



LEGEND

SYMBOL	DESCRIPTION
---272---	EXISTING CONTOUR 2' INTERVAL
---270---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	WETLAND AREA
---	25' WETLAND BUFFER
---	50' STREAM BUFFER
---	15-24.9% SLOPES
---	25% AND GREATER SLOPES
---	EXISTING WASTE & SEWER UTILITY EASEMENT
---	DEMOLITION AREA
---	EXISTING TREE
---	EXISTING SPECIMEN TREE
---	CRITICAL ROOT ZONE
---	EXISTING TREE TO BE REMOVED
---	DEMOLITION EXISTING 20' R/W TO BE ABANDONED
---	DEMOTES EXISTING SEWER EASEMENT TO BE ABANDONED

There is no existing forest reforestation or afforestation easement on site.

SPECIMEN TREE LIST

TAG #	COMMON NAME	SCIENTIFIC NAME	DBH*	VIGOR**	NOTES
1873	Pin Oak	Quercus palustris	34	good	
1880	Black Gum	Nyssa sylvatica	31	fair	some dead branches
1881	White Oak	Quercus alba	40	good	
1882	White Oak	Quercus alba	55	fair	dead branches
1883	Southern Red Oak	Quercus falcata	31	good	
1884	Black Oak	Quercus velutina	31	good	
1885	Black Oak	Quercus velutina	34	good	
1886	Black Oak	Quercus velutina	31	good	
1887	Southern Red Oak	Quercus falcata	30	good	double at 6'
1888	Black Oak	Quercus velutina	30.5	good	
1889	Southern Red Oak	Quercus falcata	31.5	good	
1890	Red Maple	Acer rubrum	31.5	fair	trunk rot

* Diameter at breast height in inches
** Estimate of general tree health
*TO BE REMOVED

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 DATE: 12/1/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 DATE: 12-19-16

Chief, Development Engineering Division
 DATE: 12-6-16

FISHER, COLLINS & CARTER, INC.
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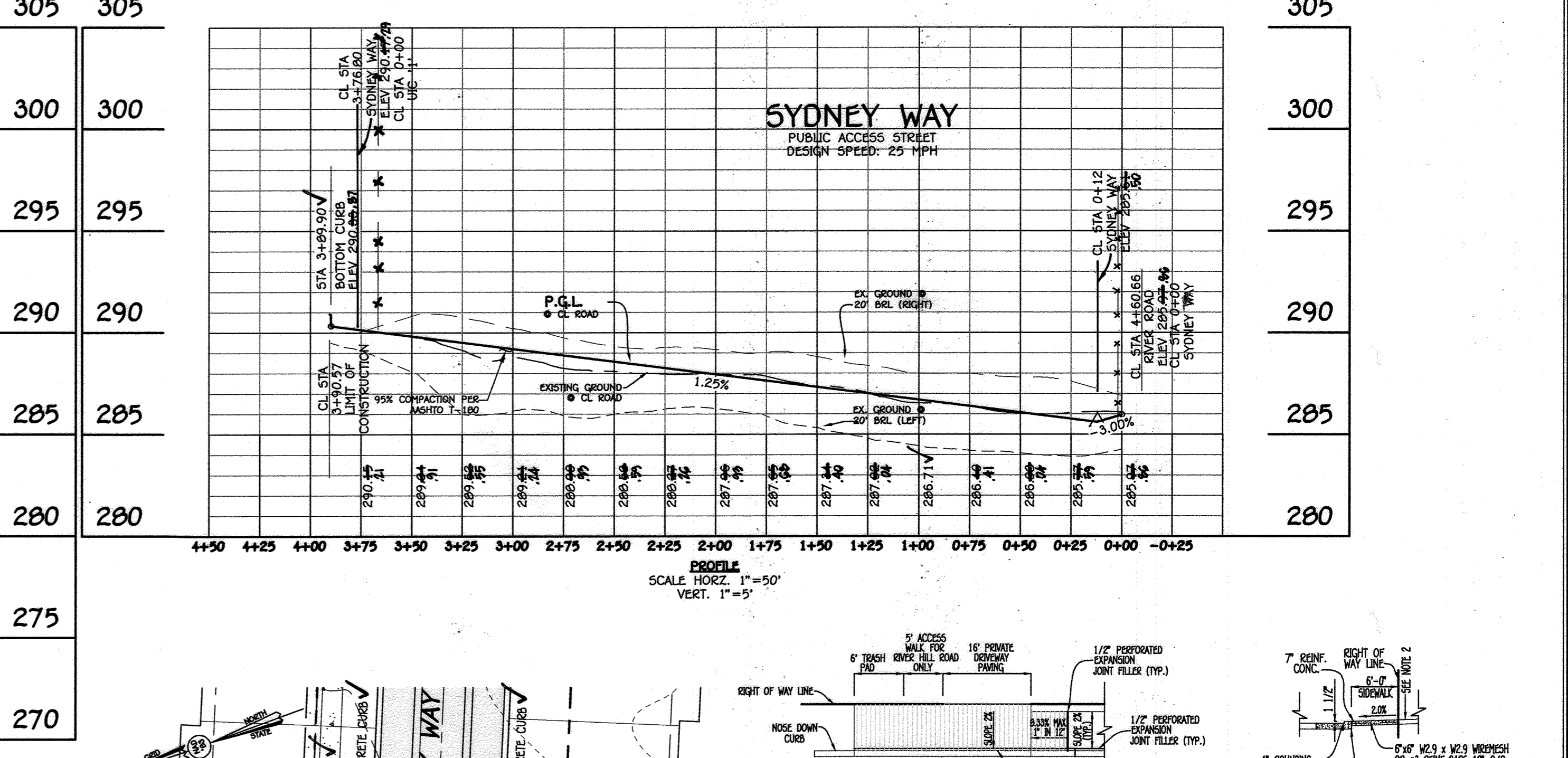
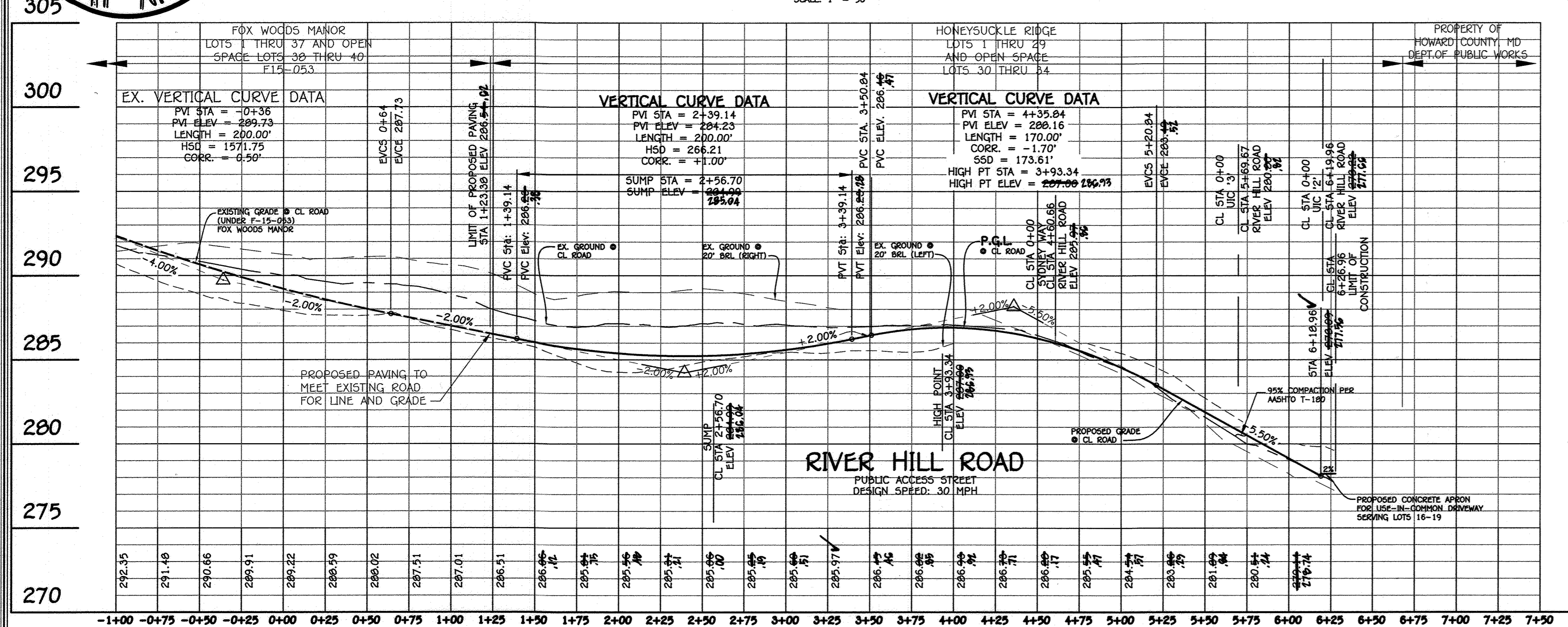
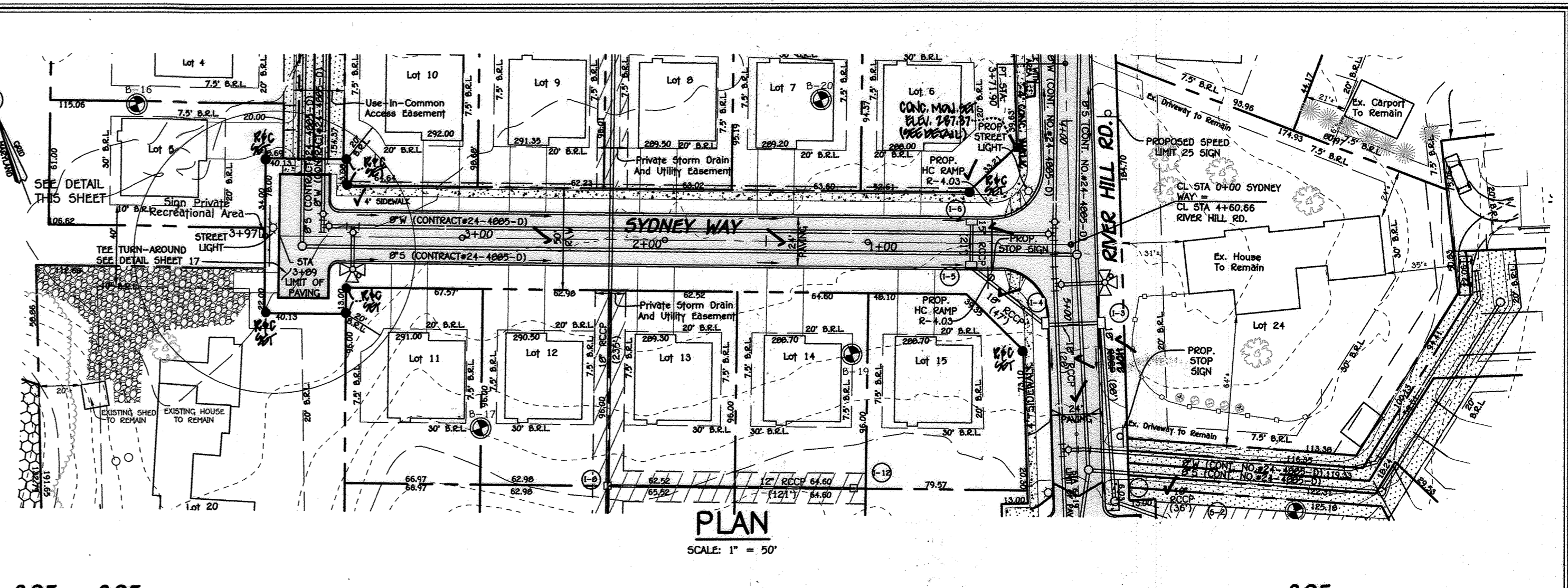
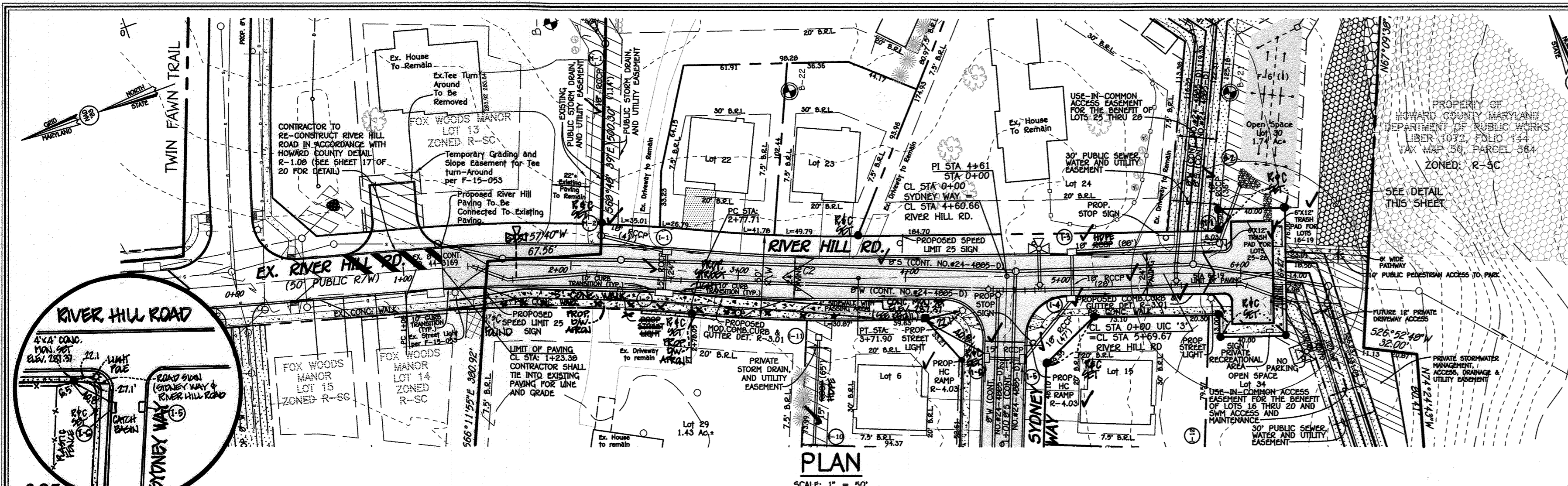
AS-BUILT CERTIFICATION
 Note: There is no AS-BUILT information provided.
 Date: 1/29/17

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
 Date: 11-9-16
 FRANK JOHN MANALANSAN II

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET SUITE 200
 ELLICOTT CITY, MARYLAND 21043
 (410)-922-4600

EXISTING CONDITIONS AND DEMOLITION PLAN
HONEYSUCKLE RIDGE
 LOTS 1 THRU 29
 AND OPEN SPACE LOTS 30 THRU 34
 PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057, WP-05-095, SP-15-005
 ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
 PARCEL NOS.: 359, 361, 362, & 474
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER, 2016
 SHEET 2 OF 20

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET



LEGEND

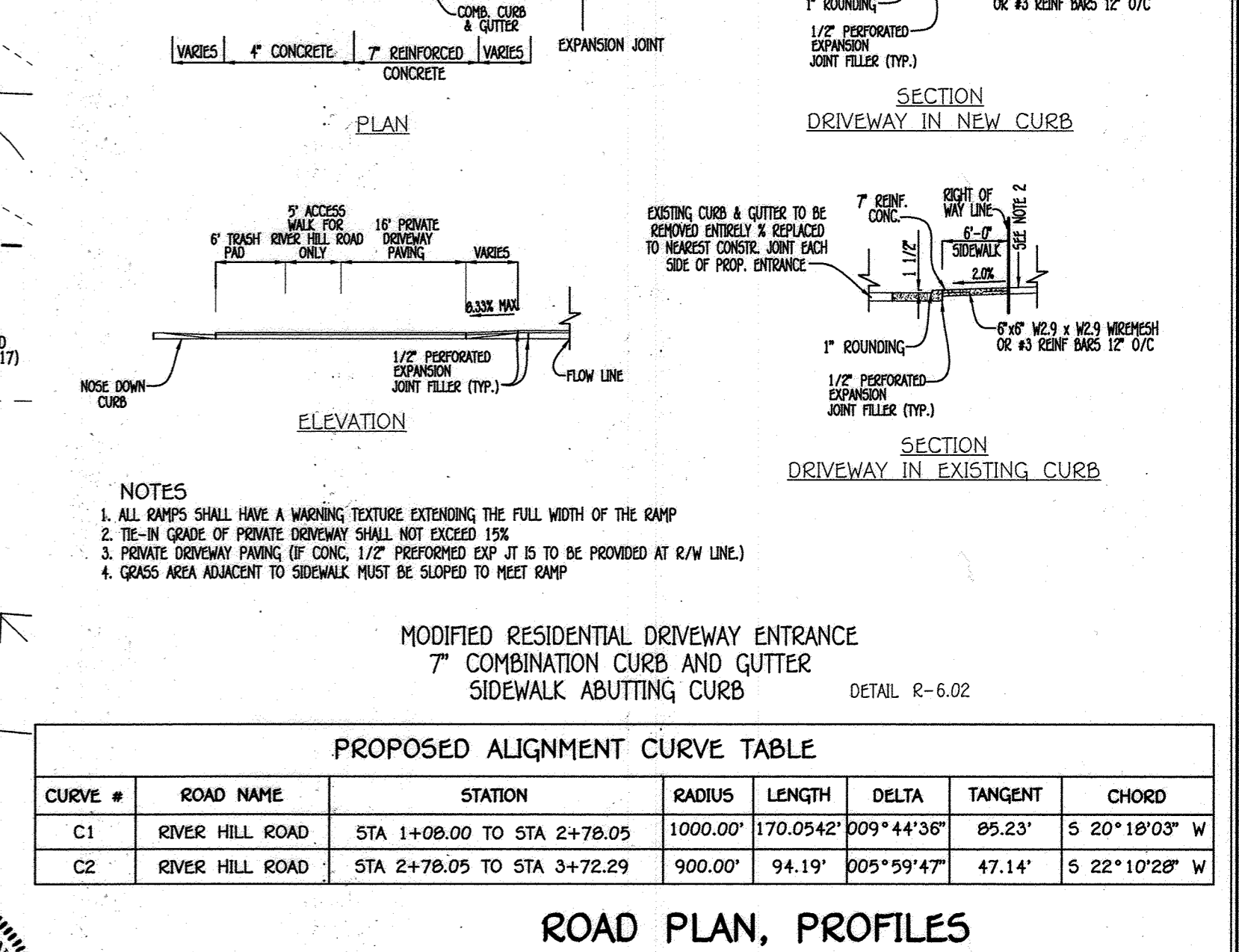
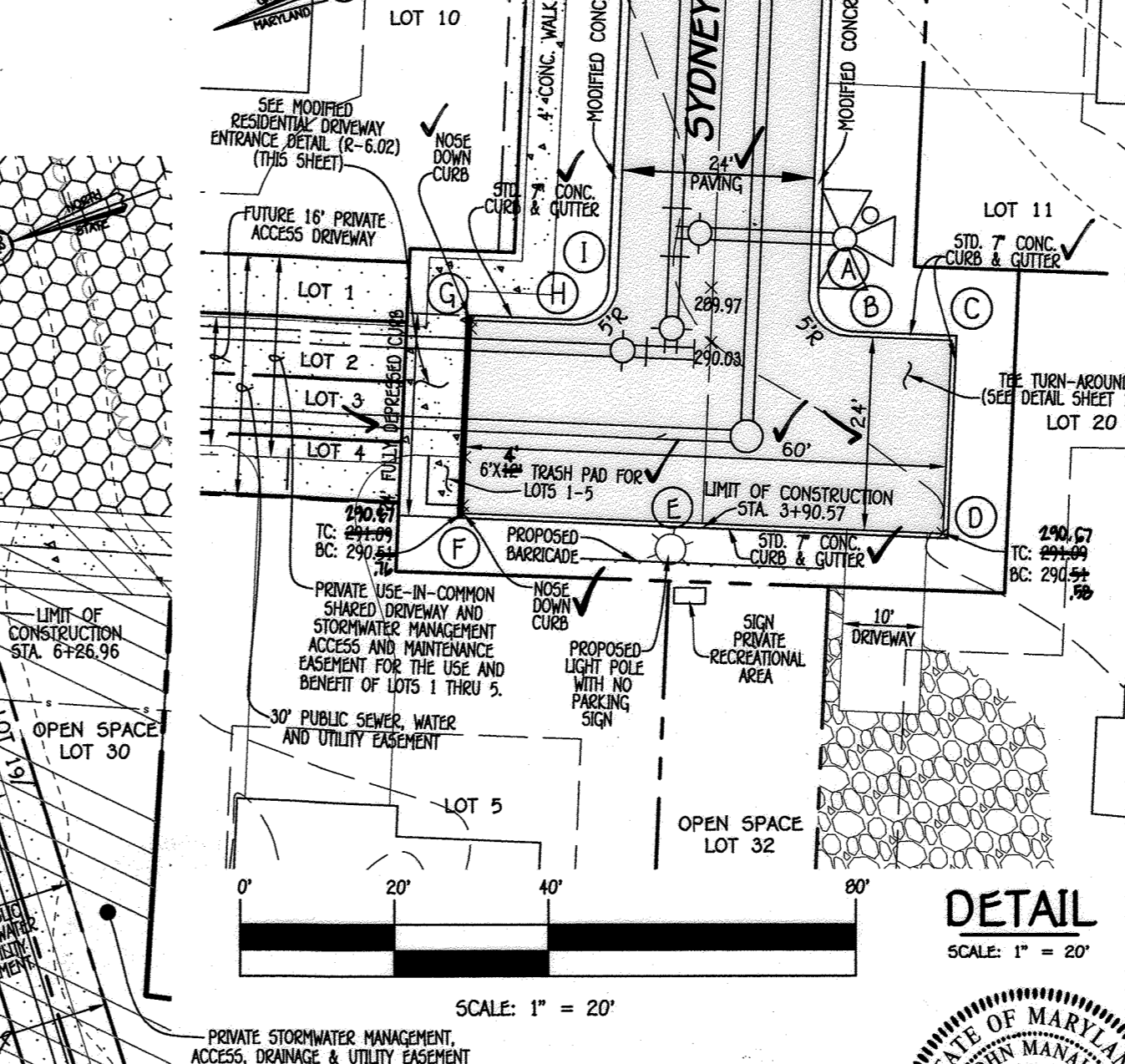
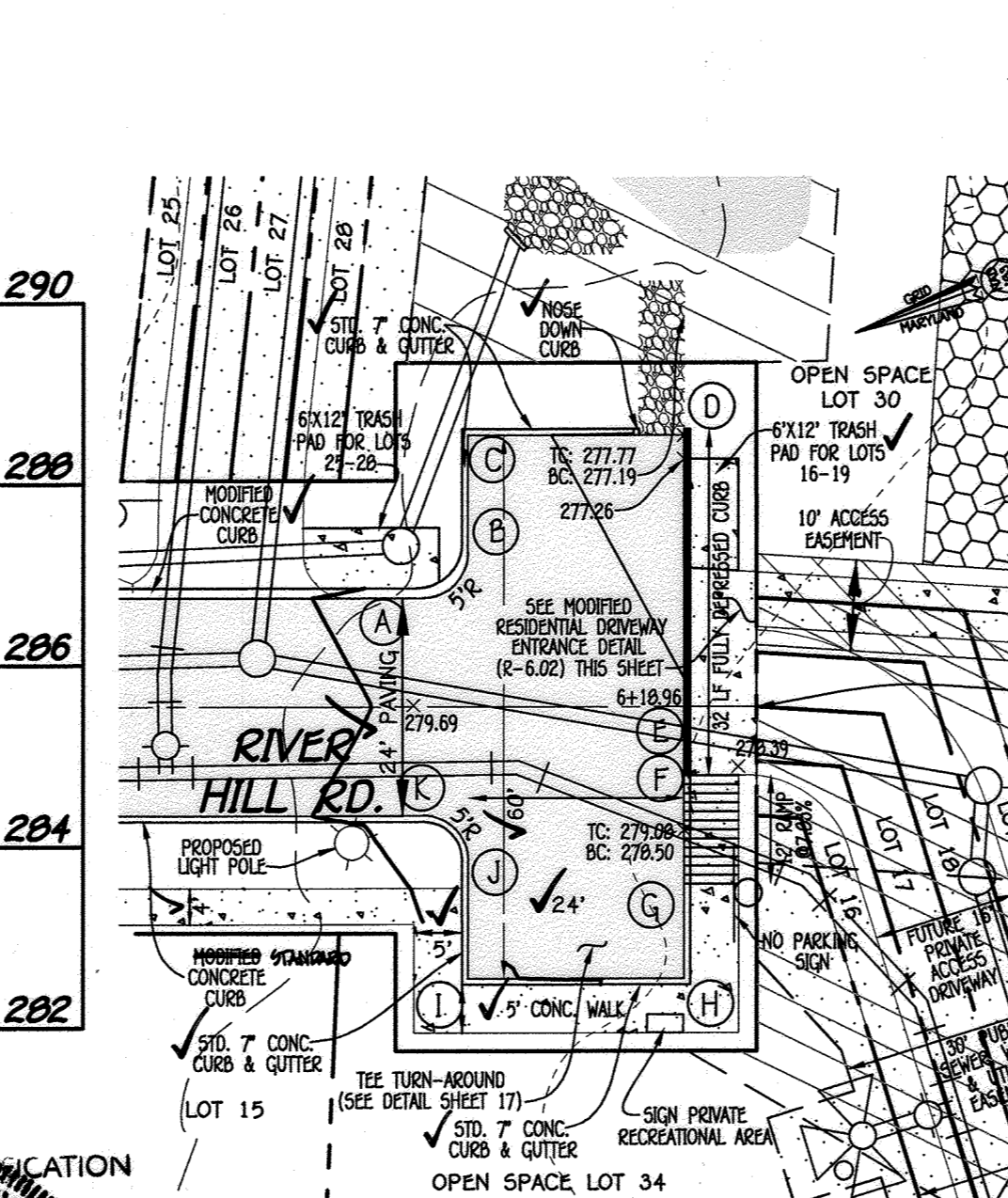
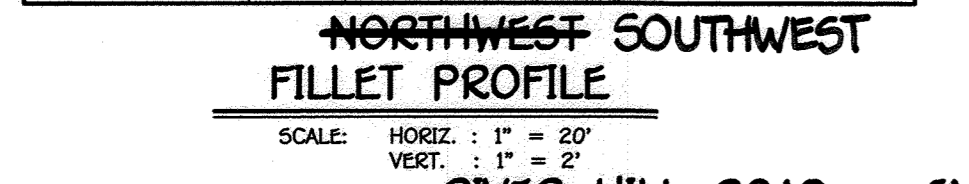
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	WETLAND AREA
---	20' WETLAND BUFFER
---	50' STREAM BUFFER
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	SPOT ELEVATION
---	PROPOSED STORM DRAIN LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	LIMIT OF DISTURBANCE
---	SEIT FENCE
---	15-24.99% SLOPES
---	25% AND GREATER
---	FOREST CONSERVATION EASEMENT
---	SUR BOUNDING
---	EXISTING TREE
---	EXISTING SPECIES TREE

RIVER HILL ROAD TEE TURN AROUND ELEVATIONS

STATION	BT	CU	TP	CU	FT	FINISHED PAVING
A	278.99	278.99	278.99	278.99	278.99	278.99
B	278.99	278.99	278.99	278.99	278.99	278.99
C	278.99	278.99	278.99	278.99	278.99	278.99
D	278.99	278.99	278.99	278.99	278.99	278.99
E	278.99	278.99	278.99	278.99	278.99	278.99
F	278.99	278.99	278.99	278.99	278.99	278.99
G	278.99	278.99	278.99	278.99	278.99	278.99
H	278.99	278.99	278.99	278.99	278.99	278.99
I	278.99	278.99	278.99	278.99	278.99	278.99
J	278.99	278.99	278.99	278.99	278.99	278.99
K	278.99	278.99	278.99	278.99	278.99	278.99

SYDNEY WAY TEE TURN AROUND ELEVATIONS

STATION	BT	CU	TP	CU	FT	FINISHED PAVING
A	290.00	290.00	290.00	290.00	290.00	290.00
B	290.00	290.00	290.00	290.00	290.00	290.00
C	290.00	290.00	290.00	290.00	290.00	290.00
D	290.00	290.00	290.00	290.00	290.00	290.00
E	290.00	290.00	290.00	290.00	290.00	290.00
F	290.00	290.00	290.00	290.00	290.00	290.00
G	290.00	290.00	290.00	290.00	290.00	290.00
H	290.00	290.00	290.00	290.00	290.00	290.00
I	290.00	290.00	290.00	290.00	290.00	290.00



PROPOSED ALIGNMENT CURVE TABLE

CURVE #	ROAD NAME	STATION	RADIUS	LENGTH	DELTA	TANGENT	CHORD
C1	RIVER HILL ROAD	STA 1+08.00 TO STA 2+78.05	1000.00'	170.0542'	90° 54' 36"	89.23'	5 20° 18' 03" W
C2	RIVER HILL ROAD	STA 2+78.05 TO STA 3+72.29	900.00'	94.19'	105° 59' 47"	47.14'	5 22° 10' 28" W

APPROVED: DEPARTMENT OF PUBLIC WORKS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING

FISHER, COLLINS & CARTER, INC.
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I hereby certify that the information shown on this AS-BUILT is true and correct as shown on the approved plans and specifications.

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ROAD PLAN, PROFILES AND DETAILS
HONEYSUCKLE RIDGE
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 AND OPEN SPACE LOTS 30 THRU 34
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 ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
 PARCEL NOS.: 359, 361, 362, & 474
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER, 2016
 SHEET 3 OF 20 F-16-041

"AS-BUILT"

SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS (B-4-2)

- A. SOIL PREPARATION**
- GENERAL STABILIZATION**
 - SEEDING PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE EQUIPMENT, OR CONSTRUCTION METHODS SUCH AS DISC HARROWS, CHISEL PLOWS OR SPRINGS MOUNTED CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE DISBURBED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRILLED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - PERMANENT STABILIZATION**
 - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT STABILIZATION ARE:
 - SOIL PH BETWEEN 6.0 AND 7.0.
 - SOIL BULK DENSITY LESS THAN 1.50 G/CC (100 LB/FT³).
 - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH TO HOLD GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF HUMUS, AN EXCEPTION: IF LONGGRASS WILL BE PLANTED, THEN A SANDY SOIL WITH LESS THAN 30 PERCENT SILT PLUS CLAY WOULD BE ACCEPTABLE.
 - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - SOIL CONTAINS SUFFICIENT FREE CALCIUM TO PERMIT ADEQUATE ROOT PENETRATION.
 - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - GRADED AREAS MUST BE MAINTAINED IN A TIGHT AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCOURED OR OTHERWISE LOOSEND TO A DEPTH OF 3 TO 5 INCHES.
 - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH AND BRUSH BRANCHES AND TWIGS FROM LAWN AREAS. DISK LAWN AREAS TO REMOVE EXCESSIVE SOIL APPLICATION. LOOSEN SURFACE SOIL BY BRACING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO LOOSEN THE SURFACE. THESE SOIL CONDITIONS WILL NOT PERMIT NITROGEN SEEDING. TOPSOIL SHOULD BE 1.0" FLATTER WITH TRILLED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONTOUR WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 3 TO 5 INCHES OF SOIL LOOSE AND FERTILIZER DISBURSED LOOSELY MAY BE DISBURSED ON ANY DISTURBED AREAS.

- B. TOPSOILING**
- PURPOSE: TO PREPARE SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW VEGETATION CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
 - TOPSOILING IS LIMITED TO AREAS HAVING THE STANDARDS AS SET FORTH IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
 - TOPSOILING FROM AN EXISTING SITE MEETS THE STANDARDS AS SET FORTH IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR PERFORM CONTINUOUS SURVIVAL OF HERBACEOUS AND PLANT MATERIALS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMEWATER IS NOT FEASIBLE.
 - AREAS HAVING SLOPES GREATER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
 - TOPSOILING SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILTY LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURES AND MUST CONTAIN LESS THAN 1 PERCENT BY WEIGHT OF MATERIALS THAT ARE TOXIC TO PLANTS. TOPSOIL MUST BE FREE OF OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.
 - TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS RHIZOMA GRASS, QUACK GRASS, JOHNSON GRASS, BUT NOT SOYBEAN, OR OTHER AS SPECIFIED.
 - TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

- C. SOIL AMENDMENTS (FERTILIZER & LIME SPECIFICATIONS)**
- SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT NUTRIENT AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A REGISTERED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSIS PURPOSES.
 - 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 AGRONOMIST. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE MANUFACTURER'S TRADE NAME OR TRADEMARK AND MANUFACTURER'S CONTACT INFORMATION.
 - LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROXYGEN SULFIDE WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS HYDROXYGEN OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIZE AND 95 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIZE.
 - LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - WHERE THE SUBSOIL IS EITHER HEAVY CLAY OR COMPOSED OF HEAVY CLAYS, SPREAD GRADED LIMESTONE AT THE RATE OF 4 TO 6 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

DUST CONTROL

- DEFINITION**
CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.
- PURPOSE**
TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCE ON AND OFF-SITE DAMAGE, LIMIT HAZARDS AND IMPROVE TRAFFIC SAFETY.
- CONDITIONS WHERE PRACTICE APPLIES**
THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.
- SPECIFICATIONS**
- MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE COMPEDED OR TRILLED TO PREVENT BLOWING.
 - VEGETATIVE COVERS - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
 - TILLAGES - TO LOOSEN SURFACE AND BRING CLAYS TO THE SURFACE, THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS, BEGIN PLACING ON WINDWARD SIDE OF THE SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 FEET, SPRING-TOOTHED HARROWS AND SIMILAR PLOW TYPE EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
 - IRRIGATION - THIS IS GENERALLY DONE AS AN EROSION TREATMENT. SOIL IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST, REPEAT AS NEEDED. AT NO TIME SHOULD THE SOIL BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.
 - BARBERS - 20' LONG BOARD FENCES SILL FENCES, SNOW FENCES, BURRAP FENCES, STRAW BALE DICES AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CARRYING CURDENTS AND SOIL BLOWING. CURRENTS AND SOIL BLOWING, BARBERS PLACED AT RIGHT ANGLES TO PREVENTING CURDENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN:
 - REDUCING WIND SPEEDS AND SOIL BLOWING.
 - REDUCING WIND SPEEDS AND SOIL BLOWING.
 - REDUCING WIND SPEEDS AND SOIL BLOWING.
 - CALCIUM CHLORIDE - APPLY AT SUCH LEVELS AS TO KEEP SURFACE MOIST, MAY NEED RE-TREATMENT.

- PERMANENT METHODS**
- PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVERS AND PERMANENT STABILIZATION WITH SOIL EXISTING AREAS OF LARGE VALUABLE PRODUCTION IF LEFT IN PLACE.
 - TOPSOILING - COVERING WITH LESS DENSE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
 - STONE - COVER SURFACE WITH COARSE STONE OR COARSE GRAVEL.

- TEMPORARY STABILIZATION NOTES (B-4-4)**
- DEFINITION**
TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.
- PURPOSE**
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.
- CONDITIONS WHERE PRACTICE APPLIES**
EXPOSED SOILS WHICH GROUND COVERS IS WISHED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF THE PERMANENT STABILIZATION PRACTICES ARE REQUIRED.
- CRITERIA**
- SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND ENTER THEM IN THE TEMPORARY STABILIZATION SUMMARY TABLE ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
 - SEEDING METHODS, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
 - WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONG AS PRESCRIBED IN SECTION B-4-3 AND B.4-4 AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY STABILIZATION SUMMARY

HARDINESS ZONE (FROM FIGURE B.3)	SEED MIXTURE (FROM TABLE B.1)	FERTILIZER RATE (10-20-20)	LIME RATE
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

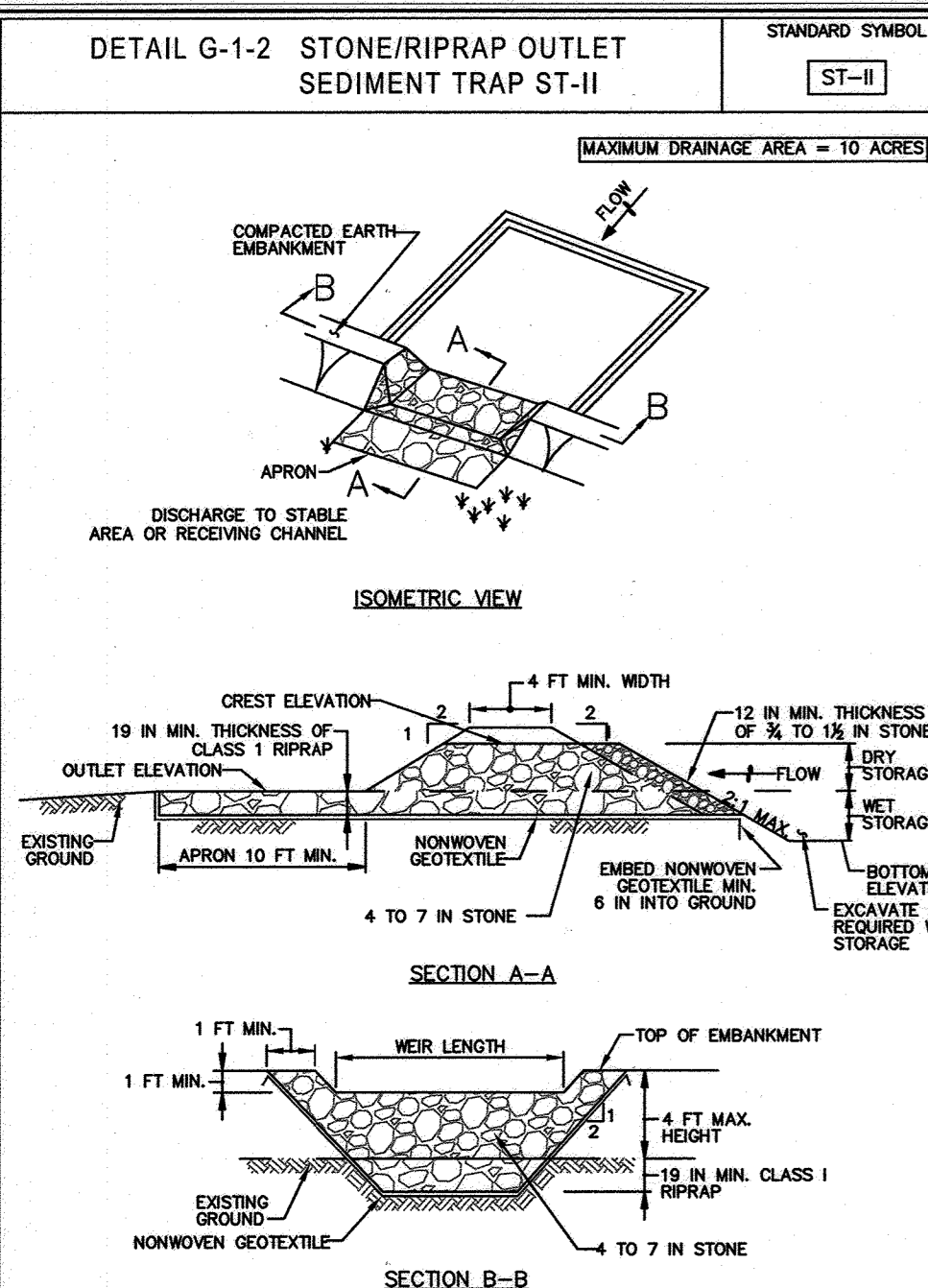
APPROVED: DEPARTMENT OF PUBLIC WORKS
Ch. M. ... 12/16/16
Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Ch. ... 12-19-16
Chief, Division of Land Development and Zoning

APPROVED: DEPARTMENT OF ENGINEERING
Ch. ... 12-6-16
Chief, Development Engineering Division

PERMANENT SEEDING NOTES (B-4-5)

- A. SEED MIXTURES**
- GENERAL USE**
 - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTIONS, APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY.
 - THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - ADDITIONAL PLANTING SPECIFICATIONS FOR QUALIFICATIONAL SITES SUCH AS HIGHWAYS, STREAM BANKS, DUMPS OR FOR SPECIAL PURPOSES SUCH AS MULCH OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
 - FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR PERMANENT SEEDING.
 - WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONG AS PRESCRIBED IN SECTION B-4-3 AND B.4-4 AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.
 - TURFGRASS MIXTURES**
 - AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A HIGH LEVEL OF MAINTENANCE.
 - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTIONS, APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - IDENTIFY TURFGRASS FULL SUN MIXTURES FOR USE IN AREAS THAT RECEIVE INTENSIVE MAINTENANCE. SEEDING REQUIRED IN THE AREAS OF CENTRAL MARYLAND EASTERN SHORE. RECOMMENDED CERTIFIED TURFGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE CERTIFIED TURFGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 - IDENTIFY TURFGRASS/PARTIAL SUN FULL SUN MIXTURES FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN THEY WILL RECEIVE MODERATE TO INTENSIVE MAINTENANCE. CERTIFIED PERENNIAL GRASSES CULTIVARS/CERTIFIED TURFGRASS SEEDING RATE: 2 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE CERTIFIED TURFGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
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 - IDENTIFY TURFGRASS/PARTIAL SUN FULL SUN MIXTURES FOR USE IN PARTIALLY SHADY AREAS AND/OR FOR AREAS



CONSTRUCTION SPECIFICATIONS

- CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
- REMOVE ALL WEEDS AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
- USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERGROWN STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
- CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WEIR CREST. COMPACT THE EMBANKMENT BY TRAVELING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
- MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
- PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SLOPES OF TRAP AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
- USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS I RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
- PLACE 1 FOOT OF CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE UPSTREAM FACE OF THE WEIR.
- CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
- STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
- REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (TOP OF NET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR SLOPES AND REMOVED ACCUMULATED SEDIMENT ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION.
- WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
- UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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PROFESSIONAL CERTIFICATE

I hereby certify that this plan for Erosion and Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Frank John Mauldin II 11-4-16
Signature Of Professional Date

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents As Deemed Necessary."

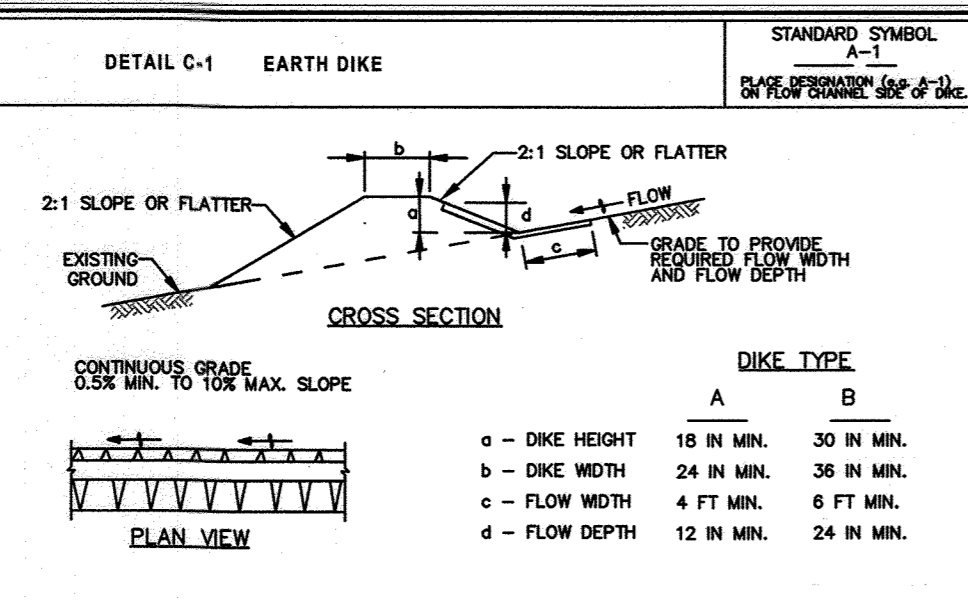
Frank John Mauldin II 11-4-16
Signature Of Developer Date

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

APPROVED: DEPARTMENT OF PUBLIC WORKS
Michael J. ... 12/16/16
Chief, Bureau of Highways DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kate ... 12-19-16
Chief, Division of Land Development DATE

Chad ... 12-16-16
Chief, Development Engineering Division DATE



DIKE TYPE

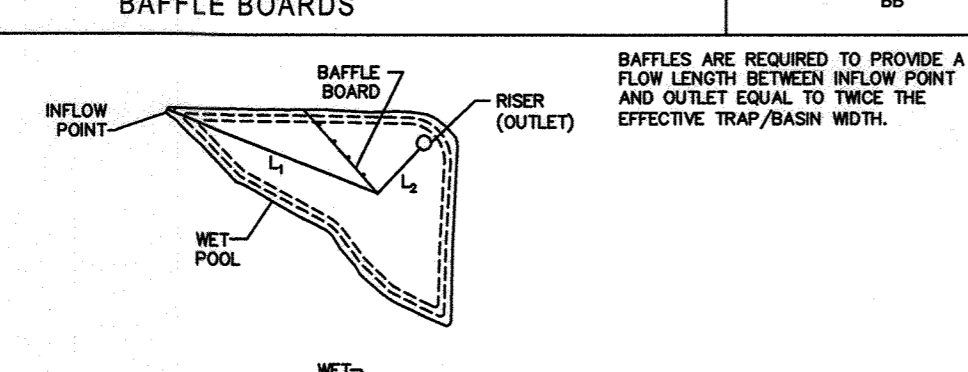
A	B
a - DIKE HEIGHT 18 IN MIN. 30 IN MIN.	b - DIKE WIDTH 24 IN MIN. 36 IN MIN.
c - FLOW WIDTH 4 FT MIN. 6 FT MIN.	d - FLOW DEPTH 12 IN MIN. 24 IN MIN.

CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL G-2-4 BAFFLE BOARDS

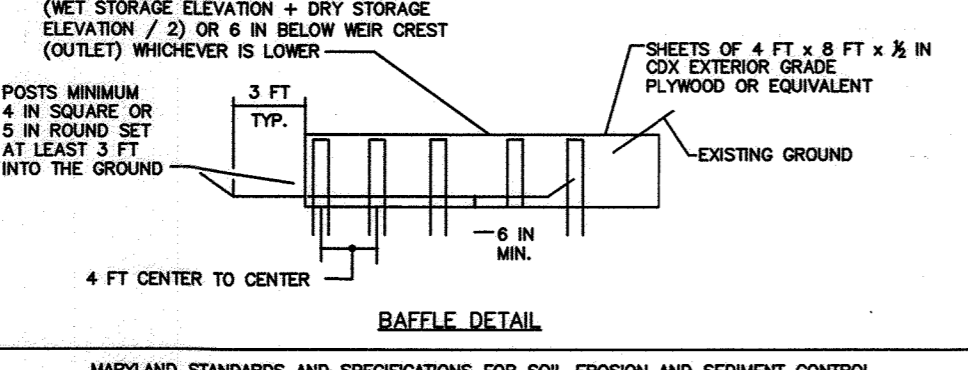


CONSTRUCTION SPECIFICATIONS

- USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
- FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN. STRETCH 3 INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.
- FOR TYPE B, USE 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 15 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
- BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
- STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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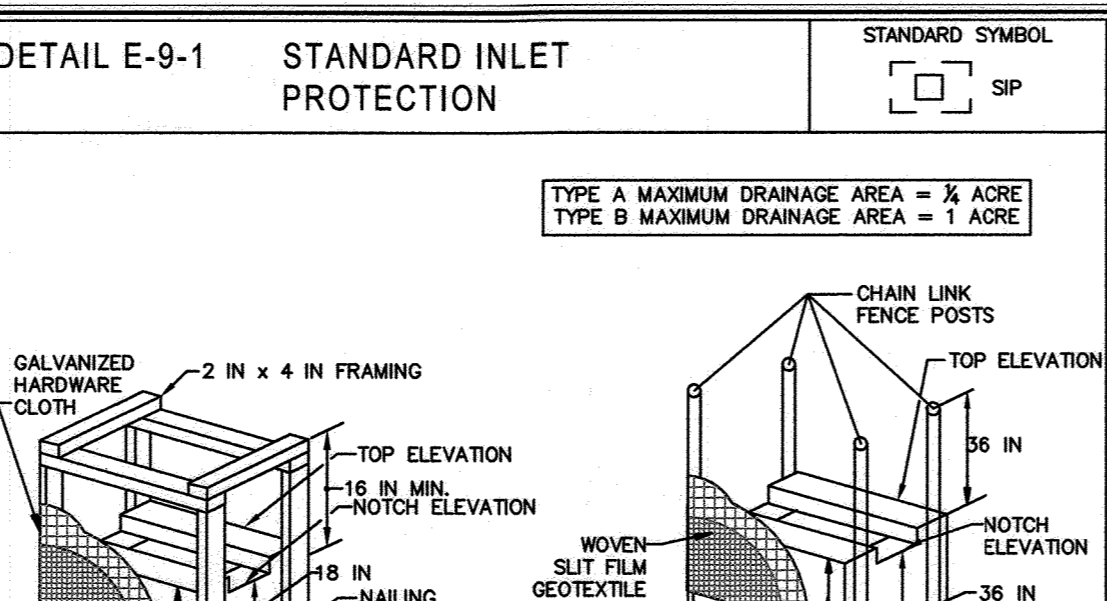
DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE



CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SOE. USE MINIMUM LENGTH OF 50 FEET (100 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SOE TO 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SOE UNDER THE ENTRANCE. MAINTAINING POSITIVE DRAINAGE. INSTALL THROUGH THE SOE WITH MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE PIPE IS NOT NECESSARY, A MOUNTABLE BERM IS REQUIRED WHEN SOE IS NOT LOCATED AT A SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SOE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLS, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTIONALLY TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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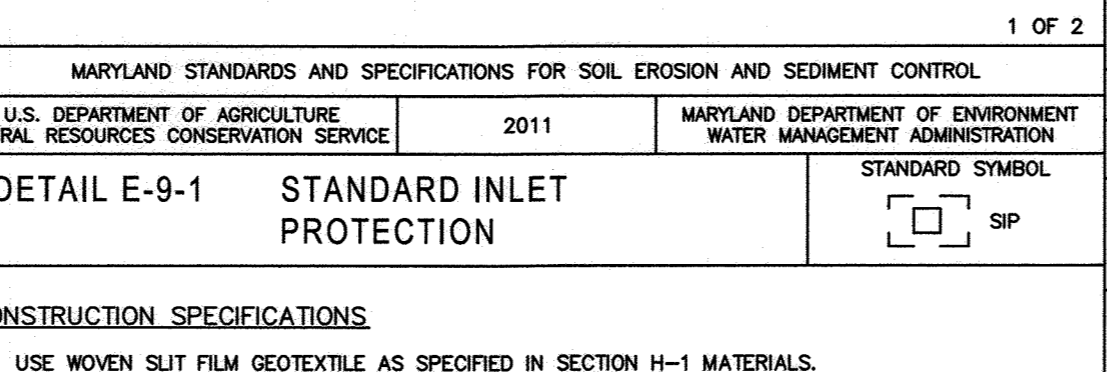


CONSTRUCTION SPECIFICATIONS

- USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
- FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2X4 FRAME AS SHOWN. STRETCH 3 INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.
- FOR TYPE B, USE 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 15 FOOT LENGTH, DRIVEN A MINIMUM OF 36 INCHES BELOW THE WEIR CREST AT EACH CORNER OF THE STRUCTURE. FASTEN 9 GAUGE OR HEAVIER CHAIN LINK FENCE, 42 INCHES IN HEIGHT, SECURELY TO THE FENCE POSTS WITH WIRE TIES. FASTEN GEOTEXTILE SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 18 INCHES BELOW THE WEIR CREST.
- BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
- STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

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DETAIL E-9-1 STANDARD INLET PROTECTION

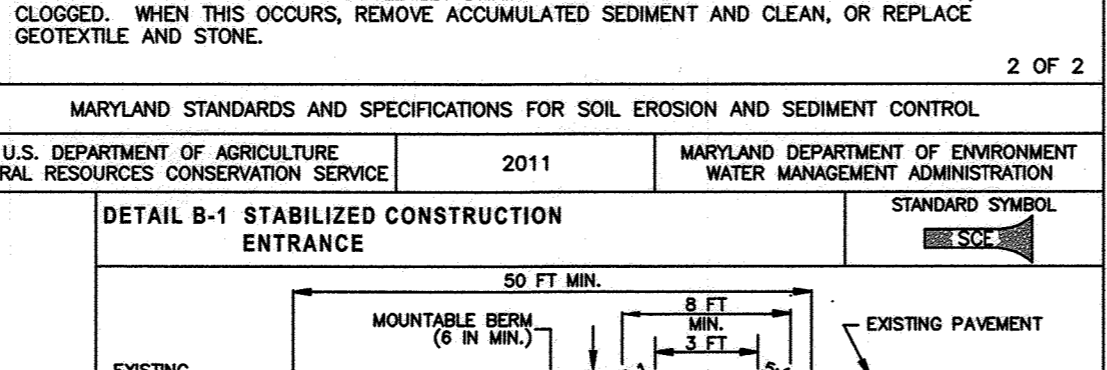


CONSTRUCTION SPECIFICATIONS

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

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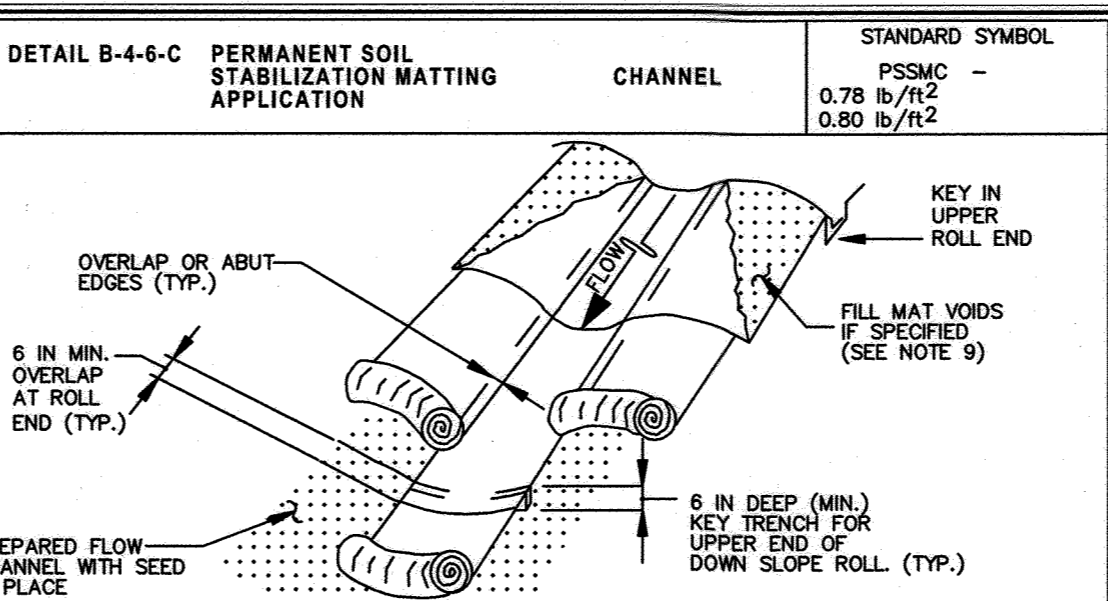
DETAIL C-9 DIVERSION FENCE



CONSTRUCTION SPECIFICATIONS

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

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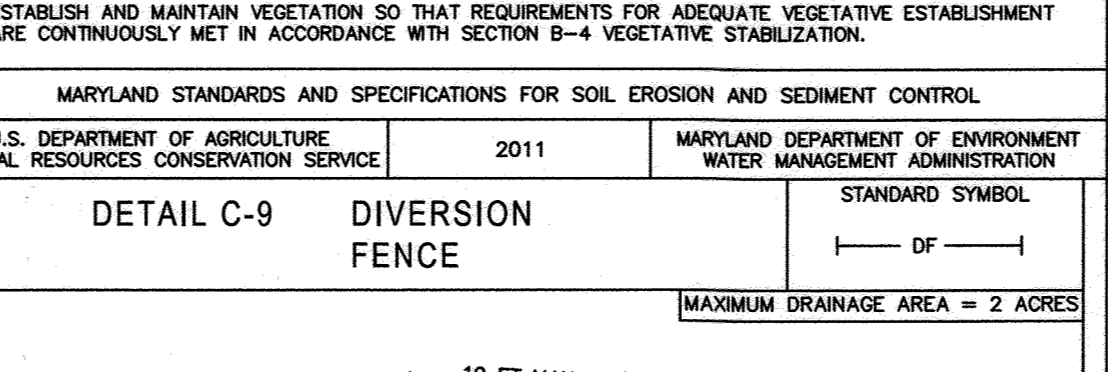


CONSTRUCTION SPECIFICATIONS

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

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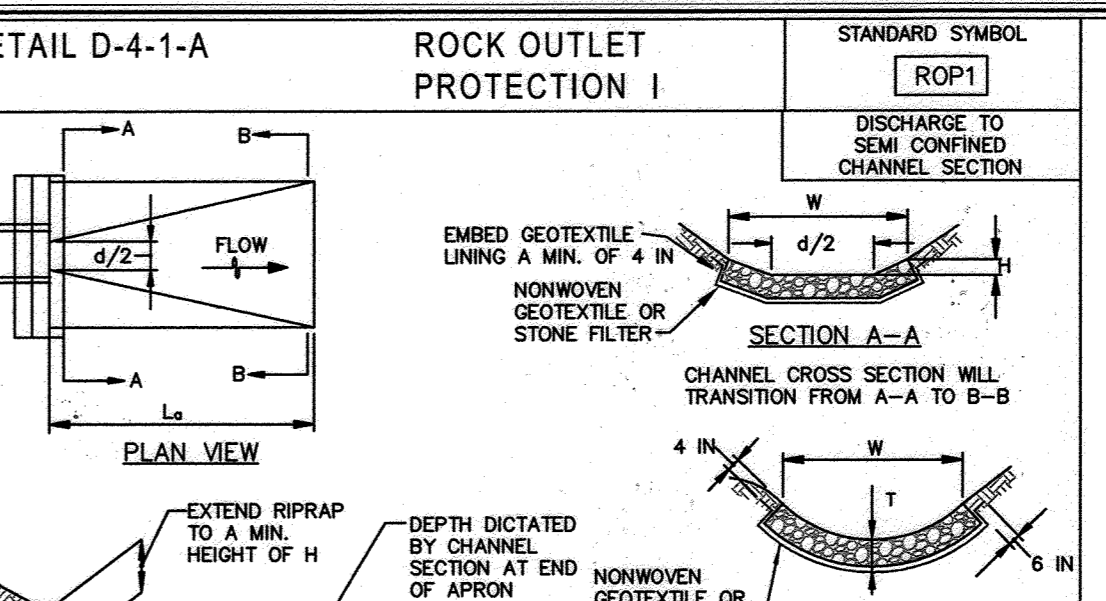
DETAIL C-9 DIVERSION FENCE



CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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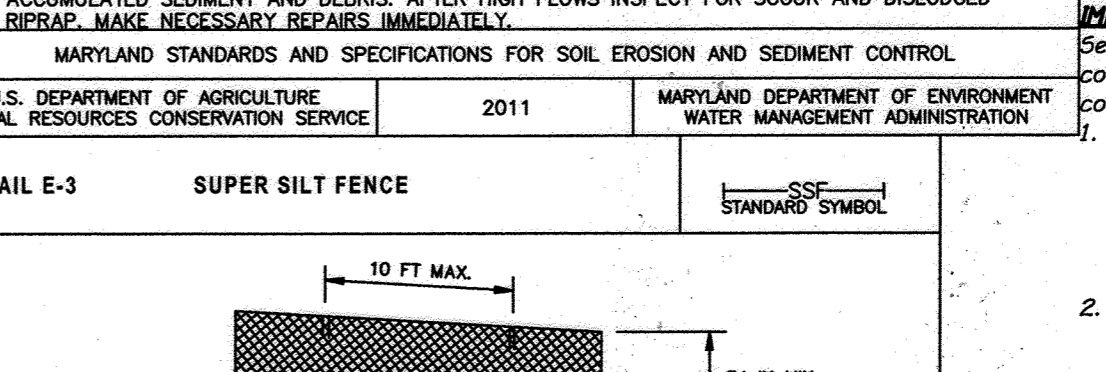


CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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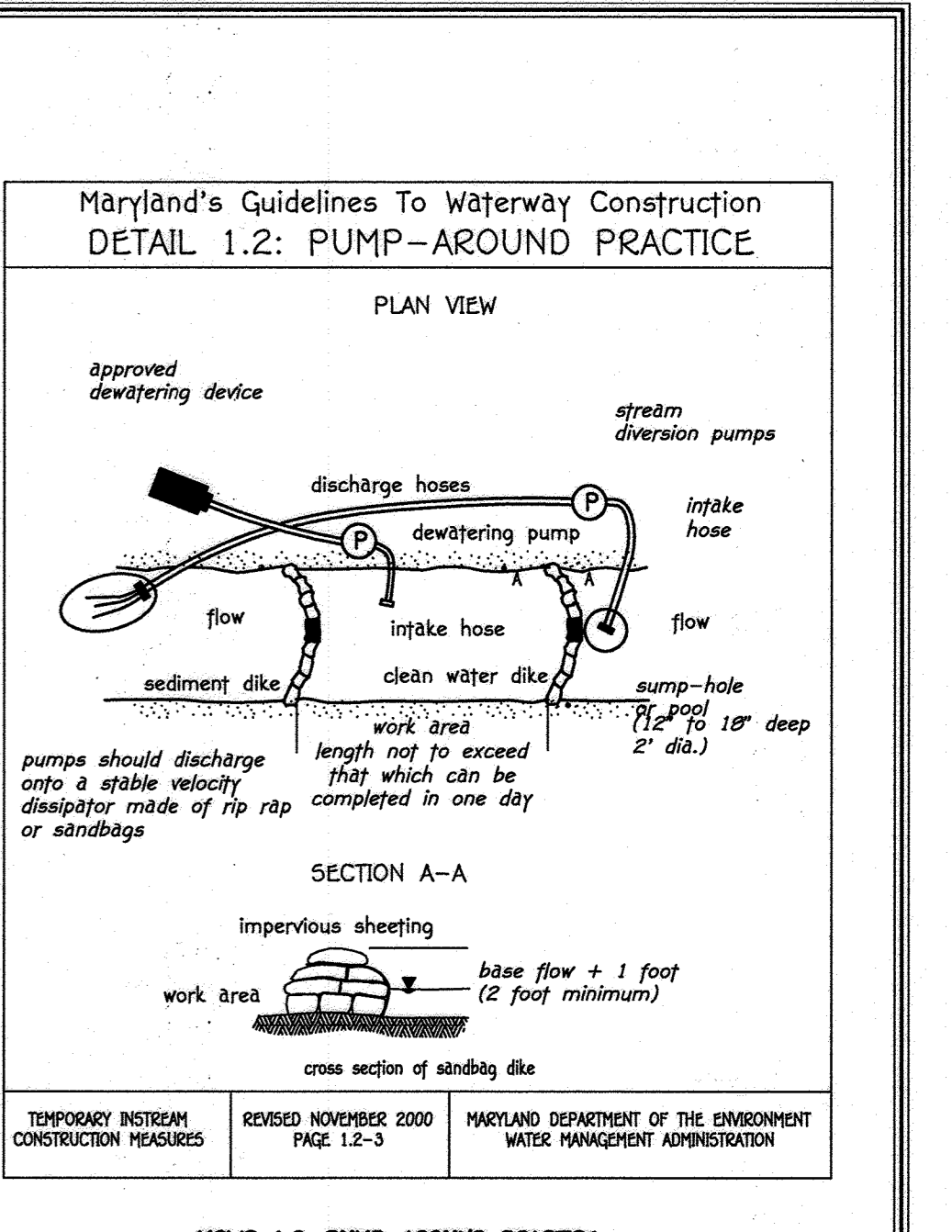
DETAIL E-3 SUPER SILT FENCE



CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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DETAIL 1.2: PUMP-AROUND PRACTICE

CONSTRUCTION SPECIFICATIONS

- Construction activities including the installation of erosion and sediment control measures should not begin until the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
- The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should stake out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will designate the contractor's staking areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.
- Construction should not begin until all sediment and erosion control measures have been installed and approved by the WMA sediment control inspector and the local environmental protection and resource management inspection and enforcement division. The contractor should begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence or construction must be followed unless the contractor obtains written approval from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.
- Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.
- Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin. Sediment bag, or other approved source. The measure should be located such that the water drains back into the channel below the downstream sandbag dike.
- Traversing a channel reach with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a reach for access to another area, the timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (See Section 4. Stream Crossings Maryland Guidelines to Waterway Construction).
- All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross sections. All grading must be stabilized at the end of each day with seed and mulch or seed and matting as specified on the plans.
- After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flow, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.
- A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work this should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream now around the work area. This water should discharge onto the same velocity dissipater used for the main stem pump around.
- If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.
- The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
- After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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SEDIMENT & EROSION CONTROL NOTES AND DETAILS

HONEYSUCKLE RIDGE
LOTS 1 THRU 29
AND OPEN SPACE LOTS 30 THRU 34
PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057,
WP-05-095, SP-15-005
ZONED: R-SC TAX MAP NO.: 00 GRID NO.: 1
PARCEL NOS.: 359, 361, 362, & 474
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY, 2016
SHEET 7 OF 20 F-16-041

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

Frank John Mauldin II 11-4-16
FRANK JOHN MAULDIN II DATE

DEVELOPER

LAND DESIGN & DEVELOPMENT
8318 FOREST STREET
SUITE 200
ELLIOTT CITY, MARYLAND 21043
(410)-922-4600

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APPROVED: DEPARTMENT OF PUBLIC WORKS
Michael J. ... 12/16/16
Chief, Bureau of Highways DATE

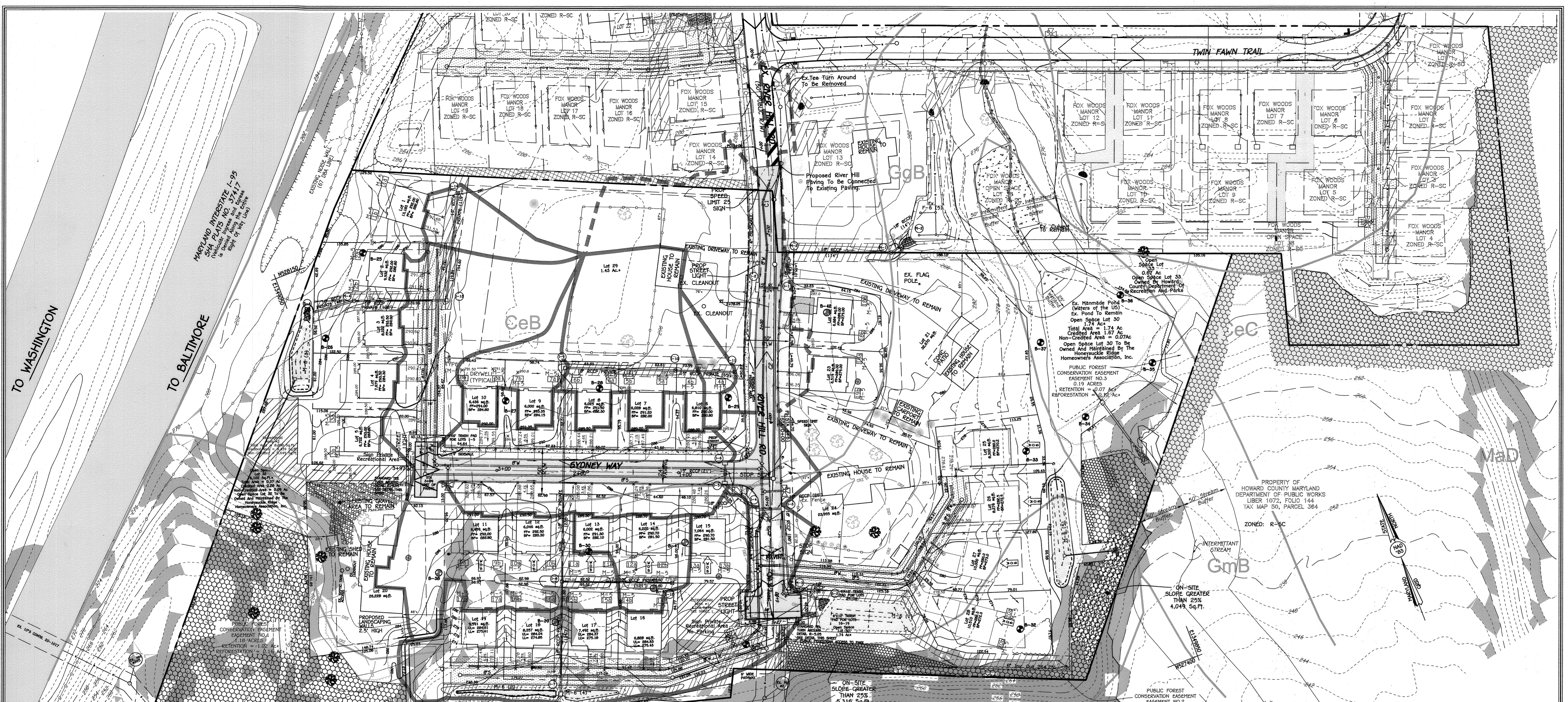
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kate ... 12-19-16
Chief, Division of Land Development DATE

Chad ... 12-16-16
Chief, Development Engineering Division DATE

NO.	REVISIONS	DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK, 10272 BALDWIN NATIONAL PARK
ELLIOTT CITY, MARYLAND 21042
(410) 461-2095

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET



LEGEND

SYMBOL	DESCRIPTION
-275-	EXISTING CONTOUR 2' INTERVAL
-270-	EXISTING CONTOUR 10' INTERVAL
-	EXISTING STORM DRAIN LINE
-	EXISTING SEWER LINE
-	EXISTING WATER LINE
-	WETLAND AREA
-	25' WETLAND BUFFER
-	50' STREAM BUFFER
-272-	PROPOSED CONTOUR 2' INTERVAL
-270-	PROPOSED CONTOUR 10' INTERVAL
<ELEVATION>	SPOT ELEVATION
-	PROPOSED STORM DRAIN LINE
-	PROPOSED SEWER
-	PROPOSED WATER
-	3% SLOPE
-	15-24% SLOPES
-	25% AND GREATER
-	FOREST CONSERVATION EASEMENT
-	PUBLIC FOREST CONSERVATION EASEMENT
-	SWM BOOBS
-	EXISTING TREE
-	EXISTING SPECIEN TREE
-	CRITICAL ROOT ZONE
-	DRAINAGE AREA LINE
-	OFF-SITE DRAINAGE AREA LINE

SOILS LEGEND

SOIL	NAME	Kw	CLASS
CeB	Chillum loam, 2 to 5 percent slopes	0.37	B
CeC	Chillum loam, 5 to 10 percent slopes	0.37	B
Fa	Fallington sandy loam, 0 to 2 percent slopes	0.02	B
GgB	Glencly loam, 3 to 8 percent slopes	0.20	B
GmB	Glenville silt loam, 3 to 8 percent slopes	0.37	C
MaB	Menor loam, 3 to 8 percent slopes	0.24	B
MaD	Minor loam, 15 to 25 percent slopes	0.24	B
Uqf	Udorthents, Highway, 0 to 65 percent slopes	X	X

DRAINAGE AREA DATA

STRUCTURE NO.	AREA	'C'	ZONED	% IMP.
I-1	0.23 AC.	.68	R-SC	68%
I-2	0.64 AC.	.40	R-SC	27%
I-3	0.07 AC.	.46	R-SC	35%
I-4	0.27 AC.	.62	R-SC	56%
I-5	0.33 AC.	.55	R-SC	48%
I-6	0.43 AC.	.46	R-SC	36%
I-7	1.04 AC.	.35	R-SC	21%
I-8	0.60 AC.	.27	R-SC	11%
I-9	0.22 AC.	.43	R-SC	32%
I-10	0.56 AC.	.30	R-SC	15%
I-11	0.08 AC.	.39	R-SC	26%
I-12	0.22 AC.	.43	R-SC	32%
I-13	0.59 AC.	.37	R-SC	24%
I-14	0.17 AC.	.28	R-SC	12%
I-15	0.16 AC.	.68	R-SC	62%

APPROVED: DEPARTMENT OF PUBLIC WORKS
M. Merriam
 Chief, Bureau of Highways
 DATE: 12/1/2014

APPROVED: DEPARTMENT OF PLANNING AND ZONING
V. G. Schuler
 Chief, Division of Land Development
 DATE: 12-19-16

P. J. ...
 Chief, Development Engineering Division
 DATE: 12-6-16

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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OWNERS

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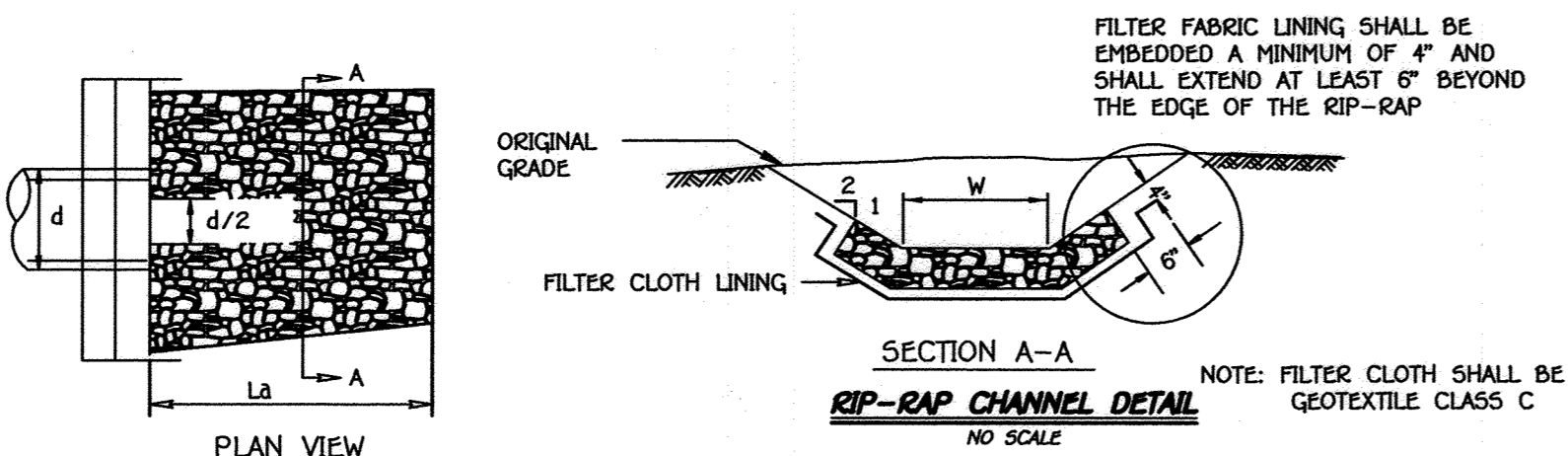
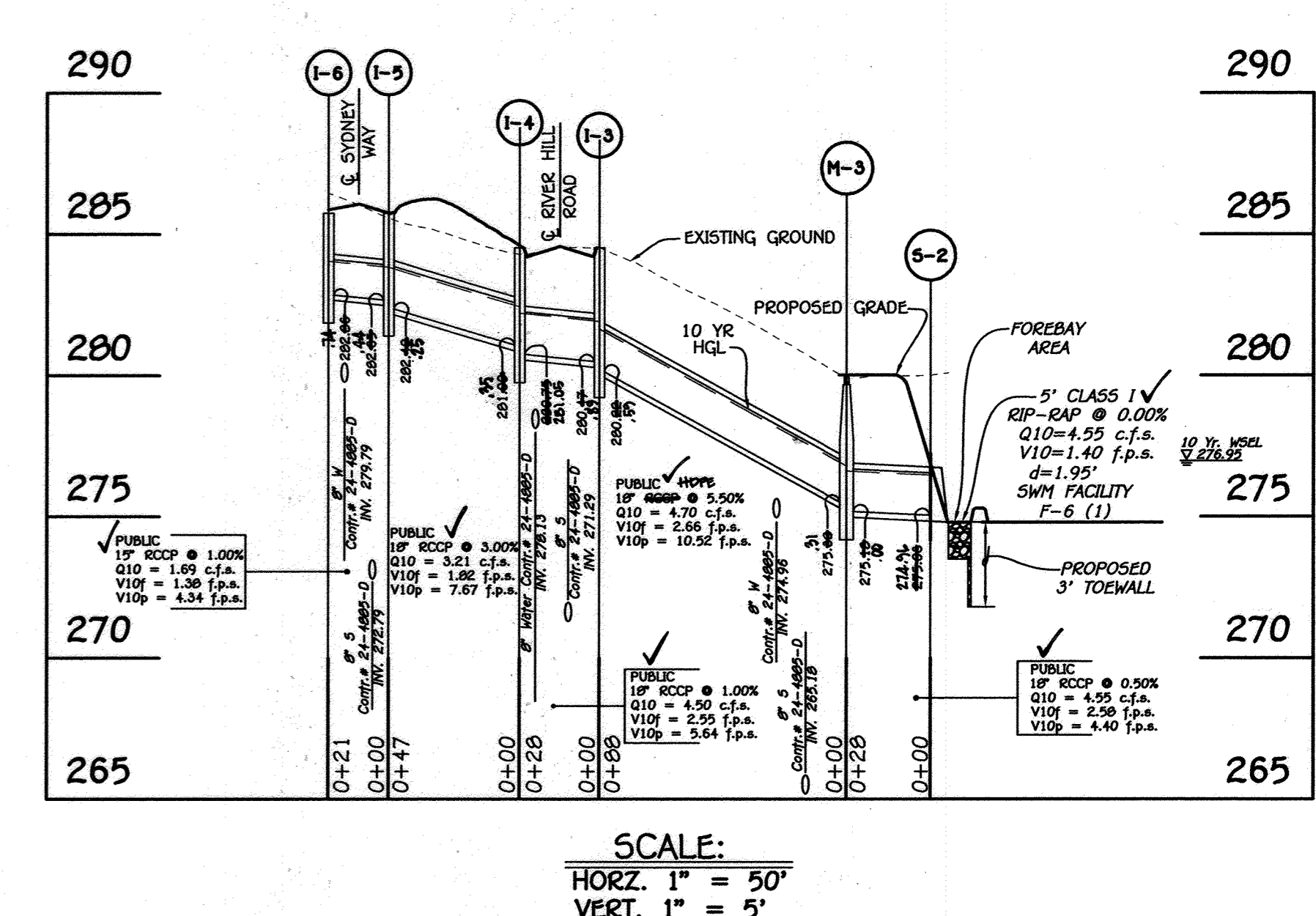
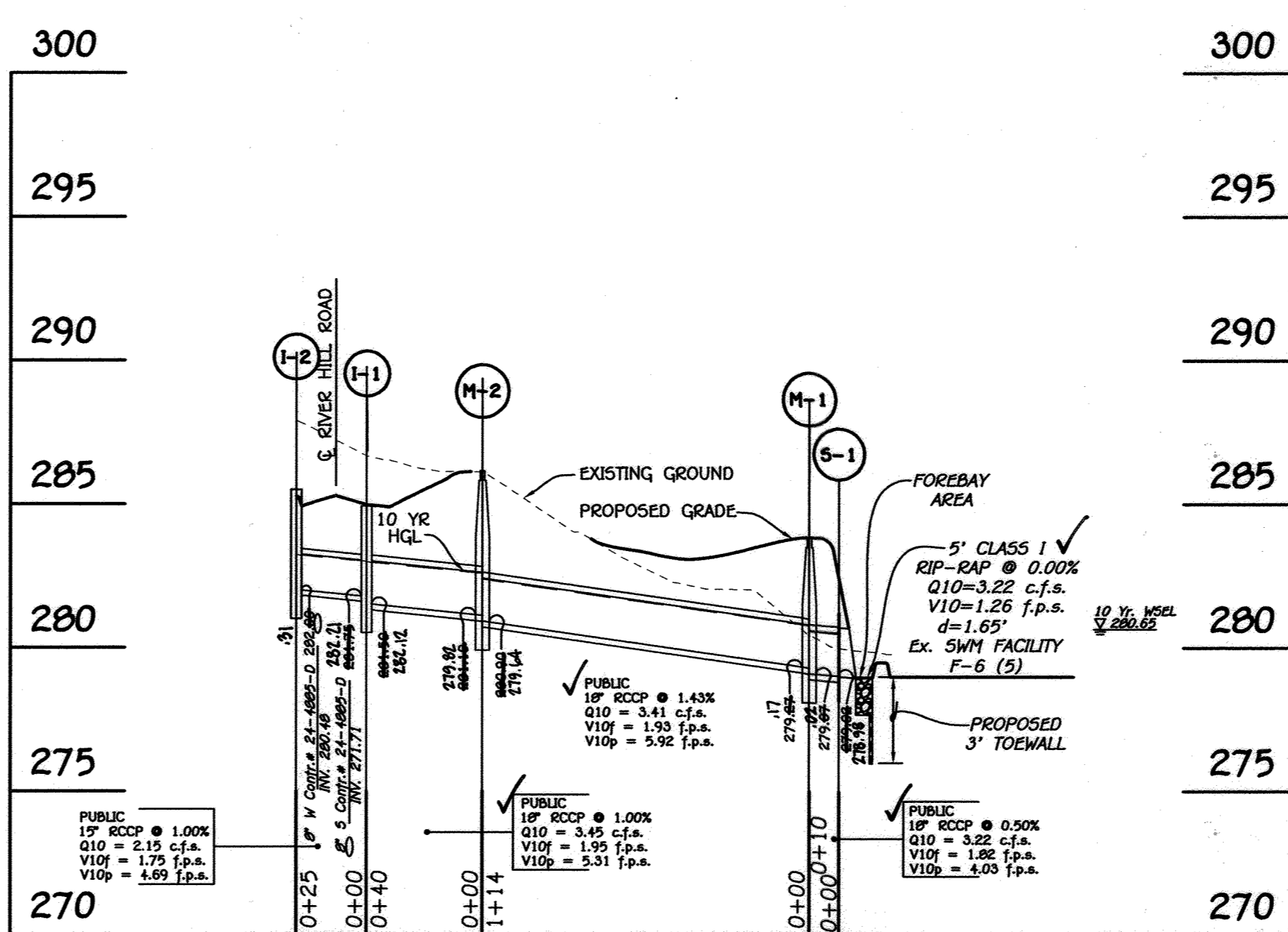
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
Frank John Manalansan II
 DATE: 11-4-16

STORM DRAIN DRAINAGE AREA & SOILS MAP HONEYSUCKLE RIDGE LOTS 1 THRU 29 AND OPEN SPACE LOTS 30 THRU 34
 PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057, WP-05-095, SP-15-005
 ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
 PARCEL NOS.: 359, 361, 362, & 474
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER, 2016
 SHEET 8 OF 20

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

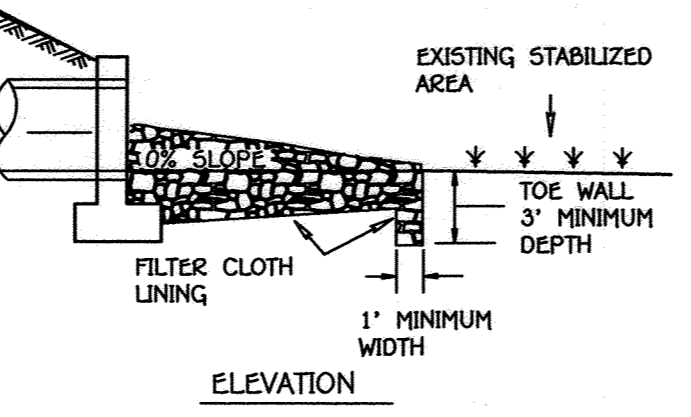
STRUCTURE SCHEDULE							
STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV IN	INV OUT	ROAD STATION AND COORDINATES	TYPE, WIDTH AND OFFSET	REMARKS
I-1	PUBLIC	284.00.71 (TOP OF GRATE)	281.55 (1-2) 15' ✓	281.50 18' ✓	RIVER HILL ROAD 2+56.70 91.37	DOUBLE 'S' INLET (2.63') WR FRAME & GRATE 12' L	D-4.23 D-4.95
I-2	PUBLIC	285.40.16	-----	282.90 15' ✓	RIVER HILL ROAD 2+56.70 91.05	A-10 INLET (2.5') ✓	D-4.03
I-3	PUBLIC	284.10.15	280.45 (1-4) 18' ✓	280.50 18' ✓	RIVER HILL ROAD 4+99.50 92	A-5 INLET (2.5') ✓	D-4.01
I-4	PUBLIC	284.10.10	281.00 (1-5) 18' ✓	279.00 18' ✓	RIVER HILL ROAD 4+99.50 90	A-5 INLET (2.5') ✓	D-4.01
I-5	PUBLIC	285.74.77 (TOP OF GRATE)	282.65 (1-6) 15' ✓	282.40 18' ✓	SYDNEY WAY 0+40.94 9.05	DOUBLE 'S' INLET (2.63') WR FRAME & GRATE 12' L	D-4.23 D-4.95
I-6	PUBLIC	285.74.77 (TOP OF GRATE)	-----	282.00 15' ✓	SYDNEY WAY 0+40.94 4.7	DOUBLE 'S' INLET (2.63') WR FRAME & GRATE 12' L	D-4.23 D-4.95
I-7	PRIVATE	* 271.00.70	267.50 (1-8) 18' ✓ 266.50 (4') EAST WALL 266.50 (4') WEST WALL	260.00 18' ✓	N 527616.60 E 1349100.57 1.79	'D' INLET (2.5') ✓ MODIFIED 'D' INLET	D-4.10
I-8	PRIVATE	* 279.00.03	272.50 (1-12) 12' ✓ 270.50 (1-9) 18' ✓	270.00 18' ✓	N 527727.20 E 1349226.04 5.60	'D' INLET (2.5') ✓	D-4.10
I-9	PRIVATE	* 280.00.00	280.44 (1-10) 18' ✓	280.00 18' ✓	N 527944.90 E 1349312.90 3.80	'D' INLET (2.5') ✓	D-4.10
I-10	PRIVATE	* 287.50.30	283.00 (1-11) 15' ✓	283.00 18' ✓	N 527898.50 E 1349425.10 0.00	'D' INLET (2.5') ✓	D-4.10
I-11	PRIVATE	* 287.54.35	-----	284.00 15' ✓	N 527873.60 E 1349408.54 4.81	'D' INLET (2.5') ✓	D-4.10
I-12	PRIVATE	* 270.00.00	-----	275.00 12' ✓	N 527680.30 E 1349330.99 3.70	'D' INLET (2.5') ✓	D-4.10
I-13	PRIVATE	* 289.60.00	282.50 (1-14) 15' ✓ 286.50 (4') MANHOLE	282.40 18' ✓	N 528060.90 E 1349217.30 1.30	'D' INLET (2.5') ✓	D-4.10
I-14	PRIVATE	* 290.04.70	-----	287.40 15' ✓	N 528166.40 E 1349271.35 0.25	'D' INLET (2.5') ✓	D-4.10
M-1	PUBLIC	283.04.04	279.20 (M-2) 18' ✓	279.00 18' ✓	N 527934.40 E 1349693.05 3.80	4' DIA. MANHOLE ✓	G-5.12
M-2	PUBLIC	285.10.10	281.10 (1-1) 18' ✓	280.00 18' ✓	N 527975.40 E 1349506.77 0.77	4' DIA. MANHOLE ✓	G-5.12
M-3	PUBLIC	280.00.00	275.30 (1-3) 18' ✓	275.10 18' ✓	N 527630.10 E 1349456.34 5.50	4' DIA. MANHOLE ✓	G-5.12
M-4	PRIVATE	285.90.90	281.10 (1-13) 18' ✓	281.00 18' ✓	N 528096.70 E 1349126.04 0.80	4' DIA. MANHOLE ✓	G-5.12
M-5	PRIVATE	250.50.50	252.00 (1-7) 18' ✓	249.00 18' ✓	N 527578.90 E 1349121.00 7.00	4' DIA. MANHOLE ✓	G-5.12
S-1	PUBLIC	280.52	279.00 (M-1) 18' ✓	-----	N 527937.00 E 1349706.00 4.80	CONC. END SECTION ✓	D-5.51
S-2	PUBLIC	276.53	275.00 (M-3) 18' ✓	-----	N 527606.40 E 1349401.10 1.10	CONC. END SECTION ✓	D-5.51
S-3	PRIVATE	250.56	249.06 (1-7) 18' ✓	-----	N 527577.20 E 1349000.00 10.50	CONC. END SECTION ✓	D-5.51
S-4	PRIVATE	282.50	281.00 (M-4) 18' ✓	-----	N 528101.10 E 1349074.30 1.10	CONC. END SECTION ✓	D-5.51

* PROVIDES THROAT OPENING



CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

- The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
- Filter cloth shall be protected from puncturing, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.



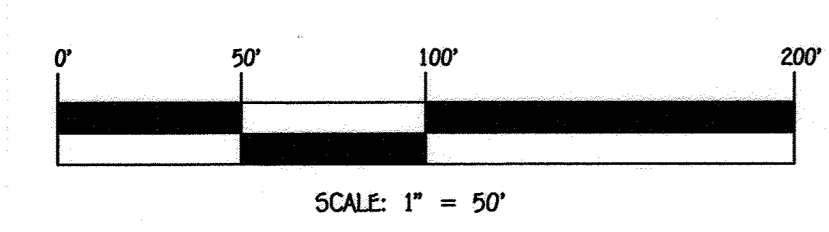
PIPE SCHEDULE (PRIVATE)		
SIZE	CLASS	LENGTH
6"	PERFORATED PVC, SCH.40	768 L.F.
6"	PVC, SCH.40	395 L.F.
12"	RCCP, CL. IV	211 L.F.
15"	RCCP, CL. IV	184 L.F.
18"	RCCP, CL. IV	699 L.F.

NOTE: RCCP, CL. IV MAY BE SUBSTITUTED WITH HOPE PIPE MATERIAL.

PIPE SCHEDULE (PUBLIC)		
SIZE	CLASS	LENGTH
15"	RCCP, CL. IV	46 L.F.
18"	RCCP, CL. IV	357 L.F.

NOTE: RCCP, CL. IV MAY BE SUBSTITUTED WITH HOPE PIPE MATERIAL WHERE DEPTH OF COVER PERMITS.

RIP-RAP CHANNEL DESIGN DATA													
STRUCTURE	AREA (S.F.)	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	n	V (f.p.s.)	BLANKET THICKNESS	PIPE SIZE	LA
S-1	12.05	11.38	1.0589	1.0391	0.005	0.0707	4'	1.65'	0.04	0.27	3.22	19"	12'
S-2	15.41	12.72	1.2115	1.1372	0.005	0.0707	4'	1.95'	0.04	0.30	4.55	19"	11.5'
S-4	7.16	9.10	0.7868	0.8516	0.005	0.0707	4'	1.14'	0.04	0.22	1.58	19"	7'
S-10	16.36	14.66	0.7868	0.8516	0.005	0.0707	8'	1.49'	0.04	2.82	46.1	19"	18'



APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 DATE: 12/16/2011

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 DATE: 12-19-11

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Engineering Division
 DATE: 12-6-11

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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 ELICOTT CITY, MARYLAND 21042
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AS-BUILT CERTIFICATION

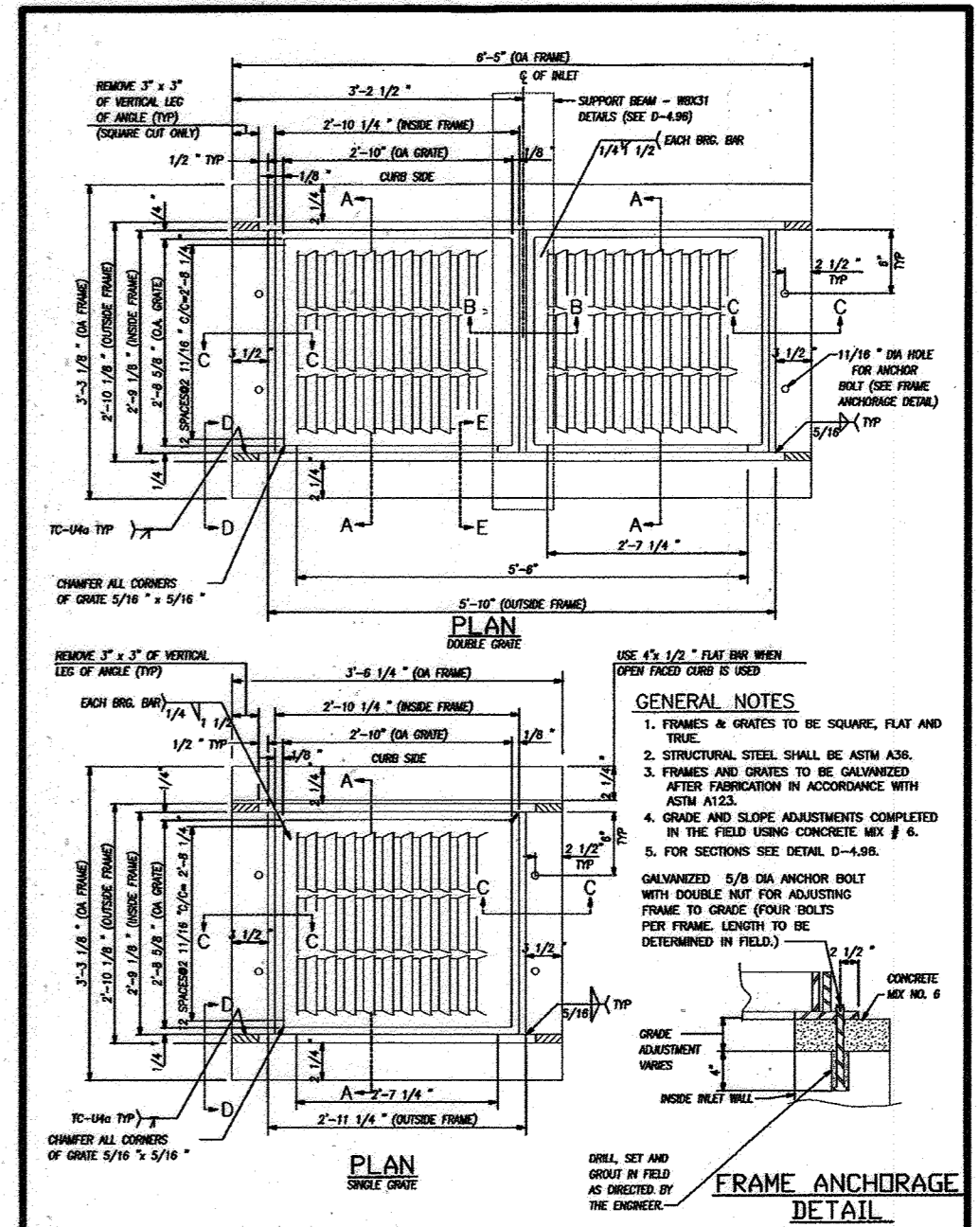
I hereby certify that the facilities shown on this AS-BUILT drawing are as shown on the approved plans and specifications.

Professional Engineer Seal

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

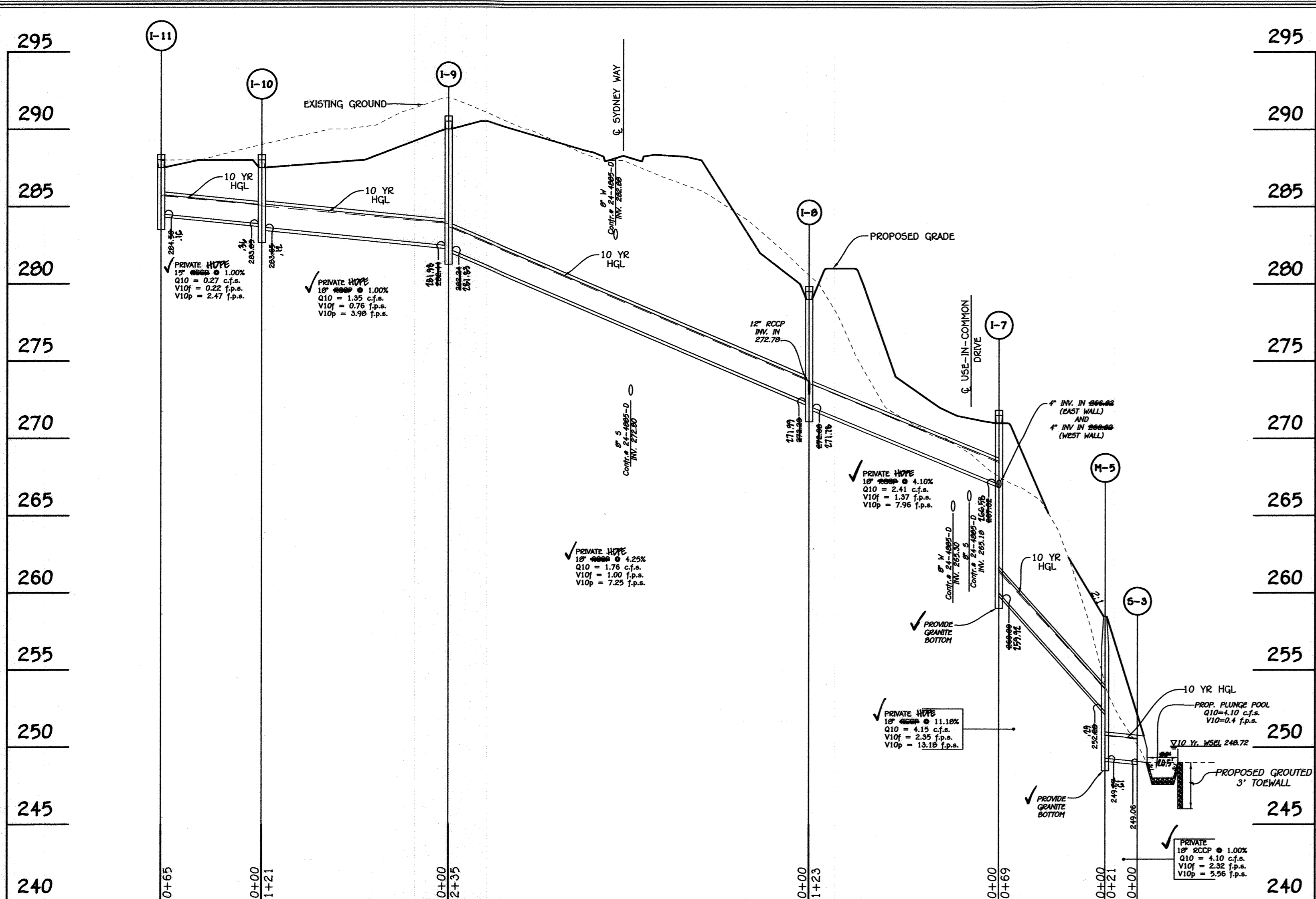
Professional Engineer Seal



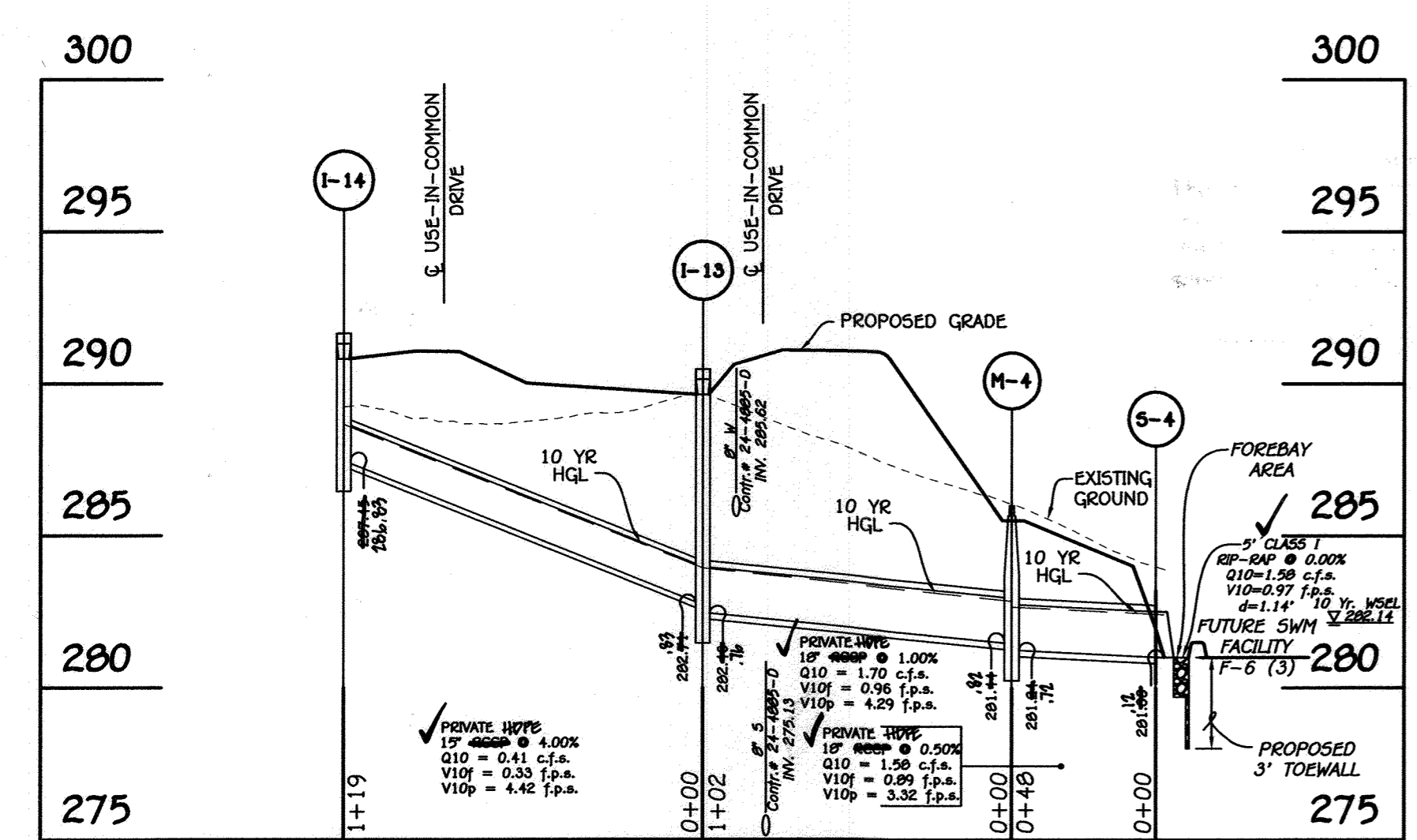
Howard County, Maryland
 Department of Public Works
 WR Inlet
 Frame, Grate & Anchorage
 Detail
 D-4-05
 4.33

STORM DRAIN PROFILES AND DETAILS
HONEYSUCKLE RIDGE
 LOTS 1 THRU 29
 AND OPEN SPACE LOTS 30 THRU 34
 PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057,
 WP-05-095, SP-15-005
 ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
 PARCEL NOS.: 359, 361, 362, & 474
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER, 2016
 SHEET 9 OF 20

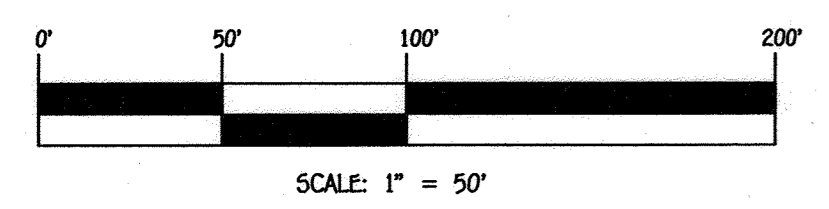
AS-BUILT



SCALE:
 HORZ. 1" = 50'
 VERT. 1" = 5'



SCALE:
 HORZ. 1" = 50'
 VERT. 1" = 5'



APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 12/1/2016
 Chief, Bureau of Highways
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 12-14-16
 Chief, Division of Land Development
 DATE

[Signature] 12-6-16
 Chief, Development Engineering Division
 DATE

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2095

AS-BUILT CERTIFICATION
 I hereby certify, by signing this plan, that the facilities shown on this plan were constructed as shown on this AS-BUILT plan, and that the same conform to the specifications and approved plans and specifications.
[Signature] 12/31/16
 PROFESSIONAL ENGINEER

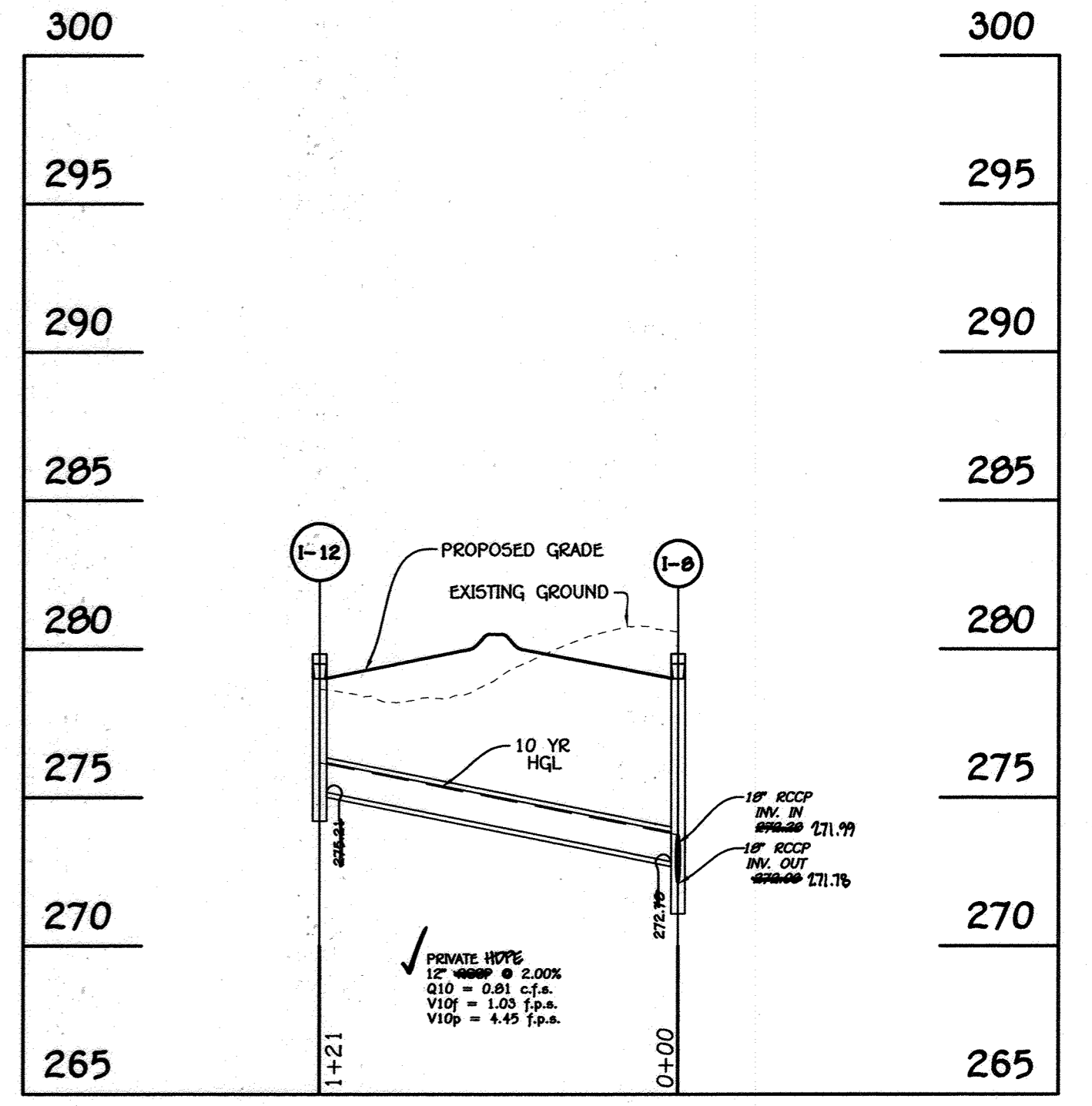
OWNERS

KATHLEEN E. WOODWARD 9151 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	PATRICK & SARA PEPLAWSKI 9140 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	DAVID & TERESIE ASHBY 9147 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	TIMOTHY McDONALD 9150 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	THOMAS & DEBORAH KUCKUDA 9130 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422
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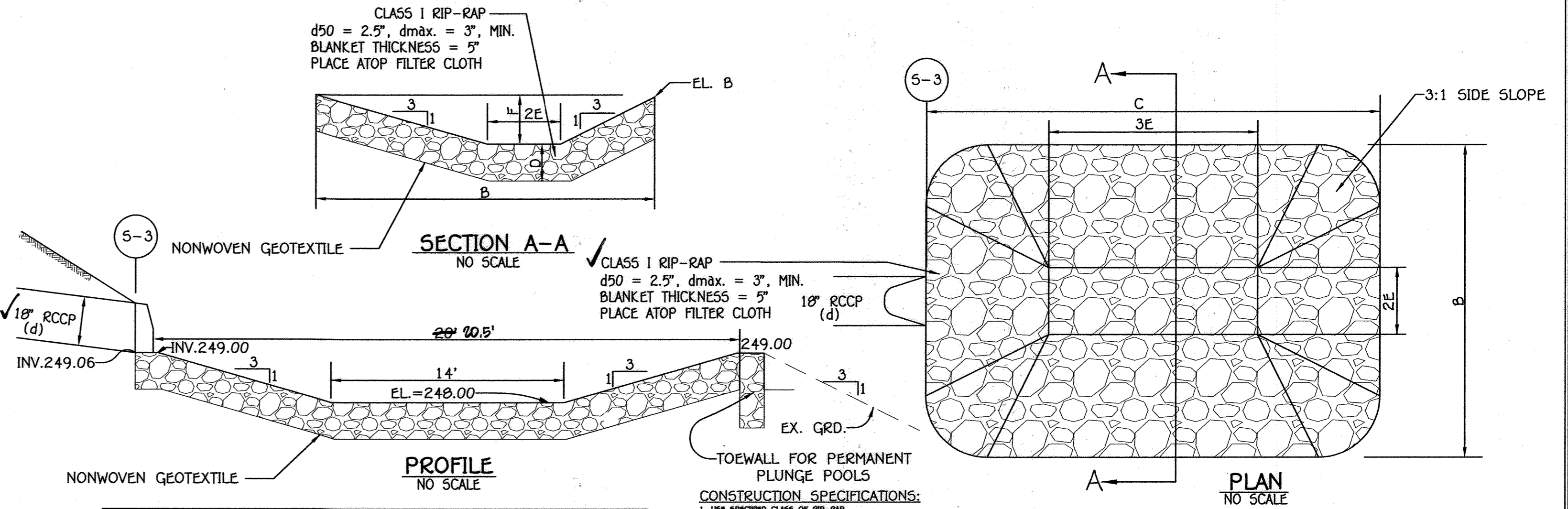
DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET
 SUITE 200
 ELICOTT CITY, MARYLAND 21043
 (410)-922-4600



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
[Signature]
 FRANK JOHN MANALANSAN
 DATE



SCALE:
 HORZ. 1" = 50'
 VERT. 1" = 5'



STILLING BASIN DATA

STRUCTURE NO.	INV. A	EL. B	C	D	2E	3E	F	B	d
5-3	249.00	249.00	20.00	5'	4.00'	14.00'	1.00'	7.00'	1.50'

TYP. TYPE 1 STILLING BASIN OUTFALL DETAIL
 NO SCALE

CONSTRUCTION SPECIFICATIONS:

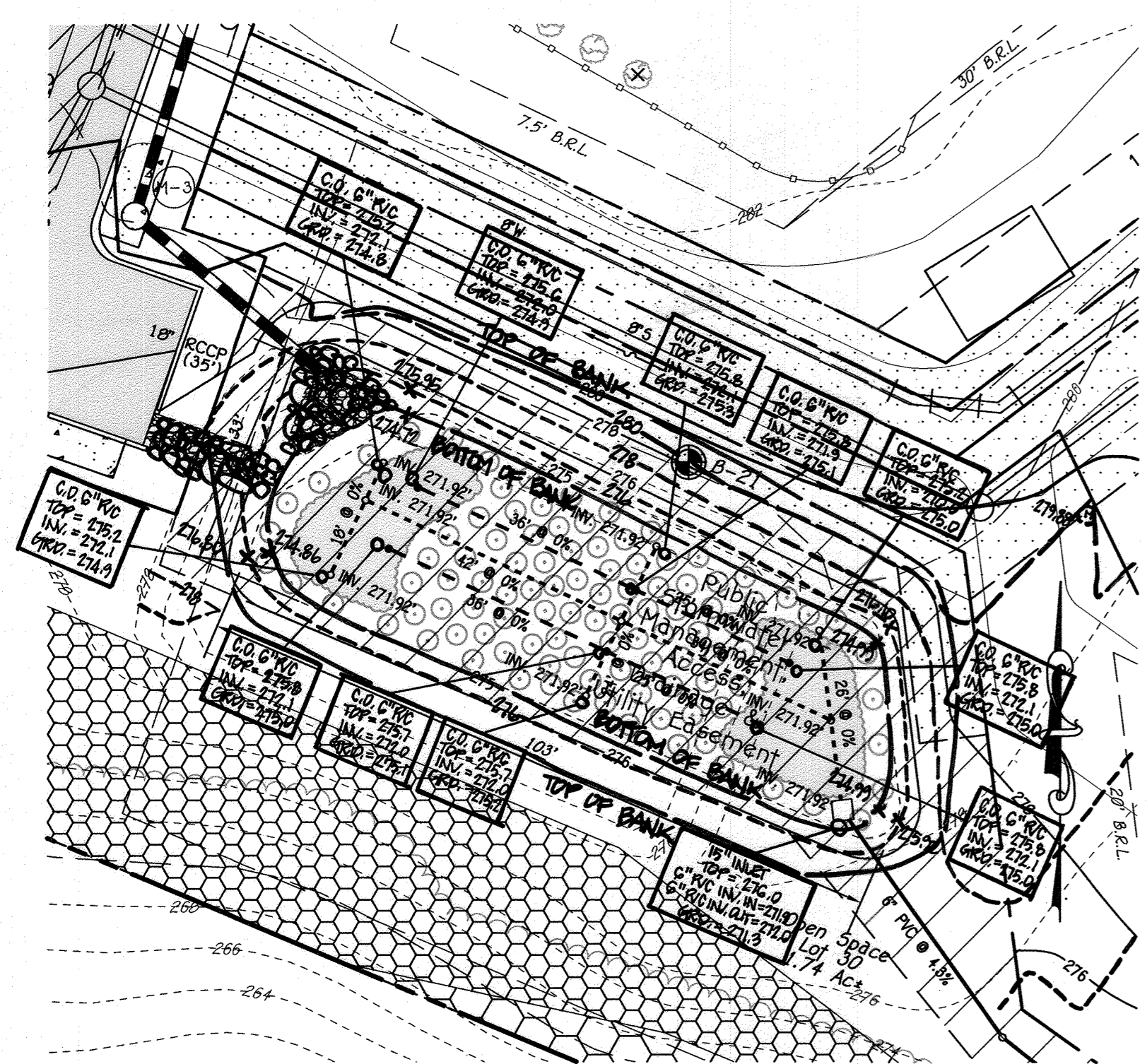
- USE SPECIFIED CLASS OF RIP-RAP.
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCHING, CUTTING OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE.
- PREPARE THE SUBGRADE FOR THE PLUNGE POOL TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SUBGRADE UNDISTURBED MATERIAL.
- SPREAD THE GEOTEXTILE MINIMUM OF 6 INCHES BEYOND THE EDGE OF THE SCOUR HOLE.
- STONE FOR THE PLUNGE POOL MAY BE PLACED BY EQUIPMENT. CONSTRUCT TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. DESIGN AND PLACE THE STONE FOR THE PLUNGE POOL IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE Voids BETWEEN THE LARGER STONES. PLACE STONE FOR THE PLUNGE POOL IN A MANNER TO PREVENT DAMAGE TO THE GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
- AT THE PLUNGE POOL OUTLET, PLACE THE STONE SO THAT IT NESTS THE EXISTING GRADE.
- MAINTAIN LINE, GRADE, AND CROSS SECTION, KEEP OUTLET FREE OF EROSION, REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND OBSCURED REPAIR. MAKE NECESSARY REPAIRS IMMEDIATELY.

MAINTENANCE:
 MAINTENANCE NEEDS ARE GENERALLY LOW FOR PLUNGE POOLS. THE LINE, GRADE, AND CROSS SECTION MUST BE MAINTAINED, AND THE OUTLET MUST BE KEPT FREE OF EROSION. AFTER HIGH FLOWS INSPECT FOR SCOUR AND OBSCURED RIP-RAP. REPAIRS MUST BE MADE IMMEDIATELY. ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED.

STORM DRAIN PROFILES AND DETAILS
HONEYSUCKLE RIDGE
 LOTS 1 THRU 29
 AND OPEN SPACE LOTS 30 THRU 34
 PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057,
 WP-05-095, SP-15-005
 ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
 PARCEL NOS.: 359, 361, 362, & 474
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER, 2016
 SHEET 10 OF 20

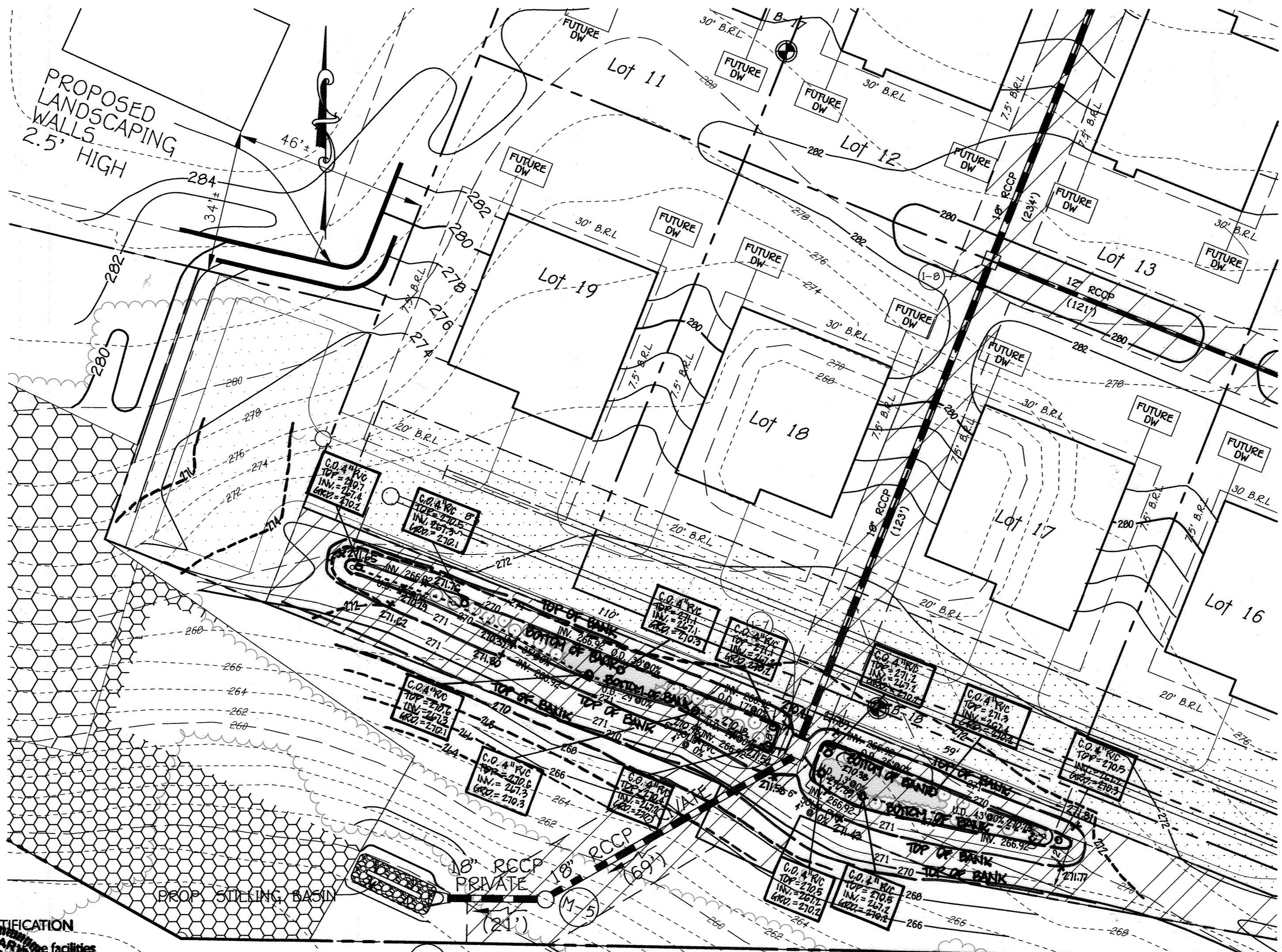
"AS-BUILT"

- 4" DIA. DOME GRATE SET AT 9" ABOVE FILTER MEDIA (SEE DETAIL SHEET 12)
- 4" DIA. SOLID CAP SET AT MULCH ELEVATION (SEE DETAIL SHEET 12)
- - - 4" PVC OVERDRAIN
- 4" PVC UNDERDRAIN



PLAN F-6 (1)
SCALE: 1" = 20'
(MICRO BIO-RETENTION FACILITY)
TO BE PROVIDED WITH FUTURE SITE DEVELOPMENT PLAN
SCALE: 1" = 20'
DRAINAGE AREA: 65,384 Sqft.
FILTER AREA: 2,936 Sqft.
ELEVATION 275.00 (ANA)
PERIMETER 244'
WEIR ELEVATION 276.00 (ANA)

QUANTITY	NAME	MAXIMUM SPACING (FT.)
245 (737 sq.ft.)	GRASSES	36" o.c.
105	SHRUBS	36"-40" o.c.

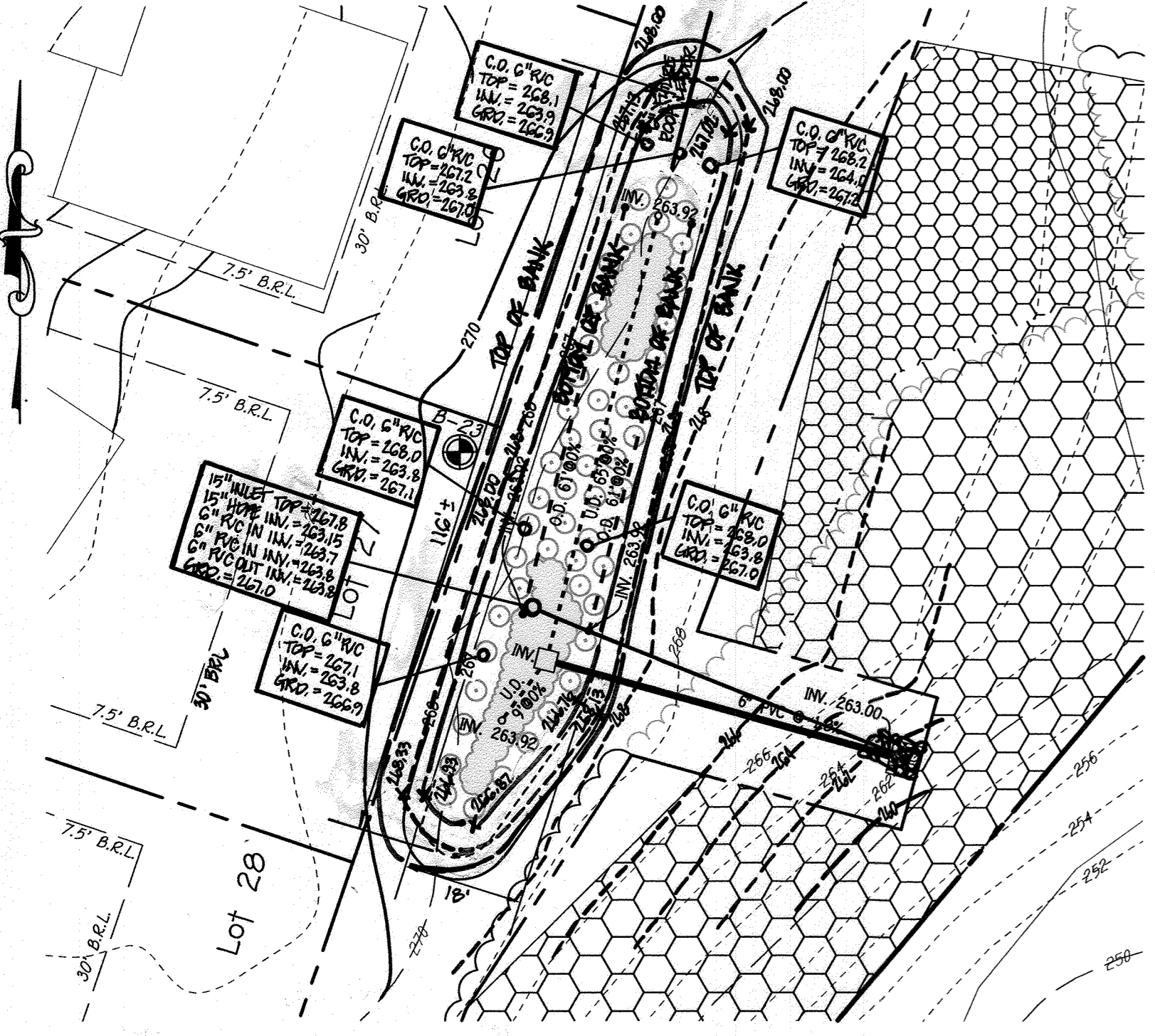


PLAN F-6 (2)
SCALE: 1" = 20'
(MICRO BIO-RETENTION FACILITY)
TO BE PROVIDED WITH FUTURE SITE DEVELOPMENT PLAN
SCALE: 1" = 20'
DRAINAGE AREA: 14,246 Sqft.
FILTER AREA: 942 Sqft.
ELEVATION 270.00-30
PERIMETER 247'
WEIR ELEVATION 271.00-30

QUANTITY	NAME	MAXIMUM SPACING (FT.)
47 (136 sq.ft.)	GRASSES	36" o.c.
20	SHRUBS	36"-40" o.c.

PLAN F-6 (3)
SCALE: 1" = 20'
(MICRO BIO-RETENTION FACILITY)
TO BE PROVIDED WITH FUTURE SITE DEVELOPMENT PLAN
SCALE: 1" = 20'
DRAINAGE AREA: 46,439 Sqft.
FILTER AREA: 1,182 Sqft.
ELEVATION 281.00 (ANA)
PERIMETER 173'
WEIR ELEVATION 282.00 (ANA)

QUANTITY	NAME	MAXIMUM SPACING (FT.)
79 (235 sq.ft.)	GRASSES	36" o.c.
34	SHRUBS	36"-40" o.c.



PLAN F-6 (5)
SCALE: 1" = 20'
(MICRO BIO-RETENTION FACILITY)
TO BE PROVIDED WITH FUTURE SITE DEVELOPMENT PLAN
SCALE: 1" = 20'
DRAINAGE AREA: 96,789 Sqft.
FILTER AREA: 1,686 Sqft.
ELEVATION 267.00 (ANA)
PERIMETER 340'
WEIR ELEVATION 268.00 (ANA)

QUANTITY	NAME	MAXIMUM SPACING (FT.)
121 (361 sq.ft.)	GRASSES	36" o.c.
51	SHRUBS	36"-40" o.c.

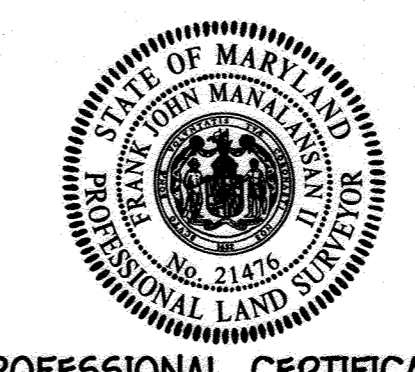
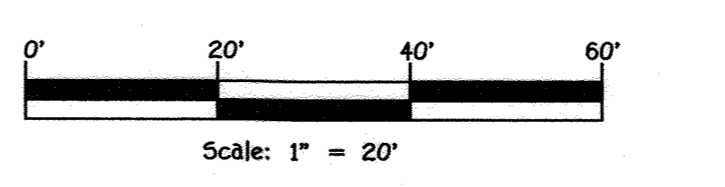
AS-BUILT CERTIFICATION
I hereby certify that the facilities shown on this AS-BUILT plan are as shown on this AS-BUILT plan and as specified on the approved plans and specifications.
Date: 4/23/21
Professional Engineer: [Signature]

SYMBOL	DESCRIPTION
-272-	EXISTING CONTOUR 2' INTERVAL
-270-	EXISTING CONTOUR 10' INTERVAL
-	EXISTING STORM DRAIN LINE
-	EXISTING WATER LINE
-	EXISTING SEWER LINE
-	WETLAND AREA
-	25' WETLAND BUFFER
-	50' STREAM BUFFER
-272-	PROPOSED CONTOUR 2' INTERVAL
-270-	PROPOSED CONTOUR 10' INTERVAL
-272.50	SPOT ELEVATION
-	PROPOSED STORM DRAIN LINE
-	PROPOSED SEWER
-	PROPOSED WATER
-	LINE OF DISURBANCE
-	SURVEY SPLIT FENCE
-	SILT FENCE
-	15-24.9% SLOPES
-	25% AND GREATER
-	FOREST CONSERVATION EASEMENT
-	SWP BOARDS
-	EXISTING TREE
-	EXISTING SPECIES TREE
-	6" PVC PIPE
-	8" PERFORATED PVC UNDERDRAIN

- SHRUBS**
SANDPAPER
SPICEBUSH
ACORNWOOD
WINTERBERRY
INKBERRY
WITCH HAZEL
BUTTERNUT
BUCKEYE
BOTTLEBRUSH
BUCKEYE
- GRASS**
SWITCHGRASS
HEAVY METAL SWITCHGRASS
- ANY OF THE SHRUBS LISTED MAY BE USED
ANY OF THE GRASS LISTED MAY BE USED

NOTE:
FOR SOIL BORING INFORMATION SEE SHEET 20

NOTES:
STORMWATER MANAGEMENT DEVICES LOCATED ON INDIVIDUAL LOTS WILL BE OWNED AND MAINTAINED BY THAT PARTICULAR LOT OWNER AND SUBJECT TO THE REQUIREMENTS OF A RECORDED DECLARATION OF COVENANT. THE STORMWATER MANAGEMENT DEVICE LOCATED WITHIN THE "PUBLIC STORMWATER MANAGEMENT, ACCESS, DRAINAGE & UTILITY EASEMENT" WILL BE PUBLICLY OWNED AND MAINTAINED. THE STORMWATER MANAGEMENT DEVICES LOCATED ON H.O.A. OPEN SPACE WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HONEYSUCKLE RIDGE HOMEOWNER'S ASSOCIATION.



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
Date: 11/16/21

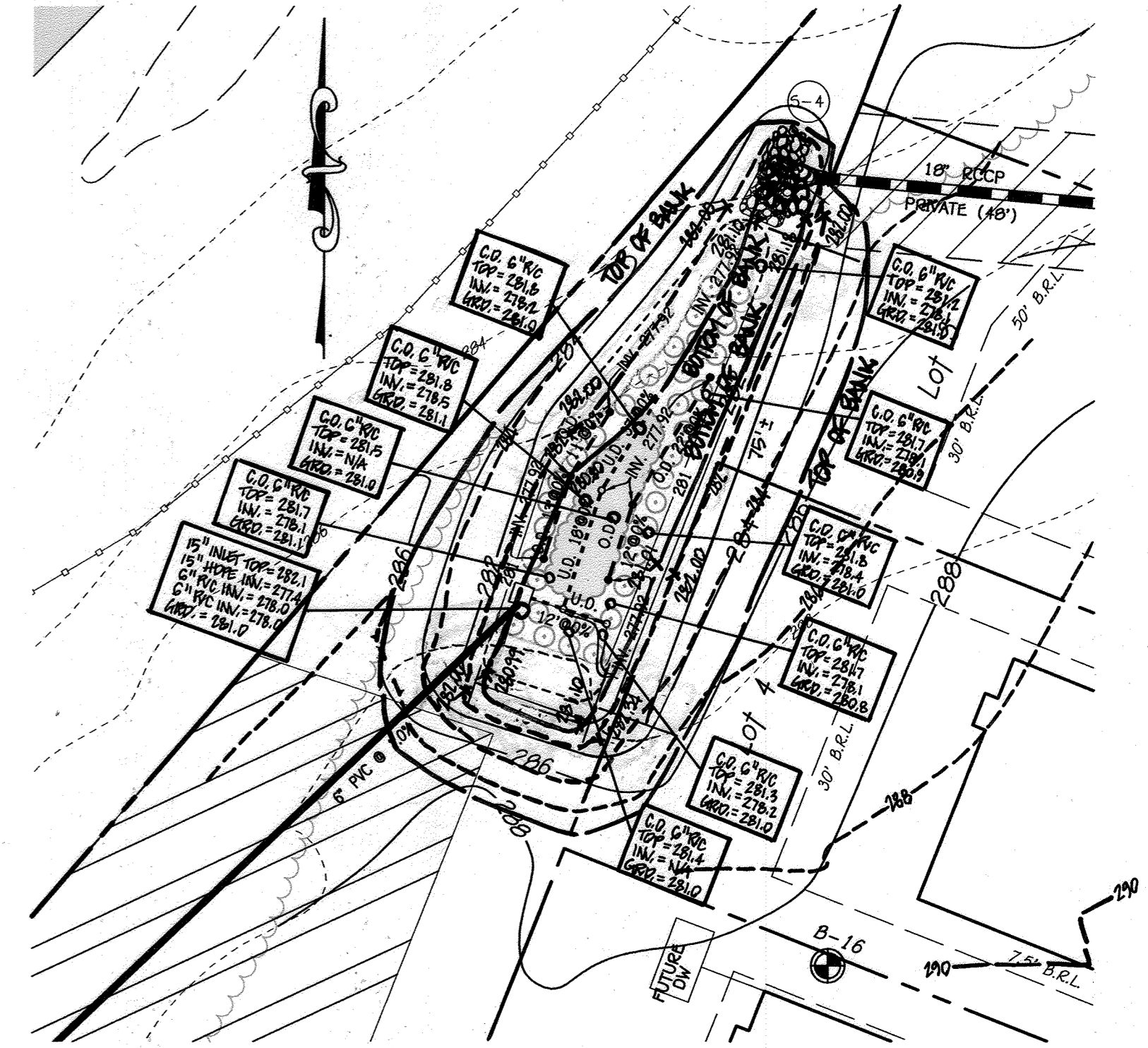
APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
Chief, Bureau of Highways
DATE: 12/1/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
Chief, Division of Land Development
DATE: 12-19-16

[Signature]
Chief, Development Engineering Division
DATE: 12-1-11

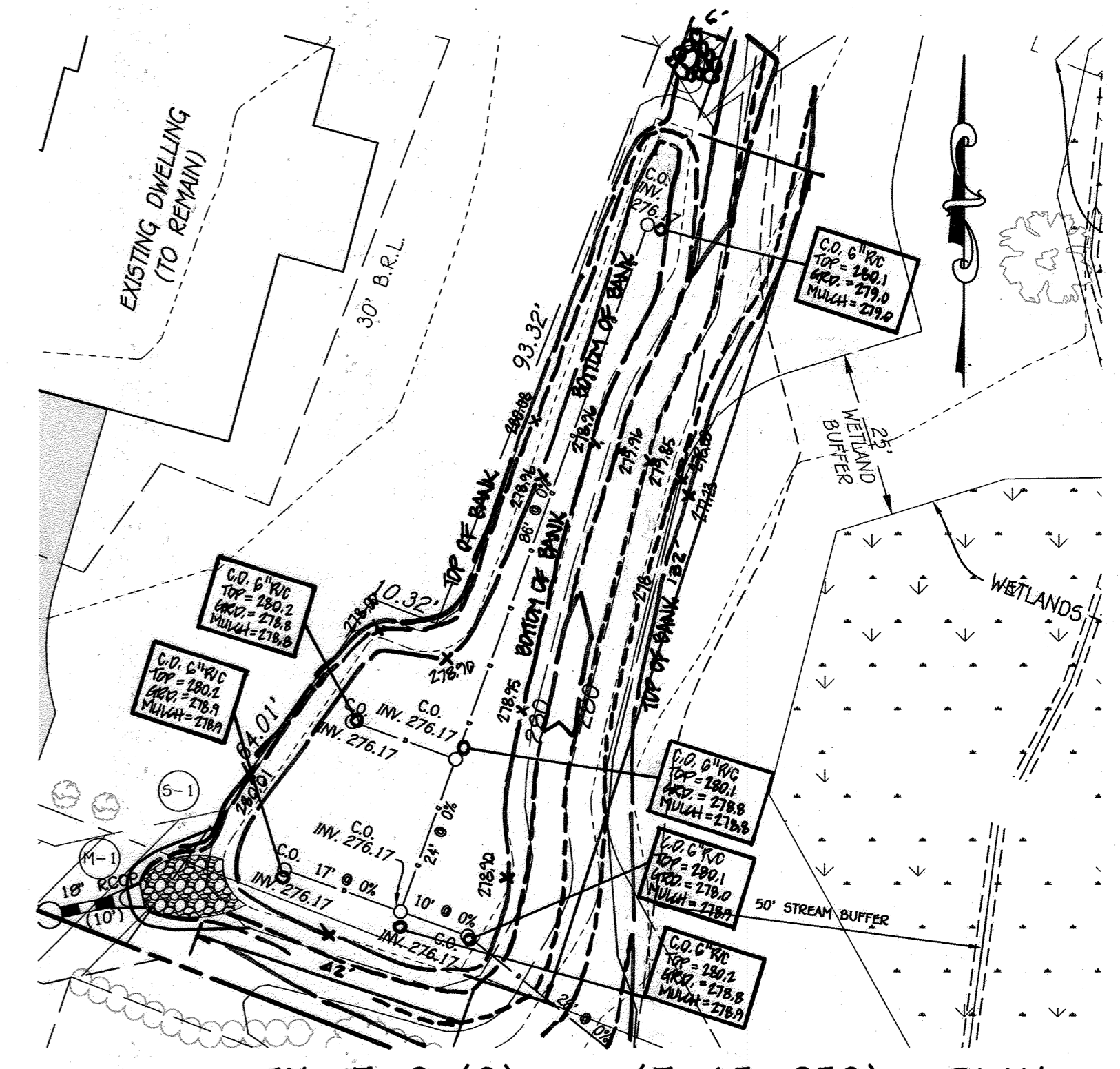
NO.	REVISIONS	DATE
1	PROVIDE BIO RETENTION FACILITIES	10/27/17

OWNERS	DEVELOPER
KATHLEEN K. WOODWARD 9151 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	LAND DESIGN & STREET 8318 FOREST STREET SUITE 200 ELLIOTT CITY, MARYLAND 21043 (410)-922-4600
PATRICK & SARA PEPOWSKI 9140 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	
DAVID & TERRIE ASHBY 9147 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	
TIMOTHY McDONALD 9150 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	
THOMAS & DEBORAH KUCKUDA 9130 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	



PLAN F-6 (3)
SCALE: 1" = 20'
(MICRO BIO-RETENTION FACILITY)
TO BE PROVIDED WITH FUTURE SITE DEVELOPMENT PLAN
SCALE: 1" = 20'
DRAINAGE AREA: 46,439 Sqft.
FILTER AREA: 1,182 Sqft.
ELEVATION 281.00 (ANA)
PERIMETER 173'
WEIR ELEVATION 282.00 (ANA)

QUANTITY	NAME	MAXIMUM SPACING (FT.)
79 (235 sq.ft.)	GRASSES	36" o.c.
34	SHRUBS	36"-40" o.c.



EX. F-6 (3) per (F-15-053) PLAN
SCALE: 1" = 20'
(MICRO BIO-RETENTION FACILITY)
TO BE PROVIDED WITH FUTURE SITE DEVELOPMENT PLAN
SCALE: 1" = 20'
DRAINAGE AREA: 59,563 Sqft.
FILTER AREA: 2,299 Sqft.
ELEVATION 275.00 (ANA)
PERIMETER 320'
WEIR ELEVATION 280.00 (ANA)

STORMWATER MANAGEMENT DETAILS
HONEYSUCKLE RIDGE
LOTS 1 THRU 29
AND OPEN SPACE LOTS 30 THRU 34
PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057,
WP-05-095, SP-15-005
ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOS.: 359, 361, 362, & 474
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER, 2016
SHEET 11 OF 20

"AS-BUILT"

Infiltration and Filter System Construction Specifications

Infiltration and filter systems either take advantage of existing permeable soils or create a permeable medium such as sand for WC, and Re v. In some instances where permeability is great, these facilities may be used for Qp as well. The most common systems include infiltration trenches, infiltration basins, sand filters, and organic filters.

When properly planted, vegetation will thrive and enhance the functioning of these systems. For example, pre-treatment buffers will trap sediments that often are bound with phosphorous and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide arteries for stormwater to permeate soil for groundwater recharge. Finally, successful plantings provide aesthetic value and wildlife habitat making these facilities more desirable to the public.

Design Constraints:

- > Planting buffer strips of at least 20 feet will cause sediments to settle out before reaching the facility, thereby reducing the possibility of clogging.
- > Determine areas that will be saturated with water and water table depth so that appropriate plants may be selected (hydrology will be similar to bioretention facilities, see figure A.5 and Table A.4 for planting material guidance).
- > Plants known to send down deep taproots should be avoided in systems where filter fabric is used as part of facility design.
- > Test soil conditions to determine if soil amendments are necessary.
- > Plants shall be located so that access is possible for structure maintenance.
- > Stabilize heavy flow areas with erosion control mats or sod.
- > Temporarily divert flows from seeded areas until vegetation is established.
- > See Table A.5 for additional design considerations.

Bio-retention

Soil Bed Characteristics

The characteristics of the soil for the bioretention facility are perhaps as important as the facility location, size, and treatment volume. The soil must be permeable enough to allow runoff to filter through the media, while having characteristics suitable to promote and sustain a robust vegetative cover crop. In addition, much of the nutrient pollutant uptake (nitrogen and phosphorus) is accomplished through absorption and microbial activity within the soil profile. Therefore, soils must balance their chemical and physical properties to support biotic communities above and below ground.

The planting soil should be a sandy loam, loamy sand, loam (USDA), or a loam/sand mix (should contain a minimum 35 to 60% sand, by volume). The clay content for these soils should be less than 25% by volume (Environmental Quality Resources (EQR), 1996; Engineering Technology Inc. and Biohabitats, Inc. (ETAB), 1993). Soils should fall within the SM, ML, SC classifications or the Unified Soil Classification System (USCS). A permeability of at least 1.0 feet per day (0.27 in/hr) is required (a conservative value of 0.5 feet per day is used for design). The soil should be free of stones, stumps, roots, or other woody material over 1" in diameter. Brush or seeds from noxious weeds (e.g., Johnson Grass, Mugwort, Nutsedge, and Canada Thistle or other noxious weeds as specified under COMAR 15.08.01.05.) should not be present in the soils. Placement of the planting soil should be in 12 to 18 lifts that are loosely compacted (tamped lightly with a backhoe bucket or traversed by dozer tracks). The specific characteristics are presented in Table A.3.

Table A.3 Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P2O5)	75 lbs. per acre, minimum
Potassium (potash - K2O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	10 to 25 %
Silt	30 to 55 %
Sand	35 to 60%

Mulch Layer

The mulch layer plays an important role in the performance of the bioretention system. The mulch layer helps maintain soil moisture and avoids surface sealing, which reduces permeability. Mulch helps prevent erosion, and provides a microenvironment suitable for soil biota at the mulch/soil interface. It also serves as a pretreatment layer, trapping the finer sediments, which remain suspended after the primary pretreatment.

The mulch layer should be standard landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (stockpiled or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to a maximum depth of three inches. Grass clippings should not be used as a mulch material.

Planting Guidance

Plant material selection should be based on the goal of simulating a terrestrial forested community of native species. Bioretention simulates an upland-species ecosystem. The community should be dominated by trees, but have a distinct community of understory trees, shrubs and herbaceous materials. By creating a diverse, dense plant cover, a bioretention facility will be able to treat stormwater runoff and withstand urban stresses from insects, disease, drought, temperature, wind, and exposure.

The proper selection and installation of plant materials is key to a successful system. There are essentially three zones within a bioretention facility (Figure A.5). The lowest elevation supports plant species adapted to standing and fluctuating water levels. The middle elevation supports plants that like drier soil conditions, but can still tolerate occasional inundation by water. The outer edge

is the highest elevation and generally supports plants adapted to drier conditions. A sample of appropriate plant materials for bioretention facilities are included in Table A.4. The layout of plant material should be flexible, but should follow the general principals described in Table A.5. The objective is to have a system, which resembles a random, and natural plant layout, while maintaining optimal conditions for plant establishment and growth. For a more extensive bioretention plan, consult ETAB, 1993 or Claytor and Schueler, 1997.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6) AND (F-6)

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

I hereby certify that the facilities shown on this "AS BUILT" plan are as shown on the approved plans and specifications.

APPROVED: DEPARTMENT OF PUBLIC WORKS

Melania
Chief, Bureau of Highways
12/1/2014
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kathleen
Chief, Division of Land Development
12-19-14
DATE
John
Chief, Development Engineering Division
12-6-14
DATE

CONSTRUCTION CRITERIA:

THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH DRY WELLS:

EROSION AND SEDIMENT CONTROL:
FINAL GRADING FOR PROPOSED DRY WELLS SHOULD NOT TAKE PLACE UNTIL THE SURROUNDING SITE IS COMPLETELY STABILIZED. IF THIS CANNOT BE ACCOMPLISHED, RUNOFF FROM DISTURBED AREAS SHALL BE DIVERTED.

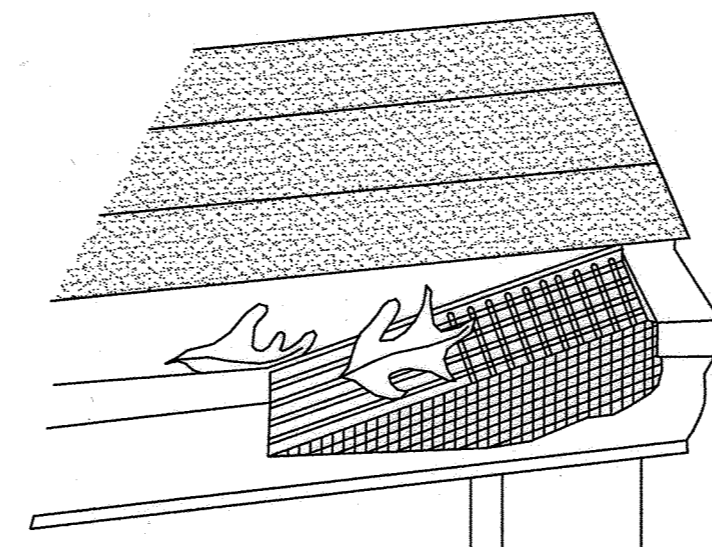
SOIL COMPACTION:
EXCAVATION SHOULD BE CONDUCTED IN DRY CONDITIONS WITH EQUIPMENT LOCATED OUTSIDE OF THE PRACTICE TO MINIMIZE BOTTOM AND SIDEWALL COMPACTION. CONSTRUCTION OF A DRY WELL SHALL BE PERFORMED WITH LIGHTWEIGHT, WIDE-TRACKED EQUIPMENT TO MINIMIZE DISTURBANCE AND COMPACTION. EXCAVATED MATERIALS SHALL BE PLACED IN A CONTAINED AREA.

UNDERGROUND CHAMBER:
A SUBSURFACE PREFABRICATED CHAMBER MAY BE USED.

DRY WELL BOTTOM:
THE BOTTOM SHALL BE AS LEVEL AS POSSIBLE TO MINIMIZE POOLED WATER IN SMALL AREAS THAT MAY REDUCE OVERALL INFILTRATION AND LONGEVITY.

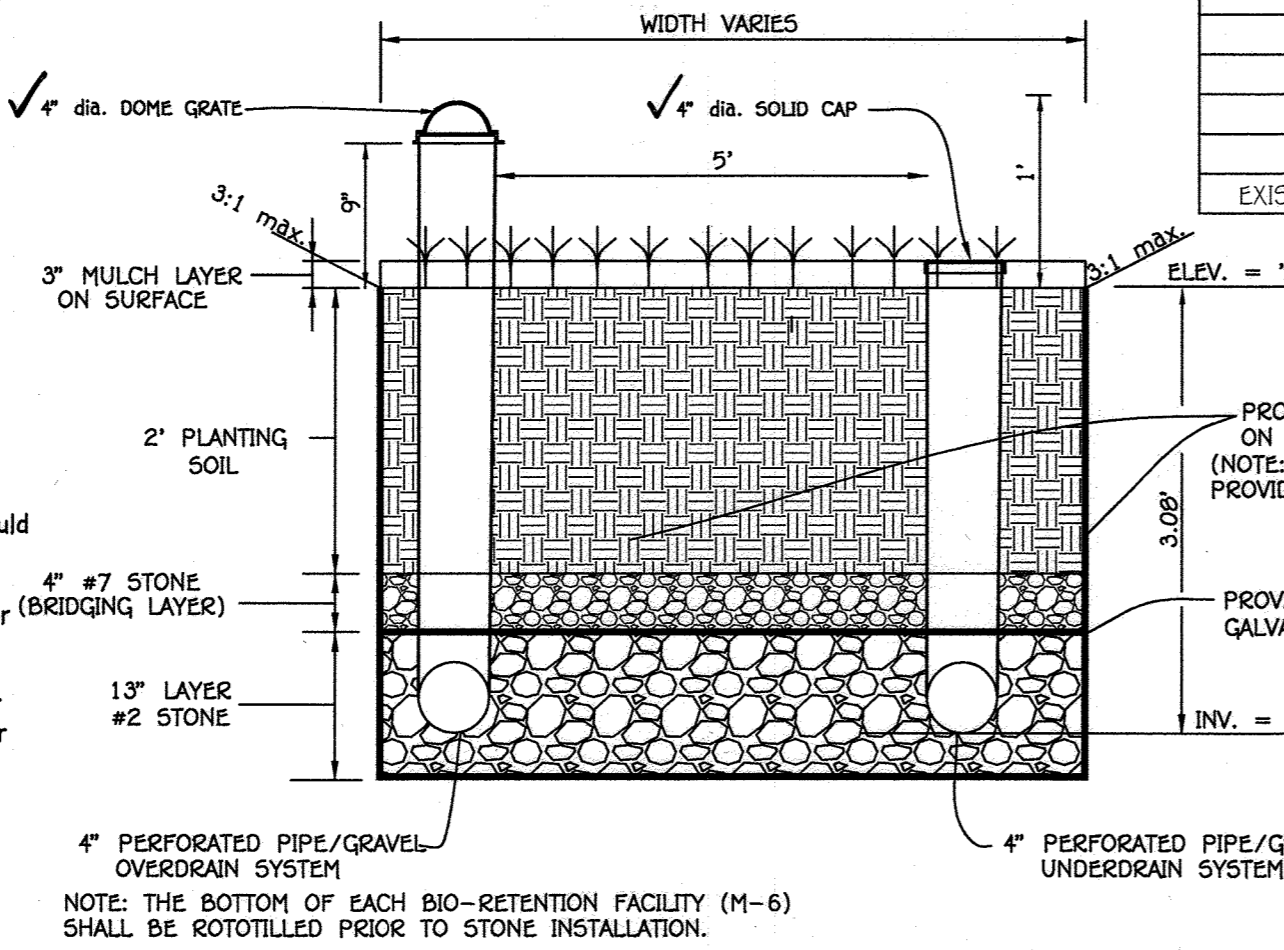
FILTER CLOTH:
FILTER CLOTH SHALL NOT BE INSTALLED ON THE BOTTOM OF THE WELL. NON-WOVEN FILTER CLOTH SHOULD BE USED TO LINE THE TOP AND SIDES OF THE DRY WELL TO PREVENT THE PORE SPACE BETWEEN THE STONES FROM BEING BLOCKED BY THE SURROUNDING NATIVE MATERIAL.

GRAVEL MEDIA:
THE AGGREGATE SHALL BE COMPOSED OF AN 18 TO 48-INCH LAYER OF CLEAN WASHED, OPEN GRADED MATERIAL WITH 40% POROSITY (E.G., ASTM D448 4, 5, OR 6 STONE OR EQUAL).

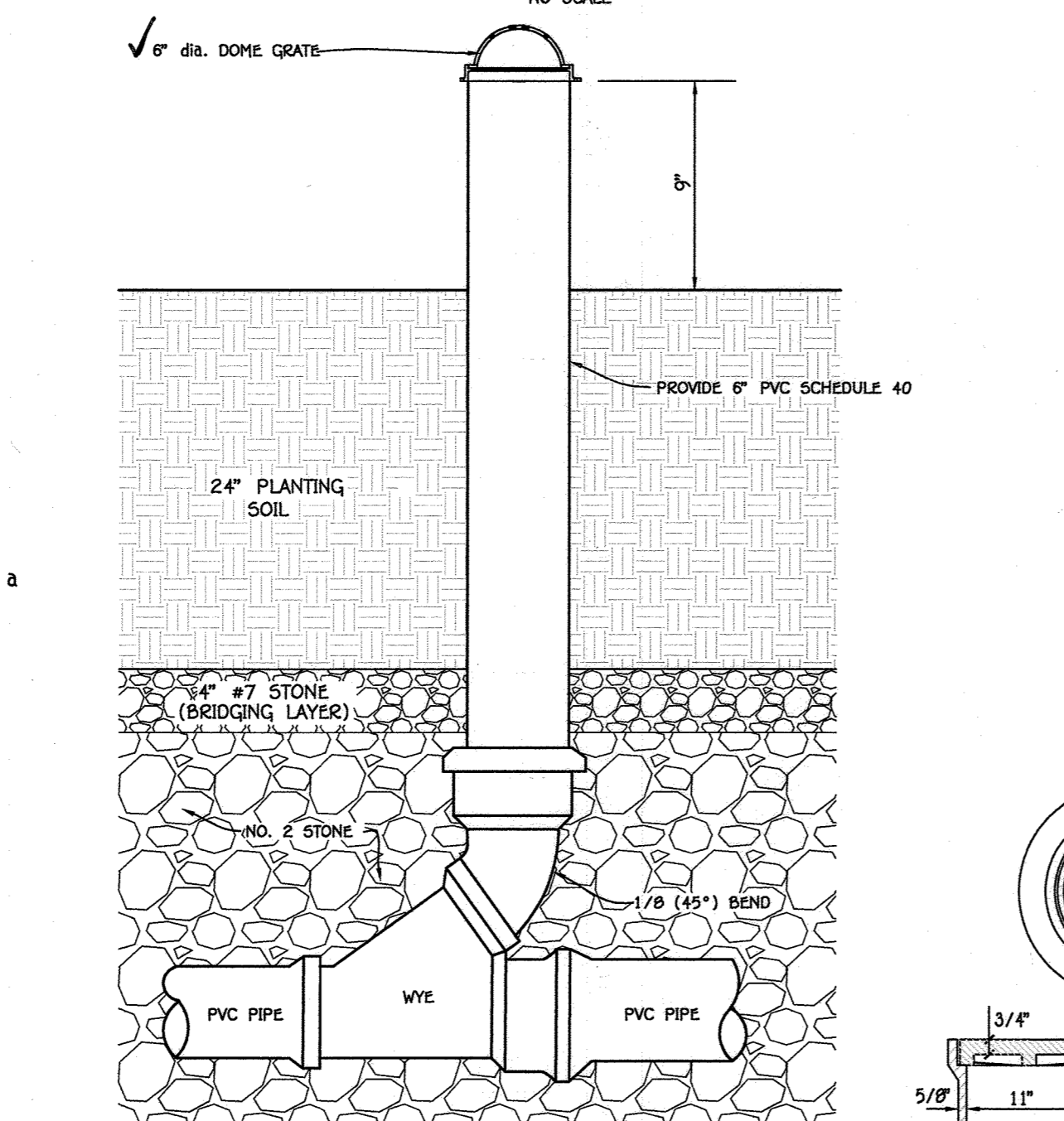


GUTTER DRAIN FILTER DETAIL
NOT TO SCALE

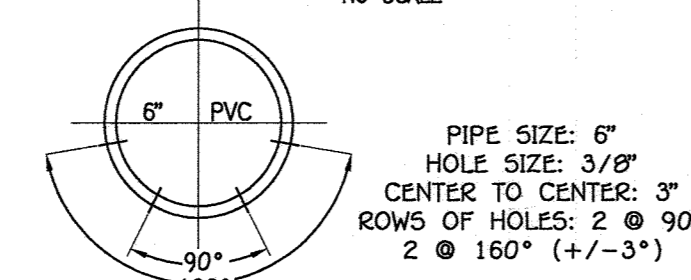
FACILITY NO.	A	B	C
F-6 (1)	270.00	270.00	270.00
M-6 (2)	270.00	270.00	270.00
F-6 (3)	270.00	270.00	270.00
M-6 (4)	270.00	270.00	270.00
F-6 (5)	270.00	270.00	270.00
EXISTING F-6 (3)	279.00	279.00	279.00



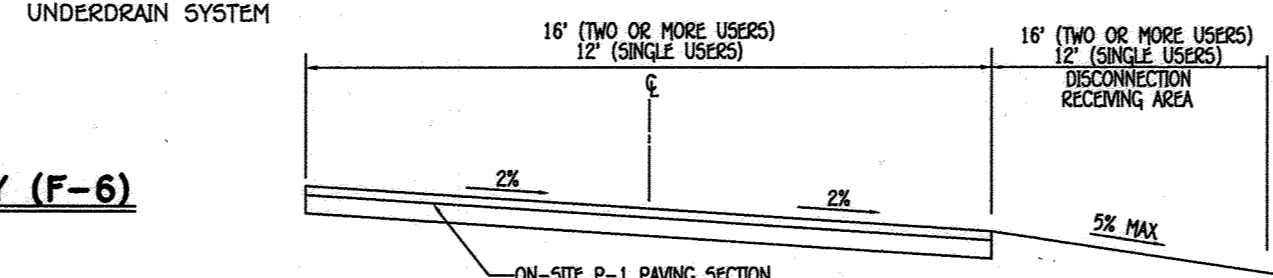
TYPICAL SECTION - BIO-RETENTION FACILITY (F-6)
NO SCALE



TYPICAL CLEAN-OUT DETAIL
NO SCALE



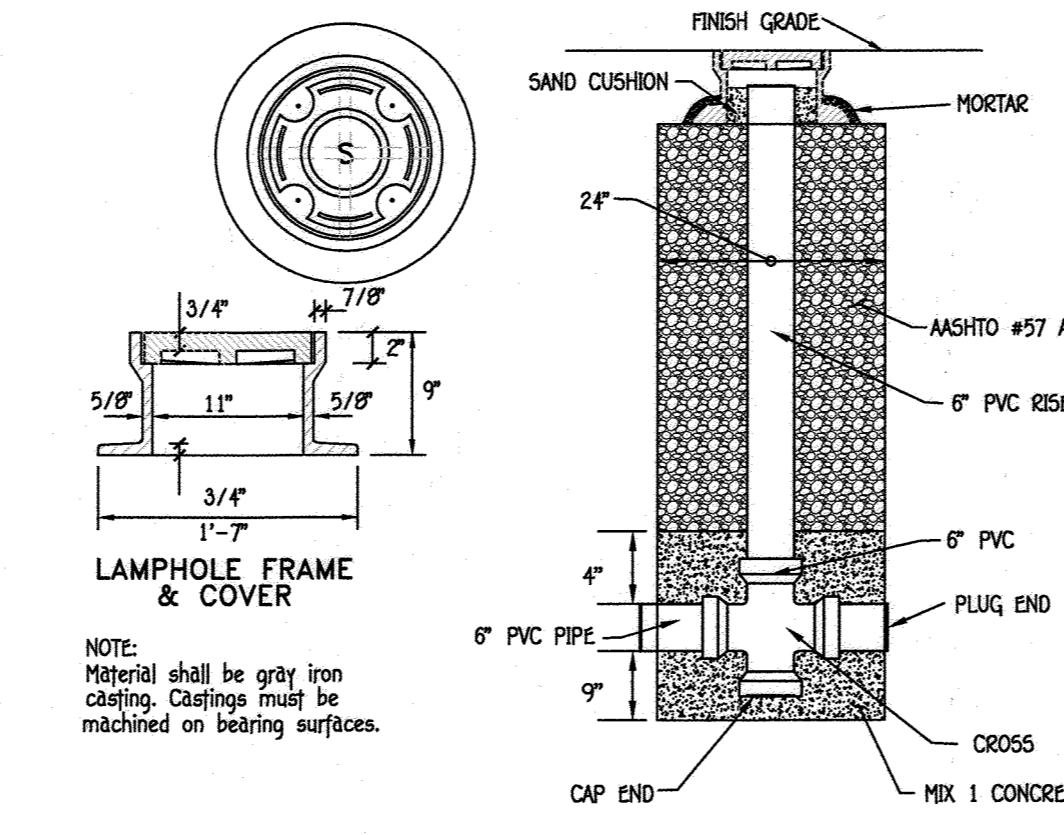
SCH40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN
PIPE NO SCALE



TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION
NOT TO SCALE

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED, DISCONNECTION OF NONROOFTOP RUNOFF (N-2)

1. MAINTENANCE OF AREAS RECEIVING DISCONNECTION RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR UNPAVED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.



CLEANOUT/ WATER QUALITY SAMPLING PORT DETAIL
NOT TO SCALE

DRY WELL CHART										
ADDRESS	LOT NO.	DRYWELL NUMBER	NO. OF DOWNSPOUTS	AREA OF ROOF	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	AREA OF STORAGE	NO. OF DRYWELLS	DIMENSIONS OF DRYWELLS
9322 SYDNEY WAY	1	M-5 (1)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9330 SYDNEY WAY	2	M-5 (2)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9336 SYDNEY WAY	5	M-5 (3)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9302 SYDNEY WAY	6	M-5 (4)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9306 SYDNEY WAY	7	M-5 (5)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9310 SYDNEY WAY	8	M-5 (6)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9314 SYDNEY WAY	9	M-5 (7)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9318 SYDNEY WAY	10	M-5 (8)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9319 SYDNEY WAY	11	M-5 (9)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9315 SYDNEY WAY	12	M-5 (10)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9311 SYDNEY WAY	13	M-5 (11)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9307 SYDNEY WAY	14	M-5 (12)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9303 SYDNEY WAY	15	M-5 (13)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9184 RIVER HILL ROAD	16	M-5 (14)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9184 RIVER HILL ROAD	17	M-5 (15)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9180 RIVER HILL ROAD	18	M-5 (16)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9192 RIVER HILL ROAD	19	M-5 (17)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9153 RIVER HILL ROAD	22	M-5 (18)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9157 RIVER HILL ROAD	23	M-5 (19)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'
9177 RIVER HILL ROAD	28	M-5 (20)	4	1,537 Sqft	195 Cuft	200 Cuft	100%	100%	2	10' X 5' X 5'

- NOTES:
1. DRYWELL DIMENSIONS SHOWN ARE BASED ON TREATMENT OF 50% OF THE AREA OF THE GENERIC BOX. AREA PROPOSED FOR THE LOT ASSUMING THAT THE FRONT PORTION (50%) OF THE ROOF AREA OF THE PROPOSED HOUSE SPECIFIED WITHIN THE GENERIC BOX WILL BE CAPTURED UNDER THE SWM PRACTICES PROPOSED UNDER F14-091.
 2. A MODIFICATION TO THE STORAGE REQUIREMENT (DRYWELL SIZE) MAY BE DETERMINE WHEN THE ACTUAL HOUSE TYPE IS SITED ON THE INDIVIDUAL LOT.



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

John M. Mankus
FRANK JOHN MANKUS II
11-4-16
DATE

B.4.C Specifications for Micro-Bioretention, Rain Gardens, Landscape Infiltration & Infiltration Berms

1. Material Specifications
The allowable materials to be used in these practices are detailed in Table B.4.1.
2. Filtering Media or Planting Soil
The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches in size. No other materials or substances shall be mixed or dumped within the micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.
The planting soil shall be tested and shall meet the following criteria:
Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (50%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
Clay Content - Media shall have a clay content of less than 5%.

pH Range should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.
There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site location topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

3. Compaction
It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoses to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to restructure the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

4. Plant Material
Recommended plant material for micro-bioretention practices can be found in Appendix A, Section A.2.3.
5. Plant Installation
Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3" shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8 th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizer, or any other material, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1,000 square feet.

6. Underdrains
Underdrains should meet the following criteria:
Pipe - Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 798, Type PS 28, or AASHTO M-278) in a gravel layer. The preferred material is slotted, 4 rigid pipe (e.g., PVC or HDPE).

Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4) galvanized hardware cloth.

Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.

The main collector pipe shall be at a minimum 0.5% slope.
A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.

A 4" layer of pea gravel (1/4" to 3/8" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1,000 square feet of surface area).

7. Miscellaneous
These practices may not be constructed until all contributing drainage area has been stabilized.

STORMWATER MANAGEMENT NOTES

1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
2. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 SQ. FT. OR LESS.
3. DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5% SLOPE. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET.
4. FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

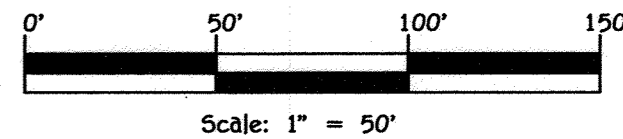
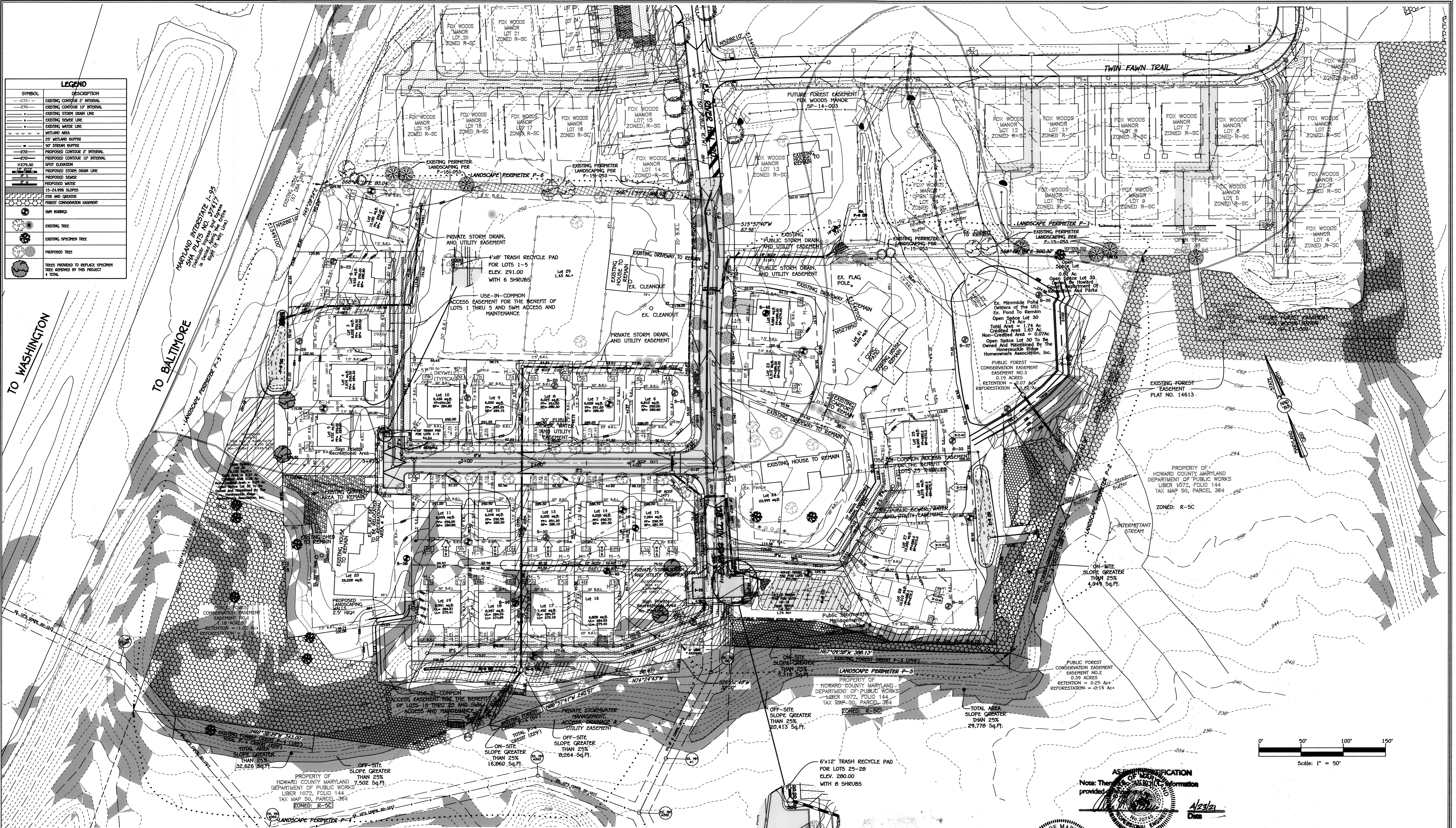
STORMWATER MANAGEMENT NOTES AND DETAILS

HONEYSUCKLE RIDGE

LOTS 1 THRU 29
AND OPEN SPACE LOTS 30 THRU 34
PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057,
WP-05-095, SP-15-005
ZONED: R-SC TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOS.: 359, 361, 362, & 474
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER, 2016
SHEET 12 OF 20

F-16-041

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING STORM DRAIN LINE
---	EXISTING SEWER LINE
---	EXISTING WATER LINE
---	WETLAND AREA
---	25' WETLAND BUFFER
---	30' STREAM BUFFER
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	SPOT ELEVATION
---	PROPOSED STORM DRAIN LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	15-24% SLOPES
---	25% AND GREATER
---	FOREST CONSERVATION EASEMENT
---	SWM BASKING
---	EXISTING TREE
---	EXISTING SPECIMEN TREE
---	PROPOSED TREE
---	TREES PROVIDED TO REPLACE SPECIMEN TREES REMOVED BY THIS PROJECT
---	4 TOTAL



APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
 Chief, Bureau of Highways
 DATE: 12/1/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
 Chief, Division of Land Development
 DATE: 12-19-16

[Signature]
 Chief, Development Engineering Division
 DATE: 12-6-16

FISHER, COLLINS & CARTER, INC.	
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS	
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLCOTT CITY, MARYLAND 21042 (410) 461-2995	
NO.	REVISIONS
1	REMOVED BIO RETENTION FACILITIES AND SUNKER
	DATE: 10/07/17

THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

OWNERS

KATHLEEN K. WOODWARD 9151 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	PATRICK & SARA PEPLAWSKI 9140 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	DAVID & TERRIE ASHBY 9147 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	TIMOTHY McDONALD 9150 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	THOMAS & DEBORAH KUCKUDA 9130 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422
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DEVELOPER

LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET
 SUITE 200
 ELLCOTT CITY, MARYLAND 21043
 (410)-922-4600

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.

[Signature]
 FRANK JOHN MANLANSAN
 DATE: 11/16

LANDSCAPE PLAN
HONEYSUCKLE RIDGE
 LOTS 1 THRU 29
 AND OPEN SPACE LOTS 30 THRU 34
 PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057,
 WP-05-095, 5P-15-005
 ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
 PARCEL NOS.: 359, 361, 362, & 474
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: DATE: NOVEMBER, 2016
 SHEET 13 OF 20 F-16-041

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

NOTES

1. THE PERIMETER LANDSCAPE OBLIGATION IS PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A LANDSCAPE SURETY IN THE AMOUNT OF \$9,980.00 SHALL BE BONDED AS PART OF THE DPM DEVELOPER AGREEMENT. THIS AMOUNT IS BASED ON (31) SHADE TREES @ \$320/SHADE TREE, WHICH INCLUDES 27 LANDSCAPE TREES FOR PERIMETER LANDSCAPING AND 4 SHADE TREES TO REPLACE 2 SPECIMEN TREES REMOVED BY THIS PROJECT AND 22 SHRUBS @ \$30/SHRUB.
2. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS 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 APPLICABLE PLANS AND CERTIFICATES.
3. THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

SCHEDULE A PERIMETER LANDSCAPE EDGE							
PERIMETER	P-1	P-2	P-3	P-4	P-5	P-6	TOTAL
LANDSCAPE TYPE	A	A	A	A	B	A	
LINEAR FEET OR ROADWAY FRONTAGE/PERIMETER	402'	494'	388'	696'	659'	435'	
CREDIT FOR EXISTING VEGETATION (YES, NO LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	388'	259'	229'	NO	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	YES 659'	NO	
NUMBER OF PLANTS REQUIRED							
SHADE TREES	0	2	2	0	0	7	31 (27*)
EVERGREEN TREES	0	0	0	0	0	0	0
SHRUBS	0	0	0	0	0	0	0

NOTE:
* REMOVAL OF 2 SPECIMEN TREES #1980 AND #1990 REQUIRE MITIGATION OF PROVIDING 4 NEW SHADE TREES (MIN. 2 1/2" CALIBER)

STREET TREE SCHEDULE		
QTY.	SIZE	COMMENTS
ROW LENGTH = 504' (504' x 27/40 = 25.2 25 TREES)	2 1/2" - 3" CAL	40' APART ON PUBLIC R/W (RIVER HILL ROAD STA. 1+26 TO 6+27)
ROW LENGTH = 390' (390' x 27/40 = 19.5 20 TREES)	2 1/2" - 3" CAL	40' APART ON PUBLIC R/W (SYDNEY WAY STA. 0+00 TO 3+89.90)

STREET TREE PLANTING SCHEDULE				
SYMBOL	ROAD NAME	TYPE & QTY.	SIZE	COMMENTS
	RIVER HILL ROAD	ACER RUBRUM 'ARMSTRONG' / ARMSTRONG COLUMNAR RED MAPLE 25 TREES	2 1/2" - 3" CAL	SPACING 40' APART
	SYDNEY WAY	GLEDTISIA TRICANTHOS INERMIS 'TRIPESAL' / IMPERIAL THORNLESS HONEYLOCUST 20 TREES	2 1/2" - 3" CAL	SPACING 40' APART

TOTAL QUANTITY = 45 STREET TREES

PRIVATE TRASH/RECYCLE PAD LANDSCAPING			
LINEAR FEET OF PERIMETER	LOTS 1-5 PAD: 12 L.F.	LOTS 16-19 PAD: 10 L.F.	LOTS 25-28 PAD: 21 L.F.
NUMBER OF SHRUBS PROVIDED:	6	0	0

- NOTES:
1. THE TRASH/RECYCLE PAD LANDSCAPING WILL BE MAINTAINED BY THE USERS OF THE PRIVATE USE-IN-COMMON MAINTENANCE AGREEMENT.
2. THE LANDSCAPING SHALL BE INSTALLED AROUND THE PERIMETER OF THE PAD EXCLUDING THE SIDE ADJACENT TO THE PUBLIC ROAD RIGHT-OF-WAY.

PERIMETER LANDSCAPE & REPLACEMENT TREE PLANT LIST				
QTY.	KEY	NAME	SIZE	COMMENTS
23		ACER RUBRUM 'ARMSTRONG' (ARMSTRONG COLUMNAR RED MAPLE)	2 1/2" - 3" CAL FULL CROWN, B&B	
4		GLEDTISIA TRICANTHOS INERMIS 'IMPERIAL' (IMPERIAL THORNLESS HONEYLOCUST)	2 1/2" - 3" CAL FULL CROWN, B&B	
4		ULMUS AMERICANA 'PRINCETON' / PRINCETON AMERICAN ELM	2 1/2" - 3" CAL FULL CROWN, B&B	PROVIDED AS MITIGATION FOR REMOVAL OF 2 SPECIMEN TREES #1980 AND #1990
22		AZALEA 'BLAW'S PINK' / BLAW'S PINK AZALEA	18"-24" SPREAD	For Trash Pad Screening

TOTAL: 31 SHADE TREES AND 22 SHRUBS (27 PERIMETER SHADE TREES AND 4 SHADE TREES PROVIDED AS MITIGATION FOR SPECIMEN TREES REMOVED FOR THIS PROJECT.)

PLANTING SPECIFICATIONS

PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN.

ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE HEALTHY GROWN, UNIFORMLY BRANCHED, HAVE A VIGOROUS ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, SIZE, ROOT AND SHAPE SHOWN ON THE PLANT LIST AND THE AMERICAN ASSOCIATION OF HEDERICULTURAL SOCIETIES (AAHS) STANDARDS. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, FREE FROM DISEASE, INJURY, DEFOLIATION, SUN SCALD INJURY, BRUISES, ABSCISIONS OF THE BARK, PLANT DAMAGE, INSECT FEED DAMAGE AND ALL FORMS OF INSECT INFESTATIONS OR ORIGINABLE DEFOLIATIONS. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORCED LEAVES WILL NOT BE ACCEPTED. ALL PLANTS SHALL BE PROBABLY FREE, NO HEATED-IN PLANTS FROM D.D.O. STORAGE WILL BE ACCEPTED.

UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATIONS SHALL CONFORM TO "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS, LATEST EDITION, INCLUDING ALL AGENDA.

CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE GUIDELINES. CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE-YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.

CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES, UTILITY CONTRACTORS AND "PRESS UTILITY" A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.

PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED BY THE TEMPORARY INSTALLATION OF A FOOT HIGH SNOW FENCE OR BLAZE ORANGE SAFETY FENCE AT THE DED LINE.

CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN THE GROWING SEASON OF COMPLETION OF SITE CONSTRUCTION.

SO SHALL BE BASE ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.

PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE.

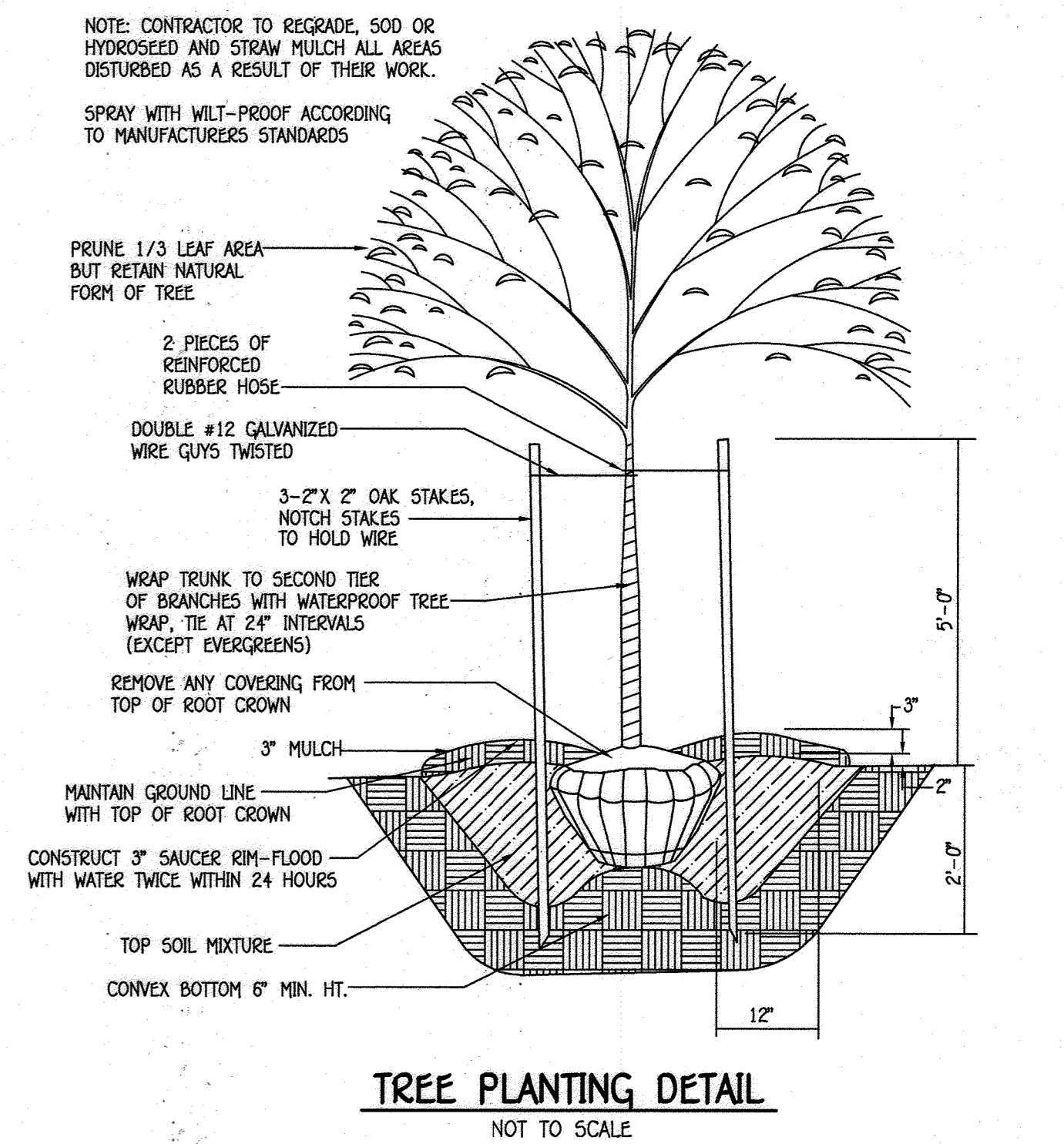
ALL SHRUBS SHALL BE PLANTED IN CONTINUOUS TRENCHES OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILS AND SPECIFIED EXCEPT WHERE NOTED ON PLANS.

POSTIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS 2 PERCENT SLOPE.

PLANTING MIX SHALL BE AS FOLLOWS: DECIDUOUS PLANTS - TWO PARTS TOPSOIL, ONE PART WELL-SORTED COM OR COM MANURE, ADD 3 LBS. OF STANDARD FERTILIZER PER CUBIC YARD OF PLANTING MIX. EVERGREEN PLANTS - TWO PARTS TOPSOIL, ONE PART FERTILIZER OR OTHER APPROVED ORGANIC MATERIAL, ADD 3 LBS. OF EVERGREEN (SOLUBLE) FERTILIZER PER CUBIC YARD OF PLANTING MIX. TOPSOIL SHALL CONFORM TO THE LANDSCAPE GUIDELINES.

WEED CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED.

ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED AND SEEDED. THIS PLAN IS INTENDED FOR LANDSCAPE USE ONLY. SEE OTHER PLAN SHEETS FOR MORE INFORMATION ON GRADING, SEDIMENT CONTROL, LAYOUT, ETC.



DEVELOPER'S/BUILDER'S CERTIFICATE

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

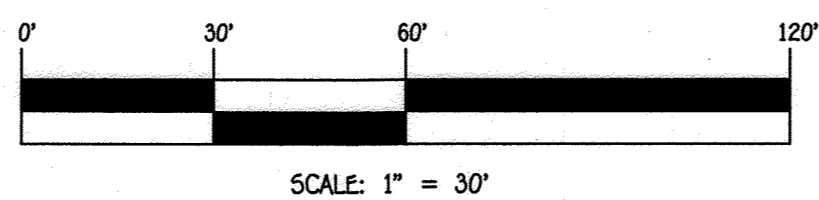
[Signature]
DEVELOPER/BUILDER
11/4/16
DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature]
Chief, Bureau of Highways
12/1/2016
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature]
Chief, Division of Land Development
12-19-16
DATE

[Signature]
Chief, Development Engineering Division
12-6-16
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 461-2895



OWNERS					
KATHLEEN K. WOODWARD 9131 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	PATRICK & SARA PELOWSKI 9140 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	DAVID & TERRIE ASHBY 9147 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	TIMOTHY MCDONALD 9150 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	THOMAS & DEBORAH KUCKUDA 9130 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	

Note: The information provided is for informational purposes only.
[Signature]
Date

DEVELOPER
LAND DESIGN & DEVELOPMENT
8318 FOREST STREET
SUITE 200
ELLCOTT CITY, MARYLAND 21043
(410)-922-4600



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/17.
[Signature]
FRANK JOHN MAMALANSAN II
11-4-16
DATE

LANDSCAPE NOTES AND DETAILS
HONEYSUCKLE RIDGE
LOTS 1 THRU 29
AND OPEN SPACE LOTS 30 THRU 34
PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057,
WP-05-095, SP-15-005
ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOS.: 359, 361, 362, & 474
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER, 2016
SHEET 14 OF 20 F-16-041

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET

Reforestation Note:

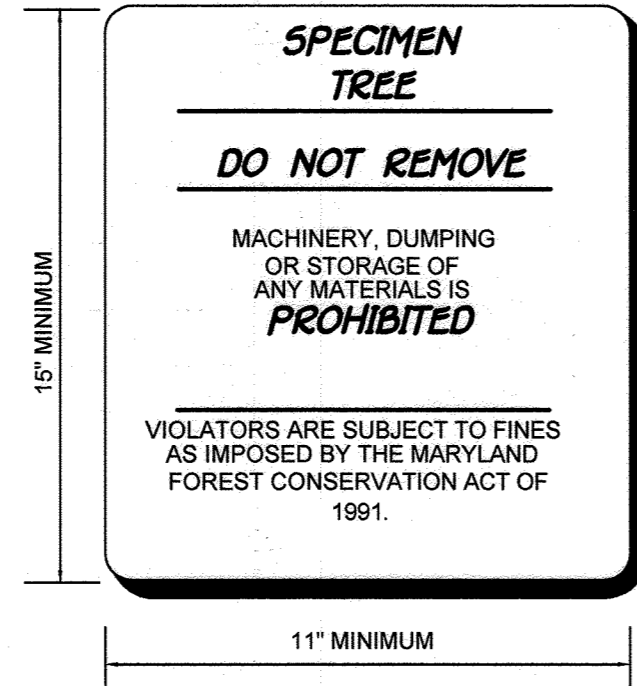
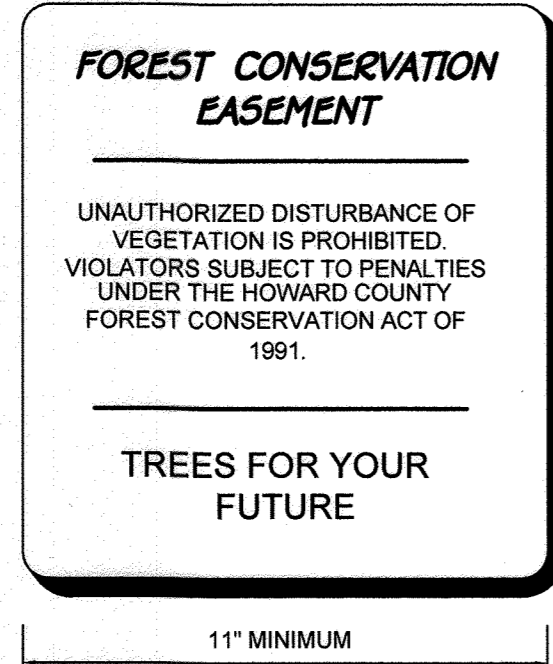
The reforestation obligation will be met within priority planting areas on the site. This includes floodplain, wetland and buffers. The final planting location and the planting specifications, details, and schedule will be provided on Final Forest Conservation Plan.

Forest Stand Data

Key	Community Type	Acreage (NTA)	Dominant Vegetation	General Condition	Retention Priority
F1	Oak/Poplar	1.7	Pinus virginiana, Fagus grandiflora, Liriodendron tulipifera, Quercus alba, Quercus velutina,	Good	Low
F2	Virginia Pine	0.8	Pinus virginiana, Prunus serotina, Sassafras albidum	Good	Moderate

See accompanying report for complete stand descriptions

ON-SITE SIGNAGE



NOTE: SIGNAGE SHALL BE PLACED ADJACENT TO SPECIMEN TREE AND SHALL REMAIN IN PLACE IN PERPETUITY

FSD NOTES:

- No rare, threatened or endangered species or their appropriate habitat were observed on the subject property.
- Surrounding land use is primarily residential.
- Approximately 1.3 acres of forest extends onto adjacent offsite property within 100 feet of the subject property.
- Wetlands, streams or buffers are present on the subject property and have been shown and labelled accordingly.

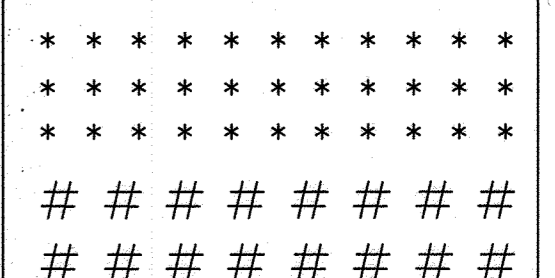
FOREST CONSERVATION DATA

EASEMENT NO.	RETENTION AREA	PLANTING AREA	TOTAL EASEMENT AREA
1	1.025 AC.	0.157 AC.	1.182 AC.
2	0.253 AC.	0.139 AC.	0.392 AC.
3	0.088 AC.	0.125 AC.	0.193 AC.
TOTAL	1.346 AC.	0.421 AC.	1.767 AC.

Planting Notes:

Planting units defined by the spacing requirements established in the FCA Manual. One plant unit is defined as 1 seedling or whip without shelter. The Manual states that 700 seedlings/whips without shelters are required per acre, or 350 whips w/shelters, or 200 1" caliper trees, or 100 2" caliper trees. By conversion it has been determined that a seedling or whip without shelter = 1 unit, whip with shelter = 2 units, 1" caliper tree = 3.5 units and 2" caliper tree = 7 units. The use of plant units simplifies the plant density calculations when mixing stock size.
 ** - These species should not be planted within the wetland limits.
 1" caliper trees should be staggered along the outer perimeter of the planting area to serve as demarcation of the boundary. The trees should be no closer than 15 foot spacing. Whip spacing to be placed on 11 foot centers, shelters will be required per Howard County policy.
 Planting shall be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance. Multifloral rose/heavy brush removal/control may be required prior to installation of planting.
 All whips are required to be installed with tree shelters per Howard County FCA requirements.

PATTERN SPACING DIAGRAM

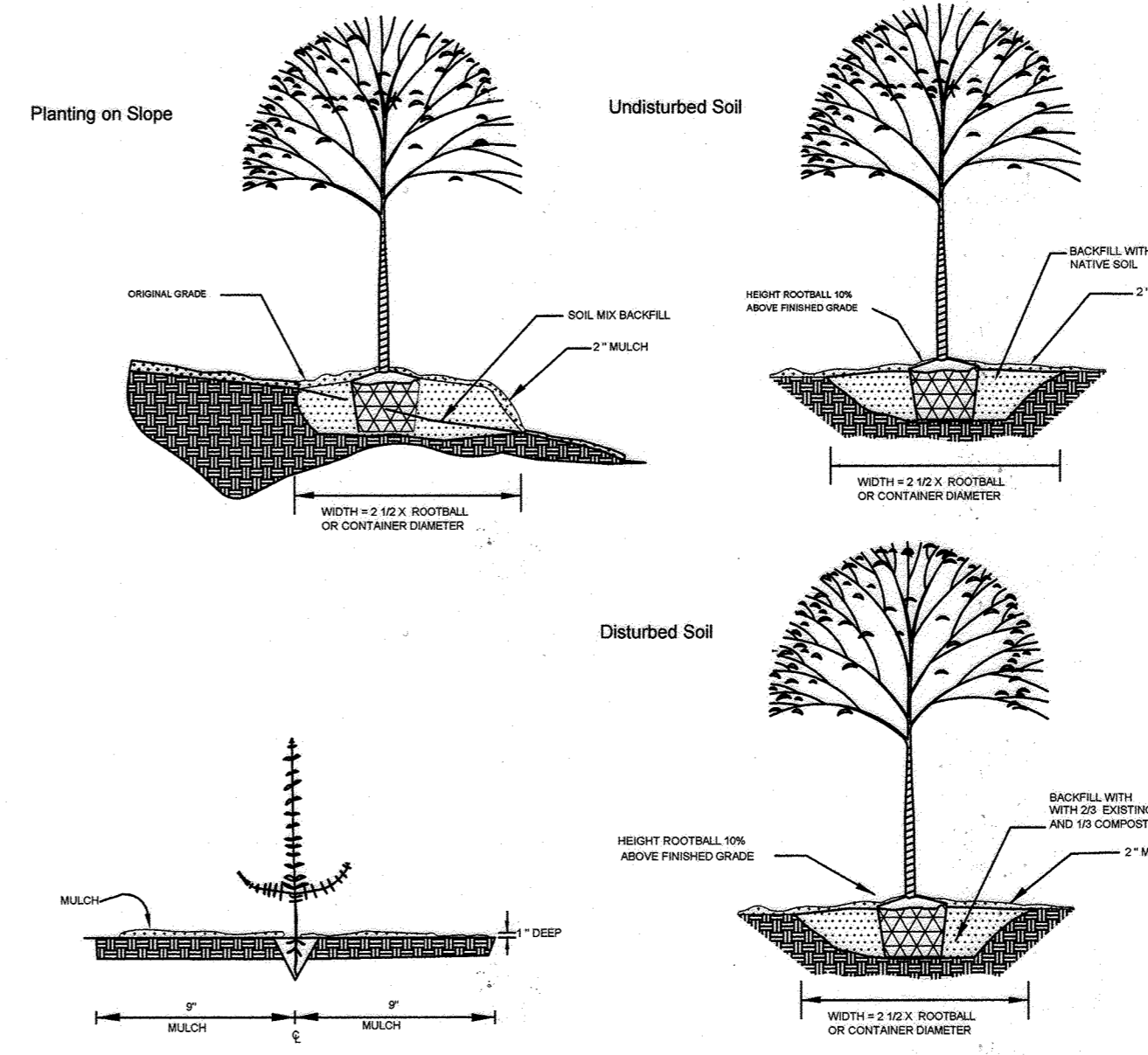


* - whip w/shelter 11' on center spacing
 # - 1" caliper tree 15' on center spacing
 Species shall be randomly interspersed, rows should be planting along contours. Planting in straight rows should be avoided.

FOREST CONSERVATION WORKSHEET VERSION 1.0

PROJECT: HONEYSUCKLE RIDGE
 DATE: FEBRUARY, 2016

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	12.74
B. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	0.00
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0.00
D. NET TRACT AREA	12.74
LAND USE CATEGORY: HIGH DENSITY RESIDENTIAL	
E. AFFORESTATION THRESHOLD (NET TRACT AREA [C] x 15%)	1.91
F. CONSERVATION THRESHOLD (NET TRACT AREA [C] x 20%)	2.55
EXISTING FOREST COVER	
G. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	2.06
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD	0.15
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	0.00
BREAK EVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	BREAK EVEN POINT
K. CLEARING PERMITTED WITHOUT MITIGATION	0.00
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	0.71
M. TOTAL AREA OF FOREST TO BE RETAINED	1.35
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION THRESHOLD	0.00
P. REFORESTATION FOR CLEARING BELOW THE CONSERVATION THRESHOLD	1.42
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD	0.00
R. TOTAL REFORESTATION REQUIRED	1.42
S. TOTAL AFFORESTATION REQUIRED	0.00
T. TOTAL PLANTING REQUIREMENT	1.42



Seeding and Whip Planting Specification

Planting/Soil Specifications

- Installation of bare-root stock shall take place between March 15 - April 20; b&b/container stock March 15 - May 30 or September 15 - November 15. Fall planting of b&b stock is not recommended.
- Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
- Bare-root plants shall be installed so that the top of root mass is level with the top of existing grade. Roots shall be dipped in an anti-desiccant gel prior to planting. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or equivalent.
- Fertilizer shall consist of Agrifert 22-0-2, or equivalent, applied as per manufacturer's specifications, for woody plants. Herbaceous plants shall be fertilized with Osmocote 8-6-12.
- Plant material shall be transported to the site in a tierped or covered truck. Plants shall be kept moist prior to planting.
- All non-organic debris associated with the planting operation shall be removed from the site by the contractor.

Sequence of Construction

- Sediment control shall be installed in accordance with general construction plan for site.
 - Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the project.
 - Upon completion of the planting, signage shall be installed as shown.
 - Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.
- Maintenance of Plantings**
- Maintenance of plantings shall last for a period of 2 years.
 - Plantings must receive 2 gallons of water, either through precipitation or watering, weekly during the 1st growing season, as needed. During second growing season, once a month during May-September, if needed.
 - Invasive exotic and noxious weeds will be removed, as required, from planting areas mechanically and/or with limited herbicide application (see groundcover note where appropriate). Old field successional species will be retained.
 - Plants will be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.
- Detail branches will be pruned from plantings.**

Guarantee Requirements

- A 75 percent survival rate of forestation plantings will be required at the end of 2 growing seasons. All plant material below the 75 percent threshold will be replaced at the beginning of the next growing season, wild trees arising from natural regeneration may be counted up to 50 percent towards the total survival number if they are healthy, native species at least 12 inches tall.

Surety for Reforestation

- The developer shall post a surety bond, letter of credit) to ensure that forestation plantings are completed. SEE GENERAL NOTE 18, SHEET 1.

Planting Notes

When possible, plants shall be installed within 24 hours of delivery. If installation cannot be performed within this time frame, plant stock shall be watered and protected from desiccation. Application of herbicide, Round-up, or equivalent, may be used to reduce plant competition from old field successional growth at the time of installation. Mowing, re-application of herbicide, or a combination thereof, may be used to control unwanted, competing vegetation.

Planting shall be installed within one year or two growing seasons of subdivision approval. Plantings shall be installed in accordance with the time schedule included in Note 1 of the planting/Seeding Specifications.

FCE Planting Area #1 - 0.157 acres

Planting units required: 112 (56 whips)
 Planting units provided: 112 (42 whips and 70 trees)

Qty	Species	Size	Spacing	Total FCA Units
4	Acer rubrum - Red maple	1" cal.	15' o.c.	
4	Quercus alba - White oak	1" cal.	15' o.c.	
0 Total 1" caliper trees (0.5 planting units per tree) = 20 Total FCA unit credit				
9	Acer rubrum - Red maple	2-3" whip	11' o.c.	
5	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
5	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
5	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
5	Prunus serotina - Black cherry	2-3" whip	11' o.c.	
5	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	
5	Quercus alba - White oak	2-3" whip	11' o.c.	
7	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	
42 Total whip plantings (2 planting units per tree) = 84 Total FCA unit credit				
Total Unit Credit (20 + 84) = 112				

1" CAL TREES = 200/AKRE (8 TREES/200 = 0.04 AC.)
 WHIPS w/shelters = 350/AKRE (42 WHIPS/350 = 0.12 AC.)
 3.5 Planting units = 1 - 1" Cal. Tree
 2 Planting units = 1 whip

FCE Planting Area #2 - 0.139 acres

Planting units required: 98 (49 whips)
 Planting units provided: 98 (35 whips and 63 trees)

Qty	Species	Size	Spacing	Total FCA Units
4	Acer rubrum - Red maple	1" cal.	15' o.c.	
4	Quercus alba - White oak	1" cal.	15' o.c.	
0 Total 1" caliper trees (0.5 planting units per tree) = 20 Total FCA unit credit				
4	Acer rubrum - Red maple	2-3" whip	11' o.c.	
4	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
4	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
4	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
4	Prunus serotina - Black cherry	2-3" whip	11' o.c.	
4	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	
5	Quercus alba - White oak	2-3" whip	11' o.c.	
6	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	
35 Total whip plantings (2 planting units per tree) = 70 Total FCA unit credit				
Total Unit Credit (20 + 70) = 98				

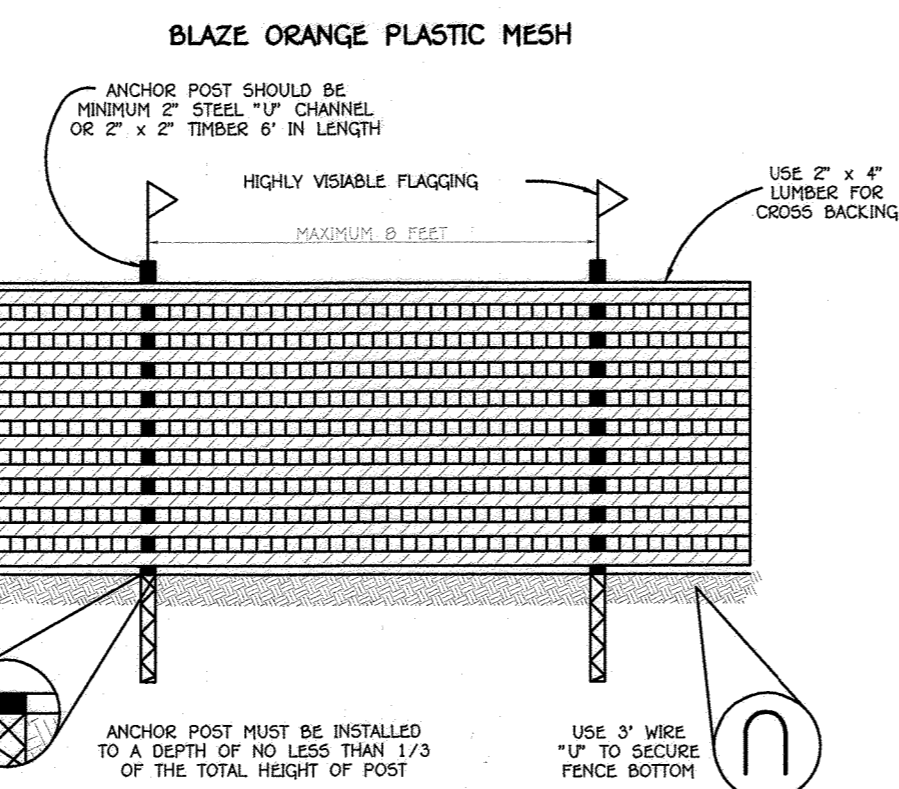
1" CAL TREES = 200/AKRE (8 TREES/200 = 0.04 AC.)
 WHIPS w/shelters = 350/AKRE (35 WHIPS/350 = 0.10 AC.)
 3.5 Planting units = 1 - 1" Cal. Tree
 2 Planting units = 1 whip

FCE Planting Area #3 - 0.125 acres

Planting units required: 91 (46 whips)
 Planting units provided: 92 (39 whips and 4 trees)

Qty	Species	Size	Spacing	Total FCA Units
2	Acer rubrum - Red maple	1" cal.	15' o.c.	
2	Quercus alba - White oak	1" cal.	15' o.c.	
4 Total 1" caliper trees (0.5 planting units per tree) = 14 Total FCA unit credit				
4	Acer rubrum - Red maple	2-3" whip	11' o.c.	
4	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
4	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
4	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
4	Prunus serotina - Black cherry	2-3" whip	11' o.c.	
6	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	
6	Quercus alba - White oak	2-3" whip	11' o.c.	
7	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	
39 Total whip plantings (2 planting units per tree) = 78 Total FCA unit credit				
Total Unit Credit (14 + 78) = 92				

1" CAL TREES = 200/AKRE (4 TREES/200 = 0.02 AC.)
 WHIPS w/shelters = 350/AKRE (39 WHIPS/350 = 0.11 AC.)
 3.5 Planting units = 1 - 1" Cal. Tree
 2 Planting units = 1 whip



- NOTES:
- FOREST PROTECTION DEVICE ONLY.
 - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 - ROOT DAMAGE SHOULD BE AVOIDED.
 - PROTECTIVE SIGNAGE MAY ALSO BE USED.
 - DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION DETAIL

NOT TO SCALE

OWNERS

- KATHLEEN K. WOODWARD 9151 RIVER HILL RD LAUREL, MD 20723 (443)-367-0422
 PATRICK & SARA PEPOWSKI 9140 RIVER HILL RD LAUREL, MD 20723 (443)-367-0422
 DAVID & TERRIE ASHBY 9147 RIVER HILL RD LAUREL, MD 20723 (443)-367-0422
 TIMOTHY McDONALD 9150 RIVER HILL RD LAUREL, MD 20723 (443)-367-0422
 THOMAS & DEBORAH KUCKUDA 9130 RIVER HILL RD LAUREL, MD 20723 (443)-367-0422

DEVELOPER

LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET
 SUITE 200
 ELLICOTT CITY, MARYLAND 21043
 (410)-922-4600

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS

MD DNR Qualified Professional
 USACE Wetland Delimiter
 Certification # W-1934006100448
 JOHN T. CANOLES

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 DATE: 4/23/16

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 DATE: 12-19-16

Chief, Development Engineering Division
 DATE: 12-6-16

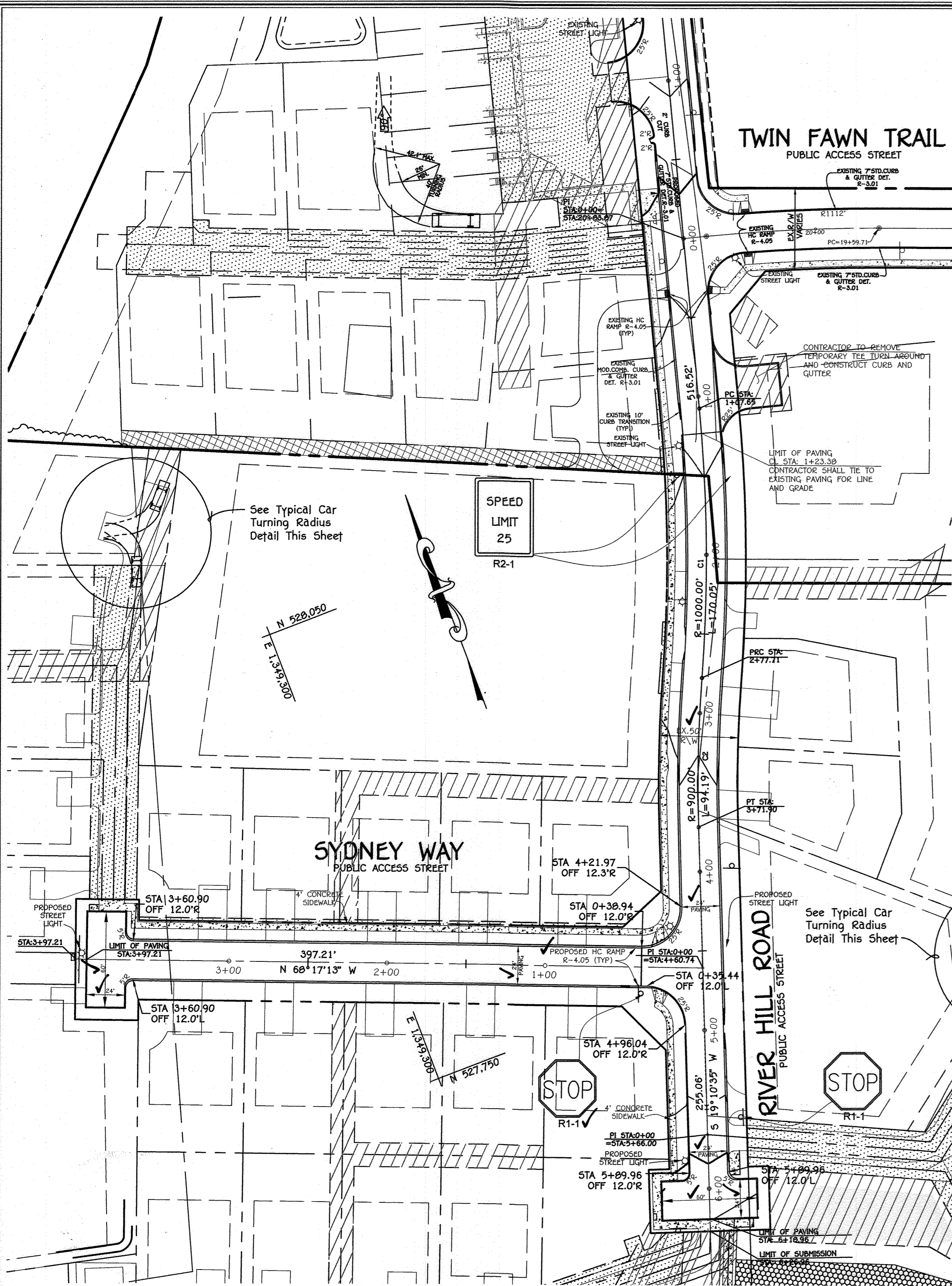
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PkE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461 - 2955

NO.	REVISIONS	DATE

FOREST CONSERVATION NOTES AND DETAILS

HONEYSUCKLE RIDGE
 LOTS 1 THRU 29
 AND OPEN SPACE LOTS 30 THRU 34
 PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057,
 WP-05-095, SP-15-005
 ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
 PARCEL NOS.: 359, 361, 362, & 474
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER, 2016
 SHEET 16 OF 20

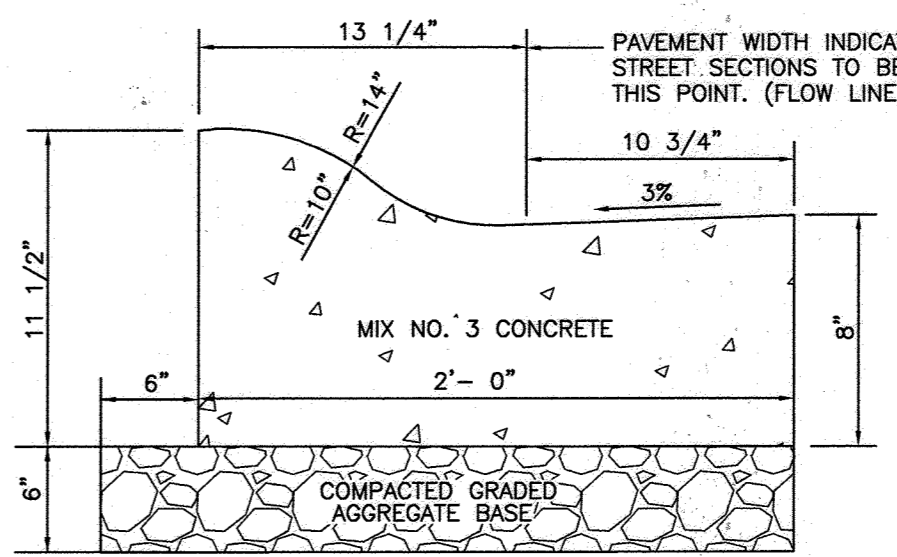
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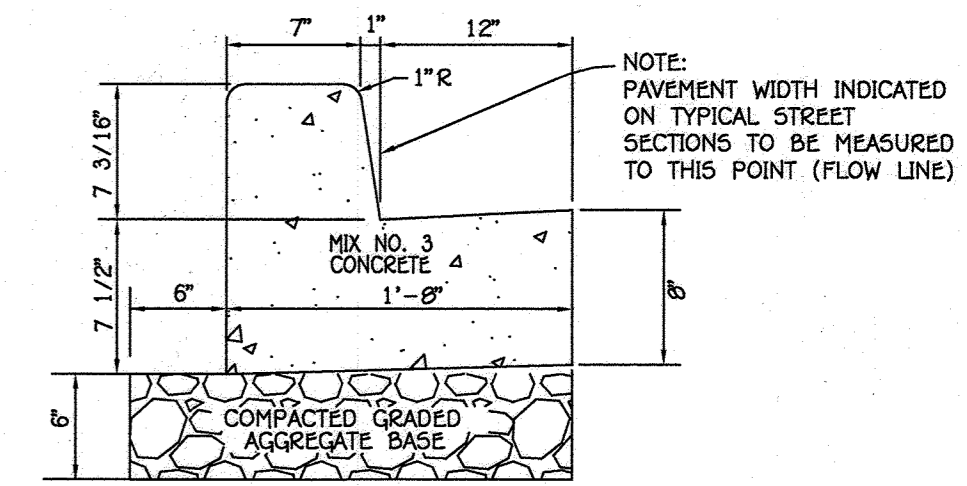
SIGNING LEGEND			
Size	Description	Size	Color
	R2-1	24" x 30"	Black/White
	R1-1	30" x 30"	Red/White

* ALONG WITH A SUPPLEMENTAL BLACK ON WHITE SIGN UNDERNEATH THAT READS "END OF COUNTY MAINTENANCE"

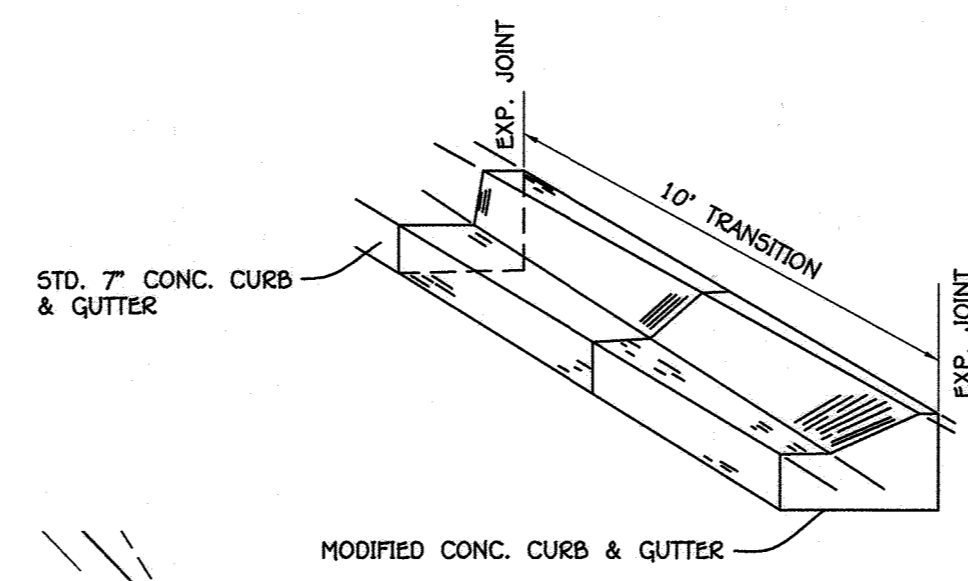
MARKING LEGEND	
Item	Description
1	Install 5 in. solid white line.
2	Install 5 in. wide solid double yellow pavement marking for center line.
3	Install 5 in. wide solid white dotted pavement marking for lane line. (2 ft. segment - 6 ft. gap)
4	24 in. wide solid white pavement marking for stop line. (THERMOPLASTIC)
5	Install pavement marking symbol as shown. (THERMOPLASTIC)



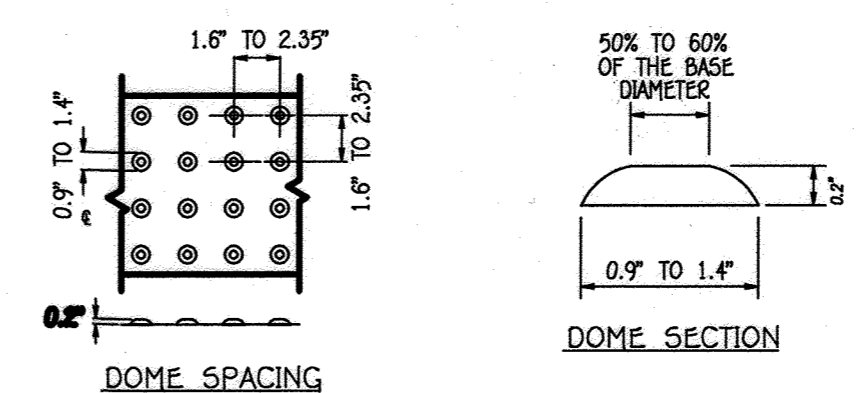
MODIFIED COMBINATION CURB AND GUTTER
NO SCALE DETAIL R-3.01



STD. 7" CONC. CURB AND GUTTER
NO SCALE DETAIL R-3.01

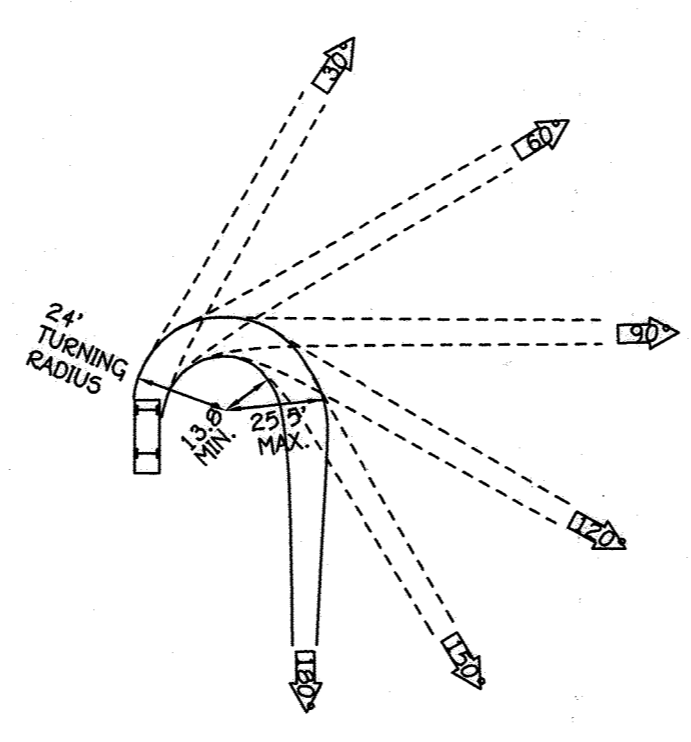


CONCRETE CURB & GUTTER TRANSITION (MATT DETAILS OR OPTIONAL 12"x12" TILE TECH PAVERS(RED))
NO SCALE

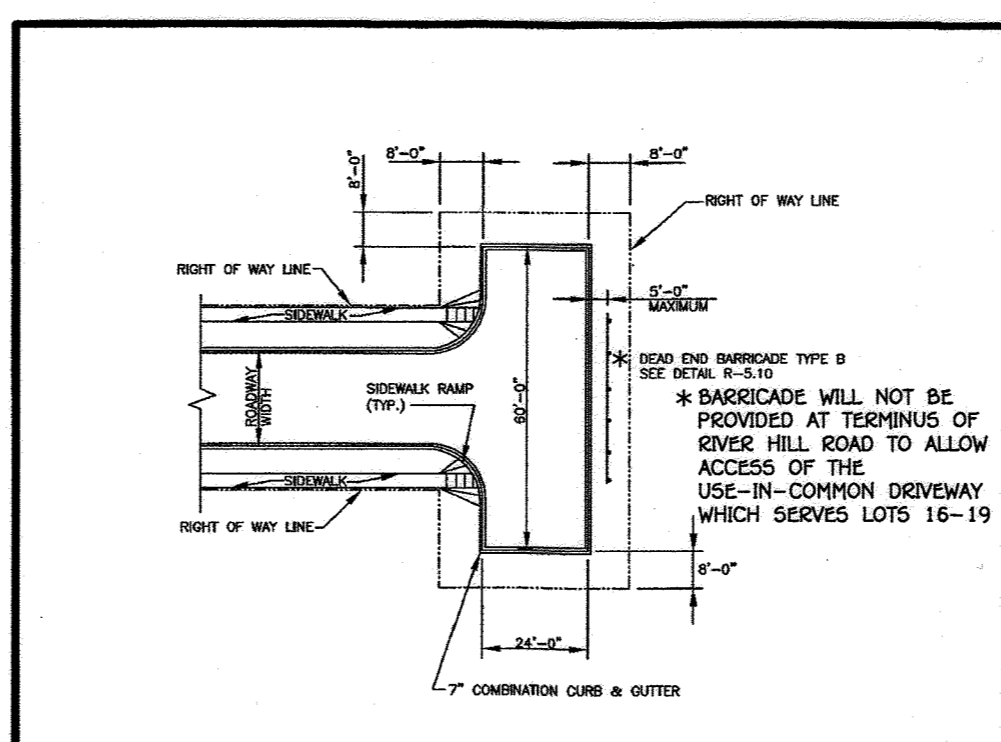


PLACEMENT GUIDELINES

- NOTES
1. THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 TO 8 INCHES FROM THE FACE OF CURB.
 2. FOR GREASED APPLICATIONS DETECTABLE WARNING SHALL BE PLACED SUCH THAT THE DOMES CLOSEST TO THE BACK OF CURB ARE NO LESS THAN 0.5" AND NO MORE THAN 3.0" FROM THE BACK OF CURB. TRUNCATED DOME SURFACES SHALL BE FABRICATED TO PROVIDE FULL DOMES ONLY.
 3. DETECTABLE WARNING SURFACE SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 611 OF THE SPECIFICATIONS.
 4. DETECTABLE WARNING SURFACES ARE REQUIRED AT STREET CROSSING & SIGNALIZED INTERSECTIONS.
- STD. DETAIL MD. 655-40

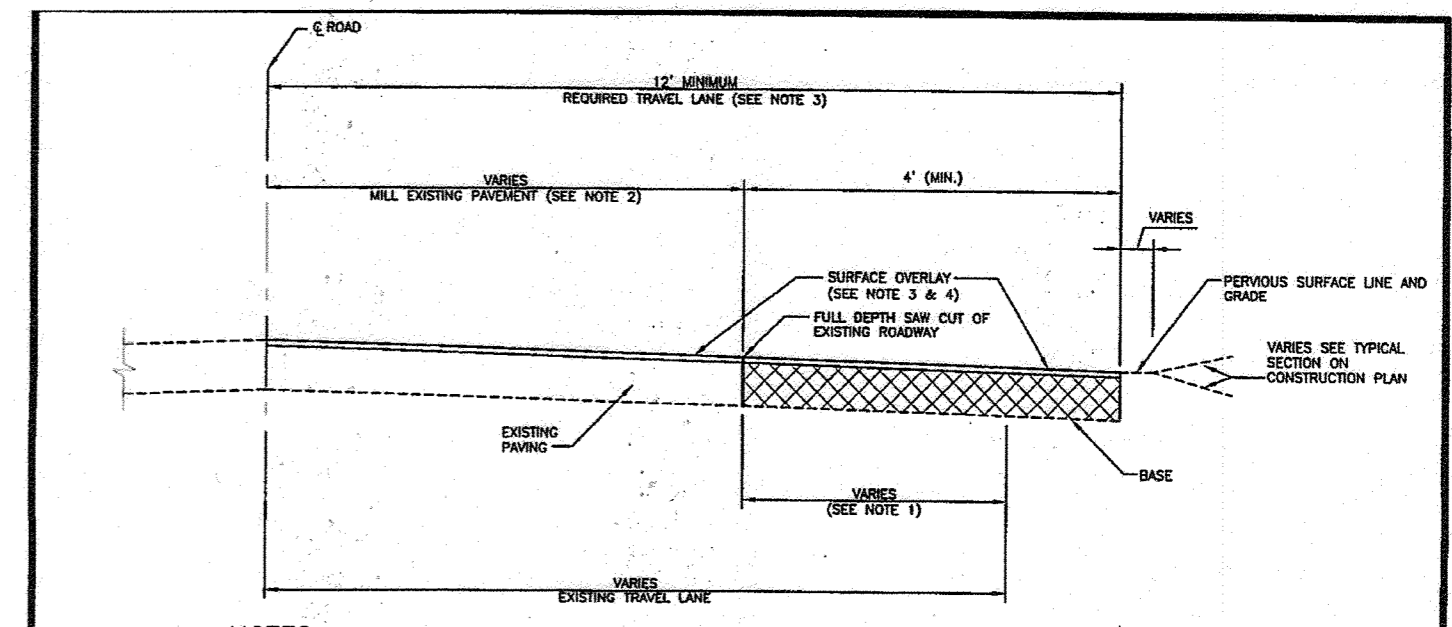


TYPICAL CAR TURNING RADIUS
NO SCALE



- NOTES:
1. FURNISHING SHALL ONLY BE INSTALLED ON RESIDENTIAL STREETS WITH LESS THAN 200 ADT.
 2. THE LENGTH OF THE BARRICADE IS TO EQUAL THE WIDTH OF THE ROADWAY.
 3. INSTALL SIGNS RT-1 (1) "NO PARKING", RT-4 "NO STANDING", RT-4 (1) "NO STOPPING" AS DIRECTED BY DPM.
 4. INSTALL SIGNS RT-1 (2) "END OF ROAD BARRIERS" BEHIND BARRICADE SIGNS TO BE INSTALLED 12' AWAY. MINIMUM 2 SIGNS PER TURN-AROUND.
 5. THERE SHALL BE NO DRIVEWAYS ALONG THE TURN-AROUND.

MODIFIED TEE TURN-AROUND Permanent (<200 ADT)
Detail R-5.05



- NOTES:
1. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE CONTRACTOR SHALL REMOVE A MINIMUM OF 1" FULL DEPTH OF THE EXISTING ROADWAY. IF CURB AND GUTTER IS INSTALLED, PROVIDE A MINIMUM OF 4" OF WEARING FROM FACE OF GUTTER FACE.
 2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE WALLED AT DEPTH OF 1 1/2" (BARRICADE).
 3. THE BARRICADES SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY.
 4. RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.

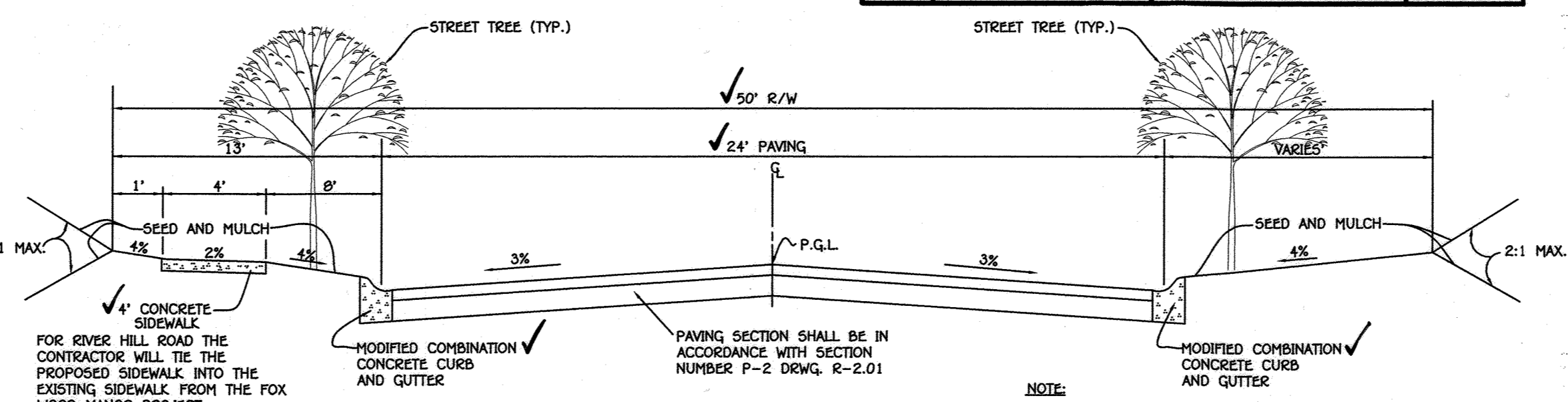
Howard County, Maryland Department of Public Works
Existing Roadway Widening Strip
Detail R-1.08

- NOTES:
- 1) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, (QUICK PUNCH) SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
 - 2) ALL SIGN LOCATIONS AND ALL PAVEMENT MARKINGS SHALL BE APPROVED BY HOWARD COUNTY TRAFFIC PRIOR TO ANY SIGNING OR PAVEMENT MARKING INSTALLATIONS.
 - 3) HOWARD COUNTY TRAFFIC WILL FIELD DETERMINE ALL PAVEMENT MARKINGS, CONTACT TRAFFIC AT 410-313-5752. STARTING AND ENDING POINTS SHOWN ON THESE PLANS ARE APPROXIMATE.

PLAN SCALE: 1" = 50'

AS-BUILT CERTIFICATION
I hereby certify that the facilities shown on this AS-BUILT plan and specifications were as shown and specified on the approved plans and specifications.
Date: 12/1/16

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
10722 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2895



SYDNEY WAY RIVER HILL ROAD TYPICAL ROADWAY SECTION
NO SCALE

ROADWAY INFORMATION CHART					
ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	PAVING SECTION
SYDNEY WAY	PUBLIC ACCESS PLACE	25 M.P.H.	R-5C	0+00 TO 3+68.90	P-2
RIVER HILL ROAD	PUBLIC ACCESS STREET	30 M.P.H.	R-5C	1+23.30 TO 6+18.96	P-2

OWNERS					
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SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)					
		3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
P-2	PARKING DRIVE ASBLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCK PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SACS: RESIDENTIAL	PAVEMENT MATERIAL (INCHES)					
		HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)					
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)					
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)					
		GRADED AGGREGATE BASE (GAB)					
		MIN HMA WITH GAB		HMA WITH CONSTANT GAB			
		1.5	1.5	1.5	1.5	1.5	1.5
		1.0	1.0	1.0	1.0	1.0	1.0
		2.0	2.0	2.0	3.5	2.0	2.0
		8.0	4.0	3.0	4.0	4.0	4.0



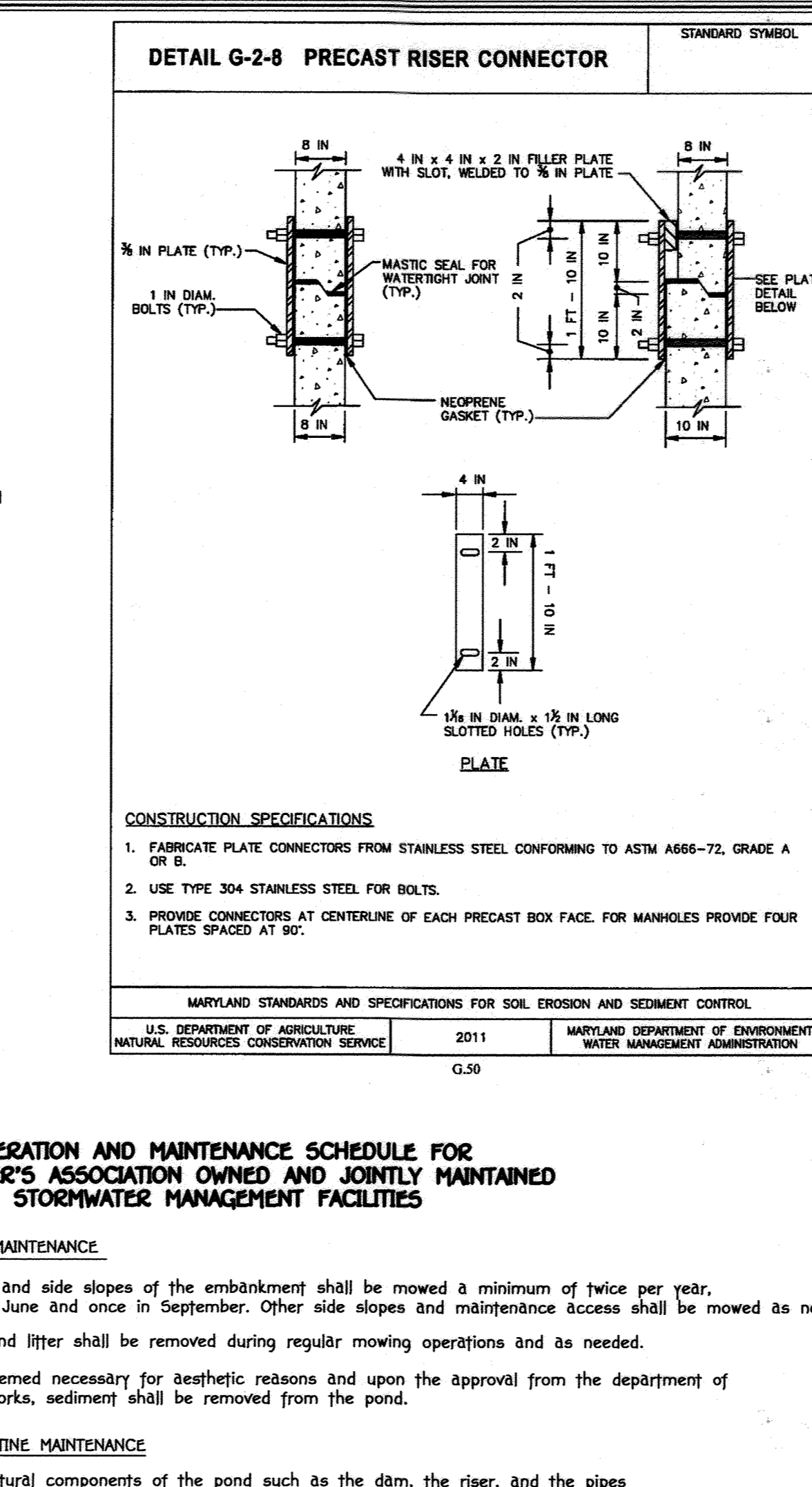
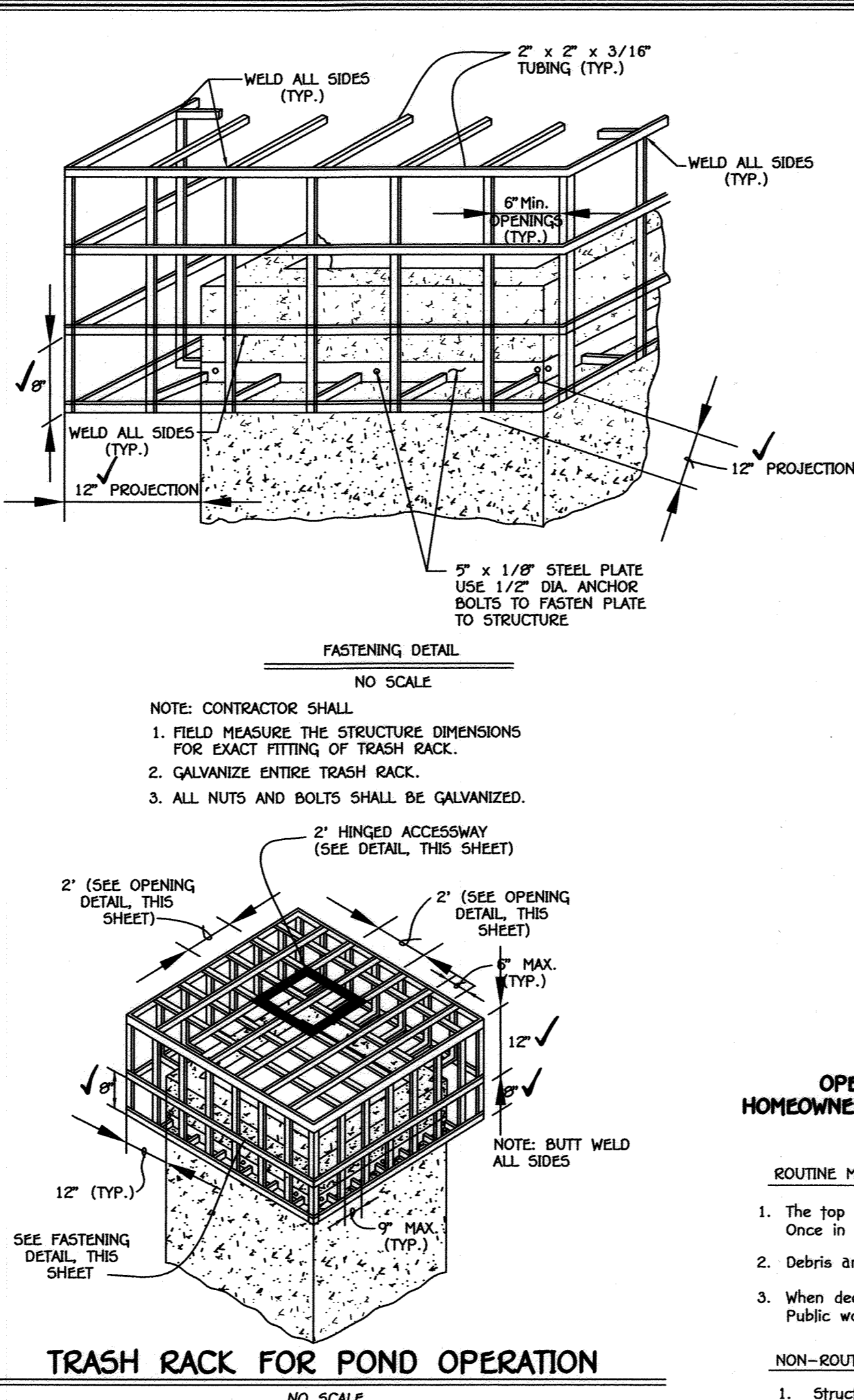
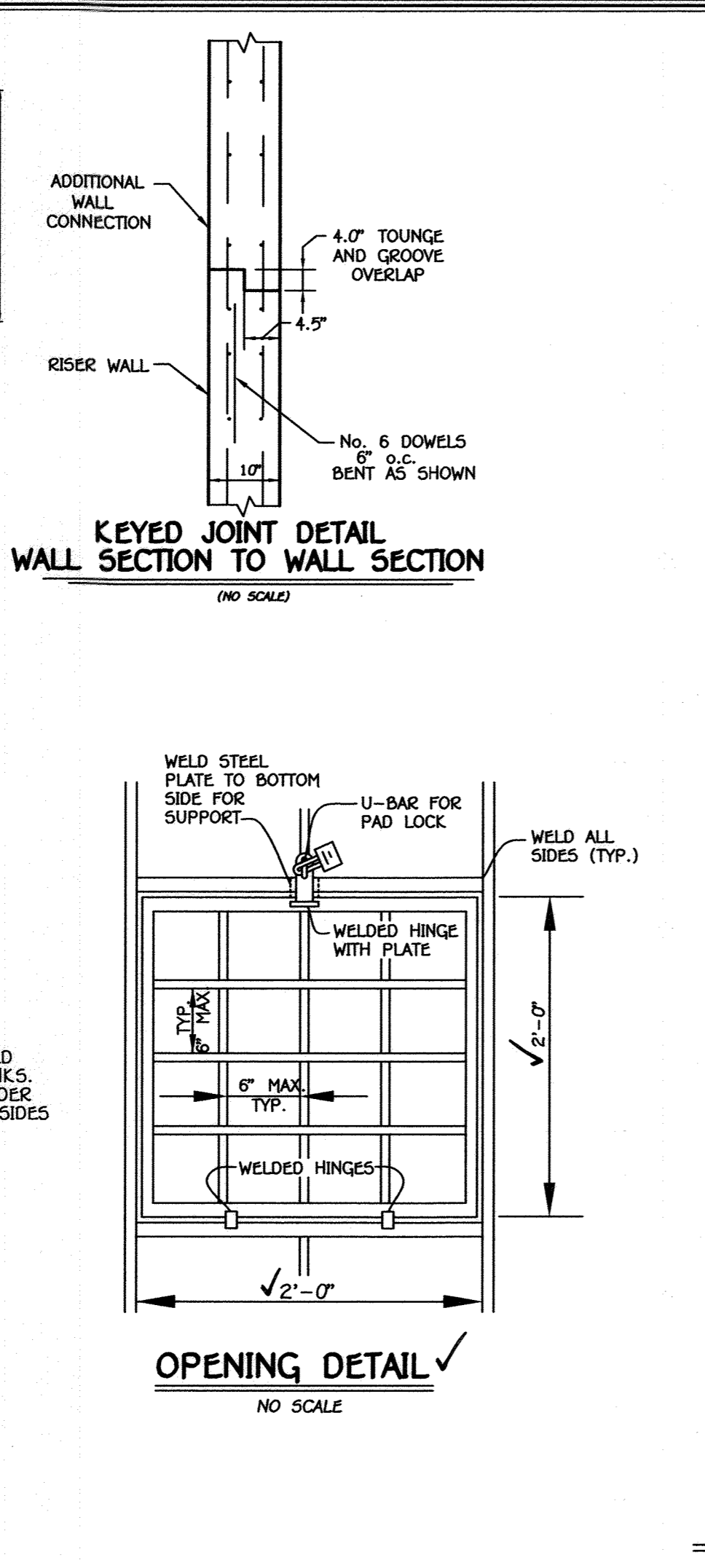
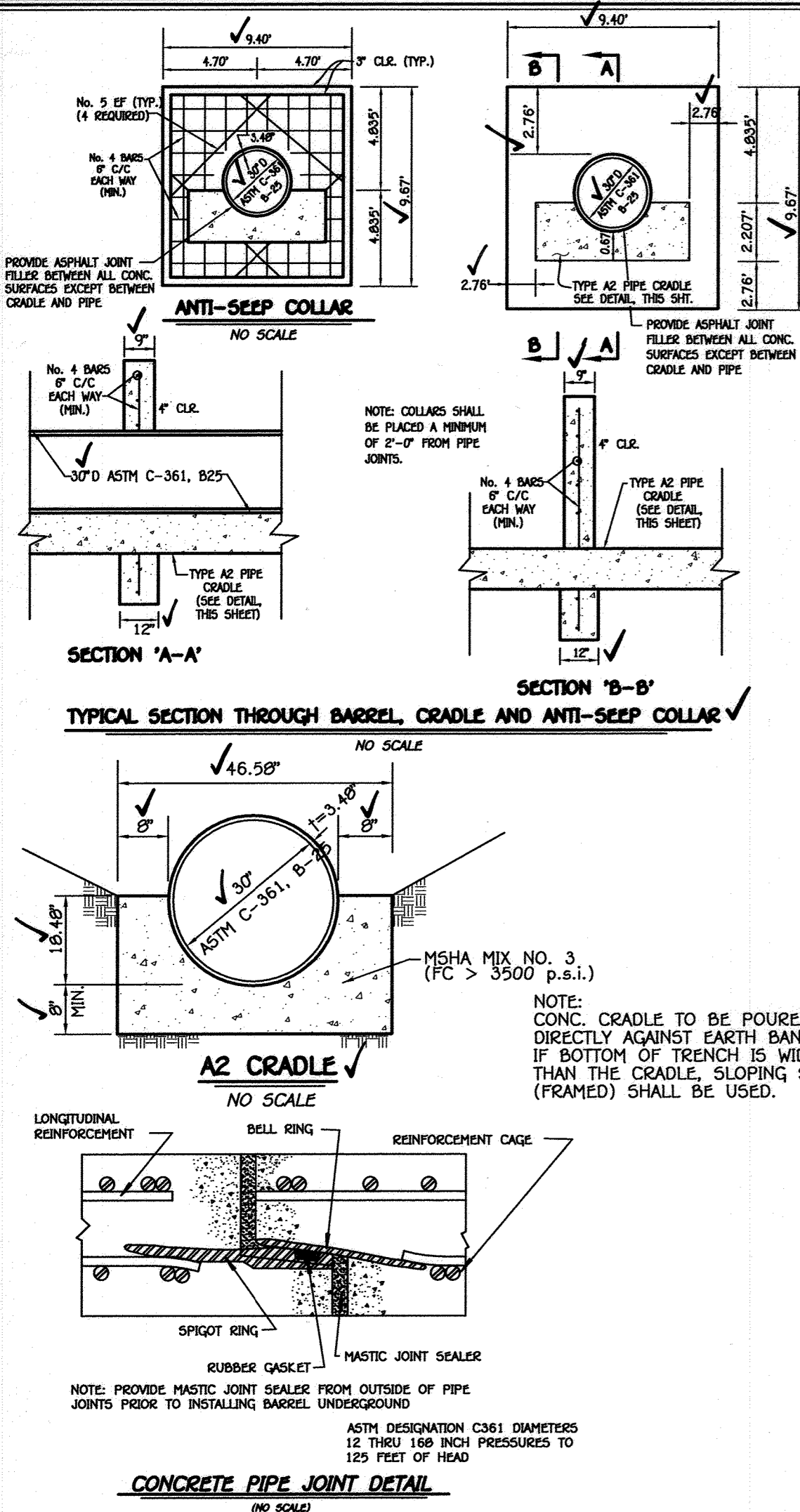
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/11/17.
DATE: 11-9-16

ROAD GEOMETRY AND SIGNAGE PLAN AND DETAILS
HONEYSUCKLE RIDGE
LOTS 1 THRU 29
AND OPEN SPACE LOTS 30 THRU 34
PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057, WP-05-095, SP-15-005
ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOS.: 359, 361, 362, & 474
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER, 2016
SHEET 17 OF 20

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways
DATE: 12/1/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development
DATE: 12-19-16

Chief, Development Engineering Division
DATE: 12-6-16



STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent edition.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared of all trees, brush, stumps, rocks, and other obstructions. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, stumps, rocks, and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry streamwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

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

EARTH FILL

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

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill material shall be placed in minimum 6-inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal objective is to install concurrently with fill placement and not excavated into the embankment.

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

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within 2% of optimum. Each layer of fill shall be compacted as necessary to obtain this density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by ASTM Method D-1556 (Standard Proctor).

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

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

Structure Backfill

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

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 513 as modified. The mixture shall have a 100-200 per cent dry unconfined compressive strength. The flowable fill shall have a minimum unit weight of 120 pcf and a minimum permeability of 2,000 gals/min. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average damp of the fill shall be 7% to ensure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the structure or pipe. At no time during the backfilling operation shall equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a completed fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.

Corrupted Metal Pipe - All of the following criteria shall apply for corrupted metal pipe:

Material - (Polymer Coated Steel Pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

Material - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of red lead.

Material - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be installed on the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will prepare the design and construction inspection.

Concrete

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

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 511.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Glass C.

Care of Water during Construction

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

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a slightly concave condition. All exposed, erodible, spillway, pool and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the approved plans and specifications. Seeding, liming, fertilizing and mulching shall be done in accordance with the approved plans and specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

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

OPERATION AND MAINTENANCE

An operation and maintenance plan in accordance with local or State regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at the intervals specified. Written records of maintenance and major repairs shall be maintained in a file. The issuance of a Maintenance and Repair Permit for any repairs or maintenance that involve the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.

AS-BUILT CERTIFICATION

I hereby certify that the construction on this Plan Was Constructed As Shown On The Plans and Meets the Approved Plans and Specifications.

Signature: *[Signature]* Date: 11/4/16

Certify Means to State of Maryland Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction, The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

OPERATION AND MAINTENANCE SCHEDULE FOR HOMEOWNER'S ASSOCIATION OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT FACILITIES

- ROUTINE MAINTENANCE**
- The top and side slopes of the embankment shall be mowed a minimum of twice per year, once in June and once in September. Other side slopes and maintenance access shall be mowed as needed.
 - Debris and litter shall be removed during regular mowing operations and as needed.
 - When deemed necessary for aesthetic reasons and upon the approval from the department of Public works, sediment shall be removed from the pond.
- NON-ROUTINE MAINTENANCE**
- Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
 - Sediment shall be removed from the pond, and forebay, no later than the capacity of the pond or forebay, is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.

Owner/Developer Certification:

"I/We Herewith Certify That Any Clearing, Grading, Construction, or Development Will Be Done Pursuant To This Approved Erosion And Sediment Control Plan, Including Inspecting And Maintaining Controls, And That The Responsible Personnel Involved in the Construction Project Will Have A Certificate Of Training From The Department Of The Environment (MDE) Approved Training Program For The Control Of Erosion And Sediment Prior To Beginning The Project. I Shall Engage A Maryland Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Certify Right-Of-Entry For Periodic On-Site Evaluation By Howard County The Howard Soil Conservation District And/OR MDE."

Signature of Developer: *[Signature]* Date: 11/4/16

Printed Name of Developer: **DONALD R. REINER, JR.**

Design Certification:

"I Herewith Certify That This Plan Has Been Designed In Accordance With Current Maryland Erosion And Sediment Control Laws, Regulations, And Standards, That It Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature of Engineer: *[Signature]* Date: 11/4/16

Printed Name of Engineer: **A. M. VITUCCI** MD PE Registration No. 20748

Professional Certification:

"I Herewith Certify These Documents Were Prepared Or Approved By Me, And That I Am A duly Licensed Professional Engineer Under The Laws Of The State Of Maryland."

License No. *[Blank]* Expiration Date: *[Blank]*

Title Block Certification, Seal, and Signature Shall Appear Close To Each Other

This Plan is Approved For Small Pond Construction, And Soil Erosion And Sediment Control By The Howard Soil Conservation District.

Signature: *[Signature]* Date: 11/16/16

Howard Soil Conservation District

Use I waters: In-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year.

Use II waters: In-stream work shall not be conducted during the period October 1 through April 30, inclusive, during any year.

Use IV waters: In-stream work shall not be conducted during the period March 1 through May 31, inclusive, during any year.

10) Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.

11) Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.

APPROVED: DEPARTMENT OF PUBLIC WORKS

Signature: *[Signature]* Date: 12/16/2016

Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: *[Signature]* Date: 12-19-16

Chief, Division of Land Development

Signature: *[Signature]* Date: 12-6-16

Chief, Development Engineering Division

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FREE
ELICOTT CITY, MARYLAND 21142
(410) 461-2699

OWNERS

KATHLEEN K. WOODWARD 9151 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	PATRICK & SARA PEPLAWSKI 9140 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	DAVID & TERRELL ASHBY 9147 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	TIMOTHY MCDONALD 9150 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422	THOMAS & DEBORAH KUCKUDA 9130 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422
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DEVELOPER

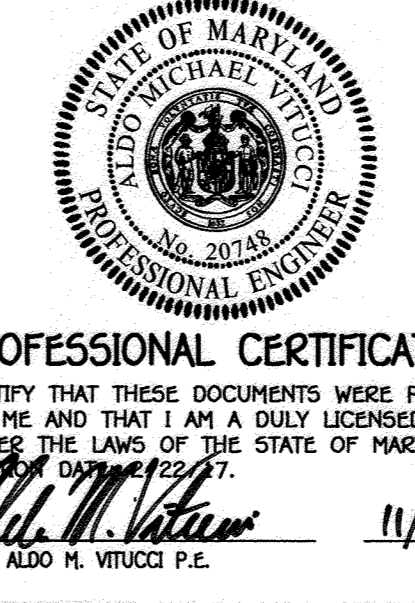
LAND DESIGN & DEVELOPMENT
6310 FOREST STREET
SUITE 200
ELICOTT CITY, MARYLAND 21043
(410)-922-4600

MODIFIED TYPE 'C' ENDWALL

OPENINGS	DIMENSIONS		VOLUME		STEEL	
D	A	B	C	E	F	H
IN.	IN.	IN.	IN.	IN.	IN.	IN.
8"	0.2'	9"	6"	6"	1'-9"	9"
					1'-6"	5'-9"
					0.61	38

REINFORCING: DEFORMED STEEL BARS (1/2" DIA.)
CHAMFER: ALL EXPOSED EDGES 1" OR AS DIRECTED.
CONC. SHALL BE S.H.A. A. MIX NO. 2.

SCALE: 1" = 50'



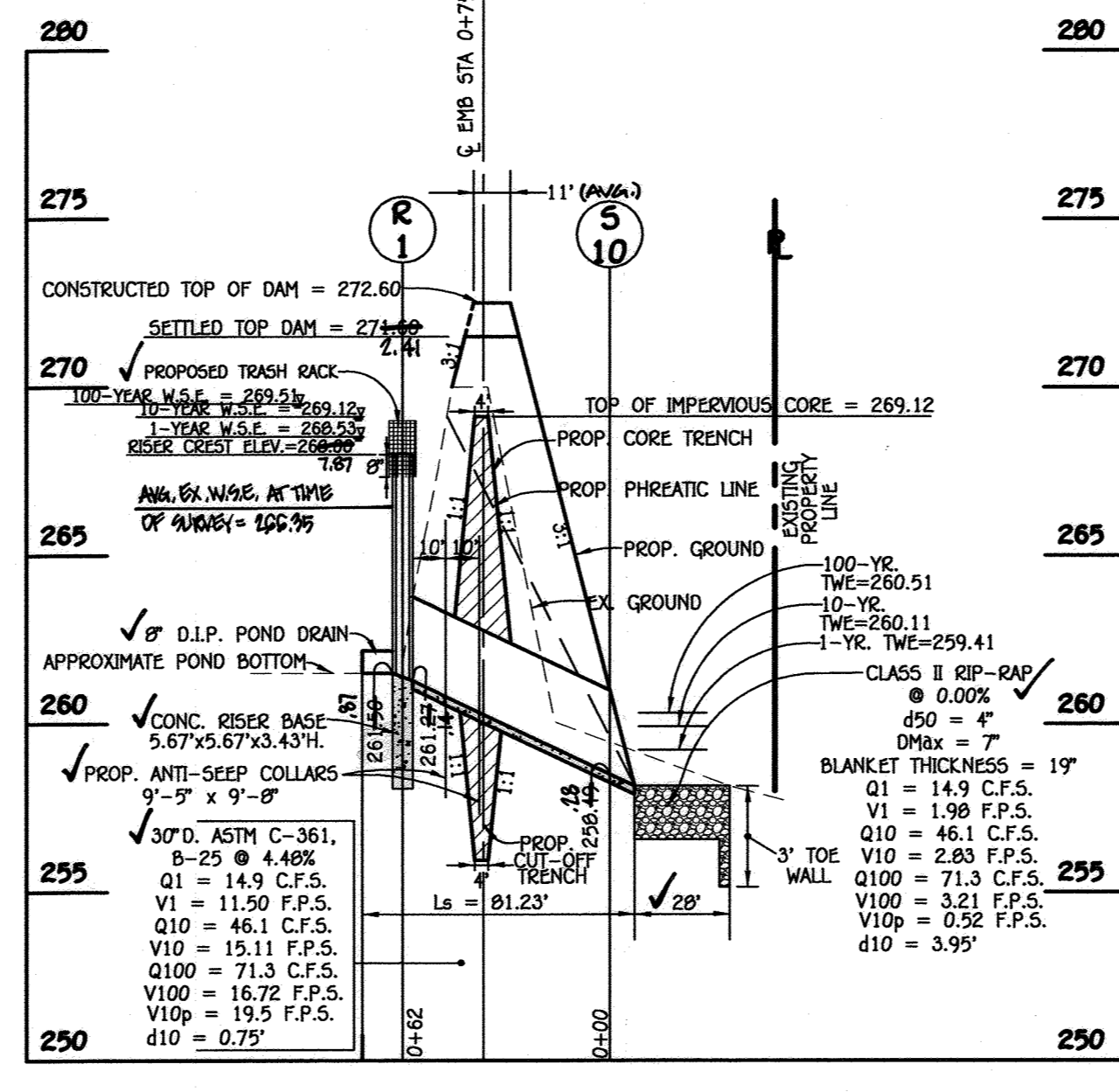
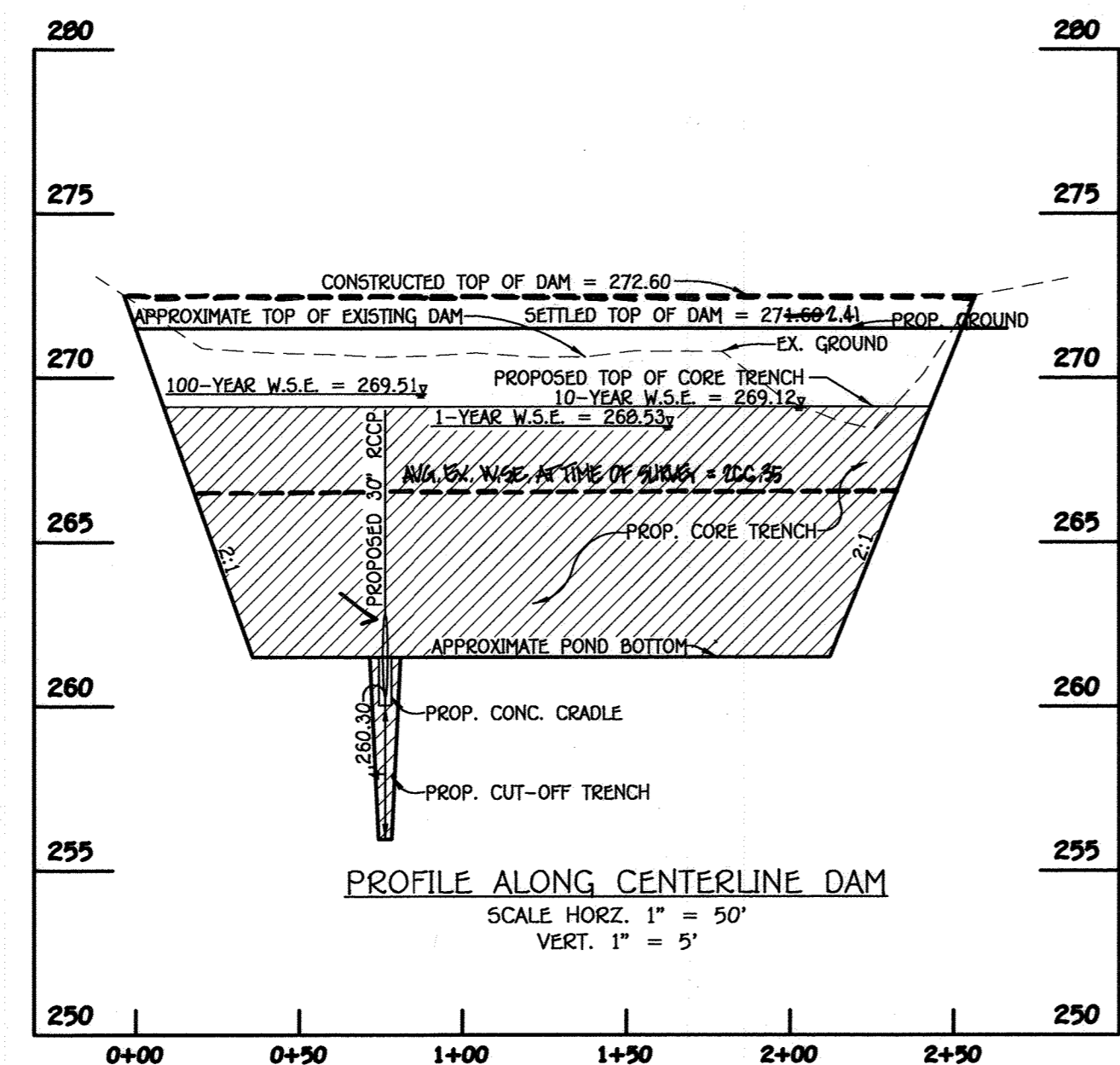
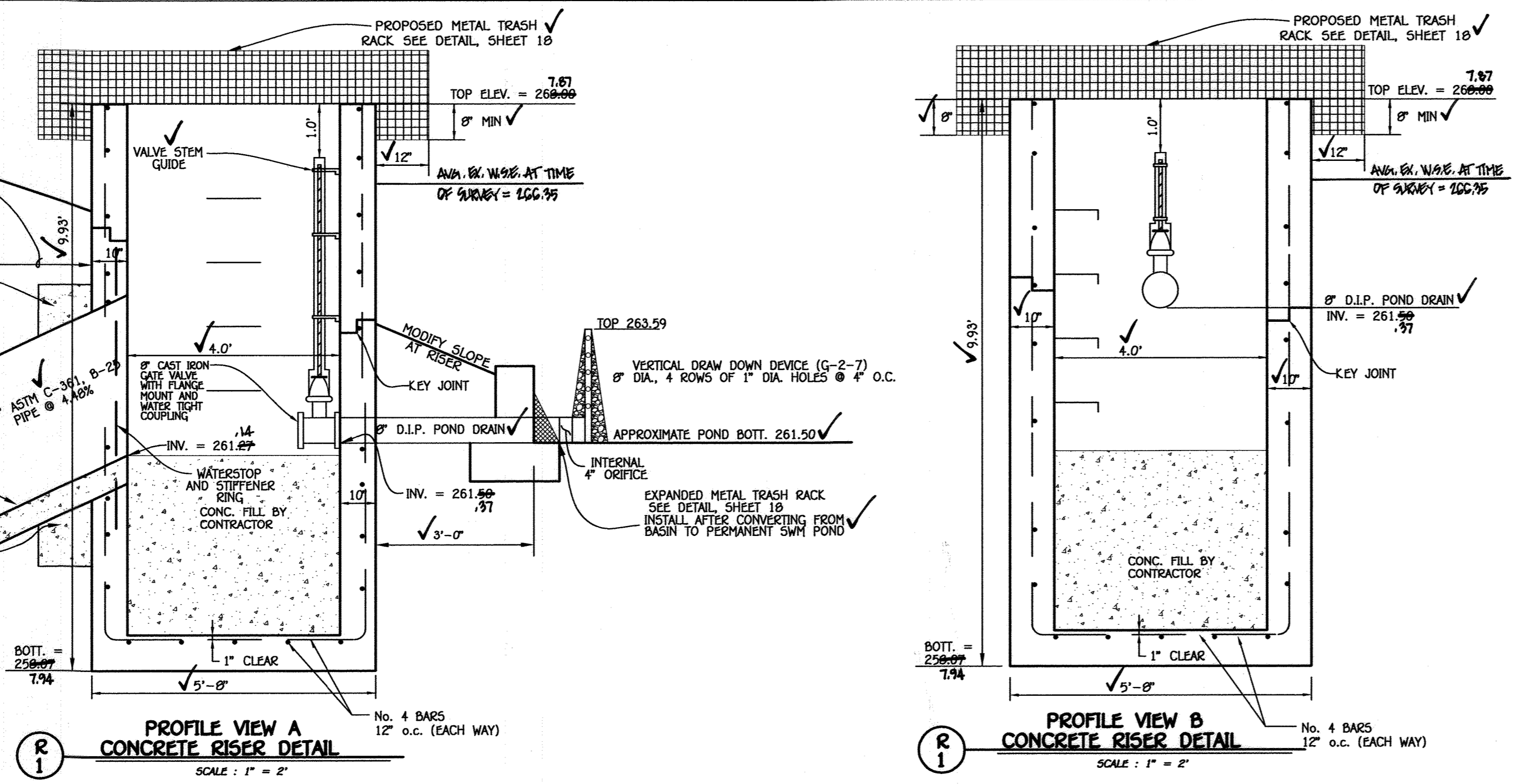
PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748, EXPIRES 11/30/2017.

Signature: *[Signature]* Date: 11/16/16

ALDO H. VITUCCI P.E.

SWM DETAIL SHEET
EXISTING POND
HONEYSUCKLE RIDGE
LOTS 1 THRU 29
AND OPEN SPACE LOTS 30 THRU 34
PREVIOUS FILE NUMBERS: F-093-04, ECP-14-057,
WP-05-095, 5P-15-005
ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOS.: 359, 361, 362, & 474
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER, 2016
SHEET 18 OF 20 F-16-041



Owner/Developer Certification:
"I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a certificate of training at a Maryland Department of the Environment (MDE) approved training program for the control of erosion and sediment prior to beginning the project. I shall engage a Maryland Registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an 'As-Built' Plan of the Pond within 30 days of completion. I certify Right-of-Entry for periodic on-site evaluation by Howard County, The Howard Soil Conservation District and/or MDE."

Signature of Developer: *Donald R. Kenwer, Jr.*
Date: 11/4/16

Design Certification:
"I hereby certify that this plan has been designed in accordance with current Maryland Erosion and Sediment Control Laws, Regulations, and Standards, that it represents a practical and workable plan based on my personal knowledge of the site and that it was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an 'As-Built' Plan of the Pond within 30 days of completion."

Signature of Engineer: *Aldo M. Vitucci*
Date: 11/4/16

Professional Certification:
"I hereby certify these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland."

License No.: 20748
Expiration Date: 11/16/16

AS-BUILT POND DETAIL
SCALE: 1" = 50'

Signature: *Aldo M. Vitucci*
Date: 11/16/16

AS-BUILT POND DETAIL
SCALE: 1" = 50'

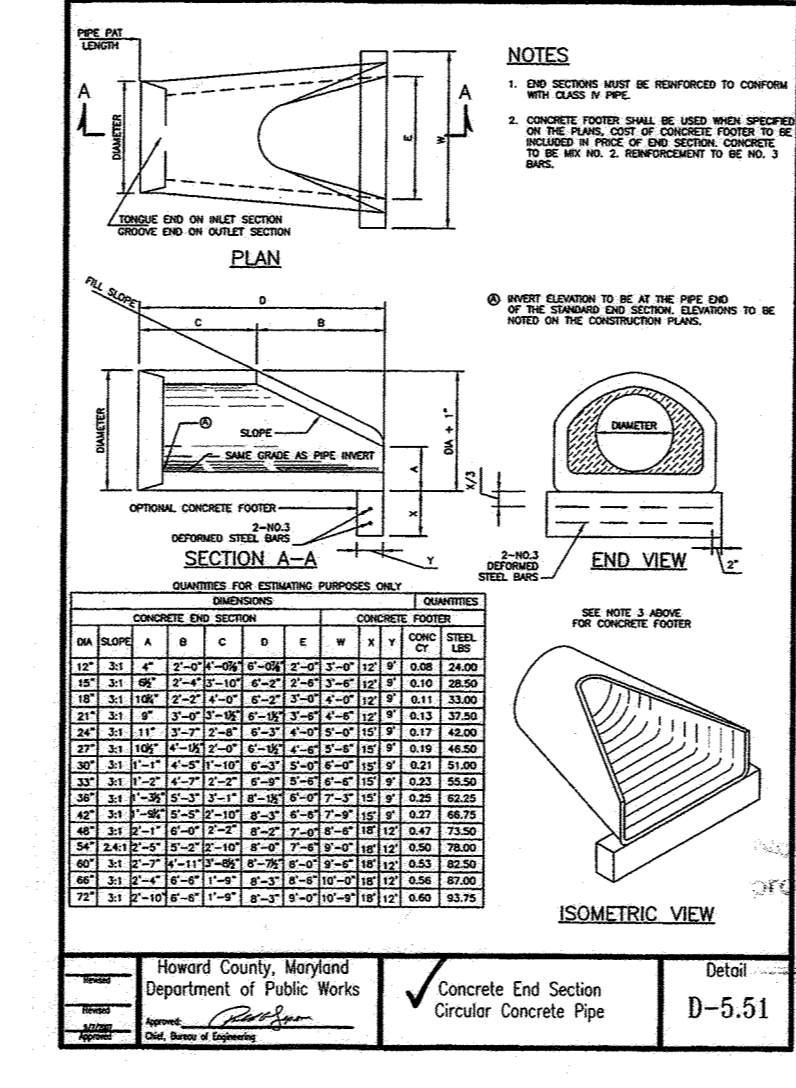
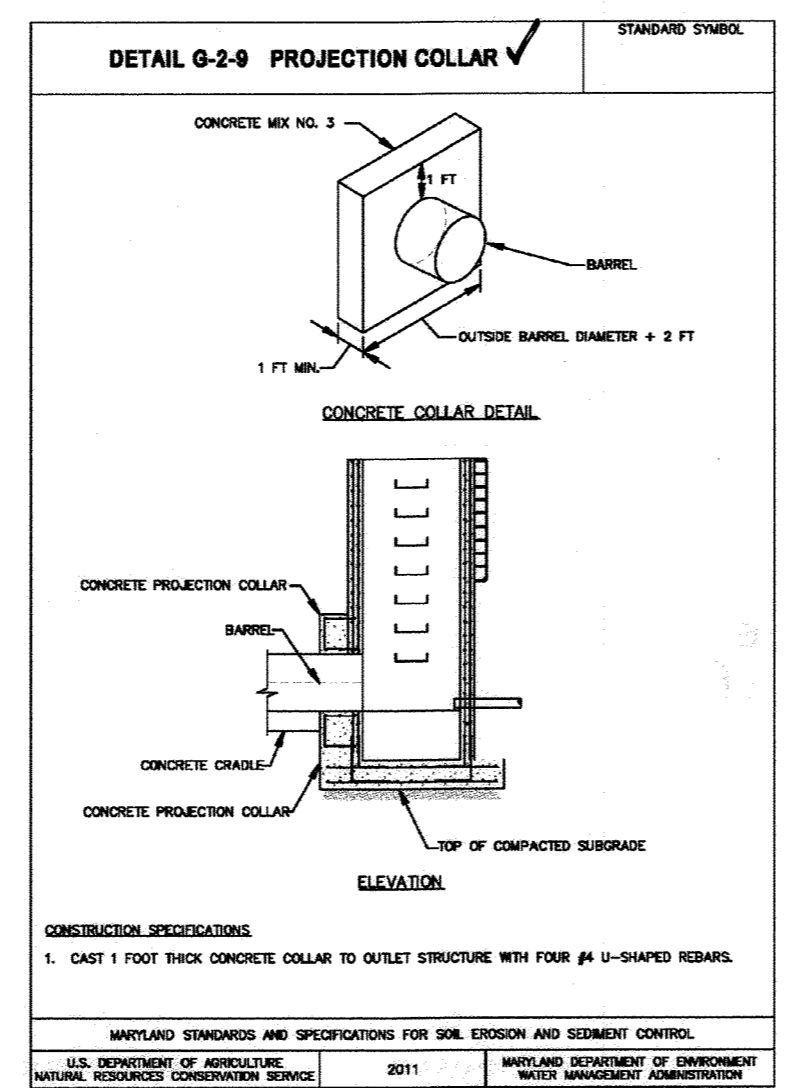
Signature: *Aldo M. Vitucci*
Date: 4/23/21

APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature: *Michael...*
Date: 12/1/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: *Karl...*
Date: 12-19-16

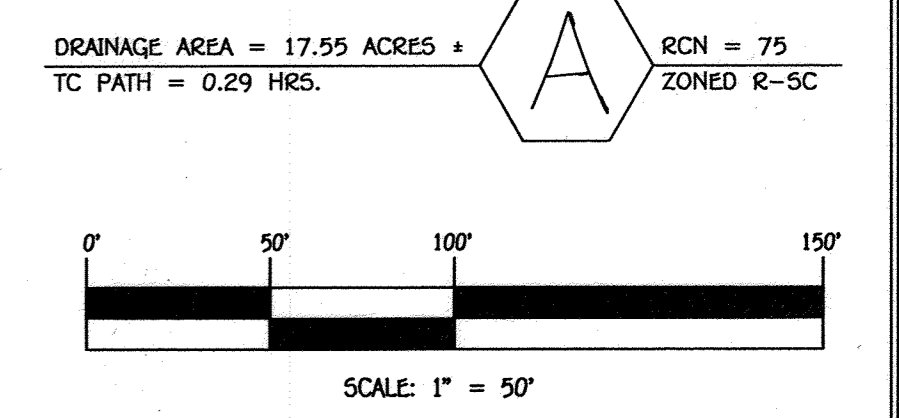
Signature: *Chad...*
Date: 12-6-16

NO.	REVISIONS	DATE



Tc PATH DATA

AREA	SEQ. ID	LENGTH	FLOW TYPE	SLOPE
A	A - B	100'	OVERLAND FLOW	2.00%
	B - C	1129'	SHALLOW CONCENTRATED FLOW - UNPAVED	4.78%
	C - D	64'	STORM DRAIN FLOW	VARIES
	D - E	390'	CHANNEL FLOW	3.03%



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748, EXPIRES 11/17/17.

Signature: *Aldo M. Vitucci*
Date: 11/16/16

OWNERS

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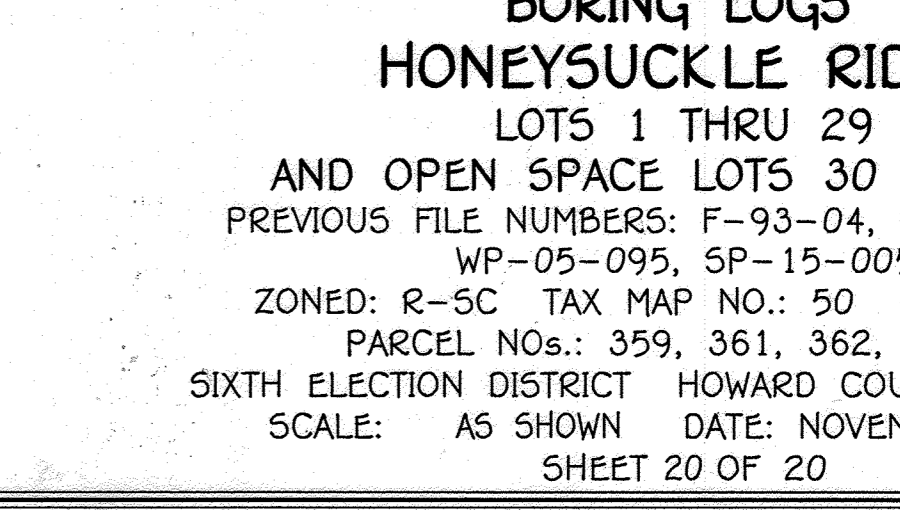
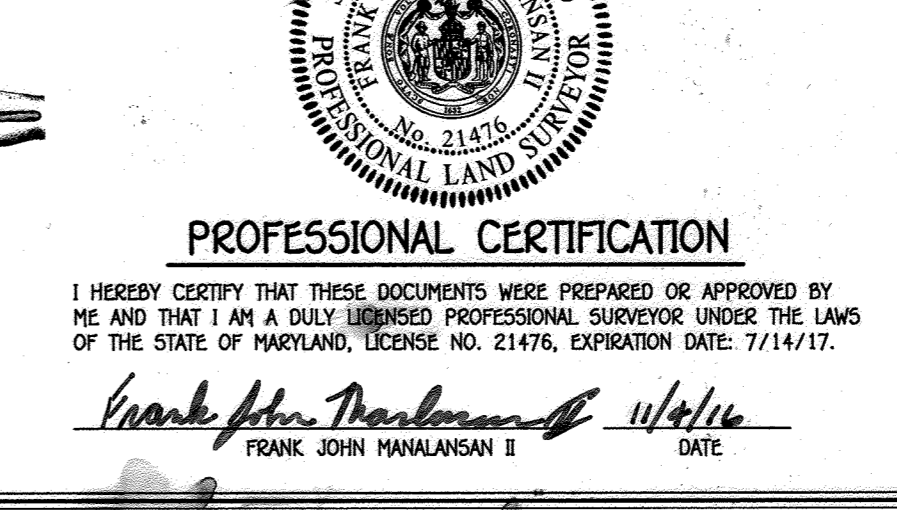
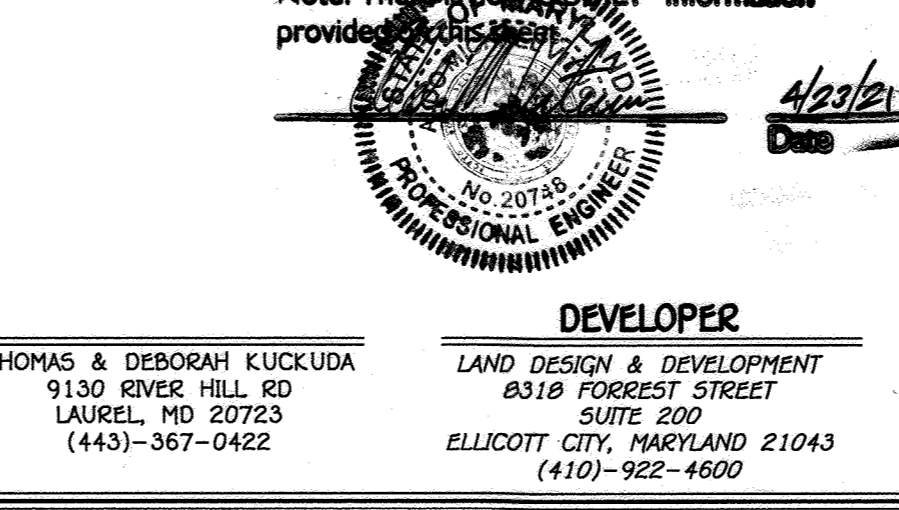
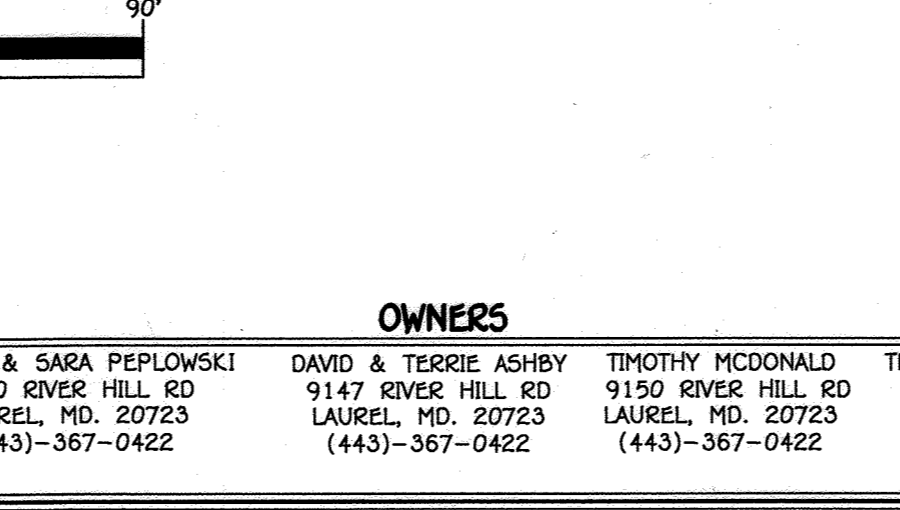
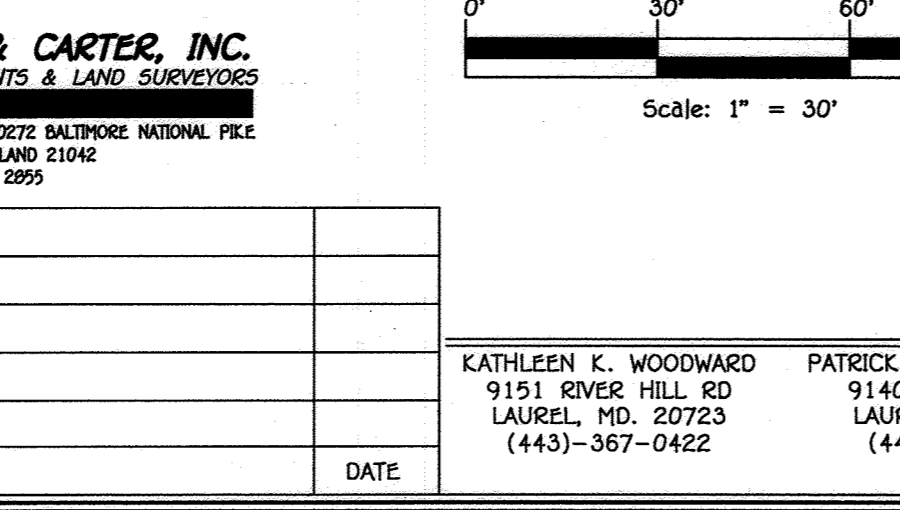
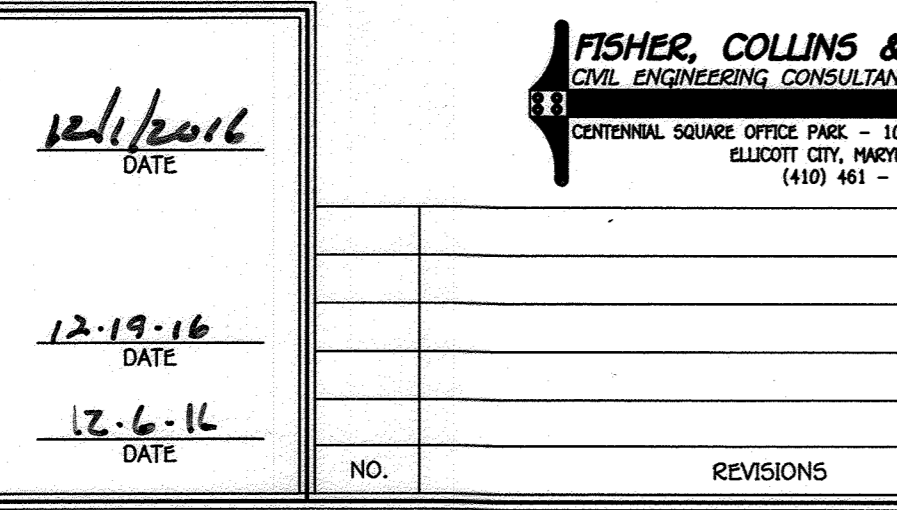
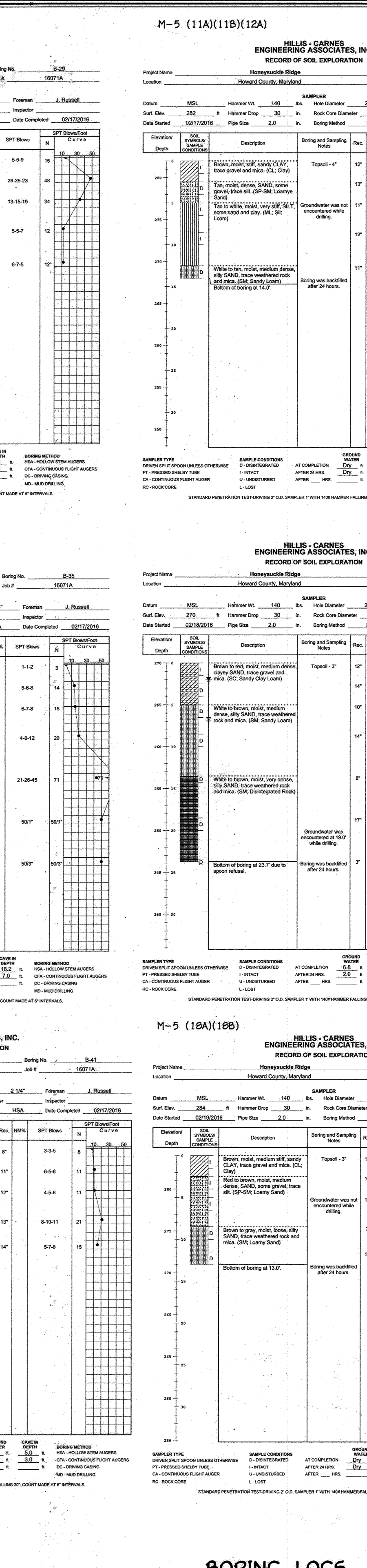
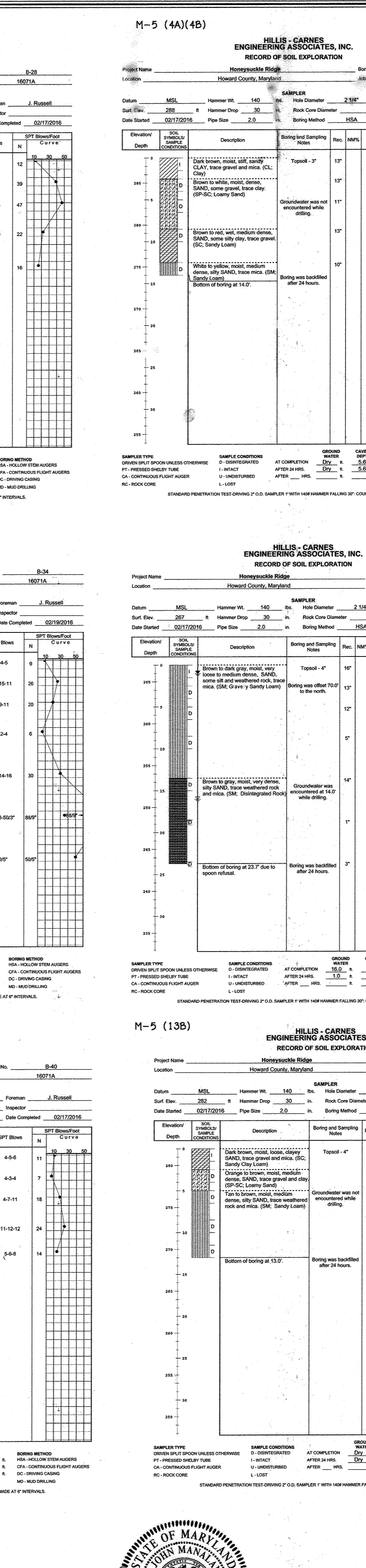
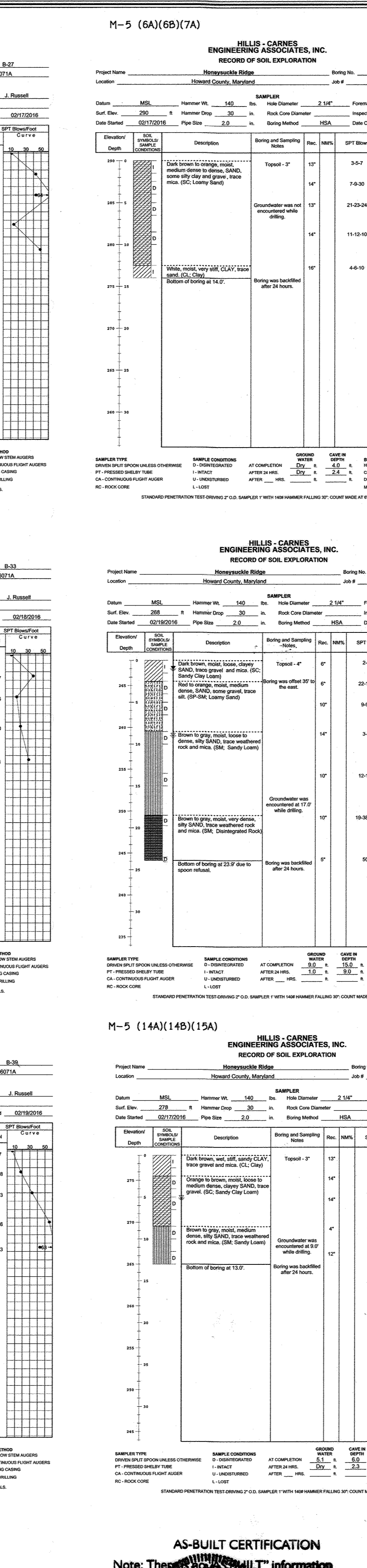
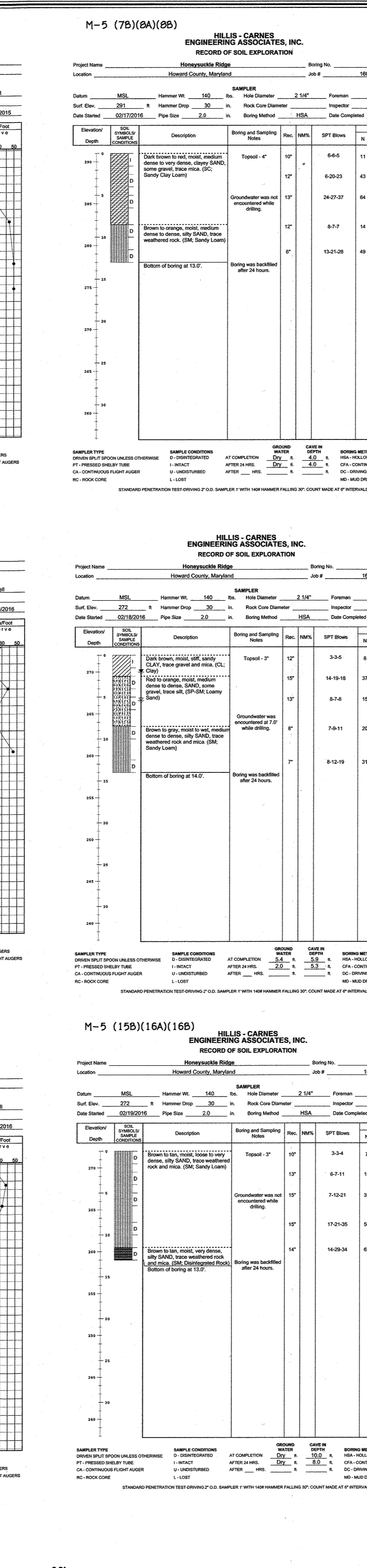
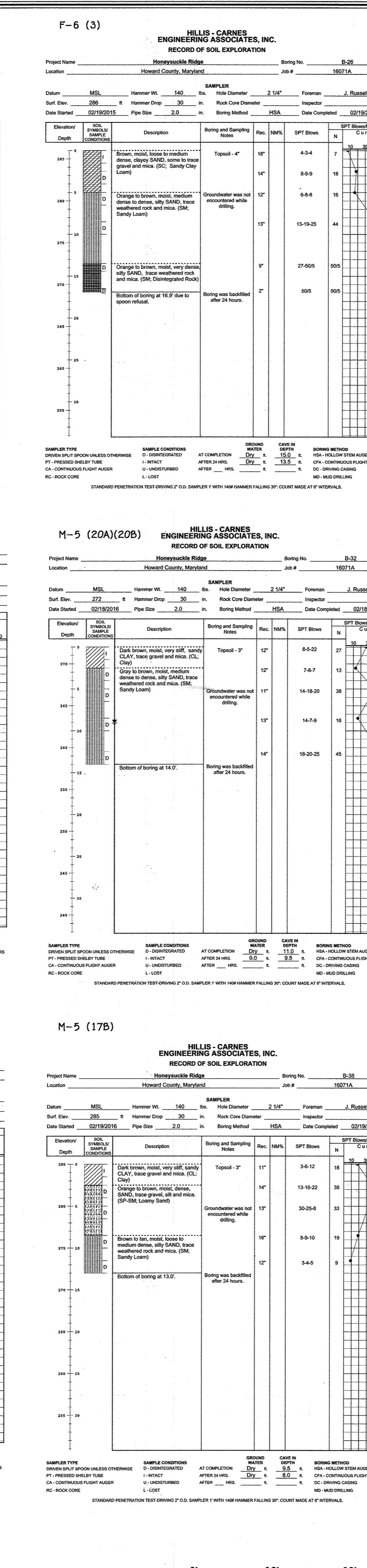
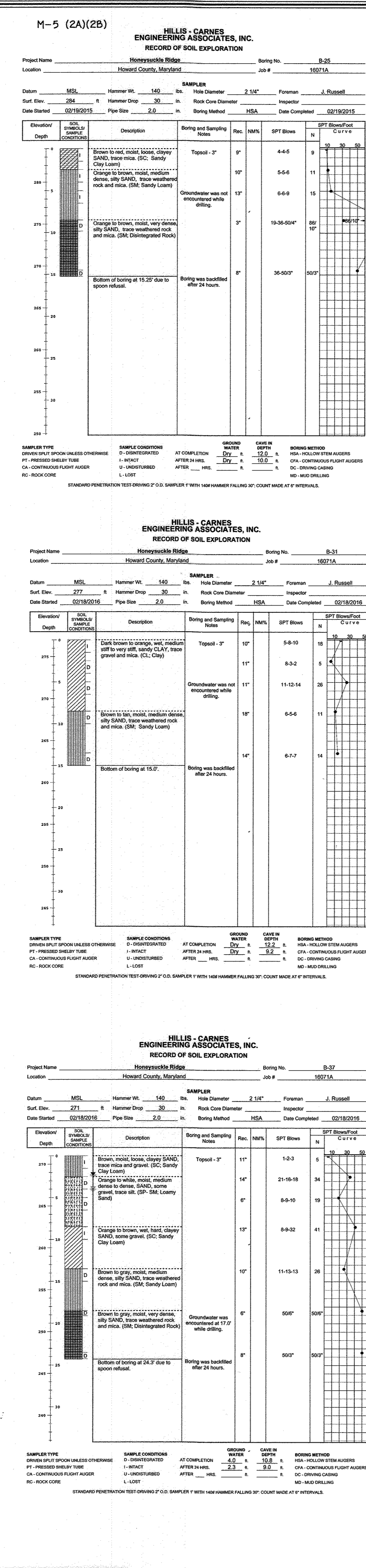
THOMAS & DEBORAH KUCKUDA 9130 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422

DEVELOPER
LAND DESIGN & DEVELOPMENT
8318 FOREST STREET
SUITE 200
ELLCOTT CITY, MARYLAND 21043
(410)-922-4600

SWM PROFILES, DETAILS & DRAINAGE AREA MAP EXISTING POND HONEYSUCKLE RIDGE
LOTS 1 THRU 29
AND OPEN SPACE LOTS 30 THRU 34
PREVIOUS FILE NUMBERS: F-93-04, ECP-14-057, WP-05-095, SP-15-005
ZONED: R-5C TAX MAP NO.: 50 GRID NO.: 1
PARCEL NOS.: 359, 361, 362, & 474
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER, 2016
SHEET 19 OF 20 F-16-041

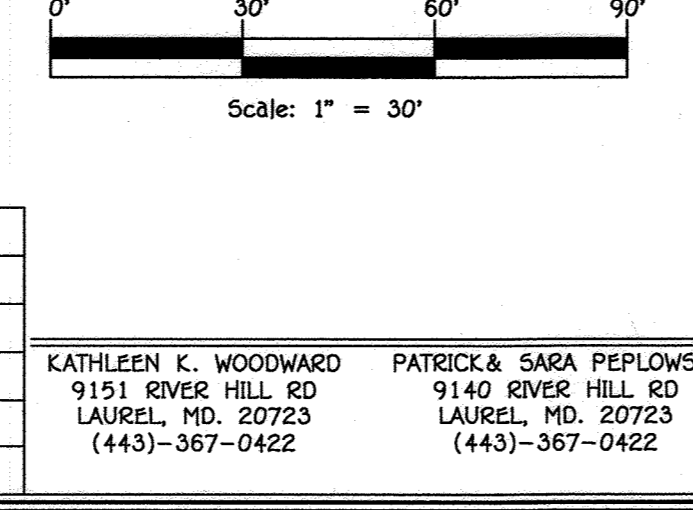
"AS-BUILT"

EXISTING ELEV. MICRO-BIO. TOP 280.00
 MICRO-BIO. BOTTOM 275.00
 BORING BOTTOM 271.00
 EXISTING ELEV. TOP OF DRYWELL (1A) 286.00
 TOP OF DRYWELL (1B) 284.00
 BOTTOM OF DRYWELL (1A) 281.00
 BOTTOM OF DRYWELL (1A) 279.00
 BORING BOTTOM 273.00
 EXISTING ELEV. TOP OF DRYWELL (3B) 291.00
 EXISTING ELEV. TOP OF DRYWELL (3A) 289.00
 BOTTOM OF DRYWELL (3B) 286.00
 BOTTOM OF DRYWELL (3A) 284.00
 BORING BOTTOM 276.00
 EXISTING ELEV. TOP OF DRYWELL (9A) 284.00
 EXISTING ELEV. TOP OF DRYWELL (10A/10B/17A) 282.00
 TOP OF DRYWELL (9B) 279.00
 BOTTOM OF DRYWELL (9A) 277.00
 TOP OF DRYWELL (10A/10B/17A) 276.00
 BOTTOM OF DRYWELLS (9B) 270.00
 BORING BOTTOM 270.00
 EXISTING ELEV. MICRO-BIO. TOP 266.00
 MICRO-BIO. BOTTOM 262.67
 BORING BOTTOM 257.67
 EXISTING ELEV. TOP OF DRYWELLS (12B/13A) 280.00
 BOTTOM OF DRYWELLS (12B/13A) 275.00
 BORING BOTTOM 270.00
 EXISTING ELEV. TOP OF DRYWELL (5B) 280.00
 EXISTING ELEV. TOP OF DRYWELL (4B/5A) 285.00
 BOTTOM OF DRYWELL (5B) 285.00
 BOTTOM OF DRYWELLS (4B/5A) 284.00
 BORING BOTTOM 277.00
 EXISTING ELEV. MICRO-BIO. TOP 281.00
 MICRO-BIO. BOTTOM 277.00
 BORING BOTTOM 273.67
 EXISTING ELEV. TOP OF DRYWELLS (18B/19A) 284.00
 EXISTING ELEV. TOP OF DRYWELL (19B) 283.00
 BOTTOM OF DRYWELLS (18B/19A) 279.00
 BOTTOM OF DRYWELL (19B) 278.00
 BORING BOTTOM 271.00
 EXISTING ELEV. MICRO-BIO. TOP 267.00
 MICRO-BIO. BOTTOM 263.67
 BORING BOTTOM 258.00



APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
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 PATRICK & SARA PEPOWSKI 9140 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422
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 TIMOTHY MCDONALD 9150 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422
 THOMAS & DEBORAH KUCKUDA 9130 RIVER HILL RD LAUREL, MD. 20723 (443)-367-0422

DEVELOPER
 LAND DESIGN & DEVELOPMENT
 8318 FOREST STREET
 ELICOTT CITY, MARYLAND 21043
 (410)-922-4600

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/11/17.
 Frank John Mullanigan II DATE

BORING LOGS
HONEYSUCKLE RIDGE
 LOTS 1 THRU 29
 AND OPEN SPACE LOTS 30 THRU 34
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F-16-041
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET