

LEGEND

2' MINOR CONTOUR	
10' MAJOR CONTOUR	
IMPERVIOUS AREA	
SOIL BOUNDARY	
TREE LINE	
STORM DRAIN	
DRAINAGE DIVIDE	
FLOW PATH/SEGMENT	

LAND USE DETAILS

LAND USE	HSG	AREA (AC)	RCN
RESIDENTIAL DISTRICTS (1/2 AC)	A	18.66	54
RESIDENTIAL DISTRICTS (1/2 AC)	C	1.37	80
PAVED, CURBS, STORM SEWERS	A	3.29	98
PAVED, CURBS, STORM SEWERS	C	0.59	98
TOTAL		23.91	63

NOTE: ENTIRE DRAINAGE AREA CONSISTS OF SINGLE FAMILY RESIDENTIAL AREA ZONED R-20 (RESIDENTIAL DISTRICTS 1/2 AC.) AND CLOSED SECTION STREETS.

TIME OF CONCENTRATION

SEGMENT	FLOW TYPE	LENGTH (LF)	SLOPE (FT/FT)	MANNING'S N	VELOCITY (FPS)	TIME (HRS)
A-B	SHEET	50	0.040	0.150	-	0.071
B-C	SHALLOW CONC.	265	0.030	0.025	-	0.021
C-D	CHANNEL	1664	-	-	6.000	0.077
TIME OF CONCENTRATION =						0.189



D.A. = 23.91 AC.
RCN = 63
Tc = 0.17 HOURS

CLIENT/LAND OWNER:
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENVIRONMENTAL SERVICES
8751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MARYLAND 21046-3143
PHONE: 410.313.0844

REVISIONS

NO.	DATE	DESCRIPTION

SITE INFORMATION

STREET ADDRESS:
ADJACENT TO:
3912 BLUE RIVER COURT
ELLCOTT CITY, MARYLAND 21042

GREY ROCK FARM
SECTIONS 5 AND 6
LOTS: 252, 301
PARCEL: 1178 TAX MAP: 0024 GRID: 0015
ELECTION DISTRICT: 1
ZONING: R-20
PLAT NO.: 9747, 10710

CENTURY ENGINEERING
CONSULTING ENGINEERS - PLANNERS
10710 GILROY ROAD
HUNT VALLEY, MARYLAND 21031
PHONE: (443) 589-2400 FAX: (443) 589-2401

BLUE RIVER COURT SWM POND REPAIR

DRAINAGE AREA MAP

PROJECT NO: 121104.42 SCALE: 1"=100' DATE: 04/11/2018

DESIGN: JBJ/JA CHECK: RG

DWG NO: DA-01 of DA-01

SHEET NO: 2 OF 19

STATE OF MARYLAND PROFESSIONAL ENGINEER

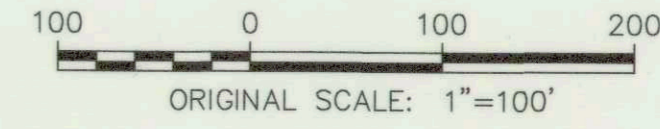
4-11-18

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

BUREAU OF ENVIRONMENTAL SERVICES
DATE: 5/1/18

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

HOWARD SOIL CONSERVATION DISTRICT
DATE: 5/10/18



DATE PLOTTED: 05/03/2018 09:54:18 AM FILE: EP-17-21.DWG PLOTTER: HP DesignJet T1300

EP-17-21

EXISTING CONDITIONS LEGEND

- 1' MINOR CONTOUR (GIS)
- 5' MAJOR CONTOUR (GIS) 5
- 1' MINOR CONTOUR (SURVEY)
- 5' MAJOR CONTOUR (SURVEY) 5
- SOIL BOUNDARY BaD
- TREE LINE
- WATERS OF THE U.S. WUS
- STREAM BUFFER SB
- 100-YEAR FLOODPLAIN FP
- TREE
- WETLAND WL
- WETLAND BUFFER (25') WB
- STORM DRAIN
- RIPRAP
- CABLE TV APPURTENANCE
- IMPERVIOUS AREA
- WOOD FENCE X
- POST
- PROPERTY BOUNDARY
- ADJACENT PROPERTY LINE
- EASEMENT/ROW LINE
- TRAVERSE POINT (REBAR AND CAP)



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REVISIONS		
NO.	DATE	DESCRIPTION

SITE INFORMATION
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 3912 BLUE RIVER COURT
 ELLICOTT CITY, MARYLAND 21042
 GRAY ROCK FARM
 SECTIONS 5 AND 6
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 PARCEL: 1178 TAX MAP: 0024 GRID: 0015
 ELECTION DISTRICT: 1
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 PLAT NO.: 9747, 10710

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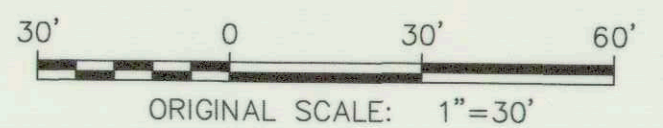
BLUE RIVER COURT
 SWM POND REPAIR

EXISTING CONDITIONS PLAN

PROJECT NO:	121104.42	SCALE:	1"=30'	DATE:	04/11/2018
DESIGN:	UB/JJA	CHECK:	RG	DWG NO: EC-01 of EC-01	
SHEET NO:			3 of 19		

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD
 BUREAU OF ENVIRONMENTAL SERVICES
 5/9/18
 DATE

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 HOWARD SOIL CONSERVATION DISTRICT
 5/10/18
 DATE



EP-17-21

EXISTING CONDITIONS LEGEND	
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5' MAJOR CONTOUR (GIS)	
1' MINOR CONTOUR (SURVEY)	
5' MAJOR CONTOUR (SURVEY)	
SOIL BOUNDARY	
TREE LINE	
WATERS OF THE U.S.	
STREAM BUFFER	
100-YEAR FLOODPLAIN	
TREE	
WETLAND	
WETLAND BUFFER (25')	
STORM DRAIN	
RIPRAP	
CABLE TV APPURTENANCE	
IMPERVIOUS AREA	
WOOD FENCE	
POST	
PROPERTY BOUNDARY	
ADJACENT PROPERTY LINE	
EASEMENT/ROW LINE	
TRAVERSE POINT (REBAR AND CAP)	
PROPOSED FEATURES LEGEND	
1' CONTOUR	
5' CONTOUR	
STORM DRAIN PIPE	
RIPRAP	
GABION	
CLAY CORE/CUTOFF TRENCH	
FILTER DIAPHRAGM	
NO-WOODY VEGETATION ZONE	
SOIL BORING LOCATION	
TREE LINE	
TREE TO BE REMOVED	
LOD	



CLIENTLAND OWNER:
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 PARCELS: 292, 301
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 ELECTION DISTRICT: 1
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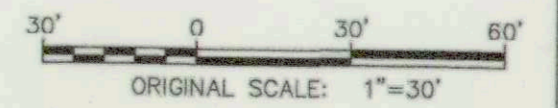
**BLUE RIVER COURT
 SWM POND REPAIR**

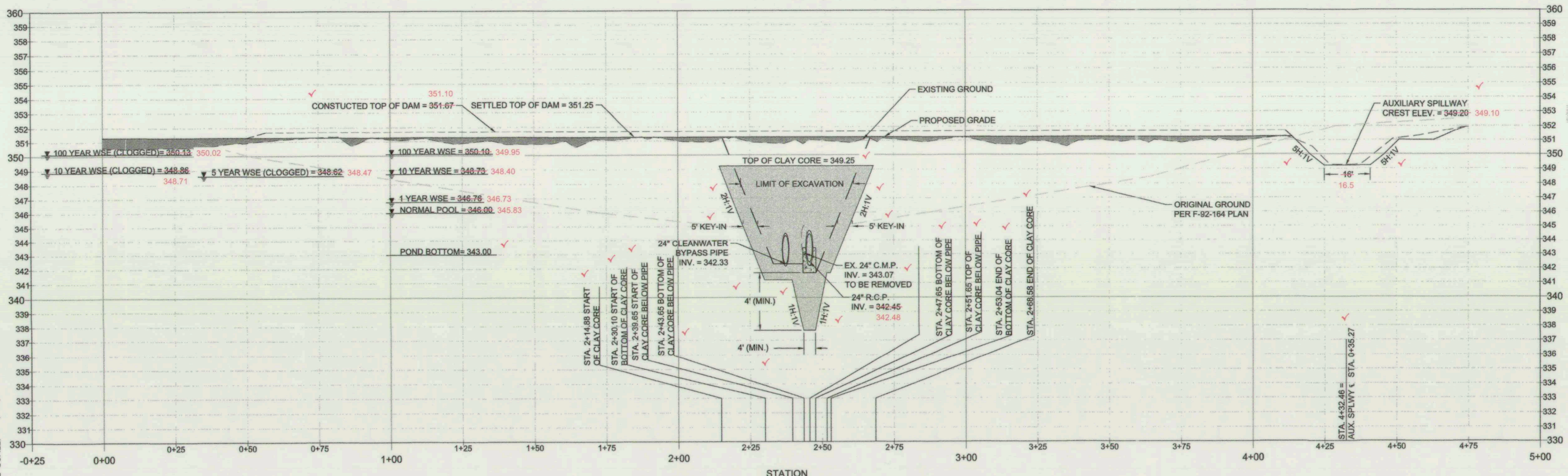
GRADING PLAN

PROJECT NO: 121104.42 SCALE: 1"=30' DATE: 04/11/2018
 DESIGNED: JBJ/A CHECKED: RG
 DRAWN: GP-01 or GP-01
 SHEET NO: 4 of 19
 DATE: 4-11-18
 LICENSE # 0847 EXPIRES 07-18-2018

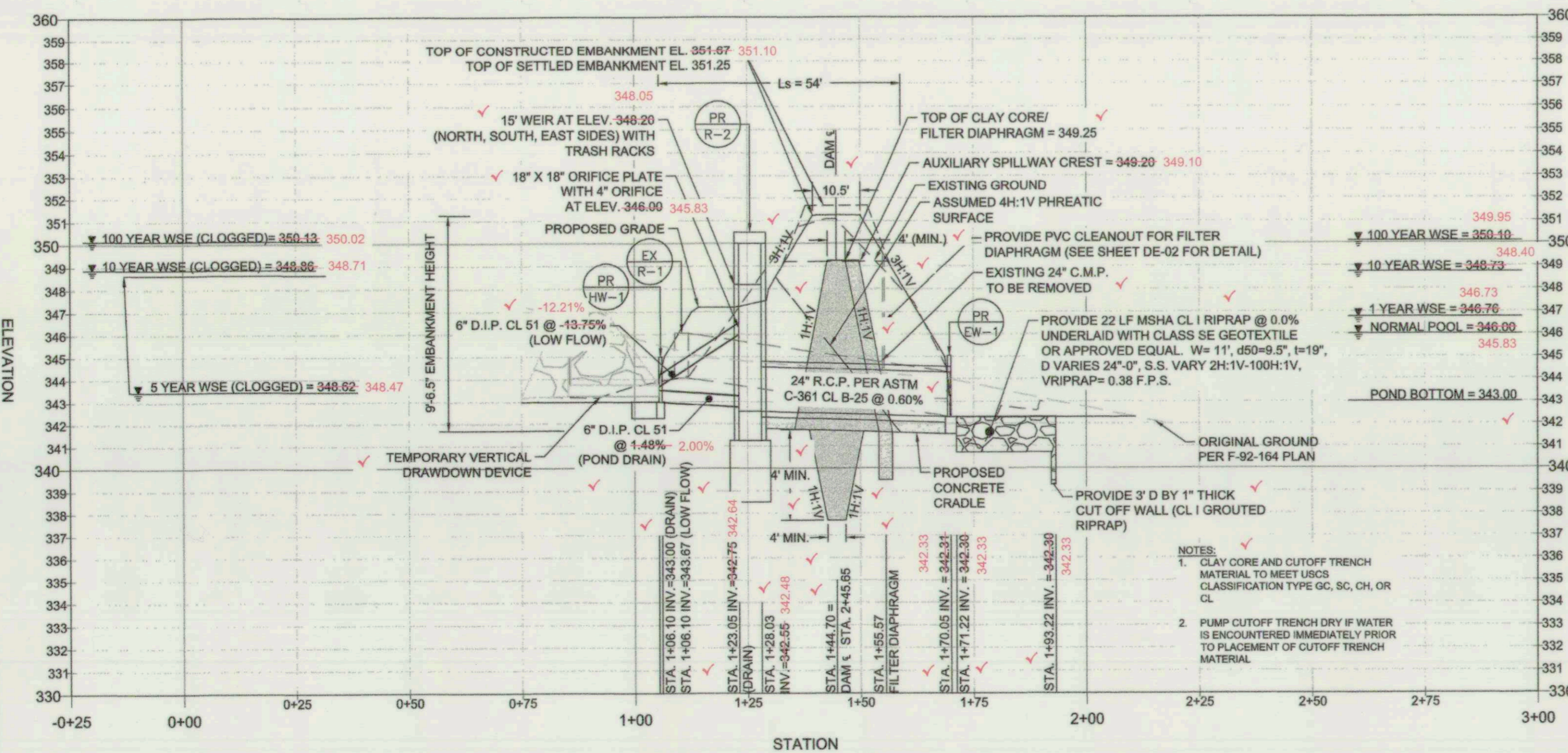
DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD
 BUREAU OF ENVIRONMENTAL SERVICES
 THIS PLAN IS APPROVED FOR SMALL POND CONSTRUCTION AND SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD SOIL CONSERVATION DISTRICT

FOR AS-BUILT
 06-05-2019
 EP-17-21

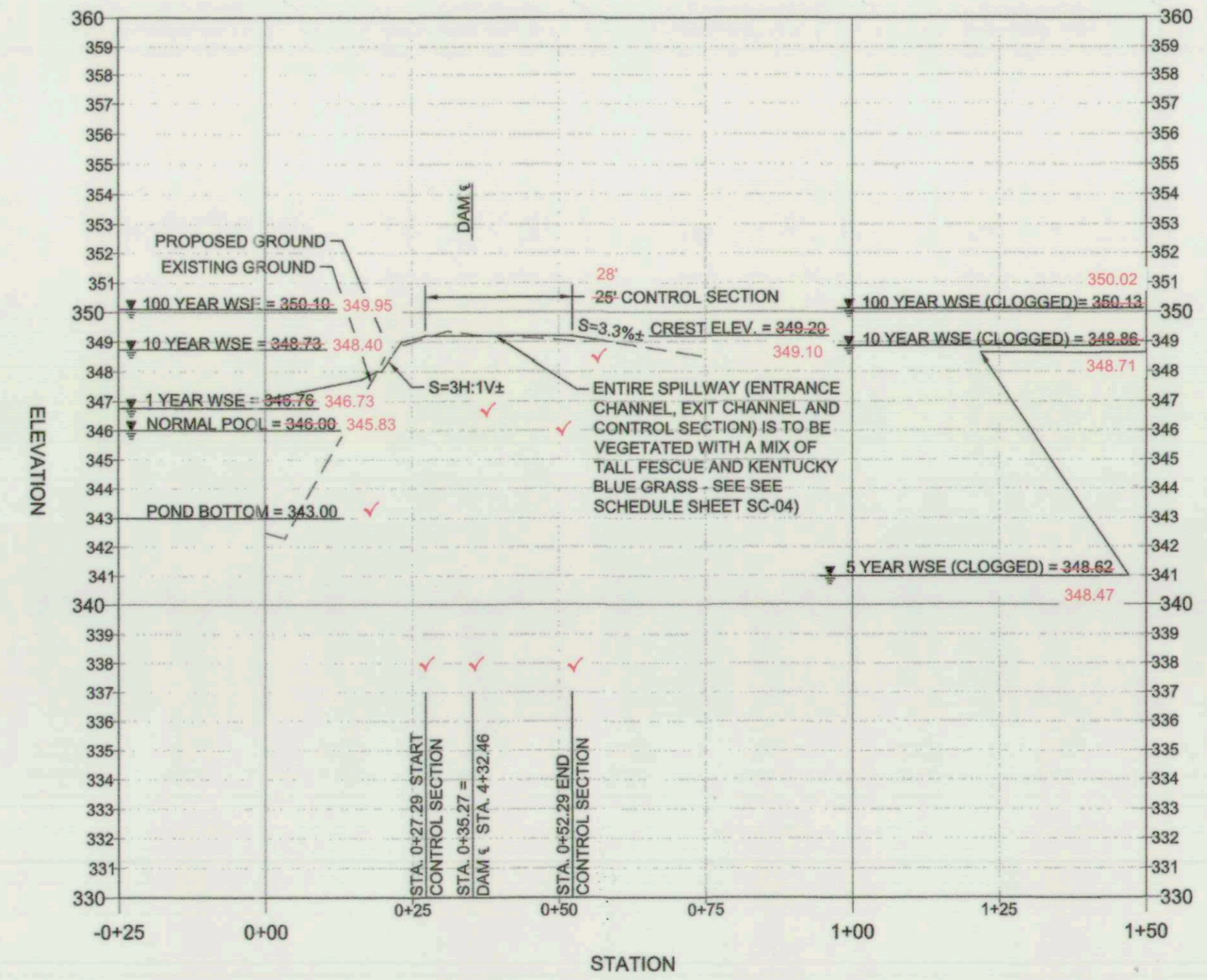




EMBankment Centerline Profile
 HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 4'



Principal Spillway Profile
 HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 4'



Auxiliary Spillway Profile
 HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 4'

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD
 BUREAU OF ENVIRONMENTAL SERVICES
 DATE: 5/9/18
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 HOWARD SOIL CONSERVATION DISTRICT
 DATE: 5/10/18

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 BUREAU OF ENVIRONMENTAL SERVICES
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 COLUMBIA, MARYLAND 21046-3143
 PHONE: 410.313.0844

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SITE INFORMATION
 STREET ADDRESS:
 ADJACENT TO:
 3912 BLUE RIVER COURT
 ELLICOTT CITY, MARYLAND 21042
 GREY ROCK FARM
 SECTIONS 5 AND 6
 LOTS: 252, 301
 PARCEL: 1178 TAX MAP: 0024 GRID: 0015
 ELECTION DISTRICT: 1
 ZONING: R-20
 PLAT NO.: 9747, 10710

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**BLUE RIVER COURT
 SWM POND REPAIR**

EMBANKMENT PROFILES

PROJECT NO.: 121104.42
 SCALE: 1"=20'
 DATE: 04/11/2018
 DESIGN: JB/JA
 CHECK: RG

DWG NO.:
 PR-01 of PR-02
 SHEET NO.:
 5 of 19
 STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 LICENSE # 10887 EXPIRES 07-13-2018

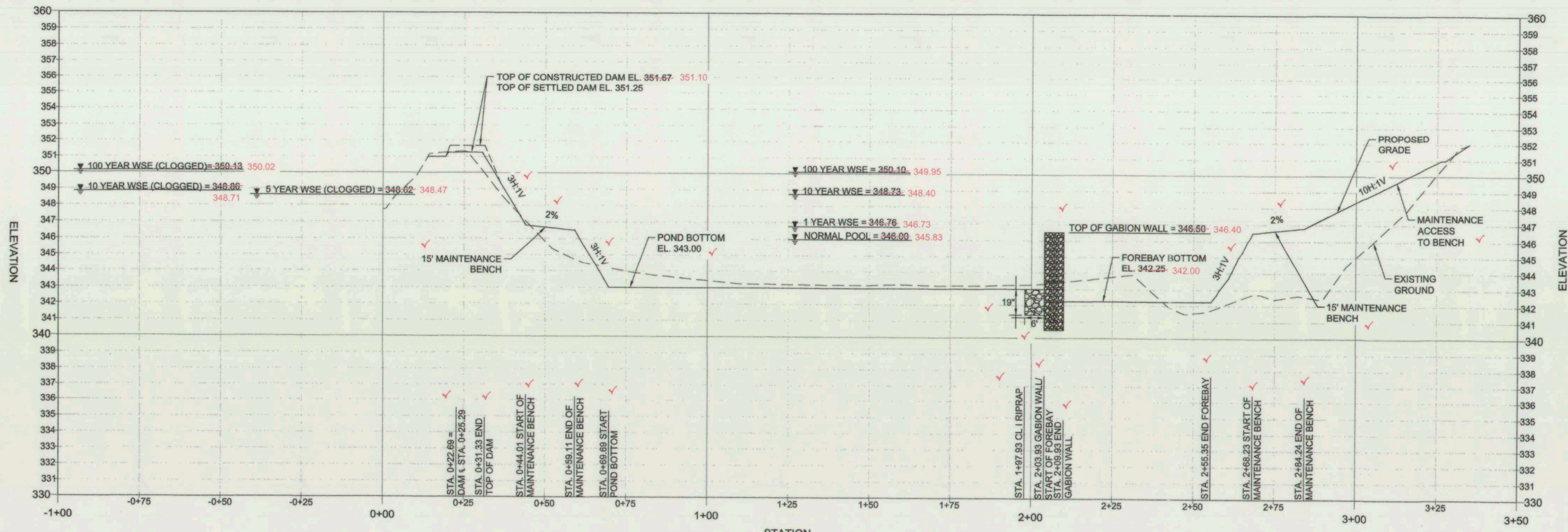
20' 0 20' 40'
 ORIGINAL SCALE: 1" = 20'

FOR AS-BUILT
 06-05-2019

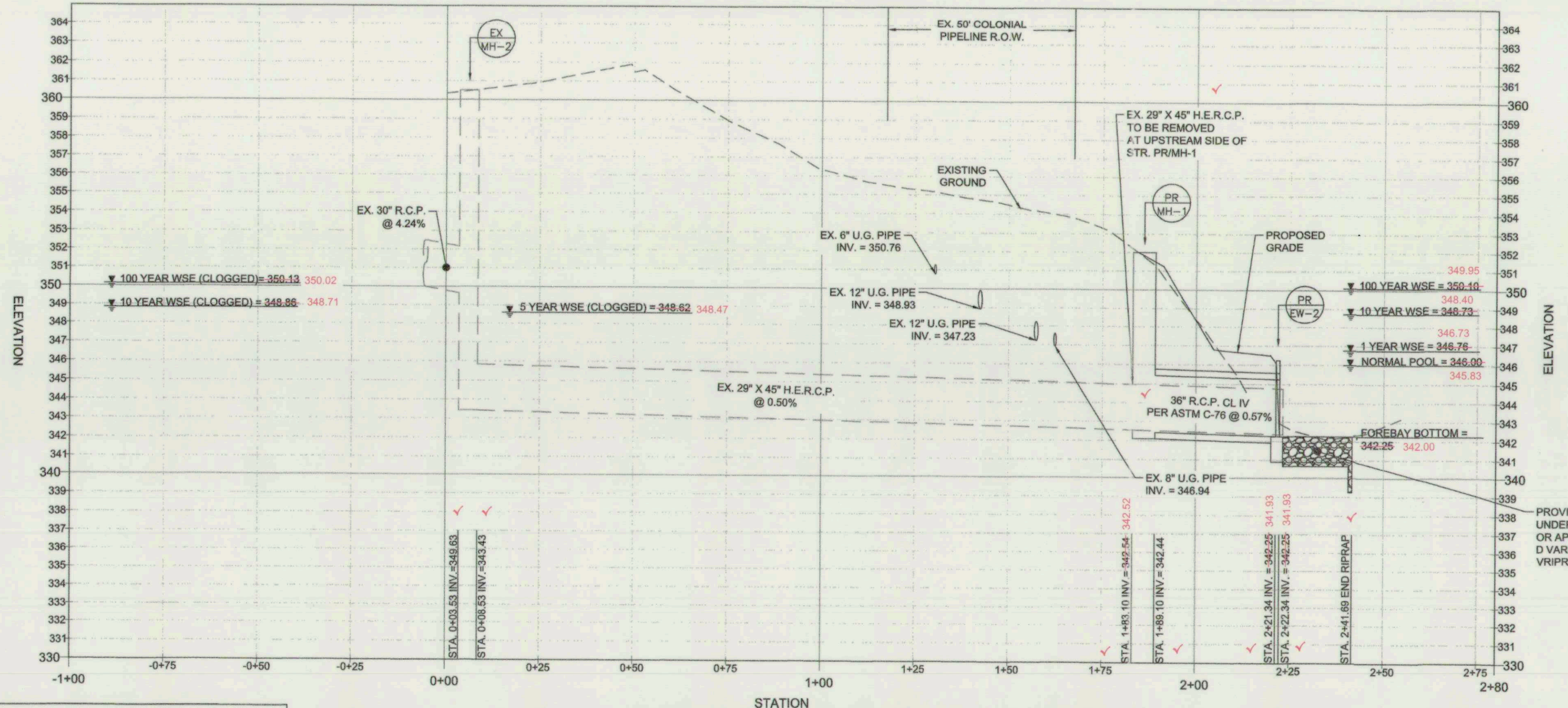
EP-17-21

AS BUILT SHEET 3 OF 8

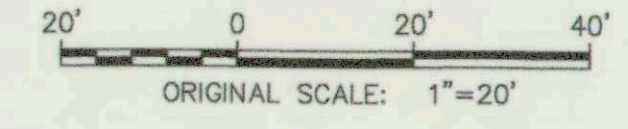
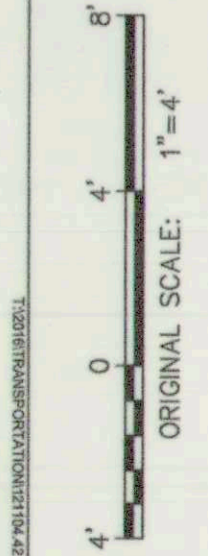
EP-17-21



POND CROSS SECTION A-A
 HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 4'



STORM DRAIN PROFILE (STR. EX/MH-2 TO STR. PR/EW-2)
 HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 4'



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BLUE RIVER COURT SWM POND REPAIR

POND PROFILES

PROJECT NO: 121104.42 SCALE: 1"=20' DATE: 04/11/2018
 SEAL: DESIGNED: JBL/JA CHECK: RG
 DWS NO: * PR-02 OF PR-02
 SHEET NO: 6 OF 19
 STATE OF MARYLAND PROFESSIONAL ENGINEER 16957
 4-11-18

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD
 BUREAU OF ENVIRONMENTAL SERVICES
 5/9/18
 DATE

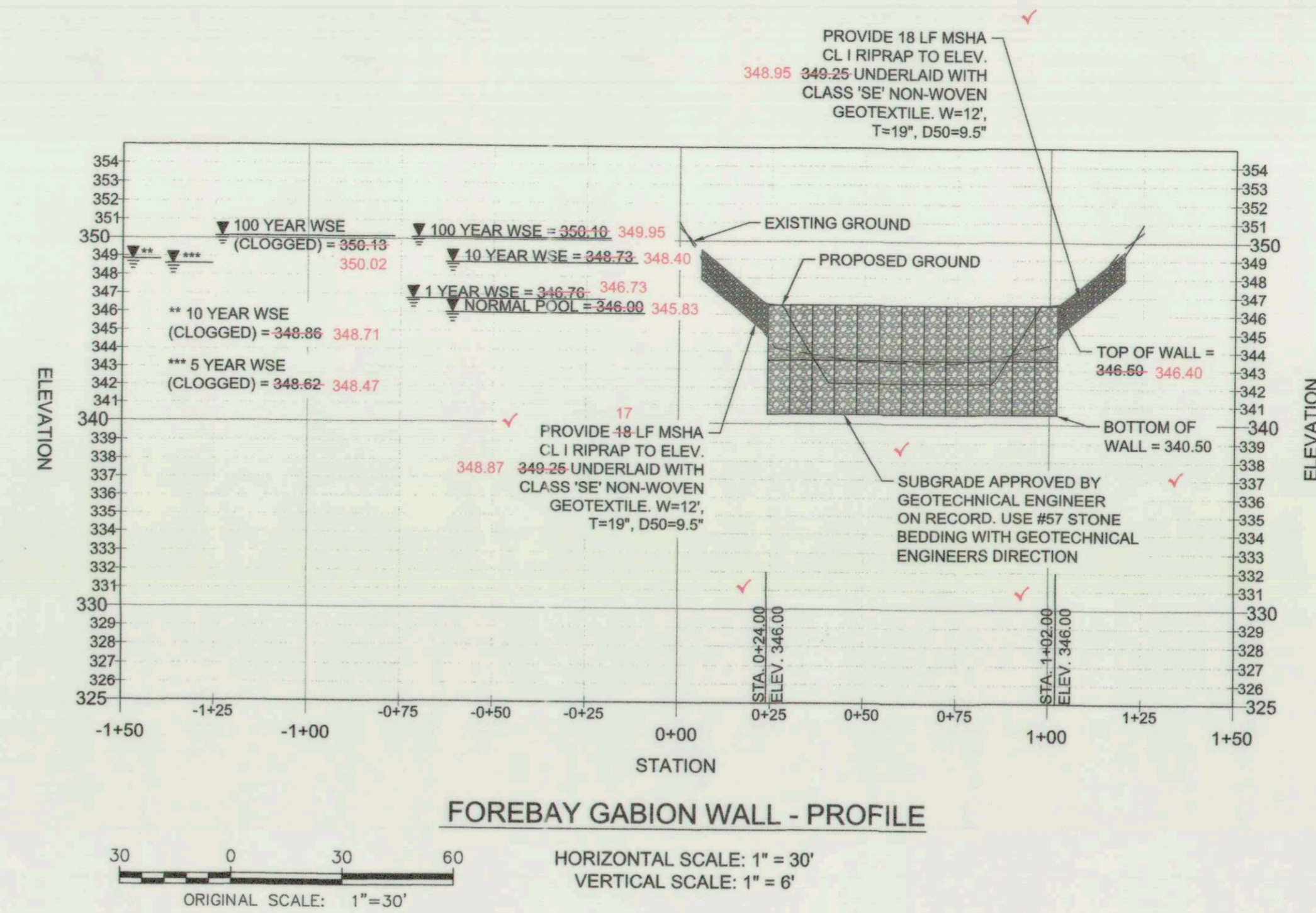
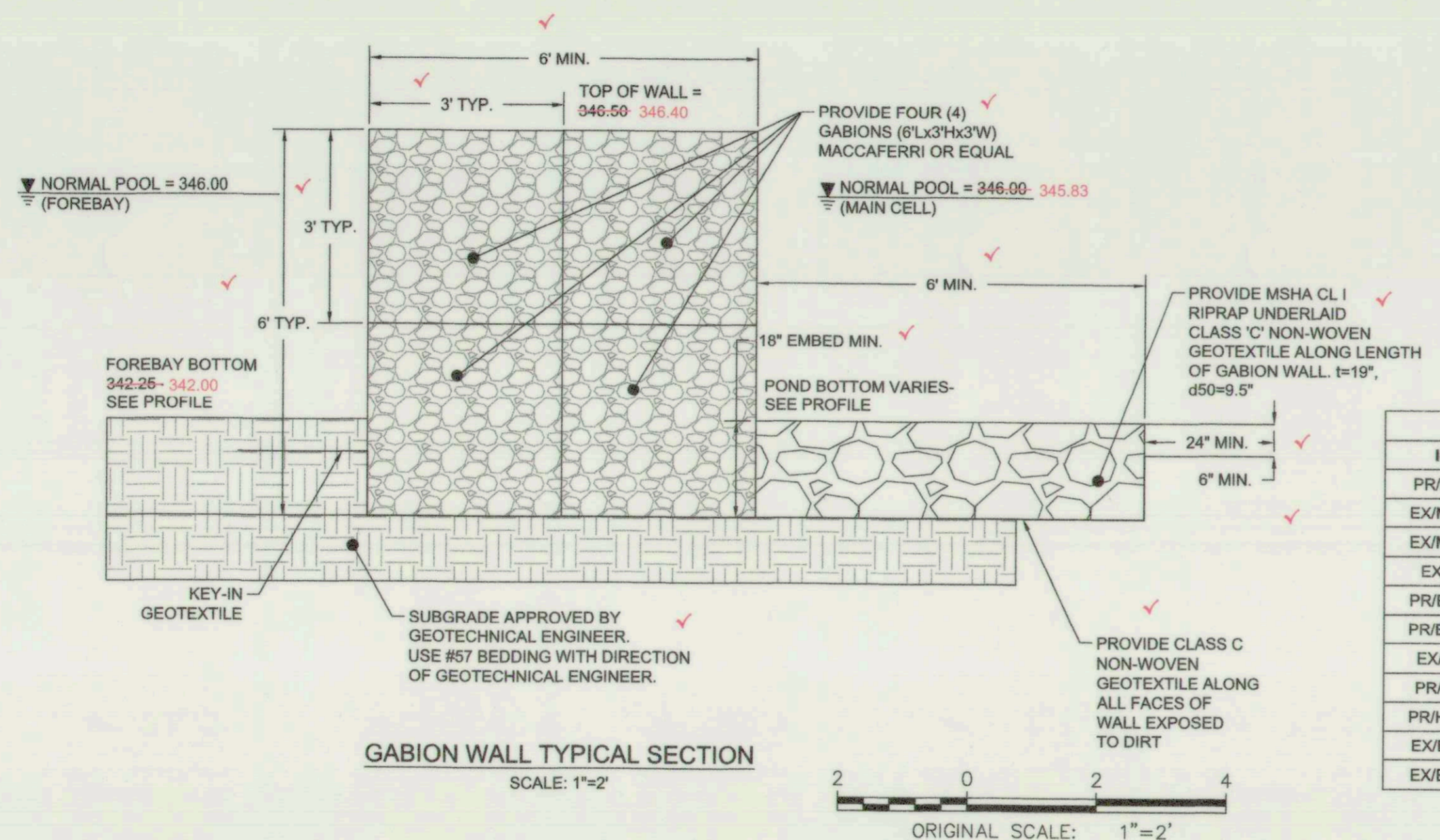
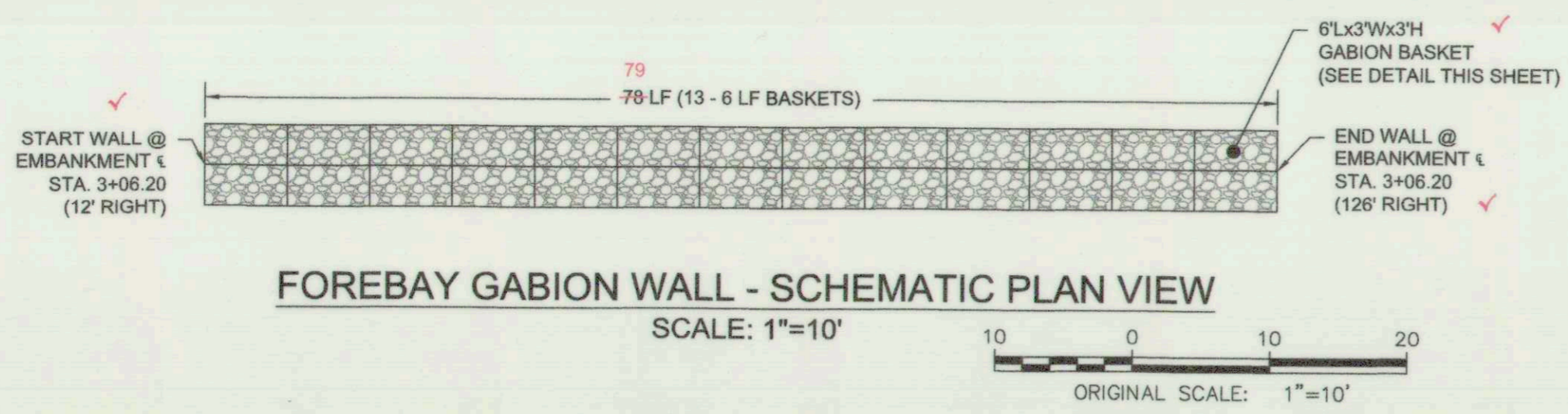
THIS PLAN IS APPROVED FOR SMALL POND CONSTRUCTION AND SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD SOIL CONSERVATION DISTRICT
 5/10/18
 DATE

FOR AS-BUILT
 06-05-2019

EP-17-21

AS BUILT SHEET 4 OF 8

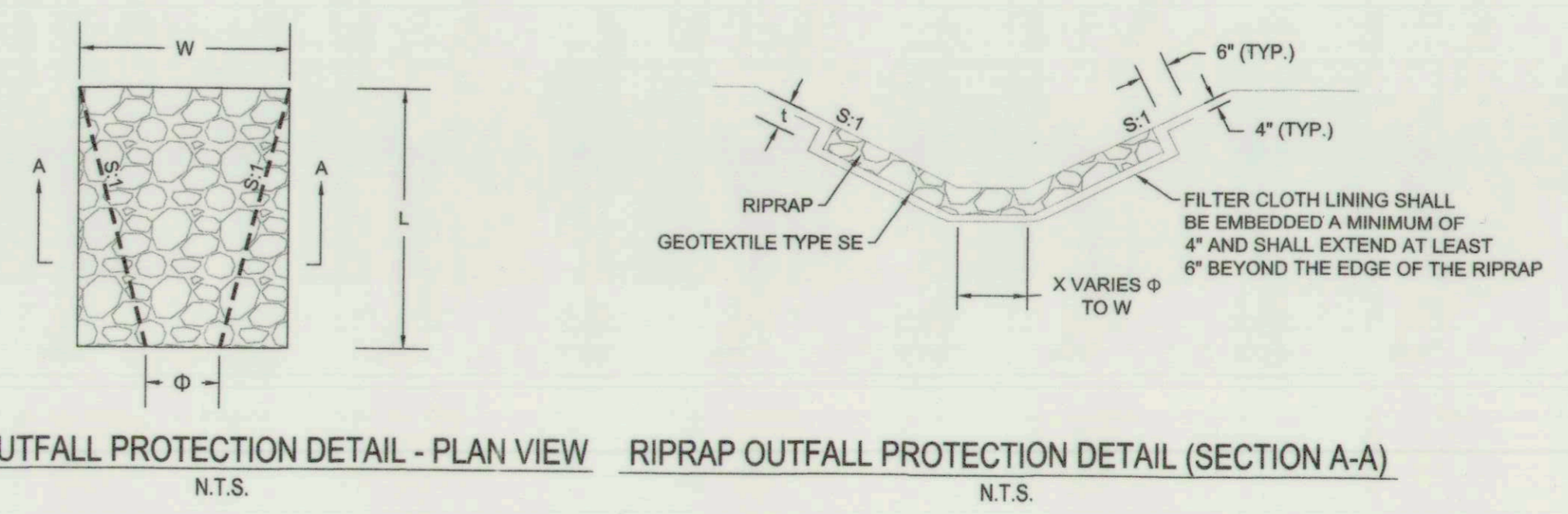
EP-17-21



STRUCTURE SCHEDULE						
ID	TYPE	STATION	OFFSET	TOP ELEV.	STANDARD	COMMENT
PR/MH-1	MANHOLE	4+35.05	85.55' RT	351.83	G-5.13	
EX/MH-2	MANHOLE	2+52.05	302.56' RT	360.48	N/A	EXISTING TO REMAIN
EX/MH-3	MANHOLE	2+41.41	405.79' RT	361.91	N/A	EXISTING TO REMAIN
EX/I-1	CURB INLET	2+14.25	320.09' RT	359.95	N/A	EXISTING TO REMAIN
PR/EW-1	ENDWALL	2+45.65	25.35' LT	INV.=342.30	D-5.21	MODIFIED TO ACCOMMODATE (2) 4" DIA. P.V.C.
PR/EW-2	ENDWALL	4+05.33	64.81' RT	INV.=342.25	D-5.21	MODIFIED TO ACCOMMODATE (2) 4" DIA. P.V.C.
EX/R-1	RISER	2+41.69	34.30' RT	346.00	N/A	EXISTING TO BE REMOVED
PR/R-2	RISER	2+45.65	19.15' RT	350.87	350.82	N/A
PR/HW-1	HEADWALL	2+45.65	39.35' RT	INV.=342.75	D-5.21	φ = 12" MODIFIED FOR (2) PIPES (6", 6" φ)
EX/ES-1	END SECTION	2+45.47	25.13' LT	INV.=342.31	N/A	EXISTING TO BE REMOVED
EX/ES-2	END SECTION	4+21.06	58.01' RT	INV.=342.37	N/A	EXISTING TO BE REMOVED

PIPE SCHEDULE					
STRUCTURE	FROM	TO	LENGT H	SIZE	PIPE
PR/MH-1	PR/EW-2		32 LF	36 IN	R.C.P. ASTM-76 CL IV
PR/HW-1	PR/R-2		17 LF	6 IN	D.I.P. CL 51
PR/HW-1	PR/R-2		17 LF	6 IN	D.I.P. CL 51
PR/R-2	PR/EW-1		42 LF	24 IN	R.C.P. ASTM-361 B-25
*EX/MH-2	PR/MH-1		35 LF	29 X 45 IN	H.E.R.C.P.
*EX/R-1	PR/EW-1		59 LF	24 IN	C.M.P.
FILTER DIAPHRAGM	PR/EW-1		20 LF	4 IN	P.V.C. SCH. 80 PERFORATED
FILTER DIAPHRAGM	PR/EW-1		14 LF	4 IN	P.V.C. SCH. 80 SOLID

- GABION WALL CONSTRUCTION NOTES**
- GABIONS ARE BASKETS MANUFACTURED FROM 8X10 DOUBLE TWISTED HEXAGONAL WOVEN STEEL WIRE MESH PER ASTM A975-11. GABIONS ARE FILLED WITH STONE AT THE PROJECT SITE TO FORM FLEXIBLE PERMEABLE MONOLITHIC STRUCTURES SUCH AS RETAINING WALLS, CHANNEL LININGS, AND WEIRS FOR EROSION CONTROL PROJECTS.
 - WIRE MESH
 - USE GALVANIZED, PVC COATED 8X10 HEXAGONAL DOUBLE TWIST WIRE MESH TYPE PER ASTM A975-11
 - MINIMUM DIAMETER OF 0.105 IN (INTERNAL), 0.146 IN (EXTERNAL)
 - MINIMUM OPENING WIDTH OF 3.25 IN.
 - LACING WIRE
 - MINIMUM DIAMETER OF 0.087 IN (INTERNAL), 0.127 IN (EXTERNAL)
 - MAXIMUM TENSILE STRENGTH OF 75 KSI PER ASTM A641/A641M.
 - ELONGATION SHALL NOT BE LESS THAN 12% PER ASTM A370.
 - SHALL HAVE MINIMUM QUANTITIES OF ZINC COATING PER ASTM A641/A641M.
 - SHALL BE COATED WITH P.V.C. COATED (NOMINAL - 0.02 IN., MINIMUM - 0.015 IN.)
 - STONE
 - USE CRUSHED ANGULAR STONE MEETING THE FOLLOWING GRADATION PER ASTM D422:
 - D100 = 8"
 - D5 = 4"
 - SUBMITTALS
 - PRIOR TO FABRICATION AND INSTALLATION, THE FOLLOWING SUBMITTALS MUST BE SUBMITTED AND APPROVED BY THE OWNER'S ENGINEER:
 - GABION MANUFACTURER
 - GABION WIRE MESH
 - GABION LACING WIRE
 - GABION STONE
 - FOUNDATION PREPARATION
 - EXCAVATE TO SUBGRADE ELEVATION AS SHOWN ON PLAN. SUBGRADE SHALL BE LEVEL, SMOOTH AND FREE OF IRREGULARITIES, LOOSE MATERIAL, AND VEGETATION. OBTAIN GEOTECHNICAL ENGINEER'S APPROVAL OF SUBGRADE PRIOR TO INSTALLING GABIONS. WITH GEOTECHNICAL ENGINEER'S RECOMMENDATION, SPECIFICATION AND DIRECTION, A BEDDING OF #57 STONE MAY BE USED.
 - INSTALL CLASS C NON-WOVEN GEOTEXTILE AROUND SIDES AND BOTTOM OF GABIONS THAT WILL CONTACT SOIL. KEY-IN GEOTEXTILE A MINIMUM OF 24 INCHES WITH SIX INCHES OF COVER.
 - INSTALLATION
 - ASSEMBLE AND INSTALL GABIONS PER PLAN FOR LOCATION, ELEVATION, AND ORIENTATION AND PER MANUFACTURER'S DIRECTION AND SPECIFICATION.
 - DO NOT TRACK CONSTRUCTION EQUIPMENT DIRECTLY ON GABION WALL.



RIPRAP CHANNEL SCHEDULE											
STRUCTURE	CLASS	φ	L	W	X VARIES φ TO W	t	D (CHANNEL)	d ₅₀	SIDE SLOPE (SS)	V _{RIPRAP}	LONGITUDINAL SLOPE
PR. EW-2	I	36 IN	19 LF	15 LF	3 LF TO 11 LF	19 IN	36 IN	9.5 IN	2H:1V	0.37 FPS	0.00 FT/FT
PR. EW-1	I	24 IN	22 LF	11 LF	2 LF TO 11 LF	19 IN	24 IN	9.5 IN	2H:1V	0.38 FPS	0.00 FT/FT

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD
 BUREAU OF ENVIRONMENTAL SERVICES
 5/9/18
 DATE

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FOR AS-BUILT
 06-05-2019

EP-17-21

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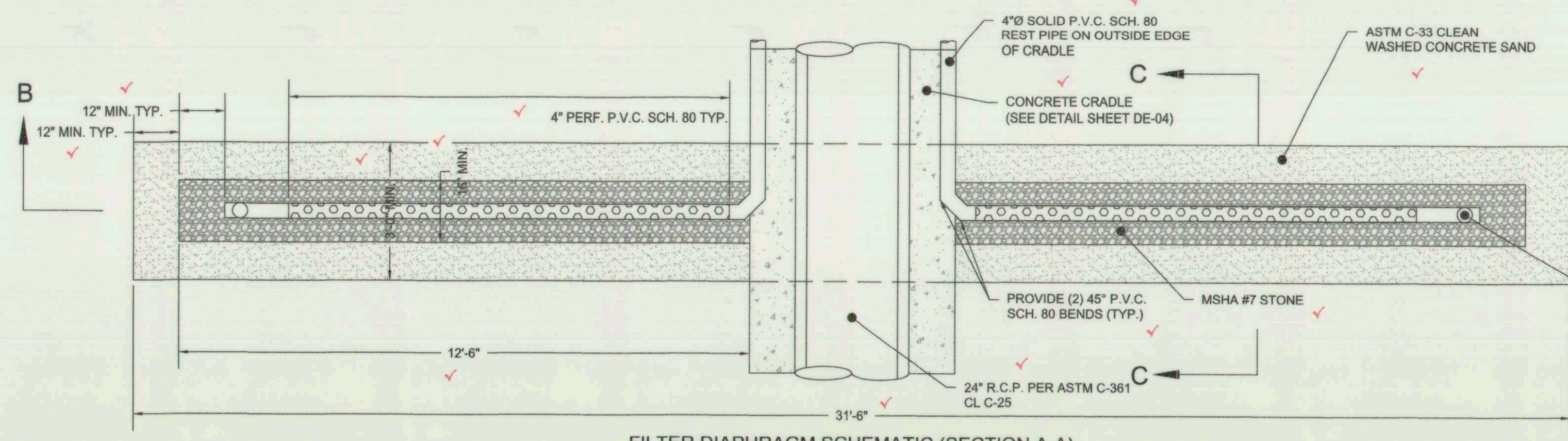
GREY ROCK FARM
 SECTIONS 5 AND 6
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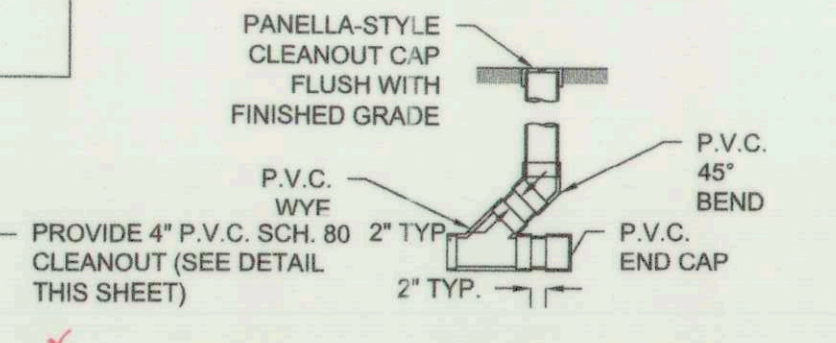
**BLUE RIVER COURT
 SWM POND REPAIR**

POND DETAILS

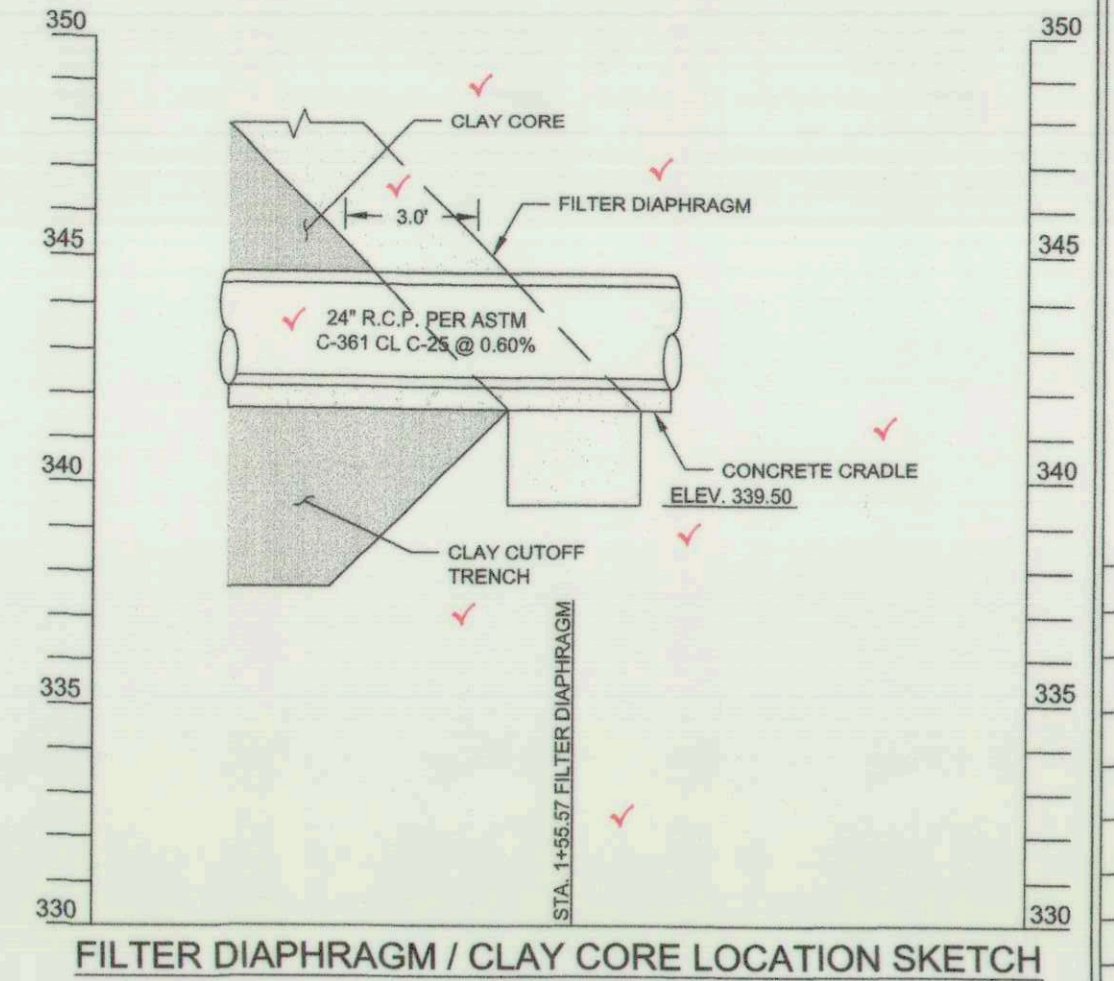
PROJECT NO.: 121104.42 SCALE: AS SHOWN DATE: 04/11/2018
 DESIGN: JBA/JA CHECK: RG
 DRAWING NO.: DE-01 OF DE-05
 SHEET NO.: 7 OF 19
 STATE OF MARYLAND PROFESSIONAL ENGINEER
 4-11-18



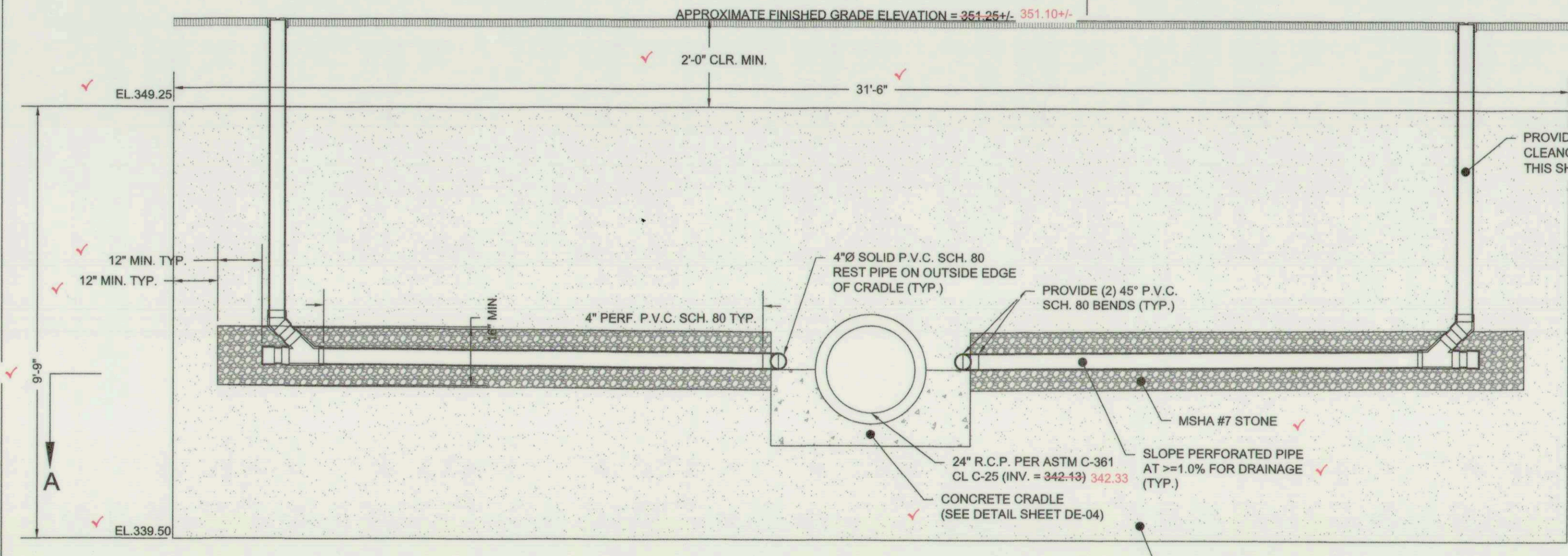
FILTER DIAPHRAGM SCHEMATIC (SECTION A-A)
SCALE: 1/2"=1'



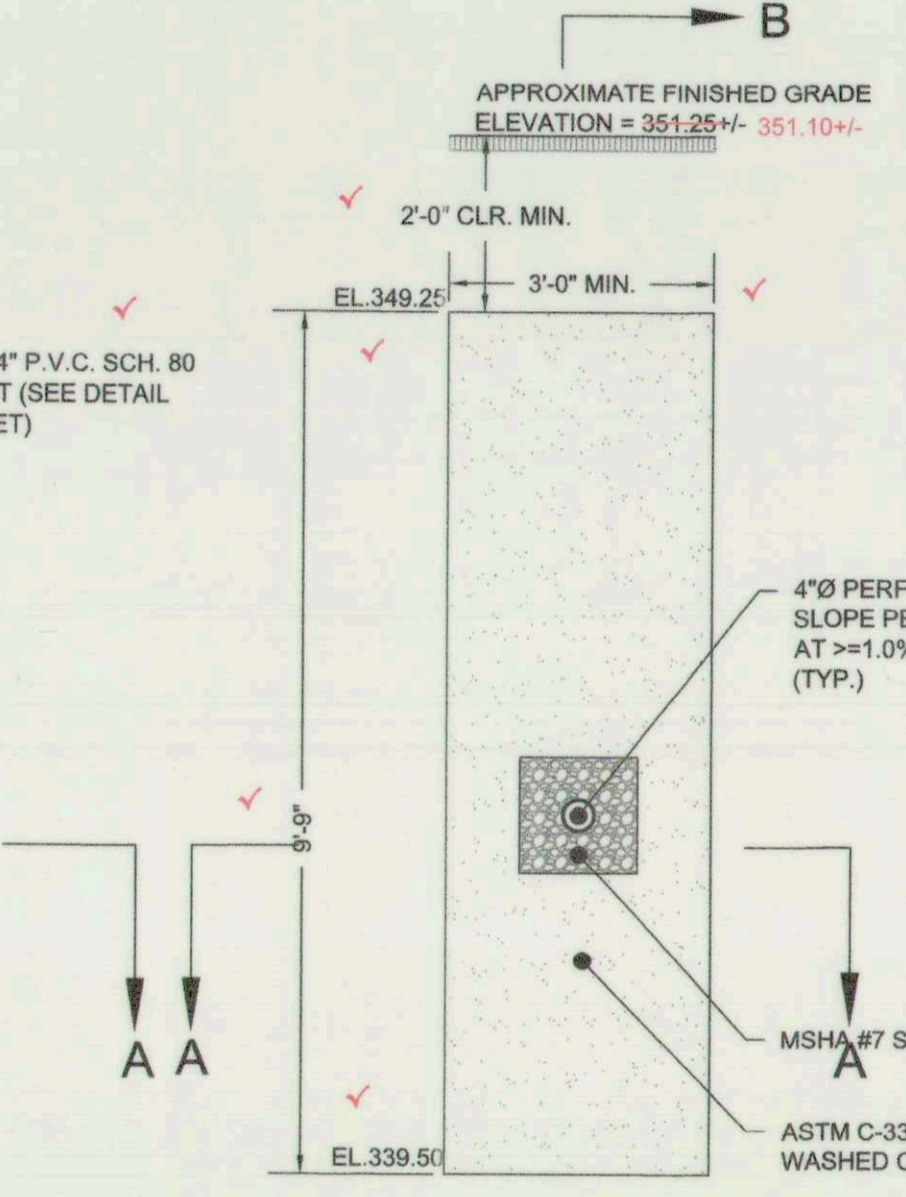
CLEANOUT DETAIL
SCALE: 1/2"=1'



FILTER DIAPHRAGM / CLAY CORE LOCATION SKETCH
SCALE: 1"=4'



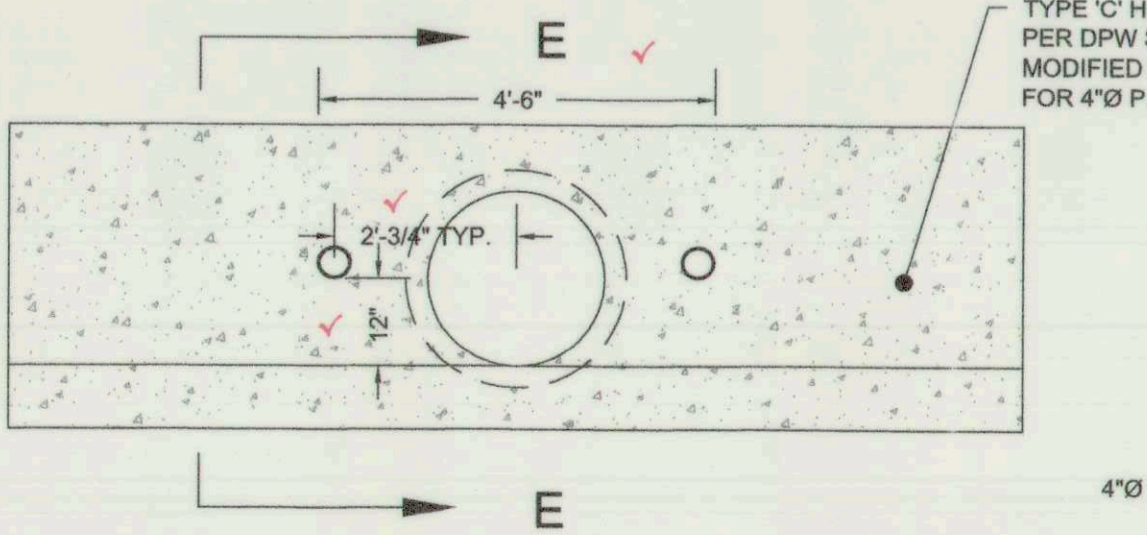
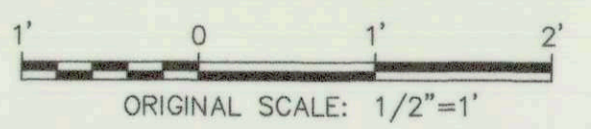
FILTER DIAPHRAGM PROFILE (SECTION B-B)
SCALE: 1/2"=1'



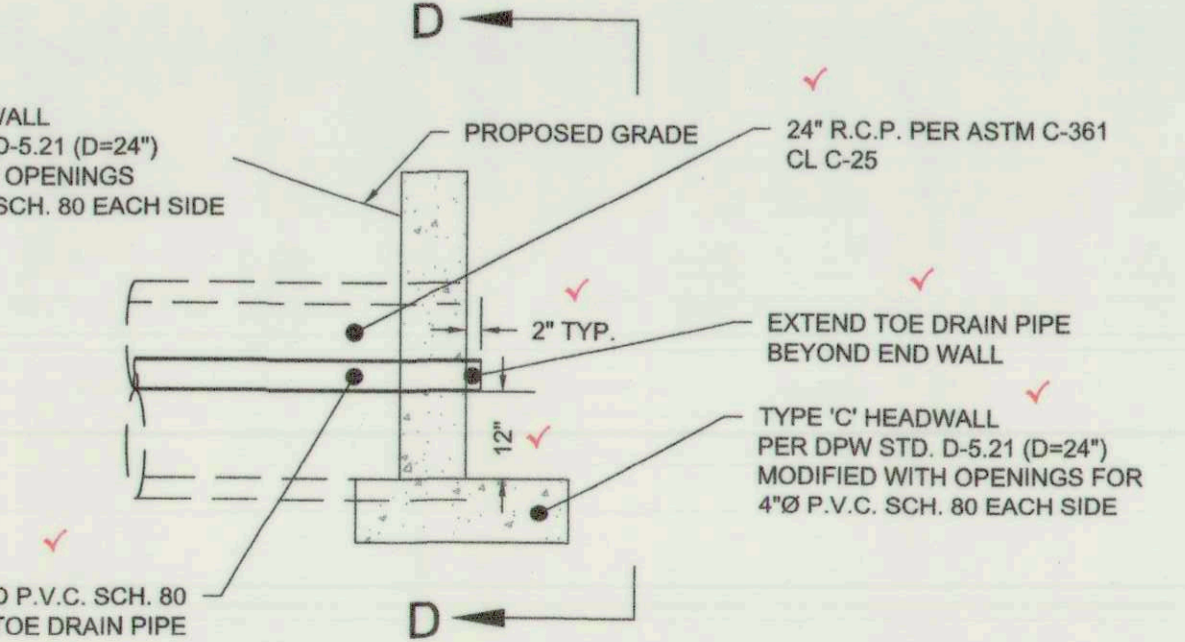
FILTER DIAPHRAGM SECTION (SECTION C-C)
SCALE: 1/2"=1'

FILTER DIAPHRAGM INSTALLATION NOTES

1. LOCATION AND GEOMETRY
 - 1.1. THE FILTER DIAPHRAGM SHALL LOCATED IMMEDIATELY DOWNSTREAM OF THE IMPERVIOUS CORE.
 - 1.2. THE FILTER DIAPHRAGM SHALL BE A MINIMUM OF THREE (3) FEET THICK.
 - 1.3. THE FILTER DIAPHRAGM SHALL BE CONSTRUCTED TO DEPTH OF TWO (2) FEET BELOW THE CONCRETE CRADLE.
 - 1.4. THE TOP ELEVATION OF THE FILTER DIAPHRAGM SHALL BE AT A MINIMUM ELEVATION EQUAL TO THE 10 YEAR WSE.
2. MATERIALS
 - 2.1. THE FILTER DIAPHRAGM MATERIAL SHALL CONSIST OF SAND MEETING ASTM C-33 FINE CONCRETE AGGREGATE REQUIREMENTS, STONE MEETING MSHA #7 GRADATION REQUIREMENTS, AND PIPE MEETING SCHEDULE 80 P.V.C. REQUIREMENTS.
 - 2.2. PERFORATED P.V.C. SHALL HAVE PERFORATIONS MEASURING 3/8 INCHES Ø SPACED EVENLY AROUND THE CIRCUMFERENCE OF THE PIPE EVERY 90° (FOUR (4) PER RING) AND FOUR (4) INCHES LONGITUDINALLY ALONG THE ENTIRE LENGTH OF THE DESIGNATED PERFORATED P.V.C. PIPE SECTION. HOLES MAY BE MACHINED AS PART OF PIPE FABRICATION OR DRILLED ON-SITE.
 - 2.3. SLOTTED P.V.C. MAY BE USED IN-LIEU OF PERFORATED P.V.C. SUBJECT TO THE FOLLOWING: THE SLOTTED P.V.C. PIPE SHALL HAVE SLOTS FOUR (4) SLOTS PER ROW WITH EACH SLOT MEASURING 1.2 INCHES± IN LENGTH AND 1/4 INCHES IN WIDTH. SLOTS SHALL BE SPACED A MINIMUM OF THREE (3) INCHES APART LONGITUDINALLY ALONG THE ENTIRE LENGTH OF THE DESIGNATED PERFORATED P.V.C. PIPE SECTION.
3. PLACEMENT
 - 3.1. THE SAND SHALL BE PLACED IN UNIFORM EIGHT (8) INCH LIFTS (MEASURED BEFORE COMPACTION).
 - 3.2. WET EACH LIFT THOROUGHLY WITH POTABLE WATER PRIOR TO COMPACTION.
 - 3.3. COMPACT WITH A MINIMUM OF TWO (2) PASSES OF A VIBRATORY PLATE COMPACTOR WEIGHING AT LEAST 160 POUNDS. THE COMPACTOR SHALL HAVE A MINIMUM CENTRIFUGAL FORCE OF 2,450 POUNDS AT A VIBRATING FREQUENCY OF NO LESS THAN 5,000 CYCLES PER MINUTE (OR BY A MINIMUM OF TWO PASSES OF A VIBRATORY SMOOTH WHEELED ROLLER WEIGHING NO LESS THAN AT LEAST 325 POUND WITH A CENTRIFUGAL FORCE OF 2,250 POUNDS AT A VIBRATING FREQUENCY OF NO LESS THAN 4,500 CYCLES PER MINUTE.
 - 3.4. THE SAND SHALL BE PLACED TO AVOID SEGREGATION OF PARTICLE SIZES AND TO ENSURE CONTINUITY AND INTEGRITY OF ALL ZONES.
 - 3.5. THE CONTRACTOR SHALL TAKE PROPER MEASURES TO PREVENT CONTAMINATION OF THE FILTER MEDIA BY ADJACENT SOIL LIFTS, CONSTRUCTION DEBRIS, OR OTHER MATERIALS. CONTAMINATED AREAS SHOULD BE REMOVED AND REPLACED.
 - 3.6. ANY DAMAGE TO THE FOUNDATION SURFACE OR THE TRENCH SIDES OR BOTTOM OCCURRING DURING PLACEMENT OF SAND FILTER MEDIA SHALL BE REPAIRED BEFORE THE SAND FILTER MEDIA PLACEMENT IS CONTINUED.
 - 3.7. THE UPPER SURFACE OF THE SAND FILTER ZONE CONSTRUCTED CONCURRENTLY WITH ADJACENT ZONES OF EARTHFILL SHALL BE MAINTAINED AT A MINIMUM ELEVATION OF ONE (1) FOOT ABOVE THE UPPER SURFACE OF ADJACENT EARTHFILL.
 - 3.8. THE FILTER DIAPHRAGM TOE DRAIN(S) SHALL OUTLET AT THE PRINCIPAL SPILLWAY END WALL AND EXTEND TWO (2) INCHES (MIN.) BEYOND THE DOWNSTREAM FACE OF THE END WALL.
4. REFER TO POND SPECIFICATION CODE MD-378 FOR ADDITIONAL SPECIFICATIONS.



END WALL (STR PR EW-1) WITH TOE DRAIN PENETRATIONS (SECTION D-D)
SCALE: 1/2"=1'



END WALL WITH TOE DRAIN PENETRATIONS (SECTION E-E)
SCALE: 1/2"=1'

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD
 THIS PLAN IS APPROVED FOR SMALL POND CONSTRUCTION AND SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Mark DeRosa 5/18/18
 Howard Soil Conservation District 5/10/18

CLIENT/LAND OWNER:
 HOWARD COUNTY
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENVIRONMENTAL SERVICES
 6751 COLUMBIA GATEWAY DRIVE, SUITE 514
 COLUMBIA, MARYLAND 21046-3143
 PHONE: 410.313.0844

REVISIONS		
NO.	DATE	DESCRIPTION

SITE INFORMATION
 STREET ADDRESS:
 ADJACENT TO:
 3912 BLUE RIVER COURT
 ELLICOTT CITY, MARYLAND 21042
 GREY ROCK FARM
 SECTIONS 5 AND 6
 LOTS: 252, 301
 PARCEL: 1178 TAX MAP: 0024 GRID: 0015
 ELECTION DISTRICT: 1
 ZONING: R-20
 PLAT NO.: 9747, 10710

MM CENTURY
 ENGINEERING
 CONSULTING ENGINEERS - PLANNERS
 10710 GILROY ROAD
 HUNT VALLEY, MARYLAND 21031
 PHONE: (443) 589-2400 FAX: (443) 589-2401

**BLUE RIVER COURT
 SWM POND REPAIR**

**FILTER DIAPHRAGM
 DETAILS**

PROJECT NO.: 121104.42	SCALE: 1/2"=1'	DATE: 04/11/2018
DESIGN: JBL/JA	CHECK: RG	
DRAWING NO.: DE-02 OF DE-05		
SHEET NO.: 8 OF 19		

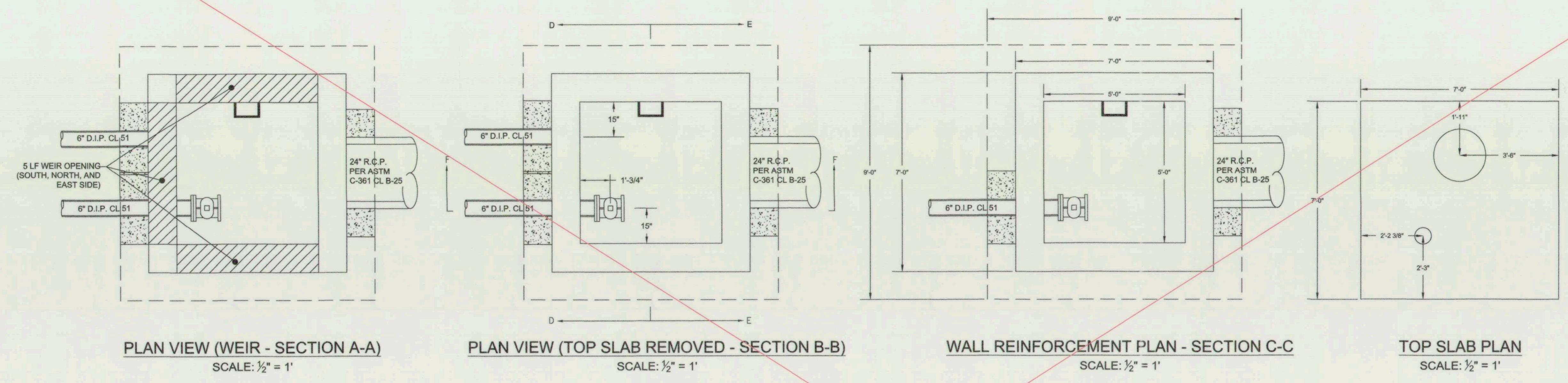
FOR AS-BUILT
 06-05-2019

EP-17-21

AS BUILT SHEET 6 OF 8

THIS SHEET (7A) DELETED AND REPLACED WITH SHEET 7B. CONTRACTOR CAST RISER IN PLACE INSTEAD OF PRE-CASTING.

CLIENT/LAND OWNER:
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENVIRONMENTAL SERVICES
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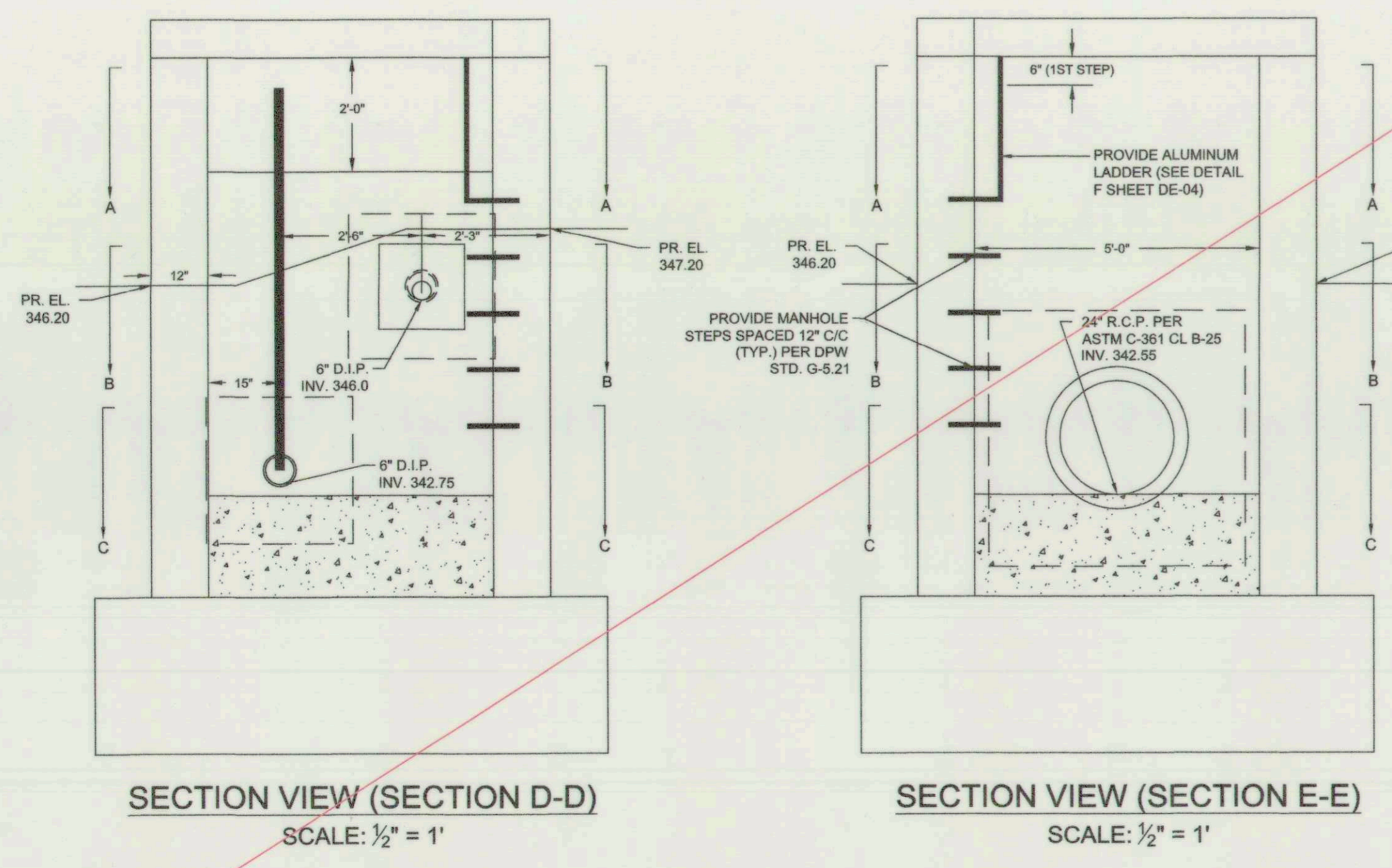


PLAN VIEW (WEIR - SECTION A-A)
SCALE: 1/2" = 1'

PLAN VIEW (TOP SLAB REMOVED - SECTION B-B)
SCALE: 1/2" = 1'

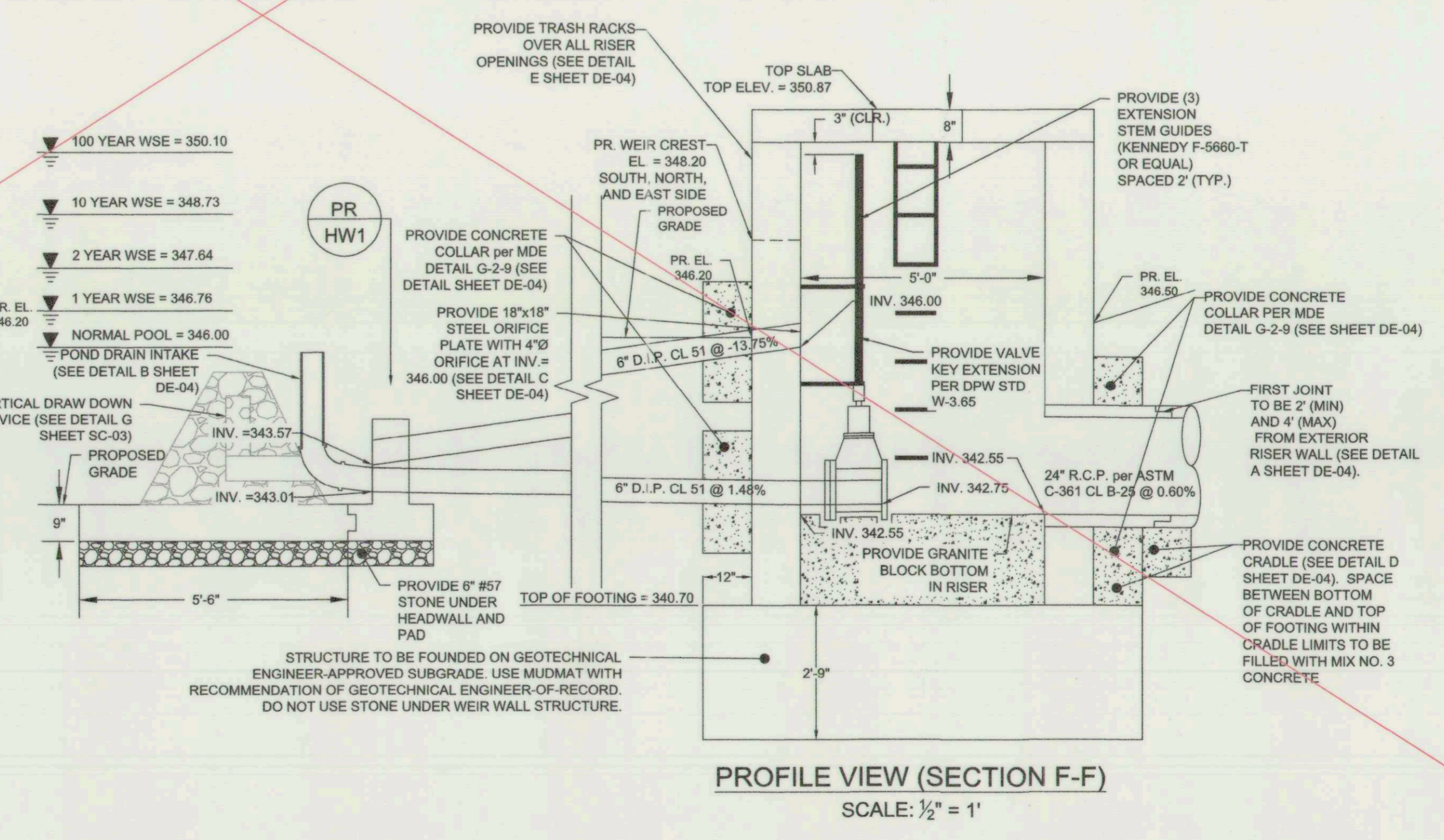
WALL REINFORCEMENT PLAN - SECTION C-C
SCALE: 1/2" = 1'

TOP SLAB PLAN
SCALE: 1/2" = 1'



SECTION VIEW (SECTION D-D)
SCALE: 1/2" = 1'

SECTION VIEW (SECTION E-E)
SCALE: 1/2" = 1'



PROFILE VIEW (SECTION F-F)
SCALE: 1/2" = 1'

NOTE: PROVIDE 12" MIN. CLR. FROM BOTTOM OF TRASH RACK TO FINISHED GRADE EXCEPT OVER LOW FLOW PIPE. PROVIDE 12" COVER OVER LOW FLOW PIPE ONLY.

REVISIONS		
NO.	DATE	DESCRIPTION

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**BLUE RIVER COURT
SWM POND REPAIR**

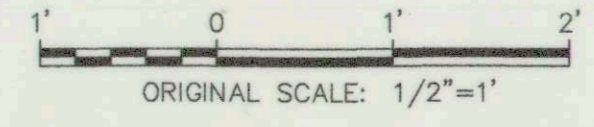
RISER SCHEMATIC

PROJECT NO: 121104-42 SCALE: 1/2"=1' DATE: 04/11/2018
DESIGN: JBJ/A CHECK: RG

DWG NO: DE-03 or DE-05
SHEET NO: 9 OF 19
STATE OF MARYLAND PROFESSIONAL ENGINEERS
4-11-18

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD
BUREAU OF ENVIRONMENTAL SERVICES
5/2/18
THIS PLAN IS APPROVED FOR SMALL POND CONSTRUCTION AND SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SOIL CONSERVATION DISTRICT
5/10/18

FOR AS-BUILT
06-05-2019



EP-17-21

AS BUILT SHEET 7A OF 8

CONCRETE CONSTRUCTION NOTES

- GOVERNING SPECIFICATIONS
 - ALL REINFORCED CONCRETE CONSTRUCTION SHALL MEET OR EXCEED CONCRETE CONSTRUCTION SPECIFICATIONS OF:
 - ACI 318: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, LATEST EDITION
 - ACI 308: ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES, LATEST EDITION
 - MARYLAND DEPARTMENT OF TRANSPORTATION, MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, LATEST EDITION
 - CONCRETE
 - ALL REINFORCED CONCRETE SHALL MEET MD SHA MIX NO. 6 (f_c = 4,500 PSI) FOR CAST-IN-PLACE CONCRETE AS DETAILED IN THE MD SHA STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, LATEST EDITION.
 - REINFORCING STEEL
 - ALL REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60.
 - MINIMUM COVER FOR ALL REINFORCING STEEL IN WALLS, SLABS, AND BEAMS SHALL BE TWO (2) INCHES.
 - MINIMUM COVER FOR ALL REINFORCING STEEL IN FOUNDATIONS SHALL BE THREE (3) INCHES.

- FORMWORK
 - FORMWORK SHALL CONFORM TO SPECIFICATIONS FOR ACI 347, LATEST EDITION
 - CHAMFER ALL EDGES WITH 1/2" X 1/2" WOOD CHAMFER STRIPS
- SUBMITTALS
 - CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER'S ENGINEER OF THE FOLLOWING SUBMITTALS:
 - REINFORCING STEEL SHOP DRAWING PREPARED BY THE STEEL SUPPLIER. **REPRODUCTION OF THE REINFORCEMENT PLAN DRAWINGS IS NOT ACCEPTABLE.** STEEL DRAWING SHALL INCLUDE A SCHEDULE OF ALL REQUIRED BENDS DETAILING BEND DIMENSIONS, BAR SIZES AND REQUIRED QUANTITIES.
 - CONCRETE MIX DESIGNS
 - WATER STOPS IF EQUIVALENT TO THE SPECIFIED PRODUCT(S) IS PROPOSED TO BE USED
 - ASSOCIATED CONCRETE PRODUCTS SUCH AS BONDING AGENT, EPOXY GROUT, ETC. IF EQUIVALENT TO THE SPECIFIED PRODUCT IS PROPOSED TO BE USED
 - APPURTENANCES INCLUDING ORIFICE PLATES, TRASH RACKS, MANHOLE COVERS, VALVES, STEM EXTENSIONS, ETC.
- SUPERVISION AND INSPECTION
 - CONCRETE CONSTRUCTION SHALL BE COMPLETED UNDER SUPERVISION OF A TECHNICIAN OPERATING UNDER RESPONSIBLE CHARGE OF A PROFESSIONAL GEOTECHNICAL ENGINEER
 - PRIOR TO INSTALLING FORM WORK, REINFORCEMENT OR CONSTRUCTION OF ANY KIND FOR ANY CONCRETE STRUCTURE FOUNDATION, THE SUBGRADE SHALL BE

- INSPECTED BY THE GEOTECHNICAL ENGINEER OF RECORD. A MUD MAT MAY BE USED TO PROVIDE SUITABLE SUBGRADE AS SPECIFIED BY THE GEOTECHNICAL ENGINEER IF THE EXISTING SUBGRADE IS UNSUITABLE. DO NOT USE GRAVEL UNDER THE RISER.
- ALL CONCRETE DEMOLITION WORK SHALL BE INSPECTED AFTER COMPLETION OF DEMOLITION. THE CONTRACTOR SHALL NOT PROCEED WITH NEW CONSTRUCTION UNTIL THE ALL DEMOLITION WORK HAS BEEN INSPECTED.
- ALL REINFORCEMENT AND FORM WORK SHALL BE INSPECTED PRIOR TO CLOSING FORMS AND POURING CONCRETE.
- CURING
 - ALL CONCRETE CONSTRUCTION AND CURING TO BE PERFORMED AS APPLICABLE ACCORDING PER SPECIFICATIONS OF:
 - ACI 308: GUIDE TO CURING CONCRETE, LATEST EDITION
 - ACI 305: GUIDE TO HOT WEATHER CONCRETING, LATEST EDITION
 - ACI 306: GUIDE TO COLD WEATHER CONCRETING, LATEST EDITION
 - FORMWORK SHALL REMAIN ON CURING CONCRETE FOR A MINIMUM OF THREE (3) DAYS AFTER POUR.
 - DO NOT BACKFILL AROUND CURED CONCRETE UNTIL TESTING HAS CONFIRMED IT HAS REACHED THE DESIGN 28-DAY STRENGTH.

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 PHONE: 410.313.0844

REVISIONS		
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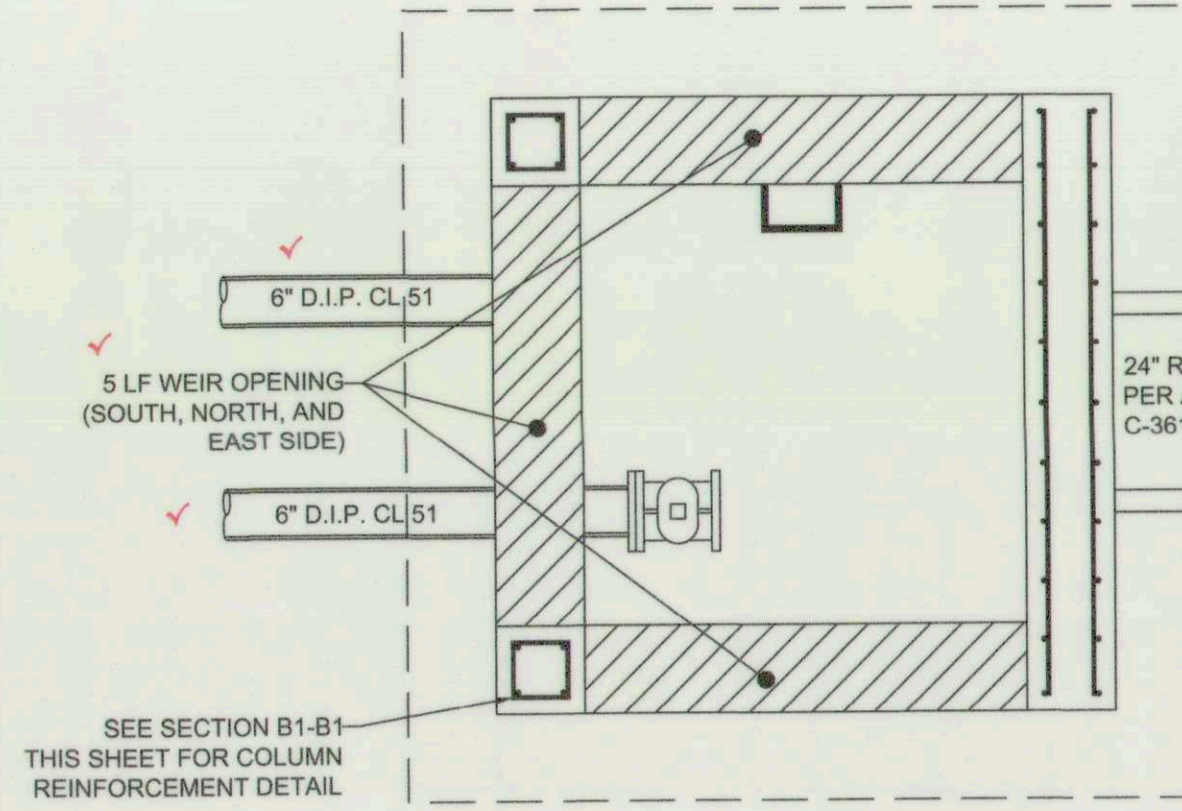
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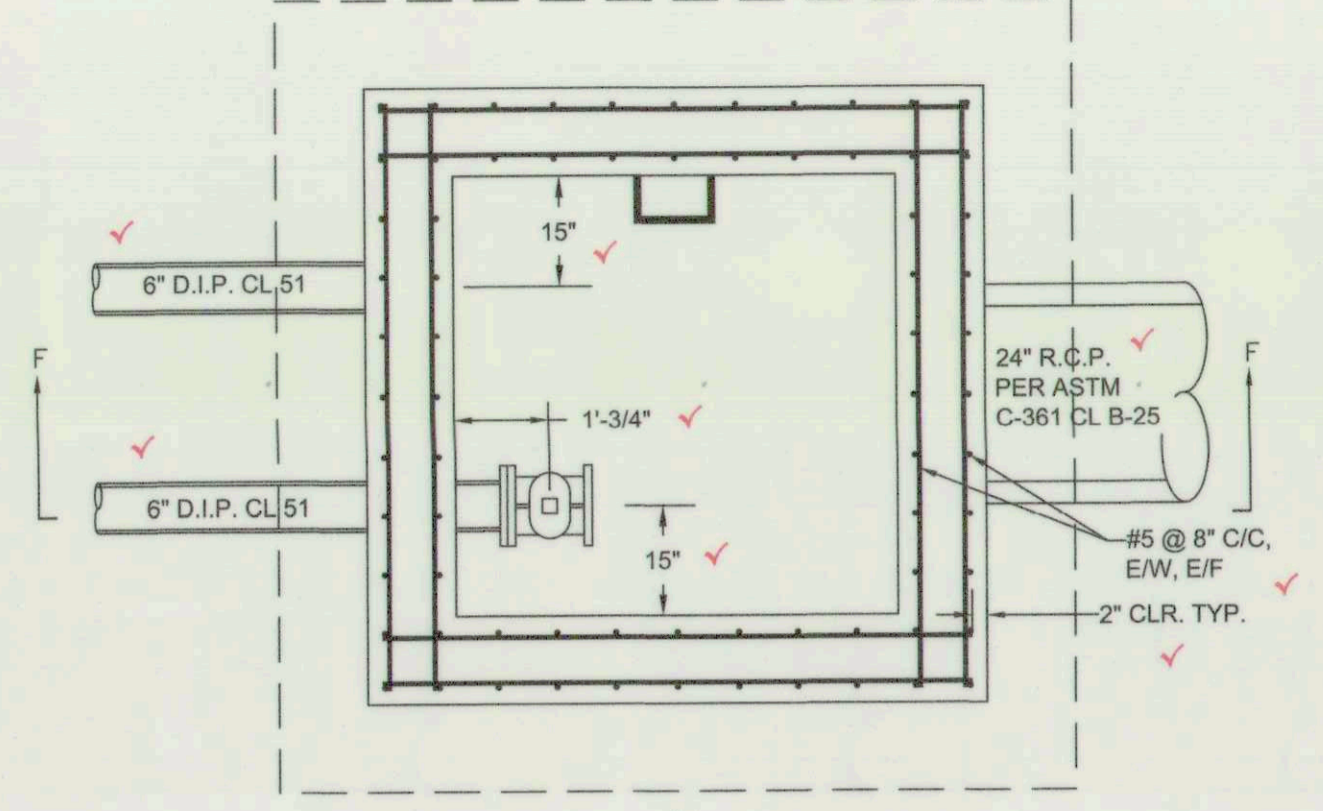
BLUE RIVER COURT SWM POND REPAIR

RISER SCHEMATIC

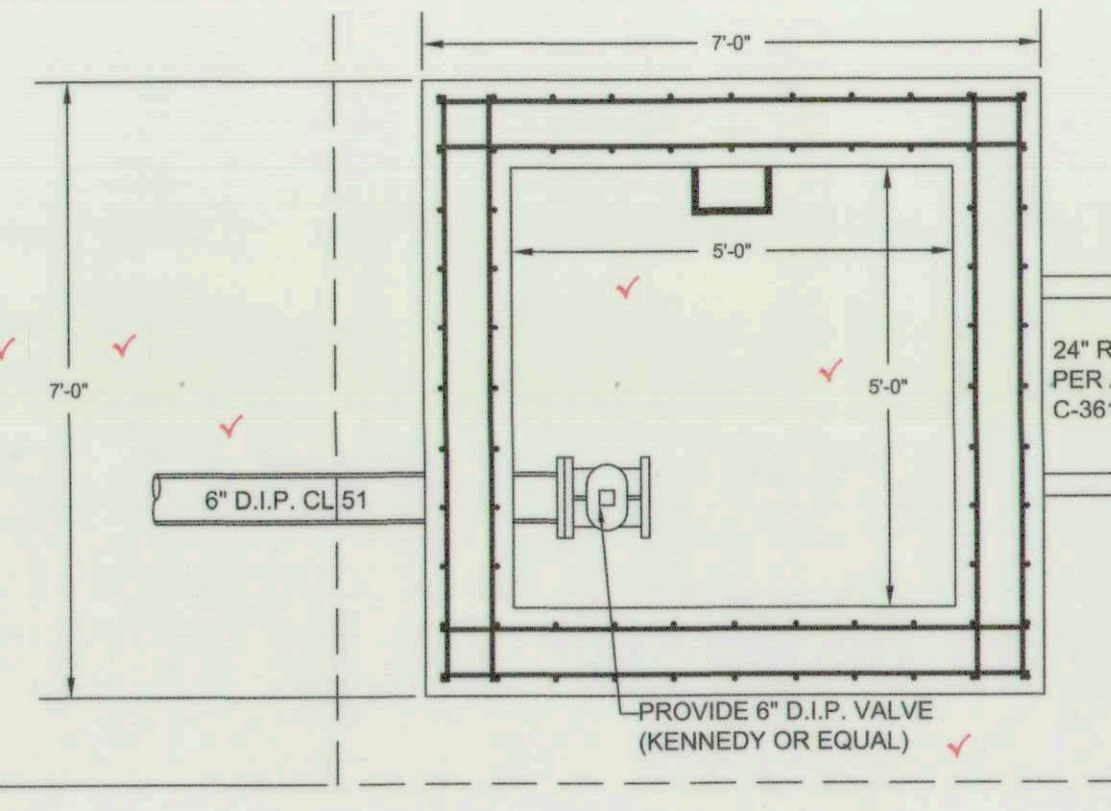
PROJECT NO. 121104.42	SCALE: 1/2"=1'	DATE: 12/01/2016
DESIGN: JBJ/A	CHECK: RG	
DWS NO. DE-03 or DE-05		
SHEET NO. 9 of 18		



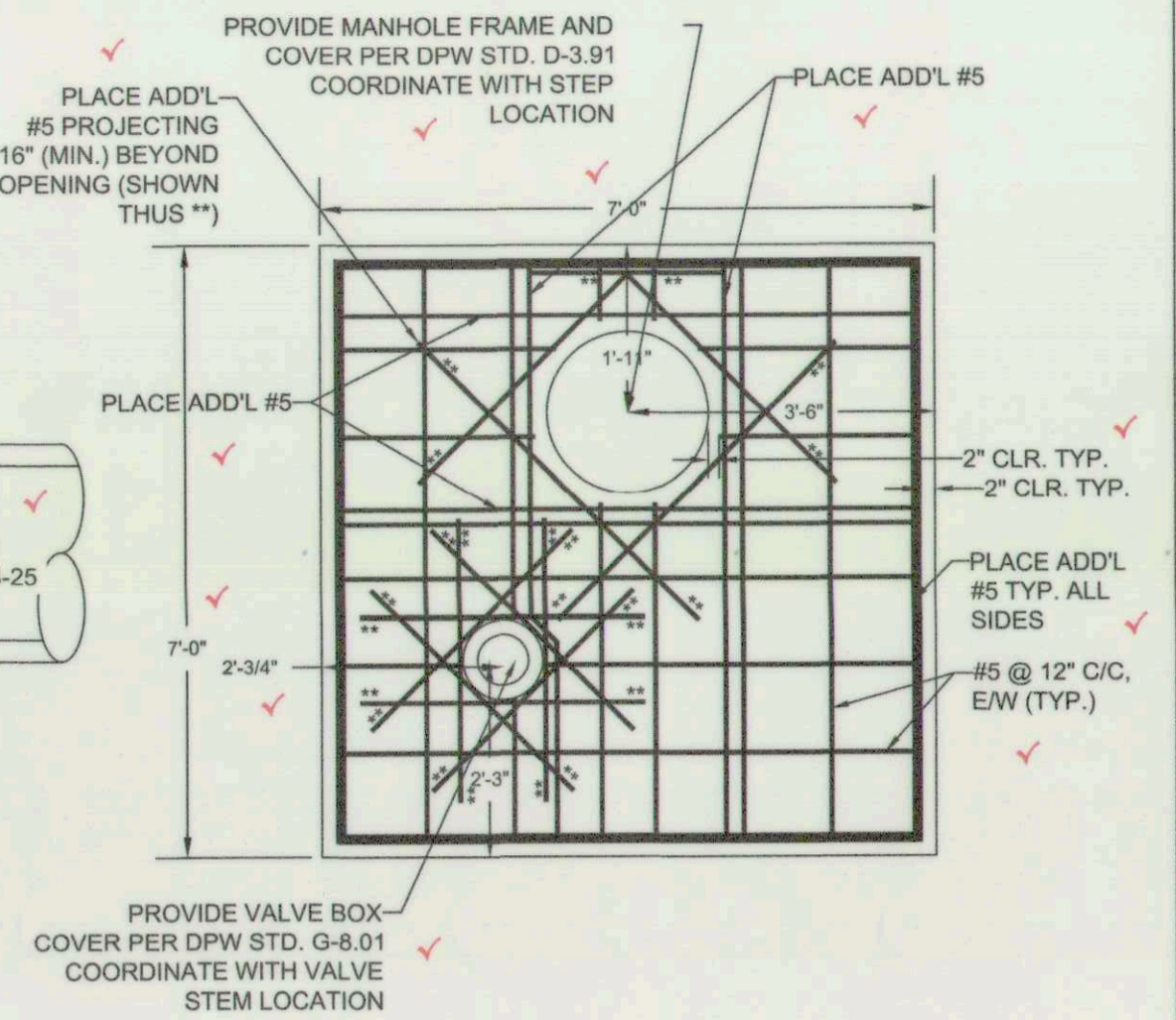
PLAN VIEW (WEIR - SECTION A-A)
 SCALE: 1/2" = 1'



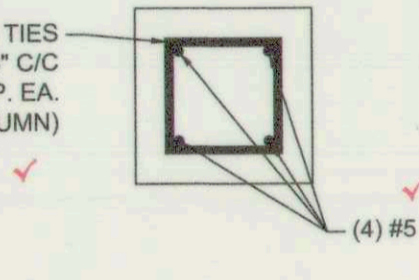
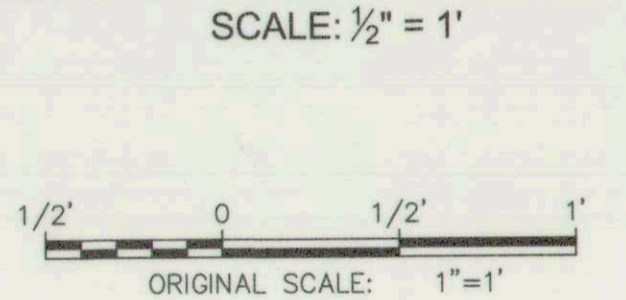
PLAN VIEW (TOP SLAB REMOVED - SECTION B-B)
 SCALE: 1/2" = 1'



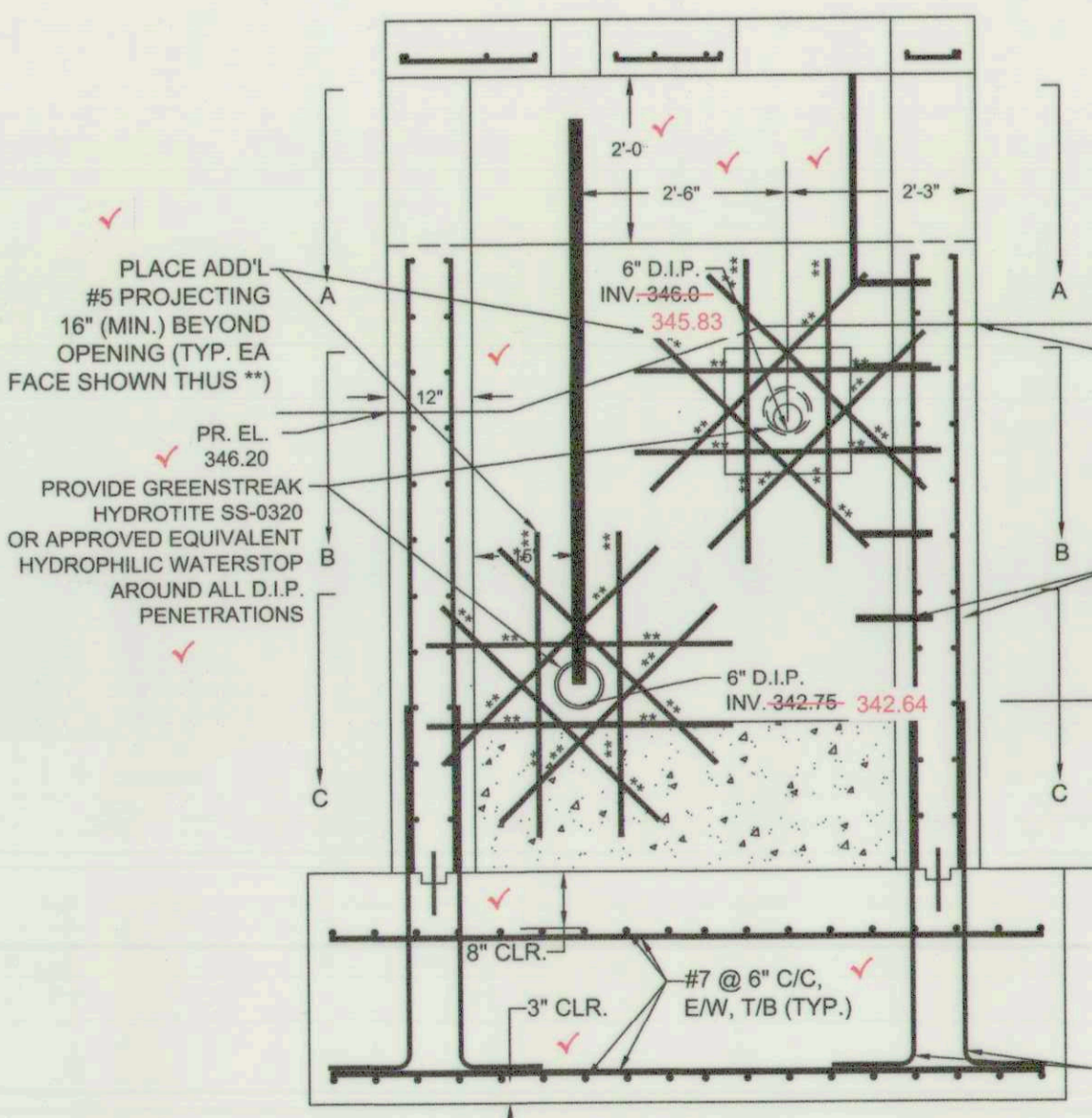
WALL REINFORCEMENT PLAN - SECTION C-C
 SCALE: 1/2" = 1'



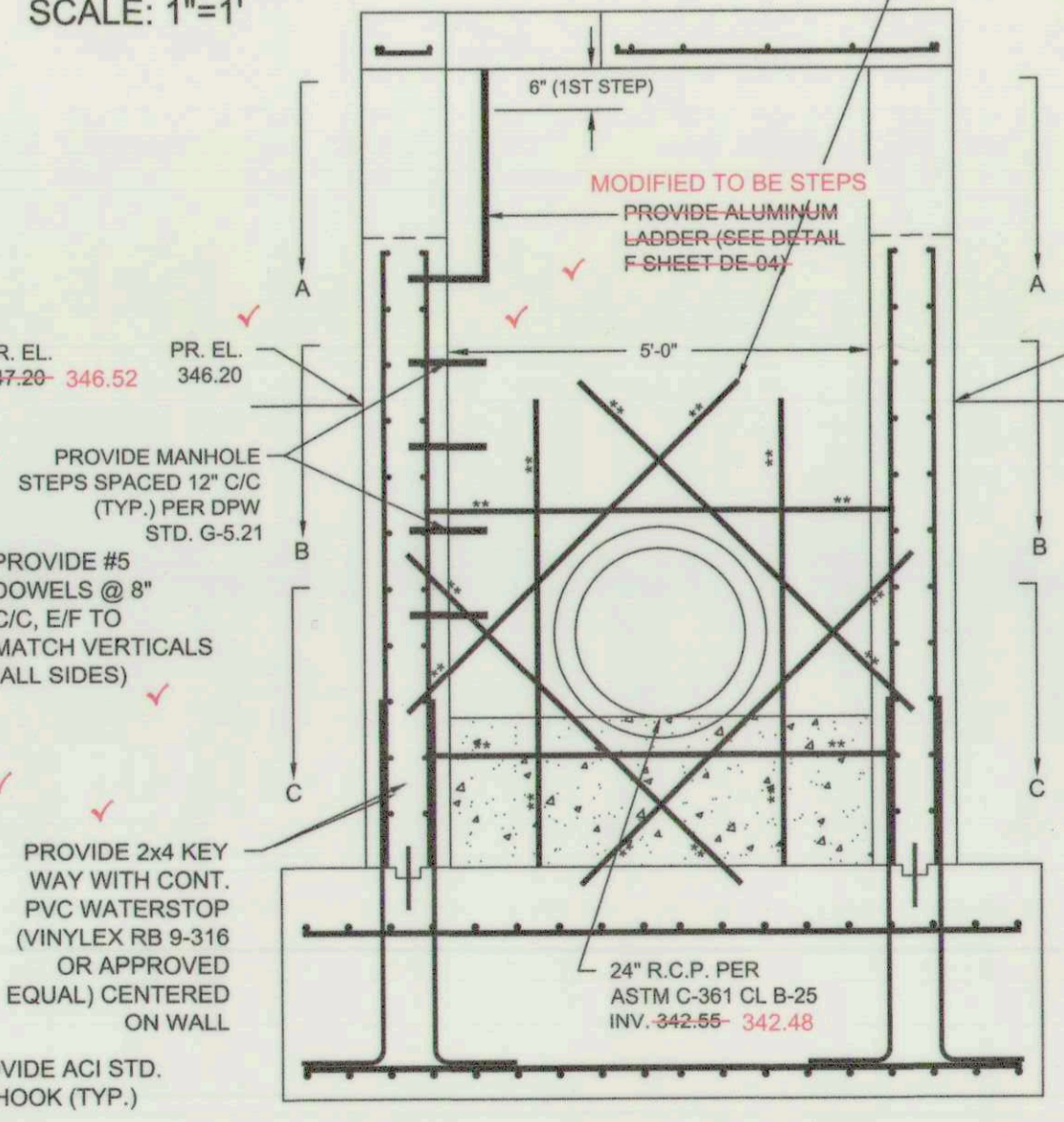
TOP SLAB PLAN
 SCALE: 1/2" = 1'



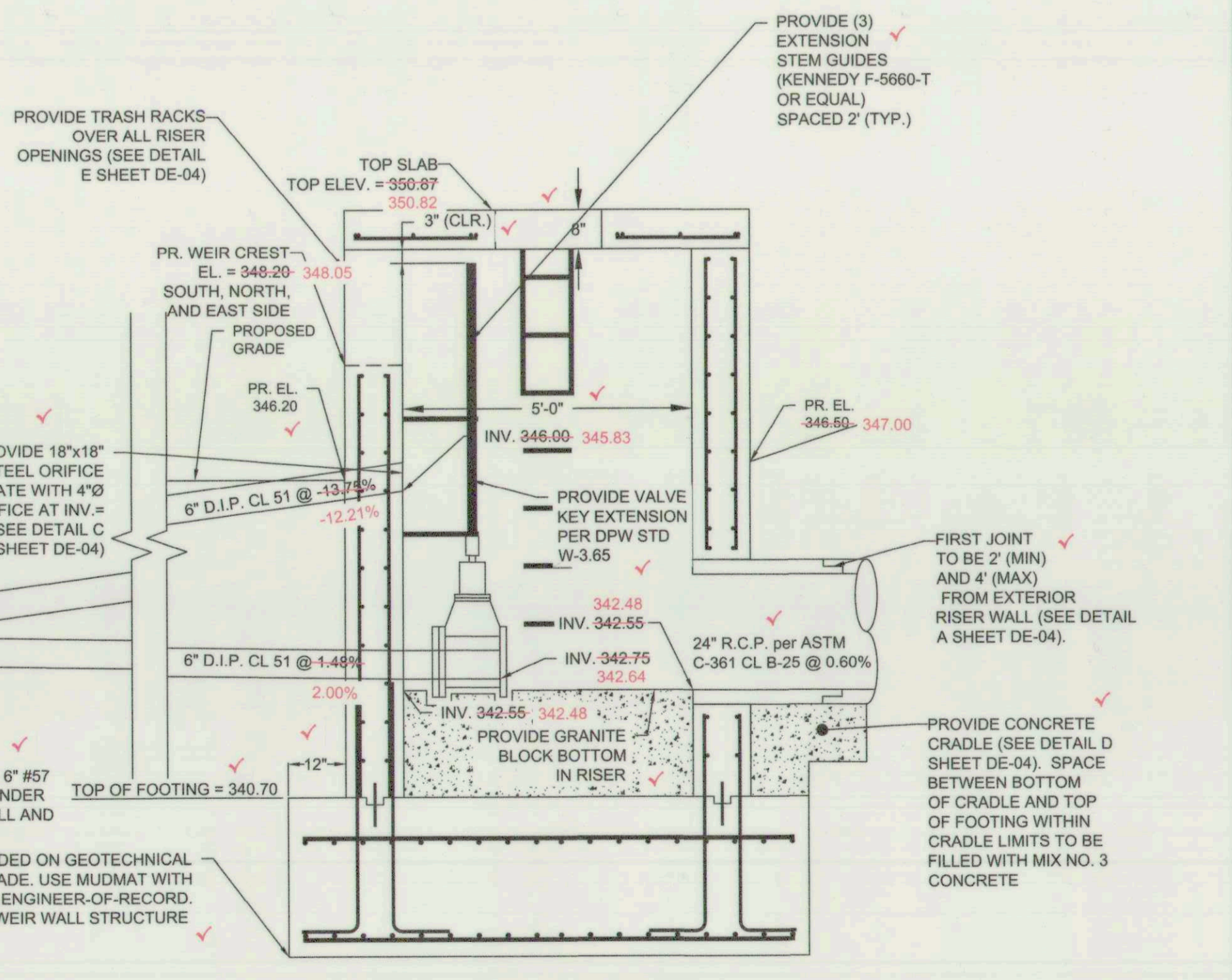
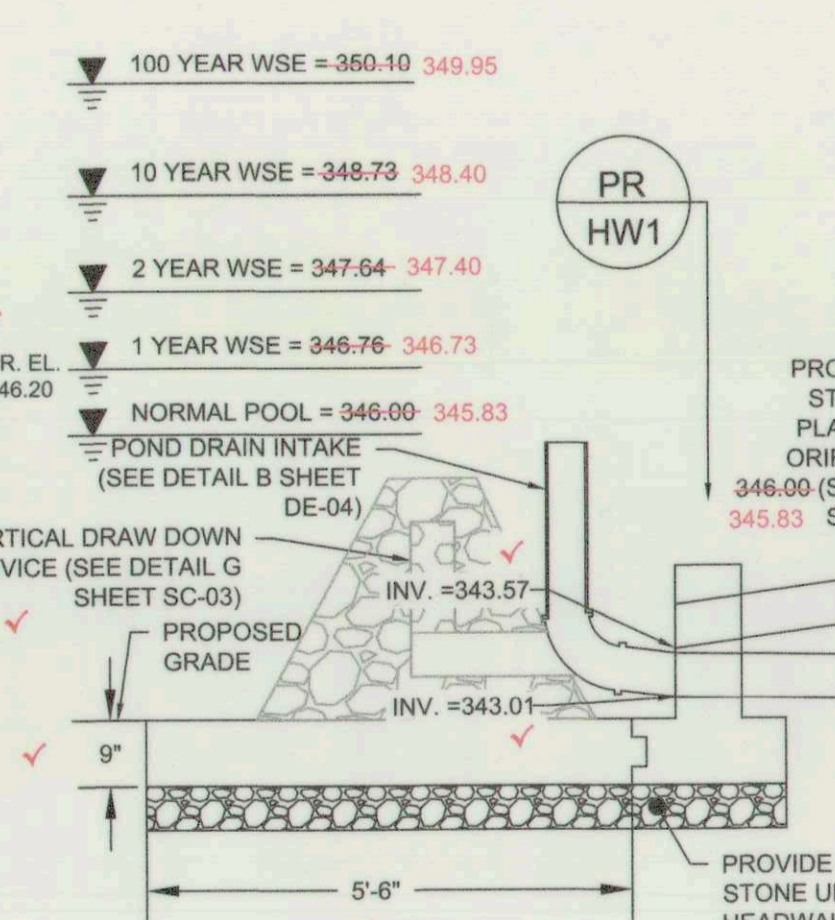
COLUMN DETAIL (SECTION B1-B1)
 SCALE: 1" = 1'



SECTION VIEW (SECTION D-D)
 SCALE: 1/2" = 1'



SECTION VIEW (SECTION E-E)
 SCALE: 1/2" = 1'

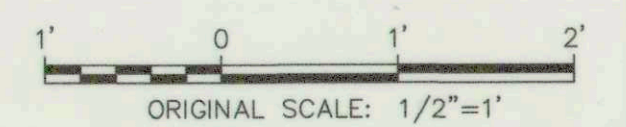


PROFILE VIEW (SECTION F-F)
 SCALE: 1/2" = 1'

THIS SHEET (7B) REPLACES SHEET 7A OF AS BUILT PLAN SET. CONTRACTOR CAST RISER IN PLACE INSTEAD OF PRE-CASTING.

NOTE: PROVIDE 12" MIN. CLR. FROM BOTTOM OF TRASH RACK TO FINISHED GRADE EXCEPT OVER LOW FLOW PIPE. PROVIDE 12" COVER OVER LOW FLOW PIPE ONLY.

FOR AS-BUILT
 06-05-2019



EP-17-21

DETAIL G-2-9 PROJECTION COLLAR STANDARD SYMBOL

CONCRETE MIX NO. 3

1 FT MIN

CONCRETE COLLAR DETAIL

CONCRETE PROJECTION COLLAR

CONCRETE CRADLE

CONCRETE PROJECTION COLLAR

TOP OF COMPACTED SUBGRADE

ELEVATION

CONSTRUCTION SPECIFICATIONS

1. CAST 1 FOOT THICK CONCRETE COLLAR TO OUTLET STRUCTURE WITH FOUR #4 U-SHAPED REBARS.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL D-4-1-C ROCK OUTLET PROTECTION III STANDARD SYMBOL

ROPIII

DISCHARGE TO AN UNCONFINED CHANNEL OR FLAT AREA

PLAN VIEW

SECTION A-A

SECTION B-B

CLASS	THICKNESS (T)
I	18 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

- RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
- USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
- PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (3/8 TO 1/2 INCH MINIMUM 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 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 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 RIPRAP DISLOGGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

CONCRETE CRADLE (DETAIL D)

SCALE: 1/2"=1'

Symbol	Value	Unit
D	24	INCHES
t	3	INCHES
P	12	INCHES
$\frac{1}{2}D + t$	15	INCHES
$\frac{1}{4}D (>= 6")$	6	INCHES

NOTES:

- DO NOT PLACE GRAVEL UNDER CRADLE.
- DEWATER ALL GROUNDWATER THROUGH FILTER BAG.
- CRADLE SHALL BE POURED AGAINST UNDISTURBED EARTH OR FORMED FORMS. SHALL BE REMOVED PRIOR TO BACKFILL. CONCRETE SHALL MEET MD SHA MIX NO. 3 (f'c = 3,500 PSI).
- POUR CRADLE IN ONE CONTINUOUS POUR.

SCALE: 1/2"=1'

RISER TRASH RACK (DETAIL E)

SCALE: 1/2"=1'

FRONT VIEW

SIDE VIEW

EMBED ANCHORS 4" MIN.

TOP SLAB

WEIR CREST

EX. RISER WALL

12" (MIN)

12" (MIN)

2'-0" 2'-1"

4 1/2"

NOTES:

- TRASH RACKS TO BE INSTALLED OVER ALL WEIR OPENINGS IN RISER
- HOT DIP GALVANIZE TRASH RACK AFTER FABRICATION.
- PROVIDE SIX (6) BOLTS (MIN.) TOP AND BOTTOM AND FOUR (4) BOLTS (MIN.) LEFT AND RIGHT PER SIDE.

PIPE JOINT DETAIL (DETAIL A)

SCALE: N.T.S.

Steel bell ring

Mastic in joint

Rod reinforcement or welded wire fabric

Concrete core

Rubber gasket

Mastic in joint

Steel spigot ring

Steel cylinder and support rod or wire fabric reinforcement as needed

POND DRAIN INTAKE (DETAIL B)

SCALE: 1"=1'

PERFORATIONS SHALL BE 1" Ø SPACED EVENLY, 8 PER RING AROUND PIPE AND 4" C/C LONGITUDINALLY ALONG ENTIRE LENGTH OF PIPE.

PROVIDE SOLID 6" P.V.C. END CAP

6" PERFORATED P.V.C. SCH. 40

STANDARD END WALL PER STD. D-5-21 (Ø=12" MODIFIED FOR (2) Ø=6")

6" D.I.P. CL 51

6" D.I.P. CL 51 90° ELBOW

1'-2 1/2" ±

3" MIN.

ALUMINUM LADDER (DETAIL F)

SCALE: 1"=1'

~~2x6x3" ALUMINUM (22" LONG)~~

22" MH OPENING

3" TYP.

2'-0"

4" MIN.

1" EDGE OF STRINGER TO CAL RUNG

MANHOLE STEP PER DPW STD. G-5-21 SPACED 12" C/C TYP.

3" x 3/8" ALUMINUM STRINGER

ALUMINUM RUNG SPACED 12" C/C TYP.

6" x 3/8" ALUMINUM PLATE (22" LONG)

3" TYP.

1 1/2" TYP.

16" TYP.

12" TYP.

TOP RUNG TO BE 6" MAX. BELOW BOTTOM OF TOP SLAB

1/2" Ø STAINLESS STEEL ANCHOR WITH NUT AND WASHER (HILTI KWIKBOLT OR EQUAL) TYP. EACH SIDE

1/2" Ø STAINLESS STEEL ANCHOR WITH NUT AND WASHER (HILTI KWIKBOLT OR EQUAL) TYP. EACH SIDE

PROVIDE SERRATED SURFACE ON RUNG

VAR. 3/4" TO 1"

VAR. 3/4" TO 1"

3' x 3/8" ALUMINUM STRINGER

REMOVABLE ORIFICE PLATE (DETAIL C)

SCALE: 1"=1'

18" x 18" x 1/4" THICK STEEL PLATE PER ASTM A-36

HOT-DIPPED GALVANIZED PER ASTM A-123

PROVIDE SILICONE CAULK BEAD AROUND EDGES OF PLATE. DO NOT USE GROUT ON PLATE.

6" D.I.P. INV. = 346.00 - 345.83

4" Ø LOW FLOW ORIFICE IN PLATE INV. = 346.00 - 345.83

ATTACH PLATE TO WALL WITH 4" L x 3/8" STAINLESS STEEL ANCHOR BOLTS, NUTS AND WASHERS (HILTI KWIKBOLT OR EQUAL)

ALUMINUM LADDER REPLACED WITH STEPS INSIDE RISER.

FOR AS-BUILT
06-05-2019
EP-17-21

CLIENT/LAND OWNER:
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REVISIONS

NO.	DATE	DESCRIPTION

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MT CENTURY
ENGINEERING
CONSULTING ENGINEERS - PLANNERS
10710 GILROY ROAD
HUNT VALLEY, MARYLAND 21031
PHONE: (443) 589-2400 FAX: (443) 589-2401

BLUE RIVER COURT SWM POND REPAIR

PRINCIPAL SPILLWAY AND RISER DETAILS

PROJECT NO.: 121104.42
SCALE: AS SHOWN
DATE: 04/11/2018
DESIGN: JBU/A
CHECK: RG
DWG NO.:
DE-04 OF DE-05
SHEET NO.:
10 OF 19
STATE OF MARYLAND PROFESSIONAL ENGINEER
NO. 15907
4-11-18
EXPIRES 07-23-2018

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD
BUREAU OF ENVIRONMENTAL SERVICES
5/9/18
DATE

THIS PLAN IS APPROVED FOR SMALL POND CONSTRUCTION AND SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SOIL CONSERVATION DISTRICT
5/10/18
DATE



BORING LOCATION PLAN
SCALE: 1" = 50'

Project No. 2012092.42		LOG OF BOREHOLE SB-1		Sheet 1 of 1		
CLIENT: Biohabitats, Inc.		PROJECT: Retrofit of SWM Facilities at Blue River Court				
ARCHITECT/ENGINEER:		SITE: Ellicott City, Howard County, Maryland				
		SAMPLES		TESTS		
SURFACE ELEV.: 326.0 ft		DEPTH (FT)	BL/CLAS#	IN. RECOVERED	MOISTURE (%)	
		BL VALUE	NUMBER	IN. DRIVEN	DRY DENSITY (PCF)	
		ROD			CL (%)	
					PL (%)	
					% PASSING #200 SIEVE	
					REMARKS/ADDITIONAL DATA	
0.2' 3" Topsoil		325.8	2-4-6 N=10	1	SS 18/18 100%	
5-6-7 N=13		325.5	2	SS 18/18 100%		27
5.5' Firm reddish brown, brown and dark brown FINE SANDY CLAY (CL) (Fill)		320.5	4-4-6 N=10	3	SS 18/18 100%	
			2-4-3 N=7	4	SS 9/18 50%	
12.0' Medium dense to very dense brown and gray SILTY SAND (SM) with mica and rock fragments (Decomposed Rock)		314.0	6-7-8 N=15	5	SS 16/18 89%	LL = 29 PL = 17 PI = 12
			41-46-34 N=80	6	SS 14/18 78%	
24.0' Spoon Refusal @ 24 ft		302.0	25-51/5"	7	SS 5/0.1 13	
End of Boring @ 24 ft						
Upon completion, borehole was backfilled with bentonite and auger cut mix						
WATER LEVEL OBSERVATIONS		AB Consultants, Inc.		STARTED: 9/28/17 FINISHED: 9/28/17		
WL	19.0 @ Drilling	9450 Annapolis Road Lanham, MD 20706 Phone: 301-306-3091 Fax: 301-306-3092		DRILL CO.: ABC	DRILL RIG: ATV D-50	
WL	18 @ 0 Hrs			DRILLER: WR	ASST DRILLER:	
WL	13.5 @ 24 Hrs			LOGGED BY:	APPROVED:	

Project No. 2012092.42		LOG OF BOREHOLE SB-2		Sheet 1 of 1		
CLIENT: Biohabitats, Inc.		PROJECT: Retrofit of SWM Facilities at Blue River Court				
ARCHITECT/ENGINEER:		SITE: Ellicott City, Howard County, Maryland				
		SAMPLES		TESTS		
SURFACE ELEV.: 326.0 ft		DEPTH (FT)	BL/CLAS#	IN. RECOVERED	MOISTURE (%)	
		BL VALUE	NUMBER	IN. DRIVEN	DRY DENSITY (PCF)	
		ROD			CL (%)	
					PL (%)	
					% PASSING #200 SIEVE	
					REMARKS/ADDITIONAL DATA	
0.2' 3" Topsoil		325.8	4-6-8 N=14	1	SS 18/18 100%	
5-6-7 N=12		325.5	2	SS 18/18 100%		LL = NP PL = NP PI = 0
6.0' Firm reddish brown and brown FINE SANDY CLAY (CL) (Fill)		320.0	3-4-6 N=10	3	SS 15/18 83%	
			4-5-5 N=10	4	SS 16/18 89%	
12.0' Dense to very dense brown and gray SILTY SAND (SM) with mica and rock fragments (Decomposed Rock)		314.0	10-18-20 N=36	5	SS 18/18 100%	14
			11-16-17 N=33	6	SS 18/18 100%	
22.0' Auger and Spoon Refusal @ 22 ft		304.0	51/6"	7	SS 0/0.1 0%	
End of Boring @ 22 ft						
Upon completion, borehole was backfilled with bentonite and auger cut mix						
WATER LEVEL OBSERVATIONS		AB Consultants, Inc.		STARTED: 9/28/17 FINISHED: 9/28/17		
WL	17.5 @ Drilling	9450 Annapolis Road Lanham, MD 20706 Phone: 301-306-3091 Fax: 301-306-3092		DRILL CO.: ABC	DRILL RIG: ATV D-50	
WL	14.5 @ 0 Hrs			DRILLER: WR	ASST DRILLER:	
WL	13 @ 24 Hrs			LOGGED BY:	APPROVED:	

CLIENT/LAND OWNER:
 HOWARD COUNTY
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENVIRONMENTAL SERVICES
 6751 COLUMBIA GATEWAY DRIVE, SUITE 514
 COLUMBIA, MARYLAND 21046-3143
 PHONE: 410.313.0844

REVISIONS		
NO.	DATE	DESCRIPTION

SITE INFORMATION
 STREET ADDRESS:
 ADJACENT TO:
 3912 BLUE RIVER COURT
 ELLICOTT CITY, MARYLAND 21042
 GREY ROCK FARM
 SECTIONS 5 AND 6
 LOTS: 252, 301
 PARCEL: 1178 TAX MAP: 0024 GRID: 0015
 ELECTION DISTRICT: 1
 ZONING: R-20
 PLAT NO.: 9747, 10710

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BLUE RIVER COURT SWM POND REPAIR

SOIL BORING LOGS

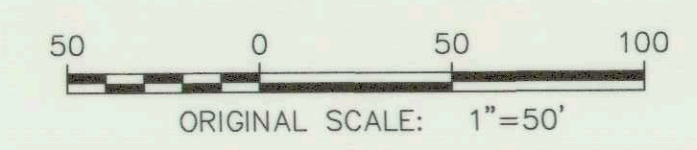
PROJECT NO: 121104.42	SCALE: 1"=50'	DATE: 04/11/2018
DESIGN: JB/JA	CHECK: RG	
DWG NO: B-01 OF B-01		
SHEET NO: 12 OF 19		

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD
 BUREAU OF ENVIRONMENTAL SERVICES

 5/9/18
 DATE

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

 5/10/18
 HOWARD SOIL CONSERVATION DISTRICT
 DATE



EP-17-21

EXISTING CONDITIONS LEGEND

- 1' MINOR CONTOUR (GIS) 1
- 5' MAJOR CONTOUR (GIS) 5
- 1' MINOR CONTOUR (SURVEY) 1
- 5' MAJOR CONTOUR (SURVEY) 5

- SOIL BOUNDARY BaD
- SLOPES 15-25%
- SLOPES <25%
- ERODIBLE SOILS
- TREE LINE
- WATERS OF THE U.S. WUS
- STREAM BUFFER SB
- 100-YEAR FLOODPLAIN FP
- TREE
- WETLAND WL
- WETLAND BUFFER (25') WB
- STORM DRAIN
- RIPRAP
- CABLE TV APPURTUNANCE
- IMPERVIOUS AREA
- WOOD FENCE X
- POST
- PROPERTY BOUNDARY
- ADJACENT PROPERTY LINE
- EASEMENT/ROW LINE
- TRAVERSE POINT (REBAR AND CAP)

PROPOSED FEATURES LEGEND

- 1' CONTOUR 1
- 5' CONTOUR 5
- STORM DRAIN PIPE
- RIPRAP
- GABION
- CLAY CORE/CUTOFF TRENCH
- FILTER DIAPHRAGM
- NO-WOODY VEGETATION ZONE
- SOIL BORING LOCATION
- TREE LINE
- TREE TO BE REMOVED

SEDIMENT CONTROL FEATURES LEGEND

- LIMITS OF REQUIRED DATA (200' OFFSET OF LOD)
- LIMIT OF DISTURBANCE LOD
- SUPER SILT FENCE SSF
- BLAZE ORANGE FENCE X
- STABILIZED CONSTRUCTION ENTRANCE
- VERTICAL DRAW DOWN (DEWATERING) DEVICE
- SUMP PIT SP
- FILTER BAG FB
- MULCH ACCESS ROAD
- CONCRETE WASH STATION

SEDIMENT CONTROL NOTES:

1. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MARYLAND STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
2. THE OWNER OR OWNER'S REPRESENTATIVE SHALL CONTACT THE HOWARD COUNTY C.I.D. SEDIMENT CONTROL INSPECTOR AT THE FOLLOWING STAGES OF THE PROJECT AND/OR IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN AND GRADING PERMIT FOR INSPECTION:
 - 2.1. PRIOR TO THE START OF EARTH DISTURBANCE;
 - 2.2. UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING;
 - 2.3. PRIOR TO REMOVAL OF THE SEDIMENT CONTROL PRACTICES.
3. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
4. PROVIDE MAINTENANCE OF TRAFFIC PER MD SHA STANDARD NO. 104.02-10 AT CONSTRUCTION ENTRANCE DURING CONSTRUCTION AND PER MD SHA STANDARD NO. 104.02-02 FOR INSTALLATION AND REMOVAL OF CONSTRUCTION ENTRANCE AND RESTORATION OF PAVEMENT AT CONSTRUCTION ENTRANCE FOOTPRINT.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL EXISTING UTILITIES AND EXISTING INFRASTRUCTURE. THE CONTRACTOR SHALL RESTORE ALL EXISTING INFRASTRUCTURE, TREES, LANDSCAPING, AND OTHER SITE FEATURES TO PRE-CONSTRUCTION CONDITIONS AFTER CONSTRUCTION IS COMPLETE.
6. ALL AREA WITHIN L.O.D. IS TO RECEIVE SOIL STABILIZATION MATTING.



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 6751 COLUMBIA GATEWAY DRIVE, SUITE 514
 COLUMBIA, MARYLAND 21046-3143
 PHONE: 410.313.0844

REVISIONS

NO.	DATE	DESCRIPTION

SITE INFORMATION

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BLUE RIVER COURT SWM POND REPAIR

EROSION AND SEDIMENT CONTROL OVERALL PLAN

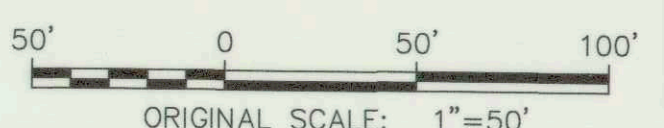
PROJECT NO:	121104.42	SCALE:	1"=30'	DATE:	04/11/2018
DESIGNER:	JBJ/UA	CHECKER:	RG	SHEET NO: 13 OF 19	
STATE OF MARYLAND PROFESSIONAL ENGINEER LICENSE # 16997 EXPIRES 07.19.2018			SC-01 of SC-04		

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

M. DePina 5/9/18
 BUREAU OF ENVIRONMENTAL SERVICES DATE

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

John A. ... 5/10/18
 HOWARD SOIL CONSERVATION DISTRICT DATE



EXISTING CONDITIONS LEGEND	
1' MINOR CONTOUR (GIS)	
5' MAJOR CONTOUR (GIS)	
1' MINOR CONTOUR (SURVEY)	
5' MAJOR CONTOUR (SURVEY)	
SOIL BOUNDARY	
SLOPES 15-25%	
SLOPES >25%	
ERODIBLE SOILS	
TREE LINE	
WATERS OF THE U.S.	
WUS	WUS
STREAM BUFFER	
SB	SB
100-YEAR FLOODPLAIN	
FP	FP
TREE	
WETLAND	
WL	WL
WETLAND BUFFER (25')	
WB	WB
STORM DRAIN	
RIPRAP	
CABLE TV APPURTENANCE	
IMPERVIOUS AREA	
WOOD FENCE	
X	X
POST	
PROPERTY BOUNDARY	
ADJACENT PROPERTY LINE	
EASEMENT/ROW LINE	
TRAVERSE POINT (REBAR AND CAP)	
PROPOSED FEATURES LEGEND	
1' CONTOUR	
5' CONTOUR	
STORM DRAIN PIPE	
RIPRAP	
GABION	
CLAY CORE/CUTOFF TRENCH	
FILTER DIAPHRAGM	
NO-WOODY VEGETATION ZONE	
SOIL BORING LOCATION	
TREE LINE	
TREE TO BE REMOVED	
SEDIMENT CONTROL FEATURES LEGEND	
LIMITS OF REQUIRED DATA (200' OFFSET OF LOD)	
LIMIT OF DISTURBANCE	
SUPER SILT FENCE	
BLAZE ORANGE FENCE	
STABILIZED CONSTRUCTION ENTRANCE	
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MULCH ACCESS ROAD	
CONCRETE WASH STATION	



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CLIENT/LAND OWNER:
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 6751 COLUMBIA GATEWAY DRIVE, SUITE 514
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REVISIONS		
NO.	DATE	DESCRIPTION

SITE INFORMATION

STREET ADDRESS:
 ADJACENT TO:
 3912 BLUE RIVER COURT
 ELLICOTT CITY, MARYLAND 21042

GREY ROCK FARM
 SECTIONS 5 AND 6
 LOTS: 252, 301
 PARCEL: 1178 TAX MAP: 0024 GRID: 0015
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 PLAT NO.: 9747, 10710

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BLUE RIVER COURT SWM POND REPAIR

EROSION AND SEDIMENT CONTROL PLAN

PROJECT NO: 121104.42 SCALE: 1"=30' DATE: 04/11/2018
 DESIGN: JB/JA CHECK: RG
 DWG NO: SC-02 OF SC-04
 SHEET NO: 14 OF 19

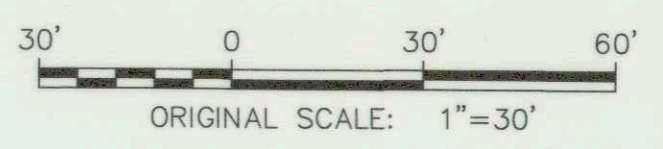
STATE OF MARYLAND PROFESSIONAL ENGINEERS
 No. 16997
 4-11-18

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

 5/9/18
 BUREAU OF ENVIRONMENTAL SERVICES DATE

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

 5/10/18
 HOWARD SOIL CONSERVATION DISTRICT DATE



EP-17-21

EXISTING CONDITIONS LEGEND

1' MINOR CONTOUR (GIS) 1
 5' MAJOR CONTOUR (GIS) 5
 1' MINOR CONTOUR (SURVEY) 1
 5' MAJOR CONTOUR (SURVEY) 5

SOIL BOUNDARY BaD

TREE LINE

WATERS OF THE U.S. WUS
 STREAM BUFFER SB
 100-YEAR FLOODPLAIN FP
 TREE
 WETLAND WL
 WETLAND BUFFER (25') WB
 STORM DRAIN
 RIPRAP
 CABLE TV APPURTUNANCE
 IMPERVIOUS AREA
 WOOD FENCE X X X
 POST
 PROPERTY BOUNDARY
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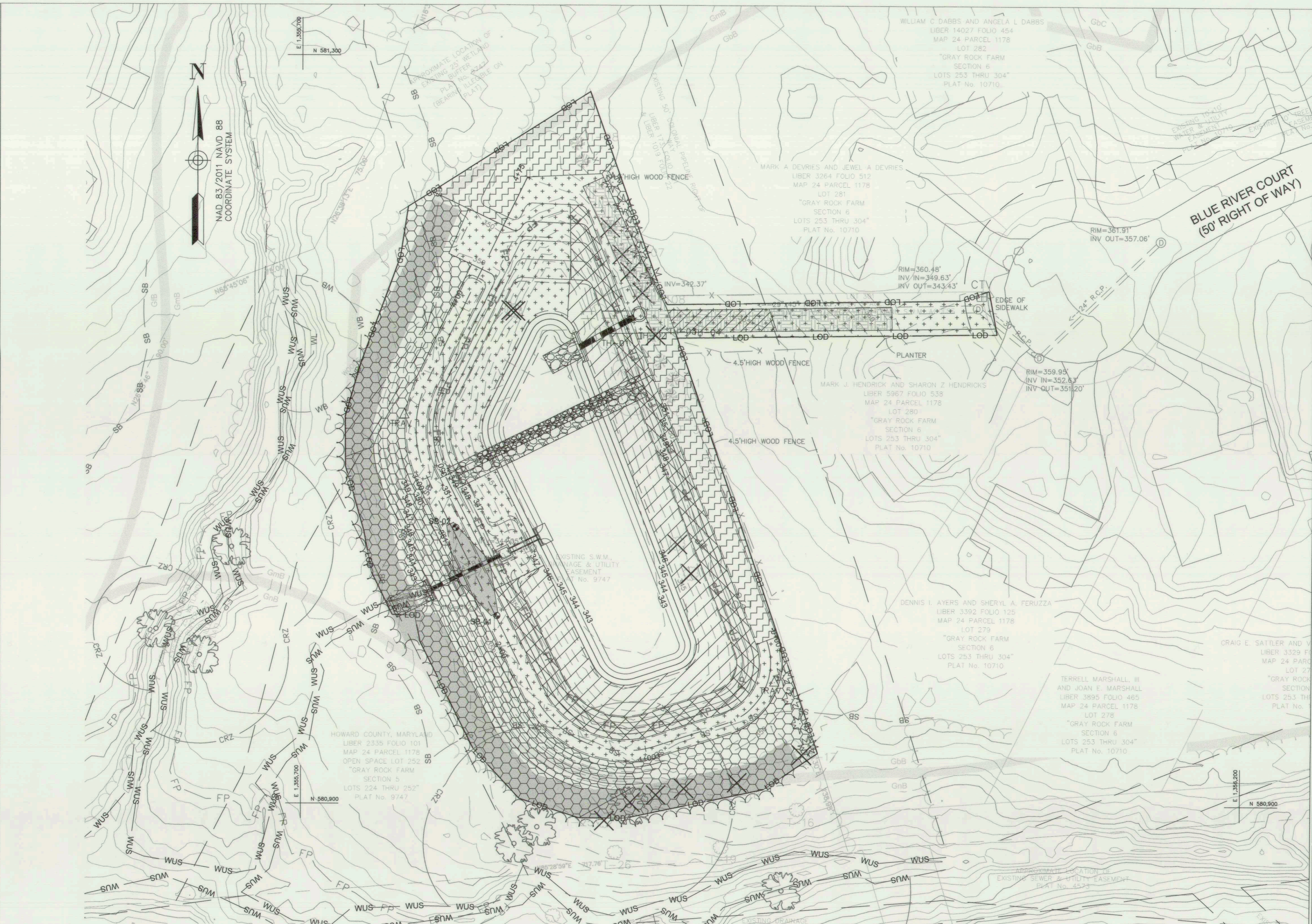
PROPOSED FEATURES LEGEND

1' CONTOUR 1
 5' CONTOUR 5
 STORM DRAIN PIPE
 RIPRAP
 GABION
 CLAY CORE/CUTOFF TRENCH
 FILTER DIAPHRAGM
 NO-WOODY VEGETATION ZONE
 SOIL BORING LOCATION
 TREE LINE
 TREE TO BE REMOVED
 TURFGRASS SEED MIX
 WETLAND SCRUB SHRUB PLANTINGS
 RIPARIAN FOREST PLANTINGS
 RIPARIAN MEADOW SEED MIX
 WETLAND MEADOW PLUGS

SCREENING TREE

30' 0 30' 60'
 ORIGINAL SCALE: 1"=30'

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD
 BUREAU OF ENVIRONMENTAL SERVICES
 DATE 5/6/18



Riparian Forest Plantings (Total Area: 5,546 SF // 0.13 AC; see composition percent note)

Species	Layer	Size	Type	Spacing	Quantity
White oak (<i>Quercus alba</i>)	Canopy	6'-8" Height	Container	16'-18" O.C.	5
Willow oak (<i>Quercus phellos</i>)	Canopy	6'-8" Height	Container	16'-18" O.C.	5
Northern red oak (<i>Quercus rubra</i>)	Canopy	6'-8" Height	Container	16'-18" O.C.	5
Mockernut hickory (<i>Carya tomentosa</i>)	Canopy	6'-8" Height	Container	16'-18" O.C.	4
Pawpaw (<i>Asimina triloba</i>)	Understorey	5' Height	Container	12'-14" O.C.	4
Eastern redbud (<i>Cercis canadensis</i>)	Understorey	5' Height	Container	12'-14" O.C.	4
Black cherry (<i>Prunus serotina</i>)	Understorey	5' Height	Container	12'-14" O.C.	4
Eastern red cedar (<i>Juniperus virginiana</i>)	Understorey	5' Height	Container	12'-14" O.C.	4
Gray dogwood (<i>Cornus racemosa</i>)	Shrub	3' Height	Container	6'-8" O.C.	9
Blackhaw (<i>Viburnum prunifolium</i>)	Shrub	3' Height	Container	6'-8" O.C.	9
Burning Heart (<i>Euonymus americanus</i>)	Shrub	3' Height	Container	6'-8" O.C.	8
Mapleleaf viburnum (<i>Viburnum acerifolium</i>)	Shrub	3' Height	Container	6'-8" O.C.	8

TC - Canopy Tree
 Note: Assume 100% canopy layer coverage; 50% understorey layer coverage; 30% shrub cluster plantings

Individually Placed Screening Trees

Species	Layer	Size	Type	Spacing	Quantity
White pine (<i>Pinus strobus</i>)	Screening Tree	6'-8" Height	B&B	As Shown	9

Wetland Scrub Shrub Plantings (5,329 SF // 0.12 AC)

Species	Layer	Size	Type	Spacing	Quantity
Buttonbush (<i>Cephalanthus occidentalis</i>)	Shrub	3' Height	Container	6'-8" O.C.	28
Swamp rose (<i>Rosa palustris</i>)	Shrub	3' Height	Container	6'-8" O.C.	27
Possumhaw (<i>Viburnum nudum</i>)	Shrub	3' Height	Container	6'-8" O.C.	27
Redosier dogwood (<i>Cornus sericea</i>)	Shrub	3' Height	Container	6'-8" O.C.	27

Riparian Meadow Seed Mix (22,312 SF // 0.51 AC)

Botanical Name	Common Name	Percent of Mix	Application Rate (lbs/AC)	Quantity
<i>Sorghastrum nutans</i>	Indiangrass	25%	10.0	3.1
<i>Andropogon gerardii</i>	Big Bluestem	20%	8.0	4.1
<i>Elymus virginicus</i>	Virginia wildrye	20%	8.0	4.1
<i>Agrostis perennans</i>	Autumn bentgrass	12%	4.8	2.4
<i>Dichanthium clandestinum</i>	Deertongue grass	12%	4.8	2.4
<i>Asclepias syriaca</i>	Common milkweed	5%	2.0	1.0
<i>Rudbeckia hirta</i>	Blackeyed Susan	2%	0.8	0.4
<i>Eupatorium perfoliatum</i>	Boneset	2%	0.8	0.4
<i>Symphoricarpos novae-angliae</i>	New England aster	2%	0.8	0.4

Total: 20.4
 Total Application Rate of 40 lbs/ac. To be applied with tackifier and 30lbs/ac of spring oats (*Avena sativa*) during the periods of March 1 to May 15, grain rye (*Secale cereale*) from August 1 to October 15 or foxtail millet (*Setaria italica*) if during May 16 to July 31.

Wetland Meadow Plugs (6,040 SF // 0.14 AC)

Botanical Name	Common Name	Type	Spacing	Quantity
<i>Juncus effusus</i>	Soft rush	2" Plug	2' O.C.	225
<i>Carex crinita</i>	Long hair sedge	2" Plug	2' O.C.	225
<i>Vernonia noveboracensis</i>	New York ironweed	2" Plug	2' O.C.	225
<i>Symphoricarpos novae-angliae</i>	New England aster	2" Plug	2' O.C.	225
<i>Solidago rugosa</i>	Wrinkleleaf goldenrod	2" Plug	2' O.C.	210
<i>Eupatorium perfoliatum</i>	Common boneset	2" Plug	2' O.C.	200
<i>Monarda didyma</i>	Scarlet beebalm	2" Plug	2' O.C.	200

Wetland Meadow Seed Mix (11,369 SF // 0.26 AC)

Botanical Name	Common Name	Percent of Mix	Application Rate (lbs/AC)	Quantity
<i>Carex vulpinoidea</i>	Fox sedge	20%	12	3.1
<i>Elymus virginicus</i>	Virginia wild rye	20%	12	3.1
<i>Panicum virgatum</i>	Switchgrass	20%	12	3.1
<i>Carex scoparia</i>	Blunt broom sedge	10%	6	1.6
<i>Carex lurida</i>	Lurid sedge	10%	6	1.6
<i>Scirpus atrovirens</i>	Green bulrush	8%	4.8	1.2
<i>Juncus effusus</i>	Soft rush	3%	1.8	0.5
<i>Verbena hastata</i>	Swamp verbena	3%	1.8	0.5
<i>Cirpus pungens</i>	Common three-square	3%	1.8	0.5
<i>Eupatorium fistulosum</i>	Joe pye weed	3%	1.8	0.5
<i>Labelia siphilitica</i>	Blue lobelia	3%	1.8	0.5

Total: 16.1
 Total Application Rate of 60 lbs/ac. To be applied with tackifier and 30lbs/ac of spring oats (*Avena sativa*) during the periods of March 1 to May 15, grain rye (*Secale cereale*) from August 1 to October 15 or foxtail millet (*Setaria italica*) if during May 16 to July 31.

Turfgrass (17,607 SF // 0.40 AC)

Seed Mix	Quantity (lbs)
GMA Turfgrass Seed Mix (200.06/07 lb)	82

Total Application Rate of 200 lbs/AC or 4.8 lbs per 1,000 SF

CLIENT/LAND OWNER:
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REVISIONS

NO.	DATE	DESCRIPTION

SITE INFORMATION

STREET ADDRESS:
 ADJACENT TO:
 3912 BLUE RIVER COURT
 ELLICOTT CITY, MARYLAND 21042

GREY ROCK FARM
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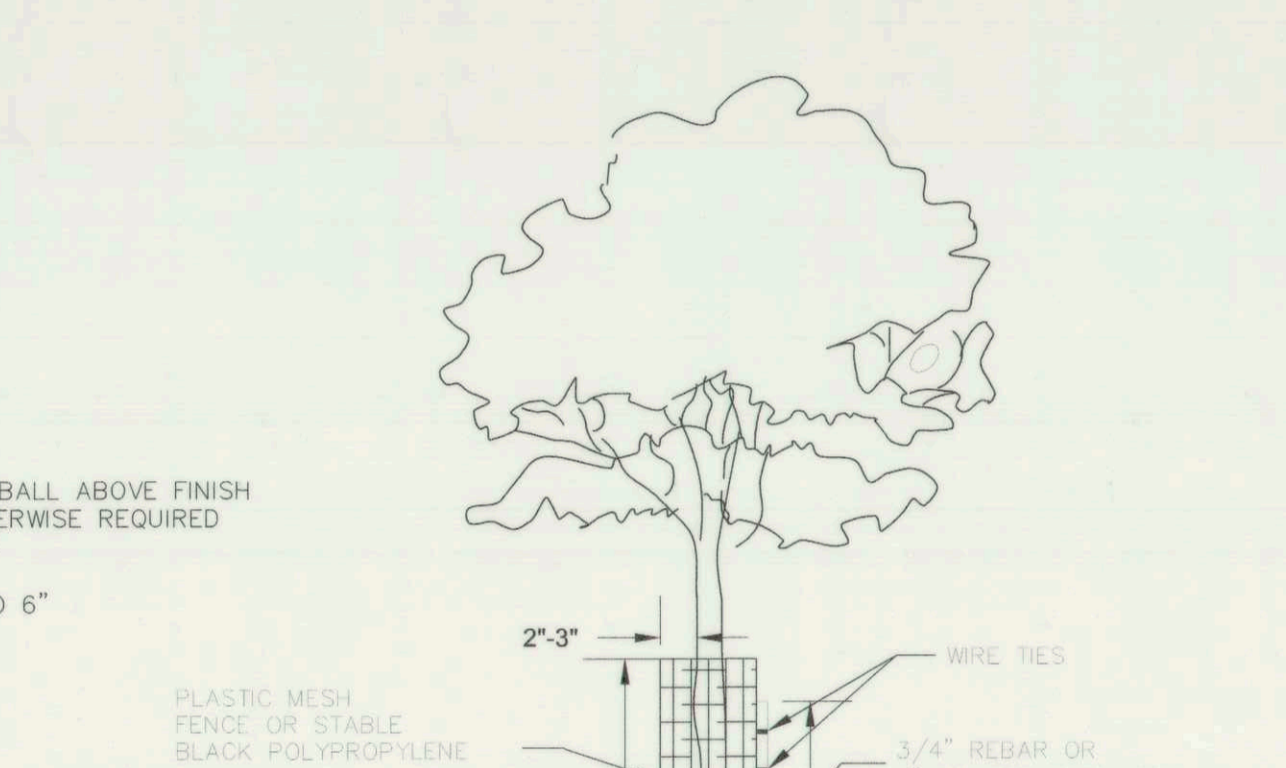
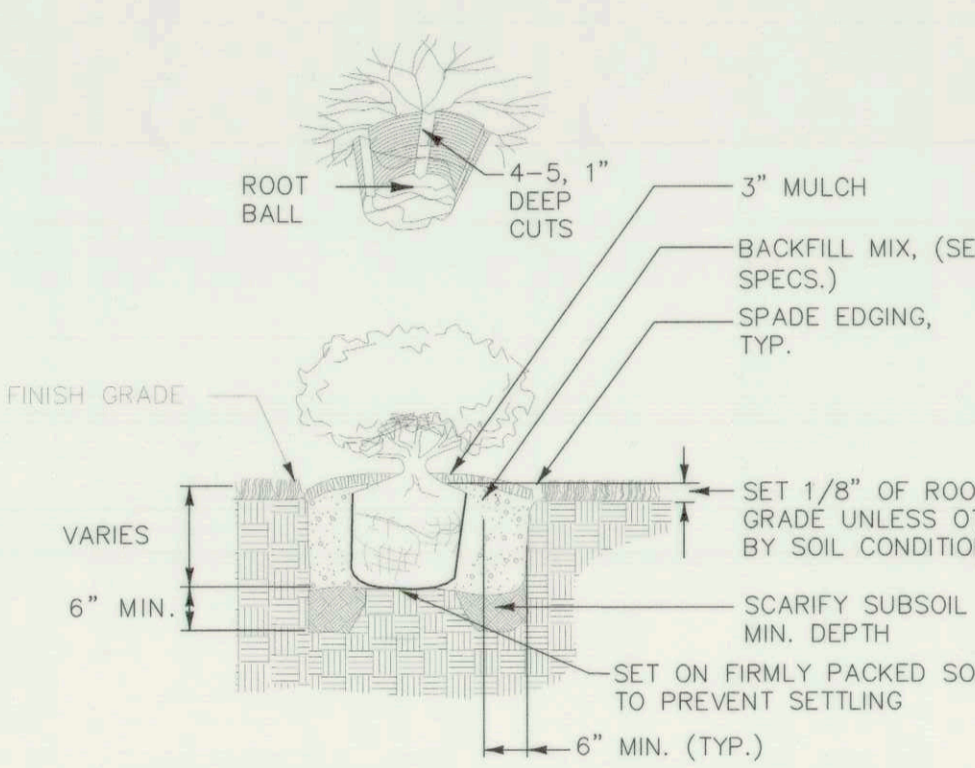
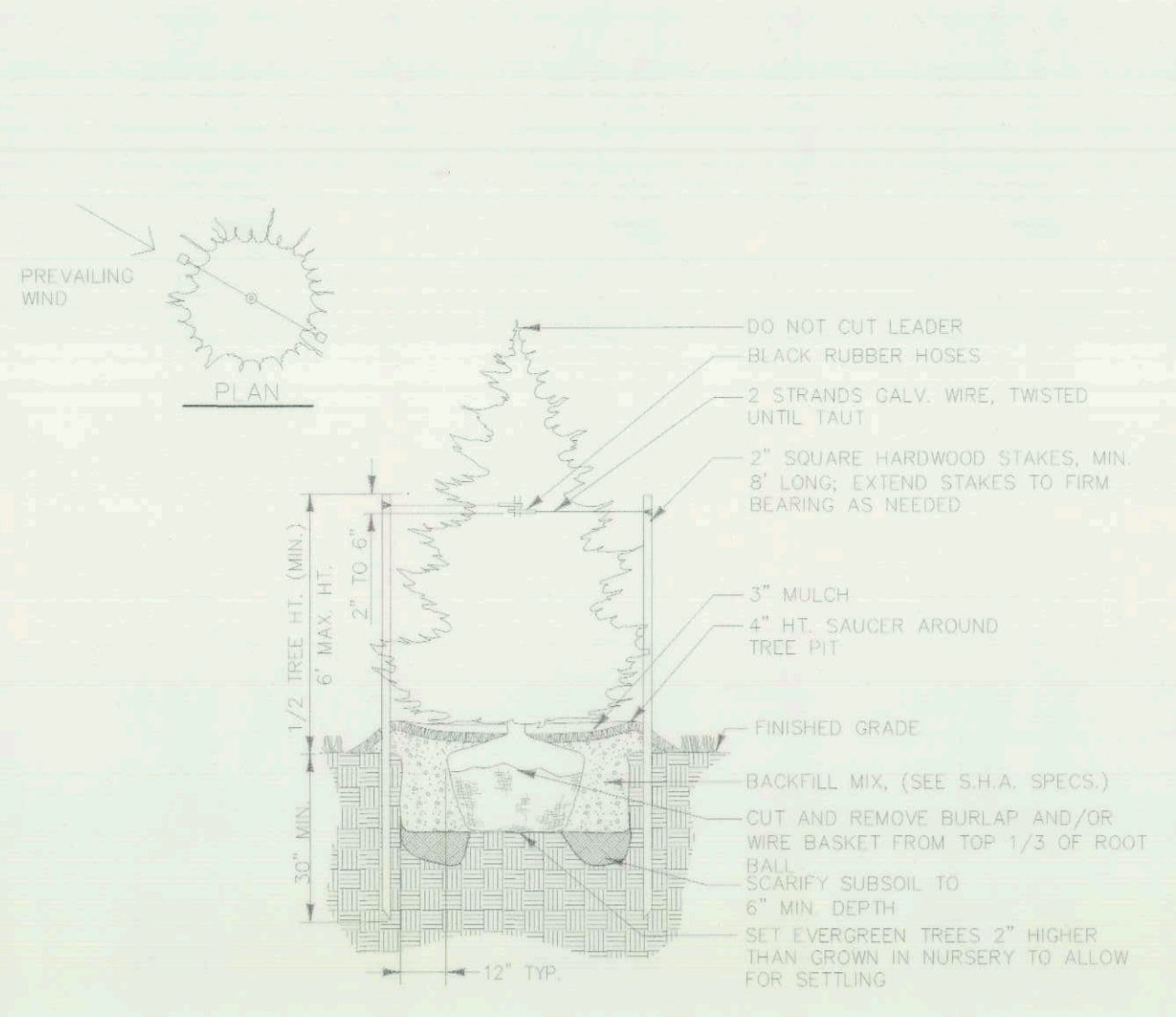
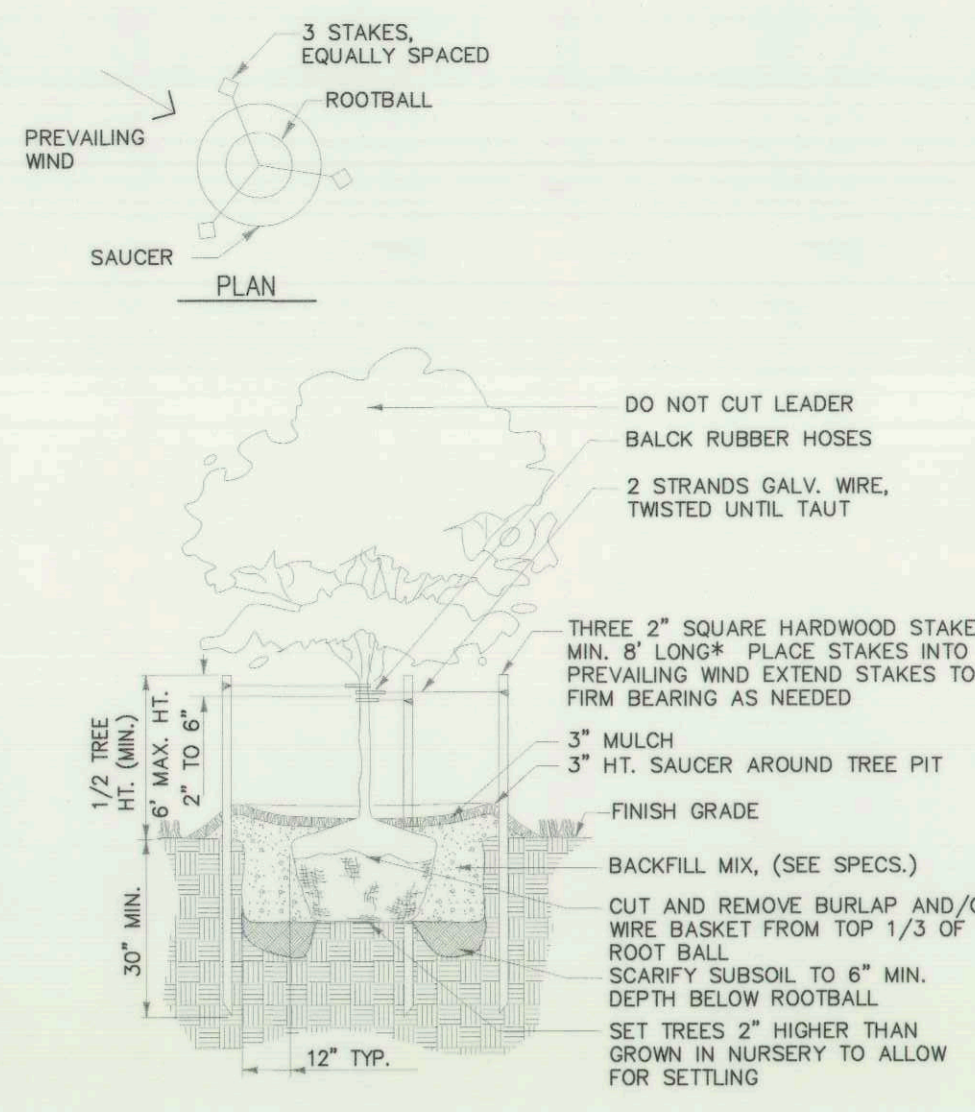
BLUE RIVER COURT SWM POND REPAIR

TITLE: **LANDSCAPE PLAN**

PROJECT NO: 121104.42 SCALE: 1"=30' DATE: 04/11/2018
 DESIGN: JBL/JA CHECK: RG
 DRAW NO: **LS-01 of LS-02**
 SHEET NO: **17 of 19**

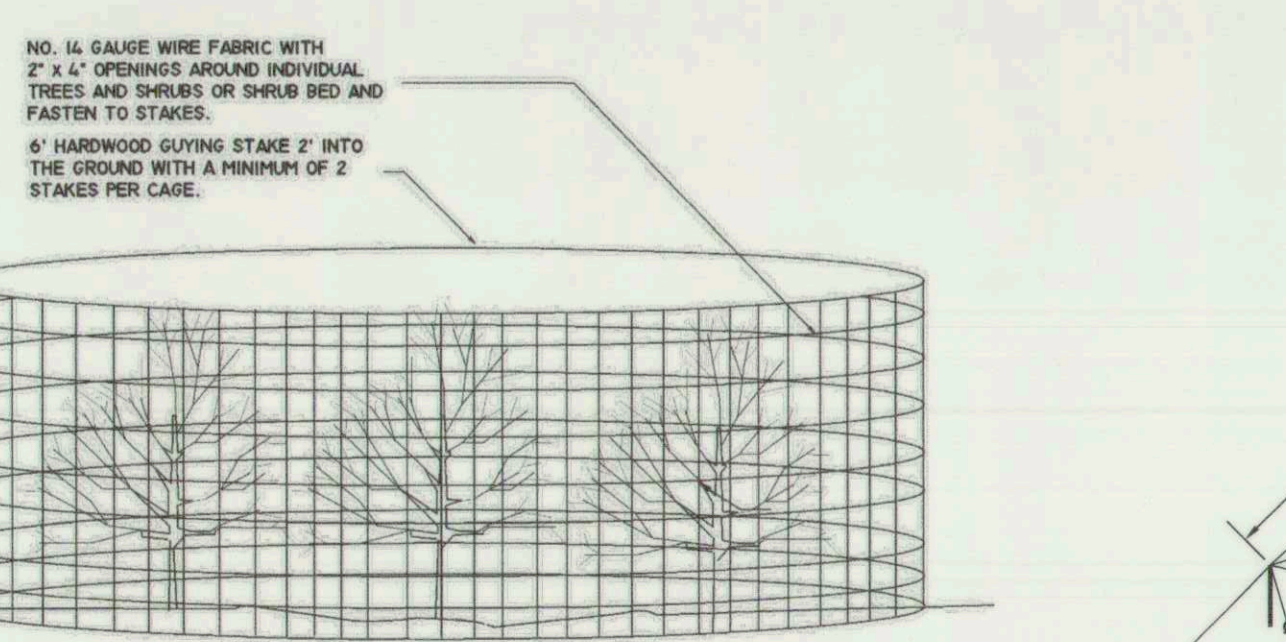
STATE OF MARYLAND PROFESSIONAL ENGINEER LICENSE # 16987 EXPIRES 07/19/2018
 4-11-18

EP-17-21

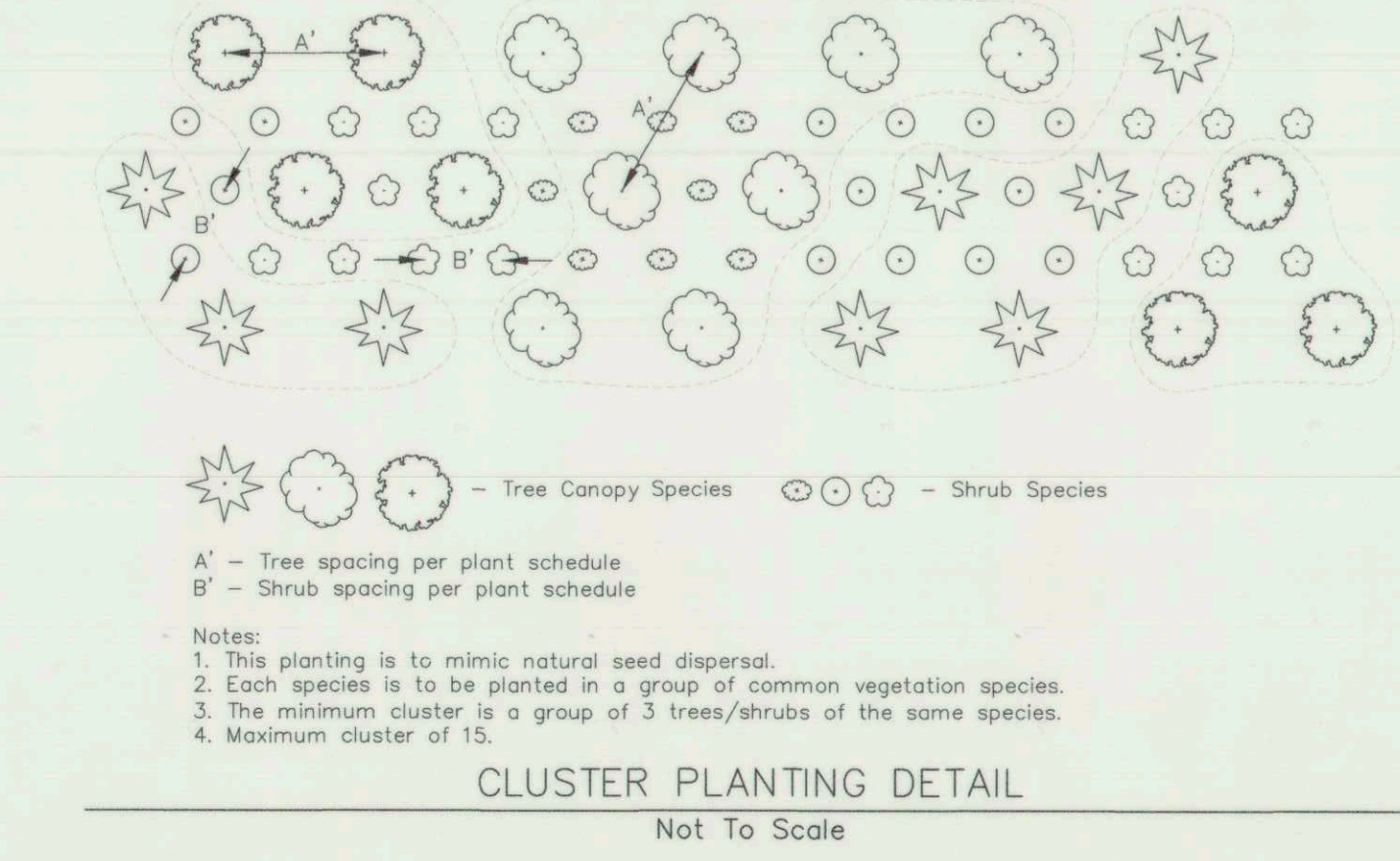
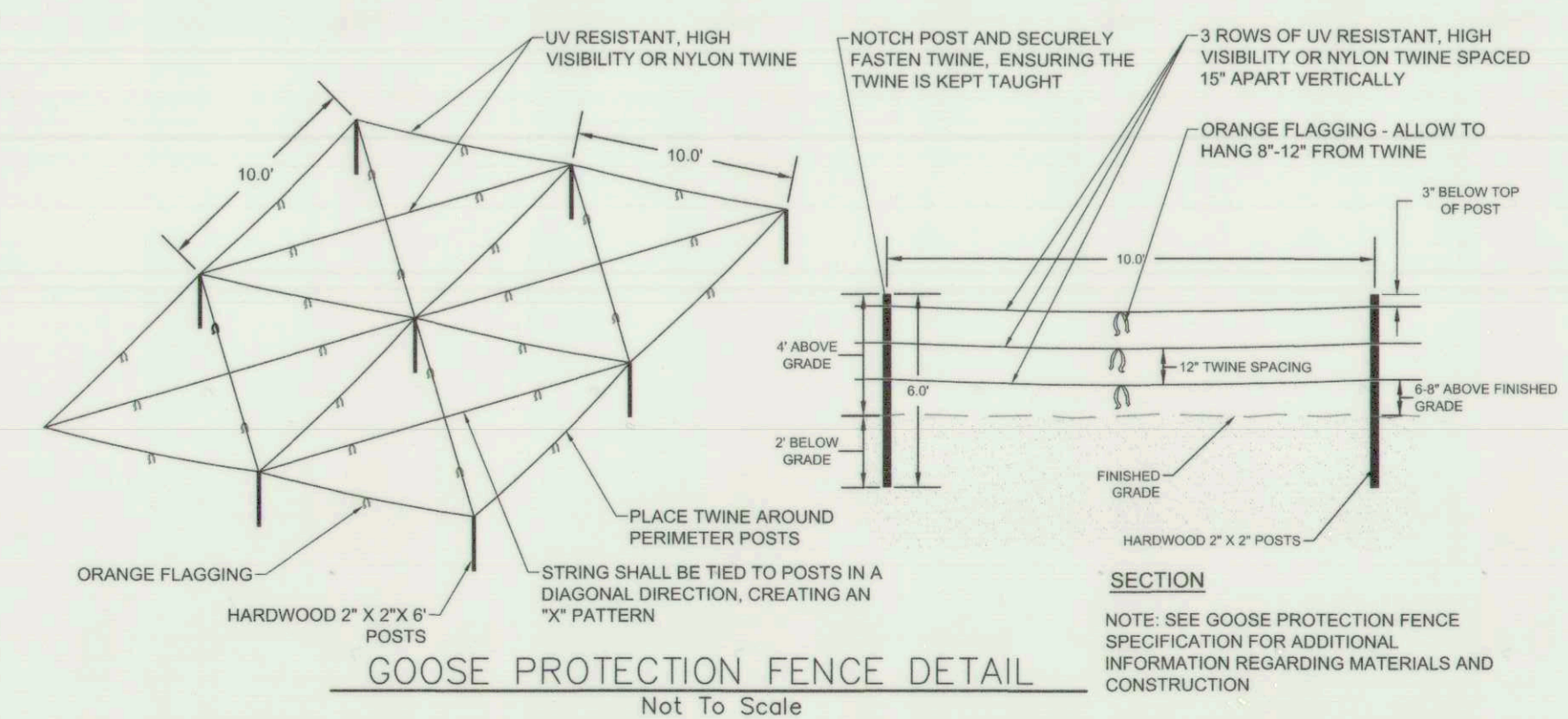


NOTES:
1. FOR CONTAINER SHRUBS, COMPLETELY REMOVE ALL NON-BIODEGRADABLE CONTAINERS AND SCARIFY ROOTBALL BY USING A SHARP BLADE AND MAKING 4 TO 5 ONE INCH CUTS THE LENGTH OF THE ROOTBALL.
2. FOR B&B SHRUBS, CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOTBALL.

1. TO BE USED ON SINGLE STEM TREES.
2. HEIGHT OF SHELTER TO BE ADJUSTED TO PREVENT CANOPY BREAKAGE.



NOTES:
1. THIS DETAIL IS TO BE USED FOR INDIVIDUAL SHRUBS AND SHRUB BEDS. IN ADDITION, IT WILL BE USED FOR EVERGREEN TREES OR DECIDUOUS TREES WITH BRANCHES LOWER THAN 4' IN HEIGHT.
2. HEIGHT OF CAGE SHALL BE 4 FEET MINIMUM WITH A MAXIMUM DIAMETER OF 10 FEET.
3. CAGE SHALL BE FASTENED TO STAKE WITH 3 (MIN.) TWIST TIE EVENLY SPACED WITH A 6" (MIN.) ABOVE THE GROUND.
4. CAGE SHALL SURROUND ALL SHRUBS AND TREES WITH A 1 FOOT SPACING FROM THE OUTSIDE OF THE PLANT.
5. STAKES SHALL BE PLACED AT A MAXIMUM 5 FOOT SPACING.
6. CAGES TO BE REMOVED AT DIRECTION OF HOWARD COUNTY
7. HARDWOOD MULCH SHALL BE PLACED TO 2-3 INCH DEPTH WITHIN FENCING.



Landscaping Notes:

Plant Material Selection -

- The contractor shall furnish plant materials in sizes and quantities specified in the plant schedules.
- Nursery grown plant material should meet or exceed the requirements of the American Nursery & Landscape Association's (A.N.L.A.) latest edition of "American Standard Nursery Stock"(ANSI Z60.1) Specifications, particularly regarding the size, growth, size of the root ball, and density of branch structure.
- All planting material shall be sourced from within 100 miles of the site.
- No substitutions shall be made without the written consent of the Owner and/or Landscape Architect.
- The Landscape Architect or Owner shall have the right, at any stage of the operations, to reject any and all work and materials which, in his or her opinion, do not meet the requirements of these plans and specifications. All rejected material shall be removed from the site by the Contractor.
- See plant lists on the landscape Plan Sheet 17 of 18 for size, type, species, spacing, quantities and application rates.
- Seed mixes shall have a minimum purity of 98% and a minimum germination of 85% per planting zone. The seed mix is to be endophyte-free and contain less than 1% inert matter.
- All mulch shall consist of straw mulch.

Plant Material Transport, Approval, & Storage -

- Plant material shall be protected to prevent sun scald, desiccation, and structural damage during transport to the site. Root stock of the plant material shall be kept moist during transport from the source to the job site and until planted.
- Plant material shall be inspected to be free of disease, damage, insect infestation, and vigor upon delivery to the site. All plants should be healthy and well structured. No heeled-cold storage or collected stock will be accepted. Plants in poor condition shall be rejected, removed from the site and replaced with acceptable materials.
- Plant material shall be stored in a cool, shaded area on the site and kept moist to prevent desiccation until ready for planting. Planting shall begin within 24 hours of plant delivery to the site. Plant material that remains unplanted beyond 24 hours shall be protected from direct sun and weather, and kept moist. Plant materials shall not be left unplanted for more than 2 weeks.
- The contractor is required to obtain clean fresh water for use during planting operations and the subsequent maintenance period.

Site Preparation -

- The site and areas abutting the LOD shall be treated for invasive species prior to the start of construction.
- No clearing or grading shall begin before stress-reduction measures have been implemented. Such measures may include tree protection planking, root pruning, crown reduction or pruning, etc. at the discretion of the plan preparer, designated specialist, or an MDLTE/ISA certified arborist.
- Prior to beginning any construction activities, tree protection fencing shall be installed along all sections of the LOD abutting wooded/forested areas and around all 'tree save' areas to ensure preservation of these areas.
- All tree protection measures must be in place at the time of the Sediment & Erosion Control inspection, prior to the commencement of demolition, site clearing, grading, or construction. Tree protection devices shall be maintained for the duration of construction. No equipment, trucks, materials, or debris may be stored within the tree protection areas during the entire construction project.
- All trees to be removed must be removed in a manner that will not damage the remaining trees. The Contractor shall dispose of stumps and major roots of all plants to be removed. Any depressions caused by removal operations shall be refilled with fertile, friable, soil placed and compacted so as to reestablish proper grade for new planting and/or lawn areas.
- Any trees that are to remain that are damaged during the clearing operation must be repaired or removed and replaced in an approved manner by an MDLTE/ISA certified arborist, designated specialist, or Howard County DPW representative as soon as final clearing has been completed.
- Root pruning may be necessary where the critical root zone is impacted, as determined by the plan preparer or an MDLTE/ISA certified arborist. Pruning shall be along the LOD adjacent to tree protection fencing. A certified arborist shall supervise or conduct root pruning.

Planting and Schedule -

- Refer to the MDSHA Standards and Specifications Section 710.03.01 Planting Seasons Table for acceptable planting period. Planting shall not be completed in sub-freezing temperatures; when the ground is frozen; when weather conditions will adversely affect plant materials; or when the soil is too wet or otherwise in a condition not acceptable for planting.
- The Contractor shall stabilize, seed with the designated permanent seed mix (see landscape schedules), and mulch the site immediately following the establishment of finished grade.
- The site hydrology will be monitored for 1 year. Following the first year of hydrology monitoring, the Contractor shall install tree and shrub plantings at the direction of the designated specialist. The extent of the wetland tree and shrub zones may be adjusted at the direction of the designated specialist.
- Mow planting area close to the ground one week (or less) prior to planting date.
- The Contractor is responsible for testing project soils. The Contractor is to provide a certified soils report to the owner. The contractor shall verify that the soils on site are acceptable for the proper growth of the proposed plant material. Should the contractor find poor soil conditions, the contractor shall be required to provide soil amendments as necessary. These amendments shall include, but not be limited to fertilizers, lime, and topsoil. Proper planting soils must be verified prior to when planting materials are installed.
- Prepare planting pits per MDSHA Standards and Specifications Section 710.03.04.
- No trees are to be planted directly over utility lines.
- Install plant materials per MDSHA Standards and Specifications 710.03.09.
- Upon completion of all landscaping, an acceptance of the work shall be held. The contractor shall notify the Landscape Architect, designated specialist, or the Owner for scheduling of the inspection at least seven (7) days prior to the anticipated inspection date.
- After installation of plants, the contractor shall monitor the soil moisture and water needs of plants and seed as necessary to ensure survivability. Watering planting pits and seeded areas should occur as specified in MDSHA Standards and Specifications Section 710.03.04(c).

Maintenance -

- Upon completion of installation, the planting area is to be maintained for a 1 year period. An 100% survival rate must be achieved from the date of acceptance to the termination of the maintenance period. Maintenance shall be as follows:
 - Any plant material showing signs of distress are to be replaced immediately by the contractor.
 - Native volunteer seedlings shall be removed only if they are adversely impacting the growth of the planted material. Non-native and invasive species are to be removed from the entire planting area through selected and approved means.
 - All man-made materials shall be removed from the site which would impact the establishment of the planted materials.
 - Thoroughly water planted material once weekly or as needed during the growing season.
 - Planted material is to be monitored for signs of damage and appropriate actions shall be taken to prevent further damage. This may include, but not be limited to, the following: pest damage or infestation, disease or browsing; any dead or decimated material shall be replaced with the identical species or an approved replacement.
 - At the end of the 1 year maintenance period, the site shall be inspected for the 100% survival rate as required by the Howard County DPW.

CLIENT/LAND OWNER:
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENVIRONMENTAL SERVICES
6751 COLUMBIA GATEWAY DRIVE, SUITE 514
COLUMBIA, MARYLAND 21046-3143
PHONE: 410.313.0844

REVISIONS		
NO.	DATE	DESCRIPTION

SITE INFORMATION

STREET ADDRESS:
ADJACENT TO:
3912 BLUE RIVER COURT
ELLICOTT CITY, MARYLAND 21042

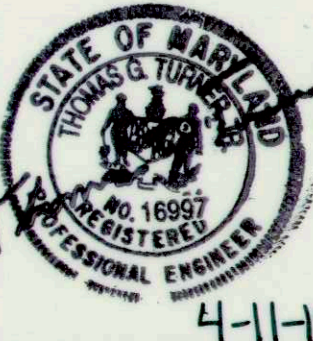
GREY ROCK FARM
SECTIONS 5 AND 6
LOTS: 252, 301
PARCEL: 1178 TAX MAP: 0024 GRID: 0015
ELECTION DISTRICT: 1
ZONING: R-20
PLAT NO.: 9747, 10710

MM CENTURY ENGINEERING
CONSULTING ENGINEERS - PLANNERS
10710 GILROY ROAD
HUNT VALLEY, MARYLAND 21031
PHONE: (443) 589-2400 FAX: (443) 589-2401

BLUE RIVER COURT SWM POND REPAIR

LANDSCAPE NOTES AND DETAILS

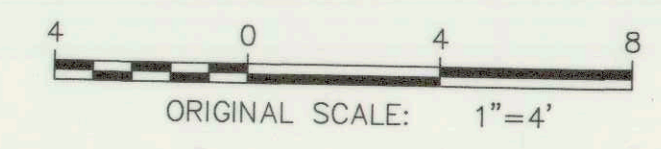
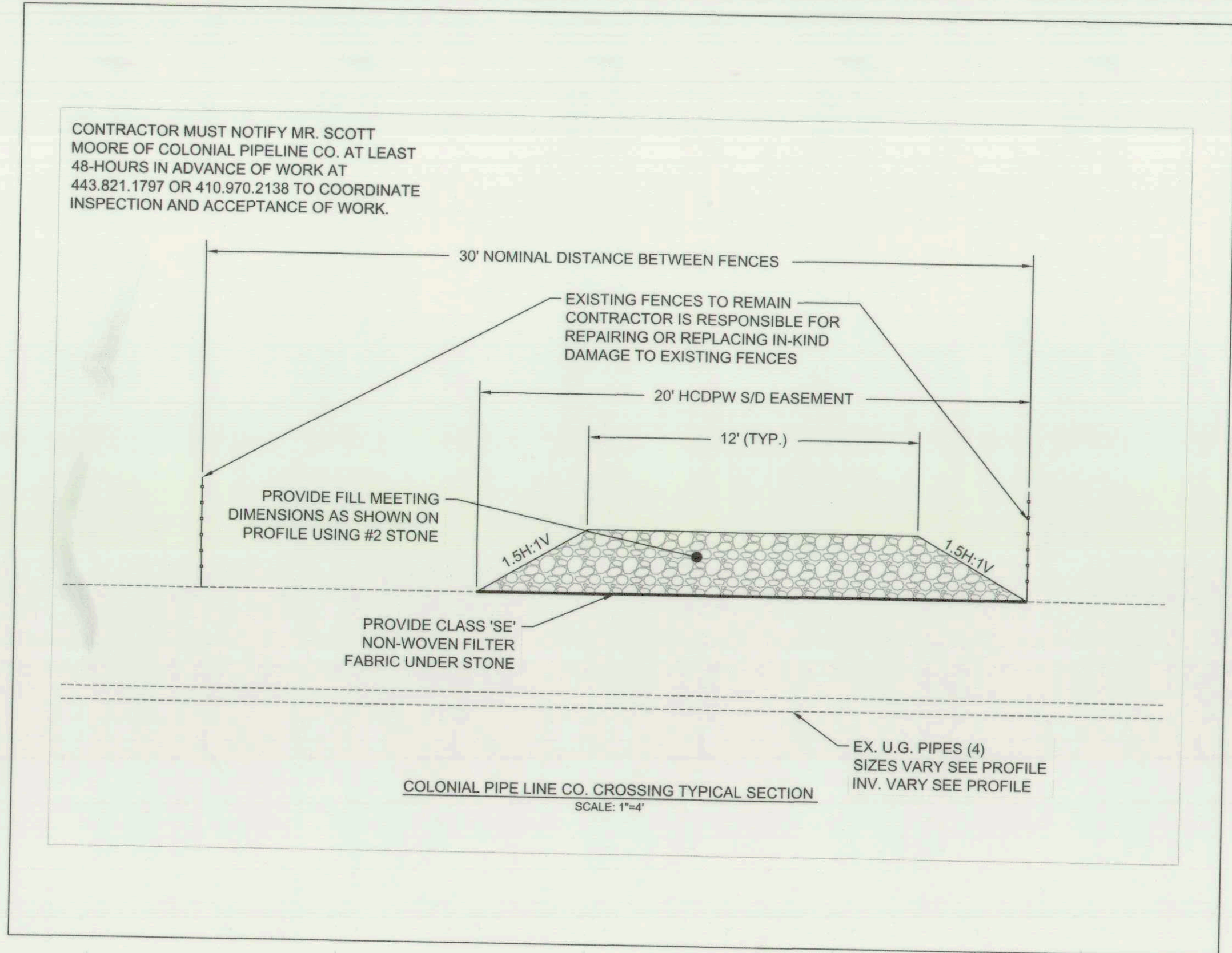
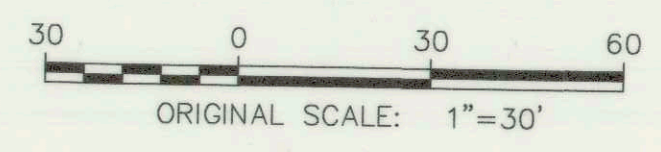
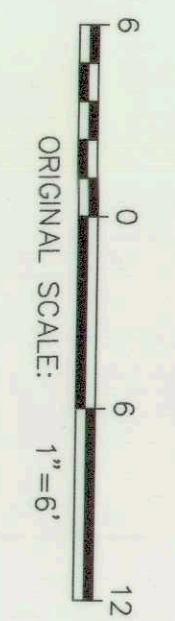
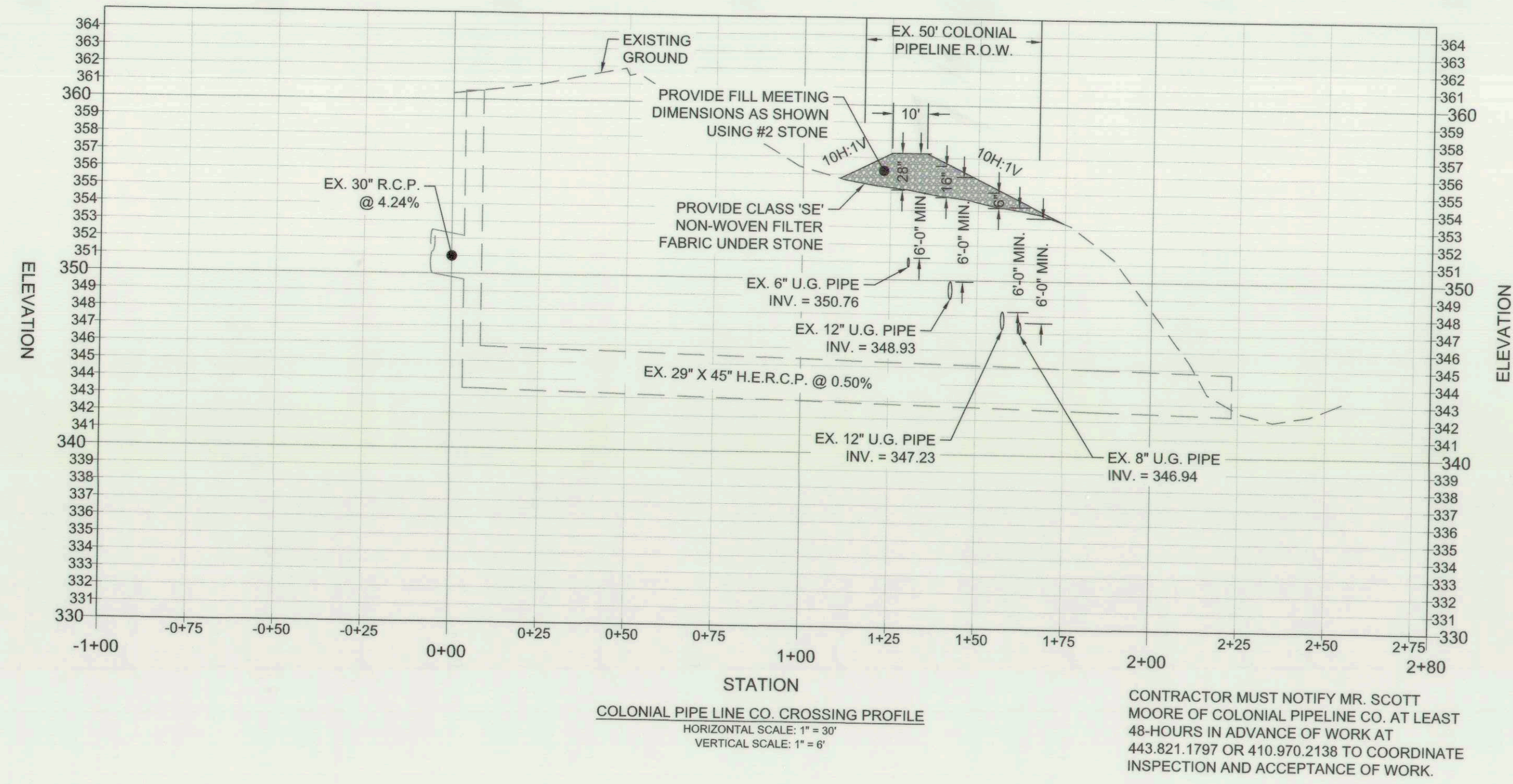
PROJECT NO.: 121104.42	SCALE:	DATE: 04/11/2018
SEAL:	DESIGN: JIB/JA	CHECK: RG
DWG NO.: LS-02 OF LS-02		SHEET NO.: 18 OF 19



4-11-18

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD
BUREAU OF ENVIRONMENTAL SERVICES
5/9/18
DATE

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 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENVIRONMENTAL SERVICES
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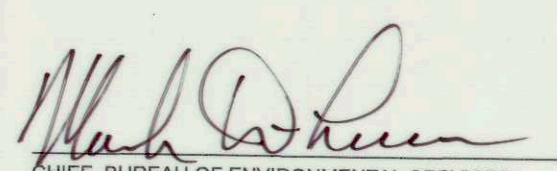
BLUE RIVER COURT
 SWM POND REPAIR

COLONIAL PIPELINE ROW
 CROSSING

PROJECT NO: 121104.42	SCALE: AS SHOWN	DATE: 04/11/2018
DESIGN: JBJ/JA	CHECK: RG	



DWG NO: CP-01 of CP-01
 SHEET NO: 19 OF 19

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES
 DATE: 5/5/18