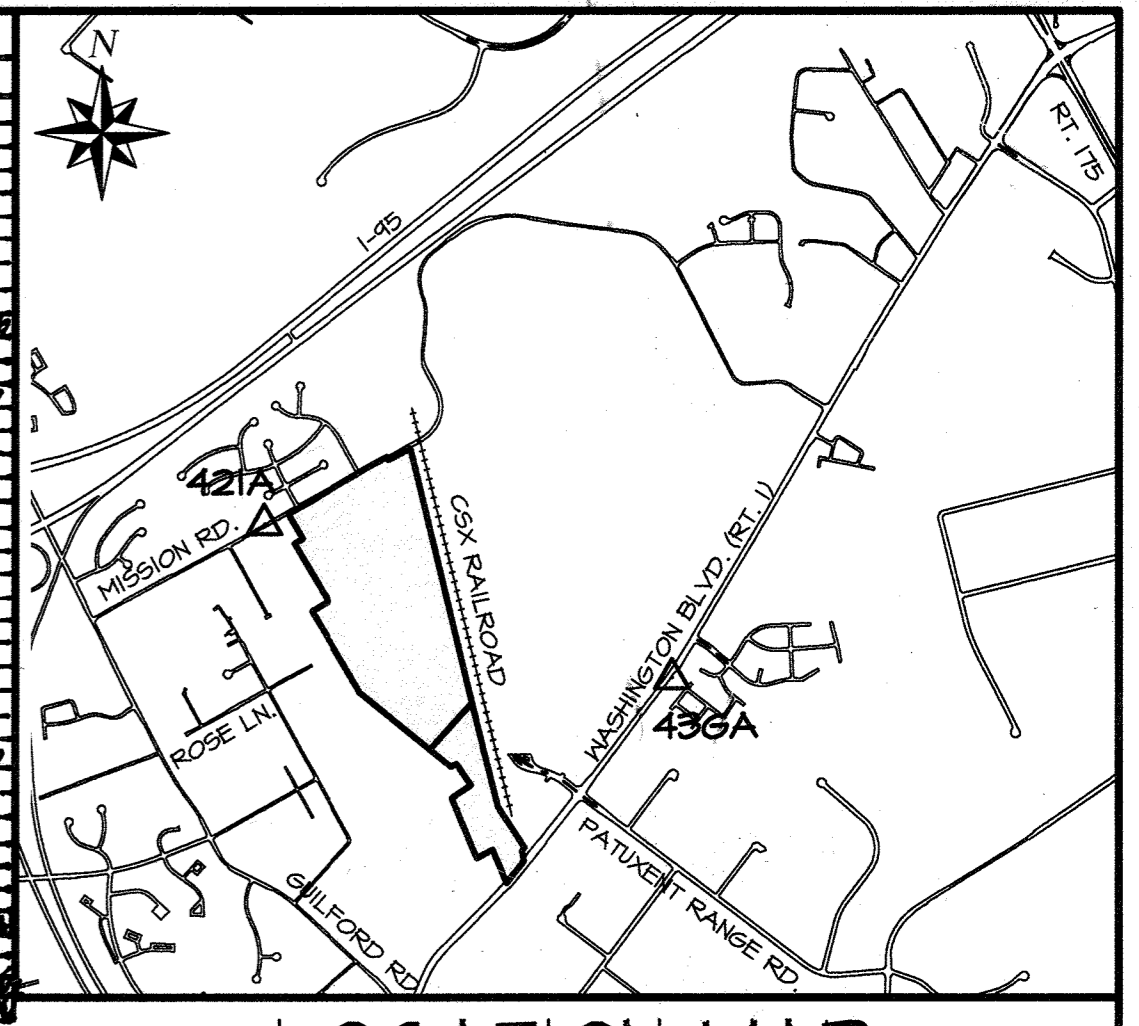


SHEET NO.	DESCRIPTION
1	MISSION ROAD
2	MISSION ROAD
3	MISSION ROAD
4	MISSION ROAD
5	MISSION ROAD
6	MISSION ROAD
7	MISSION ROAD
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43	MISSION ROAD
44	MISSION ROAD
45	MISSION ROAD
46	MISSION ROAD
47	MISSION ROAD
48	MISSION ROAD
49	MISSION ROAD
50	MISSION ROAD



SYMBOL	DESCRIPTION
260	EXISTING 5' CONTOURS
462	EXISTING 1' CONTOURS
---	EXISTING ROAD
---	EXISTING TREENE
---	LIMIT OF DISTURBANCE
---	PROPOSED CONTOURS
---	PROPERTY LINE
---	PROPOSED LIMIT OF CLEARING
---	EXISTING SEWER
---	25' WETLAND BUFFER
---	WETLANDS
---	STREAM
---	STREAM BUFFER
---	ERODIBLE SOILS
---	15%-25% SLOPE
---	>25% SLOPE
○	SPECIMEN TREES
---	FOREST RETENTION AREA
---	HOWARD COUNTY FLOODPLAIN
---	TEMPORARY GABION OUTLET STRUCTURE
---	STABILIZED CONSTRUCTION ENTRANCE

LOCATION MAP
ADC MAP 41, A-2
SCALE: 1" = 200'

NOTE:
* GRADIENT CONTROL AND ROAD CONSTRUCTION FOR THIS PLAN WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 80B OF THE HOWARD COUNTY DESIGN MANUAL, VOLUME 1: STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND AS SHOWN ON THE GRADING PLAN GP-20-096.
* AS-BUILT PLANS FOR THE PAVES SHALL BE SUBMITTED UPON COMPLETION OF THE SIGNATURE APPROVED GP-20-096.

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

DATE: 04/08/17
DEVELOPER SIGNATURE: [Signature]
COLLIN SUMPTER DEVELOPER NAME

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

DATE: 8-9-17
ENGINEER SIGNATURE: [Signature]
STEPHEN NOLAN ENGINEER NAME

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

DATE: 8/9/17
HOWARD SOIL CONSERVATION DISTRICT

LOT/PARCEL #	STREET ADDRESS
PARCEL 102	MISSION RD, JESSUP, MD 20794
PARCEL 344	8711 MISSION RD, JESSUP, MD 20794
PARCEL 235	8601 WASHINGTON BLVD, JESSUP, MD 20794

SOIL LABEL	SOIL SERIES	SLOPES	ERODIBLE	HYDRIC	PRIME AG SOILS	SEPTIC LIMITATIONS	HOMES W/ BASEMENTS	LOCAL ROADS & STREETS
CeC	CHILLUM LOAM	5-10%	YES	NO	NO	VERY LIMITED	SOMEWHAT LIMITED	VERY LIMITED
CrD	CROOM AND EVESBORO SOILS	10-15%	NO	NO	NO	VERY LIMITED	SOMEWHAT LIMITED	SOMEWHAT LIMITED
Ebc	EVESBORO LOAMY SAND	2-10%	NO	NO	NO	VERY LIMITED	NOT LIMITED	NOT LIMITED
FoaA	*FALLSINGTON SANDY LOAMS	0-2%	NO	YES	NO	VERY LIMITED	VERY LIMITED	VERY LIMITED
RuB	RUSSETT AND BELTSVILLE SOILS	2-5%	NO	NO	YES	VERY LIMITED	VERY LIMITED	VERY LIMITED
RuC	RUSSETT AND BELTSVILLE SOILS	5-10%	YES	NO	NO	VERY LIMITED	VERY LIMITED	VERY LIMITED
SfB	SASSAFRAS GRAVELLY SANDY LOAM	2-5%	NO	NO	YES	VERY LIMITED	NOT LIMITED	SOMEWHAT LIMITED
SrC	SASSAFRAS AND CROOM SOILS	5-10%	YES	NO	NO	VERY LIMITED	SOMEWHAT LIMITED	SOMEWHAT LIMITED
UcB	URBAN LAND-CHILLUM-BELTSVILLE COMPLEX	0-5%	NOT RATED	NO	NO	NOT RATED	NOT RATED	NOT RATED
Wob	WOODSTOWN SANDY LOAM	2-5%	NO	YES	YES	VERY LIMITED	VERY LIMITED	VERY LIMITED

LINE	BEARING	DISTANCE
L1	S 31°01'18" W	47.00'
L2	S 56°33'44" W	37.45'
L3	N 31°52'58" W	26.08'
L4	S 18°44'17" W	32.43'
L5	N 30°33'47" W	11.94'
L6	N 60°15'12" E	80.01'
L7	S 24°35'08" W	27.16'
L8	N 24°35'08" W	30.82'
L9	S 28°38'40" E	47.23'

NOTES

- EXISTING UTILITIES (SEWER, WATER, ELECTRIC AND STORM DRAINS) ARE LOCATED IN THE AREA OF ALL EXISTING BUILDINGS. NO NEW UTILITY CONSTRUCTION IS PROPOSED FOR THIS SITE. CONTRACTOR SHALL CONTACT MISS UTILITY BEFORE ANY WORK TO ENSURE THAT ANY EXISTING UTILITIES WILL NOT BE DAMAGED.
- WETLAND APPROVAL FROM US ARMY CORP OF ENGINEERS JURISDICTIONAL DETERMINATION: CENAB-OPR-M 2016-61850 HAS BEEN ISSUED FOR THIS SITE.
- MDE LETTER OF AUTHORIZATION 16-NP-0371/201661850 EFFECTIVE APRIL 24, 2017.
- HOWARD COUNTY ALTERNATIVE COMPLIANCE APPROVAL: WP-17-109, MAY 17, 2017.
 - SECTION 16.116(c)(1) - PROTECTION OF WETLANDS, STREAMS, AND STEEP SLOPES: ALLOWS FILLING TWO SMALL WETLAND AREAS.
 - SECTION 16.1202(a) - FOREST CONSERVATION PLAN REQUIRED FOR GRADING PERMIT AND SITE DEVELOPMENT PLAN; ALLOWS TEMPORARY DEFERRAL UNTIL SUBMISSION OF THE SDP FOR THE NEW PUBLIC SCHOOLS.
 - SECTION 16.1205(a)(10) - PRESET RETENTION PRIORITIES FOR SPECIMEN TREES: ALLOWS REMOVAL OF 31 SPECIMEN TREES SHOWN ON THIS PLAN.
- WETLAND AND BUFFER AREAS WHICH ARE TO REMAIN ALONG WITH INTERMITTENT STREAMS AND ASSOCIATED BUFFERS SHALL BE PLACED IN A FOREST CONSERVATION EASEMENT. THESE AREAS ARE TO REMAIN UNDISTURBED.
- THE SUBJECT PROPERTY IS ZONED R-SC AND R-12 PER 10/6/13 COMPREHENSIVE ZONING PLAN.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, EXCEPT AS APPROVED UNDER WP-17-109.
- THE FOREST CONSERVATION AND LANDSCAPING OBLIGATIONS HAVE BEEN DEFERRED TO THE SITE DEVELOPMENT PLAN PHASE FOR THE CONSTRUCTION OF THE SCHOOLS.
- THE PRE-SUBMISSION COMMUNITY MEETING WAS HELD AT 6 P.M. ON TUESDAY, APRIL 25, 2017, RIDGELY'S RUN COMMUNITY CENTER, 8400 MISSION ROAD, JESSUP, MARYLAND 20794.
- THE GRADING PLAN IS APPROVED UNDER GP-17-047.

NO.	DESCRIPTION	EXISTING	PROPOSED
1.	TOTAL PARCEL AREA:	±10,474,875 SF/±240.47 AC.	
2.	TOTAL PROJECT AREA:	3,355,427 SF/±91.38 AC.	
3.	WATERSHED:	LITTLE PATUXENT RIVER	
4.	WETLANDS:	EXISTING: 3.23 AC. PROPOSED: 2.67 AC.	
5.	WETLAND BUFFERS:	EXISTING: 5.14 AC. PROPOSED: 4.04 AC.	
6.	INTERMITTENT STREAMS:	655 LF.; 0.21 AC.	
7.	INTERMITTENT STREAM BUFFERS:	1.26 AC.	
8.	FLOODPLAIN AREA:	0.33 AC.	
9.	FORESTED AREA:	EXISTING: 87.64 AC. PROPOSED: 15.07 AC.	
10.	STEEP SLOPES:	15%-24.99%; 1.61 AC. >25%; 0.84 AC.	
11.	ERODIBLE SOILS:	43.09 AC.	
12.	LIMIT OF DISTURBANCE:	66.86 AC.	
13.	PROPOSED SITE USE:	TRANSFERRED TO HOWARD COUNTY: 81.88 AC. FUTURE SCHOOL PROPERTY: ROW: WATER TOWER: LAND TO REMAIN WITH CHASE PROPERTIES: ±9.5 AC.	
14.	GREEN OPEN AREA:	±86.95 AC.	
15.	PROPOSED IMPERVIOUS:	0 AC.	

AREA	MR	IDA	MR	MFO	CHA
0	0	0	0	0	0

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain)	81.88
H. Area of forest above afforestation threshold	0.00
I. Area of forest above conservation threshold	81.88

BREAK EVEN POINT:

J. Forest retention above threshold with no mitigation	29.48
K. Clearing permitted without mitigation	29.48

PROPOSED FOREST CLEARING:

L. Total area of forest to be cleared	66.81
M. Total area of forest to be retained	15.07

PLANTING REQUIREMENTS:

N. Reforestation for clearing above conservation threshold	16.36	1.0	0.0
O. Reforestation for clearing above conservation threshold	2.61	1.0	0.0
P. Credit for retention above conservation threshold	13.90	1.0	0.0
Q. Total reforestation required	16.36	1.0	0.0
R. Total afforestation required	0.00	1.0	0.0
T. Total reforestation and afforestation required	16.36	1.0	0.0

OVERALL SITE ANALYSIS

- TOTAL SITE AREA: 93.1 AC.±
- TOTAL DISTURBED AREA: 66.9 AC.± (2,995,621 SF.)
- ESTIMATED EARTHWORK:
 - GRADING CUT: 27,550 C.Y.
 - GRADING FILL: 823,310 C.Y.
 - GRADING NET: 795,760 C.Y. (FILL)

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	514.01'	744.78'	34°16'44"	S 33°16'24" E	504.00'
C2	45.31'	271.00'	96°08'31"	N 72°20'41" W	40.17'

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION: [Signature] 8-21-17
DATE

CHIEF, DIVISION OF LAND DEVELOPMENT: [Signature] 8-24-17
DATE

DIRECTOR: [Signature] 8-24-17
DATE

SWALE:	±1,050	L.F.
EARTH DIKE:	±17,452	L.F.
SILT FENCE:	±2,175	L.F.
SUPER SILT FENCE:	±7,650	L.F.
SEDIMENT TRAP:	1	EA.
MOUNTABLE BERM:	0	EA.
STABILIZED CONSTRUCTION ENTRANCE:	1	ENTRANCE(S)
SEDIMENT BASIN:	4	EA.
GABION OUTLET STRUCTURE:	1	EA.

OVERALL SUMMARY OF SEDIMENT CONTROL QUANTITIES

NOTE: THIS SUMMARY OF SEDIMENT CONTROL QUANTITIES IS FOR USE BY THE HOWARD SOIL CONSERVATION DISTRICT ONLY. THIS SUMMARY IS NOT INTENDED TO BE USED BY THE CONTRACTOR FOR ESTIMATING AND BIDDING PURPOSES.

OVERALL SEQUENCE OF OPERATIONS

- NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION AT (410) 313-1855, SAVAGE STONE, LLC AT (410)792-7234, AND THE ENGINEER AT (410) 879-7200 AT LEAST 5 DAYS PRIOR TO BEGINNING WORK.
- BEGIN PHASE 1 WORK. SEE PHASE 1 SEQUENCE OF OPERATION ON SHEET 2.
- DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D.. THE PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CD. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 20 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- CONTINUE WITH ONGOING OPERATIONS FOR THE COMPLETION OF PHASE 1 ACTIVITIES. ANY DISTURBANCE TO SEDIMENT CONTROL MEASURES BY THE GRADING OPERATIONS SHALL BE REPAIRED WITHIN ONE WORKING DAY. THE OWNER IS RESPONSIBLE FOR THE MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES INSTALLED FOR THE ONGOING OPERATIONS.
- ONCE PHASE 1 IS 50% STABILIZED AND UPON RECEIPT OF THE MDE PERMIT FOR WETLAND IMPACTS, PHASE 2 GRADING OPERATIONS MAY BEGIN.
- SEE PHASE 2 SEQUENCE OF OPERATION ON SHEET 5.
- CONTINUE WITH ONGOING OPERATIONS FOR THE COMPLETION OF PHASE 1 ACTIVITIES. ANY

TEMPORARY IMPERVIOUS ROAD SITE ANALYSIS

1. AREA DISTURBED	2.2 ACRES
2. AREA TO BE REVEGETATED	0.2 ACRES
3. TOTAL CUT	100 CY
4. TOTAL FILL	100 CY

DISTURBANCE TO SEDIMENT CONTROL MEASURES BY THE GRADING OPERATIONS SHALL BE REPAIRED WITHIN ONE WORKING DAY. THE OWNER IS RESPONSIBLE FOR THE MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES INSTALLED FOR THE ONGOING OPERATIONS.

- ONCE THE DRAINAGE AREAS TO THE SEDIMENT CONTROL MEASURES HAVE BEEN PERMANENTLY STABILIZED (I.E. ESTABLISHED VEGETATION) AND UPON PERMISSION OF THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION, THESE SEDIMENT CONTROL MEASURES MAY BE REMOVED OR RETAINED IN PLACE FOR FUTURE RECLAMATION ACTIVITIES, AS APPROPRIATE.
- ALL TRAP/BASINS SHALL BE REMOVED NO LATER THAN 3 YRS. FROM HOWARD SOIL CONSERVATION DISTRICT SIGNATURE APPROVAL.

NOTES:

- EXISTING UTILITIES (SEWER, WATER, ELECTRIC AND STORM DRAINS) ARE LOCATED IN THE AREA OF ALL EXISTING BUILDINGS. NO NEW UTILITY CONSTRUCTION IS PROPOSED FOR THIS SITE. CONTRACTOR SHALL CONTACT MISS UTILITY BEFORE ANY WORK TO ENSURE THAT ANY EXISTING UTILITIES WILL NOT BE DAMAGED.
- ALL DEWATERING DEVICES ARE TO BE USED FOR MAINTENANCE AND CLEANOUT PURPOSES OF TRAPPING DEVICES.
- THE ENGINEER MUST SUBMIT AS-BUILT TO HOWARD COUNTY SOIL CONSERVATION DISTRICT WITHIN 30 DAYS OF COMPLETION OF BASIN #1, 2, 3, 4 INSTALLATION.
- INSTALL STABILIZED CONSTRUCTION ENTRANCE AFTER PHASE 1 GRADING IS COMPLETE.
- WETLAND APPROVAL FROM US ARMY CORP OF ENGINEERS JURISDICTIONAL DETERMINATION: CENAB-OPR-M 2016-61850 HAS BEEN ISSUED FOR THIS SITE. MDE LETTER OF AUTHORIZATION 16-NP-0371/201661850 EFFECTIVE APRIL 24, 2017.

MISSION ROAD FOREST CONSERVATION WORKSHEET
VERSION 1.0
(Enter in Yellow Cells)

NET TRACT AREA: LAND TO BE CONVEYED TO HOWARD COUNTY

A. Total area to be conveyed to County	81.88	(Total Site Area = 93.10 ac)
B. Area within 100-year floodplain	0.00	
C. Area to remain in agricultural production	0.00	
D. Net tract area	81.88	

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)

Input the number "1" under the appropriate land use zoning, and leave the other cells empty.

ARA	MR	IDA	MR	MFO	CHA
0	0	0	0	0	0

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain)	81.88
H. Area of forest above afforestation threshold	0.00
I. Area of forest above conservation threshold	81.88

BREAK EVEN POINT:

J. Forest retention above threshold with no mitigation	29.48
K. Clearing permitted without mitigation	29.48

PROPOSED FOREST CLEARING:

L. Total area of forest to be cleared	66.81
M. Total area of forest to be retained	15.07

PLANTING REQUIREMENTS:

N. Reforestation for clearing above conservation threshold	16.36	1.0	0.0
O. Reforestation for clearing above conservation threshold	2.61	1.0	0.0
P. Credit for retention above conservation threshold	13.90	1.0	0.0
Q. Total reforestation required	16.36	1.0	0.0
R. Total afforestation required	0.00	1.0	0.0
T. Total reforestation and afforestation required	16.36	1.0	0.0

REVISIONS:

NO.	DATE	DESCRIPTION
1	8/21/17	ISSUED FOR PERMIT
2	8/24/17	REVISED SHEET NUMBER AND SHEET INDEX
3	7/19/20	REVISED SHEET NUMBER AND SHEET INDEX

OWNER/DEVELOPER:
CHASE LAND, LLC
P.O. BOX 850
LAUREL, MD 20725-0850
410-792-7234
ATTN: COLLIN SUMPTER

SUBDIVISION NAME - N/A	SECTION/AREA-N/A	PARCEL NO. 102, 344, 235
L/F	GRID #	ZONING
0921/556	10242/162	24 & 19 R-SC & R-12
5061/360		42 & 43
		6
		606401
WATER CODE		SEWER CODE

CNA
engineers, surveyors & landscape architects

Civil Engineers • Land Surveyors • Landscape Architects
Planners • Geotechnical Engineers • Environmental Engineers

215 Bynum Road
Forest Hill, Maryland 21050
Phone (410) 879-7200 • Fax (410) 838-1811
E-mail: cnamail@cna-engineers.com

SITE DEVELOPMENT PLAN FOR CHASE PROPERTY AT MISSION ROAD

TAX MAP 43 PARCELS 235, 344, & 102
8601 ROUTE 1 & 8717 MISSION ROAD, JESSUP, MD 20794
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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. 20467, Expiration Date: 6/1/18.

Professional Engineer: [Signature] 8-24-17

DATE: 8/24/17
SCALE: 1"=200'

Drawn By: MWD
Design By: MWD
Review By: CRM

Job No: 13066
Sheet: 1 of 39

SDP-17-064

NS
25616

**PHASE I OVERALL
SITE ANALYSIS**

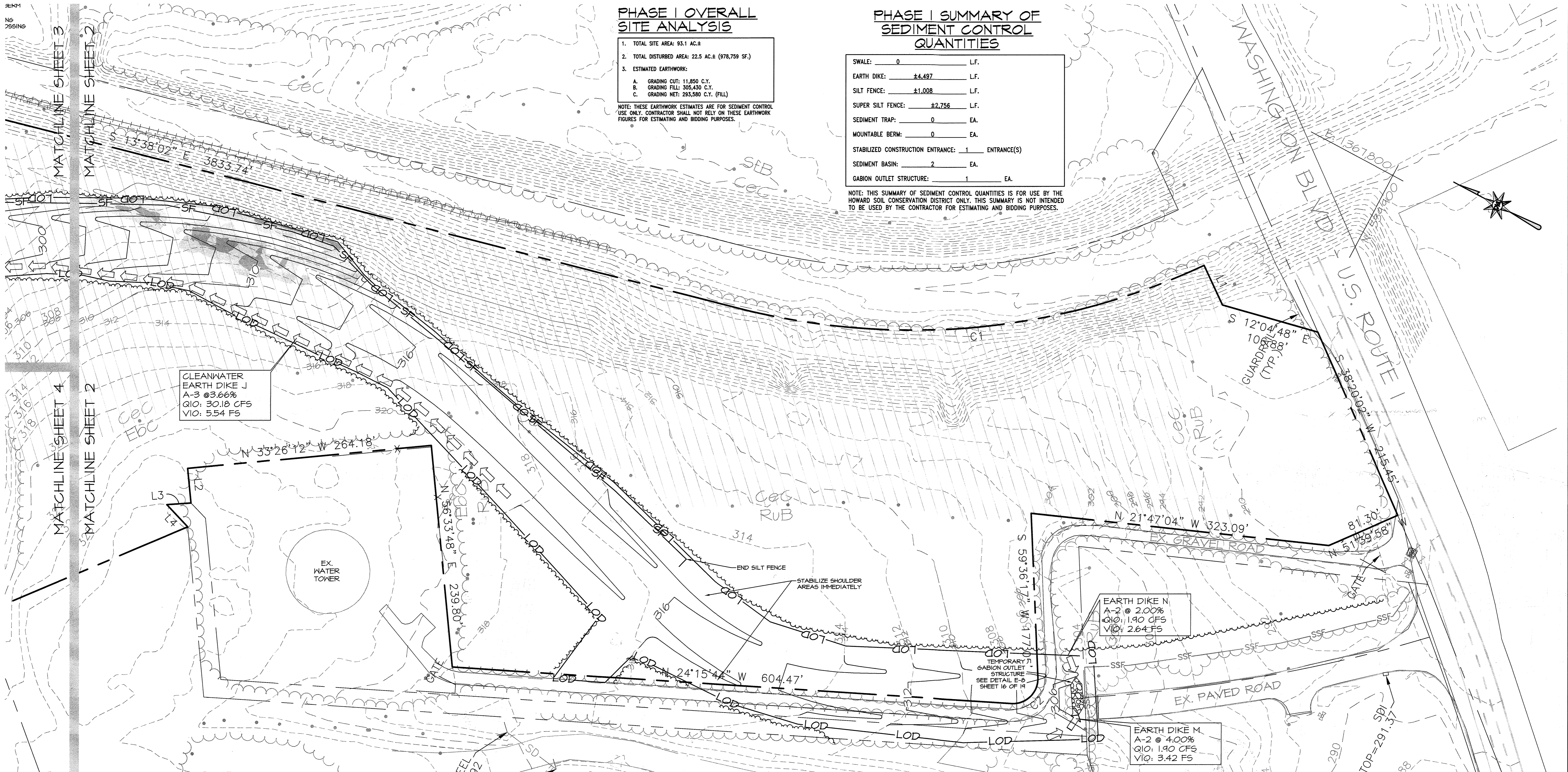
- TOTAL SITE AREA: 93.1 AC.±
- TOTAL DISTURBED AREA: 22.5 AC.± (978,759 SF.)
- ESTIMATED EARTHWORK:
 - GRADING CUT: 11,850 C.Y.
 - GRADING FILL: 305,430 C.Y.
 - GRADING NET: 293,580 C.Y. (FILL)

NOTE: THESE EARTHWORK ESTIMATES ARE FOR SEDIMENT CONTROL USE ONLY. CONTRACTOR SHALL NOT RELY ON THESE EARTHWORK FIGURES FOR ESTIMATING AND BIDDING PURPOSES.

**PHASE I SUMMARY OF
SEDIMENT CONTROL
QUANTITIES**

SWALE:	0	L.F.
EARTH DIKE:	±4,497	L.F.
SILT FENCE:	±1,008	L.F.
SUPER SILT FENCE:	±2,756	L.F.
SEDIMENT TRAP:	0	EA.
MOUNTABLE BERM:	0	EA.
STABILIZED CONSTRUCTION ENTRANCE:	1	ENTRANCE(S)
SEDIMENT BASIN:	2	EA.
GABION OUTLET STRUCTURE:	1	EA.

NOTE: THIS SUMMARY OF SEDIMENT CONTROL QUANTITIES IS FOR USE BY THE HOWARD SOIL CONSERVATION DISTRICT ONLY. THIS SUMMARY IS NOT INTENDED TO BE USED BY THE CONTRACTOR FOR ESTIMATING AND BIDDING PURPOSES.



CLEANWATER
EARTH DIKE J
A-3 @ 3.66%
Q10: 30.18 CFS
V10: 5.54 FS

EARTH DIKE N
A-2 @ 2.00%
Q10: 1.90 CFS
V10: 2.64 FS

EARTH DIKE M
A-2 @ 4.00%
Q10: 1.90 CFS
V10: 3.42 FS

PHASE I SEQUENCE OF OPERATIONS

NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION AT (410) 313-1855, SAVAGE STONE, LLC AT (410) 792-7234, AND THE ENGINEER AT (410) 879-7200 AT LEAST 5 DAYS PRIOR TO BEGINNING WORK.

- CLEAR AND GRUB FOR AND INSTALL STABILIZED CONSTRUCTION ENTRANCES AND PERIMETER SEDIMENT CONTROLS INCLUDING SILT FENCE AND SUPER SILT FENCE FOR PHASE 1.
- CLEAR AND GRUB FOR AND INSTALL PROPOSED SEDIMENT BASIN #1 AND #2, INCLUDING REMOVABLE PUMPING STATIONS, AS SPECIFIED FOR PHASE 1.
 - PRIOR TO BASIN #1 AND BASIN #2 CONSTRUCTION, CONTRACTOR SHALL CONTACT ENGINEER IN CHARGE (410) 879-7200 SO THEY MAY BE PRESENT TO OVERSEE INSTALLATION OF MAJOR COMPONENTS TO AID IN PREPARATION OF THE AS-BUILT. EXCESS MATERIAL NOT IMMEDIATELY REUSED FOR BASIN CONSTRUCTION SHALL BE PLACED IN DESIGNATED STOCKPILE AREAS.
- INSTALL SWALES AND EARTH DIKES AFTER BASIN WORK, AS SHOWN ON PHASE 1 PLANS IN ACCORDANCE WITH THE APPROVED SPECIFICATIONS. INSTALL TEMPORARY GABION OUTLET STRUCTURE.
- NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION UPON COMPLETION OF SAID INSTALLATION.

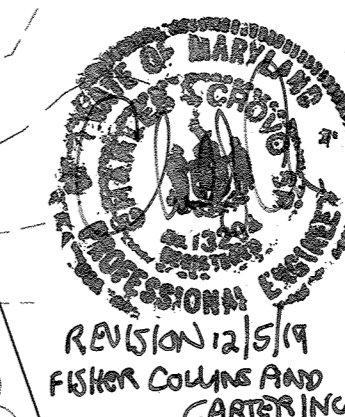
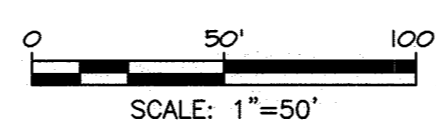
- WITH APPROVAL OF THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION, AS OVERBURDEN OPERATIONS PROGRESS, CONTINUE GRADING OPERATIONS IN THE PROPOSED FILL AREAS. STABILIZE ALL GRADES AS SOON AS POSSIBLE. ADJUST EARTHDIKE LOCATIONS AS NEEDED DURING GRADING OPERATIONS TO ENSURE ALL SEDIMENT LADEN RUNOFF IS DIRECTED TO THE SEDIMENT BASINS.
- WHEN OPERATIONS ARE COMPLETED OR IDLE MORE THAN TWO WEEKS, STABILIZATION MUST BE PERFORMED.
- DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. THE PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 20 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- CONTINUE WITH ONGOING OPERATIONS FOR THE COMPLETION OF PHASE 1 ACTIVITIES. ANY DISTURBANCE TO SEDIMENT CONTROL MEASURES BY THE GRADING OPERATIONS SHALL BE REPAIRED WITHIN ONE WORKING DAY. THE OWNER IS RESPONSIBLE FOR THE MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES INSTALLED FOR THE ONGOING OPERATIONS.

- ONCE THE DRAINAGE AREAS TO THE SEDIMENT CONTROL MEASURES HAVE BEEN PERMANENTLY STABILIZED (I.E. ESTABLISHED VEGETATION) AND UPON PERMISSION OF THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION, THESE SEDIMENT CONTROL MEASURES MAY BE REMOVED OR RETAINED IN PLACE FOR FUTURE RECLAMATION ACTIVITIES, AS APPROPRIATE.
- ALL TRAP/BASINS SHALL BE REMOVED NO LATER THAN 3 YRS. FROM HOWARD SOIL CONSERVATION DISTRICT SIGNATURE APPROVAL.

- NOTES:
- EXISTING UTILITIES (SEWER, WATER, ELECTRIC AND STORM DRAINS) ARE LOCATED IN THE AREA OF ALL EXISTING BUILDINGS. NO NEW UTILITY CONSTRUCTION IS PROPOSED FOR THIS SITE. CONTRACTOR SHALL CONTACT MISS UTILITY BEFORE ANY WORK TO ENSURE THAT ANY EXISTING UTILITIES WILL NOT BE DAMAGED.
 - ALL DEWATERING DEVICES ARE TO BE USED FOR MAINTENANCE AND CLEANOUT PURPOSES OF TRAPPING DEVICES.
 - THE ENGINEER MUST SUBMIT AS-BUILT TO HOWARD COUNTY SOIL CONSERVATION DISTRICT WITHIN 30 DAYS OF COMPLETION OF BASIN #1, 2, 3, 4 INSTALLATION.
 - INSTALL STABILIZED CONSTRUCTION ENTRANCE AFTER PHASE 1 GRADING IS COMPLETE.
 - WETLAND APPROVAL FROM US ARMY CORP OF ENGINEERS JURISDICTIONAL DETERMINATION: CENAB-OPR-M 2016-61650 HAS BEEN ISSUED FOR THIS SITE. MDE LETTER OF AUTHORIZATION 16-NT-0371/201661650 EFFECTIVE APRIL 24, 2017.

NOTE

- SEE SHEET 11 FOR BASIN 1 DETAILS.
- SEE SHEET 12 FOR BASIN 2 DETAILS.
- SEE SHEET 13 FOR BASIN 3 DETAILS.
- SEE SHEET 14 FOR BASIN 4-5 DETAILS.
- PROPOSED LIMIT OF CLEARING TREE LINE OFFSET FROM LOD LINE FOR CLARITY.



APPROVED: DEPARTMENT OF PLANNING AND ZONING

David C. L.
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 8-21-17

Vest Slankovich
CHIEF, DIVISION OF LAND CONSERVATION
DATE: 8-24-17

Valdis J. J.
DIRECTOR
DATE: 8-24-17

HOWARD SOIL CONSERVATION DISTRICT

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

John K. Rhoads
HOWARD SOIL CONSERVATION DISTRICT
DATE: 8/24/17

CNA engineers, surveyors & landscape architects
Civil Engineers • Land Surveyors • Landscape Architects
Planners • Geotechnical Engineers • Environmental Engineers
215 Bynum Road
Forest Hill, Maryland 21050
Phone (410) 879-7200 • Fax (410) 838-1811
E-mail: cna@mail@cna-engineers.com

STATE OF MARYLAND
SEAL OF THE STATE OF MARYLAND
C. MARLINS
PROFESSIONAL ENGINEER
LICENSE NO. 121519
EXPIRES 12/5/19

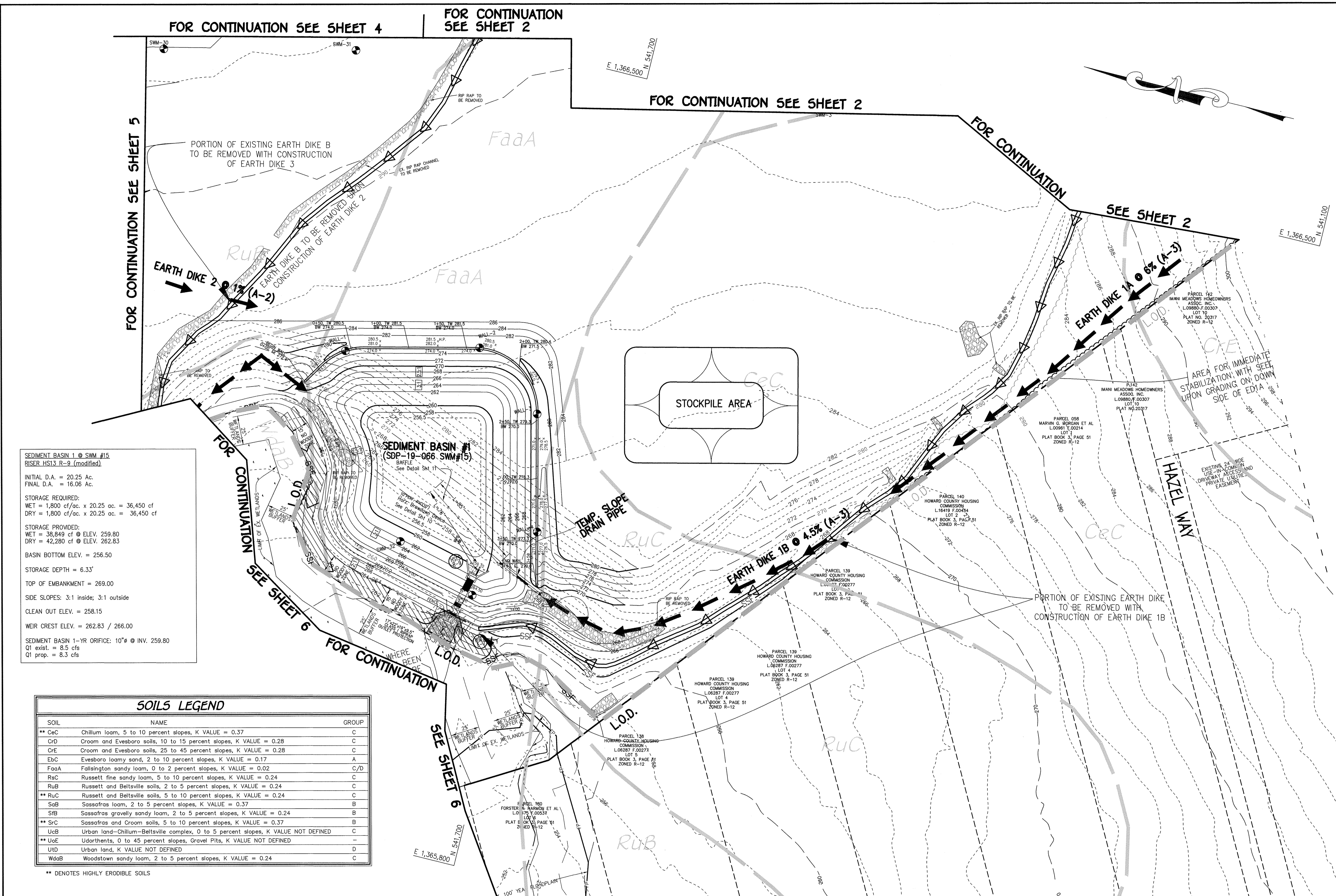
**SITE DEVELOPMENT PLAN
SITE & ESC PLAN PR. CONDITIONS-PHASE 1
FOR
CHASE PROPERTY
AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MD 20194**

6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

Date	Revisions	Date:	Scale:
12/19/19	REVISED SHEET NUMBER	6/26/2017	1"=50'
		Drawn By:	Job No:
		KLS	13066
		Design By:	Sheet:
		KLS	02 of 20
		Review By:	
		CRM	

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. 20467, Expiration Date: 6/1/18.

OWNER/DEVELOPER
CHASE LAND, LLC
P.O. BOX 850
LAUREL, MD 20725-0850
410-792-7234
ATTN: COLLIN SUMPTER



LEGEND	
SYMBOL	DESCRIPTION
--- 282 ---	EXISTING CONTOUR 2' INTERVAL
- - - 280 - - -	EXISTING CONTOUR 10' INTERVAL
- - - s - - -	EXISTING SAN. SEWER LINE
- - - d - - -	EXISTING STORM DRAIN LINE
- - - w - - -	EXISTING WATER LINE
- - - use - - -	EXISTING UNDERGROUND ELECTRIC LINE
- - - cty - - -	EXISTING CABLE/TV LINE
- - - fso - - -	EXISTING FIBER OPTIC/CABLE LINE
- - - g - - -	EXISTING GAS LINE
- - - x - - -	EXISTING FENCE
- - - x - - -	PROPOSED FENCE
- - - 282 - - -	PROPOSED CONTOUR 2' INTERVAL
- - - 280 - - -	PROPOSED CONTOUR 10' INTERVAL
+ 292.50	PROPOSED SPOT ELEVATION
- - -	PROPOSED CONCRETE WALK
- - -	PROPOSED MACADAM PAVING
- - -	EXISTING TREE AND SHRUB
- - -	EXISTING TREELINE
- - -	PROPOSED TREELINE
8" W	PROPOSED PUBLIC WATER
8" W	PROPOSED PRIVATE WATER
18" RCP	PROPOSED STORM DRAIN
8" S	PROPOSED PRIVATE SEWER
8" S	PROPOSED PUBLIC SEWER
- - -	SOILS DELINEATION
- - -	SUPER SILT FENCE
- - -	LIMIT OF DISTURBANCE
(A-2)	EARTH DIKE (SEE DETAIL AND SOIL STABILIZATION MATING OR RIPPY STONE PRESSED FLUSH WITH GROUND 7')
(A-3)	EARTH DIKE (SEE DETAIL AND SOIL STABILIZATION MATING OR RIPPY STONE PRESSED FLUSH WITH GROUND 7')
- - -	EXISTING EARTH DIKE
- - -	15' NO WOODY ZONE

CONTRACTOR NOTE:
DURING CONSTRUCTION ACTIVITIES THE LIMITS OF DISTURBANCE (L.O.D.) SHALL NOT EXCEED 30 ACRES.

SEDIMENT BASIN 1 @ SWM #15
RISER HS13 R-9 (modified)

INITIAL D.A. = 20.25 Ac.
FINAL D.A. = 16.06 Ac.

STORAGE REQUIRED:
WET = 1,800 cf/ac. x 20.25 ac. = 36,450 cf
DRY = 1,800 cf/ac. x 20.25 ac. = 36,450 cf

STORAGE PROVIDED:
WET = 38,849 cf @ ELEV. 259.80
DRY = 42,280 cf @ ELEV. 262.83

BASIN BOTTOM ELEV. = 256.50

STORAGE DEPTH = 6.33'

TOP OF EMBANKMENT = 269.00

SIDE SLOPES: 3:1 inside; 3:1 outside

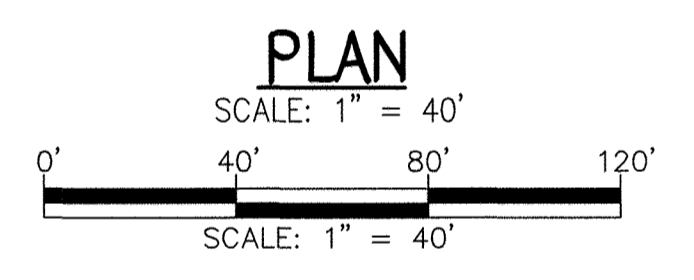
CLEAN OUT ELEV. = 258.15

WEIR CREST ELEV. = 262.83 / 266.00

SEDIMENT BASIN 1-YR ORIFICE: 10" @ INV. 259.80
Q1 exist. = 8.5 cfs
Q1 prop. = 8.3 cfs

SOILS LEGEND		
SOIL	NAME	GROUP
** CeC	Chillum loam, 5 to 10 percent slopes, K VALUE = 0.37	C
CrD	Croom and Evesboro soils, 10 to 15 percent slopes, K VALUE = 0.28	C
CrE	Croom and Evesboro soils, 25 to 45 percent slopes, K VALUE = 0.28	C
EbC	Evesboro loamy sand, 2 to 10 percent slopes, K VALUE = 0.17	A
FaaA	Fallsington sandy loam, 0 to 2 percent slopes, K VALUE = 0.02	C/D
Rsc	Russett fine sandy loam, 5 to 10 percent slopes, K VALUE = 0.24	C
RuB	Russett and Beltsville soils, 2 to 5 percent slopes, K VALUE = 0.24	C
** RuC	Russett and Beltsville soils, 5 to 10 percent slopes, K VALUE = 0.24	C
SaB	Sassafras loam, 2 to 5 percent slopes, K VALUE = 0.37	B
SfB	Sassafras gravelly sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	B
** SrC	Sassafras and Croom soils, 5 to 10 percent slopes, K VALUE = 0.37	B
UcB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes, K VALUE NOT DEFINED	-
** UoC	Udarthents, 0 to 45 percent slopes, Gravel Pits, K VALUE NOT DEFINED	-
UHD	Urban land, K VALUE NOT DEFINED	D
WdaB	Woodstown sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	C

** DENOTES HIGHLY ERODIBLE SOILS



ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR M.D.A.

Stephanie J. Tuite 7/14/20
SIGNATURE OF ENGINEER DATE

DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Daniel Lubeley 7/15/20
SIGNATURE OF DEVELOPER PRINTED NAME OF DEVELOPER DATE

"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. 38386, EXPIRATION DATE: JANUARY 12, 2022."

Stephanie J. Tuite 7/14/20
SIGNATURE DATE

STEPHANIE J. TUITE, R.L.A., P.E., LEED AP BC&D

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

Stephanie J. Tuite 7/14/20
SIGNATURE P.E. No. DATE:

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE 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.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Monty Kendall 8/15/20
Director - Department of Planning and Zoning Date

Stephanie J. Tuite 8/15/20
Chief, Division of Land Development Date

Stephanie J. Tuite 7/14/20
Chief, Development Engineering Division Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 101
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6805

DATE	DESCRIPTION	REVISION BLOCK
7/10/20	NEW SHEET TO CONSTRUCT SEDIMENT CONTROLS AND BASINS 1 THRU 5 FOR NEW SCHOOL ON SITE	

PROJECT	SECTION/AREA	PARCEL
HIGH SCHOOL #13	N/A	102, 349, 235

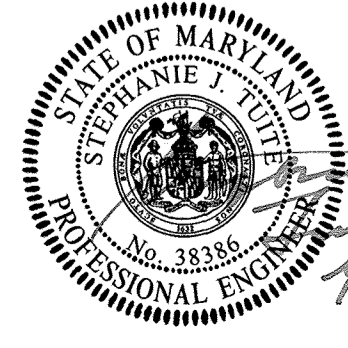
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
18 & 24 13 & 19		R-SC MXD-3 RSA-8 MXD-3	42 & 43	SIXTH	606901

WATER CODE: --- SEWER CODE: ---

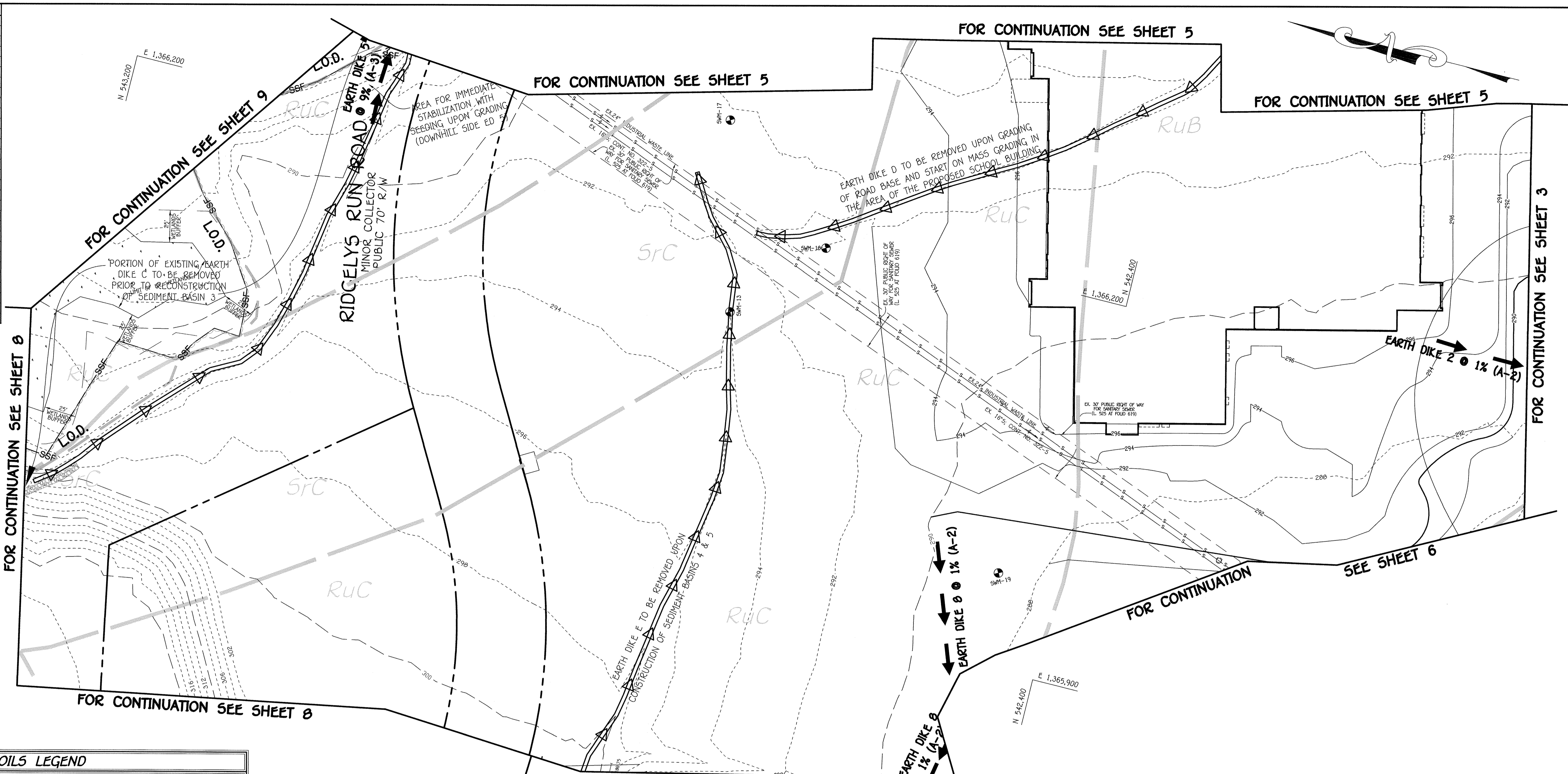
SEDIMENT AND EROSION CONTROL PLAN
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794

ZONED: R-SC, MXD-3, R-SA-8, MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 3 OF 39

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK
ELLSWORTH CITY, MARYLAND 21042
(410) 461 - 2850



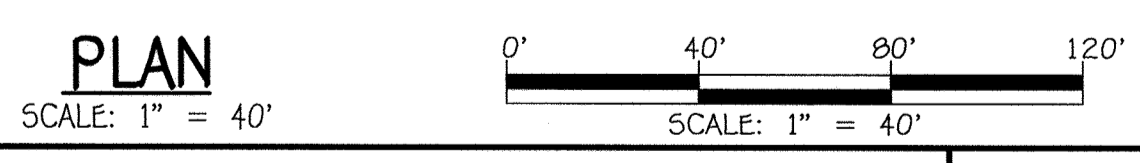
LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING UNDERGROUND ELECTRIC LINE
---	EXISTING CABLE/TV LINE
---	EXISTING FIBER OPTIC/CABLE LINE
---	EXISTING GAS LINE
---	EXISTING FENCE
X-X	PROPOSED FENCE
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
+	PROPOSED SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREE AND SHRUB
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	PROPOSED PUBLIC WATER
---	PROPOSED PRIVATE WATER
---	PROPOSED STORMDRAIN
---	PROPOSED PRIVATE SEWER
---	PROPOSED PUBLIC SEWER
---	SOILS DELINEATION
---	SUPER SILT FENCE
---	LIMIT OF DISTURBANCE
---	EARTH DIKE (SEE AND SOIL STABILIZATION MATING OR 500)
---	EXISTING EARTH DIKE



SOILS LEGEND		
SOIL	NAME	GROUP
** CeC	Chillum loam, 5 to 10 percent slopes, K VALUE = 0.37	C
C/D	Croom and Evesboro soils, 10 to 15 percent slopes, K VALUE = 0.28	C
CrE	Croom and Evesboro soils, 25 to 45 percent slopes, K VALUE = 0.28	C
EBC	Evesboro loamy sand, 2 to 10 percent slopes, K VALUE = 0.17	A
FbA	Fallsington sandy loam, 0 to 2 percent slopes, K VALUE = 0.02	C/D
RuC	Russeff fine sandy loam, 5 to 10 percent slopes, K VALUE = 0.24	C
RuB	Russeff and Beltsville soils, 2 to 5 percent slopes, K VALUE = 0.24	C
** RuC	Russeff and Beltsville soils, 5 to 10 percent slopes, K VALUE = 0.24	C
SbB	Sassafras loam, 2 to 5 percent slopes, K VALUE = 0.37	B
SfB	Sassafras gravelly sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	B
** SrC	Sassafras and Croom soils, 5 to 10 percent slopes, K VALUE = 0.37	B
UcB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes, K VALUE NOT DEFINED	C
** UoE	Udorthents, 0 to 45 percent slopes, Gravel Pits, K VALUE NOT DEFINED	-
UjD	Urban land, K VALUE NOT DEFINED	-
Wdab	Woodstown sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	C

** DENOTES HIGHLY ERODIBLE SOILS

CONTRACTOR NOTE:
DURING CONSTRUCTION ACTIVITIES THE LIMITS OF DISTURBANCE (L.O.D.) SHALL NOT EXCEED 30 ACRES.



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10275 BALDWIN NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461 - 2895

ENGINEER'S CERTIFICATE
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION." 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

Signature: *Stephanie G. Tuttle* DATE: 7/14/20
SIGNATURE OF ENGINEER DATE

DEVELOPER'S CERTIFICATE
"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

Signature: *Daniel Lubeley* DATE: 7/14/20
SIGNATURE OF DEVELOPER DATE

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. 38386, EXPIRATION DATE: JANUARY 12, 2022.

Signature: *Stephanie G. Tuttle* DATE: 7/14/20
STEPHANIE G. TUTTLE, R.L.A. P.E., LEED AP BCAD DATE

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

Signature: *David Kendall Fox* P.E. No. DATE: 8/5/20
Director - Department of Planning and Zoning DATE

Signature: *David Kendall Fox* P.E. No. DATE: 8/5/20
Chief, Division of Land Development DATE

Signature: *David Kendall Fox* P.E. No. DATE: 7.29.20
Chief, Development Engineering Division DATE

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDEHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6005

STATE OF MARYLAND
PROFESSIONAL ENGINEER
No. 38386
7/14/20

REVISION BLOCK	
7/10/20	NEW SHEET TO CONSTRUCT SEDIMENT CONTROLS AND BASINS 1 THRU 5 FOR NEW SCHOOL ON SITE.
DATE	DESCRIPTION
REVISION BLOCK	
PROJECT	SECTION/AREA PARCEL
HIGH SCHOOL #13	N/A 102, 349, 235
PLAT NOS.	BLOCK NO. ZONE TAX MAP ELEC. DIST. CENSUS TR.
18 & 24	R-12 42 & 43 SIXTH 606901
13 & 19	25C MXD-3 65A-B MXD-3
WATER CODE	SEWER CODE
---	---

SEDIMENT AND EROSION CONTROL PLAN
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-B MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 5 OF 39

SEDIMENT BASIN 4 @ BMP #13
RISER HS13 R-2 (modified)

INITIAL D.A. = 4.61 Ac.
FINAL D.A. = 4.26 Ac.

STORAGE REQUIRED:
WET = 1,800 cf/oc. x 4.61 ac. = 8,298 cf
DRY = 1,800 cf/oc. x 4.61 ac. = 8,298 cf

STORAGE PROVIDED:
WET = 9,056 cf @ ELEV. 289.50
DRY = 9,121 cf @ ELEV. 290.89

BASIN BOTTOM ELEV. = 287.00

STORAGE DEPTH = 3.89'

TOP OF EMBANKMENT = 294.00

SIDE SLOPES: 3:1 inside; 3:1 outside

CLEAN OUT ELEV. = 288.25

WEIR CREST ELEV. = 290.67 / 291.08

SEDIMENT BASIN 1-YR ORIFICE: 3" @ INV. 285.75
Q1 exist. = 1.9 cfs
Q1 prop. = 1.7 cfs

SEDIMENT BASIN 5 @ BMP #9
RISER HS13 R-8

INITIAL D.A. = 2.59 Ac.
FINAL D.A. = 2.59 Ac.

STORAGE REQUIRED:
WET = 1,800 cf/oc. x 2.59 ac. = 4,662 cf
DRY = 1,800 cf/oc. x 2.59 ac. = 4,662 cf

STORAGE PROVIDED:
WET = 4,683 cf @ ELEV. 283.74
DRY = 6,166 cf @ ELEV. 284.40

BASIN BOTTOM ELEV. = 283.00

STORAGE DEPTH = 1.40'

TOP OF EMBANKMENT = 286.25

SIDE SLOPES: 3:1 inside; 3:1 outside
2:1 above 285.00

CLEAN OUT ELEV. = 283.37

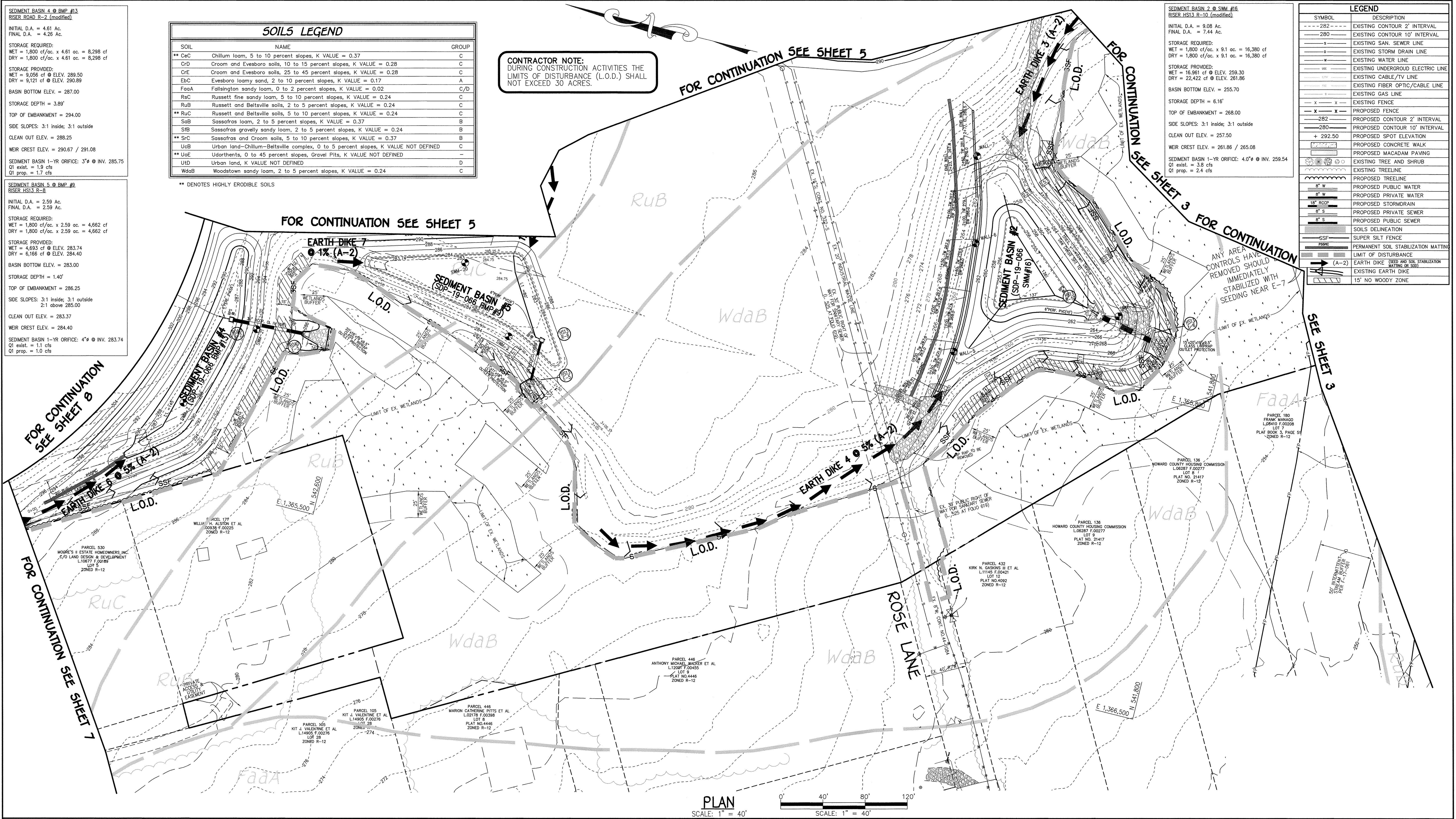
WEIR CREST ELEV. = 284.40

SEDIMENT BASIN 1-YR ORIFICE: 4" @ INV. 283.74
Q1 exist. = 1.1 cfs
Q1 prop. = 1.0 cfs

SOILS LEGEND		
SOIL	NAME	GROUP
** CeC	Chillum loam, 5 to 10 percent slopes, K VALUE = 0.37	C
CrD	Croom and Evesboro soils, 10 to 15 percent slopes, K VALUE = 0.28	C
CrE	Croom and Evesboro soils, 25 to 45 percent slopes, K VALUE = 0.28	C
EBC	Evesboro loamy sand, 2 to 10 percent slopes, K VALUE = 0.17	A
FaaA	Fallingston sandy loam, 0 to 2 percent slopes, K VALUE = 0.02	C/D
RaC	Russelt fine sandy loam, 5 to 10 percent slopes, K VALUE = 0.24	C
RuB	Russelt and Beltsville soils, 2 to 5 percent slopes, K VALUE = 0.24	C
** RuC	Russelt and Beltsville soils, 5 to 10 percent slopes, K VALUE = 0.24	C
SoB	Sassafras loam, 2 to 5 percent slopes, K VALUE = 0.37	B
SfB	Sassafras gravelly sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	B
** SrC	Sassafras and Croom soils, 5 to 10 percent slopes, K VALUE = 0.37	B
UoB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes, K VALUE NOT DEFINED	C
** UoE	Udorthents, 0 to 45 percent slopes, Gravel Pits, K VALUE NOT DEFINED	-
Ud	Urban land, K VALUE NOT DEFINED	D
WdaB	Woodstown sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	C

** DENOTES HIGHLY ERODIBLE SOILS

CONTRACTOR NOTE:
DURING CONSTRUCTION ACTIVITIES THE LIMITS OF DISTURBANCE (L.O.D.) SHALL NOT EXCEED 30 ACRES.



SEDIMENT BASIN 2 @ SWM #16
RISER HS13 R-10 (modified)

INITIAL D.A. = 9.08 Ac.
FINAL D.A. = 7.44 Ac.

STORAGE REQUIRED:
WET = 1,800 cf/oc. x 9.1 ac. = 16,380 cf
DRY = 1,800 cf/oc. x 9.1 ac. = 16,380 cf

STORAGE PROVIDED:
WET = 16,961 cf @ ELEV. 259.30
DRY = 22,422 cf @ ELEV. 261.86

BASIN BOTTOM ELEV. = 255.70

STORAGE DEPTH = 6.16'

TOP OF EMBANKMENT = 268.00

SIDE SLOPES: 3:1 inside; 3:1 outside

CLEAN OUT ELEV. = 257.50

WEIR CREST ELEV. = 261.86 / 265.08

SEDIMENT BASIN 1-YR ORIFICE: 4.0" @ INV. 259.54
Q1 exist. = 3.8 cfs
Q1 prop. = 2.4 cfs

LEGEND	
SYMBOL	DESCRIPTION
--- 282 ---	EXISTING CONTOUR 2' INTERVAL
--- 280 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING WATER LINE
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING UNDERGROUND ELECTRIC LINE
---	EXISTING CABLE/TV LINE
---	EXISTING FIBER OPTIC/CABLE LINE
---	EXISTING GAS LINE
---	EXISTING FENCE
---	PROPOSED FENCE
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
+	PROPOSED SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREE AND SHRUB
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	PROPOSED PUBLIC WATER
---	PROPOSED PRIVATE WATER
---	PROPOSED STORMDRAIN
---	PROPOSED PRIVATE SEWER
---	PROPOSED PUBLIC SEWER
---	SOILS DELINEATION
---	SUPER SILT FENCE
---	PERMANENT SOIL STABILIZATION MATING
---	LIMIT OF DISTURBANCE
(A-2)	EARTH DIKE (SEED AND SOIL STABILIZATION MATING OR SOD)
---	EXISTING EARTH DIKE
---	15' NO WOODY ZONE

PLAN
SCALE: 1" = 40'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK
ELLSWORTH CITY, MARYLAND 21042
(410) 461 - 2855

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

Stephanie G. Tuite
SIGNATURE OF ENGINEER
7/14/20
DATE

DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Daniel Lubley
SIGNATURE OF DEVELOPER
7/14/20
DATE

"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. 38386, EXPIRATION DATE: JANUARY 12, 2022."

Stephanie G. Tuite
SIGNATURE
7/14/20
DATE

STEPHANIE G. TUITE, R.L.A., P.E., LEED AP BC&D

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

Michael Kendall
SIGNATURE
8/15/20
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development
7/29/20
DATE

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBLEY
410-313-6805

STATE OF MARYLAND
STEPHANIE G. TUITE
REGISTERED PROFESSIONAL ENGINEER
No. 38386
7/14/20

DATE	DESCRIPTION
7/10/20	NEW SHEET TO CONSTRUCT SEDIMENT CONTROLS AND BASINS 1 THRU 5 FOR NEW SCHOOL ON SITE

PROJECT	SECTION/AREA	PARCEL
HIGH SCHOOL #13	N/A	102, 349, 235

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
18 & 24 13 & 19	R-12 RSC-MXD-3 RSA-3 MXD-3	42 & 43	SIXTH	606901	

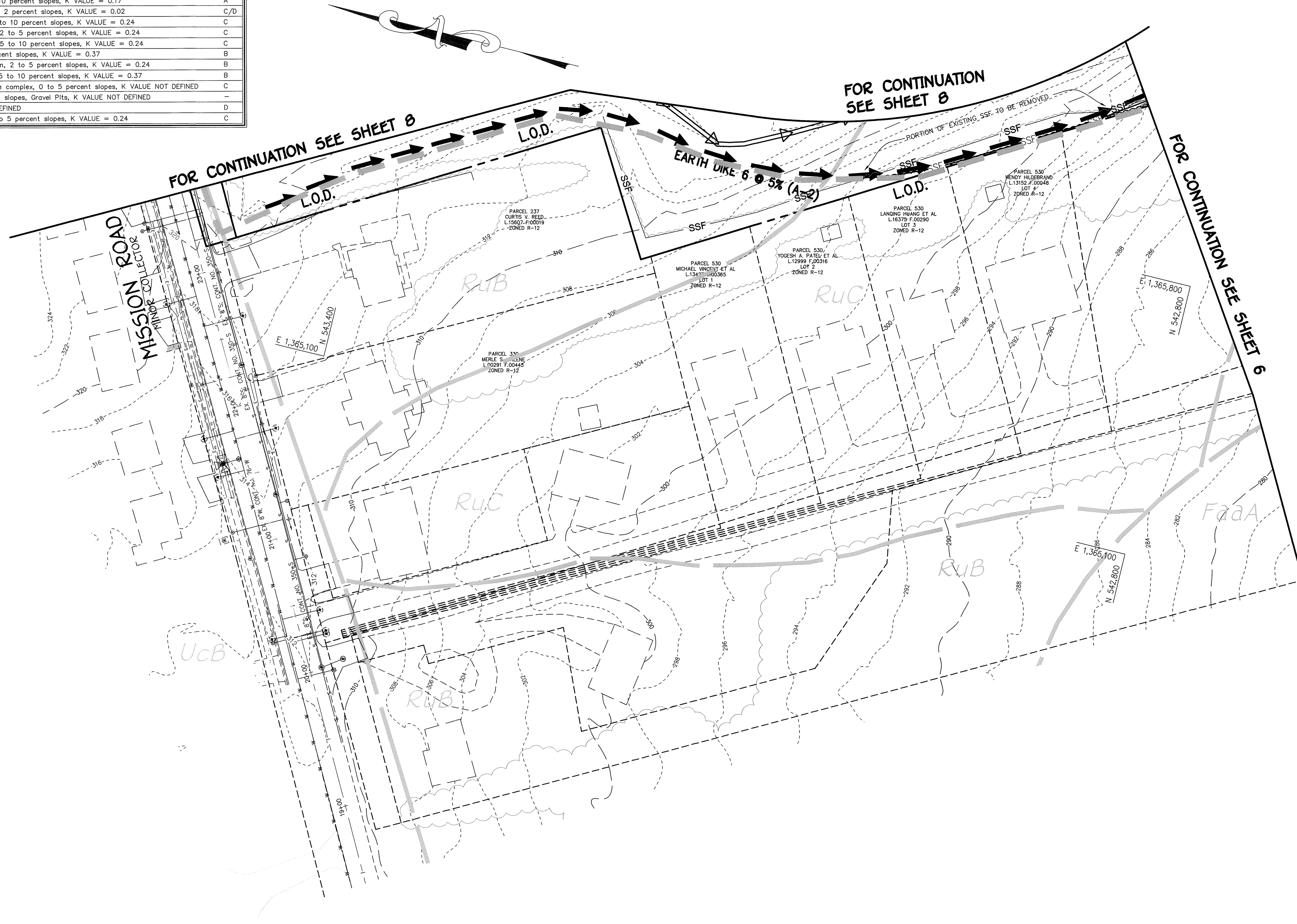
WATER CODE	SEWER CODE

SEDIMENT AND EROSION CONTROL PLAN
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 6 OF 39

SOILS LEGEND		
SOIL	NAME	GROUP
** CeC	Chillum loam, 5 to 10 percent slopes, K VALUE = 0.37	C
CrD	Croom and Evesboro soils, 10 to 15 percent slopes, K VALUE = 0.28	C
CrE	Croom and Evesboro soils, 25 to 45 percent slopes, K VALUE = 0.28	C
EbC	Evesboro loamy sand, 2 to 10 percent slopes, K VALUE = 0.17	A
FaaA	Fallsington sandy loam, 0 to 2 percent slopes, K VALUE = 0.02	C/D
RaC	Russett fine sandy loam, 5 to 10 percent slopes, K VALUE = 0.24	C
RuB	Russett and Beltsville soils, 2 to 5 percent slopes, K VALUE = 0.24	C
** RuC	Russett and Beltsville soils, 5 to 10 percent slopes, K VALUE = 0.24	C
SaB	Sassafras loam, 2 to 5 percent slopes, K VALUE = 0.37	B
SfB	Sassafras gravelly sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	B
** SrC	Sassafras and Croom soils, 5 to 10 percent slopes, K VALUE = 0.37	C
UcB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes, K VALUE NOT DEFINED	B
** UeE	Udorthents, 0 to 45 percent slopes, Gravel Pits, K VALUE NOT DEFINED	-
UHD	Urban land, K VALUE NOT DEFINED	D
WdaB	Woodstown sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	C

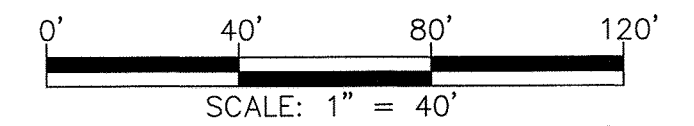
** DENOTES HIGHLY ERODIBLE SOILS



LEGEND	
SYMBOL	DESCRIPTION
--- 282 ---	EXISTING CONTOUR 2' INTERVAL
--- 280 ---	EXISTING CONTOUR 10' INTERVAL
s	EXISTING SAN. SEWER LINE
d	EXISTING STORM DRAIN LINE
w	EXISTING WATER LINE
---	EXISTING UNDERGROUND ELECTRIC LINE
---	EXISTING CABLE/TV LINE
---	EXISTING FIBER OPTIC/CABLE LINE
---	EXISTING GAS LINE
x	EXISTING FENCE
x	PROPOSED FENCE
--- 282 ---	PROPOSED CONTOUR 2' INTERVAL
--- 280 ---	PROPOSED CONTOUR 10' INTERVAL
+ 292.50	PROPOSED SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREE AND SHRUB
---	EXISTING TREELINE
---	PROPOSED TREELINE
8" W	PROPOSED PUBLIC WATER
8" W	PROPOSED PRIVATE WATER
18" RCP	PROPOSED STORM DRAIN
8" S	PROPOSED PRIVATE SEWER
8" S	PROPOSED PUBLIC SEWER
---	SOILS DELINEATION
---	SUPER SILT FENCE
---	LIMIT OF DISTURBANCE
---	EARTH DIKE (SEE AND SEE STABILIZATION MATTING OR EXISTING EARTH DIKE)

CONTRACTOR NOTE:
DURING CONSTRUCTION ACTIVITIES THE LIMITS OF DISTURBANCE (L.O.D.) SHALL NOT EXCEED 30 ACRES.

PLAN
SCALE: 1" = 40'



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
33 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2855

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.
7/14/20
DATE

DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
7/14/20
DATE

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. 38396, EXPIRATION DATE: JANUARY 12, 2022.
7/14/20
DATE

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Director, Department of Planning and Zoning
8/15/20
Date

Chief, Division of Land Development
7/22/20
Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6805

DATE	DESCRIPTION	REVISION BLOCK
7/10/20	NEW SHEET TO CONSTRUCT SEDIMENT CONTROLS AND BASINS 1 THRU 5 FOR NEW SCHOOL ON SITE	

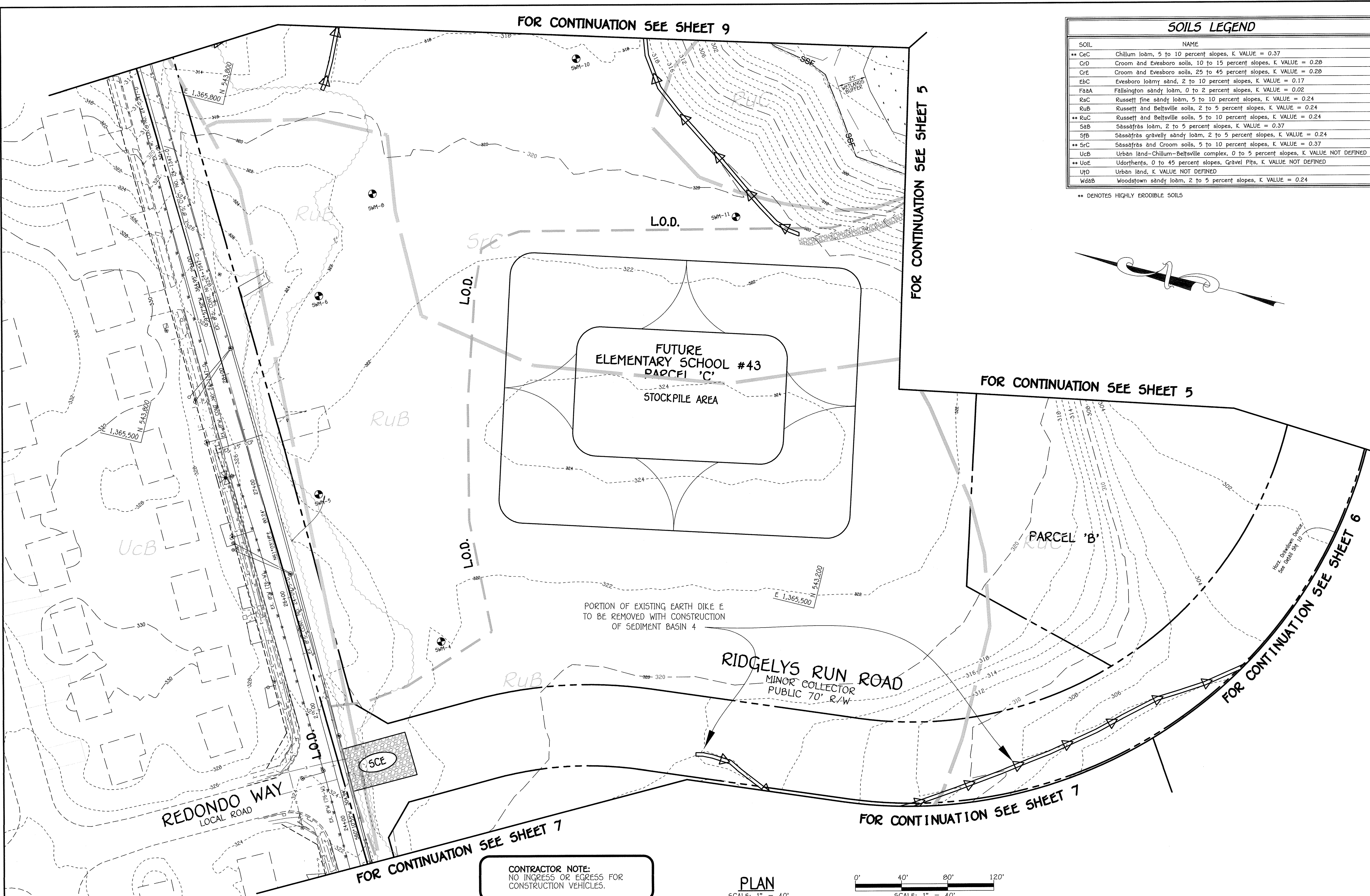
PROJECT	SECTION/AREA	PARCEL
HIGH SCHOOL #13	N/A	102, 349, 235

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
18 & 24 13 & 19	R-12	RSA-8 MXD-3	42 & 43	SIXTH	606901

WATER CODE	SEWER CODE
---	---

SEDIMENT AND EROSION CONTROL PLAN
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 7 OF 39



SOILS LEGEND		
SOIL	NAME	GROUP
** CeC	Chillum loam, 5 to 10 percent slopes, K VALUE = 0.37	C
CrD	Croom and Evesboro soils, 10 to 15 percent slopes, K VALUE = 0.28	C
CrE	Croom and Evesboro soils, 25 to 45 percent slopes, K VALUE = 0.28	C
EtC	Evesboro loamy sand, 2 to 10 percent slopes, K VALUE = 0.17	A
FaB	Fallingston sandy loam, 0 to 2 percent slopes, K VALUE = 0.02	C/D
RaC	Russett fine sandy loam, 5 to 10 percent slopes, K VALUE = 0.24	C
RuB	Russett and Beltsville soils, 2 to 5 percent slopes, K VALUE = 0.24	C
** RuC	Russett and Beltsville soils, 5 to 10 percent slopes, K VALUE = 0.24	C
SaB	Sassafras loam, 2 to 5 percent slopes, K VALUE = 0.37	B
SfB	Sassafras gravelly sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	B
** SrC	Sassafras and Croom soils, 5 to 10 percent slopes, K VALUE = 0.37	B
UcB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes, K VALUE NOT DEFINED	C
** UoE	Udorthents, 0 to 45 percent slopes, Gravel Pits, K VALUE NOT DEFINED	-
UjD	Urban land, K VALUE NOT DEFINED	D
WdAb	Woodstown sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	C

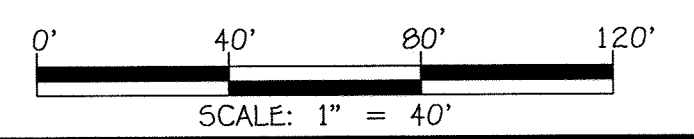
** DENOTES HIGHLY ERODIBLE SOILS

LEGEND	
SYMBOL	DESCRIPTION
---282---	EXISTING CONTOUR 2' INTERVAL
---280---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING UNDERGROUND ELECTRIC LINE
---	EXISTING CABLE/TV LINE
---	EXISTING FIBER OPTIC/CABLE LINE
---	EXISTING GAS LINE
-x-x-	EXISTING FENCE
-x-x-	PROPOSED FENCE
282	PROPOSED CONTOUR 2' INTERVAL
280	PROPOSED CONTOUR 10' INTERVAL
+ 292.50	PROPOSED SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREE AND SHRUB
---	EXISTING TREELINE
---	PROPOSED TREELINE
EF W	PROPOSED PUBLIC WATER
EF W	PROPOSED PRIVATE WATER
18" R30P	PROPOSED STORMDRAIN
EF S	PROPOSED PRIVATE SEWER
EF S	PROPOSED PUBLIC SEWER
---	SOILS DELINEATION
---	SUPER SILT FENCE
---	LIMIT OF DISTURBANCE
---	EXISTING EARTH DIKE

CONTRACTOR NOTE:
DURING CONSTRUCTION ACTIVITIES THE LIMITS OF DISTURBANCE (L.O.D.) SHALL NOT EXCEED 30 ACRES.

CONTRACTOR NOTE:
NO INGRESS OR EGRESS FOR CONSTRUCTION VEHICLES.

PLAN
SCALE: 1" = 40'



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CONVENTIONAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21142
(410) 461-2895

ENGINEER'S CERTIFICATE
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION." 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

Stephanie J. Tuite 7/14/20
SIGNATURE OF ENGINEER DATE

DEVELOPER'S CERTIFICATE
"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

Daniel Lubeley 7/14/20
SIGNATURE OF DEVELOPER PRINTED NAME OF DEVELOPER DATE

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. 38386, EXPIRATION DATE: JANUARY 12, 2022.

Stephanie J. Tuite 7/14/20
SIGNATURE DATE

STEPHANIE J. TUITE, RIA, P.E., LEED AP BCAD

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

SIGNATURE P.E. No. DATE:

Manoj Khandelwal 8/5/20
SIGNATURE DATE

Manoj Khandelwal
Chief, Division of Land Development

Stephanie J. Tuite 7/14/20
SIGNATURE DATE

Stephanie J. Tuite
Chief, Development Engineering Division

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Manoj Khandelwal 8/5/20
Director, Department of Planning and Zoning

Stephanie J. Tuite 7/14/20
DATE

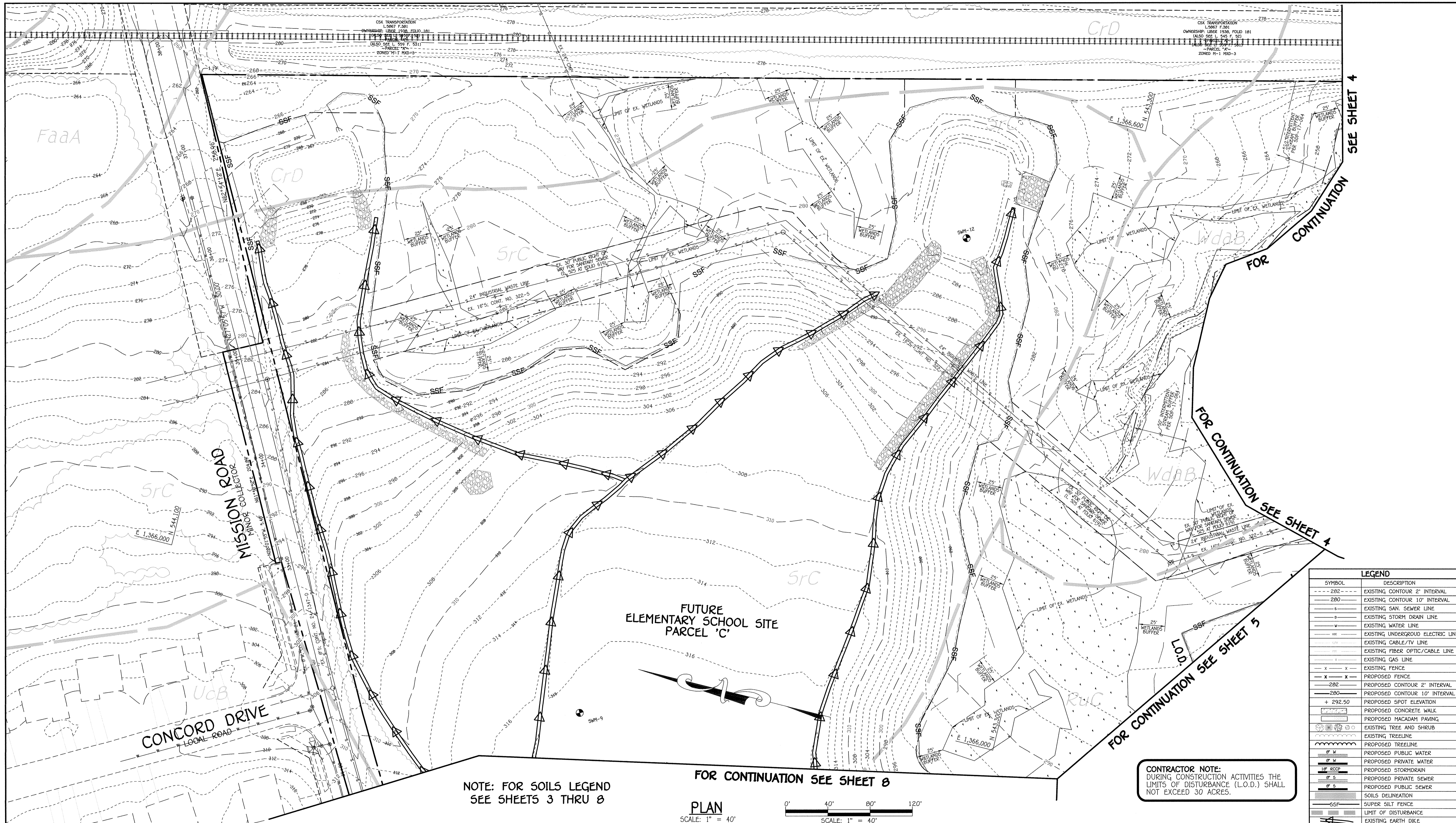
PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE "C"
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6805

STATE OF MARYLAND
STEPHANIE J. TUITE
REGISTERED PROFESSIONAL ENGINEER
No. 38386
7/14/20

7/10/20	NEW SHEET TO CONSTRUCT SEDIMENT CONTROLS AND BASINS 1 THRU 5 FOR NEW SCHOOL ON SITE
DATE	DESCRIPTION
REVISION BLOCK	
PROJECT	SECTION/AREA
HIGH SCHOOL #13	N/A
PLAT NOS.	TAX MAP
18 & 24 13 & 19	42 & 43
BLOCK NO.	ELEC. DIST.
R-12 RSC MXD-3 RSA-B MXD-3	SIXTH
ZONE	CENSUS TR.
102, 349, 235	606901
WATER CODE	SEWER CODE
---	---

SEDIMENT AND EROSION CONTROL PLAN
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-B MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 8 OF 39



LEGEND	
SYMBOL	DESCRIPTION
--- 2' ---	EXISTING CONTOUR 2' INTERVAL
--- 10' ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING UNDERGROUND ELECTRIC LINE
---	EXISTING CABLE/TV LINE
---	EXISTING FIBER OPTIC/CABLE LINE
---	EXISTING GAS LINE
---	EXISTING FENCE
---	PROPOSED FENCE
--- 2' ---	PROPOSED CONTOUR 2' INTERVAL
--- 10' ---	PROPOSED CONTOUR 10' INTERVAL
+ 292.50	PROPOSED SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREE AND SHRUB
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	PROPOSED PUBLIC WATER
---	PROPOSED PRIVATE WATER
---	PROPOSED STORMDRAIN
---	PROPOSED PRIVATE SEWER
---	PROPOSED PUBLIC SEWER
---	SOILS DELINEATION
---	SUPER SILT FENCE
---	LIMIT OF DISTURBANCE
---	EXISTING EARTH DIKE

NOTE: FOR SOILS LEGEND SEE SHEETS 3 THRU 8

FOR CONTINUATION SEE SHEET 8
 PLAN
 SCALE: 1" = 40'

CONTRACTOR NOTE:
 DURING CONSTRUCTION ACTIVITIES THE LIMITS OF DISTURBANCE (L.O.D.) SHALL NOT EXCEED 30 ACRES.

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I HAVE NOTICED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN

Signature: *Stephanie J. Tuite* DATE: 7/14/20

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *Daniel Lubeley* DATE: 7/14/20

PRINTED NAME OF DEVELOPER: Daniel Lubeley

"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. 38386, EXPIRATION DATE: JANUARY 12, 2022."

Signature: *Stephanie J. Tuite* DATE: 7/14/20

STEPHANIE J. TUITE, RLA, P.E., LEED AP BC&D

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

Signature: _____ P.E. No. _____ DATE: _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE 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.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: *Monty Kendall Fox* DATE: 8/15/2022

Director - Department of Planning and Zoning

Signature: *Daniel Lubeley* DATE: 8/12/20

Chief, Division of Land Development

Signature: *Daniel Lubeley* DATE: 7/29/20

Chief, Development Engineering Division

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 9020 MENDENHALL COURT
 SUITE 'C'
 COLUMBIA, MARYLAND 21045
 Attention: DANIEL LUBELEY
 410-313-6805

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 No. 38386
 7/14/20

DATE	DESCRIPTION	REVISION BLOCK
7/10/20	NEW SHEET TO CONSTRUCT SEDIMENT CONTROLS AND BASINS 1 THRU 5 FOR NEW SCHOOL ON SITE	

PROJECT	SECTION/AREA	PARCEL
HIGH SCHOOL #13	N/A	102, 349, 235

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
10 & 24	8-12	R-5C MXD-3	42 & 43	SIXTH	606901
13 & 19		RS-A MXD-3			

WATER CODE	SEWER CODE
---	---

SEDIMENT AND EROSION CONTROL PLAN
REVISED SITE DEVELOPMENT PLAN
 FOR
CHASE PROPERTY AT MISSION ROAD
 8420 WASHINGTON BLVD
 JESSUP, MARYLAND 20794

ZONED: R-5C MXD-3, R-5A-8 MXD-3 AND R-12
 PARCEL NOS.: 102, 349, 235
 TAX MAP No.: 42 & 43 GRID No.: 24 & 19
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 9 OF 39

PERMANENT SEEDING NOTES (B-4-5)

A. SEED MIXTURES

1. GENERAL USE

A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTION (MIXTURES), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD GUIDE, SECTION 342 - CRITICAL AREA PLANTING.

C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY. D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (50 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.

B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTION (MIXTURES), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.

1. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

2. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.

3. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR AREAS RECEIVING LOW MAINTENANCE. FULL SUN TO MEDIUM SHADE. RECOMMENDED CERTIFIED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.

4. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS OF HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:

SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND".

CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SOIL SCIENCE, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

3. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDNESS ZONES: 5B, 6A) CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONE: 6B) SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 7, 8)

D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSSIBLY NOT BE NECESSARY.

E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEEDED SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

PERMANENT SEEDING SUMMARY									
HARDNESS ZONE (FROM FIGURE B.3):		SEEDING DATES		FERTILIZER RATE (10-20-20)		LIME RATE		SEED MIXTURE (FROM TABLE B.3):	
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	N	P ₂ O ₅	K ₂ O	0	2	
8	TALL FESCUE	100	MAR 1-MAY 15 AUG 1-OCT 15	1/4-1/2	45 LBS. PER ACRE (10 LB/1000 SF)	90 LB/AC (2 LB/1000 SF)	90 LB/AC (2 LB/1000 SF)	2 TONS/AC (1000 SF)	
8	MILLET	50	MAY 15-JUNE 15	1/4-1/2					
8	SOD	100	MAR 15-MAY 31 AUG 15-NOV 15	1/4-1/2					
8	SMITH GRASS (LEGUME)	10	JUNE 1-JULY 31	4-7 in.					

TEMPORARY SEEDING 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 WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.

2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH AS DESCRIBED IN SECTION B-4-3.1.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY									
HARDNESS ZONE (FROM FIGURE B.3):		SEEDING DATES		FERTILIZER RATE (10-20-20)		LIME RATE		SEED MIXTURE (FROM TABLE B.1):	
SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P ₂ O ₅	K ₂ O	0	2	
BARLEY	96	3/7 - 5/15 8/15 - 10/15	1"	436 LB/AC (10 LB/1000 SF)				2 TONS/AC (1000 SF)	
OATS	72	3/7 - 5/15 8/15 - 10/15	1"						
RYE	112	3/7 - 5/15 8/15 - 10/15	1"						
FOXTAIL MILLET	30	6/1 - 7/31	0.50"						

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND

B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

NOTE:

THE CONTRACTOR IS RESPONSIBLE FOR PUMPING ALL STANDING WATER THROUGH A FILTERING DEVICE TO A CLEAR WATER OUTFALL WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT.

STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING (B-4-3)

DEFINITION

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

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

CRITERIA

A. SEEDING

1. SPECIFICATIONS

A. ALL SEED MUST MEET THE REQUIREMENT OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SPRING SEEDING MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 FOR RECOMMENDED QUALITY OF SEED. SEED TESTS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

B. MULCH SHALL BE APPLIED BETWEEN THE FALL AND WINTER SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAW.

C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE CONTAINER. USE FRESH INOCULANTS WHEN HYPOCHLORITE IS USED. IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

D. SOIL DO NOT MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEEDCONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISCHASSMENT OF PHYTO-TOXIC MATERIALS.

2. APPLICATION

A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DRIP OR BROADCAST SPREADERS.

B. HYDROSEEDING: THIS INCLUDES USE OF THE SUBSTRATE AND THE SEEDS SPECIFIED IN SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.

1. APPLY SEED AND MULCH IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

2. DRILL OR CULPACKEG SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

1. CULPACKEG SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/2 INCH OF COVERED SEED MUST BE COVERED BY HYDROSEEDING AT ANY ONE TIME.

2. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).

1. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P₂O₅ (PHOSPHORUS), 200 POUNDS PER ACRE; K₂O (POTASSIUM), 200 POUNDS PER ACRE.

2. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNED LIMESTONE WHEN HYDROSEEDING.

3. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.

4. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE):

A. STRAW CONSISTING OF THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW (MATERIALS MUST NOT BE EXCESSIVELY DUSTY, NOISE, USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED).

B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO UNIFORM PHYSICAL STATE.

1. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.

2. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.

3. WCFM MATERIALS ARE TO BE MANUFACTURED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTCHER-LIKE GROUND COVER ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLING.

4. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.

5. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

2. APPLICATION

A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO 2 INCHES DEPTH. STRAW IS TO BE APPLIED AT A RATE OF 2 TONS PER ACRE TO 2 INCHES DEPTH. SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.

C. WOOD CELLULOSE FIBER MULCH MUST BE APPLIED TO A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

3. ANCHORING

A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:

1. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO SLOPES WHEREREAS EQUALLY IF USED ON THE CONTOUR.

2. THIS PRACTICE SHOULD FOLLOW THE CONTOUR.

3. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

4. SYNTHETIC BINDERS SUCH AS ACRYLIC DYE (AGRO-TACK), DCA-70, PETERSET, TERRA TAX II, TERRA TACK, AP OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEED TO BE HEAVY AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4-15 FEET WIDE AND 300 TO 3,000 FEET LONG.

STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA (B-4-8)

DEFINITION

THE MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.

2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.

4. ACCESS THE STOCKPILE AREA FROM THE UPSLOPE SIDE.

5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.

6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE PLAN OR AS INDICATED BY EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.

7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION REQUIREMENTS AND B-4-4 TEMPORARY STABILIZATION.

8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERVIOUS SHEETING.

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

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

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION

A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR REPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE EQUIPMENT.

2. PERMANENT STABILIZATION

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

I. SOIL PH BETWEEN 6.0 AND 7.0.

II. SOIL SALTS LESS THAN 500 PARTS PER MILLION (PPM).

III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

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

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

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

C. GRASS AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES. D. SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.

E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES. AN AREA FOR SEED APPLICATION LOOSELY SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES TO CONTROL THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONVERSE HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. USUALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.

3. TOPSOIL APPLICATION A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.

B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SOODING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

C. TOPSOIL MUST BE APPLIED TO THE SUBSOIL OR SUBSOIL IS IN A FROZEN OR IRREGULAR CONDITION WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR CHEMICAL ANALYSIS MAY ALSO BE USED FOR CHEMICAL ANALYSIS.

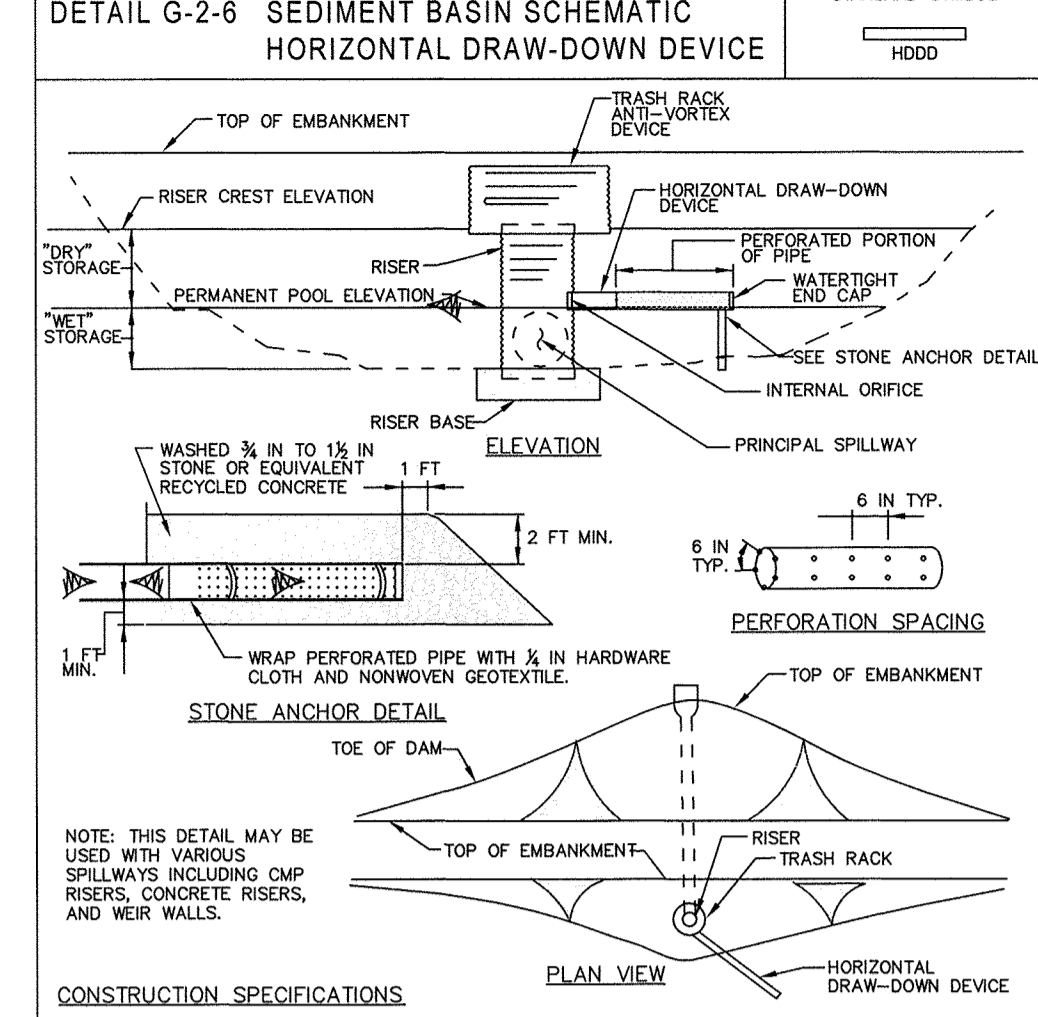
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FRESH FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNED LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM) AND MUST BE APPLIED TO SUCH EXTENT THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.

4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

DETAIL G-2-6 SEDIMENT BASIN SCHEMATIC HORIZONTAL DRAW-DOWN DEVICE



CONSTRUCTION SPECIFICATIONS

1. PERFORATE PIPE WITH 1 INCH DIAMETER PERFORATIONS SPACED 6 INCHES APART LONGITUDINALLY AND RADIALLY OR IN ACCORDANCE WITH APPROVED PLAN.

2. WRAP THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE FIRST WITH 1/2 INCH GALVANIZED HARDWARE CLOTH, THEN WITH NONWOVEN GEOTEXTILE. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS DO NOT WRAP WITH MORE THAN ONE LAYER OF GEOTEXTILE.

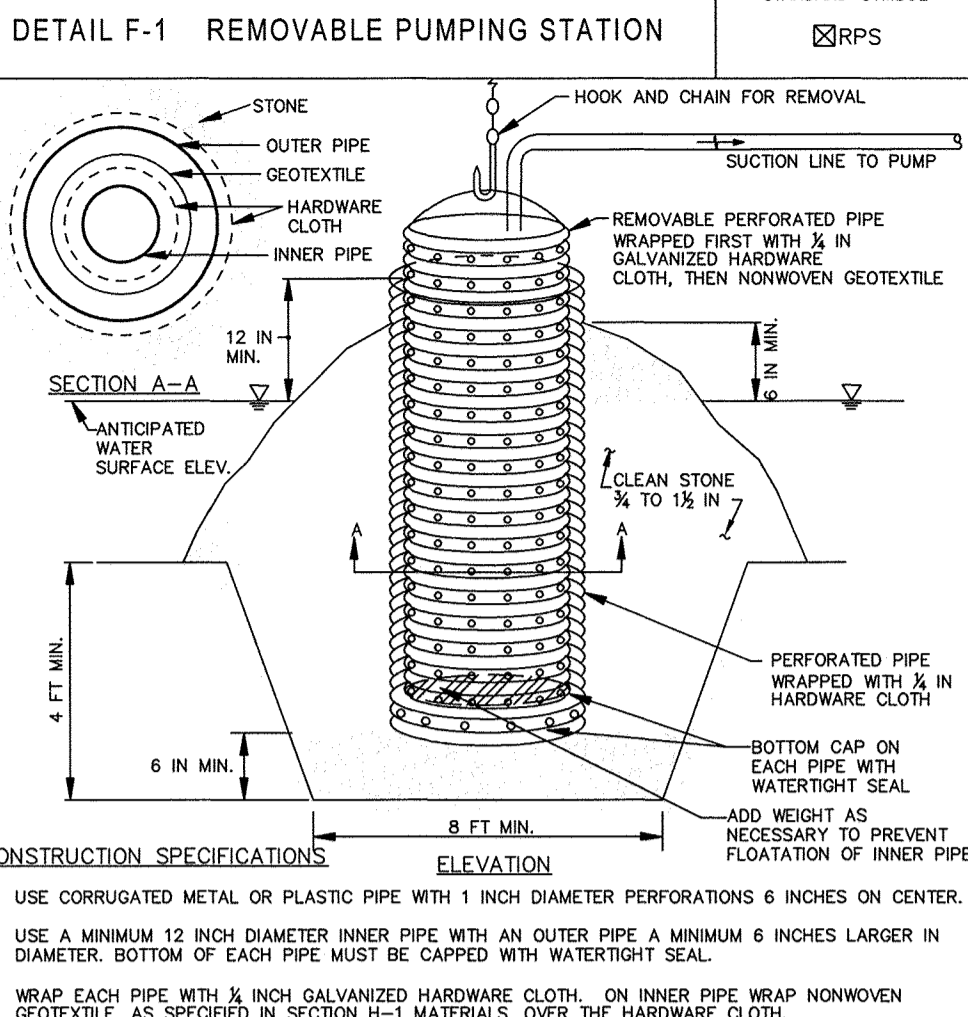
3. AS AN ALTERNATE TO STONE ANCHORING, SECURE DRAW-DOWN DEVICE WITH TWO 1 INCH STEEL ANGLES SET 3 FEET MINIMUM INTO THE GROUND ATTACHED TO DRAW-DOWN DEVICE BY A 1 INCH WIDE GALVANIZED STEEL STRAP OR 12 GAUGE OR HEAVIER WIRE.

4. REMOVE SEDIMENT WHEN IT ACCUMULATES TO CLEANOUT ELEVATION (50% OF THE WET STORAGE DEPTH) DEPOT REMOVED SEDIMENT IN AN APPROVED AREA IN A SUCH MANNER THAT IT WILL NOT CROSS THROUGH WATER TIGHT CONNECTIONS. REPLACE GEOTEXTILE AROUND PERFORATED RISER IF DRY STORAGE VOLUMES DO NOT DRAW DOWN WITHIN 10 HOURS.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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DETAIL F-1 REMOVABLE PUMPING STATION



CONSTRUCTION SPECIFICATIONS

1. USE CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS 6 INCHES ON CENTER.

2. USE A MINIMUM 12 INCH DIAMETER INNER PIPE WITH AN OUTER PIPE A MINIMUM 6 INCHES LARGER IN DIAMETER. BOTTOM OF EACH PIPE MUST BE CAPED WITH WATER TIGHT SEAL.

3. WRAP EACH PIPE WITH 1/2 INCH GALVANIZED HARDWARE CLOTH ON INNER PIPE. WRAP NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.

4. EXCAVATE 8 FEET X 8 FEET X 4 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.

5. SET TOP OF INNER AND OUTER PIPES MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN).

6. BACKFILL PIT AROUND THE OUTER PIPE WITH 3/4 TO 1 1/2 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.

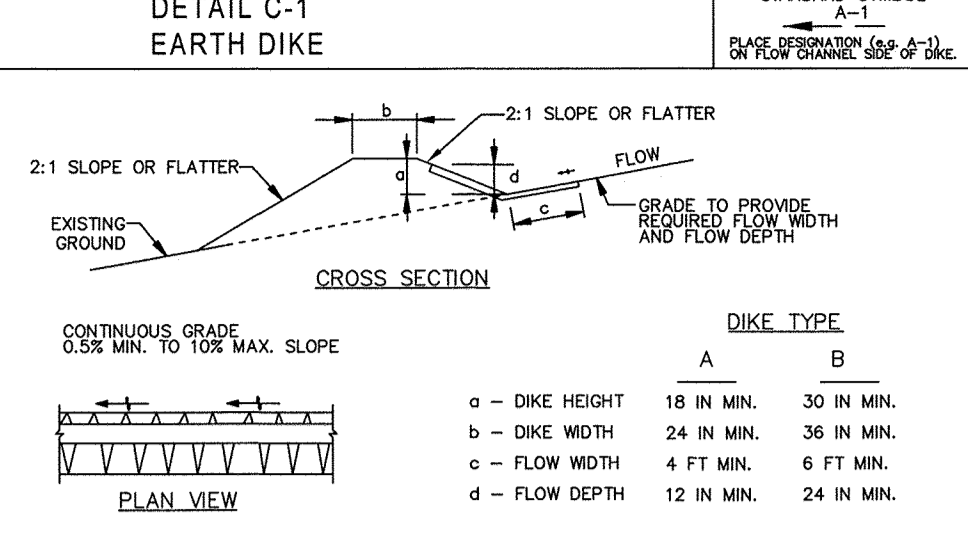
7. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.

8. A REMOVABLE PUMPING STATION REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOS, PULL OUT INNER PIPE AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

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DETAIL C-1 EARTH DIKE



CROSS SECTION

PLAN VIEW

FLOW CHANNEL STABILIZATION

A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)

A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.

A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL. A MINIMUM OF 7 INCHES AND FLOW WITH GRADING.

CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS AND OTHER OBJECTIONABLE MATERIAL, SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.

2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.

3. COMPACT FILL.

4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.

5. PROVIDE CUTOFF PROTECTION AS REQUIRED ON APPROVED PLAN.

6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.

7. 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.

8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF APPROVED PLAN.

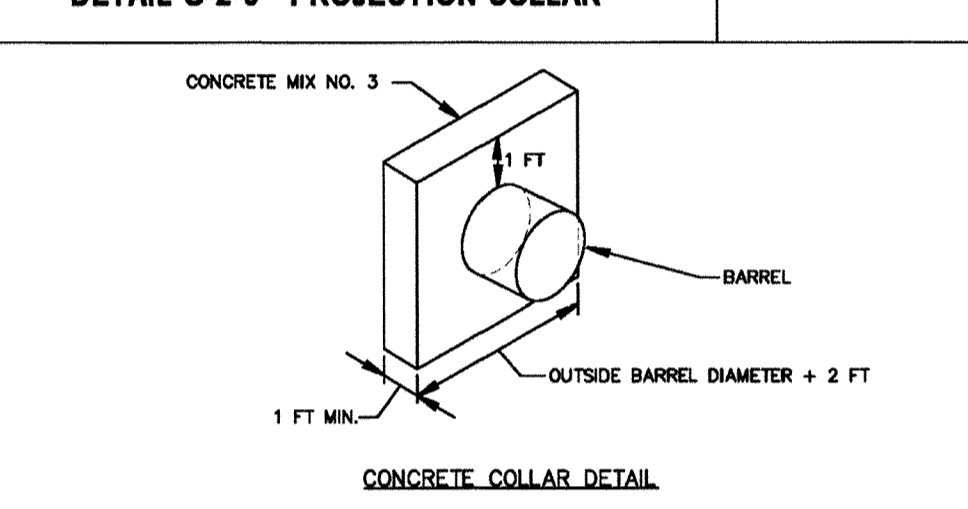
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DETAIL G-2-9 PROJECTION COLLAR

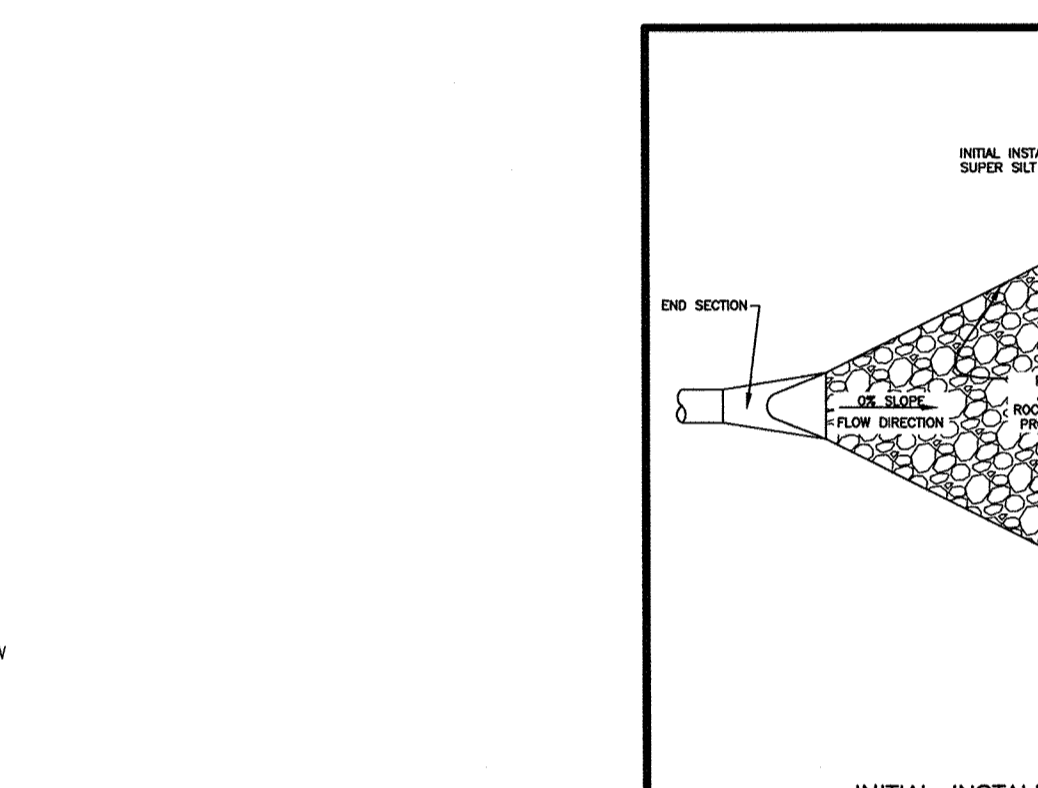


CONSTRUCTION SPECIFICATIONS

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

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DETAIL D-3-1 RIPRAP INFLOW PROTECTION

STANDARD SYMBOL: RRP

CONSTRUCTION SPECIFICATIONS

- PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
- CONSTRUCT INFLOW CHANNEL WITH CLASS I RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 18 INCHES (2' x 2') AND A 4 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
- INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
- BLEND RIPRAP INTO EXISTING GROUND.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

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DETAIL G-2-4 BAFFLE BOARDS

STANDARD SYMBOL: BB

CONSTRUCTION SPECIFICATIONS

- SET ELEVATION AT 1/4 OF THE DRY STORAGE (NET STORAGE ELEVATION + DRY STORAGE SECTION 7/2) OR 6 IN BELOW WATER CREST (OUTLET) WHICHEVER IS LOWER.
- POSTS MINIMUM 4 IN SQUARE OR 4 IN ROUND SET AT LEAST 3 FT INTO THE GROUND.
- POSTS MINIMUM 4 IN SQUARE OR 4 IN ROUND SET AT LEAST 3 FT INTO THE GROUND.
- POSTS MINIMUM 4 IN SQUARE OR 4 IN ROUND SET AT LEAST 3 FT INTO THE GROUND.

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DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL: CWS

CONSTRUCTION SPECIFICATIONS

- USE A WASH RACK DESIGNED AND CONSTRUCTED/MANUFACTURED FOR THE ANTICIPATED TRAFFIC LOADS. CONCRETE, STEEL, OR OTHER MATERIALS ARE ACCEPTABLE. PRE-FABRICATED UNITS SUCH AS CATTLE GUARDS ARE ACCEPTABLE. USE MINIMUM DIMENSION OF 6 FEET X 10 FEET. ORIENT DIRECTION OF RBBS AS SHOWN ON THE DETAIL.
- INSTALL PRIOR TO, ALONG SIDE OF, OR AS PART OF THE SCE.
- DIRECT WASH WATER TO AN APPROVED SEDIMENT TRAPPING DEVICE.
- KEEP AREA UNDER WASH RACK FREE OF ACCUMULATED SEDIMENT, IF DAMAGED, REPAIR OR REPLACE WASH RACK.

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DETAIL B-2 WASH RACK OPTION

STANDARD SYMBOL: WR

CONSTRUCTION SPECIFICATIONS

- USE A WASH RACK DESIGNED AND CONSTRUCTED/MANUFACTURED FOR THE ANTICIPATED TRAFFIC LOADS. CONCRETE, STEEL, OR OTHER MATERIALS ARE ACCEPTABLE. PRE-FABRICATED UNITS SUCH AS CATTLE GUARDS ARE ACCEPTABLE. USE MINIMUM DIMENSION OF 6 FEET X 10 FEET. ORIENT DIRECTION OF RBBS AS SHOWN ON THE DETAIL.
- INSTALL PRIOR TO, ALONG SIDE OF, OR AS PART OF THE SCE.
- DIRECT WASH WATER TO AN APPROVED SEDIMENT TRAPPING DEVICE.
- KEEP AREA UNDER WASH RACK FREE OF ACCUMULATED SEDIMENT, IF DAMAGED, REPAIR OR REPLACE WASH RACK.

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DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE

CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (150 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SIDE TO 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR OVER THE TOP OF THE SCE UNDER THE ENTRANCE. MAINTAIN POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 3:1 SLOPES AND A MINIMUM OF 18 INCHES ABOVE THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
- 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 SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MOUNTABLE BERM AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SHEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ON PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

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DETAIL H-6 ONSITE CONCRETE WASHOUT STRUCTURE

STANDARD SYMBOL: CWS

CONSTRUCTION SPECIFICATIONS

- LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
- SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
- PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER FOR LINER. USE 1/4 IN. OR THICKER UV RESISTANT IMPERMEABLE SHEETING. FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
- PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
- KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G. RIPPED OR PUNCTURED). EMPTY OR REFILL WASHOUT STRUCTURE THAT IS 75 PERCENT FULL AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WASHOUT STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINFALL, REMOVE LEAKS OR DEFECTS TO PREVENT OVERFLOW. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNIT. STRUCTURE IS REMOVED.

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DETAIL B-4-6 TEMPORARY SOIL STABILIZATION MATTING

STANDARD SYMBOL: TSM - # 4.5 lb/ft² (4" INCLUDE SHEAR STRESS)

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 TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOOTHER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-HARMFUL TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2.2 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, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. 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 A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1 1/2 TO 2 INCHES IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDING PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDING SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL EDGES BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END 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.
- 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 B-4-6-C PERMANENT SOIL STABILIZATION MATTING APPLICATION

STANDARD SYMBOL: PSMC - # 17-45 lb/ft² (INCLUDE SHEAR STRESS)

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 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-HARMFUL TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2.2 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. 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 A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1 1/2 TO 2 INCHES IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDING PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
- UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM COULDS 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 EDGES BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE NEXT DOWNSLOPE MAT.
- KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END 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, OPEN THE MATTING IS KEPT AND STAPLED IN PLACE. FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL, AND LIGHT COMPACT TO MAINTAIN SOLID MAT CONTACT WITHOUT DRIPPING 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 D-3-2 GABION INFLOW PROTECTION

STANDARD SYMBOL: GP

CONSTRUCTION SPECIFICATIONS

- PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL GABION BASKETS.
- USE GABION BASKETS MADE OF MINIMUM 11 GAUGE WIRE.
- CONSTRUCT GABION INFLOW PROTECTION BY ARRANGING 9 X 3 X 1 FOOT GABION BASKETS TO FORM A TRAPEZOIDAL SECTION WITH A 3 FOOT BOTTOM WIDTH, 1 FOOT MINIMUM DEPTH, 3 FOOT SIDE WALLS, AND 2:1 OR FLATTER SIDE SLOPES. FILL GABION BASKETS WITH 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WIRE MESH.
- INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
- INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
- BLEND GABIONS INTO EXISTING GROUND.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

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DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF

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 A GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SLIT FENCE GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEEDING BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USES MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 20% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

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DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

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

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

PIPE SLOPE DRAIN

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS - Pipe Slope Drain

- The Pipe Slope Drain (PSD) shall have a slope of 3 percent or steeper.
- The top of the earth dike over the inlet pipe shall be at least 2 times the pipe diameter measured at the invert of the pipe.
- Flexible tubing is preferred. However, corrugated metal pipe or equivalent PVC pipe can be used. All connections shall be watertight.
- A flared section shall be attached to the inlet end of pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall extend out 5' from the inlet. The filter cloth shall be "keyed in" on all sides.
- The Pipe Slope Drain shall be securely anchored to the slope by staking at the groutlets provided. Spacing for anchors shall be as provided by manufacturer's specification. In no case shall less than two (2) anchors be provided, equally spaced along the length of pipe. These details shall be provided by pipe suppliers.
- The soil ground under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth dike.
- All pipe connections shall be watertight.
- Whenever possible where a PSD drains an unstabilized area, it shall outlet into a sediment trap or basin. If this is not possible then the slope drain will discharge into a stable conveyance that leads to a sediment trap or basin. When discharging into a trap or basin the PSD must be as far away from the sediment control outlet as possible.
- When the drainage area is stabilized, the PSD shall discharge onto a stabilized area of a non-erosive velocity.
- Inspection and any required maintenance shall be performed periodically and after each rain event.
- The inlet must be kept open at all times.

Table 6 Design Criteria for Pipe Slope Drain

Size	Pipe/Tubing Diameter (D) in	Maximum Drainage Area (Acres)
PSD-12	12	0.5
PSD-18	18	1.5
PSD-21	21	2.5
PSD-24	24	3.5
PSD-24 (2)	24	5.0

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

ENGINEER'S CERTIFICATE

I, CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR

Stephanie J. Tuite
SIGNATURE OF ENGINEER
7/19/20
DATE

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION HAS BEEN DONE ACCORDING TO THESE PLANS, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Daniel Lubley
SIGNATURE OF DEVELOPER
7/19/20
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK
ELICOTT CITY, MARYLAND 21042
(410) 461 - 2850

AS-BUILT CERTIFICATION

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

Stephanie J. Tuite
SIGNATURE
P.E. No. _____ DATE: 7/19/20

Daniel Lubley
SIGNATURE OF DEVELOPER
7/19/20
DATE

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. 38386, EXPIRATION DATE: JANUARY 12, 2022.

Stephanie J. Tuite
SIGNATURE
7/19/20
DATE

Manu Kendall
Director, Department of Planning and Zoning
8/17/20
DATE

Stephanie J. Tuite
Chief, Division of Land Development
8/17/20
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBLEY
410-313-6805

7/10/20
DATE

NEW SHEET WITH SEDIMENT CONTROL DETAILS FOR NEW SCHOOL ON SITE
DESCRIPTION

REVISION BLOCK

PROJECT	SECTION/AREA	PARCEL			
HIGH SCHOOL #13	N/A	102, 349, 235			
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
18 & 24	R-12	42 & 43	SIXTH	606901	
13 & 19	RSC MXD-3 RSA-R MXD-3				

WATER CODE _____ SEWER CODE _____

STATE OF MARYLAND
STEPHANIE J. TUITE
REGISTERED PROFESSIONAL ENGINEER
NO. 38386
EXPIRES JANUARY 12, 2022

SEDIMENT AND EROSION CONTROL DETAILS

REVISED SITE DEVELOPMENT PLAN

FOR
CHASE PROPERTY
AT MISSION ROAD

8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
PARCEL NOS.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH EROSION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 11 OF 39

G-2. STANDARD AND SPECIFICATIONS

FOR
SEDIMENT BASINS
Definition
A temporary pond formed by excavation and/or construction of an embankment and equipped with a draw-down device.

Purpose
To intercept sediment-laden runoff and retain sediment in order to protect drainage ways, properties, and rights-of-way downstream of the sediment basin from sedimentation.

Conditions Where Practice Applies
A sediment basin is required where sediment trap drainage areas exceed. Stormwater management ponds may be used as sediment basins provided they meet the requirements of this section and that the construction sequence addresses converting the sediment basin to the permanent stormwater management pond.

Conditions of Use
This standard applies to the installation of temporary sediment basins on sites where:

- 1. Failure of the structure would not result in loss of life, damage to homes or buildings, or interruption of use or service of public roads or utilities;
2. The drainage area does not exceed 100 acres;
3. The maximum embankment height does not exceed 15 feet measured from the natural ground to the embankment top along the centerline of embankment; and
4. The basin is to be removed within 36 months after the beginning of construction of the basin.

Where any of these criteria cannot be met, the structure must be designed in accordance with Environmental Article, Title 5, Subtitle 5, Annotated Code of Maryland or Natural Resource Conservation Service (NRCS) Maryland Conservation Practice Standard Code No. 378 for Ponds.

Design Criteria

- 1. Local Requirements. In addition to the requirements herein, the design and construction must comply with local laws, ordinances, rules and regulations.
2. Stormwater Management. Where a sediment basin is to be used as a permanent pond, the total volume must be equal to or exceed the capacity requirements for the permanent pond or provisions must be made for additional grading when the facility is converted to a permanent structure.
3. Location. Locate the basin to obtain the maximum storage benefit from the terrain and for ease of cleanout. The basin should be located to avoid conflicts with utilities and construction activities. Where possible, locate so that storm drains may overflow or be diverted into the basin. Do not locate basin any closer than 20 feet from an existing building foundation. Basins should not be located in areas where the groundwater elevation is higher than the bottom of the basin. Basins in structural fill areas (e.g., proposed roadways and building foundations) are discouraged.
4. Storage Volume. Provide at least 3600 cubic feet of storage for each acre of drainage. The volume is measured from the bottom of the basin to the elevation of the principal spillway crest and is to be divided equally into "dry" storage (1800 ft³/acre) and "wet" storage (1800 ft³/acre). The dry storage will draw down to the wet pool elevation. The 3600 cubic feet of storage is approximately equal to 1 inch of runoff per acre of drainage area.
5. Clean Out. The clean out elevation is one-half the wet storage depth. Determine and state the elevation corresponding to the maximum allowable sediment level in the design data on the plans as a distance below the top of the riser.
6. Surface Area. The ratio of surface area (acres) to discharge (cubic feet/second) must be greater than or equal to 0.0035. The surface area is measured at the design high water elevation for the 10-year frequency storm.
7. Inflow.
a. Establish points of concentrated inflow and specify the type of inflow protection. See Section D - Erosion Control.
b. Locate inflow points to maximize the flow distance to the outlet. Length to width ratio must be 2:1 or greater, where length is the distance between the inlet and outlet. Where a 2:1 effective length to width ratio between inflow and outflow cannot be obtained, baffles are required. See Detail G-2-4 Baffle Boards.
c. Provide dikes/benches where necessary to ensure that runoff is directed to the protected inflow points of the basin. The top elevation of any dike or berm directing water to a sediment basin must be equal to, or higher than, the elevation of the basin embankment.
d. Specify in the sequence of construction that the basin must be constructed prior to the water conveyances.

- 8. Drawings. Contours for basin grading must be shown on the plan. A profile and cross-section of the spillway(s) and details for all appurtenances must be provided. Include bottom, wet storage, dry storage, and cleanout elevations; dimensions of outlet protection; and embankment width and elevation.
9. Cut-Off Trench. Provide for a cut-off trench along the centerline of the proposed embankment, a minimum depth of 4 feet and a bottom width (minimum 4 feet) wide enough to permit operation of excavation and compaction equipment. The cut-off trench must be excavated with side slopes 1:1 or flatter and be continuous for the entire length of proposed embankment.
10. Impervious Core. Provide an impervious core with a minimum top width of 4 feet along the centerline of the proposed embankment. Impervious cores must be continuous throughout the embankment and must extend upwards with 1:1 side slopes from the cut-off trench up to the 10-year water surface elevation.
11. Embankment. Elevations of the top of earth fill at constructed and settled height of the embankment must be shown on the profile. The top of the dam embankment is to be level. The top width must be a minimum of 8 feet for embankments up to 10 feet in height. For embankments

CONSTRUCTION SPECIFICATIONS

between 10 feet and 15 feet in height, the minimum top width is 10 feet. The combined upstream and downstream side slopes of the embankment must have a combined total of five horizontal to one vertical (5:1) minimum with neither slope steeper than two horizontal to one vertical (2:1).

- 12. Hydrologic Analysis. Compute the runoff in accordance with NRCS TR-55 Urban Hydrology or the method outlined in Chapter 2 Estimating Runoff of the NRCS "Engineering Field Manual for Conservation Practices." Base runoff computations on "worst soil cover" conditions. Ensure that the combined capacities of the principal and emergency spillways are sufficient to pass the "routed" peak rate of runoff from the 10-year frequency storm. The start elevation for routing must correspond to the wet pool elevation (i.e. wet storage volume must not be included in the analysis).
13. Draw-Down Device. The dry storage volume is to be dewatered to the wet pool elevation over a 10-hour period. This can be done by constructing a perforated horizontal or vertical draw-down device with an orifice to control discharge. Use the chart or equations in Table G.10 to determine the appropriate orifice size. Design the pipe perforations so that the total area of the perforations is equal to or greater than 4 times the area of the control orifice. Alternate draw-down methods may be designed as allowed by the appropriate approval authority.
14. Outlet. Locate basin to discharge onto stable ground, stable channel, or into a storm drain system. Discharge to a buffer may be required. Provide an outlet that conveys the discharge in a non-erosive manner to a stable area. Protect against scour at the discharge end of the pipe spillway in accordance with the Section D-4 Outlet Protection.
15. Drainage Easements. Where discharge occurs at the property line, comply with local ordinances and drainage easement requirements. Show adequate notes and references concerning the easements on the erosion and sediment control plan.
16. Emergency Spillway. An emergency spillway is required when the principal spillway is not designed to pass the 10-year frequency storm. The entire flow area of the emergency spillway must be in existing ground (not fill). The control section is to be trapezoidal with a minimum bottom width of eight feet and have a straight, level length of at least 25 feet. The outlet section should have sufficient slope such that the discharge capacity of the spillway is not restricted and allows the discharge to be released at a non-erosive velocity.
a. The minimum capacity of the emergency spillway must pass the peak rate of runoff from the 10-year frequency storm, less any reduction due to flow in the principal spillway. Determine the emergency spillway dimensions by using Figure G.3 Emergency Spillway Design and Table G.9 or Figure G.4.
b. The velocity of flow in the exit channel must not exceed 5 feet per second for vegetated channels. For channels with erosion protection other than vegetation, ensure velocities are within the non-erosive range for the type of protection used.
c. Freeboard (elevation difference between the 10-year storm water surface in the emergency spillway and the top of the settled embankment) must be at least a minimum of one (1) foot. Where no emergency spillway is provided, design the freeboard to a minimum of two (2) feet.
d. The principal spillway crest elevation must be a minimum of one (1) foot below the elevation of the control section of the emergency spillway.

- 17. Principal Spillway. Provide a principal spillway which consists of a vertical pipe or concrete box (riser) joined to a pipe (barrel) that extends through the embankment and discharges beyond the downstream toe of the fill.
18. Riser and Barrel Assembly.
a. The barrel must pass at least 10 percent of the 10-year, 24-hour frequency storm and be at least 10 inches in diameter. If the principal spillway is designed to pass the entire 10-year storm, then the barrel must have a minimum cross-sectional area of three (3) square feet.
b. The design of the barrel should be based on Table G.7, Table G.8, or hydraulic calculations. For plastic pipe, Table G.7 can be used for corrugated lined pipe and Table G.8 for smooth lined pipe. Use manufacturer's specification for loading.
c. Pipe material must conform to NRCS Maryland Conservation Practice Standard Code No. 378 for Ponds.
d. An anti-vortex device and trash rack are required for all risers. For corrugated metal pipe risers, meet the specifications in Detail G-2-3 Concentric Trash Rack and Anti-Vortex Device. For other types of risers, refer to NRCS Maryland Conservation Practice Standard Code No. 378 for Ponds.

- 19. Removal of Basin.
a. Specify on the plan the type(s) of dewatering device(s) to be used in accordance with Section F - Dewatering.
b. The location and disposal method(s) for sediment removed from a basin must be shown on the plans. Do not place the sediment downstream from the basin or adjacent to a drainage way or floodplain. Off-site disposal sites must be covered by an approved erosion and sediment control plan.
c. Silt fence or other sediment control practices may be required during basin installation and removal.
d. Upon removal, the wet soil around the basin must also be removed to facilitate compaction.

Maintenance

Sediment and debris must be removed and the basin restored to its original dimensions when sediment accumulates to the cleanout elevation (50% of the wet storage depth). Removed sediment must be deposited in an approved area in such a manner that it will not erode. The points of inflow and outflow as well as the interior of the basin must be cleared of any accumulated debris and kept free of erosion. The embankments must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Any trees, brush, or other woody vegetation growing on the embankment or near the principal spillway must be removed. The line, grade, and cross section must be maintained. Water tight connections must be maintained. If the dry storage volume does not drain within 10 hours, the geotextile around the draw-down device must be replaced.

CONSTRUCTION SPECIFICATIONS

- 1. Install sediment control practices necessary to construct basin. Clear and grub to remove trees, vegetation, roots or other objectionable material from the areas where the embankment is to be placed. Do not clear the pool area until completion of the embankment, unless the pool area is to be used for borrow. Salvage topsoil for later use.
2. Excavate cut-off trench along centerline of proposed embankment a minimum depth of 4 feet and a bottom (min. 4 feet) wide enough to permit operation of excavation and compaction equipment. Construct side slopes 1:1 or flatter. Cut-off trench must be continuous and extend the entire length of embankment. Compaction requirements are the same as those for the embankment. Dewater the trench during the backfilling/compaction operations, using an approved practice.
3. Construct embankment of clean soil free of roots, woody vegetation, oversized stones, rocks, or other objectionable material. Fill material for impervious core and cut-off trench must conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30 percent passing the #200 sieve. Use fill material containing sufficient moisture so that the soil can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction. Place fill material in six-inch to 10 inch layers. 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, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface for tree stormwater management ponds. A minimum of a 2-foot radius around 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.
4. Install principal spillway prior to, or concurrently with, fill placement. Do not excavate embankment for placement of spillway. All pipe connections, including anti-seep collars must be completely watertight. Install filter diaphragm when specified on plan. Barrel connection to riser must be welded all around when the pipe and riser are metal. Attach barrel to riser at the same percent (slope) of grade as the barrel. For concrete riser/barrel assembly, pour riser with barrel in place or set pre-cast riser and install projection collar for watertight connection. Place fill material around the pipe spillway in four (4) inch lifts and hand compact around the pipe to a depth of 1.5 times the pipe diameter (minimum). Securely install anti-vortex device and trash rack as shown on plan.
5. Install the emergency spillway in undisturbed natural ground. Construct spillway within a tolerance of ± 0.2 feet.
6. Stabilize embankment and associated disturbed areas within three (3) days of completion with seed and mulch. Monitor embankment and maintain erosion free during the life of the basin.
7. Install fencing and signage in accordance with the approved plan.
8. Remove sediment when accumulated material has reached 25 percent of the total storage depth. Restore basin to original design volume. Place removed sediments in a controlled area and stabilize. Do not deposit sediment downstream of the embankment, adjacent to a stream or floodplain.
9. When the contributing drainage area is stable, the basin can be removed in accordance with the approved sediment control plan.
10. A sediment basin designed, built, and certified as a stormwater management structure, may be converted when the contributory drainage area is stable. Properly dewater basin, modify outlet structure, perform additional grading, and provide required storage volume in accordance with approved stormwater management plans.

GENERAL STORMWATER MANAGEMENT NOTES

- 1. PLEASE REFER TO THE STORMWATER MANAGEMENT REPORT PREPARED BY FISHER, COLLINS, & CARTER, INC. DATED NOVEMBER 22, 2019.
2. ALL CONSTRUCTION SHALL MEET THE LATEST EDITION OF THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS, SMALL EARTHEN DAM SPECIFICATION MD-378, AND THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S CURRENT STORMWATER DESIGN MANUAL OR AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CONSULT THE ENGINEER SHOULD THERE BE ANY DISCREPANCIES. SEE MICRO-BURETMENT FACILITY SPECIFICATIONS ON SHEET xx.
3. THE UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL TEST PIT ALL KNOWN EXISTING UTILITIES TO VERIFY SIZE, SHAPE, LOCATION, AND TYPE PRIOR TO PERFORMING CONSTRUCTION. ANY UTILITY DAMAGED DUE TO CONSTRUCTION MUST BE REPAIRED IMMEDIATELY.
4. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. IF THE CONTRACTOR MAKES FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
5. CONTRACTOR SHALL NOTIFY MESS UTILITY 1-800-257-7777 AND THE HOWARD COUNTY DEPARTMENT OF INSPECTION LICENSES & PERMITS THREE (3) WORKING DAYS BEFORE BEGINNING CONSTRUCTION.
6. FISHER, COLLINS & CARTER, INC. IS NOT RESPONSIBLE FOR THE CONTRACTOR'S UTILIZATION OF MEN, MATERIALS, EQUIPMENT, OR SAFETY MEASURES IN THE PERFORMANCE OF ANY WORK FOR THIS PROJECT. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR PERFORMING THE WORK CORRECTLY AND IN CONFORMANCE WITH CODE/SPECIFICATION REQUIREMENTS.

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 311.

CASE 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 AREAS 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 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 CONSTRUCTING 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 TO THE FLOW OF WATER TO THE DOWNSTREAM OR OUPSTREAM 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 FILL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE REFORMATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER SURFS FROM WHICH THE WATER SHALL BE PUMPED.

EROSION AND SEDIMENT CONTROL

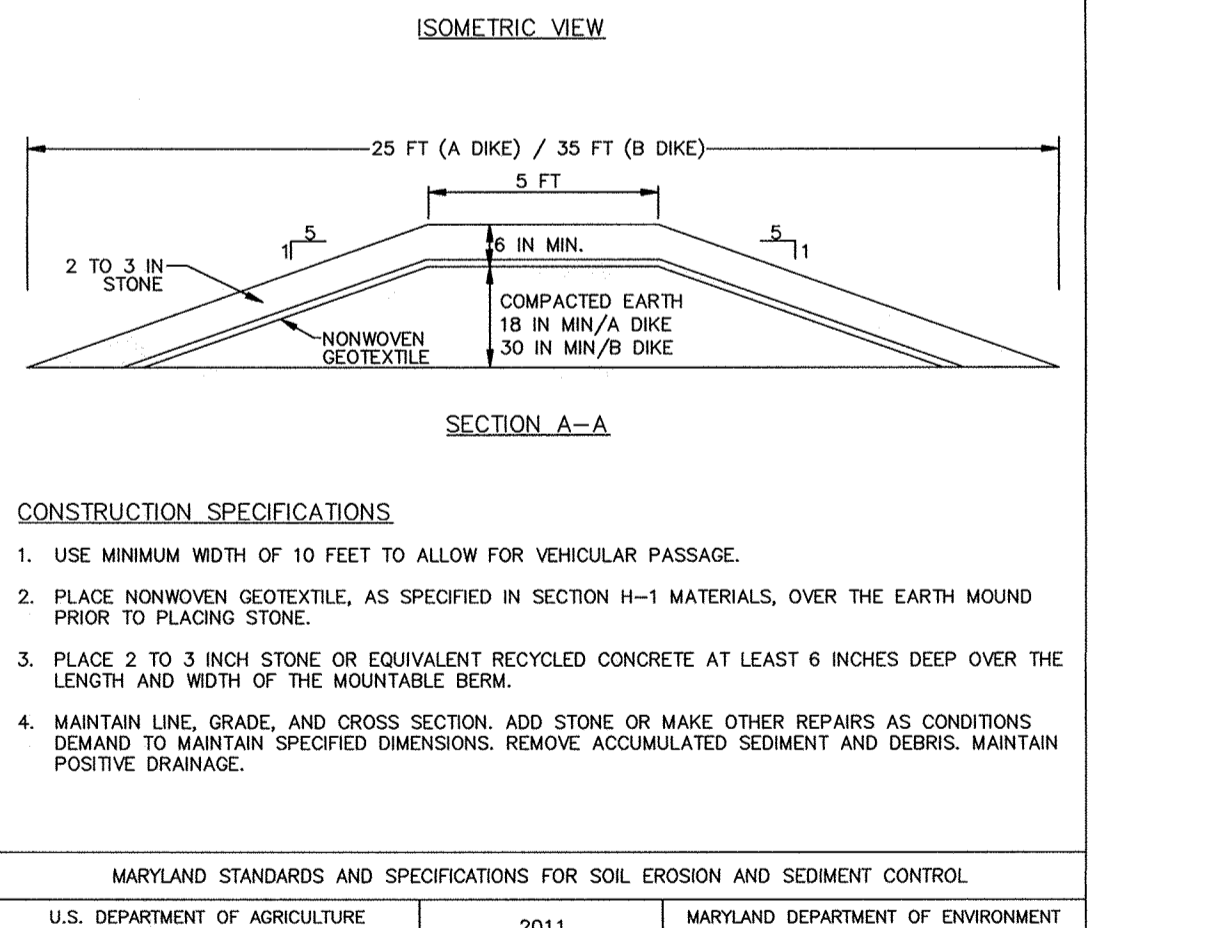
CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

CONSTRUCTION SPECIFICATIONS

- 1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
3. PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM.
4. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.

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



POND MD-378: N.R.C.S. - JANUARY 2000 CONSTRUCTION SPECIFICATIONS FOR SMALL EARTHEN DAMS

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 VERSION.

SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GROUBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHOULDER BANKS 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, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE FOR TREE STORMWATER MANAGEMENT PONDS. A MINIMUM OF A 2-FOOT RADIUS AROUND 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.

BARREL/FILL

FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6" DIAMETER OR OTHER OBJECTIONABLE MATERIAL. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISOR 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.

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMMERS OR OTHER MANUALLY DIRECTED COMPACTATION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DOWNER EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE UNLESS THE CORE SHALL BE COMPACTED CONCURRENTLY WITH THE STRUCTURE OR PIPE. UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

STRUCTURE BACKFILL

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS NOTED. THE MIXTURE SHALL HAVE A 100-200 PSI, 28 DAY UN-CONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRADE BEING IS NOT PERMITTED. 3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BONDING SHALL BE PLACED SO THAT ALL SEALS UNDER THE PIPE SHALL BE EXPOSED TO PRESENT ANY DETENTION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

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 311.

CASE 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 AREAS 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 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 CONSTRUCTING 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 TO THE FLOW OF WATER TO THE DOWNSTREAM OR OUPSTREAM 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 FILL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE REFORMATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER SURFS FROM WHICH THE WATER SHALL BE PUMPED.

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. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

- 1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1895 AFTER THE FUTURE LOG AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES: A. PRIOR TO THE START OF EARTH DISTURBANCE.
B. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
C. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT, D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

- 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED CONFORMING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THEREOF.

- 3. FOLLOWING INITIAL SOIL DISTURBANCE OR ERE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROL DIKES, SLOPES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL, (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.

- 4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-21), TEMPORARY SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS PROTECTED AND STABILIZATION FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THEREOF. CUT AND/OR FILL STOCKPILES (SEC. B-4-4-B) IN EXCESS OF 20 FT. MUST BE BLENDED WITH STABLE OUTCROP ALL CONCENTRATED FLOW, SPONGE, AND HEAVY LOADABLE AREAS SHALL RECEIVE SOIL STABILIZATION PRACTICE (SEC. B-4-6).

- 5. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.

- 6. SITE ANALYSIS:
TOTAL AREA OF SITE: 78.4 ACRES
AREA DISTURBED: 56.8 ACRES
AREA TO BE ROOFED OR PAVED: 0 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 56.8 ACRES
TOTAL FILL: 200,000 CUBIC YDS.
TOTAL FILL: 200,000 CUBIC YDS.
OFF-SITE WASTE/BORROW AREA LOCATION: N/A

- 7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

- 8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY, AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:

- INSPECTION DATE
• INSPECTION TIME (EVENING, PRE-OR POST- EVENT, DURING RAIN EVENT)
• NAME AND TITLE OF INSPECTOR
• WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS THE AMOUNT AND AMOUNT OF LAST RECORDED PRECIPITATION)
• BEST DESCRIPTION OF PROJECTS STATUS (E.G., PERCENT COMPLETED, AMOUNT OF CURRENT ACTIVITIES)
• EVIDENCE OF SEDIMENT DISCHARGES
• IDENTIFICATION OF PLAN DEFICIENCIES
• IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
• IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
• COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
• PHOTOGRAPHS
• MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).

- 9. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

- 10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. WORK REVISIONS MAY BE APPROVED BY THE CID FOR THE LIST OF HSCD-APPROVED FIELD CHANGES.

- 11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE LOG. A PROJECT IS TO BE DESIGNATED AS THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT THROUGH ACHIEVING OF 20 AC. PIPE GRADING UNIT AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 90 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES COLLECTIVELY MAY BE DISTURBED AT A GIVEN TIME.

- 12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.

- 13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR RE-DISTRIBUTION UNTIL FINAL GRADE.

- 14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON THE CONTOUR, AND BE INSPECTED AT 25' MINIMUM INTERVALS, WITH LOWER AND HIGHER UPDRILL BY 2' IN ELEVATION.

- 15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
• USE II AND III FROM 1 - JUNE 15
• USE II AND III FROM OCTOBER 1 - APRIL 30
• USE IV FROM 1 - MAY 31

- 16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

HIGH SCHOOL #13 SEQUENCE OF CONSTRUCTION

- 1. OBTAIN GRADING PERMIT AND MDE NOI GENERAL PERMIT. CONSTRUCTION SUBJECT TO LETTER OF AUTHORIZATION FOR WETLAND BUFFER DISTURBANCE UNDER #16-NET-017/201616150 (APPROX. 2 WEEKS)
2. NOTIFY MESS UTILITY (1-800-257-7777) 48 HOURS BEFORE STARTING WORK. NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410-313-1895) 24 HOURS BEFORE STARTING WORK, AND NOTIFY THE BALTIMORE GAS ELECTRIC CO. (410-291-5739) FIVE (5) WORKING DAYS PRIOR TO STARTING WORK. (1 DAY)
3. INSPECT AND, AS NEEDED, REPLACE EXISTING PERIMETER CONTROLS, TREE PROTECTION FENCE AND PERIMETER CONSTRUCTION FENCING. CONSTRUCT NEW SDF WHERE INDICATED. PUMP OUT EXISTING SEDIMENT BASINS AND REMOVE SEDIMENT PRIOR TO REMOVAL OF EXISTING SEDIMENT BASINS. #1 AND #2 ONE AT A TIME. CONSTRUCT SEDIMENT BASINS #1, #2 AND #3. INSTALL RETAINING WALLS AT SEDIMENT BASINS #1 AND #2. CONSTRUCT EARTH DIKES 1 THRU 4 AS NOTED AS WELL AS REMOVE PORTIONS OF EXISTING EARTH DIKES. (APPROX. 2 WEEKS)
4. UPON COMPLETION OF SEDIMENT BASINS #1 THRU #3, INSTALL EARTH DIKES 5 THRU 8 AS NOTED, AS WELL AS REMOVE EARTH DIKES AS NOTED IN CONJUNCTION WITH THE CONSTRUCTION OF BASIN #4 AND #5. COMPLETE INSTALLATION OF ALL NEW SEDIMENT CONTROLS AND STABILIZE ALL BASINS WITH TEMPORARY SEEDING. (APPROX. 3 MONTHS)
5. BEGIN SCHOOL PAD GRADING AND ANY NECESSARY STRUCTURAL COMPACTON. (APPROX. 2 MONTHS)
NOTE: NO STRUCTURES, FOOTINGS OR IMPERVIOUS AREAS TO BE CONSTRUCTED UNDER THIS GRADING PLAN.
6. STABILIZE ALL DISTURBED AREAS WITH TEMPORARY SEEDING AND MULCH. (APPROX. 3 DAYS)
7. THE CONTRACTOR TO HAVE AS-BUILTS PREPARED FOR THE STRUCTURES AND BASINS. (APPROX. 1 WEEK)
8. THE CONTRACTOR SHALL PROVIDE A COPY OF THE HSCD AS-BUILT ACCEPTANCE LETTER. (APPROX. 1 WEEK)

EROSION AND SEDIMENT CONTROL NOTE

THE CONTRACTOR SHALL INSPECT AND PROVIDE THE NECESSARY MAINTENANCE ON ALL SEDIMENT CONTROL DEVICES/PRACTICES ON A DAILY BASIS, AND IMMEDIATELY AFTER A RAINFALL ALONG WITH REMOVAL OF SEDIMENT FROM THE SEDIMENT BASINS WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED. THE CONTRACTOR SHALL MAINTAIN A LOG BOOK, DETAILING RESULTS OF THE INSPECTIONS AFTER EACH EVENT OR WEEKLY (WHICHEVER OCCURS MOST OFTEN). LOG SHALL DOCUMENT FINDINGS, CORRECTIONS AND DURATIONS - AT A MINIMUM UPON COMPLETION OF PROJECT OR REMOVAL OF SEDIMENT AND EROSION CONTROLS CONTRACTOR SHALL PREPARE A PDF OF THE COMPLETE LOG BOOK AND SUBMIT TO MR. J. DANIEL HAGAN PROJECT MANAGER (410-313-1529) DEPARTMENT OF CAPITAL PLANNING AND CONSTRUCTION OFFICE AT THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM.

ENGINEER'S CERTIFICATE
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10725 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21046
(410) 461 - 2895

DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD COUNTY DEPARTMENT OF INSPECTION LICENSES & PERMITS WITH A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE FLOW WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD COUNTY CONSERVATION DISTRICT.

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. 38386, EXPIRATION DATE: JANUARY 12, 2022.
STEPHANIE J. TUITE, R.L.A. P.E., LEED AP BCAD

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
MAYOR KENNETH EYE
Director - Department of Planning and Zoning

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-

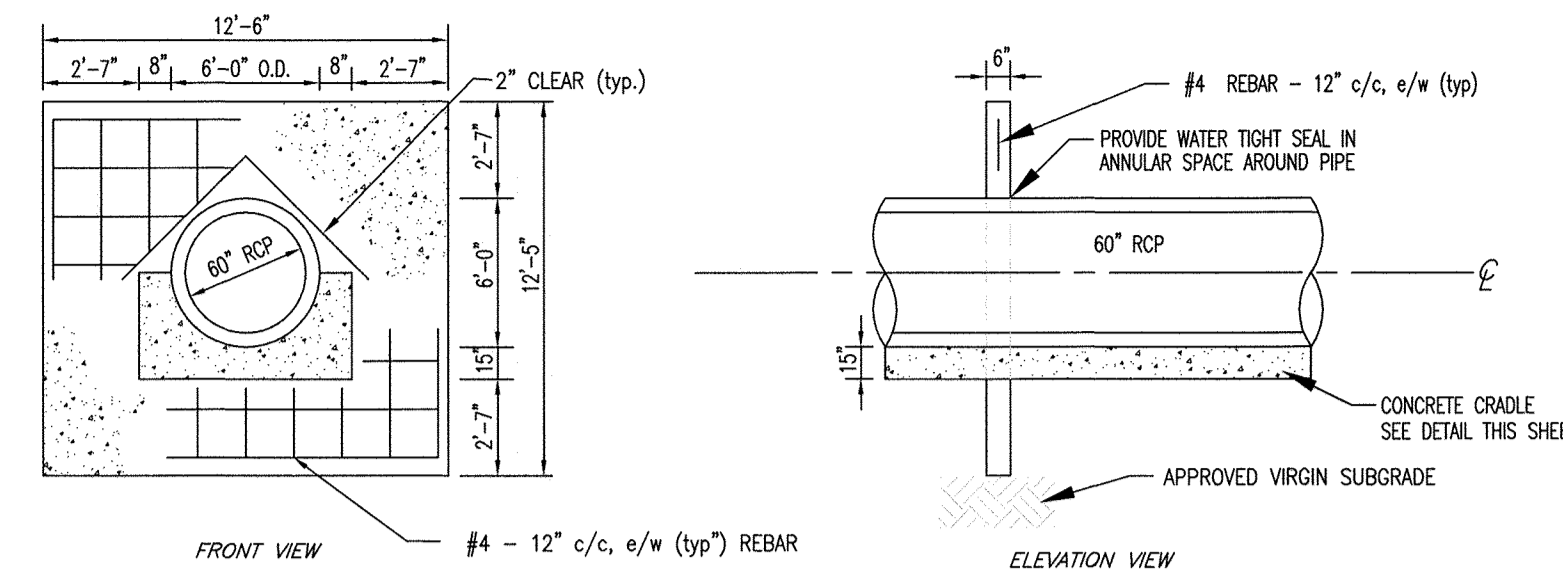
PUBLIC ROAD STRUCTURE SCHEDULE

STRUCTURE SCHEDULE									
STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV. IN	INV. OUT	COORDINATES	WIDTH	TYPE	REMARKS	
ROAD R-1	PRIVATE	267.60	262.10 (6")	258.70 (48")	N 543,054.80 E 1,366,525.92	-	-	SDP-19-066 SHEET 79	
ROAD R-2	PRIVATE	292.50	285.75 (4")	285.65 (30")	N 542,719.17 E 1,365,660.00	30"	MODIFIED "K" INLET	SDP-19-066 SHEET 68	
ROAD E-4	PRIVATE	265.10	-	258.50 (48")	N 543,081.10 E 1,366,543.41	48"	TYPE "A" HEADWALL	SEE SHEET 23	
ROAD E-5	PRIVATE	287.47	-	284.90 (30")	N 542,650.49 E 1,365,663.63	30"	CONC. END SECTION	D - 5.51	

HIGH SCHOOL #13 STRUCTURE SCHEDULE

STRUCTURE SCHEDULE									
STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV. IN	INV. OUT	COORDINATES	WIDTH	TYPE	REMARKS	
HS13 R-8	PRIVATE	285.25 *	279.75 (4")	279.65 (24")	N 542429.19 E 1365712.27	3'	MOD. K INLET	SEE SHEET 28	
HS13 R-9	PRIVATE	268.50	259.80 (10")	258.30 (60")	N 541744.34 E 1366045.80	-	RISER STRUCTURE	SEE SHEET 15	
HS13 R-10	PRIVATE	266.58	259.30 (9")	258.70 (48")	N 541921.18 E 1365982.47	-	RISER STRUCTURE	SEE SHEET 19	
HS13 E-5	PRIVATE	282.80	-	279.30 (24")	N 542430.12 E 1365672.94	24"	TYPE "A" HEADWALL	D - 5.11	
HS13 E-6	PRIVATE	263.00	-	258.50 (48")	N 541861.41 E 1365891.45	48"	TYPE "C" HEADWALL	D-5.21 W/4' FENCING	
HS13 E-7	PRIVATE	266.00	-	258.00 (60")	N 541752.86 E 1366010.32	60"	MOD. TYPE "A" HEADWALL	SEE SHEET 13	

* - DENOTES GRATE ELEVATION

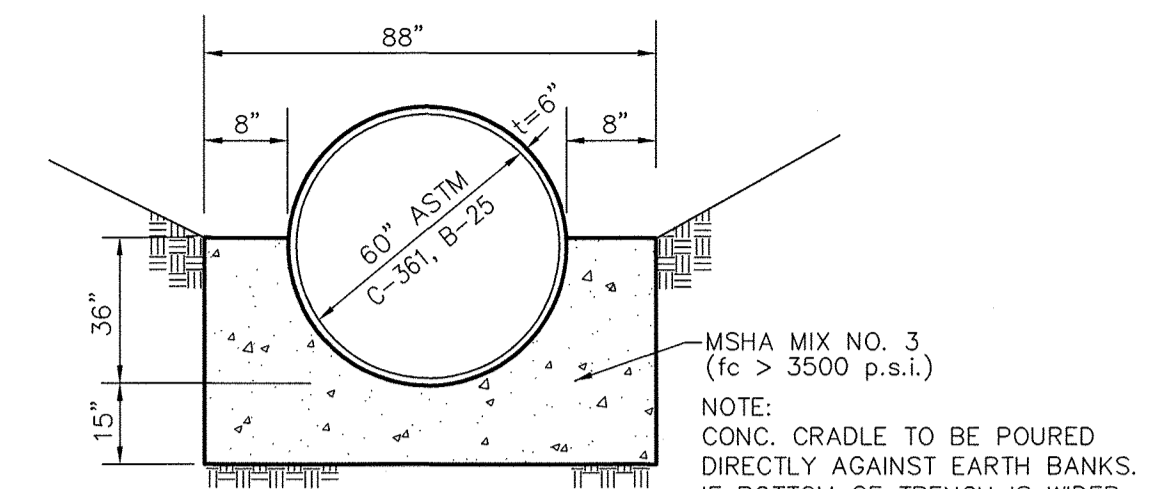


ANTI-SEEP COLLAR NOTES

1. LOWER HALF OF COLLAR SHALL BE POURED CONCURRENTLY WITH THE CRADLE POUR.
2. REBAR IS SHOWN SCHEMATICALLY AND SHALL BE PLACED THROUGHOUT THE ENTIRE COLLAR.
3. PROVIDE A WATER TIGHT SEAL IN ANNULAR SPACE BETWEEN PIPE AND COLLAR USING MASTIC SEALER. USE A "A-LOK" JOINT SEAL PRODUCT.
4. LOCATE COLLAR 2' MINIMUM FROM JOINT AND MAINTAIN 10' MINIMUM SEPARATION FROM COLLAR TO COLLAR OR COLLAR TO RISER.
5. PLACE TWO (2) ADDITIONAL REBARS (4' MIN. LONG) AT RIGHT ANGLES TO REBAR GRID 2" FROM PIPE O.D.
6. COLLAR MATERIAL SPECIFICATIONS SHALL MEET THE SAME AS THAT FOR THE CONCRETE RISER (SWM OUTFALL) STRUCTURE.

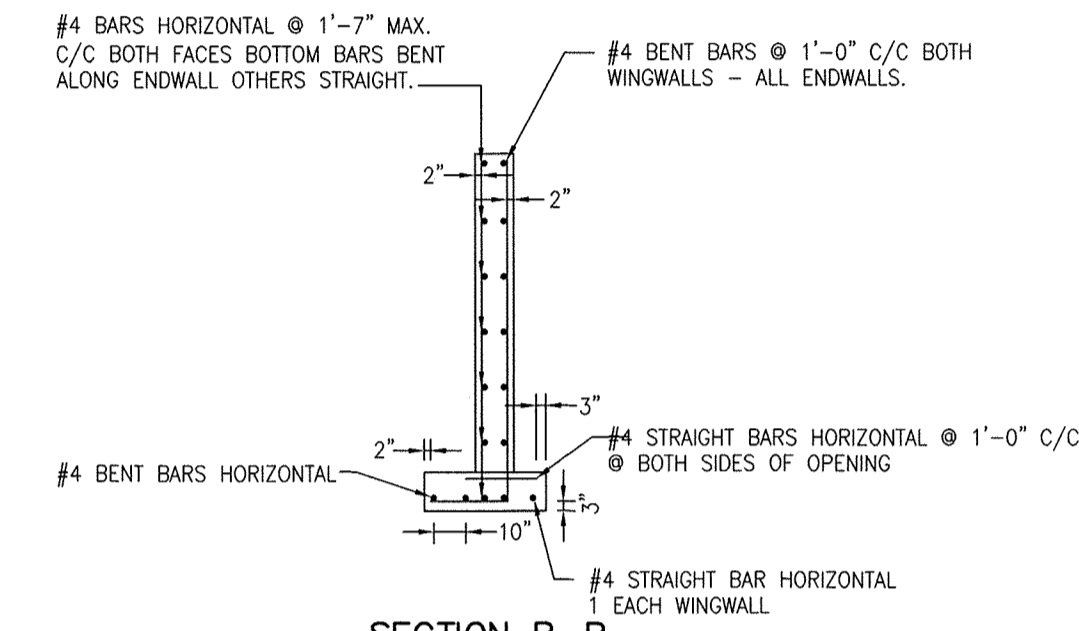
ANTI-SEEP COLLAR DETAIL

NO SCALE

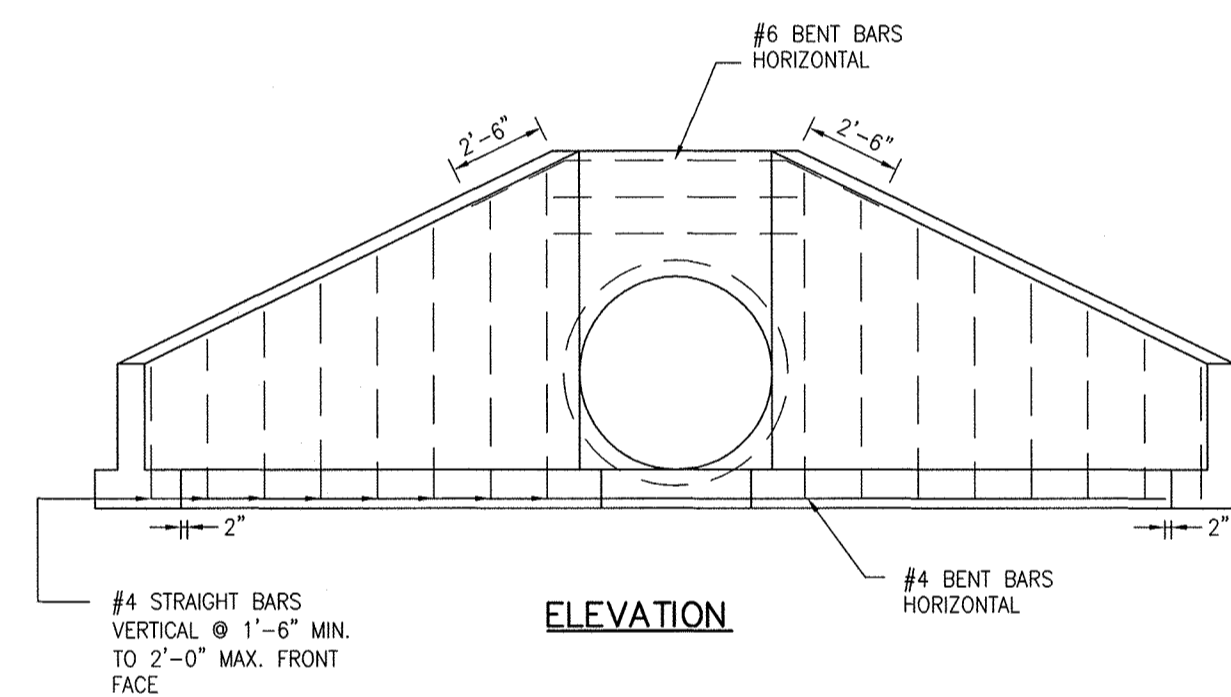


CONC. CRADLE DETAIL

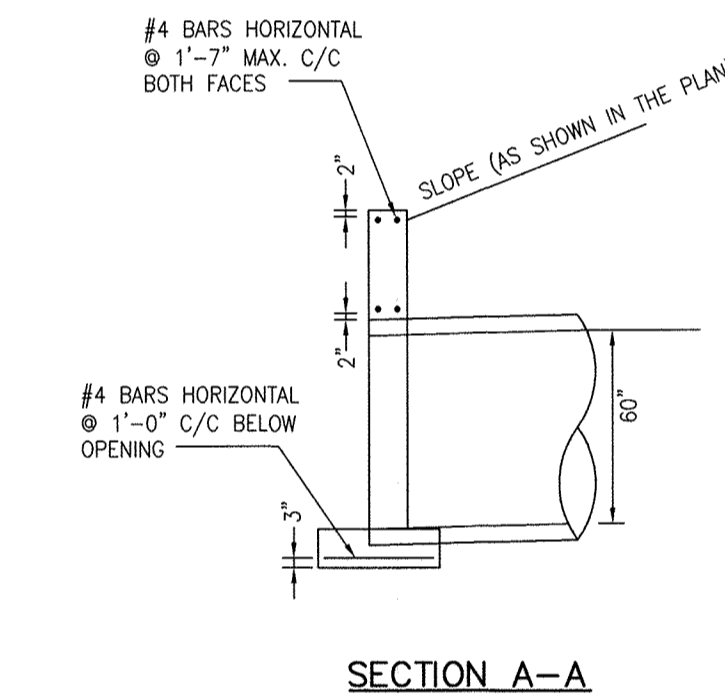
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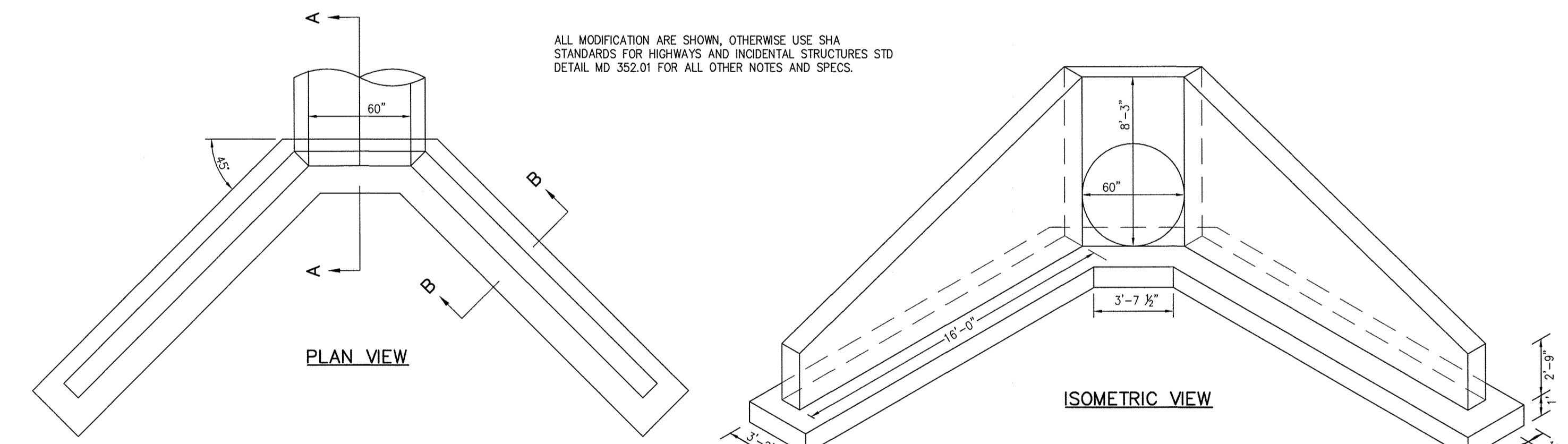
SECTION B-B DISPOSITION OF BARS DETAIL



ELEVATION



SECTION A-A

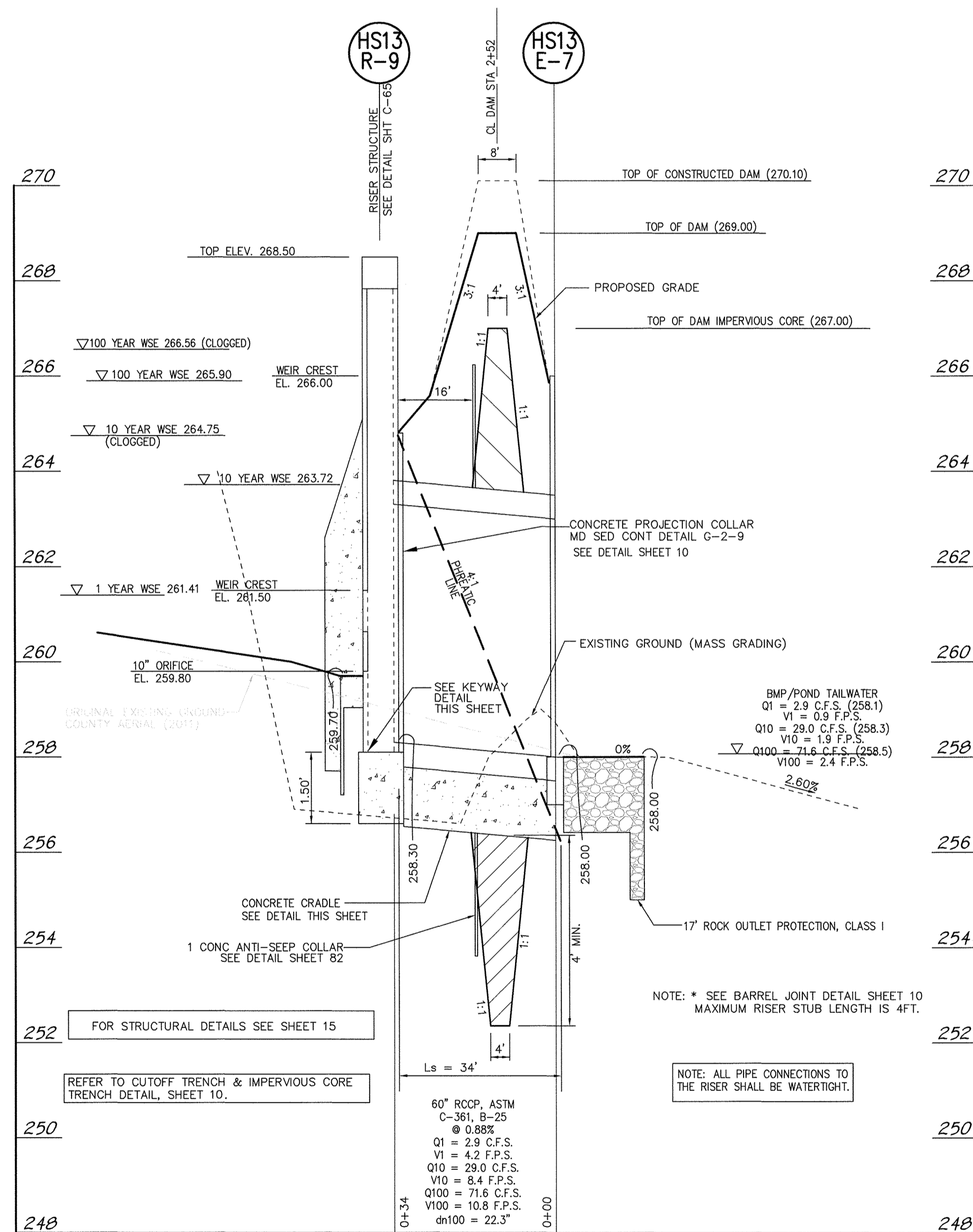


HEADWALL HS13 E-7 DETAIL (SWM #15)

SCALE: 1" = 5'

SEDIMENT BASIN NOTES

1. The draw down device shall be constructed to N.R.C.S.'s Horizontal Drawdown Device Detail G-2-6. The perforations shall have a 1" diameter and spaced 6" apart as follows: 8" pipe with 4 rows of perforations, 10" pipe with 6 rows of perforations. Minimum perforated area per LF of pipe: 6.28 sq ft for 8" pipe and 9.42 sq ft for 10" pipe.
2. The drawdown device pipe shall be evenly and adequately supported per Drawdown Device Detail G-2-6 (with aggregate or posts).
3. The drawdown device connection to the riser shall be watertight (i.e., the annular area between the drawdown device and orifice shall be temporarily sealed (with galvanized plate/gasket, or mortar, or other suitable methods that allow easy conversion to the final permanent SWM facility).
4. See the SWM plans for other embankment/riser information not shown on this sheet.
5. Install the permanent weir trash rack during construction. Remove and reinstall as needed when basin is converted to a permanent SWM facility.
6. Dewater basin and maintain drawdown device when basin drain time exceeds 10 hours. Pump basin to an approved E&S device.
7. Drawdown pipe shall be Schedule 40 PVC or approved equal.



SWM 15 PRINCIPAL SPILLWAY PROFILE

SCALE: HORIZ. : 1" = 20'

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I HAVE NOTICED 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT, AND/OR MDE.

STEPHANIE J. JUTE, R.L.A., P.E., LEED AP BC&D
DATE: 7/14/20

DEVELOPER'S CERTIFICATE

I, WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Daniel Lubeleg
DATE: 7/14/20

"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. 38386, EXPIRATION DATE: JANUARY 12, 2022."

STEPHANIE J. JUTE, R.L.A., P.E., LEED AP BC&D
DATE: 7/14/20

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Director: Department of Planning and Zoning
Chief, Development Engineering Division
DATE: 8/5/20
DATE: 8/5/20
DATE: 7/29/20

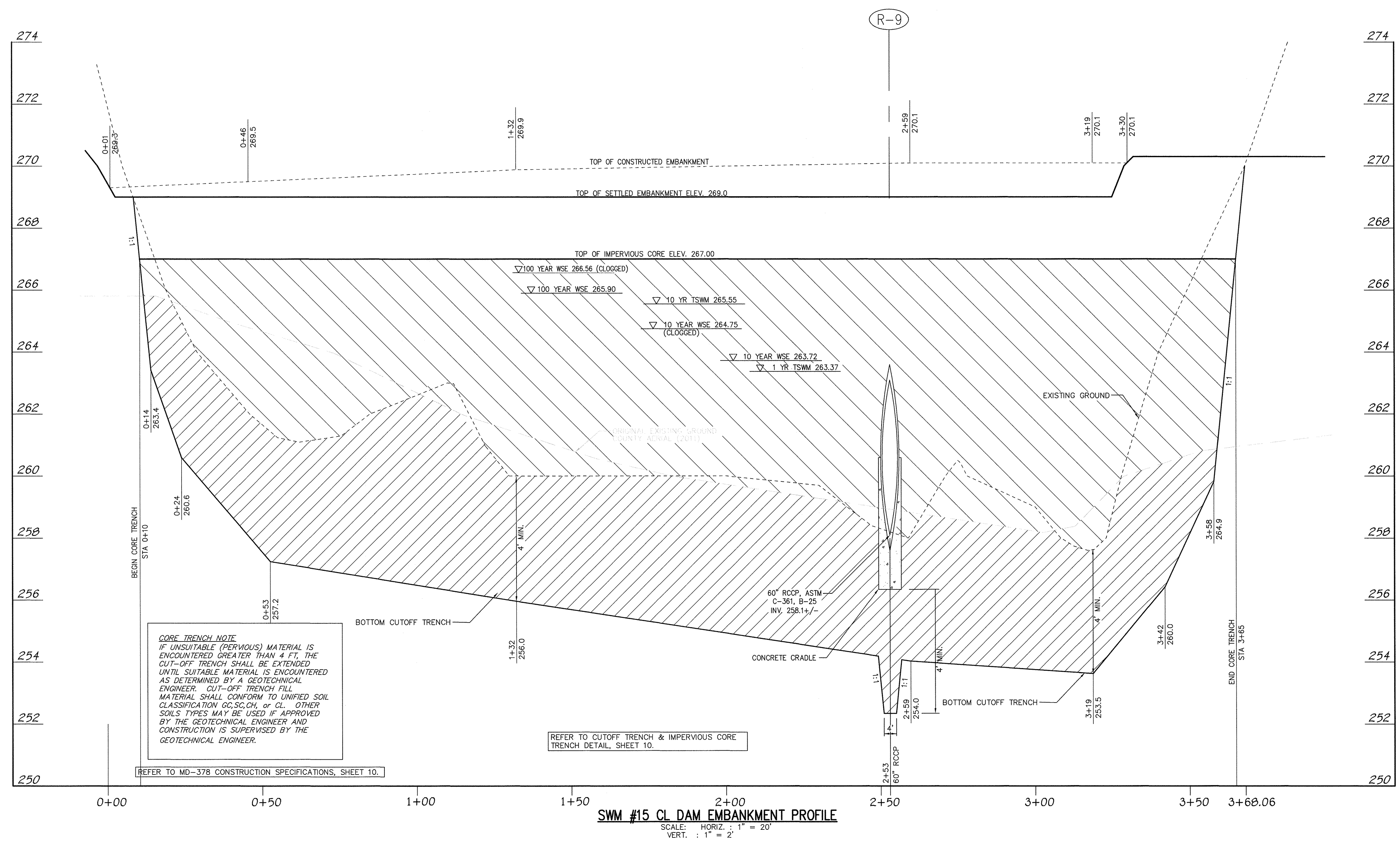
PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE "C"
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEJ
410-313-6805



DATE	DESCRIPTION	REVISION BLOCK
7/10/20	NEW SHEET OF PROFILES AND DETAILS TO CONSTRUCT BASIN 1 FOR NEW SCHOOL ON SITE	
PROJECT	HIGH SCHOOL #13	SECTION/AREA N/A
PLAT NOS.	18 & 24 13 & 19	TAX MAP R-12 RSC MID-3 RSA-8 MXD-3
WATER CODE	---	SEWER CODE ---

BASIN #1 (SWM #15) PRINCIPAL SPILLWAY PROFILE AND DETAILS
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794
ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 13 OF 39

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2855



CORE TRENCH NOTE
 IF UNSUITABLE (PERVIOUS) MATERIAL IS ENCOUNTERED GREATER THAN 4 FT. THE CUT-OFF TRENCH SHALL BE EXTENDED UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY A GEOTECHNICAL ENGINEER. CUT-OFF TRENCH FILL MATERIAL SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL. OTHER SOILS TYPES MAY BE USED IF APPROVED BY THE GEOTECHNICAL ENGINEER AND CONSTRUCTION IS SUPERVISED BY THE GEOTECHNICAL ENGINEER.

REFER TO CUTOFF TRENCH & IMPERVIOUS CORE TRENCH DETAIL, SHEET 10.

REFER TO MD-378 CONSTRUCTION SPECIFICATIONS, SHEET 10.

SWM #15 CL DAM EMBANKMENT PROFILE
 SCALE: HORIZ. : 1" = 20'
 VERT. : 1" = 2'

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND FOR MDE.

Stephanie J. Tuite 7/14/20
 SIGNATURE OF ENGINEER DATE

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Daniel Lubeley 7/14/20
 SIGNATURE OF DEVELOPER PRINTED NAME OF DEVELOPER DATE

"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. 38386, EXPIRATION DATE: JANUARY 12, 2022."

Stephanie J. Tuite 7/14/20
 SIGNATURE DATE
 STEPHANIE J. TUITE, R.L.A., P.E., LEED AP BC&D

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

 SIGNATURE P.E. No. DATE:

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

Mary Kendall Fox 8/5/20
 Director, Department of Planning and Zoning Date

Daniel Lubeley 7/29/20
 Chief, Development Engineering Division Date

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 9020 MENDENHALL COURT
 COLUMBIA, MARYLAND 21045
 Attention: DANIEL LUBELEY
 410-313-6805

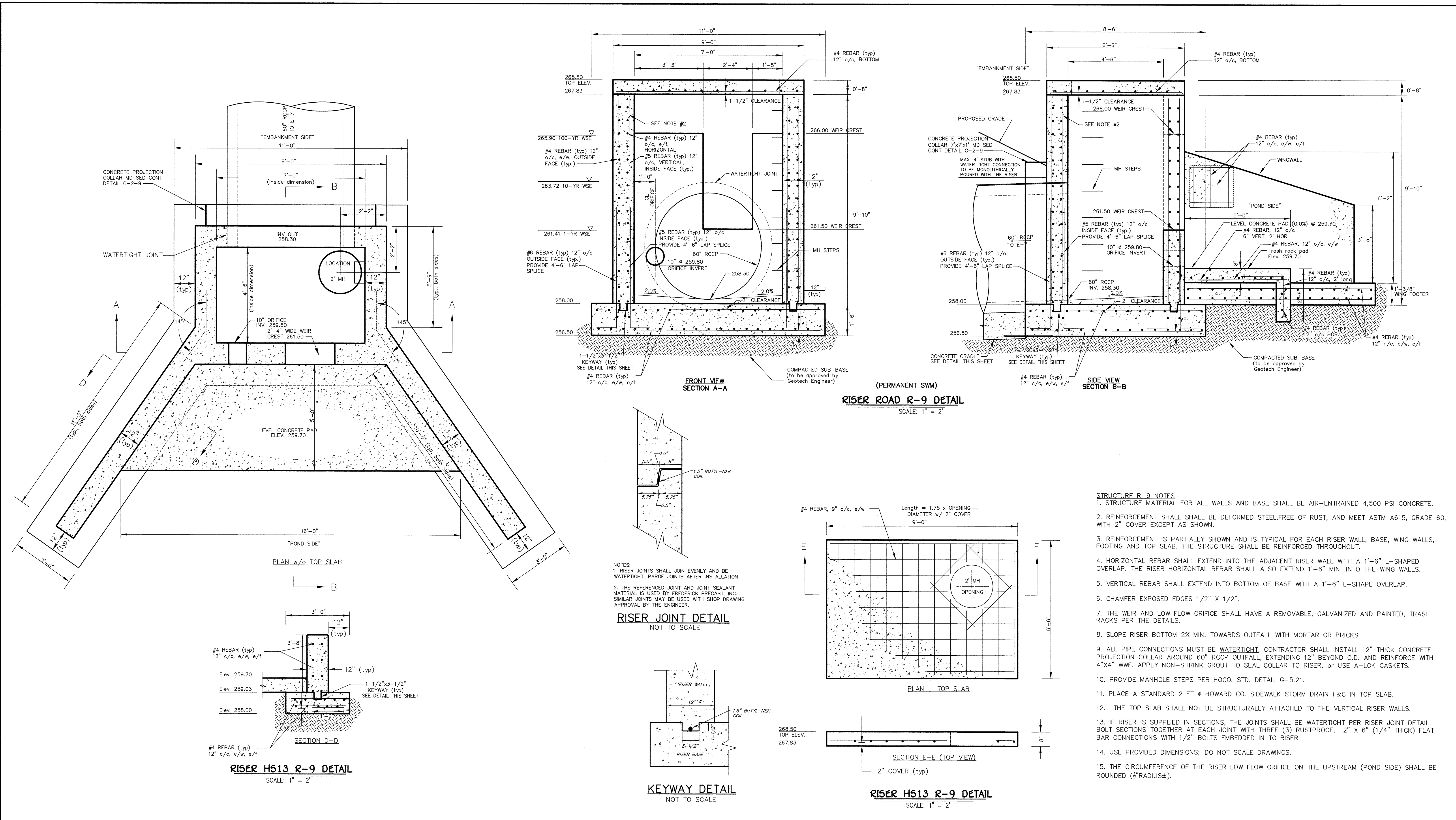
Daniel Lubeley 7/14/20
 PROFESSIONAL ENGINEER

7/10/20	NEW SHEET WITH PROFILE TO CONSTRUCT BASIN 1 FOR NEW SCHOOL ON SITE
DATE	DESCRIPTION
REVISION BLOCK	
PROJECT	SECTION/AREA
HIGH SCHOOL #13	N/A
PLAT NOS.	TAX MAP
18 & 24	42 & 43
13 & 19	SIXTH
WATER CODE	SEWER CODE
----	----

BASIN #1 (SWM #15) CL DAM PROFILE
 REVISED SITE DEVELOPMENT PLAN
 FOR
CHASE PROPERTY AT MISSION ROAD
 8420 WASHINGTON BLVD
 JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
 PARCEL Nos.: 102, 349, 235
 TAX MAP No.: 42 & 43 GRID No.: 24 & 19
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 14 OF 39

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2855



- STRUCTURE R-9 NOTES**
- STRUCTURE MATERIAL FOR ALL WALLS AND BASE SHALL BE AIR-ENTRAINED 4,500 PSI CONCRETE.
 - REINFORCEMENT SHALL BE DEFORMED STEEL, FREE OF RUST, AND MEET ASTM A615, GRADE 60, WITH 2" COVER EXCEPT AS SHOWN.
 - REINFORCEMENT IS PARTIALLY SHOWN AND IS TYPICAL FOR EACH RISER WALL, BASE, WING WALLS, FOOTING AND TOP SLAB. THE STRUCTURE SHALL BE REINFORCED THROUGHOUT.
 - HORIZONTAL REBAR SHALL EXTEND INTO THE ADJACENT RISER WALL WITH A 1'-6" L-SHAPED OVERLAP. THE RISER HORIZONTAL REBAR SHALL ALSO EXTEND 1'-6" MIN. INTO THE WING WALLS.
 - VERTICAL REBAR SHALL EXTEND INTO BOTTOM OF BASE WITH A 1'-6" L-SHAPED OVERLAP.
 - CHAMFER EXPOSED EDGES 1/2" X 1/2".
 - THE WEIR AND LOW FLOW ORIFICE SHALL HAVE A REMOVABLE, GALVANIZED AND PAINTED, TRASH RACKS PER THE DETAILS.
 - SLOPE RISER BOTTOM 2% MIN. TOWARDS OUTFALL WITH MORTAR OR BRICKS.
 - ALL PIPE CONNECTIONS MUST BE **WATERTIGHT**. CONTRACTOR SHALL INSTALL 12" THICK CONCRETE PROJECTION COLLAR AROUND 60" RCCP OUTFALL, EXTENDING 12" BEYOND O.D. AND REINFORCE WITH 4"x4" WWF. APPLY NON-SHRINK GROUT TO SEAL COLLAR TO RISER, OR USE A-LOK GASKETS.
 - PROVIDE MANHOLE STEPS PER HOCO. STD. DETAIL G-5.21.
 - PLACE A STANDARD 2 FT Ø HOWARD CO. SIDEWALK STORM DRAIN F&C IN TOP SLAB.
 - THE TOP SLAB SHALL NOT BE STRUCTURALLY ATTACHED TO THE VERTICAL RISER WALLS.
 - IF RISER IS SUPPLIED IN SECTIONS, THE JOINTS SHALL BE WATERTIGHT PER RISER JOINT DETAIL. BOLT SECTIONS TOGETHER AT EACH JOINT WITH THREE (3) RUSTPROOF, 2" X 6" (1/4" THICK) FLAT BAR CONNECTIONS WITH 1/2" RUST PROOF.
 - USE PROVIDED DIMENSIONS; DO NOT SCALE DRAWINGS.
 - THE CIRCUMFERENCE OF THE RISER LOW FLOW ORIFICE ON THE UPSTREAM (POND SIDE) SHALL BE ROUNDED (1/2" RADIUS ±).

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Stephan J. Tuite
 SIGNATURE OF ENGINEER
 7/14/20
 DATE

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Daniel Lubeley
 SIGNATURE OF DEVELOPER
 7/14/20
 DATE

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Stephan J. Tuite
 SIGNATURE
 STEPHAN J. TUITE, R.L.A., P.E., LEED AP BC&D
 7/14/20
 DATE

AS-BUILT CERTIFICATION
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Stephan J. Tuite
 SIGNATURE
 P.E. No. _____ DATE: _____

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

Maury Knevel
 Director - Department of Planning and Zoning
 8/5/20
 Date

Daniel Lubeley
 Chief, Division of Land Development
 7-29-20
 Date

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 9020 MENDENHALL COURT
 SUITE 'C'
 COLUMBIA, MARYLAND 21045
 Attention: DANIEL LUBELEY
 410-313-6805

7/10/20 NEW SHEET OF DETAILS TO CONSTRUCT BASIN #1 FOR NEW SCHOOL ON SITE

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
18 & 24	R-12	RSB	42 & 43	SIXTH	606901
13 & 19	RSC MXD-3	RSB-8 MXD-3			

PROJECT: HIGH SCHOOL #13 SECTION/AREA: N/A PARCEL: 102, 349, 235

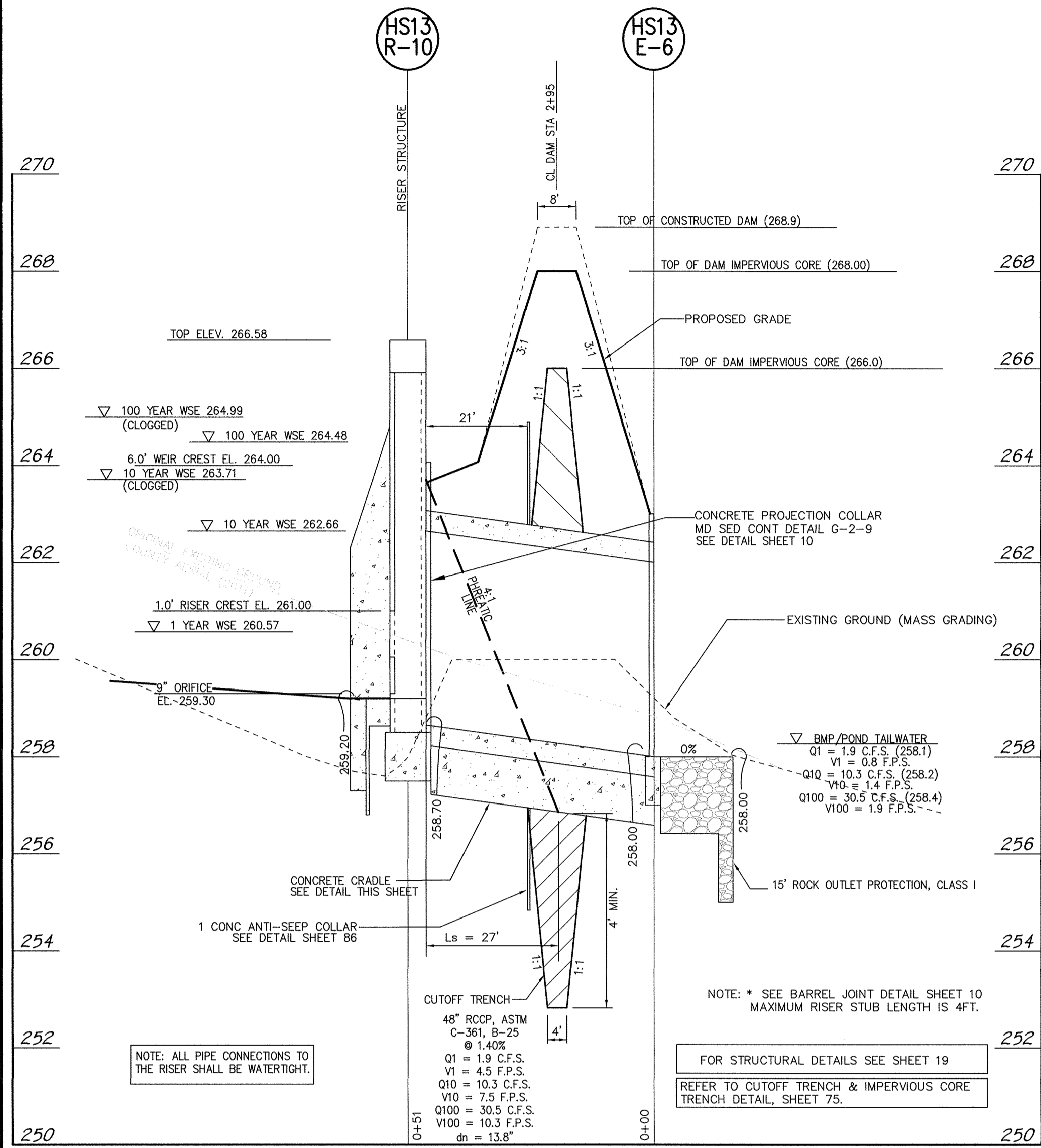
WATER CODE: SEWER CODE:

BASIN #1 (SWM #15) R-9 DETAILS
 REVISED SITE DEVELOPMENT PLAN
 FOR
CHASE PROPERTY
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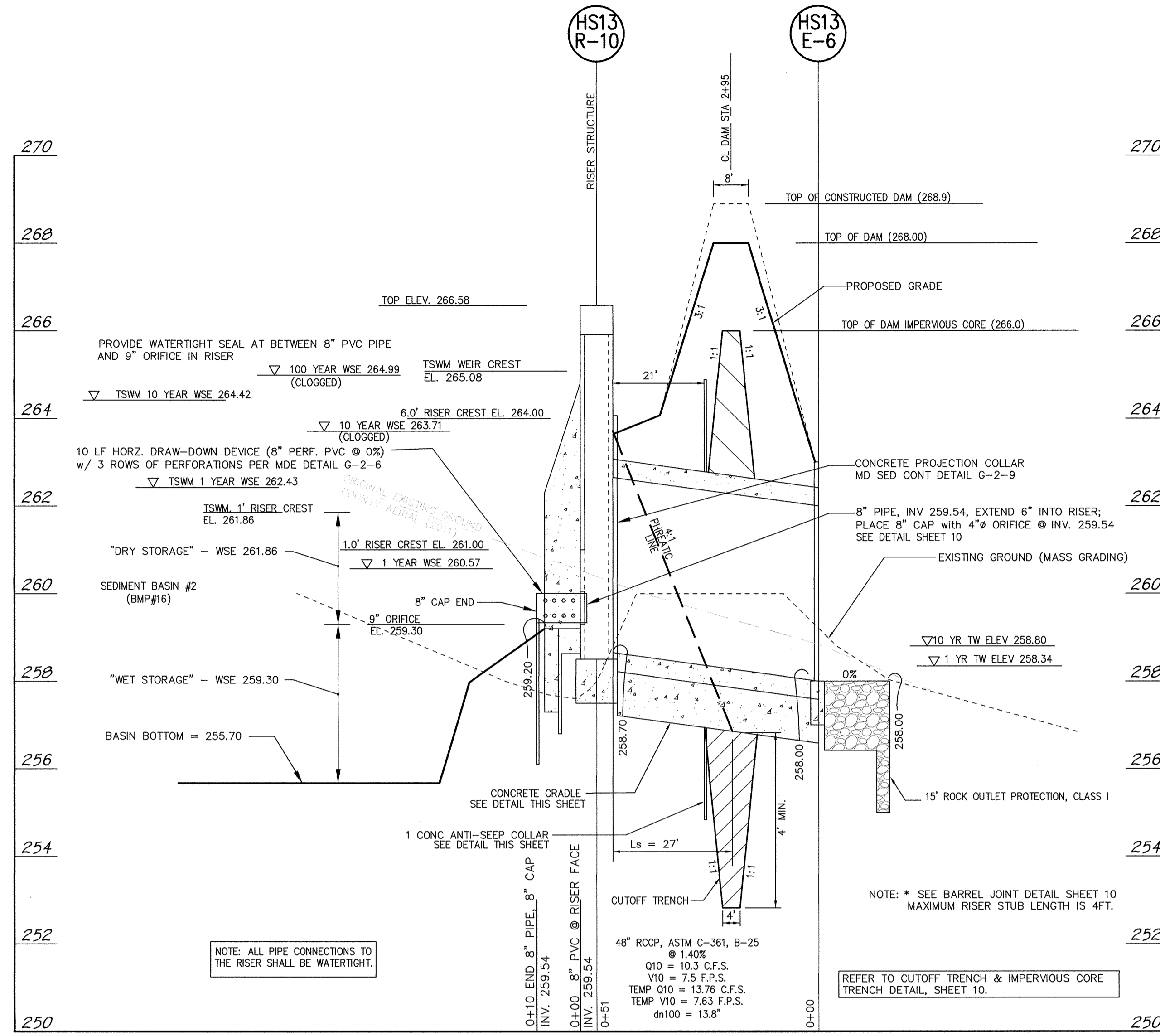
ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
 PARCEL Nos.: 102, 349, 235
 TAX MAP No.: 42 & 43 GRID No.: 24 & 19
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 15 OF 39

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 33 CENTENNIAL SQUARE OFFICE PARK - 10272 BALDORNE NATIONAL PARK
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2855



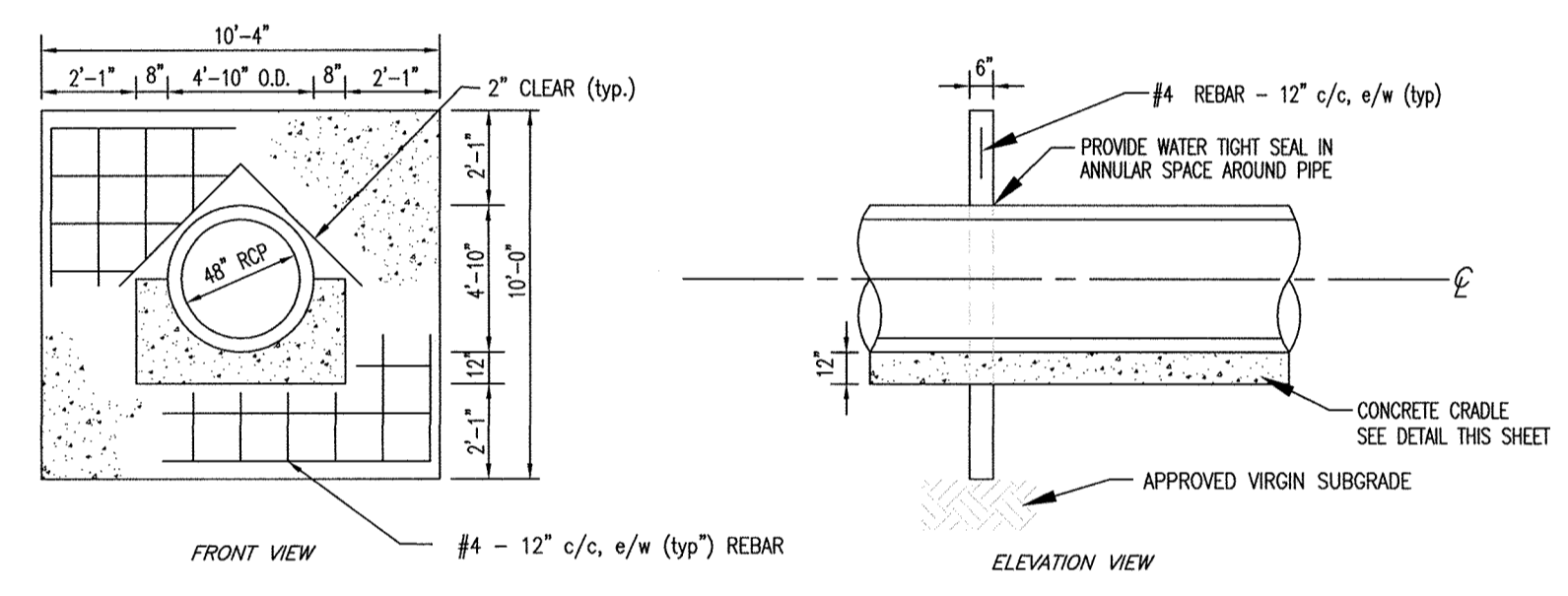


SWM 16 PRINCIPAL SPILLWAY PROFILE
SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'



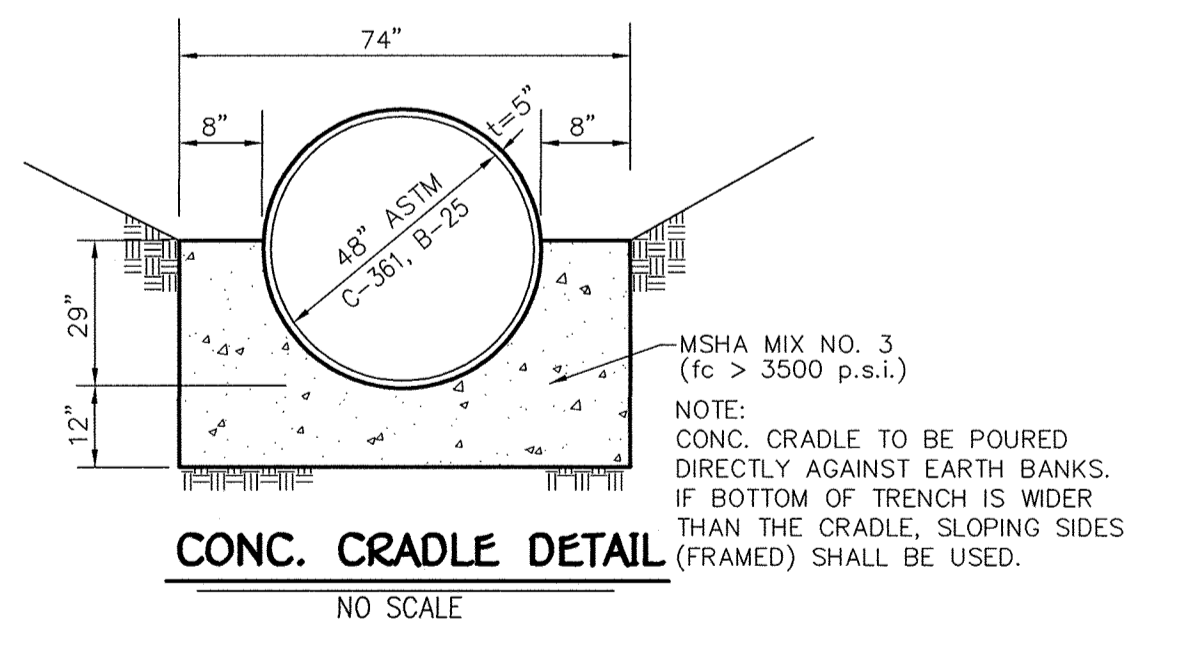
SEDIMENT BASIN #2 @ BMP #16 w/ TEMPORARY SWM DRAWDOWN DEVICE OUTFALL PROFILE
SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'

- SEDIMENT BASIN NOTES**
- The draw down device shall be constructed to N.R.C.S.'s Horizontal Drawdown Device Detail G-2-6. The perforations shall have a 1" diameter and spaced 6" apart as follows: 8" pipe with 4 rows of perforations, 10" pipe with 6 rows of perforations. Minimum perforated area per LF of pipe: 6.28 sq ft for 8" pipe and 9.42 sq ft for 10" pipe.
 - The drawdown device pipe shall be evenly and adequately supported per Drawdown Device Detail G-2-6 (with aggregate or posts).
 - The drawdown device connection to the riser shall be watertight (i.e., the annular area between the drawdown device and orifice shall be temporarily sealed (with galvanized plate/gasket, or mortar, or other suitable methods that allow easy conversion to the final permanent SWM facility).
 - See the SWM plans for other embankment/riser information not shown on this sheet.
 - Install the permanent weir trash rack during construction. Remove and reinstall as needed when basin is converted to a permanent SWM facility.
 - Dewater basin and maintain drawdown device when basin drain time exceeds 10 hours. Pump basin to an approved E&SC device.
 - Drawdown pipe shall be Schedule 40 PVC or approved equal.



- ANTI-SEEP COLLAR NOTES**
- LOWER HALF OF COLLAR SHALL BE POURED CONCURRENTLY WITH THE CRADLE POUR.
 - REBAR IS SHOWN SCHEMATICALLY AND SHALL BE PLACED THROUGHOUT THE ENTIRE COLLAR.
 - PROVIDE A WATER TIGHT SEAL IN ANNULAR SPACE BETWEEN PIPE AND COLLAR USING MASTIC SEALER. USE A "A-LOK" JOINT SEAL PRODUCT.
 - LOCATE COLLAR 2' MINIMUM FROM JOINT AND MAINTAIN 10' MINIMUM SEPARATION FROM COLLAR TO COLLAR OR COLLAR TO RISER.
 - PLACE TWO (2) ADDITIONAL REBARS (5' MIN. LONG) AT RIGHT ANGLES TO REBAR GRID 2" FROM PIPE O.D.
 - COLLAR MATERIAL SPECIFICATIONS SHALL MEET THE SAME AS THAT FOR THE CONCRETE RISER (SWM OUTFALL) STRUCTURE.

ANTI-SEEP COLLAR DETAIL
NO SCALE



CONC. CRADLE DETAIL
NO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
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Stephan J. Tuite 7/14/20
SIGNATURE OF ENGINEER DATE

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Daniel Lubeley 7/16/20
SIGNATURE OF DEVELOPER DATE

PRINTED NAME OF DEVELOPER

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Stephan J. Tuite 7/14/20
STEPHAN J. TUITE, RLA, P.E., LEED AP BC&D DATE

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

Stephan J. Tuite 8/15/2020
Date

Daniel Lubeley 8/6/20
Date

Stephan J. Tuite 7/29/20
Date

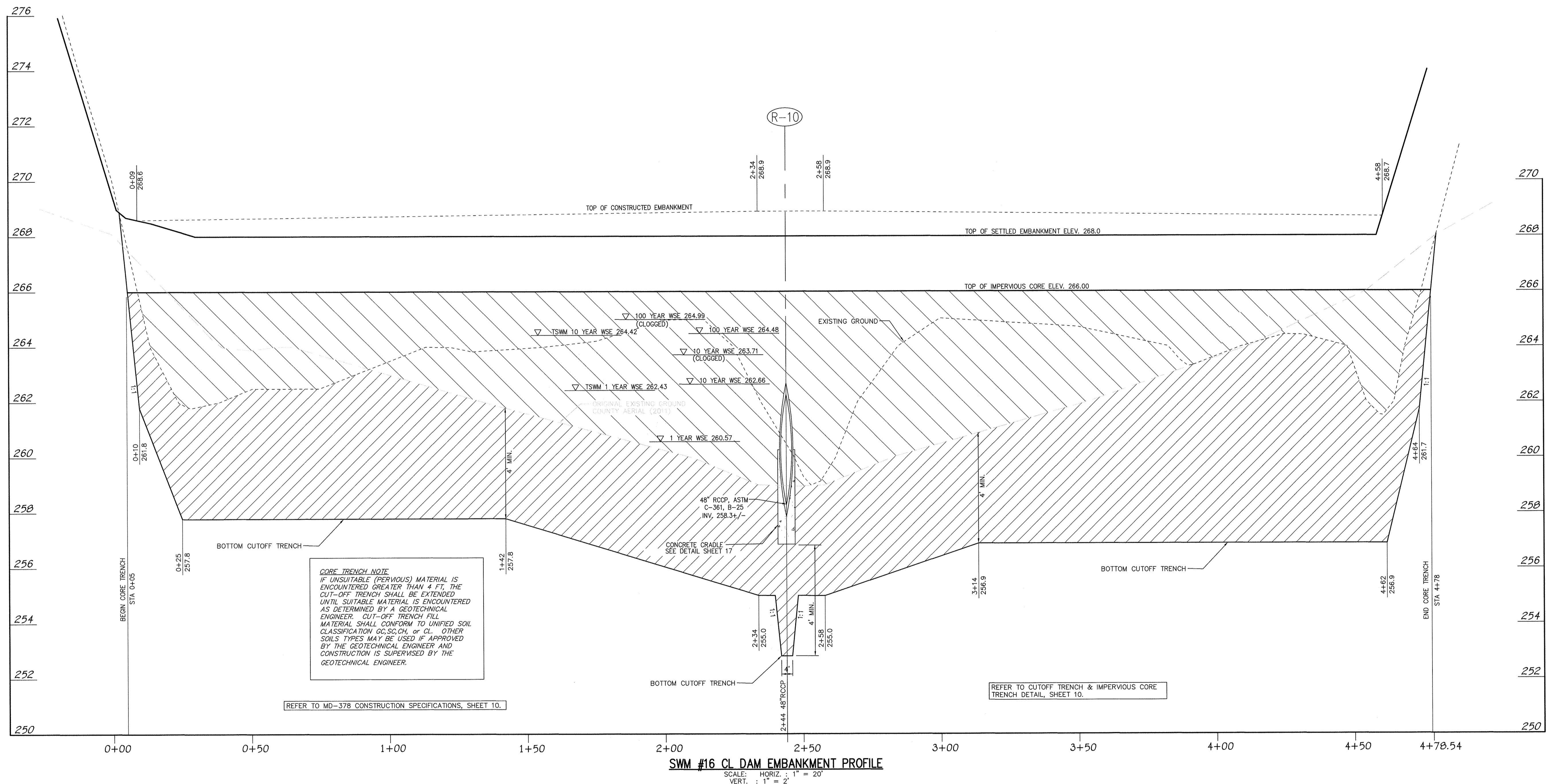
PREPARED FOR
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9020 MENDENHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6805

STATE OF MARYLAND
PROFESSIONAL ENGINEER
No. 38386
7/14/20

7/10/20	NEW SHEET OF PROFILES AND DETAILS TO CONSTRUCT BASIN 2 FOR NEW SCHOOL ON SITE
DATE	DESCRIPTION
REVISION BLOCK	
PROJECT	SECTION/AREA
HIGH SCHOOL #13	N/A
PLAT NOS.	TAX MAP
18 & 24	R-12
13 & 19	RSA-8 MXD-3
WATER CODE	SEWER CODE
---	---

BASIN #2 (SWM #16) PRINCIPAL SPILLWAY PROFILE AND DETAILS
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
PARCEL NOS.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 17 OF 39



CORE TRENCH NOTE
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REFER TO MD-378 CONSTRUCTION SPECIFICATIONS, SHEET 10.

REFER TO CUTOFF TRENCH & IMPERVIOUS CORE TRENCH DETAIL, SHEET 10.

SWM #16 CL DAM EMBANKMENT PROFILE
 SCALE: HORIZ. : 1" = 20'
 VERT. : 1" = 2'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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 ELLICOTT CITY, MARYLAND 21042
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STEPHANIE J. TUITE
 SIGNATURE OF ENGINEER
 7/14/20
 DATE

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Stephanie J. Tuite
 SIGNATURE
 7/14/20
 DATE

STEPHANIE J. TUITE, RLA, P.E., LEED AP BC&D

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

Maury Kendall
 SIGNATURE
 Director - Department of Planning and Zoning
 7/15/20
 DATE

Chief, Development Engineering Division

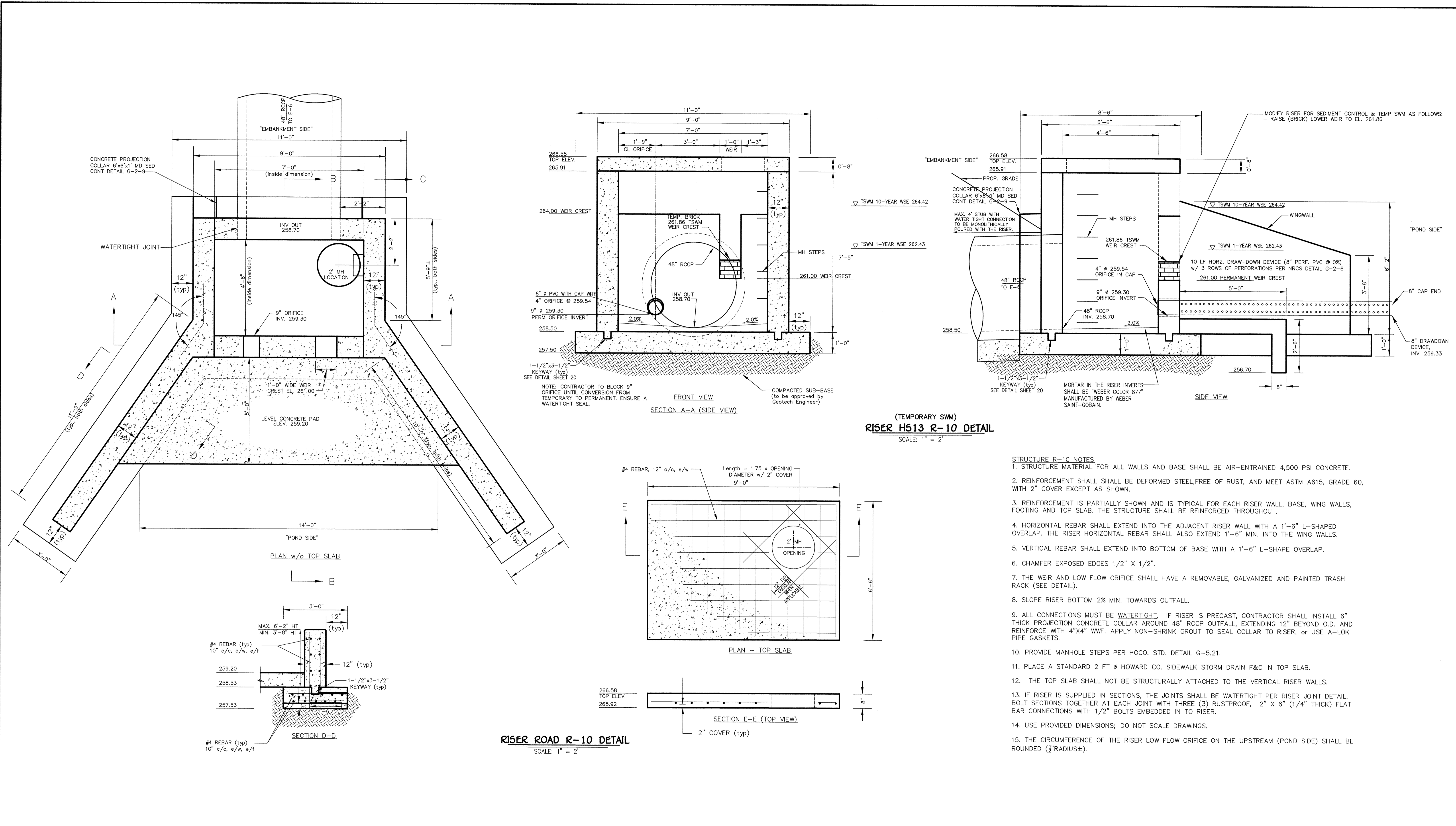
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STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 No. 38386
 7/14/20

7/10/20	NEW SHEET WITH PROFILE TO CONSTRUCT BASIN 2 FOR NEW SCHOOL ON SITE				
DATE	DESCRIPTION				
REVISION BLOCK					
PROJECT	SECTION/AREA				
HIGH SCHOOL #13	N/A				
PARCEL	102, 349, 235				
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
18 & 24	R-12	42 & 43	SIXTH	606901	
13 & 19	RSO MXD-3	SA-8, MXD-3			
WATER CODE	SEWER CODE				

BASIN #2 (SWM #16) CL DAM PROFILE
REVISED SITE DEVELOPMENT PLAN
 FOR
CHASE PROPERTY
AT MISSION ROAD
 8420 WASHINGTON BLVD
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ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
 PARCEL Nos.: 102, 349, 235
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 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 18 OF 39



(TEMPORARY SWM)
RISER H513 R-10 DETAIL
 SCALE: 1" = 2'

- STRUCTURE R-10 NOTES**
1. STRUCTURE MATERIAL FOR ALL WALLS AND BASE SHALL BE AIR-ENTRAINED 4,500 PSI CONCRETE.
 2. REINFORCEMENT SHALL BE DEFORMED STEEL, FREE OF RUST, AND MEET ASTM A615, GRADE 60, WITH 2" COVER EXCEPT AS SHOWN.
 3. REINFORCEMENT IS PARTIALLY SHOWN AND IS TYPICAL FOR EACH RISER WALL, BASE, WING WALLS, FOOTING AND TOP SLAB. THE STRUCTURE SHALL BE REINFORCED THROUGHOUT.
 4. HORIZONTAL REBAR SHALL EXTEND INTO THE ADJACENT RISER WALL WITH A 1'-6" L-SHAPED OVERLAP. THE RISER HORIZONTAL REBAR SHALL ALSO EXTEND 1'-6" MIN. INTO THE WING WALLS.
 5. VERTICAL REBAR SHALL EXTEND INTO BOTTOM OF BASE WITH A 1'-6" L-SHAPE OVERLAP.
 6. CHAMFER EXPOSED EDGES 1/2" X 1/2".
 7. THE WEIR AND LOW FLOW ORIFICE SHALL HAVE A REMOVABLE, GALVANIZED AND PAINTED TRASH RACK (SEE DETAIL).
 8. SLOPE RISER BOTTOM 2% MIN. TOWARDS OUTFALL.
 9. ALL CONNECTIONS MUST BE WATERTIGHT. IF RISER IS PRECAST, CONTRACTOR SHALL INSTALL 6" THICK PROJECTION CONCRETE COLLAR AROUND 48" RCCP OUTFALL, EXTENDING 12" BEYOND O.D. AND REINFORCE WITH 4"x4" WWF. APPLY NON-SHRINK GROUT TO SEAL COLLAR TO RISER, OR USE A-LOK PIPE GASKETS.
 10. PROVIDE MANHOLE STEPS PER HOCO. STD. DETAIL G-5.21.
 11. PLACE A STANDARD 2 FT Ø HOWARD CO. SIDEWALK STORM DRAIN F&C IN TOP SLAB.
 12. THE TOP SLAB SHALL NOT BE STRUCTURALLY ATTACHED TO THE VERTICAL RISER WALLS.
 13. IF RISER IS SUPPLIED IN SECTIONS, THE JOINTS SHALL BE WATERTIGHT PER RISER JOINT DETAIL. BOLT SECTIONS TOGETHER AT EACH JOINT WITH THREE (3) RUSTPROOF, 2" X 6" (1/4" THICK) FLAT BAR CONNECTIONS WITH 1/2" BOLTS EMBEDDED IN TO RISER.
 14. USE PROVIDED DIMENSIONS; DO NOT SCALE DRAWINGS.
 15. THE CIRCUMFERENCE OF THE RISER LOW FLOW ORIFICE ON THE UPSTREAM (POND SIDE) SHALL BE ROUNDED (1/2" RADIUS±).

RISER ROAD R-10 DETAIL
 SCALE: 1" = 2'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2055

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDC.

Signature: *Stephanie J. Tuite* DATE: 7/14/20
 SIGNATURE OF ENGINEER DATE

DEVELOPER'S CERTIFICATE
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *Daniel Lubeley* DATE: 7/14/20
 SIGNATURE OF DEVELOPER PRINTED NAME OF DEVELOPER DATE

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. 38386, EXPIRATION DATE: JANUARY 12, 2022.

Signature: *Stephanie J. Tuite* DATE: 7/14/20
 STEPHANIE J. TUITE, RLA, P.E., LEED AP BOARD

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

Signature: _____ P.E. No. _____ DATE: _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE 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.

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 9020 MENDENHALL COURT
 SUITE 'C'
 COLUMBIA, MARYLAND 21045
 Attention: DANIEL LUBELEY
 410-313-6805

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *Maura Kendall* DATE: 8/5/20
 Director, Department of Planning and Zoning

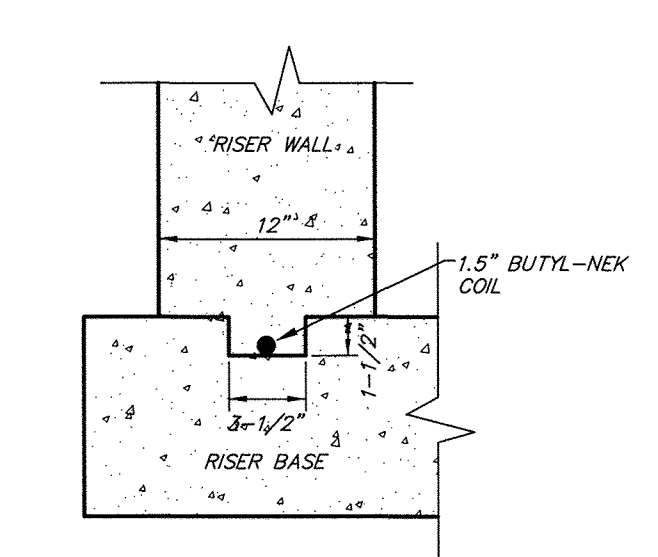
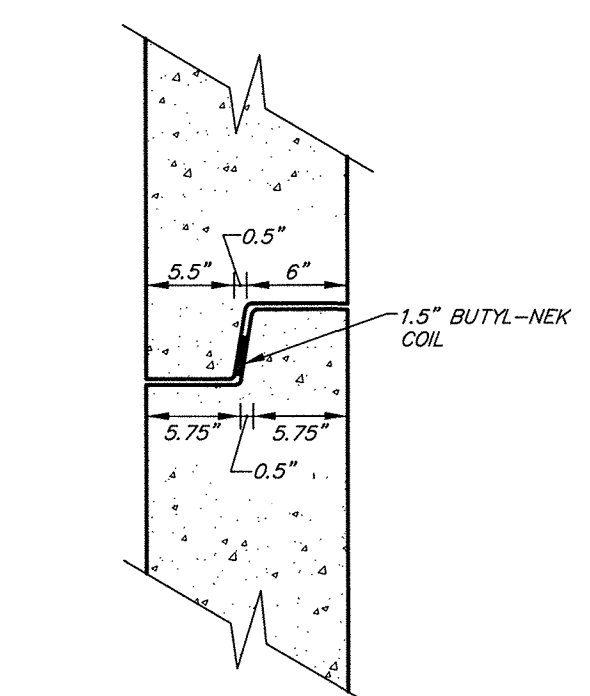
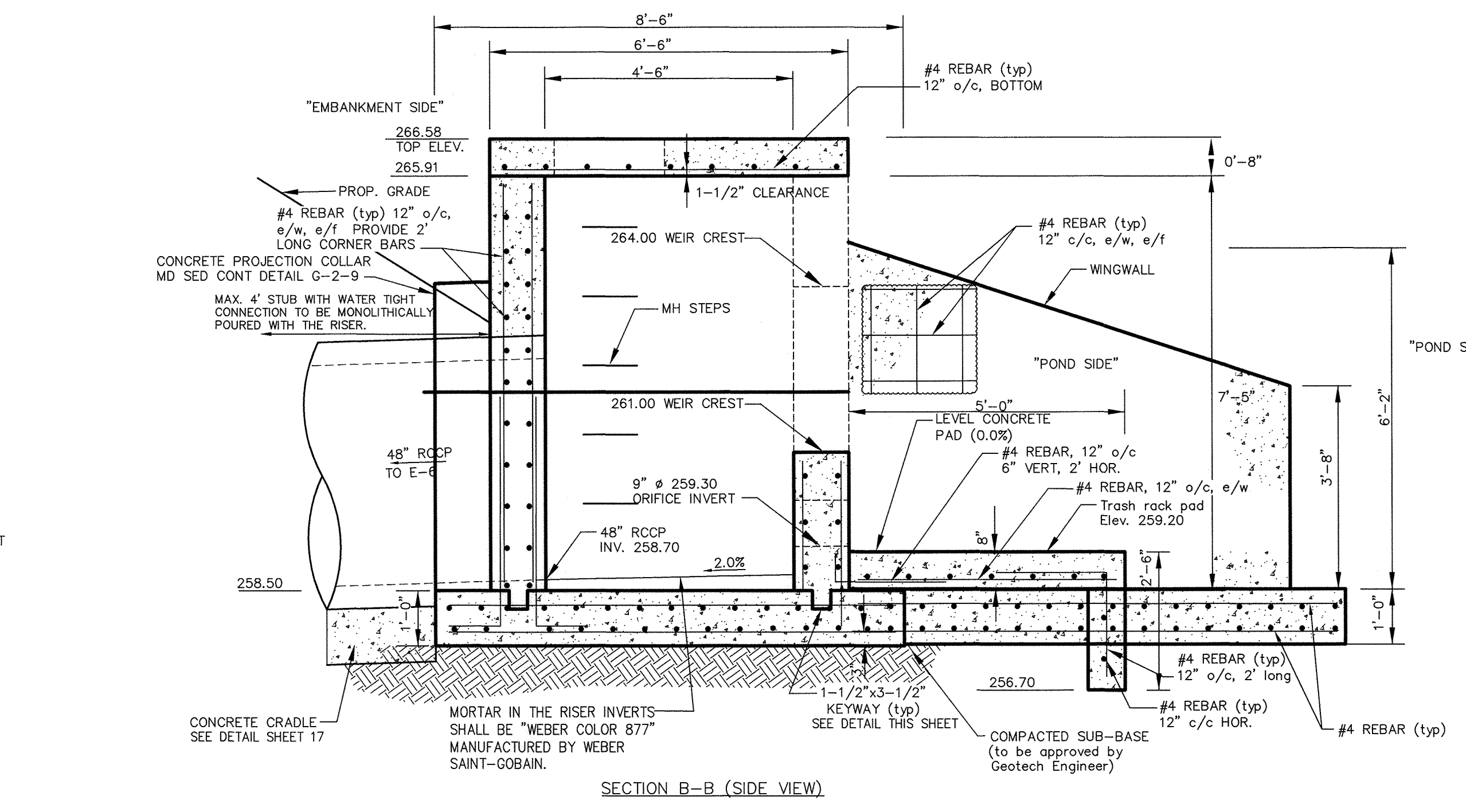
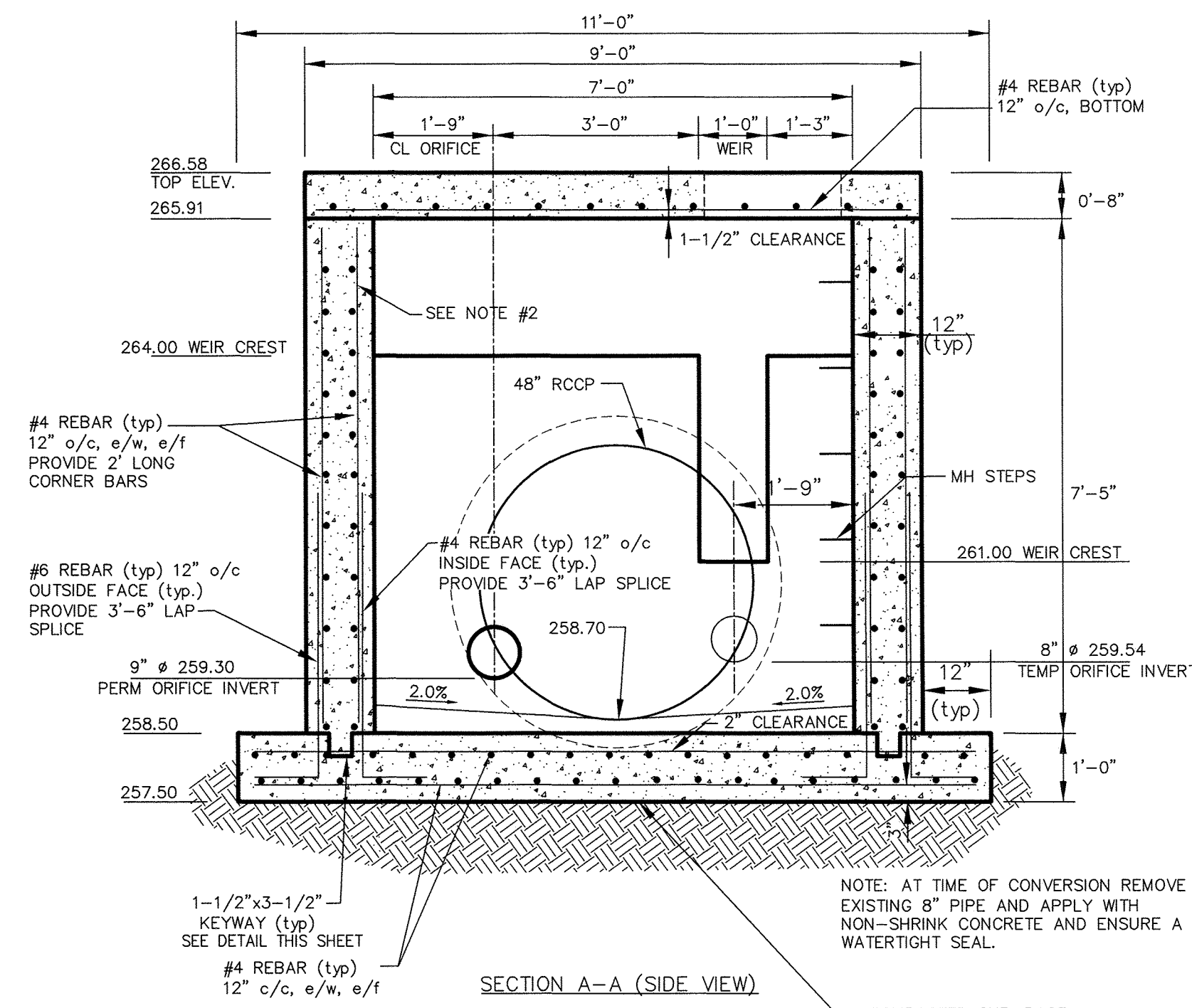
Signature: *Daniel Lubeley* DATE: 7/29/20
 Chief, Development Engineering Division

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 No. 38386
 7/14/20

7/10/20	NEW SHEET OF DETAILS TO CONSTRUCT BASIN 2 FOR NEW SCHOOL ON SITE
DATE	DESCRIPTION
REVISION BLOCK	
PROJECT	SECTION/AREA
HIGH SCHOOL #13	N/A
PARCEL	102, 349, 235
PLAT NOS.	BLOCK NO.
18 & 24	R-2
13 & 19	RSA-8 MXD-3
TAX MAP	ELEC. DIST.
42 & 43	SIXTH
CENSUS TR.	606901
WATER CODE	SEWER CODE
----	----

BASIN #2 (SWM #16) R-10 DETAILS
REVISED SITE DEVELOPMENT PLAN
 FOR
CHASE PROPERTY
AT MISSION ROAD
 8420 WASHINGTON BLVD
 JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
 PARCEL NOS.: 102, 349, 235
 TAX MAP No.: 42 & 43 GRID No.: 24 & 19
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 19 OF 39



(PERMANENT SWM)
RISER HS13 R-10 DETAIL
 SCALE: 1" = 2'

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

Signature: *Stephanie J. Toite* DATE: 7/14/20
 SIGNATURE OF ENGINEER DATE

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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/WE HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

Signature: *Daniel Lubeley* DATE: 7/14/20
 SIGNATURE OF DEVELOPER PRINTED NAME OF DEVELOPER DATE

"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. 38386, EXPIRATION DATE: JANUARY 12, 2022."

Signature: *Stephanie J. Toite* DATE: 7/14/20
 STEPHANIE J. TOITE, P.E., LEED AP BC&D

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

Signature: *Maury Kendall Fore* DATE: 8/17/2020
 Director - Department of Planning and Zoning

Signature: *Daniel Lubeley* DATE: 7/14/20
 Chief, Division of Land Development

Signature: *Daniel Lubeley* DATE: 7/29/20
 Chief, Development Engineering Division

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 9020 MENDENHALL COURT
 SUITE 'C'
 COLUMBIA, MARYLAND 21045
 Attention: DANIEL LUBELEY
 410-313-6805

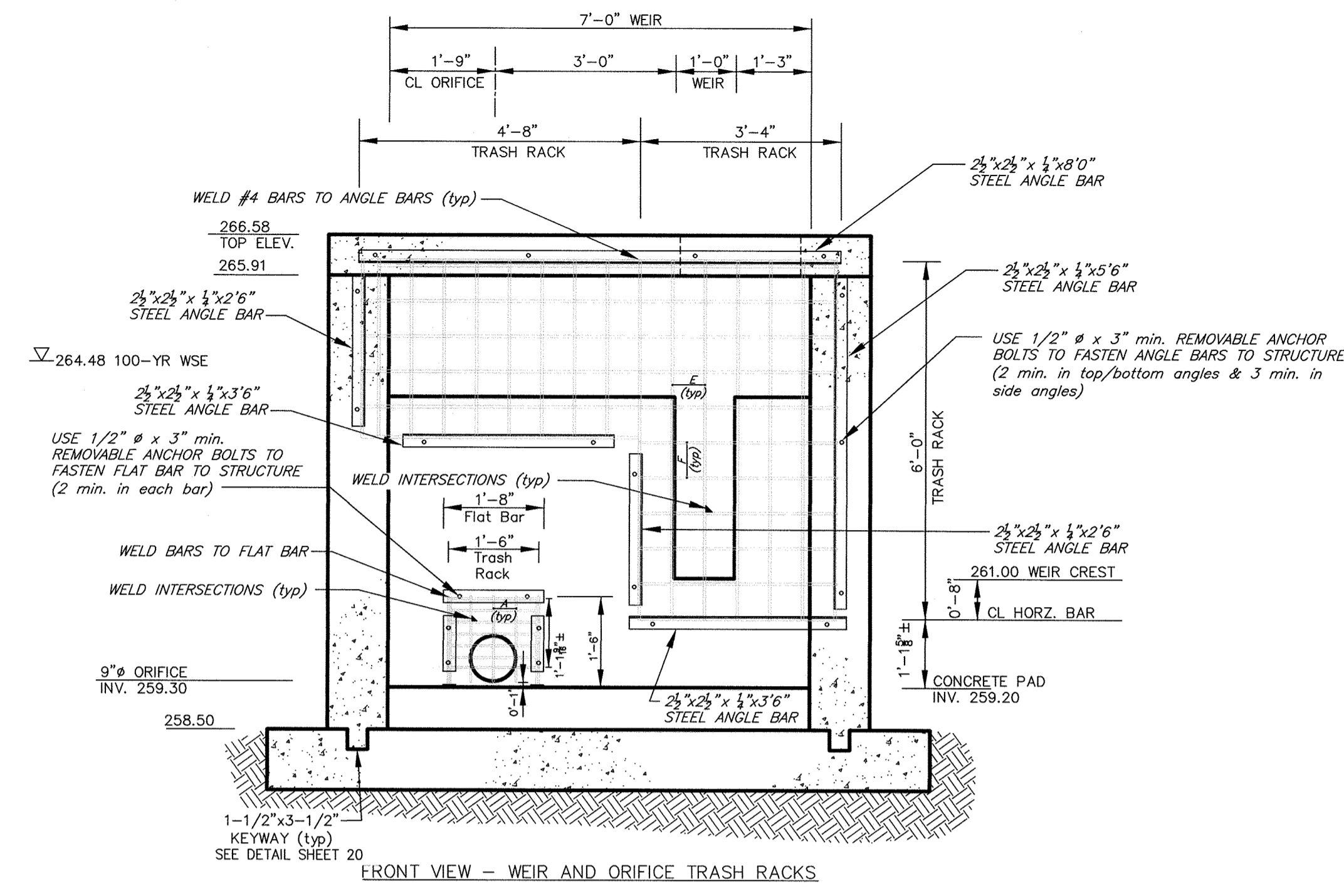
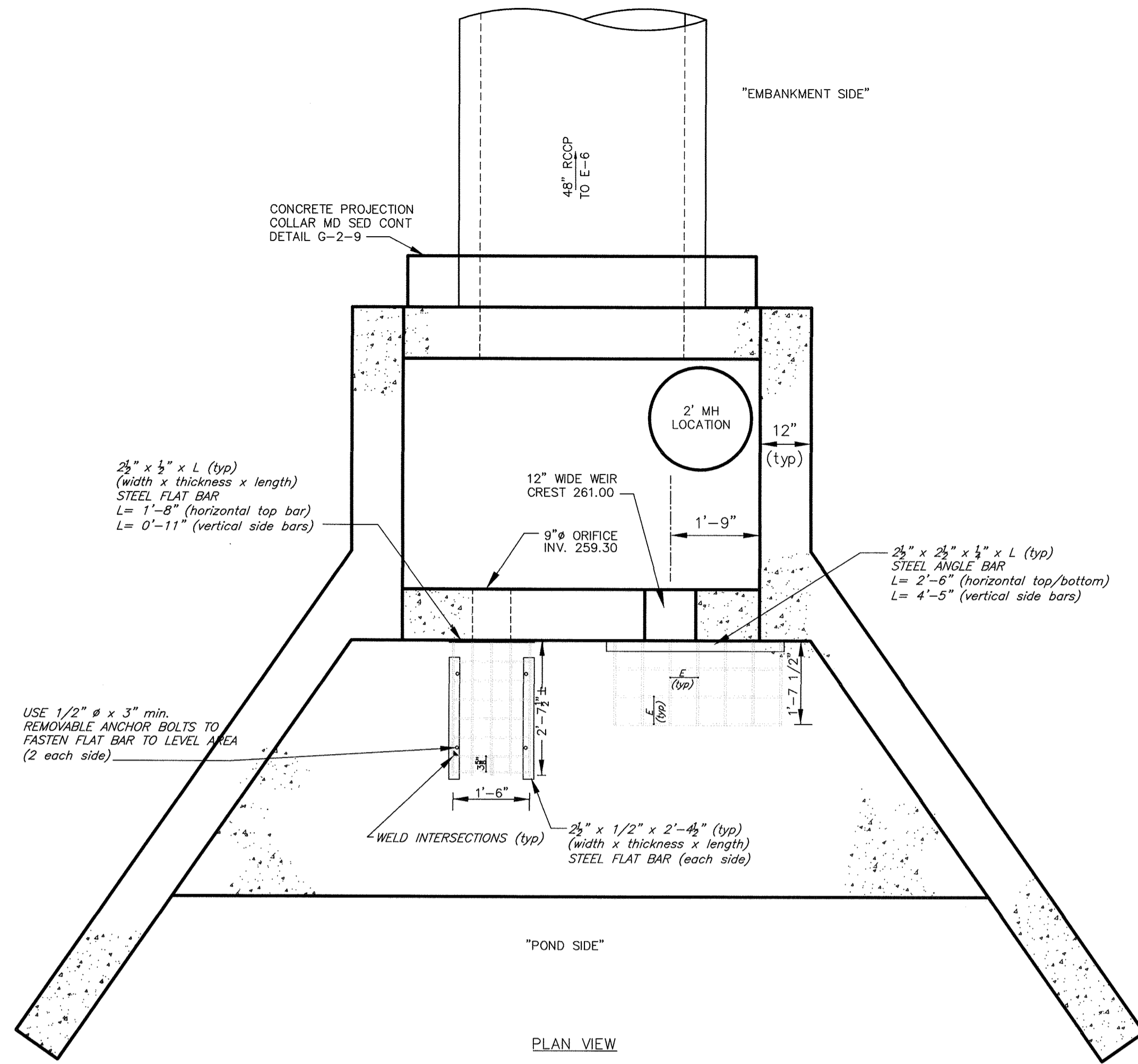
STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 No. 38386
 7/14/20

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
13 & 19	18 & 24	R-12 RSC MXD-3 RSA-8 MXD-3	42 & 43	SIXTH	606901
PROJECT		SECTION/AREA	PARCEL		
HIGH SCHOOL #13		N/A	102, 349, 235		
DATE: 7/10/20					
DESCRIPTION: NEW SHEET OF DETAILS TO CONSTRUCT BASIN 2 FOR NEW SCHOOL ON SITE					
REVISION BLOCK					
WATER CODE: --- SEWER CODE: ---					

BASIN #2 (SWM #16) R-10 DETAILS
 REVISED SITE DEVELOPMENT PLAN
 FOR
CHASE PROPERTY AT MISSION ROAD
 8420 WASHINGTON BLVD
 JESSUP, MARYLAND 20794

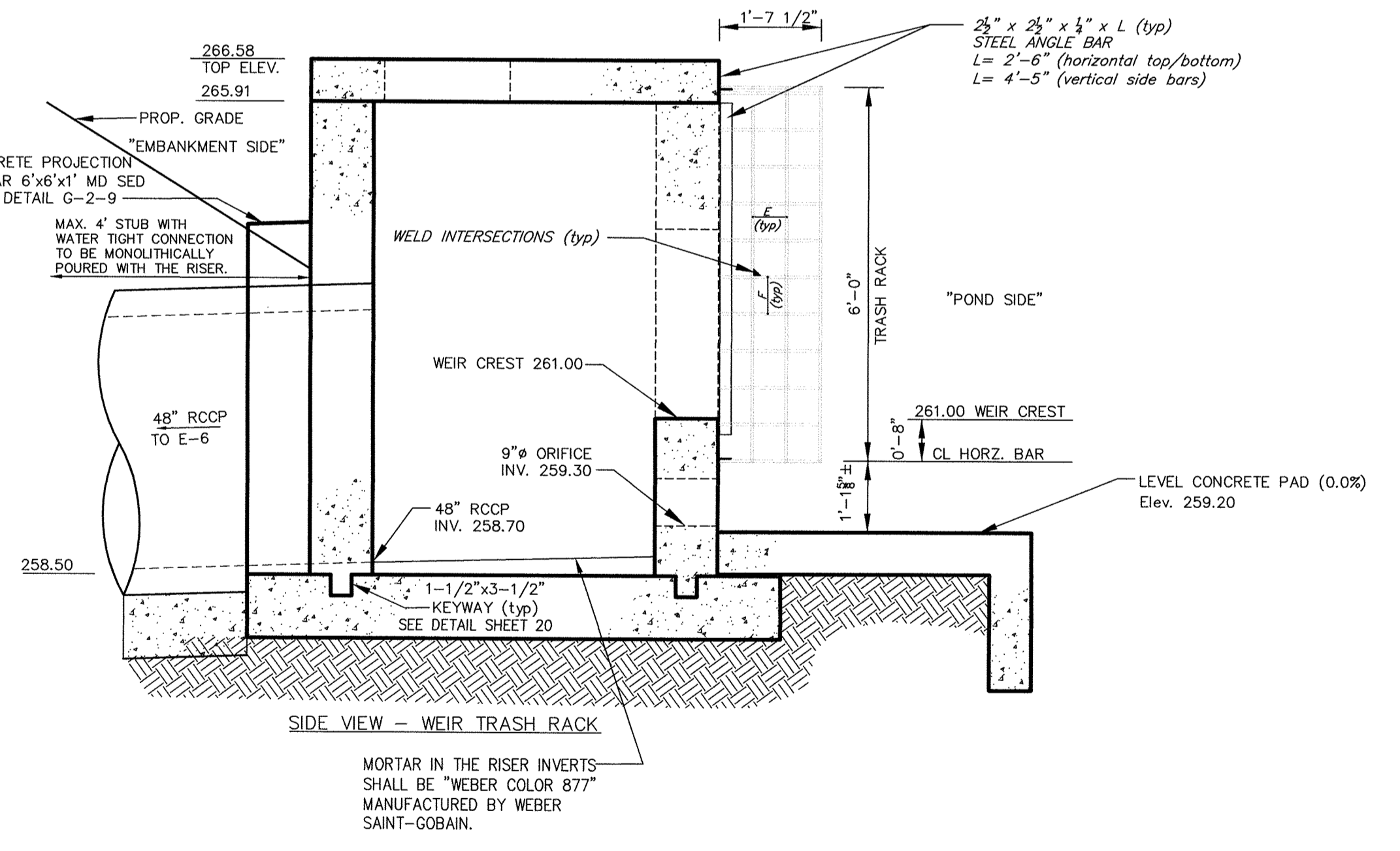
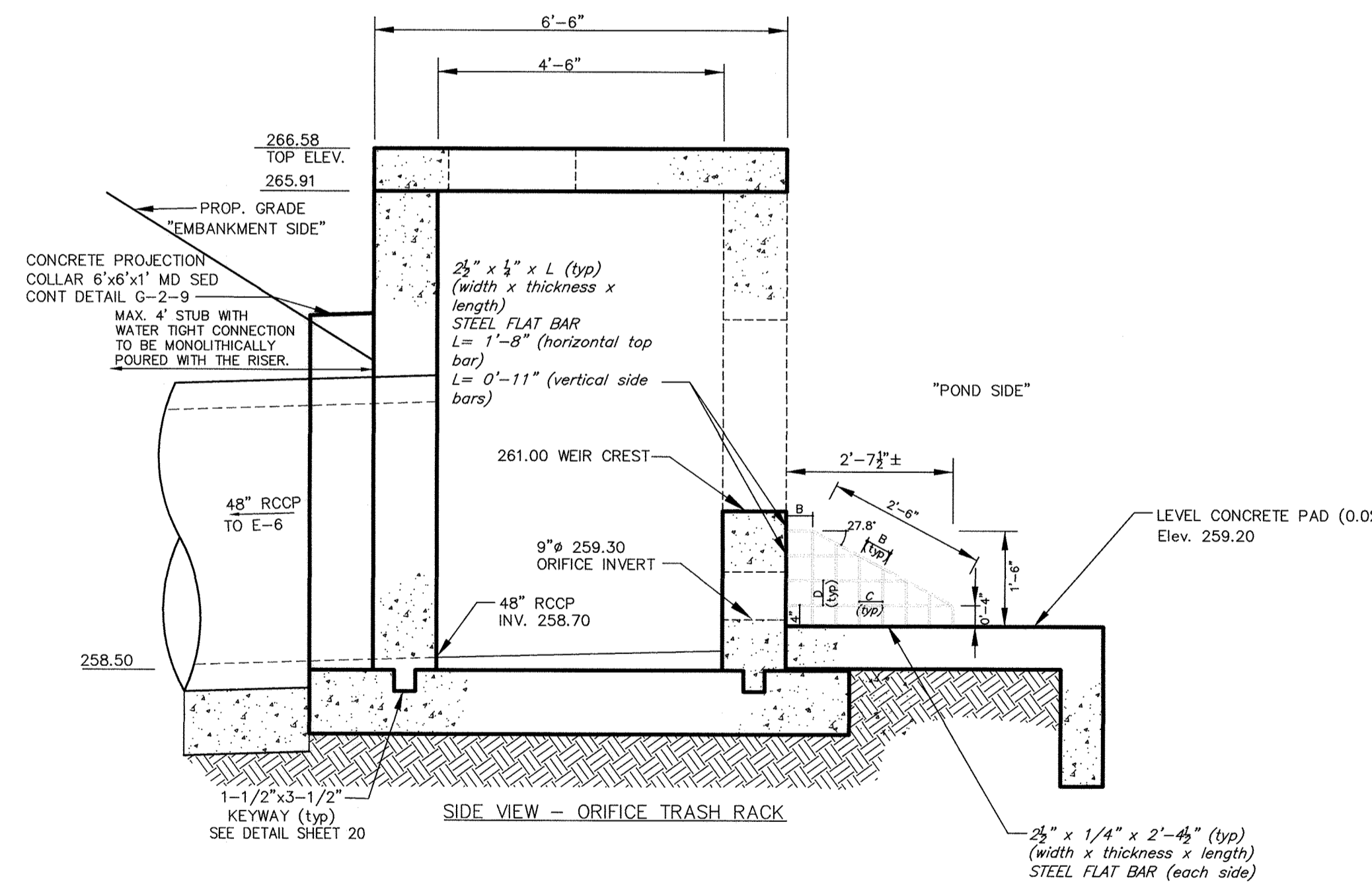
ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
 PARCEL Nos.: 102, 349, 235
 TAX MAP No.: 42 & 43 GRID No.: 24 & 19
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 20 OF 39

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2855



NOTE
ALL METAL SURFACES SHALL BE GALVANIZED AND PAINTED WITH TWO (2) COATS OF BATTLESHIP GRAY PAINT.

TRASH RACK
H5-13 R-10 DETAIL (SWM #16)
SCALE: 1" = 2'



TRASH RACK
H5-13 R-10 DETAIL (SWM #16)
SCALE: 1" = 2'

TRASH RACK NOTES

- SEE STORMWATER MANAGEMENT RISER DETAIL ROAD R-1 FOR STRUCTURE DIMENSIONS NOT SHOWN ON THIS DETAIL.
- THIS DETAIL IS FOR TRASH RACK CONSTRUCTION ONLY.
- THE TRASH RACK SHALL BE GALVANIZED AFTER FABRICATION AND PAINTED "BATTLESHIP GRAY".
- TRASH RACK SHALL CONFORM TO HOWARD COUNTY AND MD-378 (SMALL POND DESIGN) SPECIFICATIONS.
- REBAR SHALL BE #4 SMOOTH STEEL BARS.
- THE TRASH RACK FABRICATOR MAY SUBSTITUTE ANGLED BARS FOR FLAT BARS.
- THE WEIR TRASH RACK SHALL BE INSTALLED SO AS TO EXTEND 8" BELOW THE WEIR CREST WITH 12" CLEARANCE ABOVE THE CONCRETE PAD.
- THE RISER SHALL BE FIELD-MEASURED PRIOR TO THE TRASH RACK FABRICATION TO ENSURE AN EXACT TRASH RACK FIT. THE FABRICATOR CAN MAKE MINOR ADJUSTMENTS TO THE TRASH RACK DIMENSIONS (1/2") TO MEET INTENDED AND OVERALL DIMENSIONS. TRASH RACKS ARE CENTERED ON OPENINGS.
- ORIFICE TRASH RACK: NO DIAGONAL OPENING SHALL EXCEED 6.75".
- WEIR TRASH RACK: NO DIAGONAL OPENING SHALL EXCEED 9".
- ORIFICE TRASH RACK VERTICAL AND SLOPED BARS TO BE ON OUTSIDE/ABOVE INNER BARS AS SHOWN.
- WEIR TRASH RACK BOTTOM DIMENSION CALCULATION:
WEIR FLOW AREA = 1.0' x (64.99 - 61.00) + 6' x (64.99 - 64.00) = 9.9 sf.
AREA UNDER TRASH RACK = 8' x 1.6' = 12.8; 12.8 sf > 9.9 sf. OK
- PLACE TOP SLAB BOLTS NEAR VERTICAL CENTER, 3" MIN. COVER.

BAR SPACING TABLE	
ORIFICE TRASH RACK	
DIMENSION	VALUE
A	4 1/2"
B	5"
C	4 3/8"
D	4 3/8"

BAR SPACING TABLE	
WEIR TRASH RACK	
DIMENSION	VALUE
E	6 1/2"
F	7"

ENGINEER'S CERTIFICATE

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STEPHANIE J. TUIITE, RILA, P.E., LEED AP BCD&D
DATE: 7/14/20

DEVELOPER'S CERTIFICATE

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DANIEL LUBELEY
DATE: 7/16/20

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Director, Department of Planning and Zoning
Date: 8/16/20
Date: 7-29-20

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6805



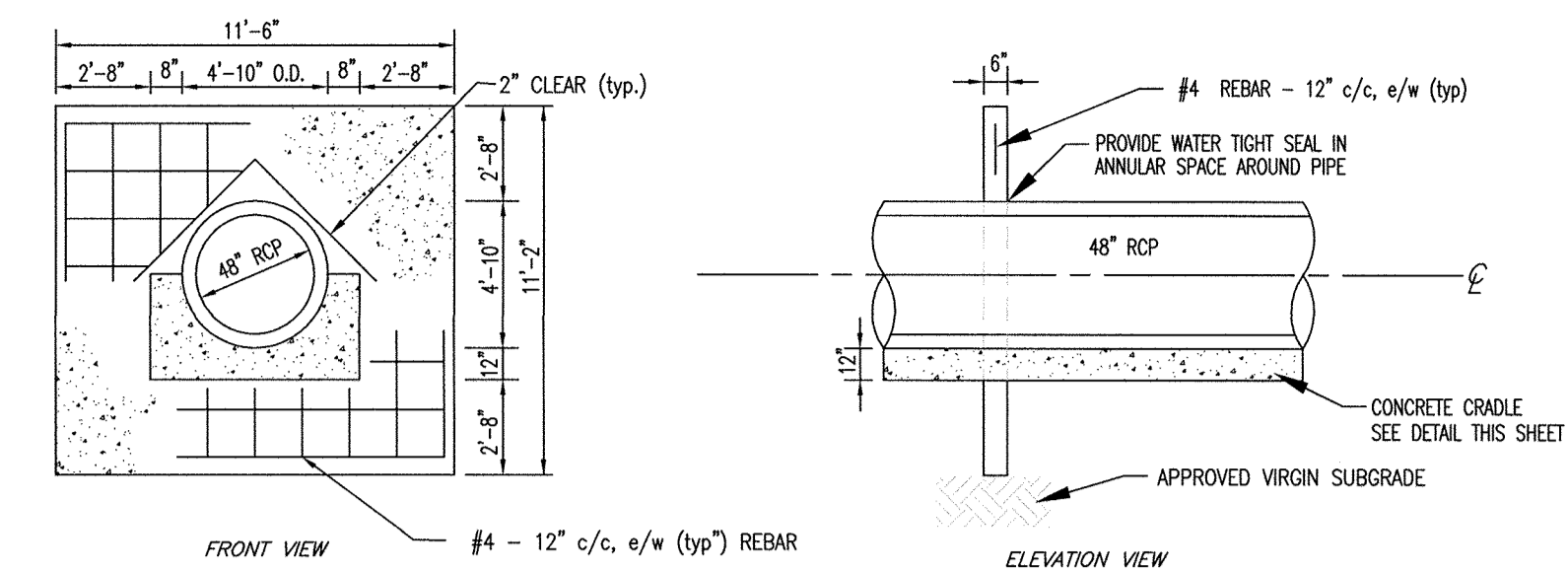
BASIN #2 (SWM #16) TRASH RACK DETAILS

REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY
AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794
ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 21 OF 39



SEDIMENT BASIN NOTES

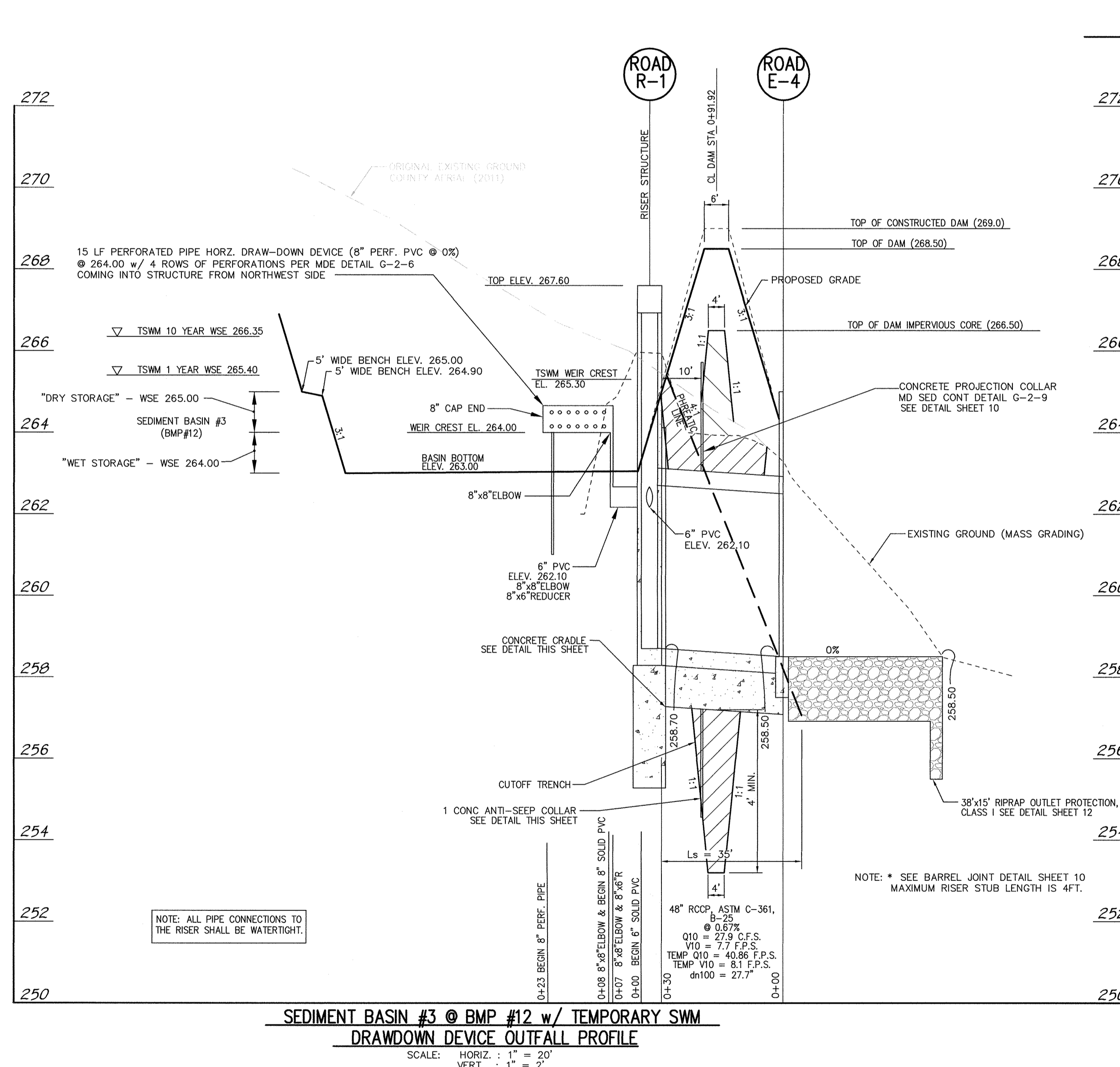
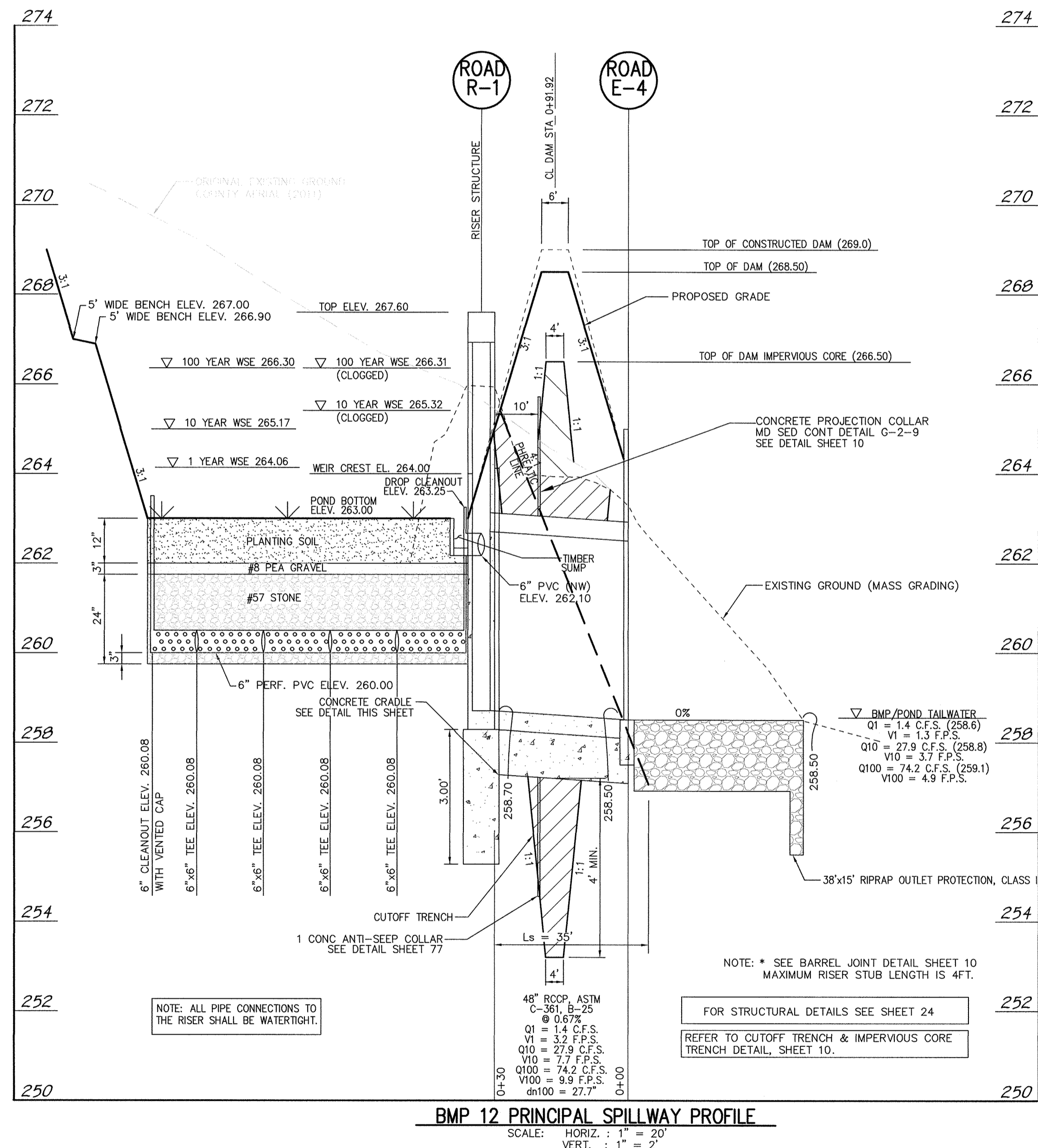
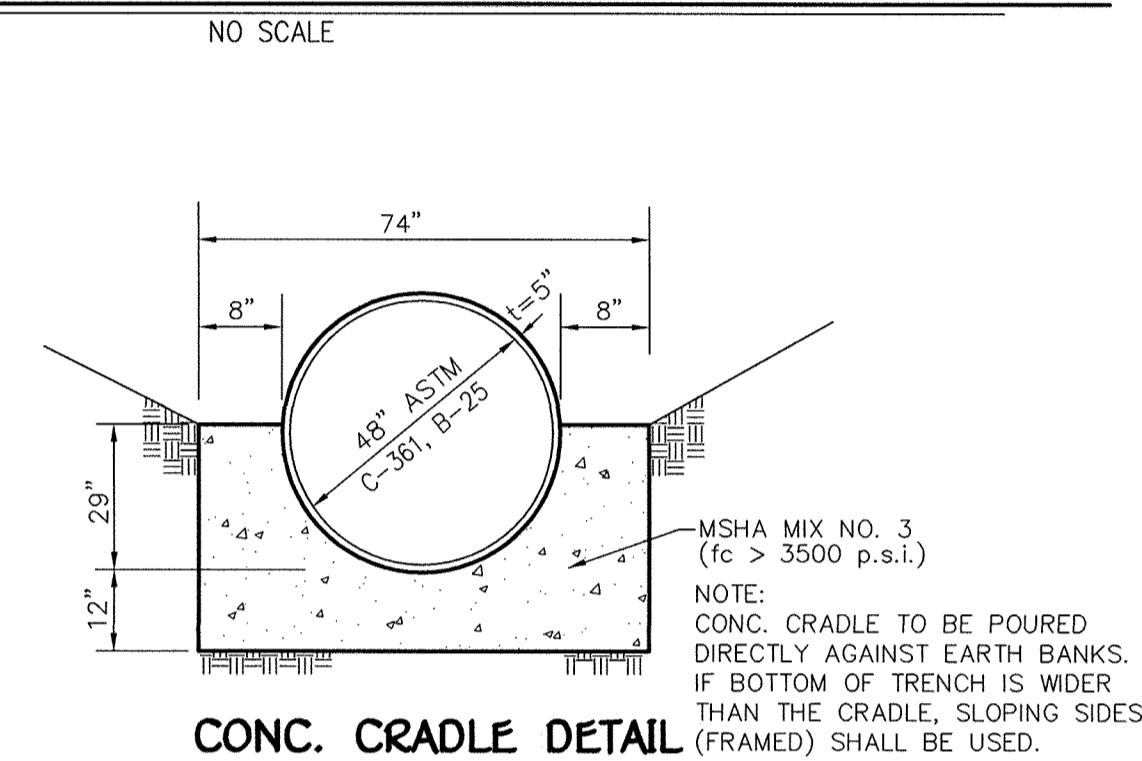
- The draw down device shall be constructed to N.R.C.S.'s Horizontal Drawdown Device Detail G-2-6. The perforations shall have a 1" diameter and spaced 6" apart as follows: 8" pipe with 4 rows of perforations, 10" pipe with 6 rows of perforations. Minimum perforated area per LF of pipe: 6.28 sf for 8" pipe and 9.42 sf for 10" pipe.
- The drawdown device pipe shall be evenly and adequately supported per Drawdown Device Detail G-2-6 (with aggregate or posts).
- The drawdown device connection to the riser shall be watertight (i.e., the annular area between the drawdown device and orifice shall be temporarily sealed (with galvanized plate/gasket, or mortar, or other suitable methods that allow easy conversion to the final permanent SWM facility).
- See the SWM plans for other embankment/riser information not shown on this sheet.
- Install the permanent weir trash rack during construction. Remove and reinstall as needed when basin is converted to a permanent SWM facility.
- Dewater basin and maintain drawdown device when basin drain time exceeds 10 hours. Pump basin to an approved E&SC device.
- Drawdown pipe shall be Schedule 40 PVC or approved equl.



ANTI-SEEP COLLAR NOTES

- LOWER HALF OF COLLAR SHALL BE POURED CONCURRENTLY WITH THE CRADLE POUR.
- REBAR IS SHOWN SCHEMATICALLY AND SHALL BE PLACED THROUGHOUT THE ENTIRE COLLAR.
- PROVIDE A WATER TIGHT SEAL IN ANNULAR SPACE BETWEEN PIPE AND COLLAR USING MASTIC SEALER. USE A "A-LOK" JOINT SEAL PRODUCT.
- LOCATE COLLAR 2' MINIMUM FROM JOINT AND MAINTAIN 10' MINIMUM SEPARATION FROM COLLAR TO COLLAR OR COLLAR TO RISER.
- PLACE TWO (2) ADDITIONAL REBARS (6' MIN. LONG) AT RIGHT ANGLES TO REBAR GRID 2" FROM PIPE O.D.
- COLLAR MATERIAL SPECIFICATIONS SHALL MEET THE SAME AS THAT FOR THE CONCRETE RISER (SWM OUTFALL) STRUCTURE.

ANTI-SEEP COLLAR DETAIL



ENGINEER'S CERTIFICATE
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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. 38386, EXPIRATION DATE: JANUARY 12, 2022.

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

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director, Department of Planning and Zoning
Date: 8/15/2020

Chief, Division of Land Development
Date: 7/29/2020

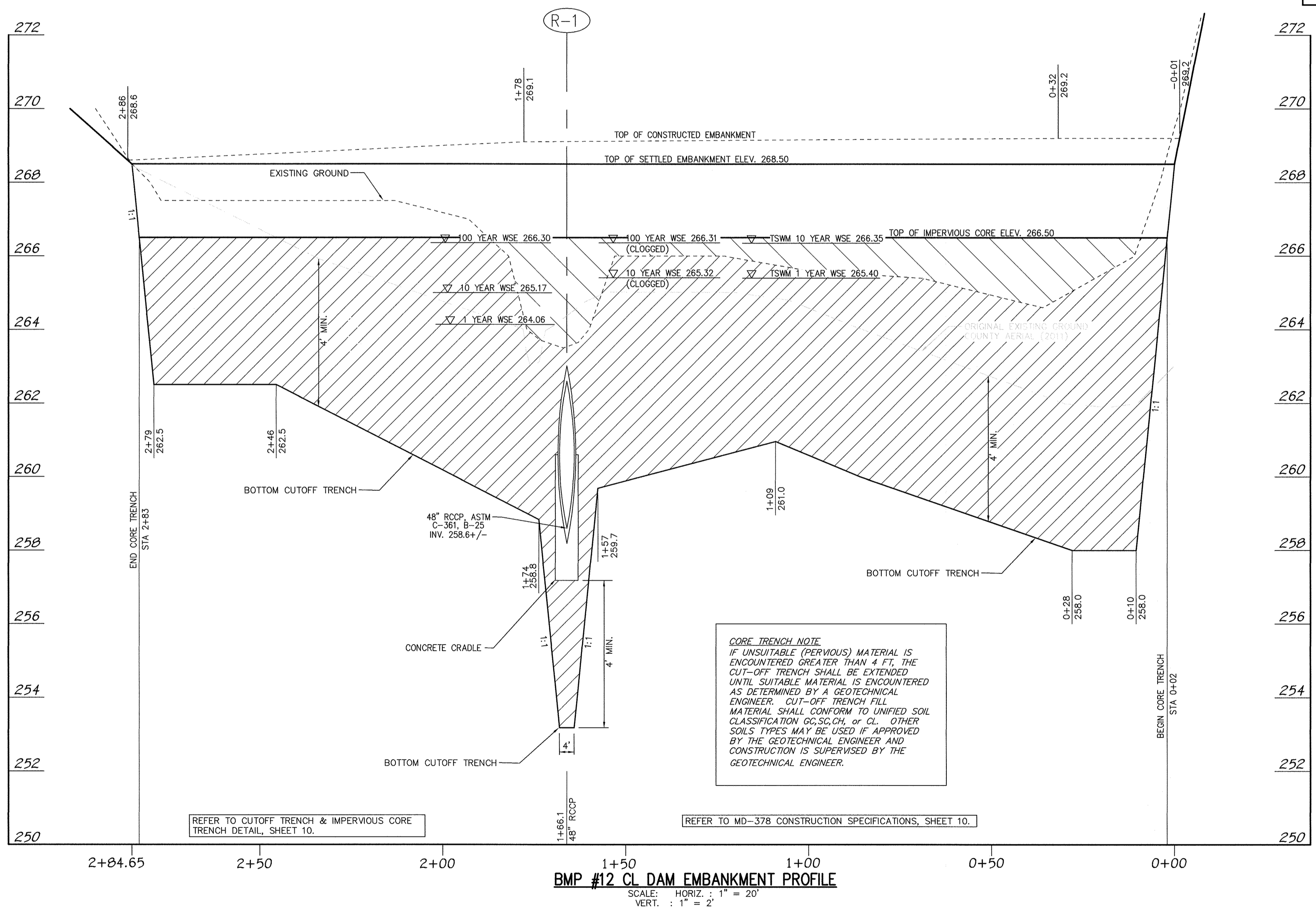
PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6805

STATE OF MARYLAND
Professional Engineer
Daniel Lubeley
7/14/20

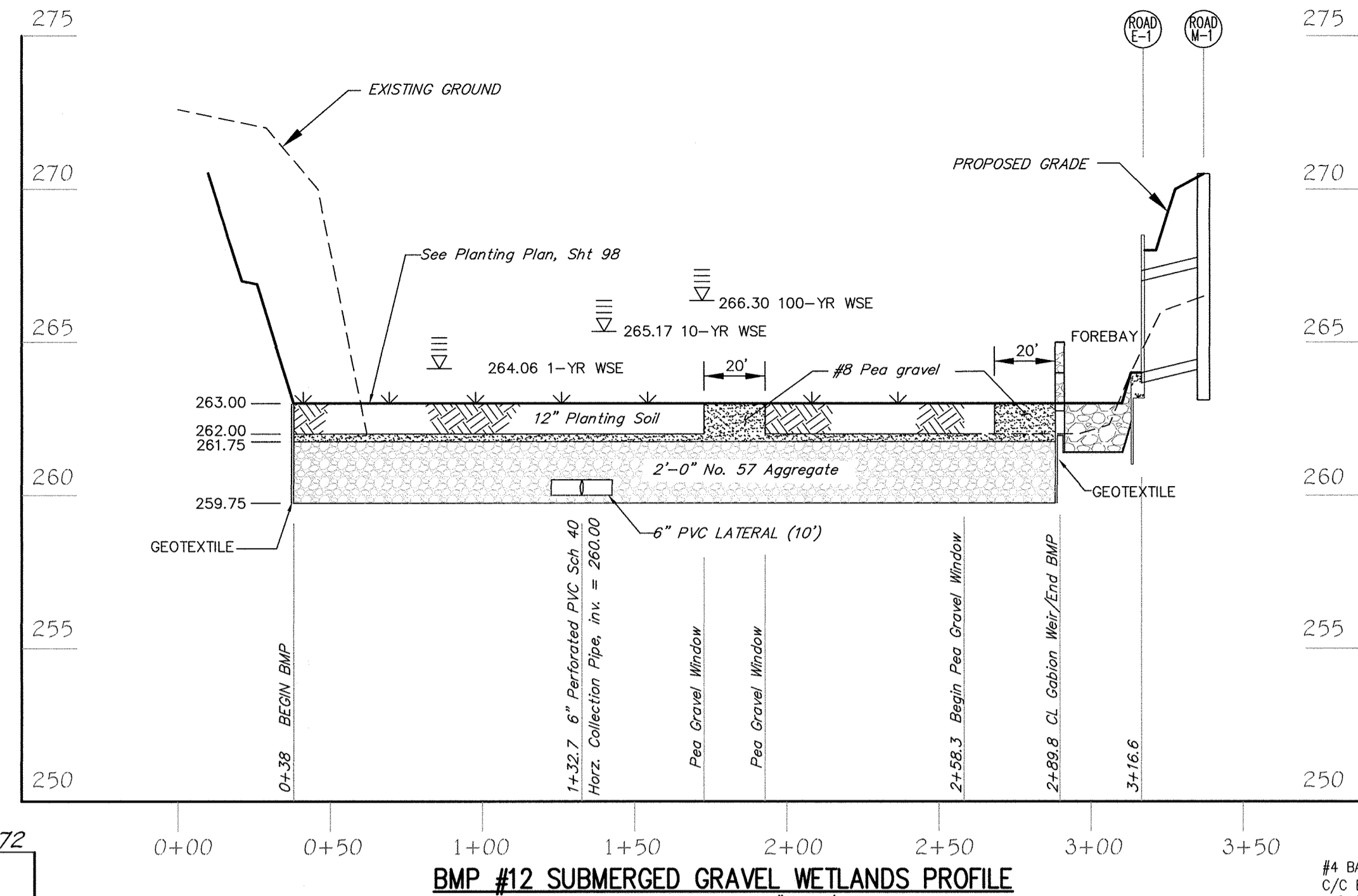
DATE	7/10/20	DESCRIPTION	NEW SHEET OF PROFILES AND DETAILS TO CONSTRUCT BASIN 3 FOR NEW SCHOOL ON SITE
REVISION BLOCK			
PROJECT	HIGH SCHOOL #13	SECTION/AREA	N/A
PLAT NOS.	18 & 24 13 & 19	ZONE	R-12 RSC MXD-3 RSA-8 MXD-3
TAX MAP	42 & 43	ELEC. DIST.	SIXTH
PARCEL	102, 349, 235	CENSUS TR.	606901
WATER CODE		SEWER CODE	

BASIN #3 (BMP #12) PRINCIPAL SPILLWAY PROFILE AND DETAILS
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794
ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 22 OF 39

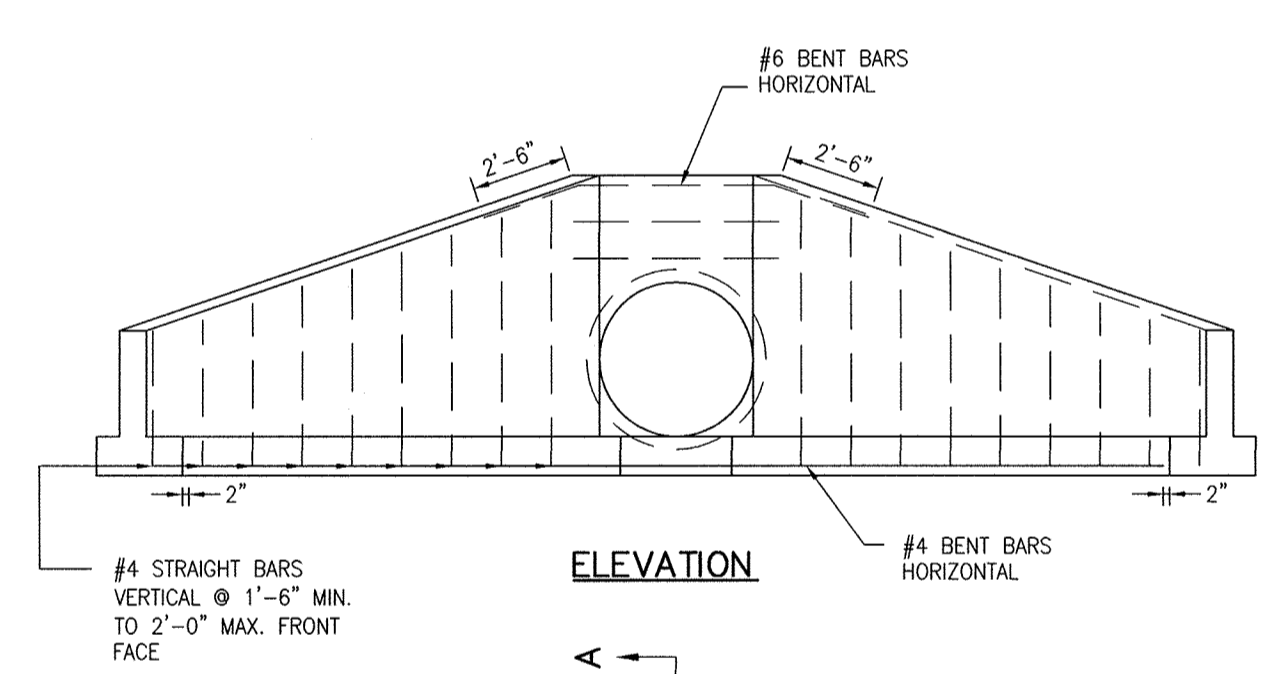
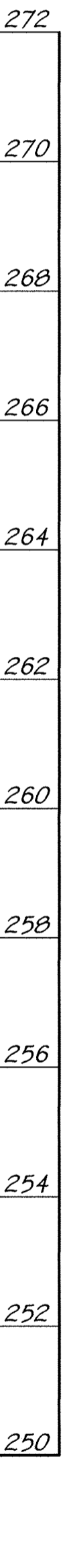
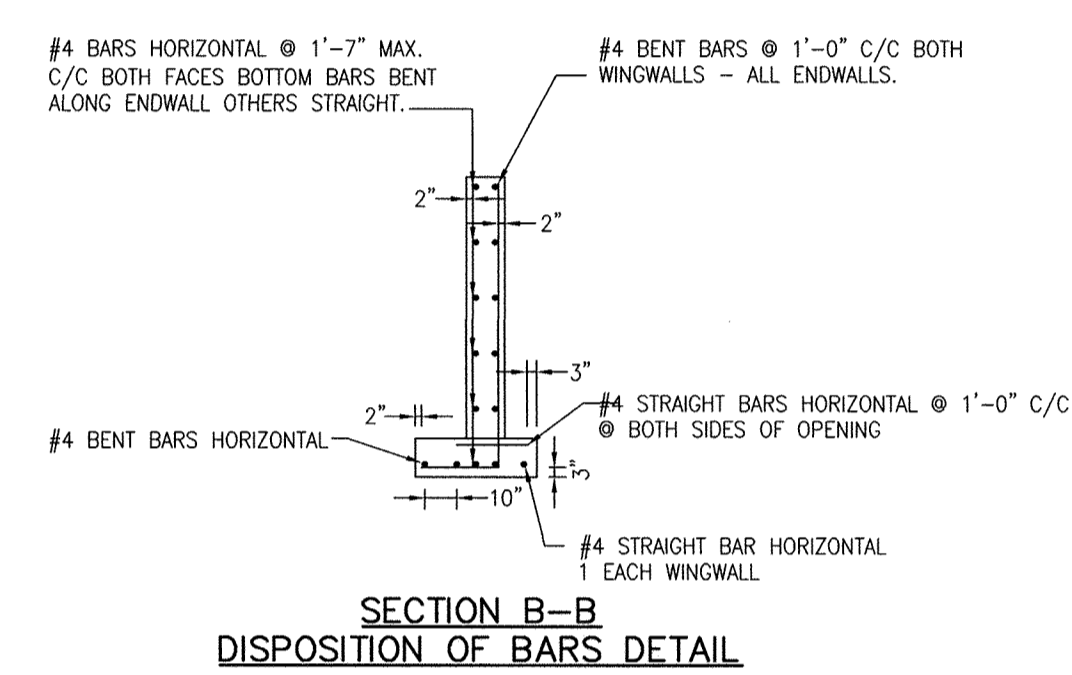
- See Sheet 77 for Profile through Principal Spillway and 6" horizontal collection pipe.
- See Sheet 76 for Bioretention Facility Notes and General SWM Notes.
- See Sheet 98 for BMP #12 planting plan.



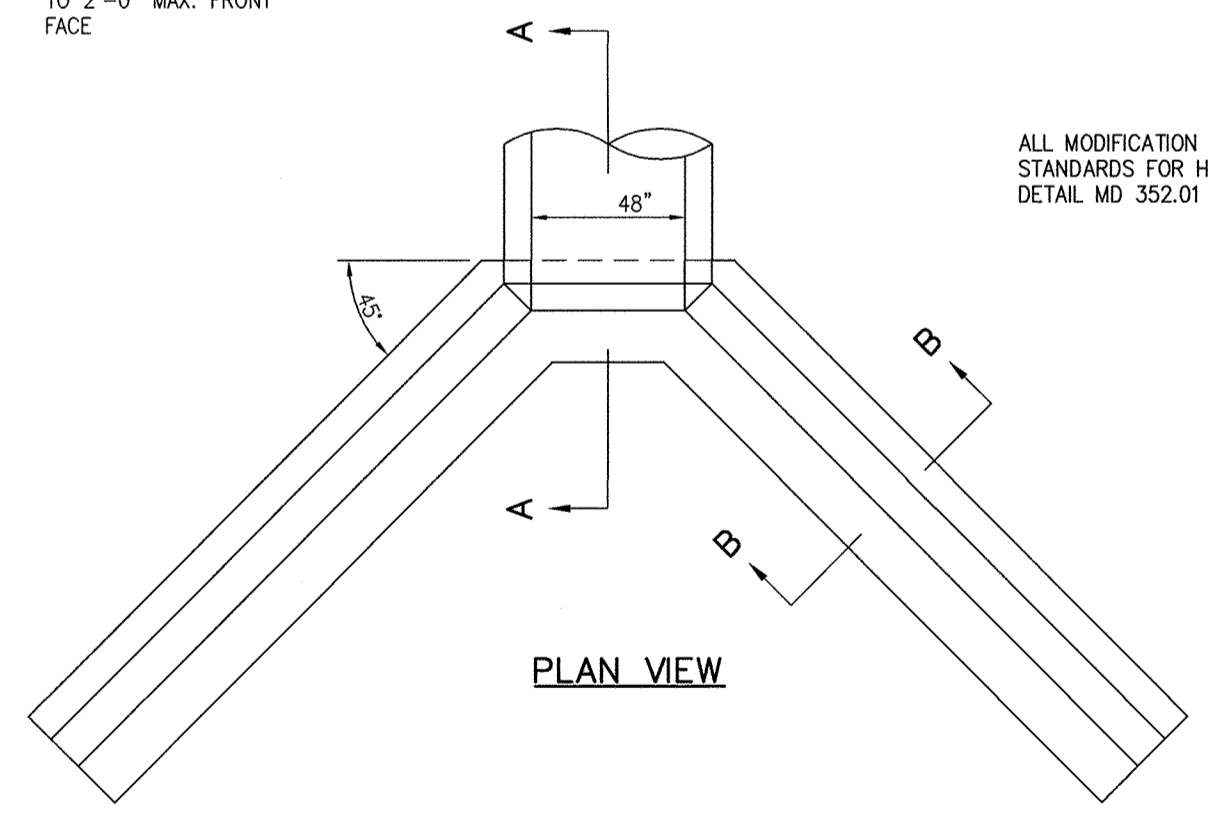
CORE TRENCH NOTE
 IF UNSUITABLE (PERVIOUS) MATERIAL IS ENCOUNTERED GREATER THAN 4 FT, THE CUT-OFF TRENCH SHALL BE EXTENDED UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY A GEOTECHNICAL ENGINEER. CUT-OFF TRENCH FILL MATERIAL SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, or CL. OTHER SOILS TYPES MAY BE USED IF APPROVED BY THE GEOTECHNICAL ENGINEER AND CONSTRUCTION IS SUPERVISED BY THE GEOTECHNICAL ENGINEER.



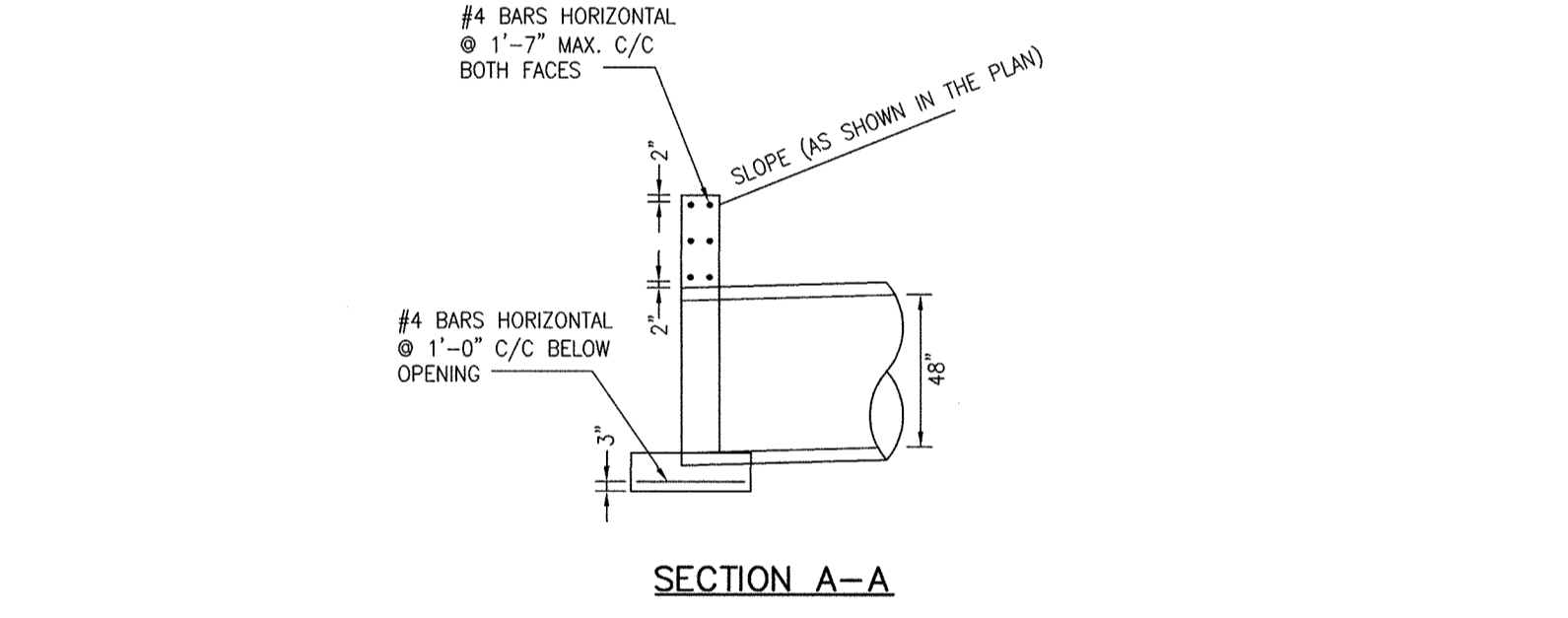
BMP #12 SUBMERGED GRAVEL WETLANDS PROFILE
 SCALE: HORIZ. : 1" = 40'
 VERT. : 1" = 4'



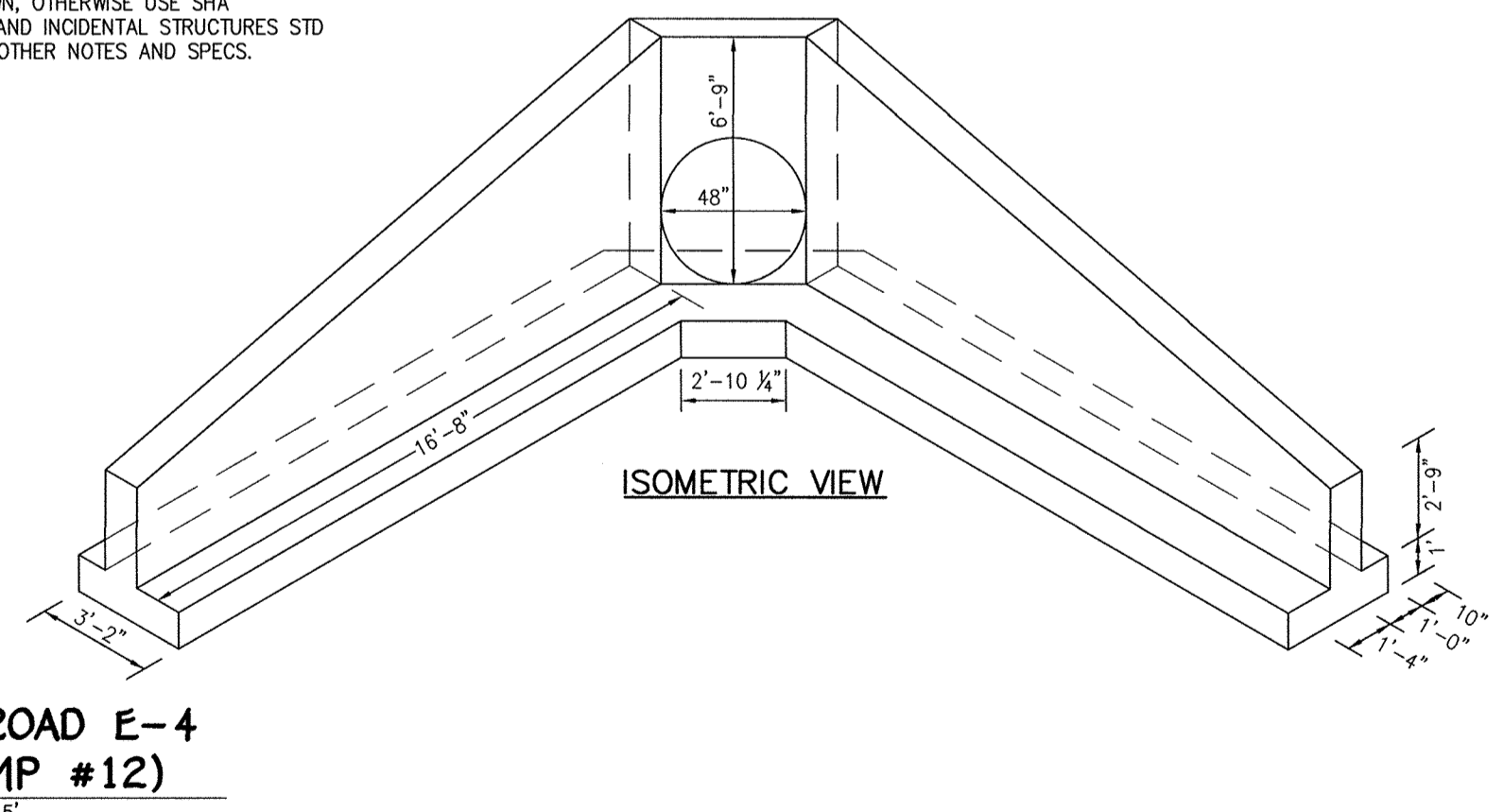
ELEVATION



PLAN VIEW



SECTION A-A



ISOMETRIC VIEW

HEADWALL ROAD E-4 DETAIL (BMP #12)
 SCALE: 1" = 5'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALDORNE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2855

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION." 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

Stephanie J. Ruite 7/14/20
 SIGNATURE OF ENGINEER DATE

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

Daniel Lubeley 7/15/20
 SIGNATURE OF DEVELOPER DATE

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. 38386, EXPIRATION DATE: JANUARY 12, 2022.

Stephanie J. Ruite 7/14/20
 SIGNATURE DATE

STEPHANIE J. RUIE, R.L.A., P.E., LEED AP BCAD

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

Daniel Lubeley 7/15/20
 SIGNATURE P.E. No. DATE:

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE 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.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Daniel Lubeley 8/5/20
 Director, Department of Planning and Zoning Date

Daniel Lubeley 7/29/20
 Chief, Division of Land Development Date

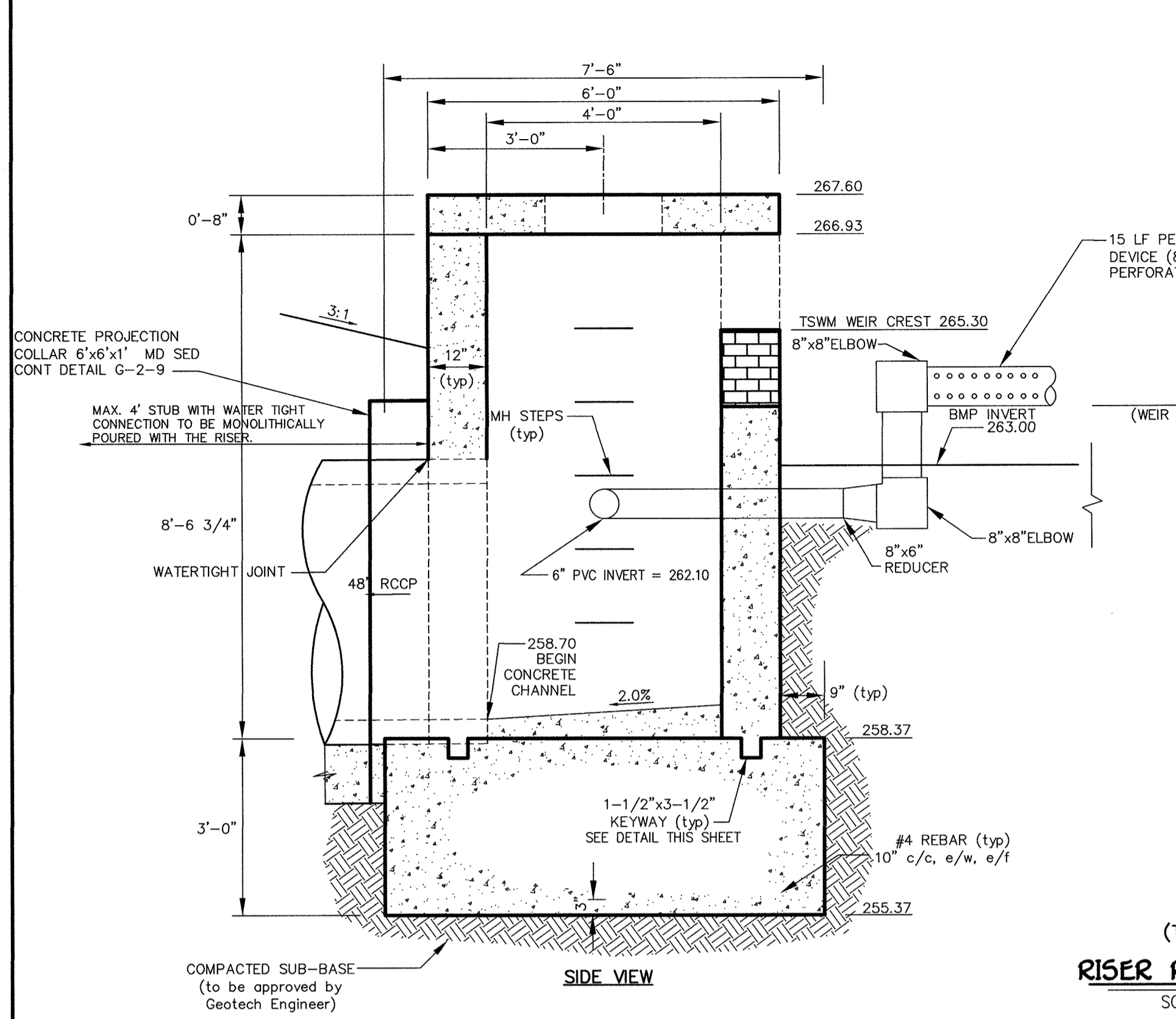
PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 9020 MENDENHALL COURT
 SUITE 'C'
 COLUMBIA, MARYLAND 21045
 Attention: DANIEL LUBELEY
 410-313-6805

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 LICENSE NO. 38386
 EXPIRES 1/12/2022
 7/14/20

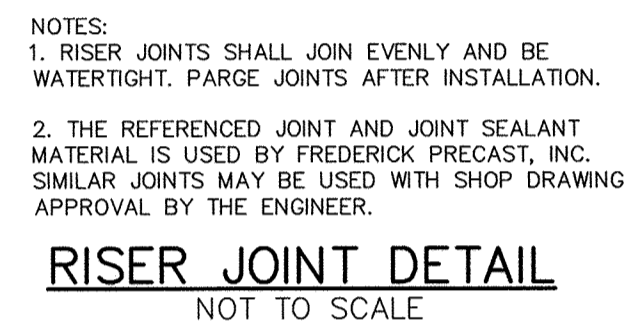
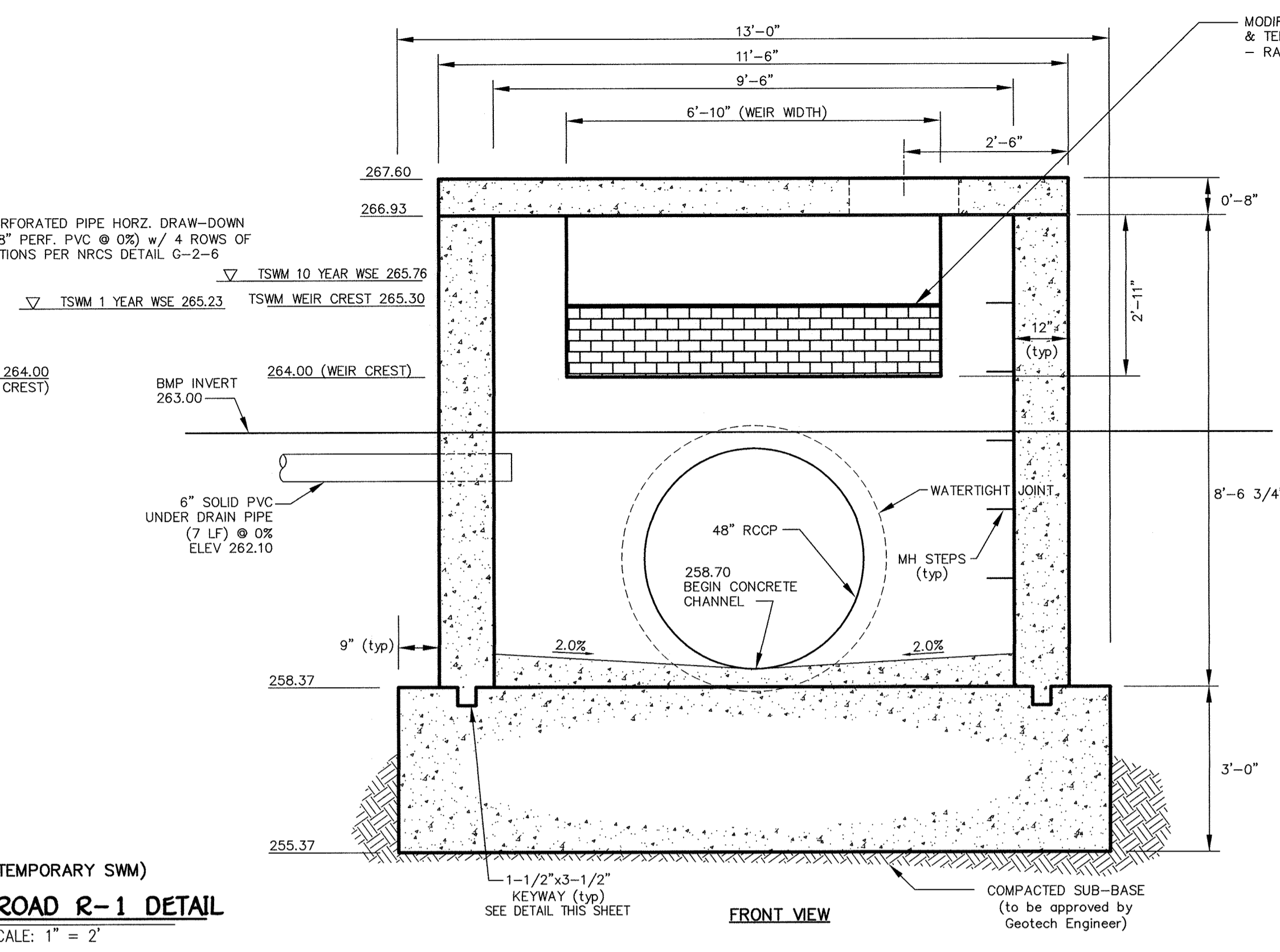
DATE	7/10/20	DESCRIPTION	NEW SHEET OF PROFILES AND DETAILS TO CONSTRUCT BASIN 3 FOR NEW SCHOOL ON SITE
REVISION BLOCK			
PROJECT	HIGH SCHOOL #13	SECTION/AREA	N/A
PLAT NOS.	BLOCK NO. 18 & 24 13 & 19	ZONE	R-12 RSC MXD-3 RSA-8 MXD-3
TAX MAP	42 & 43	ELEC. DIST.	SIXTH
CENSUS TR.	102, 349, 235	PARCEL	102, 349, 235
WATER CODE	---	SEWER CODE	---

Basin #3 (BMP #12) CL Dam Profile and Headwall Details
REVISED SITE DEVELOPMENT PLAN
 FOR
CHASE PROPERTY AT MISSION ROAD
 8420 WASHINGTON BLVD
 JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
 PARCEL Nos.: 102, 349, 235
 TAX MAP No.: 42 & 43 GRID No.: 24 & 19
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 23 OF 39



(TEMPORARY SWM)
RISER ROAD R-1 DETAIL
SCALE: 1" = 2'



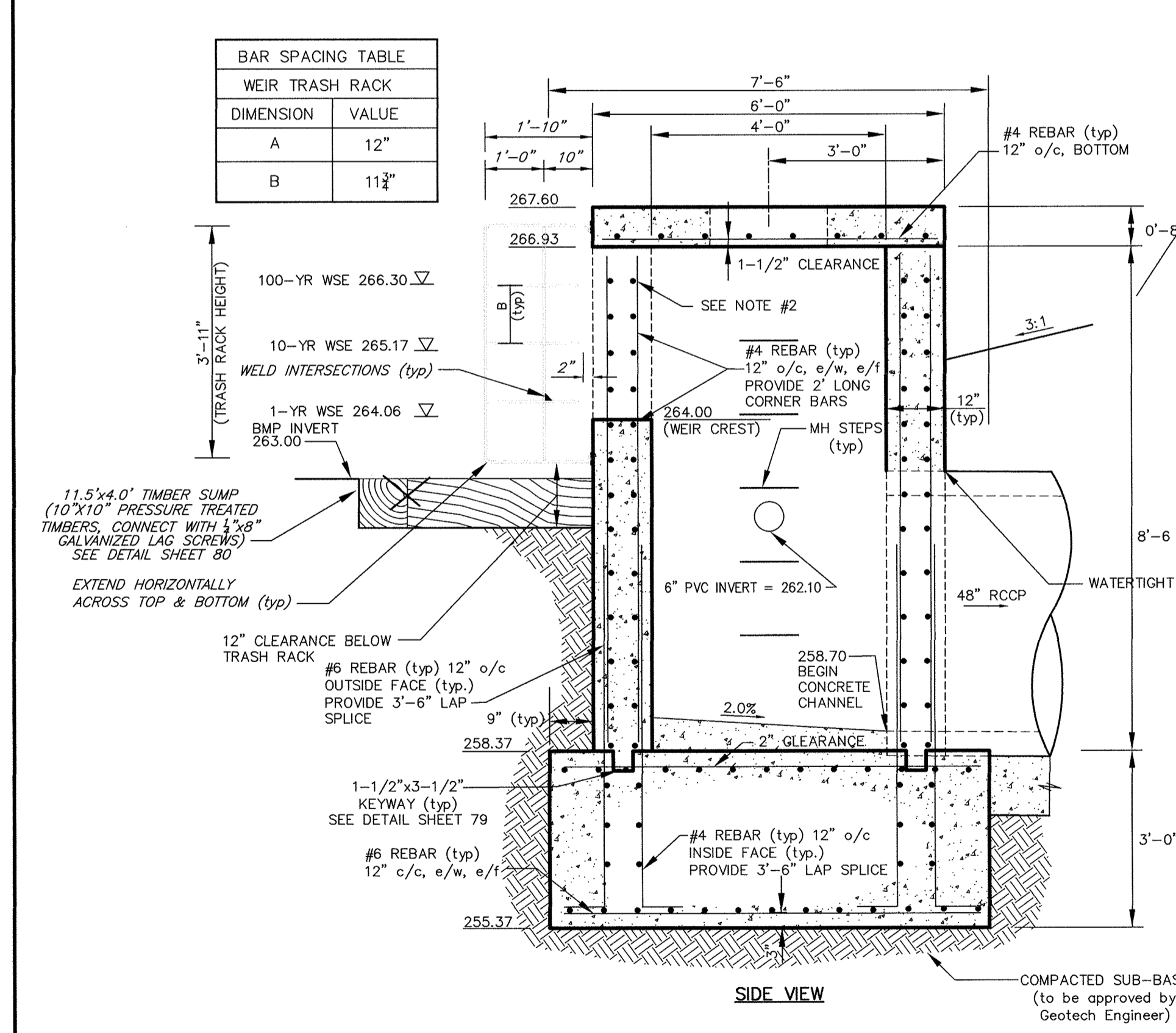
RISER JOINT DETAIL
NOT TO SCALE

- STRUCTURE R-1 NOTES**
- STRUCTURE MATERIAL FOR ALL WALLS AND BASE SHALL BE AIR-ENTRAINED 4,500 PSI CONCRETE.
 - REINFORCEMENT SHALL BE DEFORMED STEEL, FREE OF RUST, AND MEET ASTM A615, GRADE 60, WITH 2" COVER EXCEPT AS SHOWN.
 - REINFORCEMENT IS PARTIALLY SHOWN AND IS TYPICAL FOR EACH RISER WALL, BASE, WING WALLS, FOOTING AND TOP SLAB. THE STRUCTURE SHALL BE REINFORCED THROUGHOUT.
 - HORIZONTAL REBAR SHALL EXTEND INTO THE ADJACENT RISER WALL WITH A 1'-6" L-SHAPED OVERLAP. THE RISER HORIZONTAL REBAR SHALL ALSO EXTEND 1'-6" MIN. INTO THE WING WALLS.
 - VERTICAL REBAR SHALL EXTEND INTO BASE WITH A 1'-6" L-SHAPE OVERLAP.
 - CHAMFER ALL EXPOSED EDGES 1/2" X 1/2".
 - PROVIDE TRASH RACK AT THE WEIR (REMOVABLE, GALVANIZED AND PAINTED) PER THE TRASH RACK DETAIL.
 - SLOPE RISER BOTTOM 2% MIN. TOWARDS OUTFALL INVERT.
 - ALL PIPE CONNECTIONS MUST BE WATER TIGHT. CONTRACTOR SHALL INSTALL 12" THICK CONCRETE PROJECTION COLLAR AROUND 48" RCCP OUTFALL, EXTENDING 12" BEYOND O.D. AND REINFORCE WITH 4" X 4" WWF. APPLY NON-SHRINK GROUT TO SEAL COLLAR TO RISER, OR USE A-LOK GASKETS.
 - PROVIDE MANHOLE STEPS PER HO. CO. STDS. DETAIL G 5.21.
 - PLACE A STANDARD 2 FT Ø HOWARD CO. SIDEWALK STORM DRAIN F&C IN TOP SLAB.
 - THE TOP SLAB SHALL NOT BE STRUCTURALLY ATTACHED TO THE VERTICAL RISER WALLS.
 - IF RISER IS SUPPLIED IN SECTIONS, THE JOINTS SHALL BE WATER TIGHT PER RISER JOINT DETAIL. BOLT SECTIONS TOGETHER AT EACH JOINT WITH THREE (3) RUSTPROOF, 2" X 6" (1/4" THICK) FLAT BAR CONNECTIONS WITH 1/2" BOLTS EMBEDDED IN TO RISER.
 - USE PROVIDED DIMENSIONS; DO NOT SCALE DRAWINGS.

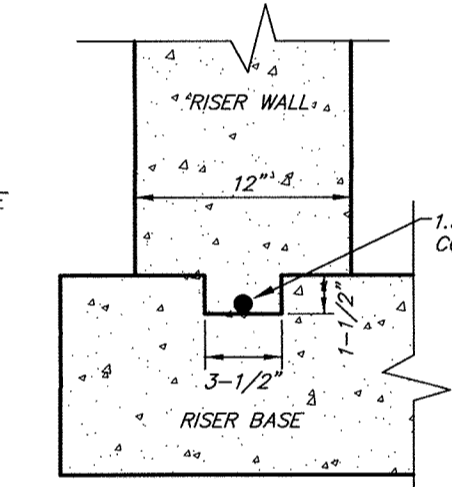
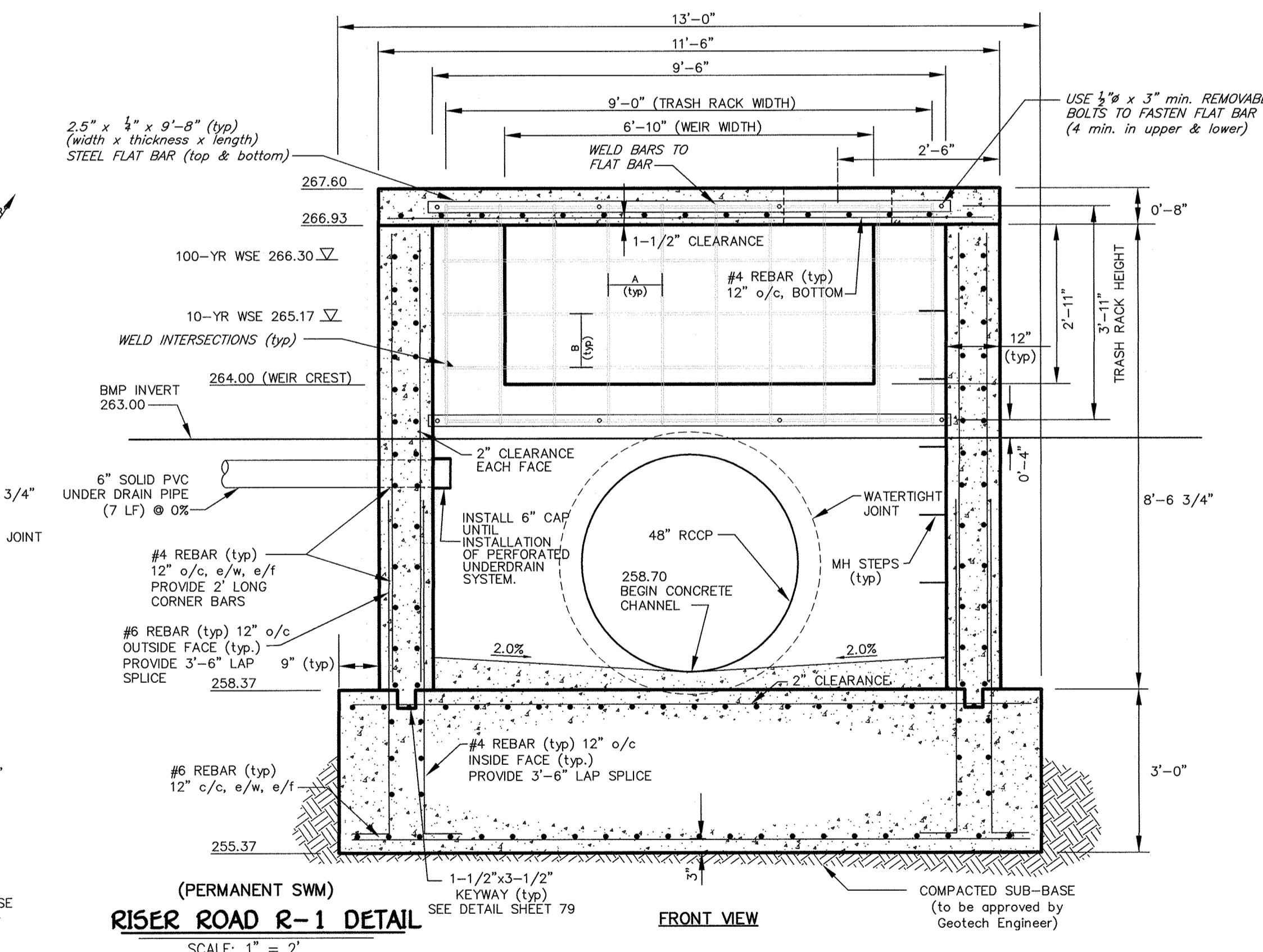
TRASH RACK NOTES

- THE TRASH RACK SHALL BE GALVANIZED AFTER FABRICATION AND PAINTED "BATTLESHIP GRAY".
- TRASH RACK SHALL CONFORM TO HOWARD COUNTY AND MD-378 (SMALL POND DESIGN) SPECIFICATIONS.
- REBAR SHALL BE #4 SMOOTH STEEL BARS.
- THE TRASH RACK FABRICATOR MAY SUBSTITUTE ANGLED BARS FOR FLAT BARS.
- THE TRASH RACK SHALL BE INSTALLED SO AS TO EXTEND 8" BELOW THE WEIR CREST WITH 12" CLEARANCE ABOVE THE TIMBER SUMP INVERT.
- THE RISER SHALL BE FIELD-MEASURED PRIOR TO THE TRASH RACK FABRICATION TO ENSURE AN EXACT TRASH RACK FIT. THE FABRICATOR CAN MAKE MINOR ADJUSTMENTS TO THE TRASH RACK DIMENSIONS (±1/2") TO MEET OVERALL AND INTENDED DIMENSIONS. TRASH RACK IS CENTERED ON OPENING.
- WEIR TRASH RACK: NO DIAGONAL OPENING SHALL EXCEED 17".
- WEIR TRASH RACK BOTTOM DIMENSION CALCULATION: 100-YR WEIR FLOW DEPTH = 2.31'; WEIR WIDTH = 6.83'; FLOW AREA = 2.31' X 6.83' = 15.8 sf. AREA UNDER TRASH RACK = BOTTOM WIDTH X PROTRUSION = 9' X 1.83' = 16.5 sf > 15.8 sf.
- PLACE TOP SLAB BOLTS NEAR VERTICAL CENTER OF TOP SLAB, 3" MIN. COVER.

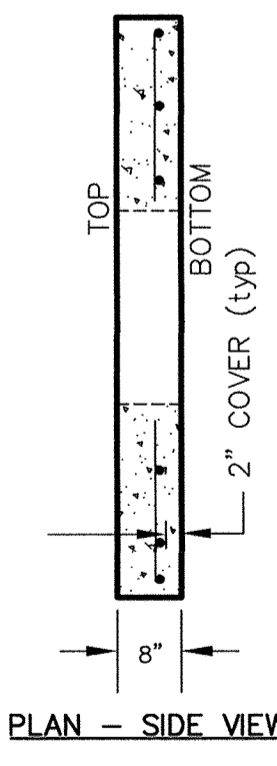
BAR SPACING TABLE	
WEIR TRASH RACK	VALUE
A	12"
B	11 1/2"



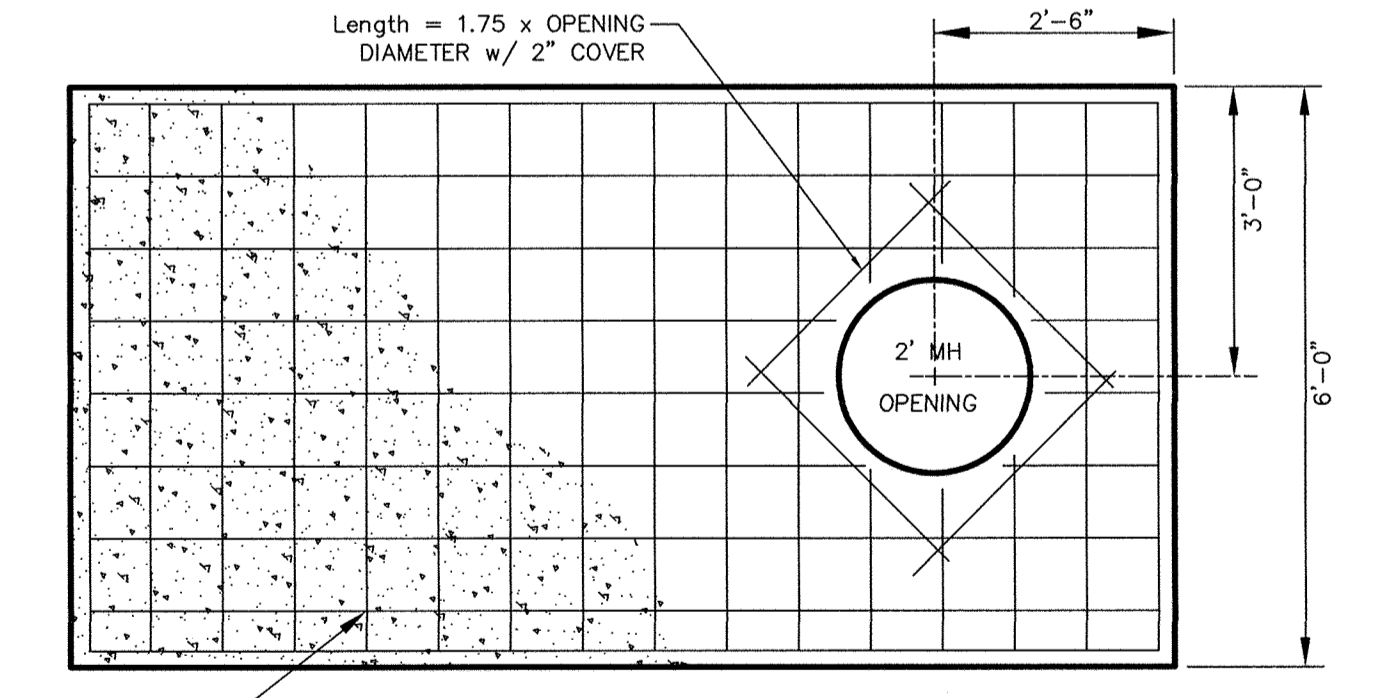
(PERMANENT SWM)
RISER ROAD R-1 DETAIL
SCALE: 1" = 2'



KEYWAY DETAIL
NOT TO SCALE



PLAN - SIDE VIEW



PLAN - TOP SLAB

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 461-2855

ENGINEER'S CERTIFICATE
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MD.

Signature: *Stephanie O. Tuite* DATE: 7/14/20
SIGNATURE OF ENGINEER

DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: *Daniel Lubeley* DATE: 7/14/20
SIGNATURE OF DEVELOPER PRINTED NAME OF DEVELOPER DATE

"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. 38386, EXPIRATION DATE: JANUARY 12, 2022."

Signature: *Stephanie O. Tuite* DATE: 7/14/20
STEPHANIE O. TUITE, RLA, P.E., LEED AP BC&D

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

Signature: _____ P.E. No. _____ DATE: _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE 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.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: *Monte A. Kendall* DATE: 8/17/20
Director - Department of Planning and Zoning

Signature: *Stephanie O. Tuite* DATE: 7/14/20
Chief, Department of Land Development

Signature: *Stephanie O. Tuite* DATE: 7/14/20
Chief, Development Engineering Division

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6805

STATE OF MARYLAND
PROFESSIONAL ENGINEER
STEPHANIE O. TUITE
LICENSE NO. 38386
EXPIRES 1/12/2022

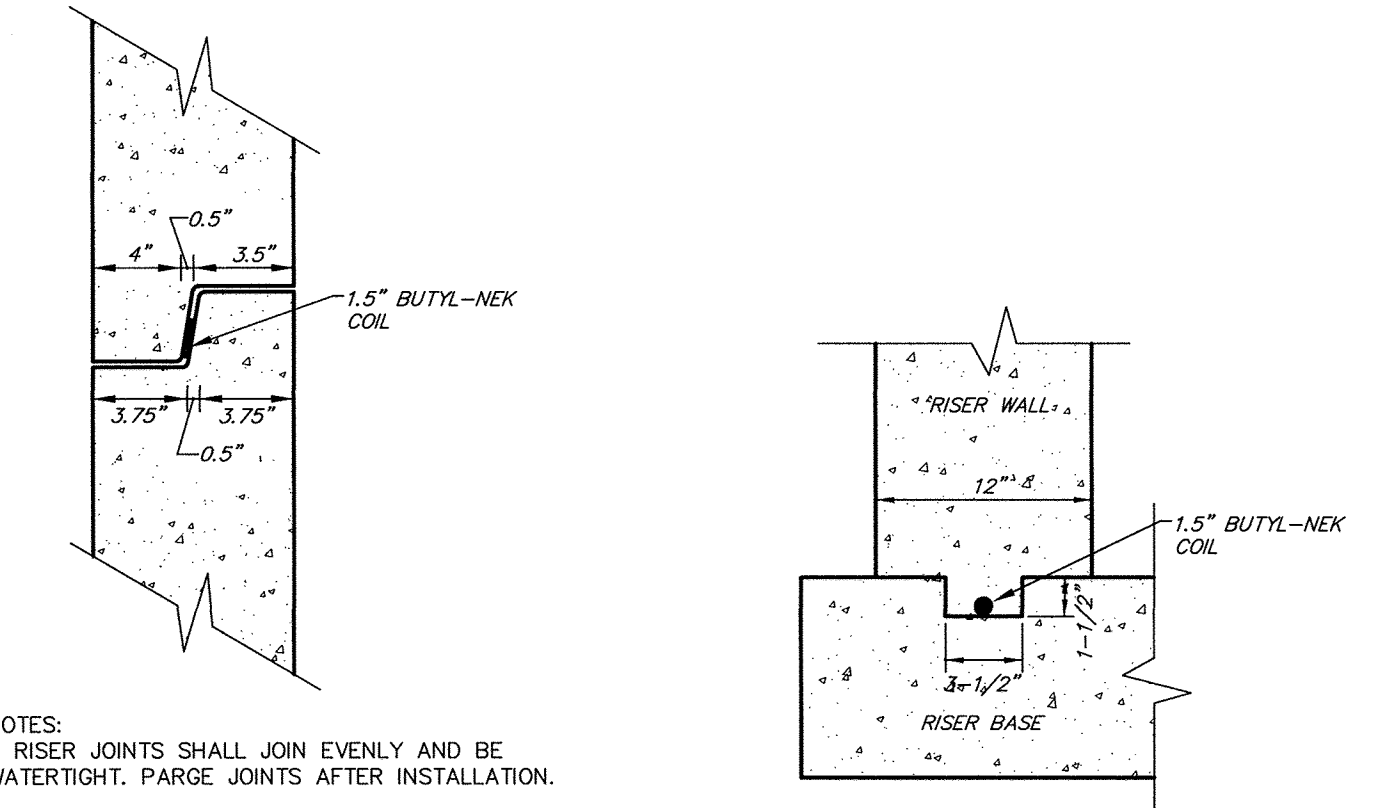
DATE	7/10/20	DESCRIPTION	NEW SHEET OF DETAILS TO CONSTRUCT BASIN 3 FOR NEW SCHOOL ON SITE
DATE		REVISION BLOCK	
PROJECT	HIGH SCHOOL #13	SECTION/AREA	N/A
PLAT NOS.	BLOCK NO. 18 & 24 13 & 19	TAX MAP	42 & 43
WATER CODE		SEWER CODE	

BASIN #3 (BMP #12) R-1 DETAILS
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020

SHEET 24 OF 39

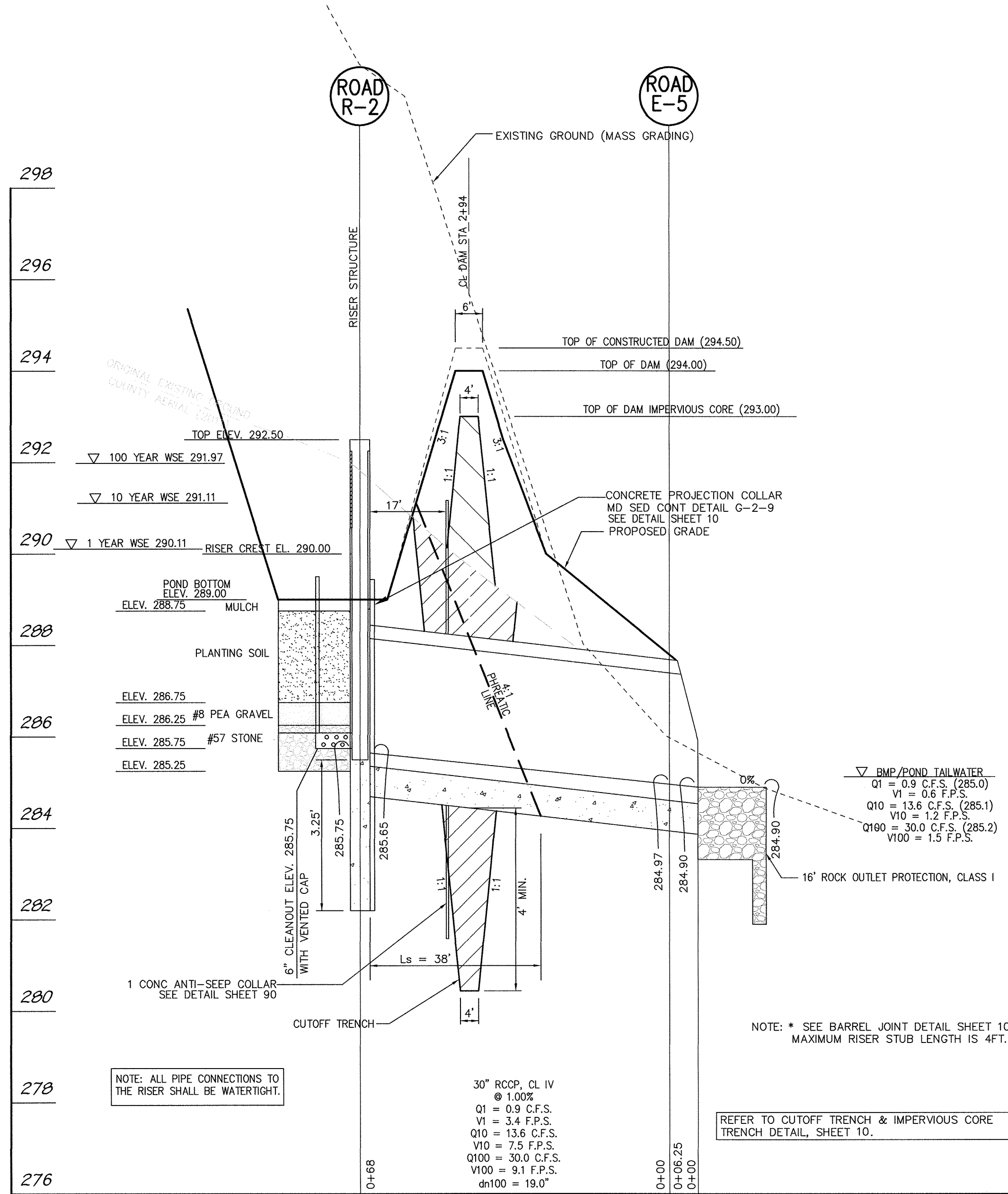
- SEDIMENT BASIN NOTES**
- The draw down device shall be constructed to N.R.C.S.'s Horizontal Drawdown Device Detail G-2-6. The perforations shall have a 1" diameter and spaced 6" apart as follows: 8" pipe with 4 rows of perforations, 10" pipe with 6 rows of perforations. Minimum perforated area per LF of pipe: 6.28 sq ft for 8" pipe and 9.42 sq ft for 10" pipe.
 - The drawdown device pipe shall be evenly and adequately supported per Drawdown Device Detail G-2-6 (with aggregate or posts).
 - The drawdown device connection to the riser shall be watertight (i.e., the annular area between the drawdown device and orifice shall be temporarily sealed (with galvanized plate/gasket, or mortar, or other suitable methods that allow easy conversion to the final permanent SWM facility).
 - See the SWM plans for other embankment/riser information not shown on this sheet.
 - Install the permanent weir trash rack during construction. Remove and reinstall as needed when basin is converted to a permanent SWM facility.
 - Dewater basin and maintain drawdown device when basin drain time exceeds 10 hours. Pump basin to an approved E&S device.
 - Drawdown pipe shall be Schedule 40 PVC or approved equal.



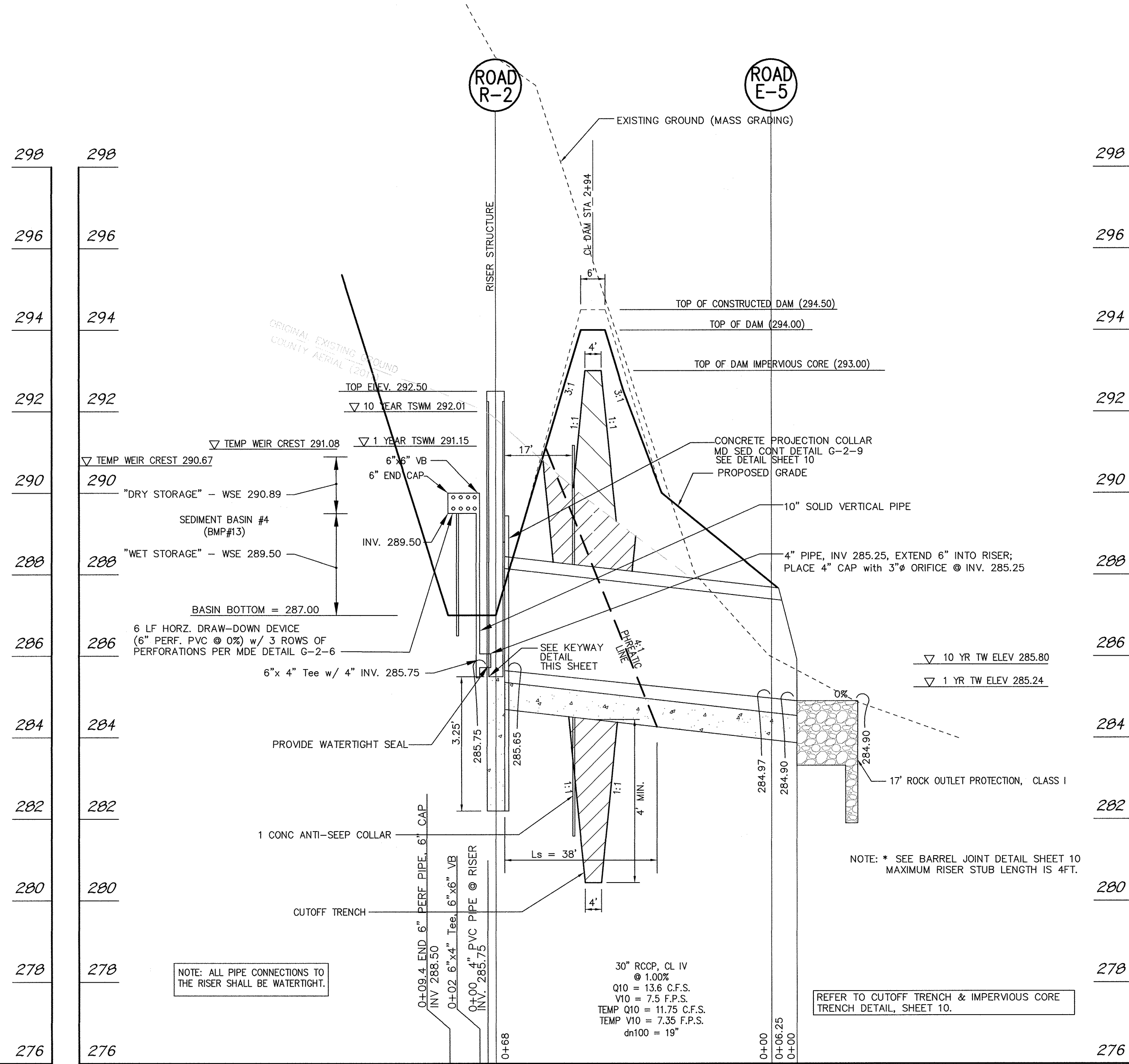
NOTES:
 1. RISER JOINTS SHALL JOIN EVENLY AND BE WATERTIGHT. PARGE JOINTS AFTER INSTALLATION.
 2. THE REFERENCED JOINT AND JOINT SEALANT MATERIAL IS USED BY FREDERICK PRECAST, INC. SIMILAR JOINTS MAY BE USED WITH SHOP DRAWING APPROVAL BY THE ENGINEER.

RISER JOINT DETAIL
 NOT TO SCALE

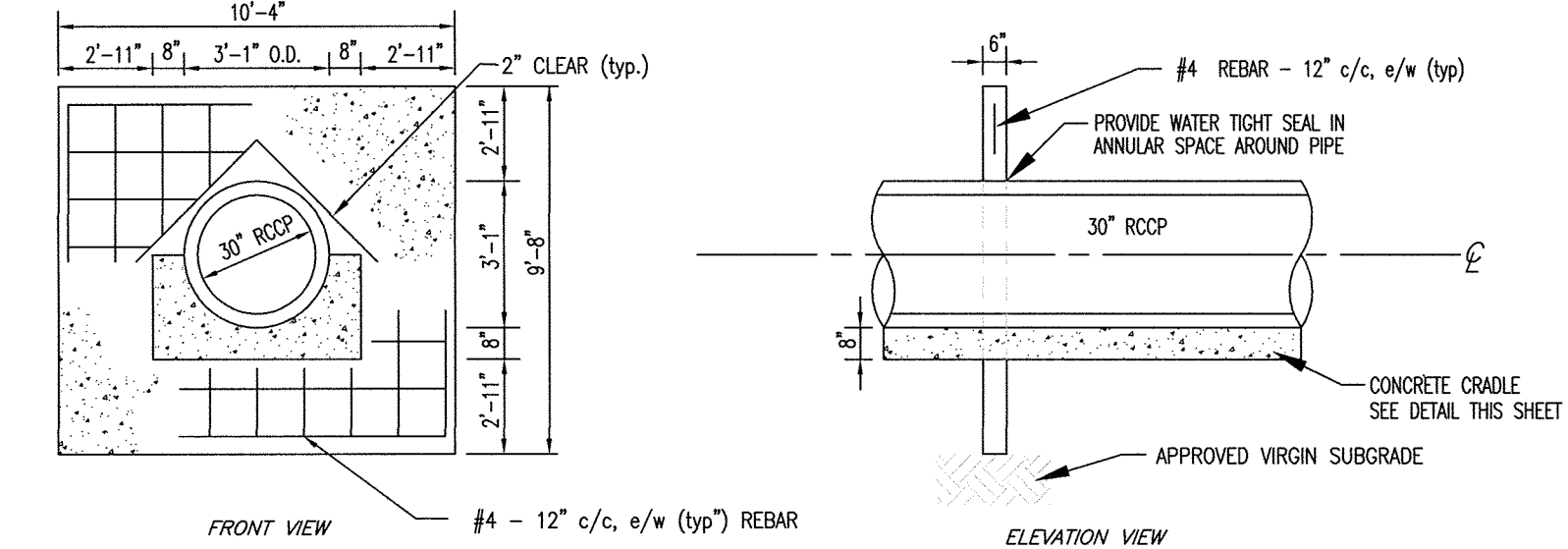
KEYWAY DETAIL
 NOT TO SCALE



BMP 13 PRINCIPAL SPILLWAY PROFILE
 SCALE: HORIZ. : 1" = 20'
 VERT. : 1" = 2'

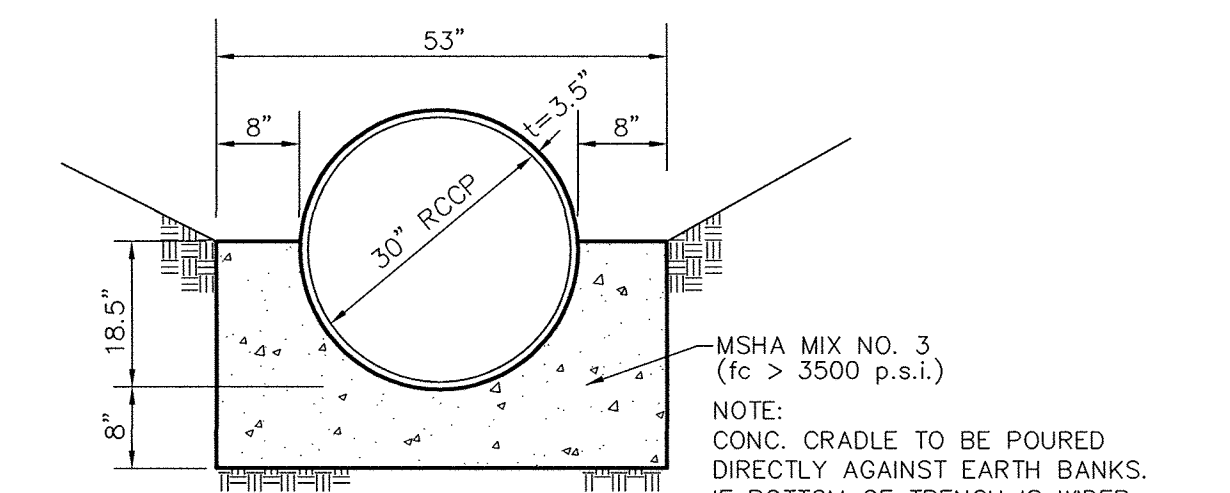


SEDIMENT BASIN #4 @ BMP #13 w/ TEMPORARY SWM DRAWDOWN DEVICE OUTFALL PROFILE
 SCALE: HORIZ. : 1" = 20'
 VERT. : 1" = 2'



- ANTI-SEEP COLLAR NOTES**
- LOWER HALF OF COLLAR SHALL BE POURED CONCURRENTLY WITH THE CRADLE POUR.
 - REBAR IS SHOWN SCHEMATICALLY AND SHALL BE PLACED THROUGHOUT THE ENTIRE COLLAR.
 - PROVIDE A WATER TIGHT SEAL IN ANNULAR SPACE BETWEEN PIPE AND COLLAR USING MASTIC SEALER. USE A "A-LOK" JOINT SEAL PRODUCT.
 - LOCATE COLLAR 2" MINIMUM FROM JOINT AND MAINTAIN 10" MINIMUM SEPARATION FROM COLLAR TO COLLAR OR COLLAR TO RISER.
 - PLACE TWO (2) ADDITIONAL REBARS (4' MIN. LONG) AT RIGHT ANGLES TO REBAR GRID 2" FROM PIPE O.D.
 - COLLAR MATERIAL SPECIFICATIONS SHALL MEET THE SAME AS THAT FOR THE CONCRETE RISER (SWM OUTFALL) STRUCTURE.

ANTI-SEEP COLLAR DETAIL
 NO SCALE



CONC. CRADLE DETAIL
 NO SCALE

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I HAVE NOTICED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN

Signature: *Stephan J. Tuite* DATE: 7/14/20

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

Signature: *Daniel Lubeley* DATE: 7/14/20

"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. 38386, EXPIRATION DATE: JANUARY 12, 2022."

Signature: *Stephan J. Tuite* DATE: 7/14/20

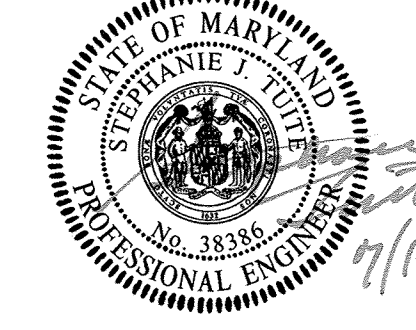
STEPHANIE J. TUITE, RLA, P.E., LEED AP BC&D

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

Signature: *Maura Kendall* P.E. No. DATE: 8/12/20

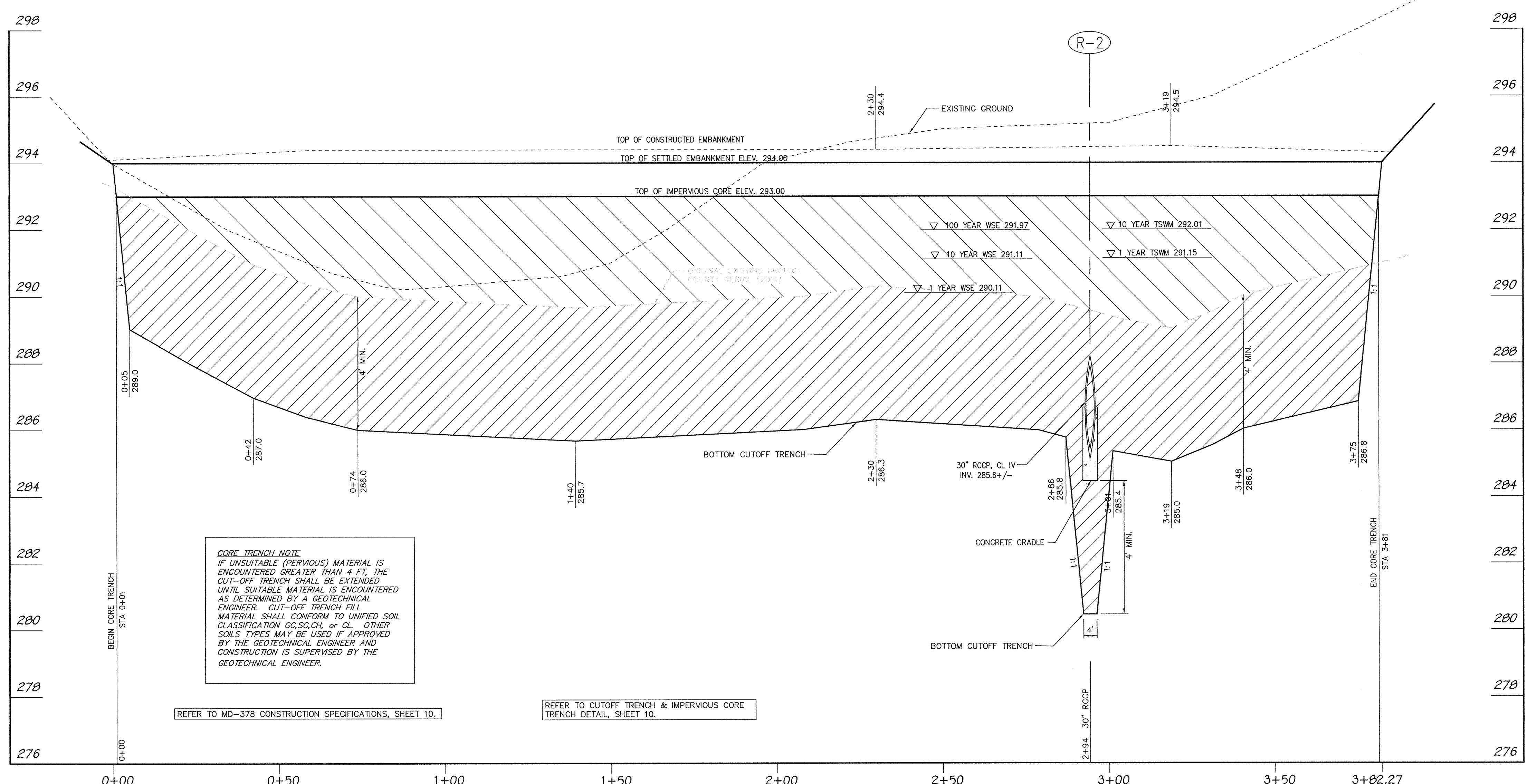
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Director: *Maura Kendall* DATE: 8/12/20
 Chief, Division of Planning and Zoning
 Chief, Division of Land Development
 Chief, Development Engineering Division

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 9020 MENDENHALL COURT
 SUITE 'C'
 COLUMBIA, MARYLAND 21045
 Attention: DANIEL LUBELEY
 410-313-6805



DATE	7/10/20	DESCRIPTION	NEW SHEET OF PROFILES AND DETAILS TO CONSTRUCT BASIN 4 FOR NEW SCHOOL ON SITE
REVISION BLOCK			
PROJECT	HIGH SCHOOL #13	SECTION/AREA	N/A
PARCEL	102, 349, 235		
PLAT NOS.	BLOCK NO. 18 & 24, 13 & 19	TAX MAP	R-12, RSC MXD-3, RSA-8 MXD-3
SEWER CODE	42 & 43	SIXTH	606901

BASIN #4 (BMP #13) PRINCIPAL SPILLWAY PROFILE AND DETAILS
REVISED SITE DEVELOPMENT PLAN
 FOR
CHASE PROPERTY AT MISSION ROAD
 8420 WASHINGTON BLVD
 JESSUP, MARYLAND 20794
 ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
 PARCEL NOS.: 102, 349, 235
 TAX MAP No.: 42 & 43 GRID No.: 24 & 19
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 26 OF 39

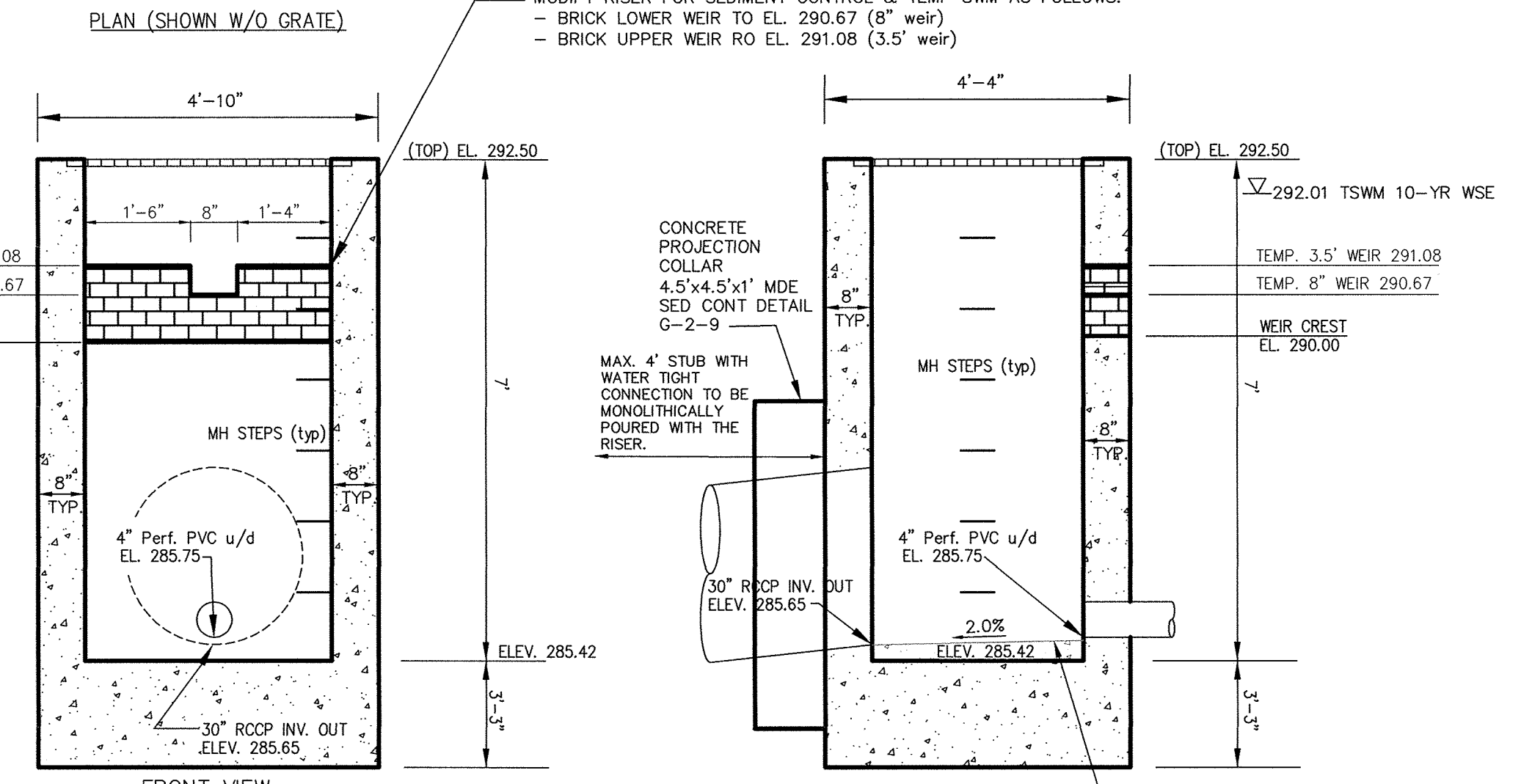
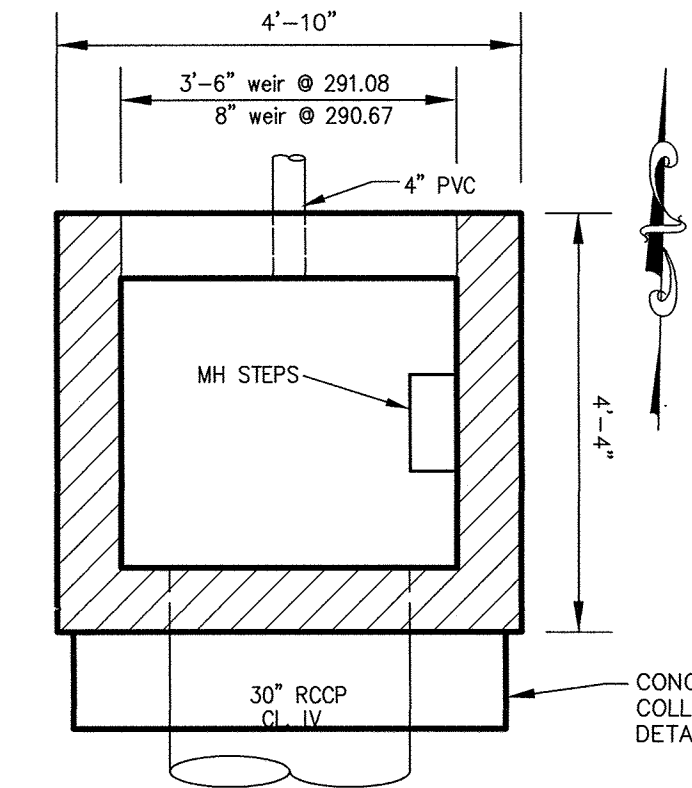


CORE TRENCH NOTE
 IF UNSUITABLE (PERVIOUS) MATERIAL IS ENCOUNTERED GREATER THAN 4 FT, THE CUT-OFF TRENCH SHALL BE EXTENDED UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY A GEOTECHNICAL ENGINEER. CUT-OFF TRENCH FILL MATERIAL SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, or CL. OTHER SOILS TYPES MAY BE USED IF APPROVED BY THE GEOTECHNICAL ENGINEER AND CONSTRUCTION IS SUPERVISED BY THE GEOTECHNICAL ENGINEER.

REFER TO MD-378 CONSTRUCTION SPECIFICATIONS, SHEET 10.

REFER TO CUTOFF TRENCH & IMPERVIOUS CORE TRENCH DETAIL, SHEET 10.

BMP #13 CL DAM EMBANKMENT PROFILE
 SCALE: HORIZ. : 1" = 20'
 VERT. : 1" = 2'



RISER R-2 DETAIL
 SCALE: 1" = 2'

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

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."
 Signature of Engineer: *Stephanie J. Tuite* DATE: 7/14/20

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature of Developer: *Daniel Lubeley* PRINTED NAME OF DEVELOPER: Daniel Lubeley DATE: 7/15/20

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. 38386, EXPIRATION DATE: JANUARY 12, 2022.
 Signature: *Stephanie J. Tuite* DATE: 7/14/20
 STEPHANIE J. TUITE, RLA, P.E., LEED AP BC&D

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 Signature: *Anna K. Kimball* DATE: 8/17/2020
 Director, Department of Planning and Zoning

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *Christina Owens* DATE: 7/16/20
 Chief, Division of Land Development

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *Paul Chubb* DATE: 7/29/20
 Chief, Development Engineering Division

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 9020 MENDENHALL COURT
 SUITE 'C'
 COLUMBIA, MARYLAND 21045
 Attention: DANIEL LUBELEY
 410-313-6805

7/10/20 NEW SHEET OF PROFILES AND DETAILS TO CONSTRUCT BASIN 4 FOR NEW SCHOOL ON SITE

DATE: 7/10/20 DESCRIPTION: REVISION BLOCK

PROJECT: HIGH SCHOOL #13 SECTION/AREA: N/A PARCEL: 102, 349, 235

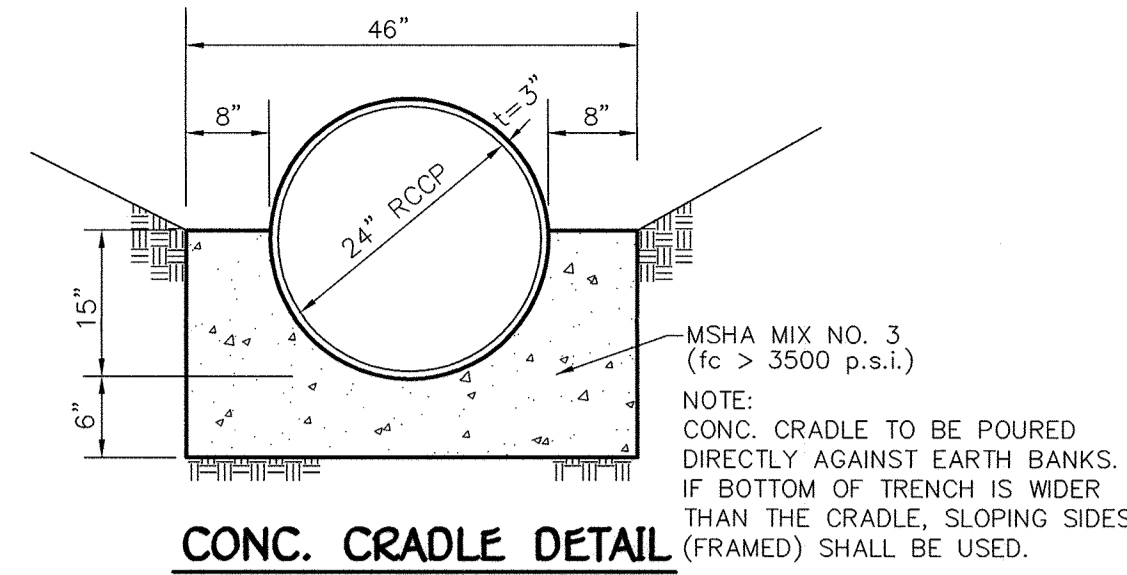
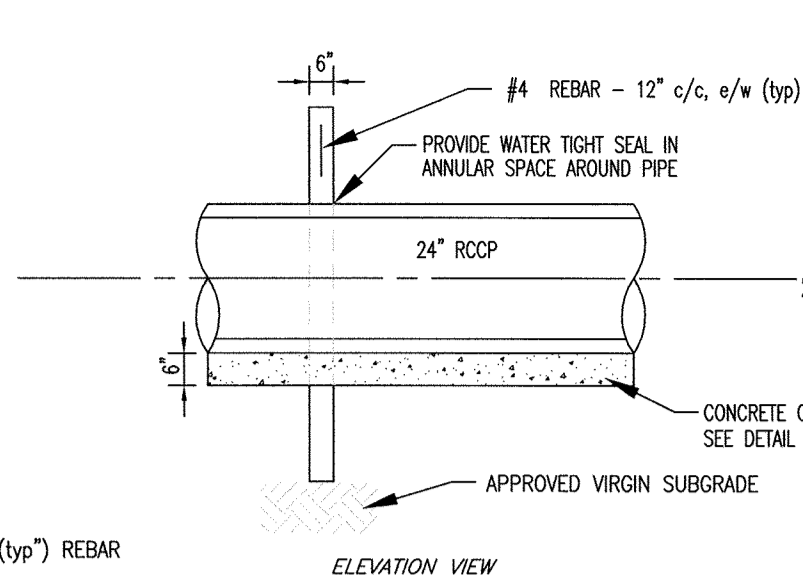
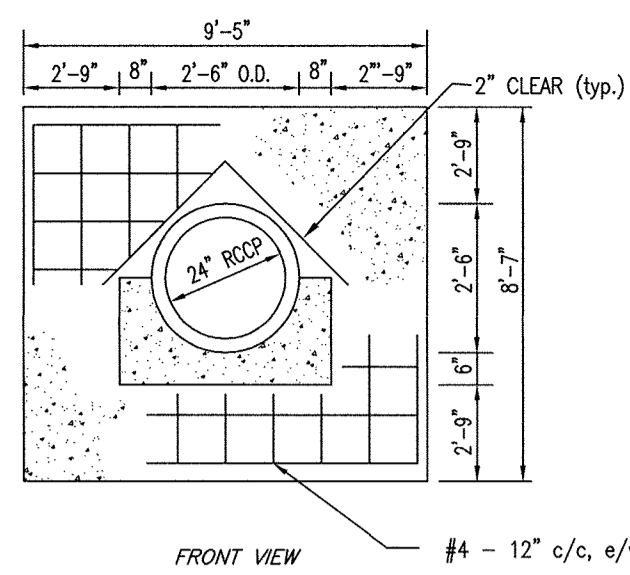
PLAT NOS.: 18 & 24, 13 & 19 BLOCK NO.: R-12, RSO MXD-3, RSA-8, MXD-3 TAX MAP: 42 & 43 ELEC. DIST.: SIXTH CENSUS TR.: 606901

WATER CODE: SEWER CODE:

STATE OF MARYLAND
STEPHANIE J. TUITE
 No. 38386
 PROFESSIONAL ENGINEER
 7/14/20

BASIN #4 (BMP #13) CL DAM PROFILE
 REVISED SITE DEVELOPMENT PLAN
 FOR
CHASE PROPERTY
 AT MISSION ROAD
 8420 WASHINGTON BLVD
 JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
 PARCEL Nos.: 102, 349, 235
 TAX MAP No.: 42 & 43 GRID No.: 24 & 19
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 27 OF 39

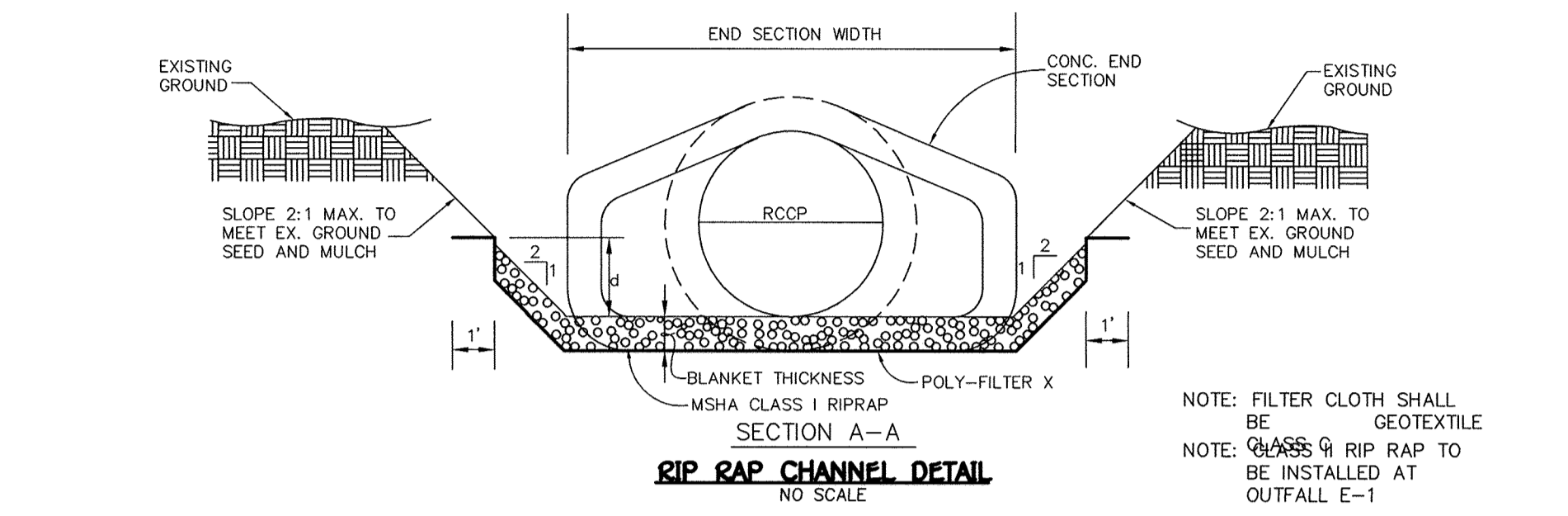
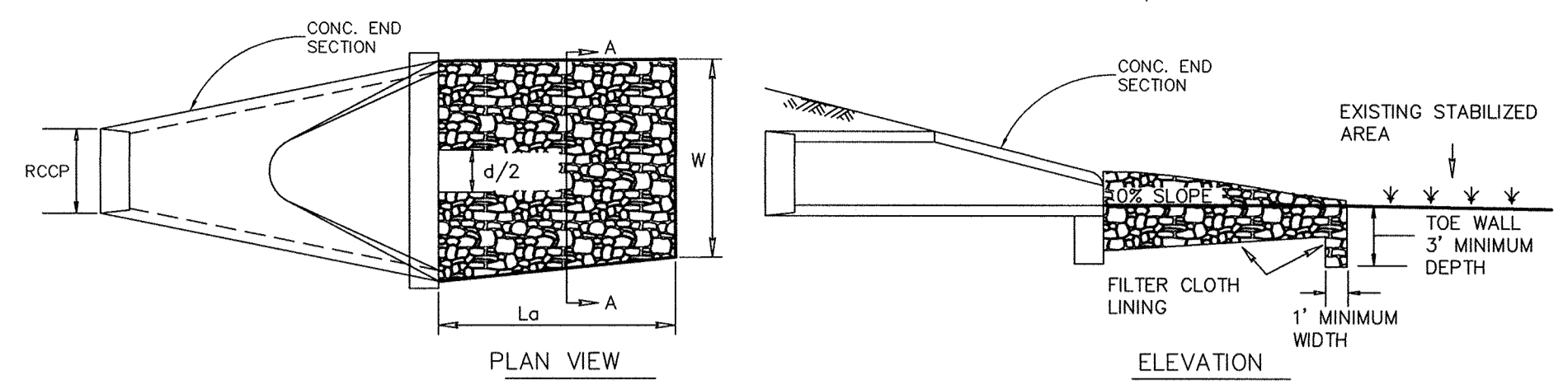


CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

- 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 PUNCHING, 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 OUTFALLS 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 OUTFALLS 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.

ROCK OUTFALL PROTECTION III

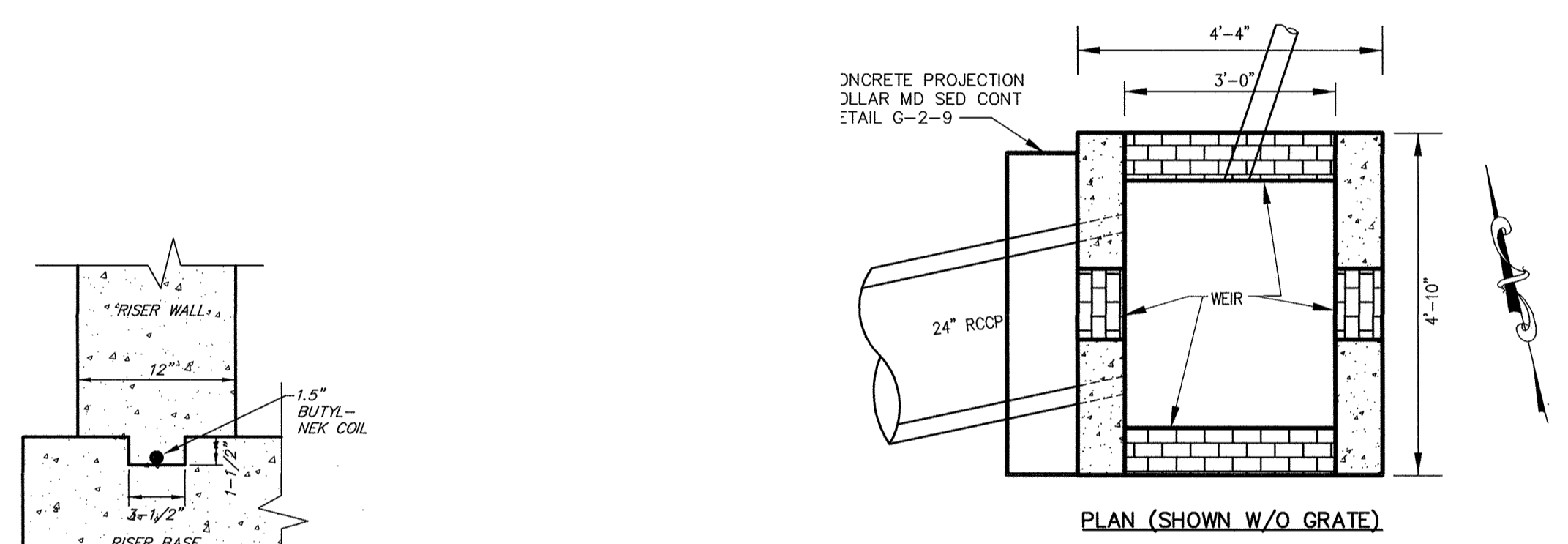
STR. NO.	APRON LENGTH (L _a)	APRON WIDTH	APRON THICKNESS	MAX. STONE DIAMETER
HS13 E-5	17'	11'	19"	9.5"
HS13 E-6	15'	20'	19"	9.5"
HS13 E-7	17'	22'	19"	9.5"
ROAD E-4	38'	15'	19"	9.5"
ROAD E-5	16'	20'	19"	9.5"



- ANTI-SEEP COLLAR NOTES**
- LOWER HALF OF COLLAR SHALL BE POURED CONCURRENTLY WITH THE CRADLE POUR.
 - REBAR IS SHOWN SCHEMATICALLY AND SHALL BE PLACED THROUGHOUT THE ENTIRE COLLAR.
 - PROVIDE A WATER TIGHT SEAL IN ANNULAR SPACE BETWEEN PIPE AND COLLAR USING MASTIC SEALER. USE A "A-LOK" JOINT SEAL PRODUCT.
 - LOCATE COLLAR 2' MINIMUM FROM JOINT AND MAINTAIN 10' MINIMUM SEPARATION FROM COLLAR TO COLLAR OR COLLAR TO RISER.
 - PLACE TWO (2) ADDITIONAL REBAR (4' MIN. LONG) AT RIGHT ANGLES TO REBAR GRID 2" FROM PIPE O.D.
 - COLLAR MATERIAL SPECIFICATIONS SHALL MEET THE SAME AS THAT FOR THE CONCRETE RISER (SWM OUTFALL) STRUCTURE.

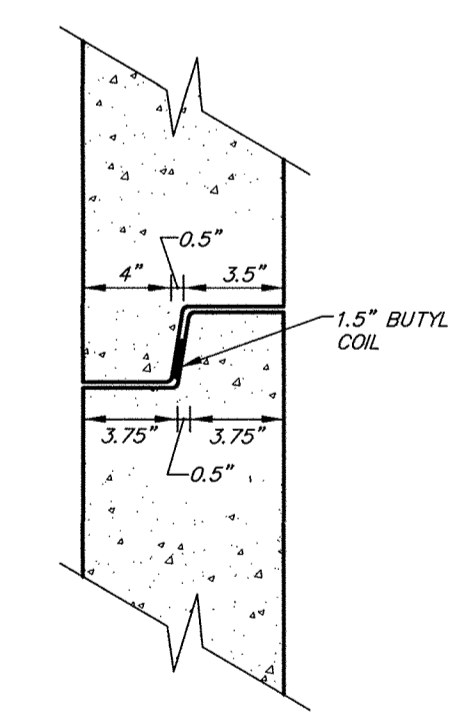
ANTI-SEEP COLLAR DETAIL

NO SCALE



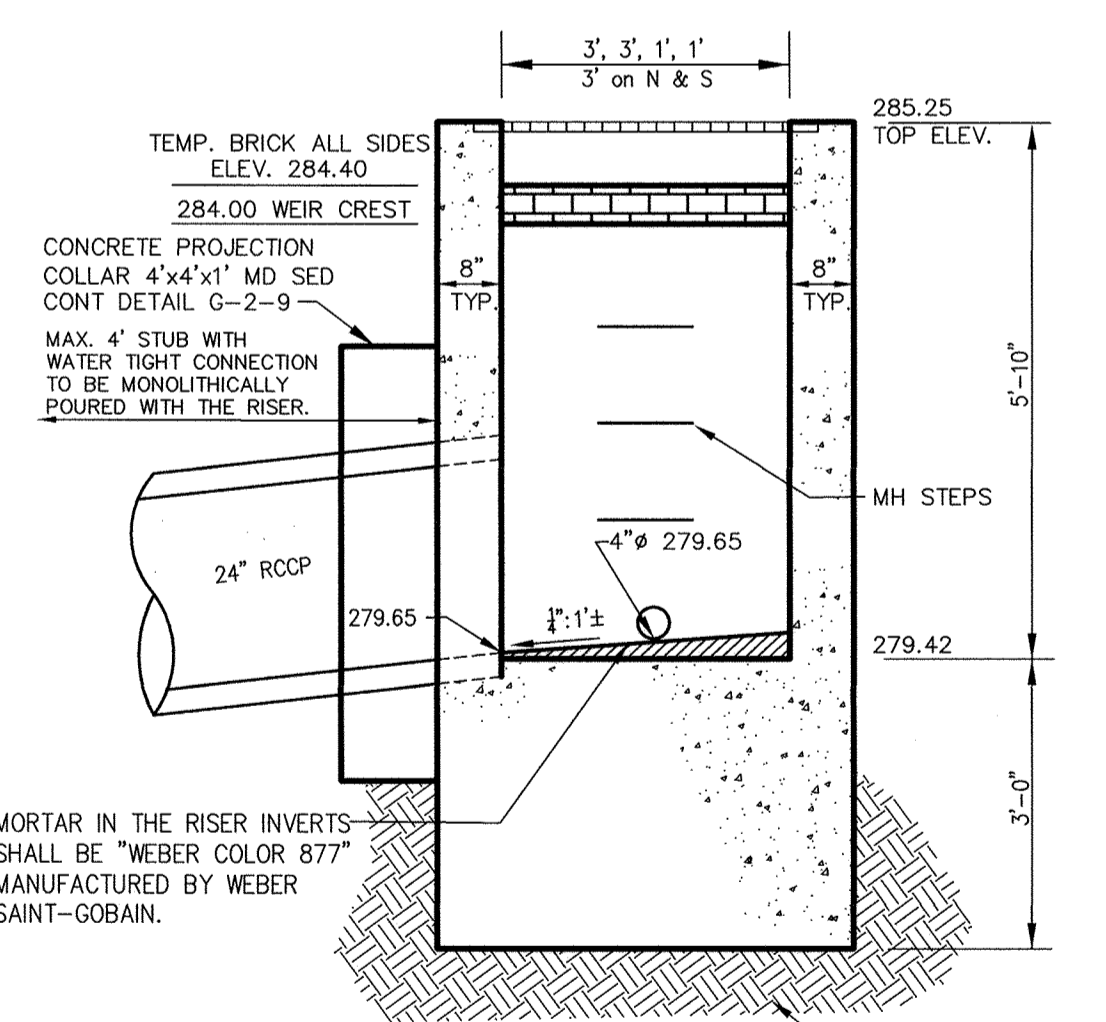
KEYWAY DETAIL

NOT TO SCALE



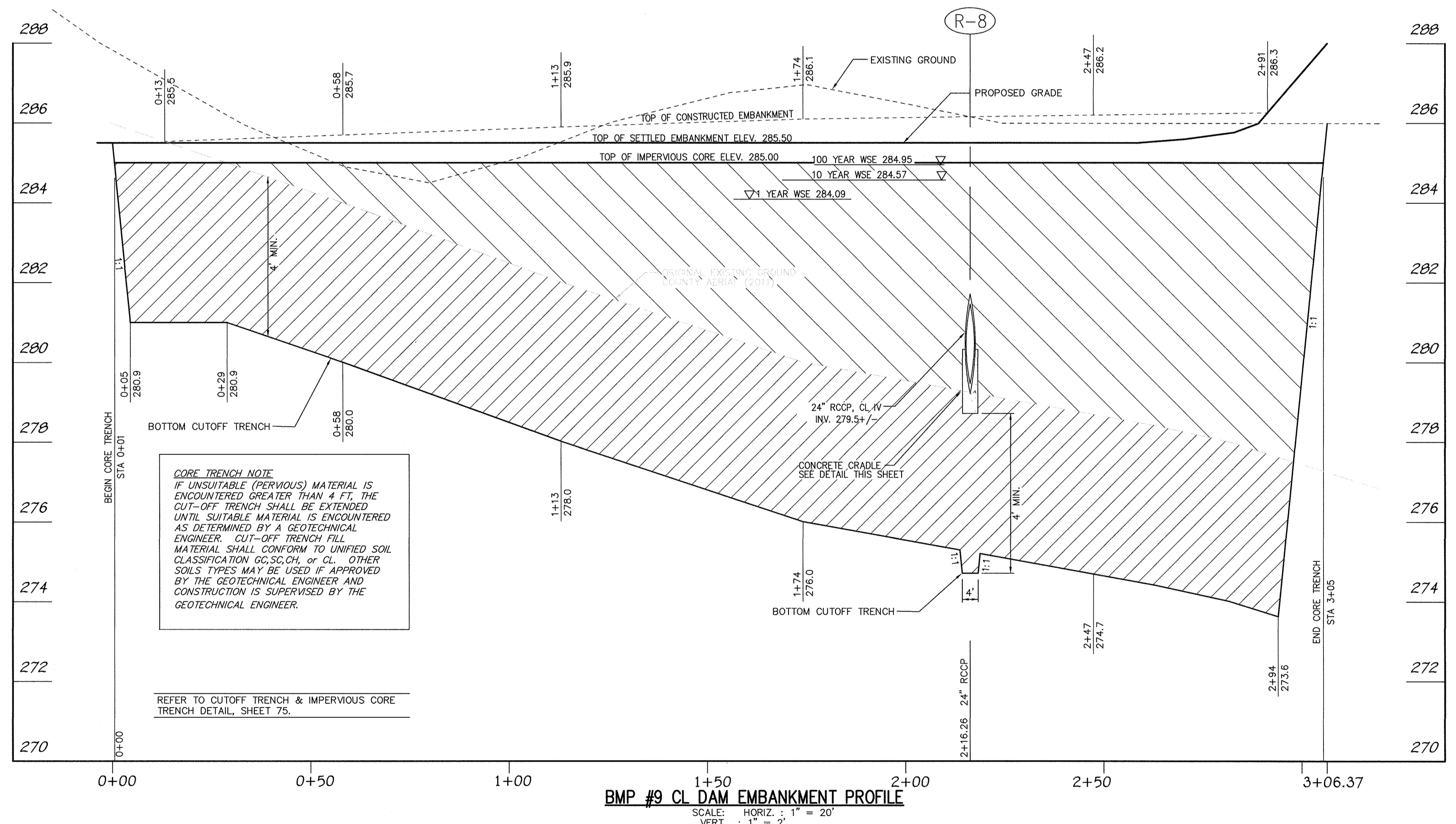
RISER JOINT DETAIL

NOT TO SCALE



RISER R-8 DETAIL

Geotech Engineer (to be approved by)



BMP #9 CL DAM EMBANKMENT PROFILE

SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'

ENGINEER'S CERTIFICATE

I, CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

7/14/20

DEVELOPER'S CERTIFICATE

I, ME CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

7/16/20

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. 38386, EXPIRATION DATE: JANUARY 12, 2022.

7/14/20

AS-BUILT CERTIFICATION

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

7/16/20

APPROVED: DEPARTMENT OF PLANNING AND ZONING

8/18/2020

8/16/20

7/29/20

PREPARED FOR HOWARD COUNTY PUBLIC SCHOOL SYSTEM

9020 MENDENHALL COURT SUITE 'C' COLUMBIA, MARYLAND 21045

Attention: DANIEL LUBELEY 410-313-6805

DATE	DESCRIPTION	REVISION BLOCK
7/10/20	NEW SHEET OF PROFILES AND DETAILS TO CONSTRUCT BASIN 5 FOR NEW SCHOOL ON SITE	

PROJECT	SECTION/AREA	PARCEL
HIGH SCHOOL #13	N/A	102, 349, 235

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
18 & 24	R-12	RSC MXD-3	42 & 43	SIXTH	606901
13 & 19	RSA-8 MXD-3				

BASIN #5 (BMP #9) PROFILES, DETAILS AND STRUCTURE SCHEDULES

REVISED SITE DEVELOPMENT PLAN

FOR CHASE PROPERTY AT MISSION ROAD

8420 WASHINGTON BLVD JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12

PARCEL Nos.: 102, 349, 235

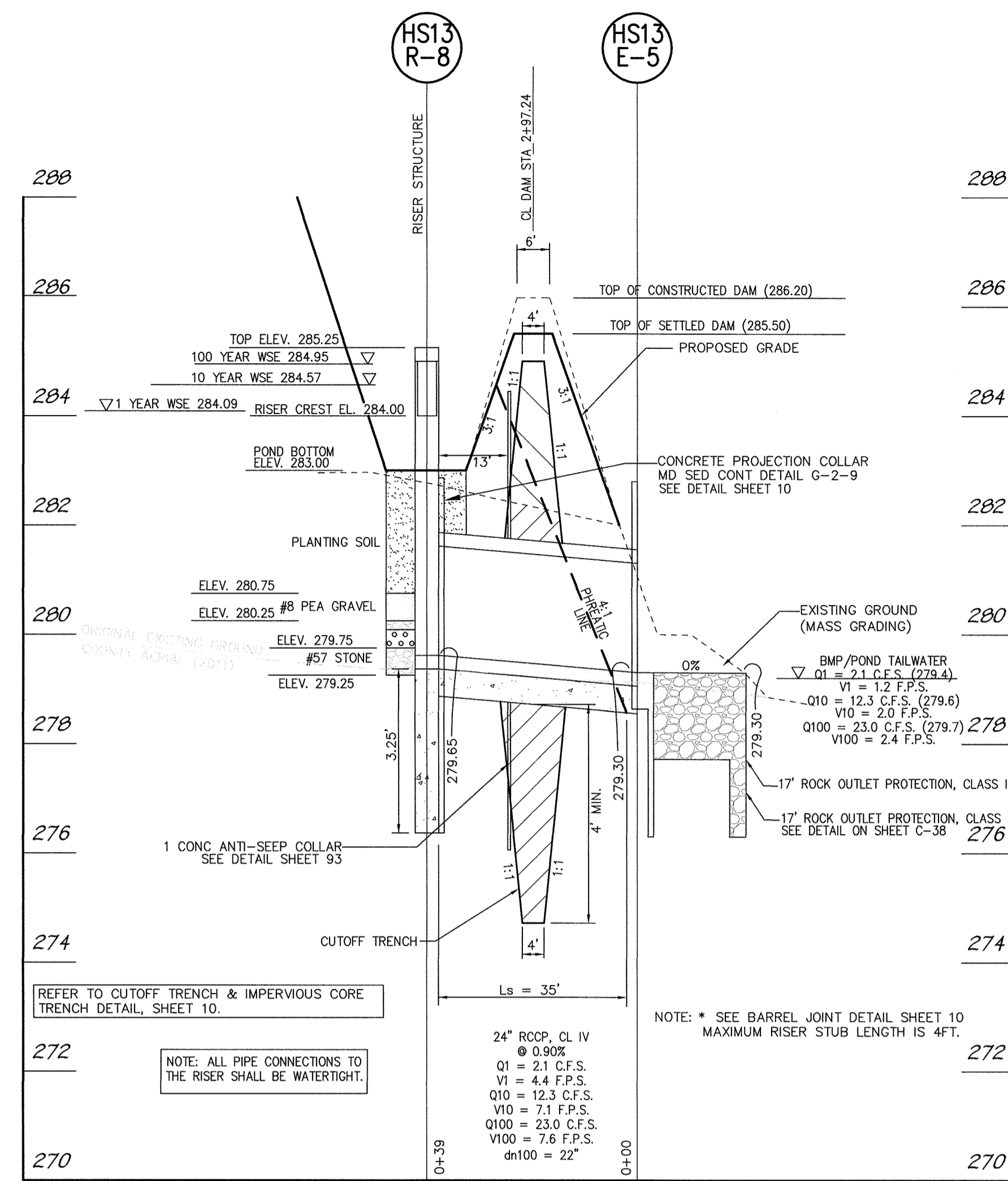
TAX MAP No.: 42 & 43 GRID No.: 24 & 19

SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

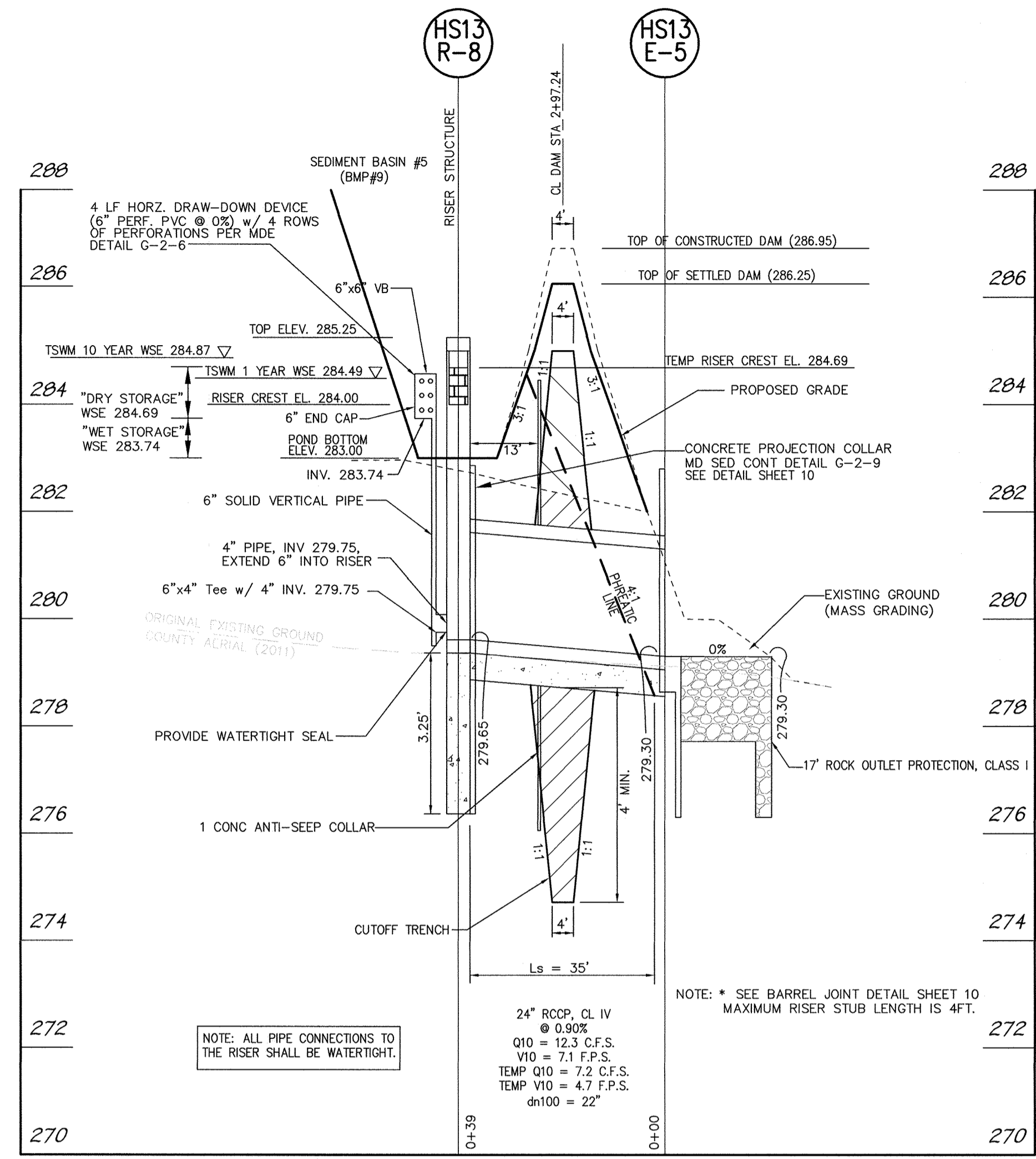
SCALE: AS SHOWN DATE: JUNE, 2020

SHEET 28 OF 39





BMP #9 PRINCIPAL SPILLWAY PROFILE
 SCALE: HORIZ. : 1" = 20'
 VERT. : 1" = 2'
 (PERMANENT SWM)



SEDIMENT BASIN #5 @ BMP #9 PRINCIPAL SPILLWAY PROFILE
 SCALE: HORIZ. : 1" = 20'
 VERT. : 1" = 2'
 (TEMPORARY SWM)

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 1000 NATIONAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2855

ENGINEER'S CERTIFICATE
 I, THE ENGINEER, CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. 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. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."
 SIGNATURE OF ENGINEER: *Stephanie J. Tuite* DATE: 7/14/20

DEVELOPER'S CERTIFICATE
 I, THE DEVELOPER, CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
 SIGNATURE OF DEVELOPER: *Daniel Lubeley* PRINTED NAME OF DEVELOPER: Daniel Lubeley DATE: 7/14/20

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. 38386, EXPIRATION DATE: JANUARY 12, 2022.
 SIGNATURE: *Stephanie J. Tuite* DATE: 7/14/20
 STEPHANIE J. TUITE, RLA, P.E., LEED AP BC&D

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 SIGNATURE: _____ P.E. No. _____ DATE: _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE 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.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Director: *Maury Kendall Fox* DATE: 8/17/20
 Chief, Division of Land Development: *Stephanie J. Tuite* DATE: 8/17/20
 Chief, Development Engineering Division: *Stephanie J. Tuite* DATE: 7-29-20

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 9020 MENDENHALL COURT
 SUITE 'C'
 COLUMBIA, MARYLAND 21045
 Attention: DANIEL LUBELEY
 410-313-6805

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 No. 38386
 7/14/20

DATE	7/10/20	DESCRIPTION	NEW SHEET WITH PROFILES FOR CONSTRUCTION OF BASIN 5 FOR NEW SCHOOL ON SITE
DATE		REVISION BLOCK	
PROJECT	HIGH SCHOOL #13	SECTION/AREA	N/A
PLAT NOS.	18 & 24 13 & 19	TAX MAP	R-12 RSC MXD-3 42 & 43
WATER CODE		ELEC. DIST.	SIXTH
		PARCEL	102, 349, 235
		CENSUS TR.	606901
SEWER CODE			

BASIN #5 (BMP #9) DETAILS
REVISED SITE DEVELOPMENT PLAN
 FOR
CHASE PROPERTY
AT MISSION ROAD
 8420 WASHINGTON BLVD
 JESSUP, MARYLAND 20794
 ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
 PARCEL Nos.: 102, 349, 235
 TAX MAP No.: 42 & 43 GRID No.: 24 & 19
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 29 OF 39

SPECIFICATIONS MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

1.01 DESCRIPTION

- A. WORK SHALL CONSIST OF FURNISHING AND CONSTRUCTION OF A MODULAR RETAINING WALL SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN, AND DIMENSIONS SHOWN ON THE PLANS.
- B. WORK INCLUDES PREPARING FOUNDATION SOIL, FURNISHING AND INSTALLING LEVELING PAD, UNIT FACING SYSTEM, UNIT DRAINAGE FILL AND REINFORCED BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS.
- C. WORK INCLUDES FURNISHING AND INSTALLING GEOGRID SOIL REINFORCEMENT OF THE TYPE, SIZE, LOCATION, AND LENGTHS DESIGNATED ON THE CONSTRUCTION DRAWINGS.

1.02 DELIVERY, STORAGE AND HANDLING

- A. CONTRACTOR SHALL CHECK ALL MATERIALS UPON DELIVERY TO ASSURE THAT THE PROPER TYPE, GRADE, COLOR, AND CERTIFICATION HAS BEEN RECEIVED.
- B. CONTRACTOR SHALL PROTECT ALL MATERIALS FROM DAMAGE DUE TO JOB SITE CONDITIONS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DAMAGED MATERIALS SHALL NOT BE INCORPORATED INTO THE WORK.

PART 2: PRODUCTS

2.01 MODULAR CONCRETE RETAINING WALL UNITS

- A. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING ARCHITECTURAL REQUIREMENTS:
FACE COLOR - COLOR MAY BE SPECIFIED BY THE OWNER.
FACE FINISH - HARD SPLIT IN ANGULAR TRI-PLANE OR STRAIGHT FACE CONFIGURATION. OTHER FACE FINISHES WILL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL OF OWNER.
BOND CONFIGURATION - RUNNING WITH BONDS NOMINALLY LOCATED AT MIDPOINT IN VERTICALLY ADJACENT UNITS, IN BOTH STRAIGHT AND CURVED ALIGNMENTS.
EXPOSED SURFACES OF UNITS SHALL BE FREE OF CHIPS, CRACKS OR OTHER IMPERFECTIONS WHEN VIEWED FROM A DISTANCE OF 20 FEET UNDER DIFFUSED LIGHTING.
- B. MODULAR CONCRETE UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1372 - STANDARD SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.
- C. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING STRUCTURAL AND GEOMETRIC REQUIREMENTS MEASURED IN ACCORDANCE WITH ASTM C140 SAMPLING & TESTING CONCRETE MASONRY UNITS:
COMPRESSIVE STRENGTH = 3000 PSI MINIMUM; ABSORPTION = 8% MAXIMUM (6% MAXIMUM IN NORTHERN STATES) FOR STANDARD WEIGHT AGGREGATES.
DIMENSIONAL TOLERANCES = ±1/8" FROM NOMINAL UNIT DIMENSIONS NOT INCLUDING ROUGH SPLIT FACE ±1/4" FROM NOMINAL UNIT HEIGHT. UNIT SIZE - 8" (H) X 18" (W) X 12" (D) MINIMUM FOR COMPACT UNITS; UNIT SIZE - 8" (H) X 18" (W) X 18" (D) MINIMUM FOR STANDARD UNITS.
INTER-UNIT SHEAR STRENGTH - 1000 PLF MINIMUM AT 2 PSI NORMAL PRESSURE; AT 2 PSI NORMAL FORCE.
[GEOGRID/UNIT PEAK CONNECTION STRENGTH - 1000 PLF MINIMUM.]
- D. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING CONSTRUCTABILITY REQUIREMENTS:
VERTICAL SETBACK = 1/8" PER COURSE (NEAR VERTICAL) OR 1 1/2" PER COURSE PER TYPICAL WALL SECTION; ALIGNMENT AND GRID ATTACHING MECHANISM - FIBERGLASS PINS, TWO PER UNIT MINIMUM; MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE 1/2" INCH.

2.02 SHEAR AND REINFORCEMENT PIN CONNECTORS

- A. SHEAR AND REINFORCEMENT PIN CONNECTORS SHALL BE 1/2 INCH DIAMETER THERMOSET ISOPHTHALIC POLYESTER RESIN PULTRUDED FIBERGLASS REINFORCEMENT RODS OR EQUIVALENT TO PROVIDE CONNECTION BETWEEN VERTICALLY AND HORIZONTALLY ADJACENT UNITS AND GEOSYNTHETIC REINFORCEMENT WITH THE FOLLOWING REQUIREMENTS: FLEXURAL STRENGTH IN ACCORDANCE WITH ASTM D4476: 128,000 PSI MINIMUM; SHORT BEAM SHEAR IN ACCORDANCE WITH ASTM D4475: 6,400 PSI MINIMUM.
- B. SHEAR CONNECTORS SHALL BE CAPABLE OF HOLDING THE GEOGRID IN THE PROPER DESIGN POSITION DURING GRID PRE-TENSIONING AND BACKFILLING.

2.03 BASE LEVELING PAD MATERIAL

- A. MATERIAL SHALL CONSIST OF A COMPACTED #57 CRUSHED STONE BASE OR CONCRETE AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- B. REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES WHERE HAND OPERATED COMPACTION EQUIPMENT IS USED, OR 8 - 10 INCHES WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.
- C. REINFORCED BACKFILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D998. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND SHALL BE +0% TO -3% OF OPTIMUM.
- D. ONLY LIGHTWEIGHT HAND-OPERATED COMPACTION EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET FROM THE BACK OF THE MODULAR CONCRETE UNIT.

2.04 UNIT DRAINAGE FILL

- A. UNIT DRAINAGE FILL SHALL CONSIST OF #57 CRUSHED STONE.

2.05 REINFORCED BACKFILL

- A. REINFORCED BACKFILL SHALL BE TYPE SM, UNLESS OTHERWISE SHOWN. FREE OF DEBRIS AND MEET THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM D422 AND MEET OTHER PROPERTIES SHOWN ON THE PLAN:

SIEVE SIZE	PERCENT PASSING
1 1/2 INCH	100
3/4 INCH	100-75
NO. 40	0-60
NO. 200	0-35

PLASTICITY INDEX (PI) <15 AND LIQUID LIMIT <40, PER ASTM D4318.

- B. MATERIAL CAN BE SITE EXCAVATED SOILS WHERE THE ABOVE REQUIREMENTS CAN BE MET. UNSUITABLE SOILS FOR BACKFILL (HIGHLY PLASTIC CLAYS OR ORGANIC SOILS) SHALL NOT BE USED IN THE REINFORCED SOIL MASS.

- C. CONTRACTOR SHALL SUBMIT REINFORCED FILL SAMPLE AND LABORATORY TEST RESULTS FOR APPROVAL PRIOR TO THE USE OF ANY REINFORCED BACKFILL MATERIAL.

2.06 GEOGRID SOIL REINFORCEMENT

- A. GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF GEOGRIDS MANUFACTURED SPECIFICALLY FOR SOIL REINFORCEMENT APPLICATIONS AND SHALL BE MANUFACTURED FROM HIGH TENACITY POLYESTER (PET) YARN.

2.07 DRAINAGE PIPE

- A. THE DRAINAGE PIPE SHALL BE PERFORATED CORRUGATED HDPE PIPE MANUFACTURED IN ACCORDANCE WITH ASTM D1248.

2.08 GEOTEXTILE FILTER FABRIC

- A. WHEN REQUIRED, FILTER FABRIC SHALL BE A NEEDLE-PUNCHED NONWOVEN FABRIC MEETING REQUIREMENTS OF AASHTO M228.

PART 3 EXECUTION

3.01 EXCAVATION

- A. CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. OWNER'S REPRESENTATIVE SHALL BE RESPONSIBLE FOR INSPECTING AND APPROVING THE SUBGRADE PRIOR TO PLACEMENT OF LEVELING MATERIAL OR FILL SOILS.

3.02 BASE LEVELING PAD

- A. LEVELING PAD MATERIAL SHALL BE PLACED TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS, TO A MINIMUM THICKNESS OF 6 INCHES AND EXTEND LATERALLY A MINIMUM OF 6" IN FRONT AND BEHIND THE MODULAR WALL UNIT.
- B. LEVELING PAD SHALL BE PREPARED TO INSURE FULL CONTACT TO THE BASE SURFACE OF THE CONCRETE UNITS.
- C. COMPACT TO MINIMUM 95% OF STANDARD PROCTOR DENSITY PER ASTM D998.

3.03 MODULAR UNIT INSTALLATION

- A. FIRST COURSE OF UNITS SHALL BE PLACED ON THE LEVELING PAD AT THE APPROPRIATE LINE AND GRADE. ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL DIRECTIONS AND INSURE THAT ALL UNITS ARE IN FULL CONTACT WITH THE BASE AND PROPERLY SEATED.
- B. PLACE THE FRONT OF UNITS SIDE-BY-SIDE. DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS. LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- C. INSTALL SHEAR/CONNECTING DEVICES PER MANUFACTURER'S RECOMMENDATIONS.
- D. PLACE AND COMPACT DRAINAGE FILL WITHIN AND BEHIND WALL UNITS. NOT LESS THAN 1.3 CU. FT. OF DRAINAGE FILL SHALL BE USED FOR EACH SQ. FT. OF WALL FACE, UNLESS NOTED OTHERWISE.
- E. PLACE AND COMPACT REINFORCED BACKFILL SOIL BEHIND DRAINAGE FILL. FOLLOW WALL ERECTION AND DRAINAGE FILL CLOSELY WITH BACKFILL.
- F. MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS, PRIOR TO UNIT DRAINAGE FILL AND BACKFILL PLACEMENT AND COMPACTION, SHALL NOT EXCEED TWO COURSES.

3.04 STRUCTURAL GEOGRID INSTALLATION

- A. GEOGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE WALL ALIGNMENT.
- B. GEOGRID REINFORCEMENT SHALL BE PLACED AT THE STRENGTHS, LENGTHS, AND ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE ENGINEER.
- C. THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL AND ATTACHED TO THE MODULAR WALL UNIT PINS AND WITHIN 1 INCH OF THE FACE OF THE UNITS. PLACE THE NEXT COURSE OF MODULAR CONCRETE UNITS OVER THE GEOGRID. THE GEOGRID SHALL BE PULLED TAUT, AND ANCHORED PRIOR TO BACKFILL PLACEMENT ON THE GEOGRID.
- D. GEOGRID REINFORCEMENTS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTHS AND PLACED SIDE-BY-SIDE TO PROVIDE 100% COVERAGE AT EACH LEVEL. SPliced CONNECTIONS BETWEEN SHORTER PIECES OF GEOGRID OR GAPS GREATER THAN 2 INCHES BETWEEN ADJACENT PIECES OF GEOGRID ARE NOT PERMITTED.

3.05 REINFORCED BACKFILL PLACEMENT

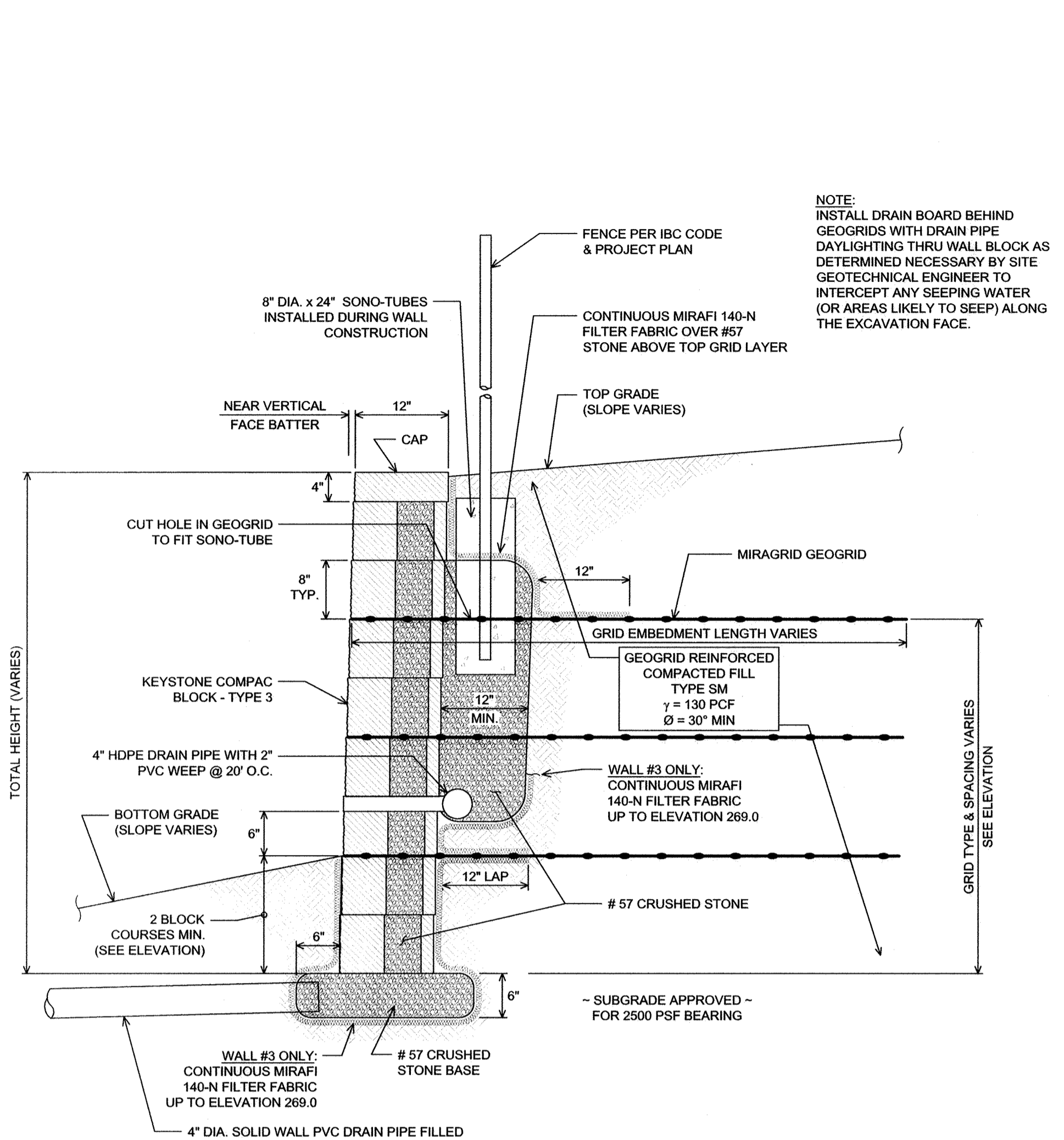
- A. REINFORCED BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOGRID AND INSTALLATION DAMAGE TO GEOGRID.
- B. REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES WHERE HAND OPERATED COMPACTION EQUIPMENT IS USED, OR 8 - 10 INCHES WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.
- C. REINFORCED BACKFILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D998. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND SHALL BE +0% TO -3% OF OPTIMUM.
- D. ONLY LIGHTWEIGHT HAND-OPERATED COMPACTION EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET FROM THE BACK OF THE MODULAR CONCRETE UNIT.
- E. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOGRID REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING OR DISPLACING THE MODULAR CONCRETE UNITS OR GEOGRID.
- F. RUBBER TIRE EQUIPMENT MAY PASS OVER GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND TURNING SHALL BE AVOIDED.
- G. AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCED BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION SITE.

3.06 CAP INSTALLATION

- A. PRIOR TO PLACEMENT OF CAP UNITS, THE UPPER SURFACE OF THE TOP COURSE WALL UNITS SHALL BE CLEANED OF SOIL AND ANY OTHER MATERIAL.
- B. CAP UNITS SHALL BE GLUED TO UNDERLYING UNITS WITH AN ALL-WEATHER EXTERIOR CONSTRUCTION ADHESIVE RECOMMENDED BY THE MANUFACTURER.

3.07 FIELD QUALITY CONTROL

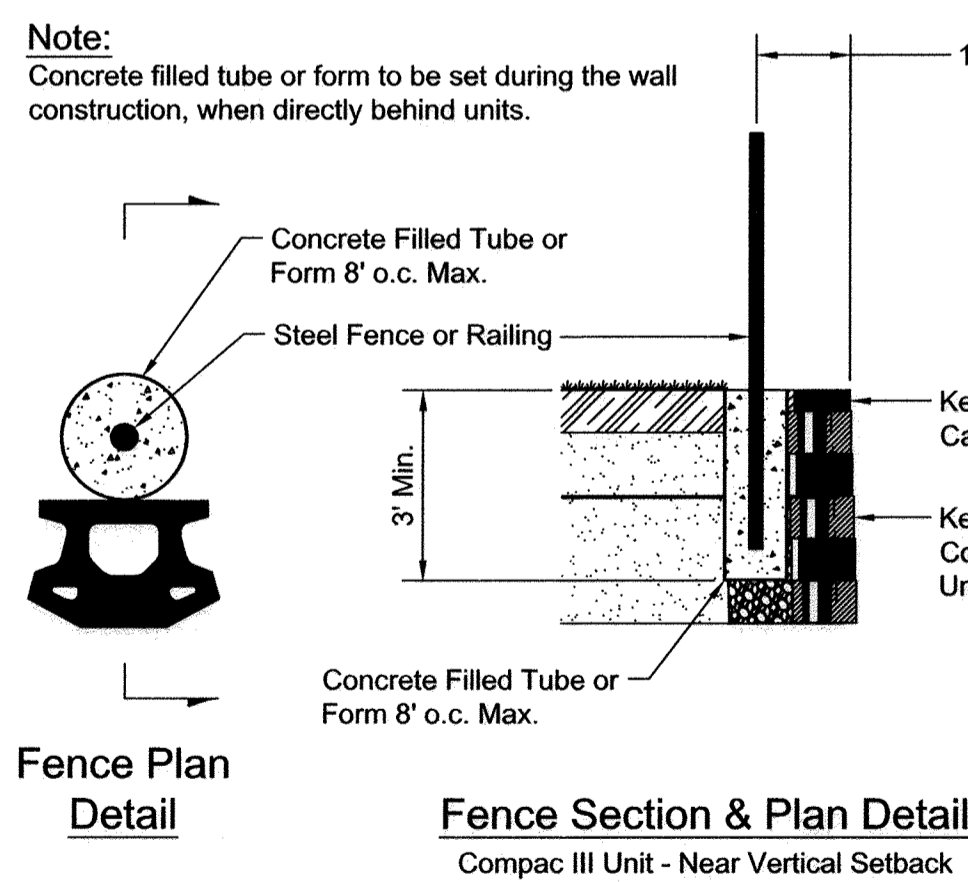
- A. THE OWNER SHALL ENGAGE INSPECTION AND TESTING SERVICES, INCLUDING INDEPENDENT LABORATORIES, TO PROVIDE QUALITY ASSURANCE AND TESTING SERVICES DURING CONSTRUCTION.
- B. AS A MINIMUM, QUALITY ASSURANCE TESTING SHOULD INCLUDE FOUNDATION SOIL INSPECTION, RETAINED SOIL AND BACKFILL TESTING, VERIFICATION OF DESIGN PARAMETERS, AND OBSERVATION OF CONSTRUCTION FOR GENERAL COMPLIANCE WITH DESIGN DRAWINGS AND SPECIFICATIONS.



**TYPICAL WALL #1 & #3 SECTION
N.T.S.**

HOWARD COUNTY NOTES:

- NO TREES SHALL BE PLANTED WITHIN 10 FEET OF THE TOP OF THE RETAINING WALL.
- RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL, OR EQUIV.) CERTIFIED SOILS TECHNICIAN.
- ONE SOIL BORING SHALL BE REQUIRED EVERY ONE HUNDRED FEET ALONG THE ENTIRE LENGTH OF THE WALL. COPIES OF ALL BORING REPORTS SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION.
- THE REQUIRED BEARING PRESSURE BENEATH THE WALL SYSTEM SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION MUST BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO START OF CONSTRUCTION. THE REQUIRED BEARING TEST SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM STP-399.
- THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN. EACH 8" LIFT MUST BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
- WALLS SHALL NOT BE CONSTRUCTED ON UNCERTIFIED FILL MATERIALS.
- WALLS SHALL NOT BE CONSTRUCTED WITHIN A HOWARD CO. RIGHT-OF-WAY OR EASEMENT.



**TYPICAL WALL #2 SECTION
N.T.S.**

"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. 14808, EXPIRATION DATE: FEBRUARY 27, 2022."

TIMOTHY D. HILL, P.E. 7/14/2020

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

SIGNATURE P.E. No. DATE:
CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE 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.

DATE	DESCRIPTION	REVISION BLOCK
7/14/2020		
8/15/2020		
9/16/20		
7/27/20		

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director, Department of Planning and Zoning

Chief, Division of Land Development

Chief, Development Engineering Division

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6805

RETAINING WALL CONSTRUCTION DETAILS

REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY
AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794

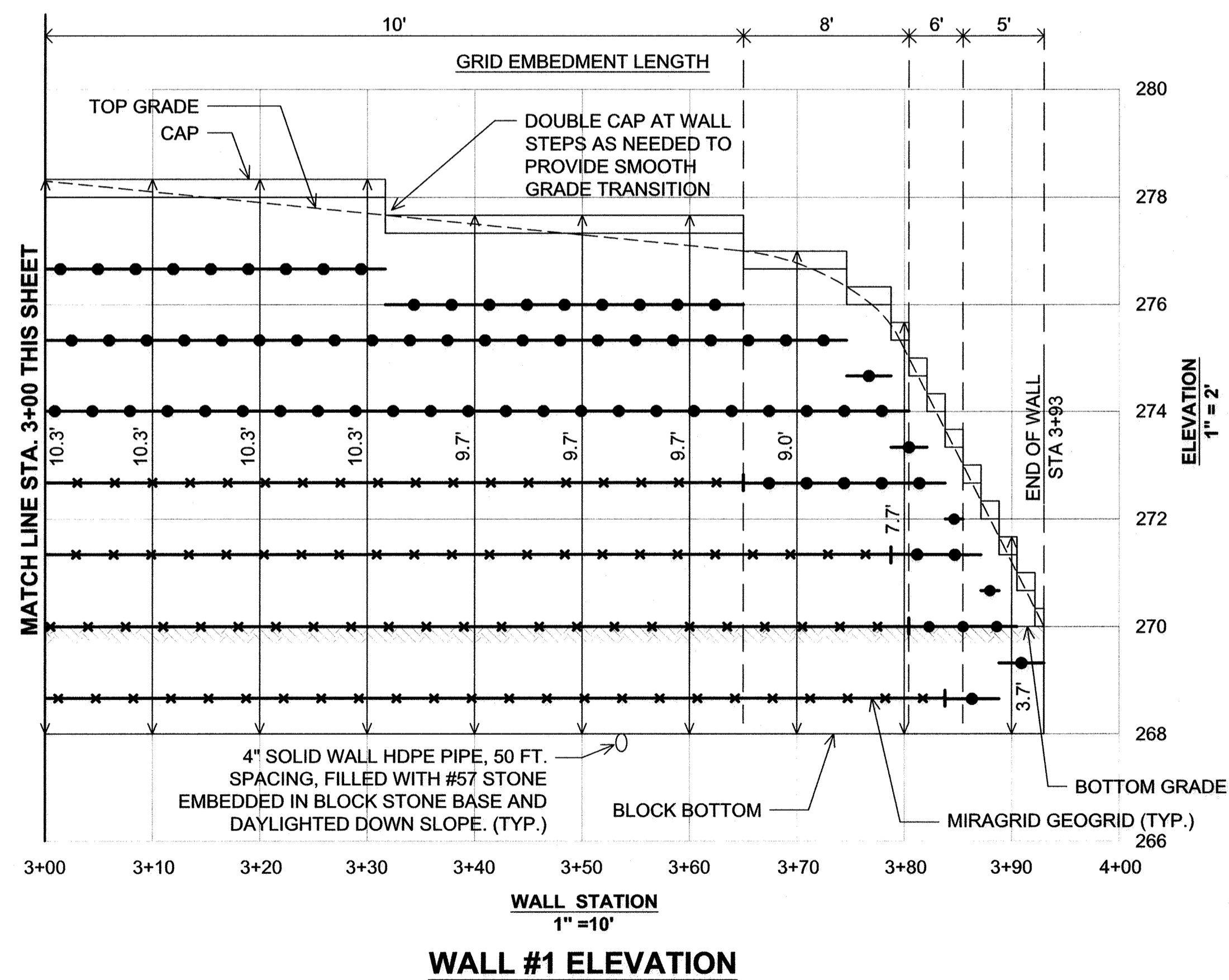
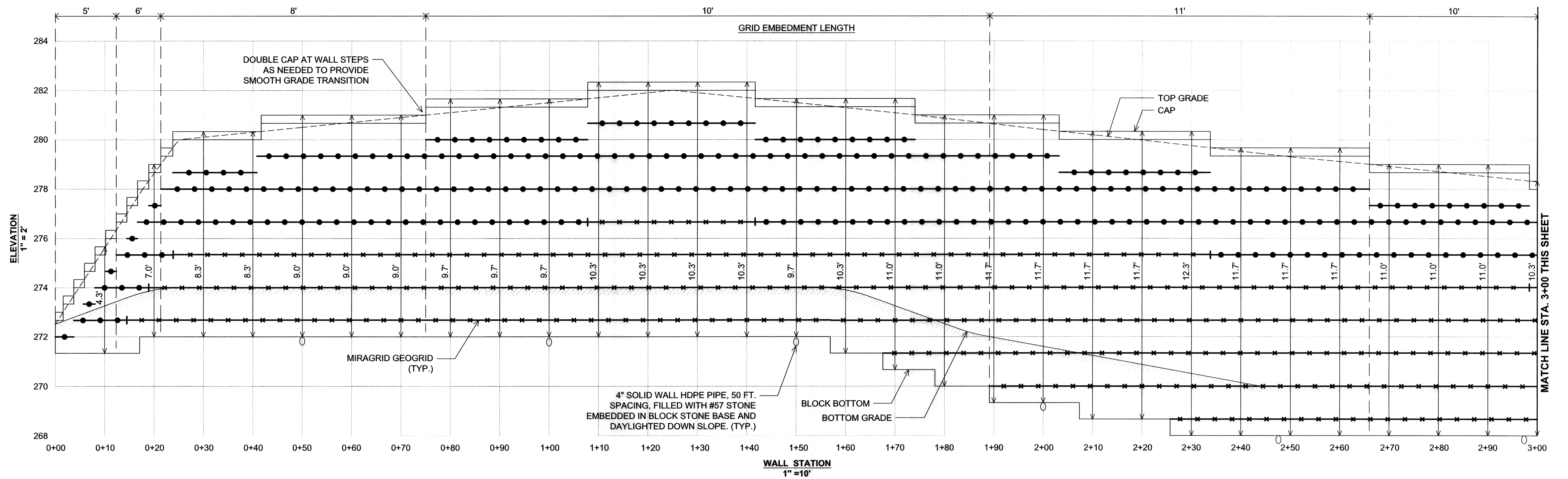
ZONED: R-5C MXD-3, R-5A-B MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 31 OF 39

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2800

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, Maryland
Phone: (410) 880-4788 www.hca.com Fax: (410) 880-4098

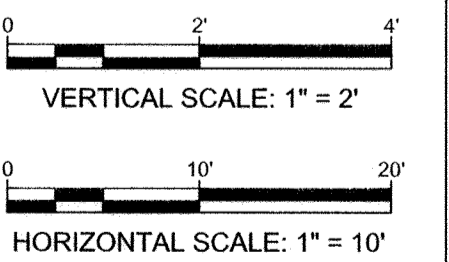
DESIGNED BY: AM DRAWN BY: AM
APPROVED BY: RWS HCEA JOB NO.: 19428A





GEOGRID KEY

- MIRAGRID 3XT GEOGRID
- MIRAGRID 5XT GEOGRID



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2855

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, Maryland
Phone: (410) 880-4788 www.hca.com Fax: (410) 880-4098
DESIGNED BY: AM DRAWN BY: AM
APPROVED BY: RWS HCEA JOB NO.: 19428A



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Timothy B. Hill
TIMOTHY B. HILL, P.E. DATE: 7/14/2020

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

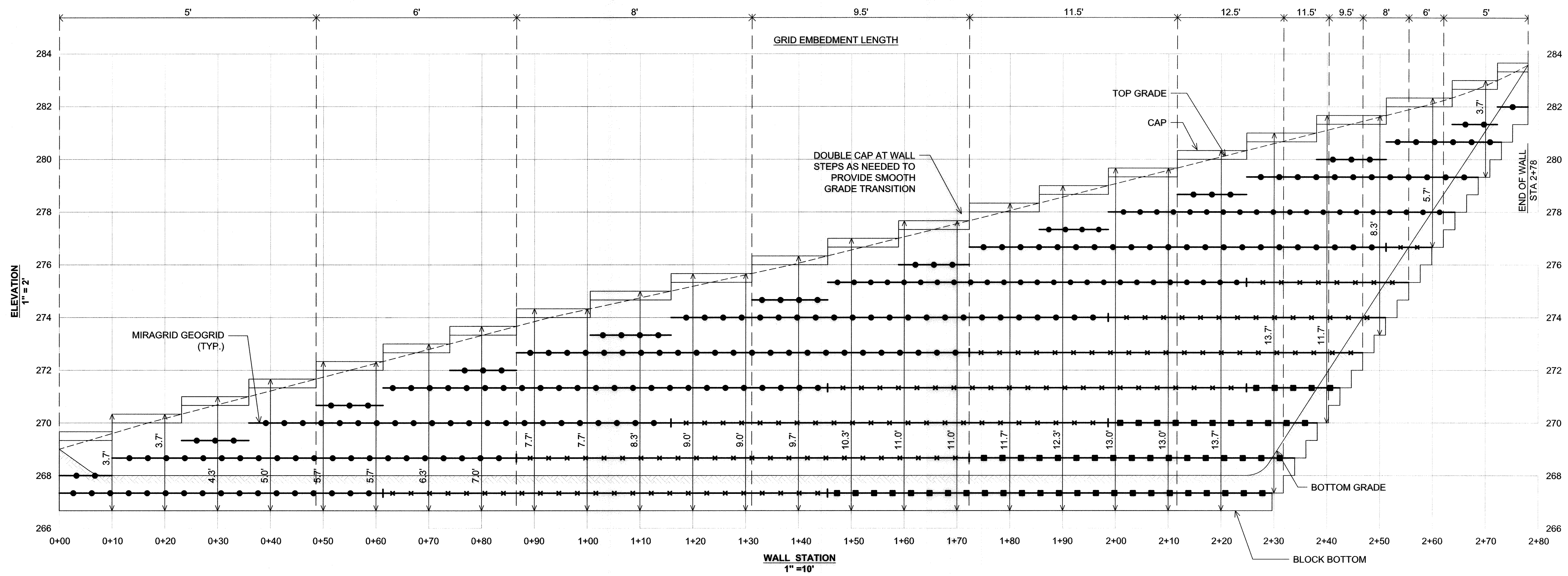
SIGNATURE: _____ P.E. No. _____ DATE: _____
CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE 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.

DATE	DESCRIPTION	REVISION BLOCK
7/15/2020	APPROVED: DEPARTMENT OF PLANNING AND ZONING	
7/15/20	Director - Department of Planning and Zoning	
7-21-20	Chief, Division of Land Development	
	Chief, Development Engineering Division	4

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6805

PROJECT	SECTION/AREA	PARCEL
HIGH SCHOOL #13	N/A	102, 349, 235
PLAT NOS.	BLOCK NO.	ZONE
-	18 & 24 13 & 19	R-12 RSC MXD-3 RGA-8 MXD-3
WATER CODE	TAX MAP	ELEC. DIST. CENSUS TR.
----	42 & 43	SIXTH 606901
	SEWER CODE	----

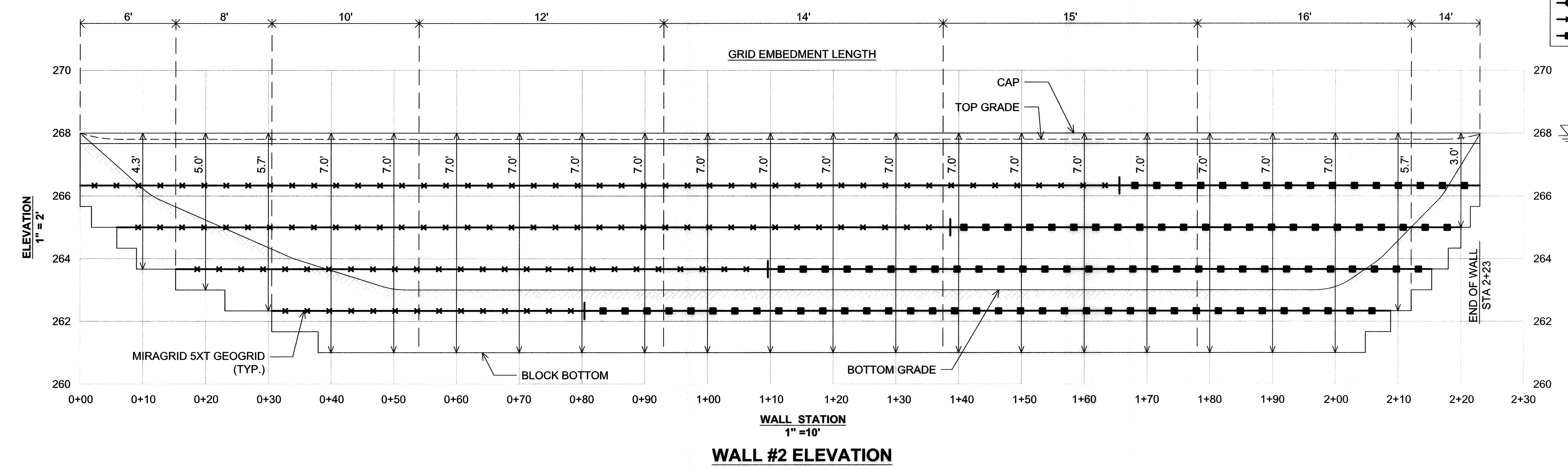
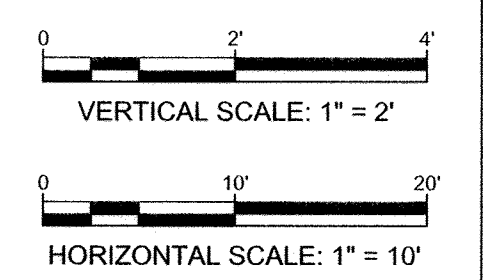
RETAINING WALL #1 ELEVATION
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY
AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794
ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 32 OF 39



GEOGRID KEY

- MIRAGRIDS 3XT GEOGRID
- MIRAGRIDS 5XT GEOGRID
- MIRAGRIDS 7XT GEOGRID

NOTE: FILL IN WALL #2 GEOGRID ZONE SHALL BE CR-6 OR SIMILAR LOW FINES NON PLASTIC HIGHLY GRANULAR MATERIAL APPROVED BY HCEA.



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELIJAH CITY, MARYLAND 21042
 (410) 881-2000

HILLIS-CARNES
 ENGINEERING ASSOCIATES
 10975 Guilford Road, Suite A Annapolis Junction, Maryland
 Phone: (410) 880-4788 www.hcea.com Fax: (410) 880-4098
 DESIGNED BY: AM DRAWN BY: AM
 APPROVED BY: RWS HCEA JOB NO.: 19428A

TIMOTHY B. WEL, P.E.
 DATE: 7/14/2020

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

SIGNATURE: _____ P.E. No. _____ DATE: _____

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE 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.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director, Department of Planning and Zoning: *Maryland* Date: 8/15/2020

Chief, Division of Land Development: *Timothy B. Wel* Date: 7/29/2020

Chief, Development Engineering Division: _____

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 9020 MENDENHALL COURT
 SUITE "C"
 COLUMBIA, MARYLAND 21045
 Attention: DANIEL LUBELEY
 410-313-6805

PROJECT HIGH SCHOOL #13		SECTION/AREA N/A	PARCEL 102, 349, 235
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP ELEC. DIST. CENSUS TR.
-	18 & 24 13 & 19	R-12 RSC MXD-3 RSA-0 MXD-3	42 & 43 SIXTH 606901
WATER CODE	SEWER CODE		
----	----		

RETAINING WALL #2 & #3 ELEVATIONS
 REVISED SITE DEVELOPMENT PLAN
 FOR
 CHASE PROPERTY
 AT MISSION ROAD
 0420 WASHINGTON BLVD
 JESSUP, MARYLAND 20794

ZONED: R-5C MXD-3, R-5A-0 MXD-3 AND R-12
 PARCEL Nos.: 102, 349, 235
 TAX MAP No.: 42 & 43 GRID No.: 24 & 19
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 33 OF 39

CONTRACTOR NOTE:
DURING CONSTRUCTION ACTIVITIES THE LIMITS OF DISTURBANCE (L.O.D.) SHALL NOT EXCEED 30 ACRES.

(13.48 ac.)
587,239 sf
RCN = 91

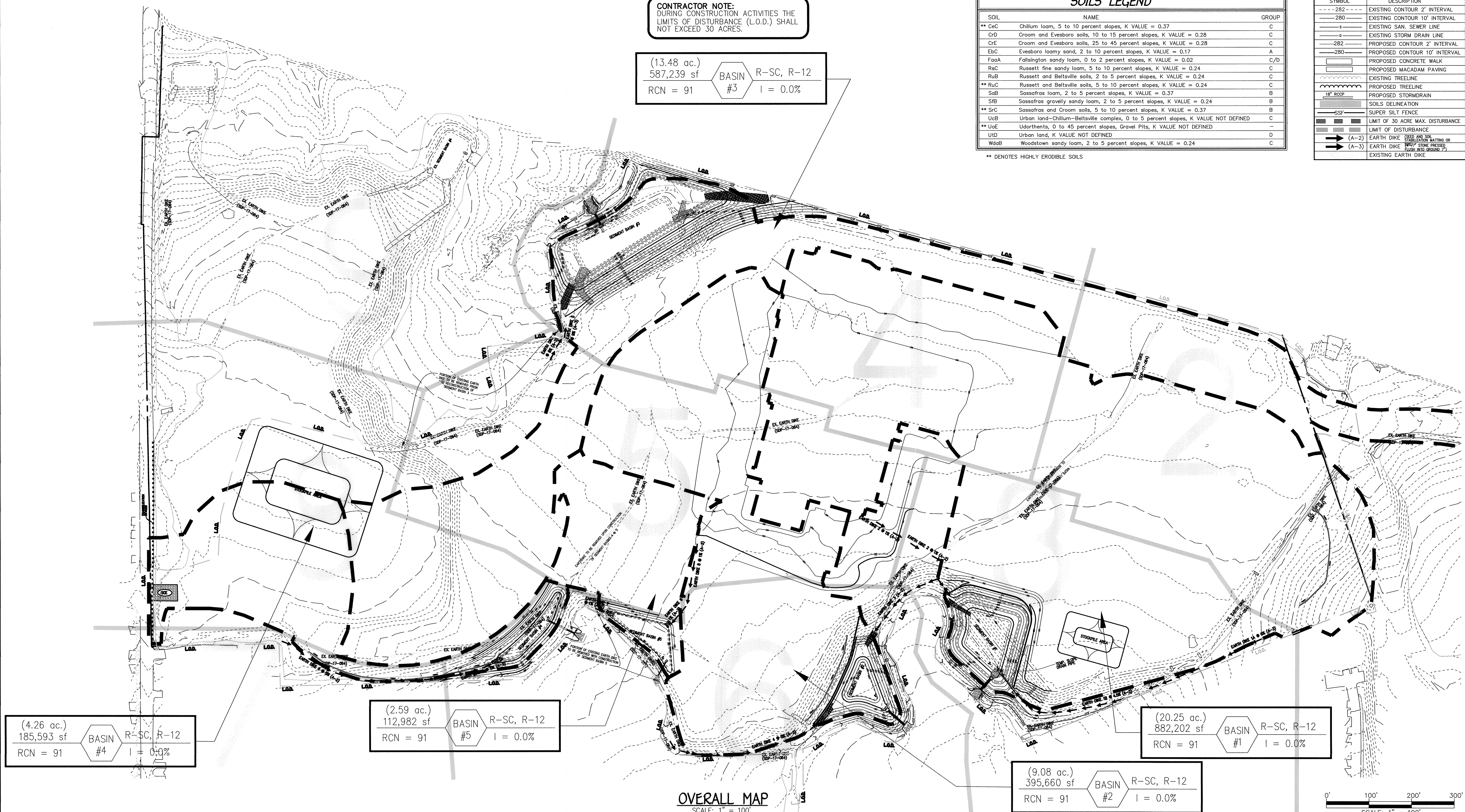
BASIN #3

R-SC, R-12
I = 0.0%

SOILS LEGEND		
SOIL	NAME	GROUP
** CeC	Chillum loam, 5 to 10 percent slopes, K VALUE = 0.37	C
CrD	Croom and Evesboro soils, 10 to 15 percent slopes, K VALUE = 0.28	C
CrE	Croom and Evesboro soils, 25 to 45 percent slopes, K VALUE = 0.28	C
EbC	Evesboro loamy sand, 2 to 10 percent slopes, K VALUE = 0.17	A
FaaA	Fallsington sandy loam, 0 to 2 percent slopes, K VALUE = 0.02	C/D
RsC	Russett fine sandy loam, 5 to 10 percent slopes, K VALUE = 0.24	C
RuB	Russett and Beltsville soils, 2 to 5 percent slopes, K VALUE = 0.24	C
** RuC	Russett and Beltsville soils, 5 to 10 percent slopes, K VALUE = 0.24	C
SaB	Sassafras loam, 2 to 5 percent slopes, K VALUE = 0.37	B
SfB	Sassafras gravelly sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	B
** SrC	Sassafras and Croom soils, 5 to 10 percent slopes, K VALUE = 0.37	B
UcB	Urban land-Chillum-Beltsville complex, 0 to 5 percent slopes, K VALUE NOT DEFINED	C
** UoE	Udorthents, 0 to 45 percent slopes, Gravel Pits, K VALUE NOT DEFINED	-
UoD	Urban land, K VALUE NOT DEFINED	D
WdaB	Woodstown sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	C

** DENOTES HIGHLY ERODIBLE SOILS

LEGEND	
SYMBOL	DESCRIPTION
---282---	EXISTING CONTOUR 2' INTERVAL
---280---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	PROPOSED STORMDRAIN
---	SOILS DELINEATION
---	SUPER SILT FENCE
---	LIMIT OF 30 ACRE MAX. DISTURBANCE
---	LIMIT OF DISTURBANCE
---	(A-2) EARTH DIKE (WOOD AND SOIL FILLATION FOR MATTING OR FLUSH INTO DRAINAGE ??)
---	(A-3) EARTH DIKE (WOOD AND SOIL FILLATION FOR MATTING OR FLUSH INTO DRAINAGE ??)
---	EXISTING EARTH DIKE



(4.26 ac.)
185,593 sf
RCN = 91

BASIN #4

R-SC, R-12
I = 0.0%

(2.59 ac.)
112,982 sf
RCN = 91

BASIN #5

R-SC, R-12
I = 0.0%

(20.25 ac.)
882,202 sf
RCN = 91

BASIN #1

R-SC, R-12
I = 0.0%

(9.08 ac.)
395,660 sf
RCN = 91

BASIN #2

R-SC, R-12
I = 0.0%

OVERALL MAP
SCALE: 1" = 100'

0' 100' 200' 300'
SCALE: 1" = 100'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21042
(410) 461-2855

"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. 38386, EXPIRATION DATE: JANUARY 12, 2022."

Stephanie J. Tuite
STEPHANIE J. TUITE, RLA, P.E., LEED AP BC&D
DATE: 7/14/20

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Mary Kroll Fir
Director, Department of Planning and Zoning
DATE: 8/5/2020

Chad Clark
Chief, Development Engineering Division
DATE: 7/29/20

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 100
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6805

STATE OF MARYLAND
PROFESSIONAL ENGINEER
No. 38386
11/14/20

DATE	DESCRIPTION
7/10/20	NEW SHEET TO SHOW SEDIMENT CONTROLS AND BASINS 1 THRU 5 FOR FOR NEW SCHOOL ON SITE

PROJECT	SECTION/AREA	PARCEL
HIGH SCHOOL #13	N/A	102, 349, 235

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
18 & 24 13 & 19	R-12 RSC MXD-3 RSA-8 MXD-3	42 & 43	SIXTH	606901	

WATER CODE	SEWER CODE
---	---

OVERALL SEDIMENT AND EROSION CONTROL PLAN
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794

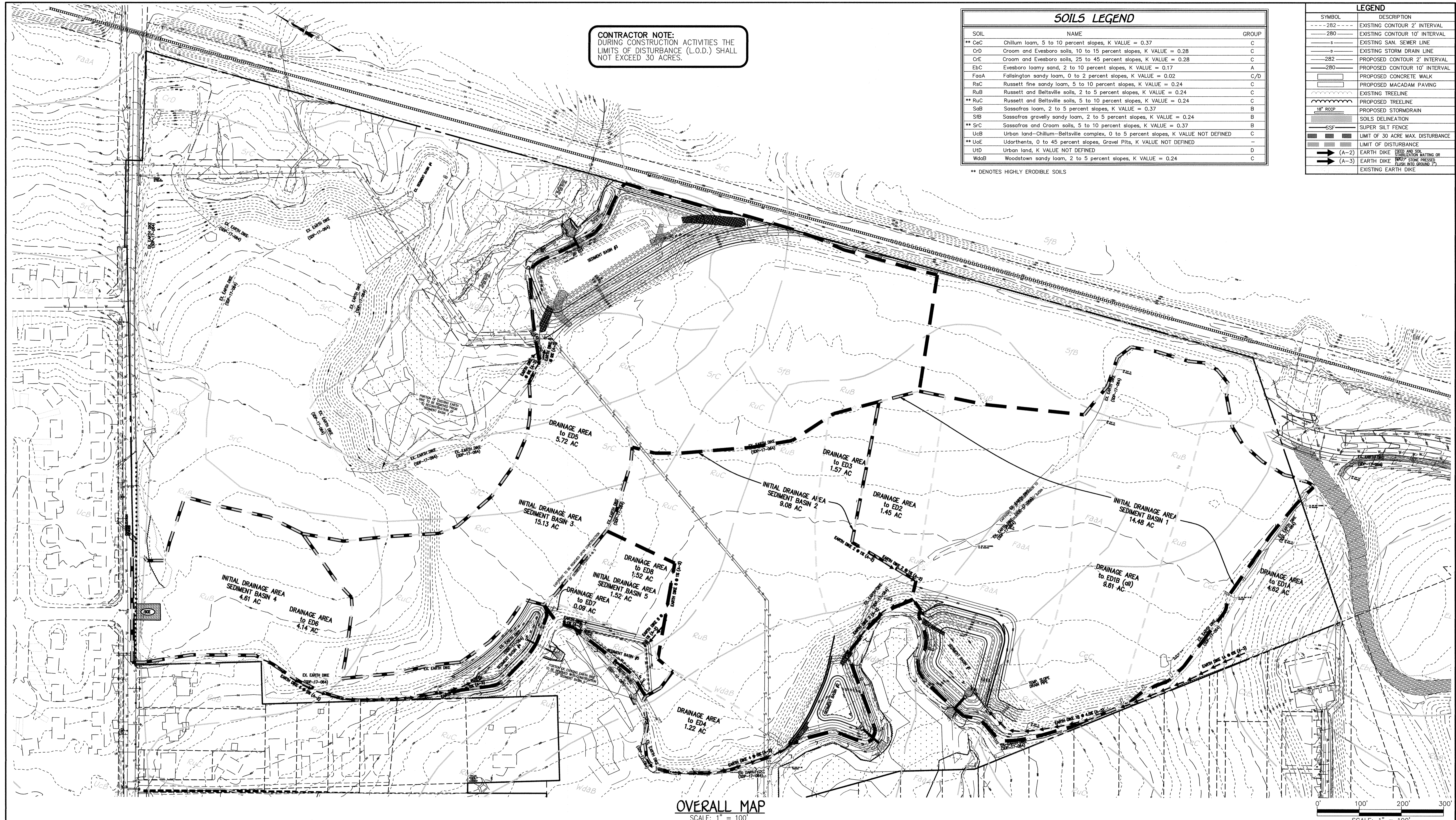
ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 34 OF 39

CONTRACTOR NOTE:
DURING CONSTRUCTION ACTIVITIES THE LIMITS OF DISTURBANCE (L.O.D.) SHALL NOT EXCEED 30 ACRES.

SOILS LEGEND		
SOIL	NAME	GROUP
** CeC	Chillum loam, 5 to 10 percent slopes, K VALUE = 0.37	C
CrD	Croom and Evesboro soils, 10 to 15 percent slopes, K VALUE = 0.28	C
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EbC	Evesboro loamy sand, 2 to 10 percent slopes, K VALUE = 0.17	A
FaaA	Fallsington sandy loam, 0 to 2 percent slopes, K VALUE = 0.02	C/D
RsC	Russett fine sandy loam, 5 to 10 percent slopes, K VALUE = 0.24	C
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** RuC	Russett and Beltsville soils, 5 to 10 percent slopes, K VALUE = 0.24	C
SoB	Sassafras loam, 2 to 5 percent slopes, K VALUE = 0.37	B
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Utd	Urban land, K VALUE NOT DEFINED	D
WdB	Woodstown sandy loam, 2 to 5 percent slopes, K VALUE = 0.24	C

** DENOTES HIGHLY ERODIBLE SOILS

LEGEND	
SYMBOL	DESCRIPTION
---282---	EXISTING CONTOUR 2' INTERVAL
---280---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---282---	PROPOSED CONTOUR 2' INTERVAL
---280---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	18" RCP
---	PROPOSED STORMDRAIN
---	SOILS DELINEATION
---	SUPER SILT FENCE
---	LIMIT OF 30 ACRE MAX. DISTURBANCE
---	LIMIT OF DISTURBANCE
---	(A-2) EARTH DIKE (SEED AND SOIL STABILIZATION MATTING OR FLUSH WITH GROUND, 7')
---	(A-3) EARTH DIKE (EMULSION BITUMEN STONE PRESSED FLUSH WITH GROUND, 7')
---	EXISTING EARTH DIKE



OVERALL MAP
SCALE: 1" = 100'

SCALE: 1" = 100'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2855

"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. 38386, EXPIRATION DATE: JANUARY 12, 2022."
Stephanie U. Tuite
STEPHANIE U. TUITE, RLA, P.E., LEED AP BC&D
DATE: 7/14/20

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Mary K. Kimmel
Director - Department of Planning and Zoning
DATE: 8/5/2020
Chris Sauer
Chief, Division of Land Development
DATE: 7-29-20
Chief, Development Engineering Division

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE 'C'
COLUMBIA, MARYLAND 21045
Attention: DANIEL LUBELEY
410-313-6805

STATE OF MARYLAND
STEPHANIE U. TUITE
PROFESSIONAL ENGINEER
7/14/20

DATE		DESCRIPTION	
7/10/20	NEW SHEET TO SHOW DRAINAGE AREAS TO SEDIMENT CONTROLS AND TO BASINS 1 THRU 5 FOR NEW SCHOOL ON SITE		
REVISION BLOCK		SECTION/AREA	PARCEL
PROJECT	HIGH SCHOOL #13	N/A	102, 349, 235
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP
18 & 24 13 & 19	R-12 RSB MND-3 RSA-8 MXD-3	42 & 43	SIXTH
ELEC. DIST.		CENSUS TR.	
606901			
WATER CODE	SEWER CODE		

INITIAL DRAINAGE AREAS TO EARTH DIKES & SEDIMENT BASINS
REVISED SITE DEVELOPMENT PLAN
FOR
CHASE PROPERTY AT MISSION ROAD
8420 WASHINGTON BLVD
JESSUP, MARYLAND 20794
ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
PARCEL Nos.: 102, 349, 235
TAX MAP No.: 42 & 43 GRID No.: 24 & 19
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2020
SHEET 35 OF 39

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: W1
 FINISH: 8/12/2019 ELEV. 286.32 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
	0.15	Brown and gray, moist, very soft sandy sil. M. (FLL)	0	1	1-1-2	DS	10'		0' Topsoil
	2.54	Medium stiff	2	2	2-2-4	DS	10'		
	5.63	Gray brown, and white, moist medium stiff sandy clay, CL (FLL)	3	3	3-3-3	DS	14'		
	7.59		4	4	4-5-3	DS	12'		
	10.11.5	Light brown, moist, medium dense silty sand, SM (FLL)	5	5	11-9-8	DS	18'		
	13.5-15	Brown, moist, stiff sandy clay, CL (FLL)	15	6	10-8-4	DS	10'		
	18.5-20	Soft	20	7	5-2-7	DS	10'		
	23.5-25	Brown, moist, dense silty sand, SM	25	8	7-2-1-16	DS	18'		
	28.5-30	Tan and red, moist, very stiff clay (CL)	30	8	2-10-12	DS	14'		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

CAVED: 20"
 WATER AT COMPLETION: DRY
 WATER AT 24 HOURS: DRY

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: W12
 FINISH: 8/12/2019 ELEV. 286.49 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
	0.15	Tan and red, moist, very stiff clay (CL)	0	1	4-2-3	DS	12'		3' Topsoil
	2.54		2	2	3-6-4	DS	14'		
	5.63		3	3	3-5-5	DS	12'		
	7.59		4	4	4-4-3	DS	8'		
	10.11.5	Brown, moist, loose, clayey sand, SC (FLL)	5	5	3-3-5	DS	8'		
	13.5-15	Medium Dense	15	6	4-5-9	DS	16'		
	18.5-20	Medium Dense (FLL)	20	7	7-6-6	DS	12'		
	23.5-25	Light brown, moist, very stiff sandy clay, CL	25	8	8-9-10	DS	16'		
	28.5-30		30	8	8-10-12	DS	14'		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

CAVED: 21"
 WATER AT COMPLETION: DRY
 WATER AT 24 HOURS: DRY

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: W2
 FINISH: 8/12/2019 ELEV. 286.49 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
	0.15	Brown, green, and gray, moist, soft to medium stiff sandy clay, CL (FLL)	0	1	4-2-3	DS	12'		3' Topsoil
	2.54		2	2	3-6-4	DS	14'		
	5.63		3	3	3-5-5	DS	12'		
	7.59		4	4	4-4-3	DS	8'		
	10.11.5	Brown, moist, loose, clayey sand, SC (FLL)	5	5	3-3-5	DS	8'		
	13.5-15	Medium Dense	15	6	4-5-9	DS	16'		
	18.5-20	Medium Dense (FLL)	20	7	7-6-6	DS	12'		
	23.5-25	Light brown, moist, very stiff sandy clay, CL	25	8	8-9-10	DS	16'		
	28.5-30		30	8	8-10-12	DS	14'		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

CAVED: 21"
 WATER AT COMPLETION: DRY
 WATER AT 24 HOURS: DRY

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: W22
 FINISH: 8/12/2019 ELEV. 286.49 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
	0.15	Brown and gray, moist, soft to medium stiff sandy clay, CL	0	1	4-2-3	DS	12'		3' Topsoil
	2.54		2	2	3-6-4	DS	14'		
	5.63		3	3	3-5-5	DS	12'		
	7.59		4	4	4-4-3	DS	8'		
	10.11.5	Brown, moist, loose, clayey sand, SC (FLL)	5	5	3-3-5	DS	8'		
	13.5-15	Medium Dense	15	6	4-5-9	DS	16'		
	18.5-20	Medium Dense (FLL)	20	7	7-6-6	DS	12'		
	23.5-25	Light brown, moist, very stiff sandy clay, CL	25	8	8-9-10	DS	16'		
	28.5-30		30	8	8-10-12	DS	14'		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

CAVED: 21"
 WATER AT COMPLETION: DRY
 WATER AT 24 HOURS: DRY

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: W3
 FINISH: 8/12/2019 ELEV. 286.49 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
	0.15	Brown and gray, moist, loose clayey sand, SC (FLL)	0	1	4-2-4	DS	10'		4' Topsoil
	2.54		2	2	10-5-4	DS	8'		
	5.63		3	3	5-4-4	DS	11'		
	7.59		4	4	4-5-5	DS	12'		
	10.11.5	Light brown, moist, medium dense silty sand, SM (FLL)	5	5	8-5-6	DS	14'		
	13.5-15		15	6	4-11-6	DS	10'		
	18.5-20	Soft	20	8	4-11-6	DS	10'		
	23.5-25	Light brown and gray, moist, medium stiff clay, CL	25	7	3-3-3	DS	14'		
	28.5-30		30	8	3-5-9	DS	14'		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

CAVED: 21"
 WATER AT COMPLETION: DRY
 WATER AT 24 HOURS: DRY

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: W32
 FINISH: 8/12/2019 ELEV. 286.49 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
	0.15	Light brown and gray, moist, very stiff clay, CL	0	1	4-2-4	DS	10'		4' Topsoil
	2.54		2	2	10-5-4	DS	8'		
	5.63		3	3	5-4-4	DS	11'		
	7.59		4	4	4-5-5	DS	12'		
	10.11.5	Green and brown, moist, medium dense silty sand, SM (FLL)	5	5	8-5-6	DS	14'		
	13.5-15		15	6	4-11-6	DS	10'		
	18.5-20	Brown, moist, medium dense silty sand, SM	20	8	4-11-6	DS	10'		
	23.5-25	Brown and light brown, moist, medium dense silty sand, SM	25	7	7-5-7	DS	10'		
	28.5-30	Light brown and gray, moist, very stiff clay, CL	30	7	7-5-11	DS	10'		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

CAVED: 14"
 WATER AT COMPLETION: DRY
 WATER AT 24 HOURS: DRY

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: W4
 FINISH: 8/12/2019 ELEV. 286.49 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
	0.15	Light brown, moist, loose to medium dense clayey sand, SC (FLL)	0	1	7-6-4	DS	10'		
	2.54		2	2	7-7-6	DS	10'		
	5.63		3	3	4-6-9	DS	10'		
	7.59		4	4	4-7-8	DS	10'		
	10.11.5	Brown, moist, medium dense silty sand, SM (FLL)	5	5	4-7-6	DS	10'		
	13.5-15		15	6	6-8-12	DS	10'		
	18.5-20	Brown and light brown, moist, medium dense silty sand, SM	20	7	7-5-7	DS	10'		
	23.5-25	Light brown and gray, moist, very stiff clay, CL	25	7	7-5-11	DS	10'		
	28.5-30		30	8	8-10-12	DS	14'		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

CAVED: 14"
 WATER AT COMPLETION: DRY
 WATER AT 24 HOURS: DRY

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: W42
 FINISH: 8/12/2019 ELEV. 286.49 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
	0.15	Light brown and gray, moist, very stiff clay, CL	0	1	12-10-14	DS	10'		
	2.54	Red, moist, very stiff clay, CL	2	2	1-2-2	DS	8'		
	5.63		3	3	1-1-1	DS	10'		
	7.59	Very soft	4	4	1-1-2	DS	10'		
	10.11.5	Very soft	5	5	1-1-1	DS	12'		
	15-16.5	Red, moist, medium stiff clay, Unified Classification: CL	6	6	5-5-5	DS	10'		
	18.5-20	Medium stiff	7	7	2-3-5	DS	12'		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

CAVED: 20"
 WATER AT COMPLETION: DRY
 WATER AT 24 HOURS: DRY

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: SW1
 FINISH: 8/12/2019 ELEV. 286.49 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
	0.15	Light brown, moist, very soft, sandy clay (FLL)	0	1	1-1-2	DS	10'		
	2.54	Medium dense	2	2	4-6-6	DS	16'		
	5.63	Light brown, moist, medium dense, silty sand, Unified Classification: SM	3	3	4-6-8	DS	14'		
	7.59	Very soft	4	4	9-6-6	DS	12'		
	10.11.5	Very soft	5	5	4-7-10	DS	16'		
	15-16.5	Red, moist, medium stiff clay, Unified Classification: CL	6	6	5-10-15	DS	12'		
	18.5-20	Medium stiff	7	7	9-13-17	DS	16'		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

CAVED: 17"
 WATER AT COMPLETION: DRY
 WATER AT 24 HOURS: DRY

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: SW2
 FINISH: 8/12/2019 ELEV. 286.49 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
	0.15	Brown, moist, loose clayey sand (FLL)	0	1	7-4-4	DS	12'		3' Topsoil
	2.54	Medium dense	2	2	4-5-4	DS	16'		
	5.63	Light brown, moist, medium dense, silty sand, Unified Classification: SM	3	3	4-6-12	DS	14'		
	7.59	Brown and gray, moist, stiff clay, Unified Classification: CL	4	4	7-6-8	DS	16'		
	10.11.5	Very soft	5	5	4-7-10	DS	16'		
	15-16.5	Gray, moist, very stiff, sandy clay some gravel (FLL)	6	6	7-10-8	DS	10'		
	18.5-20	Medium stiff	7	7	7-3-7	DS	8'		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

CAVED: 19"
 WATER AT COMPLETION: DRY
 WATER AT 24 HOURS: DRY

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: SW3
 FINISH: 8/12/2019 ELEV. 286.49 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

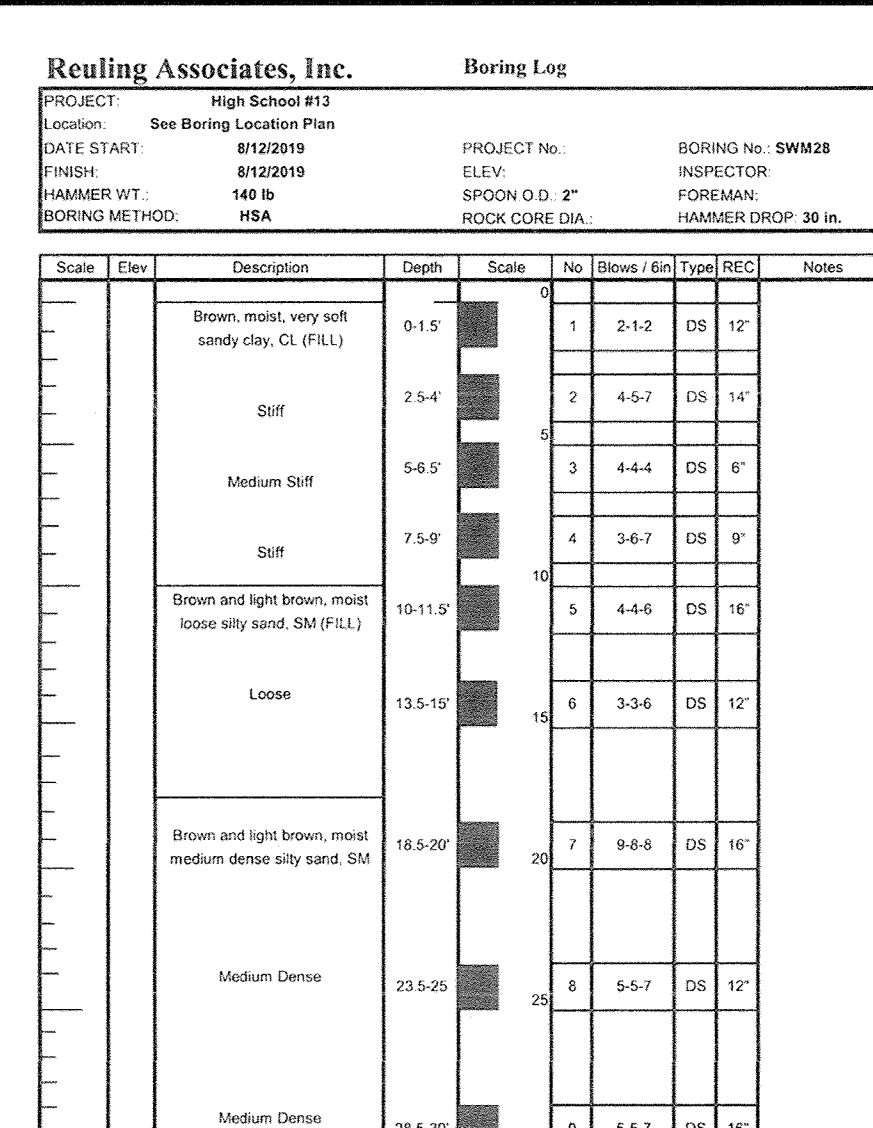
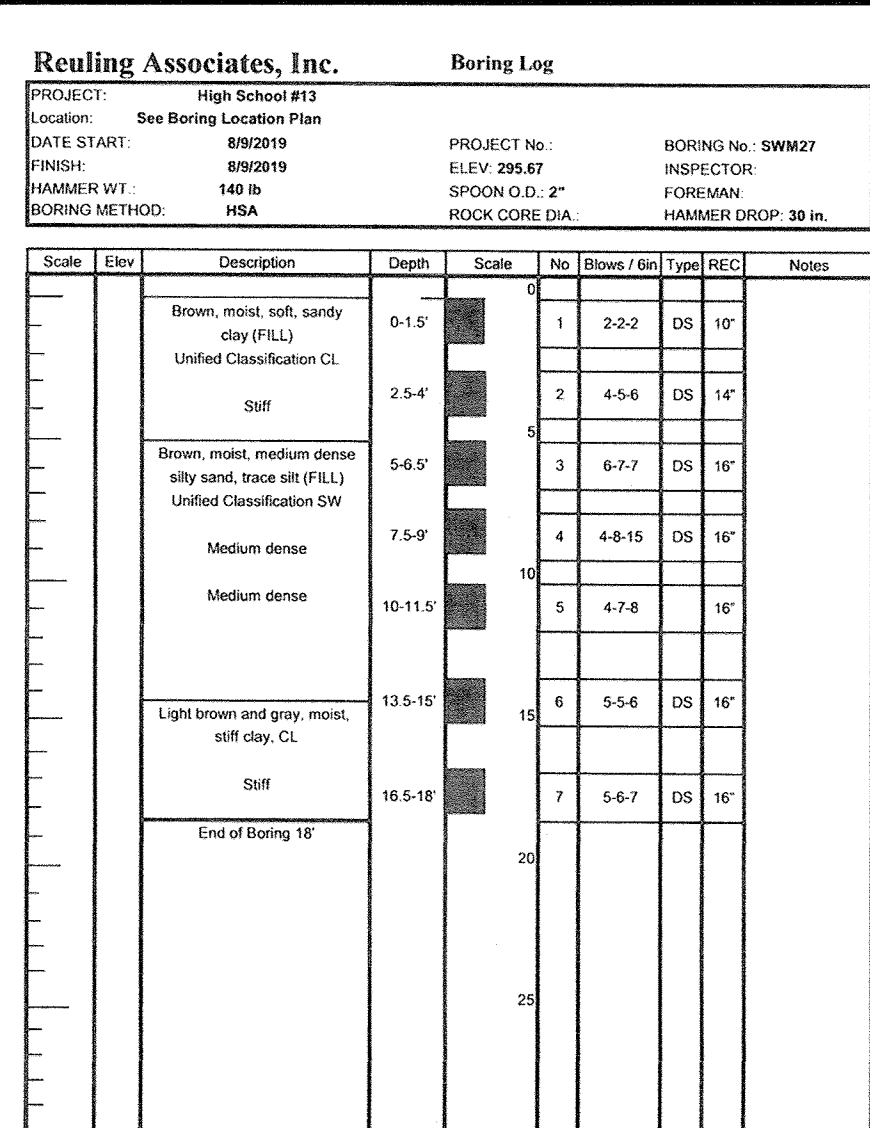
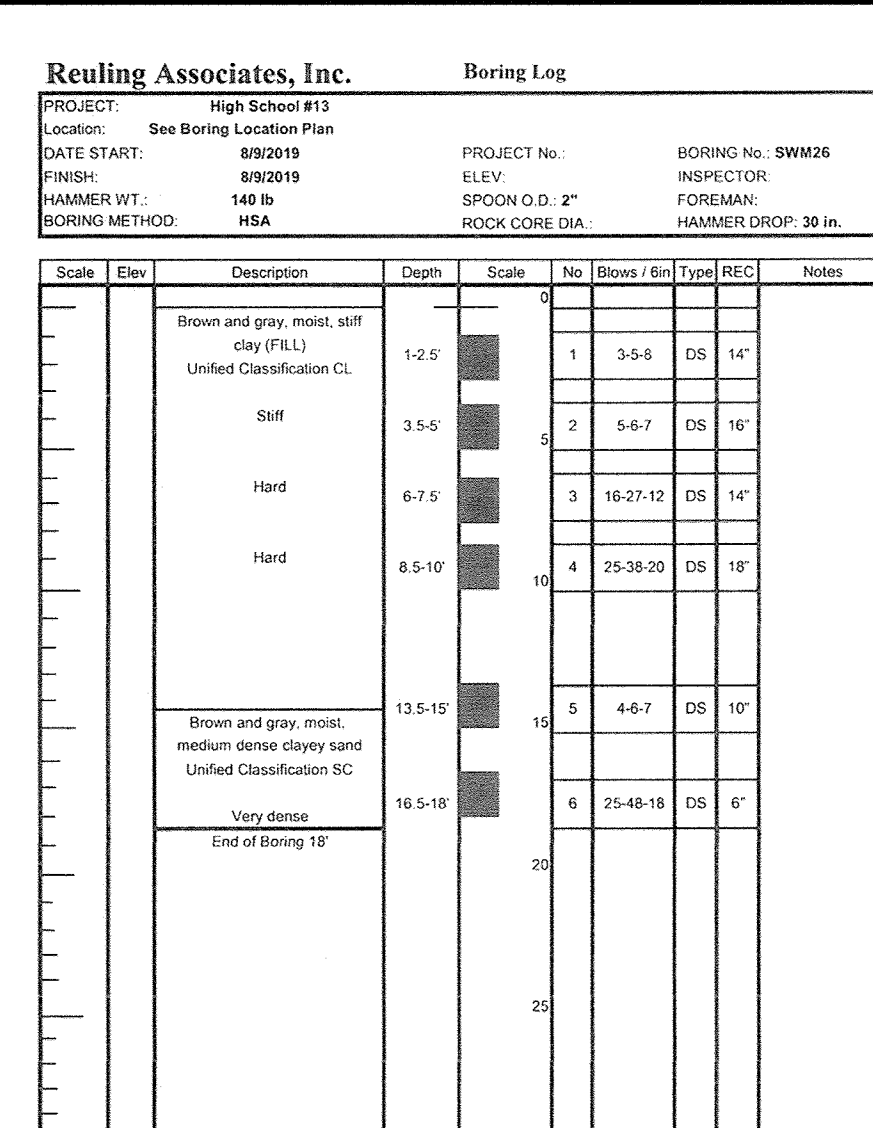
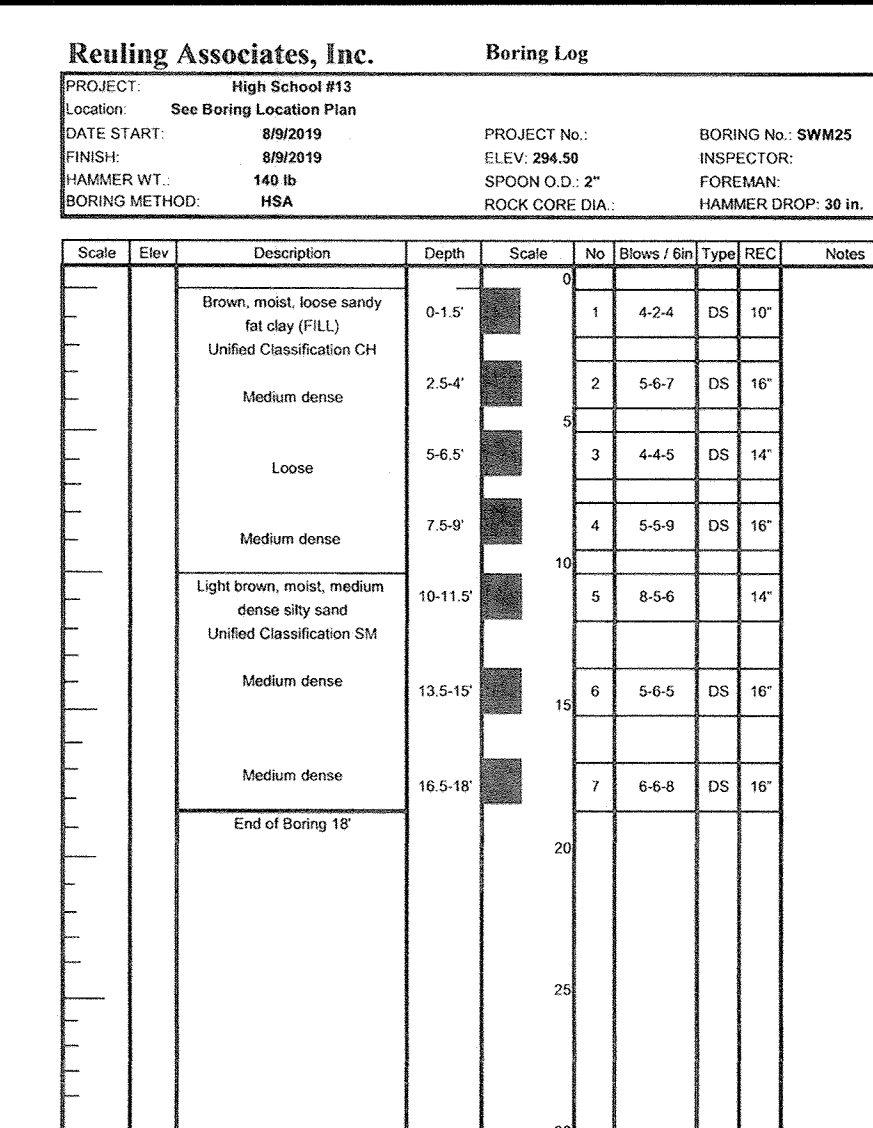
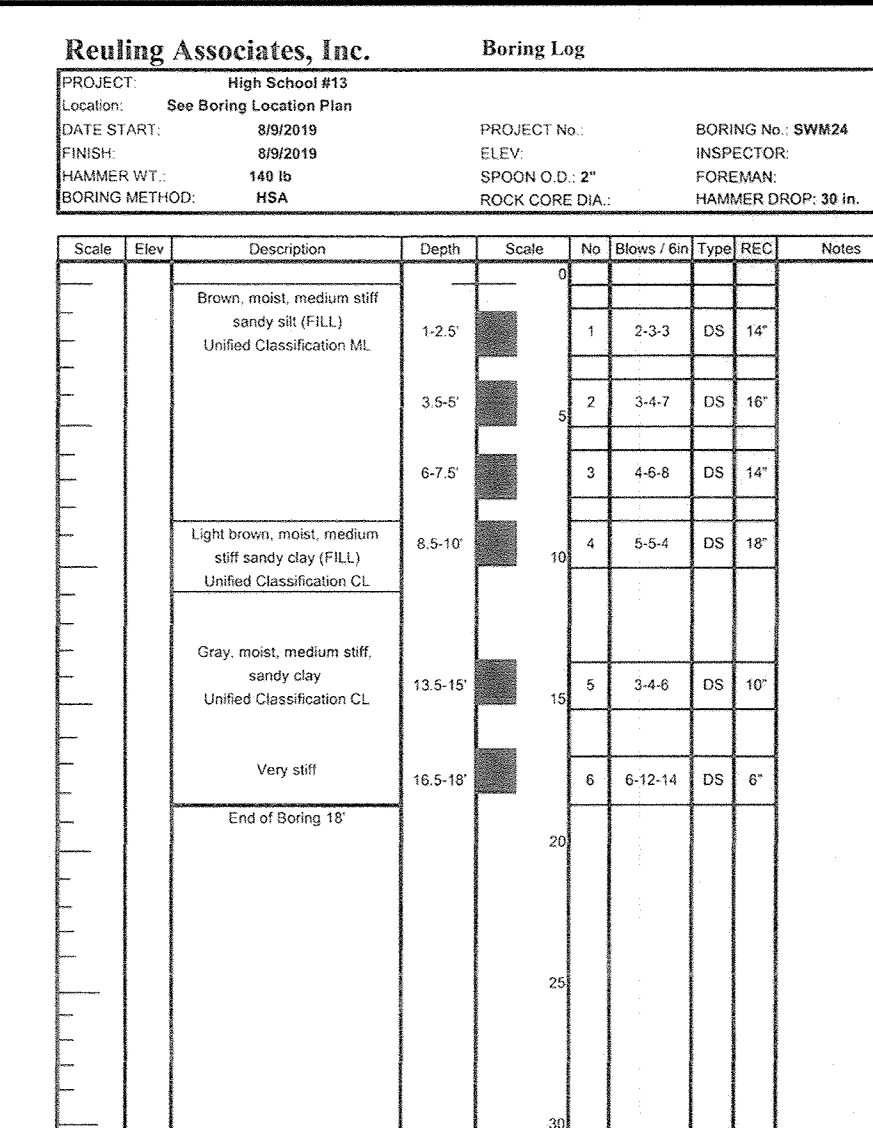
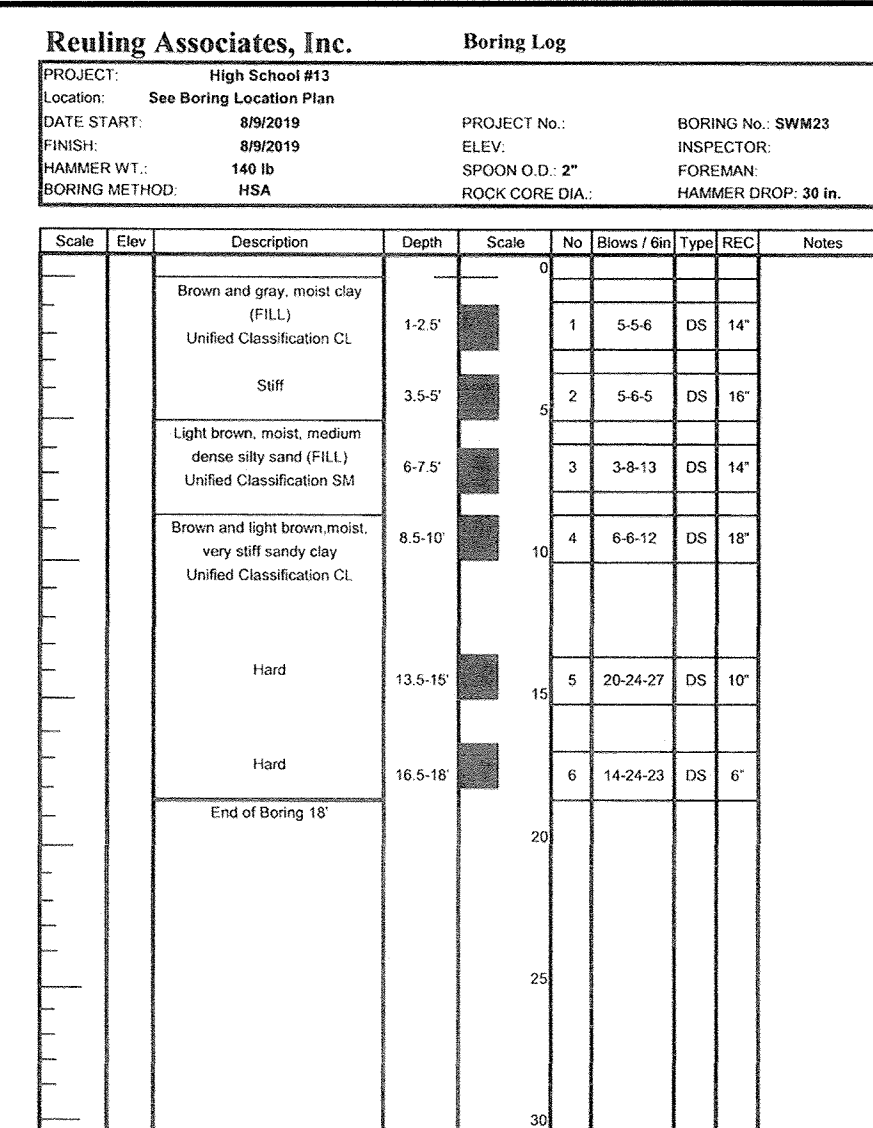
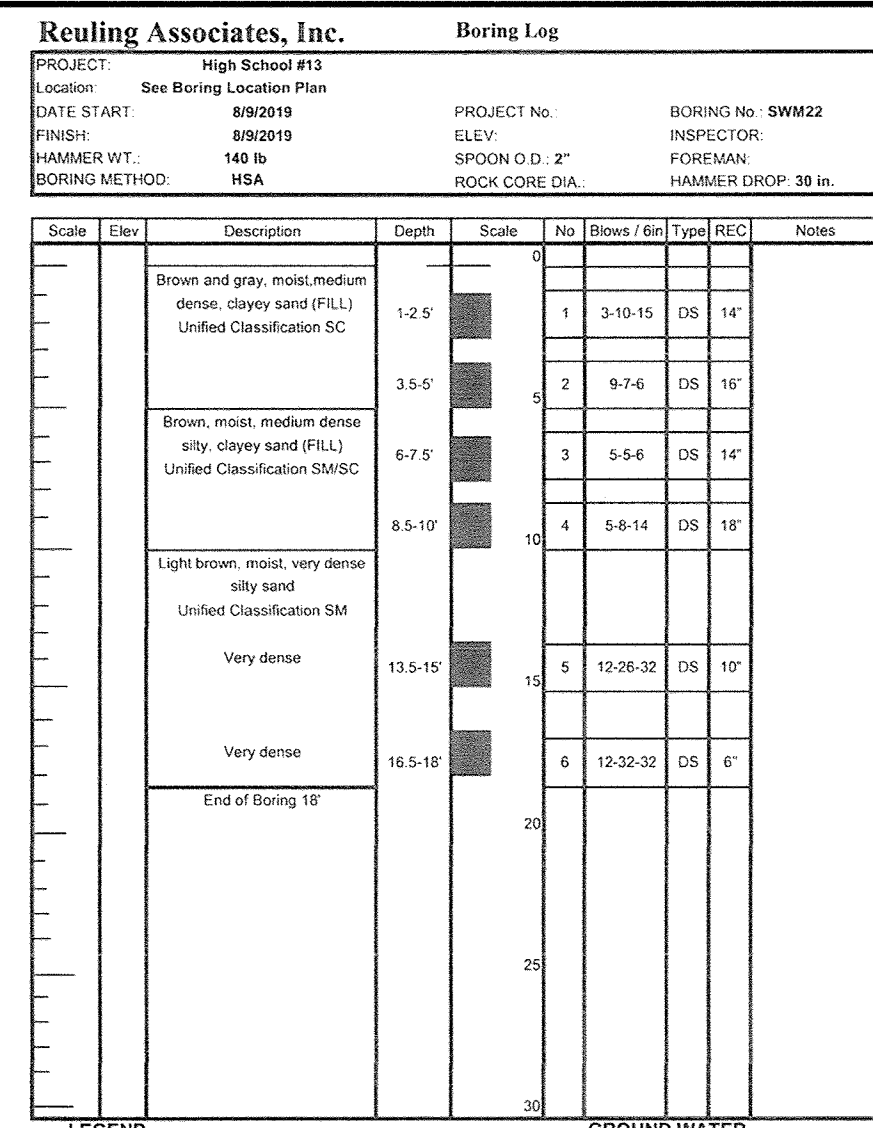
Scale	Elev	Description	Depth	Scale	No	Blows / 6in	Type	REC	Notes
	0.15	Tan and gray, moist, medium dense, clayey sand (FLL)	0	1	2-3-3	DS	11'		
	2.54	Medium stiff	2	2	3-3-3	DS	13'		
	5.63	Tan and gray, moist, medium dense, silty sand (FLL)	3	3	4-6-12	DS	14'		
	7.59	Medium dense	4	4	3-5-7	DS	16'		
	10.11.5	Brown, moist, medium dense clayey sand	5	5	6-5-8	DS	12'		
	13.5-15	Medium dense	6	6	8-13-12	DS	12'		
	16.5-18	Tan and gray, moist, medium dense silty sand, Unified Classification: SM	7	7	7-9-10	DS	12'		

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

CAVED: 18"
 WATER AT COMPLETION: DRY
 WATER AT 24 HOURS: DRY

Reuling Associates, Inc. Boring Log
 PROJECT: High School #13
 LOCATION: See Boring Location Plan
 DATE START: 8/12/2019 PROJECT No.: BORING No.: SW7
 FINISH: 8/12/2019 ELEV. 286.49 INSPECTOR:
 HAMMER WT.: 140 lb SPOON O.D.: 2" FOREMAN:
 BORING METHOD: HSA ROCK CORE DIA. HAMMER DROP: 30 in.

Scale	Elev	Description	Depth	Scale	No	Blows
-------	------	-------------	-------	-------	----	-------



LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

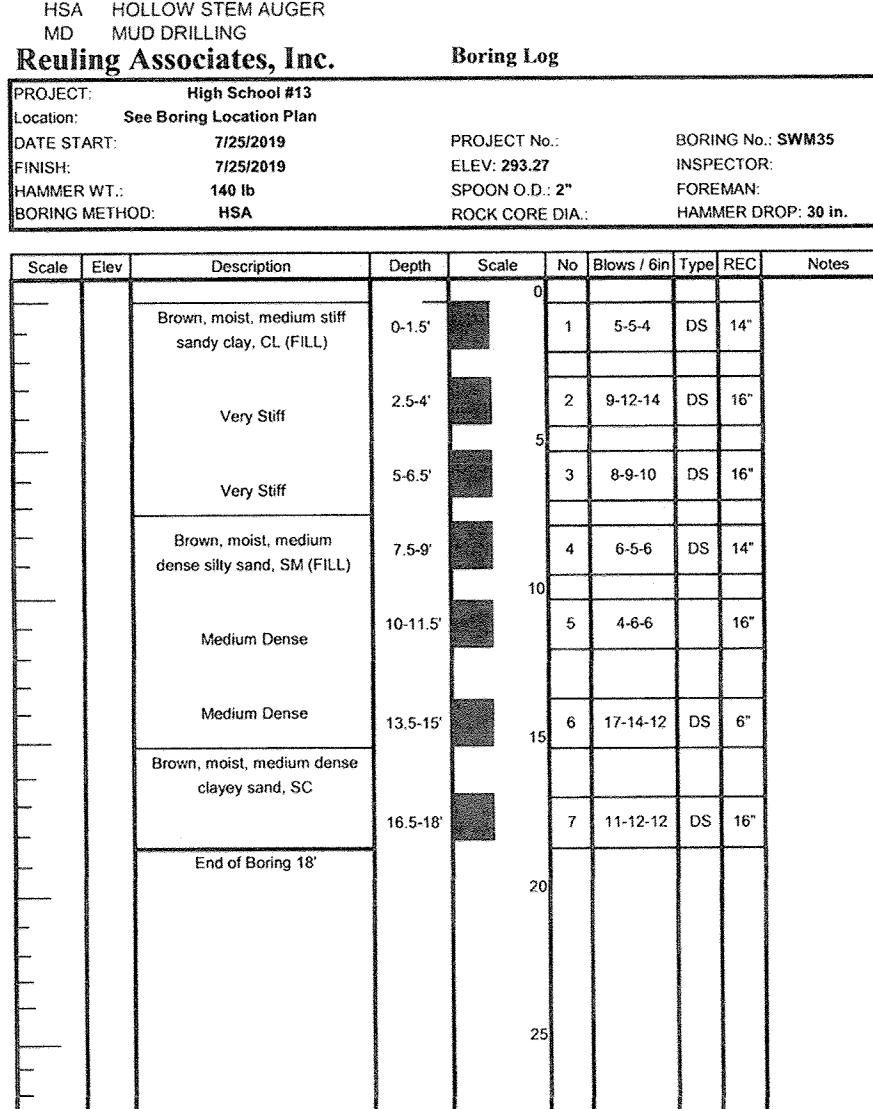
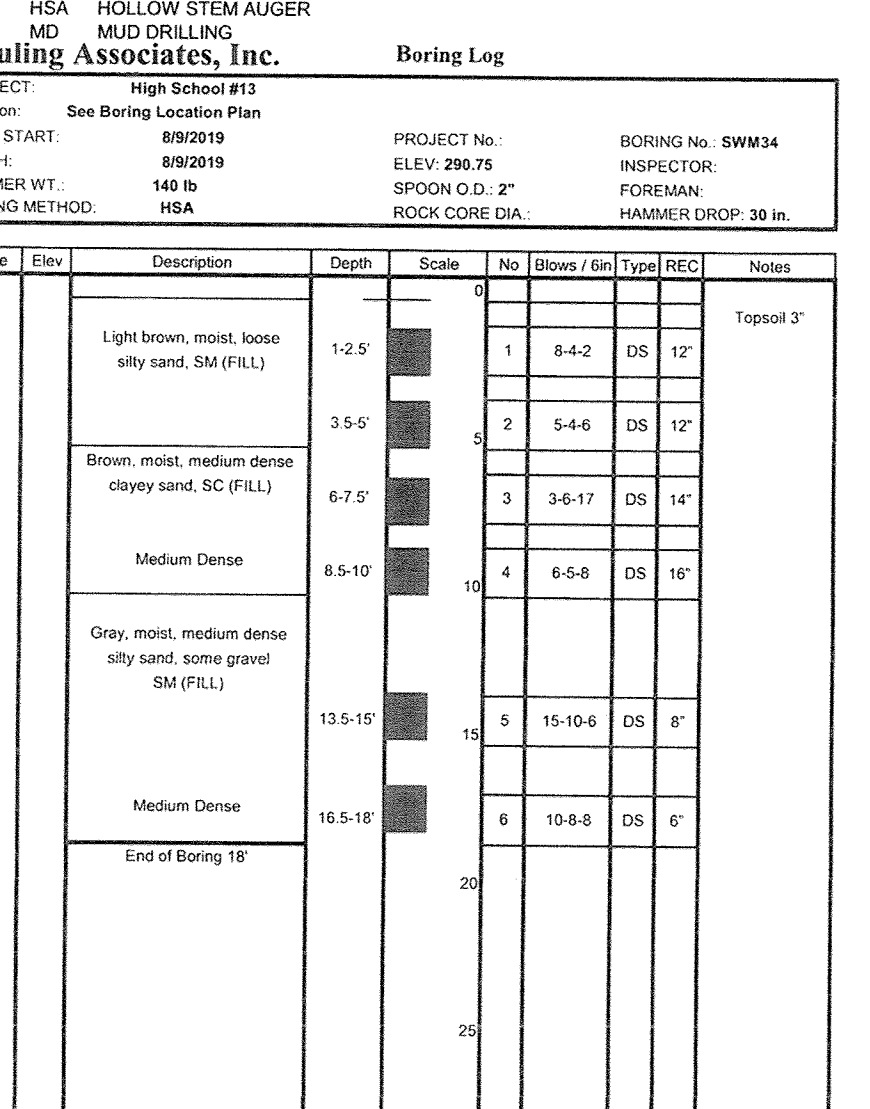
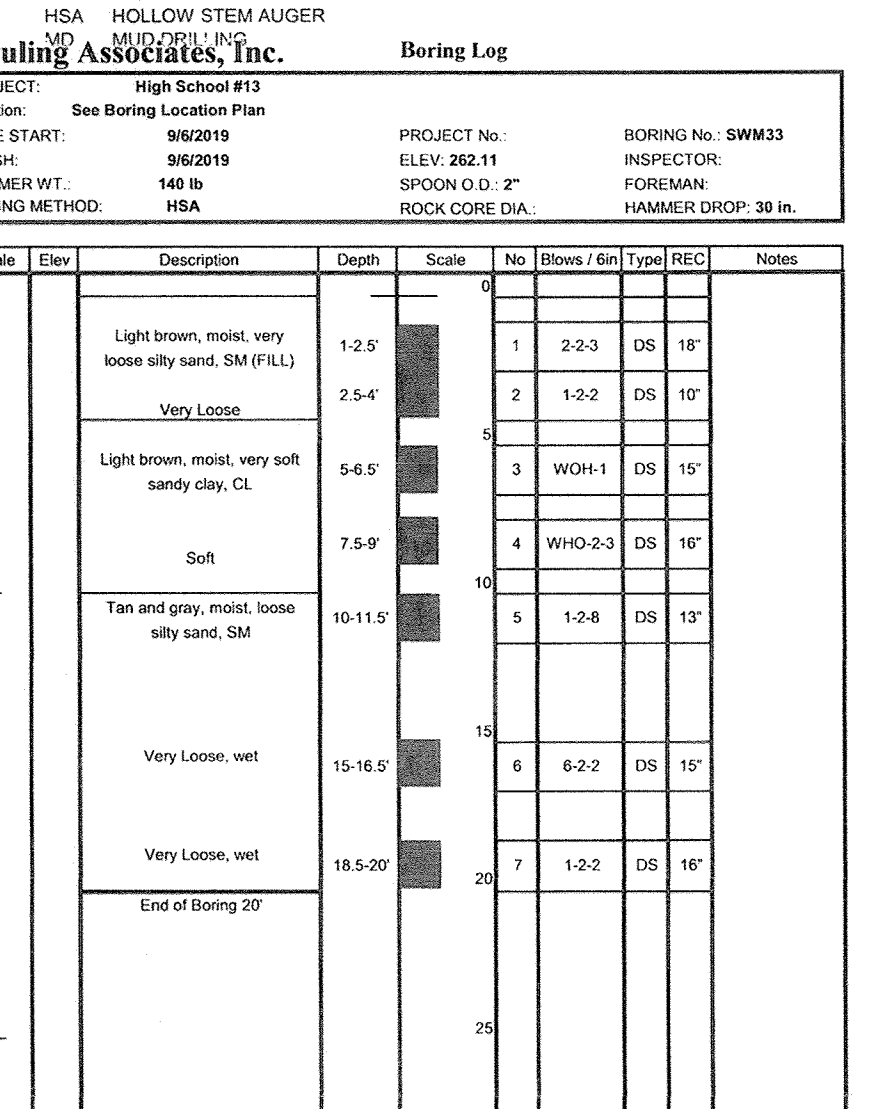
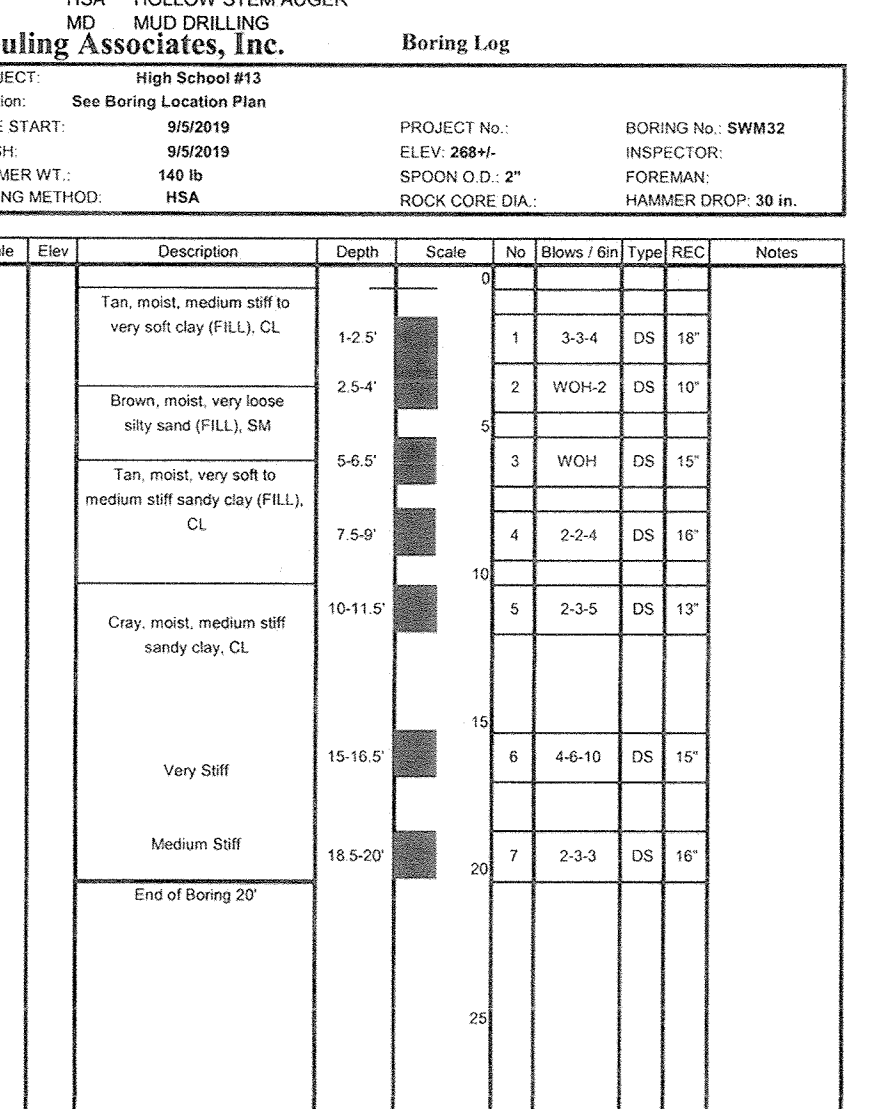
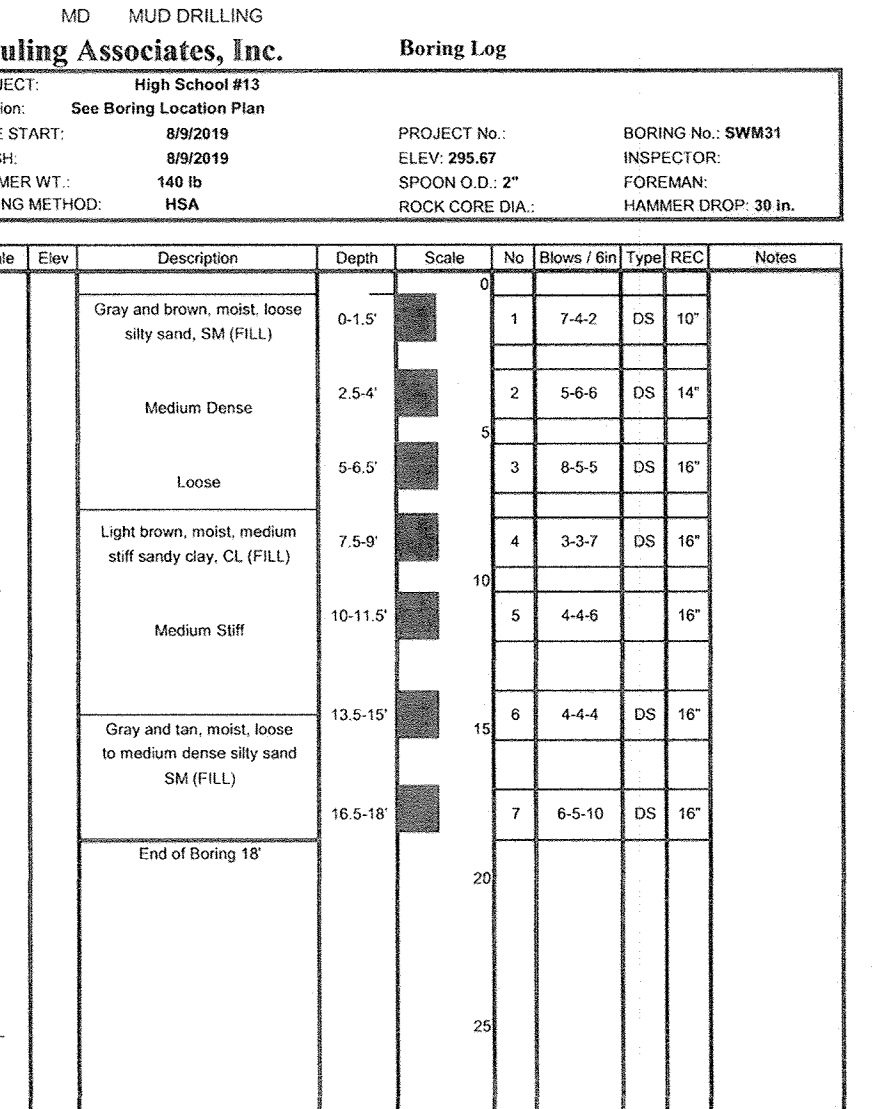
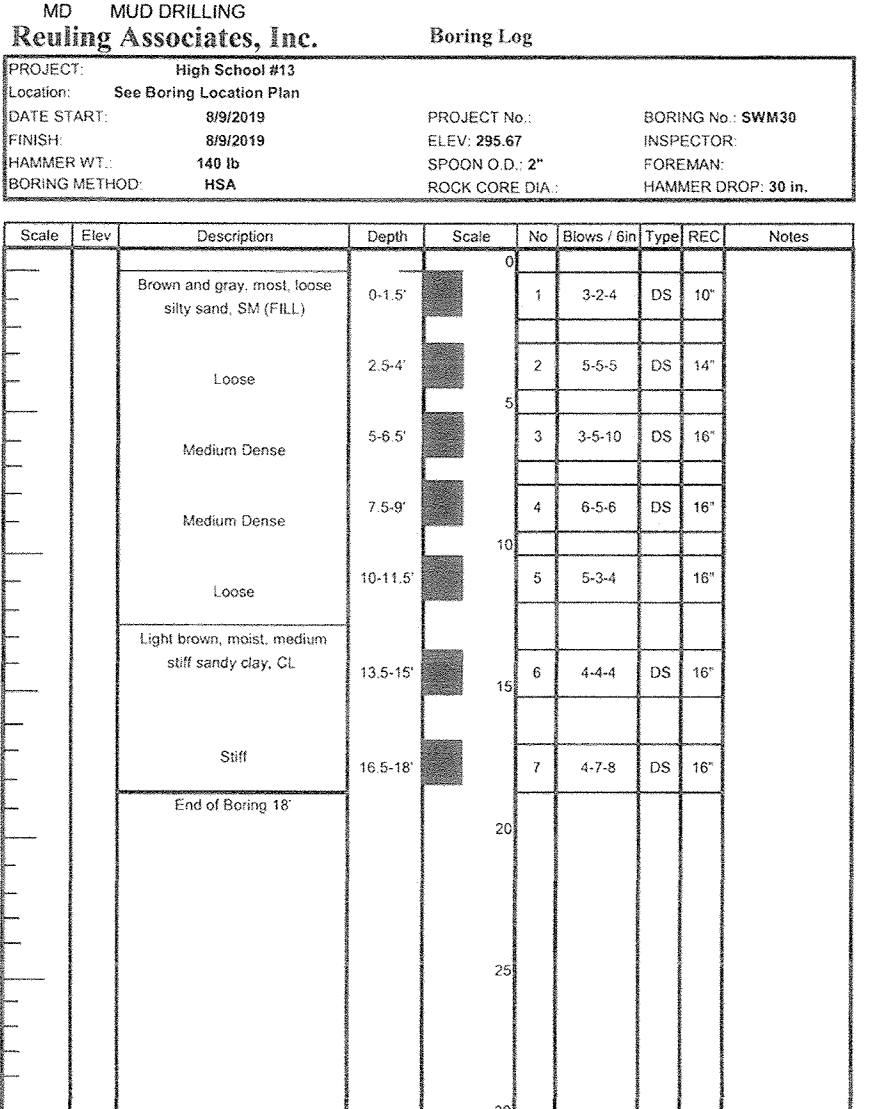
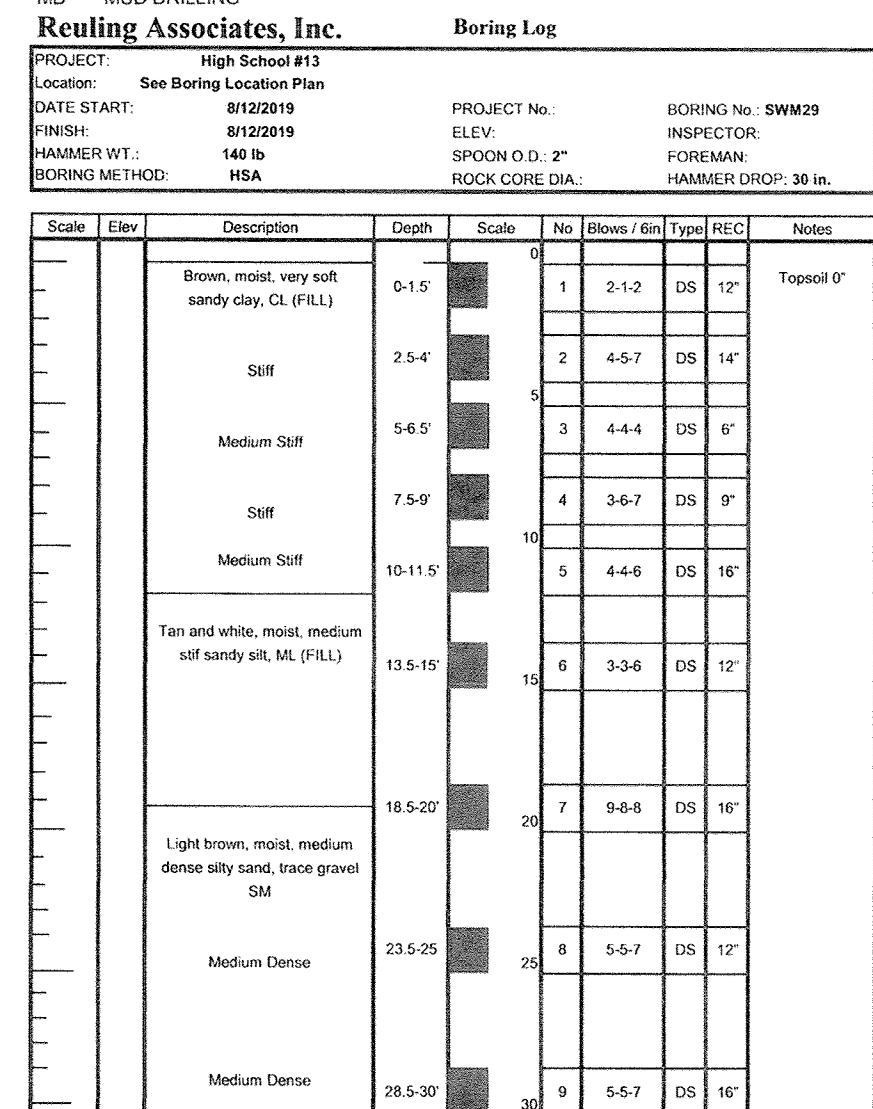
LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING



LEGEND
 DS DRIVEN SPOON
 ST SHELBY
 PS PISTON SAMPLE
 RC ROCK CORE
 HSA HOLLOW STEM AUGER
 MD MUD DRILLING

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7.3 Below Grade Walls
 The existing, clayey soil that exists over much of this site should not be used for backfill of retaining walls. Retaining wall backfill soil should be classified as SM or more granular according to the Unified Classification System. For the SM soil encountered on this site, the following values should be used for the design of below-grade walls:

Soil wet density	140 lb/ft ³
Friction Angle	30 degrees
Equivalent Fluid Pressure, Active	47 lb
Equivalent Fluid Pressure, Passive	401 lb, see below
Equivalent Fluid Pressure, At Rest	70 lb
Coefficient of Friction (fill to concrete)	0.35
Horizontal Pressure from Surcharge	0.35 x surcharge (at rest)

Because retaining walls must move laterally to develop passive pressure, we suggest limiting the amount of wall friction by applying a reduction factor to the passive pressure. We suggest using an allowable passive pressure of 2100 lb for retaining wall design. Also, a factor of safety of at least 1.5 should be used for evaluating overturning and sliding of retaining walls.

Allowances should be made for anticipated surcharge loadings. Unless the walls incorporate appropriately designed back drainage systems, such as an aggregate drainage blanket or manufactured drainage board, allowances should be made for hydrostatic pressures.

It should be noted that the use of heavy compaction equipment close to retaining walls can result in excess wall movement. The walls should be properly braced, and the backfill should be compacted with lightweight equipment.

7.4 Seismic Design Information

The seismic site classification was determined in accordance with the 2018 International Building Code. Based on the investigation results, this site is classified as Site Class D, according to Section 1613 of the code.

The following are the Spectral Response Acceleration and Site Coefficient values for the site, according to ASCE 7-16 Hazards Report, which is included in the appendix.

Site Classification	D
0.2 sec Spectral Response Acceleration, S _s	0.135g
1.0 sec Spectral Response Acceleration, S ₁	0.043g
Site Coefficient, F _s	1.6
Site Coefficient, F _v	2.4
0.2 sec Maximum Spectral Response Accel., S _{ms}	0.216g
1.0 sec Maximum Spectral Response Accel., S _{m1}	0.103g
0.2 sec Design Spectral Response Accel., S _a	0.144g
1.0 sec Design Spectral Response Accel., S _a	0.069g

10.0 REMARKS

This report was prepared to aid in the evaluation of the site for the construction of the proposed High School #13 project. It is considered that adequate recommendations have been provided to serve as a basis for design and preparation of plans and specifications. Additional recommendations can be provided as needed.

These analyses and recommendations are, of necessity, based on the information made available to us at the time of the actual writing of the report and the on-site conditions, surface and subsurface, which existed at the time the exploratory borings were drilled. Further assumption has been made that the limited exploratory borings, in relation both to the areal extent of the site and to depth, are representative of conditions across the site. If subsurface conditions are encountered which differ significantly from those reported herein, this Office should be notified immediately so that the analysis and recommendations can be reviewed and/or revised as necessary. It is also recommended that:

1. We be given the opportunity to review any plans and specifications in order to comment on the interaction of the soil conditions as described herein and the design requirements.
2. A geotechnical Engineer or an experienced Soils Inspector be present at the site during the construction phase to verify installation according to the approved plans and specifications. This is particularly important during excavation, placement, and compaction of fill material.

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties either implied or expressed.

Reuling Associates, Inc. assumes no responsibility for interpretations made by others based upon work or recommendations made by Reuling Associates, Inc.

7.3 Below Grade Walls
 The existing, clayey soil that exists over much of this site should not be used for backfill of retaining walls. Retaining wall backfill soil should be classified as SM or more granular according to the Unified Classification System. For the SM soil encountered on this site, the following values should be used for the design of below-grade walls:

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Because retaining walls must move laterally to develop passive pressure, we suggest limiting the amount of wall friction by applying a reduction factor to the passive pressure. We suggest using an allowable passive pressure of 2100 lb for retaining wall design. Also, a factor of safety of at least 1.5 should be used for evaluating overturning and sliding of retaining walls.

Reuling Associates, Inc. 13 West Aynahay Road, Timonium, Maryland 21091 (410) 508-7414

Site Classification D
 0.2 sec Spectral Response Acceleration, S_s 0.135g
 1.0 sec Spectral Response Acceleration, S₁ 0.043g
 Site Coefficient, F_s 1.6
 Site Coefficient, F_v 2.4
 0.2 sec Maximum Spectral Response Accel., S_{ms} 0.216g
 1.0 sec Maximum Spectral Response Accel., S_{m1} 0.103g
 0.2 sec Design Spectral Response Accel., S_a 0.144g
 1.0 sec Design Spectral Response Accel., S_a 0.069g

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK
 ELICOTT CITY, MARYLAND 21042
 (410) 461 - 2855

"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. 38386, EXPIRATION DATE: JANUARY 12, 2022."

Stephanie J. Tuite
 STEPHANIE J. TUITE, RLA, P.E., LEED AP BC&D
 DATE: 7/14/20

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Mary Marshall
 Director - Department of Planning and Zoning
 Date: 8/5/2020

John G. Smith
 Chief, Division of Land Development
 Date: 7/29/20

PREPARED FOR
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM
 9020 MENDENHALL COURT
 SUITE 'C'
 COLUMBIA, MARYLAND 21045
 Attention: DANIEL LUBELEY
 410-313-6805

DATE: 7/10/20
 DESCRIPTION: NEW SHEET WITH SOL BORINGS FOR NEW SCHOOL ON SITE

REVISION BLOCK

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
18 & 24	R-12	13 & 19	42 & 43	SIXTH	606901

PROJECT: HIGH SCHOOL #13
 SECTION/AREA: N/A
 PARCEL: 102, 349, 235

WATER CODE: ---
 SEWER CODE: ---

BORING LOGS
 REVISED SITE DEVELOPMENT PLAN
 FOR
CHASE PROPERTY
 AT MISSION ROAD
 8420 WASHINGTON BLVD
 JESSUP, MARYLAND 20794

ZONED: R-SC MXD-3, R-SA-8 MXD-3 AND R-12
 PARCEL Nos.: 102, 349, 235
 TAX MAP No. 42 & 43 GRID No.: 24 & 19
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2020
 SHEET 37 OF 39

7/10/20 NEW SHEET WITH SOL BORINGS FOR NEW SCHOOL ON SITE

DATE DESCRIPTION

REVISION BLOCK

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
18 & 24	R-12	13 & 19	42 & 43	SIXTH	606901

PROJECT: HIGH SCHOOL #13
 SECTION/AREA: N/A
 PARCEL: 102, 349, 235

WATER CODE: ---
 SEWER CODE: ---

OPERATION AND MAINTENANCE SCHEDULE FOR BIORETENTION BMPs #1a-c, #2a-c, #3, #4a, #5, #6, #9, #10, #11, #13.

THE BIORETENTION FACILITIES SHALL BE INSPECTED AT LEAST TWICE PER YEAR (ONCE EACH IN THE SPRING AND FALL) AND AFTER HEAVY STORMS. THE OWNER IS RESPONSIBLE FOR MAINTAINING A DETAILED LOG OF THE MAINTENANCE INSPECTION FINDINGS AND A HISTORY OF THE COMPLETED WORK. THE LOG SHALL BE MADE AVAILABLE TO HOWARD COUNTY DPZ AND/OR THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UPON REQUEST.

MICRO-BIORETENTION FACILITY COMPONENTS TO BE INSPECTED AND MAINTAINED INCLUDE THE ITEMS AS FOLLOWS:

1. THE SCHOOL BOARD (GROUNDS SERVICES) PROPOSES TURF GRASS ON HALF OF THE BOTTOM AREA OF THE BI0-BMP'S TO SIGNIFICANTLY REDUCE MAINTENANCE AS DISCUSSED IN A MEETING WITH DED. DED CONSIDERS THIS ACCEPTABLE. TURF GRASS IS PROPOSED FOR BMP'S 1a-c, 2a-c, 3, 4a-b, AND 8. THE REMAINING BMP'S 5, 6, 9, 11, 12, AND 13 WOULD BE PLANTED WITH WETLAND VEGETATION. PORTIONS OF 1b AND 2a ARE LOCATED OVER AN EXISTING SEWER EASEMENT AND WOULD BE PLANTED WITH TURF GRASS REGARDLESS WHERE THERE WILL BE NO FILTERING MEDIA/SOIL OVER THE SEWER.
2. PLANT MATERIAL: PLANTS SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION, REMOVED AND REPLACED DEAD OR DYING VEGETATION CONSIDERED BEYOND TREATMENT (SEE NOTE REGARDING MAINTENANCE ALSO INCLUDES PRUNING AND REPLACEMENT OF DEFUNCT STAKES AND WIRE.
3. MULCH LAYER: SHALL BE REPLACED ONCE EVERY SPRING DUE TO THE HEAVY METALS GENERATED FROM THE PARKING LOT. THE OWNER SHALL PROPERLY DISPOSE OF THE OLD MULCH SO AS NOT TO CAUSE STORMWATER CONTAMINATION ELSEWHERE. WASHED OUT AREAS SHALL BE REPAIRED AS NECESSARY.
4. SOIL LAYER: SHOULD STORMWATER FLOW MORE THE 48 HOURS, THE TOP 6 INCHES (MINIMUM) OF THE SOIL LAYER SHALL BE REPLACED. THE OLD SOILS SHALL BE PROPERLY DISPOSED.
5. SPILLWAY: OUTFALL, INTERIOR SLOPES: ERODED AREAS SHALL BE REPAIRED (FILLED IN AND SEEDED) AS NEEDED. BARE AREAS SHALL BE TREATED AND RE-SEED.
6. FISHER, COLLINS & CARTER, INC. IS NOT RESPONSIBLE FOR THE CONTRACTOR'S UTILIZATION OF MEN, MATERIALS, EQUIPMENT, OR SAFETY MEASURES IN THE PERFORMANCE OF ANY WORK FOR THIS PROJECT. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR PERFORMING THE WORK CORRECTLY AND IN CONFORMANCE WITH CODE/SPECIFICATION REQUIREMENTS.
7. THE BMPs MAY BE GRADED, HOWEVER, THE PLANTING SOIL IN THE BMPs SHALL NOT BE INSTALLED UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., THICK GRASS COVER, OR PAVED).
8. ALL STORMWATER MANAGEMENT FACILITIES FOR THIS PROJECT WILL BE PRIVATELY OWNED AND MAINTAINED.

NOTES:

1. IF SPECIFIC PLANTS ARE NOT SURVIVING, THE PLANT TYPE SHOULD CHANGED TO BETTER-SUITED SPECIES.
2. PLANT WATERING MAY BE NEEDED DURING PROLONGED DRY PERIODS.

OPERATION AND MAINTENANCE SCHEDULE FOR A PRIVATELY OWNED AND MAINTAINED RAINWATER HARVESTING CISTERN BMP #10

1. THE UNDERGROUND STORMWATER MANAGEMENT (SWM) FACILITY IS PRIVATELY OWNED AND MAINTAINED. THE OWNER IS RESPONSIBLE FOR PERIODICALLY INSPECTING AND MAINTAINING THIS FACILITY SO THAT IT REMAINS IN GOOD WORKING ORDER AND FUNCTIONS AS INTENDED.
2. THE 96" CISTERN SWM FACILITY SHALL BE INSPECTED AT LEAST ONCE A YEAR AND AFTER MAJOR STORMS (3" /24 hours). THE INSPECTION SHALL TAKE PLACE DURING WET WEATHER (WHEN SAFE) TO DETERMINE IF FACILITY IS OPERATING AS INTENDED.
3. AT LEAST ANNUALLY, OR WHEN SEDIMENT REACHES 2" DEPTH AT ANY LOCATION, THE SEDIMENT SHALL BE FLUSHED DOWN TO STRUCTURE M-11 AND MANUALLY REMOVED OR MOUNDING. DEBRIS THAT COULD POTENTIALLY BLOCK THE OUTFALL MUST BE REMOVED UPON DISCOVERY.
4. THE FACILITY SHALL BE IMMEDIATELY CLEANED AFTER PETROLEUM SPILLS. THE OWNER SHALL NOTIFY THE APPROPRIATE REGULATORY AGENCIES OF THE SPILL AND CLEAN-UP OPERATIONS.
5. ALL SEDIMENT/DEBRIS/OIL SHALL BE PROPERLY AND LEGALLY DISPOSED IN EITHER A LICENSED WASTE FACILITY OR A SANITARY LANDFILL. THE OUTFALL ORIFICE SHALL BE BLOCKED DURING THE CLEANING/MAINTENANCE OPERATION.
6. INSPECT STRUCTURAL COMPONENTS: ALL STRUCTURAL COMPONENTS (MANHOLES, 6" PVC TRASH RACK, AIR VENTS, STORM DRAIN CONNECTIONS, PIPE JOINTS, AND STRUCTURE M-1) SHALL BE REPAIRED UPON DETECTION OF ANY STRUCTURAL PROBLEMS (e.g., CRACKING, LEAKING, ETC.).
7. WHEN A 2.0" OR GREATER RAINFALL EVENT IS FORECAST, THE RAINWATER HARVESTING CISTERN MUST BE EMPTIED TO 10% OR LESS OF ITS FULL VOLUME. THE PURPOSE IS TO ALLOW QUANTITY MANAGEMENT STORAGE TO PROTECT DOWNSTREAM WATERWAYS.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT PONDS (ONES #15, #16)

ROUTINE MAINTENANCE

1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND EMBANKMENT AS WELL AS THE RIP-RAP OR GABION OUTFLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, RISER, AND THE PIPES SHALL BE REPAIRED IMMEDIATELY UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHALL BE REMOVED FROM THE MICRO-POOL AND FOREBAY WHEN EITHER ONE IS HALF FULL OF SEDIMENT, OR WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SUBMERGED GRAVEL WETLANDS (M-2) BMP # 12)

1. DURING THE FIRST YEAR OF OPERATION, THE OWNER SHALL INSPECT THE FACILITY AFTER EVERY HEAVY STORM AND REPLACE VEGETATION AS NEEDED.
2. THE OWNER SHALL REMOVE SEDIMENT ACCUMULATED IN THE PRETREATMENT AREAS AS NECESSARY.
3. SIGNS OF UNEVEN FLOW WITHIN THE WETLAND MAY MEAN THAT THE GRAVEL OR UNDERDRAIN IS CLOGGED. THE GRAVEL OR UNDERDRAIN SHALL BE REMOVED, CLEANED, AND REPLACED, AS NEEDED.
4. THE OWNER SHALL ENSURE A DENSE STAND OF WETLAND VEGETATION IS MAINTAINED THROUGH THE LIFE OF THE FACILITY AND REPLACE VEGETATION AS NEEDED.
5. THE OWNER SHALL ENSURE THE INLETS AND OUTLETS TO EACH GRAVEL WETLAND CELL ARE FREE FROM DEBRIS.
6. THE OWNER SHALL REPAIR EROSION AT INFLOW POINTS AND ENSURE FLOW SPLITTERS ARE FUNCTIONAL TO PREVENT STORM WATER FROM BYPASSING THE FACILITY.

FOREBAY/GABION WEIR NOTES

1. GABIONS SHALL BE MANUFACTURED BY MACCAFERRI GABIONS INC. THE INSTALLATION SHALL FOLLOW THE MANUFACTURER'S SPECIFICATIONS AND INSTALLATION GUIDELINES.
2. THE GABION BASKETS SHALL BE PVC COATED AND FILLED WITH CLEAN 4" - 7" STONE. GABION STONE SHALL BE CAREFULLY PLACED AS TO CREATE A TIGHT INTERLOCKING SOIL WALL WITH MINIMAL VOID SPACE.
3. PLACE A LAYER OF VINYL SHEETING (10 MIL MIN.) ON THE DOWNSTREAM SIDE OF ALL BURIED FOREBAY GABION SURFACES AND OUTSIDE OF THE GEOTEXTILE. VINYL SHALL NOT HAVE ANY PUNCTURES/HOLES. INTENT IS TO LIMIT WATER FLOW THROUGH BURIED GABIONS.
4. GEOTEXTILE FABRIC (MIRAFI 600X OR APPROVED EQUIV) SHALL BE PLACED AGAINST ALL BURIED GABION FACES/SURFACES. THIS IS IN ADDITION TO THE VINYL SHEETING.
5. GABIONS SHALL BE CAREFULLY PLACED WITH NO DAMAGED WIRE.
6. THE GABION EARTH FOUNDATION, SOIL WITHIN 3" OF GABIONS INCLUDING EACH END SHALL BE WELL-COMPACTED.
7. GABIONS SHALL BE FASTENED TOGETHER WITH LAGNOS OR RINGS PER MANUFACTURER'S RECOMMENDATIONS/SPECIFICATIONS. RINGS SHALL BE PER ASTM A975-97 SECTION 6.3. SPACING SHALL NOT EXCEED 6". SEE MACCAFERRI GABION INSTALLATION GUIDE.
8. GABIONS CAN BE "NESTED" IF NECESSARY TO MEET REQUIRED DIMENSIONS.

BIORETENTION FACILITY NOTES AND SPECIFICATIONS

1. REFER TO THE LATEST MARYLAND SWM DESIGN MANUAL FOR BIORETENTION SPECIFICATIONS FOR INFORMATION NOT LISTED HEREIN AND FOR ADDITIONAL INFORMATION.
2. THE BIORETENTION BMP MATERIALS ARE AS FOLLOWS:
 - PLANTING SOIL: PER PLANTING SOIL SPECIFICATIONS OUTLINED IN MDE'S 2000 SWM MANUAL, APPENDIX B.4. AND INCLUDED ON THIS SHEET. DO NOT MECHANICALLY COMPACT PLANTING SOIL, HOWEVER, SOIL CAN BE "WATERED/FLOODED" TO FACILITATE SETTLING.
 - PVC UNDERDRAIN PIPE OUTSIDE BMP: SCHEDULE 40 SOLID PIPE WITH MINIMUM SLOPE OF 0.5% OR AS PER PLAN. CAP ENDS OF PERFORATED PIPE TERMINUSES UNLESS NOTED WITH CLEANOUT.
 - PVC UNDERDRAIN WITHIN BMP: SCHEDULE 40 AND PERFORATED WITH 0.5" HOLES. WRAP UNDERDRAIN WITH GALVANIZED 1/4" HARDWARE CLOTH (WELDED WIRE MESH). PROVIDE 3" - 0.5 HOLE EVENLY SPACED AROUND THE 4" UNDERDRAIN PIPE CIRCUMFERENCE. SPACE PERFORATIONS ALONG PIPE AT 6" ON CENTER.
 - ADJACENT SETS OF PERFORATIONS SHALL TOTAL 1.18 IN. IN LENGTH PER LF OF PIPE.
 - STONE AGGREGATE: MSHA SPECIFICATIONS AS SHOWN ON TYPICAL SECTION; AGGREGATE MUST WASHED, AND BE FREE OF FINES, SAND, DIRT & DEBRIS.
 - GEOTEXTILE: PER MDE SWM MANUAL, OR MIRAFI 140N.
 - MULCH: SHREDED, WELL-AGED (6-12 MONTHS) HARDWOOD MULCH; NO WOOD CHIPS OR PINE MULCH.
3. THE CONTRACTOR SHALL UNDER NO CIRCUMSTANCES ALLOW SURFACE DRAINAGE INTO THE MICRO-BIORETENTION BMPs (FACILITIES WITH PLANTING SOIL) UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., PAVED, OR HAVE WELL-ESTABLISHED VEGETATION).
4. BOARDS SHALL NOT BE LEFT IN PLACE DURING THE BIORETENTION BMP.
5. GEOTEXTILE (FILTER FABRIC) SHALL BE PLACED AGAINST EXCAVATED VERTICAL SURFACES. SCARIFY EARTH WALLS (i.e., REMOVED "SEAL AREAS") PRIOR TO GEOTEXTILE PLACEMENT. INSTALL GEOTEXTILE PER MANUFACTURER'S SPECIFICATIONS/RECOMMENDATIONS AND USE A 2 FT MINIMUM OVERLAP AND NOTCH ENDS WITH A 6" MINIMUM BURY OR EQUIVALENT ANCHORING METHOD.
6. THE CONTRACTOR SHALL PROVIDE TO THE OWNER AN INDEPENDENT CERTIFICATION THAT THE PLANTING SOILS AND OTHER BIORETENTION MATERIALS MEET THE SPECIFICATIONS.
7. THE BIORETENTION FACILITIES SHALL BE VEGETATED (TOP LEVEL SURFACE ONLY) IN ACCORDANCE WITH THE PLANTING PLAN AND THE BMP M-6 SPECIFICATIONS IN MDE'S CURRENT STORMWATER MANAGEMENT DESIGN MANUAL.
8. FOR UNDERDRAINS, USE PERFORATED PVC PIPE INSIDE THE BIORETENTION FACILITIES AND WRAP PERFORATED PIPE WITH 1/4" HARDWARE CLOTH TO PREVENT AGGREGATE FROM ENTERING THE PERFORATIONS.
9. INSTALL CLEANOUTS (SOLID PVC PIPE) AS SHOWN. THE CLEANOUT TOP SHALL EXTEND 3" ABOVE TOP OF MULCH.
10. THE LIMIT OF THE TYPICAL SECTION (i.e., PLANTING SOIL, AGGREGATE, ETC.) IS THE ENTIRE LEVEL SURFACE OF THE BIORETENTION FACILITY EXCLUDING FOREBAY AND 2" FROM THE FOREBAY GABIONS.

GENERAL STORMWATER MANAGEMENT NOTES

1. STORMWATER MANAGEMENT HAS BEEN PROVIDED WITH ONE (1) RAINWATER HARVESTING CISTERN (M-1), ONE (1) SUBMERGED GRAVEL WETLAND BMP (M-2), THIRTEEN (13) MICRO-BIORETENTION BMPs (F-6), TWO (2) P-1 PONDS (MODIFIED FOR WATER QUANTITY ONLY). PLEASE REFER TO THE STORMWATER MANAGEMENT REPORT PREPARED BY FISHER, COLLINS, & CARTER, INC. DATED NOVEMBER 22, 2019.
2. ALL CONSTRUCTION SHALL MEET THE LATEST EDITION OF THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS. SMALL EARTHEN DAM SPECIFICATION M-378, AND THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S CURRENT STORMWATER DESIGN MANUAL, OR AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CONSULT THE ENGINEER SHOULD THERE BE ANY DISCREPANCIES. SEE MICRO-BIORETENTION FACILITY SPECIFICATIONS ON SHEET xx.
3. THE UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL TEST UP TO ALL KNOWN EXISTING UTILITIES TO VERIFY, SIZE, SHAPE, LOCATION, AND TYPE PRIOR TO PERFORMING CONSTRUCTION. ANY UTILITY DAMAGED DUE TO CONSTRUCTION MUST BE REPAIRED IMMEDIATELY.
4. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. IF THE CONTRACTOR MAKES FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
5. CONTRACTOR SHALL NOTIFY MISSY 1-800-257-7777 AND THE HOWARD COUNTY DEPARTMENT OF INSPECTION LICENSES & PERMITS THREE (3) WORKING DAYS BEFORE BEGINNING CONSTRUCTION.
6. FISHER, COLLINS & CARTER, INC. IS NOT RESPONSIBLE FOR THE CONTRACTOR'S UTILIZATION OF MEN, MATERIALS, EQUIPMENT, OR SAFETY MEASURES IN THE PERFORMANCE OF ANY WORK FOR THIS PROJECT. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR PERFORMING THE WORK CORRECTLY AND IN CONFORMANCE WITH CODE/SPECIFICATION REQUIREMENTS.
7. THE BMPs MAY BE GRADED, HOWEVER, THE PLANTING SOIL IN THE BMPs SHALL NOT BE INSTALLED UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., THICK GRASS COVER, OR PAVED).
8. ALL STORMWATER MANAGEMENT FACILITIES FOR THIS PROJECT WILL BE PRIVATELY OWNED AND MAINTAINED.

RAINWATER HARVESTING CISTERN BMP #10 NOTES AND SPECIFICATION REFERENCES

1. THE 96" CISTERN TO BE MANUFACTURED BY CONTECH ENGINEERED SOLUTIONS, LLC. CONSTRUCTION SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
2. PROVIDE AGGREGATE PIPE BEDDING AS SHOWN ON THIS SHEET.
3. MANHOLES TO BE 36" ALCMPIL, WITH WELDED STEPS/RUNGS PER CONTECH SPECIFICATIONS.
4. CONTRACTOR SHALL SUBMIT CISTERN SHOP DRAWINGS FOR REVIEW.
5. FOUNDATION/BEDDING PREPARATION

PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ON-SITE GEOTECHNICAL ENGINEER. ONCE THE FOUNDATION PREPARATION IS COMPLETE, A MINIMUM OF THE WELL-GRADED GRANULAR MATERIAL SHALL BE PLACED AS THE BEDDING AS SHOWN.

6. BACKFILL

THE BACKFILL SHALL BE AN A1, A2 OR A3 GRANULAR FILL PER AASHTO M145, OR A WELL-GRADED GRANULAR FILL AS APPROVED BY THE SITE GEOTECHNICAL ENGINEER. BACKFILL SHALL BE PLACED IN 8" LIFTS AND COMPACTED TO 90% STANDARD PROCTOR DENSITY. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND AT ANY TIME. HORIZONTALS BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT (16") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY PIPE DURING THE BACKFILL PROCESS. THE BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE DETENTION SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON THE PIPE. OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE GEOTECHNICAL ENGINEER.

7. HANDLING AND ASSEMBLY: SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF THE NATIONAL CORRUGATED STEEL PIPE ASSOCIATION (NCSPI).
8. INSTALLATION: SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS, THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

**SPECIFICATION
HIGH PERFORMANCE MODULAR BIOFILTRATION SYSTEM (HPMBS)
MATERIAL, PERFORMANCE AND INSTALLATION SPECIFICATION**

I. SUMMARY

THE FOLLOWING GENERAL SPECIFICATIONS DESCRIBE THE COMPONENTS AND INSTALLATION REQUIREMENTS FOR A VOLUME BASED HIGH PERFORMANCE MODULAR BIOFILTRATION SYSTEM (HPMBS) THAT UTILIZES PHYSICAL, CHEMICAL AND BIOLOGICAL MECHANISMS OF A SOIL PLANT AND MICROBE COMPLEX TO REMOVE POLLUTANTS TYPICALLY FOUND IN URBAN STORM WATER RUNOFF. THE MODULAR TREATMENT SYSTEM IN WHICH THE BIOLOGICALLY ACTIVE BIOFILTRATION MEDIA IS USED SHALL BE A COMPLETE, INTEGRATED SYSTEM DESIGNED TO BE PLACED IN SQUARE FOOT OR LINEAR FOOT INCREMENTS PER THE APPROVED DRAWINGS TO TREAT CONTAMINATED RUNOFF FROM IMPERVIOUS SURFACES.

THE HIGH PERFORMANCE MODULAR BIOFILTRATION SYSTEM (HPMBS) IS COMPRISED OF THE FOLLOWING COMPONENTS:

- A. PLANT COMPONENT**
 1. MANUFACTURER SHALL PROVIDE A REGIONALIZED LIST OF ACCEPTABLE PLANTS.
 2. PLANTS AS SPECIFIED IN THE APPROVED DRAWINGS/MANUFACTURER'S PLANT LIST, SHALL BE INSTALLED AT THE TIME THE HPMBS IS COMMISSIONED FOR USE.
 3. PLANTS AND PLANTING ARE TYPICALLY INCLUDED IN LANDSCAPE CONTRACT.
- B. BIOFILTER COMPONENT**
 1. THIS COMPONENT EMPLOYS A HIGH PERFORMANCE CROSS-SECTION IN WHICH EACH ELEMENT IS HIGHLY DEPENDENT ON THE OTHERS TO MEET THE PERFORMANCE SPECIFICATION FOR THE COMPLETE SYSTEM. IT IS IMPORTANT THAT THIS ENTIRE CROSS-SECTION BE PROVIDED AS A COMPLETE SYSTEM, AND INSTALLED AS SUCH.
 2. AS INDICATED IN THE APPROVED DRAWINGS, THE ELEMENTS OF THE BIOFILTER INCLUDE:
 - A. MULCH PROTECTIVE LAYER (IF SPECIFIED)
 - B. AN ADVANCED INFILTRATION RATE BIOFILTRATION PLANTING MEDIA BED WHICH UTILIZES PHYSICAL, CHEMICAL AND BIOLOGICAL MECHANISMS OF THE SOIL, PLANT, AND MICROBE COMPLEX, TO REMOVE POLLUTANTS FOUND IN STORM WATER RUNOFF.
 - C. A SEPARATION LAYER WHICH UTILIZES THE CONCEPT OF "BEDDING" TO SEPARATE THE BIOFILTRATION MEDIA FROM THE UNDERDRAIN WITHOUT THE USE OF GEOTEXTILE FABRIC.
 - D. A WIDE APERTURE MESH LAYER UTILIZED TO PREVENT BRIDGING STONE FROM ENTERING THE UNDERDRAIN/STORAGE ELEMENT.
 - E. A MODULAR, HIGH INFILTRATION RATE, 3/16" PIPE STYLE UNDERDRAIN/STORAGE SYSTEM WHICH IS DESIGNED TO DIRECTLY INFILTRATE OR EXFILTRATE WATER THROUGH ITS SURFACE. THE MODULAR UNDERDRAIN MUST PROVIDE A MINIMUM OF 50% VOID SPACE.
 3. ENERGY DISSIPATION COMPONENT
 1. AN ENERGY DISSIPATION COMPONENT IS TYPICALLY SPECIFIED TO SLOW AND SPREAD OUT WATER AS IT ENTERS THE SYSTEM. THIS COMPONENT IS DEPENDENT UPON THE DESIGN IN THE APPROVED DRAWINGS, BUT TYPICALLY CONSISTS OF A ROCK GABION, ROCK FILTER DAM OR DENSE VEGETATION ELEMENT, SUCH AS NATIVE GRASSES, EITHER SURROUNDING THE BIOFILTRATION COMPONENT OR LOCATED IMMEDIATELY UPSTREAM OF IT.
 4. PRETREATMENT COMPONENT
 1. PRETREATMENT, WHEN SPECIFIED, IS TYPICALLY ACCOMPLISHED BY LOCATING THE BIOFILTRATION COMPONENT WITHIN A TRADITIONAL VEGETATED BMP SUCH AS A VEGETATED SWALE, VEGETATED DEPRESSION, TRADITIONAL BIORETENTION SYSTEM, VEGETATED FILTER STRIP, SEDIMENT FOREBAY, ETC. THESE BMPs PROVIDE PRIMARY TSS REMOVAL WHEN DESIRABLE.
 5. OBSERVATION AND MAINTENANCE COMPONENT
 1. AN OBSERVATION AND MAINTENANCE PORT SHALL BE INSTALLED PER THE APPROVED DRAWINGS TO PROVIDE FOR EASY INSPECTION OF THE UNDERDRAIN/STORAGE ELEMENT, AND CLEANOUT ACCESS IF NEEDED.
 6. EXTREME EVENT OVERTOP (BY OTHERS)
 1. AN EXTREME EVENT OVERTOP SHOULD BE LOCATED EXTERNAL TO, BUT NEAR THE BIOFILTRATION ELEMENT TO PROVIDE BYPASS WHEN NEEDED. THIS MAY BE AN OVERLAND FLOW BYPASS STRUCTURE, BENCH OVERFLOW GRATE STRUCTURE, OR EQUIVALENT THAT SERVES THE PURPOSE. IF BENCH OVERFLOW STRUCTURES IS UTILIZED, IT SHOULD INCLUDE A REMOVABLE FILTER INSERT TO PROVIDE A MINIMUM OF 50% TSS REMOVAL AND CONTROL OF GROSS POLLUTANTS, TRASH AND FLOATABLES.
- II. QUALITY ASSURANCE AND PERFORMANCE SPECIFICATIONS**

THE QUALITY AND COMPOSITION OF ALL SYSTEM COMPONENTS AND ALL OTHER APPURTENANCES AND THEIR ASSEMBLY PROCESS SHALL BE SUBJECT TO INSPECTION UPON DELIVERY OF THE SYSTEM TO THE WORK SITE.

INSTALLATION IS TO BE PERFORMED ONLY BY SKILLED WORK PEOPLE WITH SATISFACTORY RECORD OF PERFORMANCE ON EARTHWORKS, PIPE, CHAMBER, OR POND/LANDFILL CONSTRUCTION PROJECTS OF COMPARABLE SIZE AND QUALITY.

- A. PLANTS**
 1. PLANTS MUST BE COMPATIBLE WITH THE HPMBS MEDIA AND THE ASSOCIATED HIGHLY VARIABLE HYDROLOGIC REGIME. PLANTS ARE TYPICALLY FACULTATIVE WITH FIBROUS ROOTS SYSTEMS SUCH AS NATIVE GRASSES AND SHRUBS.
 2. MANUFACTURER SHALL PROVIDE A REGIONALIZED LIST OF ACCEPTABLE PLANTS.
 3. ALL PLANT MATERIAL SHALL COMPLY WITH THE TYPE AND SIZE REQUIRED BY THE APPROVED DRAWINGS AND SHALL BE ALIVE AND FREE OF OBVIOUS SIGNS OF DISEASE.
- B. MULCH**
 1. MULCH, TYPICALLY DOUBLE SHREDED HARDWOOD (NON-FLOATABLE), SHALL COMPLY WITH THE TYPE AND SIZE REQUIRED BY THE APPROVED DRAWINGS, AND SHALL BE SOREDED TO MINIMIZE FINES.
- C. BIOFILTRATION MEDIA**
 1. BIOLOGICALLY ACTIVE BIOFILTRATION MEDIA SHALL BE VISUALLY INSPECTED TO ENSURE APPROPRIATE VOLUME, TEXTURE AND CONSISTENCY WITH THE APPROVED DRAWINGS, AND MUST BEAR A BATCH NUMBER MARKING FROM THE MANUFACTURER WHICH CERTIFIES PERFORMANCE TESTING OF THE BATCH TO MEET OR EXCEED THE REQUIRED INFILTRATION RATE (100 IN/HR). A THIRD PARTY LABORATORY TEST MUST BE PROVIDED TO CERTIFY THE 100 IN/HR RATE.
 2. WITHIN 90 DAYS AFTER PROJECT COMPLETION, THE INFILTRATION RATE SHALL BE CONFIRMED AT THE MANUFACTURER'S EXPENSE, BY A WETTED CONDITION HYDRAULIC CONDUCTIVITY TEST.
 1. FAILURE TO PASS THIS TEST WILL RESULT IN REMOVAL AND REPLACEMENT OF ALL MEDIA IN THE SYSTEM AT NO COST TO THE PROJECT OWNER/OPERATOR.
 2. TEST MUST UTILIZE THE EQUIPMENT AND FOLLOW THE STANDARD OPERATING PROCEDURES FOUND IN THE HARRIS COUNTY TEXAS MANUAL ENTITLED, LOW IMPACT DEVELOPMENT & GREEN INFRASTRUCTURE DESIGN CRITERIA FOR STORM WATER MANAGEMENT (2011).
 3. REPLACEMENT MEDIA, IF REQUIRED, MUST BE TAKEN FROM A DIFFERENT BATCH THAN THE ORIGINAL.
 3. MANUFACTURER SHALL PROVIDE, AT NO ADDITIONAL COST TO THE PROJECT OWNER/OPERATOR, MAINTENANCE OF THE BIOFILTRATION SYSTEM FOR A PERIOD OF ONE YEAR.

4. POLLUTANT REMOVAL PERFORMANCE, COMPOSITION AND CHARACTERISTICS OF THE BIOFILTRATION MEDIA MUST MEET OR EXCEED THE FOLLOWING MINIMUM STANDARDS AS DEMONSTRATED BY TESTING ACCEPTABLE TO THE PROJECT ENGINEER:
 - POLLUTANT & REMOVAL EFFICIENCY: TSS 91% PHOSPHORUS 66% NITROGEN 48%
 - COMPOSITION & CHARACTERISTICS: SAND - FINE< 5% SAND - MEDIUM 10% - 15% SAND - COARSE 15% - 25% SAND - VERY COARSE 40% - 45% GRAVEL 10% - 20% INFILTRATION RATE<100 INCHES PER HOUR PEAT MOSS 45% - 15% PEAT MOSS
 - SPECIFICATION LISTED BY ORGANIC MATERIALS REVIEW INSTITUTE: 100% NATURAL PEAT (NO COMPOSTED, SLUDGE, YARD OR LEAF WASTE) TOTAL CARBON >85% CARBON TO NITROGEN RATIO 15:1 TO 23:1 LOIGNIN CONTENT 49% TO 52% HUMIC ACID 218% YARD 6.0 TO 7.0 MOISTURE CONTENT 30% TO 50% 95% TO 100% PASSING 2.0MM SIEVE > 80% PASSING 1.0MM SIEVE
5. UNDERDRAIN/STORAGE SYSTEM
 1. UNDERDRAIN/STORAGE COMPONENTS SHALL BE MANUFACTURED IN AN ISO CERTIFIED FACILITY AND BE MANUFACTURED FROM AT LEAST 90% POST CONSUMER RECYCLED MATERIALS.
 2. UNDERDRAIN/STORAGE COMPONENTS SHALL MEET OR EXCEED THE FOLLOWING CHARACTERISTICS:
 - PROPERTY VALUE SURFACE VOID AREA 85%MIN WEIGHT3.25 LBS/CF SERVICE TEMPERATURE-14 TO 167UNCONFINED CRUSH STRENGTH3248 PSIB90 DAY CREEP TEST LOAD APPLIED - INITIAL AND SUSTAINED11.16 PSI CREEP SUSTAINED - AFTER 180 DAYS10 INCHES CREEP CRUSHED - AFTER 180 DAYS1.13 % PROJECTED CREEP - 40 YEARS1.72%
6. SEPARATION MESH
 1. SEPARATION MESH SHALL BE COMPOSITE OF HIGH-TENSACITY MONOFILAMENT POLYPROPYLENE YARNS THAT ARE WOVEN TOGETHER TO PRODUCE AN OPEN MESH GEOTEXTILE WHICH SHALL BE INERT TO BIOLOGICAL DEGRADATION AND RESISTANT TO NATURALLY OCCURRING CHEMICALS, ALKALIS AND ACIDS. THE MESH SHALL MEET OR EXCEED THE FOLLOWING CHARACTERISTICS:
 - PROPERTIES TEST METHOD UNIT MIN AVE ROLL VALUE MOD TENSILE STRENGTH ASTM D4596N/M (LBS/FT)21 (1440)25.3 (1733)CREEP REDUCED STRENGTH ASTM D5262N/M (LBS/FT)9.6 (471)3 (366)LONG TERM ALLOWABLE DESIGN LOAD (RI 06-40N/M (LBS/FT)9.9 (407)7.2 (480)UV RESISTANCE (AT 500 HOURS)-% STRENGTH RETAINED 90 APERTURE SIZE (MACHINE DIRECTION)-MM (IN)2 (0.08) APERTURE SIZE (CROSS MACHINE DIRECTION)-MM (IN)2 (0.08) MASS/UNIT AREA ASTM D5261/M2 (OZ/102)197 (5.6)
 2. BRIDGING STONE
 1. BRIDGING STONE SHALL BE 3/8" PEA GRAVEL, OR OTHER DIAMETER SIZED TO PREVENT MIGRATION OF FILTER MEDIA, AS SPECIFIED BY MANUFACTURER.
 2. STONE MUST BE WASHED AND FREE FROM SEDIMENT, SOIL AND CONTAMINANTS.
7. DELIVERY, STORAGE AND HANDLING
 1. PROTECT ALL MATERIALS FROM DAMAGE DURING DELIVERY AND STORE UV SENSITIVE MATERIALS UNDER TARP TO PROTECT FROM SUNLIGHT INCLUDING ALL PLASTICS, WHEN TIME FROM DELIVERY TO INSTALLATION EXCEEDS ONE WEEK. STORAGE SHOULD OCCUR ON SMOOTH SURFACES, FREE FROM DIRT, MUD AND DEBRIS.
 2. BIOFILTRATION MEDIA SHALL BE SEGREGATED FROM ANY OTHER AGGREGATE MATERIALS AND SHALL BE PROTECTED AGAINST CONTAMINATION, INCLUDING CONTAMINATION FROM ANY STORMWATER RUNOFF FROM AREAS OF THE SITE WHICH ARE NOT STABILIZED.
8. SUBMITTALS
 - A. PRODUCT DATA**
 1. SUBMIT MANUFACTURER'S PRODUCT DATA AND APPROVED INSTALLATION MANUAL AS WELL AS MANUFACTURER'S OPERATIONS AND MAINTENANCE MANUAL FOR THE SYSTEM. IT WILL BE THE RESPONSIBILITY OF THE SYSTEM OWNER/OPERATOR OR THEIR CONTRACTOR TO ENSURE THE SYSTEM IS OPERATED AND MAINTAINED IN ACCORDANCE WITH THE MANUAL.
 - B. CERTIFICATION**
 1. MANUFACTURER SHALL SUBMIT A LETTER OF CERTIFICATION THAT THE COMPLETE SYSTEM MEETS OR EXCEEDS ALL TECHNICAL AND PACKAGING REQUIREMENTS. BIOFILTRATION MEDIA PACKAGING MUST BEAR THE MANUFACTURER'S NAME AND ADDRESS FROM THE MANUFACTURER WHICH MATCHES A LETTER FROM THE MANUFACTURER CERTIFYING PERFORMANCE TESTING OF THE BATCH TO MEET OR EXCEED THE REQUIRED INFILTRATION RATE.
 - C. DRAWINGS**
 1. MANUFACTURER SHALL PROVIDE DIMENSIONAL DRAWINGS INCLUDING DETAILS FOR CONSTRUCTION, MATERIALS, SPECIFICATIONS AND PIPE CONNECTIONS.
 - D. MANUFACTURER'S WARRANTY**
 1. MANUFACTURER SHALL PROVIDE A WARRANTY FOR ALL COMPONENTS OF THE HPMBS FOR A PERIOD OF ONE YEAR PROVIDED THE UNIT IS INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE MANUAL. IMPROPER OPERATION, MAINTENANCE OR ACCIDENTAL OR ILLEGAL ACTIVITIES (I.E. DUMPING OF POLLUTANTS, VANDALISM, ETC.) WILL VOID THE WARRANTY. BIOFILTRATION MEDIA SHALL BE WARRANTED TO PASS THE POST-INSTALLATION INFILTRATION TEST DESCRIBED IN THIS DOCUMENT.
 - E. DESIGN COMPUTATIONS**
 1. THE HPMBS MUST BE SIZED USING THE MDE SIZING CRITERIA AND DEMONSTRATE THAT DEPENDING ON WHETHER NEW DEVELOPMENT, REDEVELOPMENT OR RETROFIT THAT ALL APPLICABLE WATER QUALITY (WQ), CHANNEL PROTECTION (CPV) AND RECHARGE (REV) REQUIREMENTS HAVE BEEN MET. IF LOCAL REGULATIONS HAVE THE SYSTEM APPROVED BASED ON AN ALTERNATE SIZING CRITERIA THE LARGER OF THE TWO COMPUTED SIZES WILL GOVERN.
 - F. SUBSTITUTION**
 1. ANY PROPOSED ALTERNATE PRODUCT SUBSTITUTION TO THIS SPECIFICATION MUST BE SUBMITTED FOR REVIEW AND APPROVED PRIOR TO BID OPENING. REVIEW PACKAGE SHOULD INCLUDE THIRD PARTY REVIEWED PERFORMANCE DATA FOR BOTH FLOW RATE AND POLLUTANT REMOVAL OF BIOFILTRATION MEDIA. POLLUTANT REMOVAL DATA MUST FOLLOW SPECIFIED PROTOCOLS. ALL COMPONENTS MUST MEET OR EXCEED QUALITY ASSURANCE AND PERFORMANCE CRITERIA INDICATED HEREIN.
 - G. PROJECT CONDITIONS**
 - A. REVIEW MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND COORDINATE INSTALLATION WITH OTHER WORK AFFECTED, SUCH AS GRADING, EXCAVATION, UTILITIES, CONSTRUCTION ACCESS AND EROSION CONTROL TO PREVENT ALL NON- INSTALLATION RELATED CONSTRUCTION TRAFFIC OVER THE COMPLETED HPMBS.**
 - B. COLD WEATHER**
 1. DO NOT USE FROZEN MATERIALS OR MATERIALS MIXED OR COATED WITH ICE OR FROST.
 2. DO NOT BUILD ON FROZEN GROUND OR WET, SATURATED OR MUDDY SUBGRADE.
 3. CARE MUST BE TAKEN WHEN HANDLING PLASTICS WHEN AIR TEMPERATURE IS AT 40 DEGREES OR BELOW AS PLASTIC BECOMES BRITTLE.
 - C. PROTECT PARTIALLY COMPLETED INSTALLATION AGAINST DAMAGE FROM OTHER CONSTRUCTION TRAFFIC WHEN WORK IS IN PROGRESS AND FOLLOWING COMPLETION OF BACKFILL BY ESTABLISHING A PERMEABLE WITH HIGHLY VISIBLE CONSTRUCTION TAPE, FENCING, OR OTHER MEANS UNTIL CONSTRUCTION IS COMPLETE.**
 - D. SOIL STABILIZATION OF THE SURROUNDING SITE MUST BE COMPLETE BEFORE THE BIOFILTRATION SYSTEM CAN BE INSTALLED. SOIL STABILIZATION OCCURS WHEN 90% OF THE SITE HAS BEEN PAVED OR VEGETATED. TEMPORARY EROSION CONTROL AND/OR SEDIMENTATION PREVENTION MEASURES SHALL BE IMPLEMENTED TO REDUCE THE POSSIBILITY OF SEDIMENTS BEING TRANSPORTED INTO THE BIOFILTRATION SYSTEM PRIOR TO FULL STABILIZATION OF THE SITE. SIGNIFICANT SEDIMENT LOADS CAN DAMAGE THE HPMBS AND LEAD TO FAILURE IF NOT PREVENTED OR REMEDIATED PROMPTLY.**
 - H. PRODUCTS**
 - A. ACCEPTABLE HPMBS**
 - FOCALPOINT HIGH PERFORMANCE BIOFILTRATION SYSTEM
 - ACCEPTABLE BEEHIVE OVERFLOW GRATE STRUCTURE (OPTIONAL)
 - BEEHIVE OVERFLOW GRATE STRUCTURE WITH REMOVABLE STORMSACK
 - ACCEPTABLE MANUFACTURER**
 - MANUFACTURER: CONVERGENT WATER TECHNOLOGIES, INC. (800)711-5428 WWW.CONVERGENTWATER.COM
 - AUTHORIZED VALUE ADDED RESELLER
 - ACF ENVIRONMENTAL (800)448 3636 WWW.ACFENVIRONMENTAL.COM
 - I. PACKAGING**
 - A. HPMBS IS ASSEMBLED ON SITE.**
 - B. MODULAR UNDERDRAIN/STORAGE UNIT IS SHIPPED FLAT AND MODULES ARE ASSEMBLED PRIOR TO INSTALLATION.**
 - C. BIOFILTRATION MEDIA IS DELIVERED IN ONE TON SUPER SACKS EACH LABELED WITH MANUFACTURER'S BATCH NUMBER AND/OR IN BULK WITH ACCOMPANYING MANUFACTURER'S CERTIFICATION.**
 - D. OTHER COMPONENTS ARE DELIVERED IN BULK OR SUPER SACKS**
 - J. EXECUTION**
 - A. EXCAVATION AND BACKFILL**
 1. BASE OF EXCAVATION SHALL BE SMOOTH, LEVEL AND FREE OF LUMPS OR DEBRIS, AND COMPACTED UNLESS INFILTRATION OF STORM WATER INTO SUBGRADE IS DESIRED. A THIN LAYER (3") OF COMPACTED BASE MATERIAL IS RECOMMENDED TO ESTABLISH A LEVEL WORKING PLATFORM (MAY NOT BE NEEDED IN SANDY SOILS). IF THE BASE OF THE EXCAVATION IS PUMPING OR APPEARS EXCESSIVELY SOFT, A GEOTECHNICAL ENGINEER SHOULD BE CONSULTED FOR ADVICE. IN MANY CASES, A STABILIZATION GEOTEXTILE AND 6" OF COMPACTABLE MATERIAL THAT DRAINS WELL WILL BE SUFFICIENT TO AVOID THE BEARING CAPACITY OF THE SOIL.
 2. MOST APPLICATIONS REQUIRE 8 OZ NON-WOVEN GEOTEXTILE OR EQUIVALENT NONWOVEN GEOTEXTILE WITH A NOMINAL WEIGHT OF 8 OZ PER SQUARE YARD TO LINE THE EXCAVATION TO SEPARATE IN SITU SOILS AND THE HPMBS. (APPLICATIONS REQUIRING WATER TO INFILTRATE THE IN SITU SUB-SOILS SHOULD USE A BRIDGING STONE RATHER THAN GEOTEXTILE TO PROVIDE A SEPARATION LAYER BETWEEN THE HPMBS AND THE IN SITU SOILS). GEOTEXTILE, WHEN UTILIZED, SHOULD BE PLACED ON THE BOTTOM AND UP THE SIDES OF THE EXCAVATION. ABSOLUTELY NO GEOTEXTILES SHOULD BE USED IN THE WATER COLUMN. IF AN IMPERMEABLE LINER IS SPECIFIED, IT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
 3. SPECIFIED BACKFILL MATERIAL MUST BE FREE FROM LUMPS, DEBRIS AND ANY SHARP OBJECTS THAT COULD PENETRATE THE GEOTEXTILE. MATERIAL IS USED FOR BACKFILL ALONG THE SIDES OF THE SYSTEM AS INDICATED IN ENGINEERING DETAIL DRAWINGS.
 - B. INSPECTION**
 1. EXAMINE PREPARED EXCAVATION FOR SMOOTHNESS, COMPACTON AND LEVEL. CHECK FOR PRESENCE OF HIGH WATER TABLE, WHICH MUST BE KEPT AT LEVELS BELOW THE BOTTOM OF THE UNDER DRAIN STRUCTURE AT ALL TIMES. IF THE BASE IS PUMPING OR APPEARS EXCESSIVELY SOFT, A GEOTECHNICAL ENGINEER SHOULD BE CONSULTED FOR ADVICE.
 2. INSTALLATION COMMENCEMENT CONSTITUTES ACCEPTANCE OF EXISTING CONDITIONS AND RESPONSIBILITY FOR SATISFACTORY PERFORMANCE. IF EXISTING CONDITIONS ARE FOUND TO BE UNSATISFACTORY, CONTACT PROJECT MANAGER OR ENGINEER FOR RESOLUTION PRIOR TO INSTALLATION.
 - C. CLEANUP AND PROTECTION DURING ONGOING CONSTRUCTION ACTIVITY**
 - A. REMOVE CLEANING DURING THE INSTALLATION AND UPON COMPLETION OF THE WORK.**
 - B. PERFORM FROM SITE ALL EXCESS MATERIALS, DEBRIS, AND EQUIPMENT. REPAIR ANY DAMAGE TO ADJACENT MATERIALS AND SURFACES RESULTING FROM INSTALLATION.**
 - C. IF SURROUNDING DRAINAGE AREA IS NOT FULLY STABILIZED, A PROTECTIVE COVERING OF GEOTEXTILE FABRIC SHOULD BE SECURELY PLACED TO PROTECT THE BIOFILTRATION MEDIA.**
 - D. CONSTRUCTION PHASE EROSION AND SEDIMENTATION CONTROLS SHALL BE PLACED TO PROTECT THE INLET(S) TO THE BIOFILTRATION SYSTEM. EXCESSIVE SEDIMENTATION, PARTICULARLY PRIOR TO ESTABLISHMENT OF PLANTS MAY DAMAGE THE HPMBS.**
 - E. STRICTLY FOLLOW MANUFACTURER'S GUIDELINES WITH RESPECT TO PROTECTION OF THE HPMBS BETWEEN INSTALLATION AND COMMISSIONING PHASES.**
 - D. COMMISSIONING**
 - A. COMMISSIONING SHOULD ONLY BE CARRIED OUT ONCE THE CONTRIBUTING DRAINAGE AREA IS FULLY STABILIZED. IF COMMISSIONING MUST BE CARRIED OUT SOONER, IT IS IMPERATIVE THAT APPROPRIATE EROSION AND SEDIMENT CONTROLS BE PLACED TO PREVENT THE ENTRY OF EXCESSIVE SEDIMENT/POLLUTANT LOADS INTO THE SYSTEM.**
 - B. COMMISSIONING INCLUDES REMOVING THE PROTECTIVE COVERING FROM THE BIOFILTRATION MEDIA, PLANTING THE PLANT MATERIAL IN ACCORDANCE WITH THE APPROVED DRAWINGS, AND PLACING MULCH IF SPECIFIED.**
 - C. DIG PLANTING HOLES THE DEPTH OF THE ROOT BALL AND TO TWO THREES AS WIDE AS THE ROOT BALL. WIDE HOLES ENCOURAGE HORIZONTAL ROOT GROWTH THAT PLANTS NATURALLY PRODUCE.**
 - D. WITH TREES, YOU MUST ENSURE YOU ARE NOT PLANTING TOO DEEP. DON'T DIG HOLES DEEPER THAN ROOT BALLS. THE MEDIA SHOULD BE PLACED AT THE ROOT COLLAR, NOT ABOVE THE ROOT COLLAR. OTHERWISE THE STEM WILL BE VULNERABLE TO DISEASE.**
 - E. STRICTLY FOLLOW MANUFACTURER'S PLANTING GUIDANCE.**
 - C. COVER THE EXPOSED ROOT BALL TOP WITH MULCH. MULCH SHOULD NOT TOUCH THE PLANT BASE BECAUSE IT CAN HOLD TOO MUCH MOISTURE AND INVITE DISEASE AND INSECTS. EVENLY PLACE 3 INCHES OF DOUBLE-SHREDED HARDWOOD MULCH (IF SPECIFIED) ON THE SURFACE OF THE MEDIA.**
 - D. PLANTINGS SHALL BE WATERED-IN AT INSTALLATION AND TEMPORARY IRRIGATIONS SHALL BE PROVIDED, IF SPECIFIED.**
 - XI. USING THE HPMBS**
 - A. MAINTENANCE REQUIREMENTS**
 1. EACH CORRECTLY INSTALLED HPMBS IS TO BE MAINTAINED BY THE MANUFACTURER FOR A MINIMUM PERIOD OF ONE YEAR. THE COST OF THIS SERVICE IS TO BE INCLUDED IN THE MANUFACTURER'S PRICE OF THE SYSTEM.
 2. ANNUAL MAINTENANCE CONSISTS OF TWO (2) SCHEDULED VISITS UNLESS OTHERWISE SPECIFIED.
 3. EACH MAINTENANCE VISIT CONSISTS OF THE FOLLOWING:
 - COMPLETE SYSTEM INSPECTION
 - REMOVAL OF FOREBAY DEBRIS, SLT, PLANT MATERIAL, TRASH AND MULCH (IF NEEDED)
 - EVALUATION OF BIOFILTRATION MEDIA
 - EVALUATION OF PLANT HEALTH
 - INSPECTION OF UNDERDRAIN/STORAGE SYSTEM VIA OBSERVATION/MAINTENANCE PORT
 - PROPERLY DISPOSE OF ALL MAINTENANCE REFUSE ITEMS (TRASH, MULCH, ETC.)
 - TAKE PHOTOGRAPHIC DOCUMENTATION OF PLANTING AND GENERAL SYSTEM HEALTH
 - UPDATE AND STORE MAINTENANCE RECORDS
 - TO ENSURE LONG TERM PERFORMANCE OF THE HPMBS, CONTINUING ANNUAL MAINTENANCE SHOULD BE PERFORMED PER THE MANUFACTURER'S OPERATIONS AND MAINTENANCE MANUAL.

4. IF SEDIMENT ACCUMULATES BEYOND AN ACCEPTABLE LEVEL IN THE UNDERDRAIN/STORAGE SYSTEM, IT WILL BE NECESSARY TO FLUSH THE UNDERDRAIN. THIS CAN BE DONE BY PUMPING WATER INTO THE OBSERVATION/MAINTENANCE PORT OR ADJACENT OVERFLOW STRUCTURE, ALLOWING THE TURBULENT FLOW THROUGH THE UNDERDRAIN TO RE- SUSPEND THE FINE SEDIMENTS. IF MULTIPLE OBSERVATION/MAINTENANCE PORTS HAVE BEEN INSTALLED, WATER SHOULD BE PUMPED INTO EACH PORT TO MAXIMIZE FLUSHING EFFICIENCY.
- SEDIMENT-LADEN WATER CAN BE PUMPED OUT AND EITHER CAPTURED FOR DISPOSAL OR FILTERED THROUGH A DRIBBAG FILTER BAG, IF PERMITTED BY THE LOCALITY.

XII. MEASUREMENT AND PAYMENT

GIVEN THE INTEGRATED NATURE OF THE HPMBS, MEASUREMENT AND PAYMENT WILL BE BASED NOT ON THE INDIVIDUAL COMPONENT PRICES, BUT ON THE SIZE OF THE BIOFILTRATION MEDIA BED. THE EXTERNAL DIMENSION AS INDICATED IN THE APPROVED PLANS AND EXECUTED IN THE INSTALLATION WILL BE MEASURED IN SQUARE FEET AND PAYMENT WILL BE MADE PER HPMBS SYSTEM.

MEASUREMENT AND PAYMENT