES FOR CAPS	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"
D	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"
H	5"	7"	9"	11"	13"	17"	21"	25"	31"	37"
J	5"	7"	9"	11"	13"	17"	21"	25"	31"	37"
K	6"	8"	10"	12"	14"	18"	22"	26"	32"	38"

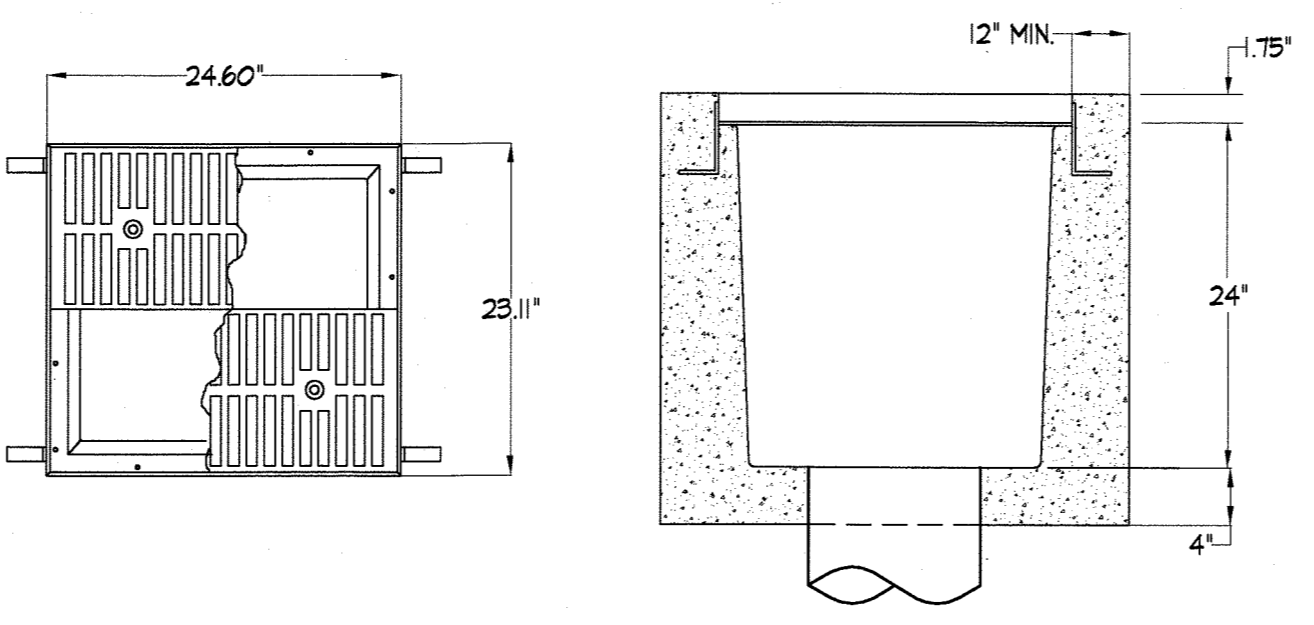


1. All concrete to be 2500 psi (mix no. 1)
2. Buttress dimensions shown are minimum. Dimensions are based on soil bearing pressure of 3000 psf and static water pressure of 150 psi. Where soil bearing pressure is less than 3000 psf, special buttress design is required.

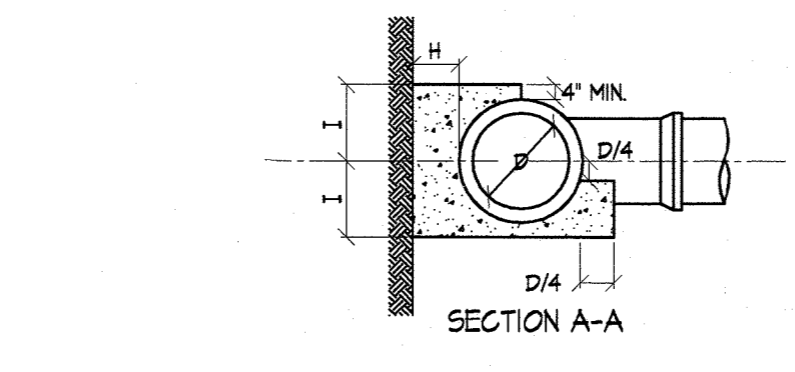
BUTTRESS FOR CAPS AND HORIZONTAL BENDS



14 FITNESS TRACK DETAIL
NOT TO SCALE



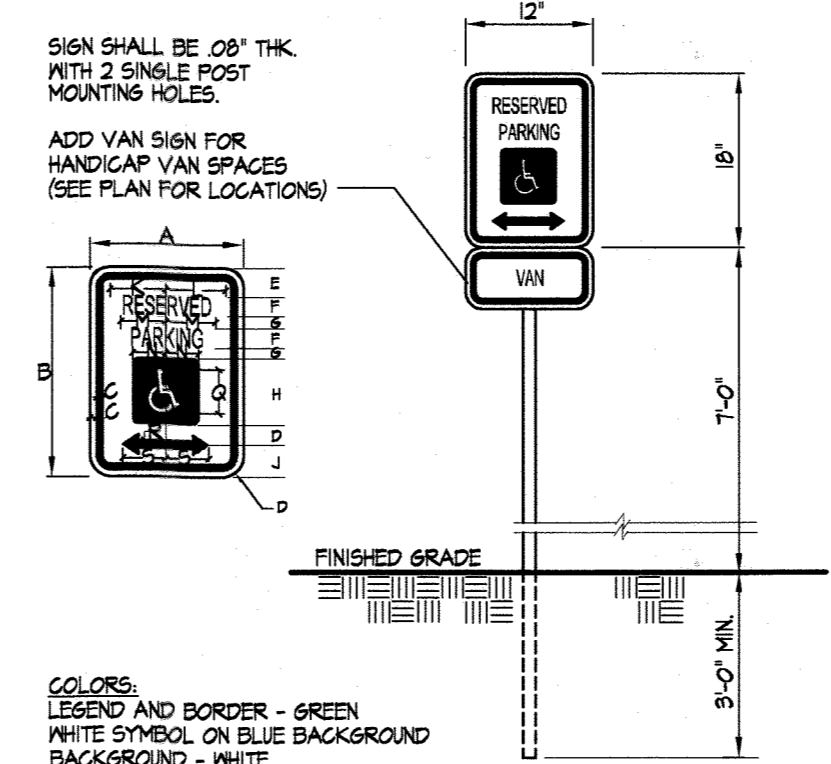
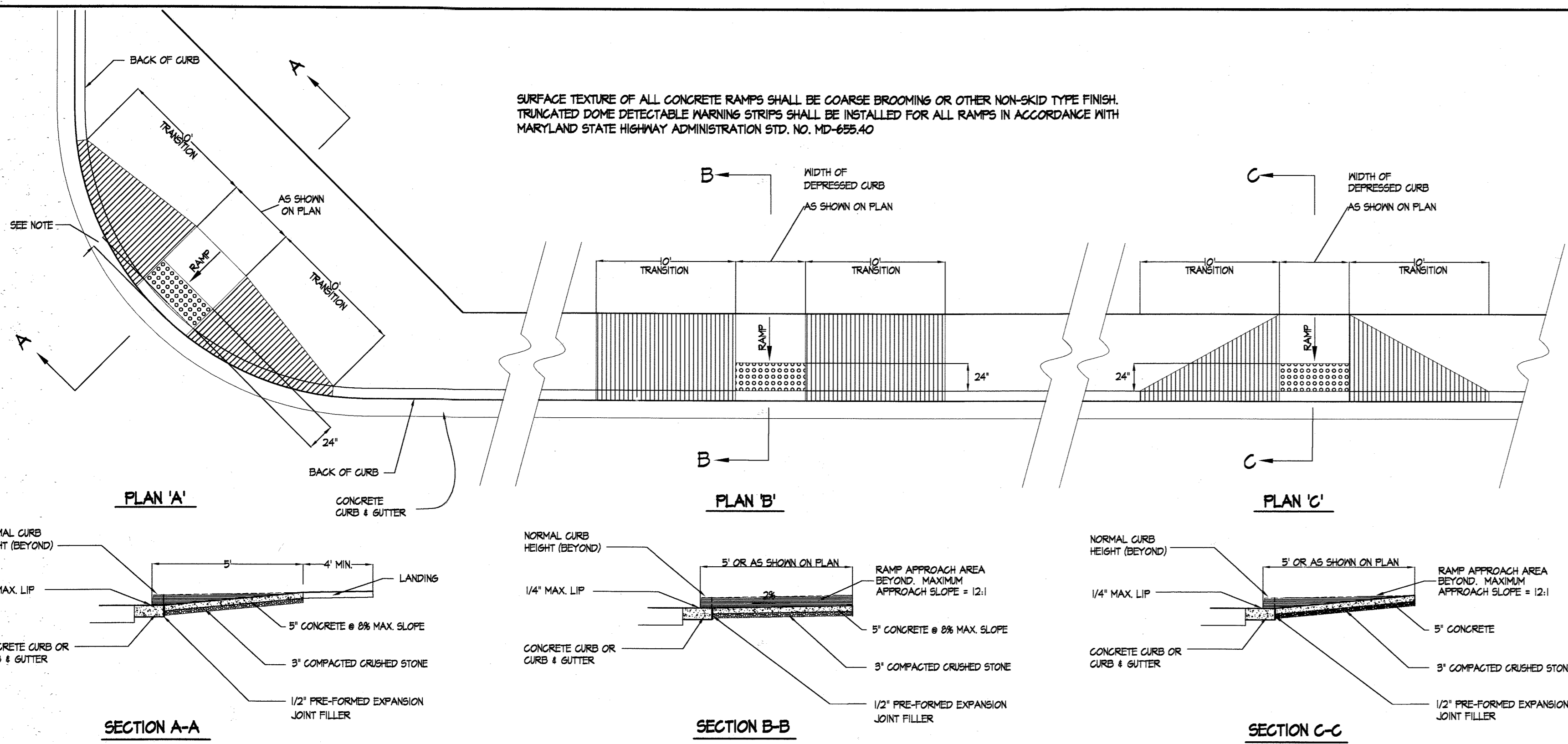
17 TRENCH DRAIN CATCH BASIN DETAIL
NOT TO SCALE



19 WATER MAIN BUTTRESSING AND VALVE HANDBOX SURROUND
NOT TO SCALE

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT <i>Robert J. Water</i> COUNTY HEALTH OFFICER DATE: 10/30/06	APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS <i>James M. Irvin</i> DIRECTOR DATE: 10/26/06	APPROVED: DEPARTMENT OF PLANNING & ZONING <i>Mark S. Wiegler</i> DIRECTOR DATE: 10/24/06	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	SITE RESOURCES, INC. LAND PLANNING / SITE DESIGN 14315 Jarrettsville Pike Phoenix, Maryland 21131 Phone: 410.683.3388 Fax: 410.683.3389	DES: KPR DRN: AM CHK: REM DATE: 10/11/06	BY: NO. REVISION DATE	600' SCALE MAP NO. 16 BLOCK NO. 2 / B	Phase II Improvements: four buildings, eight training props and associated infrastructure PUBLIC SAFETY TRAINING CENTER at Alpha Ridge Landfill, Capital Project No. C-01B2, Howard County, Maryland OWNER: Howard County, Department of Public Works 3-330 Courthouse Drive Ellicott City, Maryland 21043 Phone (410) 313-2100 ADDRESS / PERMIT INFORMATION: PARCEL #253, ADDRESS: 2200 Alpha Center Drive PLAT No. 5716, L16684 / F5614 GRID No. 21B, ZONE: RCPD10, TAX MAP No. 16 3rd Election District, Census Tract 6230 WATER CODE: 750, SEWER CODE: Private - Holding Tank	C3.02 SCALE: AS SHOWN SHEET 22 OF 81 SDP - 06-110
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SURFACE TEXTURE OF ALL CONCRETE RAMPS SHALL BE COARSE BROOMING OR OTHER NON-SKID TYPE FINISH. TRUNCATED DOME DETECTABLE WARNING STRIPS SHALL BE INSTALLED FOR ALL RAMPS IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATION STD. NO. MD-655.40

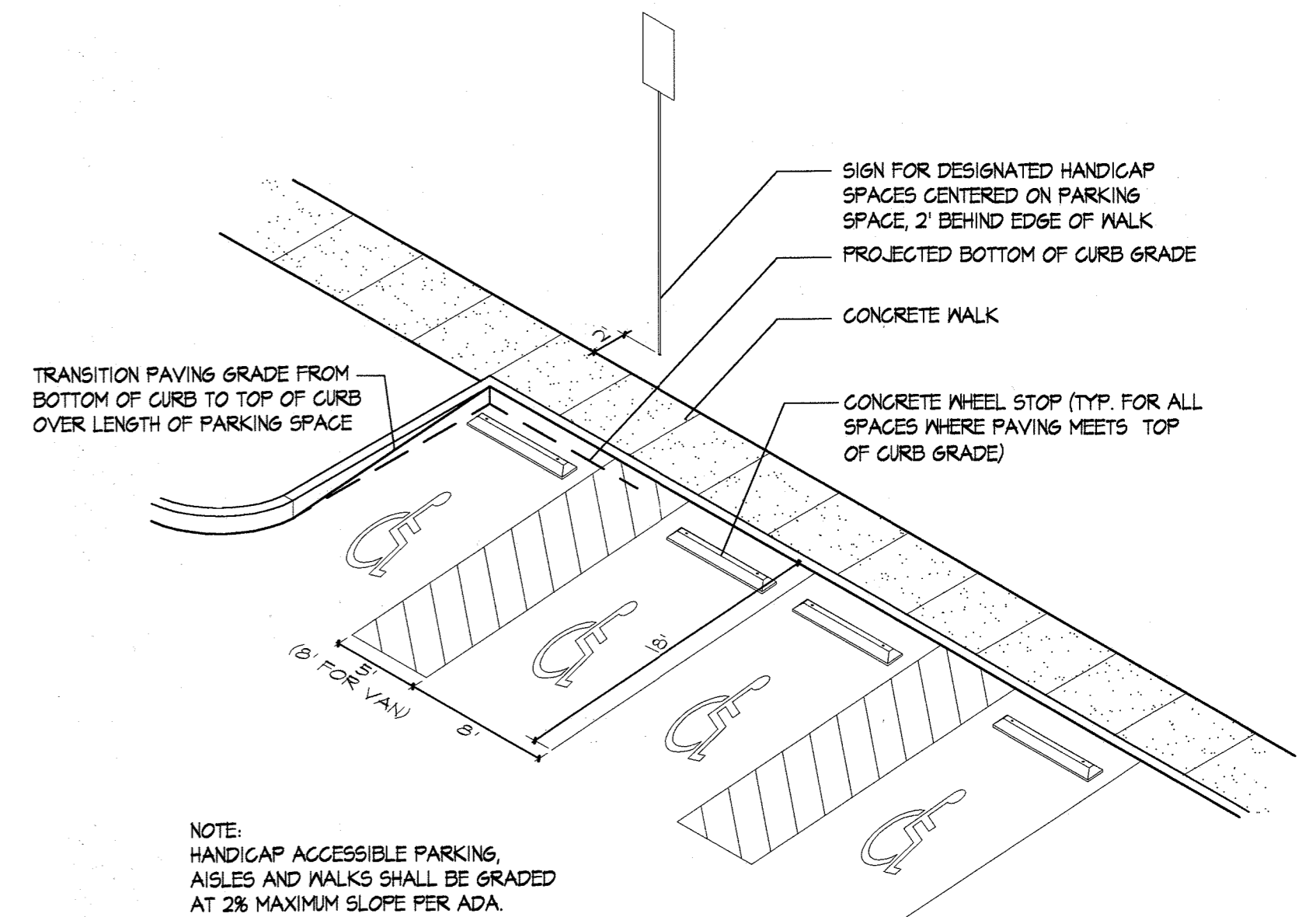


COLORS:
LEGEND AND BORDER - GREEN
WHITE SYMBOL ON BLUE BACKGROUND
BACKGROUND - WHITE

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

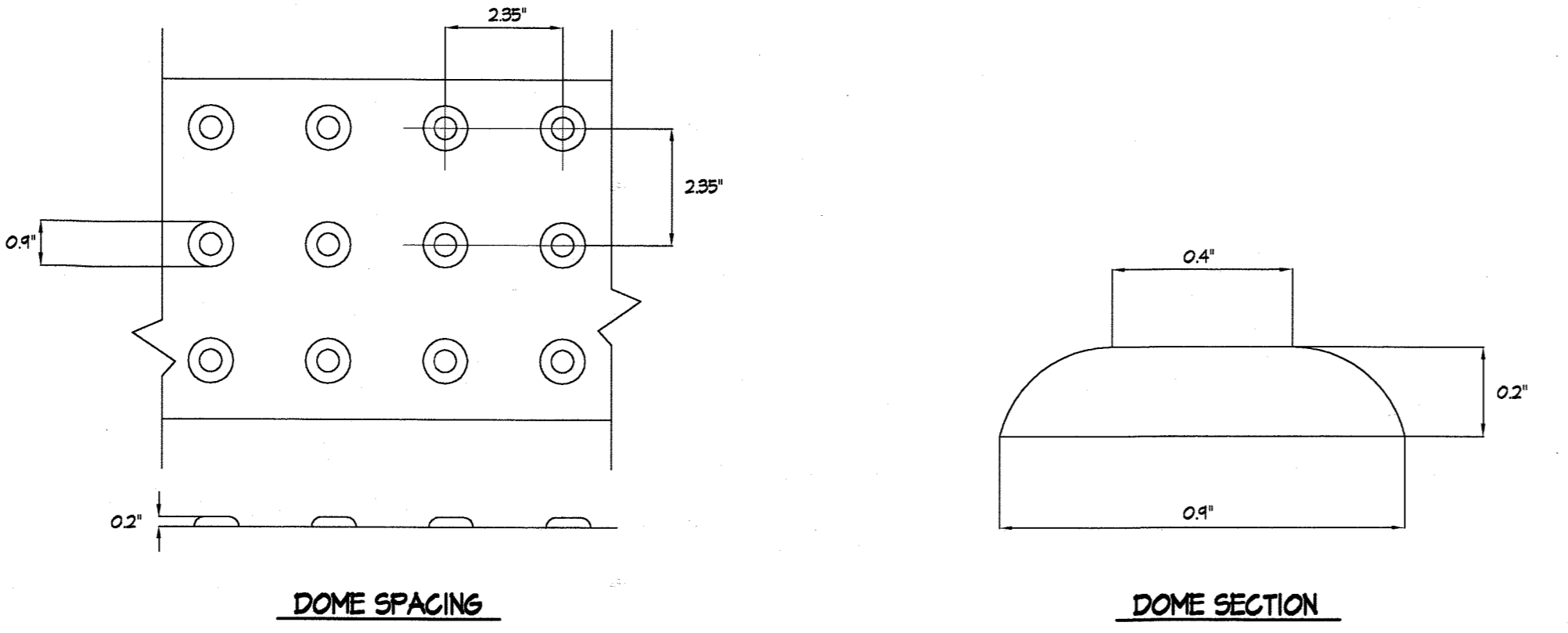
SIGN SIZE	DIMENSIONS (INCHES)				
	L	M	N	P	Q
STD	5	4-1/4	3	1/2	4

21 HANDICAP PARKING SIGN NOT TO SCALE

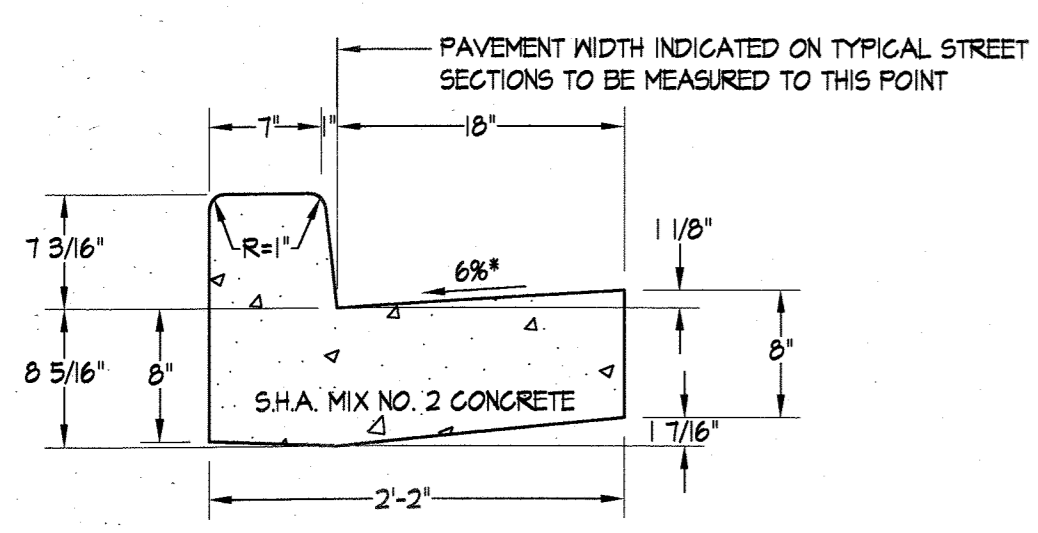


22 HANDICAP PARKING DETAIL NOT TO SCALE

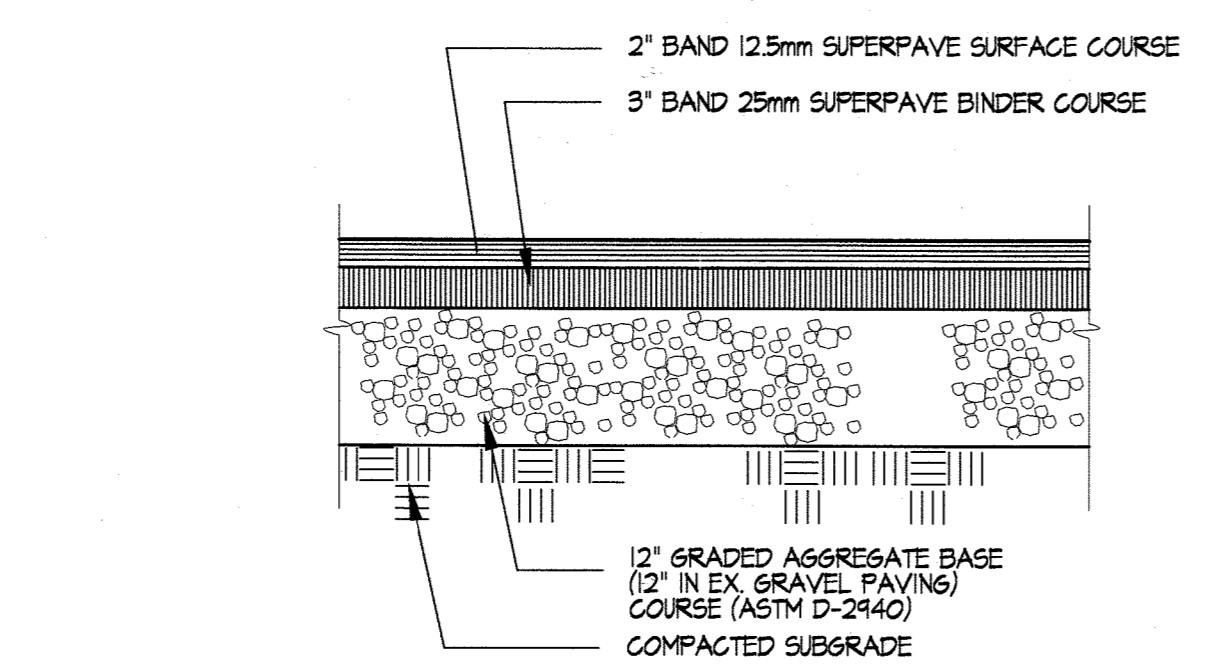
- WHERE ISLANDS OR MEDIANS ARE LESS THAN 6 FEET WIDE, THE DETECTABLE WARNING SHOULD EXTEND ACROSS THE FULL LENGTH OF THE CUT THROUGH THE ISLAND OR MEDIAN
- NOTES**
- THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
 - FOR SKEWED APPLICATIONS DETECTABLE WARNING SHALL BE PLACED SUCH THAT THE DOMES CLOSEST TO THE BACK OF CURB ARE NO LESS THAN 0.5' AND NO MORE THAN 5.0' FROM THE BACK OF THE CURB. TRUNCATED DOME SURFACES SHALL BE FABRICATED TO PROVIDE FULL DOMES ONLY.
 - DETECTABLE WARNING SURFACE SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 611 OF THE SPECIFICATIONS.



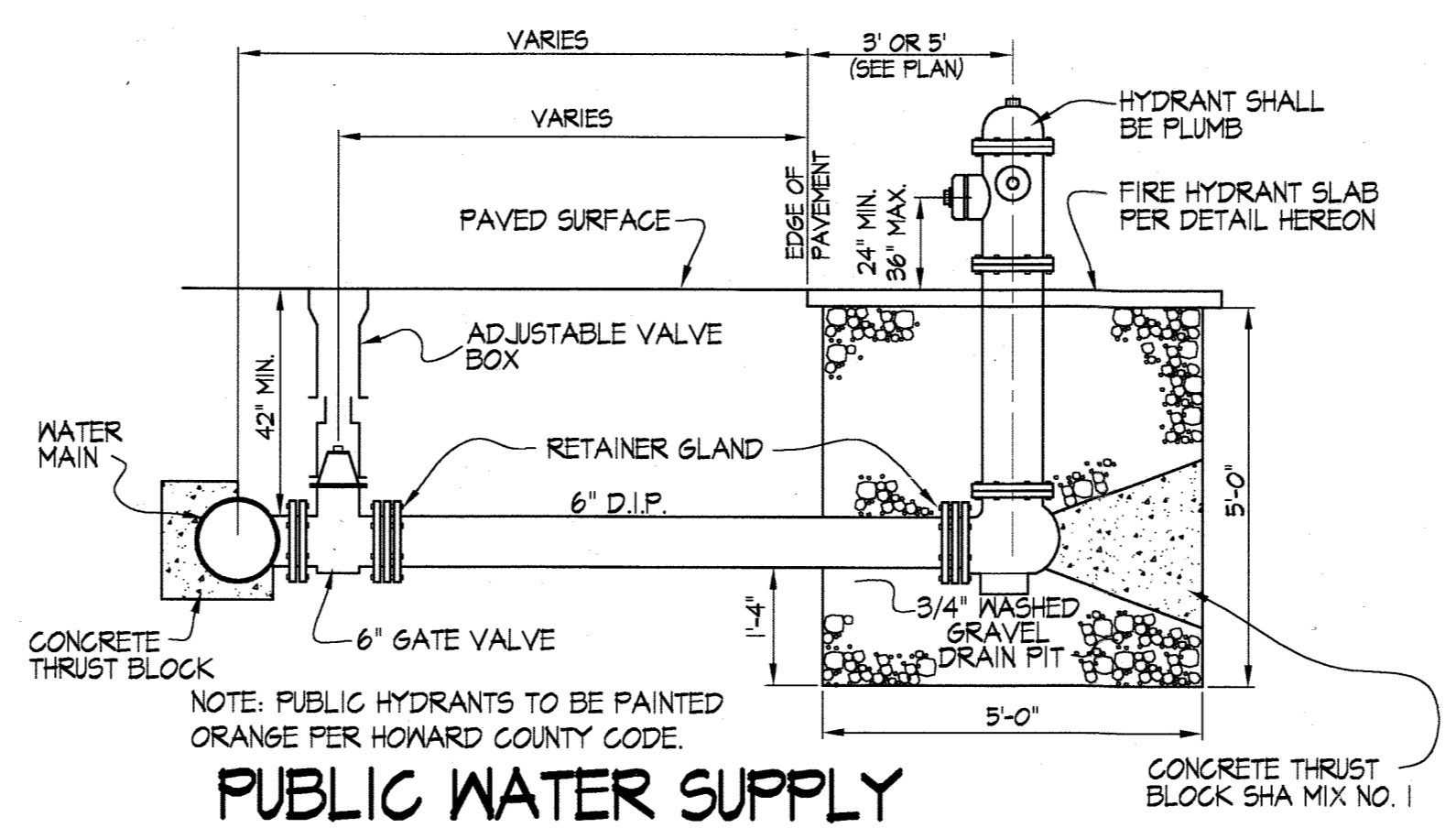
20 CONCRETE RAMP WITH DETECTABLE WARNING SURFACE DETAIL NOT TO SCALE



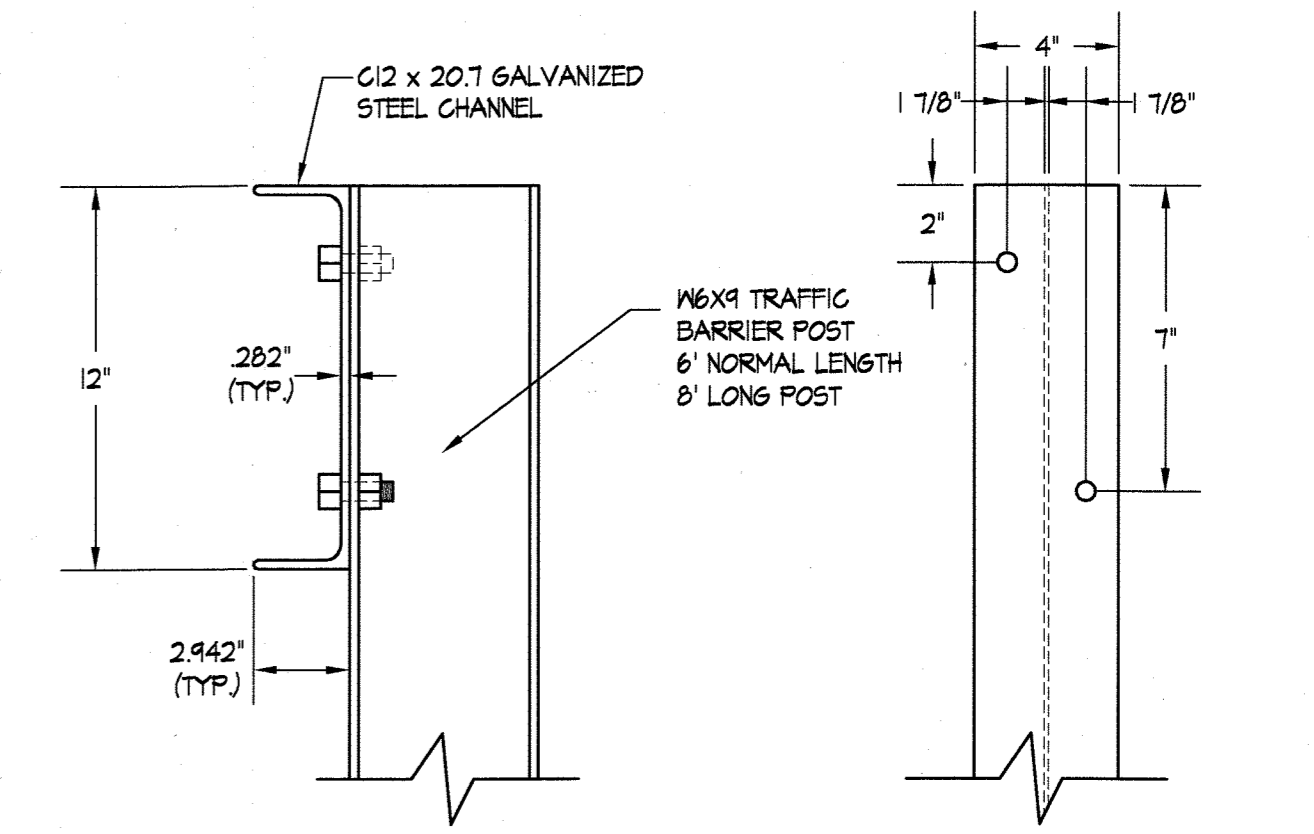
23 CURB AND GUTTER HOWARD COUNTY R-3.01 SCALE 1\"/>



24 HEAVY DUTY ASPHALT PAVING NOT TO SCALE

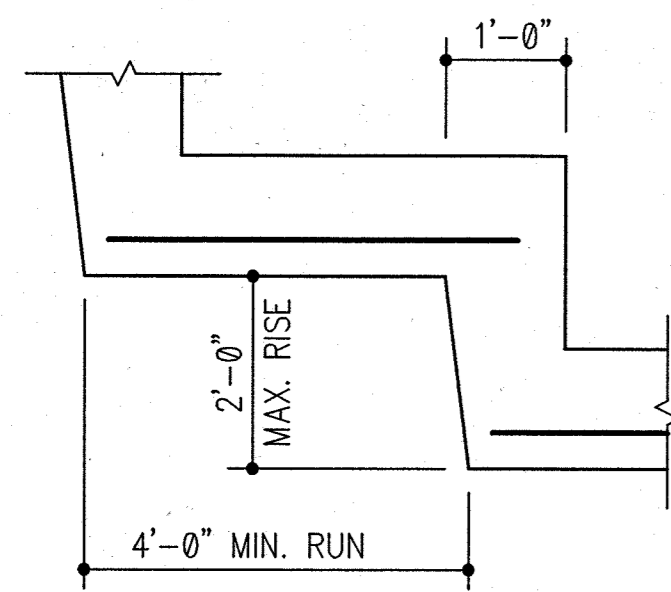


25 PUBLIC WATER SUPPLY HYDRANT & ASSEMBLY DETAIL NOT TO SCALE

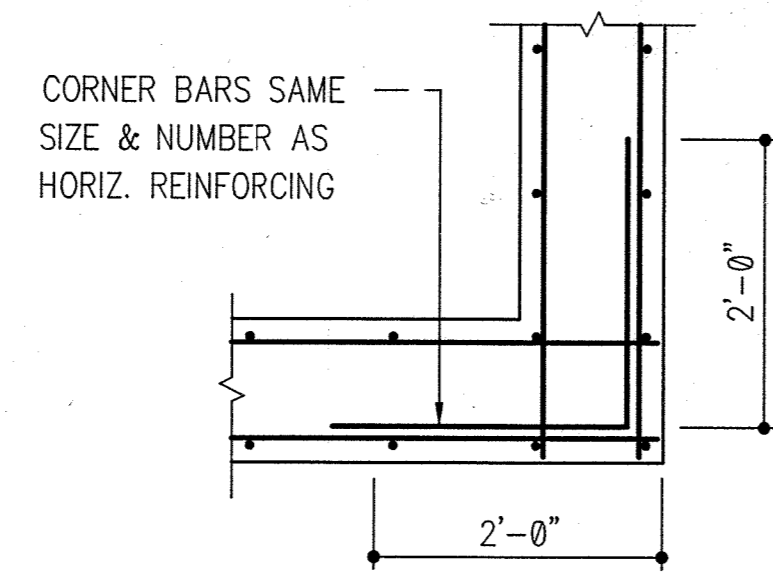


26 GUIDE RAIL DETAIL NOT TO SCALE

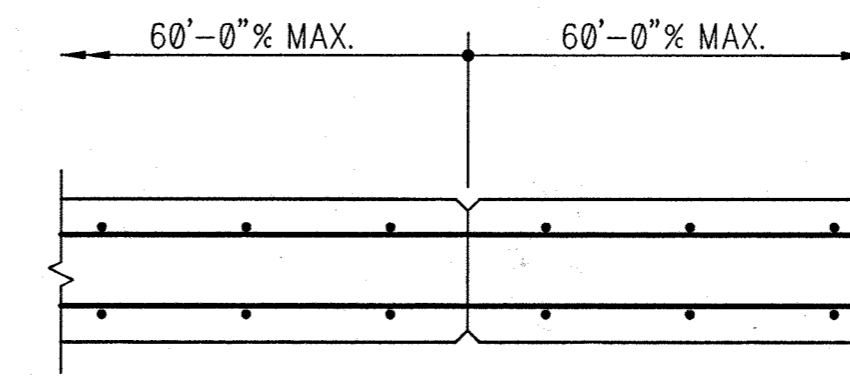
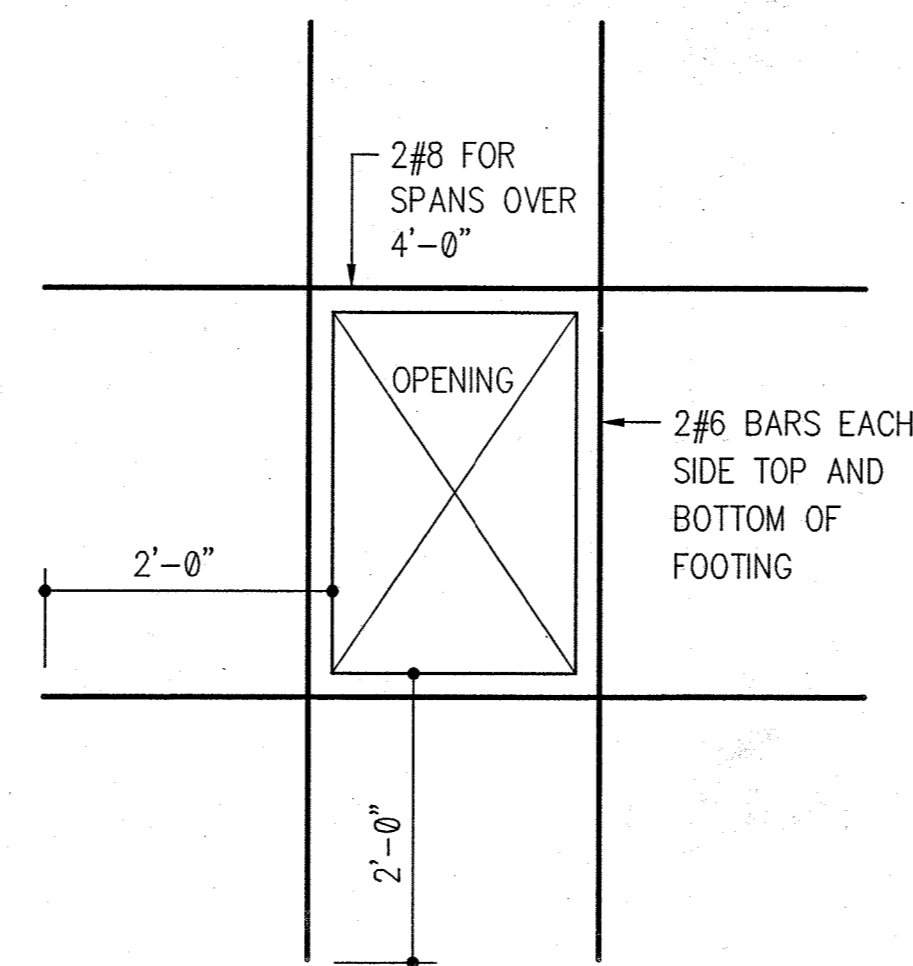
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT <i>Robert J. Weber</i> COUNTY HEALTH OFFICER DATE: 10/30/06	APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS <i>James M. Irvin</i> DIRECTOR DATE: 10/26/06	APPROVED: DEPARTMENT OF PLANNING & ZONING <i>David L. Boyle</i> DIRECTOR DATE: 10/30/06	APPROVED: CHIEF DEVELOPMENT ENGINEERING DIVISION <i>David L. Boyle</i> DATE: 10/30/06	APPROVED: CHIEF, DIVISION OF LAND DEVELOPMENT <i>David L. Boyle</i> DATE: 10/30/06	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	SITE RESOURCES, INC. LAND PLANNING / SITE DESIGN 14315 Jarrettsville Pike Phoenix, Maryland 21131 Phone: 410.683.3388 Fax: 410.683.3389	DES: KPR DRN: AM CHK: REM DATE: 10/11/06	BY: NO. REVISION DATE	600' SCALE MAP NO. 16 BLOCK NO. 2 / 8	Phase II Improvements: four buildings, eight training props and associated infrastructure PUBLIC SAFETY TRAINING CENTER at Alpha Ridge Landfill, Capital Project No. C-01B2, Howard County, Maryland OWNER: Howard County, Department of Public Works, 3430 Courthouse Drive, Ellicott City, Maryland 21043, Phone (410) 318-2100 ADDRESS / PERMIT INFORMATION: PARCEL #253, ADDRESS: 2200 Alpha Center Drive PLAT No. 15116, L&E#84 / F#14 GRID No. 218, ZONE: RCPD-2, TAX MAP No. 16 3rd Election District, Census Tract 6030 WATER CODE: 130, SEWER CODE: Private - Holding Tank	C3.03 SCALE: AS SHOWN SHEET 23 OF 37
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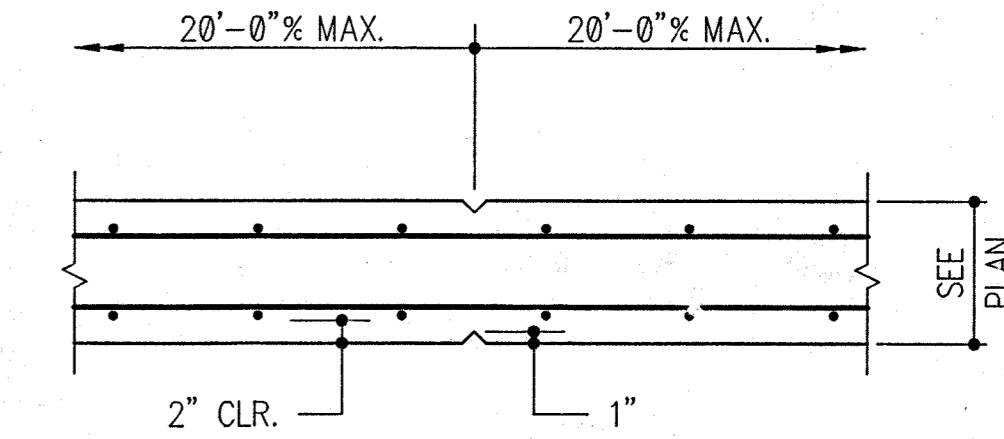
• SEE SECTION FOR SIZE OF REINF. BARS



CORNER BARS SAME SIZE & NUMBER AS HORIZ. REINFORCING



• CUT 50% OF HORIZONTAL REINFORCING



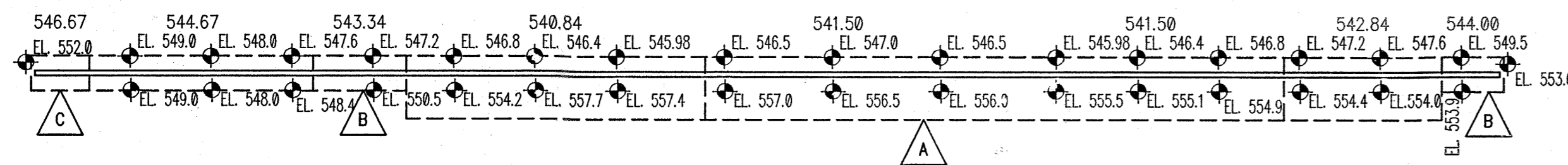
① TYP. STEPPED FOOTING
SCALE: 3/4" = 1'-0"

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"



SITE SEPARATION WALL

PLAN - SITE SEPARATION WALL SCALE: 1" = 30'-0"

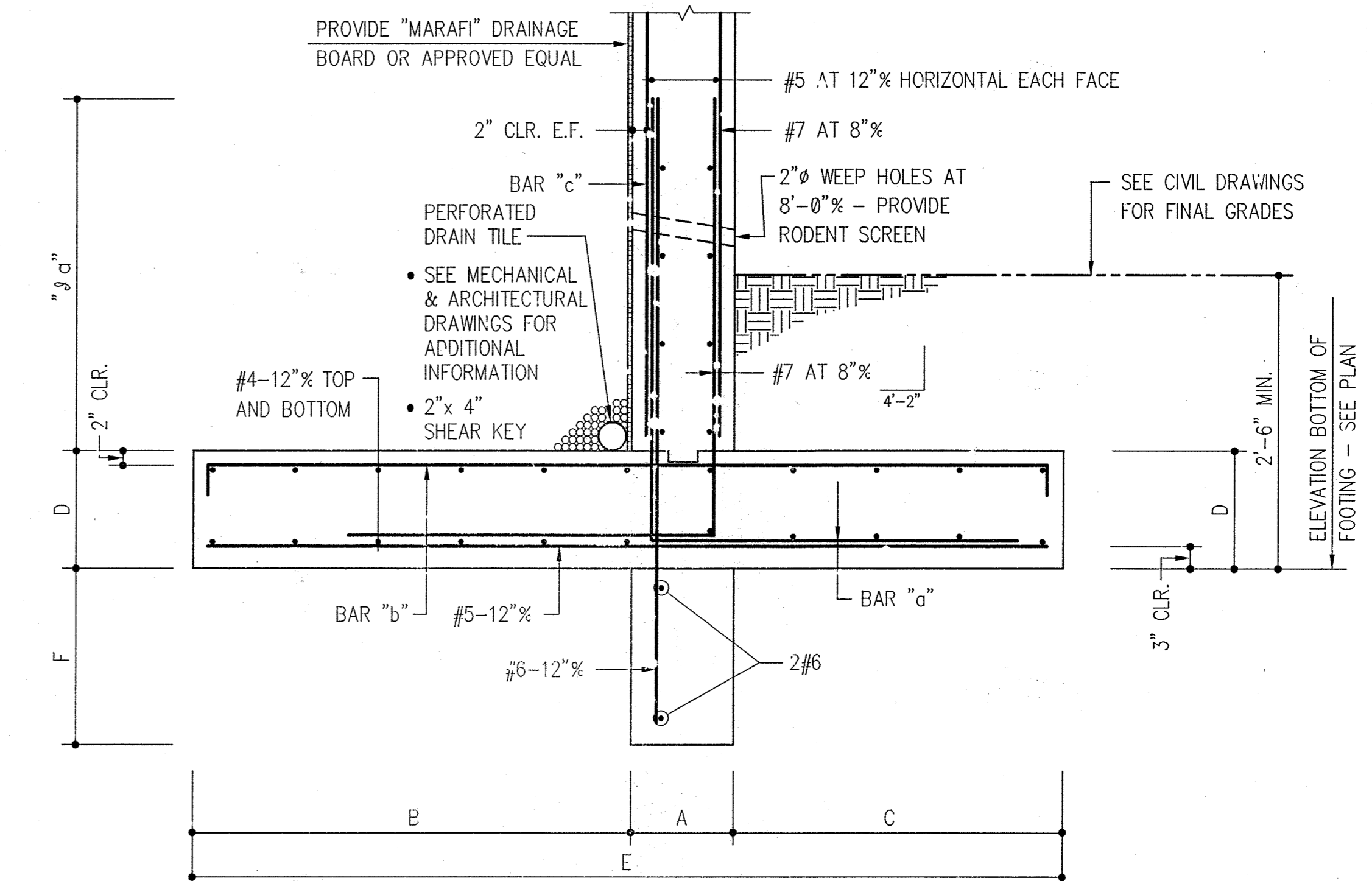
- SEE CIVIL DRAWINGS AS PREPARED BY SITE RESOURCES FOR EXACT DIMENSIONS FOR WALL LENGTH, LOCATION AND FINAL GRADES. ELEVATION TOP OF WALL = 569.00
- ELEVATIONS NOTED THUS: \diamond ARE FINAL FINISH GRADES AT WALL.
- REINFORCED CONCRETE ($f_c = 5000$ PSI) RETAINING WALL AND FOOTING INDICATED ON PLAN AND IN SCHEDULE THUS: \triangle
- DESIGN SOIL PARAMETERS USED FOR RETAINING WALL DESIGN AS FURNISHED BY HERBST/BENSON ASSOCIATES, INC. ARE AS FOLLOWS: EQUIVALENT ACTIVE FLUID PRESSURE = 45 PCF (SEE NOTE 7) SOIL BEARING VALUE = 2500 PSF
- WALL TYPES ARE INDICATED ON PLAN THUS:
 \square REINFORCED CONCRETE RETAINING WALL ($f_c = 5000$ PSI)
- ELEVATION BOTTOM OF FOOTING IS SHOWN ON PLAN.
- PROVIDE SELECT COMPACTED FILL AS BACKFILL AGAINST ALL BELOW GRADE WALLS. SEE GEOTECHNICAL REPORT PREPARED BY HERBST/BENSON ASSOCIATES, INC. DATED JANUARY 16, 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	
		ExD	B	C	F	BAR "a"	BAR "b"	BAR "c"		
\triangle	1'-2"	15'-9" x 30"	10'-10"	3'-9"	3'-0"	#7-8"	4'-0"	#9-6"	#7-8"	SEE (6-11)
\triangle	1'-2"	8'-8" x 16"	3'-9"	3'-9"	2'-0"	#7-8"	4'-0"	#6-8"	#7-8"	SEE (6-11)
\triangle	1'-2"	8'-8" x 16"	3'-9"	3'-9"	--	#7-8"	4'-0"	#6-12"	#7-8"	SEE (6-11)

- ALL CONCRETE FOR RETAINING WALLS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI.
- DO NOT BACKFILL WALLS UNTIL CONCRETE HAS ATTAINED DESIGN STRENGTH.

- PROVIDE FREE DRAINAGE SELECT COMPACTED FILL AGAINST ALL BELOW GRADE WALLS. SEE GEOTECHNICAL REPORT PREPARED BY HERBST/BENSON ASSOCIATES, INC. DATED JANUARY 16, 2006 FOR SPECIFIC REQUIREMENTS CONCERNING BACKFILL OF BELOW GRADE RETAINING WALLS.

- SEE CIVIL DRAWINGS FOR FINAL GRADES
- SEE REINFORCED CONCRETE RETAINING WALL SCHEDULE FOR DIMENSIONS AND SIZES
- ALL CONCRETE FOR FOOTING AND WALL SHALL HAVE $f_c = 5000$ PSI



⑥ TYPICAL CONCRETE SITE RETAINING WALL
SCALE: 3/4" = 1'-0"

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

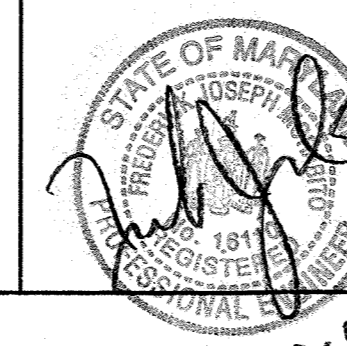
Robert W. Weller
COUNTY HEALTH OFFICER
10/20/06
DATE

James M. Irvin
DIRECTOR
10/20/06
DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING
Mark A. Gough
DIRECTOR
10/20/06
DATE
Chief, Development Engineering Division
10/20/06
DATE
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: 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	BY	NO.	REVISION	DATE
			01/25/06				

Site Separation Wall
Plan and Details

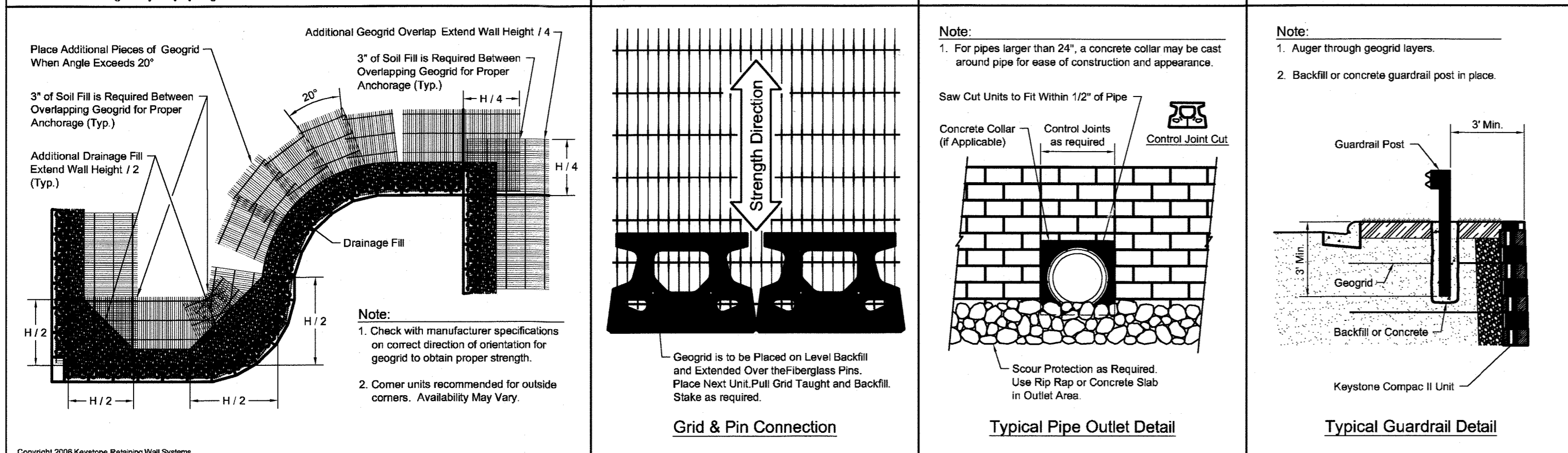
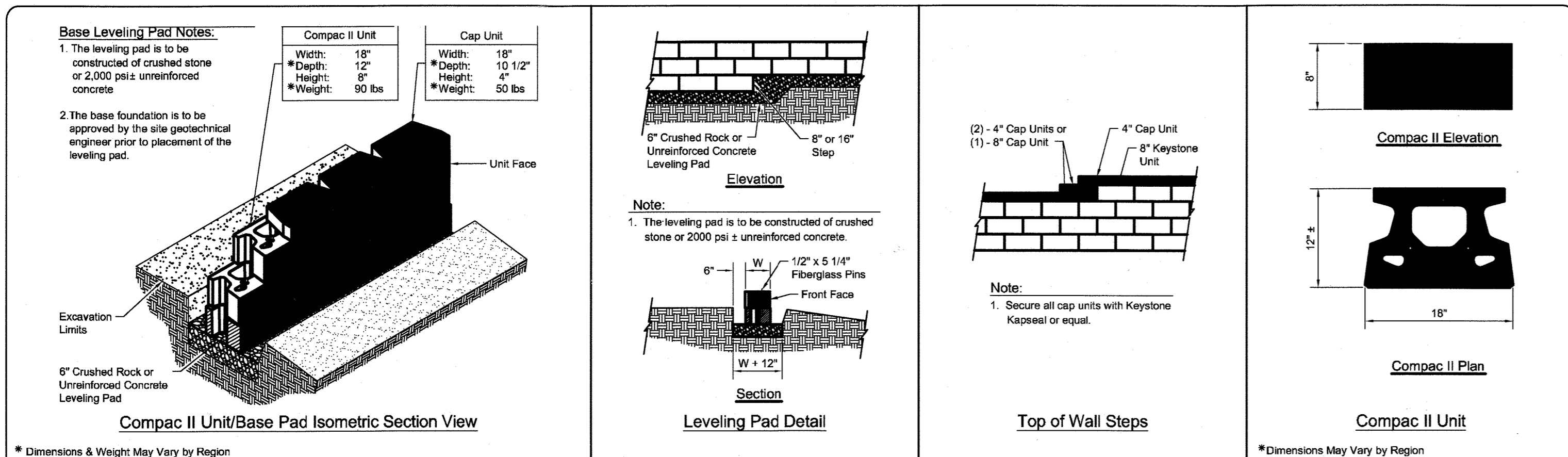
600' SCALE MAP NO. 16 BLOCK NO. 2 / 0

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland
OWNER: Howard County Department of Public Works
ADDRESS / PER. INT INFORMATION:
PARCEL 753 ADDRESS: 2200 Alpha Center Drive
PLAT 5, 574, ADDRESS: 2200 Alpha Center Drive
6710 No. 216, ZONE: RCF-50, TAX MAP No. 16
3rd Election District, Census Tract 6020
P. No. (410) 315-2100

C3.05

SCALE: AS SHOWN

SHEET 25 OF 87



No.	Date	Revision	By
1	07/21/06	Increased Safety Factor for Sliding to >2.0	AC

DESIGNED BY: AC
 CHECKED BY: CDM
 DATE: 07/26/06

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

Robert W. Wadsworth
 COUNTY HEALTH OFFICER
 DATE: 10/30/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DIRECTOR
 DATE: 10/24/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 10/26/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

James M. Irvin
 JAMES M. IRVIN, DIRECTOR
 DATE: 10/26/06

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

KEYSTONE
 RETAINING WALL SYSTEMS
 A CONTECH COMPANY
 4444 W 78th Street
 Minneapolis, MN 55435
 952-897-1040

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 DATE: 10/26/06

No.	Date	Revision	By
1	07/21/06	Increased Safety Factor for Sliding to >2.0	AC

SPECIFICATION GUIDELINES (Short Form)

PART 1 - GENERAL
 1.01 DESCRIPTION
 A. Unit fill shall consist of clean 1" minus crushed stone or crushed gravel meeting the following gradation:

Sieve Size	% Passing
1 inch	100
3/4"	75-100
No. 4	0-10
No. 50	0-5

 1.02 REFERENCE STANDARDS
 A. ASTM C1372 Specification for Segmental Retaining Wall Units
 B. ASTM D 422 Particle Size Analysis
 C. ASTM D 698 Laboratory Compaction Characteristics using Standard Effort
 D. ASTM D 4318 Liquid Limit, Plastic Limit, Plastic Index of Soils
 E. ASTM D 4956 Tensile Properties of Geotextiles - Wide Width Strip
 F. ASTM D 5262 Unconfined Tension Creep Behavior of Geotextiles
 G. NCMA SRWU-1 Test Method for Determining Connection Strength of SRW

PART 2 - MATERIALS
 2.01 DEFINITIONS
 A. Concrete Units - a KEYSTONE modular concrete facing unit, machine made from portland cement, water and mineral aggregates.
 B. Structural Geogrid - a structural geogrid formed by a regular network of integrally connected tensile elements with apertures of sufficient size to allow interlocking with surrounding soil, rock, or earth and function primarily as reinforcement.
 C. Unit Drainage Fill - drainage aggregate which is placed within and immediately behind the modular concrete units.
 D. Reinforced Backfill - Compacted soil which is within the reinforced soil volume as shown on the plans.

2.02 KEYSTONE UNITS
 A. KEYSTONE wall units shall have a minimum 28-day compressive strength of 3,000 psi. Standard weight concrete shall have a maximum moisture absorption of 8% (8% in northern climates).

2.03 FIBERGLASS CONNECTING PINS
 A. Connecting pins shall be 1/2" diameter thermoset isophthalic polyester resin pultruded fiberglass reinforcement rods supplied by the unit manufacturer.

2.04 KEYSTONE KAPSEL CONSTRUCTION ADHESIVE
 A. Material shall conform to ASTM 2339 and shall be supplied by the KEYSTONE unit supplier.

2.05 GEOGRID REINFORCEMENT
 A. Geogrid shall be the type as shown on the drawings having the property requirements described within the manufacturer's specifications and required by the design calculations.

2.06 BASE LEVELING PAD MATERIAL
 A. Material shall consist of compacted crushed stone or unreinforced concrete as shown on the construction drawings.

2.07 UNIT DRAINAGE FILL
 A. Unit fill shall consist of clean 1" minus crushed stone or crushed gravel meeting the following gradation:

Sieve Size	% Passing
2 inch	100
3/4"	75-100
No. 40	0-80
No. 200	0-35
LL < 40 and PI < 15 per ASTM D4318	

 2.08 REINFORCED BACKFILL
 A. Reinforced backfill shall be free of debris or organic material meeting the following gradation tested in accordance with ASTM D-422:

Sieve Size	% Passing
2 inch	100
3/4"	75-100
No. 40	0-80
No. 200	0-35
LL < 40 and PI < 15 per ASTM D4318	

 3.04 UNIT INSTALLATION
 A. The first course of concrete modular wall units shall be carefully placed on the base leveling pad. Each unit shall be checked for level and alignment.
 B. Units are placed side by side for full length of wall alignment. Alignment may be done by means of a string line or offset from a base line.
 C. Install fiberglass connecting pins and fill all voids in and around the modular units with unit fill material. Tamp or rod unit fill to insure that all voids are completely filled.
 D. Sweep excess material from top of units and install the next course. Ensure that each course is completely unit filled, backfilled and compacted prior to proceeding to next course.
 E. Place each subsequent course ensuring that pins protrude into adjoining courses a minimum of 1". Two pins are required per unit. Push each unit forward, away from the fill zone, locking against the pins in the previous course and backfill as the course is completed. Repeat procedure to the extent of wall height.

3.05 GEOGRID INSTALLATION
 A. Geogrid shall be laid at the proper elevations and orientation as shown on the construction drawings or as directed by the Engineer.
 B. Correct orientation (roll direction) of the geogrid shall be verified by the contractor with the strongest direction placed perpendicular to the wall.
 C. Geogrid soil reinforcement shall be connected to the KEYSTONE wall units by placing the geogrid over fiberglass pins and laying the grid back on compacted fill.
 D. The geogrid shall be pulled taut to eliminate loose folds and pretension the reinforcement. Stakes or secure back edge of geogrid prior to and during backfill and compaction. Geogrid shall be placed side by side with no gaps.

3.06 FILL PLACEMENT
 A. Backfill material shall be placed in 8" lifts and compacted to 95% of Standard Proctor density as determined in accordance with ASTM D698. The in-place moisture content shall not exceed the optimum moisture content as determined in accordance with ASTM D698 and be no lower than 3% below optimum moisture content.
 B. Backfill shall be placed, spread and compacted in such a manner that minimizes the development of slack or loss of pretension of the geogrid.
 C. Only hand-operated compaction equipment shall be allowed within 3' of the back surface of the KEYSTONE units.
 D. Backfill shall be placed from the wall back towards the embankment to ensure that the geogrid remains taut.
 E. Tracked construction equipment shall not be operated directly on the geogrid. A minimum backfill thickness of 6" is required prior to operation of tracked vehicles over the geogrid. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
 F. Rubber-tired equipment may pass over the geogrid reinforcement at slow speeds, (less than 10 mph.) Avoid sudden braking and sharp turning.
 G. At the end of each day's operation, the Contractor shall grade the backfill away from the wall and direct runoff away from the wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3.07 CAP INSTALLATION
 A. Place KEYSTONE Cap units over projecting pins from units below. Apply KapSeal adhesive to top surface of unit below and place cap unit in position. Backfill and compact to finished grade with low permeability soil.

PART 3 - EXECUTION
 3.01 EXCAVATION
 A. Contractor shall excavate to the lines and grades shown on the construction drawings. Contractor shall be careful not to disturb embankment and foundation materials beyond lines shown.
 3.02 FOUNDATION SOIL PREPARATION
 A. Foundation soil shall be excavated as required for leveling pad dimensions shown on the construction drawings, or as directed by the Engineer.
 B. Unsuitable soils shall be removed and replaced with approved compacted material as directed by the Engineer.
 C. Over-excavated areas shall be backfilled with approved compacted backfill material.
 3.03 BASE LEVELING PAD
 A. Leveling pad materials shall be placed upon an approved foundation as shown on the construction drawings to a minimum thickness of 6".
 B. Aggregate material shall be compacted to provide a dense, level surface on which to place the first course of modular units. Compaction shall be to 95% of Standard Proctor Density as determined in accordance with ASTM D698. For crushed rock, material shall be densely compacted as determined by visual observation.

KEYSTONE
 A CONTECH COMPANY
 4444 W 78th Street
 Minneapolis, MN 55435
 952-897-1040

I hereby certify that this engineering document was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Maryland.
 Craig D. Moritz, P.E.

DESIGNED BY: AC
 CHECKED BY: CDM
 DATE: 07/26/06

Project: HCPSTC
 Location: Howard County, Maryland

LEGEND - PLANTING PLAN

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING ROADS
- PROPOSED ROADS
- EXISTING TREES
- PROPOSED SHADE TREE



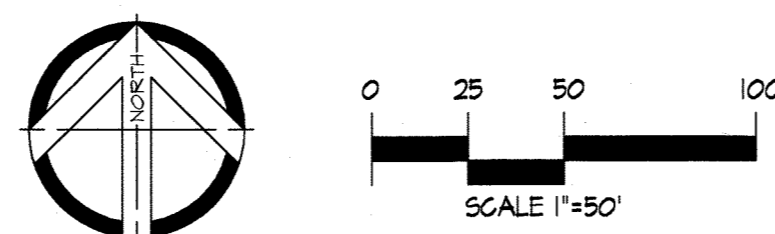
DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that the landscaping shown on this plan will be done according to the plan, Section 18.24 of the Howard County Subdivision and Land Development Regulations and the Landscape Manual. I/We further certify that upon completion a letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Name: Michael J. Anagnostou Date: 10-12-06

PREPARED BY: KEVIN P. RILEY, RLA
 STATE OF MARYLAND
 REGISTERED LANDSCAPE ARCHITECT
 LICENSE REGISTRATION NO. 9291

Name: K. Riley Date: 10/11/06

MATCHLINE, SEE SHEET C3.52



- NOTES:**
- SEE SHEET C3.53 FOR PLANTING CALCULATIONS, NOTES AND SCHEDULE.
 - SEE SHEET C6.23, C6.33, AND C 6.42 FOR STORMWATER MANAGEMENT AREA PLANTING PLAN & DETAILS.

C3.51

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 County Health Officer: Roberta W. Weller Date: 10/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Director: J. M. Irvin Date: 10/26/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 Director: Mark A. Taylor Date: 1/26/07
 Chief Development Engineering Division: Chris D. ... Date: 10/24/06
 Chief, Division of Land Development: Leslie Hanna Date: 10/24/06

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

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



DES: KFR					
DRN: AM					
CHK: REM					
DATE: 10/11/06	BY: NO.	REVISION	DATE	600' SCALE MAP NO.	16
				BLOCK NO.	2 / 8

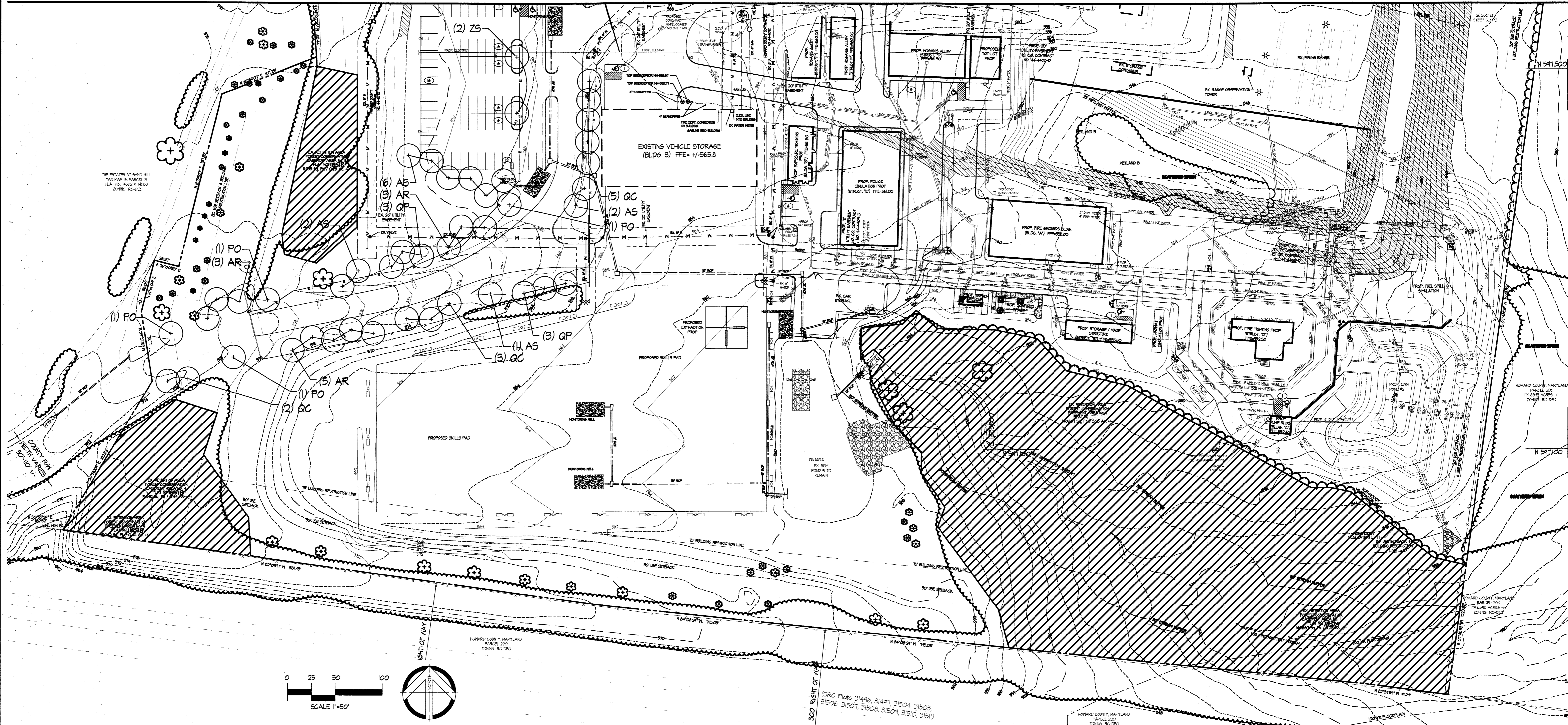
Planting Plan

**Phase II Improvements: four buildings, eight training props and associated infrastructure
 PUBLIC SAFETY TRAINING CENTER**
 at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

OWNER: Howard County, Department of Public Works, 9480 Courthouse Drive, Ellicott City, Maryland 21043, Phone (410) 319-3100
ADDRESS / PERMIT INFORMATION: PARCEL #255 ADDRESS: 2200 Alpha Center Drive, PLAT NO. 15716, L. 6694 / F. 619, GRID NO. 2/B, ZONE: RC-DEO, TAX MAP No. 16, 3rd Election District, Census Tract 6020, WATER CODE: 150, SEWER CODE: Private - Holding Tank

SCALE: 1"=50'

SHEET 28 OF 81



DEVELOPER/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.

Michael A. Sivanillo 10-12-06
 Name Date

PREPARED BY: KEVIN P. RILEY, RLA
 STATE OF MARYLAND
 REGISTERED LANDSCAPE ARCHITECT
 LICENSE REGISTRATION NO. 3291
 KPRiley 10/11/06
 Name Date

LEGEND - PLANTING PLAN

- PROPERTY LINE
- PROPOSED ROADS
- 348 --- 350 --- EXISTING CONTOURS
- 348 --- 350 --- PROPOSED CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING ROADS
- ☼ EXISTING TREES
- ⊕ PROPOSED SHADE TREE

NOTES:
 1. SEE SHEET C3.53 FOR PLANTING CALCULATIONS, NOTES AND SCHEDULE.
 2. SEE SHEET C6.23, C6.33 & C 6.42 FOR STORMWATER MANAGEMENT AREA PLANTING PLAN & DETAILS.

APPROVED: FOR PUBLIC WATER AND PRIVATE GENERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 Robert W. Doherty 10/30/06
 COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 James M. Irvin 10/26/06
 JAMES M. IRVIN, DIRECTOR DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING
 Paul D. Eagle 11/20/06
 DIRECTOR DATE

Chief Development Engineering Division
 Andy Hamer 10/27/06
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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

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



DES: KPR					
DRN: AM					
CHK: REM					
DATE: 10/11/06	BY:	NO.:	REVISION:	DATE:	

Planting Plan

600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

OWNER: Howard County Department of Public Works
 3430 Courthouse Drive
 Ellicott City, Maryland 21043
 Phone (410) 313-3100

ADDRESS / PERMIT INFORMATION:
 PARCEL #339, ADDRESS: 2200 Alpha Center Drive
 PLAT NO. 5716, L6684 / F.61R
 GRID NO. 2/B, ZONE: RC-DEO, TAX MAP NO. 16
 3rd Election District, Census Tract 6030
 WATER CODE: 130, SEWER CODE: Private - Holding Tank

C3.52

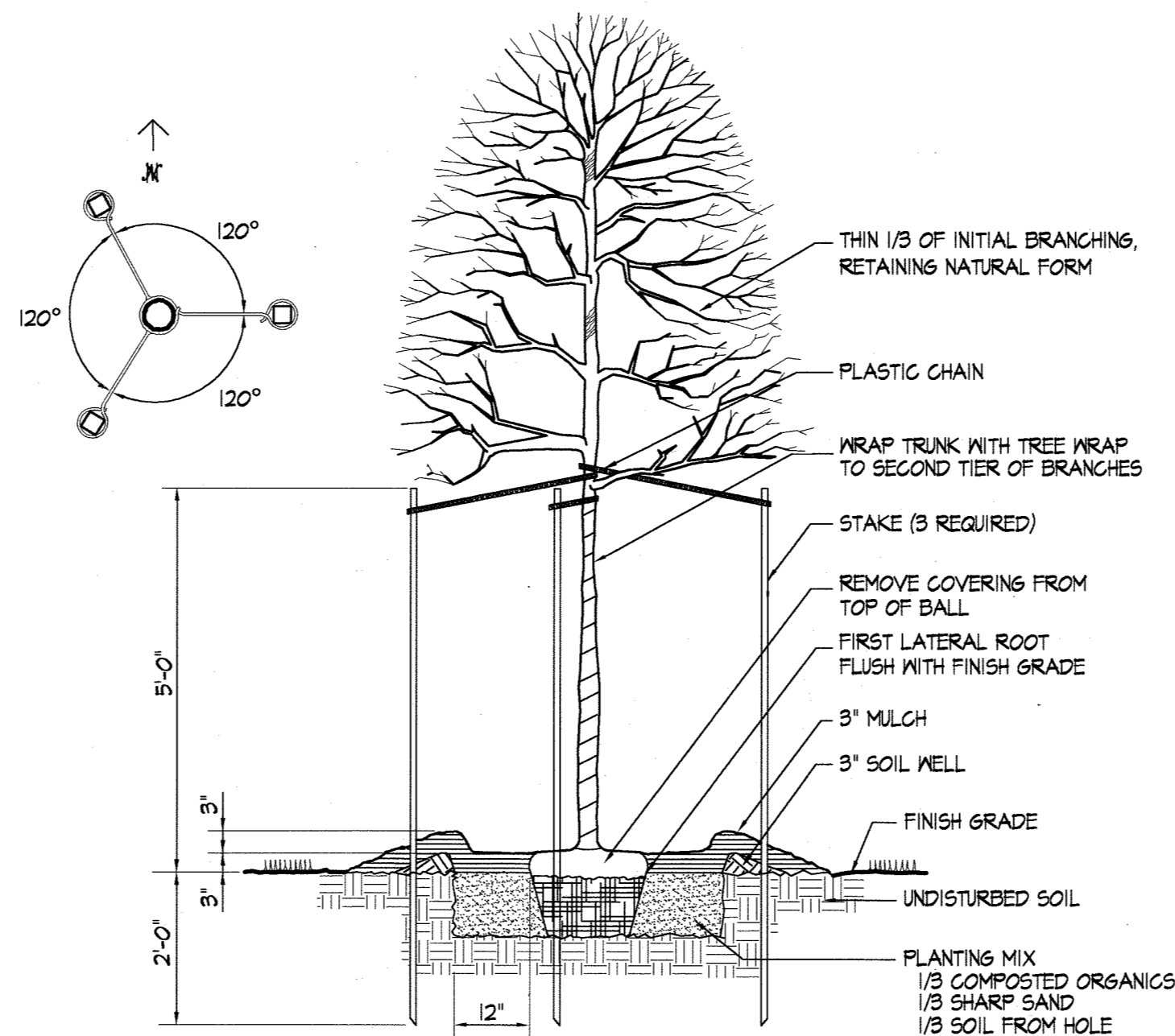
SCALE: 1"=50'

SHEET 29 OF 49

Z:\0203183-HowardCo-PublicSafety-C3.52_PlantingPlan.dwg, 10/25/2006 11:12:09 AM, Copyright, Site Resources, Inc.

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 SHEETS C3.51 AND C3.52 FOR PLANTING PLANS.
11. SEE SHEET C6.23, C6.25 & C6.41 FOR STORMWATER MANAGEMENT AREA PLANTING PLAN & DETAILS.
12. AT THE TIME OF INSTALLMENT, 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.
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 SEEDED 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. ALL PERIMETER LANDSCAPE REQUIREMENTS HAVE BEEN FULFILLED UNDER SDP-03-036. THIS LANDSCAPING SHALL REMAIN INTACT AND UNDISTURBED DURING SDP-06-110.



DECIDUOUS TREE DETAIL

N.T.S.

PARKING LOT PLANTING

Number of Parking Spaces	256
Internal Islands @ 1/20 spaces	13
Required:	14
Shade Trees @ 1/20 spaces	13
Required:	31
Provided:	

STREET TREE PLANTING

Internal Road A	
Right-of-Way	1,440 LF
Large Street Trees @ 1/40 LF	
Required	36
Provided	36

PLANTING SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY	COMMENTS
SHADE TREES						
AR	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2" - 2 1/2" CAL.	AS SHOWN	16	
AS	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2" - 2 1/2" CAL.	AS SHOWN	11	
PO	PLATANUS OCCIDENTALIS	SYCAMORE	2" - 2 1/2" CAL.	AS SHOWN	7	
OC	QUERCUS COCCINEA	SCARLET OAK	2" - 2 1/2" CAL.	AS SHOWN	10	
OP	QUERCUS PALUSTRIS	PIN OAK	2" - 2 1/2" CAL.	AS SHOWN	6	
ZS	ZELKOVA SERRATA 'VILLAGE GREEN'	VILLAGE GREEN ZELKOVA	2" - 2 1/2" CAL.	AS SHOWN	17	

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.

Michael A. Guarnonello 10/12/06
Name Date

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

KPRiley 10/11/06
NAME DATE

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Robert W. Dahn 10/12/06
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James M. Irvin 10/12/06
JAMES M. IRVIN, DIRECTOR DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING
Director 10/12/06
DATE
Chief Development Engineering Division 10/21/06
DATE
Chief, Division of Land Development 10/20/06
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

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

DES: KPR				
DRN: AM				
CHK: REM				
DATE 10/11/06	BY	NO.	REVISION	DATE

Planting Details

600' SCALE MAP NO. 16 BLOCK NO. 2 / B

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

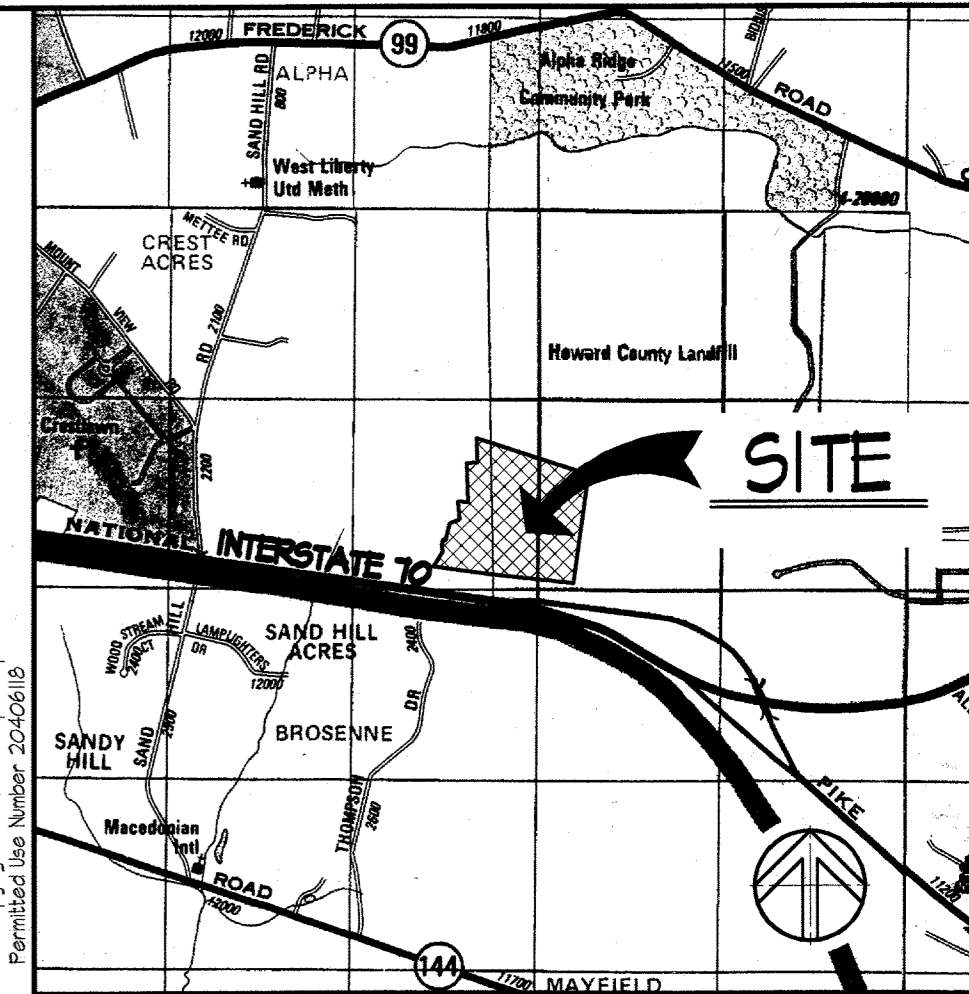
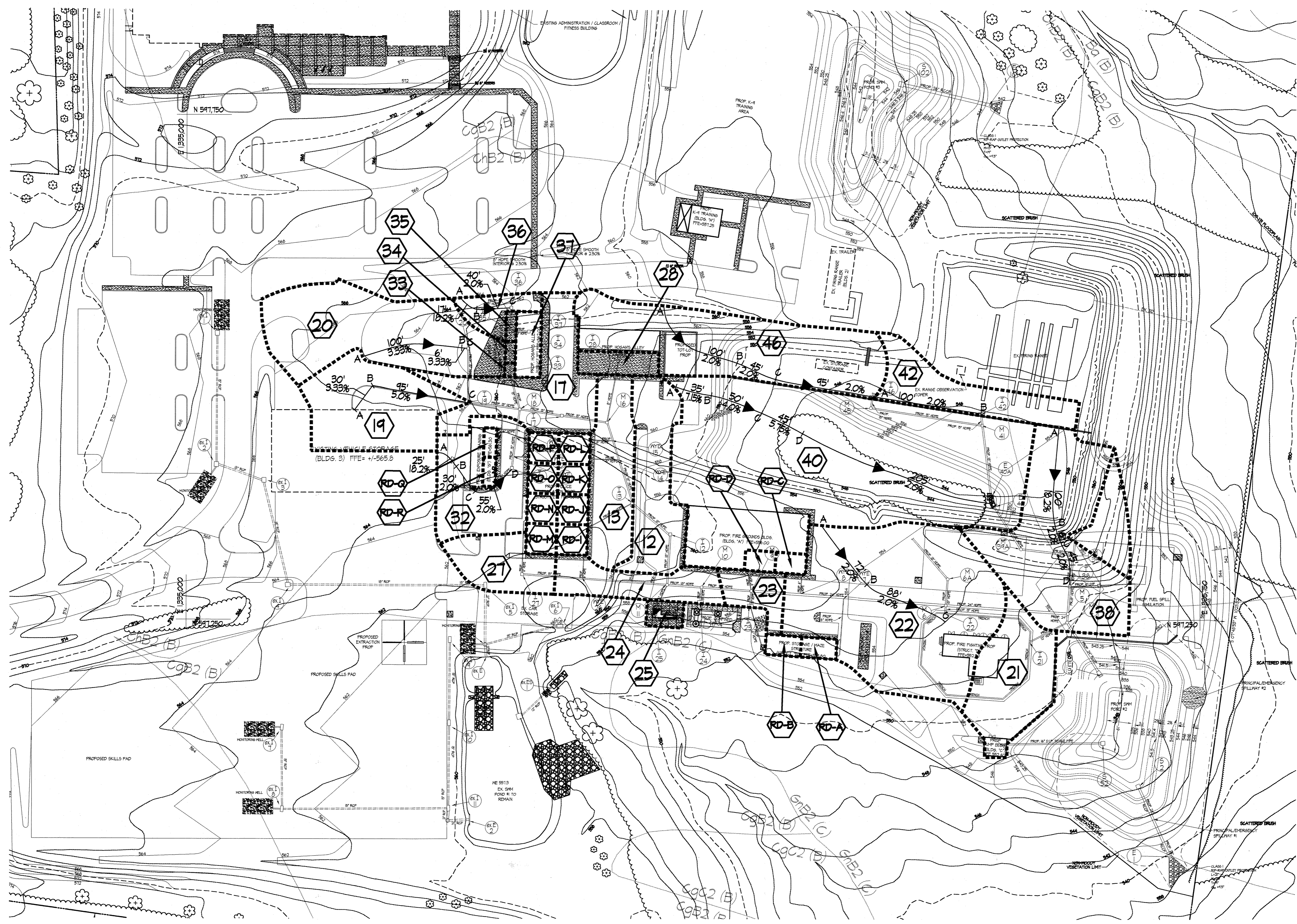
OWNER: Howard County Department of Public Works
3450 Courthouse Drive
Ellicott City, Maryland 21043
Phone (410) 318-2100

ADDRESS / PERMIT INFORMATION:
PARCEL #253, ADDRESS: 2200 Alpha Center Drive
PLAT No. 8716, L 6694 1 F 619
GRID No. 218, ZONE: RC-DEO, TAX MAP No. 16
3rd Election District, Census Tract 6020
WATER CODE: 150, SEWER CODE: Private - Holding Tank

C3.53

SCALE: as shown

SHEET 30 OF 87

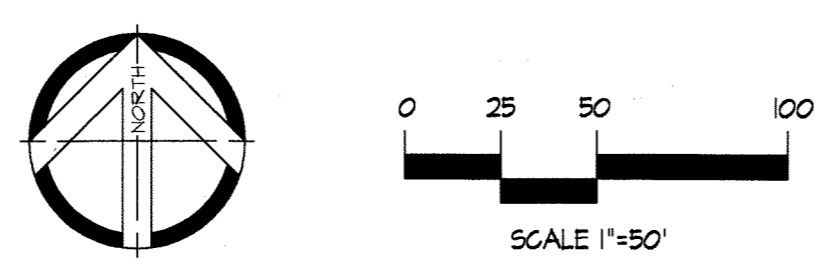


Vicinity Map Scale: 1" = 2000'

LEGEND - DRAINAGE AREA MAP

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED ROADS
- PROPOSED STORMDRAINS
- EXISTING STORM DRAINS
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- DRAINAGE AREA
- TIME OF CONCENTRATION PATH

AREA DESIGNATION	TOTAL AREA (ACRES)	IMPERVIOUS AREA (ACRES)	% IMPERVIOUS	WEIGHTED C FACTOR
12	0.20	0.15	75.00	0.71
13	0.18	0.18	100.00	0.96
17	0.25	0.22	88.00	0.81
19	0.26	0.22	84.62	0.84
20	0.38	0.17	44.74	0.54
21	0.25	0.25	100.00	0.96
22	0.68	0.52	76.47	0.78
23	0.07	0.07	100.00	0.96
24	0.12	0.12	100.00	0.96
25	0.02	0.02	100.00	0.96
27	0.11	0.04	36.36	0.46
28	0.05	0.05	100.00	0.96
32	0.21	0.15	71.43	0.67
33	0.01	0.01	100.00	0.96
34	0.01	0.01	100.00	0.96
35	0.01	0.01	100.00	0.96
36	0.05	0.02	40.00	0.50
37	0.04	0.04	100.00	0.96
38	0.45	0.24	53.33	0.61
40	1.13	0.14	12.39	0.24
42	0.16	0.01	6.25	0.25
46	0.42	0.01	2.38	0.33
RD A	0.02	0.02	100.00	0.96
RD B	0.02	0.02	100.00	0.96
RD C	0.01	0.01	100.00	0.96
RD D	0.01	0.01	100.00	0.96
RD E	0.02	0.02	100.00	0.96
RD F	0.03	0.03	100.00	0.96
RD G	0.01	0.01	100.00	0.96
RD H	0.01	0.01	100.00	0.96
RD I	0.02	0.02	100.00	0.96
RD J	0.03	0.03	100.00	0.96
RD K	0.03	0.03	100.00	0.96
RD L	0.01	0.01	100.00	0.96
RD M	0.02	0.02	100.00	0.96
RD N	0.03	0.03	100.00	0.96
RD O	0.03	0.03	100.00	0.96
RD P	0.01	0.01	100.00	0.96
RD Q	0.01	0.01	100.00	0.96
RD R	0.01	0.01	100.00	0.96



APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER: *Robert J. Weller* DATE: 10/30/06
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 JAMES M. IRVIN, DIRECTOR DATE: 10/26/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DIRECTOR: *Mark A. Leight* DATE: 10/30/06
 CHIEF DEVELOPMENT ENGINEERING DIVISION: *William J. ...* DATE: 10/24/06
 CHIEF DIVISION OF LAND DEVELOPMENT: *Wanda ...* DATE: 10/30/06

EDMEADES & STROMDAHL, LTD.
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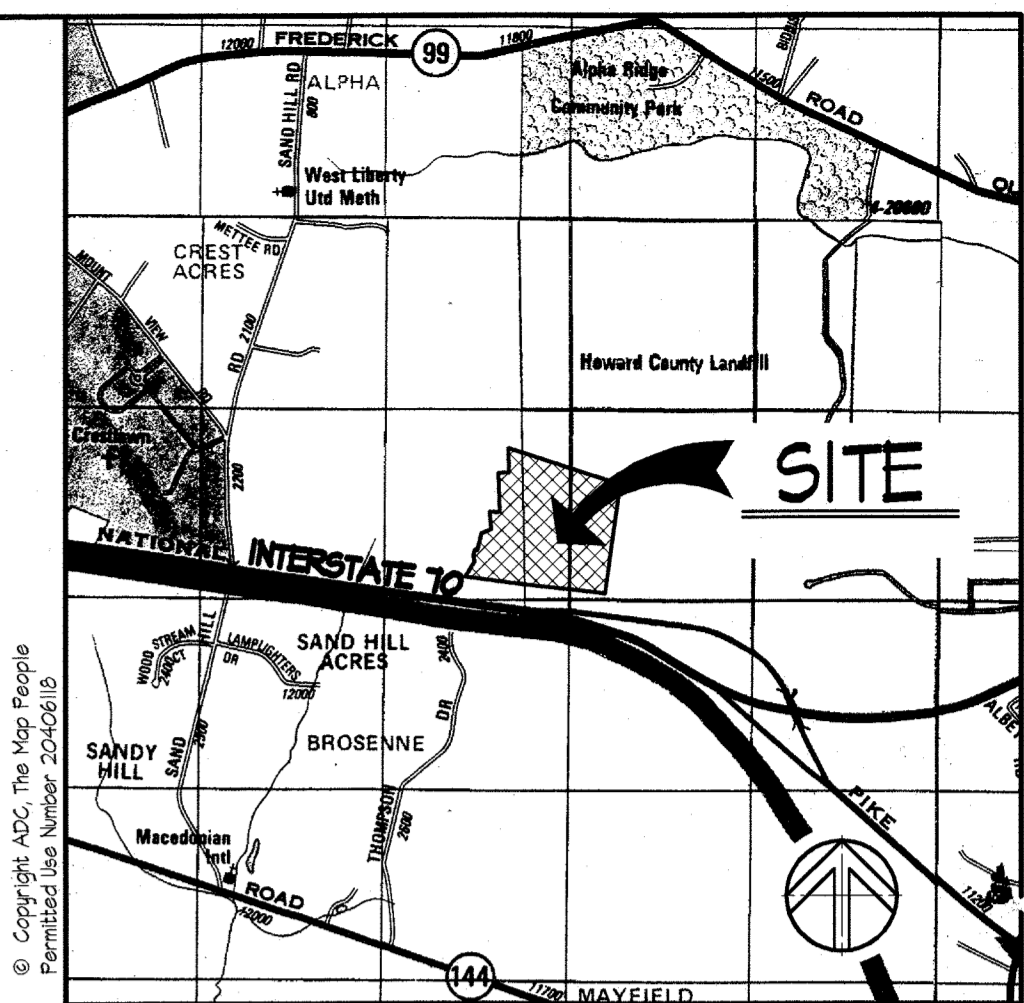
DES: KPR	BY	NO.	REVISION	DATE
DRN: AM				
CHK: REM				
DATE: 10/11/06				

Proposed Storm Drain Drainage Area Map
 600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

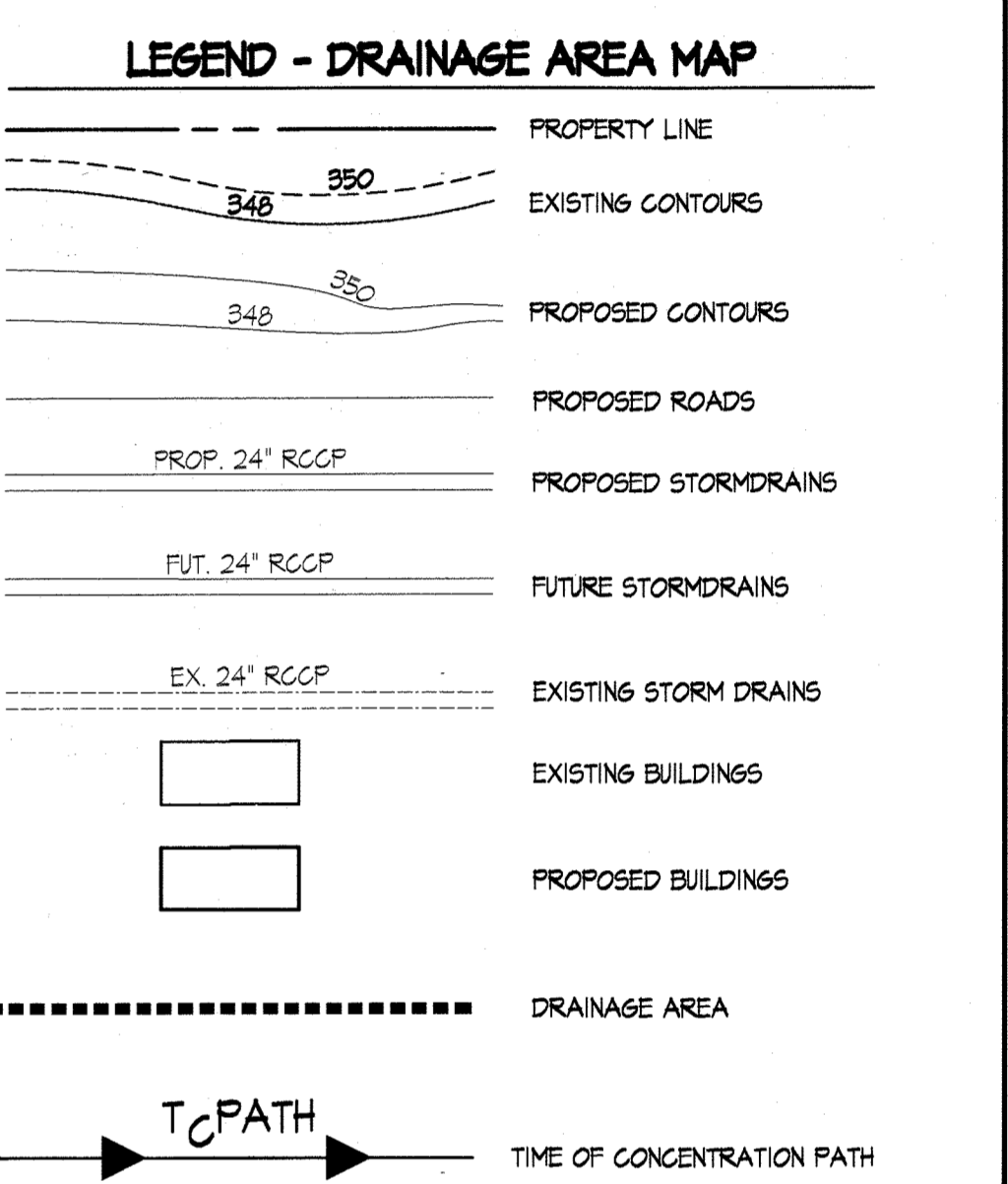
Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland
 OWNER: Howard County Department of Public Works
 3450 Courthouse Drive, Ellicott City, Maryland 21043
 Phone (410) 313-2100
 ADDRESS / PERMIT INFORMATION:
 PARCEL #255, ADDRESS: 2200 Alpha Center Drive
 PLAT No. 15116, L6664 / F619
 GRID No. 218, ZONE: RG-DEO, TAX MAP No. 16
 3rd Election District, Census Tract 6030
 WATER CODE: 730, SEWER CODE: Private - Holding Tank

C4.01
 SCALE: 1"=50'
 SHEET 31 OF 81

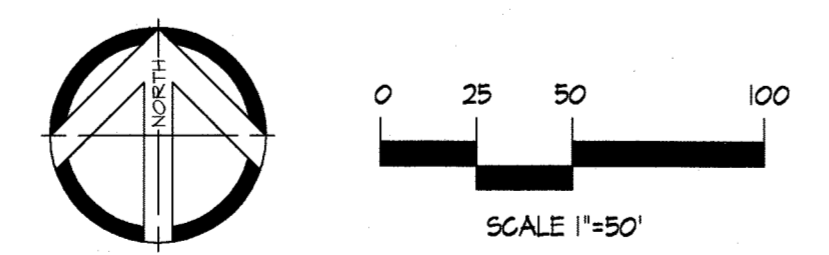
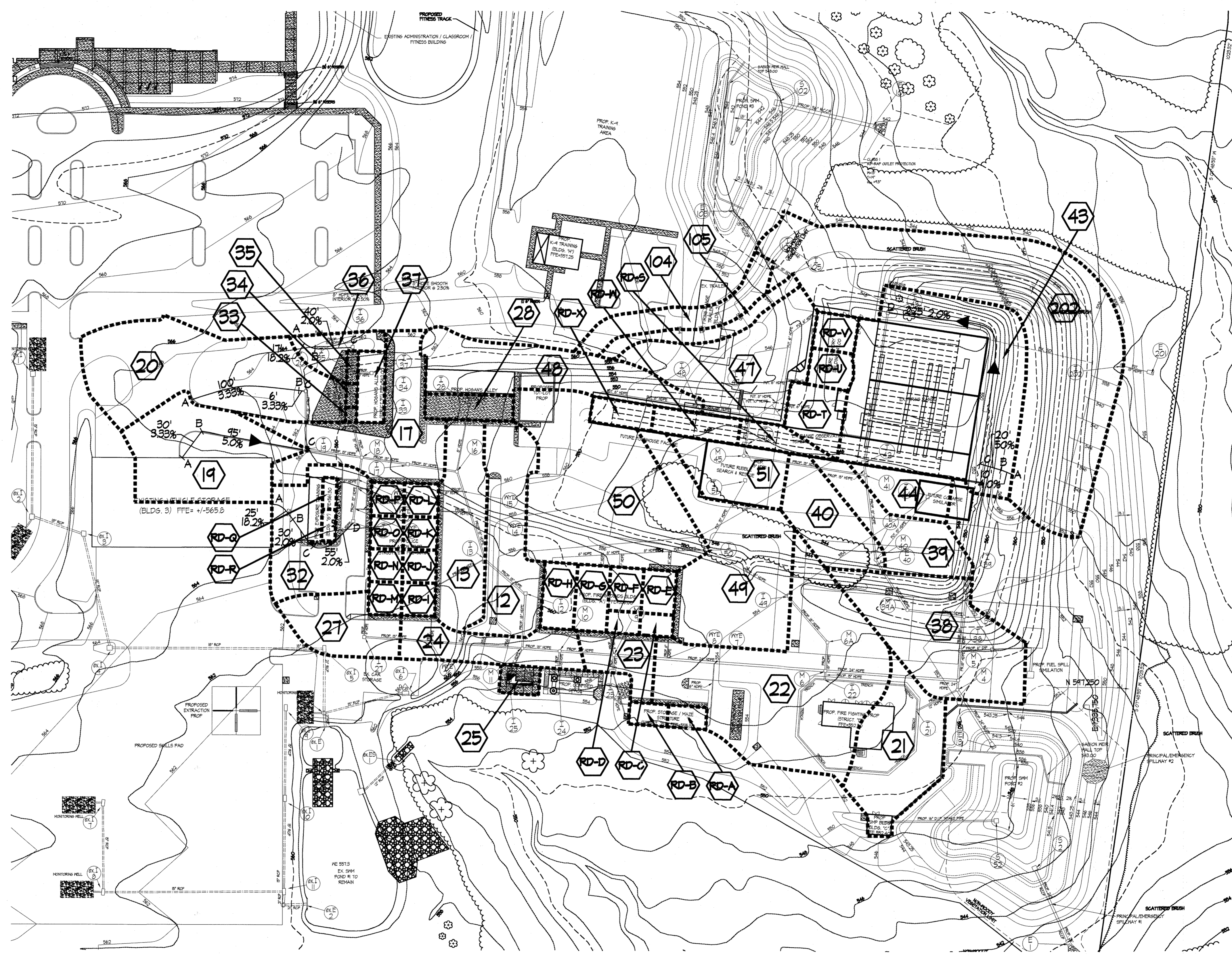
Z:\030313\HowardCo_PublicSafetyTrainingCenter\CA.01_PlanSD\Drawings\Map.dwg, 05/20/08 11:12:21 AM - Copyright, Site Resources, Inc.



Vicinity Map Scale: 1" = 2000'



AREA DESIGNATION	TOTAL AREA (ACRES)	IMPERVIOUS AREA (ACRES)	% IMPERVIOUS	WEIGHTED C FACTOR
12	0.20	0.19	100.00	0.71
13	0.18	0.18	100.00	0.96
14	0.25	0.22	88.00	0.87
17	0.26	0.22	84.62	0.84
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22	0.54	0.54	100.00	0.96
23	0.07	0.07	100.00	0.96
24	0.12	0.12	100.00	0.96
25	0.02	0.02	100.00	0.96
27	0.11	0.09	81.82	0.82
28	0.05	0.05	100.00	0.96
32	0.21	0.18	85.71	0.87
33	0.01	0.01	100.00	0.96
34	0.01	0.01	100.00	0.96
35	0.01	0.01	100.00	0.96
36	0.05	0.02	40.00	0.50
37	0.04	0.04	100.00	0.96
38	0.32	0.32	100.00	0.96
39	0.12	0.12	100.00	0.96
40	0.12	0.12	100.00	0.96
43	0.60	0.31	51.67	0.67
44	0.10	0.10	100.00	0.96
47	0.28	0.17	60.71	0.66
48	0.12	0.04	33.33	0.45
49	0.40	0.40	100.00	0.96
50	0.44	0.44	100.00	0.96
51	0.13	0.13	100.00	0.96
51	0.13	0.13	93.85	0.61
55	0.05	0.04	80.00	0.81
202	0.80	0.38	47.50	0.56
RD A	0.02	0.02	100.00	0.96
RD B	0.02	0.02	100.00	0.96
RD C	0.01	0.01	100.00	0.96
RD D	0.01	0.01	100.00	0.96
RD E	0.03	0.03	100.00	0.96
RD F	0.03	0.03	100.00	0.96
RD G	0.04	0.04	100.00	0.96
RD H	0.04	0.04	100.00	0.96
RD I	0.02	0.02	100.00	0.96
RD J	0.03	0.03	100.00	0.96
RD K	0.03	0.03	100.00	0.96
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RD N	0.03	0.03	100.00	0.96
RD O	0.03	0.03	100.00	0.96
RD P	0.01	0.01	100.00	0.96
RD Q	0.01	0.01	100.00	0.96
RD R	0.01	0.01	100.00	0.96
RD S	0.04	0.04	100.00	0.96
RD T	0.01	0.01	100.00	0.96
RD U	0.03	0.03	100.00	0.96
RD V	0.03	0.03	100.00	0.96
RD W	0.03	0.03	100.00	0.96
RD X	0.03	0.03	100.00	0.96



APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER: *Robert J. Wabner* DATE: 10/30/06
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 JAMES M. IRVIN, DIRECTOR DATE: 10/26/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DIRECTOR: *David J. Gayle* DATE: 10/24/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION &
 CHIEF, DIVISION OF LAND DEVELOPMENT: *Linda Hester* DATE: 10/24/06

EDMEADES & STROMDAHL, LTD.
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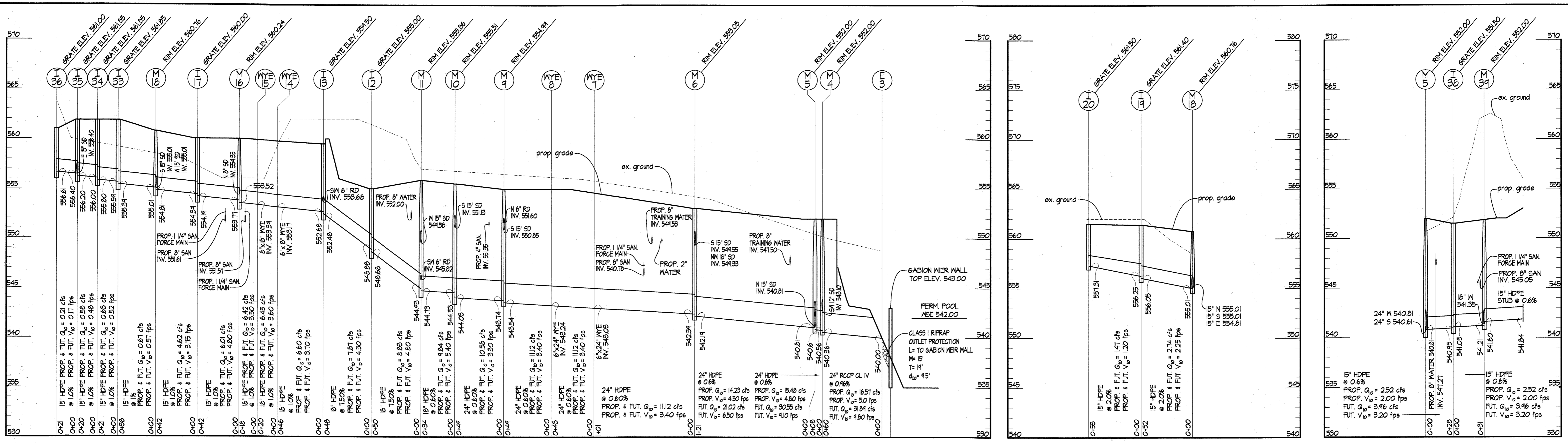
DES: KPR	BY	NO.	REVISION	DATE
DRN: AM				
CHK: REM				
DATE: 10/11/06				

Future Storm Drain Drainage Area Map
 600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-01B2, Howard County, Maryland
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 GRID No. 218, ZONE: RC-CDO, TAX MAP No. 16
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 WATER CODE: 130, SEWER CODE: Private - Holding Tank

C4.02
 SCALE: 1"=50'
 SHEET 32 OF 81

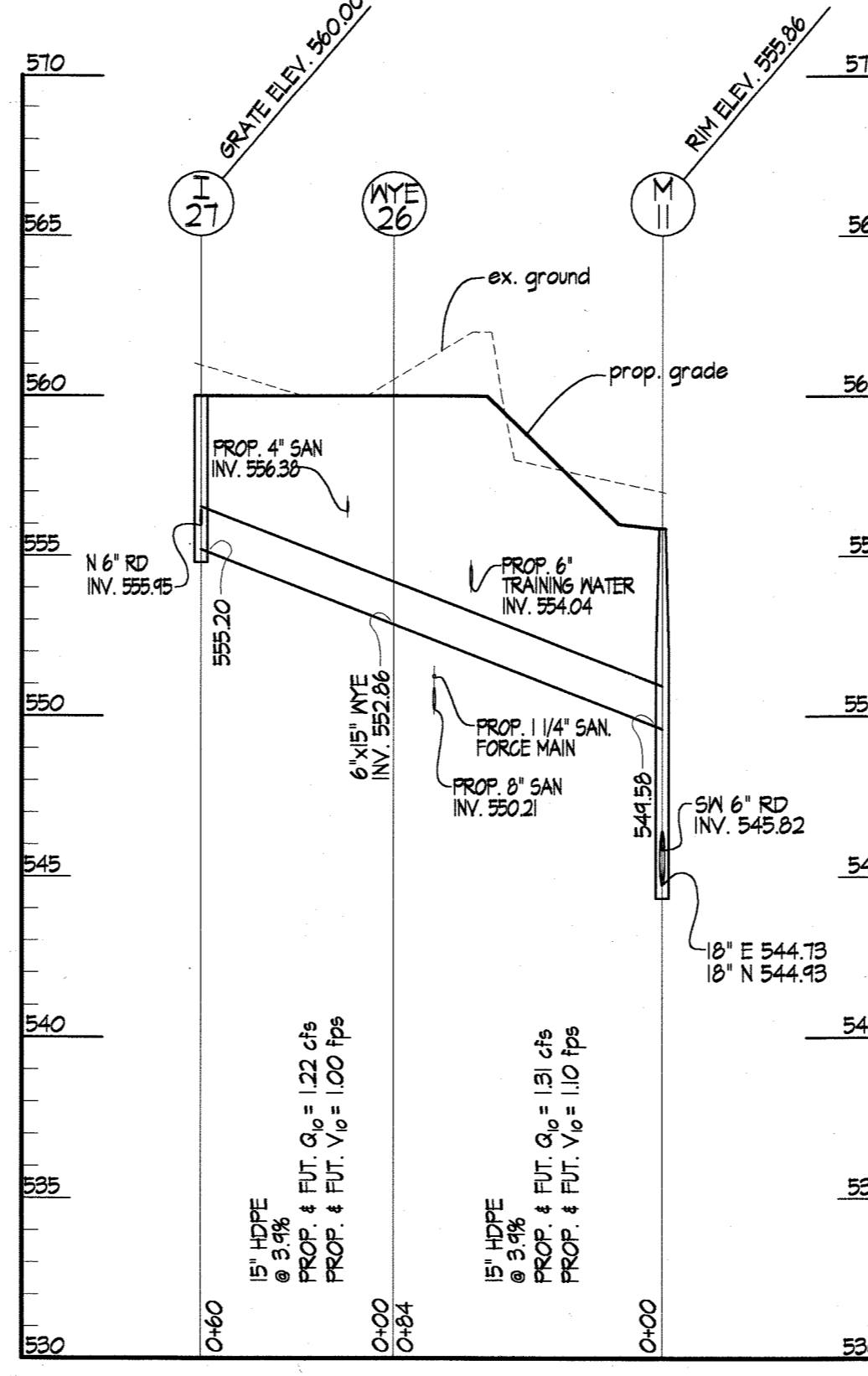
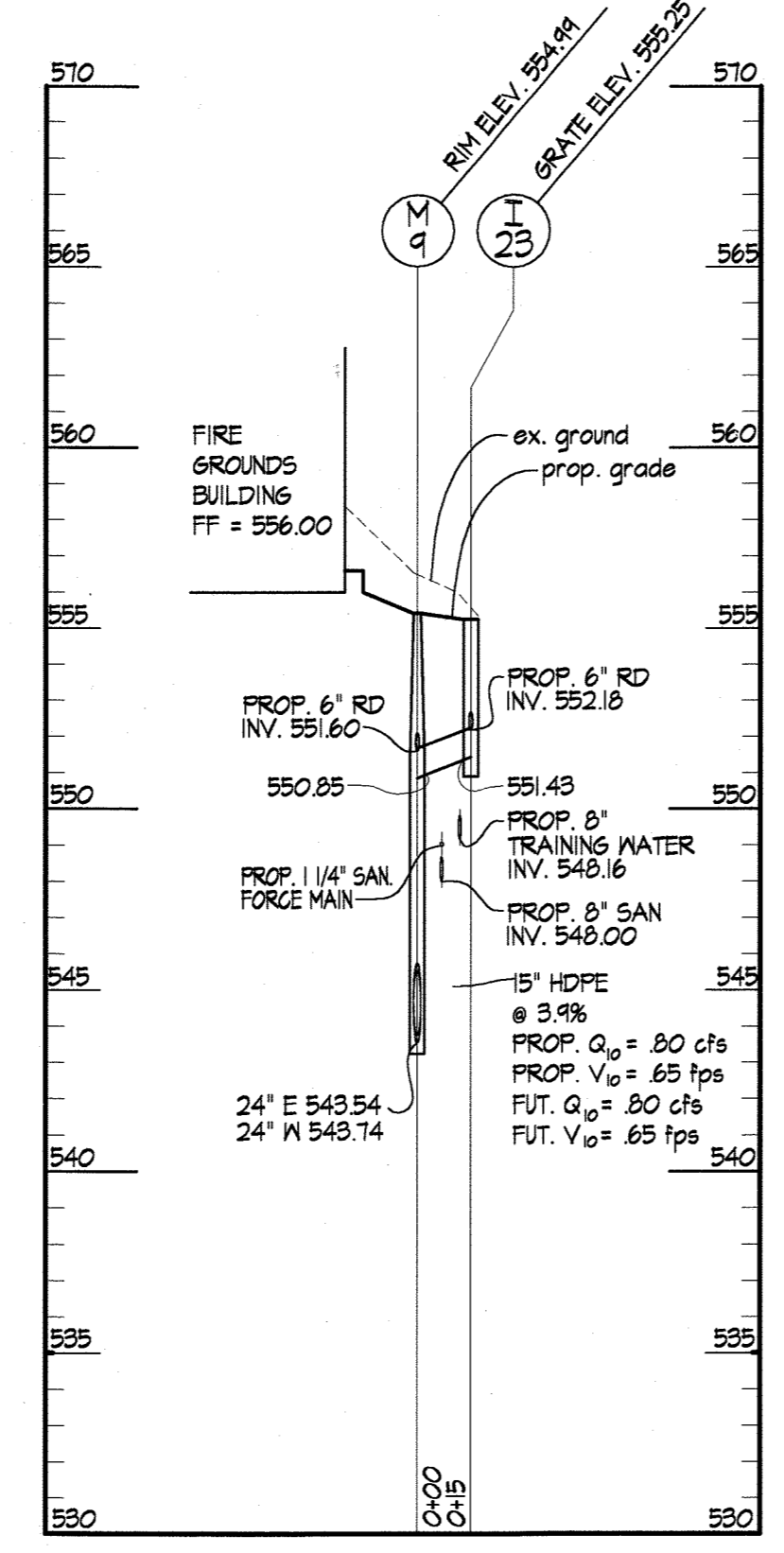
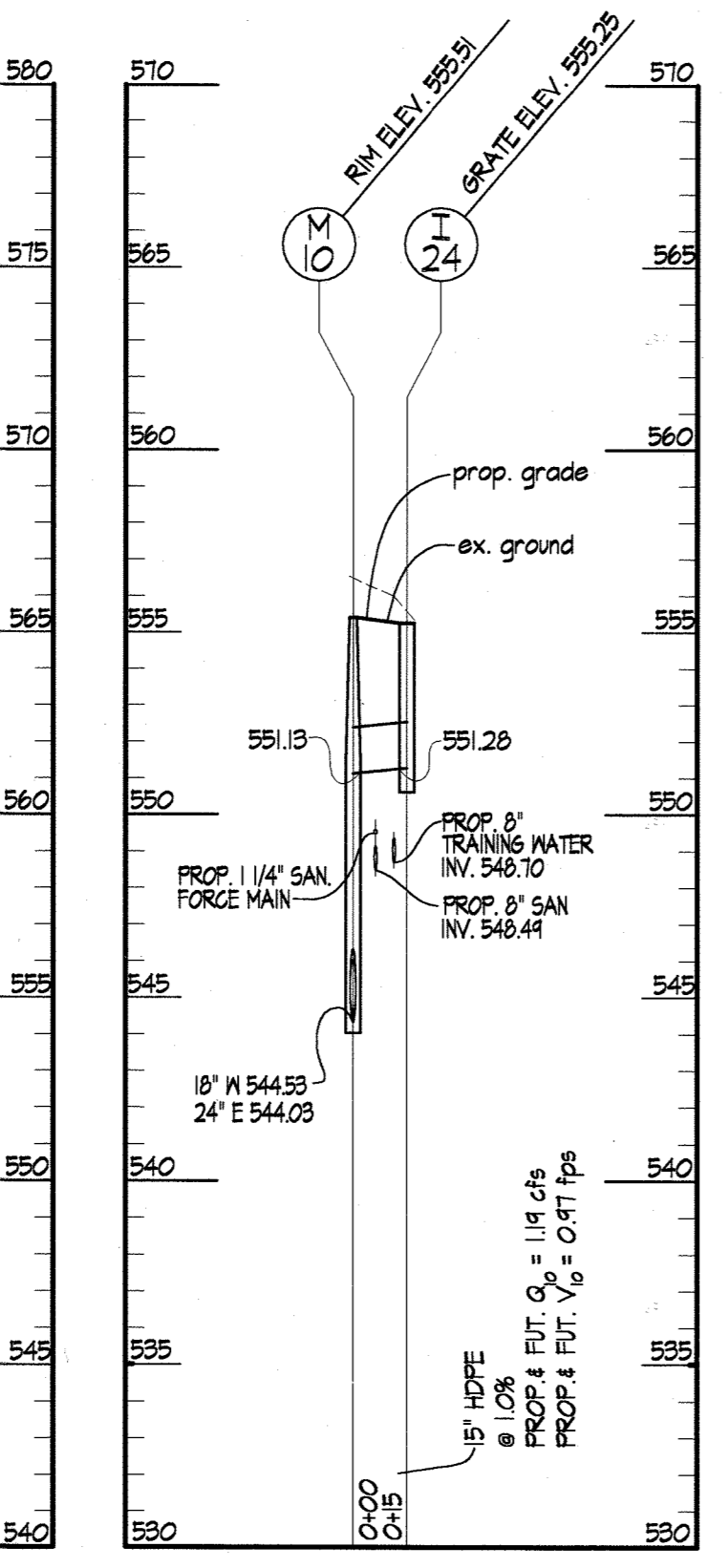
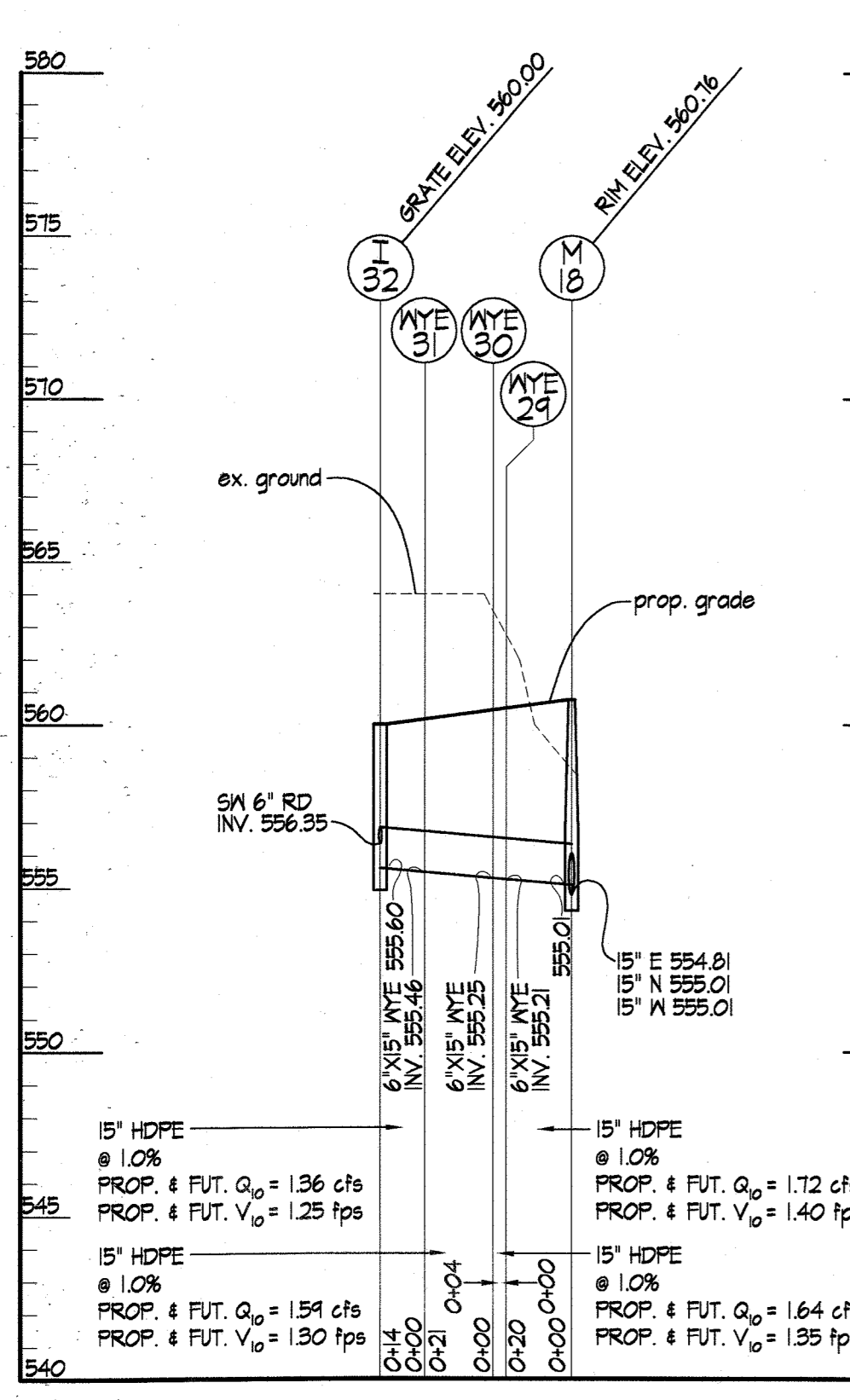
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2 PROFILE M-18 TO I-20
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'

3 PROFILE M-5 TO I-38
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'

1 PROFILE E-3 TO I-36
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'



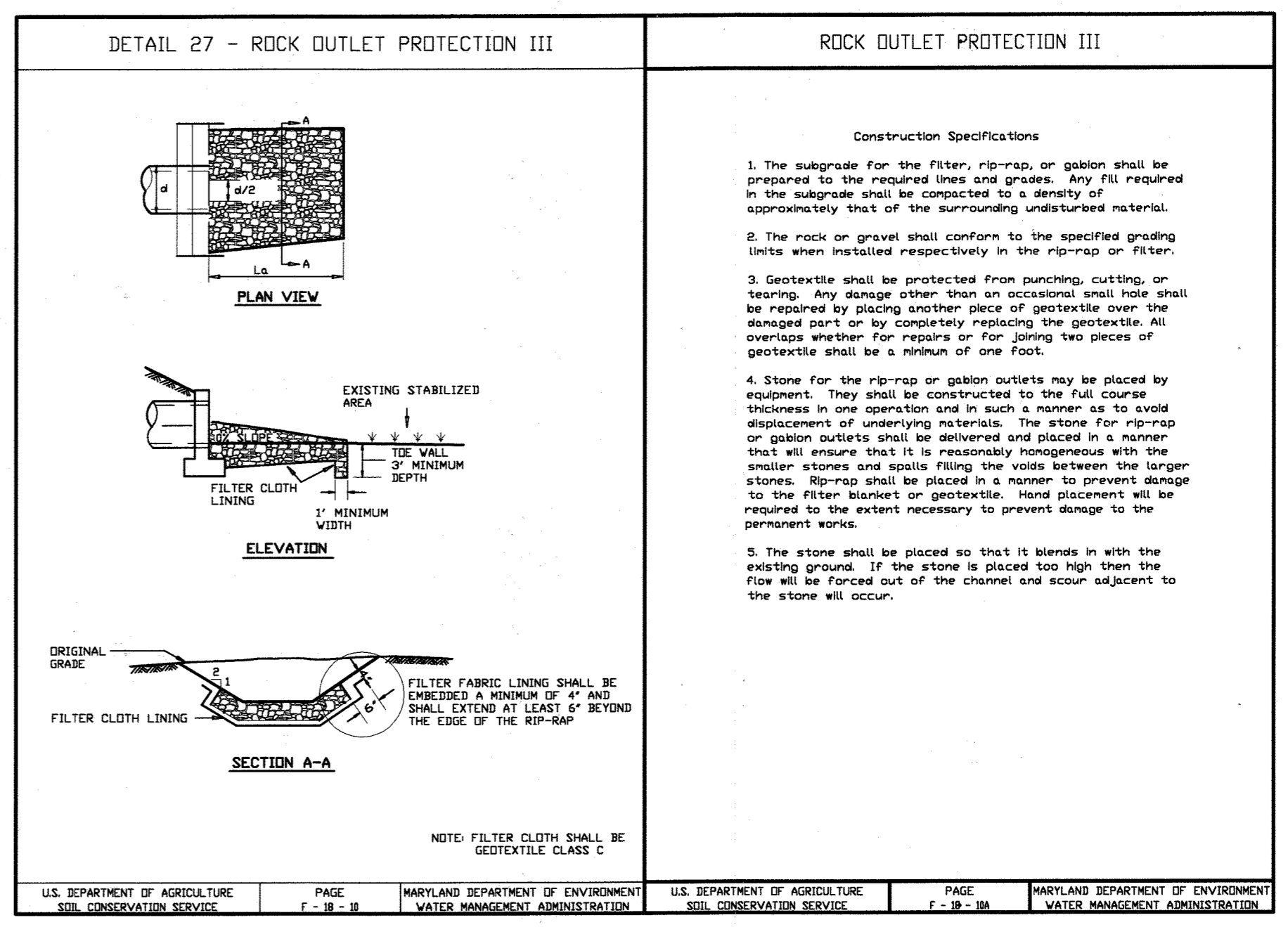
4 PROFILE M-18 TO I-32
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'



5 PROFILE M-10 TO I-24
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'

6 PROFILE M-9 TO I-23
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'

7 PROFILE M-11 TO I-27
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'



APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 Robert J. Welton, COUNTY HEALTH OFFICER, 10/30/06 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 James M. Irvin, DIRECTOR, 10/26/06 DATE

* ALL HDPE SHALL BE SMOOTH INTERIOR

APPROVED: DEPARTMENT OF PLANNING & ZONING
 David A. Wright, DIRECTOR, 10/24/06 DATE

APPROVED: CHIEF ENGINEERING DIVISION
 Charles Homan, CHIEF, DIVISION OF LAND DEVELOPMENT, 10/23/06 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

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

DES: KPR
 DRN: AM
 CHK: REM
 DATE: 10/11/06

BY NO. REVISION DATE

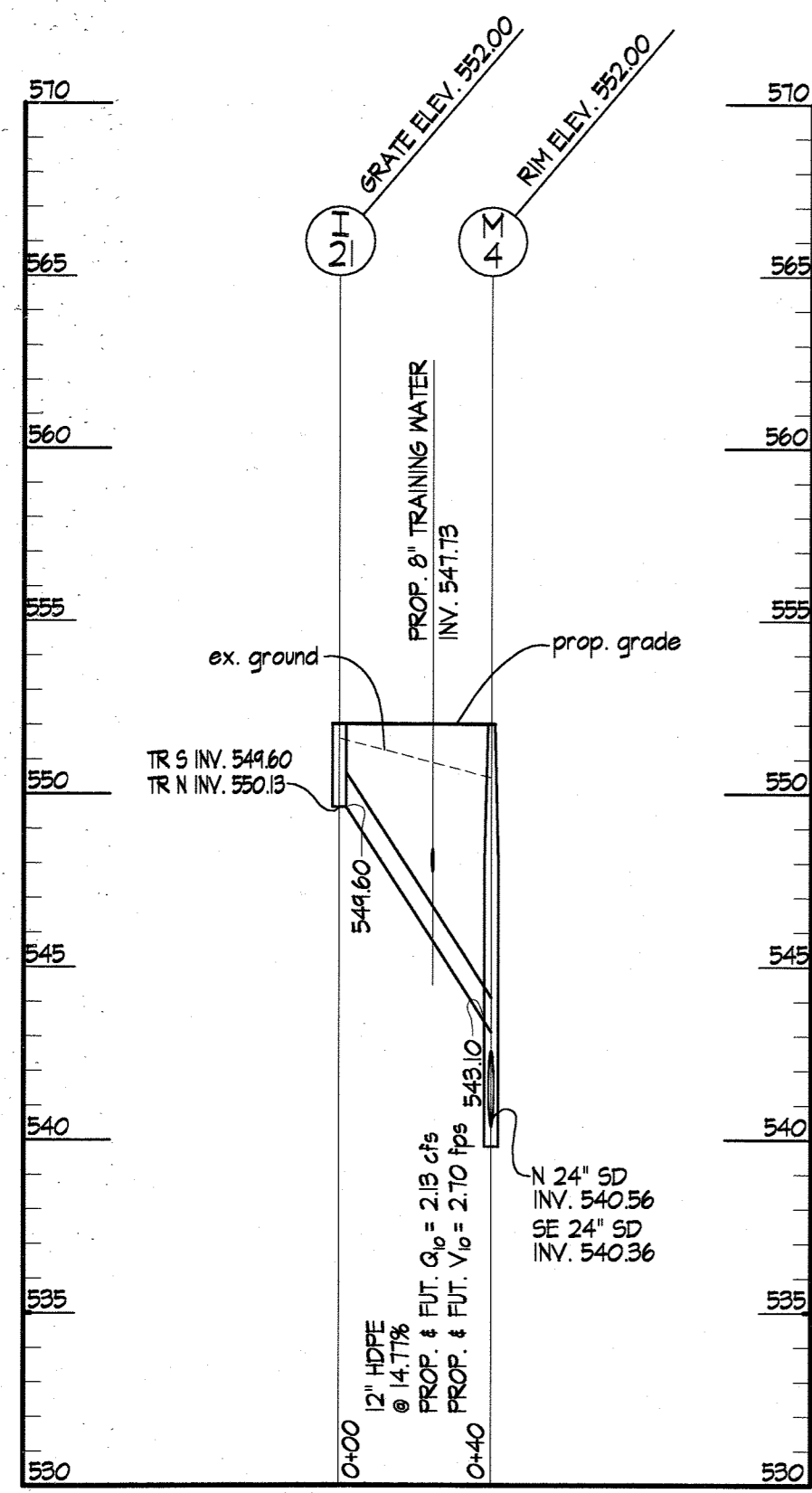
600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training traps and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No.C-0182, Howard County, Maryland

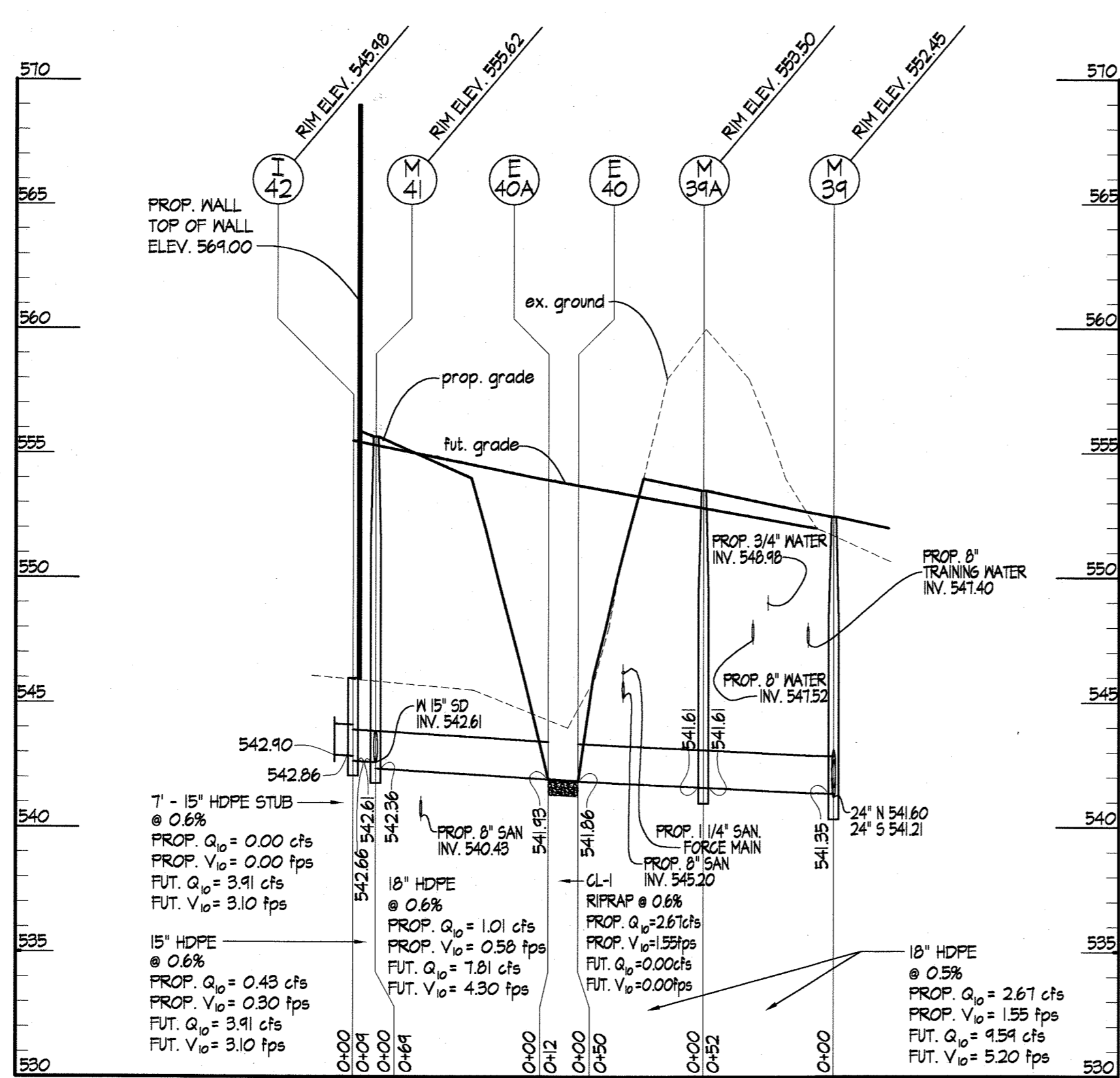
OWNER:
 Howard County
 Department of Public Works
 3450 Courthouse Drive
 Ellicott City, Maryland 21043
 Phone (410) 318-2100

ADDRESS / PERMIT INFORMATION:
 PARCEL #253 ADDRESS: 2200 Alpha Center Drive
 PLAT No. 5716, L6684 / P614
 GRID No. 218 ZONE: RC-250, TAX MAP No. 16
 3rd Election District, Census Tract 6030
 WATER CODE: 730, SEWER CODE: Private - Holding Tank

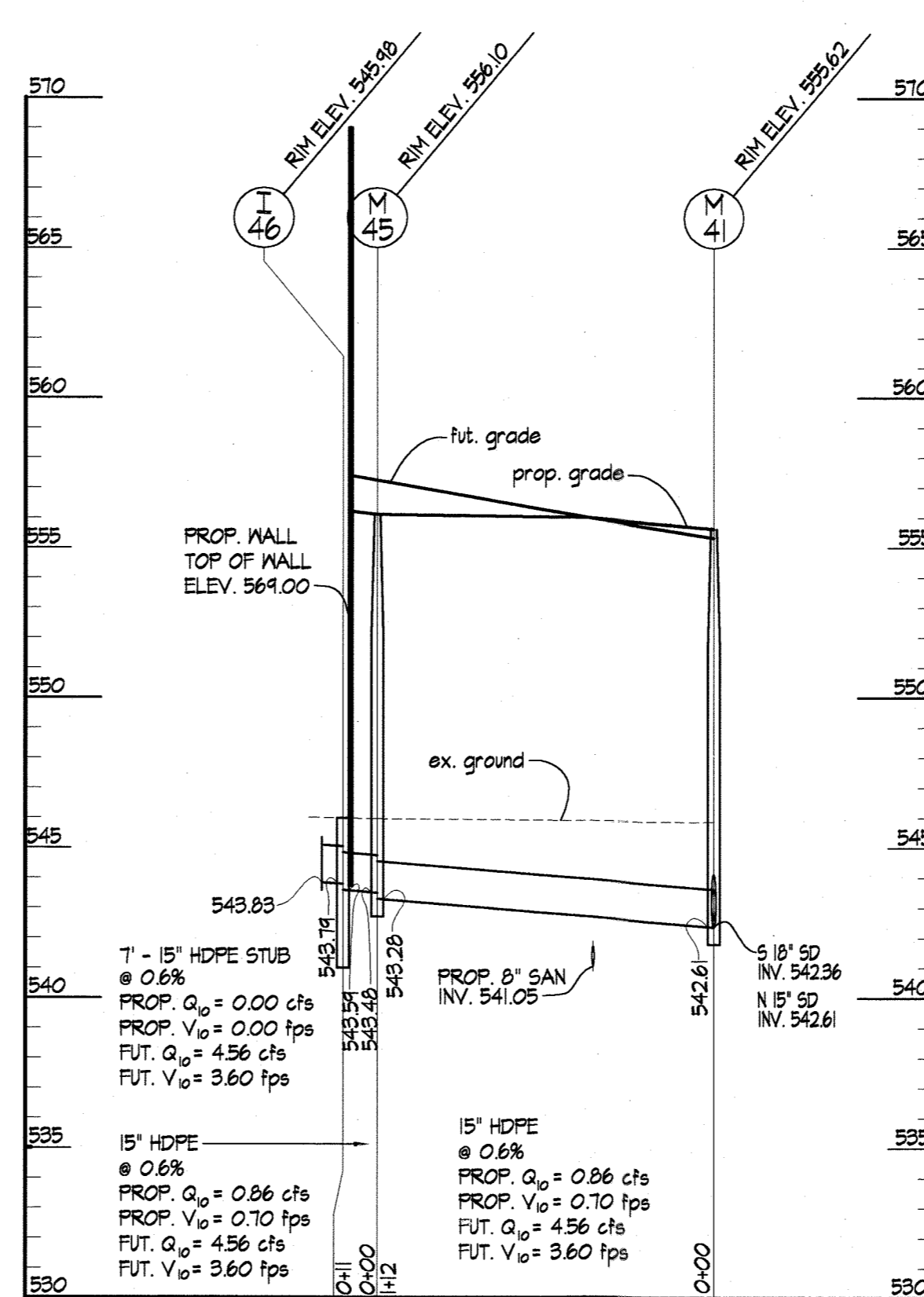
C4.03
 SCALE: AS SHOWN
 SHEET 33 OF 84
 SDP - 06-110



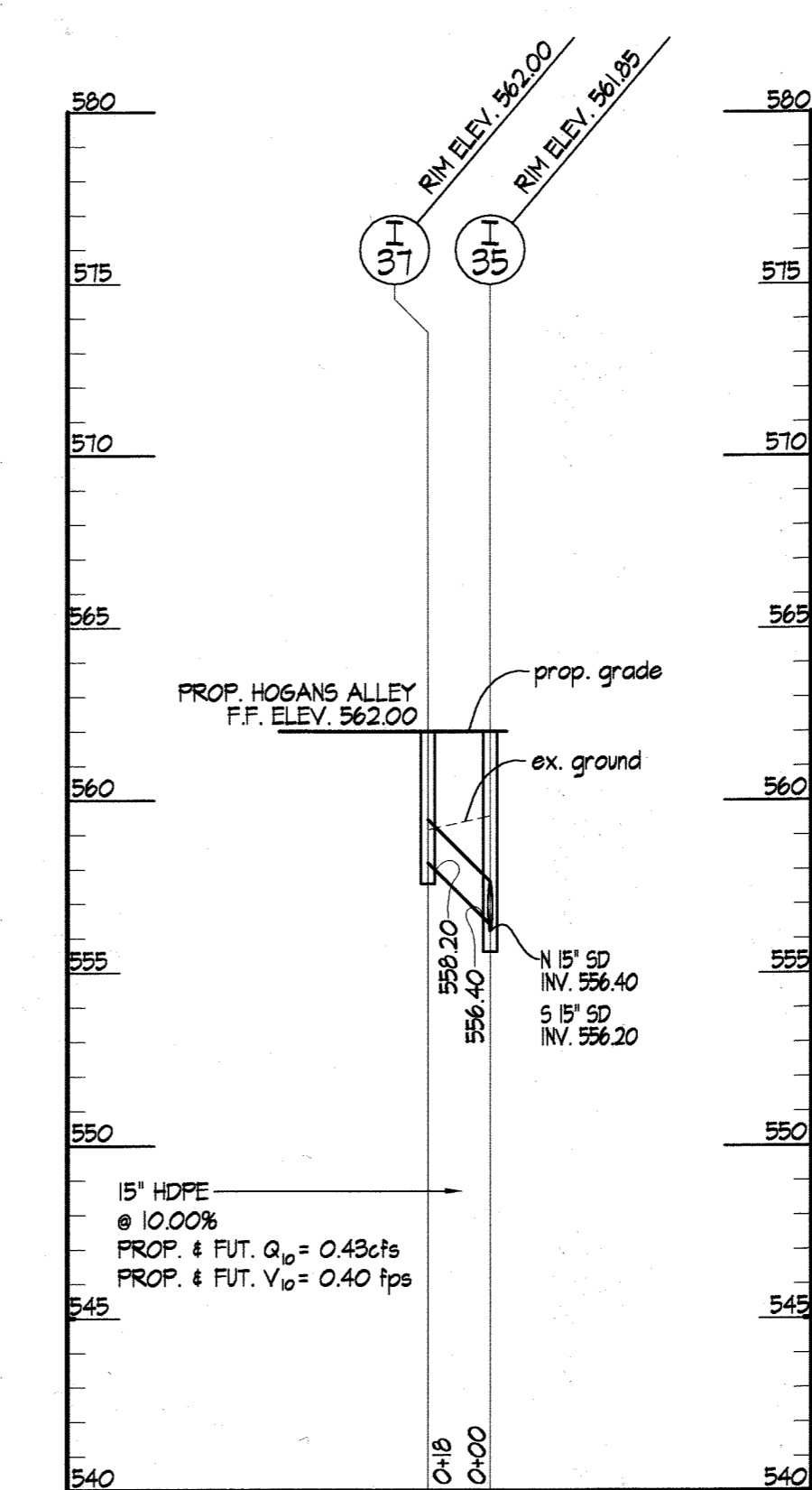
8 PROFILE 1-21 TO M-4
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'



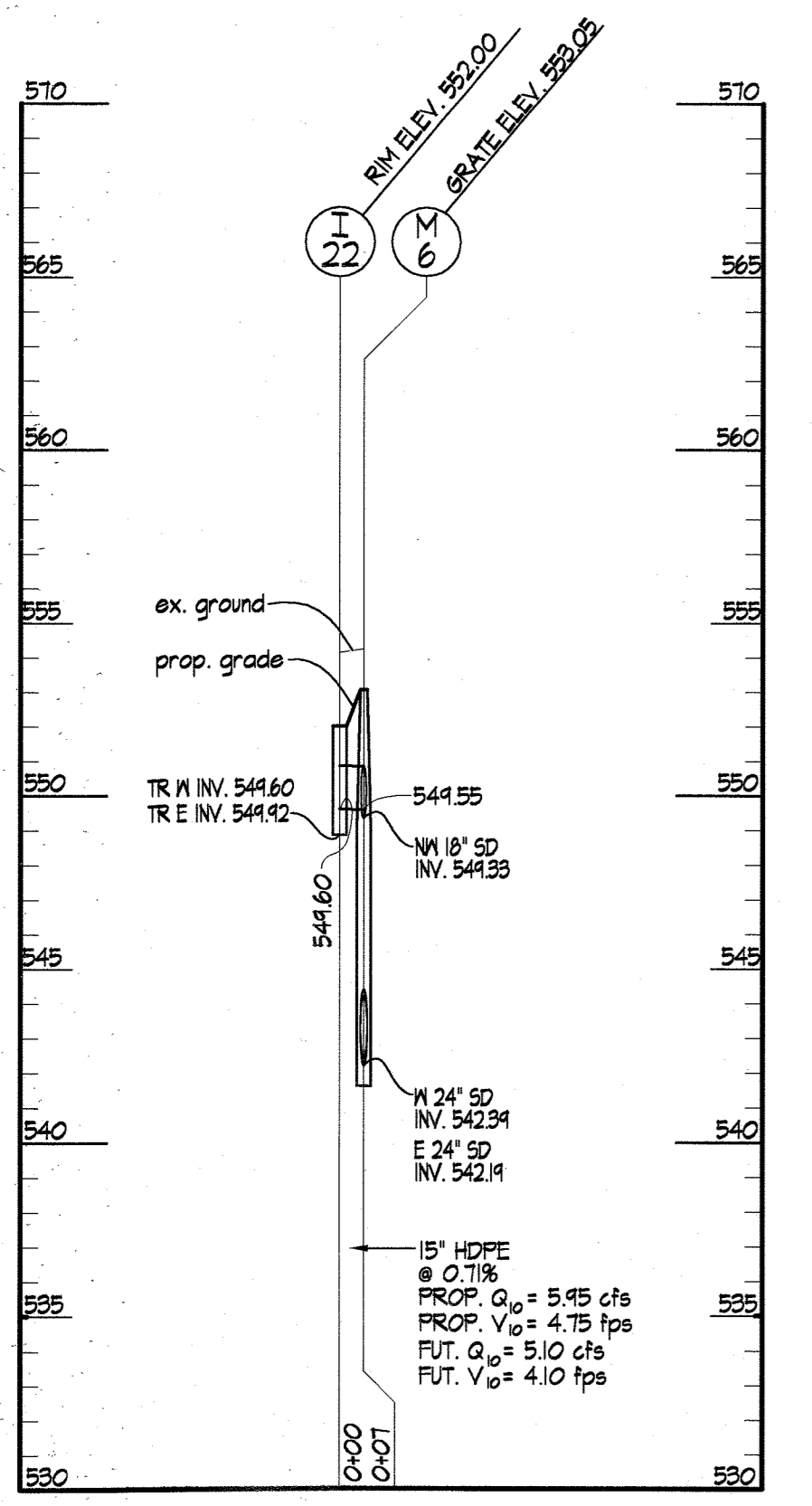
9 PROFILE M-5 TO I-42 & STUB
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'



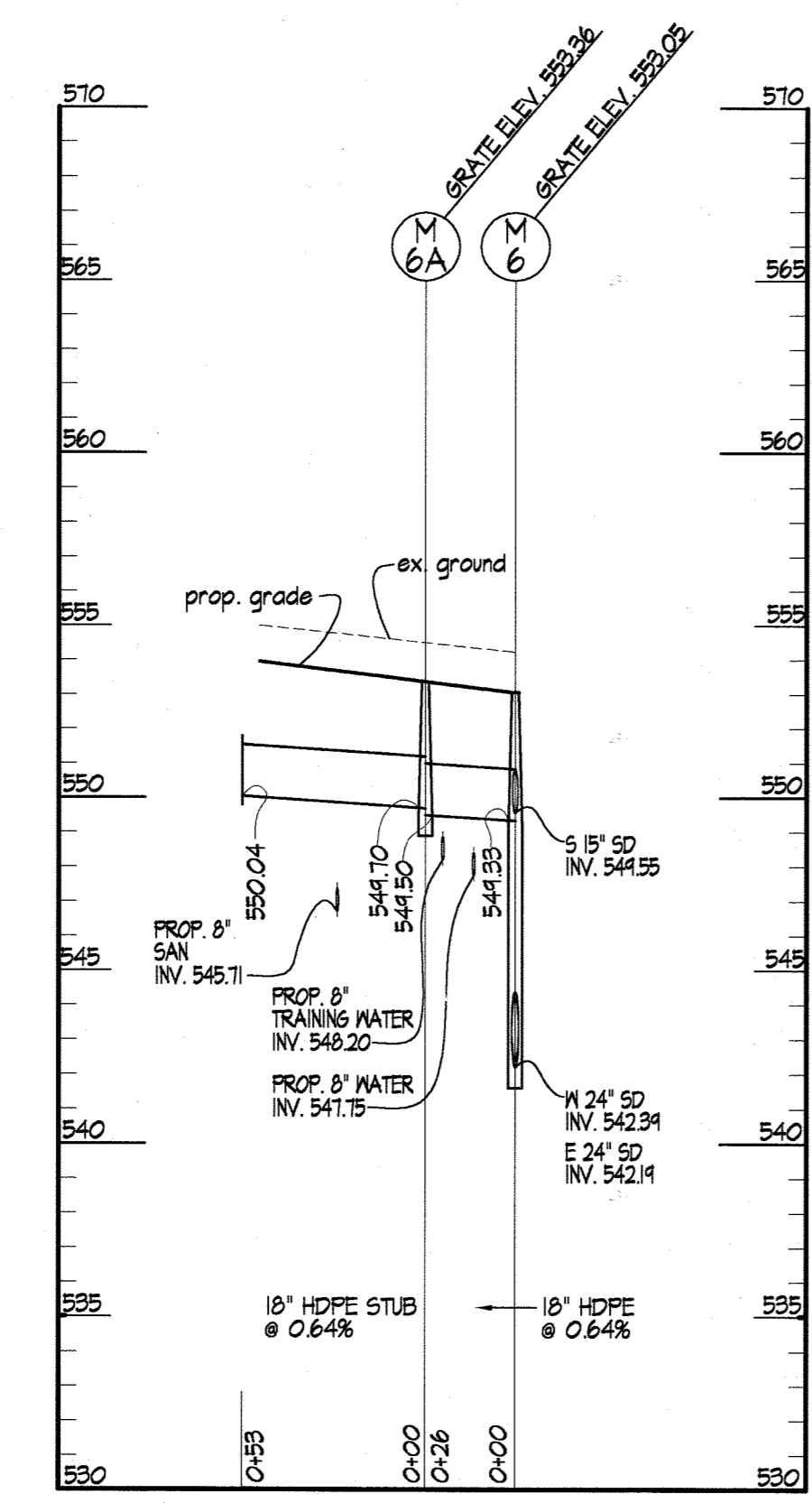
10 PROFILE M-41 TO I-46 & STUB
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'



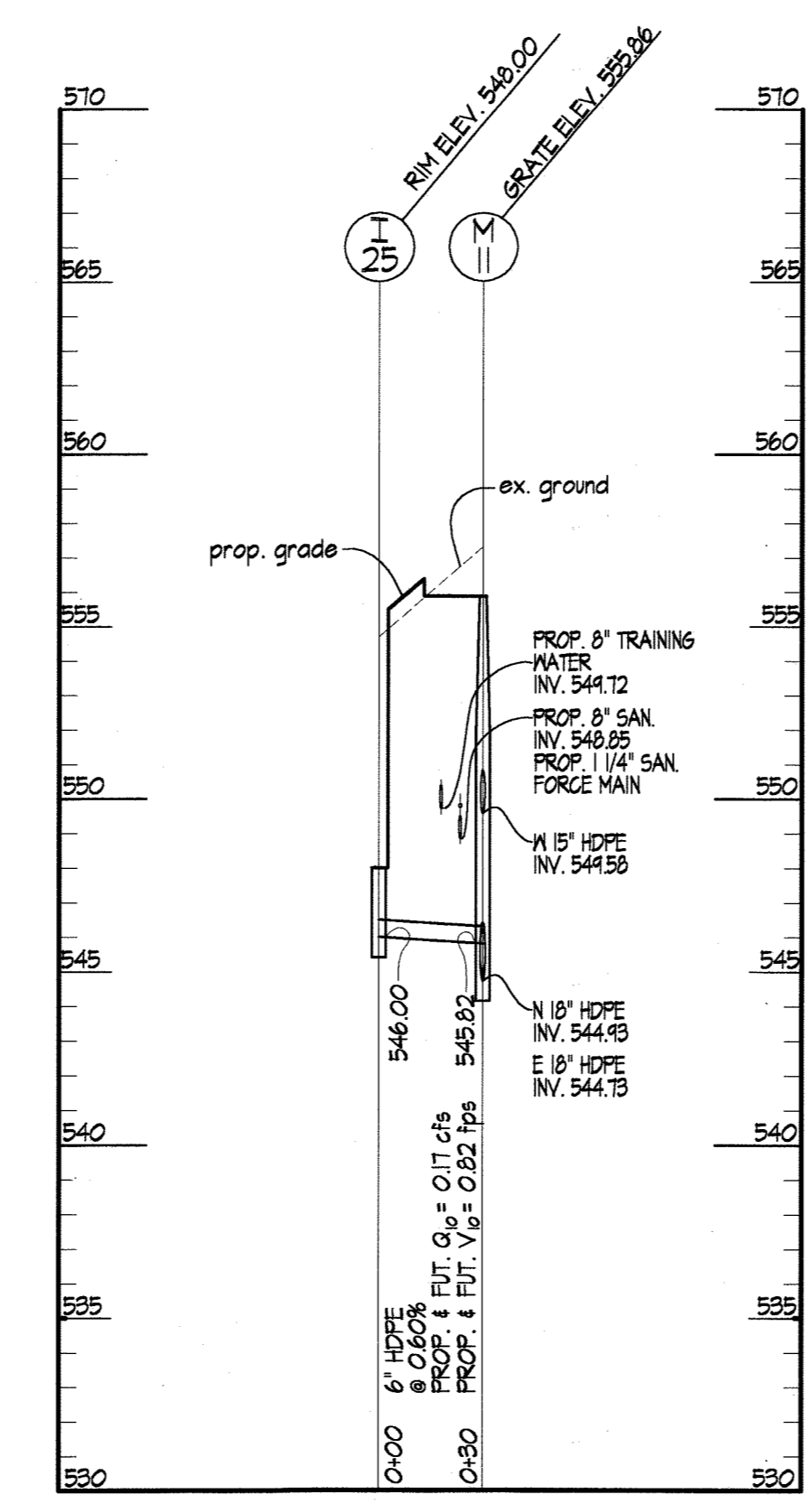
11 PROFILE I-37 TO I-35
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'



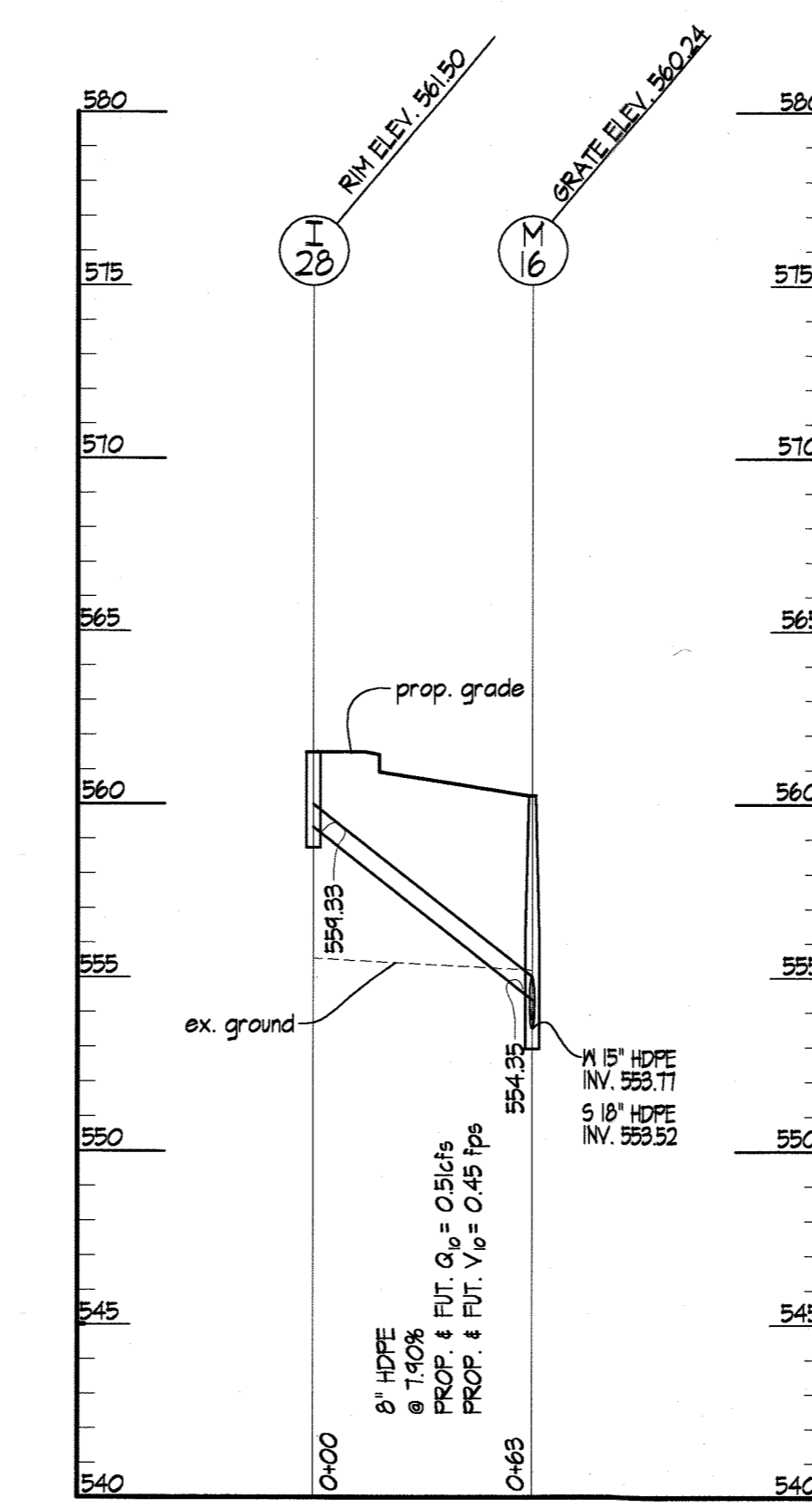
12 PROFILE I-22 TO M-6
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'



13 PROFILE STUB TO M-6
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'



14 PROFILE I-25 TO M-11
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'



15 PROFILE I-28 TO M-16
 SCALES: HORIZ.: 1" = 50'
 VERT.: 1" = 5'

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 Robert W. Weber
 COUNTY HEALTH OFFICER
 10/30/06
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 James M. Irvin
 JAMES M. IRVIN, DIRECTOR
 10/30/06
 DATE

* ALL HDPE SHALL BE SMOOTH INTERIOR

APPROVED: DEPARTMENT OF PLANNING & ZONING
 David A. Lough
 DIRECTOR
 10/30/06
 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



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

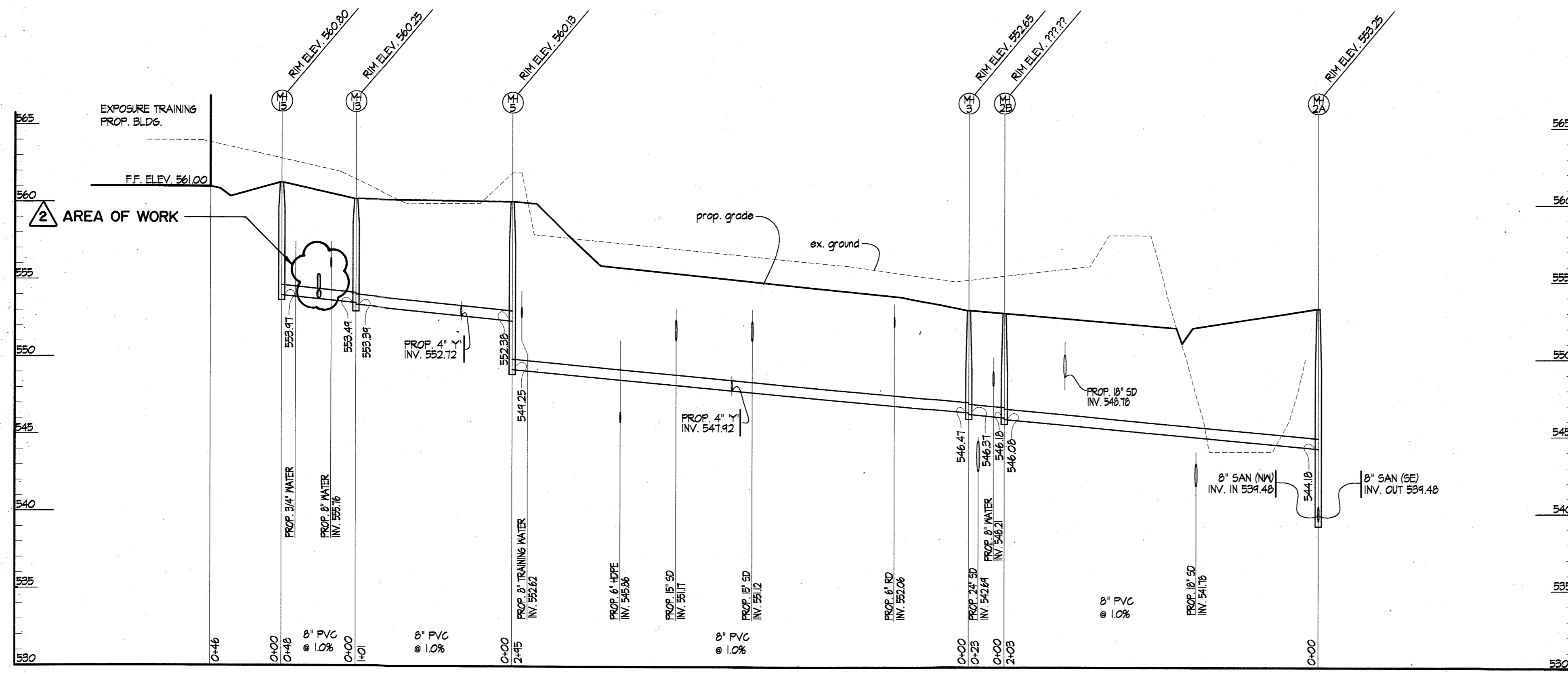
DES: KPR	
DRN: AM	
CHK: REM	
DATE: 10/11/06	
BY: NO.	REVISION

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland
 OWNER: Howard County Department of Public Works
 3430 Courthouse Drive
 Ellicott City, Maryland 21043
 Phone (410) 313-2100
 ADDRESS / PERMIT INFORMATION:
 PARCEL #253 ADDRESS: 2200 Alpha Center Drive
 PLAT No. 1576, L&E884 / F&B
 GRID No. 218, ZONE: RC-DEO, TAX MAP No. 16
 3rd Election District, Census Tract 6030
 WATER CODE: 130, SEWER CODE: Private - Holding Tank

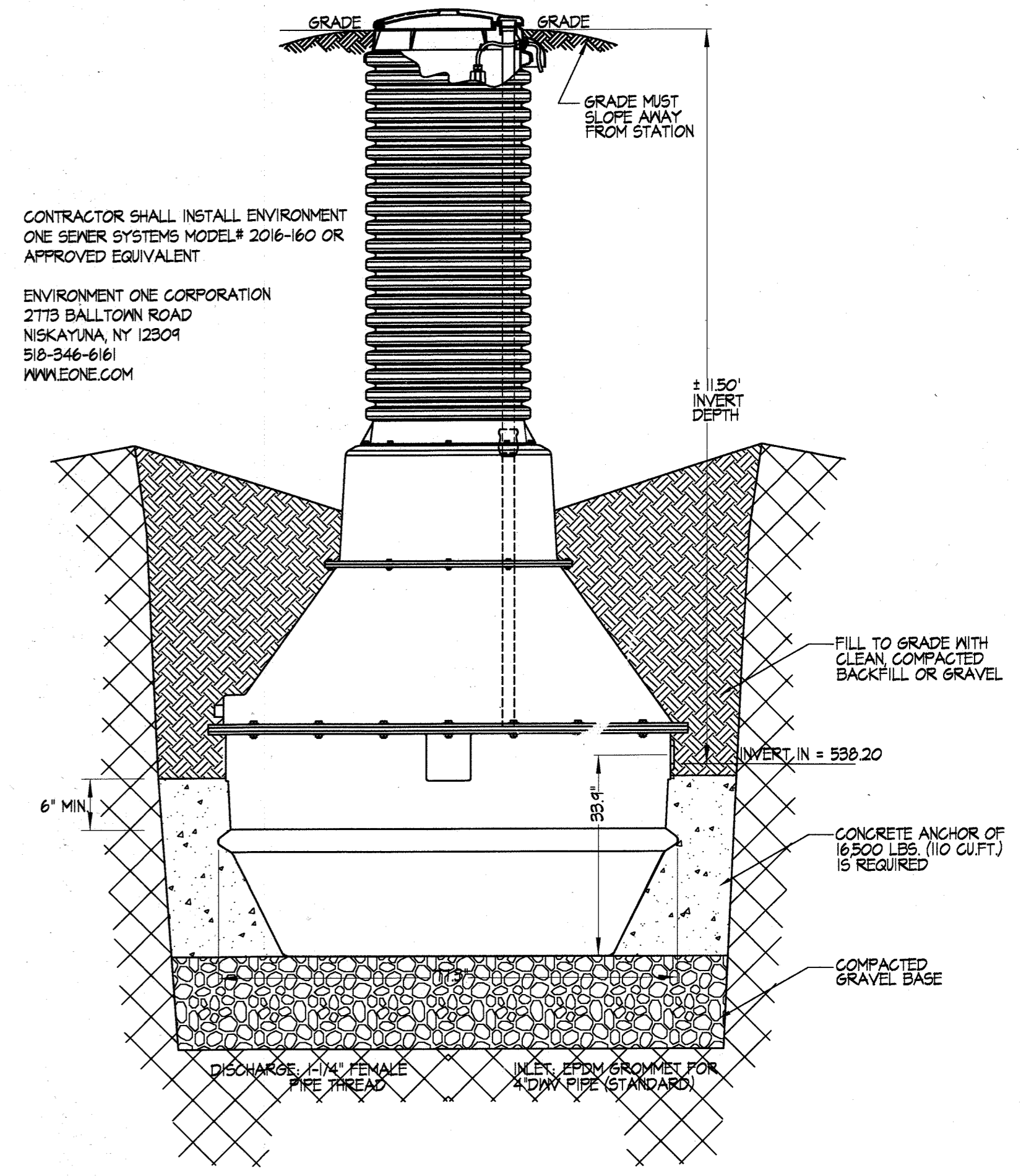
C4.04
 SCALE: AS SHOWN
 SHEET 34 OF 81

STORM DRAIN PROFILES

600' SCALE MAP NO. 16 BLOCK NO. 2 / 8



Joseph V. Morse
 12-16-14
 PROFESSIONAL CERTIFICATE:
 I HEREBY CERTIFY THAT THE INFORMATION
 CLOUDED AND LISTED UNDER REVISION #2
 ON THIS DOCUMENT WAS PREPARED OR
 APPROVED BY ME.

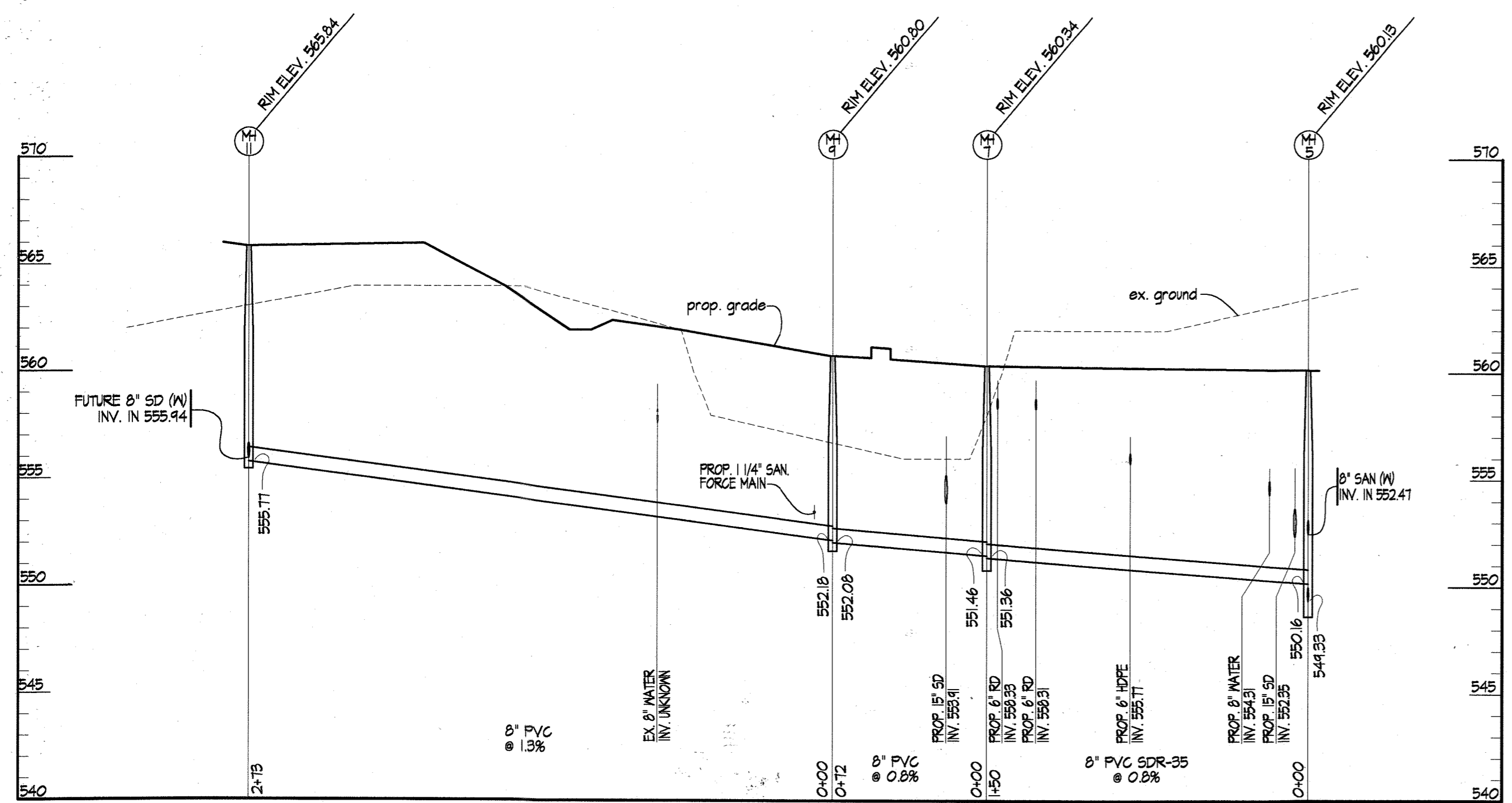


CONTRACTOR SHALL INSTALL ENVIRONMENT
 ONE SEWER SYSTEMS MODEL# 2016-160 OR
 APPROVED EQUIVALENT
 ENVIRONMENT ONE CORPORATION
 2173 BALLTOWN ROAD
 NISKAYUNA, NY 12304
 518-546-6161
 WWW.EONE.COM

1 SANITARY PROFILE EXPOSURE TRAINING PROP. TO MH-2A

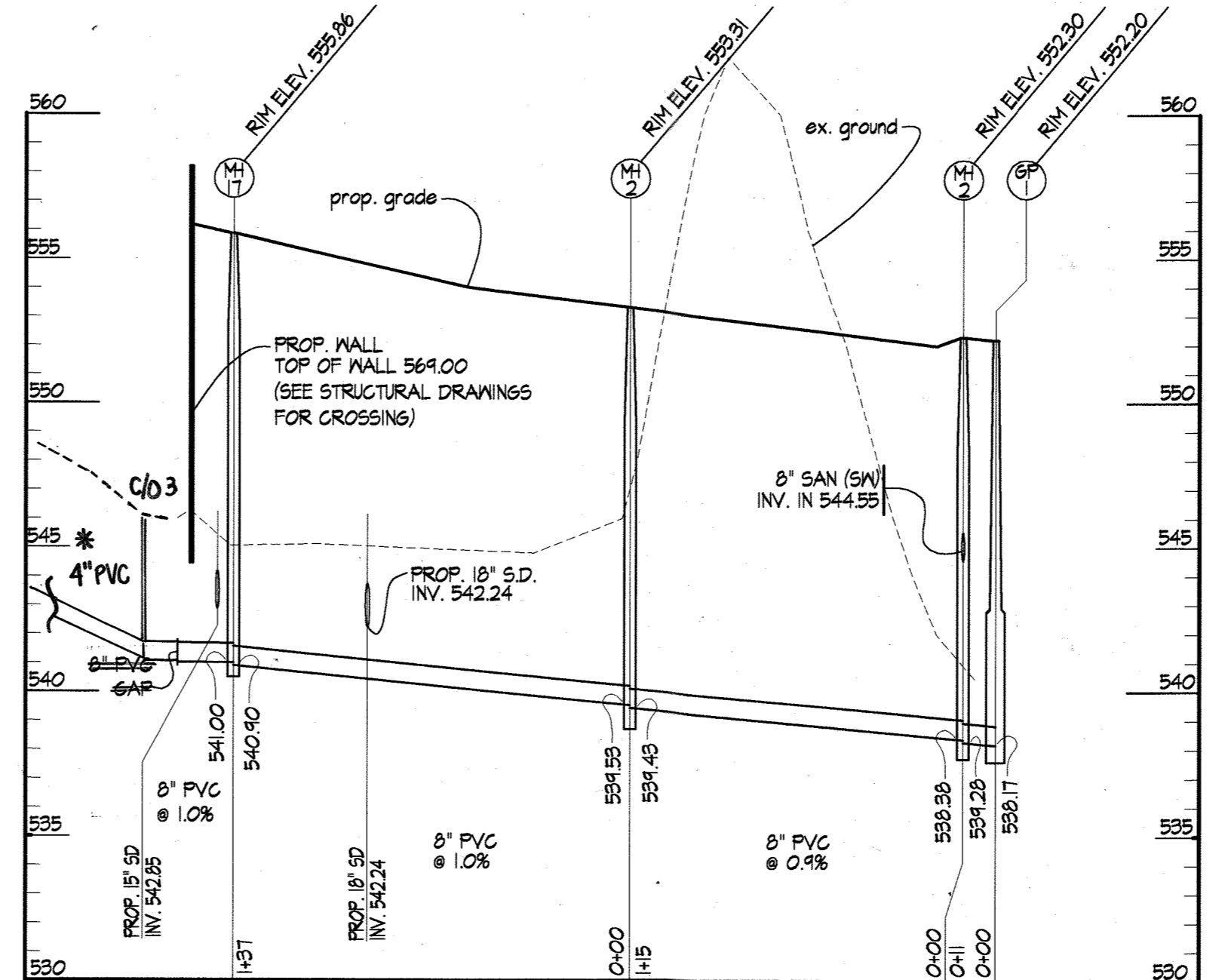
SCALES: HORIZ. 1" = 50'
 VERT. 1" = 5'

2 GRINDER PUMP DETAIL
NOT TO SCALE



3 SANITARY PROFILE MH-11 TO MH-5

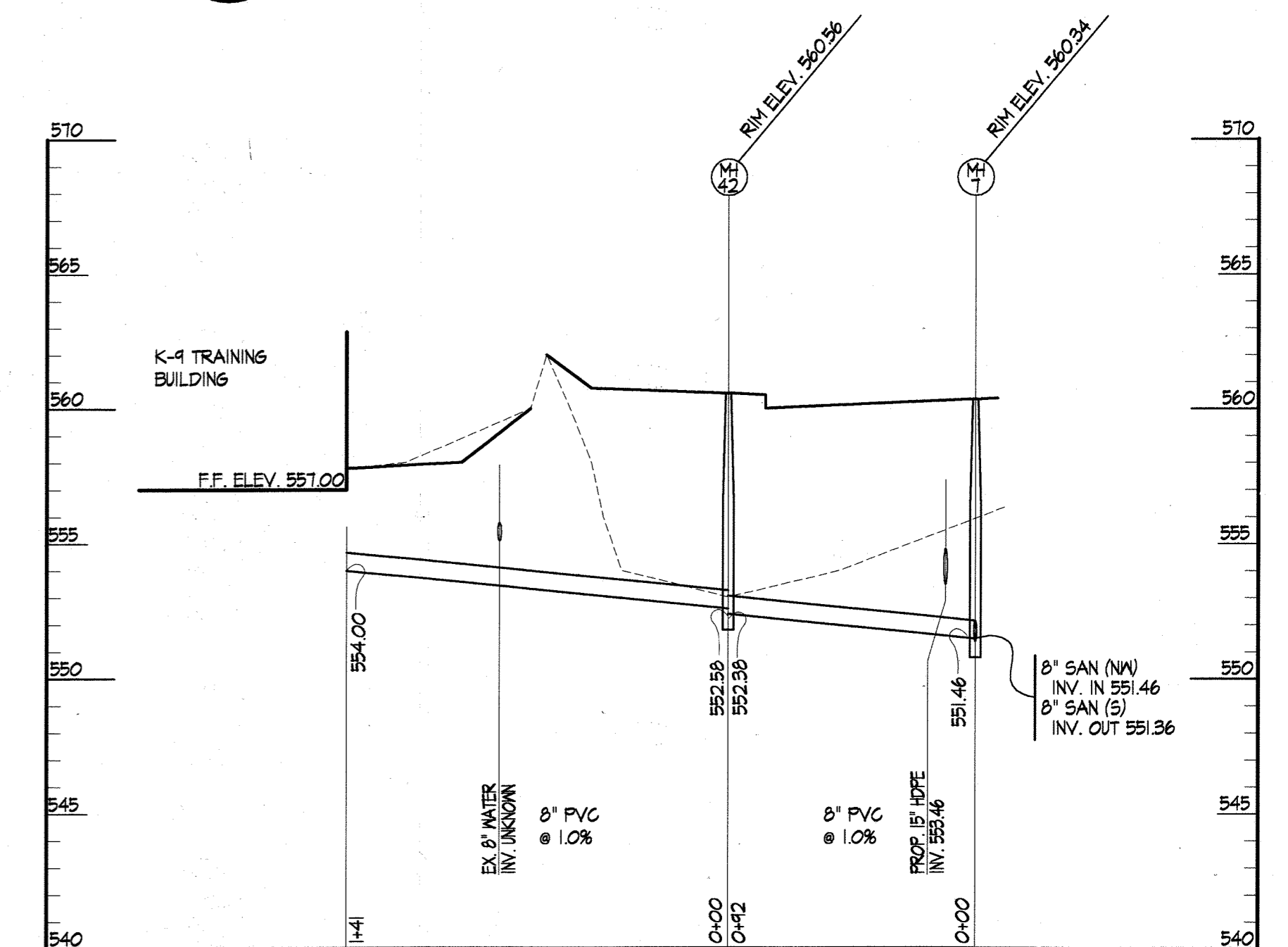
SCALES: HORIZ. 1" = 50'
 VERT. 1" = 5'



4 SANITARY PROFILE MH-17 TO GP-1

* 4" PVC SEWER TO CONTINUE
 TO TRAILER. SEE PLAN VIEW
 FOR INVERT AT PROPOSED CLEANOUTS.

SCALES: HORIZ. 1" = 50'
 VERT. 1" = 5'



5 SANITARY PROFILE K-9 TRAINING BLDG TO MH-7

SCALES: HORIZ. 1" = 50'
 VERT. 1" = 5'

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 Robert J. Walsh
 COUNTY HEALTH OFFICER
 DATE 10/30/06

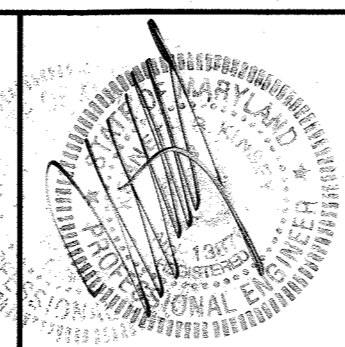
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 James M. Irvin
 DIRECTOR
 DATE 10/26/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 Director
 DATE 10/24/06

APPROVED: CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE 10/30/06

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

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



DES: KPR			
DRN: AM			
CHK: REM			
DATE: 10/11/06			
JEB	2	REDLINE REVISIONS - SEE NOTE 1 ON DRAWING C2.05 (17 OF 70)	12/11/14
BY	NO.	REVISION	DATE
		NEW TRAILER WITH WATER AND SEWER CONNECTION	11/12/18

SANITARY SEWER PROFILES
 600' SCALE MAP NO. 16 BLOCK NO. 2 / B

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

OWNER: Howard County
 Dept. of Public Works
 3430 Courthouse Drive
 Elkocott City, Maryland 21043
 Phone (410) 313-2100

ADDRESS / PERMIT INFORMATION:
 PARCEL #259, ADDRESS: 2200 Alpha Center Drive
 FLAT NO. 1516, L6684 / F618
 GRID No. 218, ZONE: RC-150, TAX MAP No. 16
 3rd Election District, Census Tract 6030
 WATER CODE: 730, SEWER CODE: Private - Holding Tank

C4.11
 SCALE: AS SHOWN
 SHEET 36 OF 81

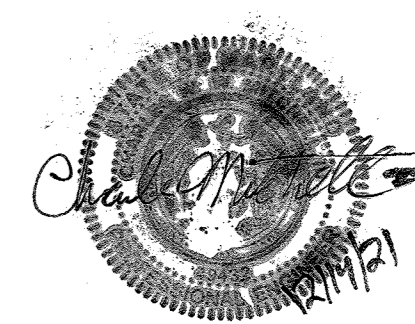
Z:\03\0313\HowardCo - PublicSafetyTraining\DWG_1016\2008\11\12\251.dwg, 10/30/06 11:12:51 AM, Copyright, Site Resources, Inc.

LEGEND - GRADING & SEC PLAN

- PROPERTY LINE
- 345 --- EXISTING CONTOURS
- 345 --- PROPOSED CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING ROADS
- PROPOSED ROADS
- EX. 15" SD --- EXISTING STORMDRAINS
- EX. 8" SAN --- EXISTING SANITARY SEWER
- EX. 6" W --- EXISTING WATER
- EXISTING ELECTRIC
- EXISTING GAS
- ← A-2 DIKE
- ← LOD
- EARTH DIKE
- LIMIT OF DISTURBANCE
- SUPER SILT FENCE
- TREE PROTECTION FENCE
- RRIP RIPRAP INFLOW PROTECTION
- GMIP GABION INFLOW PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM
- SSPFI SUPER SILT FENCE INLET PROTECTION
- ASIP AT GRADE INLET PROTECTION
- CIP CURB INLET PROTECTION
- RPS REMOVABLE PUMPING STATION

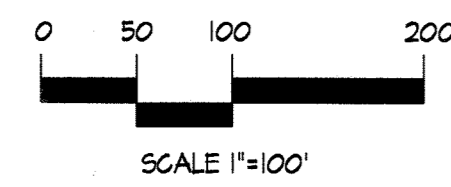
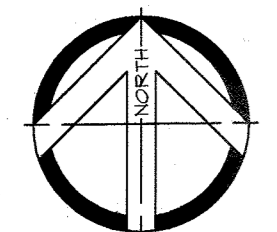


NOTE:
COMPOSITE PLAN NOT FOR CONSTRUCTION. SEE 30 SCALE PLANS FOR CONSTRUCTION.



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE REQUIREMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, CHARLES W. MITHELL, III LICENSE NO. 48472, EXPIRATION DATE: MAY 31, 2022.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.	
USDA - NATURAL RESOURCES CONSERVATION SERVICE	10/19/06 DATE
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.	
HOWARD SOIL CONSERVATION DISTRICT	10/19/06 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."	
ENGINEER	10/11/06 DATE
DEVELOPER'S CERTIFICATE	
"I do 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."	
DEVELOPER	10/11/06 DATE



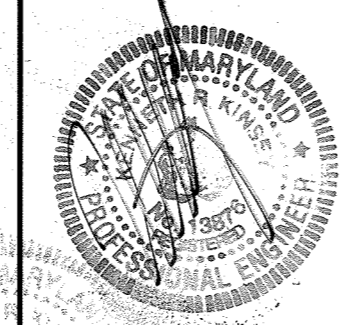
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Richard W. Waler COUNTY HEALTH OFFICER 10/30/06 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James M. Irvin DIRECTOR 10/26/06 DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING
Paul H. Leight DIRECTOR 10/30/06 DATE
Michael J. ... CHIEF, DEVELOPMENT ENGINEERING DIVISION 10/24/06 DATE
Chris ... CHIEF, DIVISION OF LAND DEVELOPMENT 10/26/06 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

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



DES: KPR	
DRN: AM	
CHK: REM	
DATE: 10/11/06	
BY: PK&K	REVISION
NO. 1	REVISE THE GRADES OF THE PROTECTION BERM AT THE FIRING RANGE. 11/1/21

Grading & Erosion & Sediment Control Composite Plan

600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

OWNER: Howard County, Department of Public Works, 3450 Courthouse Drive, Elkton City, Maryland 21043, Phone (410) 313-2100

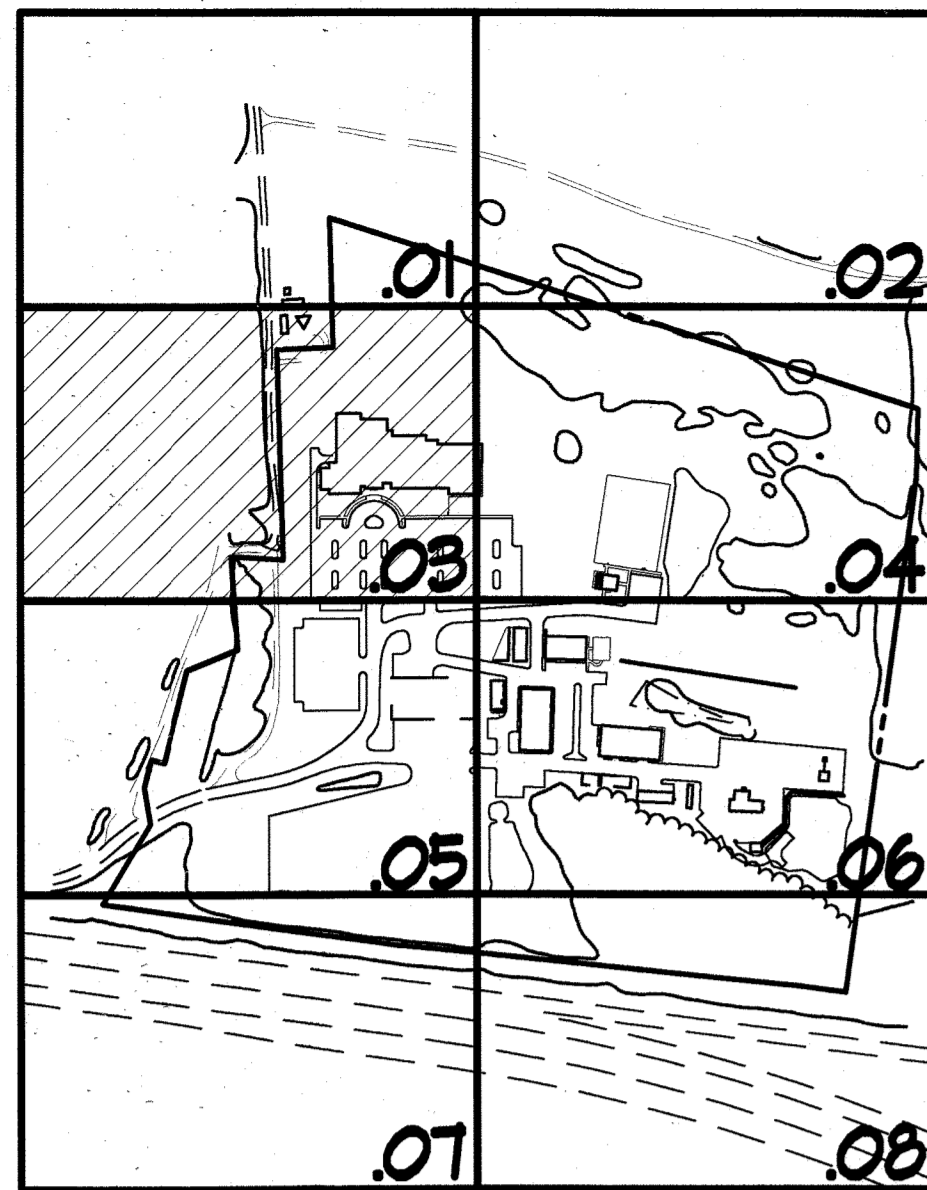
ADDRESS / PERMIT INFORMATION:
PARCEL #253, ADDRESS: 2200 Alpha Center Drive
PLAT No. 1516, L&E84 / F&E18
GRID No. 218, ZONE: R-150, TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: T30, SEWER CODE: Private - Holding Tank

SCALE: 1"=100'
SHEET 39 OF 98

PURPOSE STATEMENT: THE REDLINE REVISION OF THIS SHEET IS TO REVISE THE GRADES OF THE PROTECTION BERM AT THE FIRING RANGE.

C5.00

MATCHLINE, SEE SHEET C5.01



KEY MAP

LEGEND - GRADING & SEC PLAN

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING ROADS
- PROPOSED ROADS
- EXISTING STORMDRAINS
- EXISTING SANITARY SEWER
- EXISTING WATER
- PROPOSED WATER
- EXISTING ELECTRIC
- EXISTING GAS
- EARTH DIKE
- LIMIT OF DISTURBANCE
- SUPER SILT FENCE
- TREE PROTECTION FENCE
- RIPRAP INFLOW PROTECTION
- GABION INFLOW PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM
- AT GRADE INLET PROTECTION
- REMOVABLE PUMPING STATION
- EXISTING FOREST CONSERVATION EASEMENT
- PROPOSED FOREST CONSERVATION EASEMENT
- PROPOSED EROSION CONTROL MATTING
- EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE 10/29/06

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

HOWARD SOIL CONSERVATION DISTRICT DATE 10/29/06

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.

ENGINEER DATE 10/11/06

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.

DEVELOPER DATE 10/11/06

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

COUNTY HEALTH OFFICER DATE 10/30/06

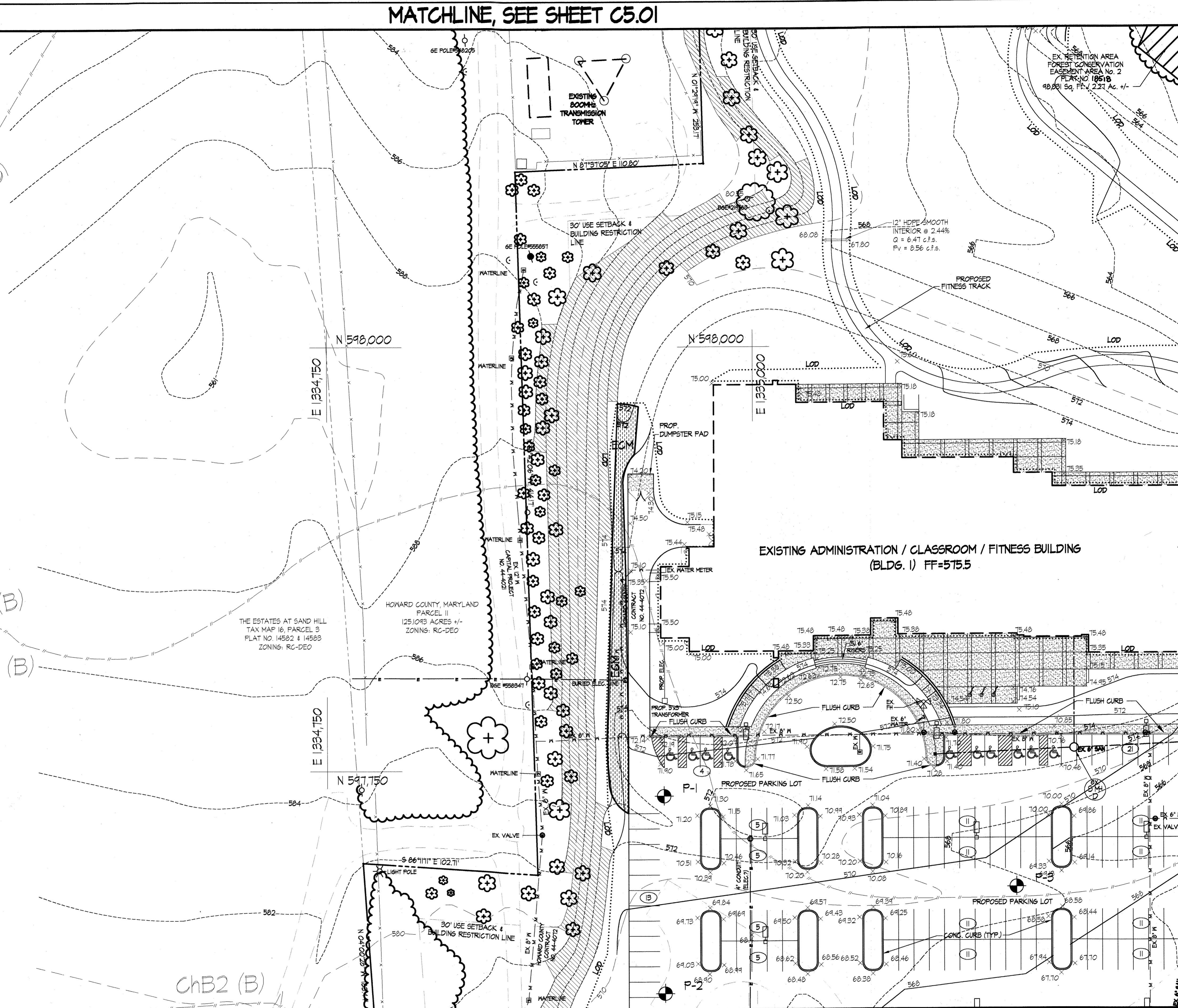
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR DATE 10/26/06

APPROVED: DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE 10/30/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 10/24/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 10/30/06

EDMEADES & STROMDAHL, LTD. ARCHITECTS / PLANNERS
34 North Main Street Bel Air, Maryland 21014
LAND PLANNING / SITE DESIGN
14315 Jarrettsville Pike Phoenix, Maryland 21131
Phone: 410.879.0388 Fax: 410.879.4785
E-mail: bw@edmeades-stromdahl.com



MATCHLINE, SEE SHEET C5.05

MATCHLINE, SEE SHEET C5.04

DES: KPR			
DRN: AM			
CHK: REM			
DATE: 10/11/06	BY NO.	REVISION	DATE

Grading & Erosion & Sediment Control Plan
600' SCALE MAP NO. 16 BLOCK NO. 2 / B

Phase II Improvements: four buildings, eight training rooms and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No.C-0182, Howard County, Maryland
OWNER: Howard County Department of Public Works
ADDRESS / PERMIT INFORMATION: PARCEL #253 ADDRESS: 2200 Alpha Center Drive
FLAT No. 1576, L16681 / 16269
GRID No. 219, ZONE: RC-DEO, TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: 130, SEWER CODE: Private - Holding Tank

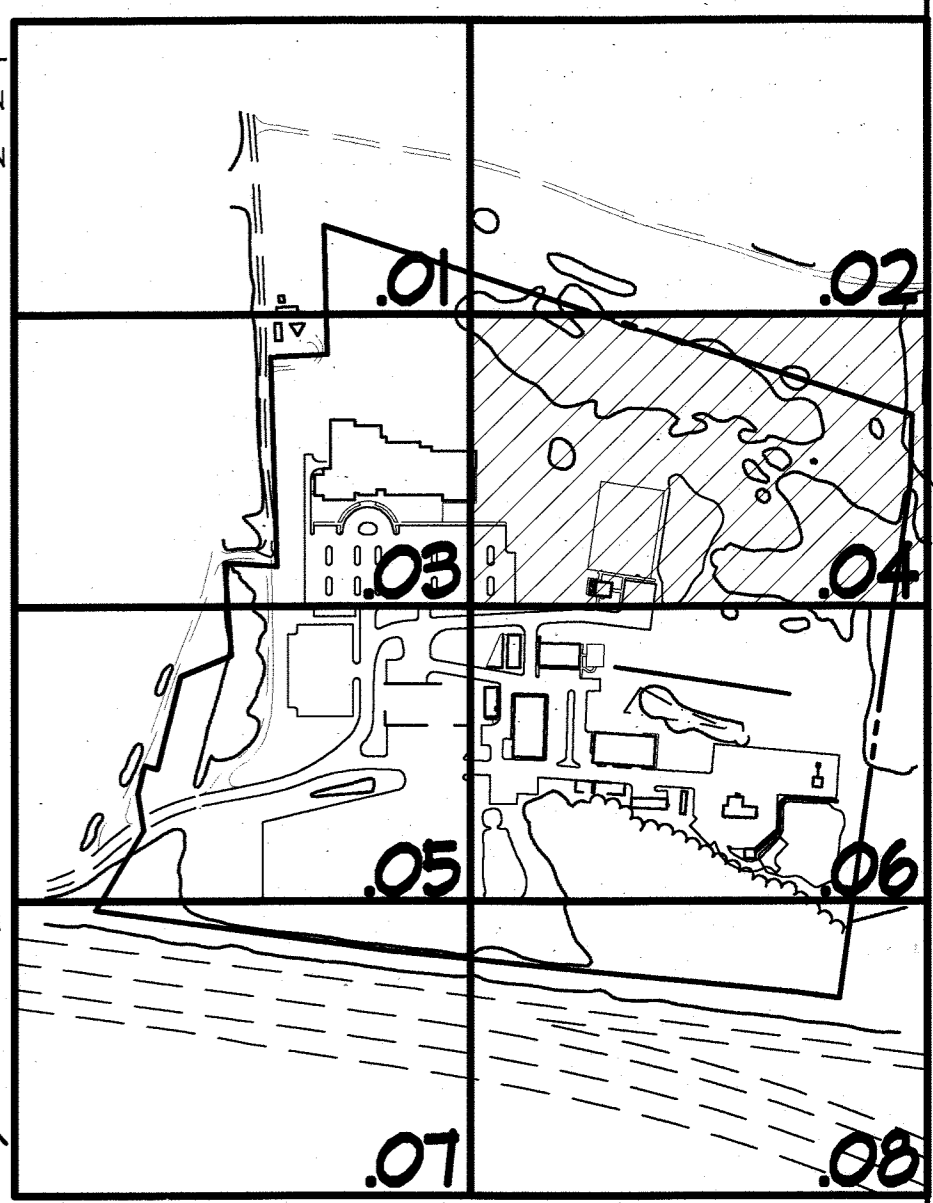
C5.03
SCALE: 1"=30'
SHEET 42 OF 49

2:0020153-HowardCo-PublicSafetyTrainingCenter-10/26/06 11:12:28 AM - Copyright, Site Resources, Inc.

MATCHLINE, SEE SHEET C5.02

LEGEND - GRADING & SEC PLAN

--- PROPERTY LINE	--- EXISTING ROADS	RRIP	RRIP INFLOW PROTECTION
--- EXISTING CONTOURS	--- PROPOSED ROADS	GMP	GABION INFLOW PROTECTION
--- PROPOSED CONTOURS	EX 15' SD	SSIF	STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM
--- EXISTING TREELINE	EX 6" SAN	CIP	AT GRADE INLET PROTECTION
--- PROPOSED TREELINE	EX 6" W	ECM	AGIP
	PROP. 6" WATER		RPS
	EXISTING ELECTRIC		EXISTING FOREST CONSERVATION EASEMENT
	EXISTING WATER		PROPOSED FOREST CONSERVATION EASEMENT
	EXISTING GAS		PROPOSED EROSION CONTROL MATTING
	EARTH DIKE		EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF
	LIMIT OF DISTURBANCE		BAFFLE
	SUPER SILT FENCE		EXISTING SPOT ELEVATION
			PROPOSED SPOT ELEVATION

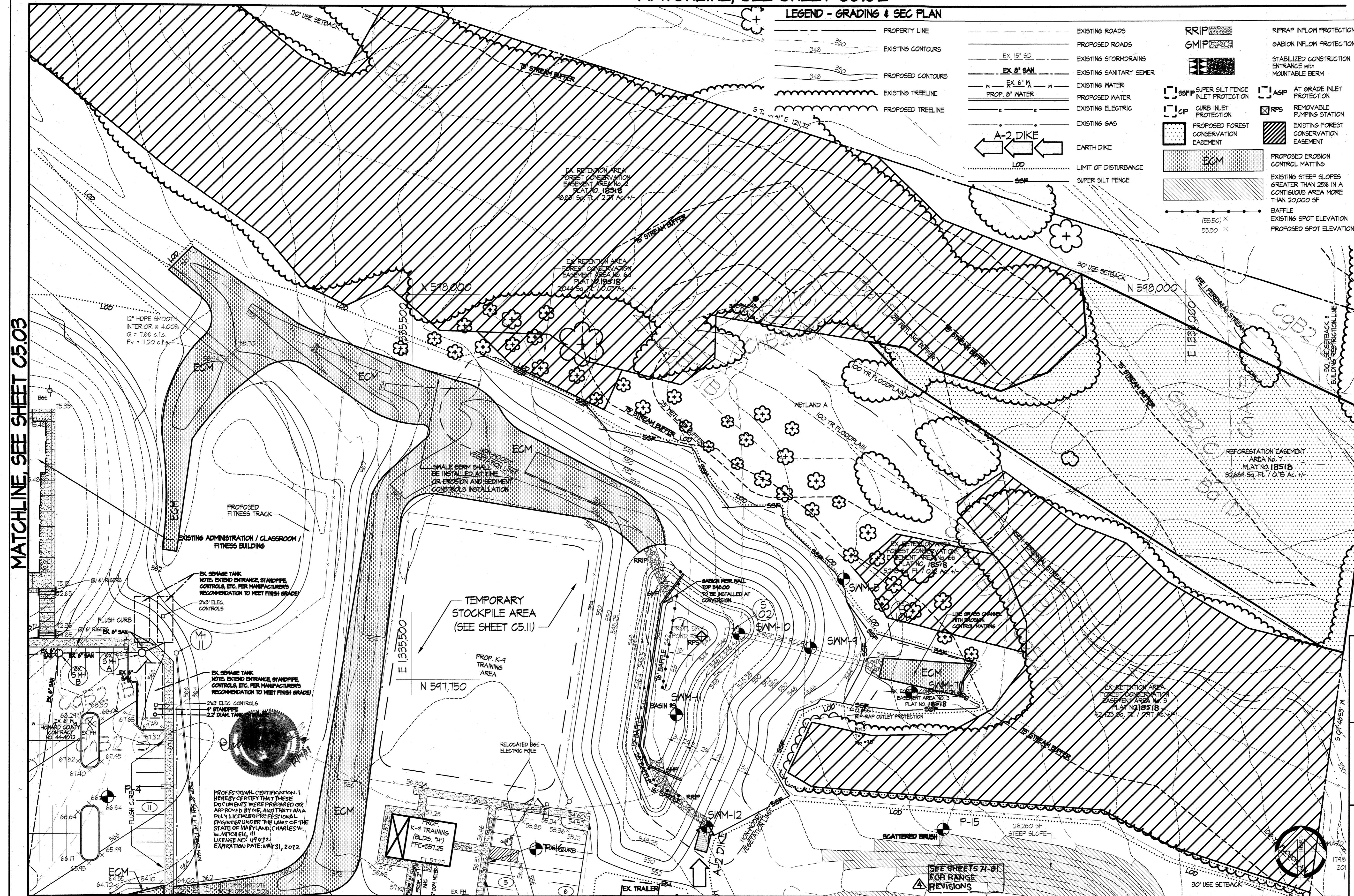


KEY MAP

SEDIMENT BASIN TABLE

BASIN NUMBER	3
EXISTING DRAINAGE AREA AC.	0.32
INTERIM DRAINAGE AREA AC.	0.32
PROPOSED DRAINAGE AREA AC.	0.32
STORAGE REQUIRED C.F.	NET 14476
	DRY 14476
	TOTAL 28952
STORAGE PROVIDED C.F.	NET 6325
	DRY 21421
	TOTAL 27746
EXISTING GROUND ELEV.	546.25
TOP BREAKWATER ELEV.	552.00
EMERGENCY SPILLWAY CREST ELEV.	N/A
RISER CREST ELEV.	544.00
NET STORAGE ELEV.	541.00
CLEANOUT ELEV.	545.00
GRID INTO BASIN C.F.S.	59.00
GRID OUT BASIN C.F.S.	28.41
GRID OUT EMERGENCY SPILLWAY C.F.S.	N/A
TOTAL GRID OUT OF BASIN C.F.S.	28.41
BASIN DEPTH	NET 5.0'
	DRY 2.0'
	TOTAL 7.0'
DESIGN HIGHWATER 100 YEAR	544.41
FREEBORD REQUIRED 100 YEAR	2.00
FREEBORD PROVIDED 100 YEAR	2.08
BARREL DIAMETER	36"
RISER INTERIOR DIMENSIONS	18' x 5'
EMERGENCY SPILLWAY WIDTH	N/A
NET STORAGE ZONE ELEV.	542.00 - 541.00
DRY STORAGE ZONE ELEV.	541.00 - 541.00
BOTTOM DIMENSIONS	18' x 5'
STORAGE REQUIRED AT CLEANOUT C.F.	1468
STORAGE PROVIDED AT CLEANOUT C.F.	6371
DIMENSION FROM CLEANOUT ELEV. TO RISER TOP	5.25'
START DRAINDOWN PERFORATIONS AT ELEV.	541.00
1 YEAR MANAGEMENT PROVIDED	YES
1 YEAR EXISTING C.F.S.	3.45
1 YEAR OUTFLOW C.F.S.	1.22

MATCHLINE, SEE SHEET C5.03



MATCHLINE, SEE SHEET C5.06

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER
 DATE 10/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DIRECTOR
 DATE 10/26/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DIRECTOR
 DATE 10/26/06

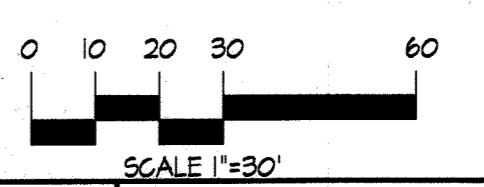
EDMEADES & STROMDAHL, LTD.
 ARCHITECTS / PLANNERS
 34 North Main Street Bel Air, Maryland 21014
 Phone: 410.879.0388 Fax: 410.879.4785
 E-mail: bw@edmeades-stromdahl.com

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



DES: KPR	
DRN: AM	
CHK: REM	
DATE: 10/11/06	
BY: BK&K	
NO.:	
REVISION:	REVISE THE GRADES OF THE PROTECTION BERM AT THE FIRING RANGE. 11/1/07

PURPOSE STATEMENT: THE REDLINE REVISION OF THIS SHEET IS TO REVISE THE GRADES OF THE PROTECTION BERM AT THE FIRING RANGE.



Grading & Erosion & Sediment Control Plan

PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland
 OWNER: Howard County Department of Public Works
 3430 Courthouse Drive Ellicott City, Maryland 21043
 Phone (410) 313-2100
 ADDRESS / PERMIT INFORMATION: PARCEL #253 ADDRESS: 2200 Alpha Center Drive
 PLAT No. 15116 L-6684 / F-614 GRID No. 218 ZONE: EC-200 TAX MAP No. 16
 3rd Election District, Canoe Tract 6030 WATER CODE: T30, SEWER CODE: Private + Holding Tank

C5.04

SCALE: 1"=30'
 SHEET 43 OF 49

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
 USDA - NATURAL RESOURCES CONSERVATION SERVICE
 DATE 10/19/06

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD SOIL CONSERVATION DISTRICT
 DATE 10/19/06

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.
 ENGINEER
 DATE 10/11/06

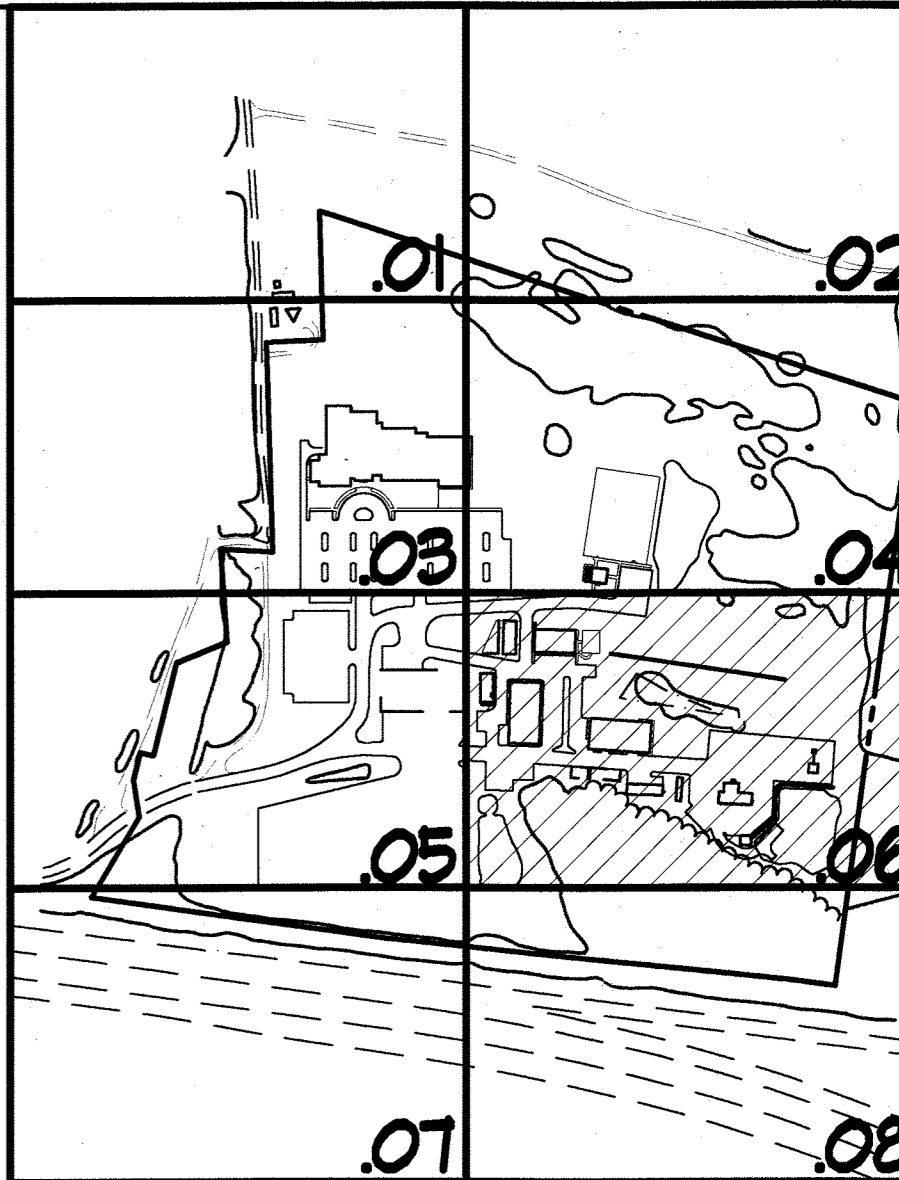
DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training 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.
 DEVELOPER
 DATE 10-12-06

2:0000103:HowardCo:PublicSafety:Training:Center:SDP-06-110:06-11-06:11:18:45:AM: Copyright, Site Resources, Inc.

MATCHLINE, SEE SHEET C5.04

LEGEND - GRADING & SEC PLAN

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING ROADS
- PROPOSED ROADS
- EXISTING STORMDRAINS
- EXISTING WATER
- EARTH DIKE
- LIMIT OF DISTURBANCE
- SUPER SILT FENCE
- TREE PROTECTION FENCE
- RIPRAP INFLOW PROTECTION
- GABION INFLOW PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM
- AT GRADE INLET PROTECTION
- REMOVABLE PUMPING STATION
- EXISTING FOREST CONSERVATION EASEMENT
- PROPOSED FOREST CONSERVATION EASEMENT
- PROPOSED EROSION CONTROL MATTING
- EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF
- BAFFLE
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION



KEY MAP

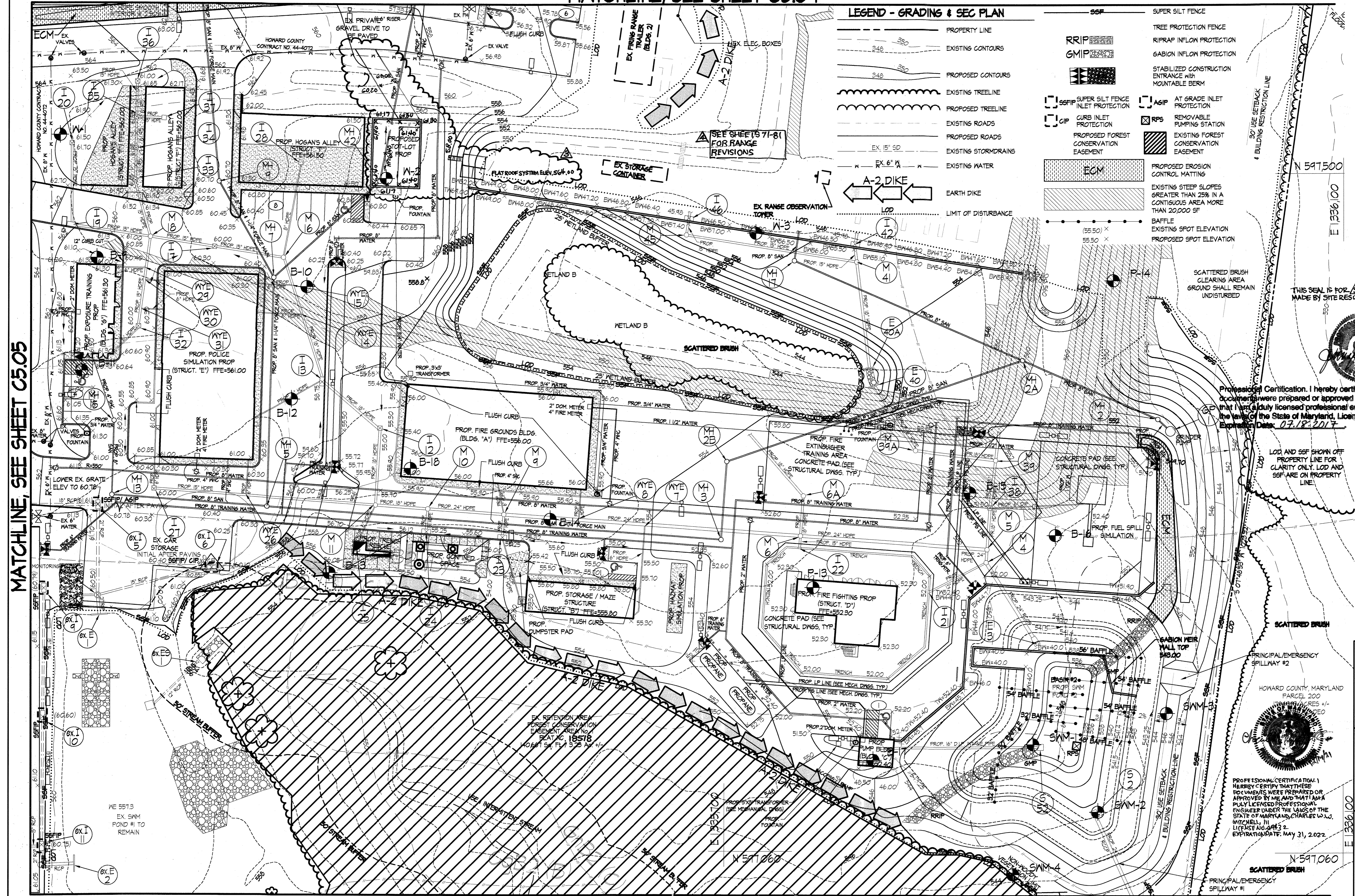
THIS SEAL IS FOR REVISIONS MADE BY SITE RESOURCES, INC.



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 23165, Expiration Date: 07/18/2017.

SEDIMENT BASIN TABLE	
BASIN NUMBER	3
EXISTING DRAINAGE AREA AC.	6.58
INTERM DRAINAGE AREA AC.	6.46
PROPOSED DRAINAGE AREA AC.	6.46
STORAGE REQUIRED C.F.	NET 11628
	DRY 23256
	TOTAL 34884
STORAGE PROVIDED C.F.	NET 32266
	DRY 64532
	TOTAL 96798
EXISTING GROUND ELEV.	548.25
TOP EMBANKMENT ELEV.	546.00
EMERGENCY SPILLWAY CREST ELEV.	544.00
RISER CREST ELEV.	544.00
NET STORAGE ELEV.	542.00
CLEANOUT ELEV.	537.00
BOTTOM ELEV.	539.00
GRID INTO BASIN C.F.S.	24.6
GRID OUT BARREL C.F.S.	11.8
GRID OUT EMERGENCY SPILLWAY C.F.S.	1.00
TOTAL GRID OUT OF BASIN C.F.S.	24.14
BASIN DEPTH	NET 1.0'
	DRY 2.0'
	TOTAL 3.0'
DESIGN HIGHER WATER 100 YEAR	1.00
FREEBOARD REQUIRED 100 YEAR	1.25
FREEBOARD PROVIDED 100 YEAR	24"
BARREL DIAMETER	4'
RISER INTERIOR DIMENSIONS	4' x 4'
EMERGENCY SPILLWAY WIDTH	11.8'
NET STORAGE ZONE ELEV.	539.00 - 543.00
DRY STORAGE ZONE ELEV.	542.00 - 544.00
BOTTOM DIMENSIONS	25' x 61'
STORAGE REQUIRED AT CLEANOUT C.F.	5.84
STORAGE PROVIDED AT CLEANOUT C.F.	4.86
DIMENSION FROM CLEANOUT ELEV. TO RISER TOP	5.82'
START DRAINDOWN PERFORMANCES AT ELEV.	542.00
1 YEAR MANAGEMENT REQUIRED	YES
1 YEAR EXISTING G.F.S.	0.81
1 YEAR OUTFLOW G.F.S.	0.44

MATCHLINE, SEE SHEET C5.05



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
 USDA - NATURAL RESOURCES CONSERVATION SERVICE
 DATE 10/19/06

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD SOIL CONSERVATION DISTRICT
 DATE 10/19/06

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.
 ENGINEER
 DATE 10/11/06

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.
 DEVELOPER
 DATE 10-12-06

MATCHLINE, SEE SHEET C5.08

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER
 DATE 10/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 JAMES M. IRVIN, DIRECTOR
 DATE 10/30/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DIRECTOR
 DATE 11/30/06

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

DESIGNER	DATE	REVISION	DATE
KFR	10/11/06	REVISE THE GRADES OF THE PROTECTION BERM AT THE FIRING RANGE	11/1/07
SRJ	10/17/06	REDLINE REVISION: ADD ARMOY AND SNIPER DECK	10/17/06

PURPOSE STATEMENT: THE REDLINE REVISION OF THIS SHEET IS TO REVISE THE GRADES OF THE PROTECTION BERM AT THE FIRING RANGE.
 SCALE 1"=30'

Grading & Erosion & Sediment Control Plan
 600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

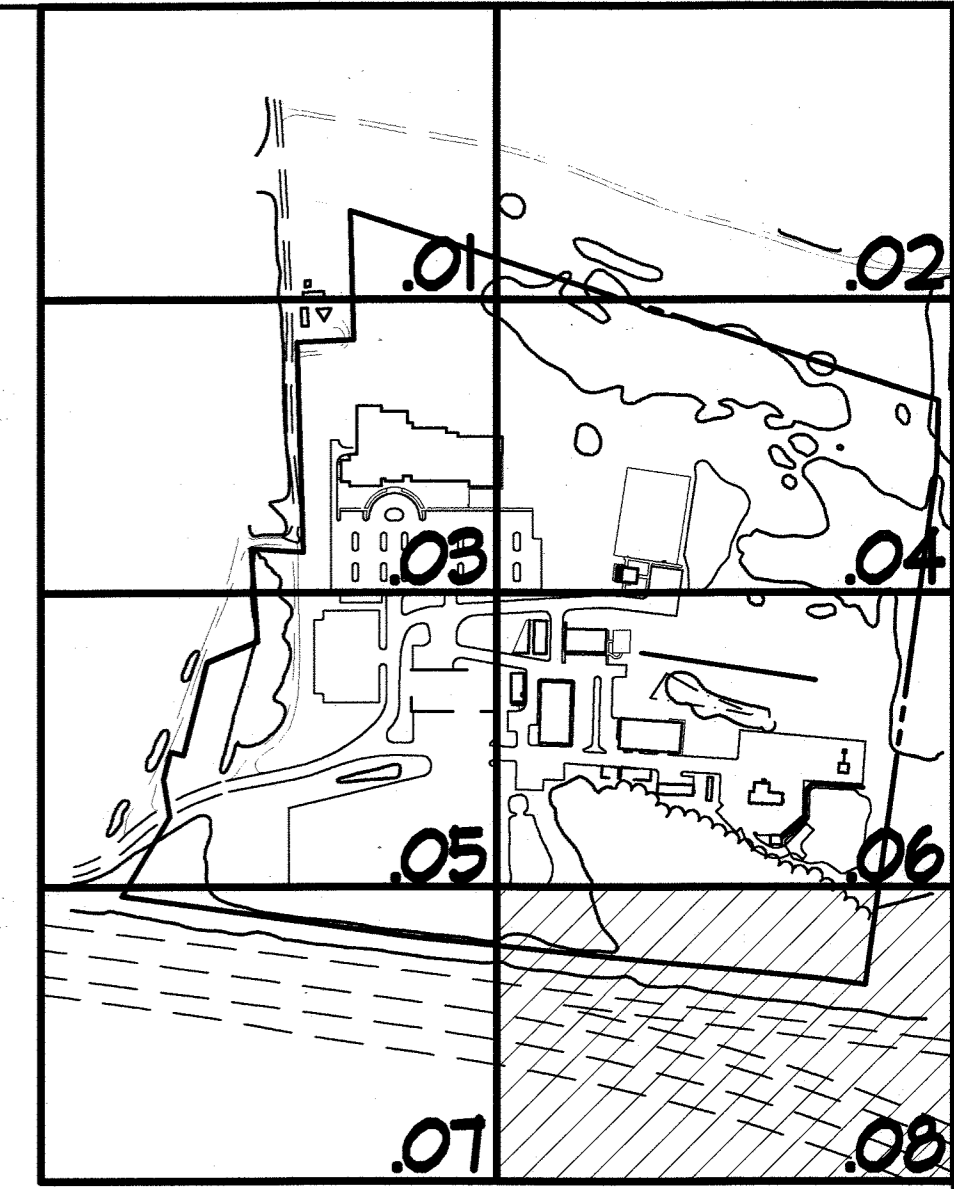
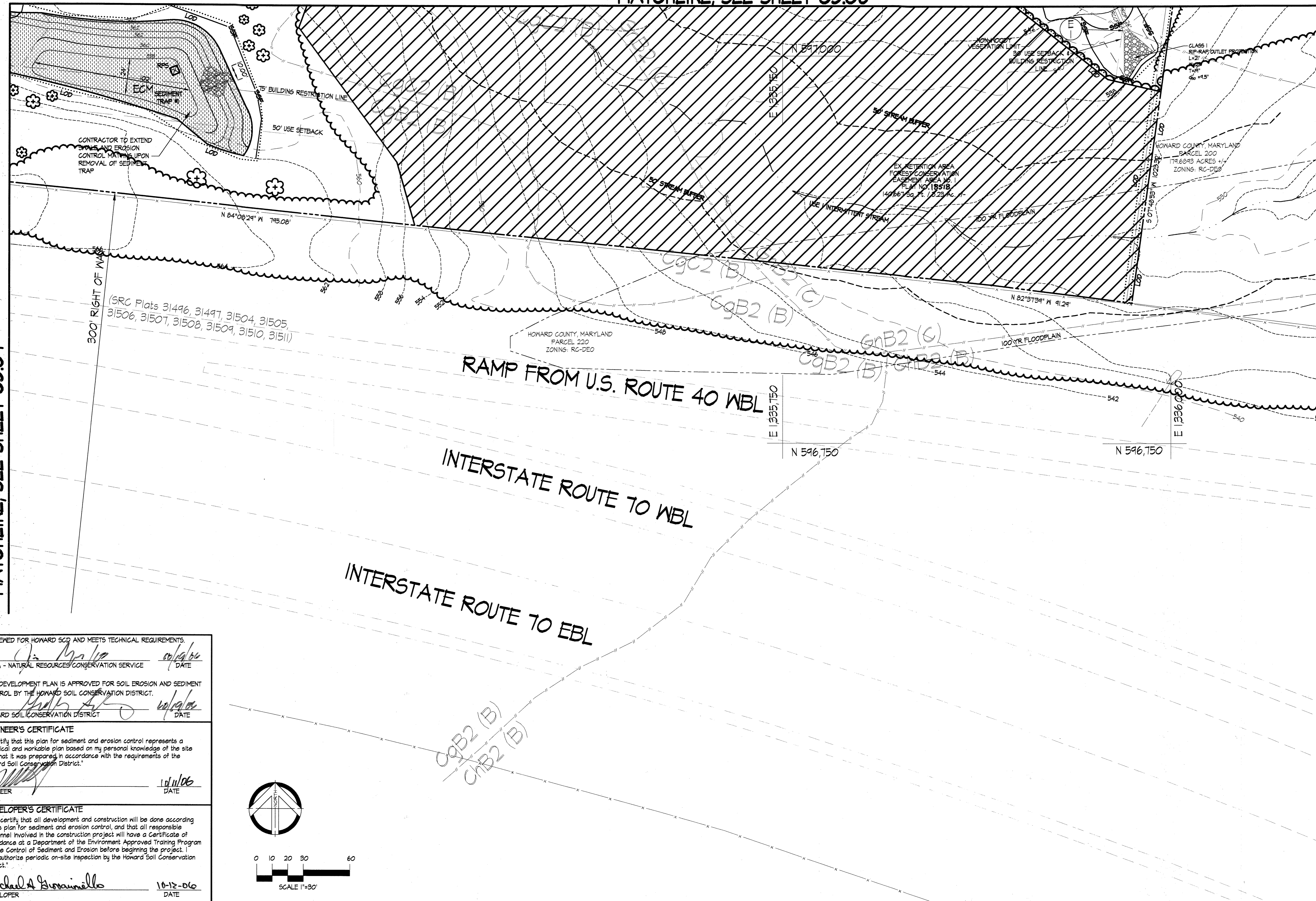
Phase II Improvements: four buildings, eight training props and associated infrastructure at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland
 OWNER: Howard County Department of Public Works
 ADDRESS: 2200 Alpha Center Drive
 2430 Courthouse Drive
 Ellipsis City, Maryland 21043
 Phone (410) 313-2700

C5.06

SHEET 45 OF 88

MATCHLINE, SEE SHEET C5.06

MATCHLINE, SEE SHEET C5.07



KEY MAP

LEGEND - GRADING & SEC PLAN

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING ROADS
- PROPOSED ROADS
- EXISTING STORMDRAINS
- EXISTING SANITARY SEWER
- EXISTING WATER
- PROPOSED WATER
- EXISTING ELECTRIC
- EXISTING GAS
- EARTH DIKE
- LIMIT OF DISTURBANCE
- SUPER SILT FENCE
- TREE PROTECTION FENCE
- RIPRAP INFLOW PROTECTION
- GABION INFLOW PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM
- SUPER SILT FENCE INLET PROTECTION
- AT GRADE INLET PROTECTION
- CURB INLET PROTECTION
- REMOVABLE PUMPING STATION
- PROPOSED FOREST CONSERVATION EASEMENT
- EXISTING FOREST CONSERVATION EASEMENT

SEDIMENT TRAP TABLE

TRAP NUMBER	ST-11
TRAP TYPE	ST-11
EXISTING DRAINAGE AREA AC.	1.25
INTERIM DRAINAGE AREA AC.	1.98
PROPOSED DRAINAGE AREA AC.	1.98
STORAGE REQUIRED C.F.	
WET	3.564
DRY	3.564
TOTAL	7.128
STORAGE PROVIDED C.F.	
WET	3.564
DRY	6.136
TOTAL	11.700
EXISTING GROUND ELEV.	554.00
TOP OF EMBANKMENT	562.00
DRY STORAGE ZONE ELEV.	561.00
WEIR CREST ELEV.	561.00
NET STORAGE/OUTLET ELEV.	554.00
CLEANOUT ELEV.	558.50
BOTTOM ELEV.	558.00
DEPTH OF CHANNEL (A)	N/A
OUTLET WIDTH (B)	10'
BOTTOM DIMENSION	24 X 102'
TRAP SIDESLOPES	3:1
TRAP DEPTH	
WET	1.8'
DRY	1.2'
TOTAL	3.0'
BARREL DIAMETER	N/A
RISER DIAMETER	N/A
NET STORAGE ZONE ELEV.	558.00-554.00
DRY STORAGE ZONE ELEV.	554.00-561.00

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCES CONSERVATION SERVICE *[Signature]* 10/10/06 DATE

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

HOWARD SOIL CONSERVATION DISTRICT *[Signature]* 10/10/06 DATE

ENGINEER'S CERTIFICATE

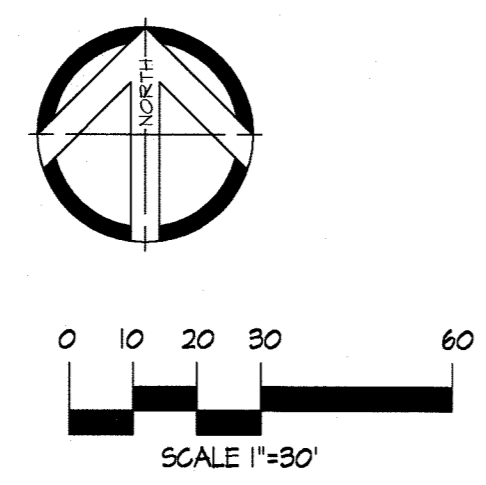
"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

ENGINEER *[Signature]* 10/11/06 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."

DEVELOPER *[Signature]* 10-12-06 DATE



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

[Signature] 10/20/06 DATE
COUNTY HEALTH OFFICER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] 10/20/06 DATE
JAMES M. IRVIN, DIRECTOR

APPROVED: DEPARTMENT OF PLANNING & ZONING

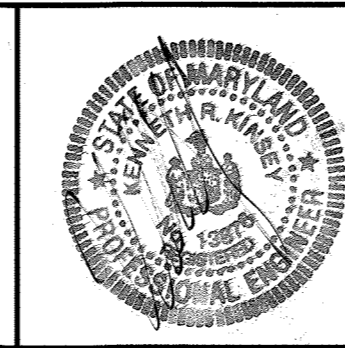
[Signature] 10/20/06 DATE
DIRECTOR

[Signature] 10/24/06 DATE
CHIEF DEVELOPMENT ENGINEERS DIVISION

[Signature] 10/20/06 DATE
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: bw@edmeades-stromdahl.com

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



DES: KPR					
DRN: AM					
CHK: REM					
DATE: 10/11/06	BY:	NO.:	REVISION:	DATE:	

Grading & Erosion & Sediment Control Plan

600' SCALE MAP NO. 16 BLOCK NO. 2 / B

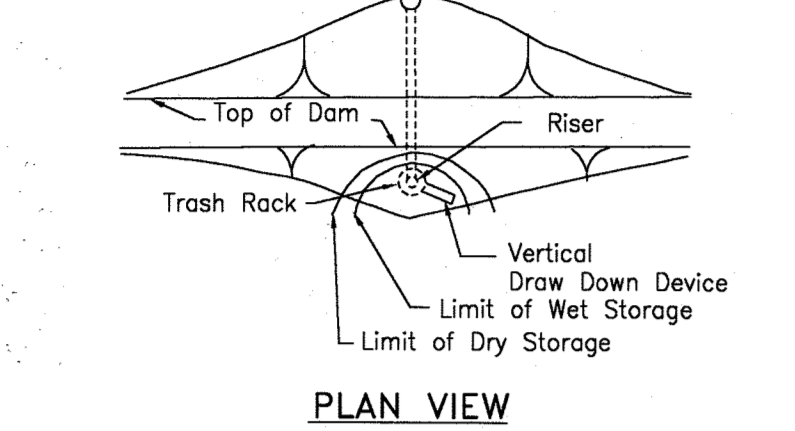
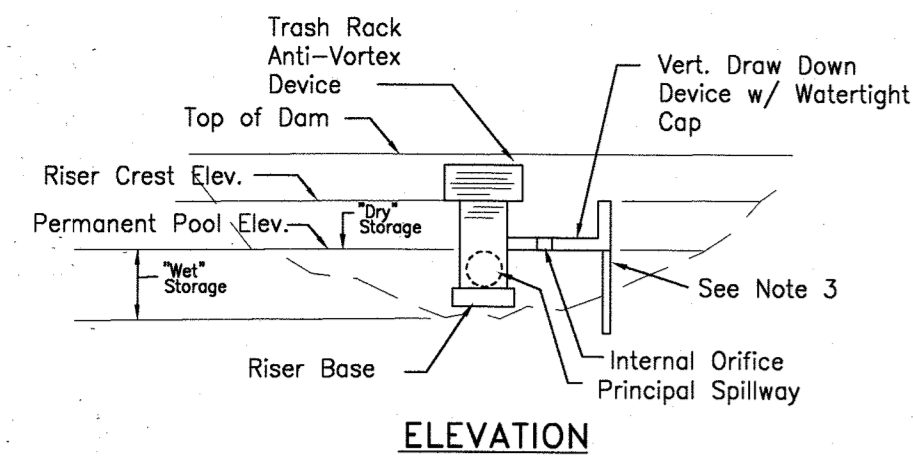
Phase II Improvements: four buildings, eight training traps and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-01B2, Howard County, Maryland

OWNER: Howard County, Department of Public Works, 9450 Courthouse Drive, Ellicott City, Maryland 21043, Phone (410) 313-3100

ADDRESS / PERMIT INFORMATION:
PARCEL #253 ADDRESS: 2200 Alpha Center Drive
PLAT NO. 15718 L 4494 F 618
GRID NO. 210, ZONE: RC-DEO, TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: 750, SEWER CODE: Private - Holding Tank

C5.08

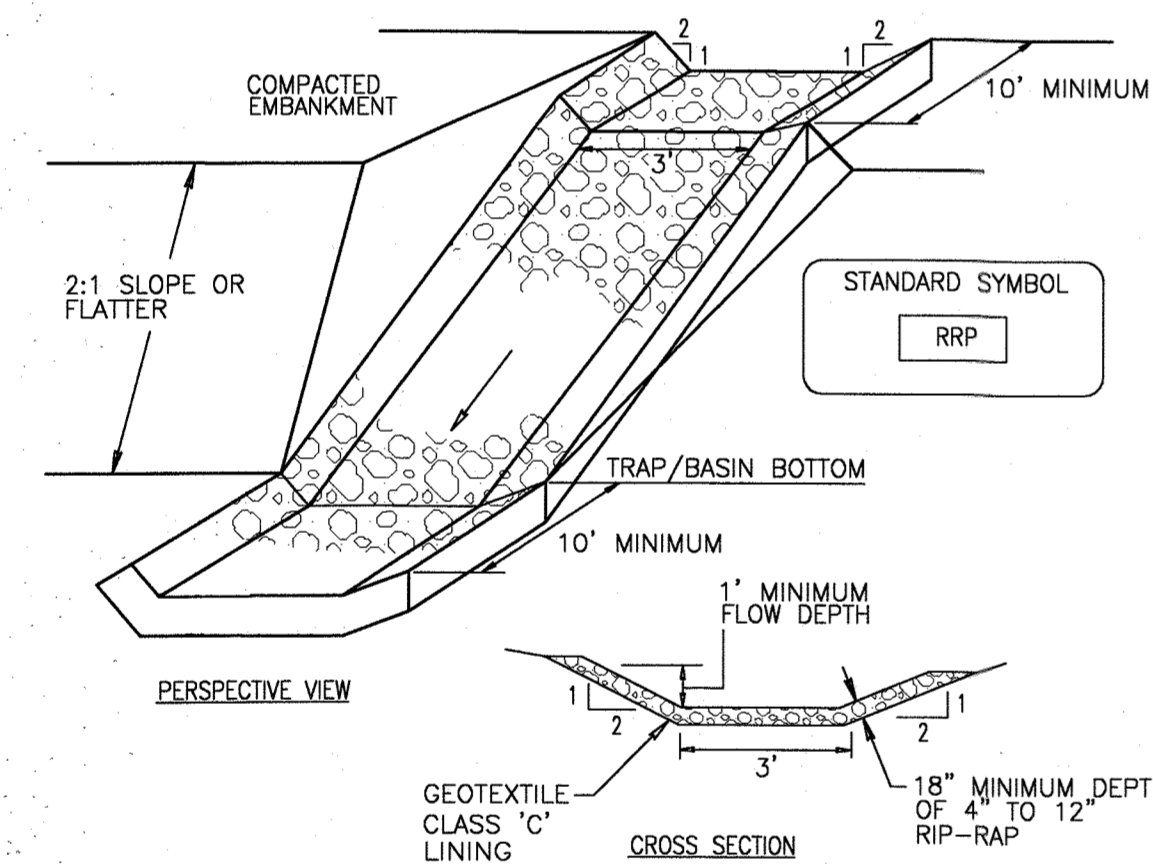
SCALE: 1"=30'
SHEET 47 OF 83



- CONSTRUCTION SPECIFICATIONS**
- Perforations in the draw-down device may not extend into the wet storage.
 - The total area of the perforations must be greater than 2 times the area of the internal orifice. A minimum of 25 - 4" perforations.
 - The perforated portion of the draw-down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.
 - Provide support of draw-down device to prevent sagging and flotation. An acceptable preventative measure is to stake both sides of draw-down device with 1" steel angle, or 1" x 4" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping them with 12 gauge minimum wire.

VERTICAL DRAW-DOWN DEVICE

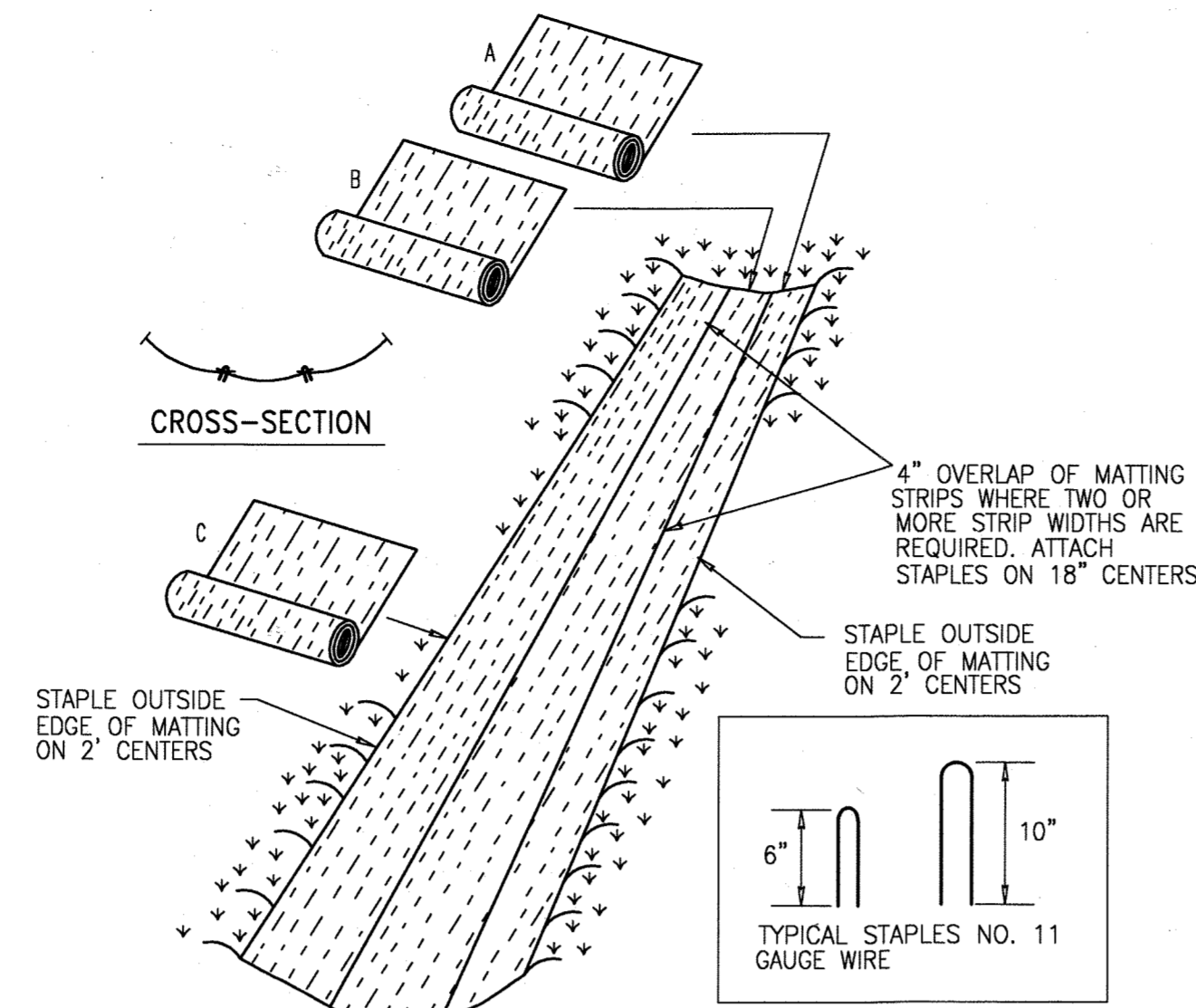
NOT TO SCALE



- CONSTRUCTION SPECIFICATIONS**
- RIP-RAP LINED INFLOW CHANNELS SHALL BE 1' IN DEPTH, HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND 3' (MIN.) BOTTOM WIDTH. THE CHANNEL SHALL BE LINED WITH 4" TO 12" RIP-RAP TO A DEPTH OF 18".
 - FILTER CLOTH SHALL BE INSTALLED UNDER ALL RIP-RAP. FILTER CLOTH SHALL BE GEOTEXTILE CLASS C.
 - ENTRANCE AND EXIT SECTIONS SHALL BE INSTALLED AS SHOWN ON THE DETAIL SECTION.
 - RIP-RAP USED FOR THE LINING MAY BE RECYCLED FOR PERMANENT OUTLET PROTECTION IF THE BASIN IS TO BE CONVERTED TO A STORMWATER MANAGEMENT FACILITY.
 - GABION INFLOW PROTECTION MAY BE USED IN LIEU OF RIP-RAP INFLOW PROTECTION.
 - RIP-RAP SHOULD BLEND INTO EXISTING GROUND.
 - RIP-RAP INFLOW PROTECTION SHALL BE USED WHERE THE SLOPE IS BETWEEN 4:1 AND 10:1. FOR SLOPES FLATTER THAN 10:1 USE EARTH DIKE OR TEMPORARY SWALE LINING CRITERIA.

RIP-RAP INFLOW PROTECTION

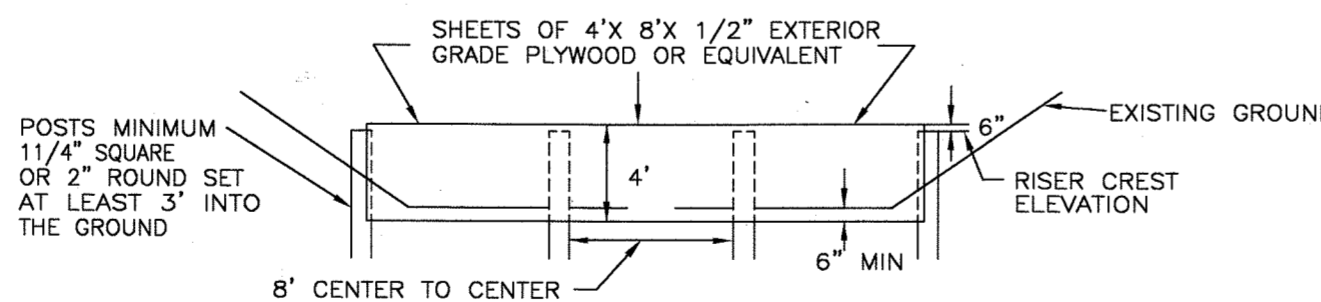
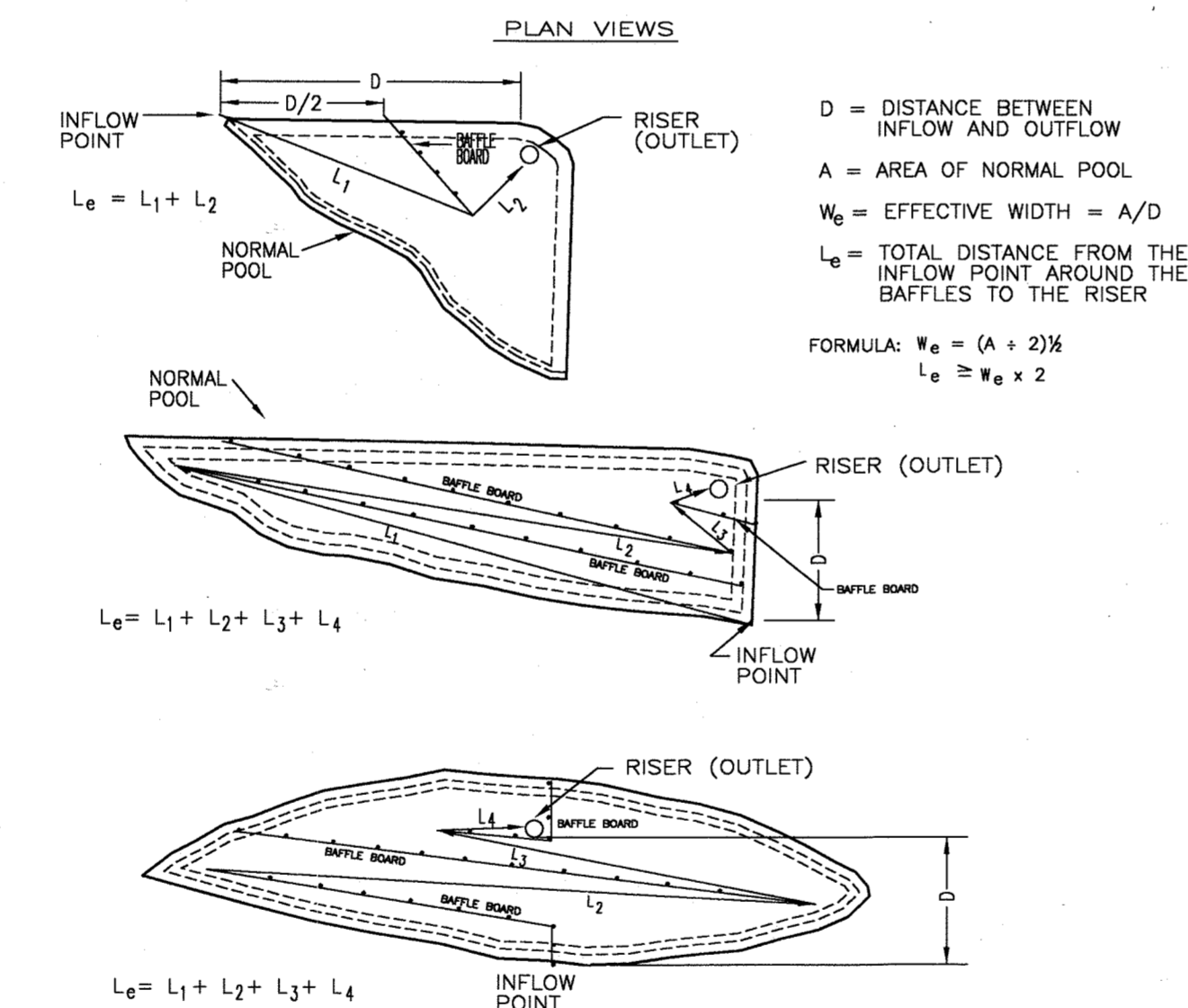
NOT TO SCALE



- CONSTRUCTION SPECIFICATIONS**
- KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".
 - STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
 - BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
 - STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
 - WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4", SHIP LAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
 - THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS OF STAPLES.
- NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEYED-IN.

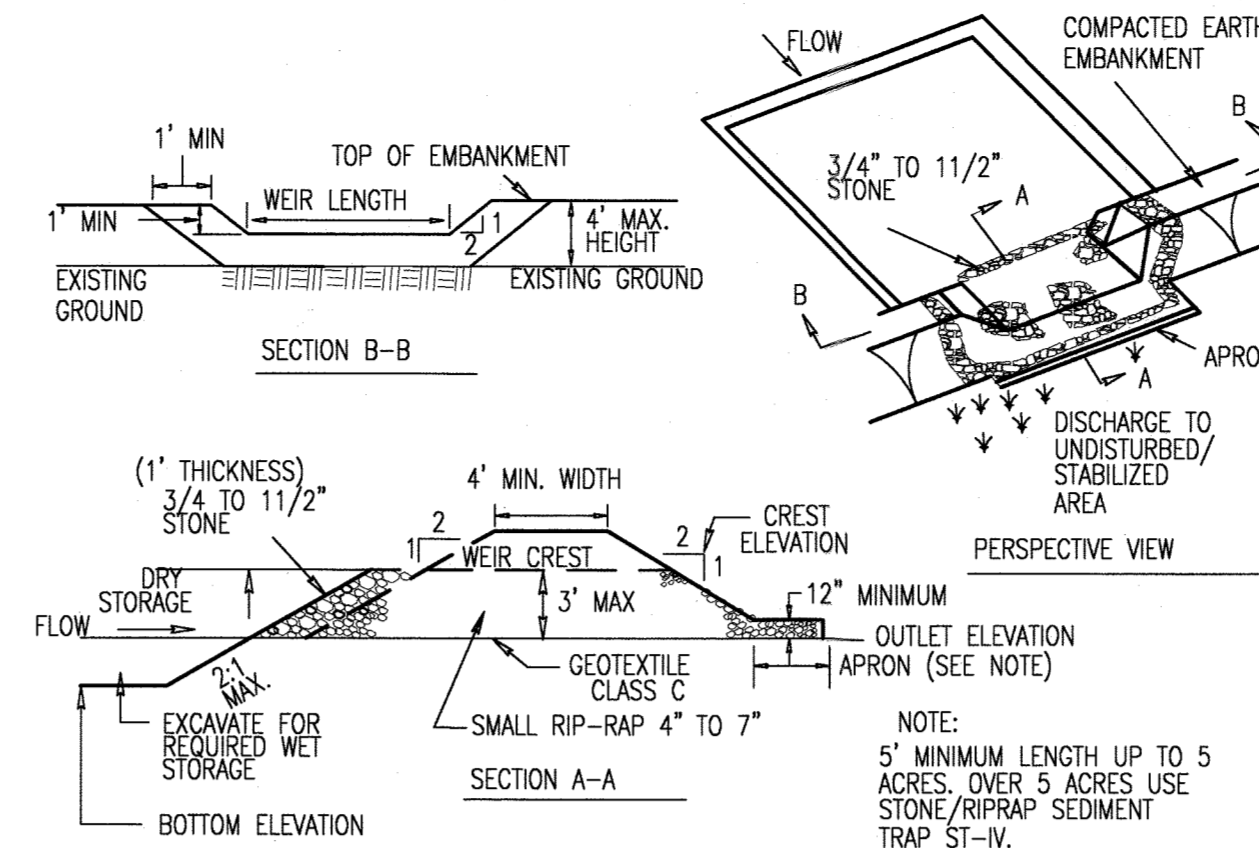
EROSION CONTROL MATTING

NOT TO SCALE



SEDIMENT BASIN BAFFLES

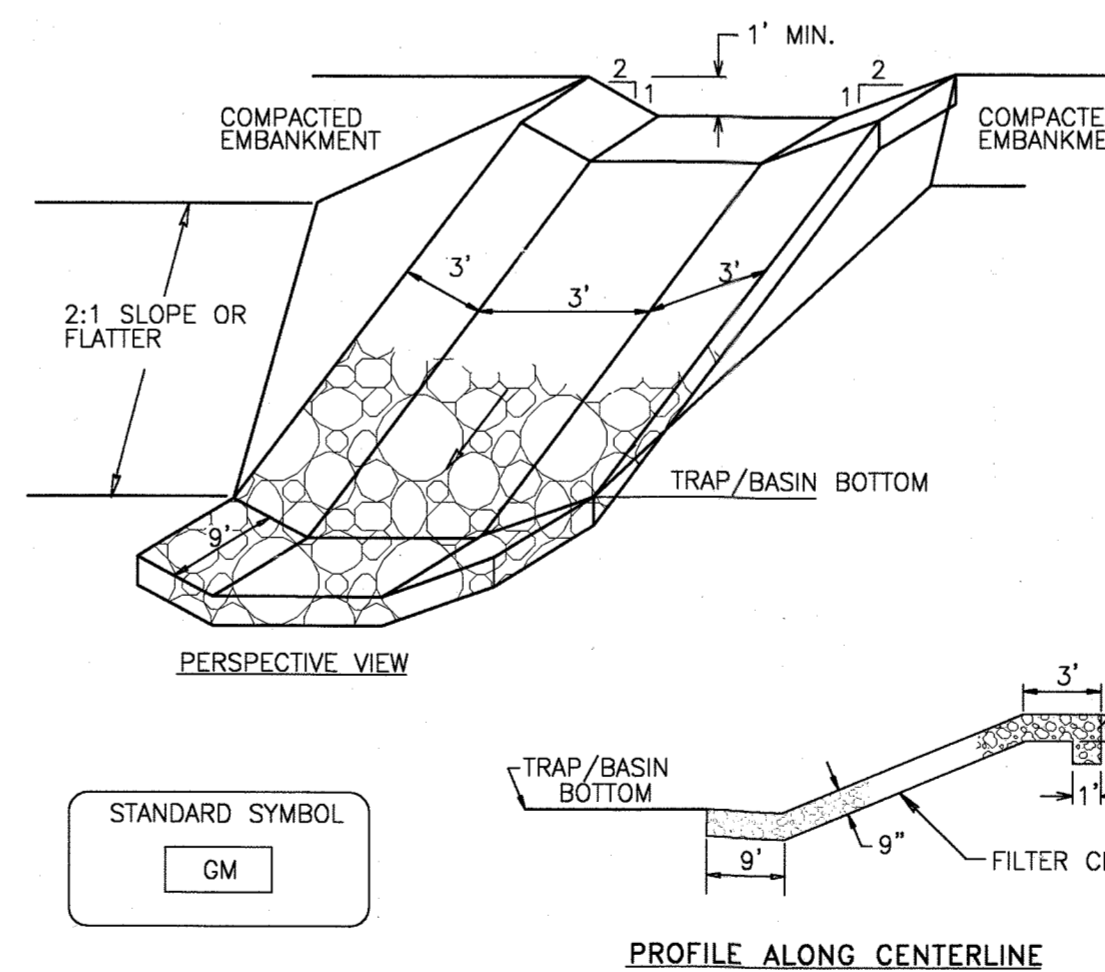
NOT TO SCALE



- CONSTRUCTION SPECIFICATIONS**
- AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
 - THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS AND OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
 - ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
 - THE STONE USED IN THE LAYER SHALL BE SMALL RIP-RAP 4" TO 7" IN SIZE WITH A 1" THICK LAYER OF 3/4" TO 1 1/2" WASHED AGGREGATE PLACED ON THE UPSTREAM FACE OF THE OUTLET. STONE FACING SHALL BE AS NECESSARY TO PREVENT CLOGGING. GEOTEXTILE CLASS C MAY BE SUBSTITUTED FOR THE STONE FACING BY PLACING IT ON THE INSIDE FACE OF THE STONE OUTLET.
 - SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF OF THE WET STORAGE DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
 - THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
 - CONSTRUCTION OF TRAPS SHALL BE CARRIED OUT IN SUCH A MANNER THAT SEDIMENT POLLUTION IS ABATED. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. POINTS OF CONCENTRATION INFLOW SHALL BE PROTECTED IN ACCORDANCE WITH GRADE STABILIZATION STRUCTURE CRITERIA. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON TRAP COMPLETION AND MONITORED AND MAINTAINED EROSION FREE DURING THE LIFE OF THE TRAP.
 - THE STRUCTURE SHALL BE DEWATERED BY APPROVED METHODS, REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
 - REFER TO SECTION D FOR SPECIFICATIONS CONCERNING TRAP DEWATERING.
 - MINIMUM TRAP DEPTH SHALL BE MEASURED FROM THE WEIR ELEVATION.
 - THE ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO THE TRAP MUST EQUAL OR EXCEED THE ELEVATION OF THE TRAP EMBANKMENT.
 - GEOTEXTILE CLASS C SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO THE PLACEMENT OF STONE. SECTIONS OF FILTER CLOTH MUST OVERLAP AT LEAST 1' WITH THE SECTION NEAREST THE ENTRANCE PLACED ON TOP. THE FILTER CLOTH SHALL BE EMBEDDED AT LEAST 6" INTO EXISTING GROUND AT THE ENTRANCE OF THE OUTLET CHANNEL.
 - OUTLET - AN OUTLET SHALL BE PROVIDED, INCLUDING A MEANS OF CONVEYING THE DISCHARGE IN AN EROSION FREE MANNER TO AN EXISTING STABLE CHANNEL.

STONE OUTLET SEDIMENT TRAP - ST-II

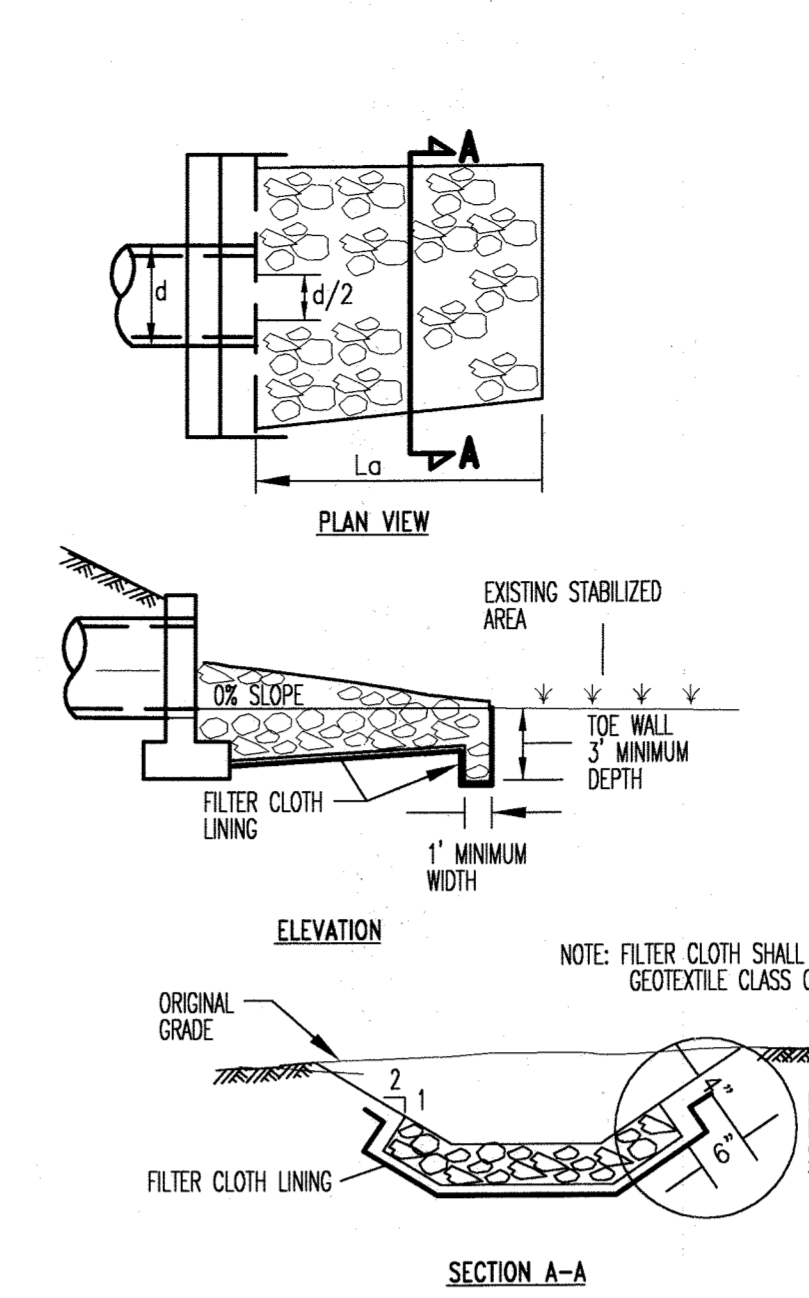
NOT TO SCALE



- CONSTRUCTION SPECIFICATIONS**
- GABION INFLOW PROTECTION SHALL BE CONSTRUCTED OF 9' x 3' x 9" GABION BASKETS FORMING A TRAPEZOIDAL CROSS SECTION 1' DEEP, WITH 2:1 SIDE SLOPES, AND A 3" BOTTOM WIDTH.
 - GEOTEXTILE CLASS C SHALL BE INSTALLED UNDER ALL GABION BASKETS.
 - THE STONE USED TO FILL THE GABION BASKETS SHALL BE 4" - 7".
 - GABIONS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
 - GABION INFLOW PROTECTION SHALL BE USED WHERE CONCENTRATED FLOW IS PRESENT ON SLOPES STEEPER THAN 4:1.

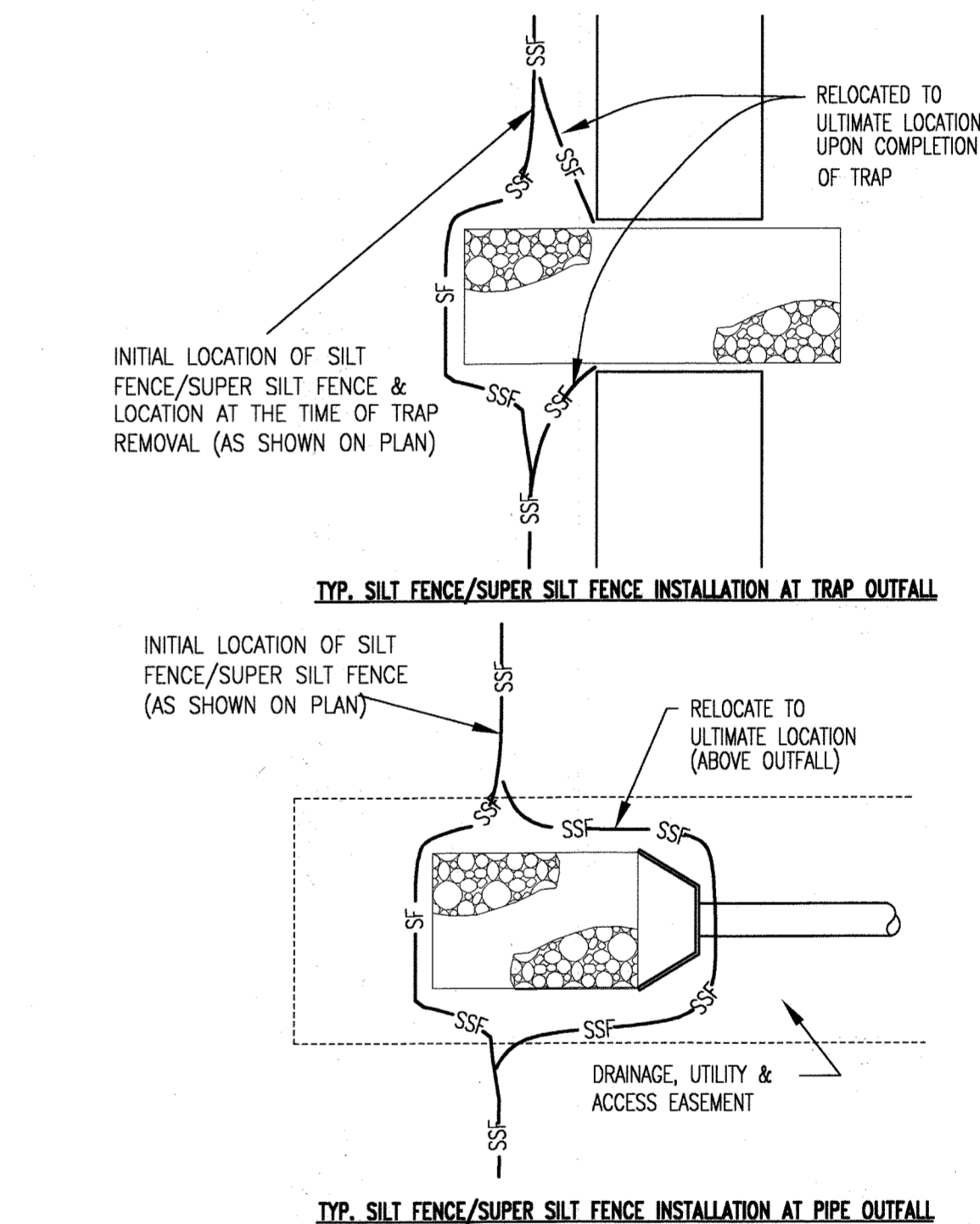
GABION INFLOW PROTECTION

NOT TO SCALE



ROCK OUTLET PROTECTION III

NOT TO SCALE



SUPER SILT FENCE OUTFALL PROTECTION

NOT TO SCALE

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: 10/11/06
 ENGINEER: [Signature]

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
 DATE: 10/19/06
 USDA - NATURAL RESOURCES CONSERVATION SERVICE
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 DATE: 10/19/06
 HOWARD SOIL CONSERVATION DISTRICT

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: 10/12/06
 DEVELOPER: Michael A. Stumwalt

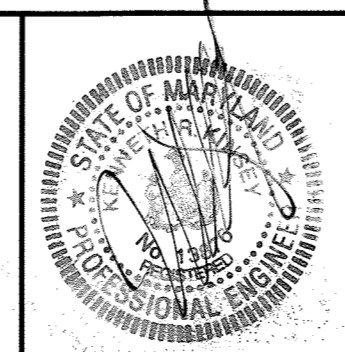
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER: [Signature] DATE: 10/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 JAMES M. IRWIN, DIRECTOR: [Signature] DATE: 10/30/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DIRECTOR: [Signature] DATE: 10/30/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: [Signature] DATE: 10/30/06
 CHIEF, DIVISION OF LAND DEVELOPMENT: [Signature] DATE: 10/30/06

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

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



DES: KPR				
DRN: AM				
CHK: REM				
DATE: 10/11/06	BY: NO.	REVISION	DATE	

Erosion & Sediment Control Details
 600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-01B2, Howard County, Maryland
 OWNER: Howard County Department of Public Works
 3480 Courthouse Drive Ellicott City, Maryland 21043
 Phone (410) 313-3700
 ADDRESS / PERMIT INFORMATION:
 PARCEL #253 ADDRESS: 2200 Alpha Center Drive
 FLAT No. 1516, L.6684 / P.614
 GRID No. 218, ZONE: RC-P20, TAX MAP No. 16
 3rd Election District, Census Tract 6290
 WATER CODE: 130, SEWER CODE: Private - Holding Tank

CS.10
 SCALE: As Shown
 SHEET 49 OF 88

LEGEND - GRADING & SEC PLAN

- PROPERTY LINE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING ROADS
- EXISTING STORMDRAINS
- EXISTING SANITARY SEWER
- EXISTING WATER
- EXISTING ELECTRIC
- EXISTING GAS
- A-2 DIKE
- EARTH DIKE
- LIMIT OF DISTURBANCE
- SUPER SILT FENCE
- RRIP RIPRAP INFLOW PROTECTION
- GMIP GABION INFLOW PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM
- SUPER SILT FENCE INLET PROTECTION
- AT GRADE INLET PROTECTION
- CURB INLET PROTECTION
- REMOVABLE PUMPING STATION
- PROPOSED FOREST CONSERVATION EASEMENT
- EXISTING FOREST CONSERVATION EASEMENT
- PROPOSED EROSION CONTROL MATTING

225' 1.78% TO PATH

8.32 AC. Basin 3 Rcn 68
0.0130 SQ. MI. tc 0.25 HR.

6.38 AC. Basin 2 Rcn 62
0.0100 SQ. MI. tc 0.31 HR.



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.
 USDA - NATURAL RESOURCES CONSERVATION SERVICE 10/19/06 DATE
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD SOIL CONSERVATION DISTRICT 10/19/06 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."
 ENGINEER 10/11/06 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."
 Michael A. Giovanniello 10-12-06 DATE
 DEVELOPER

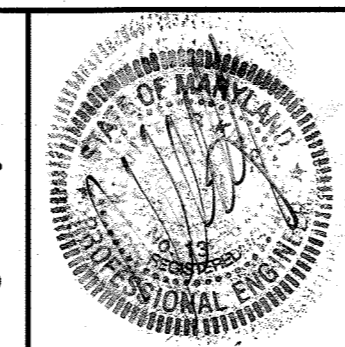
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 Robert W. Baker 10/30/06 DATE
 COUNTY HEALTH OFFICER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 James M. Irvin 10/26/06 DATE
 JAMES M. IRVIN, DIRECTOR

APPROVED: DEPARTMENT OF PLANNING & ZONING
 David L. Taylor 10/24/06 DATE
 DIRECTOR
 Chief, Development Engineering Division
 Wendy H. Hester 10/30/06 DATE
 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
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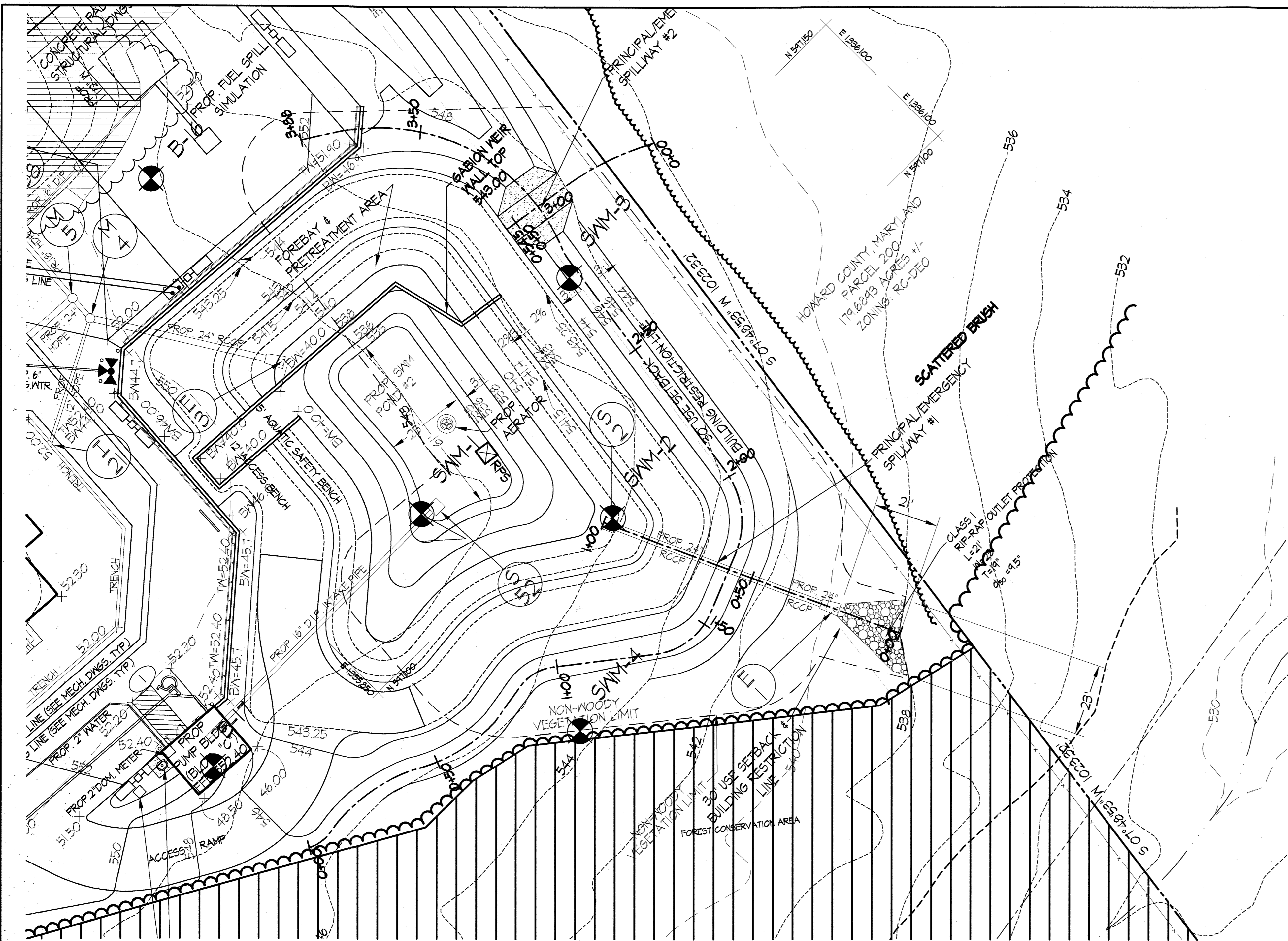
DES: KPR				
DRN: AM				
CHK: REM				
DATE 10/11/06	BY	NO.	REVISION	DATE

Temporary Stormwater Management Existing Conditions Drainage Area Map
 600' SCALE MAP NO. 16 BLOCK NO. 2 / 3

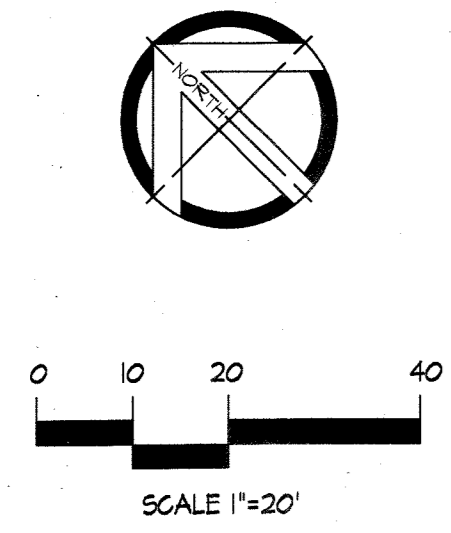
Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland
 OWNER: Howard County, Department of Public Works, 3430 Courthouse Drive, Ellicott City, Maryland 21048, Phone (410) 913-2100
 ADDRESS / PERMIT INFORMATION: PARCEL #253, ADDRESS: 2200 Alpha Center Drive, PLAT No. 1516, L6604 / F64, GRID No. 218, ZONE: RC-DEQ, TAX MAP No. 16, 3rd Election District, Census Tract 6030, WATER CODE: T30, SEWER CODE: Private - Holding Tank

C5.12
 SCALE: 1"=100'
 SHEET 51 OF 84

Z:\03\0313\HowardCo_PublicSafetyTrainingCtr_12_Ex_1_Temp_SWM_Map.dwg, 10/20/06 11:15:05 AM, Copyright: Site Resources, Inc.



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.



DESIGN SUMMARY			
	CPV / 1 YEAR	10 YEAR	100 YEAR
EXISTING D.P. (c.f.s.) (TR-20 SEC. 8)	4.91	30.16	56.84
DEVELOPED BYPASS (c.f.s.) (TR-20 SEC. 7)	1.05	9.78	14.62
DEVELOPED EX. POND #1 (c.f.s.) (TR-20 STRUCT. 1)	0.14	20.14	36.92
ALLOWABLE RELEASE (c.f.s.)	3.67	0.24	0.35
DEVELOPED INFLOW (c.f.s.) (TR-20 SEC. 5)	11.66	28.48	43.54
DEVELOPED OUTFLOW (c.f.s.) (TR-20 STRUCT. 2)	0.22	21.84	35.06
DEVELOPED D.P. (c.f.s.) (TR-20 SEC. 8)	1.15	50.85	90.78
WATER SURFACE ELEVATION	543.45	544.41	544.73
STORAGE PROVIDED PRETREATMENT (ac. ft.)	0.11	0.11	0.11
STORAGE PROVIDED (ac. ft.)	0.71	0.71	0.71
STORAGE PROVIDED CPV (ac. ft.)	1.32	1.32	1.32
STORAGE PROVIDED TOTAL (ac. ft.)	1.32	1.51	1.67
WATERSHED	LITTLE PATUXENT RIVER (USE 1-P)		
STRUCTURE TYPE	URBAN		
WATER QUALITY TYPE	NET POOL		
NET POOL SURFACE AREA (ACRES)	0.14		
STRUCTURE CLASSIFICATION	A		
STRUCTURE LOCATION	N 541.040 E 1335.458		
STORAGE HEIGHT PRODUCT (AC. FT.)	4.54		
WATERSHED TO FACILITY (AC.)	1.05		
LEVEL MANAGEMENT REQUIRED	Req.	NGV	CPV
LEVEL MANAGEMENT PROVIDED	Req.	NGV	CPV
FREEBOARD REQUIRED (100 YR)	1.00'		
FREEBOARD PROVIDED (100 YR)	1.21' / CLOSED 1.25'		
PRINCIPAL SPILLWAY CAPACITY 100 YR (c.f.s.)	14.08 / CLOSED 14.13		
EMERGENCY SPILLWAY CAPACITY 100 YR (c.f.s.)	13.48 / CLOSED 13.28		

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, SGS '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. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

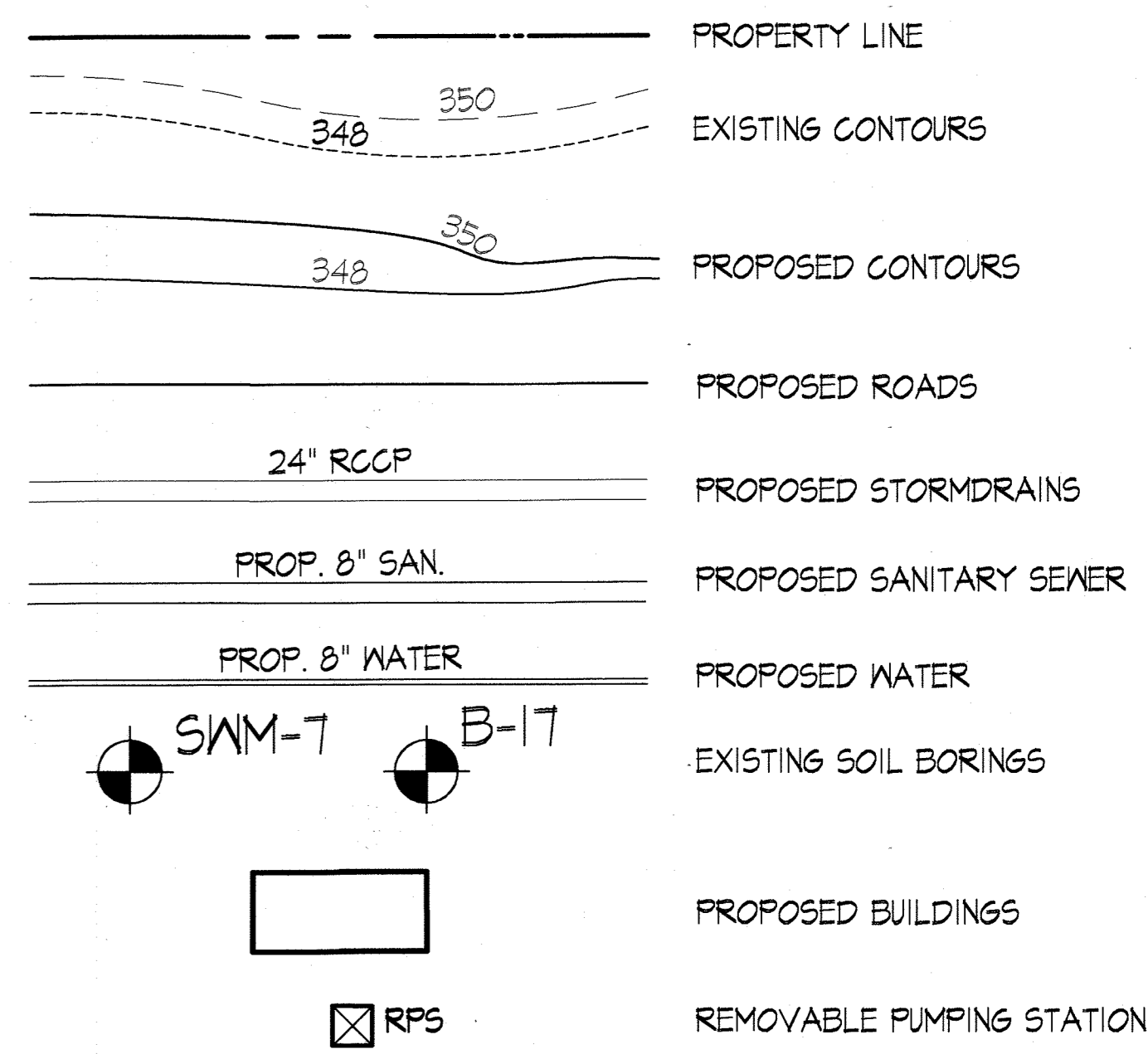
INSPECTION SCHEDULE:

- PRIOR NOTIFICATION SHALL BE GIVEN TO THE ENGINEER SO THAT INSPECTIONS MAY BE MADE AT THE FOLLOWING STAGES:
 - 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;
 - INLET-OUTLET STRUCTURES AND ANTI-SEEP STRUCTURES, WATERTIGHT CONNECTORS ON PIPES, AND
 - TRENCHES FOR ENCLOSED STORM DRAINAGE FACILITIES.
- NO WORK SHALL PROCEED UNTIL THE ENGINEER INSPECTS AND APPROVES THE WORK PREVIOUSLY COMPLETED.
- GEOTECHNICAL COMPACTION TESTING OF THE FACILITY EMBANKMENT IS REQUIRED. CERTIFICATION MUST BE PROVIDED TO THE DESIGNATED ENGINEER IN CHARGE OF THE AS-BUILT.
- A COPY OF ALL MATERIAL SUPPLY TICKETS MUST BE GIVEN TO THE DESIGNATED ENGINEER IN CHARGE OF THE AS-BUILT.

MAINTENANCE SCHEDULE

- THE POND IS PUBLIC AND SHALL BE MAINTAINED BY HOWARD COUNTY.
- THE FACILITY SHALL BE INSPECTED TWICE ANNUALLY, MARCH AND SEPTEMBER, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SGS '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. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.
- VEGETATED COVER SHALL BE MAINTAINED AT ALL TIMES.
- RILLS ON THE SLOPES OF THE DAM AND WASHED IN THE EARTH SPILLWAY SHALL BE FILLED WITH SUITABLE MATERIAL AND THOROUGHLY COMPACTED; THESE AREAS SHALL BE RESEDED OR RESEDDED, LIMED, AND FERTILIZED AS NEEDED.
- ALL APPURTENANCES SHALL BE KEPT FREE OF TRASH.

LEGEND - STORMWATER MANAGEMENT



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: 10/29/06

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: 10/29/06

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 R. Kinsey* Date: 10/11/06
 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.
 Signature: *Michael A. Giovanniello* Date: 10-11-06
 Michael A. Giovanniello
 Printed Name

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 978, 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 PE Date: 10/11/06
 Print Name: Kevin R. Kinsey

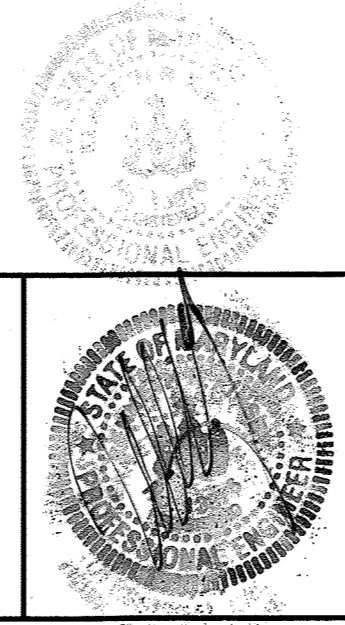
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 Signature: *Robert W. Wells* Date: 10/30/06
 COUNTY HEALTH OFFICER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Signature: *James M. Irvin* Date: 10/26/06
 JAMES M. IRVIN, DIRECTOR

APPROVED: DEPARTMENT OF PLANNING & ZONING
 Signature: *David L. Lovell* Date: 10/26/06
 DIRECTOR

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

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



DES: KPR					
DRN: AM					
CHK: REM					
DATE: 10/11/06	BY: NO.	REVISION	DATE	600' SCALE MAP NO. 16	BLOCK NO. 2 / 8

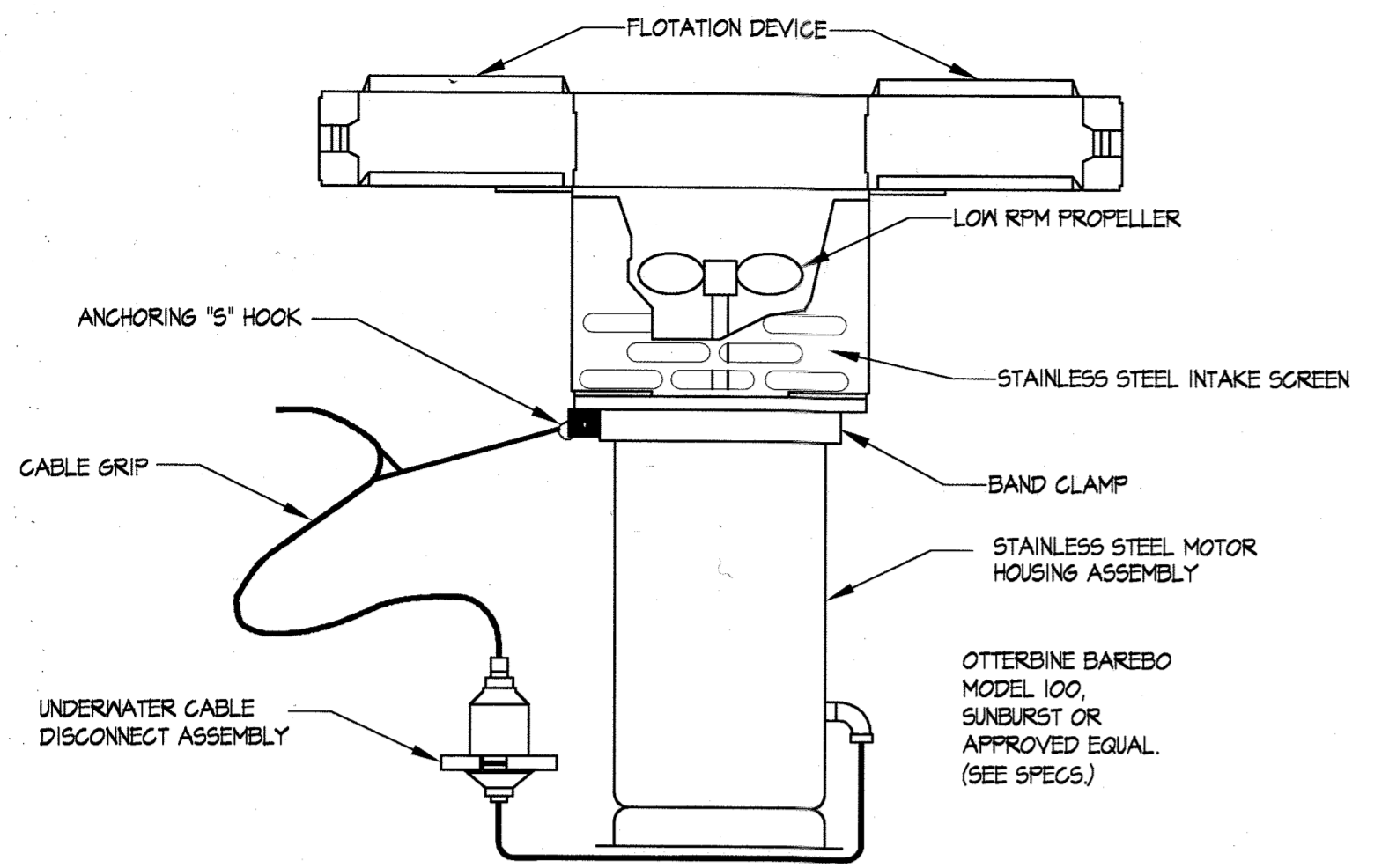
SWM Pond 2 Plan (Basin 2)

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

OWNER:
 Howard County
 Department of Public Works
 3430 Courthouse Drive
 Ellicott City, Maryland 21043
 Phone (410) 313-2700

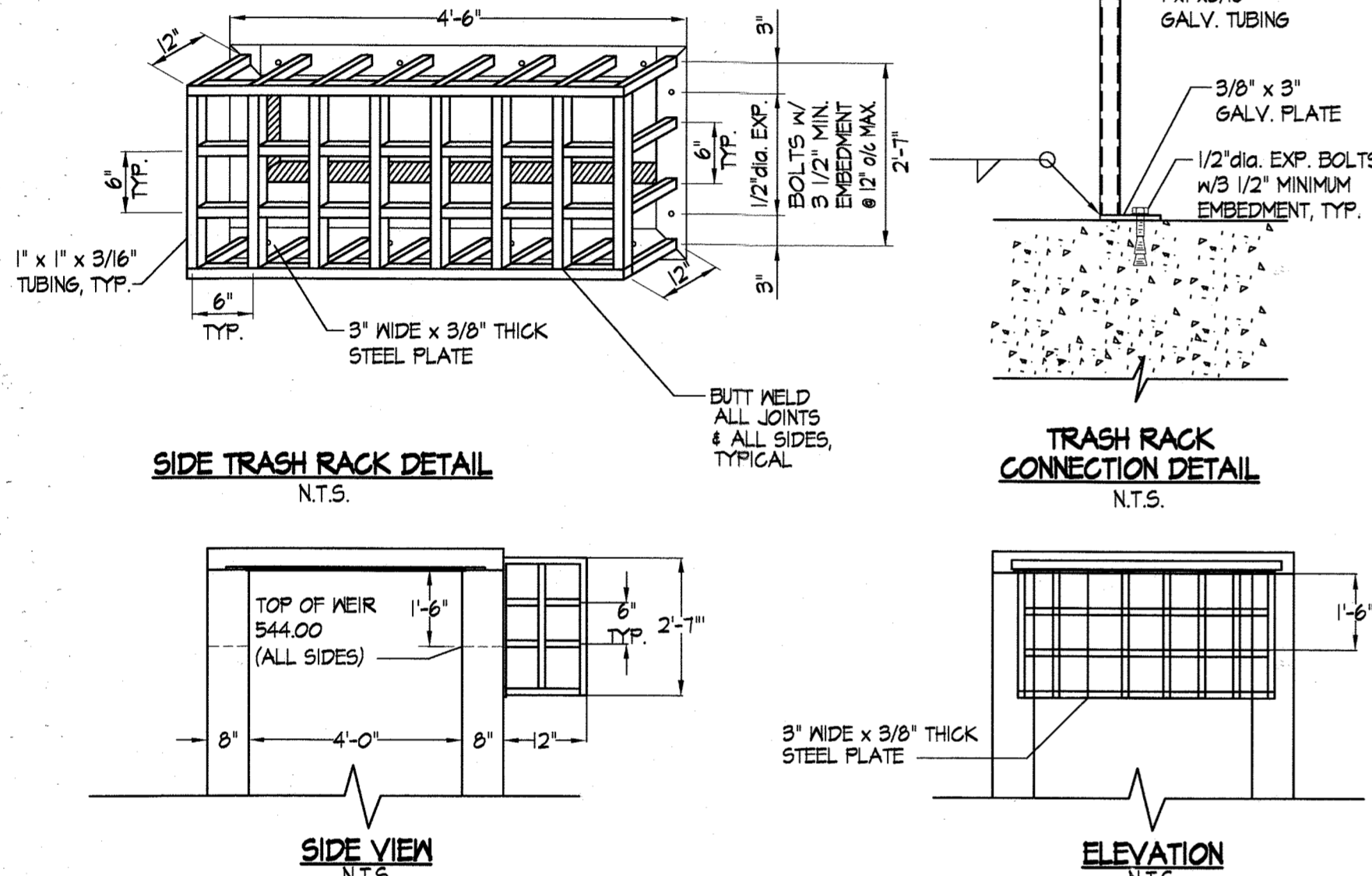
ADDRESS / PERMIT INFORMATION:
 PARCEL #253 ADDRESS: 2200 Alpha Center Drive
 PLAT No. 15716, L.6684 / F.614
 GRID No. 218, ZONE: RC-D20, TAX MAP No. 16
 3rd Election District, Census tract 6203
 WATER CODE: T30, SEWER CODE: Private - Holding Tank

SCALE: 1"=20'
 SHEET 55 OF 80
 SDP - 06-110



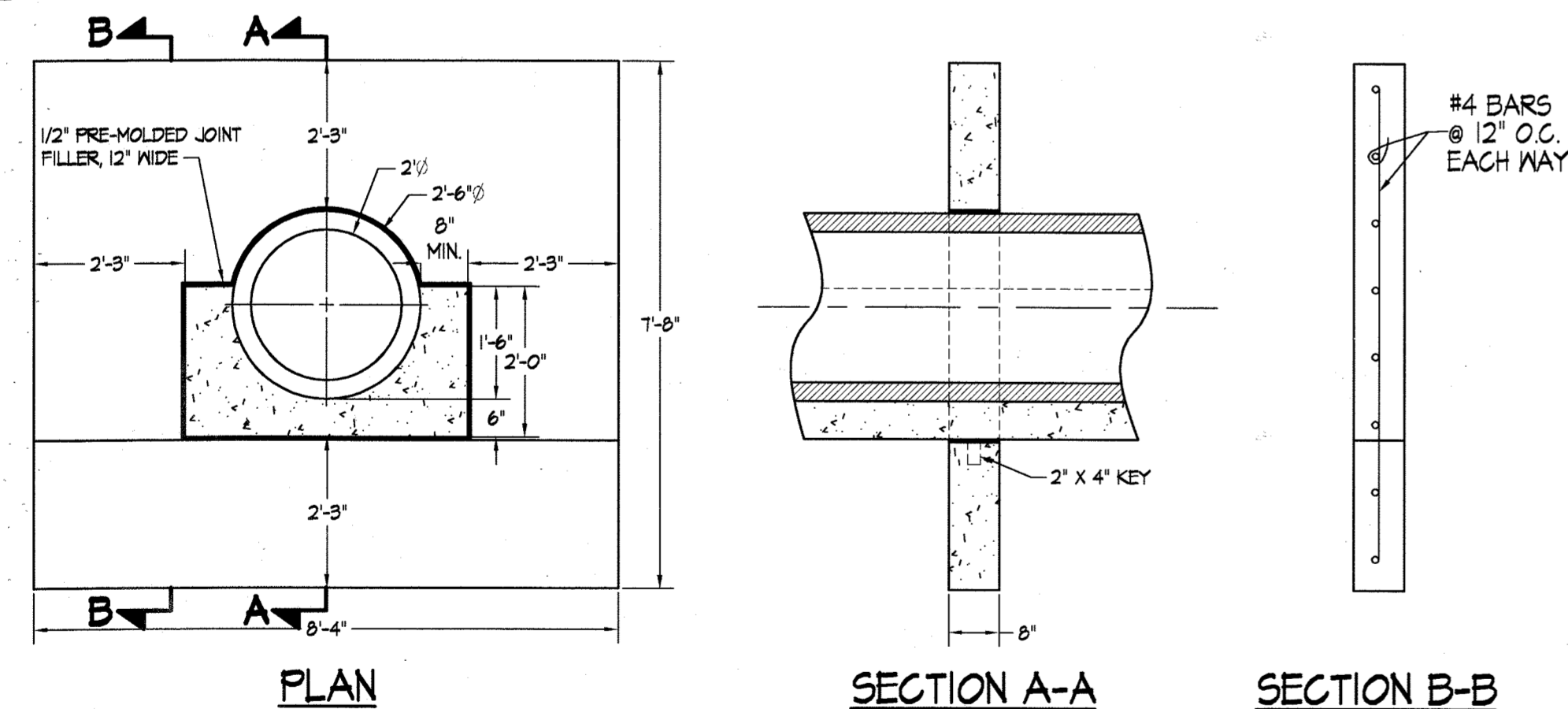
FLOATING SURFACE AERATOR DETAIL

- NOTES:
1. ALL MATERIALS SHALL BE HOT DIPPED GALVANIZED SHOP FABRICATED.
 2. TRASH RACK SHALL BE FABRICATED AND MOUNTED TO THAT IT WILL EXTEND AT LEAST 8" BELOW WEIR CREST AND BE AT LEAST 1" ABOVE PROPOSED GRADE. SEE DETAIL #4 ON THIS SHEET.



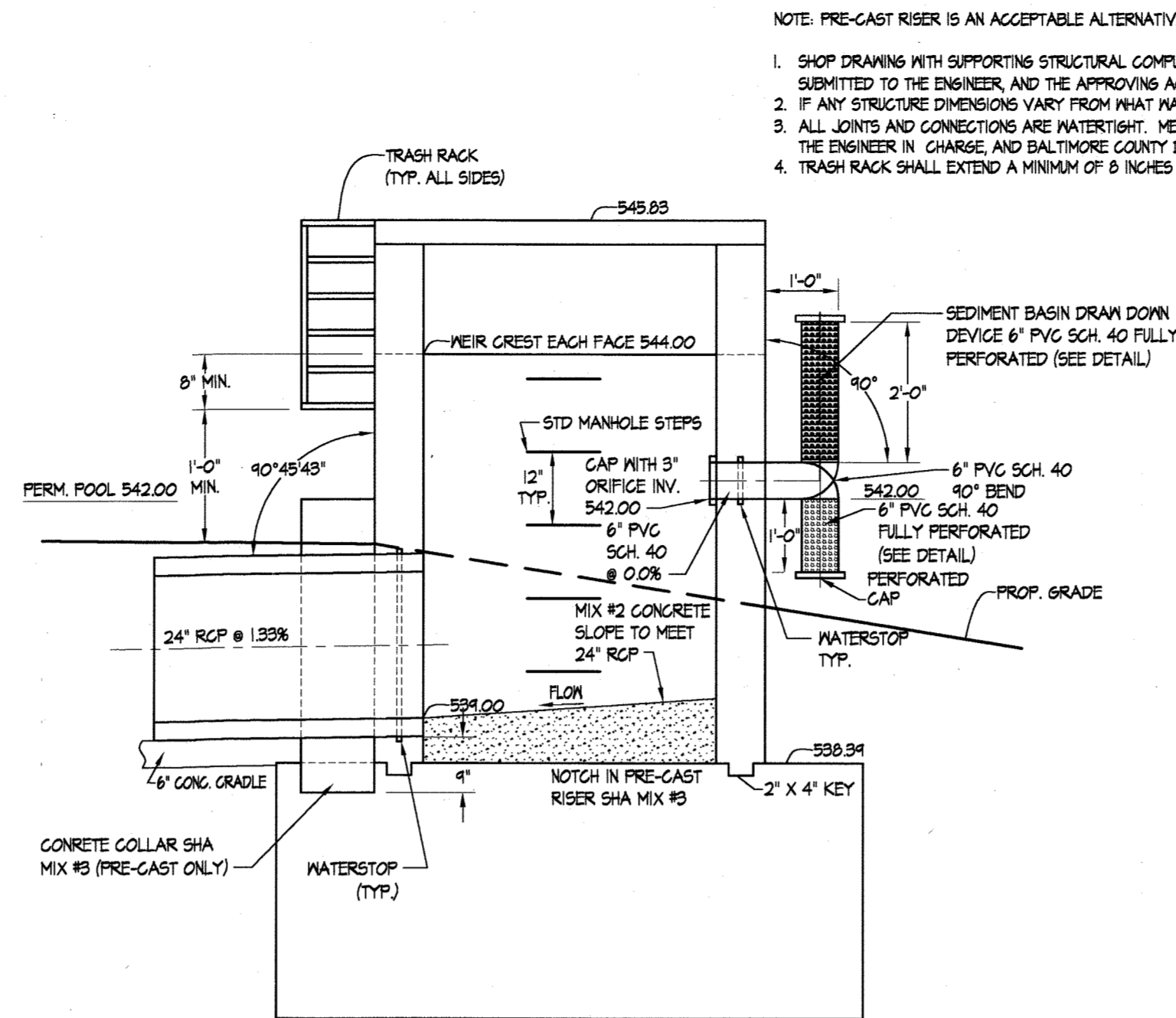
TRASH RACK DETAIL

NOT TO SCALE



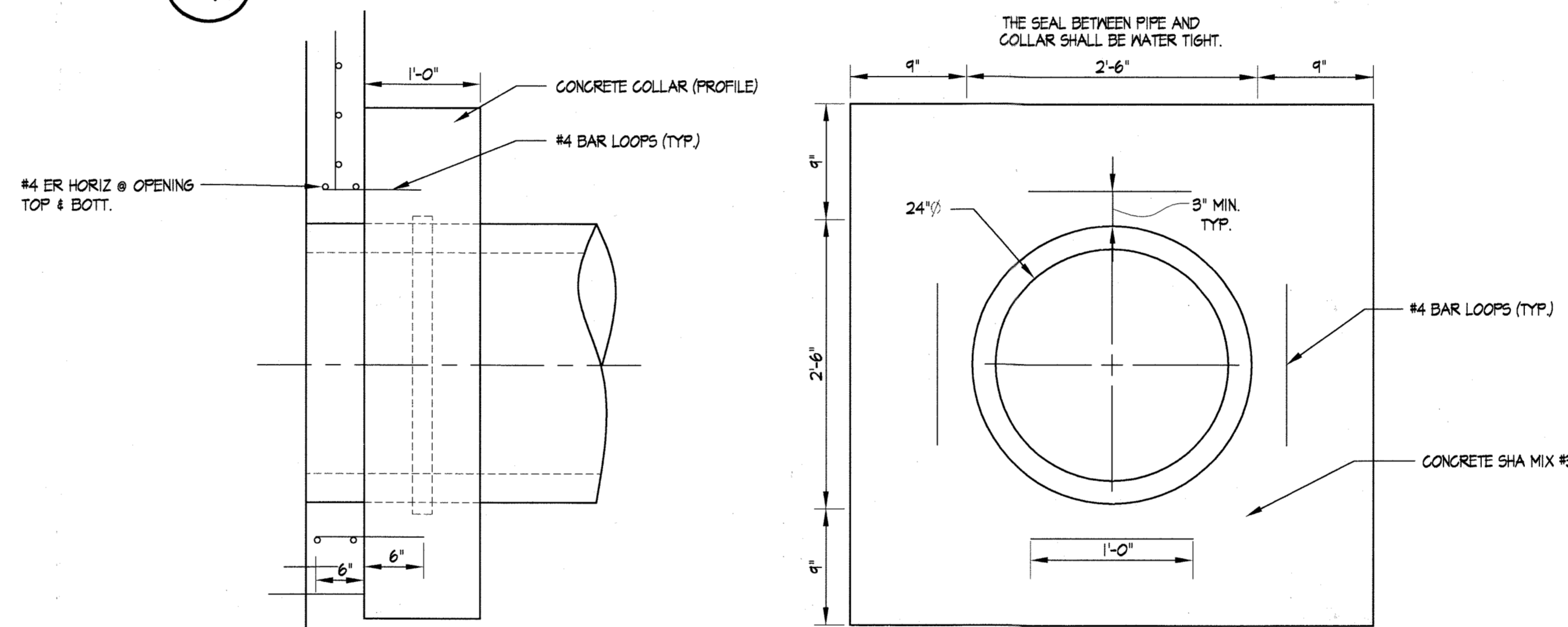
POND#2 CRADLE & ANTI-SEEP COLLAR DETAIL

NOT TO SCALE



SECTION A-A RISER STRUCTURE DETAIL

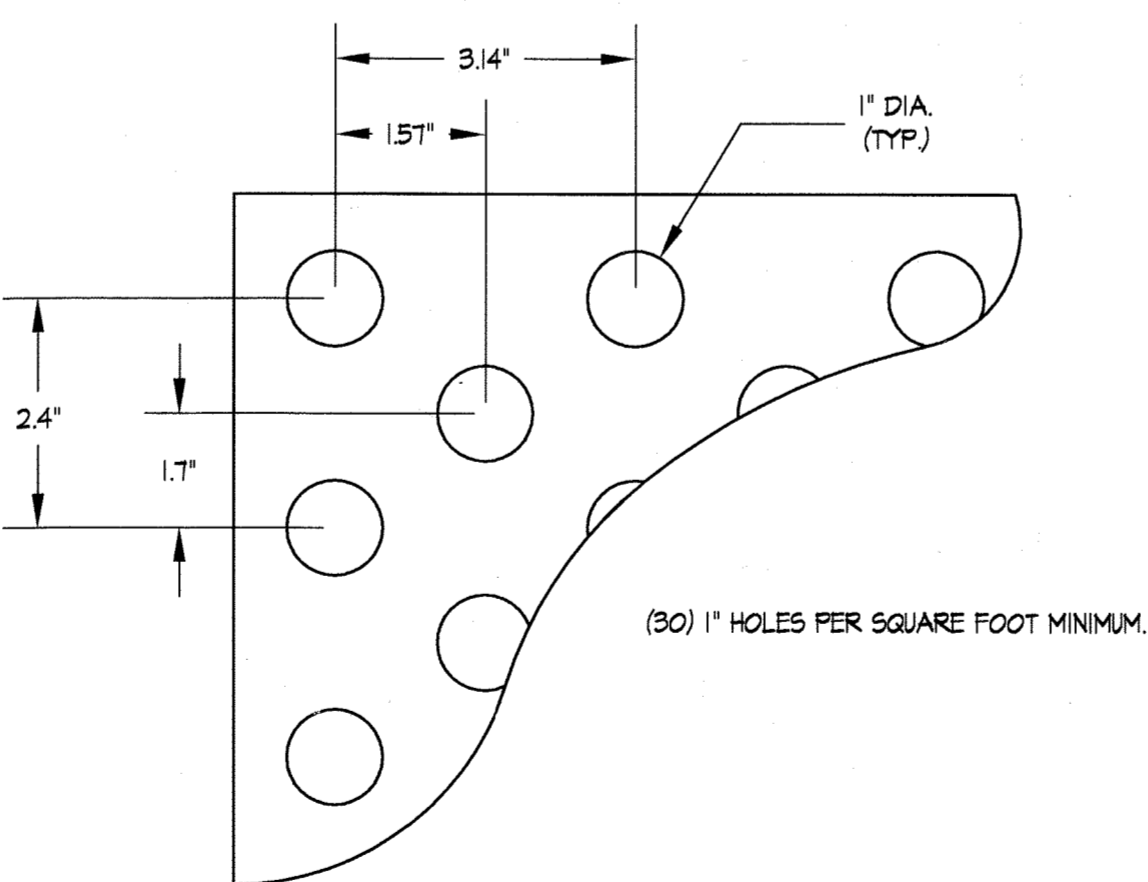
4



PRECAST RISER CONCRETE COLLAR DETAIL

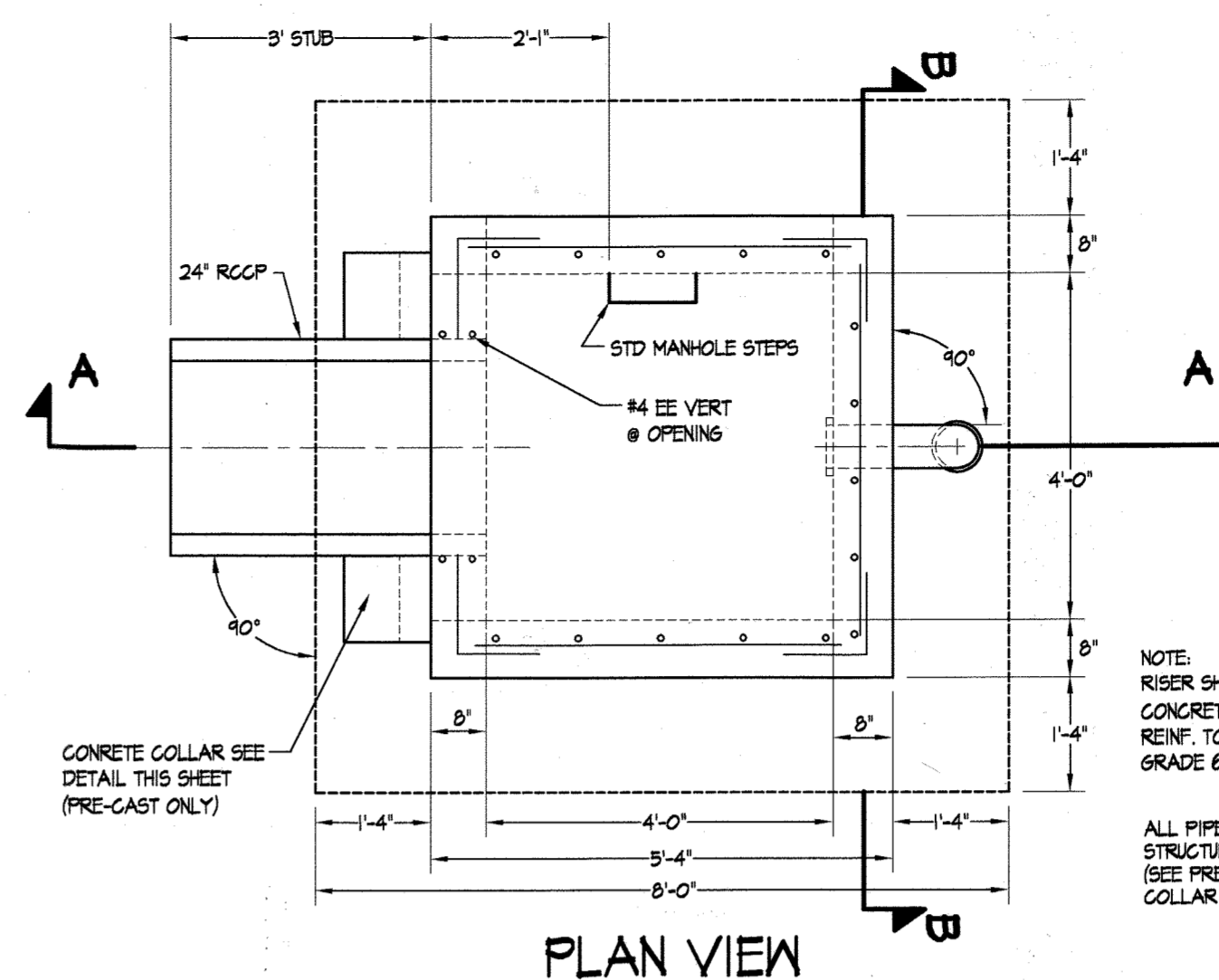
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5

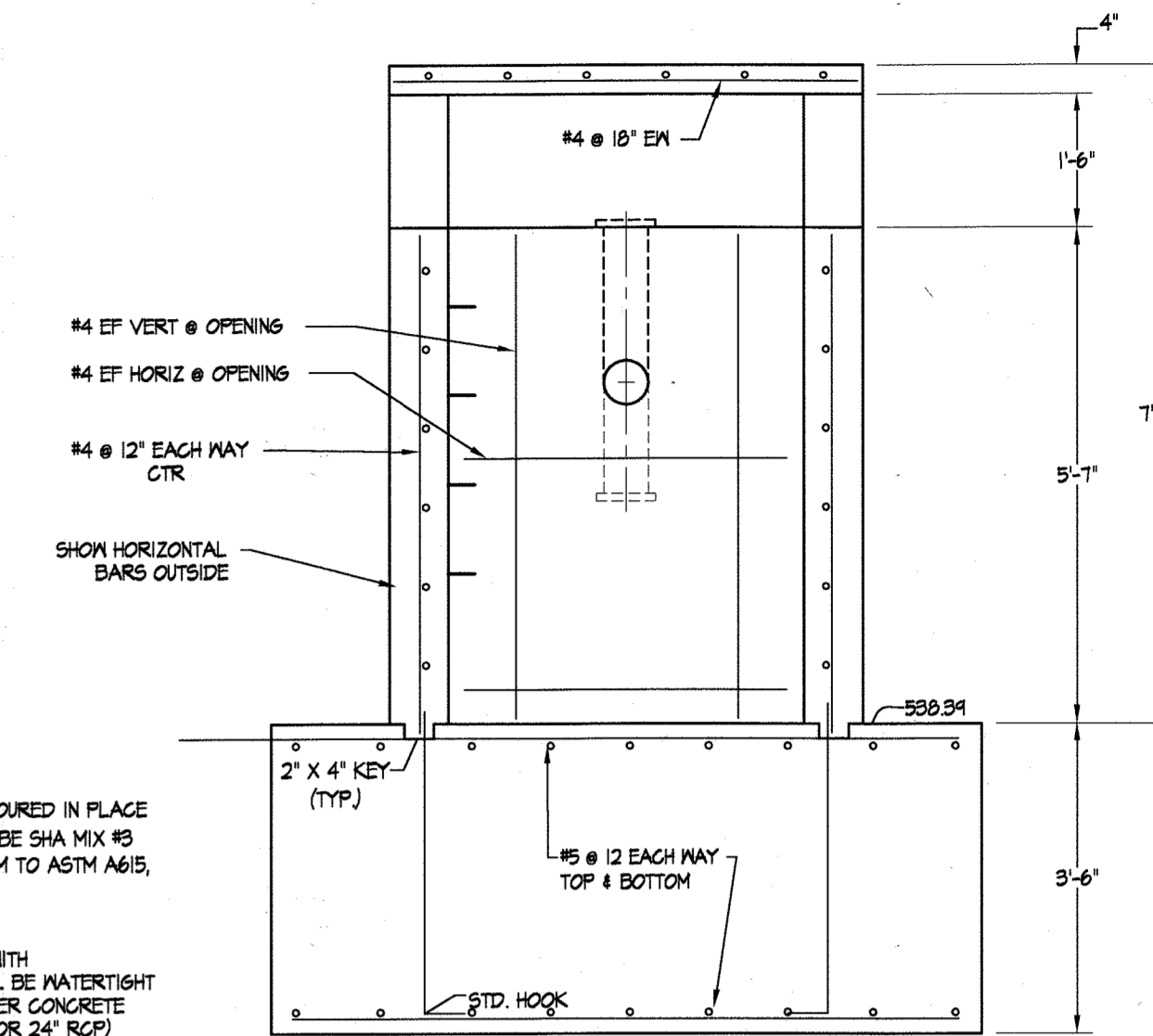


PERFORATED PVC DETAIL

NOT TO SCALE



PLAN VIEW



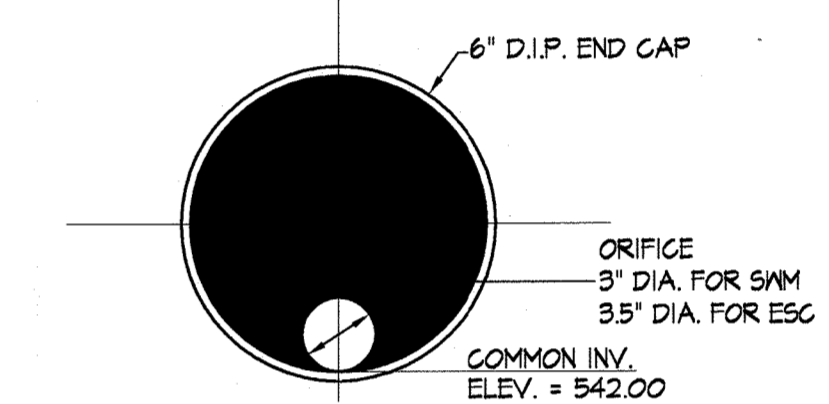
SECTION B-B

SCALE: 1" = 2'-0"

- NOTE: PRE-CAST RISER IS AN ACCEPTABLE ALTERNATIVE TO THE CAST IN PLACE RISER SHOWN PROVIDED.
1. SHOP DRAWING WITH SUPPORTING STRUCTURAL COMPUTATIONS (DESIGNED & SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER) MEETING ASTM REQUIREMENTS FOR PRE-CAST STRUCTURES MUST BE SUBMITTED TO THE ENGINEER AND THE APPROVING AGENCY (HOWARD CO. DEPWR) FOR APPROVAL PRIOR TO FABRICATION.
 2. IF ANY STRUCTURE DIMENSIONS VARY FROM WHAT WAS ORIGINALLY REVIEWED / APPROVED, THEN THE HYDRAULICS FLOTATION AND STRUCTURAL INTEGRITY WILL HAVE TO BE RE-ANALYZED.
 3. ALL JOINTS AND CONNECTIONS ARE WATER TIGHT. METHOD OF ACHIEVING A WATER TIGHT SEAL BETWEEN THE RISER STRUCTURE AND ALL CONDUITS (I.E., BARREL AND LOW FLOW PIPES) SHALL BE APPROVED BY THE ENGINEER IN CHARGE AND BALTIMORE COUNTY DEPWR PRIOR TO FABRICATION.
 4. TRASH RACK SHALL EXTEND A MINIMUM OF 8 INCHES BELOW WEIR CREST AND BE AT LEAST 1 FOOT ABOVE GRADE.

NOTE: RISER SHALL BE POURED IN PLACE CONCRETE MIX TO BE SHA MIX #8 REINF. TO CONFORM TO ASTM A618, GRADE 60

ALL PIPE JOINTS WITH STRUCTURES SHALL BE WATER TIGHT (SEE PRECAST RISER CONCRETE COLLAR DETAIL FOR 24" RCP)



6" PVC END CAP DETAIL

NOT TO SCALE

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

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

Howard Soil Conservation District

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: *Ken R. Kinsley* 10/11/06 Date

Printed Name of Engineer: **KENNETH R. KINSLEY**

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: *Michael A. Stuvanniello* 10-12-06 Date

Printed Name: **Michael A. Stuvanniello**

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

Robert A. Walden 10/30/06 DATE
COUNTY HEALTH OFFICER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

James M. Irvin 10/30/06 DATE
JAMES M. IRVIN, DIRECTOR

APPROVED: DEPARTMENT OF PLANNING & ZONING

James M. Irvin 10/30/06 DATE
DIRECTOR

EDMEADES & STROMDAHL, LTD.
ARCHITECTS / PLANNERS
34 North Main Street Bel Air, Maryland 21014
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SITE RESOURCES, INC.
LAND PLANNING / SITE DESIGN
14315 Jarrettville Pike Phoenix, Maryland 21131
Phone: 410.683.3388 Fax: 410.683.3389



DES: KPR			
DRN: AM			
CHK: REM			
DATE: 10/11/06	BY: NO.	REVISION	DATE

SWM Pond 2 Details (Basin 2)

600' SCALE MAP NO. 16 BLOCK NO. 2 / B

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

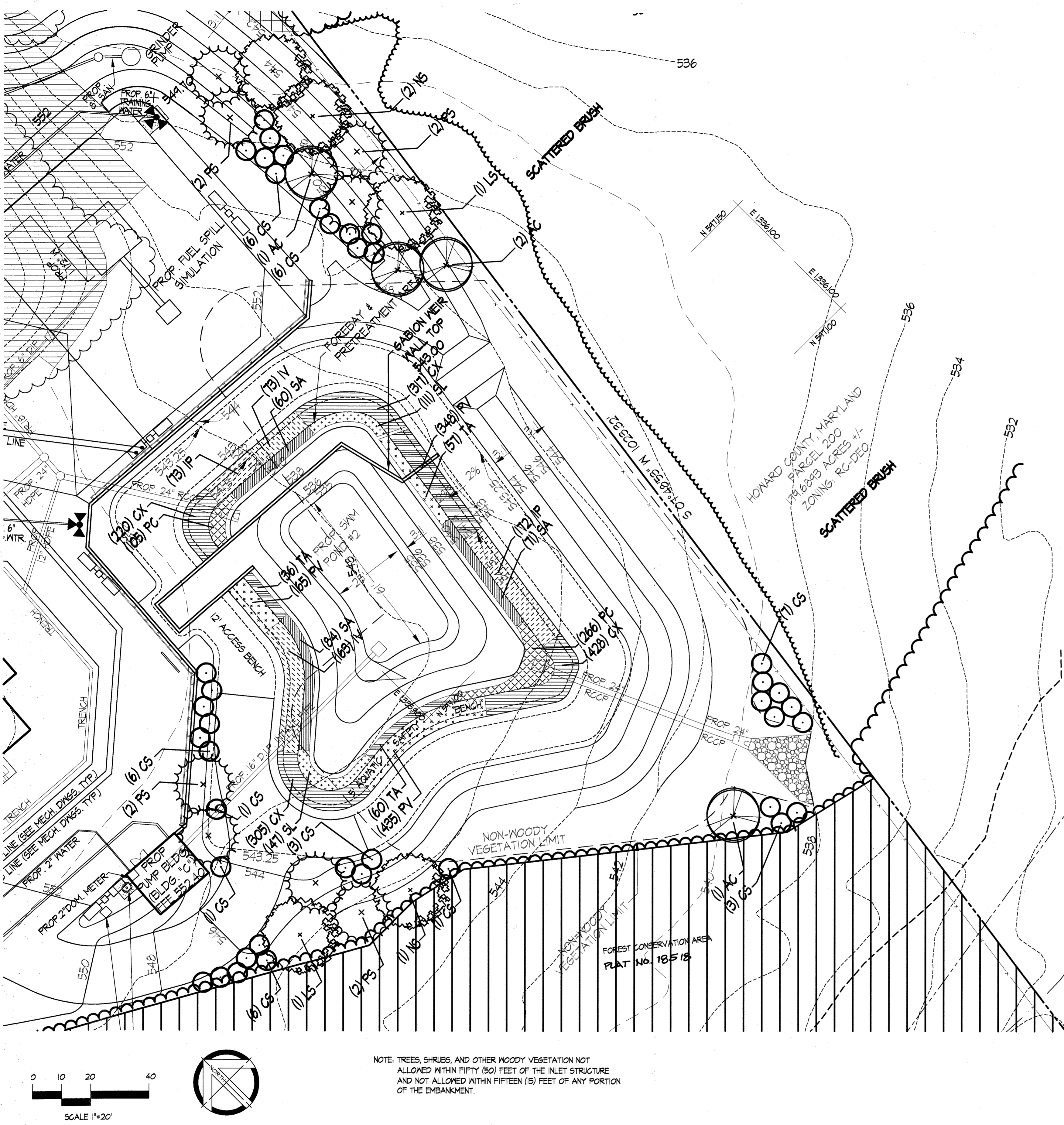
OWNER: Howard County Department of Public Works
3450 Courthouse Drive Ellicott City, Maryland 21043 Phone (410) 313-2100

ADDRESS / PERMIT INFORMATION:
PARCEL #253 ADDRESS: 2200 Alpha Center Drive
PLAT No. 15116 L 6694 F 618
GRID No. 218, ZONE: RC-DEO, TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: 150, SEWER CODE: Private - Holding Tank

C6.22

SCALE: As Shown

SHEET 57 OF 94



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 46" headroom is required for all handicap accessible spaces per ADA405.4.6.5.
- 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 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.

SWM LANDSCAPE REQUIREMENTS

PERIMETER LANDSCAPING REQUIRED:

Total Perimeter of Pond #2	= 466 LF
Length of Perimeter in Existing Woods	= 305 LF
Buffer Length of Pond #2	= 661 LF
Buffer Type	= B

Required Plantings, Buffer Type B

1 Shade Tree per 50 LF Perimeter	= 14 Planting Units
1 Evergreen Tree per 40 LF Perimeter	= 17 Planting Units
Total Required Plantings = 31 Planting Units	

PERIMETER LANDSCAPING PROVIDED:

Shade Trees	= 5 Planting Units
Evergreen Trees	= 8 Planting Units
Small Deciduous Trees (4 @ 2" Shade Tree)	= 2 Planting Units
Shrubs (40 @ 10" Shade Tree)	= 4 Planting Units
Total Provided Plantings = 19 Planting Units*	

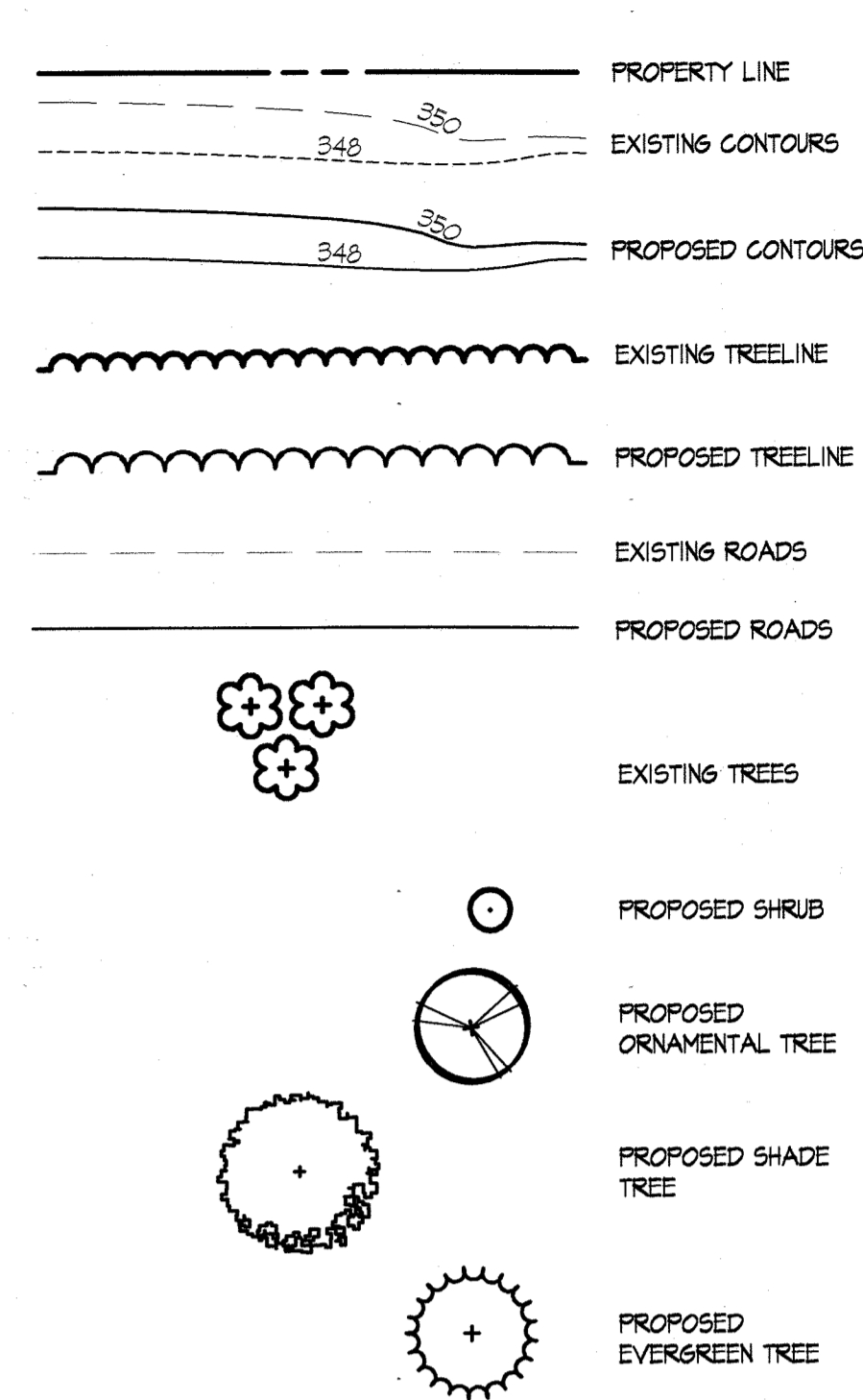
*() Planting unit shall be equal to (1) shade tree or (1) evergreen tree or (2) small deciduous trees or (10) shrubs

NOTE:
 Provided plantings do not exceed quantity required because available space is limited for the following reasons: 1. The non-woody vegetation limit extends to the property boundary to the east and to the existing woods to the south. 2. The use of this facility for safety training purposes requires greater than usual vehicular access. 3. The increased access makes necessary a retaining wall along the north and west sides of the facility.

SWM PLANT LIST, POND #2

KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY	COMMENTS
SHADE TREES						
LS	LIQUIDAMBAR STYRACIFLUA	AMERICAN SWEETGUM	2 1/2"-3" CAL.	25'-30' O.C.	2	
NS	NYSSA SYLVATICA	BLACK GUM	2 1/2"-3" CAL.	25'-30' O.C.	3	
ORNAMENTAL TREES						
AC	AMALANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	8'-10' HT.	15' O.C.	4	MULTI-STEM
EVERGREEN TREES						
FS	PINUS STROBUS	EASTERN WHITE PINE	6'-8' HT.	20' O.C.	8	
SHRUBS						
CS	CORNUS SERICEA	REDOSIER DOGWOOD	B&B	7' O.C.	40	
EMERGENT/AQUATIC PLANTS						
CX	CAREX STRICTA	TUSsock SEDGE	1 QUART	12" O.C.	1210	
IP	IRIS PSEUDACORUS	YELLOW IRIS	1 QUART	18" O.C.	245	
IV	IRIS VERSICOLOR	BLUE IRIS	1 QUART	18" O.C.	236	
PV	PELTANDRIA VIRGINICA	ARROW ARUM	1 QUART	12" O.C.	448	
PC	PONTERERIA CORDATA	PICKERELWEED	1 QUART	12" O.C.	371	
SL	SAGITARIA LATIFOLIA	DUCK POTATO	1 QUART	12" O.C.	258	
SA	SCIRPUS ACUTIS	HARDSTEM BULRUSH	1 QUART	18" O.C.	215	
TA	TYPHA ANGUSTIFOLIA	NARROW-LEAVED CATTAIL	1 QUART	18" O.C.	153	

LEGEND - SWM PLANTING PLAN



PREPARED BY: KEVIN P. RILEY, RLA
 STATE OF MARYLAND
 REGISTERED LANDSCAPE ARCHITECT
 REGISTRATION NO. 3231
 NAME: *KPRiley* DATE: 10/11/06

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 Landscaping 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: *Michael A. Giovanniello* DATE: 10-12-06

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS:
 USDA - NATURAL RESOURCES CONSERVATION SERVICE 10/12/06
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD SOIL CONSERVATION DISTRICT DATE: 10/12/06

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.
 ENGINEER: *[Signature]* DATE: 10/12/06

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.
 DEVELOPER: *Michael A. Giovanniello* DATE: 10-12-06

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: *[Signature]* MD License No. 13876 PE Date: 10/11/06
 Print Name: *KEVIN P. RILEY*



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.

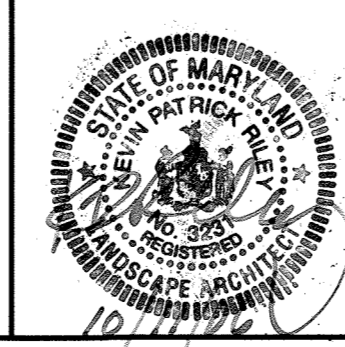
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER: *[Signature]* DATE: 10/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 JAMES M. IRVIN, DIRECTOR DATE: 10/26/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DIRECTOR: *[Signature]* DATE: 10/20/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 10/24/06
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 10/20/06

EDMEADES & STROMDAHL, LTD.
 ARCHITECTS / PLANNERS
 34 North Main Street Bel Air, Maryland 21114
 Phone: 410.879.0388 Fax: 410.879.4785
 E-mail: bw@edmeades-stromdahl.com

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



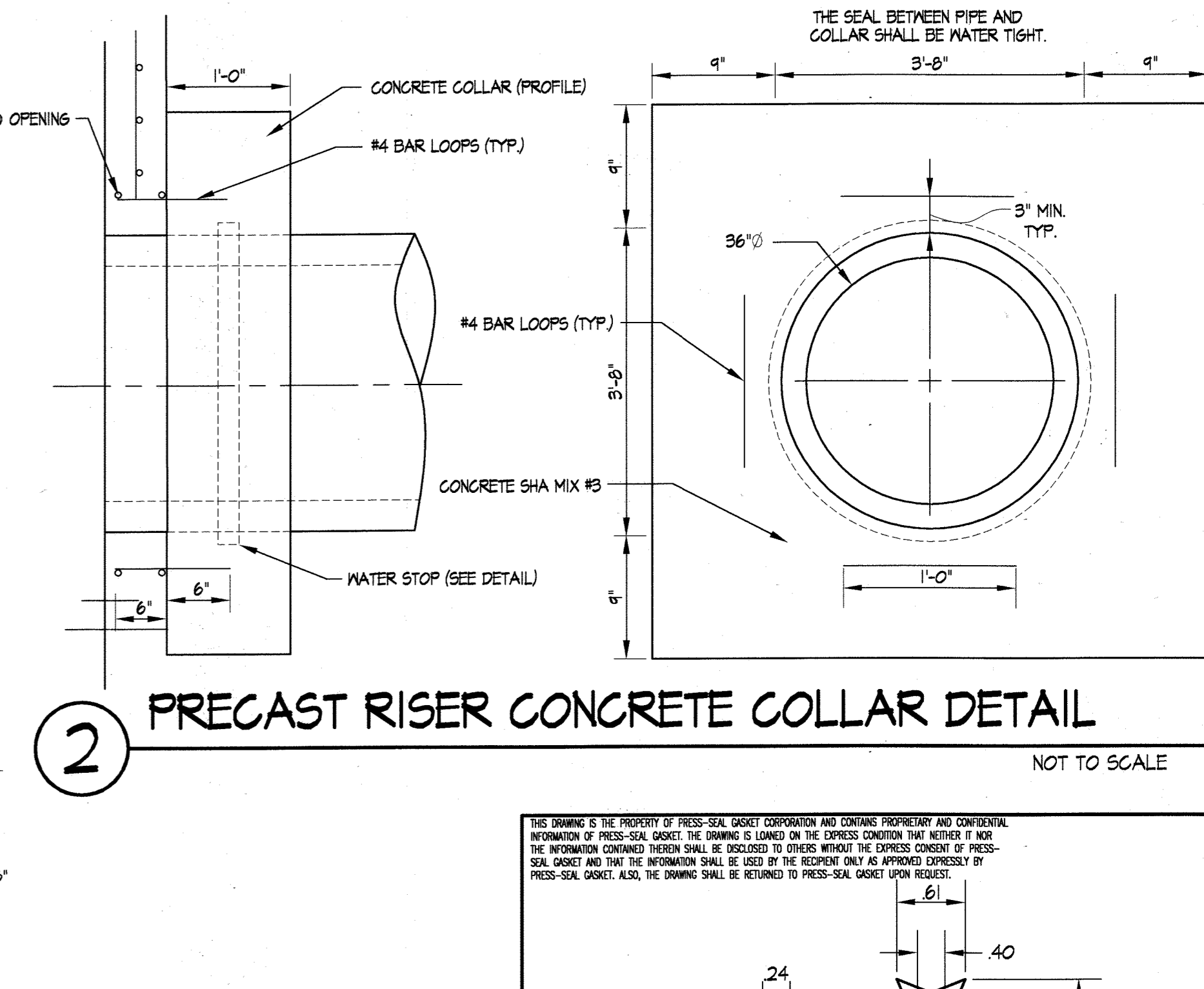
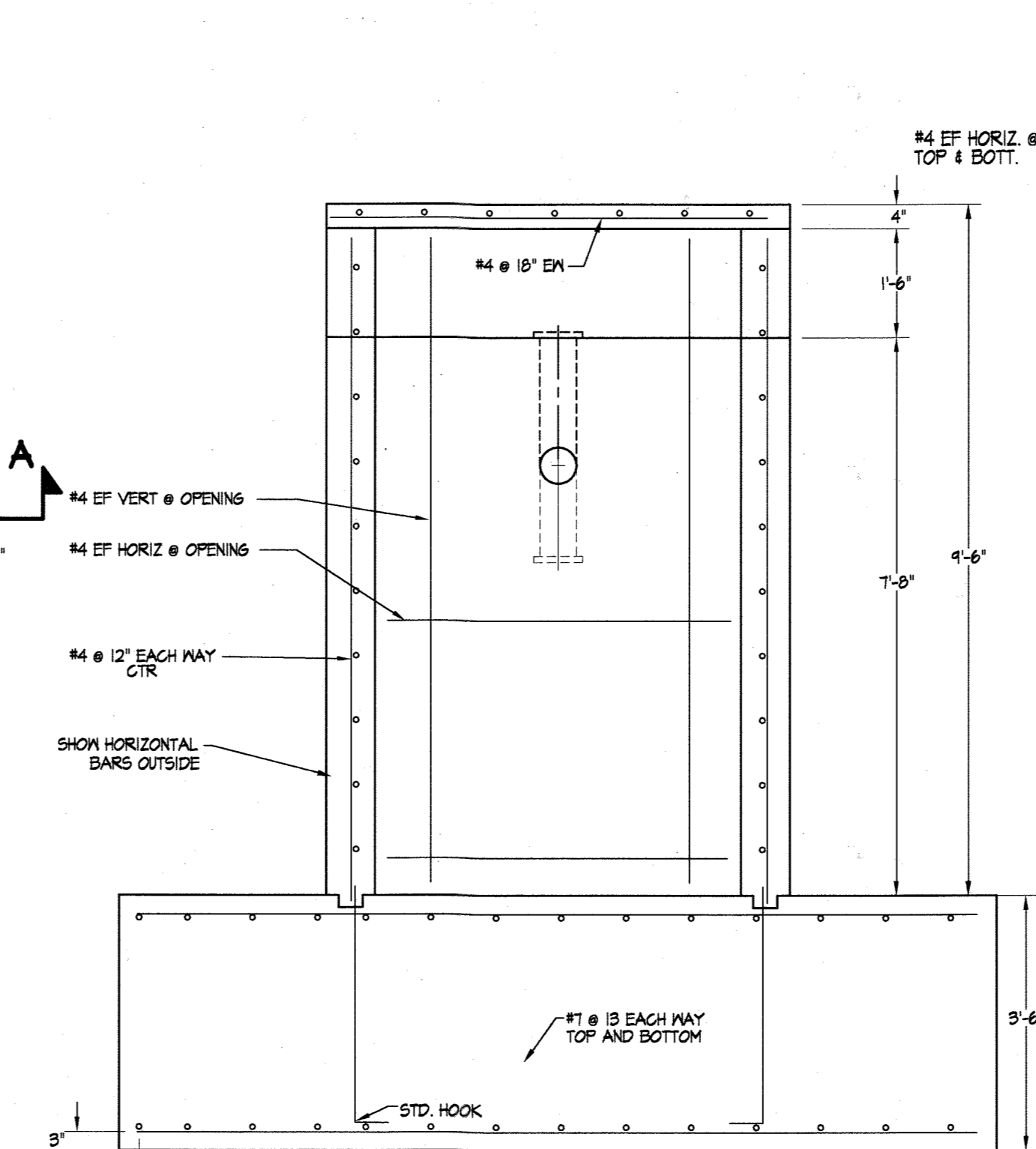
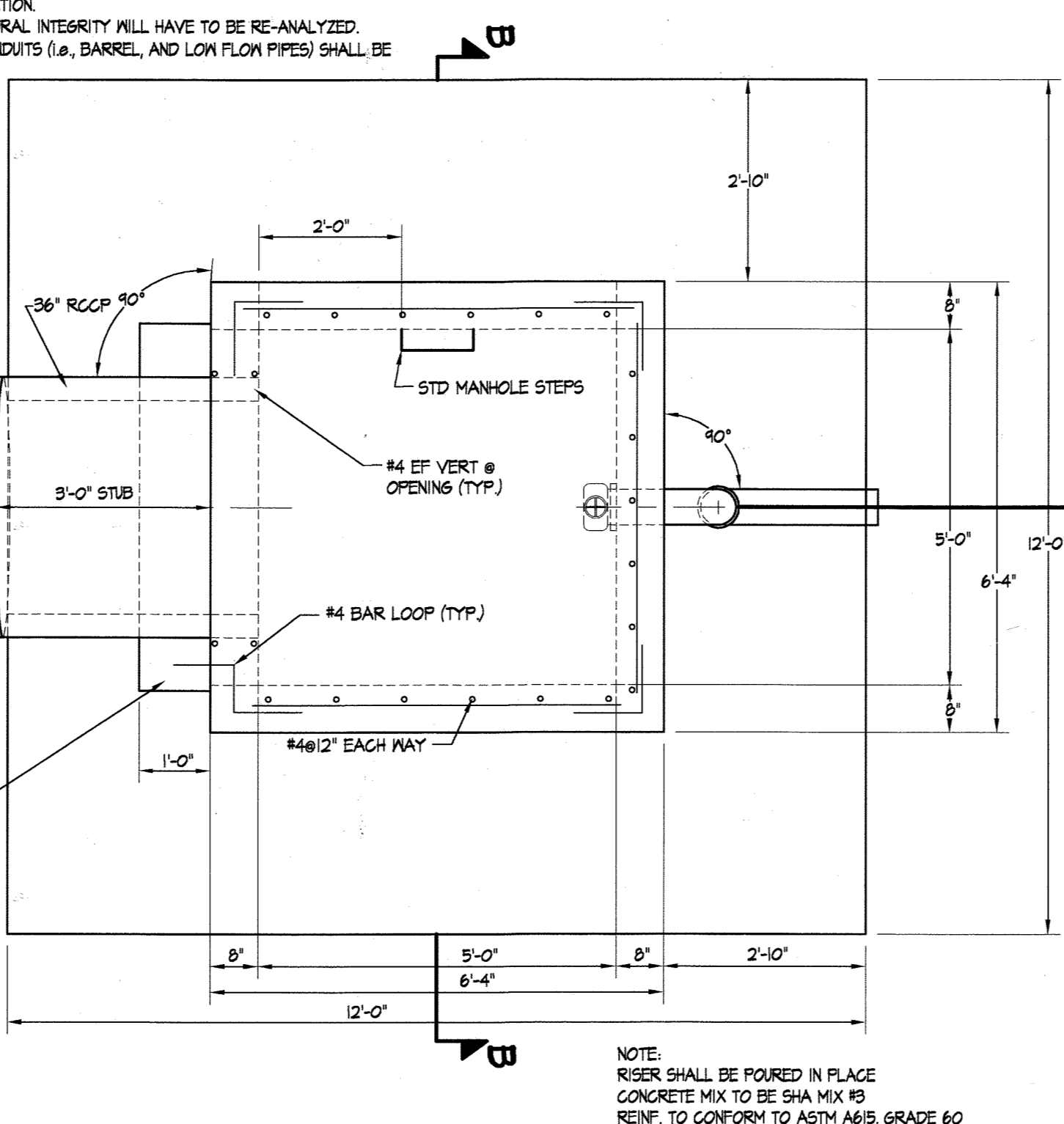
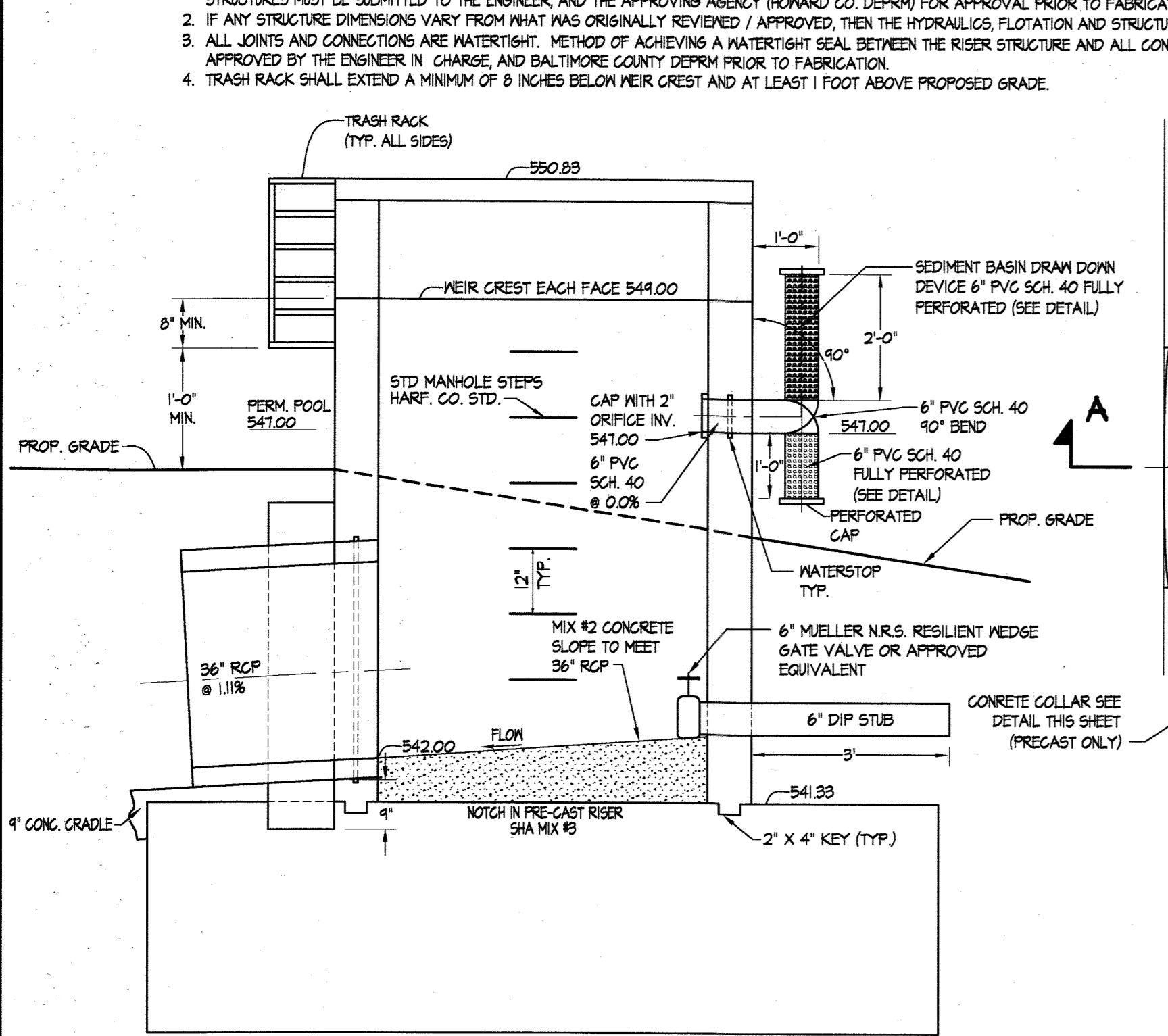
DES: KPR					
DRN: AM					
CHK: REM					
DATE: 10/11/06	BY: NO.	REVISION	DATE	600' SCALE MAP NO.	16 BLOCK NO. 2 / 8

SWM Pond 2 Planting Plan

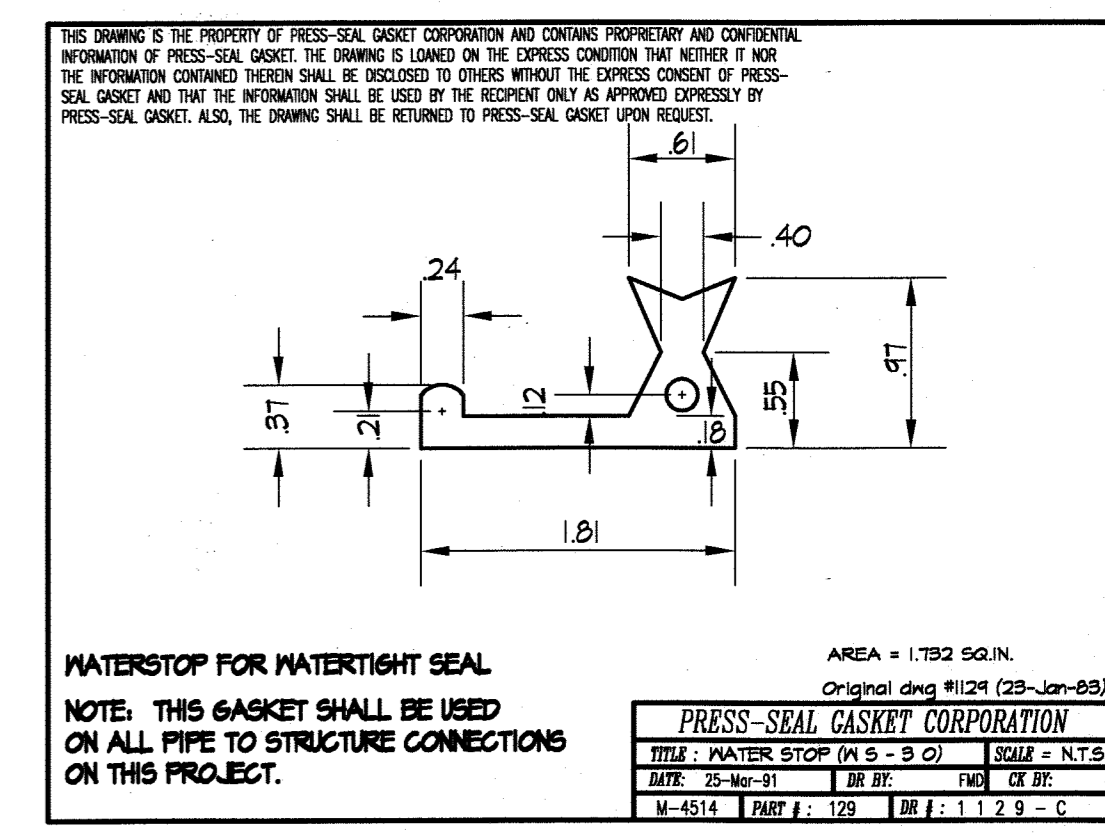
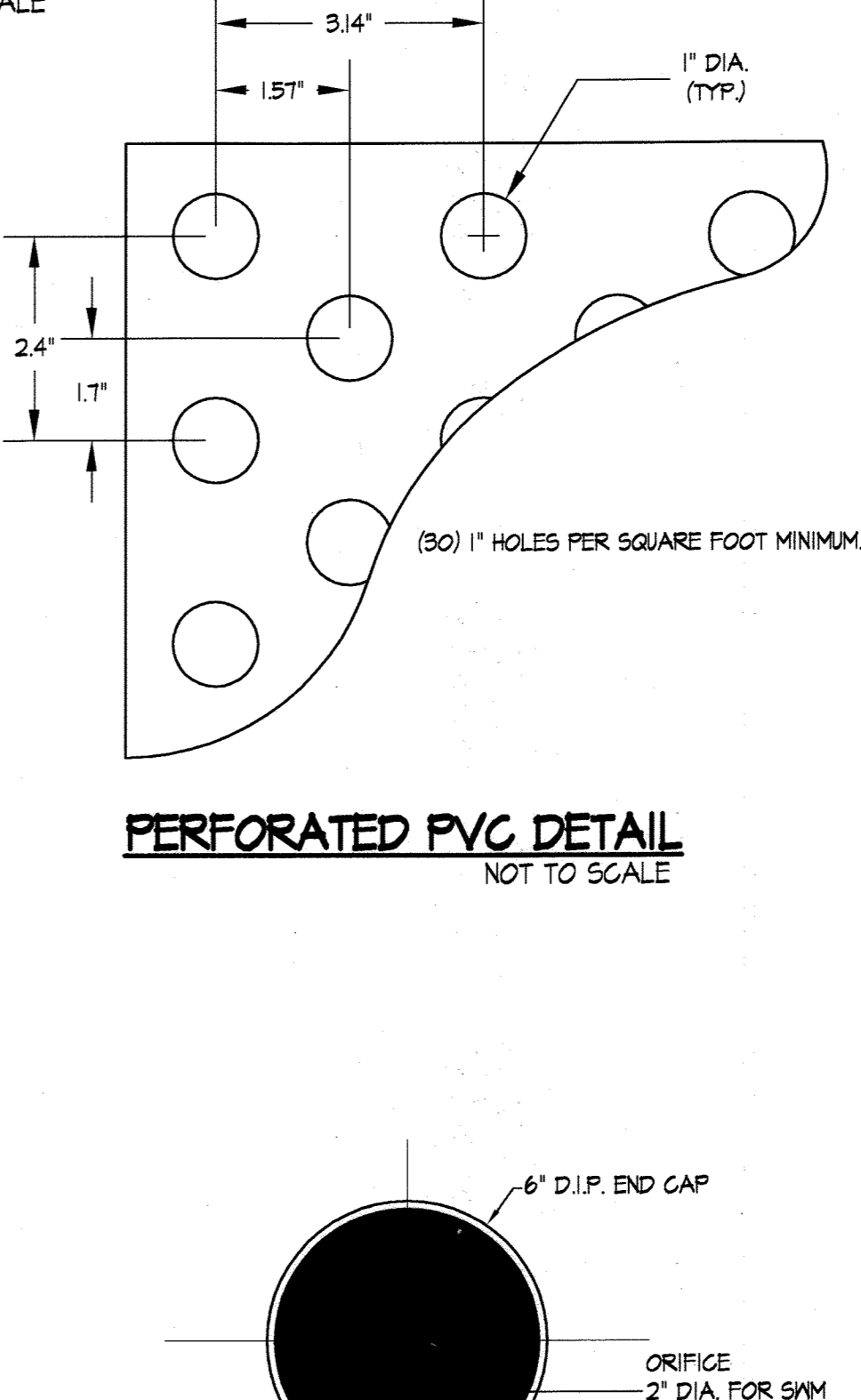
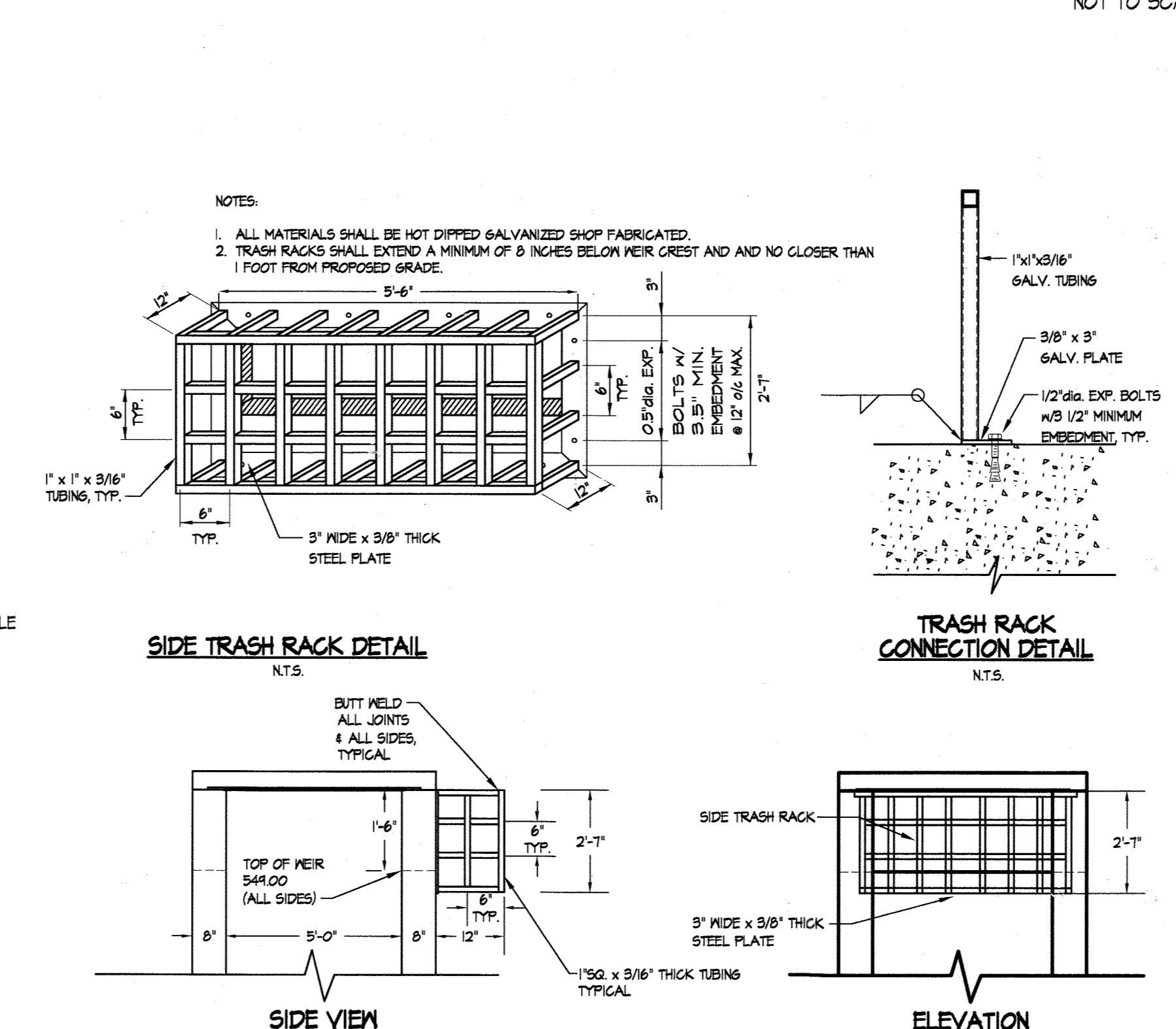
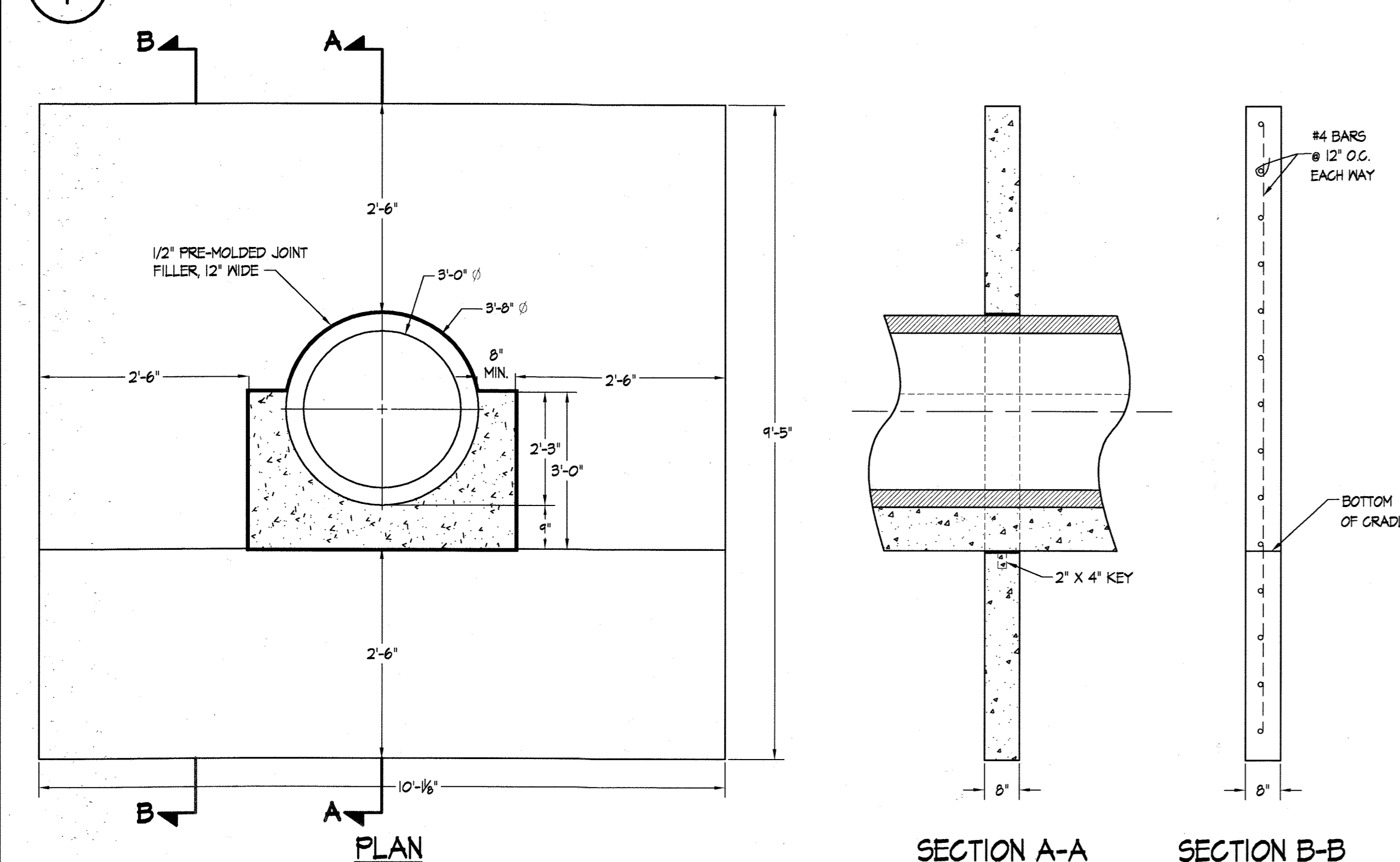
Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland
 ADDRESS / PERMIT INFORMATION:
 PARCEL #253 ADDRESS: 2200 Alpha Center Drive
 PLAT No. 5716, L6684 / F614
 GRID No. 218, ZONE: RC-D20, TAX MAP No. 16
 3rd Election District, Census Tract 6030
 WATER CODE: 130, SEWER CODE: Private - Holding Tank
 SHEET 58 OF 64

NOTE: PRE-CAST RISER IS AN ACCEPTABLE ALTERNATIVE TO THE CAST IN PLACE RISER SHOWN PROVIDED:

- SHOP DRAWINGS WITH SUPPORTING STRUCTURAL COMPUTATIONS (SIGNED & SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER) MEETING ASTM REQUIREMENTS FOR PRE-CAST STRUCTURES MUST BE SUBMITTED TO THE ENGINEER AND THE APPROVING AGENCY (HOWARD CO. DEPRM) FOR APPROVAL PRIOR TO FABRICATION.
- IF ANY STRUCTURE DIMENSIONS VARY FROM WHAT WAS ORIGINALLY REVIEWED / APPROVED, THEN THE HYDRAULICS, FLOTATION AND STRUCTURAL INTEGRITY WILL HAVE TO BE RE-ANALYZED.
- ALL JOINTS AND CONNECTIONS ARE WATER-TIGHT. METHOD OF ACHIEVING A WATER-TIGHT SEAL BETWEEN THE RISER STRUCTURE AND ALL CONDUITS (i.e., BARREL, AND LOW FLOW PIPES) SHALL BE APPROVED BY THE ENGINEER IN CHARGE, AND BALTIMORE COUNTY DEPRM PRIOR TO FABRICATION.
- TRASH RACK SHALL EXTEND A MINIMUM OF 8 INCHES BELOW WEIR CREST AND AT LEAST 1 FOOT ABOVE PROPOSED GRADE.



1 RISER STRUCTURE DETAIL



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

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

Howard Soil Conservation District

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 a written plan of the pond within 30 days of completion.

Signature of Engineer: *Michael A. Giovanniello*
Date: 10/12/06

Printed Name of Engineer: Michael A. Giovanniello

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: *Michael A. Giovanniello*
Date: 10/12/06

Printed Name: Michael A. Giovanniello

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: DEPARTMENT OF PLANNING & ZONING

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

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

DES: KPR
DRN: AM
CHK: REM
DATE: 10/11/06

SWM Pond 3
Details
(Basin 3)

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-0182, Howard County, Maryland

OWNER: Howard County
Department of Public Works
3430 Courthouse Drive
Ellicott City, Maryland 21043
Phone: (410) 313-2100

ADDRESS / PERMIT INFORMATION:
PARCEL #283 ADDRESS: 2200 Alpha Center Drive
PLAT No. 5716, L&E84 / F&E14
GRID No. 218 - ZONE: RECREO TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: 130, SEWER CODE: Private - Holding Tank

C6.32

SCALE: As Shown
SHEET 61 OF 68

SWM POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-31B. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

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

Ductile Iron Pipe And Fittings

1. Mechanical-Joint, Ductile Iron Pipe: ANWA C151, with mechanical-joint, bell- and plain-spigot and unless grooved or flanged ends are indicated, Class 52.
2. Joints: All joints must be mechanical and completely watertight.
 - a. Glands, Gaskets, and Bolts: ANWA C111, ductile or gray iron glands, rubber gaskets, and steel bolts.
 - b. Push-on-Joint, Ductile Iron Pipe: ANWA C151, with push-on-joint, bell and plain spigot and unless grooved or flanged ends are indicated, Class 52.
 - c. Push-on-Joint, Ductile Iron Fittings: ANWA C110, ductile or gray iron standard pattern or ANWA C153, ductile iron compact pattern.
3. Fittings: ANWA C110, ductile or gray iron standard pattern or ANWA C153, ductile iron compact pattern; Class D or Class 250.
4. Gaskets: ANWA C111, rubber.
5. Backfilling shall conform to "Structural Backfill".

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 "Structural 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-1120 or PVC-1220 conforming to ASTM D-1185 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 M244 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 "Structural 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% Kerby Kentucky Bluegrass, 40% Pennlaw Creeping Red Fescue, 10% Streaker Redtop. Applied at a rate of 150 lbs. per acre, or Rebel II Tall Fescue (125 lbs. per acre), Pennlaw Perennial Ryegrass (15 lbs. per acre), Kerby Kentucky Bluegrass (10 lbs. per acre) or Pennlaw Creeping Red Fescue (10 lbs. per acre), Aurora Hard Fescue (50 lbs. per acre), Common White Clover (6 lbs. per acre), Winter Rye (45 lbs. per acre) or 10% Forager Tall Fescue, 30% Chemung Crownvetch, inoculated. Applied at a rate of 55 lbs. per acre. Optimum seeding dates: March 1 to April 30.
- Lime:** 2 tons/acre Dolomitic Limestone
- Fertilizer:** 600 lbs./acre 10-10-10 fertilizer before seeding, 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.

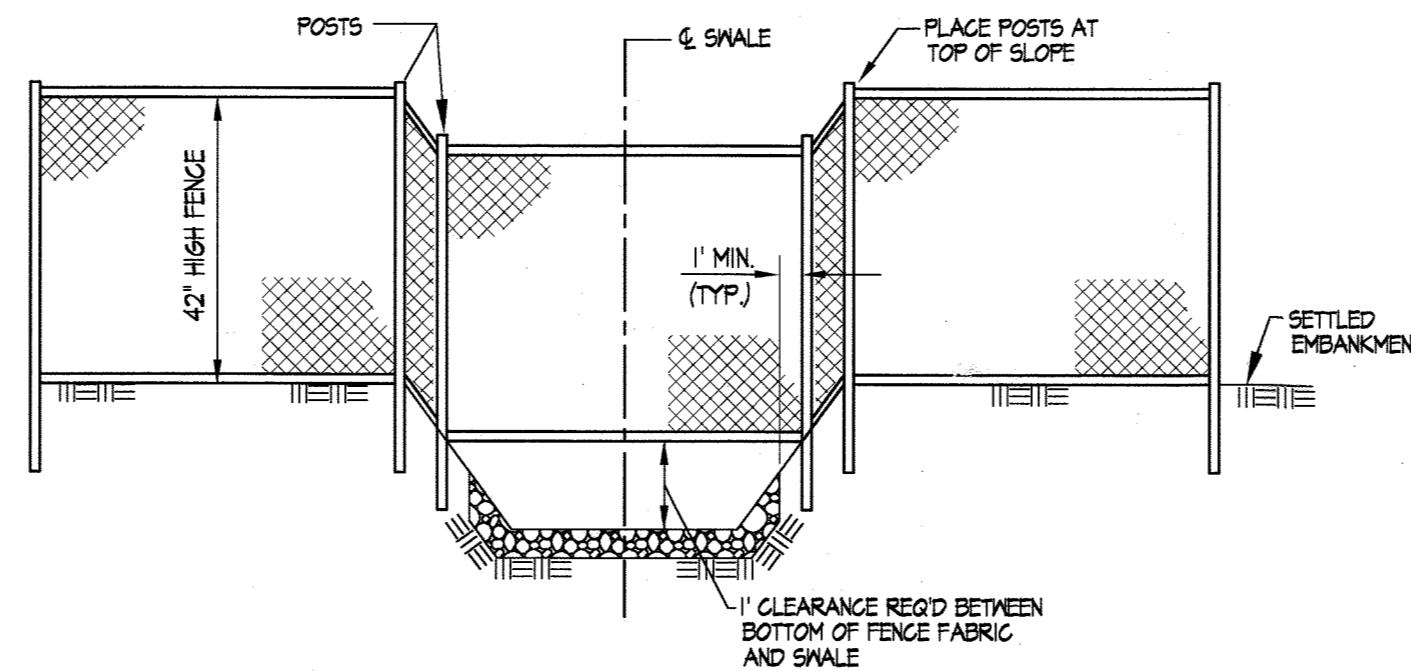
Gabions

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

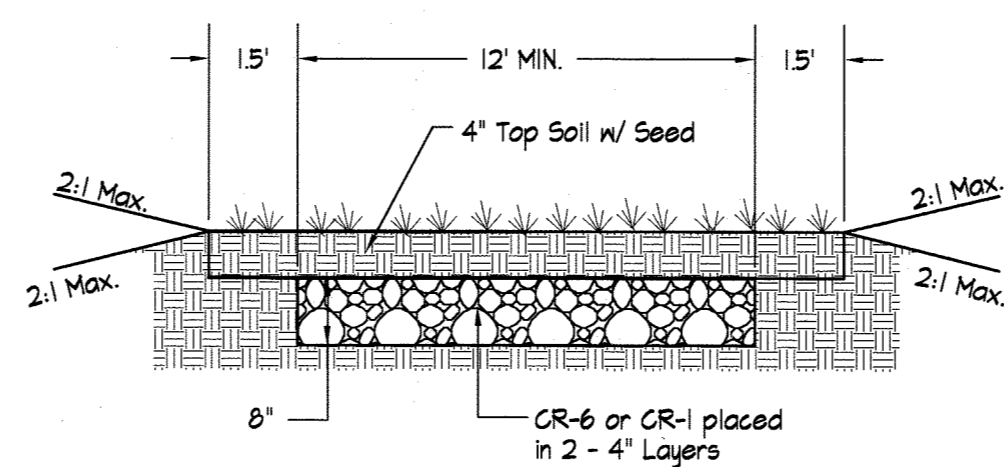
Construction Inspection by Designated Engineers

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.

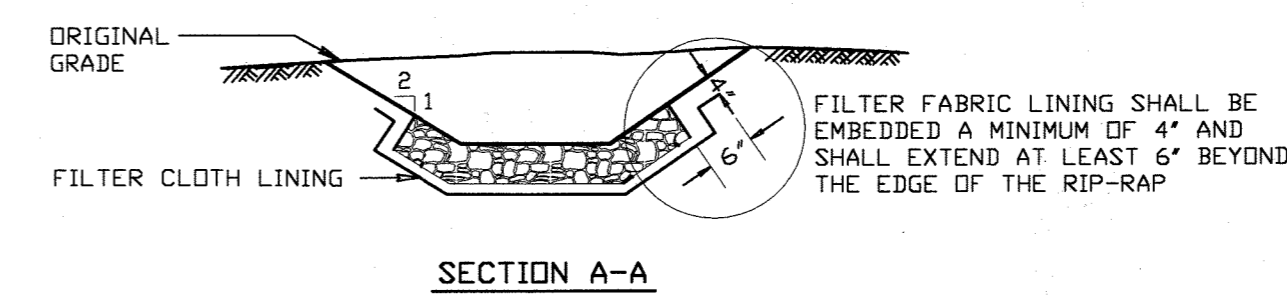
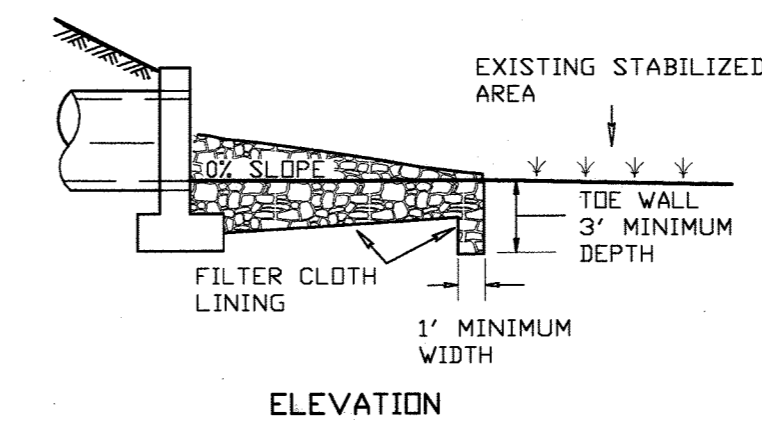
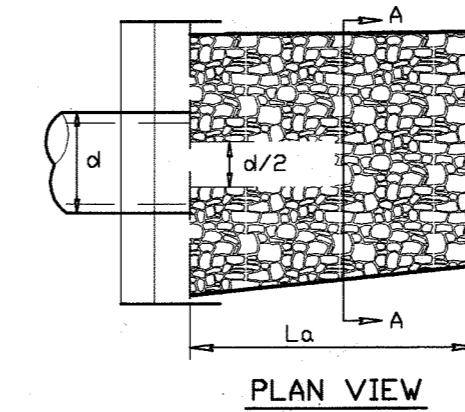


1. DETAIL OF FENCE CROSSING FOR USE ON SWALES NEAR FITNESS TRACK NOT TO SCALE



2. ACCESS RAMP DETAIL NOT TO SCALE

DETAIL 27 - ROCK OUTLET PROTECTION III



NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 18 - 10	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 18 - 10A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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ROCK OUTLET PROTECTION III

Construction Specifications

1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

Storm Water Management Facilities

From pages 13-15 of geotechnical report prepared by Herbst, Benson & Associates, dated January 16, 2006

Two ponds are being planned for the project, one at the northeast and one at the southeast corner of the site. The embankments will be formed partially in cut and partially in fill to reach proposed crest elevation. Both ponds are to be wet pond facilities with proposed permanent pond levels as shown on the approved plans.

Both ponds should be designed and constructed in accordance with MD 31B/2000 specifications. From the test boring information, it appears that some remedial work will be required for proper support of the outfall structure for the northeast pond. Boring B-4 shows existing fill and soft alluvial material in the area of the storm water management outfall. This material should be undercut and replaced with properly controlled compacted fill for stable outfall and embankment support. All existing fill and soft alluvial soils should also be undercut from the embankment area from toe to toe of embankment to expose undisturbed native soil. The exposed surface may have to be stabilized to allow proper fill compaction. A core trench should extend at least 4 feet below the stripped existing grade or two feet into competent native soils below the undercut backfill, whichever is greater.

At the proposed 3 or 4 horizontal to 1 vertical inclination, cut slopes in the relatively loose silt and sand may show signs of shallow sloughage. In these cases, the sloughed material must be undercut and replaced with more competent granular soil or crushed stone material.

As is expected for the geologic conditions, the residual soils on site do not contain Unified "C" materials, thus, core trench and pond liner clays will have to be imported from off site. Most of the basin soils appear to be loose, granular silty sands with ground water table above proposed basin elevation. Additional depth of water, however, will cause additional pressure head and in our opinion stored water will be lost into the underlying granular subgrade soil. As such, we recommend that both ponds be lined at least to the permanent pool elevation with either compacted clay or bentonite liner covered with at least 12 inches of controlled, compacted on site fill. Since the ground water table is actually higher than the basin elevation, pressure relief valves should be placed in the liner to allow water to flow into the basin, but prevent water from draining back through the bottom of the basin.

Materials may be blasted for buildings, roadway or utility excavations. Blasting may also be allowed in the pond areas, in our opinion, for the portions furthest away from the outfall structures. Although blasting will open up residual fissures and joints, the pond is already planned to be lined to hold a permanent pool; thus, any increased permeability of the rock material would not be a problem. We still recommend, however, that blasting not be performed for principal spillway excavations. If materials exceeding 100 blows per foot or the equivalent are noted above proposed invert grade, the outfall should either be relocated to an area of soil material, or excavation should be performed using jackhammers, hoe rams or similar type excavation equipment.

Ground water will be encountered in the storm water management excavation. The contractor should plan on providing temporary controls during construction. Ground water may also be encountered in excavations for the armory foundation, the firing range separation wall, and the northeast corner of the fire grounds building requiring temporary control during construction.

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: 10/26/06

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: 10/26/06

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: 10/26/06
Printed Name of Engineer: MICHAEL R. KOSBY

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: [Signature] Date: 10/26/06
Printed Name: Michael A. Giovanniello

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

[Signature] 10/26/06 DATE
COUNTY HEALTH OFFICER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] 10/26/06 DATE
JAMES M. IRVIN, DIRECTOR

APPROVED: DEPARTMENT OF PLANNING & ZONING
[Signature] 10/26/06 DATE
DIRECTOR

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

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

DES: KFR			
DRN: AM			
CHK: REM			
DATE 10/11/06	BY: NO.	REVISION	DATE

SWM Specifications & General SWM Details
600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No.C-0182, Howard County, Maryland
OWNER: Howard County, Department of Public Works
3430 Concourse Drive Ellicott City, Maryland 21043
Phone (410) 313-2100
ADDRESS / PERMIT INFORMATION:
PARCEL #253 ADDRESS: 2200 Alpha Center Drive
PLAT No. 1516, L6684 / F618
GRID No. 219, ZONE: RCD-DEO, TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: T30, SEWER CODE: Private - Holding Tank

C6.40

SCALE: As Shown
SHEET: 63 OF 64

PLANT MATERIALS AND PLANTING METHODS

A. Plant Materials

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

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"	4'-6"	6'-8"	32" diameter
3.5" - 4"	4'-6"	8'-10"	36" diameter
4" - 4.5"	6'-10"	8'-10"	40" diameter
4.5" - 5"	10'-12"	10'-12"	44" diameter
5" - 5.5"	16'-20"	12'-4"	48" diameter
5.5" - 6"	18'-20"	12'-4"	52" 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 bundles or boxes of other plant material giving the botanical and common names, size and quantity of each. Each shipment of plants shall bear certificates of inspection as required by Federal, State and County authorities.

5. Plant Inspection

The 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 digging shall be done when ground is frozen or excessively moist. No frozen or wet topsoil shall be used at any time.

3. Excavation of Plant Pits

The landscaping contractor shall excavate all plant pits, vine pits, hedge trenches and shrub beds in accordance with the following schedule:

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 gayed, and wrapped in accordance with the following specifications:

a. Stakes: Shall be sound wood 2" x 2" rough saw 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 5" caliper, provide 5/16" turn buckles, eye and eye with 4" take-up. For trees over 5" caliper, provide 3/16" 1 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 "Paul'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 practices. 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-Washington 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, Victoria, or Escort.

LANDSCAPING NOTES

1. This plan has been prepared in accordance with the New Town Alternative Compliance provisions of Section 16124 of the Howard County Code and the Howard County Landscape Manual.

2. 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.

3. Field verify underground utility locations and existing conditions before starting planting work. Contact engineer / landscape architect if any relocations are required.

4. 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.

5. 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.

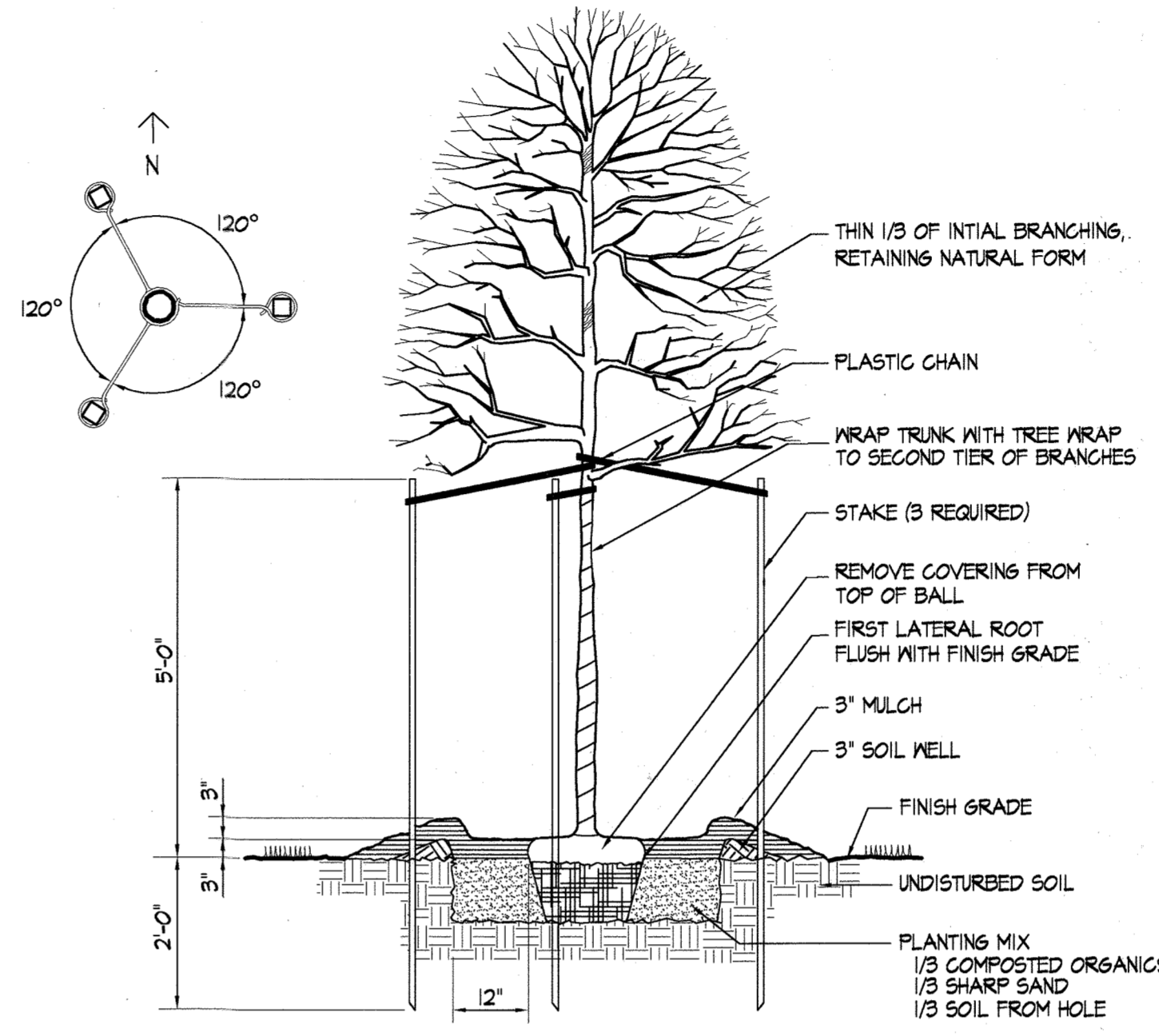
6. No substitution shall be made without written consent of the owner or his representative.

7. All areas disturbed by construction activities but not otherwise planted, paved, or mulched shall be seeded or sodded in accordance with the project specifications.

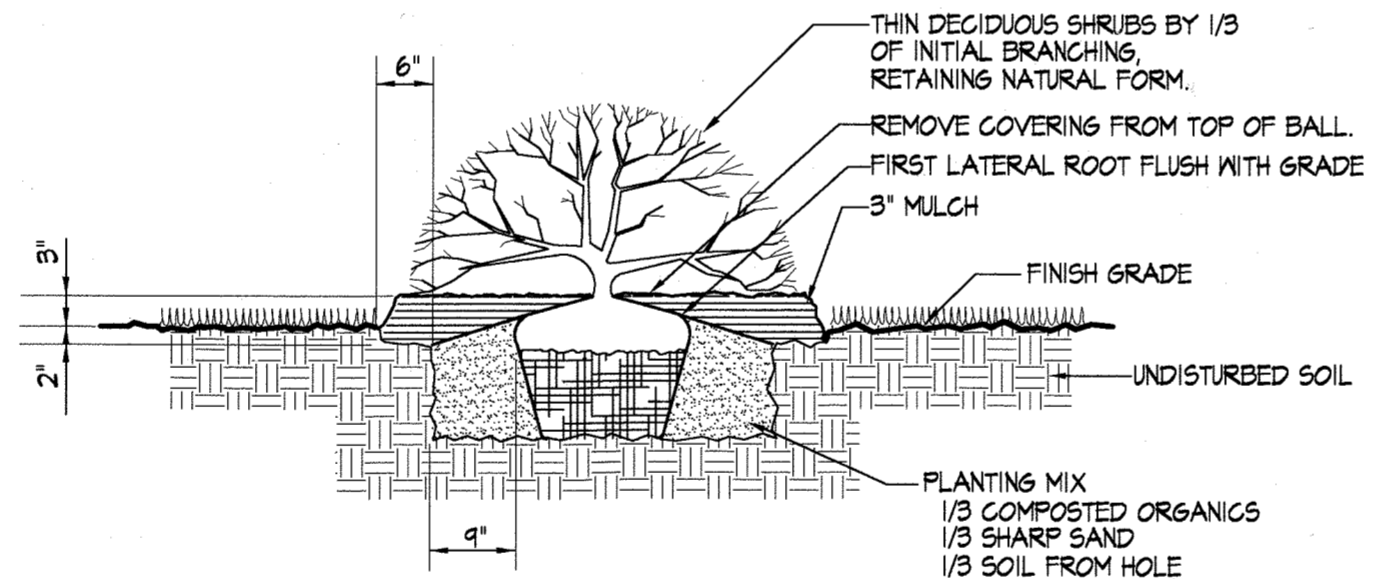
8. The contractor shall notify the owner in writing if he/she encounters soil drainage conditions which may be detrimental to the growth of the plants.

9. All exposed earth within limits of planting beds shall be mulched with shredded hardwood mulch per Planting Details.

10. 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.



DECIDUOUS TREE DETAIL
NOT TO SCALE

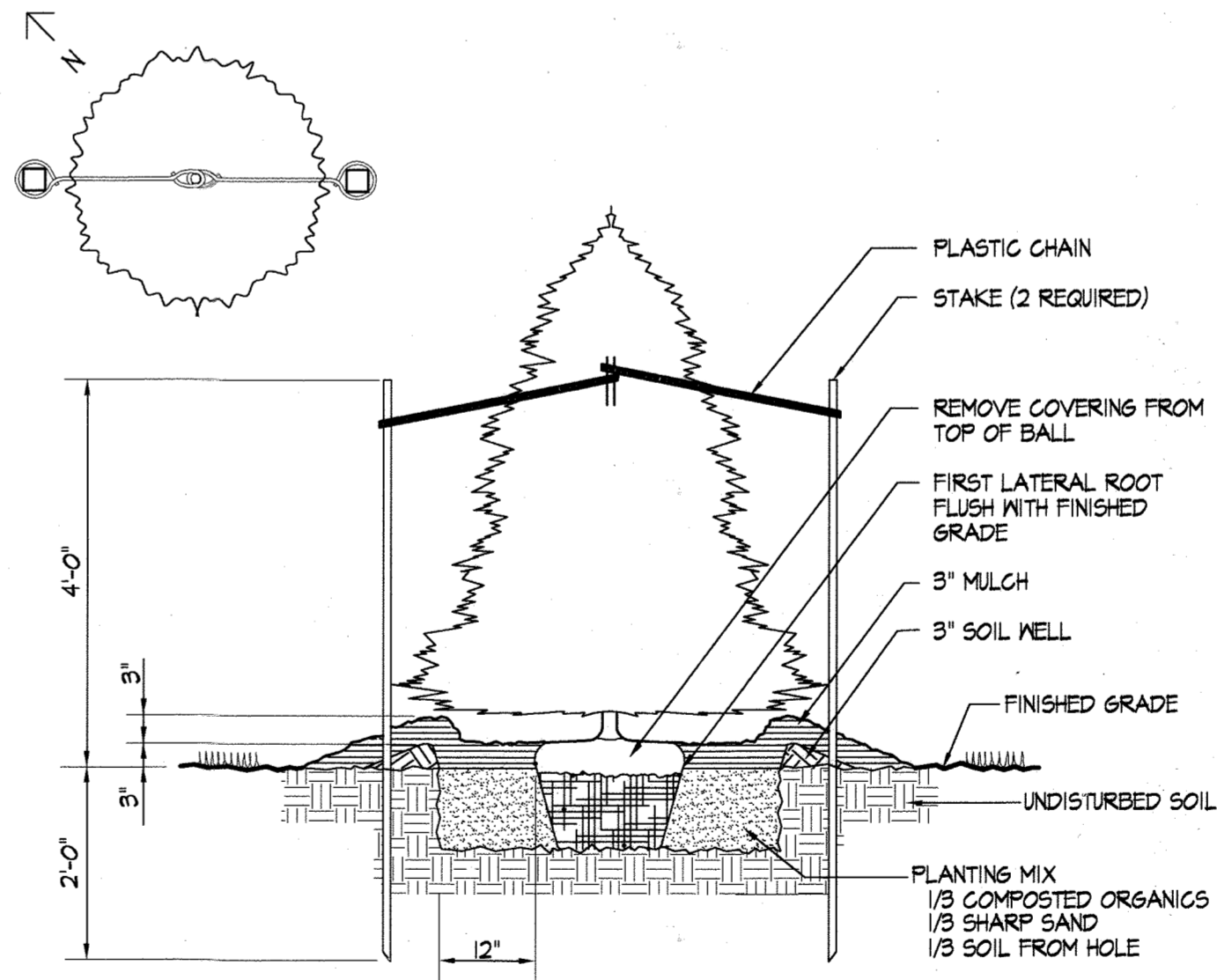


SHRUB DETAIL

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.	6.53'	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'	.51
24" O.C.	20.80'	.29
30" O.C.	26.00'	.18
36" O.C.	30.00'	.128

PLANT SPACING CHART
NOT TO SCALE



EVERGREEN TREE DETAIL
NOT TO SCALE

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

KPRiley 10/11/06
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 16124 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.

Michael A. Giovanniello 10-12-06
Name Date

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

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.

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 P. Riley 10/11/06
Signature of Engineer Date

Kevin P. Riley
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.

Michael A. Giovanniello 10-12-06
Signature Date

Michael A. Giovanniello

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

Robert J. Weber 10/30/06
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

James M. Irvin 10/30/06
JAMES M. IRVIN, DIRECTOR DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

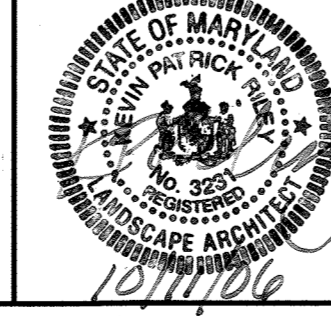
David L. Goyette 10/11/06
DIRECTOR DATE

Michael A. Giovanniello 10/11/06
CHIEF DEVELOPING ENGINEERING DIVISION DATE

Michael A. Giovanniello 10/11/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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LAND PLANNING / SITE DESIGN
14315 Jarrettville Pile Phoenix, Maryland 21131
Phone: 410.683.3388 Fax: 410.683.3389



DES:	DRN:	CHK:	DATE:	BY:	NO.:	REVISION:	DATE:
KPR	AM	REM	10/11/06				

Stormwater Management Planting Details & Notes

600' SCALE MAP NO. 16 BLOCK NO. 2 / B

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-01B2, Howard County, Maryland

OWNER: Howard County
Department of Public Works
3430 Courthouse Drive
Ellicott City, Maryland 21043
Phone (410) 313-2100

ADDRESS / PERMIT INFORMATION:
PARCEL #250, ADDRESS: 2200 Alpha Center Drive
PLAT NO. 8716, L&E84 / F 614
GRID NO. 2/B, ZONE: RC-DEO, TAX MAP NO. 16
3rd Election District, Census Tract 6030
WATER CODE: 150, SEWER CODE: Private - Holding Tank

SCALE: As Shown
SHEET 65 OF 68
SDP - 06-110

FOREST CONSERVATION WORKSHEET

NET TRACT AREA:

A. Total Tract Area:	38.23
B. Area Within 100 Year Floodplain:	0.74
C. Area To Remain in Agricultural Production:	0.00
D. Net Tract Area:	37.44

LAND USE CATEGORY:

Input the number "1" under the appropriate land use zoning and limit to only one entry.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	1	0	0	0

E. Afforestation Threshold	15% X D = 5.62
F. Conservation Threshold	20% X D = 7.50

EXISTING FOREST COVER:

G. Existing Forest Cover (excluding floodplain):	6.86
H. Area of Forest Above Afforestation Threshold:	1.24
I. Area of Forest Above Conservation Threshold:	0.00

BREAK EVEN POINT:

J. Forest Retention Above Threshold With No Mitigation:	0.00
K. Clearing Permitted Without Mitigation:	0.00

PROPOSED FOREST CLEARING:

L. Total Area Of Forest To Be Cleared:	0.24
M. Total Area Of Forest To Be Retained:	6.62

PLANTING REQUIREMENTS:

N. Reforestation For Clearing Above Conservation Threshold:	0.00
P. Reforestation For Clearing Below Conservation Threshold:	0.48
Q. Credit For Retention Above Conservation Threshold:	0.00
R. Total Reforestation Required:	0.48
S. Total Reforestation Required:	0.00
T. Total Reforestation And Afforestation Required:	0.48

FOREST STAND NARRATIVE

F51. 9.23 ac. F51 is a Maple and Oak stand. The stand is the largest associated stand and the onsite portions are approximately 4.6 acres of a much larger stand. The onsite canopy species include Red Oak, Red Maple, Black Oak, and Tulip Poplar. This stand contains some large maple trees including a 36 inch dba Red Maple. The understory is shrubby and viney and dense. Species include Greenbrier, Multiflora Rose, Poison Ivy, Japanese Honeysuckle and grape. One of two separate stream branches run through each of the two onsite portions of F51. The stream branch running through the southern, onsite portion of F51 is dry. The stream branch running through the northern, onsite portion of F51 is an perennial tributary of the Little Patuxent River. The canopy is approximately 70 to 90 percent closed. The portion of the stand, which is located directly behind the onsite gunshooting range, was not accessible at the time of inspection. No disturbance to this area is proposed. The onsite portions of this stand are of moderately good structure and habitat value.

The adjacent treeline running along Interstate Route 70 is a stand of Tree of Heaven.

Trees Indicated on FSD Map:
 Specimen Trees: 36" Red Maple
 Large Trees: 28" Red Maple
 28" Red Maple
 28" Red Maple

F52. 3.49 ac. F52 is a Red Maple stand. The canopy species include Red Maple, Red Oak, Tulip Poplar and a few American Elm trees. In some areas of the stand, Red Maple is the only canopy species. The canopy is approximately 90 percent closed in the western portion of the stand and is as low as 65 percent closed in the eastern portion of the stand. The eastern portion of the stand is in closer proximity to Wetland A. The shrub layer consists of Multiflora Rose which is concentrated in the eastern portion of the stand. The dominant herbaceous species consist of Poison Ivy, Virginia Creeper, and Japanese Honeysuckle. Groundcover is at approximately 70 percent. This stand has moderately good forest structure, but has limited habitat due to its small size and disconnection from F51. A corridor linking F51 and F52 would improve the value.

Trees Indicated on FSD Map:
 Specimen Trees: 33" Tulip Poplar
 35" White Oak

F53. 0.44 ac. F53 is a disturbed, low quality stand of Tree of Heaven. Some Tulip Poplar, Red Maple, Black Cherry, and Red Oak are also growing in this stand. This stand has been subjected to much disturbance from Interstate Route 70, the unnamed access road, and the clearing and grading of the site.

Tree Stands

The tree rows adjacent to and buffering the unnamed access road consist of Red Maple, White Pine, Tree of Heaven, and some Red Oak and Huckleberry, Multiflora Rose and Honeysuckle are growing here as well.

The tree stands on the inside of the site consist primarily of Tree of Heaven.

LINE TABLE

LINE	BEARING	DISTANCE
L1	N84°42'26"E	42.33'
L2	N4°50'23"E	22.07'
L3	N4°48'54"E	43.61'
L4	N00°31'45"E	21.49'
L5	N44°46'50"W	40.00'
L6	N71°36'47"W	55.02'
L7	N86°20'52"E	25.18'
L8	N41°16'04"W	15.86'
L9	S59°01'25"W	17.59'
L10	N84°22'04"E	43.52'
L11	N49°02'36"E	20.18'
L12	S44°08'32"E	24.17'
L13	S84°01'43"E	51.74'
L14	S78°14'20"E	46.48'
L15	S42°32'04"E	45.92'
L16	S78°16'23"E	66.76'
L17	N02°00'00"E	21.11'
L18	S77°28'01"E	20.86'
L19	S78°34'45"E	35.71'
L20	N71°23'01"W	45.15'
L21	N61°51'21"W	44.57'
L22	N81°55'54"W	17.61'
L23	N25°12'58"E	36.02'
L24	S77°48'31"E	34.94'
L25	N84°02'03"E	41.43'
L26	N61°28'00"E	34.34'
L27	N86°31'08"E	36.41'
L28	N01°08'02"E	27.32'
L29	N00°30'31"W	36.31'
L30	N84°54'34"W	44.43'
L31	N00°00'00"E	6.46'
L32	N86°18'02"E	55.42'
L33	S55°01'11"E	30.22'
L34	S64°41'45"E	34.25'
L35	S47°04'01"E	36.77'
L36	S54°48'27"E	61.05'
L37	S78°22'41"E	62.78'
L38	S50°26'02"E	36.51'
L39	S04°40'06"E	46.00'
L40	S46°14'14"W	34.44'
L41	S68°17'52"W	32.82'
L42	N72°24'06"W	42.24'
L43	N59°09'31"W	26.41'
L44	S01°33'20"W	21.73'
L45	S52°44'43"W	21.72'
L46	N75°54'55"W	61.92'
L47	N84°31'42"W	32.65'
L48	N88°02'48"W	10.49'
L49	N44°04'10"W	43.96'
L50	S64°48'31"W	24.44'
L51	N84°10'37"W	21.76'
L52	N84°41'44"W	40.43'
L53	N23°46'28"E	36.44'
L54	N85°11'25"E	35.06'
L55	S64°48'01"E	52.37'
L56	S48°11'21"E	49.77'
L57	S71°55'05"E	14.66'
L58	S51°06'20"E	55.04'
L59	S65°20'11"E	24.82'
L60	N24°11'31"E	58.23'
L61	N55°51'51"E	71.67'
L62	S71°35'54"W	46.74'
L63	S55°48'54"E	80.84'
L64	S05°04'44"E	40.73'
L65	S78°11'02"E	43.40'
L66	S48°22'50"W	51.23'
L67	N78°01'11"W	34.42'
L68	N07°59'26"W	21.77'
L69	N14°42'37"E	18.30'
L70	N78°22'40"W	63.77'
L71	N23°52'36"E	28.33'
L72	S48°37'03"W	35.61'
L73	S45°24'21"E	24.46'
L74	S43°41'02"E	67.43'
L75	N48°52'04"W	34.52'

A16	RADIUS:	194.24'
	ARC LENGTH:	36.48'
	BEARING:	S83°49'24"E
	CHORD LENGTH:	36.87'

PLAT REF. NO. 18518

PREPARED BY: KEVIN P. RILEY
 STATE OF MARYLAND
 LICENSED LANDSCAPE ARCHITECT
 LICENSE REGISTRATION NO. 101006
 NAME: *K. Riley* DATE: 10/10/06

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER: *Robert J. Wilson* DATE: 10/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 JAMES M. IRVIN, DIRECTOR DATE: 10/30/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DIRECTOR: *Mark A. Wright* DATE: 10/30/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *Mark A. Wright* DATE: 10/30/06

CHIEF, DIVISION OF LAND DEVELOPMENT: *Andy Harnett* DATE: 10/30/06

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

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



DES: KPR			
DRN: AM			
CHK: REM			
DATE: 10/11/06	BY: NO.	REVISION	DATE

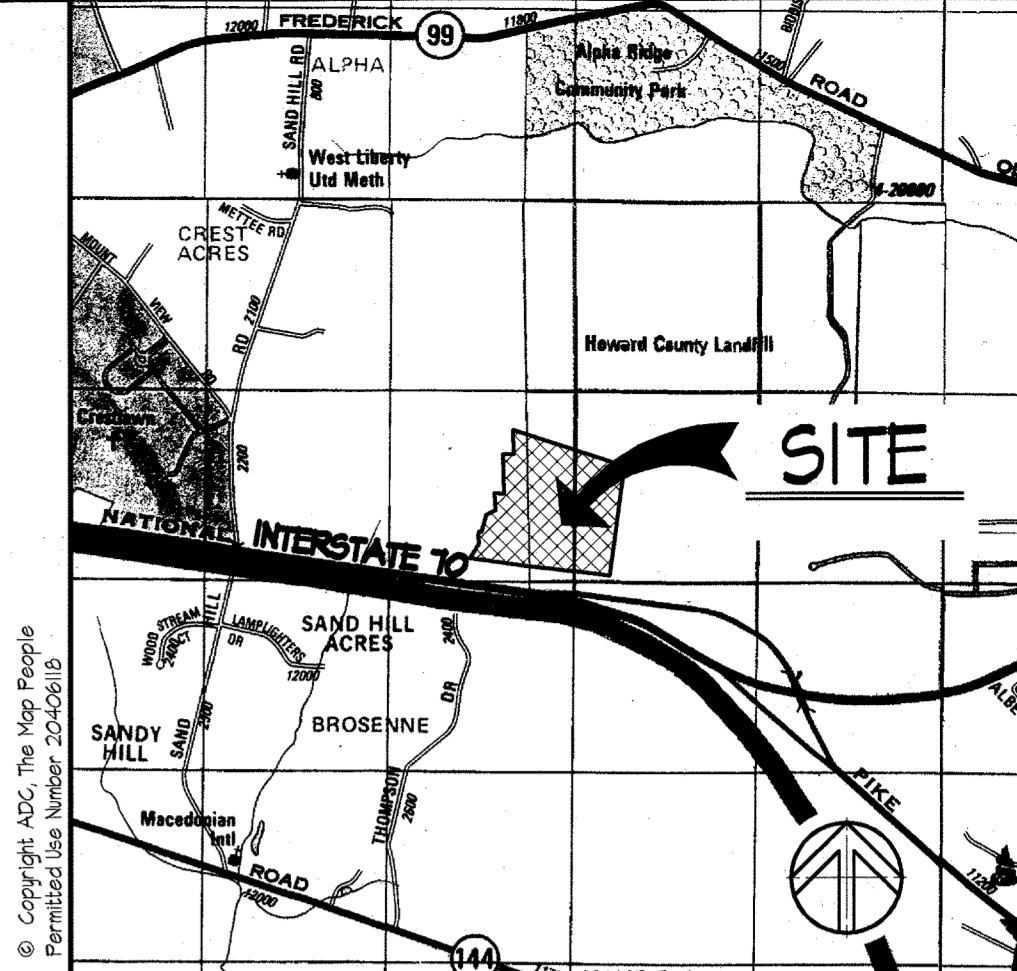
Forest Conservation Plan
 600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-01B2, Howard County, Maryland
 OWNER: Howard County, Department of Public Works, 3430 Courthouse Drive, Ellicott City, Maryland 21043, Phone (410) 313-3100
 ADDRESS / PERMIT INFORMATION: PARCEL #253, ADDRESS: 2200 Alpha Center Drive, PLAT No. 1576, L.66941/F.619, GRID No. 218, ZONE: RC-DEO, TAX MAP No. 16, 3rd Election District, Census Tract 6030, WATER CODE: 150, SEWER CODE: Private - Holding Tank

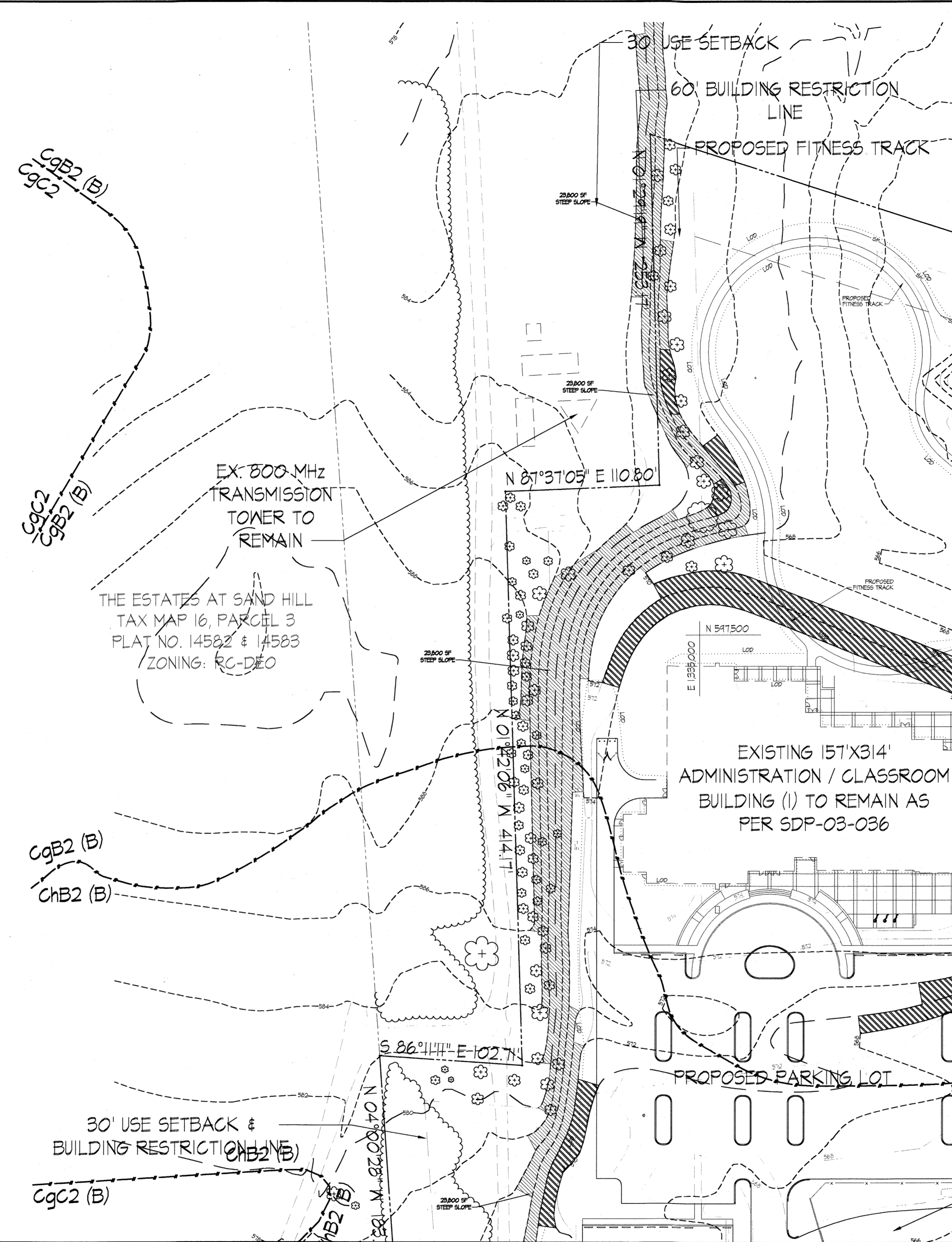
C7.01

SCALE: 1"=50'

SHEET 66 OF 81



Vicinity Map Scale: 1" = 2000'



MATCHLINE SHEET C7.02

MATCHLINE SHEET C7.03

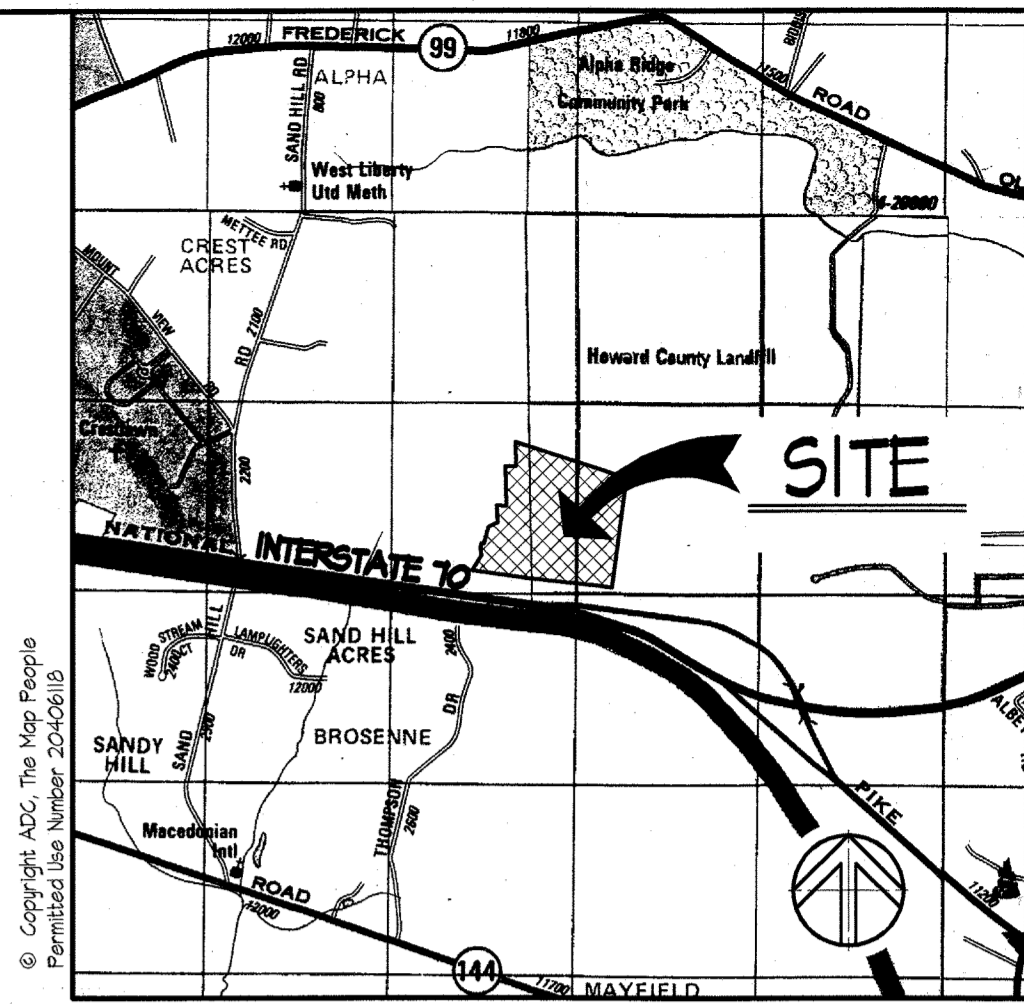
LEGEND

	PROPERTY LINE
	EXISTING TREELINE
	EXISTING BRUSHLINE
	EXISTING TREES TO REMAIN
	PROPOSED TREELINE
	EXISTING BRUSHLINE TO BE REMOVED
	EXISTING TREES TO BE REMOVED
	EXISTING FOREST CONSERVATION EASEMENT
	PROPOSED REFORESTATION EASEMENT
	EXISTING STREAM
	EXISTING WETLAND
	EXISTING SOILS
	PROPOSED SUPER SILT FENCE
	EXISTING FLOODPLAIN
	PROPOSED TREES
	EXISTING STEEP SLOPES 15% - 25%
	EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA LESS THAN 20,000 SF
	EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF
	LIMIT OF DISTURBANCE
	TREE PROTECTION FENCE

SOILS CHART

SYMBOL	NAME	HYDROLOGIC SOIL GROUP	K FACTOR
Ba	BAILE SILT LOAM	D	0.43
CgC2	CHESTER GRAVELLY SILT LOAM	B	0.32
CgC2	CHESTER GRAVELLY SILT LOAM	B	0.32
CIA	CHESTER SILT LOAM	B	0.32
ChB2	CHESTER SILT LOAM	B	0.32
GnB2	GLENVILLE SILT LOAM	C	0.32

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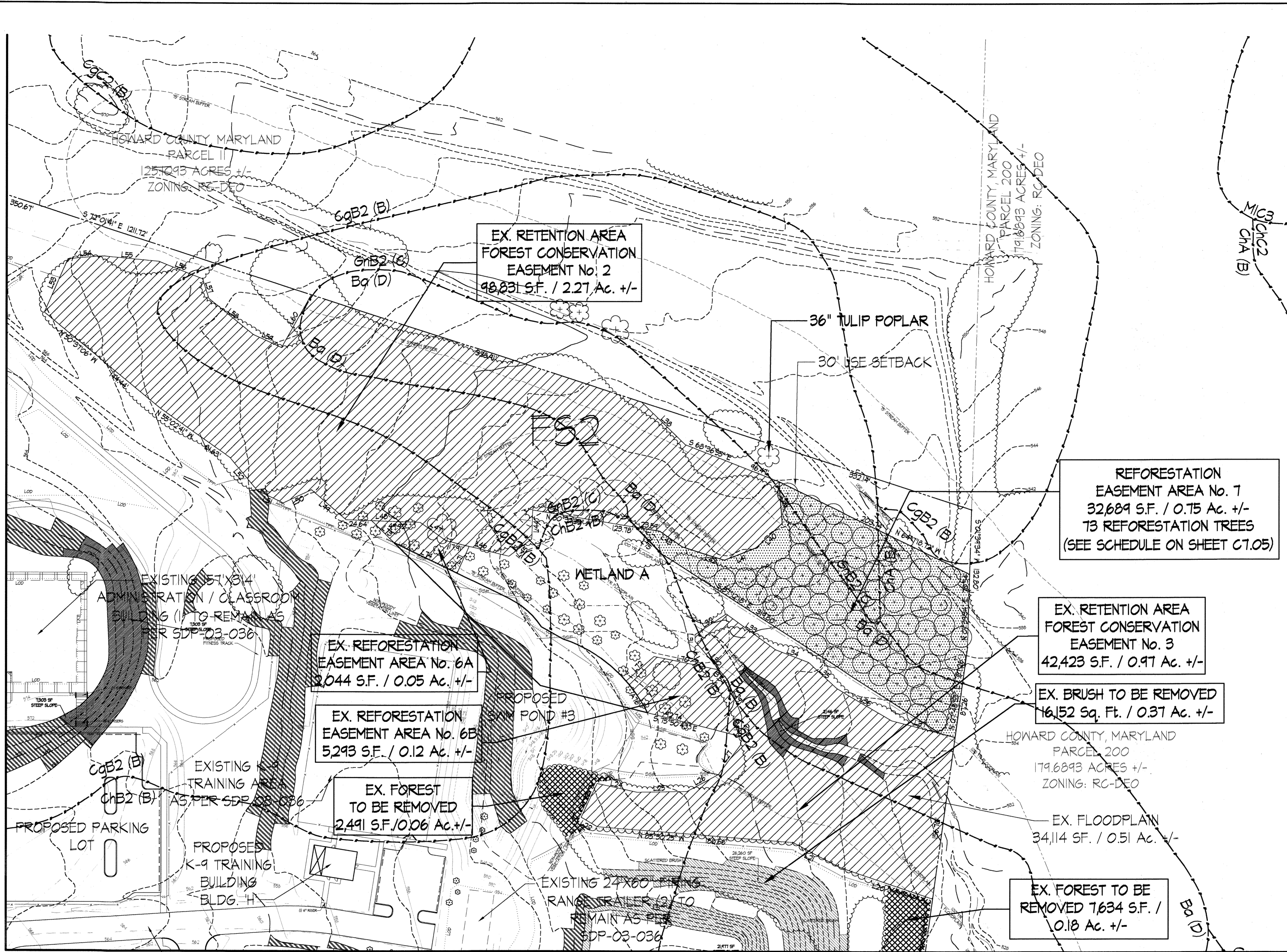


Vicinity Map Scale: 1" = 2000'

LINE TABLE

LINE	BEARING	DISTANCE
L1	N85°44'26"W	42.33'
L2	N4°50'29"E	22.10'
L3	N84°48'54"W	49.61'
L4	N07°34'45"E	21.43'
L5	N44°46'30"W	40.00'
L6	N27°36'41"W	55.03'
L7	N86°20'52"E	25.18'
L8	N47°16'04"W	5.56'
L9	S89°10'25"W	17.53'
L10	N84°20'04"E	45.52'
L11	N45°03'58"E	20.18'
L12	S44°08'32"E	24.17'
L13	S84°10'45"E	54.74'
L14	S78°19'20"E	46.14'
L15	S42°32'04"E	45.40'
L16	S76°16'25"E	66.76'
L17	N0°00'00"E	2.11'
L18	S77°23'01"E	20.36'
L19	S76°54'45"E	35.17'
L20	N71°28'01"W	45.15'
L21	N6°57'21"W	44.57'
L22	N54°58'54"W	17.31'
L23	N25°12'38"E	38.02'
L24	S71°48'51"E	34.94'
L25	N84°02'03"E	41.43'
L26	N6°29'00"E	34.54'
L27	N84°31'03"E	36.14'
L28	N0°08'02"E	27.21'
L29	N00°30'51"W	36.31'
L30	N84°54'34"W	44.43'
L31	N00°00'00"E	6.46'
L32	N81°18'02"E	38.17'
L33	S84°10'11"E	50.22'
L34	S68°47'45"E	34.25'
L35	S47°04'01"E	36.77'
L36	S87°48'27"E	61.23'
L37	S78°22'41"E	62.78'
L38	S50°36'02"E	56.51'
L39	S04°40'08"E	46.00'
L40	S46°18'19"W	34.44'
L41	S48°11'52"W	32.50'
L42	N72°24'06"W	42.24'
L43	N85°09'31"W	26.41'
L44	S01°39'20"W	21.73'
L45	S50°44'49"W	21.72'
L46	N75°54'35"W	61.92'
L47	N54°57'40"W	30.65'
L48	N86°02'48"W	70.82'
L49	N44°10'10"W	45.98'
L50	S44°48'31"W	24.44'
L51	N64°10'15"W	21.76'
L52	N84°47'44"W	40.43'
L53	N23°46'29"E	56.44'
L54	N85°11'25"E	35.06'
L55	S84°48'01"E	32.97'
L56	S68°11'24"E	45.17'
L57	S17°58'05"E	14.66'
L58	S57°06'20"E	35.04'
L59	S45°23'01"E	24.50'
L60	N04°11'51"E	58.23'
L61	N85°51'51"E	11.67'
L62	S17°58'54"W	46.74'
L63	S55°40'54"E	30.94'
L64	S03°02'44"E	40.73'
L65	S78°11'03"E	45.40'
L66	S48°22'50"W	31.23'
L67	N79°01'11"W	34.42'
L68	N07°58'26"W	21.77'
L69	N14°25'51"E	18.50'
L70	N78°22'40"W	63.77'
L71	N23°52'36"E	28.33'
L72	S46°57'03"W	35.61'
L73	S45°21'21"E	24.86'
L74	S63°44'05"E	67.43'
L75	N43°52'04"W	34.50'

MATCHLINE SHEET C7.01



LEGEND

	PROPERTY LINE
	EXISTING TREELINE
	EXISTING BRUSHLINE
	EXISTING TREES TO REMAIN
	PROPOSED TREELINE
	EXISTING BRUSHLINE TO BE REMOVED
	EXISTING TREES TO BE REMOVED
	EXISTING FOREST CONSERVATION EASEMENT
	PROPOSED REFORESTATION EASEMENT
	EXISTING STREAM
	EXISTING WETLAND
	EXISTING SOILS
	PROPOSED SUPER SILT FENCE
	EXISTING FLOODPLAIN
	PROPOSED TREES
	EXISTING STEEP SLOPES 15% - 25%
	EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA LESS THAN 20,000 SF
	EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF
	LIMIT OF DISTURBANCE
	TREE PROTECTION FENCE

MATCHLINE SHEET C7.04

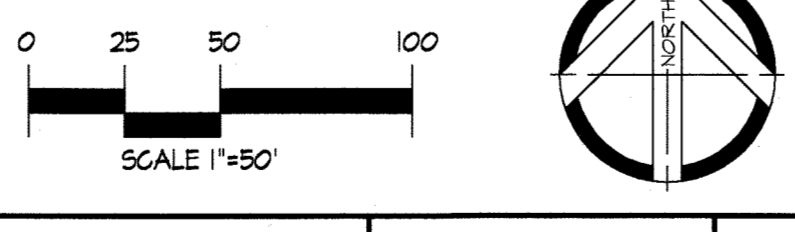
PLAT REF. NO. 18618

PREPARED BY: KEVIN P. RILEY
STATE OF MARYLAND
LICENSED LANDSCAPE ARCHITECT
LICENSE REGISTRATION NO. 1011/06
NAME: *K. Riley* DATE: 10/11/06

EX. PRIVATE GRAVEL DRIVE AS PER SDP-03-036 TO BE PAVED

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
Robert J. Wahn 10/30/06
COUNTY HEALTH OFFICER DATE

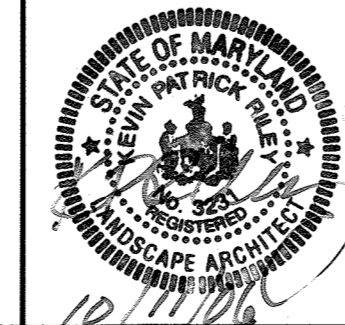
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James M. Irwin 10/11/06
JAMES M. IRWIN, DIRECTOR DATE



APPROVED: DEPARTMENT OF PLANNING & ZONING
Mark L. Leight 10/24/06
DIRECTOR DATE
David H. Hester 10/20/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION & 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

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



DES: KPR	BY: NO.	REVISION	DATE
DRN: AM			
CHK: REM			
DATE 10/11/06			

Forest Conservation Plan
600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-01B2, Howard County, Maryland
OWNER: Howard County, Department of Public Works, 3430 Courthouse Drive, Ellicott City, Maryland, 21043, Phone (410) 313-2100
ADDRESS / PERMIT INFORMATION:
PARCEL #253, ADDRESS: 2200 Alpha Center Drive
PLAT No. 1576, L6684 / F614
GRID No. 219, ZONE: RC-DEO, TAX MAP No. 16
3rd Election District, Census Tract 6030
WATER CODE: 130, SEWER CODE: Private - Holding Tank

SOILS CHART

SYMBOL	NAME	HYDROLOGIC SOIL GROUP	K FACTOR
Ba	BAILE SILT LOAM	D	0.43
CgB2	CHESTER GRAVELLY SILT LOAM	B	0.32
CgC2	CHESTER GRAVELLY SILT LOAM	B	0.32
ChA	CHESTER SILT LOAM	B	0.32
ChB2	CHESTER SILT LOAM	B	0.32
GnB2	GLENVILLE SILT LOAM	C	0.32

C7.02

SCALE: 1"=50'
SHEET 67 OF 84

Z:\00103103\HowardCo_PublicSafetyCenter\C7.02_ForestConservationPlan.dwg, 10/20/2006 11:16:56 AM, Copyright: Site Resources, Inc.

MATCHLINE SHEET C7.01

LINE TABLE

LINE	BEARING	DISTANCE
L1	N5°41'26"W	42.33'
L2	N4°50'23"E	22.07'
L3	N34°48'54"W	45.61'
L4	N00°31'45"E	21.83'
L5	N44°46'50"W	40.00'
L6	N71°36'47"W	59.03'
L7	N36°22'52"E	26.19'
L8	N47°16'04"W	15.86'
L9	S55°01'23"W	17.59'
L10	N84°20'04"E	49.52'
L11	N45°02'50"E	20.18'
L12	S44°02'32"E	24.17'
L13	S64°01'43"E	54.74'
L14	S78°14'20"E	46.14'
L15	S42°32'04"E	45.40'
L16	S78°16'23"E	56.76'
L17	N0°02'00"E	21.11'
L18	S77°28'01"E	20.86'
L19	S76°54'49"E	35.77'
L20	N71°22'07"W	45.53'
L21	N6°57'21"W	44.57'
L22	N54°35'54"W	17.81'
L23	N25°12'58"E	36.02'
L24	S77°45'31"E	34.54'
L25	N81°02'02"E	47.89'
L26	N61°25'00"E	34.34'
L27	N36°31'08"E	36.14'
L28	N01°08'02"E	27.21'
L29	N00°30'31"W	26.31'
L30	N84°54'34"W	44.43'
L31	N00°00'00"E	6.46'
L32	N56°18'02"E	35.42'
L33	S54°01'17"E	59.22'
L34	S45°47'45"E	34.28'
L35	S47°04'01"E	36.77'
L36	S54°48'21"E	61.09'
L37	S75°22'41"E	62.78'
L38	S50°36'02"E	56.31'
L39	S04°40'06"E	46.00'
L40	S46°14'14"W	34.44'
L41	S68°17'52"W	32.80'
L42	N72°24'06"W	42.24'
L43	N55°04'31"W	26.41'
L44	S03°38'20"W	21.73'
L45	S52°44'48"W	21.72'
L46	N78°54'55"W	61.42'
L47	N54°57'40"W	30.65'
L48	N89°02'48"W	72.89'
L49	N44°04'10"W	48.46'
L50	S64°45'31"W	24.94'
L51	N64°10'15"W	27.76'
L52	N34°41'44"W	40.83'
L53	N23°46'28"E	36.44'
L54	N85°11'25"E	35.06'
L55	S84°49'01"E	52.37'
L56	S68°11'24"E	49.77'
L57	S71°35'25"E	14.66'
L58	S51°06'20"E	35.04'
L59	S65°20'11"E	24.80'
L60	N34°17'31"E	58.23'
L61	N35°51'37"E	71.67'
L62	S71°35'54"E	46.74'
L63	S38°48'54"E	80.84'
L64	S03°04'44"E	40.73'
L65	S78°17'03"E	43.40'
L66	S45°22'50"W	57.23'
L67	N75°01'11"W	34.42'
L68	N07°35'26"W	21.17'
L69	N1°42'51"E	18.30'
L70	N78°22'40"W	63.77'
L71	N23°52'36"E	28.33'
L72	S48°31'03"W	35.61'
L73	S45°24'21"E	24.46'
L74	S65°44'05"E	67.43'
L75	N49°52'04"W	34.50'

ARC RADIUS: 134.24'
 ARC LENGTH: 36.49'
 BEARING: 559°46'24"E
 CHORD LENGTH: 36.67'

PLATREF. No. 18518

PREPARED BY: KEVIN P. RILEY
 STATE OF MARYLAND
 LICENSED LANDSCAPE ARCHITECT
 LICENSE REGISTRATION NO. 101410
 NAME: *K. Riley* DATE: 10/14/06

APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT
 COUNTY HEALTH OFFICER: *Robert J. Wain* DATE: 10/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 JAMES M. IRVIN, DIRECTOR DATE: 10/30/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DIRECTOR: *Mark L. Weyler* DATE: 10/31/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: *William J. ...* DATE: 10/30/06
 CHIEF, DIVISION OF LAND DEVELOPMENT: *Candy ...* DATE: 10/30/06

EDMEADES & STROMDAHL, LTD.
 ARCHITECTS / PLANNERS
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 Phone: 410.879.0388 Fax: 410.879.4785
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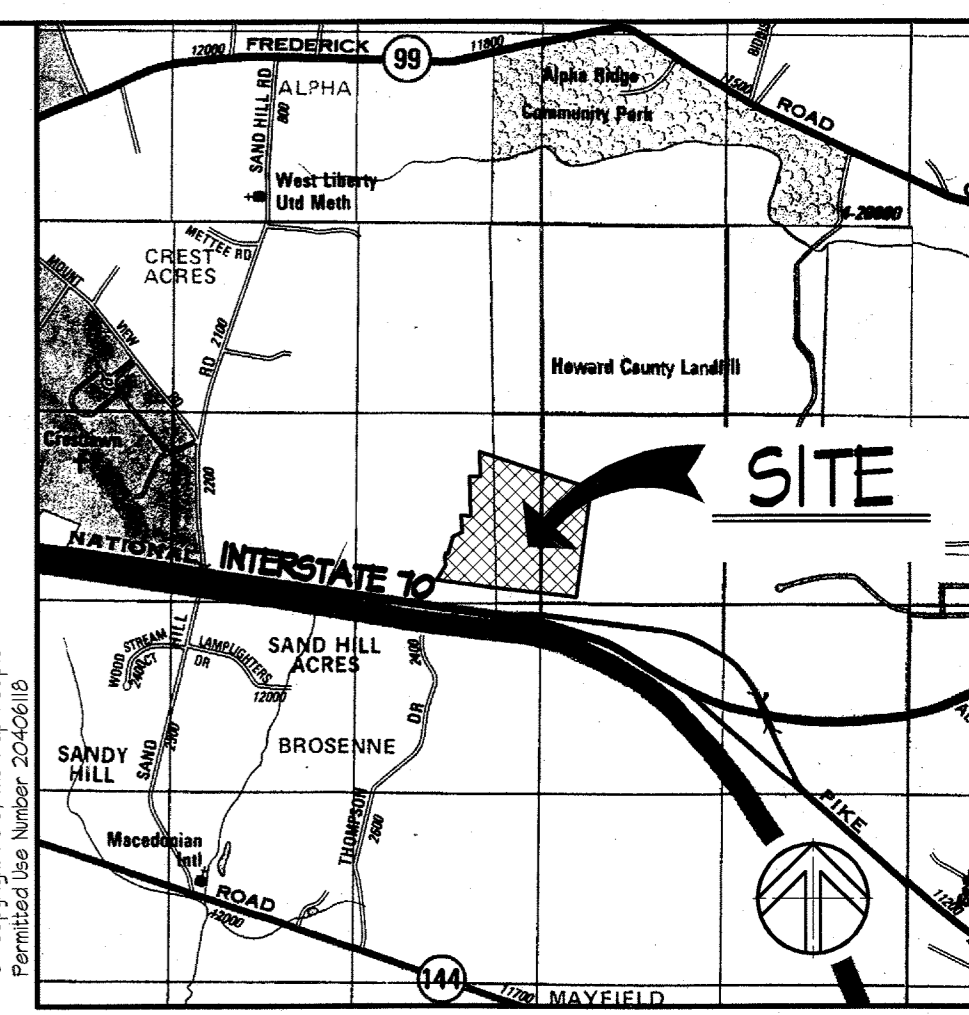
DES: KPR			
DRN: AM			
CHK: REM			
DATE: 10/11/06	BY: NO.	REVISION	DATE

Forest Conservation Plan
 600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

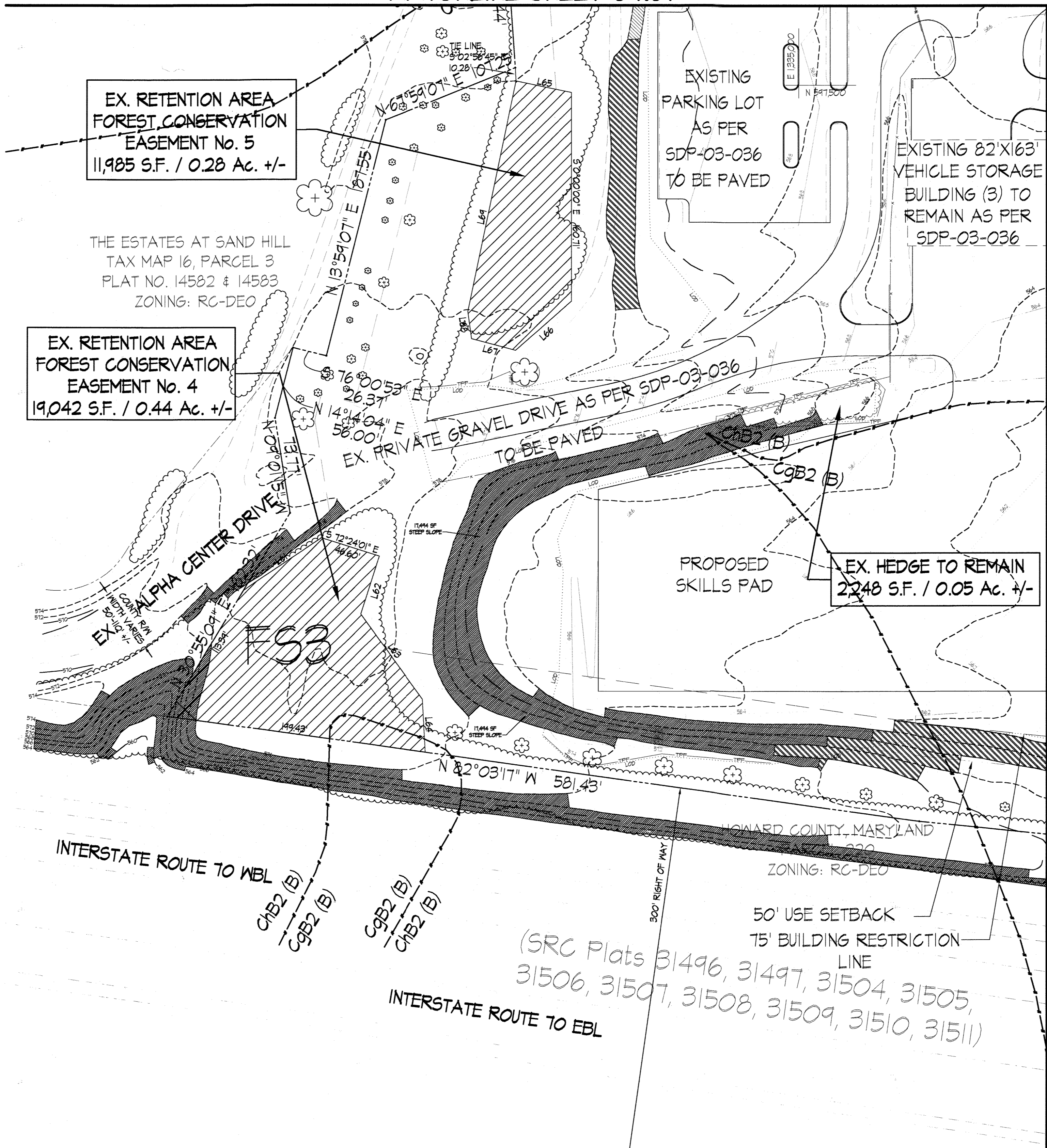
Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
 at Alpha Ridge Landfill, Capital Project No. C-01B2, Howard County, Maryland
 OWNER: Howard County, Department of Public Works, 3430 Courthouse Drive, Ellicott City, Maryland 21043, Phone (410) 313-2100
 ADDRESS / PERMIT INFORMATION: PARCEL #253, ADDRESS: 2200 Alpha Center Drive, PLAT No. 5716, L. 66891/F. 14, GRD No. 2/B, ZONE: RC-DEO, TAX MAP No. 16, 3rd Election District, Census Tract 6030, WATER CODE: 130, SEWER CODE: Private - Holding Tank

C7.03

SCALE: 1"=50'
 SHEET 68 OF 81



Vicinity Map Scale: 1" = 2000'



MATCHLINE SHEET C7.04

LEGEND

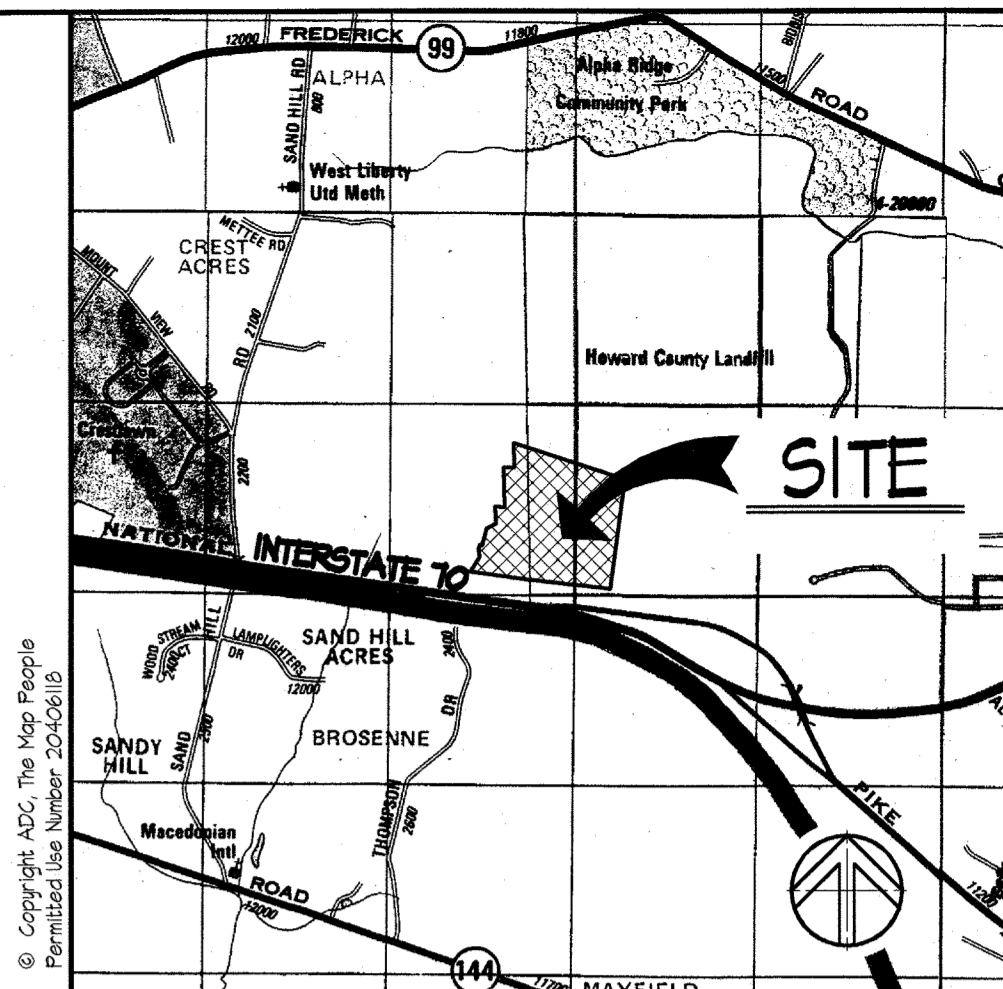
	PROPERTY LINE
	EXISTING TREELINE
	EXISTING BRUSHLINE
	EXISTING TREES TO REMAIN
	PROPOSED TREELINE
	EXISTING BRUSHLINE TO BE REMOVED
	EXISTING TREES TO BE REMOVED
	EXISTING FOREST CONSERVATION EASEMENT
	PROPOSED REFORESTATION EASEMENT
	EXISTING STREAM
	EXISTING WETLAND
	EXISTING SOILS
	PROPOSED SUPER SILT FENCE
	EXISTING FLOODPLAIN
	PROPOSED TREES
	EXISTING STEEP SLOPES 15% - 25%
	EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA LESS THAN 20,000 SF
	EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF
	LOD
	LIMIT OF DISTURBANCE
	TREE PROTECTION FENCE

SOILS CHART

SYMBOL	NAME	HYDROLOGIC SOIL GROUP	K FACTOR
Ba	BAILE SILT LOAM	D	0.43
Cg2	CHESTER GRAVELLY SILT LOAM	B	0.32
Cg2	CHESTER GRAVELLY SILT LOAM	B	0.32
ChA	CHESTER SILT LOAM	B	0.32
ChB2	CHESTER SILT LOAM	B	0.32
GrB2	GLENVILLE SILT LOAM	C	0.32

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MATCHLINE SHEET C7.02



Vicinity Map Scale: 1" = 2000'

EXISTING 82'X163' VEHICLE STORAGE BUILDING (3) TO REMAIN AS PER SDP-03-036

PROPOSED EXPOSURE TRAINING PROP BLDG. 'G'

PROPOSED POLICE SIMULATION PROP BLDG. 'E'

EX. FOREST TO BE REMOVED 7634 S.F. / 0.18 Ac. +/-

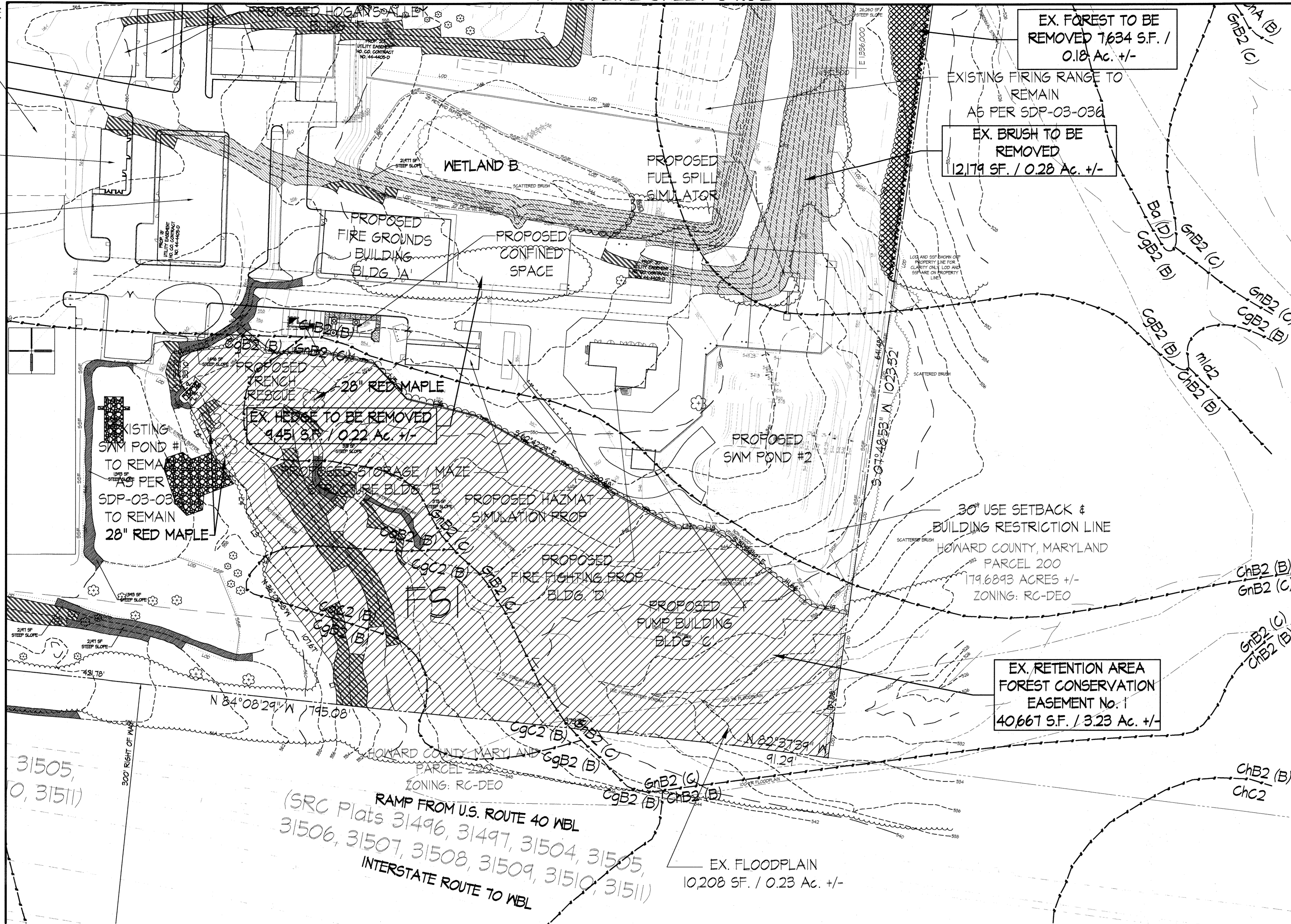
EXISTING FIRING RANGE TO REMAIN AS PER SDP-03-036

EX. BRUSH TO BE REMOVED 12,179 S.F. / 0.28 Ac. +/-

LINE TABLE

LINE	BEARING	DISTANCE
L1	N5°44'26"W	42.39
L2	N4°15'23"E	22.02
L3	N54°48'54"W	49.61
L4	N00°51'48"E	21.48
L5	N44°46'50"W	40.00
L6	N21°58'47"W	58.09
L7	N84°30'22"E	28.81
L8	N41°16'04"W	15.86
L9	S58°01'23"W	17.95
L10	N84°20'04"E	49.52
L11	N48°23'07"E	20.18
L12	S44°08'32"E	24.11
L13	S84°01'43"E	54.14
L14	S78°14'20"E	46.14
L15	S42°52'04"E	48.40
L16	S78°16'22"E	66.78
L17	N90°00'00"E	21.11
L18	S71°28'01"E	20.86
L19	S76°54'48"E	38.17
L20	N71°29'01"W	48.15
L21	N61°51'21"W	49.51
L22	N84°28'54"W	17.81
L23	N25°12'58"E	36.02
L24	S71°49'51"E	34.94
L25	N84°22'02"E	47.83
L26	N61°28'00"E	34.34
L27	N86°31'08"E	36.14
L28	N01°08'02"E	21.21
L29	N02°05'01"W	36.31
L30	N84°58'31"W	49.43
L31	N00°00'00"E	6.46
L32	N68°18'02"E	58.92
L33	S54°01'17"E	58.22
L34	S48°47'45"E	34.25
L35	S47°04'01"E	36.71
L36	S59°48'21"E	61.05
L37	S75°22'41"E	62.19
L38	S58°46'02"E	36.51
L39	S04°40'00"E	46.00
L40	S46°14'14"W	34.44
L41	S68°11'52"W	32.80
L42	N72°24'06"W	42.24
L43	N85°04'19"W	28.41
L44	S01°58'20"W	21.78
L45	S82°44'43"W	21.12
L46	N75°54'59"W	61.92
L47	N84°21'40"W	30.65
L48	N89°22'41"W	32.83
L49	N44°04'10"W	45.46
L50	S64°49'31"W	24.94
L51	N64°10'19"W	27.16
L52	N84°17'44"W	40.93
L53	N23°46'28"E	56.44
L54	N85°11'29"E	58.06
L55	S84°43'01"E	52.87
L56	S68°11'24"E	49.17
L57	S71°58'09"E	45.84
L58	S51°06'20"E	55.04
L59	S65°20'11"E	24.80
L60	N24°17'31"E	58.29
L61	N85°31'31"E	71.87
L62	S71°58'14"W	46.74
L63	S55°48'54"E	80.84
L64	S03°04'44"E	40.73
L65	S78°11'09"E	49.40
L66	S48°22'00"W	37.23
L67	N75°01'11"W	34.42
L68	N01°59'26"W	21.17
L69	N1°42'57"E	18.30
L70	N78°22'40"W	65.77
L71	N23°23'26"E	28.93
L72	S49°51'09"W	35.61
L73	S45°24'21"E	24.96
L74	S63°44'08"E	67.48
L75	N49°52'04"W	34.30

MATCHLINE SHEET C7.03



EXISTING SWAMP POND #1 TO REMAIN AS PER SDP-03-036 TO REMAIN 28" RED MAPLE

EX. HEDGE TO BE REMOVED 4,451 S.F. / 0.22 Ac. +/-

EX. RETENTION AREA FOREST CONSERVATION EASEMENT No. 1 40,667 S.F. / 3.23 Ac. +/-

EX. FLOODPLAIN 10,208 S.F. / 0.23 Ac. +/-

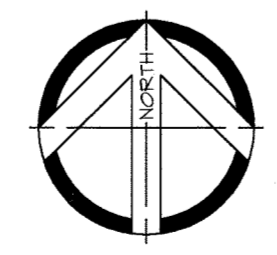
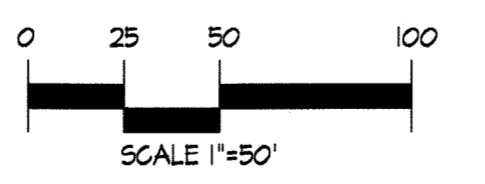
LEGEND

- PROPERTY LINE
- EXISTING TREELINE
- EXISTING BRUSHLINE
- EXISTING TREES TO REMAIN
- PROPOSED TREELINE
- EXISTING BRUSHLINE TO BE REMOVED
- EXISTING TREES TO BE REMOVED
- EXISTING FOREST CONSERVATION EASEMENT
- PROPOSED REFORESTATION EASEMENT
- EXISTING STREAM
- EXISTING WETLAND
- EXISTING SOILS
- PROPOSED SUPER SILT FENCE
- EXISTING FLOODPLAIN
- PROPOSED TREES
- EXISTING STEEP SLOPES 15% - 25%
- EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA LESS THAN 20,000 SF
- EXISTING STEEP SLOPES GREATER THAN 25% IN A CONTIGUOUS AREA MORE THAN 20,000 SF
- LIMIT OF DISTURBANCE
- TREE PROTECTION FENCE

SOILS CHART

SYMBOL	NAME	HYDROLOGIC SOIL GROUP	K FACTOR
Ba	BAILE SILT LOAM	D	0.43
Cg2	CHESTER GRAVELLY SILT LOAM	B	0.32
Cg2	CHESTER GRAVELLY SILT LOAM	B	0.32
Ch2	CHESTER SILT LOAM	B	0.32
Ch2	CHESTER SILT LOAM	B	0.32
Ch2	CHESTER SILT LOAM	B	0.32
GnB2	GLENVILLE SILT LOAM	C	0.32

PREPARED BY: KEVIN P. RILEY
STATE OF MARYLAND
LICENSED LANDSCAPE ARCHITECT
LICENSE REGISTRATION NO. 12/11/06



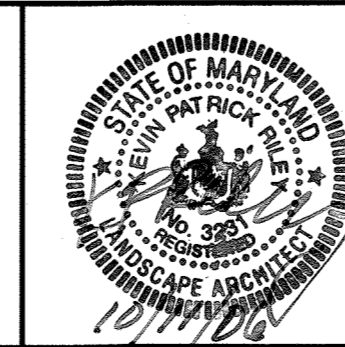
APPROVED: FOR PUBLIC WATER AND PRIVATE SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
10/30/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
10/30/06

APPROVED: DEPARTMENT OF PLANNING & ZONING
10/30/06

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

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



DES: KFR	
DRN: AM	
CHK: REM	
DATE: 10/11/06	
BY: NO.	
REVISION	
DATE	

Forest Conservation Plan
600' SCALE MAP NO. 16 BLOCK NO. 2 / 8

Phase II Improvements: four buildings, eight training props and associated infrastructure
PUBLIC SAFETY TRAINING CENTER
at Alpha Ridge Landfill, Capital Project No. C-01B2, Howard County, Maryland
OWNER: Howard County, Department of Public Works, 9450 Courthouse Drive, Ellicott City, Maryland 21043, Phone: (410) 313-2100
ADDRESS / PERMIT INFORMATION: PARCEL #253 ADDRESS: 3200 Alpha Center Drive, FLAT NO. 218, L 6694 / F 14, GRID NO. 218, ZONE: RC-DEO, TAX MAP NO. 16, 3rd Election District, Census Tract 6030, WATER CODE: 150, SEWER CODE: Private - Holding Tank

C7.04

SCALE: 1"=50'
SHEET 69 OF 84

JAMES N. ROBEY PUBLIC SAFETY TRAINING CENTER

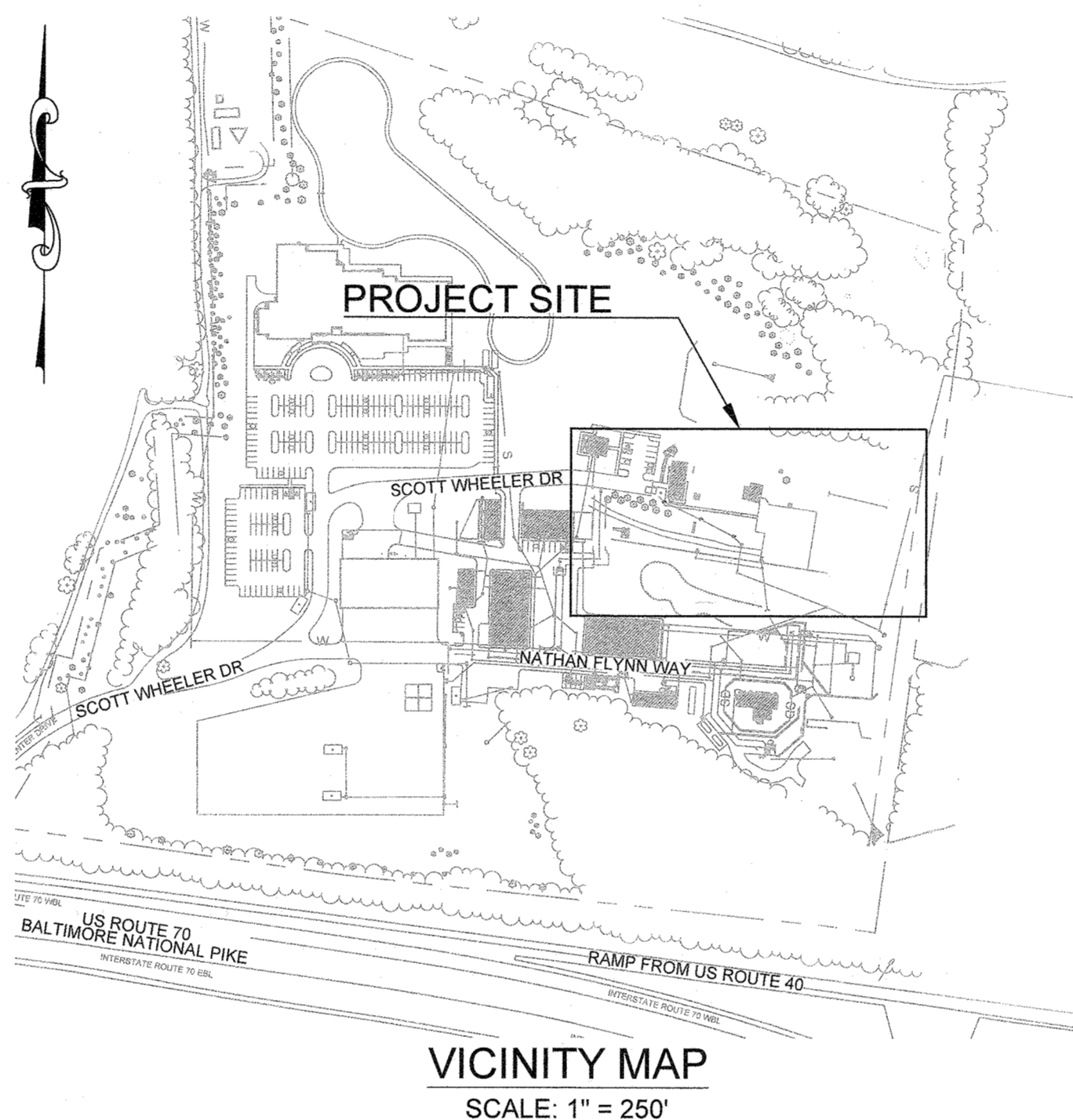
FIRING RANGE SAFETY IMPROVEMENTS

MARRIOTTVILLE, MARYLAND
 HOWARD COUNTY
 DEPARTMENT OF PUBLIC WORKS

CAPITAL PROJECT NO. C-0182 / C-0366
 CONTRACT NO. _____

INDEX OF DRAWINGS

Sheet Number	Sheet Title	Sheet Description
71	G-000	Cover Sheet
72	C-101	Existing Conditions & Demolition Plan
73	C-201	Site, Grading, Stormwater & Utility Plan
74	C-230	Site Grading Sections & Wall Details I
75	C-231	Site Grading Sections & Wall Details II
76	C-300	Erosion & Sediment Control Notes
77	C-301	Erosion & Sediment Control (Phase I)
78	C-302	Erosion & Sediment Control (Phase II)
79	C-350	Erosion & Sediment Control Details I
80	C-351	Erosion & Sediment Control Details II
81	C-352	Erosion & Sediment Control Details III



GENERAL NOTES:

- THE TOPOGRAPHIC INFORMATION SHOWN HEREON WAS PROVIDED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS IN SEPTEMBER 2020 & OCTOBER 2020, THIS INFORMATION MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION TO HIS/HER OWN SATISFACTION.
- COORDINATES, BEARINGS AND DISTANCES SHOWN HEREON ARE REFERRED TO THE MARYLAND COORDINATE SYSTEM (NAD'83/2011). ELEVATIONS SHOWN HEREON ARE REFERRED TO THE NAVD'88 DATUM.
- FOR DETAILS NOT SHOWN ON THE DRAWING OR DESCRIBED IN THE CONTRACT DOCUMENTS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON SITE.
- IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER PRIOR TO THE START OF ANY WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING MISS UTILITY AT 1-800-257-7777 FIVE DAYS PRIOR TO THE START OF ANY EXCAVATION WORK. CONTRACTOR SHALL RECEIVE CLEARANCE FROM MISS UTILITY PRIOR TO THE START OF WORK.

- IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, TO PROVIDE ALL SITE SUB-CONTRACTORS/BIDDERS WITH FULL AND COMPLETE SETS OF ALL DRAWINGS FOR THEIR USE IN PREPARING BIDS. THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER SHALL BE RESPONSIBLE FOR ANY AND ALL DELAYS AND COSTS ARISING DURING CONSTRUCTION FROM BIDS BASED UPON INCOMPLETE SETS OF SITE DOCUMENTS.
- ALL EXISTING FEATURES OUTSIDE OF THE LIMIT OF DISTURBANCE (LOD) ARE TO REMAIN, UNLESS OTHERWISE NOTED. ITEMS OUTSIDE THESE LIMITS THAT ARE DAMAGED OR REMOVED BY THE CONTRACTOR SHALL BE RETURNED TO PRE-DEMOLITION CONDITIONS OR REPLACED IN-KIND AT NO ADDITIONAL COST TO THE OWNER.
- EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR AND ARE NOT WARRANTED OR GUARANTEED BY THE OWNER OR THE ENGINEER TO BE COMPLETE OR CORRECT. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO HIS OWN SATISFACTION.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY INVERTS AND CLEARANCES FROM NEW WORK PRIOR TO START OF ANY WORK.
- THE CONTRACTOR SHALL MAINTAIN, REPAIR, AND/OR REPLACE ANY EXISTING SEDIMENT CONTROL DEVICES ENCOUNTERED AND DISTURBED DURING THE COURSE OF CONSTRUCTION AT THE END OF EACH DAY. ALL MEASURES AND DEVICES SHALL BE REPAIRED OR REPLACED BEFORE LEAVING THE WORK SITE.
- ALL UTILITIES SHOWN ARE EXISTING TO REMAIN, UNLESS OTHERWISE NOTED. THE TOPS OF ALL FRAMES, GRATES, AND COVERS OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF CONTRACT AND/OR DISTURBANCE SHALL BE ADJUSTED TO THE NEW GRADES.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE HOWARD COUNTY, STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS AND HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD DETAILS.
- THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS AND INSPECTIONS.
- UNLESS OTHERWISE NOTED, DIMENSIONS FROM CURB ARE MEASURED AT FACE OF CURB.
- FINISHED GRADES SHALL FALL AWAY FROM EXISTING AND PROPOSED BUILDINGS AT A MINIMUM OF 4% FOR VEGETATED AREAS, A MINIMUM OF 1% FOR CONCRETE SURFACES, AND A MINIMUM OF 3% FOR BITUMINOUS SURFACES UNLESS OTHERWISE INDICATED.
- ALL DISTURBED AREAS NOT STABILIZED WITH STRUCTURES, PAVING, AND/OR PLANTINGS SHALL BE STABILIZED WITH FOUR INCHES OF TOPSOIL, SEED, MULCH AND WATERED TO ESTABLISH AN ADEQUATE GROWTH OF GRASS AS SPECIFIED ON THE EROSION AND SEDIMENT CONTROL NOTES. SLOPES STEEPER THAN 2:1 SHALL RECEIVE TWO INCHES OF TOPSOIL, SEED AND STABILIZATION MATTING.
- NUMERICAL DIMENSIONS AND ELEVATIONS SHOWN SHALL SUPERSEDE ANY DISCREPANCY IN SCALING ON THE DRAWINGS.
- LIMIT OF DISTURBANCE AS SHOWN ON ALL DRAWINGS IS APPROXIMATE AND SHALL NOT PREVENT THE CONTRACTOR FROM EXTENDING BEYOND THESE LIMITS FOR COMPLETE INSTALLATION OF PROJECT ELEMENTS.
- CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL EXISTING AND PROPOSED BUILDING ENTRANCES DURING ALL PHASES OF CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER / OWNER IF EXISTING OR PROPOSED CONDITIONS RESTRICT ABILITY TO ACHIEVE POSITIVE DRAINAGE FROM BUILDINGS PRIOR TO THE START OF CONSTRUCTION.
- ALL CUTS OF EXISTING PAVEMENT SHALL BE NEAT AND IN A STRAIGHT LINE TO FACILITATE NEW PAVING. CONCRETE SAW CUTS SHALL BE AT THE NEAREST JOINT. PROPOSED CONCRETE SIDEWALK TO MEET EXISTING CONCRETE SIDEWALK AT NEAREST EXISTING CONSTRUCTION JOINT, BRICK OR ASPHALT.
- THE CONTRACTOR MUST MAINTAIN EMERGENCY ACCESS TO ALL BUILDINGS WITHIN AND ADJACENT TO THE CONSTRUCTION SITE.
- FOR EROSION SEDIMENT CONTROL & GEOTECHNICAL NOTES SEE SHEET C-300.
- SPOT ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST AS NEEDED TO MEET THE DESIGN INTENT.
- CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410) 313 - 1880 AT LEAST FIVE WORKING DAYS PRIOR TO START OF WORK.

CONTRACTOR NOTE:

CONTRACTORS BASE BID SHALL ASSUME HOWARD COUNTY WILL FURNISH 19,700 BCY OF MATERIAL WHICH THE CONTRACTOR WILL NEED TO LOAD, HAUL AND PLACE, ENSURING IT MEETS THE REQUIRED SOIL PROPERTIES. THE MATERIAL IS LOCATED AT THE ALPHA RIDGE LANDFILL 2350 MARRIOTTVILLE ROAD, MARRIOTTVILLE, MD 21104

ADD-ALTERNATE NO. 3:

CONTAMINATED SOIL TREATMENT (ALTERNATIVE 3) - SOURCE REMOVAL - SOIL EXCAVATION AND DISPOSAL OF UNTREATED SOIL. SEE SOIL TREATMENT DOCUMENTS PREPARED, APRIL 2021 BY EA ENGINEERING FOR DETAILS.

ADD-ALTERNATE NO. 4:

CONTAMINATED SOIL TREATMENT (ALTERNATIVE 4) - SOURCE REMOVAL - SOIL EXCAVATION, STABILIZATION AND DISPOSAL OF TREATED SOIL. SEE SOIL TREATMENT DOCUMENTS PREPARED, APRIL 2021 BY EA ENGINEERING FOR DETAILS.

ADD-ALTERNATE NO. 1:

CONTRACTOR SHALL FURNISH AND PLACE 19,700 BCY OF SOIL WHICH MEETS THE GEOTECHNICAL REQUIREMENTS OF THE PROJECT. SEE SHEET C-300 FOR GEOTECHNICAL NOTES.

ADD-ALTERNATE NO. 2:

THE INTENT OF THE PROJECT IS TO LEAVE THE EXISTING SLAB ON-SITE UNDAMAGED AT THE END OF CONSTRUCTION. HOWEVER, SHOULD HOWARD COUNTY DETERMINE REPLACEMENT IS REQUIRED, CONTRACTOR SHALL REMOVE AND REPLACE THE CONCRETE SLAB ON-SITE (APPROXIMATELY 8,700 SF OF CONCRETE REPLACEMENT AND REMOVAL).

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division
 Date: 1/15/22
 Chief, Division of Land Development
 Date: 2/3/22
 Director
 Date: 2-3-22



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, MATTHEW THOMASSON, LICENSE NO. 41799, EXPIRATION DATE: APRIL 12, 2022.



DESIGN BY: CWWM / ZWB
 DRAWN BY: ZWB
 CHECKED BY: MBT
 DATE: 12/17/2021

BY	NO.	REVISION	DATE
	1	FIRING RANGE BERM RE-GRADING	

OWNER/DEVELOPER
 HOWARD COUNTY
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043-4300

COVER SHEET
 HOWARD COUNTY - DEPARTMENT OF PUBLIC WORKS
 PUBLIC SAFETY TRAINING CENTER
 RANGE IMPROVEMENTS
 2200 SCOTT WHEELER DRIVE, MARRIOTTVILLE, MD 21104
 TAX MAP: 0016 PARCEL: 0253 GRID: 0008 ZONED: EXEMPT
 ELECTION DISTRICT 3 - HOWARD COUNTY, MARYLAND
 SHEET 71 OF 81

G-000
 RK&K PROJECT NUMBER 17240.015
 SCALE: As Shown

GENERAL NOTES

- COORDINATES, BEARINGS AND DISTANCES SHOWN HEREON ARE REFERRED TO THE MARYLAND COORDINATE SYSTEM (NAD83/2011). ELEVATIONS SHOWN HEREON ARE REFERRED TO THE NAVD88 DATUM.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO THE START OF ANY WORK.
- THIS SURVEY WAS PROVIDED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
- SEE SHEET G-000 FOR GENERAL NOTES.
- SEE SHEET C-300 FOR GEOTECHNICAL NOTES.

DEMOLITION NOTES

- CONTRACTOR TO REMOVE ALL EXISTING RIP-RAP, GRAVEL, DEBRIS, TREES, BRUSH, FENCES, POSTS, AND GABION BASKETS/STONE WITHIN THE LOD TO FACILITATE THE WORK TO BE COMPLETED. CONTRACTOR SHALL SALVAGE MATERIALS WHICH MAY BE RE-USED AND USE THEM ON SITE SUCH AS GABION STONE AND RIP-RAP.
- UTILITIES MARKED FOR DEMOLITION WILL BE REMOVED. SEE PROJECT SPECIFICATIONS FOR UTILITY ABANDONMENT DISPOSITION.
- SEE SHEET C-201 FOR ADDITIONAL INFORMATION.

DEMOLITION KEY NOTES

KEY D-1

- EXISTING RETAINING WALL TO REMAIN UNDISTURBED.
- EXISTING STORM DRAIN TO BE ABANDONED IN PLACE OR REMOVED. IF ABANDONED, CLOSE BULKHEAD WITH MIX NO. 2 CONCRETE OR BRICK MASONRY. FILL PIPE WITH FLOWABLE BACKFILL PER SECTION 314.
- EXISTING STORM DRAIN INLET TO REMAIN UNDISTURBED.
- EXISTING CONCRETE SLAB. ADD ALTERNATE NO. 2 - REMOVE EXISTING SLAB AND PREPARE SUB-GRADE FOR NEW SLAB
- CLEAR AND GRUB
- EXISTING SANITARY MANHOLE TO REMAIN UNDISTURBED.
- EXISTING SANITARY MANHOLE TO REMAIN. ADJUST TO FINISHED GRADE.
- PROTECT CLEANOUTS DURING CONSTRUCTION.
- DEMOLISH COVERED DECK & FULL DEPTH CONCRETE PAD.
- EXISTING ELECTRICAL BOXES TO REMAIN UNDISTURBED.

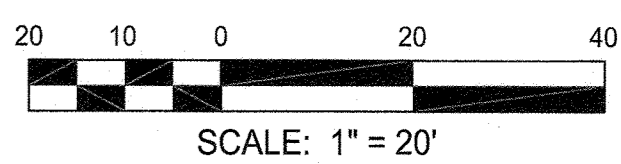


EXISTING CONDITIONS LEGEND

- 456 --- EXISTING MINOR CONTOUR
- 455 --- EXISTING MAJOR CONTOUR
- EXISTING EDGE OF ROAD
- EXISTING STORM DRAIN AND INLET
- EXISTING WATER AND FIRE HYDRANT
- EXISTING SEWER
- EXISTING ELECTRIC
- EXISTING COMMUNICATION
- EXISTING GAS LINE
- PROPERTY LINE
- L23 --- FOREST CONSERVATION EASEMENT
- SB --- EXISTING STREAM BUFFER
- WB --- EXISTING PERENNIAL STREAM
- W --- EXISTING WETLAND BUFFER
- W --- EXISTING WETLAND
- U, C, E --- EXISTING UTILITY MANHOLE
- EXISTING CURB AND GUTTER
- EXISTING TREE LINE
- EXISTING DRIVE
- EXISTING BUILDING
- EXISTING SLOPE GREATER THAN 25%

DEMOLITION LEGEND

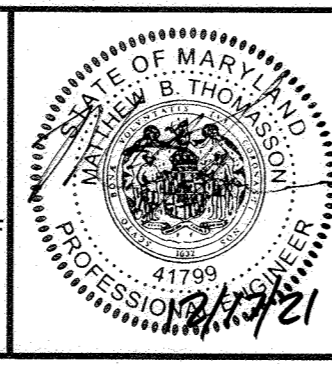
- PROPOSED UTILITY REMOVAL
- LIMIT OF DISTURBANCE
- LIMIT OF WORK
- CLEAR AND GRUB
- BUILDING DEMOLITION



APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Date: 1/27/22
 Chief, Division of Land Development
 Date: 2/3/22
 Director

RK&K
 RUMMEL, KLEPPER & KAHN, LLP
 ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
 RESPONSIVE PEOPLE. CREATIVE SOLUTIONS.
 700 East Pratt Street, Suite 500
 Baltimore, MD 21202
 Ph: 410.728.2900 Contact: John D'Epagnier
 www.rkk.com

PROFESSIONAL CERTIFICATION
 PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, MATTHEW THOMASSON LICENSE NO. 41799, EXPIRATION DATE: APRIL 12, 2022.



DESIGN BY: CWWM / ZWB
 DRAWN BY: ZWB
 CHECKED BY: MBT
 DATE: 12/17/2021

BY	NO.	REVISION	DATE
		FIRING RANGE BERM RE-GRADING	

OWNER/DEVELOPER
 HOWARD COUNTY
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043-4300

EXISTING CONDITIONS & DEMOLITION PLAN
 HOWARD COUNTY - DEPARTMENT OF PUBLIC WORKS
 PUBLIC SAFETY TRAINING CENTER
 RANGE IMPROVEMENTS
 2200 SCOTT WHEELER DRIVE, MARIOTTVILLE, MD 21104
 TAX MAP: 0016 PARCEL: 0253 GRID: 0008 ZONED: EXEMPT
 ELECTION DISTRICT 3 - HOWARD COUNTY, MARYLAND
 SHEET 72 OF 81

C-101
 RK&K PROJECT NUMBER
 17240.015
 SCALE:
 1" = 20'

GENERAL NOTES

- COORDINATES, BEARINGS AND DISTANCES SHOWN HEREON ARE REFERRED TO THE MARYLAND COORDINATE SYSTEM (NAD83/2011). ELEVATIONS SHOWN HEREON ARE REFERRED TO THE NAVD88 DATUM.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO THE START OF ANY WORK.
- THIS SURVEY WAS PROVIDED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
- SEE SHEET G-000 FOR GENERAL NOTES.
- SEE SHEET C-300 FOR GEOTECHNICAL NOTES.

SITE & UTILITY PLAN LEGEND

- PROPOSED BALLISTIC WALL SETBACK
- PROPOSED 12" CLASS V RCP PIPE (ON AASHTO A-1 OR A-3 BEDDING) AND CONCRETE HEADWALL
- LIMIT OF DISTURBANCE
- LIMIT OF WORK
- PROPOSED 10' BALLISTIC WALL
- PROPOSED 10' W UNPAVED ACCESS ROAD
- 6' RANGE SAFETY BUFFER
- ROCK OUTLET PROTECTION, SEE DETAIL ON SHEET C-350
- RIPRAP INFLOW PROTECTION, SEE DETAIL ON SHEET C-350.
- PROPOSED 4" CONCRETE SLAB
- PROPOSED 44'X10' WILLSCOT MOBILE OFFICE

GRADING PLAN LEGEND

- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED SLOPE

SITE & UTILITY KEY NOTES

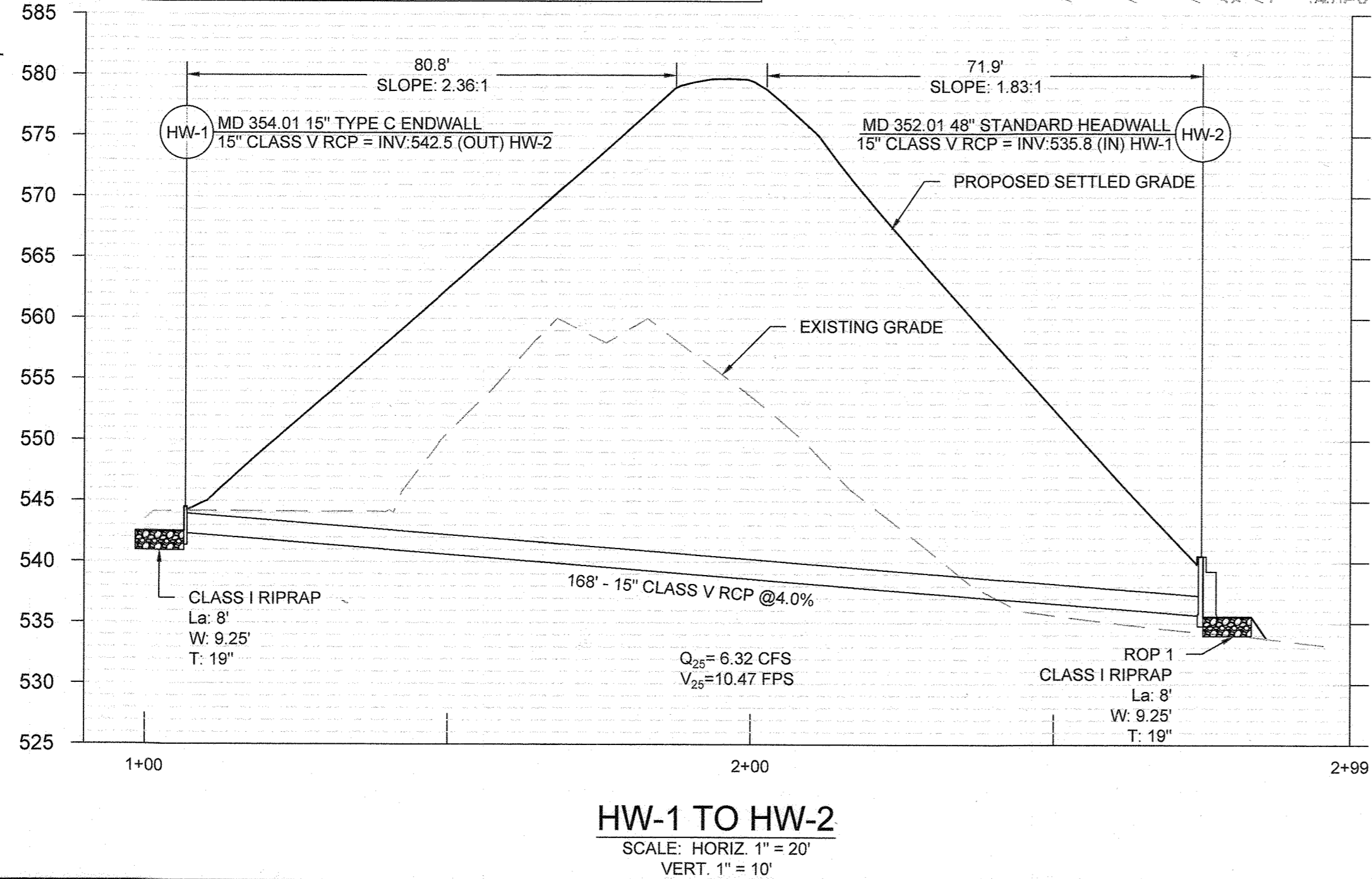
- PROPOSED 10' BALLISTIC FREESTANDING WALL.
- PROPOSED MIN. 4' SETBACK & GRADING LANDING FOR WALL @ 2.0% MAX SLOPE.
- UNPAVED ACCESS ROAD. SEE SHEET C-301 FOR GRADING DETAILS.
- PROPOSED STORM DRAIN PIPE & CONCRETE HEADWALLS. SEE THIS SHEET FOR PROFILE DETAILS.
- PROPOSED 4" CONCRETE. REFER TO HOWARD COUNTY DETAIL R-3.05 AND SEE NOTE ON SHEET G-000 FOR ADD ALTERNATE NO.2.
- EXISTING SANITARY MANHOLE TO BE ADJUSTED TO FINISHED GRADE.
- NOT USED.
- EX. CLASS 52 DUCTILE IRON SANITARY SEWER PIPE, WITH TYPE 5 BEDDING (NO. 57 STONE) PER AS-BUILT DRAWINGS DATED 9/15/10 WILL HAVE 13" +/- OF COVER AT THE COMPLETION OF CONSTRUCTION. THIS IS LESS THAN THE MAXIMUM COVER OF 32 FEET FOR THIS CLASS D.I.P. AND BEDDING TYPE.
- PROPOSED 44'X10' WILLSCOT MOBILE OFFICE.
- PROPOSED WOOD DECK.
- EXISTING ELECTRICAL BOXES TO REMAIN UNDISTURBED.
- PROPOSED HEADWALLS SEE SHEET C-350 & C-351 FOR DETAILS.

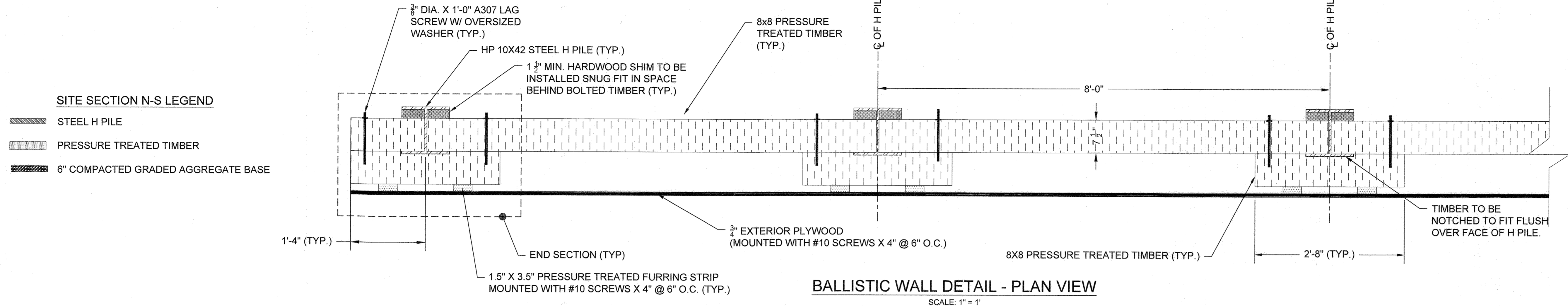
EXISTING CONDITIONS LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING EDGE OF ROAD
- EXISTING STORM DRAIN AND INLET
- EXISTING WATER AND FIRE HYDRANT
- EXISTING SEWER
- EXISTING ELECTRIC
- EXISTING COMMUNICATION
- EXISTING GAS LINE
- PROPERTY LINE
- FOREST CONSERVATION EASEMENT
- EXISTING STREAM BUFFER
- EXISTING PERENNIAL STREAM
- EXISTING WETLAND BUFFER
- EXISTING WETLAND
- EXISTING UTILITY MANHOLE
- EXISTING CURB AND GUTTER
- EXISTING TREE LINE
- EXISTING DRIVE
- EXISTING BUILDING

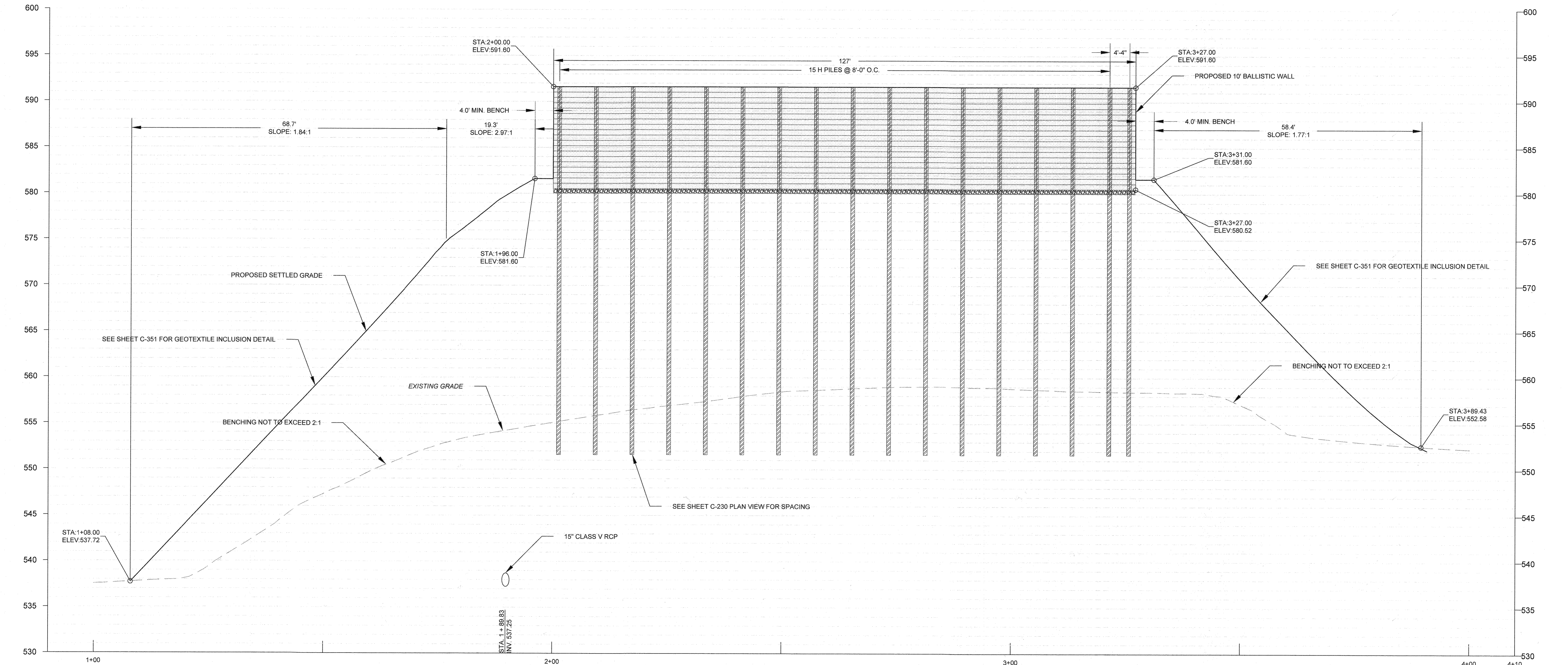
ENGINEERED SLOPE NOTES

- BERM FACES SHALL BE STABILIZED USING MDO-T-SHA TYPE B EROSION MATTING.
- IF FUTURE BERM REPAIRS ARE PERFORMED, MDO-T-SHA TYPE B EROSION MATTING SHALL BE REINSTALLED.
- EXISTING BERM SHALL BE BENCHED IN ACCORDANCE WITH SPECIFICATION 204.03.03 AS NEW BERM IS BEING CONSTRUCTED.
- THIS SLOPE HAS BEEN DESIGNED FOR A MAX SLOPE OF 1.75:1
- FOR INSTALLATION OF REQUIRED GEOTEXTILE INCLUSIONS REFER TO C-351.





- GENERAL NOTES**
1. SEE SHEET G-000 FOR GENERAL NOTES.
 2. SEE SHEET C-300 FOR GEOTECHNICAL NOTES.



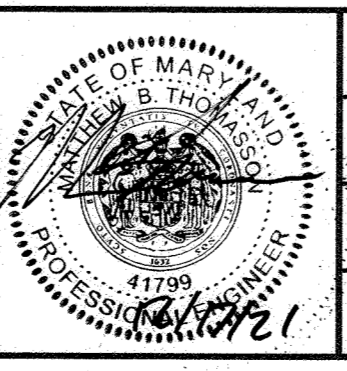
SITE SECTION NORTH TO SOUTH A-A

SCALE: HORIZ. 1" = 10'
VERT. 1" = 5'

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Date: 1/5/22
 Chief, Division of Land Development
 Date: 2/3/22
 Director
 Date: 2/3/22



PROFESSIONAL CERTIFICATION
 PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, MATTHEW THOMASSON LICENSE NO. 41799, EXPIRATION DATE: APRIL 12, 2022.



DESIGN BY: CWMM / ZWB
 DRAWN BY: ZWB
 CHECKED BY: MBT
 DATE: 12/17/2021

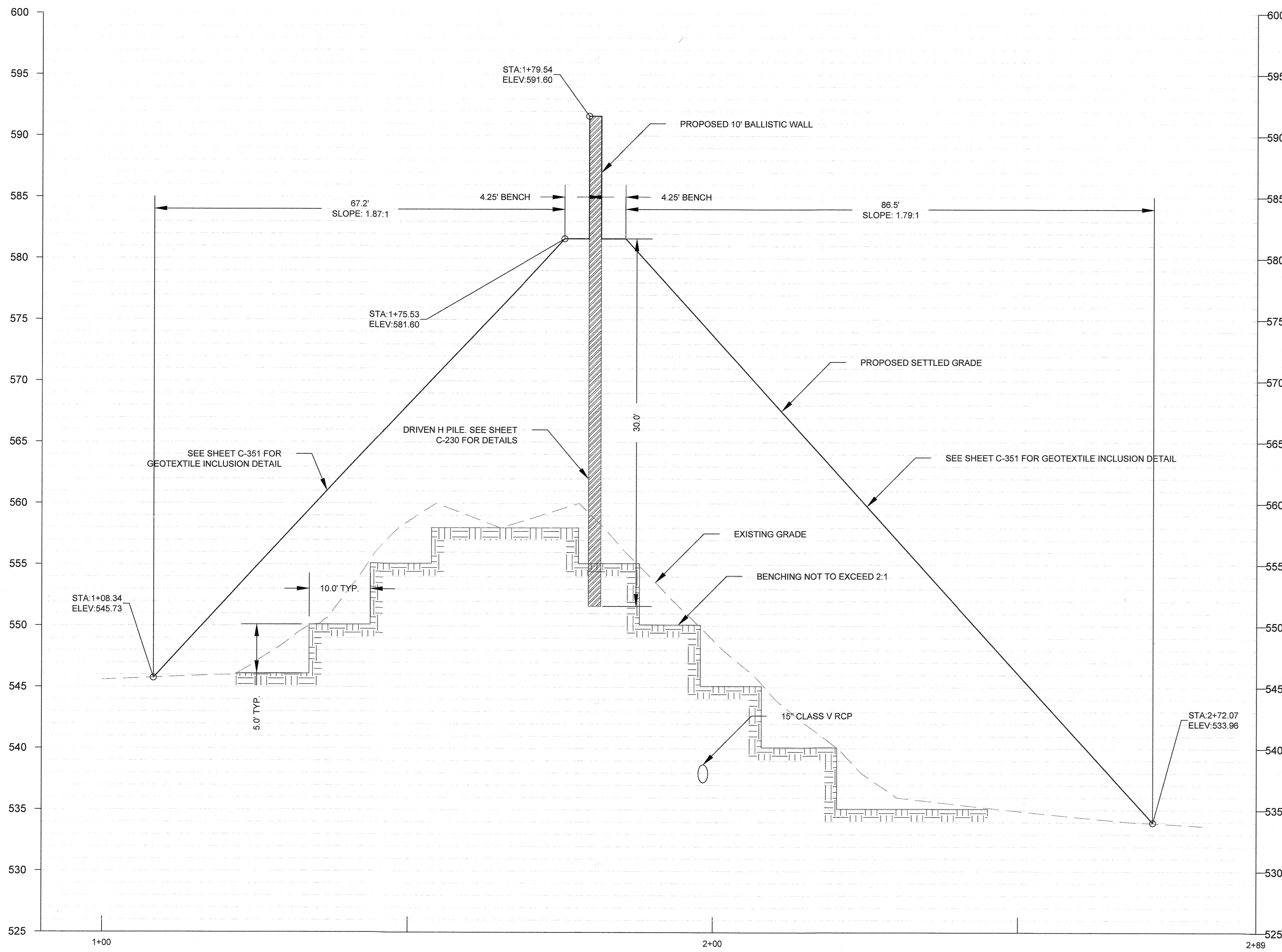
BY	NO.	REVISION	DATE
RK&K	1	FIRING RANGE BERM RE-GRADING	

OWNER/DEVELOPER
 HOWARD COUNTY
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043-4300

SITE GRADING SECTIONS & WALL DETAILS I
 HOWARD COUNTY - DEPARTMENT OF PUBLIC WORKS
PUBLIC SAFETY TRAINING CENTER
RANGE IMPROVEMENTS
 2200 SCOTT WHEELER DRIVE, MARRIOTTSTVILLE, MD 21104
 TAX MAP: 0016 PARCEL: 0253 GRID: 0008 ZONED: EXEMPT
 ELECTION DISTRICT 3 - HOWARD COUNTY, MARYLAND
 SHEET 74 OF 81

C-230
 RK&K PROJECT NUMBER 17240.015
 SCALE:

U:\GIS\05\2017\17240_HoCo\04\Howard County\Task 15 - Hood Range\04\Howard County\Task 15 - Hood Range\CADD\Plans\C-230_Site Grading Sections & Wall Details.dwg Dec-16, 2021 2:31 pm zbrwn



SITE SECTION WEST TO EAST B-B
 SCALE: HORIZ. 1" = 10'
 VERT. 1" = 5'

- GENERAL NOTES**
- SEE SHEET G-000 FOR GENERAL NOTES.
 - SEE SHEET C-300 FOR GEOTECHNICAL NOTES.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

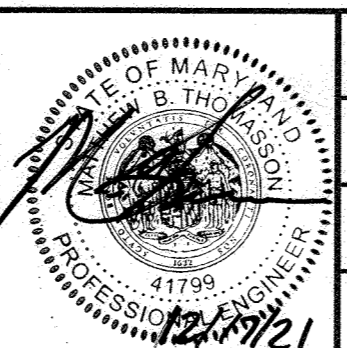
[Signature]
 Chief, Development Engineering Division
 Date: 1/25/22

[Signature]
 Chief, Division of Land Development
 Date: 2/3/22

[Signature]
 Director
 Date: 2/3/22

RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 ENGINEERS/CONSTRUCTION MANAGERS/PLANNERS/SCIENTISTS
 RESPONSIVE PEOPLE • CREATIVE SOLUTIONS
 700 East Pratt Street, Suite 500
 Baltimore, MD 21202
 Ph: 410.728.2900 Contact: John d'Epagnier
 www.rkk.com

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, MATTHEW THOMASSON
 LICENSE NO. 41799
 EXPIRATION DATE: APRIL 12, 2022.



DESIGN BY: CWWM / ZWB	RK&K	1	FIRING RANGE BERM RE-GRADING
DRAWN BY: ZWB			
CHECKED BY: MBT			
DATE: 12/17/2021			
BY	NO.	REVISION	DATE

OWNER/DEVELOPER
 HOWARD COUNTY
 DEPARTMENT OF PUBLIC WORKS

3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043-4300

SITE GRADING SECTIONS & WALL DETAILS II
 HOWARD COUNTY - DEPARTMENT OF PUBLIC WORKS
 PUBLIC SAFETY TRAINING CENTER

RANGE IMPROVEMENTS
 2200 SCOTT WHEELER DRIVE, MARRIOTTSTVILLE, MD 21104
 TAX MAP: 0016 PARCEL: 0253 GRID: 0008 ZONED: EXEMPT
 ELECTION DISTRICT 3 - HOWARD COUNTY, MARYLAND
 SHEET 75 OF 81

C-231
 RK&K PROJECT NUMBER 17240.015
 SCALE:

HOWARD COUNTY STANDARD SEDIMENT CONTROL NOTES

- 1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS...
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN...
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED...
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE...
5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE...
6. SITE ANALYSIS: TOTAL AREA OF SITE: 1.63 ACRES...
7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES...
8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID...
9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS...
10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION...
11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED...
12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES...
13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION...
14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR...
15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS...
16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL ROSION AND SEDIMENT CONTROL...

MAINTENANCE OF SEDIMENT CONTROL DEVICES

- 1. SCE: SCE MUST BE MAINTAINED IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT...
2. SILT FENCE ON PAVEMENT: ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED...
3. SILT FENCE: ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED...
4. EARTH DIKE: THE LINE, GRADE, AND CROSS SECTION MUST BE MAINTAINED...
5. TEMPORARY STONE STRUCTURE OUTLET: REMOVE SEDIMENT WHEN IT HAS ACCUMULATED...
6. STORM DRAIN INLET PROTECTION: TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING...

SLOPE MAINTENANCE REQUIREMENTS

SEEDING PHASE ACCEPTANCE: SUBMIT A REQUEST FOR SEEDING PHASE ACCEPTANCE WHEN OPERATIONS ARE COMPLETED...
ESTABLISHMENT PHASE: THE ESTABLISHMENT PHASE WILL BEGIN UPON SEEDING PHASE ACCEPTANCE...
(A) PERIOD OF MAINTENANCE: MAINTAIN SEEDED AREAS UNTIL FINAL ACCEPTANCE...
(B) REQUIRED MAINTENANCE: PERFORM THE FOLLOWING DURING THE ESTABLISHMENT PHASE...
WATERING: APPLY WATER AS NEEDED TO ENSURE SURVIVAL OF THE TURFGRASS...
OVERSEEDING: OVERSEEDING CONSISTS OF SEEDING AND MULCHING IN AREAS WHERE LIVING TURFGRASS COVERAGE IS 40 PERCENT TO 95 PERCENT...
APPLY SEED MIXTURES, SEED ADDITIVES AND FERTILIZER AND SECURE MULCH AS SPECIFIED IN MDOT-SHA 705.03.01 THROUGH 705.03.07...

STEEP SLOPE OPERATION AND MAINTENANCE SCHEDULE

UPON FINAL ACCEPTABLE, MAINTENANCE IS THE RESPONSIBILITY OF THE OWNER, HOWARD COUNTY DPW.
INSPECTIONS SHALL BE PERFORMED BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) DURING THE FIRST YEAR OF OPERATION...
INSPECTION SCHEDULE
ANNUAL INSPECTION - GENERATE ANNUAL INSPECTION REPORT
AT END OF SECOND GROWING SEASON - CHECK FOR VEGETATION ESTABLISHMENT
SIXTY HOURS AFTER THE END OF EACH SIGNIFICANT RAINFALL EVENT (>2.6 INCHES OF RAINFALL) CHECK FOR PONDING WATER, SEDIMENT DEPOSITION, EROSION DAMAGE, TRASH AND CLOGGING OF THE 15" PIPE.
ROUTINE MAINTENANCE
A. REMOVAL OF SEDIMENT AT THE 15" STORM DRAIN PIPE WHEN ACCUMULATION EXCEEDS 30% OF THE PIPE DIAMETER.
B. REMOVAL OF ACCUMULATED DEBRIS AS NECESSARY.
C. ANNUAL INSPECTION AND REPAIR OF THE BERM.
D. CORRECTIVE MAINTENANCE IS REQUIRED ANY TIME THE HEADWALL AT THE 15" PIPE DOES NOT DRAIN WITHIN 24 HOURS...
E. REPAIR AREAS OF SOIL EROSION FOLLOWING THE SLOPE REPAIR DETAIL SHOWN ON SHEET C-351.

CONTACT INFORMATION:

PROJECT: PUBLIC SAFETY TRAINING CENTER
2200 SCOTT WHEELER DRIVE, MARRIOTTSVILLE, MD 21104
OWNER / APPLICANT: HOWARD COUNTY - DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE, ELLICOTT CITY, MD 21043-4300
DESIGNER: MATT B. THOMASSON, P.E.
RK&K
700 E PRATT ST, SUITE 500, BALTIMORE, MD 21202
410-462-9259
mthomasson@rkk.com

Howard SCD Signature Block:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
Signature: [Signature] Date: 1/12/22

RipRap Inflow Protection (RRP)
Where: Tc= time of concentration, Q10=quantity of runoff for 10 year storm, d= actual flow depth
V10= velocity for 10 year storm, D=tailwater depth, T= Thickness
Outfall Protection (Pipe flow full w/ discharge to unconfined section)
Tc = 5 min
Q25 = 0.68 cfs
V25 = 4.03 ft/s
D = 0.09 ft
Use: ROPIII, T=46 in
From 'Design of Outlet Protection Chart: Min. Tailwater Condition', read Min. Values:
La = 6 ft
W = 4 ft
D50 = 0.2' ft
Use: La = 10 ft
Use: W = 4 ft
Use: D50 = 9.5" - Class I Riprap
Use: 19" Stone depth

Rock Outlet Protection Structure (ROP-1)
Where: Tc= time of concentration, Q10=quantity of runoff for 10 year storm, d= actual flow depth
V10= velocity for 10 year storm, D=tailwater depth, T= Thickness
Outfall Protection (Pipe flow full w/ discharge to unconfined section)
Tc = 5 min
Q25 = 6.32 cfs
V25 = 10.47 ft/s
D = 0.6 ft
Use: ROPI, T=19 in
From 'Design of Outlet Protection Chart: Min. Tailwater Condition', read Min. Values:
La = 8 ft
W = 1.25 ft + 8 ft = 9.25' minimum
D50 = 0.6 ft
Use: La = 8 ft
Use: W = 9.25 ft
Use: D50 = 9.5" - Class I Riprap
Use: 19" Stone depth

GEOTECHNICAL NOTES

- 1. STRIPPING, CLEARING, AND GRUBBING SHALL BE PERFORMED IN ACCORDANCE WITH HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, 2017, VOLUME IV, SECTION 101.
2. BORROW SOIL SHALL BE IN ACCORDANCE WITH THE SLOPE FILL PROVISIONS CONTAINED HEREIN AND SHALL NOT CONTAIN ENVIRONMENTAL CONTAMINATION, BUILDING DEBRIS, FROZEN, OR ORGANIC OR WET MATERIALS.
3. THE MOISTURE CONTENT OF THE FILL AND COMPACTION ACTIVITIES SHALL BE PROPERLY CONTROLLED DURING PLACEMENT...
4. IN PLACE DENSITY TESTS PER ASTM D-1556 OR D-6938 SHALL BE PERFORMED BY AN ENGINEERING TECHNICIAN...
5. THE EXISTING BERM SHALL BE BENCHED IN ACCORDANCE WITH SECTION 204.04.03 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS...
6. IF THE CONTRACTOR ELECTS TO USE A CRUSHED AGGREGATE THAT MEETS THE SLOPE FILL PROVISIONS...
7. PLACE AND COMPACT AS MUCH OF THE NEW EMBANKMENT AS PRACTICABLE PRIOR TO DRIVING THE PILES...
8. THE PILES SHALL BE DRIVEN IN ACCORDANCE WITH SECTION 410 OF THE HOWARD COUNTY STANDARD SPECIFICATIONS...
9. MDOOT-SHA TYPE B EROSION MATTING SHALL BE USED ON THE EMBANKMENT FACES TO HELP STABILIZE THE SLOPE FACES...

SLOPE FILL PROVISIONS

SELECT BACKFILL MATERIAL USED IN THE SLOPE VOLUME SHALL BE REASONABLY FREE FROM ORGANIC MATERIAL, SHALE OR OTHER POOR DURABILITY PARTICLES AND OTHERWISE DELETERIOUS MATERIALS. THE BACKFILL SHALL CONFORM TO THE FOLLOWING GRADATION AS DETERMINED BY AASHTO T-27:

Table with 2 columns: SIEVE SIZE, PERCENT PASSING. Rows include 2", 1-1/2", 3/4", NO. 4, NO. 40, NO. 200.

THE PLASTICITY INDEX (P.I.) OF THE BACKFILL MATERIAL AS DETERMINED BY AASHTO T-80 SHALL NOT EXCEED 9. THE LIQUID LIMIT (LL) SHALL NOT EXCEED 40.

BACKFILL MATERIAL SHALL EXHIBIT AN ANGLE OF INTERNAL FRICTION OF NOT LESS THAN 34 DEGREES, AS DETERMINED BY THE STANDARD DIRECT SHEAR TEST, AASHTO T236, ON THE PORTION FINER THAN THE #10 SIEVE...

BACKFILL MATERIAL SHALL HAVE A MAGNESIUM SULFATE SOUNDNESS LOSS OF LESS THAN 30 PERCENT AFTER FOUR CYCLES.

CONTRACTOR SHALL PERFORM ANALYSIS TESTS FOR EACH SOURCE OF MATERIAL AND SHALL PERFORM SUCH ADDITIONAL TESTS TO ASSURE CONFORMANCE WHENEVER THE CHARACTER OF THE SELECT BACKFILL MATERIAL CHANGES...

AT LEAST ONE SAMPLE SHALL BE COLLECTED AND TESTED PER 2,000 CUBIC YARDS OF MATERIAL USED AS SELECT BACKFILL.

COMPOSITION - TYPE B SSM
Table with 3 columns: CRITERIA, METHOD, MEASUREMENT. Rows include THICKNESS, WEIGHT, TENSILE STRENGTH - MD, TENSILE STRENGTH - TD, TENSILE STRENGTH > 500 HR. EXP, LIGHT PENETRAITION, SLOPE EROSION - C FACTOR*, SHEAR FOR 0.5 IN SOIL LOSS*, NETTING OPENING, THREAD, STITCHING AND SPACING.

MDOT-SHA SLOPE STABILIZATION MATTING, TYPE B

PERMANENT: NON-WOVEN, NONDEGRADABLE, UV STABILIZED, SYNTHETIC FIBERS; WITH NON-DEGRADABLE, UV STABILIZED, SYNTHETIC NETTING ON TOP AND BOTTOM. TYPE B SOIL STABILIZATION MATTING PRODUCTS SHALL BE LISTED IN THE CURRENT AASHTO NATIONAL TRANSPORTATION PRODUCT EVALUATION PROGRAM (NTPPEP) REPORT FOR EROSION CONTROL PRODUCTS...

SEDIMENT CONTROL

Owners/Developer Certification:
I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls...

Signature: [Signature] Date: 12/22/20
Name: MAREK C. STOKDAHL
Title: CHIEF, BUREAU OF FACILITIES

Design Certification:

I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, and that it 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: [Signature] Date: 10/22/2021
Name: Matthew B. Thomasson, PE
Title: P.E. R.L.S., or R.L.A. (circle one)

Project: HoCo Range
County/Gr: Howard County
Project Number: 17240.015
Design Phase: Final
Structure No. TGOS-1
Location: [Blank] Site: [Blank]

Temporary Gabion Outlet Structure (TGOS 1)

Max. Drainage Area 1.50 Ac.
Drainage Area 1.50 Ac.
Weir Elev. 536.25
Storage Required (C.F.) 2700
Storage Provided (C.F.) 2706
Stage Storage Table:
Table with 6 columns: Elevation [ft], Area [ft^2], Area [acre], Change in Elevation [ft], Average Area [acre], Incremental Volume [acre-ft], Cumulative Volume [acre-ft], Cumulative Volume [ft^3].

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: [Signature] Date: 1/12/22
Chief, Development Engineering Division
Signature: [Signature] Date: 2/3/22
Chief, Division of Land Development
Signature: [Signature] Date: 2/3/22
Director

RK&K
RICHARD KLEINER & PAUL LLP
ENGINEERS/CONSTRUCTION MANAGERS/PLANNERS/SCIENTISTS
RESPONSIVE PEOPLE-CREATIVE SOLUTIONS
700 East Pratt Street, Suite 500
Baltimore, MD 21202
PH: 410.728.2900
Contact: John J. Eppinger
www.rkk.com

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, MATTHEW THOMASSON LICENSE NO. 41799, EXPIRATION DATE: APRIL 12, 2022.

DESIGN BY: CWWM / ZWB
DRAWN BY: ZWB
CHECKED BY: MBT
DATE: 12/17/2021

Table with 2 columns: REVISION, DATE. Row 1: FIRING RANGE BERM RE-GRADING

OWNER/DEVELOPER
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLICOTT CITY, MD 21043-4300

EROSION & SEDIMENT CONTROL NOTES
HOWARD COUNTY - DEPARTMENT OF PUBLIC WORKS
PUBLIC SAFETY TRAINING CENTER
RANGE IMPROVEMENTS
2200 SCOTT WHEELER DRIVE, MARRIOTTSVILLE, MD 21104
TAX MAP: 0016 PARCEL: 0253 GRD: 0008 ZONED: EXEMPT
ELECTION DISTRICT 3 - HOWARD COUNTY, MARYLAND
SHEET 78 OF 81

RK&K PROJECT NUMBER 17240.015
SCALE: As Shown

GENERAL NOTES

- COORDINATES, BEARINGS AND DISTANCES SHOWN HEREON ARE REFERRED TO THE MARYLAND COORDINATE SYSTEM (NAD'83/2011). ELEVATIONS SHOWN HEREON ARE REFERRED TO THE NAVD'88 DATUM.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO THE START OF ANY WORK.
- THIS SURVEY WAS PROVIDED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
- SEE SHEET G-000 FOR GENERAL NOTES.
- SEE SHEET C-300 FOR GEOTECHNICAL NOTES.

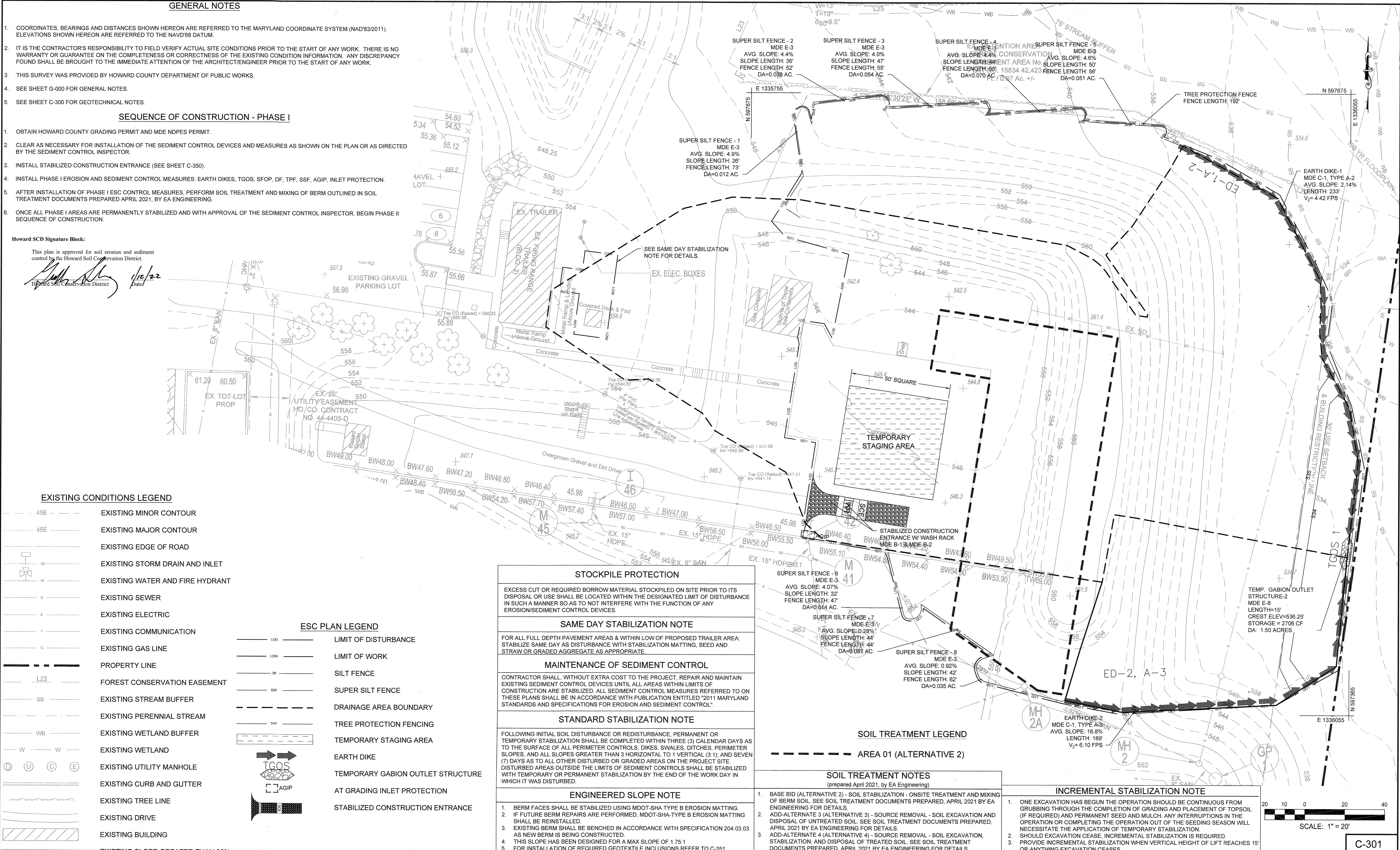
SEQUENCE OF CONSTRUCTION - PHASE I

- OBTAIN HOWARD COUNTY GRADING PERMIT AND MDE NDPES PERMIT.
- CLEAR AS NECESSARY FOR INSTALLATION OF THE SEDIMENT CONTROL DEVICES AND MEASURES AS SHOWN ON THE PLAN OR AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR.
- INSTALL STABILIZED CONSTRUCTION ENTRANCE (SEE SHEET C-350).
- INSTALL PHASE I EROSION AND SEDIMENT CONTROL MEASURES: EARTH DIKES, TGOs, SFOP, DF, TPF, SSF, AGIP, INLET PROTECTION.
- AFTER INSTALLATION OF PHASE I ESC CONTROL MEASURES, PERFORM SOIL TREATMENT AND MIXING OF BERM OUTLINED IN SOIL TREATMENT DOCUMENTS PREPARED APRIL 2021, BY EA ENGINEERING.
- ONCE ALL PHASE I AREAS ARE PERMANENTLY STABILIZED AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, BEGIN PHASE II SEQUENCE OF CONSTRUCTION.

Howard SCD Signature Block:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

[Signature] 1/12/22
 Date



EXISTING CONDITIONS LEGEND

- 456 --- EXISTING MINOR CONTOUR
- 455 --- EXISTING MAJOR CONTOUR
- --- EXISTING EDGE OF ROAD
- --- EXISTING STORM DRAIN AND INLET
- --- EXISTING WATER AND FIRE HYDRANT
- --- EXISTING SEWER
- --- EXISTING ELECTRIC
- --- EXISTING COMMUNICATION
- --- EXISTING GAS LINE
- --- PROPERTY LINE
- L23 --- FOREST CONSERVATION EASEMENT
- SB --- EXISTING STREAM BUFFER
- WB --- EXISTING PERENNIAL STREAM
- WB --- EXISTING WETLAND BUFFER
- W --- EXISTING WETLAND
- U --- EXISTING UTILITY MANHOLE
- C --- EXISTING CURB AND GUTTER
- E --- EXISTING TREE LINE
- --- EXISTING DRIVE
- --- EXISTING BUILDING

ESC PLAN LEGEND

- --- LIMIT OF DISTURBANCE
- --- LIMIT OF WORK
- --- SILT FENCE
- --- SUPER SILT FENCE
- --- DRAINAGE AREA BOUNDARY
- --- TREE PROTECTION FENCING
- --- TEMPORARY STAGING AREA
- --- EARTH DIKE
- --- TEMPORARY GABION OUTLET STRUCTURE
- --- AT GRADING INLET PROTECTION
- --- STABILIZED CONSTRUCTION ENTRANCE

STOCKPILE PROTECTION
 EXCESS CUT OR REQUIRED BORROW MATERIAL STOCKPILED ON SITE PRIOR TO ITS DISPOSAL OR USE SHALL BE LOCATED WITHIN THE DESIGNATED LIMIT OF DISTURBANCE IN SUCH A MANNER SO AS TO NOT INTERFERE WITH THE FUNCTION OF ANY EROSION/SEDIMENT CONTROL DEVICES.

SAME DAY STABILIZATION NOTE
 FOR ALL FULL DEPTH PAVEMENT AREAS & WITHIN LOW OF PROPOSED TRAILER AREA: STABILIZE SAME DAY AS DISTURBANCE WITH STABILIZATION MATTING, SEED AND STRAW OR GRADED AGGREGATE AS APPROPRIATE.

MAINTENANCE OF SEDIMENT CONTROL
 CONTRACTOR SHALL, WITHOUT EXTRA COST TO THE PROJECT, REPAIR AND MAINTAIN EXISTING SEDIMENT CONTROL DEVICES UNTIL ALL AREAS WITHIN LIMITS OF CONSTRUCTION ARE STABILIZED. ALL SEDIMENT CONTROL MEASURES REFERRED TO ON THESE PLANS SHALL BE IN ACCORDANCE WITH PUBLICATION ENTITLED "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL".

STANDARD STABILIZATION NOTE
 FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. DISTURBED AREAS OUTSIDE THE LIMITS OF SEDIMENT CONTROLS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT STABILIZATION BY THE END OF THE WORK DAY IN WHICH IT WAS DISTURBED.

ENGINEERED SLOPE NOTE
 1. BERM FACES SHALL BE STABILIZED USING MDOOT-SHA TYPE B EROSION MATTING.
 2. IF FUTURE BERM REPAIRS ARE PERFORMED, MDOOT-SHA-TYPE B EROSION MATTING SHALL BE REINSTALLED.
 3. EXISTING BERM SHALL BE BENCHED IN ACCORDANCE WITH SPECIFICATION 204.03.03 AS NEW BERM IS BEING CONSTRUCTED.
 4. THIS SLOPE HAS BEEN DESIGNED FOR A MAX SLOPE OF 1.75:1
 5. FOR INSTALLATION OF REQUIRED GEOTEXTILE INCLUSIONS REFER TO C-351.

SOIL TREATMENT NOTES
 (prepared April 2021, by EA Engineering)
 1. BASE BID (ALTERNATIVE 2) - SOIL STABILIZATION - ONSITE TREATMENT AND MIXING OF BERM SOIL. SEE SOIL TREATMENT DOCUMENTS PREPARED, APRIL 2021 BY EA ENGINEERING FOR DETAILS.
 2. ADD-ALTERNATE 3 (ALTERNATIVE 3) - SOURCE REMOVAL - SOIL EXCAVATION AND DISPOSAL OF UNTREATED SOIL. SEE SOIL TREATMENT DOCUMENTS PREPARED, APRIL 2021 BY EA ENGINEERING FOR DETAILS.
 3. ADD-ALTERNATE 4 (ALTERNATIVE 4) - SOURCE REMOVAL - SOIL EXCAVATION, STABILIZATION, AND DISPOSAL OF TREATED SOIL. SEE SOIL TREATMENT DOCUMENTS PREPARED, APRIL 2021 BY EA ENGINEERING FOR DETAILS.

INCREMENTAL STABILIZATION NOTE
 1. ONE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.
 2. SHOULD EXCAVATION CEASE, INCREMENTAL STABILIZATION IS REQUIRED.
 3. PROVIDE INCREMENTAL STABILIZATION WHEN VERTICAL HEIGHT OF LIFT REACHES 15' OR ANYTHING EXCAVATION CEASES.

AREA 01 (ALTERNATIVE 2)

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

RK&K
 RUMMEL, KLOPPER & KAHN, LLP
 ENGINEERS/CONSTRUCTION MANAGERS/PLANNERS/SCIENTISTS
 RESPONSIVE PEOPLE. CREATIVE SOLUTIONS.
 700 East Pratt Street, Suite 500
 Baltimore, MD 21202
 Ph: 410.728.2900
 www.rkk.com

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, MATTHEW THOMASSON, LICENSE NO. 41799, EXPIRATION DATE: APRIL 12, 2022.

DESIGN BY: CWWM / ZWB
 DRAWN BY: ZWB
 CHECKED BY: MBT
 DATE: 12/17/2021

BY	NO.	REVISION	DATE
RK&K	1	FIRING RANGE BERM RE-GRADING	

OWNER/DEVELOPER
 HOWARD COUNTY
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043-4300

EROSION & SEDIMENT CONTROL (PHASE I)
 HOWARD COUNTY - DEPARTMENT OF PUBLIC WORKS
 PUBLIC SAFETY TRAINING CENTER
RANGE IMPROVEMENTS
 2200 SCOTT WHEELER DRIVE, MARRIOTTSVILLE, MD 21114
 TAX MAP: 0016 PARCEL: 0255 GRD: 0038 ZONED: EXEMPT
 ELECTION DISTRICT 3 - HOWARD COUNTY, MARYLAND
 SHEET 77 OF 81

C-301

RK&K PROJECT NUMBER
 17240.015

SCALE:
 1" = 20'

GENERAL NOTES

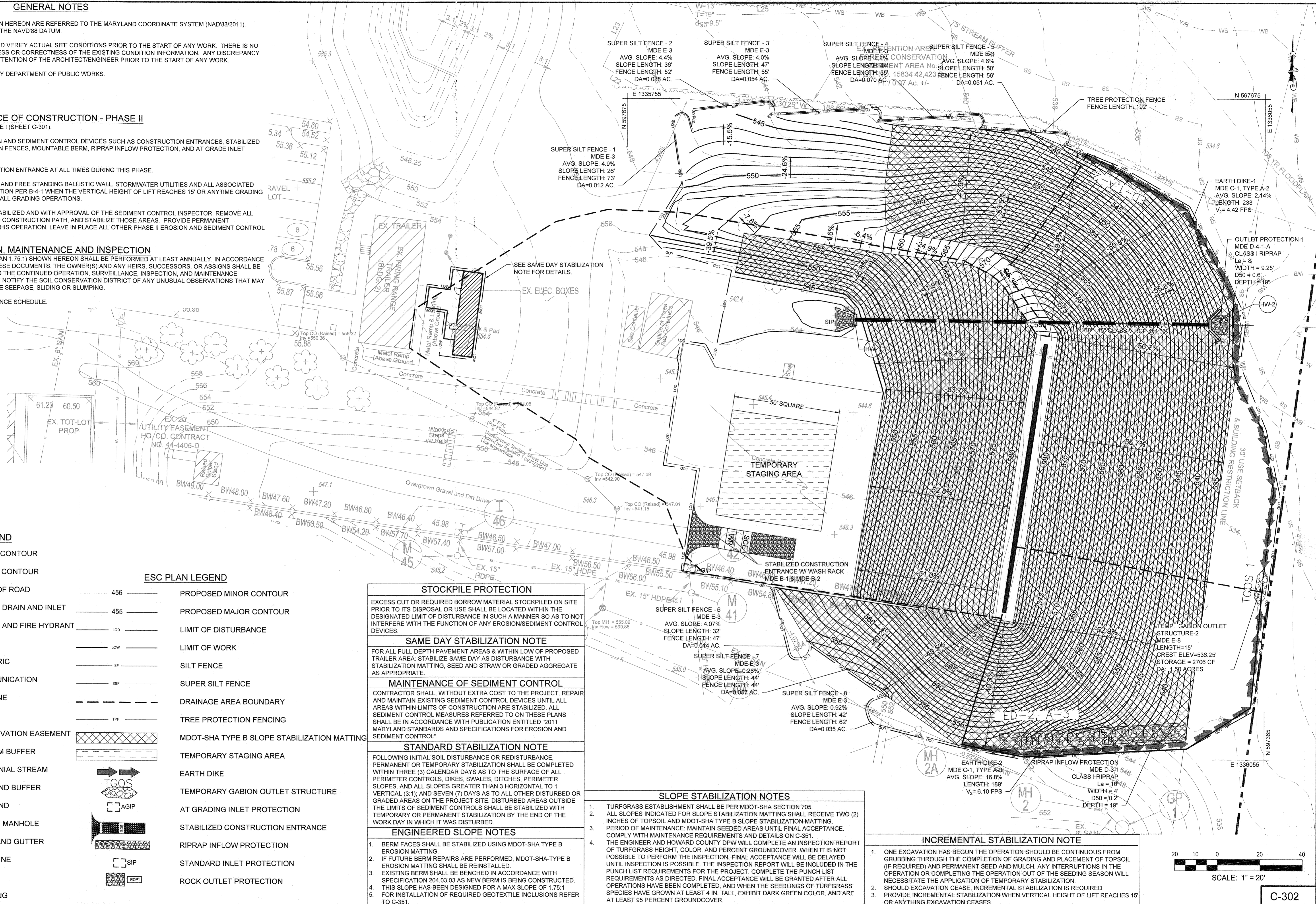
- 1. COORDINATES, BEARINGS AND DISTANCES SHOWN HEREON ARE REFERRED TO THE MARYLAND COORDINATE SYSTEM (NAD83/2011). ELEVATIONS SHOWN HEREON ARE REFERRED TO THE NAVD88 DATUM.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ACTUAL SITE CONDITIONS PRIOR TO THE START OF ANY WORK. THERE IS NO WARRANTY OR GUARANTEE ON THE COMPLETENESS OR CORRECTNESS OF THE EXISTING CONDITION INFORMATION. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO THE START OF ANY WORK.
3. THIS SURVEY WAS PROVIDED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
4. SEE SHEET G-000 FOR GENERAL NOTES.
5. SEE SHEET C-300 FOR GEOTECHNICAL NOTES.
7. COMPLETE SEQUENCE OF CONSTRUCTION - PHASE II
8. LEAVE IN PLACE THE REMAINING PHASE I EROSION AND SEDIMENT CONTROL DEVICES SUCH AS CONSTRUCTION ENTRANCES, STABILIZED CONSTRUCTION PATH, SUPER SILT AND DIVERSION FENCES, MOUNTABLE BERM, RIPRAP INFLOW PROTECTION, AND AT GRADE INLET PROTECTIONS.
9. MAINTAIN ACCESS TO THE STABILIZED CONSTRUCTION ENTRANCE AT ALL TIMES DURING THIS PHASE.
10. CONSTRUCT PROPOSED UNPAVED ACCESS ROAD AND FREE STANDING BALLISTIC WALL, STORMWATER UTILITIES AND ALL ASSOCIATED SITE GRADING. PROVIDE INCREMENTAL STABILIZATION PER B-4-1 WHEN THE VERTICAL HEIGHT OF LIFT REACHES 15' OR ANYTIME GRADING OPERATIONS CEASE. COMPLY WITH B-4-1 DURING ALL GRADING OPERATIONS.
11. ONCE ALL PHASE II AREAS ARE PERMANENTLY STABILIZED AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL CONSTRUCTION ENTRANCES AND THE STABILIZED CONSTRUCTION PATH, AND STABILIZE THOSE AREAS. PROVIDE PERMANENT STABILIZATION TO THOSE AREAS DISTURBED BY THIS OPERATION. LEAVE IN PLACE ALL OTHER PHASE II EROSION AND SEDIMENT CONTROL DEVICES.

OPERATION, MAINTENANCE AND INSPECTION

- 1. INSPECTION OF THE STEEP SLOPES (GREATER THAN 1.75:1) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE REQUIREMENTS CONTAINED WITHIN THESE DOCUMENTS. THE OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BERM AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE BERM OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, SLIDING OR SLUMPING.
2. SEE SHEET C-300 FOR OPERATION AND MAINTENANCE SCHEDULE.

Howard SCD Signature Block:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
[Signature] 1/12/22
Howard Soil Conservation District Date



EXISTING CONDITIONS LEGEND

Legend table listing existing conditions: 456 EXISTING MINOR CONTOUR, 455 EXISTING MAJOR CONTOUR, EXISTING EDGE OF ROAD, EXISTING STORM DRAIN AND INLET, EXISTING WATER AND FIRE HYDRANT, EXISTING SEWER, EXISTING ELECTRIC, EXISTING COMMUNICATION, EXISTING GAS LINE, PROPERTY LINE, FOREST CONSERVATION EASEMENT, EXISTING STREAM BUFFER, EXISTING PERENNIAL STREAM, EXISTING WETLAND BUFFER, EXISTING WETLAND, EXISTING UTILITY MANHOLE, EXISTING CURB AND GUTTER, EXISTING TREE LINE, EXISTING DRIVE, EXISTING BUILDING.

ESC PLAN LEGEND

Legend table listing proposed and existing erosion control features: 456 PROPOSED MINOR CONTOUR, 455 PROPOSED MAJOR CONTOUR, LIMIT OF DISTURBANCE, LIMIT OF WORK, SILT FENCE, SUPER SILT FENCE, DRAINAGE AREA BOUNDARY, TREE PROTECTION FENCING, MDOT-SHA TYPE B SLOPE STABILIZATION MATTING, TEMPORARY STAGING AREA, EARTH DIKE, TEMPORARY GABION OUTLET STRUCTURE, AT GRADING INLET PROTECTION, STABILIZED CONSTRUCTION ENTRANCE, RIPRAP INFLOW PROTECTION, STANDARD INLET PROTECTION, ROCK OUTLET PROTECTION.

STOCKPILE PROTECTION

EXCESS CUT OR REQUIRED BORROW MATERIAL STOCKPILED ON SITE PRIOR TO ITS DISPOSAL OR USE SHALL BE LOCATED WITHIN THE DESIGNATED LIMIT OF DISTURBANCE IN SUCH A MANNER SO AS TO NOT INTERFERE WITH THE FUNCTION OF ANY EROSION/SEDIMENT CONTROL DEVICES.

SAME DAY STABILIZATION NOTE

FOR ALL FULL DEPTH PAVEMENT AREAS & WITHIN LOW OF PROPOSED TRAILER AREA, STABILIZE SAME DAY AS DISTURBANCE WITH STABILIZATION MATTING, SEED AND STRAW OR GRADED AGGREGATE AS APPROPRIATE.

MAINTENANCE OF SEDIMENT CONTROL

CONTRACTOR SHALL, WITHOUT EXTRA COST TO THE PROJECT, REPAIR AND MAINTAIN EXISTING SEDIMENT CONTROL DEVICES UNTIL ALL AREAS WITHIN LIMITS OF CONSTRUCTION ARE STABILIZED. ALL SEDIMENT CONTROL MEASURES REFERRED TO ON THESE PLANS SHALL BE IN ACCORDANCE WITH PUBLICATION ENTITLED "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL".

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. DISTURBED AREAS OUTSIDE THE LIMITS OF SEDIMENT CONTROLS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT STABILIZATION BY THE END OF THE WORK DAY IN WHICH IT WAS DISTURBED.

ENGINEERED SLOPE NOTES

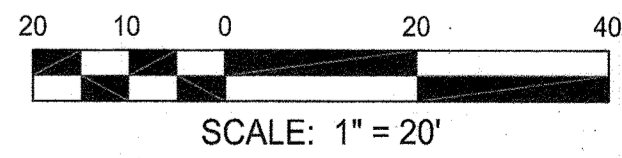
- 1. BERM FACES SHALL BE STABILIZED USING MDOT-SHA TYPE B EROSION MATTING.
2. IF FUTURE BERM REPAIRS ARE PERFORMED, MDOT-SHA-TYPE B EROSION MATTING SHALL BE REINSTALLED.
3. EXISTING BERM SHALL BE BENCHED IN ACCORDANCE WITH SPECIFICATION 204.03.03 AS NEW BERM IS BEING CONSTRUCTED.
4. THIS SLOPE HAS BEEN DESIGNED FOR A MAX SLOPE OF 1.75:1.
5. FOR INSTALLATION OF REQUIRED GEOTEXTILE INCLUSIONS REFER TO C-351.

SLOPE STABILIZATION NOTES

- 1. TURFGRASS ESTABLISHMENT SHALL BE PER MDOT-SHA SECTION 705.
2. ALL SLOPES INDICATED FOR SLOPE STABILIZATION MATTING SHALL RECEIVE TWO (2) INCHES OF TOPSOIL AND MDOT-SHA TYPE B SLOPE STABILIZATION MATTING.
3. PERIOD OF MAINTENANCE: MAINTAIN SEEDS AREAS UNTIL FINAL ACCEPTANCE. COMPLY WITH MAINTENANCE REQUIREMENTS AND DETAILS ON C-351.
4. THE ENGINEER AND HOWARD COUNTY DPW WILL COMPLETE AN INSPECTION REPORT OF TURFGRASS HEIGHT, COLOR, AND PERCENT GROUNDCOVER. WHEN IT IS NOT POSSIBLE TO PERFORM THE INSPECTION, FINAL ACCEPTANCE WILL BE DELAYED UNTIL INSPECTION IS POSSIBLE. THE INSPECTION REPORT WILL BE INCLUDED IN THE PUNCH LIST REQUIREMENTS FOR THE PROJECT. COMPLETE THE PUNCH LIST REQUIREMENTS AS DIRECTED. FINAL ACCEPTANCE WILL BE GRANTED AFTER ALL OPERATIONS HAVE BEEN COMPLETED, AND WHEN THE SEEDLINGS OF TURFGRASS SPECIES HAVE GROWN AT LEAST 4 IN. TALL, EXHIBIT DARK GREEN COLOR, AND ARE AT LEAST 95 PERCENT GROUNDCOVER.

INCREMENTAL STABILIZATION NOTE

- 1. ONE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.
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APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 1/5/22
Date
Chief, Development Engineering Division
[Signature] 2/3/22
Date
Chief, Division of Land Development
[Signature] 2/3/22
Date
Director

RK&K logo and contact information: RUMMEL, KLEPPER & KAHL, LLP ENGINEERS/CONSTRUCTION MANAGERS/PLANNERS/SCIENTISTS. 700 East Pratt Street, Suite 500 Baltimore, MD 21202. Contact: John d'Epagnier www.rkk.com

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, MATTHEW THOMASSON LICENSE NO. 41799, EXPIRATION DATE: APRIL 12, 2022.



Revision table with columns: DESIGN BY: CWWM / ZWB, DRAWN BY: ZWB, CHECKED BY: MBT, DATE: 12/17/2021, BY, NO., REVISION, DATE.

OWNER/DEVELOPER
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043-4300

EROSION & SEDIMENT CONTROL (PHASE II)
HOWARD COUNTY - DEPARTMENT OF PUBLIC WORKS
PUBLIC SAFETY TRAINING CENTER
RANGE IMPROVEMENTS
2200 SCOTT WHEELER DRIVE, MARRIOTTSVILLE, MD 21104
TAX MAP: 0016 PARCEL: 0253 GRID: 0008 ZONED: EXEMPT
ELECTION DISTRICT 3 - HOWARD COUNTY, MARYLAND
SHEET 78 OF 81

C-302
RK&K PROJECT NUMBER
17240.015
SCALE: 1" = 20'

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE

CONSTRUCTION SPECIFICATIONS

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

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: PSMS - 1.5 lb/ft² (* INCLUDE SHEAR STRESS)

CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-HARMFUL TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAPLES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1 1/2 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYS AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

DETAIL B-2 WASH RACK OPTION

STANDARD SYMBOL: WRR

CONSTRUCTION SPECIFICATIONS

- USE A WASH RACK DESIGNED AND CONSTRUCTED/MANUFACTURED FOR THE ANTICIPATED TRAFFIC LOADS. CONCRETE, STEEL, OR OTHER MATERIALS ARE ACCEPTABLE. PRE-FABRICATED UNITS SUCH AS CATTLE GUARDS ARE ACCEPTABLE. USE MINIMUM DIMENSION OF 6 FEET x 10 FEET. ORIENT DIRECTION OF RIBS AS SHOWN ON THE DETAIL.
- INSTALL PRIOR TO, ALONG SIDE OF, OR AS PART OF THE SCE.
- DIRECT WASH WATER TO AN APPROVED SEDIMENT TRAPPING DEVICE.
- KEEP AREA UNDER WASH RACK FREE OF ACCUMULATED SEDIMENT. IF DAMAGED, REPAIR OR REPLACE WASH RACK.

DETAIL D-4-1-A ROCK OUTLET PROTECTION I

STANDARD SYMBOL: ROP1

CONSTRUCTION SPECIFICATIONS

- RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
- PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (3/4 TO 1 1/2 INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPRAP.
- CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
- WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
- CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

DETAIL D-3-1 RIPRAP INFLOW PROTECTION

STANDARD SYMBOL: RRP

CONSTRUCTION SPECIFICATIONS

- PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
- CONSTRUCT INFLOW CHANNEL WITH CLASS I RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D₅₀) AND A 1 FOOT DEEP FLOW CHANNEL INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
- INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
- BLEND RIPRAP INTO EXISTING GROUND.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF

CONSTRUCTION SPECIFICATIONS

- INSTALL 2 3/8 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP

CONSTRUCTION SPECIFICATIONS

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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 1/2 x 1 1/2 x 1/2 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
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- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
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DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

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- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Howard Soil Conservation District

APPROVED: DEPARTMENT OF PLANNING AND ZONING

1/6/22 Date

2/3/22 Date

2/3/22 Date

RK&K

RUMMEL, KLEPPER & KAHN, LLP

ENGINEERS/CONSTRUCTION MANAGERS/PLANNERS/SCIENTISTS

700 East Pratt Street, Suite 500

Baltimore, MD 21202

PH: 410.728.2900

Contact: John D'Epagnier

www.rkk.com

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, MATTHEW THOMASSON LICENSE NO. 41799, EXPIRATION DATE: APRIL 12, 2022.

DESIGN BY: RK&K 1

DRAWN BY: ZWB

CHECKED BY: MBT

DATE: 12/17/2021

BY NO. REVISION DATE

FIRING RANGE BERM RE-GRADING

OWNER/DEVELOPER

HOWARD COUNTY

DEPARTMENT OF PUBLIC WORKS

3430 COURT HOUSE DRIVE

ELLCOTT CITY, MD 21043-4300

EROSION & SEDIMENT CONTROL DETAILS I

HOWARD COUNTY - DEPARTMENT OF PUBLIC WORKS

PUBLIC SAFETY TRAINING CENTER

RANGE IMPROVEMENTS

2200 SCOTT WHEELER DRIVE, HARRIOTTSVILLE, MD 21104

TAX MAP 0016 PARCEL 0253 GRID 0008 ZONED EXEMPT

ELECTION DISTRICT 3 - HOWARD COUNTY, MARYLAND

SHEET 79 OF 81

RK&K PROJECT NUMBER 17240.015

SCALE: As Shown

DETAIL B-3-2 SERRATED SLOPE

STANDARD SYMBOL

TYPICAL SECTION

OVERLAND FLOW DIVERSION
NO STEEPER THAN 1.5:1 IN RIPRAP ROCK
NO STEEPER THAN 2:1 FOR NON ROCK SURFACES

1. DIVERT OVERLAND FLOW FROM THE TOP OF ALL SERRATED CUT SLOPES AND CARRY TO A SUITABLE OUTLET.
2. MAKE SERRATIONS AS THE EXCAVATION PROGRESSES.
3. CONSTRUCT EACH STEP OR SERRATION ON THE CONTOUR. RISE & RUN DIMENSIONS WILL VARY DEPENDING ON THE FINAL SLOPE RATIO. FOR RIPRAP ROCK SURFACES, MAKE TWO FOOT VERTICAL (RISE) AND THREE FOOT HORIZONTAL (RUN) SERRATIONS AT A SLOPE RATIO NO STEEPER THAN 1.5:1. FOR NON ROCK SURFACES, MAKE TWO FOOT VERTICAL (RISE) AND FOUR FOOT HORIZONTAL (RUNS) SERRATIONS AT A SLOPE RATIO NO STEEPER THAN 2:1.
4. KEEP ALL BENCHES FREE OF SEDIMENT DURING ALL PHASES OF CONSTRUCTION.
5. HANDLE SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH SECTION H-2 SUBSURFACE DRAINS OR OTHER APPROVED METHODS.
6. MAINTAIN LINE, GRADE, AND CROSS SECTION OF SERRATED SLOPES. TEMPORARILY OR PERMANENTLY STABILIZE ALL GRADED, NON ROCK SURFACES IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENTS OR AS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL

CROSS SECTION

2:1 SLOPE OR FLATTER
EXISTING GROUND
GRADE TO PROVIDE REQUIRED FLOW WIDTH AND FLOW DEPTH

DIKE TYPE

a - DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b - DIKE WIDTH	24 IN MIN.	36 IN MIN.
c - FLOW WIDTH	4 FT MIN.	6 FT MIN.
d - FLOW DEPTH	12 IN MIN.	24 IN MIN.

PLAN VIEW

FLOW CHANNEL STABILIZATION

A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

- REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
- EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
- COMPACT FILL.
- CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
- PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
- STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
- UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL

ELEVATION

MAXIMUM DRAINAGE AREA = 1 1/2 ACRE
TIE-IN (SEE EARTH DIKE TRANSITION DETAIL ON 2 OF 2)
GRADE AT FRONT AND BACK FACE OF WALL
9 IN GABION MATTRESS
WEIR CREST
NONWOVEN GEOTEXTILE
ATTACH WOVEN MONOFILAMENT GEOTEXTILE TO THE UPSTREAM FACE OF ALL GABION BASKETS.

PLAN

PLACE WOVEN MONOFILAMENT GEOTEXTILE ON UPSTREAM FACE OF GABION BASKET PRIOR TO BACKFILL. FASTEN SECURELY WITH TIES SPACED EVERY 20 IN AT THE TOP AND MID-SECTION.

SECTION A-A

4 TO 7 IN STONE
WATER FLOW
WEIR CREST
NONWOVEN GEOTEXTILE
MIN. GABION BASKETS TYPICAL DIMENSIONS 6 FT x 3 FT x 3 FT

CONSTRUCTION SPECIFICATIONS

- REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
- EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
- COMPACT FILL.
- CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
- PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
- STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
- UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL

EARTH DIKE TRANSITION

TOP OF ADJOINING EARTH DIKE
TRANSITION EARTH DIKE
TIE-IN
GRADE EARTH DIKE INTO FACE OF WALL
EX. GROUND

CONSTRUCTION SPECIFICATIONS

- PROVIDE TRANSITION LENGTH AND HEIGHT AS SPECIFIED ON PLAN. HEIGHT OF TRANSITION EARTH DIKE MUST EXCEED 4 INCH MINIMUM FREEBOARD ABOVE TOP OF GABION AND EXTEND AT THIS ELEVATION UNTIL IT INTERCEPTS THE TOP OF ADJOINING EARTH DIKE.
- PROVIDE POSITIVE DRAINAGE ALONG EARTH DIKE TO GABION OUTLET STRUCTURE.
- COMPACT FILL.
- SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED ON PLAN. BANK PROJECTIONS OR IRREGULARITIES ARE NOT ALLOWED.

DISPOSITION OF BARS DETAIL

PLAN

SECTION A-A

QUANTITIES FOR ESTIMATING PURPOSES ONLY

OPENING	CONC. C.Y.	STEEL C.Y.	LABS.
18	1.22	0.78	0.71
21	2.40	1.56	1.42
24	3.14	2.14	1.96
27	3.98	2.82	2.64
30	4.91	3.64	3.36
33	5.94	4.62	4.26
36	7.07	5.78	5.28
39	8.42	7.14	6.42
42	10.00	8.70	7.68
45	11.81	10.47	9.16
48	13.87	12.46	10.86
51	16.20	14.68	12.78
54	18.81	17.14	14.92
57	21.61	19.86	17.28
60	24.60	22.84	20.86
63	27.79	26.07	24.66
66	31.18	29.56	28.68
69	34.87	33.30	32.92
72	38.87	37.29	37.38

'S' DISTANCES

4" FOR 12" DIA. TO 24" DIA. PIPES INCLUSIVE.
6" FOR 24" DIA. TO 36" DIA. PIPES INCLUSIVE.
8" FOR 36" DIA. TO 48" DIA. PIPES INCLUSIVE.

GENERAL NOTES

SPECIFICATIONS: LATEST S.H.A. CONCRETE SHALL BE MIN. NO. 2 REINFORCING: DEFORMED STEEL BARS-NO. 4 CHAINWIRE: ALL EXPOSED EDGES 1"x1" OR AS DIRECTED

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD TYPE C ENDWALL METAL OR CONCRETE ROUND PIPE
STANDARD NO. MD 354.01

TREE PROTECTION FENCE - HIGH VISIBILITY ORANGE FENCE

EXISTING TREES TO REMAIN
GALVANIZED PIPE CHAIN-LINK SUPPORT AT 10' O.C. MAXIMUM
MAXIMUM 10 FEET
MIN 4'-0"

HIGHLY VISIBLE FLAGGING
ORANGE HIGH VISIBILITY SAFETY FENCING
TREE PROTECTION SIGNS- 100' O.C. (MINIMUM ONE SIGN PER TREE PROTECTION AREA)
ANCHOR POSTS MUST BE INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE TOTAL HEIGHT OF POST

NOTES:

- TREE PROTECTION FENCING SHALL BE INSTALLED ALONG THE BOUNDARY OF ALL FOREST CONSERVATION EASEMENTS BORDERING THE LOD.
- BOUNDARIES OF FOREST CONSERVATION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
- ROOT DAMAGE SHOULD BE AVOIDED.
- DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.
- WHERE COMBINED SUPER SILT FENCE/TREE PROTECTION FENCE IS SPECIFIED INSTALL SUPER SILT FENCE PER DETAIL, EXCEPT, APPLY TREE PROTECTION SIGN TO SUPER SILT FENCE.

TYPICAL SECTION - GEOTEXTILE INCLUSIONS (NOT TO SCALE)

4" FURNISHED TOP SOIL WITH TURF GRASS ESTABLISHMENT AND TYPE B SOIL STABILIZATION MATTING
PROPOSED EMBANKMENT AS INDICATED ON FINISH GRADE PLANS C-201
CLASS SE TYPE II GEOTEXTILE (NON-WOVEN) PLACED CONTINUOUSLY TO THE TOP OF THE SLOPE
TOE OF SLOPE
1.75:1 (MAX)
6'

NOTES:

- WHEN NEW EMBANKMENTS ARE CONSTRUCTED AGAINST EXISTING EMBANKMENTS, REFER TO MDE B-3-2 FOR BENCHING REQUIREMENTS AND GEOTEXTILE INCLUSION PLACEMENT.
- TYPE B SOIL STABILIZATION MATTING SHALL BE PLACED CONTINUOUSLY FROM TOP OF THE SLOPE TO THE TOE OF THE SLOPE.
- REQUIRED FOR ALL SLOPES EXCEEDING 2:1.

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL

TYPE A

TYPE B

ISOMETRIC VIEW

SECTION FOR TYPE A AND B

EDGE OF ROADWAY OR TOP OF EARTH DIKE
6 IN MIN.
FLOW
POST DRIVEN INTO GROUND
EXCAVATE, BACKFILL AND COMPACT EARTH (TYP.)

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL

CONSTRUCTION SPECIFICATIONS

- USE WOVEN SILT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
- FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN. STRETCH 1/2 INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.
- FOR TYPE B, USE 2 3/8 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
- BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
- STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

TYPICAL SECTION - SLOPE REPAIR (NOT TO SCALE)

EXISTING TOE OF SLOPE
TYPE B SOIL STABILIZATION MATTING WITH 4" TOPSOIL, SEED, & MULCH
RESTORE EXISTING GROUND
SELECT BACKFILL
1.75:1 (MAX)
6'

NOTES:

- SEE GEOTECHNICAL NOTES ON SHEET C-300 FOR REPAIR/RESTORATION OF EXISTING SLOPE. NOTES 7 & 8 ON C-300 ARE NOT RELEVANT FOR REPAIR/RESTORATION.

Howard SCD Signature Block:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

John D. Spangler 1/12/22

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

Chief, Development Engineering Division
Date: 1/16/22

Chief, Division of Land Development
Date: 2/3/22

Director
Date: 2/3/22

RK&K
RUMMEL KLOPPER & KAHL, LLP
ENGINEERS/CONSTRUCTION MANAGERS/PLANNERS/SCIENTISTS
RESPONSIVE PEOPLE - ORIENTED SOLUTIONS
700 East Pratt Street, Suite 500
Baltimore, MD 21202
Ph: 410.728.2900 Contact: John D. Spangler
www.rkk.com

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, MATTHEW THOMASSON LICENSE NO. 41799, EXPIRATION DATE: APRIL 12, 2022.

DESIGN BY: RK&K 1
DRAWN BY: ZWB
CHECKED BY: MBT
DATE: 12/17/2021

BY	NO.	REVISION	DATE
		FIRING RANGE BERM RE-GRADING	

OWNER/DEVELOPER
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043-4300

EROSION & SEDIMENT CONTROL DETAILS II
HOWARD COUNTY - DEPARTMENT OF PUBLIC WORKS
PUBLIC SAFETY TRAINING CENTER

RANGE IMPROVEMENTS
2200 SCOTT WHEELER DRIVE, MARIOTTSTOWN, MD 21104
TAX MAP: 0016 PARCEL: 0255 GRID: 0008 ZONING: EXEMPT
ELECTION DISTRICT 3 - HOWARD COUNTY, MARYLAND
SHEET 80 OF 81

RK&K PROJECT NUMBER: 17240.015
SCALE: As Shown

B-4 STANDARDS AND SPECIFICATIONS

FOR

VEGETATIVE STABILIZATION

Definition

Using vegetation as cover to protect exposed soil from erosion.

Purpose

To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies

On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity

Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

- Adequate vegetative stabilization requires 95 percent groundcover.
- If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
- If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
- Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

- Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
- Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
- Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydrosedding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
- Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
- Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS

FOR

SEEDING AND MULCHING

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

A. Seeding

- Specifications
 - All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
 - Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
 - Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydrosedding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
 - Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
- Application
 - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

Howard SCD Signature Block:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

[Signature] 1/12/22
 Howard Soil Conservation District Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 1/6/22
 Chief, Development Engineering Division Date

[Signature] 2/3/22
 Chief, Division of Land Development Date

[Signature] 2/3/22
 Director Date

B-4-1 STANDARDS AND SPECIFICATIONS

FOR

INCREMENTAL STABILIZATION

Definition

Establishment of vegetative cover on cut and fill slopes.

Purpose

To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies

Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria

A. Incremental Stabilization - Cut Slopes

- Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
- Construction sequence example (Refer to Figure B.1):
 - Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
 - Perform Phase 1 excavation, prepare seedbed, and stabilize.
 - Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
 - Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

Figure B.1: Incremental Stabilization - Cut

b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

- Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
- Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.

c. Hydrosedding: Apply seed uniformly with hydroseder (slurry includes seed and fertilizer).

- If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P₂O₅ (phosphorous), 200 pounds per acre; K₂O (potassium), 200 pounds per acre.
- Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydrosedding). Normally, not more than 2 tons are applied by hydrosedding at any one time. Do not use burnt or hydrated lime when hydrosedding.
- Mix seed and fertilizer on site and seed immediately and without interruption.
- When hydrosedding do not incorporate seed into the soil.

B. Mulching

- Mulch Materials (in order of preference)
 - Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. **Note: Use only sterile straw mulch in areas where one species of grass is desired.**
 - Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - WCFM, including dye, must contain no germination or growth inhibiting factors.
 - WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotted-like ground cover, on application, having moisture absorption and penetration properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
 - WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

- Apply mulch to all seeded areas immediately after seeding.
- When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
- Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

3. Anchoring

- Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
 - A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
 - Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petrosol, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. **Use of asphalt binders is strictly prohibited.**
 - Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

PROFESSIONAL CERTIFICATION

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, MATTHEW THOMASSON LICENSE NO. 41799, EXPIRATION DATE: APRIL 12, 2022.

[Signature]

DESIGN BY: CWMW / ZWB

DRAWN BY: ZWB

CHECKED BY: MBT

DATE: 12/17/2021

BY NO. REVISION DATE

B. Incremental Stabilization - Fill Slopes

- Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
- Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
- At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
- Construction sequence example (Refer to Figure B.2):
 - Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
 - At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
 - Place Phase 1 fill, prepare seedbed, and stabilize.
 - Place Phase 2 fill, prepare seedbed, and stabilize.
 - Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

Figure B.2: Incremental Stabilization - Fill

B-4-4 STANDARDS AND SPECIFICATIONS

FOR

TEMPORARY STABILIZATION

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

Purpose

To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

- Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
- For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
- When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

No.	Hardness Zone (from Figure B.3): <u>7a</u>				Fertilizer Rate (10-20-20)	Lime Rate
	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths		
	Forstall Millet	30	Feb 15-Apr 30 Aug 15-Nov 30			
	Annual ryegrass	40	May 1-August 14	436 lb/acre (10 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)	

1. General Use

- Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
- Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
- For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
- For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/4 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

2. Turfgrass Mixtures

- Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
- Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in full sun areas where

DESIGN BY: CWMW / ZWB

DRAWN BY: ZWB

CHECKED BY: MBT

DATE: 12/17/2021

BY NO. REVISION DATE

B-4-2 STANDARDS AND SPECIFICATIONS

FOR

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition

The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation

- Temporary Stabilization
 - Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
- Permanent Stabilization
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soluble salts less than 500 parts per million (ppm).
 - Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.

B-4-5 STANDARDS AND SPECIFICATIONS

FOR

PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures

- General Use
 - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
 - For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/4 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
- Turfgrass Mixtures
 - Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
 - Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in full sun areas where

rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

- Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
- Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

Notes:

Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

SHA TURFGRASS SEED MIX

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)			Lime Rate
					N	P ₂ O ₅	K ₂ O	
	Turf-Tall Fescue (Solely) (Durant, Nom. cont.)	95	2/15 to 4/30 8/15 to 10/31	1/4" - 1/2"	45 lb/acre (1.0 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)
	Kentucky Bluegrass (See problem 1. sep. problem)	5	2/15 to 4/30 8/15 - 10/31	1/4" - 1/2"				

OWNER/DEVELOPER

HOWARD COUNTY

DEPARTMENT OF PUBLIC WORKS

3430 COURT HOUSE DRIVE

ELLCOTT CITY, MD 21043-4300

d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by digging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling

- Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is 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.
- Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
- Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - 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.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
- Areas having slopes steeper than 2:1 require special consideration and design.
- Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, trash, or other materials larger than 1 1/2 inches in diameter.
 - Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
 - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
- Topsoil Application
 - Erosion and sediment control practices must be maintained when applying topsoil.
 - Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading

and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

- Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
- Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
- Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydrosedding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
- Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
- Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS

FOR

SEEDING AND MULCHING

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

A. Seeding

- Specifications
 - All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
 - Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
 - Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydrosedding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
 - Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
- Application
 - Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
 - Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

SHA TURFGRASS SEED MIX

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)			Lime Rate
					N	P ₂ O ₅	K ₂ O	
	Turf-Tall Fescue (Solely) (Durant, Nom. cont.)	95	2/15 to 4/30 8/15 to 10/31	1/4" - 1/2"	45 lb/acre (1.0 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)
	Kentucky Bluegrass (See problem 1. sep. problem)	5	2/15 to 4/30 8/15 - 10/31	1/4" - 1/2"				

EROSION & SEDIMENT CONTROL DETAILS III

HOWARD COUNTY - DEPARTMENT OF PUBLIC WORKS

PUBLIC SAFETY TRAINING CENTER

RANGE IMPROVEMENTS

2201 SCOTT WHEELER DRIVE, MARRIOTTSVILLE, MD 21104

TAX MAP: 0018 PARCEL: 0253 GRID: 9008 ZONED: EXEMPT

ELECTION DISTRICT 3 - HOWARD COUNTY, MARYLAND

SHEET 81 OF 81

C-352

RK&K PROJECT NUMBER 17240.015

SCALE: As Shown