

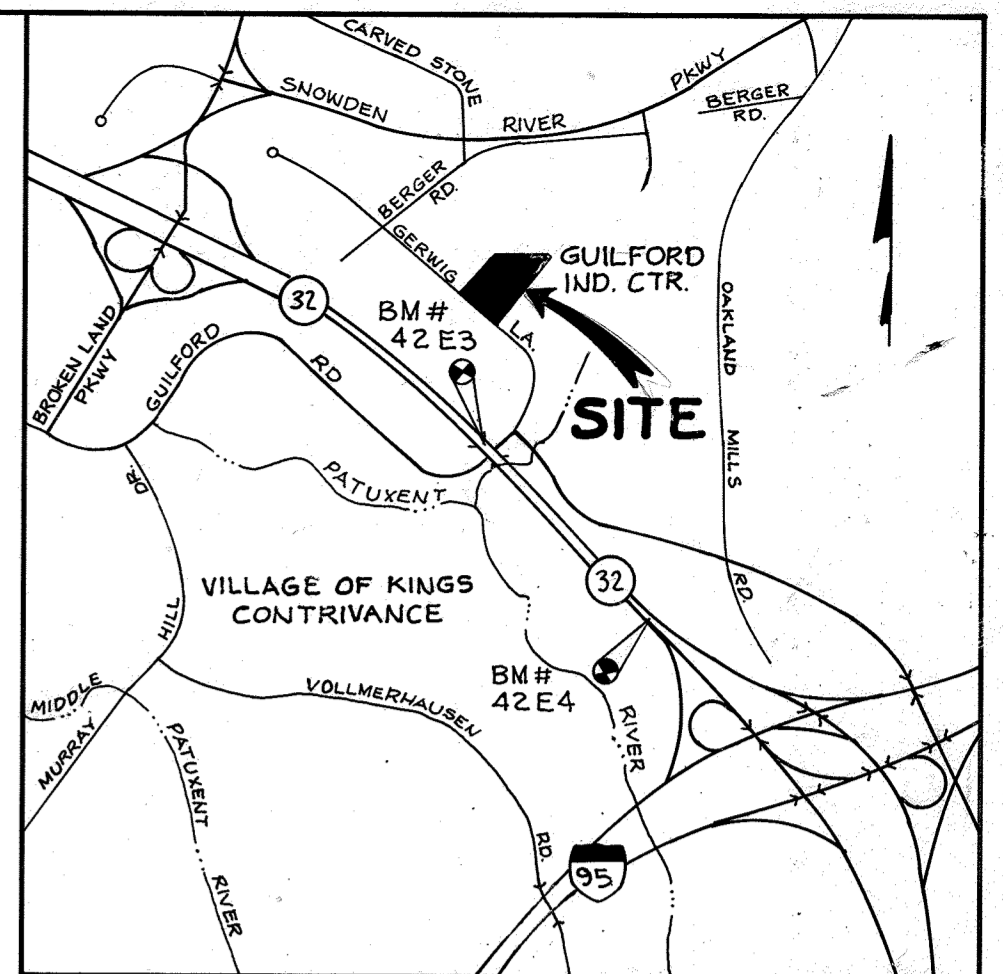
BM # 42E3 ELEV. 306.556
 N 166.582.3241 E 413.887.0332
 CONCRETE MONUMENT SET 13'± SOUTH OF WEST BOUND LANE OF MD ROUTE # 32 APPROXIMATELY 54' WEST OF GUILFORD ROAD BRIDGE.

BM # 42E4 ELEV. 337.000
 N 166.070.9771 E 414.366.1877
 CONCRETE MONUMENT SET 20'± SOUTH OF WEST BOUND LANE OF MD ROUTE # 32 APPROXIMATELY 200' EAST OF GUILFORD ROAD BRIDGE.

NOTE: HOPE INDICATES HIGH DENSITY POLYETHYLENE PIPE

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION AT (410) 313-880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY 'MISS UTILITY' AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- CONTOUR INTERVALS (IF ANY) ARE BASED ON A FIELD RUN SURVEY BY: C. BROOK MILLER, INC. DATED SEPTEMBER, 1993.
- ALL HORIZONTAL AND VERTICAL CONTROLS ARE BASED ON HOWARD COUNTY BENCH MARKS 42E3 AND 42E4.
- EXISTING WATER AND SEWER FACILITIES ARE PUBLIC AND WERE BUILT UNDER CONTRACT NO. 383A W & S.
- THERE ARE NO 100 YEAR FLOODPLAINS ON THIS SITE.
- THIS SITE IS EXEMPT FROM STORMWATER MANAGEMENT REQUIREMENTS, HOWEVER WATER QUALITY MANAGEMENT IS BEING PROVIDED.
- THERE ARE NO WETLANDS ON THIS SITE.
- A TRAFFIC STUDY IS NOT REQUIRED FOR THIS SITE.
- EXISTING UTILITIES WERE LOCATED FROM AS BUILT PLANS AND FIELD CHECKED WHENEVER POSSIBLE AND THE CONTRACTOR SHALL VERIFY THEIR LOCATION TO HIS OWN SATISFACTION.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- THE CONTRACTOR SHALL NOTE THAT IN THE CASE OF DISCREPANCY BETWEEN THE SCALED AND FIGURED DIMENSIONS SHOWN ON THESE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN.
- PROPOSED LIGHT POLES AND HARDWARE TO MATCH EXISTING FIXTURES ON SITE.
- THE PURPOSE OF THIS PLAN IS TO SHOW CONSTRUCTION OF THE PROPOSED IMPROVEMENTS LISTED HERE: PAVED EMPLOYEE PARKING LOT, PAVED EQUIPMENT PARKING LOT AT REAR OF SITE, PROVIDE 3 WATER QUALITY FACILITIES, CONCRETE STORAGE BINS, DRAINAGE SYSTEM FOR EQUIPMENT WASHING, COVERED EQUIPMENT PARKING (BLDG C), COVERED LUMBER STORAGE SHED (BLDG D), LANDSCAPE AND LIGHTING PLAN, AND EQUIPMENT WASH BUILDING (BLDG F).



VICINITY MAP
SCALE: 1" = 2000'

SITE TABULATION/ANALYSIS

AREA OF LOT H-2 8.472 AC OR 363,018 SF
 ZONING - NEW TOWN - IND.
 LAND USE - INDUSTRIAL - FDP PHASE 85
 PROP. USE - INDUSTRIAL (OFFICE/WAREHOUSE MAINT.)
 ALLOWABLE STRUCTURAL COVERAGE 50%
 FLOOR SPACE - OFFICE 4,772 SF
 WARE/MAINT. 3,374 SF
 COMMON AREAS 3,374 SF
 PROP. NET INDUSTRIAL (Bldg. A only) 88,816 SF
 EXISTING BUILDING 'B' 12,000 SF (EQUIP STORAGE)
 PROPOSED BUILDING 'C' 7,536 SF (VEHICLE STOR.)
 PROPOSED BUILDING 'D' 2,560 SF (LUMBER STOR.)
 PROPOSED BUILDING 'E' 3,200 SF (EQUIP. WASH. BLDG.)
 PROPOSED BUILDING 'F' 1,920 SF (EQUIP. WASH. BLDG.)
 INDUSTRIAL 4 SPACES/EMPLOYEE 132 SPACES (9'x18' MIN.)
 2 SPACES/ROOFS OF OFFICE 60 SPACES
 PARKING - EMPLOYEE & VISITOR 142 SPACES
 INCLUDING 8 HANDICAP SPACES (8'x18') TOTAL 142 SPACES
 MAINTENANCE VEHICLE PARKING 60 SPACES
 TRUCK PARKING (20'x40') 24 SPACES (WITHIN)
 COVER EQUIPMENT PARKING (10'x30') 22 SPACES - (BLDG C)
 BUS PARKING (EXISTING) 8 SPACES
 THERE ARE NO EXISTING OR PROPOSED SLOPES 4% OR GREATER EXCEPT AS SHOWN.
 THERE ARE NO HYDRIC SOILS ON SITE. ALL SOILS ARE OF THE (B)(C) & (D) TYPE SOILS.
 ALL VEGETATION ON SITE IS IN THE FORM OF LANDSCAPE AND LAWN.
 THERE ARE NO NATURAL WOODED AREAS ON SITE.
 OPEN SPACE (GREEN AREA) TO REMAIN ON SITE = 52,469 SF OR 14.2% OF GROSS AREA
 BUILDING COVERAGE OF SITE = 71,032 SF OR 19.4% OF GROSS AREA
 SITE REFERENCES: SEE FDP PHASE 85, SDP 72-104C SDP 93-16 AND F 70-85
 PAVED PARKING LOT/AREA ON SITE 5.87 ACRES OR 255,733 SF OR 6.9% OF GROSS AREA
 EXISTING AND PROPOSED CONCRETE BINS ARE FOR THE BULK STORAGE OF LANDSCAPING MATERIALS SUCH AS MULCH, CRUSHED STONE, SAND, ETC.

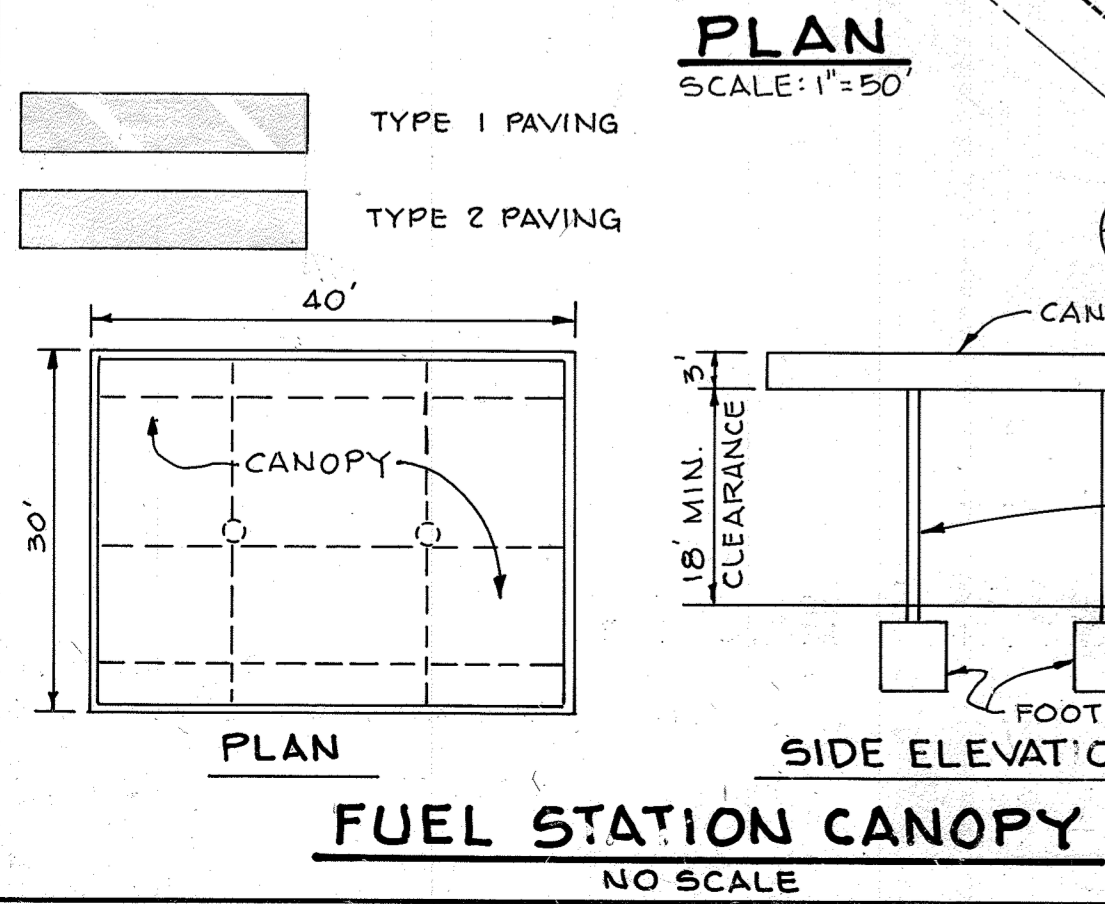
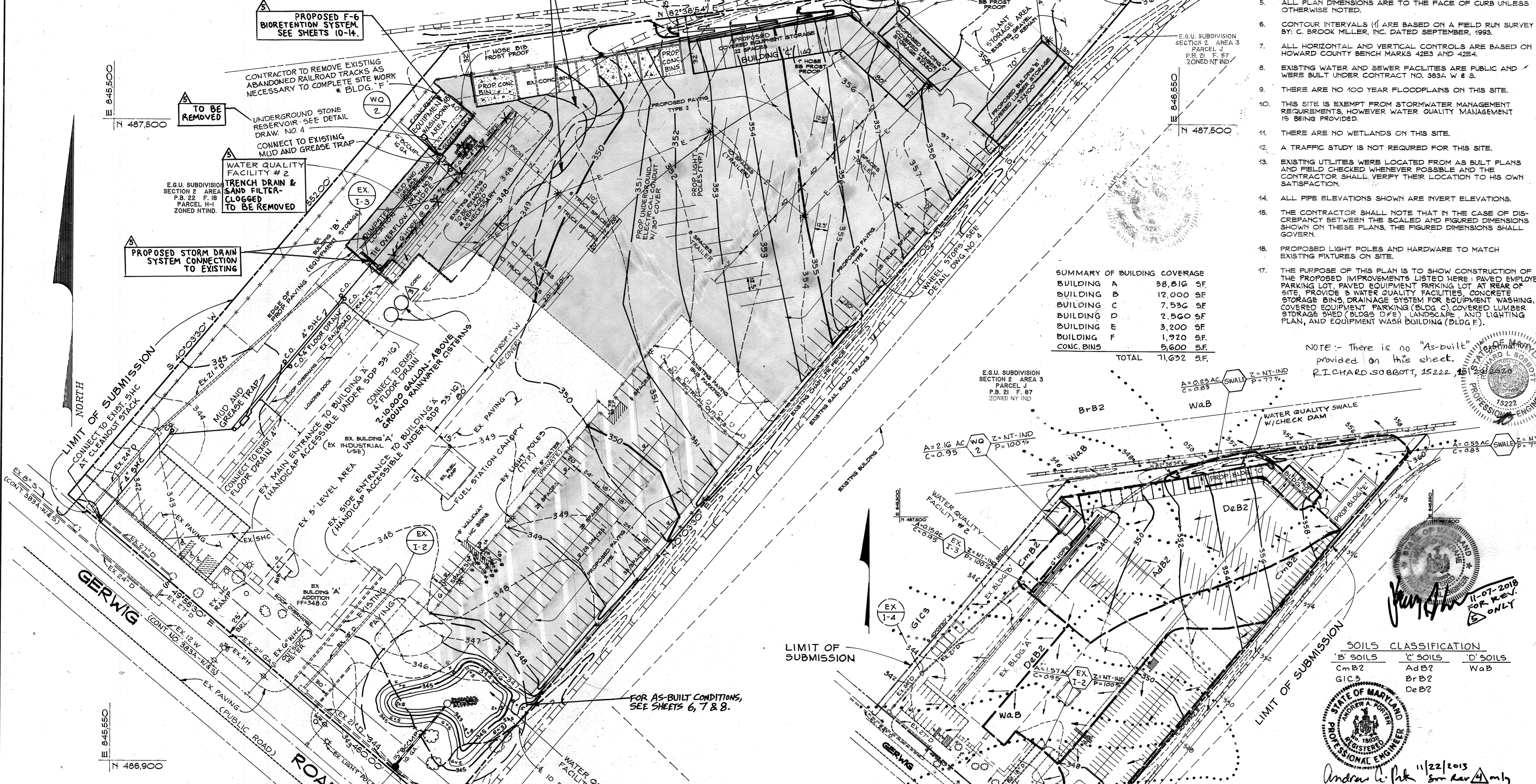
NOTE: There is no "As-built" provided on this sheet.
 RICHARD SOBOTT, 15222



SUMMARY OF BUILDING COVERAGE

BUILDING A	38,816 SF
BUILDING B	12,000 SF
BUILDING C	7,536 SF
BUILDING D	2,560 SF
BUILDING E	3,200 SF
BUILDING F	1,920 SF
CONC. BINS	5,600 SF
TOTAL	71,032 SF

BUILDINGS C,D,E,F SCHEMATIC
NO SCALE



FUEL STATION CANOPY
NO SCALE

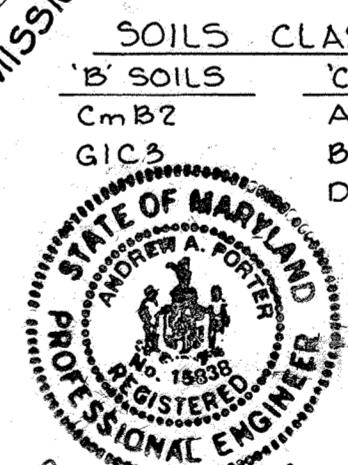
EROSION & SEDIMENT CONTROL NOTES & DETAILS

- EROSION & SEDIMENT CONTROL PLAN
- DETAILS & #6 BIORETENTION SYSTEM LANDSCAPE PLAN
- F-6 BIORETENTION SYSTEM PROFILES & DETAILS
- F-6 BIORETENTION SYSTEM PLAN
- WQ FACILITY #1 DETAILS (2)
- WQ FACILITY #1 DETAILS (1)
- WQ FACILITY #1 PROFILES & DETAILS

SHEET INDEX

NO.	DESCRIPTION
1	SITE DEVELOPMENT PLAN
2	SEDIMENT CONTROL PLAN NOTES AND DETAILS
3	WATER QUALITY DETAILS
4	MISCELLANEOUS DETAILS
5	LANDSCAPING PLAN
6	MAINT./REPAIR SW/EXC PLAN - WQ FACILITY #1

DRAINAGE AREA MAP
SCALE: 1" = 100'



Andrew Li Pak 11/22/2013
 San Rev. Only

STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	REMARKS
WQ #2	WQ#2	SEE PLAN	344.50	344.50	347.00	SEE DETAIL SHT. 3
M-1	STD. 4'-0" MANHOLE	SEE PLAN	337.25	336.75	344.00 EX.GR.	HC. STD G 5.12

ADDRESS CHART

BUILDING	STREET ADDRESS					
H-2	9450 GERWIG LANE					
SUBDIVISION	SECT./AREA	PARCEL/LOT				
H-2	2/3	986/H-2				
PLAT	BLOCK	ZONE	NT IND.	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
22/18	10	NT IND.	MAP 42	6th	6067.03	
WATER CODE		SEWER CODE				
E-06		5241400				

09/14/2018	A	REMOVE WQ FACILITY #2, ADD F-6 BIORETENTION SYSTEM, STORM DRAIN PIPES & PAVING, SHEETS 10-14.
11/22/15	A	ADDED WQ FACILITY #1 IMPROVEMENT SHEETS 5-7
8-21-09	A	ADDED 2-10000 GALLON RAINWATER CISTERNS
DATE	NO	REVISION

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Michael J. Drangel 11-07-2018
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH - DATE 11-07-2018
 FOR REV. ONLY

Anna Simonetti 11/22/2013
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH - DATE 11/22/2013

Michael J. Drangel 11/22/2013
 DIRECTOR - DATE 11/22/2013

12-7-00	A	ADDED FUEL STATION CANOPY
10-1-98	A	EXTENDED SEWER CONN. & BLDG. 'F'
Date	No	Revision Description

THE COLUMBIA PARK & RECREATION ASSOCIATION
 10221 WINCOPIN CIRCLE, SUITE 100
 COLUMBIA, MARYLAND 21044-3410
 (410) 312-6330

PHOENIX ENGINEERING, INC.
 CONSULTING ENGINEERS
 817 MADISON CROSS LANE, SUITE 300
 BALTIMORE, MARYLAND 21286
 (410) 847-8833 FAX: 847-8837

AREA	E.G.U. SUBDIVISION SECTION 2 AREA 3
	ZONED: NT IND. PARCEL 386 PB 22, F.16
	6th ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND
TITLE:	ADDITIONS TO THE COLUMBIA PARK AND RECREATION ASSOCIATION'S MAINTENANCE FACILITY AS-BUILT SITE DEVELOPMENT PLAN
PREVIOUSLY	SDP 72-104C & SDP 93-16
Des By	R.J.W. Scale AS SHOWN Proj No 80-0000 GEN/MDG
Drn By	A.J.R. Date NOV. 1993 DRAWING NO. 1 OF 214
Chk By	J.R.H. SDP-94-69

THE EASTERN PRODUCTS CORP.
PARCEL D
ZONED HT-IND
L 471 F. 827

APPROXIMATE LIMITS OF PROPOSED PAVING PATCHING, SEE SHEET 10.

PROPOSED F-6 BIORETENTION SYSTEM, SEE SHEETS 10-14.

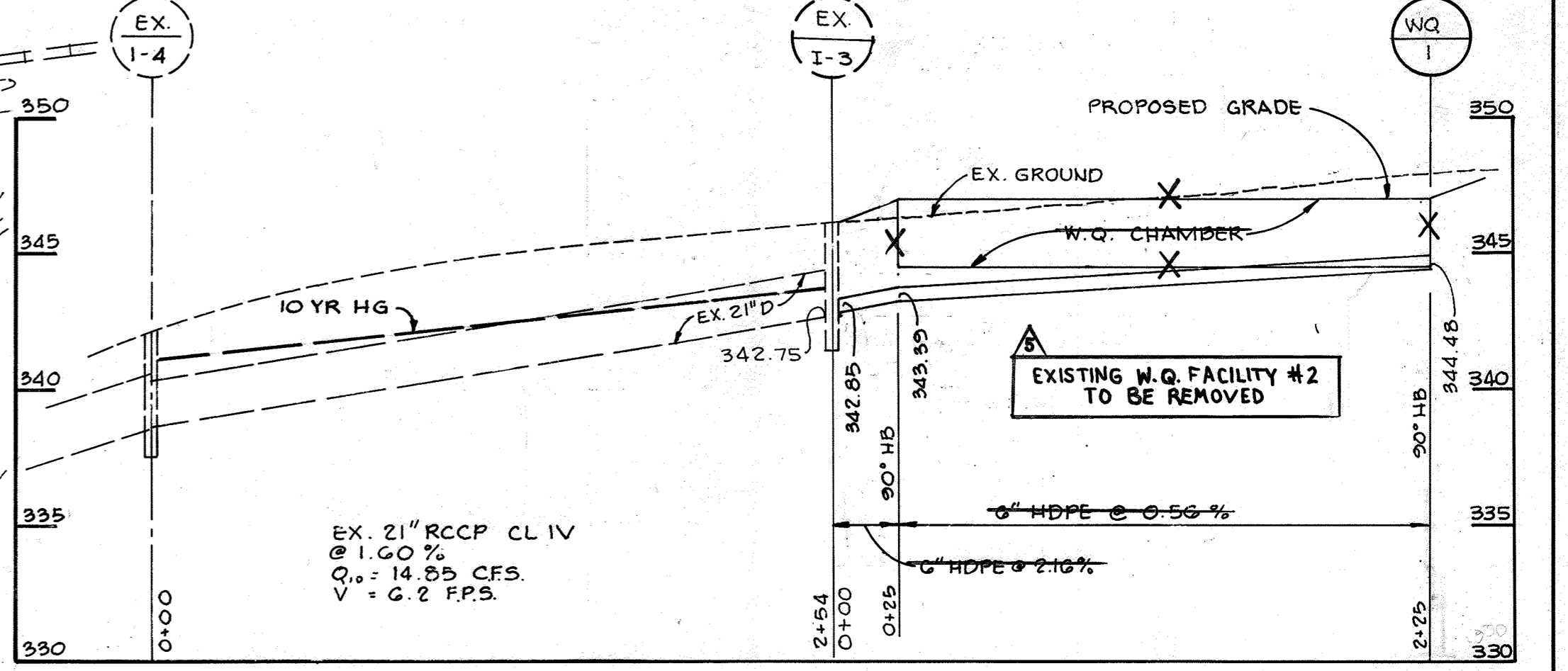
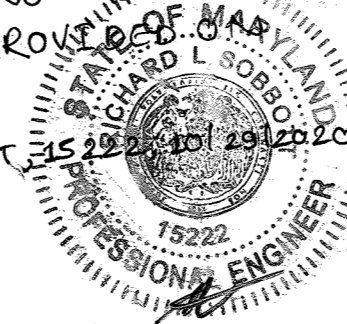
PERMANENT WATER QUALITY FACILITY #2 SEE DETAIL, DWG. NO. 3 TRENCH DRAIN & SAND FILTER CLOGGED TO BE REMOVED

PROPOSED STORM DRAIN SYSTEM CONNECTION TO EXISTING

E.G.U. SUBDIVISION SECTION 2 AREA 3 P.B. 22 F. 18 PARCEL H-1 ZONED NTND.

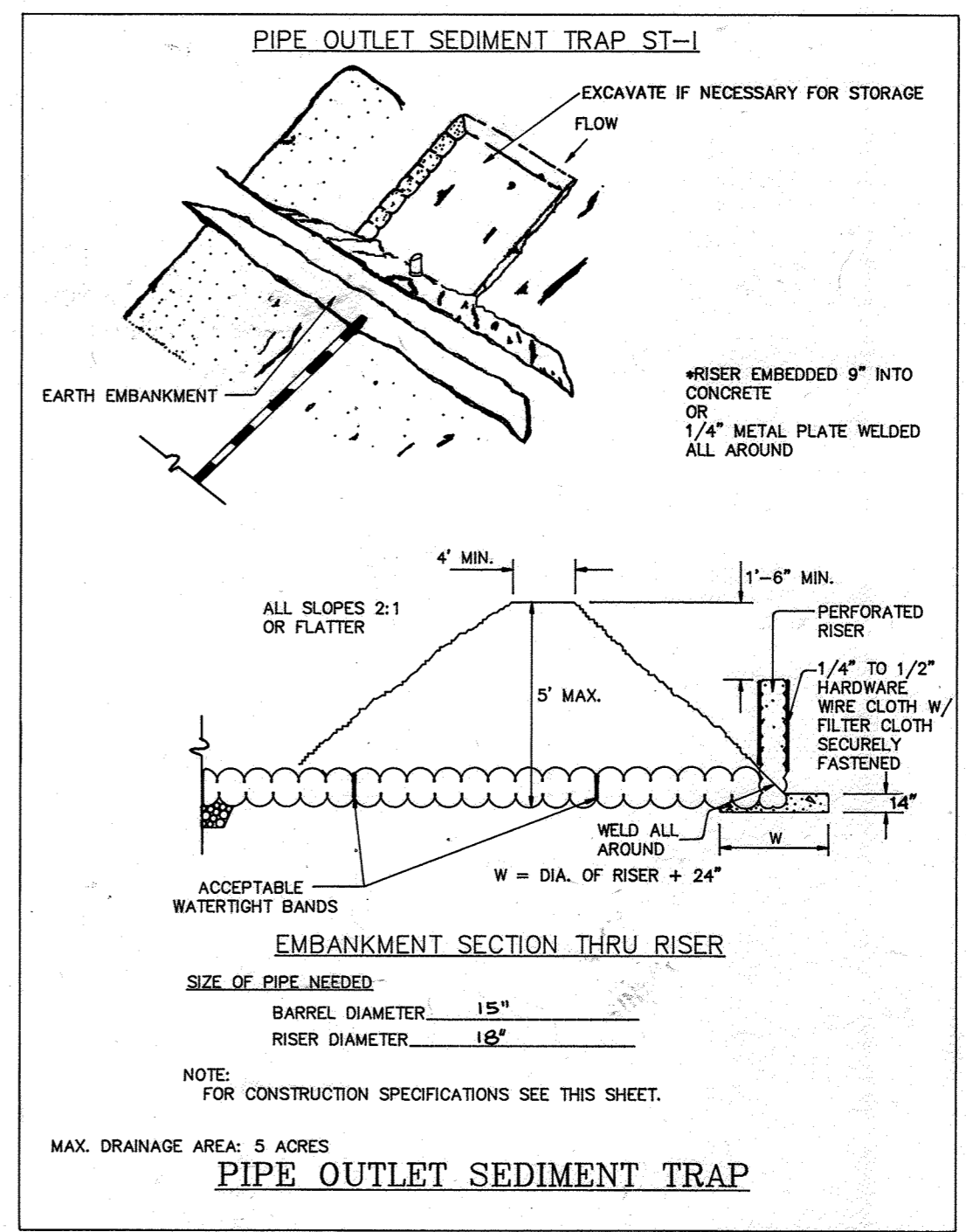
PERMANENT STONE CHECK DAMS 40 MAX SPACING SEE DETAIL, THIS SHT.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
RICHARD SOBOTT
15222101291220

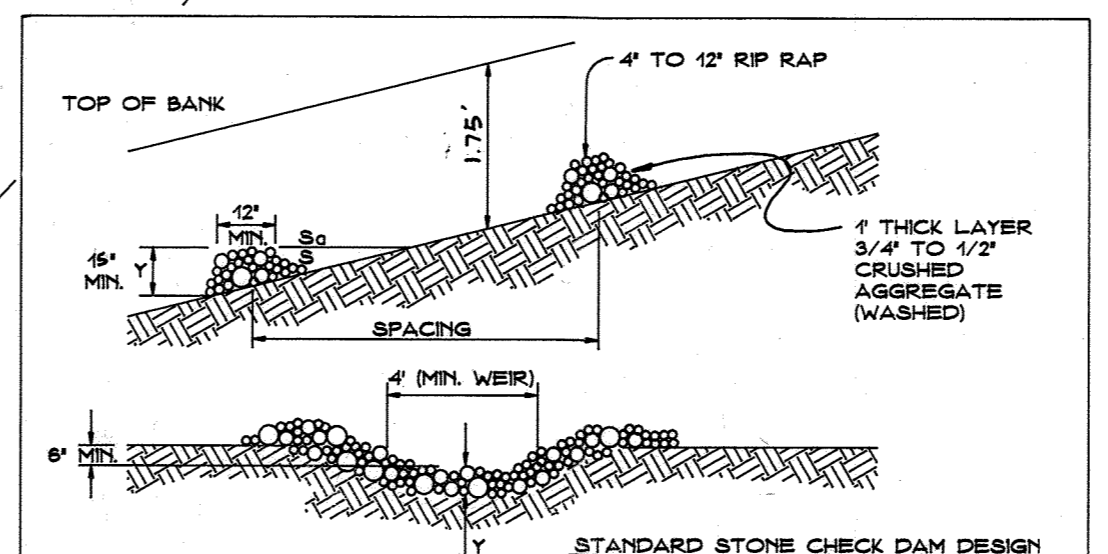


PROFILE WQ #2

SCALE: H: 1" = 50'
V: 1" = 5'



PIPE OUTLET SEDIMENT TRAP



STANDARD STONE CHECK DAM DESIGN

SLOPE	SPACING
2% OR LESS	80'
2.4% TO 4%	40'
4.4% TO 7%	25'
7.4% TO 10%	15'
OVER 10%	USE LINED WATERWAY DESIGN

NOTE: FOR USE OF SMALLER DIMENSIONS AND/OR LARGER SPACINGS SEE DETAIL, THIS SHEET.

- CONSTRUCTION SPECIFICATIONS
- SWALES AND DITCHES SHALL BE PREPARED IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS DESCRIBED IN SECTION 4-2, STANDARDS AND SPECIFICATIONS FOR TEMPORARY SWALES, FOR DETAIL SEE DWG. NO. 4
 - THE CHECK DAM SHALL BE CONSTRUCTED OF 4 INCH TO 12 INCH RIP RAP. THE RIP RAP SHALL BE PLACED SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL AND KEYED INTO THE CHANNEL BANKS.
 - THE TOP OF THE CHECK DAM SHALL BE CONSTRUCTED SO THAT THE CENTER IS APPROXIMATELY 8 INCHES LOWER THAN THE OUTER EDGES, FORMING A WEIR THAT WATER CAN FLOW ACROSS.
 - THE MAXIMUM HEIGHT OF THE CHECK DAM AT THE CENTER SHALL NOT EXCEED 2 FEET.
 - THE UPSTREAM SIDE OF THE CHECK DAM MAY BE LINED WITH APPROXIMATELY 1 FOOT OF 3/4 TO 1 1/2 INCH CRUSHED AGGREGATE.

STONE CHECK DAM

PERMANENT SEEDING NOTES

- APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.
- SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
- PREPARED - APPLY 2 TONS PER ACRE POLYCLONIC LIMESTONE (82 LBS/1000 SQ FT) AND 800 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (8 LBS/1000 SQ FT)
 - ACCEPTABLE - APPLY 2 TONS PER ACRE POLYCLONIC LIMESTONE (82 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.
- SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 80 LBS PER ACRE (14 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 80 LBS PER ACRE (14 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE AND 2 LBS LBS/1000 SQ FT OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELLS ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE 500, OPTION (3) SEED WITH 80 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELLS ANCHORED STRAW.
- MULCHING - APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 2 1/2 GAL PER ACRE (8 GAL/1000 SQ FT) OF ENHANCED ASPHALT ON FLAT AREAS ON SLOPES 6 FEET OR HIGHER, USE 3/4 GAL PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.
- MAINTENANCE - INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

- APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
- SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
- SOIL AMENDMENTS: APPLY 800 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT).
- SEEDING - FOR PERIODS MARCH 1 THRU APRIL 30, AND FROM AUGUST 16 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (23 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (7 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELLS ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR
- MULCHING - APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 2 1/2 GAL PER ACRE (8 GAL/1000 SQ FT) OF ENHANCED ASPHALT ON FLAT AREAS ON SLOPES 6 FT OR HIGHER, USE 3/4 GAL PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.
- REFER TO THE 1993 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

SEDIMENT CONTROL PLAN

SCALE: 1" = 50'

SEQUENCE OF CONSTRUCTION

- OBTAIN A GRADING PERMIT
- INSTALL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM AND INLET PROTECTION AT EXISTING INLET 1-3.
- CLEAR AND GRUB AREAS FOR AND INSTALL REMAINDER OF PERIMETER SEDIMENT CONTROL DEVICES INCLUDING STONE CHECK DAMS IN SWALE AT NORTH END OF SITE.
- CLEAR AND GRUB AREA FOR AND INSTALL PIPE OUTLET SEDIMENT TRAP #1 WITH TEMPORARY WATER TIGHT PLUG INSTALLED IN 12\"/>
- INSTALL REMAINING UNDERGROUND UTILITIES, CONDUITS, WATER, GREASE TRAP ETC.
- GRADE SITE.
- COMPLETE ALL CONSTRUCTION AND STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES.
- PAVE SITE AS SHOWN ON PLANS.
- WHEN ALL DISTURBED AREAS HAVE BEEN STABILIZED AND UPON APPROVAL OF SEDIMENT CONTROL INSPECTOR CONVERT POINT #1 TO A PERMANENT WATER QUALITY FACILITY BY REMOVING ACCUMULATED SEDIMENT AND SPREAD OVER ADJACENT LAWN AREA, RETURN BOTTOM OF TRAP TO ELEV. 342.8. INSTALL 12\"/>
- WHEN ALL UPSTREAM AREAS HAVE BEEN STABILIZED AND WITH APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ALL DISTURBED AREAS AS PER PERMANENT SEEDING NOTES.

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

Patricia Englepp 2/10/95
U.S. SOIL CONSERVATION SERVICE DATE

BY THE ENGINEER:
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 COUNTY SOIL CONSERVATION DISTRICT.

ENGINEER: JOHN R. HEINRICH, P.E. #14920 DATE 10-15-93

BY THE DEVELOPER:
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 MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

DEVELOPER: DENIS ELLIS
COLUMBIA PARK AND RECREATION ASSOCIATION DATE 10-11-93

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

John K. Robertson 2/10/95
HOWARD S.C.D. DATE

09/14/2018 REMOVE WQ FACILITY #2 AND F-6 BIORETENTION SYSTEM, STORM DRAIN PIPES & PAVING, SHEETS 10-14.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division DATE 2/15/95

Chief, Division of Land Development and Research DATE 8/18/95

Director DATE 8/10/95

12-7-00 ADDED FUEL STATION CANOPY

Revision Description

Date	No	Revision Description

OWNER/DEVELOPER

THE COLUMBIA PARK & RECREATION ASSOCIATION
10221 WINCOPIN CIRCLE, SUITE 100
COLUMBIA, MARYLAND 21044-3410
(410) 312-8330

PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
877 HAWKEYE CREEK LAKE, SUITE 300
BALTIMORE, MARYLAND 21289
(410) 247-8833 FAX 247-8397

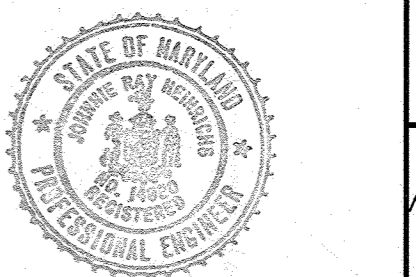
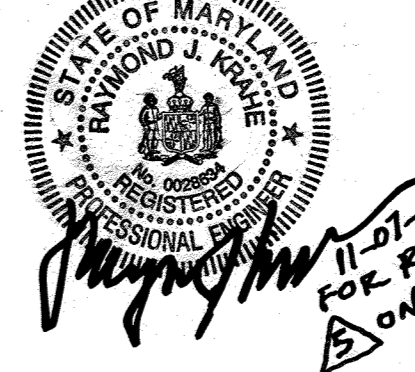
AREA E.G.U. SUBDIVISION SECTION 2 AREA 3 PARCEL 3 E 6

04th ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

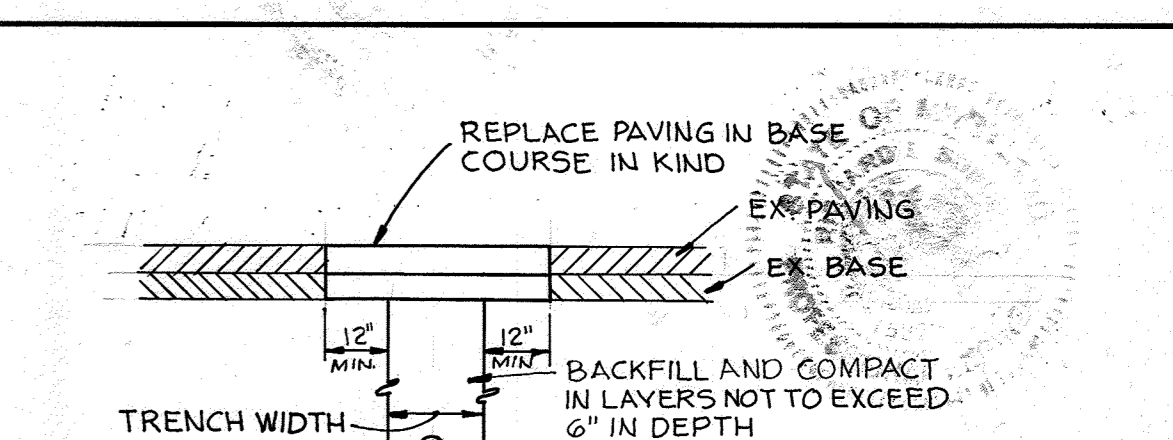
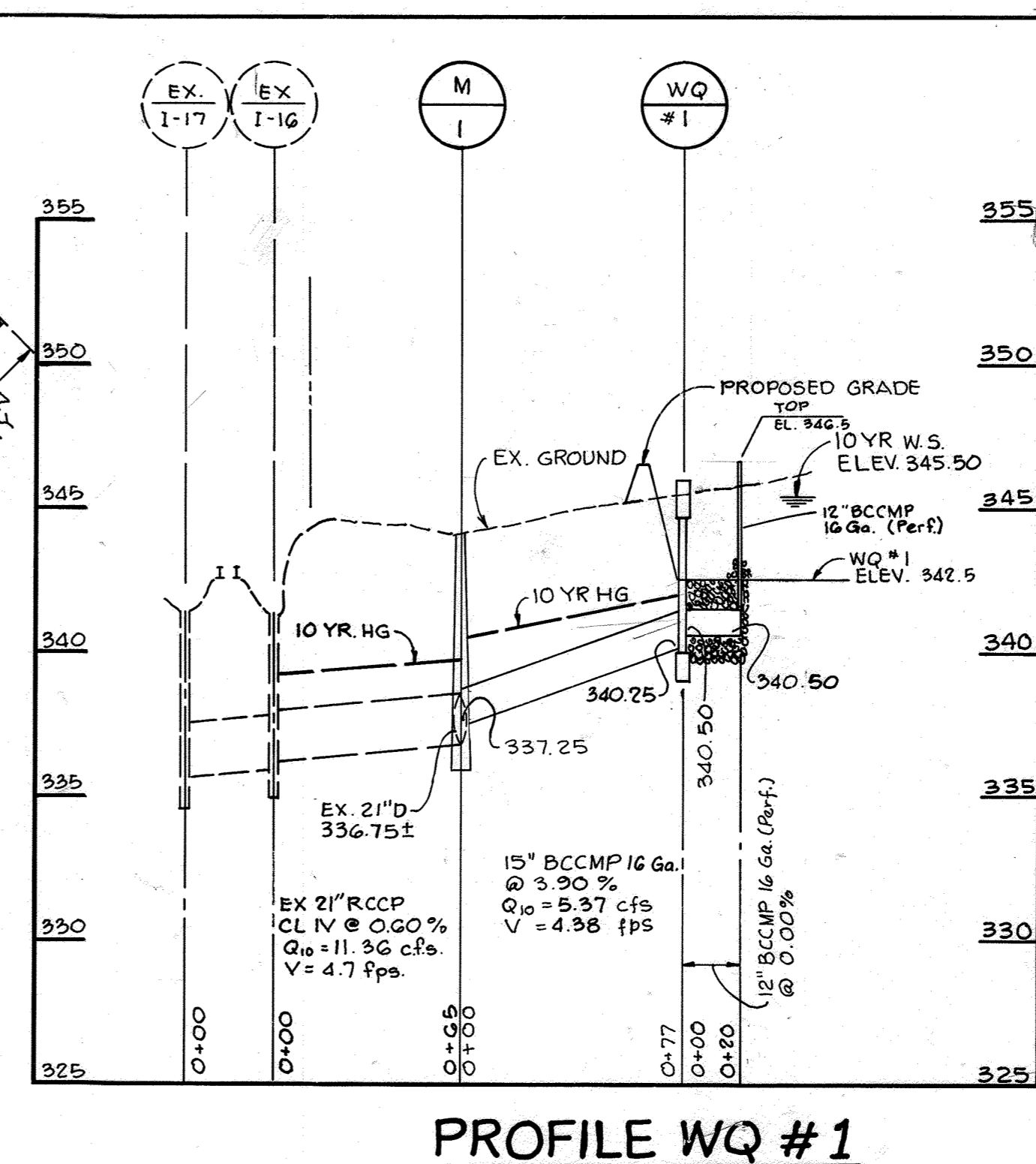
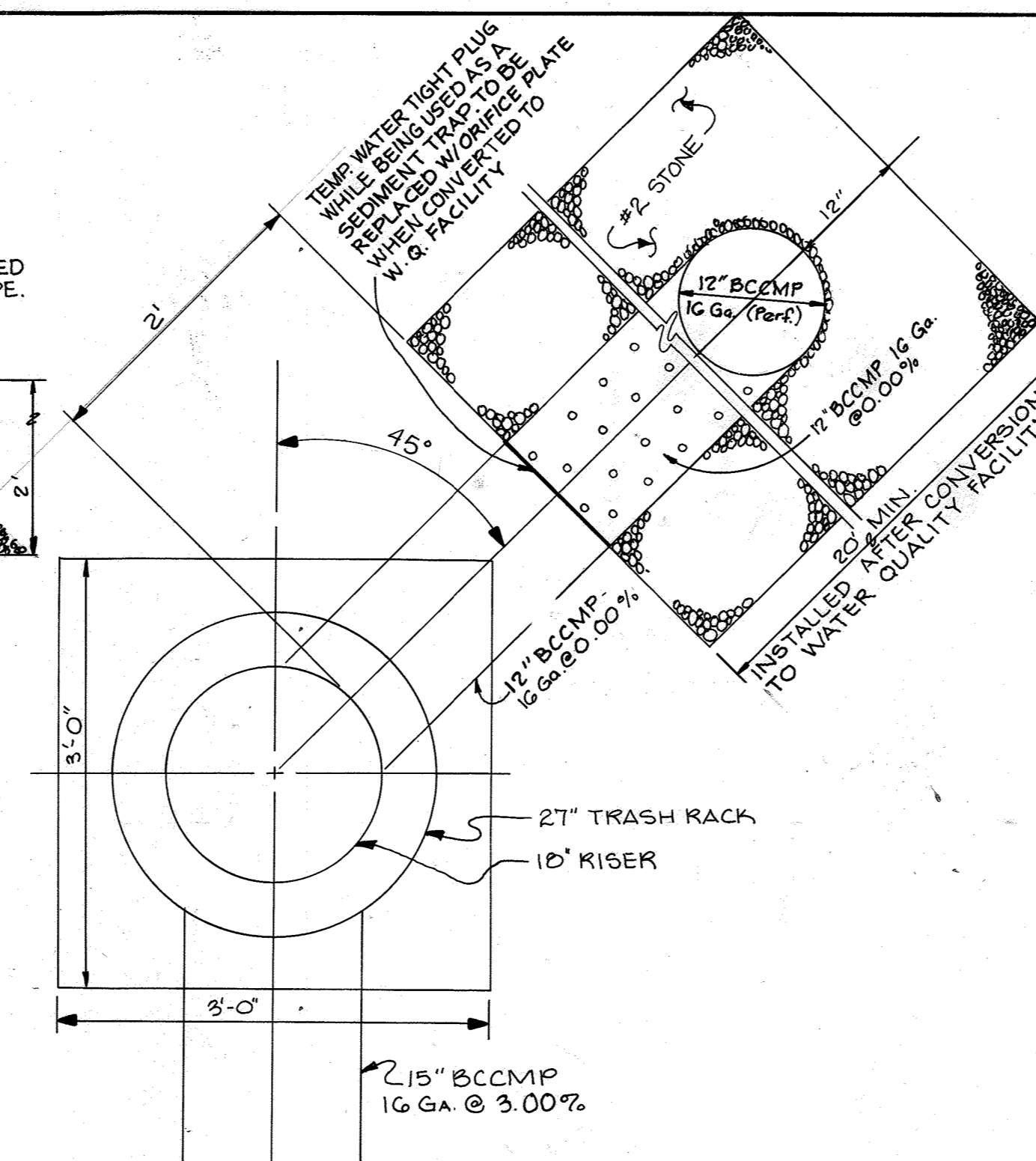
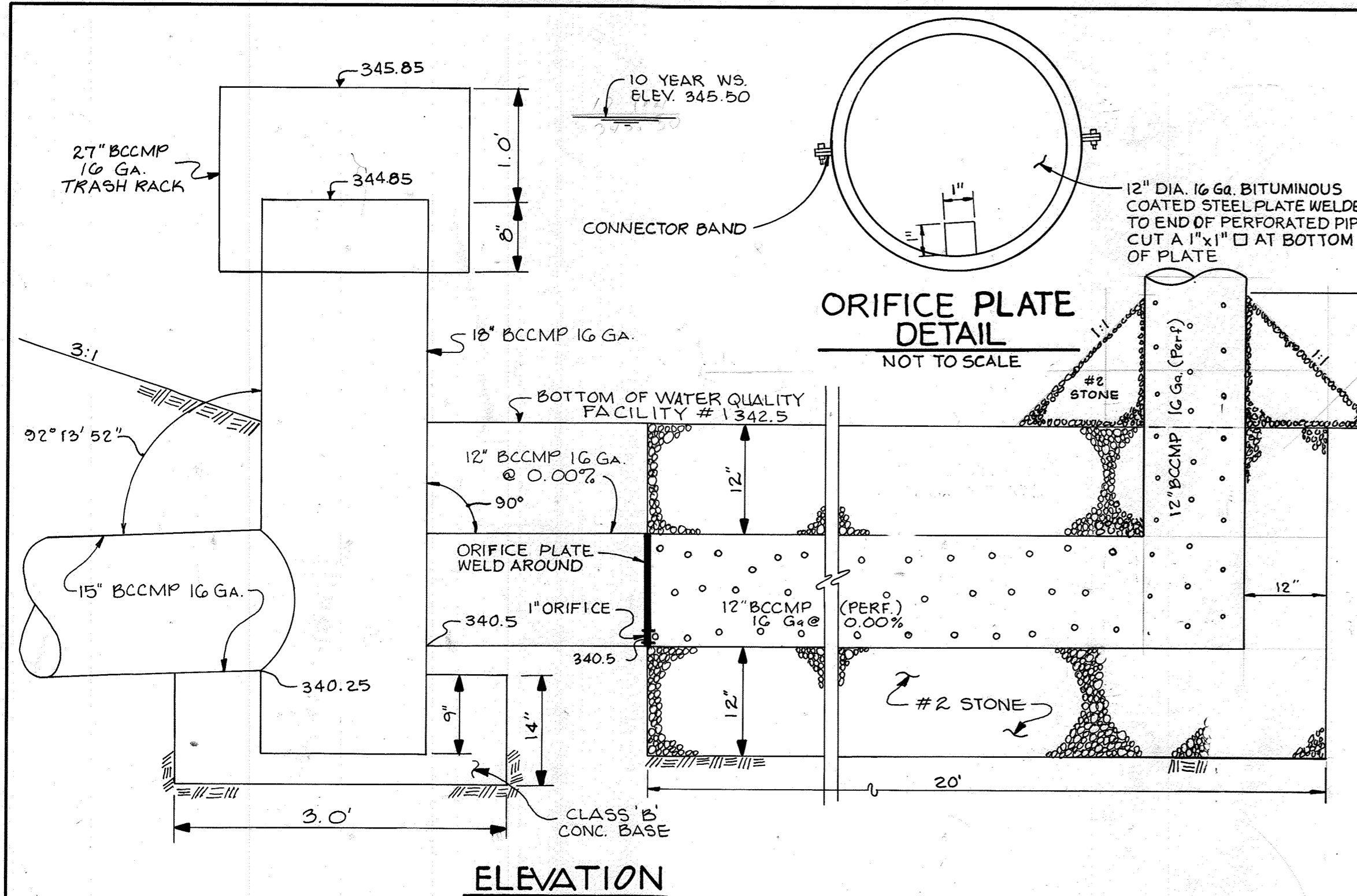
TITLE ADDITIONS TO THE COLUMBIA PARK AND RECREATION ASSOCIATION MAINTENANCE FACILITY AS-BUILT SEDIMENT CONTROL PLAN NOTES & DETAILS

Drawings Information

Des By	R.J.W.	Scale	AS SHOWN	Proj No	83-0200 GERWIG23.DWG
Drn By	A.J.R.	Date	OCT. 1993	DRAWING NO	
Chk By	J.R.H.	SDP-94-03			2 OF 14



SDP-94-03



NOTES:
1. PAVEMENT PATCH MATERIALS AND COURSE THICKNESSES SHALL BE EQUAL TO EXISTING PAVING SECTION OR AS APPROVED BY D.P.W. THE MINIMUM PAVING PATCH SHALL CONSIST OF 3" BIT CONCRETE SURFACE MATERIAL PLACED IN TWO (2) COURSES, BIT CONCRETE BASE MATERIAL WHEN PLACED SHALL NOT EXCEED 6" THICKNESS PER COURSE. STONE BASE MATERIAL SHALL NOT EXCEED 5" THICKNESS PER COURSE.
2. PLACE HOT LIQUID ASPHALT SEALER (AE-5 OR AS APPROVED BY D.P.W.) ALONG VERTICAL FACE OF EXISTING PAVING PRIOR TO PLACING NEW MATERIAL TO FORM JOINT BOND. UPON COMPLETION OF PAVING PATCH, EXCESS LIQUID ASPHALT SHALL BE BRUSHED INTO THE JOINT BETWEEN OLD AND NEW PAVING SURFACES TO PREVENT EXCESS LIQUID ASPHALT FROM BEING TRACKED BY TRAFFIC.

TRENCH REPAIR DETAIL
NOT TO SCALE

No AS-BUILT INFORMATION THIS SHEET.

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
Patricia Englund 8/18/95
U.S. SOIL CONSERVATION SERVICE DATE

BY THE ENGINEER:
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 COUNTY SOIL CONSERVATION DISTRICT.

John R. Heinrichs 10-15-93
ENGINEER: JOHN R. HEINRICHS DATE

BY THE DEVELOPER:
I 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 MARYLAND DEPARTMENT OF THE ENVIRONMENT-APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

John C. Robertson 11-10-93
DEVELOPER: DENIS ELLIS DATE
COLUMBIA PARK AND RECREATION ASSOCIATION

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

John C. Robertson 8/18/95
HOWARD S.C.D. DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
John Damm 2/15/95
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Gina Summanna 8/18/95
CHIEF DIVISION OF LAND DEVELOPMENT AND RESEARCH- DATE
Frankie S. D'Angelo 8/18/95
DIRECTOR DATE

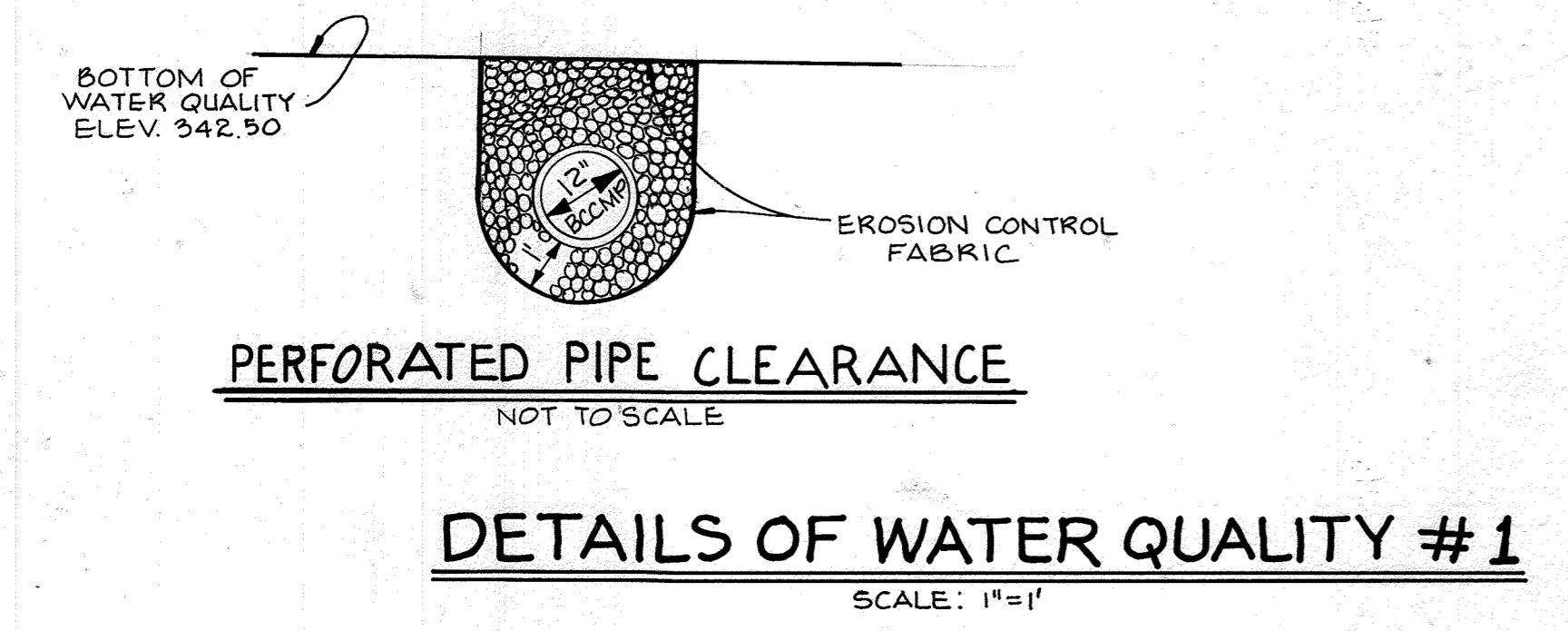
Date	No	Revision Description
09/14/2018	1	W.Q. FACILITY #2 TO BE REMOVED

OWNER/DEVELOPER
THE COLUMBIA PARK & RECREATION ASSOCIATION
10221 WINCOPIN CIRCLE, SUITE 100
COLUMBIA, MARYLAND 21044-3410
(410) 312-6330

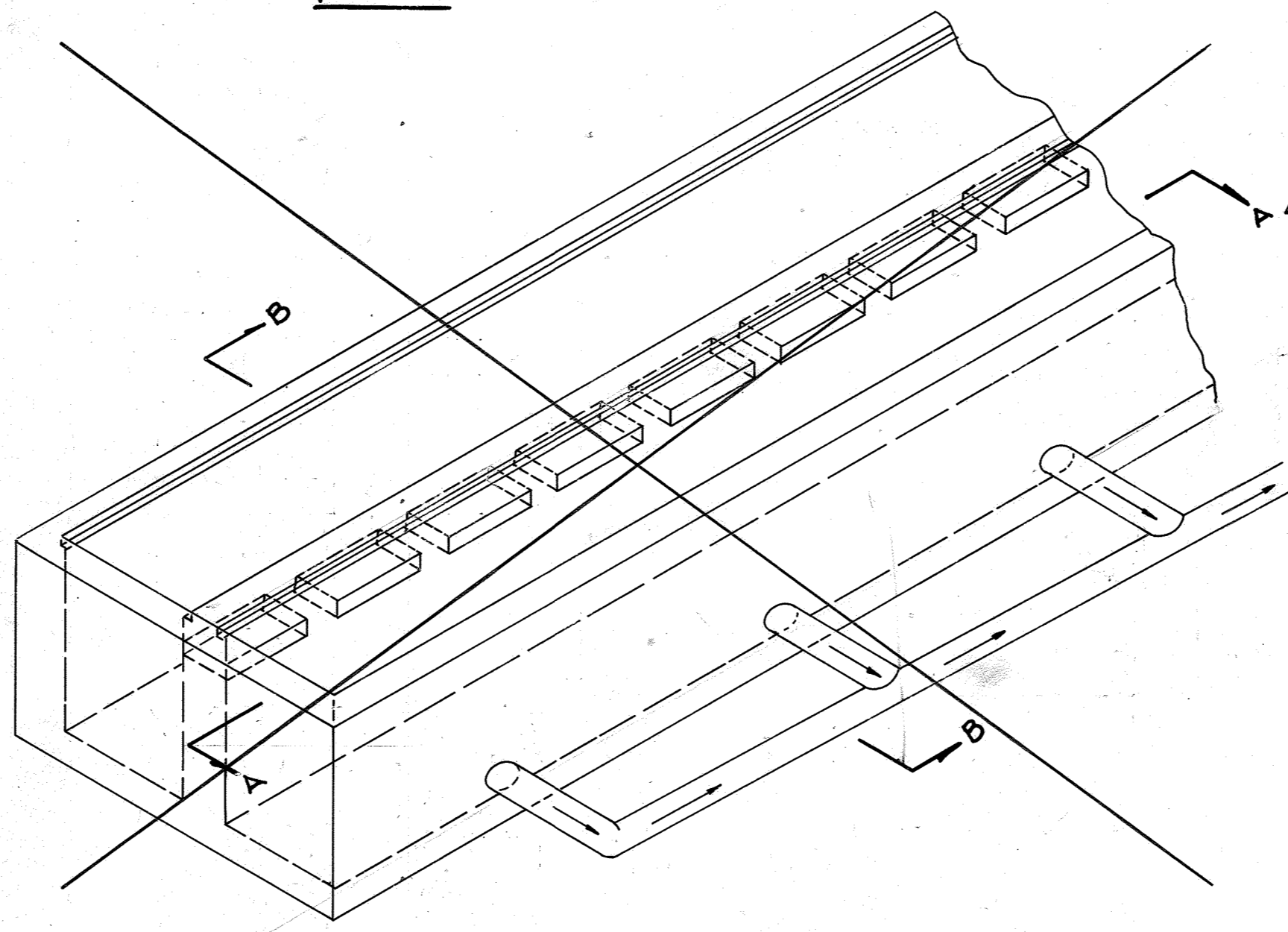
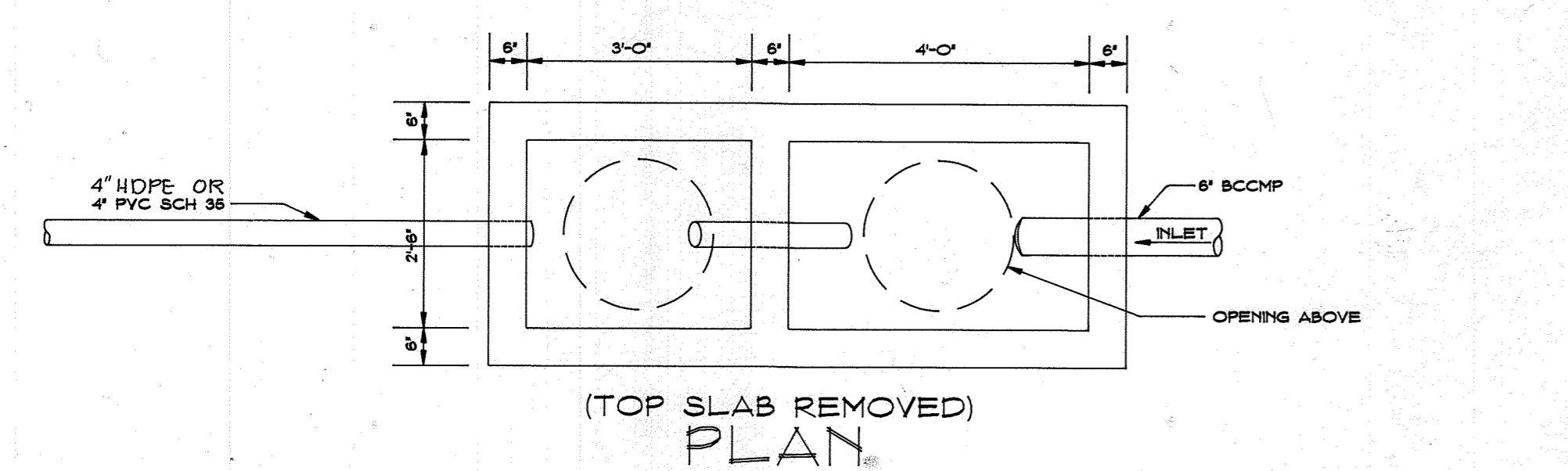
PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
817 MAIDEN CREEK LAKE SUITE 300
BALTIMORE, MARYLAND 21228
(410) 247-8833 FAX 247-8897

AREA: E.G.U. SUBDIVISION SECTION 2 AREA 3
PARCEL: 386
8th ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND
TITLE: ADDITIONS TO THE COLUMBIA PARK AND RECREATION ASSOCIATION MAINTENANCE FACILITY AS-BUILT WATER QUALITY DETAILS

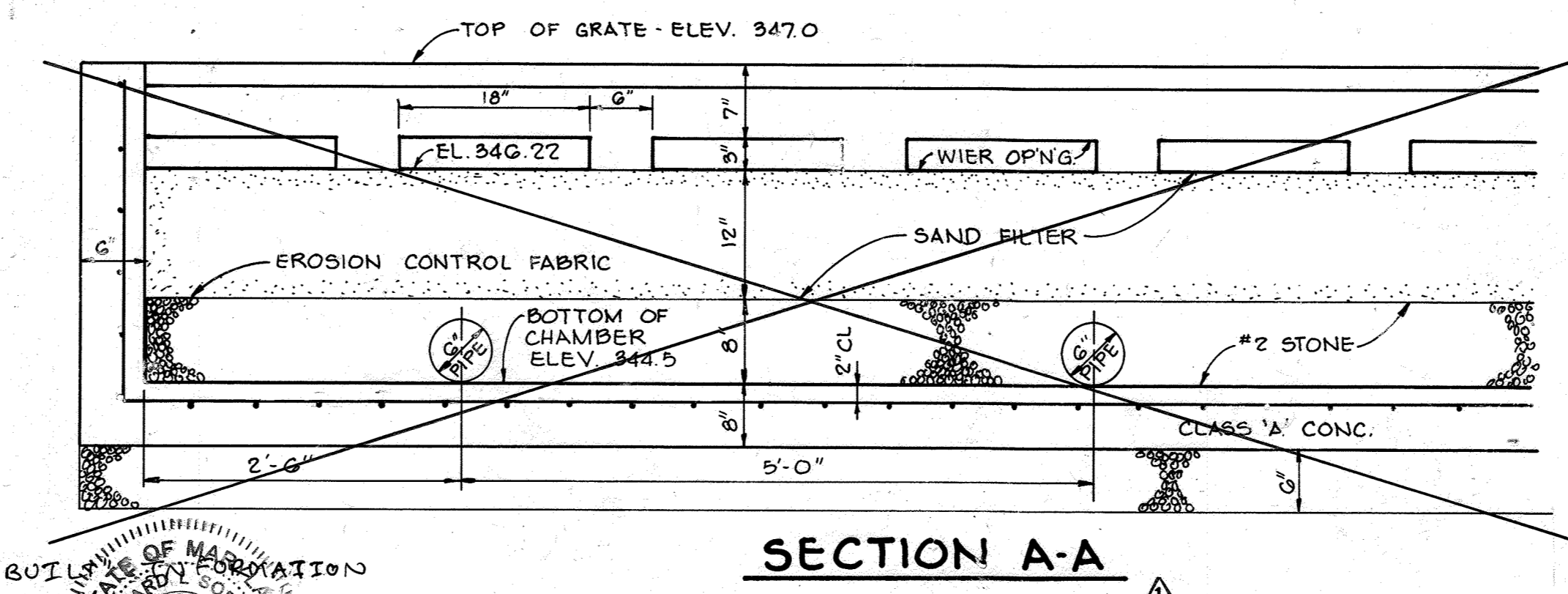
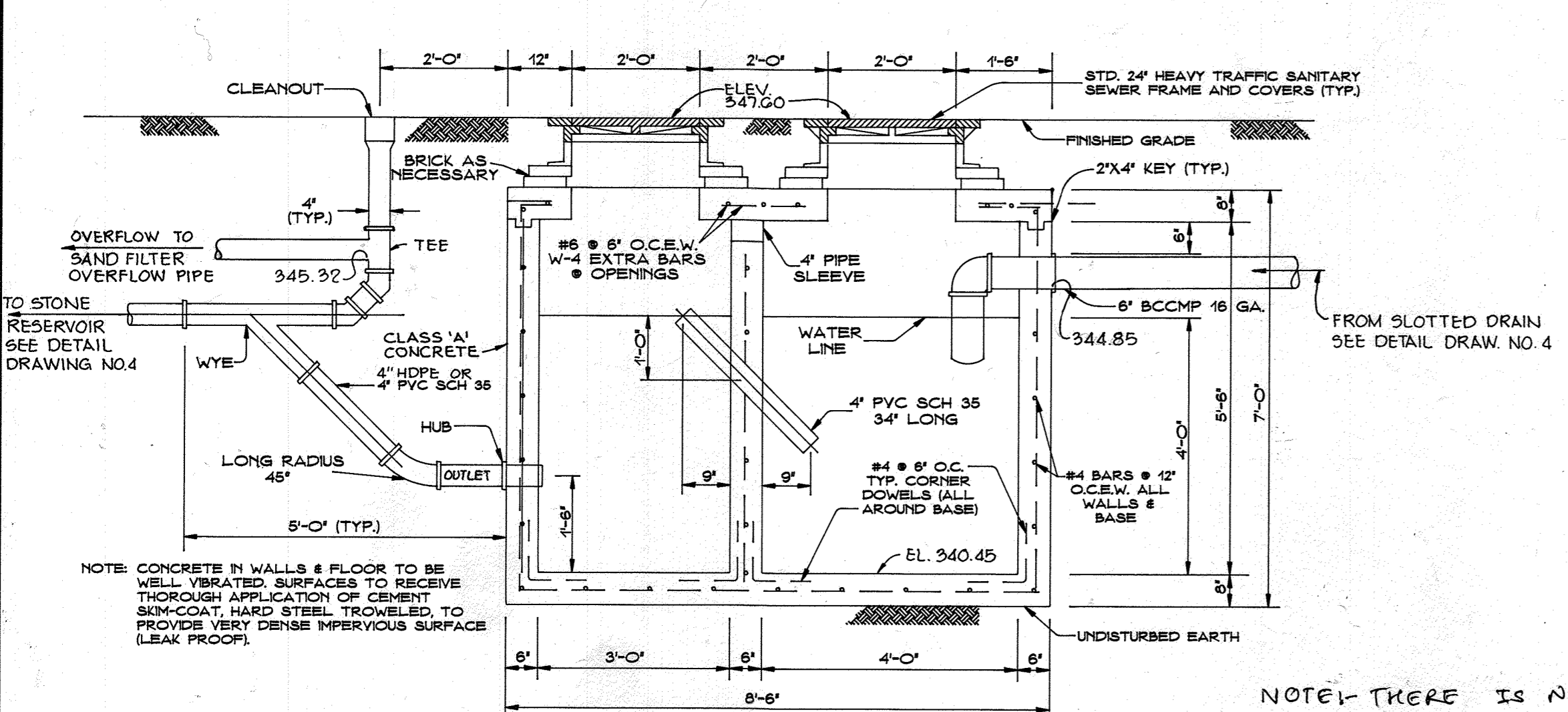
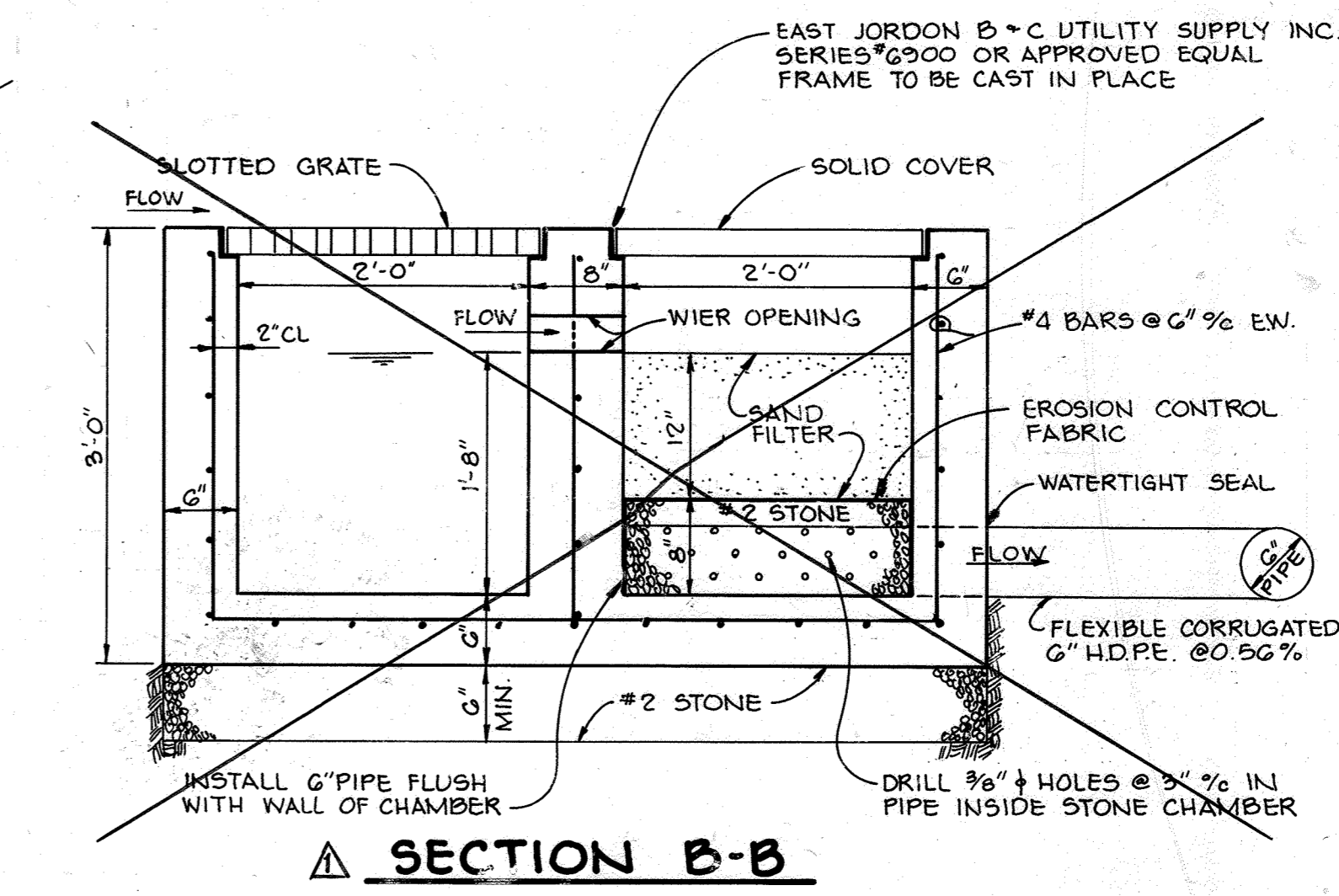
Des By: R.J.W. Scale: AS SHOWN Proj No: 93-0000 GERMUNDING
Dwn By: A.J.R. Date: OCT, 1993 DRAWING NO: 3 OF 214
Chk By: J.R.H. SPP-94-09



DETAILS OF WATER QUALITY #1
SCALE: 1"=1'



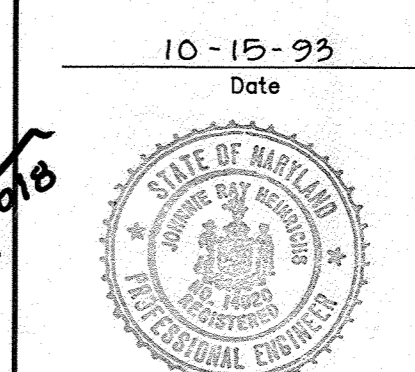
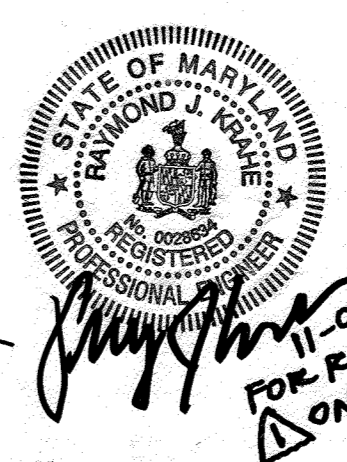
- OPERATIONS AND MAINTENANCE SCHEDULE**
- EXTENDED DETENTION POND
 - THE POND SHALL BE INSPECTED AFTER ALL SIGNIFICANT RAINFALL EVENTS TO INSURE THE OUTFALL STRUCTURE REMAINS CLEAR AND OPERATIONAL.
 - TRASH LITTER AND OTHER DEBRIS ARE TO BE REMOVED FROM THE POND WHENEVER OBSERVED. REGULAR CLEANUPS SHALL BE SCHEDULED NOT LONGER THAN SIX MONTHS APART.
 - THE SEDIMENT BUILD-UP IS TO BE REMOVED AND TAKEN TO AN APPROVED WASTE SITE WHEN THE CAPACITY OF THE POND HAS BEEN REDUCED BY ONE-HALF. THE BOTTOM IS TO BE RESTORED TO THE ORIGINAL ELEVATION AND THE LOW FLOW PIPE IS TO BE REMOVED, CLEANED, AND REPLACED IN A NEW STONE BED AS SHOWN ON THE ORIGINAL PLANS.
 - SEDIMENT CHAMBER
 - THE COVER GATES ARE TO BE REMOVED ON AN ANNUAL BASIS TO INSURE THAT THE SYSTEM IS FUNCTIONING AS DESIGNED AND TO IDENTIFY THE NEED FOR CLEANING.
 - THE SEDIMENT CHAMBER SHALL BE CLEANED WHEN THE SEDIMENT REACHES A DEPTH OF 6" (6" BELOW THE WEIR OPENINGS). THIS CHAMBER WILL PROBABLY BE FILLED WITH WATER SO THE SEDIMENT WILL BE SATURATED AND WILL HAVE TO BE DREDGED FOR DISPOSAL.
 - THE SAND CHAMBER SHALL BE CLEANED WHEN THE TOP 2" OF SAND BECOMES DISCOLORED, ESTIMATED AT 6-7 YEARS. THE TOP 2-3 INCHES OF SAND WILL BE REPLACED. THE SAND THAT IS REMOVED IS TO BE DISPOSED OF IN ACCORDANCE WITH CURRENT REGULATIONS AT AN APPROVED SITE.
 - ACCURATE RECORDS WILL BE KEPT INDICATING THE DATE OF EACH INSPECTION, THE DEPTH OF SEDIMENT AND SAND DISCOLORATION, ANY ACTION TAKEN, AND THE AMOUNT AND DISPOSAL LOCATION OF ANY MATERIAL REMOVED FROM THE FACILITY.
 - HOWARD COUNTY RETAINS THE RIGHT TO INSPECT THE RECORDS OR FACILITY AT ANY TIME.

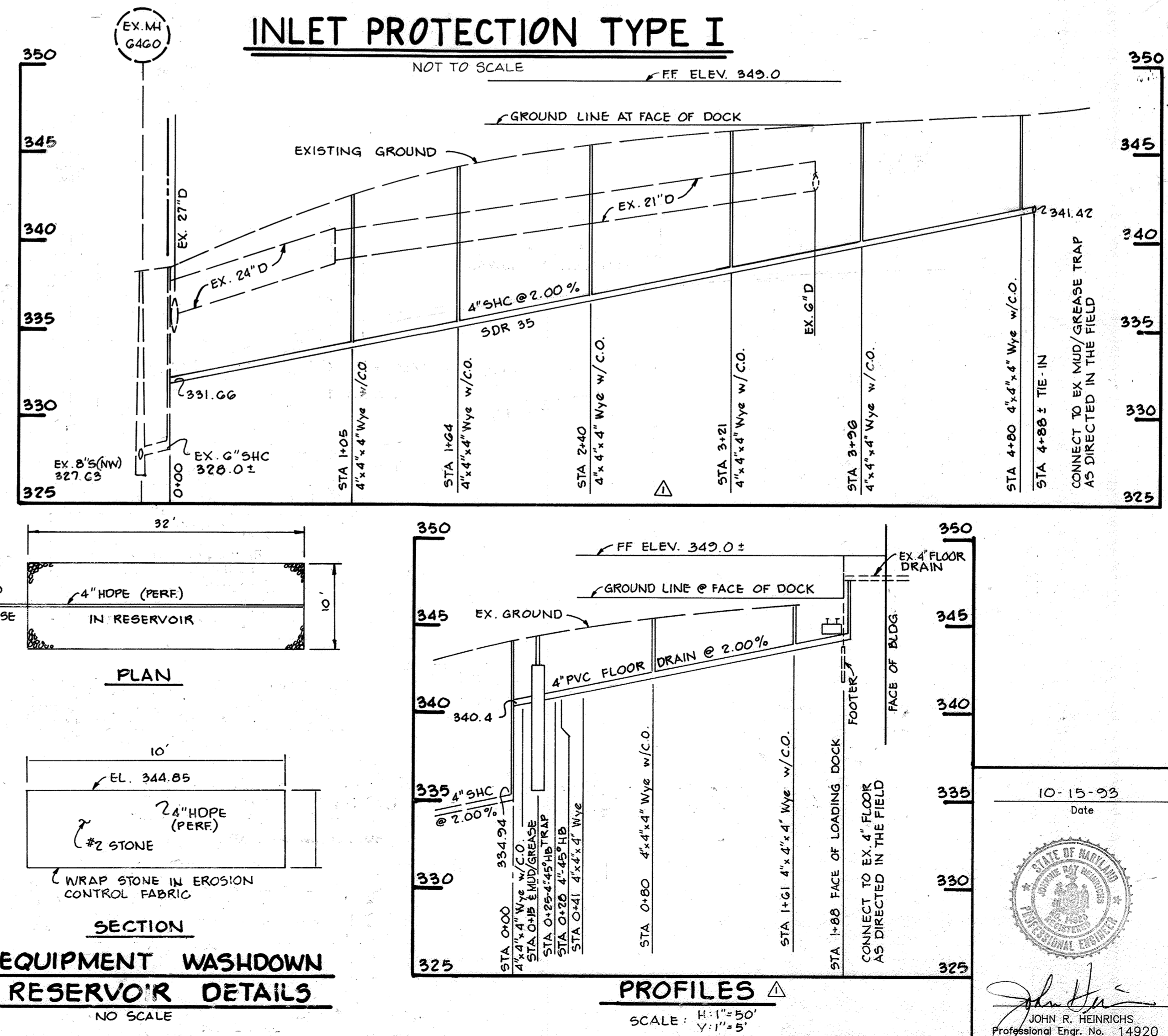
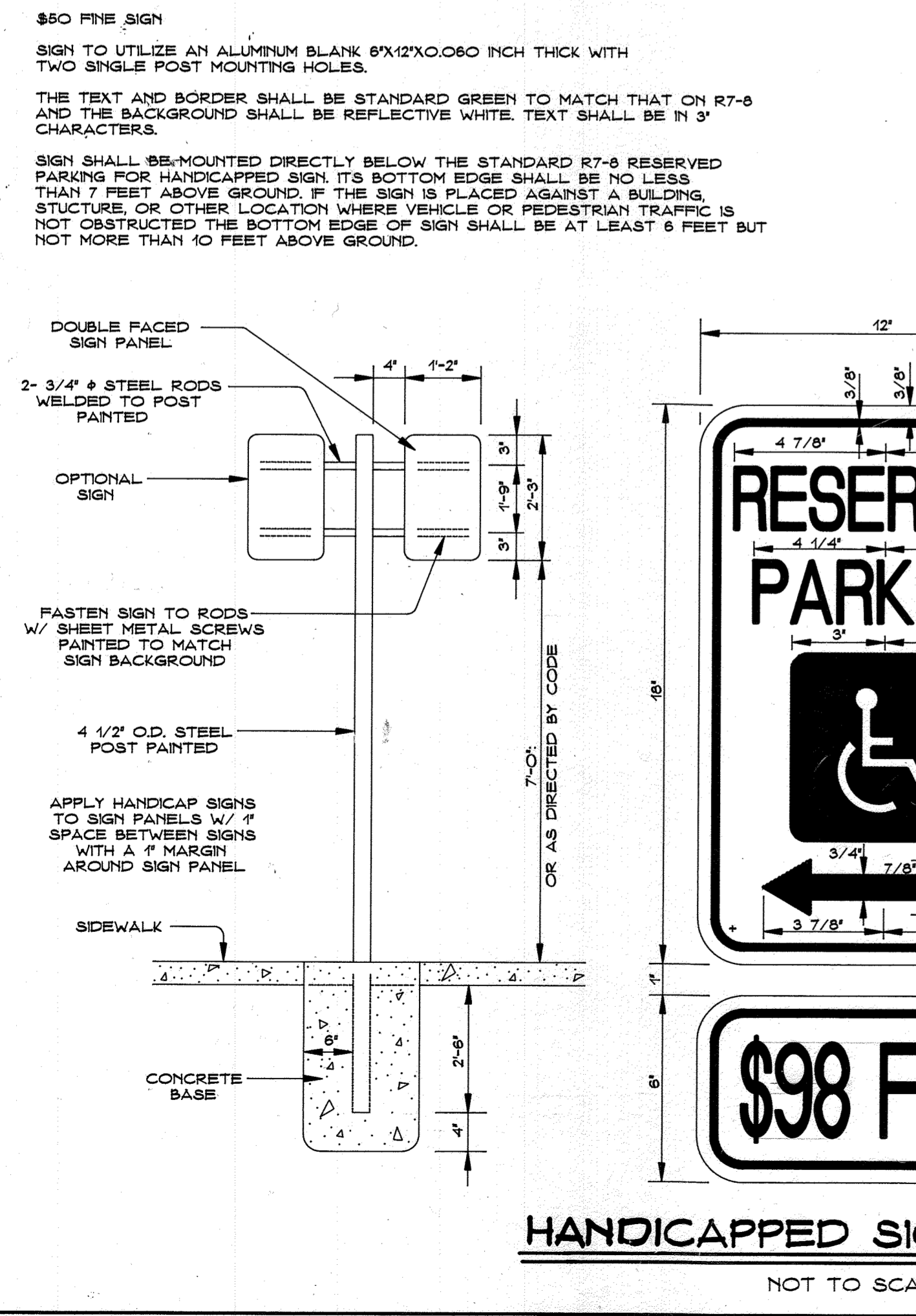
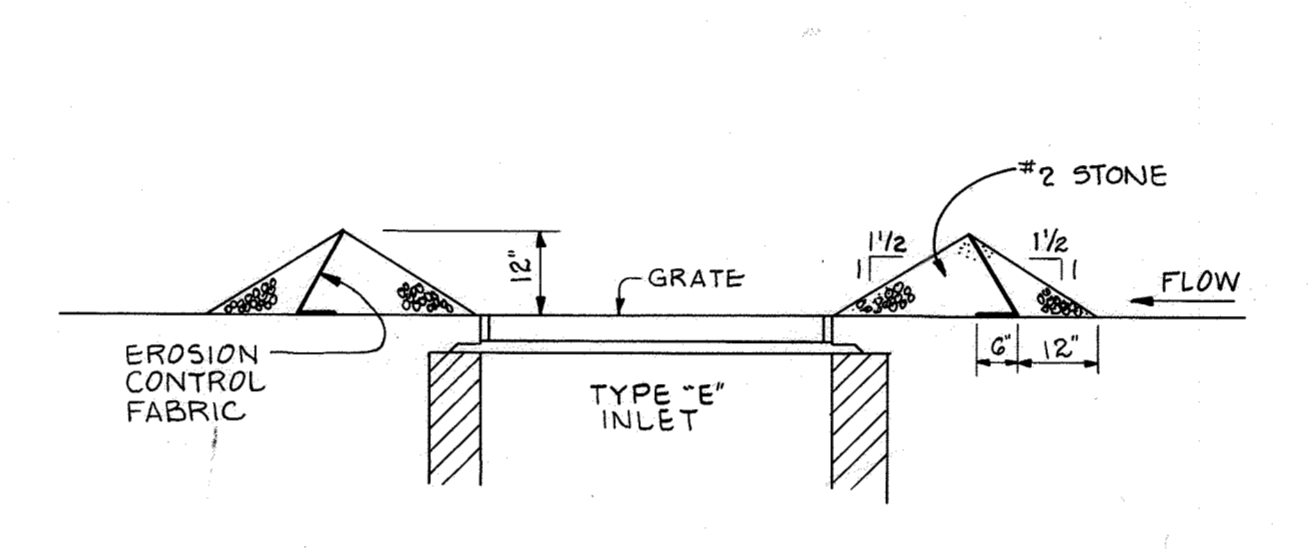
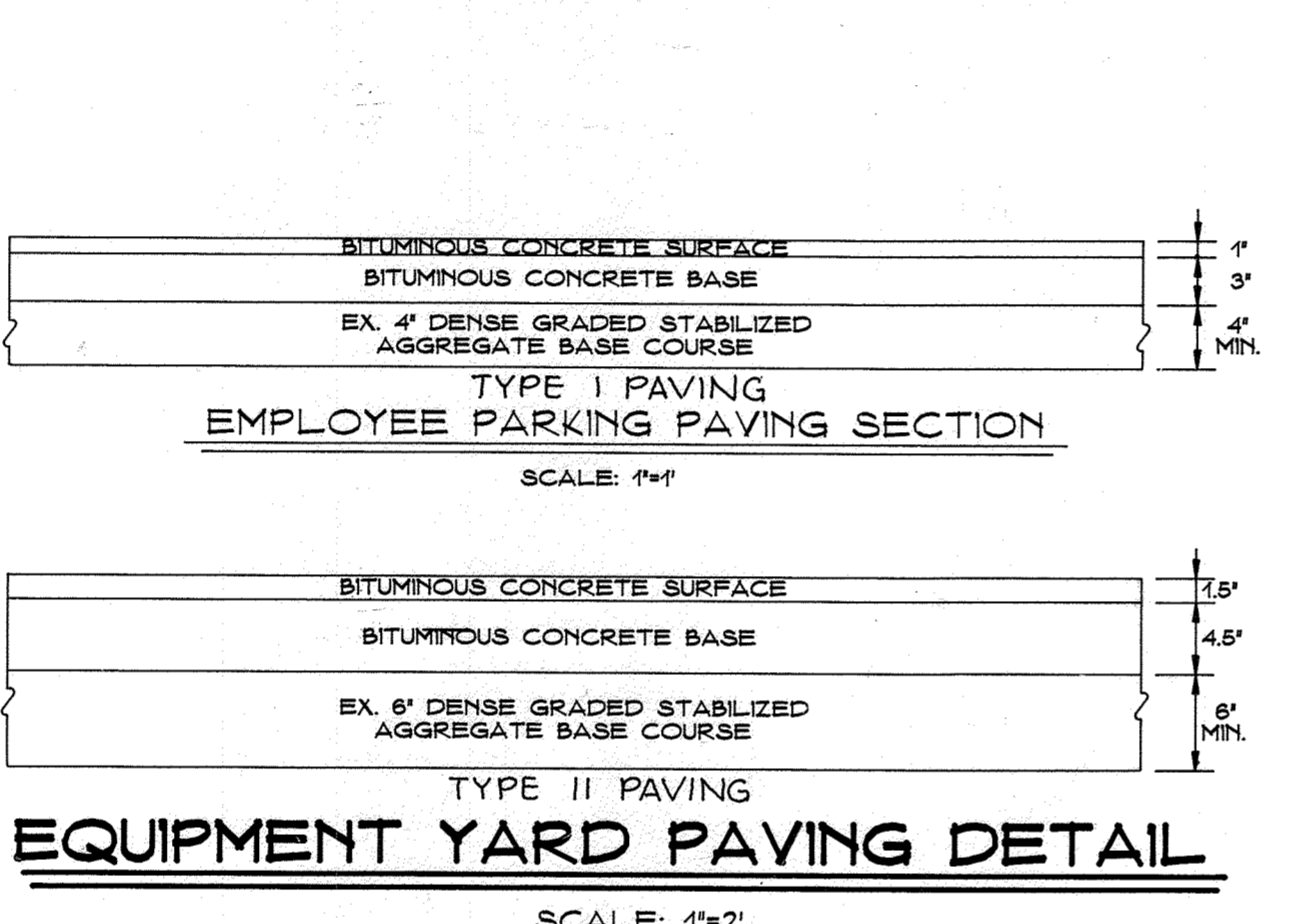
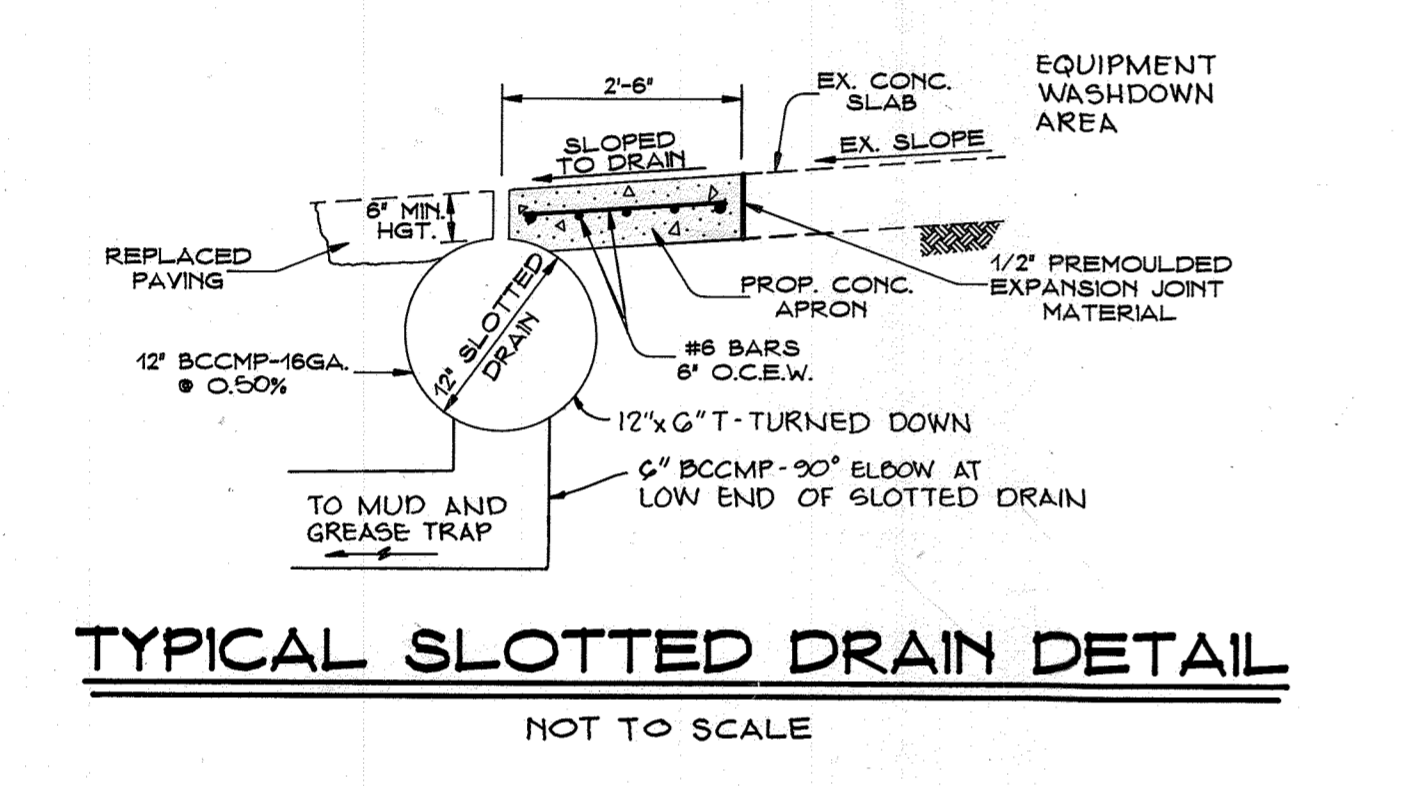
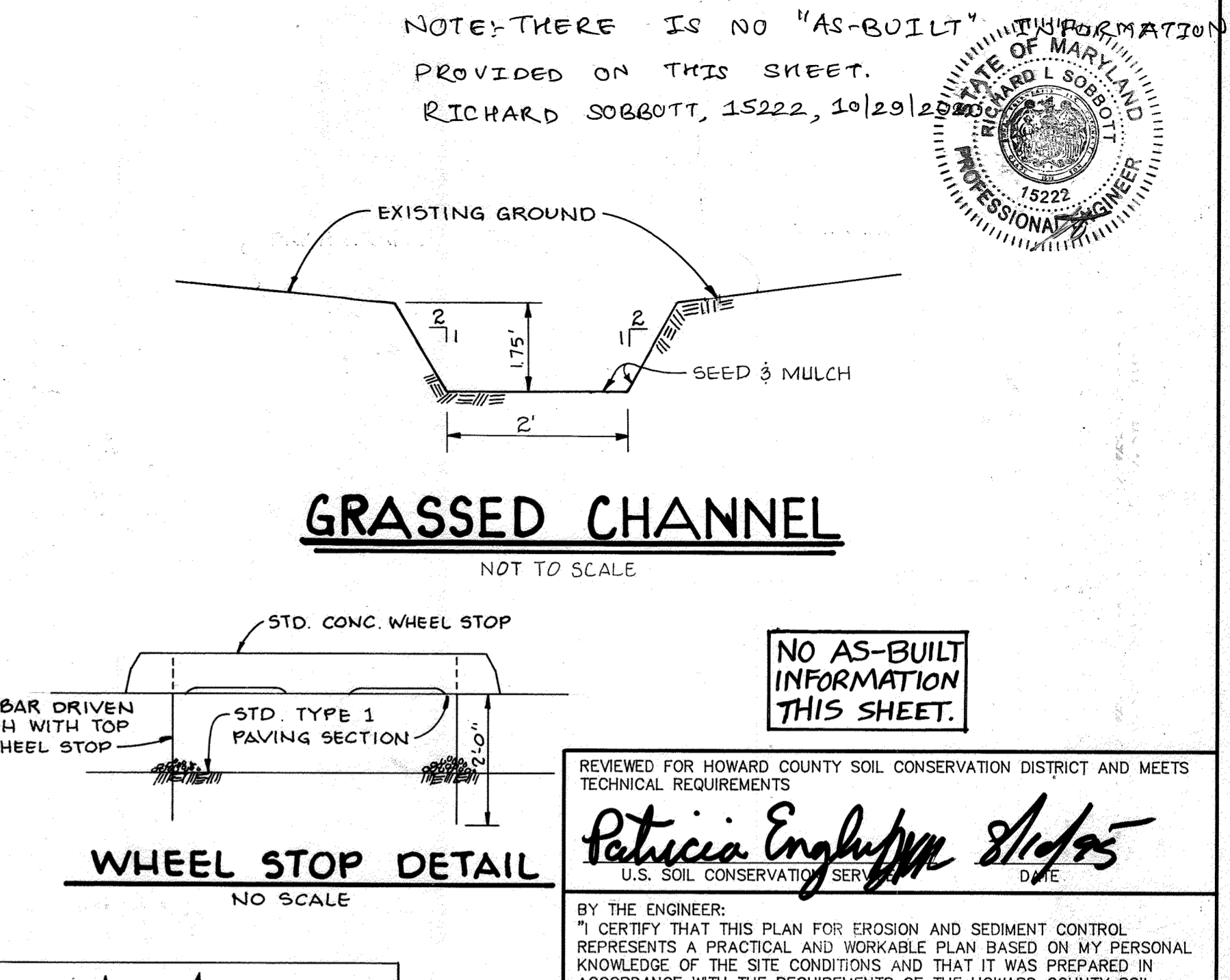
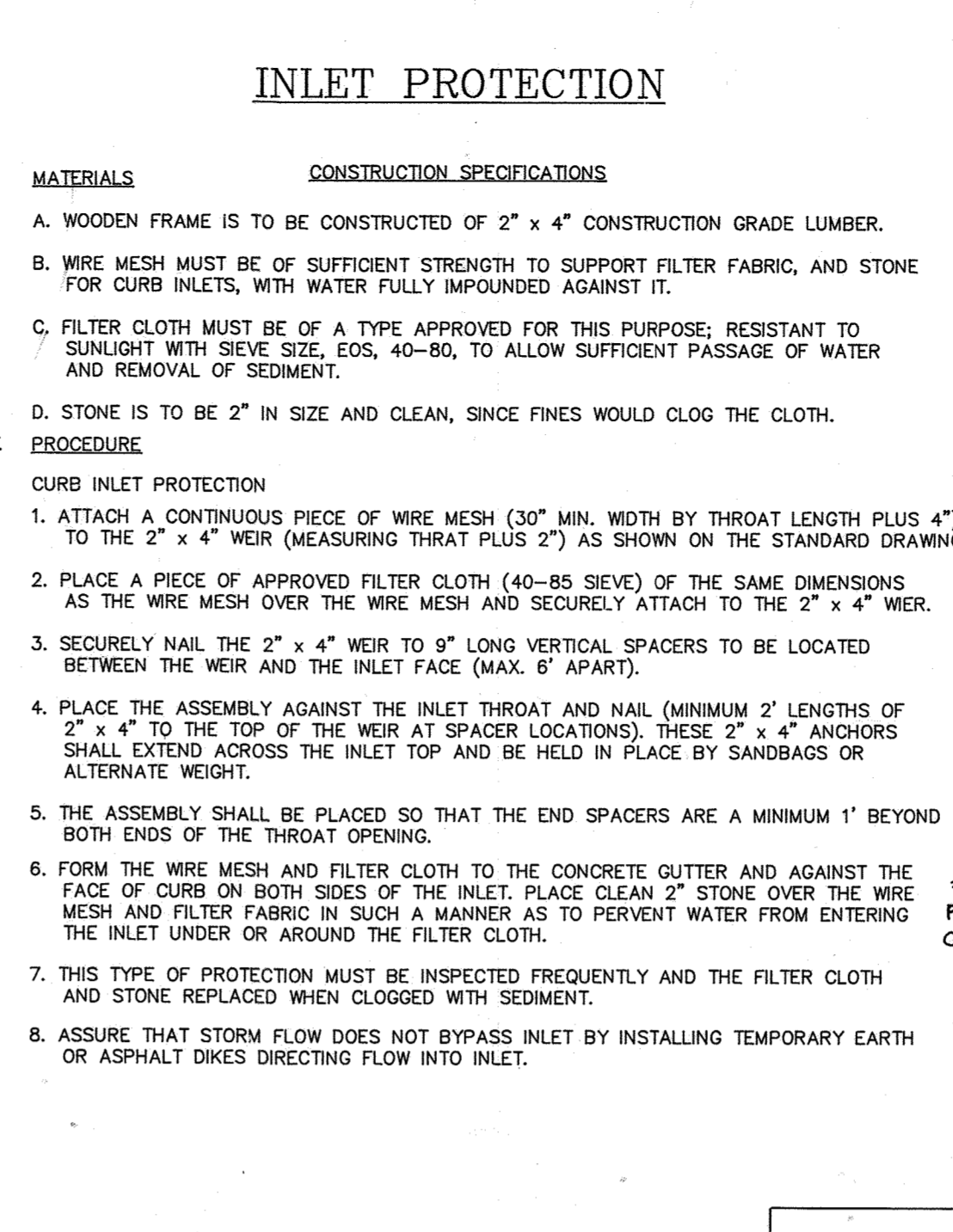
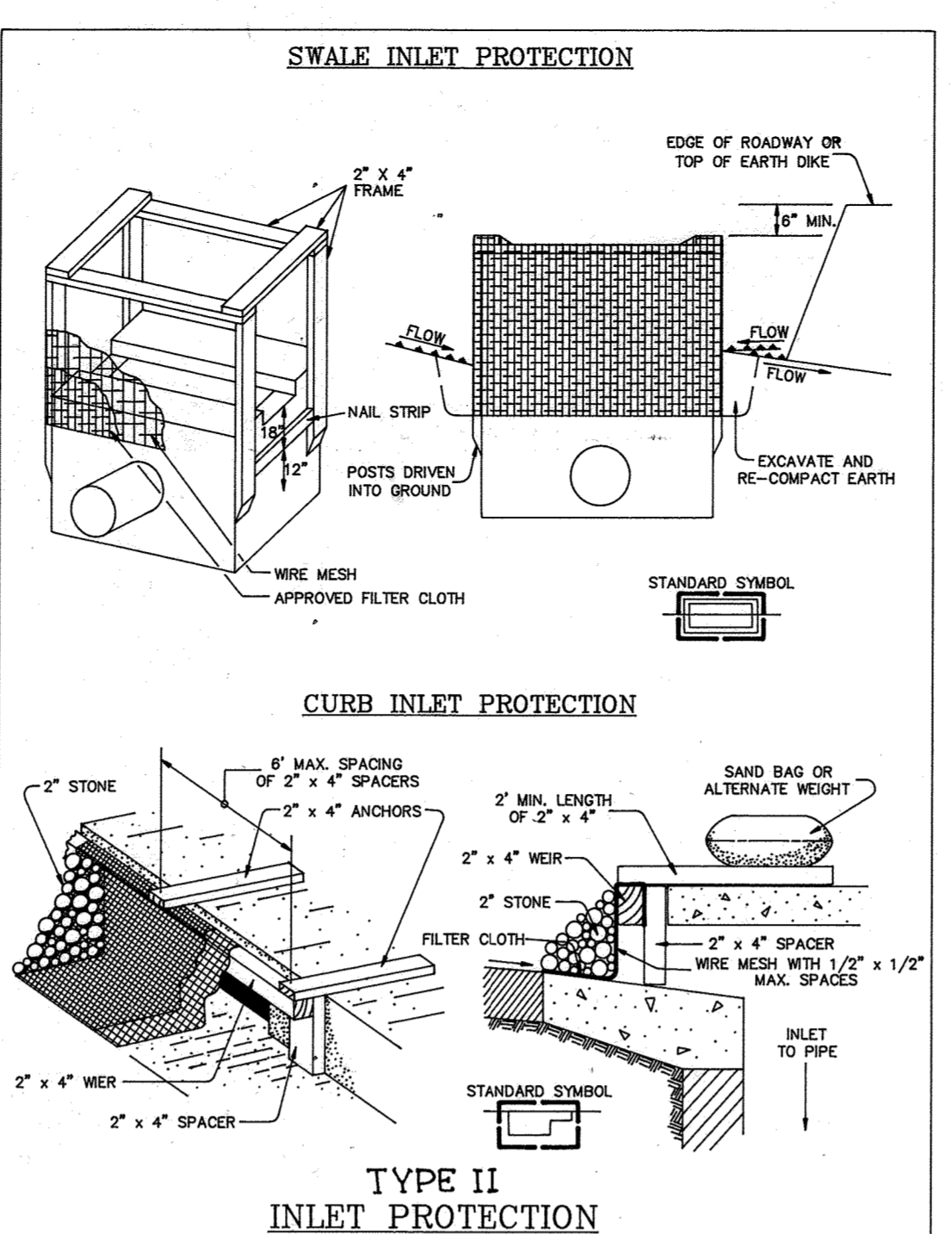
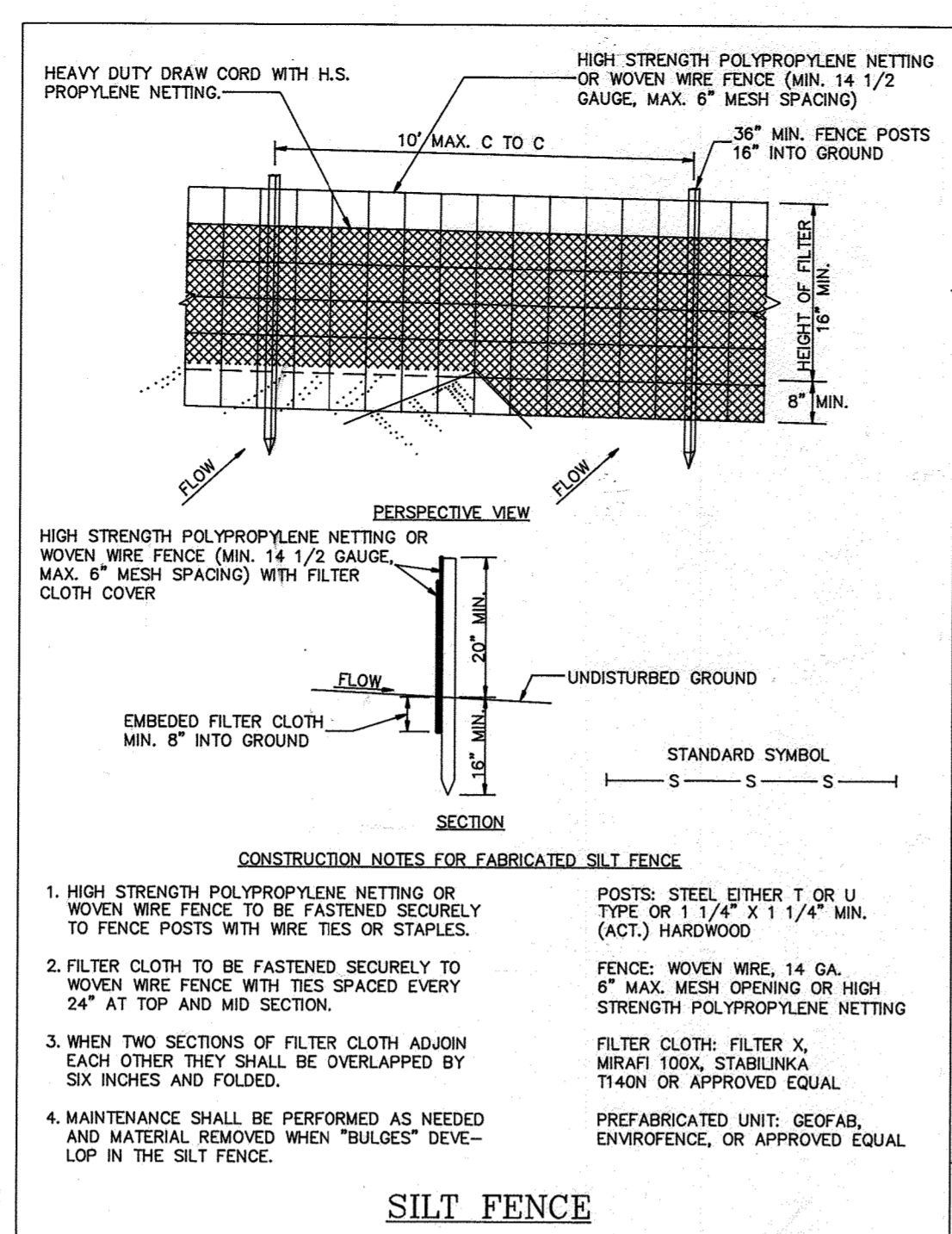
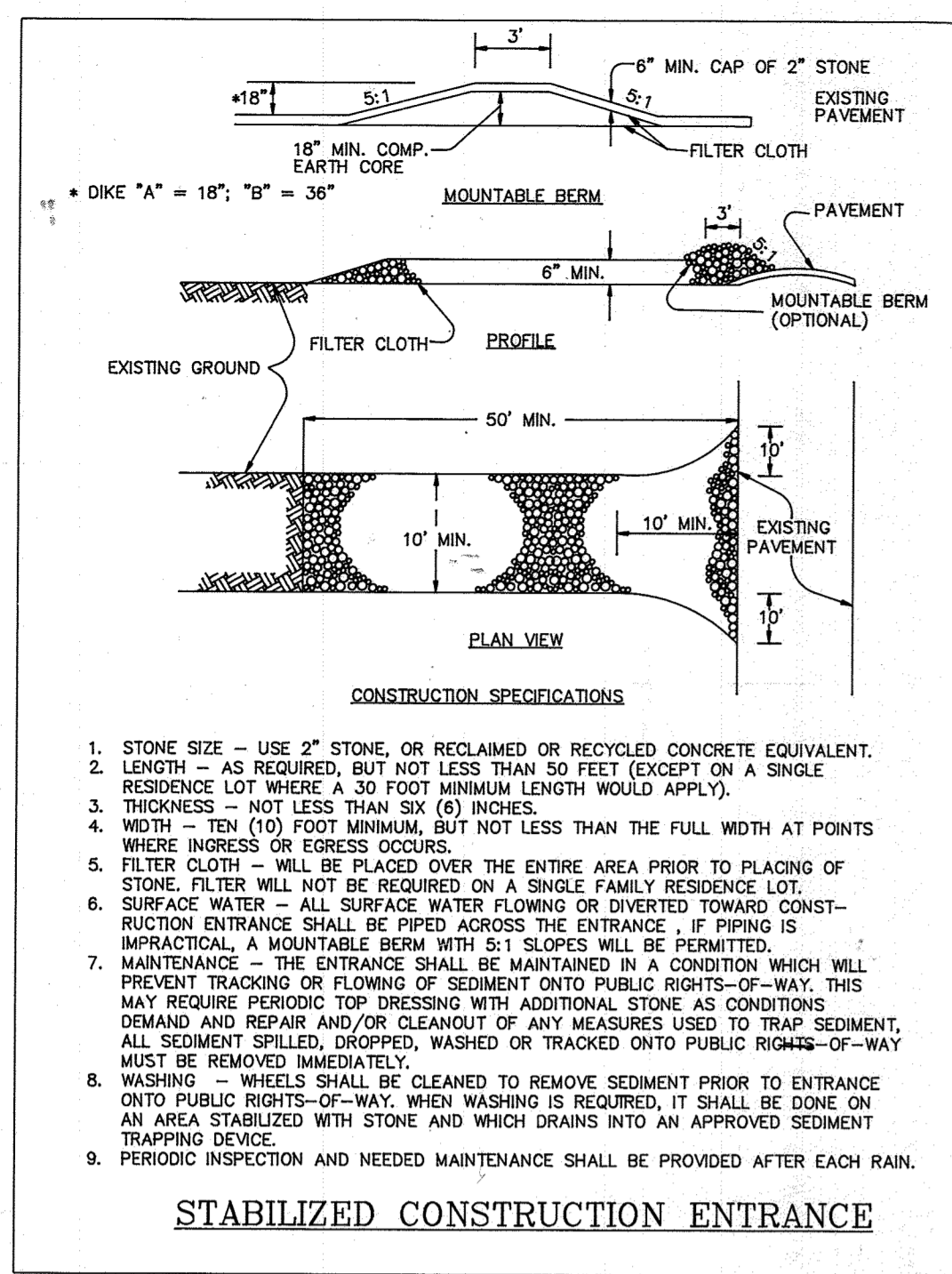


DETAILS OF WATER QUALITY #2
SCALE: 1"=1'

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET
RICHARD SOBOTT, 15222, 10/23/93

NOTE: WATER QUALITY CHAMBER TO BE PRECAST AS MANUFACTURED BY NATIONAL CONC. PRODUCTS GREENWOOD, DELAWARE 19935 OR FABRICATED ON SITE AS APPROVED BY THE ENGINEER





APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 8/10/95 DATE

Chief, Division of Land Development and Research - DATE 8/10/95

Director 8/10/95 DATE

09/14/2018 CHANGE DRAWING NO. OF 10-1-99

ADDED 5HC AND FLOOR DRAIN PROFILES

OWNER/DEVELOPER

THE COLUMBIA PARK & RECREATION ASSOCIATION

10221 WINCOPIN CIRCLE, SUITE 100
COLUMBIA, MARYLAND 21044-3410
(410) 312-6350

PHOENIX ENGINEERING, INC.

CONSULTING ENGINEERS

817 WALTON CROSS LAKE DRIVE, SUITE 300
BALTIMORE, MARYLAND 21226
(410) 847-8833 FAX 847-8397

AREA E.G.U. SUBDIVISION SECTION 2 AREA 3

PARCEL 3 86

6th ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE ADDITIONS TO THE COLUMBIA PARK AND RECREATION ASSOCIATIONS MAINTENANCE FACILITY AS-BUILT MISCELLANEOUS DETAILS

Date 10-15-93

John R. Heinrichs 8/10/95 DATE

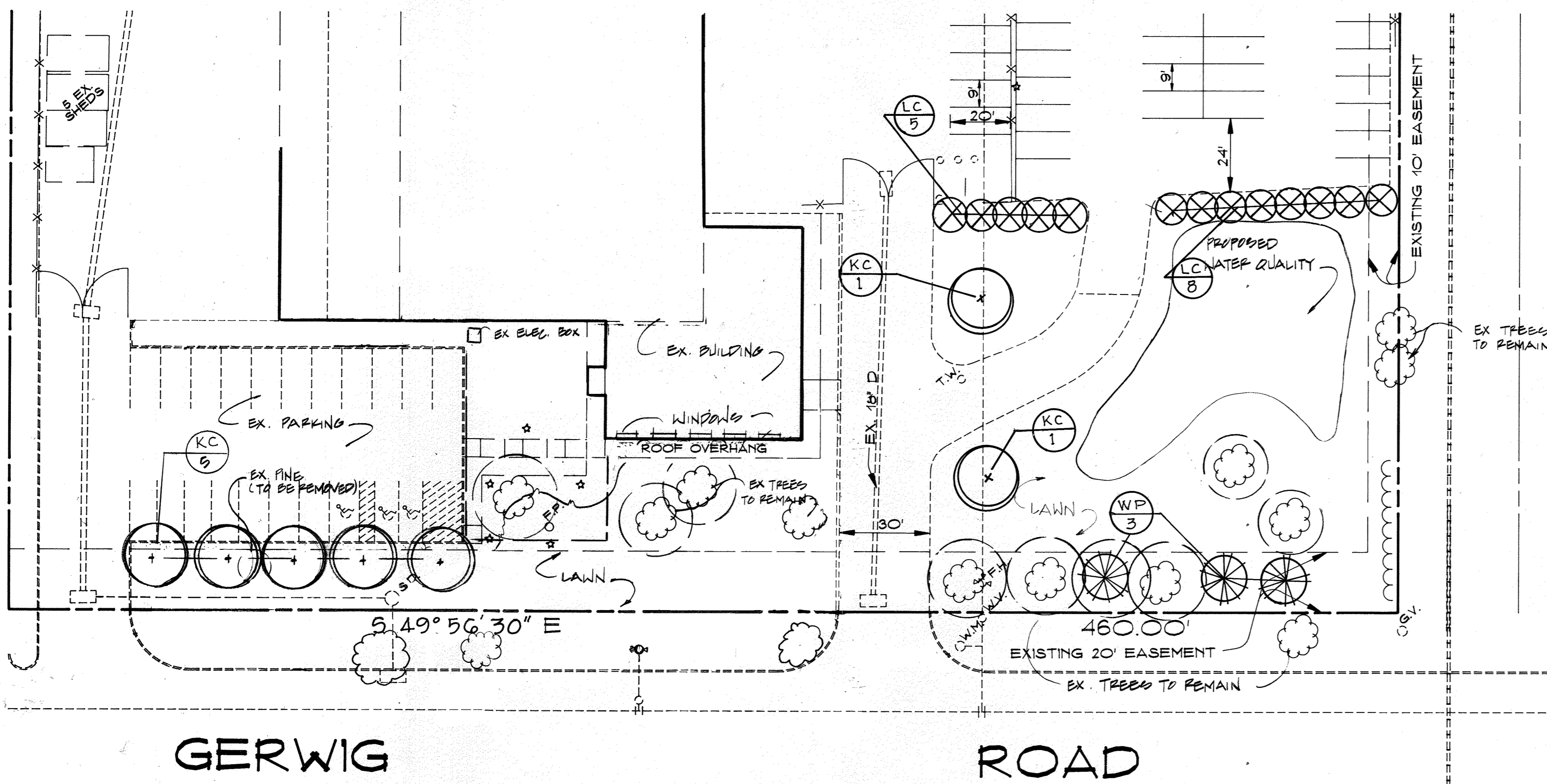
Professional Engr. No. 14920

DRWING NO 4 OF 14

SDP 94-69

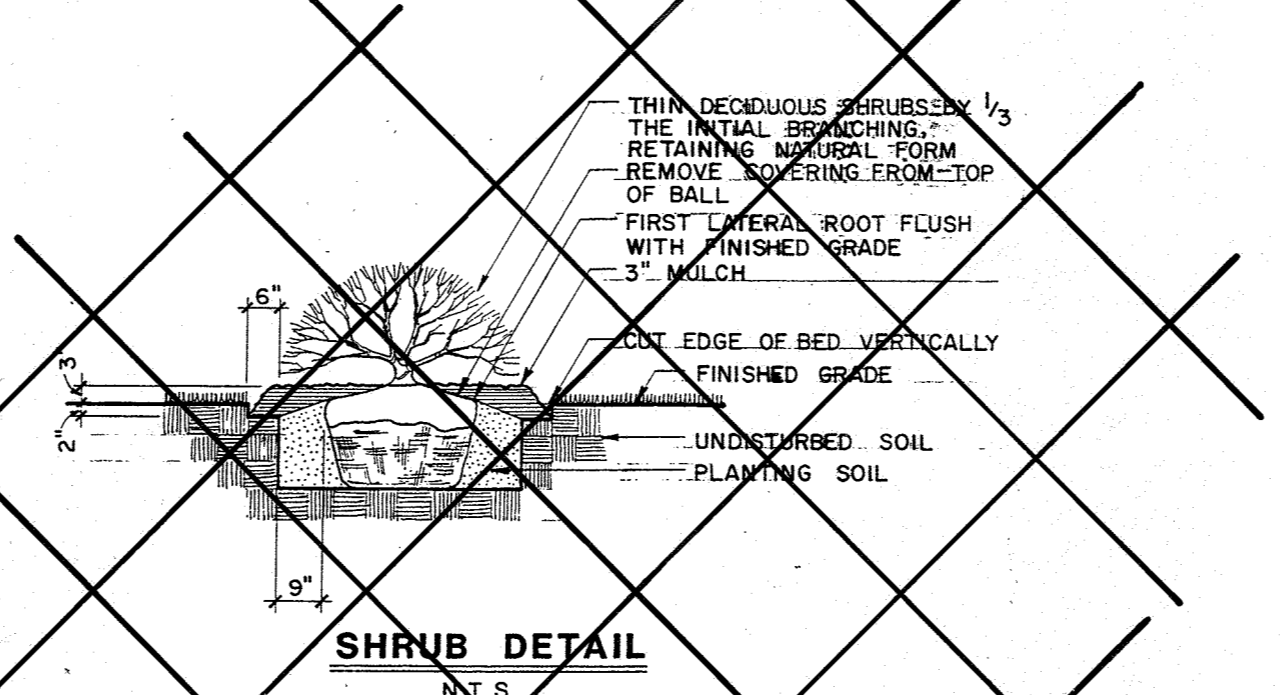
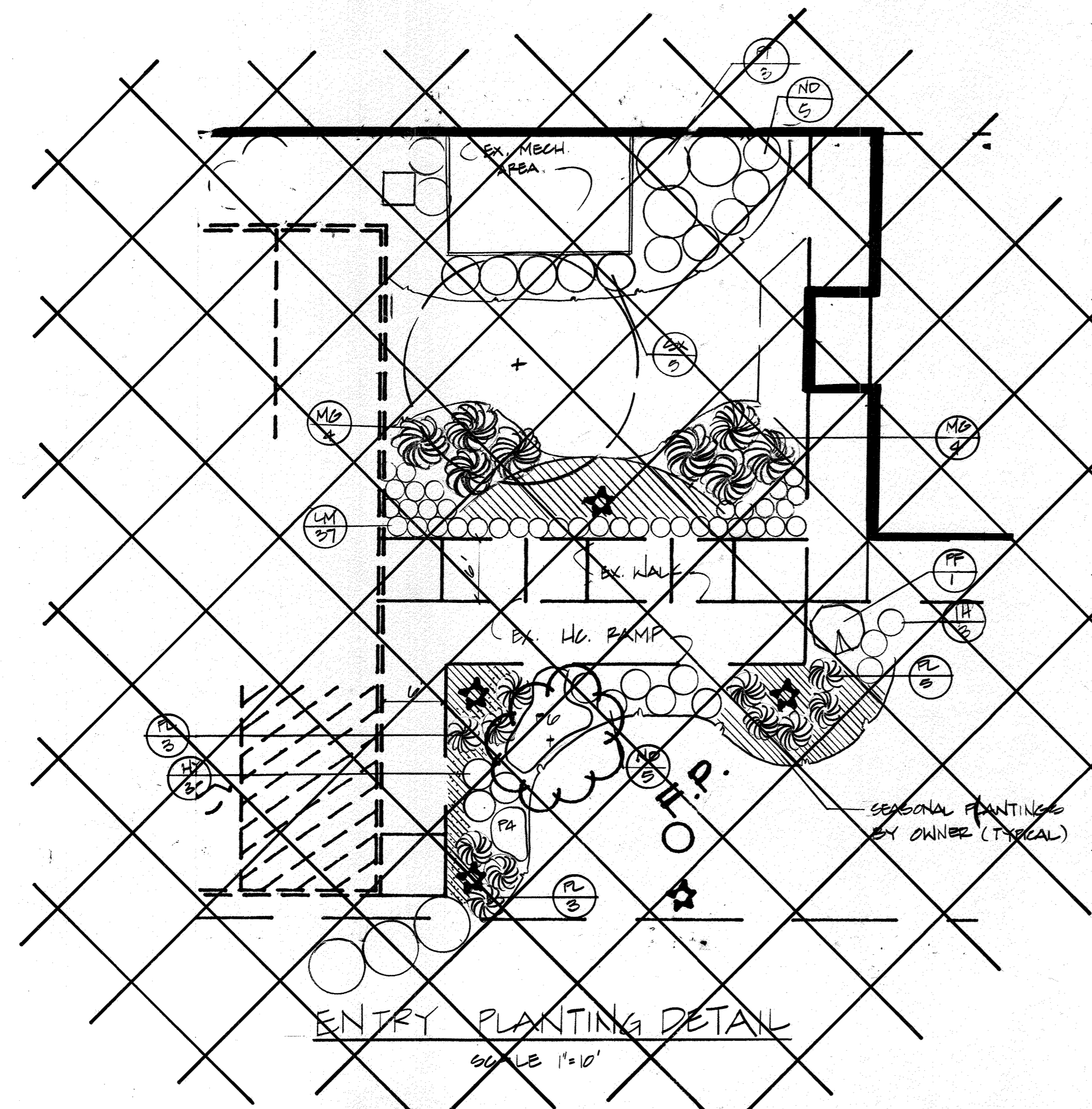
PLANT LIST

KEY	APPROX. QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	COND	REMARK
CK	2	CORNUS KOUSA	CHINESE DOGWOOD	10'-8"	B+B	
EA	3	ELONIMUS ADATUS 'COMPACTUS'	DWARF WINDBOB ELONIMUS	24"-30"	B+B	
JH	10	JUNIPERUS HORIZONTALIS 'PLUMBER'	ANDROSS JUNIPER	5 GAL	CONT	
JH	24	JUNIPERUS HORIZONTALIS 'WILTONI'	WILTON JUNIPER	5'-16"	CONT	
MA	2	MAHONIA AQUIFOLIUM	OREGON GRAPE HOLLY	2 1/2'	CONT	
ND	10	NANDINA DOMESTICA 'GOLF STREAM'	GOLF STREAM NANDINA	12"-18"	CONT	
PF	4	PHOTINIA FRAXILI	FRAXIOS PHTINIA	5 GAL	CONT	
PA	3	PICEA ABIES	NORWAY SPRUCE	10'-7"	B+B	
PI	3	PICEA JAPONICA	JAPANESE ANDOVEDA	24"-30"	B+B	
P	10	PINUS STROBUS	WHITE PINE	1'-7"	B+B	
PS	5	PRUNUS SPERULATA 'KWANZAN'	KWANZAN CHERRY	12'-2"	B+B	
PL	25	PENNISSETUM ALOPECUROIDES	MOUNTAIN GRASS	2 GAL	CONT	
EX	5	SPREA X BUXALDA ANTHONY WATERER	ANTHONY WATERER SPREA	18"-24"	CONT	
VE	10	VIBURNUM SPALANCI	KOREAN SPICE VIBURNUM	24"-30"	B+B	
EH	13	EXE COPNUTA X DUBOSA 'CHINA GRL'	CHINA GRL HOLLY	5 GAL	CONT	
LM	37	LIPIORIE MUCOSA PI	GREEN LIARPE	1 GAL	CONT	
CS	7	LOB TARDIA GELLONA	PAMPAS GRASS	2 GAL	CONT	
MG	30	MICROTHLAS SINENSIS GRACILLIMUS	MALDEN GRASS	2 GAL	CONT	
HC	-	HEMERO CALIX	DAY LILY	1 GAL	CONT	
WP	3	PINUS STROBUS	WHITE PINE	6'-8"	B+B	
KC	7	PRUNUS SPERULATA 'KWANZAN'	KWANZAN CHERRY	2'-2 1/2'	B+B	
LC	13	CUPRESSOCYPARIS LEYLANDII	LEYLAND CYPRESS	6'-8"	B+B	



LANDSCAPE PLAN

SCALE: 1" = 30'



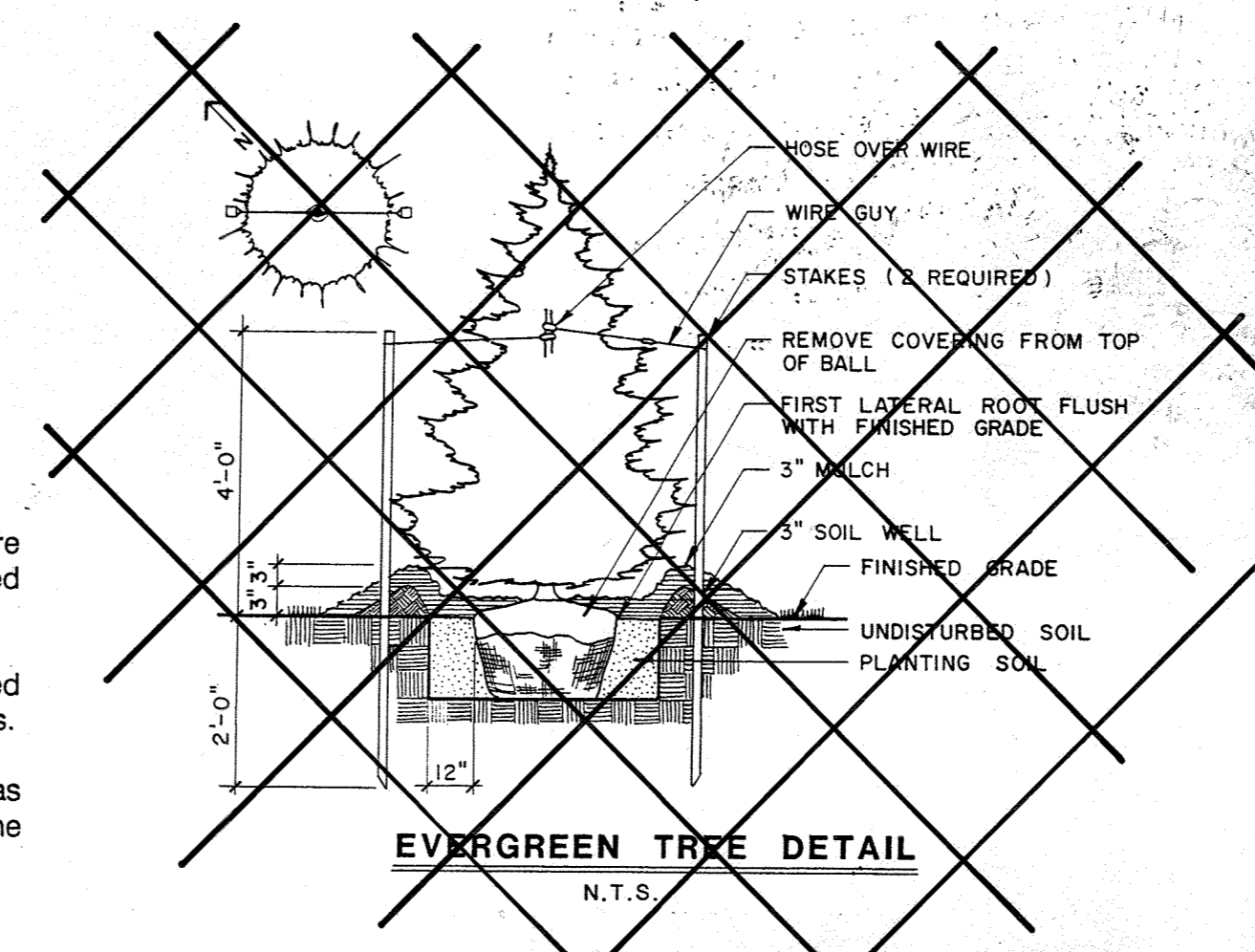
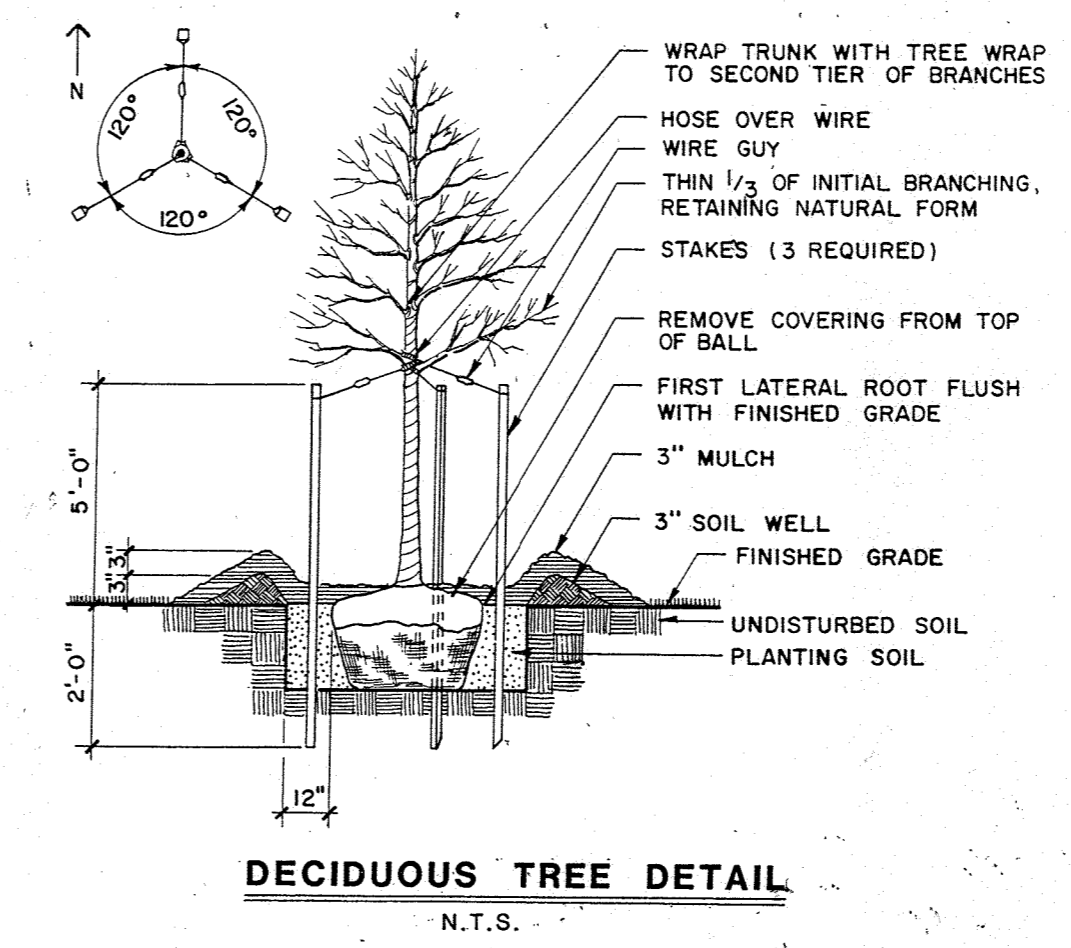
NOTE: FOR USE ONLY WHEN PLANTS ARE SPACED EQUIDISTANT FROM EACH OTHER AS SHOWN AND SPECIFIED IN THE PLANT LIST

SPACING "O"	ROW "N"	NO. OF PLANTS / S.F.
6" O.C.	5.20'	4.61
8" O.C.	6.53'	2.60
10" O.C.	8.66'	1.66
12" O.C.	10.90'	1.15
15" O.C.	13.00'	.738
18" O.C.	15.80'	.502
24" O.C.	20.80'	.290
30" O.C.	26.00'	.195
36" O.C.	30.00'	.128

PLANT SPACING CHART

PLANTING PLAN GENERAL NOTES

- Quantities of trees, evergreens, and shrubs, when noted on the plant list, are approximate. The Contractor shall make his own determination of required quantities based upon the graphic symbols shown on the Drawings.
- Contact Landscape Architect if a difference is found between the quantities noted in the plant list and the symbol count of plant materials shown on the Drawings.
- Groundcover, bulb, perennials and/or annuals, and vine quantities shall be as noted in the plant list regardless of the number of graphic symbols shown on the Drawings.



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

RICHARD SOBBOTT, 1S222, 10/20/2009

NO AS-BUILT INFORMATION THIS SHEET.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

John P. Damm 2/15/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Uma Shurman 8/18/95
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

David V. Wagner 6/10/95
DIRECTOR DATE

08/14/2018	CHANGE DRAWING NO. OF
10-1-98	REVISED PLANT TYPES AND QUANTITIES
Date	Revision Description

OWNER/DEVELOPER

THE COLUMBIA PARK & RECREATION ASSOCIATION

10221 WINCOPIN CIRCLE, SUITE 100
COLUMBIA, MARYLAND 21044-3410
(410) 312-6330

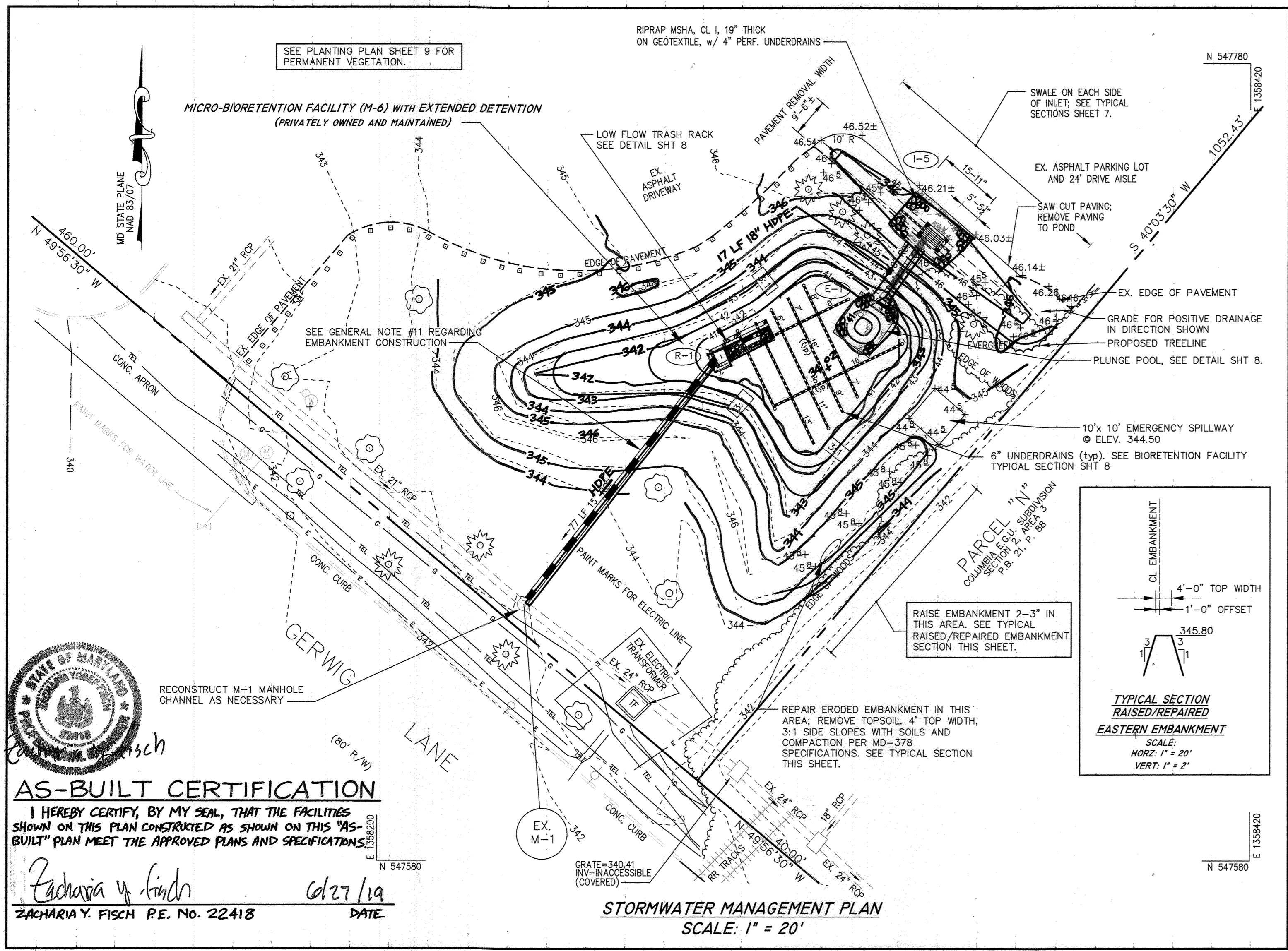
PHOENIX ENGINEERING, INC.
CONSULTING ENGINEERS
617 MADDEN CHOICE LANE, SUITE 300
BALTIMORE, MARYLAND 21286
(410) 247-8833 FAX 247-8397

AREA: E.G.U. SUBDIVISION SECTION 2 AREA 3
PARCEL: 386
6th ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

TITLE: ADDITIONS TO THE COLUMBIA PARK AND RECREATION ASSOCIATION'S MAINTENANCE FACILITY
AS-BUILT LANDSCAPING PLAN

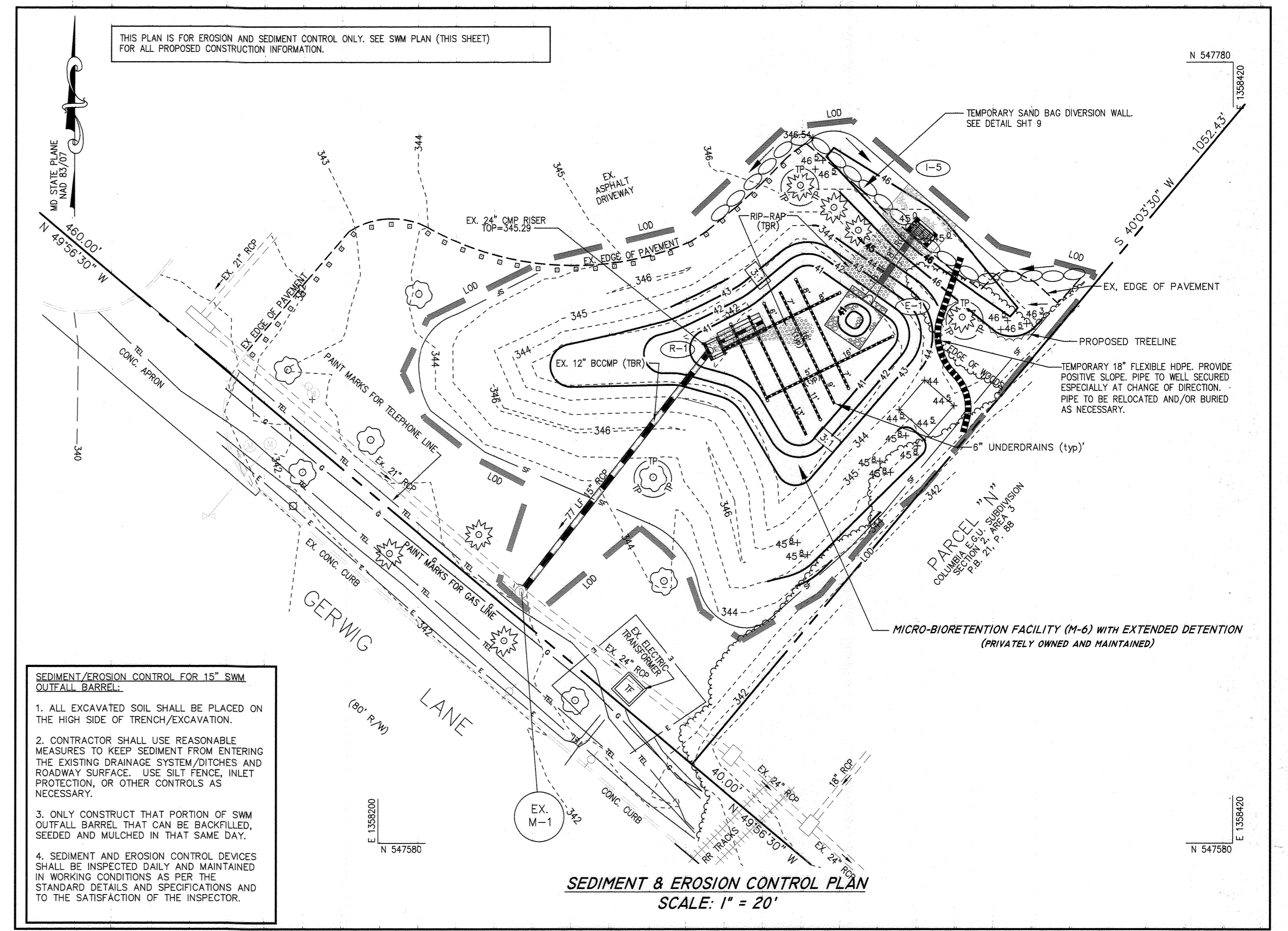
Des By	R.J.W.	Scale	AS SHOWN	Proj No	93-0200 CONSERV.DWG
Dim By	A.J.R.	Date	OCT. 1993	DRAWING NO	12
Chk By	J.R.H.	SDP-94-09		5 OF 14	

SDP 94-69



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN CONSTRUCTED AS SHOWN ON THIS AS-BUILT PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 Zacharia Y. Fisch
 ZACHARIA Y. FISCH P.E. No. 22418
 6/27/19
 DATE

STORMWATER MANAGEMENT PLAN
 SCALE: 1" = 20'



**SEDIMENT/EROSION CONTROL FOR 15\"/>
 1. ALL EXCAVATED SOIL SHALL BE PLACED ON THE HIGH SIDE OF TRENCH/EXCAVATION.
 2. CONTRACTOR SHALL USE REASONABLE MEASURES TO KEEP SEDIMENT FROM ENTERING THE EXISTING DRAINAGE SYSTEM/DITCHES AND ROADWAY SURFACE. USE SILT FENCE, INLET PROTECTION, OR OTHER CONTROLS AS NECESSARY.
 3. ONLY CONSTRUCT THAT PORTION OF SWM OUTFALL BARREL THAT CAN BE BACKFILLED, SEEDED AND MULCHED IN THAT SAME DAY.
 4. SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED DAILY AND MAINTAINED IN WORKING CONDITIONS AS PER THE STANDARD DETAILS AND SPECIFICATIONS AND TO THE SATISFACTION OF THE INSPECTOR.**

SEDIMENT & EROSION CONTROL PLAN
 SCALE: 1" = 20'

GENERAL STORMWATER MANAGEMENT NOTES

- STORMWATER MANAGEMENT WATER QUALITY HAS BEEN PROVIDED WITH BOTH EXTENDED-DETECTION AND ESDV. PLEASE REFER TO THE STORMWATER MANAGEMENT REPORT PREPARED BY CIVIL DESIGN SERVICES, LC DATED AUGUST 30, 2013.
- THE EXISTING TOPOGRAPHY FOR THIS IMPROVEMENT ONLY WAS FIELD SURVEYED IN MAY 2013 BY NJR & ASSOCIATES, LLC (JESSUP, MD). THE VERTICAL CONTROL IS BASED ON NAVD83 DATUM AND HOWARD COUNTY CONTROLS STATIONS 42E AND 42F.
- 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-BIORETENTION FACILITY NOTES AND SPECIFICATIONS ON SHEET 8.
- THE UTILITY LOCATIONS ARE APPROXIMATE. THE ENGINEER DOES NOT GUARANTEE ALL UTILITIES ARE SHOWN. CONTRACTOR SHALL TEST PIT ALL UTILITIES TO VERIFY, SIZE, SHAPE, LOCATION, AND TYPE PRIOR TO PERFORMING CONSTRUCTION. ANY UTILITY DAMAGED DUE TO CONSTRUCTION MUST BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE UTILITY OWNER.
- 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.
- CONTRACTOR SHALL NOTIFY MISS UTILITY 1-800-257-7777 AND THE HOWARD COUNTY DEPARTMENT OF INSPECTION LICENSES & PERMITS THREE (3) WORKING DAYS BEFORE BEGINNING CONSTRUCTION.
- CIVIL DESIGN SERVICES, LC 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.
- THE PLANTING SOIL AND UNDERDRAINS IN THE POND SHALL NOT BE INSTALLED UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (I.E., THICK GRASS COVER, OR PAVED) INCLUDING THE SIDE SLOPES.
- THIS STORMWATER MANAGEMENT BIORETENTION FACILITY IS PRIVATELY OWNED AND MAINTAINED BY THE COLUMBIA ASSOCIATION.
- UNDERDRAINS LENGTHS CAN BE SCALED TO DETERMINE ITS LENGTH. ALL CLEANOUTS SHALL EXTEND 3" ABOVE MULCH LAYER.
- A STANDARD SEDIMENT & EROSION CONTROL PLAN SHALL BE USED FOR THE SWM POND MODIFICATION/MAINTENANCE WORK.
- WHEN INSTALLING THE NEW 15" RCP OUTFALL BARREL, THE EMBANKMENT SHALL BE LAID BACK AT 3:1 SLOPES.
- CONTRACTOR SHALL INSTALL BARRICADES AND/OR ORANGE FENCING AS NEEDED TO ALERT CA EMPLOYEES OF THE CONSTRUCTION.
- CONTRACTOR SHALL PAINT A WHITE STRIPE (TO MATCH EXISTING PARKING STRIPING) 1" OFF AND PARALLEL TO THE SAW CUT DRIVE AISLE EDGE TO DEFINE THE 24' DRIVE AISLE.

GERWIG LANE WATER QUALITY FACILITY #1

STORMWATER MANAGEMENT SUMMARY TABLE
 PEAK DISCHARGE, WSE AND STORAGE VOLUME

	Peak Q into BMP (cfs)	Peak Q out of BMP (cfs)	Water Surface Elevation	Storage (cf) / (AF)
ESDv	-	-	342.00	1,585 / 0.0364 ^a
1-year Storm	3.6	0.12	344.11	5,927 / 0.1361
2-year Storm	4.5	0.73	344.25	6,476 / 0.1487
5-year Storm	6.0	3.4	344.48	7,725 / 0.1705
10-year Storm	7.3	5.5	344.62	8,013 / 0.1839
100-year Storm	10.4	9.6	344.75	8,609 / 0.1976

^a ESDv is not included in the volumes below.

SITE DATA:
 TOTAL SITE (LOT H-2) AREA = 369,018 sf (8.5 acre).
 DISTURBED AREA (LOD) = 13,000 sf (0.3 acre).
 WATERSHED CODE = 02-13-11 (PATUXENT RIVER).
 EARTHWORK VOLUME (CUT AND FILL) = 230 CY.

LEGEND

- 1' CONTOUR
- EXISTING EDGE OF DRIVEWAY/PARKING LOT
- LIMIT OF DISTURBANCE
- SAND BAG DIVERSION WALL
- TEMP. 18" HDPPE FLEXIBLE DIVERSION PIPE
- SILT FENCE
- EXISTING TREE LINE
- PROPOSED TREE LINE
- TREE PROTECTION
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- 6" UNDERDRAIN AND CLEANOUT WITH DISTANCE TO INTERSECTION
- PROVIDE POSITIVE DRAINAGE IN THIS DIRECTION
- EXISTING RIPRAP
- STRUCTURE NUMBER

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- NOTIFY HOWARD COUNTY D.L.P. (410.313.1880) AND MISS UTILITY (800-257-7777) AT LEAST THREE (3) DAYS PRIOR TO BEGINNING WORK.
- INSTALL PERIMETER SEDIMENT AND EROSION CONTROL DEVICES IN THIS ORDER: SILT FENCE, TREE PROTECTION FENCING, PARKING LOT DIVERSION SWALE, DIVERSION PIPE AND SAND BAG DIVERSION WALL. FOR DIVERSION SWALE INSTALLATION, SAW CUT ASPHALT AND IMMEDIATELY (I.E., SAME DAY) GRADE AND STABILIZE SWALE WITH EXCELSIOR MATTING, SEED, AND MULCH.
- WITH PERMISSION OF THE SAEC INSPECTOR, REMOVE EXISTING RISER BARRELS AND PLUG 12" OUTFALL BARREL WITH A WATER TIGHT CONNECTION.
 NOTE: ACCUMULATED WATER INSIDE OF POND SHALL BE PUMPED TO A FILTER BAG OR AN APPROVED EQUAL PRACTICE. DO NOT INSTALL PLANTING SOIL AND AGGREGATE AT THIS TIME.
- REMOVE RIPRAP, GRADE POND, AND CONSTRUCT CONCRETE RISER R-1. WRAP RISER R-1 OPENINGS IN FILTER FABRIC.
- REMOVE EXISTING 12" BCMP OUTFALL BARREL. (DO NOT ALLOW WATER TO ENTER THE STORM DRAIN SYSTEM). CONSTRUCT NEW 15" BARREL PER STORM DRAIN CONSTRUCTION NOTES.
- RECONSTRUCT THE EMBANKMENT. REPAIR OUTER EMBANKMENT SLOPE AREA AS NOTED.
- STABILIZE ALL SLOPES.
- ADJUST SAND BAGS AND DIVERSION PIPE AS NECESSARY MAINTAINING FLOW TO THE DIVERSION PIPE AND CONSTRUCT PERMANENT SWALE, INLET I-5, RIPRAP, AND PIPE TO E-1. STABILIZE AREA IMMEDIATELY UPON COMPLETION.
- WITH ESTABLISHED VEGETATION ON THE SLOPES, AND DURING A FIVE (5) DAY DRY FORECAST, EXCAVATE POND INVERT AND INSTALL AGGREGATE, UNDERDRAINS, PLANTING SOIL, AND MULCH LAYERS, AND PLUNGE POOL.
- WITH SAEC INSPECTOR'S APPROVAL, REMOVE R-1 WRAPPING, DIVERSION PIPE AND SAND BAG WALL. IMMEDIATELY STABILIZE AREA DISTURBED BY THIS PROCESS.
- INSTALL VEGETATION PER PLANTING PLAN.

PURPOSE STATEMENT
 PLAN SHEETS 6-9 OF 9 SHOW IMPROVEMENTS TO WATER QUALITY FACILITY #1 TO PROMOTE BETTER WATER QUALITY AND IMPROVE MAINTENANCE ACCESS.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 RICHARD SOBOTT, 15222, 10/20/2019

CIVIL DESIGN SERVICES, LC
 6123 Holly Ridge Court, Columbia, Maryland 21044
 410.531.0572 phone/fax
 civildesign@comcast.net

I hereby certify that I prepared these documents and that this seal signifies that I am a duly licensed professional engineer under the laws of the State of MD, License No. 15838 w/expiration December 17, 2013

Andrew C. Patten
 PROFESSIONAL ENGINEER

NO.	CHANGE TOTAL NO. OF SHEETS	REVISION	DATE
			09/19/2019

OWNER/DEVELOPER/BUILDER
 The Columbia Park and Recreation Association
 Attn: Mr. John McCoy
 10221 Wincopin Circle, Suite 100
 Columbia, Maryland 21044
 (410) 312-6330
 john.mccoy@columbiaassociation.org

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Keith Anderson
 Chief, Division of Land Development
 Date: 4-02-20

John McCoy
 Chief, Development Engineering Division
 Date: 4-1-15

John McCoy
 Director - Department of Planning and Zoning
 Date: 4-4-15

PROJECT: E.G.U. SUBDIVISION SECTION: 2/3 PARCEL/LOT: P. 386/ L. H-2

L/F: 22/18 GRID NO.: 10 ZONE: NT TAX/ZONE: 42 ELEC. DIST.: 6th CENSUS TR.: 6067.03

MAINTENANCE/RETROFIT SWM/E&SC PLAN
WATER QUALITY FACILITY #1

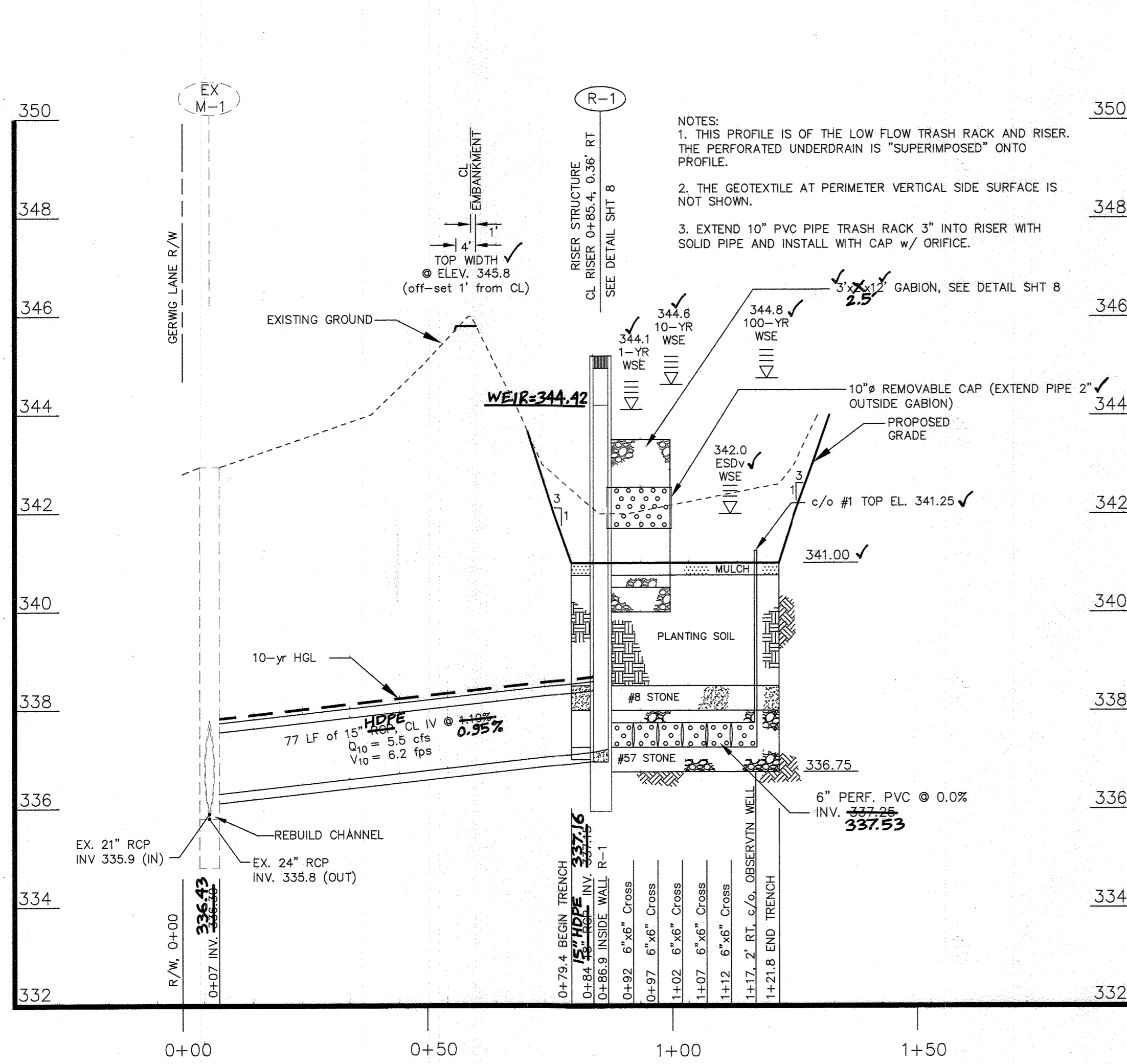
TITLE: ADDITIONS TO THE COLUMBIA PARK AND RECREATION ASSOCIATION MAINTENANCE FACILITY

AS-BUILT REVISED SITE DEVELOPMENT PLAN

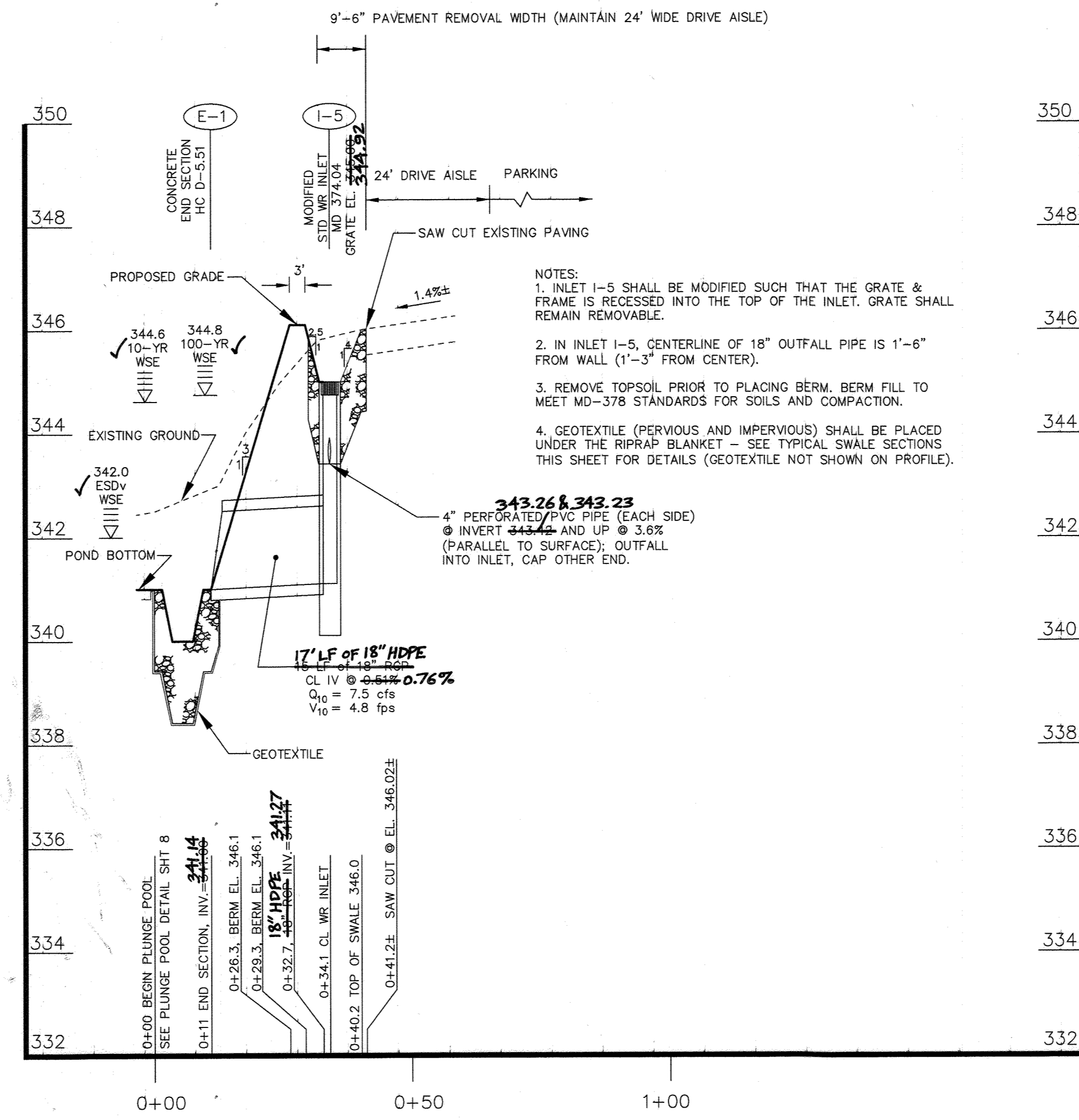
9450 GERWIG LANE, COLUMBIA, MD 21046
 PLAT BOOK 22, FOLIO 18

TAX MAP NO: 42 PARCEL NO: 386 GRID NO: 10
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 20' DATE: NOVEMBER 22, 2013

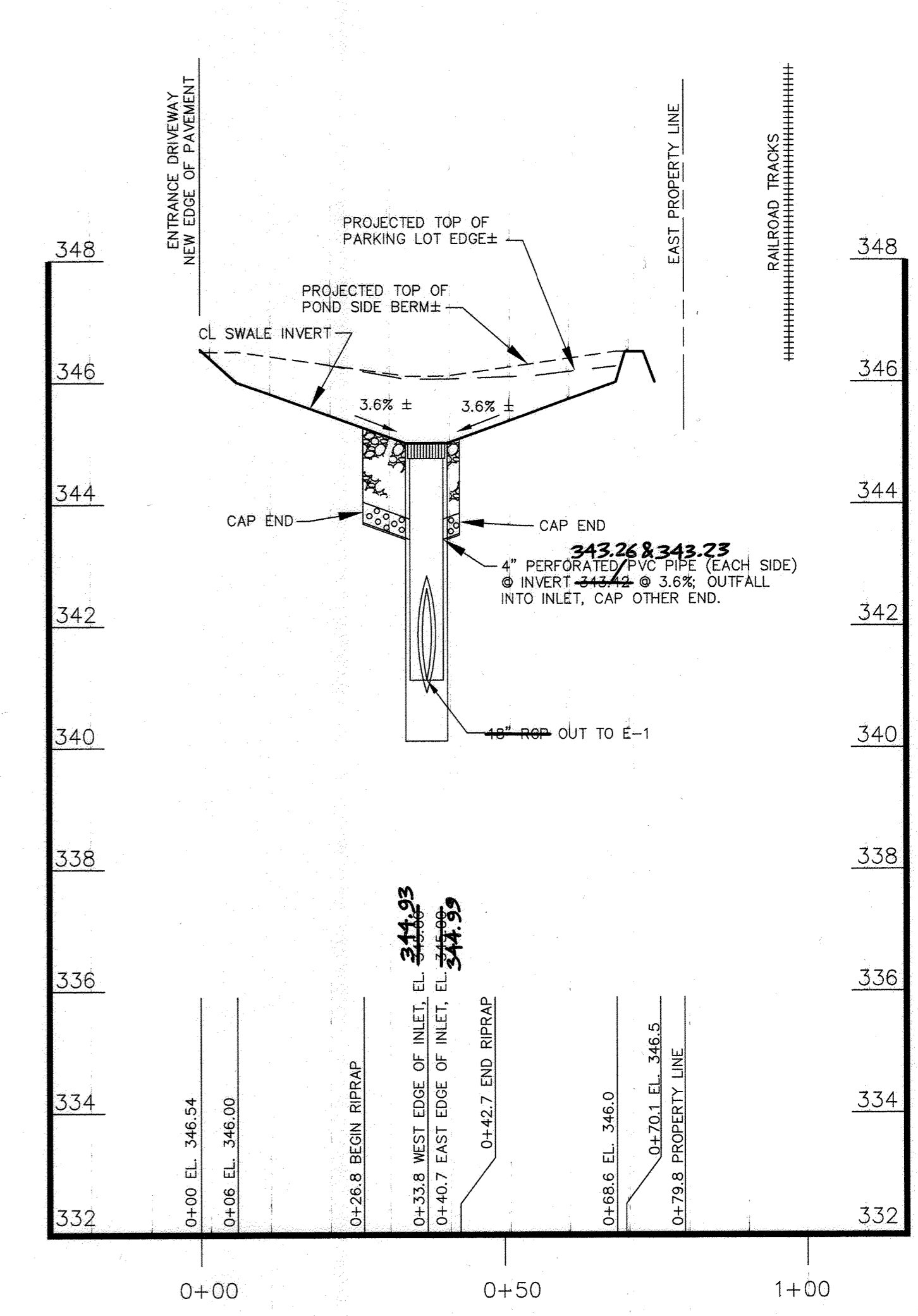
SHEET 6 OF 14



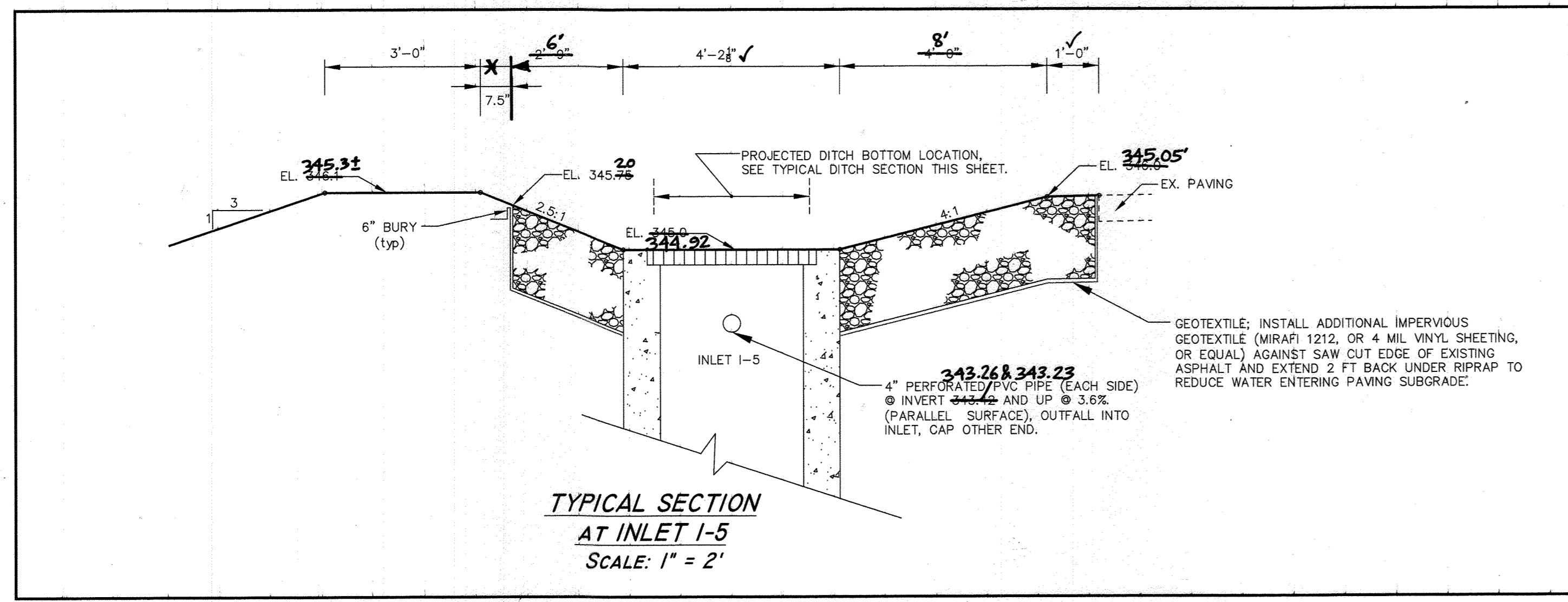
WATER QUALITY FACILITY #1 OUTFALL AND UNDERDRAIN PROFILE
 SCALE:
 HORZ: 1" = 20'
 VERT: 1" = 2'



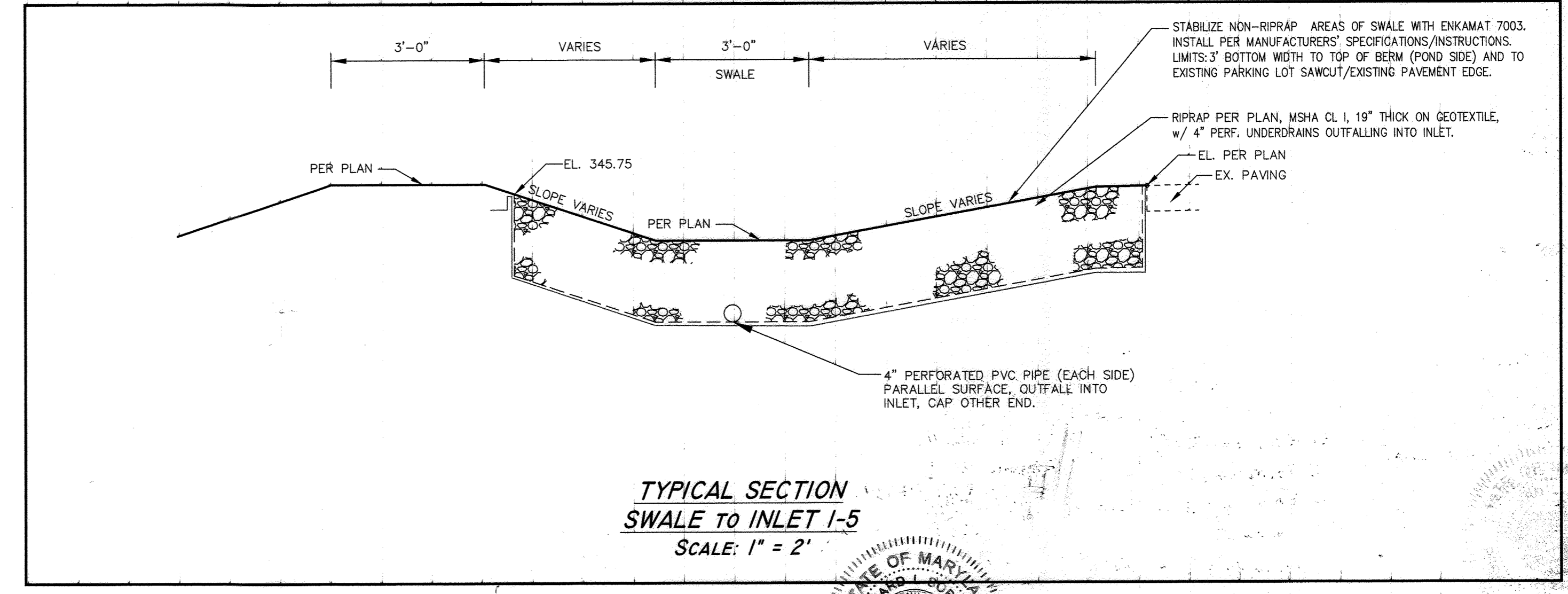
WATER QUALITY FACILITY #1 INFLOW PROFILE
 SCALE:
 HORZ: 1" = 20'
 VERT: 1" = 2'



WATER QUALITY FACILITY #1 INFLOW SWALE PROFILE (PARKING LOT DRAINAGE CAPTURE)
 SCALE:
 HORZ: 1" = 20'
 VERT: 1" = 2'



TYPICAL SECTION AT INLET I-5
 SCALE: 1" = 2'

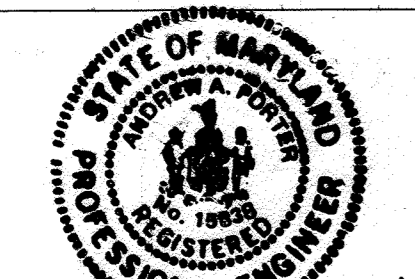


TYPICAL SECTION SWALE TO INLET I-5
 SCALE: 1" = 2'

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 RICHARD SOBOTT, 15222, 10/29/2020

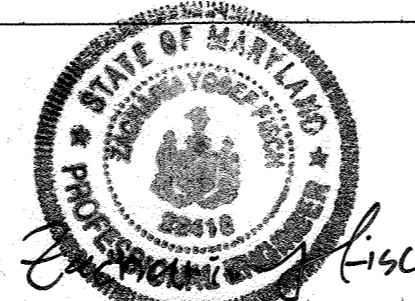
PURPOSE STATEMENT
 PLAN SHEETS 6-9 OF 9 SHOW IMPROVEMENTS TO WATER QUALITY FACILITY #1 TO PROMOTE BETTER WATER QUALITY AND IMPROVE MAINTENANCE ACCESS.

CIVIL DESIGN SERVICES, LC
 6123 Holly Ridge Court, Columbia, Maryland 21044
 410.531.0572 phone/fax
 civildesign@comcast.net



Andrew L. Park 11/22/2015

NO.	CHANGE TOTAL NO. OF SHEETS	REVISION	DATE

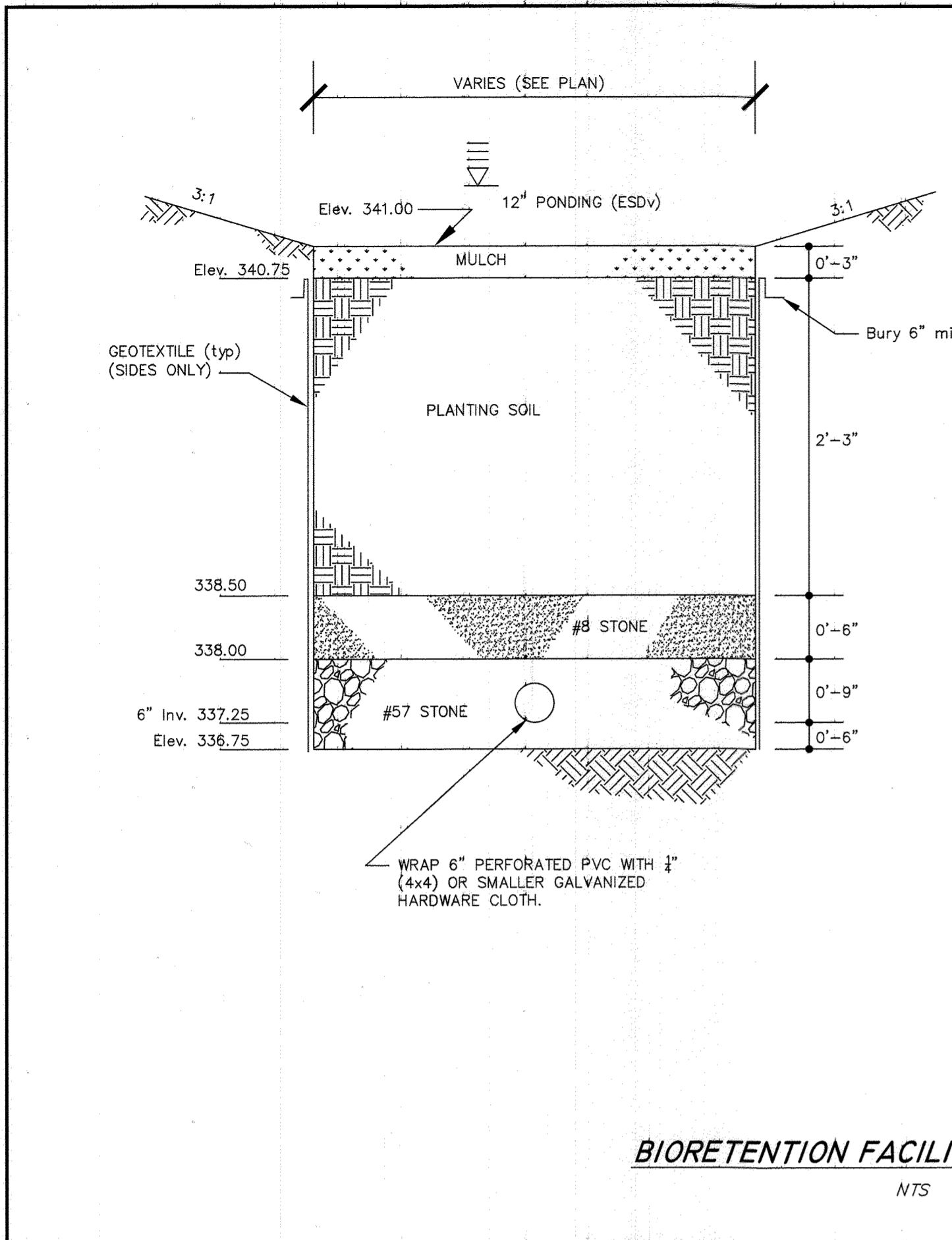


AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 Zacharia Y. Fisch 6/27/19
 ZACHARIA Y. FISCH, P.E. No. 22418

OWNER/DEVELOPER/BUILDER
 The Columbia Park and Recreation Association
 Attn: Mr. John McCoy
 10221 Wincopin Circle, Suite 100
 Columbia, Maryland 21044
 (410) 312-6330
 john.mccoy@columbiaparkandrec.com

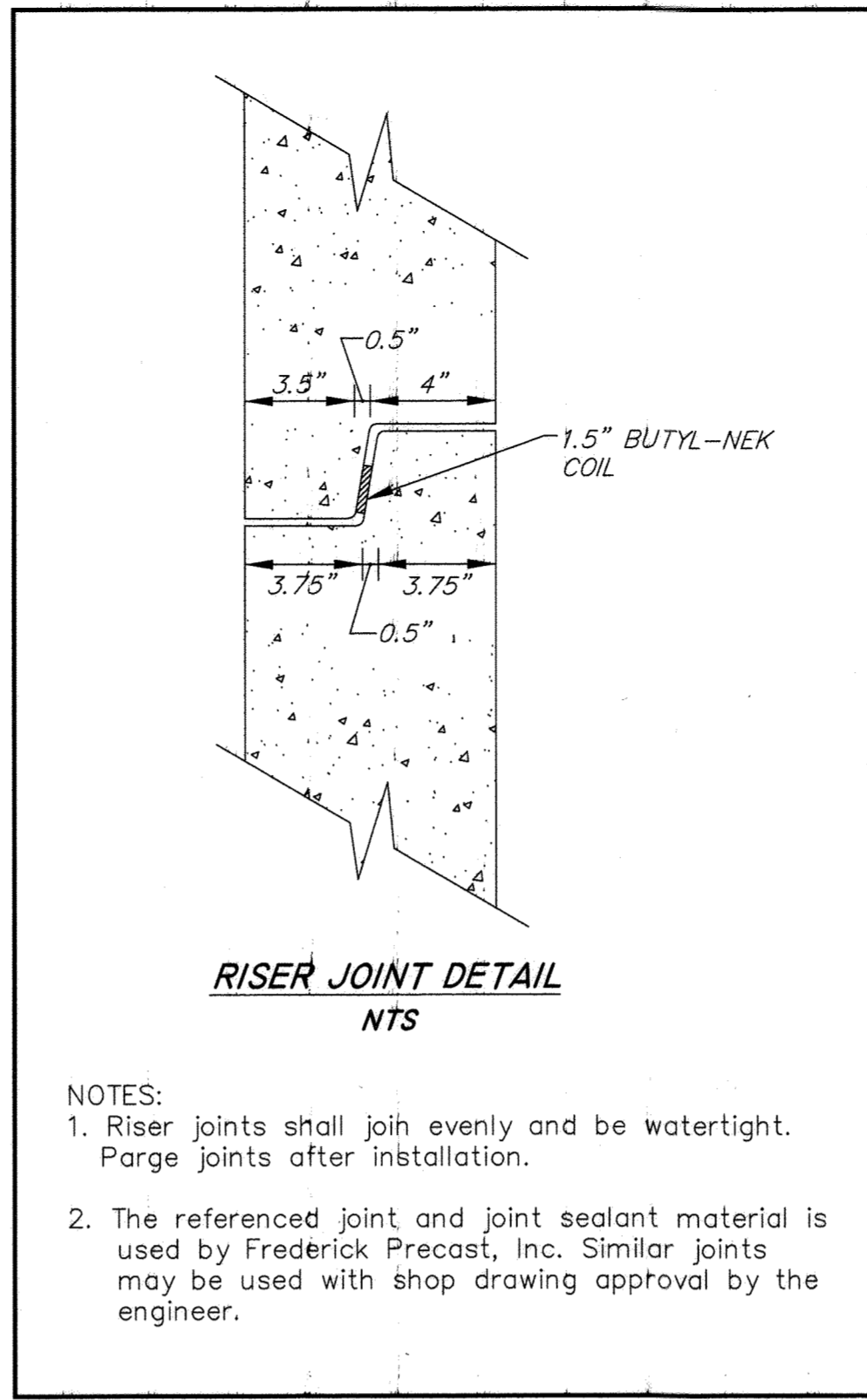
PROJECT	SECTION	PARCEL/LOT
E.G.U. SUBDIVISION	2/3	P. 386 / L. H-2

WATER QUALITY FACILITY #1 PROFILES AND DETAILS
 TITLE: ADDITIONS TO THE COLUMBIA PARK AND RECREATION ASSOCIATION MAINTENANCE FACILITY
AS-BUILT REVISED SITE DEVELOPMENT PLAN
 8450 GERWIG LANE, COLUMBIA, MD 21046
 PLAT BOOK 22, FOLIO 18
 TAX MAP NO: 42 PARCEL NO: 366 GRID NO: 10
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER 22, 2013
 SHEET 7 OF X 14



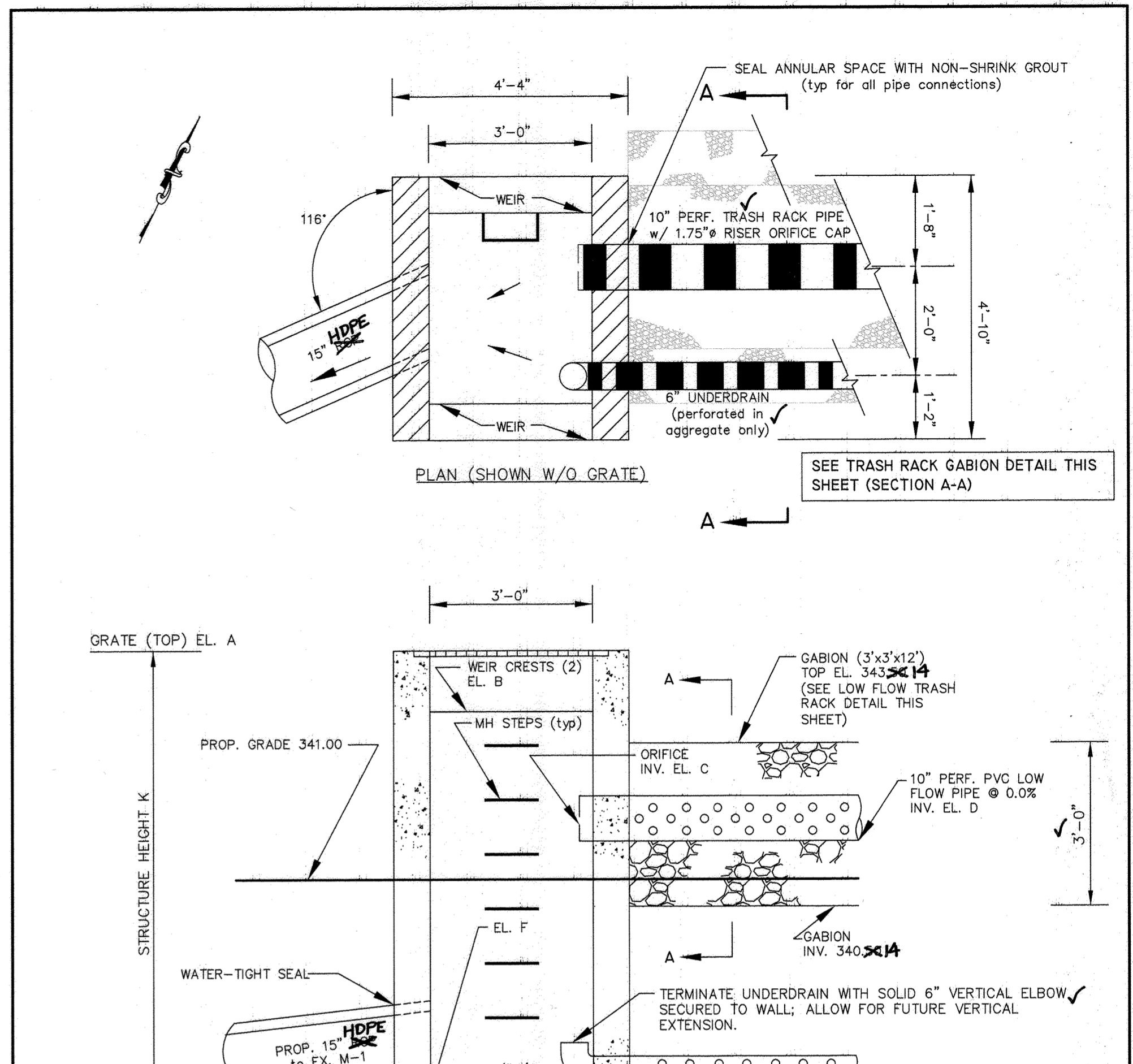
BIORETENTION FACILITY NOTES AND SPECIFICATIONS

- THE LIMIT OF THE TYPICAL SECTION (I.E., PLANTING SOIL, AGGREGATE, ETC.) IS THE ENTIRE LEVEL SURFACE OF THE BIORETENTION FACILITY AT ELEV. 341.
- REFER TO THE 2000 MARYLAND SWM DESIGN MANUAL FOR BIORETENTION SPECIFICATIONS (PG. B.3.7) FOR INFORMATION NOT LISTED HEREIN AND FOR ADDITIONAL INFORMATION.
- THE BIORETENTION FACILITY MATERIALS ARE AS FOLLOWS:
 - PLANTING SOIL: PER PLANTING SOIL SPECIFICATIONS OUTLINED IN MDE'S 2000 SWM MANUAL.
 - STONE AGGREGATE: MSHA SPECIFICATIONS AS SHOWN ON TYPICAL SECTION; AGGREGATE MUST BE FREE OF FINES, DIRT & DEBRIS.
 - GEOTEXTILE: PER MDE SWM MANUAL OR MIRAFI 140N.
 - MULCH: SHREDDED, WELL-AGED (6-12 MONTHS) HARDWOOD MULCH; NO WOOD CHIPS OR PINE MULCH.
- THE CONTRACTOR SHALL UNDER NO CIRCUMSTANCES ALLOW SURFACE DRAINAGE INTO THE BIORETENTION FACILITY UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (I.E., PAVED, OR HAVE WELL-ESTABLISHED VEGETATION).
- BOARDS SHALL NOT BE LEFT IN PLACE DURING THE CONSTRUCTION OF THE BIORETENTION FACILITY.
- GEOTEXTILE (FILTER FABRIC) SHALL BE PLACED AGAINST EXCAVATED VERTICAL SURFACES. SCARIFY EARTH PRIOR TO GEOTEXTILE PLACEMENT. INSTALL GEOTEXTILE PER MANUFACTURER'S SPECIFICATIONS/RECOMMENDATIONS AND USE A 2 FT MINIMUM OVERLAP AND NOTCH ENDS WITH A 6\"/>



NOTES:

- Riser joints shall join evenly and be watertight. Parge joints after installation.
- 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.



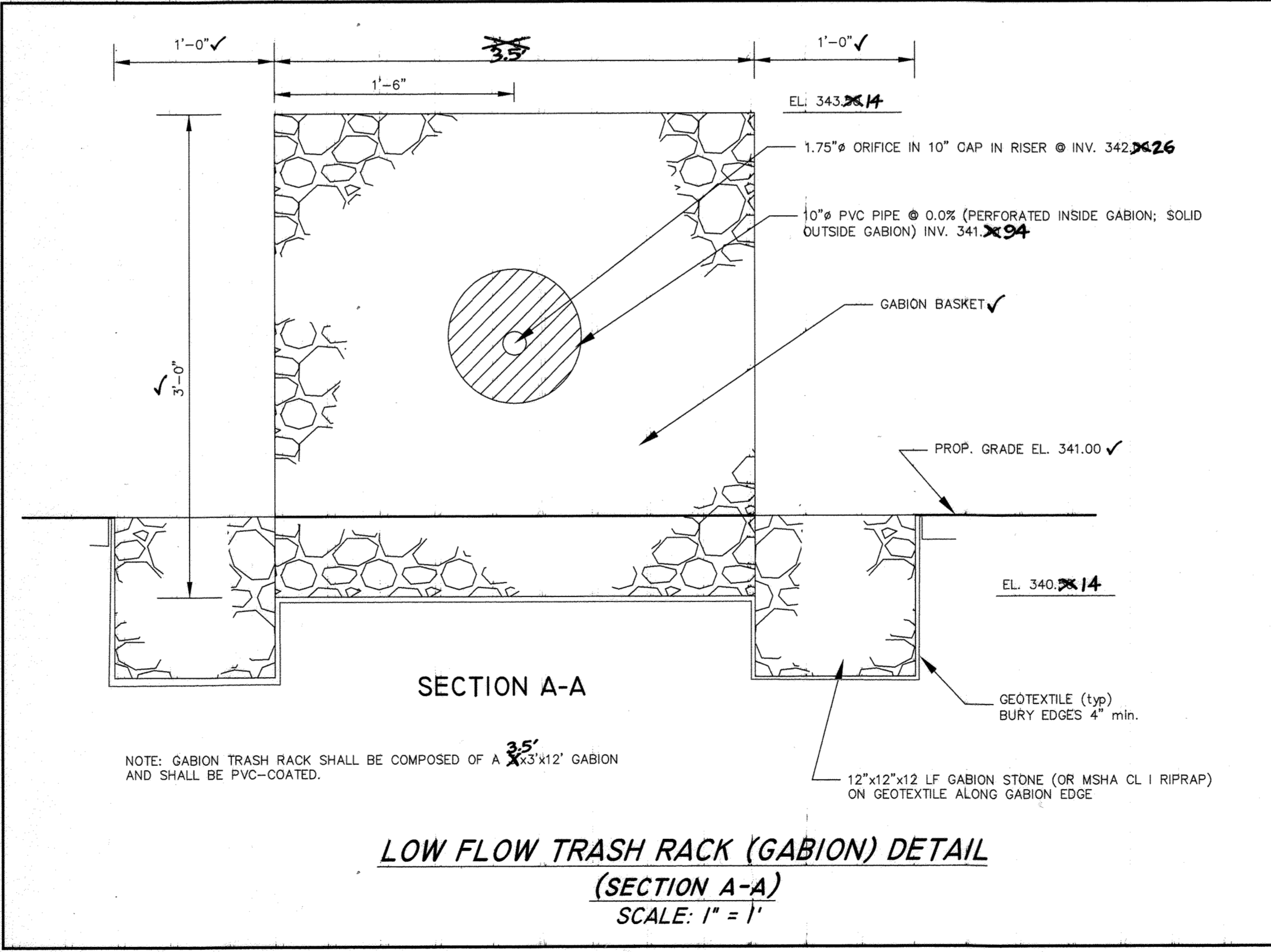
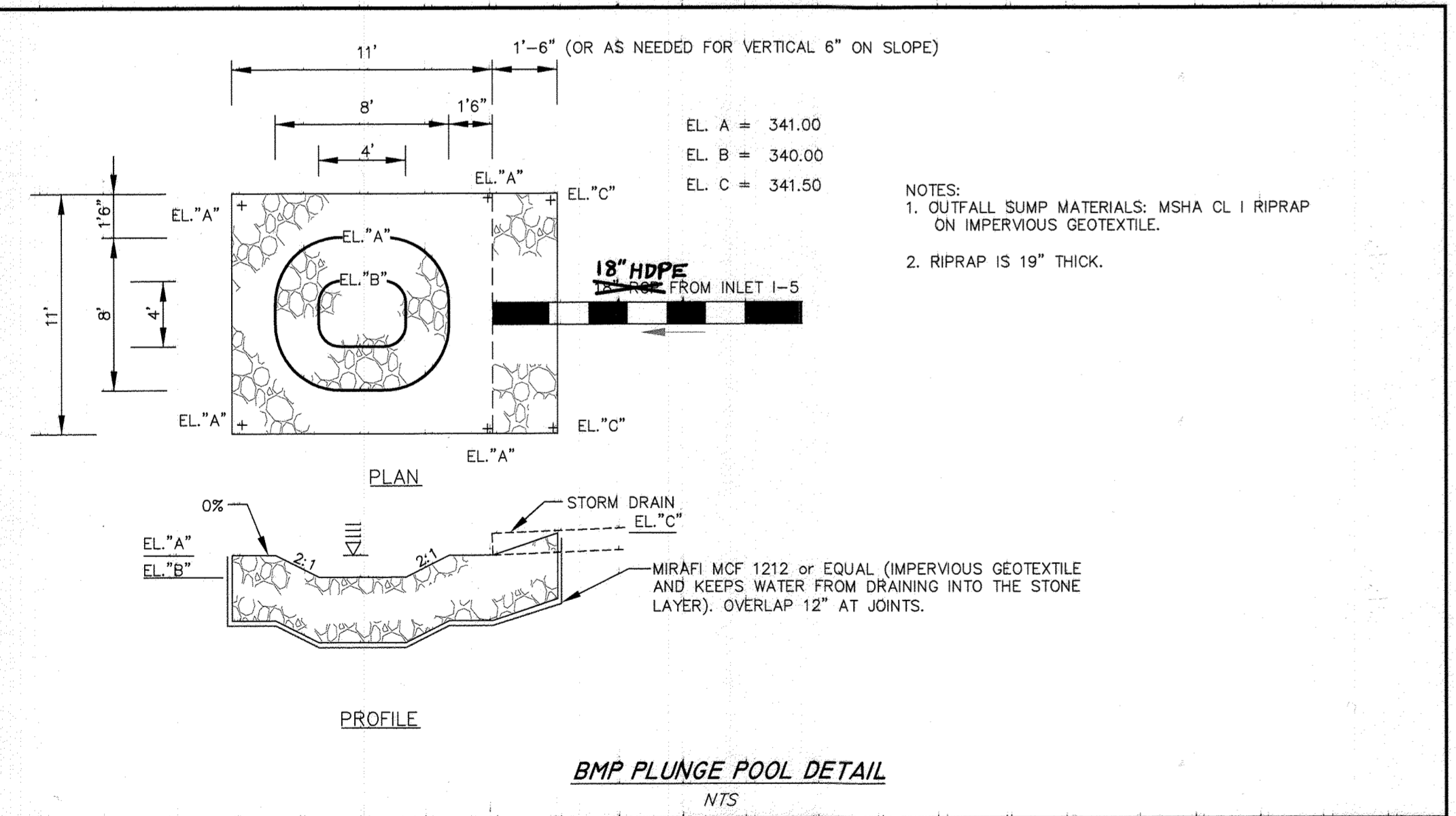
NOTES:

- SEE MSHA STD DETAIL WD-378.11 FOR DETAILS NOT SHOWN ABOVE.
- ALL STRUCTURAL REQUIREMENTS (INCLUDING WALLS) SHALL CONFORM TO THE D-INLET (DETAIL D-4.10) REQUIREMENTS DUE TO THE INCREASED INLET DEPTH.
- USE DOUBLE OPENING WITH NO CONCRETE GUTTER APPROACHES.
- SLOPE RISER INVERT 1/4\"/>

ELEV. A	TOP OF GRATE
345.30	
344.32	WEIR CREST
342.26	1.75\"/>

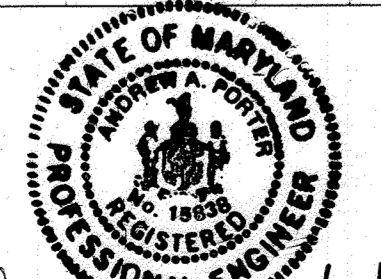
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
 RICHARD SOBBOT, 15222 PROFESSIONAL ENGINEER

PURPOSE STATEMENT
 PLAN SHEETS 6-9 OF 9 SHOW IMPROVEMENTS TO WATER QUALITY FACILITY #1 TO PROMOTE BETTER WATER QUALITY AND IMPROVE MAINTENANCE ACCESS.



LOW FLOW TRASH RACK (GABION) DETAIL (SECTION A-A) SCALE: 1\"/>

CIVIL DESIGN SERVICES, LC
 6123 Holly Ridge Court, Columbia, Maryland 21044
 410.531.0572 phone/fax
 civildesign@comcast.net



NO.	CHANGE TOTAL NO. OF SHEETS	DATE

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 ZACHARIA Y. FISCH P.E. No. 22418 6/27/19

OWNER/DEVELOPER/BUILDER
 The Columbia Park and Recreation Association
 Attn: Mr. John McCoy
 10221 Winopin Circle, Suite 100
 Columbia, Maryland 21044
 (410) 312-6330
 john.mccoy@columbiaparkandrec.com

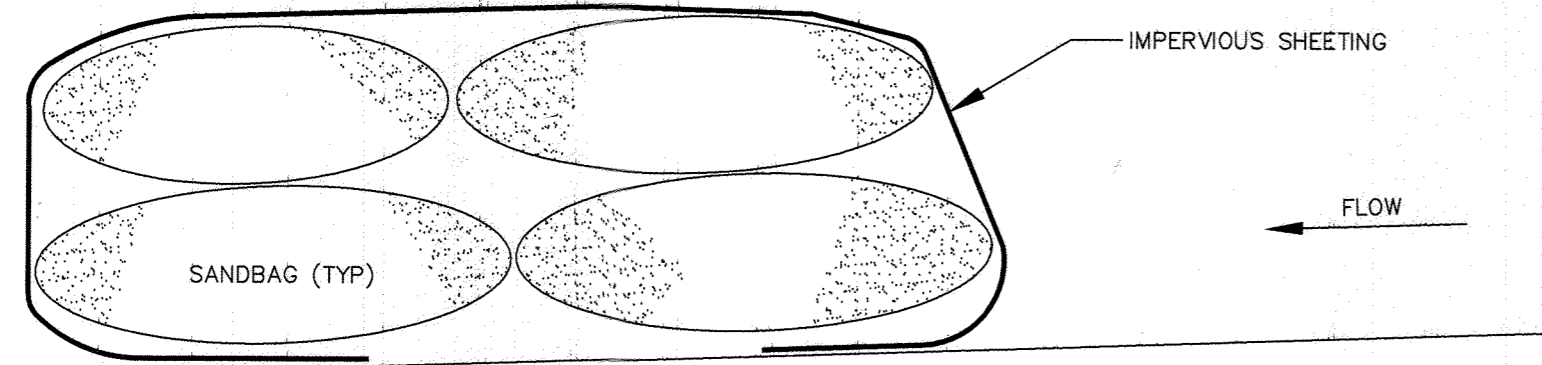
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development	4.02.15
Chief, Development Engineering Division	4.1.15
Director - Department of Planning and Zoning	4/1/15

PROJECT	SECTION	PARCEL/LOT
E.G.U. SUBDIVISION	2/3	P. 386 / L. H-2

L/F	GRID NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
22/18	10	NT	42	6 th	6067.03

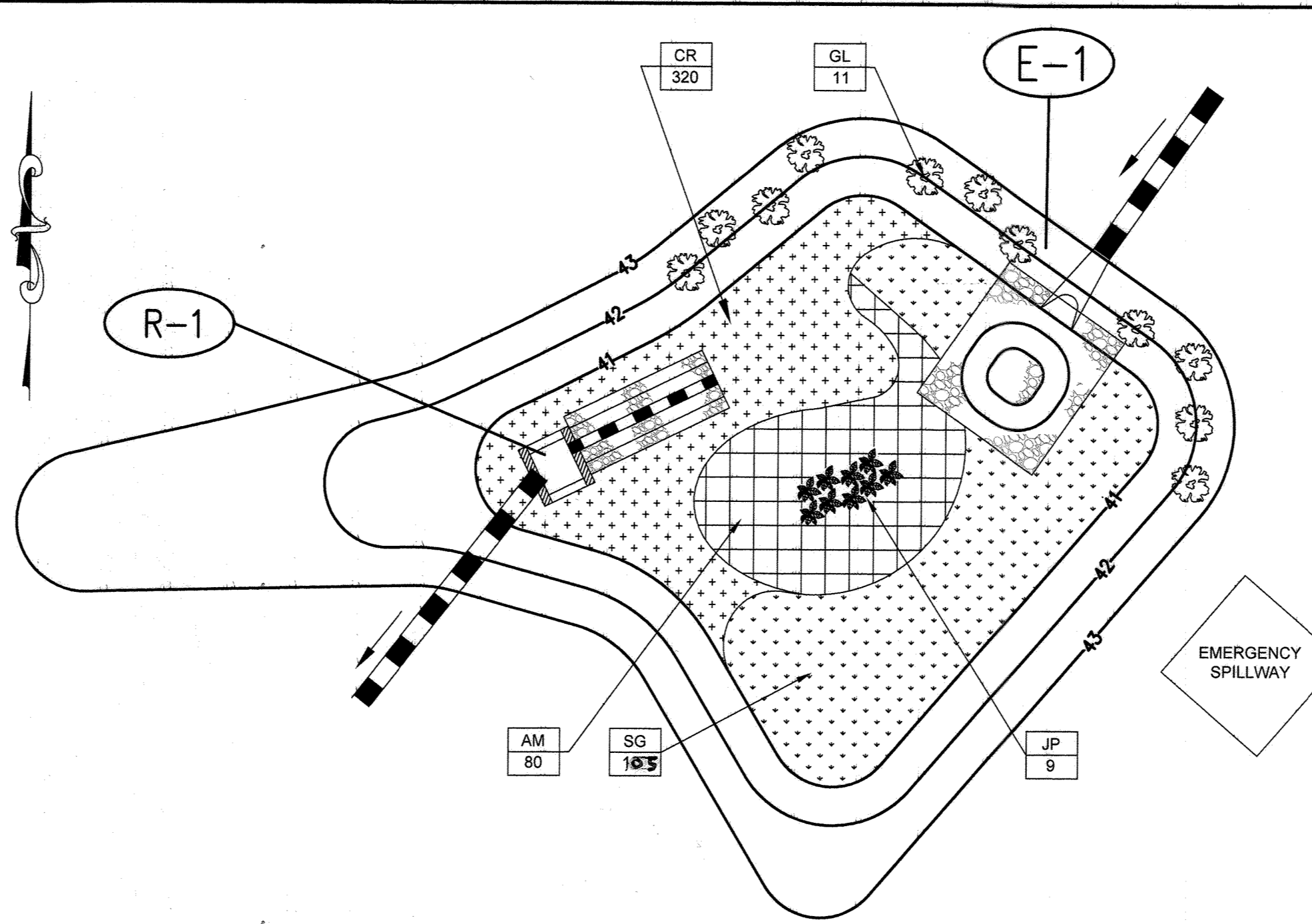
WATER QUALITY FACILITY #1 DETAILS (I)
 TITLE: ADDITIONS TO THE COLUMBIA PARK AND RECREATION ASSOCIATION MAINTENANCE FACILITY
AS-BUILT REVISED SITE DEVELOPMENT PLAN
 9450 GERWIG LANE, COLUMBIA, MD 21046
 PLAT BOOK 22, FOLIO 18
 TAX MAP NO: 42 PARCEL NO: 386 GRID NO: 10
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER 22, 2013
 SHEET 8 OF 14



- NOTES:
1. PLACE SANDBAG WALL ON A SLIGHT GRADE TO PROVIDE POSITIVE DRAINAGE.
 2. SHEETING SHALL NOT HAVE ANY HOLES OR TEARS AND SHALL BE IMMEDIATELY REPLACED IF DAMAGED.
 3. SHEETING MATERIAL SHALL BE MIRAFI 1212, OR 4 mil VINYL/POLYETHYLENE. OVERLAP SHEETS BY 18".
 4. DIVERSION SHALL HAVE A 10" MIN. HEIGHT.

SANDBAG DIVERSION DETAIL

NT



BIORETENTION FACILITY PLANTING SCHEDULE

KEY	PLANT NAME	SIZE	QUANTITY	SPACING	FORM	SYMBOL
SG	SWITCH GRASS (<i>Panicum virgatum</i> 'Hot Rod')	1 gal	105	3' O.C.	Grass	[Symbol]
CR	COMMON RUSH (<i>Juncus effusus</i>)	1 qt	320	18" O.C.	Grass	[Symbol]
GL	GRO LOW SUMAC (<i>Rhus aromatica</i> 'Gro Low')	2 gal	11	5' O.C.	Shrub	[Symbol]
AM	AMSONIA (<i>Amsonia hubrichtii</i>)	1 gal	80	30" O.C.	Perennial	[Symbol]
JP	JOE PYE WEED (<i>Eupatorium maculatum</i> 'Gateway')	1 gal	9	30" O.C.	Perennial	[Symbol]

PLANTING SPECIFICATIONS:

1. PLANT INSTALLATION SHALL BE PER MDE SPECIFICATIONS IN THE 2000 SWM DESIGN.

ADDITIONAL SPECIFICATIONS:

1. PLANT BMP LEVEL SURFACE AS SHOWN WITH AN EVEN DISTRIBUTION DENSITY. STABILIZE SIDE SLOPES W/ PERMANENT GRASS SEED PER NRCS SPECIFICATIONS. SIDE SLOPES SHALL HAVE 4" OF CLEAN TOPSOIL ON TILLED SUB-SOIL.
2. THE CA LANDSCAPE ARCHITECT MUST APPROVE BED PREPARATION AND LAYOUT PRIOR TO INSTALLATION.
3. THE CONTRACTOR SHALL PROVIDE AN UNCONDITIONAL ONE YEAR GUARANTEE FROM THE DATE OF ACCEPTANCE FOR ALL PLANT MATERIALS.
4. PLANT MATERIAL SHALL CONFORM TO THE US STANDARD FOR NURSERY STOCK BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
5. PLANTING PERENNIALS & GRASSES: ROOT SYSTEMS SHALL BE SPLIT OR CRUMBLED. POTTED PLANTS SHALL BE SET SO THAT THE TOP OF THE POT IS EVEN WITH EXISTING GRADE. TREAT THE MULCHED AND PLANTED AREA WITH A PRE-EMERGENT HERBICIDE.
6. PLANTING WOODY PLANTS: REFER TO MDE SPECIFICATIONS.
7. ALL PLANTS MUST BE THOROUGHLY WATERED PRIOR TO ACCEPTANCE.
8. THE CONTRACTOR IS RESPONSIBLE FOR LOSSES DUE TO THEFT OR OTHER REASONS THAT OCCUR PRIOR TO ACCEPTANCE.

PLANTING PLAN

SCALE:
1" = 10'

Pond MD-378: N.R.C.S. - JANUARY 2000 CONSTRUCTION SPECIFICATIONS FOR SMALL EARTHEN DAMS (PARTIAL)

All references to ASTM and AASHTO specifications apply to the most recent version.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, 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 supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

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

The minimum required density shall not be less than 95% of maximum dry density with a moisture content within ±2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

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

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

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

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313, as modified. The mixture shall have a 100-200 psi, 28 day un-confined compressive strength.

The flowable fill shall have a minimum pI of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:
1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.
2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding 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 bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.
4. Backfilling shall conform to "Structure Backfill".

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.

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

Care of Water During Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the 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 various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for 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 in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain 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 sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spill and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

OPERATION AND MAINTENANCE SCHEDULE FOR WATER QUALITY FACILITY #1

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. PLANT MATERIAL: PLANTS SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION. REMOVE AND REPLACE DEAD OR DYING VEGETATION CONSIDERED BEYOND TREATMENT (SEE NOTE BELOW). MAINTENANCE ALSO INCLUDES PRUNING, AND REPLACEMENT OF DEFICIENT STAKES AND WIRE.
2. 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.
3. SOIL LAYER: SHOULD WATER POND FOR MORE THAN 48 HOURS, THE TOP 6 INCHES (MINIMUM) OF THE SOIL LAYER SHALL BE REPLACED. THE OLD SOILS SHALL BE PROPERLY DISPOSED.
4. SPILLWAY OUTFALL, INTERIOR SLOPES: ERODED AREAS SHALL BE REPAIRED (FILLED IN AND SEEDDED) AS NEEDED. BARE AREAS SHALL BE TREATED AND RE-SEEDDED.
5. INLET: REPAIR CRACKS, DAMAGED CONCRETE, ETC. AS NECESSARY.
6. REMOVE AND PROPERLY DISPOSE ACCUMULATED SEDIMENT GREATER THAN ONE (1) INCH.

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.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET. RICHARD SOBOTT, 1S 222, 20 23 2003



NO AS-BUILT INFORMATION THIS SHEET.

PURPOSE STATEMENT
PLAN SHEETS 6-9 OF 9 SHOW IMPROVEMENTS TO WATER QUALITY FACILITY #1 TO PROMOTE BETTER WATER QUALITY AND IMPROVE MAINTENANCE ACCESS.

CIVIL DESIGN SERVICES, LC

6123 Holly Ridge Court, Columbia, Maryland 21044
410.531.0572 phone/fax
civildesign@comcast.net



John McCoy, Professional Engineer

NO.	CHANGE TOTAL NO. OF SHEETS	09/14/2008
REVISION		DATE

OWNER/DEVELOPER/BUILDER

The Columbia Park and Recreation Association
Attn: Mr. John McCoy
10221 Wincopin Circle, Suite 100
Columbia, Maryland 21044
(410) 312-6330
john.mccoy@columbiaparkassociation.org

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Kevin Schulman 4/2/15
Chief, Division of Land Development Date
Chad Eshel 4/1/15
Chief, Development Engineering Division Date
James A. Grogan 4/2/15
Director - Department of Planning and Zoning Date

PROJECT	SECTION	PARCEL/LOT
E.G.U. SUBDIVISION	2/3	P. 386 / L. H-2
L/F	GRID NO.	ZONE
22/18	10	NT
		TAX/ZONE
		42
		ELEC. DIST.
		6 th
		CENSUS TR.
		6067.03

WATER QUALITY FACILITY #1 DETAILS (2)

TITLE: ADDITIONS TO THE COLUMBIA PARK AND RECREATION ASSOCIATION MAINTENANCE FACILITY

AS-BUILT REVISED SITE DEVELOPMENT PLAN

9450 GERWIG LANE, COLUMBIA, MD 21046
PLAT BOOK 22, FOLIO 18

TAX MAP NO: 42 PARCEL NO: 386 GRID NO: 10
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: NOVEMBER 22, 2013

SHEET 9 OF 14

OPERATION AND MAINTENANCE SCHEDULE

- ROUTINE MAINTENANCE:**
1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE F-6 BIORETENTION FACILITY IS FUNCTIONING PROPERLY.
 2. REMOVE AND REPLACE STONE AND FILTER FABRIC ALONG FRONT (SE) IN PRETREATMENT SYSTEM ALONG PAVEMENT UPON OBSERVATION OF EROSION.
 3. SEDIMENT ACCUMULATION IN THE PRETREATMENT SYSTEM STONE IS TO BE REMOVED AS OBSERVED.
 4. CHECK OBSERVATION WELL PERIODICALLY FOR STANDING WATER, WHICH MAY INDICATE REDUCED FACILITY PERFORMANCE.
 5. DEBRIS AND LITTER SHALL BE REMOVED.
 6. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
 7. INSPECT STRUCTURAL COMPONENTS OF THE FACILITY SUCH AS THE RISER, THE J-VENT AND THE SCREW TOP CAPS.
- NON-ROUTINE MAINTENANCE:**
1. STRUCTURAL COMPONENTS OF THE FACILITY SUCH AS THE RISER, THE VENT AND SCREW TOP CAPS SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE.
 2. SEDIMENT SHALL BE VACUUMED FROM THE PRETREATMENT SYSTEM AND THE FACILITY VIA THE CLEANOUTS WHEN THE OBSERVATION WELL INDICATES THAT THE BSM, SAND AND STONE LAYERS ARE REMAINING SATURATED FOR MORE THAN 72 HOURS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.
 3. REPLACE DEAD OR DISEASED PLANT MATERIAL.
 4. WHEN WATER PONDS AT THE SURFACE FOR MORE THAN 72 HOURS, REMOVE AND REPLACE 3" OF HARDWOOD MULCH. SEDIMENT SHALL BE REMOVED FROM THE FILTER BED WHEN THE DEPTH EXCEEDS 1 INCH.

GENERAL INFORMATION

1. THE PROJECT IS LOCATED ON THE NORTHEAST SIDE OF GERWIG LANE (#9450) SOUTHEAST OF BERGER ROAD IN COLUMBIA, HOWARD COUNTY, MARYLAND.
2. THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED IMPROVEMENTS AT THE NORTHWEST CORNER OF THE SITE INCLUDING REMOVING THE EXISTING CLOGGED TRENCH DRAIN AND SAND FILTER AND INSTALLATION OF THE NEW THE WATER QUALITY ENHANCEMENT F-6 BIORETENTION FACILITY, DRAINAGE INLETS AND PIPING AND ASSOCIATED RE-PAVING.
3. EXISTING WATER QUALITY FACILITY SAND FILTER WAS CONSTRUCTED UNDER HOWARD COUNTY, MARYLAND STORMWATER MANAGEMENT AS-BUILT PLAN SDP-94-069, DATED 08-15-1995, AS ACCEPTED BY HOWARD SOIL CONSERVATION DISTRICT.
4. THERE ARE NO KNOWN BURIAL GROUNDS OR CEMETERY SITES LOCATED ON THE PROJECT SITE.
5. THERE ARE NO WETLANDS OR 100 YEAR FLOODPLAINS ON THIS SITE.
6. THE COORDINATES SHOWN HEREON ARE BASED ON HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM.
7. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS IN THE NAVD88 VERTICAL DATUM PREPARED BY KCI TECHNOLOGIES, INC. IN SEPTEMBER 2015.
8. WATER IS PUBLIC.
9. SEWER IS PUBLIC.
10. STORMWATER MANAGEMENT IS NOT REQUIRED FOR THIS PROJECT SINCE THE PROJECT IS A WATER QUALITY ENHANCEMENT.
11. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY AND MSHA STANDARD SPECIFICATIONS, AS APPLICABLE.
12. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 24 HOURS IN ADVANCE OF ANY WORK BEING DONE.
13. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
14. EXISTING UTILITIES ARE BASED ON UTILITY MARKOUT OBSERVED AND FIELD SURVEYS. CONTRACTOR TO OBTAIN MISS UTILITY MARKOUT AND TO VERIFY INFORMATION TO HIS/HER OWN SATISFACTION.
15. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
16. ANTICIPATED SPECIFICATIONS TO BE PROVIDED BY THE CONTRACTOR UPON CONSTRUCTION INCLUDE:
 - A. CONCRETE SAND
 - B. F-6 BIORETENTION SOIL MIX
 - C. HARDWOOD MULCH
 - D. REMOVABLE BOLLARDS

- NOTES:**
1. PERFORM FULL DEPTH SAW CUT AROUND PERIMETER OF THE F-6 BIORETENTION FACILITY.
 2. ABANDON PIPES AND TRENCH DRAINS AS SPECIFIED ON THIS PLAN WITH FLOWABLE BACKFILL. REMOVE TRENCH DRAIN GRATES AND FILL FLUSH WITH EXISTING PAVEMENT.
 3. DESIGN MODIFICATION TO ACCOMMODATE F-6 BIORETENTION FACILITY ON AN ACTIVE SITE WITH CONTINUOUS OPERATIONS FOR MAINTENANCE EQUIPMENT AND MATERIALS OPERATIONS. INCLUDES: PRETREATMENT SYSTEM OF STONE ALONG THE FRONT (SOUTHEAST) EDGE OF THE F-6 BIORETENTION SYSTEM AND PAVEMENT.

SPECIAL CONTRACTOR NOTES

1. PROJECT SITE IS NOT LOCATED WITHIN THE 100-YEAR FLOODPLAIN.
2. CONTRACTOR SHALL NOT STORE EQUIPMENT, MATERIALS AND/OR SUPPLIES BEYOND THE LIMIT OF DISTURBANCE SHOWN ON THE PLANS.
3. UPON COMPLETION OF THE WORK, BUT PRIOR TO DE-MOBILIZATION, THE CONTRACTOR SHALL REMOVE ALL REMNANTS OF CONSTRUCTION MATERIALS FROM THE SITE. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITIONS.
4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, PHOTOGRAPHS OF THE PROPOSED WORK AREA AND ACCESS SHALL BE TAKEN.
5. CONTRACTOR SHALL CONTINUOUSLY MONITOR WEATHER FORECASTS DURING WORK ACTIVITIES AND SCHEDULE WORK DURING FAVORABLE CONDITIONS.
6. ALL MATERIAL SHALL BE REMOVED AND DISPOSED OF OFFSITE.
7. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN EXITING THE PROJECT SITE AND PAY CLOSE ATTENTION TO PEDESTRIANS WALKING NEAR THE SITE.
8. WORKING HOURS ARE 7 A.M. TO 7 P.M. MONDAY THROUGH FRIDAY. WITH PERMISSION, CONTRACTORS MAY WORK ON WEEKENDS.
9. THE CONTRACTOR SHALL AVOID TRACKING HEAVY EQUIPMENT OVER CRITICAL ROOT ZONE OF SPECIMEN TREES. IF UNAVOIDABLE LOAD MATS SHOULD BE USED WHEN TRACKING OVER THE CRITICAL ROOT ZONES.

HOWARD COUNTY SURVEY CONTROL

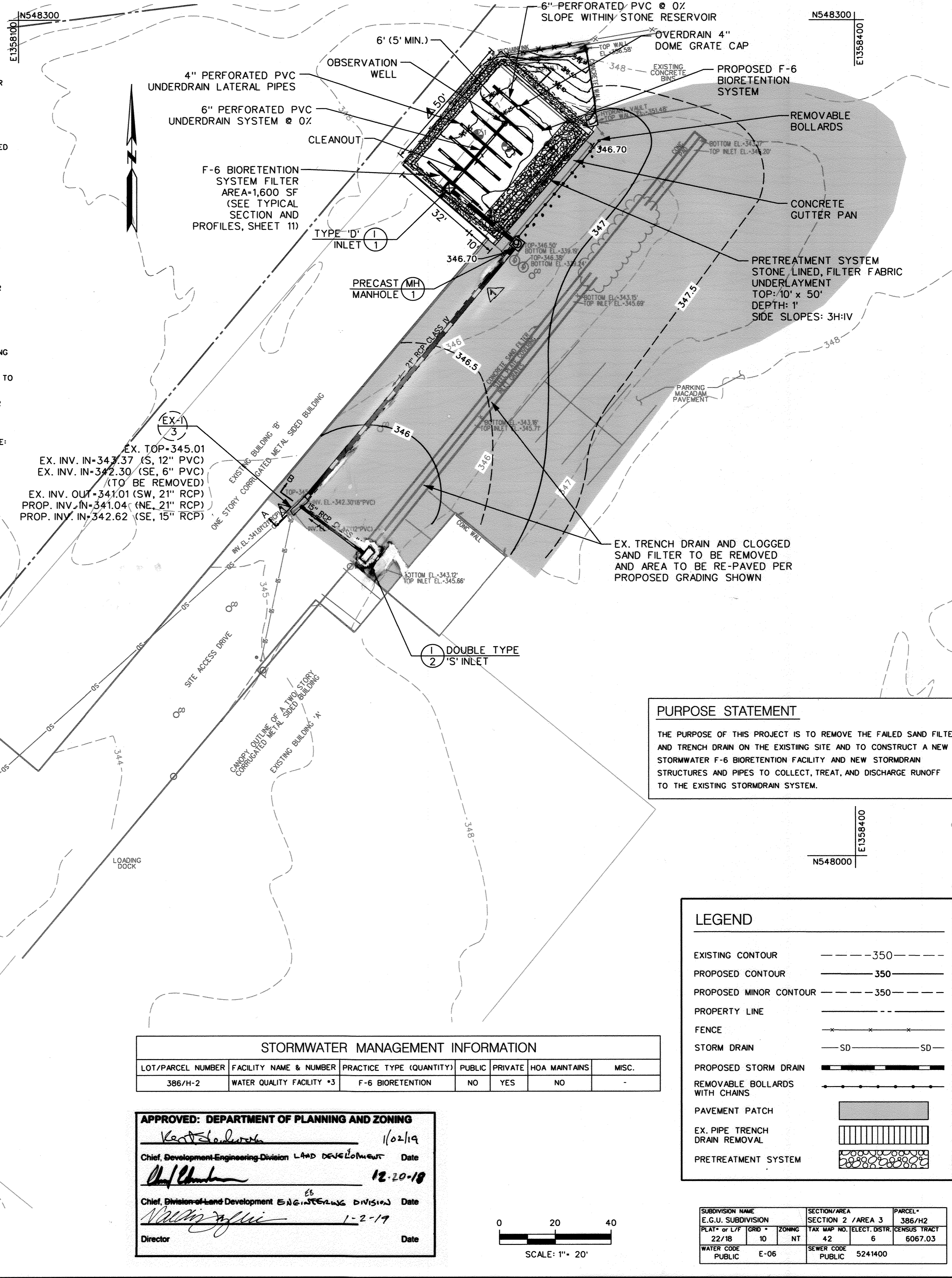
DESIGNATION	NORTHING	EASTING	ELEVATION
42EC	545,416.990	1,360,140.442	365.383'
42ED	546,494.219	1,358,095.141	286.725'

GERWIG LN

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, RAYMOND J. KRAHE, PE, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 28654 EXPIRATION DATE: 2019-03-26

AS-BUILT CERTIFICATION
I hereby certify, by my seal, that to the best of my knowledge and belief the facility shown on this plan was constructed as shown on this AS-BUILT plan meet the approved Plans & Specifications.

RICHARD L. SOBOTT, 15222, 201292020



PURPOSE STATEMENT

THE PURPOSE OF THIS PROJECT IS TO REMOVE THE FAILED SAND FILTER AND TRENCH DRAIN ON THE EXISTING SITE AND TO CONSTRUCT A NEW STORMWATER F-6 BIORETENTION FACILITY AND NEW STORMWATER STRUCTURES AND PIPES TO COLLECT, TREAT, AND DISCHARGE RUNOFF TO THE EXISTING STORMWATER SYSTEM.

LEGEND

EXISTING CONTOUR	---	350
PROPOSED CONTOUR	---	350
PROPOSED MINOR CONTOUR	---	350
PROPERTY LINE	---	
FENCE	---	
STORM DRAIN	SD	SD
PROPOSED STORM DRAIN	---	
REMOVABLE BOLLARDS WITH CHAINS	---	
PAVEMENT PATCH	---	
EX. PIPE TRENCH DRAIN REMOVAL	---	
PRETREATMENT SYSTEM	---	

STORMWATER MANAGEMENT INFORMATION

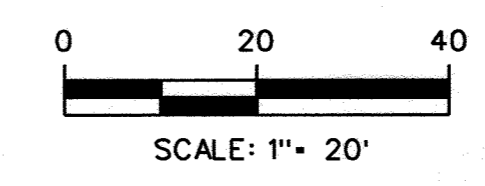
LOT/PARCEL NUMBER	FACILITY NAME & NUMBER	PRACTICE TYPE (QUANTITY)	PUBLIC	PRIVATE	HOA MAINTAINS	MISC.
386/H-2	WATER QUALITY FACILITY #3	F-6 BIORETENTION	NO	YES	NO	

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kristen Anderson 1/02/19
Chief, Development Engineering Division LAND DEVELOPMENT Date

Richard L. Sobott 12-20-18
Chief, Division of Land Development ENGINEERING DIVISION Date

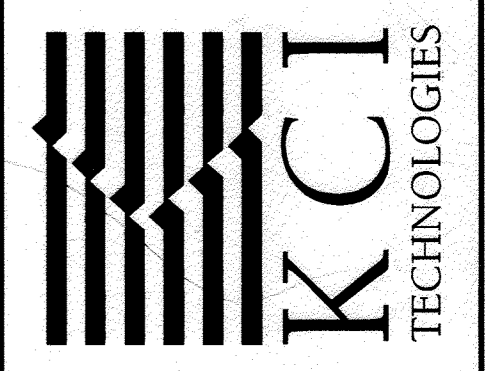
William J. Krahe 1-2-19
Director Date



SUBDIVISION NAME	SECTION/AREA	PARCEL*
E.G.U. SUBDIVISION	SECTION 2 / AREA 3	386/H2
PLAT OF LIFT GRID #	TAX MAP NO. / ELECT. DISTR. / CENSUS TRACT	
22/18	42	6
WATER CODE	SEWER CODE	
PUBLIC E-06	PUBLIC	5241400

NO.	REVISIONS DESCRIPTION	DATE
1	AS-BUILT SURVEY	

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com



COLUMBIA ASSOCIATION
MAINTENANCE FACILITY
WATER QUALITY ENHANCEMENT
REVISED SITE DEVELOPMENT PLAN

F-6
BIORETENTION
SYSTEM
PLAN

SCALE: 1" = 20'
DATE: SEPTEMBER 2018
KCI JOB NO.: 17134340.03
CAPITAL PROJECT NO.:
PERMIT ISSUE:
CONSTRUCTION ISSUE:

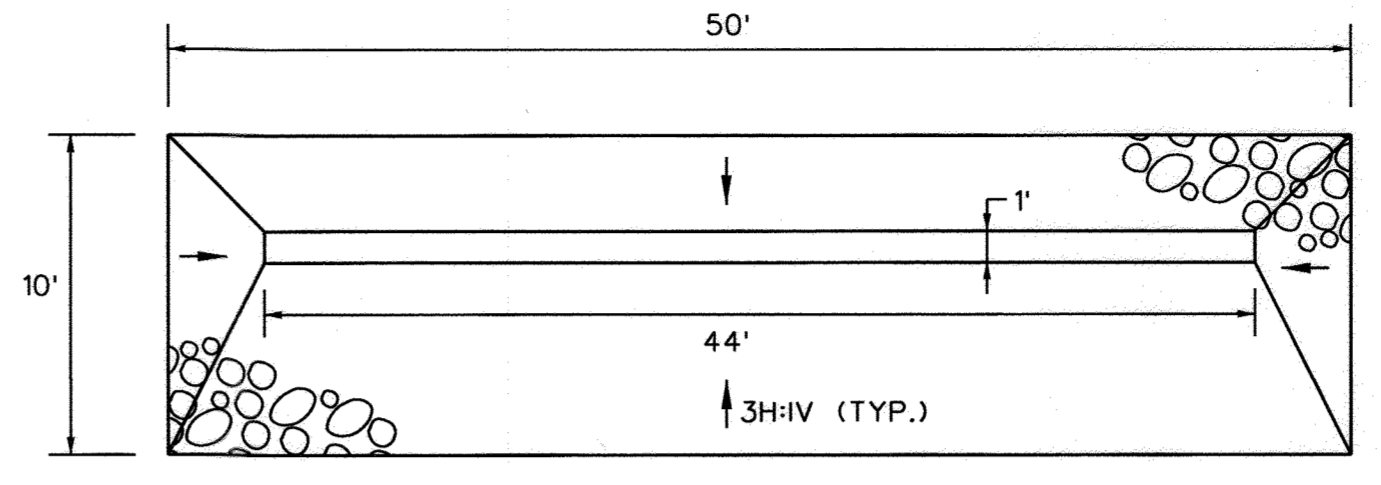
NO.	REVISIONS DESCRIPTION	DATE
A	AS-BUILT SURVEY	

936 RIDGEBROOK ROAD
 SPARKS, MARYLAND 21152
 TELEPHONE: (410) 316-7800
 FAX: (410) 316-7818
 www.kci.com

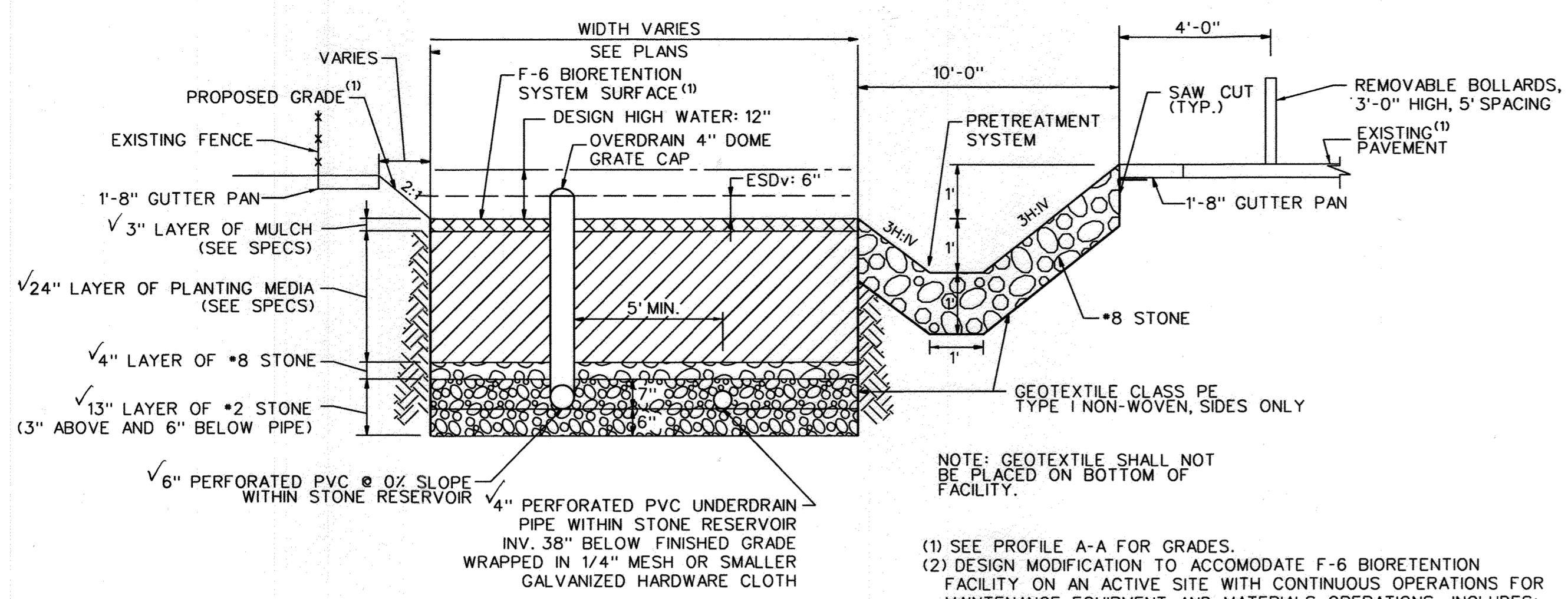
KCI
 TECHNOLOGIES

COLUMBIA ASSOCIATION
 MAINTENANCE FACILITY
 WATER QUALITY ENHANCEMENT
 REVISED SITE DEVELOPMENT PLAN

SWM	DESIGN WQV	AS-BUILT WQV
BIORETENTION FACILITY	1876 CF	198 CF

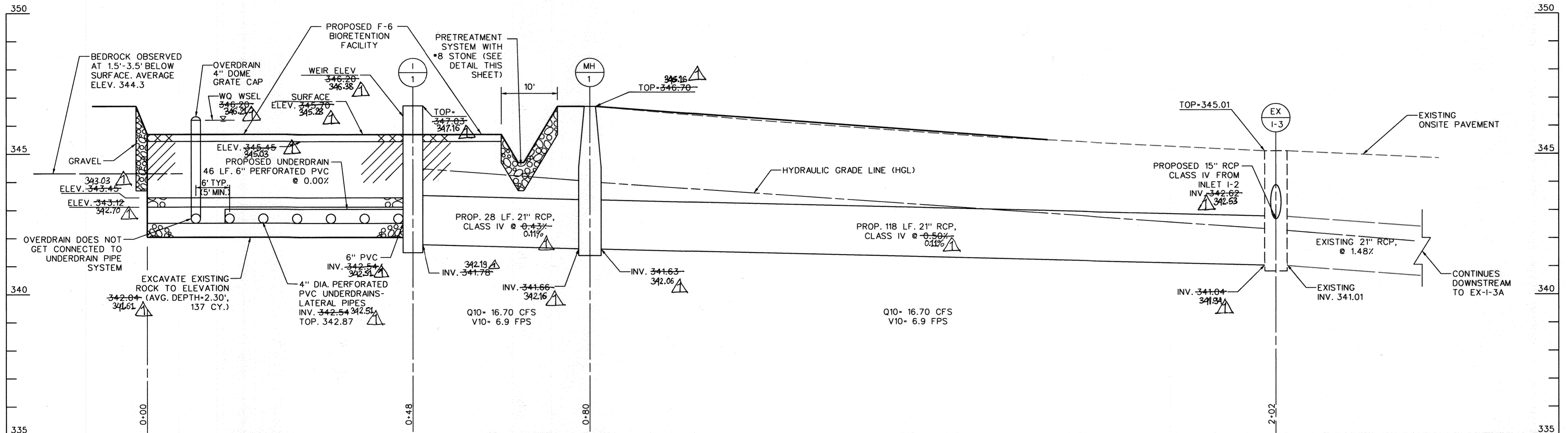


PRETREATMENT SYSTEM PLAN VIEW
 SCALE: NOT TO SCALE

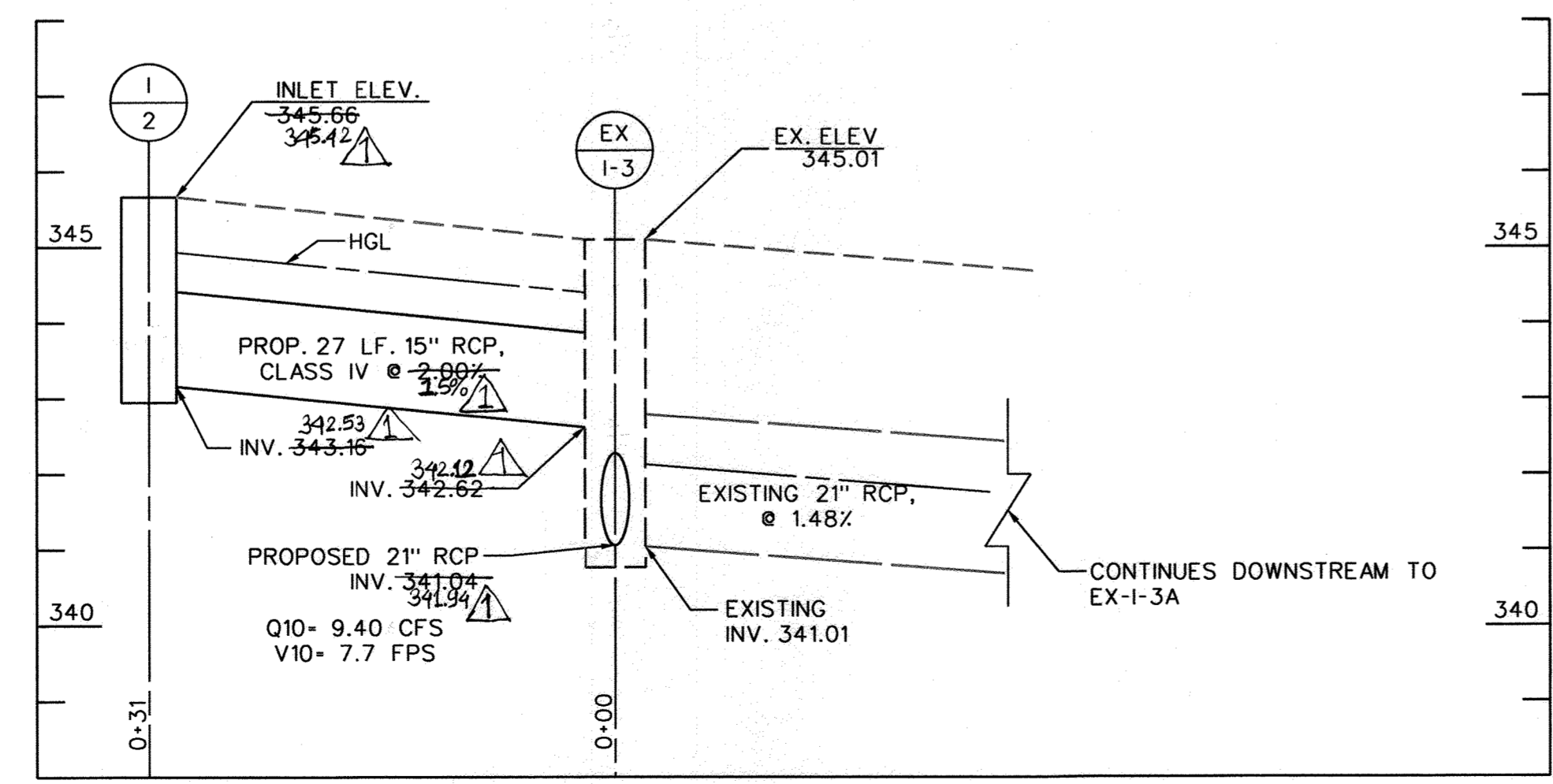


F-6 BIORETENTION TYPICAL SECTION
 SCALE: NOT TO SCALE

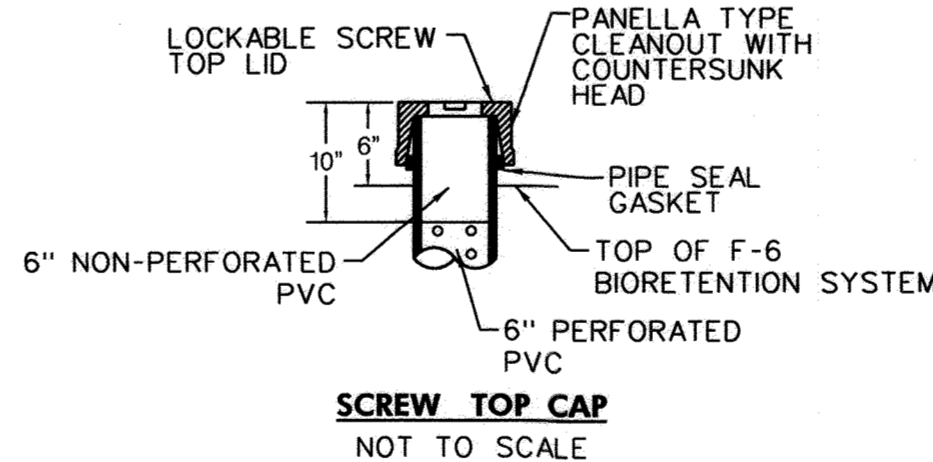
(1) SEE PROFILE A-A FOR GRADES.
 (2) DESIGN MODIFICATION TO ACCOMMODATE F-6 BIORETENTION FACILITY ON AN ACTIVE SITE WITH CONTINUOUS OPERATIONS FOR MAINTENANCE EQUIPMENT AND MATERIALS OPERATIONS. INCLUDES: PRETREATMENT SYSTEM STONE ALONG FRONT (SOUTHEAST) EDGE OF F-6 BIORETENTION FILTER AND PAVEMENT.



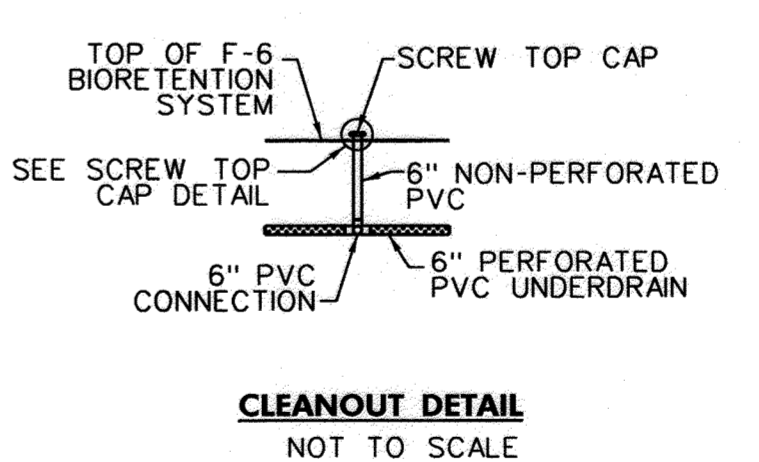
F-6 BIORETENTION & STORMDRAIN SYSTEM PROFILE A-A
 SCALE: HOR. 1" = 10'
 VERT. 1" = 2'



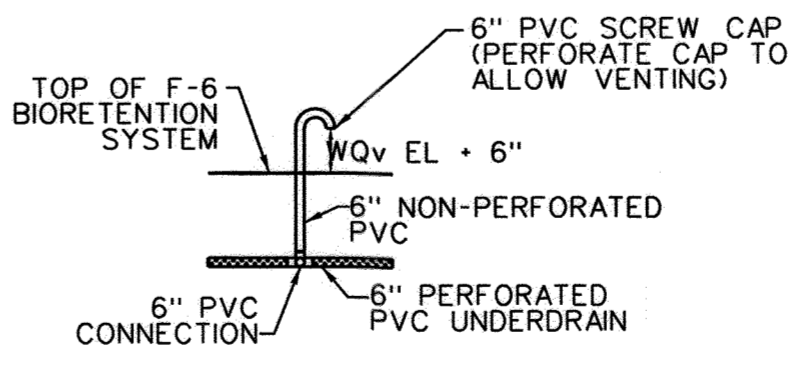
STORMDRAIN SYSTEM PROFILE B-B
 SCALE: HOR. 1" = 10'
 VERT. 1" = 2'



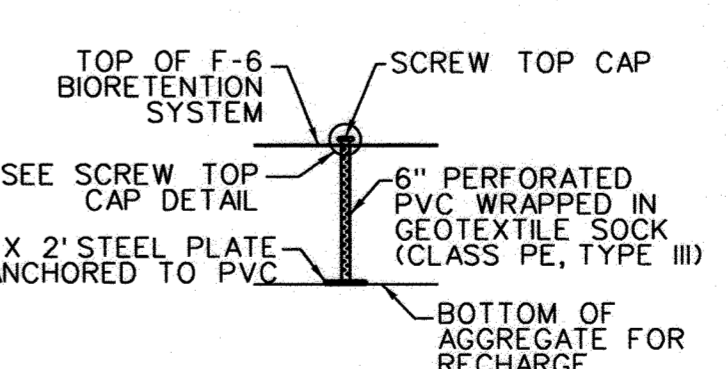
SCREW TOP CAP
 NOT TO SCALE



CLEANOUT DETAIL
 NOT TO SCALE



J-VENT DETAIL
 NOT TO SCALE



OBSERVATION WELL DETAIL
 NOT TO SCALE

- NOTES:
- FOR OBSERVATION WELL/CLEANOUT, PROVIDE A TUBE MADE OF NON-CORROSIVE MATERIAL, AT LEAST THREE FEET LONG WITH AN INSIDE DIAMETER OF AT LEAST 6 INCHES.
 - THE TUBE SHALL HAVE A FACTORY ATTACHED CAST IRON OR HIGH IMPACT PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING SCREW TOP LID. THE SCREW TOP LID SHALL BE CAST IRON OR HIGH IMPACT PLASTIC THAT WILL WITHSTAND ULTRA-VIOLET RAYS.
 - ALL VISIBLE PVC FEATURES ABOVE THE GROUND SURFACE SHALL BE BLACK IN COLOR.
 - PLACE CLEANOUTS AS SHOWN ON PLAN ON SHEET 10.

PURPOSE STATEMENT

THE PURPOSE OF THIS PROJECT IS TO REMOVE THE FAILED SAND FILTER AND TRENCH DRAIN ON THE EXISTING SITE AND TO CONSTRUCT A NEW STORMWATER F-6 BIORETENTION FACILITY AND NEW STORMDRAIN STRUCTURES AND PIPES TO COLLECT, TREAT, AND DISCHARGE RUNOFF TO THE EXISTING STORMDRAIN SYSTEM.

AS-BUILT CERTIFICATION

I hereby certify, by my seal, that to the best of my knowledge and belief the data shown on this plan was constructed as shown on the AS-BUILT plan that meet the approved plans and specifications.

RICHARD L. SOBOTT, 15222, 10/23/2022



APPROVED: DEPARTMENT OF PLANNING AND ZONING

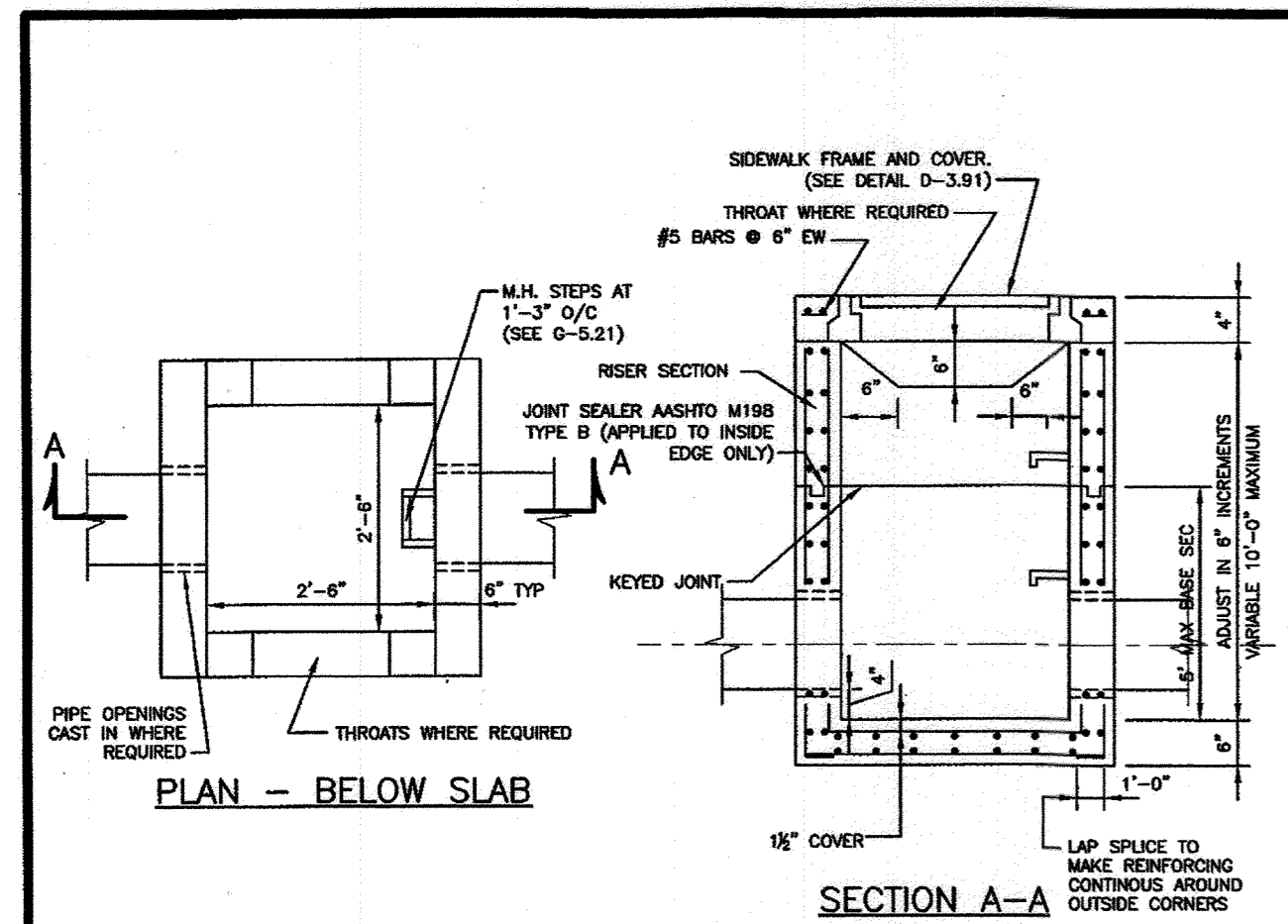
Chief, Development Engineering Division
 Chief, Division of Land Development
 Director

12-20-18
 1/02/19
 1-2-19

PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, RAYMOND J. KRAHE, PE, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 28634, EXPIRATION DATE: 2019-03-26.

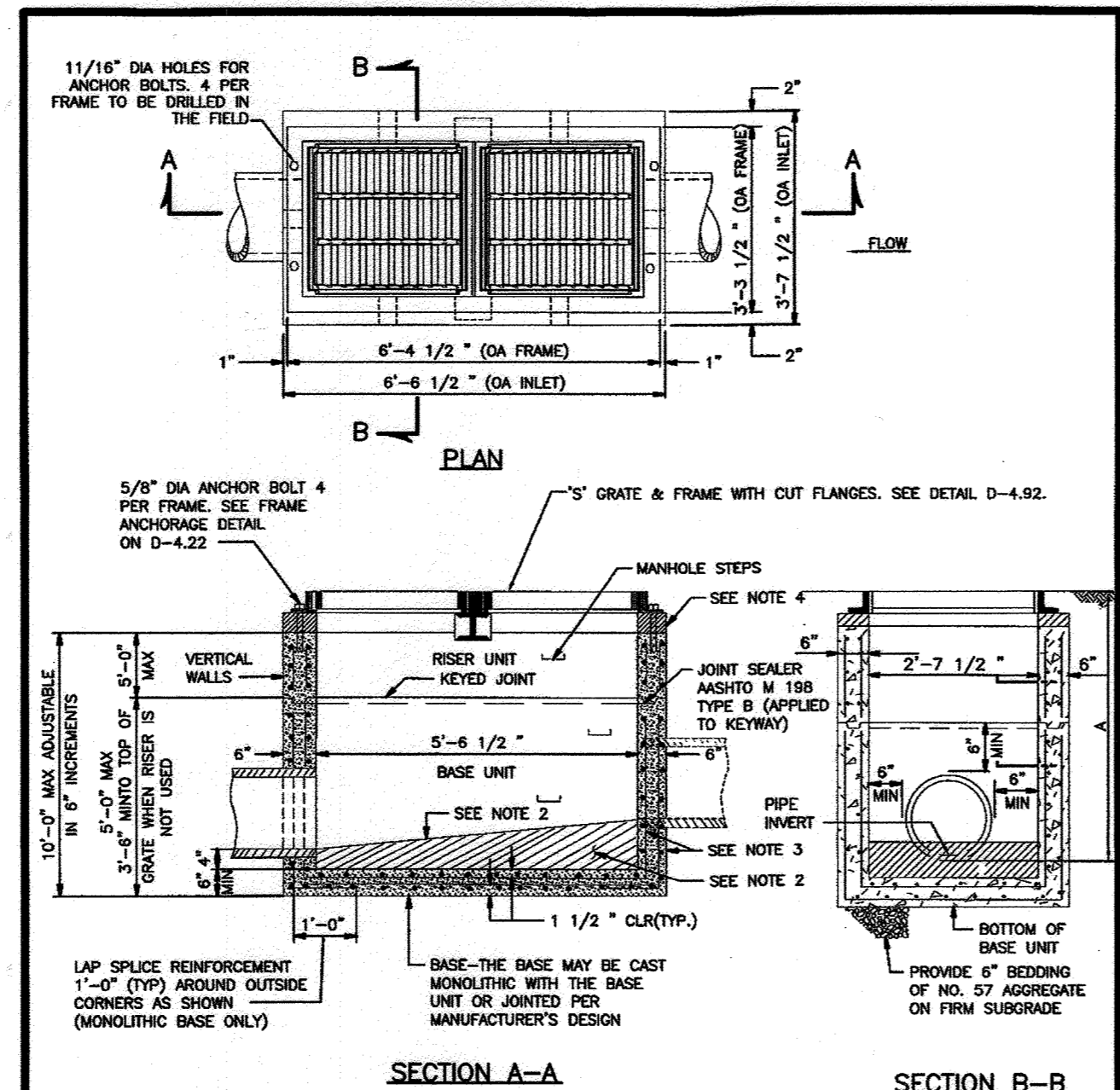
11-07-2018

SUBDIVISION NAME E.G.U. SUBDIVISION	SECTION/AREA SECTION 2 / AREA 3	PARCEL 386/H2
PLAT or L/F 22/18	GRID 10	ZONING NT
TAX MAP NO. 42	ELECT. DISTR. 6	CENSUS TRACT 6067.03
WATER CODE PUBLIC E-06	SEWER CODE PUBLIC 5241400	



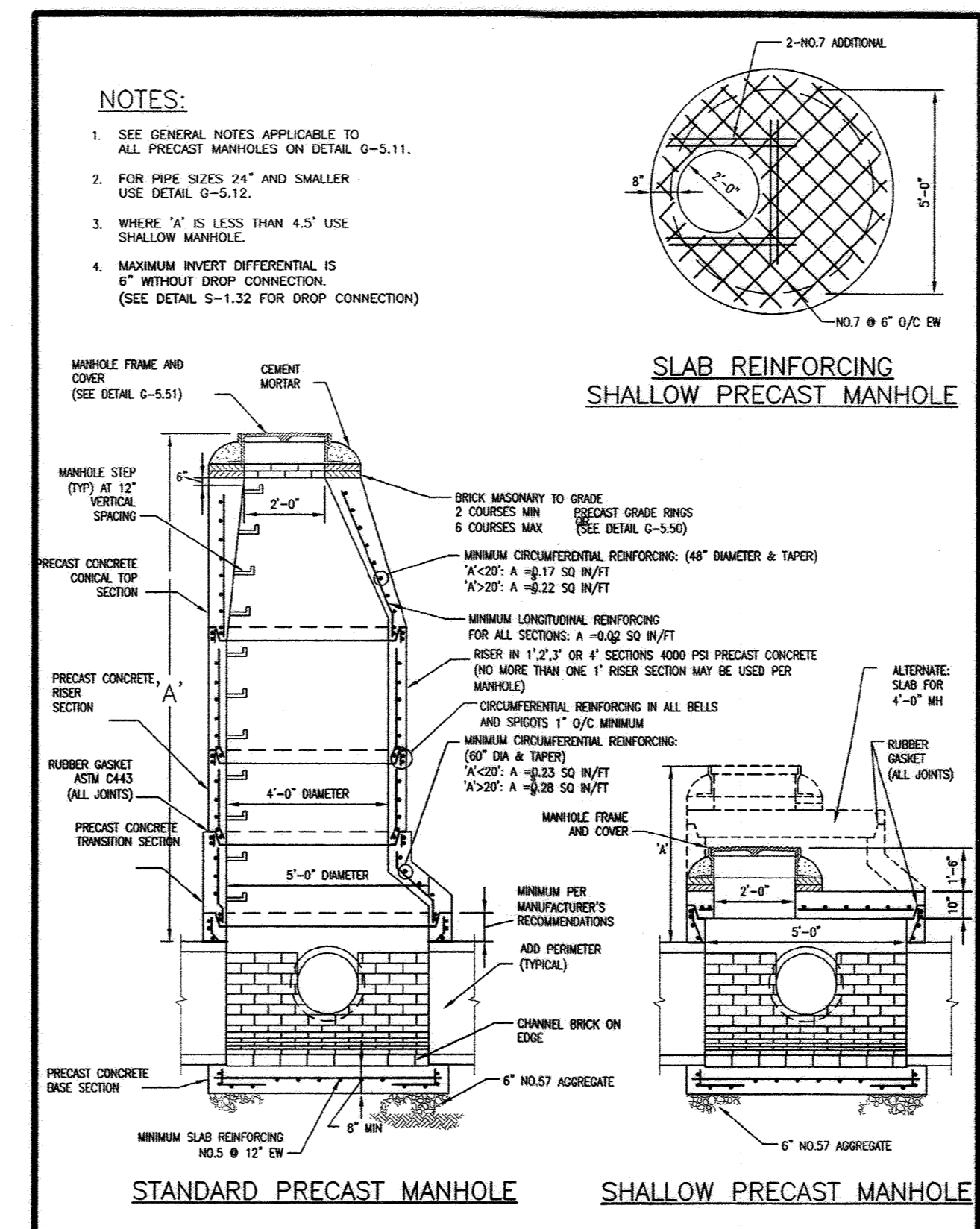
- NOTES:**
- CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF LATEST EDITION OF ACI 301 AND ACI 318.
 - PRECAST STRUCTURES SHALL BE DESIGNED BY A PRECAST CONCRETE STRUCTURES MANUFACTURER IN ACCORDANCE TO LOADINGS SPECIFIED IN LATEST EDITIONS OF ASTM C887 ASTM C890.
 - PRECAST STRUCTURES SHALL CONFORM TO THE REQUIREMENTS OF LATEST EDITIONS OF ASTM C888.
 - RESILIENT CONNECTORS BETWEEN MANHOLE STRUCTURES, PIPES AND LATERALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF LATEST EDITIONS OF ASTM C893.
 - OVERALL HEIGHT OF PRECAST IS ADJUSTABLE IN 6" INCREMENTS. FINAL GRADE ADJUSTMENTS SHALL BE MADE BY THE CONTRACTOR WITH BRICK AND MORTAR.
 - INVERT SHALL BE APPROVED PRECAST, PLAIN MIX NO.3 CONCRETE OR BRICK LAD ON EDGE. INVERT TO SLOPE DOWN TOWARD OUTLET AT THE RATE OF 2" PER FOOT, OR AS SHOWN ON PLAN OR AS DIRECTED. INVERT BRICK SHALL BE ASTM C32-91 GRADE SS.

Howard County, Maryland Department of Public Works	Type 'D' Inlet Precast	Detail D-4.10
---	---------------------------	------------------



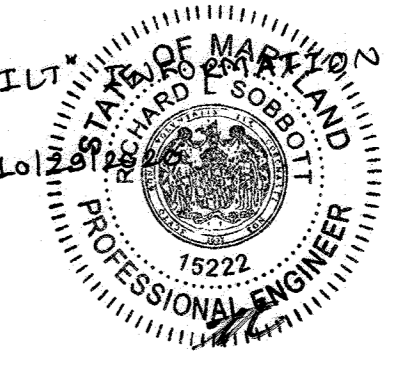
- NOTES:**
- SLAB SHALL BE MIX NO.3 CONCRETE.
 - INVERTS SHALL BE APPROVED PRECAST, PLAIN MIX NO.3 CONCRETE OR BRICK LAD ON EDGE. INVERT TO SLOPE DOWN TOWARD OUTLET AT THE RATE OF 2" PER FOOT, OR AS SHOWN ON PLAN OR AS DIRECTED. INVERT BRICK SHALL BE ASTM C32-91 GRADE SS.
 - REINFORCEMENT- 2 LAYERS OF 4 x 4-W4.0 x W4.0 WELDED WIRE FABRIC.
 - TOP 4" OF WALLS SHALL BE BRICK MASONRY. ADDITIONAL BRICK SHALL BE USED TO BRING THE GRATE TO EXISTING GRADE IF REQUIRED.
 - WHERE A IS 3'-6" OR GREATER STANDARD MANHOLE STEPS SHALL BE INSTALLED.

Howard County, Maryland Department of Public Works	Double Type 'S' Inlet	Detail D-4.23
---	-----------------------	------------------



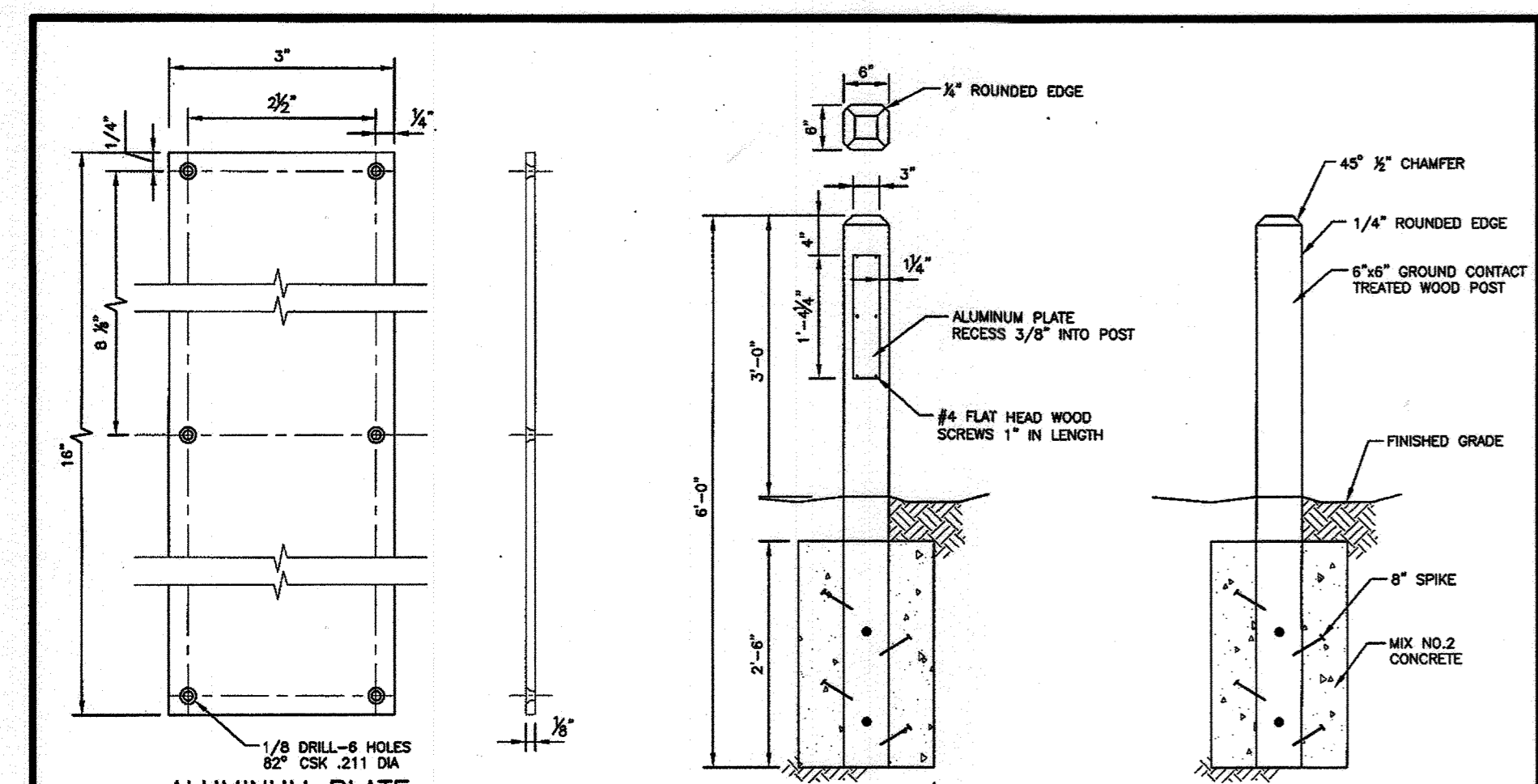
Howard County, Maryland Department of Public Works	PRECAST MANHOLE Standard and Shallow 5'-0" for 27" to 36" Pipe	Detail G-5.13
---	--	------------------

NOTE: THERE IS NO "AS-BUILT" PROVIDED ON THIS SHEET.
RICHARD SOBOTT, 1S222, 10128



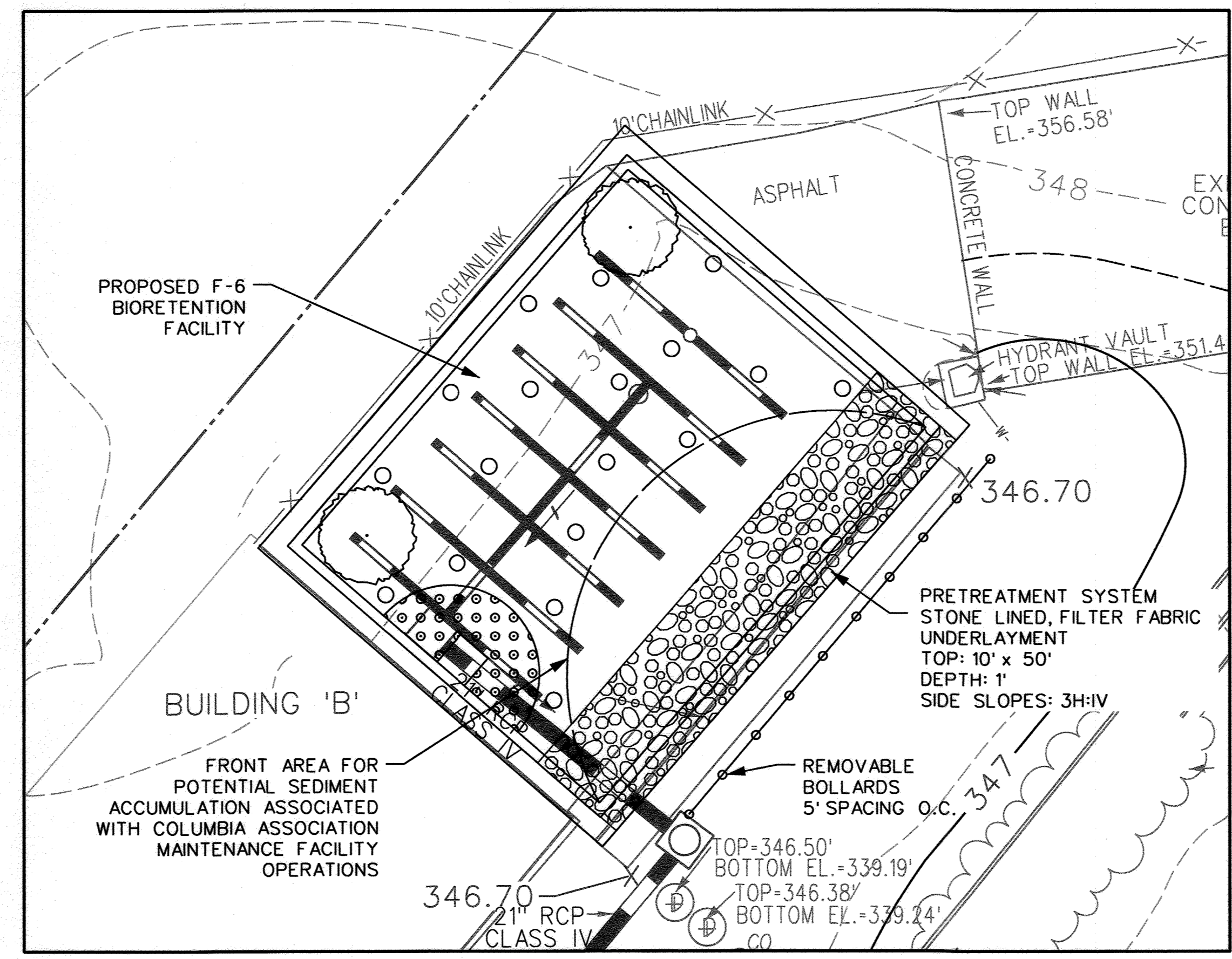
PURPOSE STATEMENT

THE PURPOSE OF THIS PROJECT IS TO REMOVE THE FAILED SAND FILTER AND TRENCH DRAIN ON THE EXISTING SITE AND TO CONSTRUCT A NEW STORMWATER F-6 BIORETENTION FACILITY AND NEW STORMDRAIN STRUCTURES AND PIPES TO COLLECT, TREAT, AND DISCHARGE RUNOFF TO THE EXISTING STORMDRAIN SYSTEM.



- NOTES: ALUMINUM PLATE**
- PLATE TO BE SCREWED & GLUED IN PLACE. SCREWS ARE TO BE COUNTERSINK.
 - BOLLARDS WILL BE PLACED AT THE FOUR CORNERS OF THE OPEN SPACE ACCESS STRIP.
 - THE ALUMINUM PLATE WILL ONLY BE REQUIRED ON THE FRONT RIGHT BOLLARD DIRECTLY FACING THE ROAD.

Howard County, Maryland Department of Public Works	Open Space Bollard	Detail G-7.41
---	--------------------	------------------



BIORETENTION FACILITY LANDSCAPE PLAN
SCALE: 1" = 10'

NAMES (COMMON /BOTANICAL)	PERCENT OF MIX
NATIVE WETLAND RETENTION SEED MIX	
VIRGINIA WILD RYE / ELYMUS VIRGINICUS	25%
DEER TONGUE TIGONIA / PANICUM CLANDISTINUM	25%
FOX SEDGE / CAREX VULPINOIDEA	20%
AUTUMN BENTGRASS / AGROSTIS PERENNANS	15%
TICKLEGRASS / AGROSTIS SCABRA	15%
TOTAL	100%
APPLICATION RATE: 20 LBSAC OR 1/3-1/2 LB PER 1,000 SQ. FT.	

F-6 BIORETENTION FACILITY PLANT LIST					
SYMBOL	QTY.	NAMES (COMMON /BOTANICAL)	SIZE	SPACING / RATE	FORM
TREES					
○	1	SERVICEBERRY /AMELANCHIER LAEVIS	1'-1/2" cal	12'-0" O.C.	B&B
○	1	WHITE FRINGETREE / CHIONARITHUS VIRGINICUS	1'-1/2" cal	12'-0" O.C.	B&B
SHRUB ZONE					
○	3	WINTER BERRY / ILEX VERTICILLATA	3'-0" HT	6'-8"	CONTAINER
○	3	HIGHBUSH BLUEBERRY / VACCINIUM CORYMBOSUM	3'-0" HT	6'-8"	CONTAINER
○	3	NANNY BERRY / VIBURNUM LENTAGO	3'-0" HT	6'-8"	CONTAINER
○	3	RED-OSIER DOGWOOD / CORNUS SERICEA	3'-0" HT	6'-8"/30%	CONTAINER
○	3	SWEET PEPPERBUSH / CLETHRA ALNIFOLIA	3'-0" HT	6'-8"/40%	CONTAINER
○	3	INKBERRY / ILEX GLABRA	3'-0" HT	6'-8"/40%	CONTAINER
HERBACEOUS ZONE					
⊙	29	BLUEFLAG / IRIS VERSICOLOR	2'-1/2" HT	2' O.C.	PLUG

COLUMBIA ASSOCIATION
MAINTENANCE FACILITY
WATER QUALITY ENHANCEMENT
REVISED SITE DEVELOPMENT PLAN

AS-BUILT
DETAILS &
F-6
BIORETENTION
LANDSCAPE
PLAN

SCALE: AS SHOWN
DATE: SEPTEMBER 2018
KCI JOB NO.: 17134.340.03
CAPITAL PROJECT NO.:
PERMIT ISSUE:
CONSTRUCTION ISSUE:

SUBDIVISION NAME E.G.U. SUBDIVISION	SECTION/AREA SECTION 2 / AREA 3	PARCEL # 386/H2
PLAT # or L77 (GRD) - 22/1B	ZONING 10	TAX MAP NO. ELECT. DIST. CENSUS TRACT 42 6 6067.03
WATER CODE PUBLIC	SEWER CODE PUBLIC	5241400

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, RAYMOND J. KRAHE, PE, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 28634, EXPIRATION DATE: 2019-03-26

APPROVED: DEPARTMENT OF PLANNING AND ZONING

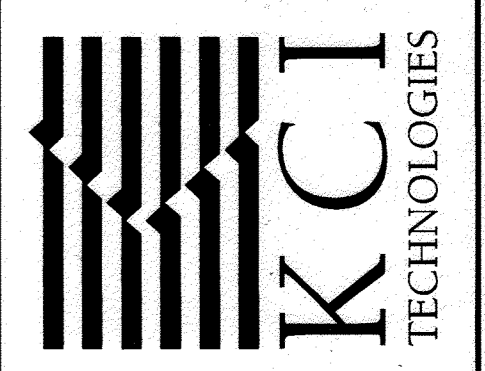
[Signature] 12-20-18
Chief, Development Engineering Division Date

[Signature] 1/02/19
Chief, Division of Land Development Date

[Signature] 1-2-19
Director Date

NO.	REVISIONS DESCRIPTION	DATE

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com



**HOWARD SOIL CONSERVATION DISTRICT (HSCD)
STANDARD SEDIMENT CONTROL NOTES**

- A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48-hour notice to CID must be given at the following stages:
 - Prior to the start of earth disturbance.
 - Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading.
 - Prior to the start of another phase of construction or opening of another grading unit.
 - Prior to the removal or modification of sediment control practices.

Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.

- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
- Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be mulched with stable mulch. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
- All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.

- Inspection date
- Inspection type (routine, pre-storm event, during rain event)
- Name and title of inspector
- Weather information (current conditions as well as time and amount of last recorded precipitation)
- Brief description of project's status (e.g., percent complete) and/or current activities
- Evidence of sediment discharges
- Identification of plan deficiencies
- Identification of sediment controls that require maintenance
- Identification of missing or improperly installed sediment controls
- Compliance status regarding the sequence of construction and stabilization requirements
- Photographs
- Monitoring/sampling
- Maintenance and/or corrective action performed
- Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPPDES, MDE).

- Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
- Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may be allowed by the CID per the list of HSCD-approved field changes.
- Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the CID, no more than 30 acres cumulatively may be disturbed at a given time.
- Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
- Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.
- All Silt Fence and Saper Silt Fence shall be placed on-the-contour, and be lubricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.
- Stream channels must not be disturbed during the following restricted time periods (inclusive):
 - Use I and IP March 1 - June 15
 - Use III and IIIIP October 1 - April 30
 - Use IV March 1 - May 31

(A) Cut Concrete - 44 Cu. Yds.
Cut Soil - 104 Cu. Yds.
Excavate Rock - 137 Cu. Yds.
Total - 285 Cu. Yds.
(B) Fill Bioretention material

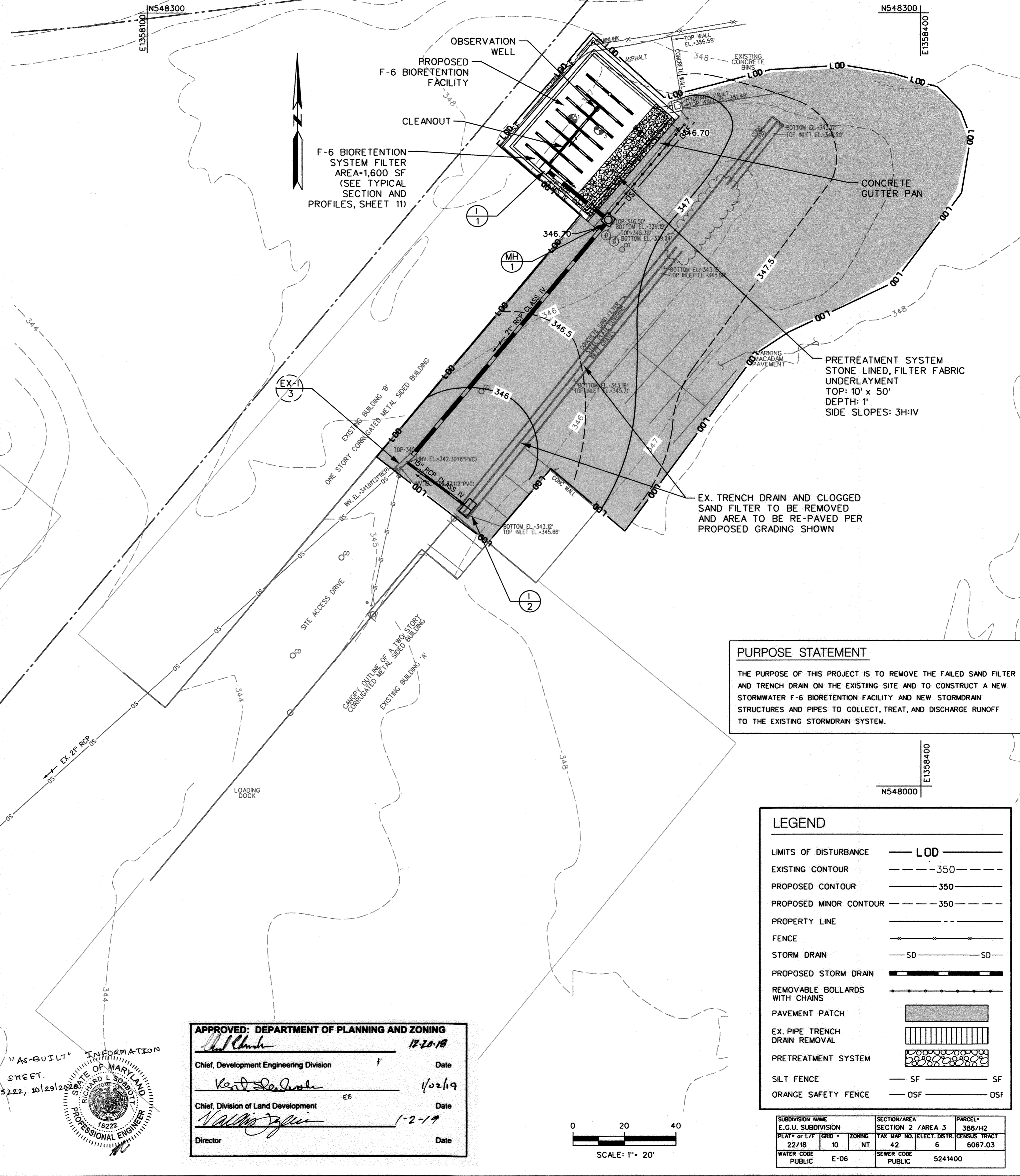
Rev. 8/2015

SEQUENCE OF CONSTRUCTION

- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777.
- CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING THAT SHALL INCLUDE COLUMBIA ASSOCIATES' PROJECT MANAGER AND MAINTENANCE FACILITY PERSONNEL.
- MARK LOD PRIOR TO PRE-CONSTRUCTION MEETING.
- CONTRACTOR SHALL MINIMIZE THE IMPACT ON EXISTING UTILITIES AND OTHER EXISTING FEATURES.
- CONTRACTOR SHALL CAUTION THE EQUIPMENT OPERATORS TO TAKE EXTRA PRECAUTION WHILE DRIVING WITHIN THE COLUMBIA ASSOCIATES MAINTENANCE FACILITY PARKING LOT.
- PARKING LOT SHALL BE SWEEPED CLEAN AT THE END OF EACH WORK DAY TO MINIMIZE SEDIMENT-LADEN RUNOFF TO INLETS.
- IF F-6 BIORETENTION EXCAVATION REQUIRES THE REMOVAL OF STANDING WATER, IT SHALL BE PUMPED TO A DEWATERING BAG, OR OTHER SUITABLE DEVICE PRIOR TO DISCHARGE INTO THE EXISTING STORM DRAIN.
- FOLLOWING F-6 BIORETENTION FACILITY CONSTRUCTION, PLACE PLANTINGS ACCORDING TO LANDSCAPE PLAN.
- AT PROJECT COMPLETION, RESTRIPE PARKING SPACES, AS REQUIRED, AND REMOVE ANY REMAINING SEDIMENT AND/OR DEBRIS FROM THE PARKING LOT.

BIORETENTION

- CONSTRUCT STORM DRAIN SYSTEM FROM INLET I-1 TO MH-1 AND TO EXISTING INLET EX-1-3, AS SHOWN ON THE PLANS, CONNECT TO EX-1-3 DURING A DRY WEATHER FORECAST.
- CONSTRUCT PAVEMENT PATCH, AS SHOWN ON THE PLANS.
- CONSTRUCT F-6 BIORETENTION SYSTEM.



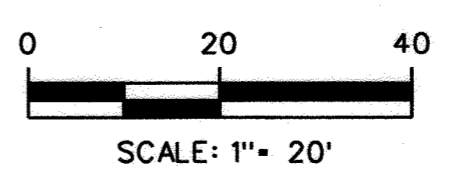
PURPOSE STATEMENT

THE PURPOSE OF THIS PROJECT IS TO REMOVE THE FAILED SAND FILTER AND TRENCH DRAIN ON THE EXISTING SITE AND TO CONSTRUCT A NEW STORMWATER F-6 BIORETENTION FACILITY AND NEW STORMDRAIN STRUCTURES AND PIPES TO COLLECT, TREAT, AND DISCHARGE RUNOFF TO THE EXISTING STORMDRAIN SYSTEM.

LEGEND

LIMITS OF DISTURBANCE	LOD
EXISTING CONTOUR	350
PROPOSED CONTOUR	350
PROPOSED MINOR CONTOUR	350
PROPERTY LINE	
FENCE	
STORM DRAIN	SD
PROPOSED STORM DRAIN	
REMOVABLE BOLLARDS WITH CHAINS	
PAVEMENT PATCH	
EX. PIPE TRENCH DRAIN REMOVAL	
PRETREATMENT SYSTEM	
SILT FENCE	SF
ORANGE SAFETY FENCE	OSF

SUBDIVISION NAME	SECTION/AREA	PARCEL
E.G.U. SUBDIVISION	SECTION 2 / AREA 3	386/H2
PLAT or L/P	GRID * ZONING	TAX MAP NO./ELECT. DISTR. CENSUS TRACT
22/18	10 NT	42 6 6067.03
WATER CODE	SEWER CODE	
PUBLIC E-06	PUBLIC 5241400	



APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 12-20-18
Chief, Development Engineering Division Date

[Signature] 1/02/19
Chief, Division of Land Development Date

[Signature] 1-2-19
Director Date

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
RICHARD SOBOTT, 15222, 10/29/2020

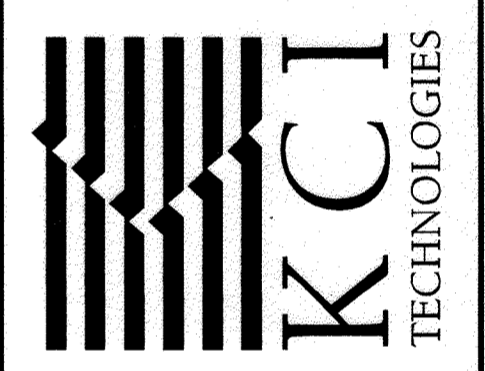


PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, RAYMOND J. KRAHE, PE, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 28634 EXPIRATION DATE: 2019-03-26

[Signature] 11-07-2018

NO.	REVISIONS DESCRIPTION	DATE

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com



COLUMBIA ASSOCIATION
MAINTENANCE FACILITY
WATER QUALITY ENHANCEMENT
REVISED SITE DEVELOPMENT PLAN

AS-BUILT
EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 20'
DATE: SEPTEMBER 2018
KCI JOB NO.: 17134340.03
CAPITAL PROJECT NO.:
PERMIT ISSUE:
CONSTRUCTION ISSUE:

B-4-2 STANDARDS AND SPECIFICATIONS

FOR

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition
The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose
To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies
Where vegetative stabilization is to be established.

Criteria

- 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 construction equipment, such as disc harrows or chiselplows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
 - b. Apply fertilizer and lime as prescribed on the plans.
 - c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
 - 2. Permanent Stabilization
 - a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - i. Soil pH between 6.0 and 7.0.
 - ii. Soluble salts less than 500 parts per million (ppm).
 - iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is lowgrass will be planted on 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 topsoils required if on-site soils do not meet the above conditions.
 - c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
 - d. Apply 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 down areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracking equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and 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 soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
 - 2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. The depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
 - 3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
 - a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
 - b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
 - c. The original soil to be vegetated contains material toxic to plant growth.
 - d. The soil is so acidic that treatment with limestone is not feasible.
 - 4. Areas having slopes steeper than 2:1 require special consideration and design.
 - 5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
 - a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 2 inches in diameter.
 - b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
 - c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

- 6. Topsoil Application
 - a. Erosion and sediment control practices must be maintained when applying topsoil.
 - b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from grading or other operations must be corrected in order to prevent the formation of depressions or water pockets.
 - c. Topsoil must not be placed if the topsoil or subsoils in a frozen or muddy condition, when the subsoil is excessively wet or on 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 engineering purposes may also be used for chemical analyses.
 - 2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
 - 3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydrosedding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
 - 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 subsoils are either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

- B. Mulching
 - 1. Mulch Materials (in order of preference)
 - a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, coked, decayed, or excessively discolored. Use only sterile straw mulch in areas where one species of grass is desired.
 - b. Wood Cellulose Fiber Mulch (WCFFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - i. WCFFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 - ii. WCFFM, including dye, must contain no germination or growth inhibiting factors.
 - iii. WCFFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
 - iv. WCFFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
 - v. WCFFM 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 a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
 - c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to obtain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - 3. Anchoring
 - a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
 - i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
 - ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water to a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 - iii. Synthetic binders such as Acrylic DLR (Agra-Tack), DCA-70, Petrosel, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders is strictly prohibited at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt netting is strictly prohibited.
 - iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

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

FOR STOCKPILE AREA

Definition
A 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 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 to the stockpile area from the upgrade.
- 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 fill, an appropriate 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 and Standard 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 impermeable sheeting.

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

FOR STOCKPILE AREA

Definition
To stabilize disturbed soils with permanent vegetation.

Purpose
To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies
Exposed soils where ground cover is needed for 6 months or more.

Criteria

- 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 Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - c. For sites having disturbed area over 5 acres, use 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 (150 pounds per acre) at the time of seeding; in addition to the soil amendments shown in the Permanent Seeding Summary.
 - 2. Turfgrass Mixtures
 - a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 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.
 - ii. Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in full sun areas where

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

FOR STOCKPILE AREA

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.

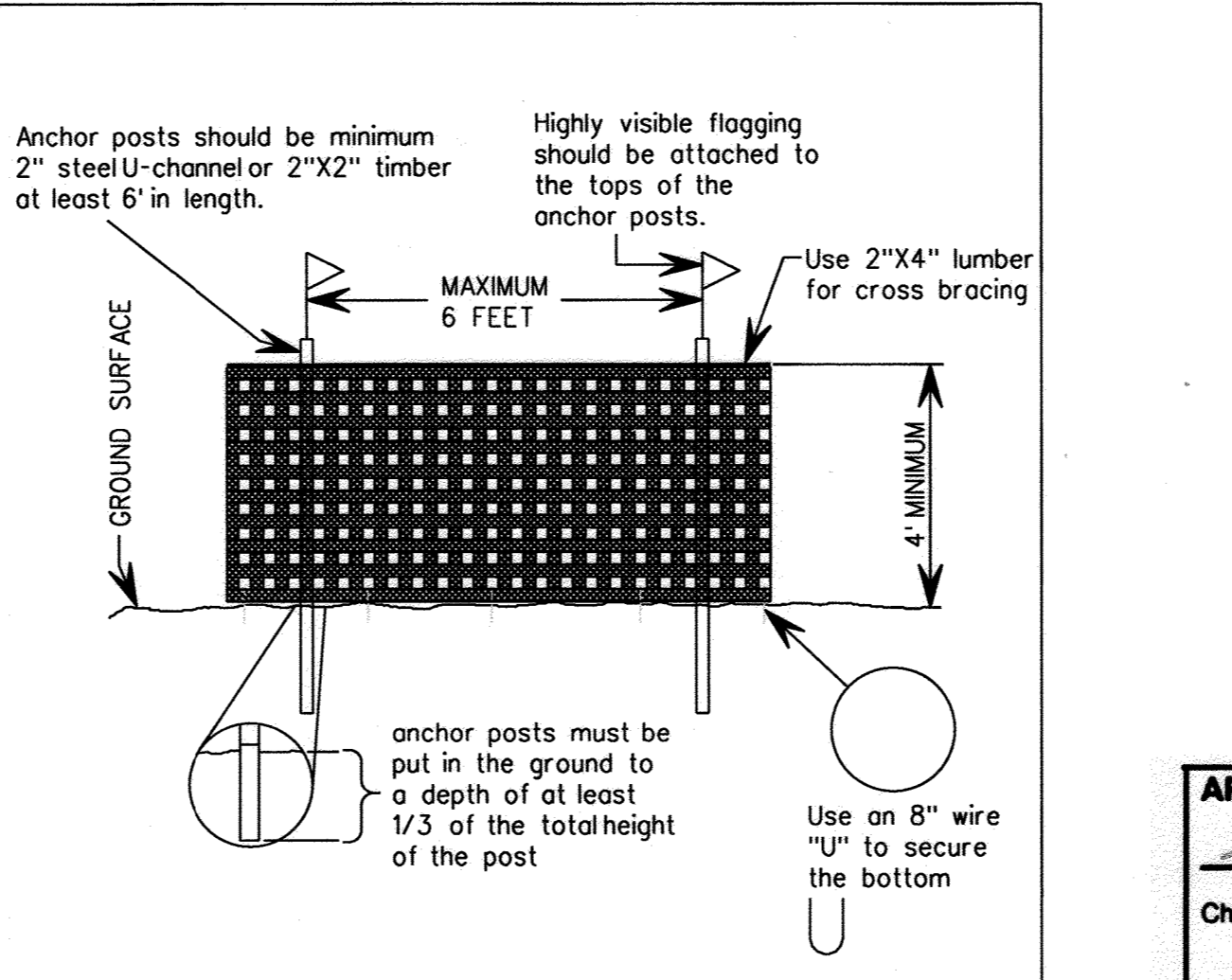
Criteria

- 1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
- 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 alone as prescribed in Section B-4.3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

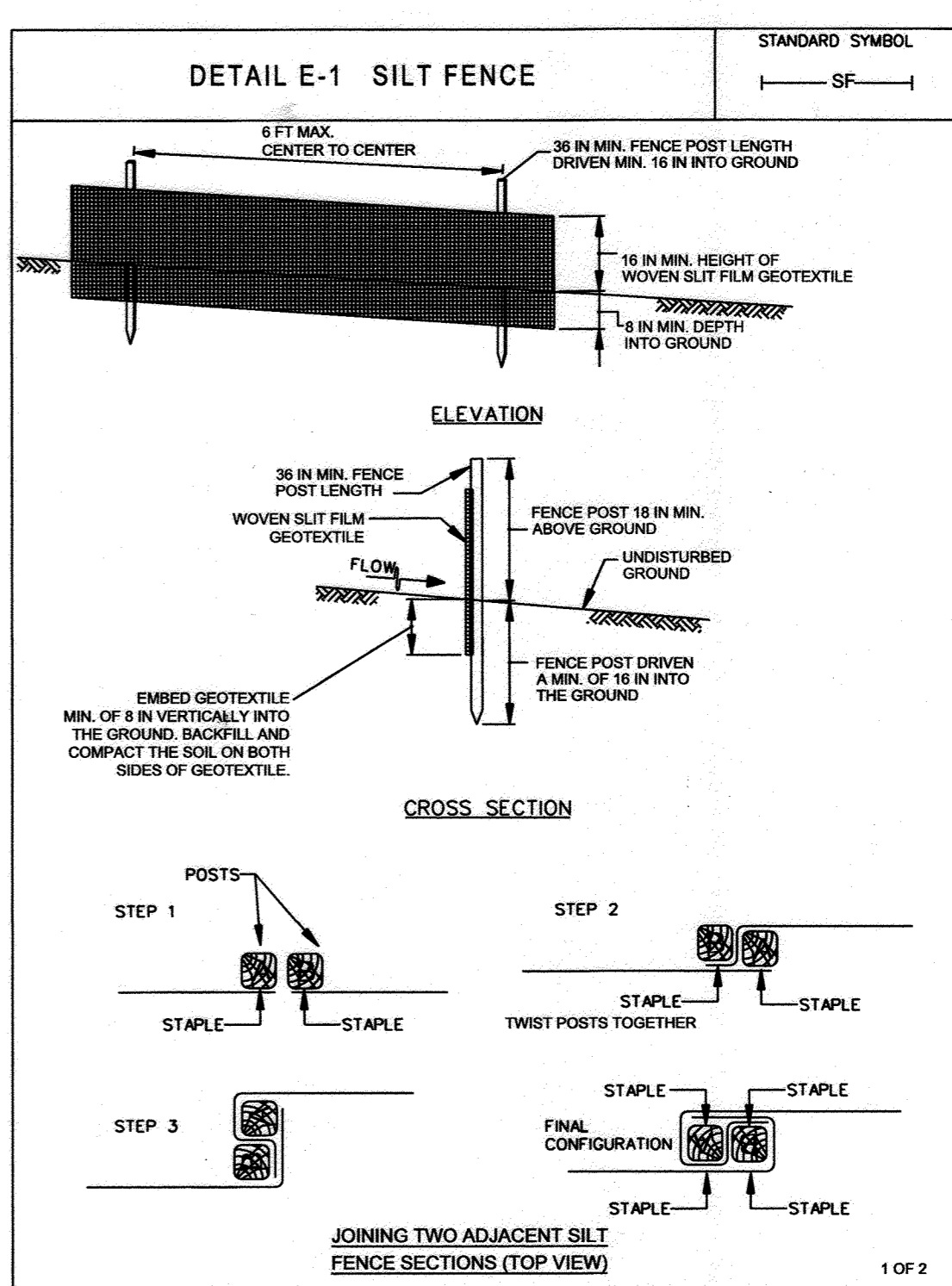
No.	Hardiness Zone (from Figure B.3): 7a		Seeding Dates	Seeding Depths	Fertilizer Rate (lb/30-20)	Lime Rate
	Species	Application Rate (lb/ac)				
	Annual Ryegrass	40	Feb. 15 to Apr. 15	1/2 to 1"		
	Barley	96	Aug. 15 to Nov. 30	1/2 to 1"	436 lb/ac (10 lb/1000 sq ft)	2 tons/ac (90 lb/1000 sq ft)
	Foxtail Millet	30	May 1 to Aug. 15	1/2 to 1"		

- NOTES:**
- 1. Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season. Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seed mix. Cereals are generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereals have allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.
 - 2. Oats are the recommended nurse crop for warm-season grasses.
 - 3. For sandy soils, plant seeds at twice the depth listed above.
 - 4. The planting dates listed are overages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.



DETAIL FOR BLAZE ORANGE PLASTIC MESH SAFETY FENCE
NOT TO SCALE

DETAIL E-1 SILT FENCE



MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

CONSTRUCTION SPECIFICATIONS

- 1. USE WOOD POSTS 1 1/2 X 1 1/2 INCH MINIMUM SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- 2. USE 36 INCH MINIMUM POSTS DRIVEN 18 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- 3. USE WOVEN SILT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- 4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- 5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FENCE.
- 6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN, OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- 7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- 8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

PURPOSE STATEMENT

THE PURPOSE OF THIS PROJECT IS TO REMOVE THE FAILED SAND FILTER AND TRENCH DRAIN ON THE EXISTING SITE AND TO CONSTRUCT A NEW STORMWATER F-6 BIORETENTION FACILITY AND NEW STORMWATER STRUCTURES AND PIPES TO COLLECT, TREAT, AND DISCHARGE RUNOFF TO THE EXISTING STORMWATER SYSTEM.

NO AS-BUILT INFORMATION THIS SHEET.

NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
RICHARD SOBOTT, 15222, 10/29/2020.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division Date 1/20/15
Chief, Division of Land Development Date 1/02/19
Director Date 1-2-19

SUBDIVISION NAME E.G.U. SUBDIVISION	SECTION/AREA SECTION 2 / AREA 3	PARCEL # 386-H2
PLAT # OR LVT 22/18	GRID # 42	ZONING NT
WATER CODE PUBLIC	TAX MAP NO. 42	ELECT. DIST. PUBLIC
SEWER CODE E-06	SEWER CODE 5241400	DENSITY TRACT 6067.03

NO.	REVISIONS DESCRIPTION	DATE

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com

KCI TECHNOLOGIES

COLUMBIA ASSOCIATION MAINTENANCE FACILITY WATER QUALITY ENHANCEMENT REVISED SITE DEVELOPMENT PLAN

COLUMBIA ASSOCIATION MAINTENANCE FACILITY WATER QUALITY ENHANCEMENT
COLUMBIA ASSOCIATION
9450 GERRING LANE
COLUMBIA, MD 21046

AS-BUILT EROSION & SEDIMENT CONTROL NOTES & DETAILS

SCALE: AS SHOWN
DATE: SEPTEMBER 2018
KCI JOB NO.: 17134.340.03
CAPITAL PROJECT NO.:
PERMIT ISSUE:
CONSTRUCTION ISSUE: