

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE: 10/21/2015

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHEF, BUREAU OF HIGHWAYS DATE: 11-13-15

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 11-13-15

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 11-13-15

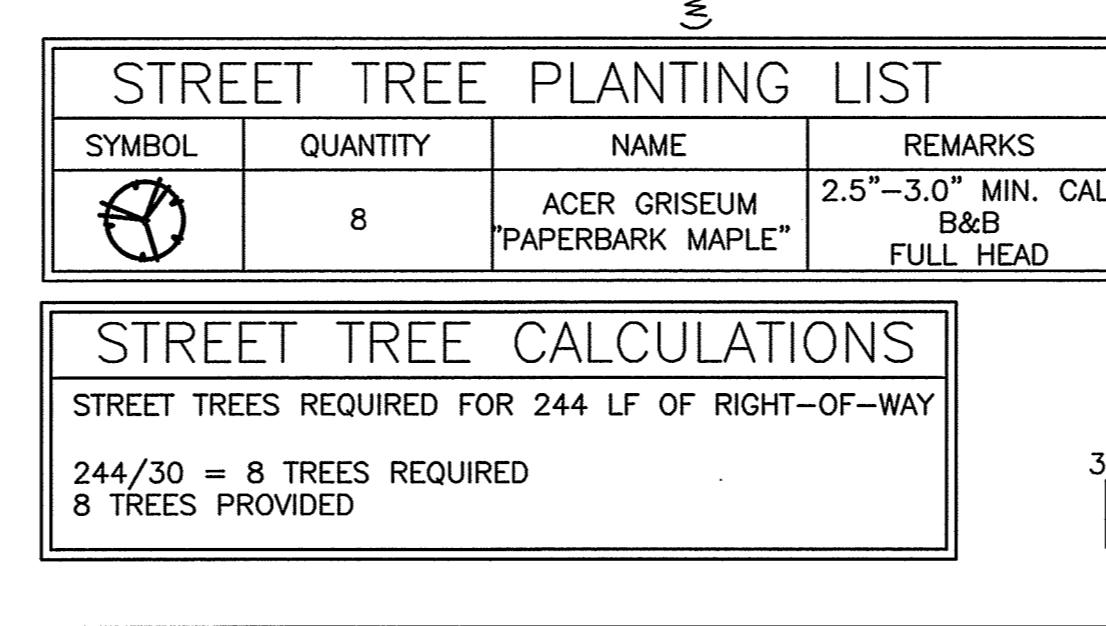
SITE PLAN
 SCALE: 1"=30'

MISS UTILITY
 CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE.

STREET TREE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
	8	ACER GRISEUM "PAPERBARK MAPLE"	2.5"-3.0" MIN. CAL. B&B FULL HEAD

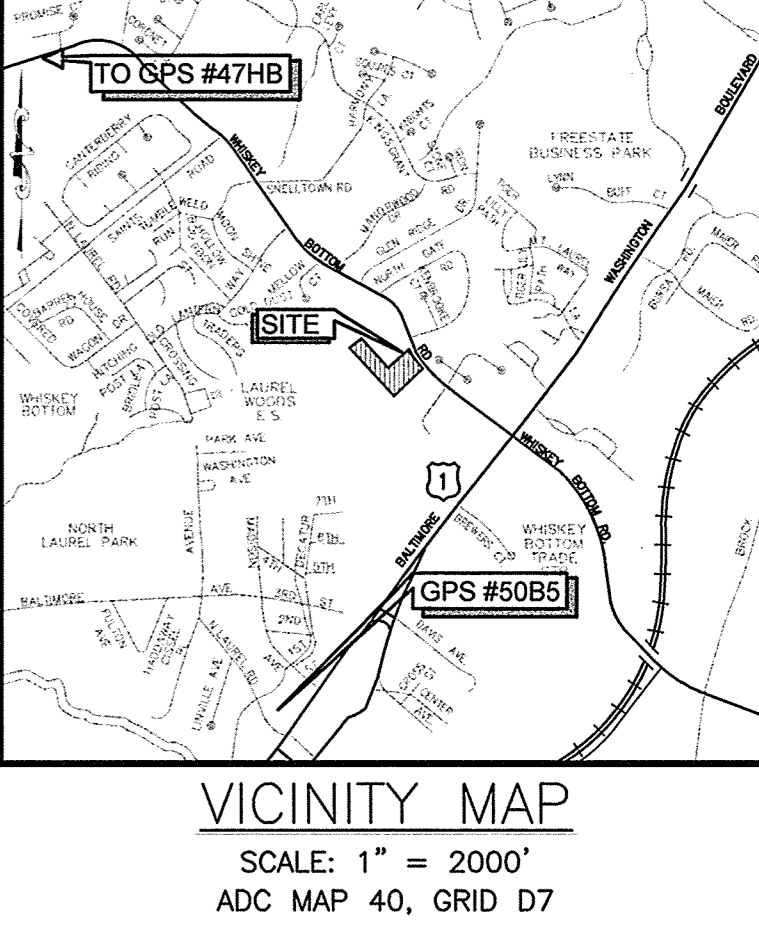
STREET TREE CALCULATIONS
 STREET TREES REQUIRED FOR 244 LF OF RIGHT-OF-WAY
 244/30 = 8 TREES REQUIRED
 8 TREES PROVIDED



BENCHMARK DATA

POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
1	528843.43	1358936.29	261	REBAR & CAP
2	528725.53	1359148.14	264	REBAR & CAP
3	528534.23	1358816.57	257.5	REBAR & CAP

POINT	NORTHING	EASTING	ELEVATION
#47HB	531895.78	1356076.26	296.82
#50B5	524999.33	1357925.66	177.42



SOILS TABLE

SYMBOL	DESCRIPTION	HYDROLOGIC SOILS GROUP
UsB	URBAN LAND-SASSAFRAS-BELTSVILLE COMPLEX, 0 TO 5 PERCENTS SLOPES	D
Rsc	URBAN LAND-WOODSTOWN-SASSAFRAS COMPLEX, 5 TO 10 PERCENT SLOPES	C

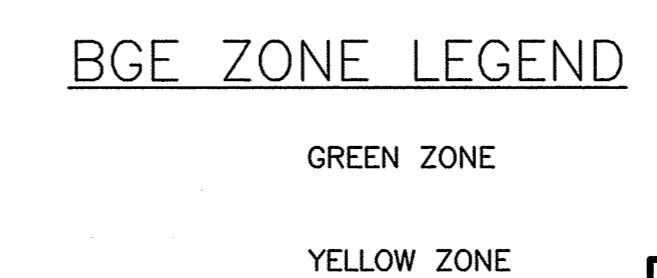
STORMWATER MANAGEMENT FACILITY TABLE

FACILITY	DRAINAGE AREA (AC.)	DRAINAGE AREA (S.F.)	%	TARGET PE	PROVIDED	
					PE	ESD _v (C.F.)
SWM-1 (M-5) DRY WELL	0.02	888	100%	1.2	1.34	99
SWM-2 (M-5) DRY WELL	0.02	888	100%	1.2	1.34	99
SWM-3 (M-5) DRY WELL	0.02	888	100%	1.2	1.34	99
SWM-4 (M-5) DRY WELL	0.02	888	100%	1.2	1.34	99
SWM-5 (M-5) DRY WELL	0.02	888	100%	1.2	1.34	99
SWM-6 (M-5) DRY WELL	0.02	888	100%	1.2	1.34	99
SWM-7 (M-6) MICRO-BIORETENTION	0.37	16,084	46%	1.2	0.90	550
NON-ROOFTOP DISCONNECT	0.09	4,039	100%	1.0	1.54	320

STORMWATER MANAGEMENT SUMMARY TABLE

AREA OF DISTURBANCE (AC.)	IMP. AREA (AC.)	PE		ESD VOLUME (CF)		BMP
		REQUIRED	PROVIDED	REQUIRED	PROVIDED	
1.10	0.28	1.20	1.31	1,337	1,465	(M-6) MICRO-BIORETENTION (M-5) DRYWELLS (N-2) NON-ROOF DISCONNECTION

- LEGEND**
- PROPERTY LINE
 - ADJOINING PROPERTY LINE
 - EXISTING BUILDING LINE
 - EXISTING CONTOUR
 - EXISTING TREELINE
 - EXISTING EDGE OF PAVEMENT
 - EXISTING TREE
 - PROPOSED LOT LINE
 - PROPOSED BUILDING SETBACK LINE
 - PROPOSED FULL DEPTH ASPHALT
 - PROPOSED IMPERVIOUS AREA
 - PROPOSED LAND DEDICATION
 - LOD - LIMIT OF DISTURBANCE
 - SSF - SUPER SILT FENCE
 - PIPE
 - MANHOLE
 - UTILITY POLE
 - GUY WIRE
 - LIGHT POLE
 - FIRE HYDRANT
 - RESIDENTIAL MAILBOX
 - SIGN
 - FLOOD LIGHT
 - CONCRETE MONUMENT
 - BUSH
 - CONIFEROUS TREE
 - DECIDUOUS TREE
 - EDGE OF WOODS
 - FENCE
 - HEDGE
 - UNDERGROUND STORM DRAIN PIPE
 - EXISTING WATER
 - EXISTING GAS
 - EXISTING OVERHEAD ELECTRIC
 - PROPOSED SEWER
 - PROPOSED WATER



REVISIONS

NO.	DATE	DESCRIPTION	BY
1	12/10/20	AS-BUILT	BA

OWNER/DEVELOPER:
 LINDA L. ARMSTRONG
 9309 WHISKEY BOTTOM ROAD
 LAUREL, MD 20732
 301-776-5600

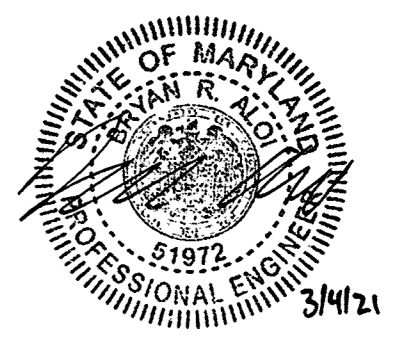
BUTTERFIELD GROVE
 LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6
SITE PLAN/STORMWATER MANAGEMENT PLAN

TAX MAP: 47 GRID: 22 PARCEL: 191
 ZONED: R-SC
 ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND

DESIGN NAB DATE 10/02/15
 DRAWN BRA SCALE 1"=30' SHEET NO. 3 OF 14

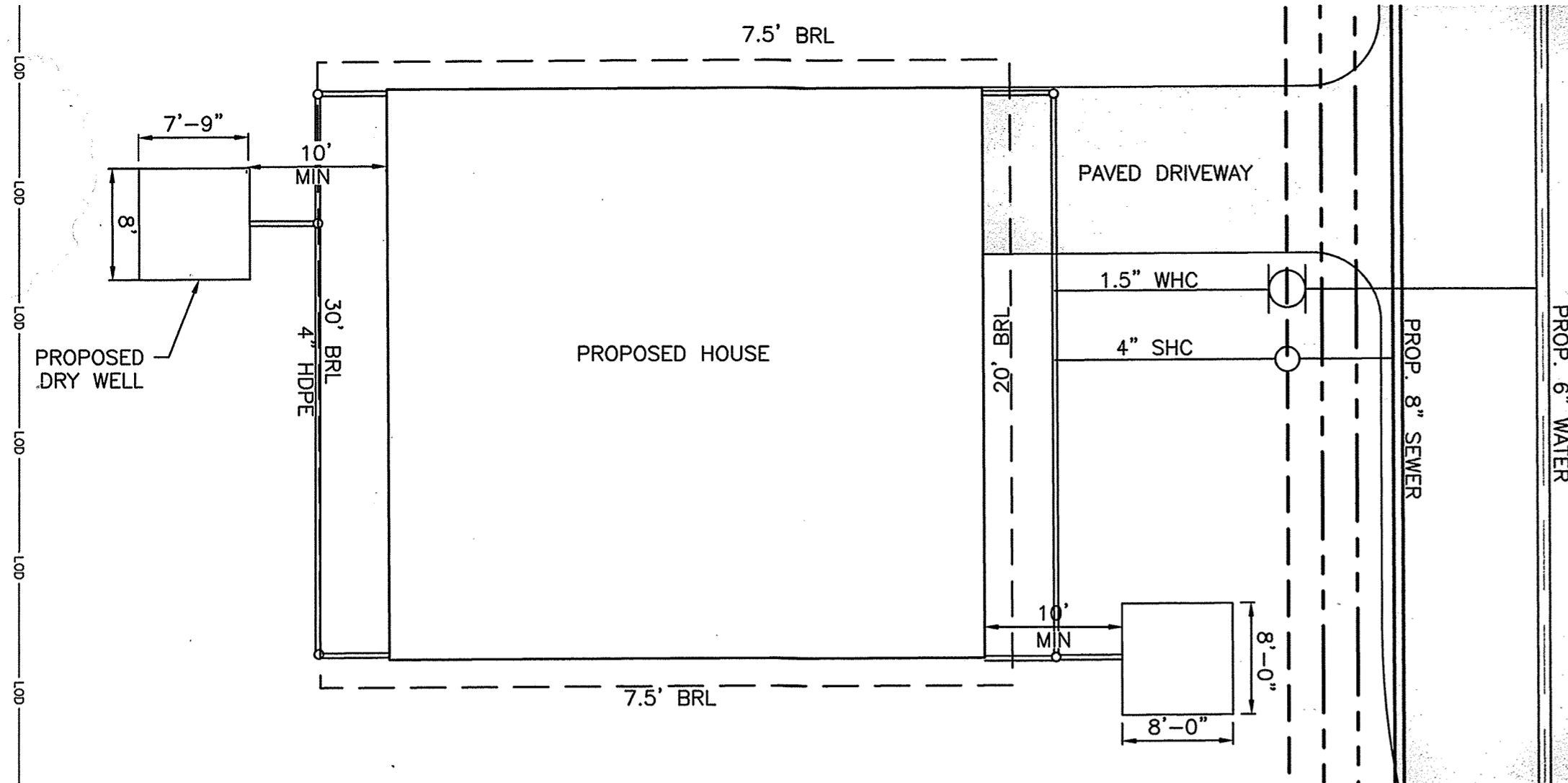
KCI PROJECT NO. 27121943
C-1.00

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

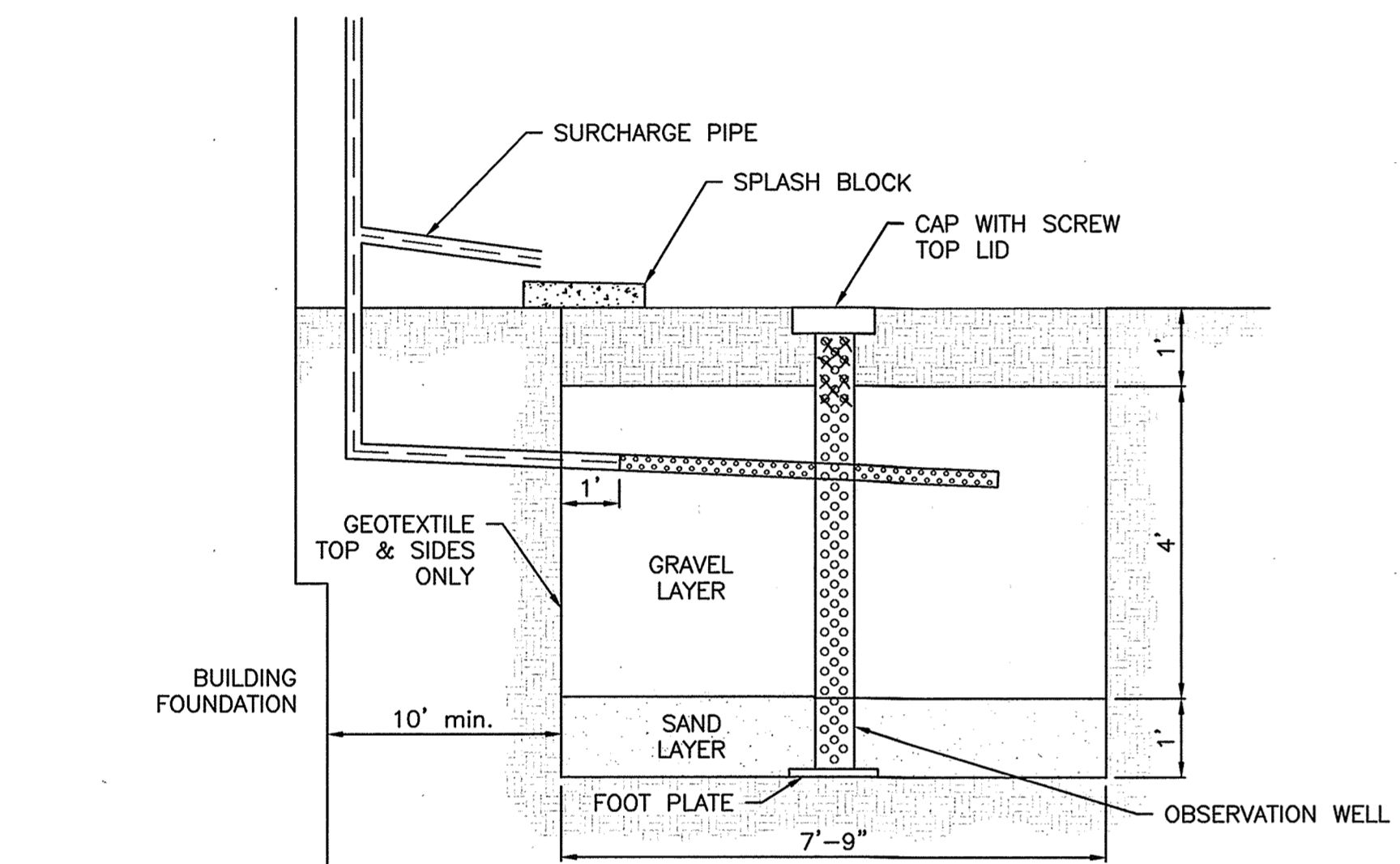


I HEREBY CERTIFY, BY MY SEAL, THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 LICENSE #51972, BRYAN ALOI, 12/10/2020





DRY WELL TYPICAL PLAN VIEW
SCALE: 1"=10'

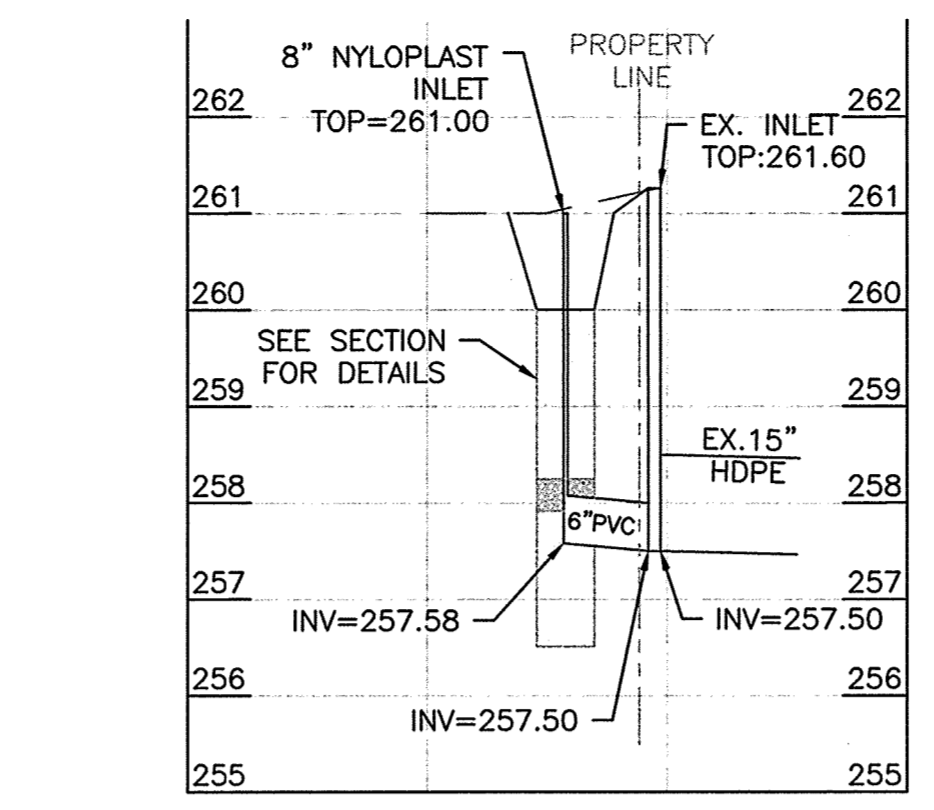


DRY WELL TYPICAL SECTION
SCALE: 1"=2'

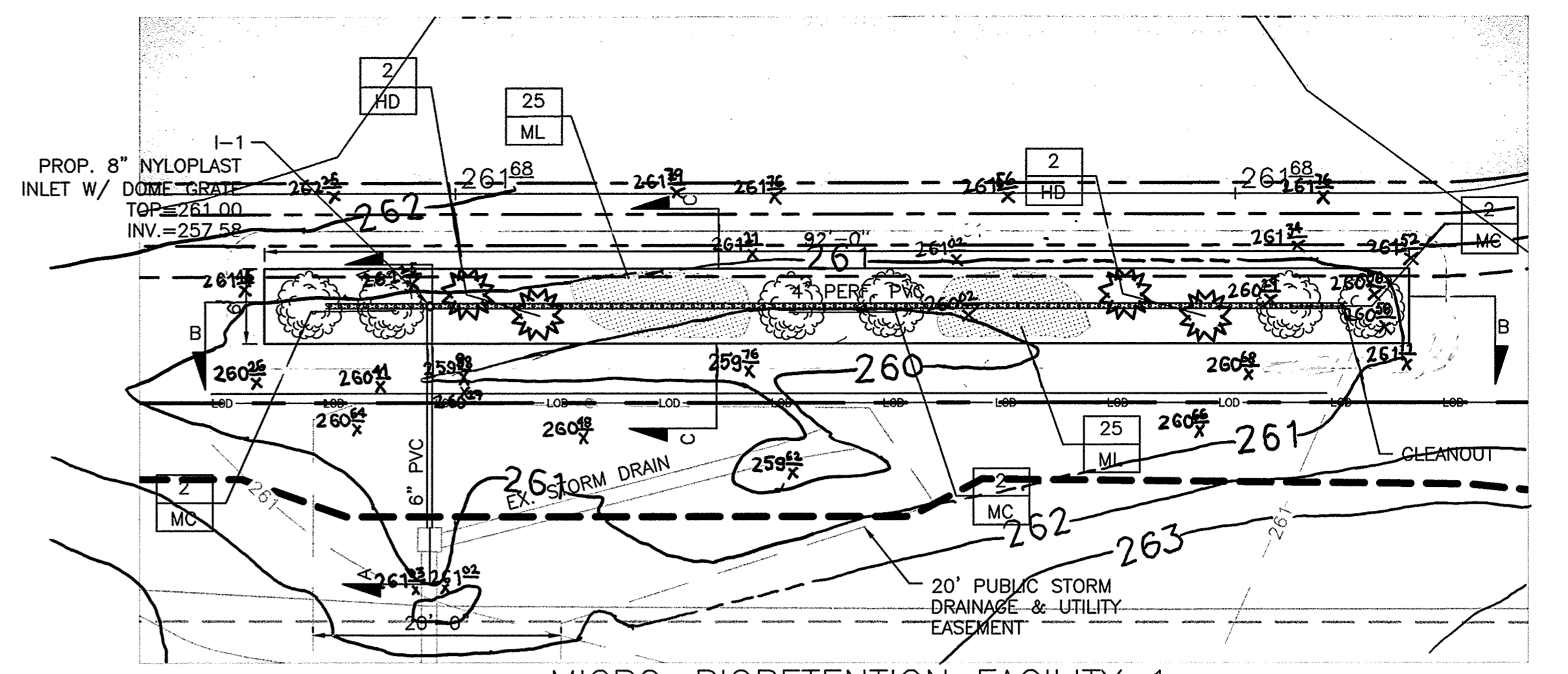
NOTE: GUTTER DRAIN FILTERS MUST BE INSTALLED ON THE HOUSES FOR PRETREATMENT

OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION

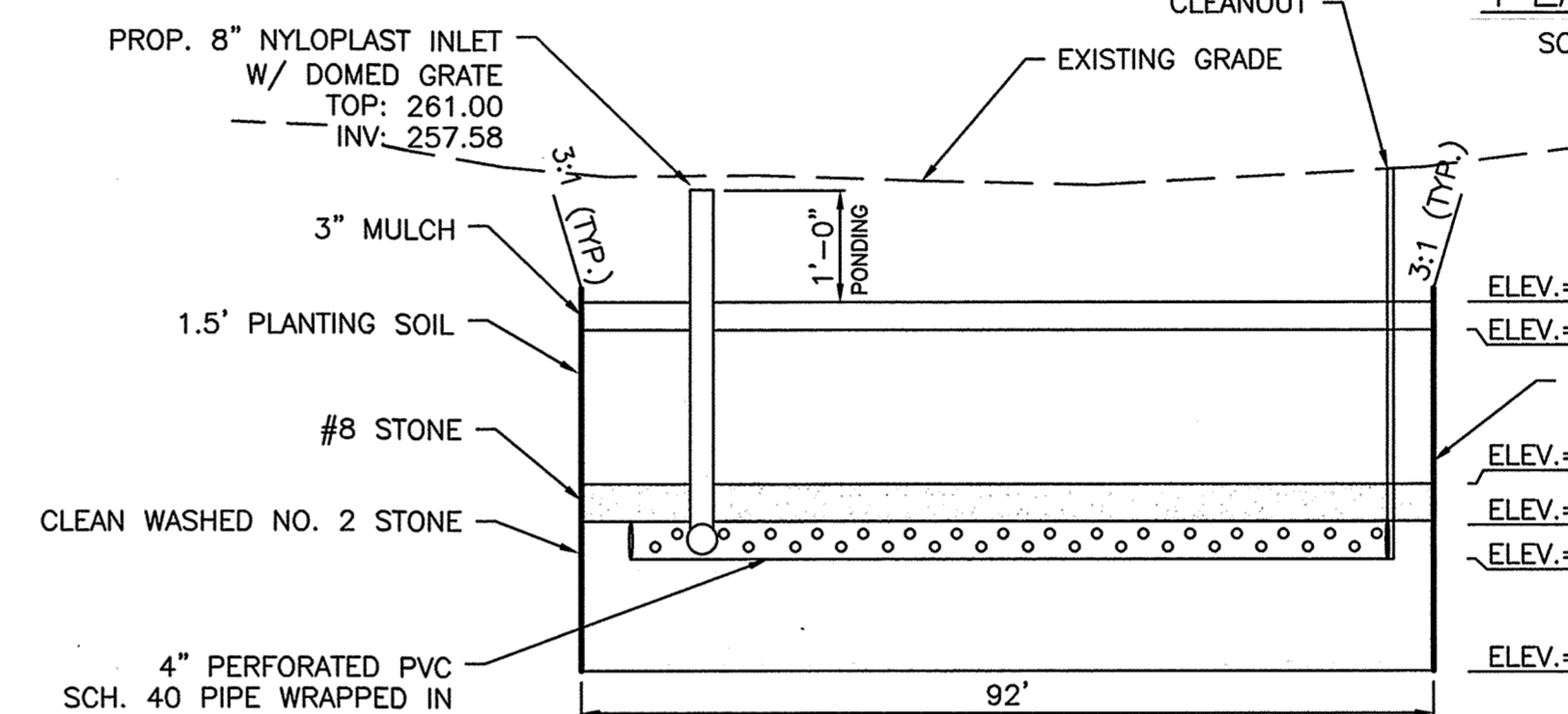
- A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
- B. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.



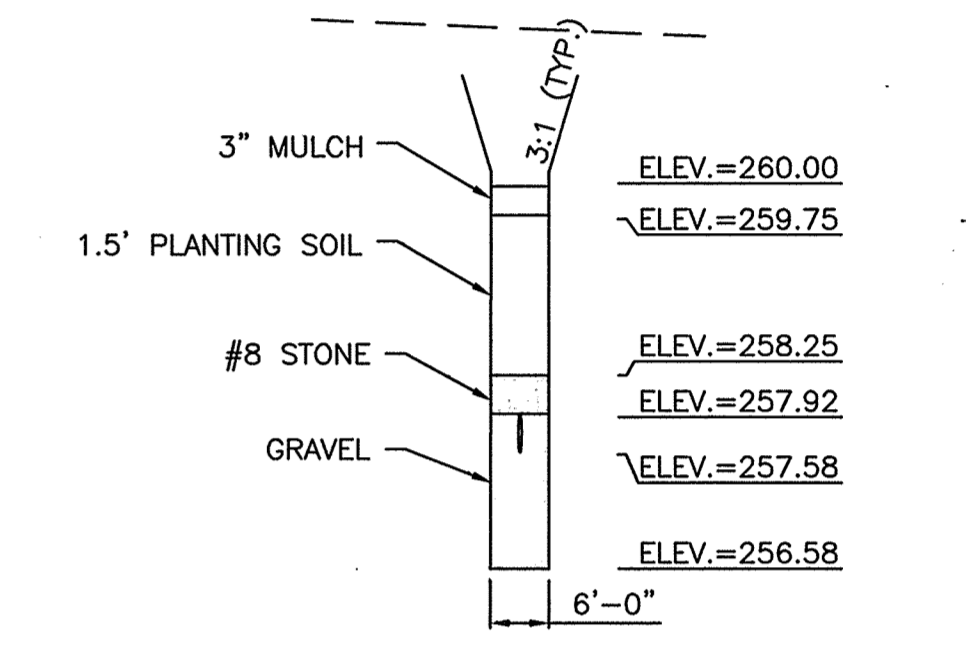
SECTION A
SCALE: HOR: 1"=20"
VERT: 1"=2'



PLAN VIEW
SCALE: 1"=10'



SECTION B
SCALE: HOR: 1"=20"
VERT: 1"=2'



SECTION C
SCALE: HOR: 1"=20"
VERT: 1"=2'

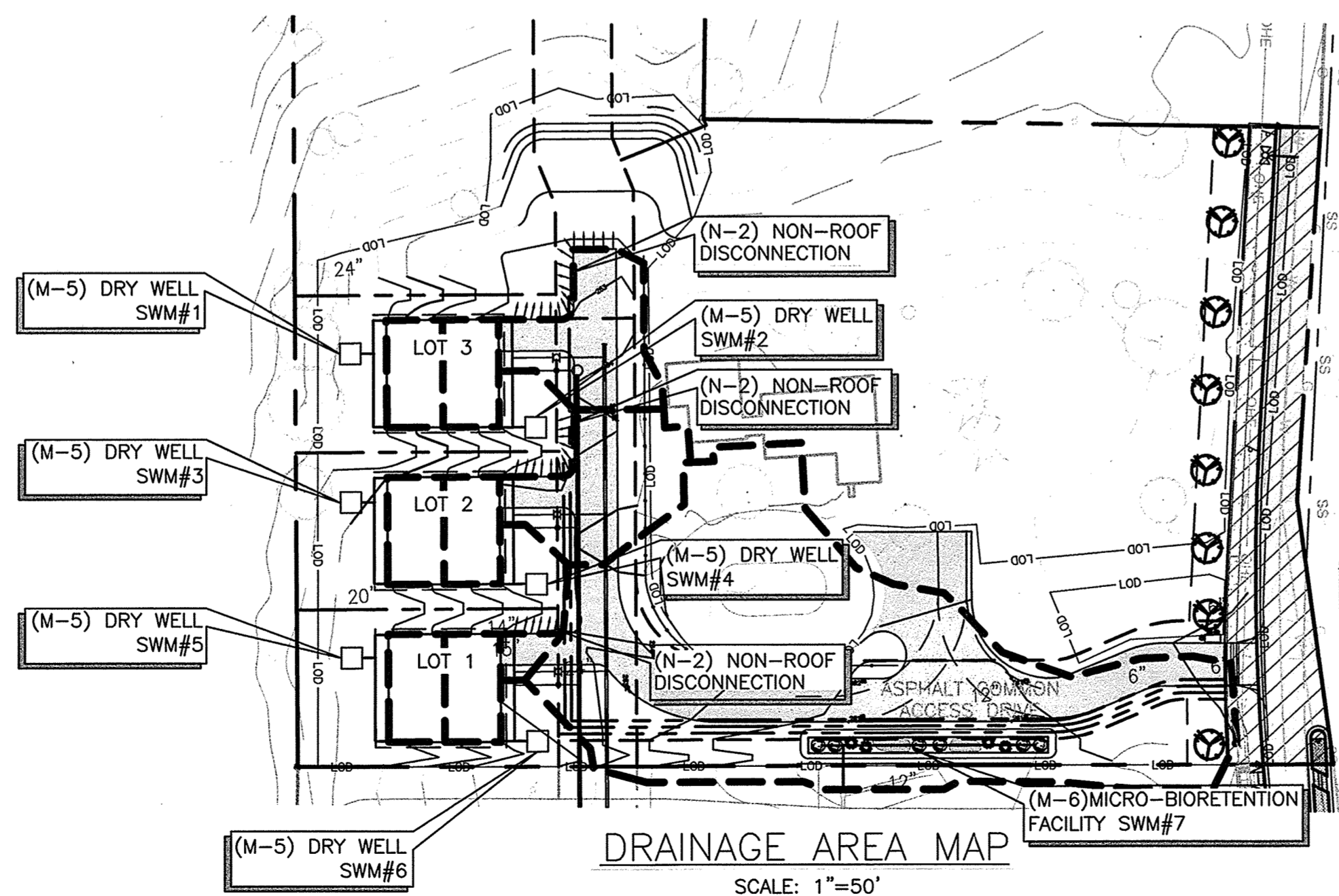
STRUCTURE TABLE						
STRUCTURE	TOP ELEV.	INV. IN	INV. OUT	NORTHING	EASTING	TYPE
I-1	261.00	257.68	257.58	528649.70	1359009.51	8" NYLOPLAST INLET

PLANT SCHEDULE					
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE / CONDITION	REMARKS
SHRUBS					
MC	6	MYRICA CERIFERA	WAX MYRTLE	#4 CONT.	
HD	4	HYPERICUM DENSIFLORUM	ST. JOHNS WART	#4 CONT.	
PERENNIALS					
ML	50	MYOSOTIS	FORGET-ME-NOT	#1 CONT.	SPACE 12"

NOTE: SEE SHEET L-1.02 FOR LANDSCAPE NOTES AND DETAILS.

OPERATION AND MAINTENANCE SCHEDULE FOR DRY WELLS

- A. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- B. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
- C. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTYTWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- E. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- F. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.



DRAINAGE AREA MAP
SCALE: 1"=50'

STORM DRAIN DRAINAGE AREA DATA					
FACILITY	ZONING	AREA (AC.)	C FACTOR	% IMPERVIOUS	
SWM #1	R-SC	0.02	95	100%	
SWM #2	R-SC	0.02	95	100%	
SWM #3	R-SC	0.02	95	100%	
SWM #4	R-SC	0.02	95	100%	
SWM #5	R-SC	0.02	95	100%	
SWM #6	R-SC	0.02	95	100%	
SWM #7	R-SC	0.37	60	46%	

PIPE SCHEDULE		
SIZE	LENGTH	TYPE/CLASS
6"	18 LF	PERF. PVC SHC. 40
4"	85 LF	PERF. PVC SHC. 40

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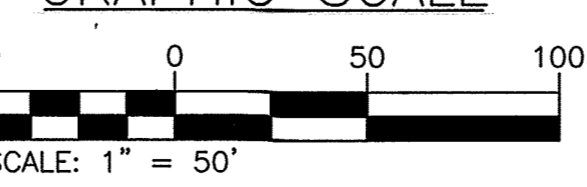
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
10/21/20

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
11-13-15

11-9-15

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REVISIONS		
NO.	DATE	BY
1	12/10/20	AS-BUILT

OWNER/DEVELOPER:
LINDA L. ARMSTRONG
9309 WHISKEY BOTTOM ROAD
LAUREL, MD 20732
301-776-5600

BUTTERFIELD GROVE
LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6
STORM WATER MANAGEMENT DETAILS

TAX MAP: 47 GRID: 22 PARCEL: 191
ZONED: R-SC
ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND

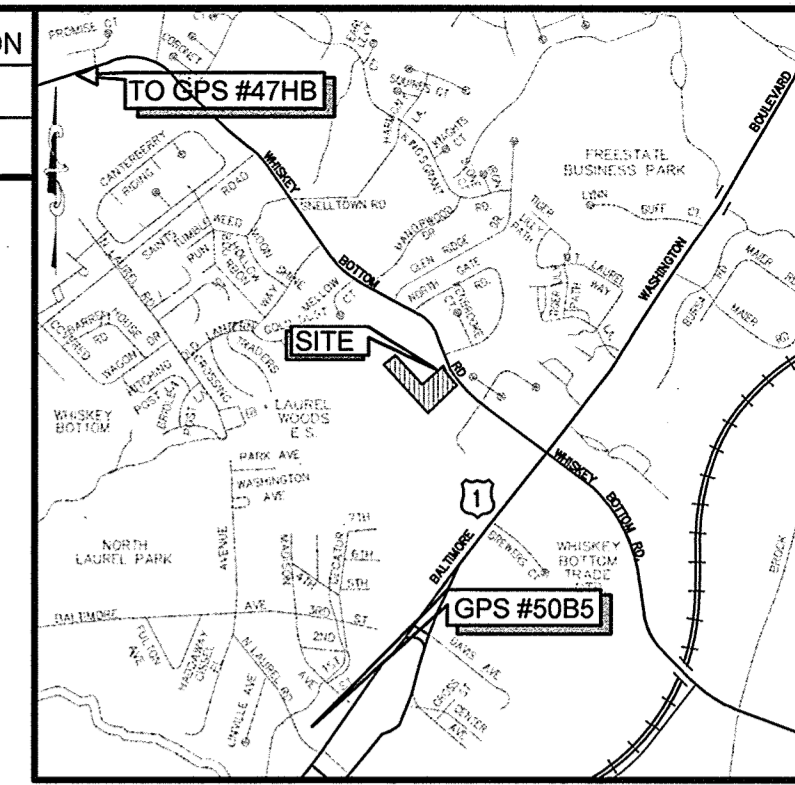
DESIGN NAB DATE 10/02/15
DRAWN BRA SCALE VARIES

KCI PROJECT NO. 27121943
SHEET NO. 4 OF 14

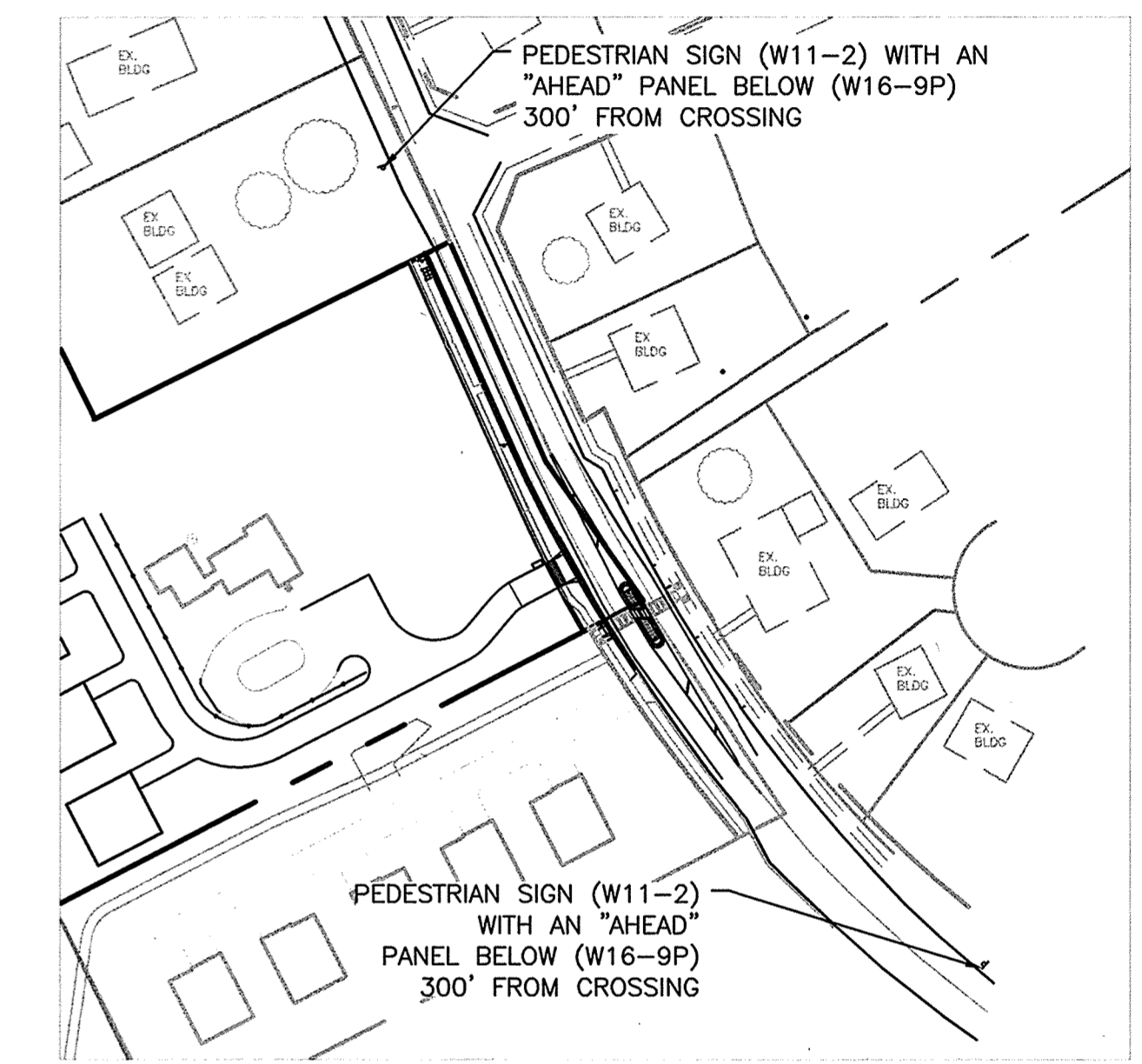
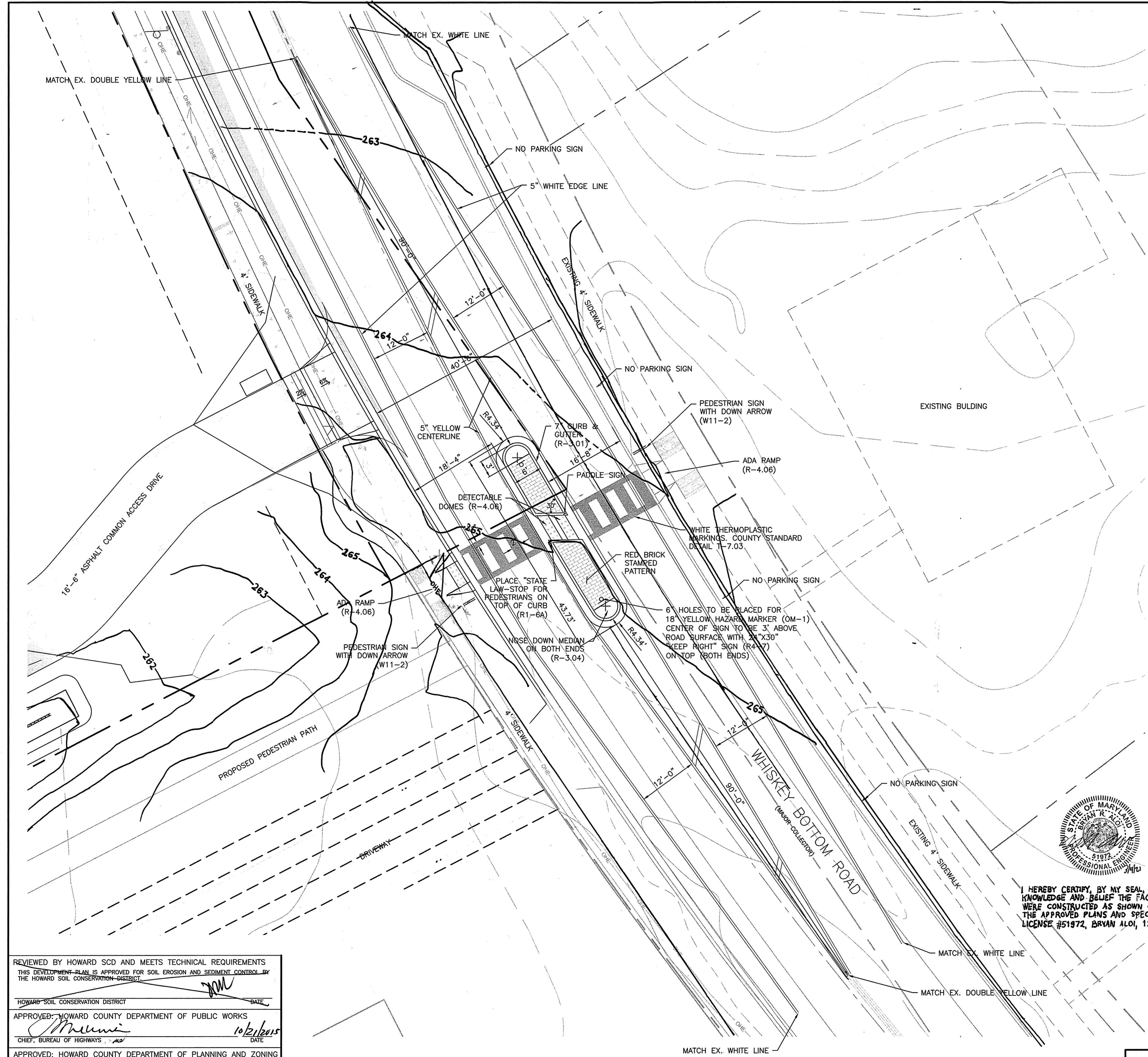
SHEET NO. MARYLAND
C-1.01



POINT	NORTHING	EASTING	ELEVATION
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#50B5	524999.33	1357925.66	177.42



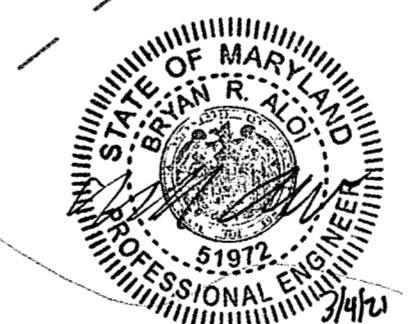
VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 40, GRID D7



WHISKEY BOTTOM ROAD
CROSSWALK OVERALL VIEW
SCALE: 1" = 100'

NOTES

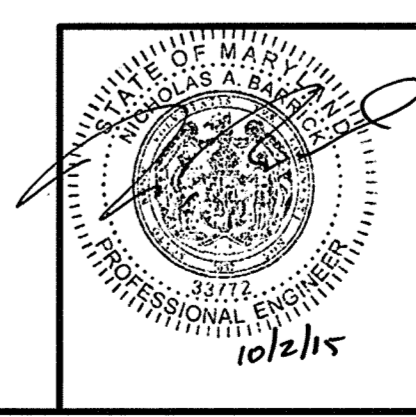
1. ALL PAVEMENT MARKINGS AND SIGN LOCATIONS MUST BE FIELD LOCATED OR MARKED BY SOMEONE FROM THE TRAFFIC ENGINEERING STAFF PRIOR TO ANY SIGN OR MARKINGS BEING INSTALLED.
2. ALL EXISTING PAVEMENT MARKINGS THAT DO NOT CONFORM TO THE PROPOSED NEW MARKINGS MUST BE REMOVED BY GRINDING ONLY.
3. THE EXISTING "NO PARKING" SIGNS MAY HAVE TO BE MODIFIED. ANY CHANGES WILL BE DETERMINED BY THE TRAFFIC ENGINEER IN THE FIELD.
4. ALL W11-2 SIGNS, INCLUDING THE DOWN ARROWS AND "AHEAD" PANELS, ARE TO BE FYG IN COLOR.



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LICENSE #51972, BRYAN ALO, 12/10/2020

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HOWARD SOIL CONSERVATION DISTRICT	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	DATE
CHIEF, BUREAU OF HIGHWAYS	10/21/2015
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	11-9-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE

WHISKEY BOTTOM ROAD
CROSSWALK PLAN VIEW
SCALE: 1" = 10'



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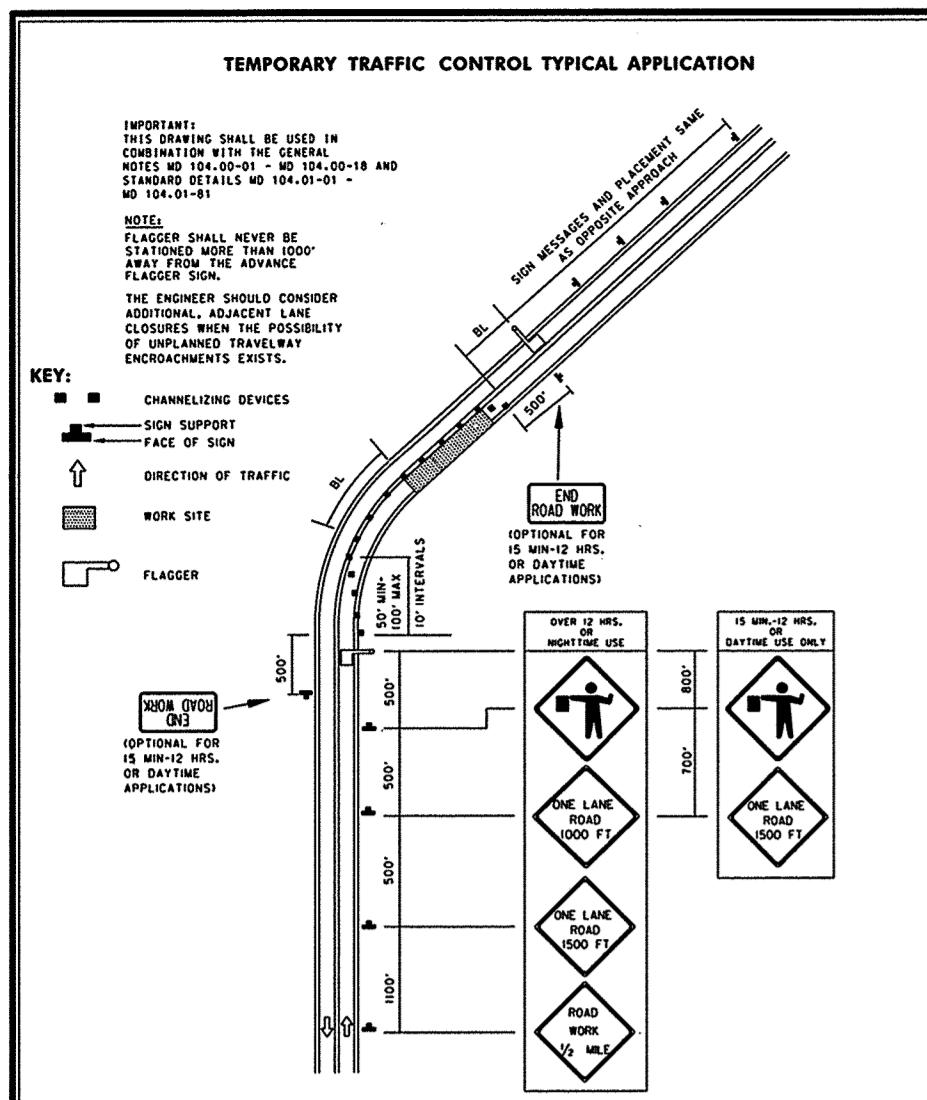
REVISIONS		
NO.	DATE	BY
1	12/10/20	AS-BUILT

OWNER/DEVELOPER: LINDA L. ARMSTRONG 9309 WHISKEY BOTTOM ROAD LAUREL, MD 20732 301-776-5600	BUTTERFIELD GROVE LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6 SITE DETAILS AND NOTES TAX MAP: 47 GRID: 22 PARCEL: 191 ZONED: R-SC ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND KCI PROJECT NO. 27121943 SHEET NO. 5 OF 14
DESIGN NAB DRAWN BRA	DATE 10/02/15 SCALE VARIES
SHEET NO. C-1.02	

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

KCI
TECHNOLOGIES

11850 WEST MARKET PLACE
SUITE A
FLEXTON, MD 20729
TELEPHONE: (410) 792-8086
FAX: (410) 792-7419



TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

IMPORTANT: THIS SIGNING SHALL BE USED IN CONJUNCTION WITH THE GENERAL NOTES AND SPECIFICATIONS OF HOWARD COUNTY AND MSHA STANDARD DETAILS NO. 104.02-01 AND 104.02-02.

NOTES: SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY POSITIVE PROTECTION OR TEMPORARY CONCRETE BARRIERS OR SIMILAR DEVICES REFER TO STANDARD NO. 104.02-01 FOR MORE DETAILS.

WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NO. 104.02-01 FOR MORE DETAILS.

THERE SHALL BE A MINIMUM OF SEVEN CHANNELING DEVICES IN THE SHOULDER TAPER.

THE ENGINEER SHOULD CONSIDER ADDITIONAL TRAFFIC CONTROL DEVICES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.

KEY:

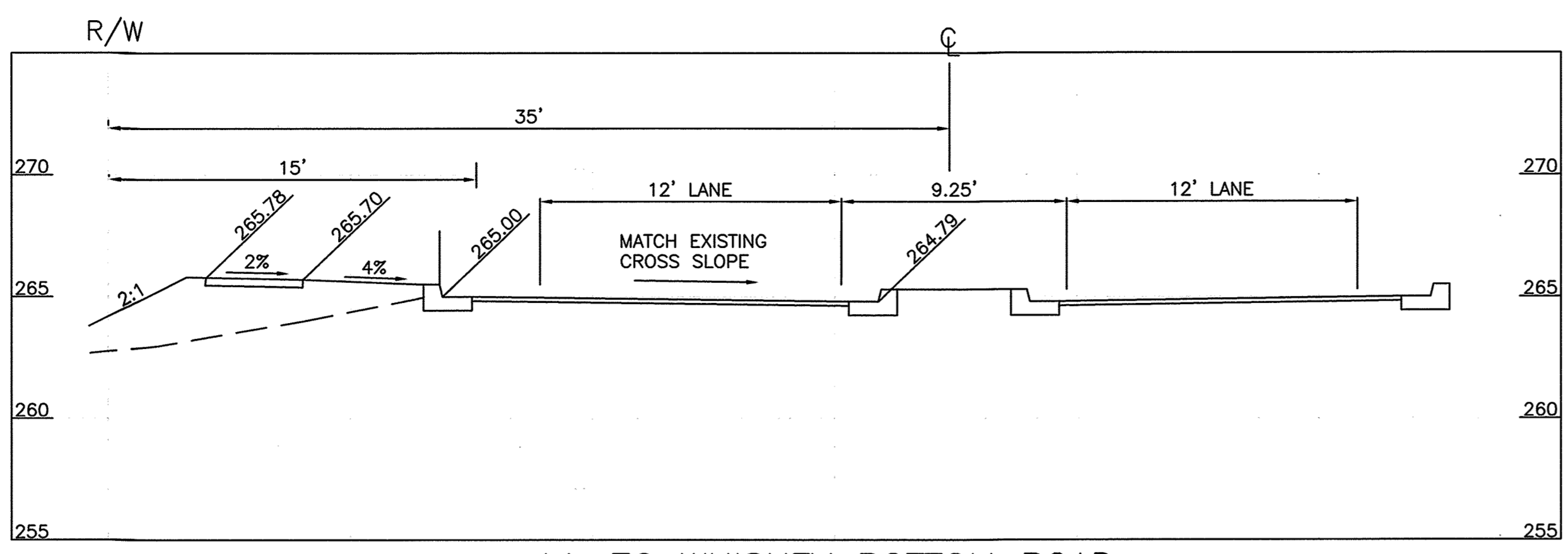
- CHANNELING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE

APPROVED: *[Signature]* DATE: 11-13-15

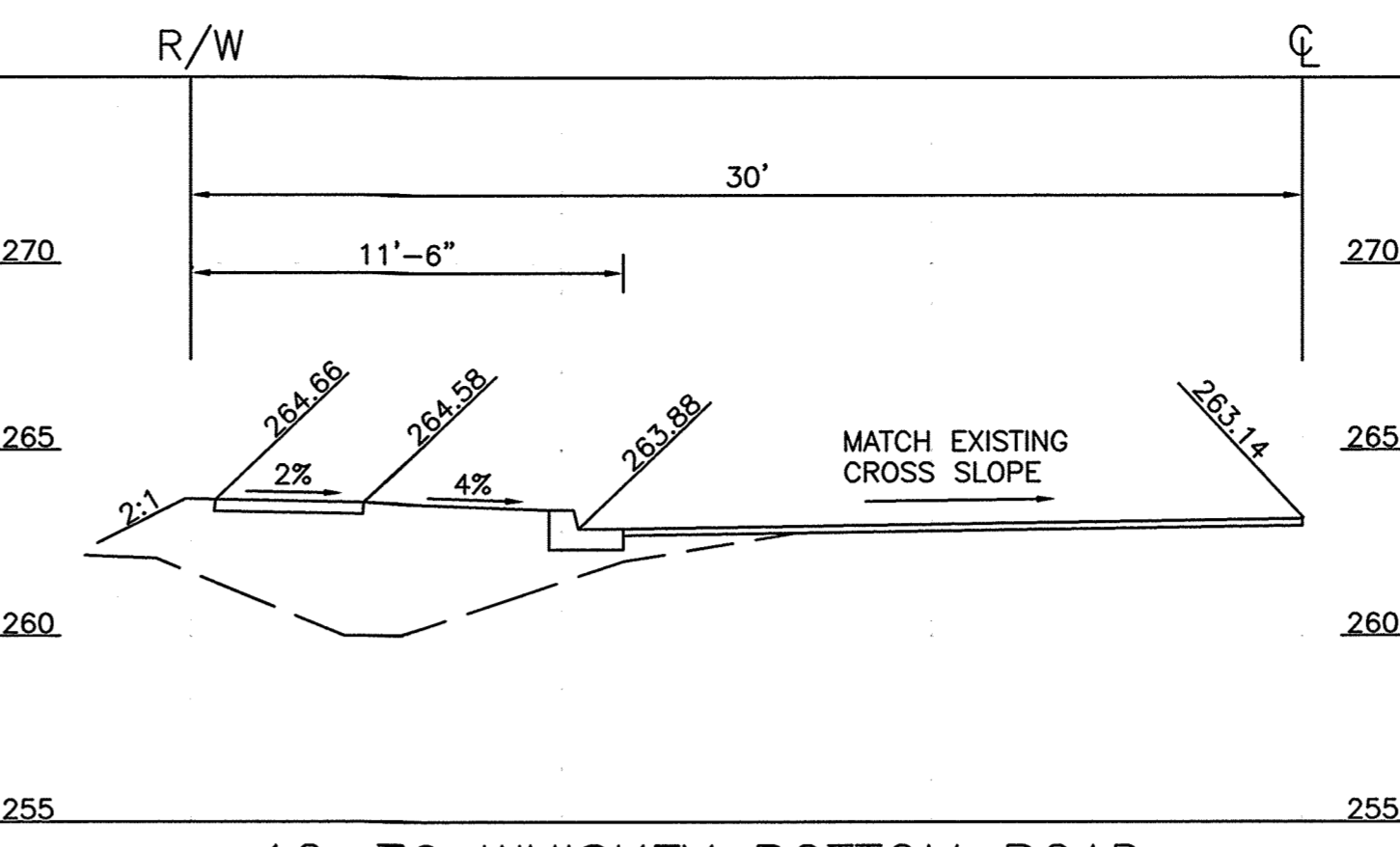
CHIEF, BUREAU OF HIGHWAYS

APPROVED: *[Signature]* DATE: 11-9-15

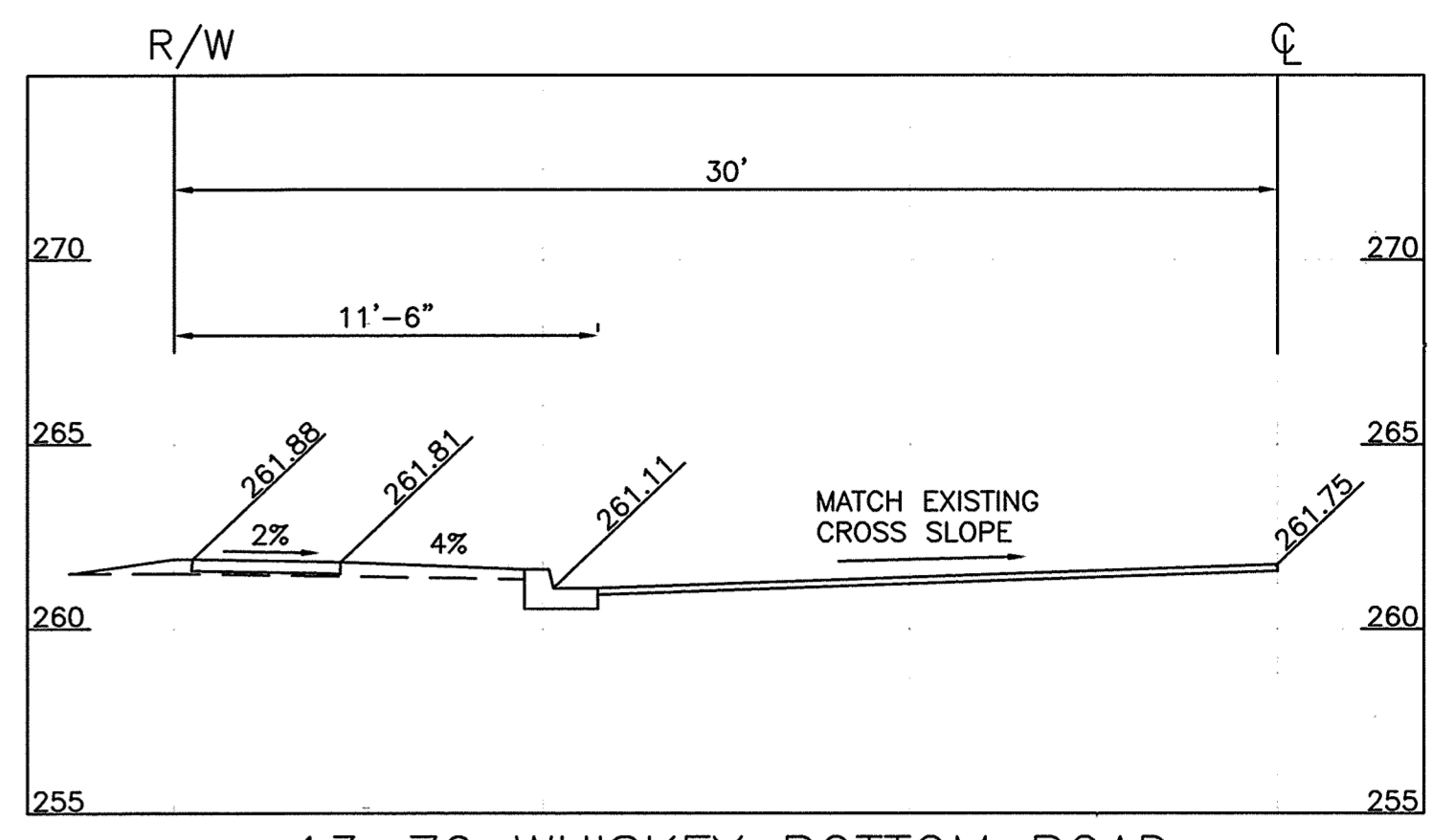
CHIEF, DEVELOPMENT ENGINEERING DIVISION



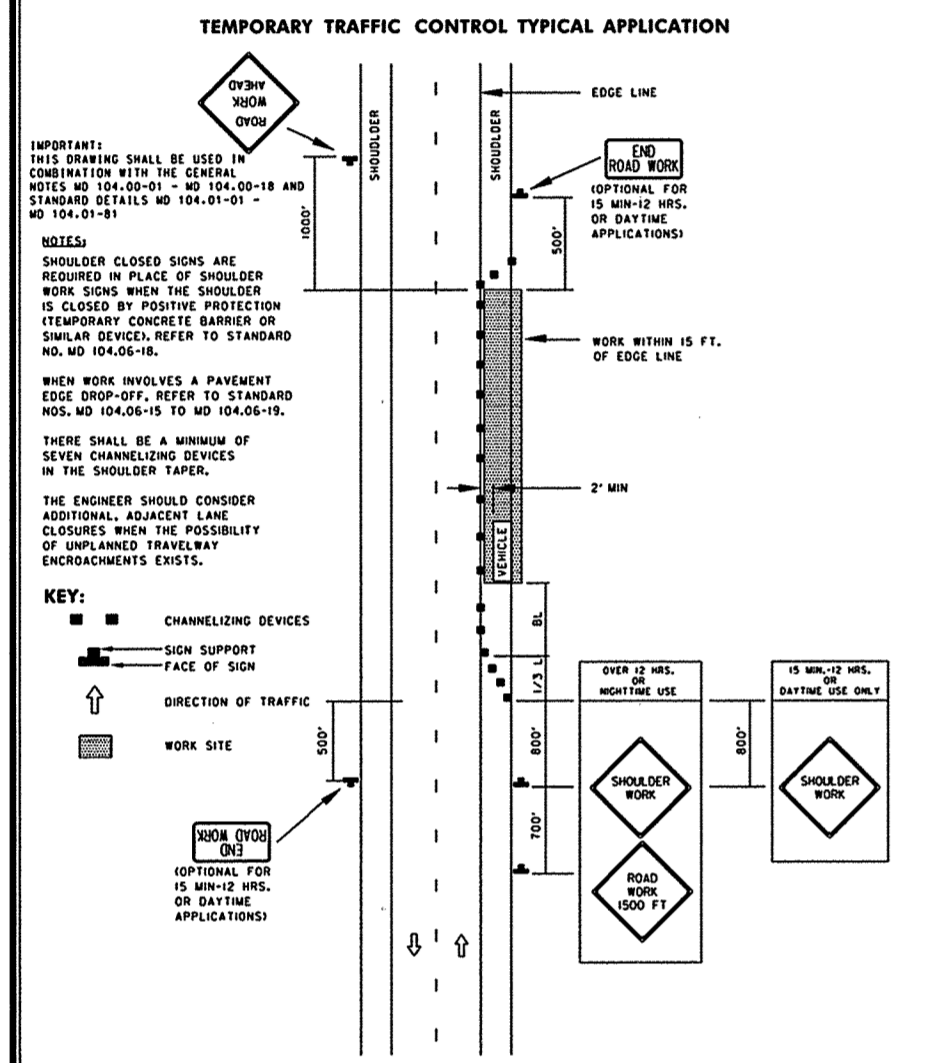
11+70 WHISKEY BOTTOM ROAD
SCALE: 1"=5'



12+70 WHISKEY BOTTOM ROAD
SCALE: 1"=5'



13+70 WHISKEY BOTTOM ROAD
SCALE: 1"=5'



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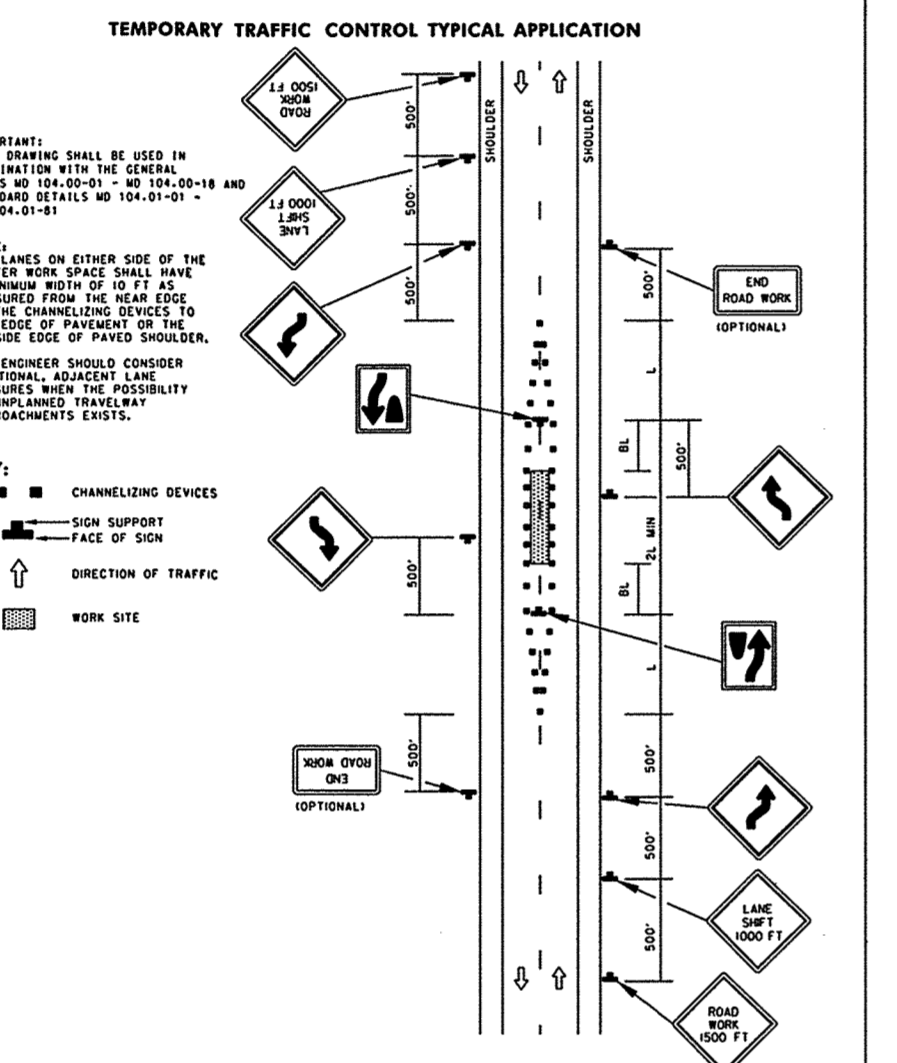
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- WORK SITE

APPROVED: *[Signature]* DATE: 11-13-15

CHIEF, BUREAU OF HIGHWAYS

APPROVED: *[Signature]* DATE: 11-9-15

CHIEF, DEVELOPMENT ENGINEERING DIVISION



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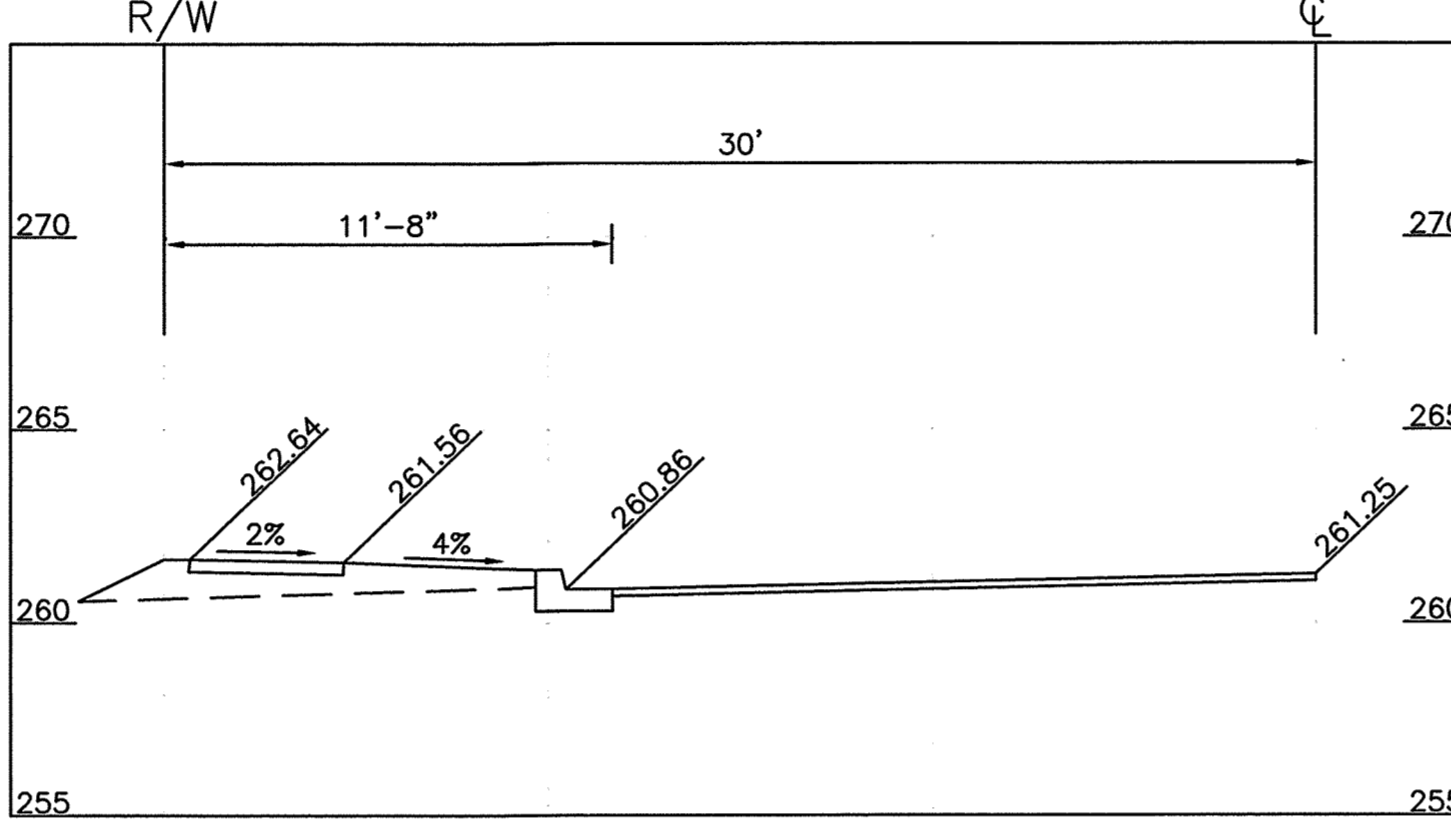
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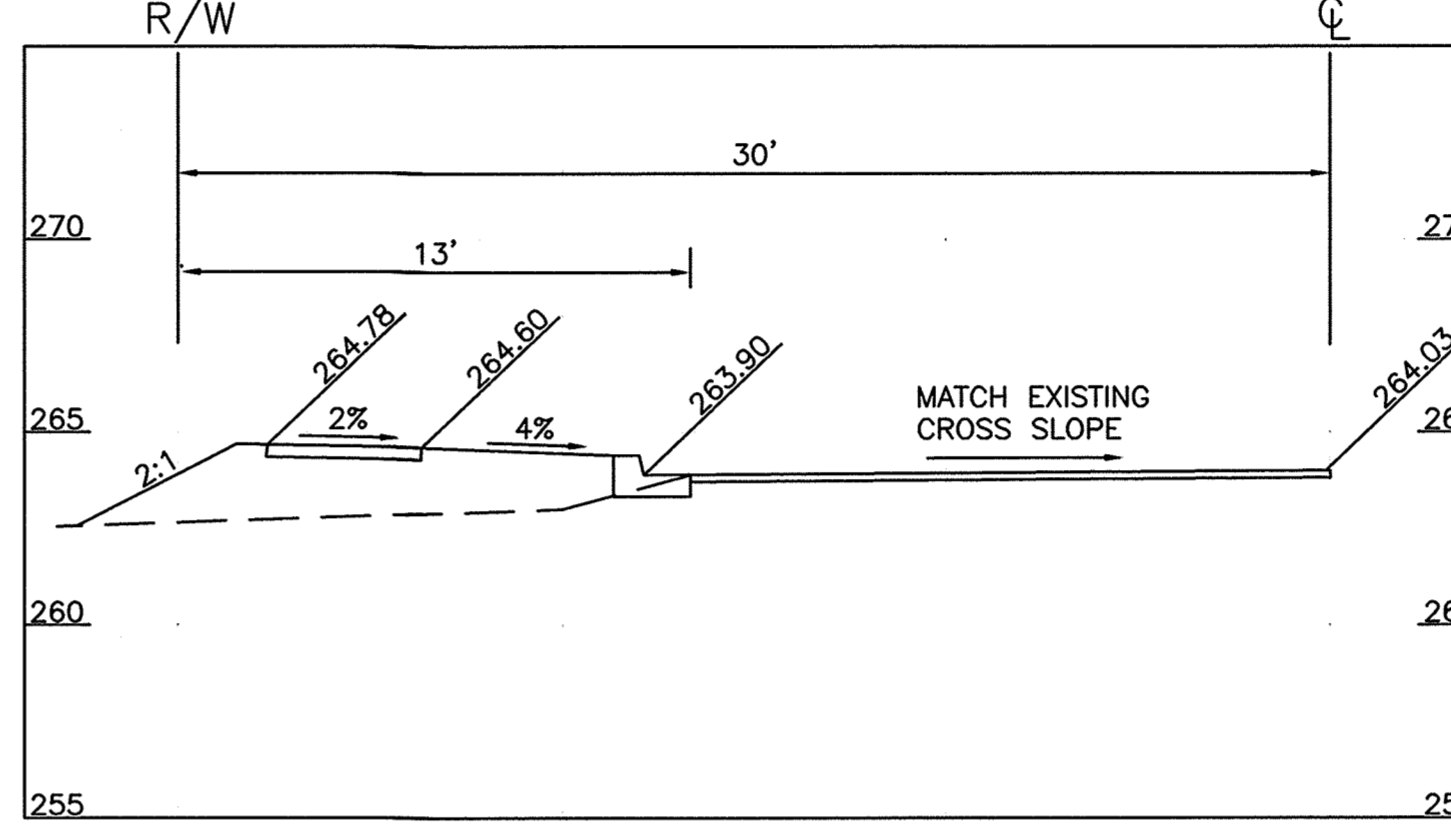
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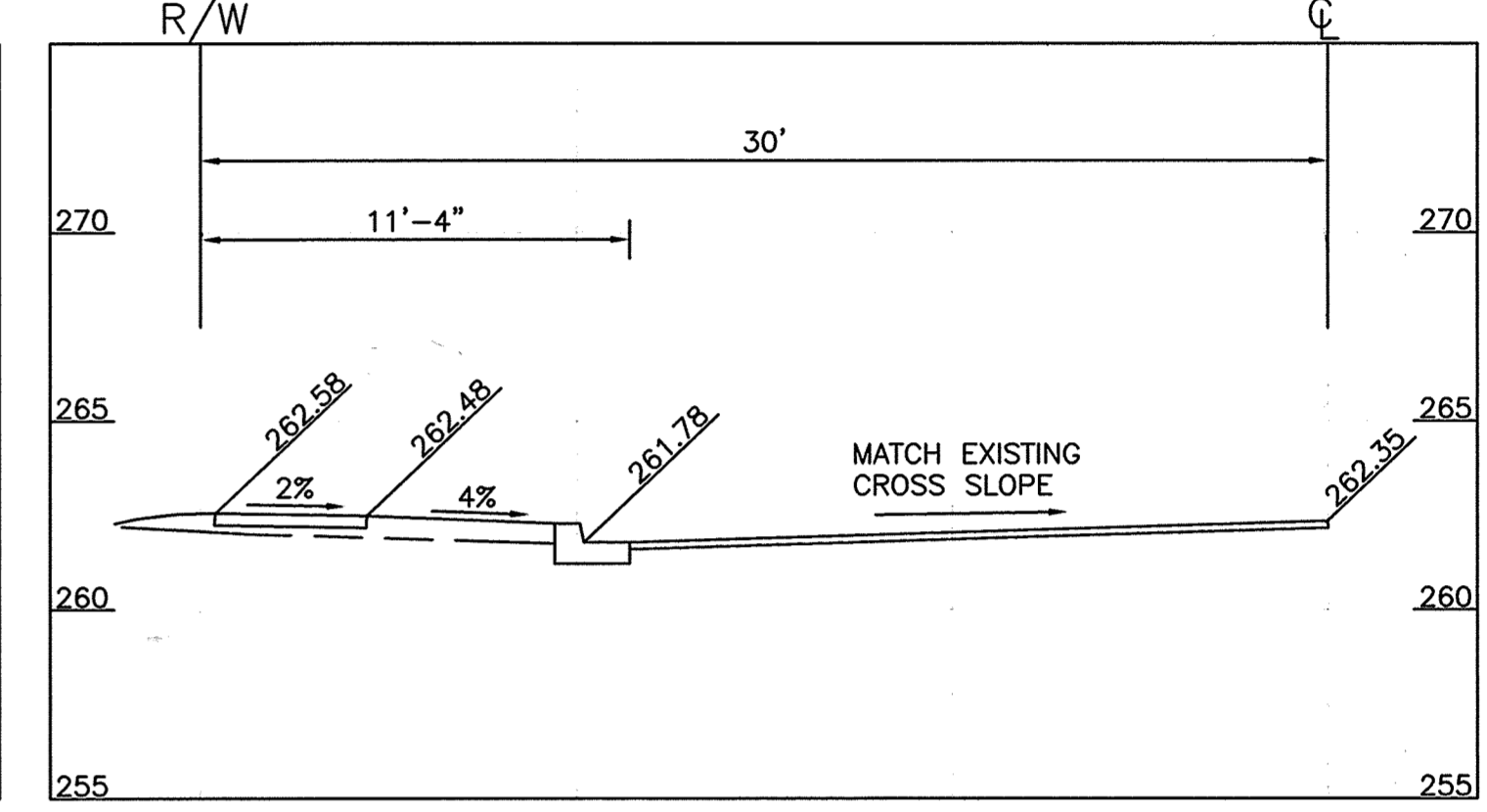
CHIEF, DEVELOPMENT ENGINEERING DIVISION



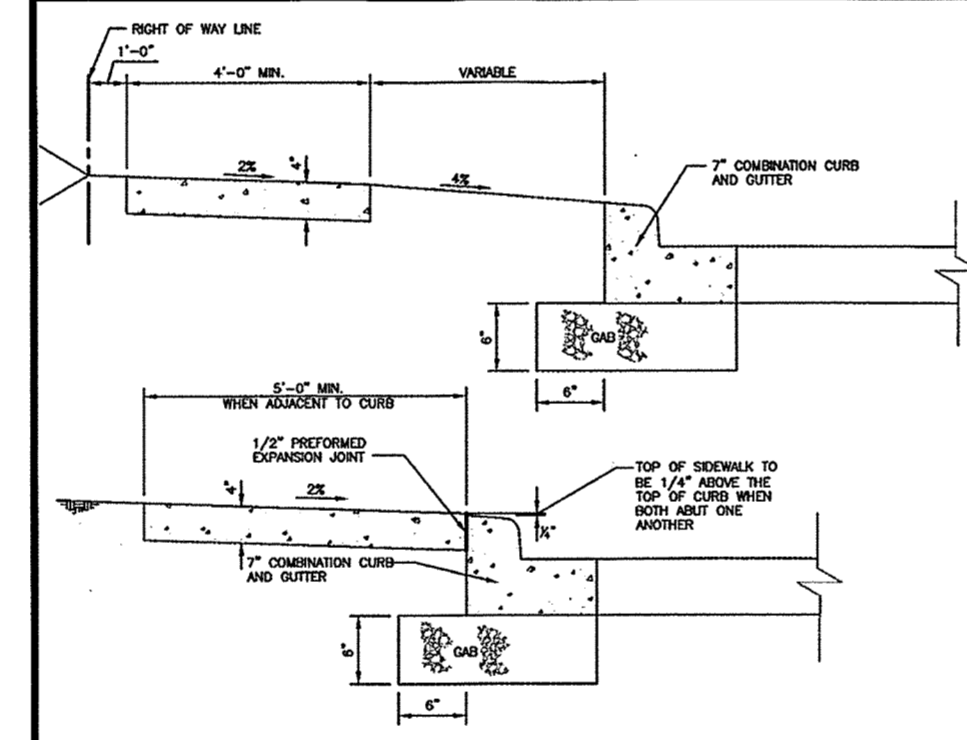
14+14 WHISKEY BOTTOM ROAD
SCALE: 1"=5'



12+20 WHISKEY BOTTOM ROAD
SCALE: 1"=5'



13+20 WHISKEY BOTTOM ROAD
SCALE: 1"=5'



NOTES:

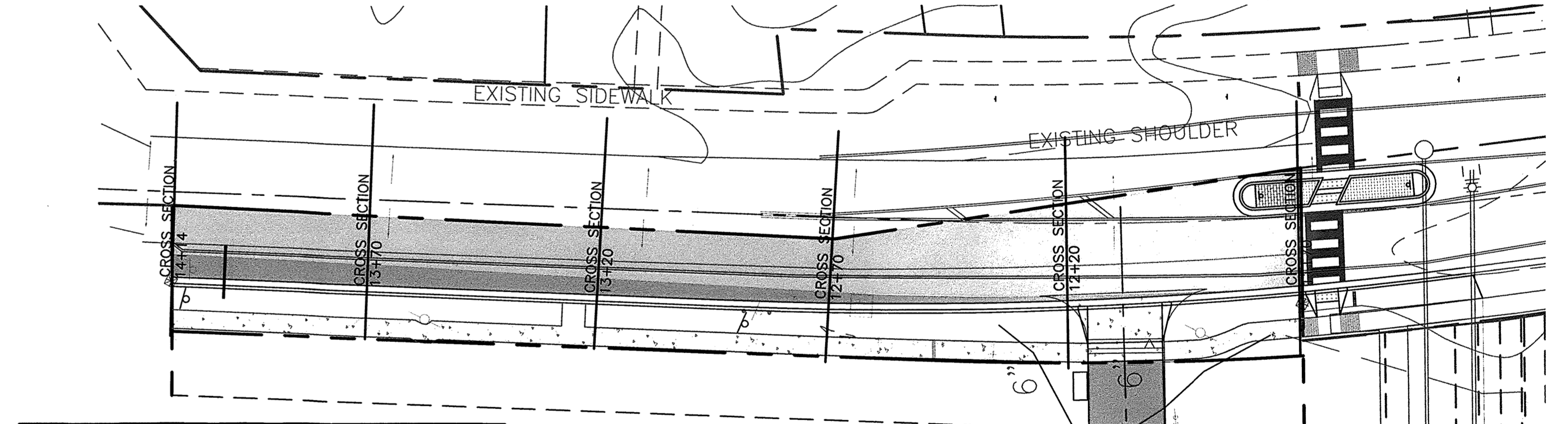
- SIDEWALK TO BE SCALED IN 5'-0" MAXIMUM SQUARES.
- EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO BE MORE THAN 10' APART.
- 1/2" PERFORATED EXPANSION JOINTS IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK.
- CONCRETE TO BE MIX NO. 3.
- WHEN BARRIERS ARE USED, SIDEWALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PERFORMED EXPANSION JOINT BETWEEN SIDEWALK AND CURB.
- ON LONGITUDINAL SIDEWALK CROSSINGS OF 20' OR GREATER, A CONCRETE HEADER 4" THICK AND 12" DEEP BEHIND THE NORMAL 4" SIDEWALK FINISHES SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERSECTIONS OF ALL STREETS. THE SIDEWALK SHALL BE PLACED AT THE EXPANSION JOINT LOCATION AND SHALL BE BONDING WITH THE SIDEWALK.
- SIDEWALK WITH ADJACENT CURB SHALL BE 5'-0" MINIMUM EXCEPT SIDEWALK ADJACENT TO CURB IN CURB-TO-CURB AREAS MAY BE 4'-0" MIN.
- SIDEWALK LOCATED 2' OR MORE FROM CURB MAY BE 4'-0" IN WIDTH WITH A 5/8" PAVED CURB-TO-CURB AREAS MAY BE 4'-0" MIN.
- 4'-0" SIDEWALK REQUIRES A PAVING AREA (SEE DETAIL R-4.01).

APPROVED: *[Signature]* DATE: 11-13-15

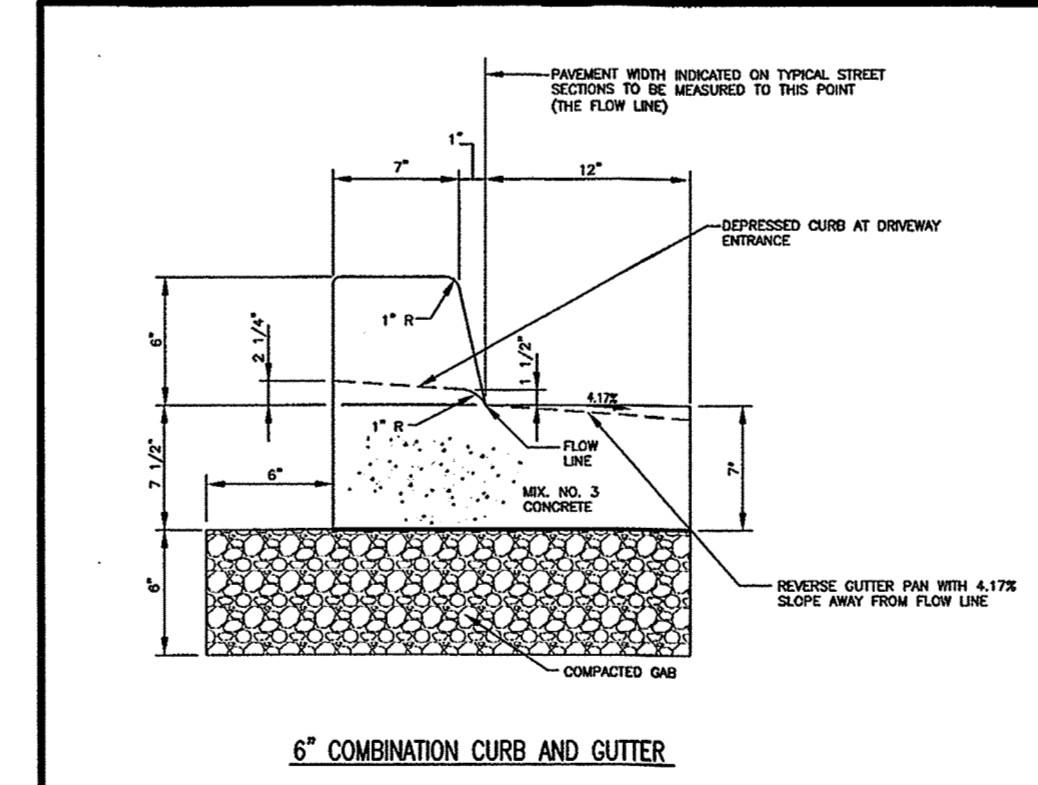
CHIEF, BUREAU OF HIGHWAYS

APPROVED: *[Signature]* DATE: 11-9-15

CHIEF, DEVELOPMENT ENGINEERING DIVISION



WHISKEY BOTTOM ROAD
PLAN VIEW
SCALE: 1"=20'



PAVING SECTION P-4
NOT TO SCALE

2" 12.5MM PG64-22 SURFACE COURSE

2" 12.5MM PG64-22 INTERMEDIATE COURSE

4" 19.0MM PG04-22 BASE COURSE

6" GAB

6" COMBINATION CURB AND GUTTER

NOTE:

- CUTTER PAV AT THE WEAR EDGE OF INTERMEDIATE MATERIALS ON THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN DIRECTION AS THE PAVEMENT MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MOORED CURB AND GUTTER.

APPROVED: *[Signature]* DATE: 10/2/15

CHIEF, BUREAU OF HIGHWAYS

SEQUENCE OF CONSTRUCTION

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS 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.
- THE TRAFFIC CONTROL DEVICES SHOWN ON THE PLANS (HANDICAP RAMPS AND CENTER ISLAND) MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC CONTROL DIVISION (410)313-5752 PRIOR TO THE INSTALLATION OF ANY TRAFFIC CONTROL DEVICES. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MDMUTCD). 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 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- CONTRACTOR TO CONSTRUCT EAST HANDICAP RAMP USING MDT SHA TRAFFIC CONTROL DETAIL NO. 104.02-02.
- CONTRACTOR TO CONSTRUCT WEST HANDICAP RAMP, CURB AND SIDEWALK USING MDT SHA TRAFFIC CONTROL DETAIL NO. 104.02-02.
- CONTRACTOR TO CONSTRUCT CENTER ISLAND SHOWN ON THE PLANS USING MDT SHA TRAFFIC CONTROL DETAIL NO. 104.02-06. CONTRACTOR MUST ALSO HAVE FLAGGERS ON SITE TO FURTHER CONTROL TRAFFIC THROUGH THE WORK ZONE.
- UPON COMPLETION OF THE CENTER ISLAND, ALL TRAFFIC CONTROL SIGNAGE SHALL BE INSTALLED AND FIELD APPROVED BY HOWARD COUNTY TRAFFIC CONTROL DIVISION (410-313-5752).
- COORDINATE ROAD PAVING AND ROAD WIDENING PAVING.

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

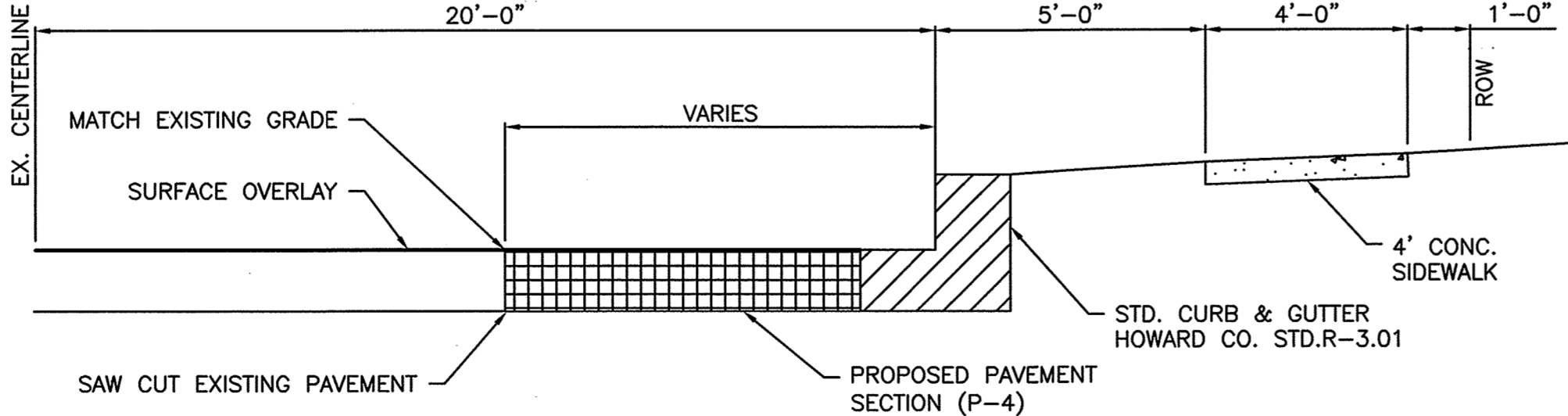
HOWARD SOIL CONSERVATION DISTRICT DATE: 11/13/15

APPROVED: *[Signature]* DATE: 11/13/15

CHIEF, BUREAU OF HIGHWAYS

APPROVED: *[Signature]* DATE: 11-9-15

CHIEF, DEVELOPMENT ENGINEERING DIVISION



ROAD WIDENING SECTION DETAIL
NOT TO SCALE

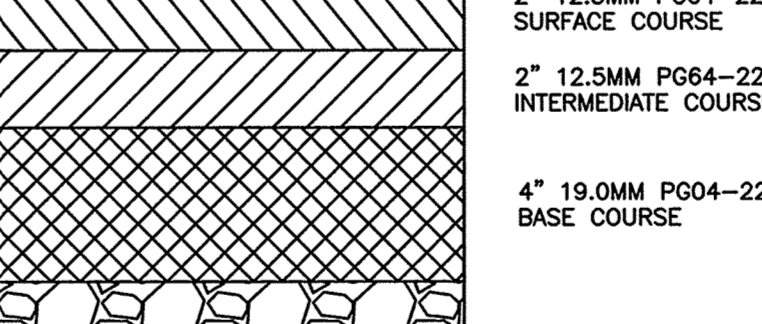
- NOTES:
- WHEN EXISTING PAVEMENT WIDTH IS 20' OR GREATER FROM CENTERLINE, SAW CUT PAVEMENT AND CONSTRUCT CURB AND GUTTER AGAINST FACE OF CUT 20' FROM CENTERLINE.
 - WHEN EXISTING TRAVEL LANE IS LESS THAN 20' CONTRACTOR SHALL REMOVE A MINIMUM OF 1' FULL DEPTH AND 4' WIDTH OF EXISTING ROADWAY AND PROVIDE A MINIMUM OF 4' WIDENING FROM FACE OF GUTTER PAN
 - THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT A DEPTH OF 1 1/2" MINIMUM.
 - THE RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION
 - RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION
 - MATCH SLOPE OF GUTTER PAN TO STREET CROSS SECTION AS REQUIRED.

APPROVED: *[Signature]* DATE: 10/2/15

CHIEF, BUREAU OF HIGHWAYS

APPROVED: *[Signature]* DATE: 11-9-15

CHIEF, DEVELOPMENT ENGINEERING DIVISION



ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

KCI
TECHNOLOGIES

11850 WEST MARKET PLACE
SUITE A
LAUREL, MD 20759
TELEPHONE: (410) 792-8986
FAX: (410) 792-7419

REVISIONS		
NO.	DATE	BY

OWNER/DEVELOPER:
LINDA L. ARMSTRONG
9309 WHISKEY BOTTOM ROAD
LAUREL, MD 20732
301-776-5600

BUTTERFIELD GROVE
LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6

SITE DETAILS AND NOTES

TAX MAP: 47 GRID: 22 PARCEL: 191
ZONED: R-5C
ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND

DESIGN: NAB DATE: 10/02/15 KCI PROJECT NO. 27121943 SHEET NO. 6 OF 14
DRAWN: BRA SCALE: VARIES SHEET NO. 6 OF 14

C-1.03

GENERAL NOTES

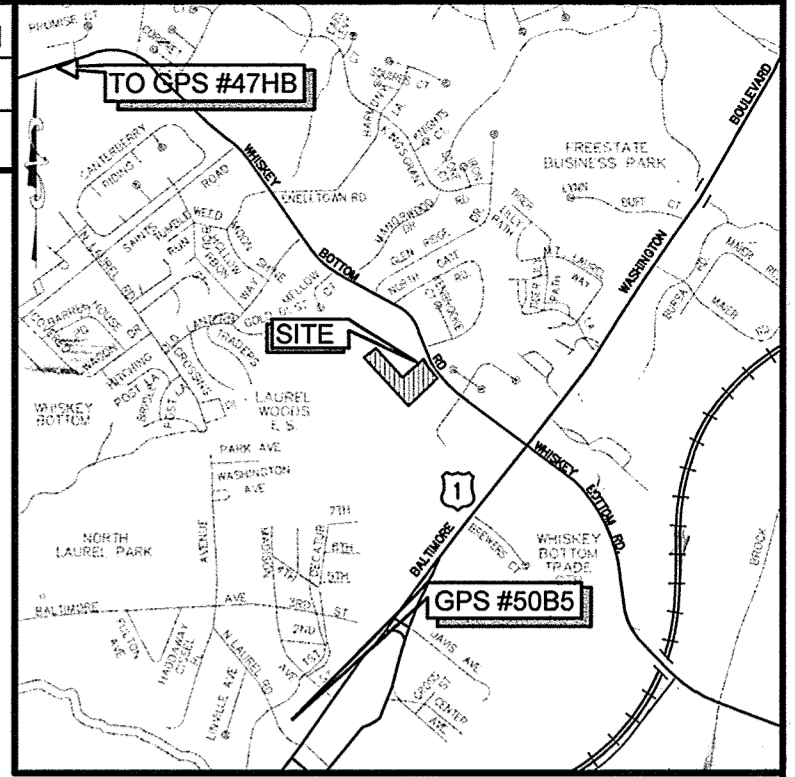
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE SUBJECT PROPERTY IS ZONED R-SC PER THE 10-06-13 COMPREHENSIVE ZONING PLAN.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU 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 OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED BY KCI TECHNOLOGIES INC. DATED JUNE, 2013.
- EXISTING OFFSITE TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY GIS.
- 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. 47HB AND 50B5 WERE USED FOR THIS PROJECT.
- WATER IS PUBLIC, CONTRACT NUMBER 24-4892-D.
- STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE 2007 MDE DESIGN MANUAL AND HOWARD COUNTY REQUIREMENTS. TREATMENT IS PROVIDED USING ENVIRONMENTAL SITE DESIGN METHODS, INCLUDING MICRO-BIORETENTION FACILITIES AND NON-ROOFTOP DISCONNECTION.
- EXISTING UTILITIES ARE BASED ON FIELD LOCATIONS AND RECORD DRAWINGS.
- NO WETLANDS, STREAMS, FLOODPLAINS, FOREST CONSERVATION EASEMENTS, STEEP SLOPES, OR ENVIRONMENTAL BUFFERS ARE LOCATED ON THIS SITE.
- NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT. (MINOR SUBD.)
- TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERIES LOCATED ON THIS SITE.
- A NOISE STUDY IS NOT REQUIRED FOR THIS DEVELOPMENT.
- ARTICLES OF INCORPORATION FOR THE BUTTERFIELD GROVE HOMEOWNER'S ASSOCIATION WAS FILED WITH THE MARYLAND STATE DEPARTMENT OF ASSESSMENT AND TAXATION ON 05/06/2015. RECEIPT NO. 4466098.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- THE USE-IN-COMMON ACCESS MAINTENANCE AGREEMENT, FOR USE BY ALL LOTS & OPEN SPACE LOTS ON THE PROPERTY, WILL BE RECORDED WITH THE FINAL PLAT IN THE LAND RECORDS OF HOWARD COUNTY.
- WETLAND DELINEATION WAS PERFORMED BY KCI TECHNOLOGIES, INC. AND DOCUMENTED IN A LETTER OF FINDINGS DATED AUGUST 2013.
- A SIMPLIFIED FOREST STAND DELINEATION AND FOREST CONSERVATION PLAN WERE PREPARED BY KCI TECHNOLOGIES, INC. IN AUGUST 2013.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
- THE EXISTING DWELLING WAS CONSTRUCTED CIRCA 1870 AND WILL REMAIN. NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATIONS REQUIRE.
- THE EXISTING PROPERTY IS KNOWN AS THE JOSEPH TRAVERS HOUSE, HOWARD COUNTY ID# 801. THE PROPOSED PLAN HAS BEEN APPROVED BY THE HOWARD COUNTY HISTORIC DISTRICT COMMISSION ON FEBRUARY 12, 2014.
- THE REFUSE AND RECYCLING COLLECTION PAD LOCATED WITHIN THE USE-IN-COMMON DRIVEWAY EASEMENT WILL BE MAINTAINED BY THE OWNERS OF LOTS 1-4 PURSUANT TO THE DECLARATION OF RIGHT OF ACCESS AND MAINTENANCE OBLIGATION RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY ALONG WITH THE RECORDING OF THIS PLAT.
- WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122.B OF THE HOWARD COUNTY CODE.
- PUBLIC WATER AND SEWAGE ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
- NO IMPROVEMENTS SHALL BE PERMITTED TO BE CONSTRUCTED OR PLACED WITHIN THE PUBLIC WATER, SEWER, AND UTILITY EASEMENTS THAT WILL IMPEDE OR HINDER ACCESS TO THE PUBLIC WATER AND SEWER MAINS. IMPROVEMENTS SUCH AS AIR CONDITIONING UNITS, DECKS, FENCING, FOUNDATION PLANTINGS AND TREES SHALL NOT BE PLACED WITHIN THE EASEMENT.
- A PRIVATE RANGE OF ADDRESS SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430 FOR DETAILS AND COST ESTIMATE.
- APPROVAL OF A SITE DEVELOPMENT PLAN IS REQUIRED FOR THE DEVELOPMENT OF ALL RESIDENTIAL LOTS WITHIN THIS SUBDIVISION PRIOR TO ISSUANCE OF ANY GRADING OR BUILDING PERMITS FOR NEW HOUSE CONSTRUCTION IN ACCORDANCE WITH SECTION 16.155 OF SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- LAND DEDICATED TO HOWARD COUNTY, MARYLAND FOR PURPOSES OF A PUBLIC ROAD (0.164 ACRES, 7,149 SQUARE FEET).
- ALL TRASH AND RECYCLABLES COLLECTION WILL BE AT WHISKEY BOTTOM ROAD, WITHIN 5' OF THE PUBLIC RIGHT OF WAY.
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH" TYPE), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE)
 - SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN.)
 - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45' TURNING RADIUS
 - STRUCTURES (CULVERTS/BRIDGE) - CAPABLE OF SUPPORTING 25 GROSS TONS 25 LOADING.
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
 - STRUCTURE CLEARANCES - MINIMUM 12 FEET
 - MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- THIS PLAT IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS PER COUNCIL BILL 32-2013. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH THE SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL BY PROVIDING 7 SHADE TREES, 11 ORNAMENTAL TREES, AND 3 SHRUBS FOR THE PERIMETER LANDSCAPING REQUIREMENT AND 6 ORNAMENTAL TREES AND 17 EVERGREEN TREES FOR SCREEN LANDSCAPING PER THE HISTORIC DISTRICT COMMISSION. FINANCIAL SURETY IN THE AMOUNT OF \$7,140.00 WILL BE POSTED WITH THE DPW DEVELOPER'S AGREEMENT. THE ORNAMENTAL FENCE AND LANDSCAPING WITHIN ACCESS EASEMENT TO BE MAINTAINED BY THE HOA.
- THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. THE FOREST CONSERVATION OBLIGATION OF 0.47 ACRES HAS BEEN FULFILLED BY THE RETENTION/PLANTING OF 0.47 ACRES. THE TOTAL FINANCIAL SURETY OBLIGATION OF \$10,237.00.
- ON LOT STORMWATER FACILITIES ARE SUBJECT TO DECLARATIONS OF COVENANTS, WHICH SHALL BE RECORDED IN THE HOWARD COUNTY LAND RECORDS AT THE TIME OF THE PLAT RECORDATION. ALL ASSOCIATED DECLARATIONS OF COVENANTS SHALL BE AMENDED, AS NEEDED, BASED ON ANY FUTURE DESIGN.
- A PRIVATE RANGE OF ADDRESS SIGN SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430 FOR DETAILS AND COST ESTIMATE.
- OPEN SPACE LOT 5 SHALL BE TRANSFERRED TO THE DEPARTMENT OF PARKS AND RECREATION. OPEN SPACE LOT 6 SHALL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- IN ACCORDANCE WITH SECTION 110.0.E OF THE ZONING REGULATIONS, AT LEAST 10% OF THE DWELLINGS IN EACH R-SC DEVELOPMENT SHALL BE MODERATE INCOME HOUSING UNITS (MIHU). THE REQUIREMENT FOR THIS SUBDIVISION IS 1 MIHU. THE APPLICANT IS ELECTING TO PAY A FEE-IN-LIEU FOR THE REQUIREMENT, WHICH WILL BE PAID WITH THE PERMIT. A MIHU AGREEMENT WILL BE RECORDED SIMULTANEOUSLY WITH THIS PLAT.

BUTTERFIELD GROVE

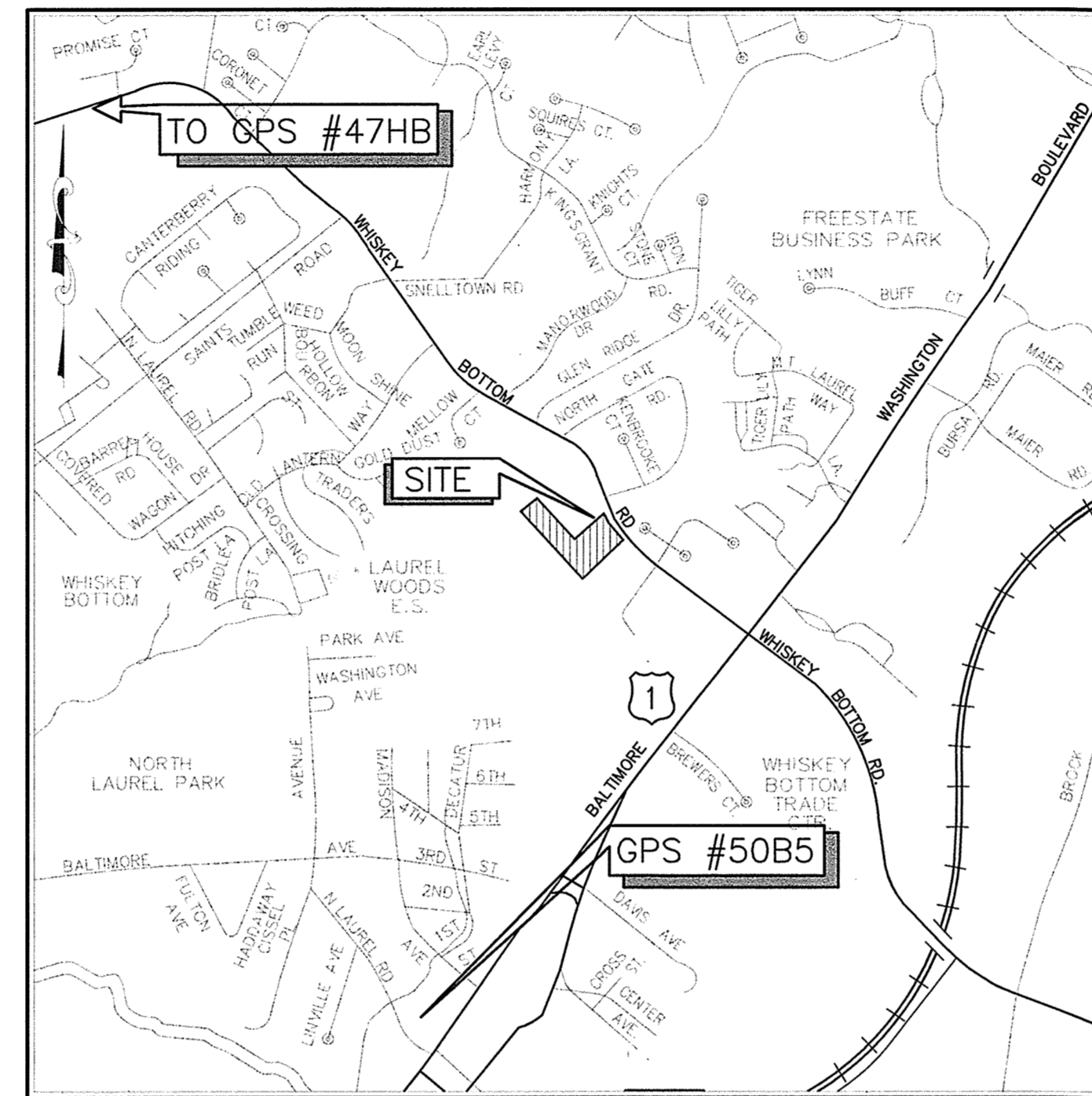
LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6

FINAL CONSTRUCTION PLANS

POINT	NORTHING	EASTING	ELEVATION
#47HB	531895.78	1356076.26	296.82
#50B5	524999.33	1357925.66	177.42



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 40, GRID D7



LEGEND

---	PROPERTY LINE
---	ADJOINER LINE
---	EDGE OF ROAD
---	EX. BUILDING
---	EX. CONTOUR
---	EX. SPOT GRADE
---	EX. FENCE
---	EX. WALK
---	EX. WATER LINE
---	EX. WATER VALVE
---	EX. FIRE HYDRANT
---	EX. SEWER LINE
---	EX. SEWER MANHOLE
---	EX. GAS LINE
---	EX. LIGHT POLE
---	EX. TREE

VICINITY MAP
SCALE: 1"=1000'

SHEET INDEX

SHEET	DESCRIPTION	No.
CO.01	TITLE SHEET	1
CO.02	EXISTING CONDITIONS/DEMOLITION PLAN	2
C1.00	SITE PLAN/STORMWATER MANAGEMENT PLAN	3
C1.01	STORMWATER MANAGEMENT DETAILS	4
C1.02	SITE DETAILS AND NOTES	5
C1.03	SITE DETAILS AND NOTES	6
C3.00	SEDIMENT AND EROSION CONTROL PLAN	7
C3.01	SEDIMENT AND EROSION CONTROL NOTES	8
C3.02	SEDIMENT AND EROSION CONTROL NOTES	9
C3.03	SEDIMENT AND EROSION CONTROL NOTES	10
L1.00	LANDSCAPING PLAN	11
L1.01	LANDSCAPING DETAILS AND NOTES	12
F1.00	FOREST CONSERVATION PLAN	13
F1.01	FOREST CONSERVATION NOTES AND DETAILS	14

NOTE: SEE SHEET C3.03 FOR SEQUENCE OF CONSTRUCTION

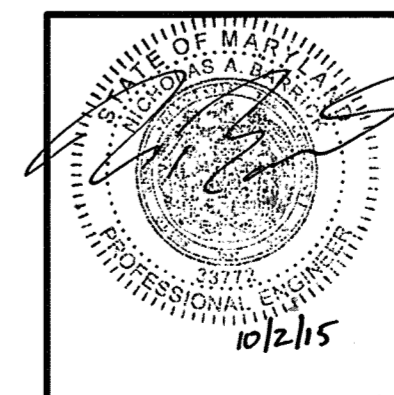
NOTE: THE PLAN F-14-085 MAY NOT BE USED TO OBTAIN A BUILDING PERMIT.

STORMWATER MANAGEMENT SUMMARY TABLE

AREA OF DISTURBANCE (AC.)	IMP. AREA (AC.)	PE		ESD VOLUME (CF)		BMP
		REQUIRED	PROVIDED	REQUIRED	PROVIDED	
1.10	0.30	1.20	1.22	1,416	1,465	(M-6) MICRO-BIORETENTION (M-5) DRYWELLS (N-2) NON-ROOF DISCONNECTION



Professional Certification. I hereby certify that these documents were prepared or approved by me and that I am duly licensed professional engineer under the laws of the State of Maryland.
License No. S1977, Expiration Date: 12/1/21



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

SITE DATA TABULATION

- GENERAL SITE DATA:**
 - CURRENT ZONING: R-SC
 - LOCATION: TAX MAP: 47, GRID: 22, PARCEL: 191
 - ELECTION DISTRICT: 6
 - LIBER/FOLIO: 10802/351
 - ADC MAP/GRID: 40/D7
 - APPLICABLE DPZ FILE REFERENCES: ECP-14-011
 - PROPOSED USE OF SITE: SINGLE FAMILY DETACHED RESIDENTIAL
 - PROPOSED WATER AND SEWER SYSTEMS: PUBLIC
- AREA TABULATION:**

	TOTAL
a. TOTAL AREA OF SITE:	3.1193 AC.
b. APPROXIMATE AREA OF 100 YEAR FLOODPLAIN:	N/A
c. APPROX. AREA OF STEEP SLOPES (25% OR MORE):	N/A
d. NET AREA OF THE SITE:	3.1193 AC.
e. AREA OF PLAN SUBMISSION:	3.1193 AC.
f. AREA OF PROPOSED BUILDABLE LOTS:	2.10 AC.
g. AREA OF PROPOSED PUBLIC ROAD RIGHT OF WAY:	0.164 AC.
h. APPROXIMATE AREA OF LIMIT OF DISTURBANCE:	1.10 AC.
- DENSITY TABULATION:**
 - NET AREA OF THE SITE: 3.1193 AC.
 - TOTAL NUMBER OF BUILDABLE LOTS ALLOWED: 12
 - TOTAL NUMBER OF BUILDABLE LOTS PROPOSED: 4
- UNIT/LOT TABULATION:**
 - TOTAL NUMBER OF RESIDENTIAL UNITS/LOTS PROPOSED ON THIS SUBMISSION: 4
 - TOTAL NUMBER OF OPEN SPACE LOTS PROPOSED: 1
 - TOTAL NUMBER OF NON-CREDITED OPEN SPACES: 1
- OPEN SPACE DATA:**
 - MINIMUM RESIDENTIAL LOT SIZE: 6,000 SF
 - OPEN SPACE REQUIRED (25% OF 3.1193 AC.): 0.78 AC.
 - AREA OF PROPOSED OPEN SPACE LOTS: 0.78 AC.
 - AREA OF PROPOSED NON-CREDITED O.S. LOTS: 0.073 AC.
 - AREA OF CREDITED OPEN SPACE PROVIDED: 0.78 AC.



REVISIONS

NO.	DATE	BY
1	12/10/20	AS BUILT

OWNER/DEVELOPER: LINDA L. ARMSTRONG 9309 WHISKEY BOTTOM ROAD LAUREL, MD 20732 301-776-5600		BUTTERFIELD GROVE LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6	
TAX MAP: 47 ELECTION DISTRICT NO. 6 - HOWARD		GRID: 22 ZONED: R-SC COUNTY MARYLAND	
DESIGN NAB	DATE 10/02/15	KCI PROJECT NO. 27121943	SHEET NO.
DRAWN BRA	SCALE AS SHOWN	SHEET NO. 1 OF 14	C-0.01

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS

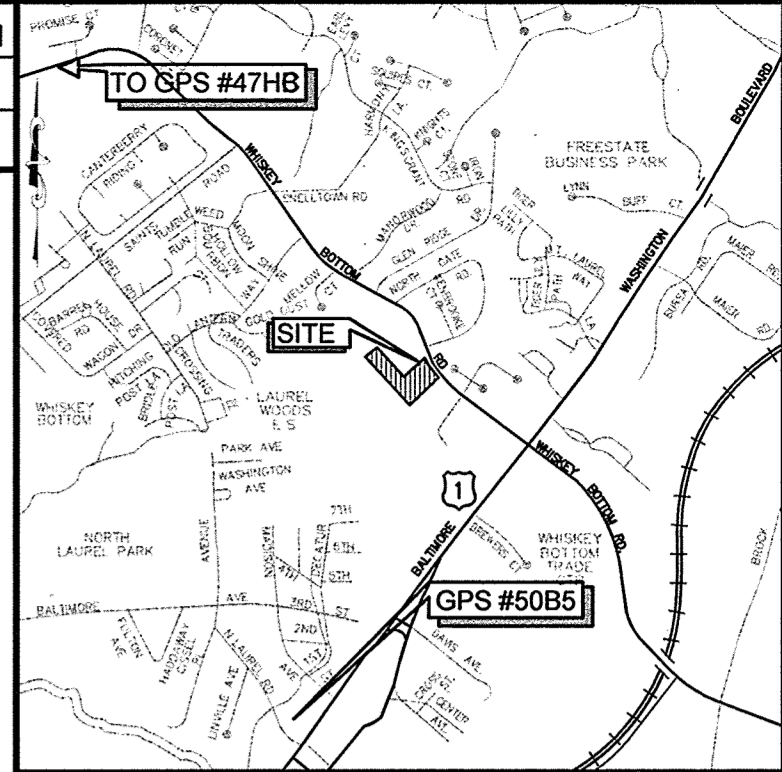
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION

MISS UTILITY

CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE.

POINT	NORTHING	EASTING	ELEVATION
#47HB	531895.78	1356076.26	296.82
#50B5	524999.33	1357925.66	177.42

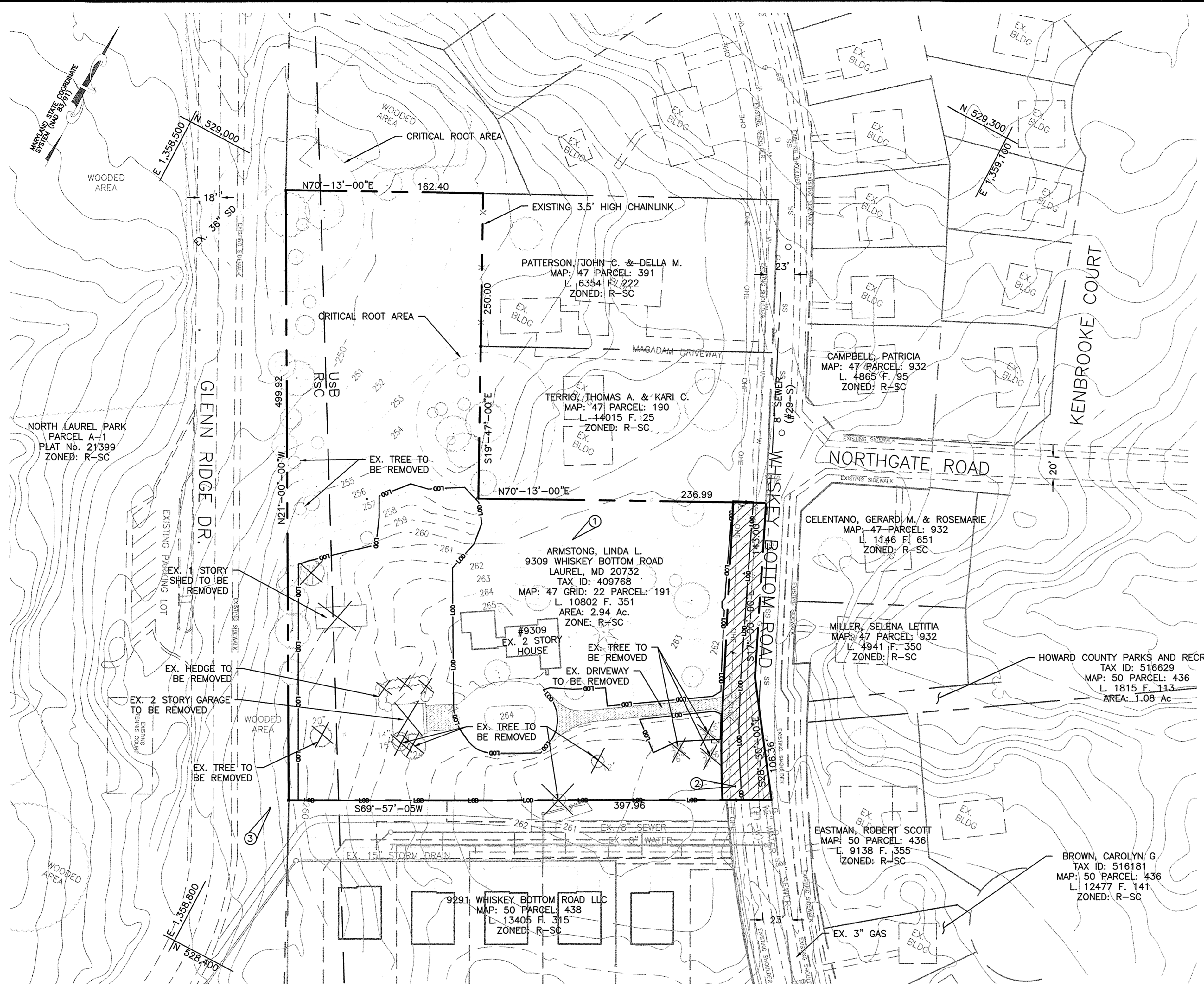


BENCHMARK DATA				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
1	528843.43	1358936.29	261	REBAR & CAP
2	528725.53	1359148.14	264	REBAR & CAP
3	528534.23	1358816.57	257.5	REBAR & CAP

VICINITY MAP
SCALE: 1"=200'
ADC MAP/GRID: 40/D7

GENERAL / DEMOLITION NOTES

- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" (1-800-257-7777) AT LEAST FIVE 5 WORKING DAYS PRIOR TO STARTING ANY WORK.
- OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. KCI TECHNOLOGIES, INC. DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR THE COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR SHALL VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION. IN THE EVENT THAT INFORMATION IS IN CONFLICT WITH INFORMATION OUTLINED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT PRIOR TO STARTING ANY WORK.
- CONTRACTOR SHALL REMOVE PAVEMENT, CURB AND GUTTER, AND CONCRETE WALK TO LIMITS INDICATED ON THE DRAWING.
- CONTRACTOR SHALL NOT PROCEED WITH ANY DEMOLITION WORK UNTIL ALL UTILITY DISCONNECTIONS HAVE BEEN COMPLETED AND VERIFIED IN WRITING BY UTILITY COMPANY, AND/OR OWNER.
- BURNING OF COMBUSTIBLE MATERIALS FROM DEMOLISHED STRUCTURES WILL NOT BE PERMITTED ON-SITE.
- EXISTING CURB AND GUTTER & CONCRETE SIDEWALK SHALL BE REMOVED TO THE NEAREST JOINT.
- ALL DEMOLITION MATERIAL TO REMAIN WITHIN THE LIMIT OF DISTURBANCE. ALL STOCKPILED MATERIALS ARE TO REMAIN WITHIN THE STOCKPILE/STAGING AREA AS SHOWN ON THE APPROVED SEDIMENT & EROSION CONTROL PLAN. ALL SEDIMENT CONTROL MEASURES ARE TO BE IN PLACE PRIOR TO BEGINNING DEMOLITION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAUL ALL DEMOLITION MATERIAL OFFSITE TO AN APPROVED FACILITY.
- CONTRACTOR TO SUBMIT A DEMOLITION/CONSTRUCTION STAGING PLAN TO THE OWNER AND ARCHITECT FOR APPROVAL, PRIOR TO BEGINNING AND CONSTRUCTION.
- CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES SHOWN HEREON BEFORE STARTING ANY WORK ON THESE PLANS. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR THE COST OF ANY AND ALL DAMAGES WHICH OCCUR AS A RESULT OF A FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES TO REMAIN. CONTRACTOR TO NOTIFY THE ENGINEER ONCE TEST PITS HAVE BEEN COMPLETED.
- ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL ADJUST ALL FRAMES, GRATES AND COVERS OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE CONTRACT TO THE PROPOSED GRADES AS REQUIRED.
- CONTRACTOR SHALL INSTALL SEDIMENT CONTROLS PRIOR TO BEGINNING ANY WORK AND SHALL MAINTAIN SEDIMENT CONTROLS THROUGHOUT THE ENTIRE DURATION OF DEMOLITION & CONSTRUCTION ACTIVITIES, IN ACCORDANCE WITH ALL APPLICABLE STATE & COUNTY REQUIREMENTS.
- IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THIS PROJECT WILL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION FROM THIS PLAN PRIOR TO ANY CHANGE BEING MADE. ANY DEVIATION FROM THIS PLAN WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- SOIL BORINGS WERE COMPLETED BY HERBST BENSON & ASSOCIATES & LETTER REPORT DATED JANUARY 2014. A COPY OF THE GEOTECHNICAL REPORT HAS BEEN INCLUDED WITH THE PROJECT MANUAL.
- THE DEMOLITION INFORMATION SHOWN ON THIS DRAWING IS FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LIMITS OF DEMOLITION AND REMOVAL OF AFFECTED SITE ITEMS PRIOR TO BEGINNING WORK.
- THE EXISTING STRUCTURES THAT ARE PROPOSED TO BE REMOVED, WILL BE DEMOLISHED PRIOR TO THE RECORDATION OF THE SUBDIVISION PLAT.



LEGEND

- PROPERTY LINE
- ADJOINER LINE
- EDGE OF ROAD
- EX. BUILDING
- EX. CONTOUR
- EX. SPOT GRADE
- EX. FENCE
- EX. WALK
- EX. WATER LINE
- EX. WATER VALVE
- EX. FIRE HYDRANT
- EX. SEWER LINE
- EX. SEWER MANHOLE
- EX. GAS LINE
- EX. LIGHT POLE
- EX. TREE
- PROPOSED LAND DEDICATION

EXISTING CONDITION / DEMOLITION PLAN

SCALE: 1"=50'

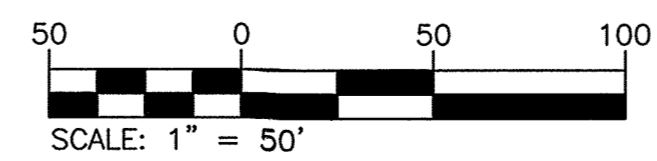
SOILS TABLE

SYMBOL	DESCRIPTION	HYDROLOGIC SOILS GROUP
UsB	URBAN LAND-SASSAFRAS-BELTSVILLE COMPLEX, 0 TO 5 PERCENTS SLOPES	D
RcC	URBAN LAND-WOODSTOWN-SASSAFRAS COMPLEX, 5 TO 10 PERCENT SLOPES	C

SPECIMEN TREE TABLE

SIZE	TYPE	CONDITION
42"	ASH (FRAXINUS ORNUS)	GOOD
38"	WHITE OAK (QUERCUS ALBA)	GOOD

GRAPHIC SCALE

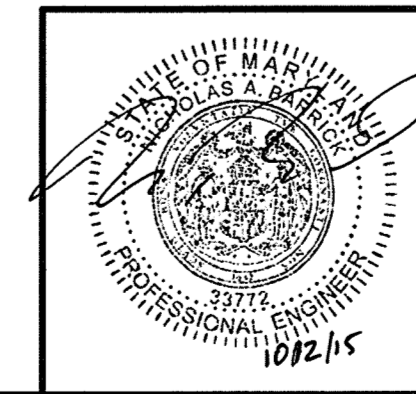


REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 33772 EXP. DATE: 06/16/2017

REVISIONS		
NO.	DATE	BY

OWNER/DEVELOPER:
LINDA L. ARMSTRONG
9309 WHISKEY BOTTOM ROAD
LAUREL, MD 20732
301-776-5600

BUTTERFIELD GROVE
LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6

EXISTING CONDITIONS / DEMOLITION PLAN

TAX MAP: 47 GRID: 22 PARCEL: 191
ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND

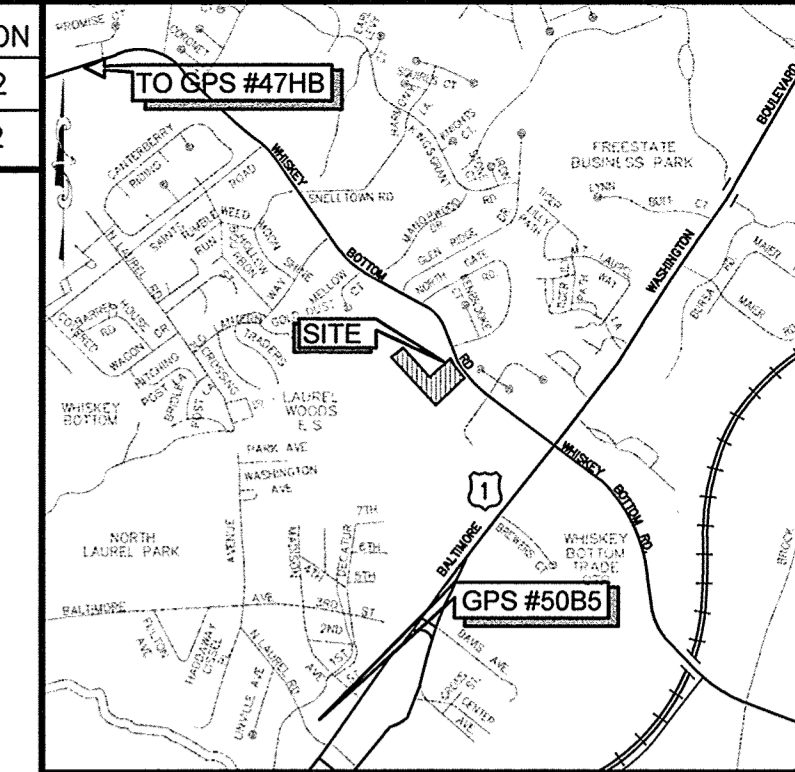
DESIGN NAB DATE 10/02/15
DRAWN BRA SCALE 1"=50'

KCI PROJECT NO. 27121943
SHEET NO. 2 OF 14

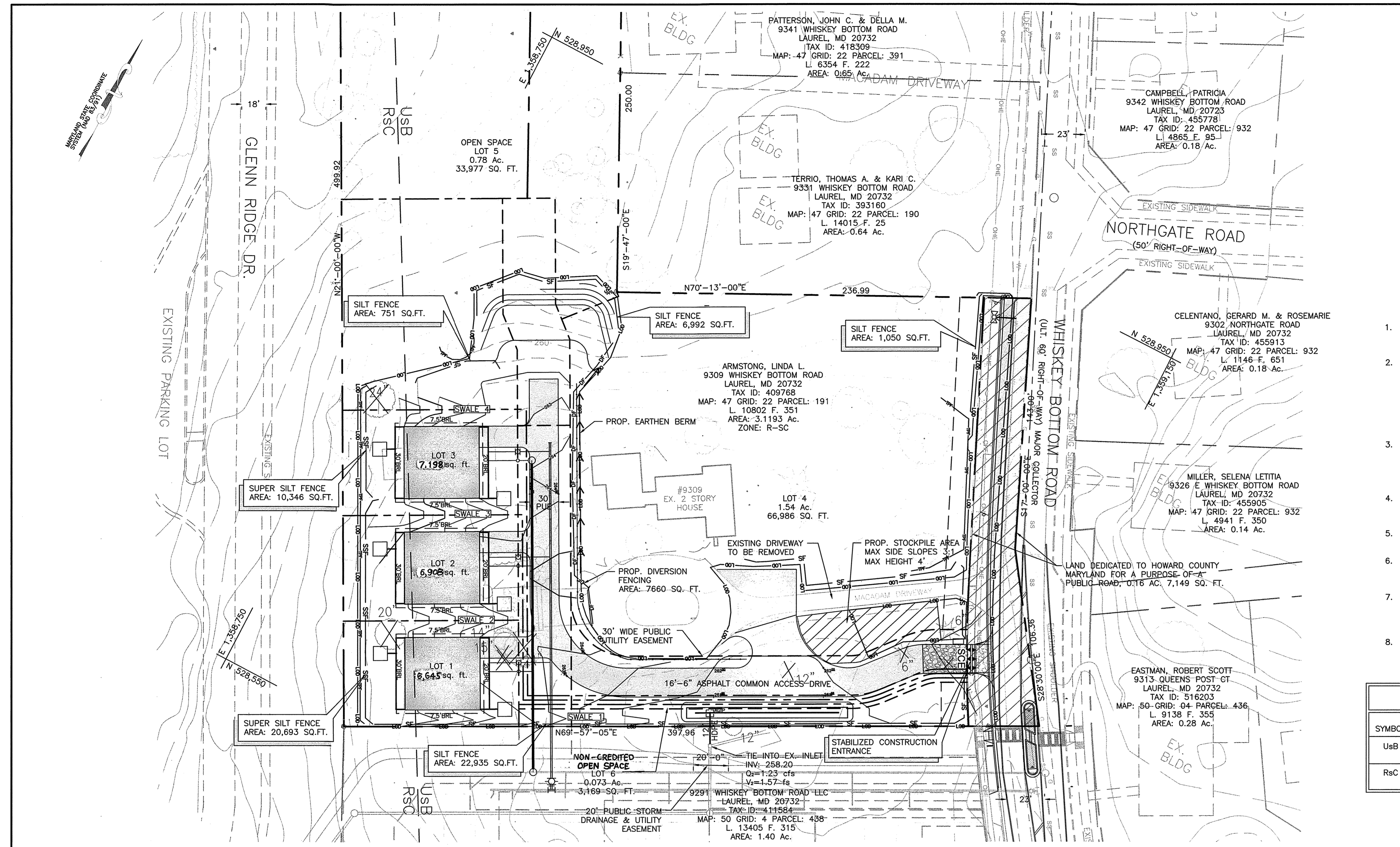
SHEET NO. C-0.02



POINT	NORTHING	EASTING	ELEVATION
#47HB	531895.78	1356076.26	296.82
#50B5	524999.33	1357925.66	177.42



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 40, GRID D7



SITE NOTES

- OWNER/APPLICANT: LINDA L. ARMSTRONG
9309 WHISKEY BOTTOM ROAD
LAUREL, MARYLAND 20732
- SITE DATA:
TAX ID: 409768
TAX MAP/GRID: 47/22
PARCEL: 191
LIBER/FOLIO: 10802/351
AREA: 3.1193 ACRES
ZONE: R-SC
ADC MAP/GRID: 40/D7
- HORIZONTAL AND VERTICAL DATA SHOWN HEREON ARE BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY KCI TECHNOLOGIES, INC. ON OR ABOUT JULY 2012 AND REFLECT NATIONAL GEODETIC SURVEY NAD '83 (1991) AND NAVD '88 VALUES RESPECTIVELY.
- PROPERTY SHOWN HEREON LIES WITHIN ZONE C, AN AREA OF MINIMAL FLOODING, PER FEMA COMMUNITY PANEL NO. 2400440045B EFFECTIVE DATE DECEMBER 4, 1986.
- THERE ARE NO WETLANDS, BUFFERS, OR ANY OTHER ENVIRONMENTAL FEATURES ON THIS SITE.
- THIS PROPERTY IS FORMERLY KNOWN AS THE "JOSEPH TRAVERS HOUSE" AND IS KNOWN TO THE MARYLAND HISTORICAL TRUST AS PROPERTY HO-801.
- EXISTING UTILITY INFORMATION SHOWN HEREON IS BASED ON THE BEST AVAILABLE INFORMATION, WHICH INCLUDES A FIELD RUN SURVEY COMPLETED BY KCI TECHNOLOGIES, INC. ON OR ABOUT JULY 2012.
- LIMIT OF DISTURBANCE (LOD): 1.10 AC.

SOILS TABLE

SYMBOL	DESCRIPTION	HYDROLOGIC SOILS GROUP
UsB	URBAN LAND-SASSAFRAS-BELTSVILLE COMPLEX, 0 TO 5 PERCENTS SLOPES	D
RSC	URBAN LAND-WOODSTOWN-SASSAFRAS COMPLEX, 5 TO 10 PERCENT SLOPES	C

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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.

10/21/15
DATE
ENGINEER

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

10/21/15
DATE
DEVELOPER

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

10/14/15
DATE
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS

10/21/2015
DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT

11-9-15
DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION

LEGEND

- PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING BUILDING LINE
- 260--- EXISTING CONTOUR
- EXISTING TREELINE
- EXISTING EDGE OF PAVEMENT
- EXISTING TREE
- PROPOSED LOT LINE
- PROPOSED BUILDING SETBACK LINE
- PROPOSED FULL DEPTH ASPHALT
- PROPOSED IMPERVIOUS AREA
- PROPOSED LAND DEDICATION
- LOD --- LIMIT OF DISTURBANCE
- SSF --- SUPER SILT FENCE
- PIPE
- MANHOLE
- UTILITY POLE
- GUY WIRE
- LIGHT POLE
- FIRE HYDRANT
- RESIDENTIAL MAILBOX
- SIGN
- FLOOD LIGHT
- CONCRETE MONUMENT
- BUSH
- CONIFEROUS TREE
- DECIDUOUS TREE
- EDGE OF WOODS
- FENCE
- HEDGE
- UNDERGROUND STORM DRAIN PIPE
- EXISTING WATER
- EXISTING GAS
- EXISTING OVERHEAD ELECTRIC
- PROPOSED SEWER
- PROPOSED WATER

SEDIMENT AND EROSION CONTROL PLAN

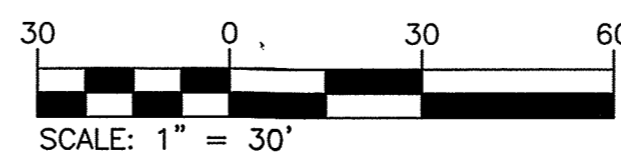
SCALE: 1"=30'

NOTE: THIS STANDARD SEDIMENT CONTROL PLAN MAY NOT BE USED TO OBTAIN BUILDING PERMITS FOR THIS PROJECT

SWALE TABLE

SWALE	PEAK FLOW (Q _p)	VELOCITY (V ₁₀)
1	0.71 cfs	0.98 fps
2	0.28 cfs	0.52 fps
3	0.64 cfs	0.87 fps
4	0.53 cfs	0.75 fps

GRAPHIC SCALE



REVISIONS		
NO.	DATE	BY

OWNER/DEVELOPER:
LINDA L. ARMSTRONG
9309 WHISKEY BOTTOM ROAD
LAUREL, MD 20732
301-776-5600

BUTTERFIELD GROVE
LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6
SEDIMENT AND EROSION CONTROL PLAN

TAX MAP: 47 GRID: 22 PARCEL: 191
ZONED: R-SC
ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND

DESIGN NAB	DATE 10/02/15	KCI PROJECT NO. 27121943	SHEET NO. C-3.00
DRAWN BRA	SCALE 1"=30'		

SHEET NO. 7 OF 14

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

STANDARDS AND SPECIFICATIONS FOR LAND GRADING

DESIGN CRITERIA

THE GRADING PLAN SHOULD BE BASED ON THE INCORPORATION OF BUILDING DESIGNS AND STREET LAYOUTS THAT FIT AND UTILIZE EXISTING TOPOGRAPHY AND DESIRABLE NATURAL SURROUNDINGS TO AVOID EXTREME GRADE MODIFICATION. INFORMATION SUBMITTED MUST PROVIDE SUFFICIENT TOPOGRAPHIC SURVEYS AND SOIL INVESTIGATIONS TO DETERMINE LIMITATIONS THAT MUST BE IMPOSED ON THE GRADING OPERATION RELATED TO SLOPE STABILITY, ADJACENT PROPERTIES, DRAINAGE PATTERNS, MEASURES FOR WATER REMOVAL, AND VEGETATIVE TREATMENT, ETC.

MANY JURISDICTIONS HAVE REGULATIONS AND DESIGN PROCEDURES ALREADY ESTABLISHED FOR LAND GRADING THAT MUST BE FOLLOWED. THE PLAN MUST SHOW EXISTING AND PROPOSED CONTOURS FOR THE AREA(S) TO BE GRADED INCLUDING PRACTICES FOR EROSION CONTROL, SLOPE STABILIZATION, AND SAFE CONVEYANCE OF RUNOFF (E.G., WATERWAYS, LINED CHANNELS, REVERSE BENCHES, GRADE STABILIZATION STRUCTURES). THE GRADING/CONSTRUCTION PLANS ARE TO INCLUDE THE PHASING OF THESE PRACTICES AND CONSIDERATION OF THE FOLLOWING:

- PROVISIONS TO SAFELY CONVEY SURFACE RUNOFF TO STORM DRAINS, PROTECTED OUTLETS OR STABLE WATER COURSES TO ENSURE THAT SURFACE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER GRADED AREAS.
- CUT AND FILL SLOPES, STABILIZED WITH GRASSES, NO STEEPER THAN 2:1. (WHERE THE SLOPE IS TO BE MOWED, THE SLOPE SHOULD BE NO STEEPER THAN 3:1, BUT 4:1 IS PREFERRED BECAUSE OF SAFETY FACTORS RELATED TO MOWING STEEP SLOPES.) SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL DESIGN AND STABILIZATION CONSIDERATIONS TO BE SHOWN ON THE PLANS.
- BENCHING PER DETAIL B-3-1 WHENEVER THE VERTICAL INTERVAL (HEIGHT) OF ANY 2:1 SLOPE EXCEEDS 20 FEET; FOR 3:1 SLOPES, WHEN IT EXCEEDS 30 FEET; AND FOR 4:1 SLOPES, WHEN IT EXCEEDS 40 FEET. LOCATE BENCHES TO DIVIDE THE SLOPE FACE AS EQUALLY AS POSSIBLE AND TO CONVEY THE WATER TO A STABLE OUTLET. SOILS, SEEPS, ROCK OUTCROPS, ETC. ARE TO BE TAKEN INTO CONSIDERATION WHEN DESIGNING BENCHES.
 - PROVIDE BENCHES WITH A MINIMUM WIDTH OF SIX FEET FOR EASE OF MAINTENANCE.
 - DESIGN BENCHES WITH A REVERSE SLOPE OF 6:1 OR FLATTER TO THE TOE OF THE UPPER SLOPE AND WITH A MINIMUM OF ONE FOOT IN DEPTH. GRADE THE LONGITUDINAL SLOPE OF THE BENCH BETWEEN 2 PERCENT AND 3 PERCENT, UNLESS ACCOMPANIED BY APPROPRIATE DESIGN AND COMPUTATIONS.
 - THE MAXIMUM ALLOWABLE FLOW LENGTH WITHIN A BENCH IS 800 FEET UNLESS ACCOMPANIED BY APPROPRIATE DESIGN AND COMPUTATIONS.
- DIVERSION OF SURFACE WATER FROM THE FACE OF ALL CUT AND FILL SLOPES USING EARTH DIKES OR SWALES. CONVEY SURFACE WATER DOWN SLOPE USING A DESIGNED STRUCTURE, AND:
 - PROTECT THE FACE OF ALL GRADED SLOPES FROM SURFACE RUNOFF UNTIL THEY ARE STABILIZED.
 - DO NOT SUBJECT THE SLOPE'S FACE TO ANY CONCENTRATED FLOW OF SURFACE WATER SUCH AS FROM NATURAL DRAINAGE WAYS, GRADED SWALES, DOWNSPOUTS, ETC.
 - PROTECT THE FACE OF THE SLOPE BY SPECIAL EROSION CONTROL MATERIALS TO INCLUDE, BUT NOT BE LIMITED TO, APPROVED VEGETATIVE STABILIZATION PRACTICES, RIPRAP OR OTHER APPROVED STABILIZATION METHODS.
- SERRATED SLOPE AS SHOWN IN DETAIL B-3-2. THE STEEPEST ALLOWABLE SLOPE FOR RIPABLE ROCK IS 1.5:1. FOR NON ROCK SURFACES, THE SLOPES ARE TO BE 2:1 OR FLATTER. THESE STEPS WILL WEATHER AND ACT TO HOLD MOISTURE, LIME, FERTILIZER AND SEED THUS PRODUCING A MUCH QUICKER AND LONGER LIVED VEGETATIVE COVER AND BETTER SLOPE STABILIZATION.
- SUBSURFACE DRAINAGE PROVISIONS, PROVIDE SUBSURFACE DRAINAGE WHERE NECESSARY TO INTERCEPT SEEPAGE THAT WOULD OTHERWISE ADVERSELY AFFECT SLOPE STABILITY OR CREATE EXCESSIVELY WET SITE CONDITIONS.
- PROXIMITY TO ADJACENT PROPERTY. SLOPES MUST NOT BE CREATED CLOSE TO PROPERTY LINES WITHOUT ADEQUATE PROTECTION AGAINST SEDIMENTATION, EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE, OR OTHER RELATED DAMAGES.
- QUALITY OF FILL MATERIAL. FILL MATERIAL MUST BE FREE OF BRUSH, RUBBISH, LOGS, STUMPS, BUILDING DEBRIS, AND OTHER OBJECTIONABLE MATERIAL. DO NOT PLACE FROZEN MATERIALS IN THE FILL NOR PLACE THE FILL MATERIAL ON A FROZEN FOUNDATION.
- STABILIZATION. STABILIZE ALL DISTURBED AREAS STRUCTURALLY OR VEGETATIVELY IN COMPLIANCE WITH SECTION B-4 STANDARDS AND SPECIFICATIONS FOR STABILIZATION PRACTICES.

MAINTENANCE

THE LINE, GRADE, AND CROSS SECTION OF BENCHING AND SERRATED SLOPES MUST BE MAINTAINED. BENCHES AND SERRATED SLOPES MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

STOCKPILE AREA

PURPOSE

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CRITERIA

- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
- THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
- RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
- ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/77 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
- IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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."

10/2/15
DATE
10/2/15
DATE

DEVELOPER'S CERTIFICATE

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

10/2/15
DATE
10/2/15
DATE

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

10/14/15
DATE
10/14/15
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS

10/21/2015
DATE
10/21/2015
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT

11-13-15
DATE
11-13-15
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION

11-9-15
DATE
11-9-15
DATE

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

PURPOSE

TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL.

CONDITIONS WHERE PRACTICE APPLIES

ON ALL DISTURBED AREAS NOT STABILIZED BY OTHER METHODS. THIS SPECIFICATION IS DIVIDED INTO SECTIONS ON INCREMENTAL STABILIZATION; SOIL PREPARATION, SOIL AMENDMENTS AND TOPSOILING; SEEDING AND MULCHING; TEMPORARY STABILIZATION; AND PERMANENT STABILIZATION.

EFFECTS ON WATER QUALITY AND QUANTITY

STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUNOFF TO DOWNSTREAM AREAS. PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION, EVAPORATION, TRANSPARATION, PERCOLATION, AND GROUNDWATER RECHARGE. OVER TIME, VEGETATION WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH. VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERBODIES. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE ROOT ZONE. SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

ADEQUATE VEGETATIVE ESTABLISHMENT

INSPECT SEEDED AREAS FOR VEGETATIVE ESTABLISHMENT AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

- ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUND COVER.
- IF AN AREA HAS LESS THAN 40 PERCENT GROUND COVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.
- IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUND COVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.
- MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

PURPOSE

TO PROVIDE TIMELY VEGETATIVE COVER ON CUT AND FILL SLOPES AS WORK PROGRESSES.

CONDITIONS WHERE PRACTICE APPLIES

ANY CUT OR FILL SLOPE GREATER THAN 15 FEET IN HEIGHT. THIS PRACTICE ALSO APPLIES TO STOCKPILES.

CRITERIA

- INCREMENTAL STABILIZATION - CUT SLOPES
 - EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL SLOPES AS THE WORK PROGRESSES.
 - CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.1):
 - CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.
 - PERFORM PHASE 1 EXCAVATION, PREPARE SEEDBED, AND STABILIZE.
 - PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
 - PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDDED AREAS AS NECESSARY.

NOTE: ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

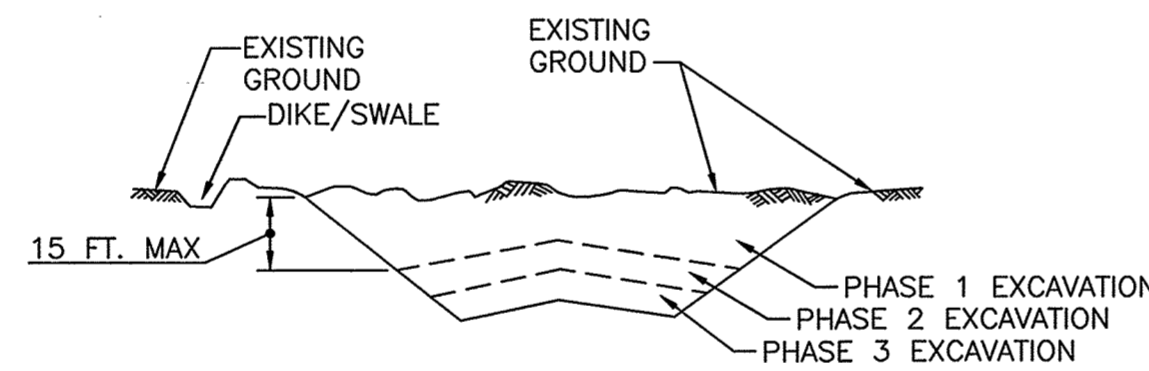


FIGURE B.1: INCREMENTAL STABILIZATION - CUT

- INCREMENTAL STABILIZATION - FILL SLOPES
 - CONSTRUCT AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL SLOPES AS THE WORK PROGRESSES.
 - STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET, OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.
 - AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
 - CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.2):
 - CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SILT FENCE ON LOW SIDE OF FILL UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
 - AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
 - PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.
 - PLACE PHASE 2 FILL, PREPARE SEEDBED, AND STABILIZE.
 - PLACE FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDDED AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

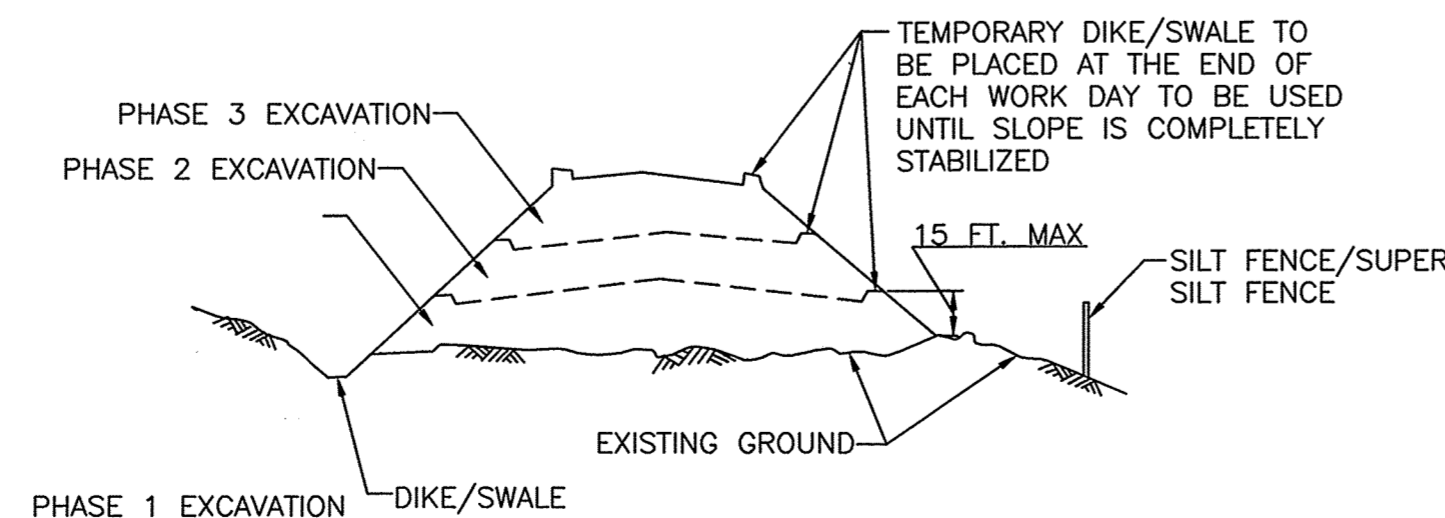


FIGURE B.2: INCREMENTAL STABILIZATION - FILL

STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

PURPOSE

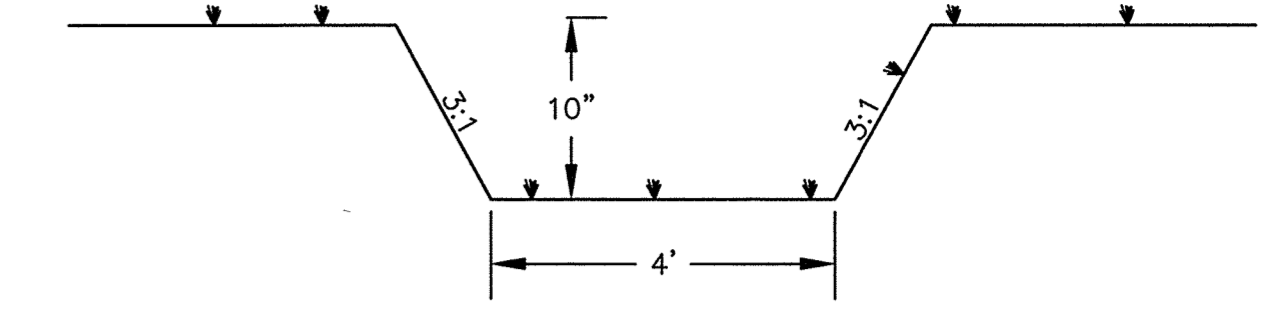
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

- SOIL PREPARATION
 - TEMPORARY STABILIZATION
 - SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - PERMANENT STABILIZATION
 - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - SOIL PH BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR DISKED TO A DEPTH OF 3 TO 5 INCHES.
 - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 3 INCHES OF SOIL LOOSE AND FRAGILE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
- TOPSOILING
 - TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
 - TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
 - TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
 - AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
 - TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.
 - TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
 - TOPSOIL APPLICATION
 - EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 - UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
- SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
 - SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
 - FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
 - LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
 - LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.
 -



TYPICAL SWALE DETAIL

REVISIONS		
NO.	DATE	BY

OWNER/DEVELOPER:
LINDA L. ARMSTRONG
9309 WHISKEY BOTTOM ROAD
LAUREL, MD 20732
301-776-5600

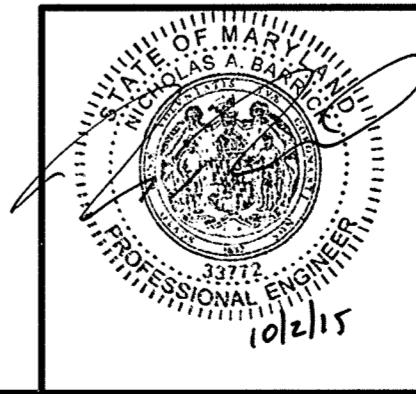
BUTTERFIELD GROVE
LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6
SEDIMENT AND EROSION CONTROL NOTES

TAX MAP: 47 GRID: 22 PARCEL: 191
ZONED: R-SC
ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND

DESIGN NAB DATE 10/02/15
DRAWN BRA SCALE AS SHOWN

KCI PROJECT NO. 27121943
SHEET NO. 8 OF 14

SHEET NO. C-3.01



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

- CRITERIA**
- SEEDING
 - ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
 - MULCH ALONE MAY BE APPLIED BEFORE THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
 - INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
 - SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
 - APPLICATION
 - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 - INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDING MUST BE FIRM AFTER PLANTING.
 - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 - IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHORUS), 200 POUNDS PER ACRE TOTAL OF SOLUBLE PHOSPHORUS; 200 POUNDS PER ACRE TOTAL OF SOLUBLE POTASH.
 - LIME: USE ONLY GRADED AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
 - MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

- MULCHING
 - MULCH MATERIALS (IN ORDER OF PREFERENCE)
 - STRAW CONSISTING OF THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER. ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
 - APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 - WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- ANCHORING
 - PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD.
 - A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
 - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - SYNTHETIC BINDERS SUCH AS ACRYLIC DLP (AGRO-TACK), DCA-70, PETROSET, TERRA TAC II, TERRA TACK AIR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
 - LEIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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.

10/2/15
DATE

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

10/2/15
DATE

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

10/4/15
DATE

APPROVED—HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
10/21/2015
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
11-13-15
DATE

STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

PURPOSE
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

- CRITERIA**
- SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
 - FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
 - WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING TABLE

HARDINESS ZONE (FROM FIGURE B.3): 6B					FERTILIZER RATE (10-20-20)	LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS		
1	BARLEY	96	3/1-5/31 8/1-10/15	1.0"	436 LB/AC (10LB/1000SF)	2 TONS/AC (90LB/1000SF)
2	CEREAL RYE	112	3/1-5/15 8/1-11/15	1.0"		
3	FOXTAIL MILLET	30	5/16-7/31	0.5"		

STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

PURPOSE
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

- CRITERIA**
- SEED MIXTURES
 - GENERAL USE
 - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
 - FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
 - FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
 - TURFGRASS MIXTURES
 - AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
 - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL, MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
 - TALL FESCUE/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.
 - IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
 - WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
 - CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
 - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

PERMANENT SEEDING TABLE

HARDINESS ZONE (FROM FIGURE B.3): 6B					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P2O5	K2O	
4	DEERTONGUE CREEPING RED FESCUE VIRGINIA WILD RYE	15 20 5	3/1-5/15 5/16-6/15	0.5"	45LB/AC (1LB/ 1000SF)	90LB/AC (2LB/ 1000SF)	90LB/AC (2LB/ 1000SF)	2 TONS/AC (90LB/ 1000SF)
6	TALL FESCUE PERENNIAL RYEGRASS WHITE CLOVER	40 25 5	3/1-5/15 8/1-10/15	0.5"				
9	TALL FESCUE KENTUCKY BLUEGRASS	60 40	3/1-5/15 8/1-10/15	0.5"				

PERMANENT SEEDING TABLE

HARDINESS ZONE (FROM FIGURE B.3): 6B					FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P2O5	K2O	
4	DEERTONGUE CREEPING RED FESCUE VIRGINIA WILD RYE	15 20 5	3/1-5/15 5/16-6/15	0.5"	45LB/AC (1LB/ 1000SF)	90LB/AC (2LB/ 1000SF)	90LB/AC (2LB/ 1000SF)	2 TONS/AC (90LB/ 1000SF)
6	TALL FESCUE PERENNIAL RYEGRASS WHITE CLOVER	40 25 5	3/1-5/15 8/1-10/15	0.5"				
9	TALL FESCUE KENTUCKY BLUEGRASS	60 40	3/1-5/15 8/1-10/15	0.5"				

- SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).
 - GENERAL SPECIFICATIONS
 - CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
 - SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/4 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
 - STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
 - SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
 - SOD MUST BE DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
 - SOD INSTALLATION
 - DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
 - LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
 - WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
 - WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
 - SOD MAINTENANCE
 - IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
 - AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
 - DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/4 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

ALL NUMERIC VALUES EXCEPT APPARENT OPENING SIZE (AOS) REPRESENT MINIMUM AVERAGE ROLL VALUES (MARV). MARV IS CALCULATED AS THE TYPICAL MINUS TWO STANDARD DEVIATIONS. MD IS MACHINE DIRECTION; CD IS CROSS DIRECTION.

VALUES FOR AOS REPRESENT THE AVERAGE MAXIMUM OPENING.

GEOTEXTILES MUST BE EVALUATED BY THE NATIONAL TRANSPORTATION PRODUCT EVALUATION PROGRAM (NTPPE) AND CONFORM TO THE VALUES IN TABLE H.1.

THE GEOTEXTILE MUST BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS AND MUST BE ROT AND MILDEW RESISTANT. THE GEOTEXTILE MUST BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS AND COMPOSED OF A MINIMUM OF 95 PERCENT BY WEIGHT OF POLYOLEFINS OR POLYESTERS, AND FORMED INTO A STABLE NETWORK SO THE FILAMENTS OR YARNS RETAIN THEIR DIMENSIONAL STABILITY RELATIVE TO EACH OTHER, INCLUDING SALVAGES.

WHEN MORE THAN ONE SECTION OF GEOTEXTILE IS NECESSARY, OVERLAP THE SECTIONS BY AT LEAST ONE FOOT. THE GEOTEXTILE MUST BE PULLED TAUT OVER THE APPLIED SURFACE. EQUIPMENT MUST NOT RUN OVER EXPOSED FABRIC. WHEN PLACING RIPRAP ON GEOTEXTILE, DO NOT EXCEED A ONE FOOT DROP HEIGHT.

GEOTEXTILE FABRICS

PROPERTY	TEST METHOD	WOVEN SILT FILM GEOTEXTILE		WOVEN MONOFILAMENT GEOTEXTILE		NONWOVEN GEOTEXTILE	
		MD	CD	MD	CD	MD	CD
GRAB TENSILE STRENGTH	ASTM D-4632	200 LB	200 LB	370 LB	250 LB	200 LB	200 LB
GRAB TENSILE ELONGATION	ASTM D-4632	15%	10%	15%	15%	50%	50%
TRAPEZOIDAL TEAR STRENGTH	ASTM D-4533	75 LB	75 LB	100 LB	60 LB	80 LB	80 LB
PUNCTURE STRENGTH	ASTM D-6241	450 LB		900 LB		450 LB	
APPARENT OPENING SIZE ²	ASTM D-4751	U.S. SIEVE 30 (0.59 mm)		U.S. SIEVE 70 (0.21 mm)		U.S. SIEVE 70 (0.21 mm)	
PERMITTIVITY	ASTM D-4491	0.05 SEC ⁻¹		0.28 SEC ⁻¹		1.1 SEC ⁻¹	
ULTRAVIOLET RESISTANCE RETAINED AT 500 HOURS	ASTM D-4355	70% STRENGTH		70% STRENGTH			

TABLE H.2: STONE SIZE

TYPE	SIZE RANGE	D50	D100	AASHTO	MIDSIZE WEIGHT ³
NUMBER 57 ¹	3/8 TO 1-1/2 INCH	1/2 IN	1-1/2 IN	M-43	N/A
NUMBER 1	2 TO 3 INCH	2-1/2 IN	3 IN	M-43	N/A
RIPRAP ² (CLASS 0)	4 TO 7 INCH	5-1/2 IN	7 IN	N/A	N/A
CLASS I	N/A	9-1/2 IN	15 IN	N/A	40 LB
CLASS II	N/A	16 IN	24 IN	N/A	200 LB
CLASS III	N/A	23 IN	34 IN	N/A	600 LB

1 THIS CLASSIFICATION IS TO BE USED ON THE UPSTREAM FACE OF STONE OUTLETS AND CHECK DAMS.

2 THIS CLASSIFICATION IS TO BE USED FOR GABIONS.

3 OPTIMUM GRADATION IS 50 PERCENT OF THE STONE BEING ABOVE AND 50 PERCENT BELOW THE MIDSIZE.

STONE MUST BE COMPOSED OF A WELL GRADED MIXTURE OF STONE SIZE SO THAT FIFTY (50) PERCENT OF THE PIECES BY WEIGHT ARE LARGER THAN THE SIZE DETERMINED BY USING THE CHARTS. A WELL GRADED MIXTURE, AS USED HEREIN, IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF LARGER SIZE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE IN SUCH A MIXTURE MUST NOT EXCEED THE RESPECTIVE D100 SELECTED FROM TABLE H.2. THE D50 REFERS TO THE MEDIAN DIAMETER OF THE STONE. THIS IS THE SIZE FOR WHICH 50 PERCENT, BY WEIGHT, WILL BE SMALLER AND 50 PERCENT WILL BE LARGER.

NOTE: RECYCLED CONCRETE EQUIVALENT MAY BE SUBSTITUTED FOR ALL STONE CLASSIFICATIONS FOR TEMPORARY CONTROL MEASURES ONLY. CONCRETE BROKEN INTO THE SIZES MEETING THE APPROPRIATE CLASSIFICATION, CONTAINING NO STEEL REINFORCEMENT, AND HAVING A MINIMUM DENSITY OF 150 POUNDS PER CUBIC FOOT MAY BE USED AS AN EQUIVALENT.

DETAIL C-9 DIVERSION FENCE

CONSTRUCTION SPECIFICATIONS

- USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2 1/2 INCH MAXIMUM OPENING).
- USE 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
- FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
- SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
- EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
- WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
- KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

C.27

ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS

KCI TECHNOLOGIES

1180 West Market Place
Suite A
Plexton, MD 20759
Telephone: (410) 792-8086
Fax: (410) 792-7419

REVISIONS

NO.	DATE	BY

OWNER/DEVELOPER:
LINDA L. ARMSTRONG
9309 WHISKEY BOTTOM ROAD
LAUREL, MD 20732
301-776-5600

BUTTERFIELD GROVE
LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6

SEDIMENT AND EROSION CONTROL NOTES

TAX MAP: 47 GRID: 22 PARCEL: 191
ZONED: R-SC
ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND

DESIGN NAB DATE 10/02/15
DRAWN BRA SCALE AS SHOWN SHEET NO. 9 OF 14

KCI PROJECT NO. 27121943
SHEET NO. C-3.02

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

SEQUENCE OF CONSTRUCTION

CONTRACTOR TO NOTIFY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, FIVE (5) DAYS PRIOR TO CONTRACTOR'S ANTICIPATED DATE TO BEGIN CONSTRUCTION.

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES GREATER THAN 3:1, AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE.

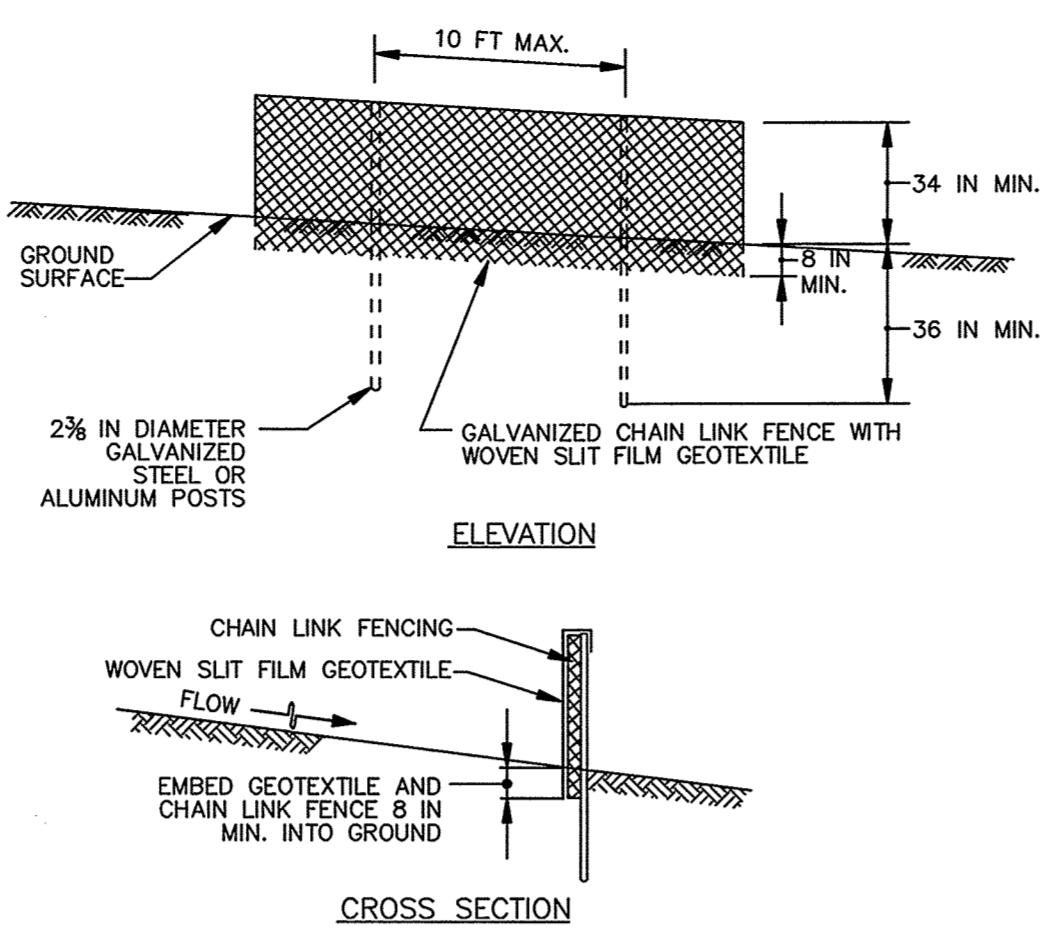
1. NOTIFY MISS UTILITY AT LEAST 48 HOURS IN ADVANCE OF WORK ON SITE. 1 DAY
2. CLEAR FOR AND INSTALL SEDIMENT CONTROL MEASURES (IE. SILT FENCE, TREE PROTECTION FENCE, STONE CONSTRUCTION ENTRANCE). NOTIFY INSPECTOR UPON COMPLETION OF SEDIMENT CONTROL MEASURES INSTALLATION. 7 DAYS
3. UPON INSTALLATION OF THE SEDIMENT AND EROSION CONTROL DEVICES, CONTRACTOR SHALL BEGIN DEMOLISHING EXISTING STRUCTURES AND CLEARING AND GRUBBING 14 DAYS
4. CONTRACTOR TO BEGIN TO ROUGH GRADE THE SITE. EXCAVATE FOR AND INSTALL WATER, SEWER, AND STORM DRAINS AS SHOWN ON THE PLAN. 30 DAYS
5. CONTRACTOR TO FINE GRADE FOR AND INSTALL PROPOSED BUILDINGS, DRIVE, AND OTHER SITE FEATURES SHOWN ON THE PLAN. 90 DAYS
6. ONCE CONSTRUCTED, AND DRAINAGE AREAS STABILIZED, CONTRACTOR TO EXCAVATE & INSTALL MICRO-BIOTRETENTION FACILITIES AND LANDSCAPING. PERMANENTLY STABILIZE ALL DISTURBED AREAS 14 DAYS
7. EROSION AND SEDIMENT CONTROL PRACTICES AND SITE IN GENERAL, MUST BE INSPECTED WEEKLY AND AFTER EACH RAINFALL EVENT, BY THE CONTRACTOR, OR OTHER RESPONSIBLE PERSON, AND ANY NEEDED MAINTENANCE PERFORMED IMMEDIATELY. ON-GOING
8. ONCE 95% GRASS COVER IS ATTAINED, REMOVE SEDIMENT CONTROLS. 3 DAYS
9. SEDIMENT AND EROSION CONTROLS CANNOT BE REMOVED UNTIL THE SITE HAS ADEQUATE STABILIZATION. ONCE VEGETATION HAS BEEN ESTABLISHED, THE SITE SHALL HAVE 95% GROUND COVER TO BE CONSIDERED ADEQUATELY STABILIZED AND THE SEDIMENT CONTROL INSPECTOR HAVE APPROVED SUCH REMOVAL. ALL AREAS WHERE SEDIMENT AND EROSION CONTROL DEVICES HAVE BEEN REMOVED SHALL BE STABILIZED IMMEDIATELY WITH SEED AND MULCH 1 DAY

STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
6. SITE ANALYSIS:
 TOTAL AREA OF SITE 3.10 ACRES
 AREA DISTURBED 1.10 ACRES
 AREA TO BE ROOFED OR PAVED 0.30 ACRES
 AREA TO BE VEGETATIVELY STABILIZED 0.69 ACRES
 TOTAL CUT 75 CU. YDS.
 TOTAL FILL 75 CU. YDS.
 OFFSITE WASTE/BORROW ARE LOCATION N/A
7. ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
9. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF PERIMETER EROSION AND SEDIMENT CONTROL STRUCTURES, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
10. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
11. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
12. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL
SSF



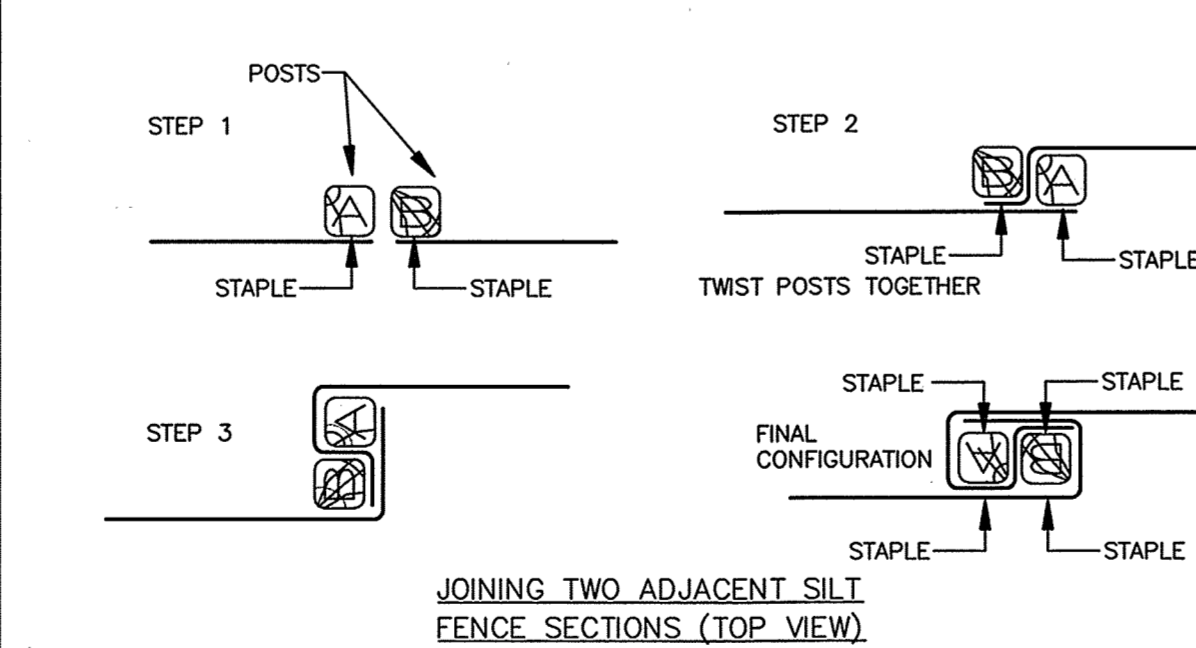
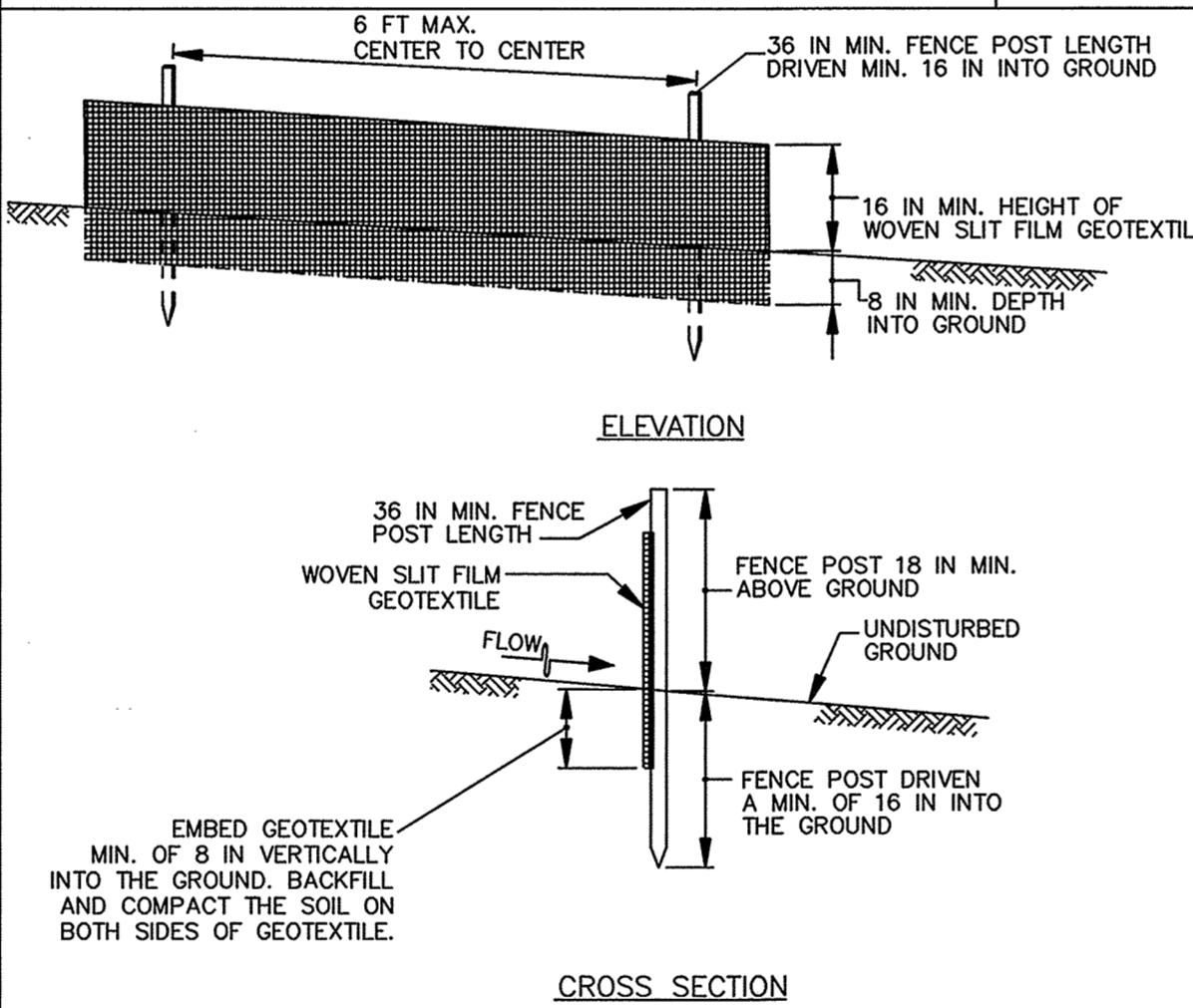
CONSTRUCTION SPECIFICATIONS

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

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

DETAIL E-1 SILT FENCE

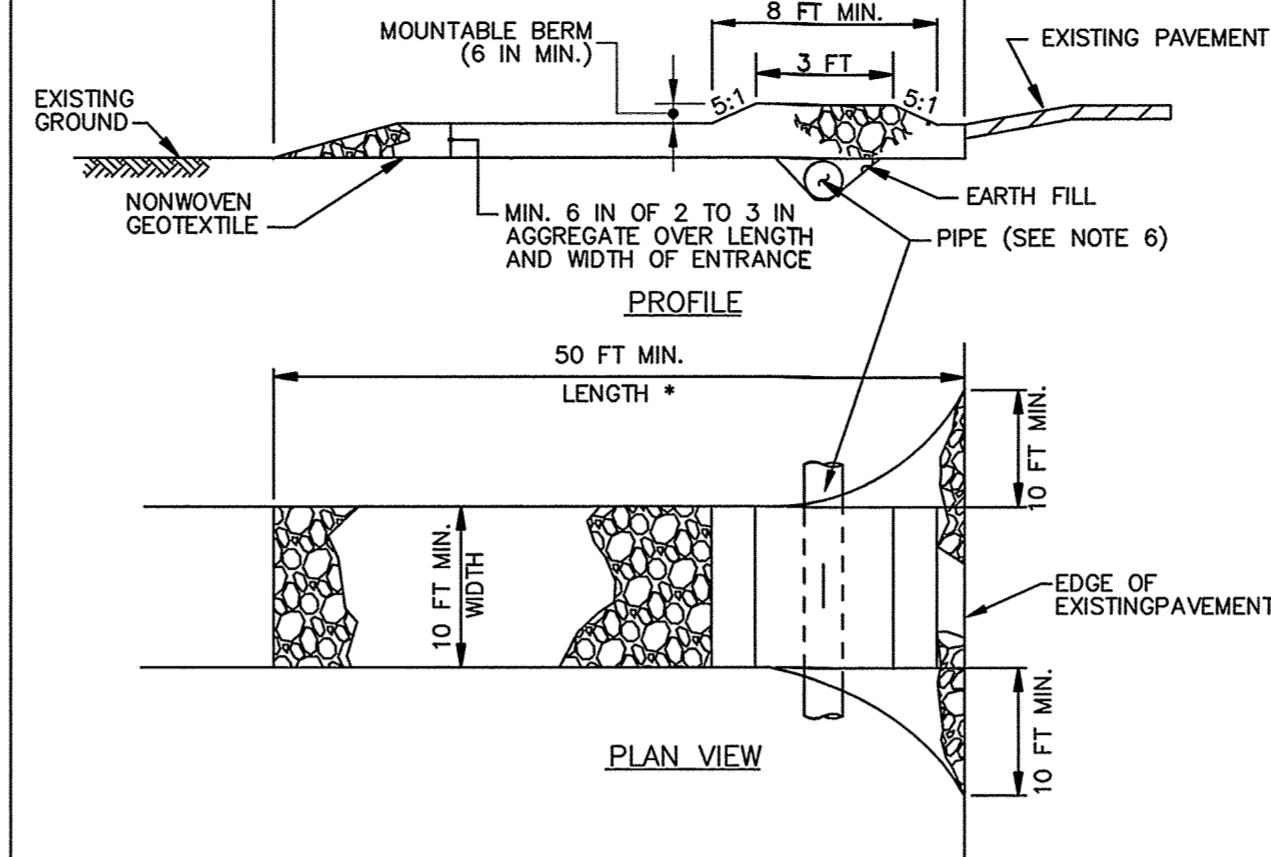
STANDARD SYMBOL
SF



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

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL
SC



CONSTRUCTION SPECIFICATIONS

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

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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL
SF

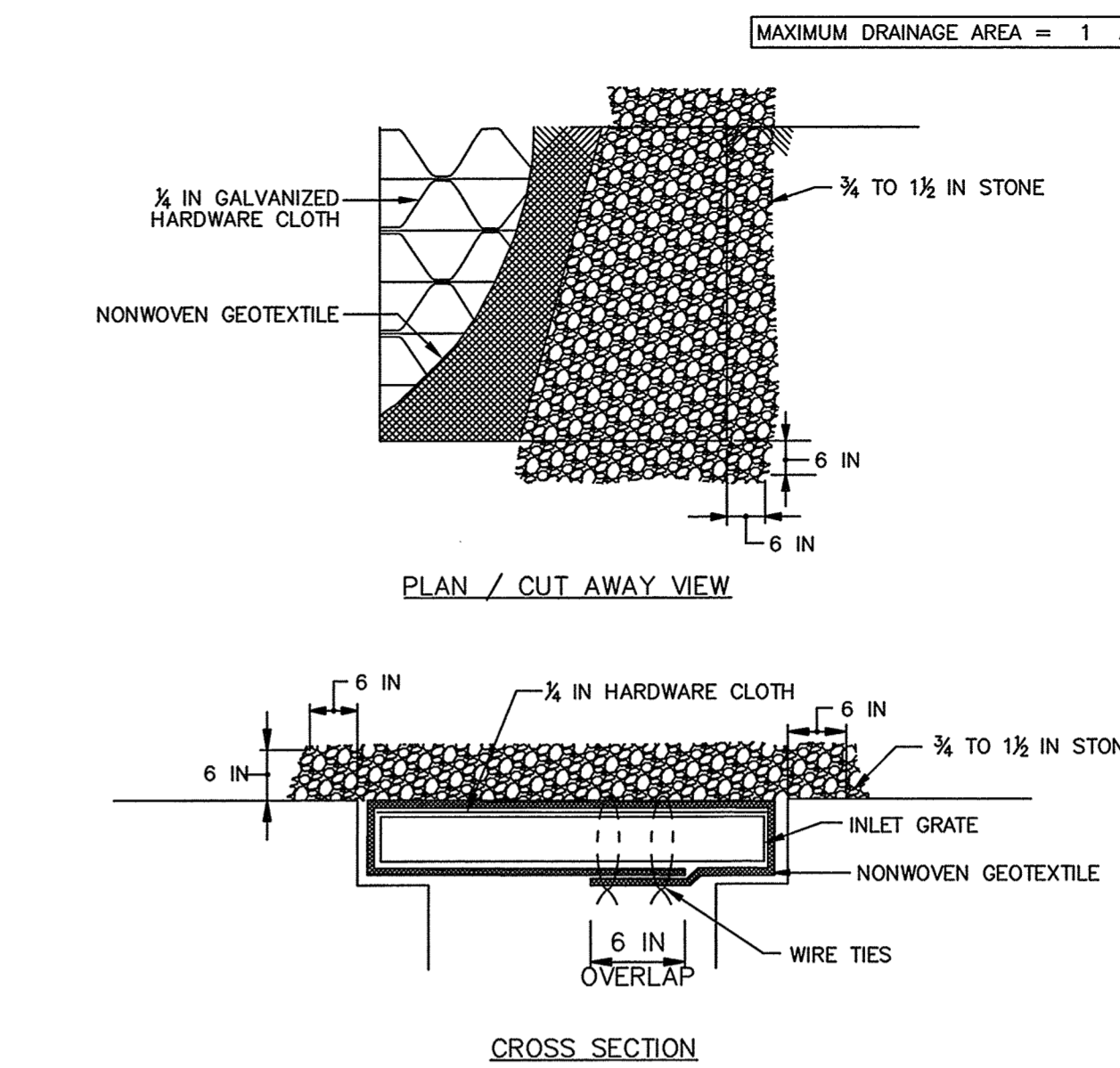
CONSTRUCTION SPECIFICATIONS

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

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

DETAIL E-9-2 AT-GRADE INLET PROTECTION

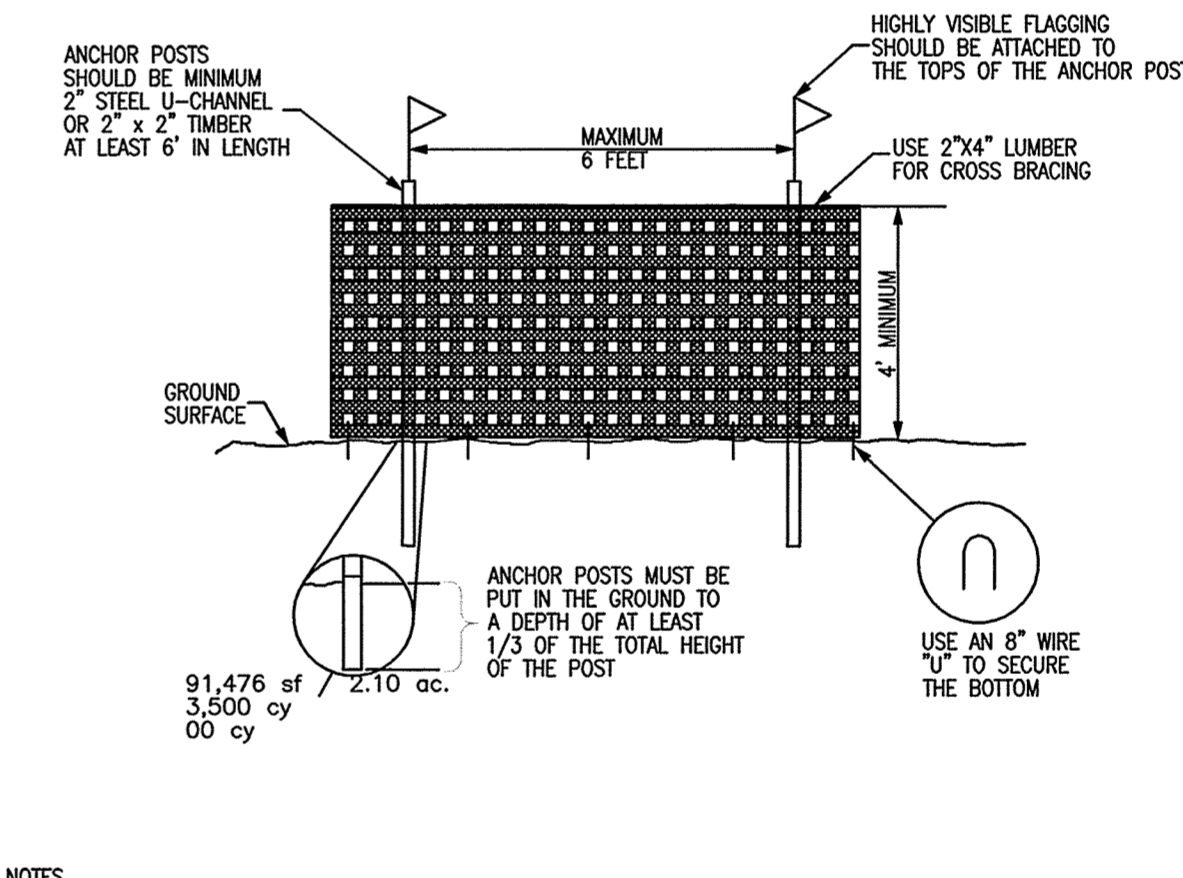
STANDARD SYMBOL
AGIP



CONSTRUCTION SPECIFICATIONS

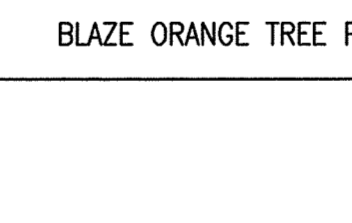
1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4.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

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



GENERAL NOTES

1. Limits of disturbance will be set as part of the review process for an approved TCP.
2. The boundaries of the limits of disturbance should be staked or flagged prior to erecting the protection device.
3. Anchor posts should be placed to avoid severing or damaging large tree roots.
4. Fencing material shall be fastened securely to the anchor posts, cross bracing and ground.



OWNER/DEVELOPER:
 LINDA L. ARMSTRONG
 9309 WHISKEY BOTTOM ROAD
 LAUREL, MD 20732
 301-776-5600

REVISIONS			
NO.	DATE	BY	

TAX MAP: 47	GRID: 22	PARCEL: 191
ZONED: R-SC	ELECTION DISTRICT NO. 6 - HOWARD	COUNTY MARYLAND
DESIGN NAB	DATE 10/02/15	KCI PROJECT NO. 27121943
DRAWN BRA	SCALE AS SHOWN	SHEET NO. 10 OF 14

KCI TECHNOLOGIES

ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION MANAGERS

11850 WEST MARKET PLACE
 SUITE A
 FULFORD, MD 20759
 TELEPHONE: (410) 792-8086
 FAX: (410) 792-7419

ENGINEER'S CERTIFICATE
 I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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.
 ENGINEER Linda L. Armstrong 10/2/15 DATE

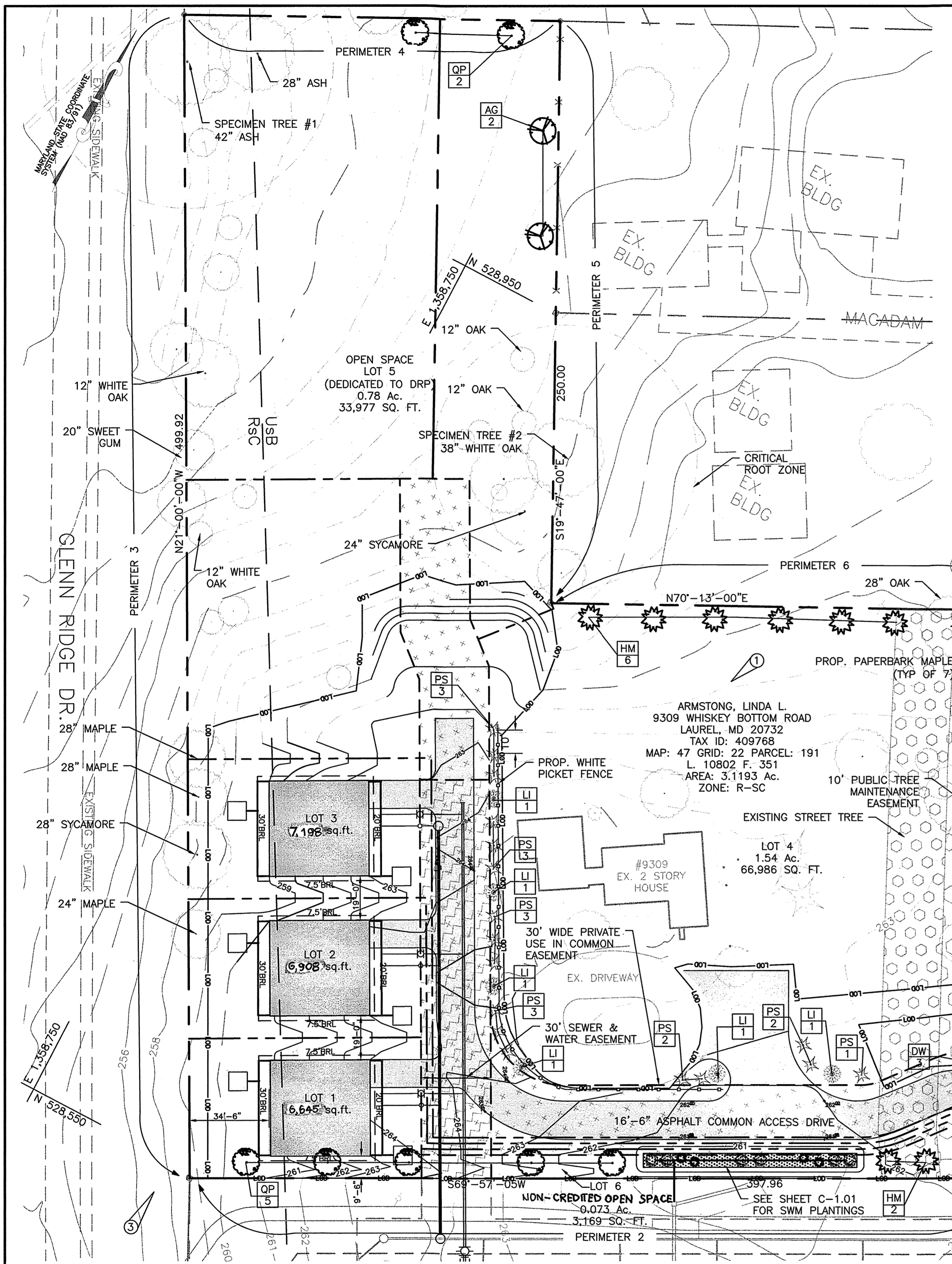
DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.
 DEVELOPER Linda L. Armstrong 10/2/15 DATE

REVIEWED BY HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD SOIL CONSERVATION DISTRICT [Signature] 10/2/15 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 10/2/2015 DATE
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 11-3-15 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 11-9-15 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



SCHEDULE 'A' PERIMETER LANDSCAPE EDGE

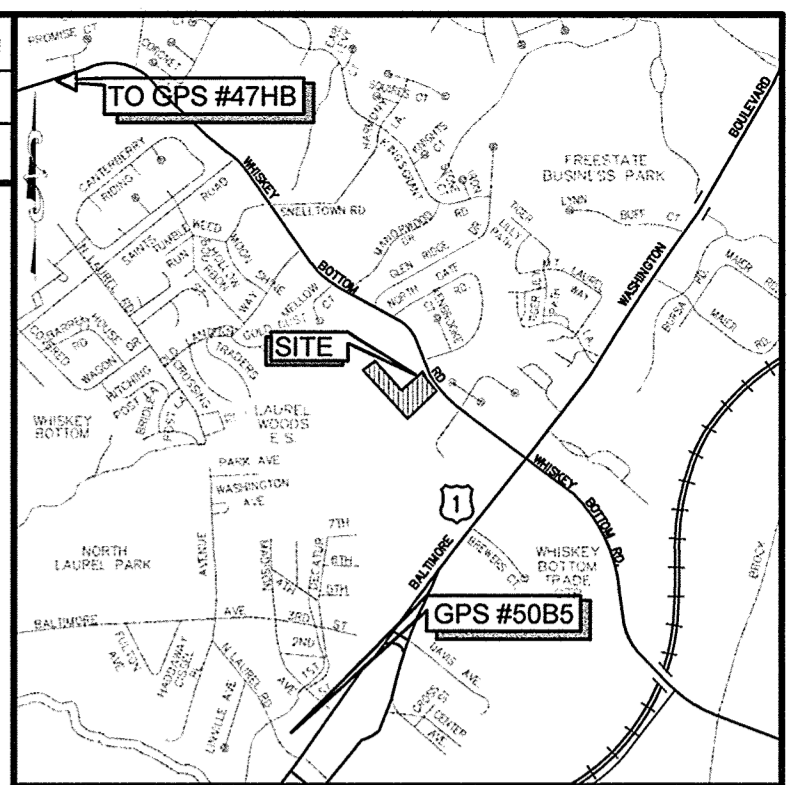
CATEGORY	2 SOUTHEAST PROPERTY LINE	3 WEST PROPERTY LINE	4 NORTH PROPERTY LINE	5 NORTHEAST PROPERTY LINE	6 NORTH PROPERTY LINE
LANDSCAPE TYPE	A	A	A	A	A
LINEAR FEET OF PERIMETER	357'	500'	162'	250'	210'
CREDIT FOR EXISTING VEGETATION REQUIRED	NO	8 TREES	1 TREE	3 TREES	1 TREE
NUMBER OF PLANTS REQUIRED					
-SHADE TREES	6	8	3	4	4
-EVERGREEN TREES	0	0	0	0	0
-SHRUBS	0	0	0	0	0
NUMBER OF PLANTS PROVIDED					
-SHADE TREES	5	0	2	0	0
-EVERGREEN	0	0	0	0	0
-SHRUBS	0	0	0	0	0
-ORNAMENTAL	2	0	0	2	6

NOTE:
 • ADDITIONAL SCREENING BETWEEN THE PROPOSED HOUSES AND EXISTING HOUSE IS IN ACCORDANCE WITH THE HISTORIC DISTRICT COMMISSION RECOMMENDATION.
 • ADDITIONAL SHRUB PLANTINGS ARE REQUIRED FOR SCREENING OF THE COMMUNITY TRASH PAD.

POINT	NORTHING	EASTING	ELEVATION
#47HB	531895.78	1356076.26	296.82
#50B5	524999.33	1357925.66	177.42

BENCHMARK DATA

POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
1	528843.43	1358936.29	261	REBAR & CAP
2	528725.53	1359148.14	264	REBAR & CAP
3	528534.23	1358816.57	257.5	REBAR & CAP



VICINITY MAP
 SCALE: 1" = 2000'
 ADC MAP 40, GRID D7

LEGEND

---	PROPERTY LINE	○	PIPE
- - -	ADJOINING PROPERTY LINE	○	MANHOLE
---	EXISTING BUILDING LINE	○	UTILITY POLE
---	EXISTING CONTOUR	○	GUY WIRE
---	EXISTING TREELINE	○	LIGHT POLE
---	EXISTING EDGE OF PAVEMENT	○	FIRE HYDRANT
---	EXISTING TREE	○	RESIDENTIAL MAILBOX
---	PROPOSED LOT LINE	○	SIGN
---	PROPOSED BUILDING SETBACK LINE	○	FLOOD LIGHT
---	PROPOSED FULL DEPTH ASPHALT	○	CONCRETE MONUMENT
---	PROPOSED IMPERVIOUS AREA	○	BUSH
---	PROPOSED LAND DEDICATION	○	CONIFEROUS TREE
---	LOD - LIMIT OF DISTURBANCE	○	DECIDUOUS TREE
---	SSF - SUPER SILT FENCE	○	EDGE OF WOODS
---	30' PUBLIC SEWER, WATER, & UTILITY EASEMENT 5,141 SQ. FT.	○	FENCE
---	PRIVATE ACCESS EASEMENT	○	HEDGE
---		○	UNDERGROUND STORM DRAIN PIPE
---		○	EXISTING WATER
---		○	EXISTING GAS
---		○	EXISTING OVERHEAD ELECTRIC
---		○	PROPOSED SEWER
---		○	PROPOSED WATER
---		○	10' PUBLIC TREE MAINTENANCE EASEMENT

BGE ZONE LEGEND

○	GREEN ZONE
○	YELLOW ZONE

DEVELOPER'S/BUILDER'S CERTIFICATION

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF NOTICE, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Linda Armstrong
 DEVELOPER 10/02/2015
DATE

MISS UTILITY

CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE.

GRAPHIC SCALE

30 0 30 60
 SCALE: 1" = 30'

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS
 11850 West Market Place
 Suite A
 Fulton, MD 20739
 Telephone: (410) 792-8886
 Fax: (410) 792-7419

SPECIMEN TREE TABLE

TREE	SIZE	TYPE	CONDITION
#1	42"	ASH (FRAXINUS ORNUS)	GOOD
#2	38"	WHITE OAK (QUERCUS ALBA)	GOOD

SOILS TABLE

SYMBOL	DESCRIPTION	HYDROLOGIC SOILS GROUP
UsB	URBAN LAND-SASSAFRAS-BELTSVILLE COMPLEX, 0 TO 5 PERCENTS SLOPES	D
RsC	URBAN LAND-WOODSTOWN-SASSAFRAS COMPLEX, 5 TO 10 PERCENT SLOPES	C

PLANTING SCHEDULE

SYMBOL	KEY	QUANTITY	NAME	SIZE	COND.	COMMENTS
○	AG	2	ACER GRISEUM "PAPERBARK MAPLE"	2.5"-3" MIN. CAL.	B&B	FULL HEAD
○	QP	7	QUERCUS PHELLOS "WILLOW OAK"	2.5"-3" CAL.	B&B	FULL CROWN
○	PS	17	PINUS STROBUS "EASTERN WHITE PINE"	6'-8" HGT.	B&B	SHEAR TO GROUND
○	LI	6	LAGERSTROEMIA INDICA "CRAPE MYRTLE"	6'-8" HGT.	B&B	
○	HM	8	ACER CAMPESTRE "HEDGE MAPLE"	1.5"-2" MIN. CAL.	B&B	
○	DW	3	CORNUS SERICEA "DOGWOOD HEDGE"			

Professional Certification. I hereby certify that these documents were prepared or approved by me and that I am duly licensed professional engineer under the laws of the State of Maryland.
 License No. 51977 - Expiration Date: 12/16/2015

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

REVISIONS			
NO.	DATE	BY	
1	12/10/20	AS BUILT	

OWNER/DEVELOPER: LINDA L. ARMSTRONG 9309 WHISKEY BOTTOM ROAD LAUREL, MD 20732 301-776-5600		BUTTERFIELD GROVE LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6 LANDSCAPING PLAN	
TAX MAP: 47 ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND		GRID: 22 ZONED: R-SC PARCEL: 191	
DESIGN NAB	DATE 10/02/15	KCI PROJECT NO. 27121943	SHEET NO.
DRAWN BRA	SCALE 1"=30'	SHEET NO. 11 OF 14	L-1.00

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Neil S. ...
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 11-13-15

Chad ...
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 11-4-15

LANDSCAPE MAINTENANCE

- I. GENERAL
 - A. ALL PLANTING AREAS, INCLUDING LAWNS, BUFFERS, AND PARKING LOTS, SHALL BE PERIODICALLY INSPECTED A MINIMUM OF ONCE PER MONTH, EVERY TWO (2) WEEKS DURING THE GROWING SEASON, OR AFTER EACH MOWING SESSION, A FALL CLEAN-UP SHALL BE PERFORMED EACH YEAR.
 - B. REMOVE ALL LITTER, DEBRIS AND WEEDS.
 - C. MAINTAIN A MINIMUM OF A 2-INCH DEPTH OF ORGANIC HARDWOOD MULCH OR EQUAL IN ALL PLANTING BEDS.
- II. IRRIGATION (IF APPLICABLE)
 - A. AUTOMATIC SPRINKLERS SHALL BE CLEANED OUT AND TURNED OFF IN THE FALL PRIOR TO THE FIRST FROST, AND TESTED WHEN TURNED ON IN THE SPRING.
 - B. EVALUATE SUCCESS OF IRRIGATION SYSTEM AND MODIFY AS NECESSARY. WATER REQUIREMENTS:
 - NEW TURF: KEEP MOIST UNTIL ALL SEED GERMINATES AND BECOMES AN ESTABLISHED STAND OF TURF. EXISTING TURF: DURING DRY PERIODS, WATER TWICE A WEEK FOR 20 MINUTES AT A TIME, OR SET IRRIGATION FOR COVERAGE OF 1-2 INCHES OF WATER PER WEEK.
- III. SEASONAL FLOWERS
 - A. ANNUAL FLOWER BEDS SHALL BE PERIODICALLY MULCHED AND THE SOIL AMENDED ANNUALLY. NEW PLANTINGS SHALL BE PROVIDED IN MAY OF EACH YEAR. DURING THE GROWING SEASON, ALL BEDS SHALL RECEIVE PERIODIC INSPECTIONS PER NOTE I, IRRIGATION AND WEEDING TO MAINTAIN A NEAT APPEARANCE.
- IV. TURF
 - A. LAWN AREAS SHALL NOT EXCEED A HEIGHT OF 4 INCHES. APPROXIMATELY 12-15 MOWINGS PER YEAR WILL BE REQUIRED.
 - B. FERTILIZER AND SOIL AMENDMENTS SHOULD BE ADDED A NECESSARY AND/OR ON A SEASONAL BASIS. FERTILIZER IS OPTIMALLY APPLIED TO LAWN AND TURF AREAS THREE TIMES PER SEASON. TIMING, FREQUENCY, AND RATE OF APPLICATION SHALL BE ADJUSTED ACCORDING TO WEATHER AND TO HORTICULTURAL AND SOIL TEST CONDITIONS FOR EACH SPECIFIC SITE. FERTILIZER SHALL BE APPLIED BY ACCEPTED METHODS ONLY. SAFETY SHALL BE OF PRIME CONSIDERATION. CARE SHALL BE TAKEN NOT TO APPLY FERTILIZER WHEN THE GROUND IS WET.
 - C. SOIL AMENDMENTS SUCH AS LIME, GYPSUM OR PEAT MOSS MAY BE TO BE ADDED TO THE SOILS OF LAWNS, TURF OR PLANTING AREAS PERIODICALLY. THE NEED FOR SUCH AMENDMENTS SHALL BE ANALYZED DURING THE PERIODIC INSPECTIONS AND IN CONJUNCTION WITH SOIL TESTS.
 - D. SOIL AMENDMENTS SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURERS' SPECIFICATIONS OR BASED UPON SOIL TEST RESULTS.

APPLY A 3-1-2 (21-7-14, 10-4-6, OR 24-4-8) 50% ORGANIC FERTILIZER TWICE A YEAR BETWEEN MARCH 15 TO APRIL 15 AND SEPTEMBER 1 TO OCTOBER 1, IF NECESSARY, TWO ADDITIONAL APPLICATIONS MAY BE MADE IN MAY AND NOVEMBER. DO NOT APPLY FERTILIZER OR SOIL AMENDMENTS WHILE TURF IS EITHER WET OR UNDER EXTREME STRESS, IN WINDY CONDITIONS, OR WHEN CHILDREN ARE PRESENT.
- V. PRUNING
 - A. REMOVAL OF DEAD, DISEASED, INSECT INFESTED OR WEAK WOOD SHALL TAKE PLACE IN THE DORMANT SEASON.
 - B. OR AFTER FLOWERING, EXCESSIVE SHOOTS AND SUCKERS SHALL BE REMOVED.
 - C. SHRUB MATERIAL USED AS A SCREEN SHALL BE PRUNED AS A MASS TO ENHANCE THEIR NATURAL FORM. HEDGES
 - D. ROOT PRUNING OF TREES ADJACENT TO CURBS OR SIDEWALKS SHALL OCCUR DURING PERIODIC INSPECTIONS.
 - E. WITH KNOWLEDGE OF MOST RECENT PRUNING, NO MORE THAN 1/3 OF ROOT SYSTEM SHALL BE PRUNED DURING A YEAR.
- VI. INSECT AND DISEASE CONTROL
 - A. THE CONTROL OF INSECTS AND DISEASE ASSOCIATED WITH ALL PLANTING AREAS SHALL ALWAYS BE A MAINTENANCE PRIORITY. ALL PLANTINGS, INCLUDING EXISTING MATURE TREES, SHALL BE PERIODICALLY INSPECTED FOR INSECT OR DISEASE INFESTATION. METHODS UTILIZED TO CONTROL INSECTS OR DISEASE MAY RANGE FROM SPRAYING AND PRUNING TO PLANT REMOVAL. WHATEVER METHOD IS UTILIZED, SAFETY AND CONTROL SHALL BE OF PRIME CONCERN. TRAINED AND CERTIFIED PERSONNEL SHALL PERFORM THESE TASKS.
- VII. RENOVATION
 - A. RENOVATION INCLUDES THE RESEEDING OR REPLANTING OF LANDSCAPE AREAS DAMAGED, DESTROYED OR FAILING DUE TO INSECTS, DISEASE, WEATHER OR PHYSICAL DAMAGE.
 - B. LAWN -- ALL AREAS WHERE SOIL HAS BEEN EXPOSED SHALL BE RENOVATED DURING THE NEXT PLANNING SEASON. PROPER HORTICULTURAL AND SOIL EROSION PREVENTION METHODS SHALL BE UTILIZED. IF SOIL EROSION HAS OCCURRED, THE AREA SHALL BE REPAIRED WITH A SEED MIXTURE COMPATIBLE TO EXISTING PLANTINGS SHALL BE UTILIZED.
 - C. PLANTINGS -- ALL PLANTINGS WHICH ARE DAMAGED OR DESTROYED SHALL BE REPLACED DURING THE NEXT GROWING SEASON. A FAILING, DAMAGED OR DESTROYED LANDSCAPE SCREEN OR BUFFER MUST BE RENOVATED OR REPLACED WITHIN A REASONABLE PERIOD OF TIME, BUT NOT TO EXCEED THE SUBSEQUENT ROWING SEASON.
- VIII. SITE AMENITIES
 - A. BENCHES, PATHS, BICYCLE RACKS, TRASH RECEPTACLES AND SIGNS SHALL BE INSPECTED AT LEAST TWICE A YEAR, ONCE IN MARCH AND ONCE IN AUGUST, TO DETERMINE THEIR CONDITION. ANY DAMAGED, WORN OR UNSAFE CONDITIONS SHALL BE RECTIFIED IMMEDIATELY.
- IX. PAVED SURFACES
 - A. ALL PAVED SURFACES, CONCRETE SIDEWALKS, ASPHALT PAVEMENT AND DECORATIVE PAVEMENT SHALL BE INSPECTED ON A REGULAR BASIS. ALL SUCH SURFACES SHALL BE INSPECTED AT LEAST ONCE PER MONTH.
 - B. TRASH, STAINS AND/OR OBSTRUCTIONS SHALL BE REMOVED IMMEDIATELY. PAVEMENT SHALL BE INSPECTED FOR DAMAGE, CRACKS, AND/OR POT HOLES, AND RETURNED TO THEIR ORIGINAL CONDITIONS.
 - C. SNOW SHALL BE REMOVED DURING AND FOLLOWING EVERY STORM. SIDEWALKS AND PARKING AREAS SHALL BE KEPT CLEAR OF ICE AND SNOW DURING BUSINESS HOURS.

PLANTING NOTES

1. PLANT MATERIAL SHALL BE FURNISHED AND INSTALLED AS INDICATED, INCLUDING ALL LABOR, MATERIALS, PLANTS, EQUIPMENT, INCIDENTALS, AND CLEAN-UP.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT. LAYOUT TO BE APPROVED BY OWNERS' REPRESENTATIVE PRIOR TO INSTALLATION.
3. PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY; HAVE NORMAL GROWTH HABITS, WELL-DEVELOPED DENSELY FOLIATED BRANCHES, AND VIGOROUS ROOT SYSTEMS; AND BE FREE FROM DEFECTS AND INJURIES.
4. CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO GROWTH OF PLANT MATERIAL.
5. ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN VIGOROUS GROWING CONDITION. PROVISION SHALL BE MADE FOR A GROWTH GUARANTEE OF AT LEAST ONE YEAR FROM THE DATE OF ACCEPTANCE FOR TREES AND SHRUBS. REPLACEMENTS SHALL BE MADE AT THE BEGINNING OF THE FIRST SUCCEEDING PLANTING SEASON. ALL REPLACEMENTS SHALL HAVE A GUARANTEE EQUAL TO THAT STATED ABOVE.
6. PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY IF/WHEN PRACTICAL. IN THE EVENT THAT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE-DAY PERIOD AFTER DELIVERY. ANY PLANTS NOT INSTALLED DURING THIS PERIOD SHALL BE REJECTED, UNLESS OWNER AND CONTRACTOR PROVIDE OTHERWISE BY WRITTEN AGREEMENT.
7. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF ROOTBALL SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF ANSI Z60 "AMERICAN STANDARD FOR NURSERY STOCK" PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
8. ALL PLANTS SHALL BE PLANTED IN AMENDED TOP SOIL THAT IS THOROUGHLY WATERED AND TAMPED AS BACK-FILLING PROGRESSES. PLANTING MIX TO BE AS SHOWN ON PLANTING DETAILS. LARGE PLANTING AREAS TO INCORPORATE FERTILIZER AND SOIL CONDITIONERS AS STATED IN PLANTING SPECIFICATIONS.
9. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES. PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE BALL ONLY.
10. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOP SOIL THAT IS IN A MUDDY OR FROZEN CONDITION. ALL PLANT MATERIAL SHALL BE SPRAYED WITH "WILT-PRUF" OR EQUAL AS PER MANUFACTURERS INSTRUCTIONS.
11. NO PLANT, EXCEPT GROUNDCOVERS, SHALL BE PLANTED LESS THAN TWO FEET FROM EXISTING STRUCTURES AND SIDEWALKS.
12. SET ALL PLANTS PLUMB AND STRAIGHT. SET AT SUCH LEVEL THAT A NORMAL OR NATURAL RELATIONSHIP TO THE GROUND IF THE PLANT WITH THE GROUND SURFACE WILL BE ESTABLISHED. LOCATE THE PLANT IN THE CENTER OF THE PIT.
13. ALL INJURED ROOTS SHALL BE PRUNED TO MAKE CLEAN ENDS BEFORE PLANTING UTILIZING CLEAN, SHARP TOOLS. IT IS ADVISABLE TO PRUNE APPROXIMATELY 1/3 OF THE GROWTH OF LARGE TREES (2" CALIPER AND GREATER) BY THE REMOVAL OF SUPERFLUOUS BRANCHES, THOSE WHICH CROSS, THOSE WHICH RUN PARALLEL, ETC. MAIN LEADER OF TREES SHALL NOT BE CUT BACK. LONG SIDES BRANCHES SHALL BE SHORTENED.
14. EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICE TO PRESERVE THE NATURAL CHARACTER OF PLANT. PRUNING SHALL BE DONE WITH CLEAN, SHARP TOOLS.
15. TREES SHALL BE SUPPORTED IMMEDIATELY AFTER PLANTING. ALL TREES 6" AND GREATER IN CALIPER SHALL BE GUYED. SMALLER TREES SHALL BE STAKED. GUYING WIRES AND STAKES SHALL BE INSTALLED AS INDICATED. THE LANDSCAPE CONTRACTOR SHALL REMOVE STAKING, GUYING AND TREE WRAP AT THE END OF ONE YEAR MAINTENANCE AND GUARANTEE PERIOD.
16. ALL PLANTING BEDS SHALL BE MULCHED WITH 3" LAYER OF DOUBLE SHREDDED HARDWOOD BARK MULCH.
17. NEW PLANTING AREAS AND SOD SHALL BE ADEQUATELY IRRIGATED OR WATERED TO ESTABLISH THE PROPOSED PLANTS AND LAWN.
18. ALL PLANTS SHOWN ON THE APPROVED LANDSCAPE PLAN SHALL BE INSTALLED, INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT OR HIS REPRESENTATIVE. THE LANDSCAPE ARCHITECT SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD. TREES, SHRUBS, VINES AND GROUNDCOVER AS REQUIRED BY OR ASSOCIATED WITH A SUBDIVISION OR SITE PLAN APPROVED BY THE PLANNING AUTHORITIES SHALL BE INSTALLED DURING THE FOLLOWING PLANTING SEASONS:

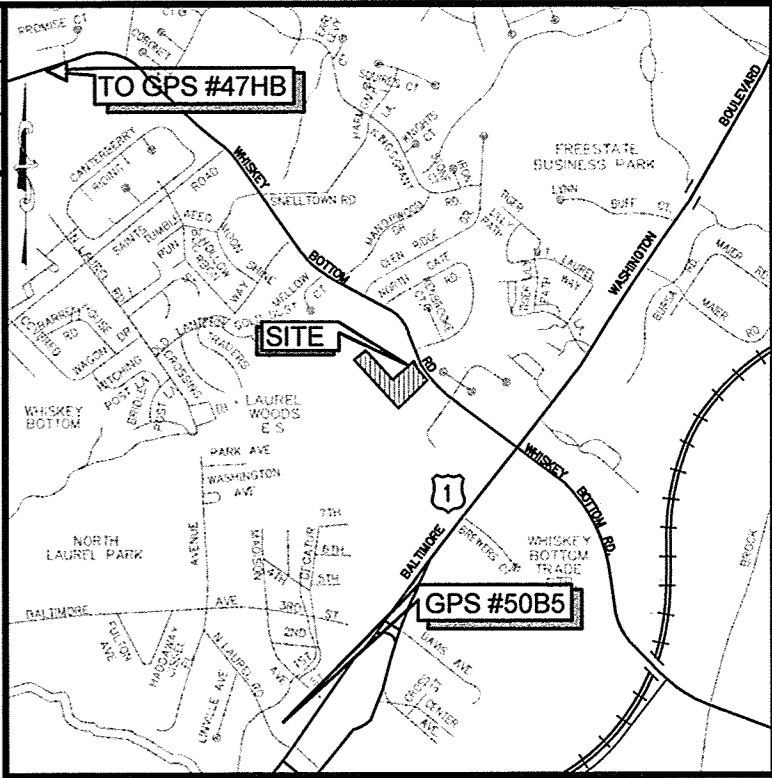
PLANTING SEASONS:	TYPE	DATES
PLANTS		03/15 TO 12/15
LAWNS		03/15 TO 06/15
		09/15 TO 12/01

THE FOLLOWING TREE VARIETIES SHALL NOT BE PLANTED DURING THE FALL PLANTING SEASON DUE TO THE HAZARDS ASSOCIATED WITH PLANTING THESE TREES IN THIS SEASON:

ACER RUBRUM	POPULUS SPP.
BETULA SPP.	PRUNUS SPP.
CARPINUS SPP.	PIRUS SPP.
CRATAEGUS SPP.	QUERCUS SPP.
KOELREUTERIA PANICULATA	SALIX SPP.
LIQUIDAMBAR STYRACIFLUA	TILIA TOMENTOSA
LIRIODENDRON TULIPIFERA	ZELKOVA
PLATANUS ACERIFOLIA	

ANY PLANTING INSTALLED IN CONFLICT WITH THIS REQUIREMENT MUST RECEIVE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. FAILURE TO COMPLY WITH THESE REQUIREMENTS WILL REQUIRE THE REMOVAL OF THE PLANTING IN QUESTION. THIS REQUIREMENT DOES NOT APPLY TO SEEDING OR SODDING OR PLANTINGS SPECIFICALLY FOR SOIL STABILIZATION PURPOSES. PLANTINGS ASSOCIATED WITH ANY LOT GIVEN A CERTIFICATE OF OCCUPANCY OUTSIDE THESE PERIODS SHALL BE PROVIDED DURING THE PREVIOUS OR NEXT APPROPRIATE SEASON.
19. ALL DISTURBED AREAS SHALL BE TREATED WITH 4" TOP SOIL AND SEEDED IN ACCORDANCE WITH PERMANENT STABILIZATION METHODS INDICATED ON SOIL EROSION AND SEDIMENT CONTROL SHEET.
20. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING.
21. THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS.
22. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. BY PROVIDING 7 SHADE TREES, 11 ORNAMENTAL, AND 3 SHRUBS FOR THE PERIMETER LANDSCAPING REQUIREMENT, AND 6 ORNAMENTAL TREES AND 17 EVERGREEN TREES FOR SCREEN LANDSCAPING PER THE HISTORIC DISTRICT COMMISSION. FINANCIAL SURETY IN THE AMOUNT OF \$7,140.00 WILL BE POSTED WITH THE DPW DEVELOPER'S AGREEMENT.

POINT	NORTHING	EASTING	ELEVATION
#47HB	531895.78	1356076.26	296.82
#50BS	524999.33	1357925.66	177.42

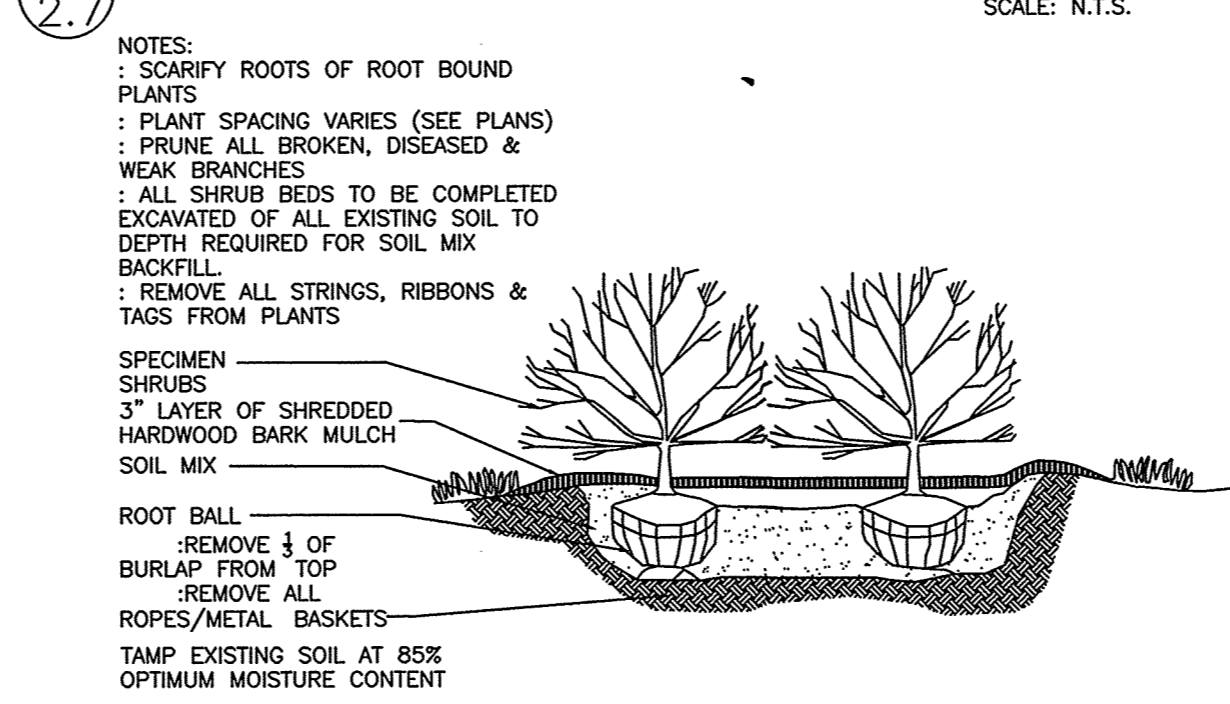


VICINITY MAP
SCALE: 1" = 200'
ADC MAP 40, GRID D7

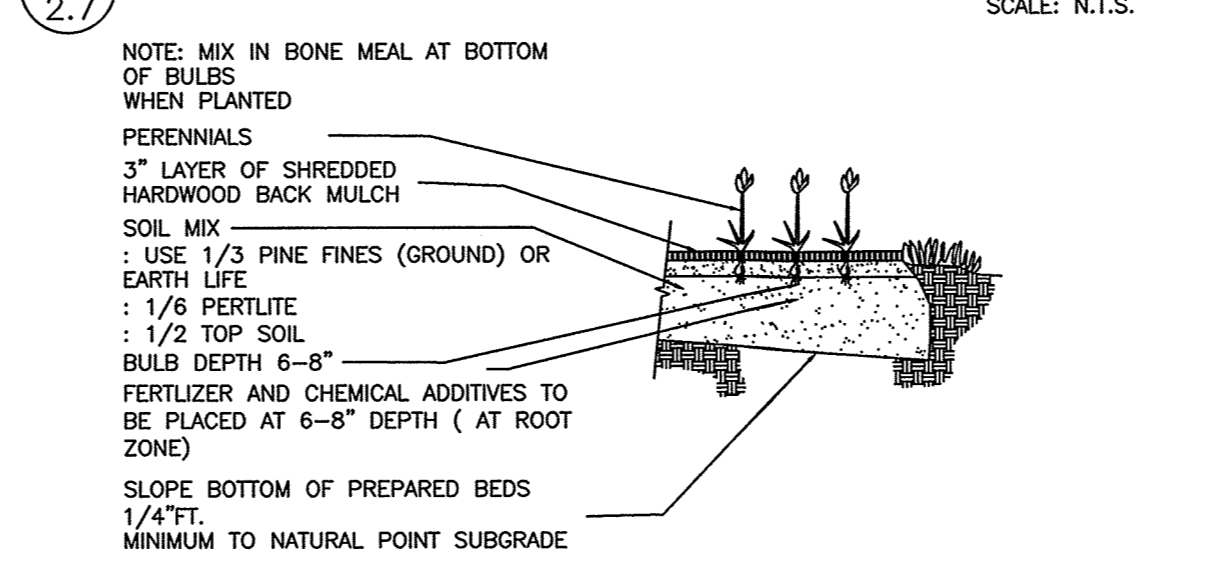
TRIANGULAR SPACING FOR SHRUBS, COVERS, BULBS AND PERENNIALS

4
2.7

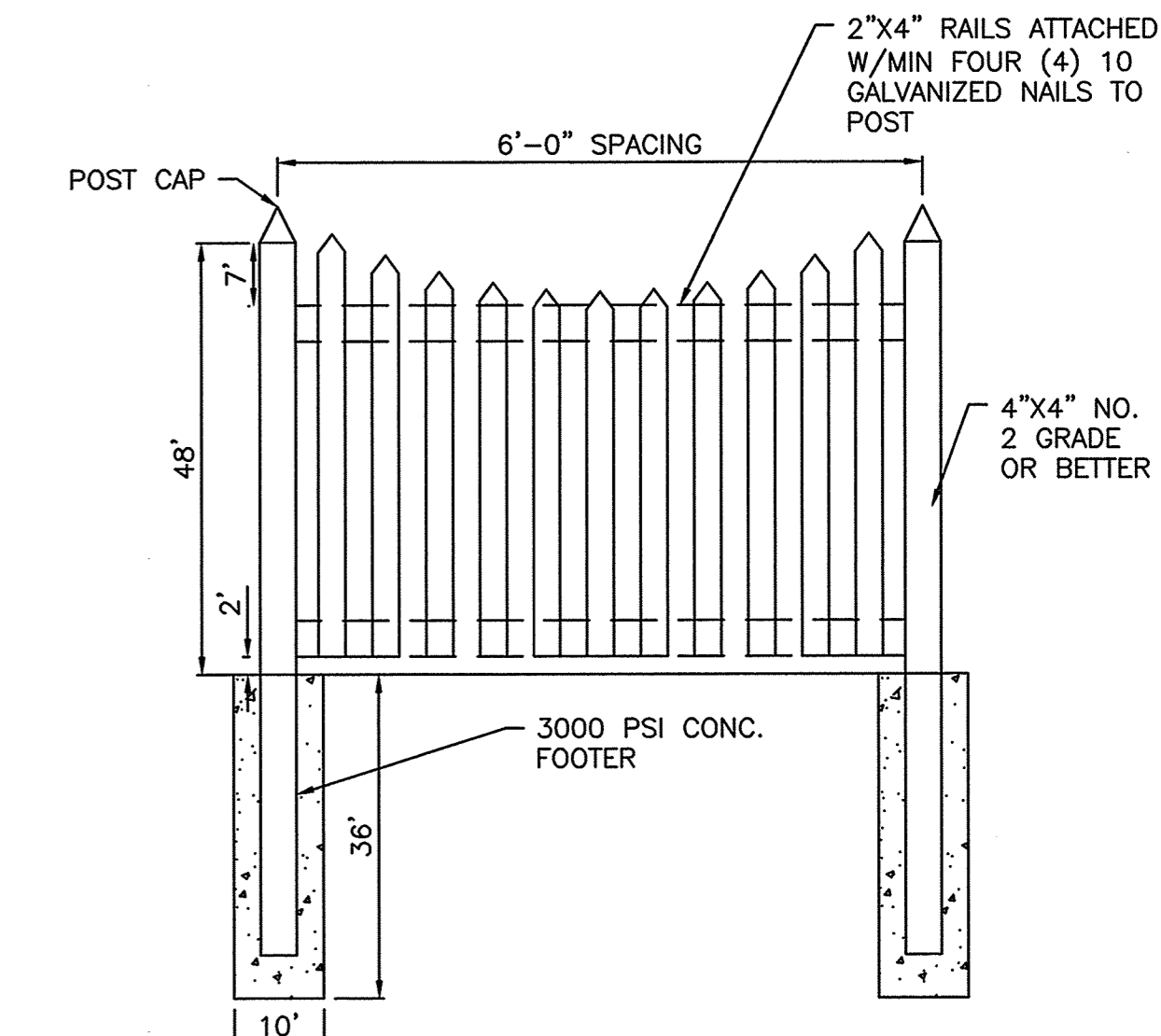
1 TREE GUYING PLANTING DETAIL SCALE: N.T.S.



2 SHRUB PLANTING DETAIL SCALE: N.T.S.



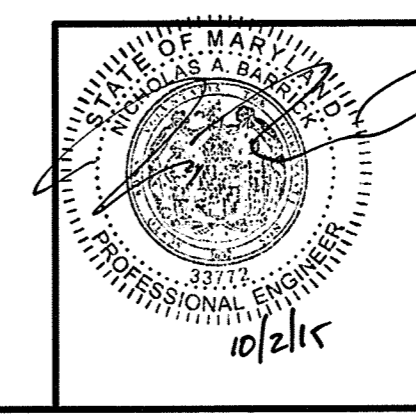
3 ANNUALS AND PERENNIALS PLANTING DETAIL SCALE: N.T.S.



WOOD PICKET FENCE N.T.S.

1. WOOD PICKETS-1"x3" PRESSURE TREATED ATTACHED EACH PICKET TO RAIL WITH TWO (2) #10 GALVANIZED SCREWS.
2. NAILS & CONNECTORS -ALL CONNECTIONS SHALL BE GALVANIZED

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
K. J. Sullivan 11-13-15
 CHIEF, DIVISION OF LAND DEVELOPMENT
A. J. [Signature] 11-9-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

REVISIONS		
NO.	DATE	BY

OWNER/DEVELOPER:
LINDA L. ARMSTRONG
9309 WHISKEY BOTTOM ROAD
LAUREL, MD 20732
301-776-5600

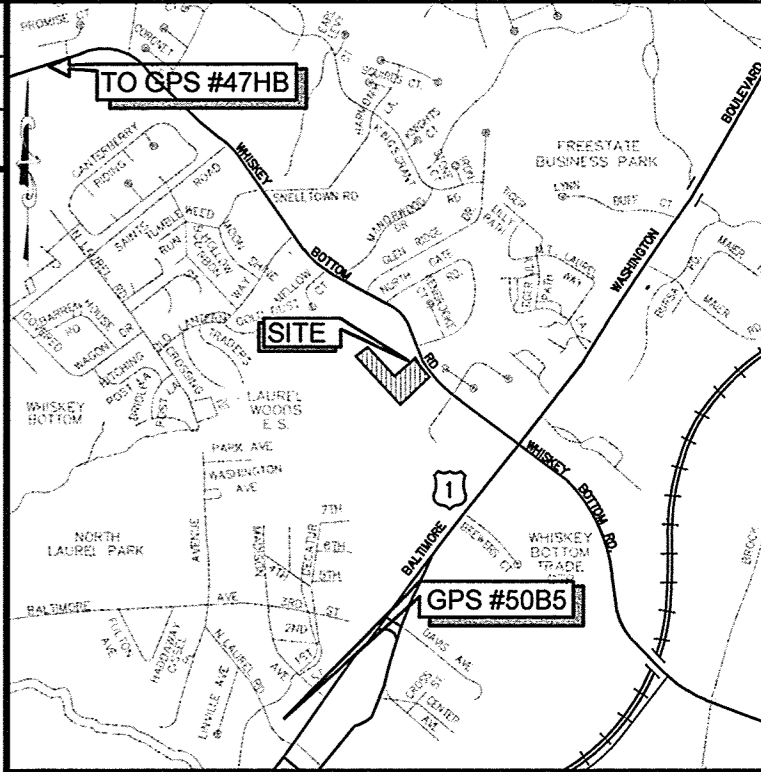
BUTTERFIELD GROVE
LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6
LANDSCAPING DETAILS AND NOTES

TAX MAP: 47 GRID: 22 PARCEL: 191
ZONED: R-SC
ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND

DESIGN NAB	DATE 10/02/15	KCI PROJECT NO. 27121943	SHEET NO.
DRAWN BRA	SCALE VARIES	SHEET NO. 12 OF 14	L-1.01

KCI TECHNOLOGIES
 ENGINEERS
 PLANNERS
 SCIENTISTS
 CONSTRUCTION MANAGERS
 11850 WEST MARKET PLACE
 SUITE A
 FALTON, MD 20759
 TELEPHONE: (410) 792-8086
 FAX: (410) 792-7419

POINT	NORTHING	EASTING	ELEVATION
#47HB	531895.78	1356076.26	296.82
#50B5	524999.33	1357925.66	177.42



GENERAL NOTES

- THIS SITE IS ZONED R-SC.
- THE SOURCE OF THE PROPERTY BOUNDARIES ON THIS PLAN IS FROM AVAILABLE DEEDS AND PLATS AND A FIELD RUN SURVEY PERFORMED BY KCI TECHNOLOGIES, INC. PERFORMED ON OR ABOUT JULY 2012.
- THE TOPOGRAPHY SHOWN ON THIS PLAN IS FROM A FIELD RUN SURVEY PERFORMED BY KCI TECHNOLOGIES, INC. ON OR ABOUT JULY 2012.
- THE SOURCE OF THE SOILS INFORMATION ON THIS PLAN IS FROM THE USDA NRCS WEB SOIL SURVEY (WSS).
- NO COUNTY REGULATED 100-YEAR FLOODPLAIN IS LOCATED ON-SITE PER:
1. A DRAINAGE AREA OF LESS THAN 50-ACRES AS VERIFIED BY NICHOLAS A. BARRICK, P.E., CIVIL ENGINEER, KCI TECHNOLOGIES, INC. WRITTEN VERIFICATION FROM DER MAY BE REQUIRED DURING SUBSEQUENT DEVELOPMENT REVIEW PROCESSES.
- NO WETLANDS OR STREAMS ARE LOCATED ON-SITE BASED ON A PUBLISHED INFORMATION REVIEW.
- THIS SITE IS NOT WITHIN A SENSITIVE SPECIES PROTECTION REVIEW AREA BASED ON A REVIEW OF THE SSPRA GIS LAYER PREPARED BY THE HERITAGE AND WILDLIFE SERVICE, MARYLAND DEPARTMENT OF NATURAL RESOURCES.
- THE SITE DOES NOT INCLUDE FOREST INTERIOR DWELLING SPECIES HABITAT.
- THE SITE IS NOT SUBJECT TO A PREVIOUSLY APPROVED FCP.
- THERE ARE TWO SPECIMEN TREES LOCATED NEAR THE AREA OF WORK.
- THIS SITE DOES NOT CONTAIN WETLANDS OF SPECIAL STATE CONCERN AS DEFINED IN COMAR 26.23.06.01.
- THIS SITE DOES NOT CONTAIN A TIER II WATERBODY AS DEFINED IN COMAR 26.08.02.04.
- THERE ARE NO SCENIC OR HISTORIC ROADS LOCATED ON OR ADJACENT TO THIS PROPERTY.
- THE SUBJECT PROPERTY WAS KNOWN AS THE JOSEPH TRAVERS HOUSE, HOCO. NO. 801 BUT IS NOT LOCATED WITHIN A REGISTERED HISTORIC DISTRICT.
- THERE ARE NO KNOWN ARCHEOLOGICAL SITES LOCATED ON THE SUBJECT PROPERTY; HOWEVER, THE SUBJECT PROPERTY HAS NOT BEEN SURVEYED FOR ARCHEOLOGICAL RESOURCES AND A PHASE I ARCHEOLOGY REPORT MAY BE REQUIRED DURING SUBSEQUENT DEVELOPMENT REVIEW PROCESSES.
- WATERSHED - UPPER PATUXENT RIVER WATERSHED (#02131104).

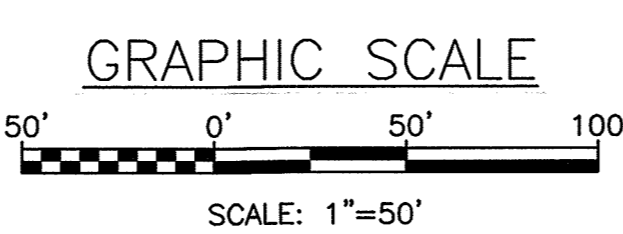
GENERAL NOTES

KCI PERFORMED A FIELD RECONNAISSANCE FOR THE ENTIRE SUBJECT PROPERTY TO DETERMINE THE PRESENCE OR ABSENCE OF WETLAND AREAS ON AUGUST 23, 2013. NO WETLANDS OR "WATERS OF THE U.S." WERE IDENTIFIED ON THE SUBJECT PROPERTY. THE SITE IS PRIMARILY MAINTAINED LAWN WITH AN AREA OF OVERGROWN VINES INCLUDING ORIENTAL BITTERSWEET (Celastrus orbiculatus), JAPANESE HONEYSUCKLE (Lonicera japonica), VIRGINIA CREEPER (Parthenocissus quinquefolia), AS WELL AS GOLDENROD SPECIES (Solidago sp.) AND FESCUE SPECIES (Festuca sp.). SWEET GUM (Liquidambar styraciflua), MULBERRY (Morus sp.), AND SILVER MAPLE (Acer saccharinum) WERE ALSO IDENTIFIED. NO WETLAND HYDROLOGY INDICATORS WERE IDENTIFIED. SOILS WERE NOT INVESTIGATED AS NEITHER OF THE OTHER WETLAND CHARACTERISTICS WERE NOTED ONSITE.

FOREST MITIGATION WILL BE SATISFIED THROUGH 0.47 ACRE OF AFFORESTATION PLANTINGS ON A PORTION OF THE SITE DEDICATED FOR HOWARD COUNTY OPEN SPACE.

SIZE	TYPE	CONDITION
42"	ASH (FRAXINUS ORNUS)	GOOD
38"	WHITE OAK (QUERCUS ALBA)	GOOD

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kristen DeLoach 11-13-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Paul P. ... 11-13-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



QUALIFIED PROFESSIONAL CERTIFICATION
 THIS COMPLIES WITH THE CURRENT REQUIREMENTS OF HOWARD COUNTY CODE.
 SIGNED: *Jennifer Bird* DATE: 6/09/2015
 JENNIFER BIRD
 936 RIDGEBROOK ROAD
 SPARKS, MD 21152
 PHONE: 410-316-7800
 JENNIFER.BIRD@KCI.COM

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33772 EXP. DATE: 06/16/2017

NO.	DATE	BY

OWNER/DEVELOPER:
 LINDA L. ARMSTRONG
 9309 WHISKEY BOTTOM ROAD
 LAUREL, MD 20732
 301-776-5600

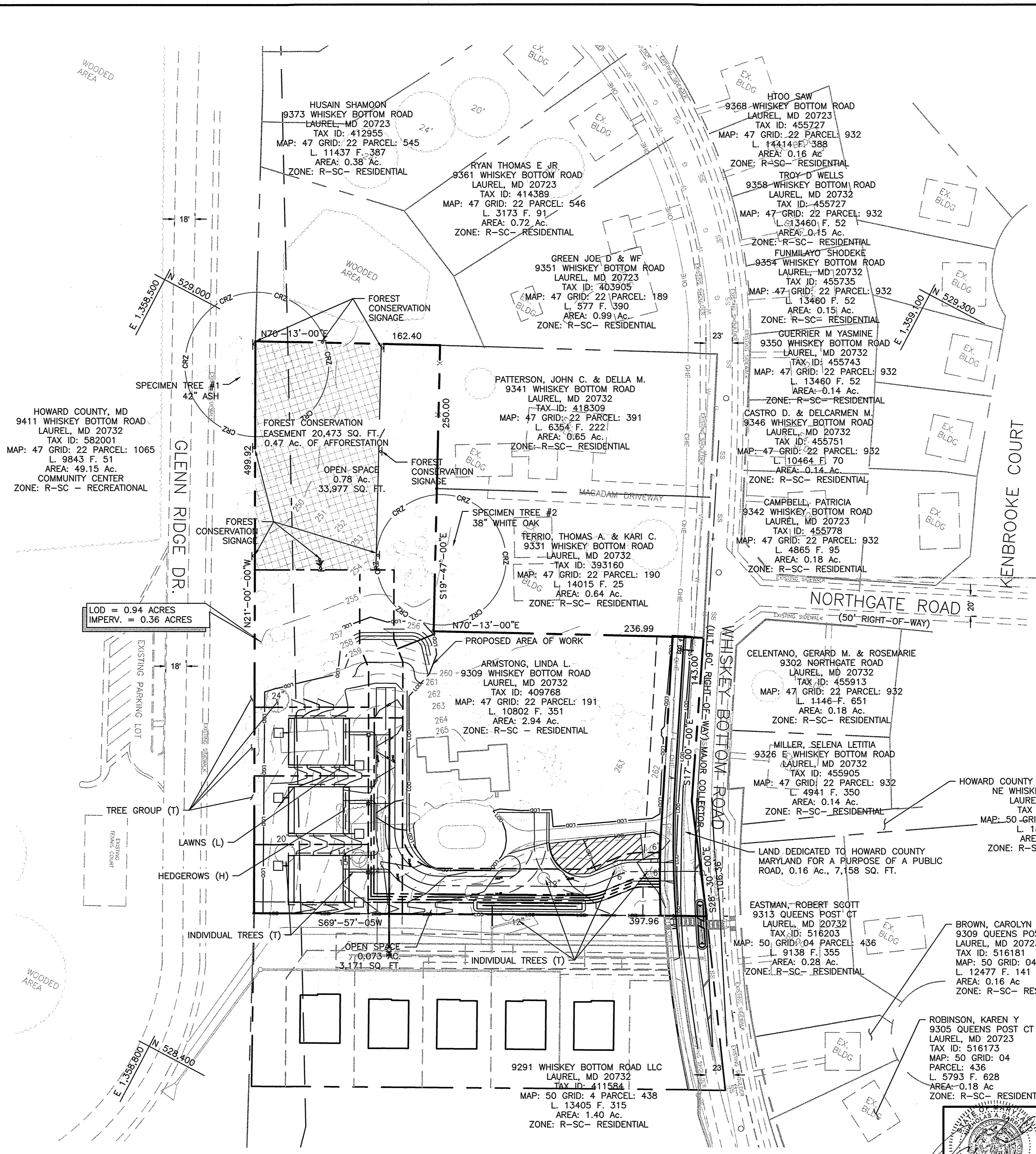
BUTTERFIELD GROVE
 LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6
FOREST CONSERVATION PLAN

TAX MAP: 47 GRID: 22 PARCEL: 191
 ZONED: R-SC
 ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND

DESIGN NAB DATE 10/02/15
 DRAWN BRA SCALE 1"=50'
 KCI PROJECT NO. 27121943 SHEET NO. 13 OF 14
 SHEET NO. FCP-1

LEGEND

	PROPERTY LINE
	ADJOINING PROPERTY LINE
	EXISTING BUILDING LINE
	EXISTING CONTOUR
	EXISTING TRELIN
	EXISTING EDGE OF PAVEMENT
	EXISTING TREE
	CRITICAL ROOT ZONE (CRZ)
	PROPOSED LOT LINE
	PROPOSED BUILDING SETBACK LINE
	PROPOSED ASPHALT ACCESS ROAD
	PROPOSED EXISTING AREA
	PROPOSED LAND DEDICATION
	LIMIT OF DISTURBANCE
	FOREST CONSERVATION SIGN
	PIPE
	MANHOLE
	UTILITY POLE
	GUY WIRE
	LIGHT POLE
	FIRE HYDRANT
	RESIDENTIAL MAILBOX
	SIGN
	FLOOD LIGHT
	CONCRETE MONUMENT
	BUSH
	CONIFEROUS TREE
	DECIDUOUS TREE
	EDGE OF WOODS
	FENCE
	HEDGE
	UNDERGROUND STORM DRAIN PIPE
	EXISTING WATER
	EXISTING GAS
	EXISTING OVERHEAD ELECTRIC
	EXISTING SANITARY SEWER



PLANTING SPECIFICATION NOTES

1. QUANTITY: (SEE PLANT SCHEDULE)
2. TYPE: (SEE PLANT SCHEDULE)
3. PLANT QUALITY STANDARDS: THE PLANTS SELECTED SHALL BE HEALTHY AND STURDY REPRESENTATIVES OF THEIR SPECIES. SEEDLINGS SHALL HAVE A MINIMUM TOP GROWTH OF 18" THE DIAMETER OF THE ROOT COLLAR (THE PART OF THE ROOT JUST BELOW GROUND LEVEL) SHALL BE AT LEAST 3/8". THE ROOTS SHALL BE WELL DEVELOPED AND AT LEAST 8" LONG, NO MORE THAN TWENTY-FIVE PERCENT (25%) OF THE ROOT SYSTEM (BOTH PRIMARY AND AUXILIARY/FIBROUS ROOTS SHALL BE PRESENT. PLANTS THAT DO NOT HAVE AN ABUNDANCE OF WELL DEVELOPED TERMINAL BUDS ON THE LEADERS AND BRANCHES SHALL BE REJECTED.

PLANTS SHALL BE SHIPPED BY THE NURSERY IMMEDIATELY AFTER LIFTING FROM THE FIELD OR REMOVAL FROM THE GREEN HOUSE, AND PLANTED IMMEDIATELY UPON RECEIPT BY THE LANDSCAPE CONTRACTOR.

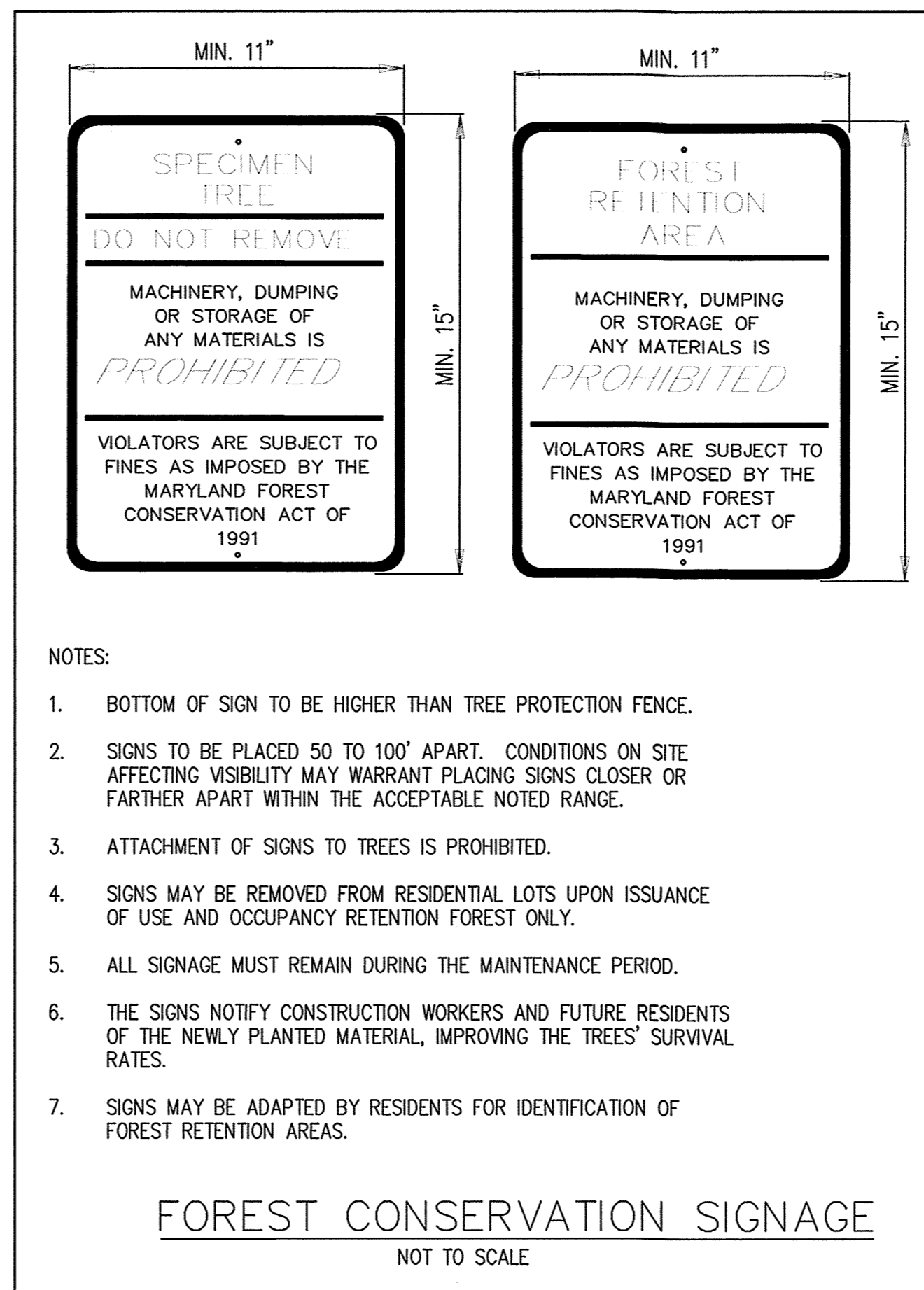
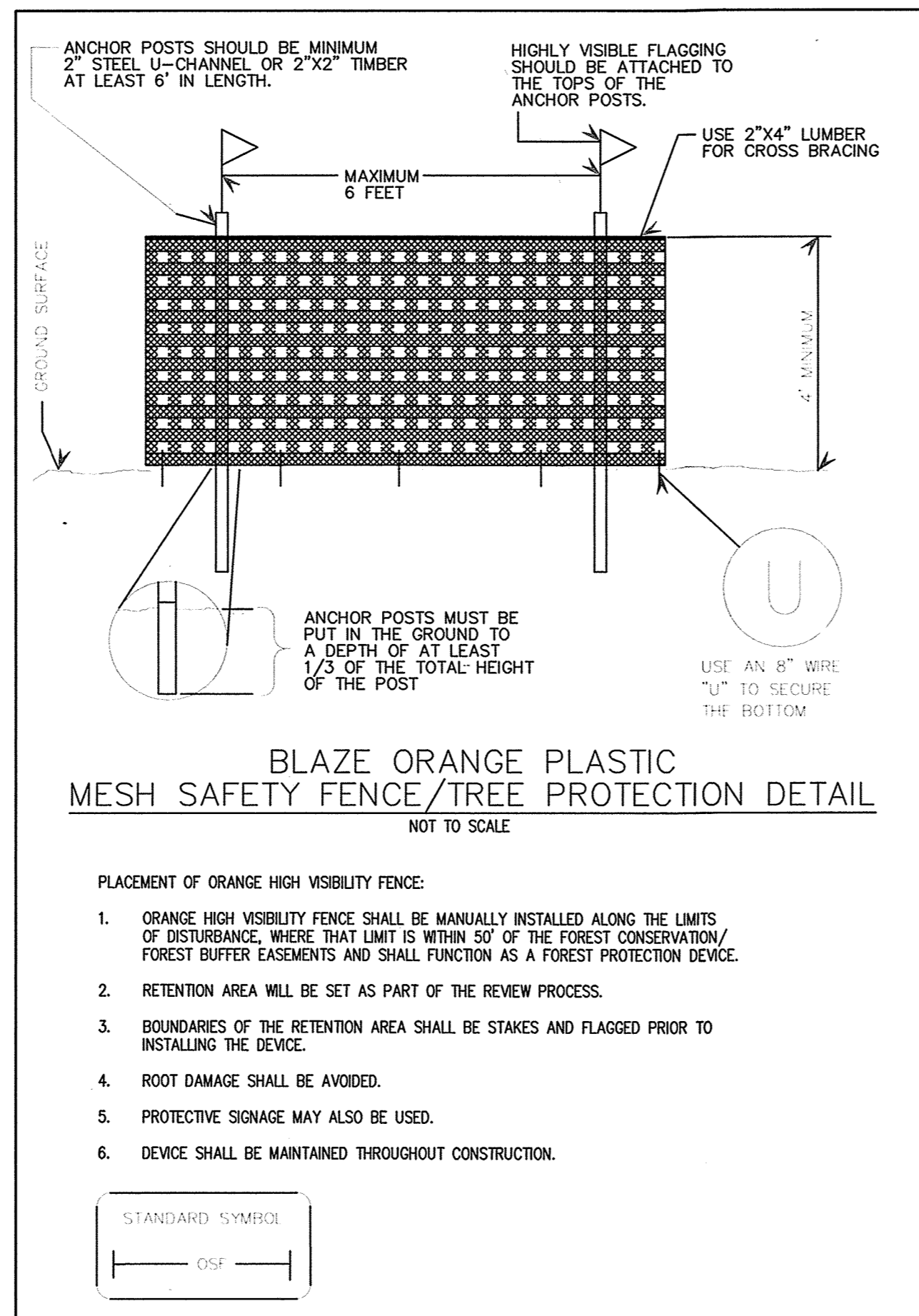
IF THE PLANTS CANNOT BE PLANTED IMMEDIATELY AFTER DELIVERY TO THE REFORESTATION SITE, THEY SHALL BE STORED IN THE SHADE WITH THEIR ROOT MASSES PROTECTED FROM DIRECT EXPOSURE TO SUN AND WIND BY THE USE OF STRAW, PEAT MOSS, COMPOST, OR OTHER SUITABLE MATERIAL AND SHALL BE MAINTAINED THROUGH PERIODIC WATERING, UNTIL THE TIME OF PLANTING.
4. PLANT HANDLING: THE QUANTITY OF SEEDLINGS TAKEN TO THE FIELD SHALL NOT EXCEED THE QUANTITY THAT CAN BE PLANTED IN A DAY. SEEDLINGS, ONCE REMOVED FROM THE NURSERY OR TEMPORARY STORAGE AREA SHALL BE PLANTED IMMEDIATELY.
5. TIMING OF PLANTING: THE BEST TIME TO PLANT SEEDLINGS IS WHILE THEY ARE DORMANT, PRIOR TO SPRING BUDDING. THE MOST SUITABLE MONTHS FOR PLANTING ARE MARCH AND APRIL, WHEN THE SOIL IS MOIST, BUT MAY BE PLANTED FROM MARCH THROUGH NOVEMBER. NO PLANTING SHALL BE DONE WHILE GROUND IS FROZEN. PLANTING SHALL OCCUR WITHIN ONE GROWING SEASON OF THE ISSUANCE OF GRADING/BUILDING PERMITS AND/OR REACHING THE FINAL GRADES AND STABILIZATION OF PLANTING AREAS.
6. SEEDLING PLANTING: TREE SEEDLINGS SHALL BE HAND PLANTED USING A DIBBLE BAR OR SHARP-SHOOTER SHOVEL. IT IS IMPORTANT THAT THE SEEDLING BE PLACED IN THE HOLE SO THAT THE ROOTS CAN SPREAD OUT NATURALLY; THEY SHOULD NOT BE TWISTED, BALLED UP OR BENT. MOST SOIL SHOULD THEN BE PACKED FIRMLY AROUND THE ROOTS. SEEDLINGS SHOULD BE PLANTED AT A DEPTH WHERE THEIR ROOTS LIE JUST BELOW THE GROUND SURFACE. AIR POCKETS SHOULD NOT BE LEFT AFTER CLOSING THE HOLE WHICH WOULD ALLOW THE ROOTS TO DRY OUT. SEE PLANTING DETAILS FOR FURTHER EXPLANATION. IF THE CONTRACTOR WISHES TO PLANT BY ANOTHER METHOD, THE PREPARER OF THIS TREE CONSERVATION PLAN MUST BE CONTACTED AND GIVE HIS APPROVAL BEFORE PLANTING MAY BEGIN.
7. SPACING: SEE PLANT SCHEDULE AND/OR PLANTING PLAN FOR SPACING REQUIREMENTS. ALSO REFER TO THE PLANTING LAYOUT DETAIL FOR A DESCRIPTION OF THE GENERAL PLANTING THEORY.
8. SOIL: UPON THE COMPLETION OF ALL GRADING OPERATIONS, A SOIL TEST SHALL BE CONDUCTED TO DETERMINE WHAT SOIL PREPARATION AND SOIL AMENDMENTS, IF ANY, ARE NECESSARY TO CREATE GOOD TREE GROWING CONDITIONS. SOIL SAMPLES SHALL BE TAKEN AT A RATE THAT PROVIDES ONE SOIL SAMPLE FOR EACH AREA THAT APPEARS TO HAVE A DIFFERENT SOIL TYPE (IF THE ENTIRE AREA APPEARS UNIFORM, THEN ONLY ONE SAMPLE IS NECESSARY), AND SUBMITTED FOR TESTING TO A PRIVATE COMPANY. THE COMPANY OF CHOICE SHALL MAKE RECOMMENDATIONS FOR IMPROVING THE EXISTING SOIL. THE SOIL WILL BE TESTED AND RECOMMENDED FOR CORRECTIONS OF SOIL TEXTURE, PH, MAGNESIUM, PHOSPHORUS, POTASSIUM, CALCIUM AND ORGANIC MATTER.
9. SOIL IMPROVEMENT MEASURES: THE SOIL SHALL THEN BE IMPROVED ACCORDING TO THE RECOMMENDATIONS MADE BY THE TESTING COMPANY.
10. SIGNAGE: SIGNS SHALL BE POSTED PER THE SIGNAGE DETAIL ON THIS SHEET.
11. PLANTING METHOD: CONSULT THE PLANTING DETAIL(S) SHOWN ON THIS PLAN.
12. MULCHING: APPLY TWO-INCH THICK LAYER OF WOODCHIP OR SHREDDED HARDWOOD MULCH (AS NOTED) TO EACH PLANTING SITE (SEE DETAIL SHOWN ON THIS PLAN).
13. GROUND COVER ESTABLISHMENT: THE REMAINING DISTURBED AREA BETWEEN SEEDLING PLANTING SITES SHALL BE SEEDED AND STABILIZED WITH WHITE CLOVER SEED AT THE RATE OF 5 LBS/ACRE.
14. MOWING: NO MOWING SHALL BE ALLOWED IN ANY PLANTING AREA.
15. SURVIVAL CHECK FOR BOND RELEASE: THE SEEDLING PLANTING IS TO BE CHECKED AT THE END OF EACH YEAR FOR FOUR YEARS TO ASSURE THAT NO LESS THAN 75% OF THE ORIGINAL PLANTED QUANTITY SURVIVES. IF THE MINIMUM NUMBER HAS NOT BEEN PROVIDED THE AREA MUST BE SUPPLEMENTED WITH ADDITIONAL SEEDLINGS TO REACH THE REQUIRED NUMBER AT TIME OF PLANTING.

PLANT MAINTENANCE

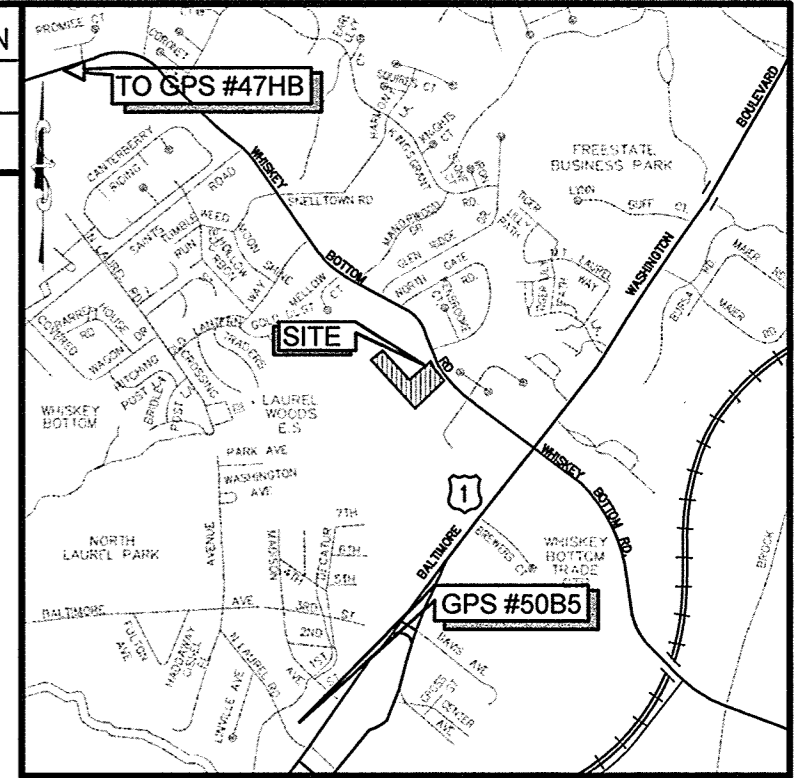
UNLESS OTHERWISE NEGOTIATED, ALL PLANT MATERIALS FURNISHED AND INSTALLED SHALL BE GUARANTEED FOR AN 85% SURVIVAL RATE FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE OF THE WORK BY THE OWNER; UNLESS THAT DATE OCCURS PRIOR TO THE GROWING SEASON, IN WHICH CASE THE PERIOD WOULD BE EXTENDED TO THE FOLLOWING GROWING SEASON TO ALLOW FOR SUFFICIENT ASSESSMENT AND DETERMINATION OF THE HEALTH OF THE VEGETATION. THE WARRANTY DOES NOT COVER MORTALITY DUE TO CIRCUMSTANCES BEYOND THE CONTRACTORS CONTROL, AND INCLUDE BUT ARE NOT LIMITED TO; ANIMAL PREDATION, HERBIVORY DAMAGE, IMPROPER HYDROLOGIC REGIME, VANDALISM, AND STORM DAMAGE.

AFTER ANY PLANTING IS COMPLETED THE CONTRACTOR SHALL INSTITUTE A PROGRAM OF WATERING THAT IS SUFFICIENT TO SUPPORT PROPER PLANT GROWTH AND INSURE SURVIVABILITY. THE FREQUENCY AND DURATION OF WATERING SHALL BE DICTATED BY THE NATURE OF THE ON-SITE SOILS, SPECIES INSTALLED, AND THE AMOUNT OF RAINFALL.

THE CONTRACTOR SHALL PROVIDE PLANTINGS MAINTENANCE IN THE FORM OF WEEDING, ON AN AS NEEDED BASIS. THIS WORK MAY CONSIST OF MANUAL SUPPRESSION OF VINES AND OTHER INVASIVE PLANTS. HERBICIDE, FUNGICIDE, AND FERTILIZER, APPLICATIONS MAY BE ALLOWED FOR PLANTINGS MAINTENANCE IF PRIOR APPROVAL IS RECEIVED FROM THE OWNER.



POINT	NORTHING	EASTING	ELEVATION
#47HB	531895.78	1356076.26	296.82
#50B5	524999.33	1357925.66	177.42



Forest Conservation Worksheet 2.2

Net Tract Area			
A. Total Tract Area		A =	3.12
B. Deductions		B =	0.00
C. Net Tract Area		C =	3.12
Land Use Category			
Input the number "1" under the appropriate land use zoning, and limit to only one entry			
ARA	MDR	IDA	HDR
0	0	1	0
MPD	CIA		
0	0		
D. Afforestation Threshold (Net Tract Area x 15%)		D =	0.47
E. Conservation Threshold (Net Tract Area x 20%)		E =	0.62
Existing Forest Cover			
F. Existing Forest Cover within the Net Tract Area		F =	0.00
G. Area of Forest Above Conservation Threshold		G =	0.00
Break Even Point			
H. Break Even Point		H =	0.00
I. Forest Clearing Permitted Without Mitigation		I =	0.00
Proposed Forest Clearing			
J. Total Area of Forest to be Cleared		J =	0.00
K. Total Area of Forest to be Retained		K =	0.00
Planting Requirements			
L. Reforestation for Clearing Above the Conservation Threshold		L =	0.00
M. Reforestation for Clearing Below the Conservation Threshold		M =	0.00
N. Credit for Retention above the Conservation Threshold		N =	0.00
P. Total Reforestation Required		P =	0.00
Q. Total Afforestation Required		Q =	0.47
R. Total Planting Requirement		R =	0.47

MASTER PLANT SCHEDULE



Upland Forest Zone
(20,473 SF / 0.47 AC)
Whips - 0.47 Acres X 350 = 165 Trees Required

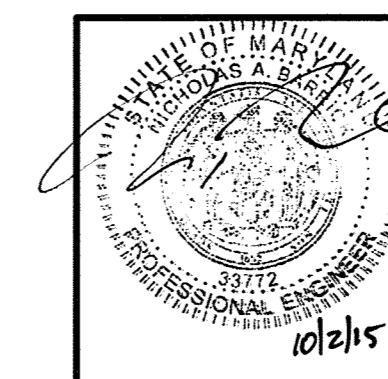
Botanical Name	Common Name	Size	Spacing	Quantity
Cornus florida	Flowering dogwood	Whip	11' x 11'	45
Acer Rubrum	Red Maple	Whip	11' x 11'	45
Liquidambar styraciflua	Sweet gum	Whip	11' x 11'	45
Fagus grandifolia	American beech	Whip	11' x 11'	10
Quercus alba	White oak	Whip	11' x 11'	10
Quercus rubra	Northern red oak	Whip	11' x 11'	10



Upland Forest Zone Seed Mix	Application Rate	Quantity (lbs)
ERNST Seed Mix: ERNMX-172 MD Upland Mix	15 lbs/acre	6.6



REVISIONS		
NO.	DATE	BY



QUALIFIED PROFESSIONAL CERTIFICATION
THIS COMPLIES WITH THE CURRENT REQUIREMENTS OF HOWARD COUNTY CODE.
SIGNED: *Jennifer Bird* DATE: 6/09/2015
JENNIFER BIRD
936 RIDGEBROOK ROAD
SPARKS, MD 21152
PHONE: 410-316-7800
JENNIFER.BRID@KCI.COM

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OWNER/DEVELOPER:
LINDA L. ARMSTRONG
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LAUREL, MD 20732
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BUTTERFIELD GROVE
LOTS 1 - 4, OPEN SPACE LOT 5, AND NON-CREDITED OPEN SPACE LOT 6
FOREST CONSERVATION PLAN
NOTES AND DETAILS
TAX MAP: 47 GRID: 22 PARCEL: 191
ZONED: R-SC ELECTION DISTRICT NO. 6 - HOWARD COUNTY MARYLAND

DESIGN NAB DATE 10/02/15
DRAWN BRA SCALE N.T.S.
SHEET NO. 14 OF 14

KCI PROJECT NO. 27121943
SHEET NO. FCP-2

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Westch Lane 11-13-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Chad Clark 11-9-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE