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36	RETAINING WALL PLAN & PROFILES
37	RETAINING WALL PLAN & PROFILES
38	RETAINING WALL PLAN & PROFILES
39	RETAINING WALL PLAN & PROFILES

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41	RETAINING WALL PLAN & PROFILES
42	RETAINING WALL PLAN & PROFILES

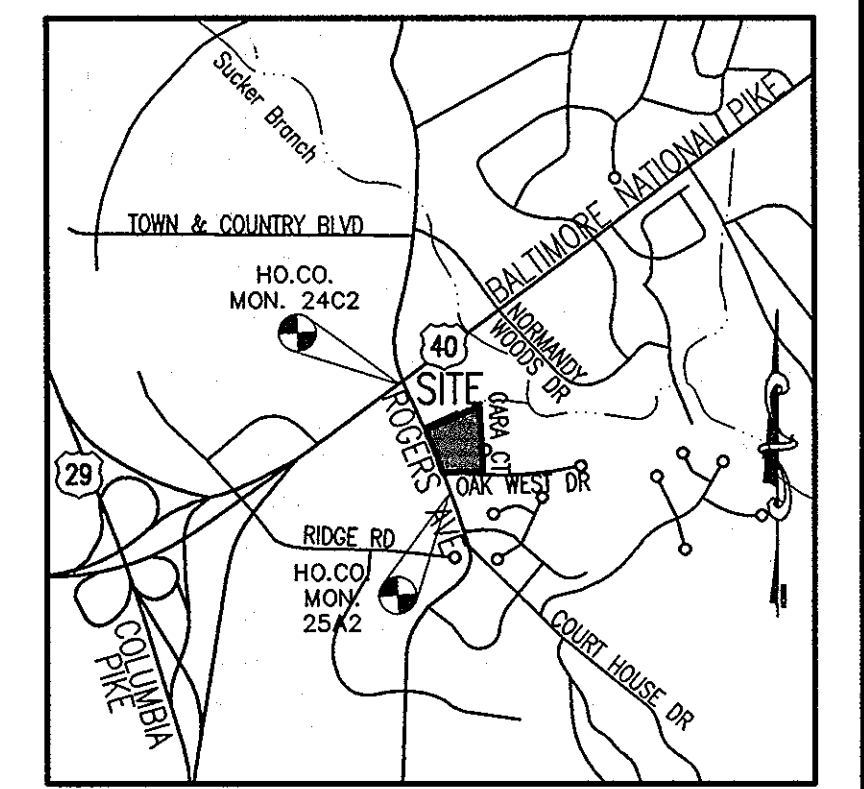
SITE DEVELOPMENT PLAN

ALTA AT REGENCY CREST

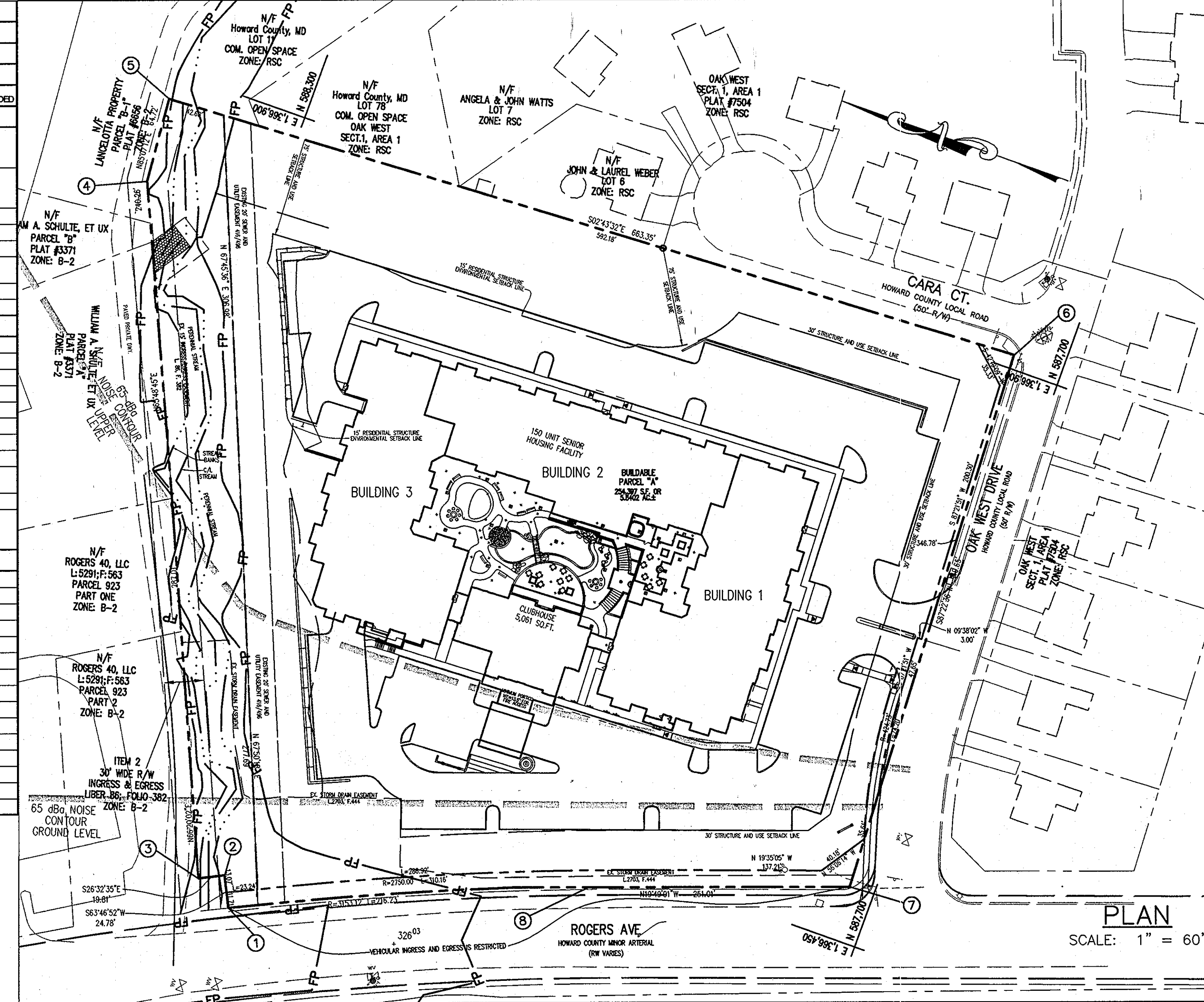
BUILDABLE PARCEL A AND OPEN SPACE LOT 1

2ND ELECTION DISTRICT

HOWARD COUNTY, MARYLAND



UNIVERSAL DESIGN GUIDELINES FOR AGE RESTRICTED HOUSING	
Project: Alta at Regency Crest	
County File #: SDP-08-068	
Date: 1/16/08	
DESIGN ELEMENT PROVIDED	
REQUIRED ELEMENTS	
For multi-family apartment or condo developments, an accessible path between parking, dwelling units, and common areas that meets ADA standards	X
For single family detached and attached developments, a "no-step" access to the front entrance to the community building and all dwellings (a no-step entrance is desirable, but not required at other entrances)	na
36" wide front door with exterior lighting of the entrance	X
all interior doorways at least 32" wide (36" is preferable)	X
hallways at least 36" wide, (40-42" is preferable)	X
complete living area including master bedroom & bath on first floor (or elevator access if multi-story rental/condo apartments)	X
lever handles on interior and exterior doors	X
blocking for grab bars in walls in bathroom walls near toilet and shower	X
DESIRABLE ELEMENTS	
low maintenance exterior materials	X
covered main entry	X
entry door approach with 18"-24" of clearance at side adjacent to handle	X
smooth transitions between rooms (vertical threshold of 2" or less)	X
slip resistant flooring	X
maximize accessible path between main living rooms (preferably 38-42")	X
anti-scratch devices on all plumbing fixtures	X
5' turning radius or T turn in kitchen and first floor bathroom	X
parallel and forward approach maneuvering space in front of appliances and plumbing fixtures	X
main electrical breaker box located on the first floor	X
switches, doorbells, thermostats, and breaker boxes should be located no more than 48" above the floor; electrical receptacles should be at least 15" above the floor	X
CUSTOM OPTION ELEMENTS	
security system	X
visual ID of visitors	X
visual smoke detectors	X
handrails on both sides of exterior and interior stairs	X
task lighting in kitchen, bath and other work spaces	X
rocker light switches	X
lighting in closets and pantry	X
closet rods adjustable from 3" to 6"	X
slip resistant flooring in kitchen and bath	X
multi-level or adjustable kitchen countertops and work spaces	X
pull-out shelves for kitchen base cabinets	X
front mounted controls on stove	X
installation of grab bars in bathroom	X
hand held showerhead in shower	X
curbless shower	X



SITE DATA ANALYSIS

GROSS AREA OF SITE:	6.69 ACRES (291,279 SF)
AREA IN 100 YEAR FLOODPLAIN:	0.72 ACRES (31,534 SF)
AREA OF STEEP SLOPES (OUTSIDE OF 100 YEAR FLOOD PLAIN):	0.73 ACRES (31,684 SF)
NET TRACT AREA:	5.24 ACRES (228,061 SF)
AREA OF RIGHT-OF-WAY DEDICATION:	0.1789 ACRES (7,791 SF)
LIMIT OF DISTURBED AREA:	5.03 ACRES (219,065 SF)
EXISTING USES:	EXISTING HOME
PROPOSED USES:	1 SENIOR LIVING BUILDING & CLUBHOUSE
UNITS PROPOSED:	150 RENTAL UNITS
PARKING REQUIRED:	195 SPACES (1.3 SPACES/DWELLING UNIT X 150 = 195)
TOTAL PARKING PROVIDED:	195
NUMBER OF HANDICAP SPACES:	7
NUMBER OF REGULAR SPACES:	168
NUMBER OF UNDER-BUILDING SPACES:	20 (19 STANDARD & 1 HC CAR)
BUILDING HEIGHT ALLOWED:	50 FEET (1 ADDITIONAL FOOT PER EVERY 2 FEET OF SETBACK ABOVE THE MINIMUM)
BUILDING HEIGHT PROPOSED:	58.2' FOR THE SENIOR LIVING BUILDING (MORE THAN 17' OF ADDITIONAL SETBACK IS PROVIDED FOR THE PROPOSED HEIGHT) 23.2' FOR THE CLUBHOUSE
MODERATE INCOME HOUSING UNITS REQUIRED:	10% (150) = 15 UNITS
MODERATE INCOME HOUSING UNITS PROPOSED:	15 UNITS
OPEN SPACE REQUIRED:	1.34 AC. (20%)
OPEN SPACE PROVIDED:	1.43 AC. (21.4%) [0.69 AC. (LOT 1), 0.34 AC. (AFFORESTATION), 0.11 AC (FOREST RETENTION) AND 0.29 AC (COURTYARD)]
REQUIRED COMMUNITY CENTER AREA:	20 SF/UNIT (157 99 UNITS) + 10 SF/UNIT (51 UNITS) = 2490 SF
PROPOSED COMMUNITY CENTER AREA:	5,061 SF
*SLOPES >25% SHOWN ARE NOT HOWARD COUNTY REGULATED STEEP SLOPES (<20,000 SF TOTAL AREA)	
BENCH MARK HOWARD COUNTY CONTROL STATION 24C2 N 588,648.312 E 1,366,038.195 ELEV. 354.76 HOWARD COUNTY CONTROL STATION 25A2 N 587,502.680 E 1,336,556.401 ELEV. 348.89	
VICINITY MAP SCALE: 1" = 2000'	
ADC MAP # 12 GRID # E7	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
DIRECTOR, DEP. DATE 12/17/09	
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 12/16/09	
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 12/16/09	
3/10/10 REV. SHT. INDEX AND SITE DATA ANALYSIS NOTES.	
REVISION	
OWNER: CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLCOTT CITY, MD 21043-4105	
DEVELOPER: WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070	
PROJECT: ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING	
AREA: TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE: TITLE SHEET	
Patton Harris Rust & Associates, p.c. Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
DESIGNED BY: PHRA	
DRAWN BY: JML	
PROJECT NO: 15661-1-0	
DATE: 8/24/09	
SCALE: 1" = 60'	
DRAWING NO. 1 OF 42	

- 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 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 - TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON 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 EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
 - THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD SURVEY PREPARED BY BENCHMARK ENGINEERING & SURVEYED BY PHRA+A DECEMBER, 2007. BOUNDARY SURVEY PREPARED BY BENCHMARK ENGINEERING & SURVEYED BY PHRA+.
 - 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. 24C2 AND 25A2 WERE USED FOR THIS PROJECT.
 - WATER IS PUBLIC CONTRACT #14-1613-D
 - SEWER IS PUBLIC CONTRACT #21-5.
 - THE STORMWATER MANAGEMENT FOR THIS SITE IS PROVIDED IN AN UNDERGROUND SYSTEM ON EACH SIDE OF THE PROPOSED BUILDING. WATER QUALITY FOR THE SITE IS ADDRESSED BY TWO BAYLETTERS, WITH PRE-TREATMENT IN BAYSCAGS. COW STORAGE IS PROVIDED IN UNDERGROUND PIPING SYSTEMS. SITE RECHARGE IS PERFORMED IN THREE RECHARGE TRENCHES.
 - APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
 - THE 100-YEAR FLOODPLAIN HAS BEEN SHOWN HEREON BASED ON FLOODPLAIN STUDY PREPARED BY PHRA+A DATED JANUARY, 2008 & APPROVED ON NOVEMBER 17, 2008.
 - THE SITE IS ZONED POR (PLANNED OFFICE RESEARCH) PER 02-02-04 COMPREHENSIVE ZONING PLAN & THE COMP LITE ZONING AMENDMENTS DATED 7-28-06. CURRENT USE OF THE SITE IS RESIDENTIAL.
 - ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
 - THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
 - CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
 - PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
 - NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
 - PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
 - ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
 - ALL LIGHTING IS TO BE DIRECTED/REFLECTED AWAY FROM ADJACENT PUBLIC ROADS AND RESIDENTIALLY ZONED PROPERTIES, AND BE IN ACCORDANCE WITH SECTION 13.1 OF THE HOWARD COUNTY ZONING REGULATIONS. LIGHT TRASPAS ON ADJOINING PROPERTIES SHALL BE LIMITED TO 0.1 FOOT CANDLES.
 - THERE ARE TWO EXISTING PERMANENT STRUCTURES AND ONE SHED ON-SITE. ALL EXISTING STRUCTURES WILL BE REMOVED.
 - WETLANDS, STREAMS, ASSOCIATED BUFFERS, 100-YR FLOODPLAIN & STEEP SLOPES ARE LOCATED ON THIS PROJECT. GRADING, REMOVAL OF VEGETATIVE COVER AND TREES AND PAVING ARE NOT PERMITTED IN WETLANDS, STREAMS, WETLAND BUFFERS, STREAM BUFFERS, FLOODPLAIN, FOREST CONSERVATION AREAS, OR STEEP SLOPES.

SEE SHEET 19 FOR BUILDING ELEVATIONS

- LEGEND**
- PROPERTY LINE
 - EX. STREAM AND BUFFER
 - EXISTING 100-YR FLOODPLAIN
 - EXISTING BUILDING
 - PROPOSED BUILDING
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE, 1993)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
 - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2" GALVANIZED STEEL PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
 - ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
 - THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY MCCARTHY & ASSOCIATES, INC., DATED AUGUST, 2007, AND WAS APPROVED ON 2/20/08.
 - A DESIGN MANUAL WAIVER FOR THIS PROJECT WAS DENIED ON 1/30/08. THE WAIVER REQUESTED PERMISSION TO CALCULATE THE RON BASED ON MEASURED IMPERVIOUS AREA. A SECOND DESIGN MANUAL WAIVER WAS REQUESTED ON 6/11/08 TO ALLOW THE USE OF A 1" ORIFICE INSTEAD OF A 1.5" ORIFICE FOR THE OUTLET CONTROL STRUCTURE, AND WAS APPROVED ON 7/16/08.
 - A KNOX BOX IS REQUIRED TO BE PLACED ON FRONT OF THE BUILDING. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSED (INTEGRATED WITH THE FIRE ALARM SYSTEM).
 - ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
 - AN ADMINISTRATIVE ADJUSTMENT (AA-07-29) WAS ON DENIED JAN. 24, 2008. THE ADMINISTRATIVE ADJUSTMENT WAS REQUESTED TO REDUCE SETBACKS FROM 75' TO 60' ALONG THE EASTERN PROPERTY BOUNDARY FOR A CARPORT, GREENHOUSE, RETAINING WALLS, AND PARKING SPACES. THESE FEATURES HAVE BEEN RELOCATED OR REMOVED FROM THE PLAN.
 - A REQUEST FOR ALTERNATIVE COMPLIANCE FROM THE 15' WIDE LANDSCAPED AREA BETWEEN CURB AND BUILDING FACE WAS REQUESTED ON 6/11/08. THIS REQUEST ASKS TO AVERAGE 15' BETWEEN CURB AND BUILDING FACE, AND WAS APPROVED ON JULY 23, 2008.
 - THIS PROJECT IS SERVED BY PRIVATE TRASH AND RECYCLING SERVICE. NO COUNTY SERVICE WILL BE PROVIDED.
 - THE 65 DBA NOISE CONTOUR LINE DRAWN ON THIS SUBDIVISION PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992 AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 DBA NOISE EXPOSURE. THE 65 DBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.

COORDINATE LIST

	N	E
1	588,152.76	1,366,319.24
2	588,163.70	1,366,341.47
3	588,181.42	1,366,332.62
4	588,395.07	1,366,814.66
5	588,400.58	1,366,879.14
6	587,737.98	1,366,910.68
7	587,718.77	1,366,491.48
8	587,954.92	1,366,406.38

ADDRESS CHART

PARCEL NUMBER	STREET ADDRESS
P.A. -BLDG #1	3311 OAK WEST DRIVE
P.A. -BLDG #2	3315 OAK WEST DRIVE
P.A. -BLDG #3	3319 OAK WEST DRIVE
P.A. -CLUBHOUSE	3305 OAK WEST DRIVE

PROJECT NAME	ALTA AT REGENCY CREST	SECT./-	PARCEL 1/BUILDABLE PARCEL
PLAT NO.	21067, 21068, 20993-94	GRID #	1
ZONING	POR	TAX MAP NO.	25
ELECT. DIST.	2	CENSUS TRACT	6028.00
SEWER CODE	14-1613-D	SEWER CODE	21-S

PHRA+A
Professional Corporation
Professional Engineer
Professional Surveyor
Professional Planner
Professional Landscape Architect
Professional Engineer
Professional Surveyor
Professional Planner
Professional Landscape Architect

BY: [Signature]
DATE: 12/16/09



DEMOLITION NOTES:

1. ALL MATERIALS DEMOLISHED, UNLESS IDENTIFIED TO BE SALVAGED (CONCRETE, PAVING, ROOT MAT, FENCING AND ALL OTHER DEBRIS) SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PER FEDERAL, STATE AND LOCAL REGULATIONS. ALL COSTS OF HAULING, DISPOSAL AND TIPPING FEES ARE THE RESPONSIBILITY OF THE CONTRACTOR AS PART OF THE BASE BID.
2. ALL MATERIALS IDENTIFIED TO BE SALVAGED SHALL BE REMOVED WITH CARE TO MINIMIZE DAMAGE AND SHALL BE RETURNED TO THE APPROPRIATE UTILITY COMPANY. SALVAGED ITEMS INCLUDE: ALL ELECTRIC AND GAS METERS.
3. ALL QUANTITIES OF DEMOLITION SHALL BE DETERMINED BY THE CONTRACTOR AND COVERED IN THE BASE BID. CONTRACTOR SHALL MAKE NECESSARY SITE INSPECTIONS PRIOR TO BID TO VERIFY ALL QUANTITIES TO HIS SATISFACTION.
4. CONTRACTOR SHALL REFER TO SEPARATE PLANS IN THE CIVIL SERIES (STORMWATER MANAGEMENT, SEDIMENT CONTROL, PAVING, ETC.) TO DETERMINE APPROPRIATE SEQUENCE OF ALL DEMOLITION ACTIVITIES.
5. EXISTING TREES WITHIN THE WORK AREA SHALL BE REMOVED UNLESS OTHERWISE DESIGNATED ON THE FINAL FOREST CONSERVATION PLAN EITHER INDIVIDUALLY OR BY GENERAL AREA. CONTRACTOR SHALL PROVIDE PROTECTIVE DEVICES TO AVOID DAMAGE TO TREES TO REMAIN DURING CONSTRUCTION.
6. REFER TO SEPARATE PLANS FOR SEDIMENT AND EROSION CONTROL REQUIREMENTS.
7. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANY AND OWNER PRIOR TO REMOVAL OR RELOCATION OF ANY EXISTING UTILITIES. ALL SERVICES TO EXISTING FACILITY SHALL REMAIN UNAFFECTED UNLESS COORDINATED IN ADVANCE WITH OWNER.
8. ALL ELECTRICAL LINES FEEDING LIGHTING FIXTURES SHALL BE REMOVED BACK TO LOCATIONS SHOWN OR TO NEAREST HAND BOX OR PANEL WHERE PROPER TERMINATION ACCORDING TO CURRENT REGULATING CODES CAN BE MADE.
9. EXISTING UTILITY LINES HAVE BEEN SHOWN USING THE BEST AVAILABLE RECORDS OBTAINED FROM UTILITY COMPANIES AND FIELD EVIDENCE. PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL CALL MISS UTILITY TO LOCATE ALL UNDERGROUND UTILITY LINES AND SUPPLEMENT THOSE MARKINGS BY ENGAGING A PRIVATE UTILITY LOCATING COMPANY (AT CONTRACTORS EXPENSE) TO ENSURE THAT ALL EXISTING UTILITIES HAVE BEEN MARKED.

DEMOLITION KEY

- 1 RAZE EXISTING BUILDINGS REMOVE STRUCTURE AND FOUNDATION.
- 2 CONCRETE PAD TO BE REMOVED.
- 3 BITUMINOUS PAVING TO BE REMOVED.
- 4 REMOVE STANDING WOODEN POLES.
- 5 REMOVE OVERHEAD WIRE FROM UTILITY POLE ON SOUTHWEST CORNER OF SITE TO EXISTING STRUCTURE.
- 6 REMOVE GUIDE WIRE.
- 7 REMOVE EXISTING TREES.
- 8 REMOVE EXISTING CURB AND CUTTER
- 9 REMOVE EXISTING CONCRETE SIDEWALK

LEGEND

- FOREST TO BE CLEARED
- FEATURE TO BE REMOVED
- BITUMINOUS PAVING TO BE REMOVED
- CONCRETE PAVING TO BE REMOVED
- LIMIT OF PAVEMENT REMOVAL
- REMOVE UTILITY LINE IN THE DIRECTION SHOWN

LEGEND

- PROPERTY LINE
- EXISTING TREELINE
- WETLANDS AND 25' BUFFER
- EX. STREAM AND BUFFER
- EX. 100-YEAR FLOODPLAIN
- EXISTING CONTOURS
- EXISTING BUILDING
- SLOPES: > 25%
- EXISTING SOILS
- EX. OVERHEAD POWER LINE
- EX. SEWER LINE
- EX. GAS LINE
- EX. TREES
- EX. CURB & CUTTER
- EX. EDGE OF PAVEMENT
- EX. STORM DRAIN EASEMENT
- EX. SANITARY SEWER EASEMENT
- EX. INGRESS/EGRESS EASEMENT

SOILS CHART

MAP SYMBOL	NAME	STRUCTURAL LIMITATIONS Dwellings w/ Basements	EROSION HAZARD	HYDRIC	SLOPE (%)
GhB	Glenelg-Urban land complex	Not Limited	Slight	N	0-8
GmB	Glenville silt loam	Very Limited: Ponding, Depth to Sat. Zone	Moderate	Partially	3-8
GnB	Glenville-Balle silt loam	Very Limited: Ponding, Depth to Sat. Zone	Moderate	Partially	0-8
MaD	Manor loam	Very Limited: Slope, Depth to bedrock	Severe	N	15-25

SOURCE: SOIL INFORMATION TAKEN FROM USDA-NRCS WEBSITE.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Butler 12/17/09
DIRECTOR, DEP DATE

John D. ... 12/16/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE

... 12/17/09
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER: CENTURY HOLDING, LLC
3311 ROGERS AVENUE OAK WEST DR.,
ELLICOTT CITY, MD 21043-4105

DEVELOPER: WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE SUITE 501
VIENNA, VA 22182
703-760-5070

PROJECT: ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

AREA: TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: EX. CONDITIONS & DEMOLITION PLAN

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

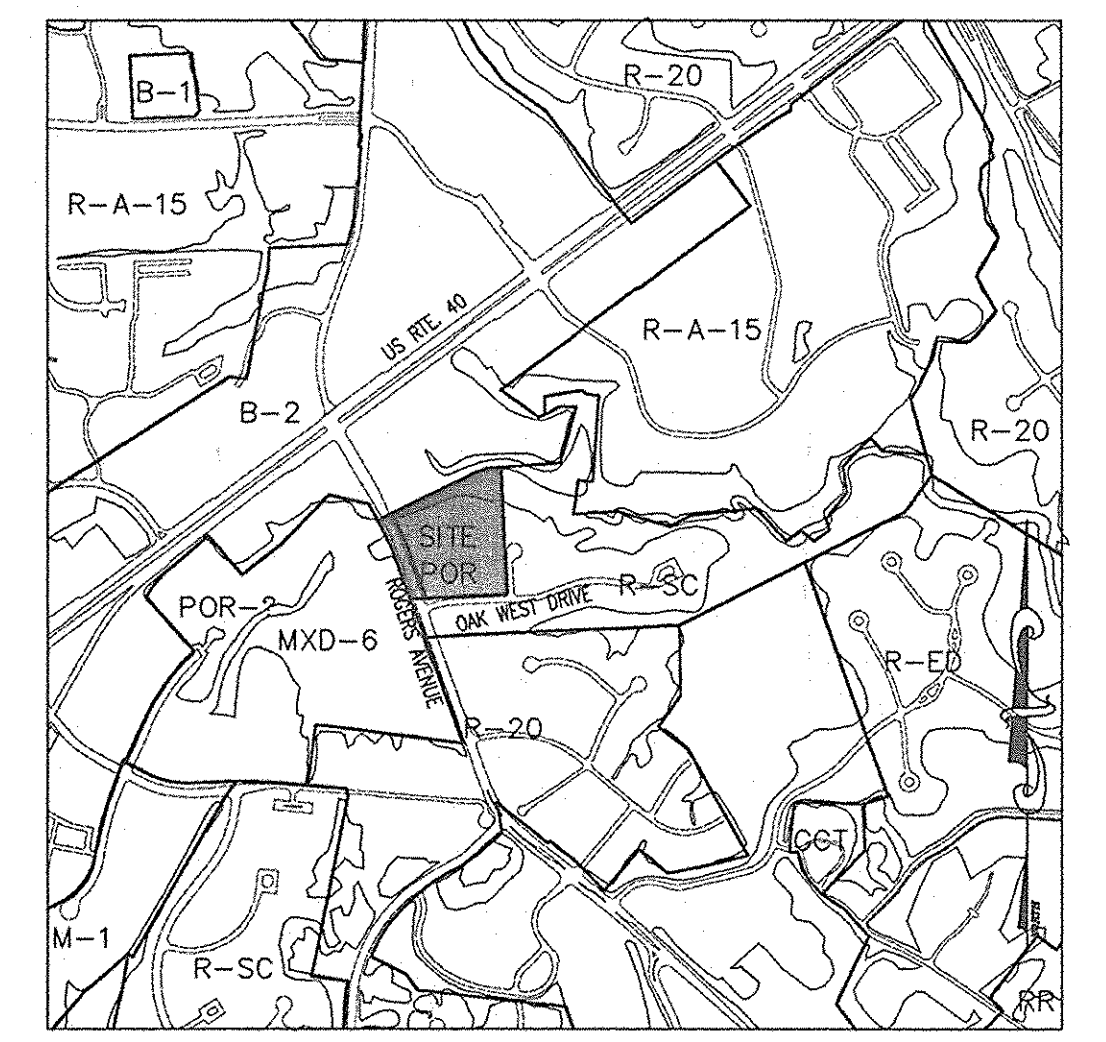
SEAL:

DESIGNED BY: JML
DRAWN BY: JML
PROJECT NO: 15661-1-0
C-SDP02DEM.DWG
DATE: 8/24/09
SCALE: 1" = 40'
DRAWING NO: 2 OF 42



AREA	ACRES
TOTAL TRACT AREA	6.69
EXISTING FOREST	1.04
EXISTING HEDGEROW	0.13
LAND WITHIN STREAM BUFFERS	1.04
LAND WITHIN STREAMBED	0.17
LAND WITHIN FLOODPLAIN	0.70
FOREST WITHIN STREAM BUFFERS	0.79
FOREST WITHIN STREAMBED	0.13
FOREST WITHIN FLOODPLAIN	0.50

SYMBOL	COMMUNITY	AREA	PRIORITY RETENTION
F1	FOREST	1.04 Ac.±	HIGH
H1	HEDGEROW	0.02 Ac.±	LOW
H2	HEDGEROW	0.11 Ac.±	HIGH



VICINITY MAP
SCALE: 1"=1000'

LEGEND

	PROPERTY LINE		EXISTING BUILDING
	EXISTING TREELINE		SPECIMEN TREE LOCATION
	FEMA 100 YEAR FLOODPLAIN		OPEN FIELD
	EXISTING SOILS		FOREST STAND
	STREAM AND BUFFER		HEDGEROW
	EXISTING CONTOURS		STEEP SLOPES 15-25%
			STEEP SLOPES 25%

SOILS CHART

MAP SYMBOL	NAME	STRUCTURAL LIMITATIONS	EROSION HAZARD	HYDRIC	SLOPE (%)
GhB	Glenelg-Urban land complex	Not Limited	Slight	N	0-8
GmB	Glenville silt loam	Very Limited: Ponding, Depth to Sat. Zone	Moderate	Partially	3-8
GnB	Glenville-Baile silt loam	Very Limited: Ponding, Depth to Sat. Zone	Moderate	Partially	0-8
MaD	Manor loam	Very Limited: Slope, Depth to bedrock	Severe	N	15-25

SOURCE: SOIL INFORMATION TAKEN FROM USDA-NRCS WEBSITE.

KEY	SPECIES	SIZE	CONDITION	REMAIN OR REMOVE
1	RED MAPLE (<i>Acer rubrum</i>)	31"	VERY POOR	REMOVE
2	AMERICAN BEECH (<i>Fagus grandifolia</i>)	36"	GOOD	REMOVE
3	AMERICAN BEECH (<i>Fagus grandifolia</i>)	37"	GOOD	REMOVE
4	EASTERN WHITE PINE (<i>Pinus strobus</i>)	30"	GOOD	REMOVE
5	SILVER MAPLE (<i>Acer saccharinum</i>)	51"	GOOD	REMAIN

GENERAL NOTES

1. THE SITE IS LOCATED AT 3311 ROGERS AVENUE, ELLICOTT CITY, MD 21043. THE SITE CONSISTS OF 1 PARCEL (PARCEL 1) WHICH EQUALS A TOTAL OF 6.69± ACRES.
2. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD SURVEY PREPARED BY BENCHMARK ENGINEERING & VERIFIED BY PHR+A DECEMBER, 2007. BOUNDARY SURVEY PREPARED BY BENCHMARK ENGINEERING & VERIFIED BY PHR+A.
3. THE SOILS ON SITE ARE GLENELG-URBAN LAND COMPLEX (0-8% SLOPES) - GhB, GLENVILLE SILT LOAM (3-8% SLOPES) - GmB, GLENVILLE-BAILE SILT LOAMS (0-8% SLOPES) - GnB, MANOR LOAM (15-25% SLOPES) - MaD.
4. THE SITE IS ZONED POR (PLANNED OFFICE RESEARCH). CURRENT USE OF THE SITE IS RESIDENTIAL.
5. THIS SITE IS LOCATED IN THE PATAPSCO RIVER LOWER N. BRANCH WATERSHED (2130906). THIS SITE IS LOCATED IN A USE I-P WATERSHED ACCORDING TO INFORMATION AVAILABLE FROM THE CODE OF MARYLAND REGULATIONS (COMAR) 26.08.02.02 "STREAM SEGMENT DESIGNATIONS". THE APPROPRIATE 50' STREAM BUFFER HAS BEEN SHOWN AS REQUIRED IN THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SECTION 16.116 "PROTECTION OF WETLANDS, STREAMS, AND STEEP SLOPES".
6. ONE STREAM IS LOCATED ON THE SITE AND IS IDENTIFIED AS A USE I-P STREAM ACCORDING TO INFORMATION AVAILABLE FROM THE CODE OF MARYLAND REGULATIONS (COMAR) 26.08.02.08 "STREAM SEGMENT DESIGNATIONS". THE STREAM IS LOCATED IN THE NORTHERN BOUNDARY OF THE SITE EXTENDING TO THE NORTHEAST FLOWING OFF-SITE. A FLOODPLAIN IS LOCATED ON THE SITE AS SHOWN BY FLOODPLAIN STUDY PREPARED BY PHR+A.
7. EXISTING FOREST CONSISTS OF 1 STAND AND 2 HEDGEROWS AS SHOWN. TREES GREATER THAN 30" IN DIAMETER WERE OBSERVED WITHIN THE PROPERTY BOUNDARY AND ARE SHOWN.
8. FIELD WORK FOR THIS INVENTORY WAS CONDUCTED ON DECEMBER 17, 2007 BY JAY M. LOFTUS, PLANNER OF PATTON HARRIS RUST AND ASSOCIATES, PC UNDER THE SUPERVISION OF PETER J. STONE, RLA AND SCOTT R. WOLFORD, RLA OF PATTON HARRIS RUST AND ASSOCIATES, PC.
9. THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.
10. NO RARE, THREATENED OR ENDANGERED PLANTS OR ANIMALS OR CRITICAL HABITATS WERE OBSERVED IN THE FIELD AS STATED IN A LETTER RECEIVED FROM THE MARYLAND DNR.
11. 5 SPECIMEN TREES (30" IN DIAMETER) HAVE BEEN IDENTIFIED AND MEASURED AS SHOWN ON THIS PLAN. FOUR OF THE SPECIMEN TREES WILL NEED TO BE REMOVED DUE TO THE PROPOSED DEVELOPMENT ON THE SITE.
12. SPECIMEN TREE LOCATIONS WERE FIELD APPROXIMATED.
13. NO HISTORIC FEATURES ARE LOCATED ON-SITE.
14. FOREST STAND 1 CONTAINS 1.04 ACRES OF FOREST ON-SITE, WHILE THE STAND IS PART OF CONTIGUOUS FOREST THAT EXTENDS FOR A TOTAL OF SEVENTY-NINE (79) ACRES OFF-SITE.
15. WETLANDS ARE LOCATED ON THE SITE.
16. NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
17. NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
18. THERE ARE THREE EXISTING STRUCTURES ON THE SITE AS SHOWN. THE HOUSE, GARAGE, AND SHED WILL BE REMOVED. A SENIOR ORIENTED MULTI-FAMILY BUILDING AND ASSOCIATED PARKING ARE PROPOSED FOR THE SITE DEVELOPMENT.
19. THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.
20. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Buttle 12/17/09
DIRECTOR, DEP. DATE

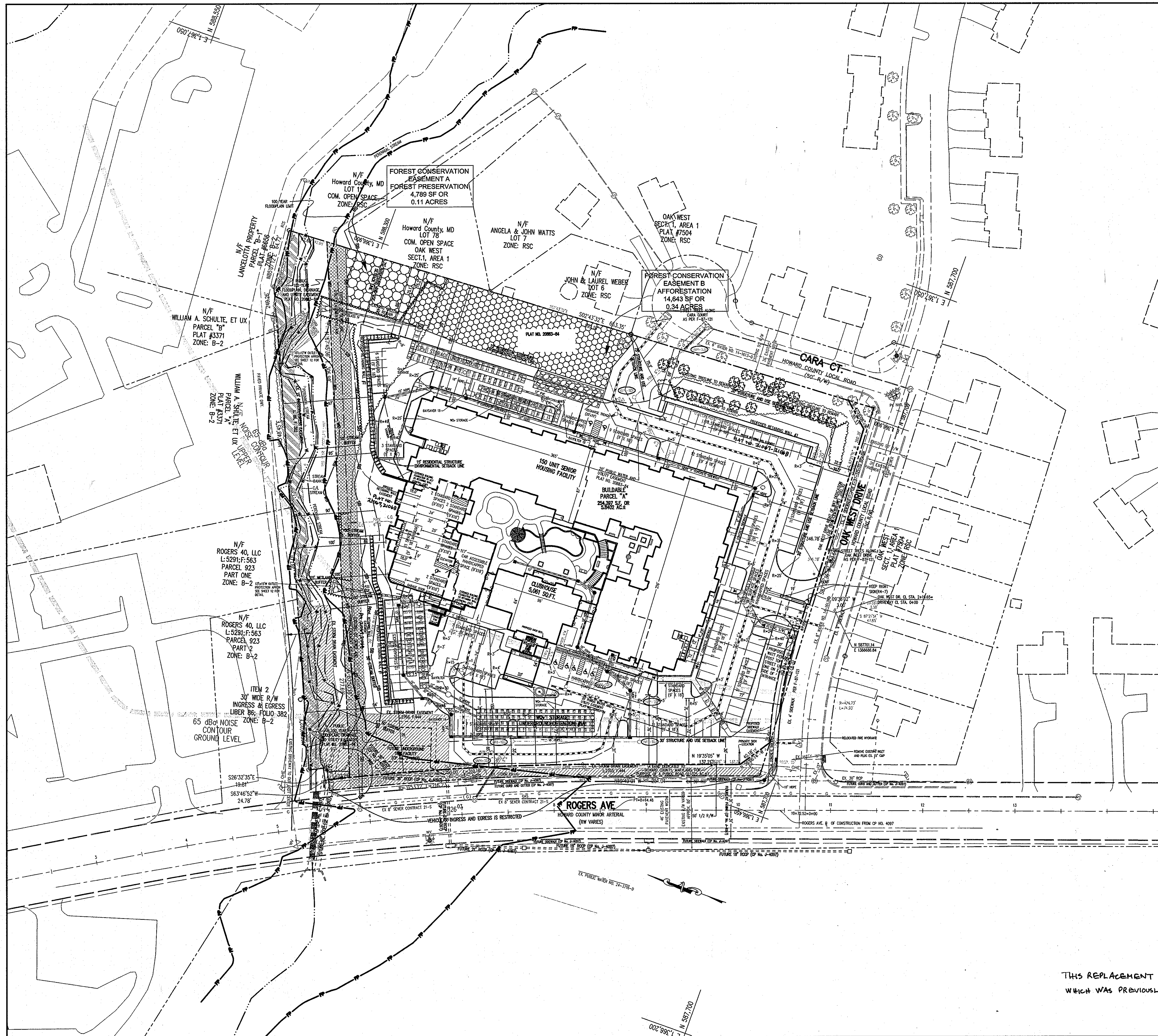
John D. ... 12/16/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

W. J. ... 12/17/09
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO.	REVISION
OWNER	CENTURY HOLDING, LLC 3311 ROGERS AVENUE OAK WEST DR. ELLICOTT CITY, MD 21043-4105
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070
PROJECT	ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE	FOREST STAND DELINEATION PLAN

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DESIGNED BY :	JML
DRAWN BY :	JML
PROJECT NO :	15661-1-0
DATE :	8/24/09
SCALE :	1"=50'
DRAWING NO. :	3 OF 42



LEGEND

PROPERTY LINE		SILT FENCE	
EXISTING TREELINE		LIMIT OF DISTURBANCE	
EXISTING TREELINE TO REMAIN		OVERHEAD ELECTRIC LINE	
PROPOSED LOT LINE		EXISTING BUILDING	
EX. STREAM AND BUFFER		PROPOSED BUILDING	
EX. 100-YEAR FLOODPLAIN		PROPOSED CONTOURS	
EXISTING CONTOURS		EX. STORM DRAIN EASEMENT	
PROPOSED FOREST CONSERVATION EASEMENT 'A'		EX. SANITARY SEWER EASEMENT	
PROPOSED FOREST CONSERVATION EASEMENT 'B'		EX. INGRESS/EGRESS EASEMENT	
PROPOSED RETAINING WALL EASEMENT			

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

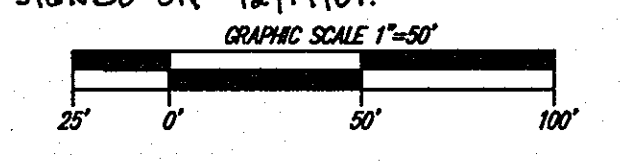
Thomas G. Buttle 4/24/10
DIRECTOR DATE

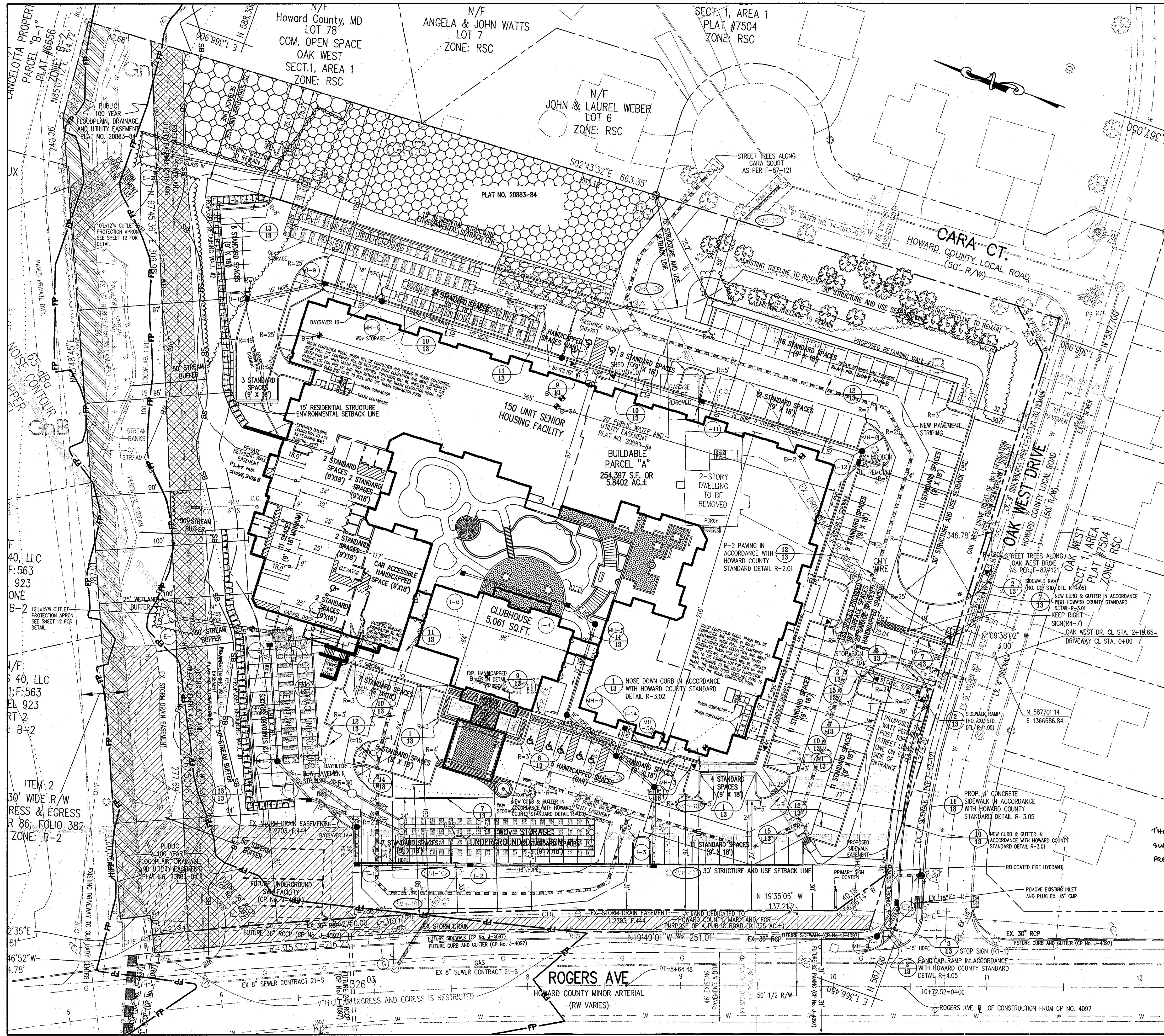
John P. ... 4/23/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

... 4/23/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

3/10/10	1	CHANGE RETAINING WALLS, EASEMENTS, ADD WHC CONNECTIONS
DATE NO.		REVISION
OWNER	CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLCOTT CITY, MD 21043-4105	
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070	
PROJECT	ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING	
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE	REVISED REPLACEMENT SHEET OVERALL SITE DEVELOPMENT PLAN	
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282		
SEAL	 DESIGNED BY : PHRA DRAWN BY: JML PROJECT NO : 15661-1-0 DATE : 3/24/10 SCALE : 1"=50' DRAWING NO. 4 OF 42	

THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET #4 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09.



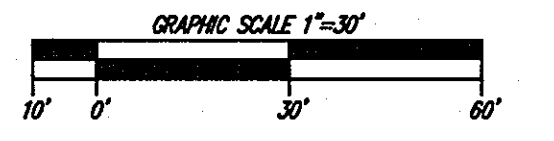


LEGEND

PROPERTY LINE		SILT FENCE	
EXISTING TREELINE		LIMIT OF DISTURBANCE	
EXISTING TREELINE TO REMAIN		OVERHEAD ELECTRIC LINE	
PROPOSED LOT LINE		EXISTING BUILDING	
EX. STREAM AND BUFFER		PROPOSED BUILDING	
EX. 100-YEAR FLOODPLAIN		PROPOSED CONTOURS	
EXISTING CONTOURS		EX. STORM DRAIN EASEMENT	
PROPOSED FOREST CONSERVATION EASEMENT 'A'		EX. SANITARY SEWER EASEMENT	
PROPOSED FOREST CONSERVATION EASEMENT 'B'		EX. INGRESS/EGRESS EASEMENT	
PROPOSED RETAINING WALL EASEMENT			

THIS REACEMENT SHEET WILL SUPERSEDE SHEET NO. 5 WHICH WAS PREVIOUSLY SIGNED ON 12/11/09.

THE FOLLOWING HOWARD COUNTY DETAILS ARE TO BE REFERENCED FOR THIS DEVELOPMENT:
 PAVING: (P-1) PAVING HOWARD COUNTY DETAIL R-2.01
 CURB AND GUTTER: HOWARD COUNTY DETAIL R-3.01
 TRANSITION AND NOSE DOWN CURB AND GUTTER: HOWARD COUNTY DETAIL R-3.02
 HANDICAPPED RAMPS: HOWARD COUNTY DETAIL: R-4.02, R-4.05, R-4.06
 PLEASE REFERENCE THE MOST CURRENT HOWARD COUNTY DESIGN MANUAL VOLUME IV.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Bull 4/20/10
 DIRECTOR DATE

William J. Miller 4/15/10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kathleen 4/20/10
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

3/10/10	1	CHANGE RETAINING WALLS, EASEMENTS, ADD WHC CONNECTIONS
DATE	NO.	REVISION

OWNER: CENTURY HOLDING, LLC
 3311 OAK WEST DRIVE
 ELLICOTT CITY, MD 21043-4105

DEVELOPER: WOOD PARTNERS
 ATTN: MR. ANTHONY MORSE, PE
 8150 LEESBURG PIKE
 SUITE 501
 VIENNA, VA 22182
 703-780-5070

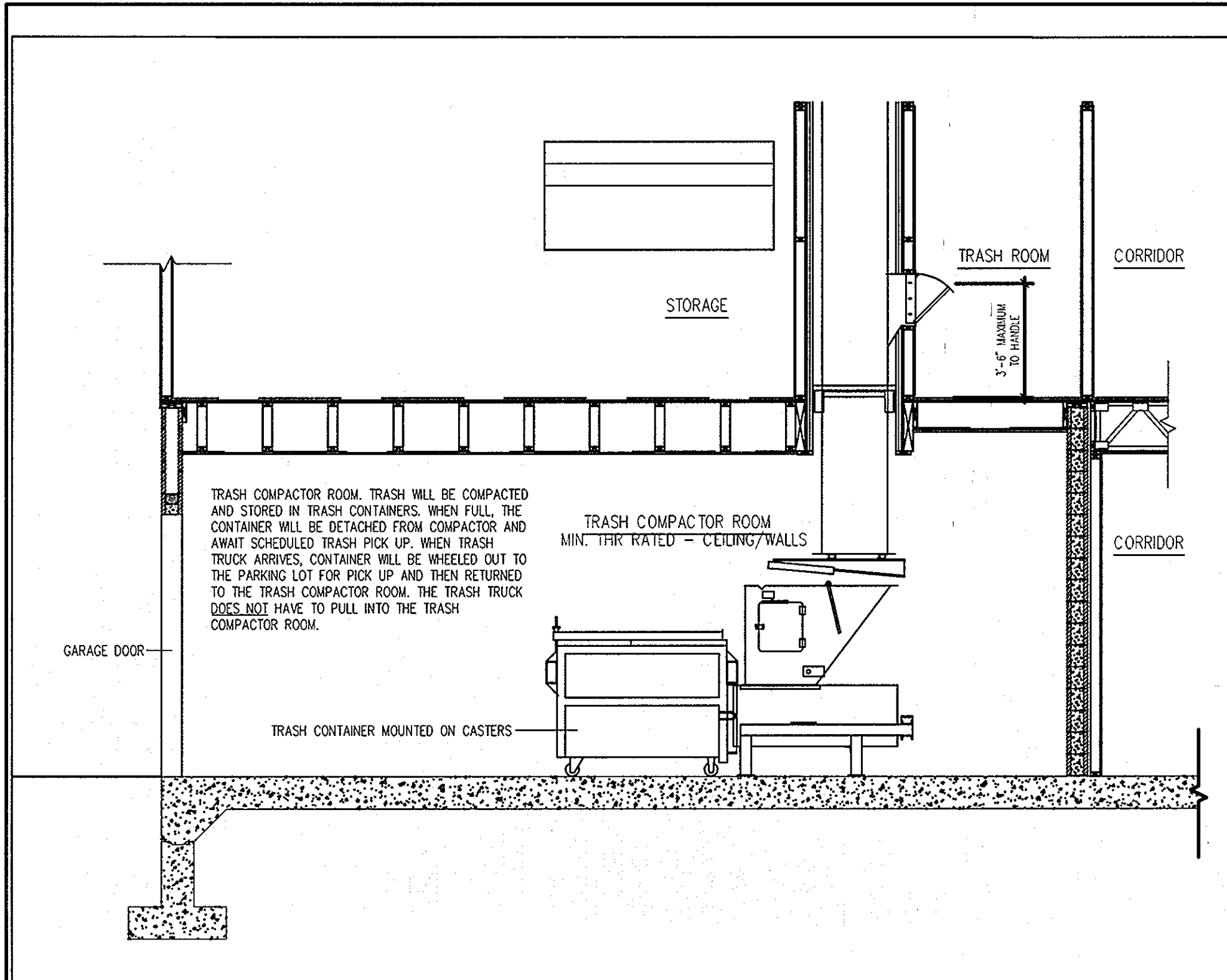
PROJECT: ALTA AT REGENCY CREST
 BUILDABLE PARCEL A AND OPEN SPACE LOT 1
 AGE RESTRICTED ADULT HOUSING

AREA: TAX MAP 25, GRID 1, PARCEL 1
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

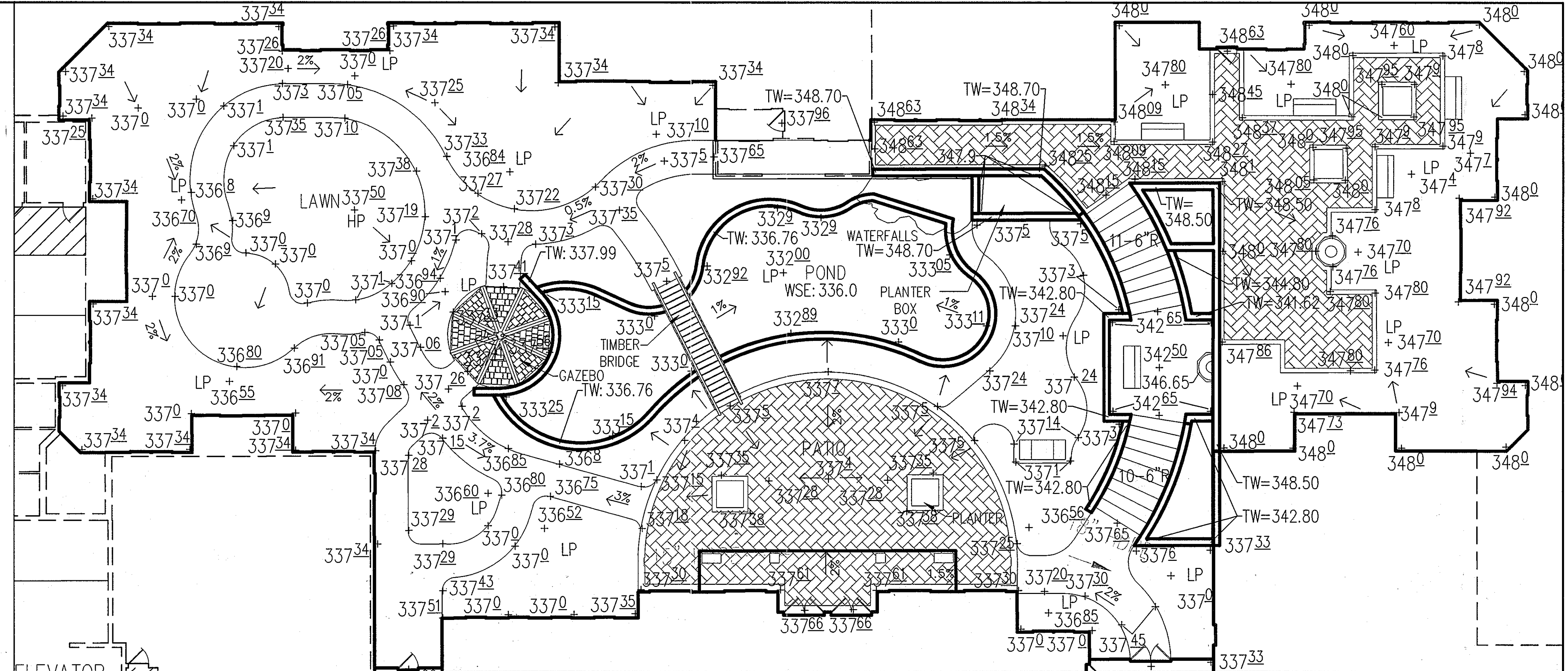
TITLE: REVISED REACEMENT SHEET
SITE DEVELOPMENT PLAN

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

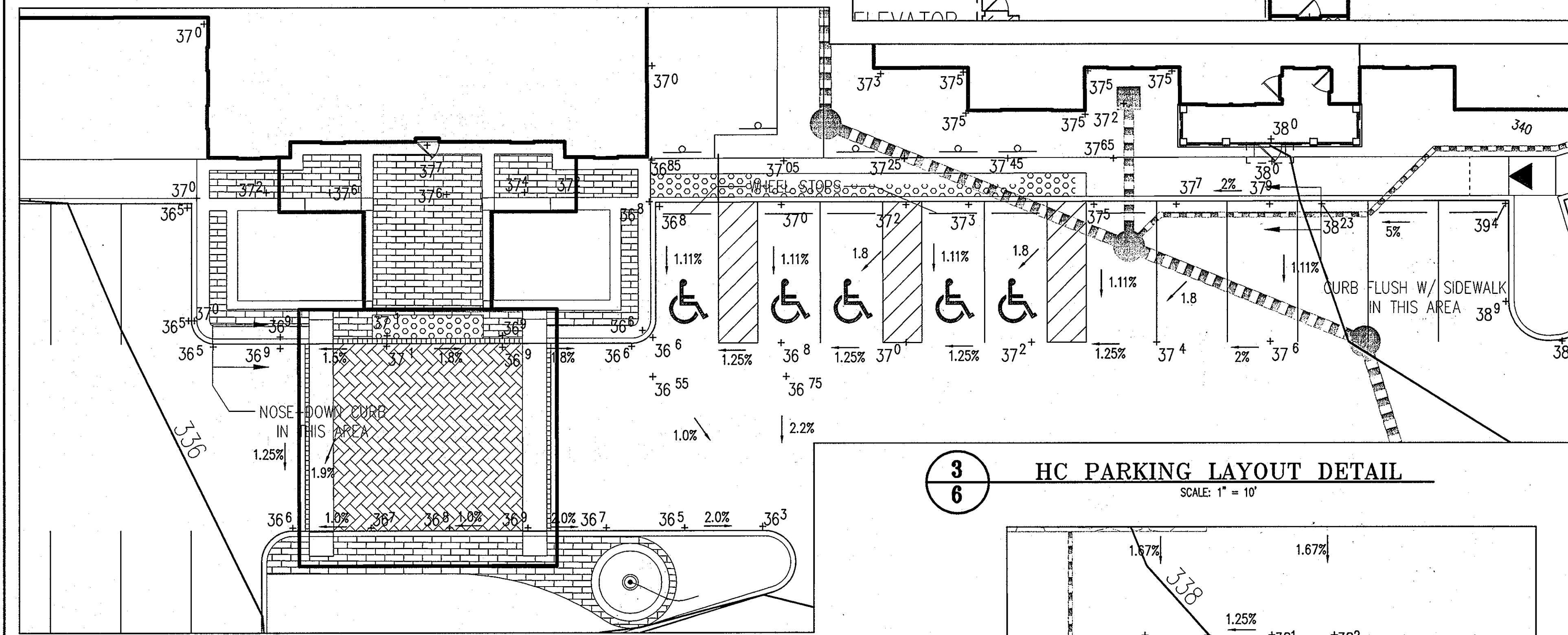
DESIGNED BY: PHRA
 DRAWN BY: JML
 PROJECT NO.: 15661-1-0
 DATE: 3/24/10
 SCALE: 1"=30'
 DRAWING NO. 5 OF 42



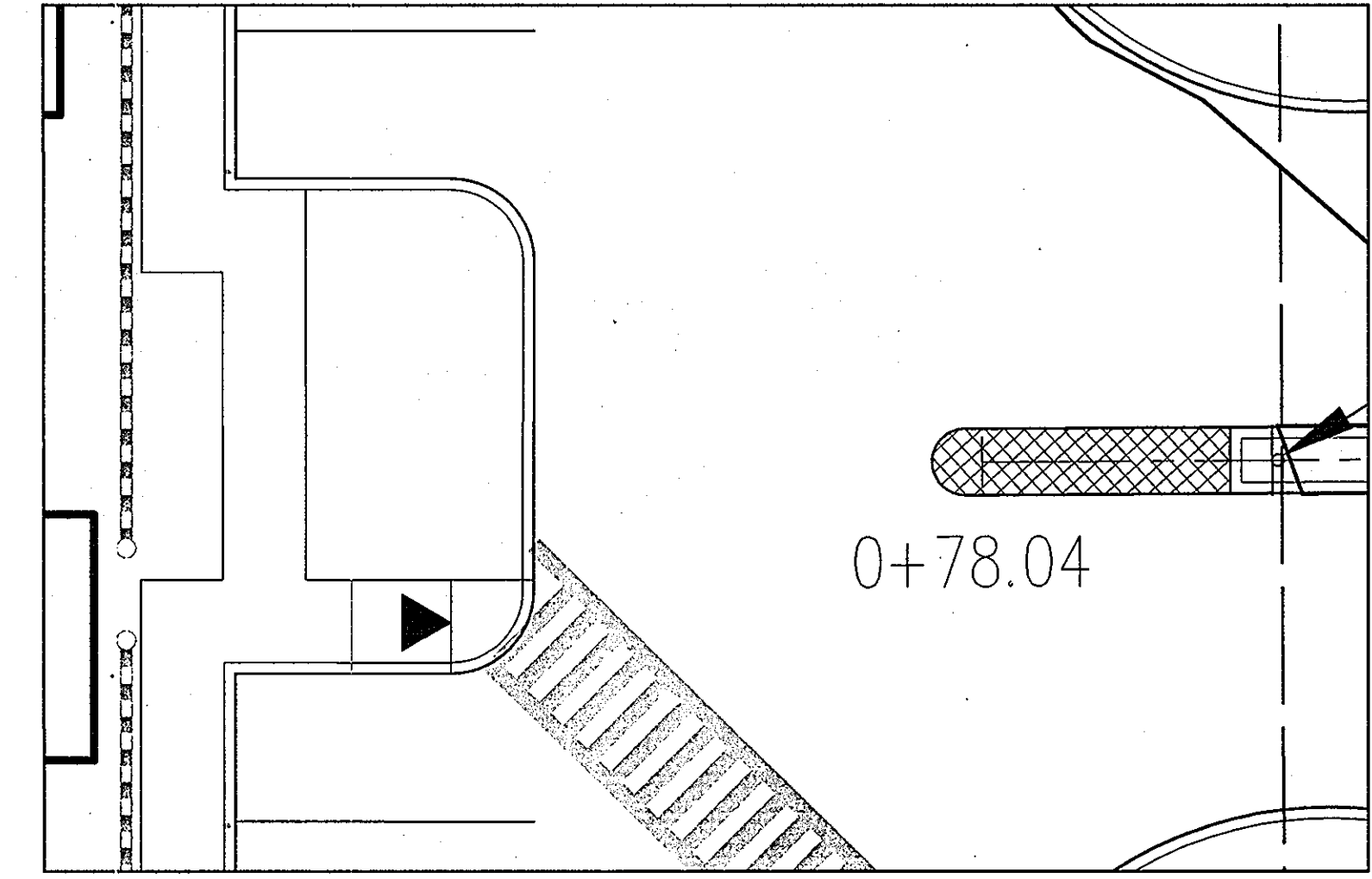
1
6 TRASH COMPACTOR LOCATION DETAIL
SCALE: 1"=10'



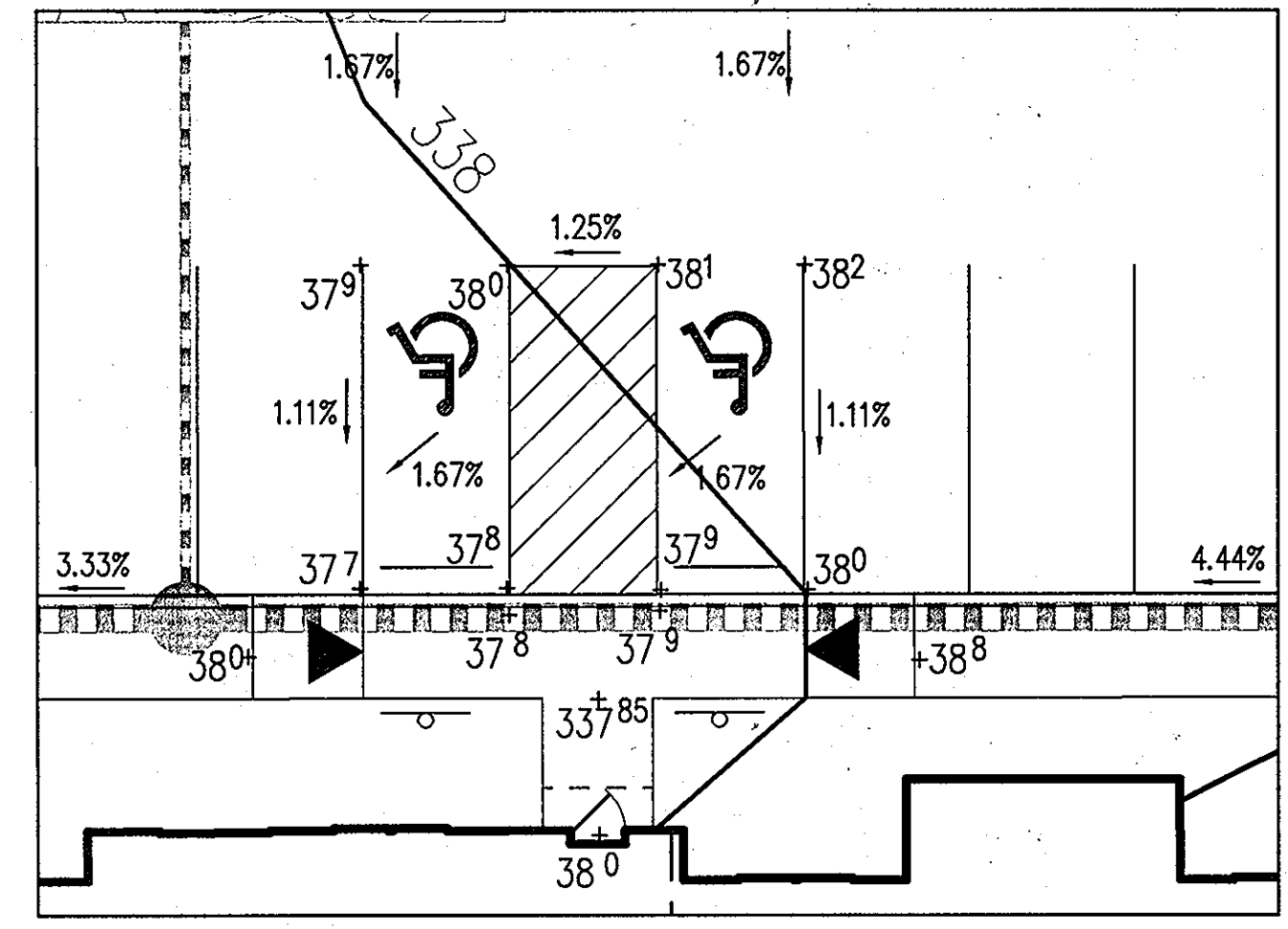
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6 COURTYARD DETAIL
SCALE: 1"=10'



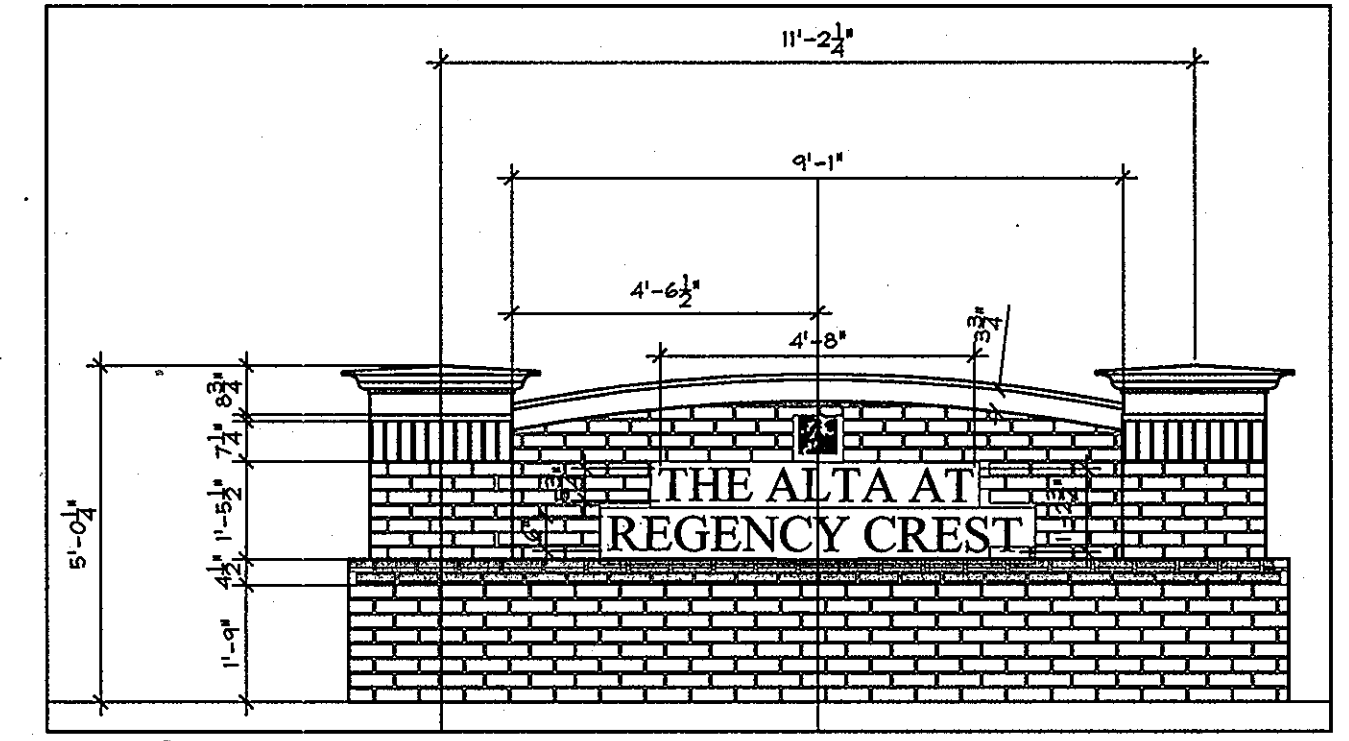
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6 HC PARKING LAYOUT DETAIL
SCALE: 1"=10'



6
6 SIDEWALK AND ISLAND DETAIL
1"=10'



7
6 HC PARKING LAYOUT DETAIL
SCALE: 1"=10'



5
6 PRIMARY SIGN WALL ELEVATION
NOT TO SCALE

THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET NO. 6 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Thomas E. Butler 4/20/10 DATE
 DIRECTOR
John D. ... 4/20/10 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
Victor ... 4/20/10 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

DATE	NO.	REVISION
3/10/10	1	REVISE COURTYARD GRADING, CLUBHOUSE ENTRY, HC PARKING

OWNER: CENTURY HOLDING, LLC
 3311 OAK WEST DRIVE
 ELLICOTT CITY, MD 21043-4105

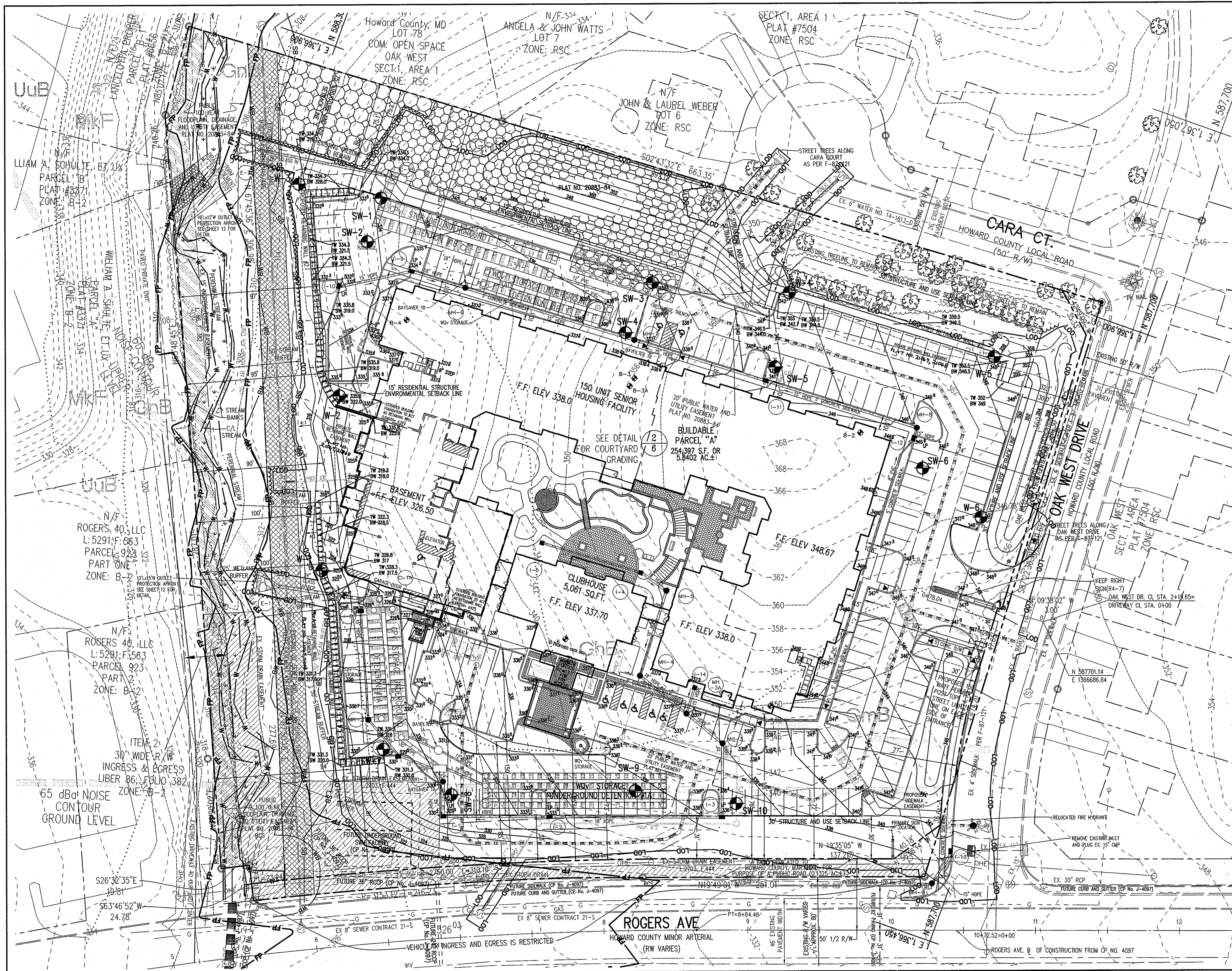
DEVELOPER: WOOD PARTNERS
 ATTN: MR. ANTHONY MORSE, PE
 8150 LEESBURG PIKE
 SUITE 501
 VIENNA, VA 22182
 703-760-5070

PROJECT: ALTA AT REGENCY CREST
 BUILDABLE PARCEL A AND OPEN SPACE LOT 1
 AGE RESTRICTED ADULT HOUSING
 AREA: TAX MAP 25, GRID 1, PARCEL 1
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: REVISED REPLACEMENT SHEET
 SITE DETAILS

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

SEAL: [Professional Engineer Seal]
 DESIGNED BY: PHRA
 DRAWN BY: JML
 PROJECT NO.: 15661-1-0
 DATE: 3/24/10
 SCALE: NTS
 DRAWING NO.: 6 OF 42



THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET NO. 7 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09.

SCALE: 1" = 30'

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Morgan E. Suttle</i>	4/20/10
DIRECTOR	DATE
<i>Anthony Morse</i>	4/12/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>Kevin Slademan</i>	4/20/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
3/10/10	1 CHANGE RETAINING WALLS, EASEMENTS, REVISE SYSTEM 1A
DATE NO.	REVISION
OWNER	CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELlicOTT CITY, MD 21043-4105
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070
PROJECT	ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE	REVISED REPLACEMENT SHEET GRADING AND STORMWATER MANAGEMENT PLAN
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
SEAL	
DESIGNED BY :DWC	
DRAWN BY: KAD	
PROJECT NO : 15661-1-0	C-SDP07GRA.DWG
DATE : 3/24/10	
SCALE : 1"=30'	
DRAWING NO. 7	OF 42

**UNDERGROUND STORMWATER MANAGEMENT
CONSTRUCTION SPECIFICATIONS**

A. SITE PREPARATION
AREAS UNDER THE CULVERS, STRUCTURAL WORKS, AND STREAM DIVERSION SHALL BE CLEARED, GRUBBED, AND THE TOPSOIL STRIPPED TO REMOVE ALL TREES, VEGETATION, ROOTS, OR OTHER OBJECTIONABLE MATERIAL.

B. SPECIFICATION FOR CORRUGATED STEEL PIPE
DESCRIPTION:
THE ALUMINIZED TYPE II CORRUGATED STEEL SHALL BE FABRICATED IN ACCORDANCE WITH AASHTO DESIGNATION M-274 FROM A BASE METAL MANUFACTURED IN ACCORDANCE WITH ASTM A-525 COATED UNIFORMLY ON BOTH SIDES WITH 1.00 OZ./SQ.FT. OF PURE ALUMINUM.

MATERIAL:
THE 120" DIAMETER CORRUGATED METAL PIPES SHALL BE OF THE CORRUGATION DESIGN AND GAGE INDICATED. THE STEEL PIPE COUPLERS AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-38 WITH THE PIPE HAVING A 1/2" X 1/2" CORRUGATION PROFILE AND SHALL BE A MINIMUM 12" GAGE (0.108"). THE COUPLING BANDS SHALL BE THE SAME MATERIAL AS THE PIPE AND SHALL BE A MINIMUM OF 10 INCHES WIDE. THE CORRUGATED METAL PIPE SHALL BE MANUFACTURED WITH CONTINUOUS LOCKSEAM OR BUTT WELDED HELICAL CORRUGATIONS AND HAVING NO LESS THAN TWO ANNUAL CORRUGATIONS REROLLED AT BOTH ENDS OF ANY LENGTH OF PIPE. COUPLING BANDS SHALL BE FORMED WITH TWO CORRUGATIONS THAT ARE SPACED TO PROVIDE SEATING IN THE SECOND REROLLED CORRUGATION OF EACH PIPE END, AND PIPE ENDS SHALL BE MATCHED AND NUMBERED. ALL METAL SURFACES SHALL BE GALVANIZED AND PAINTED WITH TWO COATS OF BATTLESHIP GRAY PAINT OR EQUIVALENT.

C. INSTALLATION
THE CORRUGATED METAL PIPE SHALL BE HANDLED IN A MANNER NOT TO DAMAGE THE PIPE OR COATING. BEDDING AND BACKFILL MATERIAL SHALL BE SELECTED, GRANULAR MATERIAL AND SHALL BE FREE OF ROCKS AND HARD CLODS LARGER THAN 3-INCHES IN SIZE. THE BEDDING AND BACKFILL MATERIAL SHALL BE CAREFULLY PLACED AND CONSOLIDATED EVENLY ON BOTH SIDES OF THE PIPE IN MAXIMUM 8-INCH LOOSE LIFTS. THE PH OF THE SURROUNDING SOIL SHALL BE LESS THAN (9) AND GREATER THAN (4).

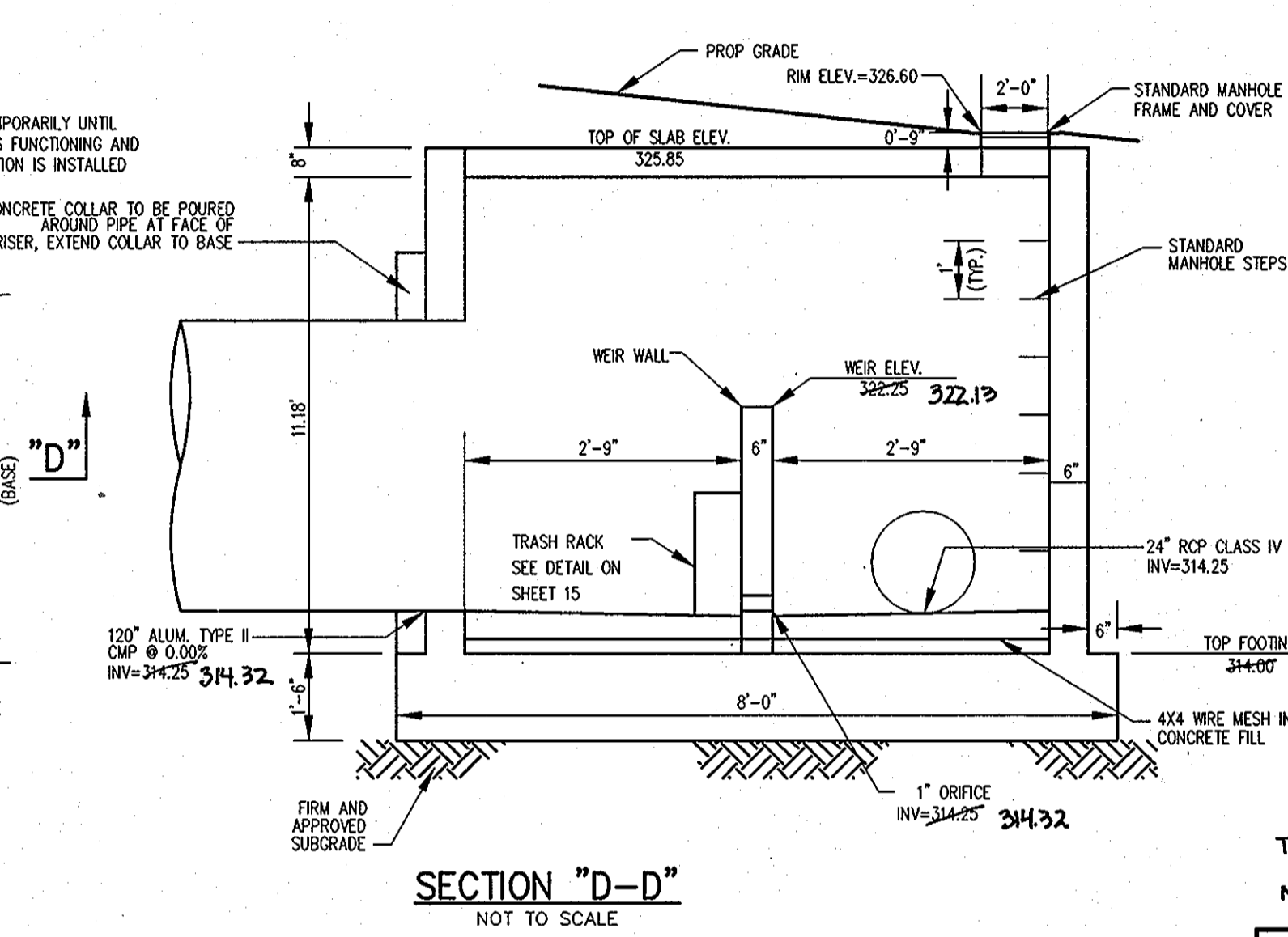
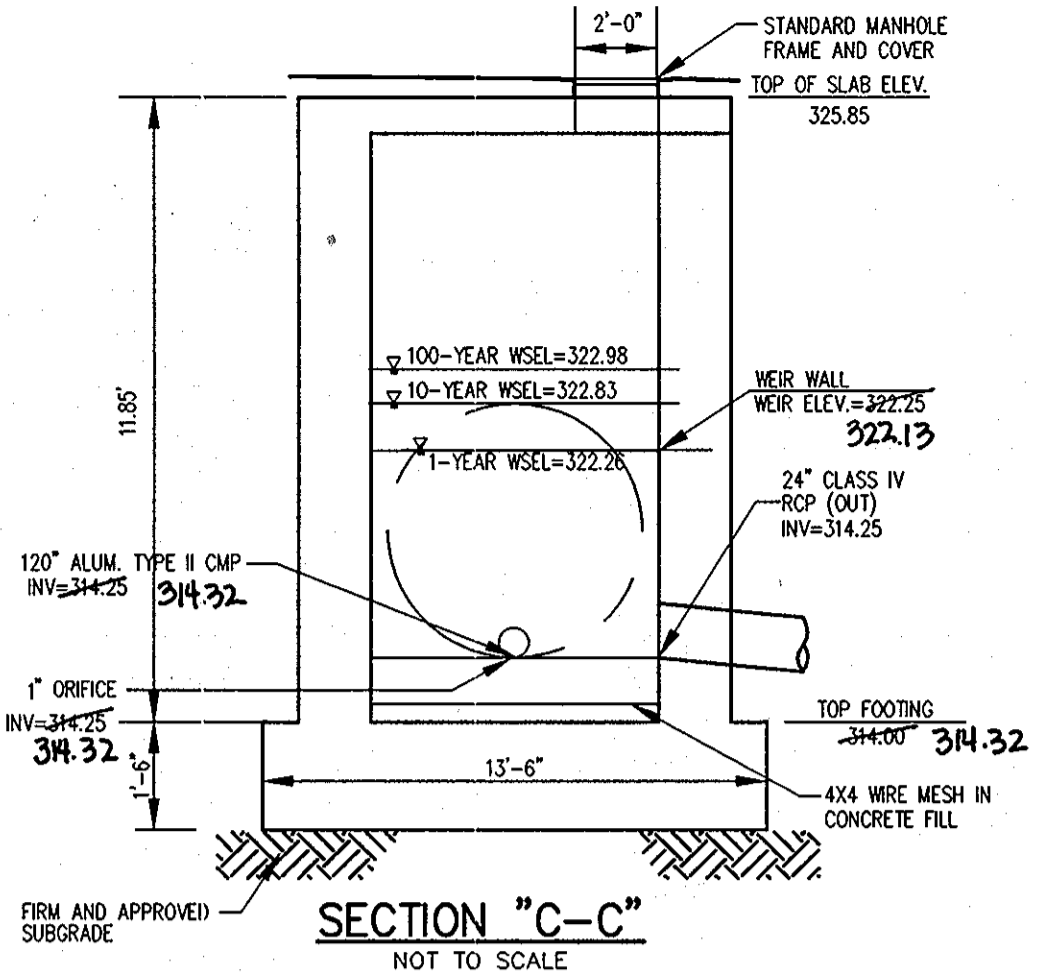
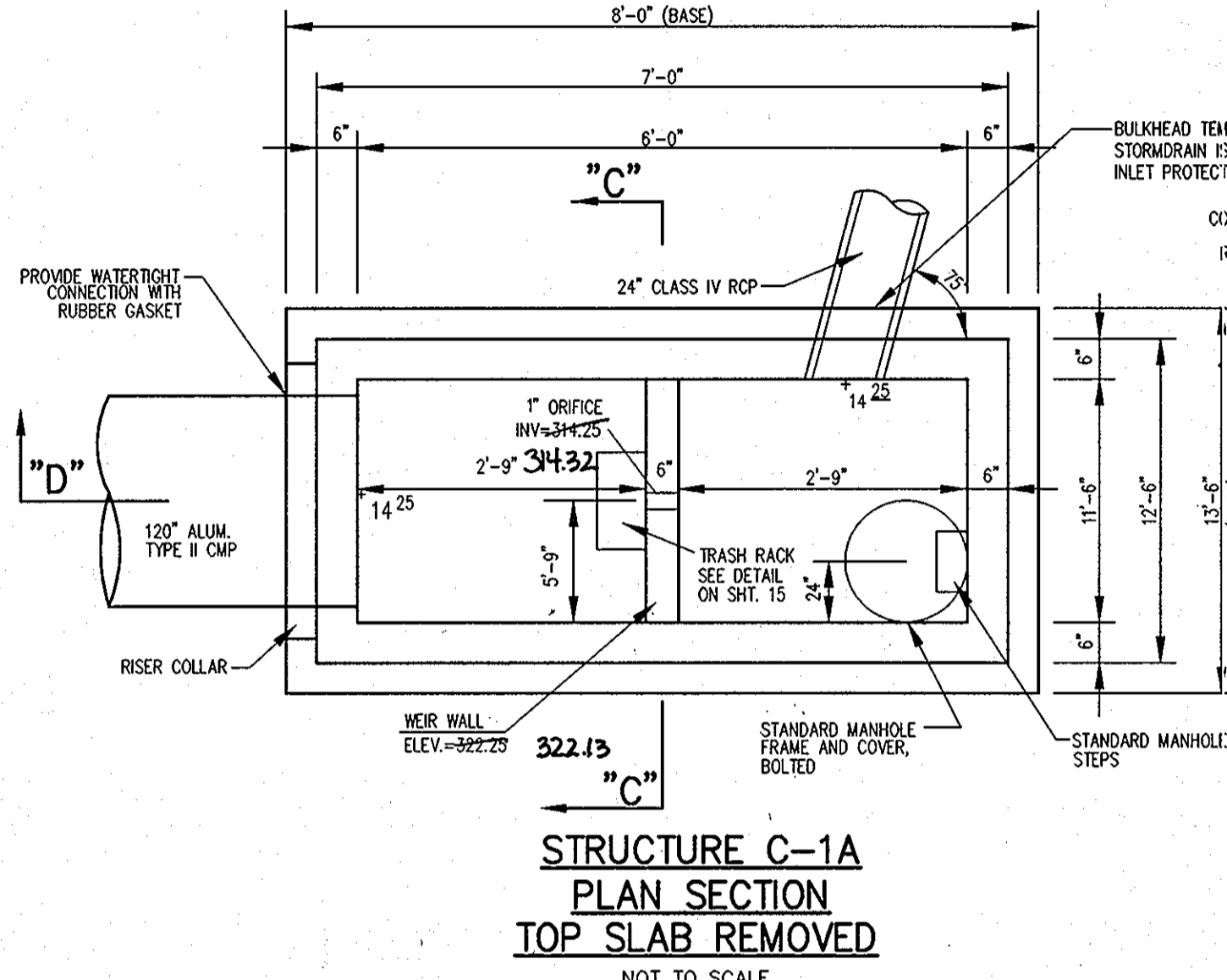
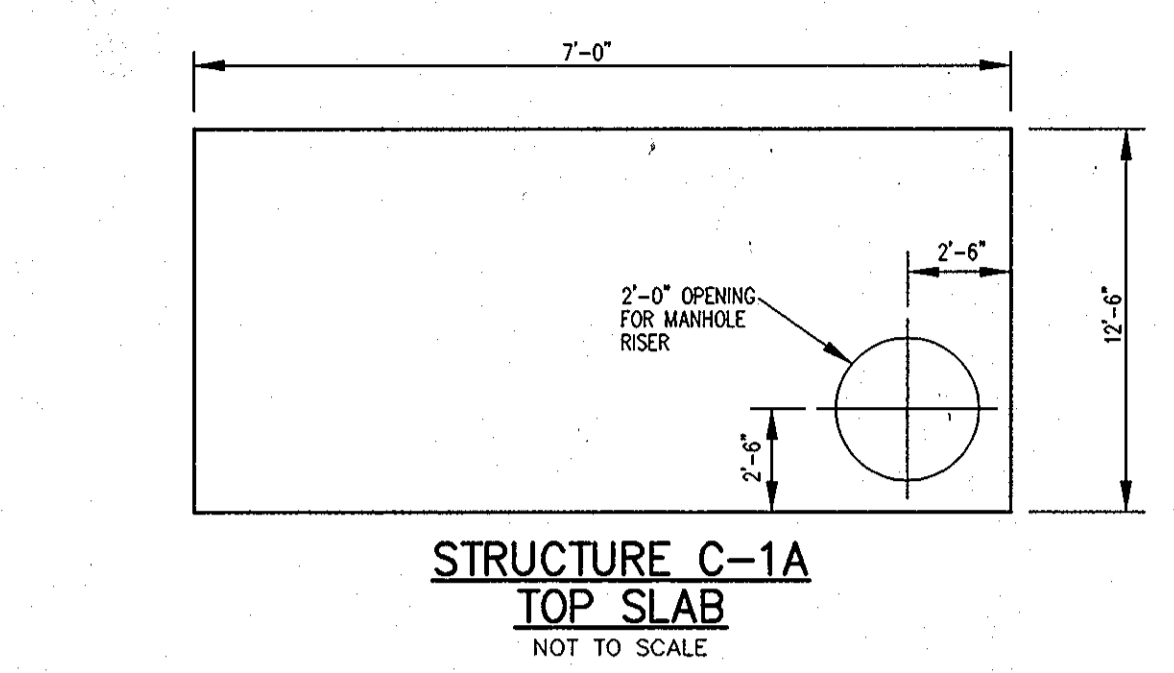
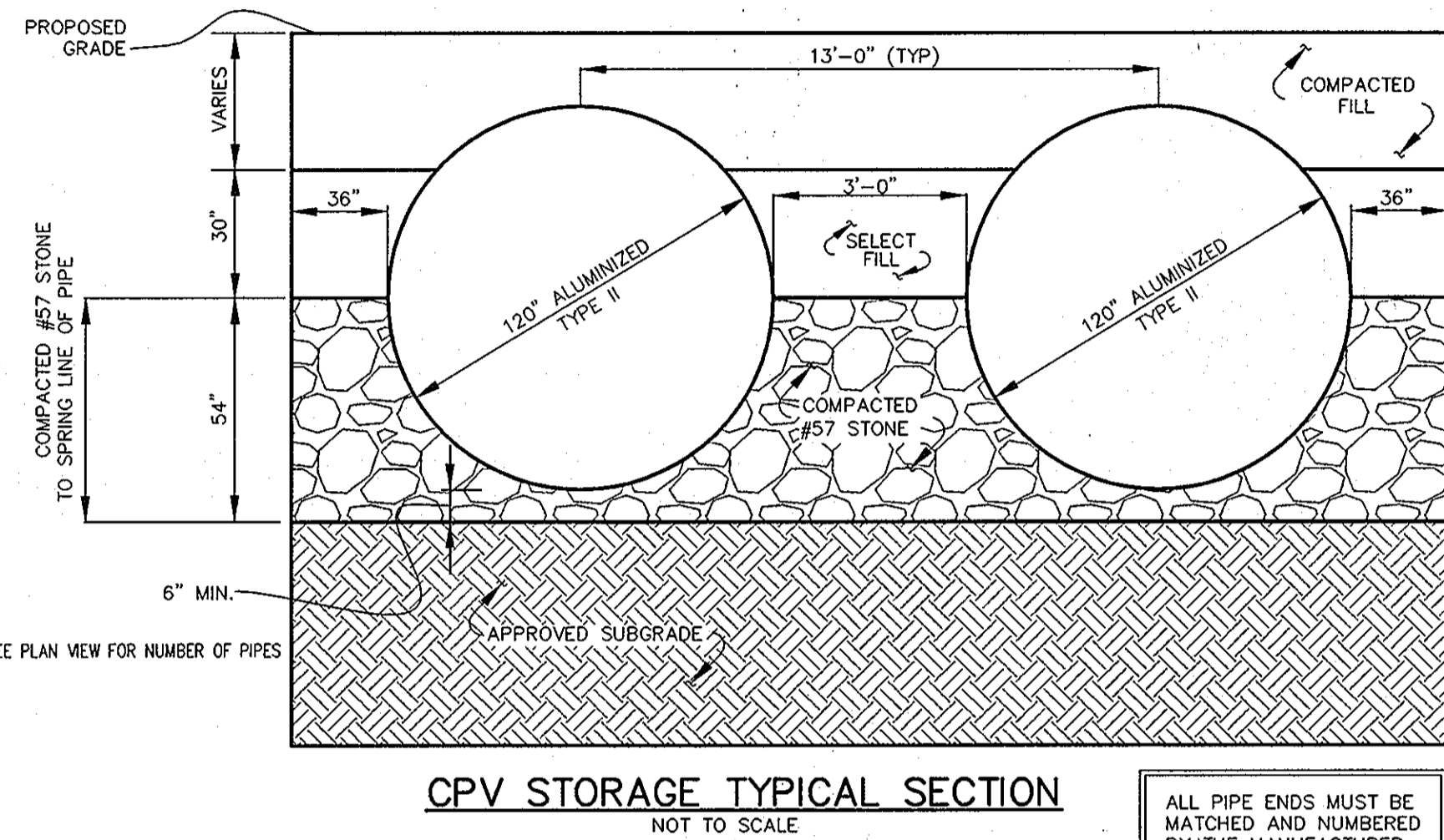
THE MATERIAL MUST COMPLETELY FILL ALL SPACES UNDER AND ADJACENT TO THE STRUCTURE OR PIPE. AT NO TIME DURING THE BACKFILL OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF THE STRUCTURE. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR DRIVE EQUIPMENT OVER A CONCRETE STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24-INCHES OR GREATER OVER THE STRUCTURE OR PIPE.

CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SHORING OF TRENCH WALLS TO PREVENT FAILURE DURING CONSTRUCTION.

D. CONNECTIONS
ALL CONNECTIONS SHALL BE COMPLETELY WATERTIGHT. THIS INCLUDES ALL ENDCAPS, PIPES, CONNECTIONS TO AND FROM CONCRETE CONTROL STRUCTURE AND ALL CONNECTIONS FROM STORM DRAINAGE SYSTEM. SEE MATERIAL SPECIFICATIONS ABOVE.

GENERAL NOTES:

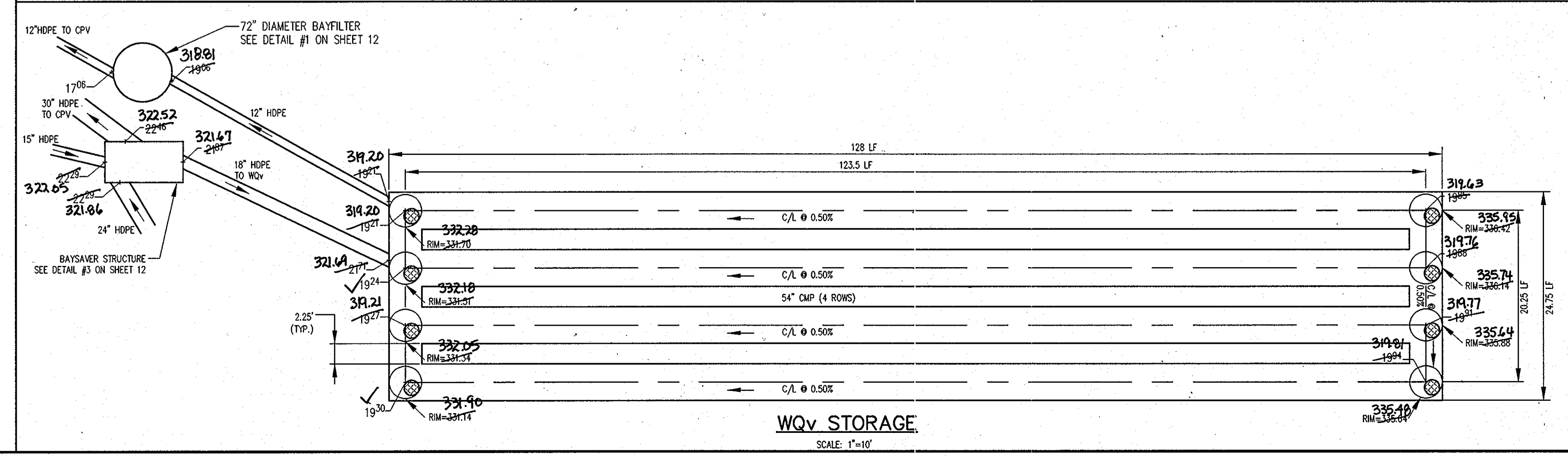
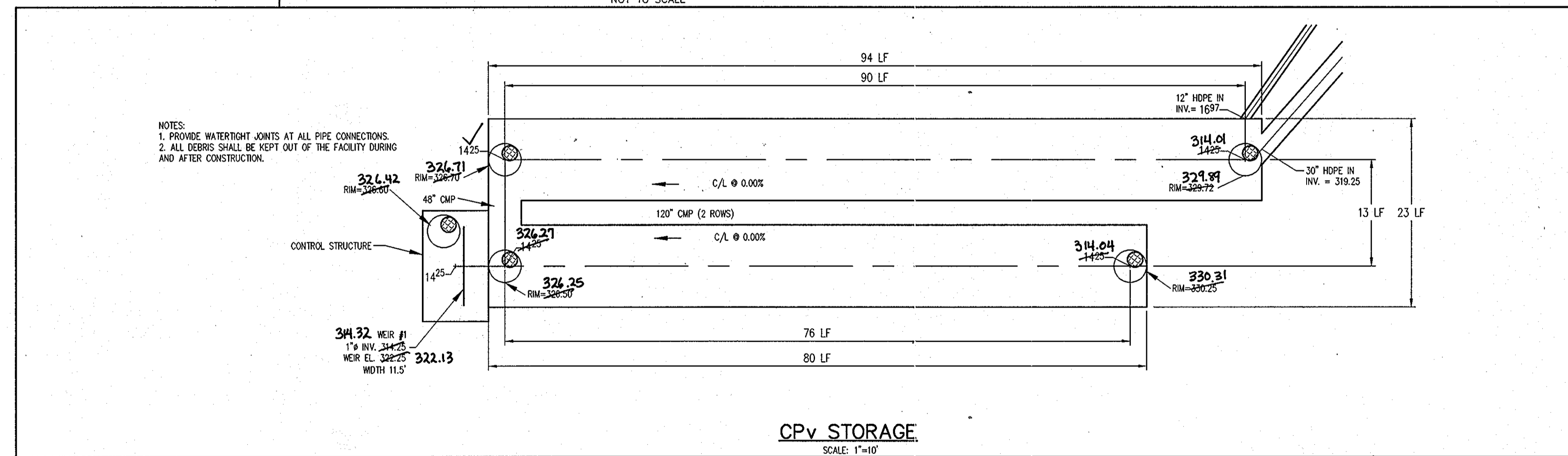
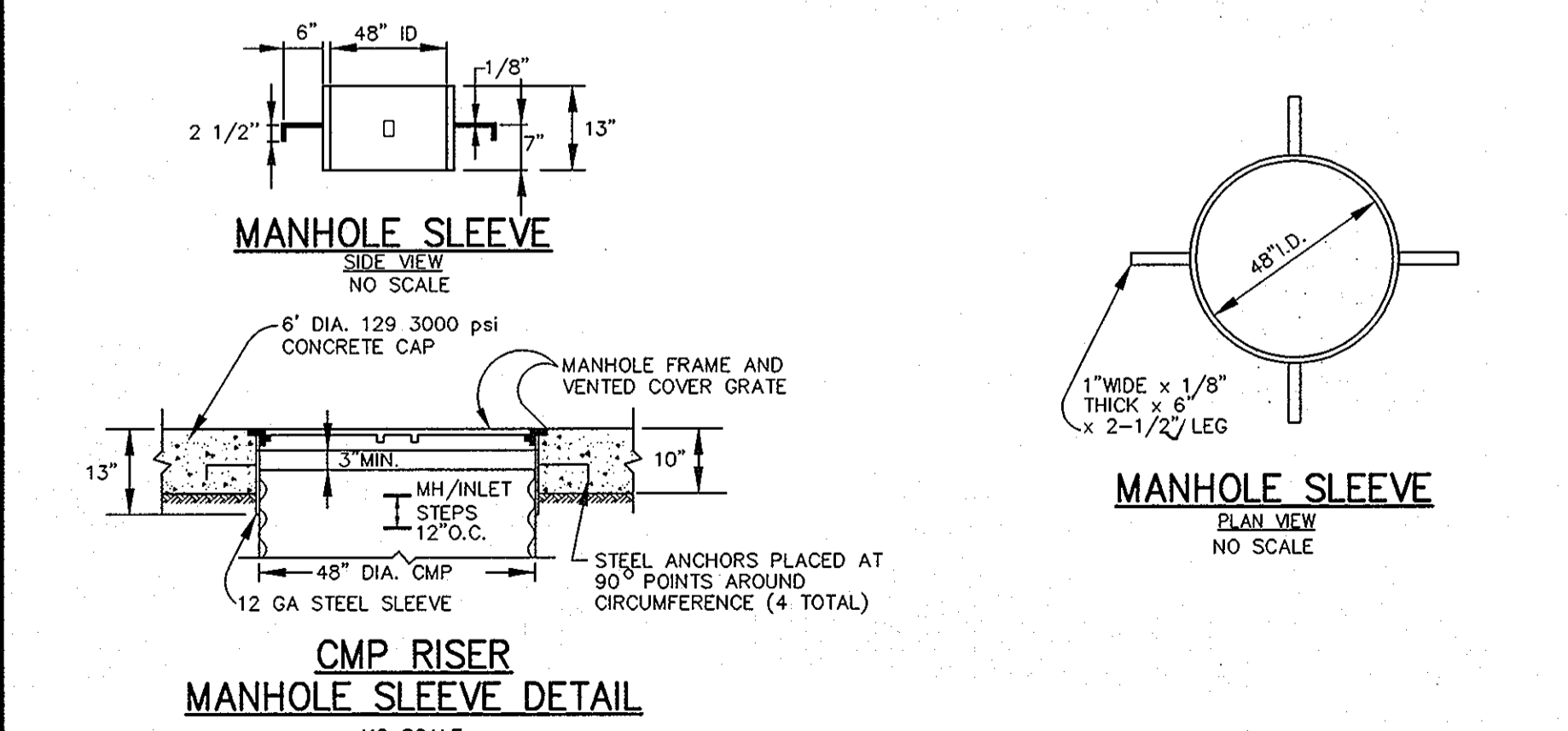
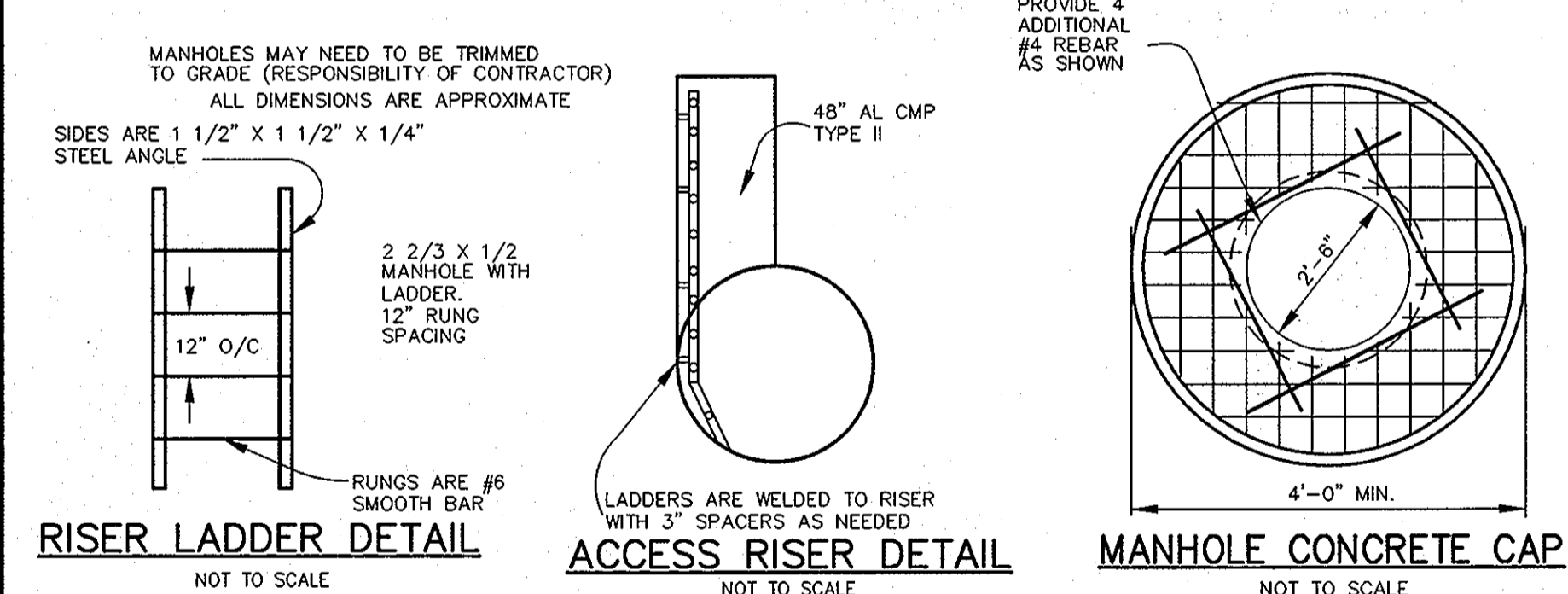
1. ALL CONSTRUCTION SHALL MEET HOWARD COUNTY STANDARDS AND SPECIFICATIONS.
2. CONCRETE STRENGTH SHALL BE 4,000 PSI MIN. AT 28 DAYS.
3. REINFORCEMENT SHALL BE CLEAN AND FREE OF RUST AND MEET ASTM-615 GRADE 60.
4. ALL REINFORCEMENT SHALL HAVE 2" MIN. COVER.
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.
6. THE STRUCTURE FOUNDATION AND PIPE BEDDING SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION.
7. CMP PIPE INSTALLATION PER MANUFACTURER'S RECOMMENDATION.
8. CONTRACTOR SHALL EXERCISE CARE DURING CONSTRUCTION SO AS NOT TO DAMAGE UNDERGROUND S.W.M.F. ANY DAMAGE TO CMP, MANHOLES, ETC. SHALL BE REPAIRED BY CONTRACTOR AT HIS/HER EXPENSE TO SATISFACTION OF ENGINEER.
9. ALL DEBRIS SHALL BE KEPT OUT OF THE FACILITY DURING AND AFTER CONSTRUCTION.



AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
JAMES A. RUFF
NO. PE. NO. 21801
DATE: 4/20/10

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. 21114.
EXPIRATION DATE: 11-10-2011

RISER GENERAL NOTES:
1. THIS DETAIL IS FOR A PRECAST RISER. IF RISER IS CAST IN PLACE, STRUCTURAL DRAWINGS ARE REQUIRED.
2. RISER STRUCTURES SHALL BE REINFORCED CONCRETE.
3. ALL CONNECTIONS SHALL BE WATERTIGHT.
4. CONTRACTOR SHALL BULKHEAD THE OUTLET PIPE AND SEWER SYSTEM WITH SUMP PUMP AND FILTER BAGS UNTIL CONSTRUCTION IS COMPLETE AND ENTIRE SITE IS STABILIZED.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
Director	4/20/10
Chief, Development Engineering Division	4/20/10
Chief, Division of Land Development	4/20/10
DATE	NO.
3/10/10	1
SWITCH FROM STORMFILTER TO BAYFILTER, REV. STR. C-1A 7 CPV.	
OWNER	REVISION
CENTURY HOLDING, LLC	
3311 OAK WEST DRIVE	
ELLCOTT CITY, MD 21043-4105	
DEVELOPER	
WOOD PARTNERS	
ATTN: MR. ANTHONY MORSE, PE	
8150 LEESBURG PIKE	
SUITE 501	
WIENNA, VA 22182	
703-780-5070	
PROJECT	
ALTA AT REGENCY CREST	
BUILDABLE PARCEL A AND OPEN SPACE LOT 1	
AGE RESTRICTED ADULT HOUSING	
AREA	
TAX MAP 25, GRID 1, PARCEL 1	
2ND ELECTION DISTRICT	
HOWARD COUNTY, MARYLAND	
TITLE	
STORMWATER MANAGEMENT	
UNDERGROUND DETENTION #1A	
Patton Harris Rust & Associates, pc	
Engineers, Surveyors, Planners, Landscape Architects.	
8818 Centre Park Drive	
Columbia, MD 21045	
T 410.997.8900	
F 410.997.9282	
DESIGNED BY	: DWK
DRAWN BY	: KAD
PROJECT NO.	: 15661-1-0
DATE	: 3/24/10
SCALE	: AS SHOWN
DRAWING NO.	: 8 OF 42

UNDERGROUND STORMWATER MANAGEMENT CONSTRUCTION SPECIFICATIONS

A. SITE PREPARATION

AREAS UNDER THE CULVERTS, STRUCTURAL WORKS, AND STREAM DIVERSION SHALL BE CLEARED, GRUBBED, AND THE TOPSOIL STRIPPED TO REMOVE ALL TREES, VEGETATION, ROOTS, OR OTHER OBJECTIONABLE MATERIAL.

B. SPECIFICATION FOR CORRUGATED STEEL PIPE

DESCRIPTION:
THE ALUMINIZED TYPE II CORRUGATED STEEL SHALL BE FABRICATED IN ACCORDANCE WITH AASHTO DESIGNATION M-274 FROM A BASE METAL MANUFACTURED IN ACCORDANCE WITH ASTM A-525 COATED UNIFORMLY ON BOTH SIDES WITH 1.00 OZ./SQ.FT. OF PURE ALUMINUM.

MATERIAL:
THE 84" DIAMETER CORRUGATED METAL PIPE SHALL BE OF THE CORRUGATION DESIGN AND GAGE INDICATED. THE STEEL PIPE COUPLERS AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-36 WITH THE PIPE HAVING A 1/2" X 1/2" X 1/2" CORRUGATION PROFILE AND SHALL BE A MINIMUM 1/4" GAGE (0.025"). THE COUPLING BANDS SHALL BE THE SAME MATERIAL AS THE PIPE AND SHALL BE A MINIMUM OF 10 INCHES WIDE. THE CORRUGATED METAL PIPE SHALL BE MANUFACTURED WITH CONTINUOUS LOCKSEAM OR BUTT WELDED HELICAL CORRUGATIONS AND HAVING NO LESS THAN TWO ANNUAL CORRUGATIONS REROLLED AT BOTH ENDS OF ANY LENGTH OF PIPE. COUPLING BANDS SHALL BE FORMED WITH TWO CORRUGATIONS THAT ARE SPACED TO PROVIDE SEATING IN THE SECOND REROLLED CORRUGATION OF EACH PIPE END, AND PIPE ENDS SHALL BE MATCHED AND NUMBERED. ALL METAL SURFACES SHALL BE GALVANIZED AND PAINTED WITH TWO COATS OF BATTLESHIP GRAY PAINT OR EQUIVALENT.

C. INSTALLATION

THE CORRUGATED METAL PIPE SHALL BE HANDLED IN A MANNER NOT TO DAMAGE THE PIPE OR COATING. BEDDING AND BACKFILL MATERIAL SHALL BE SELECTED, GRANULAR MATERIAL AND SHALL BE FREE OF ROCKS AND HARD CLODS LARGER THAN 3-INCHES IN SIZE. THE BEDDING AND BACKFILL MATERIAL SHALL BE CAREFULLY PLACED AND CONSOLIDATED EVENLY ON BOTH SIDES OF THE PIPE IN MAXIMUM 8-INCH LOOSE LIFTS. THE PH OF THE SURROUNDING SOIL SHALL BE LESS THAN (9) AND GREATER THAN (4).

THE MATERIAL MUST COMPLETELY FILL ALL SPACES UNDER AND ADJACENT TO THE STRUCTURE OR 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 THE STRUCTURE. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR DRIVE EQUIPMENT OVER A CONCRETE STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24-INCHES OR GREATER OVER THE STRUCTURE OR PIPE.

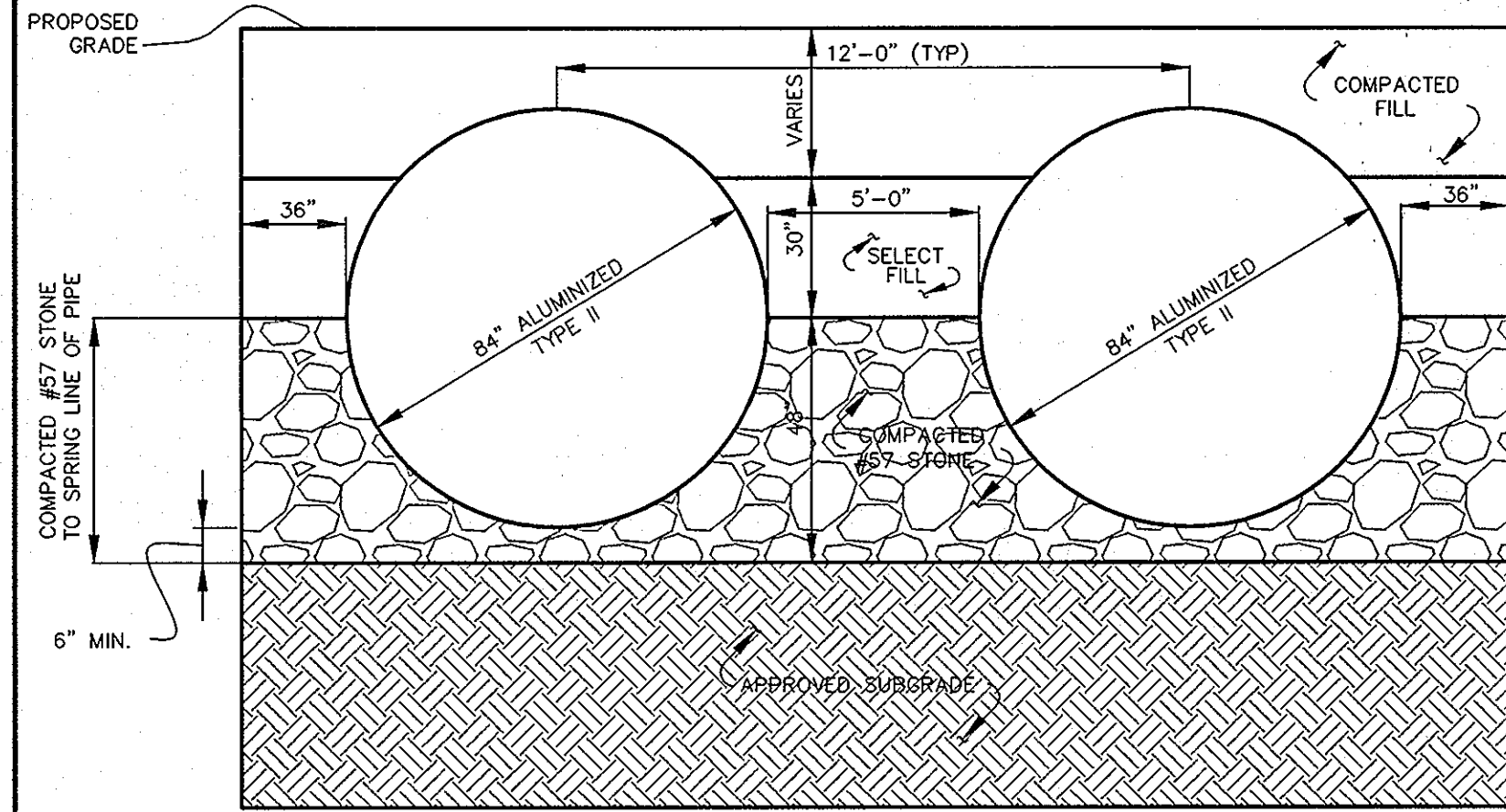
CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SHORING OF TRENCH WALLS TO PREVENT FAILURE DURING CONSTRUCTION.

D. CONNECTIONS

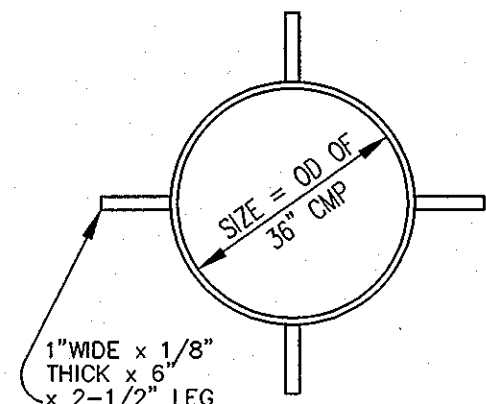
ALL CONNECTIONS SHALL BE COMPLETELY WATERTIGHT. THIS INCLUDES ALL ENDCAPS, PIPES, CONNECTIONS TO AND FROM CONCRETE CONTROL STRUCTURE AND ALL CONNECTIONS FROM STORM DRAINAGE SYSTEM. SEE MATERIAL SPECIFICATIONS ABOVE.

GENERAL NOTES:

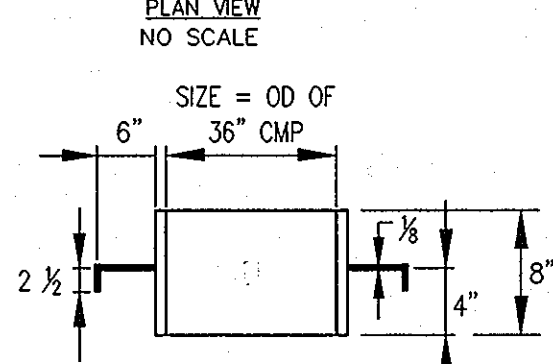
1. ALL CONSTRUCTION SHALL MEET HOWARD COUNTY STANDARDS AND SPECIFICATIONS.
2. CONCRETE STRENGTH SHALL BE 4000 PSI MIN. AT 28 DAYS.
3. REINFORCEMENT SHALL BE CLEAN AND FREE OF RUST AND MEET ASTM-615 GRADE 60.
4. ALL REINFORCEMENT SHALL HAVE 2" MIN. COVER.
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.
6. THE STRUCTURE FOUNDATION AND PIPE BEDDING SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION.
7. CMP PIPE INSTALLATION PER MANUFACTURER'S RECOMMENDATION.
8. CONTRACTOR SHALL EXERCISE CARE DURING CONSTRUCTION SO AS NOT TO DAMAGE UNDERGROUND UTIL. ANY DAMAGE TO CMP, MANHOLES, ETC. SHALL BE REPAIRED BY CONTRACTOR AT HIS/HER EXPENSE TO SATISFACTION OF ENGINEER.
9. ALL DEBRIS SHALL BE KEPT OUT OF THE FACILITY DURING AND AFTER CONSTRUCTION.



Cpv STORAGE TYPICAL SECTION
NOT TO SCALE

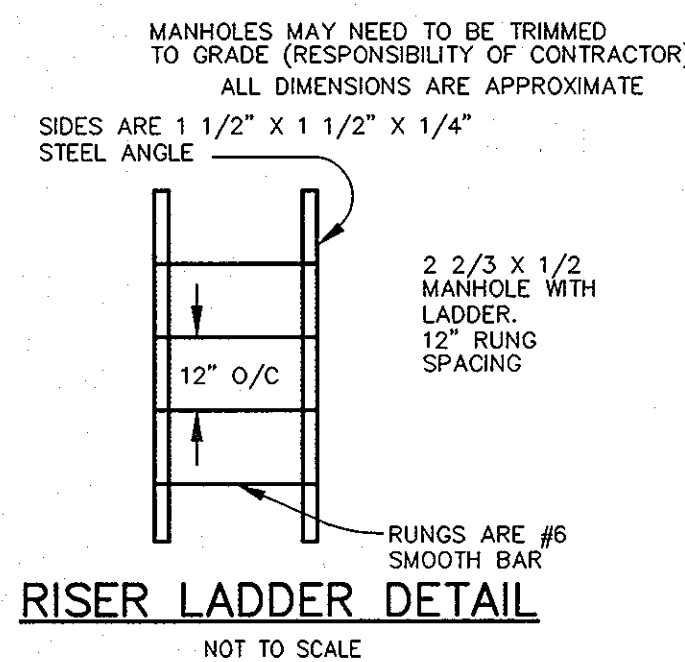


MANHOLE SLEEVE
PLAN VIEW
NO SCALE

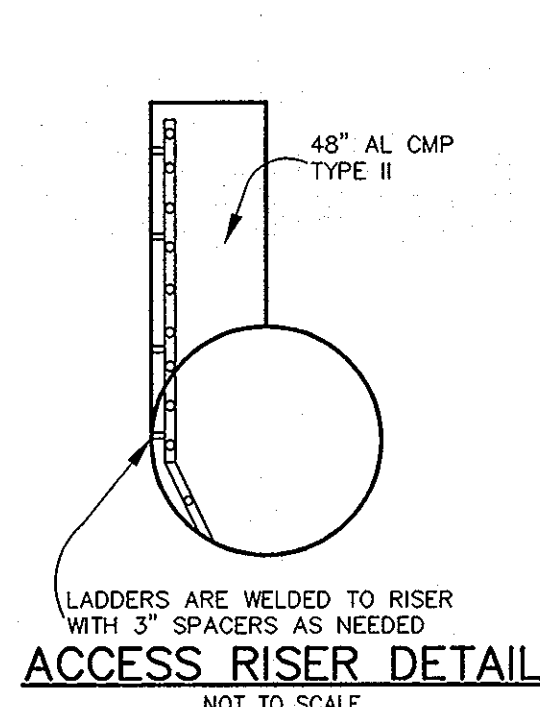


MANHOLE SLEEVE
SIDE VIEW
NO SCALE

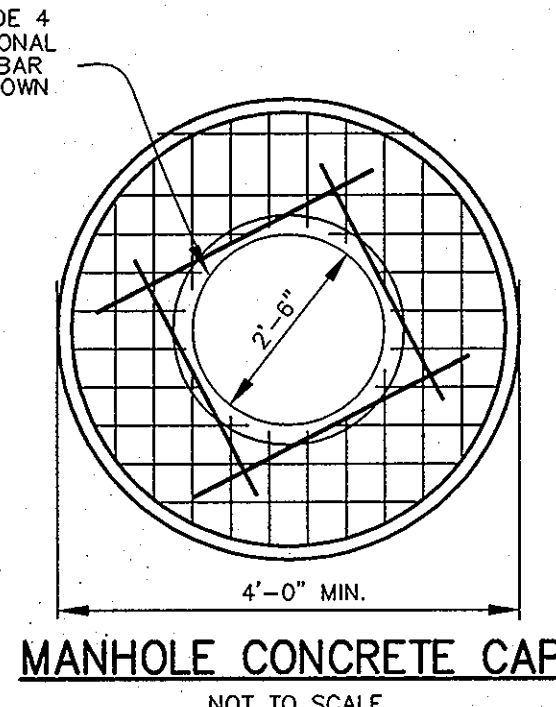
ALL PIPE ENDS MUST BE MATCHED AND NUMBERED BY THE MANUFACTURER



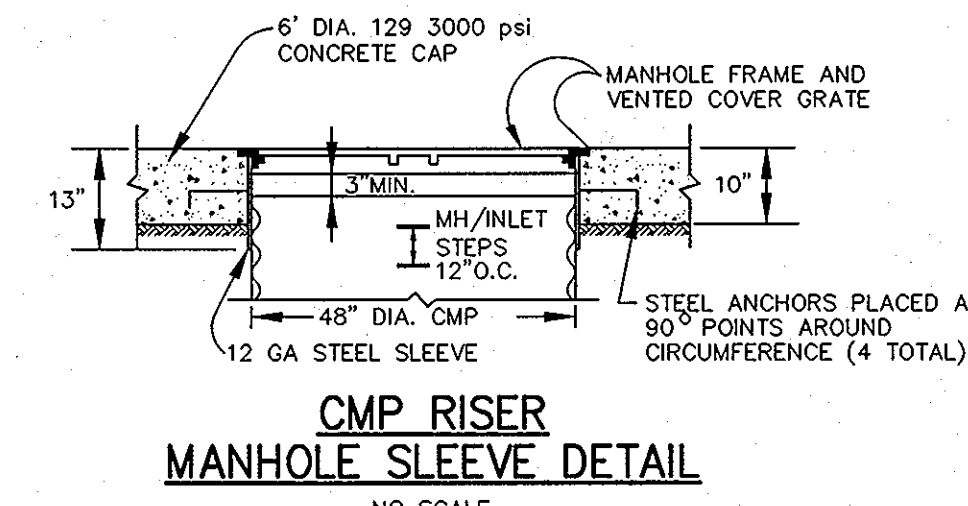
RISER LADDER DETAIL
NOT TO SCALE



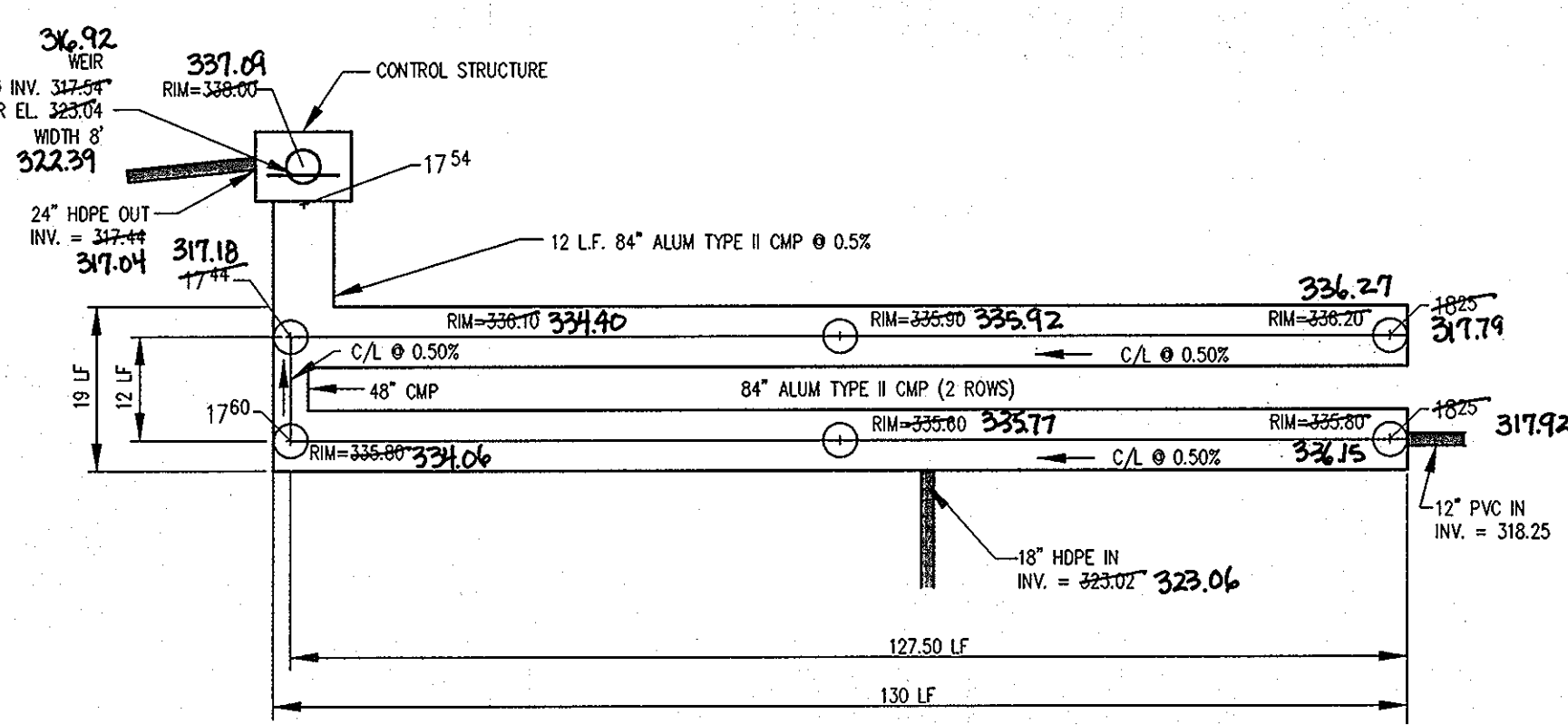
ACCESS RISER DETAIL
NOT TO SCALE



MANHOLE CONCRETE CAP
NOT TO SCALE

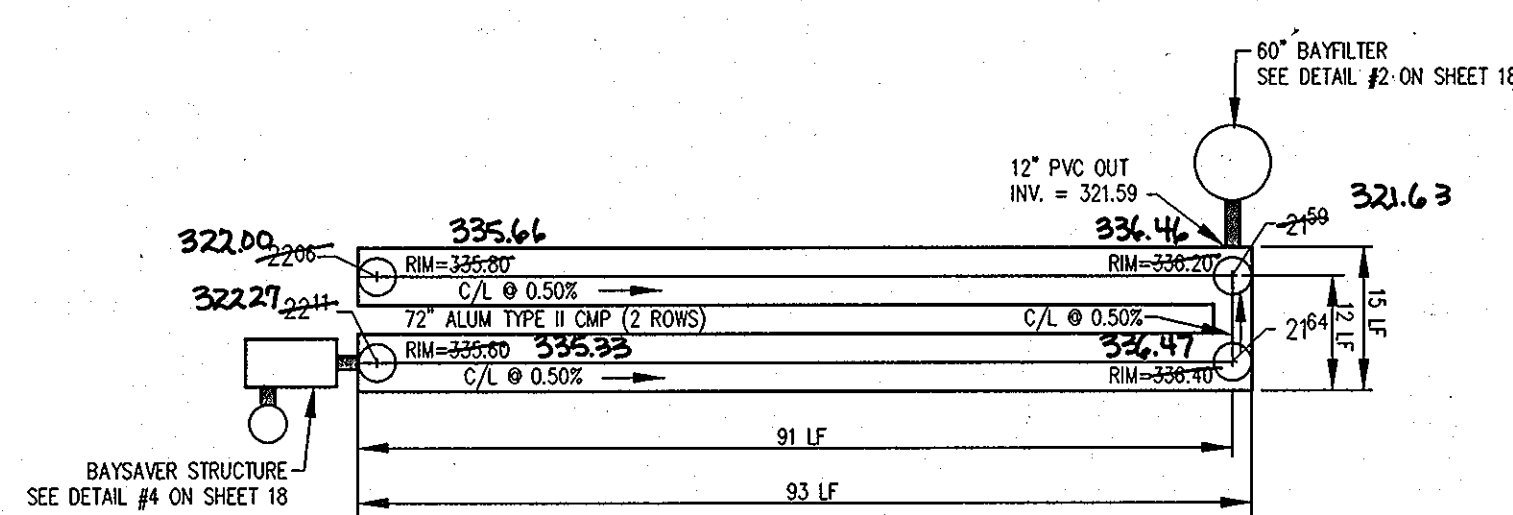


**CMP RISER
MANHOLE SLEEVE DETAIL**
NO SCALE

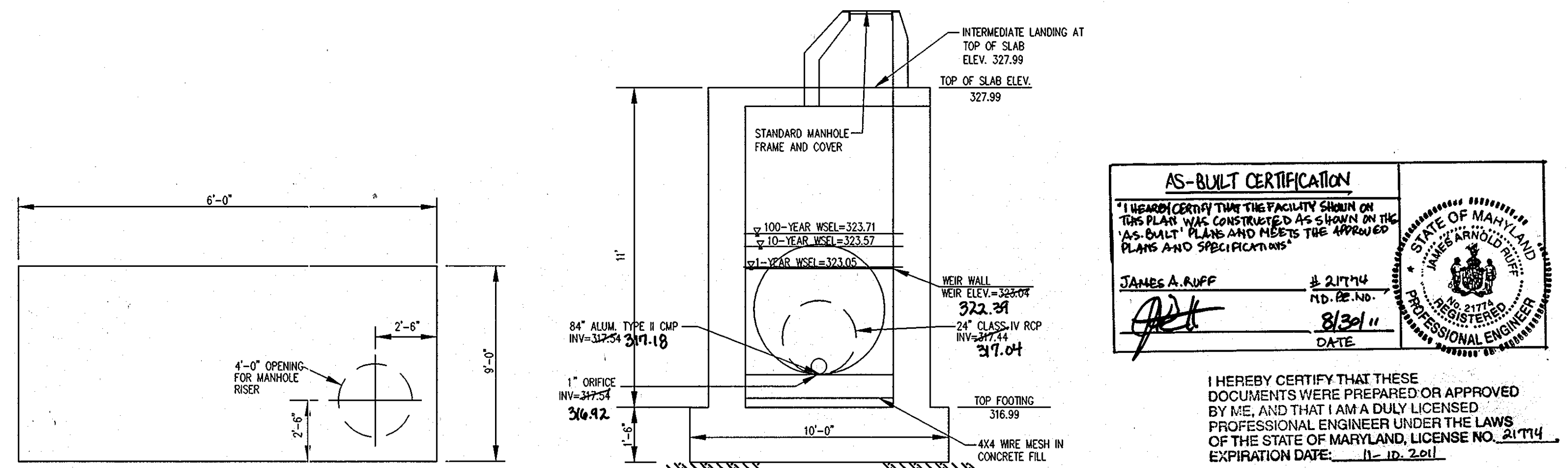


NOTES:
1. PROVIDE WATERTIGHT JOINTS AT ALL PIPE CONNECTIONS.
2. ALL DEBRIS SHALL BE KEPT OUT OF THE FACILITY DURING AND AFTER CONSTRUCTION.

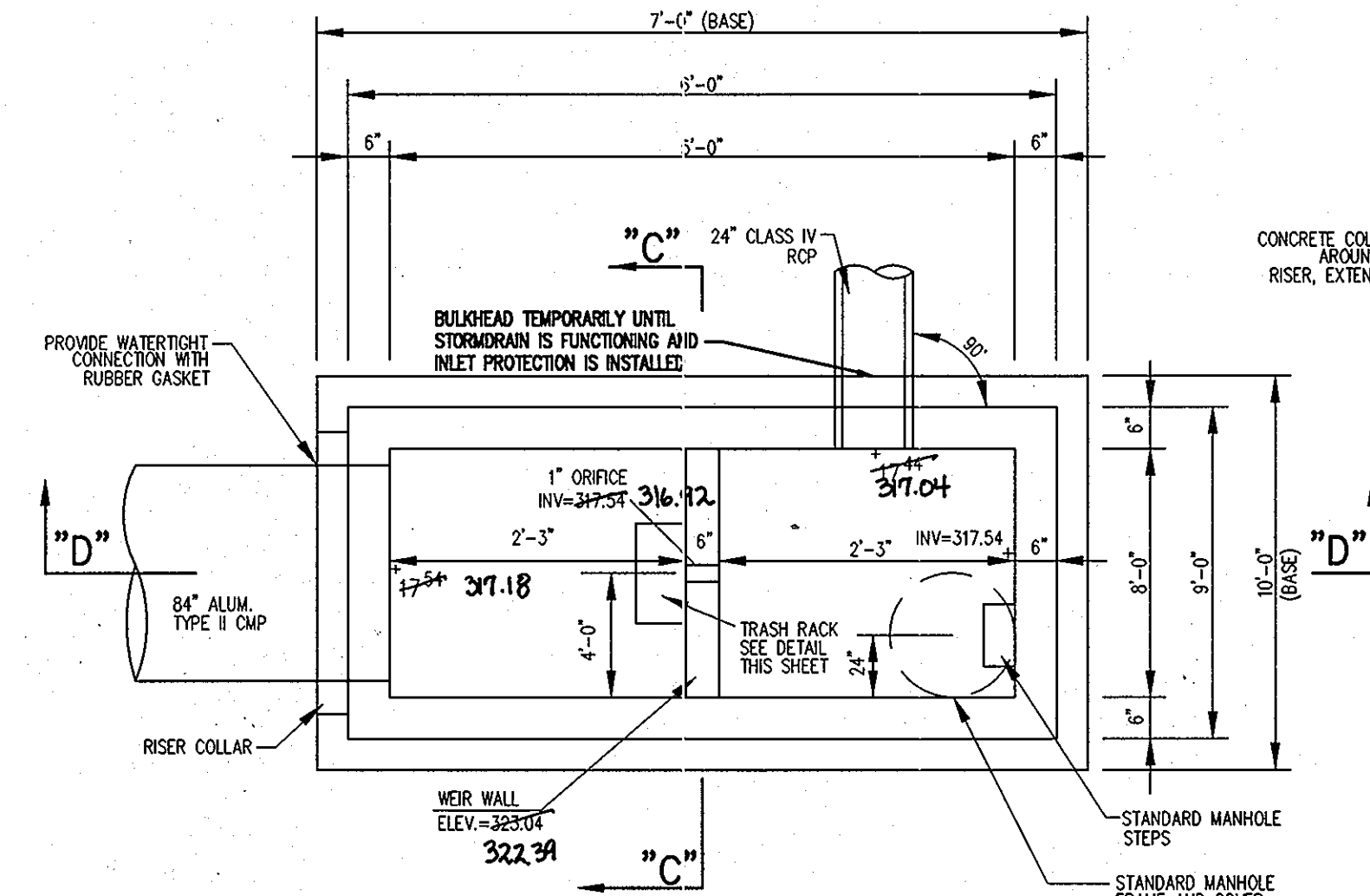
Cpv STORAGE
SCALE: 1"=20'



WQv STORAGE
SCALE: 1"=20'



**STRUCTURE C-1
TOP SLAB**
NOT TO SCALE



**STRUCTURE C-1B
PLAN SECTION
TOP SLAB REMOVED**
NOT TO SCALE

SECTION "C-C"
NOT TO SCALE

SECTION "D-D"
NOT TO SCALE

RISER GENERAL NOTES:

1. THIS DETAIL IS FOR A PRECAST RISER. IF RISER IS CAST IN PLACE, STRUCTURAL DRAWINGS ARE REQUIRED.
2. RISER STRUCTURES SHALL BE REINFORCED CONCRETE.
3. ALL CONNECTIONS SHALL BE WATERTIGHT.
4. CONTRACTOR SHALL BULKHEAD THE OUTLET PIPE AND DEWATER SYSTEM WITH SUMP PUMP AND FILTER BAGS UNTIL CONSTRUCTION IS COMPLETE AND ENTIRE SITE IS STABILIZED.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JAMES A. RUFF
DATE: 8/30/11
PROFESSIONAL ENGINEER

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. 21714, EXPIRATION DATE: 11-12-2011

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Ruttle 4/20/10
DIRECTOR

4/20/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION

4/20/10
CHIEF, DIVISION OF LAND DEVELOPMENT

3/10/10 1 SWITCH FROM STORMFILTER TO BAYFILTER, ADD TRASH RACK DET.

OWNER: CENTURY HOLDING, LLC
3311 OAK WEST DRIVE
ELLCOTT CITY, MD 21043-4105

DEVELOPER: WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
VIENNA, VA 22182
703-760-5070

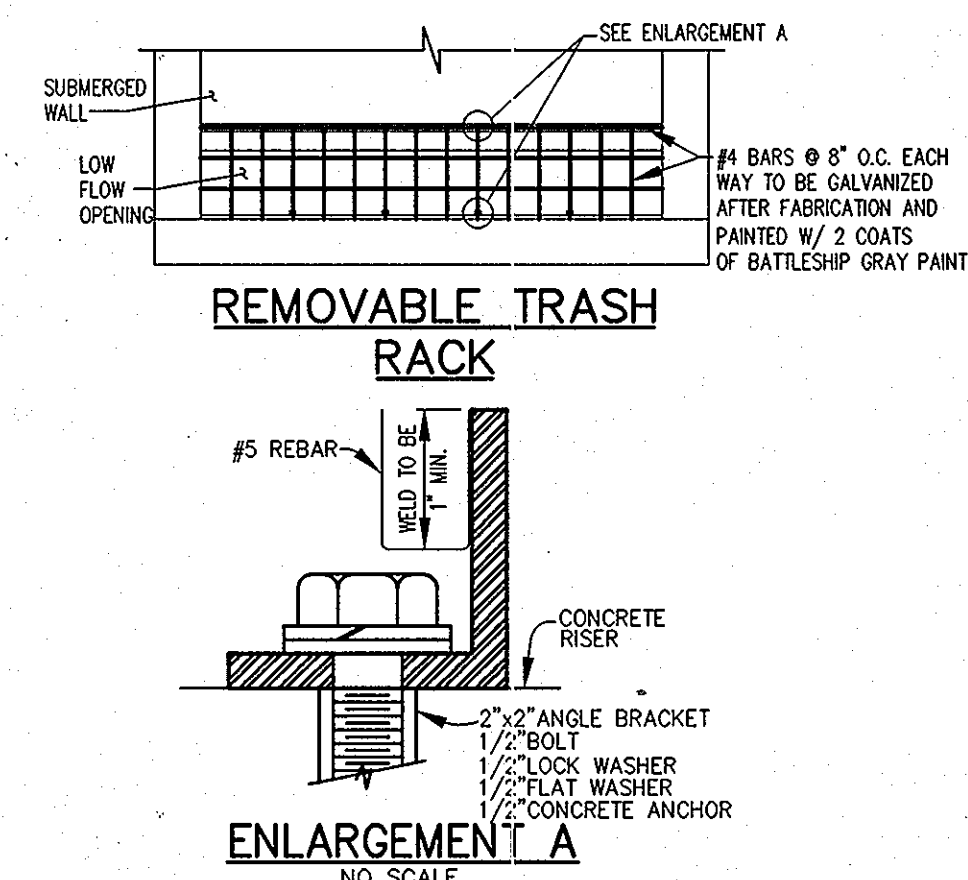
PROJECT: ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

AREA: TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT

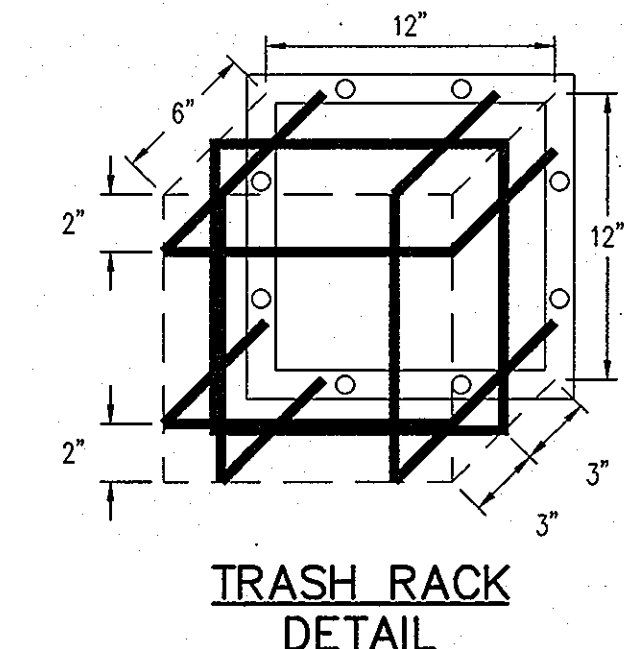
TITLE: STORMWATER MANAGEMENT UNDERGROUND DETENTION #1B

Patton Harris Rust & Associates, PC
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DESIGNED BY: DWK
DRAWN BY: KAD
PROJECT NO: C-SOP09DET.DWG
DATE: 3/24/10
SCALE: AS SHOWN
DRAWING NO. 9 OF 42

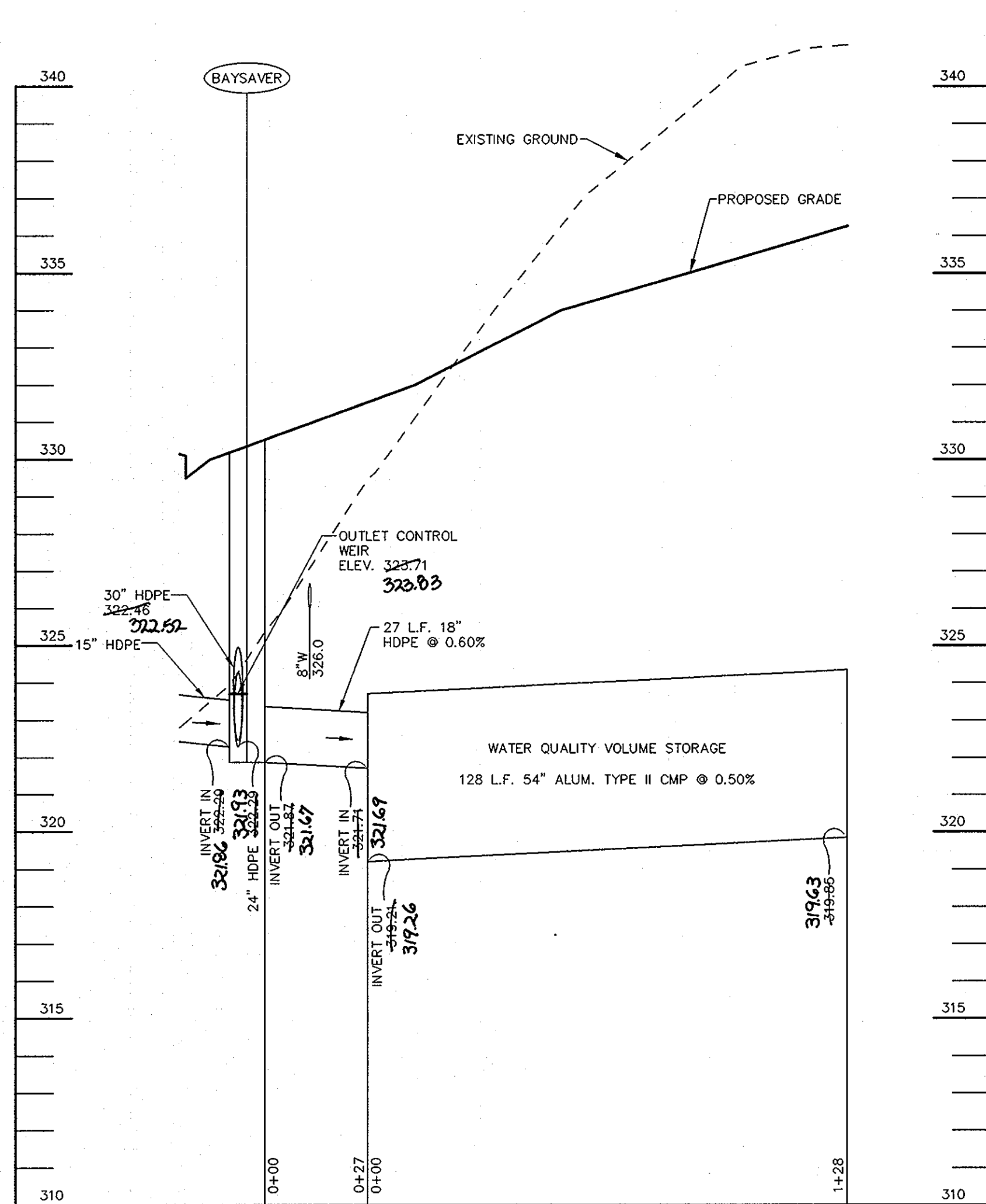


REMOVABLE TRASH RACK
NO SCALE



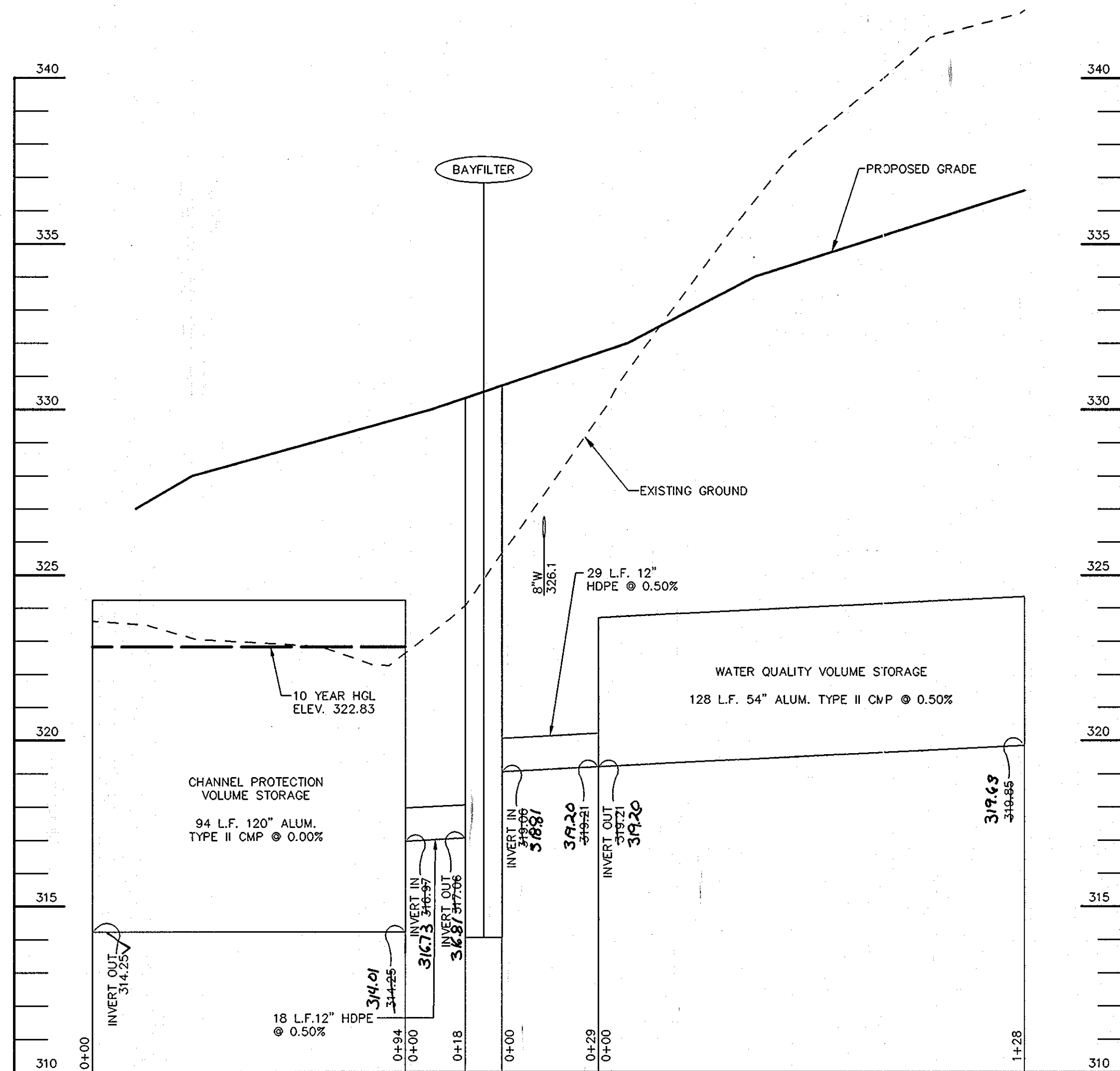
TRASH RACK DETAIL

THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET NO. 9 WHICH WAS PREVIOUSLY SIGNED ON 12/11/10.



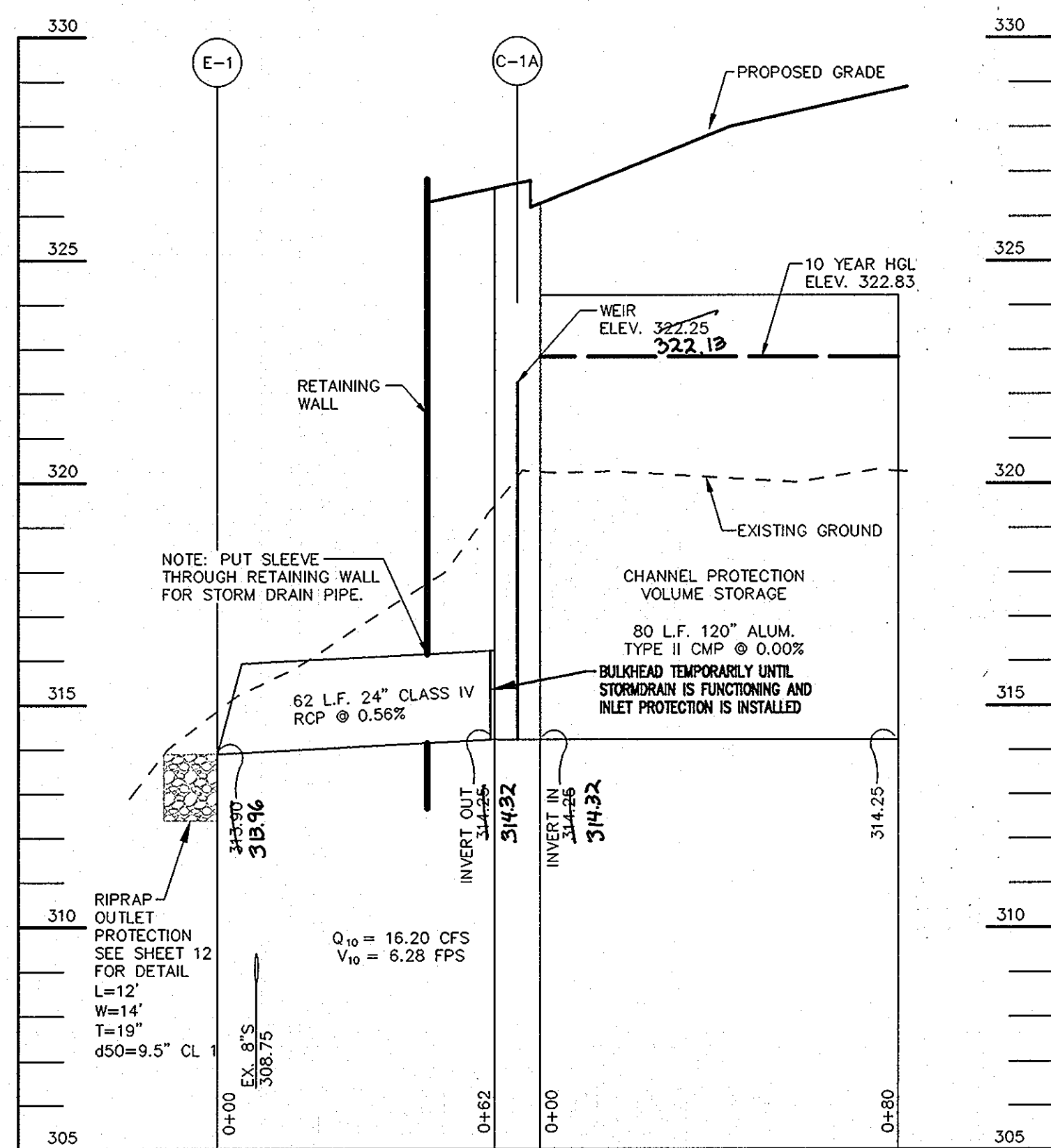
STORM DRAIN PROFILE-WQV

SCALE: H- 1"=30'
V- 1"=3'



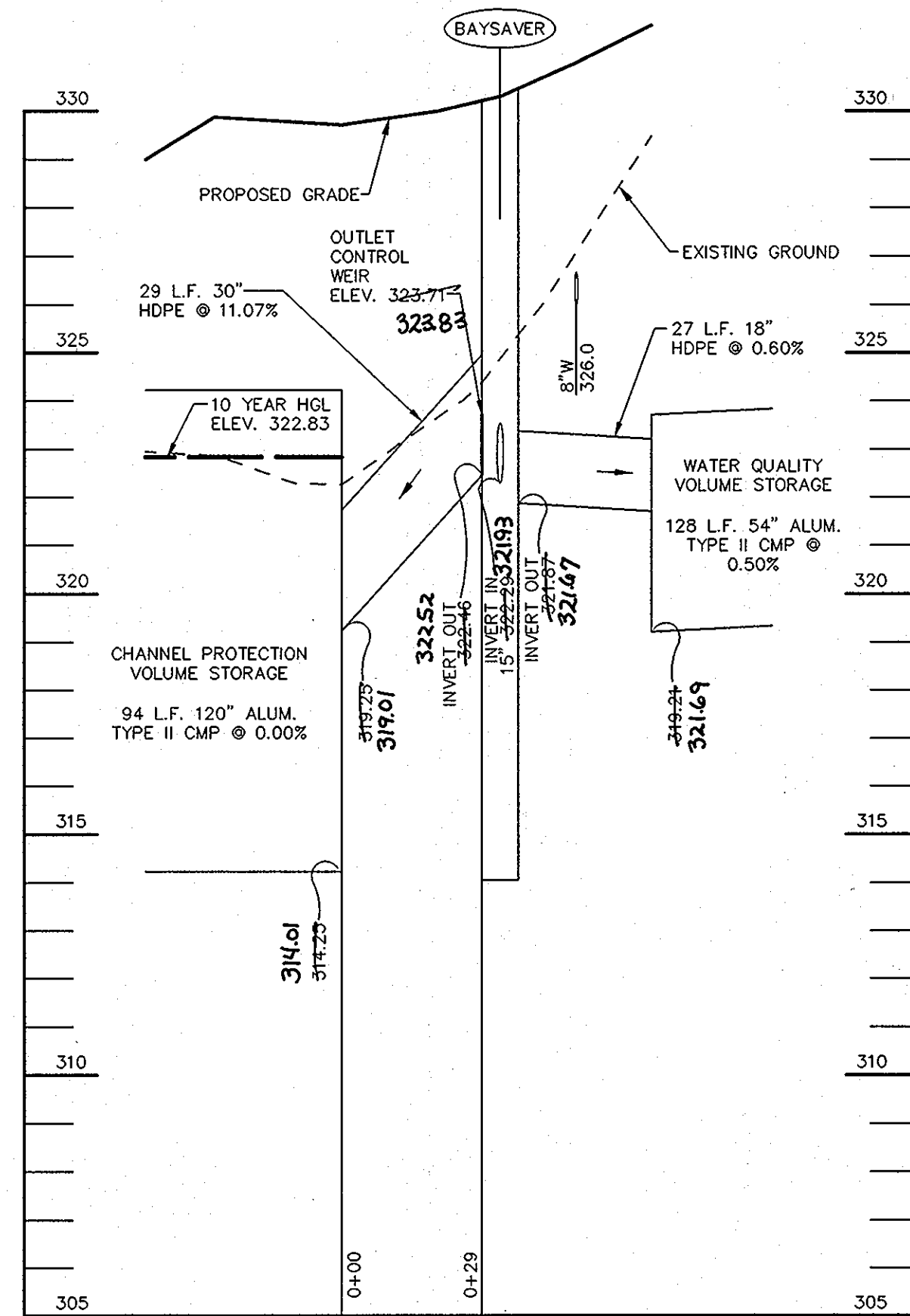
STORM DRAIN PROFILE-Cpv

SCALE: H- 1"=30'
V- 1"=3'



STORM DRAIN PROFILE-Cpv

SCALE: H- 1"=30'
V- 1"=3'



BYPASS FLOW PROFILE

SCALE: H- 1"=30'
V- 1"=3'

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND FACILITIES

1. The underground stormwater management facility is privately owned and it shall be the responsibility of the owner to periodically inspect and clean the facility to maintain its operation and function.
2. The underground stormwater management facility shall be inspected yearly at a minimum and after especially severe storm events.
3. When sediment accumulation of more than 2" is observed or any debris that might obstruct the out fall is observed, the facility shall be cleaned.
4. The facility shall be cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies notifying them of the spill and cleanup operation.
5. The sediment and debris shall be removed from the underground stormwater management facility by vacuum truck or other manual means. The owner shall follow proper cleaning and disposal of the removed material and liquid.
6. The inlet and outlet pipes shall be checked for any obstructions at least once every six (6) months. If obstructions are found, the owner shall have them removed and properly disposed of.

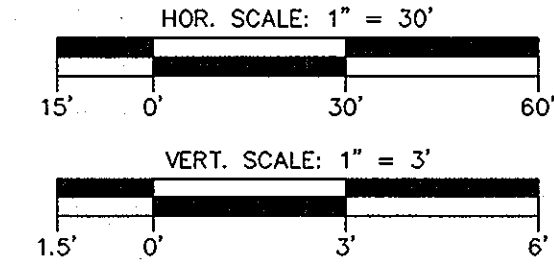
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BAYSAVER WATER QUALITY DEVICE

- a. The BaySaver water quality structure shall be periodically inspected and cleaned to maintain operation and function. The owner shall inspect the BaySaver unit yearly at a minimum, utilizing the BaySaver Inspection/Monitoring Form. Inspections shall be done by using a Grade Stick or similar device. When the Sediment depths exceed 2 feet, the unit must be cleaned.
- b. The BaySaver water quality structure shall be checked and cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies.
- c. The maintenance of the BaySaver unit shall be done using a vacuum truck which will remove the water, sediment, debris, floating hydrocarbons and other materials in the unit. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
- d. The inlet and outlet pipes shall be checked for any obstructions at least once every six months. If obstructions are found, the owner shall have them removed. Structural parts of the BaySaver unit shall be repaired as needed.
- e. The owner shall retain and make the BaySaver Inspection/Monitoring Forms available to the Howard County officials upon their request.

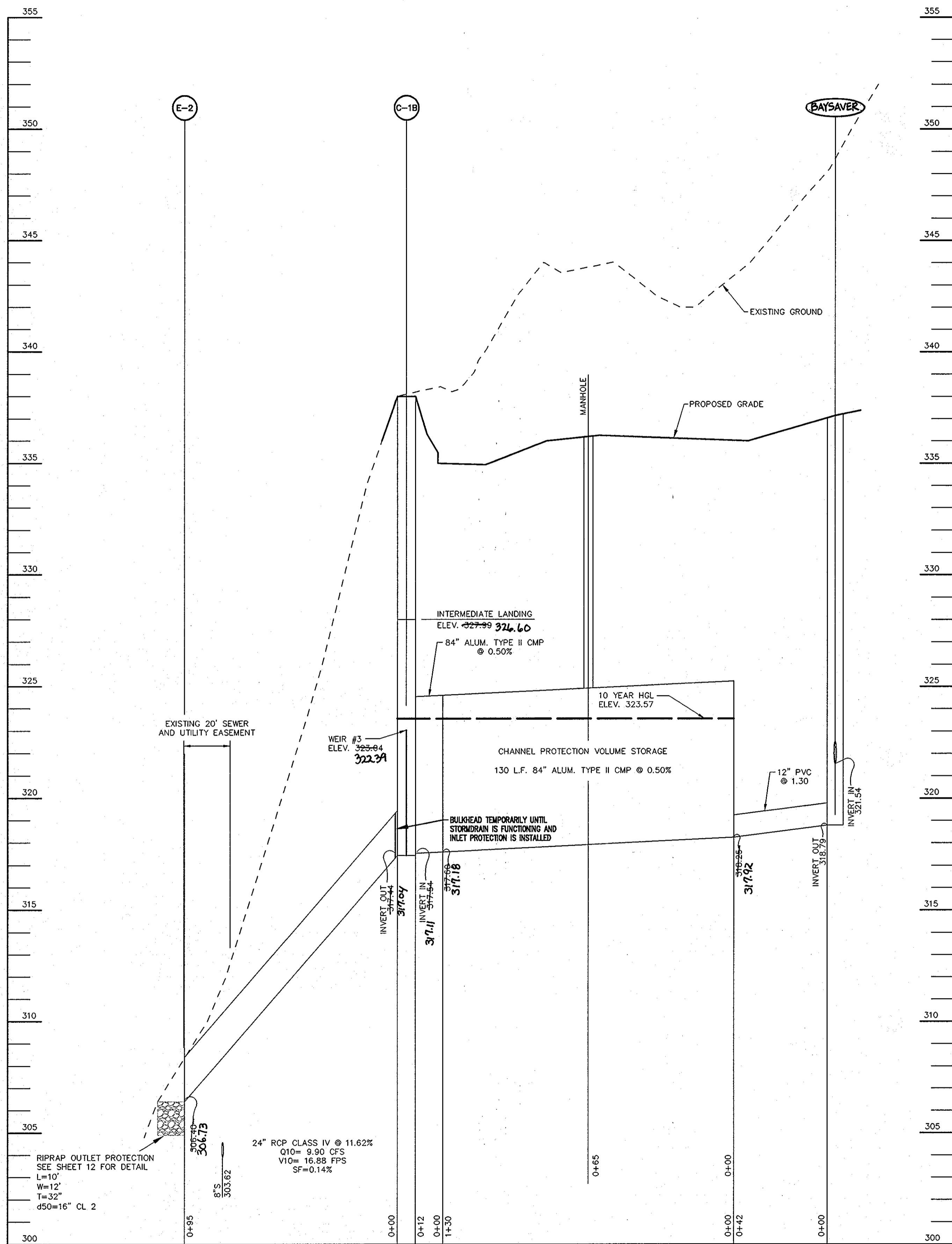
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Thomas E. Ruttle</i>	4/20/10
DIRECTOR	DATE
<i>John Deane</i>	4/13/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>Scott Sheppard</i>	4/20/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
3/10/10	1 INCREASE CPV STORAGE PIPES TO 120", CORRECT INV. AND LABELS
DATE	NO. REVISION
OWNER CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLCOTT CITY, MD 21043-4105	
DEVELOPER WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 WIENNA, VA 22182 703-760-5070	
PROJECT ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING	
AREA TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE STORMWATER MANAGEMENT PROFILES - #1A	
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
SEAL	DESIGNED BY :DWC
	DRAWN BY: KAD
	PROJECT NO : 15661-1-0 C-SDP10DET.DWG
	DATE : 3/24/10
	SCALE : AS SHOWN
	DRAWING NO. 10 OF 42

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE 'AS-BUILT' PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
JAMES A. RUFF 21774 M.D.P.E. NO. 3/24/10 DATE

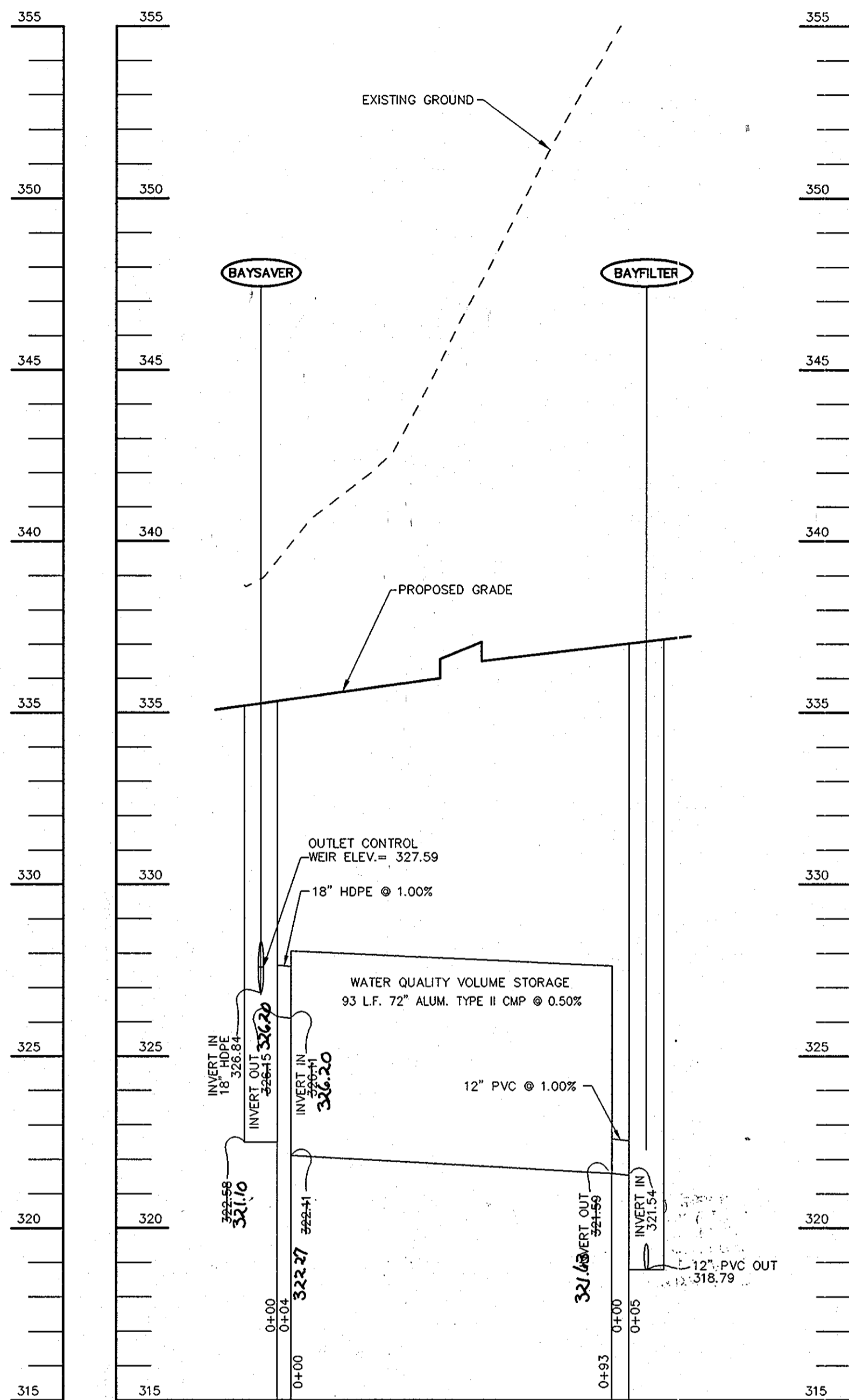
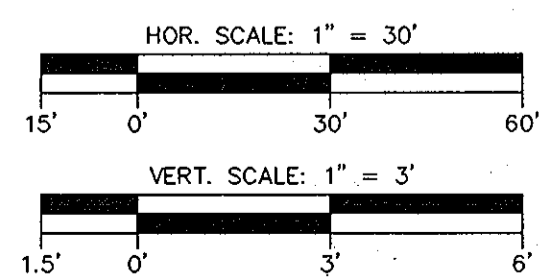
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21774, EXPIRATION DATE: 12-10-2011.



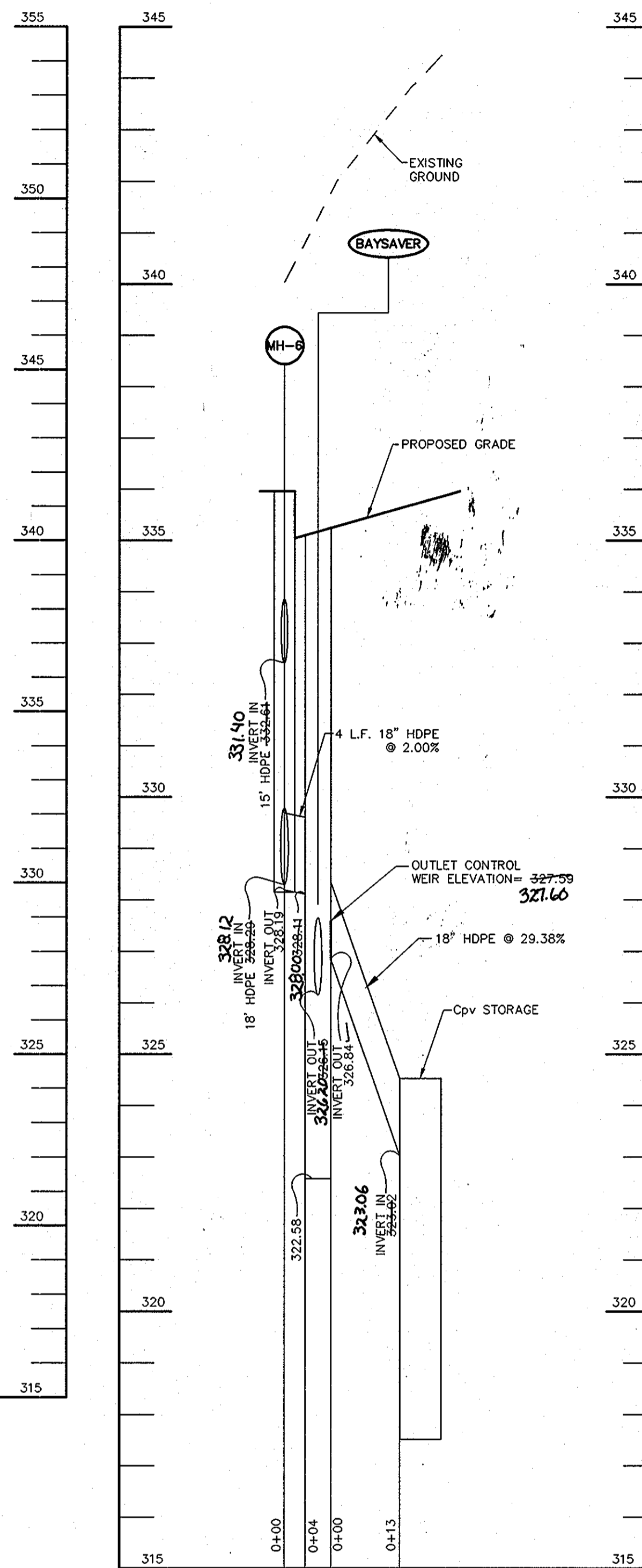
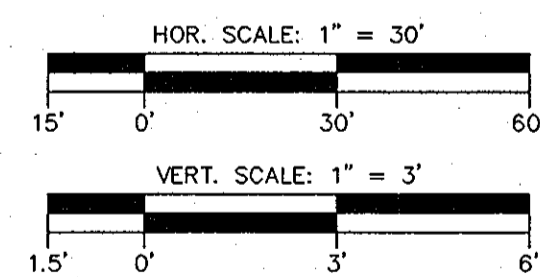
THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET NO. 10 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09.



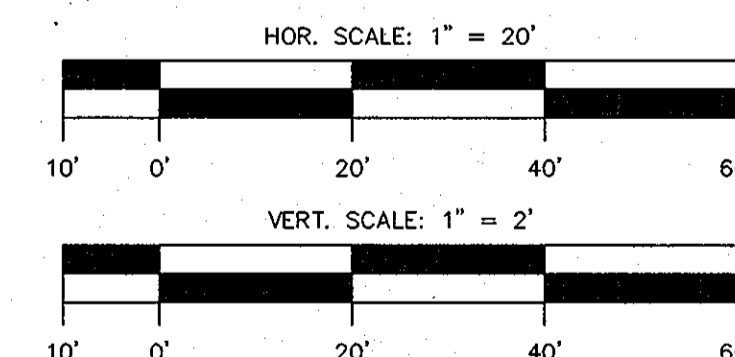
STORM DRAIN PROFILE



PROFILE



PROFILE



AS-BUILT CERTIFICATION

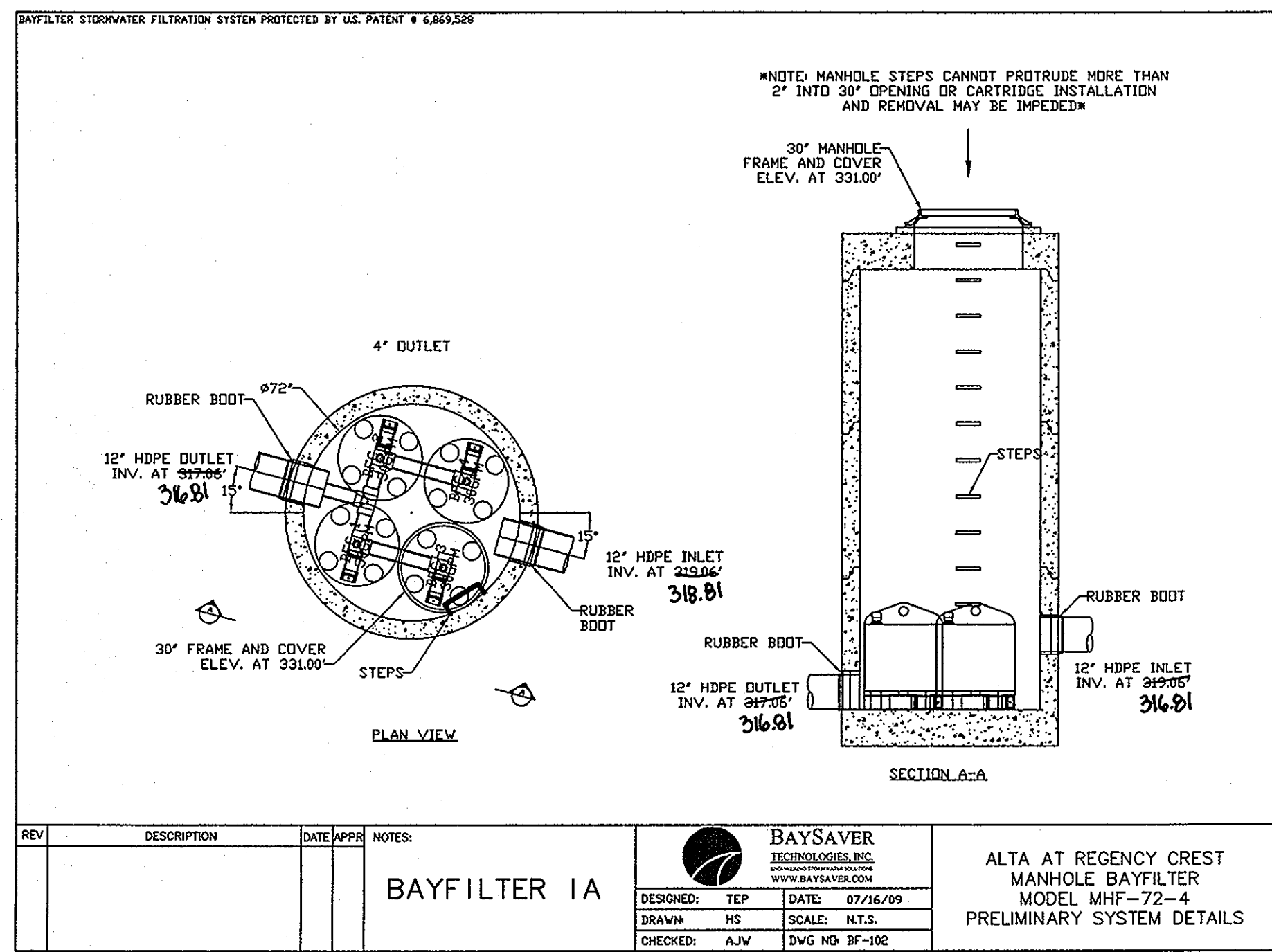
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED ACCORDING TO THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

JAMES A. RUFF 2/21/14
 M.D., P.E., N.D.
 8/3/11
 DATE

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. 21774, EXPIRATION DATE: 11-10-2011.

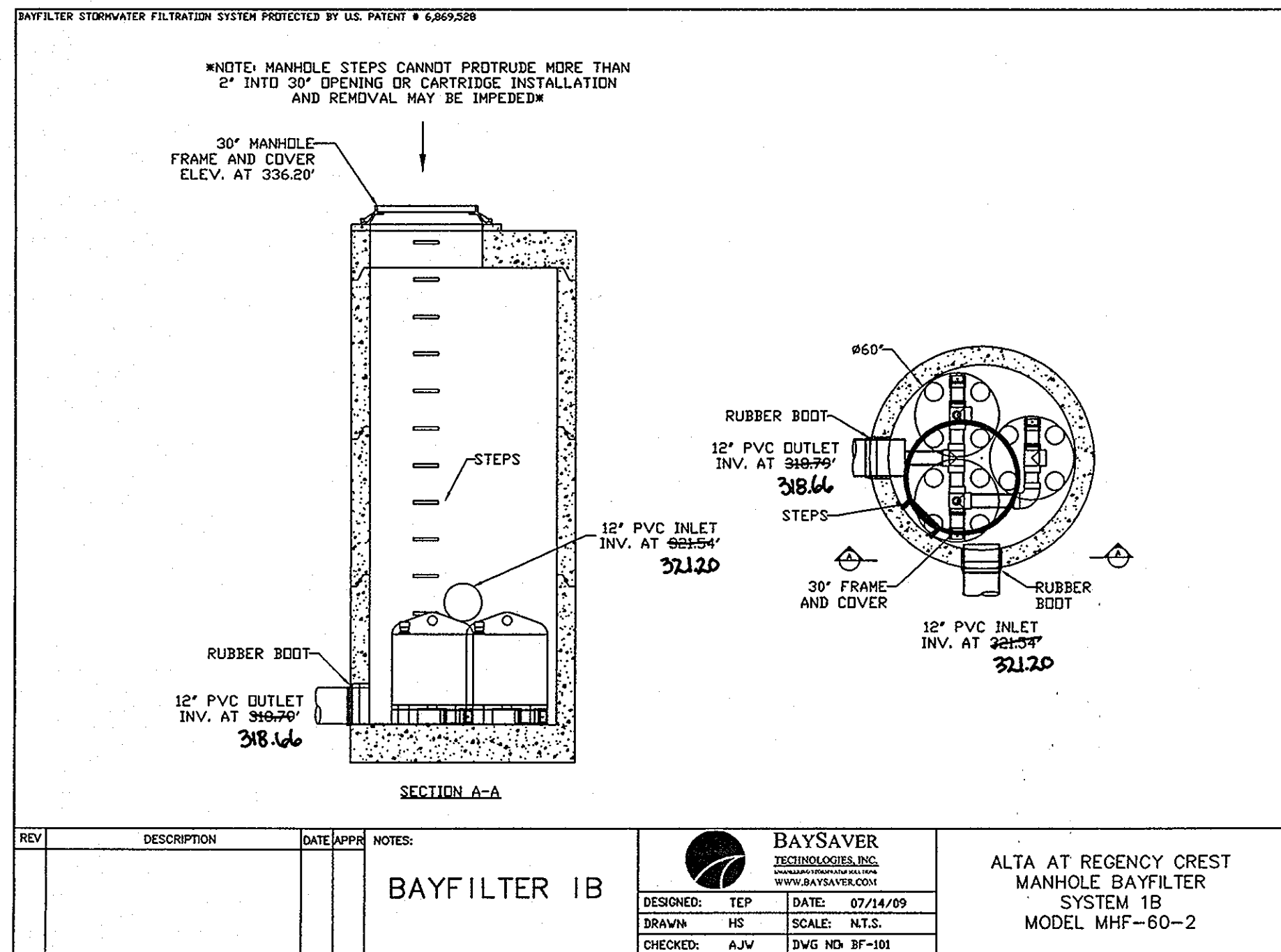
THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET NO. 11 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Thomas G. Suttle</i>	4/20/10
DIRECTOR	DATE
<i>Mark D. ...</i>	4/20/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>Neil S. ...</i>	4/20/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
3/10/10	1 ADD OUTLET CONTROL WEIR, CORRECT INVERTS
DATE	NO. REVISION
OWNER CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLCOTT CITY, MD 21043-4105	
DEVELOPER WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070	
PROJECT ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING	
AREA TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE STORMWATER MANAGEMENT PROFILES - #1B	
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
	DESIGNED BY : DWC
	DRAWN BY: KAD
	PROJECT NO 15661-1-0 C-SDP11PRO.DWG
	DATE : 3/24/10
	SCALE : AS SHOWN
DRAWING NO. 11 OF 42	



1
18

BAYFILTER DETAIL
UNDERGROUND DETENTION #1A



2
18

BAYFILTER DETAIL
UNDERGROUND DETENTION #1B

BAYFILTER™ SPECIFICATIONS

PART 1.00 GENERAL

1.1 DESCRIPTION

A. The BayFilter™ System's internal components manufacturer selected by the Contractor and approved by the Engineer, shall furnish all labor, materials, equipment and incidentals required to manufacture the BayFilter System component(s) specified herein in accordance with the attached Drawing(s) and these specifications.

B. Concrete structures and any appurtenances that form an integral part of the BayFilter™ treatment unit shall be as described in Section 2.1B of these specifications.

1.2 QUALITY CONTROL INSPECTION

A. The quality of materials, the process of manufacture, and the finished sections shall be subject to inspection by the Engineer. Such inspection may be made at the place of manufacture, or on the worksite after delivery, or at both places, and shall be subject to rejection at any time if material conditions fail to meet any of the specification requirements. If a BayFilter System component(s) is rejected after delivery to the site, it shall be marked for identification and removed from the site. Any BayFilter System Component(s) which have been damaged beyond repair during delivery will be rejected.

1.3 SUBMITTALS

A. Plan, elevation, and profile dimensional drawings shall be submitted to the Engineer for review and approval. The Contractor shall be provided with the approved plan, elevation, and profile dimensional drawings.

PART 2.00 PRODUCTS

2.1 INTERNAL COMPONENTS

All components including concrete structure(s), PVC manifold piping, filter cartridges, shall be provided by BaySaver Technologies Inc., 1302 Rising Road, Unit 1, Mount Airy, NC (800.229.7283).

A. PVC Manifold Piping: All internal PVC pipe and fittings shall meet ASTM D1785. Manifold piping shall be provided to the contractor partially pre-cut and pre-assembled.

B. Filter Cartridges: External shell of the filter cartridges shall be substantially constructed of polyethylene or equivalent material acceptable to the manufacturer. Filtration media shall be arranged in a layered fashion to maximize available filtration area. An orifice plate shall be supplied with each cartridge to restrict flow rate to a maximum of 30 gpm.

C. Filter Media: Filter media shall be by BaySaver Technologies Inc. or approved alternate. Filter media shall consist of the following mix: Sand media shall have an effective particle size of not more than 0.42 mm, it shall have an angular grain shape, a hardness of 7, be 99% silica, and not leach nutrients. The media shall also include a blend of Perlite and Activated Alumina.

2.2 PERFORMANCE

A. The stormwater filter system shall be an offline design capable of treating 100% of the required treatment flow at full sediment load conditions.

B. The stormwater filter system's cartridge units shall have no moving parts.

C. The stormwater treatment unit shall be designed to remove at least 80% of the suspended solids load. Said removal shall be based on full-scale testing using SILCO-SEL 106 testing procedure with a 400-micron (manufactured by US Silica) or equivalent. Said full scale testing shall have included sediment capture based on actual total mass collected by the stormwater filtration system.

D. The stormwater filtration system shall reduce incoming turbidity (measured as NTUs) by 50% or more and shall not have any components that leach nitrates or phosphates.

E. The stormwater filtration cartridge shall be equipped with a hydrodynamic backwash mechanism to extend the filter's life and optimize its performance. Inlet flow shall be upflow.

F. The stormwater filtration system shall be designed to remove a minimum of 40% of the incoming Total Phosphorus (TP) load.

G. The stormwater filtration system's cartridge units shall have the following minimum flow and sediment load capacities:

Design Flow per BFC, gpm Nominal	Treated Sediment Load for 80% Sediment Removal - Lbs
10	100
20	200
30	300
40	400
50	500

2.3 PRECAST CONCRETE VAULT COMPONENTS

A. Precast Concrete Vault: Shall be provided according to latest revisions of ASTM C478, C858, and C1433. Precast concrete vaults shall be manufactured by an NPCA certified plant and shall be provided by BaySaver Technologies, Inc.

B. Vault Joint Sealant: Shall be Coseal CS-102 or BaySaver approved.

C. Doors: Doors shall have hot-dipped galvanized frames and covers or BaySaver approved. Covers shall have diamond plate finish. Each door to be equipped with a recessed lift handle and a locking latch with hold-down bolts. Wrench to be provided for each set of doors, upon request. Doors shall meet H-20 loading requirements for incidental traffic at a minimum.

D. Frames and Covers: Frames and covers shall be gray cast iron and shall meet AASHTO H-20 loading requirements or BaySaver approved.

E. Ladders: Ladders shall be constructed of aluminum or steel reinforced copolymer polypropylene conforming to ASTM D-4101. Ladder shall bolt in place and be equipped with a pull-up ladder extender that shall extend a minimum of 24 inches above the top rung of ladder. Ladder shall meet all ASTM C-497 load requirements.

F. Steps: Steps shall be constructed of copolymer polypropylene conforming to ASTM D-4101 or BaySaver approved. Steps shall be driven into performed or drilled holes once concrete is cured. Steps shall meet the requirements of ASTM C-478 and AASHTO M-199.

2.4 CONTRACTOR PROVIDED COMPONENTS

Specifications for all contractor-provided components are minimum requirements. If a higher standard is shown on the plans or described in another section of the technical specifications, then the higher standard shall govern.

A. Sub-Base: Sub-base shall be six-inch minimum of 1/2-inch minus rock, 95% compaction. Compact undisturbed sub-grade material 95% of maximum density at 4% of optimum moisture content. Unstable material below sub-grade shall be replaced to engineer's approval.

B. Concrete: Concrete shall be 3000 psi minimum at 28-day strength, 1/2-inch gravel, 4-inch slump maximum, placed within 90 minutes of initial placing.

C. Silicone Sealant: Shall be pure PVC silicone conforming to Federal Specification Number TT-S001543A or TT-S00230C or Engineer approved.

D. Grout: Shall be non-shrink grout meeting the requirements of Corps of Engineers CRD-C388. Specimens molded, cured and tested in accordance with ASTM C-409 shall have minimum compressive strength of 6,000 psi. Grout shall not exhibit visible bleeding.

E. Backfill: Backfill shall be 1/2-inch minus rock at 95% compaction.

PART 3.00 EXECUTION

3.1 PRECAST CONCRETE VAULT

A. Vault top finish grade shall be even with surrounding finish grade surface unless otherwise noted on plans.

B. Contractor shall grout all inlet and outlet pipes flush with vault interior wall.

C. Studded PVC fittings shall be used on all PVC inlet and outlet pipes.

D. The contractor responsible for inspecting and/or completing installation of flow spreaders/energy dissipators.

3.2 ANTI-FLOTTATION BALLAST (Where Required)

A. Ballast shall be to the dimensions specified by the engineer and noted on the data block. Ballast shall run the entire length of the long side of the vault, both sides. Ballast shall not encase the inlet and/or outlet piping. Provide 12" clearance from outside diameter of pipe.

3.3 CLEANUP

A. Remove all excess materials, rocks, roots, or foreign material, leaving the site in a clean, complete condition approved by the engineer. All filter components shall be free of any foreign materials including concrete.

3.4 FILTER CARTRIDGES

A. Filter cartridges shall not be installed until the project site is clean and stabilized or if the inlet and outlet pipes are temporarily blocked off. The project site includes any surface that contributes storm drainage to the BayFilter. All impermeable surfaces shall be clean and free of dirt and debris. All catch basins, manholes and pipes shall be free of dirt and sediment.

3.5 STORMWATER FILTERING SYSTEM SYSTEMS INSTALLATION NOTES

A. Contractor to strictly follow the approved design and construction specifications. Any substitutions are to be pre-approved by the inspector and design engineer in writing prior to placement of materials.

B. The stormwater filtration system(s) may not be activated until all contributing drainage areas to each facility are stabilized. Construction of the facility shall not proceed without prior authorization of the inspector.

C. No "rock dust" can be used for sand.

D. Unless otherwise noted, all poured in place concrete shall be 3500 psi at 28 days.

E. Contact "Miss Utility" at 1-800-257-7777 at least 48 hours prior to the start of construction.

3.6 CONCRETE

A. Concrete placement and strength shall meet the requirements of the latest edition of the Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Sections 414 and 902, Mix No. 3.

PART 4.00 EXECUTION

4.1 INSTALLATION

A. Installation of the BayFilter System(s) shall be performed per manufacturer's Installation Instructions. Such instructions can be obtained by calling BaySaver Technologies, Inc. at 1-800-229-7283 or by login to www.BaySaver.com.

BayFilter™ Maintenance

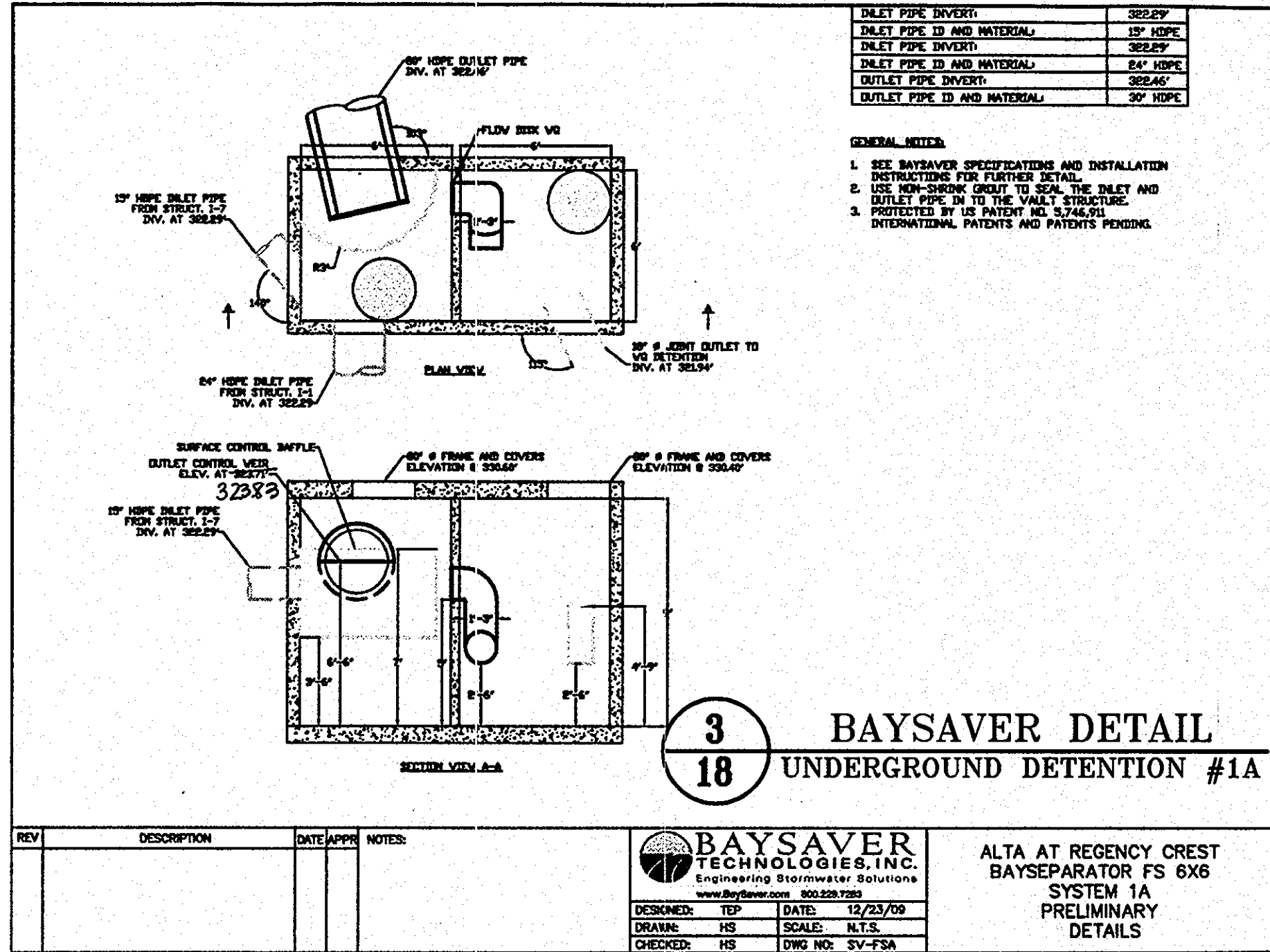
A. The BayFilter™ system requires periodic maintenance to continue operating at the design efficiency. The maintenance process comprises the removal and replacement of each BayFilter™ cartridge and the cleaning of the vault or manhole with a vacuum truck. BayFilter™ maintenance should be performed by a BaySaver Technologies, Inc. certified maintenance contractor.

B. When a BayFilter™ system is first installed, it is recommended that it be inspected every six (6) months. When the filter system exhibits flows below design levels the system should be maintained. Filter cartridge replacement should also be considered when sediment levels are at or above the level of the 4" collector pipe to the manifold.

C. General Maintenance Procedure:

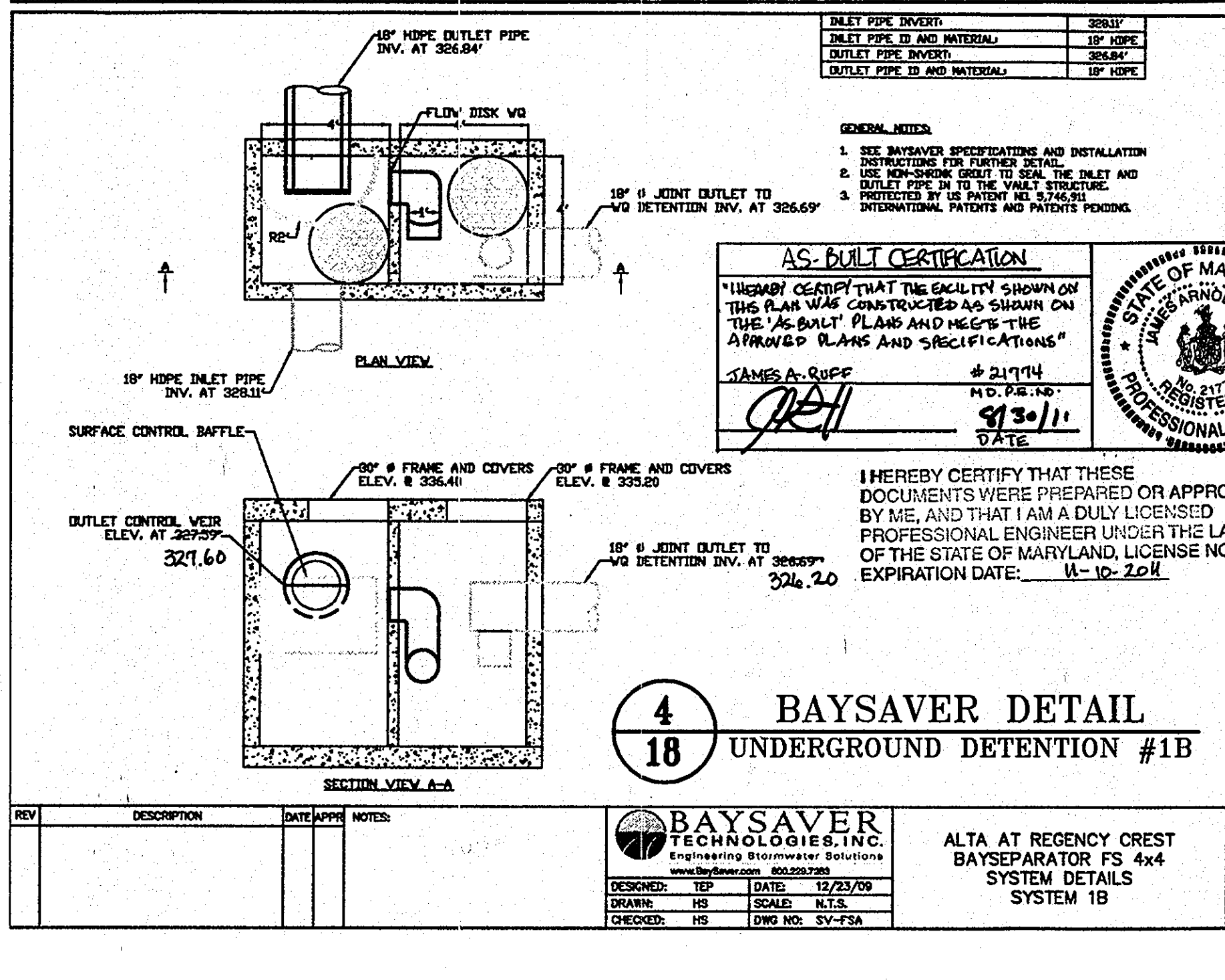
1. Remove the manhole covers and open all access hatches.
2. Before entering the system make sure the air is safe per OSHA Standards or use a breathing apparatus. Use low O₂, high CO₂ or other applicable warning devices per regulatory requirements.
3. Using a vacuum truck remove any liquid and sediments that can be removed prior to entry.
4. Using a small lift or the boom of the vacuum truck, remove the used cartridges by lifting them out. Use the trolley system to remove cartridges when applicable.
5. When all cartridges are removed, remove the balance of the solids and water; then loosen the stainless clamps on the Fernco couplings for the manifold and remove the drain pipes as well. Carefully cap the manifold and the Fernco's and rinse the floor removing the balance of the collected solids.
6. Clean the manifold pipes, inspect, and re-install.
7. Install the exchange cartridges and close all covers.
8. The used cartridges must be sent back to BaySaver Technologies, Inc. for exchange/recycling and credit on undamaged units.

SEQUENCE OF CONSTRUCTION AND INSPECTOR'S CHECK-OFF LIST FOR PRECAST VAULT BAYFILTERS	Developer/Engineer/Inspector	Developer/Engineer		Inspector		Geotechnical Engineer	
		Initials	Date	Initials	Date	Initials	Date
1. Pre-Construction Meeting, Excavation, and Safety Review	X			X		X	
2. Excavate the hole, providing any shoring and shoring necessary to comply with all federal, state and local safety regulations. Level the subgrade to the proper elevation. Verify the elevation against the vault dimensions, the invert elevations, and the site plans. Adjust the base aggregate, if necessary.	X			X		X	
3. Obtain approval of subgrade from Geotechnical Engineer. On solid subgrade, set the BayFilter™ precast vault.	X			X		X	
4. Check the level and elevation of the precast vault.	X			X		X	
5. Install the PVC outlet manifold and outlet chamber system.	X			X		X	
6. Install the PVC outlet pipe and inlet pipe in the BayFilter™ vault.	X			X		X	
7. Install the energy dissipator level spreader at the inlet pipe.	X			X		X	
8. After the site is stabilized, remove any accumulated sediment or debris from the vault and install the BayFilter™ cartridges. Install the top slab and access hatch.	X			X		X	
9. Final inspection	X			X		X	
10. Final inspection	X			X		X	



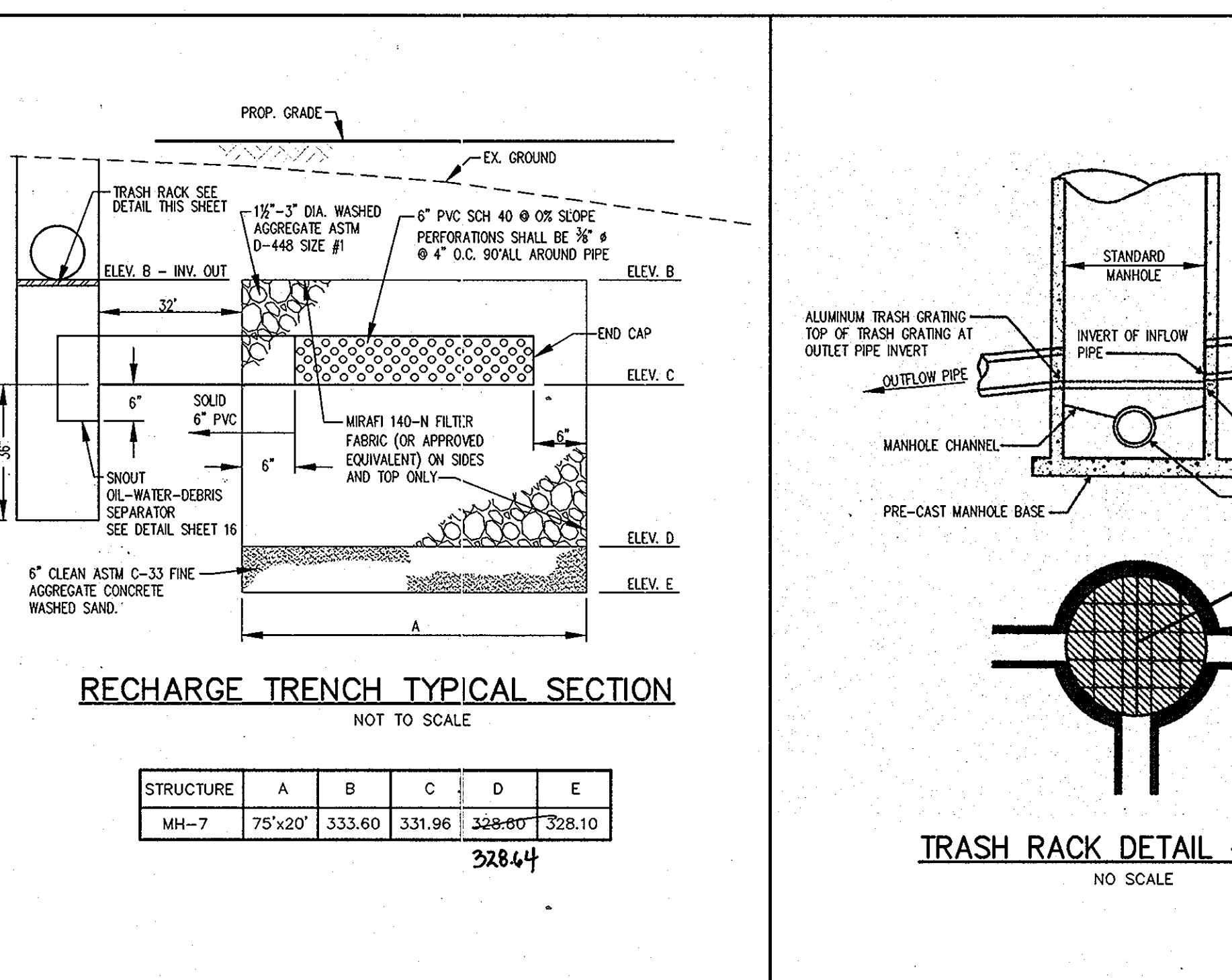
3
18

BAYSAYER DETAIL
UNDERGROUND DETENTION #1A



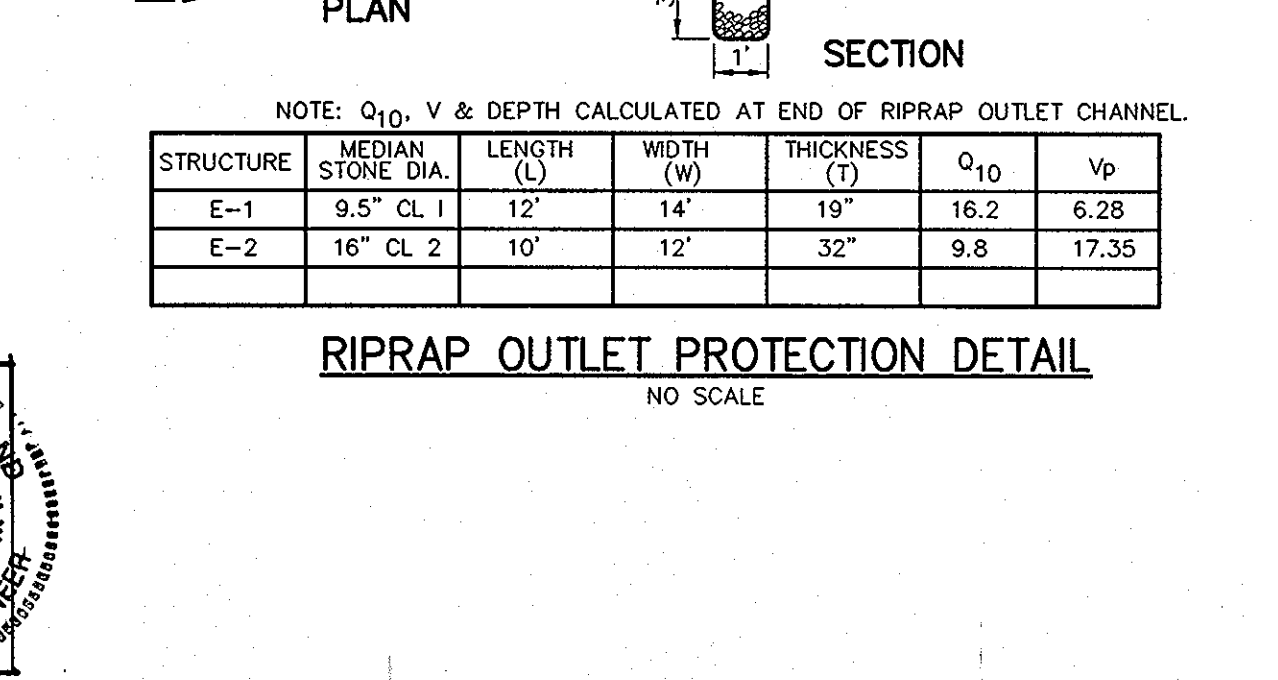
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18

BAYSAYER DETAIL
UNDERGROUND DETENTION #1B



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. "SE" GEOTEXTILE OR BETTER 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 FABRIC OVER THE DAMAGED SECTION, WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC, IT 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 FABRIC. 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.



THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET NO. 12 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Ruttle 4/26/10
DIRECTOR DATE

John P. ... 4/23/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Keith ... 4/20/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
3/10/10	1	SWITCH TO BAYSAYER AND BAYFILTER, ADD BAYFILTER SPECS

OWNER: CENTURY HOLDING, LLC
3311 OAK WEST DRIVE
ELLCOTT CITY, MD 21043-4105

DEVELOPER: WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
WIENNA, VA 22182
703-760-5070

PROJECT: ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

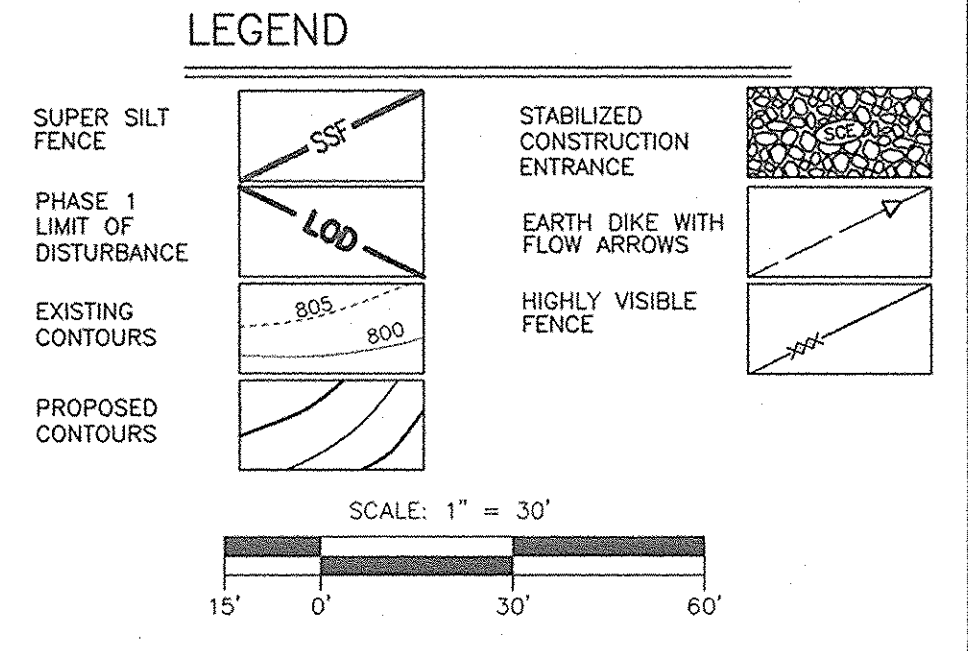
AREA: TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT

TITLE: HOWARD COUNTY, MARYLAND

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DESIGNED BY: DWK
DRAWN BY: KAD
PROJECT NO: 15661-1-0
DATE: 3/24/10
SCALE: AS SHOWN
DRAWING NO. 12 OF 42

DESIGNED BY: DWK
DRAWN BY: KAD
PROJECT NO: C-SDP12DET.DWG
DATE: 3/24/10
SCALE: AS SHOWN
DRAWING NO. 12 OF 42



THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET NO. 13 WHICH WAS PREVIOUSLY SIGNED ON 12/17/10.

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Scott Zimmerly 3/24/10
DEVELOPER DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

John P. Pade 3/24/10
ENGINEER DATE

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

John S. Slig 4/8/10
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Deanna E. Butler 4/20/10
DIRECTOR DATE

Michael J. Pappas 4/15/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kevin Sheehan 4/20/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
3/10/10	1	REV. RET. WALL 1 & 2. SHIFT LOD, SSF @ WALL 1

OWNER: CENTURY HOLDING, LLC
3311 OAK WEST DRIVE
ELLCOTT CITY, MD 21043-4105

DEVELOPER: WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
VIENNA, VA 22182
703-760-5070

PROJECT: ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

AREA: TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

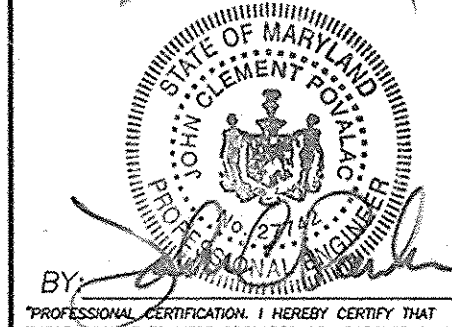
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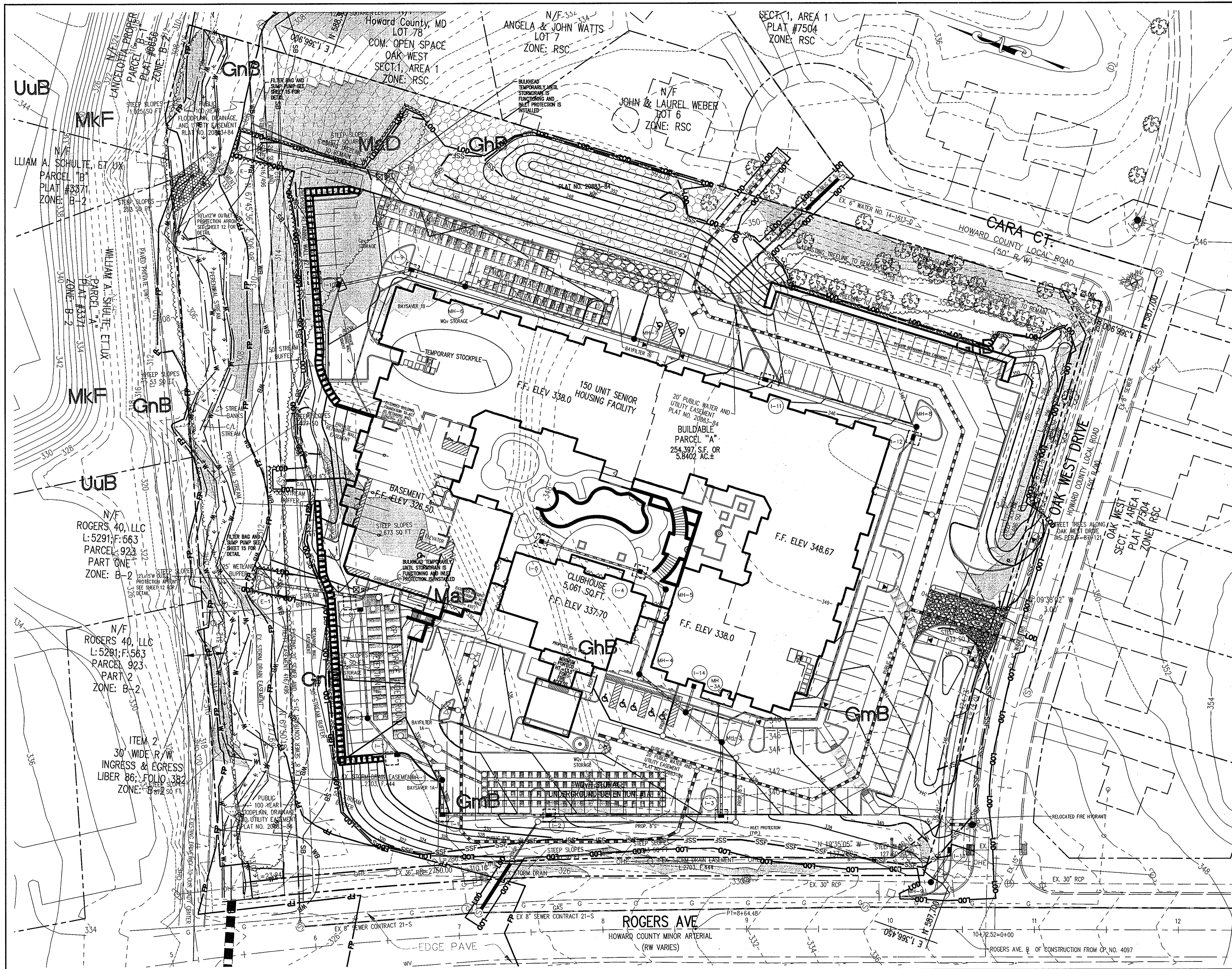
Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9262

DESIGNED BY: DWC
DRAWN BY: KAD
PROJECT NO.: 15661-1-0
C-SDP13ESC1.DWG
DATE: 3/24/10
SCALE: 1"=30'
DRAWING NO.: 13 OF 42

SEDIMENT TRAP SCHEDULE

TRAP NUMBER	1	2	3
TRAP TYPE	ST II	ST II	ST II
EX. DRAINAGE AREA (AC)	1.54	1.24	1.28
PR. DRAINAGE AREA (AC)	N/A	N/A	N/A
STORAGE REQUIRED (CF)	5,544	4,464	4,608
STORAGE PROVIDED (CF)	5,604	4,584	4,736
WEIR LENGTH (FT)	8	8	42
DEPTH BELOW OUTLET (FT)	3.25	3.25	3.25
CHANNEL DEPTH (FT)	N/A	N/A	N/A
OUTFALL LENGTH (FT)	N/A	N/A	N/A
WEIR CREST (FT)	335.00	439.00	317.00
OUTLET ELEVATION (FT)	332.25	437.25	315.25
CLEANOUT ELEVATION (FT)	332.00	436.00	314.00
BOTTOM ELEVATION (FT)	330.00	434.00	315.00
BOTTOM DIMENSIONS (FT)	10'x40'	10'x30'	10'x32'
Q _{EX} / Q _{2PR}	N/A	N/A	N/A





LEGEND

SUPER SILT FENCE	PROPOSED CONTOURS
LIMIT OF DISTURBANCE	STABILIZED CONSTRUCTION ENTRANCE
EXISTING CONTOURS	EARTH DIKE WITH FLOW ARROWS

THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET NO. 14 WHICH WAS PREVIOUSLY SIGNED ON 8/17/09.

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Scott Zimmely 3/24/10
DEVELOPER DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

John Paul 3/24/10
ENGINEER DATE

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

John Paul 4/8/10
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas S. Tuttle 4/20/10
DIRECTOR DATE

John Paul 4/12/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Scott Zimmely 4/20/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

3/10/10	1	REV. RET WALLS 1-3, CPV STORAGE 1A
DATE	NO.	REVISION
OWNER CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLCOTT CITY, MD 21043-4105		

DEVELOPER WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
WIENNA, VA 22182
703-760-5070

PROJECT ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

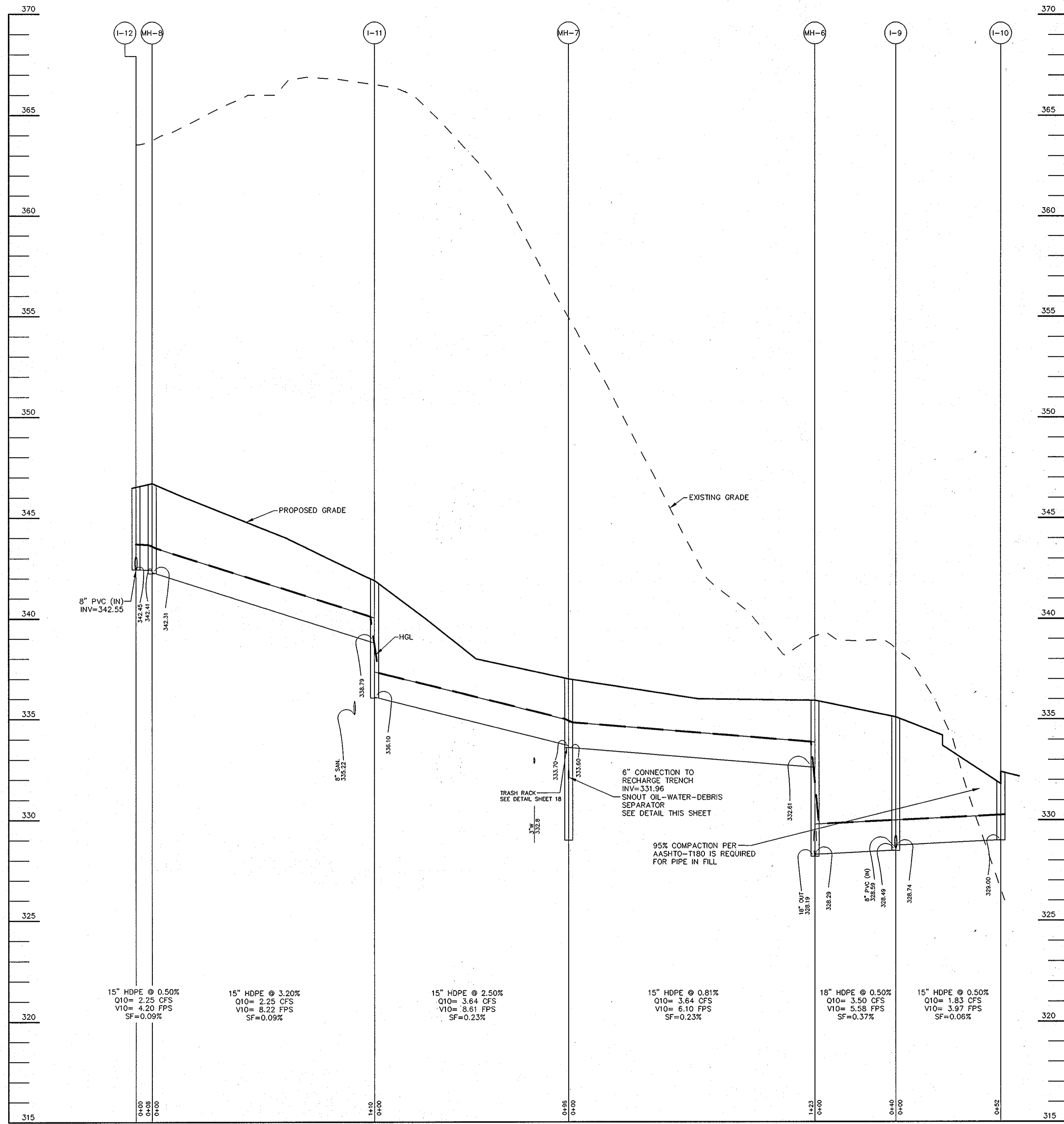
AREA TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE EROSION AND SEDIMENT CONTROL PLAN - PHASE TWO

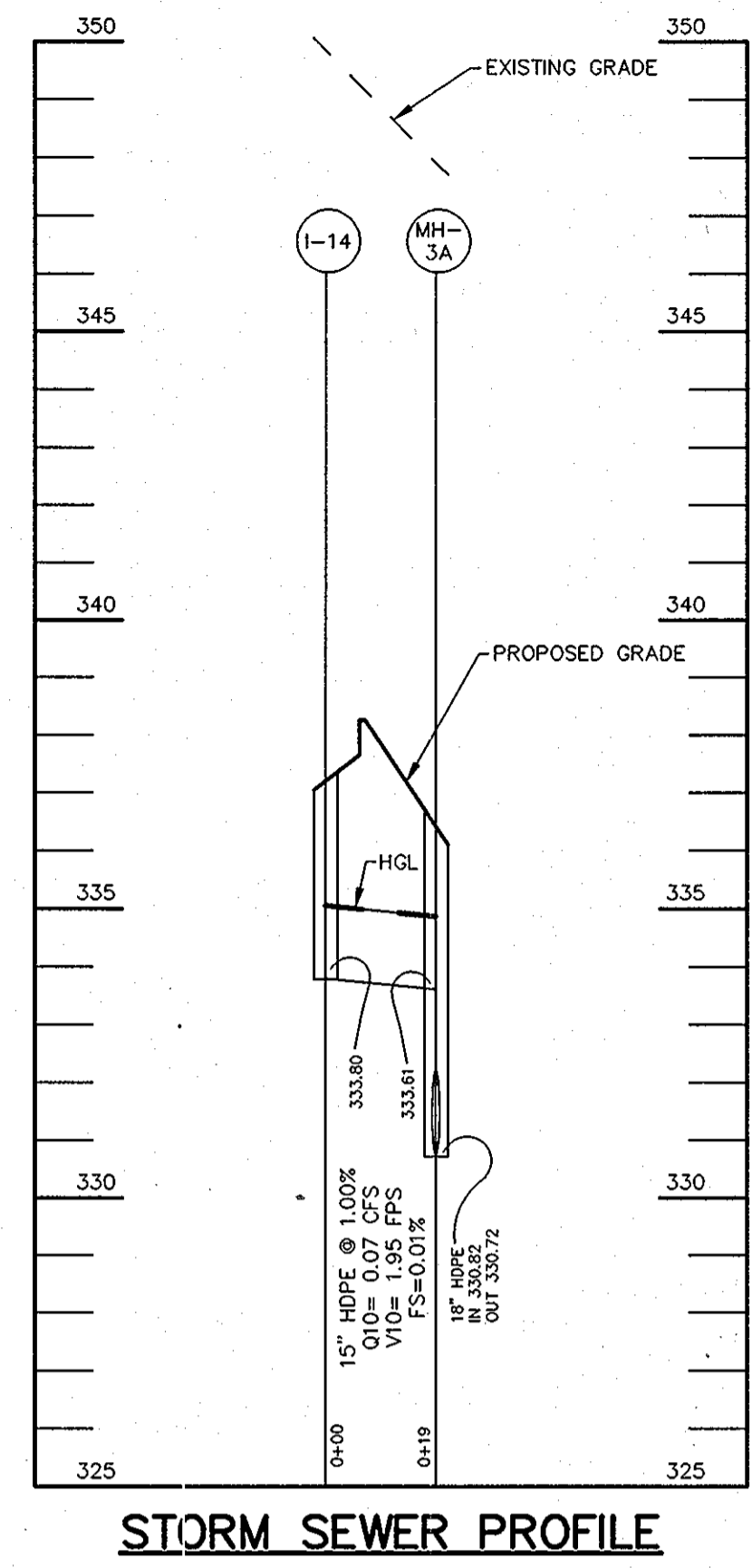
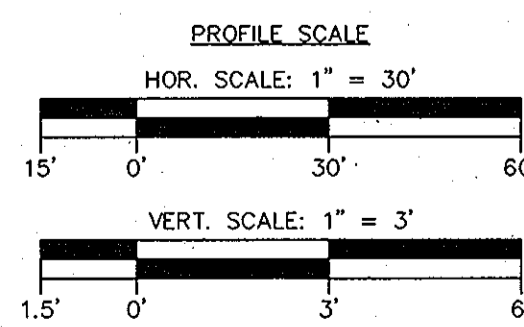
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SEAL

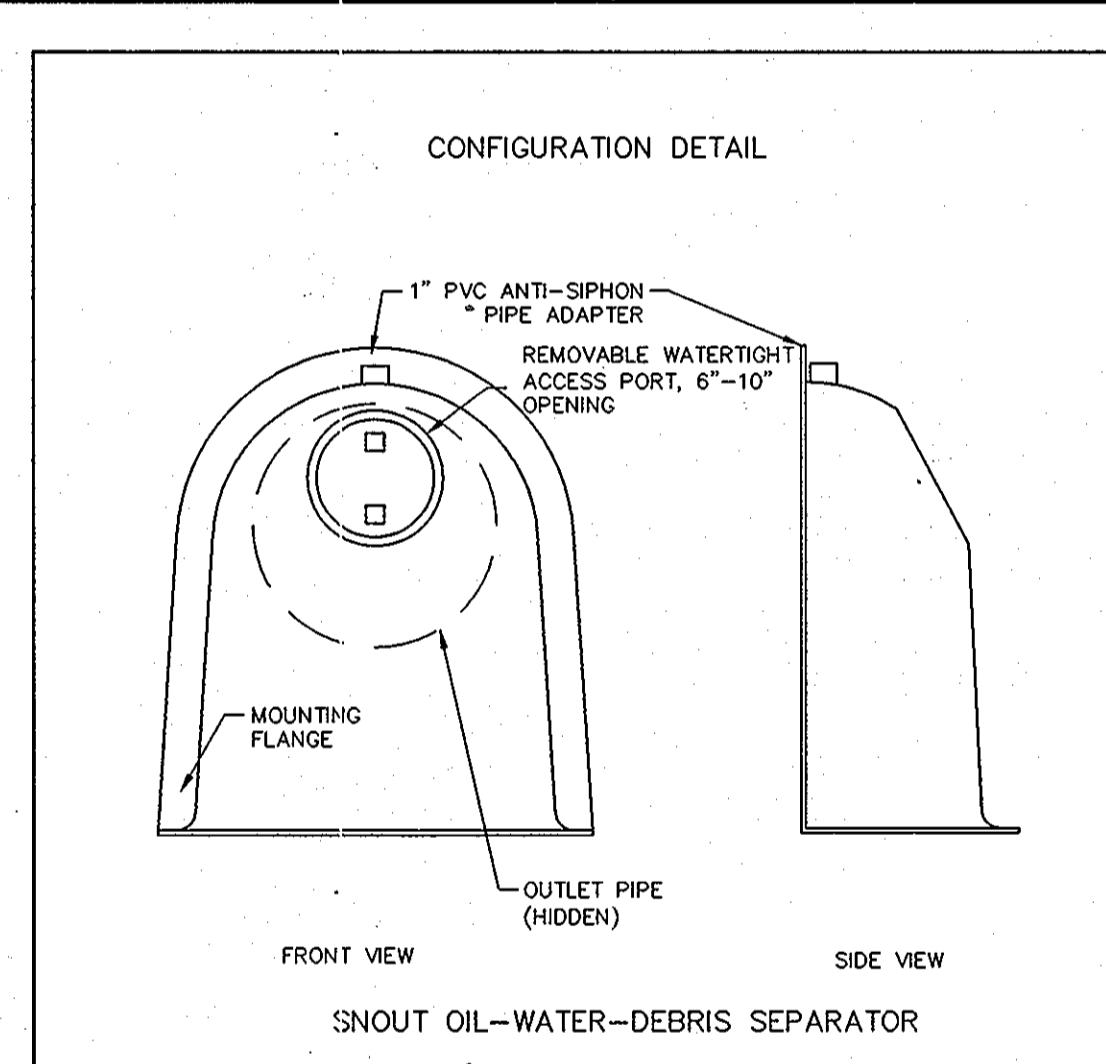
DESIGNED BY : DWC
DRAWN BY : KAD
PROJECT NO : 15661-1-0
DATE : 3/24/10
SCALE : 1"=30'
DRAWING NO. 14 OF 42



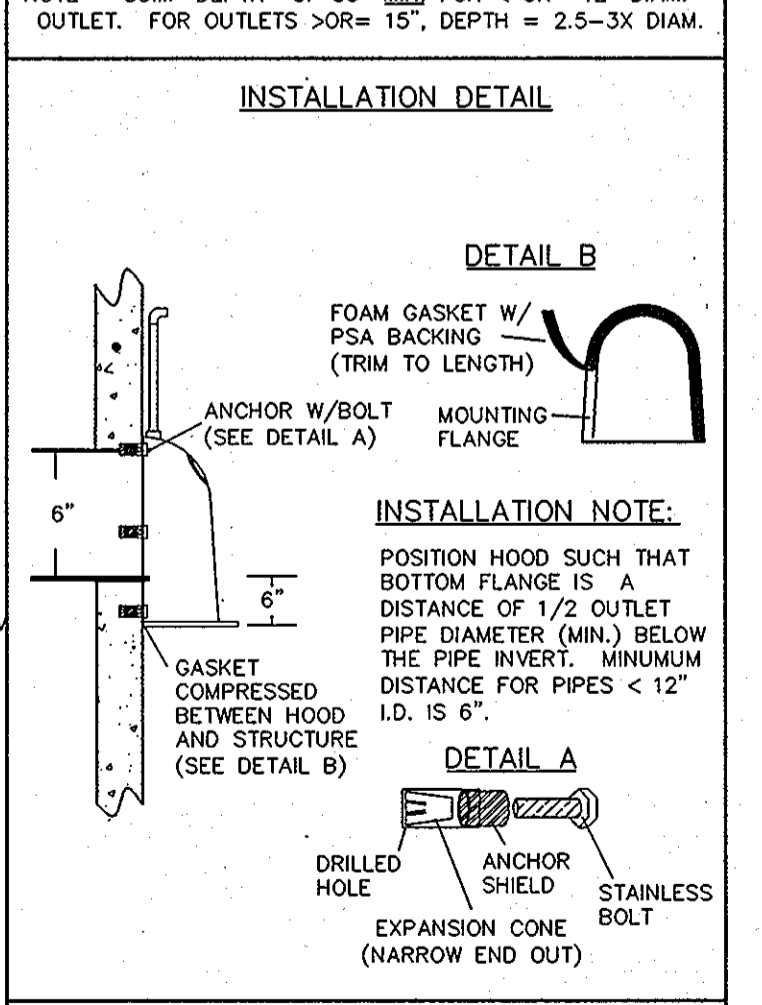
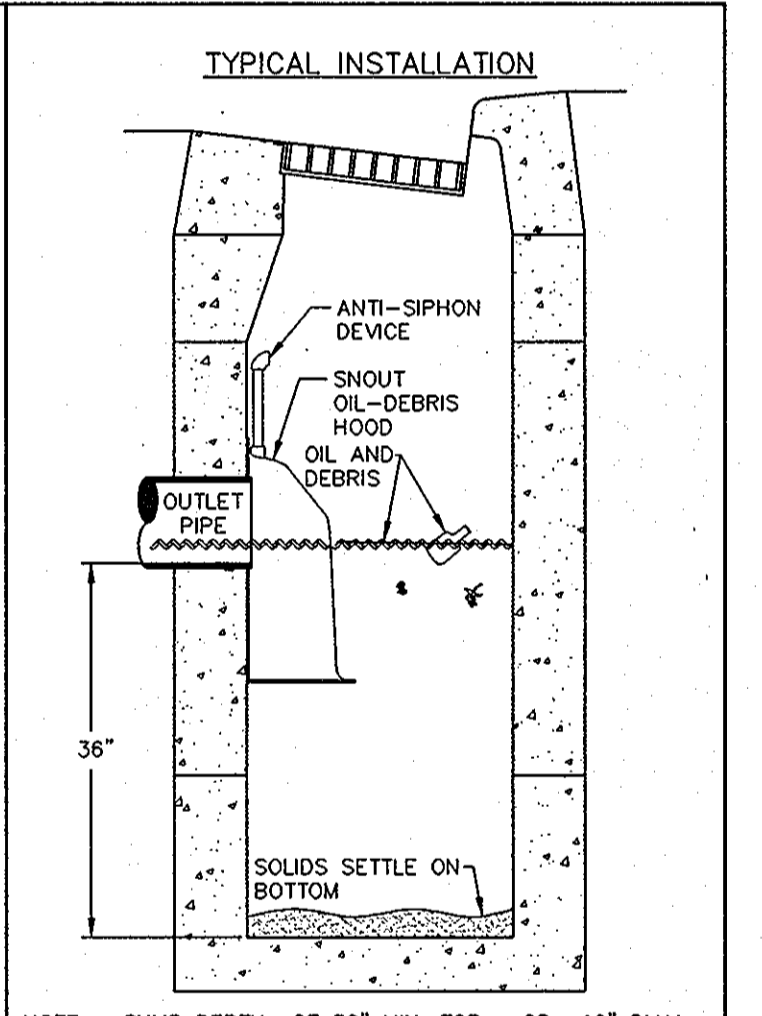
STORM SEWER PROFILE



STORM SEWER PROFILE



- NOTES:**
- ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY: BEST MANAGEMENT PRODUCTS, INC. 53 MT. ARCHER RD. LYME, CT 06371 (860) 434-0277, (860) 434-3195 FAX TOLL FREE: (800) 504-8008 OR (888) 354-7585 WEB SITE: www.bestmp.com
 - ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS.
 - ALL HOODS SHALL BE EQUIPPED WITH A WATER TIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT AS DRAWN. (SEE CONFIGURATION DETAIL)
 - THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION.
 - THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <12" I.D.
 - THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 24" ACCORDING TO STRUCTURE CONFIGURATION.
 - THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL.
 - THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH 3/8" STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL)
 - INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT. INSTALLATION KIT SHALL INCLUDE:
A. INSTALLATION INSTRUCTIONS
B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER
C. OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING
D. 3/8" STAINLESS STEEL BOLTS
E. ANCHOR SHIELDS
 - SEE SHEET 12 FOR TRASH RACK DETAIL.
 - HOOD TO BE INSTALLED ON STANDARD 48" MANHOLE (MH-7).
- US Patent # 6126817



HOOD SPECIFICATION FOR CATCH BASINS AND WATER QUALITY STRUCTURES

DESCRIPTION	DATE	SCALE
OIL-DEBRIS HOOD SPECIFICATION AND INSTALLATION (TYPICAL)	09/08/00	NONE
DRAWING NUMBER	SP-SN	

STRUCTURE SCHEDULE

STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
I-1	A-5	N 588048.63 E 1366419.98	322.82	322.72	330.10	HOCO STD. DETAIL D-4.01
I-2	A-5	N 587979.01 E 1366444.57	324.55	324.05	334.10	HOCO STD. DETAIL D-4.01
I-3	A-5	N 587865.86 E 1366484.55	329.85	325.51	336.80	HOCO STD. DETAIL D-4.01
I-4	YARD	N 587976.52 E 1366625.19	332.60	332.35	336.56	HOCO STD. DETAIL D-4.14
I-5	YARD	N 588047.88 E 1366621.66	-	332.96	336.52	HOCO STD. DETAIL D-4.14
I-7	A-5	N 588092.51 E 1366448.83	322.52	322.42	330.10	HOCO STD. DETAIL D-4.01
I-8	TYPE 'S'	N 588150.09 E 1366533.42	-	323.17	326.35	HOCO STD. DETAIL D-4.22
I-9	A-5	N 588197.26 E 1366771.20	328.74	328.49	335.10	HOCO STD. DETAIL D-4.01
I-10	A-5	N 588240.15 E 1366742.87	-	329.00	332.40	HOCO STD. DETAIL D-4.01
I-11	A-5	N 587939.37 E 1366781.85	338.79	336.10	342.00	HOCO STD. DETAIL D-4.01
I-12	A-5	N 587827.85 E 1366777.47	342.55	342.45	346.50	HOCO STD. DETAIL D-4.01
I-13	A-5	N 587706.54 E 1366514.56	-	336.00	340.10	HOCO STD. DETAIL D-4.01
I-14	YARD	N 587913.87 E 1366561.92	-	333.80	337.20	HOCO STD. DETAIL D-4.14
MH-1	4" DIA MANHOLE	N 588056.70 E 1366441.62	322.47	322.37	330.30	HOCO STD. DETAIL G-5.12
MH-2	4" DIA MANHOLE	N 588120.04 E 1366464.78	322.79	322.69	333.30	HOCO STD. DETAIL G-5.12
MH-3	4" DIA MANHOLE	N 587882.50 E 1366531.97	330.47	330.37	337.90	HOCO STD. DETAIL G-5.12
MH-3A	4" DIA MANHOLE	N 587913.07 E 1366542.96	333.61 330.82	330.72	337.40	HOCO STD. DETAIL G-5.12
MH-4	4" DIA MANHOLE	N 587952.44 E 1366557.11	331.31	331.11	337.15	HOCO STD. DETAIL G-5.12
MH-5	4" DIA MANHOLE	N 587955.18 E 1366619.23	332.13	331.93	337.00	HOCO STD. DETAIL G-5.12
MH-6	4" DIA MANHOLE	N 588158.09 E 1366771.54	332.61 328.29	328.19	335.60	HOCO STD. DETAIL G-5.12
MH-7	4" DIA MANHOLE	N 588035.05 E 1366776.57	333.70	331.96 (6") 333.60	338.00	HOCO STD. DETAIL G-5.12
MH-8	4" DIA MANHOLE	N 587829.50 E 1366785.07	342.41	342.31	346.70	HOCO STD. DETAIL G-5.12
MH-9	DOGHOUSE MANHOLE	N 587712.40 E 1366488.78	334.31	330.27	337.80	HOCO STD. DETAIL G-5.14

* RECHARGE TRENCH CONNECTION IN THIS STRUCTURE

NOTES:
NORTHINGS AND EASTINGS OF A-5 INLETS TAKEN AT FACE OF CURB.
NORTHINGS AND EASTINGS OF YARD INLETS TAKEN AT CENTER OF INLET.
ALL STRUCTURES ARE HOWARD COUNTY STANDARDS UNLESS NOTED OTHERWISE. CONTRACTOR MAY USE PRECAST STRUCTURE WHERE AVAILABLE TO MEET THE STANDARD STRUCTURE SPECIFIED.
STATIONS ARE GIVEN TO CENTER OF STRUCTURE AT FACE OF CURB FOR CURB INLETS AND TO CENTER OF STRUCTURE FOR ALL OTHER STRUCTURES.
ELEVATIONS ARE GIVEN TO TOP OF CURB FOR CURB INLETS, TOP OF GRATE FOR GRATE INLETS AND TOP OF LID FOR MANHOLES.
PIPE LENGTHS ARE GIVEN TO THE CENTER OF THE STRUCTURE. CONTRACTOR SHALL ADJUST LENGTH TO OBTAIN ACTUAL PIPE LENGTHS.

PIPE SCHEDULE

PIPE LENGTH	SIZE	TYPE
616	15"	HDPE
370	18"	HDPE
107	24"	HDPE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Morgan S. Butler 4/26/10
DIRECTOR DATE

W.D. Williams 4/13/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Walt Stalwood 4/26/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

3/10/10 1 REVISE INVERTS, STRUCTURE SCHEDULE

DATE NO. REVISION

OWNER CENTURY HOLDING, LLC
3311 OAK WEST DRIVE
ELLICOTT CITY, MD 21043-4105

DEVELOPER WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
VIENNA, VA 22182
703-780-5070

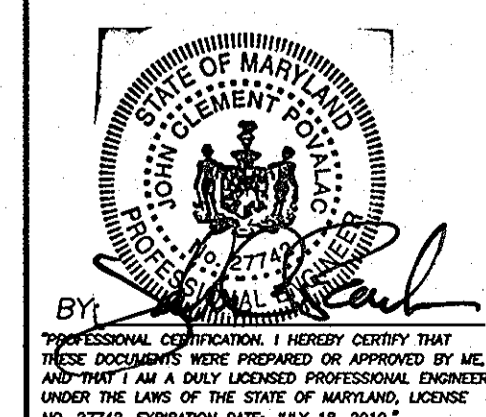
PROJECT ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

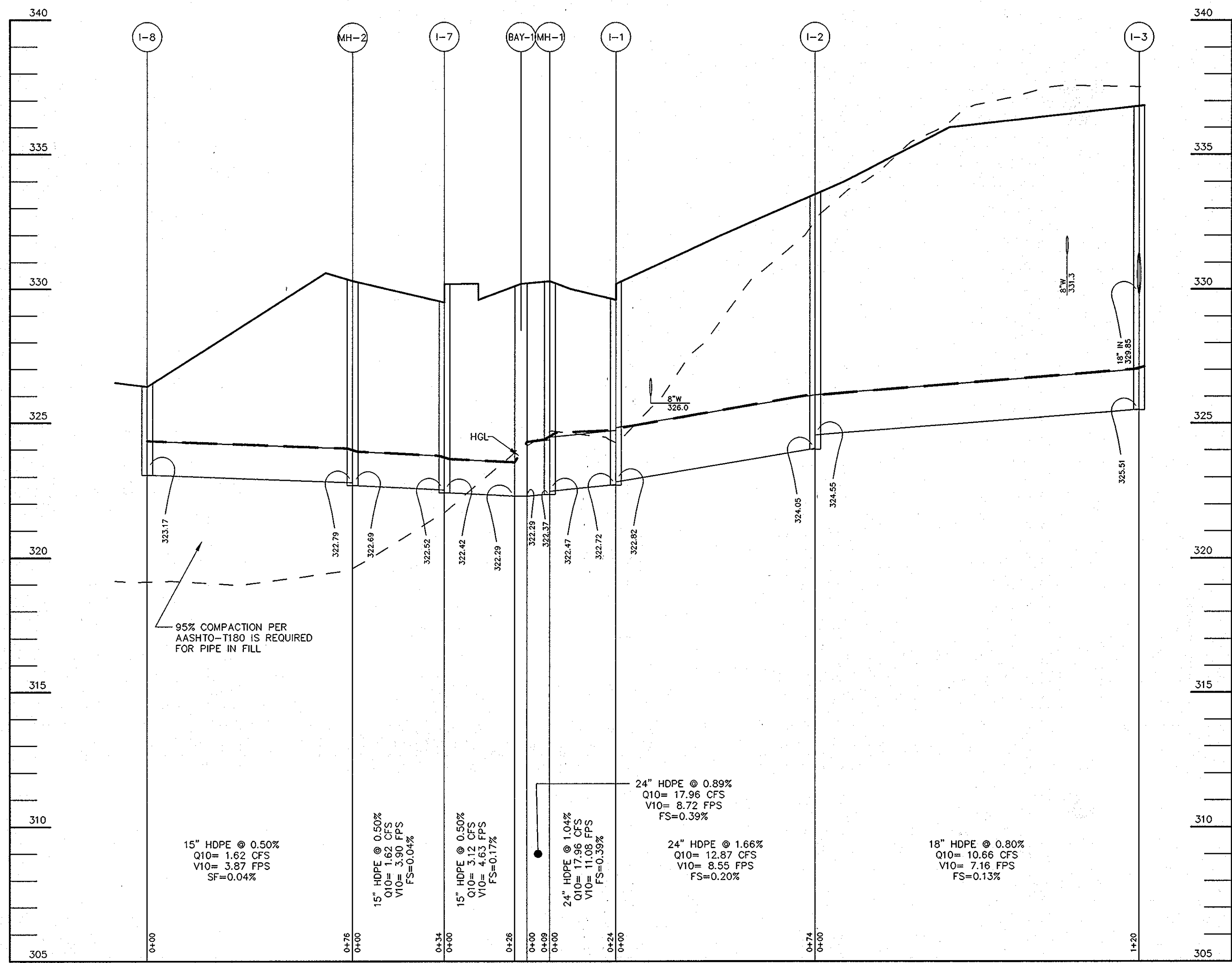
AREA TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE REVISED REPLACEMENT SHEET
STORM SEWER PROFILES

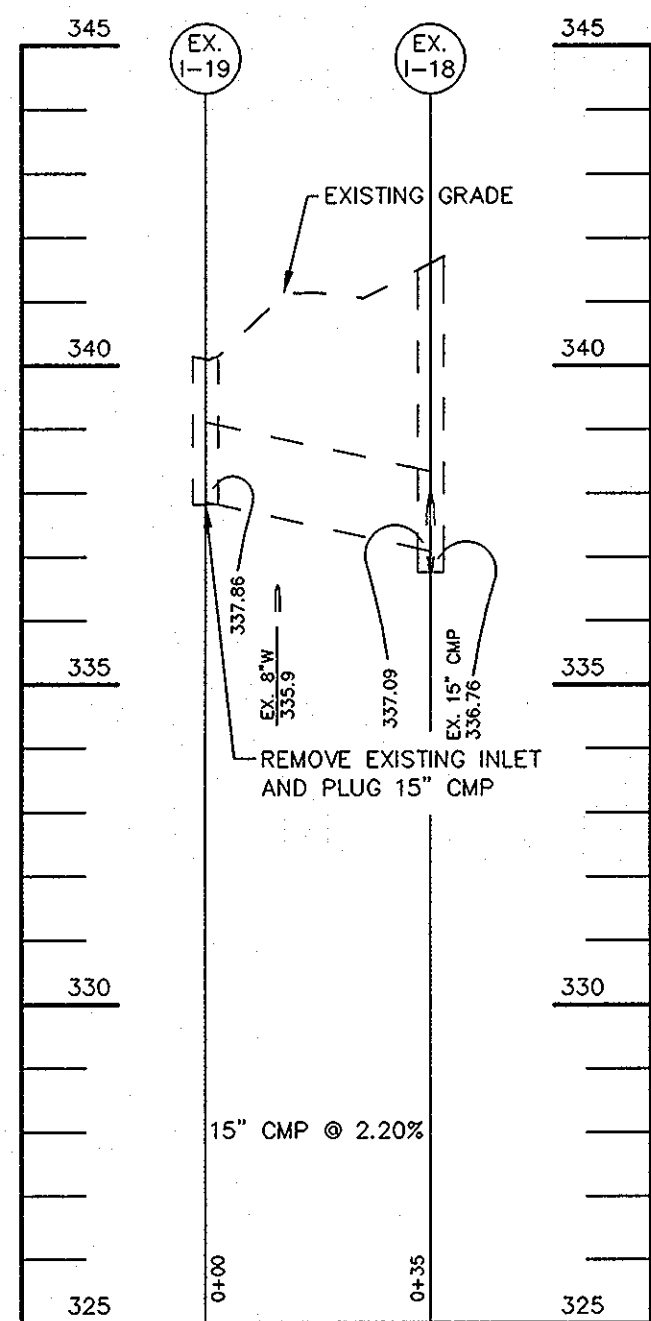
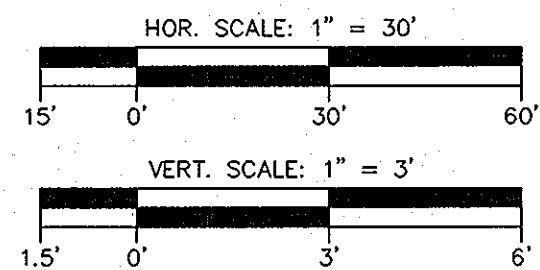
Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DESIGNED BY :DWC
DRAWN BY: KAD
PROJECT NO 15661-1-0
DATE : 3/24/10
SCALE : AS SHOWN
DRAWING NO. 16 OF 42

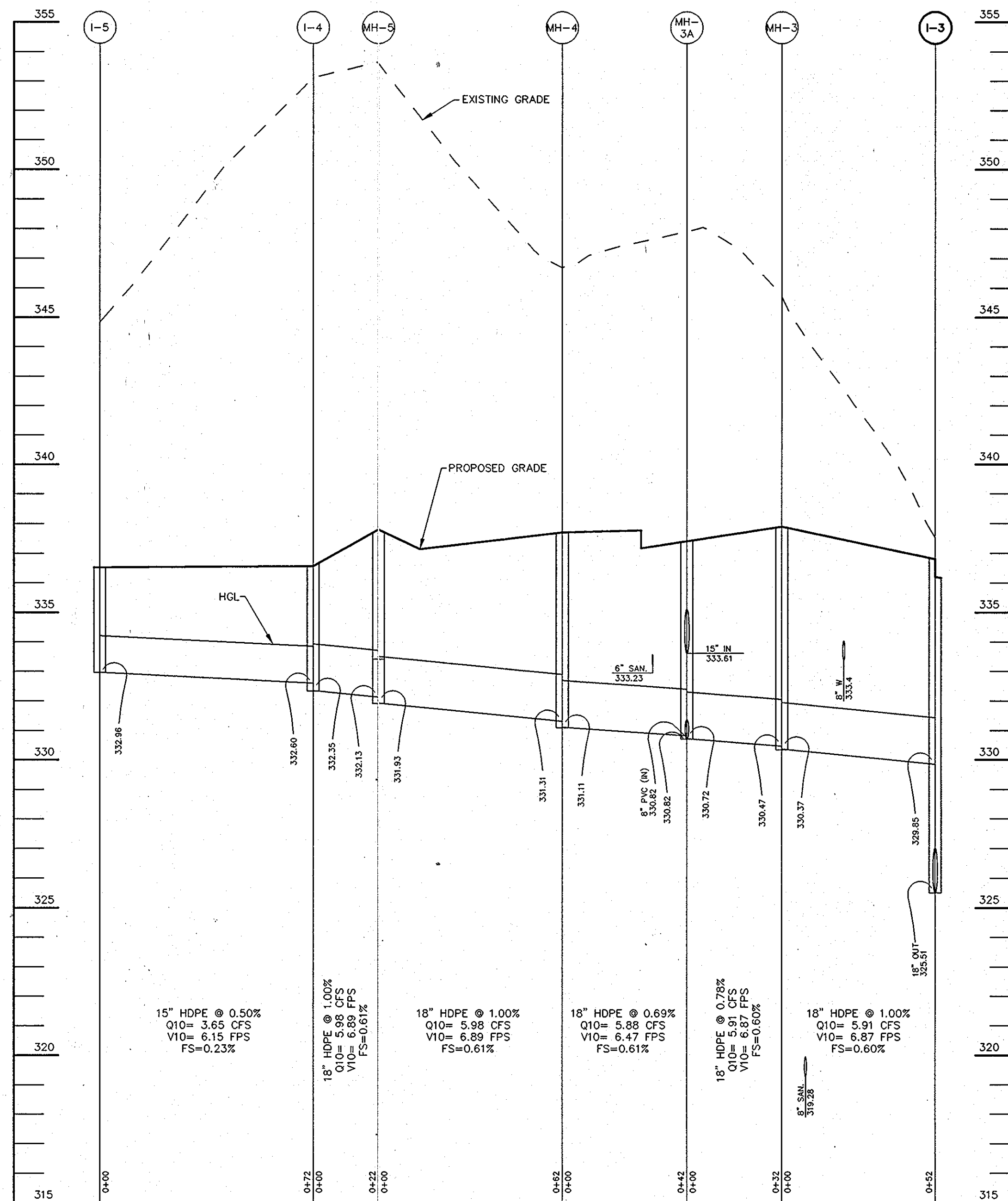
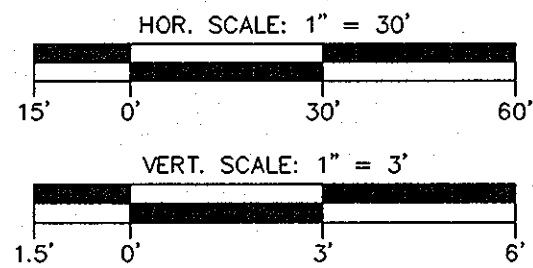




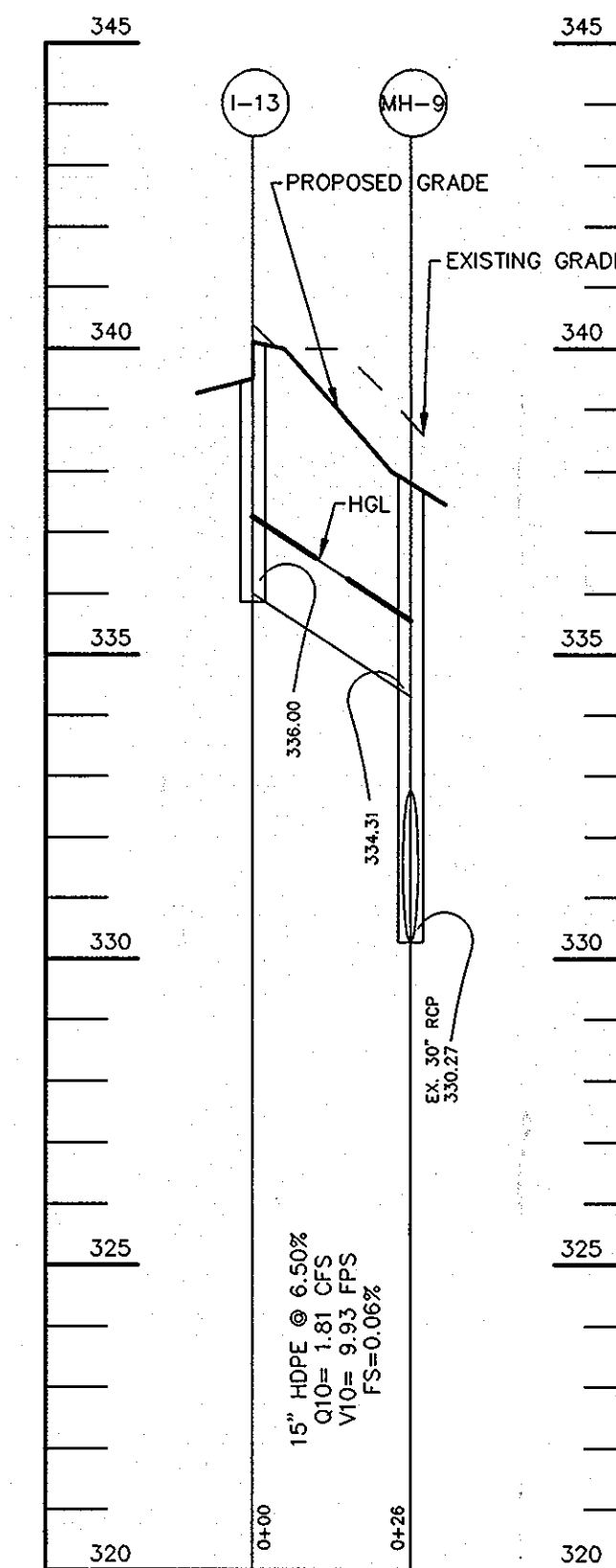
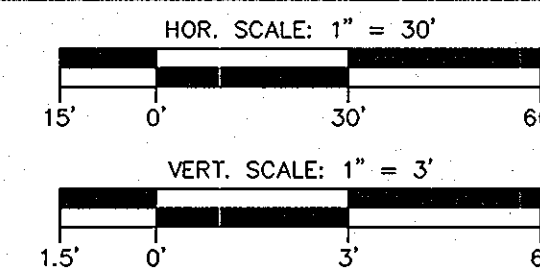
STORM SEWER PROFILE



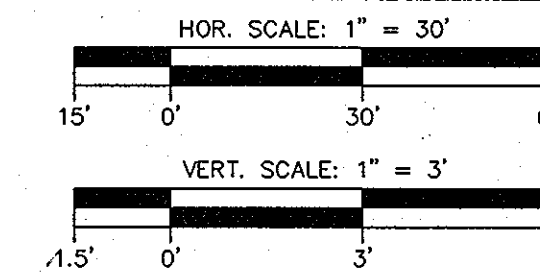
STORM SEWER PROFILE



STORM SEWER PROFILE



STORM SEWER PROFILE



APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Butler 4/20/10
 DIRECTOR DATE

John Williams 4/12/10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kevin Shanahan 4/24/10
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

3/10/10 1 REVISE INVERTS AND STRUCTURE STATIONING

OWNER CENTURY HOLDING, LLC
 3311 OAK WEST DRIVE
 ELLICOTT CITY, MD 21043-4105

DEVELOPER WOOD PARTNERS
 ATTN: MR. ANTHONY MORSE, PE
 8150 LEESBURG PIKE
 SUITE 501
 VIENNA, VA 22182
 703-760-5070

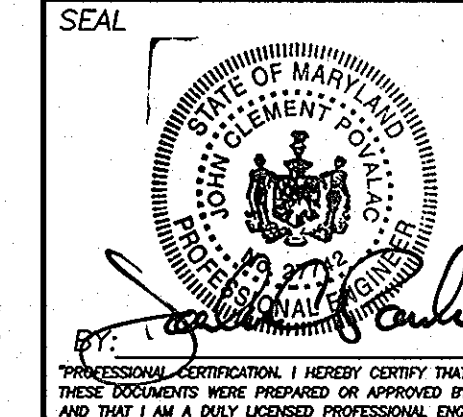
PROJECT ALTA AT REGENCY CREST
 BUILDABLE PARCEL A AND OPEN SPACE LOT 1
 AGE RESTRICTED ADULT HOUSING

AREA TAX MAP 25, GRID 1, PARCEL 1
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

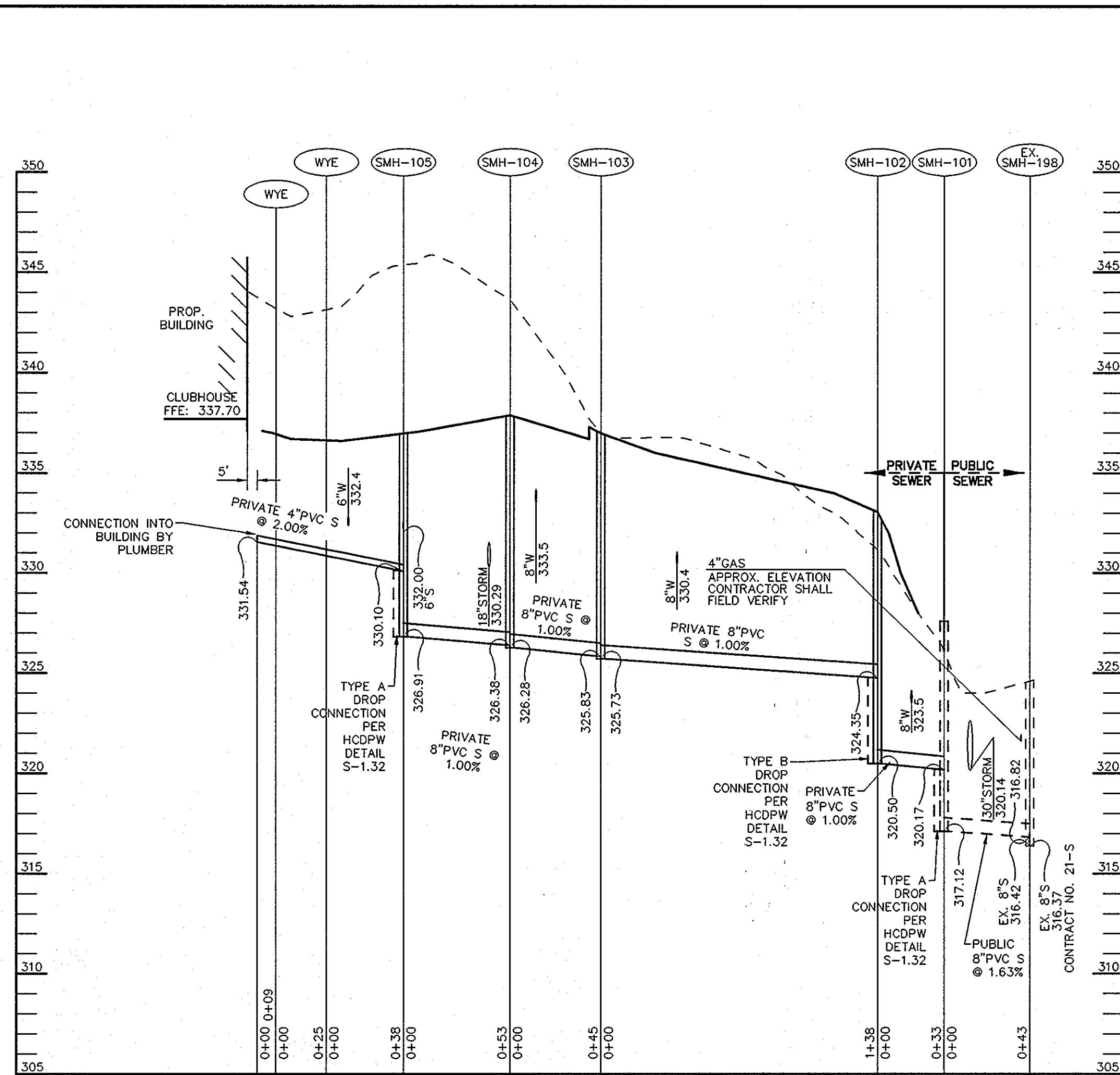
TITLE REVISED REPLACEMENT SHEET
 STORM SEWER PROFILES

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

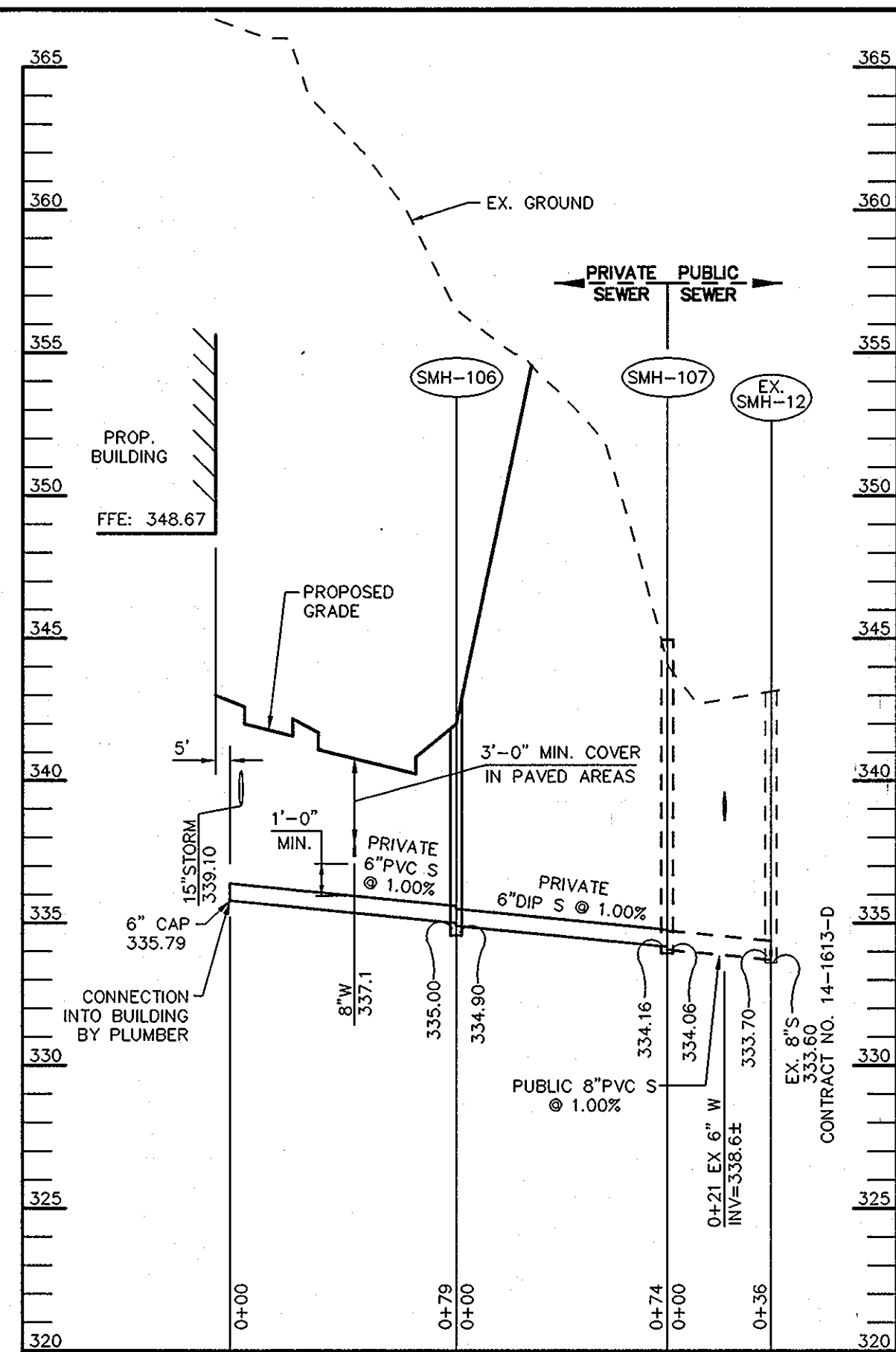
DESIGNED BY : PHRA
 DRAWN BY: KAD
 PROJECT NO : 15661-1-0
 C-SDP17PRO.DWG
 DATE : 3/24/10
 SCALE : AS SHOWN
 DRAWING NO. 17 OF 42



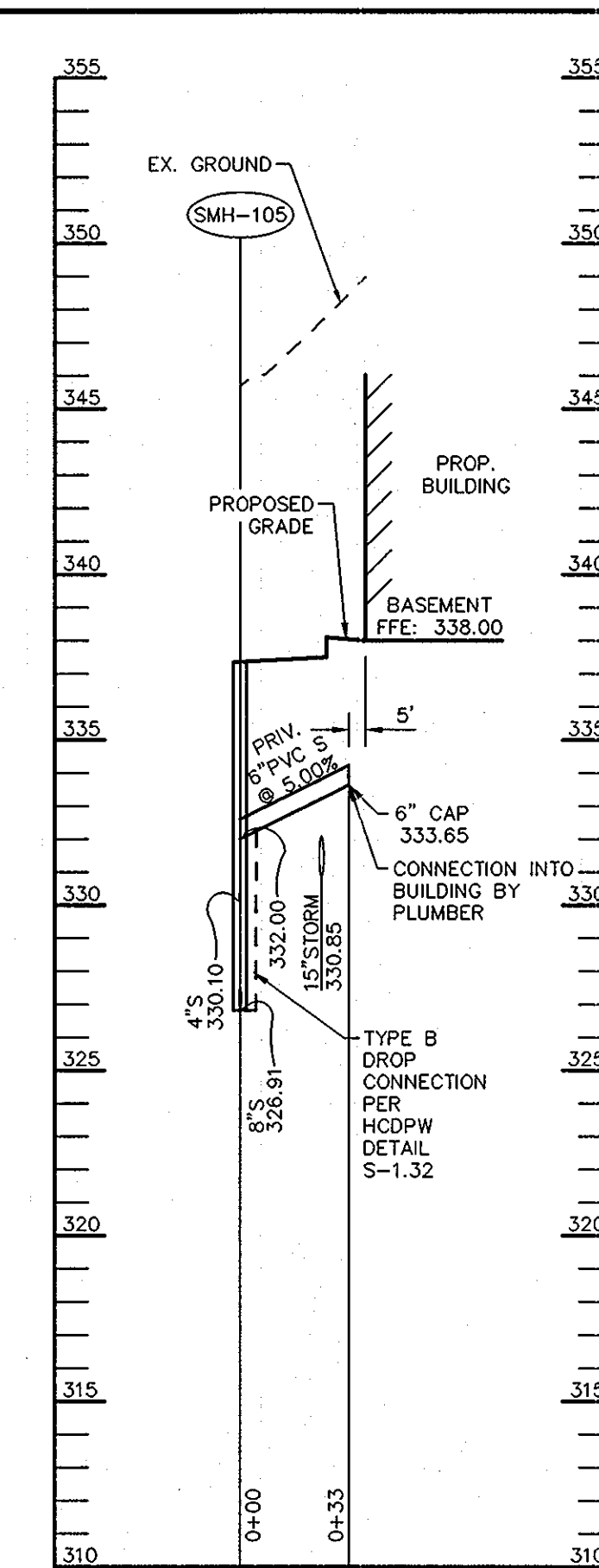
THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET NO. 17 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09.



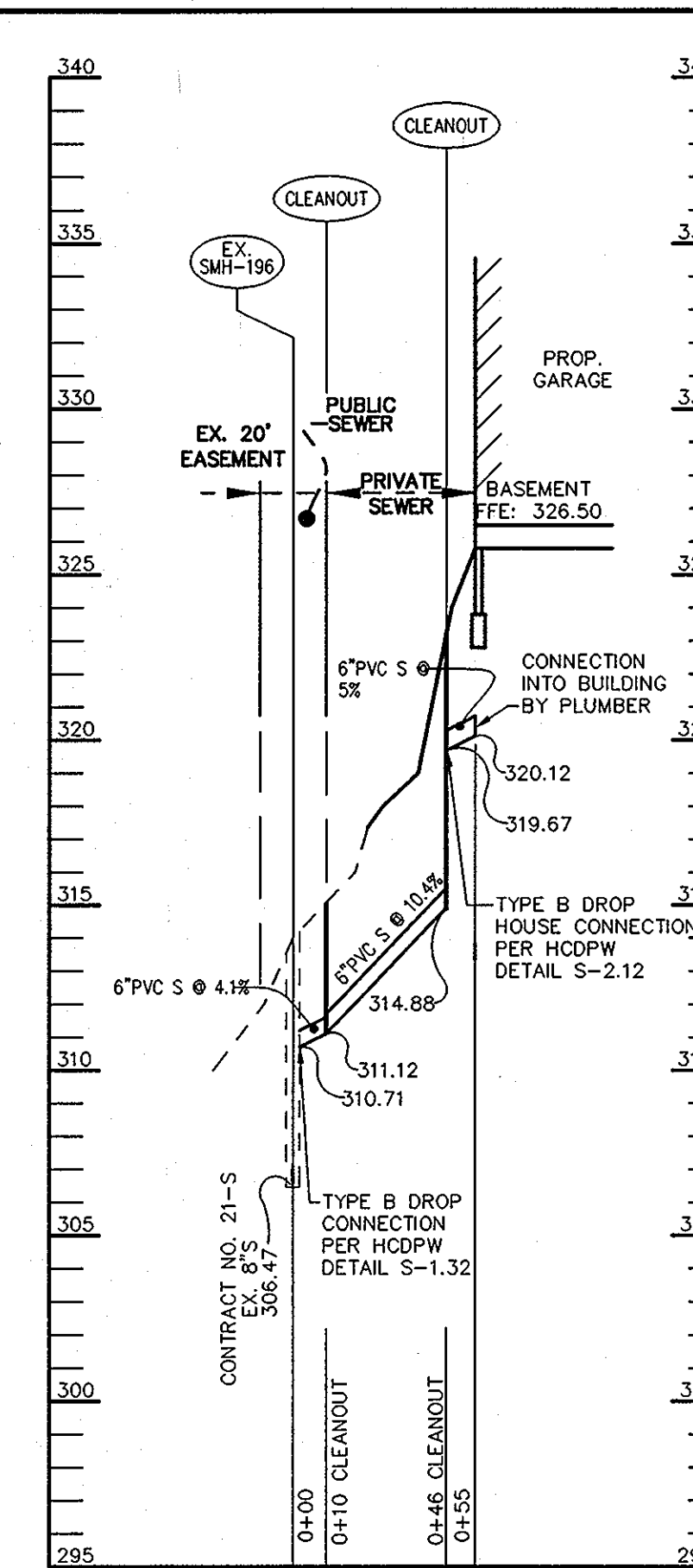
SEWER PROFILE #1



SEWER PROFILE #2



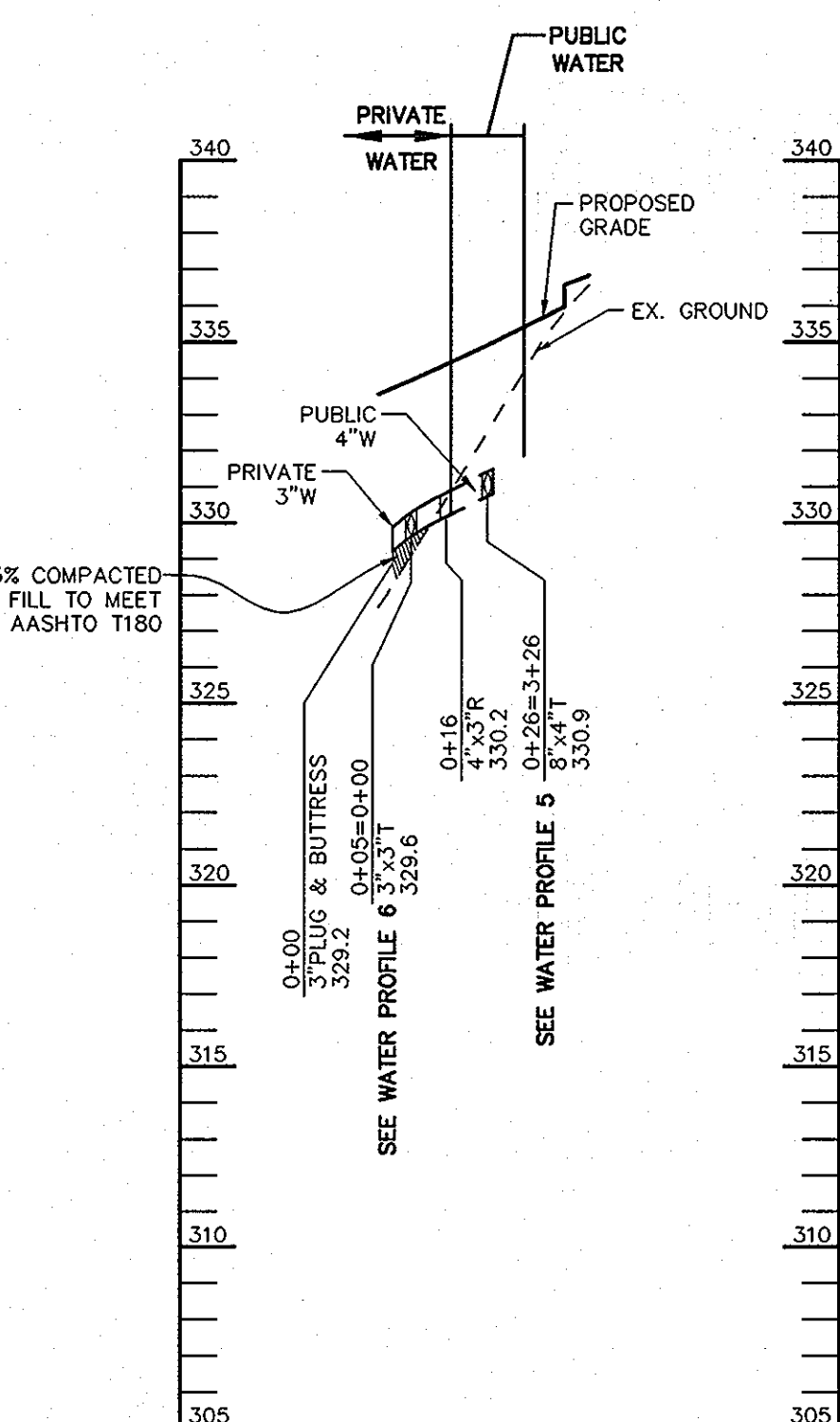
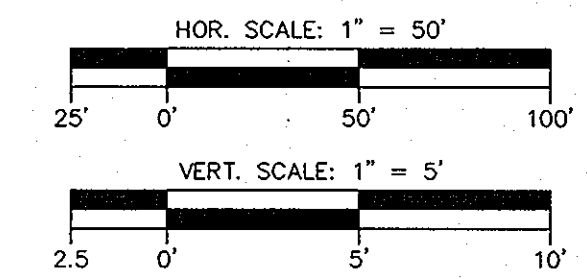
PRIVATE SEWER PROFILE #3



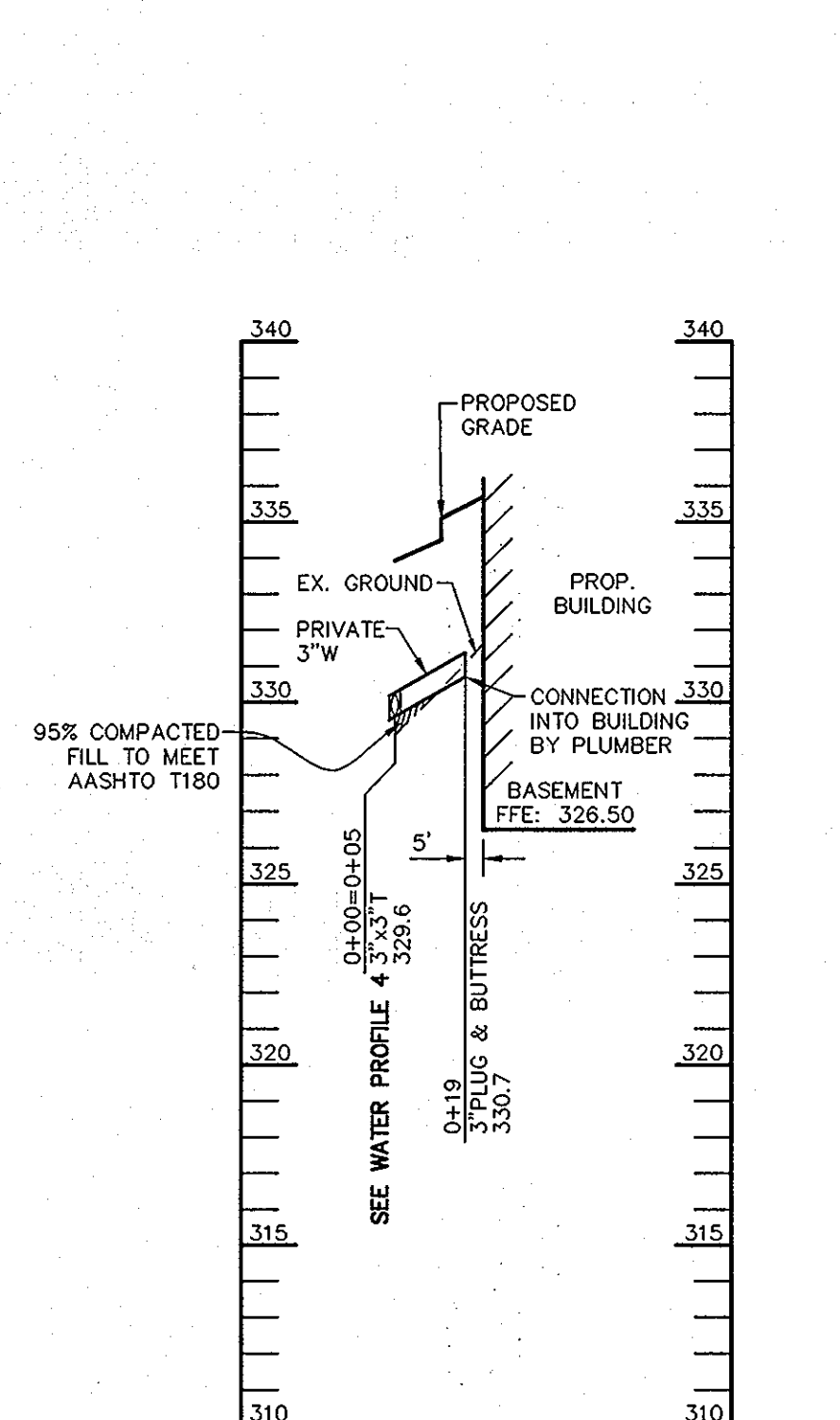
SEWER PROFILE #4

STRUCTURE SCHEDULE						
STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
SMH-101	4'-0" DIA.	N 587984 E 1366436	320.17	317.12	327.00	HOCO STD. DETAIL G-5.11
SMH-102	4'-0" DIA.	N 587854 E 1366482	324.35	320.50	333.00	HOCO STD. DETAIL G-5.32
SMH-103	4'-0" DIA.	N 587869 E 1366525	325.83	325.73	337.00	HOCO STD. DETAIL G-5.11
SMH-104	4'-0" DIA.	N 587923 E 1366522	326.38	326.28	338.12	HOCO STD. DETAIL G-5.11
SMH-105	4'-0" DIA.	N 587987 E 1366834	332.00	326.91	336.97	HOCO STD. DETAIL G-5.32
SMH-106	4'-0" DIA.	N 587988 E 1366834	335.00	334.90	342.10	HOCO STD. DETAIL G-5.11
SMH-107	4'-0" DIA.	N 587954 E 1366900	334.16	334.06	345.00	HOCO STD. DETAIL G-5.11

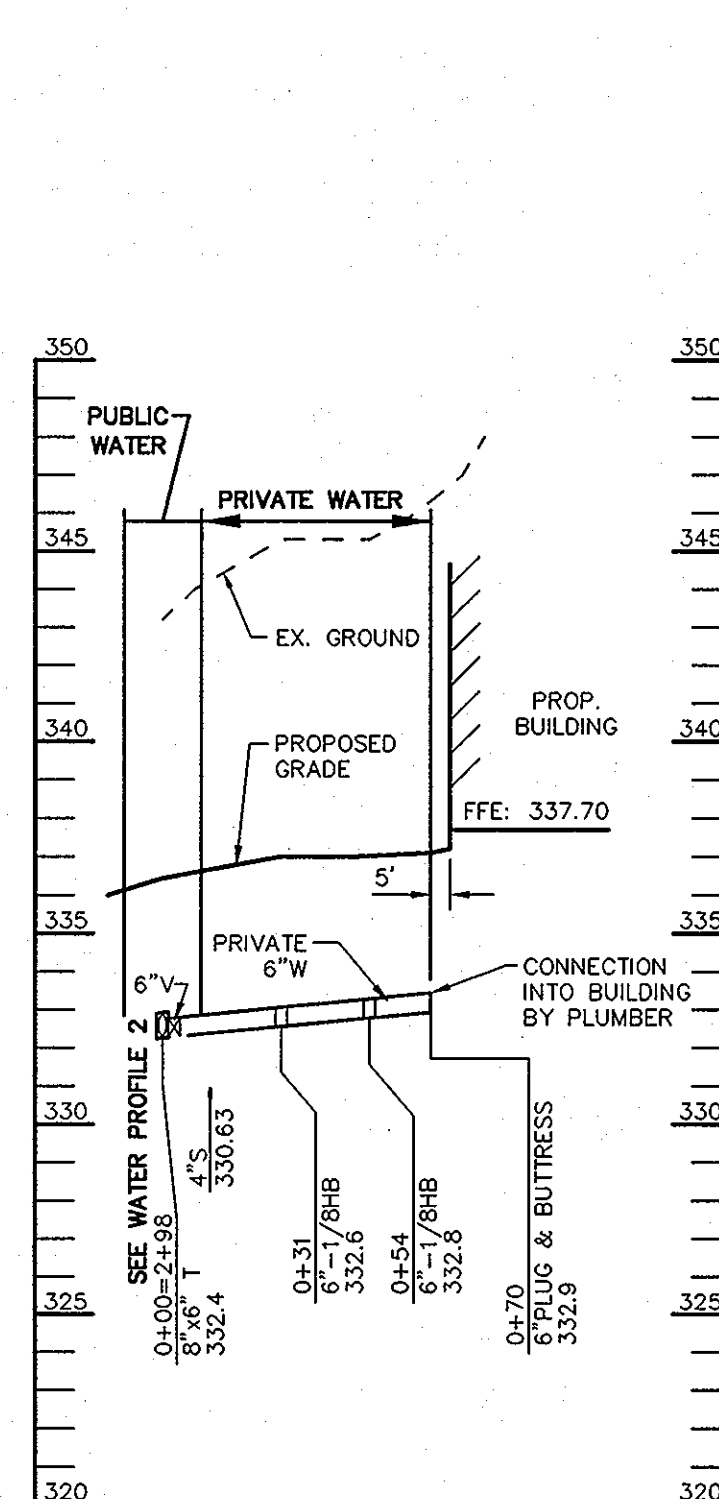
ALL DROP CONNECTIONS TO BE PER HOCO STD. DETAIL S-1.32



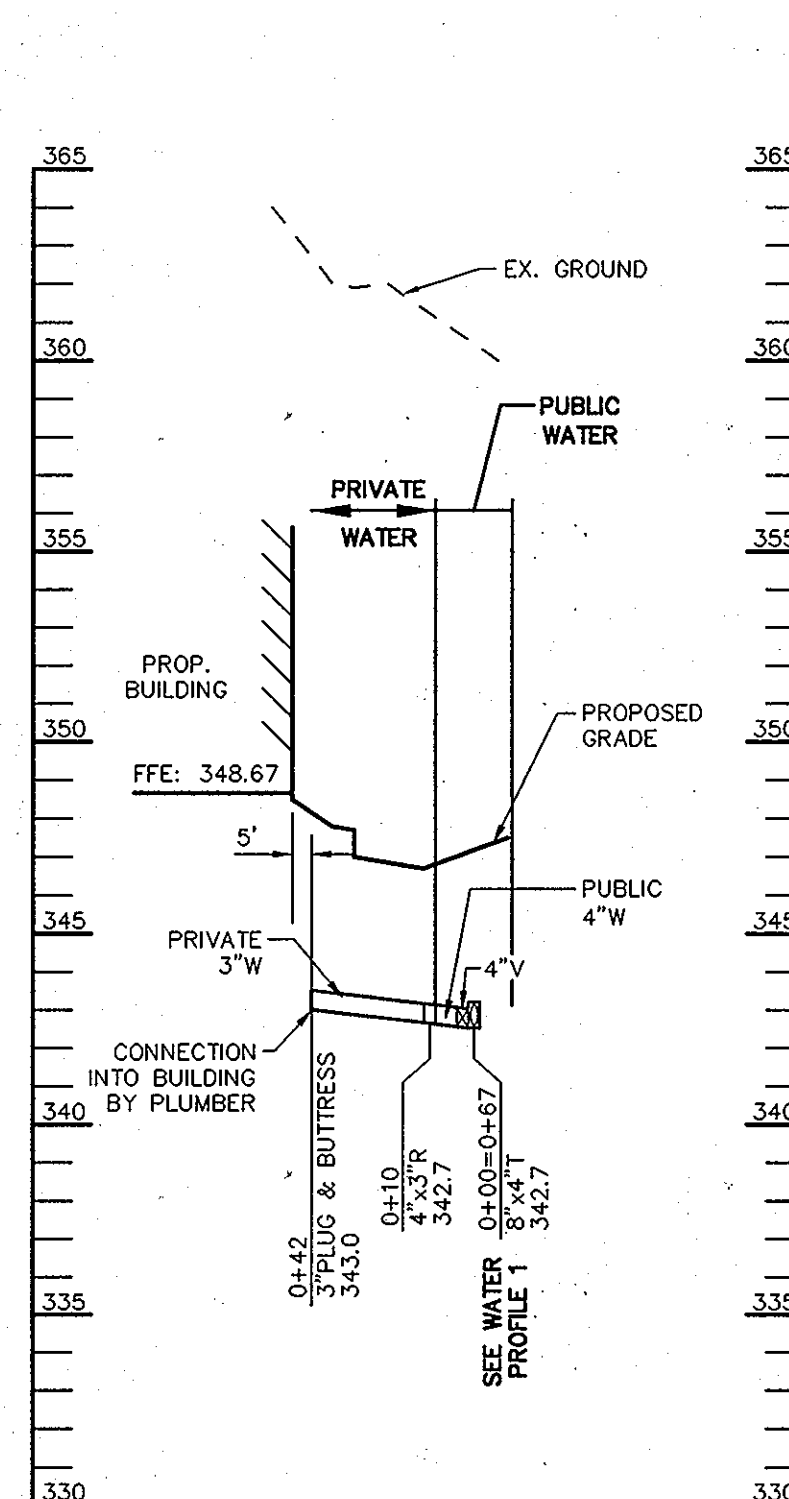
WATER PROFILE #4



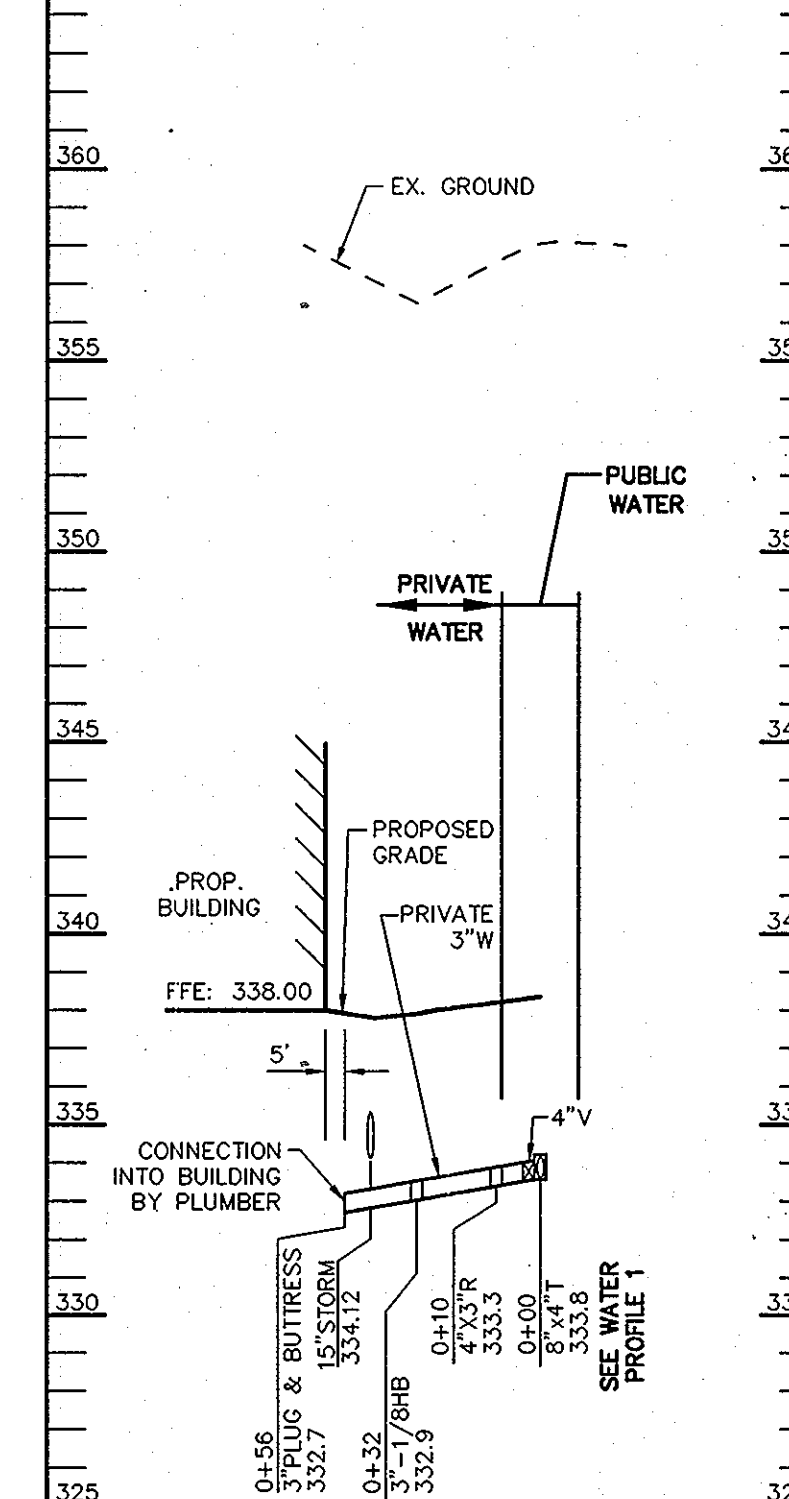
PRIVATE WATER PROFILE #6



WATER PROFILE #7



WATER PROFILE #8



WATER PROFILE #9

THIS REPLACEMENT SHEET WILL SUPERSEDE SHEET NO. 18 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Antle 4/26/10
DIRECTOR DATE

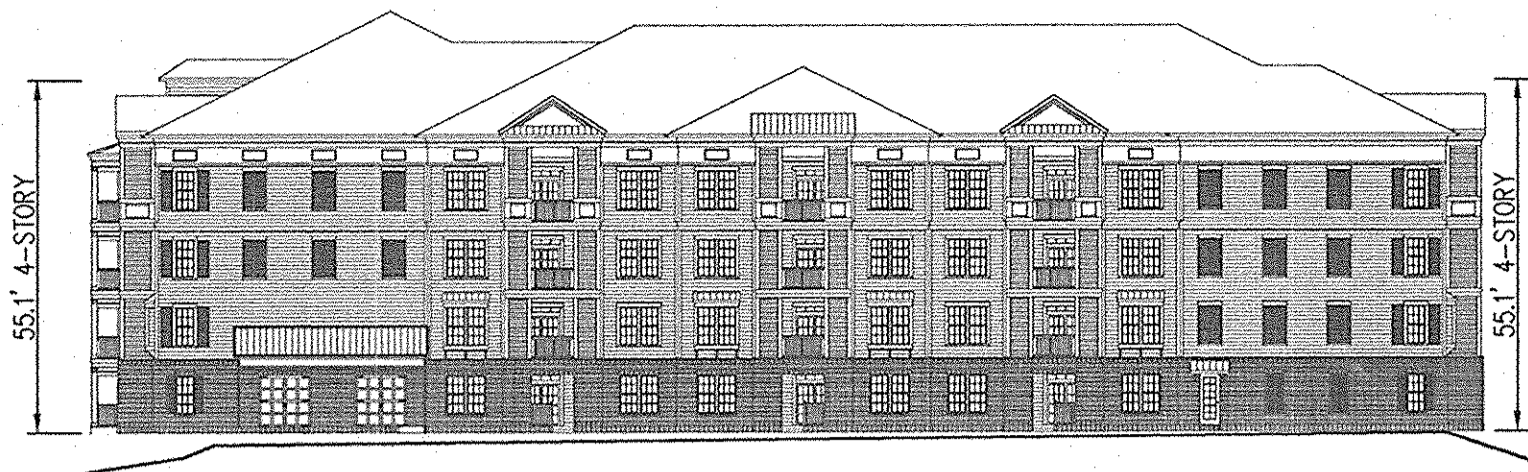
W. J. Williams 4/13/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE

Victor Schmitt 4/26/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

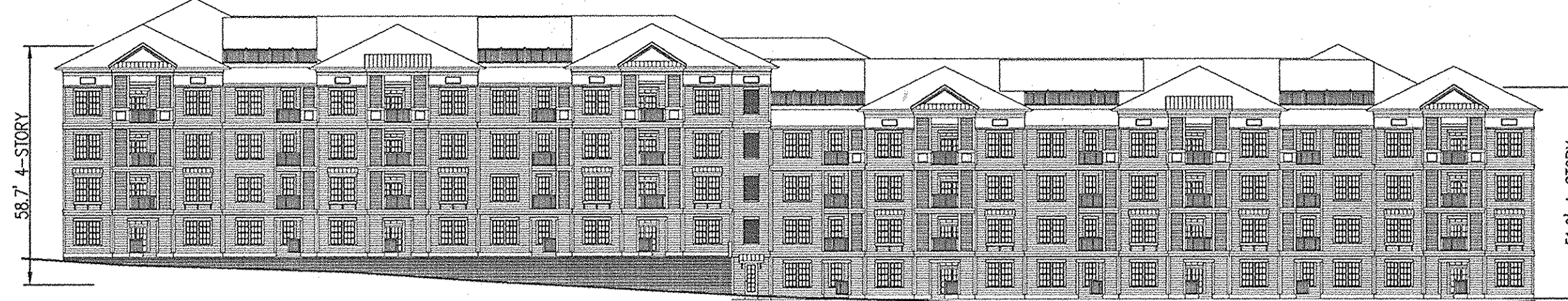
3/10/10 1 CHANGE S PRO #4 TO #2 & ADD NEW PRO. #4. DELETE W PRO #5, RENAME W PRO #5 TO #6, ADD NEW PRO. 7-9.

DATE	NO.	REVISION
		OWNER CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLCOTT CITY, MD 21043-4105
		DEVELOPER WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070
		PROJECT ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING
		AREA TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
		TITLE REUSED REPLACEMENT SHEET WATER AND SEWER PROFILES
		Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282

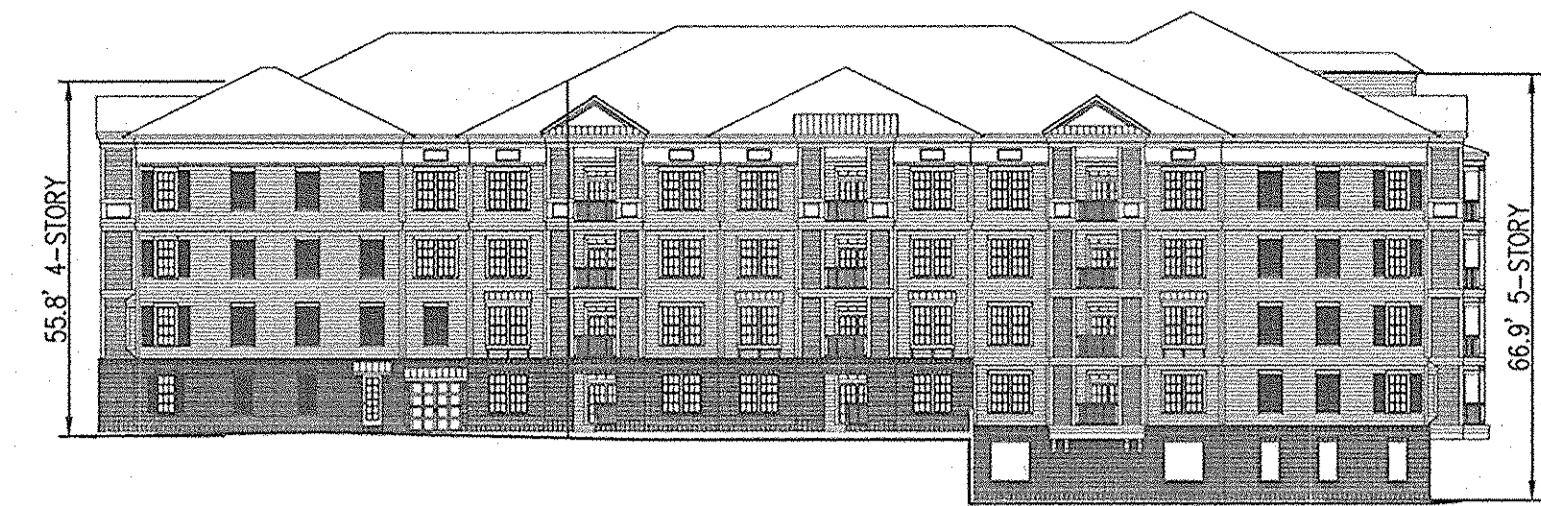
DESIGNED BY: DWG
DRAWN BY: KAD
PROJECT NO : C-SDP18PRO.DWG
DATE : 3/24/10
SCALE : AS SHOWN
DRAWING NO. 18 OF 42



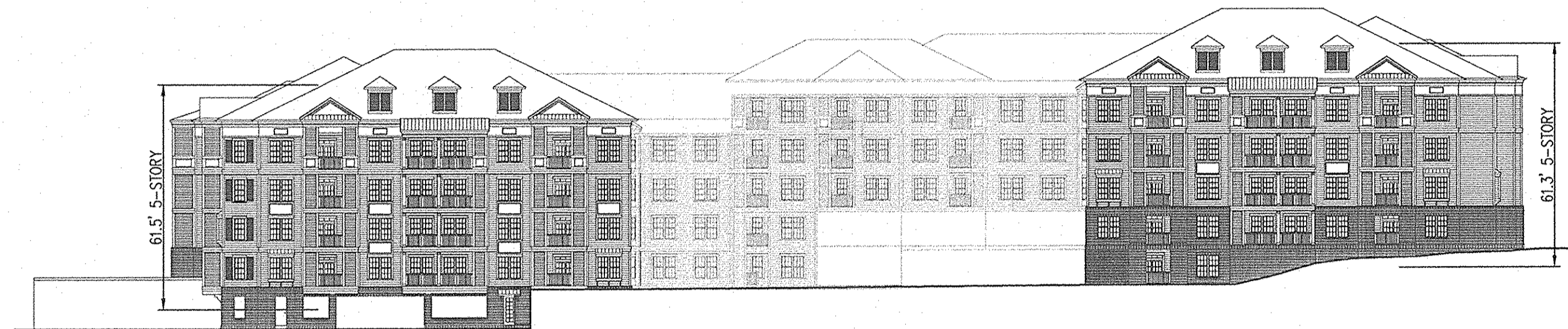
1 SOUTH ELEVATION
19 NOT TO SCALE



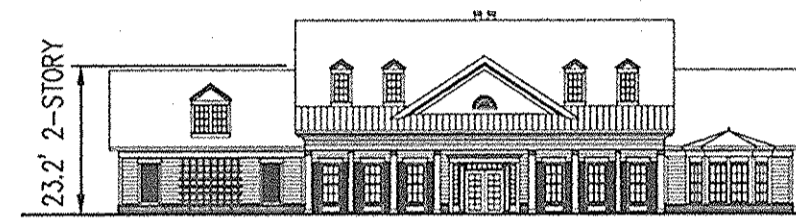
2 EAST ELEVATION
19 NOT TO SCALE



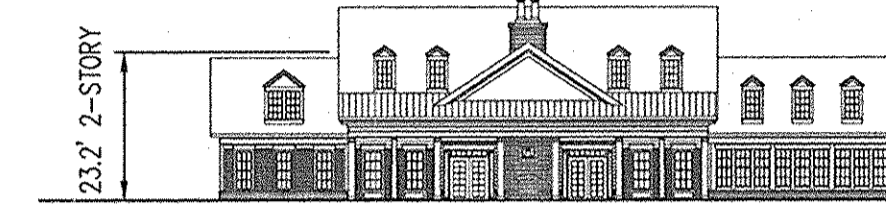
3 NORTH ELEVATION
19 NOT TO SCALE



4 WEST ELEVATION
19 NOT TO SCALE



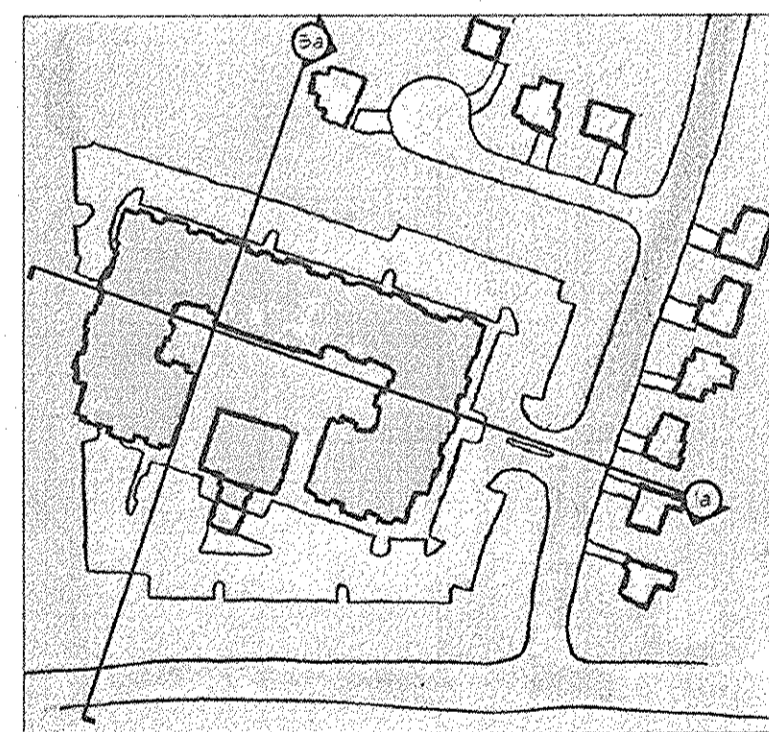
5 FRONT ELEVATION
19 NOT TO SCALE



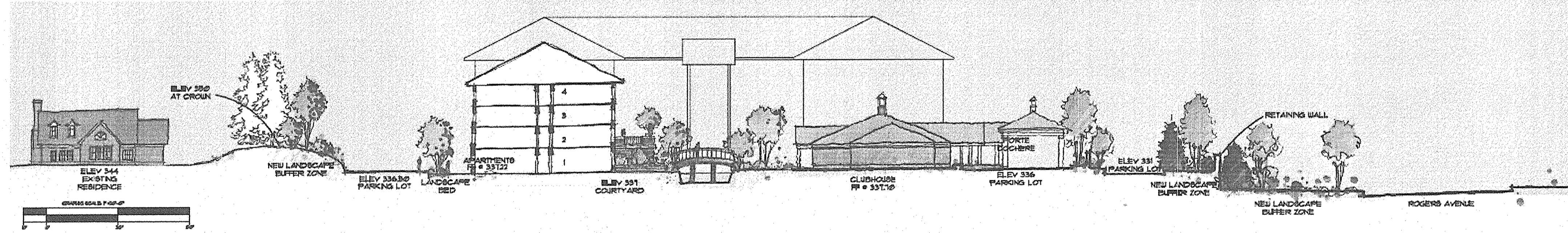
6 COURTYARD ELEVATION
19 NOT TO SCALE

BUILDING HEIGHT DEFINITION AS DEFINED IN HOWARD COUNTY ZONING REGULATIONS:
THE VERTICAL DISTANCE FROM THE MEAN OF THE LOWEST AND HIGHEST ELEVATION POINTS ADJOINING THE EXTERIOR WALLS OF THE STRUCTURE TO THE HIGHEST POINT OF A FLAT ROOF; TO THE DECK LINE OF A MANSARD ROOF AND TO THE MEAN HEIGHT BETWEEN THE EAVE AND RIDGE OF THE HIGHEST ROOF SECTION FOR A GABLE, HIP, OR GAMBREL ROOF.

THE STRUCTURE EXCEEDS 50 FEET IN HEIGHT BUT IS PROVIDING AN ADDITIONAL 2 FEET OF SETBACK FOR EVERY 1 FOOT IN HEIGHT ABOVE 50 FEET IN ACCORDANCE WITH SECTION 115.D.1.b OF THE ZONING REGULATIONS.

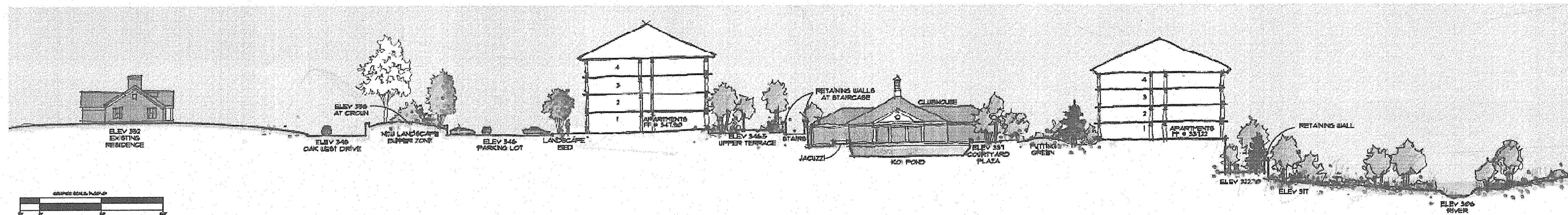


Section Cut Key



5 Section 5
Scale: 1"=30'-0"

Section



1 Section 1
Scale: 1"=30'-0"

Section

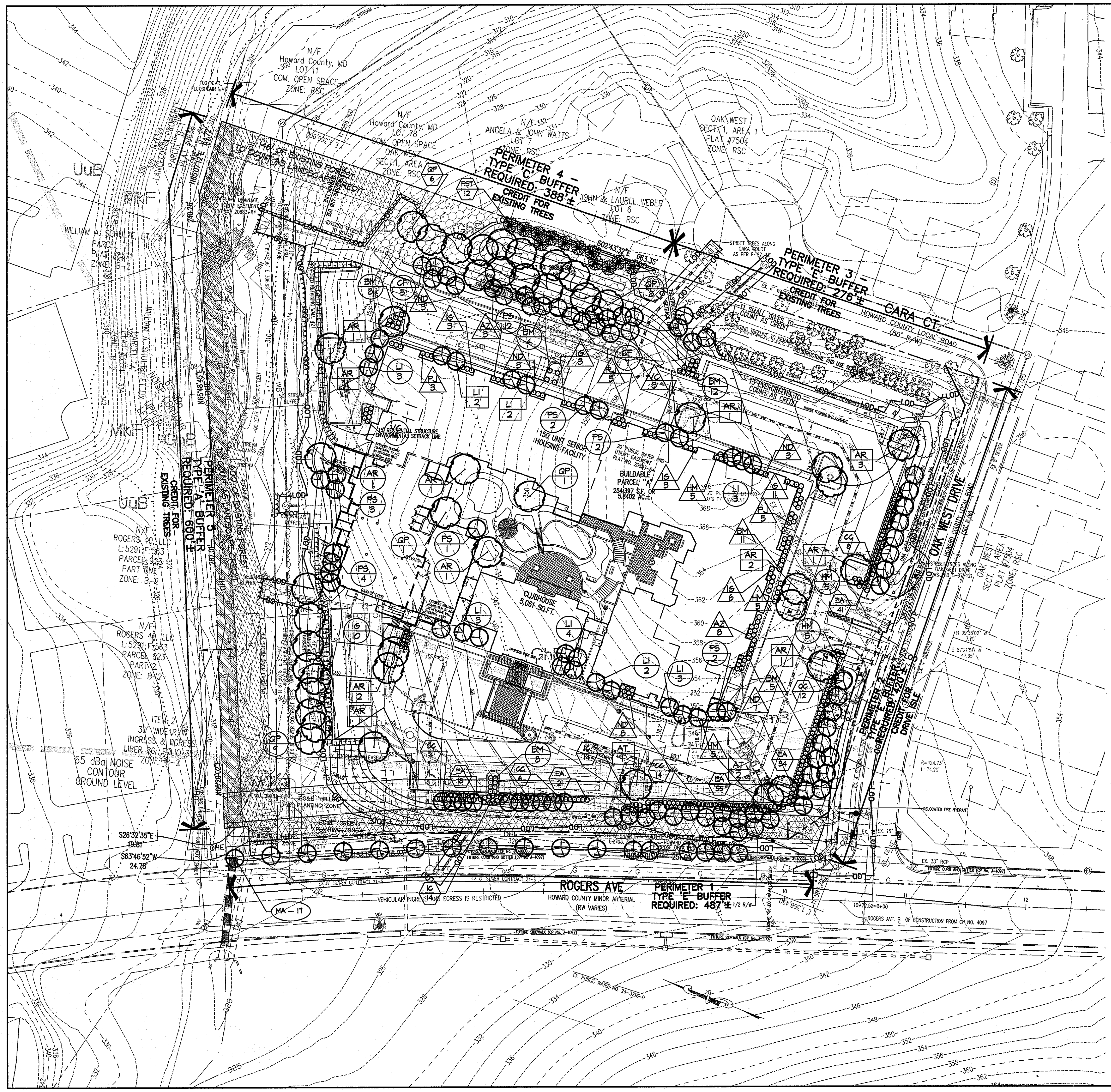
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Thomas E. Butler 12/17/09
DIRECTOR, DEP. DATE
Michael J. ... 12/16/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Kit Sheehy 12/17/09
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
OWNER		
CENTURY HOLDING, LLC		
3311 ROGERS AVENUE OAK WEST DR.		
ELLCOTT CITY, MD 21043-4105		
DEVELOPER		
WOOD PARTNERS		
ATTN: MR. ANTHONY MORSE, PE		
8150 LEESBURG PIKE		
SUITE 501		
WIENNA, VA 22182		
703-760-5070		
PROJECT		
ALTA AT REGENCY CREST		
BUILDABLE PARCEL A AND OPEN SPACE LOT 1		
AGE RESTRICTED ADULT HOUSING		
AREA		
TAX MAP 25, GRID 1, PARCEL 1		
2ND ELECTION DISTRICT		
HOWARD COUNTY, MARYLAND		

TITLE
BUILDING ELEVATIONS
Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282



DESIGNED BY : PHRA
DRAWN BY: JML
PROJECT NO : 15661-1-0
DATE : 8/24/09
SCALE : NTS
DRAWING NO. 19 OF 42

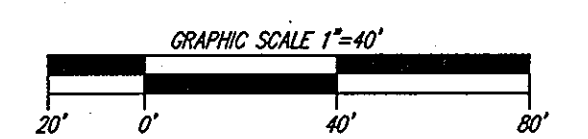


This replacement sheet will supersede sheet No. 20 which was previously signed on 12/17/09.

DEVELOPER'S/BUILDER'S CERTIFICATE:
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

LEGEND

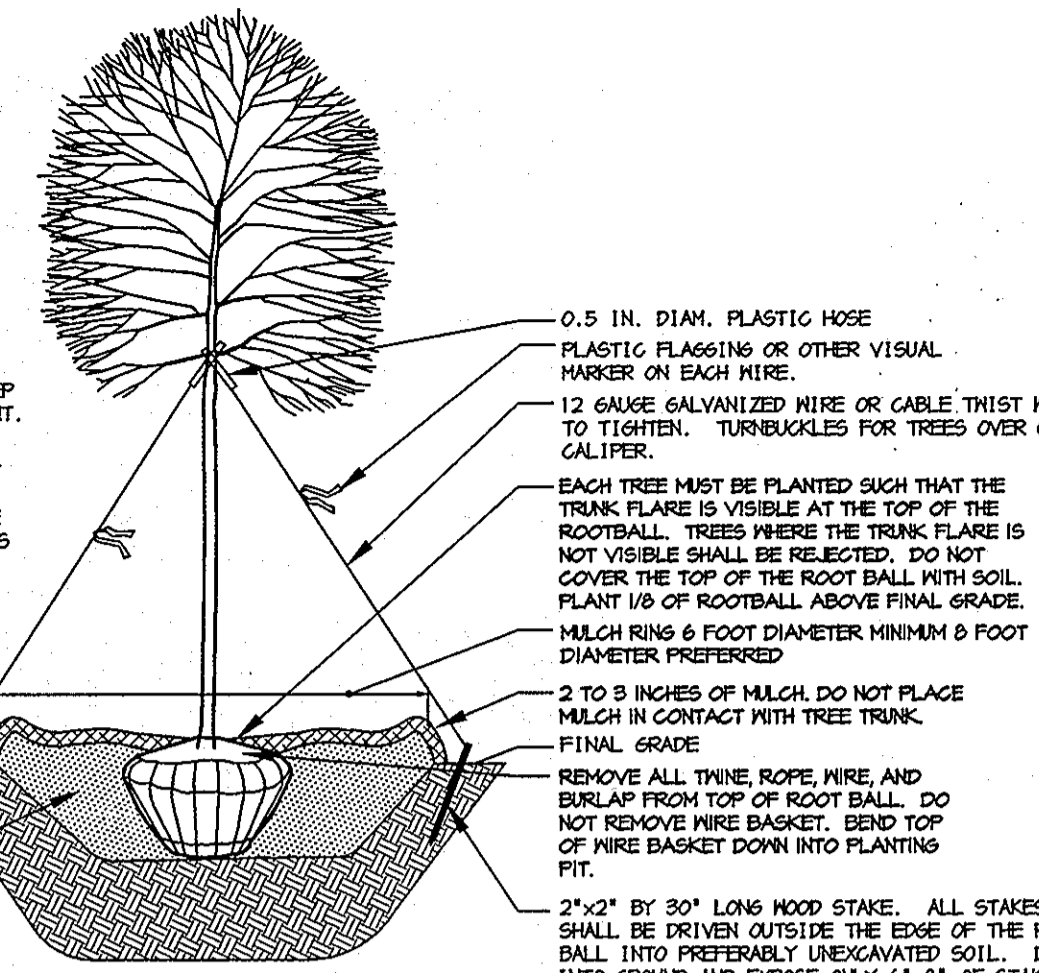
- EXISTING TREE TO REMAIN
- PROPERTY LINE
- EXISTING TREELINE
- PROPOSED TREELINE
- TREE PROTECTION DEVICE (TPD) (SUPER SILT FENCE)
- PROP. SHADE TREE
- PROP. EVERGREEN TREE
- EXISTING FORESTED AREA COUNTED AS LANDSCAPE CREDIT
- EXISTING BG&E POWER LINE
- EXISTING BG&E 'GREEN PLANTING ZONE'
- EXISTING BG&E 'YELLOW PLANTING ZONE'
- ALTERNATIVE COMPLIANCE LANDSCAPE PLANTING
- PERIMETER LANDSCAPE PLANTING
- INTERNAL RESIDENTIAL LANDSCAPE PLANTING
- INTERNAL PARKING LOT LANDSCAPE PLANTING
- STREET TREE LANDSCAPE PLANTING
- LIMIT OF DISTURBANCE
- FOREST CONSERVATION AREA
- FOREST REFORESTATION AREA
- PARKING ISLANDS



SIGNATURE	<i>Scott R. Wolford</i>	DATE	3/24/10
APPROVED :	HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.		
DIRECTOR	<i>Morgan & Spittle</i>	DATE	4/2/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION	<i>W. D. ...</i>	DATE	4/12/10
CHIEF, DIVISION OF LAND DEVELOPMENT	<i>W. J. ...</i>	DATE	4/20/10
DATE	3/10/10	REVISION	1 RELOCATE PLANT MATERIAL TO ACCOUNT FOR ACCESS CONNECTION
OWNER	CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLICOTT CITY, MD 21043-4105		
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 WIENNA, VA 22182 703-760-5070		
PROJECT	ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING		
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
TITLE	Revised Replacement Sheet LANDSCAPE PLAN		
SEAL	 Patton Harris Rust & Associates, PC Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282		
DESIGNED BY :	JML		
DRAWN BY :	JML		
PROJECT NO :	15661-1-0 C-SDP20LND.DWG		
DATE :	3/24/10		
SCALE :	1" = 40'		
DRAWING NO. 20 OF 42	SCOTT R. WOLFORD #797		

NOTES:

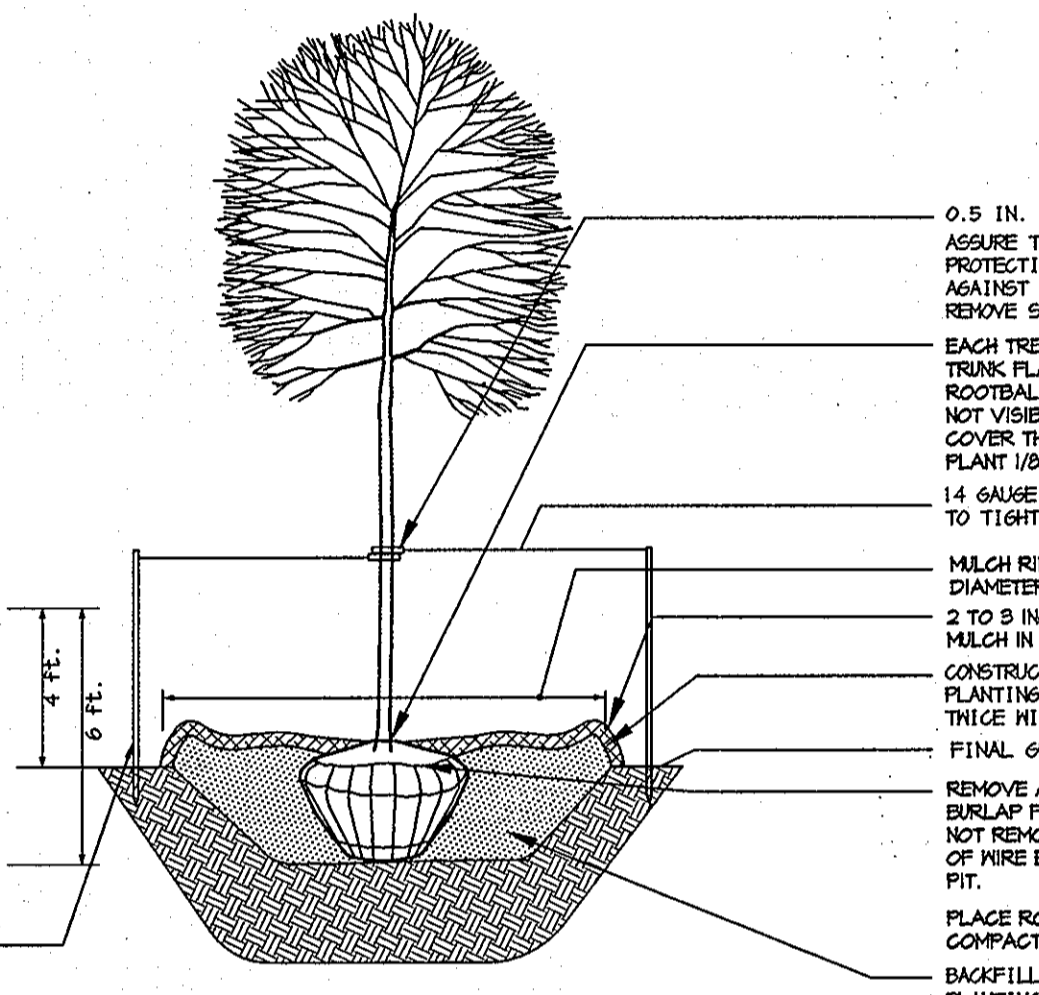
- DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LINES, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR THIGS AND LATERAL BRANCHES MAY BE PRUNED, HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
- STAKE TREES AS SHOWN.
- DIG PLANTING PIT THREE AS NIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5".
- PLACE ROOT BALL ON UNDEGRAVATED OR COMPACTED SOIL.
- TIGHTEN NIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. PLASTIC HOSE SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 IN. OF GROWTH AND BUFFER ALL BRANCHES FROM THE NIRE.
- TUCK ANY LOOSE ENDS OF THE NIRE OR CABLE INTO THE NIRE WRAP SO THAT NO SHARP NIRE ENDS ARE EXPOSED.
- INSTALL THREE GUY WIRES PER TREE, SPACED EVENLY AROUND THE TRUNK.
- ASSURE THAT THE BEARING SURFACE OF THE PROTECTIVE COVERING OF THE NIRE OR CABLE AGAINST THE TREE TRUNK IS A MINIMUM OF 0.5 IN. REMOVE STAKES AFTER ONE YEAR.
- CONSTRUCT 3" SAUCER ALL AROUND PLANTING HOLE. FLOOD WITH WATER THREE TIMES WITHIN 24 HOURS.
- BACKFILL WITH PLANTING MIX (SEE PLANTING SPECIFICATIONS). TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.



DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR LARGER)
NOT TO SCALE

NOTES:

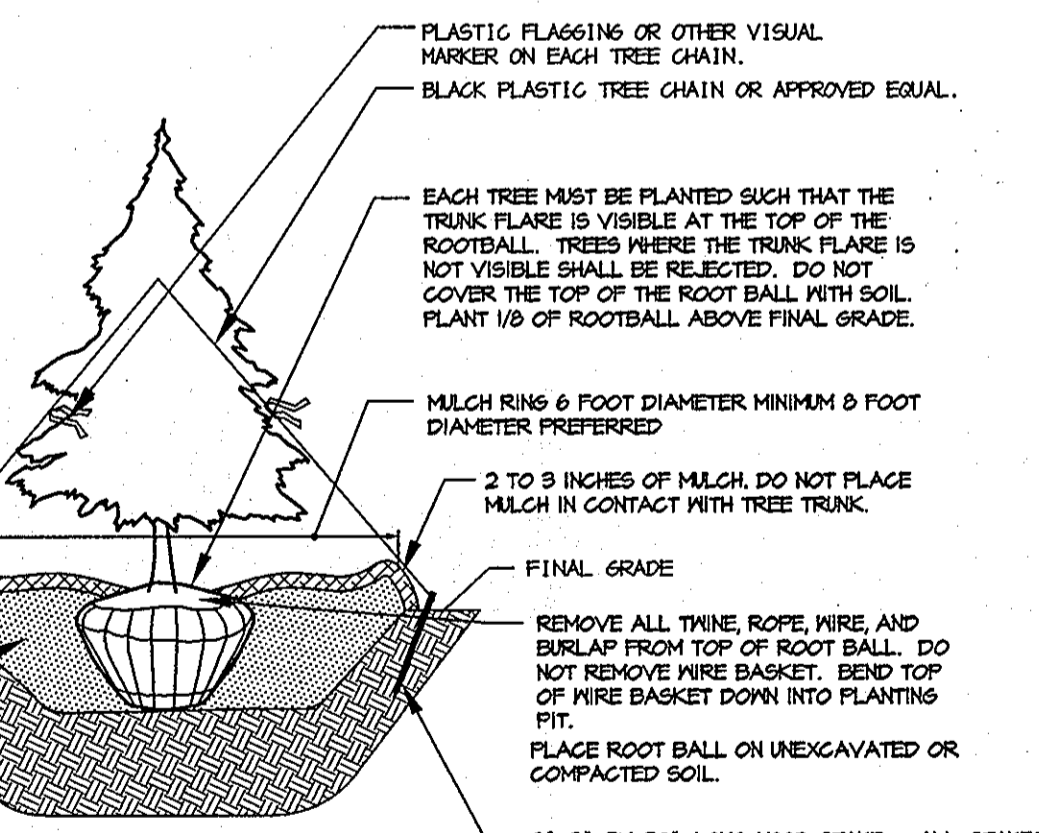
- DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LINES, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR THIGS AND LATERAL BRANCHES MAY BE PRUNED, HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
- STAKE TREES AS SHOWN.
- DIG PLANTING PIT THREE AS NIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5".
- TIGHTEN NIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. PLASTIC HOSE SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 IN. OF GROWTH AND BUFFER ALL BRANCHES FROM THE NIRE.
- TUCK ANY LOOSE ENDS OF THE NIRE OR CABLE INTO THE NIRE WRAP SO THAT NO SHARP NIRE ENDS ARE EXPOSED.
- INSTALL TWO STAKES ON OPPOSITE SIDES OF TREE, PARALLEL TO THE DIRECTION OF THE PREVAILING WINDS, UNLESS OTHERWISE DIRECTED BY LANDSCAPE ARCHITECT. ALL STAKES SHALL BE DRIVEN OUTSIDE THE EDGE OF THE ROOT BALL INTO PREFERABLY UNDEGRAVATED SOIL.
- CONSTRUCT 3" SAUCER ALL AROUND PLANTING HOLE. FLOOD WITH WATER THREE TIMES WITHIN 24 HOURS.
- BACKFILL WITH PLANTING MIX (SEE PLANTING SPECIFICATIONS). TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.



DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR SMALLER)
NOT TO SCALE

NOTES:

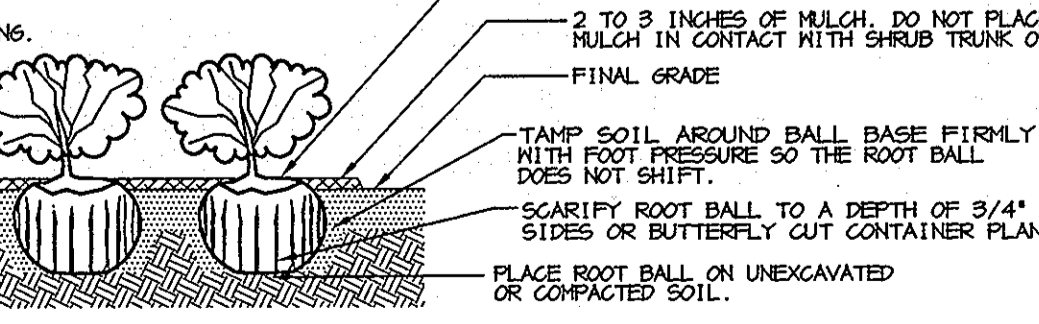
- SELECT ONLY NURSERY STOCK WITH A SINGLE LEADER UNLESS OTHERWISE SPECIFIED ON PLAN. PLANTS WITH CO-DOMINANT, MISSED, OR DAMAGED LEADERS SHALL BE REJECTED.
- STAKE TREES AS SHOWN.
- DIG PLANTING PIT THREE AS NIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5".
- CONSTRUCT 3" SAUCER ALL AROUND PLANTING HOLE. FLOOD WITH WATER THREE TIMES WITHIN 24 HOURS.
- BACKFILL WITH PLANTING MIX (SEE PLANTING SPECIFICATIONS). TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.
- DO NOT HEAVILY PRUNE THE SHRUB AT PLANTING. PRUNE ONLY BROKEN, DAMAGED, OR DISSEASED BRANCHES.
- DIG PLANTING PIT 12" NIDER THAN THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 12".
- FOR BID SHRUBS, REMOVE ALL THINE ROPE AND BURLAP FROM TOP OF ROOT BALL.
- ALL CONTAINERS SHALL BE REMOVED BEFORE INSTALLATION.



EVERGREEN B&B TREE PLANTING DETAIL
NOT TO SCALE

NOTES:

- SEE PLANTING SPECIFICATIONS FOR PREPARATION OF PLANTING BED.
- DO NOT HEAVILY PRUNE THE SHRUB AT PLANTING. PRUNE ONLY BROKEN, DAMAGED, OR DISSEASED BRANCHES.
- DIG PLANTING PIT 12" NIDER THAN THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 12".
- FOR BID SHRUBS, REMOVE ALL THINE ROPE AND BURLAP FROM TOP OF ROOT BALL.
- ALL CONTAINERS SHALL BE REMOVED BEFORE INSTALLATION.



SHRUB BED PLANTING DETAIL - B&B AND CONTAINER SHRUBS
NOT TO SCALE

PLANTING SPECIFICATIONS

- Plants, related material, and operations shall meet the detailed description, as given on the plans and as described herein. Where discrepancies exist between Standards & Guidelines referenced within these specifications and the Landscape Manual of the applicable jurisdiction, the latter takes precedence.
- All plant material, unless otherwise specified, that is not nursery grown, uniformly branched, does not have a vigorous root system, and does not conform to the most recent edition of the American Association of Nurserymen (AAN) Standards will be rejected. Plant material that is not healthy, vigorous, free from defects, decay, disfiguring roots, sunscald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements will be rejected. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will be rejected. All B & B plants shall be freshly dug; no headed-in plants or plants from cold storage will be accepted.
- Unless otherwise specified, all general conditions, planting operations, details and planting specifications shall conform to the most recent edition of the "Landscape Specification Guidelines by the Landscape Contractors Association of MD, DC, & VA", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects.
- Contractor shall guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section on the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.
- Contractor shall be responsible for notifying all relevant and appropriate utility companies, utility contractors, and "Miss Utility" a minimum of 48 hours prior to the beginning of any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Major changes will require the approval of the landscape architect. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
- Protection of existing vegetation to remain shall be accomplished via the temporary installation of 4 foot high snow fence at the drip line, see detail.
- Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of completion of site construction. Do not plant Pinus strobus or Xcupressocyparis leylandii between November 15 and March 15. Landscape plants are not to be installed before site is graded to final grade.
- Contractor to regrade, fine grade, sod, hydroseed and straw mulch all areas disturbed by their work.
- Bid shall be based on actual site conditions. No extra payment shall be made for work arising from actual site conditions differing from those indicated on drawings and specifications.
- Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence. Where discrepancies on the plan exist between the symbols and the callout leader, the number of symbols take precedence.
- All shrubs and groundcover areas shall be planted in continuous planting beds, prepared as specified, unless otherwise indicated on plans. (See Specification 13). Beds to be mulched with minimum 2" and maximum 3" of composted, double-shredded hardwood mulch throughout.
- Positive drainage shall be maintained on planting beds (minimum 2 percent slope).
- Bed preparation shall be as follows: Till into a minimum depth of 6" 1 yard of Compro or Leafgro per 200 SF of planting bed, and 1 yard of topsoil per 100 SF of bed. Add 3 lbs of standard 5-10-5 fertilizer per cubic yard of planting mix and till. Ericaceous plants (Azaleas, Rhododendrons, etc.): top dress after planting with iron sulfate or comparable product according to package directions. Taxus baccata 'Repandens' (English weeping yews): Top dress after planting with 1/4 to 1/2 cup lime each.
- Planting mix: For trees not in a prepared bed, mix 50% Compro or Leafgro with 50% soil from tree hole to use as backfill, see tree planting detail.
- Weed & insect control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. For tree planting, apply a pre-emergent on top of soil and root ball before mulching. Caution: For areas to be planted with a ground cover, be sure to carefully check the chemical used to assure its adaptability to the specific groundcover to be treated. Maintain the mulch weed-free for the extent of the warranty period. Under no circumstances is a pesticide containing chlorpyrifos to be used as a means of pest control.
- Water: All plant material planted shall be watered thoroughly the day of planting. All plant material not yet planted shall be properly protected from drying out until planted. At a minimum, water unplanted plant material daily and as necessary to avoid desiccation.
- Pruning: Do not heavily prune trees and shrubs at planting. Prune only broken, dead, or diseased branches.
- All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded, grass seed planted, and covered with straw mulch.

PLANT SCHEDULE					
SYMBOL	QTY.	SCIENTIFIC / COMMON NAME	SIZE	ROOT	REMARKS
AR	18	ACER RUBRUM 'OCTOBER GLORY'	3.5-4" CAL.	B&B	PLANT AS SHOWN
AT	3	ACER TRUNCATUM 'NORWEGIAN SUNSET'	3.5-4" CAL.	B&B	PLANT AS SHOWN
QP	25	QUERCUS PHellos WILLOW OAK	3.5-4" CAL.	B&B	PLANT AS SHOWN
CC	44	CERCIS CANADENSIS EASTERN REDBUD	8-10" HT.	CONT.	MULTI-STEM
CF	12	CORNUS FLORIDA FLOWERING DOGWOOD	8-10" HT.	CONT.	PLANT AS SHOWN
LI	22	LIGULARIA 'SIOUX' SIOUX GRAPENYRTE	8-10" HT.	CONT.	MULTI-STEM
MA	17	MORUS NIPONICA CRAPAPPE	8-10" HT.	B&B	PLANT AS SHOWN
PS	26	PRUNUS SARGENTII SARGENT CHERRY	2.5" CAL.	B&B	PLANT AS SHOWN
PST	12	PINUS STROBUS EASTERN WHITE PINE	6-8" HT.	B&B	PLANT AS SHOWN
AZ	11	AZALEA 'DELAWARE VALLEY WHITE'	24"-30" HT.	CONT.	PLANT AS SHOWN
BM	48	BUXUS MICROPHYLLA 'WINTER GEM'	24"-30" HT.	CONT.	PLANT AS SHOWN
EA	189	EUONYMUS ALATUS 'COMPACTUS'	24"-30" HT.	CONT.	PLANT AS SHOWN
HN	28	HYDRANGEA MACROPHYLLA 'NIKKO BLUE'	30"-42" HT.	CONT.	PLANT AS SHOWN
IG	36	ILEX GLABRA 'SHAMBROOK'	24"-30" HT.	CONT.	PLANT AS SHOWN
IC	28	ILEX CORNUTA 'BURFORD HOLLY'	24"-30" HT.	CONT.	PLANT AS SHOWN
ND	24	NANDINA DOMESTICA HEAVENLY BAMBOO	24"-30" HT.	CONT.	PLANT AS SHOWN
PJ	13	PIERIS JAPONICA 'MOUNTAIN FIRE'	30"-36" HT.	CONT.	PLANT AS SHOWN
VC	10	VIBURNUM CARLESII KOREANSPICE VIBURNUM	24"-30" HT.	CONT.	PLANT AS SHOWN

SCHEDULE A - PERIMETER LANDSCAPE EDGE	ADJACENT TO PERIMETER PROPERTIES					TOTAL PLANTS
	1	2	3	4	5	
PERIMETER	1	2	3	4	5	
LANDSCAPE TYPE	E	E	E	C	A	
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	487' ±	420' ±	276' ±	388' ±	600' ±	
CREDIT FOR EXISTING VEGETATION (YES/NO/ LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	YES N/A	146' 25' EXISTING FOREST	600' 25' EXISTING FOREST	
CREDIT FOR GRADE CHANGE OR DRIVE AISLE (YES/NO/LINEAR FEET)	NO	YES (DRIVE ISLE) 42'	YES (GRADE CHANGE) 276'	NO	NO	
LINEAR FEET REMAINING	487' ±	378' ±	276' ±	242' ±	-	
NUMBER OF PLANTS REQUIRED						
SHADE TREES	12	10	7	6	0	35
EVERGREEN TREES	0	0	0	0	0	12
SMALL FLOWERING TREES	0	0	0	0	0	0
SHRUBS	122	45	69	0	0	206
NUMBER OF PLANTS PROVIDED						
SHADE TREES	0	0	0	6	0	6
EVERGREEN TREES	0	0	0	0	0	0
SMALL FLOWERING TREES	24	20	13	2	0	55
SHRUBS	122	45	69	0	0	217

SCHEDULE 'A' NOTES:

- SUBSTITUTION NOTES PERIMETER 3:
13 EXISTING EVERGREEN TREES AND 11 EXISTING SMALL FLOWERING TREES WILL COUNT AS CREDIT FOR 7 REQUIRED SHADE TREES. GRADE CHANGE (HEIGHT DIFFERENCE OF >3') TO COUNT AS 69 SHRUB REQUIREMENT.

SCHEDULE B - PARKING LOT INTERNAL LANDSCAPING

PARKING LOT	1
NUMBER OF PARKING SPACES	175
NUMBER OF SHADE TREES REQUIRED (1/10 SPACES)	18
CREDIT FOR EXISTING TREES	0
NUMBER OF TREES PROVIDED	
SHADE TREES	16
OTHER TREES (2:1 SUBSTITUTION)	4
NUMBER OF ISLANDS PROVIDED	20 ⁽¹⁾

SCHEDULE 'B' NOTES:

- PARKING LOT INTERNAL LANDSCAPING NOTES:
4,070 SF OF ELIGIBLE PARKING ISLANDS
(4,070/200 = 20 ISLANDS PROVIDED)

SCHEDULE C - RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING

NUMBER OF APARTMENT DWELLING UNITS	150
NUMBER OF SHADE TREES REQUIRED (1/3 APTS)	50
NUMBER OF TREES PROVIDED	
SHADE TREES	22
OTHER TREES (2:1 SUBSTITUTION)	56 ⁽¹⁾

SCHEDULE 'C' NOTES:

- SUBSTITUTION NOTES RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING:
56 ORNAMENTAL TREES WILL COUNT TOWARD 28 SHADE TREES.

STREET TREE CALCULATIONS

ROGERS AVENUE	487' ± / 30	17 STREET TREES
TOTAL TREES REQUIRED		17 STREET TREES

STREET TREE NOTES:

SMALL TREES MUST BE SELECTED FOR PLANTING UNDER POWER LINES AS STATED IN PAGE 39 OF HOWARD COUNTY LANDSCAPE MANUAL AMENDED MARCH 2, 1998.

ALTERNATIVE COMPLIANCE LANDSCAPE CHART

TOTAL NUMBER OF PLANTS REQUIRED	0 SHRUBS
TOTAL NUMBER OF PLANTS PROPOSED	108 SHRUBS

GENERAL NOTES:

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WAS POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$47,070.
103 SHADE TREES @ \$300 = 30,900
17 ORNAMENTAL TREES @ \$150 = 2,550
12 EVERGREEN TREES @ \$150 = 1,800
394 SHRUBS @ \$30 = 11,820
- THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- ALL MATERIAL SELECTED 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.
- ALL MATERIAL SHALL BE PLANTED IN ACCORDANCE WITH THE MINIMUM STANDARDS CITED IN THE LATEST EDITION OF "LANDSCAPE SPECIFICATION GUIDELINES" PUBLISHED BY THE LANDSCAPE CONTRACTORS ASSOCIATION.
- AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS SHALL BE OF THE PROPER HEIGHT AND/OR SPREAD REQUIREMENTS IN ACCORDANCE WITH THIS PLAN AND THE HOWARD COUNTY LANDSCAPE MANUAL.
- NO SUBSTITUTIONS OR RELOCATION OF PLANTS MAY BE MADE WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING OF HOWARD COUNTY. ANY DEVIATION FROM THIS LANDSCAPE PLAN MAY RESULT IN A REQUIREMENT FOR SUBMITTAL OF AN OFFICIAL "REDLINE REVISION" TO THE SITE DEVELOPMENT PLAN(S) AND/OR DENIAL IN THE RELEASE OF LANDSCAPE SURETY.
- THIS PLAN PROPOSES THE REMOVAL OF 42 TREES, THE RETENTION OF 13 EVERGREEN TREES AND 11 FLOWERING TREES, AND THE PLANTING OF 46 SHADE TREES, 12 EVERGREEN TREES, 121 FLOWERING TREES, AND 387 SHRUBS.
- PERIMETER LANDSCAPE OBLIGATIONS WILL BE FULFILLED BY A COMBINATION OF NEW PLANTINGS AND PRESERVATION OF EXISTING VEGETATION.
- SHOULD ANY TREE DESIGNATED FOR PRESERVATION, FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, 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 LANDSCAPE MANUAL.
- THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING PLANT MATERIALS, 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.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas J. Butler 12/13/89
DIRECTOR, DEP.
John Deussen 12/16/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY
West Shalwood 12/17/09
CHIEF, DIVISION OF LAND DEVELOPMENT
3/6/10 1 REV. PARKING SCH. B, PLANT SCH.

DATE NO. REVISION

OWNER CENTURY HOLDING, LLC
3311 ROGERS AVENUE OAK WEST DR.
ELLCOTT CITY, MD 21043-4105

DEVELOPER WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
VIENNA, VA 22182
703-760-5070

PROJECT ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

AREA TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE LANDSCAPE NOTES AND DETAILS

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15661-1-C
C-SDP21LND.DWG
DATE : 8/24/09
SCALE : AS SHOWN
DRAWING NO. 21 OF 42

SCOTT R. WOLFORD #797

KEY	SPECIES	SIZE	CONDITION	REMAIN OR REMOVE
1	RED MAPLE (<i>Acer rubrum</i>)	31"	VERY POOR	REMOVE
2	AMERICAN BEECH (<i>Fagus grandifolia</i>)	36"	GOOD	REMOVE
3	AMERICAN BEECH (<i>Fagus grandifolia</i>)	37"	GOOD	REMOVE
4	EASTERN WHITE PINE (<i>Pinus strobus</i>)	30"	GOOD	REMOVE
5	SILVER MAPLE (<i>Acer saccharinum</i>)	51"	GOOD	REMAIN

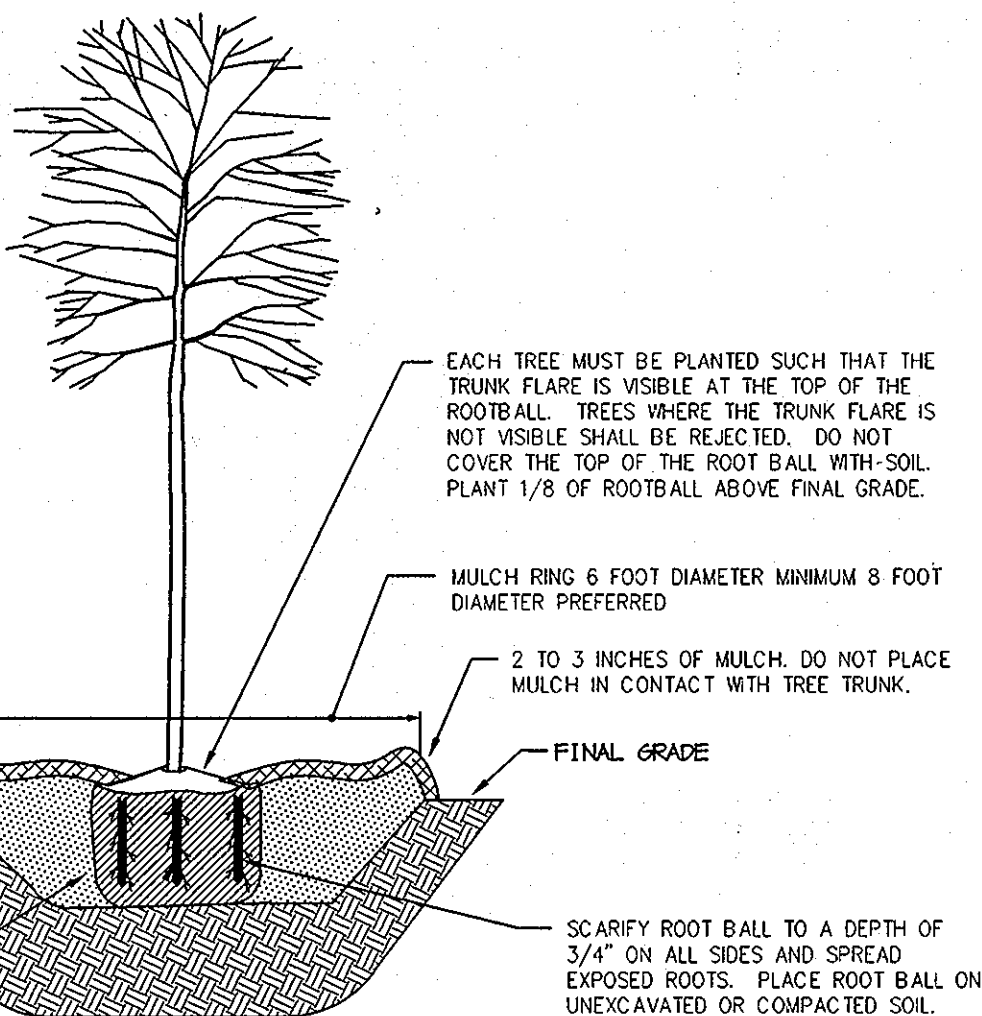
Howard County Forest Conservation Worksheet			
Project Name:	Rodgers Avenue Senior Housing		
County File #:	SDP-08-68		
Date:	September 3, 2008		
Net Tract Area			Acres
A. Total Tract Area		A =	6.69
B. Other Deductions	Floodplain (0.72)	B =	0.72
C. Net Tract Area = (A-B-C)		C =	5.97
Land Use Category:			
D. Afforestation Threshold (Net Tract Area X 15%)		D =	0.90
E. Conservation Threshold (Net Tract Area X 20%)		E =	1.19
Existing Forest Cover			
F. Existing Forest Cover within the Net Tract Area		F =	0.52
G. Area of Forest Above Conservation Threshold		G =	0.00
If the Existing Forest Cover (F) is greater than Conservation Threshold (G), then G = Existing Forest Cover (F) - Conservation Threshold (E); Otherwise G = 0			
Break Even Point			
H. Break Even (Amount of forest that must be retained so that no mitigation is required)		H =	0.52
(1) If the area of forest above the Conservation Threshold (G) is greater than zero, then H = (0.2 X the area of forest above Conservation Threshold (G)) + the Conservation Threshold (E)			
(2) If the area of forest above the Conservation Threshold (G) is equal to zero, then H = Existing Forest Cover (F)			
I. Forest Clearing Permitted Without Mitigation		I =	0.00
I = Existing Forest Cover (F) - Break Even Point (H)			
Proposed Forest Clearing			
J. Total Area of Forest to be Cleared		J =	0.41
K. Total Area of Forest to be Retained		K =	0.11
K = Existing Forest Cover (F) - forest to be cleared (J)			
Planting Requirements			
If the Total Area of Forest to be Cleared (J) is at or above the Break Even Point (H), no planting is required and no further calculations are necessary (L=0, M=0, N=0, P=0); If not, calculate the planting requirement below:			
L. Reforestation for Clearing Above the Conservation Threshold		L =	0.00
(1) If the total area of forest to be retained (K) is greater than the Conservation Threshold (E), then L = the area of forest to be cleared (J) X 0.25; or (2) If the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then L = area of forest above Conservation Threshold (G) X 0.25			
M. Reforestation for Clearing Below the Conservation Threshold		M =	0.82
(1) If Existing Forest Cover (F) is greater than Conservation Threshold (E) and the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then M = 2.0 X (the Conservation Threshold (E) - the forest to be retained (K)) (2) If Existing Forest (F) is less than or equal to the Conservation Threshold (E), then M = 2.0 X Forest to be cleared (J)			
N. Credit for Retention Above the Conservation Threshold		N =	0.00
If the area of forest to be retained (K) is greater than the Conservation Threshold (E), then N = K - E			
P. Total Reforestation Required P = L + M - N		P =	0.82
Q. Total Afforestation Required		Q =	0.38
(1) If Existing Forest Cover (F) is less than the Afforestation Threshold (D) then Q = the Afforestation Threshold (D) - the Existing Forest Cover (F)			
R. Total Planting Requirement R = P + Q		R =	1.20

NOTES:

- DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR THIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
- STAKE TREES AS SHOWN ON B&B DETAIL.
- DIG PLANTING PIT TWO AND A HALF TIMES AS WIDE AS THE DIAMETER OF THE CONTAINER WITH A MINIMUM PLANTING PIT DIAMETER OF 30".
- REMOVE CONTAINER JUST BEFORE PLANTING. INSPECT HEALTH OF ROOTS. REJECT MATERIAL WITH UNHEALTHY OR INSUFFICIENT ROOTS.

CONSTRUCT 3" SAUCER ALL AROUND PLANTING HOLE. FLOOD WITH WATER THREE TIMES WITHIN 24 HOURS.

BACKFILL WITH PLANTING MIX (SEE PLANTING SPECIFICATIONS). TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.



CONTAINERIZED TREE PLANTING DETAIL
NOT TO SCALE

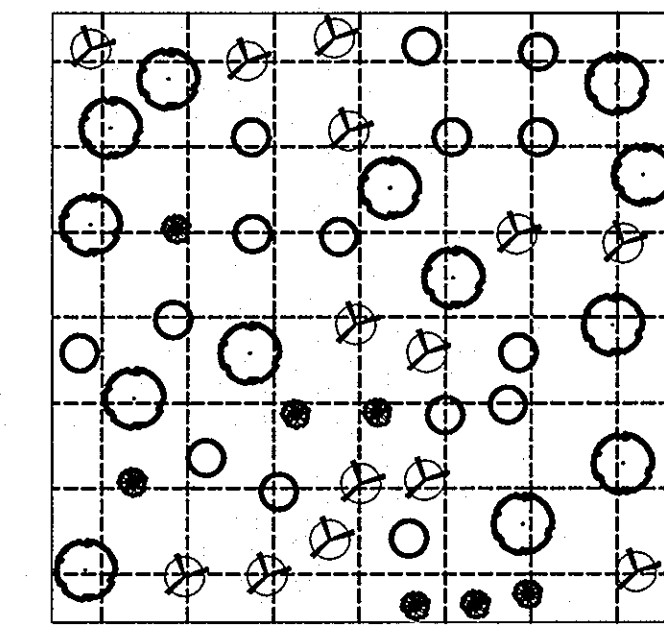
SEQUENCE OF OPERATIONS

PRE-CONSTRUCTION SITE PREPARATION

- FIELD STAKE LIMITS OF DISTURBANCE (L.O.D.) AT 25' INTERVALS.
- REVIEW L.O.D. IN FIELD AND ADJUST IF PRACTICAL.
- INSTALL TREE PROTECTION FENCE AT THE L.O.D. AND IMPLEMENT TREE PROTECTION METHODS AS SHOWN.
- CLEAR AND GRUB AS NECESSARY TO FACILITATE ROOT PRUNING TO A DEPTH OF 2-3 FEET WITHIN THE LIMITS OF THE PROPOSED FOREST RETENTION AREA AND AROUND SPECIMEN TREES TO BE SAVED. CLEAR REMAINING TREES IN A WAY THAT "SAVE TREES" ARE NOT DISTURBED. GRUB STUMPS 12" IN DIAMETER AND LARGER THAT ARE WITHIN 25' OF THE L.O.D.
- PRUNE AND FERTILIZE DESIRABLE "EDGE TREES" AS PER CONSULTING ARBORIST'S RECOMMENDATIONS AND DETAILS PROVIDED ON THIS SHEET.
- THERE SHALL BE NO STAGING, STORAGE, OR STOCKPILING OF MATERIALS WITHIN THE NONTIDAL WETLANDS OR 25' NONTIDAL WETLANDS BUFFER, OR OUTSIDE OF THE L.O.D.
- REMOVE OR TREAT WITH AN ACCEPTABLE METHOD, NOXIOUS PLANT MATERIAL SUCH AS MULTIFLORA ROSE, THORNHURST, AND JOHNSON GRASS BEFORE INSTALLING REFORESTATION PLANTS.
- INSTALL TREE PROTECTION SIGNAGE.
- STABILIZE ANY DISTURBED AREAS USING THE SPECIFIED STABILIZATION MIXTURE WHICH ALLOWS FOR NATURAL REVEGETATION OF FOREST COMMUNITIES.

FOREST CONSERVATION SEQUENCE OF OPERATIONS

- Prior to beginning any grading operations on this site or on a respective lot, there may be a preconstruction meeting held at the site which is to include the Contractor and representatives from Patton Harris Rust & Associates, Inc. (PHRA). The Howard County Department of Planning and Zoning (DPZ) and the owner will be notified by the Contractor as to the time and place of the field meeting, should they wish to send a representative. The purpose of this meeting will be to review the approved FDP and to field verify the correct Limits of Disturbance (L.O.D.).
- The Limits of Disturbance (L.O.D.) pertinent to the preservation of wooded areas shall be staked in the field with final adjustments being made as necessary to insure adequate protection of the Critical Root Zone of trees designated for retention. Stakes to be used shall be those specified for the "TREE PROTECTION DEVICE" to which approved protective material will be attached. Alternate means of defining the L.O.D. may be used if approved by the DPZ.
- All forest retention areas shall be protected by highly visible, well anchored temporary protection devices (see detail), which shall be securely in place prior to any clearing or grading operations.
- Grading operations or other construction operations which could dislodge or otherwise damage the protective devices shall be avoided along the edges of the L.O.D. lines if possible. Any protective devices which are damaged during site construction operations shall be properly repaired immediately by the Contractor.
- After site grading, utility access road, and driveway construction have been completed, all trees adjacent to the L.O.D. line shall be inspected for indications of crown die-back (summer indicator), damage with respect to critical root zones or any dead wood or other conditions which might be hazardous to pedestrians, buildings, utility lines, vehicular access ways or parked vehicles.
- Should there be evidence of any damage to tree trunks, branches or the critical root zone of trees within the protected areas, or to isolated specimen trees to be preserved, the exposed roots shall be examined within a period of two (2) days from the date of observation by a licensed tree care professional. Exposed roots should be covered immediately to a depth of 6 - 8 inches with soil, preferably mixed with 50% peat moss or leaf mold.
- Remove damaged, dead or dying trees or limbs only if the trees or limbs pose an immediate safety hazard to buildings, utility lines, vehicles, or access and egress drives or pedestrian areas. Trees designated for pruning or removal shall be pruned or removed using equipment and methods which will not damage or destroy adjacent large trees or understory trees or shrubs designated for retention.
- All temporary forest protection devices will be carefully removed after all general construction, necessary tree surgery, removal of debris, etc. regrading and reseeded and erosion control disturbance have been completed and acceptance and approval of the work and site conditions have been given by the DPZ.



KEY TREES

- TREE SPECIES 'A'
- TREE SPECIES 'B'
- TREE SPECIES 'C'
- TREE SPECIES 'D'
- TREE SPECIES 'E'

NOTES

- RANDOMLY LOCATE GROUPS OF PLANT SPECIES, TAKING CARE NOT TO PLANT IN SUCCESSION MORE THAN 4 OF THE SAME SPECIES.
- THIS DETAIL PROVIDES A HYPOTHETICAL GRAPHIC DEPICTION OF A PROPOSED LAYOUT FOR NINE DIFFERENT TREE SPECIES (A-I). IT IS NOT MEANT TO BE FOLLOWED EXACTLY. THE PURPOSE IS TO ACHIEVE THE APPEARANCE OF RANDOM SPACING.
- SEE PLANT LIST FOR ACTUAL NUMBER OF PLANT SPECIES. SEE PLANT LIST FOR ON-CENTER SPACING REQUIREMENTS.

RANDOM PLANTING LAYOUT DETAIL

NOT TO SCALE
RANDOMLY SPACE NEW TREE & SHRUB INSTALLATIONS TO ALLOW NO MORE THAN (5) 1" CALIPER TREES OF ANY PARTICULAR SPECIES TO BE PLANTED IN SUCCESSION. USE SUGGESTED SPACING AS A GENERAL GUIDE. TAKE CARE NOT TO PLANT IN PERFECT ROWS OR GRIDS.

PLANTING SPECIFICATIONS:

AFFORESTATION OR REFORESTATION MAINTENANCE AND REPLACEMENT REQUIREMENTS

A two year (24) month maintenance and replacement warranty period is required for all newly planted materials. The maintenance and replacement warranty period shall commence upon the date of the written acceptance by the Owner of the planted areas. A written warranty will be delivered to the Owner upon acceptance of the planted areas. Maintenance and replacement shall be provided by the Contractor responsible for the initial planting operations and related work. All landscape plant material included as forest conservation credits shall be covered under this maintenance and replacement warranty period.

I. MAINTENANCE:

The Contractor shall field check the newly planted area(s) and shall provide the following maintenance items in accordance with the following schedule which shall begin after the completion and acceptance of the initial Afforestation or Reforestation planting.

II. MAINTENANCE ITEMS:

- Watering: Watering of all newly planted materials once per week as weather permits during the entire initial growing season. Following the initial growing season, watering shall be done on an "as needed" basis depending on the frequency of natural rainfall. During the months of July and August and periods of severe drought, all newly planted materials shall be watered thoroughly once every week. Watering shall be done deeply and slowly using an open end hose or watering probe, at low pressure, allowing the water to be absorbed into the soil until thoroughly saturated. The watered area shall include the whole root zone as the tree becomes more established.
- Fertilizing: Fertilizing shall be applied only after the soil has been tested to determine its needs. Organic fertilizer should be applied in accordance with the amounts recommended in the soil analysis report. No fertilizing of newly planted trees shall be done within the first growing season after initial planting. Following the first growing season, apply fertilizer as recommended either in late fall or early spring.
- Supplemental Mulch: To control undesirable vegetation adjacent to the newly planted materials and to prevent tree roots from drying out, additional mulch shall be placed over the existing mulch field where required. Carefully remove any invasive plants (including the root system) within the mulch fields. Do not damage trees in any way during removal of invasive plants or remaining operations.
- Pruning: Remove dead, diseased, dying and broken branches from all plant materials. Pruning shall be done cleanly leaving no ragged ends.

III. REPLACEMENT OF DEAD OR DYING MATERIALS:

- Replacement: Any plant materials which are 25% dead or more shall be replaced during the appropriate spring or fall planting seasons in accordance with the methods indicated in the Planting Specifications. A tree shall be considered dead when the main leader has died back.
- All replacements shall be plants of the same genus, species and size as specified on the plant list.

3. Contractor shall schedule an inspection of the Afforestation or Reforestation area(s) by a qualified representative of the DPZ and by the qualified professional who prepared the plan, at the beginning and at the end of the growing season to observe any problems, monitor survival rate and specify necessary remedial actions needed to correct existing problems. The inspection should focus on the following items when determining survival potential:

- (a) Vigor and threat of competing vegetation
- (b) Plant structure
- (c) Growth rate
- (d) Crown development
- (e) Trunk conditions and health

IV. PLANT CONDITION CHECK SHEETS

The Contractor shall maintain accurate records on appropriate field data check sheets which shall include all conditions observed relative to the health and potential survival of the plant materials. Such check sheets shall be completed during each scheduled maintenance session during the 24 month management and maintenance program. One copy of the check sheets shall be sent to the Client, one copy to PHRA, and one copy shall be sent to the Howard County Department of Planning and Zoning.

V. SURVIVAL REQUIREMENT:

The survival rate for Afforestation and Reforestation areas shall be a minimum of seventy-five percent (75%) of the total number of trees required to be planted per acre under the approved plan.

VI. INSPECTION/CERTIFICATION SCHEDULE:

The Contractor shall submit with his bid, a schedule for the work which shall include inspections by PHRA at the conclusion of installation and at the start and conclusion of each growing season during the two-year warranty period.

VII. PENALTY FOR VIOLATION:

A site inspection by the Contractor and a representative of PHRA shall take place at the end of the 24 month management and maintenance agreement period. The Contractor shall contact PHRA at least one (1) month in advance of such inspection for coordination. If the survival rate of the Afforestation or Reforestation area(s) falls below the established survival requirements by the end of the 24-month management and maintenance agreement, the remaining amount of the cash bond or other surety may be subject to forfeiture, or other penalties may be imposed.

AFFORESTATION PLANT SCHEDULE					
SYMBOL	QTY.	SCIENTIFIC COMMON NAME	SIZE	ROOT	REMARKS
OP	10	QUERCUS PRINUS WILLOW OAK	3.5-4" CAL.	B&B	PLANT AS SHOWN

GENERAL NOTES:

- THE SITE IS LOCATED AT 3311 ROGERS AVENUE, ELLICOTT CITY, MD 21043. THE SITE CONSISTS OF 1 PARCEL (PARCEL 1) WHICH EQUALS A TOTAL OF 6.694 ACRES.
- BOUNDARY AND TOPOGRAPHIC INFORMATION IS PROVIDED BY HOWARD COUNTY GIS DATA AND PHRA FIELD SURVEY CONDUCTED IN DECEMBER, 2007.
- THE SOILS ON SITE ARE GLENELG-URBAN LAND COMPLEX (0-8% SLOPES) - G8B, GLENVILLE SILT LOAM (3-8% SLOPES) - G8D, GLENVILLE-SILT LOAM (8-15% SLOPES) - G8E, MANOR LOAM (15-25% SLOPES) - M8D.
- THE SITE IS ZONED POR (PLANNED OFFICE RESEARCH). CURRENT USE OF THE SITE IS RESIDENTIAL.
- THIS SITE IS LOCATED IN THE PATAPSCO RIVER LOWER N. BRANCH WATERSHED (2120906). THIS SITE IS LOCATED IN A USE I-P WATERSHED ACCORDING TO INFORMATION AVAILABLE FROM THE CODE OF MARYLAND REGULATIONS (COMAR) 26.08.02.08 "STREAM SEGMENT DESIGNATIONS". THE APPROPRIATE 50' STREAM BUFFER HAS BEEN SHOWN AS REQUIRED IN THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SECTION 16.116 "PROTECTION OF WETLANDS, STREAMS, AND STEEP SLOPES".
- ONE STREAM IS LOCATED ON THE SITE AND IS IDENTIFIED AS A USE I-P STREAM ACCORDING TO INFORMATION AVAILABLE FROM THE CODE OF MARYLAND REGULATIONS (COMAR) 26.08.02.08 "STREAM SEGMENT DESIGNATIONS". THE STREAM IS LOCATED IN THE NORTHERN BOUNDARY OF THE SITE EXTENDING TO THE NORTHEAST FLOWING OFF-SITE. A FLOODPLAIN IS LOCATED ON THE SITE AS SHOWN BY FEMA FIRM MAP 24004A-0207C.
- EXISTING FOREST CONSISTS OF 1 STAND AND 2 HEDGEROWS AS SHOWN. TREES GREATER THAN 30" IN DIAMETER WERE OBSERVED WITHIN THE PROPERTY BOUNDARY AND ARE SHOWN.
- FIELD WORK FOR THIS INVENTORY WAS CONDUCTED ON DECEMBER 17, 2007 BY JAY M. LOFTUS, PLANNER OF PATTON HARRIS RUST AND ASSOCIATES, PC UNDER THE SUPERVISION OF PETER J. STONE, RLA AND SCOTT R. WOODFORD, RLA OF PATTON HARRIS RUST AND ASSOCIATES, PC.
- THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.
- NO RARE, THREATENED OR ENDANGERED PLANTS OR ANIMALS OR CRITICAL HABITATS WERE OBSERVED IN THE FIELD AS STATED IN A LETTER RECEIVED FROM THE MARYLAND DNR.
- 15 SPECIMEN TREES (30" IN DIAMETER) HAVE BEEN IDENTIFIED AND MEASURED AS SHOWN ON THIS PLAN. FOUR OF THE SPECIMEN TREES WILL NEED TO BE REMOVED DUE TO THE PROPOSED DEVELOPMENT ON THE SITE.
- THE MAJORITY OF THE PLAN HAS BEEN PREPARED USING TOPOGRAPHY OBTAINED FROM HOWARD COUNTY GIS DATA. SPECIMEN TREE LOCATIONS WERE FIELD APPROXIMATED.
- NO HISTORIC FEATURES ARE LOCATED ON-SITE.
- FOREST STAND 1 CONTAINS 1.04 ACRES OF FOREST ON-SITE, WHILE THE STAND IS PART OF CONTIGUOUS FOREST THAT EXTENDS FOR A TOTAL OF SEVENTY-NINE (79) ACRES OFF-SITE.
- WETLANDS ARE LOCATED ON THE SITE.
- NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- THERE ARE THREE EXISTING STRUCTURES ON THE SITE AS SHOWN. THE HOUSE, GARAGE, AND SHED WILL BE REMOVED. A SENIOR ORIENTED MULTI-FAMILY BUILDING AND ASSOCIATED PARKING ARE PROPOSED FOR THE SITE DEVELOPMENT.
- THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.
- THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.
- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION. THE TOTAL FOREST CONSERVATION OBLIGATION FOR THIS PROJECT IS 1.31 ACRES (0.11 ACRES OF RETENTION, 0.82 ACRES OF REFORESTATION, AND 0.38 ACRES OF AFFORESTATION). THE FOREST CONSERVATION AS PART OF THE DPW DEVELOPER'S AGREEMENT WITH 0.11 ACRES OF RETENTION IN THE AMOUNT OF \$858.00 AND ON-SITE AFFORESTATION OF 0.10 ACRES IN THE AMOUNT OF \$2173.00, AN ADDITIONAL 0.24 ACRES OF ON-SITE AFFORESTATION IS BEING PROVIDED AS A LANDSCAPE CREDIT PROVIDED AS PART OF THE LANDSCAPE SURETY PROVIDED FOR PERIMETER 4 (20% OF 1.2 ACRE PLANTING REQUIREMENT= 0.2 ACRES). THE REMAINING 0.86 ACRE OBLIGATION (0.82 ACRE REFORESTATION AND 0.04 ACRE AFFORESTATION OBLIGATION) WAS MET BY PROVIDING A FEE IN LIEU PAYMENT OF \$28,097.00 (37,462 SF X \$0.75).

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas J. Butler 12/17/09
DIRECTOR, DEP. DATE

John Deussen 12/16/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Victor Sheehy 12/17/09
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

OWNER: CENTURY HOLDING, LLC
3311 ROGERS AVENUE OAK WEST DR.,
ELLICOTT CITY, MD 21043-4105

DEVELOPER: WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
VIENNA, VA 22182
703-760-5070

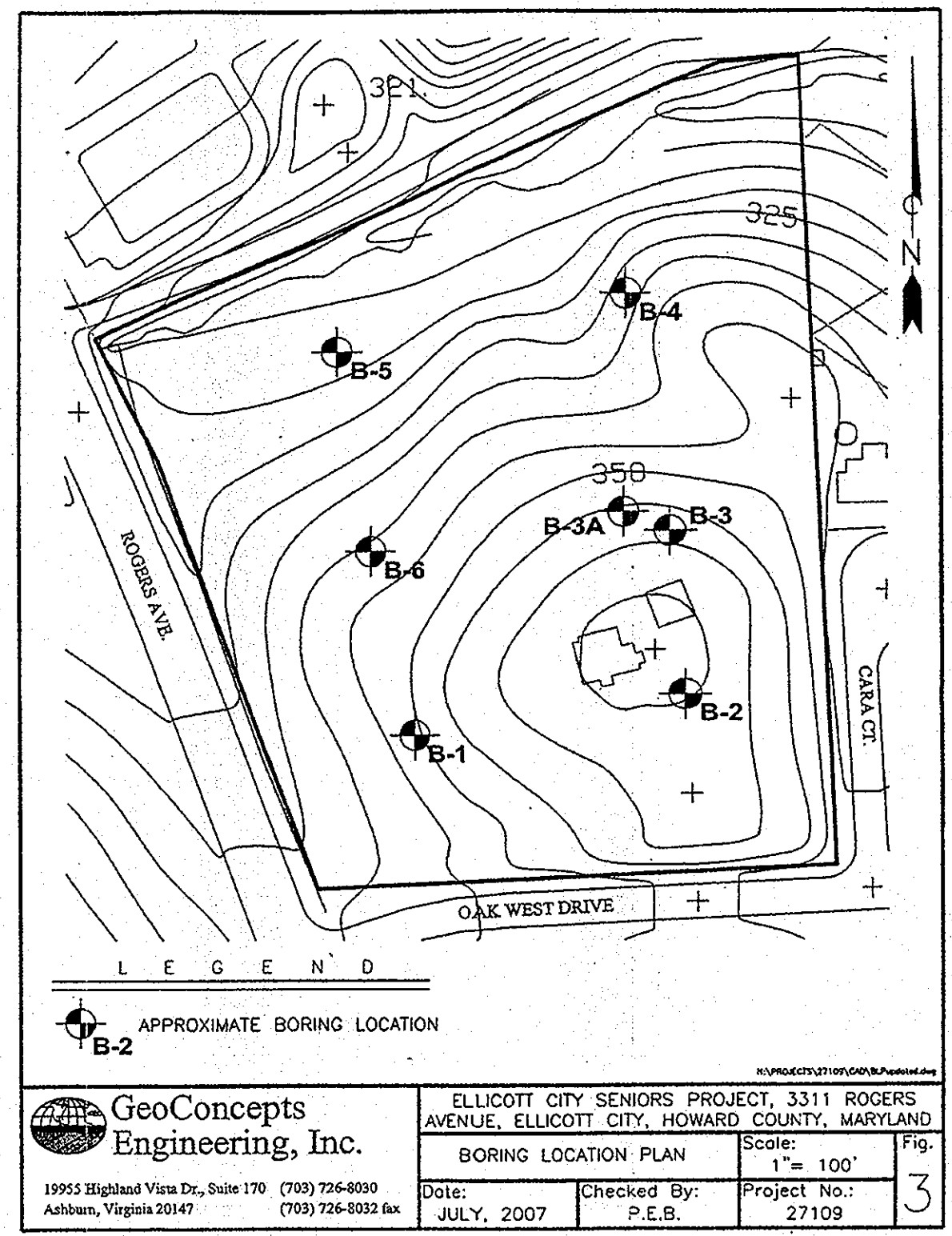
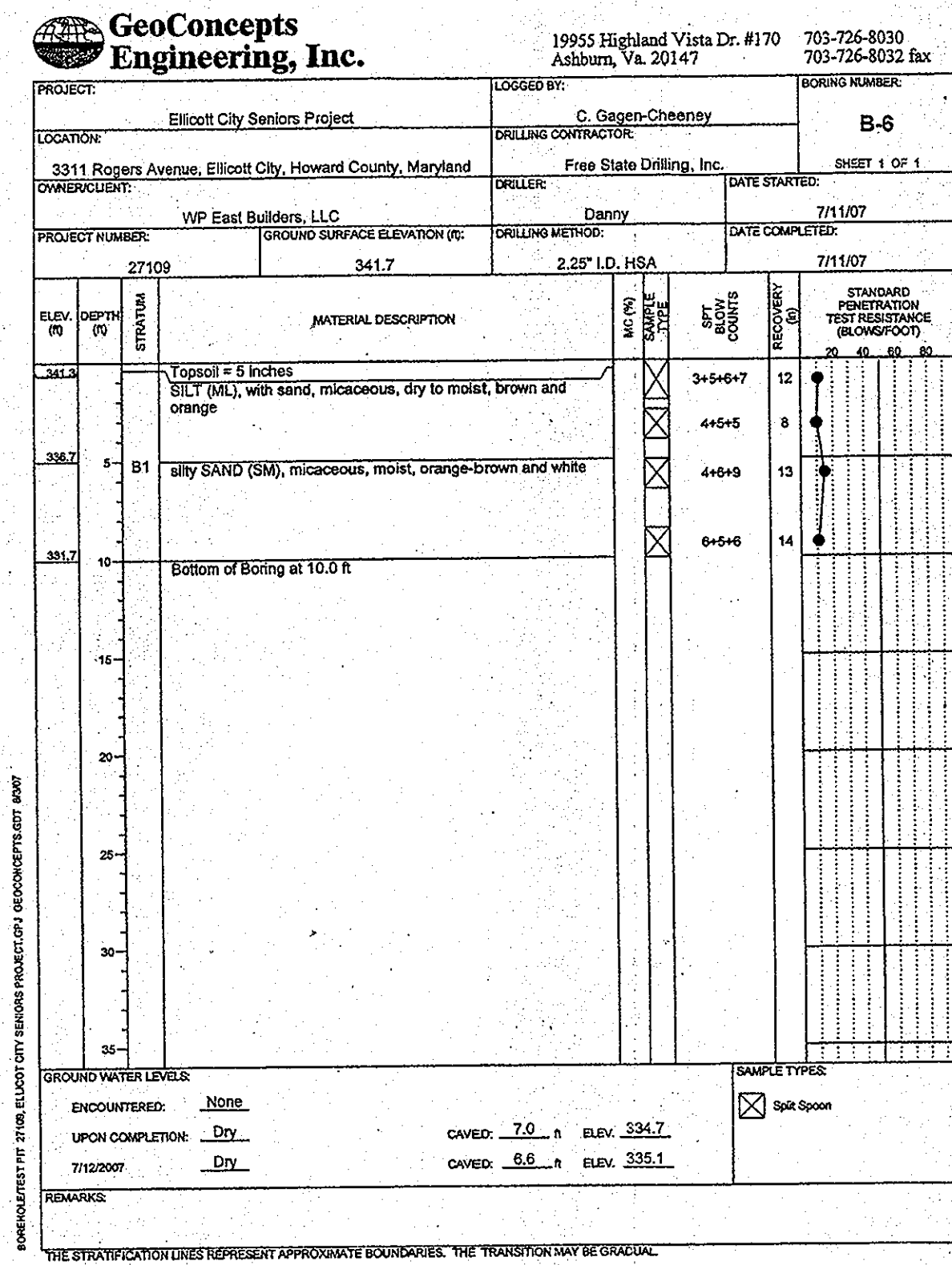
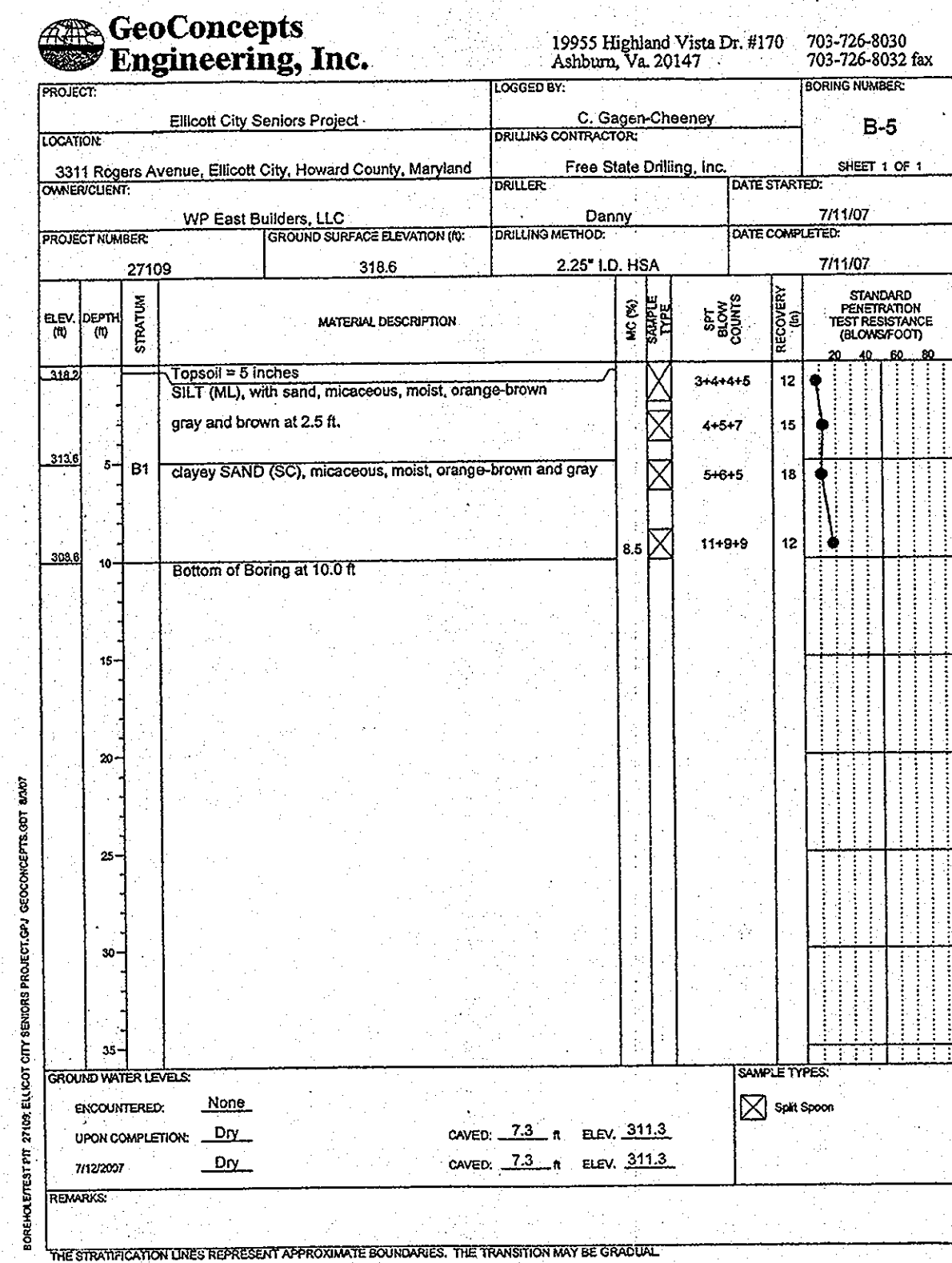
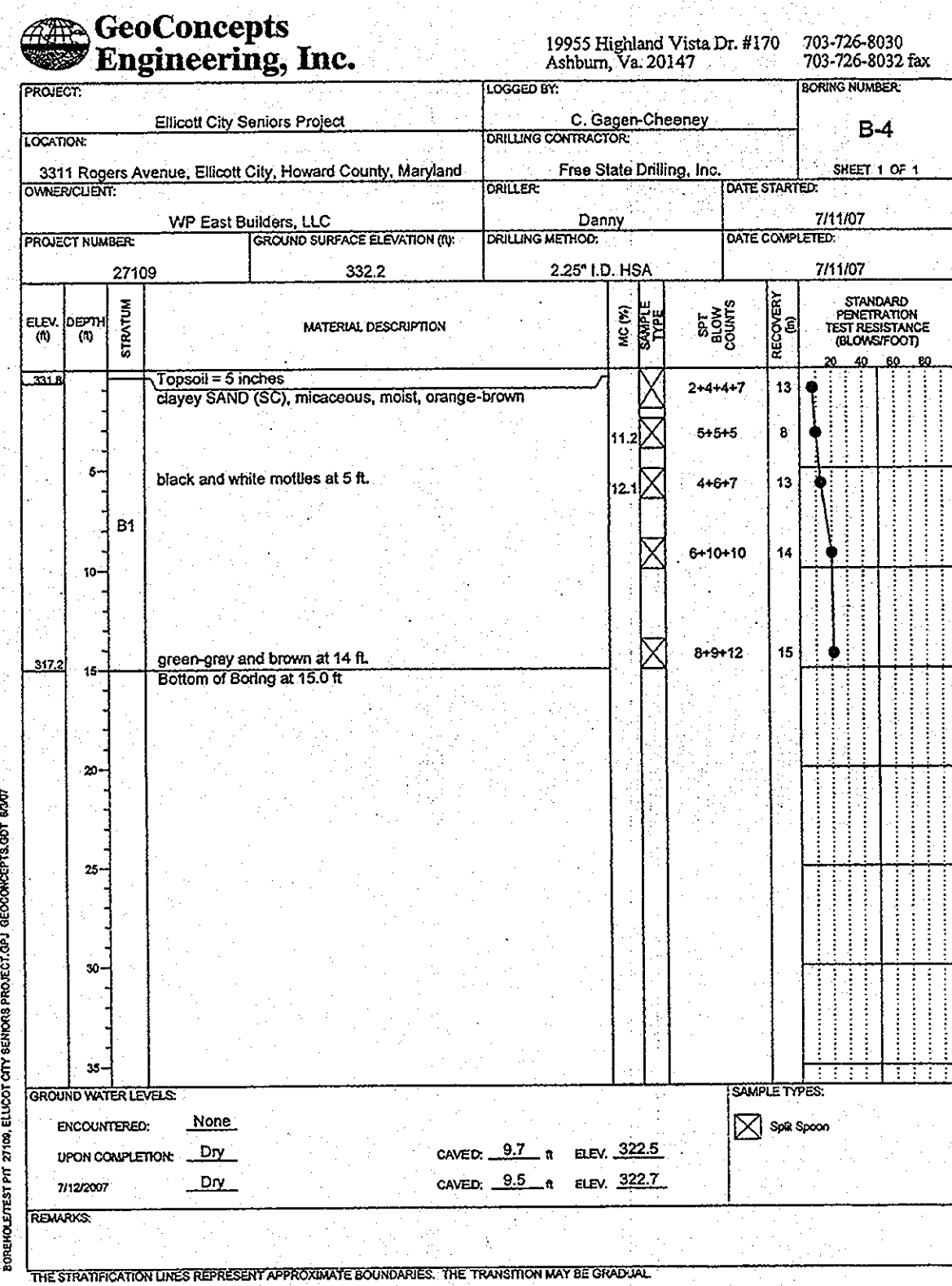
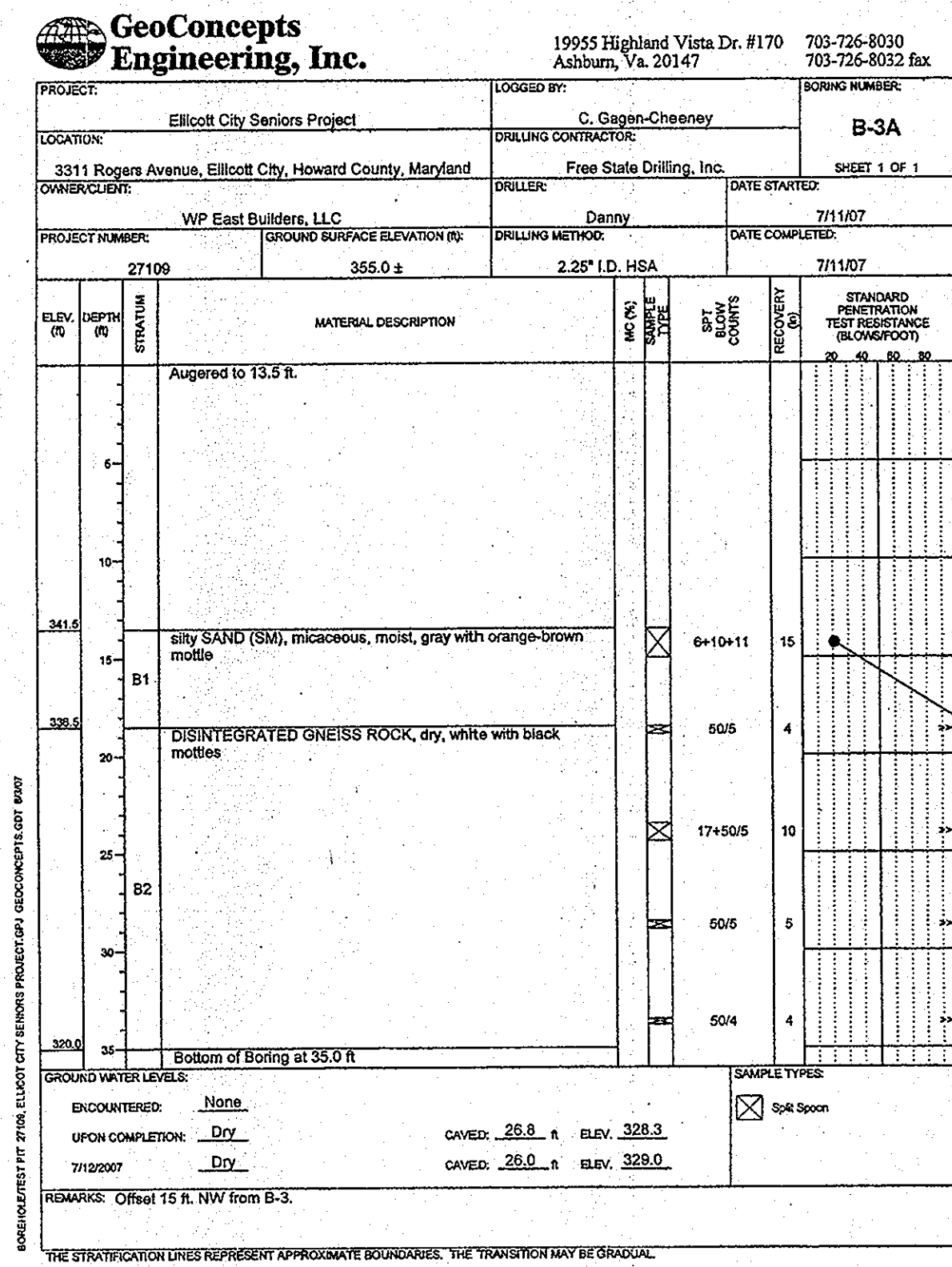
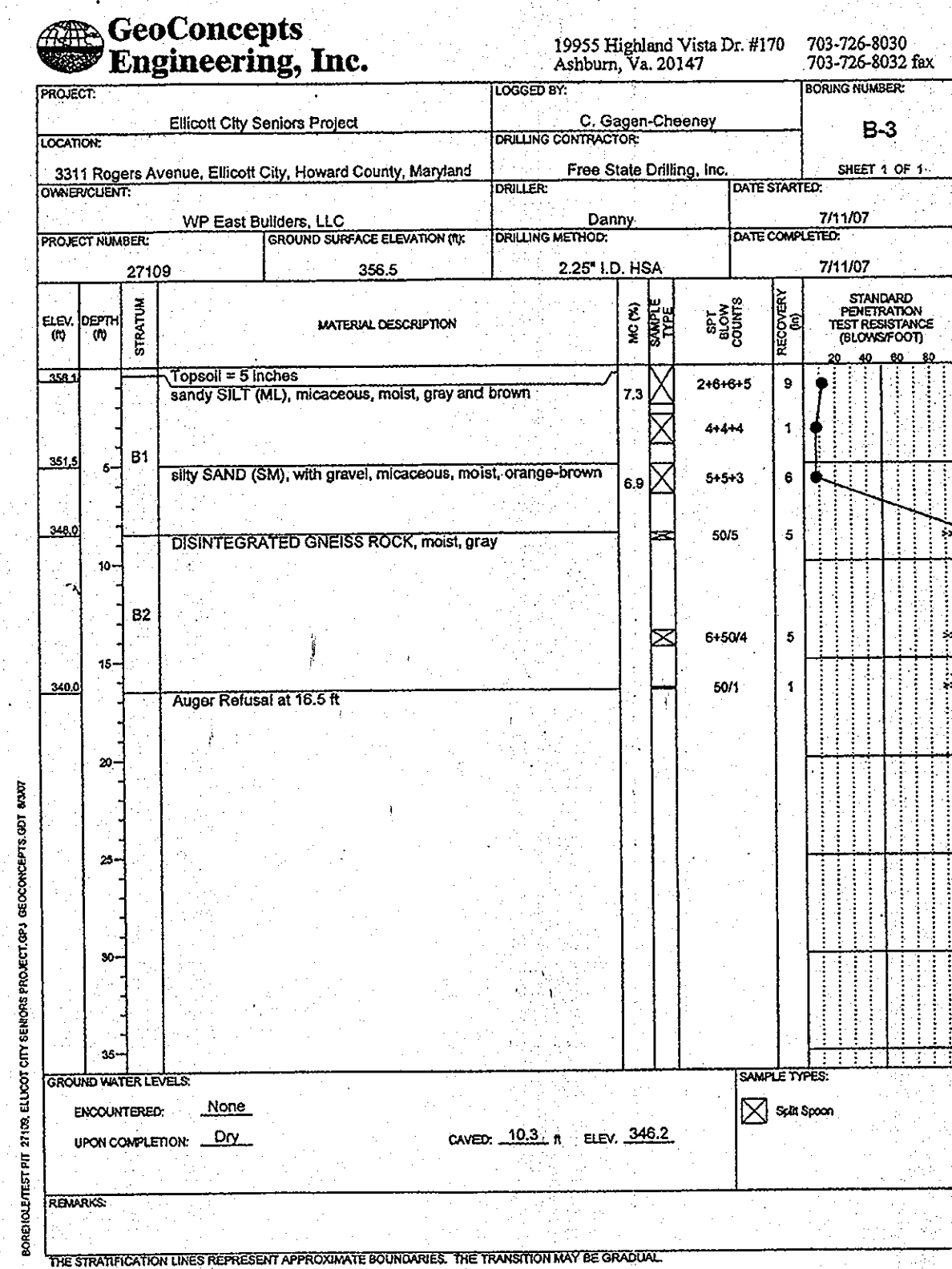
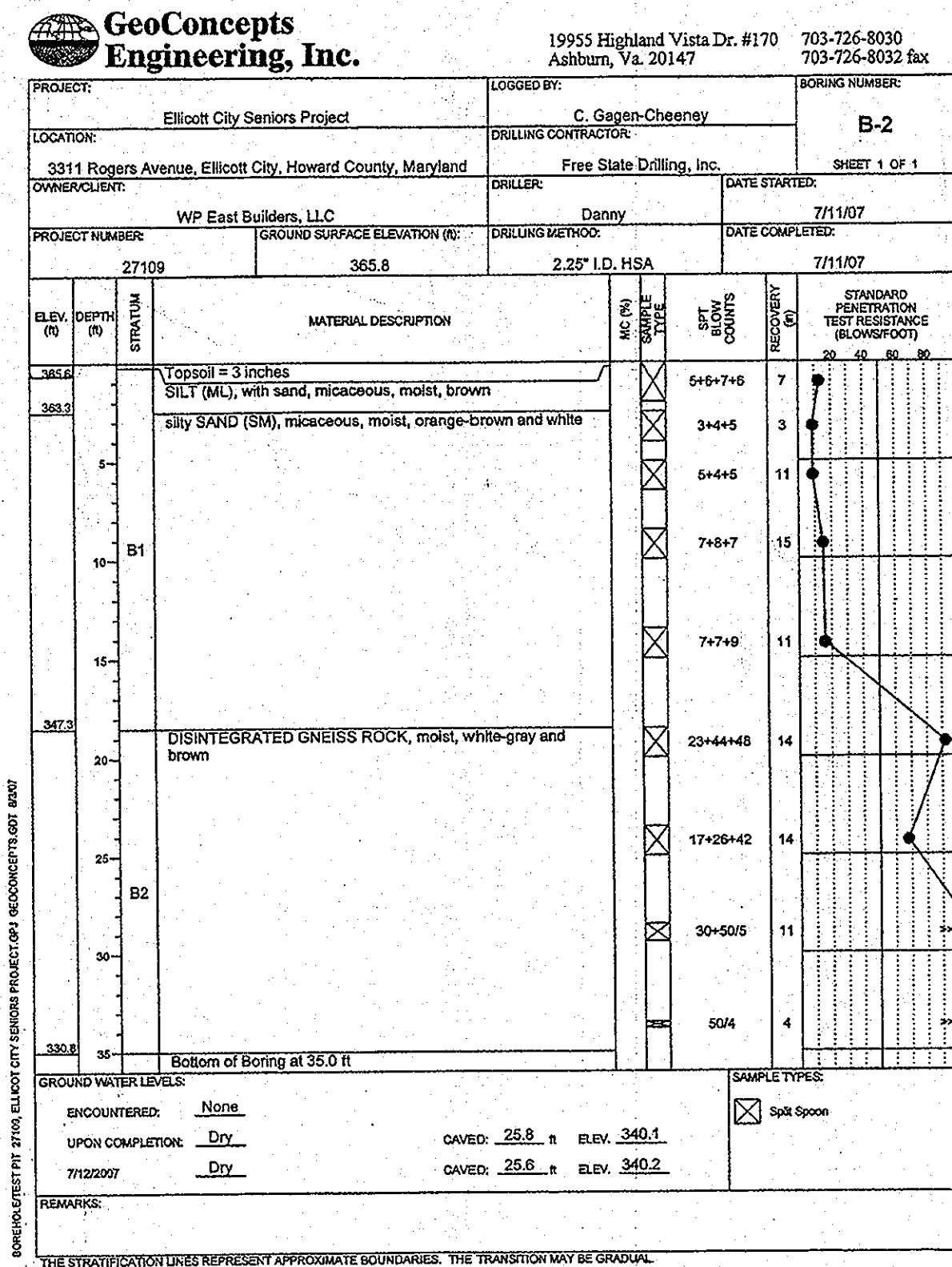
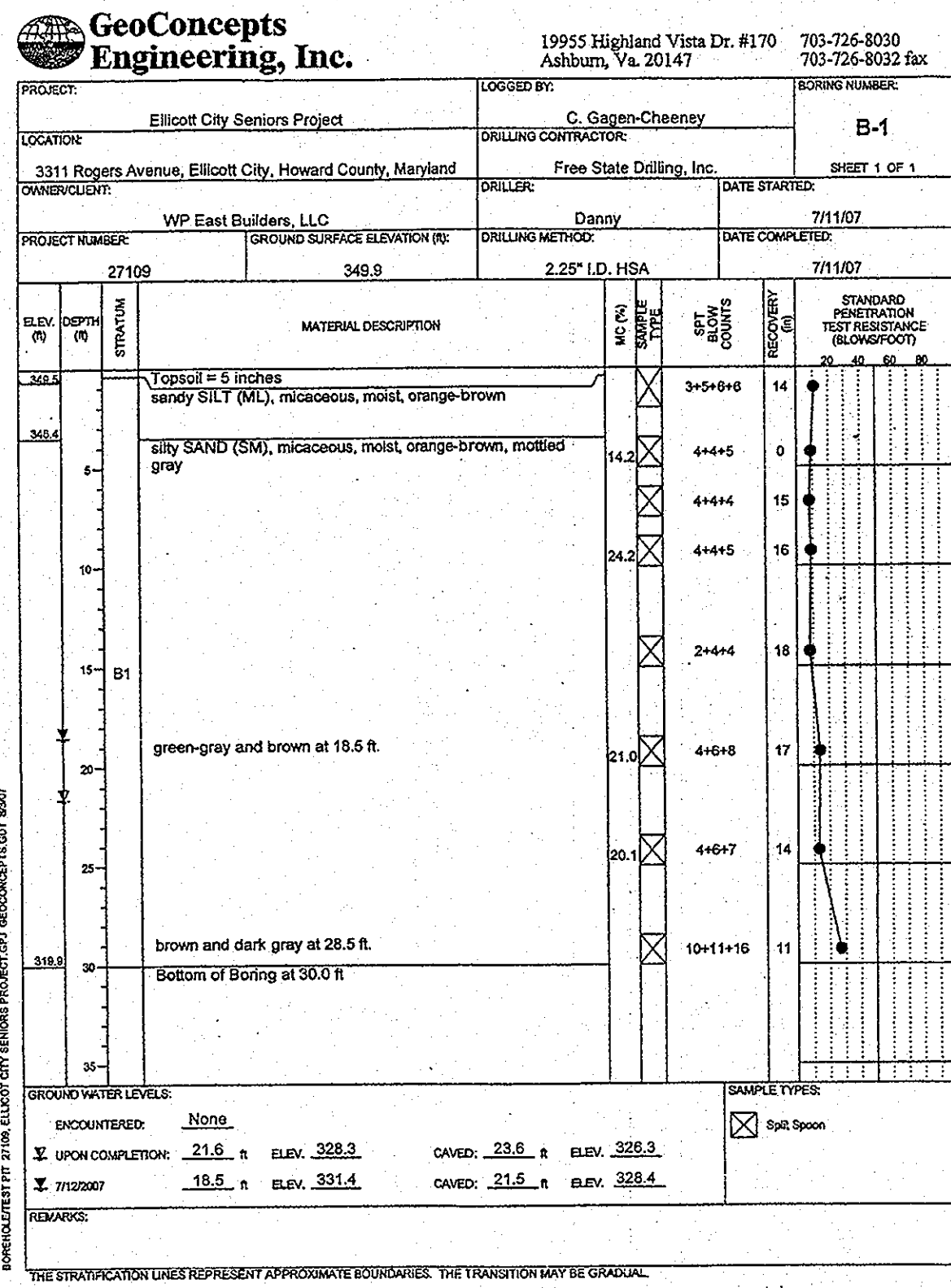
PROJECT: ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

AREA: TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: FOREST CONSERVATION PLAN
DETAIL SHEET

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DESIGNED BY: PHRA
DRAWN BY: JML
PROJECT NO.: 15661-1-0
DATE: 8/24/09
SCALE: AS SHOWN
DRAWING NO. 23 OF 42



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Butler 12/17/09
DIRECTOR, DEP. DATE

Mr. Anthony Morise 12/16/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

West Sheehy 12/17/09
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER: CENTURY HOLDING, LLC
3311 ROGERS AVENUE OAK WEST DR., ELLICOTT CITY, MD 21043-4105

DEVELOPER: WOOD PARTNERS
ATTN: MR. ANTHONY MORISE, PE
8150 LEEBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070

PROJECT: ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

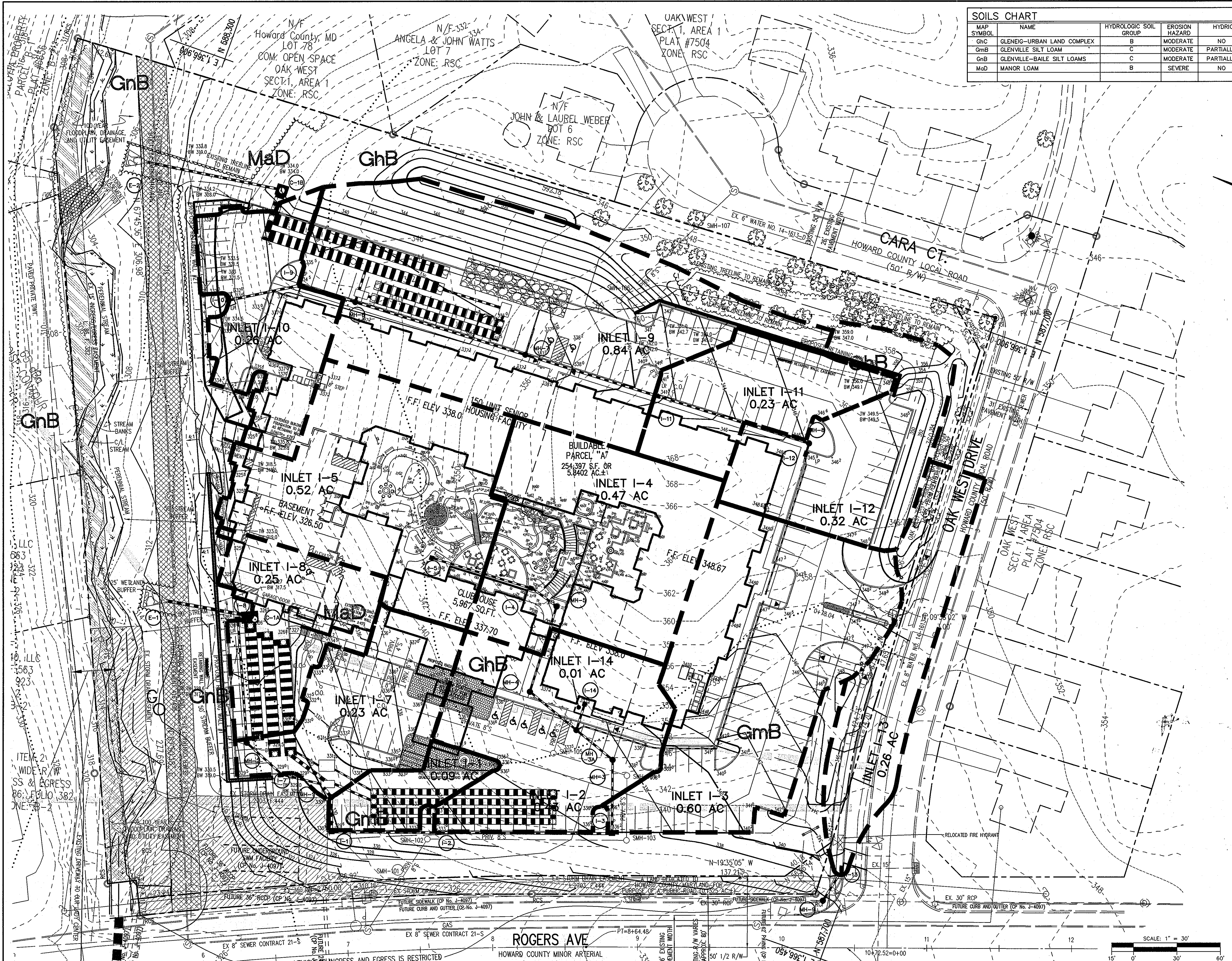
AREA: TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: SOIL BORING LOGS

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive Columbia, MD 21045
T 410.997.8900 F 410.997.9282

SEAL: [Professional Engineer Seal]

DESIGNED BY: DWC
DRAWN BY: KAD
PROJECT NO.: 15661-1-0
C-SDP24BOR.DWG
DATE: 8/24/09
SCALE: AS SHOWN
DRAWING NO. 24 OF 42



MAP SYMBOL	NAME	HYDROLOGIC SOIL GROUP	EROSION HAZARD	HYDRIC	SLOPE (%)
GhC	GLENEIG-URBAN LAND COMPLEX	B	MODERATE	NO	0-8%
GmB	GLENNVILLE SILT LOAM	C	MODERATE	PARTIALLY	3-8%
GhB	GLENNVILLE-BAILE SILT LOAMS	C	MODERATE	PARTIALLY	0-8%
MaD	MANOR LOAM	B	SEVERE	NO	15-25%

INLET NO.	AREA (AC.)	C
I-1	0.09	0.72
I-2	0.40	0.72
I-3	0.60	0.72
I-4	0.47	0.72
I-5	0.52	0.72
I-7	0.23	0.72
I-8	0.25	0.72
I-9	0.84	0.72
I-10	0.26	0.72
I-11	0.23	0.72
I-12	0.32	0.72
I-13	0.26	0.82
I-14	0.01	0.72

LEGEND

--- DRAINAGE AREA DIVIDE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Thomas E. Jutler 12/17/09 DATE
 DIRECTOR, DEP
Chris Deussen 12/16/09 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
Kat Stankovich 12/17/09 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

DATE NO. REVISION
 OWNER CENTURY HOLDING, LLC
 3311 ROGERS AVENUE OAK WEST DR.,
 ELLICOTT CITY, MD 21043-4105

DEVELOPER WOOD PARTNERS
 ATTN: MRJ ANTHONY MORSE, PE
 8150 LEESBURG PIKE
 SUITE 501
 VIENNA, VA 22182
 703-780-5070

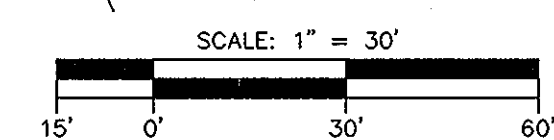
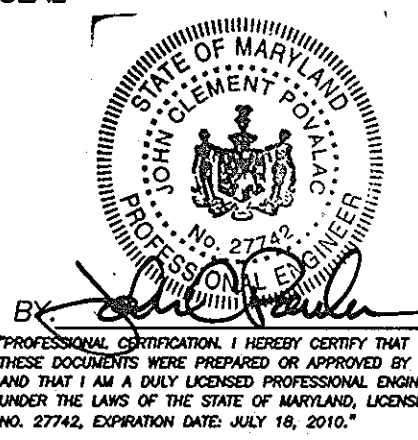
PROJECT ALTA AT REGENCY CREST
 BUILDABLE PARCEL A AND OPEN SPACE LOT 1
 AGE RESTRICTED ADULT HOUSING

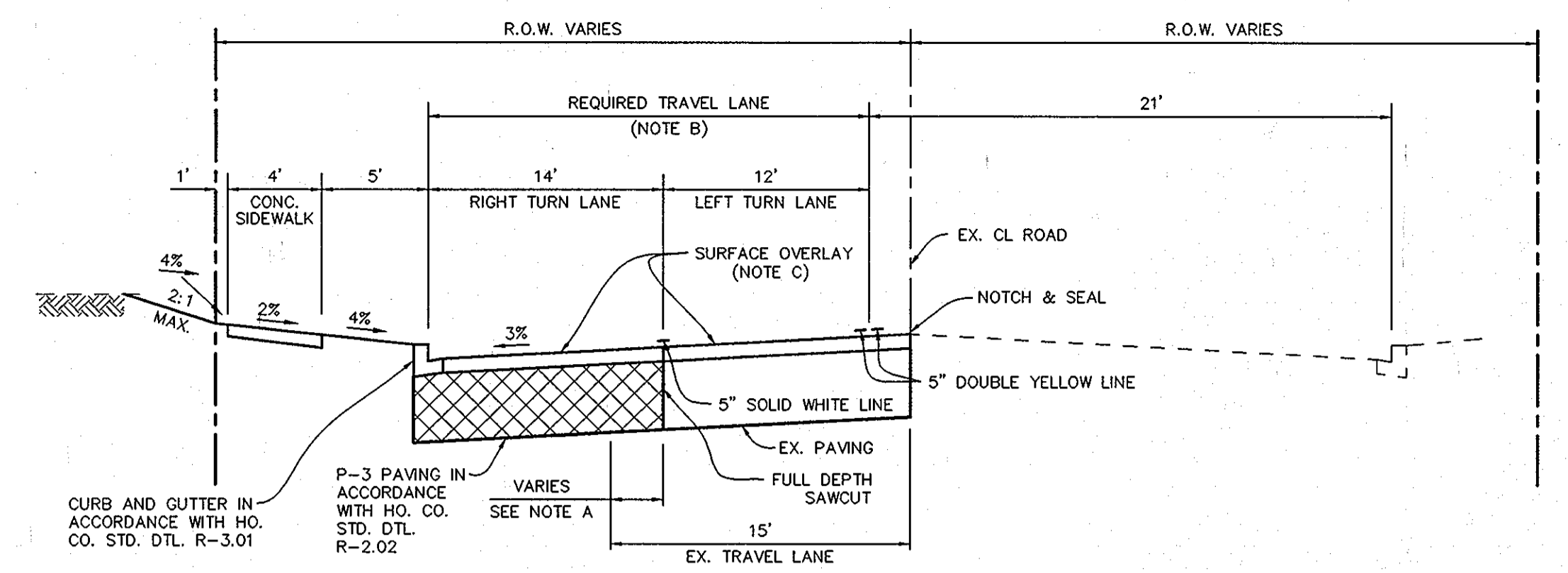
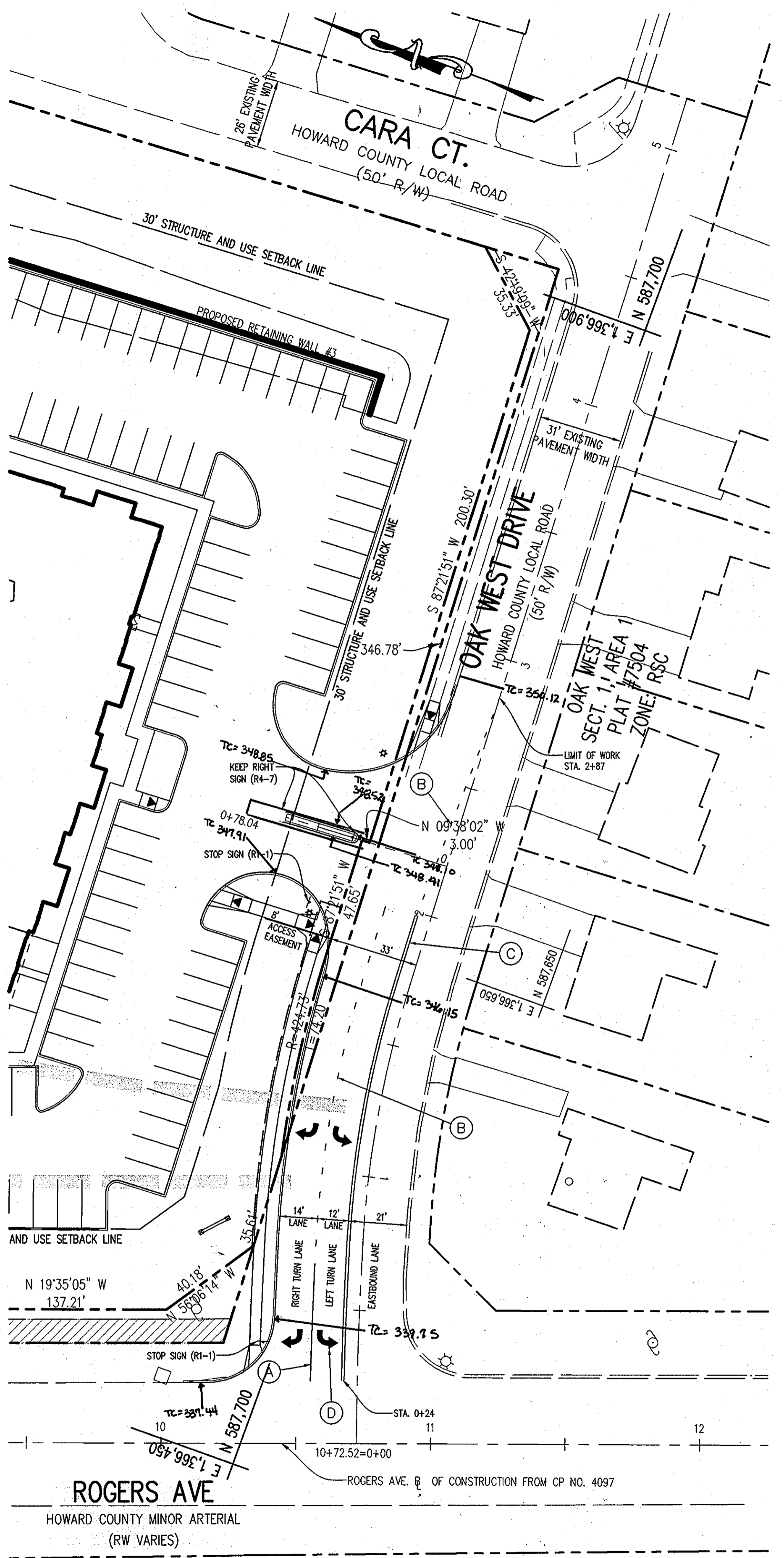
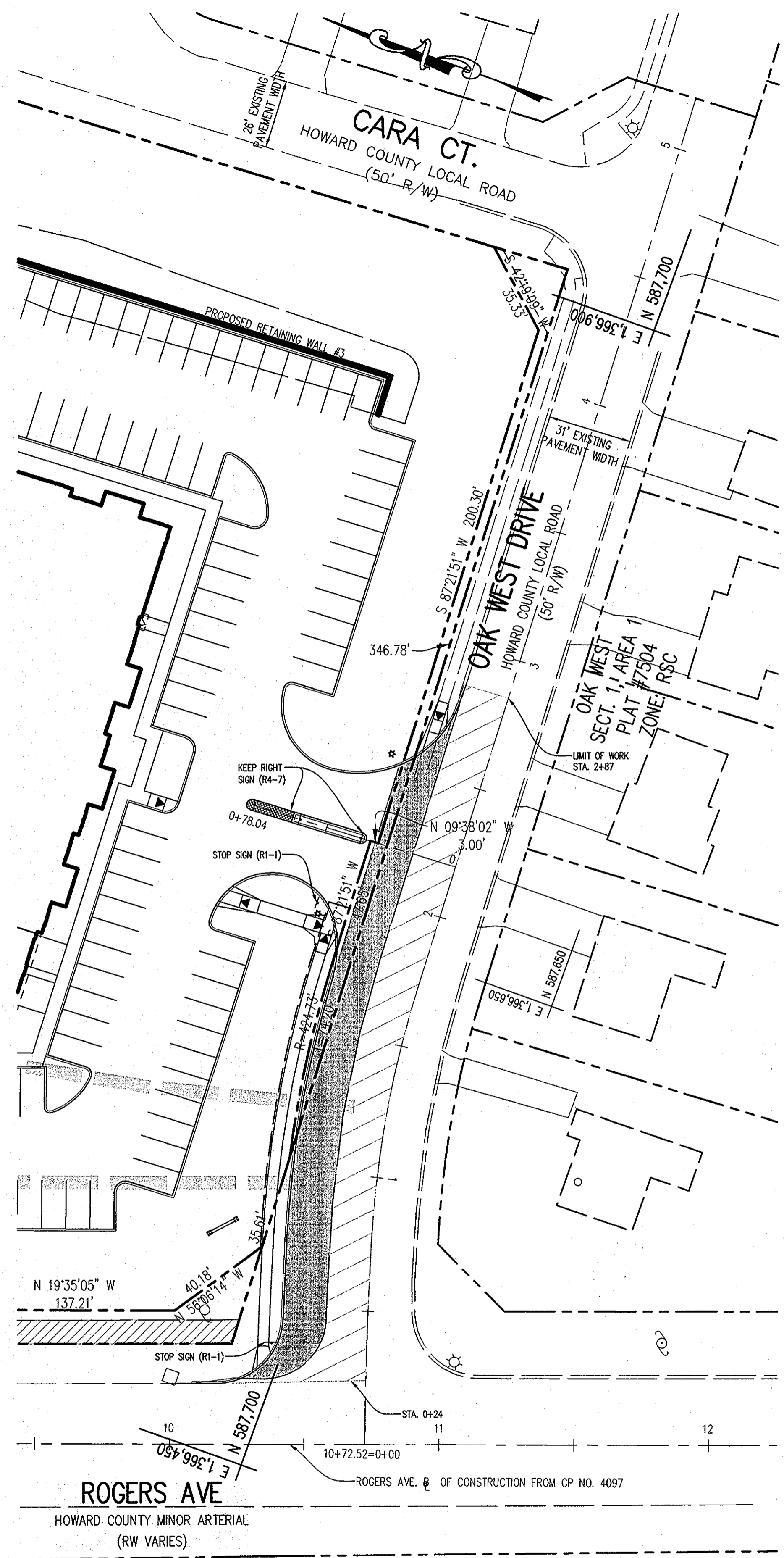
AREA TAX MAP 25, GRID 1, PARCEL 1
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE INLET DRAINAGE AREA MAP

Patton Harris Rust & Associates, PC
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

DESIGNED BY: DWC
 DRAWN BY: KAD
 PROJECT NO: C-SDP25IDA.DWG
 DATE: 8/21/09
 SCALE: AS SHOWN
 DRAWING NO. 25 OF 42





TYPICAL SECTION OF OAK WEST DRIVE WIDENING
STA. 0+24 TO 1+99
 (PER DMV IV STD. DETAIL R-1.08)
 NOT TO SCALE

LEGEND
 PROPOSED FULL DEPTH CONSTRUCTION
 PROPOSED MILL AND OVERLAY

ROAD IMPROVEMENT PLAN
 GRAPHIC SCALE 1"=30'

ROAD STRIPING LEGEND
 (A) 5" SOLID WHITE LINE
 (B) 5" WHITE TYPE I LINE (2' LINE/6" GAP/2' LINE)
 (C) 5" DOUBLE YELLOW LINE
 (D) PREFORMED THERMOPLASTIC PAVEMENT MARKING ARROW

PAVEMENT MARKING AND STRIPING PLAN
 GRAPHIC SCALE 1"=30'

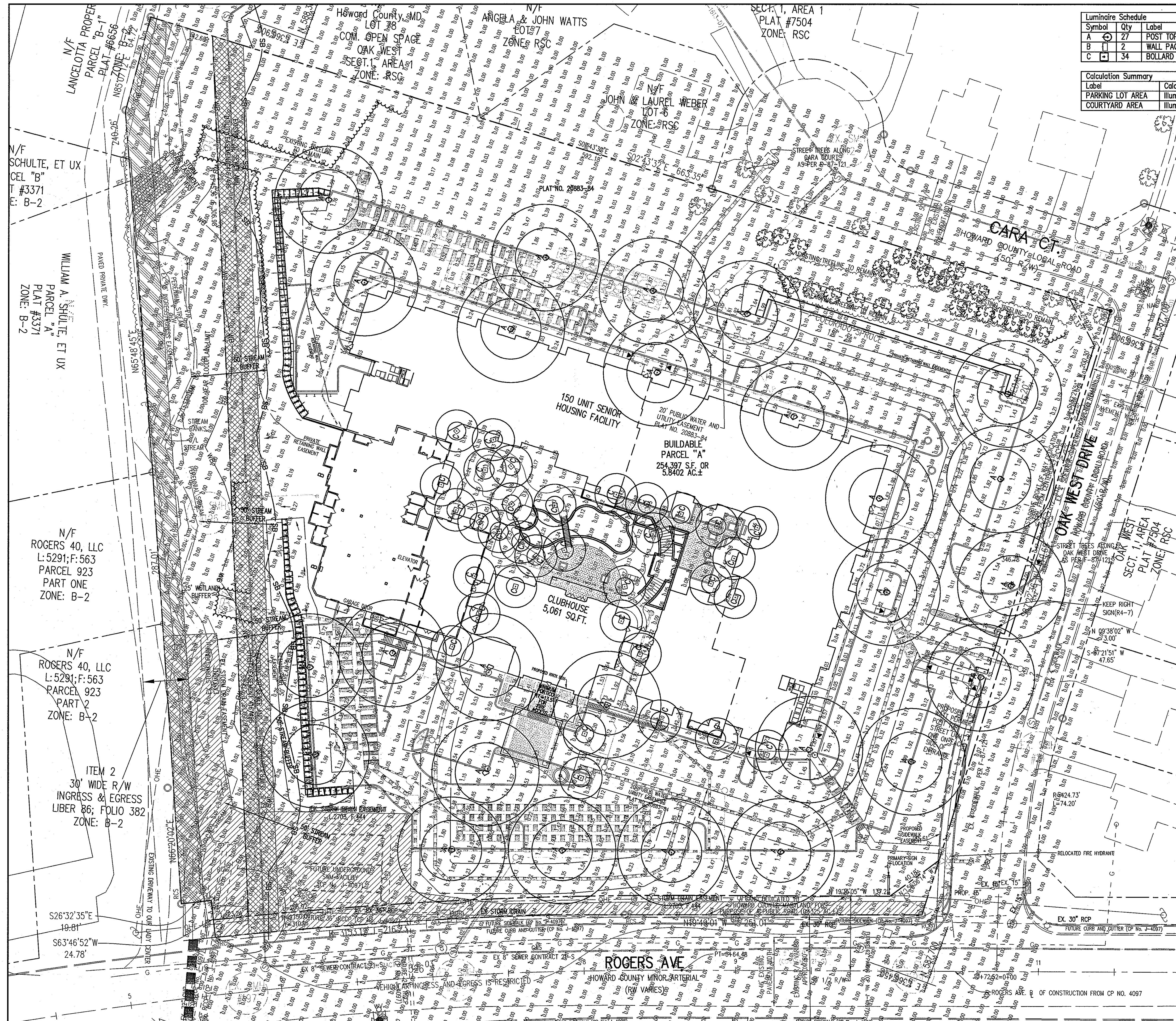
LEGEND

PROPERTY LINE	[Symbol]
EXISTING TREELINE	[Symbol]
EXISTING TREELINE TO REMAIN	[Symbol]
PROPOSED LOT LINE	[Symbol]
EX. STREAM AND BUFFER	[Symbol]
EX. 100-YEAR FLOODPLAIN	[Symbol]
PROPOSED RETAINING WALL EASEMENT	[Symbol]
OVERHEAD ELECTRIC LINE	[Symbol]
EXISTING BUILDING	[Symbol]
PROPOSED BUILDING	[Symbol]
EX. STORM DRAIN EASEMENT	[Symbol]

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 TANGIE A. RUPP
 4 21TH MD P.E. No. 11774
 8/24/09

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. 21774, EXPIRATION DATE: 11-12-2011

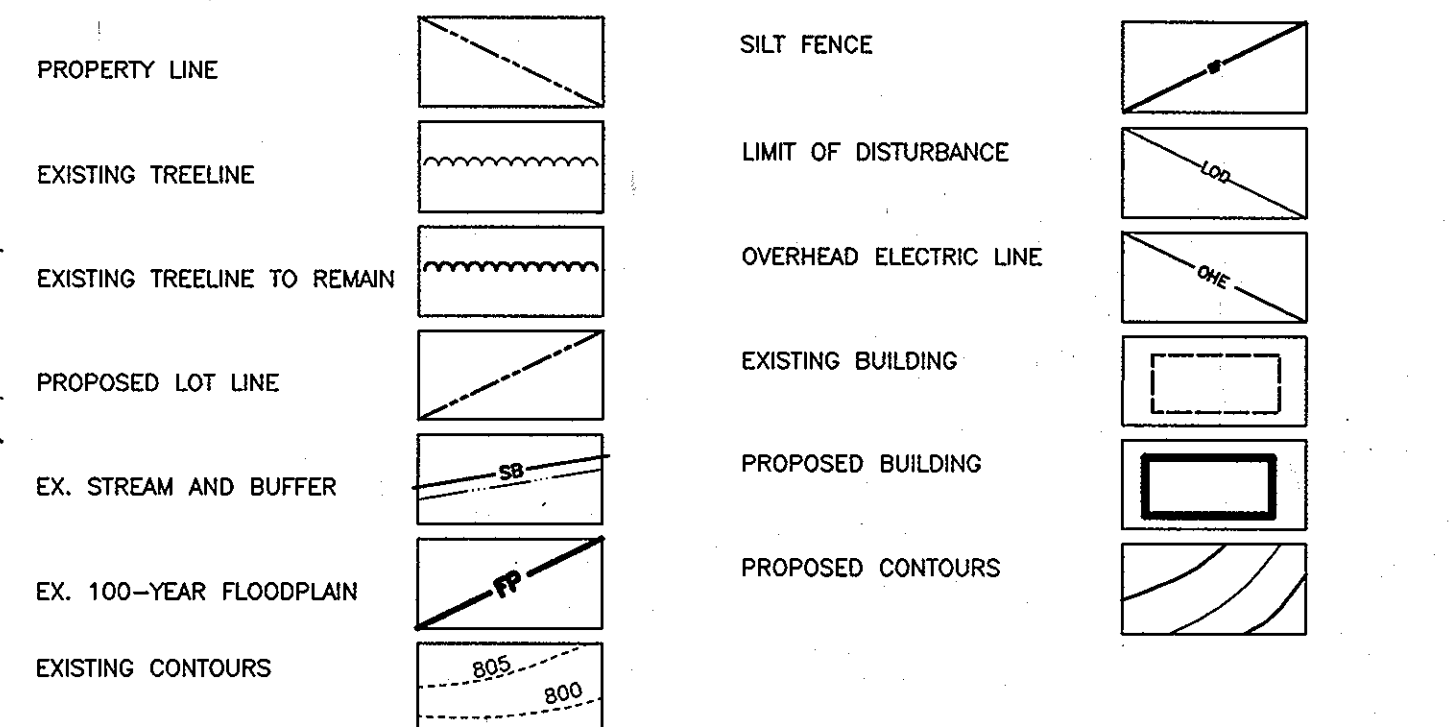
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Thomas E. Suttler</i> DIRECTOR, DEP.	12/12/09 DATE
<i>John Deussen</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	12/16/09 DATE
<i>Neil Shindler</i> CHIEF, DIVISION OF LAND DEVELOPMENT	12/16/09 DATE
DATE NO.	REVISION
OWNER	CENTURY HOLDING, LLC 3311 ROGERS AVENUE - OAK WEST DR., ELLICOTT CITY, MD 21043-4105
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070
PROJECT	ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE	OAK WEST DRIVE ROAD IMPROVEMENT PLAN
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
DESIGNED BY	DWC
DRAWN BY	EMR
PROJECT NO.	15661-1-0 C-SDP28RIP
DATE	8/24/09
SCALE	1" = 30'
DRAWING NO.	26 OF 42



Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Lumens	LLF	Description
A	27	POST TOP	SINGLE	14000	0.800	3177BP 175W MH AT 14' LAMP HEIGHT - PARTIAL CUTOFF OPTICS
B	2	WALL PACK	SINGLE	14000	0.800	175W MH AT 14' LAMP HEIGHT
C	34	BOLLARD	SINGLE	5000	0.800	164-51B 70W MH AT 2.5' LAMP HEIGHT

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING LOT AREA	Illuminance	Fc	0.57	4.10	0.01	57.00	410.00
COURTYARD AREA	Illuminance	Fc	0.63	4.58	0.05	12.60	91.60

LEGEND



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

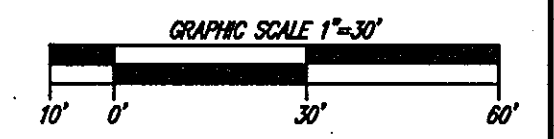
Monica E. Huddle 4/26/10 DATE
 DIRECTOR
W.D. Dammann 4/13/10 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
Keith Barlowe 4/20/10 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

3/10/10	1	REVISED RETAINING WALLS, SHIFT LIGHT LOCATIONS
DATE NO.		REVISION
OWNER	CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLICOTT CITY, MD 21043-4105	
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070	
PROJECT	ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING	
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE	REVISED REPLACEMENT SHEET LIGHTING PLAN	

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

DESIGNED BY: :INDUST. LIGHT
 DRAWN BY: :INDUST. LIGHTING
 PROJECT NO.: 15861-1-0
 DATE: 3/24/10
 SCALE: 1"=30'
 DRAWING NO.: 27 OF 42

THIS REPLACEMENT SHEET
 WILL SUPERCEDE SHEET
 NO. 27 WHICH WAS
 PREVIOUSLY SIGNED ON
 12/17/09.



TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

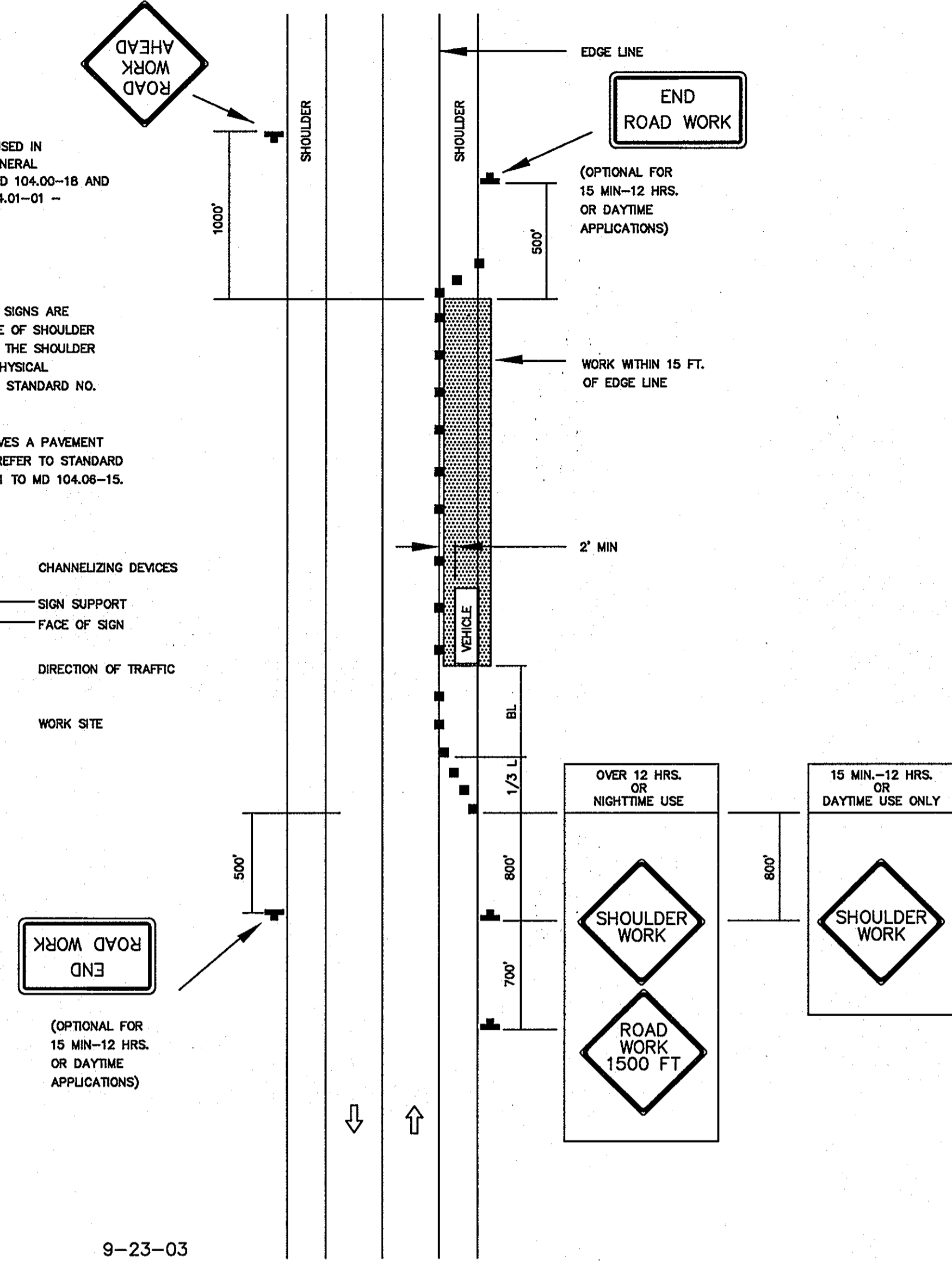
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-82

NOTES:
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER REFER TO STANDARD NO. MD 104.06-14.

WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-11 TO MD 104.06-15.

KEY:

 CHANNELIZING DEVICES
 SIGN SUPPORT
 FACE OF SIGN
 DIRECTION OF TRAFFIC
 WORK SITE



8-20-03 9-23-03

MD. 104.02-02
SHOULDER WORK, 2 LANE, 2-WAY TRAFFIC, ≤ 40MPH
NO SCALE

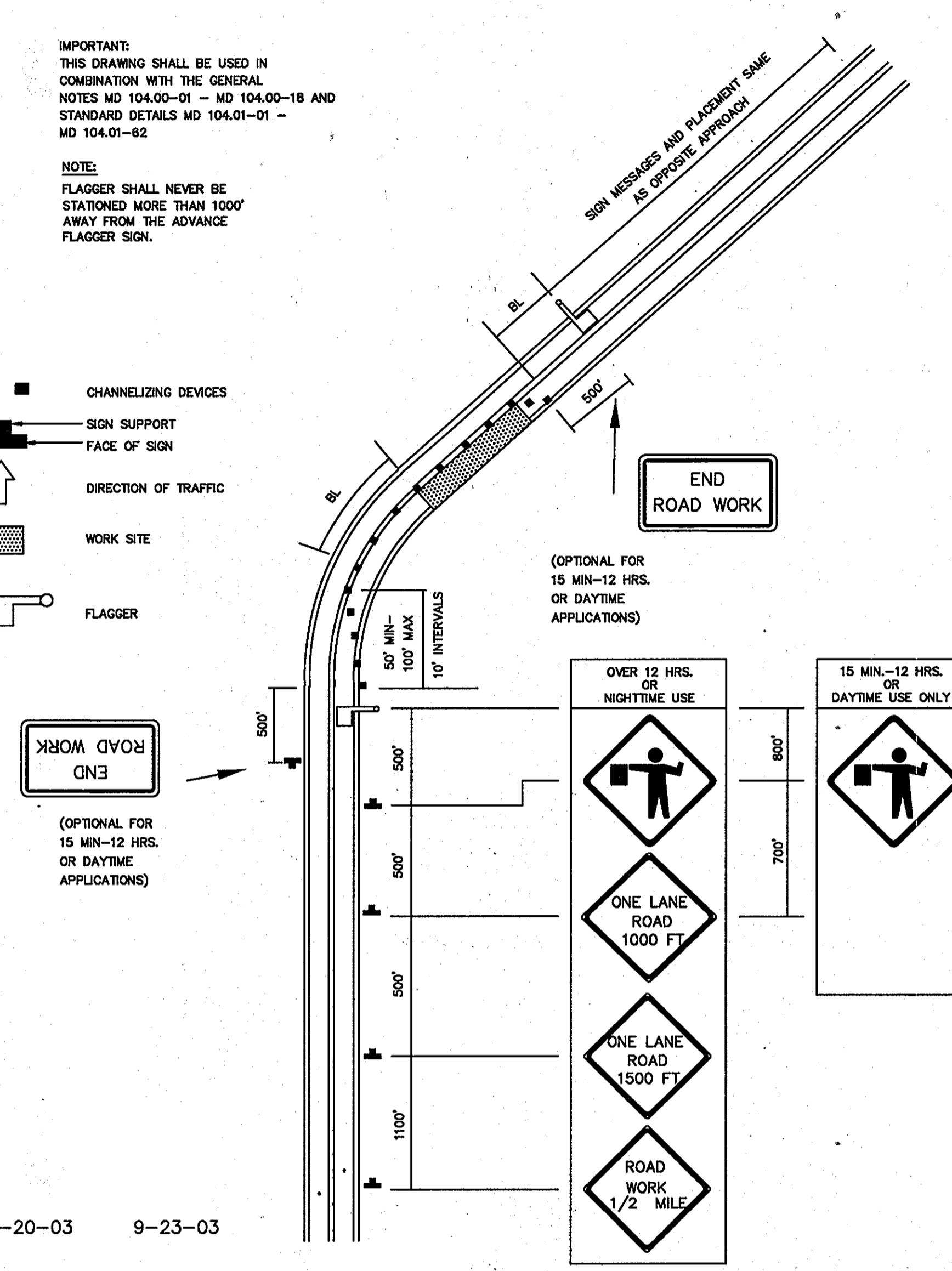
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-82

NOTE:
FLAGGER SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

KEY:

 CHANNELIZING DEVICES
 SIGN SUPPORT
 FACE OF SIGN
 DIRECTION OF TRAFFIC
 WORK SITE
 FLAGGER



8-20-03 9-23-03

MD. 104.02-10
FLAGGING OPERATION, 2 LANE, 2-WAY TRAFFIC, ≤ 40MPH
NO SCALE

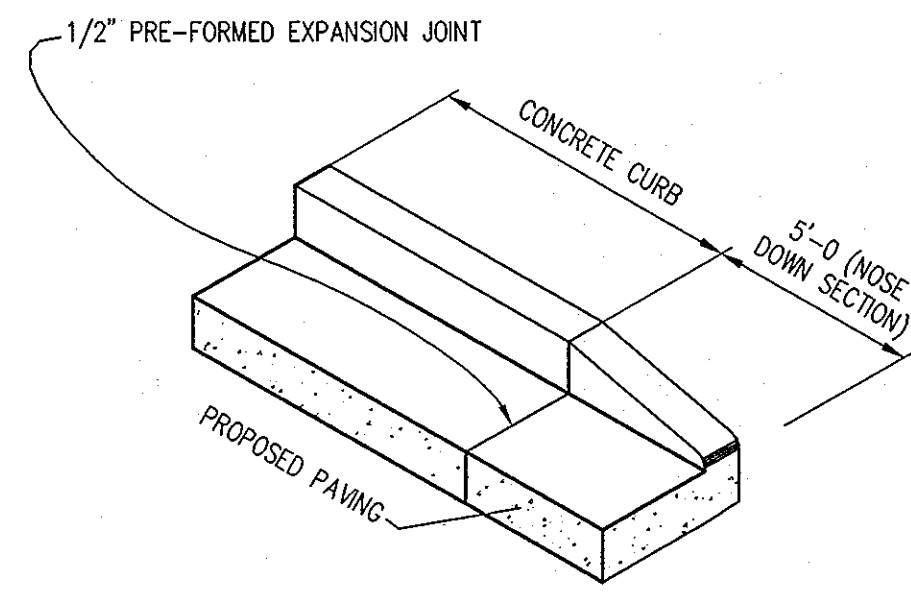
NOTES

- OAK WEST DRIVE IS AN EXISTING 2 LANE, 2-WAY ROAD. THE POSTED SPEED LIMIT FOR THE ROAD IS 25 MPH.
- REFER TO MDSHA STANDARDS MD 104.01-80 AND MD 104.01-81 FOR BUFFER LENGTHS AND TAPER LENGTHS. FOR GENERAL NOTES FOR CHANNELIZATION DEVICES, REFER TO MDSHA STANDARD MD 104.00-10.
- REFER TO MDSHA STANDARD MD 104.00-12 FOR GENERAL NOTES FOR FLAGGING OPERATION.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Thomas E. Butler</i> DIRECTOR, DEP.	12/17/09 DATE
<i>John Deussen</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	12/16/09 DATE
<i>Ken Shelton</i> CHIEF, DIVISION OF LAND DEVELOPMENT	12/17/09 DATE

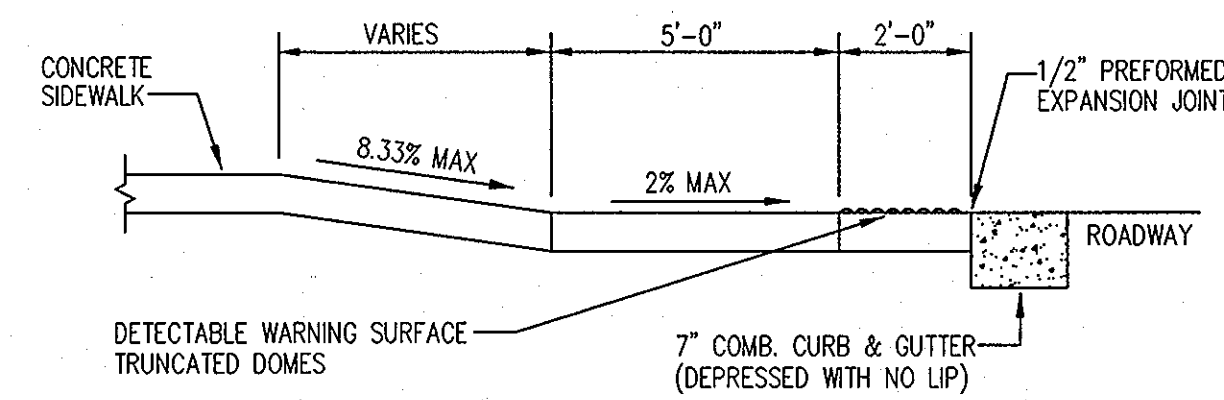
DATE	NO.	REVISION
OWNER CENTURY HOLDING, LLC 3311 ROGERS AVENUE OAK WEST DR. ELLCOTT CITY, MD 21043-4105		
DEVELOPER WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070		
PROJECT ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING		
AREA TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
TITLE MOT PLAN- OAK WEST DRIVE		
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282		

	DESIGNED BY :ACR
	DRAWN BY:BCL
	PROJECT NO : 15661-1-0 C-SP027DET.DWG
	DATE : 8/24/09
	SCALE NO SCALE
	DRAWING NO. 28 OF 42



HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.02).

1 **NOSE DOWN CURB DETAIL**
NOT TO SCALE



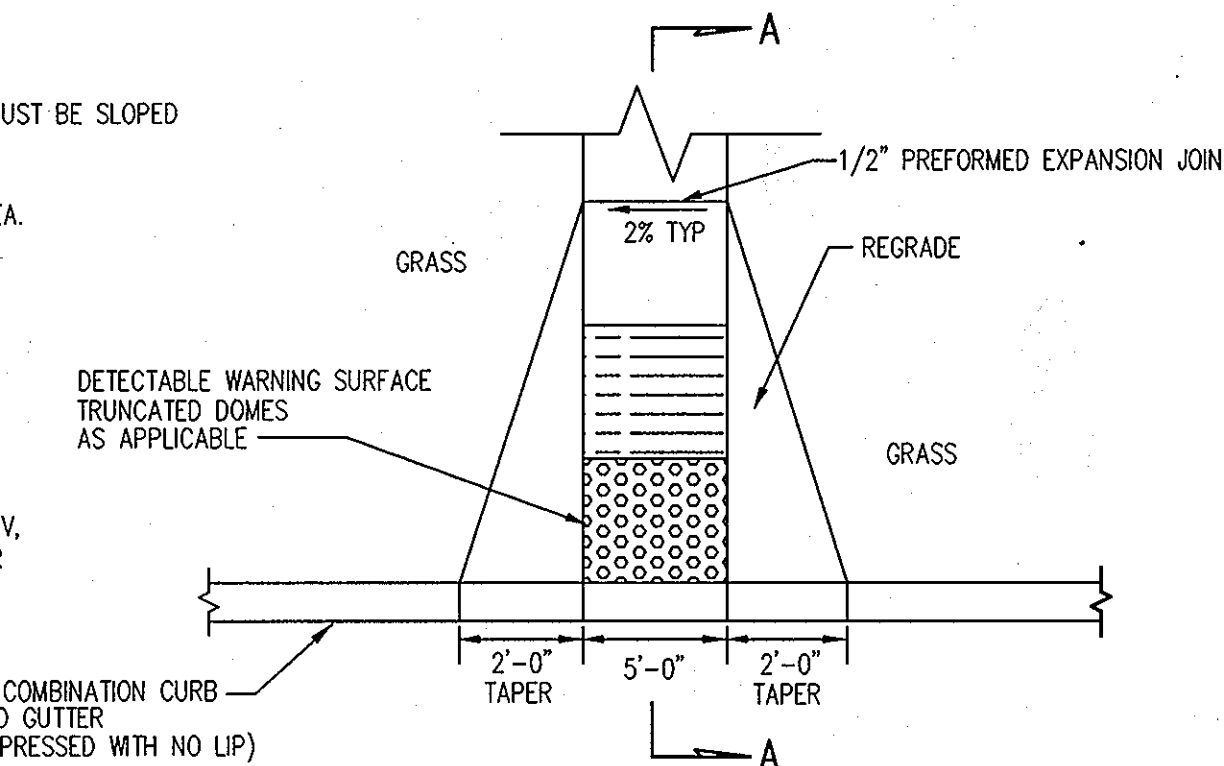
SECTION A-A

NOTES:

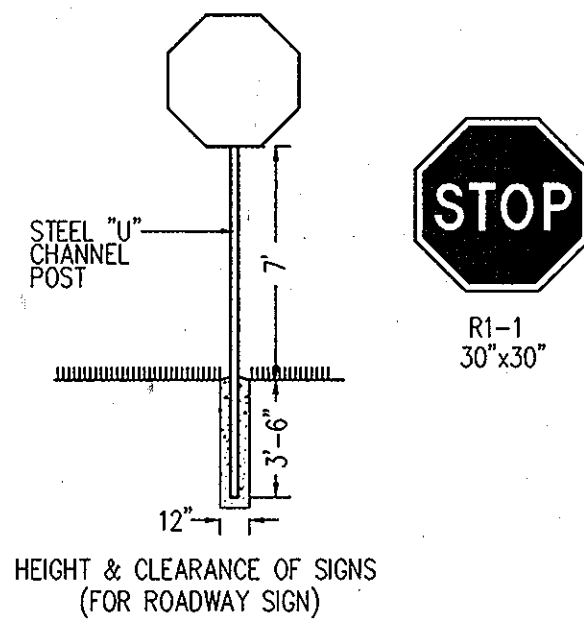
- ALL RAMP SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF RAMP. SEE DETAIL R-4.07
- GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
- 4'-0" SIDEWALK REQUIRES PASSING AREA. (SEE DETAIL R-4.01)

HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-4.05).

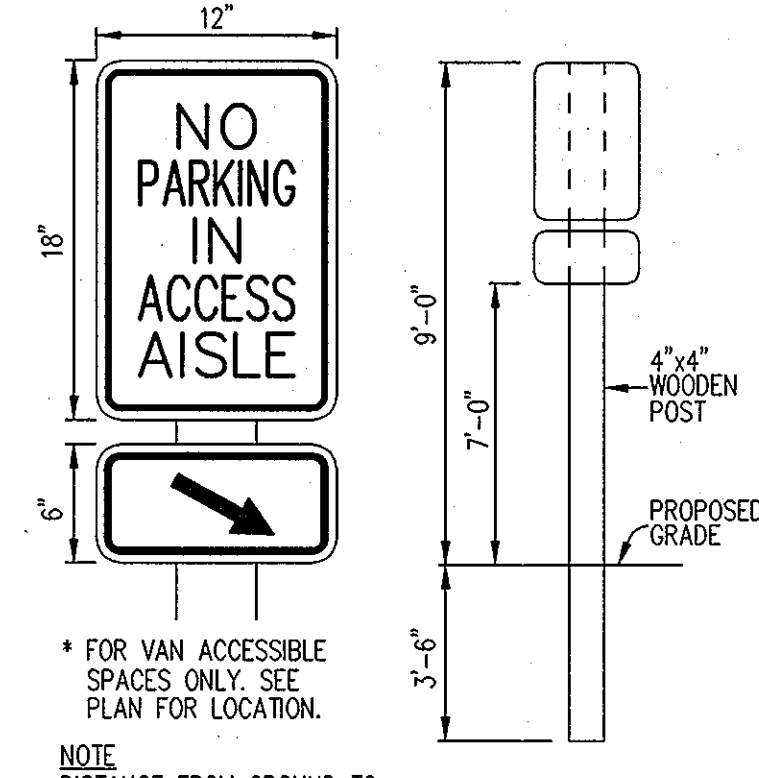
2 **HANDICAP RAMP**
NOT TO SCALE



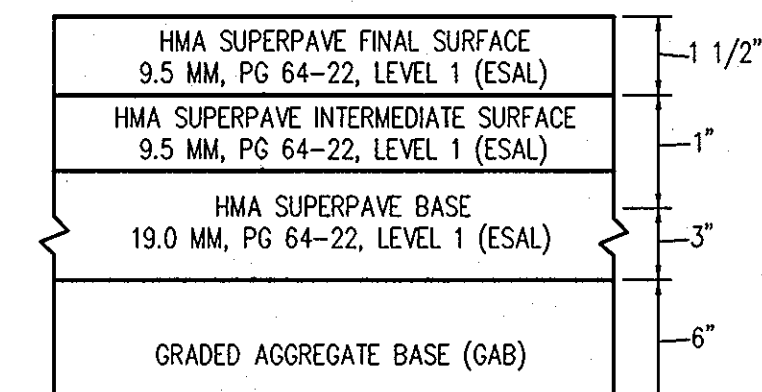
RAMP PERPENDICULAR TO CURB



3 **STOP SIGN DETAIL**
NOT TO SCALE



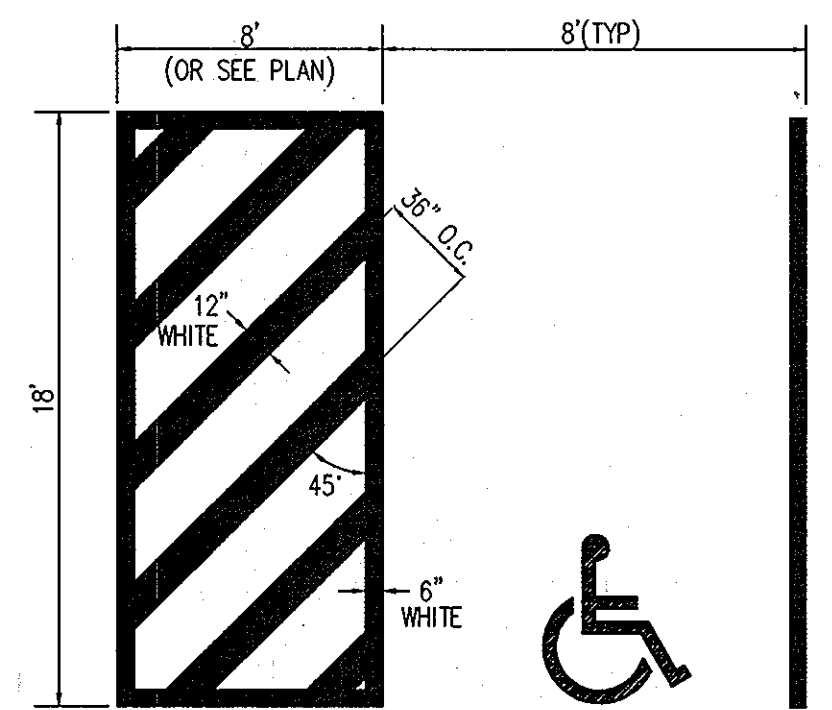
4 **ACCESS AISLE SIGN**
NOT TO SCALE



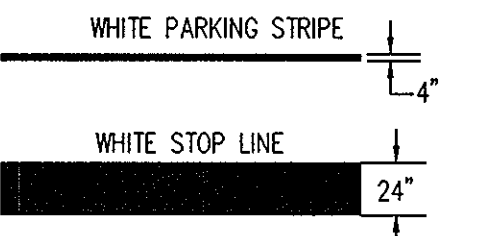
HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)

5 **P-3 PAVING**
NOT TO SCALE

NOTE: THE PAVING SECTION SHOWN HAS NOT BEEN DESIGNED FOR ACTUAL SOIL CONDITIONS, IN PLACE COMPACTION RESULTS, OR TRAFFIC VOLUMES SPECIFIC TO THIS PROJECT. IT IS RECOMMENDED THAT THE USER CONSULT WITH A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER FOR A SPECIFIC PAVING DESIGN BASED ON THE APPROPRIATE PARAMETERS PRIOR TO INSTALLATION OF THIS PAVING SECTION.

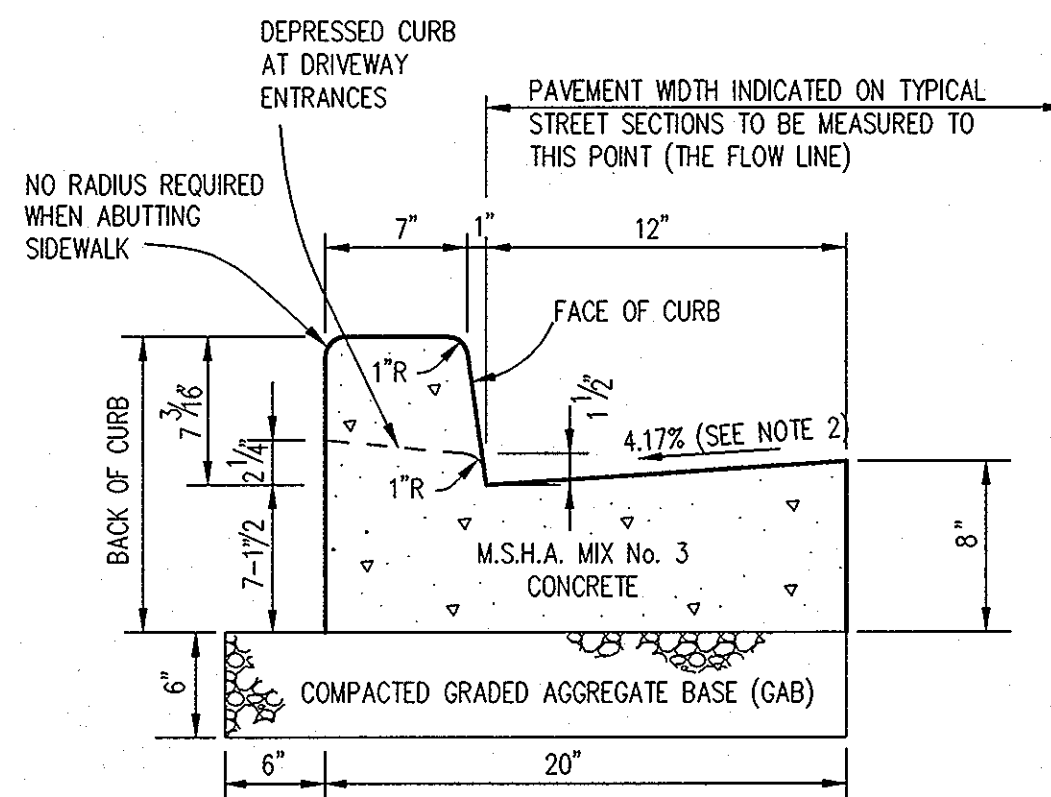


HDCP SPACE



LINE SPECIFICATIONS

6 **STRIPING STANDARDS**
NOT TO SCALE



NOTE: PROVIDE TRANSITION TO CURB INLET IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-3.06.

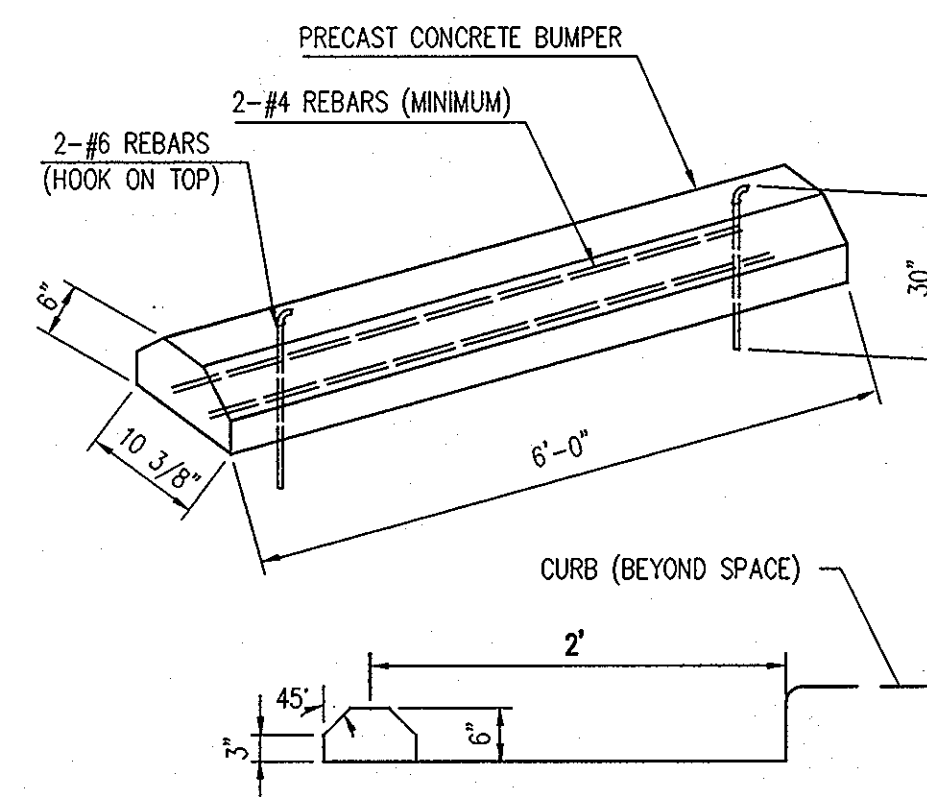
7 **STANDARD 7" COMBINATION CURB AND GUTTER**
NOT TO SCALE

HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.01).

* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT.

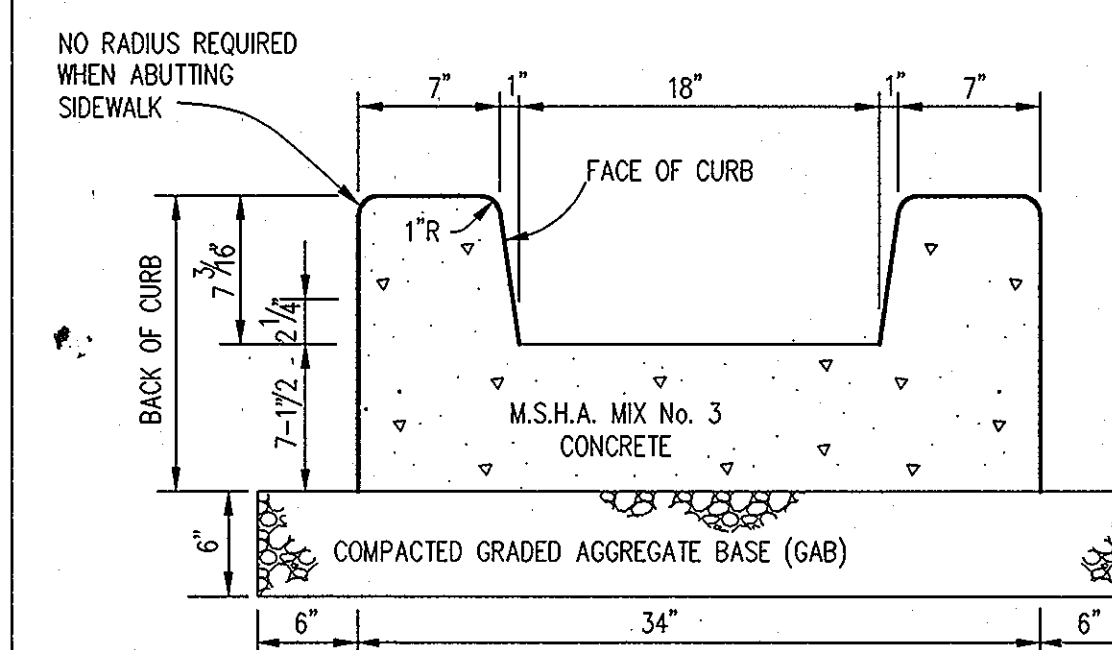
NOTES:

- A REVERSE GUTTER PAN SHALL HAVE A GUTTER SLOPE OF 4.17% AWAY FROM THE FLOW LINE, AND SHALL NOT BE USED WHERE THIS DRAINAGE CREATES A HAZARDOUS CONDITION.
- GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTION SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF THE SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB & GUTTER.
- A MINIMUM OF TWO (2) FEET OF COMPACTED STABILIZED EARTH, OR EQUIVALENT, SHALL SUPPORT THE ENTIRE BACK OF CURB.
- POSITIVE DRAINAGE SHALL BE PROVIDED BOTH BEHIND THE CURB AND ALONG THE GUTTER AND FLOW LINE.



SECTION

8 **CONCRETE WHEEL STOP**
NOT TO SCALE

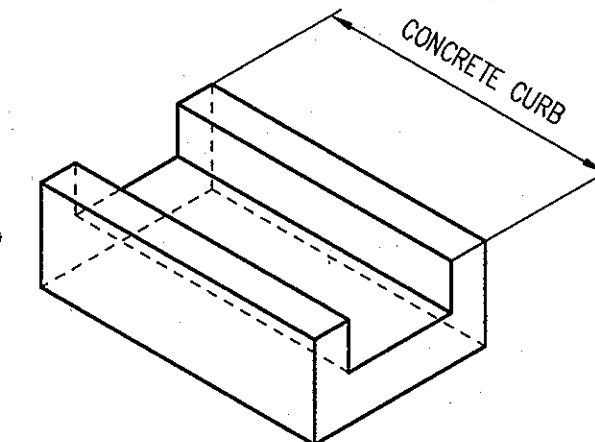


HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.01).

NOTES:

- A MINIMUM OF TWO (2) FEET OF COMPACTED STABILIZED EARTH, OR EQUIVALENT, SHALL SUPPORT THE ENTIRE BACK OF CURB.
- POSITIVE DRAINAGE SHALL BE PROVIDED BOTH BEHIND THE CURB AND ALONG THE GUTTER AND FLOW LINE.

14 **18" CONCRETE SWALE**
NOT TO SCALE



PEDESTRIAN CROSSWALK DETAIL

HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING 1-7.03)

15 **CROSSWALK DETAIL**
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas J. Hudler 4/24/10
DIRECTOR DATE

Mr. [Signature] 4/13/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Keith [Signature] 4/24/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

3/10/10 1 REMOVED W/M FROM DETAIL 10 & 11, ADDED DETAIL 15.

OWNER CENTURY HOLDING, LLC
3311 OAK WEST DRIVE
ELLICOTT CITY, MD 21043-4105

DEVELOPER WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
VIENNA, VA 22182
703-760-5070

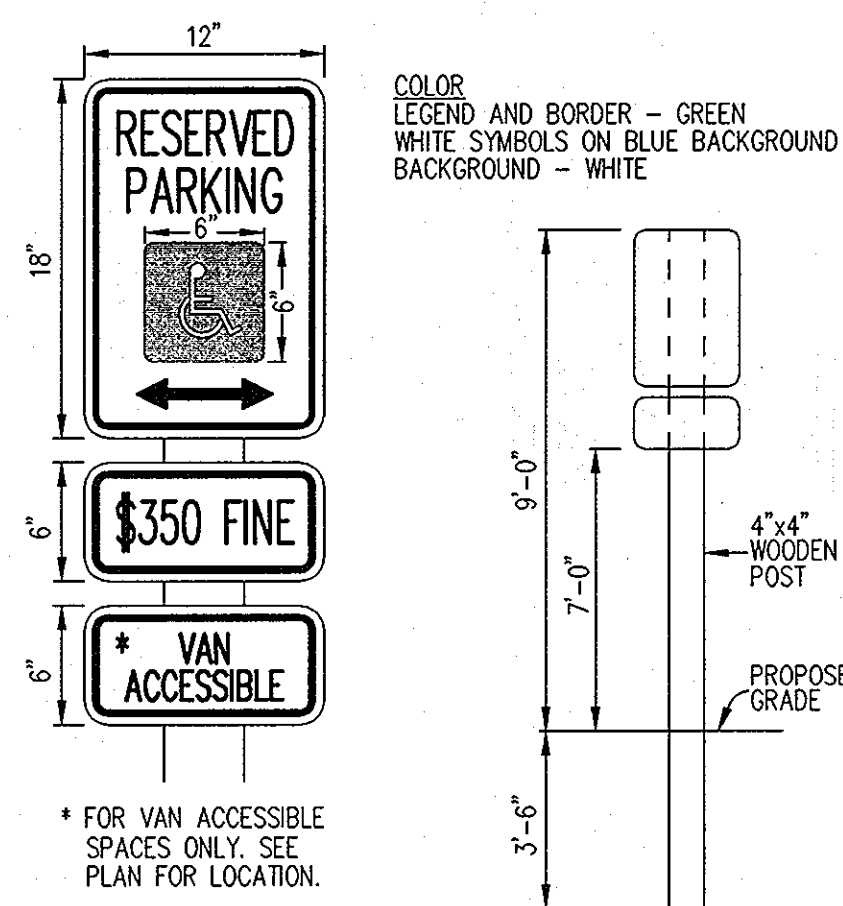
PROJECT ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

AREA TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE REVISED REPLACEMENT SHEET
SITE DETAILS

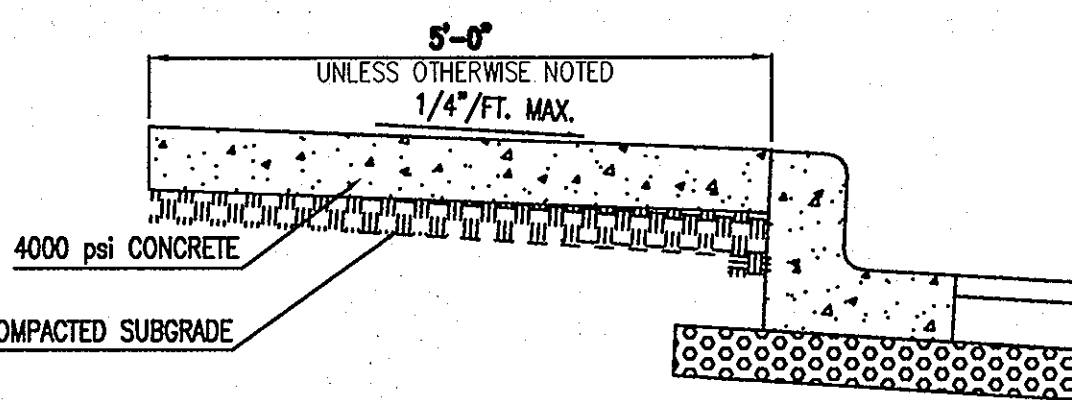
Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DESIGNED BY: PHRA
DRAWN BY: JML
PROJECT NO.: 15661-1-0
DATE: 3/24/10
SCALE: NTS
DRAWING NO.: 29 OF 42

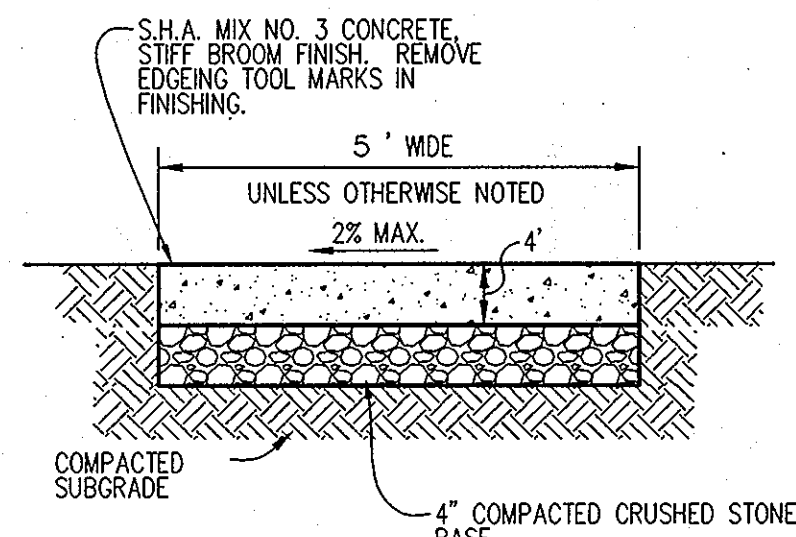


NOTE: DISTANCE FROM GROUND TO BOTTOM OF SIGN TO BE 7'.

9 **HANDICAP SIGN DETAIL**
NOT TO SCALE



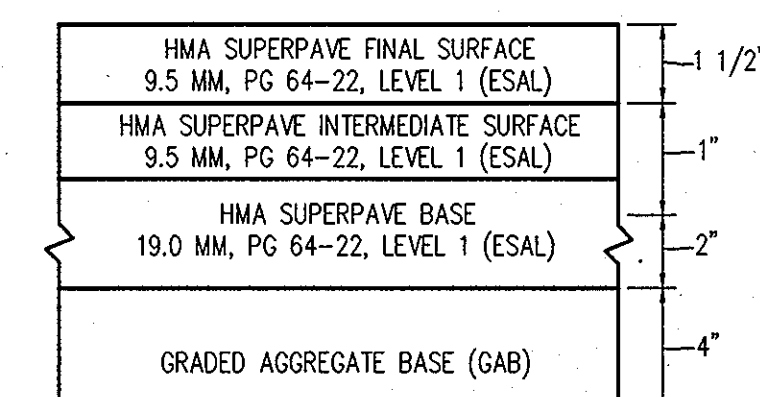
10 **SIDEWALK TRANSITION DETAIL**
NOT TO SCALE



NOTES:
PROVIDE LATITUDINAL EXPANSION JOINTS AT 15' O.C. (MAX.) PROVIDE CONTRACTION (DUMMY) JOINT AT 5' O.C. INTERVALS BETWEEN EXPANSION JOINTS. SIDEWALK TO BE SCRIBED IN 5' MAX. SQUARES.
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.05).

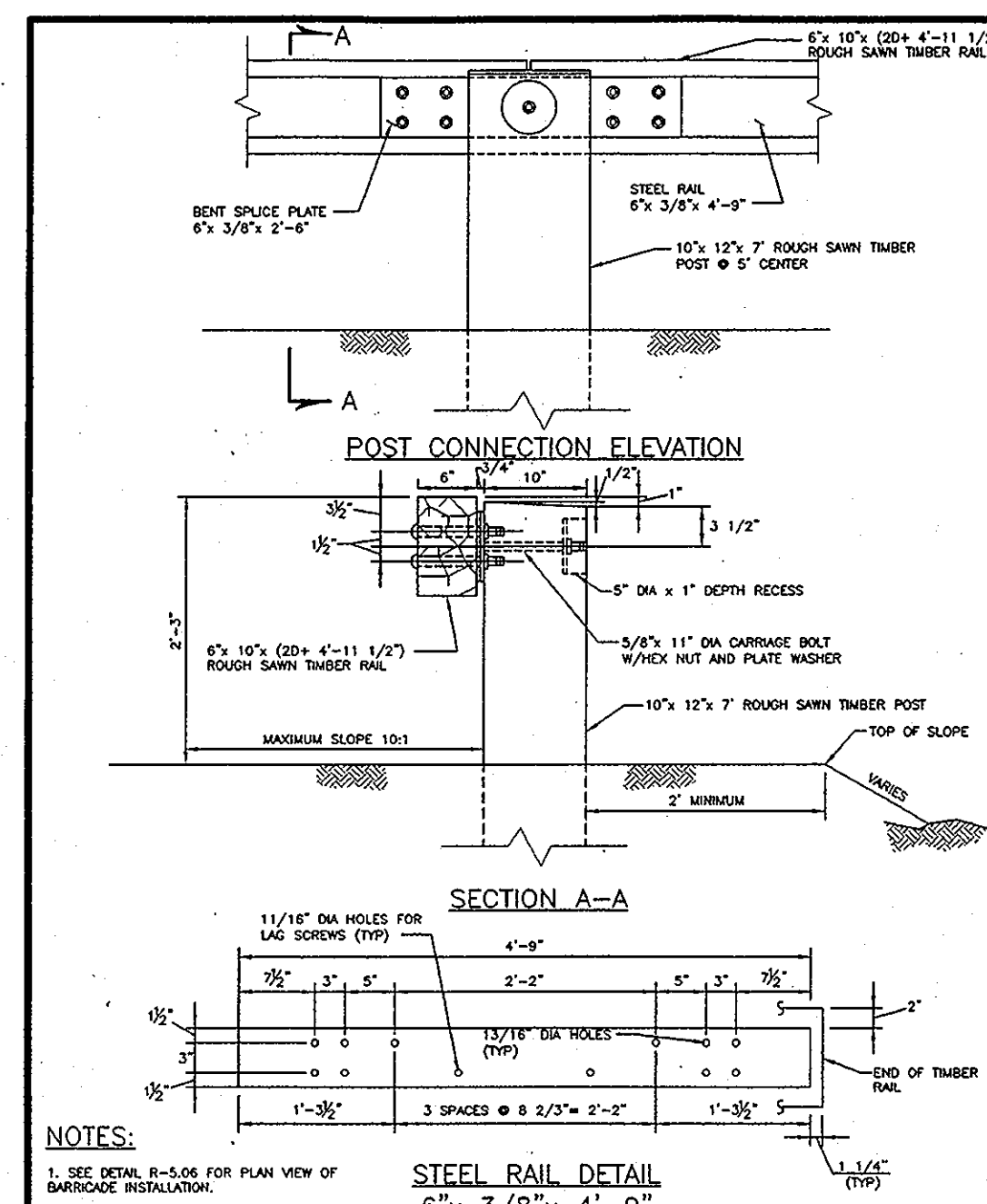
11 **SIDEWALK DETAIL**
NOT TO SCALE



HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)

12 **P-2 PAVING**
NOT TO SCALE

NOTE: THE PAVING SECTION SHOWN HAS NOT BEEN DESIGNED FOR ACTUAL SOIL CONDITIONS, IN PLACE COMPACTION RESULTS, OR TRAFFIC VOLUMES SPECIFIC TO THIS PROJECT. IT IS RECOMMENDED THAT THE USER CONSULT WITH A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER FOR A SPECIFIC PAVING DESIGN BASED ON THE APPROPRIATE PARAMETERS PRIOR TO INSTALLATION OF THIS PAVING SECTION.

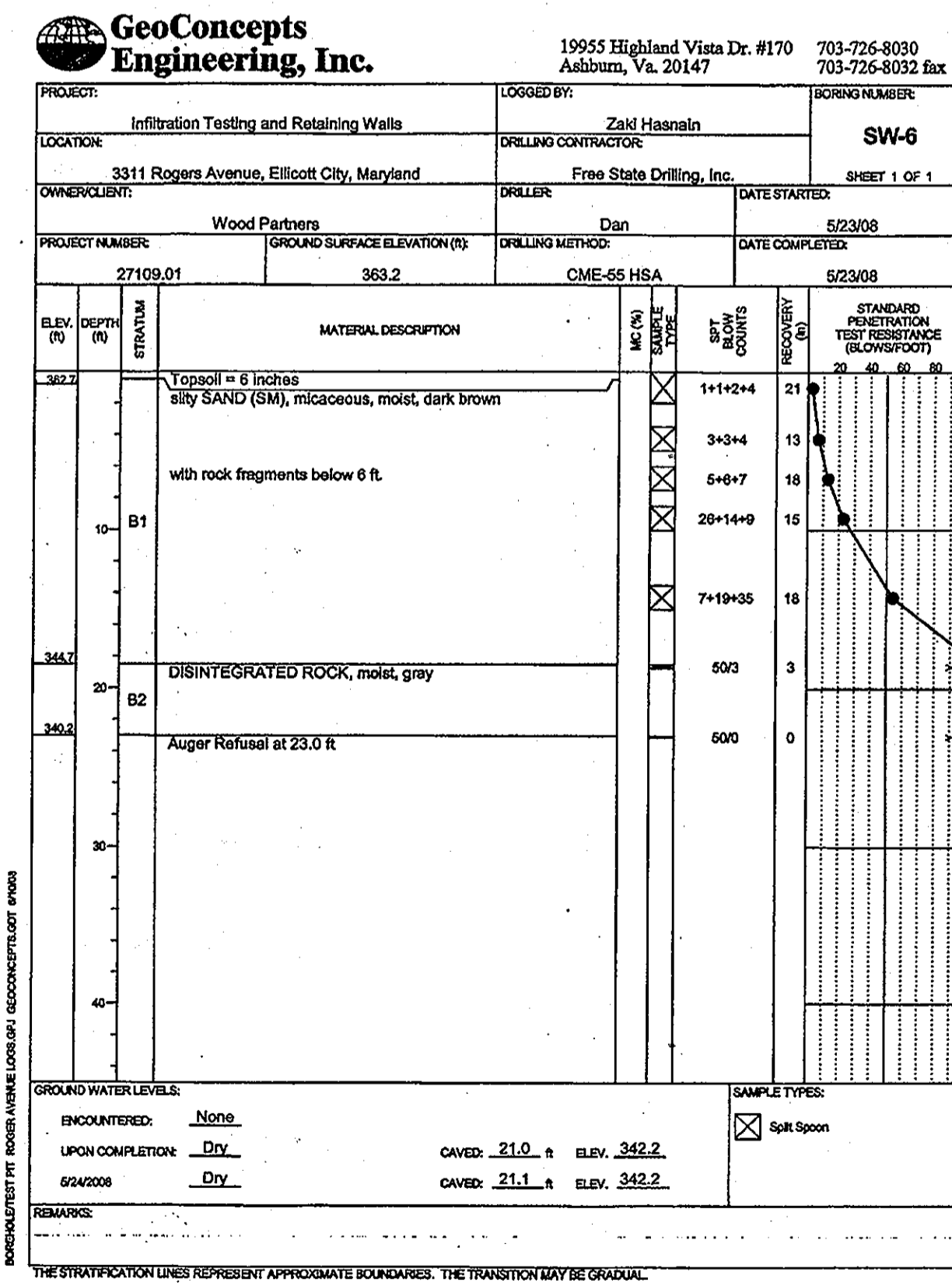
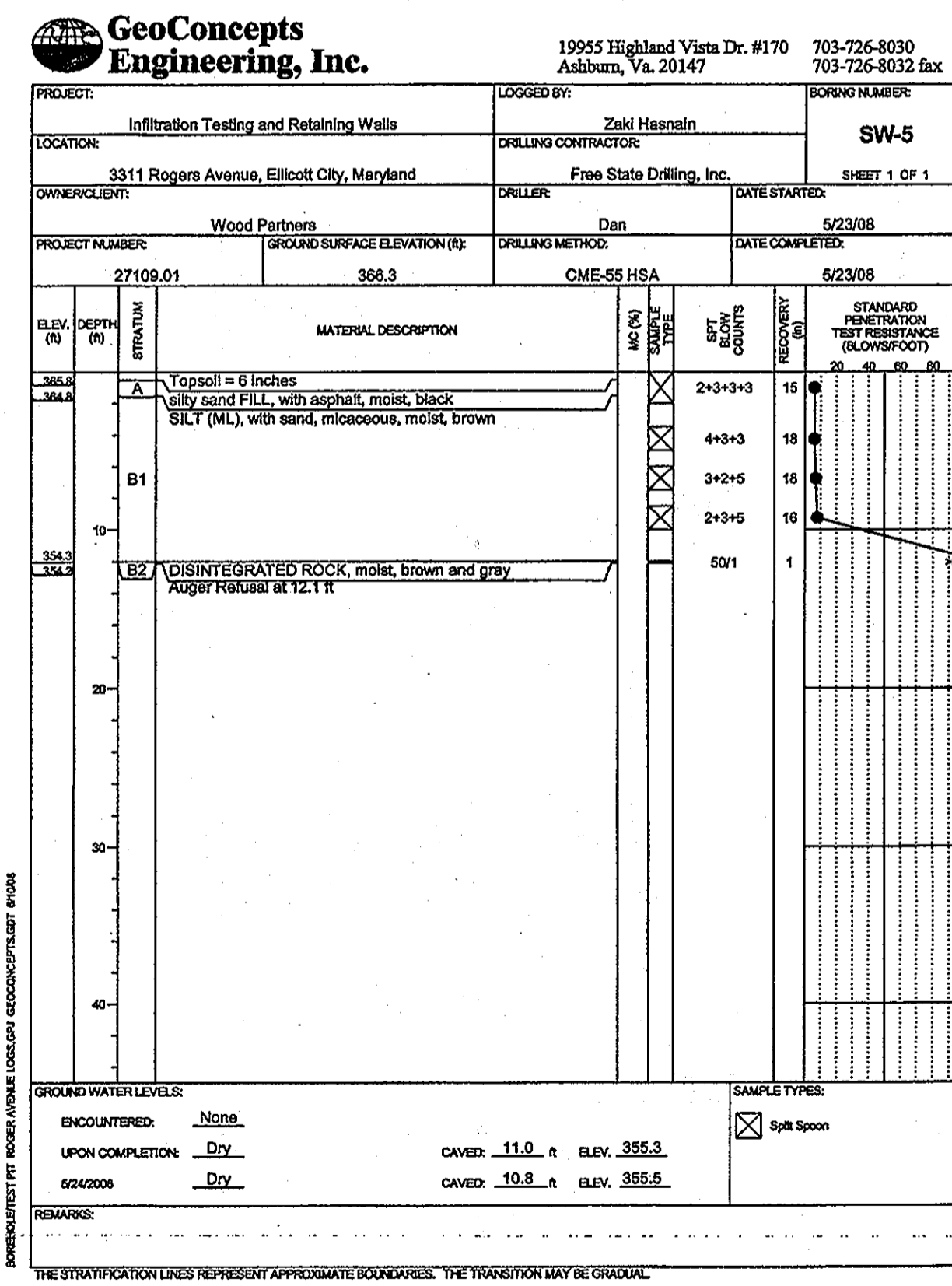
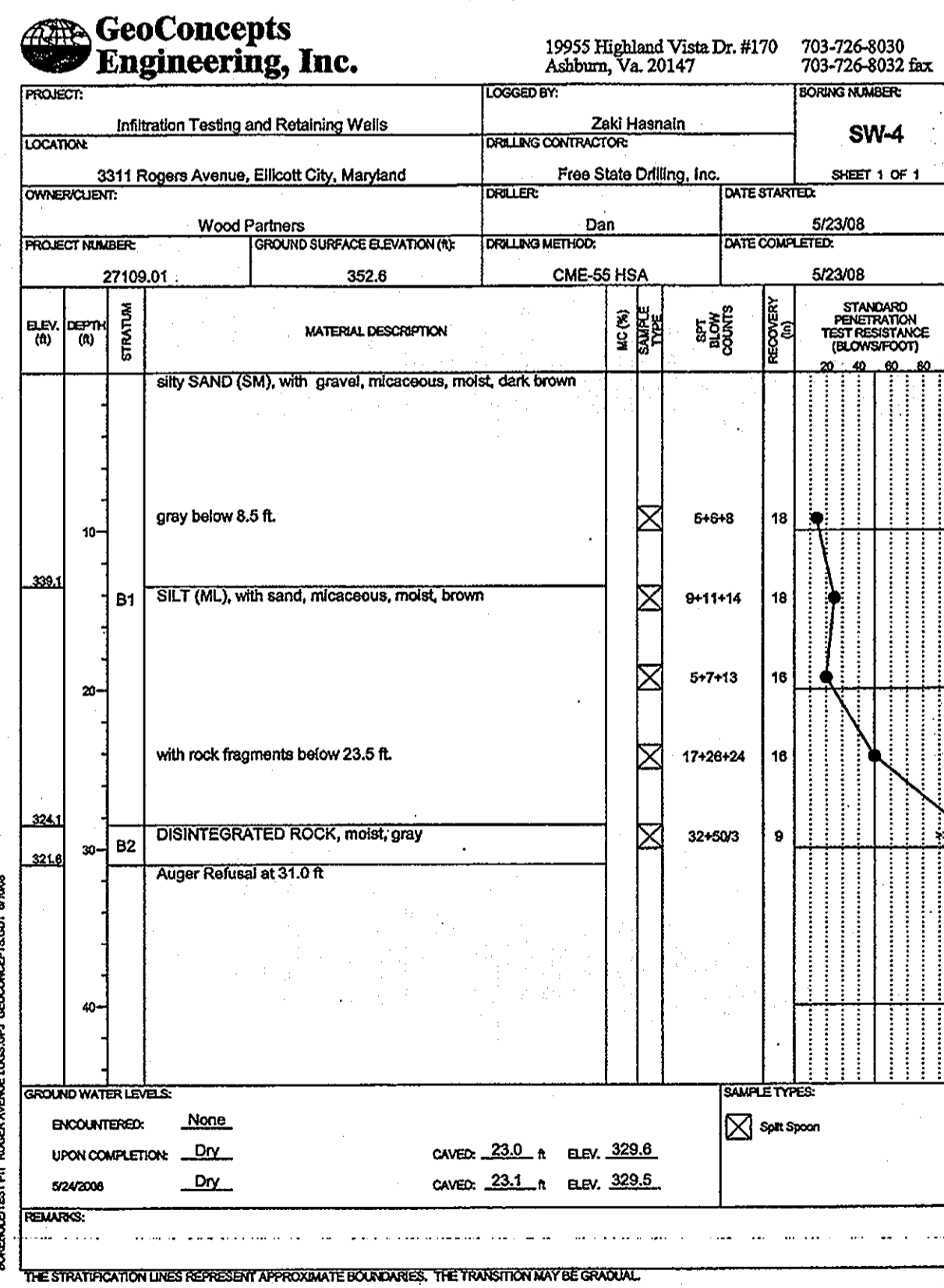
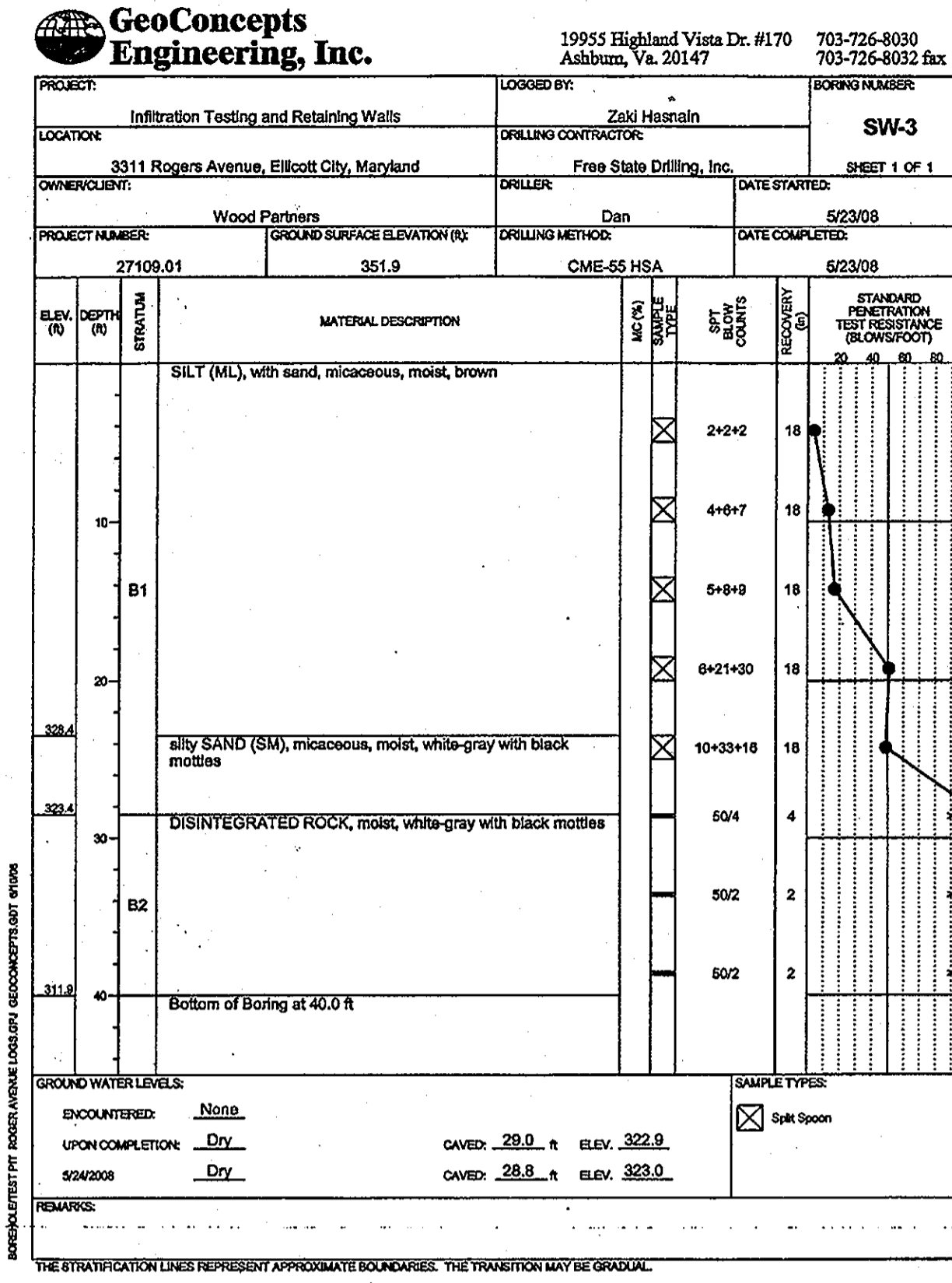
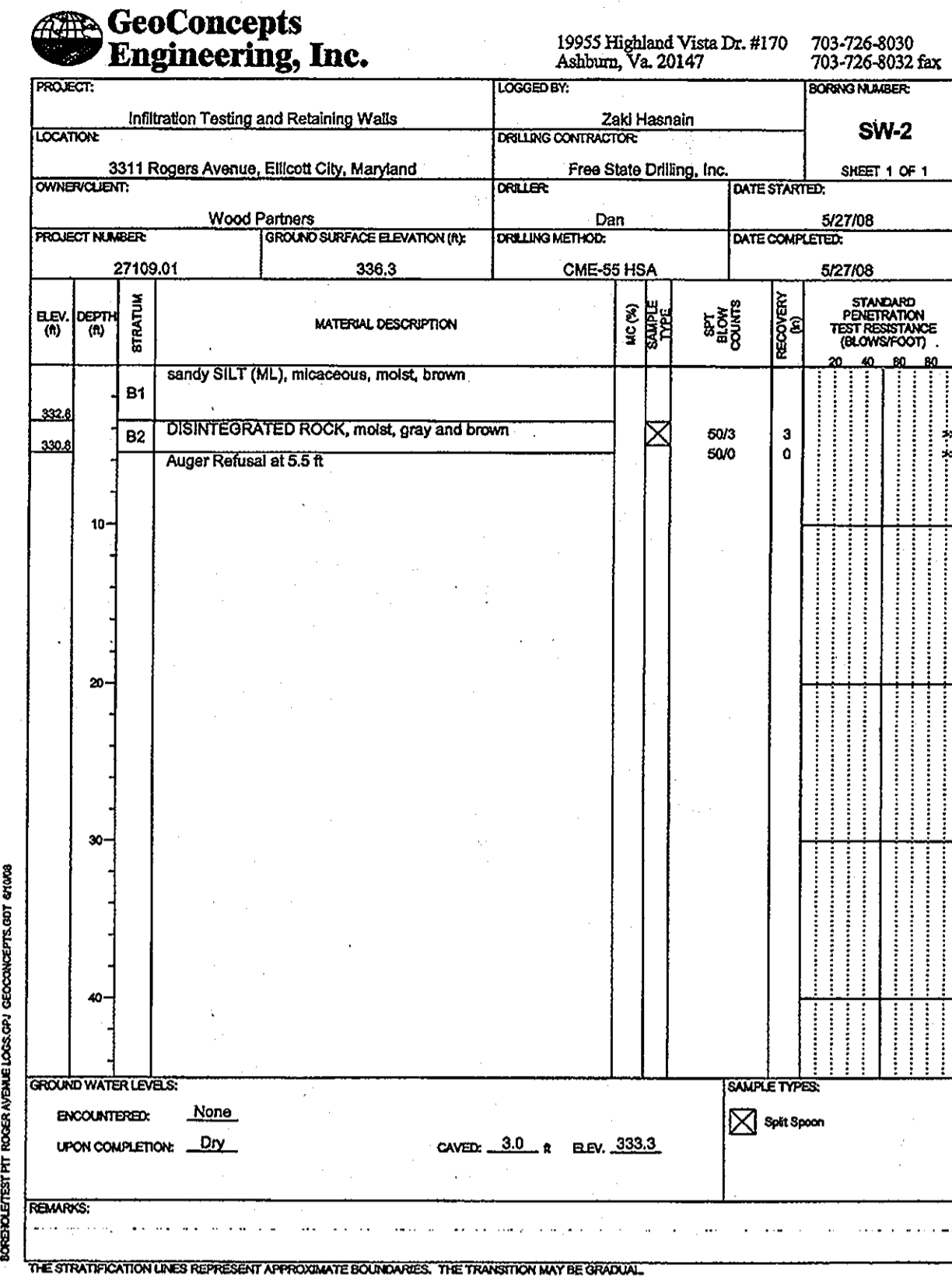
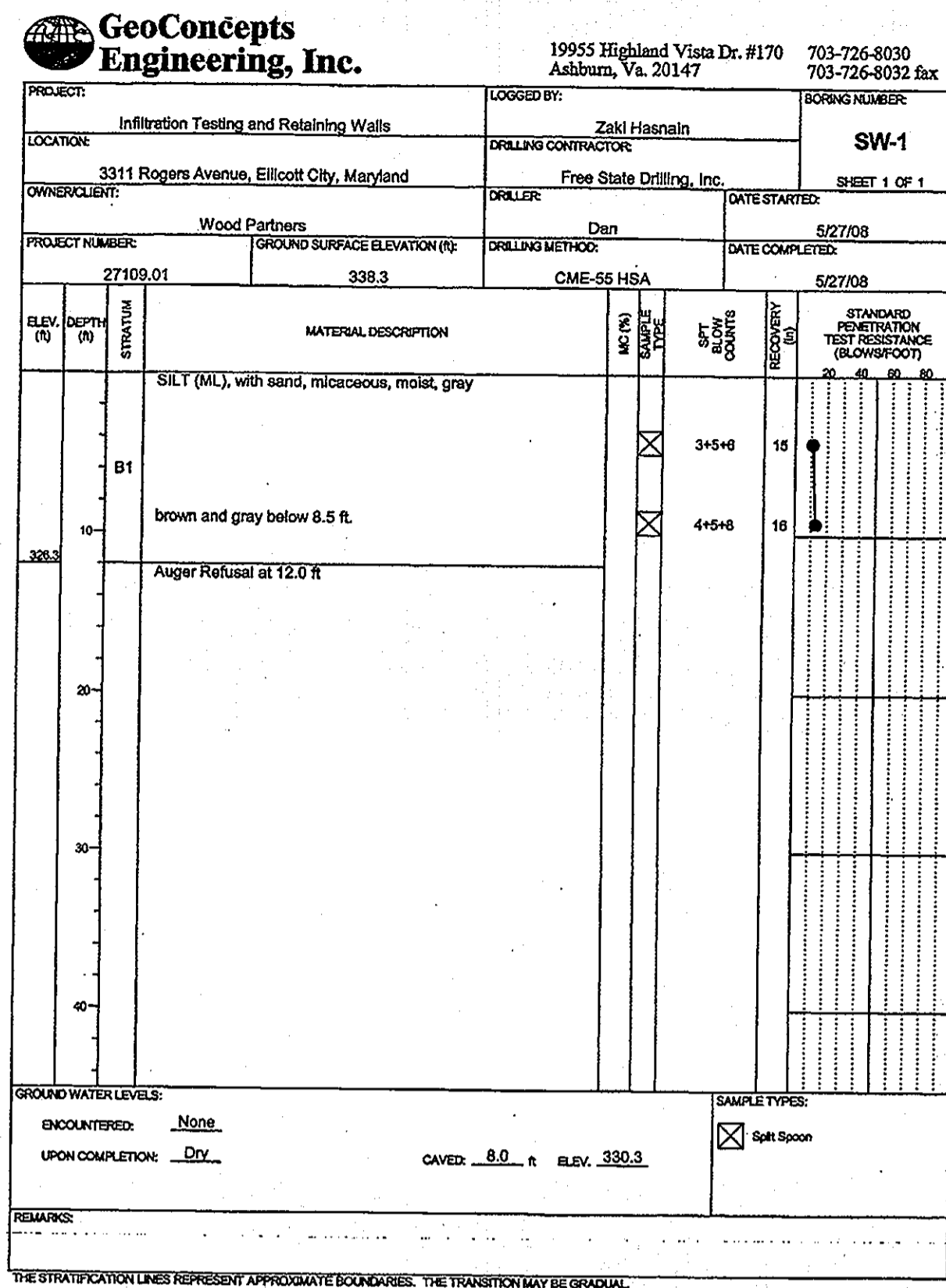


NOTES:
1. SEE DETAIL R-5.06 FOR PLAN VIEW OF BARRICADE INSTALLATION.
2. INSTALL SIGNS (Q-4-(2)) "END OF ROAD AHEAD" BEHIND BARRICADE. SIGNS TO BE INSTALLED 12' AHEAD MINIMUM. 2 SIGNS PER LOCATION.

Howard County, Maryland
Department of Public Works
DEAD END BARRICADE
Type B
Detail
R-5.10

13 **GUARDRAIL DETAIL**
NOT TO SCALE

THIS REPLACEMENT SHEET WILL SUPERSEDE SHEET 29 WHICH WAS PREVIOUSLY SIGNED ON 12/11/09.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Butler 12/12/09
DIRECTOR, DEP. DATE

John D. ... 12/16/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE

W. S. ... 12/17/09
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO. REVISION

OWNER: CENTURY HOLDING, LLC
3311 ROGERS AVENUE OAK WEST DR.
ELlicott CITY, MD 21043-4105

DEVELOPER: WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
VIENNA, VA 22182
703-760-5070

PROJECT: ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

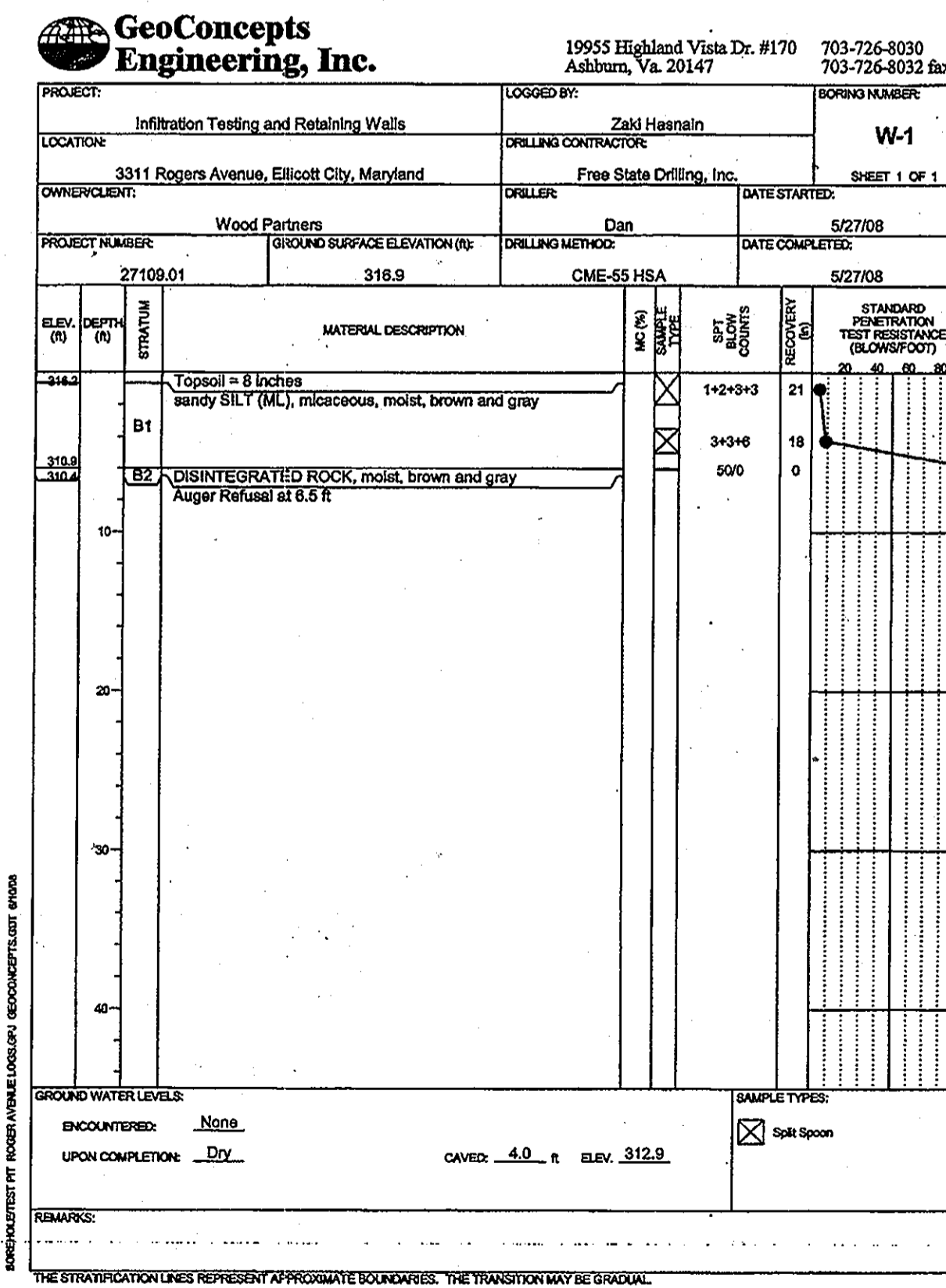
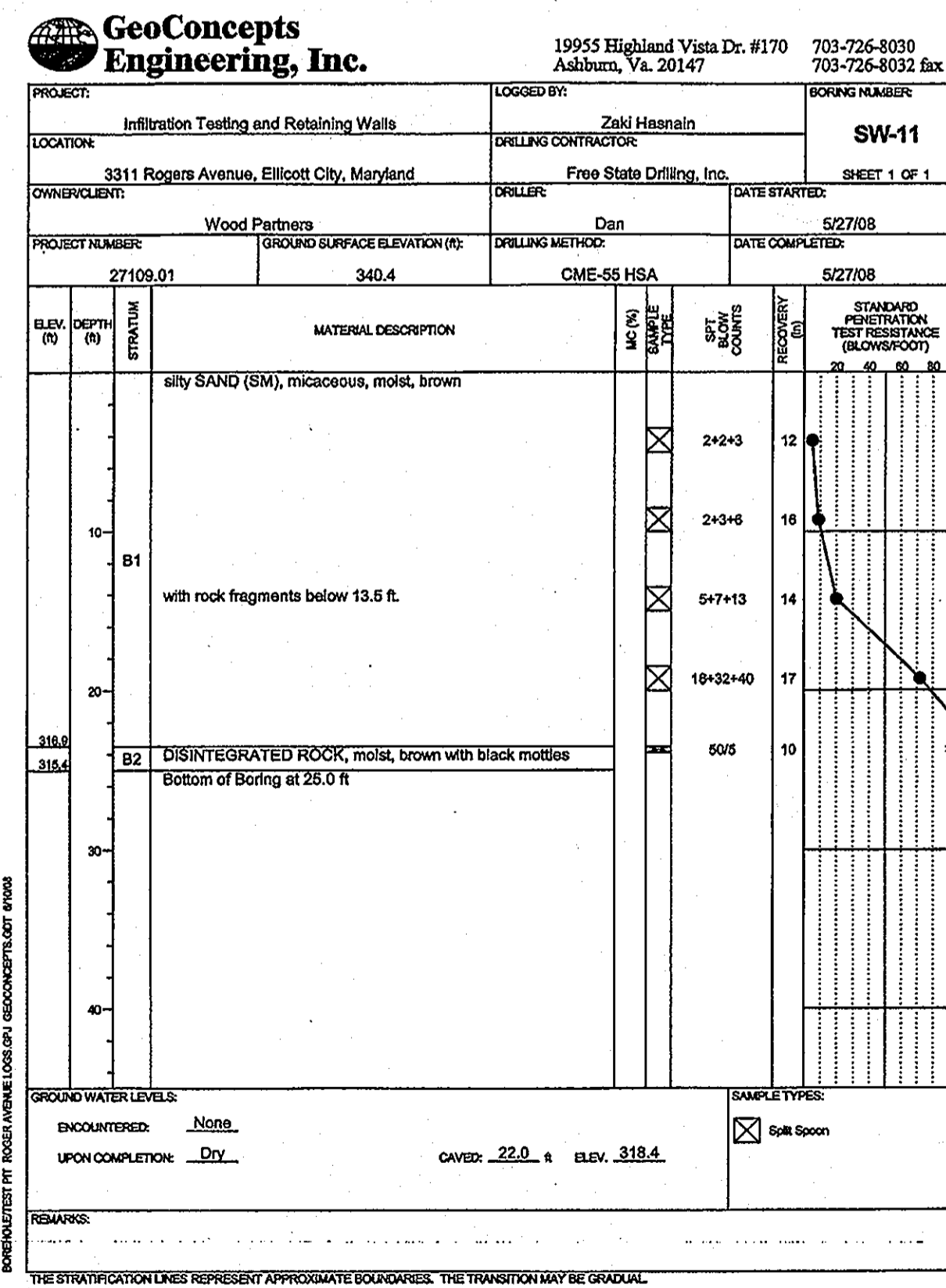
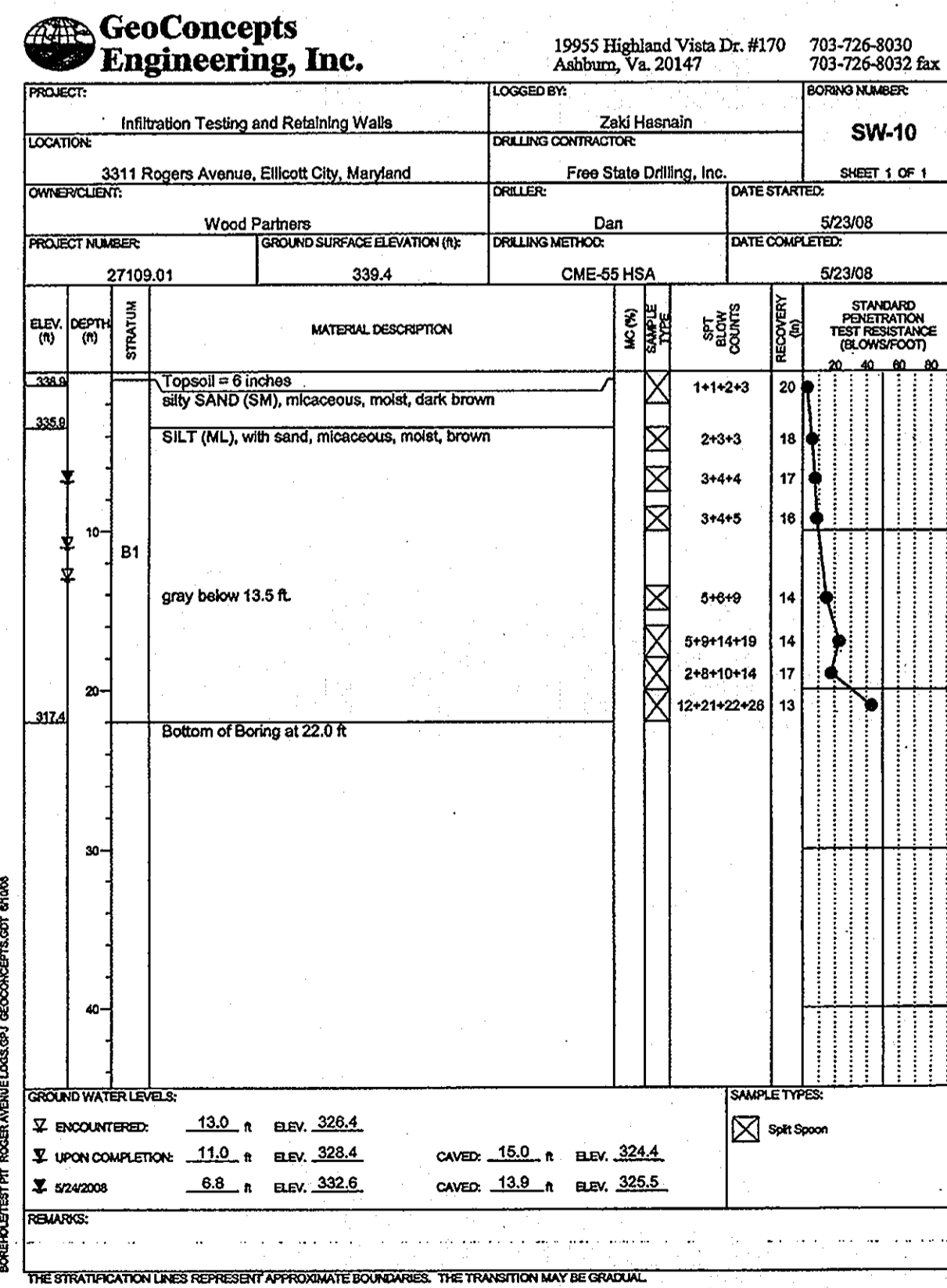
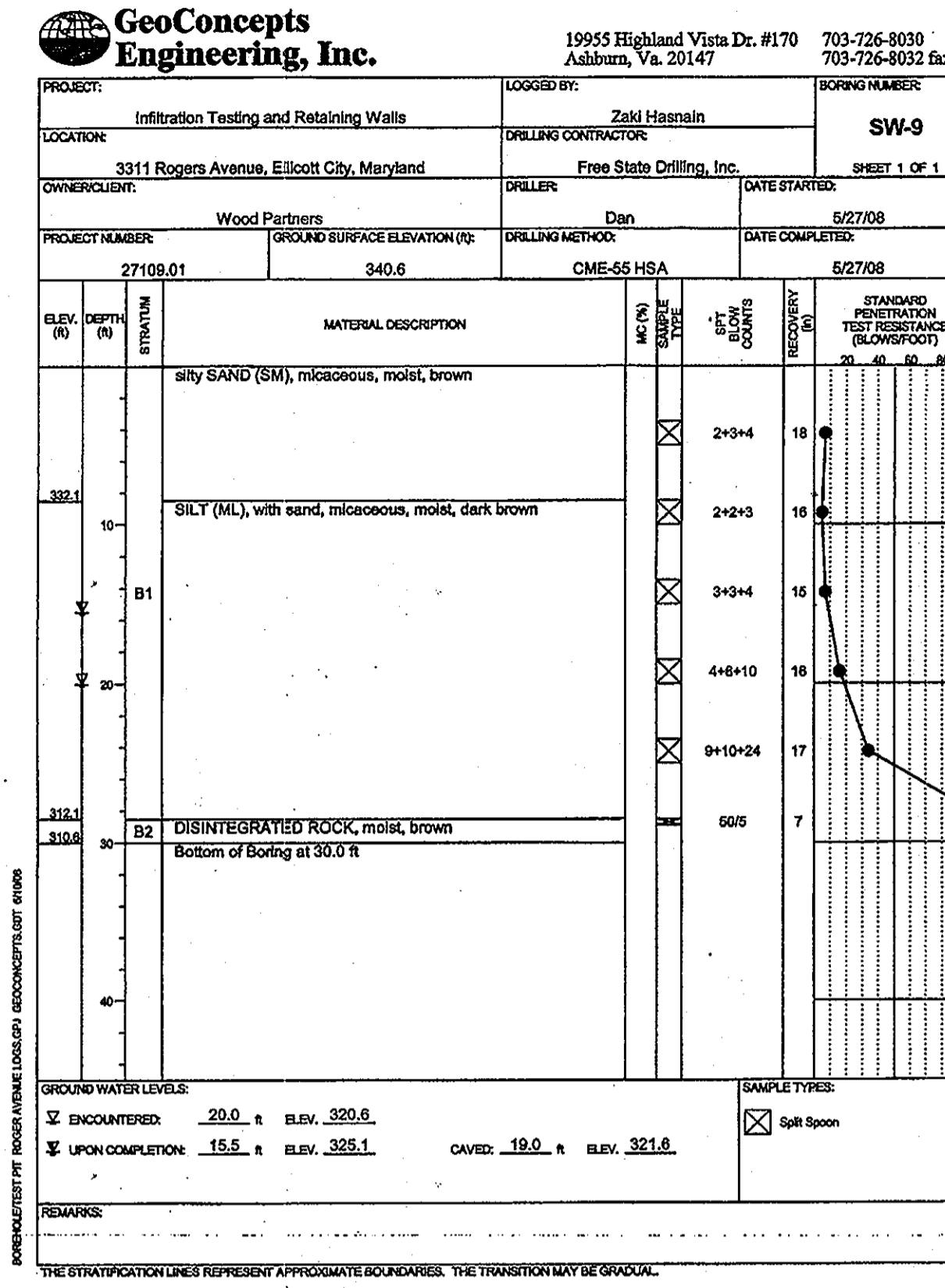
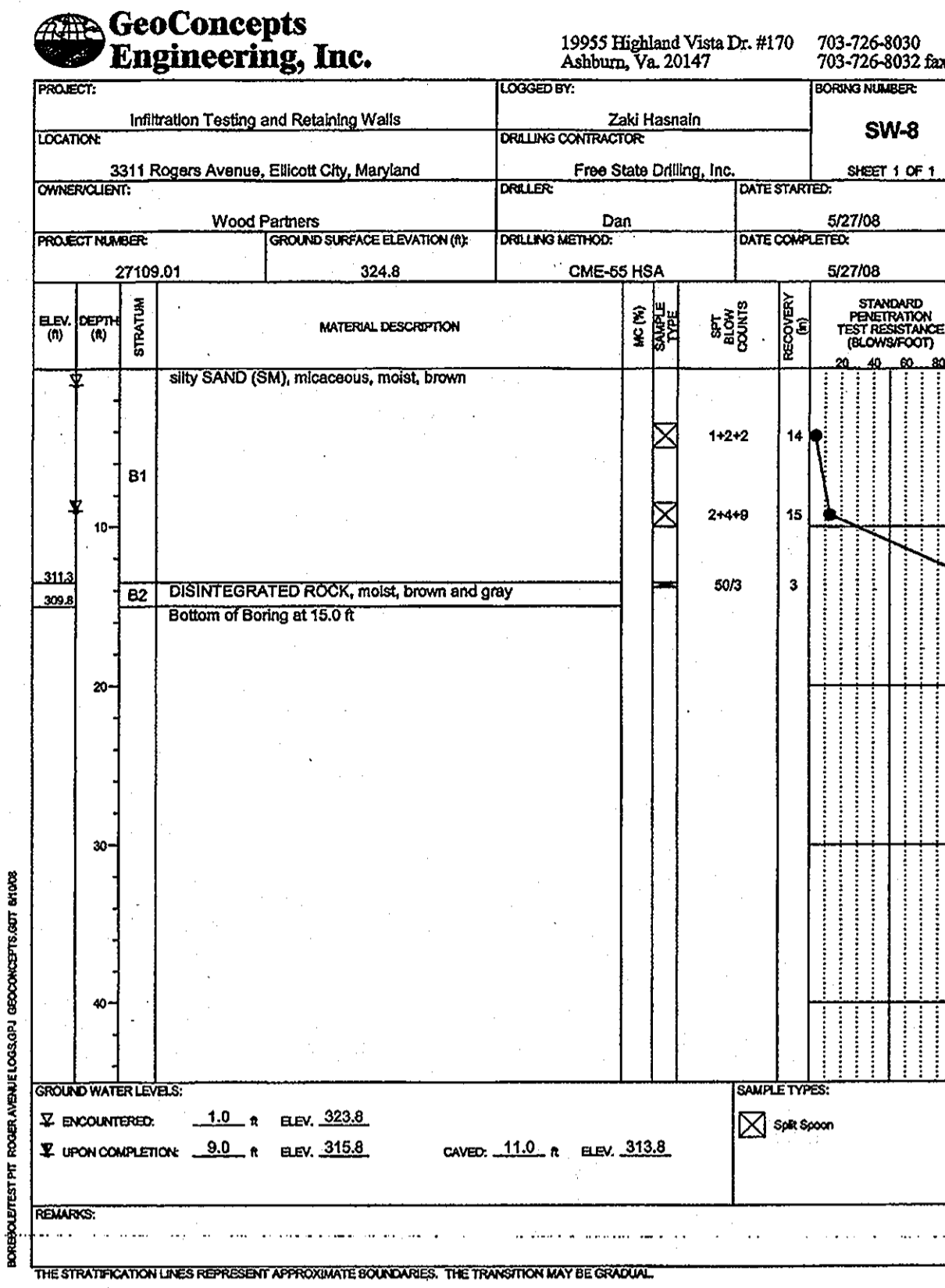
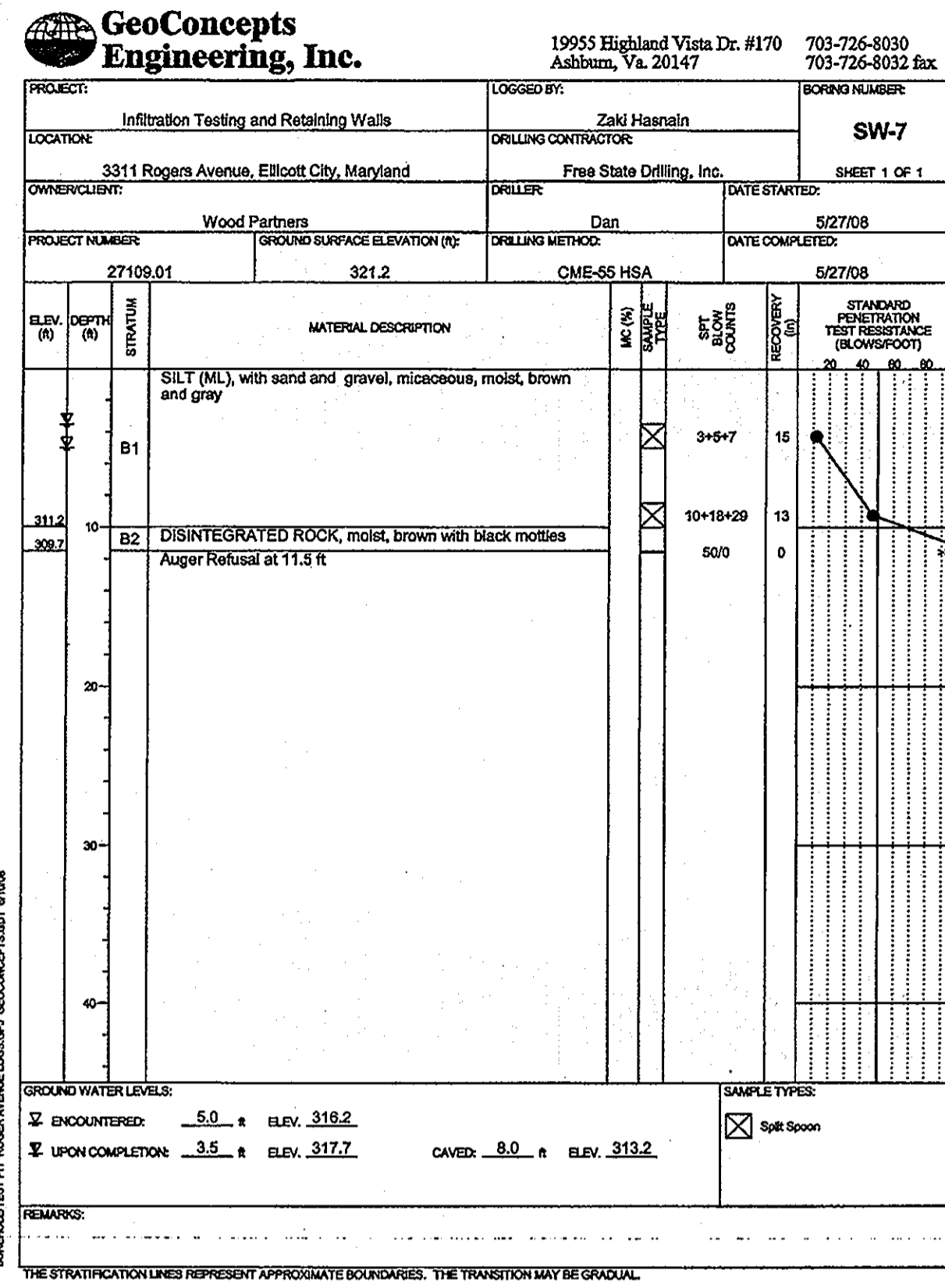
AREA: TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: SOIL BORING LOGS

Patton Harris Rust & Associates, PC
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DESIGNED BY: DWC
DRAWN BY: KAD
PROJECT NO: C-SDP30BOR.DWG
DATE: 8/24/09
SCALE: AS SHOWN
DRAWING NO. 30 OF 42

BY: *Zaki Hasnain*
PROFESSIONAL ENGINEER IN MECHANICAL ENGINEERING
AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE
NO. 27742, EXPIRATION DATE: JULY 18, 2010.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas J. Butler 12/17/09
DIRECTOR, DEP. DATE

John P. ... 12/16/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE

Keith ... 12/16/09
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO. REVISION

OWNER: CENTURY HOLDING, LLC
3311 ROGERS AVENUE OAK WEST DR.,
ELLCOTT CITY, MD 21043-4105

DEVELOPER: WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
VIENNA, VA 22182
703-760-5070

PROJECT: ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

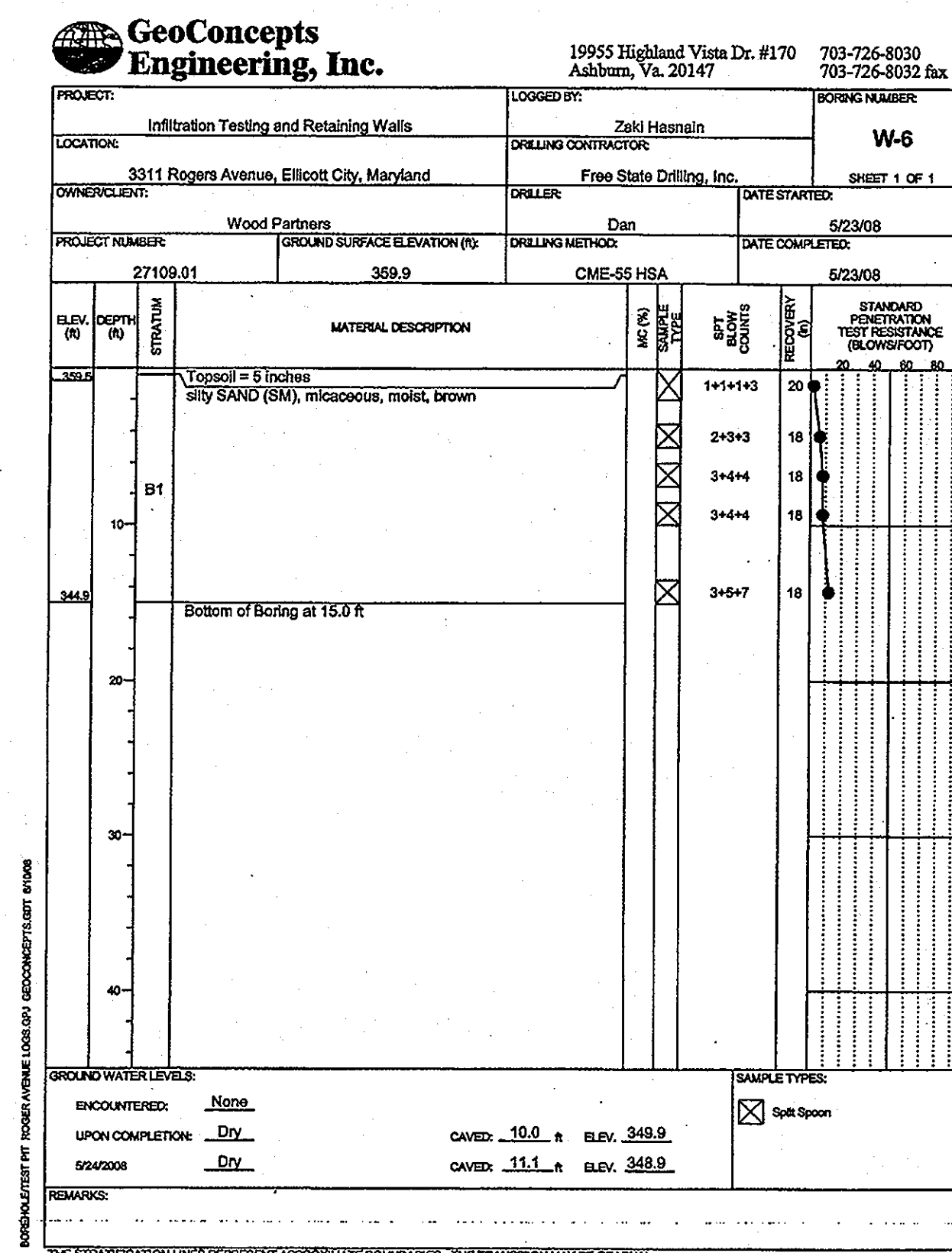
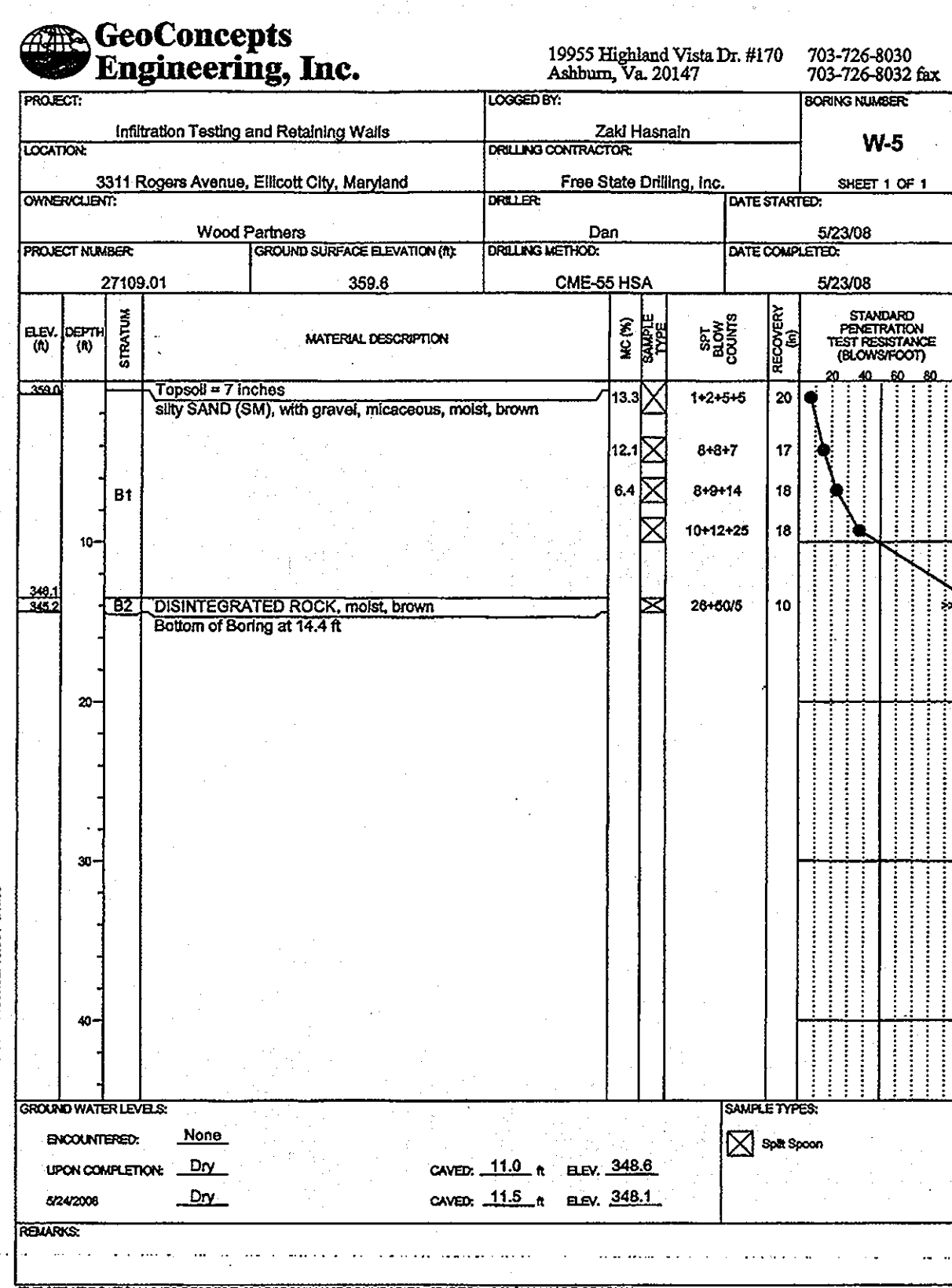
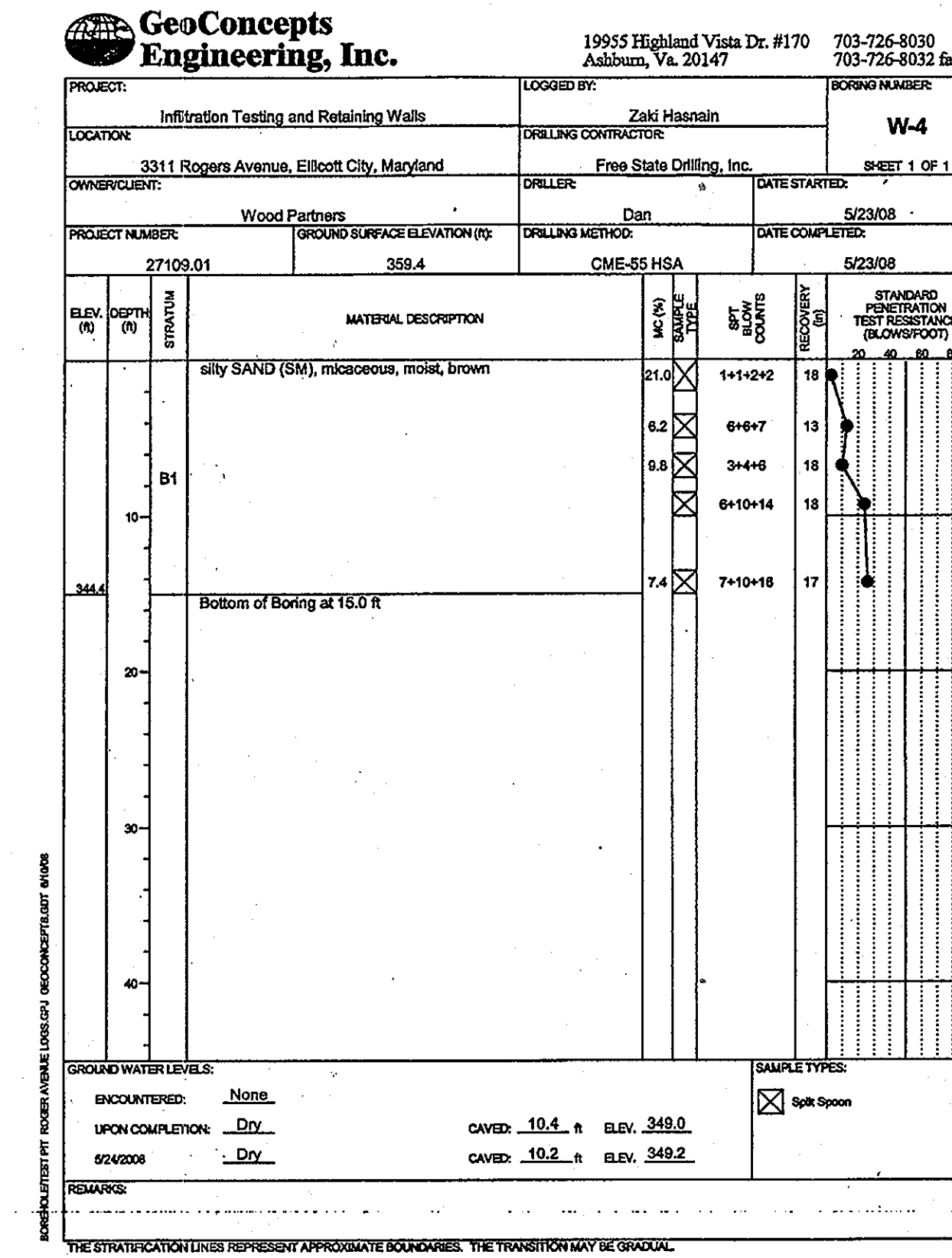
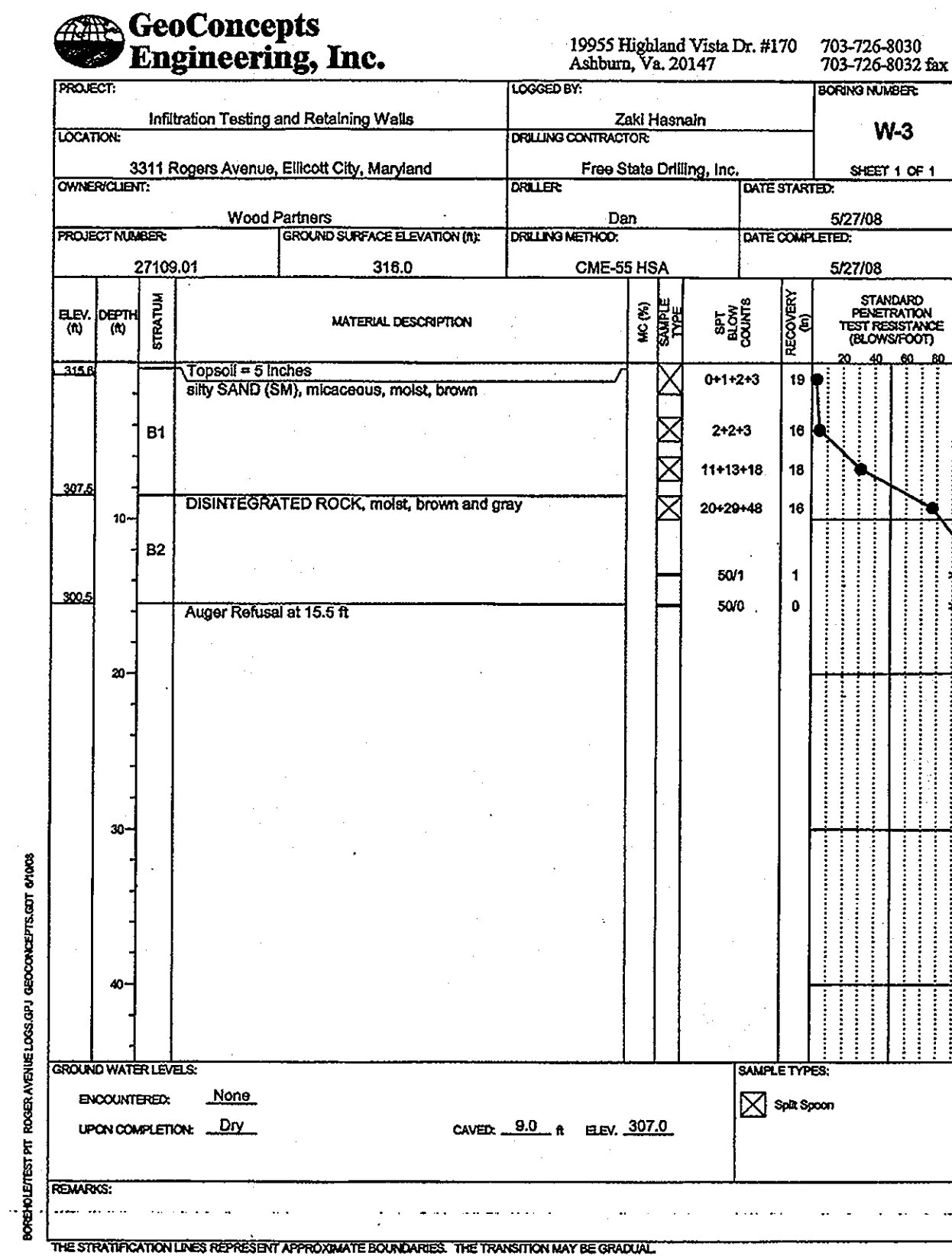
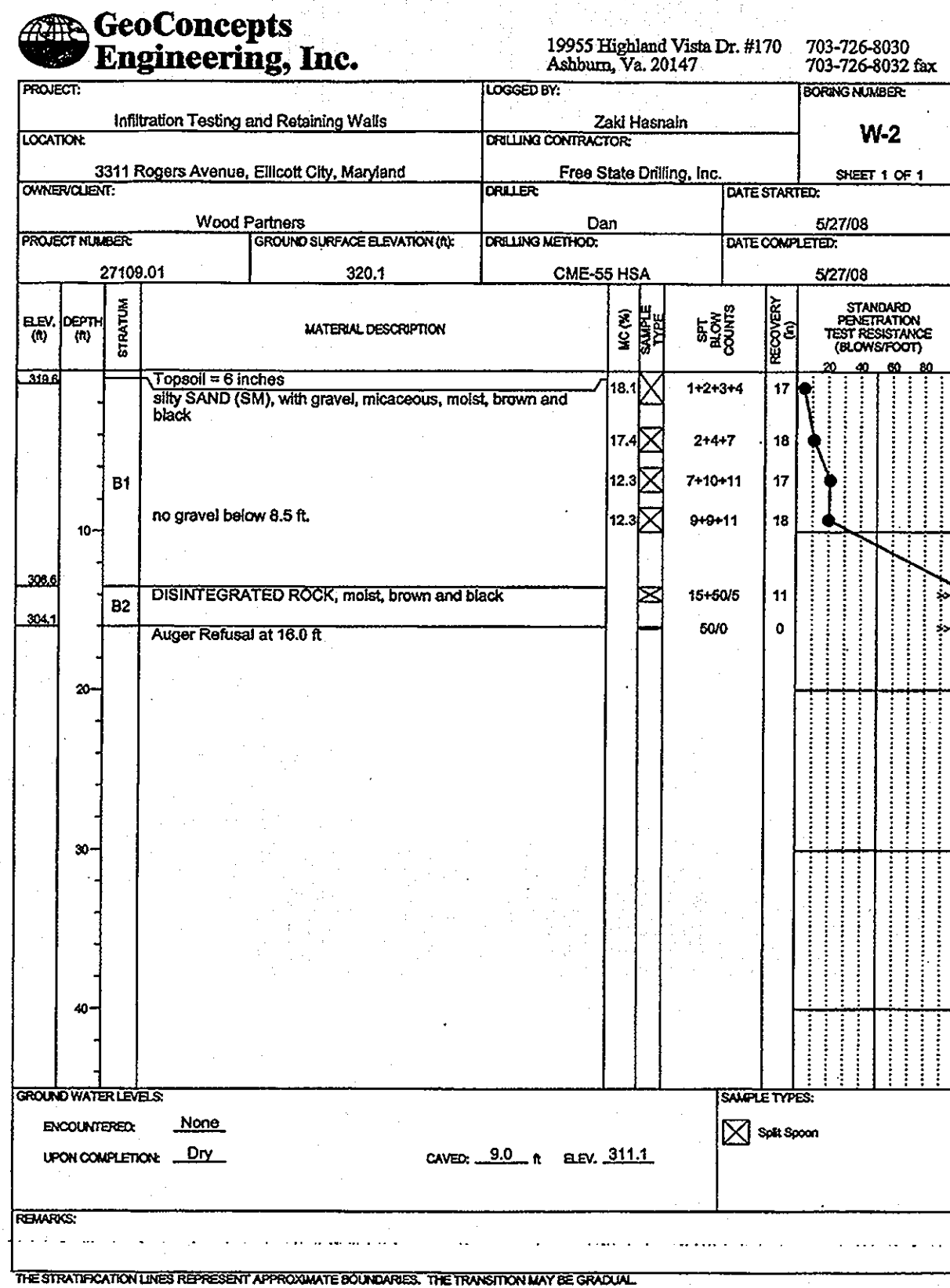
AREA: TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: SOIL BORING LOGS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
F 410.997.8900
F 410.997.9282

SEAL: [Professional Engineer Seal]

DESIGNED BY: DWC
DRAWN BY: KAD
PROJECT NO: C-SDP31BOR.DWG
DATE: 8/24/09
SCALE: AS SHOWN
DRAWING NO. 31 OF 42



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas J. Butler 12/17/09
DIRECTOR, DEP DATE

John J. ... 12/16/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE

West ... 12/17/09
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO. REVISION

OWNER: CENTURY HOLDING, LLC
3311 ROGERS AVENUE OAK WEST DR.,
ELLCOTT CITY, MD 21043-4105

DEVELOPER: WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
VIENNA, VA 22182
703-760-5070

PROJECT: ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

AREA: TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

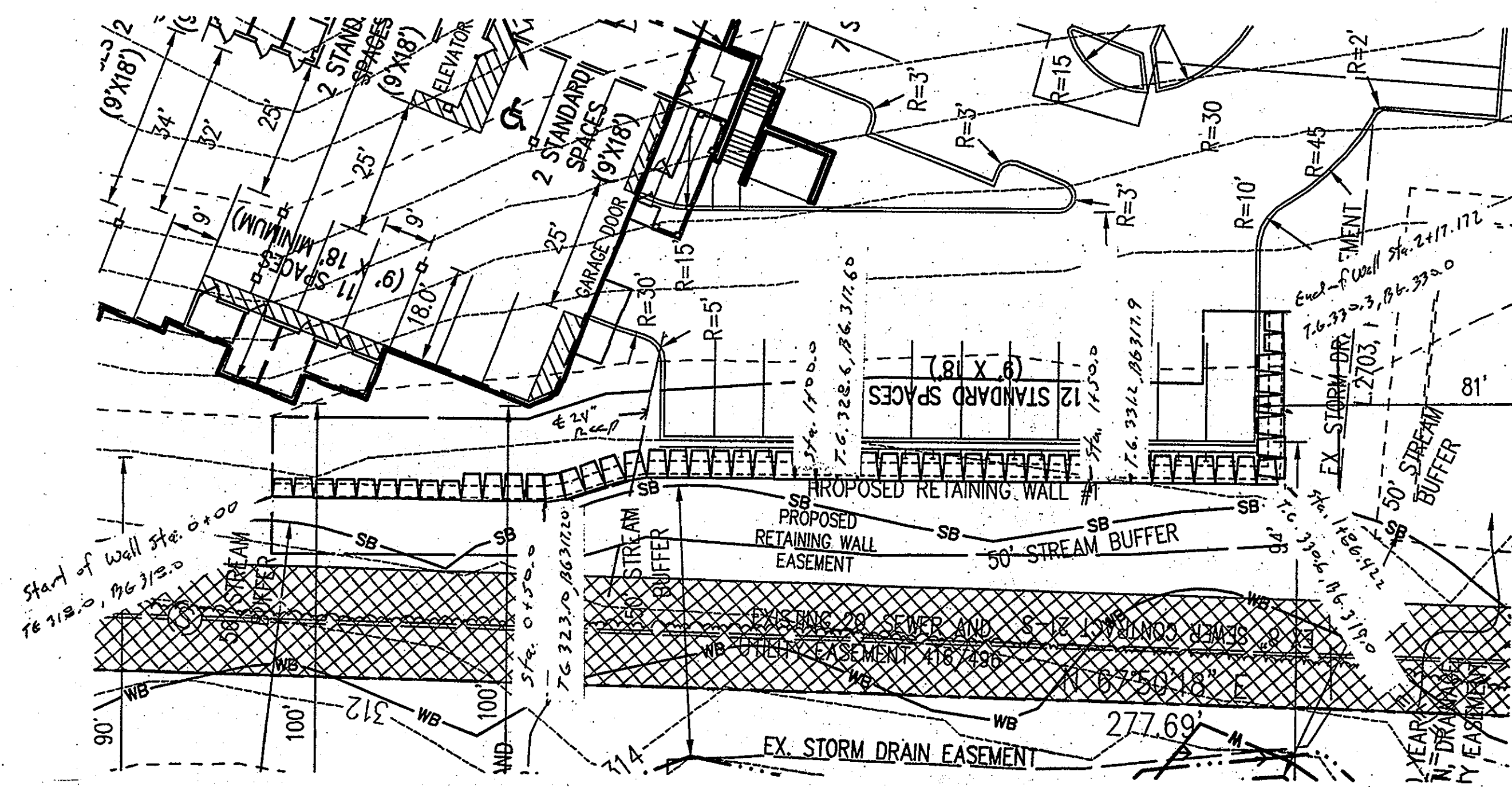
TITLE: SOIL BORING LOGS

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL: [Professional Engineer Seal]

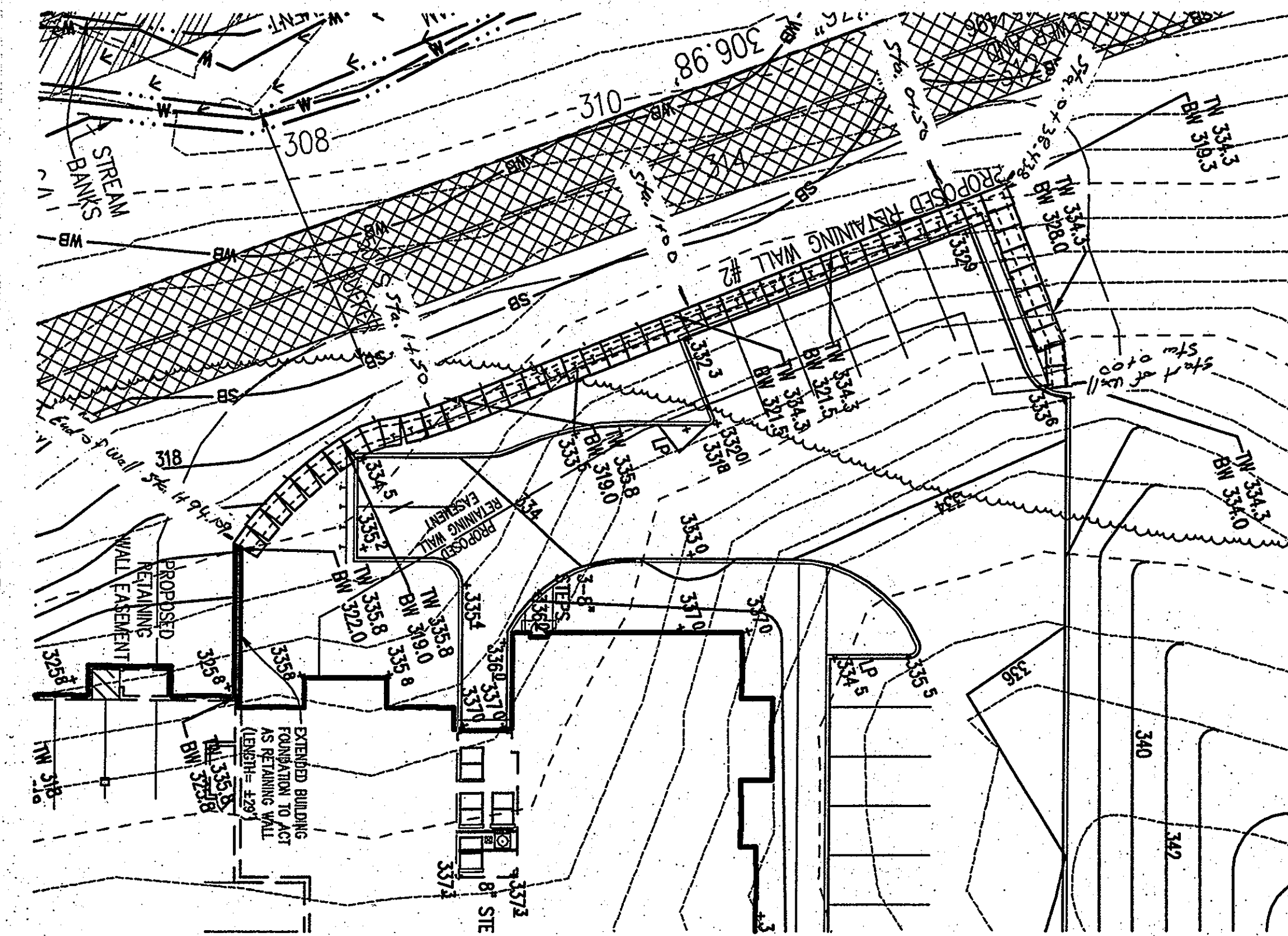
DESIGNED BY: DWC
DRAWN BY: KAD
PROJECT NO: C-SDP32BOR.DWG
DATE: 8/24/09
SCALE: AS SHOWN
DRAWING NO. 32 OF 42

BY: [Signature]
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27742, EXPIRATION DATE: JULY 18, 2010.



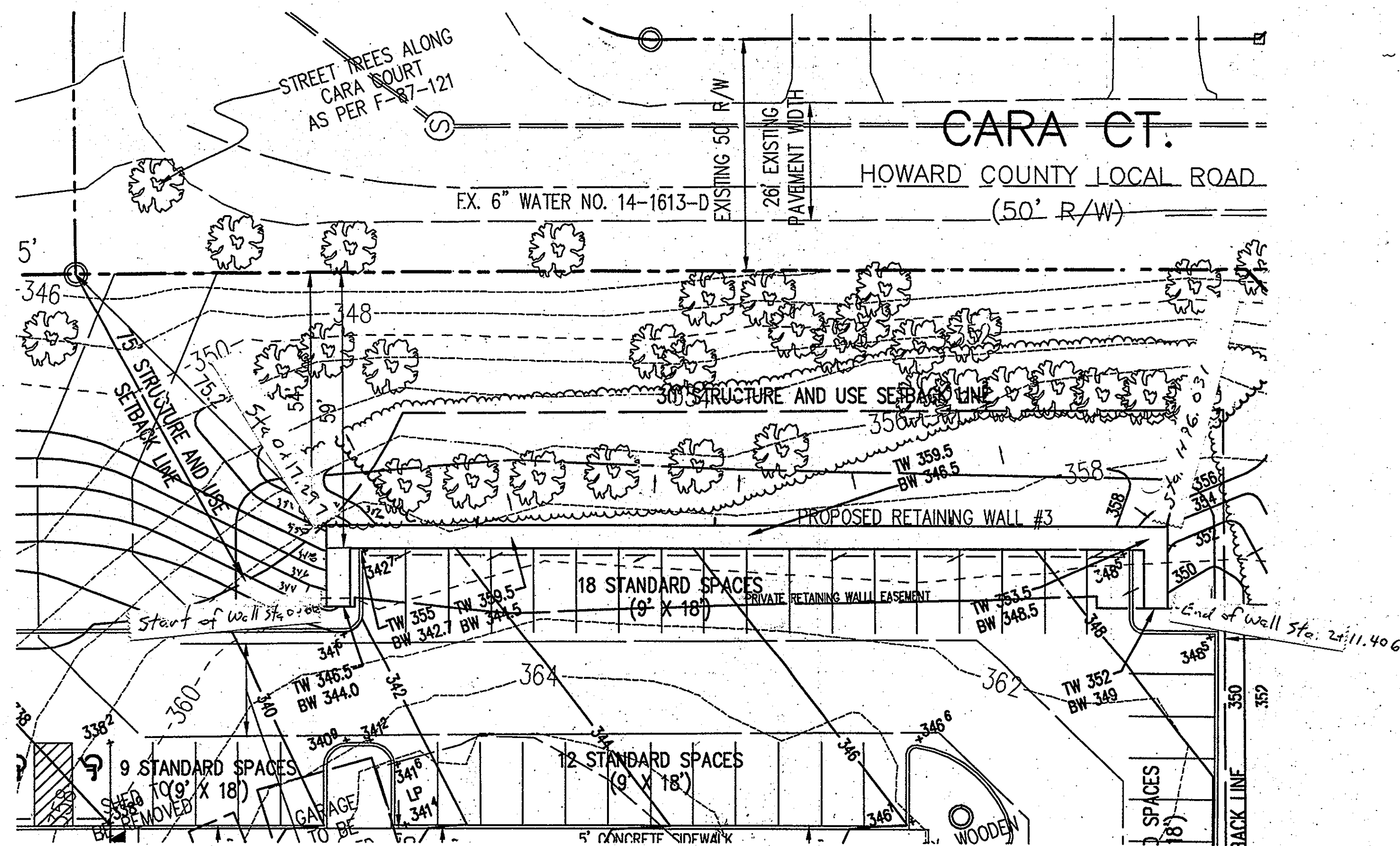
RETAINING WALL NO. 1

1" = 20'



RETAINING WALL NO. 2

1" = 20'



RETAINING WALL NO. 3

1" = 20'

GENERAL NOTES

- 1.) ALL CONSTRUCTION TO BE IRC 2006 AND HOWARD COUNTY BUILDING CODES.
- 2.) RETAINING WALLS TO BE CONSTRUCTED OF PRECAST REDI-ROCK BLOCKS AS DETAILED ON THESE DRAWINGS. FINISH OF BLOCKS TO BE AS DIRECTED BY THE OWNER.
- 3.) MINIMUM BEARING CAPACITY TO BE 2000 PSF OR 2500 PSF AS DESIGNATED ON THE DRAWINGS. THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION TO BE PROVIDED TO HOWARD COUNTY INSPECTOR PRIOR TO START OF WALL ERECTION. SOIL TO BE TESTED WITH DYNAMIC CONE PENETROMETER PER ASTM STP-399.
- 4.) CONCRETE FOR FOOTINGS TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. CONCRETE TO BE AIR ENTRAINED 6%.
- 5.) ALL RETAINING WALLS TO HAVE A RAILING AT WALLS 3' HIGH OR HIGHER. ALL RETAINING WALLS ADJACENT TO ROADS OR PARKING LOTS TO HAVE A GUARDRAIL PER THE DRAWINGS.
- 6.) ALL BACKFILL BEHIND WALLS TO BE COMPACTED PER REDI-ROCK SPECIFICATIONS AND AS REQUIRED BY ON SITE GEOTECHNICAL ENGINEER. DESIGN SOIL PARAMETERS ARE AS FOLLOWS:
 Site Soils - Density 116.7 pcf, Phi Angle - 28 degrees
 SW Backfill - Density 127 pcf, Phi Angle - 39.5 degrees
 GW Backfill - Density 133 pcf, Phi Angle 41.5 degrees
 No. 57 Stone - Density 130 pcf, Phi Angle - 40 degrees
 GW Foundation Pad - Density 133 pcf, Phi Angle - 41.5 degrees.

- 7.) THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ON SITE SOILS TECHNICIAN. EACH 8 INCH LIFT MUST BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR. DENSITY AND TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
- 8.) RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, W, ACEL OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN.
- 9.) FOR CRITICAL WALLS, ONE SOIL BORING IS REQUIRED EVERY 100 FEET ALONG THE LENGTH OF THE WALLS, COPIES OF THE BORING REPORTS SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
- 10.) WALL CONSTRUCTION TO BE PER REDI ROCK SPECIFICATIONS.

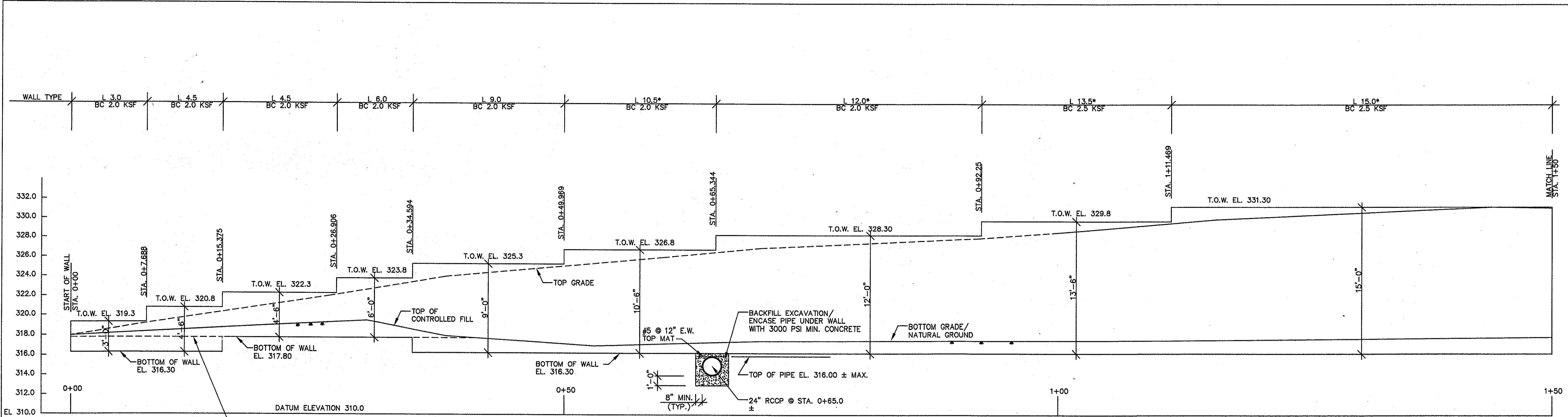
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas G. Buttle 4/20/10
 DIRECTOR DATE
Michael D. ... 4/13/10
 CHIEF, DEVELOPMENT ENGINEERING DIVISION NY DATE
Walt Stalwell 4/20/10
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO.	REVISION
OWNER	CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLICOTT CITY, MD 21043-4105
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070
PROJECT	ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE	"REVISED REPLACEMENT SHEET" THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET #33 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09

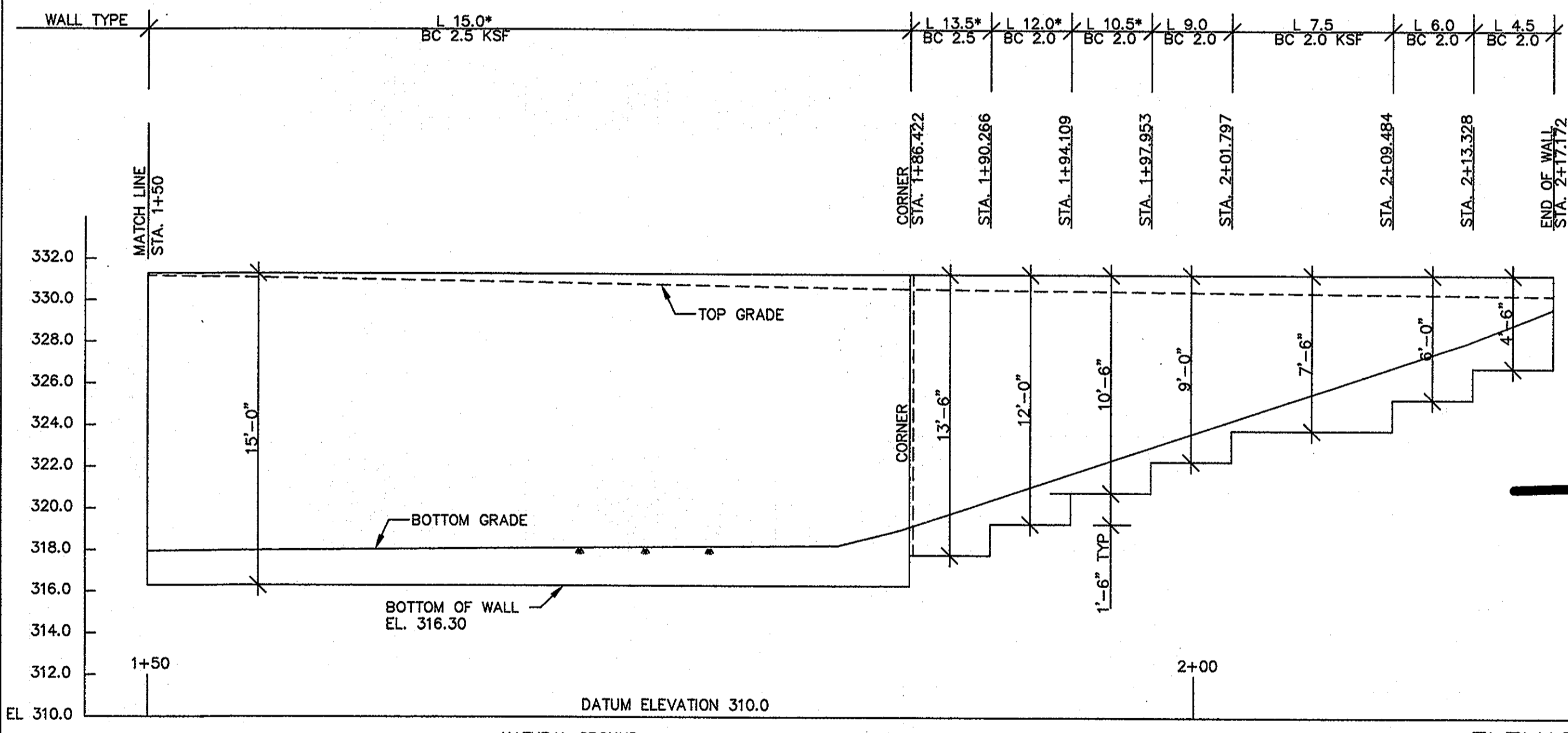
BLAKE STRUCTURAL
 3511 N. CALVERT STREET
 BALTIMORE, MD 21218
 OFFICE: 443-874-4630

DESIGNED BY :
 DRAWN BY :
 PROJECT NO : 15661-1-0
 DATE : 11/18/09
 SCALE :
 DRAWING NO. 33 OF 42



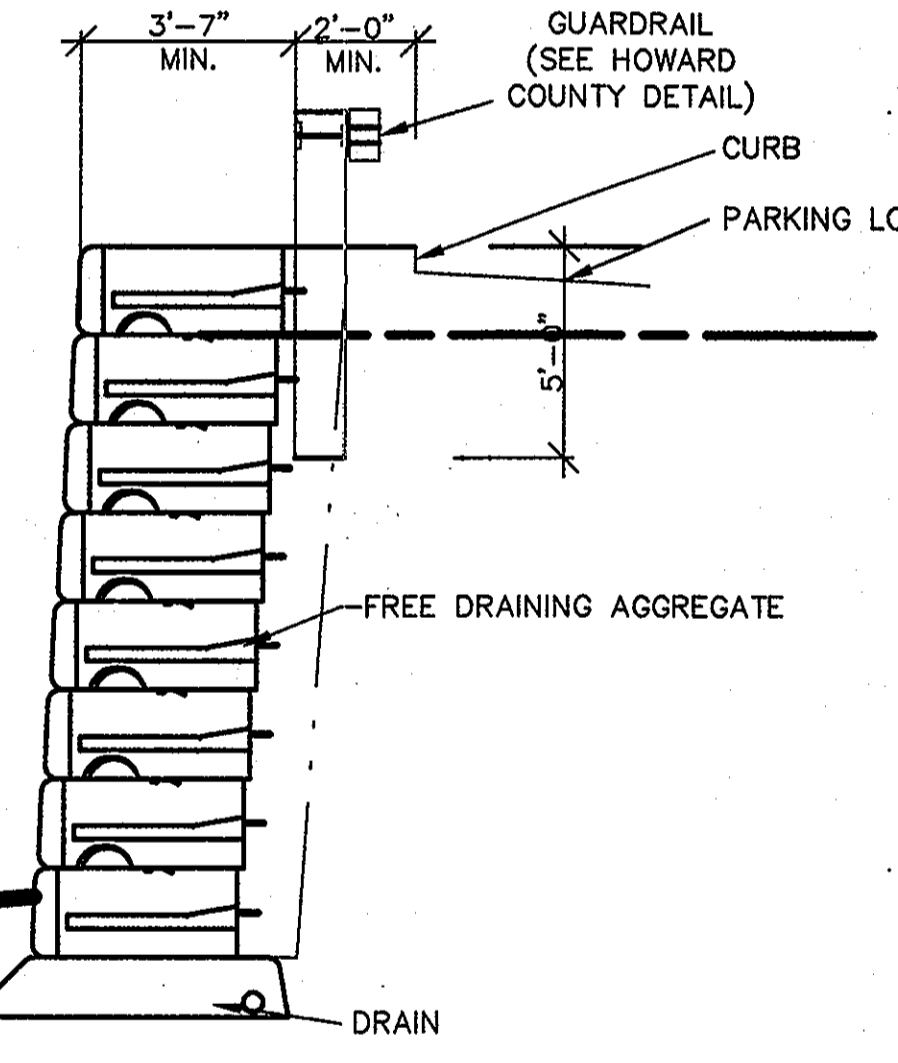
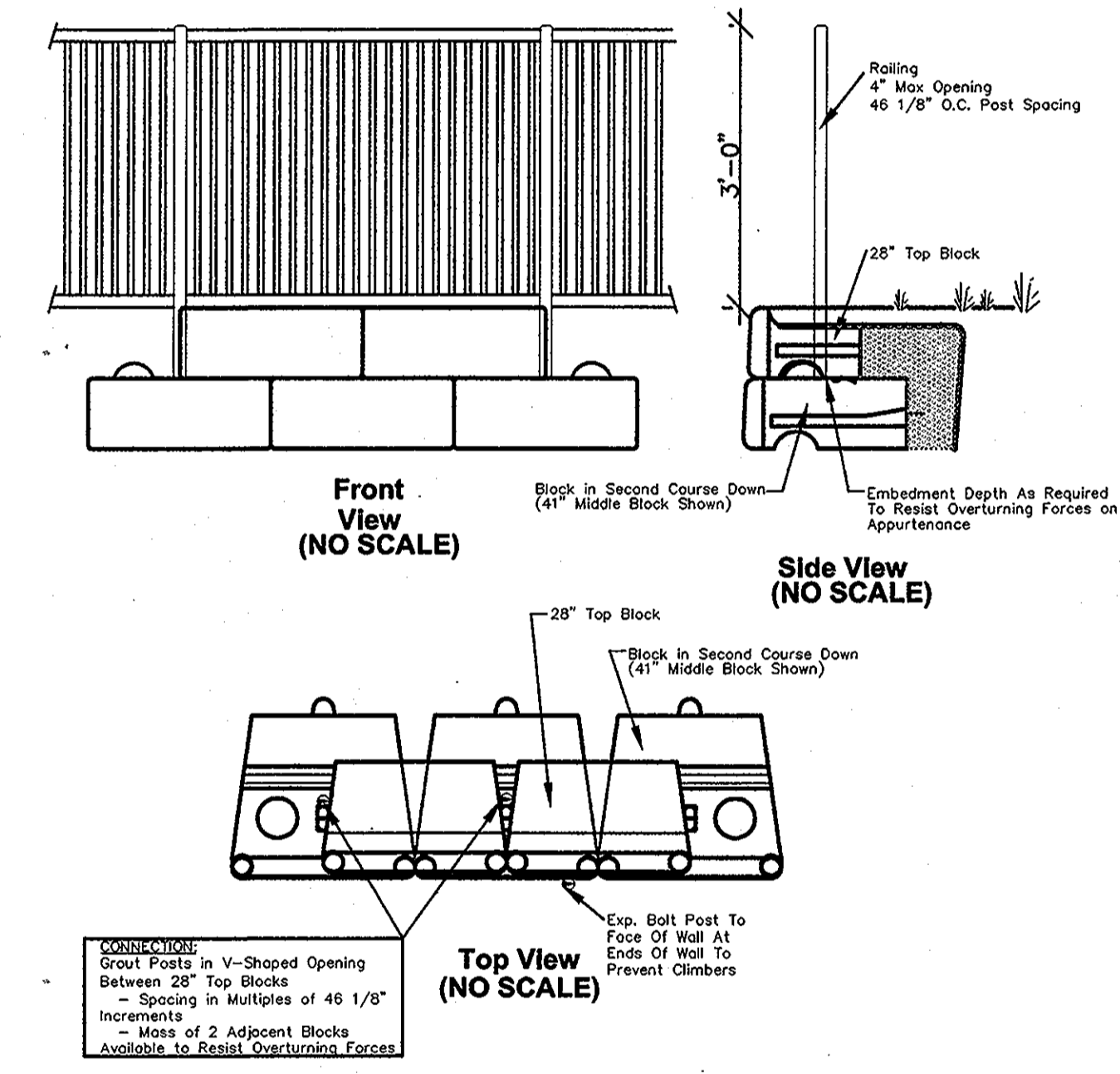
ELEVATION - RETAINING WALL NO. 1
1" = 5'

LEGEND
B.C. = BEARING CAPACITY
*USE SW WEDGE BACKFILL



ELEVATION - RETAINING WALL NO. 1
1" = 5'

TYPICAL APPURTENANCE INSTALLATION WITH REDI-ROCK WALLS



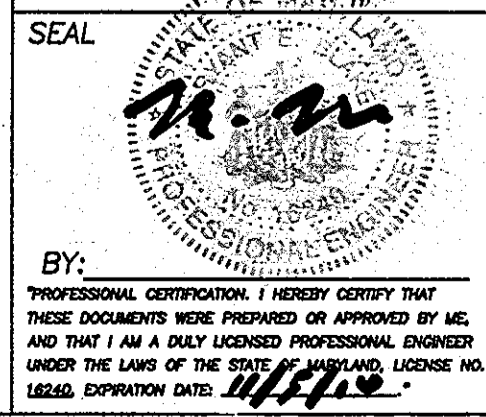
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Thomas & Butler</i>	4/20/10
DIRECTOR	DATE
<i>John P. ...</i>	4/10/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY	DATE
<i>West ...</i>	4/20/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE

DATE	NO.	REVISION
OWNER		
CENTURY HOLDING, LLC		
3311 OAK WEST DRIVE		
ELLICOTT CITY, MD 21043-4105		
DEVELOPER		
WOOD PARTNERS		
ATTN: MR. ANTHONY MORSE, PE		
8150 LEESBURG PIKE		
SUITE 501		
VIENNA, VA 22182		
703-760-5070		
PROJECT ALTA AT REGENCY CREST		
BUILDABLE PARCEL A AND OPEN SPACE LOT 1		
AGE RESTRICTED ADULT HOUSING		
AREA		
TAX MAP 25, GRID 1, PARCEL 1		
2ND ELECTION DISTRICT		
HOWARD COUNTY, MARYLAND		

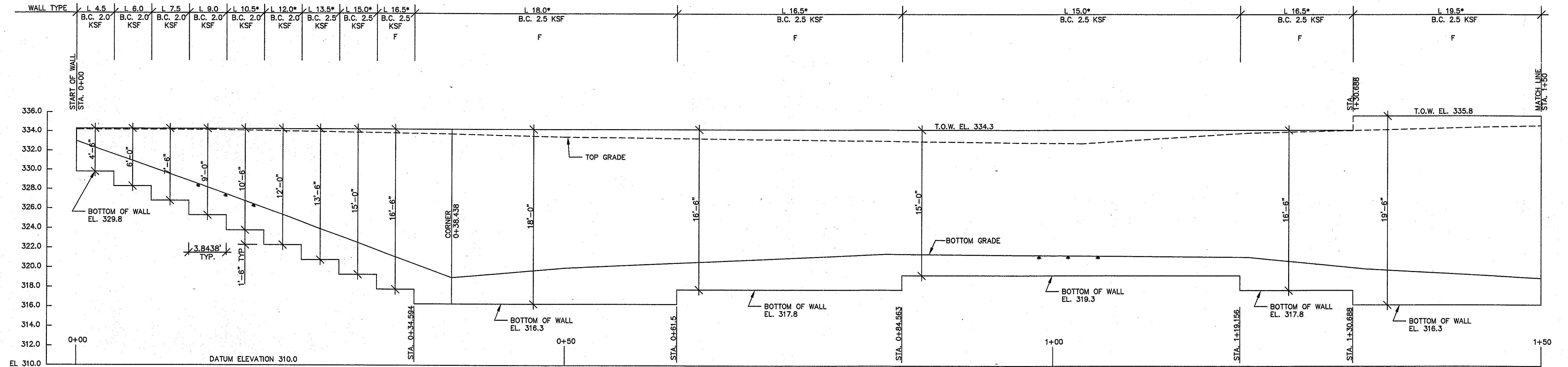
"REVISED REPLACEMENT SHEET"
THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET #34 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09

TITLE
RETAINING WALL PLAN AND NOTES

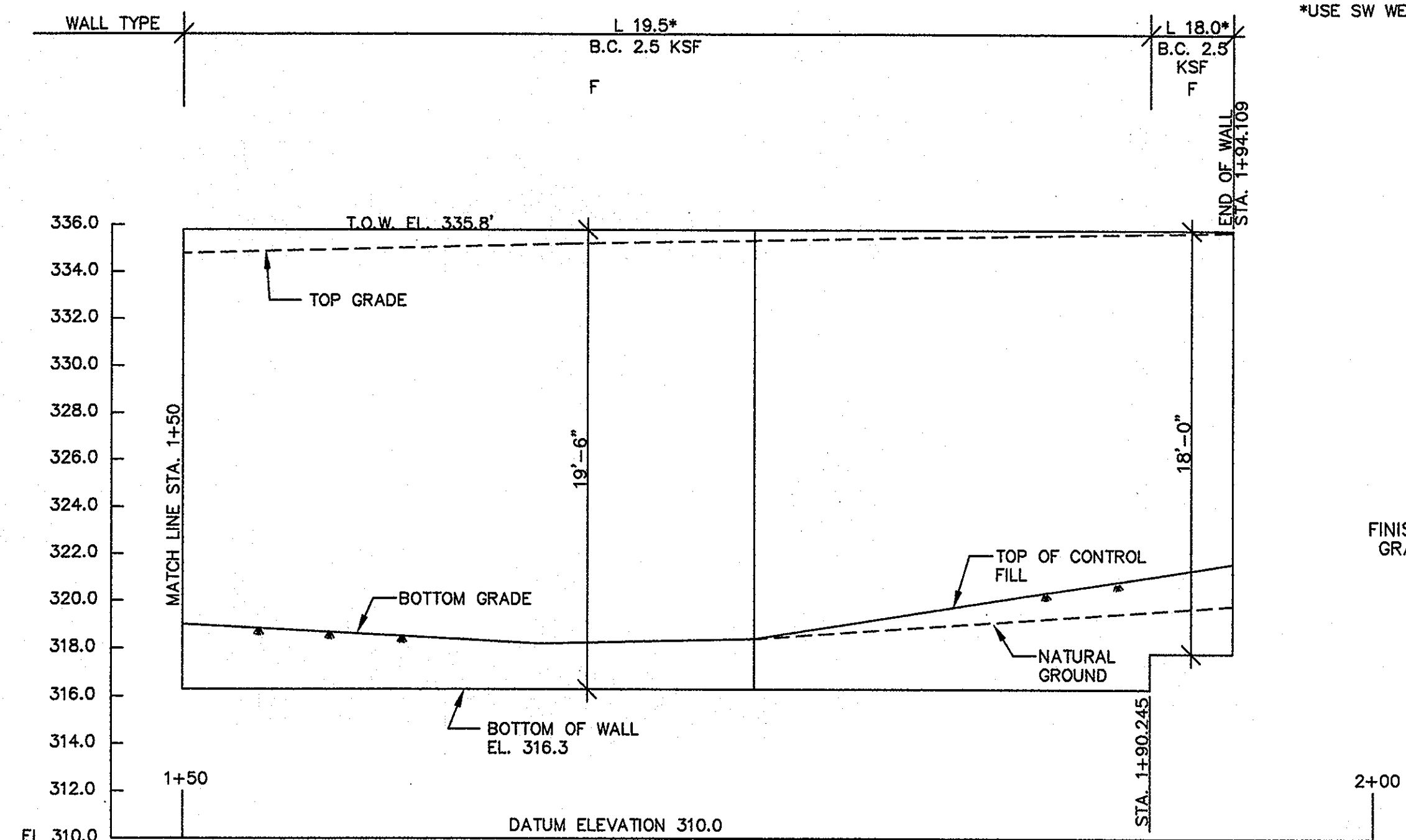
Blake Structural
3511 N. Calvert Street
Baltimore, MD 21218
Office #: 443-874-4630



DESIGNED BY :
DRAWN BY :
PROJECT NO : 15661-1-0
DATE : 11/18/09
SCALE :
DRAWING NO. 34 OF 42

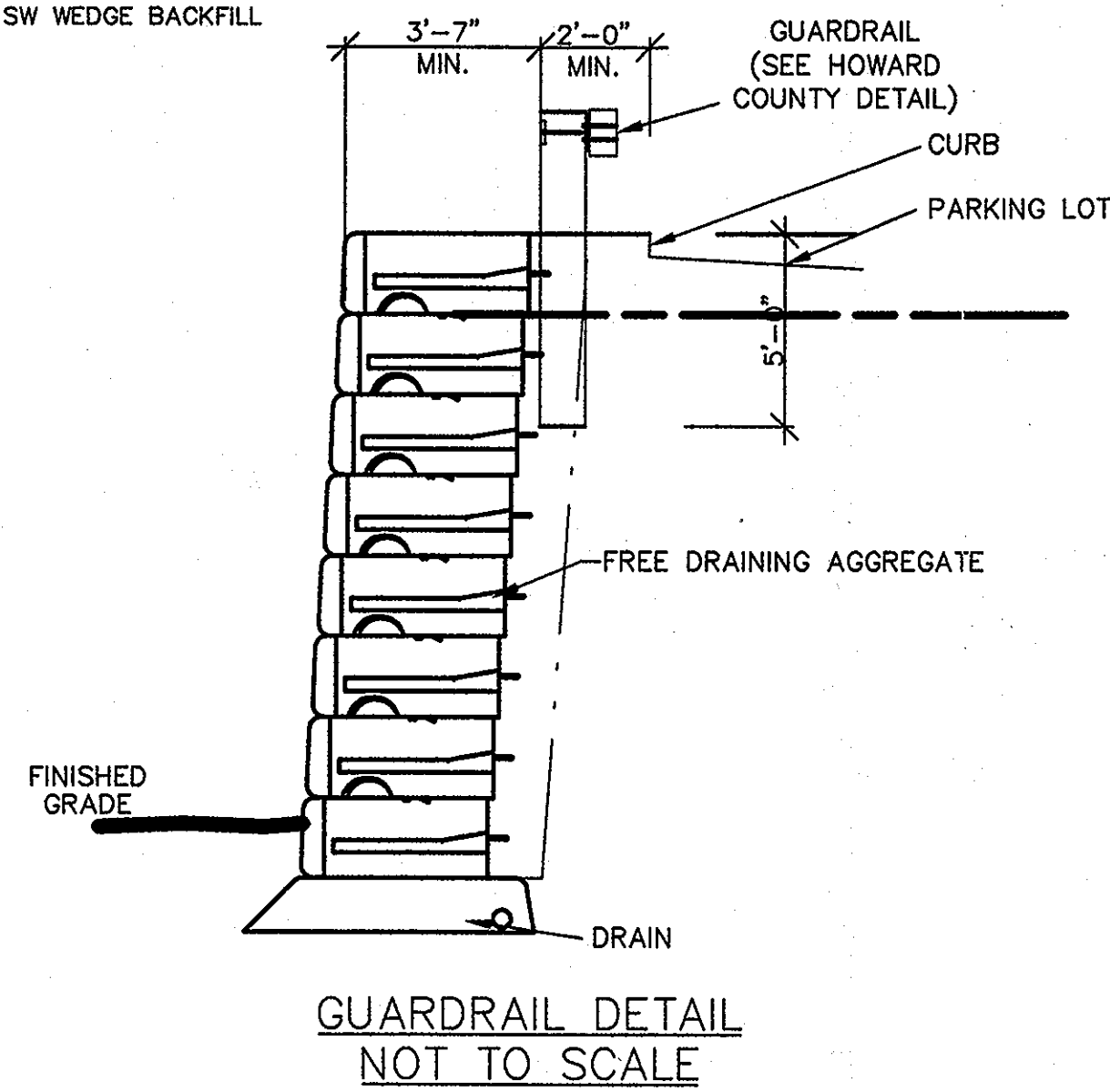


ELEVATION - RETAINING WALL NO. 2
1" = 5'

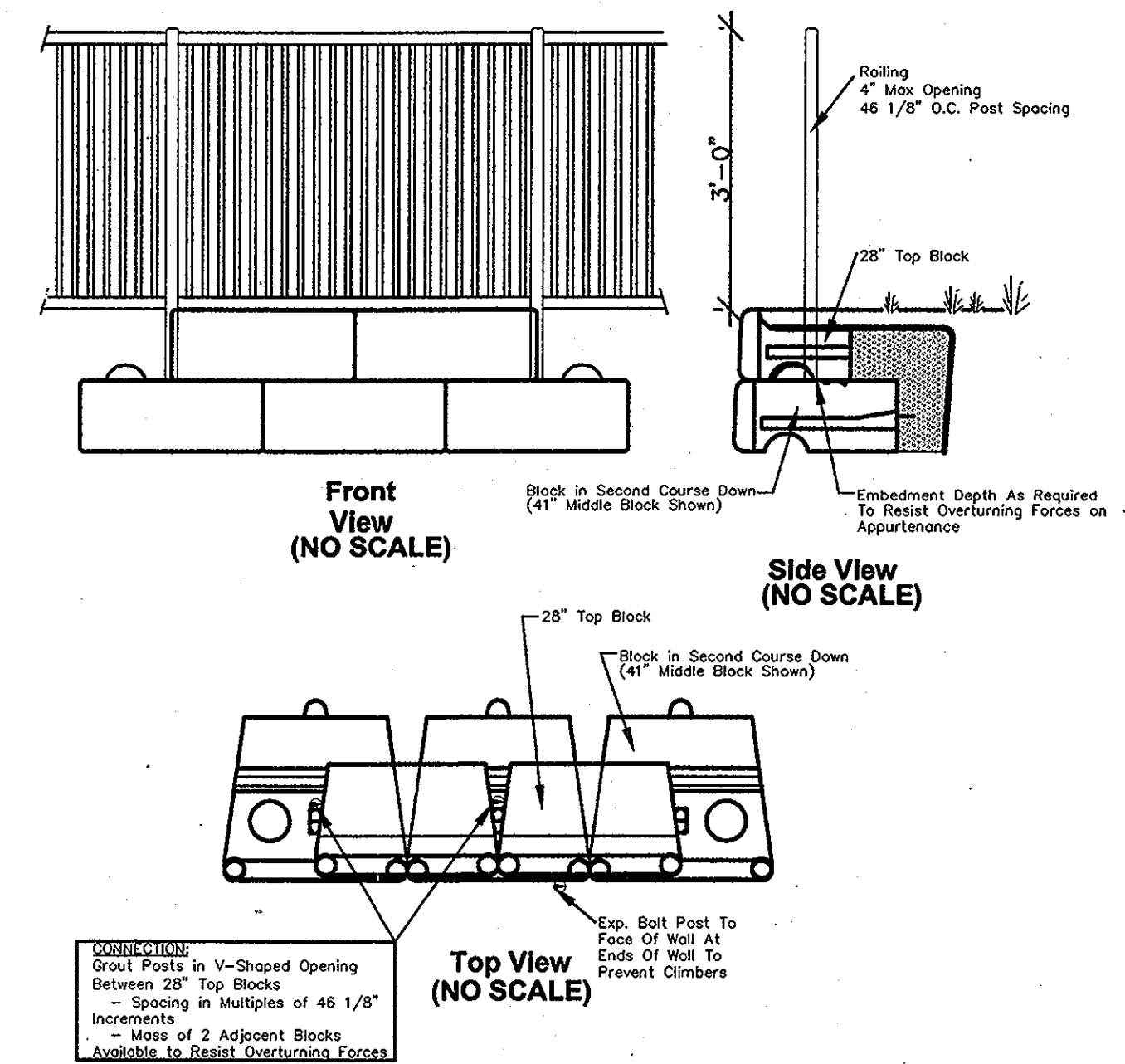


ELEVATION - RETAINING WALL NO. 2
1" = 5'

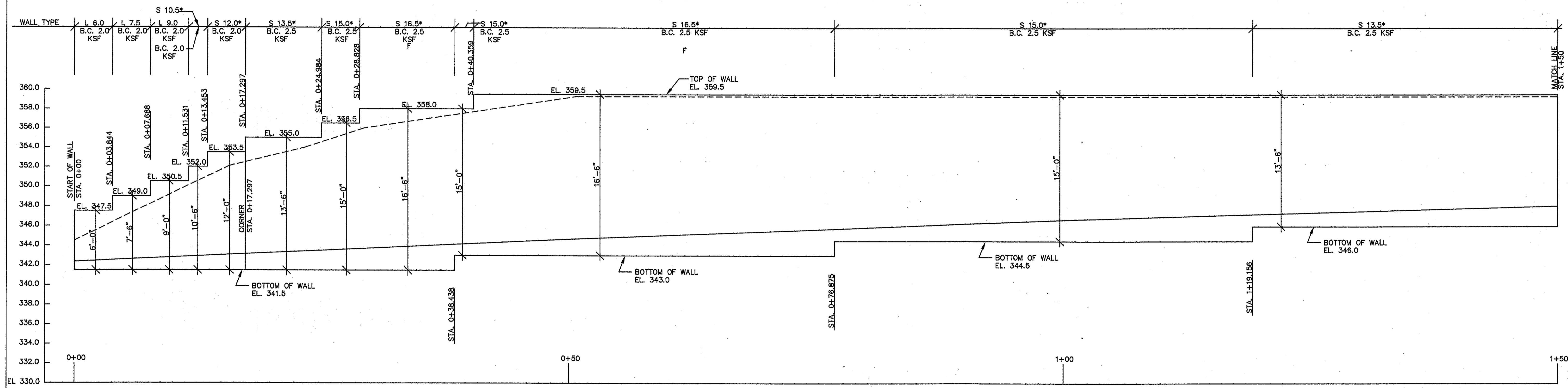
LEGEND
B.C. = BEARING CAPACITY
*USE SW WEDGE BACKFILL



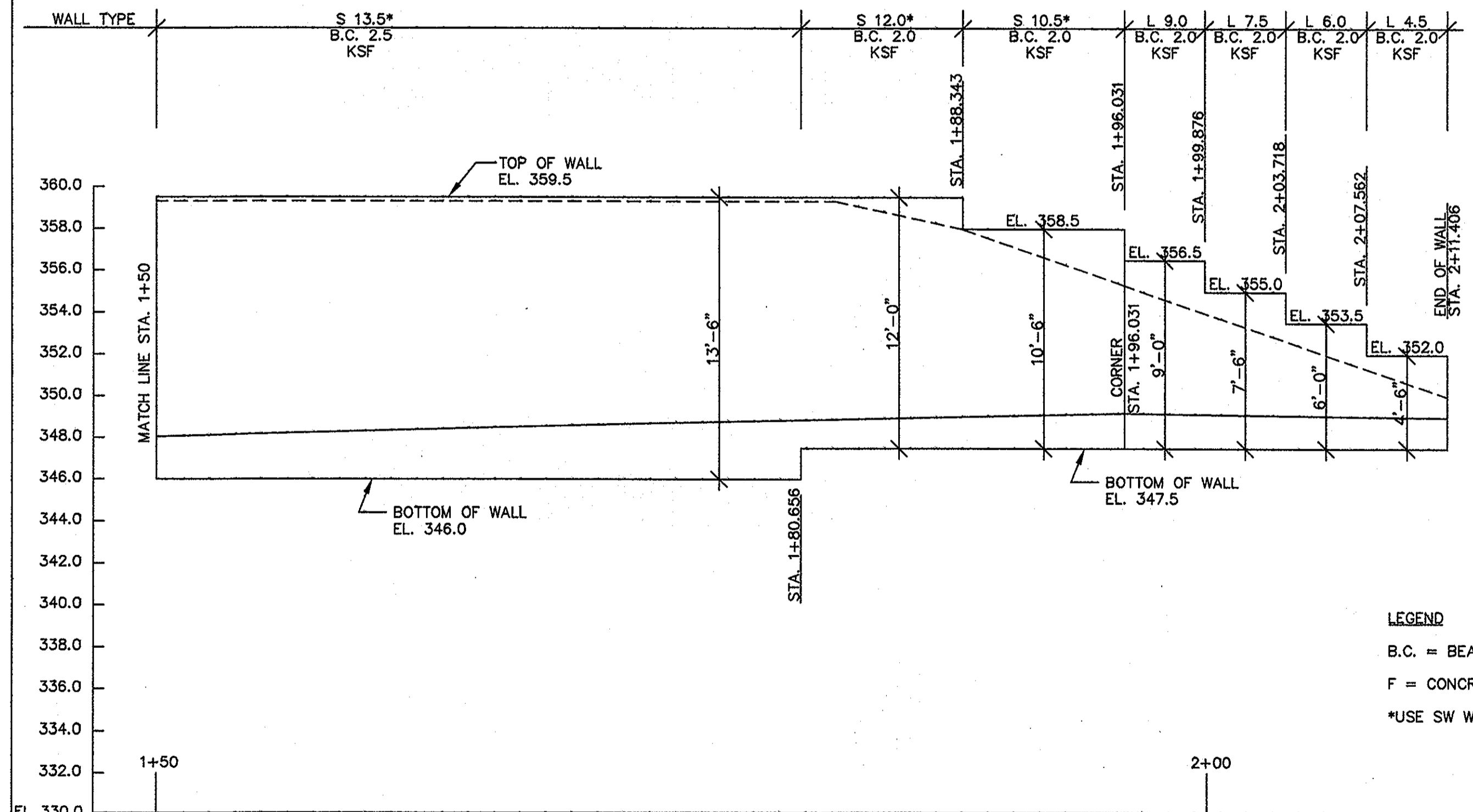
TYPICAL APPURTENANCE INSTALLATION WITH REDI-ROCK WALLS



APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Morgan & Justice</i> DIRECTOR	4/20/10 DATE
<i>Anthony Morse</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	4/12/10 DATE
<i>Kevin S. ...</i> CHIEF, DIVISION OF LAND DEVELOPMENT	4/20/10 DATE
DATE NO.	REVISION
OWNER	CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLICOTT CITY, MD 21043-4105
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070
PROJECT	ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
"REVISED REPLACEMENT SHEET" THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET #35 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09	
TITLE RETAINING WALL PLAN AND NOTES	
Blake Structural 3511 N. Calvert Street Baltimore, MD 21218 Office #: 443-874-4630	
SEAL	DESIGNED BY :
BY: <i>[Signature]</i>	DRAWN BY :
	PROJECT NO : 15661-1-0
	DATE : 11/18/09
SCALE :	DRAWING NO. 35 OF 42

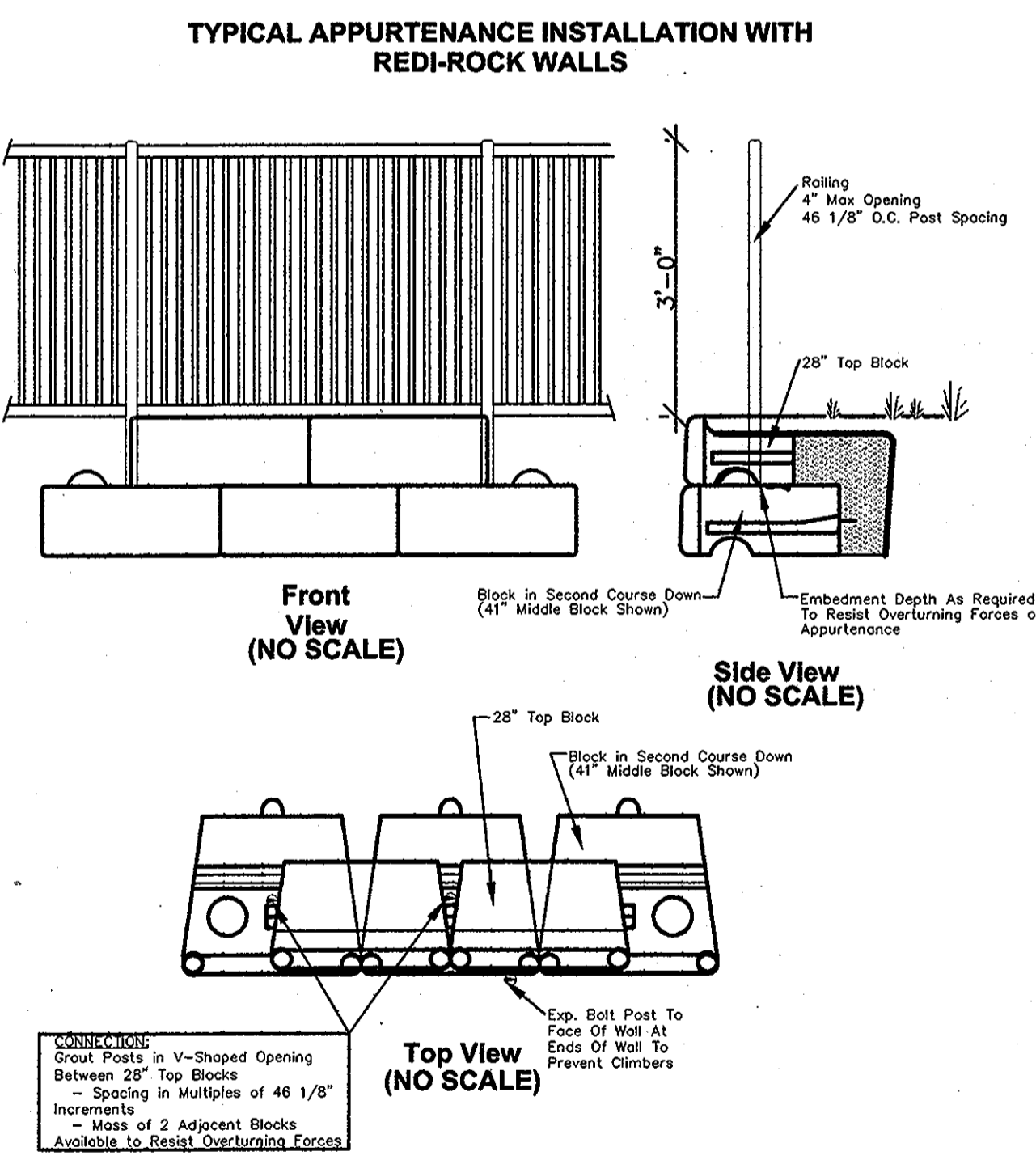
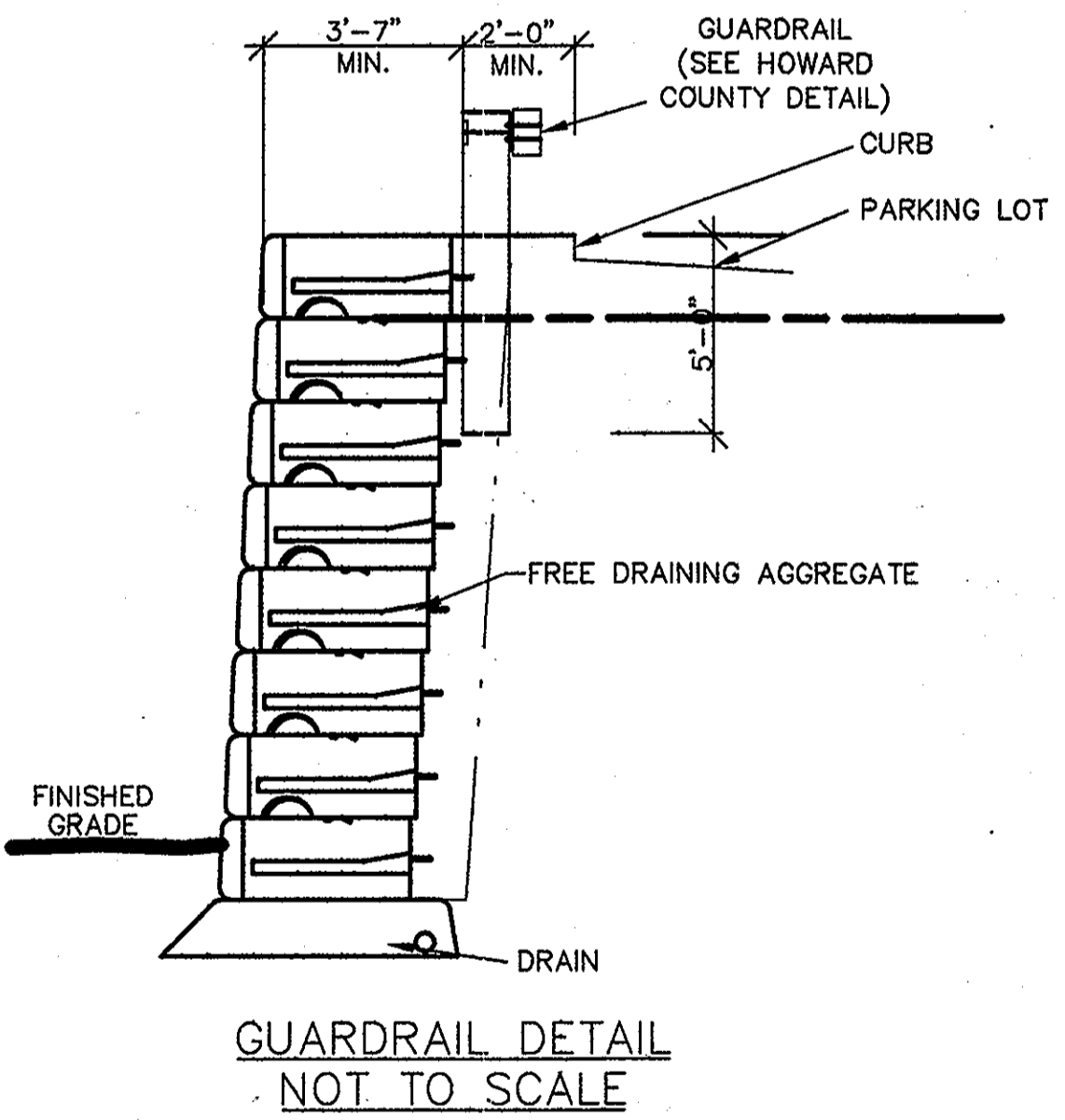


ELEVATION - RETAINING WALL NO. 3
 1" = 5'

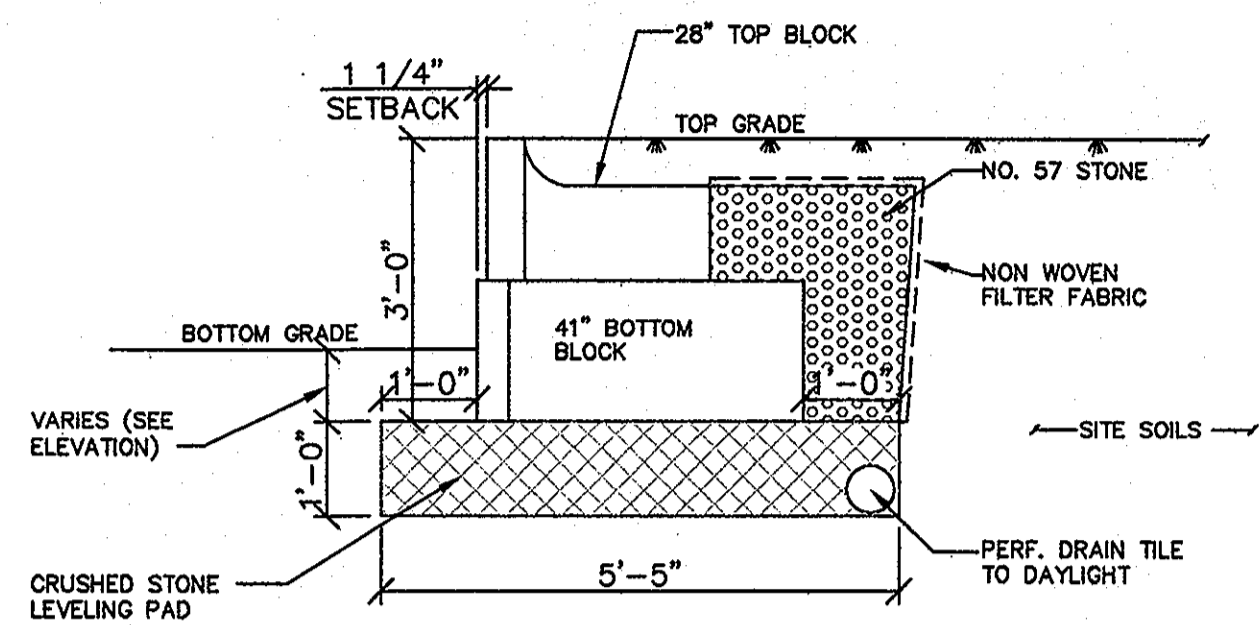


ELEVATION - RETAINING WALL NO. 3
 1" = 5'

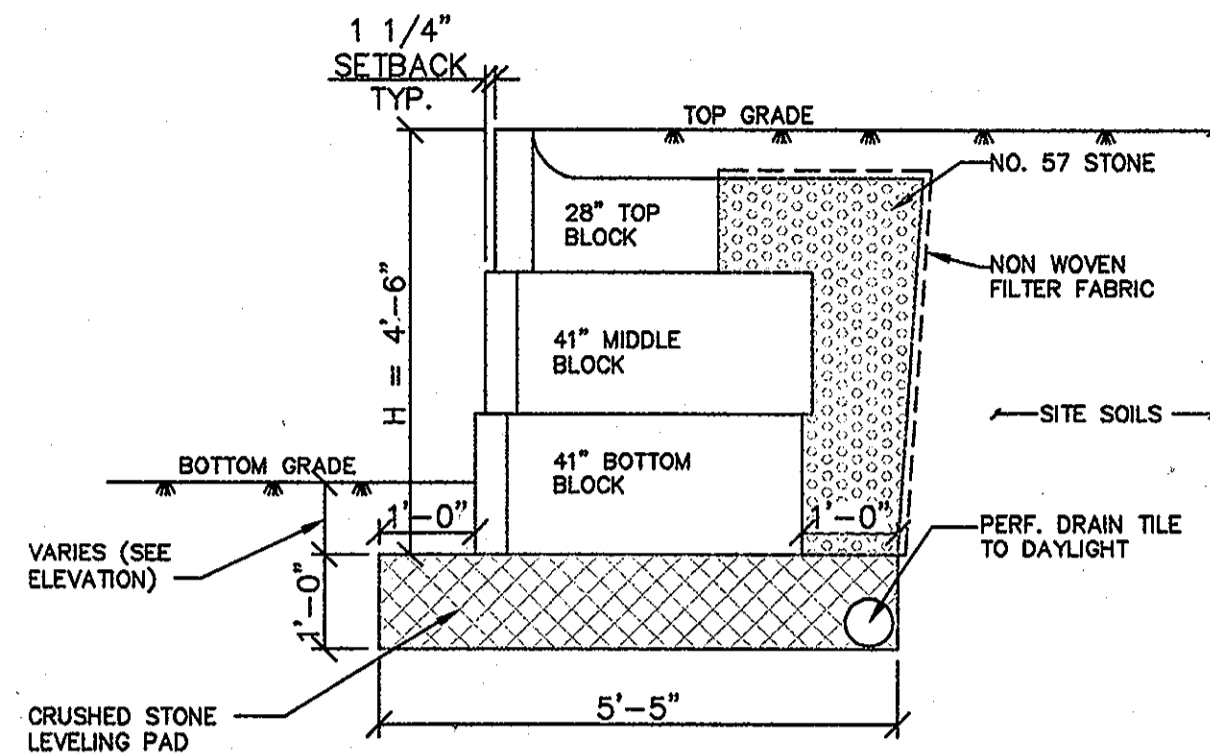
LEGEND
 B.C. = BEARING CAPACITY
 F = CONCRETE FOOTING
 *USE SW WEDGE BACKFILL



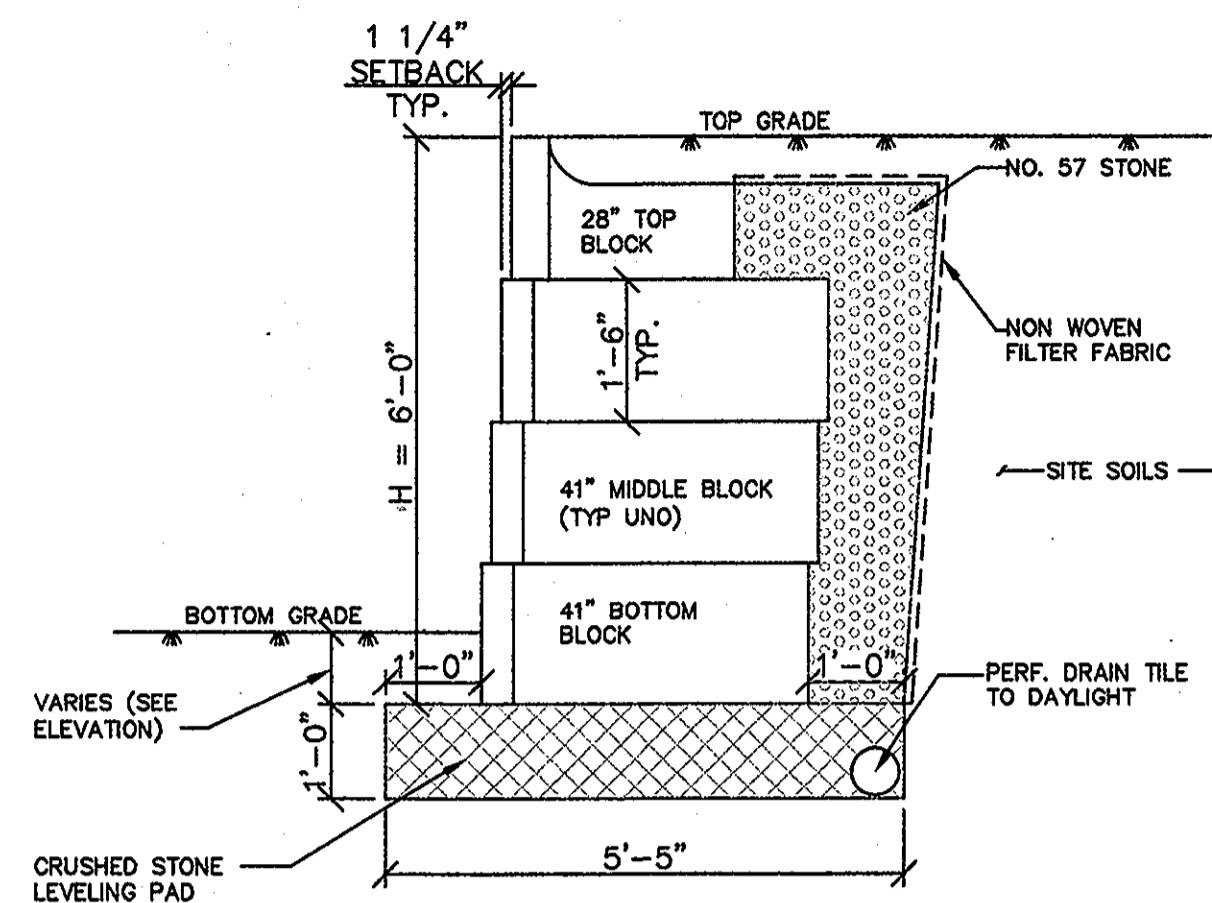
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Mona S. Xutler</i>	4/20/10 DATE
DIRECTOR	
<i>Michael D. ...</i>	4/15/10 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	
<i>Keith ...</i>	4/20/10 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	
DATE NO.	REVISION
OWNER	CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLICOTT CITY, MD 21043-4105
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070
PROJECT	ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
"REVISED REPLACEMENT SHEET" THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET #36 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09	
TITLE RETAINING WALL PLAN AND NOTES	
Blake Structural 3511 N. Calvert Street Baltimore, MD 21218 Office #: 443-874-4630	
SEAL	DESIGNED BY:
	DRAWN BY:
	PROJECT NO: 15661-1-0
	DATE: 11/18/09
	SCALE:
BY:	DRAWING NO. 36 OF 42



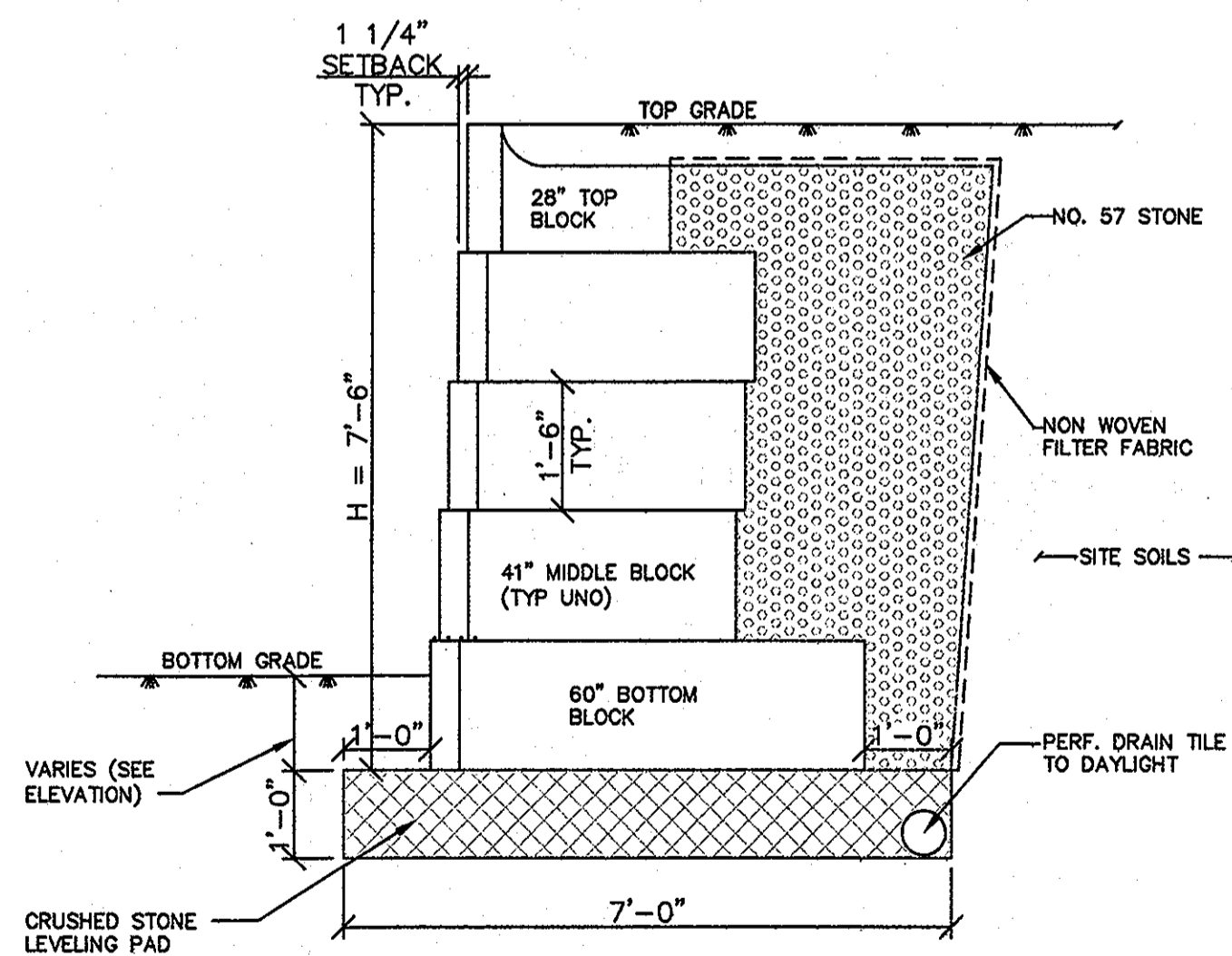
SECTION - WALL TYPE L 3
 H = 3'-0"
 1/2" = 1'-0"



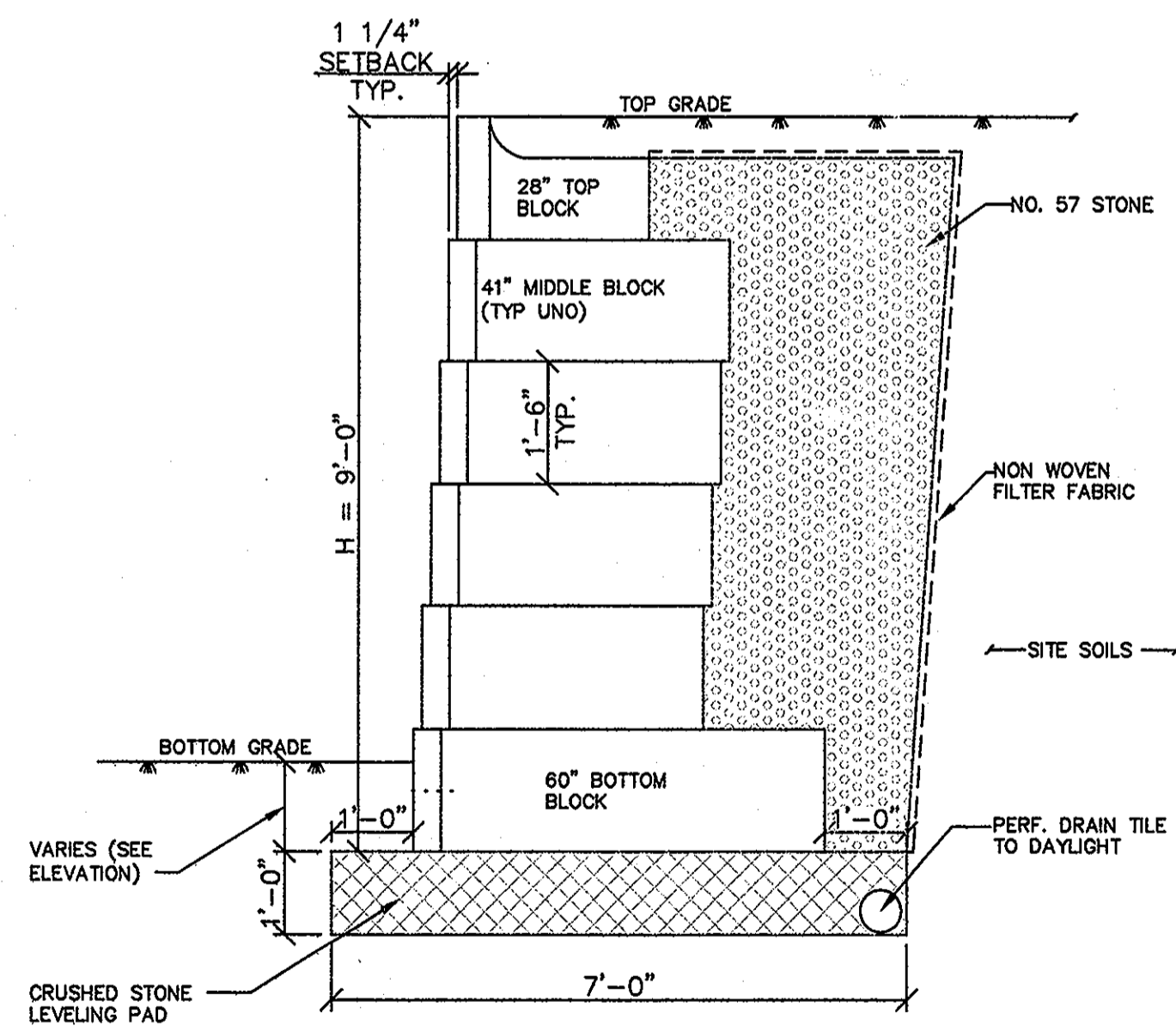
SECTION - WALL TYPE L 4.5 H =
 4'-6"
 1/2" = 1'-0"



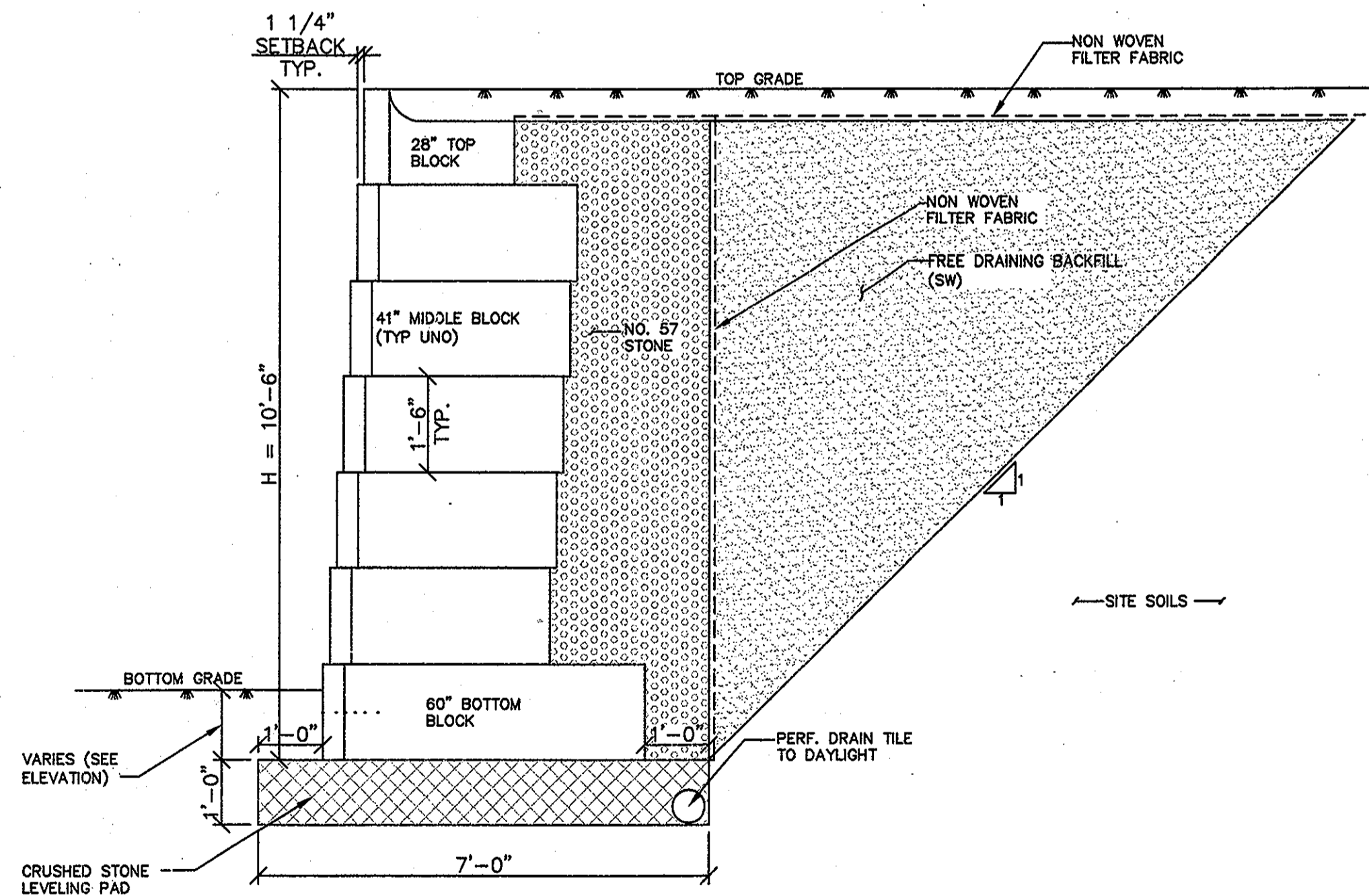
SECTION - WALL TYPE L 6.0 H =
 6'-0"
 1/2" = 1'-0"



SECTION - WALL TYPE L 7.5 H =
 7'-6"
 1/2" = 1'-0"



SECTION - WALL TYPE L 9.0 H =
 9'-0"
 1/2" = 1'-0"



SECTION - WALL TYPE L 10.5 H =
 10'-6"
 1/2" = 1'-0"

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
 Director: *Thomas J. Frittle* 4/26/10
 Chief, Development Engineering Division: *Anthony Morse* 4/13/10
 Chief, Division of Land Development: *John S. ...* 4/26/10

DATE	NO.	REVISION

OWNER: CENTURY HOLDING, LLC
 3311 OAK WEST DRIVE
 ELLICOTT CITY, MD 21043-4105

DEVELOPER: WOOD PARTNERS
 ATTN: MR. ANTHONY MORSE, PE
 8150 LEESBURG PIKE
 SUITE 501
 VIENNA, VA 22182
 703-760-5070

PROJECT: ALTA AT REGENCY CREST
 BUILDABLE PARCEL A AND OPEN SPACE LOT 1
 AGE RESTRICTED ADULT HOUSING

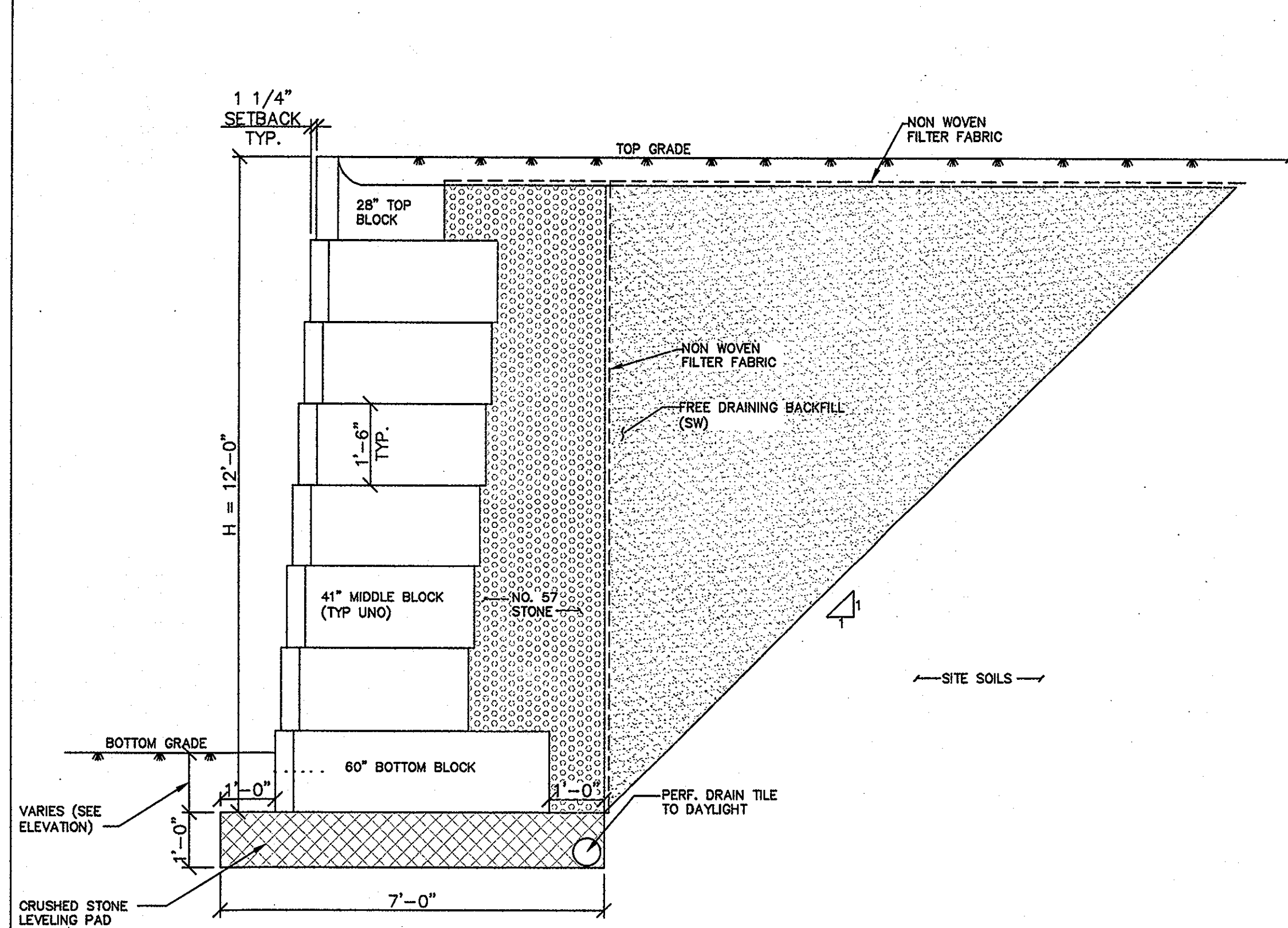
AREA: TAX MAP 25, GRID 1, PARCEL 1
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

"REVISED REPLACEMENT SHEET"
 THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET #37 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09

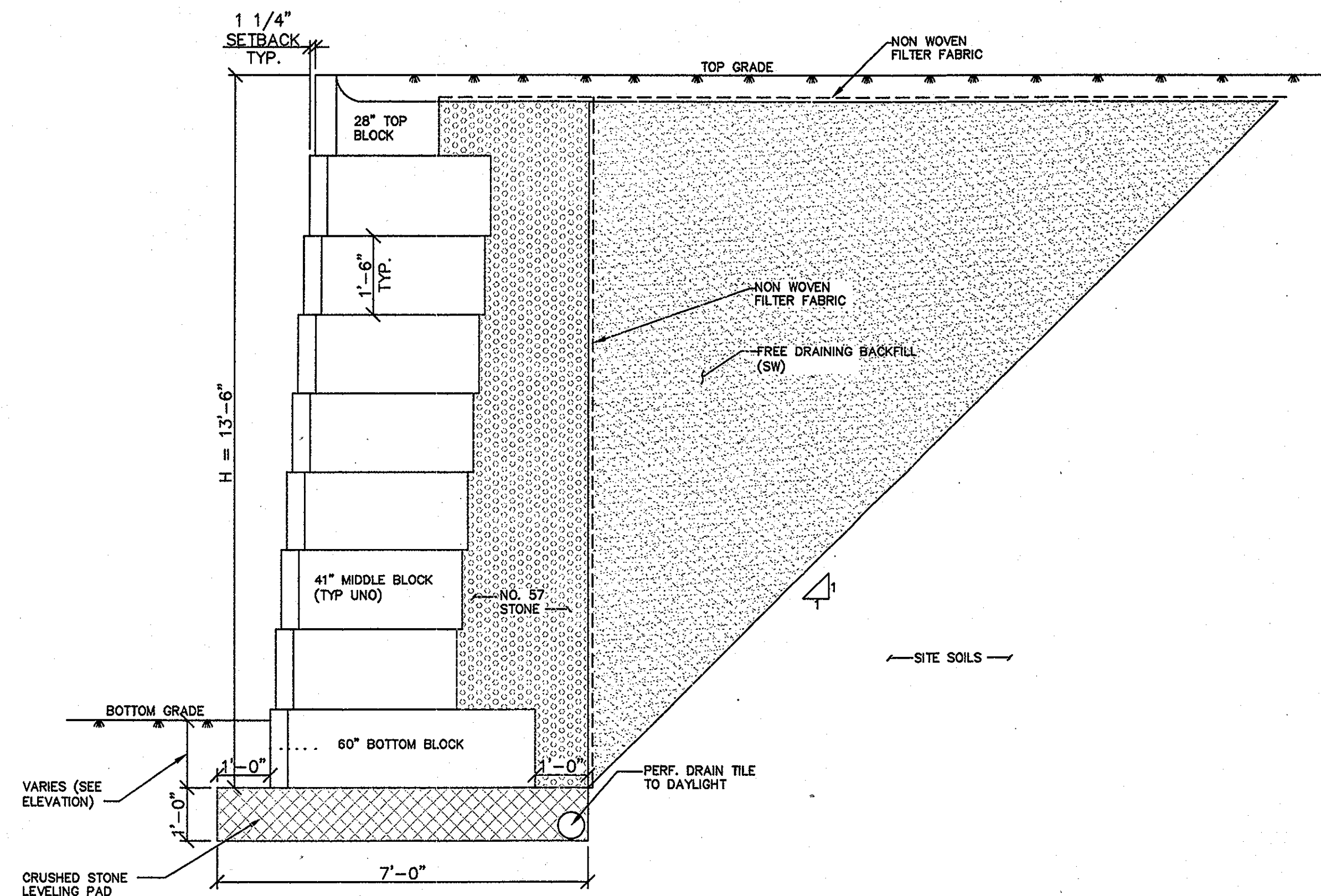
TITLE: RETAINING WALL PLAN AND NOTES

Blake Structural
 3511 N. Calvert Street
 Baltimore, MD 21218
 Office #: 443-874-4630

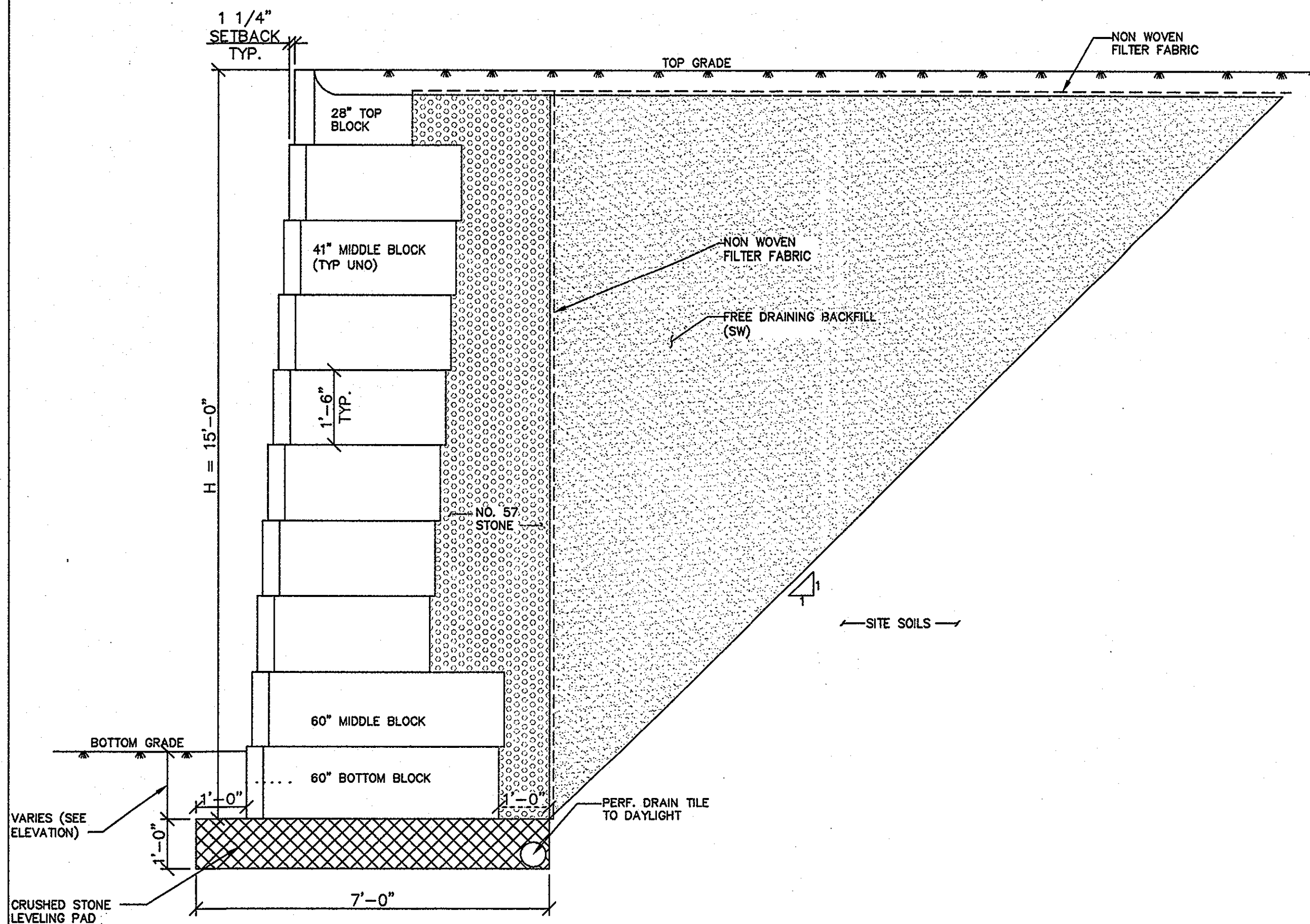
SEAL: [Professional Engineer Seal]
 DESIGNED BY:
 DRAWN BY:
 PROJECT NO: 15661-1-0
 DATE: x11/18/09
 SCALE:
 DRAWING NO. 37 OF 42



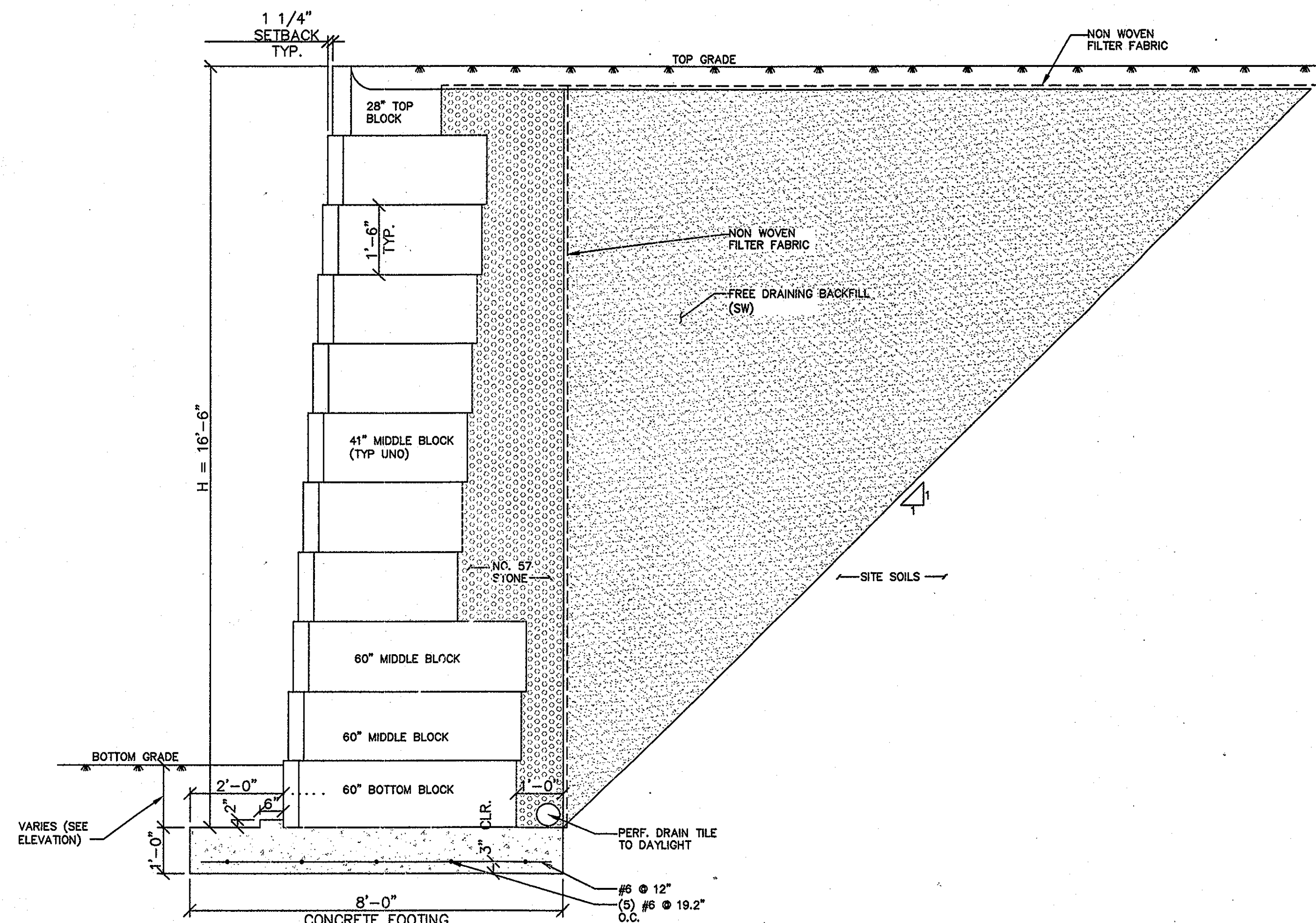
SECTION - WALL TYPE L 12.0 H = 12'-0"
1/2" = 1'-0"



SECTION - WALL TYPE L 13.5 H = 13'-6"
1/2" = 1'-0"

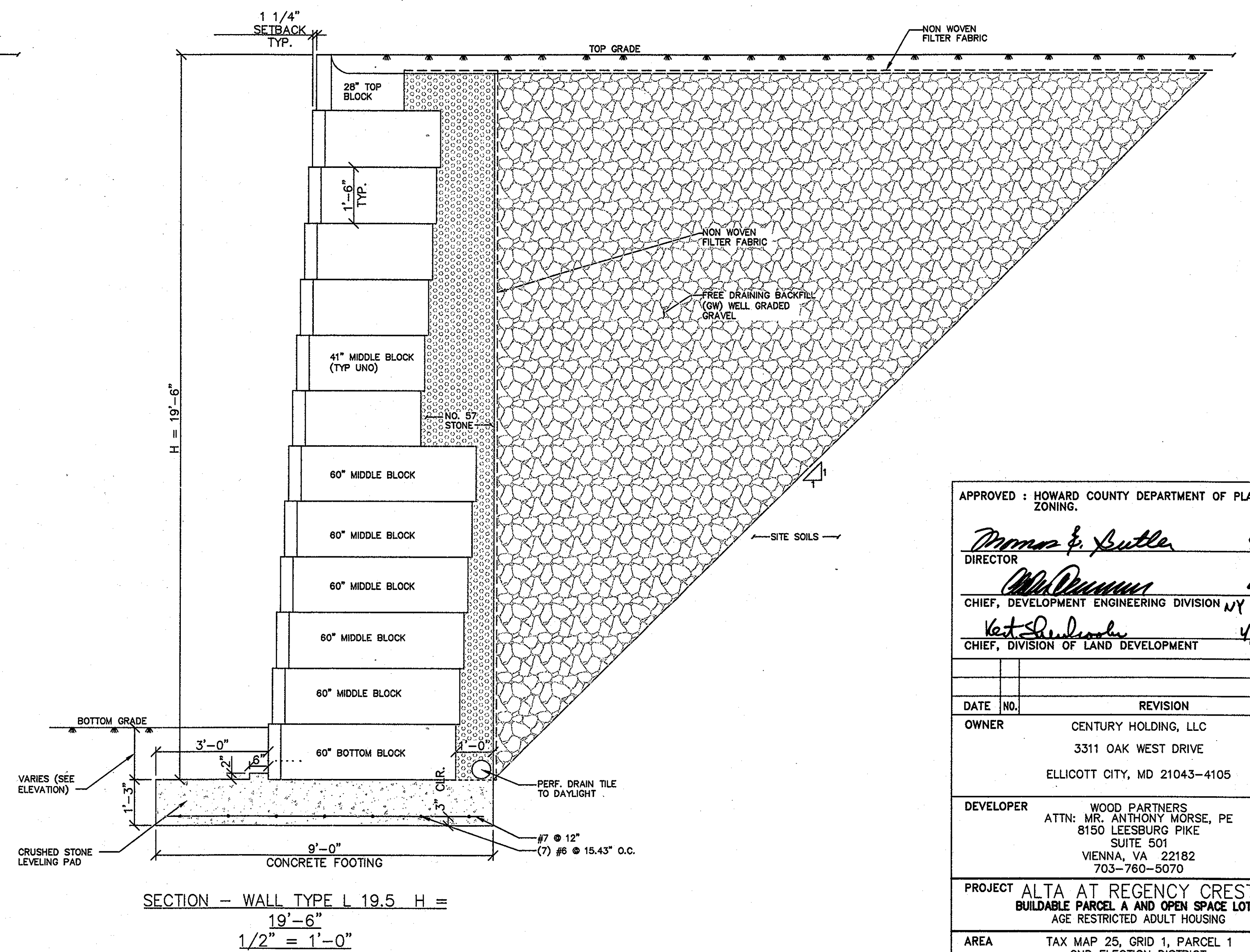
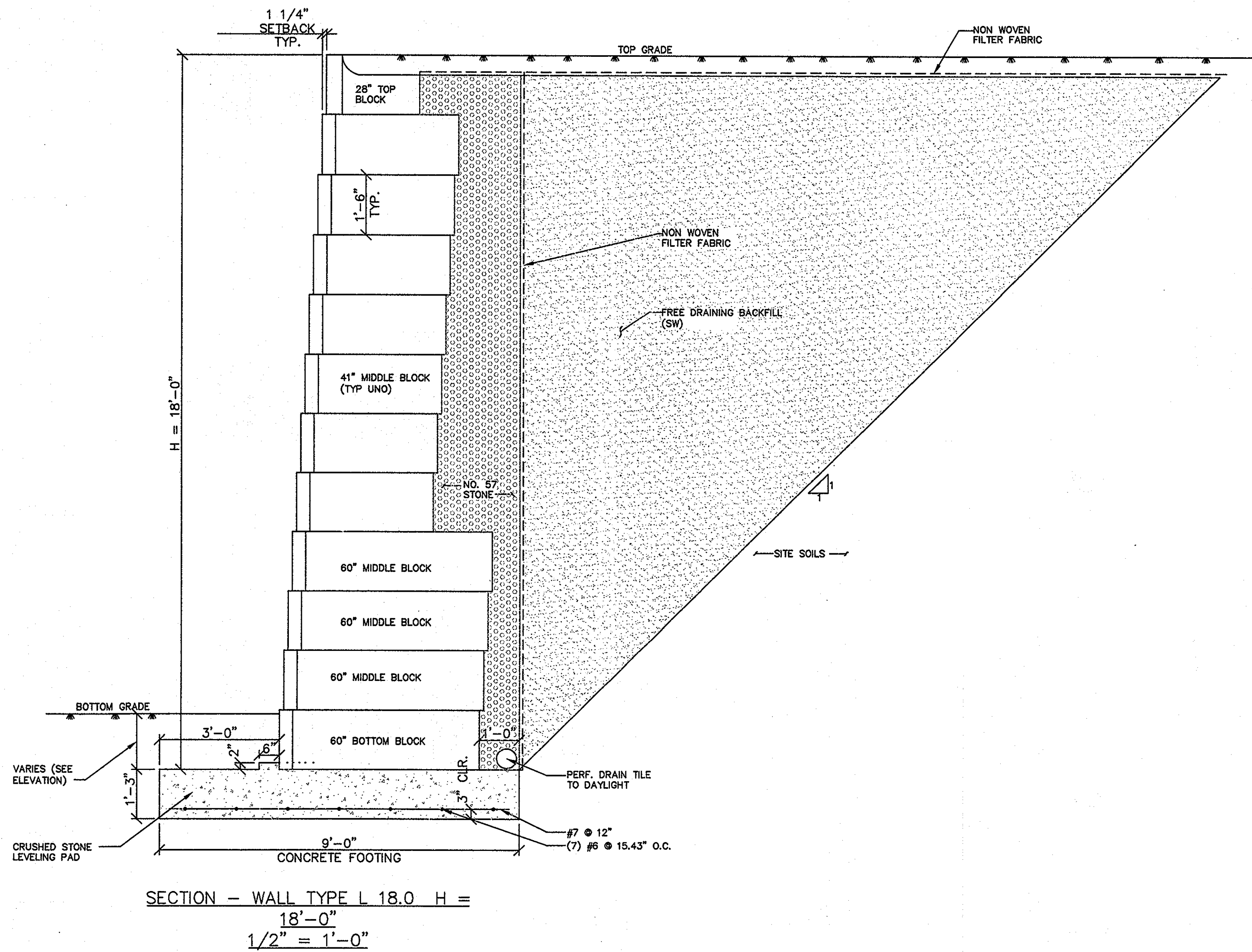


SECTION - WALL TYPE L 15.0 H = 15'-0"
1/2" = 1'-0"



SECTION - WALL TYPE L 16.5 H = 16'-6"
1/2" = 1'-0"

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Thomas J. Antle</i> DIRECTOR	4/20/10 DATE
<i>Chris P. ...</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	4/12/10 DATE
<i>Kevin ...</i> CHIEF, DIVISION OF LAND DEVELOPMENT	4/20/10 DATE
DATE NO.	REVISION
OWNER	CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLICOTT CITY, MD 21043-4105
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070
PROJECT ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING	
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
"REVISED REPLACEMENT SHEET" THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET #38 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09	
TITLE RETAINING WALL PLAN AND NOTES	
Blake Structural 3511 N. Calvert Street Baltimore, MD 21218 Office #: 443-874-4630	
SEAL	DESIGNED BY :
	DRAWN BY :
	PROJECT NO : 15661-1-0
	DATE : 11/18/09
BY:	SCALE :
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15661-1-0, EXPIRATION DATE: 11/18/10	DRAWING NO. 38 OF 42



APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Buttle 4/20/10
DIRECTOR DATE
Michael Deumer 4/13/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
Kevin Deumer 4/20/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
		OWNER
		CENTURY HOLDING, LLC
		3311 OAK WEST DRIVE
		ELLCOTT CITY, MD 21043-4105

DEVELOPER
WOOD PARTNERS
ATTN: MR. ANTHONY MORSE, PE
8150 LEESBURG PIKE
SUITE 501
VIENNA, VA 22182
703-760-5070

PROJECT ALTA AT REGENCY CREST
BUILDABLE PARCEL A AND OPEN SPACE LOT 1
AGE RESTRICTED ADULT HOUSING

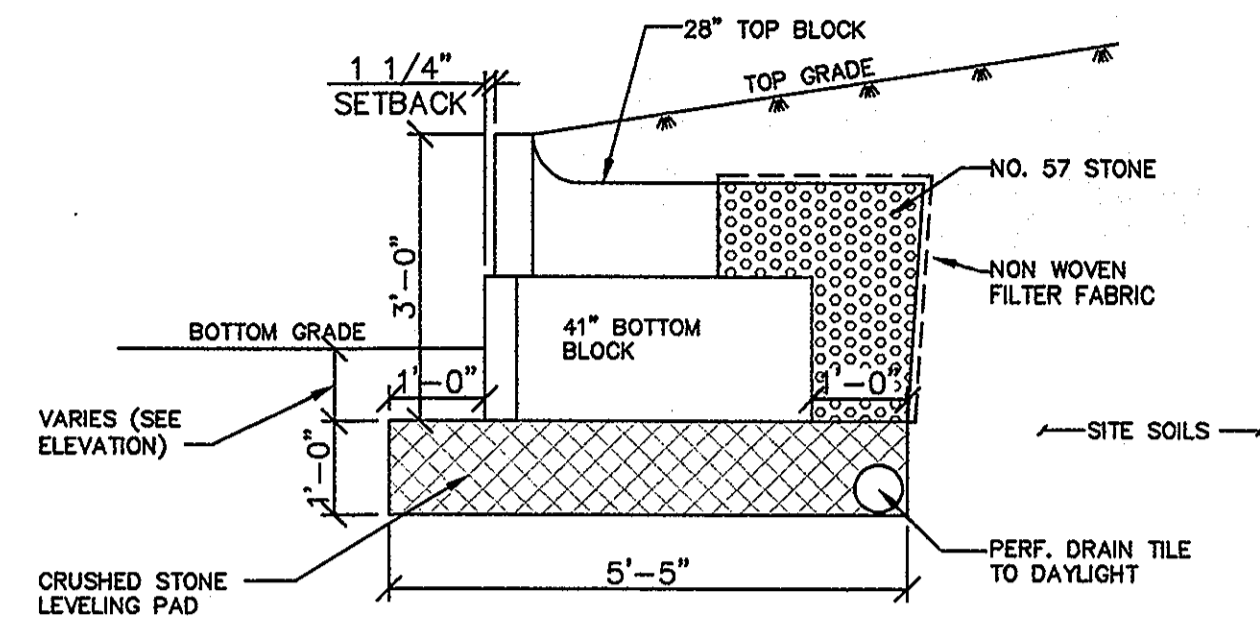
AREA TAX MAP 25, GRID 1, PARCEL 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

"REVISED REPLACEMENT SHEET"
THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET #39 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09
TITLE
RETAINING WALL PLAN AND NOTES

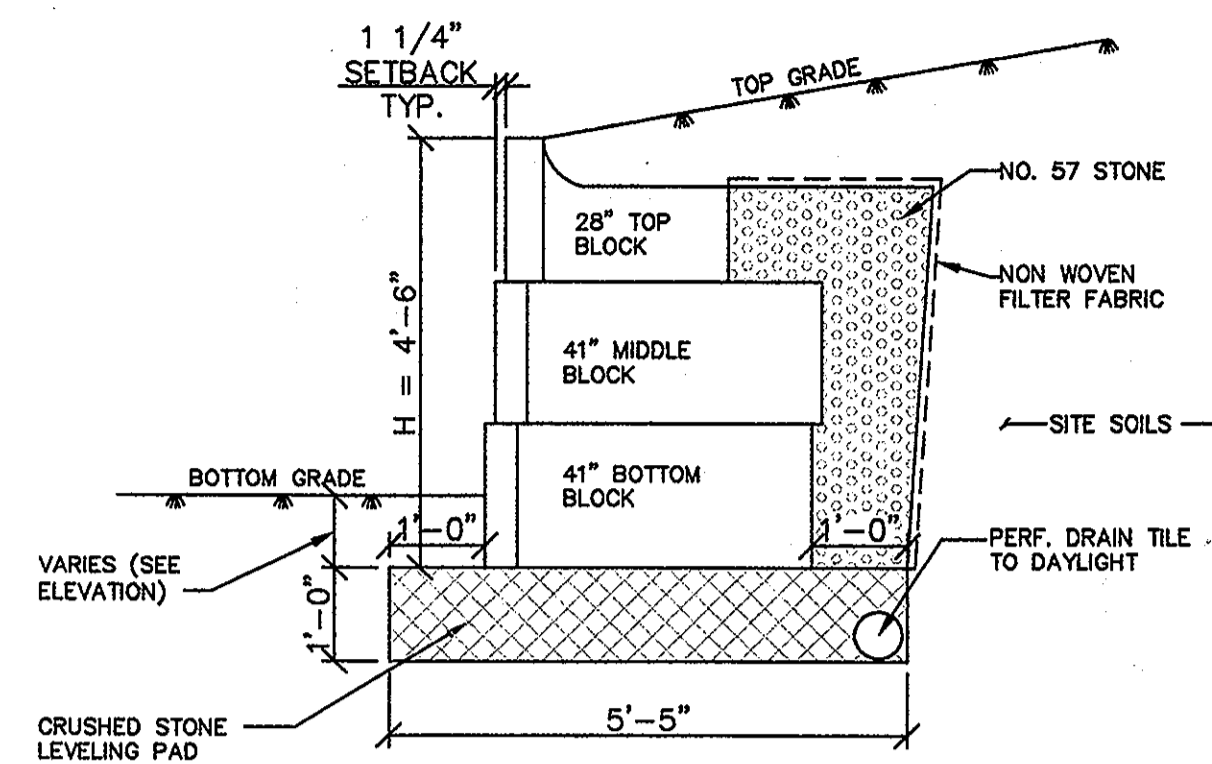
Blake Structural
3511 N. Calvert Street
Baltimore, MD 21218
Office #: 443-874-4630

SEAL	DESIGNED BY :
	DRAWN BY :
	PROJECT NO : 15661-1-0
	DATE : 11/18/09
	SCALE :
BY:	DRAWING NO. 39 OF 42

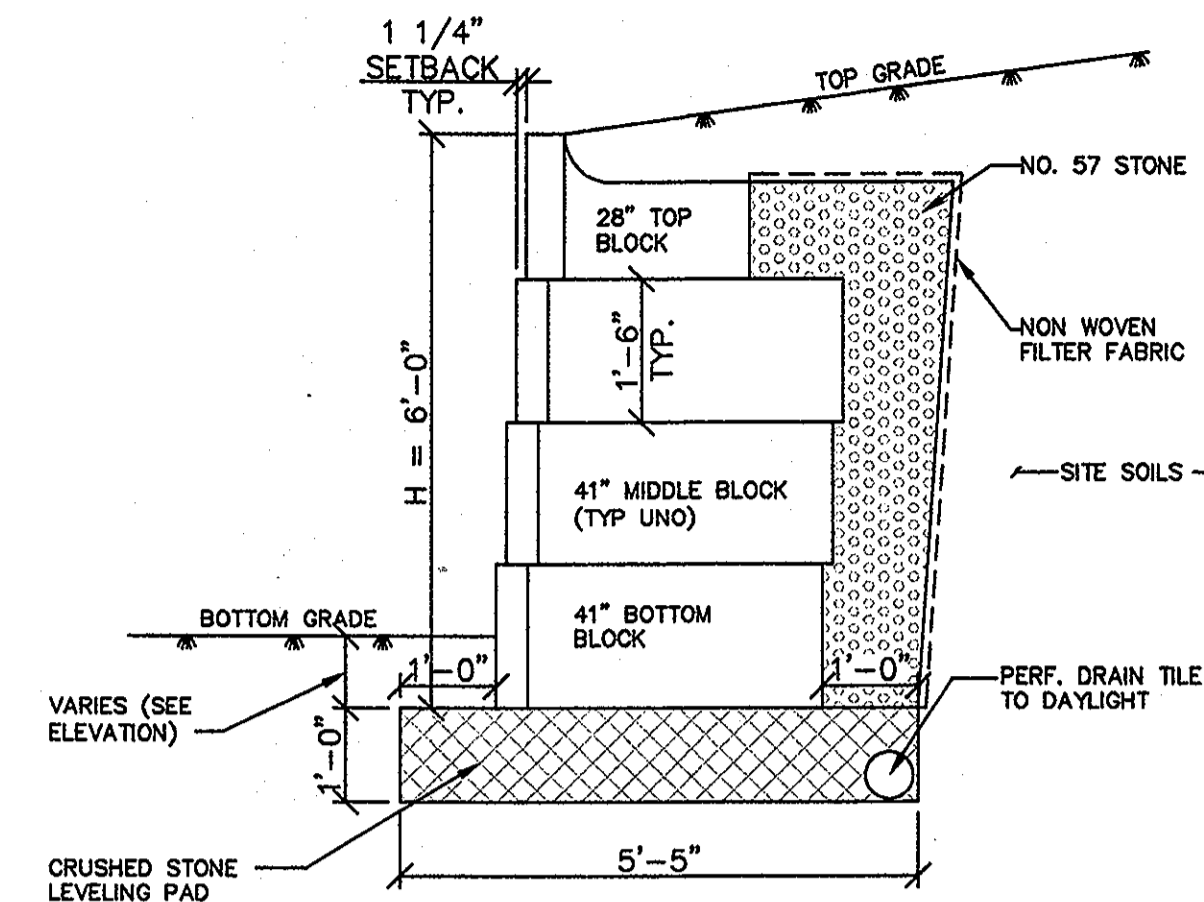
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15661-1-0, EXPIRATION DATE: 11/18/10



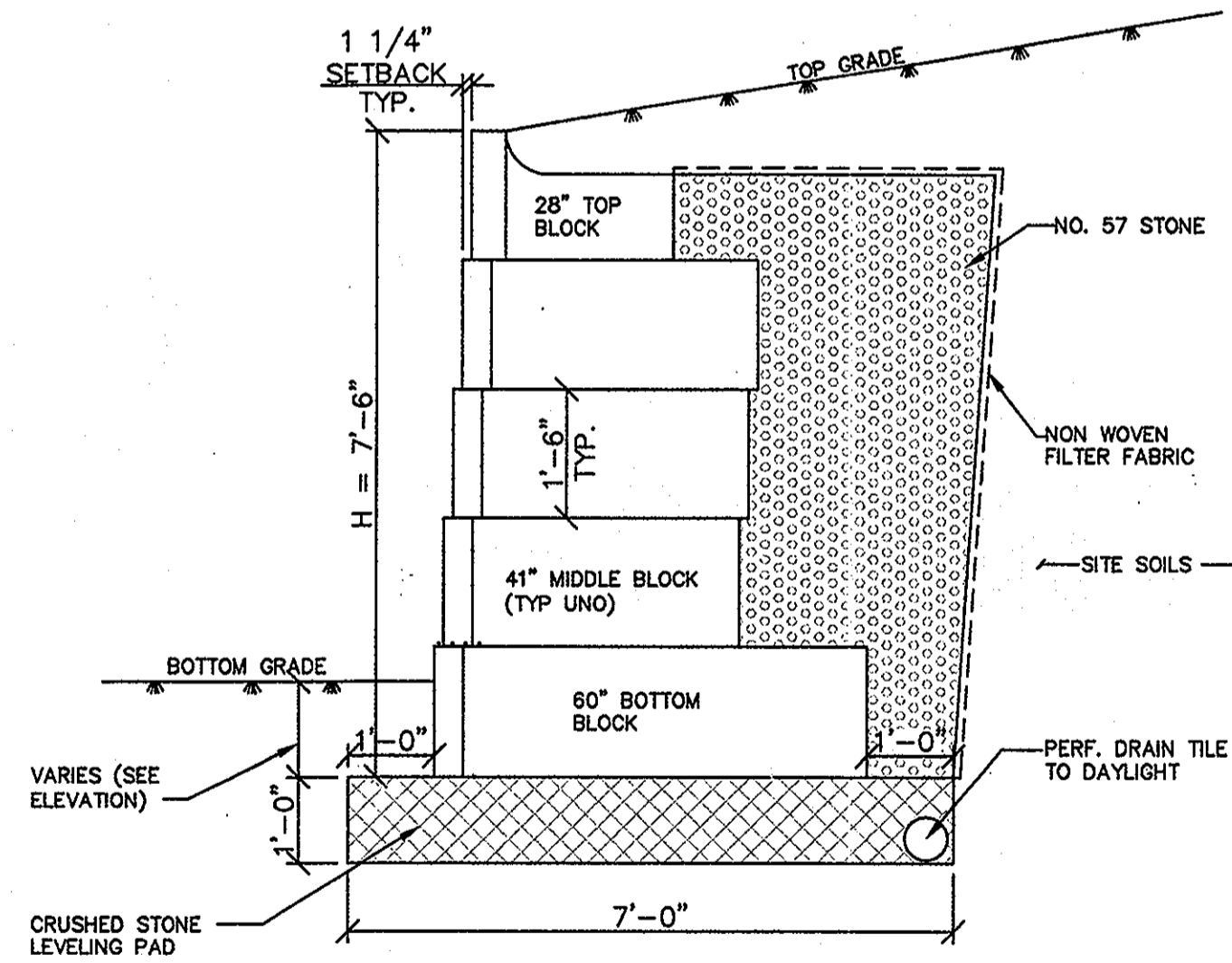
SECTION -- WALL TYPE S 3.0
 H = 3'-0"
 1/2" = 1'-0"



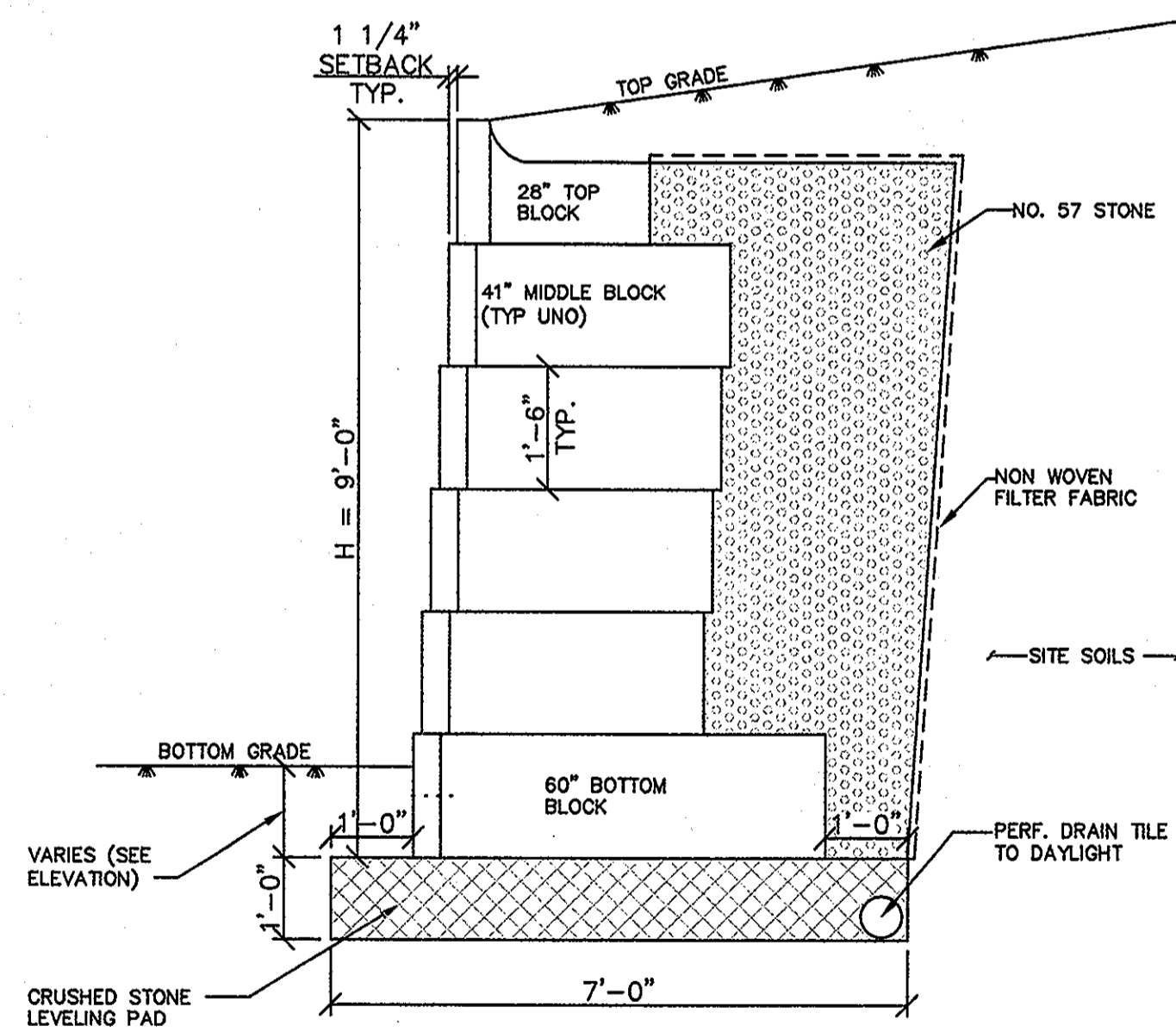
SECTION -- WALL TYPE S 4.5 H =
 4'-6"
 1/2" = 1'-0"



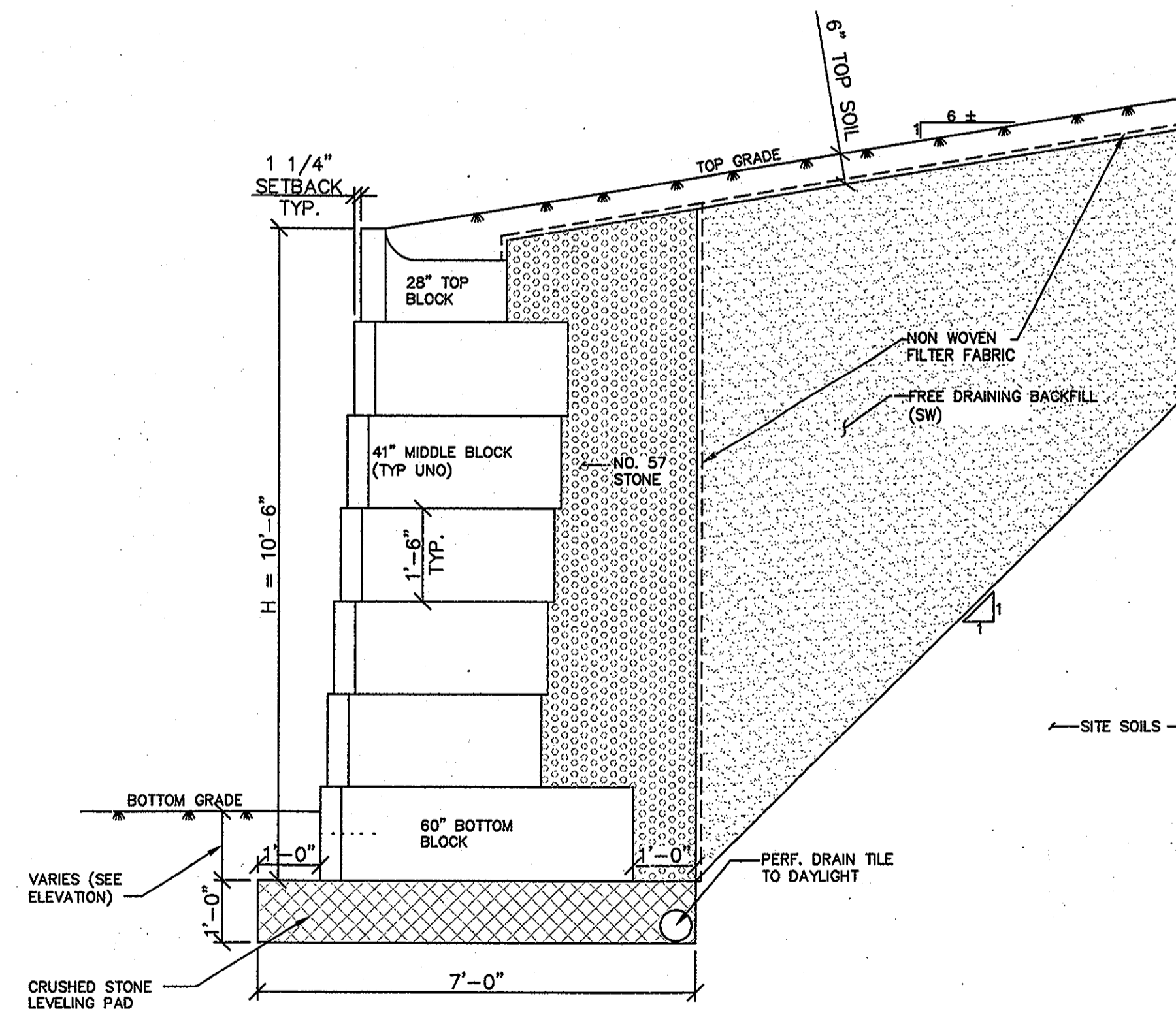
SECTION -- WALL TYPE S 6.0 H =
 6'-0"
 1/2" = 1'-0"



SECTION -- WALL TYPE S 7.5 H =
 7'-6"
 1/2" = 1'-0"

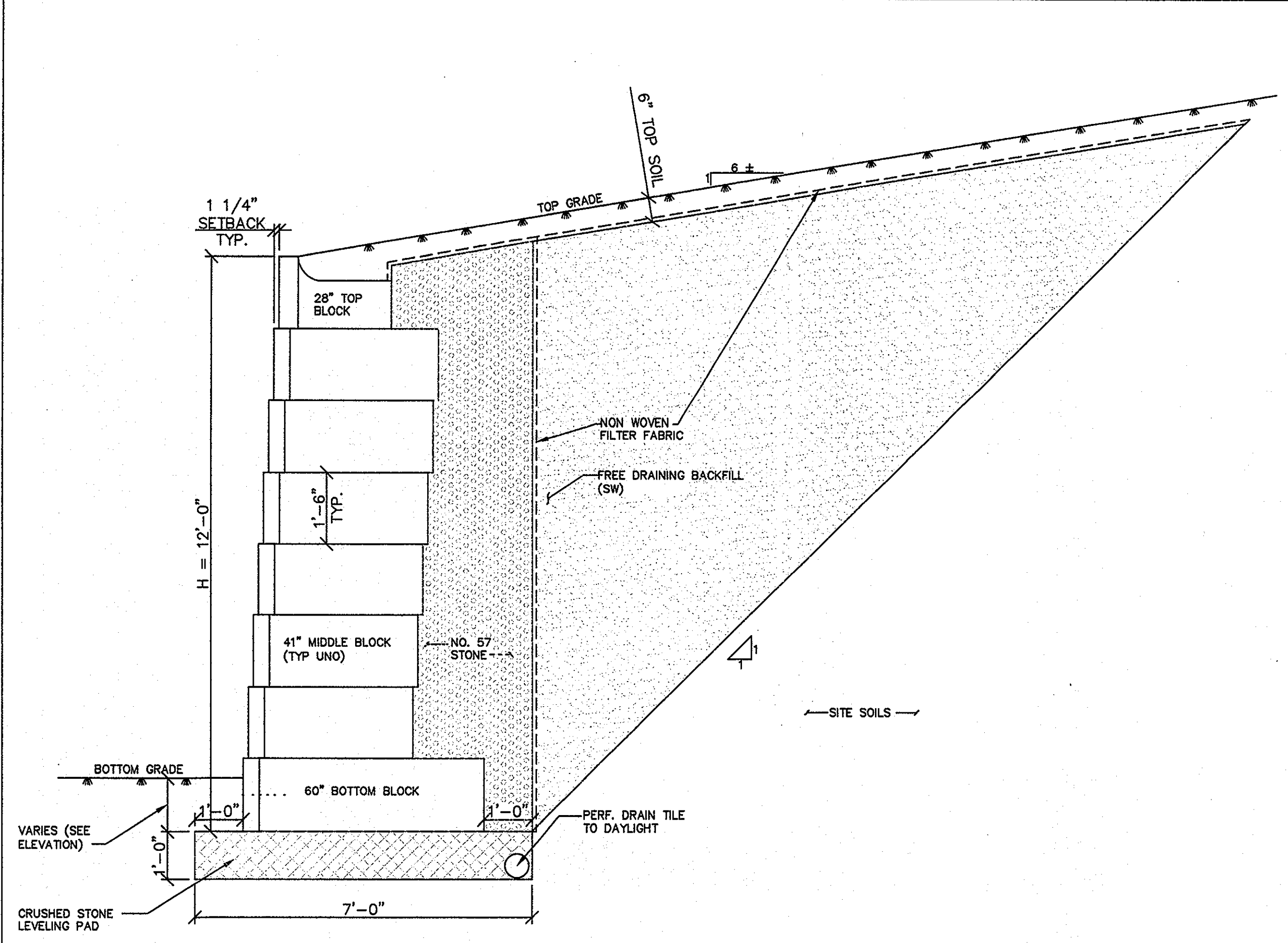


SECTION -- WALL TYPE S 9.0 H =
 9'-0"
 1/2" = 1'-0"

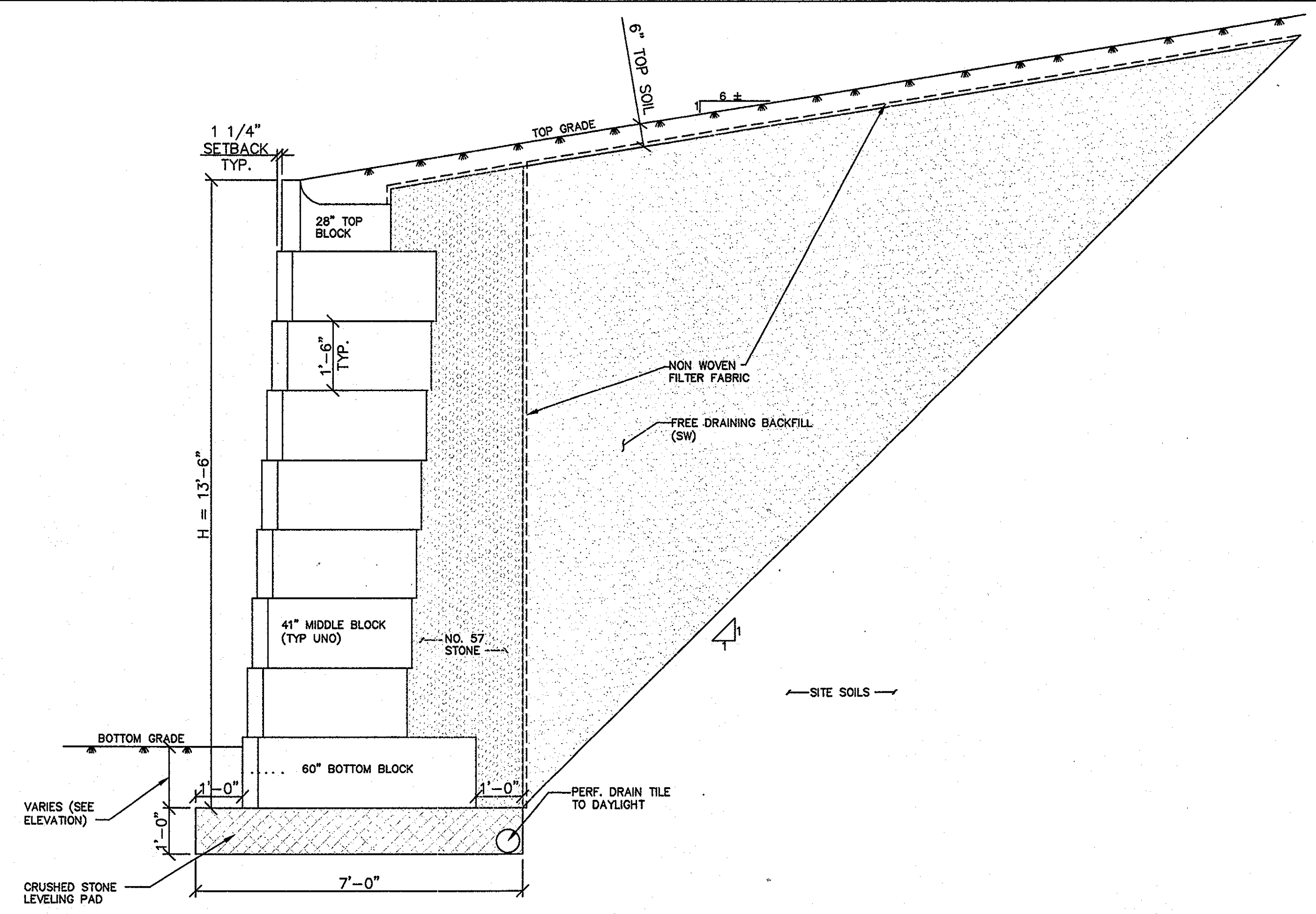


SECTION -- WALL TYPE S 10.5 H =
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 1/2" = 1'-0"

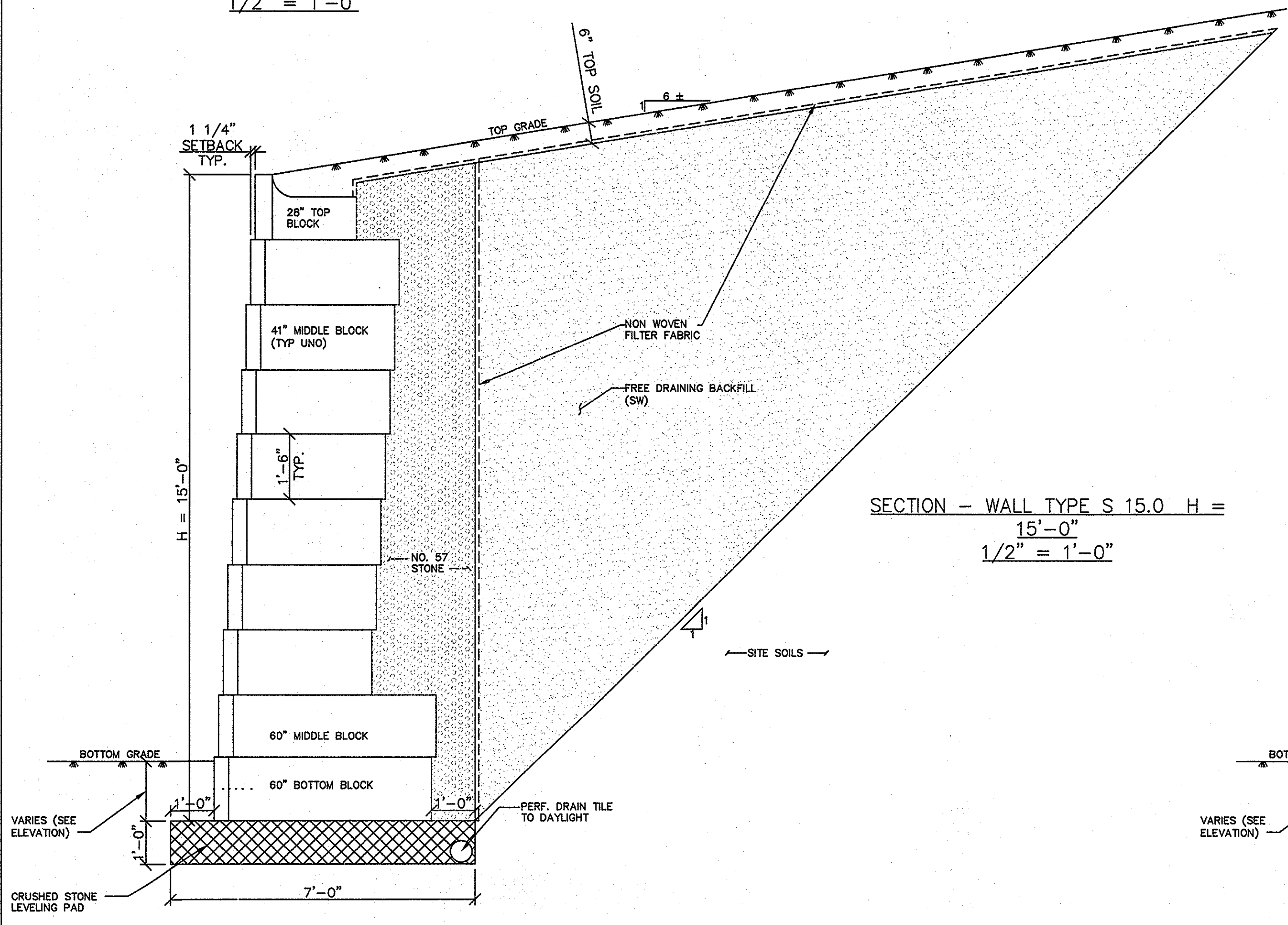
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Thomas E. Butler</i>	4/20/10
DIRECTOR	DATE
<i>Mike Pannunzi</i>	4/13/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
<i>Veit Sandbrook</i>	4/20/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
DATE NO.	REVISION
OWNER	CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLICOTT CITY, MD 21043-4105
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070
PROJECT	ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
"REVISED REPLACEMENT SHEET" THIS REPLACEMENT SHEET WILL SUPERCEDE SHEET #40 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09	
TITLE RETAINING WALL PLAN AND NOTES	
Blake Structural 3511 N. Calvert Street Baltimore, MD 21218 Office #: 443-874-4630	
SEAL	DESIGNED BY :
	DRAWN BY :
	PROJECT NO : 15661-1-0
	DATE : 11/18/09
	SCALE :
DRAWING NO. 40 OF 42	



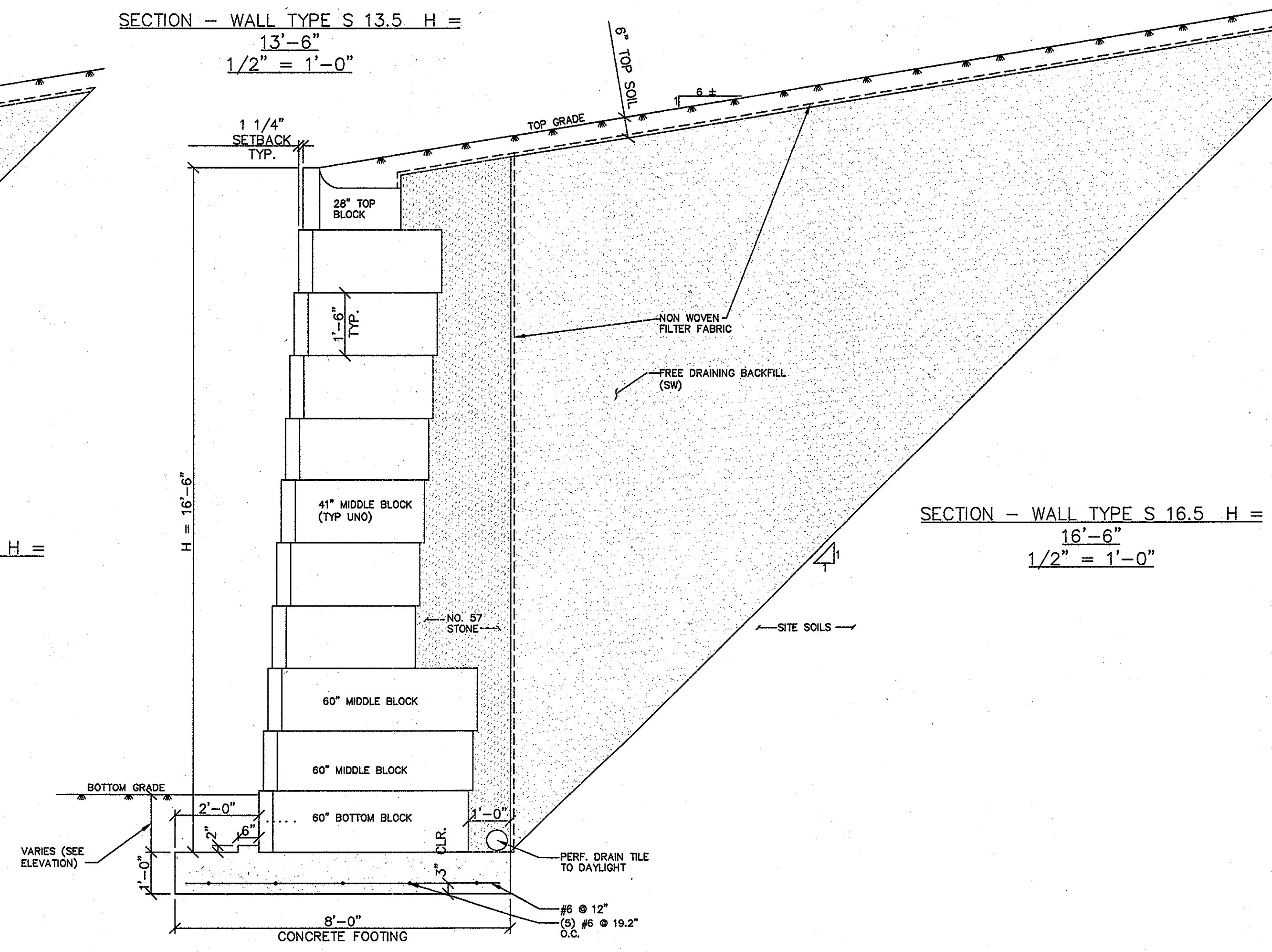
SECTION -- WALL TYPE S 12.0 H =
 $12'-0''$
 $1/2'' = 1'-0''$



SECTION -- WALL TYPE S 13.5 H =
 $13'-6''$
 $1/2'' = 1'-0''$



SECTION -- WALL TYPE S 15.0 H =
 $15'-0''$
 $1/2'' = 1'-0''$



SECTION -- WALL TYPE S 16.5 H =
 $16'-6''$
 $1/2'' = 1'-0''$

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Thomas E. Buttle</i> DIRECTOR	4/20/10 DATE
<i>John Danner</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	4/12/10 DATE
<i>K. J. Sheehan</i> CHIEF, DIVISION OF LAND DEVELOPMENT	4/20/10 DATE
DATE NO.	REVISION
OWNER	CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLICOTT CITY, MD 21043-4105
DEVELOPER	WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070
PROJECT	ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING
AREA	TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
"REVISED REPLACEMENT SHEET" THIS SHEET IS AN ADDITION TO THE PREVIOUS SET OF 40 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09	
TITLE RETAINING WALL PLAN AND NOTES	
Blake Structural 3511 N. Calvert Street Baltimore, MD 21218 Office #: 443-874-4630	
SEAL	DESIGNED BY :
	DRAWN BY :
	PROJECT NO : 15661-1-0
	DATE : 11/18/09
	SCALE :
DRAWING NO. 41 OF 42	

Typical Gravity Wall with 41" Blocks

No Scale

Notes:
Load Condition A Shown (No Backslope - No Surcharge)
Move Blocks Forward During Installation to Engage Shear Knobs (Typical)
Free Draining Backfill to Extend at Least 12" Behind Wall
Non-Woven Geotextile Fabric (If Specified)
Perforated Sock Drain (As Specified by Engineer)
Crushed Stone Leveling Pad

See REDI-ROCK.com for Detailed Section Drawings of Each Condition Shown in the Design Charts

DESIGNED BY	J. JOHNSON	DATE	01/20/09
CHECKED BY		NO SCALE	
PROJECT	Redi-Rock® International, LLC		
NO. OF SHEETS	1	OF 1	

41" SERIES BLOCKS

Top - 28" Volume = 6.55 cft Weight = ±1223 lbs C of G = 15.06"	Half Top - 28" Volume = 4.13 cft Weight = ±591 lbs
Middle - 41" Volume = 16.44 cft Weight = ±2351 lbs C of G = 20.92"	Half Middle - 41" Volume = 7.73 cft Weight = ±1041 lbs
Bottom - 41" Volume = 17.37 cft Weight = ±2483 lbs C of G = 21.3"	Half Bottom - 41" Volume = 7.73 cft Weight = ±1105 lbs
Planter Volume = 14.12 cft Weight = ±2020 lbs C of G = 19.35"	Half Planter Volume = 5.91 cft Weight = ±890 lbs

NOTES:
Volume and Center of Gravity (C of G) calculations are based on the blocks as shown.
Center of Gravity is measured from the back of the block.
Half blocks may include a fork lift slot on one side.
Actual weights and volumes may vary.
Weight shown is based on 143 pcf concrete.

DESIGNED BY	J. JOHNSON	DATE	01/20/09
CHECKED BY		NO SCALE	
PROJECT	Redi-Rock® International, LLC		
NO. OF SHEETS	1	OF 1	

STEPS

3-Sided Straight Step Volume = 4.58 cft Weight = ±655 lbs	4-Sided 6" Cap Block Volume = 4.81 cft Weight = ±688 lbs
--	---

FREESTANDING CORNER BLOCKS

Garden Corner Volume = 8.28 cft Weight = ±1182 lbs	Half Garden Corner Volume = 4.25 cft Weight = ±607 lbs
Top Corner (available with textured top) Volume = 10.44 cft Weight = ±1493 lbs	Half Top Corner (available with textured top) Volume = 5.18 cft Weight = ±741 lbs
Middle Corner Volume = 10.51 cft Weight = ±1502 lbs (Bottom Corner Block does not have groove)	Half Middle Corner Volume = 5.28 cft Weight = ±755 lbs (Half Bottom Corner Block does not have groove)

NOTES:
Architectural faces on the blocks have varying textures.
Volumes are based on the blocks as shown.
Actual weights and volumes may vary.
Weight shown is based on 143 pcf concrete.

DESIGNED BY	J. JOHNSON	DATE	01/20/09
CHECKED BY		NO SCALE	
PROJECT	Redi-Rock® International, LLC		
NO. OF SHEETS	1	OF 1	

SPECIALTY BLOCKS

Protruding Planter Volume = 15.45 cft Weight = ±2210 lbs C of G = 24.71"	23" End Block Volume = 6.79 cft Weight = ±970 lbs C of G = 12.29"
Drain Ditch Block Volume = 11.28 cft Weight = ±1614 lbs C of G = 21.57"	Half Drain Ditch Block Volume = 5.01 cft Weight = ±717 lbs C of G = 22.96"
Drain Ditch Block - MODIFIED (Block poured to the back of the ditch line. This provides deeper area for topsoil when block is used as a top block) Volume = 8.5 cft Weight = ±1215 lbs C of G = 18.1"	Garden Corner - MODIFIED (Back edge of block sawcut and removed to make right or left top corner block) Volume = 8.28 cft Weight = ±1180 lbs
Anchor Block Volume = 15.69 cft Weight = ±2259 lbs C of G = 21.2"	42 1/2" Short Block Volume = 15.69 cft Weight = ±2259 lbs C of G = 21.00"

NOTES:
Volume and Center of Gravity (C of G) calculations are based on the blocks as shown.
Center of Gravity is measured from the back of the block.
Half blocks include a fork lift slot on one side.
Actual weights and volumes may vary.
Weight shown is based on 143 pcf concrete.

DESIGNED BY	J. JOHNSON	DATE	01/20/09
CHECKED BY		NO SCALE	
PROJECT	Redi-Rock® International, LLC		
NO. OF SHEETS	1	OF 1	

Typical Block Setbacks

SETBACK = 1 1/4" (4.0" Better Angle on Wall)

SETBACK = 16 1/4"

SETBACK = 0" (No Better Angle on Wall)

Notes:
Move Blocks Forward During Installation to Engage Shear Knobs (Typical)

DESIGNED BY	J. JOHNSON	DATE	01/20/09
CHECKED BY		NO SCALE	
PROJECT	Redi-Rock® International, LLC		
NO. OF SHEETS	1	OF 1	

41" Middle Block with Soil Infill

Concrete (143 pcf)
Volume (Vc) 16.44 cft (Data from Block Specifications Chart)
Center of Gravity (COGc) 20.92 In From Back of Block (Data from Block Specifications Chart)
Total Weight (Pc) Pc = 16.44 cft x 143 pcf = 2351 lbs

Soil (100 pcf)
Volume (Vs) Vs = (1/2 x 4.75' x 35.12' x 16") x (1/12 in)² x 2 Sides = 1.74 cft
Center of Gravity (COGcs) COGcs = 35.12 In x 1/3 = 11.71 In From Back of Block
Total Weight (Ps) Ps = 1.74 cft x 100 pcf = 174 lbs

Force Calculations
Σ Fx = 0
Σ Fy = P - Pc - Ps = 0
P = Pc + Ps = 2351 lbs + 174 lbs
P = 2525 lbs

Σ Ma = Pcx COGc + Pcs COGcs - P x COG = 0
COG = [(2351 lbs x 20.92 in) + (174 lbs x 11.71 in)] / 2525 lbs
COG = 20.28 In From Back of Block

FOR WALL CALCULATIONS, CENTER OF GRAVITY = 20.2" FROM THE FRONT FACE

DESIGNED BY	J. JOHNSON	DATE	01/20/09
CHECKED BY		NO SCALE	
PROJECT	Redi-Rock® International, LLC		
NO. OF SHEETS	1	OF 1	

60" BLOCKS

Middle - 60" Volume = 23.0 cft Weight = ±3290 lbs C of G = 31.28"	Half Middle - 60" Volume = 9.31 cft Weight = ±1331 lbs
Bottom - 60" Volume = 23.5 cft Weight = ±3420 lbs C of G = 31.90"	Half Bottom - 60" Volume = 9.75 cft Weight = ±1394 lbs

NOTES:
The 60" block is typically used as a bottom block in a larger wall. See the 41" Series for additional blocks and steps.
Volume and Center of Gravity (C of G) calculations are based on the blocks as shown.
Center of Gravity is measured from the back of the block.
Half blocks may include a fork lift slot on one side.
Actual weights and volumes may vary.
Weight shown is based on 143 pcf concrete.

DESIGNED BY	J. JOHNSON	DATE	01/20/09
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PROJECT	Redi-Rock® International, LLC		
NO. OF SHEETS	1	OF 1	

60" Middle Block with Soil Infill

Concrete (143 pcf)
Volume (Vc) 23.0 cft (Data from Block Specifications Chart)
Center of Gravity (COGc) -31.28 In From Back of Block (Data from Block Specifications Chart)
Total Weight (Pc) Pc = 23.0 cft x 143 pcf = 3289 lbs

Soil (100 pcf)
Volume (Vs) Vs = (1/2 x 7.38' x 54.62' x 18") x (1/12 in)² x 2 Sides = 4.20 cft
Center of Gravity (COGcs) COGcs = 54.62 In x 1/3 = 18.21 In From Back of Block
Total Weight (Ps) Ps = 4.20 cft x 100 pcf = 420 lbs

Force Calculations
Σ Fx = 0
Σ Fy = P - Pc - Ps = 0
P = Pc + Ps = 3289 lbs + 420 lbs
P = 3709 lbs

Σ Ma = Pcx COGc + Pcs COGcs - P x COG = 0
COG = [(3289 lbs x -31.28 in) + (420 lbs x 18.21 in)] / 3709 lbs
COG = 29.80 In From Back of Block

FOR WALL CALCULATIONS, CENTER OF GRAVITY = 30.2" FROM THE FRONT FACE

DESIGNED BY	J. JOHNSON	DATE	01/20/09
CHECKED BY		NO SCALE	
PROJECT	Redi-Rock® International, LLC		
NO. OF SHEETS	1	OF 1	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Howard E. Fulton 4/20/10 DATE
DIRECTOR

John J. ... 4/13/10 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Kevin S. ... 4/20/10 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT

DATE	NO.	REVISION
		OWNER CENTURY HOLDING, LLC 3311 OAK WEST DRIVE ELLCOTT CITY, MD 21043-4105
		DEVELOPER WOOD PARTNERS ATTN: MR. ANTHONY MORSE, PE 8150 LEESBURG PIKE SUITE 501 VIENNA, VA 22182 703-760-5070
		PROJECT ALTA AT REGENCY CREST BUILDABLE PARCEL A AND OPEN SPACE LOT 1 AGE RESTRICTED ADULT HOUSING
		AREA TAX MAP 25, GRID 1, PARCEL 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
		"REVISED REPLACEMENT SHEET" THIS SHEET IS AN ADDITION TO THE PREVIOUS SET OF 40 WHICH WAS PREVIOUSLY SIGNED ON 12/17/09
		TITLE RETAINING WALL PLAN AND NOTES
		Blake Structural 3511 N. Calvert Street Baltimore, MD 21218 Office #: 443-874-4630
		DESIGNED BY:
		DRAWN BY:
		PROJECT NO: 15661-1-0
		DATE: 11/18/09
		SCALE:
		DRAWING NO. 42 OF 42

SEAL: [Professional Engineer Seal]

BY: [Signature]

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 11177, EXPIRES 12/31/10.