

# NORTH LAUREL CONNECTIONS

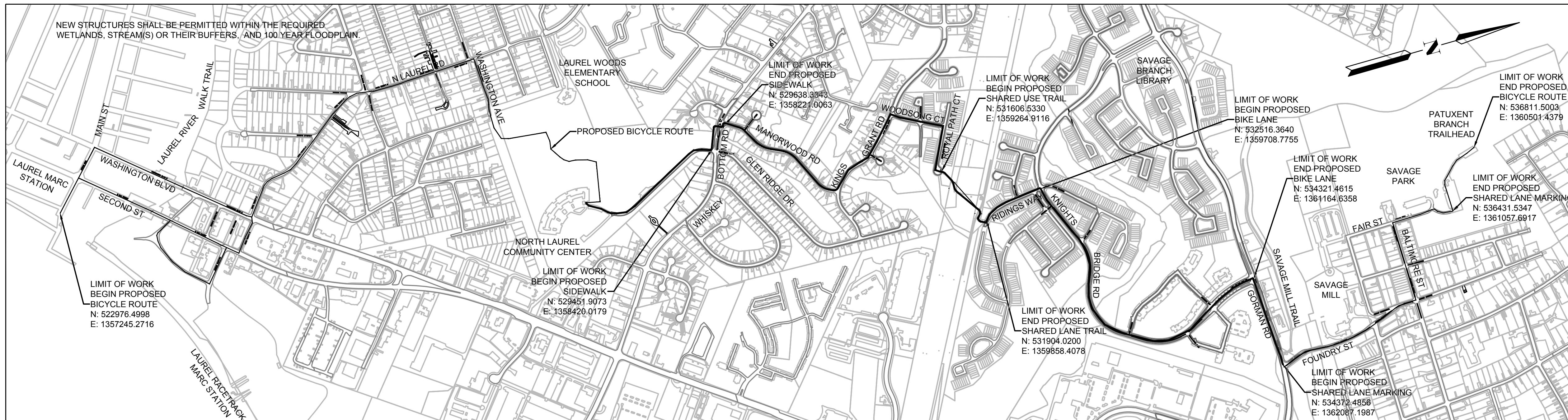
## SITE DEVELOPMENT PLAN SDP-21-XXXX

### HOWARD COUNTY CAPITAL PROJECT NO. K5066

### HOWARD COUNTY, MARYLAND

#### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY AND MD-SHA STANDARDS AND SPECIFICATIONS AS 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 START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MDMUTCD).
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM A COMBINATION OF PUBLICLY AVAILABLE GIS WITH 2' CONTOUR INTERVALS AND SURVEYED TOPOGRAPHY.
- ALL PROPOSED IMPROVEMENTS SHALL COMPLY WITH ALL APPLICABLE HOWARD COUNTY, AASHTO, MD-MUTCD REQUIREMENTS AND THE US ACCESS BOARD SHARED-USE PATH ACCESSIBILITY GUIDELINES PROPOSED RULE MAKING (3/2012).
- EXISTING UTILITIES ARE BASED ON AVAILABLE PUBLIC RECORDS. THE CONTRACTOR SHALL DIG TEST PITS BY HAND AT ALL PROPOSED UTILITY CROSSINGS AND CONNECTION POINTS TO VERIFY EXACT UTILITY LOCATIONS.
- NO SOILS INVESTIGATION OR NOISE STUDIES WERE PERFORMED AS A PART OF THE DESIGN OF THIS PROJECT. A SPEED STUDY WAS PERFORMED BY OTHERS AT RIDINGS WAY (RIDINGS WAY SPEED STUDY, NOVEMBER 7, 2012). A SIGHT DISTANCE EVALUATION OF THE CROSSING ALONG RIDINGS WAY IS PROVIDED ON DRAWING C2.6.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND



LOCATION MAP  
SCALE 1" = 600'

#### SHEET INDEX

1 C0.0: COVER SHEET  
 2 C1.1: LEGEND AND ABBREVIATIONS  
 3-5 C1.2-1.4: GENERAL NOTES  
 6 C1.5: OVERALL ROUTE LAYOUT  
 7-13 C2.1-2.7: PROPOSED B&E TRAIL PLANS  
 14-18 C3.1-3.5: PROPOSED WHISKEY BOTTOM SIDEWALK PLANS  
 19 - 30 C4.1 - C4.12: KNIGHTS BRIDGE PAVEMENT MARKING PLANS  
 31 - 34 C5.1-5.4: STANDARD DETAILS

APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

PROPERTY NUMBER	ZONE	ACCOUNT ID	PROPERTY OWNERSHIP	LEGAL DESCRIPTION/ADDRESS	DEED LIBER	DEED FOLIO	TAX MAP	TAX MAP GRID	PARCEL	LOT	EASEMENT
10	R-SC	1406582001	HOWARD COUNTY MD	PAR A1 47.8855 A / 9411 WHISKEY BOTTOM RD NORTH LAUREL PARK RESUB	09843	00051	0047	0022	1065	A 1	N/A
11	R-SC	1406452248	BOACHIE CHARITY	LOT 22 .328 AR / 9513 MELLOW CT WHISKEY BOTTOM N	17987	00273	0047	0022	0928	22	TEMPORARY FOR CONSTRUCTION MAY BE NEEDED
12	R-SC	1406526896	HOWARD COUNTY MD	LOT 25 .5077 A OPSP / MANORWOOD RD CURRY PROPERTY S1 A1	02021	00266	0047	0022	0178	25	N/A
PROPERTY NUMBER	ZONE	ACCOUNT ID	PROPERTY OWNERSHIP	LEGAL DESCRIPTION/ADDRESS	DEED LIBER	DEED FOLIO	TAX MAP	TAX MAP GRID	PARCEL	LOT	EASEMENT
20	R-SC	1406536727	KINGS WOODS TOWNSHOUSE ASSOCIATION INC	LOT 286 .927 A OPS / ROYAL PATH COVE KINGS WOODS SEC 3 AR 1	05786	00331	0047	0015	0553	286	YES
21	R-SC	1406392067	BALTIMORE GAS & ELECTRIC CO	2.0438 A / HARMONY LN LAUREL	00626	00573	0047	0022	0880	N/A	YES
22	R-SC	1406391990	BALTIMORE GAS & ELECTRIC CO	.5101 ACRES HARMONY LN LAUREL	00650	00304	0047	0022	0887	N/A	YES
23	R-SC	1406391842	BALTIMORE GAS & ELECTRIC CO	1.4919 A IMP / 9840 HARMONY LN LAUREL	00612	00639	0047	0016	0727	N/A	YES
24	R-SC	1406392067	BALTIMORE GAS & ELECTRIC CO	2.0438 A / HARMONY LN LAUREL	00626	00573	0047	0022	0880	N/A	NO
25	R-SC	1406391893	BALTIMORE GAS & ELECTRIC CO	8.8981 ACRES / ROUTE 1	00453	00394	0047	0016	0916	N/A	YES
26	R-SC	1406391923	BALTIMORE GAS & ELECTRIC CO	2.682 ACRES / HARMONY LN	00059	00505	0047	0016	0773	N/A	YES (OPTION A)
27	R-SA-8	1406541941	BOWLING BROOK FARMS ASSOCIATION INC	LOT 165 1.7096 A / GORDON CT / BOWLING BROOK FARMS	03355	00093	0047	0017	1008	165	YES (OPTION B)
28	R-SA-8	1406541976	BOWLING BROOK FARMS ASSOCIATION INC	LOT 179 8.433 SQ OPS / RIDINGS WAY BOWLING BROOK FARMS	03355	00093	0047	0017	1008	179	YES (OPTION B)

#### HOWARD COUNTY CONTROL STATIONS

47EC 47FB  
 NORTHING: 534,261.218  
 EASTING: 1,359,948.169  
 ELEVATION: 233.687  
 (LATEST ADJ. FEB. 2014)

#### SITE ANALYSIS DATA CHART

AREA OF PLAN SUBMISSION: 1.9 ACRES  
 LIMIT OF DISTURBED AREA: 1.9 ACRES  
 PRESENT ZONING DESIGNATION: R-SC, R-SA-8, PUBLIC RIGHT-OF-WAY  
 CEPPA NUMBER:N/A  
 PROPOSED USE: SHARED USE PATH, BIKE LANE, SIGNED BIKE ROUTE

PERMIT INFORMATION CHART														
PROJECT NAME: NORTH LAUREL CONNECTIONS HOWARD COUNTY CAPITAL PROJECT NO. K5066					SECTION/AREA SEE TABLE		PARCEL SEE TABLE							
L/F N/A	ZONE R-SC, R-SA-8	TAX MAP 47	BLOCK MULTIPLE	ELEC. DIST. 3	CENSUS TRACT 6069		PROJECT NO. 5409.05							
GENERAL														
COVER SHEET														

PROFESSIONAL CERTIFICATION		REUSE OF DOCUMENTS				GENERAL				PROJECT NO. 5409.05
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF [STATE], LICENSE NO. 35022, EXPIRATION DATE: 12/28/2021.		ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.				NORTH LAUREL CONNECTIONS HOWARD COUNTY, MD				DATE 12-18-2020
 DSGN DR CHK APVD		VLR VLR AO MRAB								DRAWING NO. C0.0
										SHEET NO. 1 of 34
										100% DESIGN SUBMISSION

**TOOLE**  
DESIGN

8484 GEORGIA AVENUE, SUITE 800  
 SILVER SPRING, MD 20910  
 PHONE: 301.927.1900  
 FAX: 301.927.2800  
 www.tooledesign.com

REVISION BY APVD

### DEMOLITION LEGEND

	EXISTING TREE TO BE REMOVED
	EXISTING CONCRETE TO BE REMOVED
	EXISTING ASPHALT TO BE REMOVED
—	SAWCUT

### EROSION SEDIMENT CONTROL LEGEND

	PROPOSED RIPRAP
— SF — DF —	DIVERSION FENCE
— SF — DA —	DRAINAGE AREA TO E&S MEASURE
— SF — SF —	SILT FENCE
— LOD — LOD —	LIMIT OF DISTURBANCE
— — — — —	TREE PROTECTION (HC STD L9.02)
— — — — —	SOIL MAP BOUNDARY
	CURB INLET PROTECTION

### SURVEY/SITEWORK LEGEND

— — — — —	EXISTING PROPERTY BOUNDARY/ RIGHT-OF-WAY
— — — — —	PROPOSED TEMPORARY CONSTRUCTION EASEMENT
— — — — —	PROPOSED PERMANENT ACCESS/ MAINTENANCE/STORMWATER MANAGEMENT EASEMENT
305 — — — — —	EXISTING GRADE CONTOUR — MAJOR
305 — — — — —	EXISTING GRADE CONTOUR — MINOR
— — — — —	FINISHED GRADE CONTOUR — MAJOR
— — — — —	FINISHED GRADE CONTOUR — MINOR
— — — — —	EDGE OF PAVEMENT
— — — — —	CURB AND GUTTER
	PROPOSED DECIDUOUS TREE
	PROPOSED EVERGREEN TREE
	PROPOSED IMPERVIOUS ASPHALT PAVEMENT
	PROPOSED PERMEABLE ASPHALT PAVEMENT
	PROPOSED CONCRETE
	PROPOSED BOARDWALK
	PROPOSED SIGN ON U-POST
	EXISTING SIGN ON U-POST

APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

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Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

PROFESSIONAL CERTIFICATION  
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LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.



### UTILITY LEGEND

	CATV BOX		STORM DRAIN CLEANOUT
	CATV HANDBOX		STORM DRAIN DOWNSPOUT
	CATV PEDESTAL		STORM DRAIN MANHOLE
	ELECTRIC BOX		TELEPHONE BOX
	ELECTRIC HANDBOX		TELEPHONE HANDBOX
	ELECTRIC CABINET		TELEPHONE MANHOLE
	ELECTRIC MANHOLE		TELEPHONE PEDESTAL
	ELECTRIC SWITCHGEAR		CALL BOX
	ELECTRIC TRANSFORMER		CARD READER
	ELECTRIC METER		UNKNOWN MANHOLE
	STREET LIGHT		UNKNOWN CLEANOUT
	LANDSCAPE LIGHT		UTILITY POLE
	TRAFFIC CONTROL HANDBOX		VENT PIPE
	FIBER OPTIC BOX		FIRE HYDRANT
	FIBER OPTIC HANDBOX		WATER MANHOLE
	FIBER OPTIC MANHOLE		WATER METER
	FUEL TANK MANHOLE		WATER VALVE
	GAS METER		ABANDONED UTILITY
	GAS VALVE		END OF ELECTRONIC INFORMATION
	MONITORING WELL		DIRECTION ONLY
	SANITARY CLEANOUT		NO ASSOCIATED UTILITY DETECTED
	SANITARY MANHOLE		NOT FIELD LOCATABLE

### PAVEMENT MARKING LEGEND

EXISTING	PROPOSED
BE	BEGIN ERADICATION
EE	END ERADICATION
ES	ERADICATE SYMBOL
—	SIGN AND POST
	BICYCLE LANE SYMBOL
	SHARED LANE MARKING SYMBOL
— 5" SWL —	5" SOLID WHITE LANE LINE
— 10" SWL —	10" SOLID WHITE LANE LINE
— 5" BWL —	5" BROKEN WHITE LANE LINE (10' STRIPE, 30' SKIP)
— 5" DWL —	5" DOTTED WHITE LINE (3' STRIPE, 3' SKIP)
— 5" DAWL —	5" DASHED WHITE LINE (3' STRIPE, 9' SKIP)
— 5" SYL —	5" SOLID YELLOW LANE LINE
— 5" DYL —	5" DASHED YELLOW LINE (3' STRIPE, 9' SKIP)
— 5" SYCL —	5" SOLID YELLOW CENTERLINE
— 5" DSYCL —	5" DOUBLE SOLID YELLOW CENTERLINE
— 5" BYCL —	5" DOUBLE BROKEN YELLOW CENTERLINE (10' STRIPE, 30' SKIP)
— 5" DDYCL —	5" DOUBLE DASHED YELLOW CENTERLINE (2' STRIPE, 4' SKIP)
— 5" SBYCL —	5" SOLID YELLOW LANE LINE WITH 5" BROKEN YELLOW LANE LINE (10' STRIPE, 30' SKIP)
— 10" SWCHL —	10" SOLID WHITE CHANNELIZATION LINE
— 6"-24" SYCHL —	6"-24" SOLID YELLOW CHANNELIZATION LINE
— 12"/24" SL —	12" / 24" STOP LINE
— CW —	CROSSWALK WITH 12" SWL FOR PARALLEL LINES
— HVCW —	HIGH VISIBILITY CROSSWALK WITH 12" SWL FOR PARALLEL LINES AND 12" SWL (3' O.C. AT 90° ALIGNED WITH CURB, UNLESS OTHERWISE NOTED)
	WHITE PAVEMENT ARROW AND TEXT
	COLORIZED COATING
	NEW OR RELOCATED SIGN

### ABBREVIATIONS

ABAND.	ABANDONED
APPROX.	APPROXIMATE, APPROXIMATELY
ASPH	ASPHALT
B/	BOTTOM OF
BC	CURB
BDLG	BUILDING
CAL	CALIPER
CG	CURB & GUTTER
C/L	CENTERLINE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
DET	DETAIL
DIA	DIAMETER
D/W	DRIVEWAY
DWG(S)	DRAWING(S)
EA	EACH
ELEV	ELEVATION
ELEC	ELECTRICAL
ENGR	ENGINEER
E/MH	ELECTRIC MANHOLE
EP	EDGE OF PAVEMENT
EX	EXISTING
FT	FEET
HH	HANDHOLE
HIG	HIGH
HORIZ	HORIZONTAL
HP	HIGH POINT
HSCD	HOWARD SOIL CONSERVATION DISTRICT
INV	INVERT
J, J-BOX	JUNCTION BOX
LF	LINEAR FEET
LP	LAMP POLE
LP	LOW POINT
MAX	MAXIMUM
MDSHA	MARYLAND STATE HIGHWAY ADMINISTRATION
MH	MANHOLE
MIN	MINIMUM
N	NORTH
N/A	NOT APPLICABLE
NE	NORTHEAST
No.	NUMBER
NTS	NOT TO SCALE
PC	POINT OF CURVATURE
PED	PEDESTAL
PERP	PERPENDICULAR
PI	POINT OF INTERSECTION
PROP	PROPERTY
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
QL	QUALITY LEVEL
R	RADIUS
REQ'D	REQUIRED
REV	REVISION
R/W	RIGHT-OF-WAY
SAN	SANITARY SEWER
SEC, SECT	SECTION
SF	SQUARE FEET
SG	STORM GRATE
SGA	STATE HIGHWAY ADMINISTRATION
SHR	SHRUB
SMH	SEWER MANHOLE
SPEC	SPECIFICATION
SQ. FT.	SQUARE FEET
STA	STATION
STD	STANDARD
S/W	SIDEWALK
T/	TOP OF
TC	TOP OF CURB
TEL MH	TELEPHONE MANHOLE
TEMP	TEMPORARY, TEMPERATURE
TYP	TYPIICAL
VERT	VERTICAL
WL	WATER LINE
WV	WATER VALVE

REUSE OF DOCUMENTS  
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT.  
REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.

DSGN	SD				
DR	RB				
CHK	AO				
APVD	MRAB	NO.	DATE	REVISION	BY APVD

**TOOLE**  
**DESIGN**

8484 GEORGIA AVENUE, SUITE 800  
SILVER SPRING, MD 20910  
PHONE: 301.927.1900  
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NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

GENERAL  
DT-01 - LEGEND & ABBREVIATIONS

PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C0.1  
SHEET NO.  
2 of 34  
100% DESIGN SUBMISSION

**CONSTRUCTION NOTES**

- ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THESE DRAWINGS, PROJECT SPECIFICATIONS, AND WITH THE CURRENT EDITION OF THE HOWARD COUNTY, AND THE MARYLAND STATE HIGHWAY ADMINISTRATION (SHA) STANDARDS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS AND LICENSES AND KEEP COPIES OF THE SAME ON SITE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL REVIEW THE PLANS FOR THIS PROJECT PRIOR TO WORK.
- THE CONTRACTOR SHALL CHECK ALL DIMENSIONS. ANY DISCREPANCIES FOUND SHALL BE CALLED TO THE ATTENTION OF THE PROJECT DESIGNER AND BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
- ALL INFORMATION SHOWN ON THESE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. THE CONTRACTOR SHALL REPORT IMMEDIATELY TO THE ENGINEER OF RECORD ANY CONDITIONS CONFLICTING WITH THE DRAWINGS. FIELD MODIFICATIONS TO THE DRAWINGS SHALL NOT BE MADE WITHOUT THE CONSENT OF THE ENGINEER OF RECORD.
- THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK SITE, FREE FROM TRASH AND DEBRIS AT ALL TIMES.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING TRUCKS AND/OR OTHER EQUIPMENT OF MUD PRIOR TO ENTERING THE HOWARD COUNTY OR SHA RIGHT-OF-WAY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ALL STREETS, ALLAY DUST AND TO TAKE WHATEVER MEASURES NECESSARY TO ENSURE THE ROAD(S) ARE MAINTAINED IN A CLEAN, MUD, AND DUST FREE CONDITIONS AT ALL TIMES.
- THE CONTRACTOR SHALL KEEP AND MAINTAIN A SET OF APPROVED PROJECT PLANS AND SPECIFICATIONS ON THE SITE AT ALL TIMES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIALS ANY PAVEMENT, UTILITIES, PAVEMENT MARKINGS, ETC. THAT MUST BE CUT OR REMOVED, OR THAT ARE DAMAGED DURING CONSTRUCTION AT NO ADDITIONAL COST. TEMPORARY OR PERMANENT PAVEMENT PATCHES ARE TO BE PLACED IN ALL ROADWAY CUTS WITH COLD MIX THE SAME DAY THE CUT IS MADE IN ACCORDANCE WITH HOWARD COUNTY REQUIREMENTS.
- ALL EXISTING PAVEMENT MARKINGS MAY NOT BE SHOWN. ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE ERADICATED BY A METHOD APPROVED BY HOWARD COUNTY.
- ALL SIGNS SHALL BE HIGH INTENSITY SHEETING MEETING THE REQUIREMENTS OF AASHTO M26.
- PROPOSED SIGNS SHALL BE INSTALLED SO THAT NO PORTION OF THE SIGN PANEL OVERHANGS ADJACENT ROADWAY PAVEMENT, I.E. SHALL NOT HANG IN FRONT OF A FACE OF CURB.
- PROPOSED SIGN POSTS SHALL BE LOCATED A MINIMUM OF 2 FEET BEHIND ANY ADJACENT FACE OF CURB. IF LOCATED IN OR ADJACENT TO SIDEWALKS, A 32" MINIMUM CLEAR AND 48" PREFERRED PASSING SPACE ON EXISTING AND PROPOSED SIDEWALKS SHALL BE MAINTAINED.
- PROPOSED SIGNS AT NEW LOCATIONS SHALL BE INSTALLED SO THEY DO NOT BLOCK THE VISIBILITY OF ANY EXISTING SIGNS OR SIGNALS.
- PROPOSED SIGNS AND POSTS SHALL BE CLEAR OF EXISTING FIRE HYDRANTS, SURFACE UTILITY, AND OVERHEAD UTILITY EQUIPMENT A MINIMUM OF 10 FEET OR AS REQUIRED BY APPLICABLE STANDARDS.
- FOR NEW POST INSTALLATION, THE CONTRACTOR SHALL VERIFY THAT THERE ARE NO CONFLICTING UNDERGROUND OR OVERHEAD UTILITIES.
- SIGNS MOUNTED TO EXISTING LIGHT, SIGNAL OR UTILITY POLES SHALL BE FASTENED WITH A MANUFACTURED STEEL BANDING SYSTEM. POLES SHALL NOT BE DRILLED DIRECTLY. THE CONTRACTOR SHALL SUBMIT MANUFACTURER INFORMATION ON THE BANDING SYSTEM TO HOWARD COUNTY FOR APPROVAL PRIOR TO INSTALLATION.

**COORDINATION**

- CONSTRUCTION WILL TAKE PLACE ADJACENT TO ONGOING TRAFFIC OPERATIONS. THE CONTRACTOR SHALL OBTAIN PERMITS AND COORDINATE CONSTRUCTION ACTIVITIES WITH HOWARD COUNTY AND SHA, AS APPLICABLE.
- THE CONTRACTOR SHALL SUBMIT A PROPOSED CONSTRUCTION SCHEDULE FOR REVIEW AND APPROVAL BY HOWARD COUNTY IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ARRANGE A MEETING WITH THE OWNER'S REPRESENTATIVE TO DISCUSS COORDINATION OF CONSTRUCTION ACTIVITIES AND RELATED PROJECTS. THE CONTRACTOR SHALL PARTICIPATE IN PERIODIC PROGRESS MEETINGS AND SHALL SUBMIT A SCHEDULE UPDATE AT EACH MEETING.

**UTILITIES**

- PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF LOCATING ANY AND ALL UNDERGROUND UTILITIES (PUBLIC OR PRIVATE) THAT MAY EXIST OR CROSS THROUGH THE AREA OF CONSTRUCTION, WHETHER OR NOT THEY ARE SHOWN ON THE PLANS BEFORE DIGGING. TO AVOID THE UTILITIES, THE CONTRACTOR SHALL CALL MISS UTILITY OF MARYLAND AT 1-800-257-7777. STATE LAW MANDATES THE NOTIFICATION OF UTILITY OWNERS 48-HOURS IN ADVANCE OF EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT NO EXPENSE TO THE OWNER, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- THIS PLAN DOES NOT GUARANTEE THE EXISTENCE, NON-EXISTENCE, SIZE, TYPE, LOCATION, ALIGNMENT, OR DEPTH OF ANY OR ALL UNDERGROUND UTILITIES OR OTHER FACILITIES. WHERE SURFACE FEATURES (MANHOLES, CATCH BASINS, VALVES, ETC.) ARE UNAVAILABLE OR INCONCLUSIVE, INFORMATION SHOWN MAY BE FROM UTILITY OWNERS RECORD AND/OR ELECTRONIC LINE TRACING, THE RELIABILITY OF WHICH IS UNCERTAIN. THE CONTRACTOR SHALL PERFORM TEST EXCAVATION OR OTHER REINVESTIGATION AS NECESSARY TO VERIFY LOCATION AND CLEARANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES, IF ANY, TO THE EXISTING UTILITIES AND RELATED STRUCTURES.
- UNLESS OTHERWISE NOTED, UTILITY MANHOLES, COVERS, METER BOXES, AND HATCHES ARE TO BE ADJUSTED BY THE CONTRACTOR PRIOR TO PLACING FINAL SURFACE PAVEMENT. THE TOP ELEVATION OF EXISTING MANHOLES SHALL BE ADJUSTED TO MEET THE FINAL PAVEMENT ELEVATION AT THE TIME OF FINAL PAVING OPERATIONS. ALL MANHOLES ARE TO BE PROTECTED FROM THE TRAVELING PUBLIC. NO MANHOLE IS TO BE RAISED ABOVE THE TOP ELEVATION OF THE FINISH GRADE WITHOUT THE APPROPRIATE TRANSITION.
- CONTRACTOR SHALL CONFORM TO THE "OVERHEAD HIGH VOLTAGE ACT" (EFFECTIVE JULY 1, 2003) AND SHALL CONTACT THE NECESSARY AUTHORITIES PRIOR TO THE START OF CONSTRUCTION.
- HOWARD COUNTY'S UTILITY DEPARTMENT INSPECTOR SHALL BE NOTIFIED WHEN ANY IMPROVEMENT PERTINENT TO HIS INSPECTION DUTIES ARE BEING INSTALLED. SPECIFIC REQUIREMENTS ARE:
  - SITE INSPECTION OR AREA SUPERVISOR IS TO BE NOTIFIED AT LEAST 5 DAYS PRIOR TO START OF CONSTRUCTION.
  - A MINIMUM OF 24 HOURS NOTICE IS REQUIRED WHEN REQUESTING COMPACTION TESTS AND RESIDENTIAL OR NON-RESIDENTIAL USE PERMITS.

APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
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PROFESSIONAL ENGINEER UNDER THE  
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DSGN	SD			
DR	RB			
CHK	AO			
APVD	MRAB	NO.	DATE	REVISION

**TOOLE  
DESIGN**

**TRANSPORTATION MANAGEMENT PLAN**

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY TRAFFIC CONTROL, SUCH AS LANE CLOSURES, FLAGGERS, DRIVEWAY ENTRANCES, ETC. TO PROPERLY MAINTAIN TRAFFIC THROUGHOUT THE PROJECT AREA.
- ALL TRAFFIC MAINTENANCE SHALL CONFORM TO THE LATEST REVISIONS THERETO: MARYLAND WORK AREA PROTECTION MANUAL, SHA SPECIFICATIONS AND CONSTRUCTION DETAILS, AND THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- ALL EXISTING SIGNS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAY ENTRANCES DURING CONSTRUCTION.
- PEDESTRIAN AND CYCLE DETOURS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION ACCORDING TO THE MARYLAND WORK ZONE SAFETY GUIDELINES AND THE MARYLAND MUTCD GUIDELINES.

**STORM SEWER**

- LENGTHS OF PIPES SHOWN ON THE DRAWINGS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
- INVERT ELEVATIONS SHOWN ON THE DRAWINGS ARE TAKEN AT THE FACE OF THE STRUCTURE.
- MINOR FIELD ADJUSTMENTS IN THE ELEVATION AND ALIGNMENT OF STORM SEWERS AND STRUCTURES MAY BE NECESSARY TO MEET EXISTING CONDITIONS AND PROPOSED FINAL GRADING. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR RECORD PRIOR TO MAKING ANY NECESSARY ADJUSTMENTS.
- TOP OF STRUCTURES SHALL BE SET TO MATCH CURB AND GUTTER, SIDEWALK AND/OR DITCH CONSTRUCTION.

**SIDEWALKS AND MULTI-USE/SHARED USE PATHS**

- A MINIMUM 2 FOOT CLEARANCE IS REQUIRED BETWEEN THE WALKWAY EDGE AND ANY VERTICAL CONSTRAINT SUCH AS TREES, UTILITY POLES, SIGNS, ETC., UNLESS OTHERWISE SPECIFICALLY NOTED ON THE PLANS AT EACH LOCATION.
- A MINIMUM 5 FOOT UTILITY STRIP IS REQUIRED BETWEEN THE EDGE OF THE WALKWAY AND THE BACK OF THE CURB AND GUTTER, UNLESS OTHERWISE NOTED ON THE PLAN.
- A MINIMUM 10 FOOT SEPARATION IS REQUIRED BETWEEN THE EDGE OF THE SIDEWALK AND THE EDGE OF THE PAVEMENT FOR NON CURB AND GUTTER ROADS, UNLESS OTHERWISE NOTED ON THE PLANS.
- SHARED USE PATHS SHALL BE A MINIMUM OF 10 FEET WIDTH, UNLESS OTHERWISE NOTED.
- ALL VEGETATIVE MATERIAL WITHIN 10 FEET OF VERTICAL CLEARANCE FROM THE PROPOSED PATHWAY SHALL BE REMOVED PRIOR TO PATH CONSTRUCTION. THE HORIZONTAL CLEARING LIMITS SHALL BE IN ACCORDANCE WITH THE DETAILS PROVIDED. AN EXCEPTION TO THIS REQUIREMENT SHALL BE TO SAVE ANY TREES THAT ARE DESIGNATED ON THE CONSTRUCTION PLANS.
- ALL GRADES FOR PROPOSED SIDEWALK SHALL BE IN ACCORDANCE WITH CONSTRUCTION PLANS. ANY FIELD ADJUSTMENT OF THE PROPOSED SIDEWALK GRADES SHALL BE APPROVED BY THE ENGINEER OF RECORD. THE FOLLOWING GRADE CRITERIA SHALL BE ADHERED TO FOR FIELD ADJUSTMENTS:
  - MINIMUM GRADE: 1% EXCEPT IN SAGS WITH ADEQUATE DRAINAGE
  - MAXIMUM GRADE: ROADWAY GRADE OR 5% WHICHEVER IS GREATER IN AREAS WHERE SIDEWALK OR SHARED USE PATH IS ADJACENT TO A ROADWAY. MAXIMUM GRADE IS 5% IN ALL OTHER AREAS.

**GRADING, DRAINAGE & PAVEMENT**

- STABLE SUBGRADE SHALL COMPRIZE SOLID, WELL DRAINED, UNDISTURBED EARTH CAPABLE OF SUPPORTING STREET LOADING WITHOUT RESULTING IN ANY DAMAGE OR SETTLEMENT AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
- UNLESS MORE STRINGENT COMPACTION REQUIREMENTS ARE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS, THE BACKFILL OF EMBANKMENT MATERIAL, THE INSTALLATION OF TRENCH BACKFILL AND THE RESTORATION OF DISTURBED AREAS SHALL BE COMPACTED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS. ALL COMPACTION SHALL BE AT +/- 2% OF THE OPTIMUM MOISTURE CONTENT. ANY WORK WITHIN SHA RIGHT OF WAY SHALL MEET SHA STANDARDS AND SPECIFICATIONS.
- ALL SUBGRADE, SUBBASE, BASE, AND SHOULDER MATERIAL SHALL BE PLACED AND COMPACTED TO THE DENSITY SPECIFIED IN THE CURRENT EDITION OF THE HOWARD COUNTY STANDARD SPECIFICATIONS AND CONSTRUCTION DETAILS. ALL COMPACTION SHALL BE AT +/- 2% OF THE OPTIMUM MOISTURE CONTENT.
- UNLESS MORE STRINGENT COMPACTION REQUIREMENTS ARE NOTED ON THE PLANS, THE SUBGRADE FOR ALL WALKWAYS SHALL BE COMPACTED TO A MINIMUM OF 98% OF THEORETICAL MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT.
- WHERE UNSUITABLE SUBGRADE, AS DETERMINED BY HOWARD COUNTY, IS ENCOUNTERED, IT SHALL BE MADE STABLE BY DRAINING, COMPACTING AND/OR REPLACING WITH SUITABLE MATERIAL AS REQUIRED TO THE SATISFACTION OF THE INSPECTION REPRESENTATIVE.
- CONTRACTOR SHALL NOT DISTURB EXISTING NATURAL DRAINAGE DITCHES, STREAM BANKS, OR KNOWN WETLAND AREAS.
- PROPOSED TOP OF CURB GRADES SHALL BE FIELD ADJUSTED AS REQUIRED TO CONFORM TO THE INTENT OF THE TYPICAL SECTION. A SMOOTH GRADE SHALL BE MAINTAINED FROM THE BASELINE TO THE PROPOSED EDGE OF PAVEMENT OR FACE OF CURB TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR THE PONDING OF WATER ON THE TRAIL, BUFFERS OR ROADWAY. THE EXISTING PAVEMENT SHALL BE RECAPPED AND/OR REMOVED AND REPLACED AS NECESSARY TO ACCOMPLISH THIS REQUIREMENT. ALL CURB FORMS SHALL BE INSPECTED FOR HORIZONTAL AND VERTICAL ALIGNMENT BY HOWARD COUNTY OR THEIR AUTHORIZED REPRESENTATIVES PRIOR TO PLACEMENT OF CONCRETE.
- ALL CONCRETE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE HOWARD COUNTY OR SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, UNLESS SPECIFIED OTHERWISE.
- ALL ASPHALT PAVEMENT COURSES SHALL BE IN CONFORMANCE WITH SHA SPECIFICATIONS, UNLESS OTHERWISE SPECIFIED BY THE OWNER AND/OR AS SHOWN ON THE APPROVED PLANS.
- THE LOCATIONS AND INVERTS OF ALL DRAINAGE STRUCTURES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. AND THE CONTRACTOR SHALL VERIFY THIS DATA. IF DURING CONSTRUCTION, THE LOCATION AND INVERT ELEVATIONS FOR EXISTING STRUCTURES ARE FOUND TO DIFFER SIGNIFICANTLY FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER OF RECORD PRIOR TO INSTALLATION OF THE DRAINAGE STRUCTURE.
- THE CONTRACTOR SHALL RESTORE ALL DRIVEWAYS AND PAVEMENT DISTURBED DURING CONSTRUCTION. DRIVEWAY RESTORATION SHALL FOLLOW SHA STANDARDS AND DETAILS.
- THE PAVEMENT DESIGN IN THE CONSTRUCTION PLANS WAS PREPARED BASED ON AVAILABLE SUBSURFACE INFORMATION, INCLUDING LABORATORY CALIFORNIA BEARING RATIO (C.B.R.) TESTS THAT ARE PERFORMED DURING THE DESIGN SUBSURFACE INVESTIGATION. WHEN THE CONTRACTOR REACHES THE SUBGRADE ELEVATION, ADDITIONAL C.B.R. TEST LOCATIONS MAY BE DIRECTED BY THE GEOTECHNICAL ENGINEER FOR SELECTED LOCATIONS, BASED ON ACTUAL FIELD CONTROL OBSERVATIONS. THE C.B.R. SAMPLES AND TESTS SHALL BE PERFORMED BY A THIRD-PARTY GEOTECHNICAL FIRM. THE RESULTS OF THE ENGINEER'S EVALUATION OF THE C.B.R. LABORATORY TESTS SHALL BE OBTAINED IN WRITING PRIOR TO THE PLACEMENT OF ANY SUBBASE OR BASE MATERIAL IN THE AREA(S) UNDER CONSIDERATION. THE PROPOSED PAVEMENT DESIGN FOR THE AREAS UNDER CONSIDERATION WILL EITHER BE CONFIRMED OR ADJUSTED BY THE ENGINEER BASED ON THE RESULT OF THE C.B.R. THE CONTRACTOR SHALL COOPERATE BY MODIFYING CONSTRUCTION ACTIVITIES AND/OR SCHEDULING IN ORDER TO PERMIT THE ADDITIONAL C.B.R. TESTING. THE CONTRACTOR SHALL NOT BE ENTITLED TO ANY MONETARY DAMAGES WHATSOEVER FOR ANY DELAYS RESULTING FROM THIS TESTING.

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**EROSION AND SEDIMENT CONTROL**

- TEMPORARY SILT FENCE SHALL BE CONSTRUCTED FOR SHEET RUN OFF, AND SHALL BE LOCATED AS DIRECTED BY HOWARD COUNTY REPRESENTATIVE OR EROSION AND SEDIMENT INSPECTOR. SUPER SILT FENCE MAY BE INSTALLED AT THE SITE UNDER THE DIRECTION OF THE HOWARD SOIL AND CONSERVATION DISTRICT INSPECTOR.
- WHEN WIRE SUPPORT IS USED, STANDARD STRENGTH FILTER CLOTH MAY BE USED. POSTS FOR THIS TYPE OF INSTALLATION SHALL BE PLACED A MAXIMUM OF 10 FEET APART. THE WIRE MESH FENCE MUST BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST ONE INCH LONG, TIE WIRES, OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF TWO INCHES AND SHALL NOT EXTEND MORE THAN 34 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- WHEN WIRE SUPPORT IS NOT USED, EXTRA STRENGTH FILTER CLOTH MAY BE USED. POSTS FOR THIS TYPE OF FABRIC SHALL BE PLACED A MAXIMUM OF 6 FEET APART. THE FILTER FABRIC SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING ONE INCH LONG (MINIMUM) HEAVY DUTY WIRE STAPLES OR TIE WIRES AND EIGHT INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH.
- WIRE FENCE REINFORCEMENT FOR SILT FENCES USING STANDARD STRENGTH FILTER CLOTH SHALL BE A MINIMUM OF 14 GAUGE AND SHALL HAVE A MAXIMUM MESH SPACING OF 6 INCHES. POSTS SHALL BE EITHER STEEL POSTS OR WOODEN STAKES AND HAVE A MINIMUM LENGTH OF 5 FEET.
- SYNTHETIC FILTER FABRIC SHALL BE A PERVERSIVE SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS NOTED IN THE LATEST VERSION OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION AND SEDIMENT CONTROL HANDBOOK. THE SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF SIX MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0°F TO 120°F.
- SILT FENCES SHALL BE INSPECTED AND CLEANED ON A WEEKLY BASIS AND ON A DAILY BASIS IMMEDIATELY FOLLOWING EACH RAIN STORM. ALL NECESSARY REPAIRS SHOULD BE MADE IMMEDIATELY.
- REFERENCE THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR MOST RECENT VERSION.
- THE TEMPORARY EROSION AND SILTATION (E&S) CONTROL ITEMS SHOWN ON THE E&S CONTROL PLANS ARE INTENDED TO PROVIDE A GENERAL PLAN FOR CONTROLLING EROSION AND SILTATION WITHIN THE PROJECT LIMITS. THE E&S CONTROL PLAN IS BASED ON FIELD CONDITIONS AT THE TIME OF PLAN DEVELOPMENT AND AN ASSUMED SEQUENCE OF CONSTRUCTION. THE CONTRACTOR, IN CONJUNCTION WITH THE PROJECT DESIGNER AND/OR ENVIRONMENTAL MONITOR, SHALL ADJUST THE LOCATION, QUANTITY AND TYPE OF EROSION AND SILTATION CONTROL ITEMS REQUIRED BASED ON THE ACTUAL FIELD CONDITIONS ENCOUNTERED AT THE TIME OF CONSTRUCTION AND THE SELECTED SEQUENCE OF CONSTRUCTION.
- THE AREAS BEYOND THE PROJECTS CONSTRUCTION AREA ARE TO BE PROTECTED FROM SILTATION. PERIMETER CONTROLS SUCH AS FILTER BARRIER, SILT FENCE, DIVERSION DIKES, TURBIDITY CURTAINS, ETC. SHALL BE INSTALLED PRIOR TO ANY GRUBBING OPERATIONS OR OTHER EARTH MOVING ACTIVITIES.
- ROCK FOR CHECK DAMS, DROP INLET SILT TRAPS, EROSION CONTROL STONE AND RIPRAP IN CHANNELS SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION AND SEDIMENT CONTROL HANDBOOK.
- SILT REMOVAL AND SEDIMENT CLEAN-OUT FROM EROSION AND SILTATION CONTROL ITEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING:
  - TEMPORARY SEDIMENT BASINS AND SEDIMENT TRAPS - WHEN THE "WET" STORAGE VOLUME (PERMANENT POOL) HAS BEEN REDUCED BY 50%.
  - DEWATERING BASINS - WHEN THE EXCAVATED VOLUME HAS BEEN REDUCED BY 50%.
  - ALL OTHER EROSION AND SILTATION CONTROL ITEMS - WHEN THE CAPACITY, HEIGHT, OR DEPTH HAS BEEN REDUCED BY 50%.
- EXCEPT WHERE NOTED HEREON, TO THE BEST OF THE DESIGNER'S KNOWLEDGE, THE PROPOSED DEVELOPMENT OF THE SUBJECT PROPERTY CONFORMS TO ALL CURRENT APPLICABLE LAND DEVELOPMENT ORDINANCES, REGULATIONS, AND ADOPTED STANDARDS.
- LAND CONSERVATION NOTES - MEASURES TO CONTROL EROSION AND SILTATION SHALL BE PROVIDED PURSUANT TO AND IN COMPLIANCE WITH CURRENT STATE AND LOCAL REGULATIONS. HOWEVER, THE APPROVAL OF THESE PLANS SHALL IN NO WAY RELIEVE THE CONTRACTOR OR HIS AGENT OF ANY LEGAL RESPONSIBILITIES WHICH MAY BE REQUIRED BY THE CODE OF MARYLAND OR ANY ORDINANCE ENACTED BY MARYLAND, SHA, OR HOWARD COUNTY.
- EROSION AND SILTATION CONTROL SHALL BE PROVIDED WHERE NECESSARY PRIOR TO CLEARING, GRADING AND CONSTRUCTION.
- ADDITIONAL SILTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS DIRECTED BY HOWARD COUNTY INSPECTOR DURING FIELD REVIEW. COSTS ASSOCIATED WITH ADDITIONAL MEASURES SHALL BE ASSUMED BY THE CONTRACTOR.

**SEDIMENT CONTROL NOTES**

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
  - A. PRIOR TO THE START OF EARTH DISTURBANCE.
  - B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
  - C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
  - D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
 OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
- 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 TOPSOIL (SEC. B-4-2), 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 APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
- 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 CID.
- SITE ANALYSIS:
 

TOTAL AREA OF SITE:	1.9 ACRES
AREA DISTURBED:	1.9 ACRES
AREA TO BE ROOFED OR PAVED:	x.xx ACRES
AREA TO BE VEGETATIVELY STABILIZED:	x.xx ACRES
TOTAL CUT:	100 CU. YDS.
TOTAL FILL:	805 CU. YDS.
SURPLUS CUT TO BE DISPOSED OF ON A SITE WITH AN APPROVED SEDIMENT CONTROL PLAN.	
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY; AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
  - INSPECTION DATE
  - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
  - NAME AND TITLE OF INSPECTOR
  - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
  - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
  - EVIDENCE OF SEDIMENT DISCHARGES
  - IDENTIFICATION OF PLAN DEFICIENCIES
  - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
  - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
  - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
  - PHOTOGRAPHS
  - MONITORING/SAMPLING
  - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
  - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE, ETC.)
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
- ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
- DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. 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 CID, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
- TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
- ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
- STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
  - USE I AND II MARCH 1 - JUNE 15
  - USE II AND III OCTOBER 1 - APRIL 30
  - USE IV MARCH 1 - MAY 31
- A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.



REUSE OF DOCUMENTS  
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT.  
REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.

DSGN	SD			
DR	RB			
CHK	AO			
APVD	MRAB	NO.	DATE	REVISION
				BY APVD

**TOOLE  
DESIGN**

NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

GENERAL  
EROSION AND SEDIMENT CONTROL NOTES - 1

PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C1.3  
SHEET NO.  
4 of 34

**SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS**

DEFINITION: THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE: TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

PRACTICE APPLIED: WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

**A. SOIL PREPARATION****1. TEMPORARY STABILIZATION**

- a. SEEDED 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 RIPPER MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSEND, 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.
- b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
- c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

**2. PERMANENT STABILIZATION**

- a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

i. SOIL pH BETWEEN 6.0 AND 7.0.

ii. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

iii. 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.

iv. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSEND TO A DEPTH OF 3 TO 5 INCHES.

d. APPLY SOIL AMENDMENT AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.

e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEEDING.

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 1 TO 3 INCHES OF SOIL LOOSE AND FRIBLE. SEEDBED LOOSING MAY BE NECESSARY ON NEWLY DISTURBED AREAS.

**B. TOPSOILING**

- 1. 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.
- 2. 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.

**3. TOPSOILING IS LIMITED TO AREAS HAVING 1.0 OR FLATTER SLOPES WHERE:**

- a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
- b. THE SOIL AMTERAIL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
- c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
- d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

**4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.****5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:**

- a. TOPSOIL MUST BE LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY NOT BE USED RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUB-SOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN  $\frac{1}{2}$  INCHES IN DIAMETER.
- b. 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.
- c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY QUALIFIED AGRONOMIST OR SOIL SCIENTISTS BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

**6. TOPSOIL APPLICATION**

- a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
- b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PREFORMED 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.
- c. 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 DETERIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

**C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)**

- 1. SOIL TESTS MUST BE PREFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTRIBUTED 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.
- 2. 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.
- 3. 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 A 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.
- 4. 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.
- 5. 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 1.00 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

**SEEDING AND MULCHING**

DEFINITION: THE APPLICATION OF THE SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

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

PRACTICE APPLIED: TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

**A. SEEDING****1. SPECIFICATIONS**

- a. 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 MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
- b. MULCH ALONE MAY NOT BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
- c. 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. TEMPERATURE ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
- d. 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.

**2. APPLICATION**

- a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
  - i. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE, OR SITE-SPECIFIC SEEDING SUMMARIES.
  - ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
- b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY THE COVER SEED WITH SOIL.
  - i. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST  $\frac{1}{2}$  INCH OF SOIL COVERING. SEEDED MUST BE FIRM AFTER PLANTING.
  - ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER)
  - i. 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; K2O (POTASSIUM), 200 POUNDS PER ACRE.
  - ii. LIME: USE ONLY GROUND 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.
  - iv. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

**B. MULCHING****1. MULCH MATERIALS (IN ORDER OF PREFERENCE)**

- a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
- b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
  - i. 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.
  - ii. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
  - iii. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH 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.
  - iv. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OF COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHOTOTOXIC.
- v. 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.

**2. APPLICATION**

- a. APPLY MULCH TO ALL SEDED AREAS IMMEDIATELY AFTER SEEDING.
- b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEDED 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.
- c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

**3. ANCHORING**

- a. 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.
  - i. 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.
  - ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY WITH 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.
  - iii. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (ARGO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY 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.
  - iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

**TEMPORARY STABILIZATION**

DEFINITION: TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

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

CONDITIONS WHERE PRACTICE APPLIED: 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.

**1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE.**

- 2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
- 3. 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. OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

**PERMANENT STABILIZATION**

DEFINITION: TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

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

PRACTICE APPLIED: EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

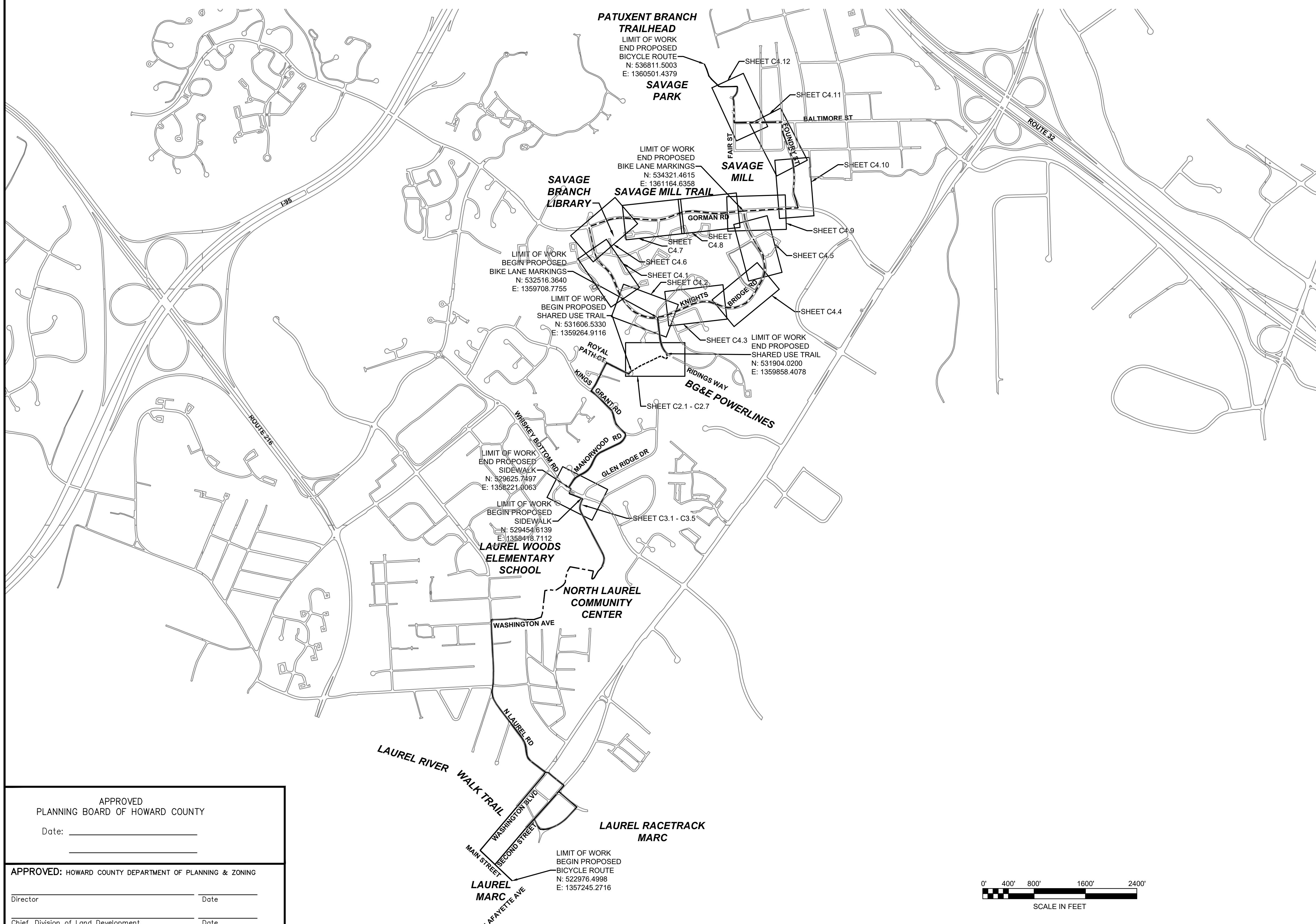
**A. SEED MIXTURES****1. GENERAL USE**

- a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN THE PERMANENT SEEDING SUMMARY TABLE FOR THE APPROPRIATE PLANT HARDINESS ZONE AND BASED ON THE SITE CONDITION OR PURPOSE.
- b. 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.

**c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE A SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.****d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FROM FERTILIZER (46-0-0) AT  $\frac{3}{2}$  POUNDS PER 100 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.****2. TURFGRASS MIXTURES**

- a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
- b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE.

**i. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 100 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE.****ii. 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 CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SE**



#### NOTES

1. PROPOSED BIKE ROUTE BEGINS IN THE SOUTH AT THE LAUREL MARC STATION AND CONTINUES NORTH TO SAVAGE PARK, WHERE IT CONNECTS WITH THE EXISTING PATUXENT BRANCH TRAIL.
2. A PROPOSED PAVED TRAIL WILL CARRY THE BIKE ROUTE ACROSS THE BALTIMORE GAS & ELECTRIC (BG&E) POWERLINE PROPERTY BETWEEN ROYAL PATH COURT AND RIDINGS WAY. SEE SHEET C2.2 FOR PLAN AND PROFILE OF THE PROPOSED TRAIL.
3. ADDITIONAL ROADWAY MARKINGS FOR THE EXISTING BIKE LANE ALONG KNIGHTS BRIDGE ROAD AND PROPOSED SHARED LANE MARKINGS (SHARROWS) FOR FOUNDRY STREET, BALTIMORE STREET, AND FAIR STREET ARE SHOWN ON SHEETS C4.1 - C4.12.
4. SEE SHEET C1.2 FOR PROJECT NOTES.
5. SEE SHEET C5.1 - 5.3 FOR CONSTRUCTION DETAILS.
6. PROPOSED WAYFINDING SIGNS ARE INCLUDED IN A SEPARATE PACKAGE.

#### LEGEND

EXISTING ROADWAY WITH PROPOSED WAYFINDING
EXISTING TRAIL SEGMENT WITH PROPOSED WAYFINDING
PROPOSED TRAIL SEGMENT WITH PROPOSED WAYFINDING
EXISTING/ENHANCED BIKE LANE SEGMENTS WITH PROPOSED WAYFINDING
PROPOSED SHARED LANE AREAS WITH PROPOSED WAYFINDING

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF (STATE),  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.



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NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

GENERAL

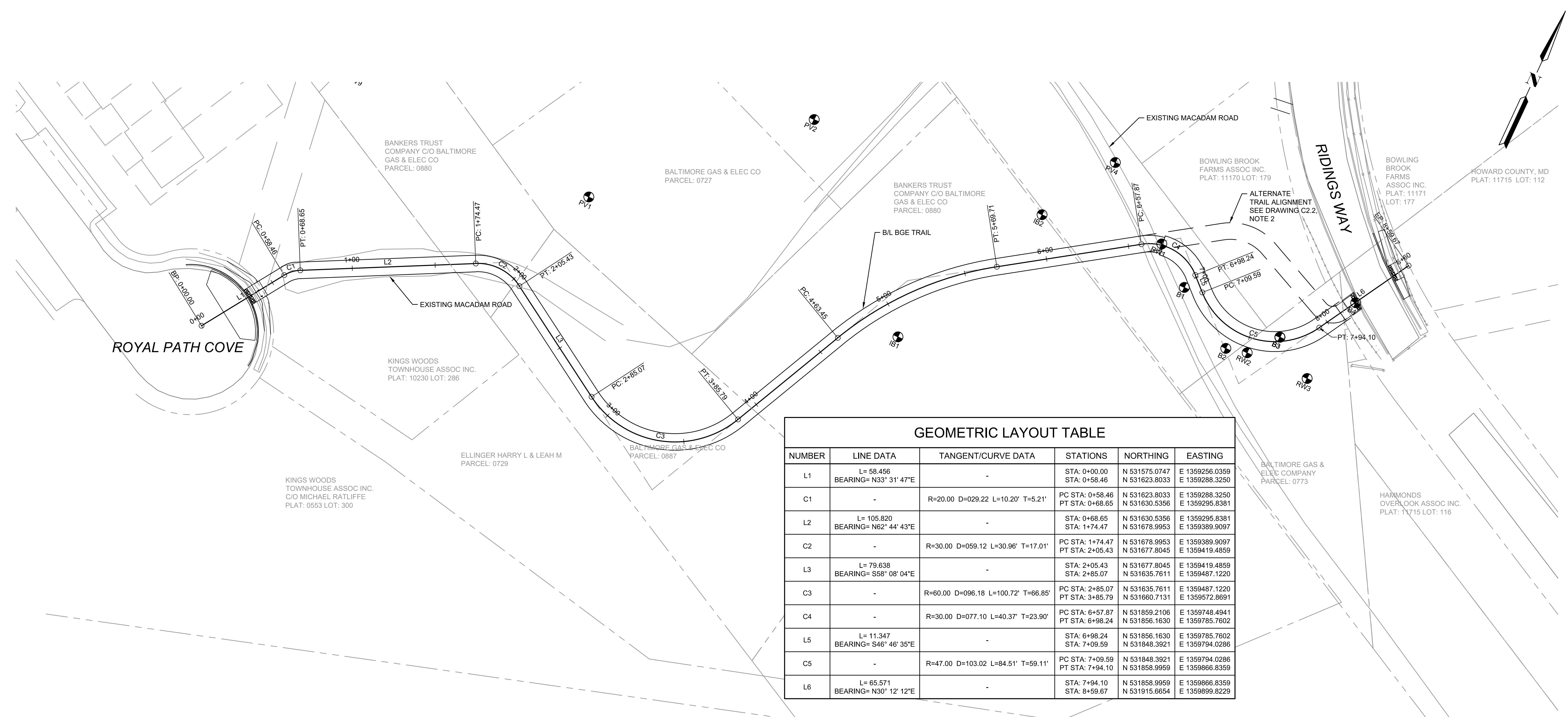
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5409.05

OVERALL ROUTE LAYOUT

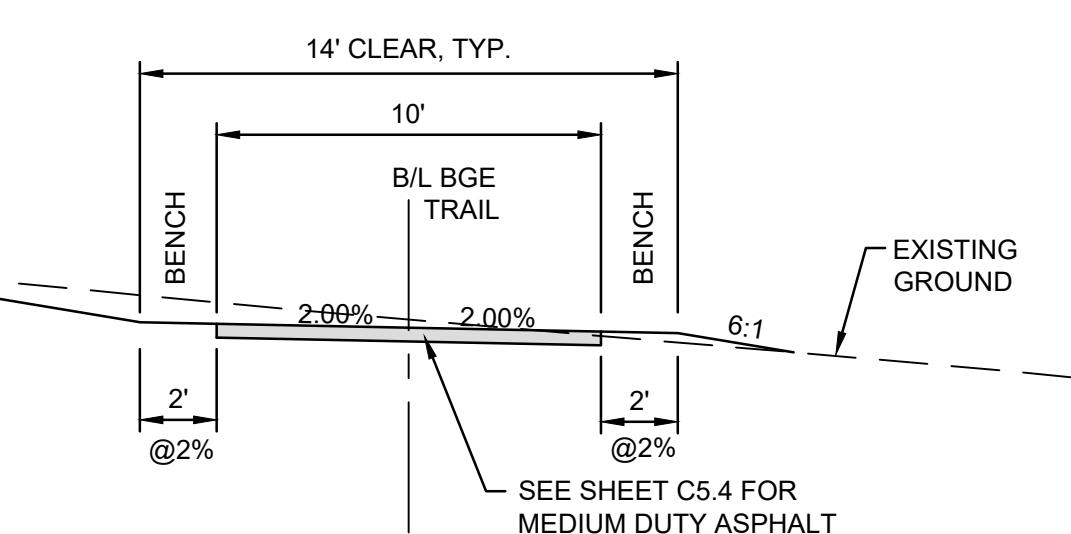
DATE  
12-18-2020

DRAWING NO.  
C1.5

SHEET NO.  
6 of 34

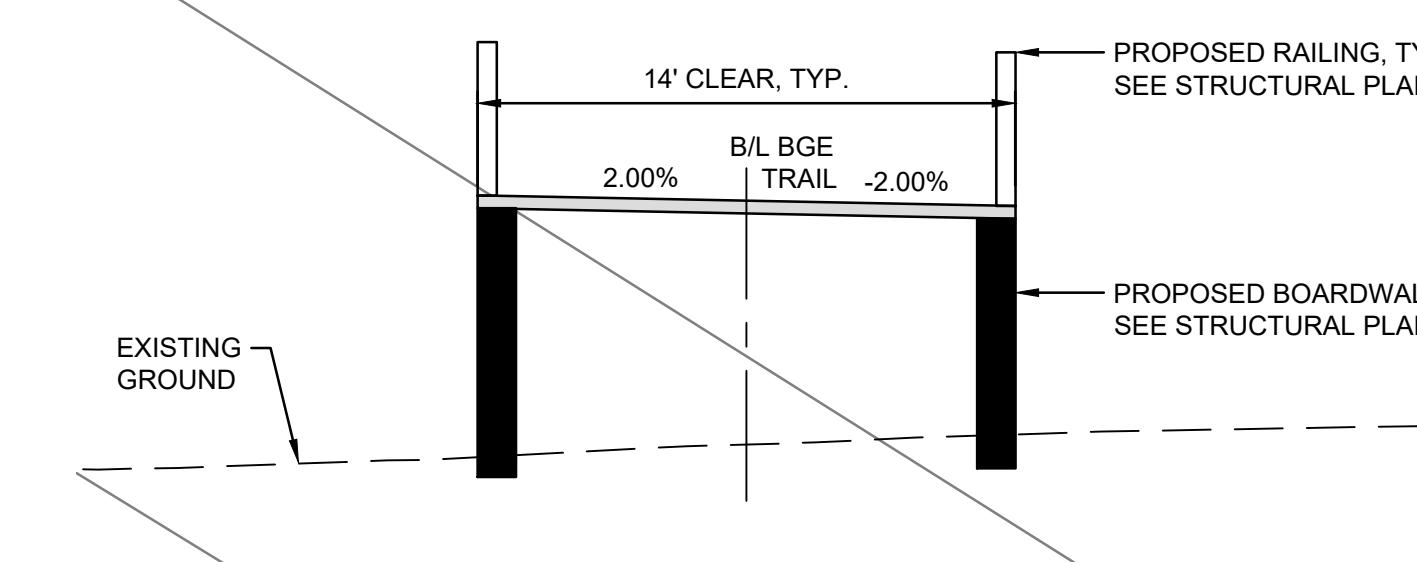


GEOMETRIC LAYOUT TABLE					
NUMBER	LINE DATA	TANGENT/CURVE DATA	STATIONS	NORTHING	EASTING
L1	L= 58.456 BEARING= N33° 31' 47"E	-	STA: 0+00.00 STA: 0+58.46	N 531575.0747 N 531623.8033	E 1359256.0359 E 1359288.3250
C1	-	R=20.00 D=029.22 L=10.20' T=5.21'	PC STA: 0+58.46 PT STA: 0+68.65	N 531623.8033 N 531630.5356	E 1359288.3250 E 1359295.8381
L2	L= 105.820 BEARING= N62° 44' 43"E	-	STA: 0+68.65 STA: 1+74.47	N 531630.5356 N 531678.9953	E 1359295.8381 E 1359389.9097
C2	-	R=30.00 D=059.12 L=30.96' T=17.01'	PC STA: 1+74.47 PT STA: 2+05.43	N 531678.9953 N 531677.8045	E 1359389.9097 E 1359419.4859
L3	L= 79.638 BEARING= S58° 08' 04"E	-	STA: 2+05.43 STA: 2+85.79	N 531677.8045 N 531635.7611	E 1359419.4859 E 1359487.1220
C3	-	R=60.00 D=096.18 L=100.72' T=66.85'	PC STA: 2+85.07 PT STA: 3+85.79	N 531635.7611 N 531660.7131	E 1359487.1220 E 1359572.8691
C4	-	R=30.00 D=077.10 L=40.37' T=23.90'	PC STA: 6+57.87 PT STA: 6+98.24	N 531859.2106 N 531856.1630	E 1359748.4941 E 1359785.7602
L5	L= 11.347 BEARING= S46° 46' 35"E	-	STA: 6+98.24 STA: 7+09.59	N 531856.1630 N 531848.3921	E 1359785.7602 E 1359794.0286
C5	-	R=47.00 D=103.02 L=84.51' T=59.11'	PC STA: 7+09.59 PT STA: 7+94.10	N 531848.3921 N 531858.9959	E 1359794.0286 E 1359866.8359
L6	L= 65.571 BEARING= N30° 12' 12"E	-	STA: 7+94.10 STA: 8+59.67	N 531858.9959 N 531915.6654	E 1359866.8359 E 1359899.8229



TYPICAL SECTION - TRAIL

SCALE: HOR. 1"=5' VERT. 1"=5'



TYPICAL SECTION - TRAIL ON BOARDWALK

SCALE: HOR. 1"=5' VERT. 1"=5'



APPROVED PLANNING BOARD OF HOWARD COUNTY	
Date: _____	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING	
Director	Date
Chief, Division of Land Development	Date
Chief, Development Engineering Division	Date

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF (STATE),  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.

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DR	VLR				
CHK	AO				
APVD	MRAB	NO.	DATE	REVISION	BY APVD

**TOOLE**  
**DESIGN**

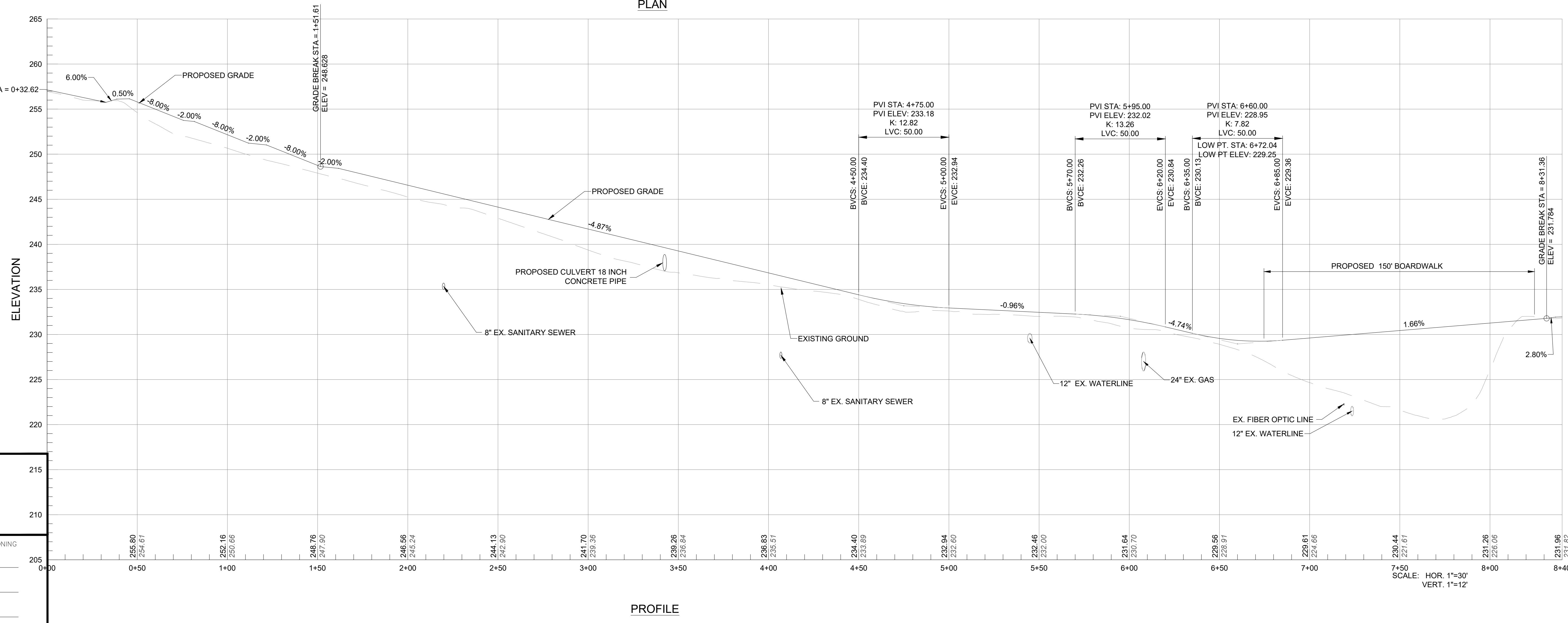
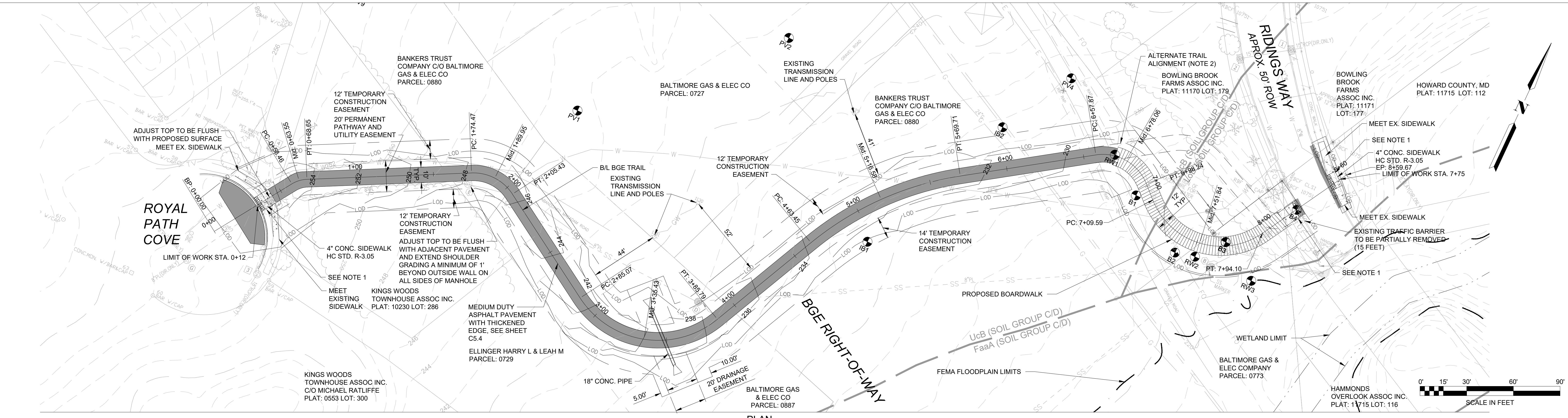
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SILVER SPRING, MD. 20910  
PHONE: 301.927.1900  
FAX: 301.927.2800  
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NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

CIVIL  
BGE  
GEOMETRIC LAYOUT PLAN AND  
TYPICAL SECTIONS

PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C2.1  
SHEET NO.  
7 of 34

NOT FOR CONSTRUCTION



**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
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DR	VLR			
CHK	AO			
APVD	MRAB	NO.	DATE	REVISION
				BY APVD

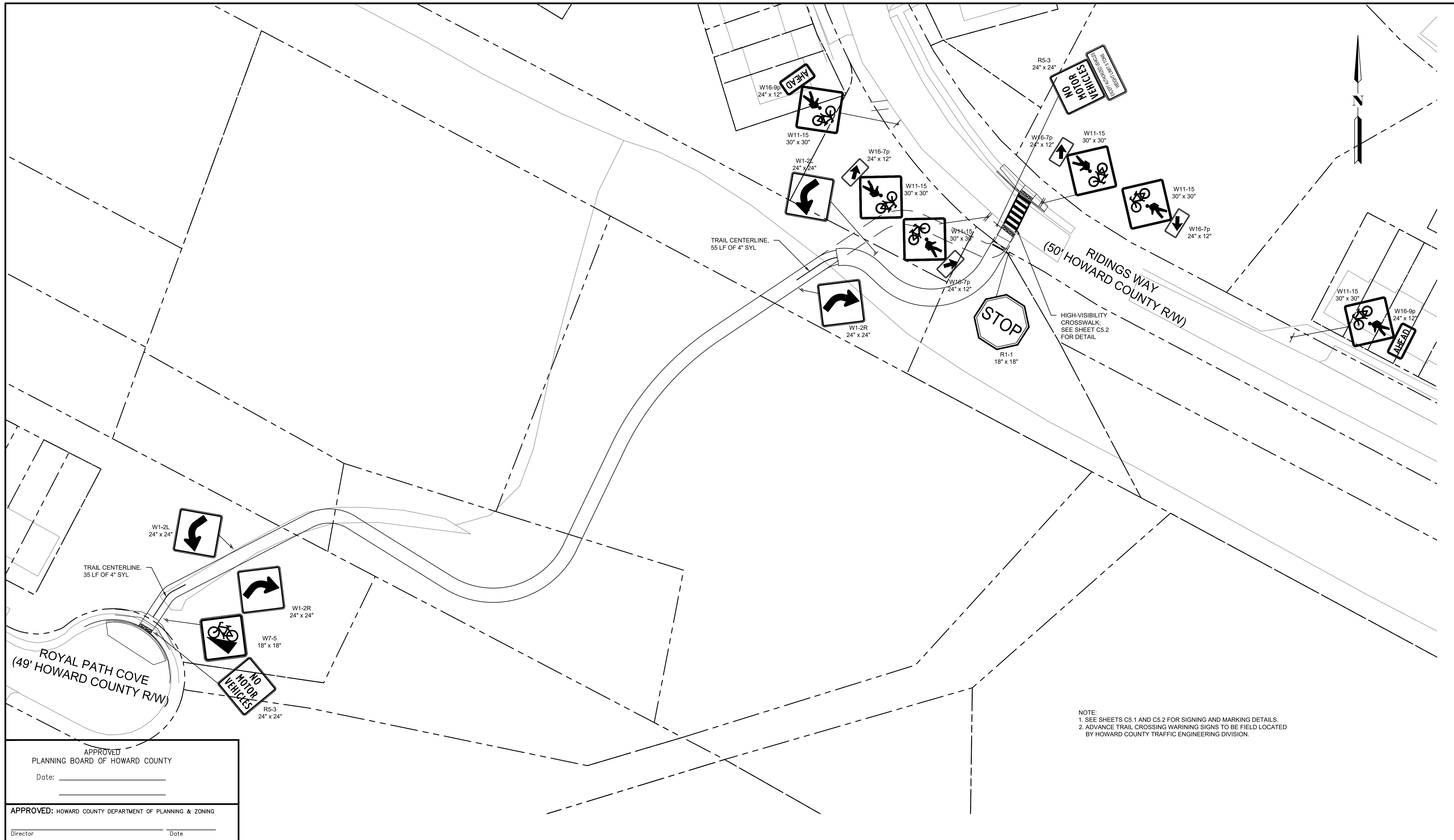
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NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

**CIVIL  
BGE  
PLAN AND PROFILE**

PROJECT NO. 5409.05  
DATE 12-18-2020  
DRAWING NO. C2.2  
SHEET NO. 8 of 34



APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

0' 15' 30' 60' 90'  
SCALE IN FEET

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
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LICENSE NO. 35022,  
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DSGN	VLR				
12/10/2020	APVD	MRAB	NO.	DATE	REVISION
					BY APVD

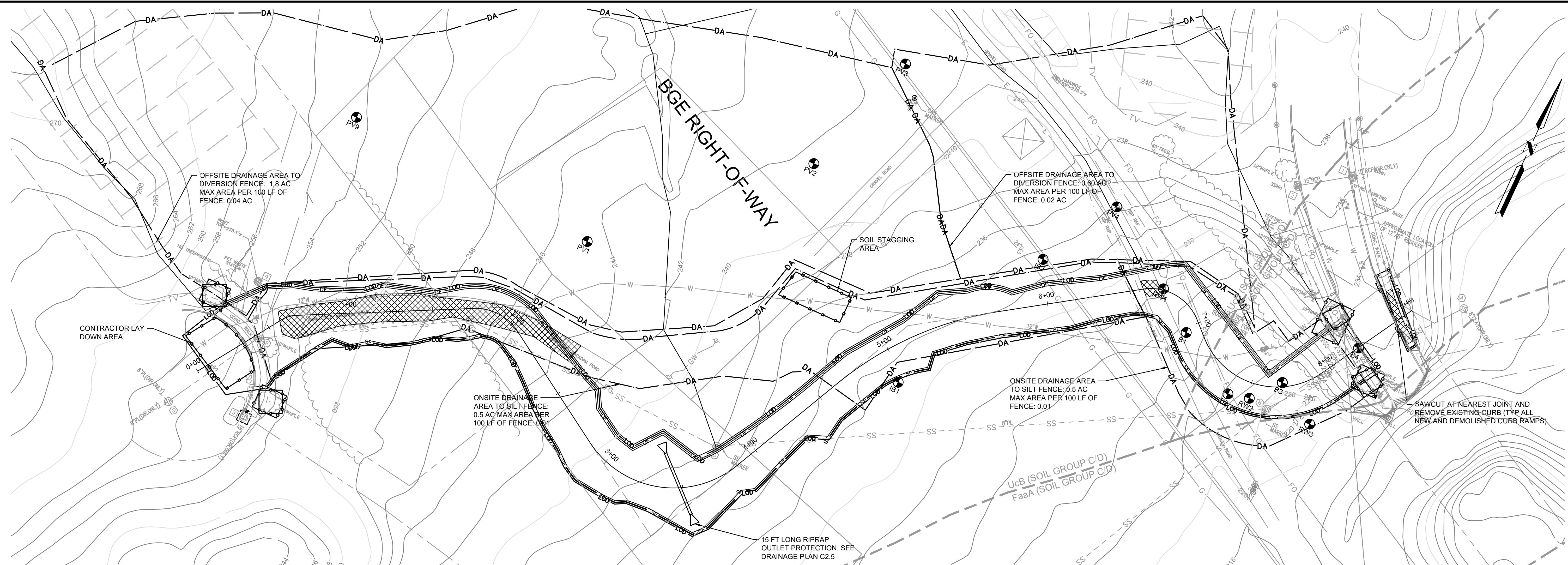
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DESIGN**

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SILVER SPRING, MD. 20910  
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FAX: 301.927.2800  
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NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

BGE BGE SIGNING AND MARKING PLAN

PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C2.3  
SHEET NO.  
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NOTES:

1. SEE SHEETS C1.3 & C1.4 FOR EROSION AND SEDIMENT CONTROL NOTES.
2. SEE SHEET C5.3 FOR EROSION AND SEDIMENT CONTROL DETAILS.
3. SEE DRAWING C2.6 FOR LANDSCAPING PLAN.
4. PRIOR TO DEMOLITION OF THE EXISTING SIDEWALK, CONTRACTOR SHALL PROVIDE AN ADA-COMPLIANT DETOUR ROUTE FOR PEDESTRIANS AND CYCLISTS AROUND CLOSED SECTIONS OF THE PATHWAY. PROVIDE BARRICADES AND DETOUR SIGNAGE PER MDMUTCD AT EACH CLOSURE.

SOIL LEGEND		
SOIL TYPE	SOIL DESCRIPTION	SOILS GROUP
UcB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes	C
LoB	Legore-Montalto-Urban land complex, 0 to 8 percent slopes	C

APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

ENGINEER'S CERTIFICATION  
  
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.\*

DEVELOPER/BUILDER'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 ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT'S 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.\*

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

0' 15' 30' 60' 90'  
SCALE IN FEET

PROFESSIONAL CERTIFICATION  
  
I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.

REUSE OF DOCUMENTS  
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT.  
REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.

DSGN	AO			
DR	CK			
CHK	XXXX			
APVD	MRAB	NO.	DATE	REVISION
				BY APVD

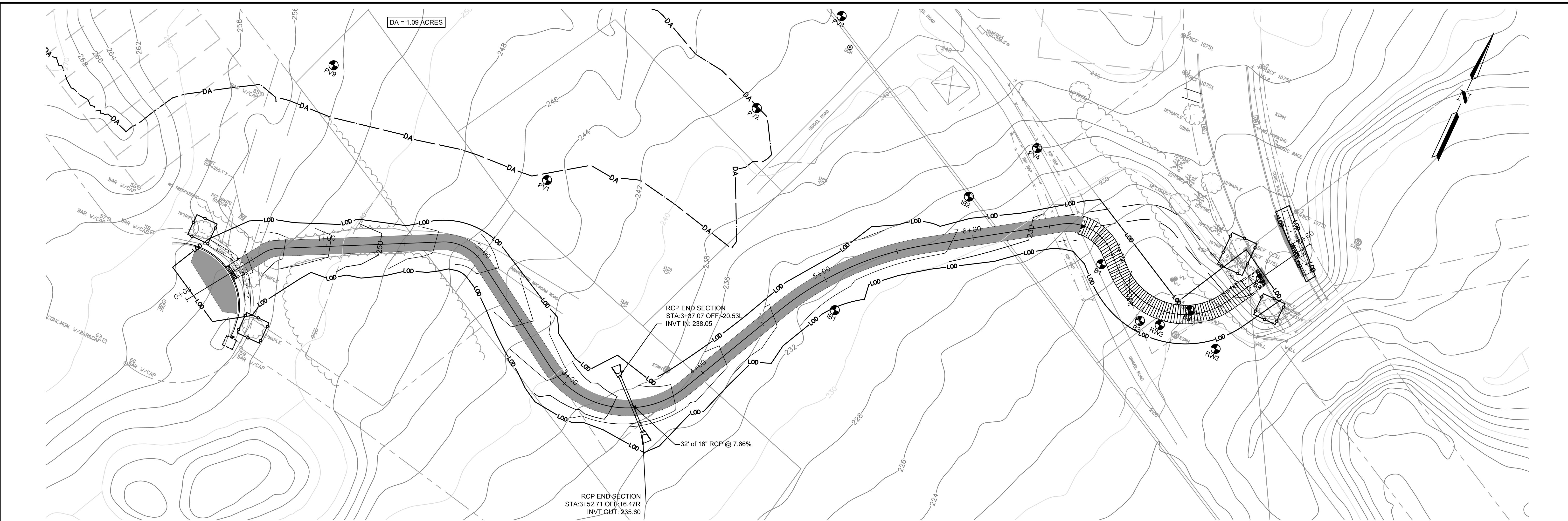
**TOOLE  
DESIGN**

8484 GEORGIA AVENUE, SUITE 800  
SILVER SPRING, MD 20910  
PHONE: 301.927.1900  
FAX: 301.927.2800  
www.tooledesign.com

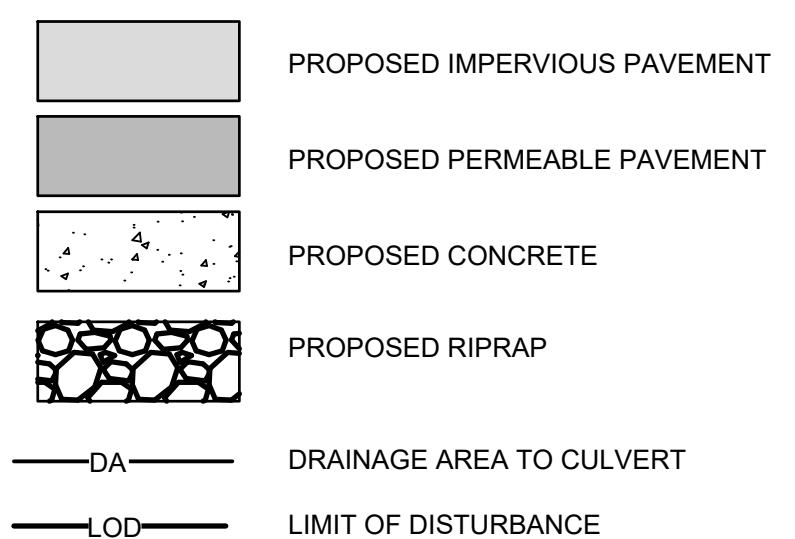
NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

CIVIL  
  
BGE EROSION AND SEDIMENT  
CONTROL/DEMO PLAN

PROJECT NO.  
5409.05  
  
DATE  
12-18-2020  
  
DRAWING NO.  
C2.4  
  
SHEET NO.  
10 of 34



#### LEGEND



#### GENERAL NOTES:

- SEE SHEETS C1.3 & C1.4 FOR EROSION AND SEDIMENT CONTROL NOTES.
- SEE SHEET C5.3 FOR EROSION AND SEDIMENT CONTROL DETAILS.
- SEE DRAWING C2.6 FOR LANDSCAPING PLAN.

#### DRAINAGE NOTES:

- CULVERT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE HOWARD COUNTY DESIGN MANUAL VOLUMES I AND IV, UNLESS OTHERWISE NOTED.
- FOR TYPES OF STRUCTURES REFER TO THE LATEST STANDARD DETAILS PER HOWARD COUNTY BUREAU OF ENGINEERING.
- INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM SURVEY COMPLETED IN JULY 2018 IF CLEARANCES ARE LESS THAN SPECIFIED, CONTACT THE ENGINEER, AND OWNER OF OTHER INVOLVED UTILITY BEFORE PROCEEDING WITH CONSTRUCTION.
- CULVERT SHOULD HAVE A MINIMUM OF 1 FOOT OF COVER.

North Laurel Connections Final Design Production Drawing - 01/06/2021

APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

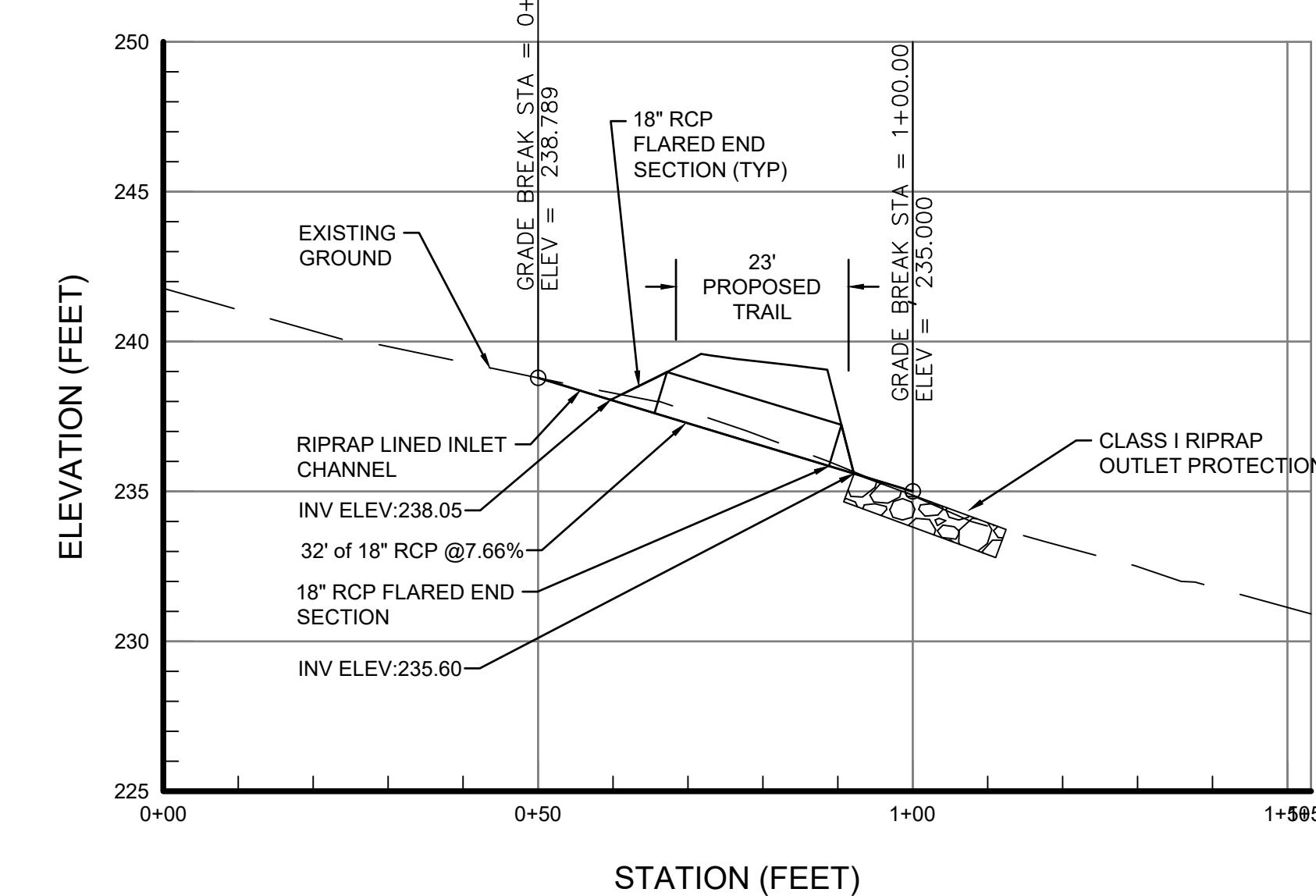
CULVERT CALCULATIONS	
A	1.09 ACRES
I	6.6 IN/HR
C	RUNOFF COEFFICIENT, TABLE 3.01 HOWARD COUNTY DESIGN MANUAL
Q	0.38 VOL. I
FREQUENCY	2.73 FLOWRATE IN CFS
T <sub>c</sub>	10 DESIGN FREQUENCY
	10 IN MIN

#### Analyzer Report

Drainage Structure Analyzer	
Culvert Hydraulic Analysis	
Date: Wednesday, December 30, 2020 8:35:37 PM	
Input Data	
Shape: Circular Material: RC C76-A Roughness: 0.013000 Entrance Edge: Square edge w/ headwall Number of Barrels: 1 Length: 32.00 ft Slope: 766.000% Tailwater: 0.00 ft Inlet Control Equation: Entrance Loss Size (W x T): 18.00 x 2.0000 Flow Rate: 2.7 cfs	
Output Results	
Flow Rate: 2.7 cfs Control: Inlet Capacity: 298.7 cfs Manning's Velocity: 51.08 ft/s Headwater: -4.87 ft Critical Depth: 0.62 ft Normal Depth: 0.10 ft Size (W x T): 18.00 x 2.0000	

SCALE: HOR. 1'=20'  
VERT. 1'=5'

#### CULVERT PROFILE PROFILE



0' 15' 30' 60' 90'  
SCALE IN FEET

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.

REUSE OF DOCUMENTS  
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT.  
REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.

DSGN	AO				
DR	CK				
CHK	AO				
APVD	MRAB	NO.	DATE	REVISION	BY APVD

**TOOLE**  
**DESIGN**

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SILVER SPRING, MD 20910  
PHONE: 301.927.1900  
FAX: 301.927.2800  
www.tooledesign.com

NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

CIVIL  
BGE DRAINAGE PLAN

PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C2.5  
SHEET NO.  
11 of 34

NOT FOR CONSTRUCTION

NOTES:

1. FOR PLANTING INFORMATION, SEE DETAILS ON SHEET CXXX
2. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTES OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENTS OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
3. THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITIONS, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

PLANT SCHEDULE					
BOTANICAL NAME	SYMBOL	COMMON NAME	QUANTITY	SIZE / TYPE	(O.C.) SPACING
CLETHRA ALNIFOLIA 'HUMMINGBIRD'	CA	SWEET PEPPERBUSH	20	3 GAL CONT.	3'-0"
HEMEROCALLIS 'STELLA DR ORO'	HS	DAYLILY	139	1 GAL CONT.	1'-0"
MAGNOLIA VIRGINIANA	MV	SWEETBAY MAGNOLIA	3	B & B	10'-0"
PANICUM VIRGATUM 'CHEYENNE SKY'	PV	SWITCHGRASS	52	1 GAL CONT.	2'-0"

#### ENTRANCE AT ROYAL PATH COVE

APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

#### PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.

REUSE OF DOCUMENTS  
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REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.

DSGN	VLR				
DR	VLR				
CHK	AO				
APVD	MRAB	NO.	DATE	REVISION	BY APVD

**TOOLE  
DESIGN**

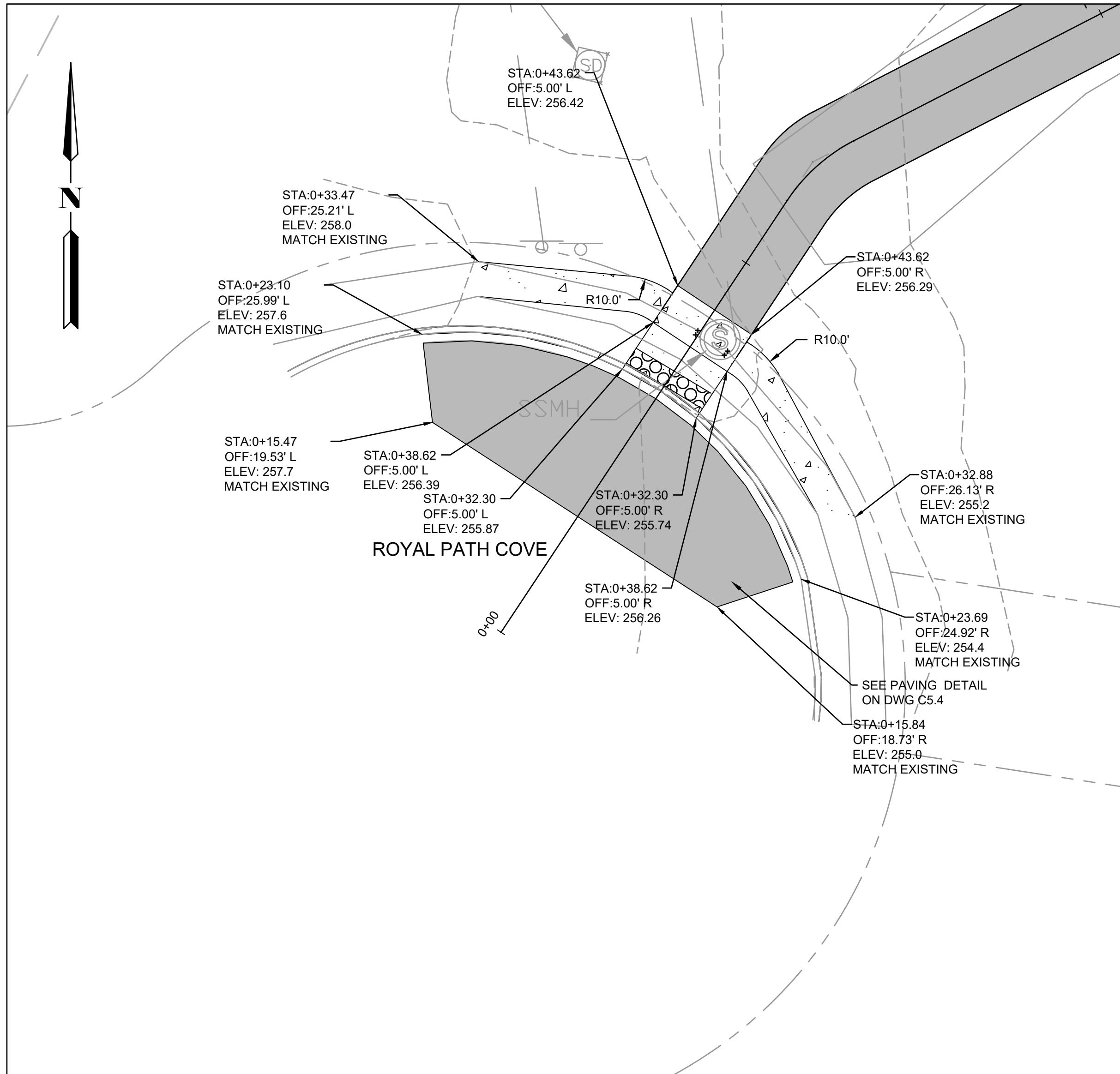
8484 GEORGIA AVENUE, SUITE 800  
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PHONE: 301.927.1900  
FAX: 301.927.2800  
www.tooledesign.com

NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

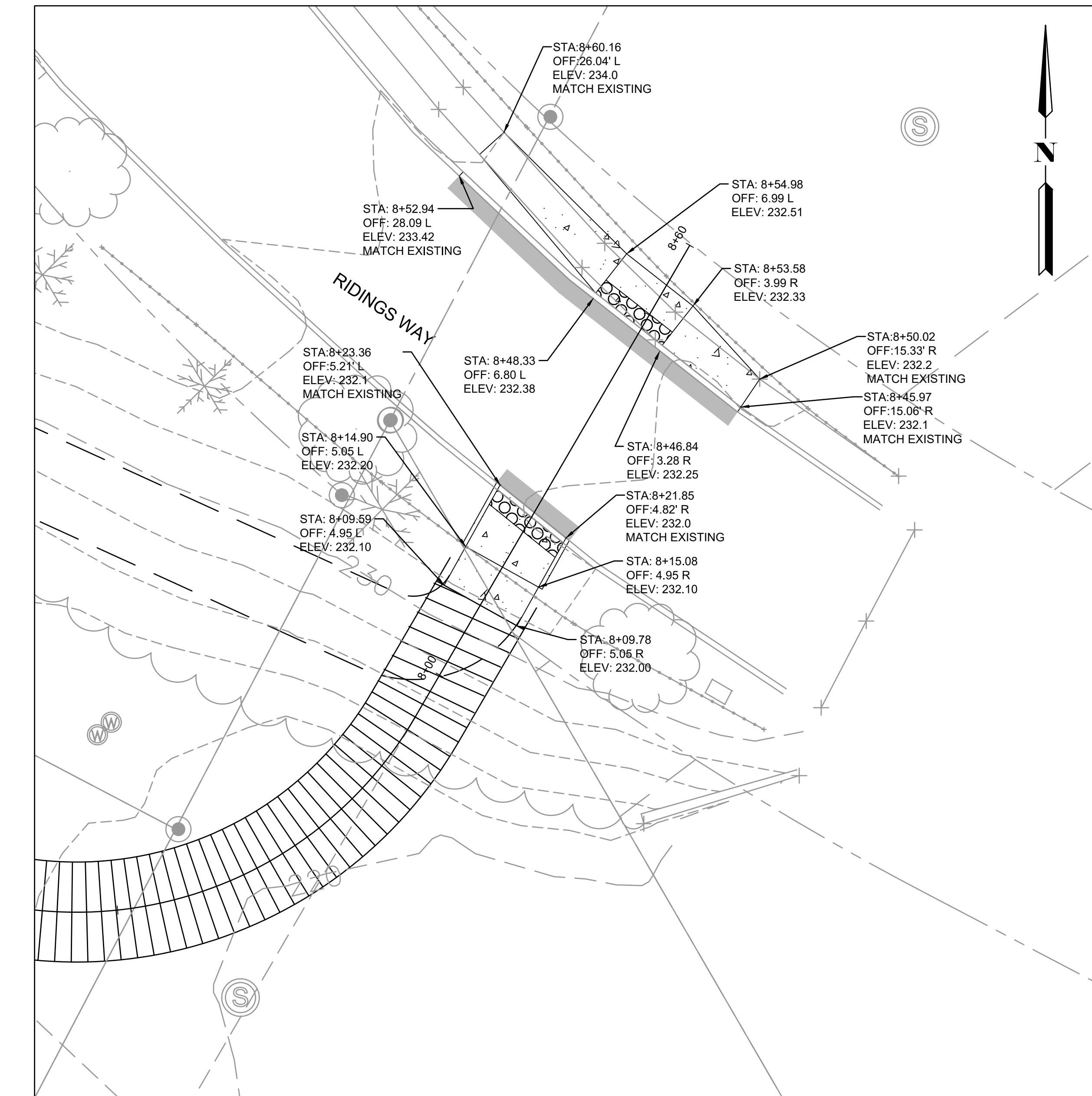
CIVIL  
BGE LANDSCAPING PLAN

PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C2.6  
SHEET NO.  
12 of 34

NOT FOR CONSTRUCTION



1 CURB RAMP DETAIL - ROYAL PATH COVE  
1"=10'



2 CURB RAMP DETAIL - RIDINGS WAY

APPROVED  
PLANNING BOARD OF HOWARD COUNTY

<b>APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING &amp; ZONING</b>	
Director	Date
Chief, Division of Land Development	Date
Chief, Development Engineering Division	Date

<h1>PROFESSIONAL CERTIFICATION</h1> <p>I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF [STATE], LICENSE NO. 35022, EXPIRATION DATE: 12/28/2021.</p>	
	

		REUSE OF DOCUMENTS		
<i>3-12</i>		ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.		
DSGN	VLR			
DR	VLR			
CHK	AO			
APVD	MRAB	NO.	DATE	REVISION

# TOOLE DESIGN

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SILVER SPRING, MD 20910  
PHONE: 301.927.1900  
FAX: 301.927.2800  
[www.tooledesign.com](http://www.tooledesign.com)

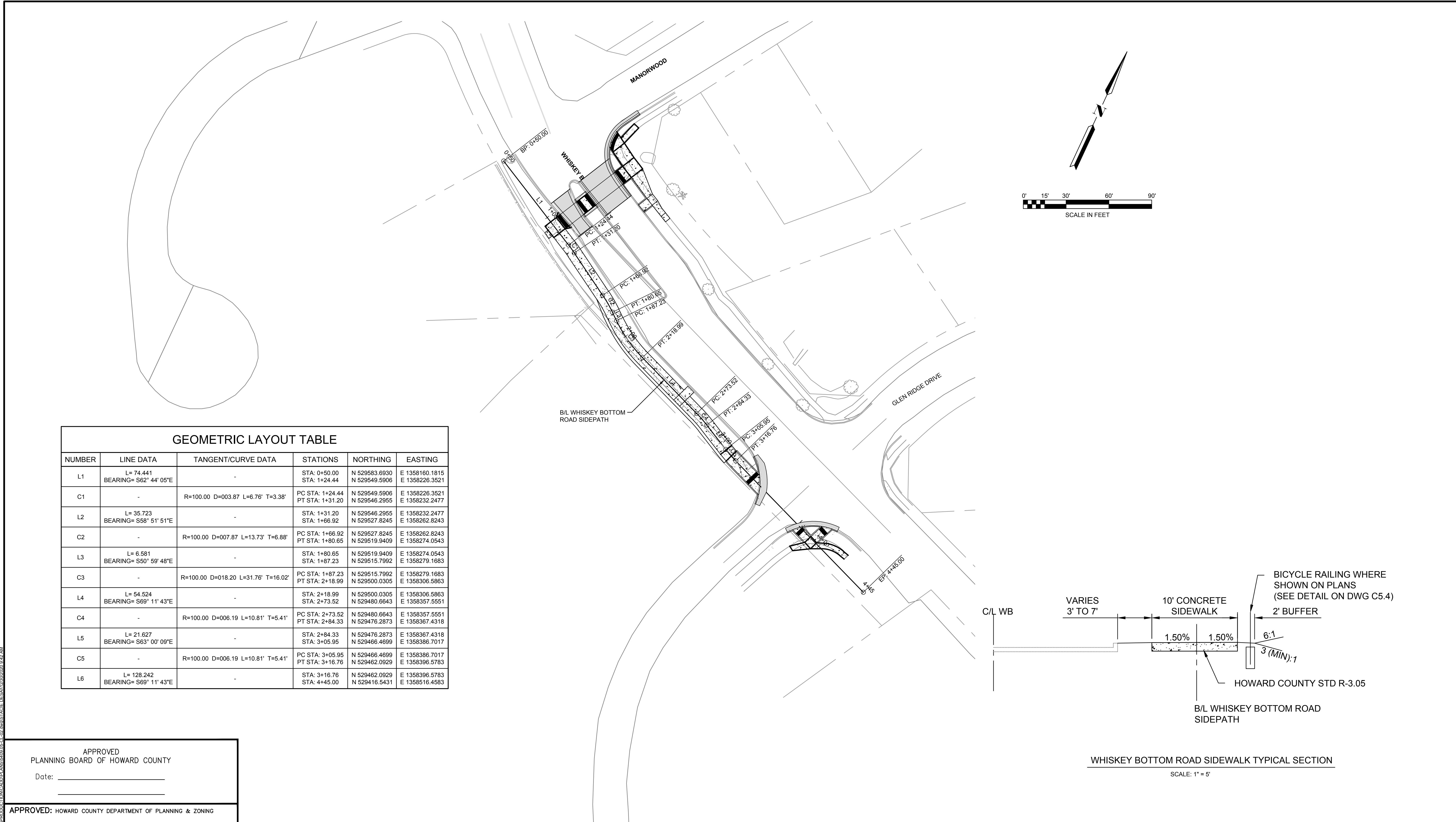
# NORTH LAUREL CONNECTIO

## HOWARD COUNTY, MD

## CIVIL

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PROJECT NO.	5409.05
DATE	12-18-2020
DRAWING NO.	C2.7
SHEET NO.	13 of 34



APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

North Laurel Connections Final Design DWG C5.4 (12/18/2020) 09:27 AM

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

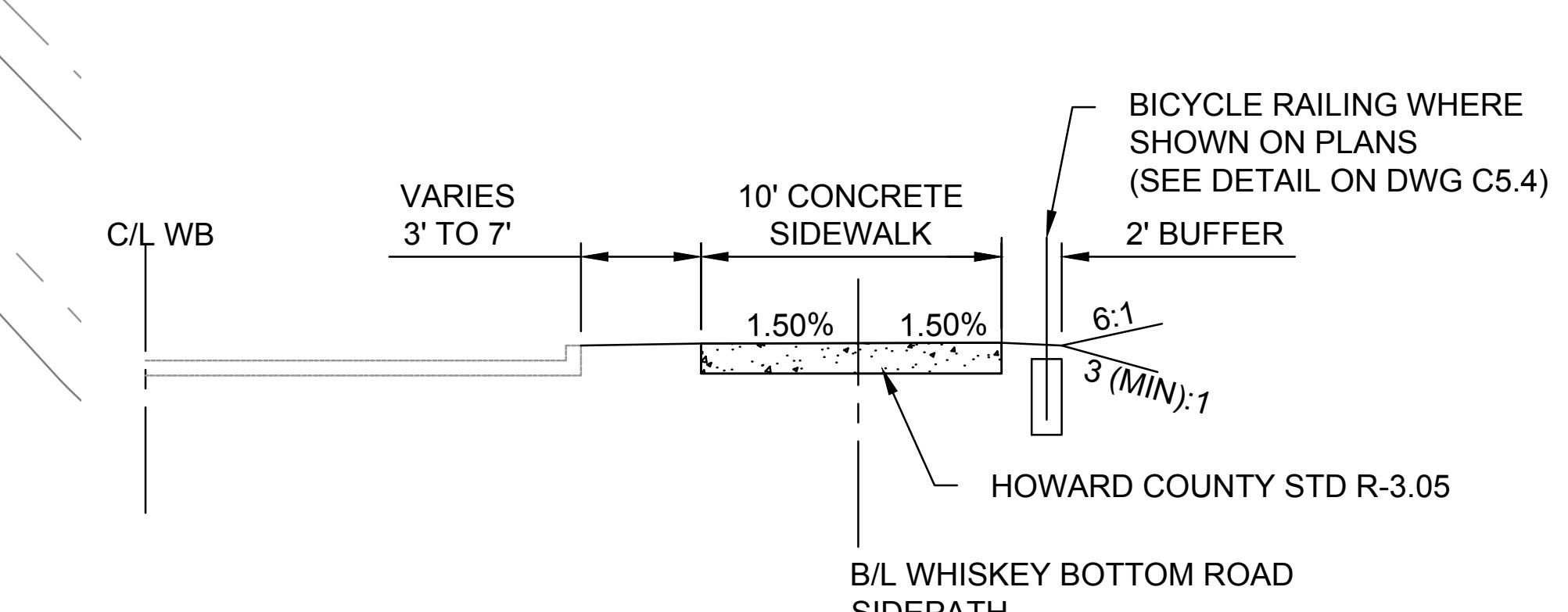
Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

WHISKEY BOTTOM ROAD SIDEWALK TYPICAL SECTION

SCALE: 1" = 5'



PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.



REUSE OF DOCUMENTS  
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DSGN	VLR				
DR	VLR				
CHK	AO				
APVD	MRAB	NO.	DATE	REVISION	BY APVD

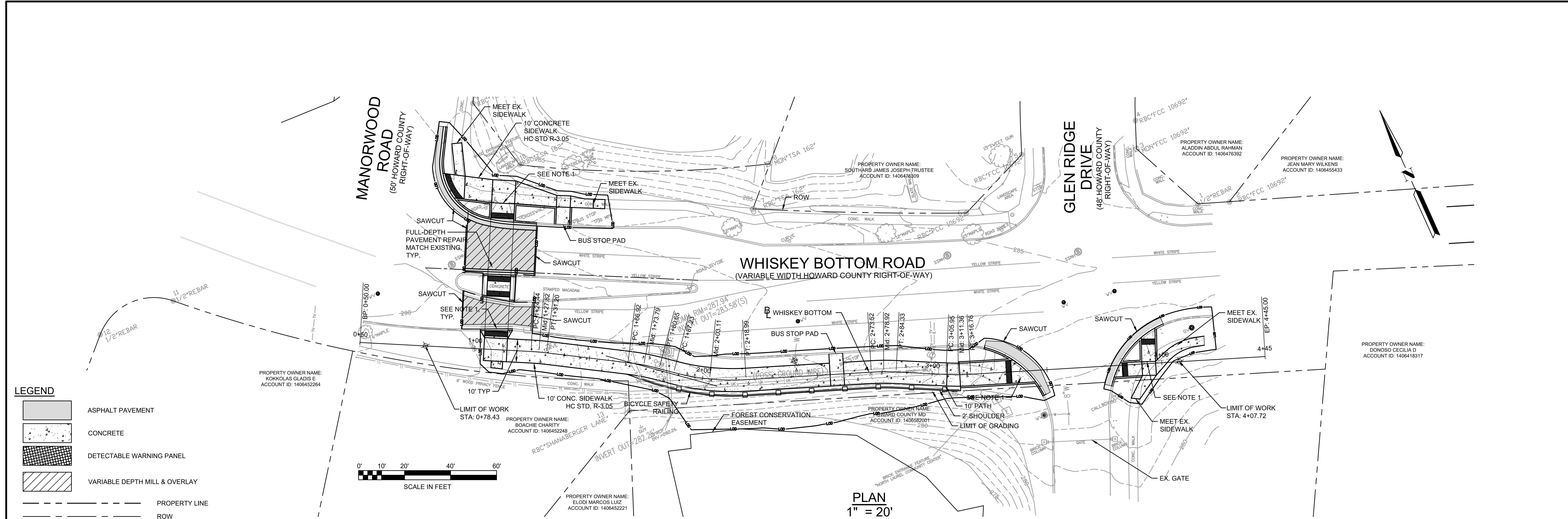
**TOOLE**  
**DESIGN**

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SILVER SPRING, MD 20910  
PHONE: 301.927.1900  
FAX: 301.927.2800  
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NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

CIVIL  
WHISKEY BOTTOM  
GEOMETRIC LAYOUT PLAN  
AND TYPICAL SECTION

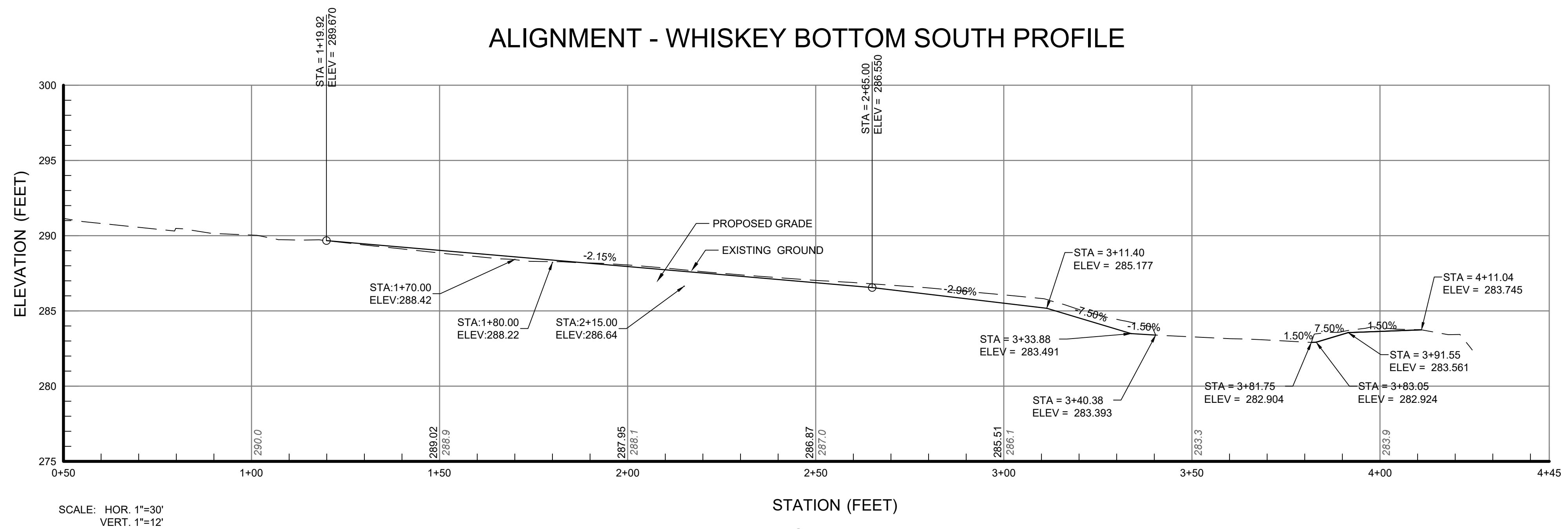
PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C3.1  
SHEET NO.  
14 of 34



**NOTES:**

- SEE SHEET C.3.5 FOR WHISKEY BOTTOM ROAD CURB RAMP DETAILS.

**ALIGNMENT - WHISKEY BOTTOM SOUTH PROFILE**



APPROVED  
PLANNING BOARD OF HOWARD COUNTY  
Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
Director \_\_\_\_\_ Date \_\_\_\_\_  
Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_  
Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.

STATE OF MARYLAND  
No. 35022  
REGISTERED  
PROFESSIONAL ENGINEER  
12/28/2021

DSGN	AO	REUSE OF DOCUMENTS ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.
DR	CK	
CHK	MRAB	
APVD	MRAB	

NO. DATE

REVISION

BY APVD

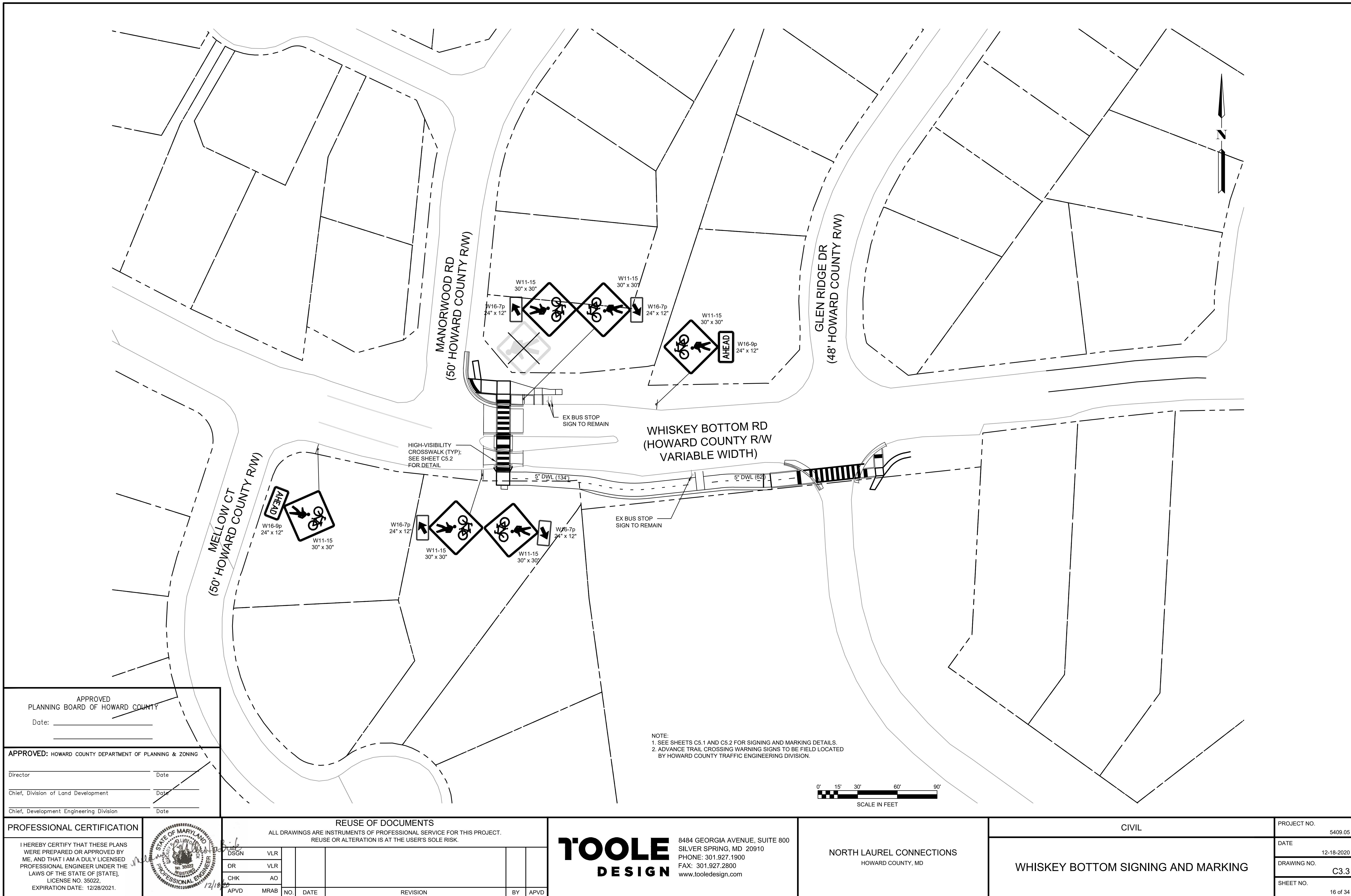
**TOOLE  
DESIGN**

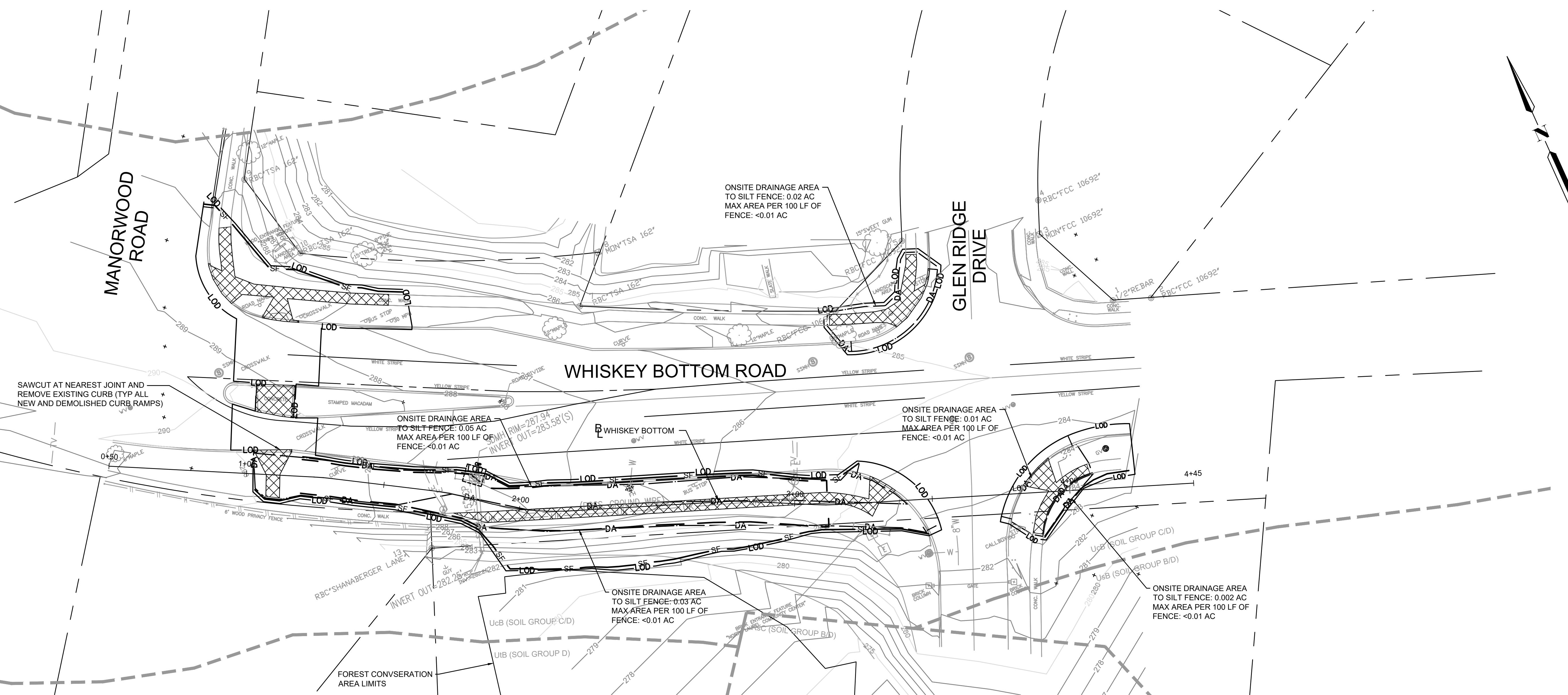
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SILVER SPRING, MD 20910  
PHONE: 301.927.1900  
FAX: 301.927.2800  
www.tooledesign.com

NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

CIVIL  
WHISKEY BOTTOM PLAN AND  
PROFILE

PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C3.2  
SHEET NO.  
15 of 34





#### LEGEND



EXISTING CONCRETE REMOVAL



PROPOSED STABILIZED CONSTRUCTION ENTRANCE



TREE REMOVAL

LOD LIMIT OF DISTURBANCE

TP PROPOSED STABILIZED CONSTRUCTION ENTRANCE

CS CONSTRUCTION STAGING AREA

SM SOIL MAP BOUNDARY

CIP CURB INLET PROTECTION

SAWCUT

#### NOTES:

- SEE SHEETS C1.3 & C1.4 FOR EROSION AND SEDIMENT CONTROL NOTES.
- SEE SHEET C5.3 FOR EROSION AND SEDIMENT CONTROL DETAILS.
- PRIOR TO DEMOLITION OF EACH SEGMENT OF THE EXISTING SIDEWALK, CONTRACTOR SHALL PROVIDE AN ADA-COMPLIANT DETOUR ROUTE FOR PEDESTRIANS AND CYCLISTS AROUND CLOSED SECTIONS OF THE SIDEWALK. PROVIDE BARRICADES AND DETOUR SIGNAGE PER MDMUTCD AT EACH CLOSURE.
- DRAINAGE AREAS WILL NOT BE IMPACTED AS PART OF THIS PROJECT AND NET IMPERVIOUS CHANGE IS LESS THAN 5,000 SF. NO DRAINAGE DESIGN IS REQUIRED.
- DUE TO CONSTRAINED LIMITS OF DISTURBANCE NO CONSTRUCTION ENTRANCE PROVIDED.

SOIL LEGEND		
SOIL TYPE	SOIL DESCRIPTION	SOILS GROUP
UcB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes	C

DF	APPROVED FENCE
PLANNING BOARD OF HOWARD COUNTY	
Date:	DRAINAGE AREA TO E&S MEASURE
SF	SILT FENCE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

ENGINEER'S CERTIFICATION  
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.\*

DEVELOPER'S/BUILDER'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 ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT'S 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.\*

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

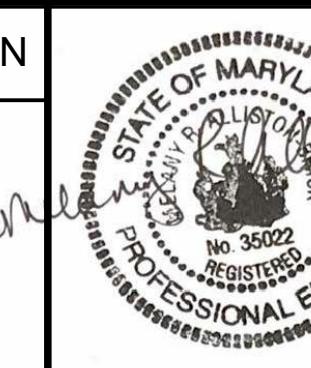
ENGINEER'S SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

SIGNATURE OF DEVELOPER/BUILDER \_\_\_\_\_ DATE \_\_\_\_\_

HOWARD S.C.D. \_\_\_\_\_ DATE \_\_\_\_\_

0' 10' 20' 40' 60'  
SCALE IN FEET

I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.



REUSE OF DOCUMENTS  
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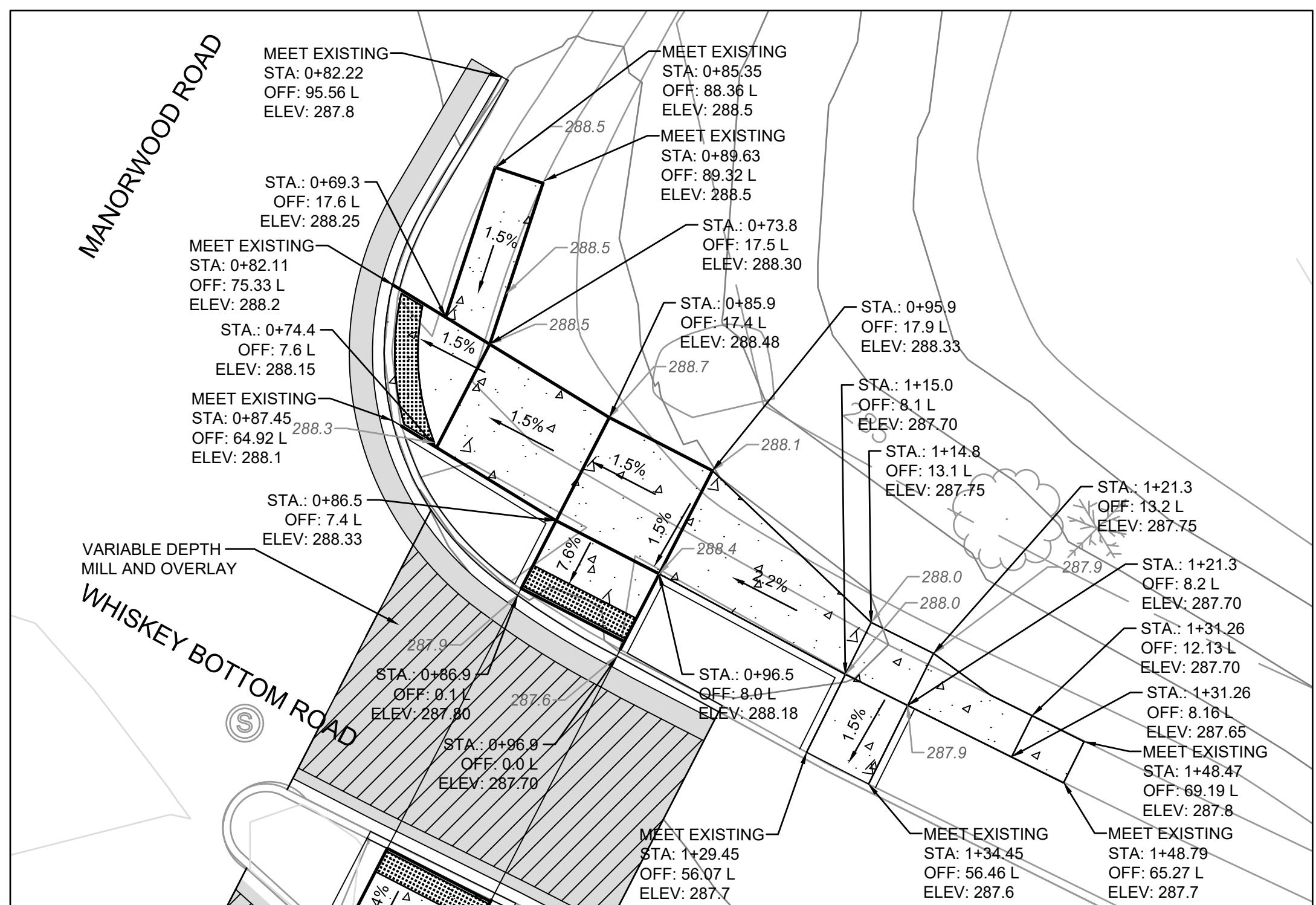
**TOOLE**  
**DESIGN**

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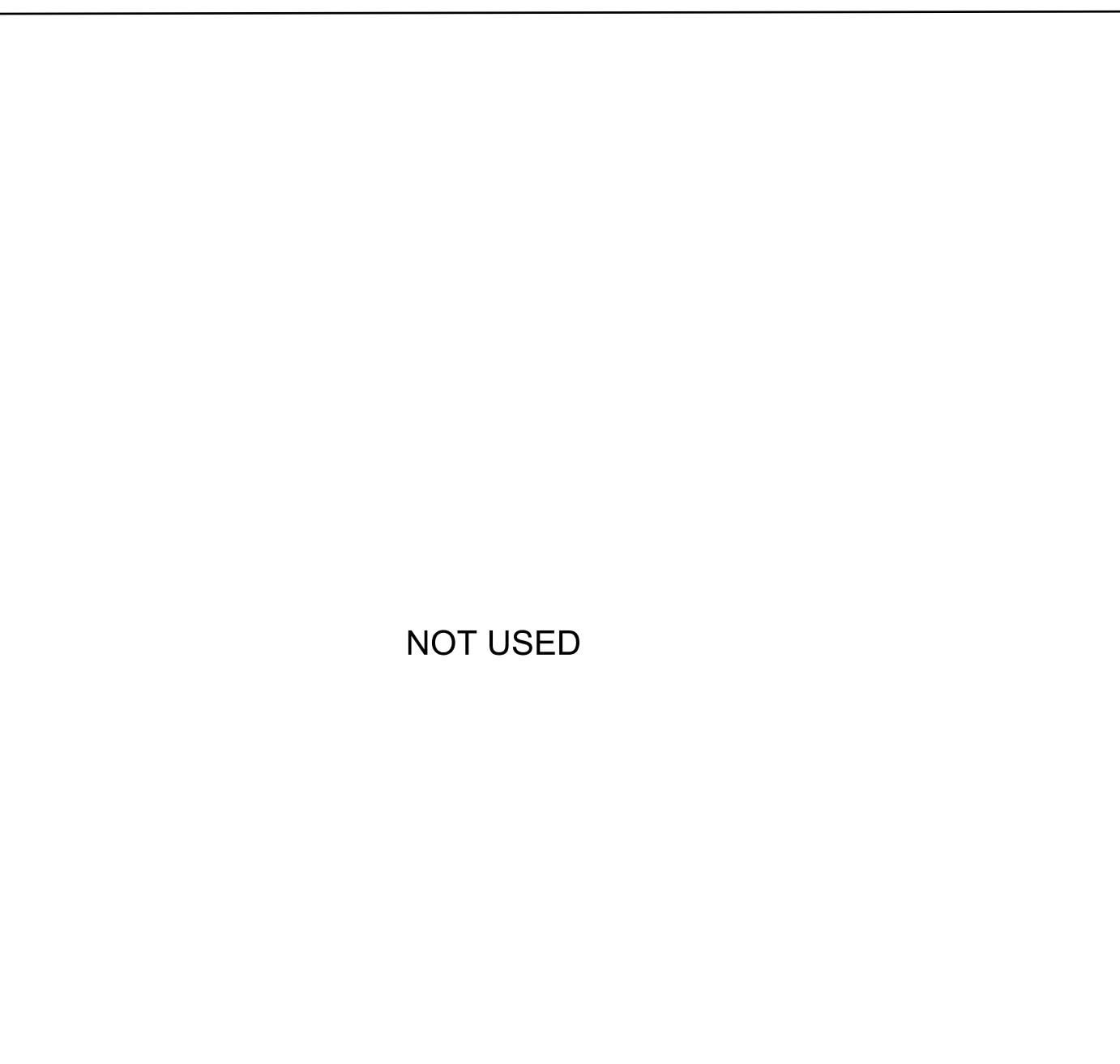
NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

CIVIL  
WHISKEY BOTTOM ROAD EROSION AND  
SEDIMENT CONTROL PLAN

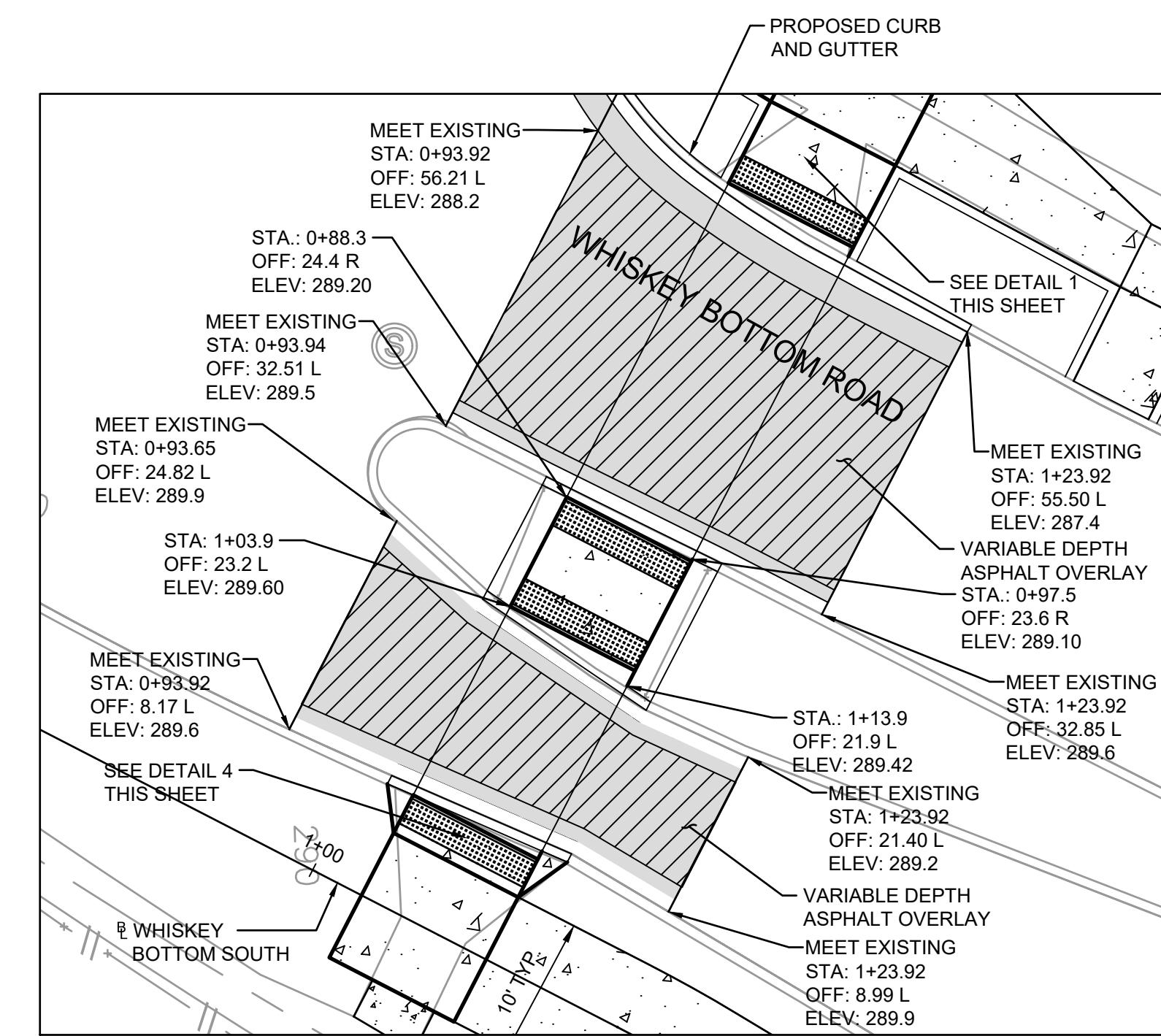
PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C3.4  
SHEET NO.  
17 of 34



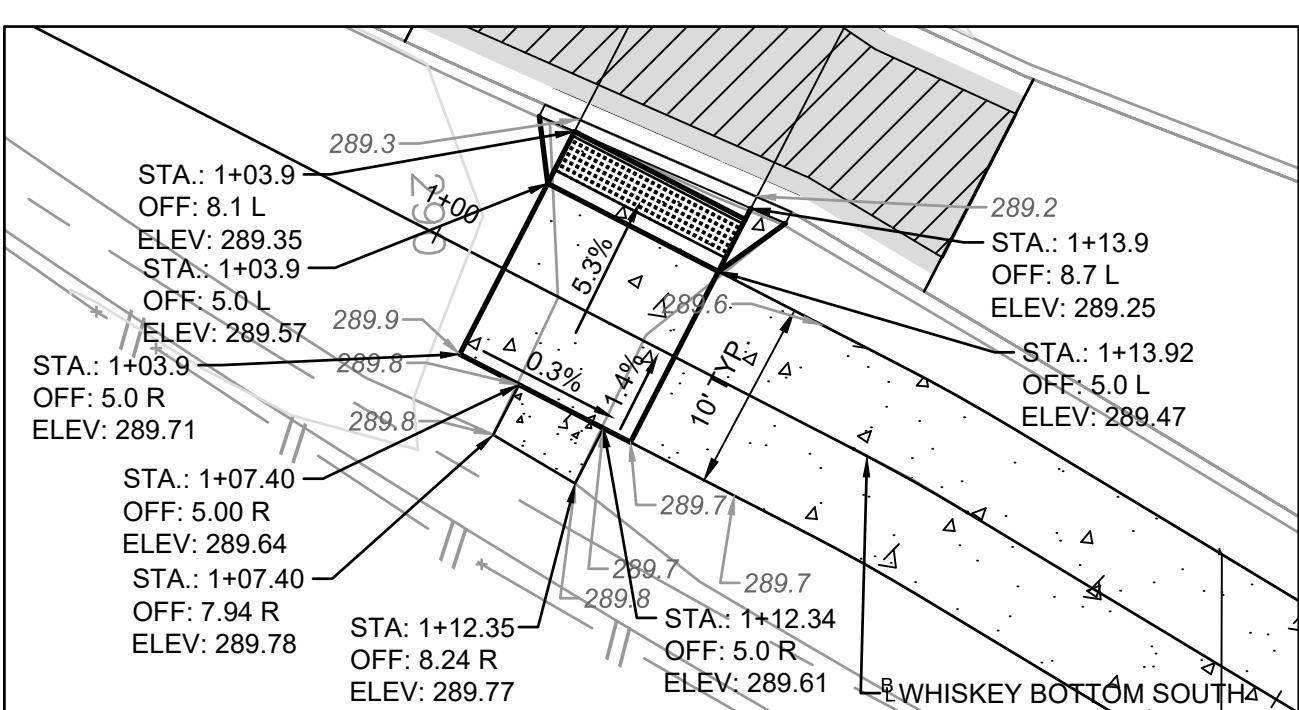
1 CURB RAMP DETAIL - WHISKEY BOTTOM ROAD AND MANORWOOD ROAD, NORTH RAMP



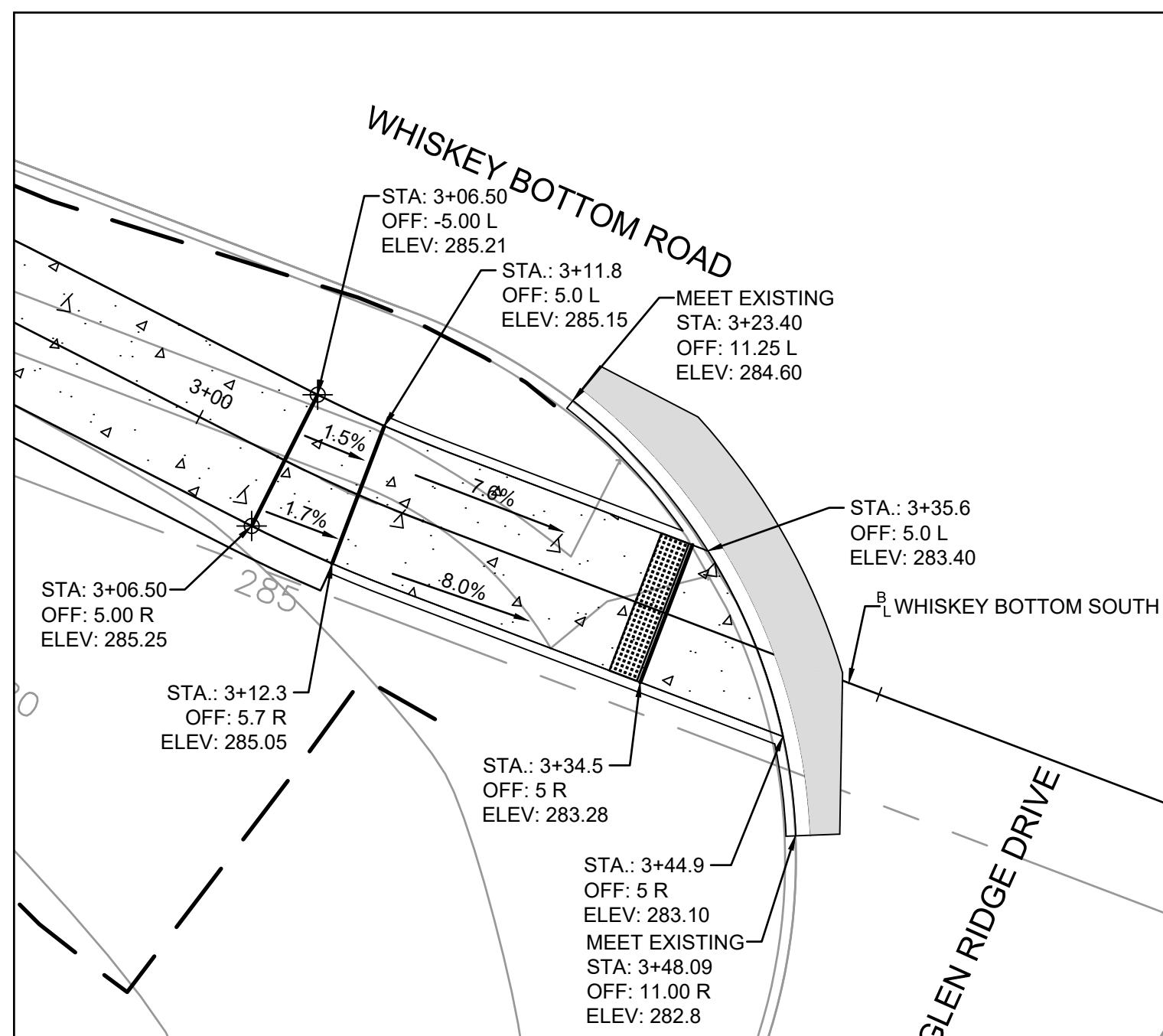
2 CURB RAMP DETAIL - WHISKEY BOTTOM ROAD AND GLEN RIDGE DRIVE, NW CORNER



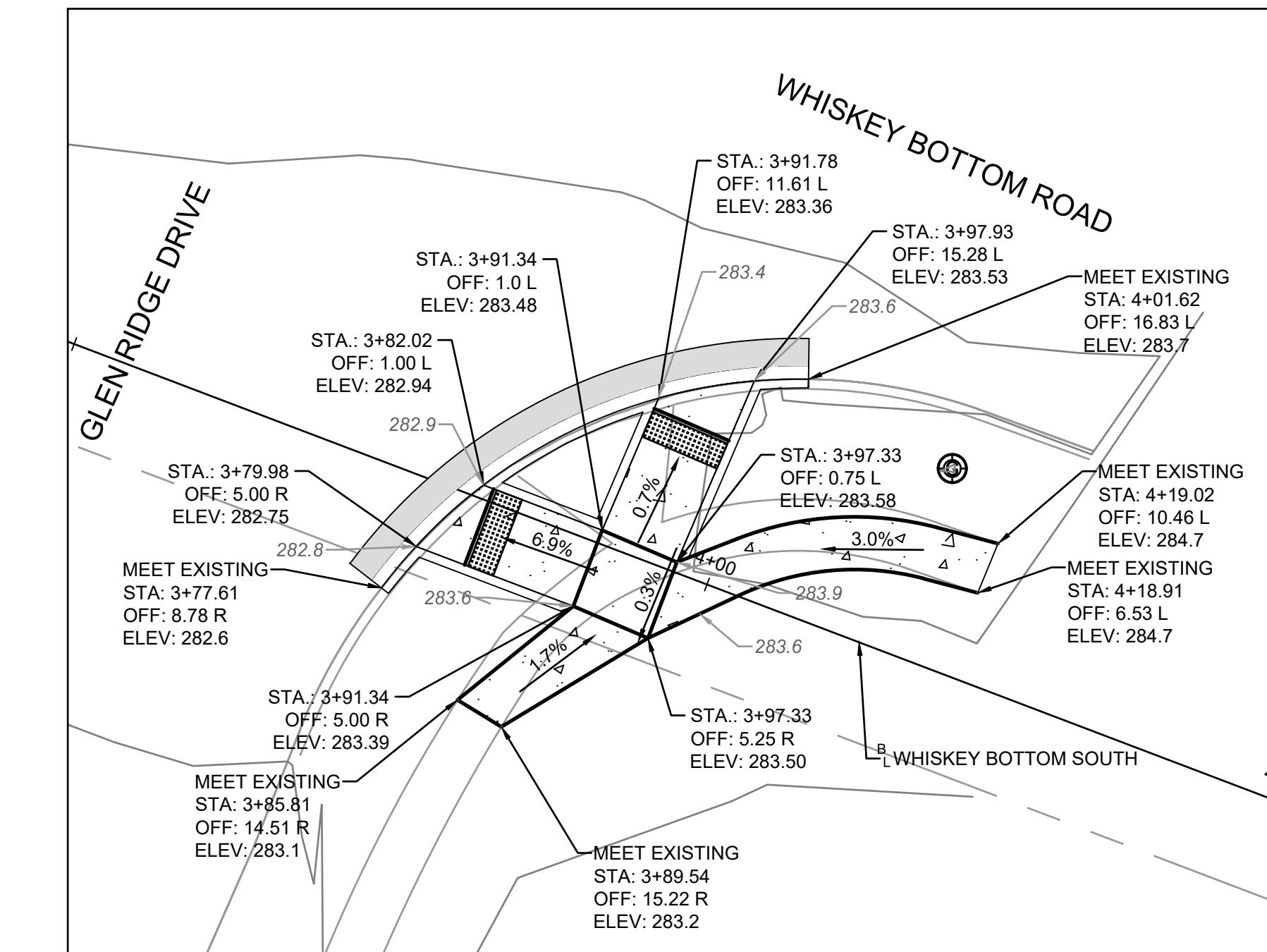
3 CURB RAMP DETAIL - WHISKEY BOTTOM ROAD CROSSING AT MANORWOOD ROAD



4 CURB RAMP DETAIL - WHISKEY BOTTOM ROAD AND MANORWOOD ROAD, SOUTH RAMP



5 CURB RAMP DETAIL - WHISKEY BOTTOM ROAD AND GLEN RIDGE DRIVE, SW CORNER



6 CURB RAMP DETAIL - WHISKEY BOTTOM ROAD AND GLEN RIDGE DRIVE, SE CORNER

0' 5' 10' 20' 30'

SCALE IN FEET

APPROVED	
PLANNING BOARD OF HOWARD COUNTY	
Date: _____	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING	
Director	Date
Chief, Division of Land Development	Date
Chief, Development Engineering Division	Date

PROFESSIONAL CERTIFICATION	<p>STATE OF MARYLAND PROFESSIONAL ENGINEER No. 35022 REGISTERED 12/10/2021</p>	<p>DSGN</p> <p>AO</p> <p>DR</p> <p>CK</p> <p>MRAB</p> <p>CHK</p> <p>APVD</p> <p>MRAB</p>	REUSE OF DOCUMENTS		
ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT. REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.					
MEET EXISTING THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF [STATE], LICENSE NO. 35022, EXPIRATION DATE: 12/28/2021.			REVISION	BY	APVD
NO.			DATE		

**TOOLE**  
**DESIGN**

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SILVER SPRING, MD 20910  
PHONE: 301.927.1900  
FAX: 301.927.2800  
www.tooledesign.com

NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

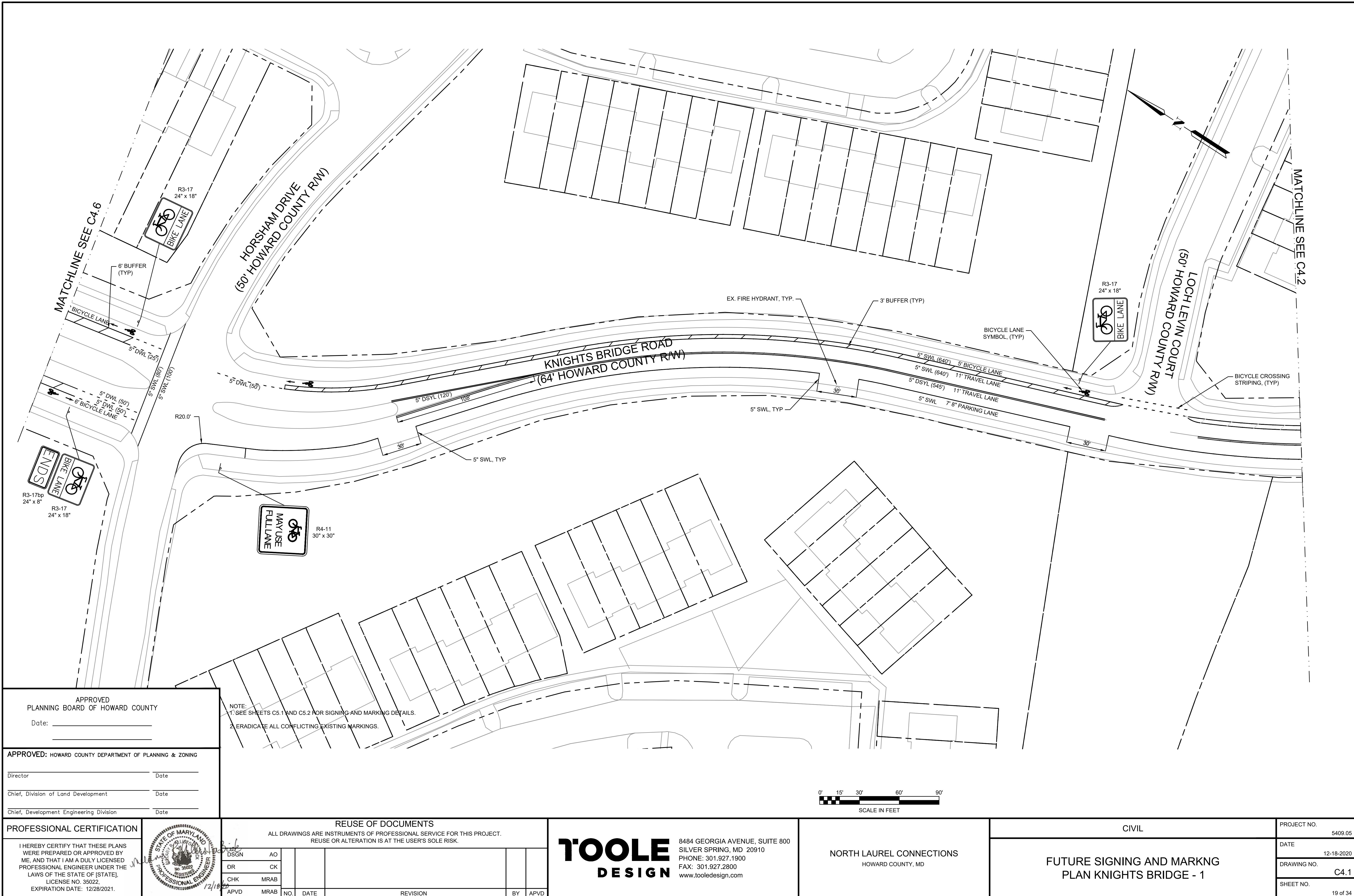
CIVIL  
WHISKEY BOTTOM  
CURB RAMP DETAILS

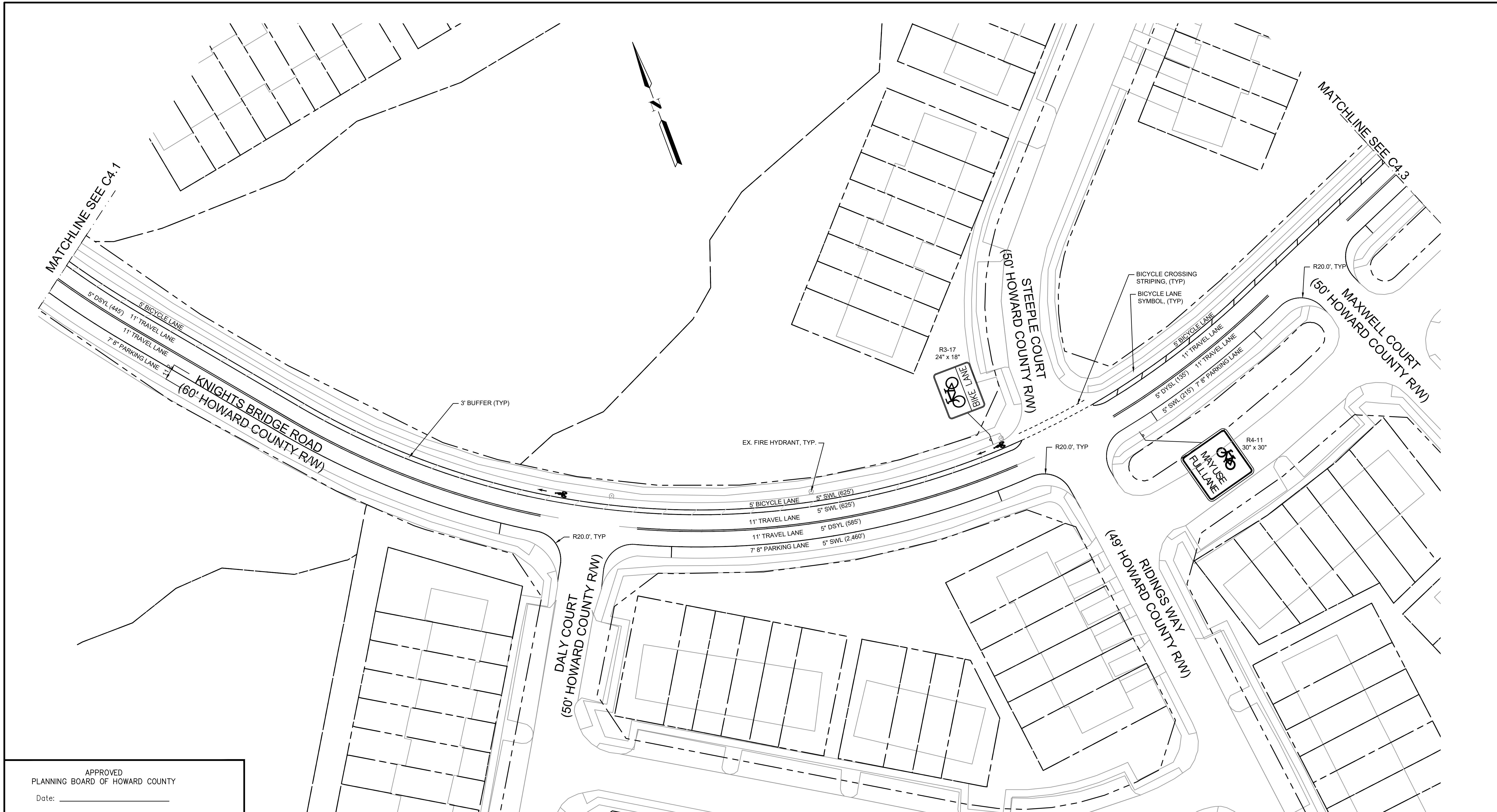
PROJECT NO.  
5409.05

DATE  
12-18-2020

DRAWING NO.  
C3.5

SHEET NO.  
18 of 34





APPROVED	
PLANNING BOARD OF HOWARD COUNTY	
Date: _____	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING	
Director	Date
Chief, Division of Land Development	Date
Chief, Development Engineering Division	Date

NOTE:  
 1. SEE SHEETS C5.1 AND C5.2 FOR SIGNING AND MARKING DETAILS.  
 2. ERADICATE ALL CONFLICTING EXISTING MARKINGS.



I HEREBY CERTIFY THAT THESE PLANS  
 WERE PREPARED OR APPROVED BY  
 ME, AND THAT I AM A DULY LICENSED  
 PROFESSIONAL ENGINEER UNDER THE  
 LAWS OF THE STATE OF [STATE],  
 LICENSE NO. 35022,  
 EXPIRATION DATE: 12/28/2021.



PROFESSIONAL CERTIFICATION  
 ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT.  
 REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.

DSGN	AO			
DR	CK			
CHK	MRAB			
APVD	MRAB	NO.	DATE	REVISION BY APVD

**TOOLE  
DESIGN**

8484 GEORGIA AVENUE, SUITE 800  
 SILVER SPRING, MD 20910  
 PHONE: 301.927.1900  
 FAX: 301.927.2800  
[www.tooledesign.com](http://www.tooledesign.com)

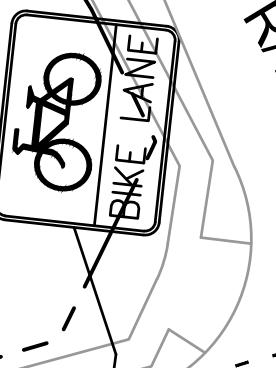
NORTH LAUREL CONNECTIONS  
 HOWARD COUNTY, MD

CIVIL  
 FUTURE SIGNING AND MARKNG  
 PLAN KNIGHTS BRIDGE - 2

PROJECT NO.  
 5409.05  
 DATE  
 12-18-2020  
 DRAWING NO.  
 C4.2  
 SHEET NO.  
 20 of 34

MATCHLINE SEE C4.2

(50' HOWARD COUNTY R/W)  
BURLEY LANE



SYMBOL, (TYP)

BICYCLE CROSSING STRIPING, TYP.

EX. FIRE HYDRANT, TYP.

5' BICYCLE LANE

5' SWL (625)  
5' SWL (625)  
5' DYSL (686)  
5' SWL (625)  
5' SWL (625)  
5' SWL (625)  
5' SWL (625)  
11' TRAVEL LANE  
11' TRAVEL LANE  
7' 8" PARKING LANE

KNIGHTS BRIDGE ROAD  
(60' HOWARD COUNTY R/W)

MATCHLINE SEE C4.4

APPROVED	
PLANNING BOARD OF HOWARD COUNTY	
Date: _____	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING	
Director	Date
Chief, Division of Land Development	Date
Chief, Development Engineering Division	Date

NOTE:  
1. SEE SHEETS C5.1 AND C5.2 FOR SIGNING AND MARKING DETAILS.  
2. ERADICATE ALL CONFLICTING EXISTING MARKINGS.

0' 15' 30' 60' 90'  
SCALE IN FEET

I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE].  
LICENSE NO. 35022.  
EXPIRATION DATE: 12/28/2021.



REUSE OF DOCUMENTS  
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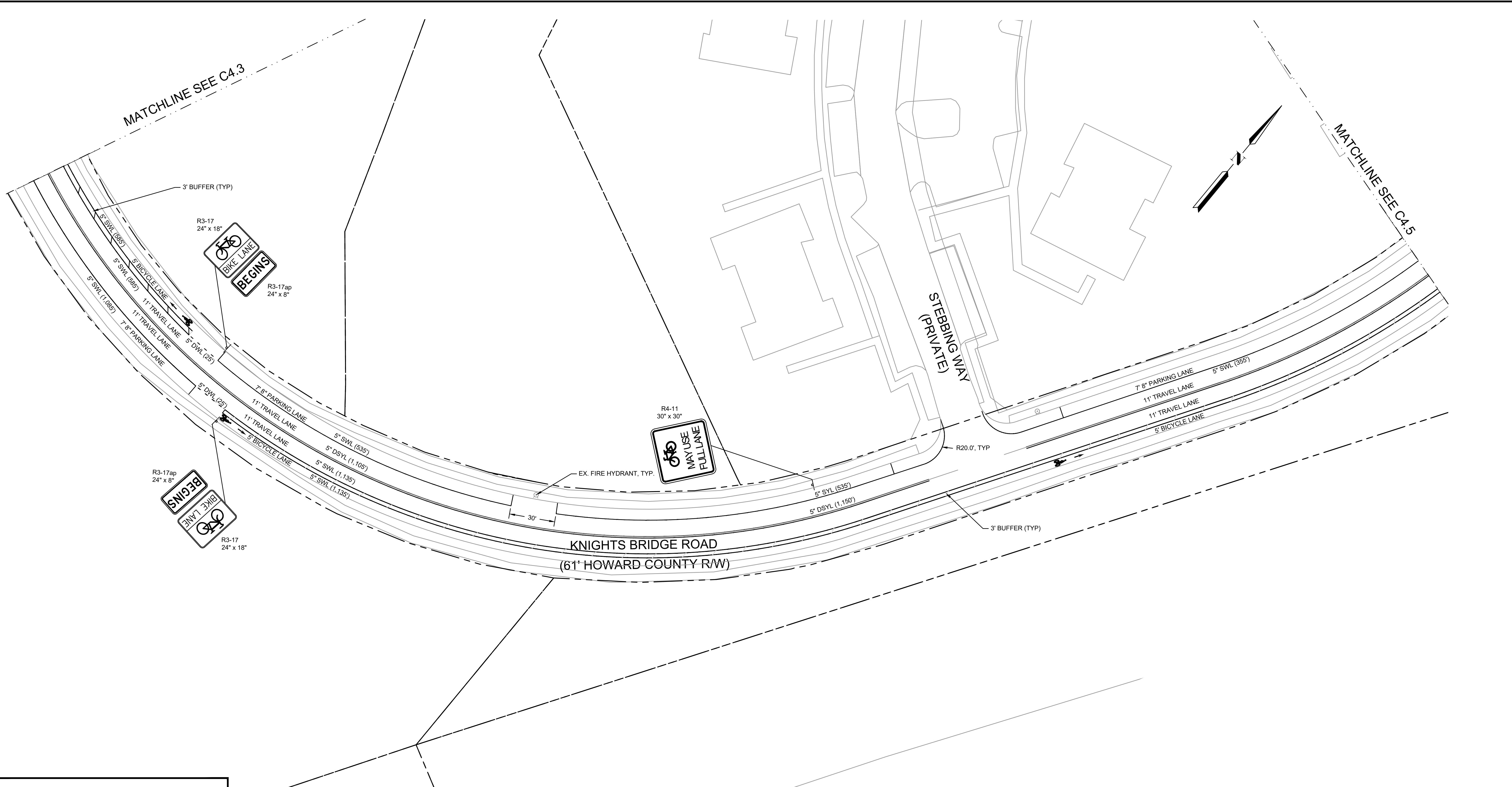
DSGN	VLR				
DR	VLR				
CHK	AO				
APVD	MRAB	NO.	DATE	REVISION	BY APVD

**TOOLE**  
**DESIGN**

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NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

CIVIL	PROJECT NO. 5409.05
FUTURE SIGNING AND MARKNG PLAN KNIGHTS BRIDGE - 3	DATE 12-18-2020
	DRAWING NO. C4.3
	SHEET NO. 21 of 34



APPROVED  
PLANNING BOARD OF HOWARD COUNTY

NOTE:

1. SEE SHEETS C5.1 AND C5.2 FOR SIGNING AND MARKING DETAILS.
2. ERADICATE ALL CONFLICTING EXISTING MARKINGS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

---

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

A scale bar consisting of a black horizontal line with a pattern of black and white squares at the left end. Above the line, the text '0'' is at the start, '15'' is at the first tick, '30'' is at the second tick, and '60'' is at the third tick. Below the line, the text 'SCALE IN FEET' is centered.

PROFESSIONAL CERTIFICATION

---

I HEREBY CERTIFY THAT THESE PLANS  
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PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.

*[Signature]*



## REUSE OF DOCUMENTS

*Brick*

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DR	VLR					
CHK	AO					
APVD	MRAB	NO	DATE	REVISION	BY	APVD



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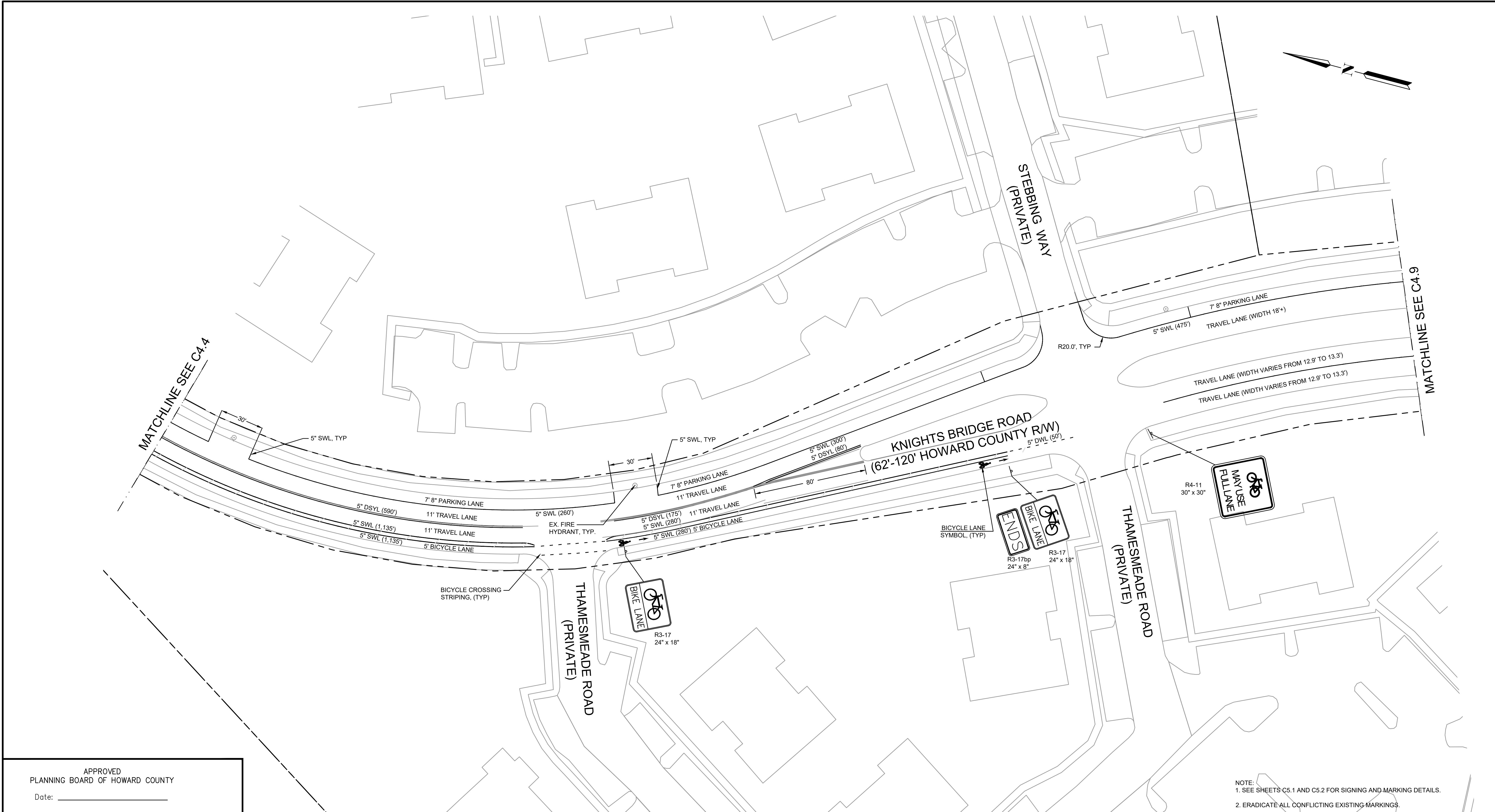
# NORTH LAUREL CONNECTION

## HOWARD COUNTY, MD

## CIVIL

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PROJECT NO. 5409.05  
DATE 12-18-2020  
DRAWING NO. C4.4  
SHEET NO. 22 of 34



APPROVED  
PLANNING BOARD OF HOWARD COUNTY

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

---

Director \_\_\_\_\_ Date \_\_\_\_\_

---

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

---

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

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PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.



## REUSE OF DOCUMENTS

# TOOLE DESIGN

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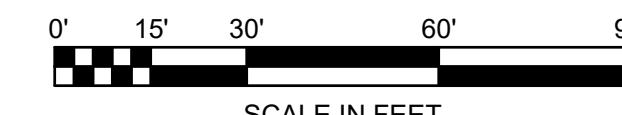
# NORTH LAUREL CONNECTIONS

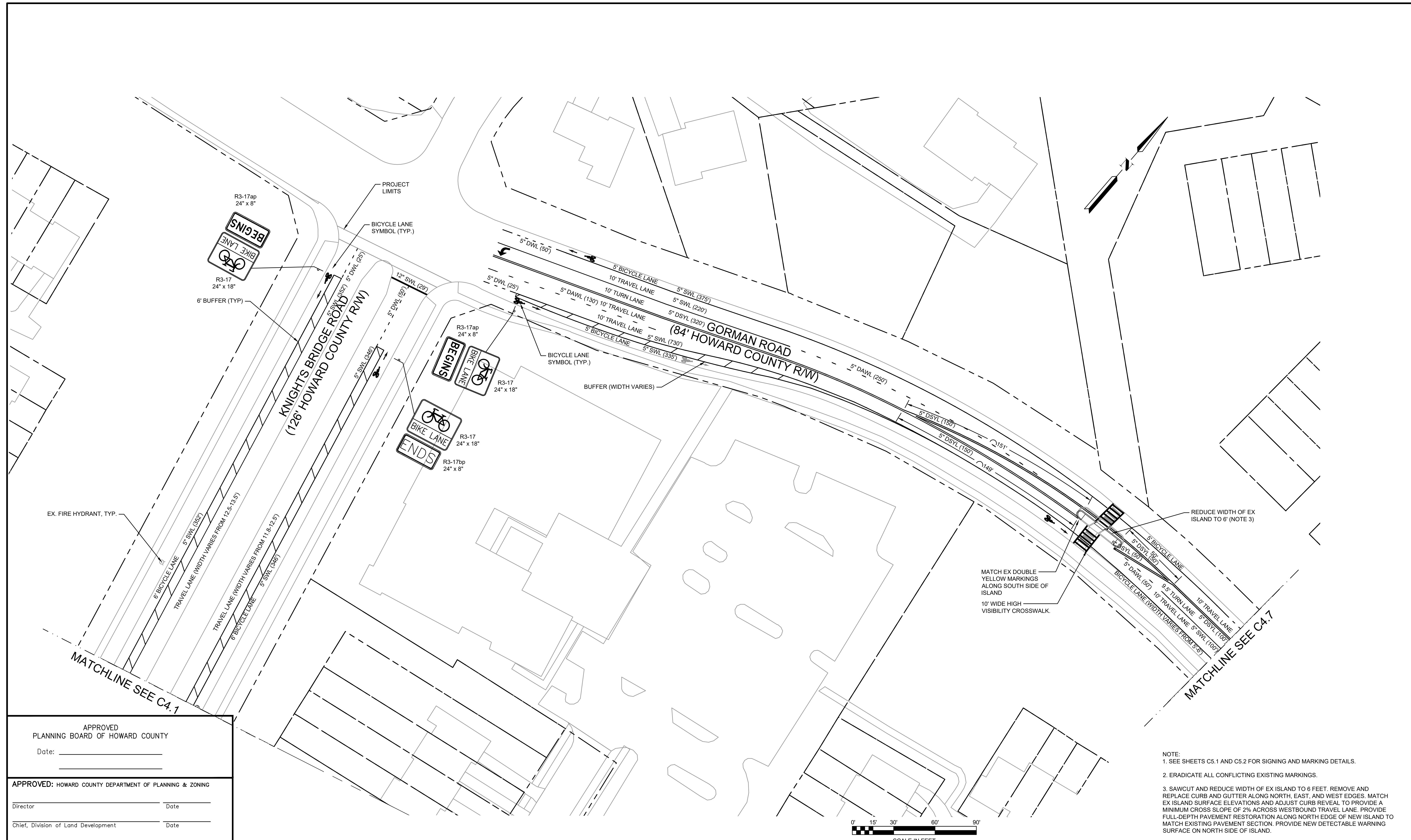
## HOWARD COUNTY, MD

## CIVIL

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PROJECT NO. 5409.05  
DATE 12-18-2020  
DRAWING NO. C4.5  
SHEET NO. 23 of 34





APPROVED  
PLANNING BOARD OF HOWARD COUNTY

The seal is circular with a decorative border. The outer ring contains the text "STATE OF MARYLAND" at the top and "PROFESSIONAL ENGINEER" at the bottom. The inner circle features a central emblem depicting a figure standing on a base, surrounded by a circular border with the words "SPECIALTY PRACTITIONER". Below the emblem, the number "NO. 35022" is printed, and at the bottom, the word "REGISTERED" is visible.

I HEREBY CERTIFY THAT THESE PLANS  
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LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.

## REUSE OF DOCUMENTS

# TOOLE DESIGN

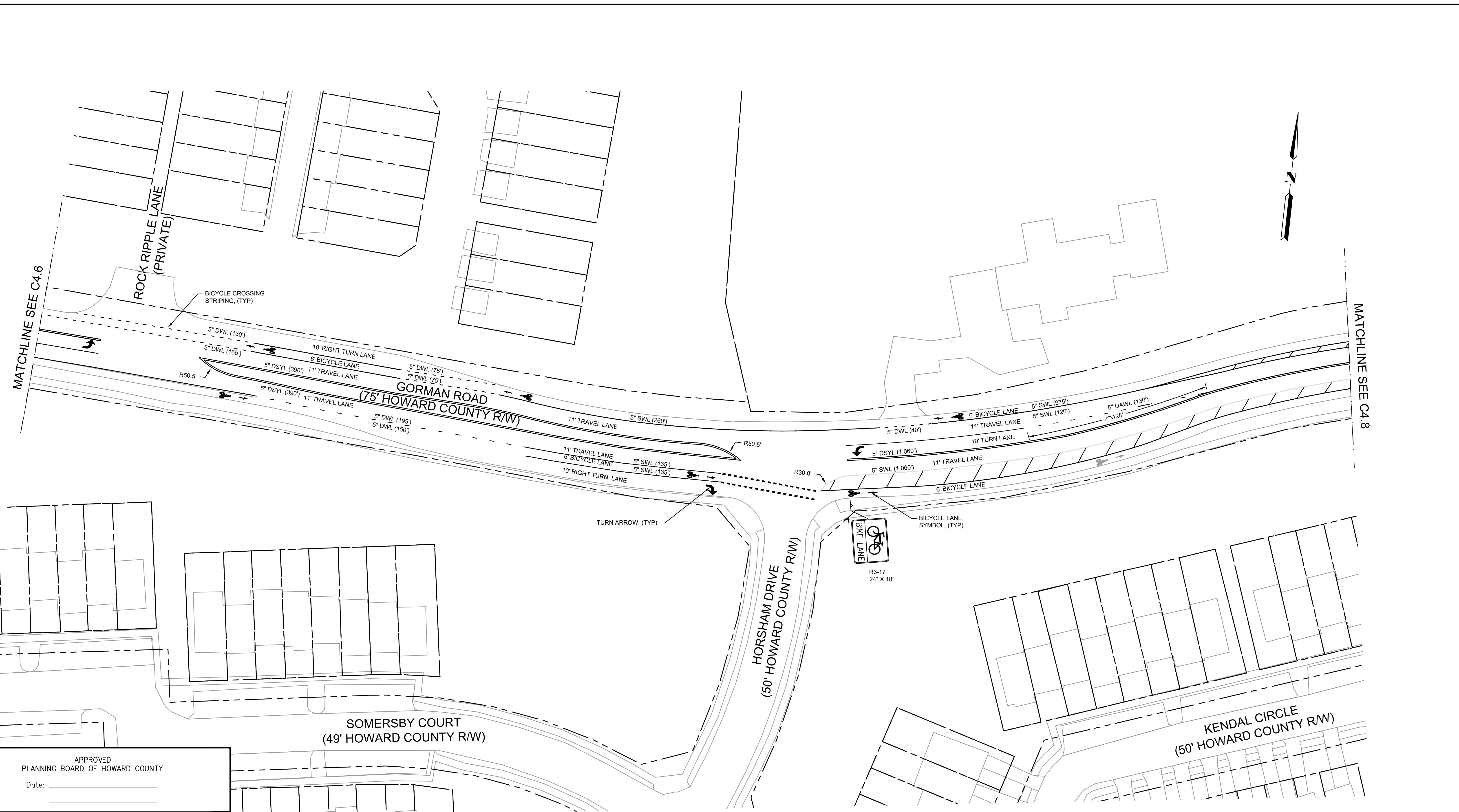
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## NORTH LAUREL CONNECTION HOWARD COUNTY, MD

CIVIL

---

PROJECT NO. 5409.05  
DATE 12-18-2020  
DRAWING NO. C4.6  
SHEET NO. 24 of 34



APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

NOTE:  
1. SEE SHEETS C5.1 AND C5.2 FOR SIGNING AND MARKING DETAILS.  
2. ERADICATE ALL CONFLICTING EXISTING MARKINGS.

0' 15' 30' 60' 90'  
SCALE IN FEET

REUSE OF DOCUMENTS  
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REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.



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LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.

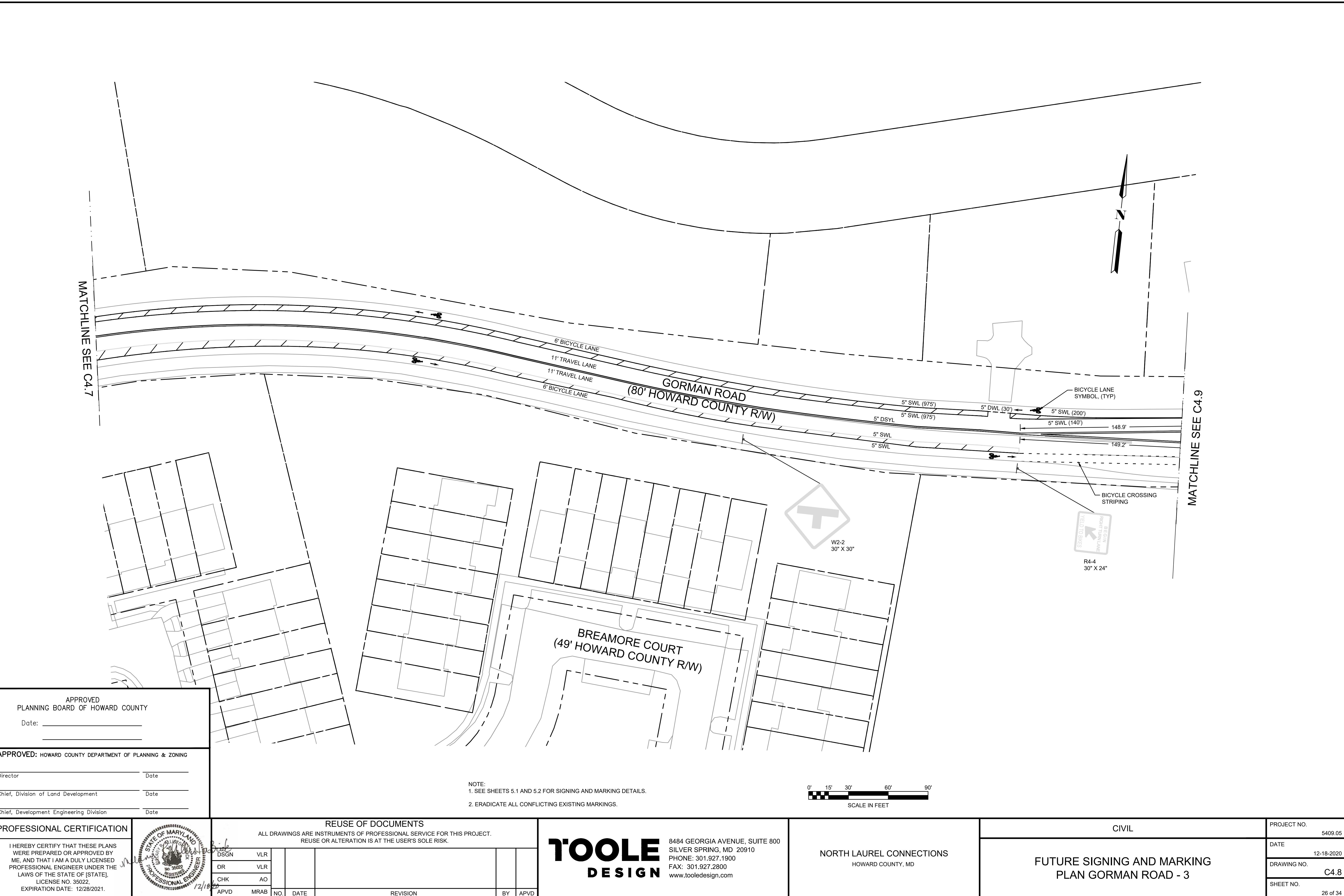
**TOOLE**  
**DESIGN**

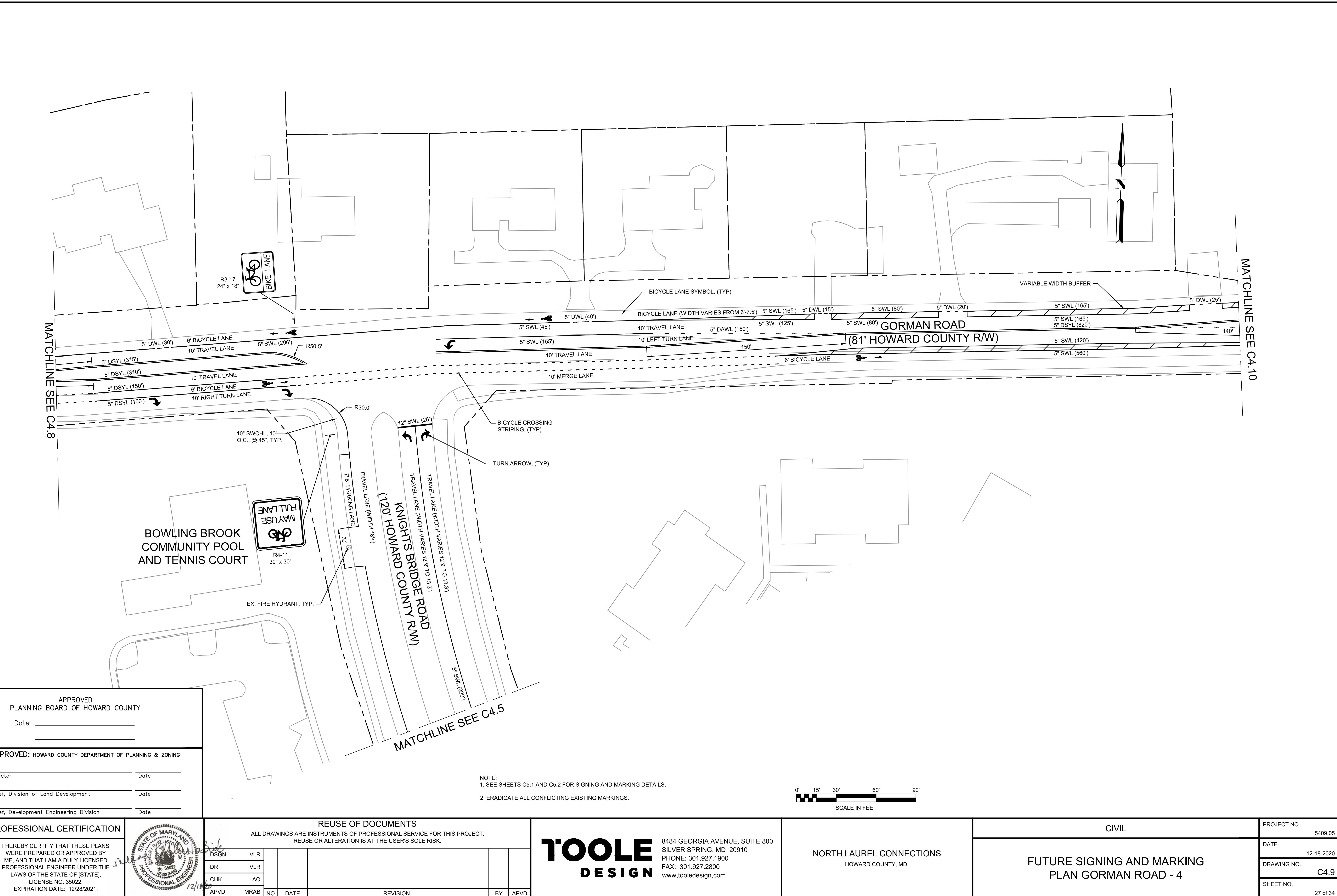
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SILVER SPRING, MD 20910  
PHONE: 301.927.1900  
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www.tooledesign.com

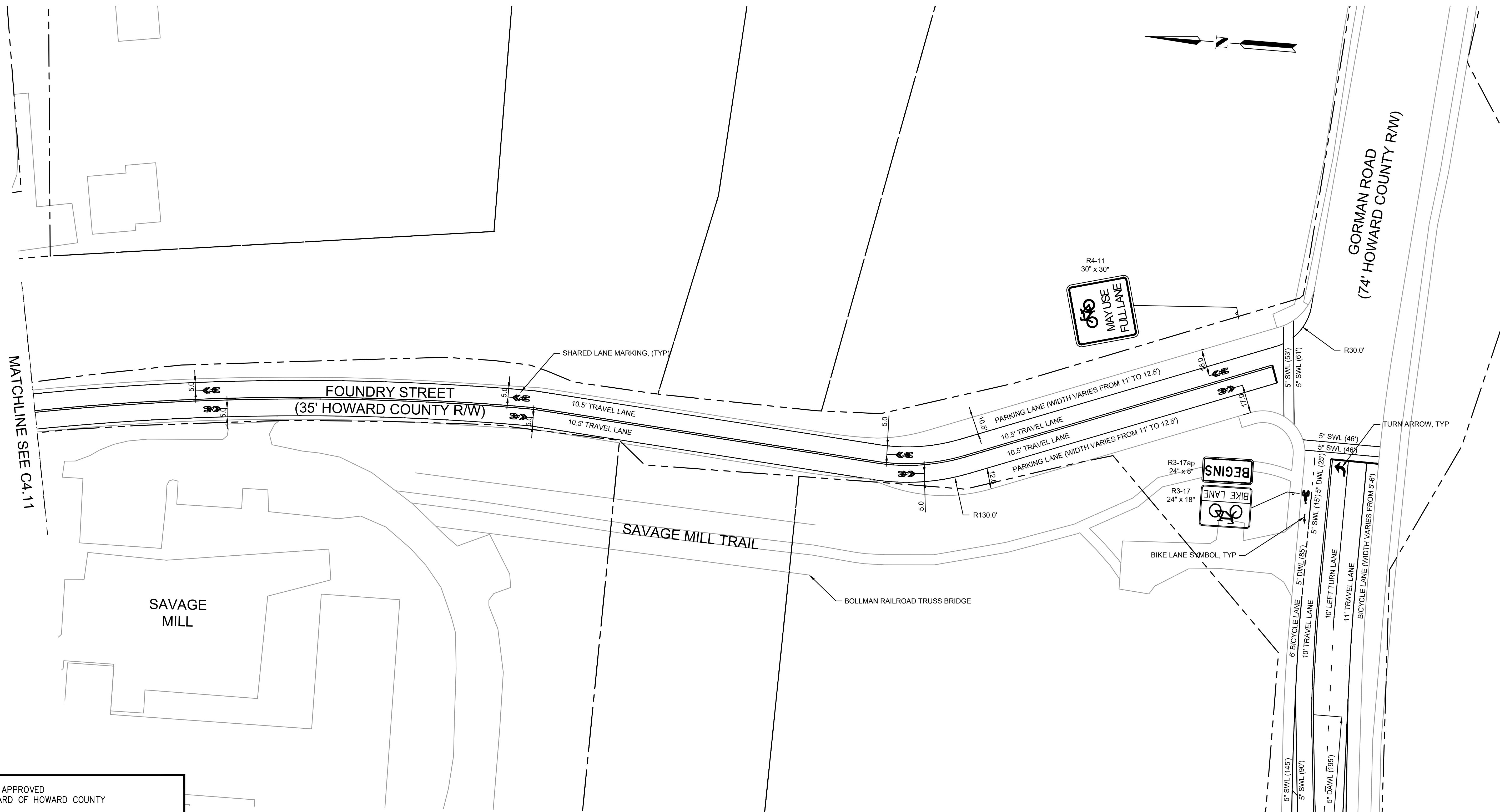
NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

CIVIL  
FUTURE SIGNING AND MARKING  
PLAN GORMAN ROAD - 2

PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C4.7  
SHEET NO.  
25 of 34







APPROVED  
PLANNING BOARD OF HOWARD COUNTY  
Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

NOTE:  
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PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THESE PLANS  
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LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.



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DSGN	VLR				
DR	VLR				
CHK	AO				
APVD	MRAB	NO.	DATE	REVISION	BY APVD

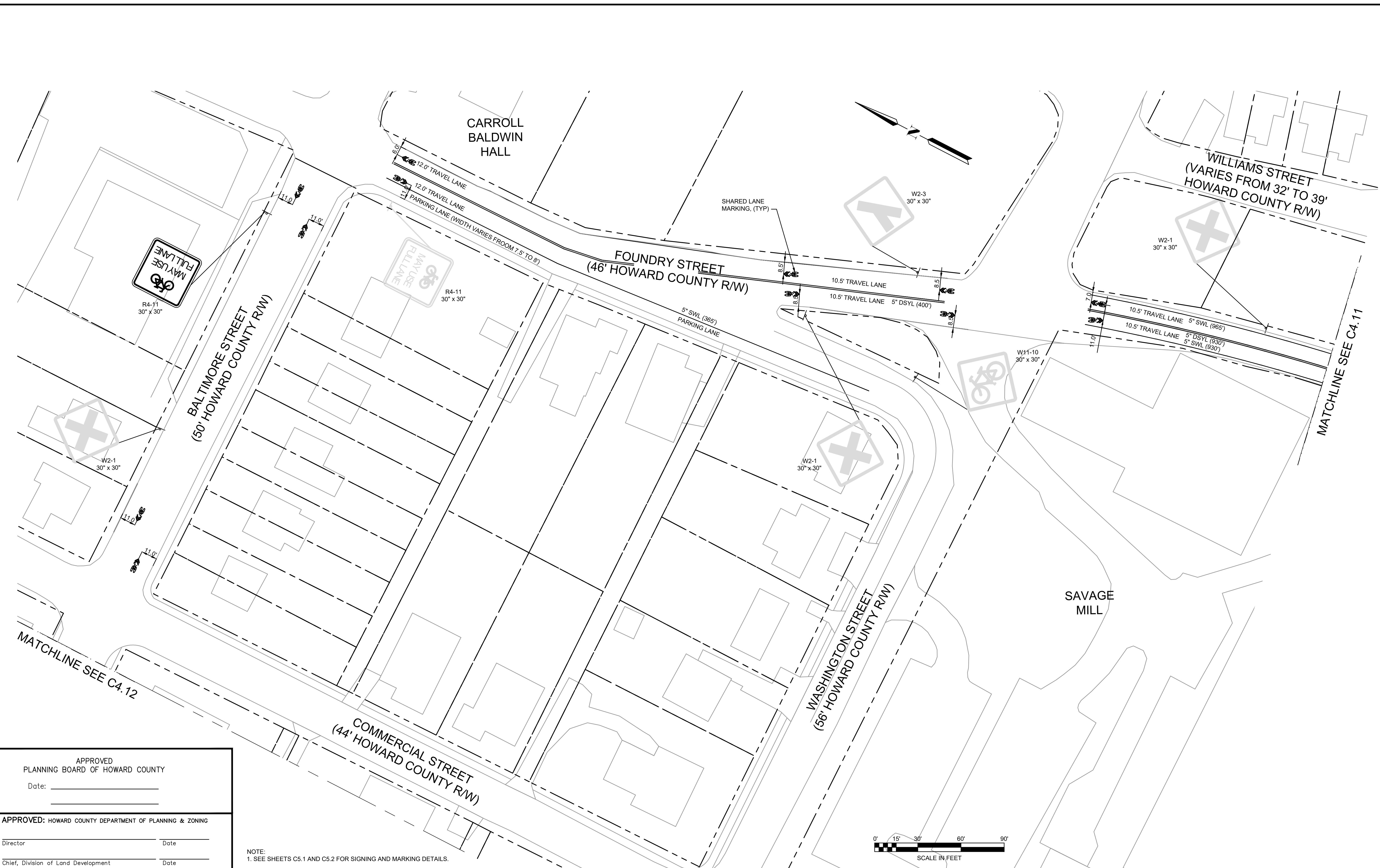
**TOOLE  
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NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

CIVIL  
FUTURE SIGNING AND MARKNG PLAN  
FOUNDARY STREET - 1  
(BY OTHERS)

PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C4.10  
SHEET NO.  
28 of 34



APPROVED  
PLANNING BOARD OF HOWARD COUNTY

NOTE:

1. SEE SHEETS C5.1 AND C5.2 FOR SIGNING AND MARKING DETAILS
2. ERADICATE ALL CONFLICTING EXISTING MARKINGS.

PROFESSIONAL CERTIFICATION

---

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LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.

*[Signature]*



## REUSE OF DOCUMENTS

# TOOLE DESIGN

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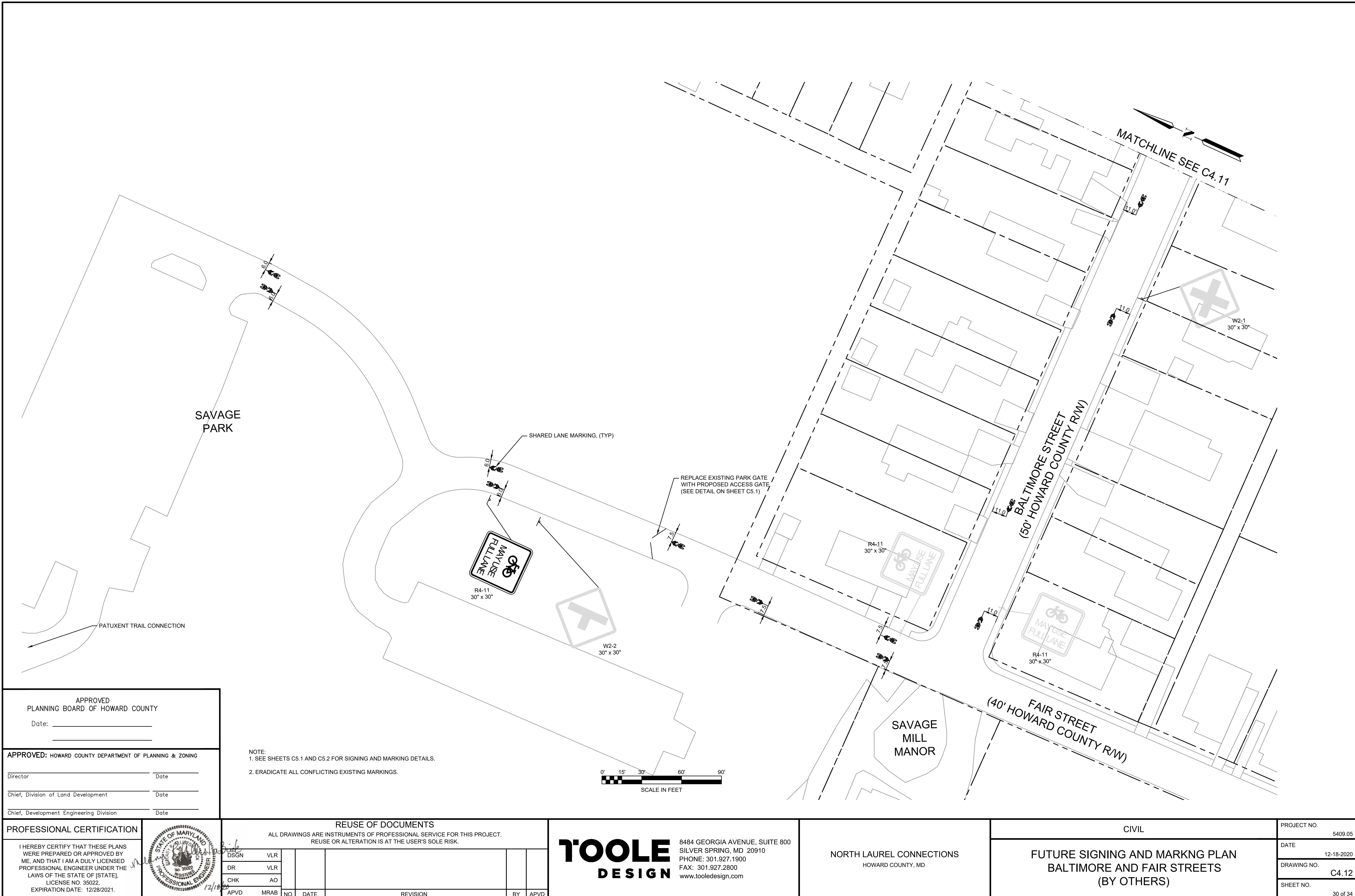
# NORTH LAUREL CONNECTION

## HOWARD COUNTY, MD

CIVIL

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PROJECT NO. 5409.05  
DATE 12-18-2020  
DRAWING NO. C4.11  
SHEET NO. 29 of 34



APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

---

Director \_\_\_\_\_ Date \_\_\_\_\_

OMER, DEVELOPMENT ENGINEERING DIVISION

I HEREBY CERTIFY THAT THESE PLANS  
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ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.

NOTE:

1. SEE SHEETS C5.1 AND C5.2 FOR SIGNING AND MARKING DETAILS.
2. ERADICATE ALL CONFLICTING EXISTING MARKINGS.

# COOLE DESIGN

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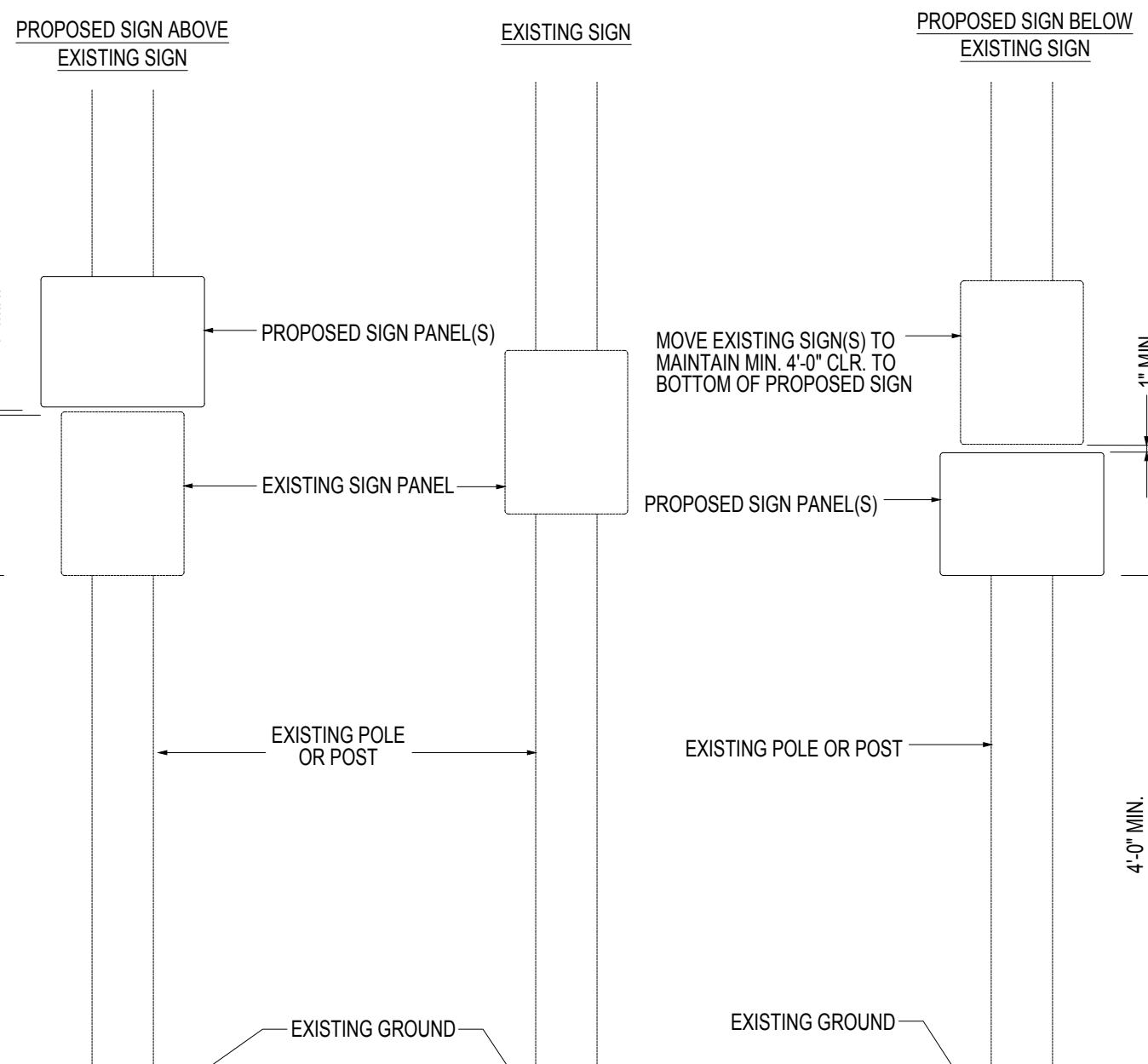
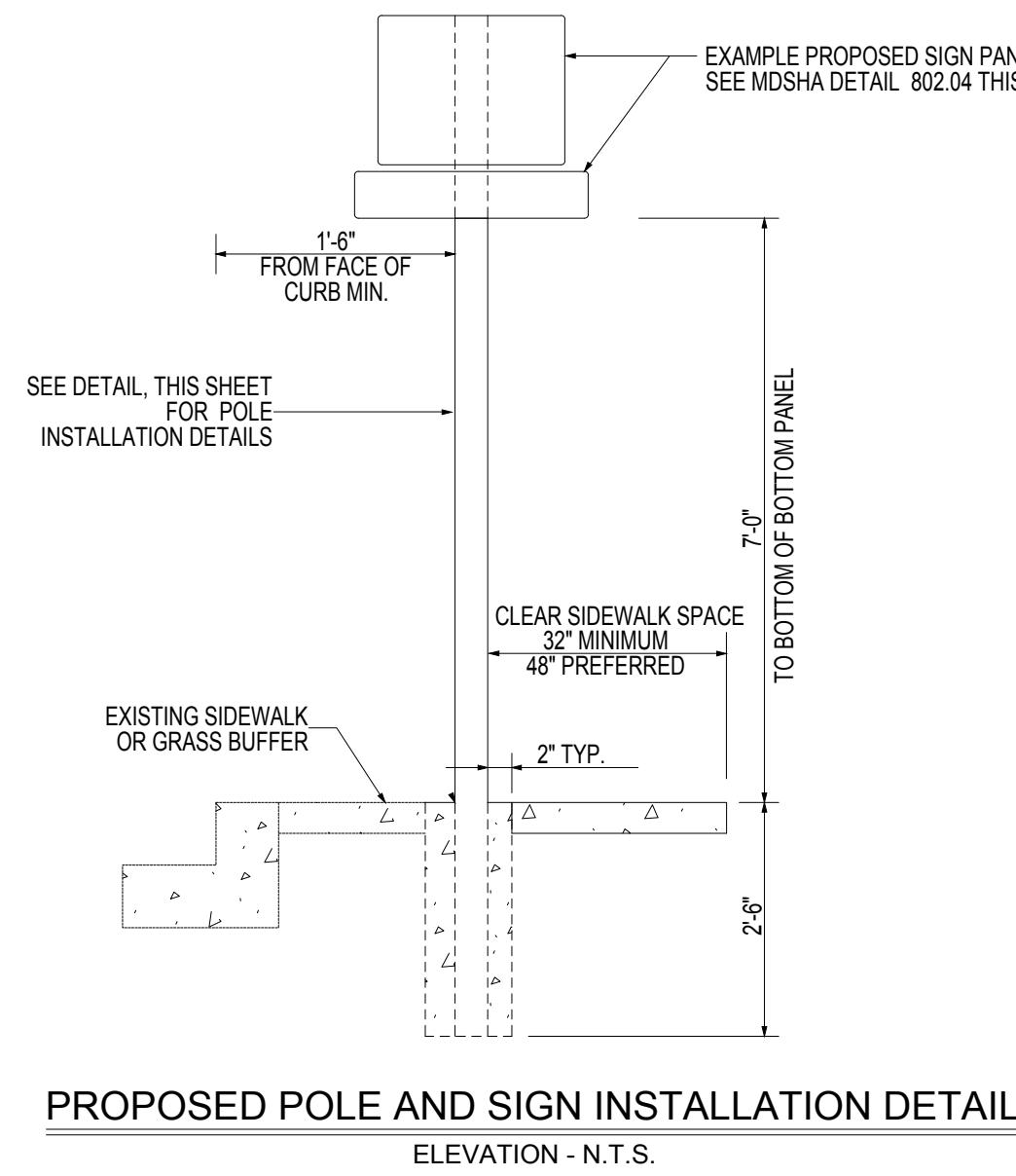
# NORTH LAUREL CONNECTION

## HOWARD COUNTY, MD

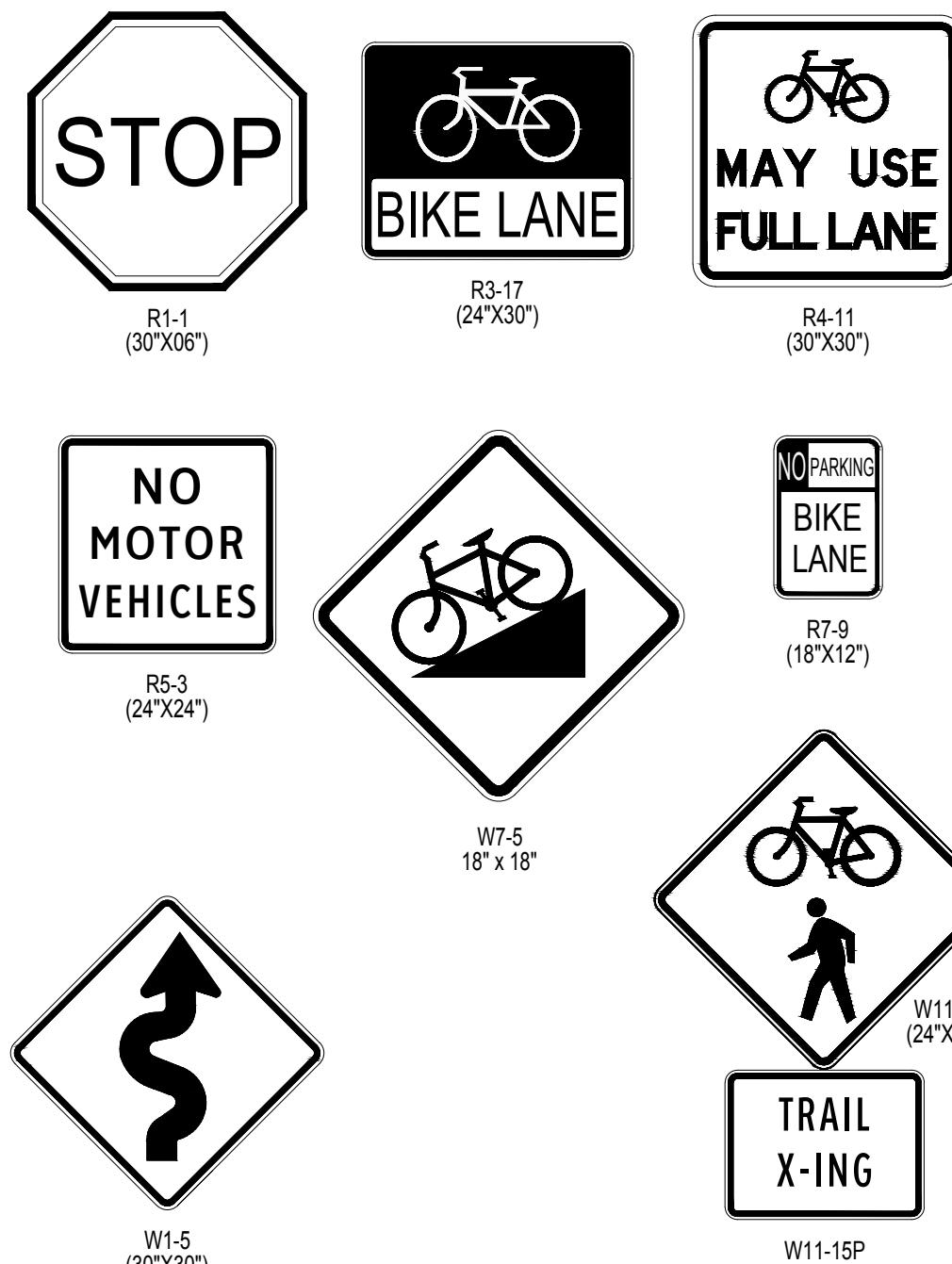
## CIVIL

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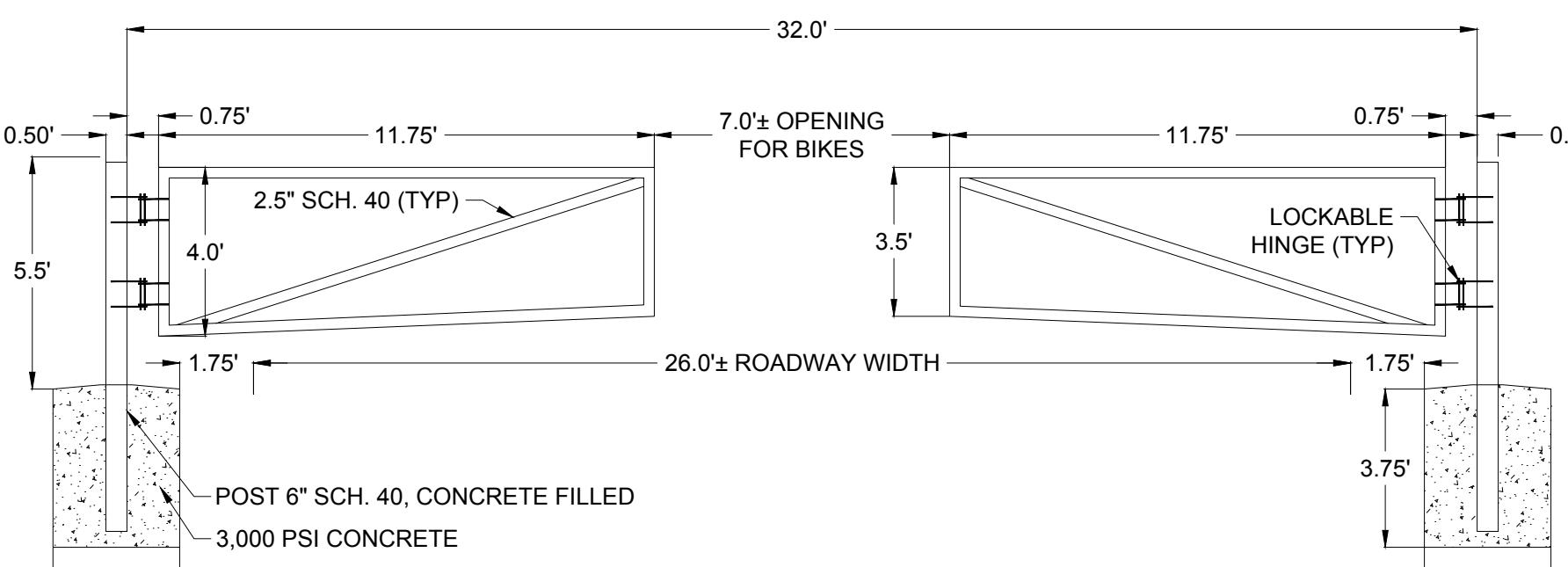
PROJECT NO.	5409.05
DATE	12-18-2020
DRAWING NO.	C4.12
SHEET NO.	30 of 34



**MOUNTING SIGN ON POLE WITH EXISTING SIGN**  
ELEVATION - N.T.S.

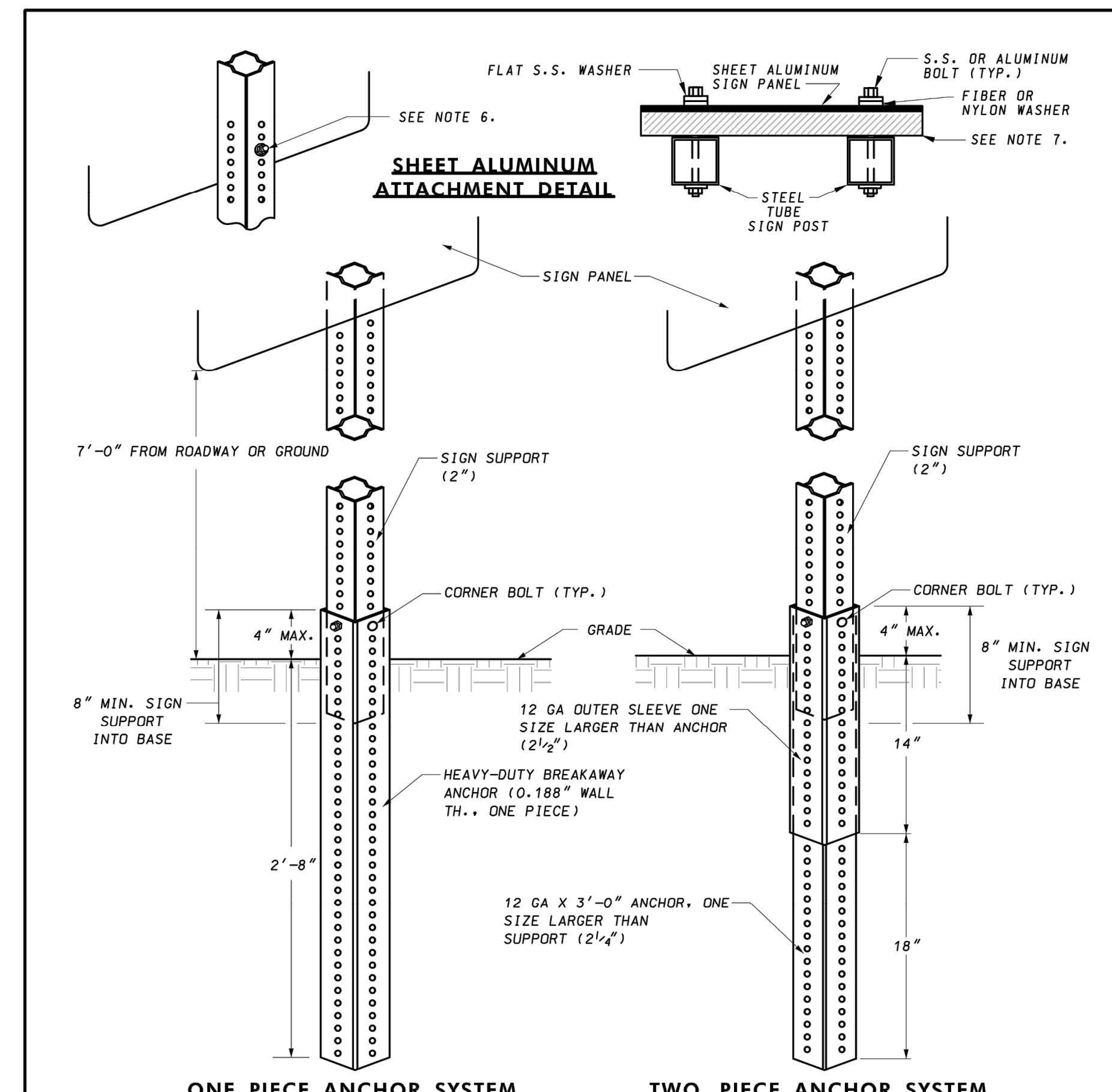


**MUTCD STANDARD SIGNS**  
N.T.S.



**PROPOSED GATE DETAIL**  
N.T.S.

**NOTE:**  
1. SIGNS ON EXISTING GATE SHALL BE REMOVED, STORED SAFELY, AND REINSTALLED ON PROPOSED GATE. DAMAGED SIGNS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.



**NOTES:**

1. INSTALLATION SHALL BE PERFORMED PER MANUFACTURER'S RECOMMENDATIONS.
2. CORNER BOLTS AND HARDWARE SHALL BE AS APPROVED BY AASHTO AND PER MANUFACTURER'S RECOMMENDATIONS.
3. THE INSTALLATION SHALL MEET THE LATEST AASHTO BREAKAWAY REQUIREMENTS.
4. SPLICES SHALL NOT BE USED TO EXTEND THE HEIGHT OF A SIGN POST.
5. ONLY 2" SIGN SUPPORTS SHALL BE USED. SIGN POSTS GREATER THAN OR LESS THAN 2" ARE NOT PERMITTED.
6. FOR SHEET ALUMINUM ATTACHMENT, ALL BOLTS SHALL BE 3/8" F593 (16-8 TYPE 303-304) STAINLESS STEEL OR ANODIZED ALUMINUM HEX HEAD BOLT WITH WASHERS AND NUTS SPACED AT 12" MAXIMUM.
7. ALL SHEET ALUMINUM SIGNS 5' WIDE AND LARGER SHALL BE BRACED WITH TWO HORIZONTAL 2"X4" TREATED WOOD OR EQUAL, ATTACHED TO THE SUPPORTS. THE BOLT LENGTHS SHALL BE COORDINATED.

SPECIFICATION	CATEGORY CODE ITEMS
802	
APPROVED	 OFFICE OF TRAFFIC AND SAFETY
Director	APPROVAL • SHA APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
	APPROVAL 5-17-07 APPROVAL 5-2-07
Chief, Division of Land Development	REVISED REVISED
Chief, Development Engineering Division	REVISED REVISED

**Maryland Department of Transportation  
STATE HIGHWAY ADMINISTRATION**  
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

**BREAKAWAY TUBULAR  
STEEL SIGN SUPPORTS**

**STANDARD NO.** MD 802.04

APPROVED	
PLANNING BOARD OF HOWARD COUNTY	
Date: _____	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING	
Director	Date
Chief, Division of Land Development	Date
Chief, Development Engineering Division	Date

PROFESSIONAL CERTIFICATION  
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EXPIRATION DATE: 12/28/2021.



REUSE OF DOCUMENTS  
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DSGN	VLR	DR	VLR	CHK	AO	APVD	MRAB	NO.	DATE	REVISION	BY	APVD
<i>John Doe</i>												

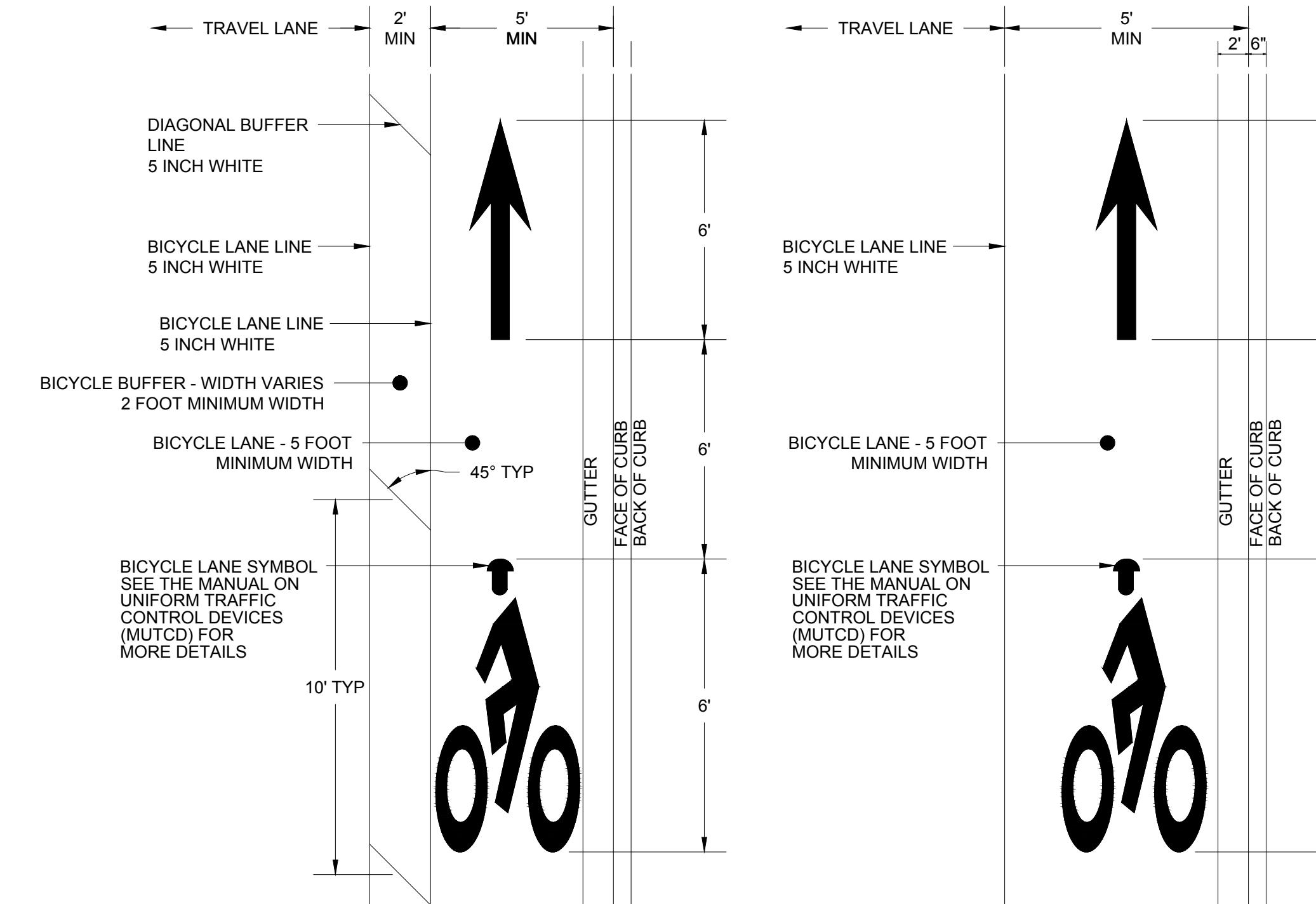
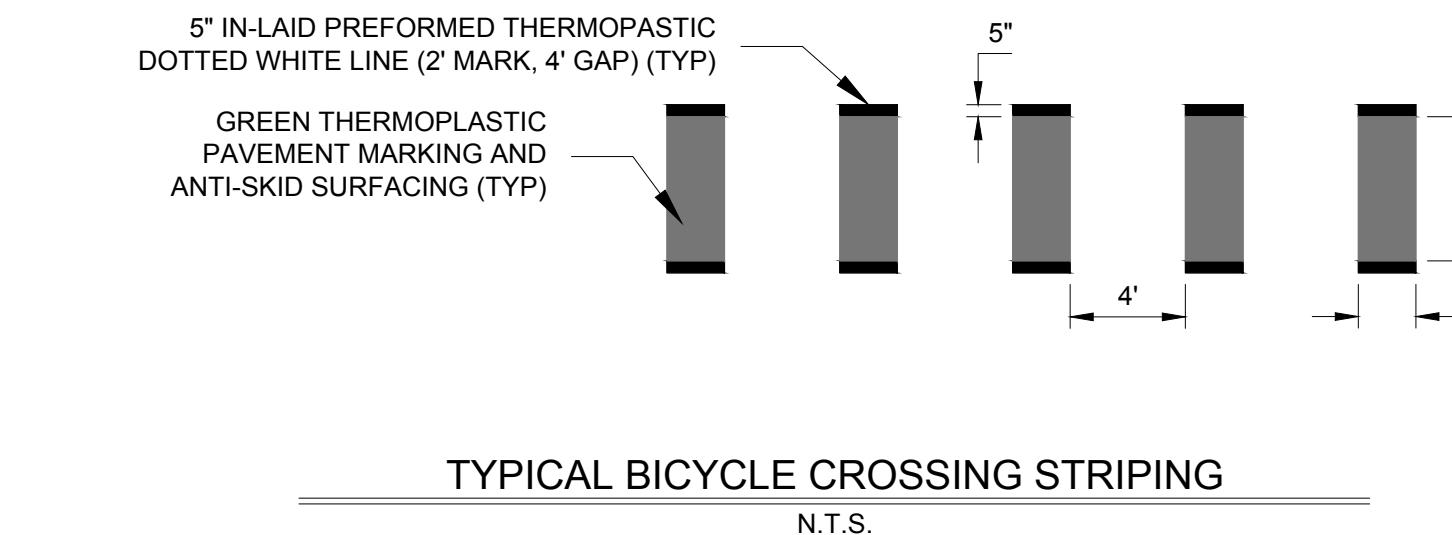
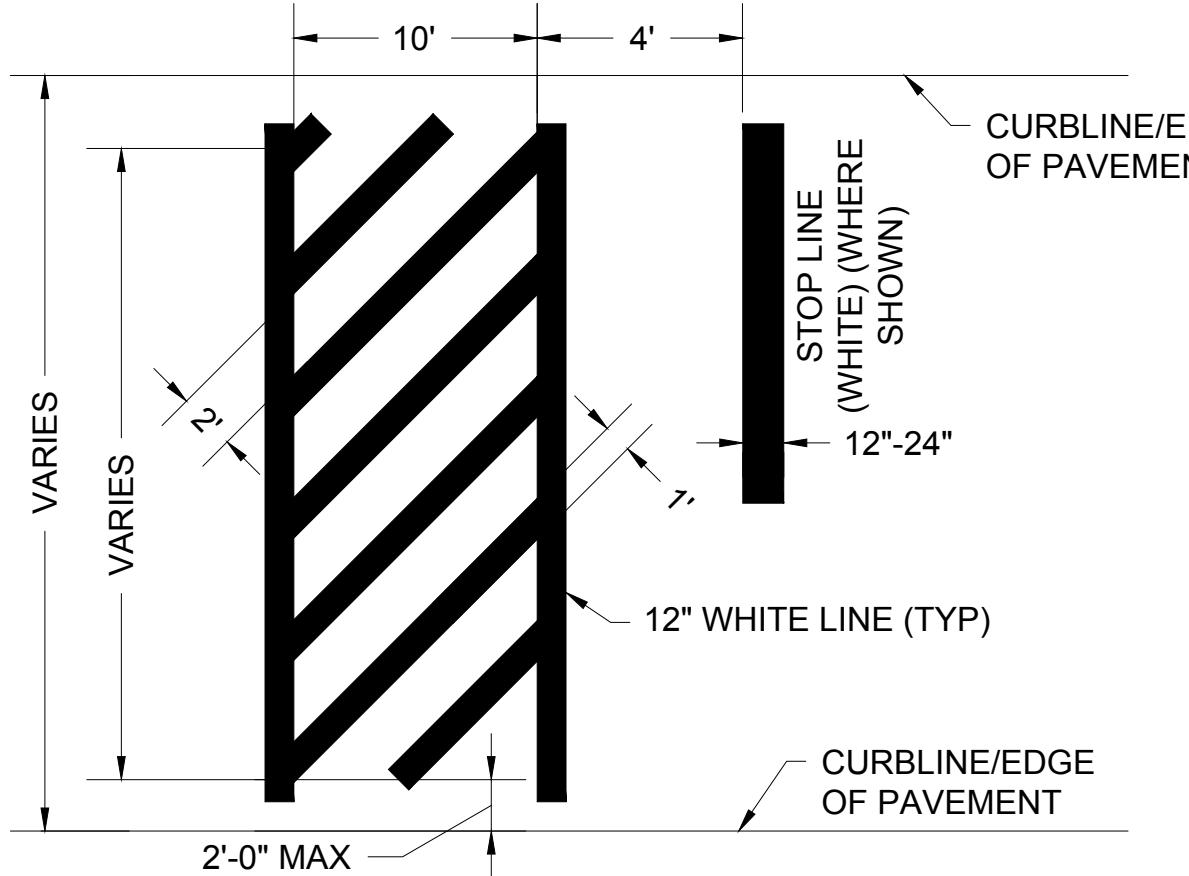
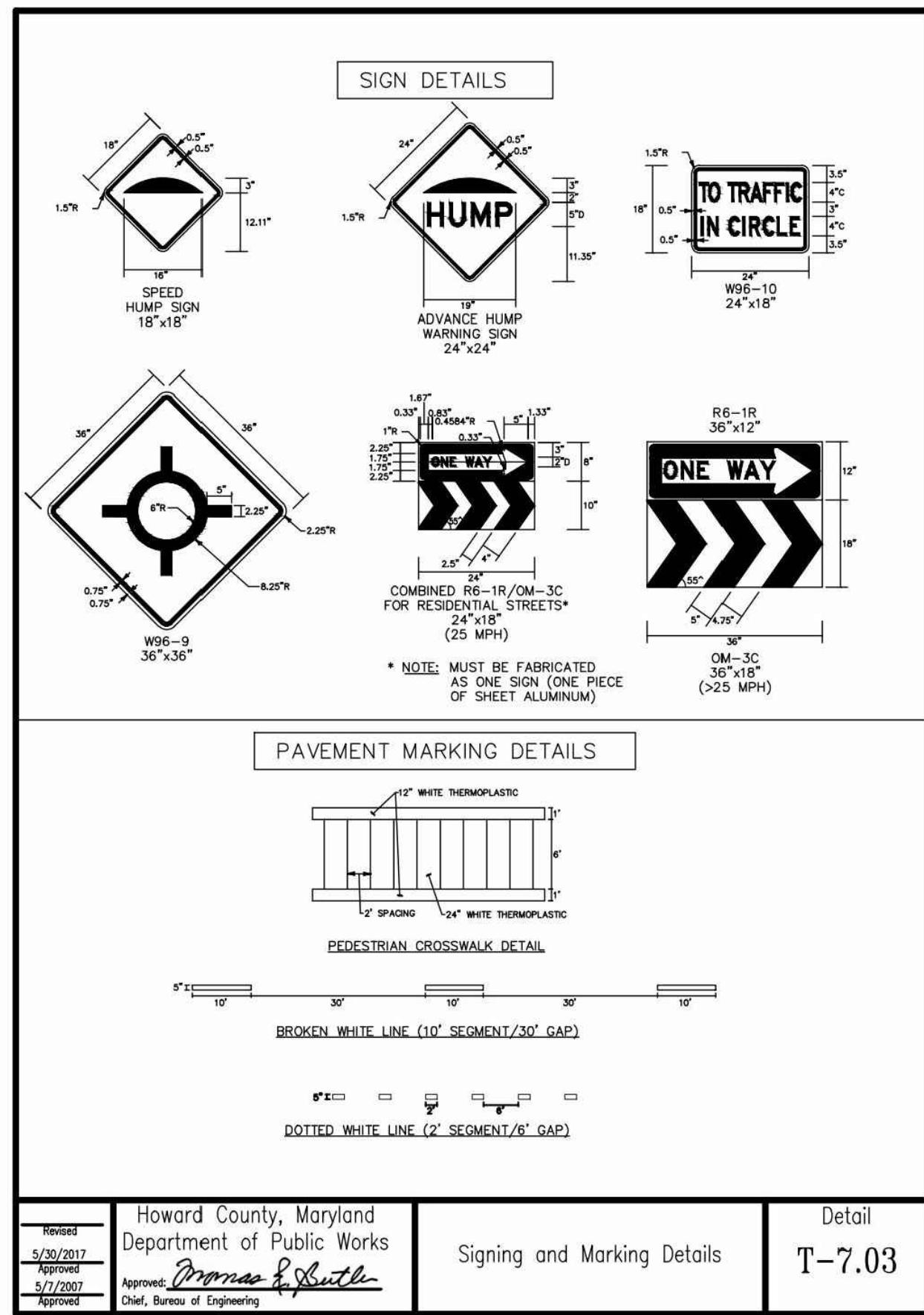
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FAX: 301.927.2800  
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NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

GENERAL  
STANDARD DETAILS - 1

PROJECT NO. 5409.05  
DATE 12-18-2020  
DRAWING NO. C5.1  
SHEET NO. 31 of 34

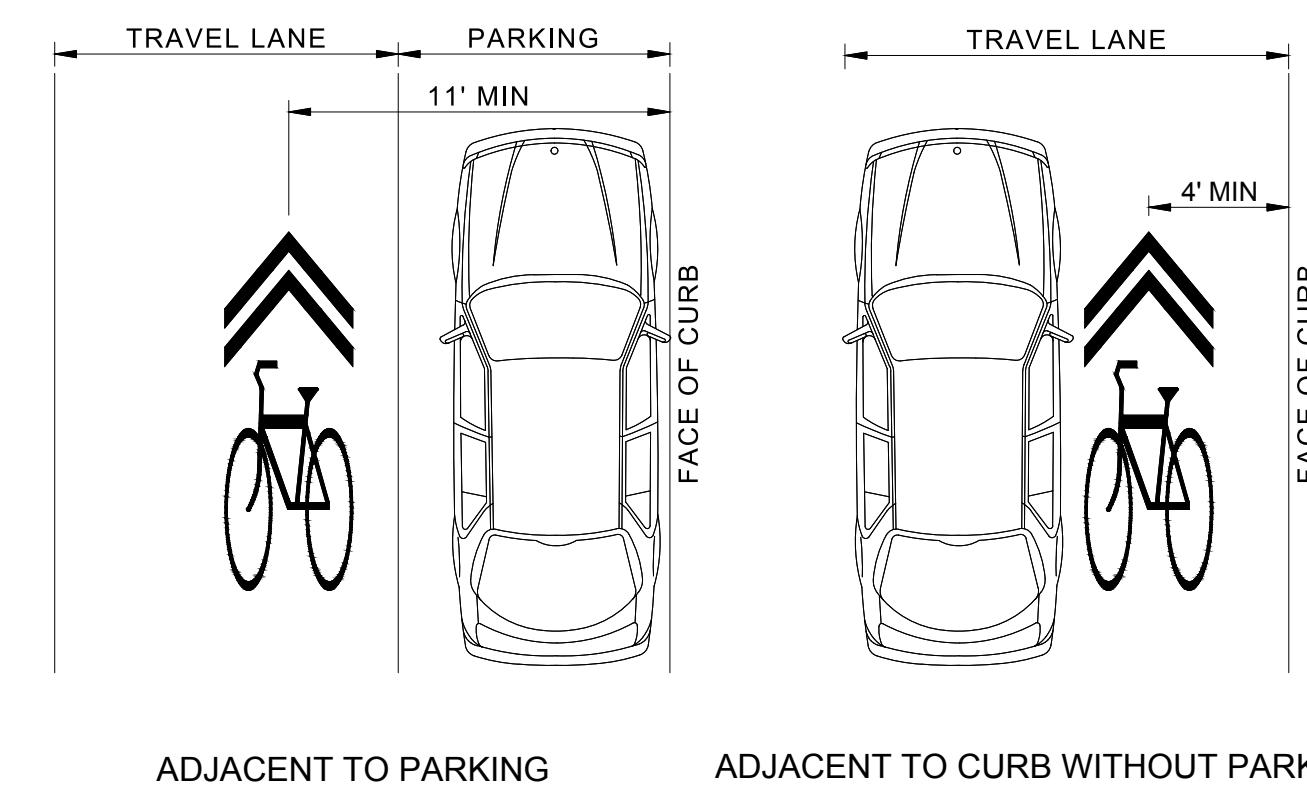


**BUFFERED BICYCLE LANE STRIPING**

ADJACENT TO CURB WITHOUT PARKING

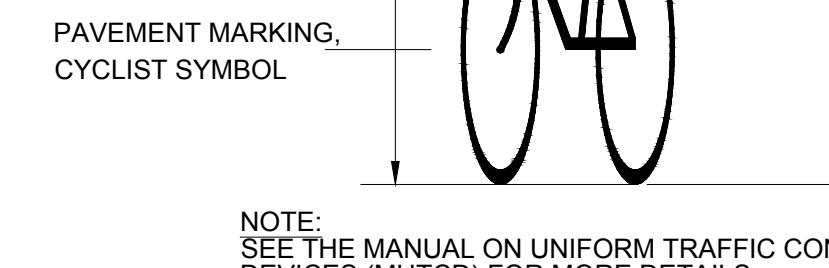
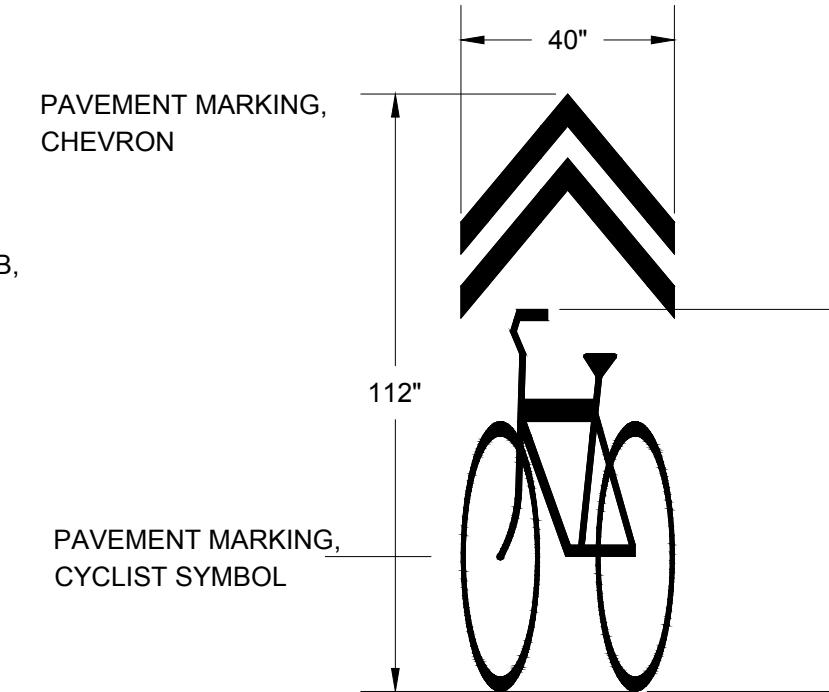
**BICYCLE LANE STRIPING**

ADJACENT TO CURB WITHOUT PARKING



**SHARED LANE SYMBOL PLACEMENT NOTES:**

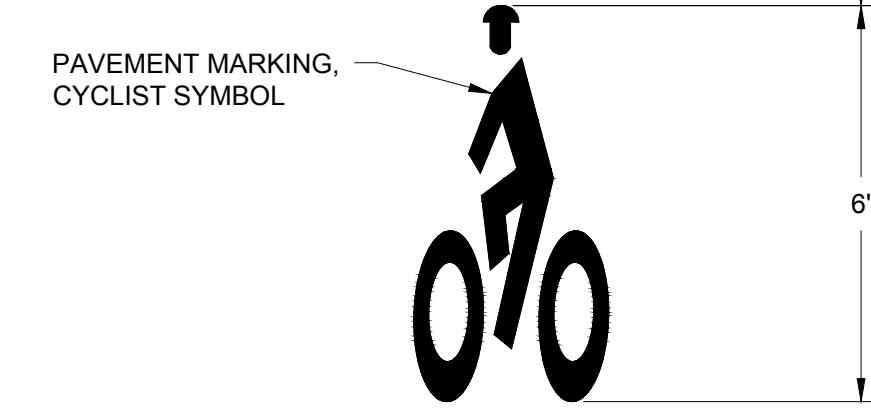
1. IN LOCATIONS WITH ON-STREET PARKING, SHARED LANE MARKING SYMBOLS SHALL BE PLACED SO THAT THEIR CENTERS ARE A MINIMUM OF 11 FEET FROM THE ADJACENT FACE OF CURB, UNLESS SHOWN OTHERWISE ON THE PLAN SHEETS.
2. IN LOCATIONS WITHOUT PARKING, SHARED LANE MARKING SYMBOLS SHALL BE PLACED SO THAT THEIR CENTERS ARE 4 FEET FROM THE ADJACENT FACE OF CURB, UNLESS SHOWN OTHERWISE ON THE PLAN SHEETS.
3. IF LOCATED IN A TURN LANE, SHARED LANE MARKING SYMBOLS SHALL BE CENTERED IN THE LANE UNLESS OTHERWISE NOTED ON THE PLAN SHEETS.
4. DO NOT PLACE SYMBOLS ON LANE LINES.
5. SEE PLAN SHEETS FOR SYMBOL LOCATIONS.
6. DISTANCE BETWEEN SHARED LANE SYMBOLS SHALL NOT EXCEED 250 LF.
7. SHARED LANE SYMBOLS BE SPACED EVENLY WITHIN EACH BLOCK.



**NOTE:**  
SEE THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR MORE DETAILS

**BICYCLE LANE SYMBOL PLACEMENT NOTES:**

1. DO NOT PLACE SYMBOLS ON LANE LINES.
2. PLACE BICYCLE LANE SYMBOLS WITHIN CENTER OF BICYCLE LANE.
3. SEE PLAN SHEETS FOR SYMBOL LOCATIONS.



APPROVED  
PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

**PROFESSIONAL CERTIFICATION**

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LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.



**REUSE OF DOCUMENTS**

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DSGN	VLR		
DR	VLR		
CHK	AO		
APVD	MRAB	NO.	DATE
REVISION		BY	APVD

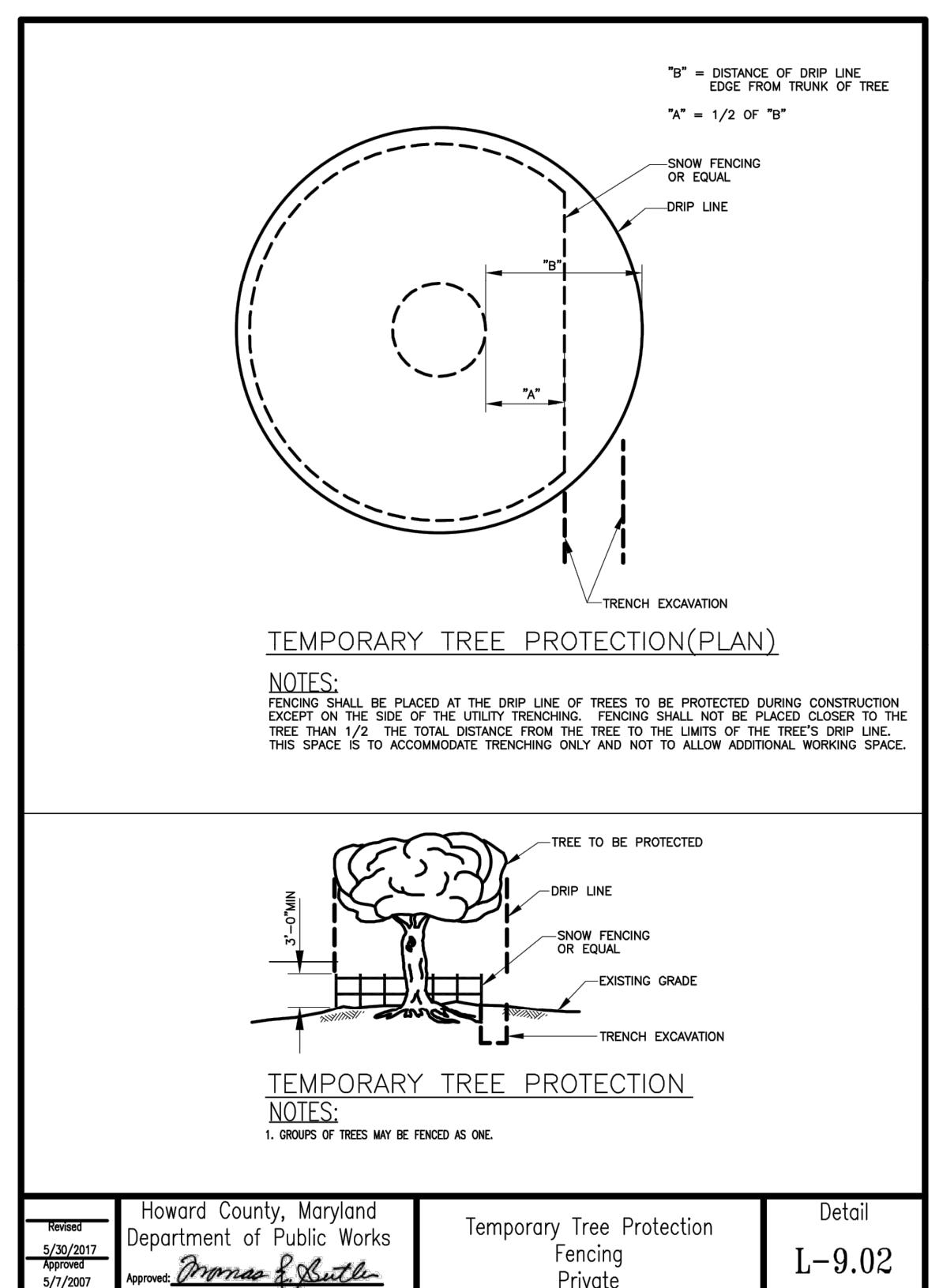
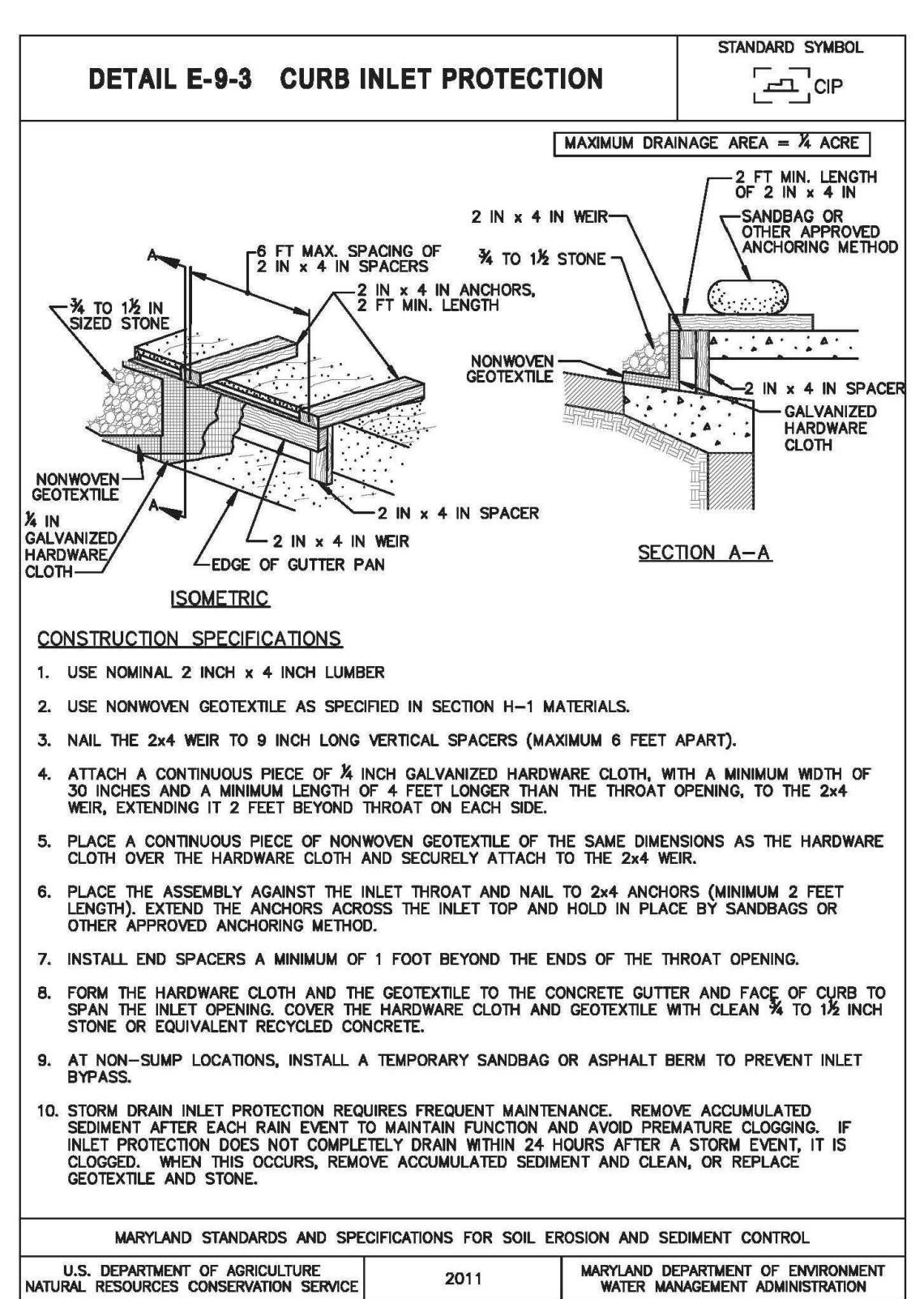
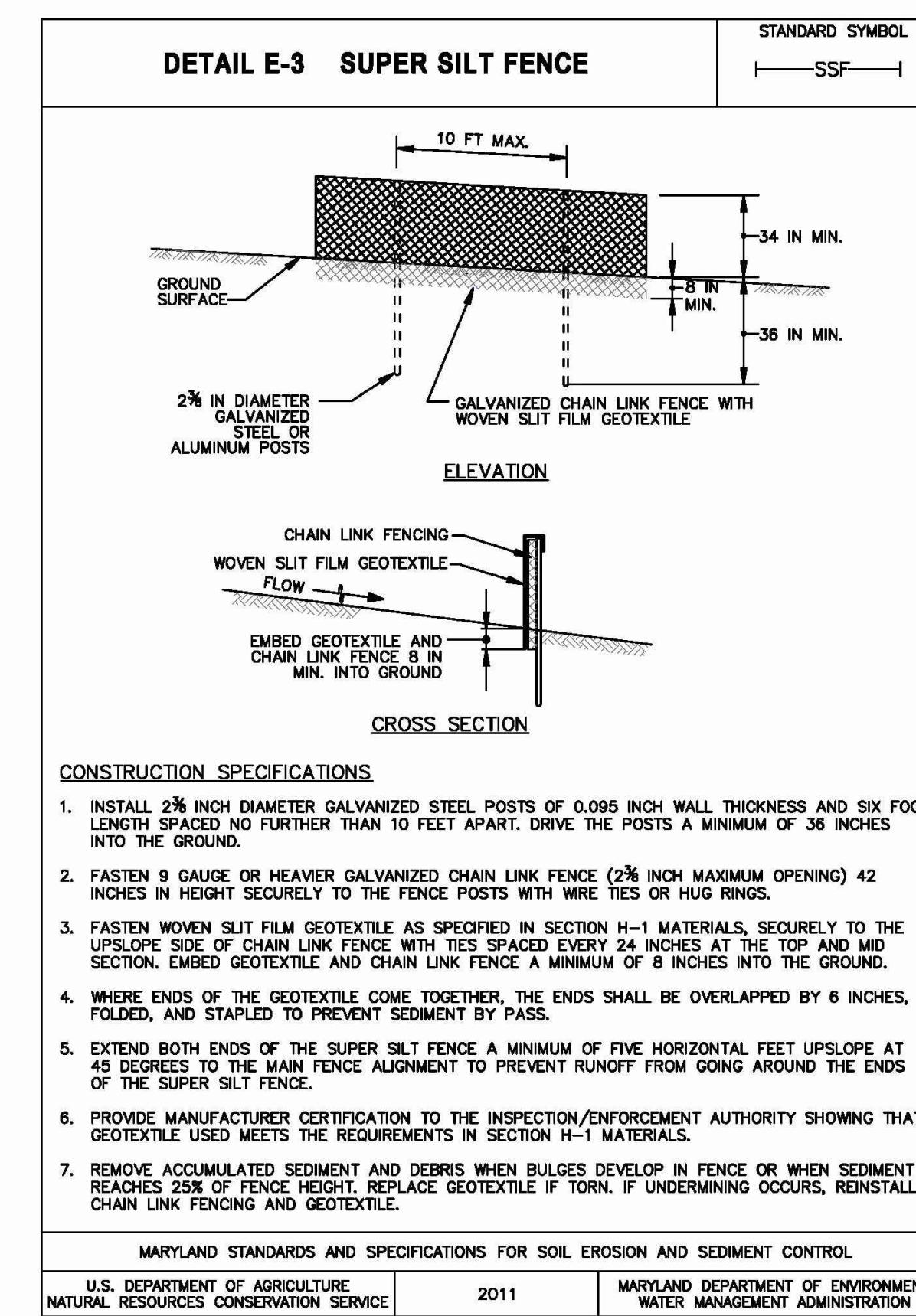
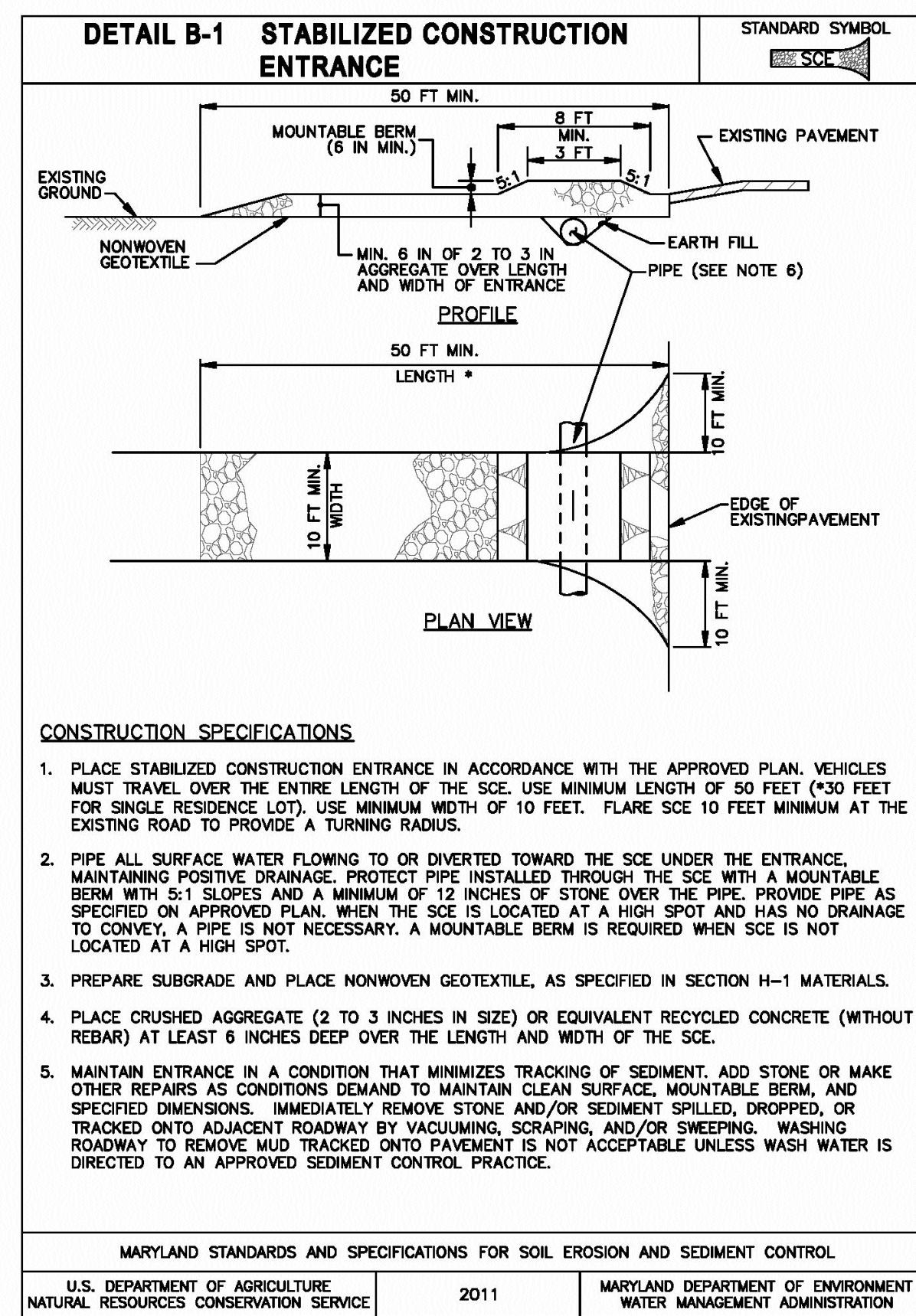
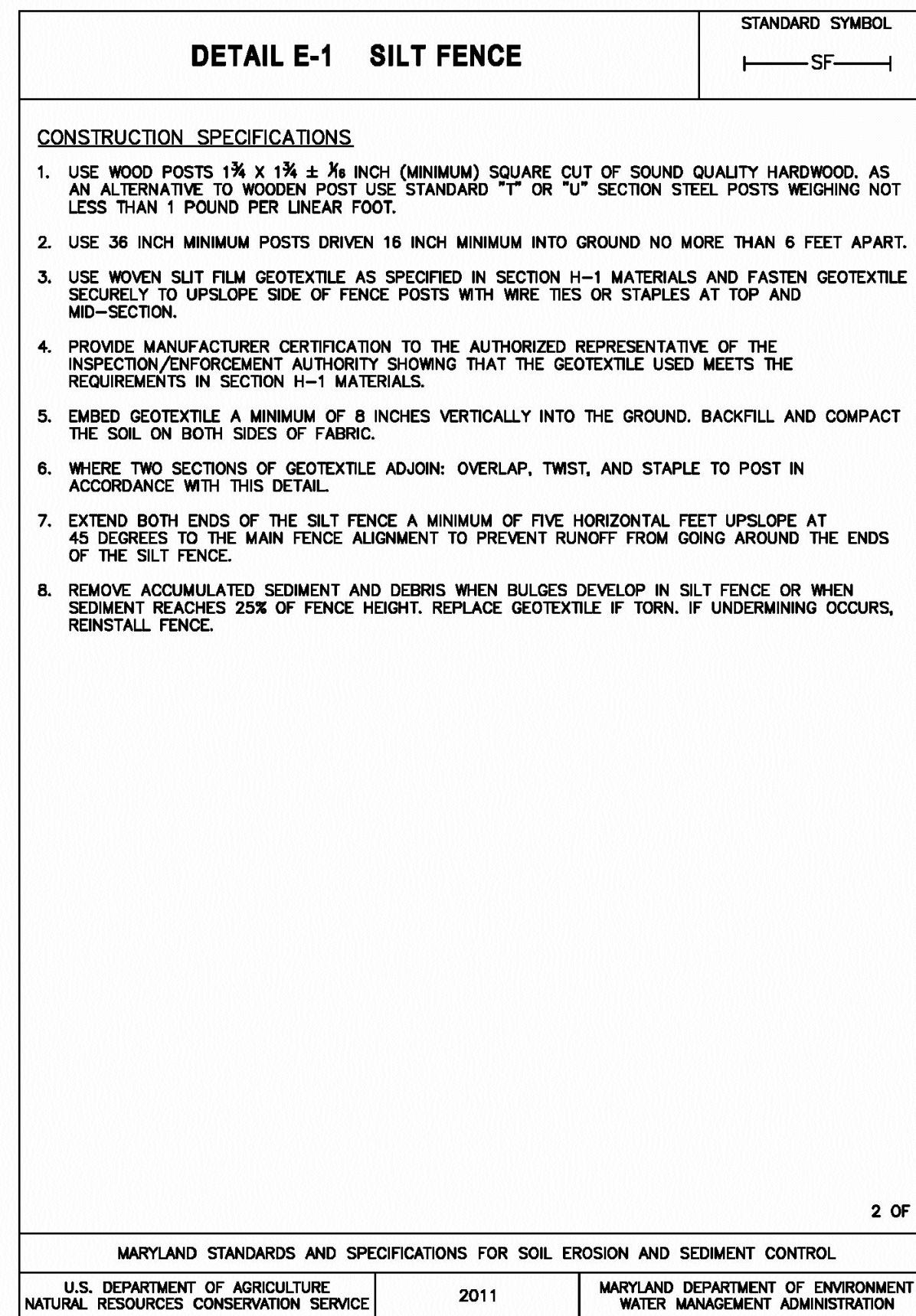
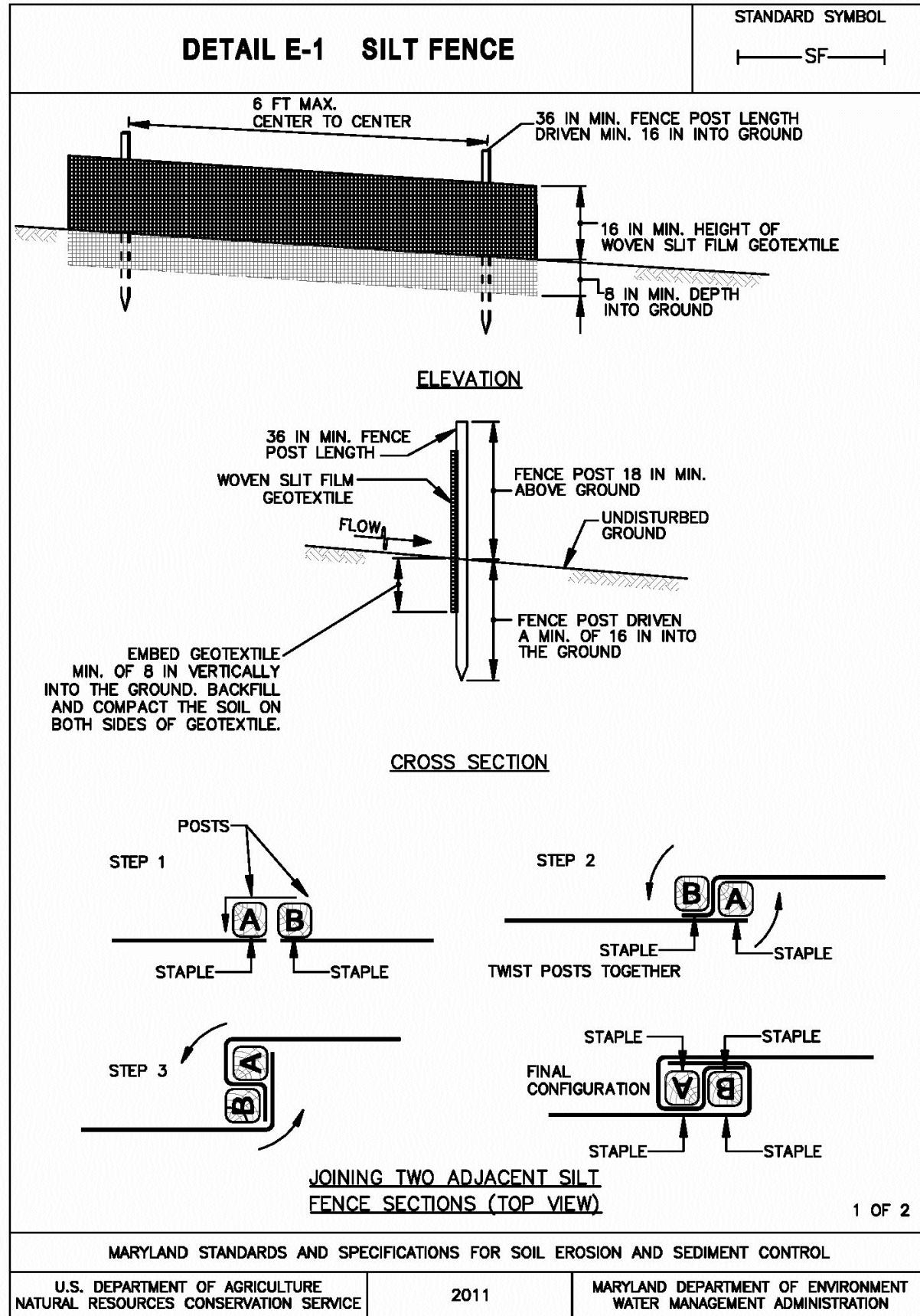
**TOOLE  
DESIGN**

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SILVER SPRING, MD 20910  
PHONE: 301.927.1900  
FAX: 301.927.2800  
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NORTH LAUREL CONNECTIONS  
HOWARD COUNTY, MD

**GENERAL**  
**STANDARD DETAILS - 2**

PROJECT NO.  
5409.05  
DATE  
12-18-2020  
DRAWING NO.  
C5.2  
SHEET NO.  
32 of 34



Permanent Seeding Summary								
Hardiness Zone (from Figure B.3): _____ Seed Mixture (from Table B.3): _____					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	
				1/4- 1/2 in	45 pounds per acre (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
				1/4- 1/2 in				
				1/4- 1/2 in				

---

Chief. Development Engineering Division Date

gate

PROFESSIONAL CERTIFICATION

---

I HEREBY CERTIFY THAT THESE PLANS  
WERE PREPARED OR APPROVED BY  
ME, AND THAT I AM A DULY LICENSED  
PROFESSIONAL ENGINEER UNDER THE  
LAWS OF THE STATE OF [STATE],  
LICENSE NO. 35022,  
EXPIRATION DATE: 12/28/2021.

*[Signature]*

The seal is circular with a decorative border. The outer ring contains the text "STATE OF MARYLAND" at the top and "PROFESSIONAL ENGINEER" at the bottom. The inner circle features a central figure, possibly a Native American, holding a bow and arrow. The text "REGISTERED" is positioned above the figure, and "NO. 35022" is below it. Handwritten signatures "J. E. P. Elliott" and "K. J. C. West" are overlaid on the seal. A date "12/18/20" is written in the bottom right corner.

# REUSE OF DOCUMENTS

# TOOLE DESIGN

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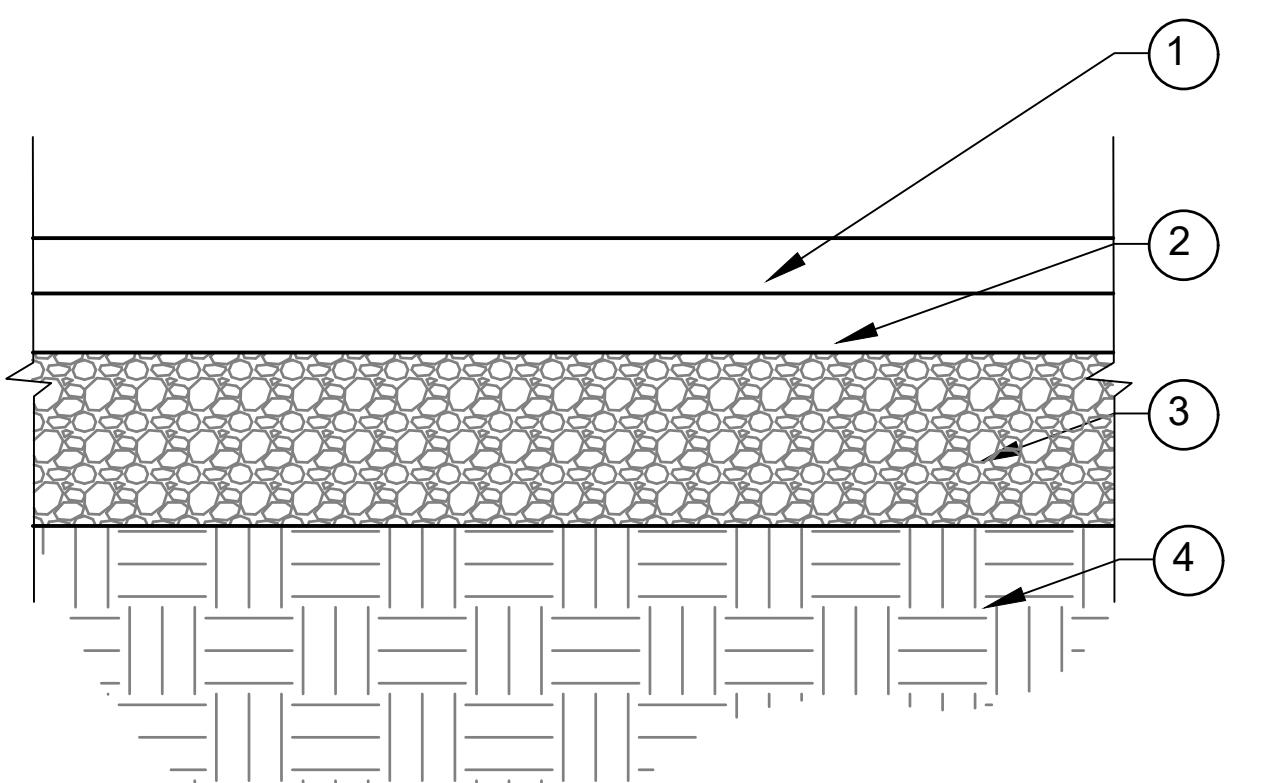
# NORTH LAUREL CONNECTIONS

## HOWARD COUNTY, MD

## GENERAL

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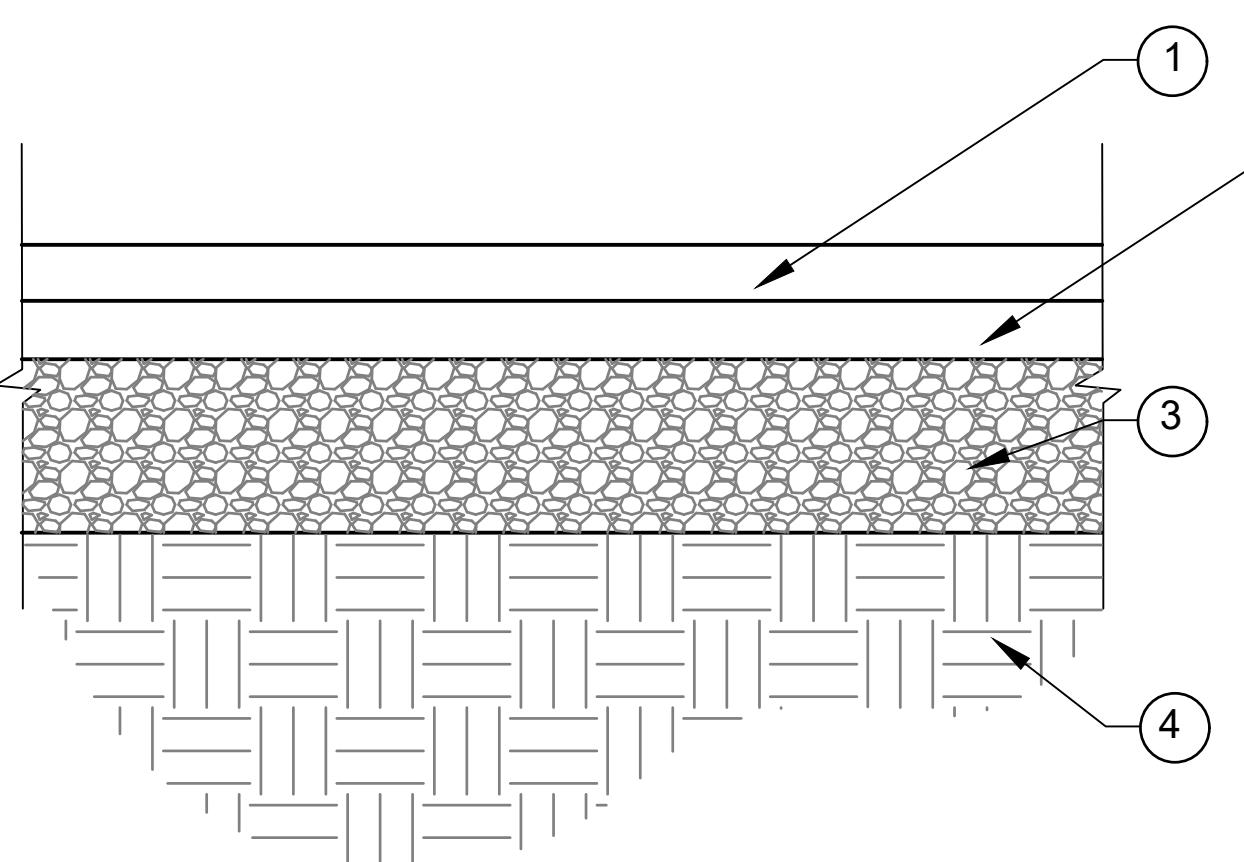
PROJECT NO. 5409  
DATE 12-18-20  
DRAWING NO. C5  
SHEET NO. 33 of 33



① 1.5" ASPHALT SUPERPAVE SURFACE COURSE 9.5MM  
 ② 2.5" ASPHALT SUPERPAVE BASE COURSE 12.5 MM  
 ③ 6" COMPACTED AGGREGATE BASE  
 ④ COMPACTED SOIL SUBGRADE

#### MEDIUM-DUTY ASPHALT PAVEMENT

NTS

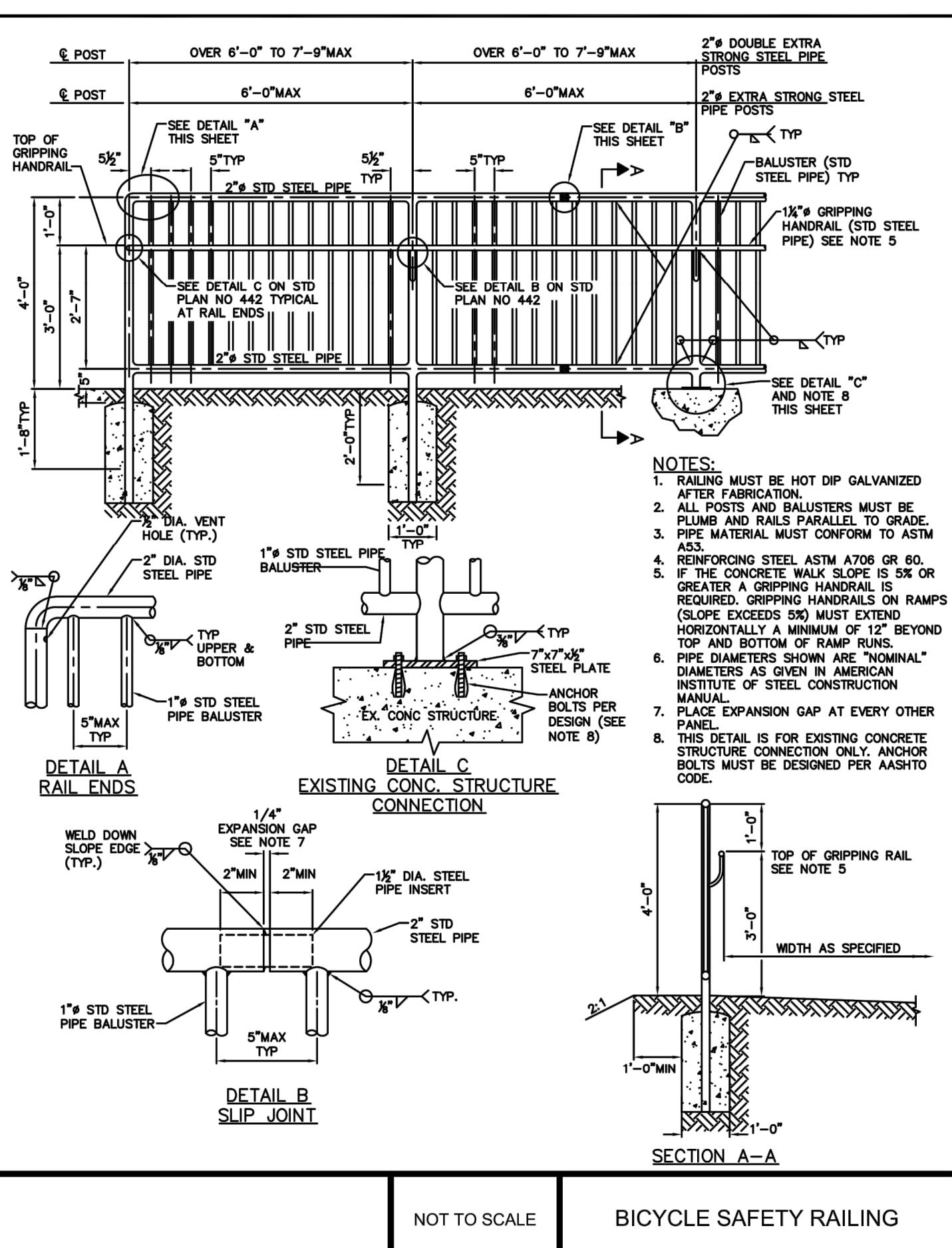


① 2" SM-9.5A SURFACE  
 ② 3" BM-25.0 BASE  
 ③ 6" AGGREGATE  
 ④ COMPACTED SOIL SUBGRADE

NOTES:  
 1. PAVEMENT THICKNESS AS SHOWN, OR TO MATCH EXISTING, WHICHEVER IS GREATER.

#### FULL DEPTH PAVEMENT REPAIR

NTS



APPROVED  
 PLANNING BOARD OF HOWARD COUNTY

Date: \_\_\_\_\_

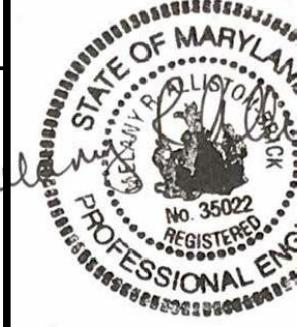
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director \_\_\_\_\_ Date \_\_\_\_\_

Chief, Division of Land Development \_\_\_\_\_ Date \_\_\_\_\_

Chief, Development Engineering Division \_\_\_\_\_ Date \_\_\_\_\_

PROFESSIONAL CERTIFICATION  
 I HEREBY CERTIFY THAT THESE PLANS  
 WERE PREPARED OR APPROVED BY  
 ME, AND THAT I AM A DULY LICENSED  
 PROFESSIONAL ENGINEER UNDER THE  
 LAWS OF THE STATE OF [STATE],  
 LICENSE NO. 35022,  
 EXPIRATION DATE: 12/28/2021.



REUSE OF DOCUMENTS  
 ALL DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE FOR THIS PROJECT.  
 REUSE OR ALTERATION IS AT THE USER'S SOLE RISK.

DSGN	SD				
DR	RB				
CHK	MRAB				
APVD	MRAB	NO.	DATE	REVISION	BY APVD

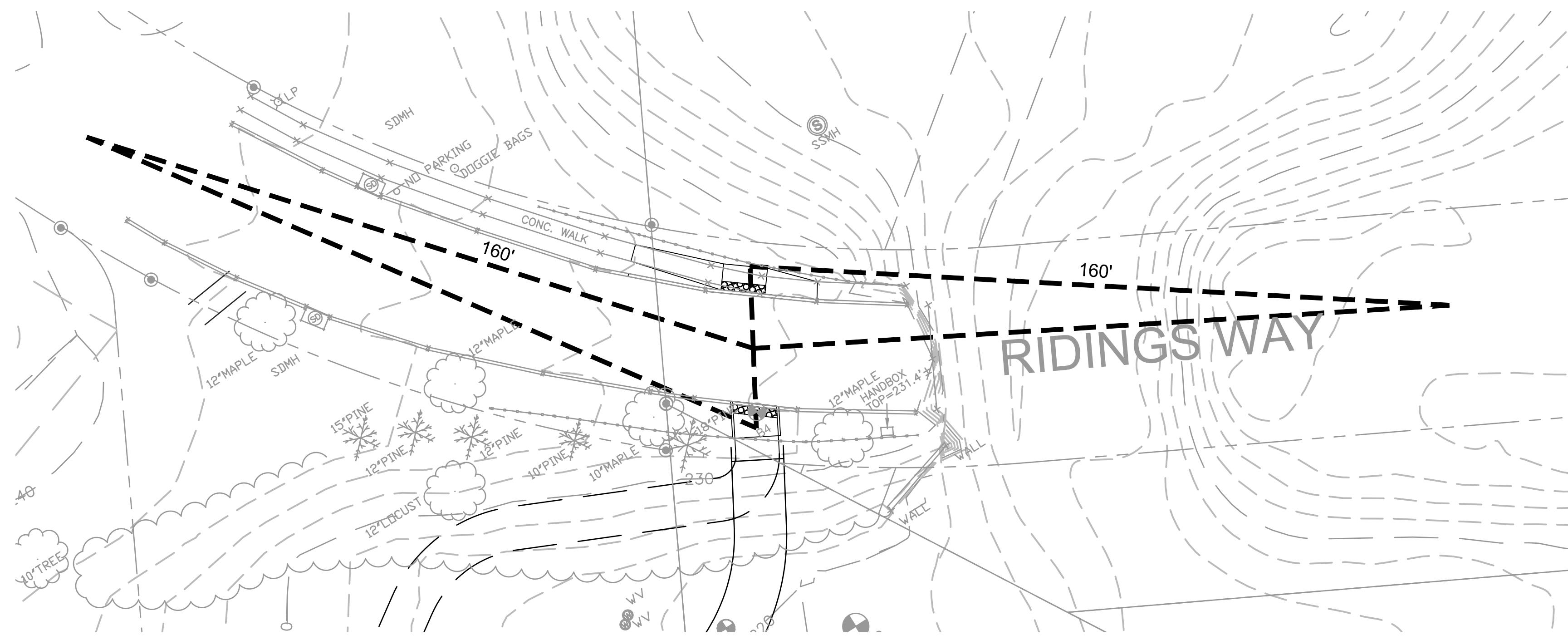
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NORTH LAUREL CONNECTIONS  
 HOWARD COUNTY, MD

GENERAL  
 STANDARD DETAILS  
 AND SIGHT DISTANCE ALONG  
 RIDINGS WAY

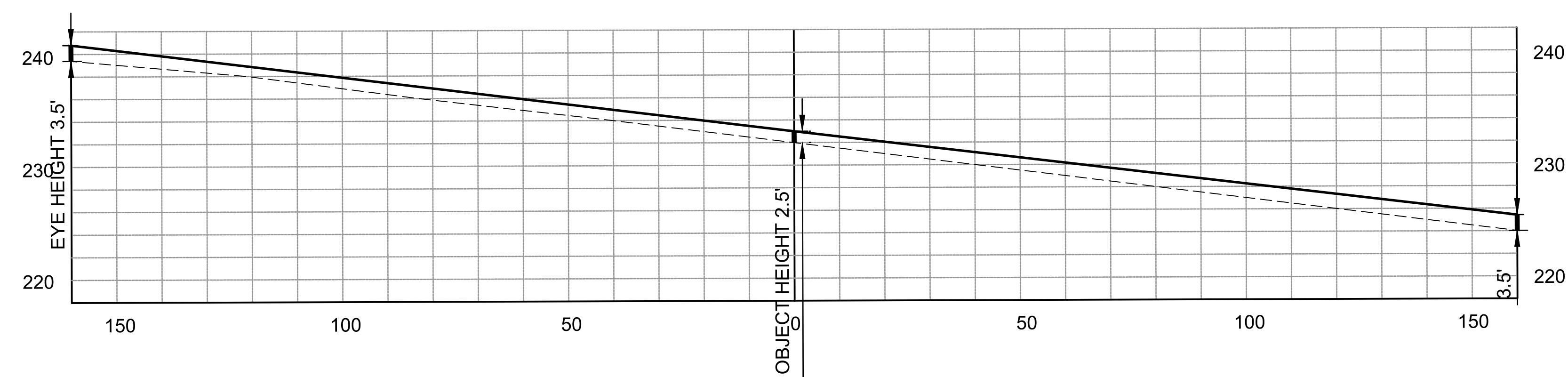
PROJECT NO.  
 5409.05  
 DATE  
 12-18-2020  
 DRAWING NO.  
 C5.4  
 SHEET NO.  
 34 of 34



#### SIGHT DISTANCE FROM BGE TRAIL AT RIDINGS WAY PLAN VIEW

NTS

NOTES:  
 1. SIGHT DISTANCE STUDY IS BASED ON 25 MPH DESIGN SPEED.



#### SIGHT DISTANCE FROM BGE TRAIL AT RIDINGS WAY PROFILE

NTS

NOTES:  
 1. SIGHT DISTANCE STUDY IS BASED ON 25 MPH DESIGN SPEED.