

BLANDAIR PARK - PHASE 6

HOWARD COUNTY, MARYLAND

CAPITAL PROJECT #N-3102

SITE DEVELOPMENT PLAN SDP-23-016

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY SPECIFICATIONS AND DETAILS FOR CONSTRUCTION PLUS MDOT SHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 10/06/2013 COMPREHENSIVE ZONING PLAN.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING OR NEW STRUCTURES SHALL BE PERMITTED WITHIN WETLANDS, STREAMS, WETLAND OR STREAM BUFFERS, 100-YEAR FLOODPLAIN, OR FOREST CONSERVATION EASEMENTS UNLESS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. NO SURETY IS REQUIRED FOR CAPITAL PROJECTS.
- THE FOREST STAND DELINEATION FOR THIS PROJECT WAS PREPARED BY WHITMAN, REQUARDT & ASSOCIATES AND CONFIRMED ON FEBRUARY 23, 2022.
- THIS PROJECT RECEIVED ALTERNATIVE COMPLIANCE APPROVAL, WP-22-099, ON MAY 11, 2023 TO PHASE THE REQUIREMENTS OF SUBSECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION, SUBJECT TO THE FOLLOWING CONDITIONS:
 - THE TOTAL FOREST CONSERVATION OBLIGATION FOR THE ENTIRE BLANDAIR REGIONAL PARK DEVELOPMENT SHALL BE INCLUDED IN A FOREST CONSERVATION PLAN SUBMITTED WITH EACH PHASE SITE DEVELOPMENT PLAN. THE FOREST CONSERVATION PLAN SUBMITTED WITH EACH RESPECTIVE PHASE SITE DEVELOPMENT PLAN SHALL DEPICT THE FOREST CONSERVATION AREAS BEING PROPOSED TO SATISFY THE FOREST CONSERVATION OBLIGATION FOR THE BLANDAIR REGIONAL PARK DEVELOPMENT GIVEN THE OBLIGATION AS A RESULT OF THAT PHASE.
 - THE APPLICANT SHALL SUBMIT A FINAL PLAN APPLICATION TO INCLUDE A PLAT OF ALL FOREST CONSERVATION EASEMENT AREAS CONCURRENTLY WITH THE SUBMISSION OF THE SITE DEVELOPMENT PLAN FOR THE FINAL PHASE OF BLANDAIR REGIONAL PARK. THE FOREST CONSERVATION EASEMENT AREAS DEPICTED ON THE PLAT SHALL INCLUDE THOSE APPROVED ON PRIOR SITE DEVELOPMENT PLAN PHASES AND THOSE AREAS PROPOSED ON THE FINAL PHASE SITE DEVELOPMENT PLAN.
- THIS PROJECT WAS APPROVED FOR A WAIVER FROM THE REQUIREMENTS OF SUBSECTION 16.116(A)(2)(III) OF THE HOWARD COUNTY CODE - PROHIBITING GRADING, REMOVAL OF VEGETATIVE COVER, PAVING, AND NEW STRUCTURES WITHIN 100 FT STREAM BUFFER. WAIVER WAS APPROVED ON 05/11/2023 UNDER ALTERNATIVE COMPLIANCE #WP-22-099. APPROVAL OF ALTERNATIVE COMPLIANCE OF SECTION 16.116(A)(2)(III) IS SUBJECT TO THE FOLLOWING CONDITIONS:
 - DISTURBANCE SHOULD BE ONLY FOR THE MINIMUM NECESSARY TO PAVE A PARKING LOT, REPAVE AN EXISTING PATHWAY AND CONSTRUCT UTILITIES, AND THE NECESSARY GRADING SHOWN IN THE LIMITS OF DISTURBANCE ON THE SITE DEVELOPMENT PLAN, SDP-23-016.
- RECOMMENDATION - PARK MAINTENANCE AND OPERATION SHOULD TAKE REASONABLE MEASURES AND USE BEST MANAGEMENT PRACTICES TO ENSURE THE PARKING LOT PERMEABLE PAVERS ARE MAINTAINED TO INDUSTRY STANDARDS. IF POSSIBLE, OPERATIONS SHOULD LIMIT OR AVOID SALT TREATMENT OF THE PERMEABLE PAVERS DURING WINTER STORM EVENTS, ESPECIALLY GIVEN THE PROXIMITY TO THE STREAM.
- WATER IS PUBLIC: CONTRACT NUMBER 44-5219-D.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UP ON THE MARYLAND STATE PLANE COORDINATE SYSTEM: HORIZONTAL NAD'83/91 VERTICAL NAVD'88.
HOWARD COUNTY MONUMENTS USED FOR THIS PROJECT:
30HA: N 566030.6258, E 1357989.5444
36BC: N 563264.1261, E 1359585.7197
- THERE IS NO 100-YEAR APPROXIMATE FLOODPLAIN ON NFIP FIRM PANEL 24027C0155D, DATED 11/6/2013 WITHIN THE PROJECT LIMITS.
- THE WETLANDS DELINEATION STUDY FOR THE PROJECT WAS PREPARED BY WHITMAN, REQUARDT & ASSOCIATES AND REVIEWED AND CONCURRED IN THE FIELD WITH MDE AND USACE ON AUGUST 17, 2009 AND CONFIRMED ON FEB. 23, 2022.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY WHITMAN, REQUARDT & ASSOCIATES AND WAS APPROVED ON JULY 26, 2012 BY PLANNING AND ZONING, DEVELOPMENT ENGINEERING DIVISION AND DEPARTMENT OF PUBLIC WORKS, TRAFFIC ENGINEERING DIVISION.
- TOPOGRAPHICAL FIELD SURVEYS OF THE SITE WERE PERFORMED BY WHITMAN, REQUARDT AND ASSOCIATES LLP (WRA) IN MARCH 2008. ADDITIONAL UTILITY INFORMATION WAS PROVIDED BY HOWARD COUNTY RECORDS AND MAY NOT REFLECT CURRENT CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION.
- APPROXIMATE LOCATION AND INVERTS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN AN UNINTERRUPTED SERVICE. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES BY TEST PIT OR OTHER MEANS OF INVESTIGATION APPROVED BY THE OWNER WELL IN ADVANCE OF CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF MDOT SHA'S MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL TRAFFIC SIGNS SHALL CONFORM TO THE LATEST VERSION OF MDOT SHA'S STANDARD SIGN BOOK.
- ALL TRASH AND REFUSE WILL BE RESPONSIBILITY OF THE DEPARTMENT OF RECREATION AND PARKS, AND WILL BE REMOVED FROM THE PARK ON A WEEKLY BASIS. DURING CONSTRUCTION, ALL TRASH AND REFUSE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ENVIRONMENTAL SITE DESIGN (ESD) IS INCORPORATED INTO THE PHASE 6 DEVELOPMENT AT THE MAXIMUM EXTENT POSSIBLE. ESD FACILITIES INCLUDE PERVIOUS PAVERS (ALTERNATE SURFACE) AND MICRO-BIORETENTIONS FACILITIES. AN EXTENDED DETENTION SHALLOW WETLAND POND WAS CONSTRUCTED UNDER PHASE 1 AND PROVIDES MITIGATION OF THE 100-YEAR EVENT. ANOTHER EXTENDED DETENTION POND WAS INSTALLED UNDER PHASE J AND PROVIDES ADDITIONAL MITIGATION OF THE 100-YEAR EVENT. HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS WILL BE RESPONSIBLE FOR MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES.
- 20' SANITARY SEWER WATER EASEMENT WAS PROVIDED WITH CONTRACT NO. 24-4637-D; THE 20' WATER EASEMENT WAS PROVIDED WITH CONTRACT NO. 24-4905-D; THE EASEMENT FOR 26" HIGH PRESSURE GAS MAIN RECORDED UNDER THE FOLLOWING DEEDS: LIBER 305, FOLIO 173 AND LIBER 305 FOLIO 329.
- A DESIGN MANUAL WAIVER FOR THE DIRECTIONAL DRILL INSTALLATION OF THE WATER LINE UNDER THE STREAM AND STREAM BUFFER (DESIGN MANUAL II, SECTION 5.14A) WAS PREPARED AND SUBMITTED WITH THIS SDP. IT WAS APPROVED ON 05/15/2023 UNDER ALTERNATIVE COMPLIANCE #WP-22-099.
- A REQUEST FOR NECESSARY ENVIRONMENTAL DISTURBANCE WITHIN THE STEEP SLOPES FOR A STORM DRAIN OUTFALL WAS APPROVED BY HOWARD COUNTY ON 08/11/2023.

BENCHMARK DATA

30HA: N 566030.6258, E 1357989.5444, ELEV. 386.983
36BC: N 563264.1261, E 1359585.7197, ELEV. 409.981

REVISIONS

NO.	DESCRIPTION	DATE

SITE ANALYSIS DATA CHART

TOTAL PROPERTY AREA: 298.08 ACRES
AREA OF PLAN SUBMISSION: 7.65 ACRES
LIMIT OF DISTURBED AREA: 7.65 ACRES
PROPOSED IMPERVIOUS COVER: 5.0 ACRES*
ALL AREAS BELOW ARE TAKEN FROM WITHIN THE LOD
STEEP SLOPES AREA: 2,040 SF (WITHIN LOD)
STEEP SLOPES AREA IMPACTS: 408 SF (PERMANENT), 1,632 SF (TEMPORARY)
FLOOD PLAIN AREA: 0 SF
WETLANDS AREA: 0 SF
STREAM AREA (WATERS OF THE US WITHIN LOD): 0 SF
STREAM BUFFER AREA: 13,725 SF
FLOODPLAIN AREA DISTURBED: 0 SF
WETLANDS AREA DISTURBED: 0 SF
STREAM BUFFER AREA IMPACTS: 13,725 SF (0.32 AC)

PRESENT ZONING DESIGNATION: RC-DEO, PER THE COMPREHENSIVE ZONING PLAN, EFFECTIVE OCTOBER 8, 2013

PROPOSED USES: PICKLE BALL COURTS, SKATE PARK, BASKETBALL COURTS

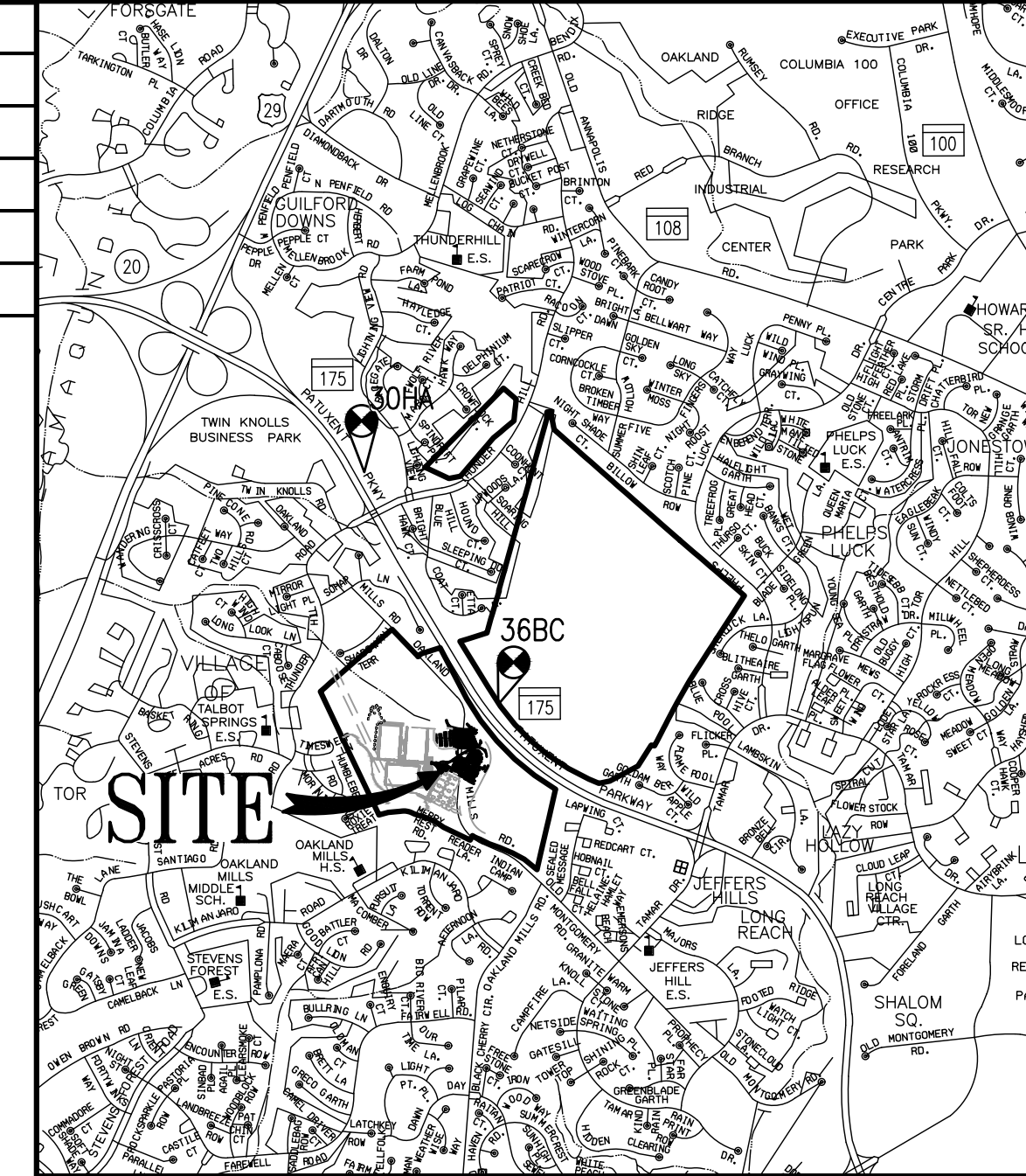
PARKING SPACES PROVIDED: 119 SPACES
101± OVERFLOW SPACES
7 ACCESSIBLE SPACES

APPLICABLE DPZ FILE NUMBERS: ECP-11-023, SDP-10-007; WP-10-013; SDP-12-063; WP-13-176; WP-14-105, SDP-15-050, WP-15-117, WP-16-022, SCP-15-036, ECP 22-025, WP-22-099.

*NOTE: NUMBER CALCULATED CONSIDERING ALL ALTERNATIVE SURFACES ARE IMPERVIOUS

LIST OF DRAWINGS

- C0.1 COVER SHEET
- C0.2 ABBREVIATIONS, NOTES AND LEGEND
- C1.0A EXISTING CONDITIONS/DEMOLITION PLAN A
- C1.0B EXISTING CONDITIONS/DEMOLITION PLAN B
- C1.1 OVERALL SITE DEVELOPMENT PLAN
- C1.2A SITE GEOMETRY/UTILITY PLAN A
- C1.2B SITE GEOMETRY/UTILITY PLAN B
- C1.3A GRADING/STORMWATER MANAGEMENT PLAN A
- C1.3B GRADING/STORMWATER MANAGEMENT PLAN B
- C1.3C DETAILED GRADING FOR ACCESSIBLE PARKING
- C1.3D DETAILED GRADING FOR ACCESSIBLE PATHS
- C1.4A EROSION AND SEDIMENT CONTROL PLAN A
- C1.4B EROSION AND SEDIMENT CONTROL PLAN B
- C1.5 STAKEOUT PLAN
- C1.6 PHOTOMETRIC TEST DIAGRAM
- C2.1 STORM DRAIN PROFILES
- C2.2 STORM DRAIN PROFILES
- C2.3 STORM DRAIN STRUCTURE AND PIPE SCHEDULES
- C2.4 WATER PROFILES
- C3.1 ENLARGED MICRO-BIORETENTION PLANS
- C3.2 ENLARGED MICRO-BIORETENTION PLANS
- C3.3 ENLARGED FOCAL POINT PLANS
- C4.1 SITE DETAILS
- C4.2 SITE DETAILS
- C4.3 SITE DETAILS
- C4.4 STORMWATER MANAGEMENT NOTES & DETAILS
- C4.5 STORMWATER MANAGEMENT NOTES & DETAILS
- C4.6 FOCAL POINT SPECIFICATIONS
- C5.1 EROSION AND SEDIMENT CONTROL NOTES
- C5.2 EROSION AND SEDIMENT CONTROL DETAILS
- C5.3 EROSION AND SEDIMENT CONTROL NOTES & DETAILS
- C6.1 SOIL BORINGS PLAN
- C6.2 SOIL BORING LOGS
- C6.3 SOIL BORING LOGS
- C3.1A ESD DRAINAGE AREA MAP A
- C3.1B ESD DRAINAGE AREA MAP B
- C3.2A INLET DRAINAGE AREA MAP A
- C3.2B INLET DRAINAGE AREA MAP B
- L1.1 MATERIALS PLAN
- L2.1 HARDSCAPE DETAILS
- L2.2 HARDSCAPE DETAILS
- L2.3 HARDSCAPE DETAILS
- L2.4 HARDSCAPE DETAILS
- L2.5 HARDSCAPE DETAILS
- L2.6 HARDSCAPE DETAILS
- L3.1 PLANTING PLAN
- L3.2 PLANTING DETAILS
- F6.1 FOREST CONSERVATION PLAN
- F6.2 FOREST CONSERVATION PLAN
- F6.3 FOREST CONSERVATION PLAN
- F6.4 FOREST CONSERVATION NOTES AND DETAILS
- E6.1 ELECTRICAL DETAILS
- E6.2A ELECTRICAL WALKWAY LIGHT DETAILS
- E6.2B ELECTRICAL PARKING LIGHT DETAILS



ADC MAP: HOWARD COUNTY MAP 16 GRID: A6
VICINITY MAP
1" = 2000'



LOCATION MAP

1" = 400'

ADDRESS CHART	
PARCEL #	STREET ADDRESS
3	PARK ENTRANCE: 5752 OAKLAND MILLS ROAD

OWNER:	DEVELOPER:	PERMIT INFORMATION CHART			
		WATER CODE:	SEWER CODE:	BUILDING	STREET ADDRESS
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MD 21046 ATTN: MR. JASON THOMPSON	HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MD 21046 ATTN: MR. JASON THOMPSON	PUBLIC	PUBLIC	N/A	N/A
VOICE 410-313-4031 FAX 410-313-4646	VOICE 410-313-4031 FAX 410-313-4646	PROJECT NAME: BLANDAIR PARK - PHASE 6		SECTION/AREA N/A	PARCEL 3
		L/F 4391/55 5203/439	GRID #5	ZONING RC-DEO	TAX MAP BLOCK 36 5 ELEC. DIST. 6 CENSUS TRACT 6066.04

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chief, Development Engineering Division <i>Chris D. Edmondson</i>	DATE 12/20/2023
Chief, Division of Land Development <i>Lynnda Eversberg</i>	DATE 12/20/2023
Director	DATE



Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

GRAPHIC SCALES	
0 2000' 4000'	SCALE: 1" = 2000'
0 400' 800'	SCALE: 1" = 400'

SIGNATURE

DocuSigned by:
Anthony W.
109F4C08E804A
10/16/13

PROFESSIONAL CERTIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15376.
EXPIRATION DATE: 09/22/2025

BLANDAIR REGIONAL PARK - PHASE 6

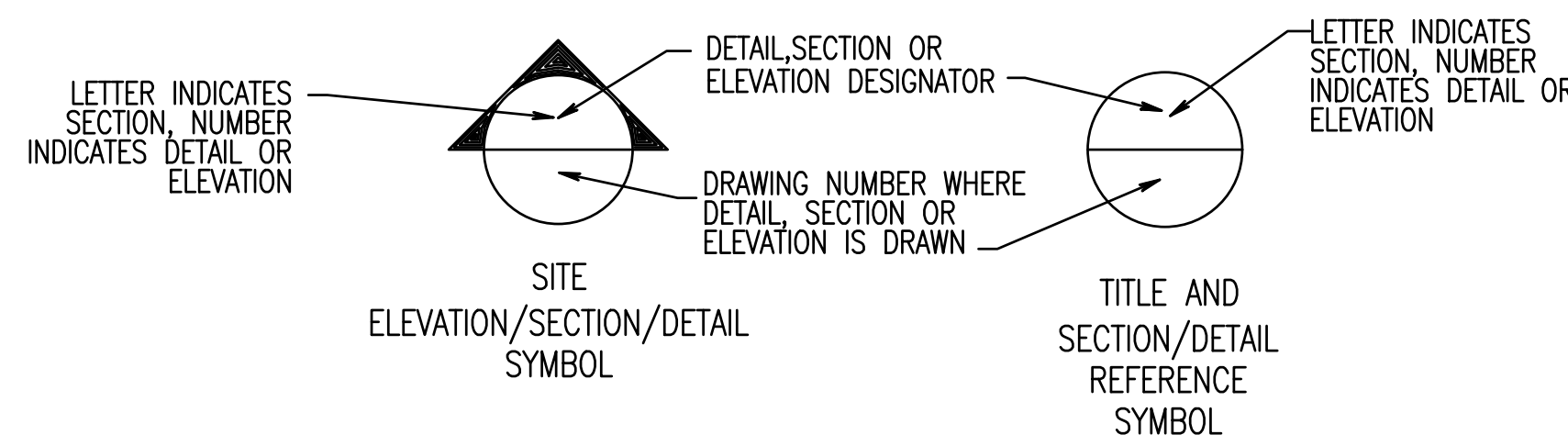
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ABBREVIATIONS

AASHTO AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	OD OUTSIDE DIAMETER
ABAN, ABAND ABANDON	OHE OVERHEAD ELECTRIC
APPROX APPROXIMATELY	OHT OVERHEAD TELEPHONE
ASTM ASSOCIATION FOR STANDARD TESTING METHODS	PC POINT OF CURVATURE
BLDG BUILDING	PCC POINT OF COMPOUND CURVATURE
BIT BITUMINOUS	PERF PERFORATED
B.M. BENCH MARK	PI POINT OF INTERSECTION, POST INDICATOR
CFS CUBIC FEET PER SECOND	POB POINT OF BEGINNING
C.I. CAST IRON	POC POINT ON CURVE
C.I.P. CAST IRON PIPE	POE POINT OF END
C/L CENTERLINE	POT POINT ON TRAVERSE
CO CLEAN OUT	PT POINT OF TANGENCY
COMM COMMUNICATION	PVC POLYVINYL CHLORIDE, POINT OF VERTICAL CURVE
CONTR. JT. CONTRACTION JOINT	PVI POINT OF VERTICAL INTERSECTION
CONC CONCRETE	PVMT PAVEMENT
CMP CORRUGATED METAL PIPE	PVT POINT OF VERTICAL TANGENCY
DEMO DEMOLITION	PP POWER POLE
DIP DUCTILE IRON PIPE	PV POST INDICATOR VALVE
DIA, DIAM DIAMETER	PROP PROPOSED
DWG, DRWG DRAWING	R RADIUS, RIGHT
E EAST	RD ROAD
EL, ELEV ELEVATION	RCCP REINFORCED CONCRETE CULVERT PIPE
ELECT, ELEC ELECTRICAL	RCP REINFORCED CONCRETE PIPE
EMBED EMBEDDED	REIN, REINF REINFORCED
EX EXISTING	RR RAILROAD
EXP JT EXPANSION JOINT	S SOUTH, SLOPE, SANITARY
EW EACH WAY	SAN SANITARY
F&C FRAME AND COVER	SCE STABILIZED CONSTRUCTION ENTRANCE
FH FIRE HYDRANT	SCH SCHEDULE
FIN, FL, F.F. FINISHED FLOOR	SD STORM DRAIN
FT FEET	SDR STANDARD DIMENSION RATIO
FPS FEET PER SECOND	SE SOUTHEAST
HB HORIZONTAL BEND	SF SILT FENCE
HO. CO. HOWARD COUNTY	SHT SHEET
HC HANDICAPPED	SP STUDY POINT
HP HIGH POINT	SS STAINLESS STEEL
IN INCH	STA STATION
INV INVERT	STD STANDARD
IP INLET PROTECTION	STRUCT, STR STRUCTURAL
JT JOINT	SW SOUTHWEST
LT LEFT	TEL TELEPHONE
LOD LIMIT OF DISTURBANCE	TS&V TAPPING SLEEVE & VALVE
LP LOW POINT	T/C TOP OF CURB
MAX MAXIMUM	TC TOP OF COVER
MECH MECHANICAL	TG TOP OF GRATE
MH MANHOLE	TW TOP OF WALL
MIN MINIMUM	TYP TYPICAL
MW MONITORING WELL	UG UNDERGROUND
N NORTH	UE UNDERGROUND ELECTRIC DUCT
NE NORTHEAST	UMH UNKNOWN MANHOLE
NIC NOT IN CONTRACT	UT UNDERGROUND TELEPHONE DUCT
NTS NOT TO SCALE	UFA UNDERGROUND FIRE ALARM
NW NORTHWEST	VB VERTICAL BEND
OC, O/C ON CENTER	VC VERTICAL CURVE
	W WEST, WATT, WATER, WIDE
	W/ WITH
	WWF WELDED WIRE FABRIC

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		CONTOUR
		SPOT ELEVATION
		STORM DRAIN
		UNDERDRAIN
		WATER
		SANITARY SEWER
		UNDERGROUND ELECTRIC
		UNDERGROUND TELEPHONE
		UNDERGROUND COMMUNICATIONS
		GAS
		CONCRETE CURB AND GUTTER
		FLUSH CURB
		FENCE
		BUILDING
		CONCRETE
		HEAVY DUTY CONCRETE PAVEMENT
		ASPHALT PAVEMENT
		ARTIFICIAL TURF
		WATER VALVE
		FIRE HYDRANT
		STORM DRAIN INLET
		STORM DRAIN MANHOLE
		SANITARY SEWER MANHOLE
		ELECTRIC MANHOLE/HANDHOLE
		TELEPHONE MANHOLE
		LIGHT POLE
		UTILITY POLE
		TRANSFORMER
		GENERATOR
		UTILITY MARKER
		ELECTRIC JUNCTION BOX
		GUY WIRE
		SIGN
		EVERGREEN TREE
		DECIDUOUS TREE
		WOODS LINE
		RIPRAP
		25%+ SLOPES
		STREAM
		100' STREAM BUFFER
		FLY MONUMENT
		GPS MONUMENT
		SURVEY TRAVERSE MONUMENT
		LIMIT OF DISTURBANCE
		PROPERTY LINE
		SETBACK
		BORING LOCATION
		100 YEAR FLOODPLAIN
		WATER LINE EASEMENT
		PROJECT LIMITS



REVISIONS	

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

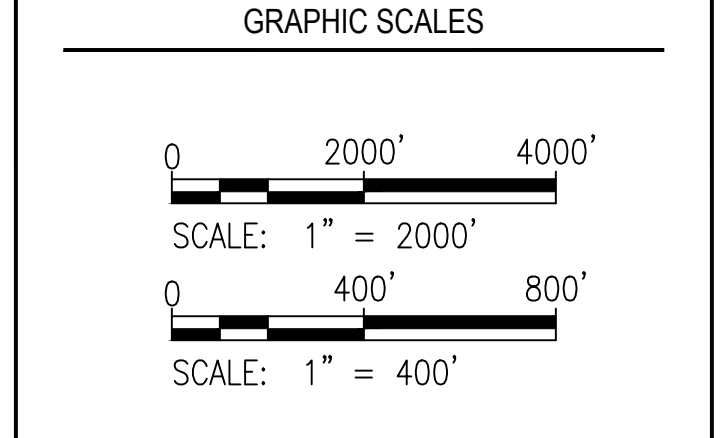
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6



SIGNATURE

Discussed by: *W. Reu* 10/16/13
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PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 09/22/2023

BLANDAIR REGIONAL PARK - PHASE 6

ABBREVIATIONS, NOTES, AND LEGEND

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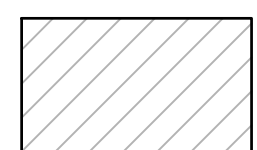


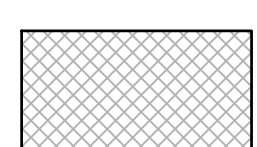

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

	12/20/2023
CHIEF, DEVELOPMENT PERMIT DIVISION	DATE
	12/20/2023
CHIEF, DIVISION OF ZONING	DATE
DIRECTOR	DATE

FILENAME: N:\4208-006\CAD\14208006\02.DWG
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DEMOLITION LEGEND

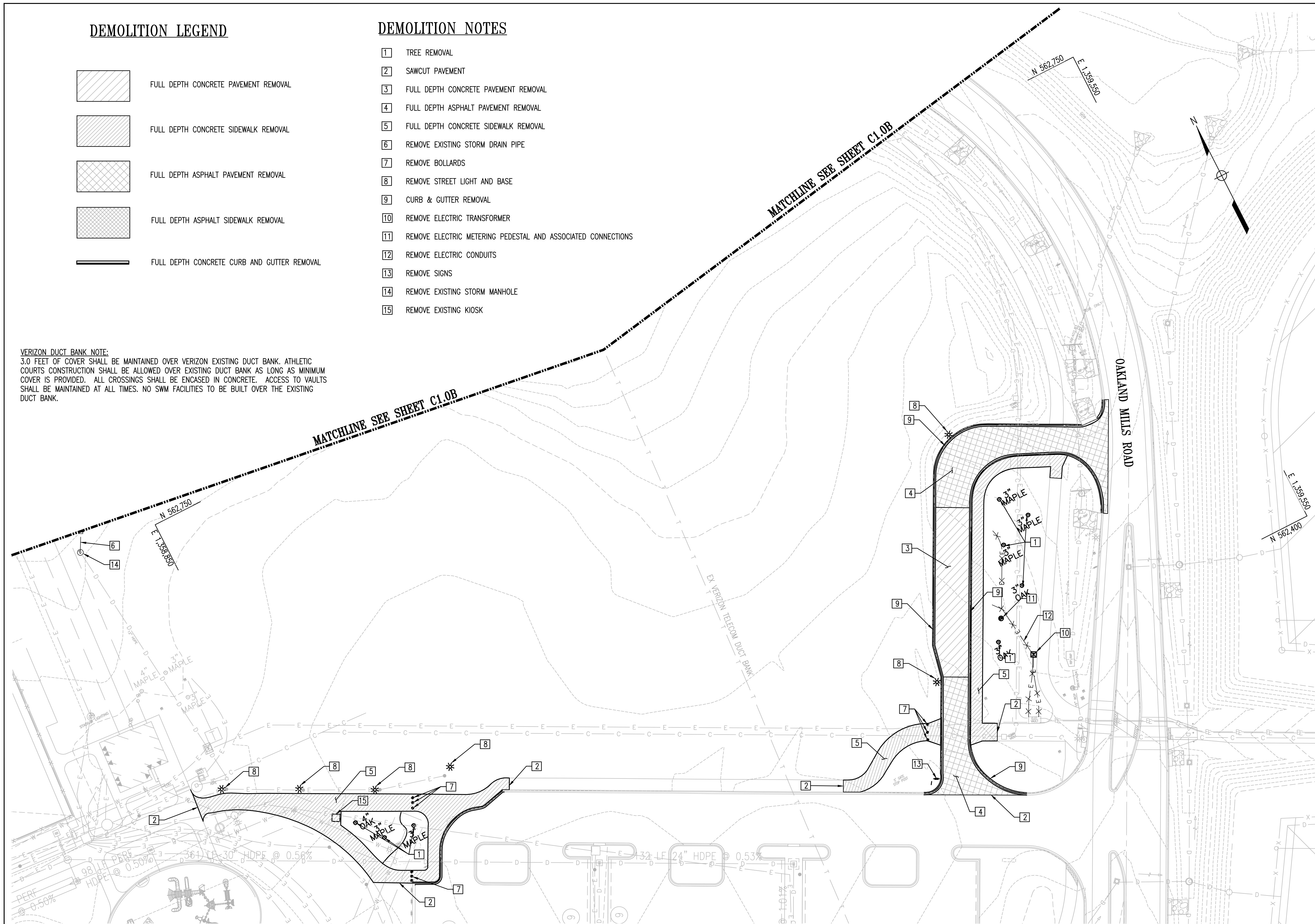
-  FULL DEPTH CONCRETE PAVEMENT REMOVAL
-  FULL DEPTH CONCRETE SIDEWALK REMOVAL
-  FULL DEPTH ASPHALT PAVEMENT REMOVAL
-  FULL DEPTH ASPHALT SIDEWALK REMOVAL
-  FULL DEPTH CONCRETE CURB AND GUTTER REMOVAL

DEMOLITION NOTES

- 1 TREE REMOVAL
- 2 SAWCUT PAVEMENT
- 3 FULL DEPTH CONCRETE PAVEMENT REMOVAL
- 4 FULL DEPTH ASPHALT PAVEMENT REMOVAL
- 5 FULL DEPTH CONCRETE SIDEWALK REMOVAL
- 6 REMOVE EXISTING STORM DRAIN PIPE
- 7 REMOVE BOLLARDS
- 8 REMOVE STREET LIGHT AND BASE
- 9 CURB & GUTTER REMOVAL
- 10 REMOVE ELECTRIC TRANSFORMER
- 11 REMOVE ELECTRIC METERING PEDESTAL AND ASSOCIATED CONNECTIONS
- 12 REMOVE ELECTRIC CONDUITS
- 13 REMOVE SIGNS
- 14 REMOVE EXISTING STORM MANHOLE
- 15 REMOVE EXISTING KIOSK

VERIZON DUCT BANK NOTE:

3.0 FEET OF COVER SHALL BE MAINTAINED OVER VERIZON EXISTING DUCT BANK. ATHLETIC COURTS CONSTRUCTION SHALL BE ALLOWED OVER EXISTING DUCT BANK AS LONG AS MINIMUM COVER IS PROVIDED. ALL CROSSINGS SHALL BE ENCASED IN CONCRETE. ACCESS TO VAULTS SHALL BE MAINTAINED AT ALL TIMES. NO SWM FACILITIES TO BE BUILT OVER THE EXISTING DUCT BANK.



REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043



Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

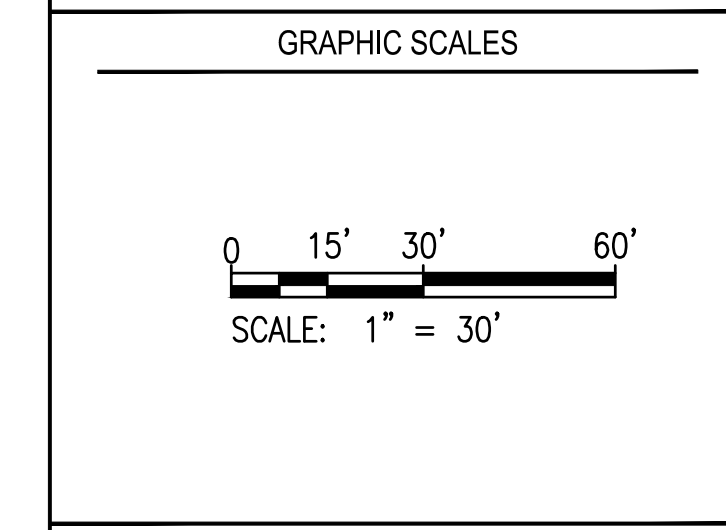
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY


TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6



SIGNATURE



DocuSigned by:
 Anthony M. [Signature]
 10/16/23

PROFESSIONAL CERTIFICATION.
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376. EXPIRATION DATE: 09/22/2023.

BLANDAIR REGIONAL PARK - PHASE 6

EXISTING CONDITIONS / DEMOLITION PLAN A

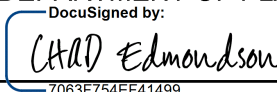
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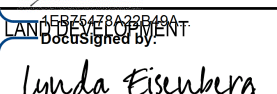
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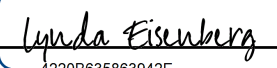
Date: 10/2023 SDP Sheet 3 of 54
 Des: BWJ Drawn: LEM Check: AUO

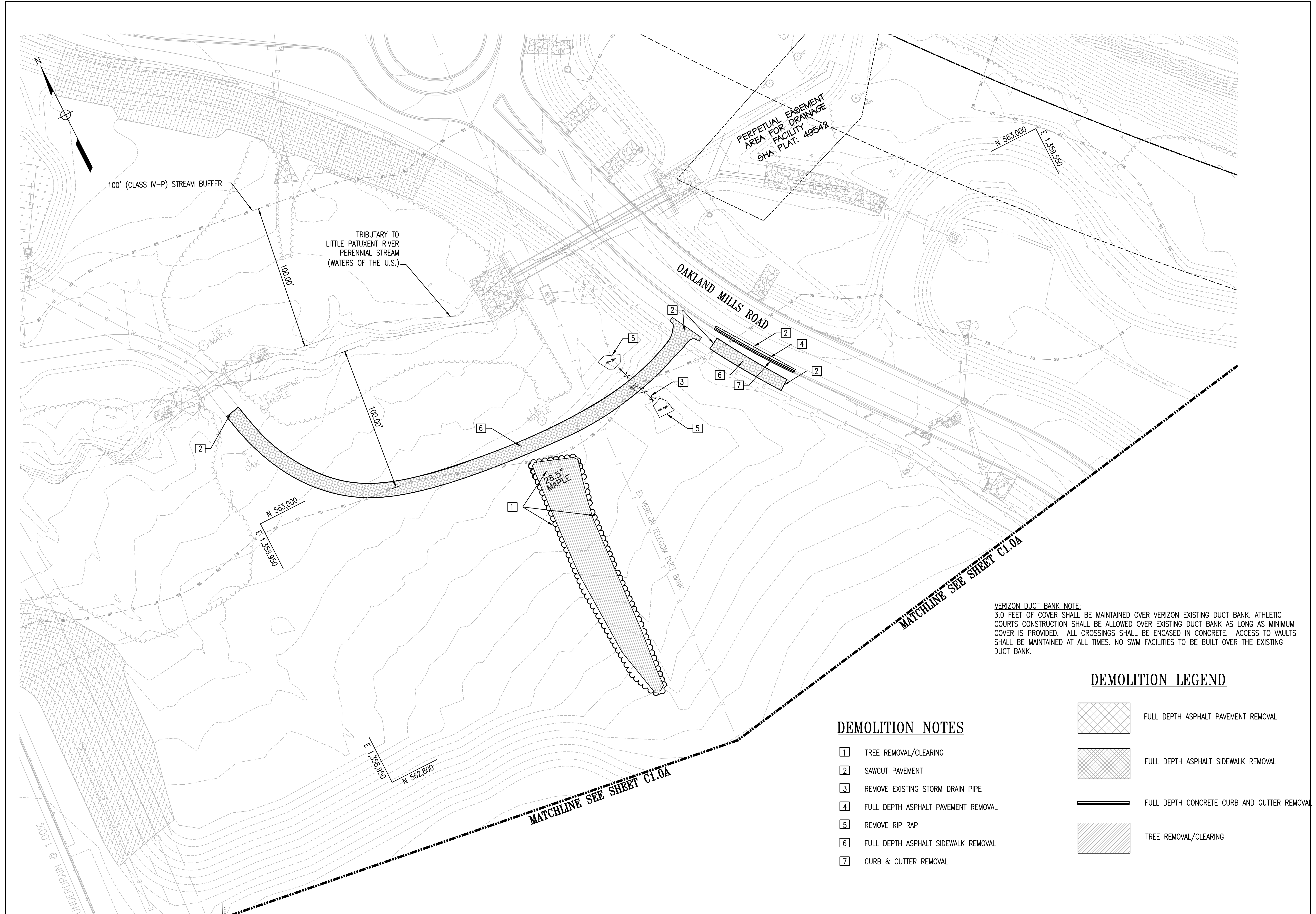
APPROVED: DEPARTMENT OF PLANNING AND ZONING

12/20/2023

CHIEF, DEVELOPMENT DIVISION

 DATE 12/4/2023

CHIEF, DIVISION OF ZONING

 DATE 12/20/2023

DIRECTOR

 DATE

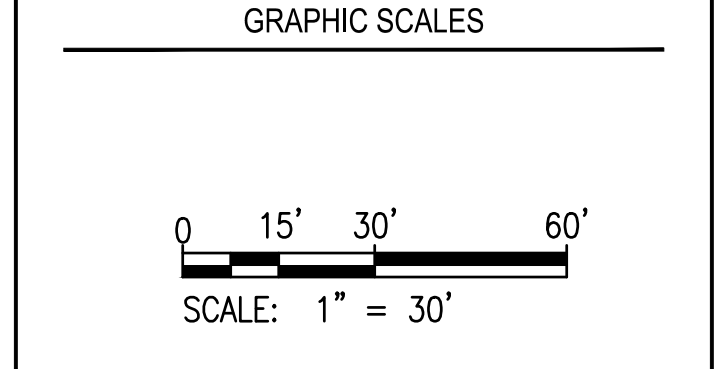


REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043



PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



VERIZON DUCT BANK NOTE:
 3.0 FEET OF COVER SHALL BE MAINTAINED OVER VERIZON EXISTING DUCT BANK. ATHLETIC COURTS CONSTRUCTION SHALL BE ALLOWED OVER EXISTING DUCT BANK AS LONG AS MINIMUM COVER IS PROVIDED. ALL CROSSINGS SHALL BE ENCASED IN CONCRETE. ACCESS TO VAULTS SHALL BE MAINTAINED AT ALL TIMES. NO SWM FACILITIES TO BE BUILT OVER THE EXISTING DUCT BANK.

DEMOLITION NOTES

- 1 TREE REMOVAL/CLEARING
- 2 SAWCUT PAVEMENT
- 3 REMOVE EXISTING STORM DRAIN PIPE
- 4 FULL DEPTH ASPHALT PAVEMENT REMOVAL
- 5 REMOVE RIP RAP
- 6 FULL DEPTH ASPHALT SIDEWALK REMOVAL
- 7 CURB & GUTTER REMOVAL

DEMOLITION LEGEND

- FULL DEPTH ASPHALT PAVEMENT REMOVAL
- FULL DEPTH ASPHALT SIDEWALK REMOVAL
- FULL DEPTH CONCRETE CURB AND GUTTER REMOVAL
- TREE REMOVAL/CLEARING

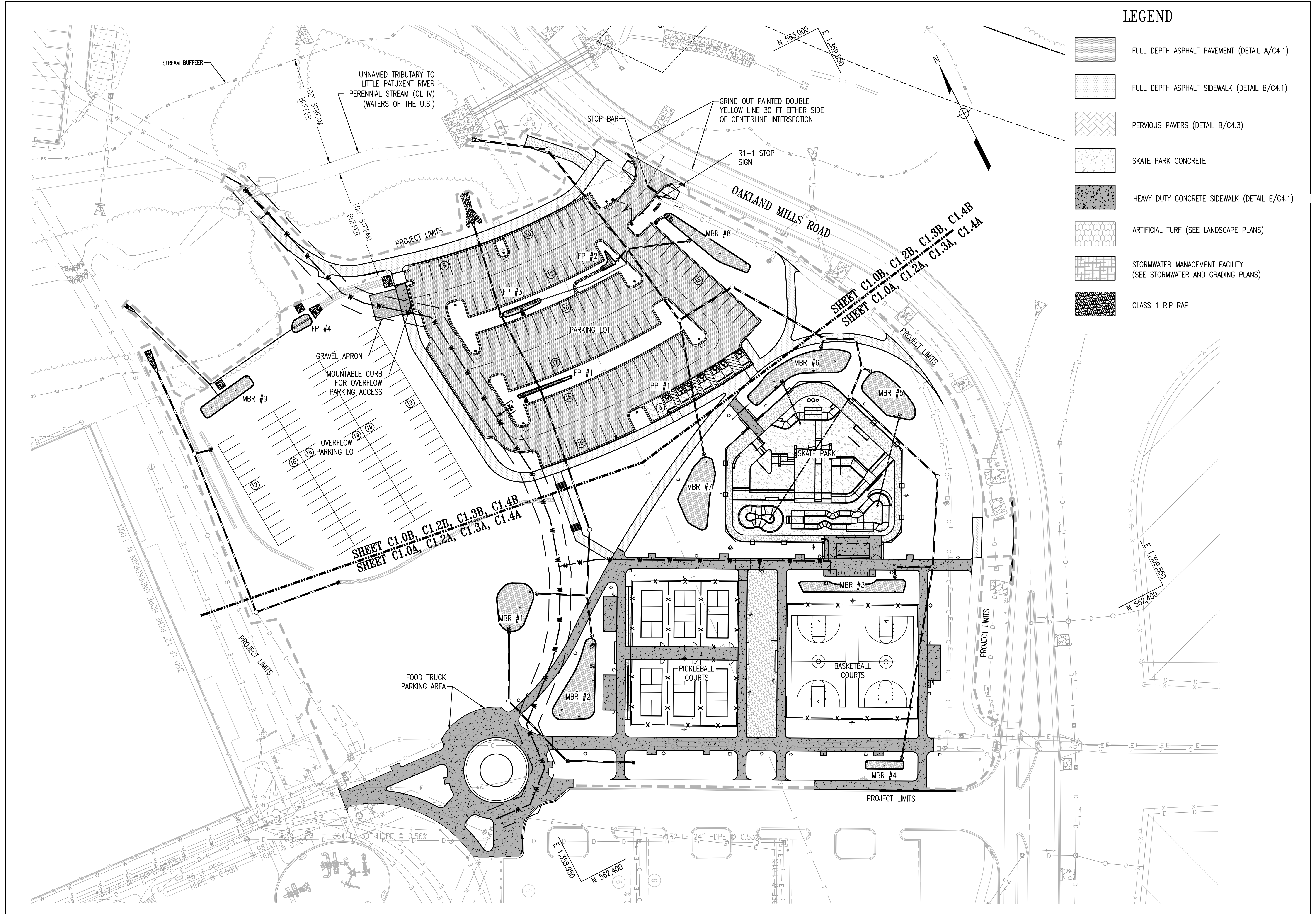
SIGNATURE

DocuSigned by:
 [Signature]
 10/16/23
 109F4C048E8044A
 PROFESSIONAL CERTIFICATION.
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 09/22/2025

BLANDAIR REGIONAL PARK - PHASE 6

EXISTING CONDITIONS / DEMOLITION PLAN B
 Drawing No.
C1.0B
 Scale: 1" = 30'
 Date: 10/2023 SDP Sheet 4 of 54
 Des: BWJ Drawn: LEM Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 12/20/2023
 CHIEF, DEVELOPMENT DIVISION
 [Signature] 12/4/2023
 CHIEF, DIVISION OF ZONING
 [Signature] 12/20/2023
 DIRECTOR



LEGEND

- FULL DEPTH ASPHALT PAVEMENT (DETAIL A/C4.1)
- FULL DEPTH ASPHALT SIDEWALK (DETAIL B/C4.1)
- PERVIOUS PAVERS (DETAIL B/C4.3)
- SKATE PARK CONCRETE
- HEAVY DUTY CONCRETE SIDEWALK (DETAIL E/C4.1)
- ARTIFICIAL TURF (SEE LANDSCAPE PLANS)
- STORMWATER MANAGEMENT FACILITY (SEE STORMWATER AND GRADING PLANS)
- CLASS 1 RIP RAP

REVISIONS	

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6

GRAPHIC SCALES

SCALE: 1" = 40'

SIGNATURE

DocuSigned by: *Anthony Saburido* 10/18/23
109F4C48E8044A

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19375
EXPIRATION DATE: 09/22/2025

BLANDAIR REGIONAL PARK - PHASE 6

OVERALL SITE DEVELOPMENT PLAN

Drawing No.

C1.1

Scale: 1" = 40'

Date: 10/2023 SDP Sheet 5 of 54

Des: BWJ Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING




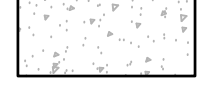





Chief, Development Division	12/20/2023
Chief, Division of Land Development	12/4/2023
Director	12/20/2023

VERIZON DUCT BANK NOTE:
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CONSTRUCTION NOTES

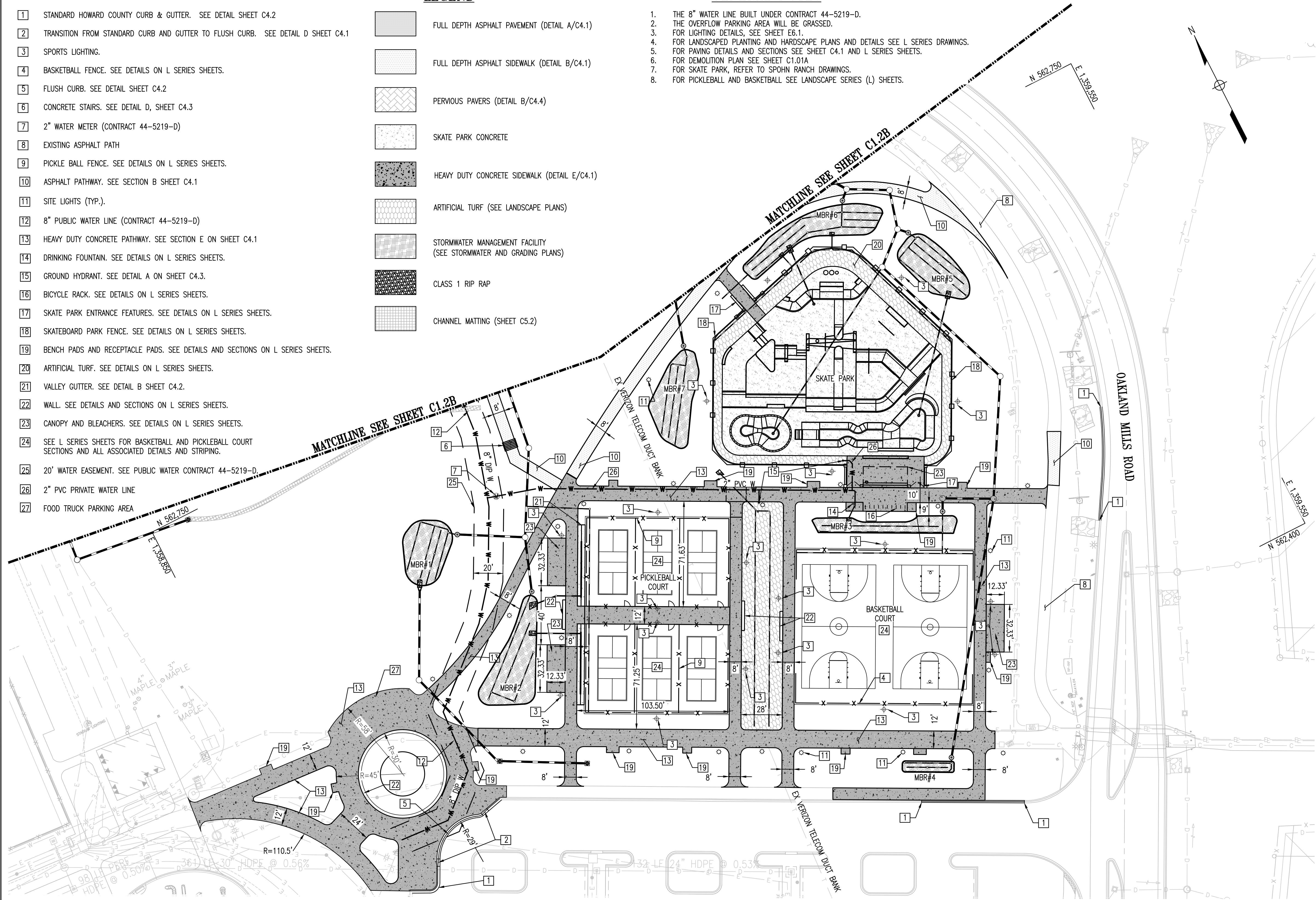
- 1 STANDARD HOWARD COUNTY CURB & GUTTER. SEE DETAIL SHEET C4.2
- 2 TRANSITION FROM STANDARD CURB AND GUTTER TO FLUSH CURB. SEE DETAIL D SHEET C4.1
- 3 SPORTS LIGHTING.
- 4 BASKETBALL FENCE. SEE DETAILS ON L SERIES SHEETS.
- 5 FLUSH CURB. SEE DETAIL SHEET C4.2
- 6 CONCRETE STAIRS. SEE DETAIL D, SHEET C4.3
- 7 2" WATER METER (CONTRACT 44-5219-D)
- 8 EXISTING ASPHALT PATH
- 9 PICKLE BALL FENCE. SEE DETAILS ON L SERIES SHEETS.
- 10 ASPHALT PATHWAY. SEE SECTION B SHEET C4.1
- 11 SITE LIGHTS (TYP.).
- 12 8" PUBLIC WATER LINE (CONTRACT 44-5219-D)
- 13 HEAVY DUTY CONCRETE PATHWAY. SEE SECTION E ON SHEET C4.1
- 14 DRINKING FOUNTAIN. SEE DETAILS ON L SERIES SHEETS.
- 15 GROUND HYDRANT. SEE DETAIL A ON SHEET C4.3.
- 16 BICYCLE RACK. SEE DETAILS ON L SERIES SHEETS.
- 17 SKATE PARK ENTRANCE FEATURES. SEE DETAILS ON L SERIES SHEETS.
- 18 SKATEBOARD PARK FENCE. SEE DETAILS ON L SERIES SHEETS.
- 19 BENCH PADS AND RECEPTACLE PADS. SEE DETAILS AND SECTIONS ON L SERIES SHEETS.
- 20 ARTIFICIAL TURF. SEE DETAILS ON L SERIES SHEETS.
- 21 VALLEY GUTTER. SEE DETAIL B SHEET C4.2.
- 22 WALL. SEE DETAILS AND SECTIONS ON L SERIES SHEETS.
- 23 CANOPY AND BLEACHERS. SEE DETAILS ON L SERIES SHEETS.
- 24 SEE L SERIES SHEETS FOR BASKETBALL AND PICKLEBALL COURT SECTIONS AND ALL ASSOCIATED DETAILS AND STRIPING.
- 25 20' WATER EASEMENT. SEE PUBLIC WATER CONTRACT 44-5219-D.
- 26 2" PVC PRIVATE WATER LINE
- 27 FOOD TRUCK PARKING AREA

LEGEND

-  FULL DEPTH ASPHALT PAVEMENT (DETAIL A/C4.1)
-  FULL DEPTH ASPHALT SIDEWALK (DETAIL B/C4.1)
-  PERVIOUS PAVERS (DETAIL B/C4.4)
-  SKATE PARK CONCRETE
-  HEAVY DUTY CONCRETE SIDEWALK (DETAIL E/C4.1)
-  ARTIFICIAL TURF (SEE LANDSCAPE PLANS)
-  STORMWATER MANAGEMENT FACILITY (SEE STORMWATER AND GRADING PLANS)
-  CLASS 1 RIP RAP
-  CHANNEL MATTING (SHEET C5.2)

GENERAL NOTES

- 1. THE 8" WATER LINE BUILT UNDER CONTRACT 44-5219-D.
- 2. THE OVERFLOW PARKING AREA WILL BE GRASSED.
- 3. FOR LIGHTING DETAILS, SEE SHEET E6.1.
- 4. FOR LANDSCAPED PLANTING AND HARDSCAPE PLANS AND DETAILS SEE L SERIES DRAWINGS.
- 5. FOR PAVING DETAILS AND SECTIONS SEE SHEET C4.1 AND L SERIES SHEETS.
- 6. FOR DEMOLITION PLAN SEE SHEET C1.01A
- 7. FOR SKATE PARK, REFER TO SPOHN RANCH DRAWINGS.
- 8. FOR PICKLEBALL AND BASKETBALL SEE LANDSCAPE SERIES (L) SHEETS.



REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

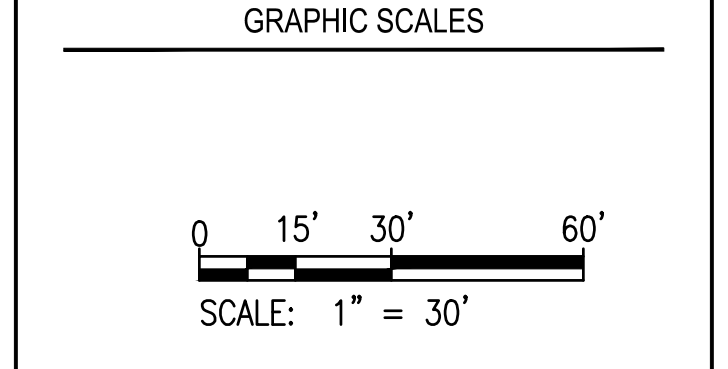
WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6



SIGNATURE

DocuSigned by: *William A. ...* 10/16/13
 12094C048E0844A

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 10/22/2025

BLANDAIR REGIONAL PARK - PHASE 6

SITE GEOMETRY/
 UTILITY PLAN A

Drawing No.
C1.2A

Scale: 1" = 30'

Date: 10/2023 SDP Sheet 6 of 54
 Des: BWJ Drawn: JTD Check: AUO

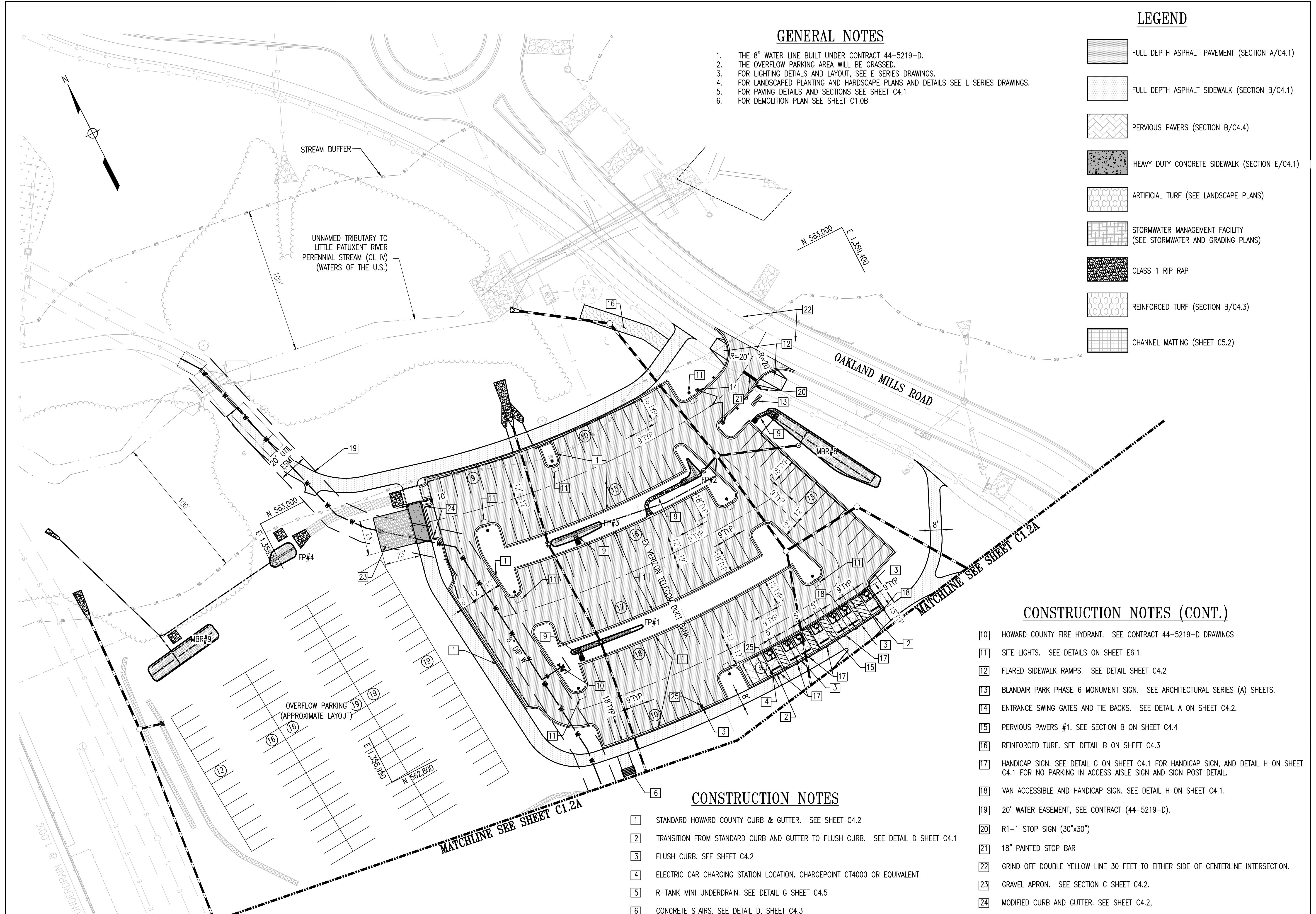
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Developed by: *Chad Edmondson* 12/20/2023
 CHIEF, DEVELOPMENT DIVISION DATE: 12/4/2023

Reviewed by: *Linda Eisenberg* 12/20/2023
 CHIEF, DIVISION OF ZONING AND PERMITS DATE: 12/20/2023

DATE: 12/20/2023

VERIZON DUCT BANK NOTE:
 3.0 FEET OF COVER SHALL BE MAINTAINED OVER VERIZON EXISTING DUCT BANK. ATHLETIC COURTS CONSTRUCTION SHALL BE ALLOWED OVER EXISTING DUCT BANK AS LONG AS MINIMUM COVER IS PROVIDED. ALL CROSSINGS SHALL BE ENCASED IN CONCRETE. ACCESS TO VAULTS SHALL BE MAINTAINED AT ALL TIMES. NO SWM FACILITIES TO BE BUILT OVER THE EXISTING DUCT BANK.



GENERAL NOTES

1. THE 8" WATER LINE BUILT UNDER CONTRACT 44-5219-D.
2. THE OVERFLOW PARKING AREA WILL BE GRASSED.
3. FOR LIGHTING DETAILS AND LAYOUT, SEE E SERIES DRAWINGS.
4. FOR LANDSCAPED PLANTING AND HARDSCAPE PLANS AND DETAILS SEE L SERIES DRAWINGS.
5. FOR PAVING DETAILS AND SECTIONS SEE SHEET C4.1
6. FOR DEMOLITION PLAN SEE SHEET C1.0B

LEGEND

- FULL DEPTH ASPHALT PAVEMENT (SECTION A/C4.1)
- FULL DEPTH ASPHALT SIDEWALK (SECTION B/C4.1)
- PERVIOUS PAVERS (SECTION B/C4.4)
- HEAVY DUTY CONCRETE SIDEWALK (SECTION E/C4.1)
- ARTIFICIAL TURF (SEE LANDSCAPE PLANS)
- STORMWATER MANAGEMENT FACILITY (SEE STORMWATER AND GRADING PLANS)
- CLASS 1 RIP RAP
- REINFORCED TURF (SECTION B/C4.3)
- CHANNEL MATTING (SHEET C5.2)

REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

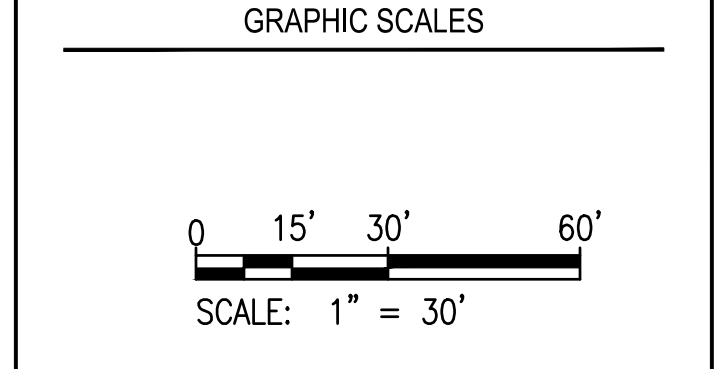


PROPERTY

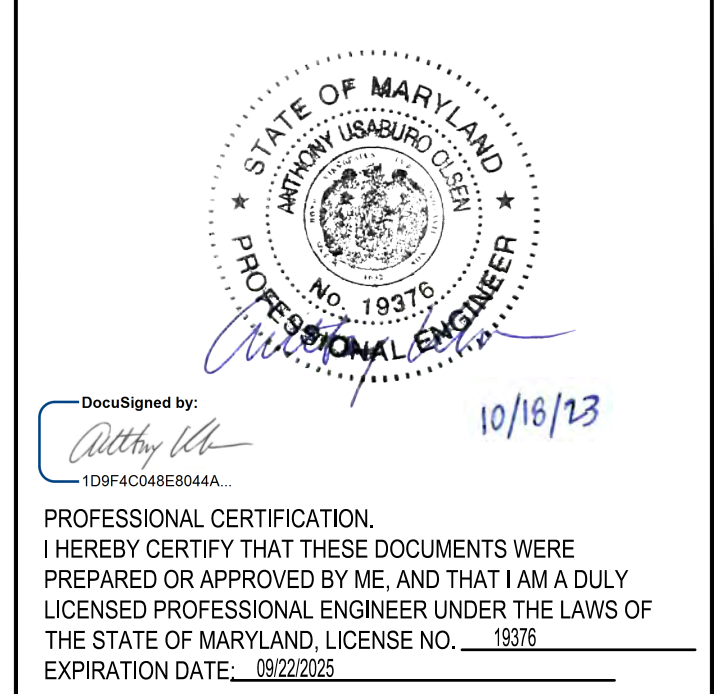
TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6



SIGNATURE



BLANDAIR REGIONAL
 PARK - PHASE 6

SITE GEOMETRY/
 UTILITY PLAN B

Drawing No.
C1.2B

Scale: 1" = 30'
Date: 10/2023 SDP Sheet 7 of 54
Des: BWJ Drawn: JTD Check: AUO

CONSTRUCTION NOTES (CONT.)

- 10 HOWARD COUNTY FIRE HYDRANT. SEE CONTRACT 44-5219-D DRAWINGS
- 11 SITE LIGHTS. SEE DETAILS ON SHEET E6.1.
- 12 FLARED SIDEWALK RAMPS. SEE DETAIL SHEET C4.2
- 13 BLANDAIR PARK PHASE 6 MONUMENT SIGN. SEE ARCHITECTURAL SERIES (A) SHEETS.
- 14 ENTRANCE SWING GATES AND TIE BACKS. SEE DETAIL A ON SHEET C4.2.
- 15 PERVIOUS PAVERS #1. SEE SECTION B ON SHEET C4.4
- 16 REINFORCED TURF. SEE DETAIL B ON SHEET C4.3
- 17 HANDICAP SIGN. SEE DETAIL G ON SHEET C4.1 FOR HANDICAP SIGN, AND DETAIL H ON SHEET C4.1 FOR NO PARKING IN ACCESS AISLE SIGN AND SIGN POST DETAIL.
- 18 VAN ACCESSIBLE AND HANDICAP SIGN. SEE DETAIL H ON SHEET C4.1.
- 19 20' WATER EASEMENT, SEE CONTRACT (44-5219-D).
- 20 R1-1 STOP SIGN (30"x30")
- 21 18" PAINTED STOP BAR
- 22 GRIND OFF DOUBLE YELLOW LINE 30 FEET TO EITHER SIDE OF CENTERLINE INTERSECTION.
- 23 GRAVEL APRON. SEE SECTION C SHEET C4.2.
- 24 MODIFIED CURB AND GUTTER. SEE SHEET C4.2,
- 25 REMOVABLE BOLLARD, SEE DETAIL 3 ON SHEET L2.6.

CONSTRUCTION NOTES

- 1 STANDARD HOWARD COUNTY CURB & GUTTER. SEE SHEET C4.2
- 2 TRANSITION FROM STANDARD CURB AND GUTTER TO FLUSH CURB. SEE DETAIL D SHEET C4.1
- 3 FLUSH CURB. SEE SHEET C4.2
- 4 ELECTRIC CAR CHARGING STATION LOCATION. CHARGEPOINT CT4000 OR EQUIVALENT.
- 5 R-TANK MINI UNDERDRAIN. SEE DETAIL G SHEET C4.5
- 6 CONCRETE STAIRS. SEE DETAIL D, SHEET C4.3
- 7 SIDEWALK RAMP. SEE DETAIL J, SHEET C4.1
- 8 EXISTING ASPHALT PATH
- 9 RIP RAP CHANNEL TO FACILITY BOTTOM.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

12/20/2023

CHIEF, DEVELOPMENT DIVISION

12/4/2023

CHIEF, DIVISION OF ZONING

12/20/2023





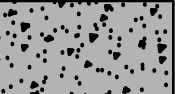


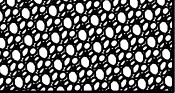
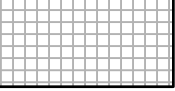
DIRECTOR

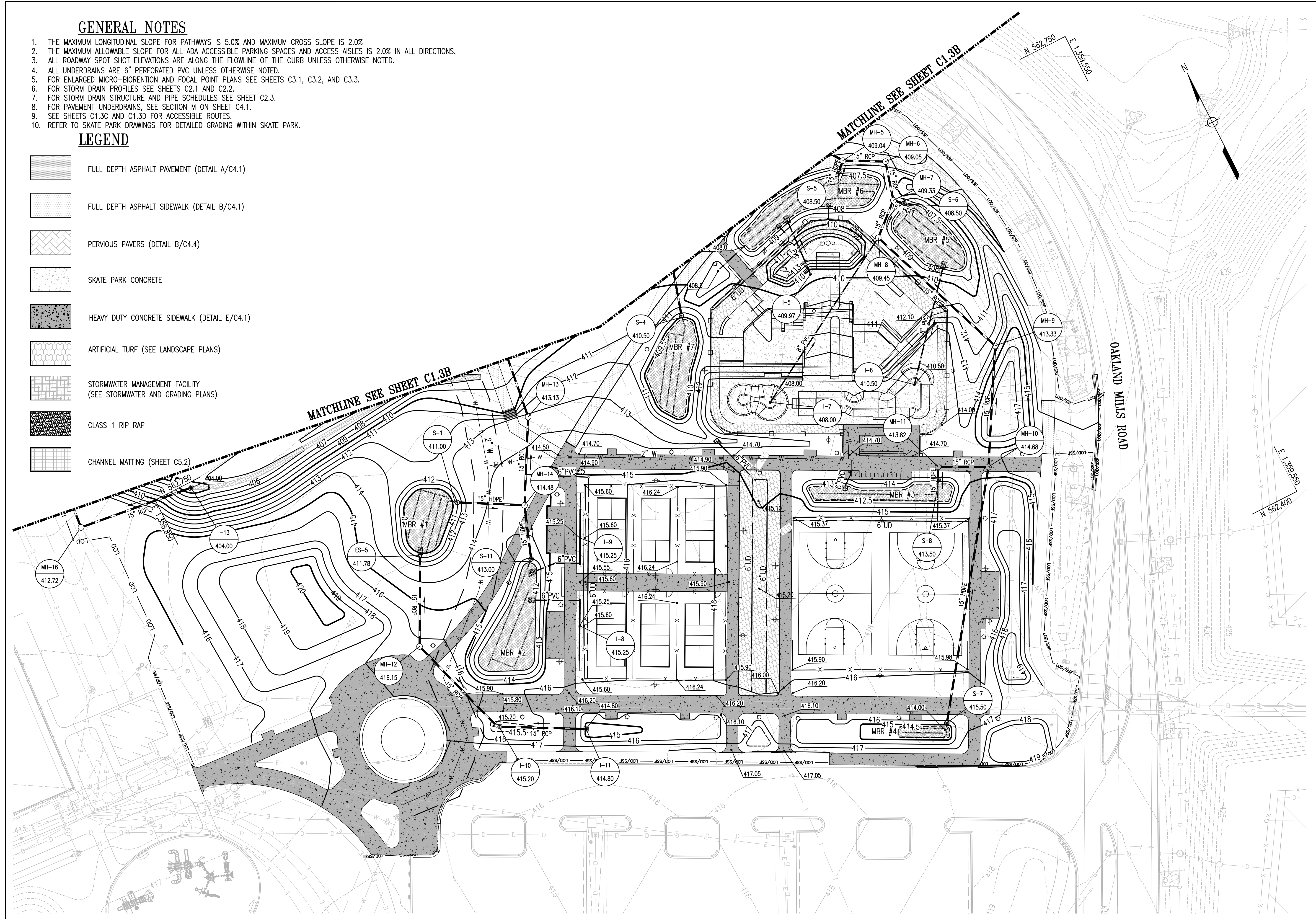
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GENERAL NOTES

1. THE MAXIMUM LONGITUDINAL SLOPE FOR PATHWAYS IS 5.0% AND MAXIMUM CROSS SLOPE IS 2.0%
2. THE MAXIMUM ALLOWABLE SLOPE FOR ALL ADA ACCESSIBLE PARKING SPACES AND ACCESS AISLES IS 2.0% IN ALL DIRECTIONS.
3. ALL ROADWAY SPOT SHOT ELEVATIONS ARE ALONG THE FLOWLINE OF THE CURB UNLESS OTHERWISE NOTED.
4. ALL UNDERDRAINS ARE 6" PERFORATED PVC UNLESS OTHERWISE NOTED.
5. FOR ENLARGED MICRO-BIORENTION AND FOCAL POINT PLANS SEE SHEETS C3.1, C3.2, AND C3.3.
6. FOR STORM DRAIN PROFILES SEE SHEETS C2.1 AND C2.2.
7. FOR STORM DRAIN STRUCTURE AND PIPE SCHEDULES SEE SHEET C2.3.
8. FOR PAVEMENT UNDERDRAINS, SEE SECTION M ON SHEET C4.1.
9. SEE SHEETS C1.3C AND C1.3D FOR ACCESSIBLE ROUTES.
10. REFER TO SKATE PARK DRAWINGS FOR DETAILED GRADING WITHIN SKATE PARK.

LEGEND

-  FULL DEPTH ASPHALT PAVEMENT (DETAIL A/C4.1)
-  FULL DEPTH ASPHALT SIDEWALK (DETAIL B/C4.1)
-  PERVIOUS PAVERS (DETAIL B/C4.4)
-  SKATE PARK CONCRETE
-  HEAVY DUTY CONCRETE SIDEWALK (DETAIL E/C4.1)
-  ARTIFICIAL TURF (SEE LANDSCAPE PLANS)
-  STORMWATER MANAGEMENT FACILITY (SEE STORMWATER AND GRADING PLANS)
-  CLASS 1 RIP RAP
-  CHANNEL MATTING (SHEET C5.2)



REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043



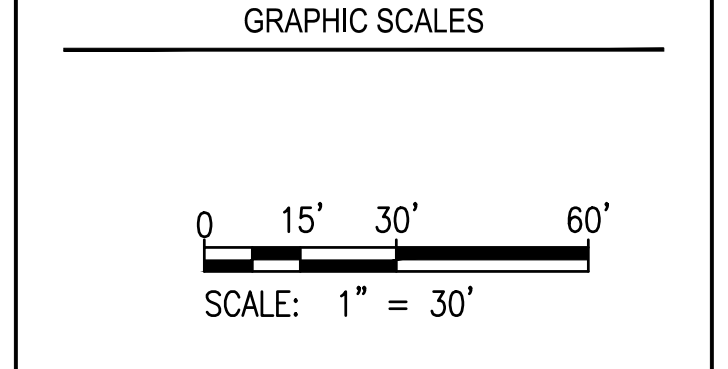
Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY


TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6



SIGNATURE



10/16/23

109FC048E804A...

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 09/22/2025

BLANDAIR REGIONAL
 PARK - PHASE 6

GRADING/STORMWATER
 MANAGEMENT PLAN A

Drawing No.
C1.3A

Scale: 1" = 30'

Date: 10/2023 SDP Sheet 8 of 54
 Des: BWJ Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development & Planning Division	12/20/2023
Chief, Division of Land Development	12/4/2023
Director	12/20/2023

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REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

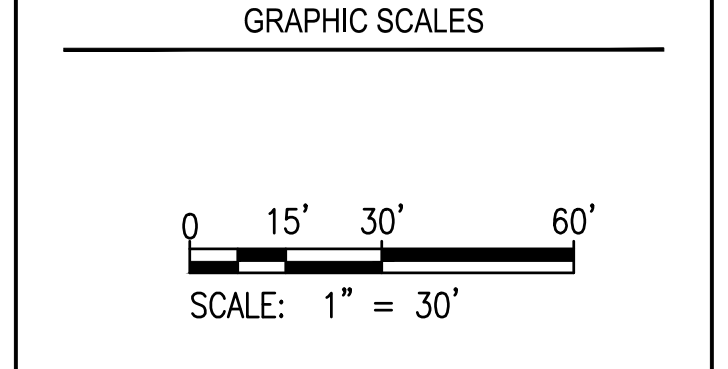


PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6



SIGNATURE

10/16/13

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BLANDAIR REGIONAL PARK - PHASE 6

GRADING/STORMWATER MANAGEMENT PLAN B

Drawing No.

C1.3B

Scale: 1" = 30'

Date: 10/20/23 SDP Sheet 9 of 54

Des: BWJ Drawn: JTD Check: AUO



LEGEND

	FULL DEPTH ASPHALT PAVEMENT (SECTION A/C4.1)
	FULL DEPTH ASPHALT SIDEWALK (SECTION B/C4.1)
	PERVIOUS PAVERS (SECTION B/C4.4)
	HEAVY DUTY CONCRETE SIDEWALK (SECTION E/C4.1)
	SYNTHETIC TURF (SEE LANDSCAPE PLANS)
	STORMWATER MANAGEMENT FACILITY (SEE STORMWATER AND GRADING PLANS)
	CLASS 1 RIP RAP
	REINFORCED TURF (SECTION B/C4.3)
	CHANNEL MATTING (SHEET C5.2)

GENERAL NOTES

1. THE MAXIMUM LONGITUDINAL SLOPE FOR PATHWAYS IS 5.0% AND MAXIMUM CROSS SLOPE IS 2.0%
2. THE MAXIMUM ALLOWABLE SLOPE FOR ALL ADA ACCESSIBLE PARKING SPACES AND ACCESS AISLES IS 2.0% IN ALL DIRECTIONS.
3. ALL ROADWAY SPOT SHOT ELEVATIONS ARE ALONG THE FLOWLINE OF THE CURB UNLESS OTHERWISE NOTED.
4. ALL UNDERDRAINS ARE 6" PERFORATED PVC UNLESS OTHERWISE NOTED.
5. FOR ENLARGED MICRO-BIORENTION AND FOCAL POINT PLANS SEE SHEETS C3.1, C3.2, AND C3.3.
6. FOR STORM DRAIN PROFILES SEE SHEETS C2.1 AND C2.2.
7. FOR STORM DRAIN STRUCTURE AND PIPE SCHEDULES SEE SHEET C2.3.
8. SEE SHEETS C1.3C AND C1.3D FOR ACCESSIBLE ROUTES.
9. FOR PAVEMENT UNDERDRAINS, SEE SECTION M ON SHEET C4.1.

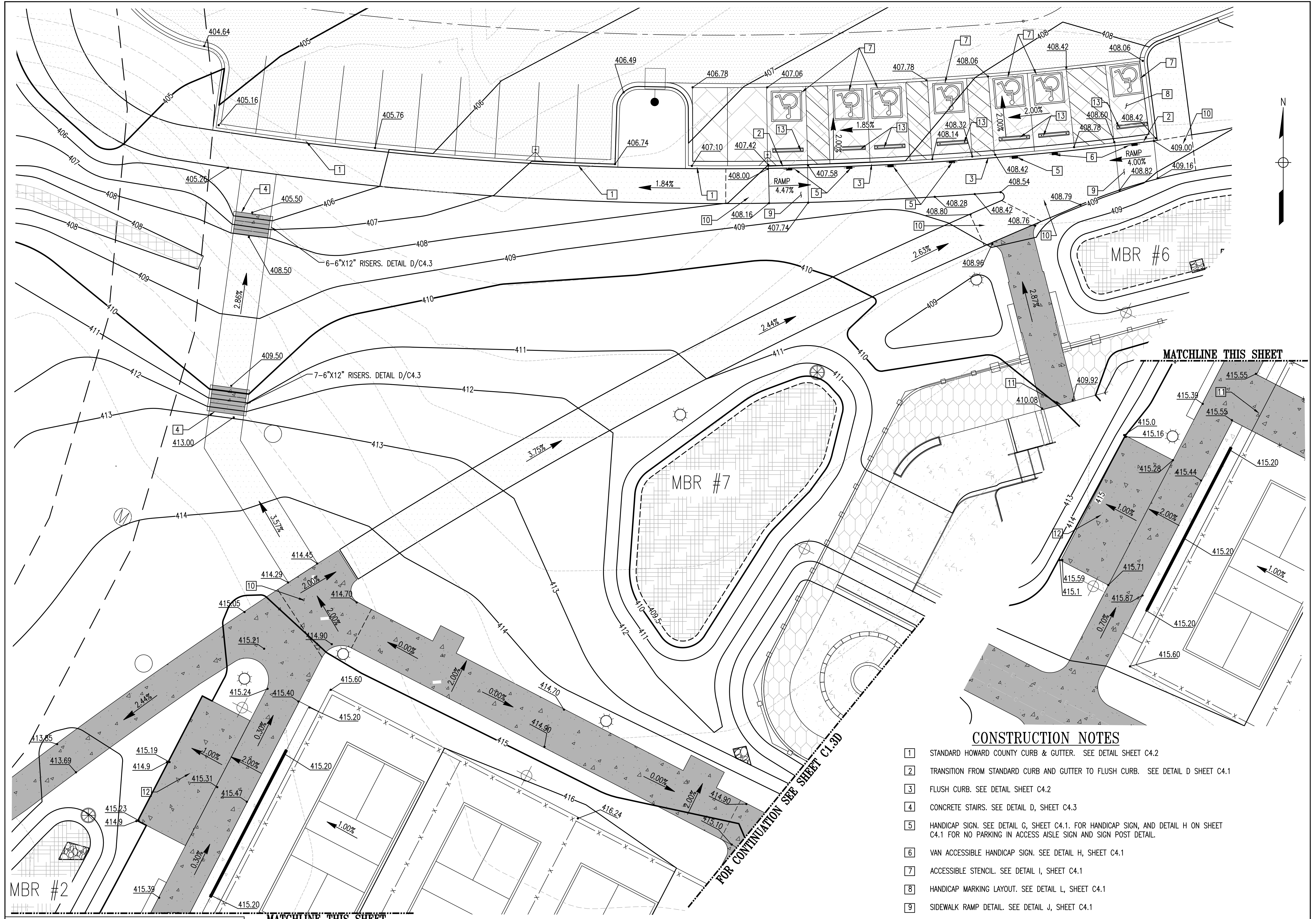
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APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development and Planning Division: *Chad Edmondson* 12/20/2023

Chief, Division of Land Development: *Linda Eisenberg* 12/4/2023

Director: *Linda Eisenberg* 12/20/2023



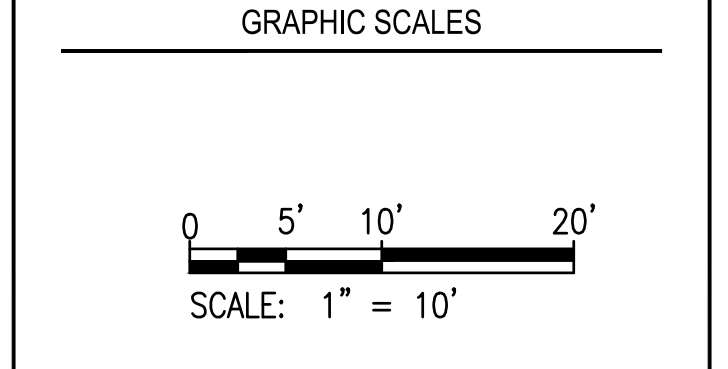
REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
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 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



SIGNATURE

Designed by: *Colby W.* 10/16/13
 PROFESSIONAL CERTIFICATION.
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376. EXPIRATION DATE: 09/22/2025.

CONSTRUCTION NOTES

- 1 STANDARD HOWARD COUNTY CURB & GUTTER. SEE DETAIL SHEET C4.2
- 2 TRANSITION FROM STANDARD CURB AND GUTTER TO FLUSH CURB. SEE DETAIL D SHEET C4.1
- 3 FLUSH CURB. SEE DETAIL SHEET C4.2
- 4 CONCRETE STAIRS. SEE DETAIL D, SHEET C4.3
- 5 HANDICAP SIGN. SEE DETAIL G, SHEET C4.1. FOR HANDICAP SIGN, AND DETAIL H ON SHEET C4.1 FOR NO PARKING IN ACCESS AISLE SIGN AND SIGN POST DETAIL.
- 6 VAN ACCESSIBLE HANDICAP SIGN. SEE DETAIL H, SHEET C4.1
- 7 ACCESSIBLE STENCIL. SEE DETAIL I, SHEET C4.1
- 8 HANDICAP MARKING LAYOUT. SEE DETAIL L, SHEET C4.1
- 9 SIDEWALK RAMP DETAIL. SEE DETAIL J, SHEET C4.1
- 10 LANDING AREA. 2% MAXIMUM SLOPE IN ALL DIRECTIONS. MINIMUM 5' LENGTH AND WIDTH.
- 11 COURT/SKATE PARK ENTRANCE
- 12 BLEACHER PADS
- 13 6' LONG CONCRETE WHEEL STOPS

BLANDAIR REGIONAL PARK - PHASE 6

DETAILED GRADING
 ACCESSIBLE PARKING

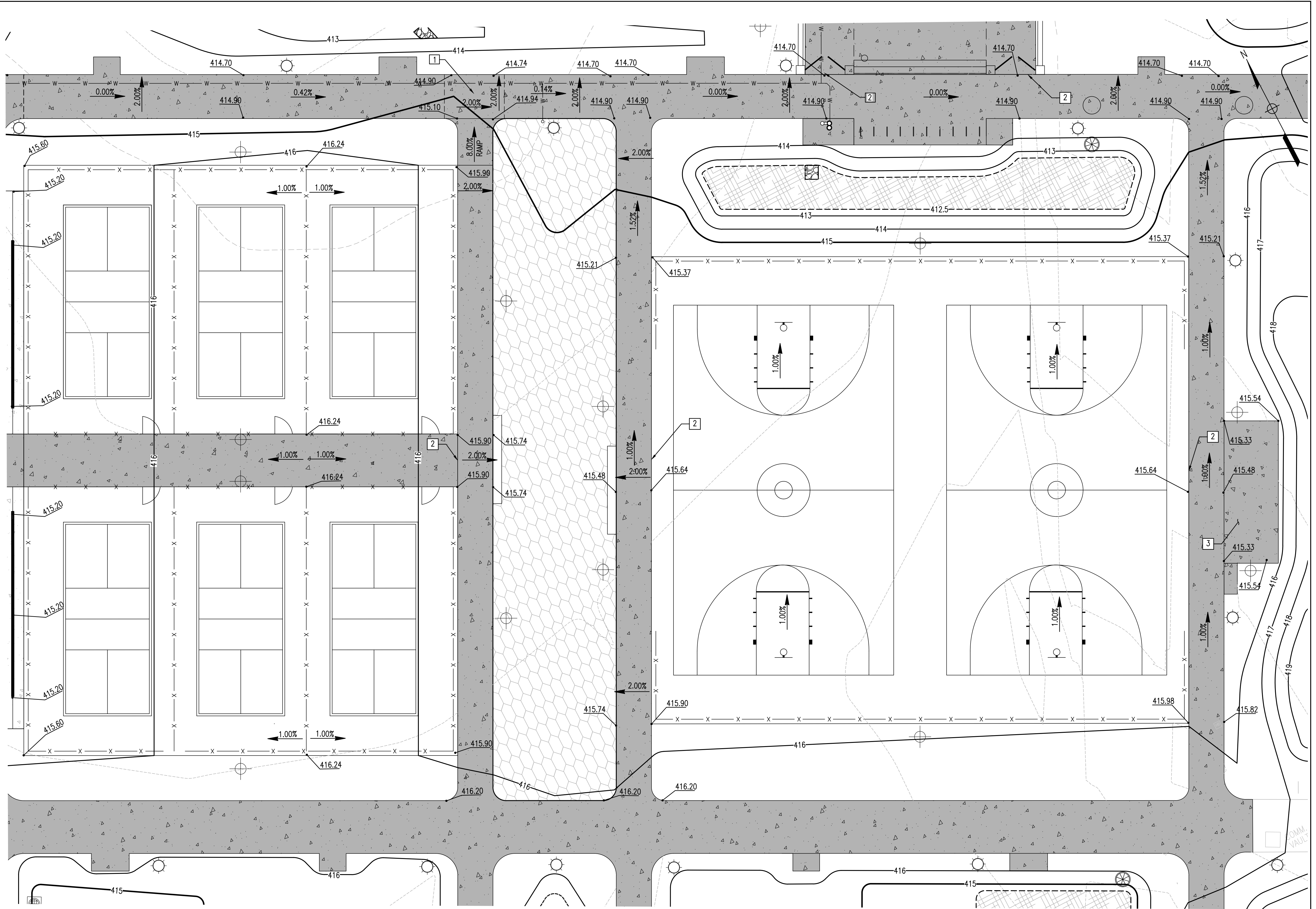
Drawing No.
C1.3C

Scale: 1" = 10'

Date: 10/2023 SDP Sheet 10 of 54
 Des: BWJ Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 12/20/2023
 Chief Development Engineer Division
 12/4/2023
 Chief Division of Land Development
 12/20/2023
 Director
 12/20/2023

MATCHLINE THIS SHEET



REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

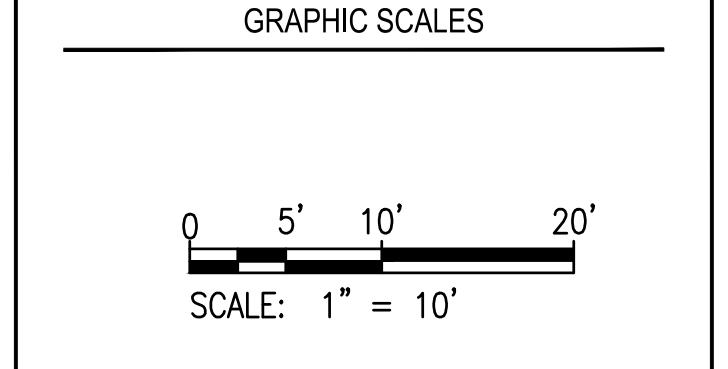


PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6



SIGNATURE

DocuSigned by:
Cathy VA
 10BF4C48E804A
 PROFESSIONAL CERTIFICATION.
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 10/22/2025

BLADAIR REGIONAL PARK - PHASE 6

DETAILED GRADING ACCESSIBLE PATHS

Drawing No.
C1.3D

Scale: 1" = 10'

Date: 10/2023 SDP Sheet 11 of 54

Des: BWJ Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Designed by: *Chad Edmondson* 12/20/2023

CHIEF, DEVELOPMENT DIVISION DATE: 12/4/2023

CHIEF, DIVISION OF ZONING DESIGN DATE: 12/20/2023

DIRECTOR: *Linda Eisenberg* DATE:

CONSTRUCTION NOTES

- 1 LANDING AREA. 2% MAXIMUM SLOPE IN ALL DIRECTIONS.
- 2 COURT/SKATE PARK ENTRANCE.
- 3 BLEACHER PADS.

OWNERS/DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

Signature of Bob Linz, Bob Linz - Bureau Chief of Capital Projects, dated 10/18/2023.

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS. THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Anthony Olsen, Designer's Signature, dated 10/18/2023.

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

Approved by Alexander Bratovic, dated 12/4/2023.

BLANDAIR PHASE 6 SOILS TABLE with columns: Soil Symbol, Soil Description, HSG, K Value.

GENERAL NOTES

- 1. REFER TO SHEET C5.1 FOR EROSION AND SEDIMENT CONTROL NOTES.
2. REFER TO SHEET C5.2 AND C5.3 FOR EROSION AND SEDIMENT CONTROL DETAILS.
3. REFER TO SHEET C5.3 FOR SEQUENCE OF CONSTRUCTION.

INLET PROTECTION TABLE

Table with columns: STRUCTURE, TYPE OF IP, DA. Lists structures I-1 through I-11.

SUPER SILT FENCE DA TABLE

Table with columns: SUPER SILT FENCE #, INITIAL DA, FINAL DA, LF. Lists fences SSF-1 through SSF-7.

SILT FENCE DA TABLE

Table with columns: ESD SILT FENCE #, DA, LF. Lists fences MBR #1 through MBR #9 and FPH #1 through FPH #4.

DIVERSION FENCE DA TABLE

Table with columns: DIVERSION FENCE #, DA, LF. Lists fences DF-1 and DF-2.

EARTH DIKE DA TABLE

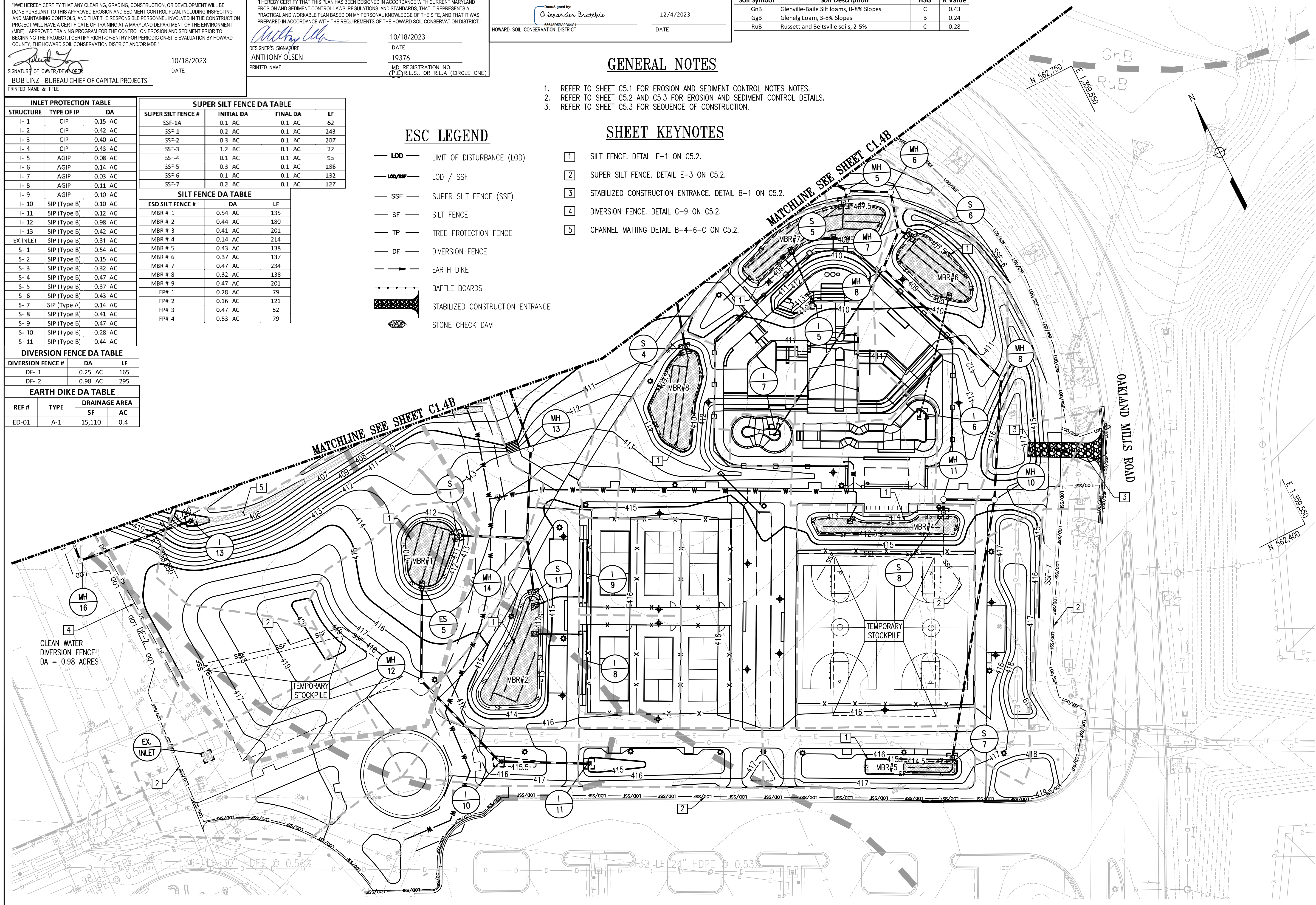
Table with columns: REF #, TYPE, DRAINAGE AREA. Lists dike ED-01.

ESC LEGEND

- LOD - LIMIT OF DISTURBANCE (LOD)
LOD/SSF - LOD / SSF
SSF - SUPER SILT FENCE (SSF)
SF - SILT FENCE
TP - TREE PROTECTION FENCE
DF - DIVERSION FENCE
ED - EARTH DIKE
BB - BAFFLE BOARDS
SCE - STABILIZED CONSTRUCTION ENTRANCE
SCD - STONE CHECK DAM

SHEET KEYNOTES

- 1 SILT FENCE. DETAIL E-1 ON C5.2.
2 SUPER SILT FENCE. DETAIL E-3 ON C5.2.
3 STABILIZED CONSTRUCTION ENTRANCE. DETAIL B-1 ON C5.2.
4 DIVERSION FENCE. DETAIL C-9 ON C5.2.
5 CHANNEL MATTING DETAIL B-4-6-C ON C5.2.

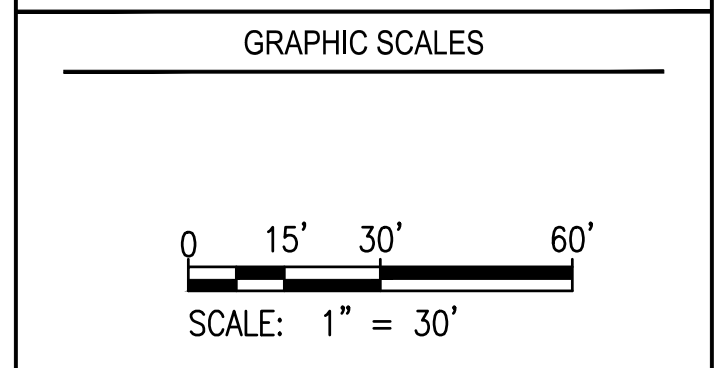


REVISIONS table with columns for revision number and description.

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS, DEPARTMENT OF PUBLIC WORKS.

WRAP Whitman, Reardon & Associates, LLP logo and address.

PROPERTY TAX MAP 36, GRID 5, PARCEL 3. ZONING: RC-DEO. ELECTION DISTRICT 6.



SIGNATURE section with professional seal of Alexander Bratovic, dated 10/16/23.

BLANDAIR REGIONAL PARK - PHASE 6

EROSION AND SEDIMENT CONTROL PLAN A. Drawing No. C1.4A. Scale: 1" = 30'. Date: 10/2023. Des: BWJ. Drawn: JTD. Check: AUO.

APPROVED: DEPARTMENT OF PLANNING AND ZONING. Chief Development Engineering Division: Chad Edmondson, dated 12/20/2023.

VERIZON DUCT BANK NOTE: 3.0 FEET OF COVER SHALL BE MAINTAINED OVER VERIZON EXISTING DUCT BANK. ATHLETIC COURTS CONSTRUCTION SHALL BE ALLOWED OVER EXISTING DUCT BANK AS LONG AS MINIMUM COVER IS PROVIDED.

SHEET KEYNOTES

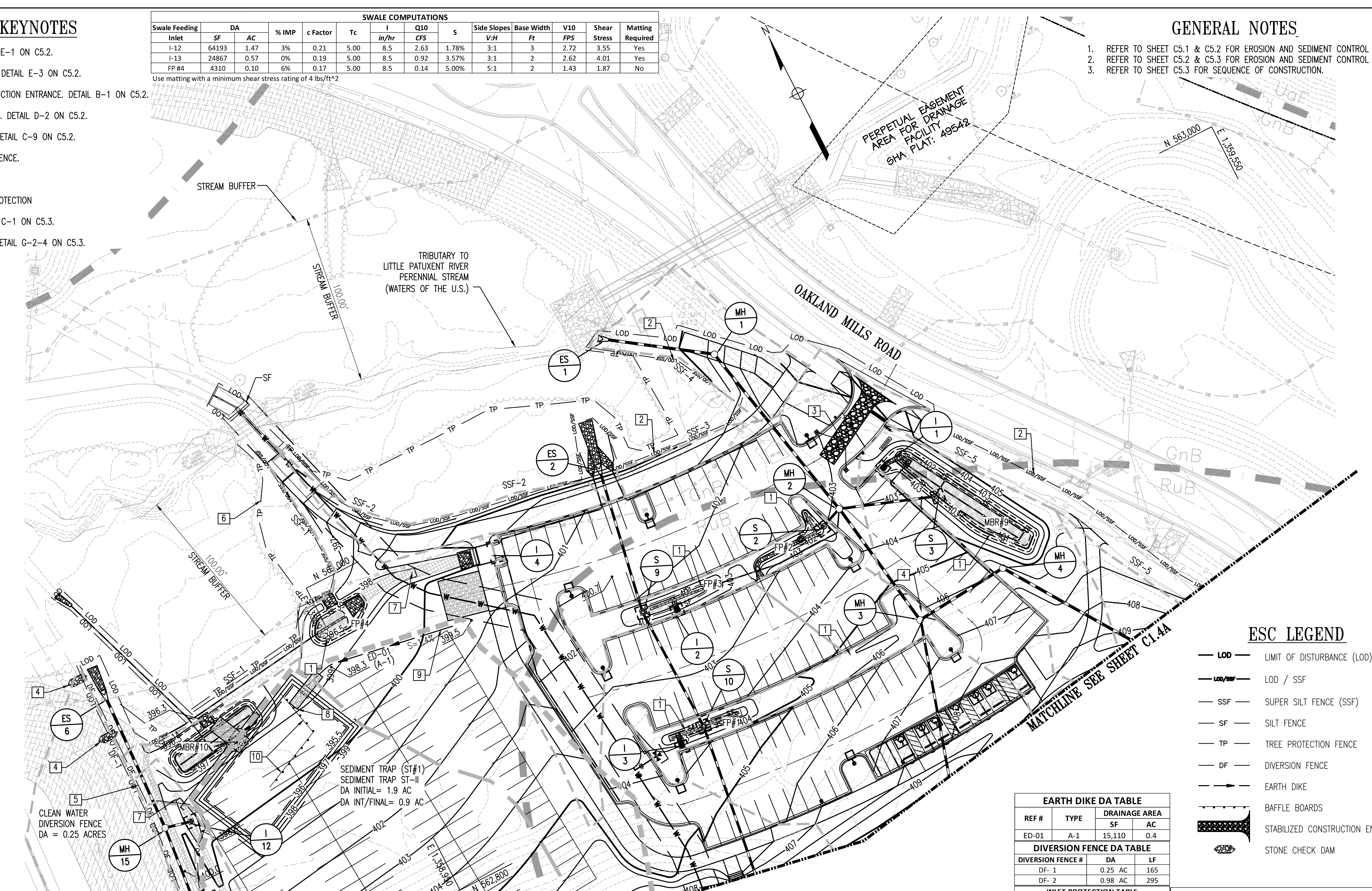
- 1 SILT FENCE. DETAIL E-1 ON C5.2.
- 2 SUPER SILT FENCE. DETAIL E-3 ON C5.2.
- 3 STABILIZED CONSTRUCTION ENTRANCE. DETAIL B-1 ON C5.2.
- 4 STONE CHECK DAMN. DETAIL D-2 ON C5.2.
- 5 DIVERSION FENCE. DETAIL C-9 ON C5.2.
- 6 TREE PROTECTION FENCE.
- 7 CHANNEL MATTING.
- 8 RIP RAP INFLOW PROTECTION
- 9 EARTH DIKE. DETAIL C-1 ON C5.3.
- 10 BAFFLE BOARDS. DETAIL G-2-4 ON C5.3.

SWALE COMPUTATIONS													
Swale Feeding	DA		% IMP	c Factor	Tc	Q10		S	Side Slopes	Base Width	V10	Shear Stress	Matting Required
	Inlet	SF				AC	in/hr						
I-12	64193	1.47	3%	0.21	5.00	8.5	2.63	1.78%	3:1	3	2.72	3.55	Yes
I-13	24867	0.57	0%	0.19	5.00	8.5	0.92	3.57%	3:1	2	2.62	4.01	Yes
FP #4	4310	0.10	6%	0.17	5.00	8.5	0.14	5.00%	5:1	2	1.43	1.87	No

Use matting with a minimum shear stress rating of 4 lbs/ft²

GENERAL NOTES

- 1. REFER TO SHEET C5.1 & C5.2 FOR EROSION AND SEDIMENT CONTROL NOTES.
- 2. REFER TO SHEET C5.2 & C5.3 FOR EROSION AND SEDIMENT CONTROL DETAILS.
- 3. REFER TO SHEET C5.3 FOR SEQUENCE OF CONSTRUCTION.



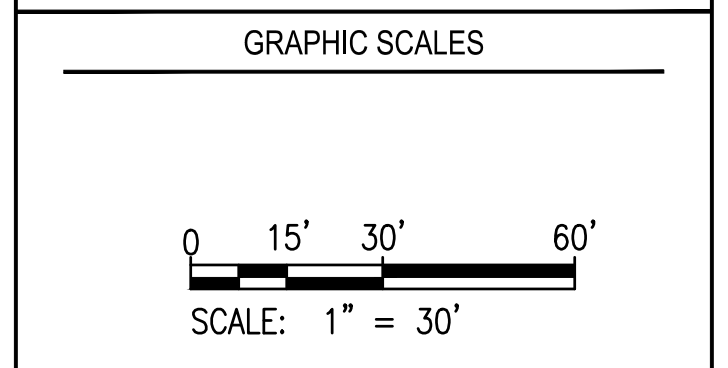
REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



SIGNATURE

DocuSigned by: Anthony Olsen
 120F4C048E8844A
 10/16/13

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376
 EXPIRATION DATE: 10/16/2023

BLANDAIR REGIONAL PARK - PHASE 6

EROSION AND SEDIMENT CONTROL PLAN B

Drawing No.
C1.4B

Scale: 1" = 30'

Date: 10/20/2023 SDP Sheet 13 of 54
 Des: BWJ Drawn: JTD Check: AUO

ESC LEGEND

- LOD — LIMIT OF DISTURBANCE (LOD)
- LOD/SSF — LOD / SSF
- SSF — SUPER SILT FENCE (SSF)
- SF — SILT FENCE
- TP — TREE PROTECTION FENCE
- DF — DIVERSION FENCE
- E — EARTH DIKE
- B — BAFFLE BOARDS
- SCD — STABILIZED CONSTRUCTION ENTRANCE
- SC — STONE CHECK DAM

EARTH DIKE DA TABLE			
REF #	TYPE	DRAINAGE AREA	
		SF	AC
ED-01	A-1	15,110	0.4

DIVERSION FENCE DA TABLE			
DIVERSION FENCE #	DA	LF	
DF-1	0.25 AC	165	
DF-2	0.98 AC	295	

INLET PROTECTION TABLE			
STRUCTURE	TYPE OF IP	DA	
I-1	CIP	0.15 AC	
I-2	CIP	0.42 AC	
I-3	CIP	0.40 AC	
I-4	CIP	0.43 AC	
I-5	AGIP	0.08 AC	
I-6	AGIP	0.14 AC	
I-7	AGIP	0.03 AC	
I-8	AGIP	0.11 AC	
I-9	AGIP	0.10 AC	
I-10	SIP (Type B)	0.10 AC	
I-11	SIP (Type B)	0.12 AC	
I-12	SIP (Type B)	0.98 AC	
I-13	SIP (Type B)	0.42 AC	
EX INLET	SIP (Type B)	0.31 AC	
S-1	SIP (Type B)	0.54 AC	
S-2	SIP (Type B)	0.15 AC	
S-3	SIP (Type B)	0.32 AC	
S-4	SIP (Type B)	0.47 AC	
S-5	SIP (Type B)	0.37 AC	
S-6	SIP (Type B)	0.43 AC	
S-7	SIP (Type A)	0.14 AC	
S-8	SIP (Type B)	0.41 AC	
S-9	SIP (Type B)	0.47 AC	
S-10	SIP (Type B)	0.28 AC	
S-11	SIP (Type B)	0.44 AC	

SUPER SILT FENCE DA TABLE			
SUPER SILT FENCE #	INITIAL DA	FINAL DA	LF
SSF-1A	0.1 AC	0.1 AC	62
SSF-1	0.2 AC	0.1 AC	243
SSF-2	0.3 AC	0.1 AC	207
SSF-3	1.2 AC	0.1 AC	72
SSF-4	0.1 AC	0.1 AC	55
SSF-5	0.3 AC	0.1 AC	186
SSF-6	0.1 AC	0.1 AC	132
SSF-7	0.2 AC	0.1 AC	127

SILT FENCE DA TABLE			
ESD SILT FENCE #	DA	LF	
MBR # 1	0.54 AC	135	
MBR # 2	0.44 AC	180	
MBR # 3	0.41 AC	201	
MBR # 4	0.14 AC	214	
MBR # 5	0.43 AC	138	
MBR # 6	0.37 AC	137	
MBR # 7	0.47 AC	234	
MBR # 8	0.32 AC	138	
MBR # 9	0.47 AC	201	
FPH 1	0.28 AC	79	
FPH 2	0.16 AC	121	
FPH 3	0.47 AC	52	
FPH 4	0.53 AC	79	

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

DocuSigned by: *Anthony Olsen*
 ANTHONY OLSEN
 10/18/2023
 DATE

OWNERS/DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE.

DocuSigned by: *Alexander Bratovich*
 BOB LINZ - BUREAU CHIEF OF CAPITAL PROJECTS
 10/18/2023
 DATE

VERIZON DUCT BANK NOTE:
 3.0 FEET OF COVER SHALL BE MAINTAINED OVER VERIZON EXISTING DUCT BANK. ATHLETIC COURTS CONSTRUCTION SHALL BE ALLOWED OVER EXISTING DUCT BANK AS LONG AS MINIMUM COVER IS PROVIDED. ALL CROSSINGS SHALL BE ENCASED IN CONCRETE. ACCESS TO VAULTS SHALL BE MAINTAINED AT ALL TIMES. NO SWM FACILITIES TO BE BUILT OVER THE EXISTING DUCT BANK.

BLANDAIR PHASE 6 SOILS TABLE			
Soil Symbol	Soil Description	HSG	K Value
GnB	Glennville-Baile Silt loams, 0-8% Slopes	C	0.43
GgB	Glennville Loams, 3-8% Slopes	B	0.24
RuB	Russett and Beltsville soils, 2-5%	C	0.28

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

DocuSigned by: *Alexander Bratovich*
 HOWARD SOIL CONSERVATION DISTRICT
 12/4/2023
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 12/20/2023

DocuSigned by: *Chad Edmondson*
 CHIEF, DEVELOPMENT PERMITTING DIVISION
 DATE: 12/4/2023

DocuSigned by: *Lynnda Eversberg*
 CHIEF, DIVISION OF CONSTRUCTION
 DATE: 12/20/2023

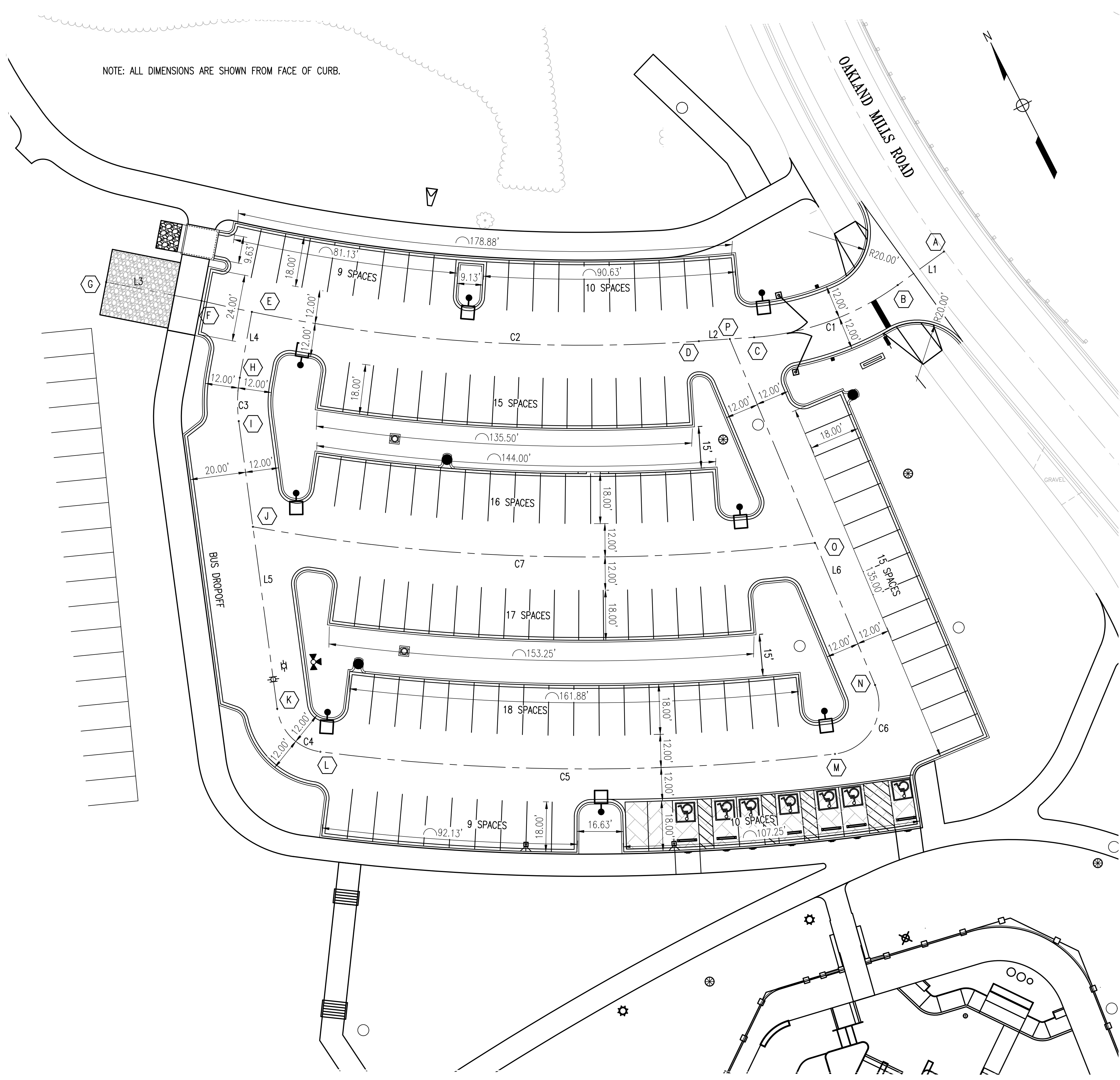
DocuSigned by: *Lynnda Eversberg*
 DIRECTOR
 DATE: 12/20/2023

STAKEOUT TABLE

LINE AND POINT INFORMATION TABLE					
POINT	NORTHING	EASTING	LINE	DISTANCE	BEARING
A	562959.30	1359320.22	L1	20.54	S 55-36'-13" W
B	562947.70	1359303.27			
C	562930.31	1359251.09			
D	562929.45	1359231.16	L2	19.95	N 87-31'-48" E
E	562944.37	1359070.59	L4 (E-H)	24.11	S 11-55'-53" W
F	562948.85	1359052.58			
G	562956.53	1359018.44	L3	35.00	N 77-19'-20" W
H	562920.78	1359065.60			
I	562905.17	1359064.80	L5	104.53	S 06-03'-18" E
J	562866.99	1359068.85			
K	562801.22	1359075.83			
L	562785.34	1359090.93			
M	562779.52	1359276.11			
N	562803.95	1359291.21			
O	562855.72	1359271.12	L6	135.13	N 21-12'-49" W
P	562929.93	1359242.31			

CURVE INFORMATION TABLE

CURVE #	RADIUS	LENGTH	CENTER COORDINATES	
			NORTHING	EASTING
C1	100.00	53.72	563030.22	1359246.78
C2	555.79	180.31	563524.69	1359205.48
C3	50.00	15.70	562910.44	1359114.52
C4	18.00	23.56	562803.12	1359099.73
C5	744.33	185.76	563520.61	1359206.73
C6	18.00	33.26	562797.44	1359274.43
C7	668.00	203.37	563320.61	1359206.73



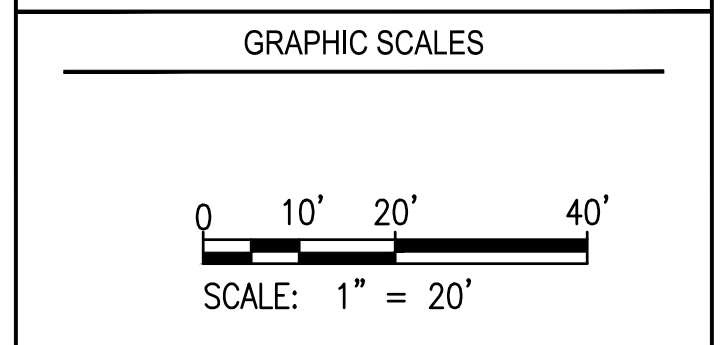
REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



SIGNATURE

DocuSigned by:
 109F4C348E8044A
 PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 09/22/2025

BLANDAIR REGIONAL PARK - PHASE 6

STAKEOUT PLAN
 Drawing No.
C1.5
 Scale: 1" = 20'
 Date: 10/2023 SDP Sheet 14 of 54
 Des: BWJ Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING

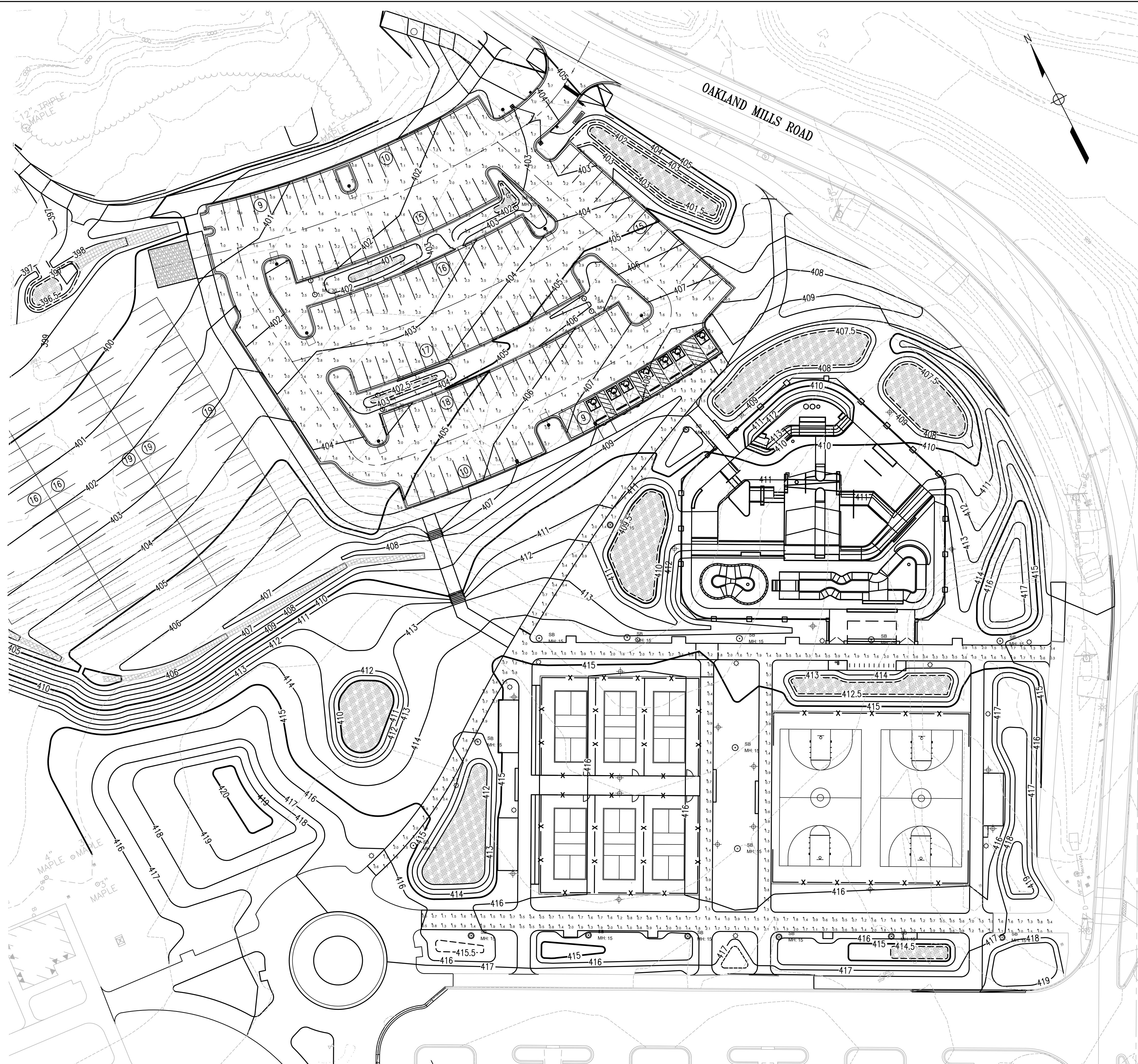
Chief, Development & Zoning Division: *Charles Edmondson* 12/20/2023

Chief, Division of Land Development: *Linda Eisenberg* 12/4/2023

Director: *Linda Eisenberg* 12/20/2023

NOTES

1. THIS PLAN COMPLIES WITH SUBSECTION 134.0.D.1 OF THE ZONING REGULATIONS FOR LIGHT TRESPASS.



REVISIONS	

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

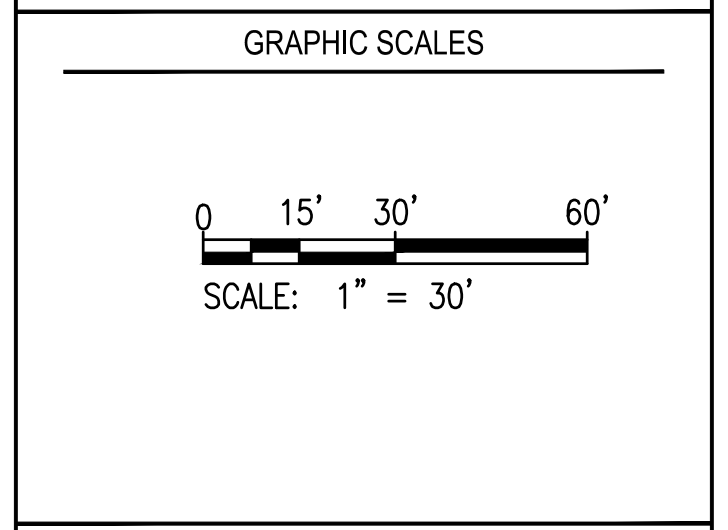


PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6



SIGNATURE

DocuSigned by:
Whittney Oler
10/16/23

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 10/16/2023

BLANDAIR REGIONAL PARK - PHASE 6

PHOTOMETRIC TEST DIAGRAM

Drawing No.
C1.6

Scale: 1" = 30'

Date: 10/2023 SDP Sheet 15 of 54

Des: BWJ Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING

12/20/2023

CHIEF, DEVELOPMENT DIVISION

12/4/2023

CHIEF, DIVISION OF ZONING

12/20/2023

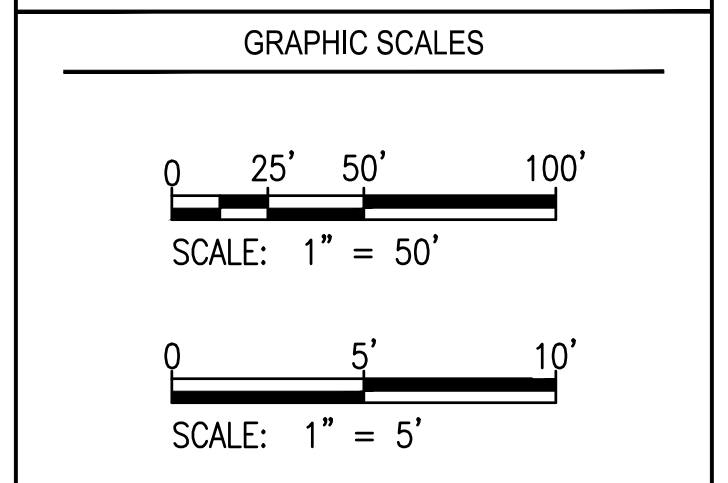
DIRECTOR

REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043



PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6

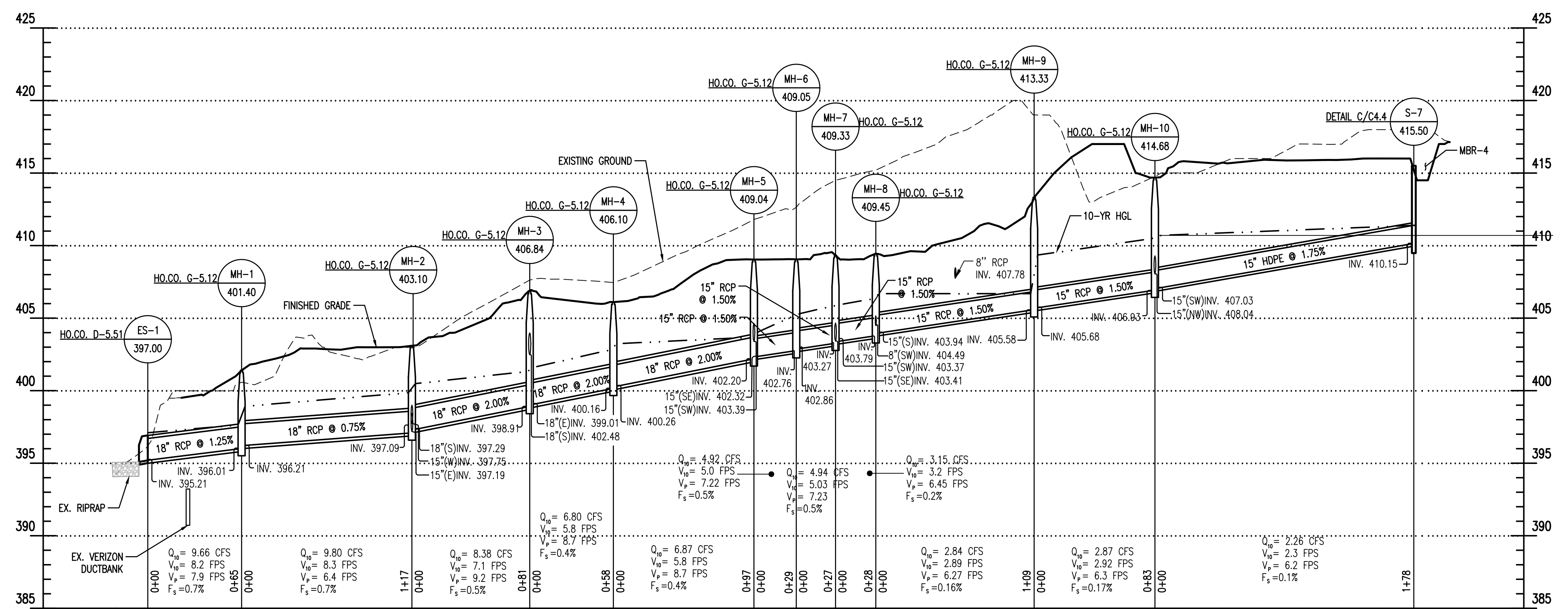


SIGNATURE

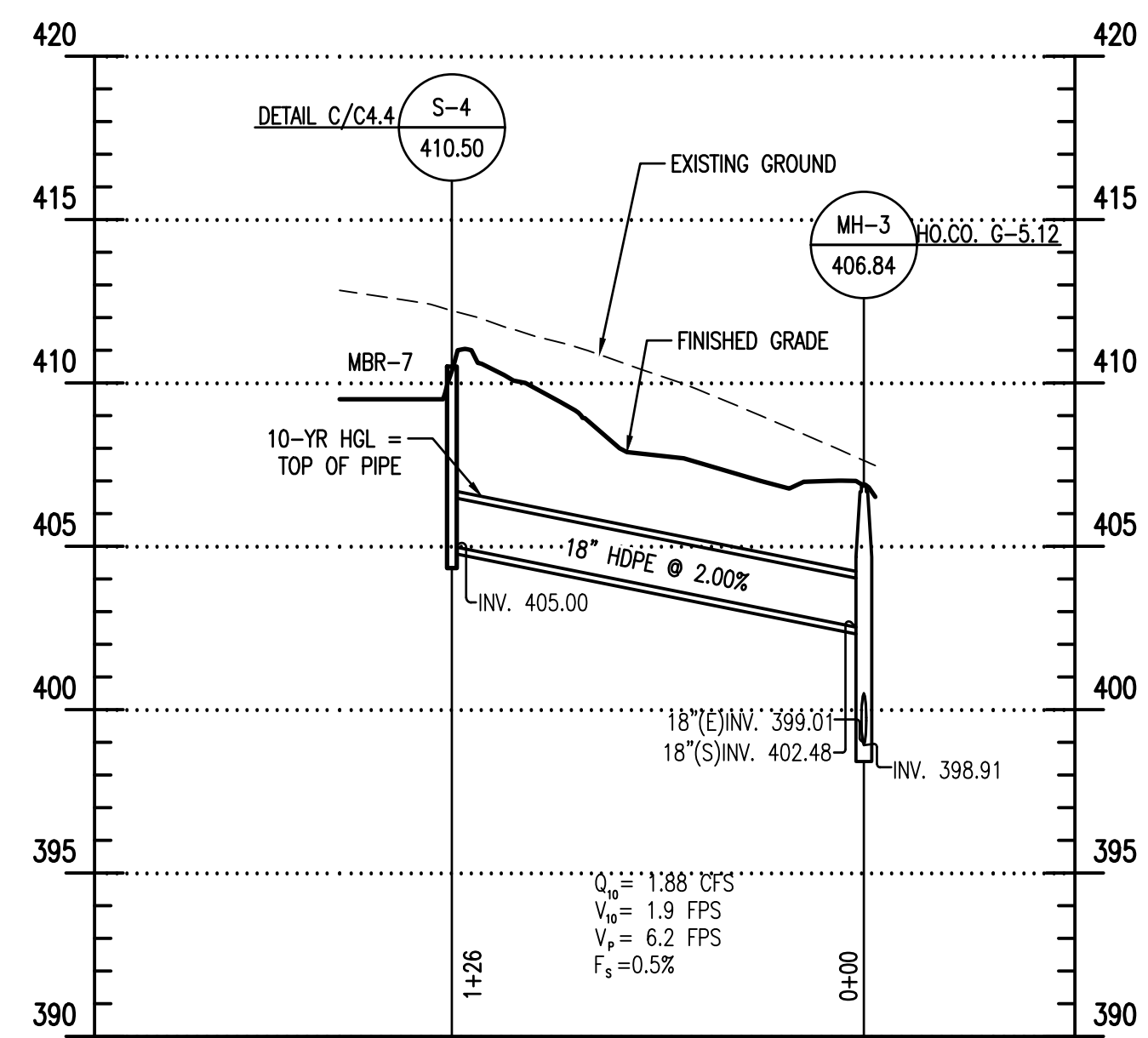
10/16/23
 10BF6C48E804A...
 PROFESSIONAL CERTIFICATION
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BLANDAIR REGIONAL PARK - PHASE 6

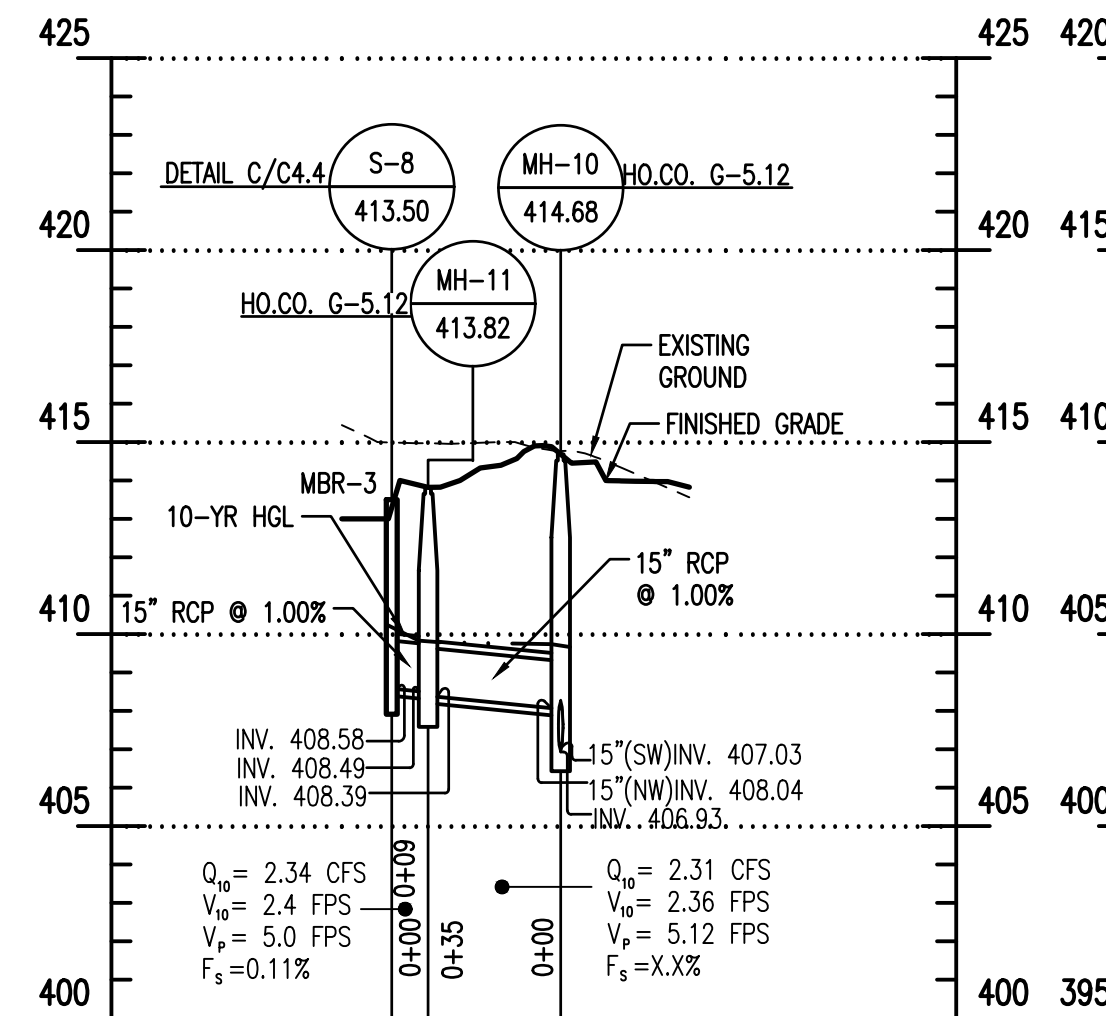
STORM DRAIN PROFILES
 Drawing No. **C2.1**
 Scale: 1" = 50' HORZ 1" = 5' VERT
 Date: 10/2023 SDP Sheet 16 of 54
 Des: BWJ Drawn: LEM Check: AUO



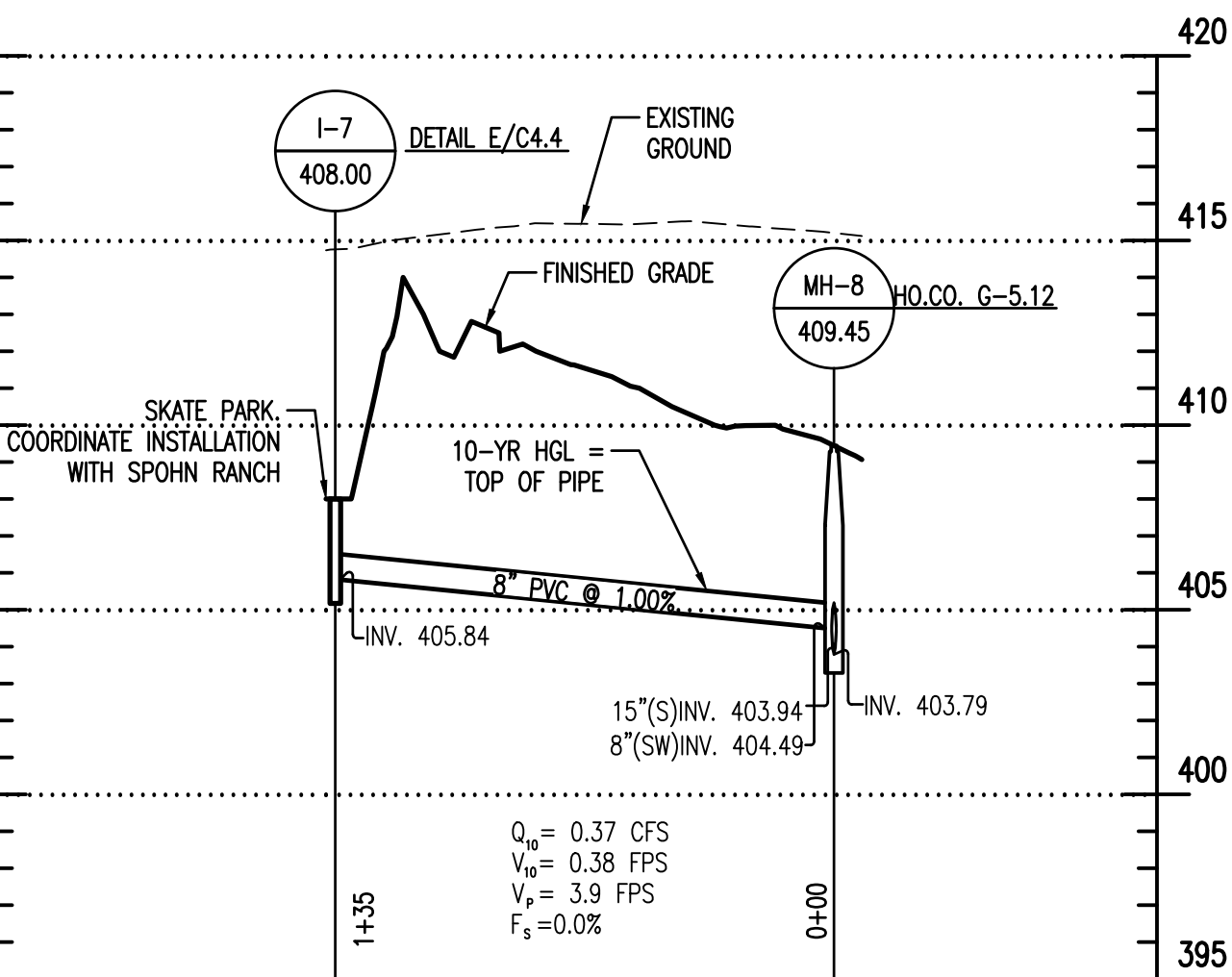
ES-1 TO S-7 - STORM DRAIN PROFILE
 SCALE: 1"=50' HORIZ.
 1"=5' VERT.



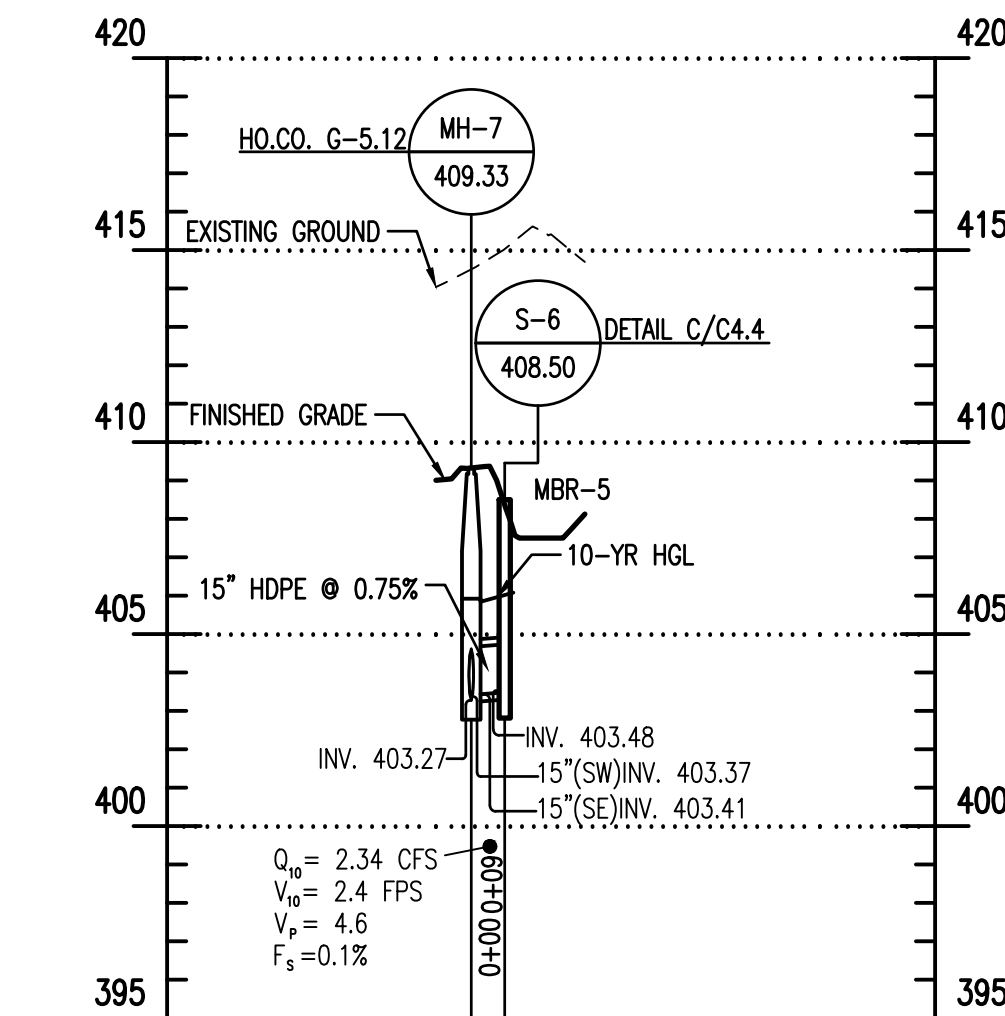
S-4 TO MH-3 - STORM DRAIN PROFILE
 SCALE: 1"=50' HORIZ.
 1"=5' VERT.



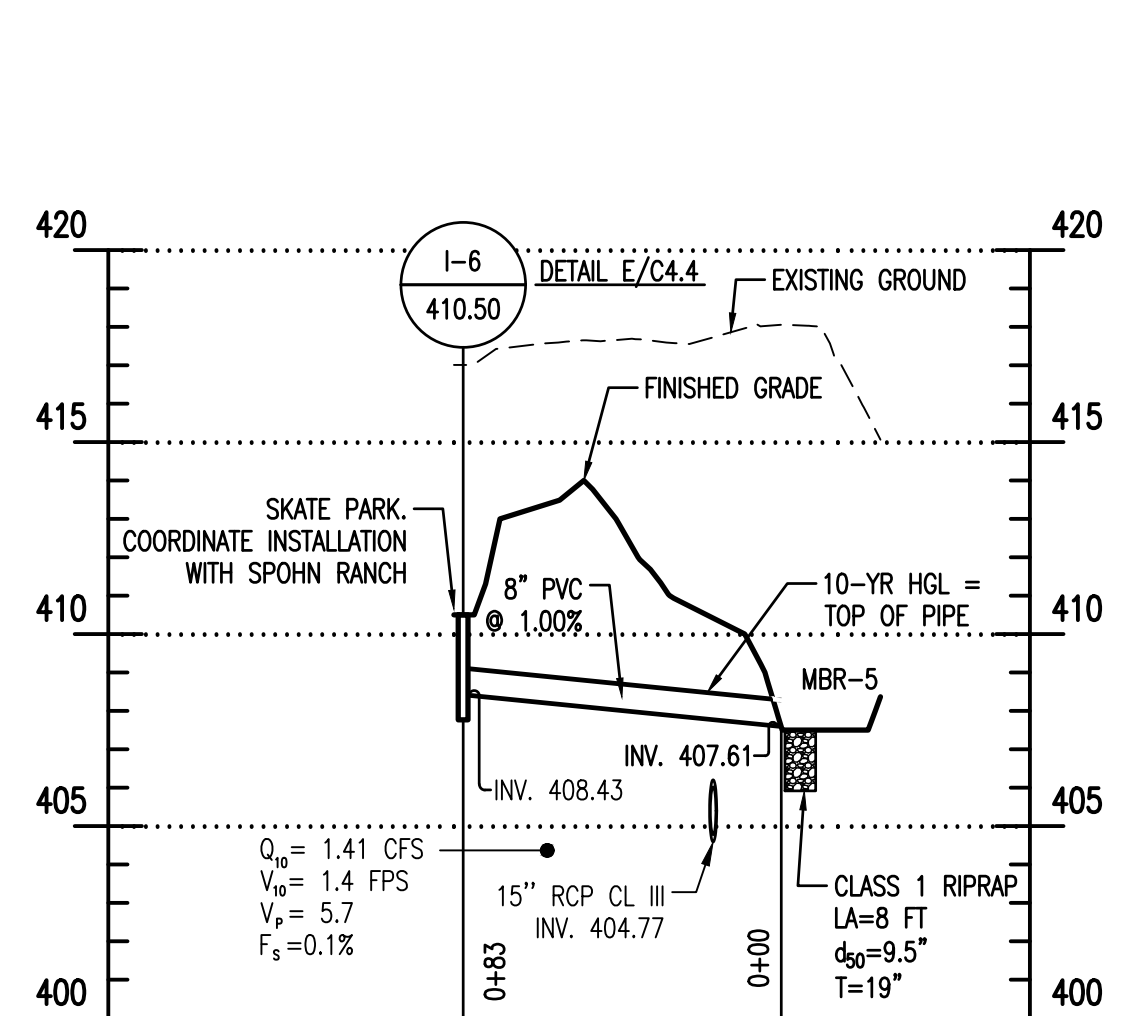
S-8 TO MH-11 - STORM DRAIN PROFILE
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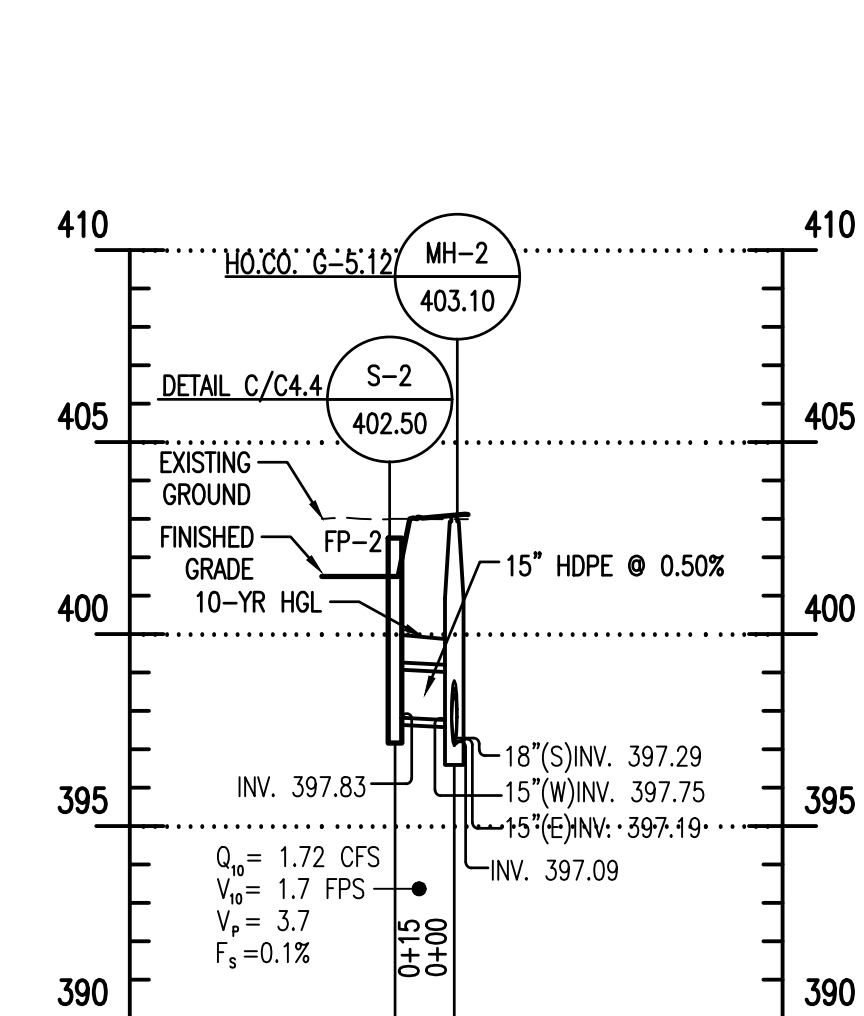
I-7 TO MH-8 - STORM DRAIN PROFILE
 SCALE: 1"=50' HORIZ.
 1"=5' VERT.



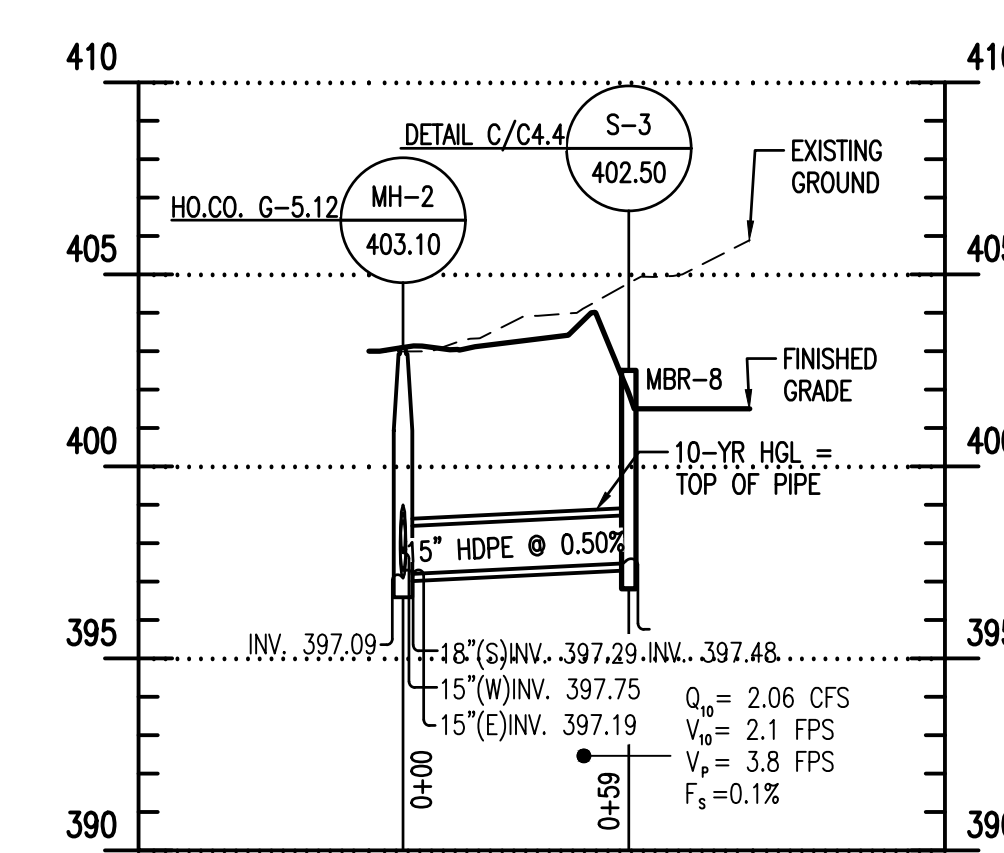
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 1"=5' VERT.



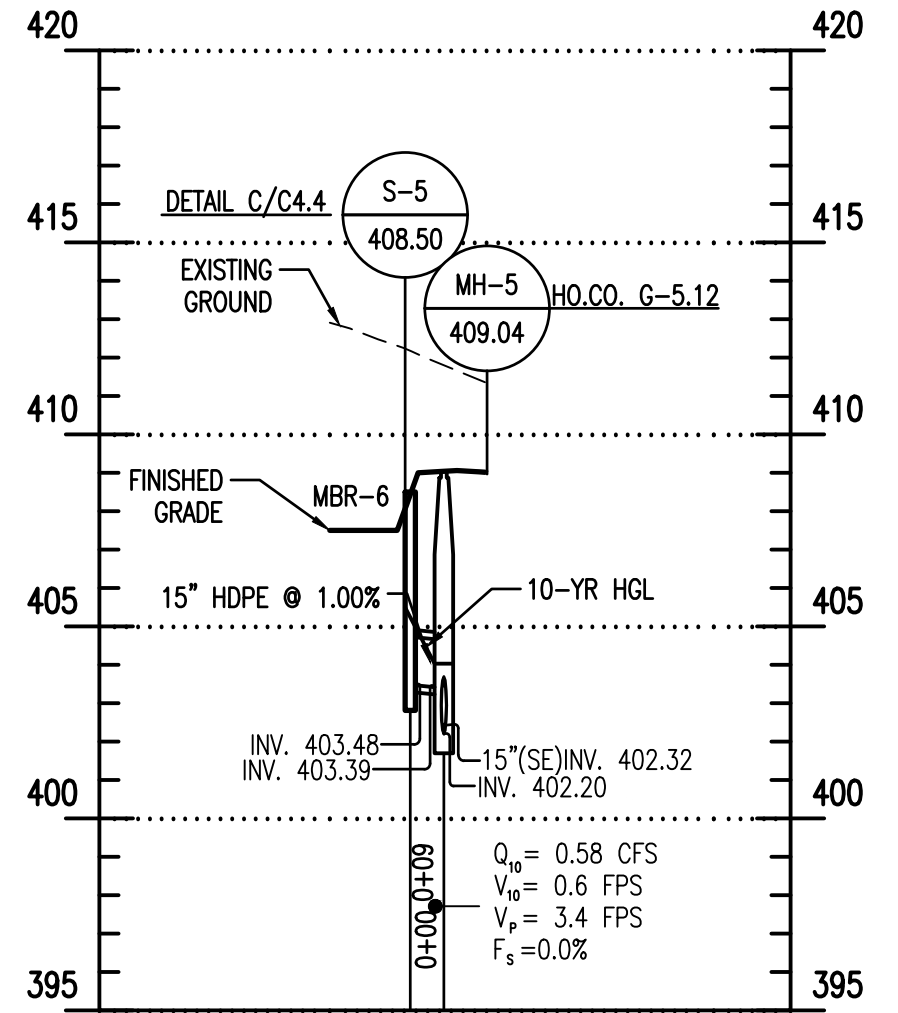
I-6 TO MBR-5 - STORM DRAIN PROFILE
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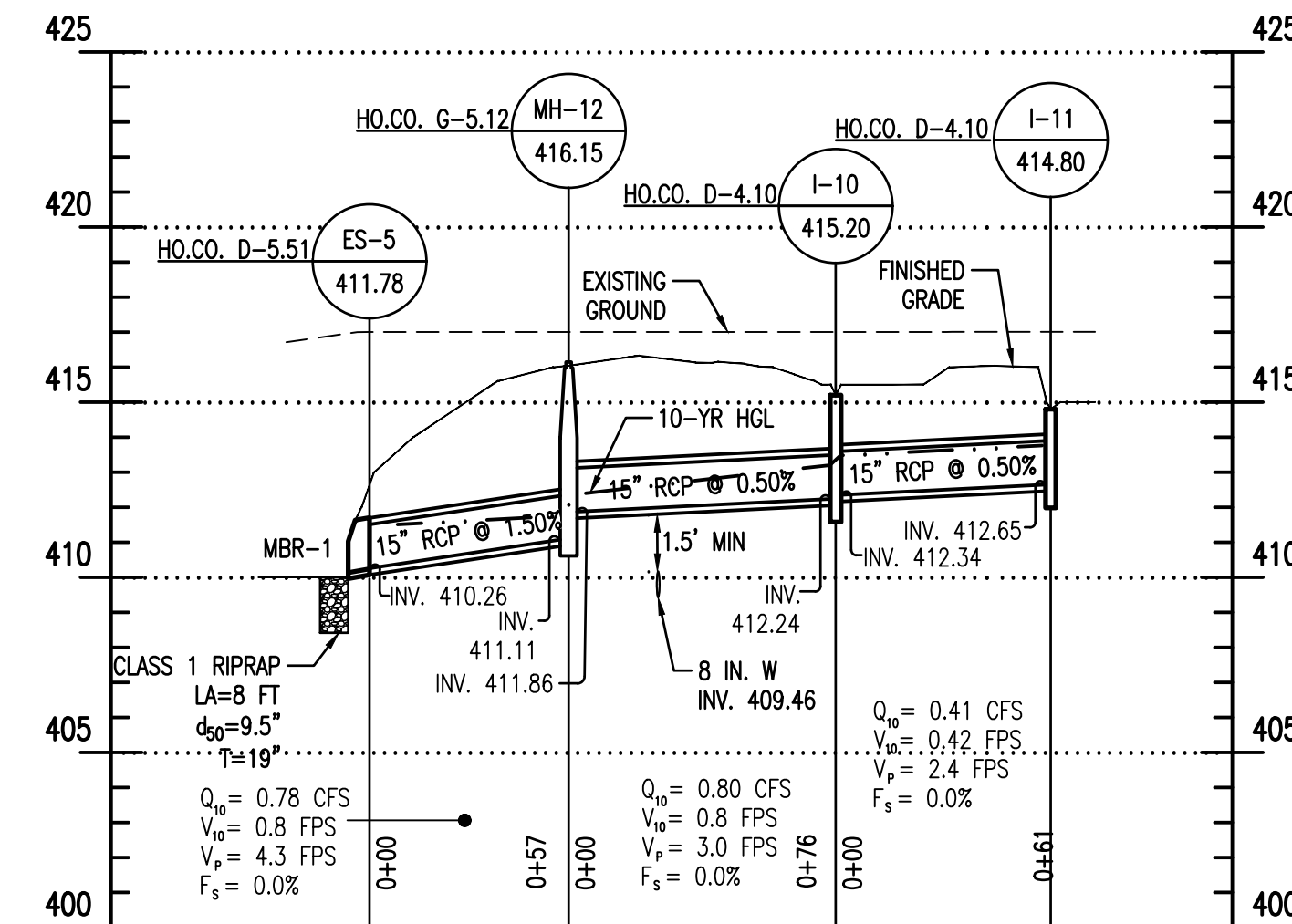
S-2 TO MH-2 - STORM DRAIN PROFILE
 SCALE: 1"=50' HORIZ.
 1"=5' VERT.



S-3 TO MH-2 - STORM DRAIN PROFILE
 SCALE: 1"=50' HORIZ.
 1"=5' VERT.



S-5 TO MH-5 - STORM DRAIN PROFILE
 SCALE: 1"=50' HORIZ.
 1"=5' VERT.



ES-7 TO I-11 - STORM DRAIN PROFILE
 SCALE: 1"=50' HORIZ.
 1"=5' VERT.

- NOTES:
- PIPES WITH AN HGL 2 FEET OR MORE ABOVE THE CROWN SHALL BE CONNECTED TO STRUCTURES WITH RUBBER GASKETS. SEE SHEET C2.3 FOR PIPE SCHEDULE.
 - THE BOTTOM OF ALL DROP MANHOLE STRUCTURES SHALL BE LINED WITH GRANITE BLOCKS AT LEAST 4-INCHES THICK. SEE SHEET C2.3 FOR STRUCTURE SCHEDULE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

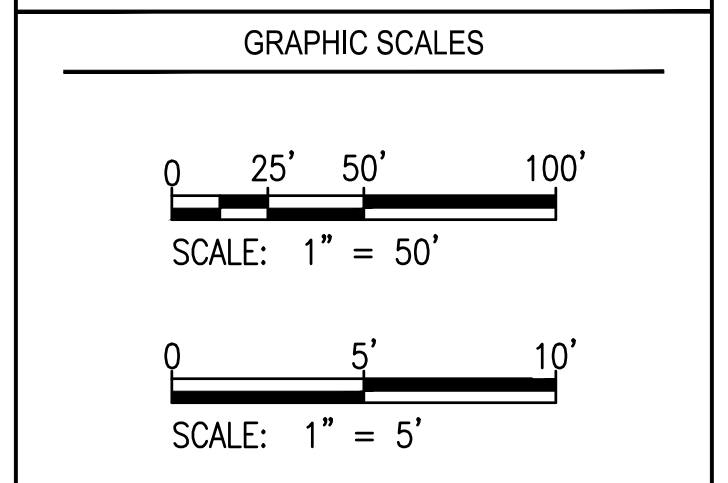
Chief, Development Division	12/20/2023
Chief, Division of Land Development	12/4/2023
Director	12/20/2023

REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043



PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6

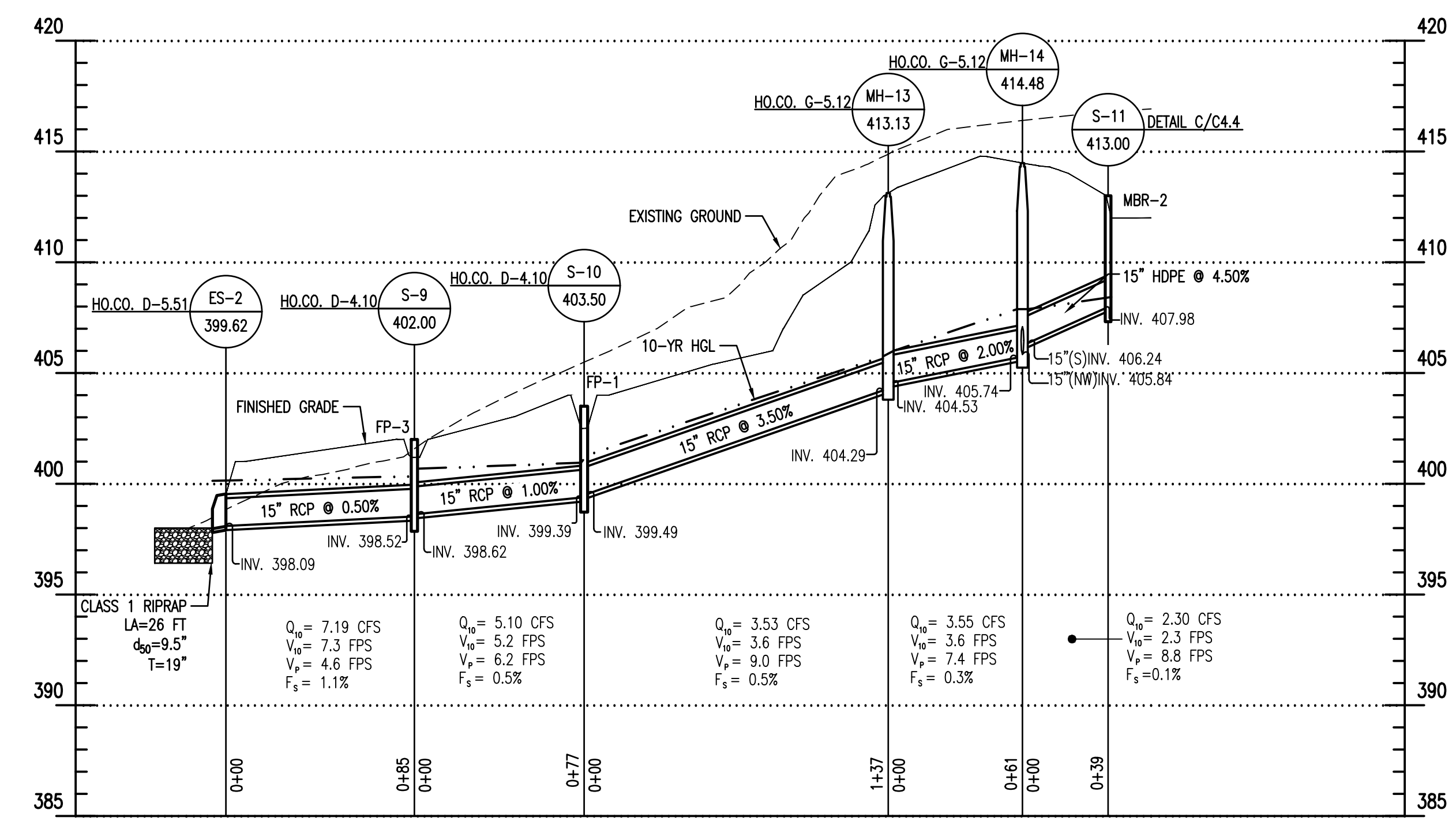


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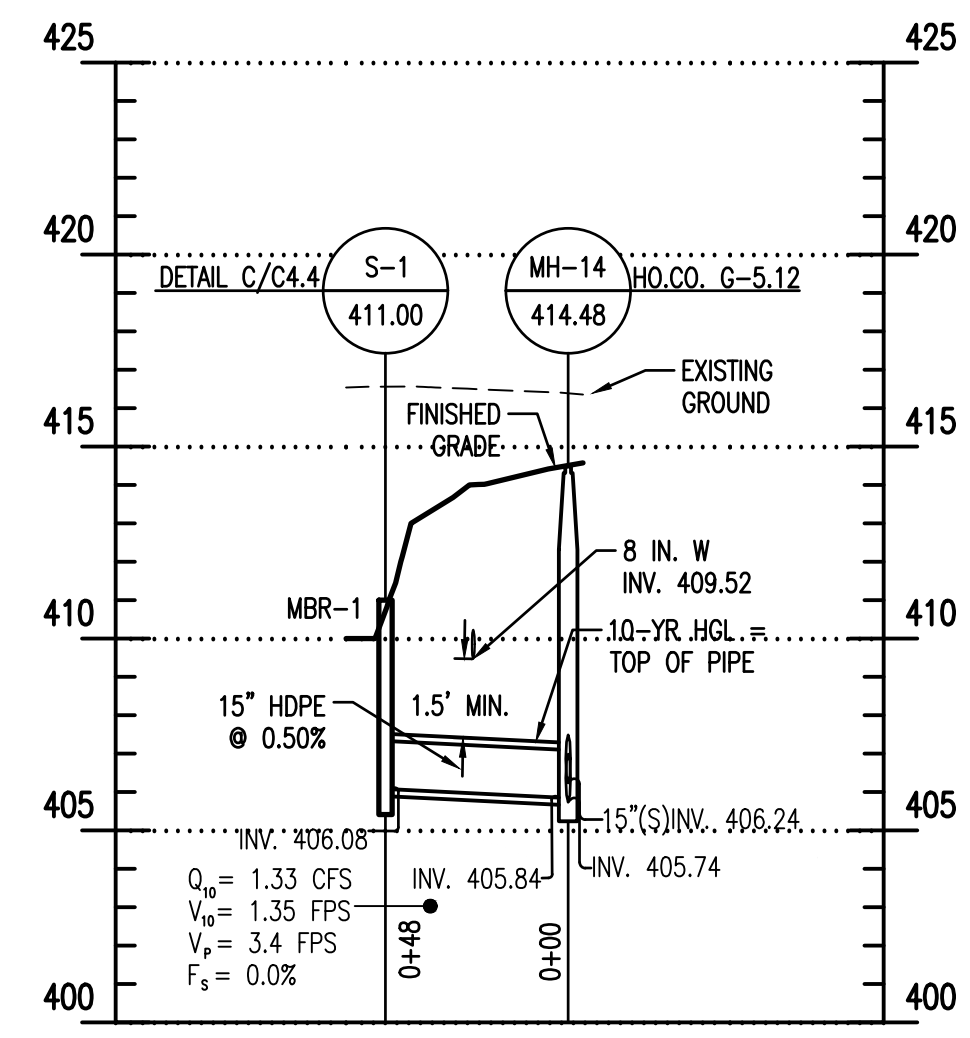
DocuSigned by:
 10DFAC48E8B44A...
 PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 10/22/2028

BLANDAIR REGIONAL PARK - PHASE 6

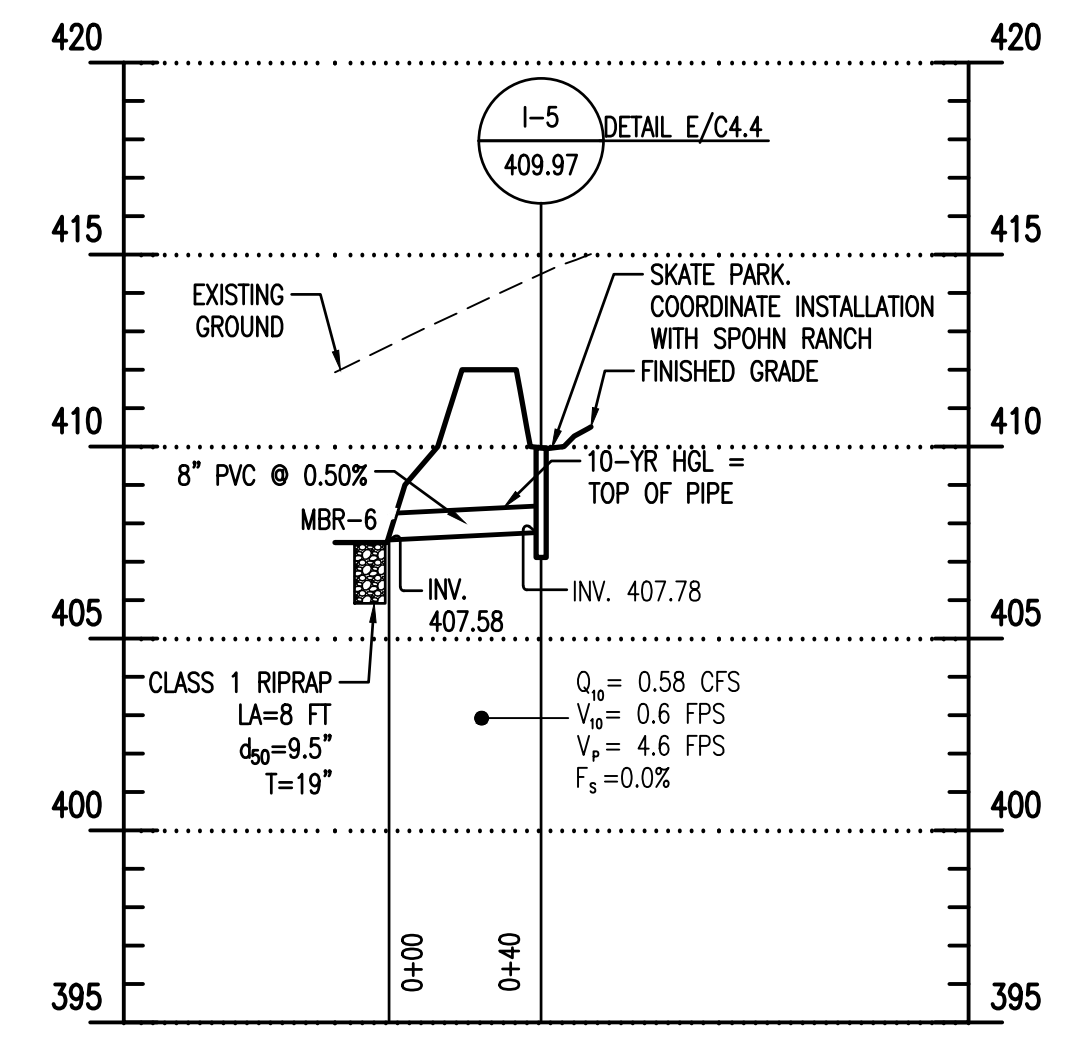
STORM DRAIN PROFILES
 Drawing No.
C2.2
 Scale: 1" = 50' HORZ 1" = 5' VERT
 Date: 10/2023 SDP Sheet 17 of 54
 Des: BWJ Drawn: LEM Check: AUO



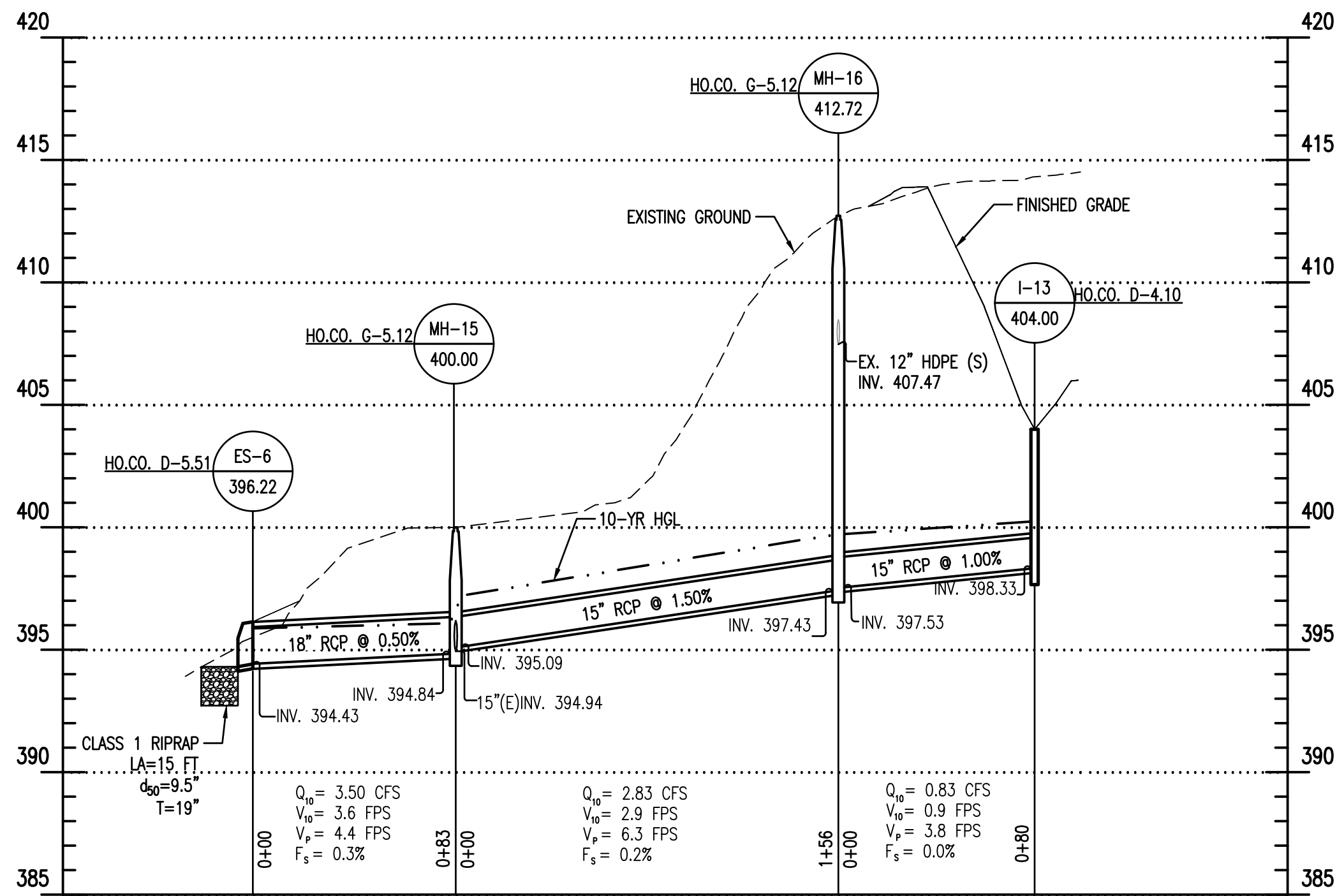
ES-2 TO S-11 - STORM DRAIN PROFILE
 SCALE: 1"=50' HORZ.
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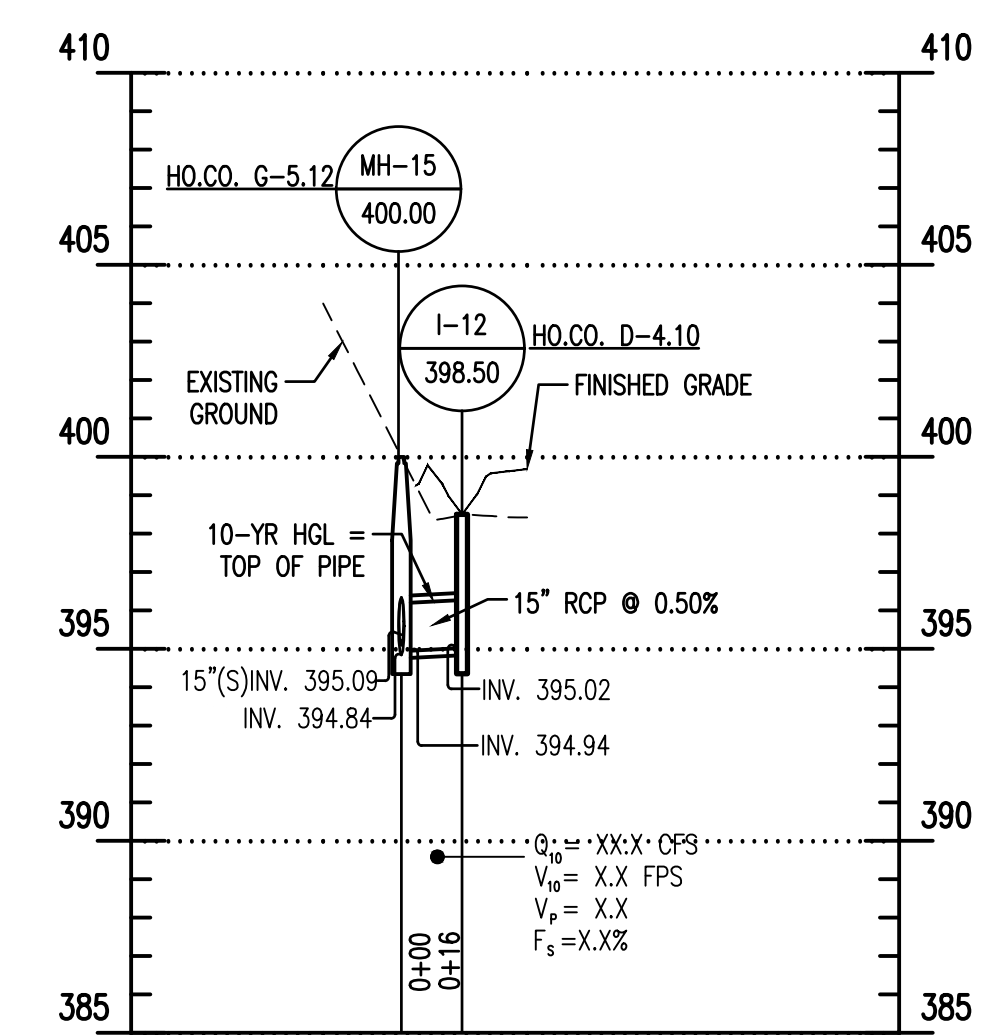
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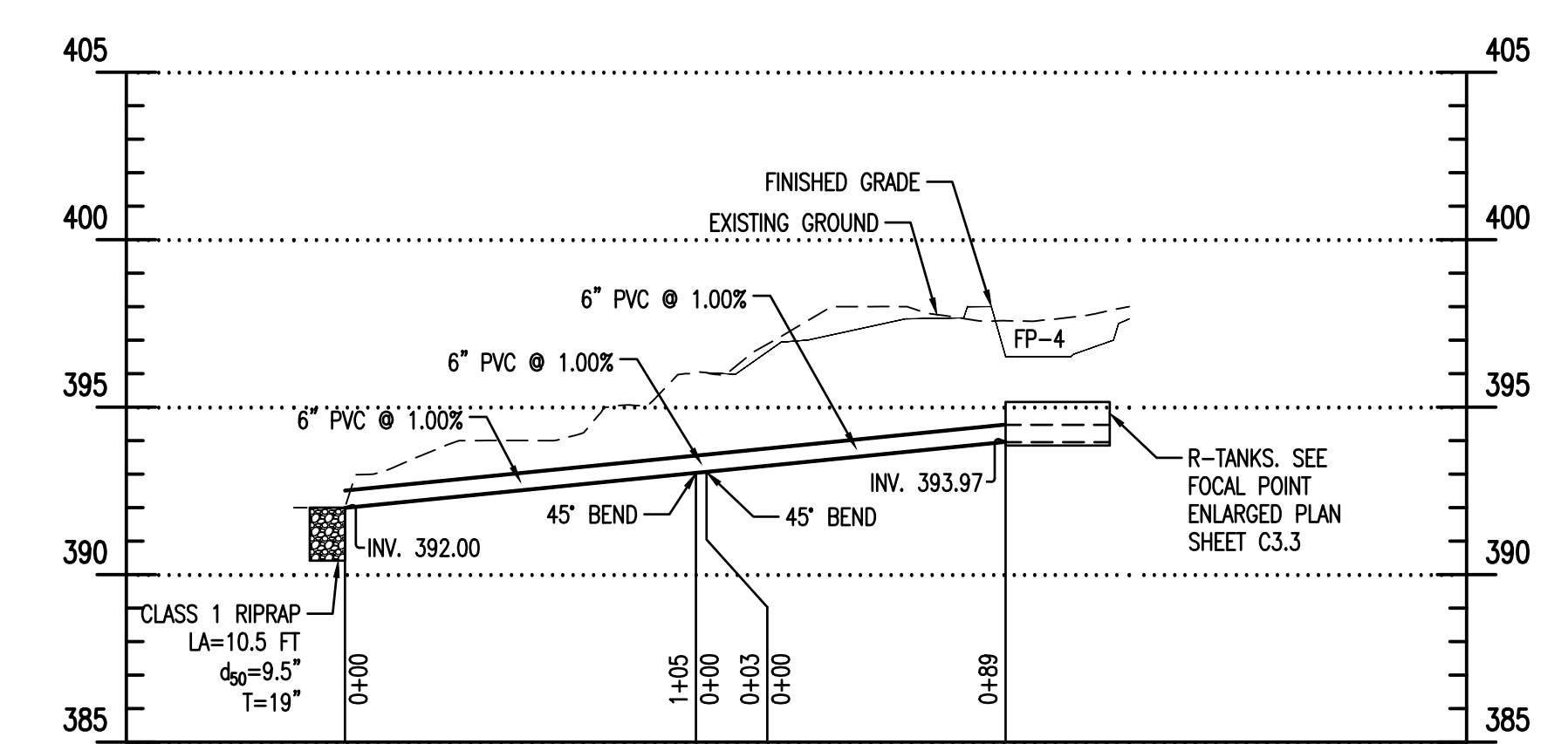
MBR-6 TO I-5 - STORM DRAIN PROFILE
 SCALE: 1"=50' HORZ.
 1"=5' VERT.



ES-8 TO I-13 - STORM DRAIN PROFILE
 SCALE: 1"=50' HORZ.
 1"=5' VERT.



MH-15 TO I-12 - STORM DRAIN PROFILE
 SCALE: 1"=50' HORZ.
 1"=5' VERT.



FP 4 OUTFALL - STORM DRAIN PROFILE
 SCALE: 1"=50' HORZ.
 1"=5' VERT.

- NOTES:
- PIPES WITH AN HGL 2 FEET OR MORE ABOVE THE CROWN SHALL BE CONNECTED TO STRUCTURES WITH RUBBER GASKETS. SEE SHEET C2.3 FOR PIPE SCHEDULE.
 - THE BOTTOM OF ALL DROP MANHOLE STRUCTURES SHALL BE LINED WITH GRANITE BLOCKS AT LEAST 4-INCHES THICK. SEE SHEET C2.3 FOR STRUCTURE SCHEDULE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Designed by: *Charles Edmondson* 12/20/2023
 CHIEF, DEVELOPMENT DIVISION DATE: 12/4/2023
 CHIEF, DIVISION OF ZONING DESIGN DATE: 12/20/2023
 DIRECTOR DATE:

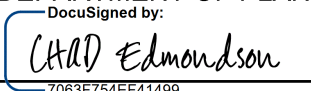
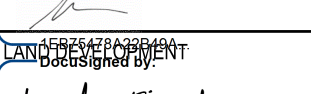
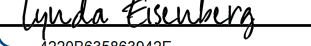
DRAINAGE STRUCTURE SCHEDULE					
STR. NO.	TYPE	TOP ELEV.	INVERTS	NORTHING	EASTING
ES-1	CONCRETE END SECTION - HO.CO. D-5.51	397.00	18" (SE) INV. 395.21	563050.50	1359174.32
ES-2	CONCRETE END SECTION - HO.CO. D-5.51	399.62	15" (S) INV. 398.09	562981.12	1359135.67
ES-5	CONCRETE END SECTION - HO.CO. D-5.51	411.78	15" (SW) INV. 410.26	562628.74	1358992.08
ES-6	CONCRETE END SECTION - HO.CO. D-5.51	396.22	18" (S) INV. 394.43	562994.55	1358815.19
I-1	RAIN GUARDIAN TURRET INLET - D-E/C4.5	402.70	-	562908.70	1359286.07
I-2	RAIN GUARDIAN TURRET INLET - D-E/C4.5	402.10	-	562889.30	1359139.38
I-3	RAIN GUARDIAN TURRET INLET - D-E/C4.5	403.65	-	562816.62	1359105.48
I-4	COG/COS INLET (L=10') - MDOT SHA MD 374.68	400.37	-	562968.22	1359058.20
I-5	AREA DRAIN GRATE - E/C4.4	409.97	8" (N) INV. 407.78	562683.95	1359320.49
I-6	AREA DRAIN GRATE - E/C4.4	410.50	8" (NE) INV. 408.43	562584.25	1359349.61
I-7	AREA DRAIN GRATE - E/C4.4	408.00	8" (NE) INV. 405.84	562618.24	1359255.94
I-8	TRENCH DRAIN - I/C4.3	415.25	15" (NE) INV. 410.99 15" (W) INV. 410.89	562541.16	1359070.12
I-9	TRENCH DRAIN - I/C4.3	415.25	15" (SW) INV. 411.29	562594.49	1359097.71
I-10	PRECAST TYPE 'D' INLET - HO.CO. D-4.10	415.20	15" (SE) INV. 412.34 15" (N) INV. 412.24	562505.32	1358987.90
I-11	PRECAST TYPE 'D' INLET - HO.CO. D-4.10	414.80	15" (NW) INV. 412.65	562476.05	1359041.92
I-12	PRECAST TYPE 'D' INLET - HO.CO. D-4.10	398.50	15" (W) INV. 395.02	562908.16	1358826.94
I-13	PRECAST TYPE 'D' INLET - HO.CO. D-4.10	404.00	15" (W) INV. 398.33	562746.36	1358875.67
MH-1	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	401.40	18" (S) INV. 396.21 18" (NW) INV. 396.01	563013.65	1359227.39
MH-2	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	403.10	18" (S) INV. 397.29 18" (N) INV. 397.09 15" (W) INV. 397.75 15" (E) INV. 397.19	562898.84	1359251.66
MH-3	MSHA MD 383.01 Std Manhole	406.84	18" (E) INV. 399.01 18" (N) INV. 398.91 18" (S) INV. 402.48	562818.73	1359264.44
MH-4	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	406.10	18" (SE) INV. 400.26 18" (W) INV. 400.16	562823.84	1359321.87
MH-5	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	409.04	15" (SE) INV. 402.32 18" (NW) INV. 402.20 15" (SW) INV. 403.39	562743.32	1359375.63
MH-6	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	409.05	15" (S) INV. 402.86 15" (NW) INV. 402.76	562729.48	1359401.30
MH-7	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	409.33	15" (SW) INV. 403.37 15" (N) INV. 403.27 15" (SE) INV. 403.41	562703.40	1359394.14
MH-8	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	409.45	15" (S) INV. 403.94 15" (NE) INV. 403.79 8" (SW) INV. 404.49	562685.18	1359373.21
MH-9	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	413.33	15" (SW) INV. 405.68 15" (N) INV. 405.58	562582.81	1359410.93
MH-10	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	414.68	15" (SW) INV. 407.03 15" (NE) INV. 406.93 15" (NW) INV. 408.04	562510.85	1359369.19
MH-11	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	413.82	15" (SE) INV. 408.39 15" (SW) INV. 408.49	562526.72	1359338.50
MH-12	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	416.15	15" (S) INV. 411.86 15" (NE) INV. 411.11	562578.30	1358965.89
MH-13	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	413.13	15" (SW) INV. 404.53 15" (N) INV. 404.29	562684.69	1359103.68

DRAINAGE STRUCTURE SCHEDULE					
STR. NO.	TYPE	TOP ELEV.	INVERTS	NORTHING	EASTING
MH-14	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	414.48	15" (S) INV. 406.24 15" (NE) INV. 405.74 15" (NW) INV. 405.84	562631.91	1359073.96
MH-15	4'-0" PRECAST MANHOLE - HO.CO. G-5.12	400.00	18" (N) INV. 394.84 15" (S) INV. 395.09 15" (E) INV. 394.94	562911.77	1358811.55
MH-16	MSHA MD 383.01 Std Manhole	412.72	15" (E) INV. 397.53 15" (N) INV. 397.43	562756.34	1358796.19
S-1	24" NYLOPLAST DRAIN BASIN - C/C4.4	411.00	15" (SE) INV. 406.08	562655.26	1359032.48
S-2	24" NYLOPLAST DRAIN BASIN - C/C4.4	402.50	15" (E) INV. 397.83	562893.36	1359237.23
S-3	24" NYLOPLAST DRAIN BASIN - C/C4.4	402.50	15" (W) INV. 397.48	562879.12	1359307.04
S-4	24" NYLOPLAST DRAIN BASIN - C/C4.4	410.50	18" (N) INV. 405.00	562697.87	1359228.57
S-5	24" NYLOPLAST DRAIN BASIN - C/C4.4	408.50	15" (NE) INV. 403.48	562737.35	1359369.23
S-6	24" NYLOPLAST DRAIN BASIN - C/C4.4	408.50	15" (NW) INV. 403.48	562697.23	1359400.31
S-7	24" NYLOPLAST DRAIN BASIN - C/C4.4	415.50	15" (NE) INV. 410.15	562367.03	1359263.71
S-8	24" NYLOPLAST DRAIN BASIN - C/C4.4	413.50	15" (NE) INV. 408.58	562518.33	1359334.16
S-9	PRECAST TYPE 'D' INLET - HO.CO. D-4.10	402.00	15" (S) INV. 398.62 15" (N) INV. 398.52	562897.42	1359120.56
S-10	PRECAST TYPE 'D' INLET - HO.CO. D-4.10	403.50	15" (S) INV. 399.49 15" (N) INV. 399.39	562820.73	1359122.09
S-11	24" NYLOPLAST DRAIN BASIN - C/C4.4	413.00	15" (N) INV. 407.98	562595.57	1359060.73

DRAINAGE PIPE SCHEDULE						
START STRUCTURE	END STRUCTURE	SIZE	LENGTH	SLOPE	START INVERT	END INVERT
FP #4	-	6" PVC	105	1.00%	393.05	392.00
-	-	6" PVC	3	1.00%	393.08	393.05
-	-	6" PVC	89	1.00%	393.97	393.08
I-5	-	8" PVC	40	0.50%	407.78	407.58
I-6	-	8" PVC	83	1.00%	408.43	407.61
I-7	MH-8	8" PVC	135	1.00%	405.84	404.49
I-8	-	15" RCP CL III	29	0.50%	410.89	410.74
I-9	I-8	15" RCP CL III	60	0.50%	411.29	410.99
I-10	MH-12	15" RCP CL III	76	0.50%	412.24	411.86
I-11	I-10	15" RCP CL III	61	0.50%	412.65	412.34
I-12	MH-15	15" RCP CL III	16	0.50%	395.02	394.94
I-13	MH-16	15" RCP CL III	80	1.00%	398.33	397.53
MH-1	ES-1	18" RCP CL III	65	1.25%	396.01	395.21
MH-2	MH-1	18" RCP CL IV	117	0.75%	397.09	396.21
MH-3	MH-2	18" RCP CL III	81	2.00%	398.91	397.29
MH-4	MH-3	18" RCP CL III	58	2.00%	400.16	399.01
MH-5	MH-4	18" RCP CL III	97	2.00%	402.20	400.26
MH-6	MH-5	15" RCP CL III	29	1.50%	402.76	402.32
MH-7	MH-6	15" RCP CL III	27	1.50%	403.27	402.86
MH-8	MH-7	15" RCP CL III	28	1.50%	403.79	403.37
MH-9	MH-8	15" RCP CL III	109	1.50%	405.58	403.94
MH-10	MH-9	15" RCP CL III	83	1.50%	406.93	405.68
MH-11	MH-10	15" RCP CL III	35	1.00%	408.39	408.04
MH-12	ES-5	15" RCP CL III	57	1.50%	411.11	410.26
MH-13	S-10	15" RCP CL IV	137	3.50%	404.29	399.49
MH-14	MH-13	15" RCP CL III	61	2.00%	405.74	404.53
MH-15	ES-6	18" RCP CL III	83	0.50%	394.84	394.43
MH-16	MH-15	15" RCP CL III	156	1.50%	397.43	395.09
S-1	MH-14	15" HDPE	48	0.50%	406.08	405.84
S-2	MH-2	15" HDPE	15	0.50%	397.83	397.75
S-3	MH-2	15" HDPE	59	0.50%	397.48	397.19
S-4	MH-3	18" HDPE	126	2.00%	405.00	402.48
S-5	MH-5	15" HDPE	9	1.00%	403.48	403.39
S-6	MH-7	15" HDPE	9	0.75%	403.48	403.41
S-7	MH-10	15" HDPE	178	1.75%	410.15	407.03
S-8	MH-11	15" HDPE	9	1.00%	408.58	408.49
S-9	ES-2	15" RCP CL IV	85	0.50%	398.52	398.09
S-10	S-9	15" RCP CL IV	77	1.00%	399.39	398.62
S-11	MH-14	15" HDPE	39	4.50%	407.98	406.24

NOTES:

- PIPES WITH AN HGL 2 FEET OR MORE ABOVE THE CROWN SHALL BE CONNECTED TO STRUCTURES WITH RUBBER GASKETS. SEE SHEET C2.3 FOR PIPE SCHEDULE.
- THE BOTTOM OF ALL DROP MANHOLE STRUCTURES SHALL BE LINED WITH GRANITE BLOCKS AT LEAST 4-INCHES THICK. SEE SHEET C2.3 FOR STRUCTURE SCHEDULE.
- REFER TO THE "HOWARD COUNTY VOLUME IV DESIGN MANUAL STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" FOR ALL HOWARD COUNTY DRAINAGE STRUCTURES
- REFER TO THE "MDOT SHA BOOK OF STANDARDS - FOR HIGHWAY & INCIDENTAL STRUCTURES" FOR ALL MDOT SHA DRAINAGE STRUCTURES.
- THERE ARE NO END SECTIONS WITH THE NAMES ES-3 AND ES-4.

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
 CHIEF, DEVELOPMENT DIVISION	12/20/2023
 CHIEF, DIVISION OF ZONING DEPARTMENT	12/4/2023
 DIRECTOR	12/20/2023

REVISIONS	

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043



PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE



DocuSigned by:
Anthony Usaburo Ochi
10/16/23

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 18378
EXPIRATION DATE: 09/22/2028

BLANDAIR REGIONAL PARK - PHASE 6

STORM DRAIN STRUCTURE AND PIPE SCHEDULES

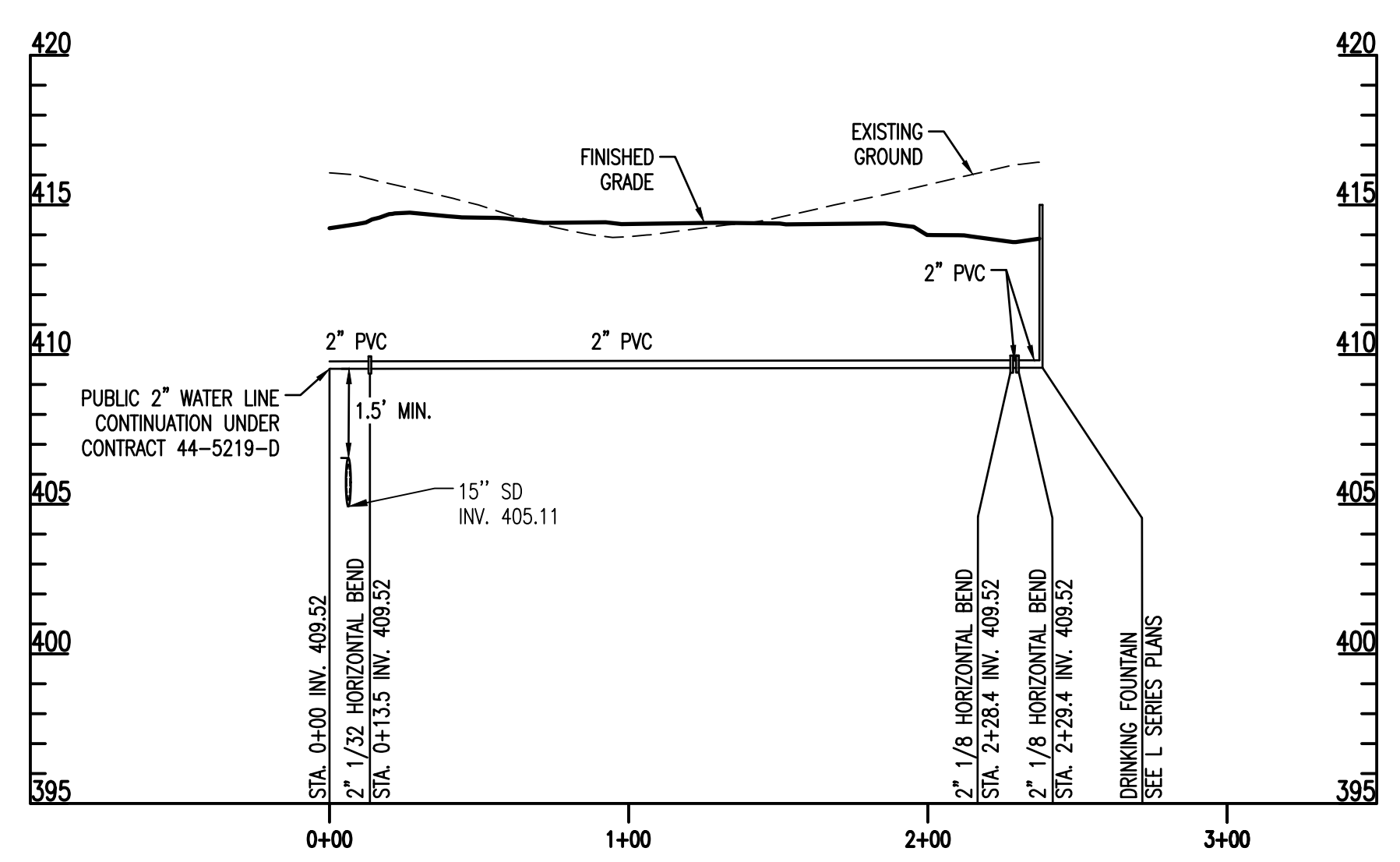
Drawing No.

C2.3

Scale: NONE

Date: 10/2023 SDP Sheet 18 of 54

Des: BWJ Drawn: LEM Check: AUO



2 IN. WATER PROFILE
 SCALE: 1" = 50' HORIZ.
 5' VERT.

2 IN WATER STRUCTURE TABLE			
STATION	NORTHING	EASTING	DESCRIPTION
0+13.45	562657.52	1359096.37	2" 1/32 HORIZONTAL BEND
2+28.40	562558.81	1359287.34	2" 1/8 HORIZONTAL BEND
2+29.42	562557.84	1359287.64	2" 1/8 HORIZONTAL BEND

APPROVED: DEPARTMENT OF PLANNING AND ZONING

 CHIEF, DEVELOPMENT DIVISION
 DATE: 12/20/2023

 CHIEF, DIVISION OF ZONING
 DATE: 12/20/2023

 DIRECTOR
 DATE: 12/20/2023

REVISIONS	

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

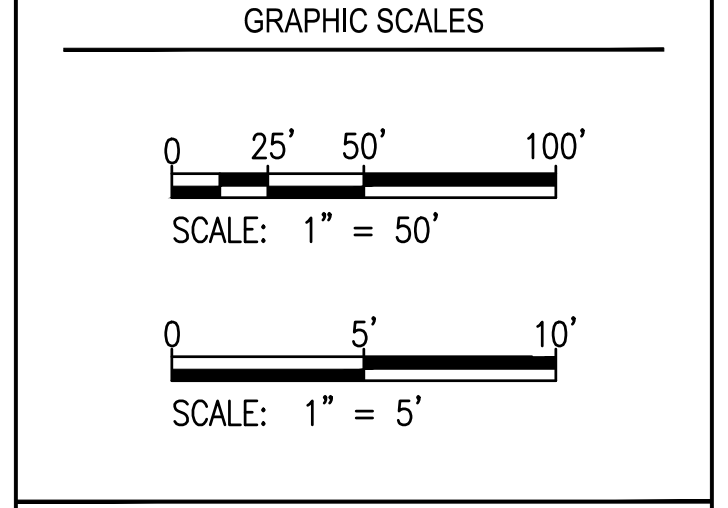


PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6



SIGNATURE

 10/16/23

PROFESSIONAL CERTIFICATION.
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376
 EXPIRATION DATE: 09/22/2025

BLANDAIR REGIONAL
 PARK - PHASE 6

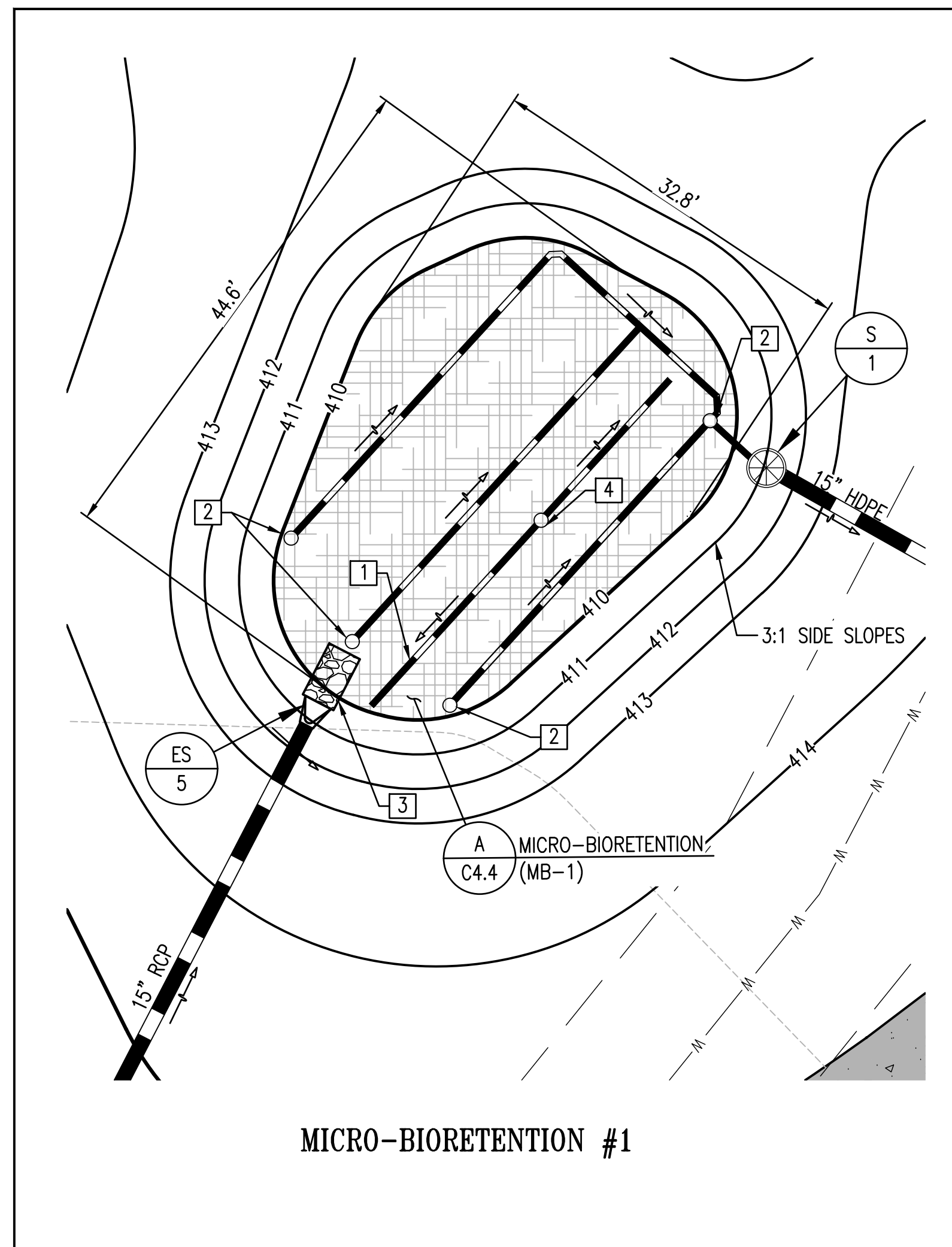
WATER PROFILES

Drawing No.
C2.4

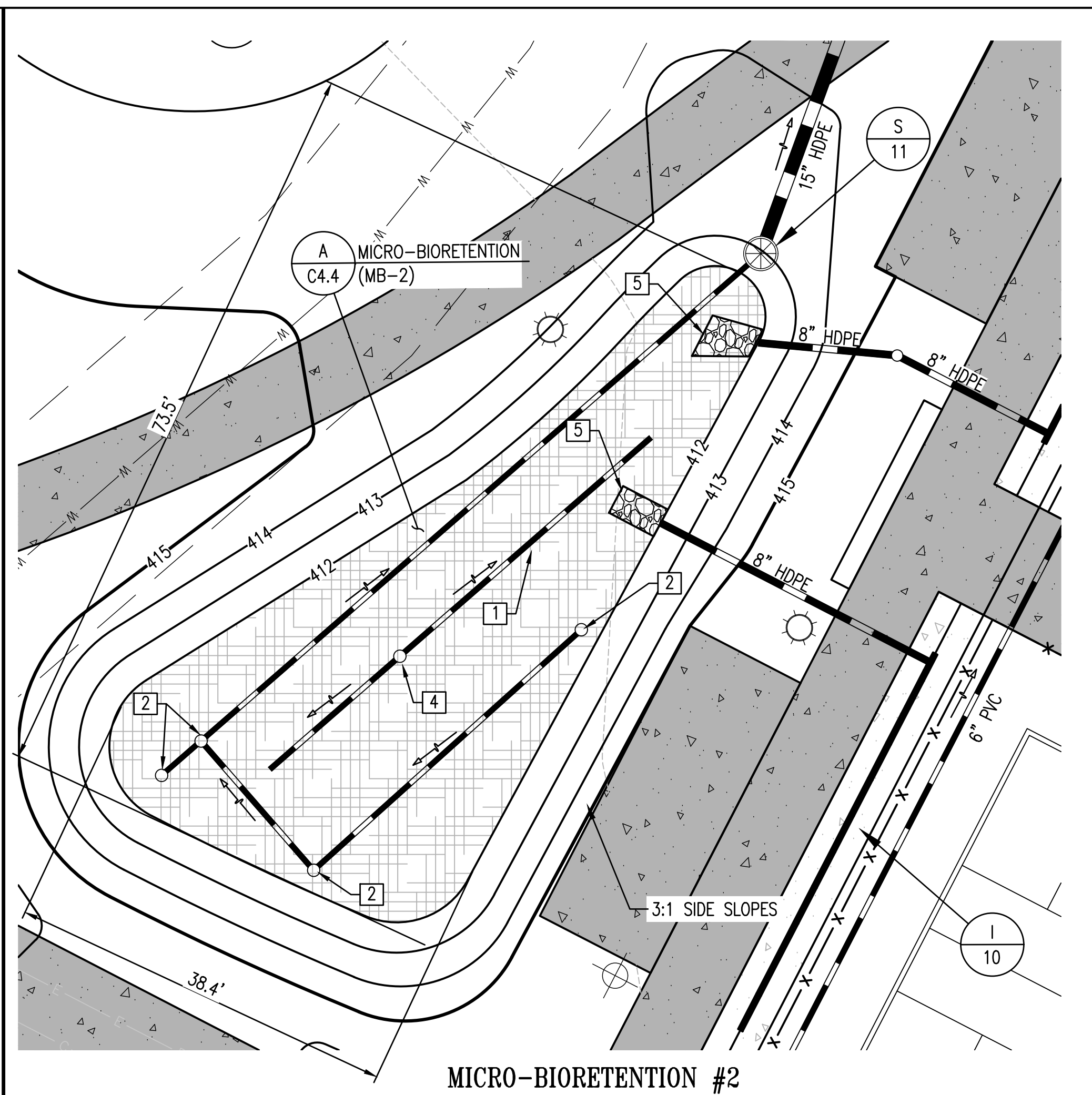
Scale: 1" = 50' HORZ 1" = 5' VERT

Date: 10/2023 SDP Sheet 19 of 54

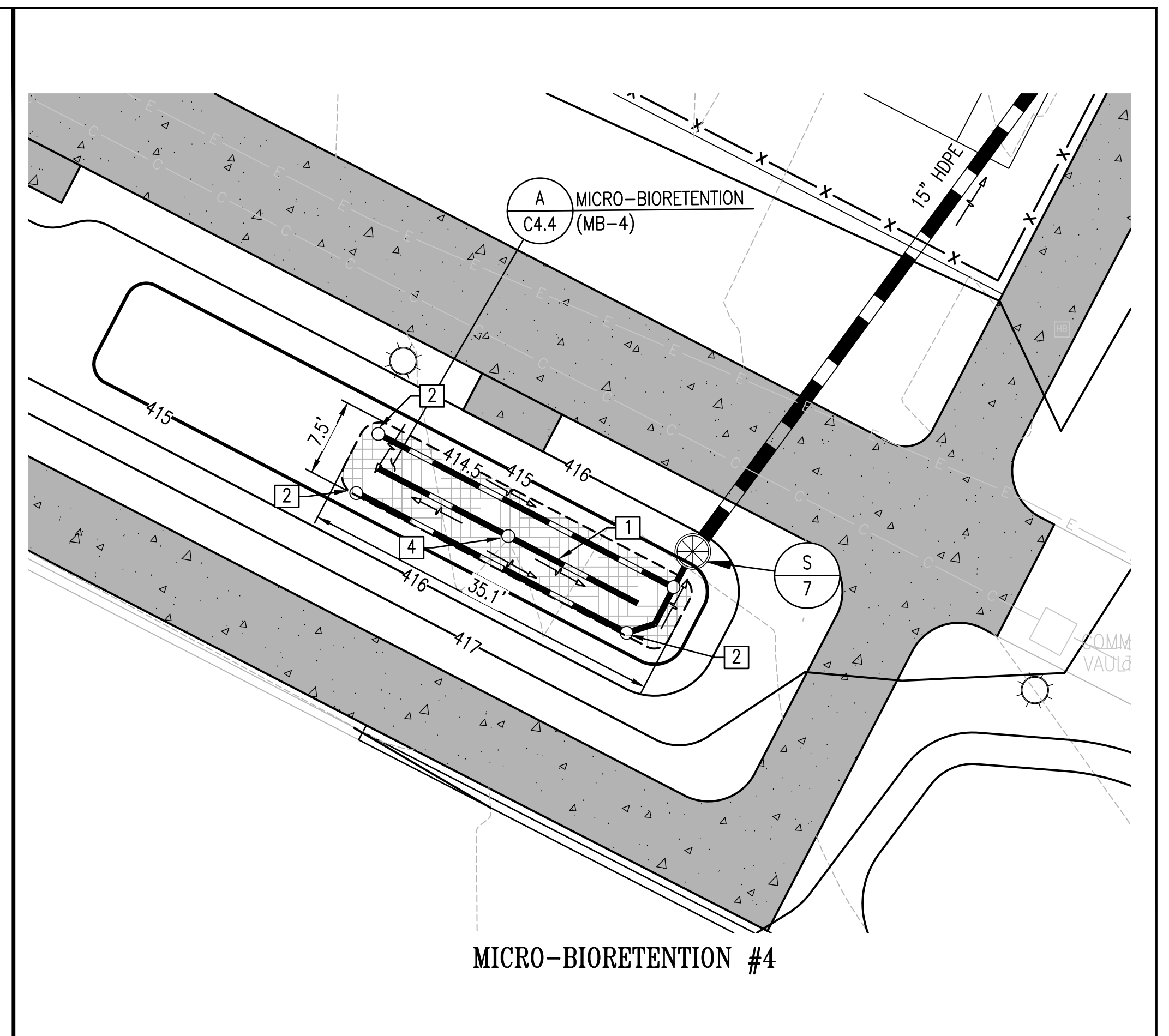
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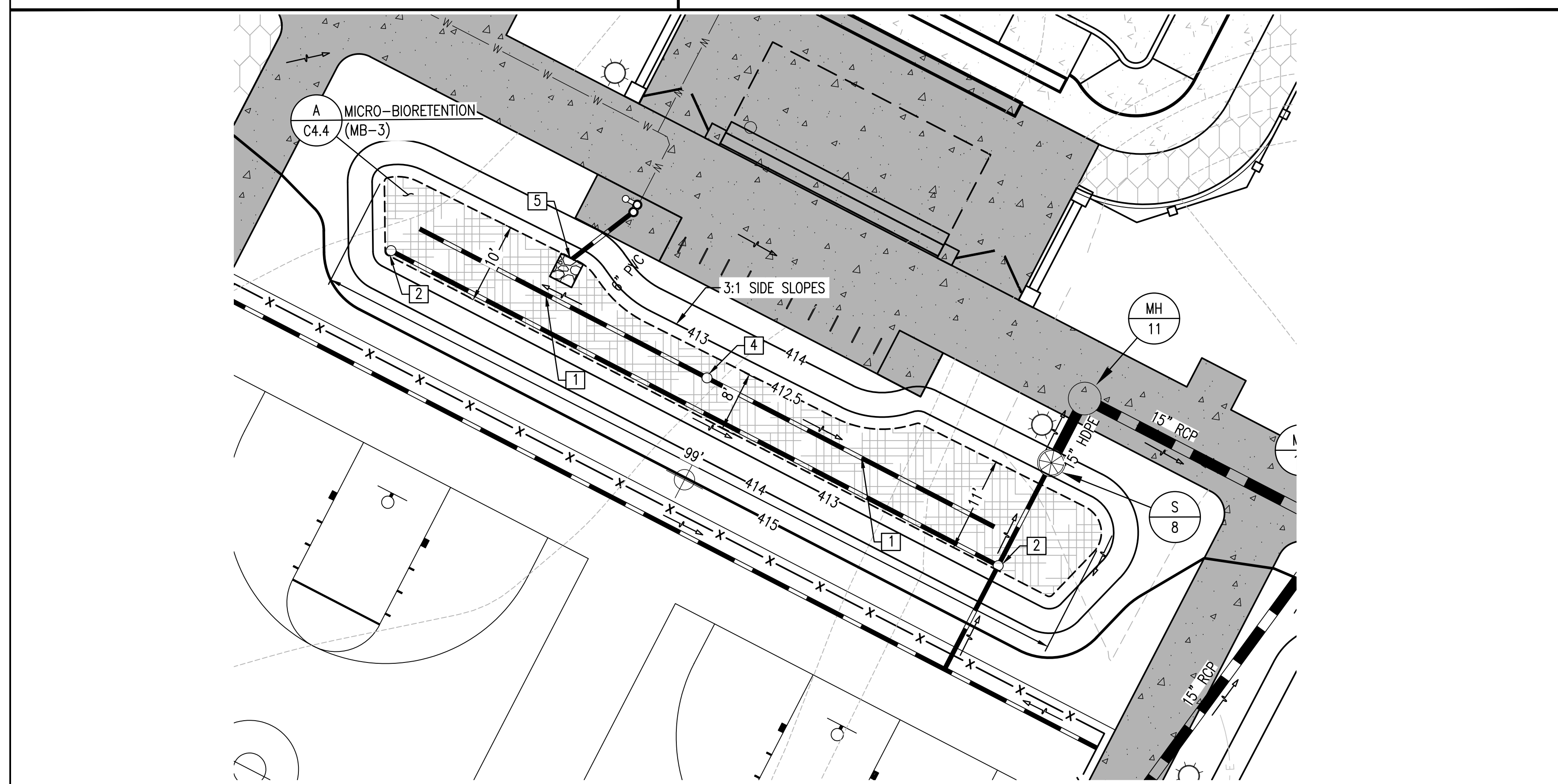
MICRO-BIORETENTION #1



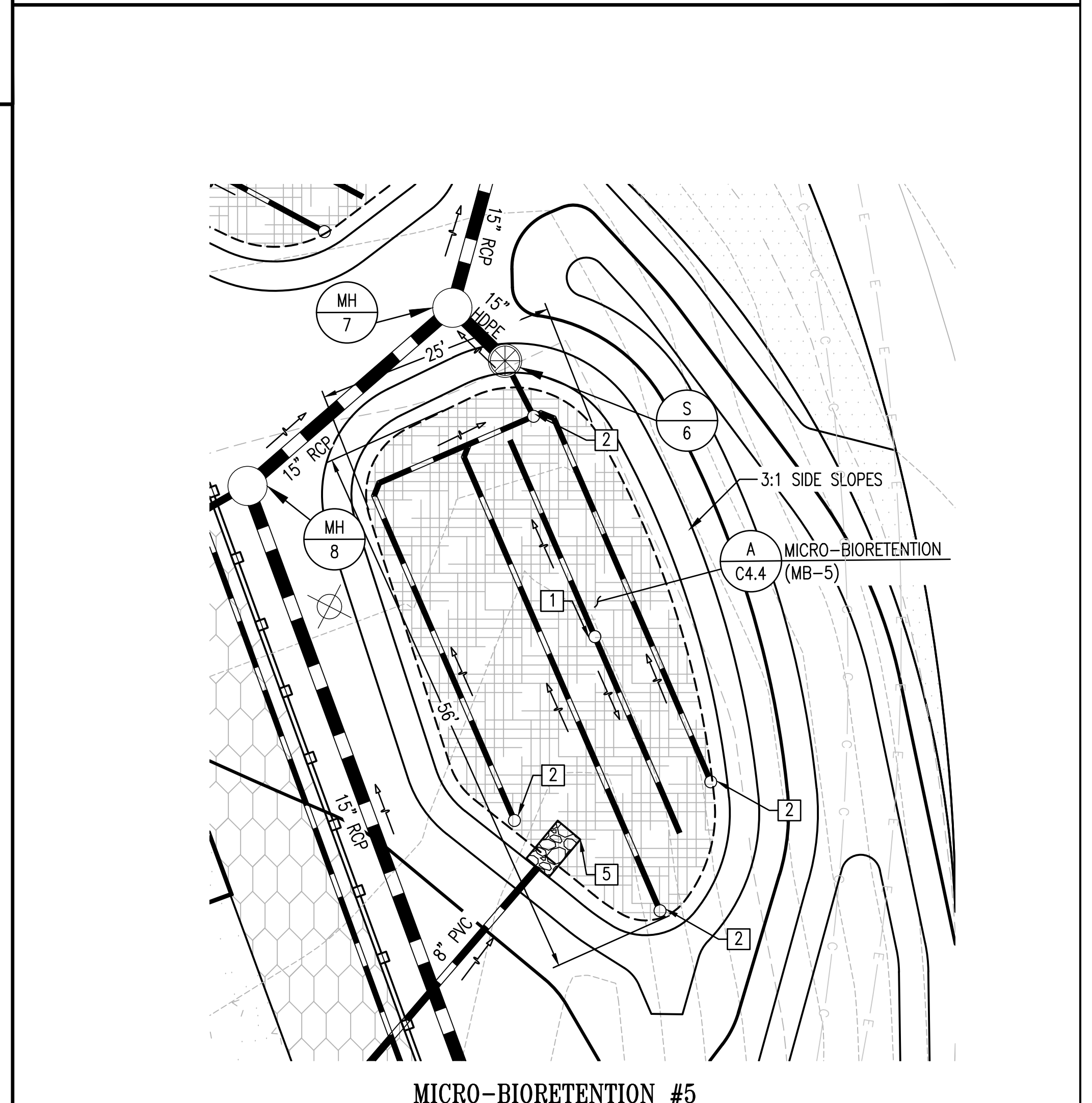
MICRO-BIORETENTION #2



MICRO-BIORETENTION #4



MICRO-BIORETENTION #3



MICRO-BIORETENTION #5

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 12/20/2023
 CHIEF, DEVELOPMENT DIVISION
 12/4/2023
 CHIEF, DIVISION OF ZONING
 12/20/2023
 DIRECTOR

GENERAL NOTES

- ALL UNDERDRAINS ARE 6" PERFORATED PVC UNLESS OTHERWISE NOTED.
- FOR GRADING/STORMWATER MANAGEMENT PLANS SEE SHEETS C1.3A AND C1.3B.
- FOR STORM DRAIN PROFILES SEE SHEETS C2.1 AND C2.2.
- FOR STORM DRAIN STRUCTURE AND PIPE SCHEDULES SEE SHEET C2.3.

SHEET KEYNOTES

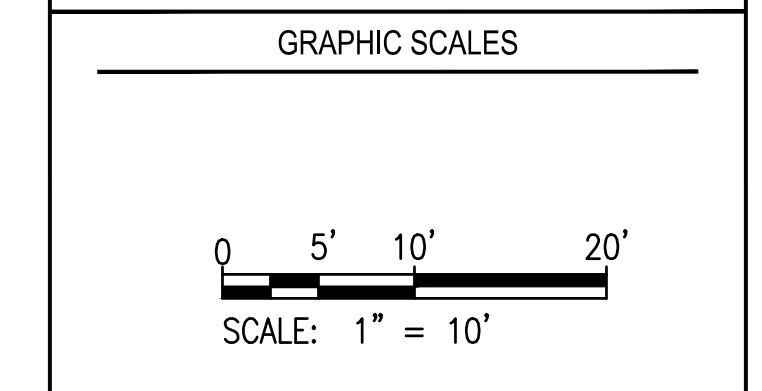
- OVERFLOW DISTRIBUTION PIPE. DETAIL A/C4.4
- CLEANOUT. DETAIL C/4.3
- RIP-RAP OUTFALL, SEE STORM DRAIN PROFILES ON SHEETS C2.1 - C2.2.
- OVERFLOW STRUCTURE.
- PROVIDE CLASS I RIP-RAP AT OUTLET OF PIPE AND CUT PIPE TO MATCH SLOPE.

REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043



PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6

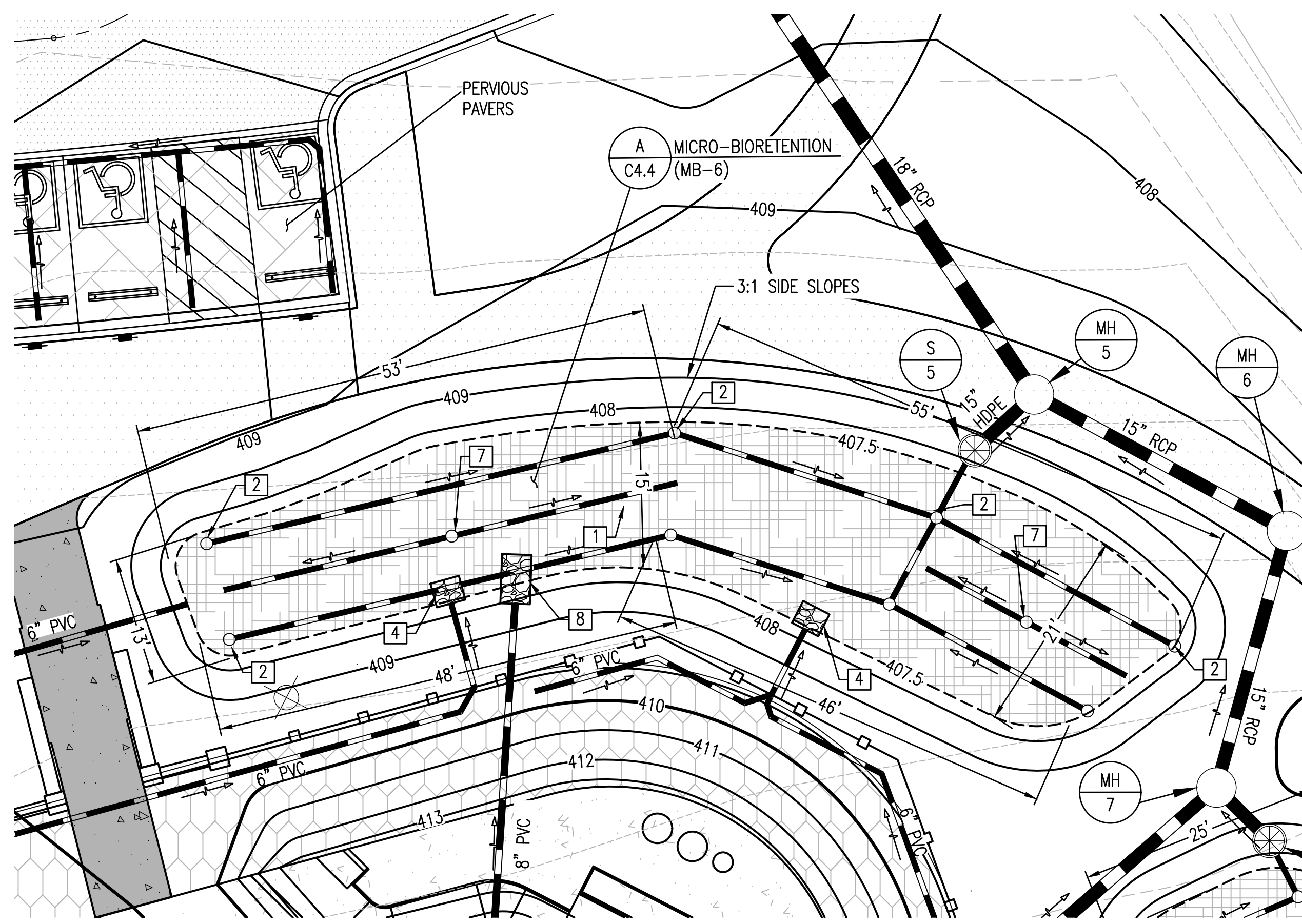


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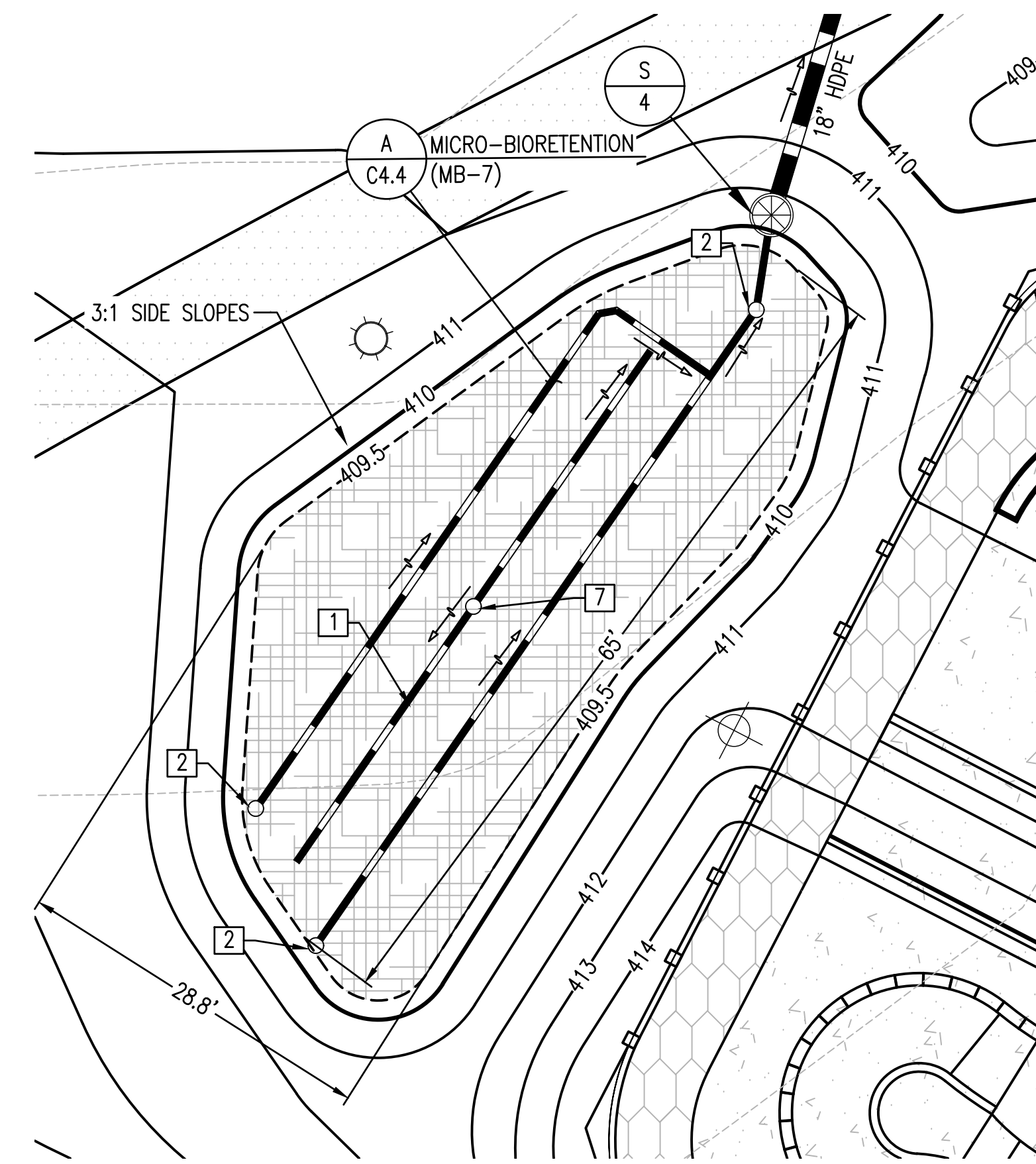
 10/16/23
 PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 09/22/2025

BLANDAIR REGIONAL PARK - PHASE 6

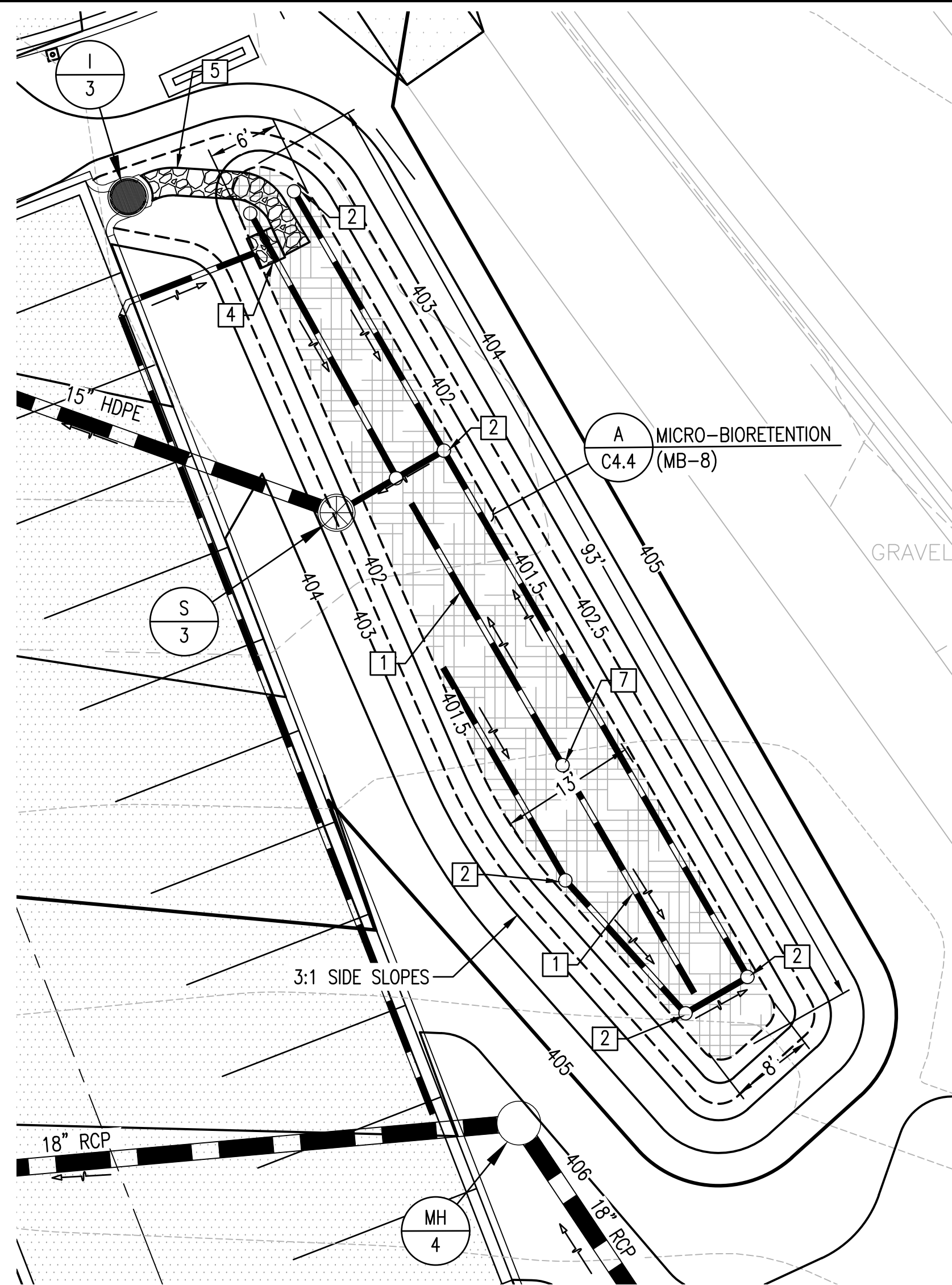
ENLARGED MICRO-BIORETENTION PLANS
 Drawing No.
C3.1
 Scale: 1" = 10'
 Date: 10/2023 SDP Sheet 20 of 54
 Des: BWJ Drawn: JTD Check: AUO



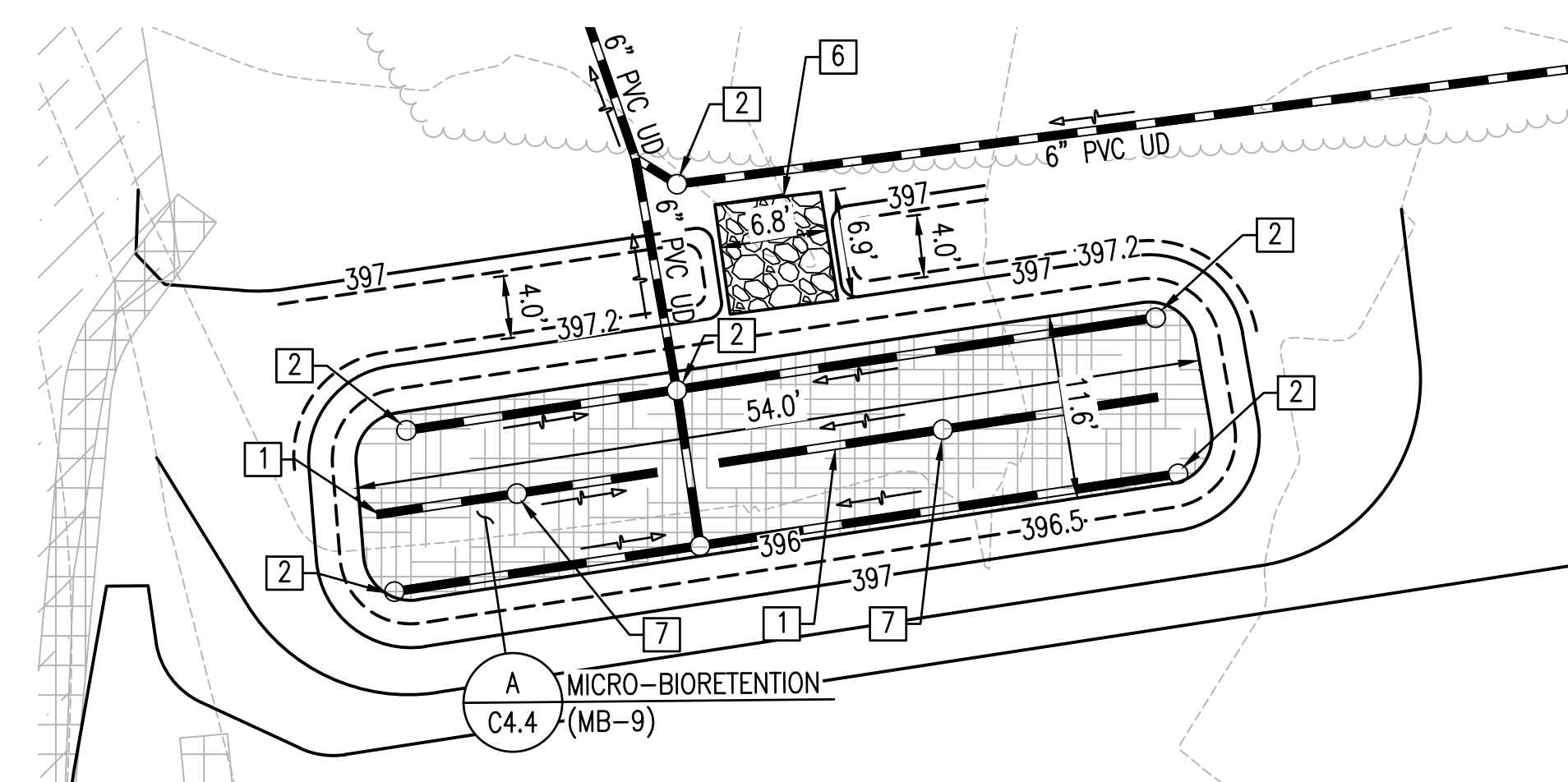
MICRO-BIORETENTION #6



MICRO-BIORETENTION #7



MICRO-BIORETENTION #8



MICRO-BIORETENTION #9

GENERAL NOTES

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3. FOR STORM DRAIN PROFILES SEE SHEETS C2.1 AND C2.2.
4. FOR STORM DRAIN STRUCTURE AND PIPE SCHEDULES SEE SHEET C2.3.

SHEET KEYNOTES

- 1 OVERFLOW DISTRIBUTION PIPE. DETAIL A/C4.4
- 2 CLEANOUT. DETAIL C/4.3
- 3 RIP-RAP OUTFALL, SEE STORM DRAIN PROFILES ON SHEETS C2.1 - C2.2.
- 4 RIPRAP FROM 6" PIPE. DETAIL D/C4.4
- 5 INLET CHANNEL. DETAIL H/C4.5
- 6 CL I RIPRAP. 19" DEPTH. ELEVATION TOP 397'.
- 7 OVERFLOW STRUCTURE
- 8 PROVIDE CLASS I RIP-RAP AT OUTLET OF PIPE AND CUT PIPE TO MATCH SLOPE.

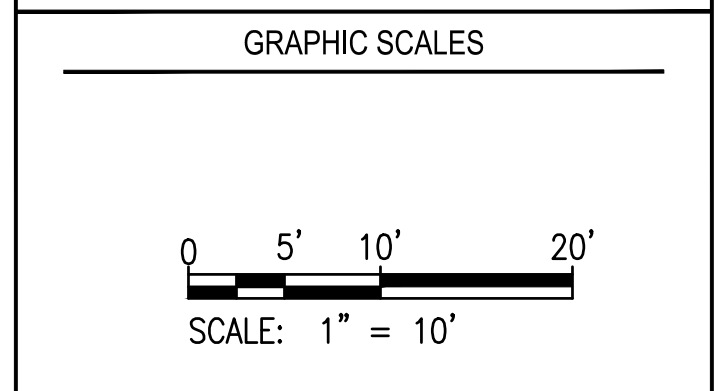
APPROVED: DEPARTMENT OF PLANNING AND ZONING	12/20/2023
Chief, Development and Planning Division	12/4/2023
Chief, Division of Land Development	12/20/2023
Director	

REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



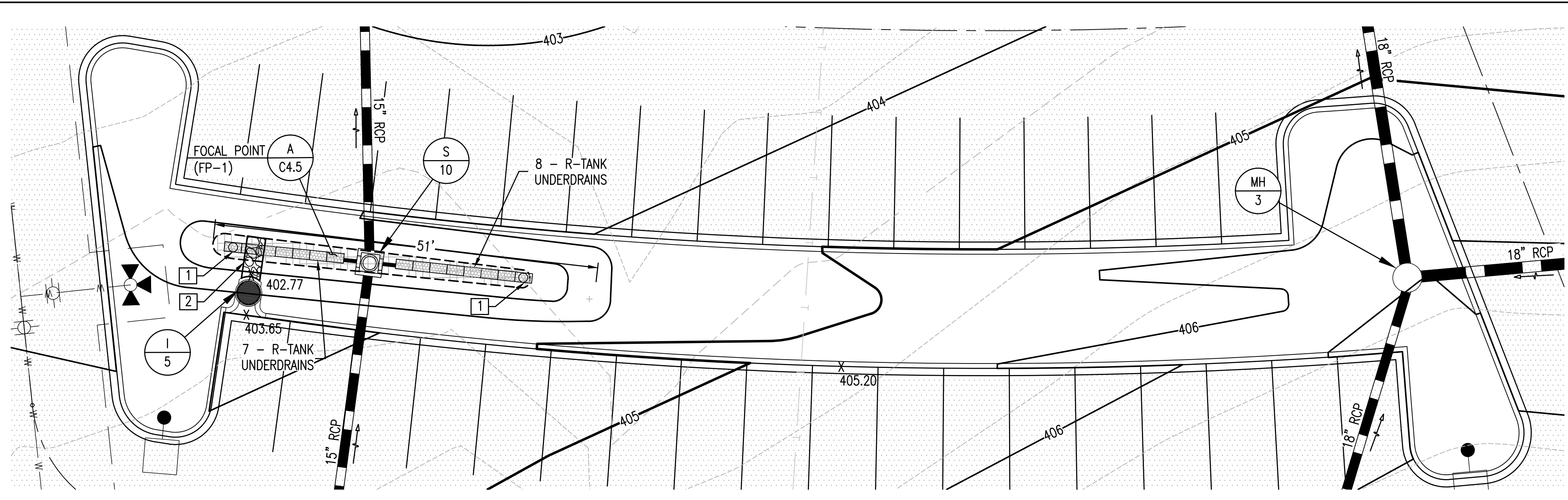
SIGNATURE

DocuSigned by:
 Whitney M.
 10/16/23

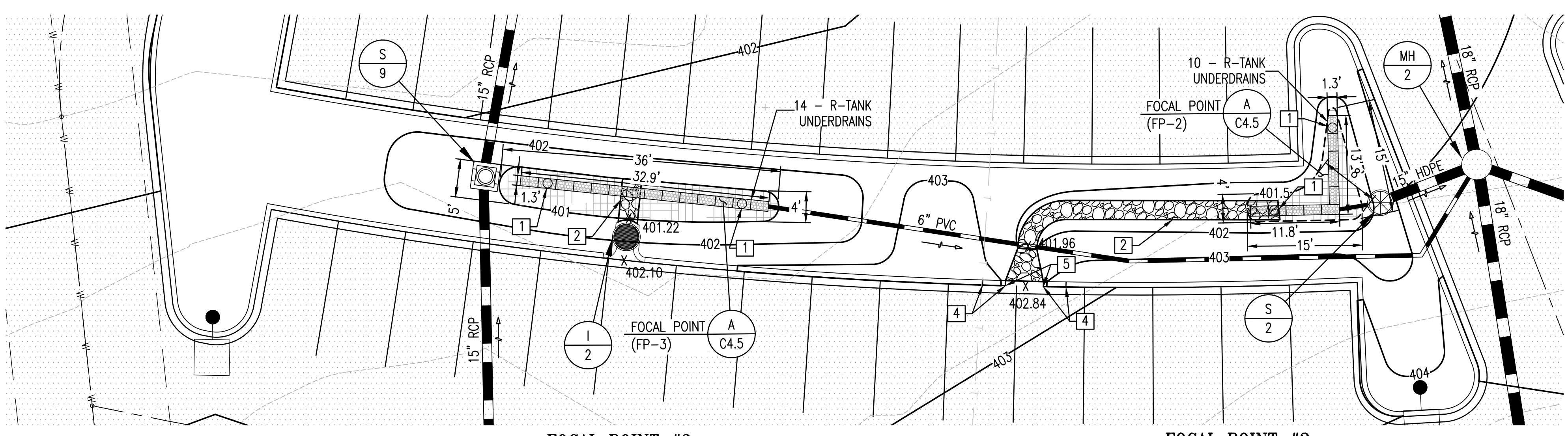
PROFESSIONAL CERTIFICATION
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BLANDAIR REGIONAL PARK - PHASE 6

ENLARGED MICRO-BIORETENTION PLANS
 Drawing No.
C3.2
 Scale: 1" = 10'
 Date: 10/2023 SDP Sheet 21 of 54
 Des: BWJ Drawn: JTD Check: AUO

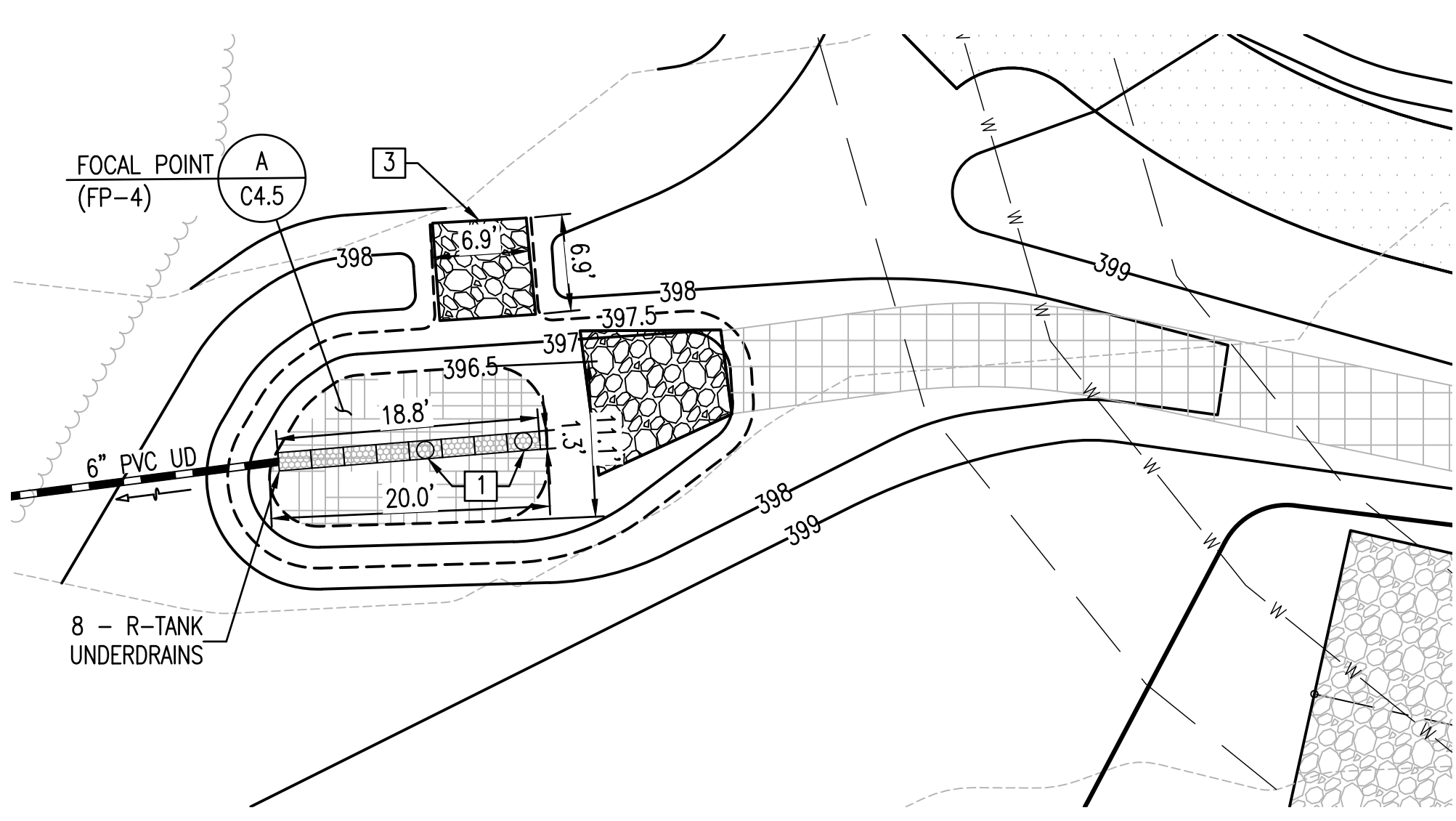


FOCAL POINT #1



FOCAL POINT #3

FOCAL POINT #2



FOCAL POINT #4

GENERAL NOTES

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4. FOR STORM DRAIN STRUCTURE AND PIPE SCHEDULES SEE SHEET C2.3.

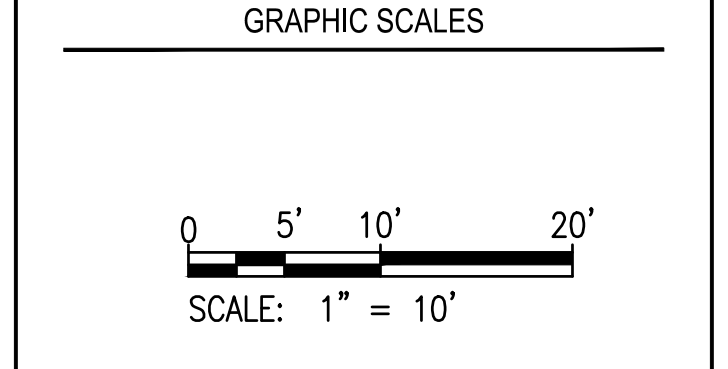
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 12/20/2023
 CHIEF, DEVELOPMENT AND ZONING DIVISION
 12/4/2023
 CHIEF, DIVISION OF LAND DEVELOPMENT
 12/20/2023
 DIRECTOR
 DATE

REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



SIGNATURE

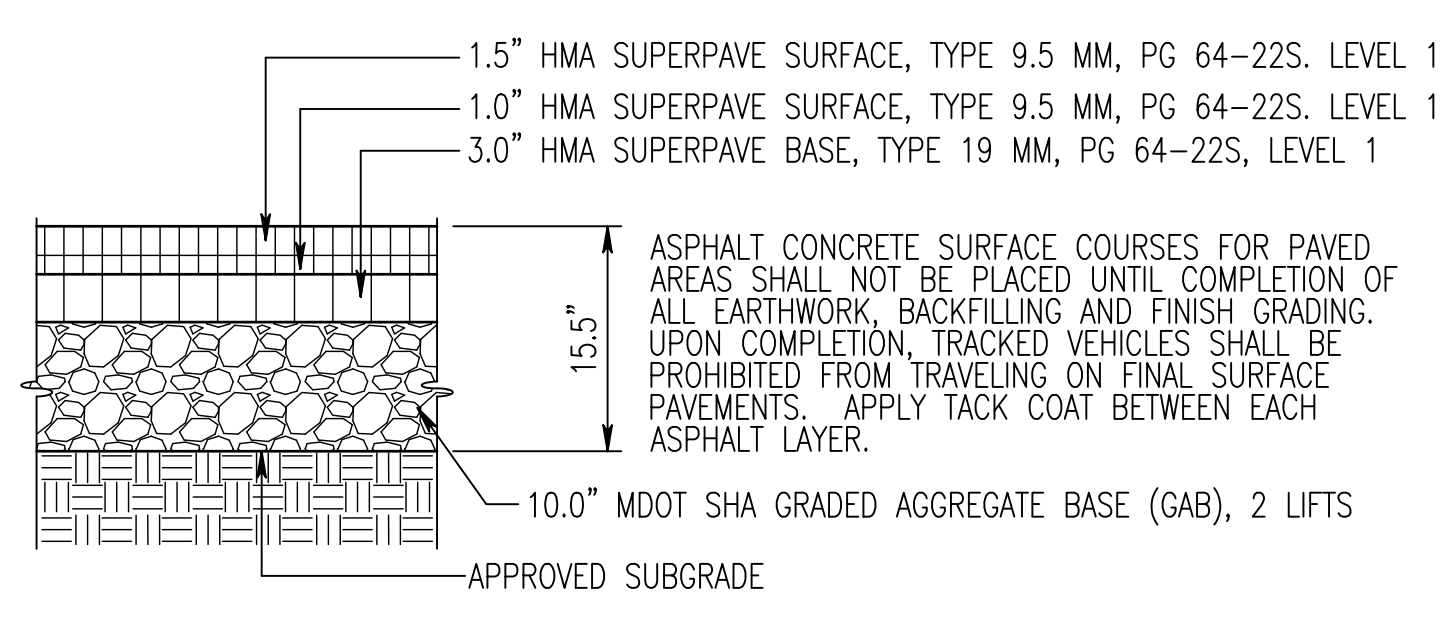
DocuSigned by:
 120FAC08E8044A
 PROFESSIONAL CERTIFICATION.
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 09/22/2025

BLANDAIR REGIONAL PARK - PHASE 6

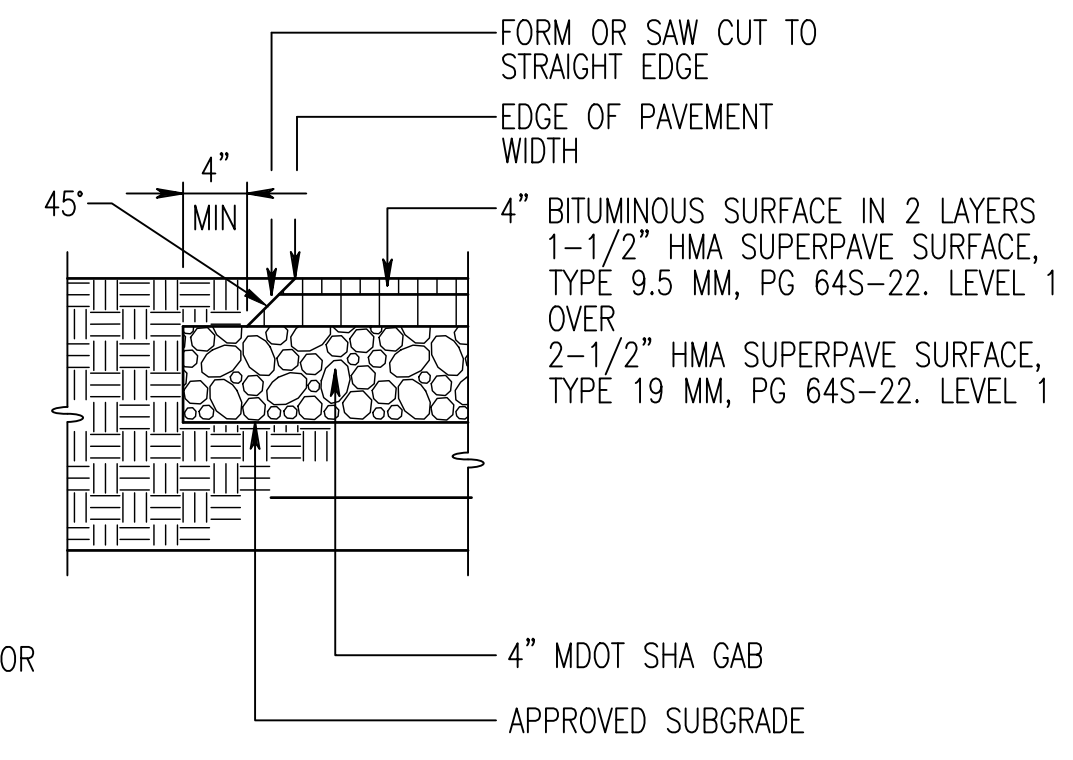
SHEET KEYNOTES

- 1 OVERFLOW DISTRIBUTION PIPE. DETAIL C/C4.4
- 2 INLET CHANNEL. DETAIL H/C4.5
- 3 CL 1 RIPRAP. 19" DEPTH. ELEVATION TOP 397.50'
- 4 FLUSH CURB. REFER TO DETAIL ON C4.2
- 5 NOSE DOWN CURB. DETAIL D/C4.1

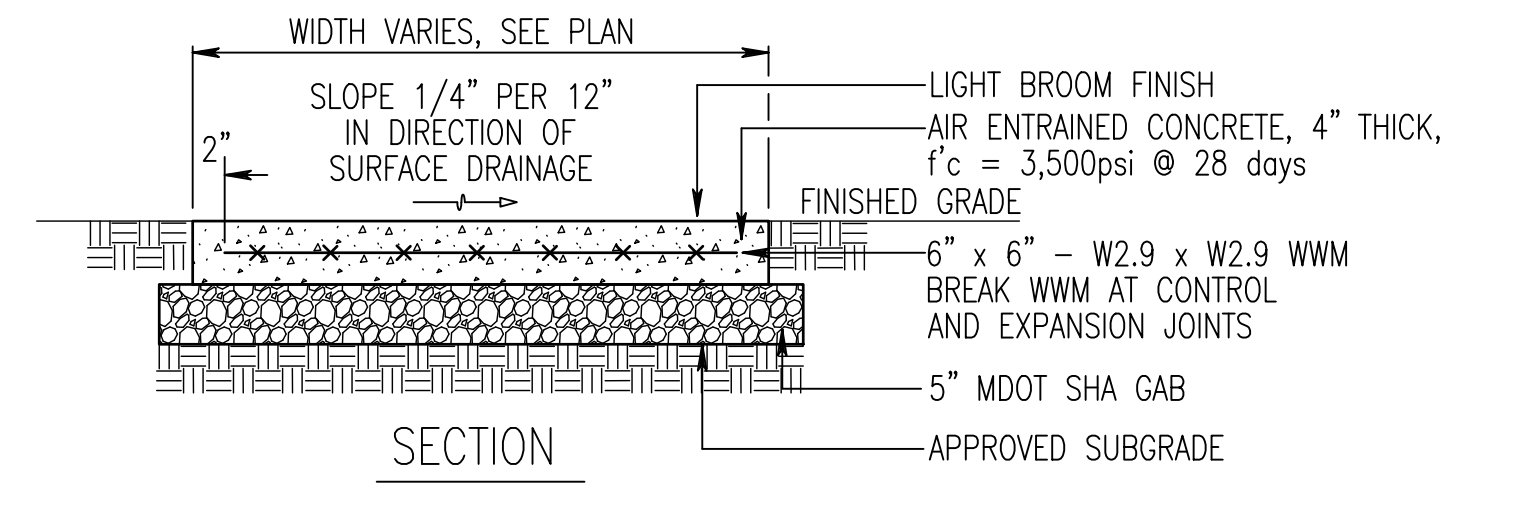
ENLARGED FOCAL POINT PLANS
 Drawing No.
C3.3
 Scale: 1" = 10'
 Date: 10/2023 SDP Sheet 22 of 54
 Des: BWJ Drawn: JTD Check: AUO



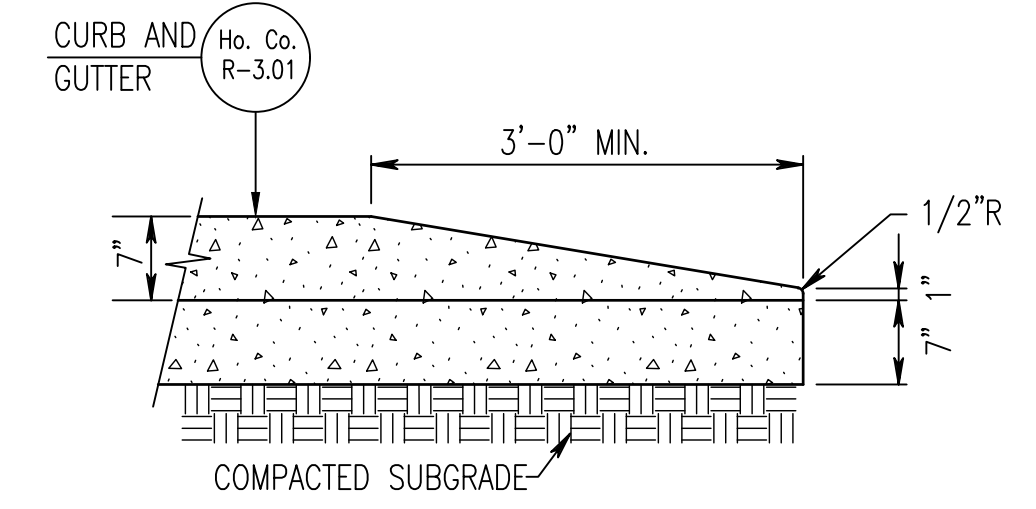
BITUMINOUS ASPHALT PAVEMENT
A
C4.1 NOT TO SCALE



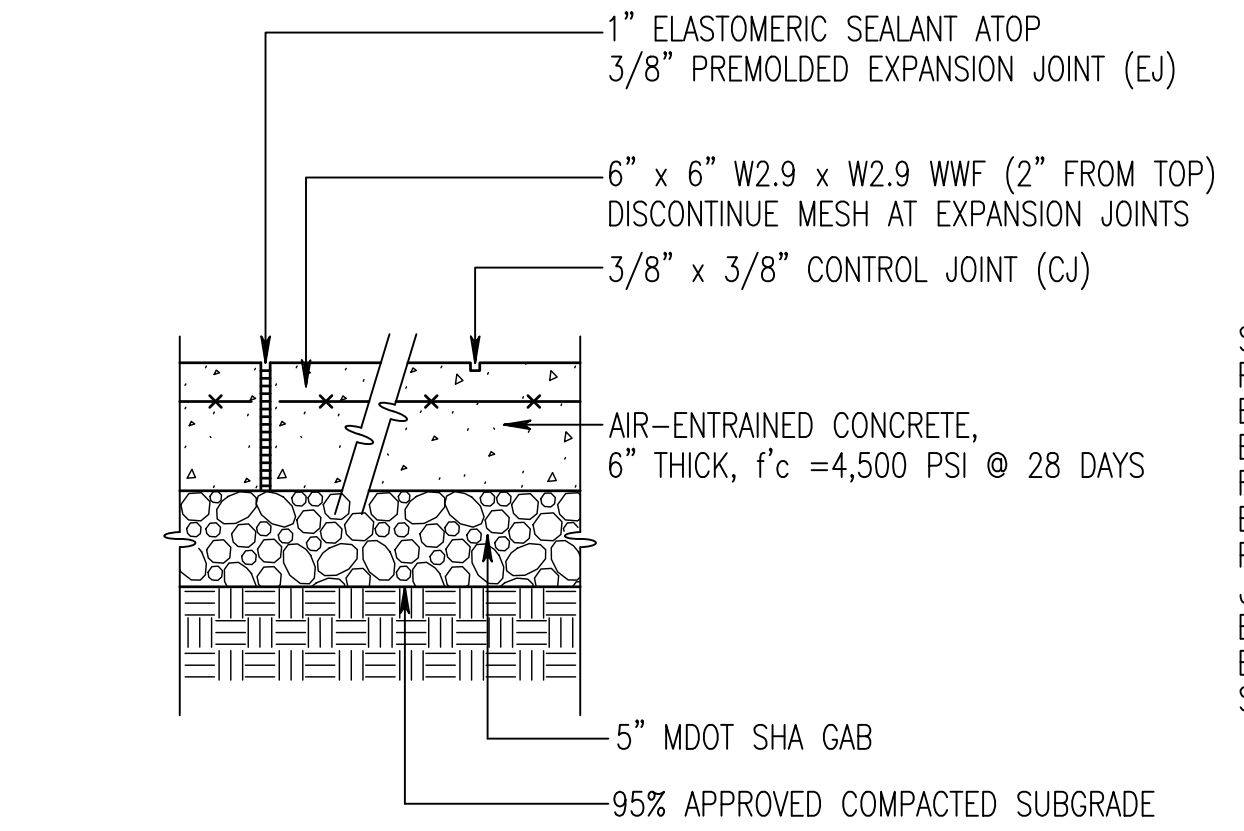
BITUMINOUS SIDEWALK
B
C4.1 NOT TO SCALE



CONCRETE SIDEWALK
C
C4.1 NOT TO SCALE

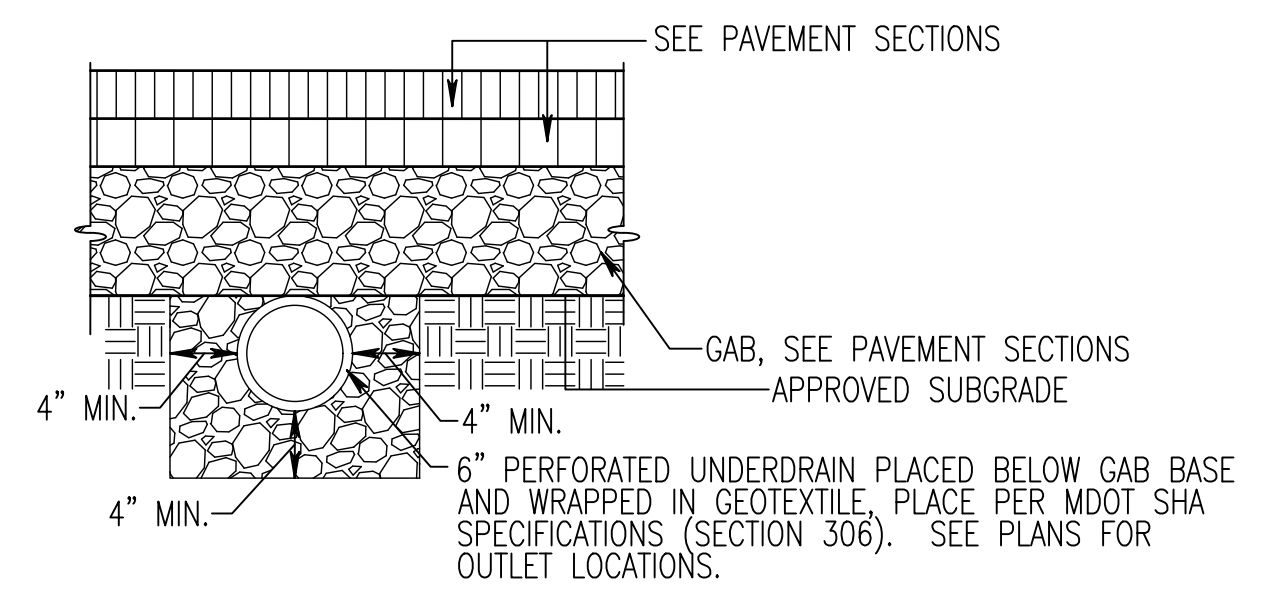


NOSE DOWN CURB
D
C4.1 NOT TO SCALE

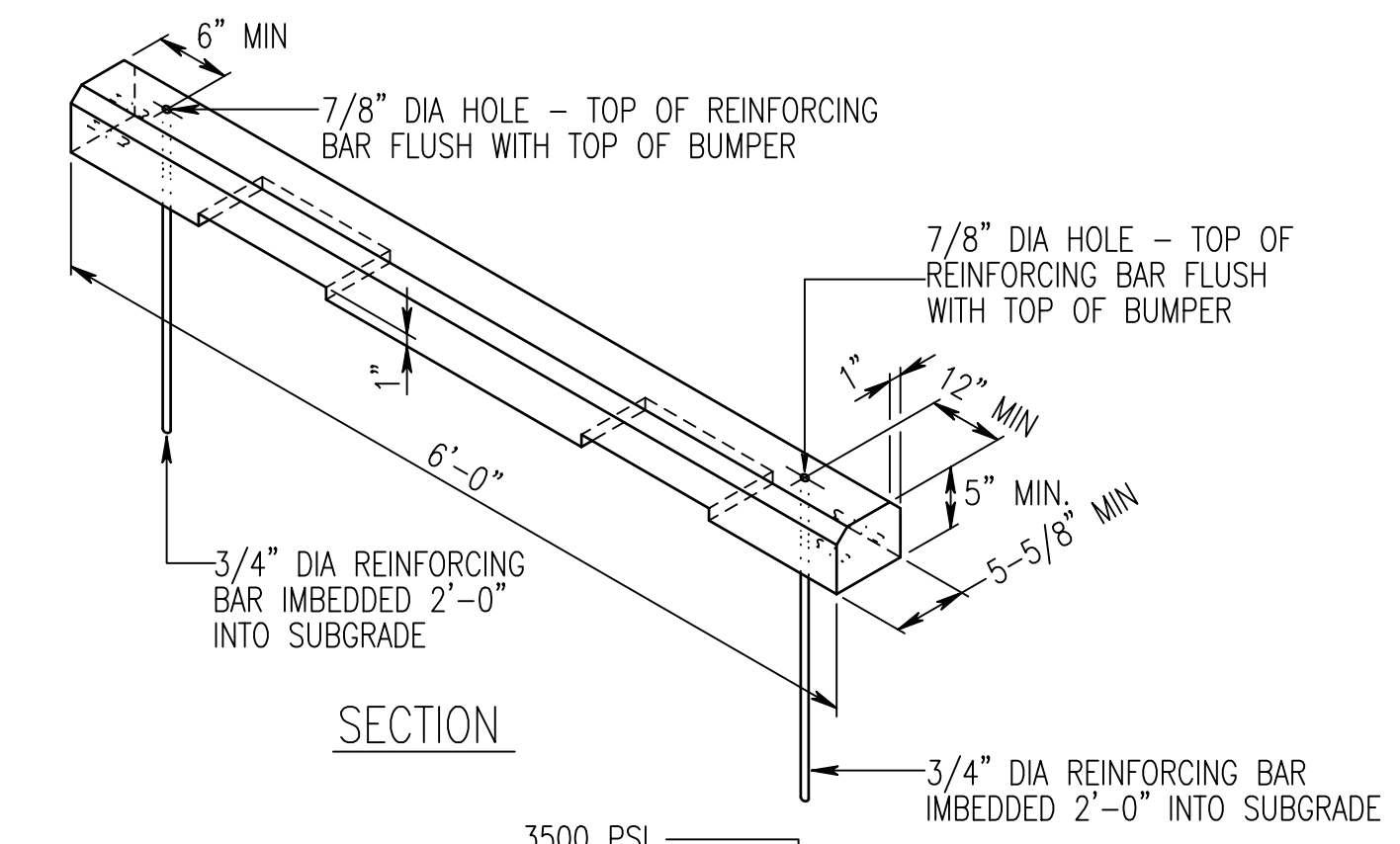


HEAVY DUTY CONCRETE SIDEWALK
E
C4.1 NOT TO SCALE

SEE LANDSCAPE PLANS FOR SCORING PATTERNS. PROVIDE 1" POURED ELASTOMERIC SEALANT ATOP PREMOULDED EXPANSION JOINT MATERIAL, 1/2" THICK, FULL DEPTH OF JOINT AND TRIMMED TO BE SLIGHTLY BELOW SURFACE AS SHOWN. PLACE AT 15' O.C. MAX. SPACING. FORM JOINT AROUND ALL APPURTENANCES EXTENDING INTO OR THRU CONCRETE AND BETWEEN CONCRETE AND ANY FIXED STRUCTURE (BUILDING, CURB, ETC.)



PAVEMENT UNDERDRAIN
M
C4.1 NOT TO SCALE

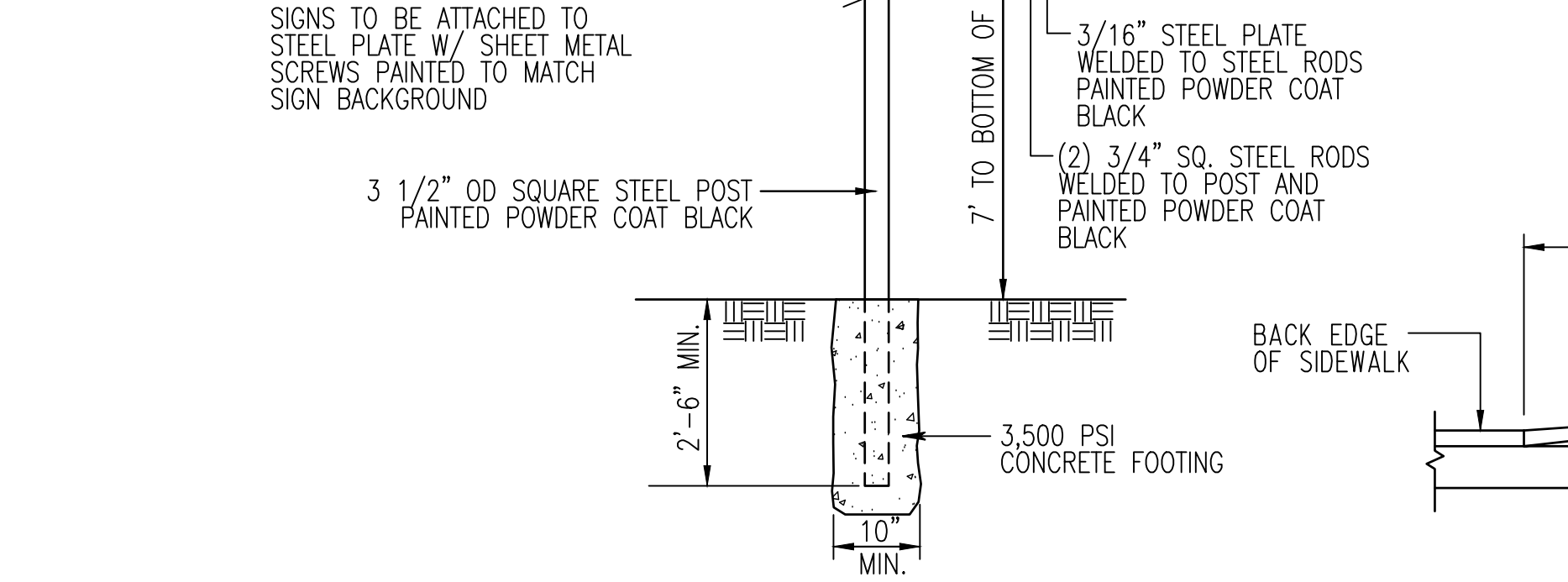
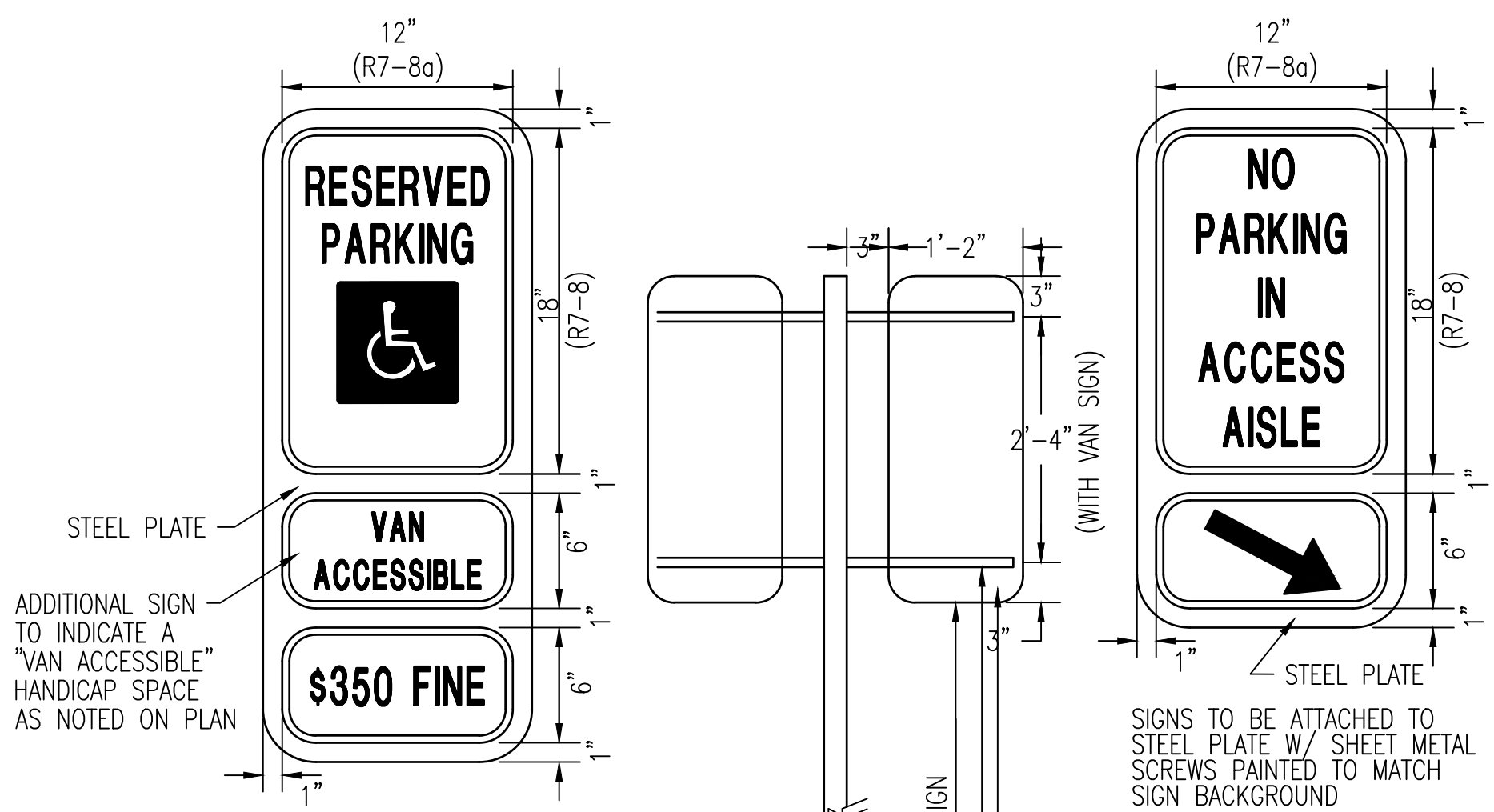


PARKING BUMPER
K
C4.1 NOT TO SCALE



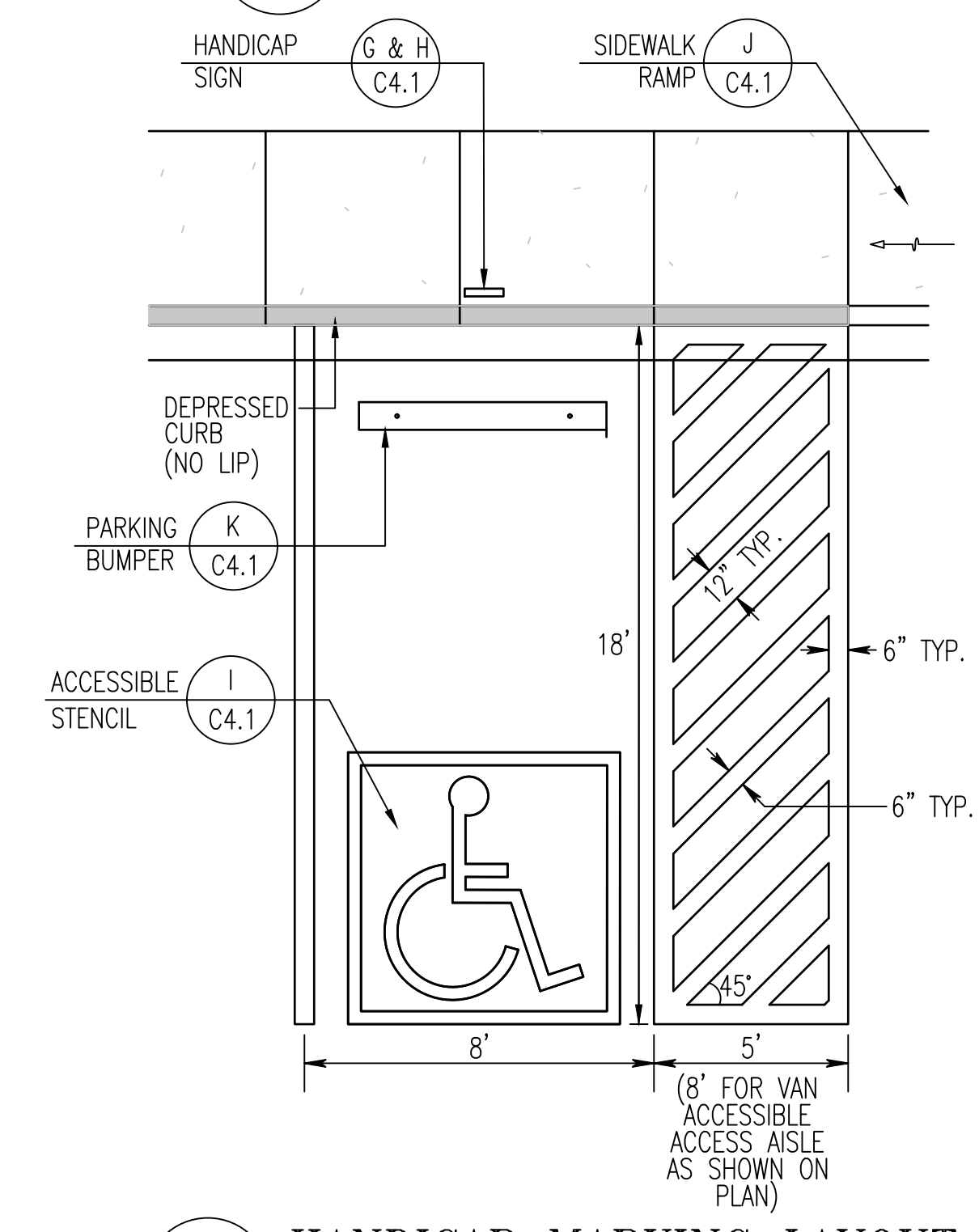
NOTE: SEE DETAIL H/C4.1 FOR POLE DETAIL AND NO PARKING IN ACCESS AISLE SIGN DETAIL.

HANDICAP SIGN
G
C4.1 NOT TO SCALE



VAN ACCESSIBLE HANDICAP SIGN
H
C4.1 NOT TO SCALE

ACCESSIBLE STENCIL
I
C4.1 NOT TO SCALE



HANDICAP MARKING LAYOUT
L
C4.1 NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chief, Development Division <i>Chad Edmondson</i>	DATE: 12/20/2023
Chief, Division of Planning <i>[Signature]</i>	DATE: 12/4/2023
Director <i>[Signature]</i>	DATE: 12/20/2023

REVISIONS	

HOWARD COUNTY
DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

WRX
Whitman, Reardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
TAX MAP 36, GRID 5, PARCEL 3
ZONING: RC-DEO
ELECTION DISTRICT 6

GRAPHIC SCALES

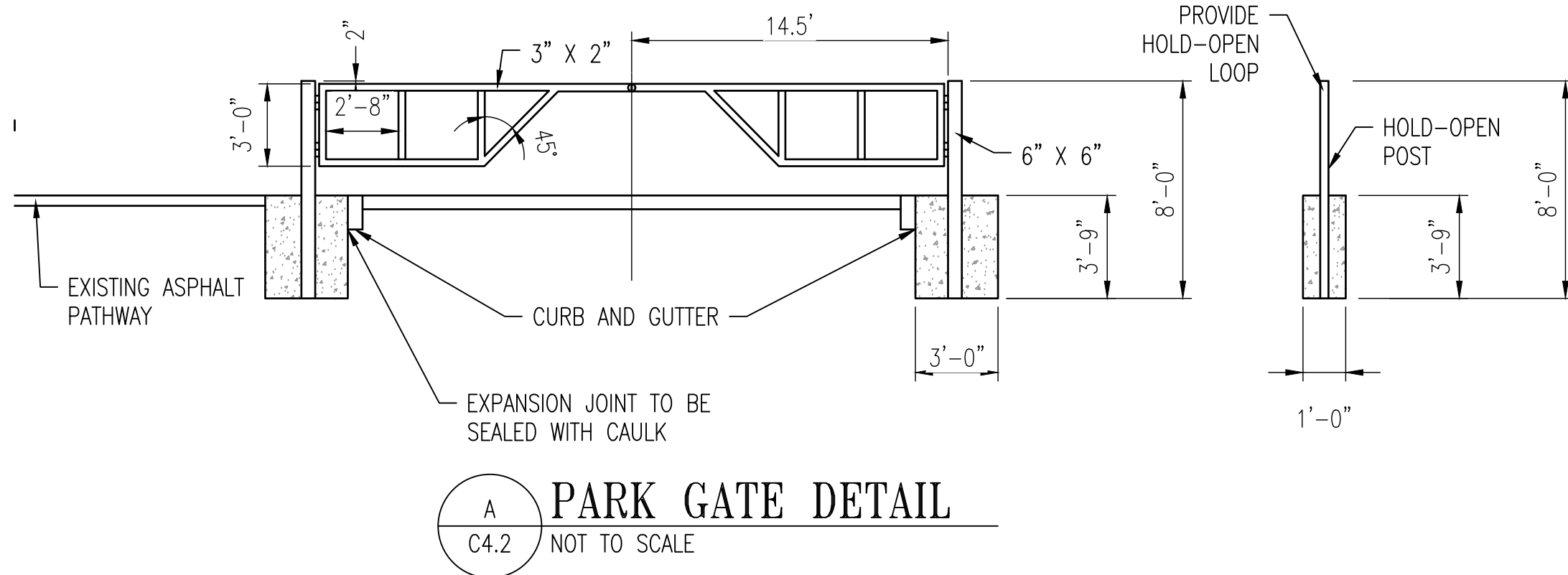
SIGNATURE
STATE OF MARYLAND
PROFESSIONAL ENGINEER
10/16/13
120F4C248E3044A
PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 18939 EXPIRATION DATE: 09/22/2023

BLANDAIR REGIONAL PARK - PHASE 6

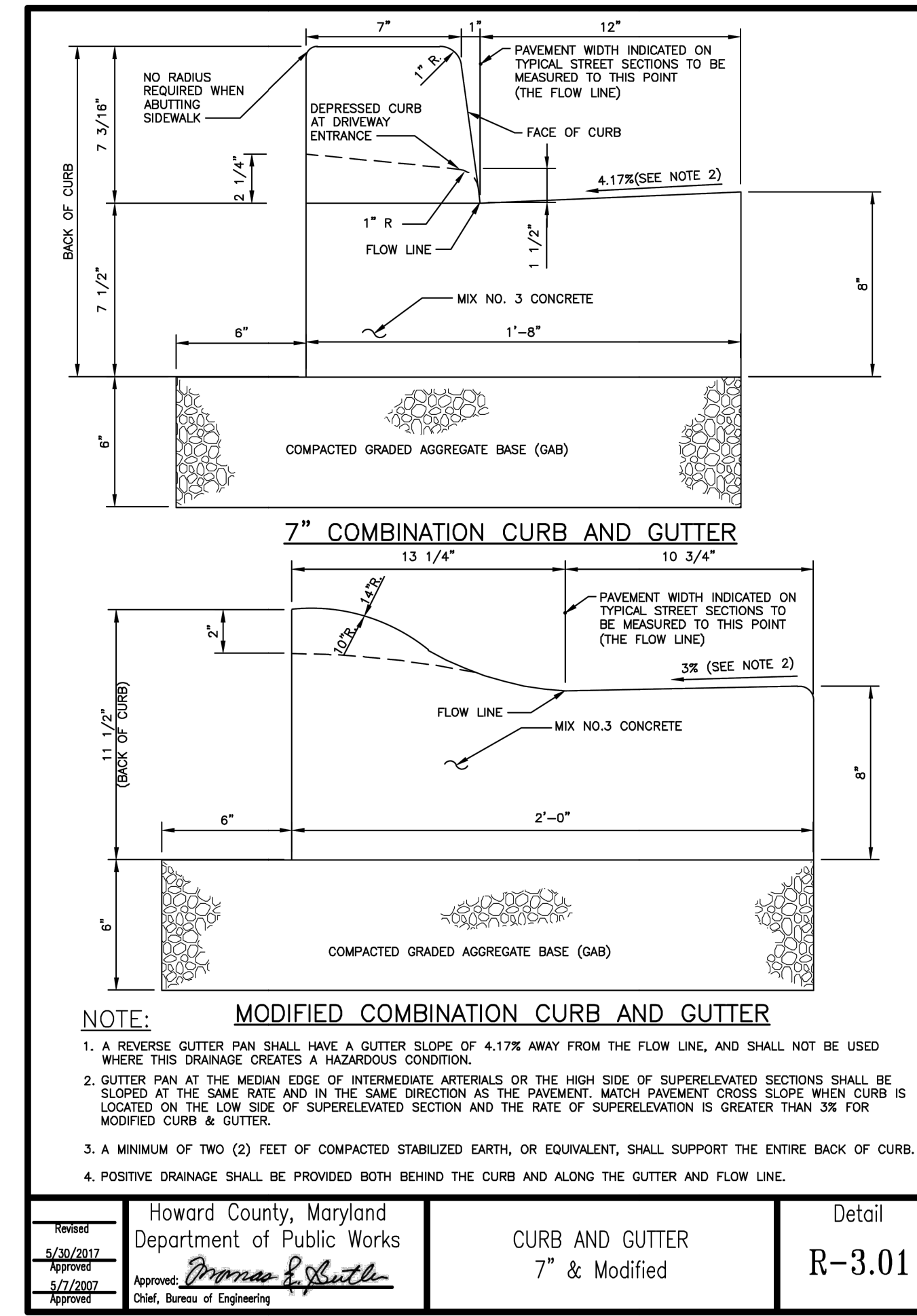
SITE DETAILS
Drawing No.
C4.1
Scale: AS SHOWN
Date: 10/2023 SDP Sheet 23 of 54
Des: BWJ Drawn: JTD Check: AUO

NOTES:

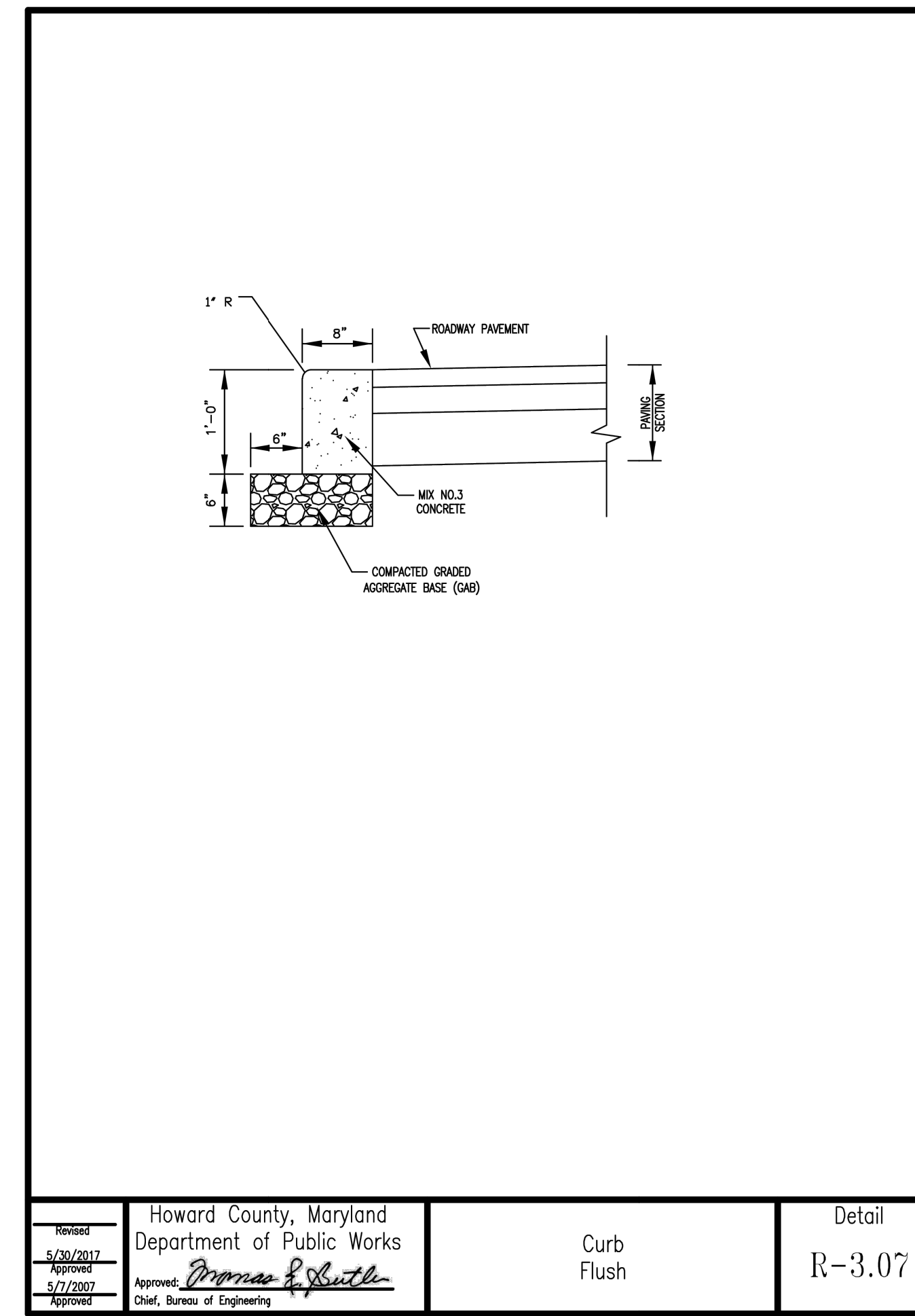
- GATE SHALL SWING IN TOWARDS PARK.
- ALL WELDING TO BE CLEANED AND GROUND SMOOTH.
- WELD FLANGES AT ENDS OF TOP RAILS, ONE SIDE TO HAVE SLOT OPENING TO FIT OVER WELDED U-BOLT ON OTHER SIDE FOR PADLOCK ATTACHMENT.
- INSTALL 4"x4" HOLD-OPEN POSTS ON EACH SIDE OF GATE, 2 FT. 7 IN FROM EDGE OF ROADWAY, AND APPROPRIATE DISTANCE FROM GATEPOSTS.
- GREASE ALL FITTINGS.
- ATTACH U-BOLT WITH STAINLESS STEEL CLIP TO HOLD OPEN POST AND WELD U-BOLT TO GATE FOR EASY ATTACHMENT AND RELEASE OF GATE.
- USE 7" BARREL HINGES WITH STAINLESS PIN, AND WELD PADS 3"x1-1/2"x3/8" THICK. GATE HINGES TO BE PLUMB AND SQUARE WITH GATE POST.
- PRIME ALL METAL SURFACES AND APPLY TWO COATS OF GLOSS BLACK POLYURETHANE PAINT. USE ROLLER ON LARGE AREAS AND USE BRUSH OR SPONGE FOR TIGHT AREAS.
- GREASE ALL FITTINGS.
- TOP OF FOOTINGS TO BE LEVEL WITH EXISTING GRADE.
- BACK-FILL AROUND FOOTINGS, AND FINISH WITH APPROPRIATE MATERIAL: TOPSOIL AND SEED, MULCH, OR PAVED SURFACE TO MATCH ADJACENT.
- INSTALL RED & WHITE STRIPED REFLECTIVE TAPE ALONG FRONT AND BACK OF TOP RAIL AND ON VERTICALS. ALSO INSTALL REFLECTIVE TAPE AROUND TOP OF GATEPOSTS AND HOLD-BACK POSTS.
- COORDINATE EXACT GATE LOCATION WITH HOWARD CO. PRIOR TO FABRICATION OR INSTALLATION. SIZE AND LOCATION SHOWN ARE APPROXIMATE.



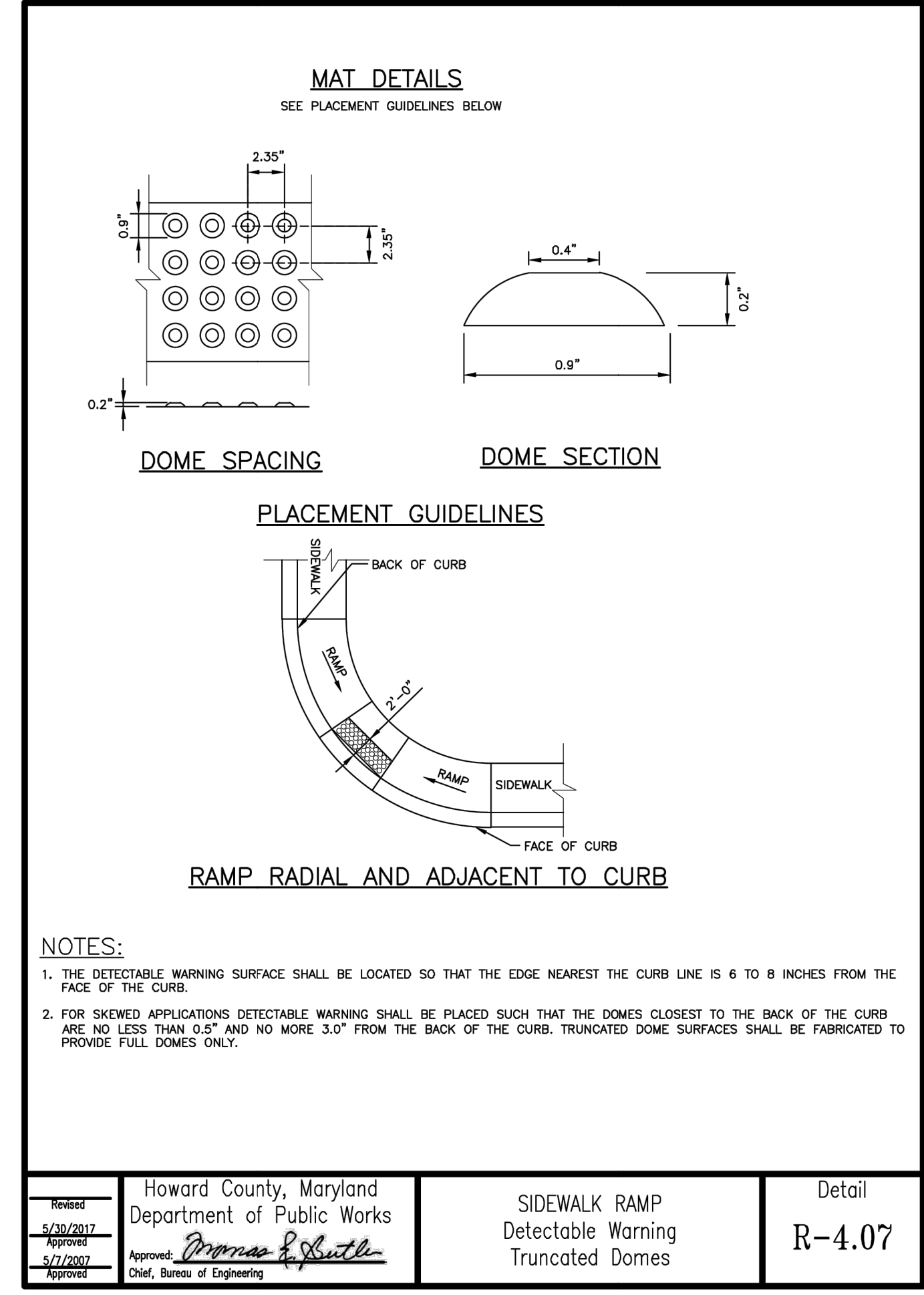
A PARK GATE DETAIL
C4.2 NOT TO SCALE



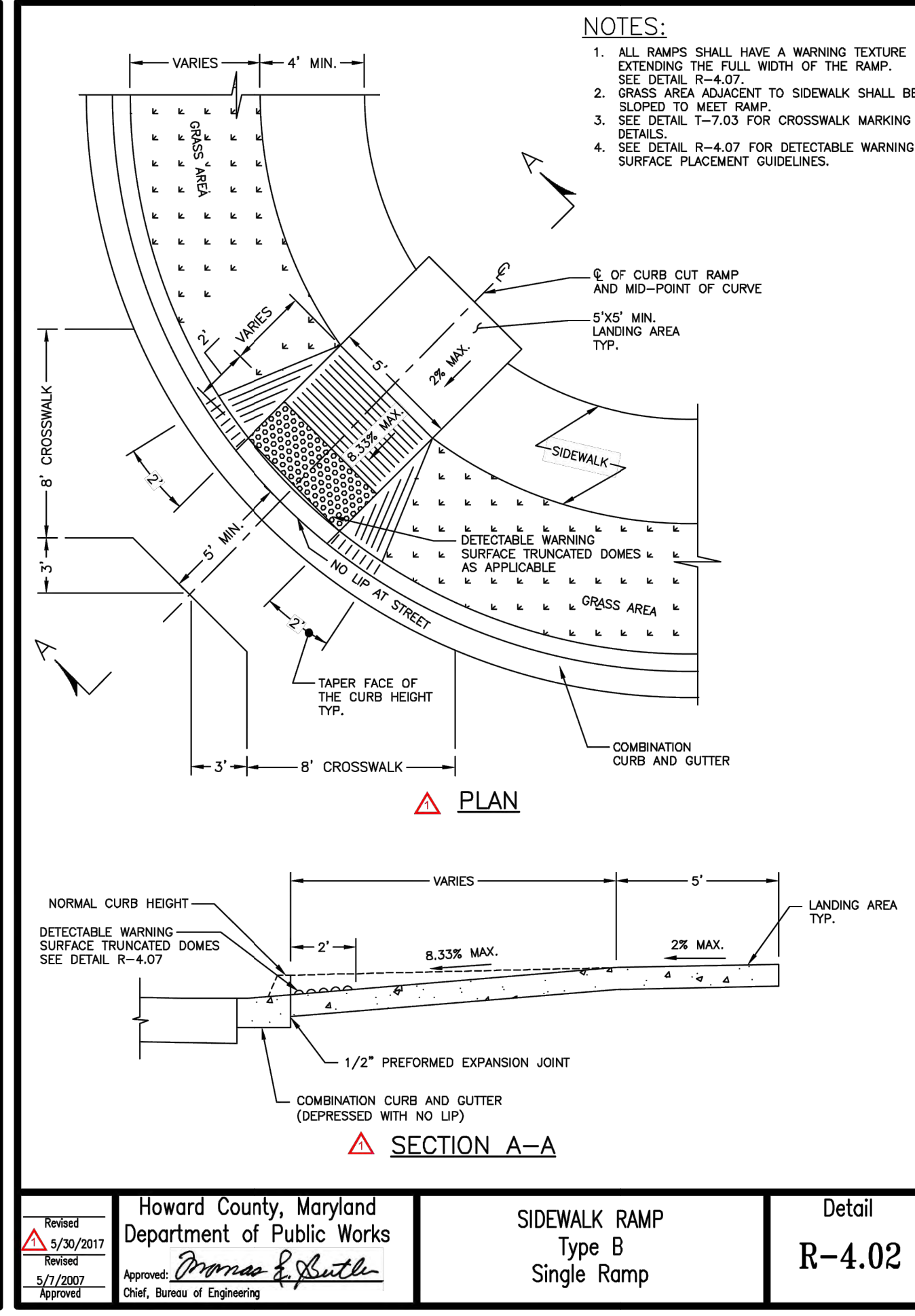
Howard County, Maryland
Department of Public Works
CURB AND GUTTER
7" & Modified
Detail
R-3.01



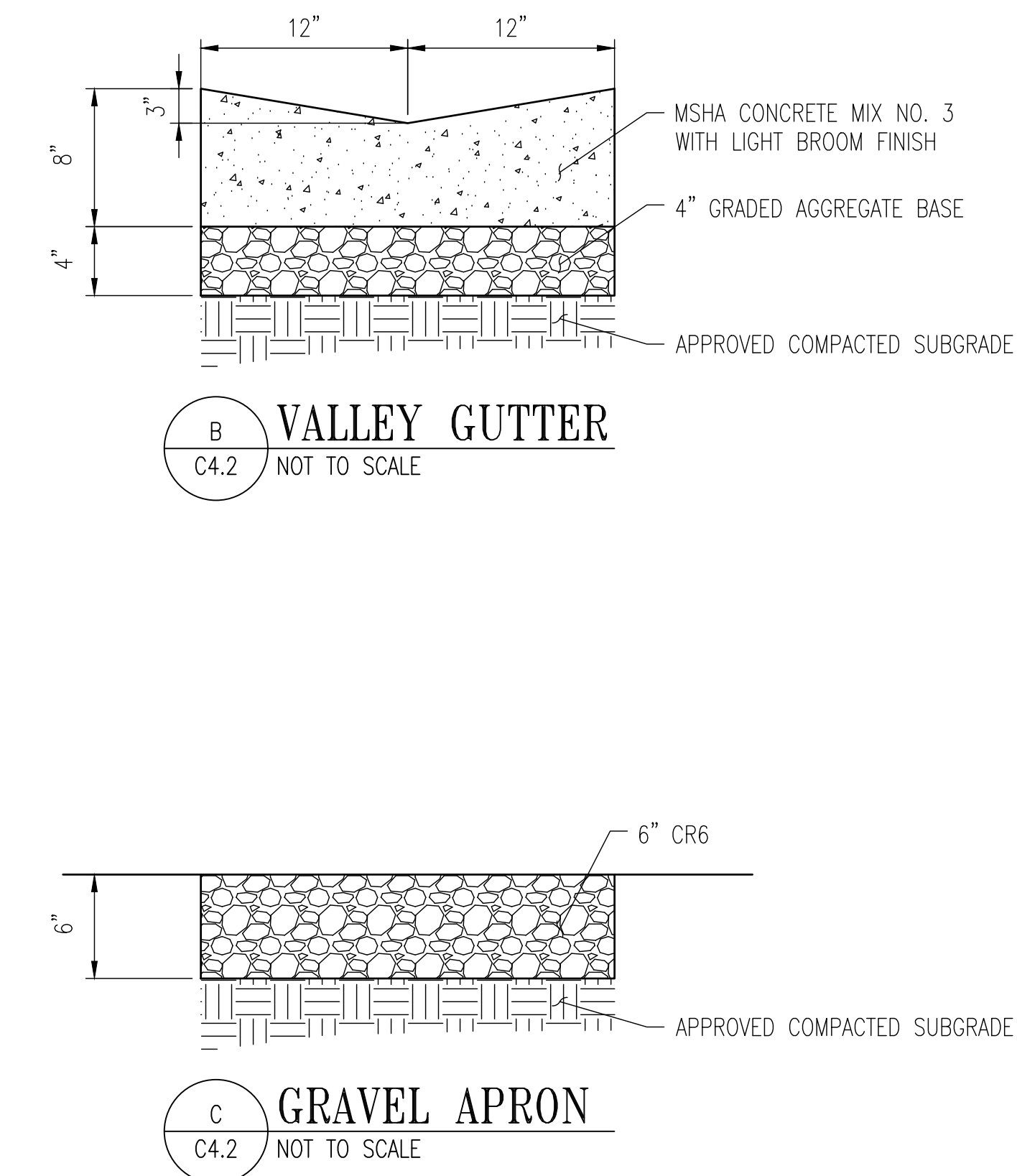
Howard County, Maryland
Department of Public Works
Curb
Flush
Detail
R-3.07



Howard County, Maryland
Department of Public Works
SIDEWALK RAMP
Detectable Warning
Truncated Domes
Detail
R-4.07



Howard County, Maryland
Department of Public Works
SIDEWALK RAMP
Type B
Single Ramp
Detail
R-4.02



B VALLEY GUTTER
C4.2 NOT TO SCALE

C GRAVEL APRON
C4.2 NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Prepared by: *Chad Edmondson* 12/20/2023
 CHIEF, DEVELOPMENT DIVISION
 DATE: 12/4/2023
 CHIEF, DIVISION OF ZONING AND PLANNING
 Prepared by: *Linda Eisenberg* 12/20/2023
 DIRECTOR
 DATE:

REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6

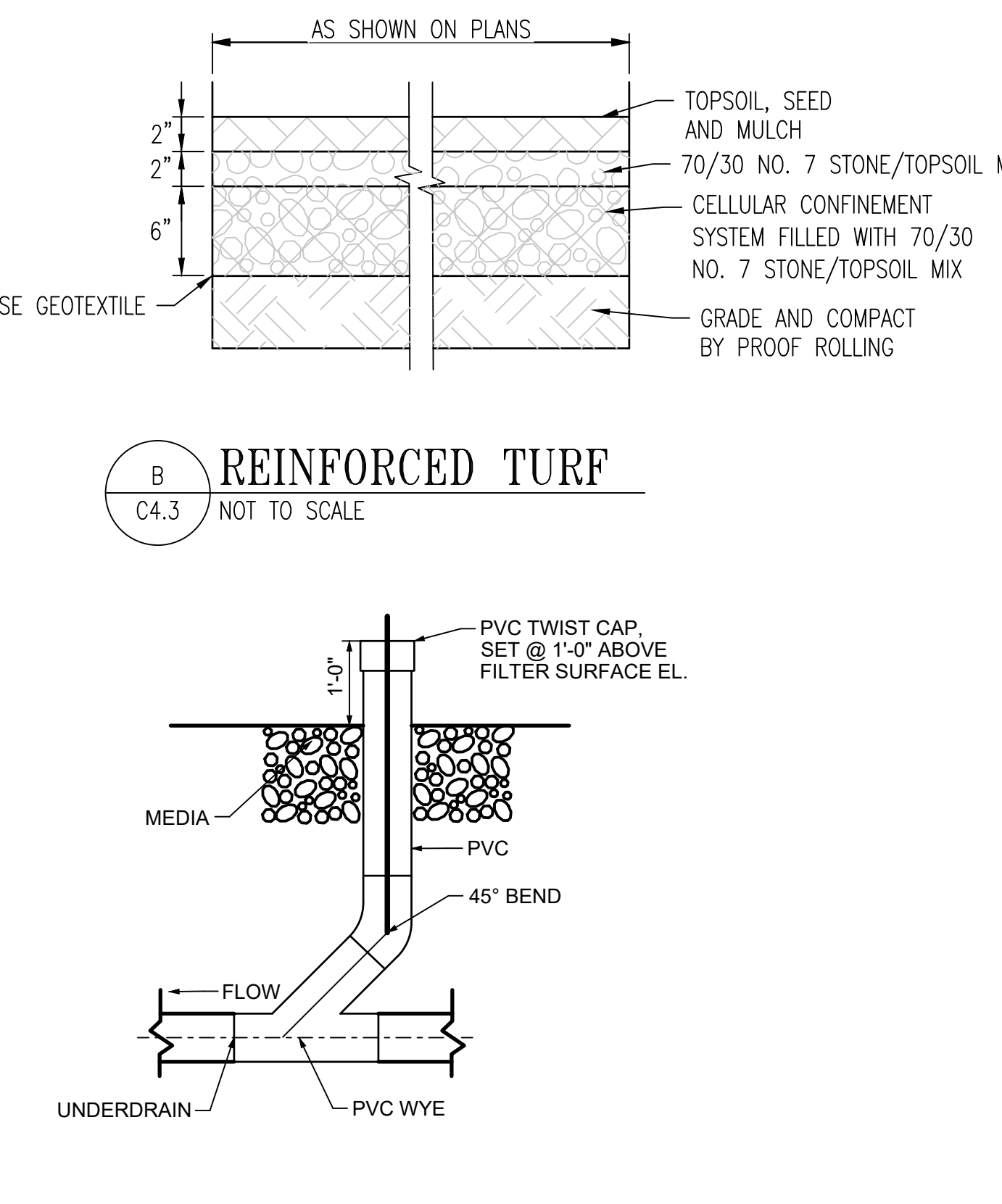
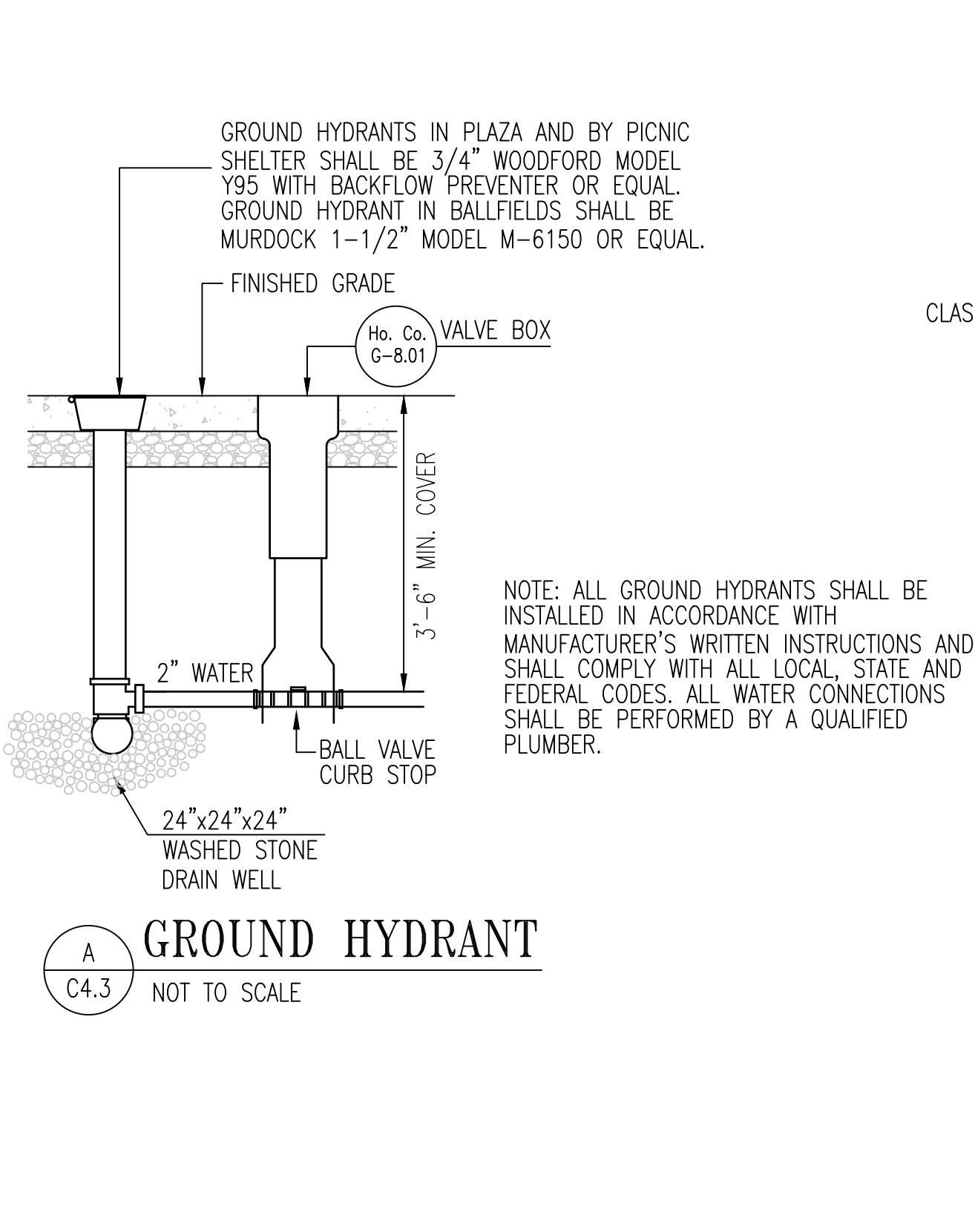
GRAPHIC SCALES

SIGNATURE

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BLANDAIR REGIONAL
 PARK - PHASE 6

SITE DETAILS
 Drawing No.
C4.2
 Scale: AS SHOWN
 Date: 10/2023 SDP Sheet 24 of 54
 Des: BWJ Drawn: JTD Check: AUO



DURA SLOPE™

GENERAL ENGINEERING SPECIFICATIONS

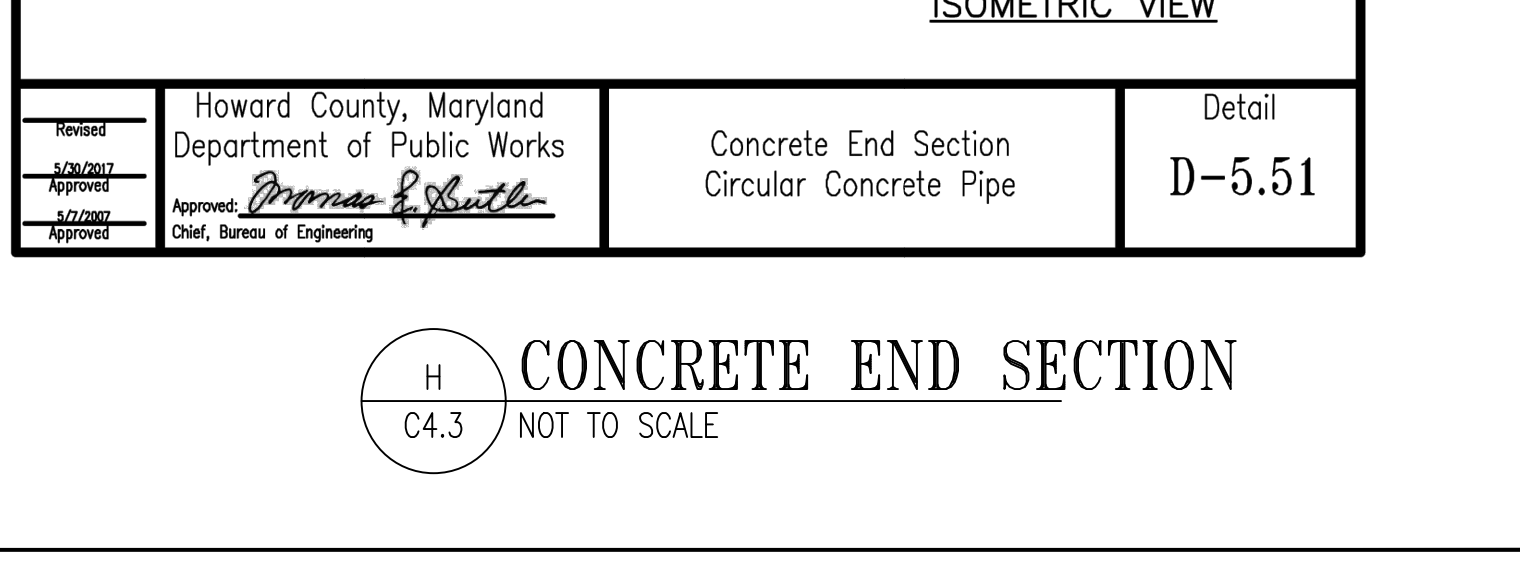
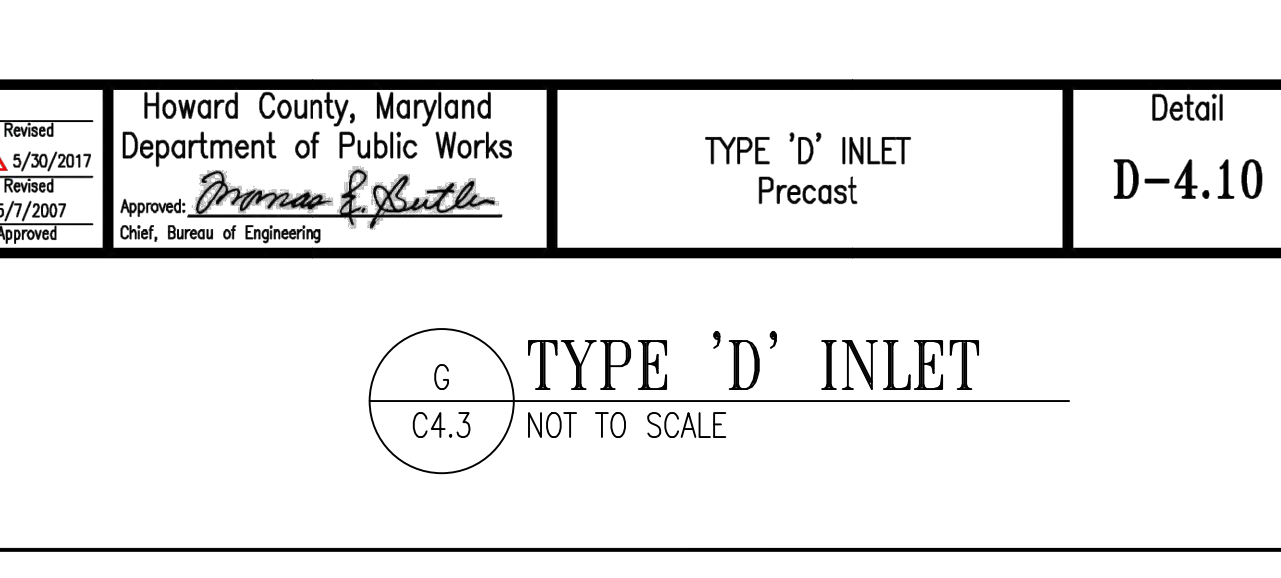
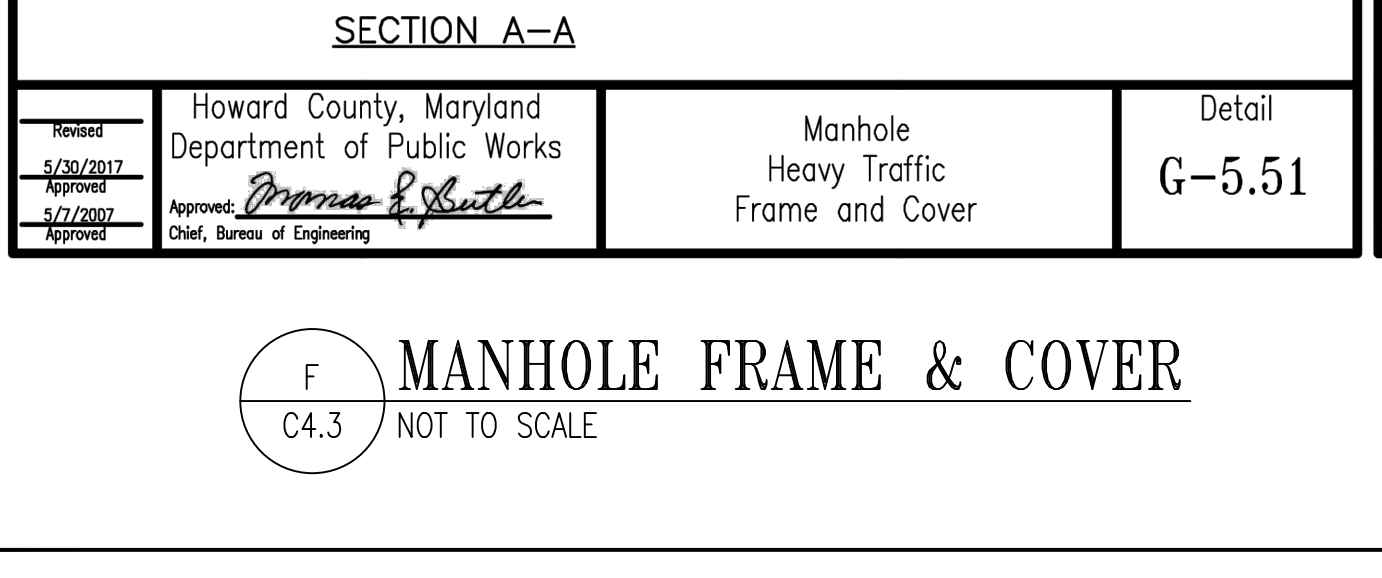
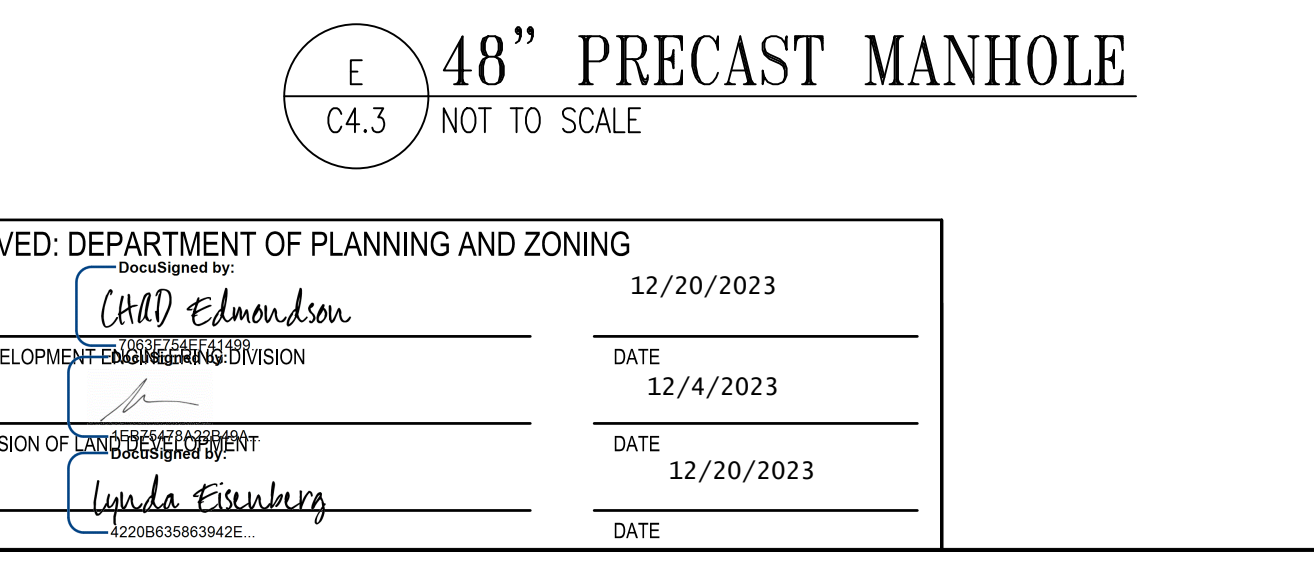
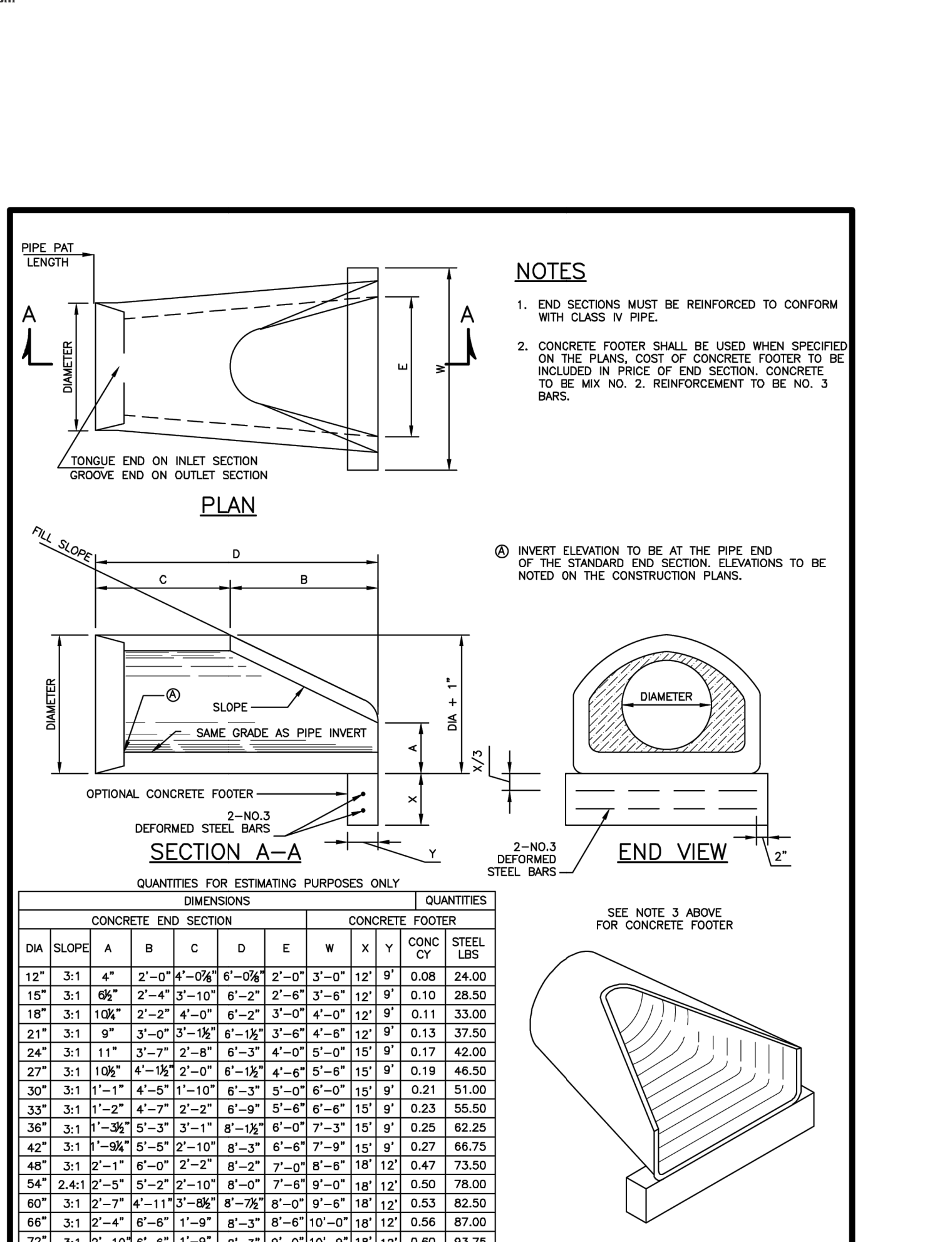
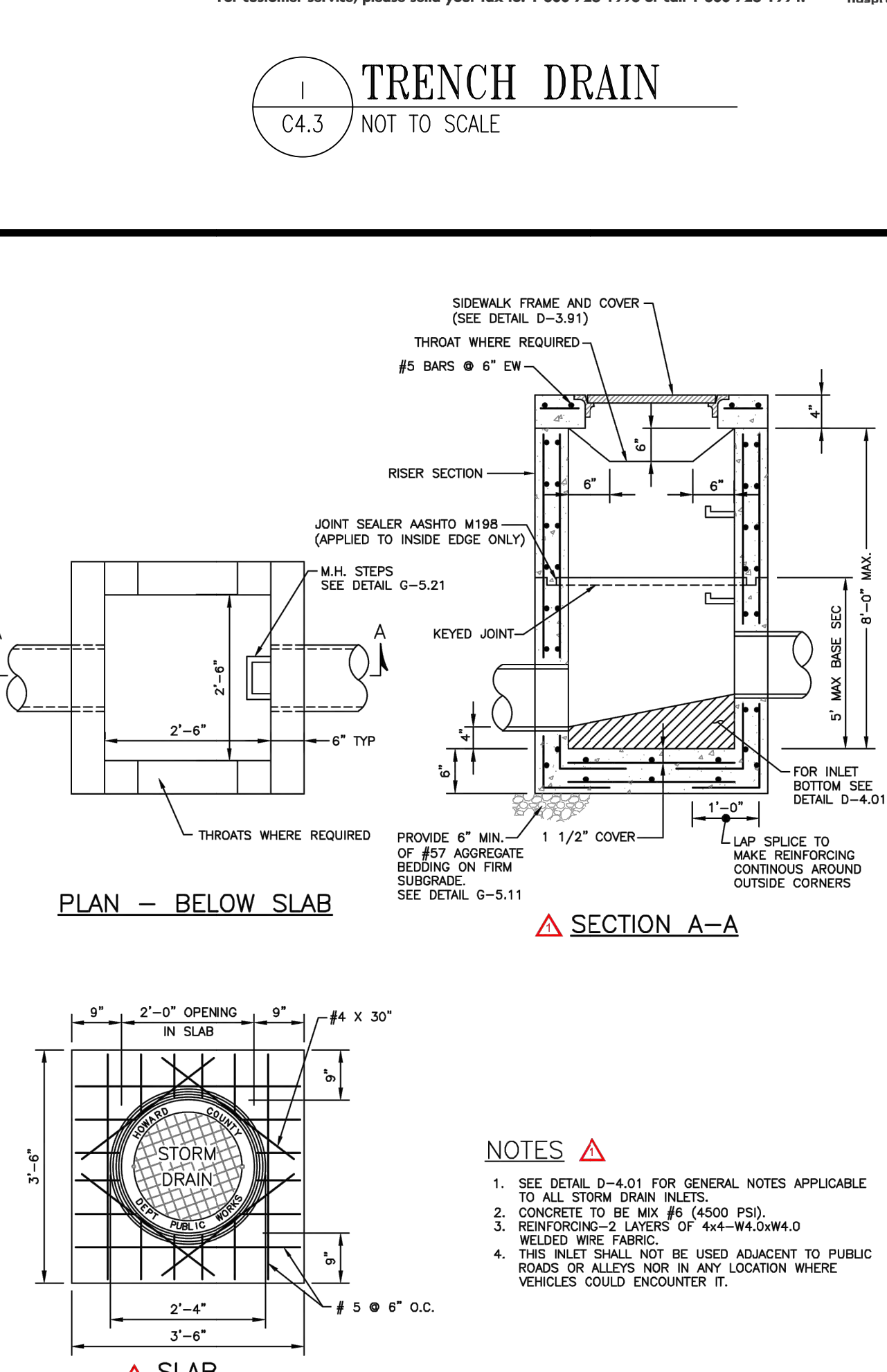
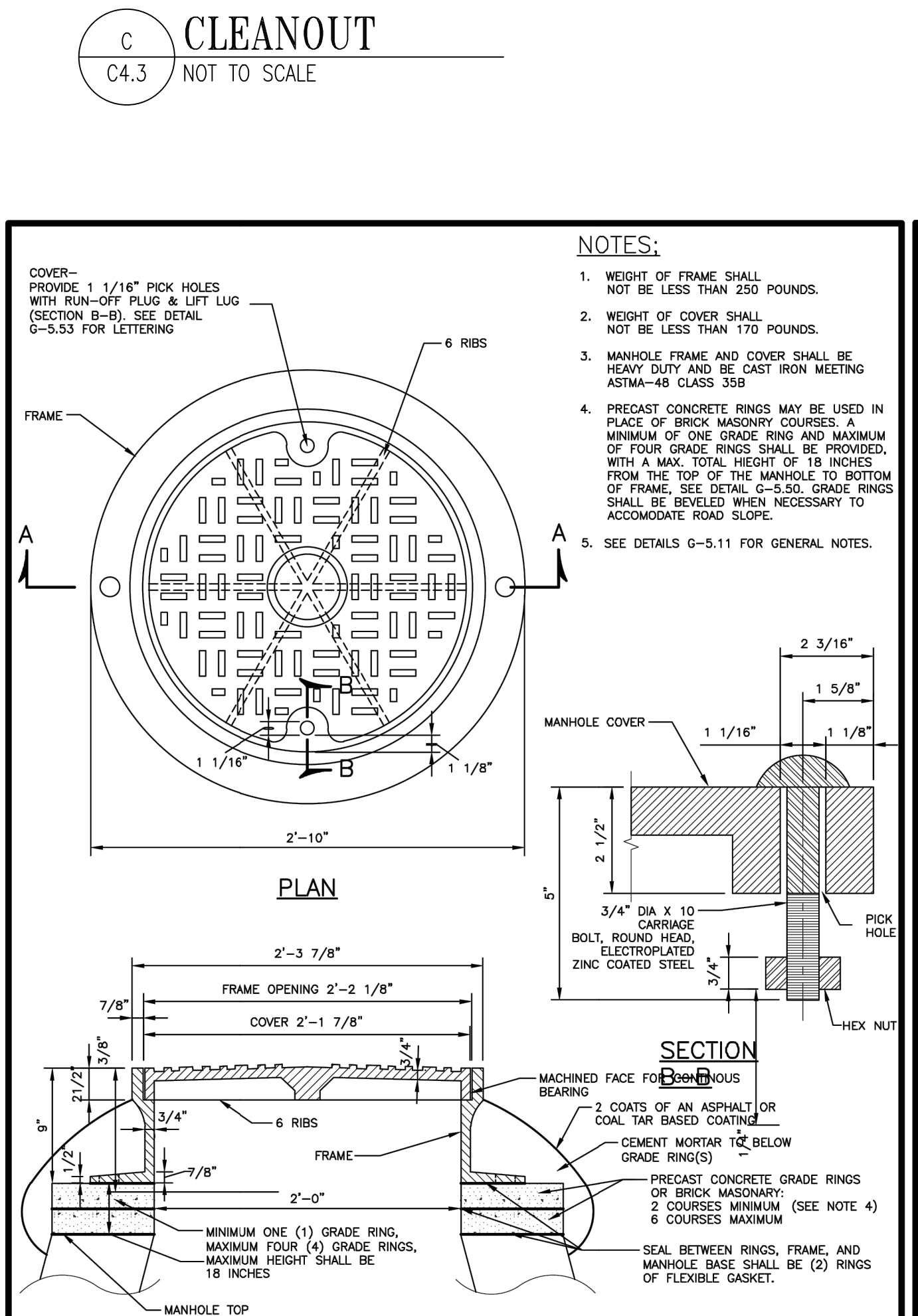
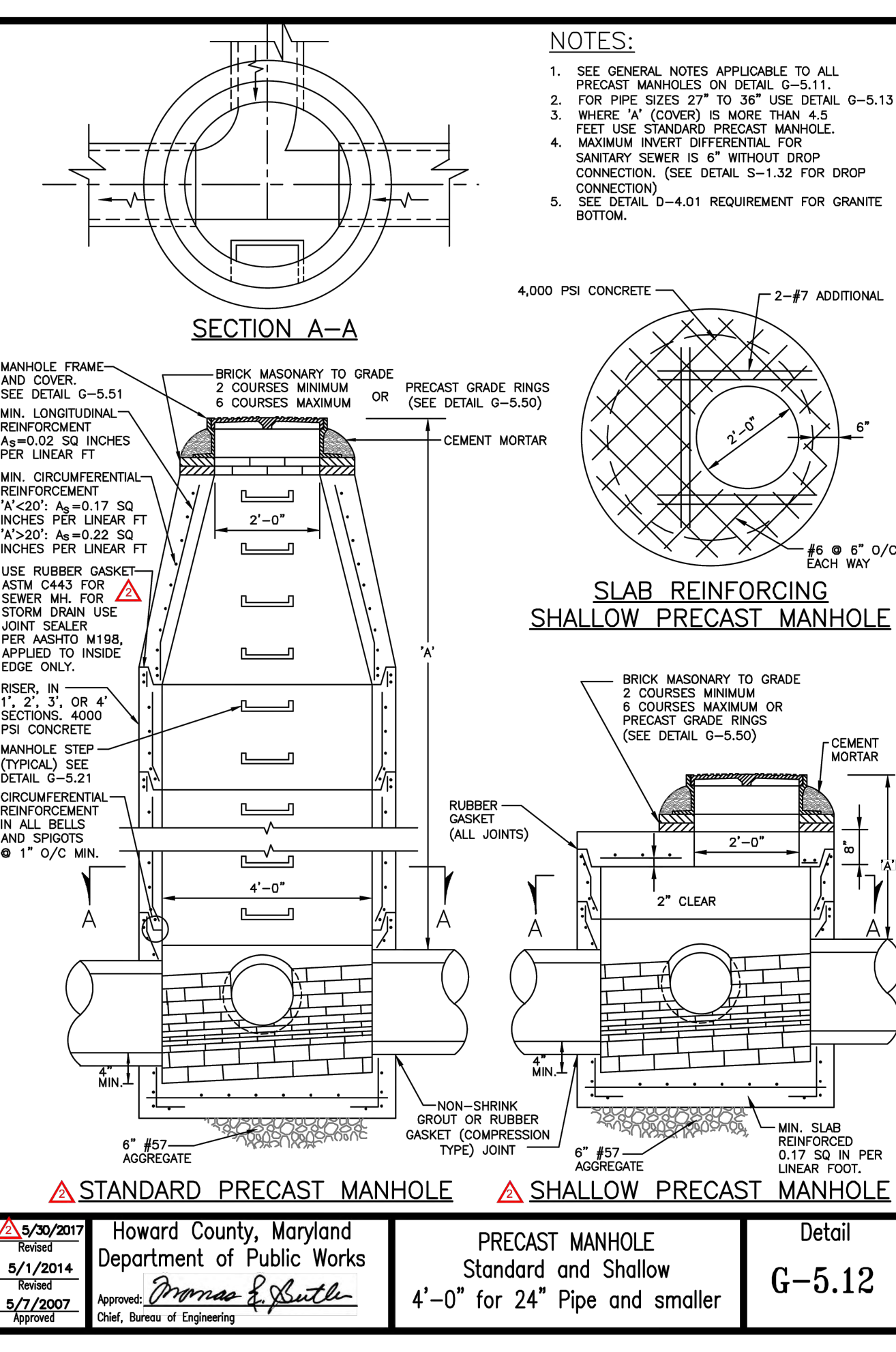
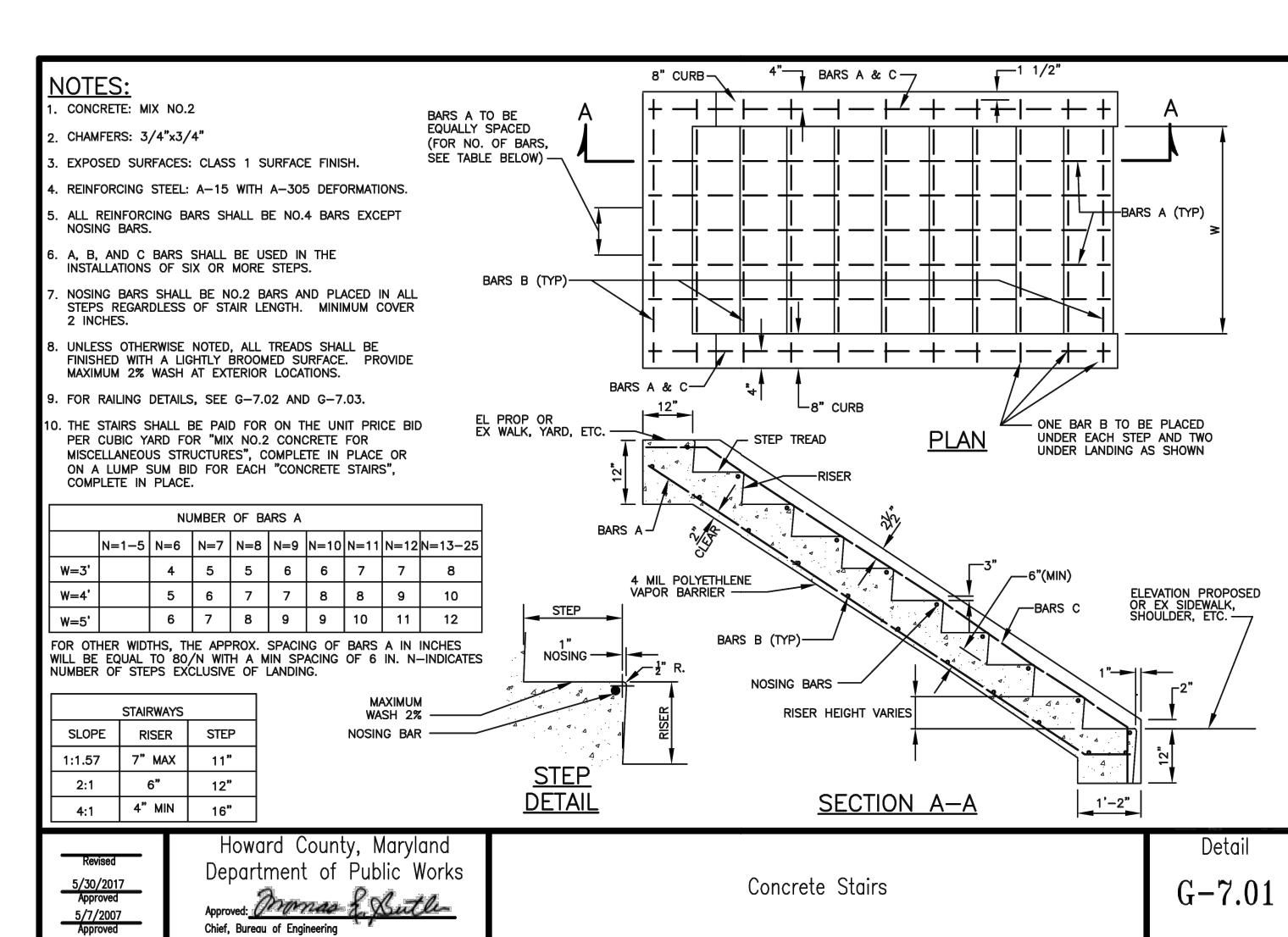
The NDS Dura Slope™ trench drain system consists of 33 channel sections; 24 pre-sloped sections with 0.7% built in slope and 9 neutral sections. The system also has a catch basin assembly. All Dura Slope™ channel sections are 48" long, grip #3 and #4 round and support 6" wide grates. Dura Slope™ channel sections are also available in depths from 4" to 12".

The sloped channel sections enable the Dura Slope™ system to extend to a length of 96 feet with continuous slope. The neutral channel sections can be used for non-sloped system runs or can be used in conjunction with the pre-sloped channel sections for an extended system run of 132 feet. By incorporating central collection using the catch basin assembly, the Dura Slope™ trench drain system can be extended up to 266 feet. The ProFit™ locking system maintains structural integrity during installation, and is a locking device and support for the grates. Each channel section ships with ProFit™, Blank Grate Inserts and grate screws installed.

DIMENSION KEY	
A:	Length
B:	Min. Inner Depth
C:	Max. Inner Depth
D:	Min. Outer Depth
E:	Max. Outer Depth

COMMON DIMENSION FOR ALL CHANNEL SECTIONS	
F:	Bottom Outlet Depth 0.65"
G:	Width 6"
H:	Re-bar Lock Width 10.185"

PART NUMBERS	WEIGHT (LBS)	FLOW RATE (GPM)	LFM	A	B	C	D	E	PRODUCT CLASS
DS-009H	7.452	75	284	48"	3.998	3.998	5.354	5.790	2509
DS-091	7.528	75	284	48"	3.998	3.998	5.690	6.170	2509
DS-091H	7.812	89	327	48"	4.334	4.334	5.692	6.100	2509
DS-202	7.929	89	327	48"	4.334	4.334	6.028	6.508	2509
DS-403	8.309	103	380	48"	4.670	4.670	6.362	6.842	2509
DS-04	8.638	117	443	48"	5.006	5.042	6.698	6.778	2509
DS-084H	8.928	131	486	48"	5.342	5.342	6.700	7.111	2509
DS-086	8.988	131	486	48"	5.342	5.678	7.024	7.114	2509
DS-096	9.309	145	529	48"	5.678	5.678	7.370	7.460	2509
DS-097	9.741	159	602	48"	6.014	6.350	7.706	7.796	2509
DS-097H	10.040	173	665	48"	6.350	6.350	7.738	8.119	2509
DS-098	10.112	173	665	48"	6.350	6.686	8.042	8.132	2509
DS-099	10.468	187	708	48"	6.686	6.686	8.378	8.598	2509
DS-100	10.629	201	751	48"	7.022	7.022	8.714	8.794	2509
DS-100H	11.158	215	814	48"	7.358	7.358	8.716	9.127	2509
DS-101	11.228	215	814	48"	7.358	7.694	8.960	9.150	2509
DS-102	11.599	229	867	48"	7.694	8.030	9.306	9.496	2509
DS-103	11.971	243	920	48"	8.030	8.366	9.722	9.892	2509
DS-103H	12.271	257	973	48"	8.366	8.366	9.724	10.138	2509
DS-104	12.343	257	973	48"	8.366	8.702	10.068	10.138	2509
DS-105	12.714	271	1026	48"	8.702	8.702	10.394	10.474	2509
DS-106	13.086	285	1079	48"	9.038	9.038	10.730	10.810	2509
DS-106H	13.396	299	1132	48"	9.374	9.374	10.732	11.146	2509
DS-107	13.408	299	1132	48"	9.374	9.710	11.066	11.146	2509
DS-108	13.820	313	1185	48"	9.710	10.046	11.402	11.482	2509
DS-109	14.201	327	1238	48"	10.046	10.382	11.738	11.818	2509
DS-109H	14.401	341	1291	48"	10.382	10.382	11.440	12.155	2509
DS-110	14.873	341	1291	48"	10.382	10.718	12.074	12.154	2509
DS-111	14.945	355	1344	48"	10.718	11.054	12.410	12.490	2509
DS-112	15.316	369	1397	48"	11.054	11.390	12.746	12.826	2509
DS-124	15.616	383	1450	48"	11.390	11.390	12.662	13.186	2509
DS-113	15.688	382	1448	48"	11.390	11.726	13.002	13.182	2509
DS-114	16.000	396	1499	48"	11.726	12.062	13.416	13.498	2509



REVISIONS	

HOWARD COUNTY
DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
TAX MAP 36, GRID 5, PARCEL 3
ZONING: RC-DEO
ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE

STATE OF MARYLAND
PROFESSIONAL ENGINEER
10/16/23

DocuSigned by:
Cathy W
106F4C048E046A...

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 18378
EXPIRATION DATE: 09/22/2028

BLANDAIR REGIONAL PARK - PHASE 6

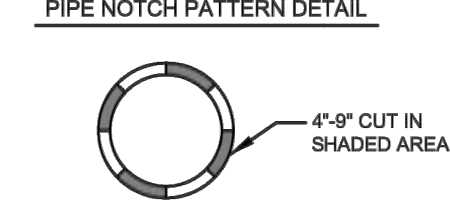
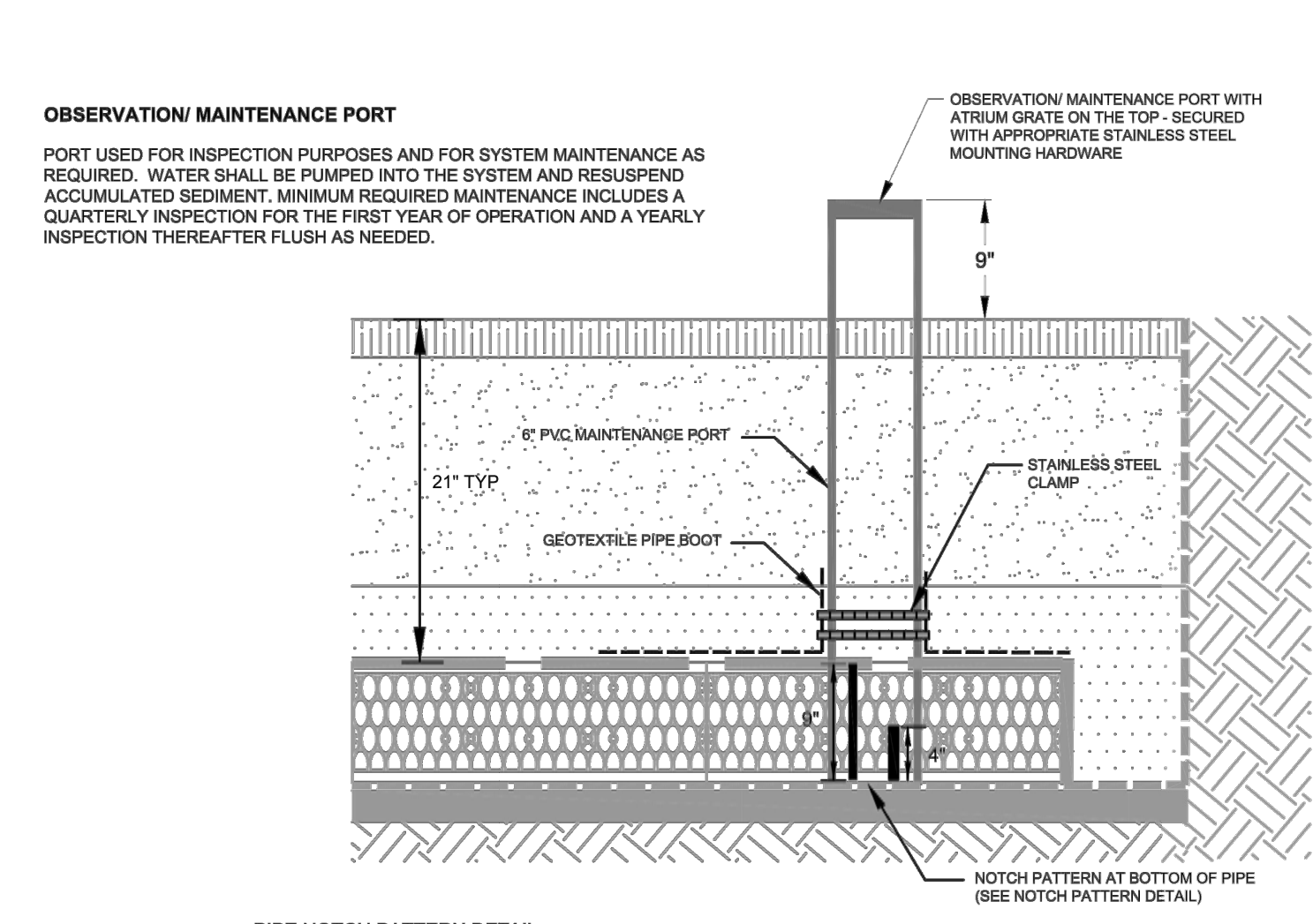
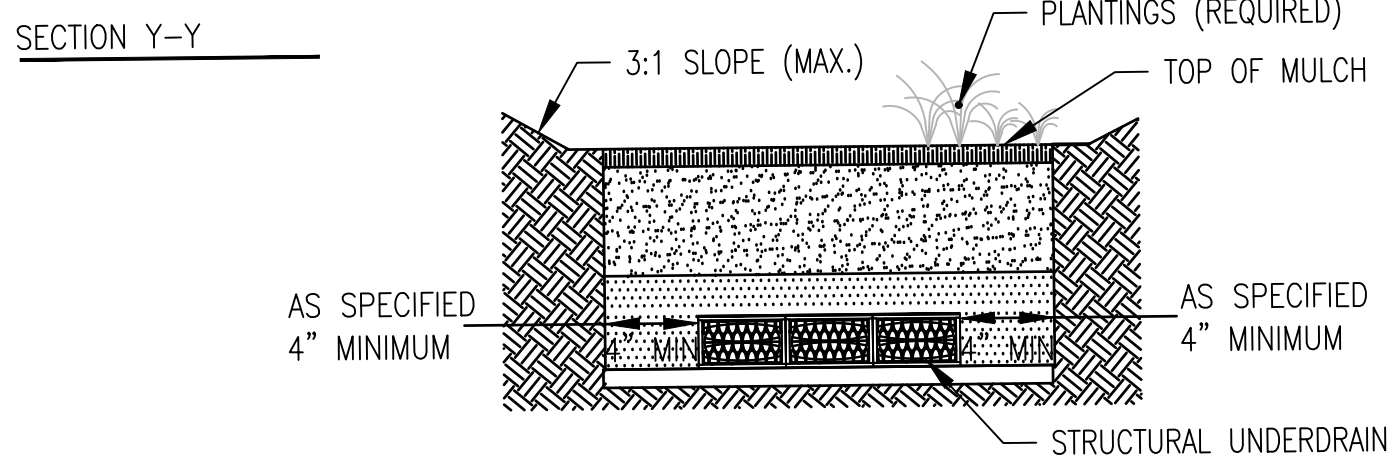
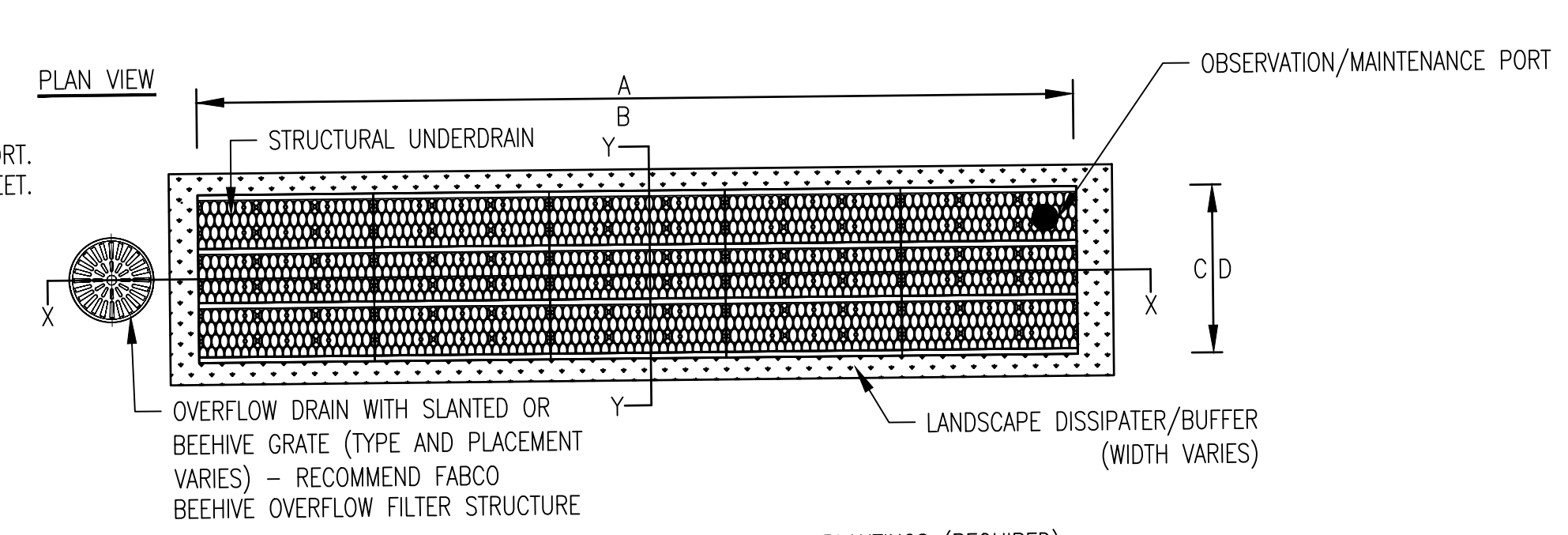
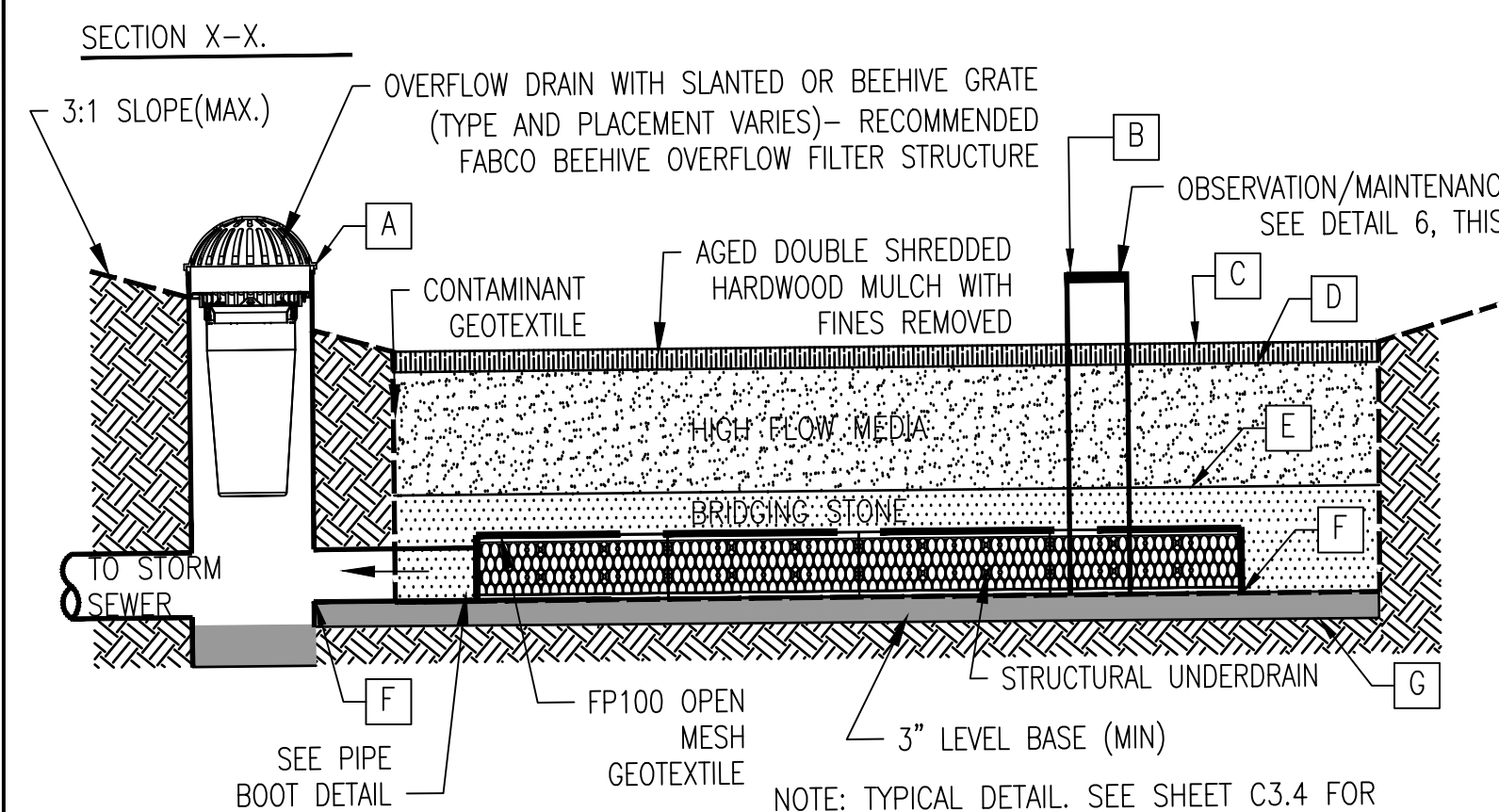
SITE DETAILS
Drawing No.
C4.3
Scale: AS SHOWN
Date: 10/2023 SDP Sheet 25 of 54
Des: BWJ Drawn: JTD Check: AUO
SDP-23-016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
12/20/2023
CHIEF, DEVELOPMENT DIVISION
12/4/2023
CHIEF, DIVISION OF ZONING
12/20/2023
DIRECTOR

Howard County, Maryland
Department of Public Works
Manhole Heavy Traffic Frame and Cover
Detail G-5.51

Howard County, Maryland
Department of Public Works
TYPE 'D' INLET Precast
Detail D-4.10

Howard County, Maryland
Department of Public Works
Concrete End Section Circular Concrete Pipe
Detail D-5.51

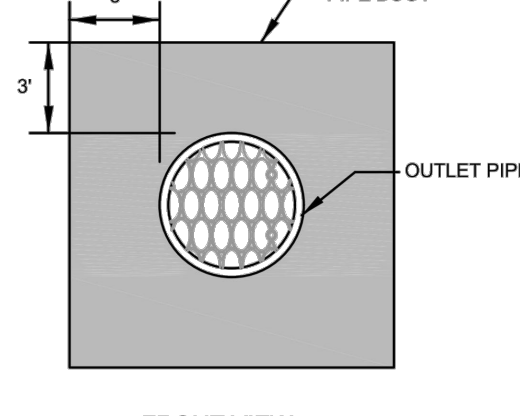
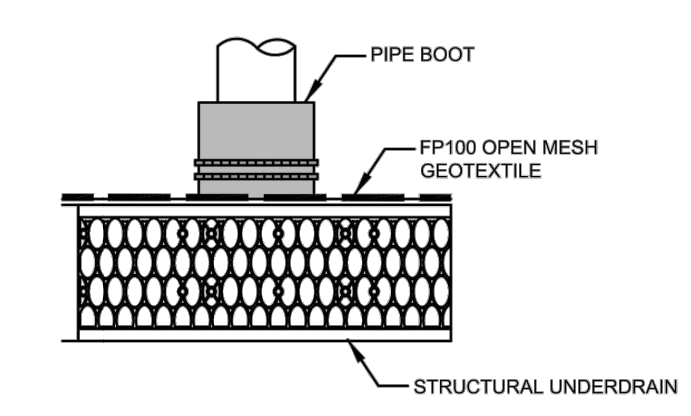


A FOCAL POINT SECTION X-X
C4.5 NOT TO SCALE

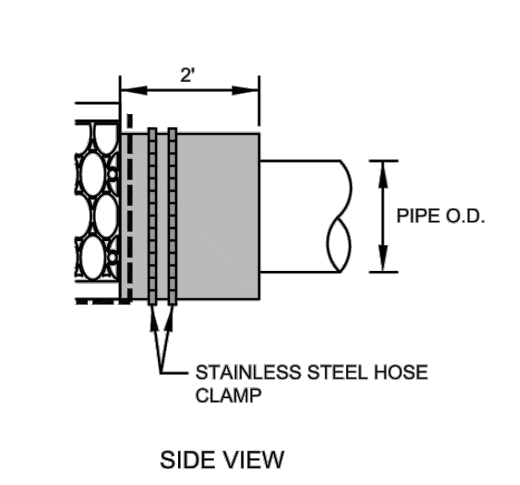
B FOCAL POINT PLAN & SECTION Y-Y
C4.5 NOT TO SCALE

OBSERVATION/ MAINTENANCE PORT CONNECTION

PIPE BOOT DETAIL



OUTLET/ INLET PIPE CONNECTION



FRONT VIEW

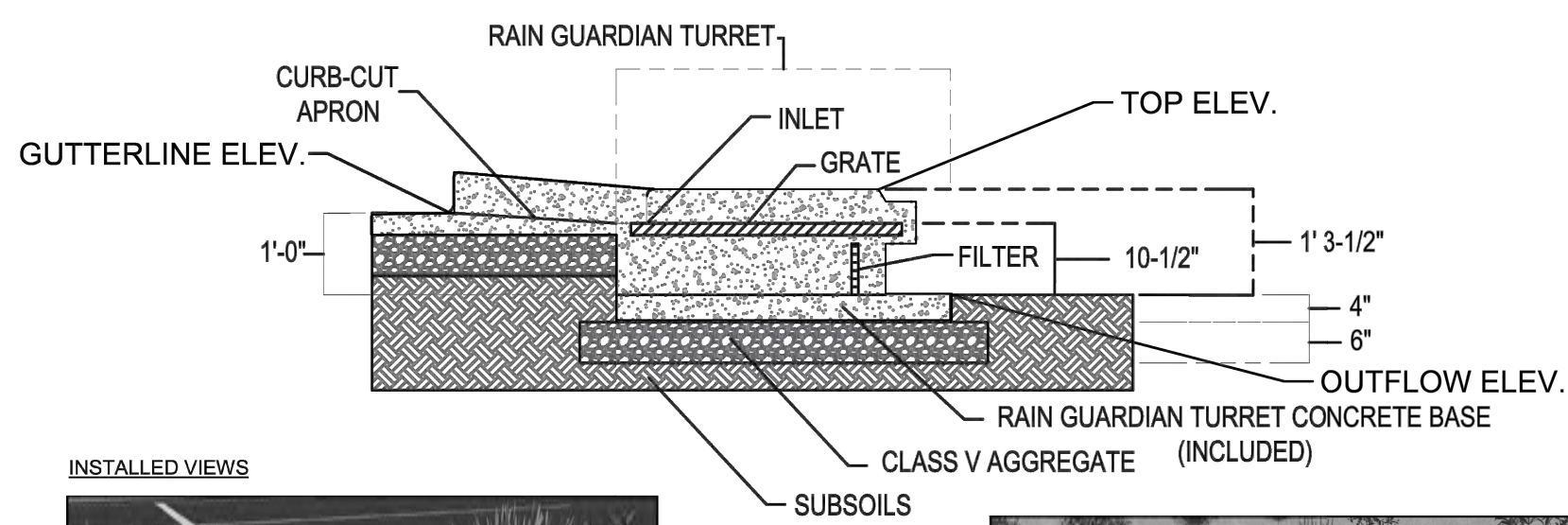
SIDE VIEW

F PIPE CONNECTION DETAIL
C4.5 NOT TO SCALE

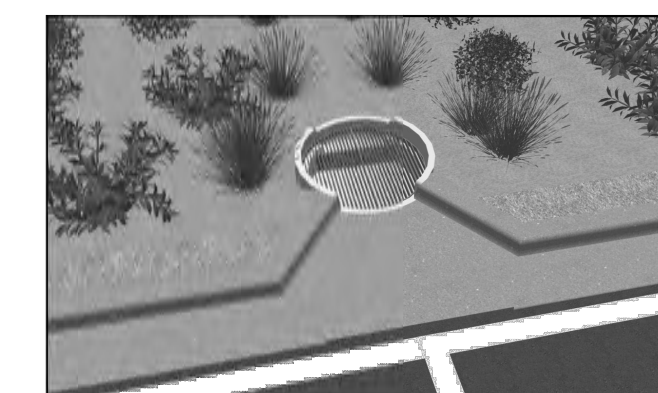
FOCAL POINT MEDIA ELEVATION TABLE

REF	DESCRIPTION	FP#1	FP#2	FP#3	FP#4
A	TOP OF OUTLET STRUCTURE	403.50	402.50	402.00	397.50
B	TOP OF OVERFLOW/OBSERVATION PORT	403.25	402.25	401.75	397.25
C	TOP OF MULCH	402.50	401.50	401.00	396.50
D	TOP OF HIGH FLOW MEDIA	402.25	401.25	400.75	396.25
E	TOP OF BRIDGING STONE	400.75	399.75	399.25	394.75
F	TOP OF R-TANK UNDERDRAIN	400.25	399.25	398.75	394.25
G	BOTTOM OF R-TANK UNDERDRAIN	399.46	398.46	397.96	393.46
H	BOTTOM OF LEVEL BASE	399.21	398.21	397.71	393.21
	OUTLET STRUCTURE NUMBER	S-10	S-2	S-9	N/A

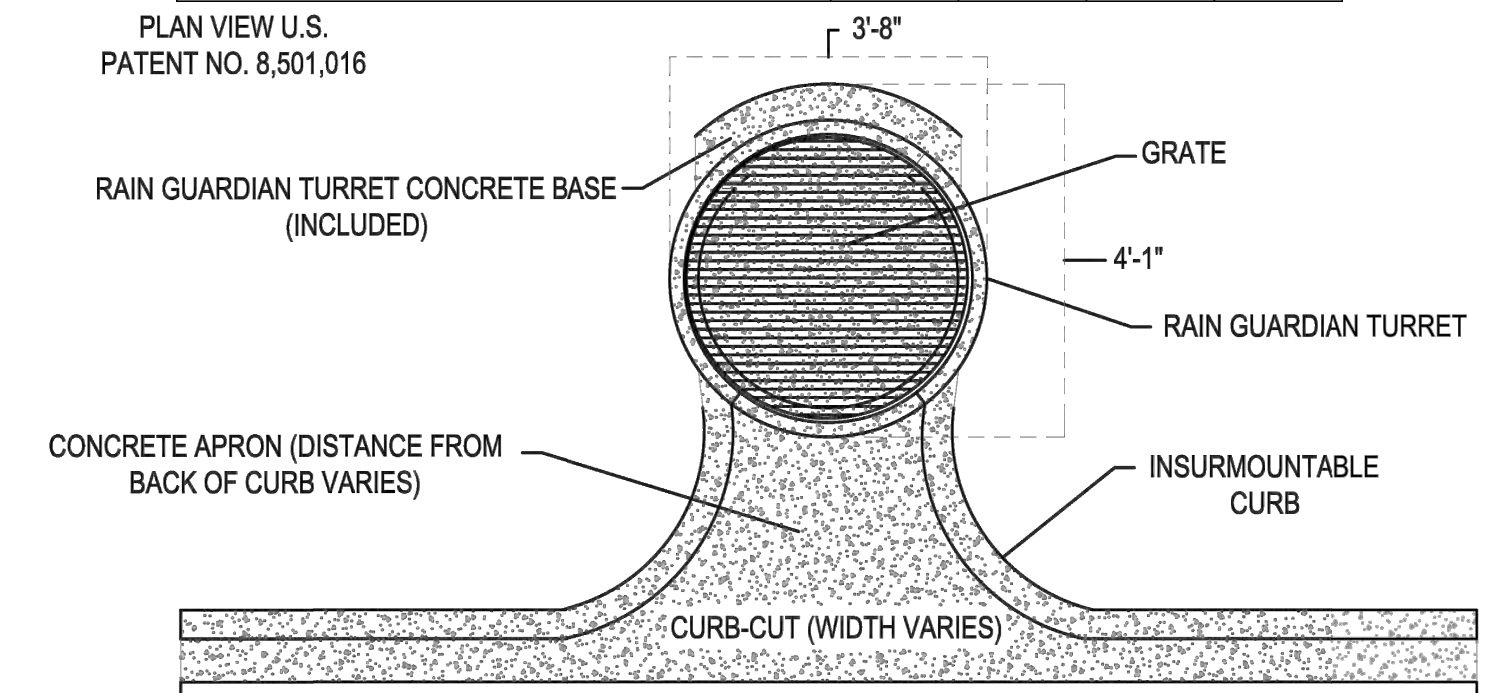
CROSS-SECTION VIEW
U.S. PATENT NO. 8,501,016



INSTALLED VIEWS



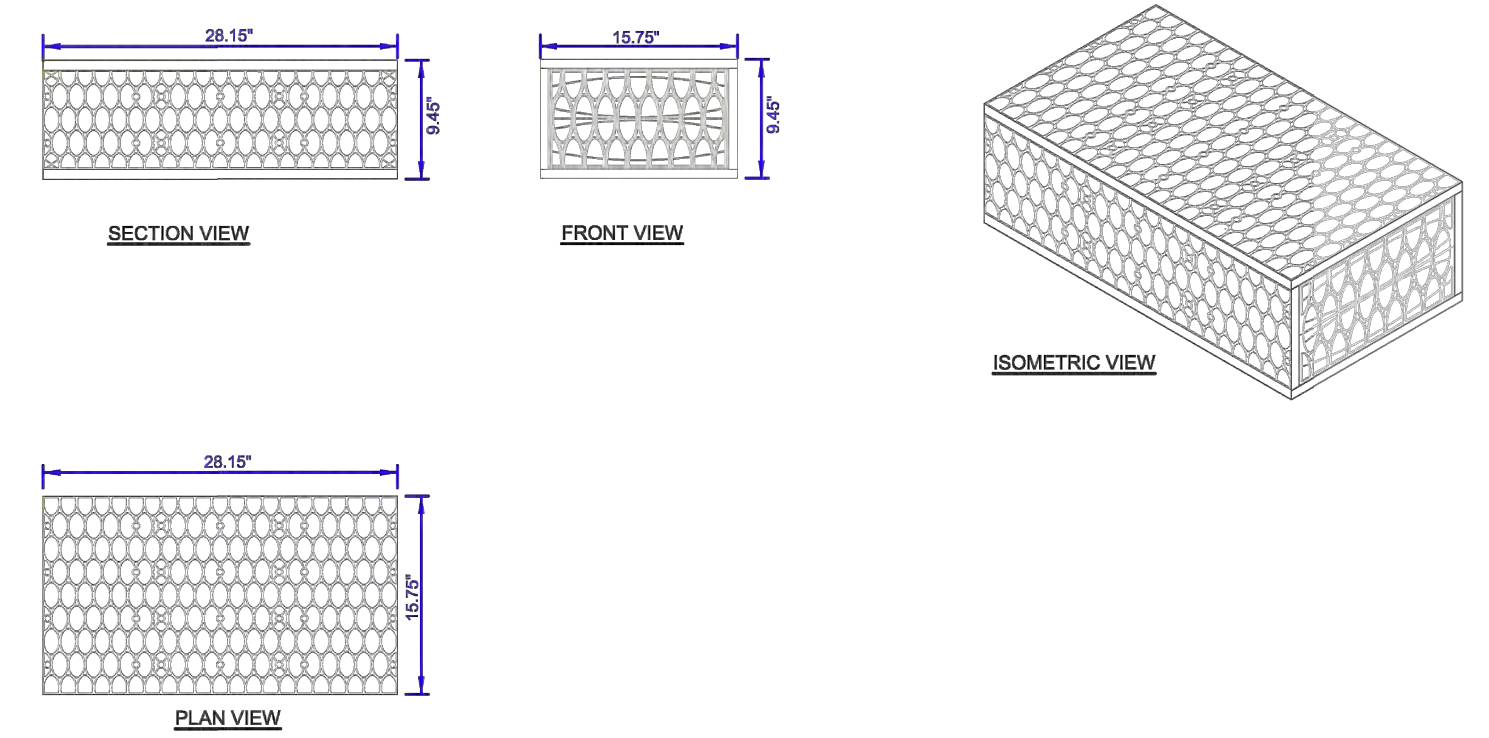
E RAIN GUARDIAN TURRET SECTION
C4.5 NOT TO SCALE



SPECIFICATIONS:

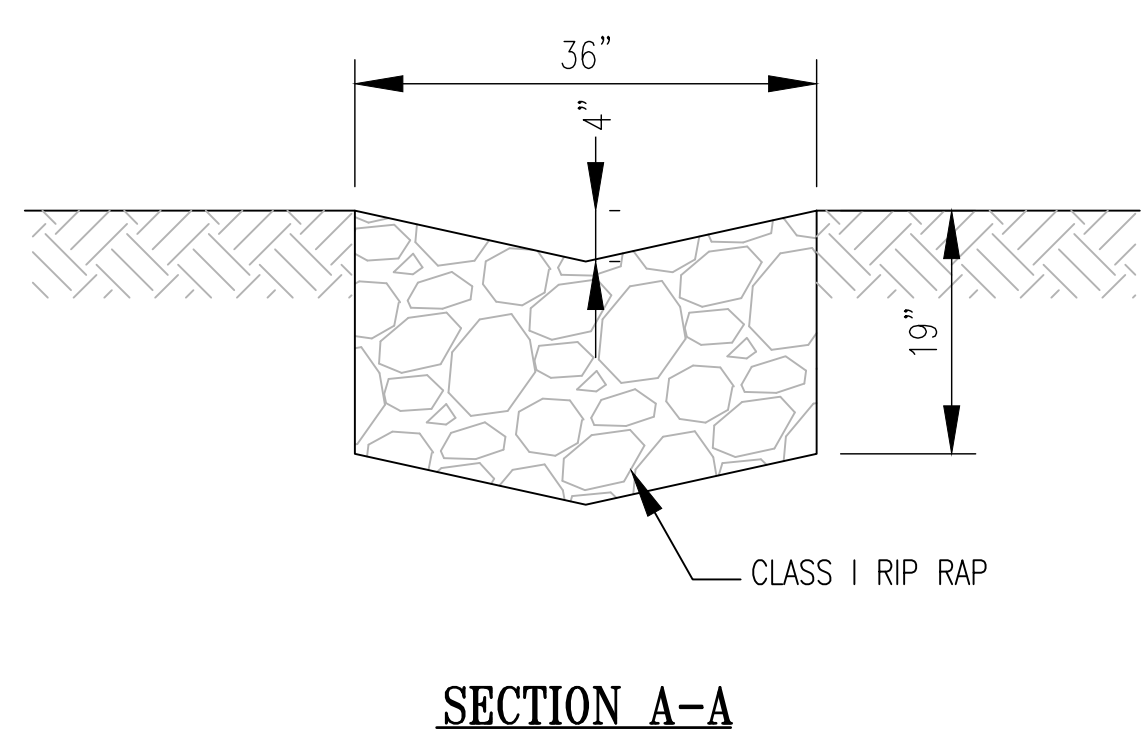
1. STEEL REINFORCED, COLD JOINT SECURED MONOLITHIC CONCRETE STRUCTURE (1,030 LBS).
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. CONCRETE AIR ENTRAINED (4 PERCENT TO 8 PERCENT BY VOLUME).
3. MANUFACTURED AND DESIGNED TO ASTM C888.
4. THREE-POINT PICK USING RECESSED LIFTING POCKETS WITH A STANDARD HOOK.
5. SOIL UNDER BASE TO BE COMPACTED TO 95 PERCENT STANDARD PROCTOR.
6. ONE PIECE LIGHT-DUTY GALVANIZED GRATE (34.5 LBS/PIECE) FOR 541 LB CONCENTRATED LOAD OR 309 LB/SQFT UNIFORM LOAD.
7. USE EXPANSION JOINT MATERIAL BETWEEN TURRET AND BIORETENTION INLET.

D RAIN GUARDIAN TURRET PLAN
C4.5 NOT TO SCALE

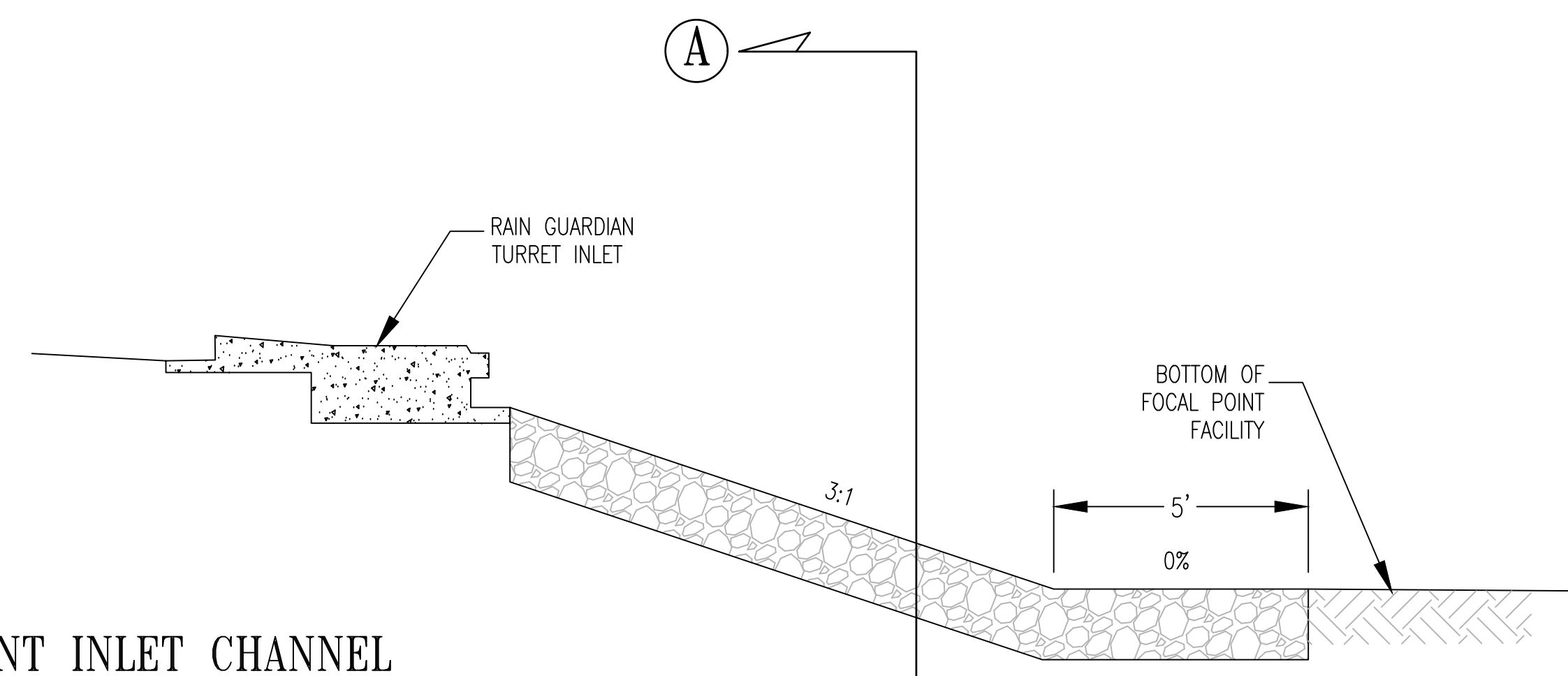


MODULE DATA

GEOMETRY: LENGTH = 28.15 IN. (715 MM) WIDTH = 15.75 IN. (400 MM) HEIGHT = 9.45 IN. (240 MM) TANK VOLUME = 2.42 CF STORAGE VOLUME = 2.30 CF VOID INTERNAL VOLUME: 90% VOID SURFACE AREA: 90%	LOAD RATING: 33.4 PSI, (MODULE ONLY) HS25, (WITH ACF COVER SYSTEM)	MATERIAL: 100% RECYCLED POLYPROPYLENE SMALL PLATES PER SEGMENT/TOTAL: 5/5
--	--	--



SECTION A-A



H FOCAL POINT INLET CHANNEL
C4.5 NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Development Division: *Chad Edmondson* 12/20/2023
 Chief, Division of Land Development: *Linda Eisenberg* 12/20/2023
 Director: *Linda Eisenberg* 12/20/2023

G R-TANK HD MINI MODULE DETAIL
C4.5 NOT TO SCALE

REVISIONS

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 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046
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 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 No. 19376
 EXPIRATION DATE: 09/22/2023
 10/16/23

BLANDAIR REGIONAL PARK - PHASE 6

STORMWATER MANAGEMENT NOTES & DETAILS
 Drawing No. **C4.5**
 Scale: AS SHOWN
 Date: 10/2023 SDP Sheet 27 of 54
 Des: BWJ Drawn: JTD Check: AUO

FOCALPOINT SPECIFICATION

I. SUMMARY

THE FOLLOWING GENERAL SPECIFICATIONS DESCRIBE THE COMPONENTS AND INSTALLATION REQUIREMENTS FOR A VOLUME BASED HIGH PERFORMANCE MODULAR BIOFILTRATION SYSTEM (HPMBS) THAT UTILIZES PHYSICAL, CHEMICAL AND BIOLOGICAL MECHANISMS OF A SOIL, PLANT AND MICROBE COMPLEX TO REMOVE POLLUTANTS TYPICALLY FOUND IN URBAN STORM WATER RUNOFF. THE MODULAR TREATMENT SYSTEM IN WHICH THE BIOLOGICALLY ACTIVE BIOFILTRATION MEDIA IS USED SHALL BE A COMPLETE, INTEGRATED SYSTEM DESIGNED TO BE PLACED IN SQUARE FOOT OR LINEAR FOOT INCREMENTS PER THE APPROVED DRAWINGS TO TREAT CONTAMINATED RUNOFF FROM IMPERVIOUS SURFACES.

THE HIGH PERFORMANCE MODULAR BIOFILTRATION SYSTEM (HPMBS) IS COMPRISED OF THE FOLLOWING COMPONENTS:

- A. PLANT COMPONENT
 - 1. MANUFACTURER SHALL PROVIDE A REGIONALIZED LIST OF ACCEPTABLE PLANTS.
 - 2. PLANTS, AS SPECIFIED IN THE APPROVED DRAWINGS/MANUFACTURER'S PLANT LIST, SHALL BE INSTALLED AT THE TIME THE HPMBS IS COMMISSIONED FOR USE.
 - 3. PLANTS AND PLANTING ARE TYPICALLY INCLUDED IN LANDSCAPE CONTRACT.
- B. BIOFILTER COMPONENT
 - 1. THIS COMPONENT EMPLOYS A HIGH PERFORMANCE CROSS-SECTION IN WHICH EACH ELEMENT IS HIGHLY DEPENDENT ON THE OTHERS TO MEET THE PERFORMANCE SPECIFICATION FOR THE COMPLETE SYSTEM. IT IS IMPORTANT THAT THIS ENTIRE CROSS-SECTION BE PROVIDED AS A COMPLETE SYSTEM, AND INSTALLED AS SUCH.
 - 2. AS INDICATED IN THE APPROVED DRAWINGS, THE ELEMENTS OF THE BIOFILTER INCLUDE:
 - A. A MULCH PROTECTIVE LAYER (IF SPECIFIED).
 - B. AN ADVANCED HIGH INFILTRATION RATE BIOFILTRATION PLANTING MEDIA BED WHICH UTILIZES PHYSICAL, CHEMICAL AND BIOLOGICAL MECHANISMS OF THE SOIL, PLANT, AND MICROBE COMPLEX, TO REMOVE POLLUTANTS FOUND IN STORM WATER RUNOFF.
 - C. A SEPARATION LAYER WHICH UTILIZES THE CONCEPT OF 'BRIDGING' TO SEPARATE THE BIOFILTRATION MEDIA FROM THE UNDERDRAIN WITHOUT THE USE OF GEOTEXTILE FABRICS.
 - D. A WIDE APERTURE MESH LAYER UTILIZED TO PREVENT BRIDGING STONE FROM ENTERING THE UNDERDRAIN/STORAGE ELEMENT.
 - E. A MODULAR, HIGH INFILTRATION RATE 'FLAT PIPE' STYLE UNDERDRAIN/STORAGE SYSTEM WHICH IS DESIGNED TO DIRECTLY INFILTRATE OR EXFILTRATE WATER THROUGH ITS SURFACE. THE MODULAR UNDERDRAIN MUST PROVIDE A MINIMUM OF 95% VOID SPACE.
- C. ENERGY DISSIPATION COMPONENT
 - 1. AN ENERGY DISSIPATION COMPONENT IS TYPICALLY SPECIFIED TO SLOW AND SPREAD OUT WATER AS IT ENTERS THE SYSTEM. THIS COMPONENT IS DEPENDENT UPON THE DESIGN IN THE APPROVED DRAWINGS, BUT TYPICALLY CONSISTS OF A ROCK GABION, ROCK FILTER DAM OR DENSE VEGETATION ELEMENT, SUCH AS NATIVE GRASSES, EITHER SURROUNDING THE BIOFILTRATION COMPONENT OR LOCATED IMMEDIATELY UPSTREAM OF IT.
- D. PRETREATMENT COMPONENT
 - 1. PRETREATMENT, WHEN SPECIFIED, IS TYPICALLY ACCOMPLISHED BY LOCATING THE BIOFILTRATION COMPONENT WITHIN A TRADITIONAL VEGETATED BMP SUCH AS A VEGETATED SWALE, VEGETATED DEPRESSION, TRADITIONAL BIORETENTION SYSTEM, VEGETATED FILTER STRIP, SEDIMENT FOREBAY, ETC. THESE BMP'S PROVIDE PRIMARY TSS REMOVAL WHEN DESIRABLE.
- E. OBSERVATION AND MAINTENANCE COMPONENT
 - 1. AN OBSERVATION AND MAINTENANCE PORT SHALL BE INSTALLED PER THE APPROVED DRAWINGS TO PROVIDE FOR EASY INSPECTION OF THE UNDERDRAIN/STORAGE ELEMENT, AND CLEANOUT ACCESS IF NEEDED.
- F. EXTREME EVENT OVERFLOW (BY OTHERS)
 - 1. AN EXTREME EVENT OVERFLOW SHOULD BE LOCATED EXTERNAL TO, BUT NEAR THE BIOFILTRATION ELEMENT TO PROVIDE BYPASS WHEN NEEDED. THIS MAY BE AN OVERLAND FLOW BYPASS STRUCTURE, BEEHIVE OVERFLOW GRATE STRUCTURE, OR EQUIVALENT THAT SERVES THE PURPOSE. IF BEEHIVE OVERFLOW STRUCTURES IS UTILIZED IT SHOULD INCLUDE A REMOVABLE FILTER INSERT TO PROVIDE A MINIMUM OF 50% TSS REMOVAL AND CONTROL OF GROSS POLLUTANTS, TRASH AND FLOATABLES.

INSTALLATION IS TO BE PERFORMED ONLY BY SKILLED WORK PEOPLE WITH SATISFACTORY RECORD OF PERFORMANCE ON EARTHWORKS, PIPE, CHAMBER, OR POND/LANDFILL CONSTRUCTION PROJECTS OF COMPARABLE SIZE AND QUALITY.

- A. PLANTS
 - 1. PLANTS MUST BE COMPATIBLE WITH THE HPMBS MEDIA AND THE ASSOCIATED HIGHLY VARIABLE HYDROLOGIC REGIME. PLANTS ARE TYPICALLY FACULTATIVE WITH FIBROUS ROOTS SYSTEMS SUCH AS NATIVE GRASSES AND SHRUBS.
 - 2. MANUFACTURER SHALL PROVIDE A REGIONALIZED LIST OF ACCEPTABLE PLANTS.
 - 3. ALL PLANT MATERIAL SHALL COMPLY WITH THE TYPE AND SIZE REQUIRED BY THE APPROVED DRAWINGS AND SHALL BE ALIVE AND FREE OF OBVIOUS SIGNS OF DISEASE.
- B. MULCH
 - 1. MULCH, TYPICALLY DOUBLE SHREDDED HARDWOOD (NON-FLOATABLE), SHALL COMPLY WITH THE TYPE AND SIZE REQUIRED BY THE APPROVED DRAWINGS, AND SHALL BE SCREENED TO MINIMIZE FINES.
- C. BIOFILTRATION MEDIA
 - 1. BIOLOGICALLY ACTIVE BIOFILTRATION MEDIA SHALL BE VISUALLY INSPECTED TO ENSURE APPROPRIATE VOLUME, TEXTURE AND CONSISTENCY WITH THE APPROVED DRAWINGS, AND MUST BEAR A BATCH NUMBER MARKING FROM THE MANUFACTURER WHICH CERTIFIES PERFORMANCE TESTING OF THE BATCH TO MEET OR EXCEED THE REQUIRED INFILTRATION RATE (100 INHR). A THIRD PARTY LABORATORY TEST MUST BE PROVIDED TO CERTIFY THE 100 INHR RATE.
 - 2. WITHIN 90 DAYS AFTER PROJECT COMPLETION, THE INFILTRATION RATE SHALL BE CONFIRMED AT THE MANUFACTURER'S EXPENSE, BY A WETTED CONDITION HYDRAULIC CONDUCTIVITY TEST.
 - a. FAILURE TO PASS THIS TEST WILL RESULT IN REMOVAL AND REPLACEMENT OF ALL MEDIA IN THE SYSTEM AT NO COST TO THE PROJECT OWNER/OPERATOR.
 - b. TEST MUST UTILIZE THE EQUIPMENT AND FOLLOW THE STANDARD OPERATING PROCEDURES FOUND IN THE HARRIS COUNTY TEXAS MANUAL ENTITLED, LOW IMPACT DEVELOPMENT & GREEN INFRASTRUCTURE DESIGN CRITERIA FOR STORM WATER MANAGEMENT (2011).
 - c. REPLACEMENT MEDIA, IF REQUIRED, MUST BE TAKEN FROM A DIFFERENT BATCH THAN THE ORIGINAL.
 - 3. MANUFACTURER SHALL PROVIDE, AT NO ADDITIONAL COST TO THE PROJECT OWNER/OPERATOR, MAINTENANCE OF THE BIOFILTRATION SYSTEM FOR A PERIOD OF ONE YEAR.
 - 4. POLLUTANT REMOVAL PERFORMANCE, COMPOSITION AND CHARACTERISTICS OF THE BIOFILTRATION MEDIA MUST MEET OR EXCEED THE FOLLOWING MINIMUM STANDARDS AS DEMONSTRATED BY TESTING ACCEPTABLE TO THE PROJECT ENGINEER.

Pollutant	Removal Efficiency
TSS	91%
Phosphorus	66%
Nitrogen	48%
Composition and Characteristics	
Sand - Fine	<5%
Sand - Medium	10% - 15%
Sand - Coarse	15% - 25%
Sand - Very Coarse	40% - 45%
Gravel	10% - 20%
Infiltration Rate	>100 inches per hour
Peat Moss*	5% - 15%
* Peat Moss Specification	
Listed by Organic Materials Review Institute	
100% natural peat (no composted, sludge, yard or leaf waste) Total Carbon >85%	
Carbon to Nitrogen Ratio 15:1 to 23:1 Lignin Content 49% to 52%	
Humic Acid >18%	
pH 6.0 to 7.0	
Moisture Content 30% to 50%	
95% to 100% passing 2.0mm sieve	
>80% passing 1.0mm sieve	

D. UNDERDRAIN/STORAGE SYSTEM

- 1. UNDERDRAIN/STORAGE COMPONENTS SHALL BE MANUFACTURED IN AN ISO CERTIFIED FACILITY AND BE MANUFACTURED FROM AT LEAST 90% POST CONSUMER RECYCLED MATERIALS.
- 2. UNDERDRAIN/STORAGE COMPONENTS SHALL MEET OR EXCEED THE FOLLOWING CHARACTERISTICS:

Property	Value
Surface Void Area	>95%
Unit Weight	3.25 lbs/cf
Service Temperature	-14° to 167°
Uncured Crush Strength	92.48 psi
180 Day Creep Test	
Load Applied - initial and Sustained	11.16 psi
* Creep Sustained - After 180 Days	0.20 inches
* Creep Sustained - After 180 Days	1.13%
* Projected Creep - 40 years	1.72%

- E. SEPARATION MESH
 - 1. SEPARATION MESH SHALL BE COMPOSED OF HIGH-TENACITY MONOFILAMENT POLYPROPYLENE YARNS THAT ARE WOVEN TOGETHER TO PRODUCE AN OPEN MESH GEOTEXTILE WHICH SHALL BE INERT TO BIOLOGICAL DEGRADATION AND RESISTANT TO NATURALLY ENCOUNTERED CHEMICALS, ALKALIS AND ACIDS. THE MESH SHALL MEET OR EXCEED THE FOLLOWING CHARACTERISTICS:

Properties	Test Method	Unit	Min Avg Roll Value	
			MD	CD
Tensile Strength	ASTM D4955	kN/m (lb/yd)	21 (1,440)	25.3 (1,733)
Creep Reduced Strength	ASTM D5262	kN/m (lb/yd)	6.9 (49.2)	8.3 (59.6)
Long Term Allowable Design Load	GRI GG-4	kN/m (lb/yd)	5.8 (40.7)	7.2 (49.0)
UV Resistance (at 500 hours)	-	% strength retained	90	
Aperture Size (machine direction)	-	mm (in)	2 (0.08)	
Aperture Size (cross machine direction)	-	mm (in)	2 (0.08)	
Mass/Unit Area	ASTM D5581	g/m ² (oz/yd ²)	197 (5.8)	

- F. BRIDGING STONE
 - 1. BRIDGING STONE SHALL BE 3/8" PEA GRAVEL, OR OTHER DIAMETER SIZED TO PREVENT MIGRATION OF FILTER MEDIA, AS SPECIFIED BY MANUFACTURER.
 - 2. STONE MUST BE WASHED AND FREE FROM SEDIMENT, SOIL AND CONTAMINANTS.

III. DELIVERY, STORAGE AND HANDLING

- A. PROTECT ALL MATERIALS FROM DAMAGE DURING DELIVERY AND STORE UV SENSITIVE MATERIALS UNDER TARP TO PROTECT FROM SUNLIGHT INCLUDING ALL PLASTICS. WHEN TIME FROM DELIVERY TO INSTALLATION EXCEEDS ONE WEEK, STORAGE SHOULD OCCUR ON SMOOTH SURFACES, FREE FROM DIRT, MUD AND DEBRIS.
- B. BIOFILTRATION MEDIA SHALL BE SEGREGATED FROM ANY OTHER AGGREGATE MATERIALS AND SHALL BE PROTECTED AGAINST CONTAMINATION, INCLUDING CONTAMINATION FROM ANY STORMWATER RUNOFF FROM AREAS OF THE SITE WHICH ARE NOT STABILIZED.

IV. SUBMITTALS

- A. PRODUCT DATA
 - 1. SUBMIT MANUFACTURER'S PRODUCT DATA AND APPROVED INSTALLATION MANUAL AS WELL AS MANUFACTURER'S OPERATIONS AND MAINTENANCE MANUAL FOR THE SYSTEM. IT WILL BE THE RESPONSIBILITY OF THE SYSTEM OWNER/OPERATOR OR THEIR CONTRACTOR TO ENSURE THE SYSTEM IS OPERATED AND MAINTAINED IN ACCORDANCE WITH THE MANUAL.
- B. CERTIFICATION
 - 1. MANUFACTURER SHALL SUBMIT A LETTER OF CERTIFICATION THAT THE COMPLETE SYSTEM MEETS OR EXCEEDS ALL TECHNICAL AND PACKAGING REQUIREMENTS. BIOFILTRATION MEDIA PACKAGING MUST BEAR A BATCH NUMBER MARKING FROM THE MANUFACTURER WHICH MATCHES A LETTER FROM THE MANUFACTURER CERTIFYING PERFORMANCE TESTING OF THE BATCH TO MEET OR EXCEED THE REQUIRED INFILTRATION RATE.
- C. DRAWINGS
 - 1. MANUFACTURER SHALL PROVIDE DIMENSIONAL DRAWINGS INCLUDING DETAILS FOR CONSTRUCTION, MATERIALS, SPECIFICATIONS AND PIPE CONNECTIONS.
- D. MANUFACTURER'S WARRANTY
 - 1. MANUFACTURER SHALL PROVIDE A WARRANTY FOR ALL COMPONENTS OF THE HPMBS FOR A PERIOD OF ONE YEAR PROVIDED THE UNIT IS INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE MANUAL. IMPROPER OPERATION, MAINTENANCE OR ACCIDENTAL OR ILLEGAL ACTIVITIES (I.E. DUMPING OF POLLUTANTS, VANDALISM, ETC.) WILL VOID THE WARRANTY. BIOFILTRATION MEDIA SHALL BE WARRANTED TO PASS THE POST-INSTALLATION INFILTRATION TEST DESCRIBED IN THIS DOCUMENT.
- E. DESIGN COMPUTATIONS
 - 1. THE HPMBS MUST BE SIZED USING THE MDE SIZING CRITERIA AND DEMONSTRATE THAT DEPENDING ON WHETHER NEW DEVELOPMENT, REDEVELOPMENT OR RETROFIT THAT ALL APPLICABLE WATER QUALITY (WQ), CHANNEL PROTECTION (C/P) AND RECHARGE (R/C) REQUIREMENTS HAVE BEEN MET. IF LOCAL REGULATIONS HAVE THE SYSTEM APPROVED BASED ON AN ALTERNATIVE SIZING CRITERIA THE LARGER OF THE TWO COMPUTED SIZES WILL GOVERN.
- F. SUBSTITUTIONS
 - 1. ANY PROPOSED EQUAL ALTERNATIVE PRODUCT SUBSTITUTION TO THIS SPECIFICATION MUST BE SUBMITTED FOR REVIEW AND APPROVED PRIOR TO BID OPENING. REVIEW PACKAGE SHOULD INCLUDE THIRD PARTY REVIEWED PERFORMANCE DATA FOR BOTH FLOW RATE AND POLLUTANT REMOVAL OF BIOFILTRATION MEDIA. POLLUTANT REMOVAL DATA MUST FOLLOW SPECIFIED PROTOCOLS. ALL COMPONENTS MUST MEET OR EXCEED QUALITY ASSURANCE AND PERFORMANCE CRITERIA INDICATED HEREIN.

V. PROJECT CONDITIONS

- A. REVIEW MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND COORDINATE INSTALLATION WITH OTHER WORK AFFECTED, SUCH AS GRADING, EXCAVATION, UTILITIES, CONSTRUCTION ACCESS AND EROSION CONTROL TO PREVENT ALL NON-INSTALLATION RELATED CONSTRUCTION TRAFFIC OVER THE COMPLETED HPMBS.
- B. COLD WEATHER
 - 1. DO NOT USE FROZEN MATERIALS OR MATERIALS MIXED OR COATED WITH ICE OR FROST.
 - 2. DO NOT BUILD ON FROZEN GROUND OR WET, SATURATED OR MUDDY SUBGRADE.
 - 3. CARE MUST BE TAKEN WHEN HANDLING PLASTICS WHEN AIR TEMPERATURE IS AT 40 DEGREES OR BELOW AS PLASTIC BECOMES BRITTLE.
- C. PROTECT PARTIALLY COMPLETED INSTALLATION AGAINST DAMAGE FROM OTHER CONSTRUCTION TRAFFIC WHEN WORK IS IN PROGRESS AND FOLLOWING COMPLETION OF BACKFILL BY ESTABLISHING A PERIMETER WITH HIGHLY VISIBLE CONSTRUCTION TAPE, FENCING, OR OTHER MEANS UNTIL CONSTRUCTION IS COMPLETE.
- D. SOIL STABILIZATION OF THE SURROUNDING SITE MUST BE COMPLETE BEFORE THE BIOFILTRATION SYSTEM CAN BE BROUGHT ONLINE. SOIL STABILIZATION OCCURS WHEN 80% OF THE SITE HAS BEEN PAVED OR VEGETATED. TEMPORARY EROSION CONTROL AND/OR SEDIMENTATION PREVENTION MEASURES SHALL BE IMPLEMENTED TO REDUCE THE POSSIBILITY OF SEDIMENTS BEING TRANSPORTED INTO THE BIOFILTRATION SYSTEM PRIOR TO FULL STABILIZATION OF THE SITE. SIGNIFICANT SEDIMENT LOADS CAN DAMAGE THE HPMBS AND LEAD TO FAILURE IF NOT PREVENTED OR REMEDIATED PROMPTLY.

VI. PRODUCTS

- A. ACCEPTABLE HPMBS
 - FOCALPOINT HIGH PERFORMANCE BIOFILTRATION SYSTEM
- B. ACCEPTABLE BEEHIVE OVERFLOW GRATE STRUCTURE (OPTIONAL)
 - BEEHIVE OVERFLOW GRATE STRUCTURE WITH REMOVABLE STORMSACK
- C. ACCEPTABLE MANUFACTURER
 - MANUFACTURER:
 - CONVERGENT WATER TECHNOLOGIES, INC.
 - (800) 711-5429
 - WWW.CONVERGENTWATER.COM
- D. AUTHORIZED VALUE ADDED RESELLER
 - ACF ENVIRONMENTAL
 - (800) 448-3630
 - WWW.ACFENVIRONMENTAL.COM

VII. PACKAGING

- A. HPMBS IS ASSEMBLED ON SITE.
- B. MODULAR UNDERDRAIN/STORAGE UNIT IS SHIPPED FLAT AND MODULES ARE ASSEMBLED PRIOR TO INSTALLATION.
- C. BIOFILTRATION MEDIA IS DELIVERED IN ONE TON SUPER SACKS EACH LABELED WITH MANUFACTURER'S BATCH NUMBER AND/OR IN BULK WITH ACCOMPANYING MANUFACTURER'S CERTIFICATION.
- D. OTHER COMPONENTS ARE DELIVERED IN BULK OR SUPER SACKS

VIII. EXECUTION

- A. EXCAVATION AND BACKFILL
 - 1. BASE OF EXCAVATION SHALL BE SMOOTH, LEVEL AND FREE OF LUMPS OR DEBRIS, AND COMPACTED UNLESS INFILTRATION OF STORM WATER INTO SUBGRADE IS DESIRED. A THIN LAYER (7) OF COMPACTED BASE MATERIAL IS RECOMMENDED TO ESTABLISH A LEVEL WORKING PLATFORM (MAY NOT BE NEEDED IN SANDY SOILS). IF THE BASE OF THE EXCAVATION IS PUMPING OR APPEARS EXCESSIVELY SOFT, A GEOTECHNICAL ENGINEER SHOULD BE CONSULTED FOR ADVICE. IN MANY CASES, A STABILIZATION GEOTEXTILE AND 6" OF COMPACTABLE MATERIAL THAT DRAINS WELL WILL BE SUFFICIENT TO AMEND THE BEARING CAPACITY OF THE SOIL.
 - 2. MOST APPLICATIONS REQUIRE 8 OZ NON-WOVEN GEOTEXTILE OR EQUIVALENT NON-WOVEN GEOTEXTILE WITH A NOMINAL WEIGHT OF 8 OZ PER SQUARE YARD TO LINE THE EXCAVATION TO SEPARATE IN SITU SOILS AND THE HPMBS. (APPLICATIONS REQUIRING WATER TO INFILTRATE THE IN SITU SUB-SOILS SHOULD USE A BRIDGING STONE RATHER THAN GEOTEXTILE TO PROVIDE A SEPARATION LAYER BETWEEN THE HPMBS AND THE IN SITU SOILS). GEOTEXTILE, WHEN UTILIZED, SHOULD BE PLACED ON THE BOTTOM AND UP THE SIDES OF THE EXCAVATION. ABSOLUTELY NO GEOTEXTILES SHOULD BE USED IN THE WATER COLUMN. IF AN IMPERMEABLE LINER IS SPECIFIED, IT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
 - 3. SPECIFIED BACKFILL MATERIAL MUST BE FREE FROM LUMPS, DEBRIS AND ANY SHARP OBJECTS THAT COULD PENETRATE THE GEOTEXTILE. MATERIAL IS USED FOR BACKFILL ALONG THE SIDES OF THE SYSTEM AS INDICATED IN ENGINEERING DETAIL DRAWINGS.

B. INSPECTION

- 1. EXAMINE PREPARED EXCAVATION FOR SMOOTHNESS, COMPACTION AND LEVEL. CHECK FOR PRESENCE OF HIGH WATER TABLE, WHICH MUST BE KEPT AT LEVELS BELOW THE BOTTOM OF THE UNDER DRAIN STRUCTURE AT ALL TIMES. IF THE BASE IS PUMPING OR APPEARS EXCESSIVELY SOFT, A GEOTECHNICAL ENGINEER SHOULD BE CONSULTED FOR ADVICE.
- 2. INSTALLATION COMMENCEMENT CONSTITUTES ACCEPTANCE OF EXISTING CONDITIONS AND RESPONSIBILITY FOR SATISFACTORY PERFORMANCE. IF EXISTING CONDITIONS ARE FOUND TO BE UNSATISFACTORY, CONTACT PROJECT MANAGER OR ENGINEER FOR RESOLUTION PRIOR TO INSTALLATION.

IX. CLEANUP AND PROTECTION DURING ONGOING CONSTRUCTION ACTIVITY

- A. PERFORM CLEANING DURING THE INSTALLATION AND UPON COMPLETION OF THE WORK.
- B. REMOVE FROM SITE ALL EXCESS MATERIALS, DEBRIS, AND EQUIPMENT. REPAIR ANY DAMAGE TO ADJACENT MATERIALS AND SURFACES RESULTING FROM INSTALLATION.
- C. IF SURROUNDING DRAINAGE AREA IS NOT FULLY STABILIZED, A PROTECTIVE COVERING OF GEOTEXTILE FABRIC SHOULD BE SECURELY PLACED TO PROTECT THE BIOFILTRATION MEDIA.
- D. CONSTRUCTION PHASE EROSION AND SEDIMENTATION CONTROLS SHALL BE PLACED TO PROTECT THE INLET(S) TO THE BIOFILTRATION SYSTEM. EXCESSIVE SEDIMENTATION, PARTICULARLY PRIOR TO ESTABLISHMENT OF PLANTS MAY DAMAGE THE HPMBS.
- E. STRICTLY FOLLOW MANUFACTURER'S GUIDELINES WITH RESPECT TO PROTECTION OF THE HPMBS BETWEEN INSTALLATION AND COMMISSIONING PHASES.

X. COMMISSIONING

- A. COMMISSIONING SHOULD ONLY BE CARRIED OUT ONCE THE CONTRIBUTING DRAINAGE AREA IS FULLY STABILIZED. IF COMMISSIONING MUST BE CARRIED OUT SOONER, IT IS IMPERATIVE THAT APPROPRIATE EROSION AND SEDIMENT CONTROLS BE PLACED TO PREVENT THE ENTRY OF EXCESSIVE SEDIMENT/POLLUTANT LOADS INTO THE SYSTEM.
- B. COMMISSIONING ENTAILS REMOVING THE PROTECTIVE COVERING FROM THE BIOFILTRATION MEDIA, PLANTING THE PLANT MATERIAL IN ACCORDANCE WITH THE APPROVED DRAWINGS AND PLACING MULCH IF SPECIFIED.
- 1. DIG PLANTING HOLES THE DEPTH OF THE ROOT BALL AND TWO TO THREE TIMES AS WIDE AS THE ROOT BALL. WIDE HOLES ENCOURAGE HORIZONTAL ROOT GROWTH THAT PLANTS NATURALLY PRODUCE.
- 2. WITH TREES, YOU MUST ENSURE YOU ARE NOT PLANTING TOO DEEP. DON'T DIG HOLES DEEPER THAN ROOT BALLS. THE MEDIA SHOULD BE PLACED AT THE ROOT COLLAR, NOT ABOVE THE ROOT COLLAR. OTHERWISE THE STEM WILL BE VULNERABLE TO DISEASE.
- 3. STRICTLY FOLLOW MANUFACTURER'S PLANTING GUIDANCE.
- C. COVER THE EXPOSED ROOT BALL TOP WITH MULCH. MULCH SHOULD NOT TOUCH THE PLANT BASE BECAUSE IT CAN HOLD TOO MUCH MOISTURE AND INVITE DISEASE AND INSECTS. EVENLY PLACE 3 INCHES OF DOUBLE-SHREDDED HARDWOOD MULCH (IF SPECIFIED) ON THE SURFACE OF THE MEDIA.
- D. PLANTINGS SHALL BE WATERED-IN AT INSTALLATION AND TEMPORARY IRRIGATIONS SHALL BE PROVIDED, IF SPECIFIED.

XI. USING THE HPMBS

- A. MAINTENANCE REQUIREMENTS
 - 1. EACH CORRECTLY INSTALLED HPMBS IS TO BE MAINTAINED BY THE MANUFACTURER FOR A MINIMUM PERIOD OF ONE YEAR. THE COST OF THIS SERVICE IS TO BE INCLUDED IN THE MANUFACTURER'S PRICE OF THE SYSTEM.
 - 2. ANNUAL MAINTENANCE CONSISTS OF TWO (2) SCHEDULED VISITS UNLESS OTHERWISE SPECIFIED.
 - 3. EACH MAINTENANCE VISIT CONSISTS OF THE FOLLOWING:
 - 1. COMPLETE SYSTEM INSPECTION
 - 2. REMOVAL OF FOREIGN DEBRIS, SILT, PLANT MATERIAL, TRASH AND MULCH (IF NEEDED)
 - 3. EVALUATION OF BIOFILTRATION MEDIA
 - 4. EVALUATION OF PLANT HEALTH
 - 5. INSPECTION OF UNDERDRAIN/STORAGE SYSTEM VIA OBSERVATION/MAINTENANCE PORT
 - 6. PROPERLY DISPOSE OF ALL MAINTENANCE REFUSE ITEMS (TRASH, MULCH, ETC.)
 - 7. TAKE PHOTOGRAPHS DOCUMENTING PLANT GROWTH AND GENERAL SYSTEM HEALTH
 - 8. UPDATE AND STORE MAINTENANCE RECORDS
 - 9. TO ENSURE LONG TERM PERFORMANCE OF THE HPMBS, CONTINUING ANNUAL MAINTENANCE SHOULD BE PERFORMED PER THE MANUFACTURER'S OPERATIONS AND MAINTENANCE MANUAL.
 - 10. IF SEDIMENT ACCUMULATES BEYOND AN ACCEPTABLE LEVEL IN THE UNDERDRAIN/STORAGE SYSTEM, IT WILL BE NECESSARY TO FLUSH THE UNDERDRAIN. THIS CAN BE DONE BY PUMPING WATER INTO THE OBSERVATION/MAINTENANCE PORT OR ADJACENT OVERFLOW STRUCTURE, ALLOWING THE TURBULENT FLOWS THROUGH THE UNDERDRAIN TO RESUSPEND THE FINE SEDIMENTS. IF MULTIPLE OBSERVATION/MAINTENANCE PORTS HAVE BEEN INSTALLED, WATER SHOULD BE PUMPED INTO EACH PORT TO MAXIMIZE FLUSHING EFFICIENCY.
- SEDMIMENT-LADEN WATER CAN BE PUMPED OUT AND EITHER CAPTURED FOR DISPOSAL OR FILTERED THROUGH A DIRTBAG FILTER BAG, IF PERMITTED BY THE LOCALITY.

XII. MEASUREMENT AND PAYMENT

GIVEN THE INTEGRATED NATURE OF THE HPMBS, MEASUREMENT AND PAYMENT WILL BE BASED NOT ON THE INDIVIDUAL COMPONENT PRICES, BUT ON THE SIZE OF THE BIOFILTRATION MEDIA BED. THE EXTERNAL DIMENSION AS INDICATED IN THE APPROVED PLANS AND EXECUTED IN THE INSTALLATION WILL BE MEASURED IN SQUARE FEET AND PAYMENT WILL BE MADE PER HPMBS SYSTEM.

MEASUREMENT AND PAYMENT OF BEEHIVE OVERFLOW GRATE STRUCTURE WITH REMOVABLE FILTER INSERT WILL BE BASED ON PER UNIT PRICE.

REVISIONS	

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043



Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY


TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE



DocuSigned by:
William W.
10/16/23

109FCC48E804A...

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 18376
EXPIRATION DATE: 09/22/2023

BLANDAIR REGIONAL PARK - PHASE 6

FOCAL POINT SPECIFICATIONS

Drawing No.

C4.6

Scale: AS SHOWN

Date: 10/2023 SDP Sheet 28 of 54

Des: BWJ Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Developed by: *Chad Edmondson* 12/20/2023

CHIEF, DEVELOPMENT DIVISION DATE: 12/4/2023

CHIEF, DIVISION OF ZONING DEVELOPMENT DATE: 12/20/2023

DIRECTOR *Lynnda Eversberg* DATE:

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

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

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

- 2. 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.
3. 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.
4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-3), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-5). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).

- 5. All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.
6. Site Analysis:
Total Area of Site: 7.66 Acres
Area Disturbed: 7.66 Acres
Area to be roofed or paved: 3.09 Acres
Area to be vegetatively stabilized: 4.57 Acres
Total Cut: 19050 Cu. Yds. *
Total Fill: 4000 Cu. Yds. *
Offsite waste/borrow area location: Site with an active grading permit

Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
* CUT AND FILL VOLUMES HAVE BEEN SHOWN FOR PERMITTING ONLY AND ARE NOT TO BE UTILIZED BY CONTRACTORS FOR BID OR ESTIMATE PURPOSES. CONTRACTORS MUST DEVELOP OWN QUANTITIES.

- 7. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly, and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:
• Inspection date
• Inspection type (routine, pre-storm event, during rain event)
• Name and title of inspector
• Weather information (current conditions as well as time and amount of last recorded precipitation)
• Brief description of project's status (e.g., percent complete) and/or current activities
• Evidence of sediment discharges
• Identification of plan deficiencies
• Identification of sediment controls that require maintenance
• Identification of missing or improperly installed sediment controls
• Compliance status regarding the sequence of construction and stabilization requirements
• Photographs
• Monitoring/sampling
• Maintenance and/or corrective action performed
• Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).

- 9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may allowed by the CID per the list of HSCD-approved field changes.
11. 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.
12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.
14. All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.
15. Stream channels must not be disturbed during the following restricted time periods (inclusive):
• Use I and IP March 1 - June 15
• Use III and IIP October 1 - April 30
• Use IV March 1 - May 31
16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

HOWARD SOIL CONSERVATION DISTRICT TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

Seedbed preparation: -- loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil amendments: -- apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

Seeding: -- for periods March 1 -- April 30 and from August 15 -- October 15, seed with 2-1/2 bushel per acre of annual ryegrass (3.2 lbs/1000 sq. ft.), for the period May 1 -- August 14, seed with 3 lbs/acre of weeping lovegrass (0.7 lbs/1000 sq. ft.), for the period November 16 -- February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or you sod.

mulching: -- apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding, anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas, on slope 8 ft. or higher, use 348 gal. per acre (8 gal/1000 sq. ft.) for anchoring.

refer to the 2011 Maryland standards and specifications for soil erosion and sediment control for additional rates and methods not covered.

HOWARD SOIL CONSERVATION DISTRICT 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, disking or other acceptable means before seeding, if not previously loosened.

Soil amendments: in lieu of soil test recommendations, use one of the following schedules:

- 1. Preferred -- apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding, harrow or disk into upper three inches of soil, at time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq. ft.)

- 2. Acceptable -- apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding, harrow or disk into upper three inches of soil.

Seeding -- for the periods March 1 -- April 30, and August 1 -- October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 tall fescue, for the period May 1 -- July 31, seed with 60 lbs/acre Kentucky 31 tall fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass, during the period of October 16 -- February 28, protect site by:

- option 1 -- two tons per acre of well anchored straw mulch and seed as soon as possible in the spring.

option 2 -- use sod.

- option 3 -- seed with 60 lbs/acre Kentucky 30 tall fescue and mulch with 2 tons/acre well anchored straw.

Mulching -- apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding, anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas, on slope 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq. ft.) for anchoring.

Maintenance -- inspect all seeding areas and make needed repairs, replacements and reseedings.

B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Definition: Using vegetation as cover to protect exposed soil from erosion.

Purpose: To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies: On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity: Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment. Adequate Vegetative Establishment: Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

- 1. Adequate vegetative stabilization requires 95 percent groundcover.
2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

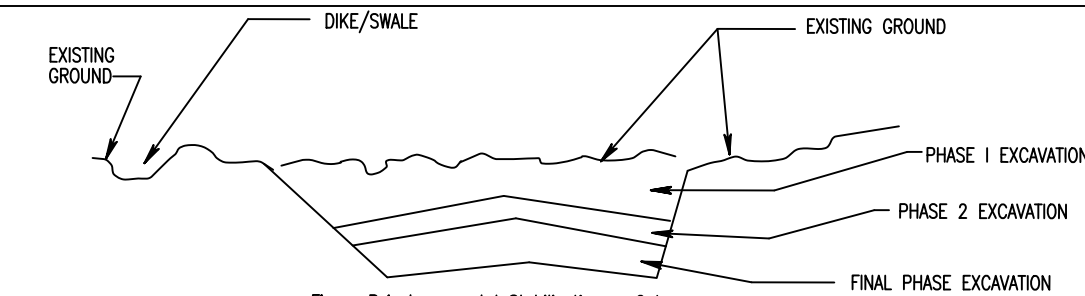
Definition: Establishment of vegetative cover on cut and fill slopes.

Purpose: To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies: Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria: Incremental Stabilization - Cut Slopes

- 1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
2. Construction sequence example (Refer to Figure B.1)
a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.
NOTE: Once excavation has begun, the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

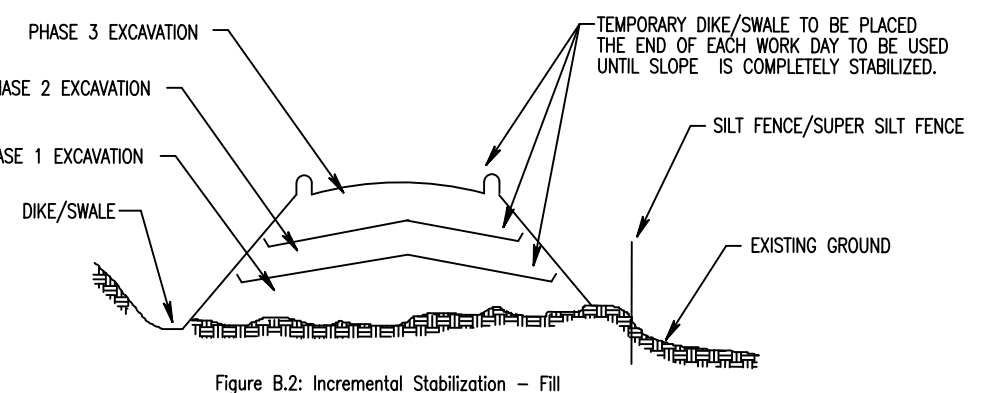


- B. Incremental Stabilization - Fill Slopes
1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
4. Construction sequence example (Refer to Figure B.2):
a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
c. Place Phase 1 fill, prepare seedbed, and stabilize.
d. Place Phase 2 fill, prepare seedbed, and stabilize.
e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded area as necessary.

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

Definition: The application of seed and mulch to establish vegetative cover. Purpose: To protect disturbed soils from erosion during and at the end of construction. Conditions Where Practice Applies: To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria: A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.



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 or construction equipment, such as disc harrows or chisel plows 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:
a.a. Soil pH between 6.0 and 7.0.
a.b. Soluble salts less than 500 parts per million (ppm).
a.c. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
a.d. Soil contains 1.5 percent minimum organic matter by weight.
a.e. Soil contains sufficient pore space to permit adequate root penetration.
b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise 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. Take lawn 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 tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

- 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 dusty. Note: Use only sterile straw mulch in areas where no species of grass is desired.
b. Wood Cellulose Fiber Mulch (WCFF) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
a.a. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
b.b. WCFM, including dye, must contain no germination or growth inhibiting factors.
b.c. WCFM material is 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.
b.d. WCFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
b.e. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 30 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 attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

- 3. Anchoring
a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
a.a. A mulch anchoring tool is a tractor draw 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.
a.b. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
a.c. Synthetic binders such as Acrylic DLR (Agra-Tack), DCA-70, Petrosert, 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 needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
a.d. 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.

- 4. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact rates 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.

Definition: The application of seed and mulch to establish vegetative cover.

Purpose: To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies: To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria:

- A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
c. Inoculants: the inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until use. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.

- 2. Application
a. Dry Seeding: This includes use of conventional drag or broadcast spreaders.
a.a. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
a.b. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
b.a. Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
b.b. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
c.a. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P205 (phosphorus), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
c.b. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
c.c. Mix seed and fertilizer on site and seed immediately and without interruption.
c.d. When hydroseeding do not incorporate seed into the soil.

- B. Mulching
1. Mulch Materials (in order of preference)
a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, coked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where no species of grass is desired.
b. Wood Cellulose Fiber Mulch (WCFF) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
a.a. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
b.b. WCFM, including dye, must contain no germination or growth inhibiting factors.
b.c. WCFM material is 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.
b.d. WCFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
b.e. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 30 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 attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

- 3. Anchoring
a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
a.a. A mulch anchoring tool is a tractor draw 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.
a.b. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
a.c. Synthetic binders such as Acrylic DLR (Agra-Tack), DCA-70, Petrosert, 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 needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
a.d. 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.

- 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

Table with columns: Hardiness Zone, Seed Mixture, Species, Application Rate, Seeding Dates, Seeding Depths, Fertilizer Rate, Lime Rate. Includes rows for Annual Ryegrass and Foxtail Millet.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

Definition: To stabilize disturbed soils with permanent vegetation.

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

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, playground, and commercial sites which will require 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.
b.a. 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.
b.b. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
b.c. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
b.d. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf areas. Mixture includes: Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.
Notes: Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

- c. Ideal Times of Seeding for Turf Grass Mixtures
Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6b)
Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)
Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future growth of grasses will pose no difficulty.
e. If soil moisture is deficient, supply new seedlings with adequate water for plant growth 1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary

Table with columns: Hardiness Zone, Seed Mixture, Species, Application Rate, Seeding Dates, Seeding Depths, Fertilizer Rate (N, P205, K2O), Lime Rate. Includes rows for Creeping Red Fescue and Kentucky Bluegrass.

EROSION AND SEDIMENT CONTROL NOTES:

- 1. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.
2. EITHER TEMPORARY OR PERMANENT STABILIZATION MATTING IS TO BE PROVIDED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR WITHIN THE TIME FRAMES REQUIRED BY THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, WHICHEVER IS MORE STRINGENT.
3. TREE PROTECTION FENCE IS OFFSET THREE (3) FEET FROM LIMIT OF DISTURBANCE FOR PRESENTATION PURPOSES. CONTRACTOR SHALL INSTALL TREE PROTECTION FENCE ALONG LIMIT OF DISTURBANCE. SUPER SILT FENCE ARE OFFSET THREE (3) FEET FROM TREE PROTECTION FENCE FOR PRESENTATION PURPOSES. CONTRACTOR SHALL INSTALL SUPER SILT FENCE A MAXIMUM OF ONE (1) FOOT INSIDE TREE PROTECTION.

Table with columns: REVISIONS, Description, Date.

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS 3430 COURT HOUSE DRIVE ELLICOTT CITY, MD 21043

Whitman, Requardt & Associates, LLP 801 South Caroline Street, Baltimore, Maryland 21231 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE



DocuSigned by: Anthony Olsen 105FAC0E804A. PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19376. EXPIRATION DATE: 09/22/2023

BLANDAIR REGIONAL PARK - PHASE 6

EROSION AND SEDIMENT CONTROL NOTES

Drawing No. C5.1

Scale: NOT TO SCALE Date: 10/2023 SDP Sheet 29 of 54 Des: BWJ Drawn: AKC Check: AUO

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THE CONSTRUCTION PROJECT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

DESIGNER'S SIGNATURE: Anthony Olsen, DATE: 10/18/2023, PRINTED NAME: ANTHONY OLSEN, M.D. REGISTRATION NO., F.E.L.S., OR R.L.A. (CIRCLE ONE)

B-4-8 STANDARDS AND SPECIFICATIONS

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 and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile 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.

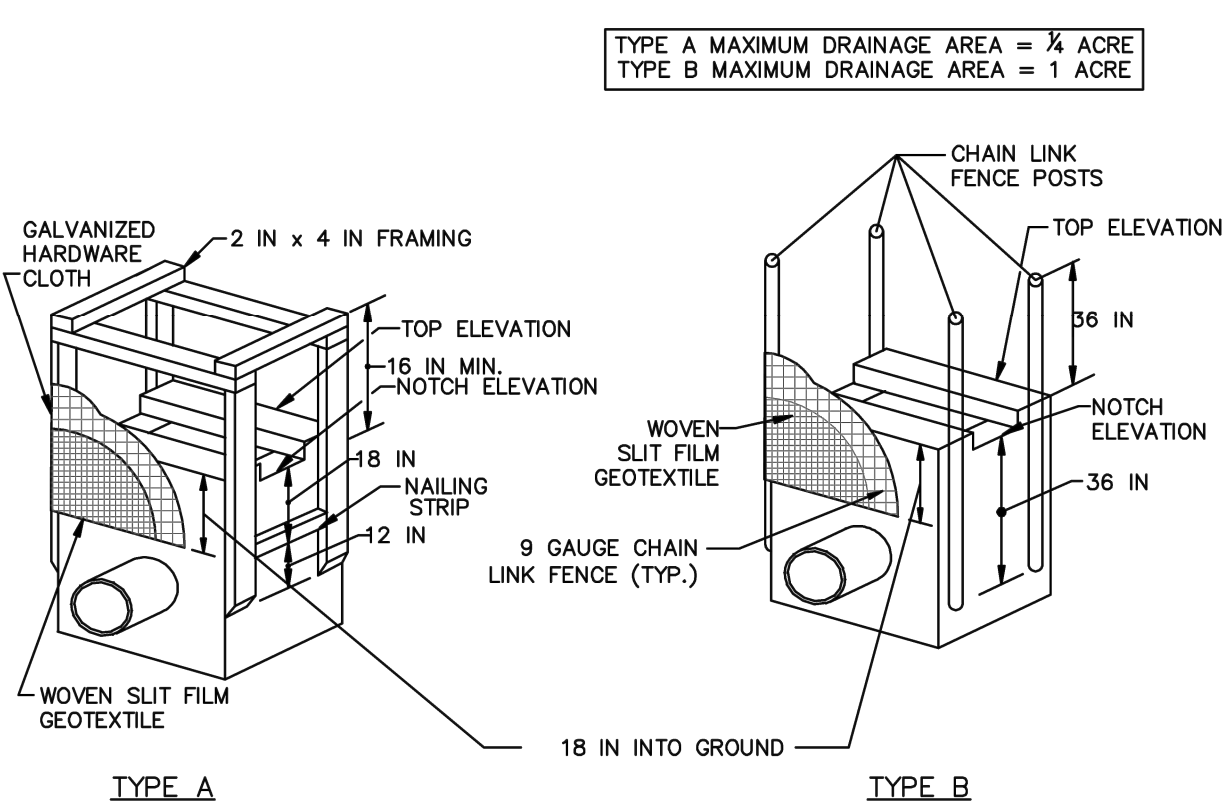
Maintenance

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.

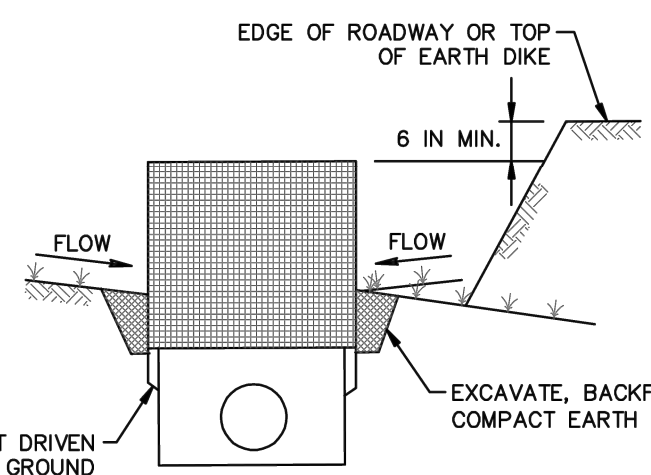
B.43

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL SIP



ISOMETRIC VIEW



SECTION FOR TYPE A AND B

1 OF 2

Table with 4 columns: U.S. Department of Agriculture, Natural Resources Conservation Service; 2011; Maryland Department of Environment, Water Management Administration.

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL SIP

CONSTRUCTION SPECIFICATIONS

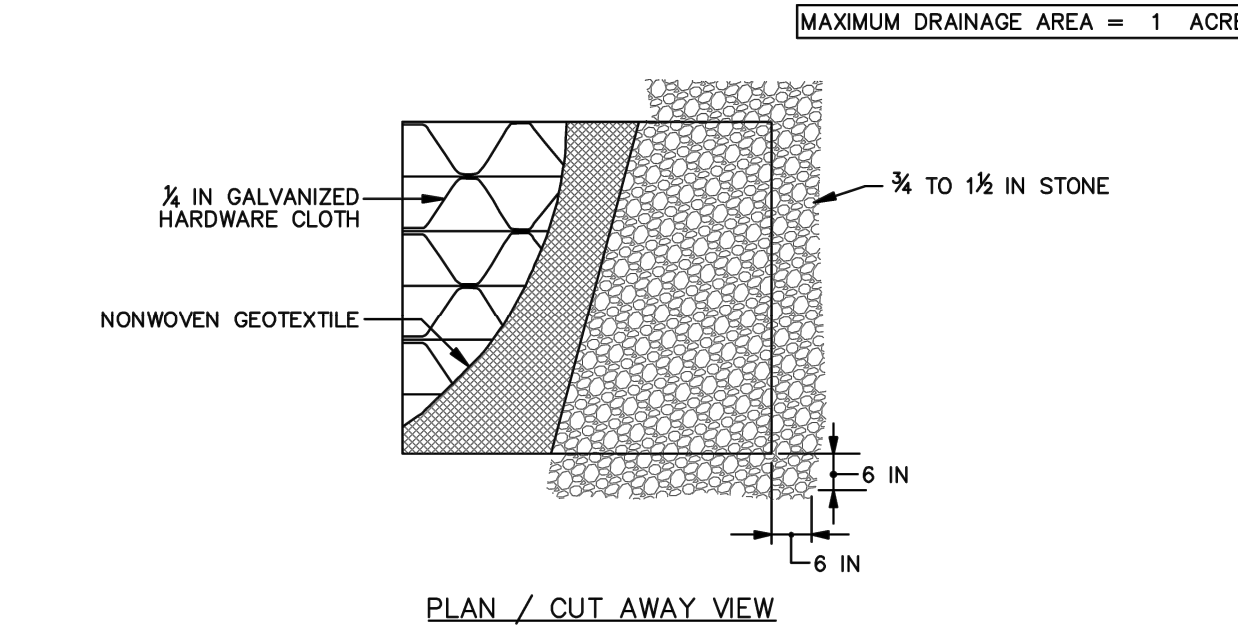
- 1. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18 INCHES BELOW THE NOTCH ELEVATION.
3. FOR TYPE A, USE NOMINAL 2 INCH X 4 INCH CONSTRUCTION GRADE LUMBER POSTS, DRIVEN 1 FOOT INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET ASSEMBLY THE TOP PORTION OF THE 2x4 FRAME AS SHOWN. STRETCH 1/2 INCH GALVANIZED HARDWARE CLOTH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. FASTEN GEOTEXTILE SECURELY TO THE HARDWARE CLOTH WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND HARDWARE CLOTH A MINIMUM OF 18 INCHES BELOW THE WEIR CREST. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POST, BE OVERLAPPED AND FOLDED, THEN FASTENED TO THE POST.
4. BACKFILL AROUND THE INLET IN LOOSE 4 INCH LIFTS AND COMPACT UNTIL SOIL IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES.
5. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

2 OF 2

Table with 4 columns: U.S. Department of Agriculture, Natural Resources Conservation Service; 2011; Maryland Department of Environment, Water Management Administration.

DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL AGIP



PLAN / CUT AWAY VIEW

CROSS SECTION

CONSTRUCTION SPECIFICATIONS

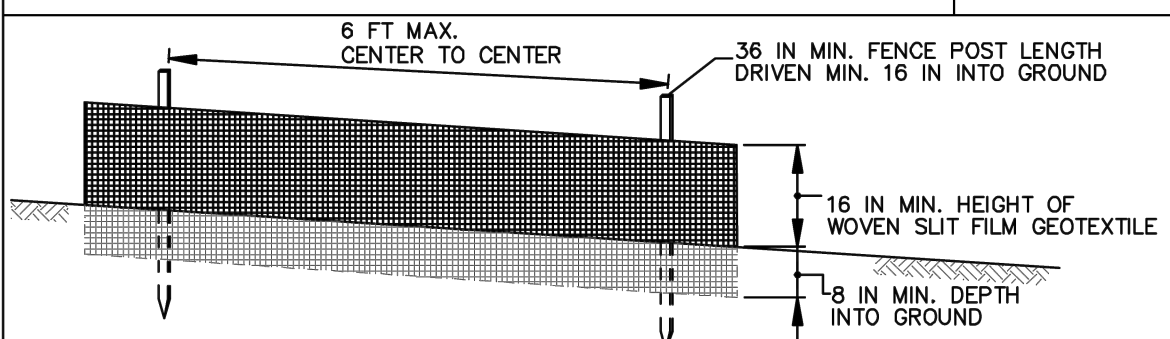
- 1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

1 OF 2

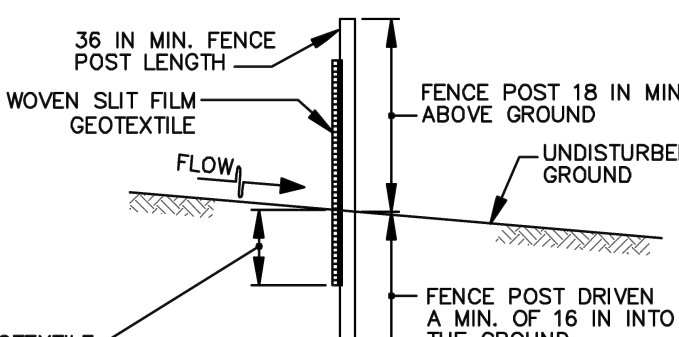
Table with 4 columns: U.S. Department of Agriculture, Natural Resources Conservation Service; 2011; Maryland Department of Environment, Water Management Administration.

DETAIL E-1 SILT FENCE

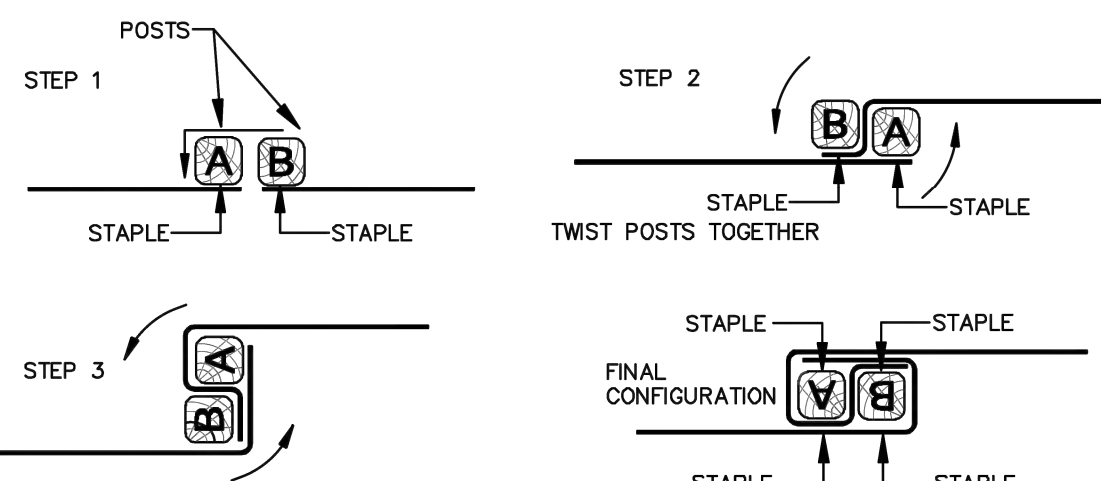
STANDARD SYMBOL SF



ELEVATION



CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

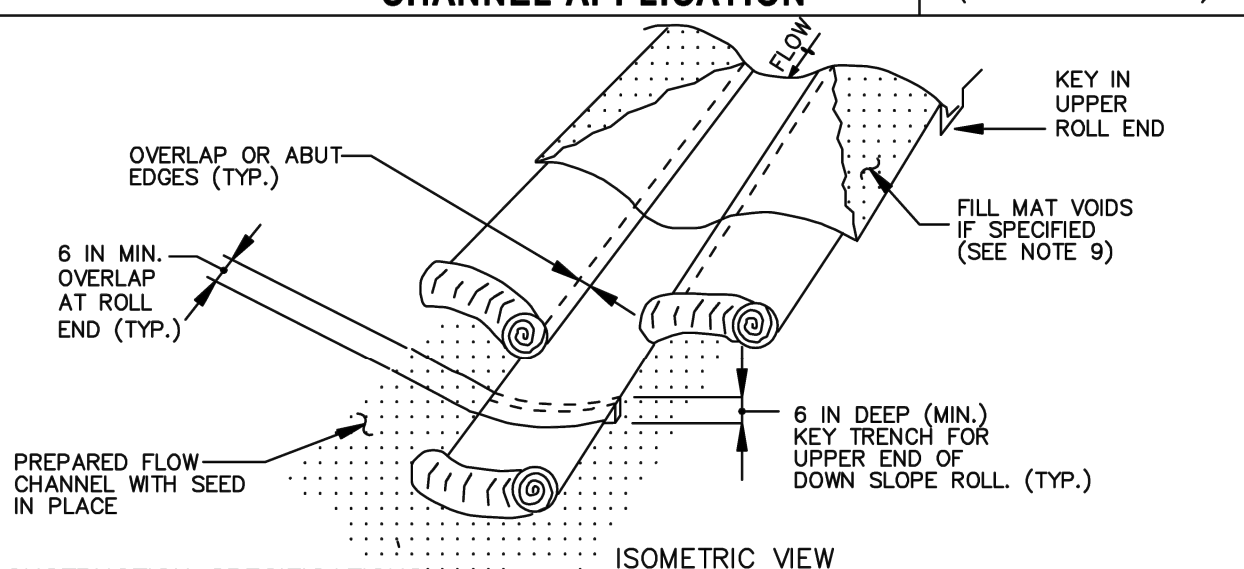
1 OF 2

Table with 4 columns: U.S. Department of Agriculture, Natural Resources Conservation Service; 2011; Maryland Department of Environment, Water Management Administration.

E.2

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL PSSMC - * 5.0 lb/ft² (* INCLUDE SHEAR STRESS)



ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

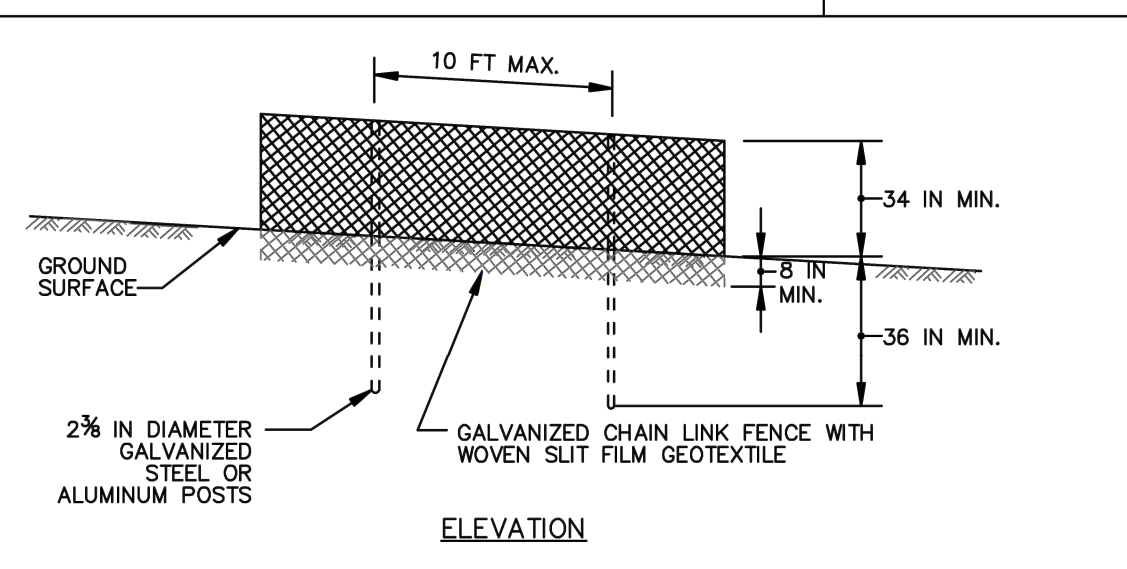
- 1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2/32 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1.5 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE, WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDBED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYPED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

1 OF 2

Table with 4 columns: U.S. Department of Agriculture, Natural Resources Conservation Service; 2011; Maryland Department of Environment, Water Management Administration.

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL SSF



ELEVATION

CROSS SECTION

CONSTRUCTION SPECIFICATIONS

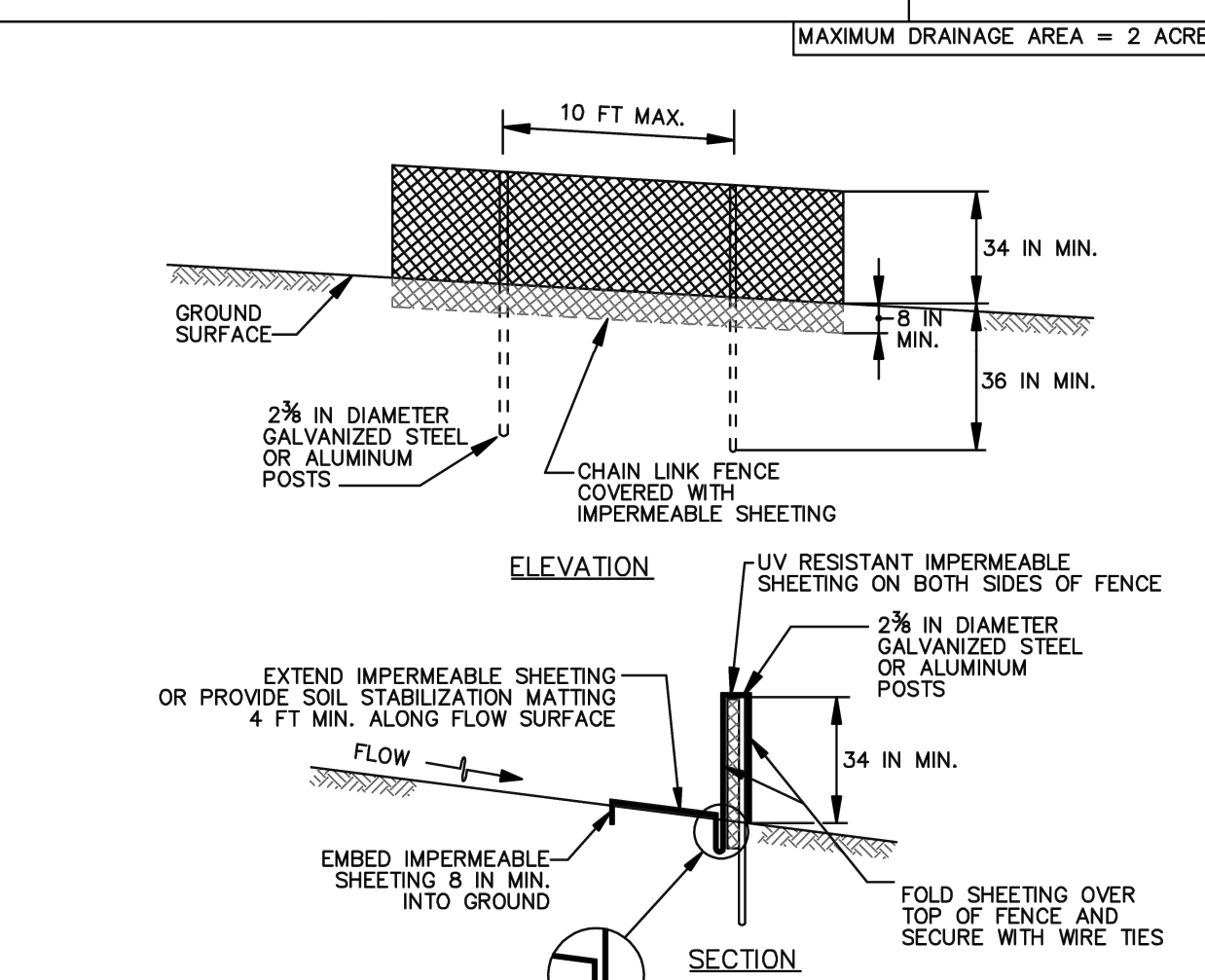
- 1. INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

1 OF 2

Table with 4 columns: U.S. Department of Agriculture, Natural Resources Conservation Service; 2011; Maryland Department of Environment, Water Management Administration.

DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL DF



ELEVATION

SECTION

CONSTRUCTION SPECIFICATIONS

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

1 OF 2

Table with 4 columns: U.S. Department of Agriculture, Natural Resources Conservation Service; 2011; Maryland Department of Environment, Water Management Administration.

Table for APPROVED: DEPARTMENT OF PLANNING AND ZONING with signatures and dates for Chief Development and Chief Division of Planning and Zoning.

DESIGN CERTIFICATION section with signature of Alexander Bratichie and date 12/4/2023.

OWNERS/DEVELOPER'S CERTIFICATION section with signature of Bob Linz and date 10/18/2023.

DESIGN CERTIFICATION section with signature of Anthony Olsen and date 10/18/2023.

Table for REVISIONS with columns for description and date.

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MD 21046 DEPARTMENT OF PUBLIC WORKS 3430 COURT HOUSE DRIVE ELLICOTT CITY, MD 21043

WRP Whitman, Reardon & Associates, LLP 801 South Caroline Street, Baltimore, Maryland 21231 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY TAX MAP 36, GRID 5, PARCEL 3 ZONING: RC-DEO ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE section with a professional seal and signature of Anthony Olsen, dated 10/18/23.

PROFESSIONAL CERTIFICATION section with a statement of certification and expiration date 09/22/23.

BLANDAIR REGIONAL PARK - PHASE 6

EROSION AND SEDIMENT CONTROL NOTES & DETAILS Drawing No. C5.2 Scale: NOT TO SCALE Date: 10/2023 SDP Sheet 30 of 54 Des: BWJ Drawn: AKC Check: AUO

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN A GRADING PERMIT AND ARRANGE FOR AN ON-SITE PRE-CONSTRUCTION MEETING WITH A HOWARD COUNTY SCD INSPECTOR (410-313-1880). (1 DAY).
- 2. NOTIFY THE SEDIMENT CONTROL INSPECTION OFFICE 24 HOURS PRIOR TO CONSTRUCTION. (1 DAY)
- 3. INSTALL PERIMETER CONTROLS INCLUDING SUPER SILT FENCE, TREE PROTECTION FENCE AND STABILIZED CONSTRUCTION ENTRANCES. (2 WEEK)
- 4. INSTALL DF-1 AND STORM DRAIN STARTING AT ES-6 TO MH-16 TO I-12 AND STABILIZE IMMEDIATELY. INSTALL CLEAN WATER DIVERSION FENCES DF-2 ON SLOPE TO DIVERT CLEAN WATER INTO I-12. (1 WEEK)
- 5. INSTALL SEDIMENT TRAP #1 AND EARTH DIKE THAT DIVERTS RUNOFF INTO TRAP. (1 WEEK)
- 6. BEGIN MASS GRADING. AS GRADING PROGRESSES, ADJUST EARTH DIKE TO MAINTAIN DRAINAGE INTO SEDIMENT TRAP #1. (4 WEEKS)
- 7. INSTALL STORM DRAIN SYSTEM. INSTALL INLET PROTECTION ON NEW INLETS AS SYSTEM IS BUILT. (4 WEEKS)
- 8. WHEN THE OVERFLOW PARKING AREA IS UP TO GRADE AND THE DRAINAGE DITCH FLOWING TO I-12 IS COMPLETE, INSTALL DRAINAGE SYSTEM FROM MH-16 TO I-13 AND INSTALL INLET PROTECTION ON I-12 & I-13. ADJUST DF-2 TO DIRECT CLEAN WATER TO THE UPSTREAM SIDE OF THE BERM WHEN IT IS STABILIZED. (1 DAY)
- 9. INSTALL WATER MAIN. BORE & JACK WATER MAIN UNDER THE STREAM/EX. CURVERT. (2 WEEKS)
- 10. INSTALL COURTS, SIDEWALK AND PAVE PARKING AREA. DO NOT INSTALL LIQUID SURFACE TO COURTS AT THIS POINT. (6 WEEKS)
- 11. UPON STABILIZATION OF ALL CONTRIBUTING DRAINAGE AREAS, INSTALL ALL ESD FACILITIES INCLUDING MICRO-BIOTENTIONS, FOCAL POINT FACILITIES, AND PEROUS MATERIALS (BOTH SYNTHETIC TURF AND PEROUS PAVERS). INSTALL ASPHALT PAVING OF PARKING LOT. INSTALLATION OF THE FINAL PAVEMENT COURSE MUST BE INSPECTED BY THE ON-SITE GEO-TECHNICAL ENGINEER. (1 MONTH)
- 12. REMOVE SEDIMENT TRAP #1 WHEN THE OVERFLOW PARKING AREA IS STABILIZED. CONTRACTOR MUST OBTAIN APPROVAL FROM SEDIMENT CONTROL INSPECTOR PRIOR TO REMOVAL OF SEDIMENT TRAP #1. (2 DAYS)
- 13. INSTALL MICRO BIOTENTION FACILITY #10 AFTER SEDIMENT TRAP #1 IS REMOVED AND THE OVERFLOW PARKING IS BROUGHT TO GRADE. (1 WEEK)
- 14. INSTALL COURTS LIQUID SURFACE AND STRIPE ALL PAVING AS SHOWN. (2 WEEKS)
- 15. FLUSH AND PUMP CLEAN THE STORM DRAIN SYSTEM. (1 DAY)
- 16. UPON PERMANENT STABILIZATION OF ALL DISTURBED AREAS AND WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE ANY REMAINING SEDIMENT CONTROL DEVICES AND ALL NON-NATURAL ITEMS FROM FORESTS, FLOODPLAIN, STREAMS, WETLANDS AND THEIR BUFFERS.

Table with 2 columns: REVISIONS, and empty rows for tracking changes.

HOWARD COUNTY
DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043



PROPERTY
TAX MAP 36, GRID 5, PARCEL 3
ZONING: RC-DEO
ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE
Professional Engineer Seal for Anthony Olsen, State of Maryland, License No. 19376, dated 10/18/23.

BLANDAIR REGIONAL PARK - PHASE 6

EROSION AND SEDIMENT CONTROL NOTES & DETAILS
Drawing No. C5.3
Scale: NOT TO SCALE
Date: 10/2023 SDP Sheet 31 of 54
Des: BWJ Drawn: AKC Check: AUO

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE. Includes plan view, profile, and construction specifications for a 50 ft min. length entrance with a mountable berm and aggregate cover.

DETAIL D-2 STONE CHECK DAM. Includes channel profile, cross section, and construction specifications for a stone check dam with a 4 ft min. weir and 12 in. apron.

DETAIL D-4-1-C ROCK OUTLET PROTECTION III. Includes plan view, section A-A, section B-B, and construction specifications for riprap outlet protection.

DETAIL E-9-3 CURB INLET PROTECTION. Includes isometric view, section A-A, and construction specifications for a curb inlet protection with a 2 in x 4 in weir.

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II. Includes isometric view, section A-A, section B-B, and construction specifications for a sediment trap with a 4 ft min. weir.

DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II. Includes a table with drainage area and storage requirements, and construction specifications for a sediment trap.

DETAIL D-3-1 RIPRAP INFLOW PROTECTION. Includes isometric view, profile along centerline, and construction specifications for riprap inflow protection.

DETAIL C-1 EARTH DIKE. Includes cross section, dike type table, and construction specifications for an earth dike with a 2:1 slope.

DETAIL G-2-4 BAFFLE BOARDS. Includes plan views and baffle detail, and construction specifications for baffle boards to stabilize flow channels.

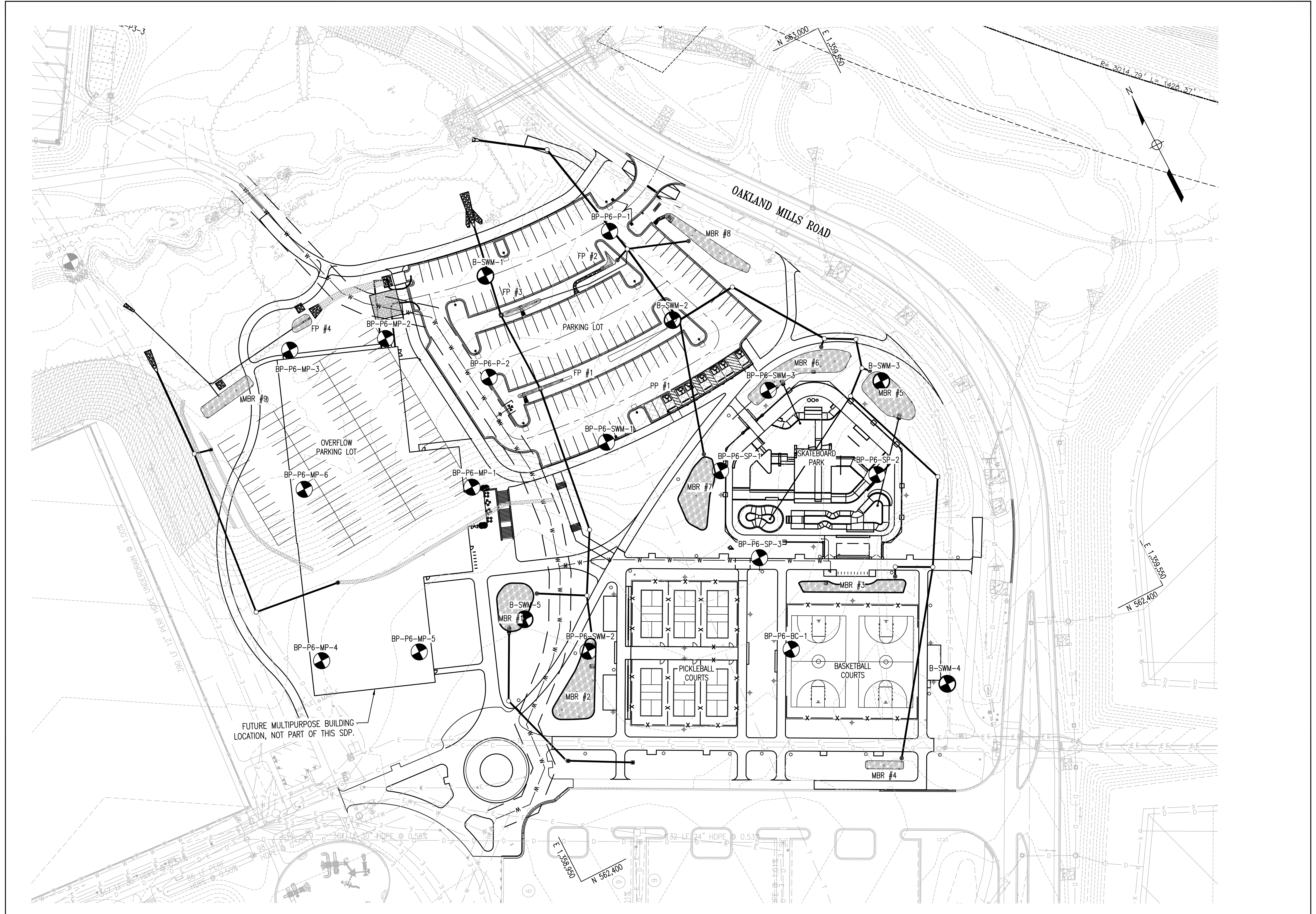
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief Development Engineer: [Signature] 12/20/2023
Chief Division of Land Development: [Signature] 12/20/2023
Director: [Signature]

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Disapproved by: [Signature] 12/4/2023
HOWARD SOIL CONSERVATION DISTRICT

DESIGN CERTIFICATION
I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS.
Designer's Signature: [Signature] 10/18/2023
Anthony Olsen 19376
MD REGISTRATION NO. (P, E, R, L, S., OR R, L, A. (CIRCLE ONE))

OWNERS/DEVELOPER'S CERTIFICATION
I HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN.
Signature: [Signature] 10/18/2023
Bob Linz - Bureau Chief of Capital Projects

FILENAME: N:\42038-006\CADD\230205062502.DWG
PLOT DATE: 10/16/2023 9:21:03 PM PAGE SETUP: WPA-PDF 036x24x FULL BLEED D 036.00 X 24.00 INCHES



REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

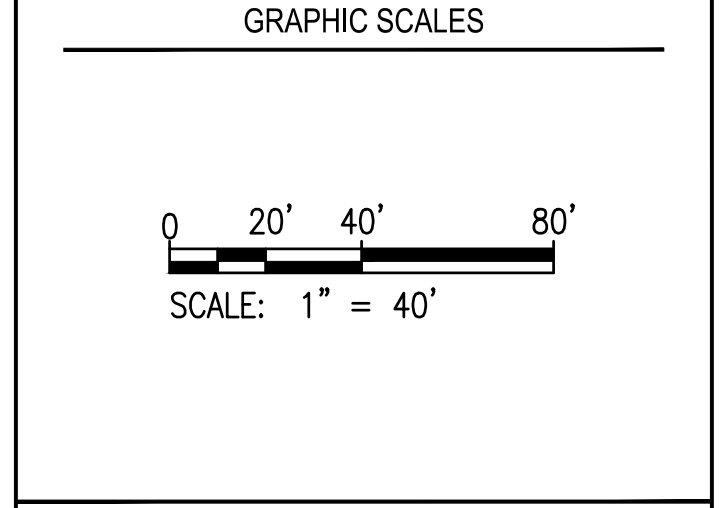


PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6



SIGNATURE

Designed by: *Carly M.* 10/16/13
 PROFESSIONAL CERTIFICATION.
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 10/22/2025

BLANDAIR REGIONAL PARK - PHASE 6

SOIL BORINGS PLAN

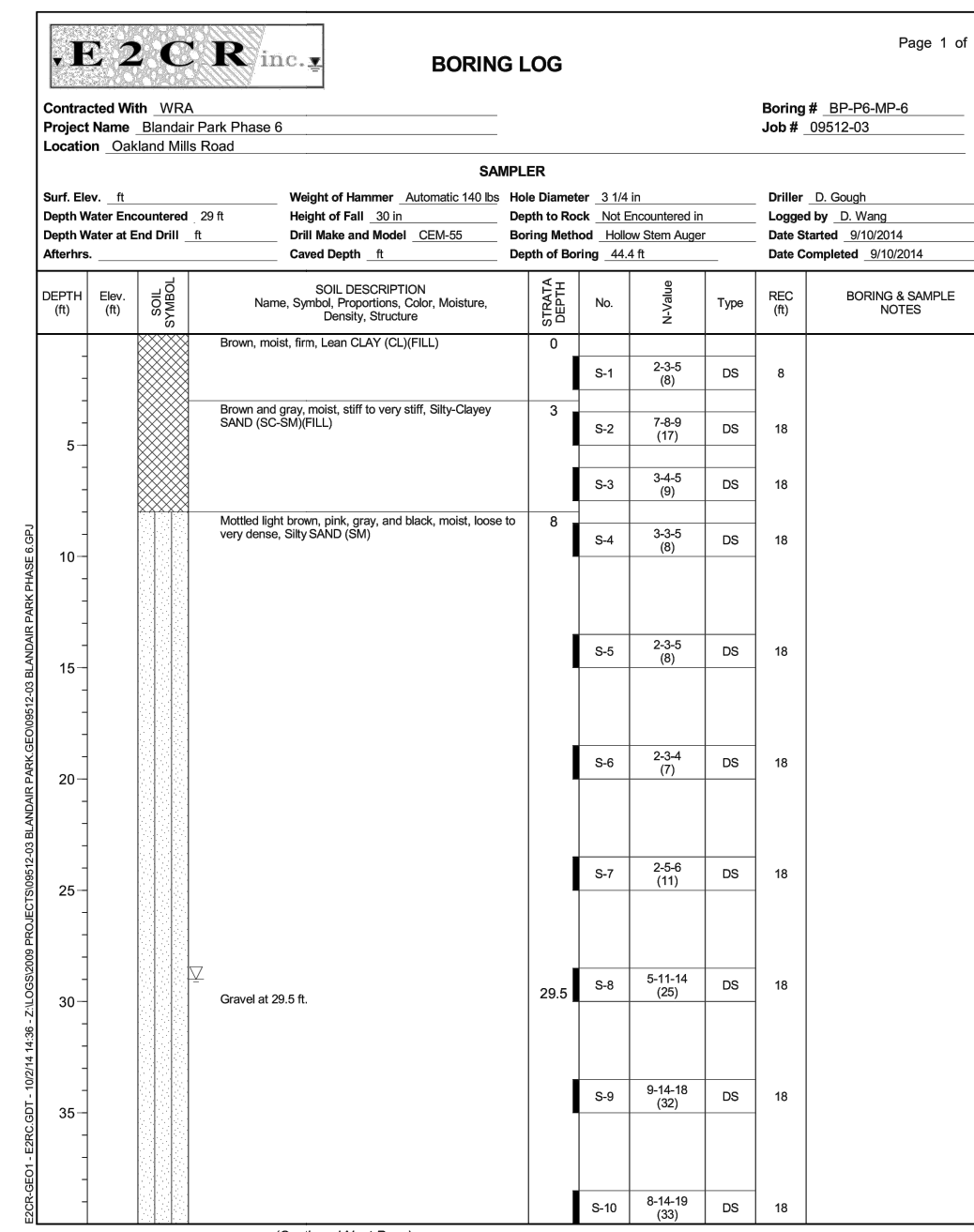
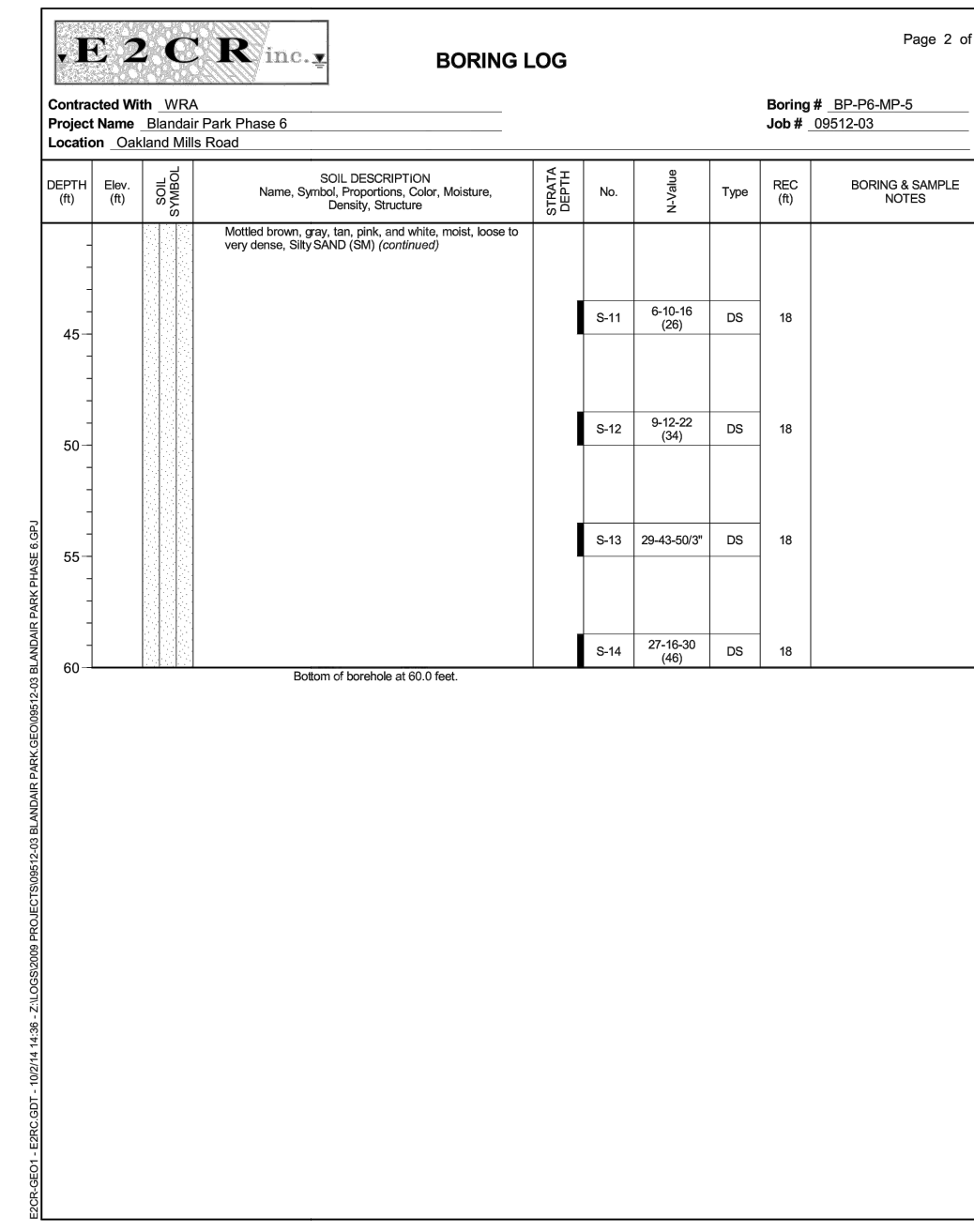
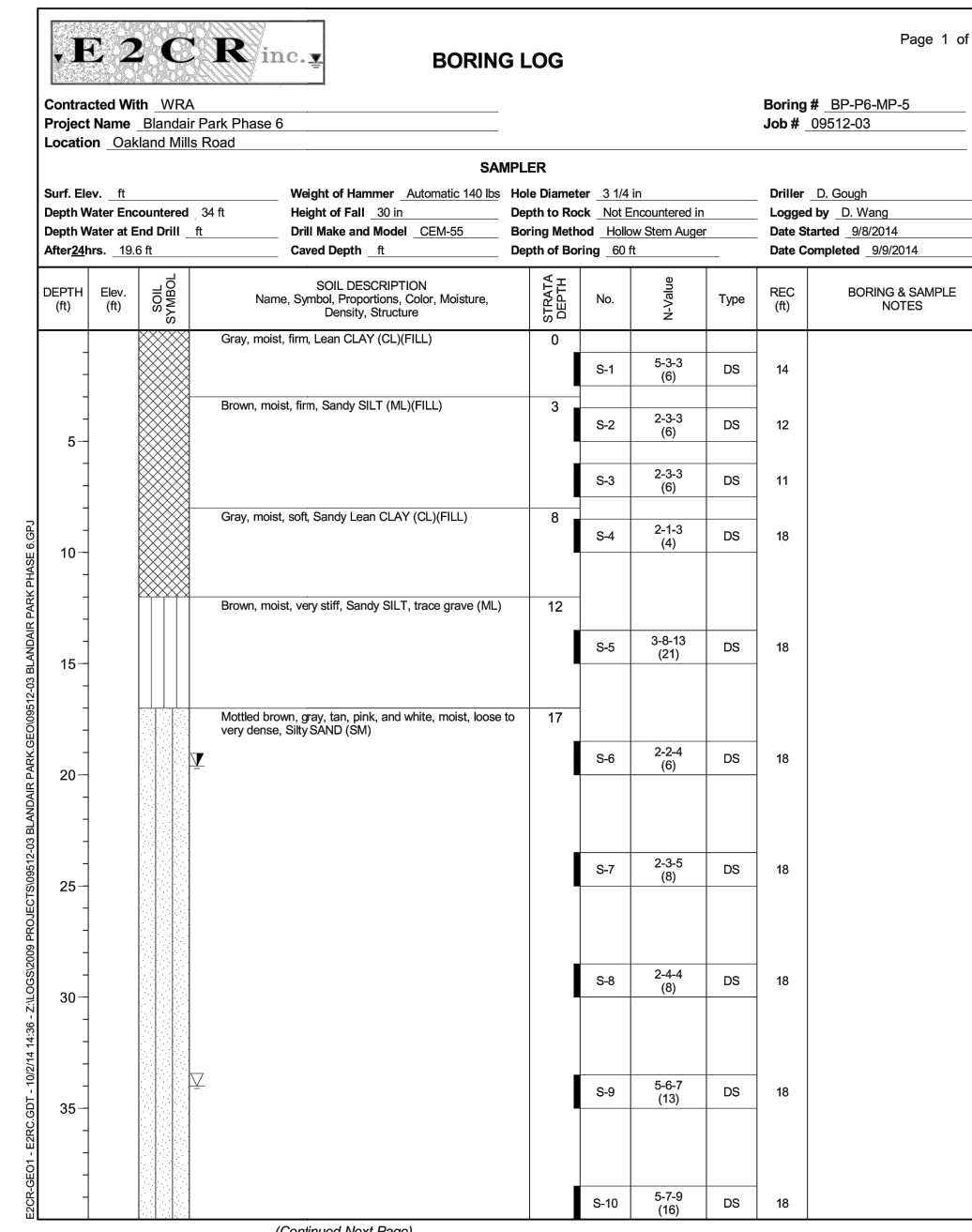
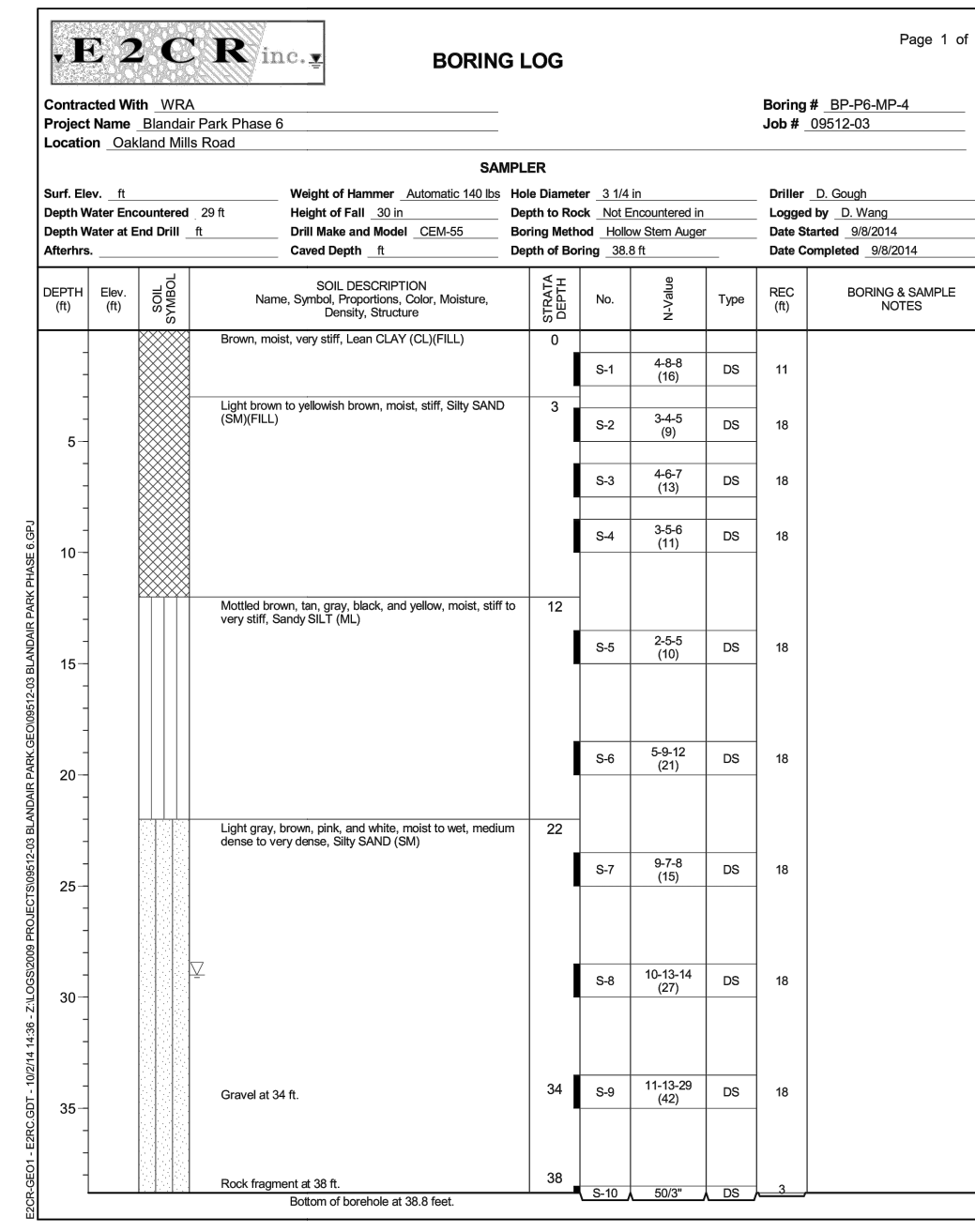
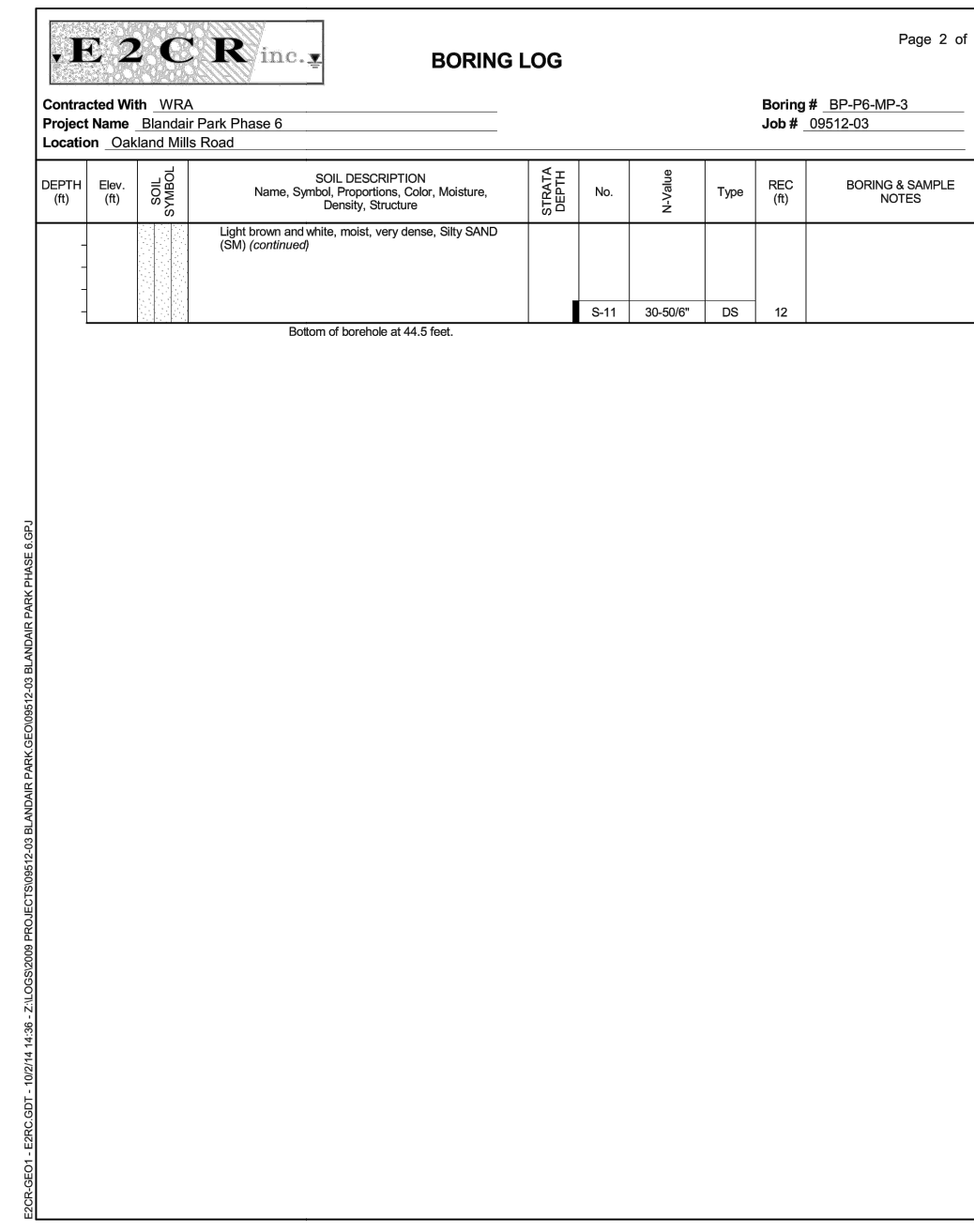
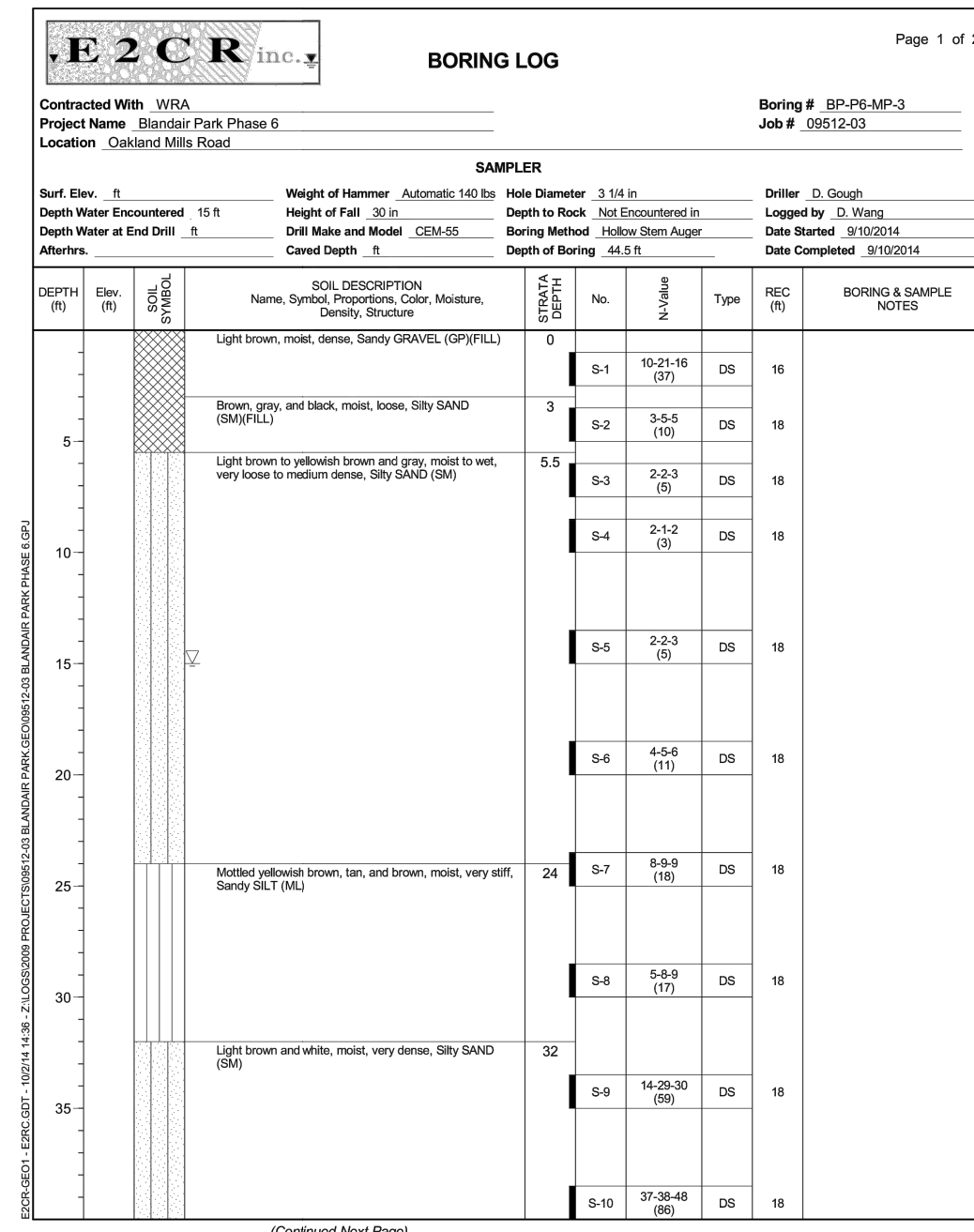
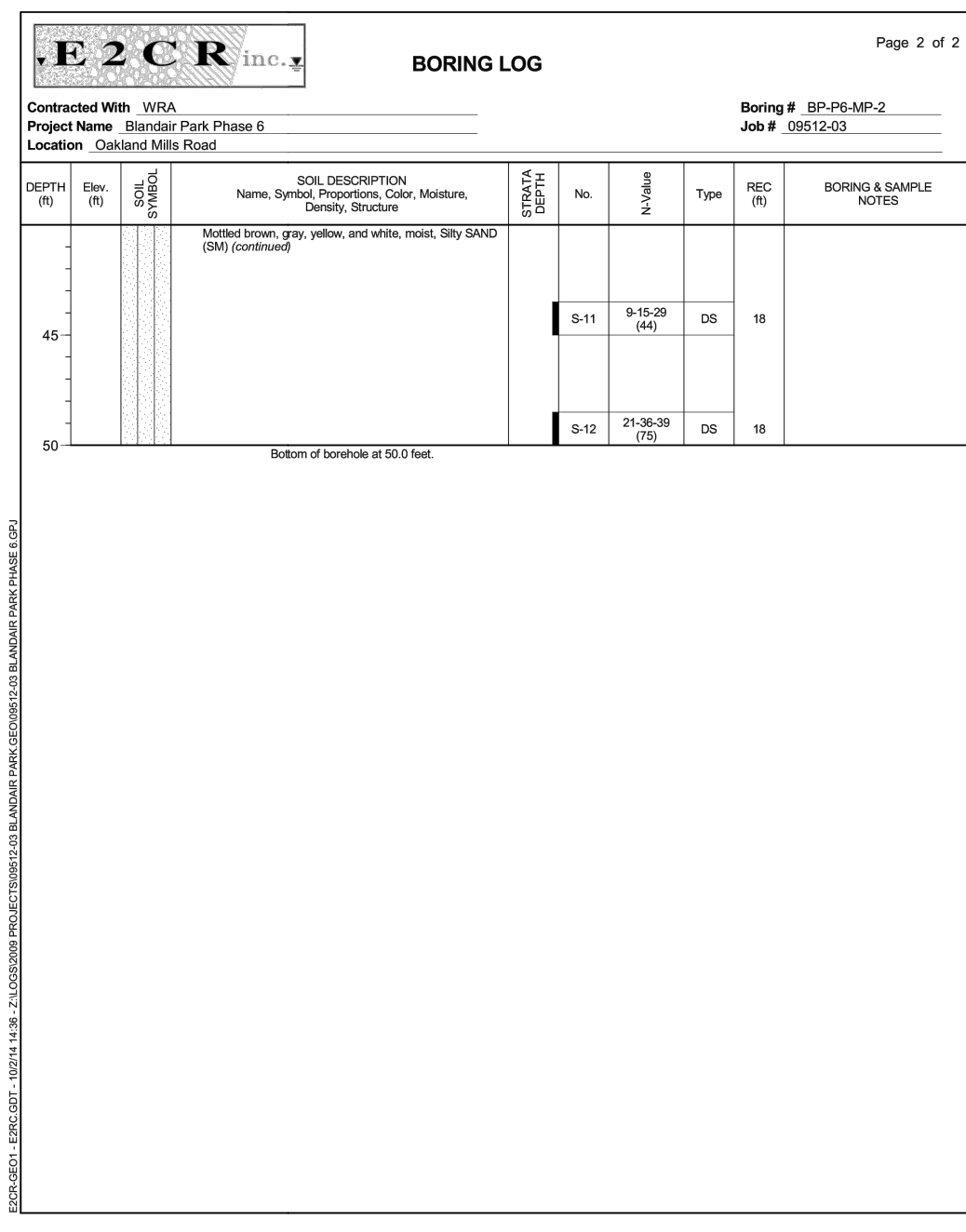
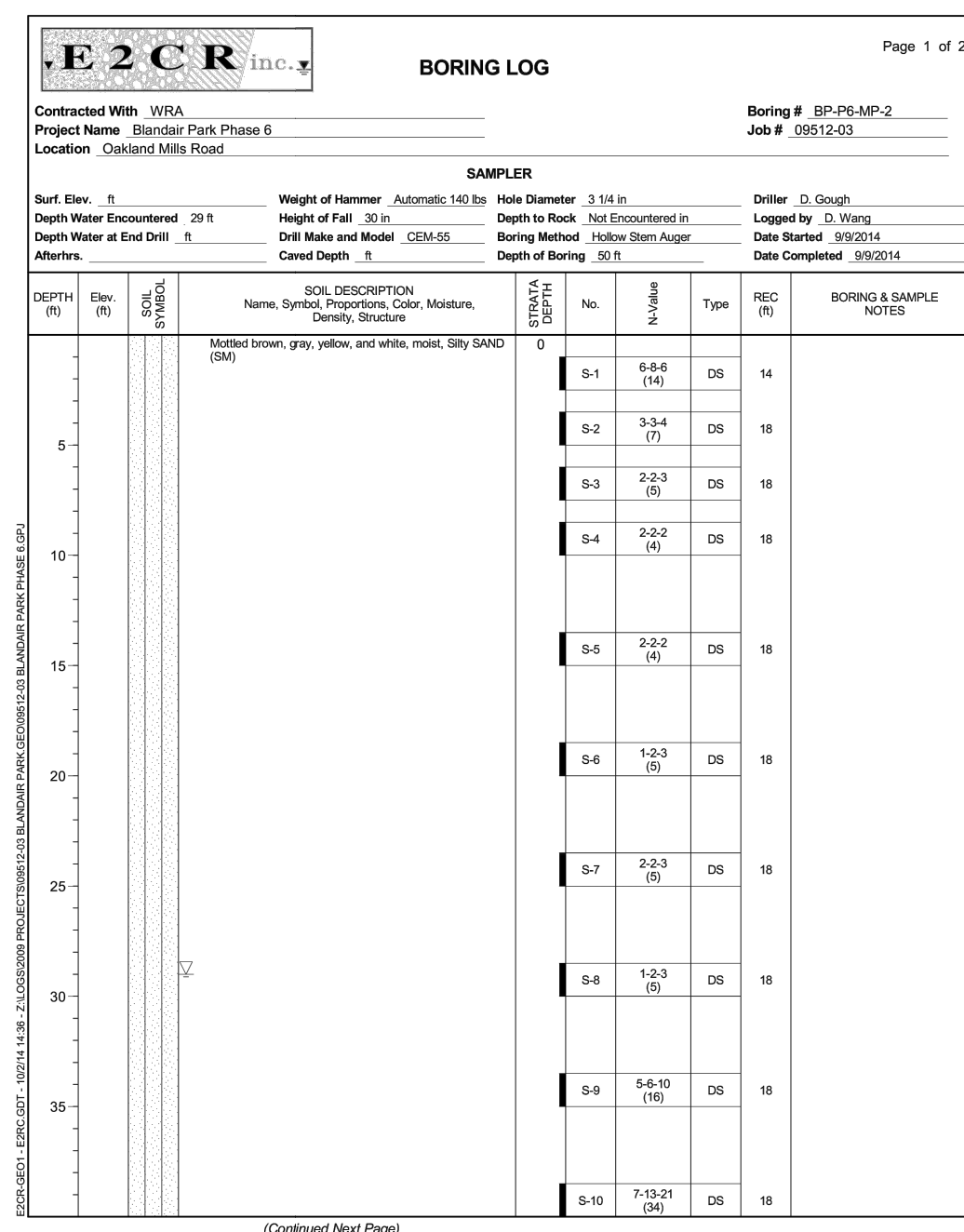
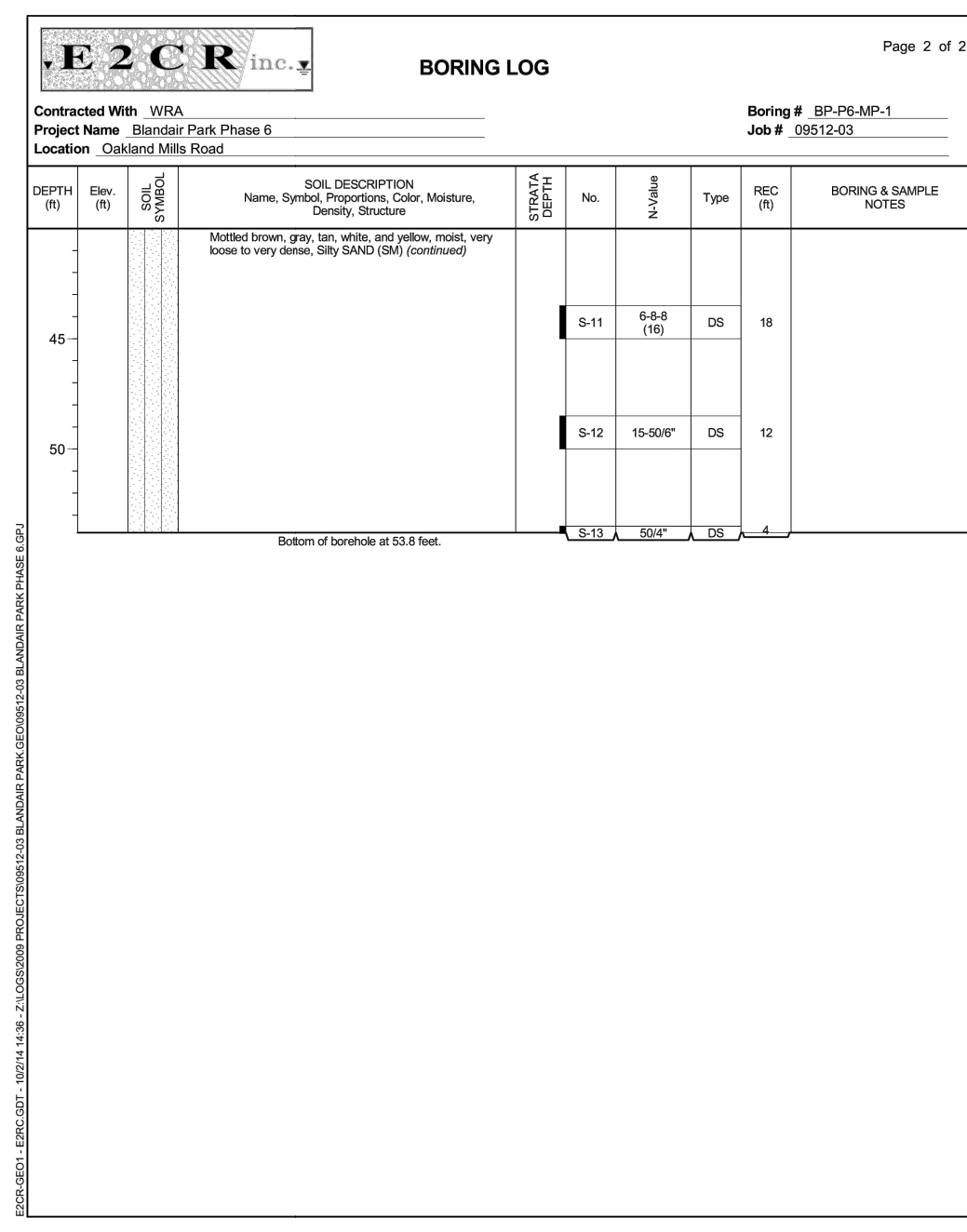
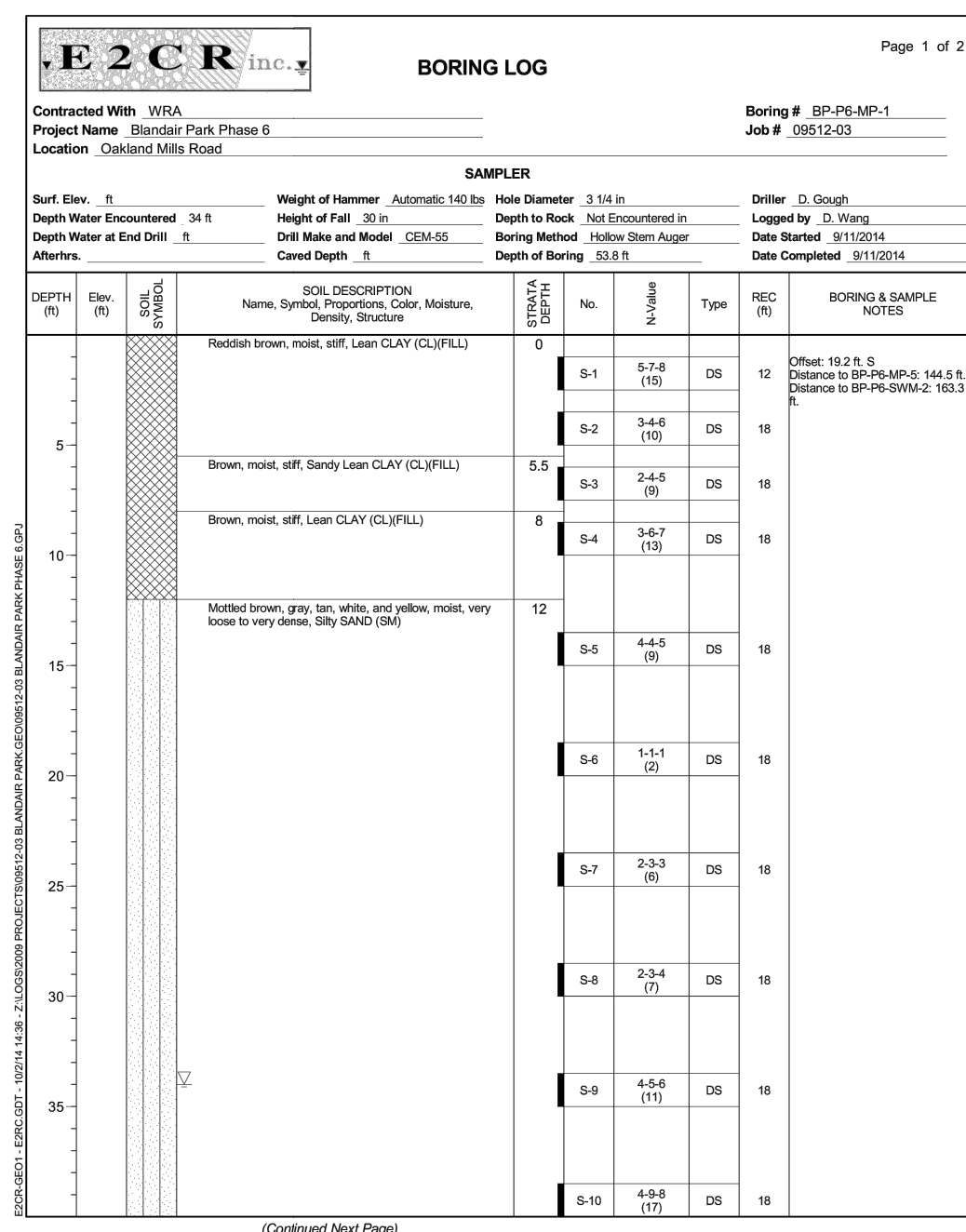
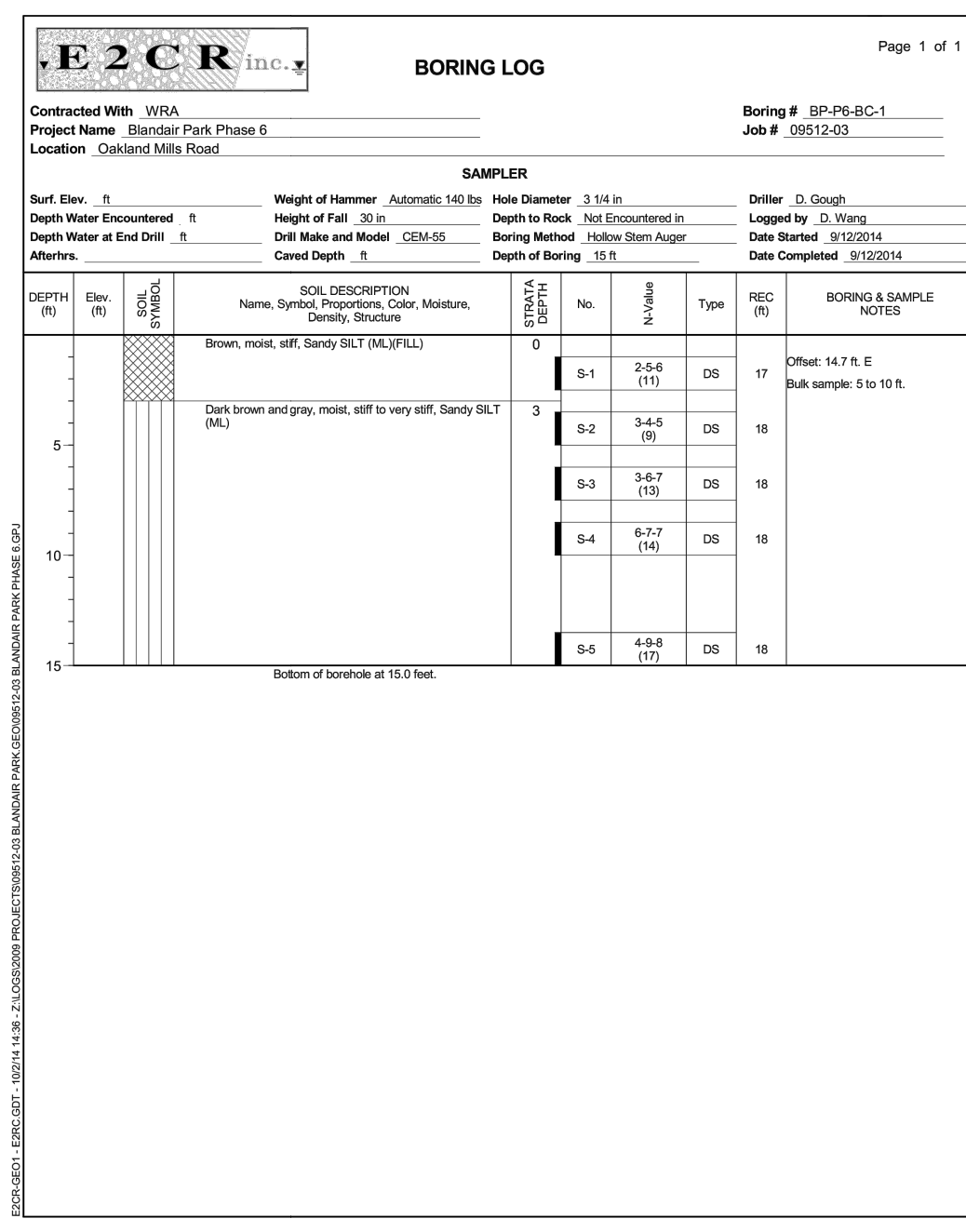
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C6.1

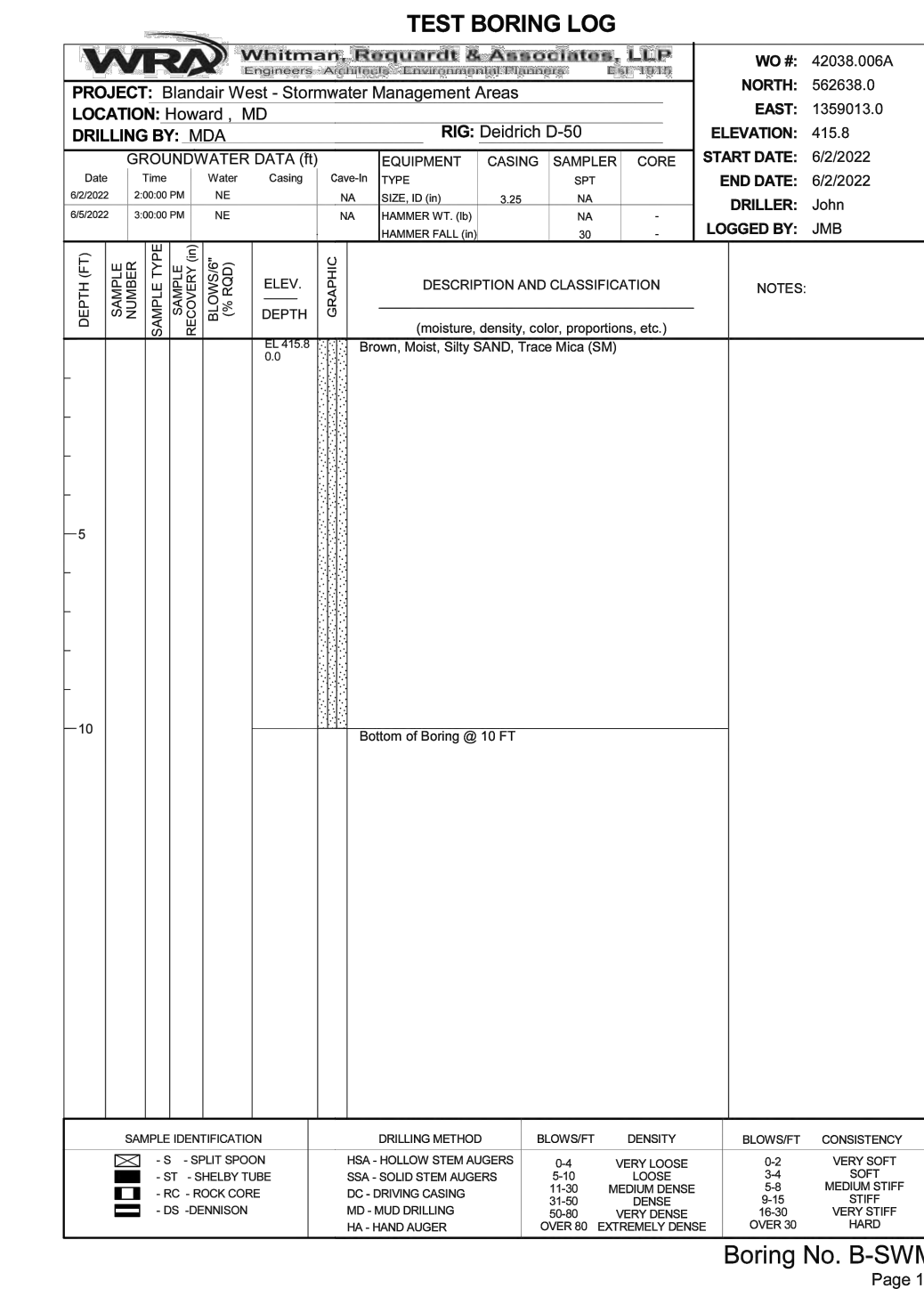
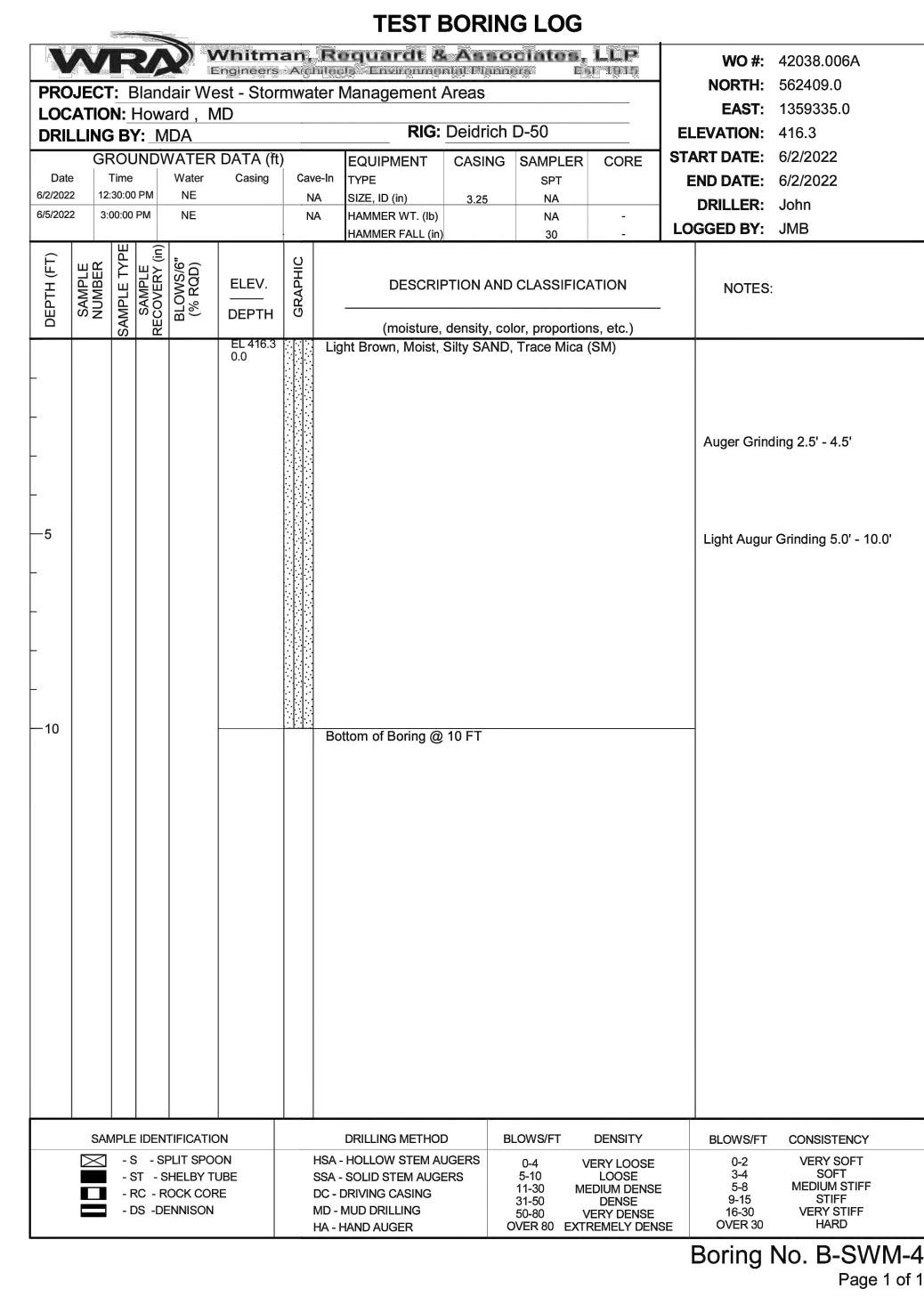
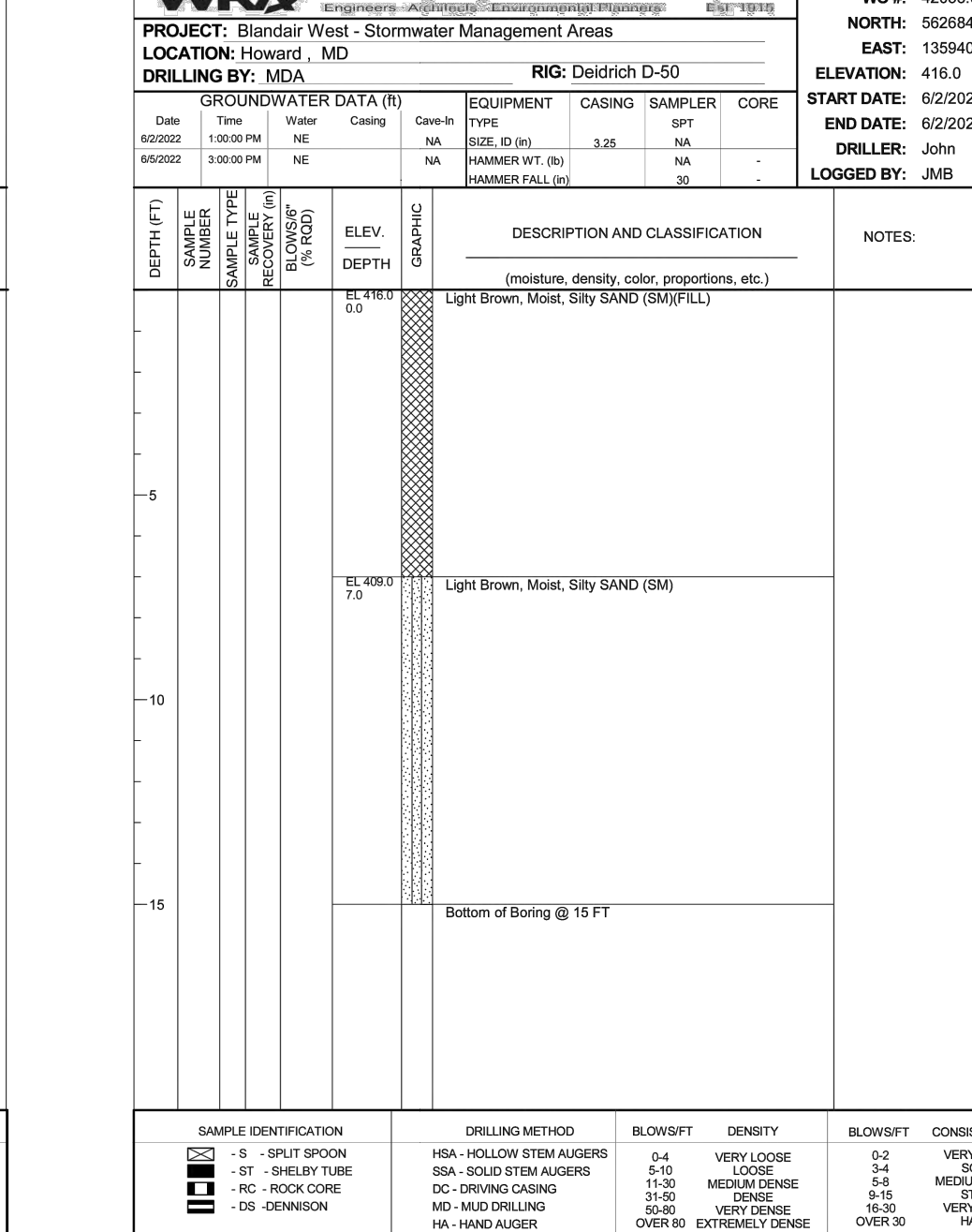
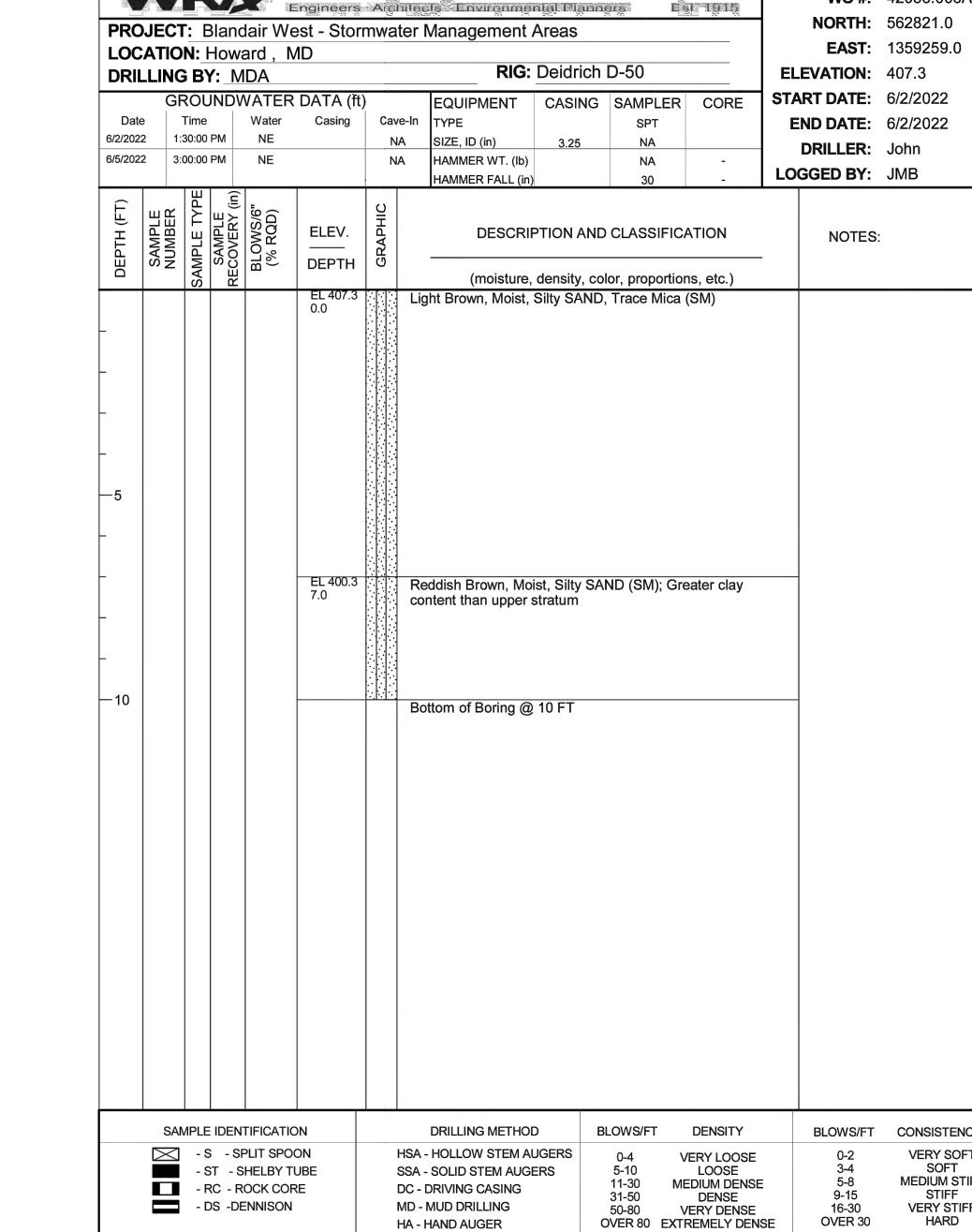
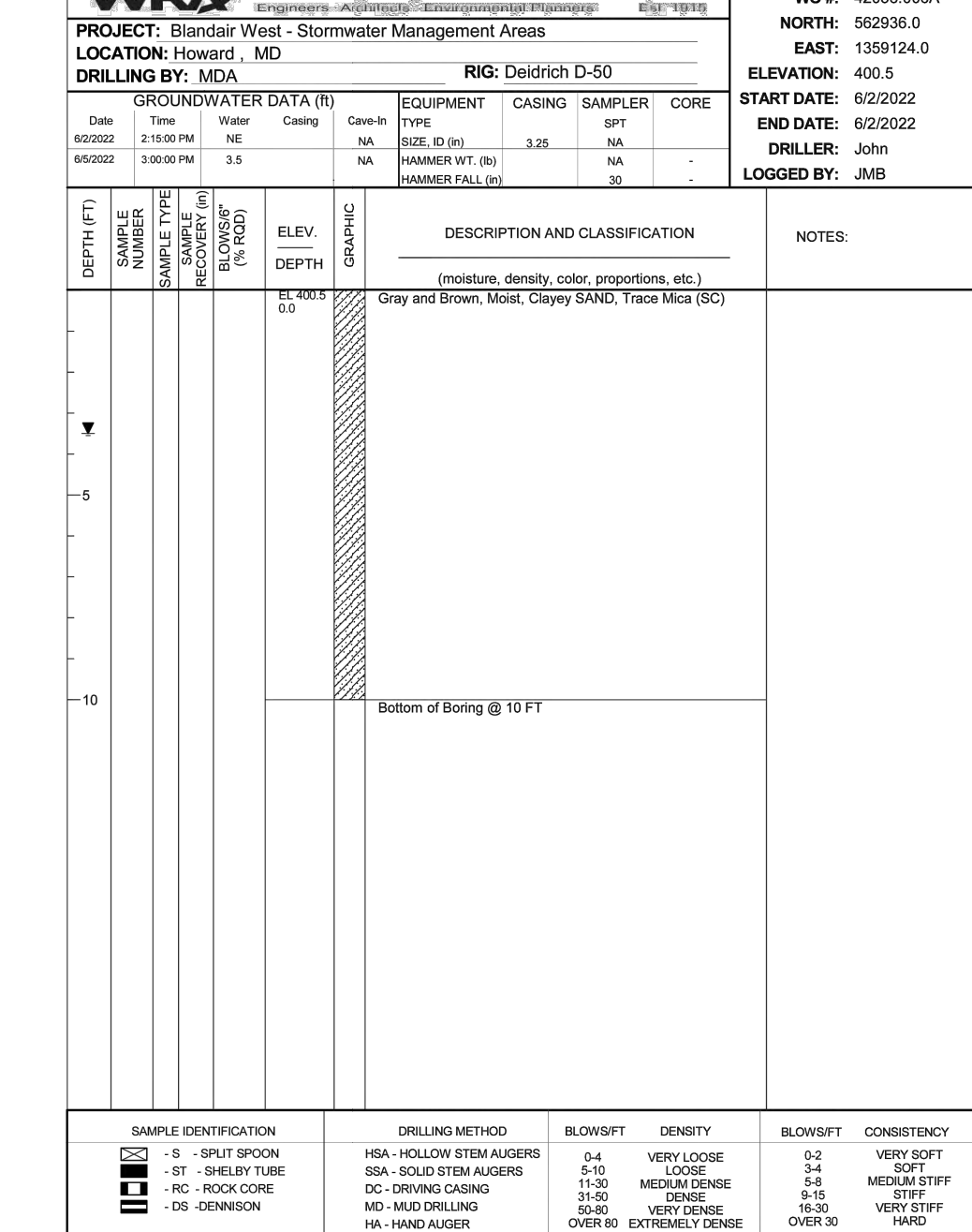
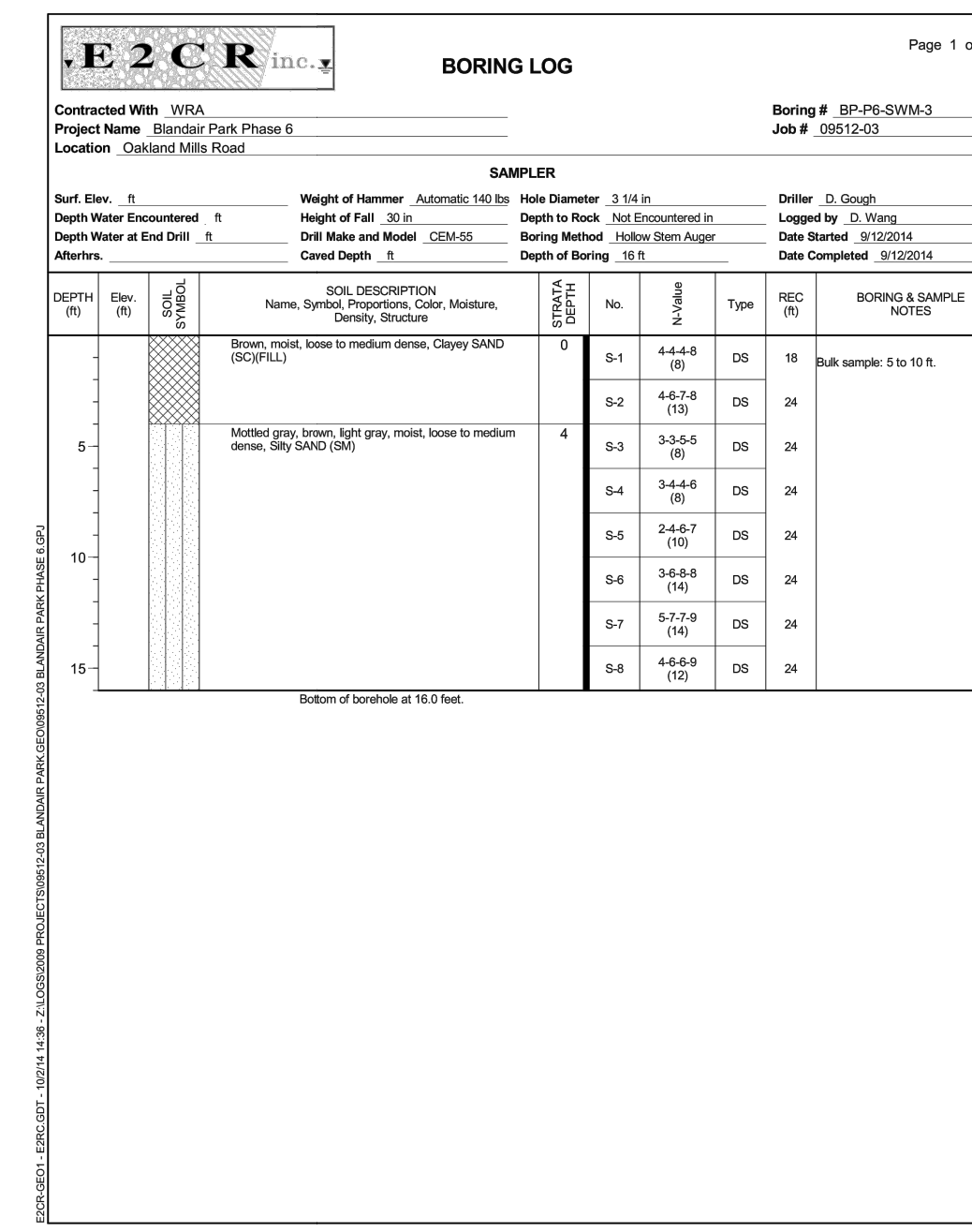
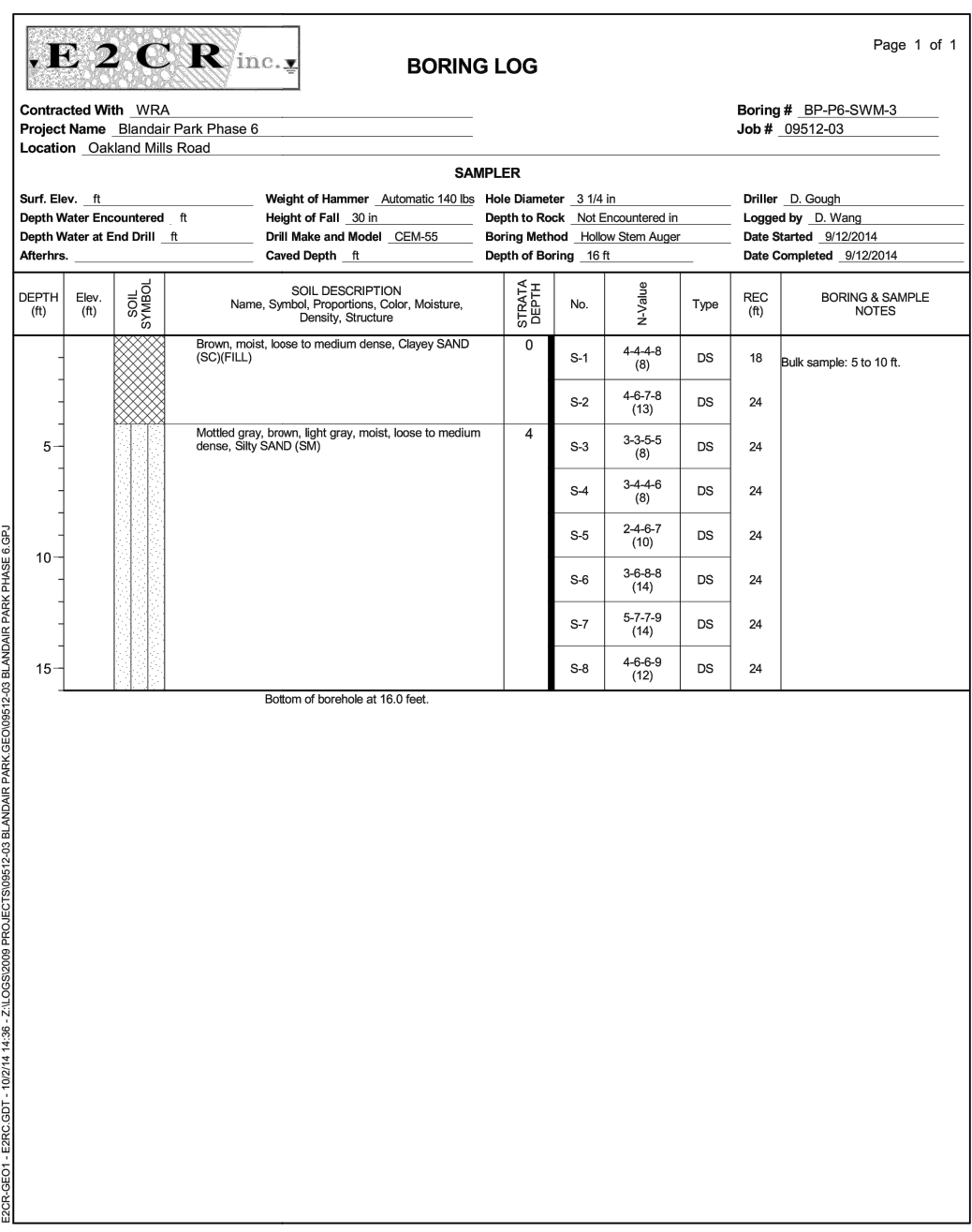
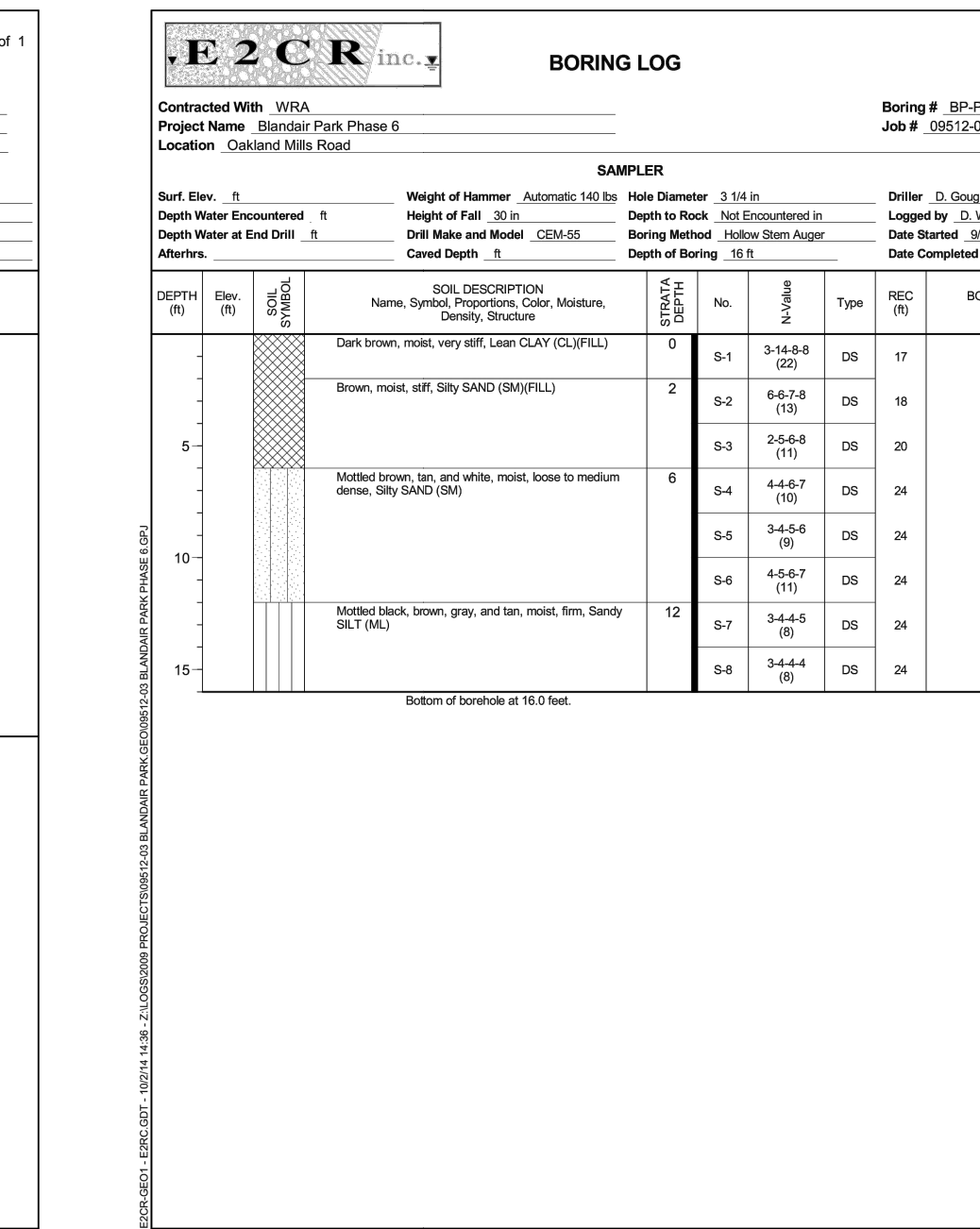
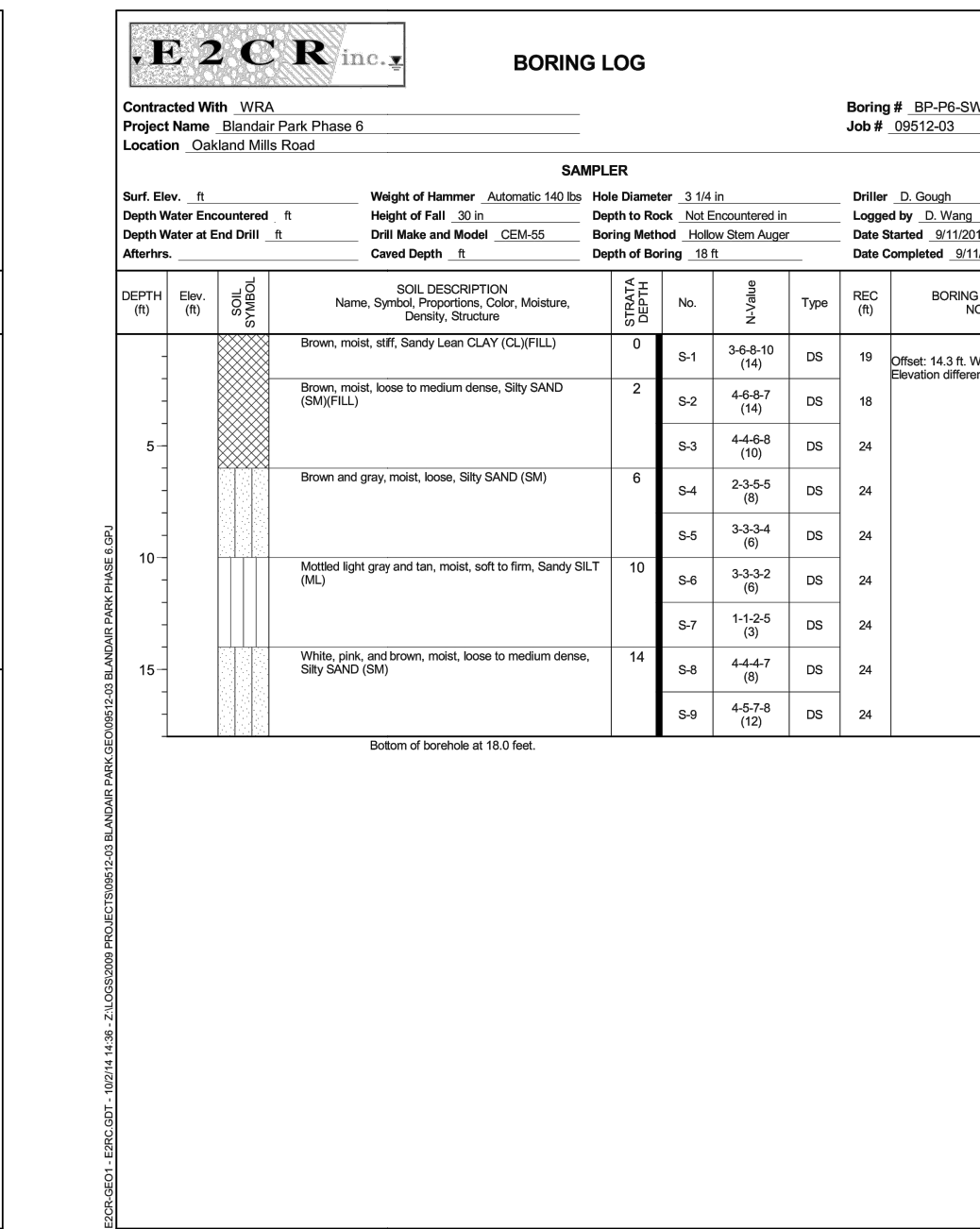
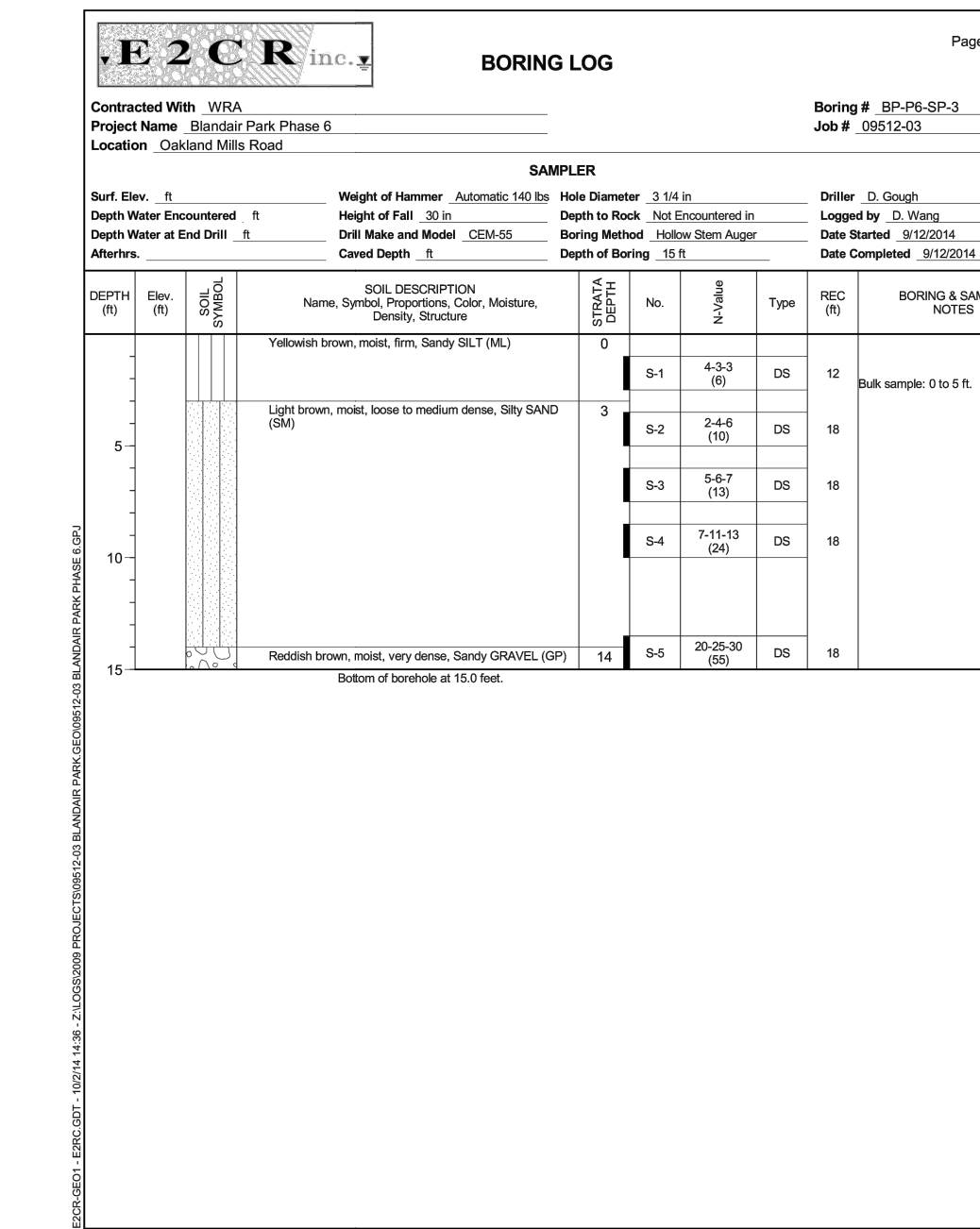
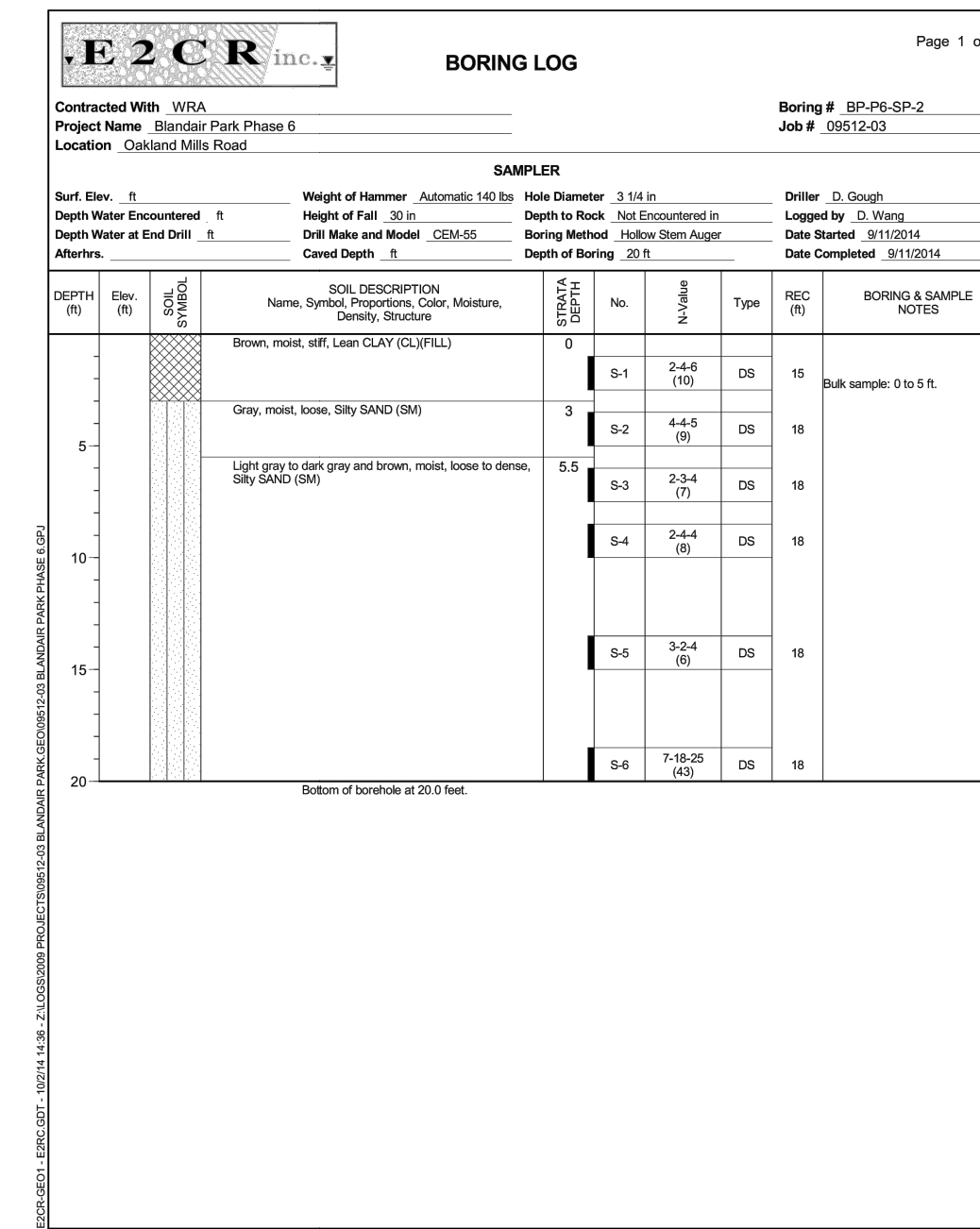
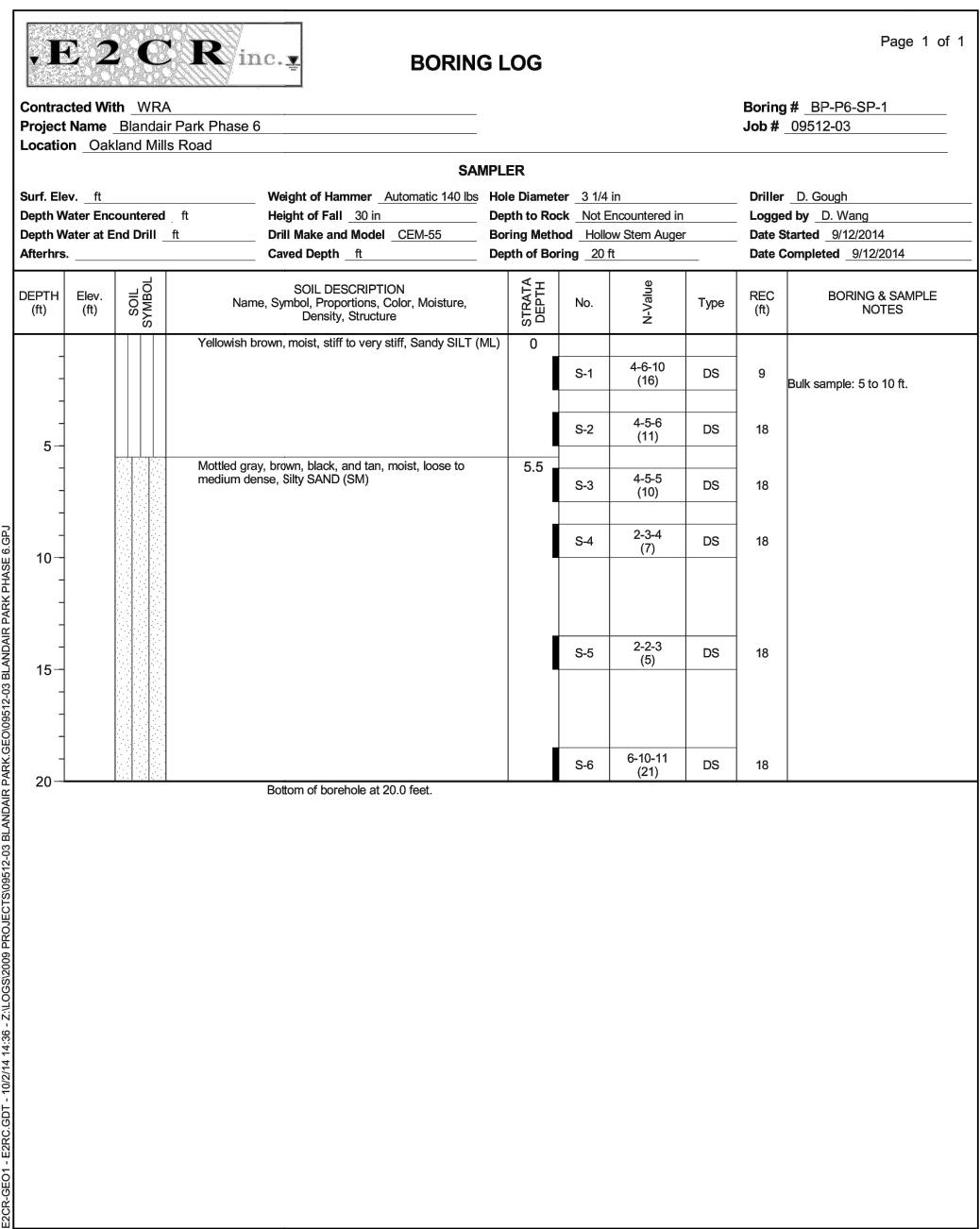
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Date: 10/2023 SDP Sheet 32 of 54

Des: BWJ Drawn: JTD Check: AUO

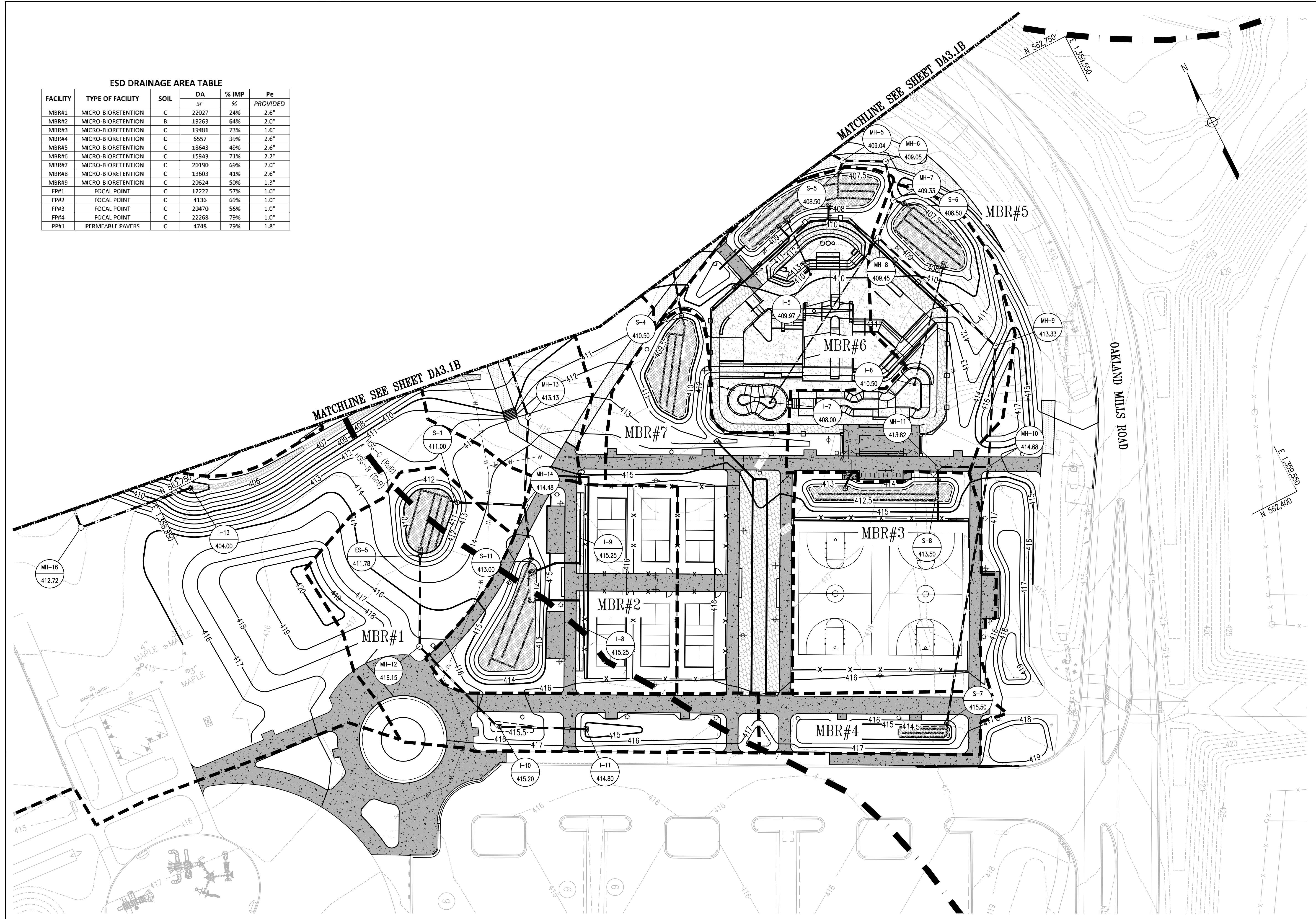
APPROVED: DEPARTMENT OF PLANNING AND ZONING	12/20/2023
Designed by: <i>Carl D. Edmondson</i>	DATE
CHIEF, DEVELOPMENT DIVISION	12/4/2023
CHIEF, DIVISION OF ZONING	DATE
Designed by: <i>Linda Eisenberg</i>	12/20/2023
DIRECTOR	DATE





ESD DRAINAGE AREA TABLE

FACILITY	TYPE OF FACILITY	SOIL	DA	% IMP	Pe
			SF	%	PROVIDED
MBR#1	MICRO-BIORETENTION	C	22027	24%	2.6"
MBR#2	MICRO-BIORETENTION	B	19263	64%	2.0"
MBR#3	MICRO-BIORETENTION	C	19481	73%	1.6"
MBR#4	MICRO-BIORETENTION	C	6557	39%	2.6"
MBR#5	MICRO-BIORETENTION	C	18643	49%	2.6"
MBR#6	MICRO-BIORETENTION	C	15943	71%	2.2"
MBR#7	MICRO-BIORETENTION	C	20190	69%	2.0"
MBR#8	MICRO-BIORETENTION	C	13603	41%	2.6"
MBR#9	MICRO-BIORETENTION	C	20624	50%	1.3"
FP#1	FOCAL POINT	C	17222	57%	1.0"
FP#2	FOCAL POINT	C	4136	69%	1.0"
FP#3	FOCAL POINT	C	20470	56%	1.0"
FP#4	FOCAL POINT	C	22268	79%	1.0"
PP#1	PERMEABLE PAVERS	C	4748	79%	1.8"



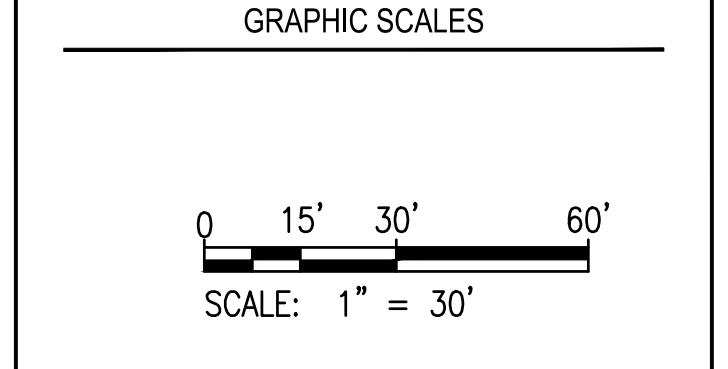
REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



SIGNATURE

DocuSigned by:
 Caitlynn W.
 1DBFAC48E804A
 10/16/13

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 09/22/2023

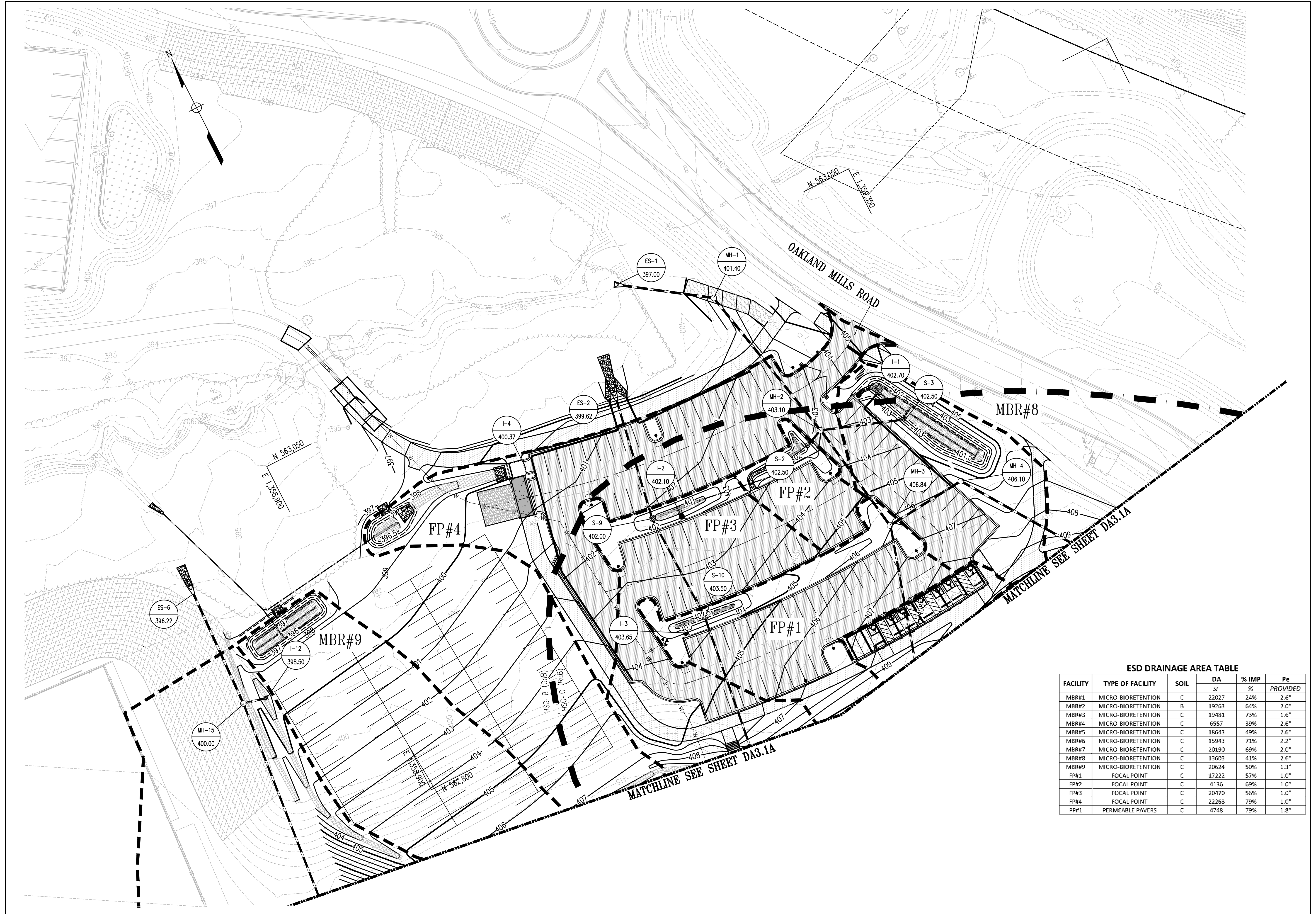
BLANDAIR REGIONAL
 PARK - PHASE 6

ESD DRAINAGE AREA MAP A
 Drawing No.
DA3.1A

Scale: 1" = 30'

Date: 10/2023 SDP Sheet 35 of 54
 Des: BWJ Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 12/20/2023
 Chief, Development Division
 12/4/2023
 Chief, Division of Land Development
 12/20/2023
 Director
 DATE



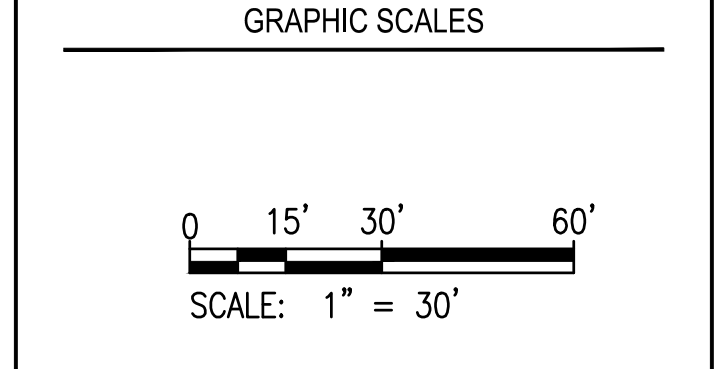
REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043



PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



SIGNATURE

DocuSigned by: *Colby VA* 10/18/23
 1D9F4C48E844

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 10/22/2025

ESD DRAINAGE AREA TABLE

FACILITY	TYPE OF FACILITY	SOIL	DA SF	% IMP	Pe PROVIDED
MBR#1	MICRO-BIORETENTION	C	22027	24%	2.6"
MBR#2	MICRO-BIORETENTION	B	19263	64%	2.0"
MBR#3	MICRO-BIORETENTION	C	19481	73%	1.6"
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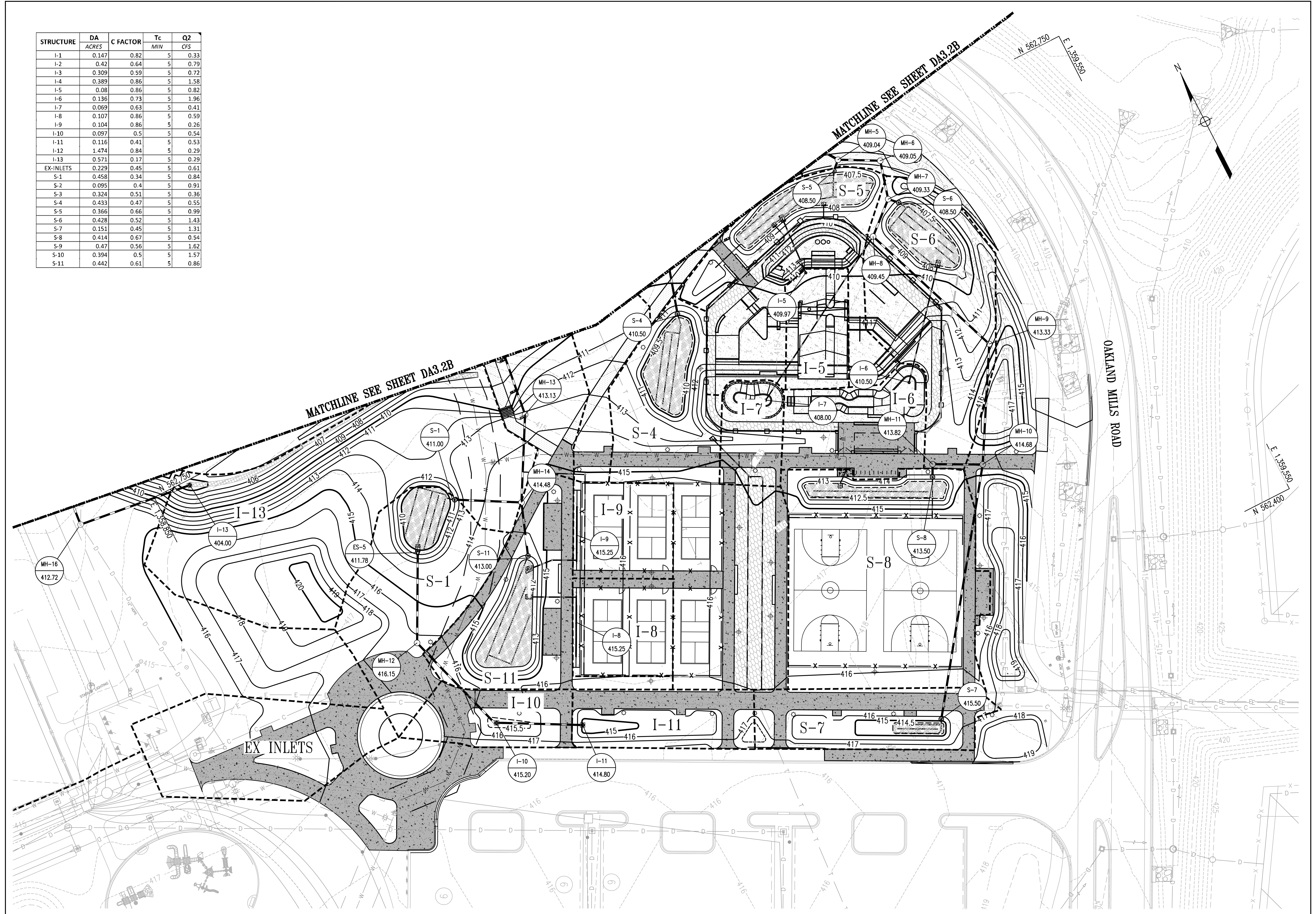
BLANDAIR REGIONAL PARK - PHASE 6

ESD DRAINAGE AREA MAP B
 Drawing No.
DA3.1B

Scale: 1" = 30'
 Date: 10/2023 SDP Sheet 36 of 54
 Des: BWJ Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 12/20/2023
 CHIEF, DEVELOPMENT DIVISION
 12/4/2023
 CHIEF, DIVISION OF ZONING
 12/20/2023
 DIRECTOR
 DATE

STRUCTURE	DA ACRES	C FACTOR	Tc MIN	Q2 CFS
I-1	0.147	0.82	5	0.33
I-2	0.42	0.64	5	0.79
I-3	0.309	0.59	5	0.72
I-4	0.389	0.86	5	1.58
I-5	0.08	0.86	5	0.82
I-6	0.136	0.73	5	1.96
I-7	0.069	0.63	5	0.41
I-8	0.107	0.86	5	0.59
I-9	0.104	0.86	5	0.26
I-10	0.097	0.5	5	0.54
I-11	0.116	0.41	5	0.53
I-12	1.474	0.84	5	0.29
I-13	0.571	0.17	5	0.29
EX-INLETS	0.229	0.45	5	0.61
S-1	0.458	0.34	5	0.84
S-2	0.095	0.4	5	0.91
S-3	0.324	0.51	5	0.36
S-4	0.433	0.47	5	0.55
S-5	0.366	0.66	5	0.99
S-6	0.428	0.52	5	1.43
S-7	0.151	0.45	5	1.31
S-8	0.414	0.67	5	0.54
S-9	0.47	0.56	5	1.62
S-10	0.394	0.5	5	1.57
S-11	0.442	0.61	5	0.86



REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6

GRAPHIC SCALES

 SCALE: 1" = 30'

SIGNATURE

 PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 09/22/2023

BLANDAIR REGIONAL
 PARK - PHASE 6

STORM DRAIN DRAINAGE
 AREA MAP A

Drawing No.
DA3.2A

Scale: 1" = 30'
 Date: 10/2023 SDP Sheet 37 of 54
 Des: BWJ Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 12/20/2023
 CHIEF DEVELOPMENT DIVISION
 12/4/2023
 CHIEF DIVISION OF ZONING
 12/20/2023
 DIRECTOR
 DATE



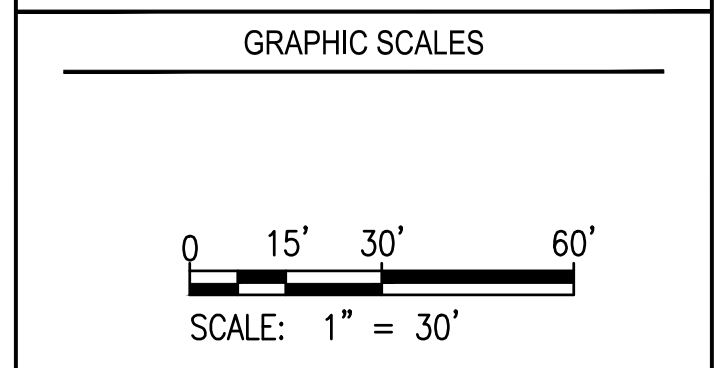
REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



STRUCTURE	DA ACRES	C FACTOR	Tc MIN	Q2 CFS
I-1	0.065	0.86	5	0.33
I-2	0.168	0.8	5	0.79
I-3	0.147	0.82	5	0.72
I-4	0.42	0.64	5	1.58
I-5	0.237	0.58	5	0.82
I-6	0.389	0.86	5	1.96
I-7	0.08	0.86	5	0.41
I-8	0.136	0.73	5	0.59
I-9	0.069	0.63	5	0.26
I-10	0.107	0.86	5	0.54
I-11	0.104	0.86	5	0.53
I-12	0.097	0.5	5	0.29
I-13	0.116	0.42	5	0.29
I-14	0.138	0.42	5	0.34
I-15	2.207	0.2	5	2.64
EX-INLETS	0.229	0.45	5	0.61
S-1	0.211	0.68	5	0.84
S-2	0.257	0.6	5	0.91
S-3	0.095	0.65	5	0.36
S-4	0.246	0.38	5	0.55
S-5	0.324	0.52	5	0.99
S-6	0.366	0.66	5	1.43
S-7	0.428	0.52	5	1.31
S-8	0.211	0.43	5	0.54
S-9	0.414	0.67	5	1.62
S-10	0.47	0.56	5	1.57
S-11	0.279	0.53	5	0.86
S-12	0.442	0.61	5	1.6
S-13	0.458	0.35	5	0.94

SIGNATURE

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19376 EXPIRATION DATE: 09/22/2025

BLANDAIR REGIONAL PARK - PHASE 6

STORM DRAIN DRAINAGE AREA MAP B

Drawing No.
DA3.2B

Scale: 1" = 30'

Date: 10/2023 SDP Sheet 38 of 54
 Des: BWJ Drawn: JTD Check: AUO

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 12/20/2023

CHIEF, DEVELOPMENT DIVISION
 12/4/2023

CHIEF, DIVISION OF ZONING
 12/20/2023

DIRECTOR
 DATE

MATERIALS KEY

PAVING/HARDSCAPE

- (P1)** HEAVY DUTY CONCRETE PAVEMENT. SEE CIVIL DWGS FOR SECTION. MEDIUM BROOM FINISH PERPENDICULAR TO EDGE OF WALK.
- (P2)** SCORED CONCRETE PAVEMENT. SEE CIVIL DWGS FOR SECTION. MEDIUM BROOM FINISH PERPENDICULAR TO EDGE OF WALK.
- (P3)** ASPHALT. SEE CIVIL DWGS FOR SECTION.
- (P4)** ARTIFICIAL TURF
- (W1)** SEAT WALL
- (W2)** ENTRY PIER
- (W3)** ENTRY WALL
- (H1)** HANDRAIL AT TEMPORARY CONCRETE STAIRS



RECREATION

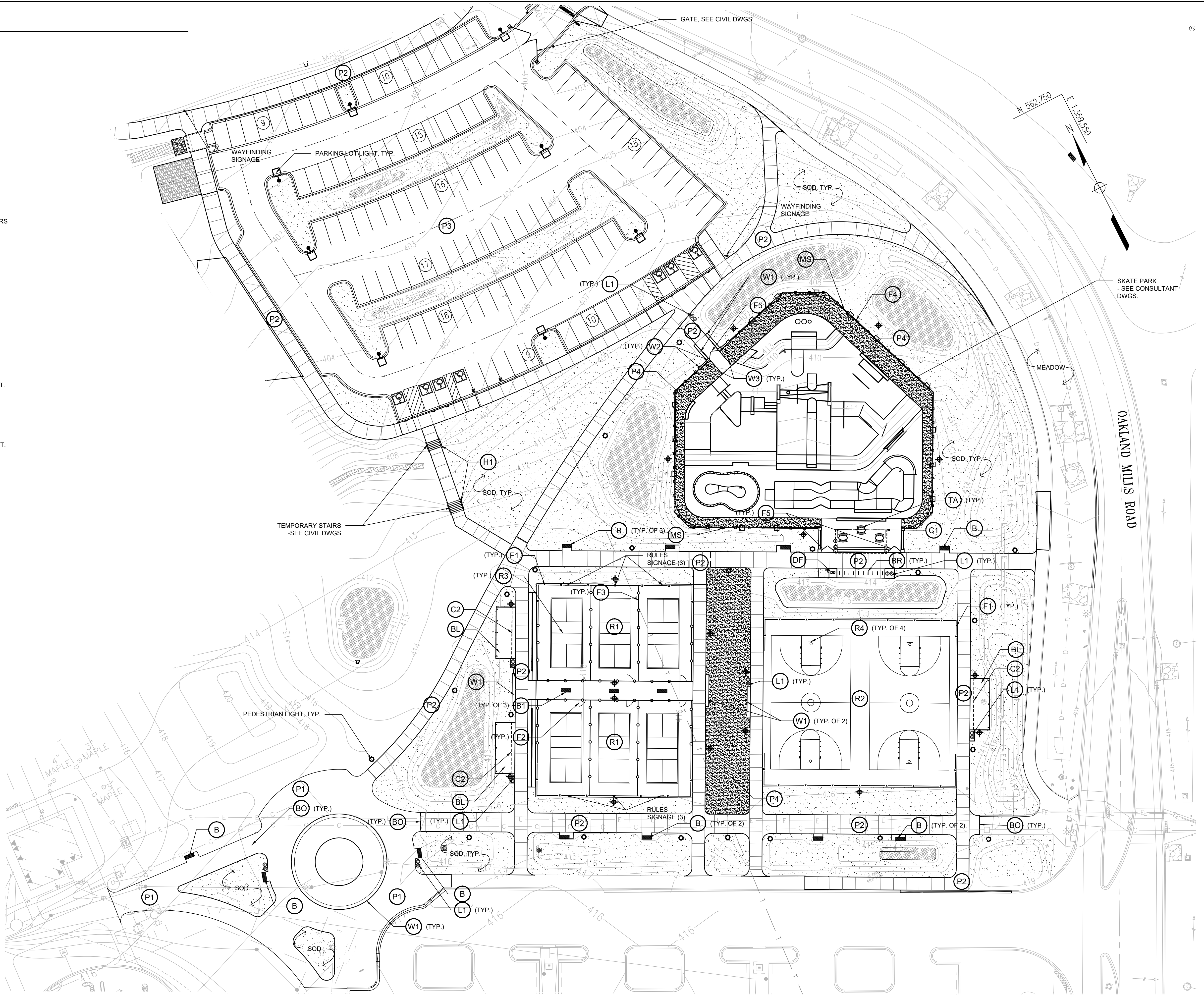
- (R1)** PICKLEBALL COURT PAVING
- (R2)** BASKETBALL COURT PAVING
- (R3)** PICKLEBALL POLE, NET, & CENTER ANCHOR
- (R4)** BASKETBALL GOAL
- (F1)** CHAINLINK COURT PERIMETER FENCE - 10' HT.
- (F2)** CHAINLINK COURT GATE - 4' WIDE
- (F3)** CHAINLINK PICKLEBALL DIVIDER FENCE - 4' HT.
- (F4)** SKATE PARK FENCE - 8' HT.
- (F5)** SKATE PARK DOUBLE GATE - 8' HT.
- (MS)** MOW STRIP / CONCRETE BAND

SITE AMENITIES

- (BL)** 3-ROW BLEACHER
- (C1)** CANOPY - 14'
- (C2)** CANOPY - 10'
- (B)** BENCH TYPE A
- (B1)** BENCH TYPE B
- (BO)** BOLLARD
- (DF)** DRINKING FOUNTAIN
- (L1)** LITTER / RECYCLING RECEPTACLE
- (TA)** PICNIC TABLE
- (BR)** BIKE RACKS

LIGHTING

-  PARKING LOT LIGHT, SEE LIGHTING DWGS
-  PEDESTRIAN LIGHT, SEE LIGHTING DWGS



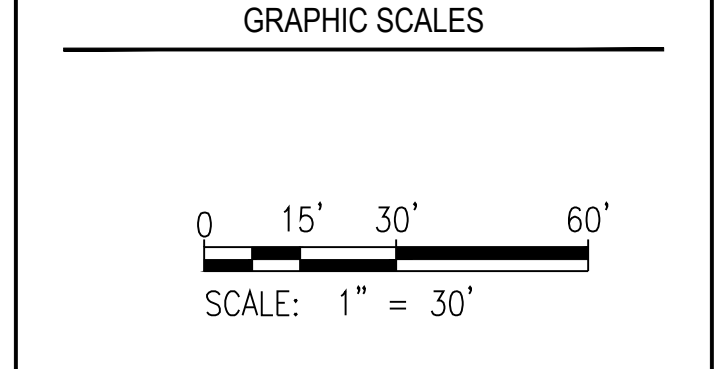
REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



SIGNATURE

DocuSigned by:
 Scott Rykiel
 ECT10B098A043D

BLANDAIR REGIONAL PARK - PHASE 6

Materials Plan
 Drawing No.
L1.1

Scale: As Shown
 Date: 10/2023 SDP Sheet 39 of 54
 Des: CB/CO Drawn: KA Check: SK

APPROVED: DEPARTMENT OF PLANNING AND ZONING	12/20/2023
Chief, Development Division	12/4/2023
Chief, Division of Land Development	12/20/2023
Director	

REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6

GRAPHIC SCALES

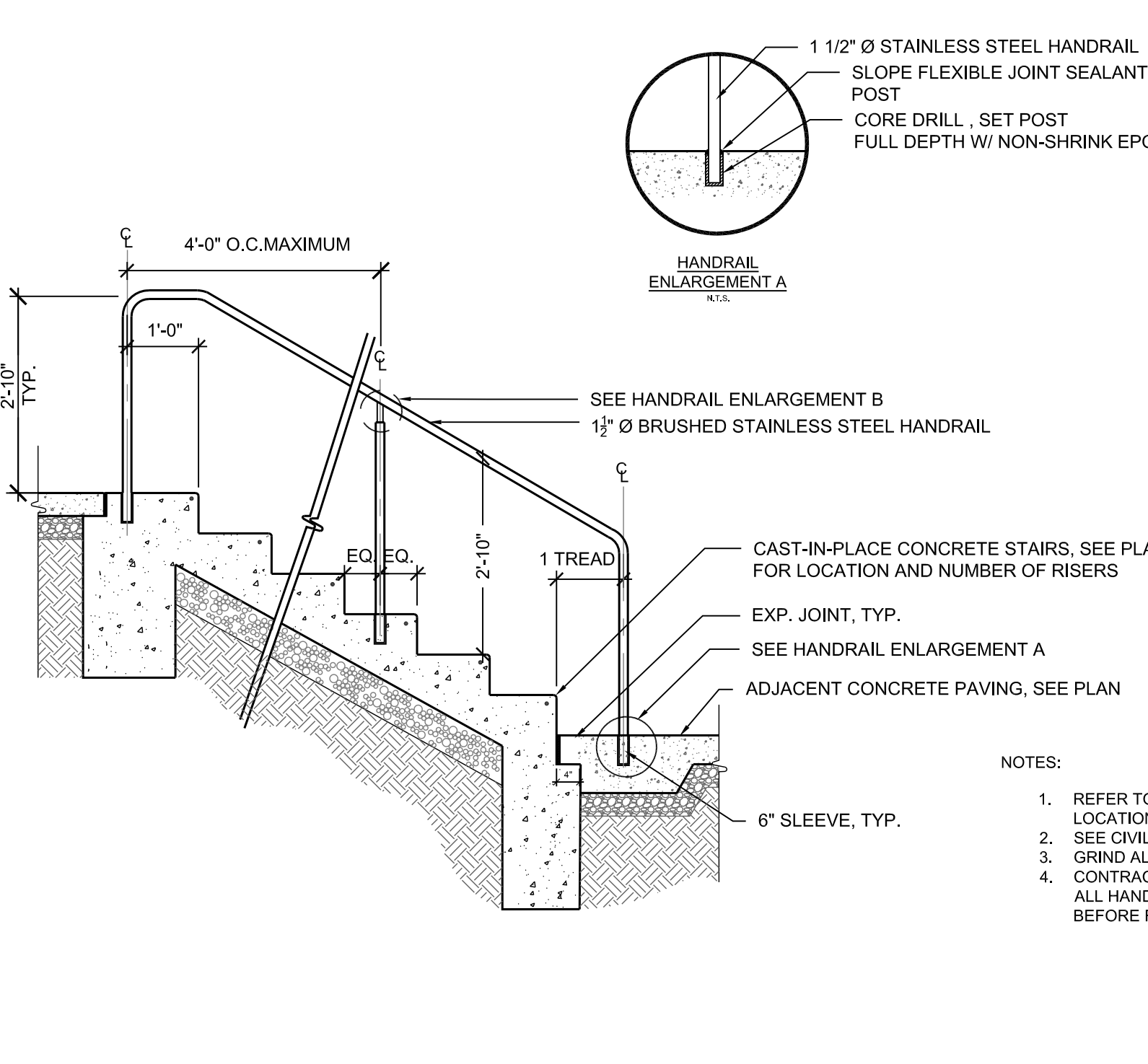
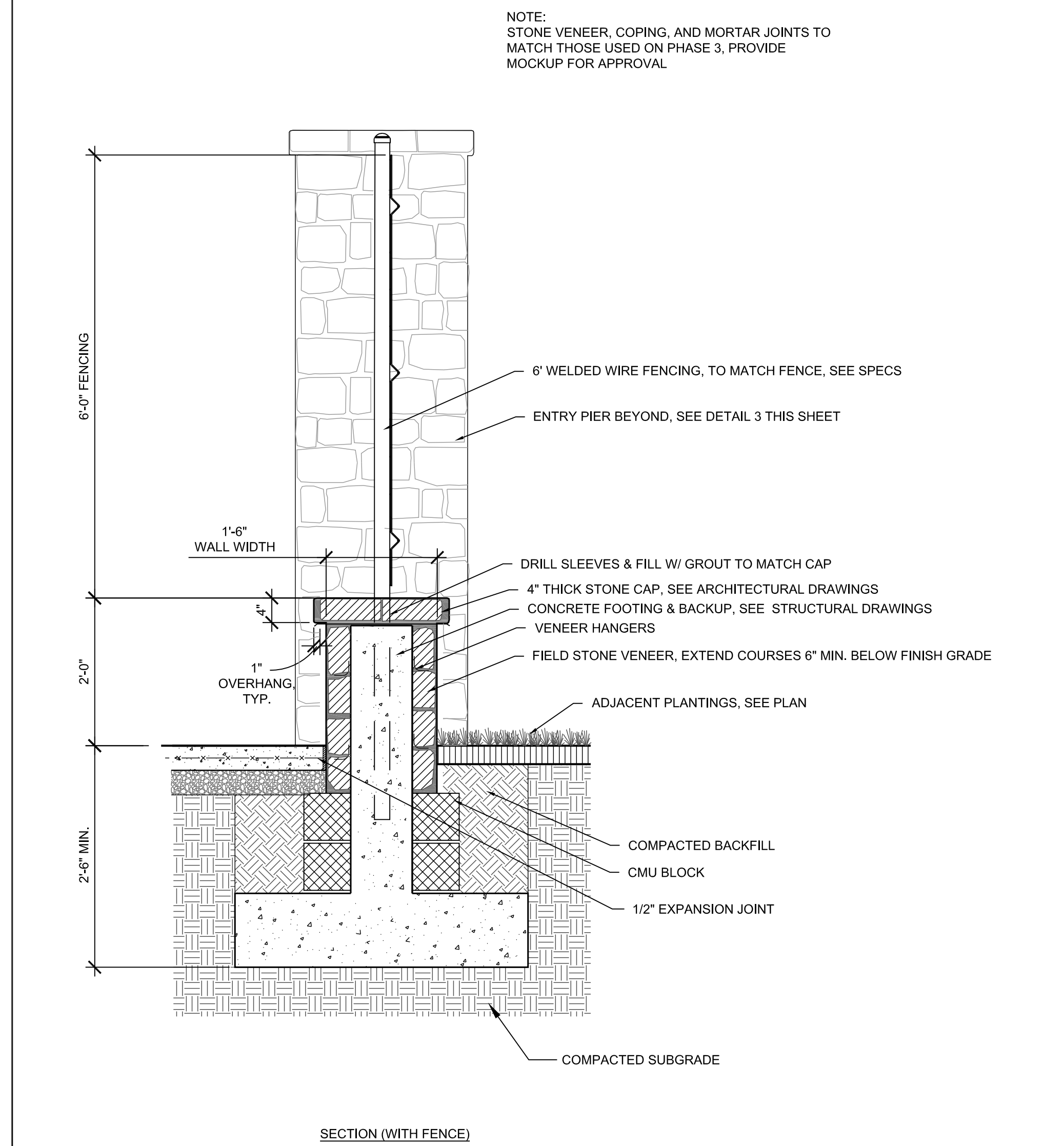
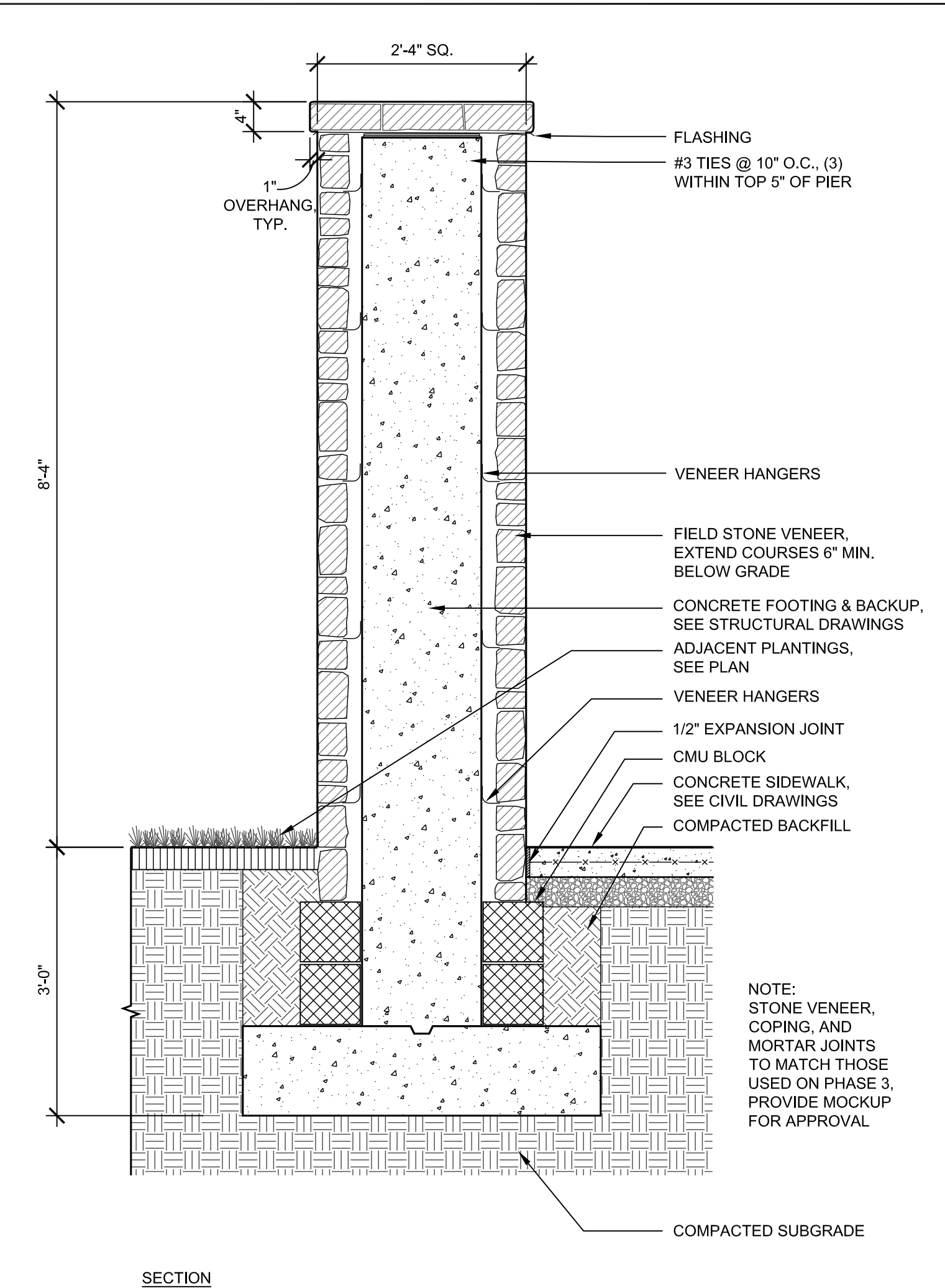
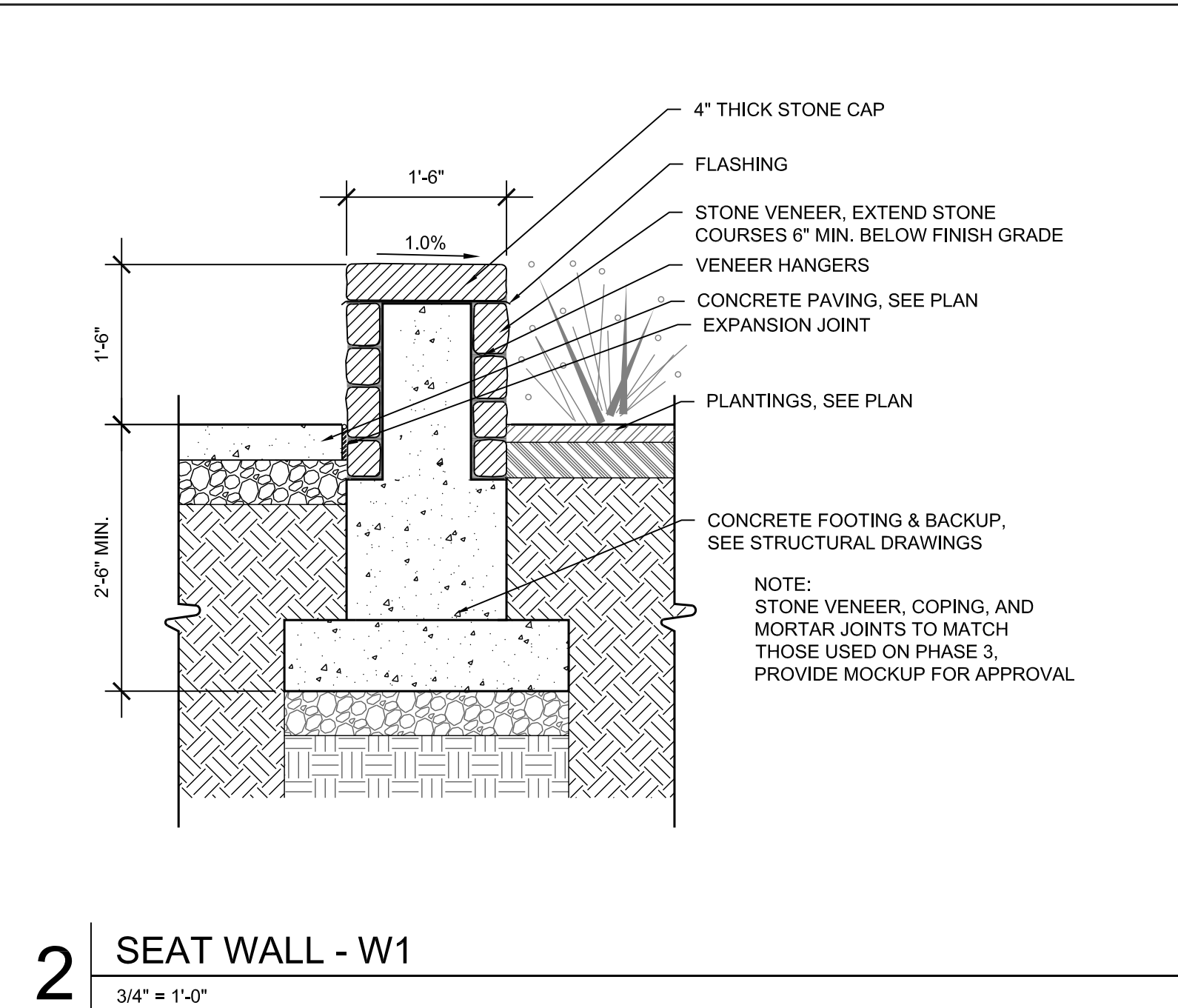
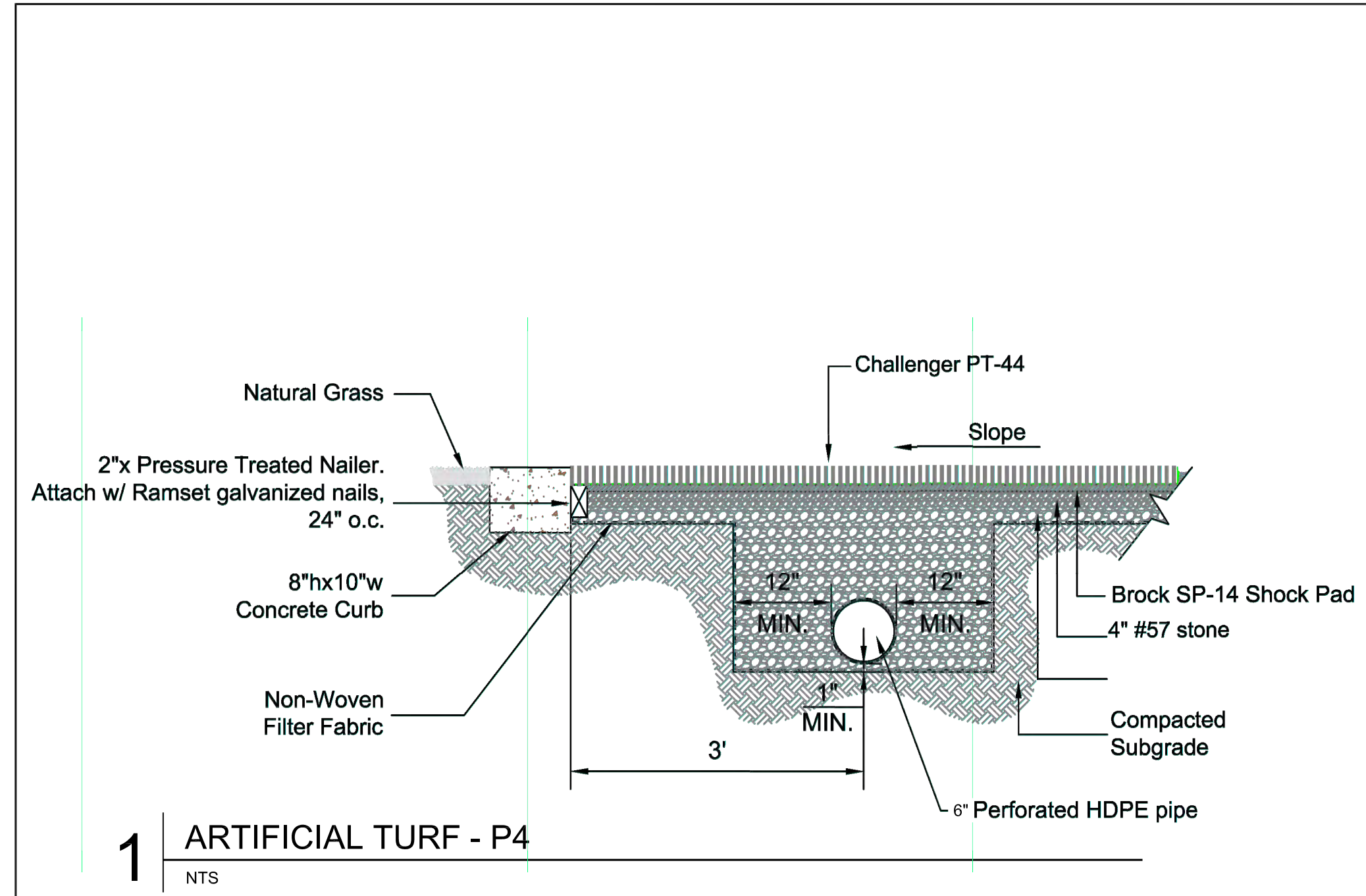
SIGNATURE



DocuSigned by:
 Scott Rykiel
 ECT78B038A843D

BLANDAIR REGIONAL
 PARK - PHASE 6

Hardscape Details
 Drawing No.
L2.1
 Scale: As Shown
 Date: 10/2023 SDP Sheet 40 of 54
 Des: CB/CO Drawn: KA Check: SK



APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Chief, Development & Planning Division	12/20/2023
Chief, Division of Land Development	12/4/2023
Director	12/20/2023

MAHAN RYKIEL
 ASSOCIATES INC
 Whitehall Mill 3300 Clipper Mill Road
 Suite 200 Baltimore, MD 21211 410.235.6001

REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6

GRAPHIC SCALES

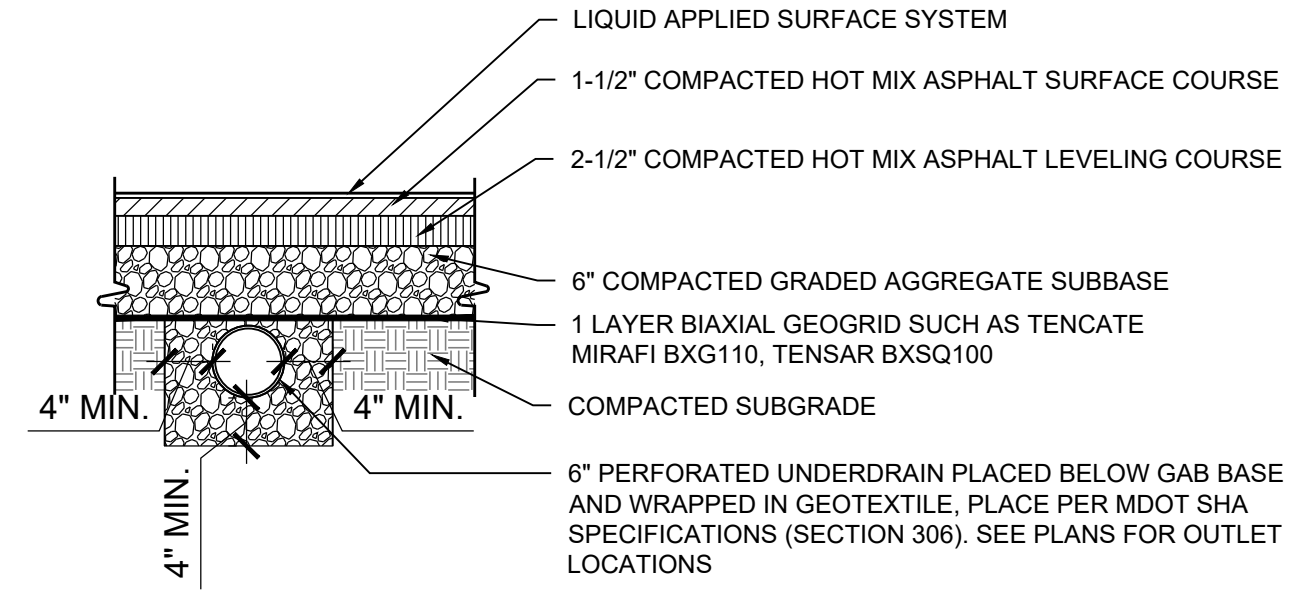
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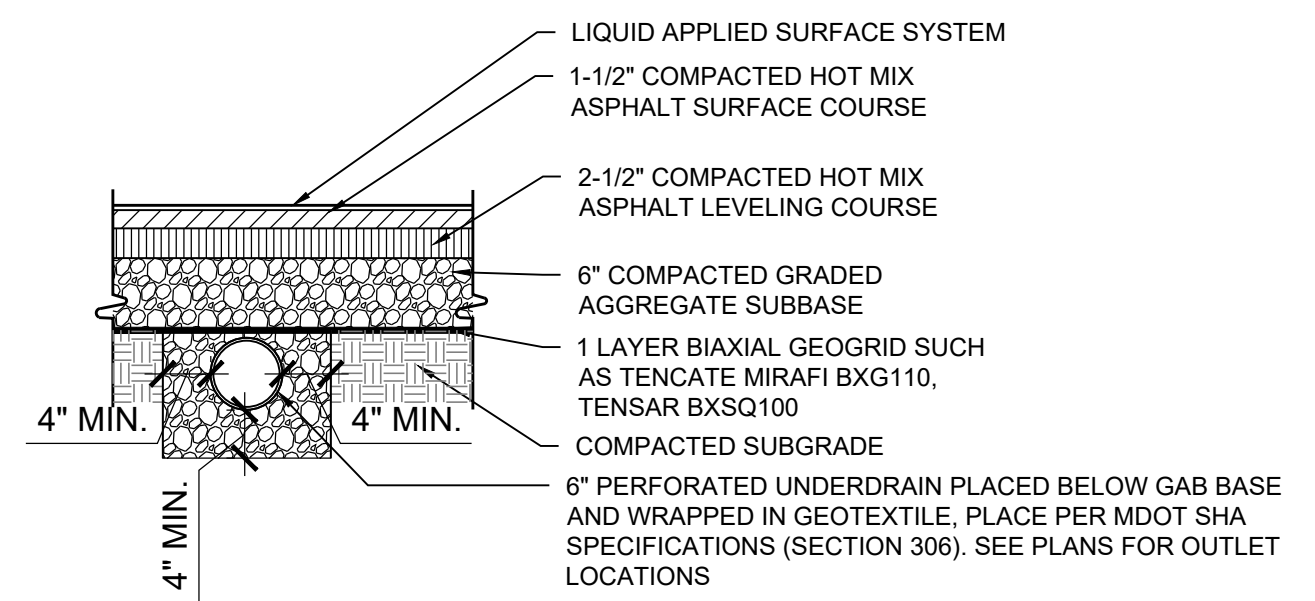
DocuSigned by:
 Scott Rykiel
 EC7908CB4A843D

BLANDAIR REGIONAL
 PARK - PHASE 6

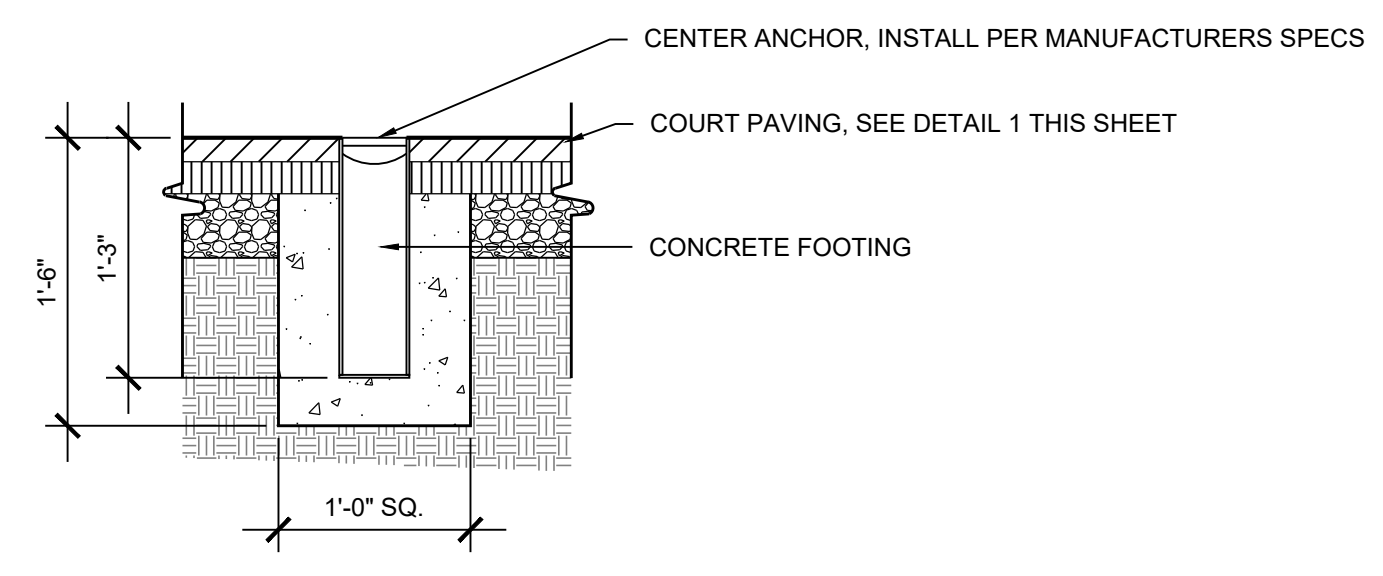
Hardscape Details
 Drawing No.
L2.2
 Scale: As Shown
 Date: 10/2023 SDP Sheet 41 of 54
 Des: CB/CO Drawn: KA Check: SK



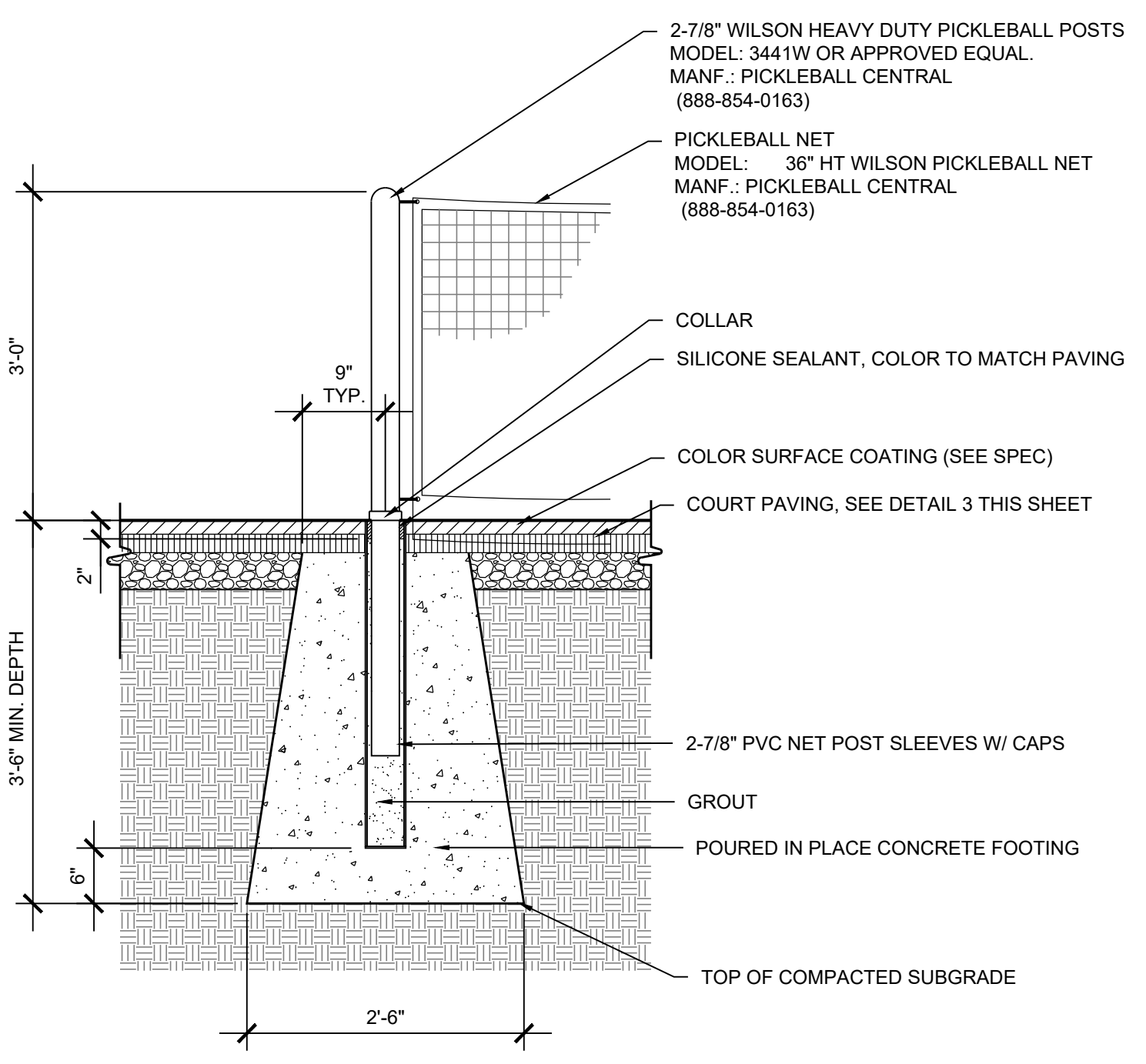
1 PICKLEBALL COURT PAVING - R1
 3/4" = 1'-0"



2 BASKETBALL COURT PAVING - R2
 3/4" = 1'-0"



3 PICKLEBALL NET CENTER ANCHOR - R3
 1" = 1'-0"



NOTE:
 THIS DETAIL IS A REPRESENTATION OF DESIGN INTENT AND AS SUCH DENOTES VERTICAL AND HORIZONTAL RELATIONSHIPS, MATERIALS, AND FINISHES. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO INDICATE STRUCTURAL DESIGN APPROPRIATE TO ENSURE LOCAL CODES AND DESIGN INTENT ARE MET.

4 PICKLEBALL POLE & NET - R3
 3/4" = 1'-0"



MANUFACTURER INFORMATION:
 Bison, Inc.
 603 L Street
 Lincoln, NE 68508
 1-800-247-7668
 www.bisoninc.com

Model: Bison PR-98G (J-po), 6x6 poles
 Details: 3/4 nets requested, 40" in-ground
 Quantity: 4

NOTE:
 INSTALL PER MANUFACTURER'S RECOMMENDATION
 CONTRACTOR TO PROVIDE SHOP DRAWINGS WITH FOOTING FOR APPROVAL BEFORE INSTALLATION.

5 BASKETBALL GOAL - R4
 1/2" = 1'-0"

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 (Signed by) 12/20/2023
 CHIEF, DEVELOPMENT PERMITS DIVISION 12/4/2023
 CHIEF, DIVISION OF LAND DEVELOPMENT 12/20/2023
 DIRECTOR 12/20/2023

MAHAN RYKIEL
 ASSOCIATES INC
 Whitehall Mill 3300 Clipper Mill Road
 Suite 200 Baltimore, MD 21211 410.235.6001

REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE



Designed by
 Scott Rykiel
 EC79C8C8B6A843D

BLANDAIR REGIONAL
 PARK - PHASE 6

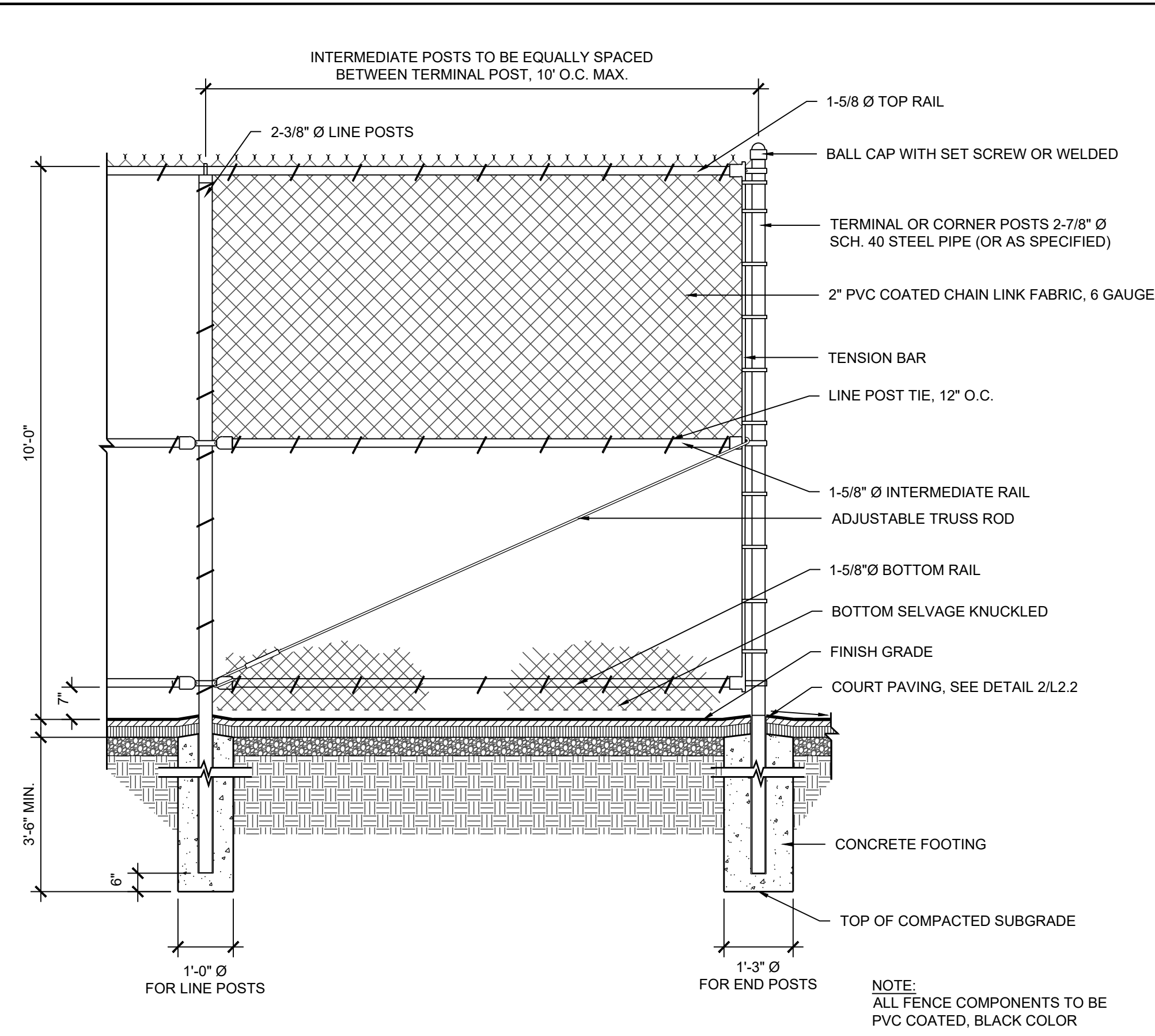
Hardscape Details

Drawing No.
L2.3

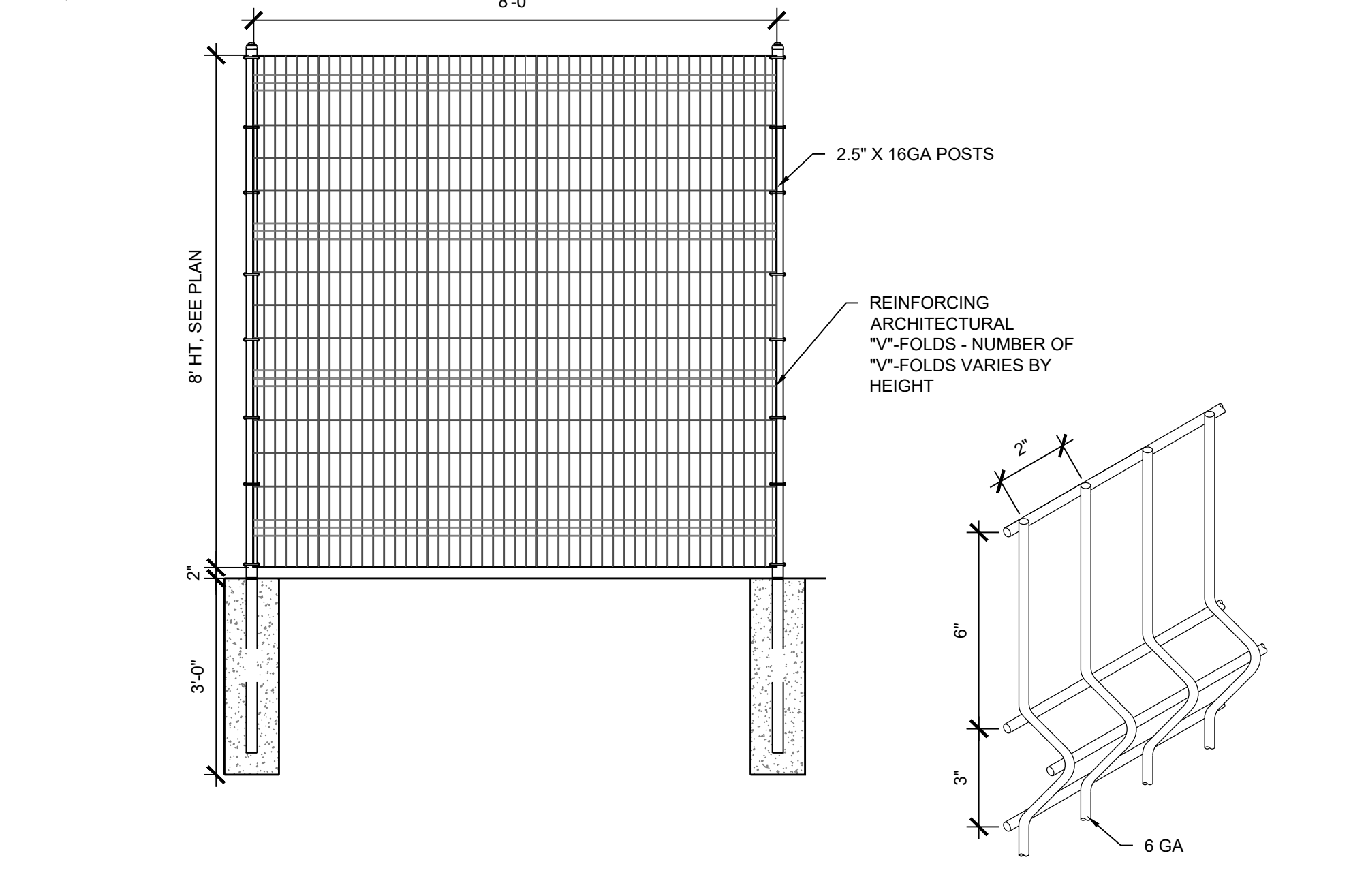
Scale: As Shown

Date: 10/2023 SDP Sheet 42 of 54

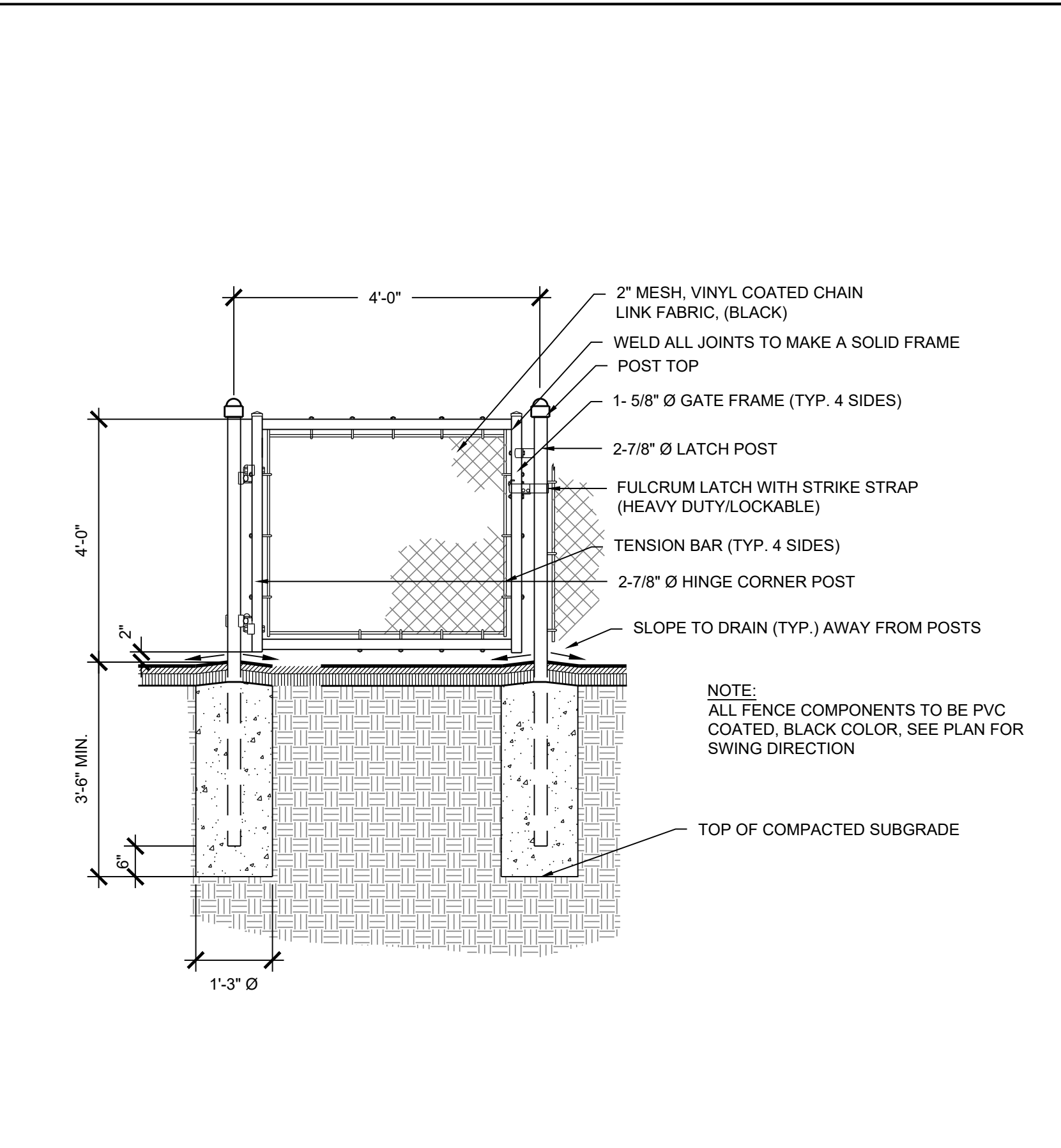
Des: CB/CO Drawn: KA Check: SK



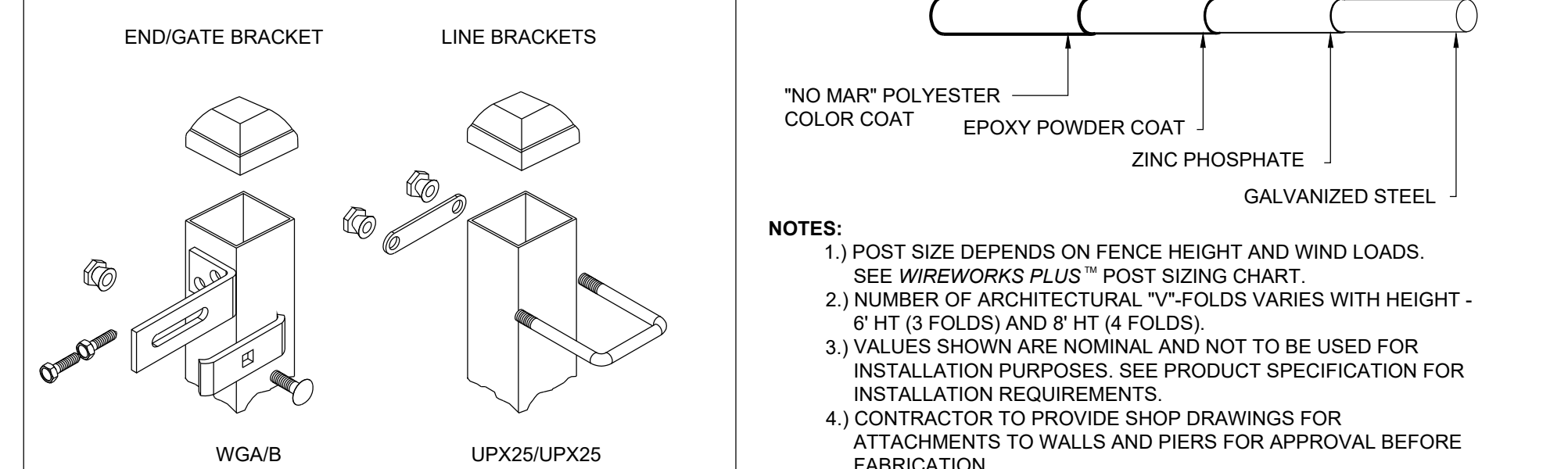
1 CHAINLINK COURT PERIMETER FENCE - 10' HT - F1
 1/2" = 1'-0"



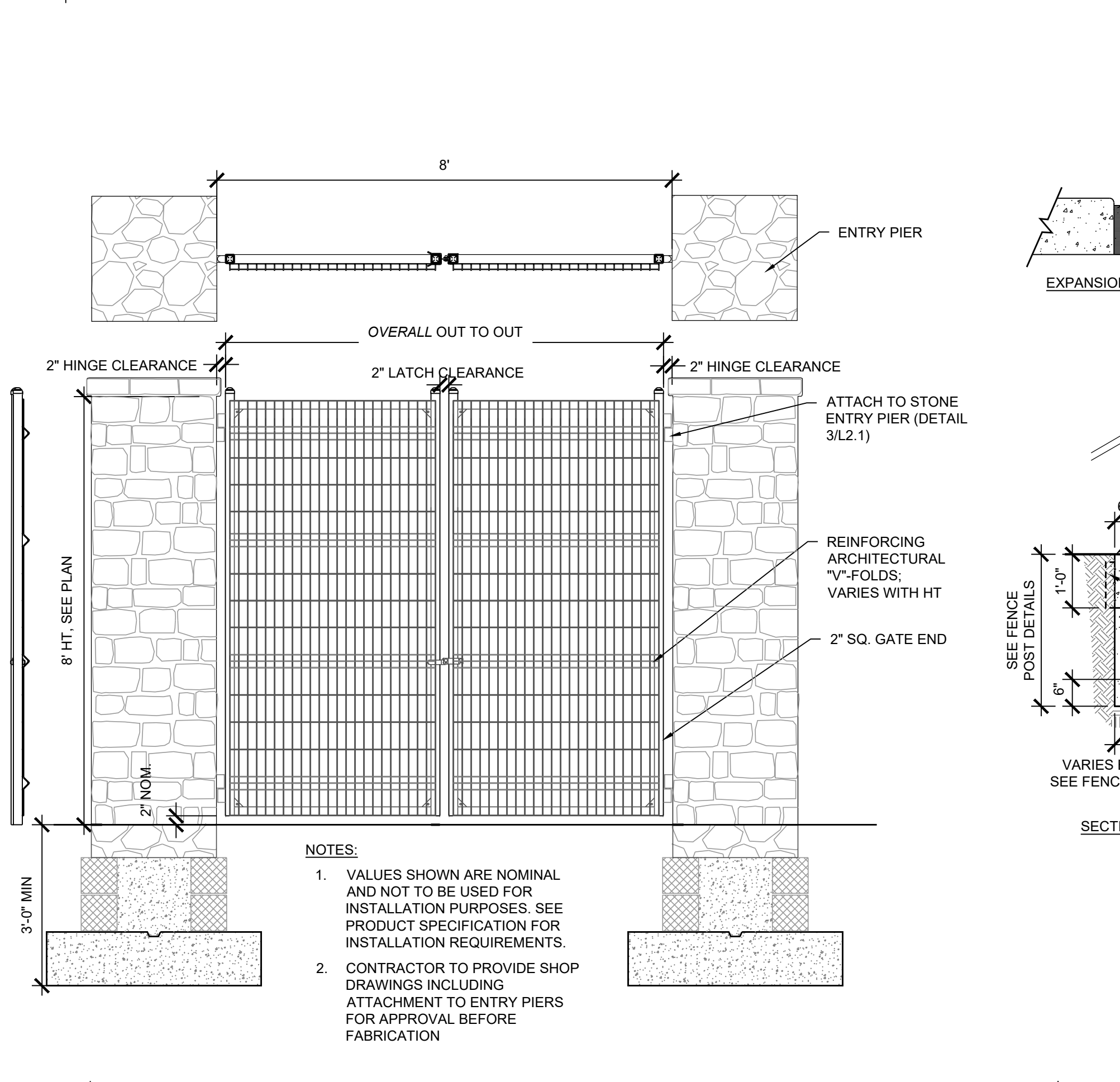
2 CHAINLINK PICKLEBALL DIVIDER FENCE - 4' HT - F3
 1/2" = 1'-0"



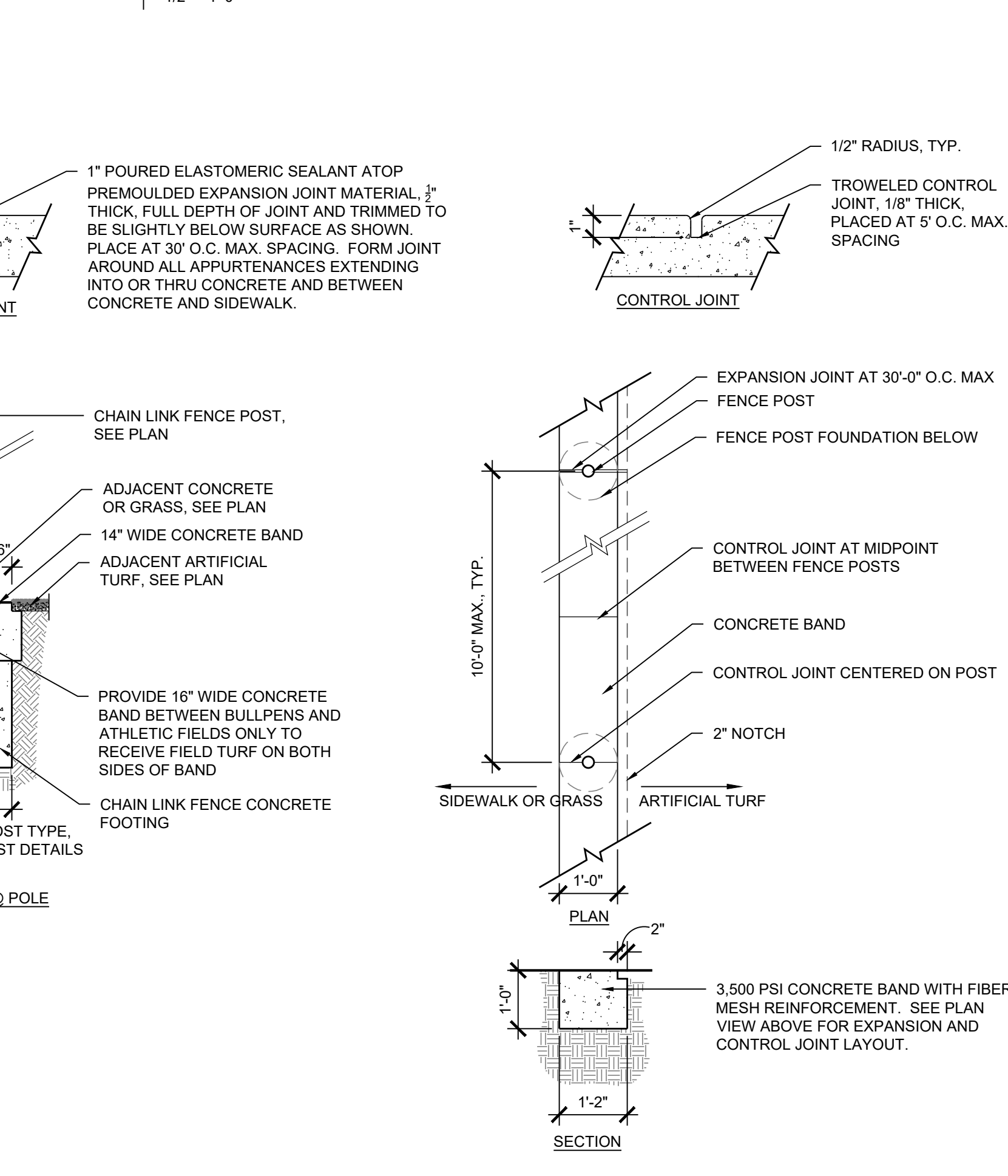
3 CHAINLINK COURT GATE - 4' WIDE - F2
 1/2" = 1'-0"



4 SKATE PARK FENCE - 6' OR 8' HT - F4
 1/2" = 1'-0"



5 SKATE PARK DOUBLE GATE - F5
 1/2" = 1'-0"

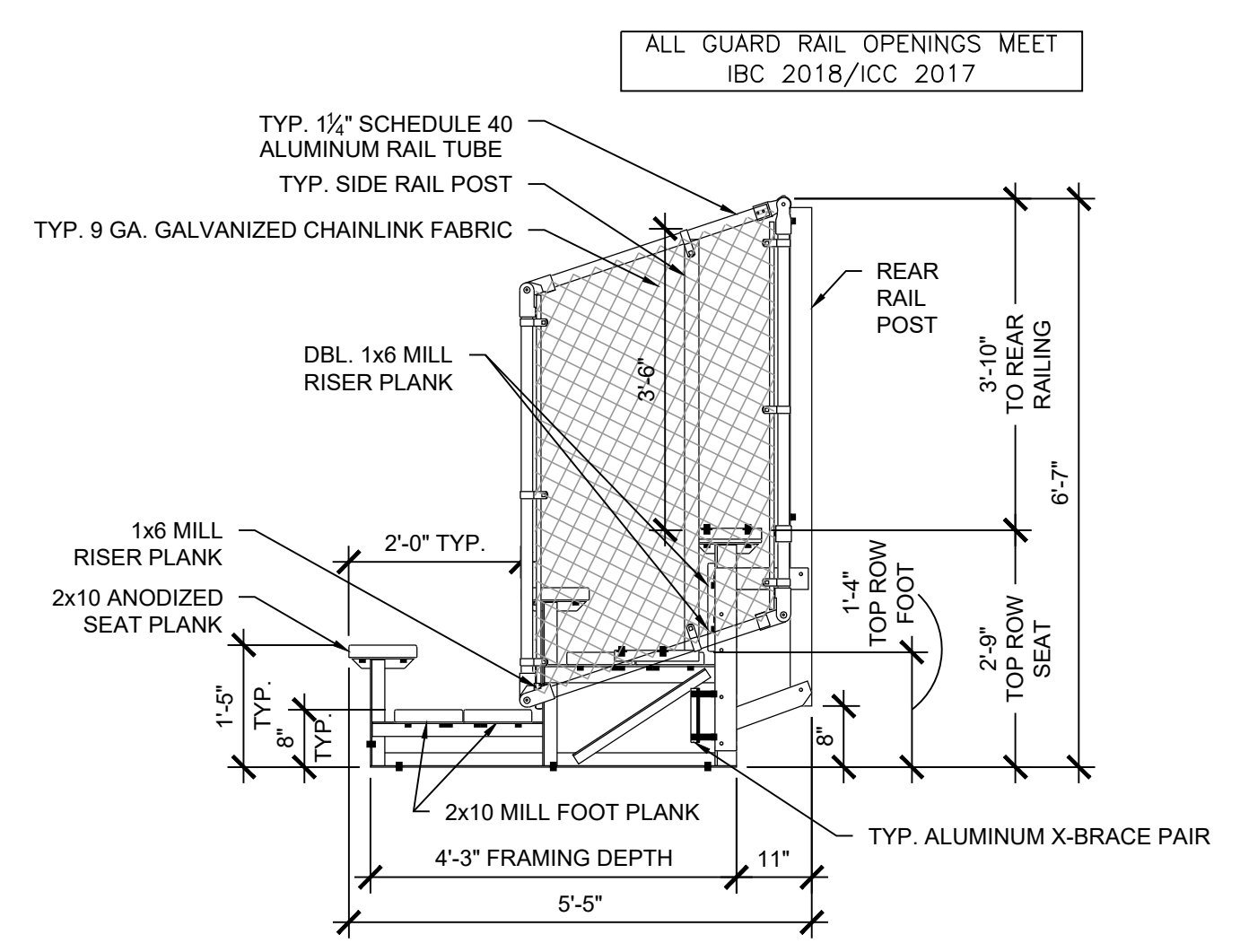


6 CONCRETE BAND - MS
 1/2" = 1'-0"

APPROVED: DEPARTMENT OF PLANNING AND ZONING

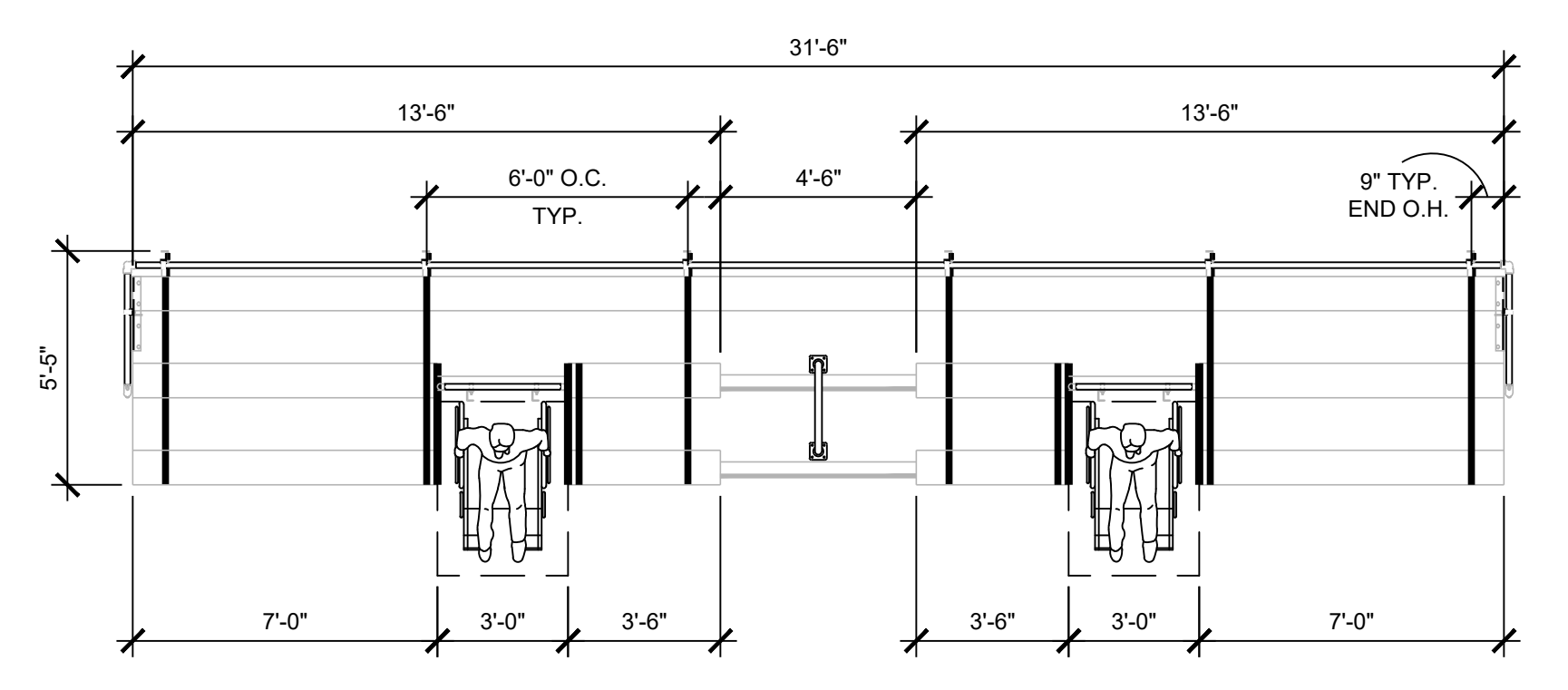
Chief, Development Division	12/20/2023
Chief, Division of Land Development	12/4/2023
Director	12/20/2023

MAHAN RYKIEL
 ASSOCIATES INC
 Whitehall Mill 3300 Clipper Mill Road
 Suite 200 Baltimore, MD 21211 410.235.6001



ELEVATION

- NOTE:
- END CAPS FOR SEAT BOARDS AND FOOT BOARDS ARE TO BE FIELD-APPLIED BY USING A RUBBER MALLET AND DRIVING THEM IN PLACE.
 - END CAPS FOR RISER BOARDS ARE TO BE FIELD-APPLIED WITH ALUMINUM POP-RIVETS (3 POP-RIVETS PER RISER END CAP.)
 - RISER BOARDS GET END CAPS ON CLOSED-DECK UNITS ONLY.



PLAN
SCALE: 1/4" = 1'-0"

MANUFACTURER:
NATIONAL RECREATION SYSTEMS
5120 INVESTMENT DRIVE,
FORT WAYNE, IN 46808
(888) 568-9064
(OR EQUAL)
MODEL:
ADA SERIES 3-ROW, 31'-6" LONG NON-ELEVATED DELUXE ALUMINUM BLEACHER, MODEL NB-0531.5AADA

1 | 3- ROW BLEACHER - BL
1/2" = 1'-0"

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Designed by: <i>Chad Edmondson</i>	DATE: 12/20/2023
CHIEF, DEVELOPMENT PERMIT DIVISION	DATE: 12/4/2023
CHIEF, DIVISION OF ZONING PERMIT	DATE: 12/20/2023
DIRECTOR: <i>Lynnda Eisenberg</i>	DATE:

MAHAN RYKIEL
ASSOCIATES INC
Whitehall Mill 3300 Clipper Mill Road
Suite 200 Baltimore, MD 21211 410.235.6001

REVISIONS	

HOWARD COUNTY
DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
TAX MAP 36, GRID 5, PARCEL 3
ZONING: RC-DEO
ELECTION DISTRICT 6

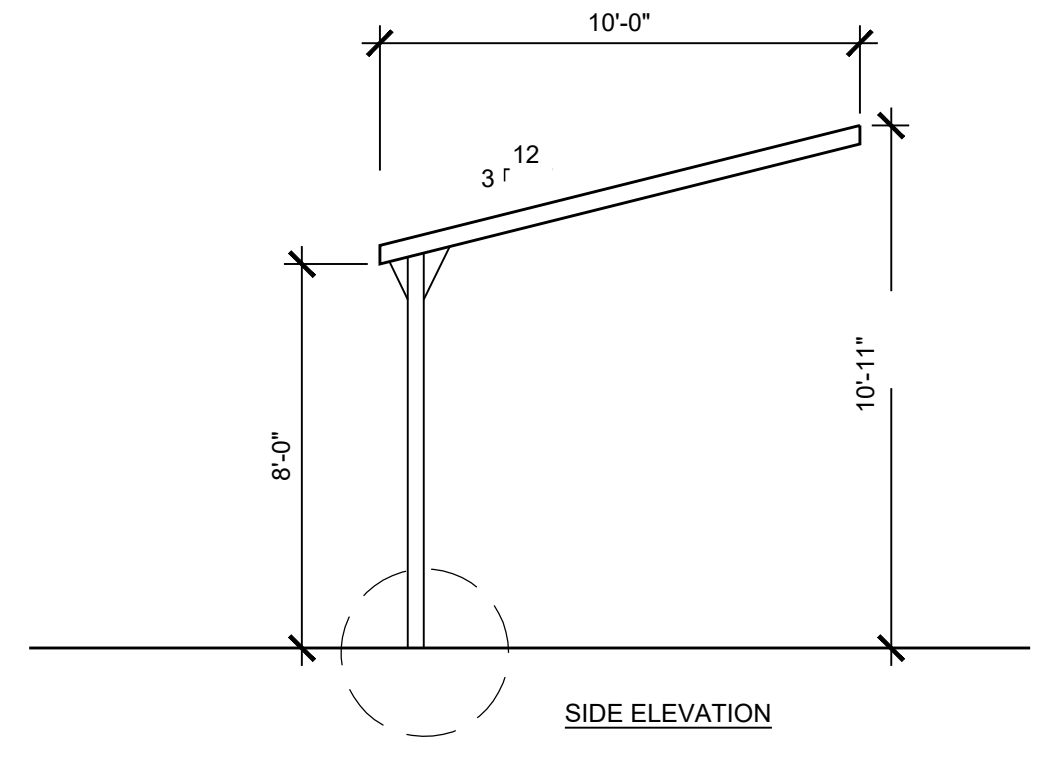
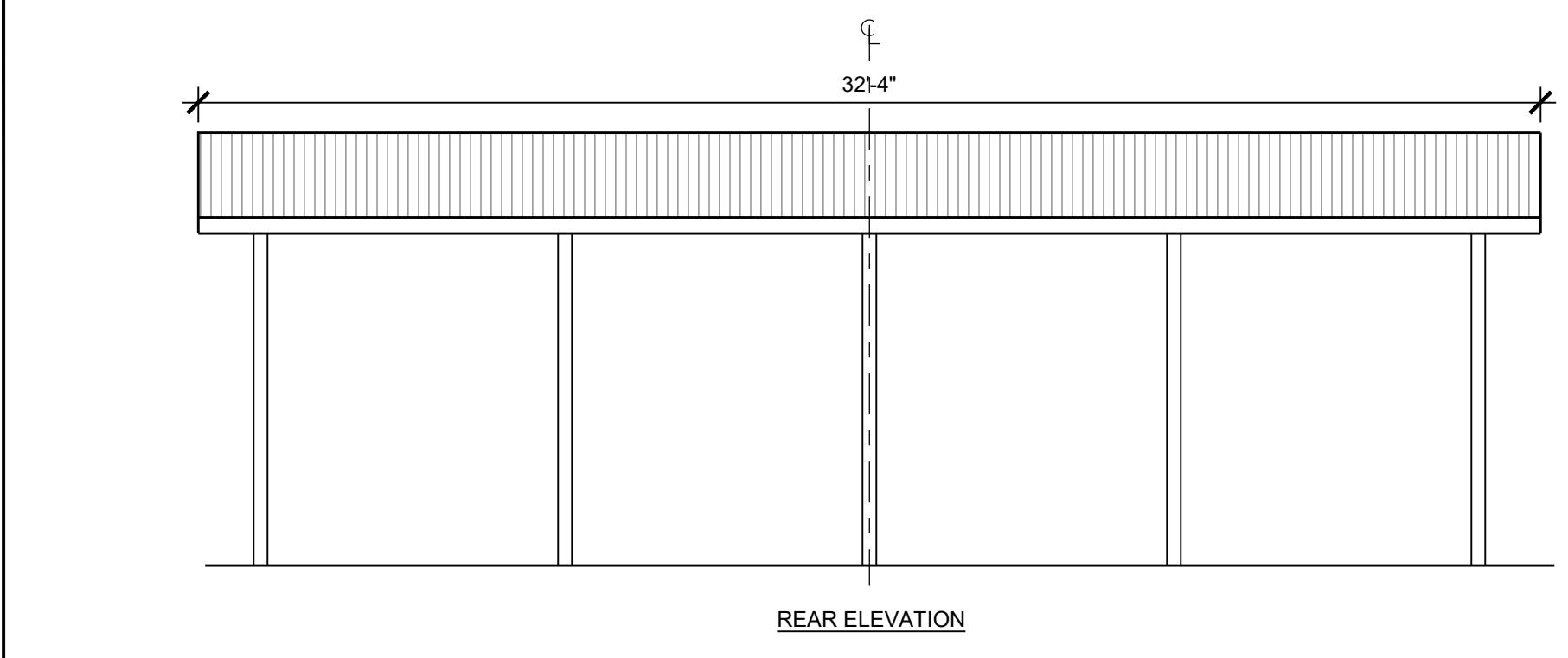
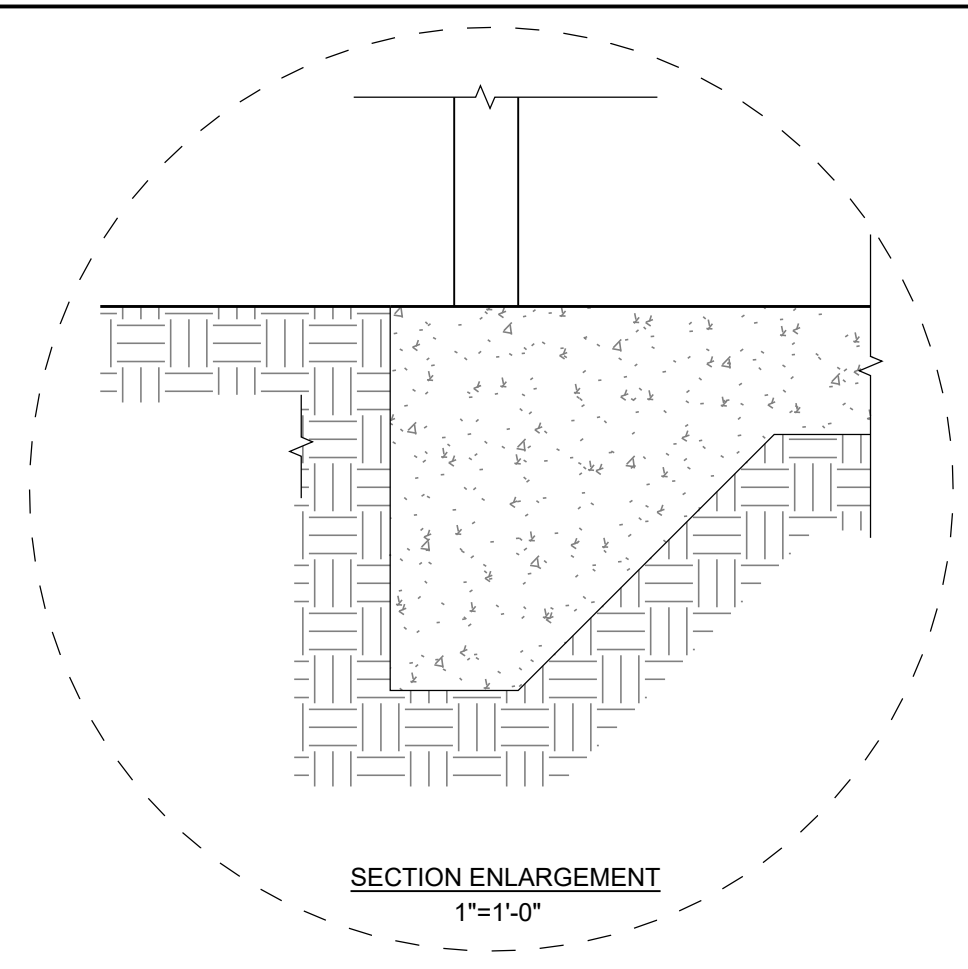
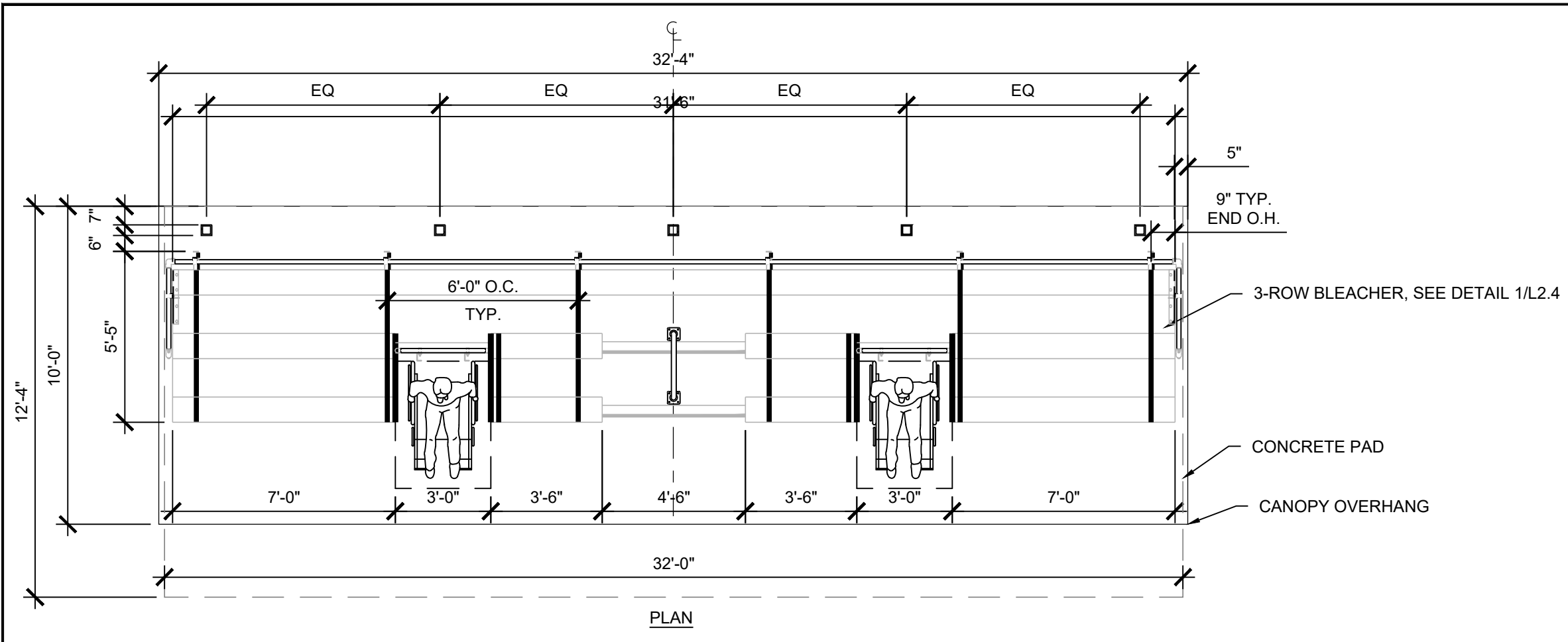
GRAPHIC SCALES

SIGNATURE

DocuSigned by:
Scott Rykiel
E77B08026A843D

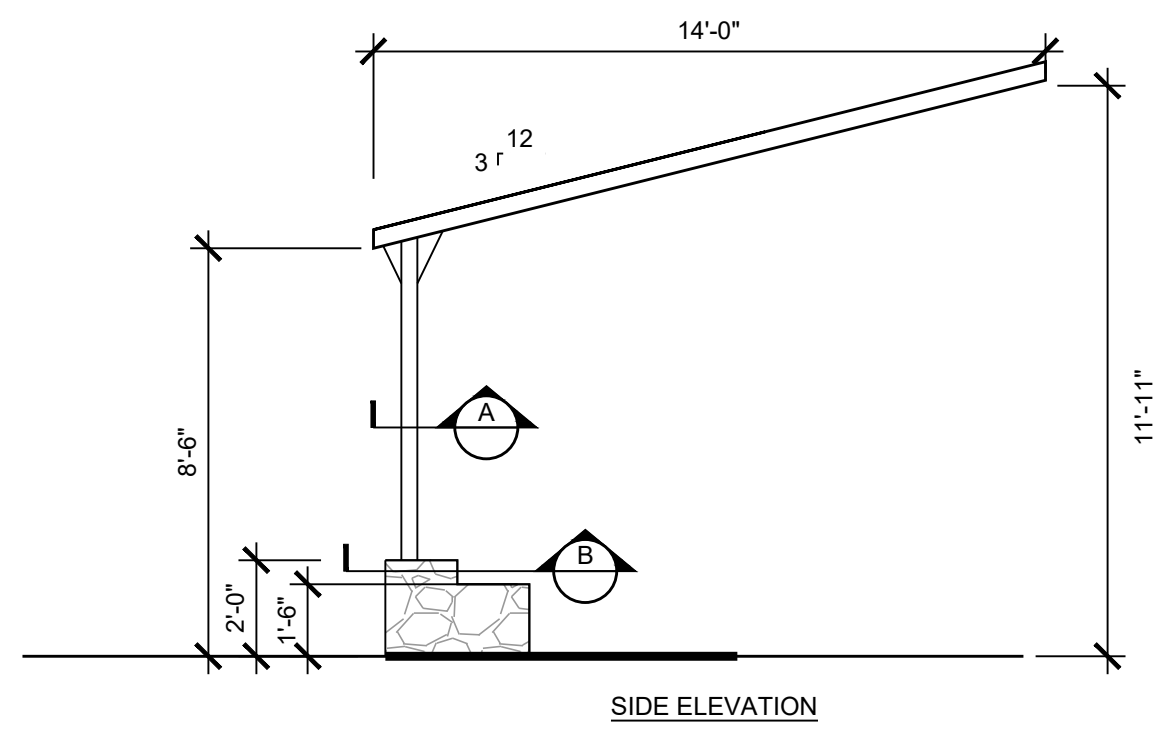
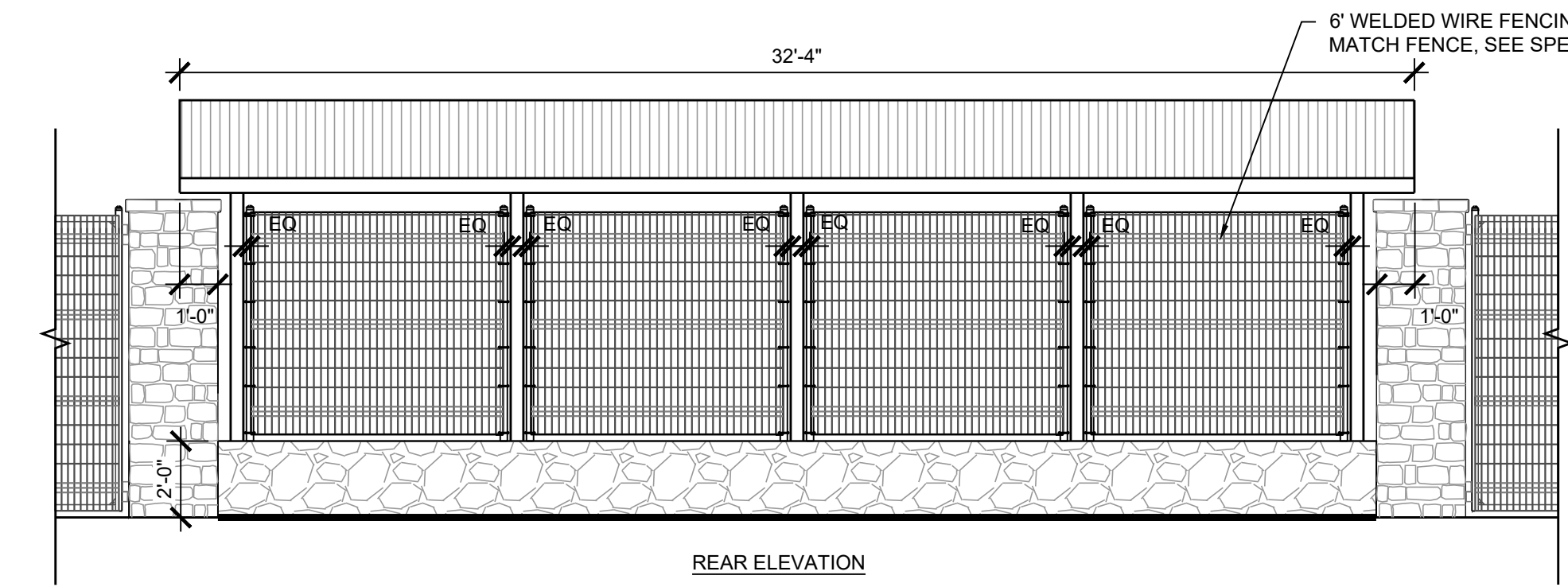
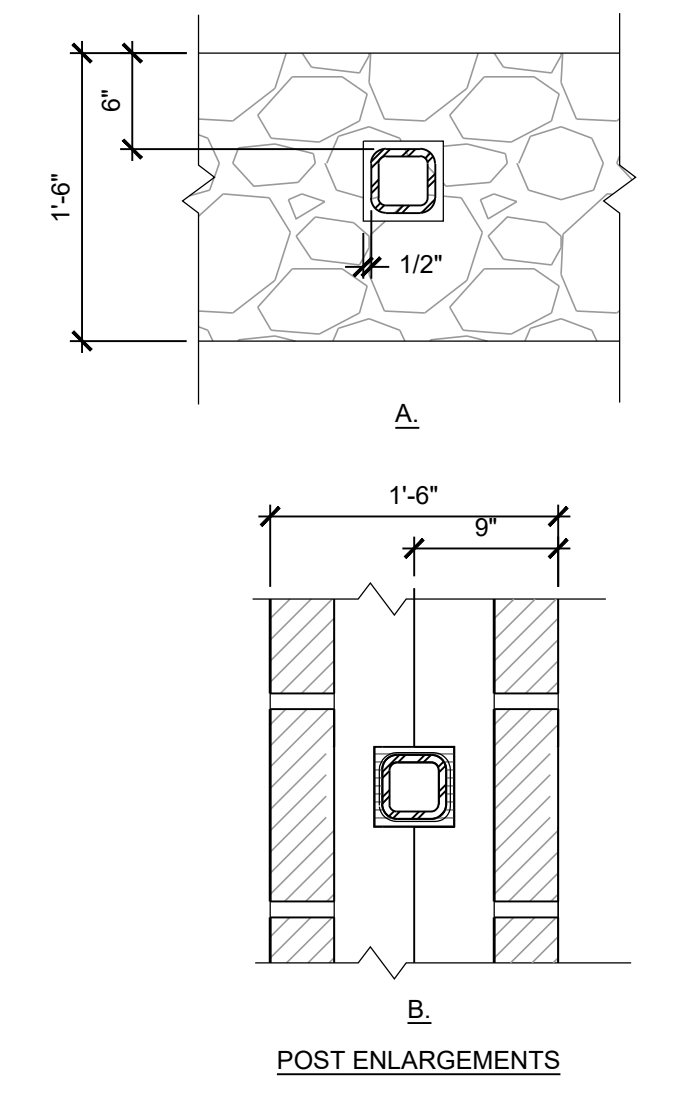
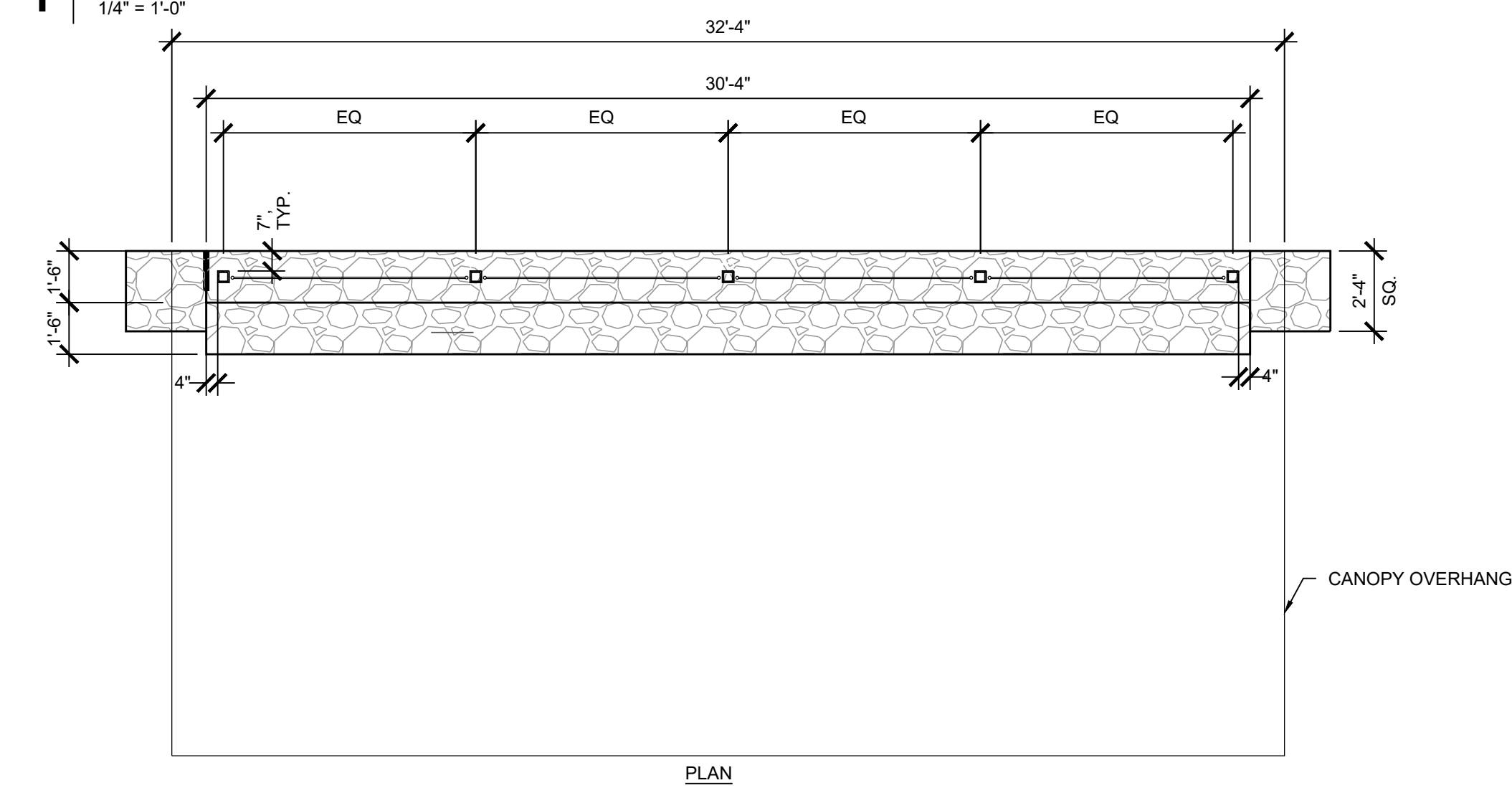
BLANDAIR REGIONAL
PARK - PHASE 6

Hardscape Details
Drawing No.
L2.4
Scale: As Shown
Date: 10/2023 SDP Sheet 43 of 54
Des: CB/CO Drawn: KA Check: SK



NOTES:
 1. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL BEFORE FABRICATION.
 2. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

1 CANOPY - 10' CANTILEVER - C2

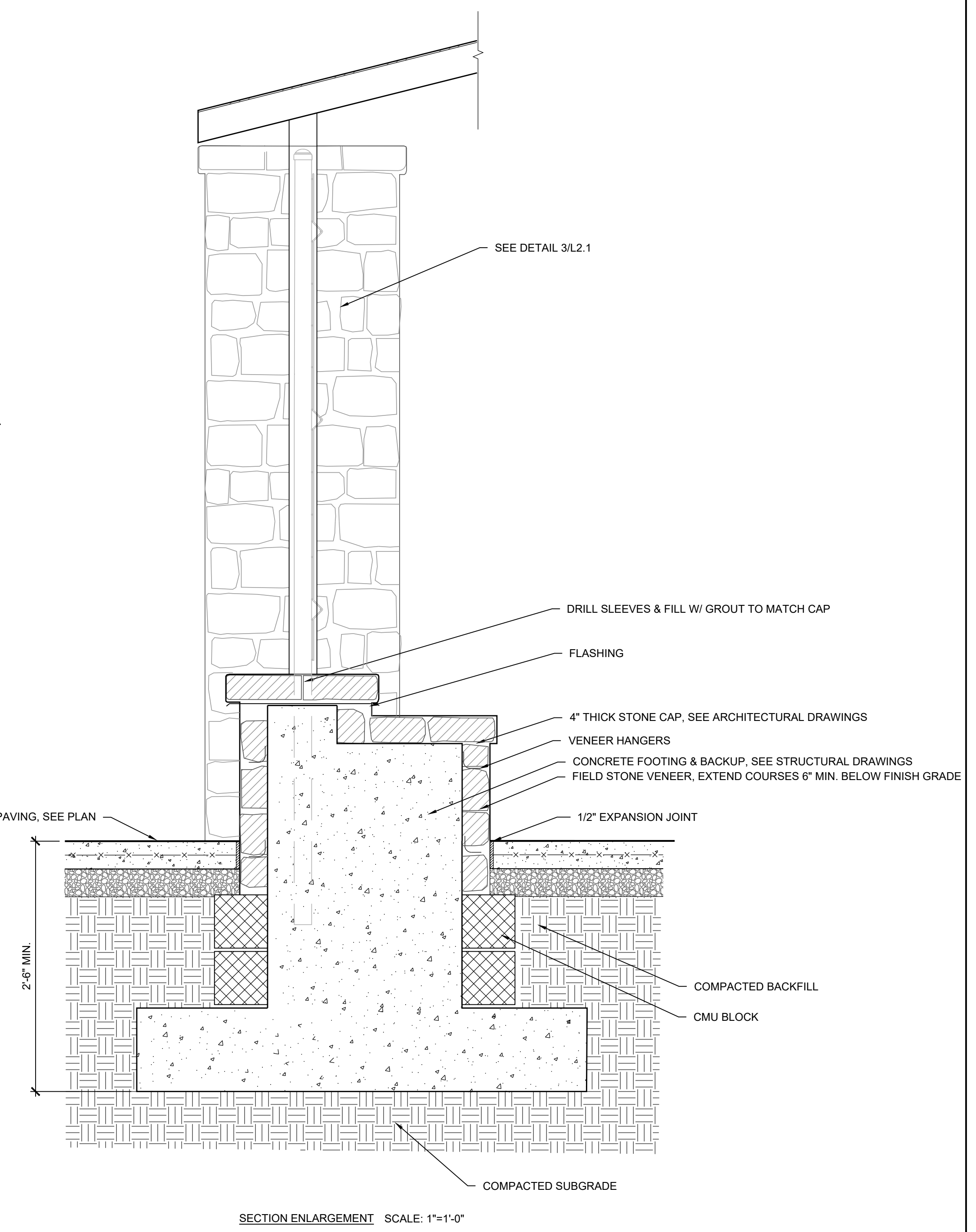


NOTES:
 1. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL BEFORE FABRICATION.
 2. INSTALL PER SHELTER & FENCING MANUFACTURER'S SPECIFICATIONS.

2 CANOPY - 14' CANTILEVER - C1

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DESIGNED BY: <i>Carl Edmondson</i>	DATE: 12/20/2023
CHIEF, DEVELOPMENT DIVISION	DATE: 12/4/2023
CHIEF, DIVISION OF ZONING	DATE: 12/20/2023
DIRECTOR: <i>Linda Eisenberg</i>	DATE:



NOTES:
 1. CONTRACTORS TO PROVIDE SHOP DRAWINGS FOR APPROVAL BEFORE INSTALLATION

REVISIONS	

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046
 DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE

 Designed by: *Scott Rykiel*

BLANDAIR REGIONAL PARK - PHASE 6

Hardscape Details
 Drawing No. **L2.5**
 Scale: As Shown
 Date: 10/2023 SDP Sheet 44 of 54
 Des: CB/CO Drawn: KA Check: SK

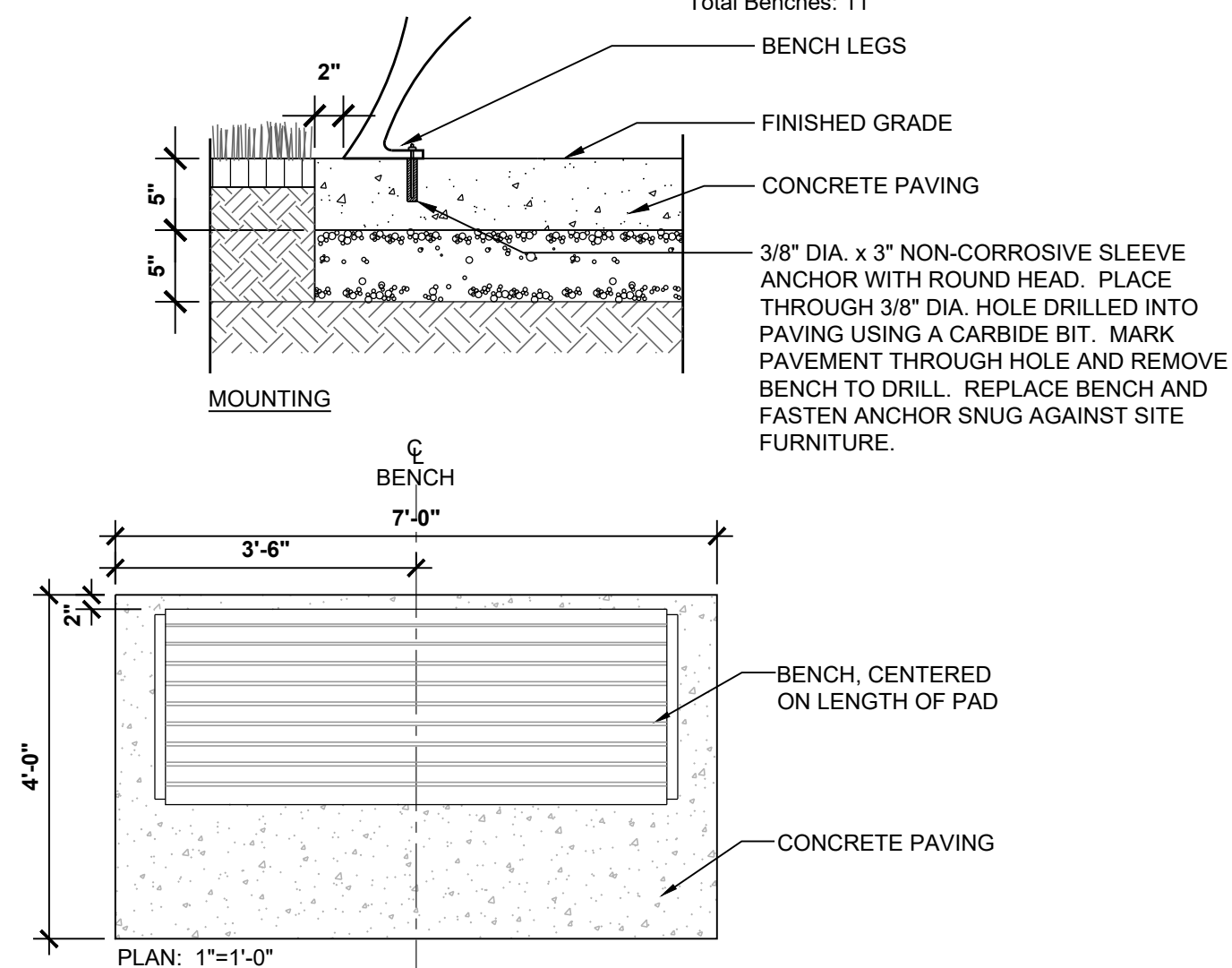
MAHAN RYKIEL
 ASSOCIATES INC
 Whitehall Mill 3300 Clipper Mill Road
 Suite 200 Baltimore, MD 21211 410.235.6001



MANUFACTURER INFORMATION:
Victor Stanley, Inc.
P.O. Drawer 330
Dunkirk, MD 20754
1-800-368-2573
www.victorstanley.com

Eva Backed Bench with Ipe Slats
6' Bench
Frame Color: Bronze
Ipe Slats

Total Benches: 11



1 BENCH - B

N.T.S.



MANUFACTURER INFORMATION:
Elkay Manufacturing Company
2222 Camden Court
Oak Brook, IL 60523
630-574-8484
www.elkay.com

Both fountains: Freestanding/surface mount
Color: Brown, Powder coat
Submit shop drawing for approval.

Outdoor EZH2O® Tri-level Bottle Filling Station
Model LK4430BF1U by Elkay Manufacturing Company
Total drinking fountains: Three (3)

4 DRINKING FOUNTAIN - DF

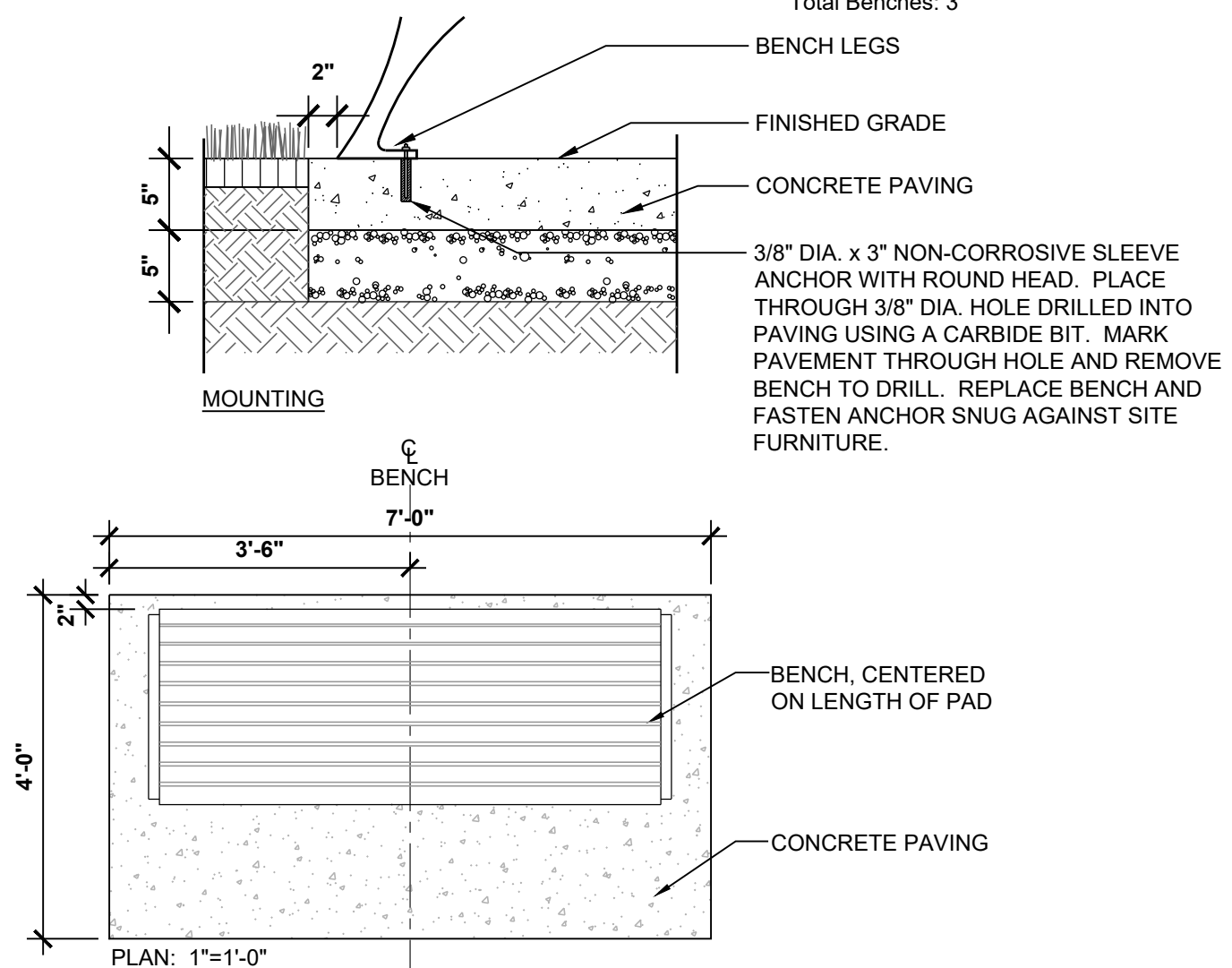
N.T.S.



MANUFACTURER INFORMATION:
Victor Stanley, Inc.
P.O. Drawer 330
Dunkirk, MD 20754
1-800-368-2573
www.victorstanley.com

Eva Backless Bench with Ipe Slats
6' Bench
Frame Color: Bronze
Ipe Slats

Total Benches: 3



2 BACKLESS BENCH - B1

N.T.S.



MANUFACTURER INFORMATION:
Victor Stanley, Inc.
P.O. Drawer 330
Dunkirk, MD 20754
1-800-368-2573
www.victorstanley.com

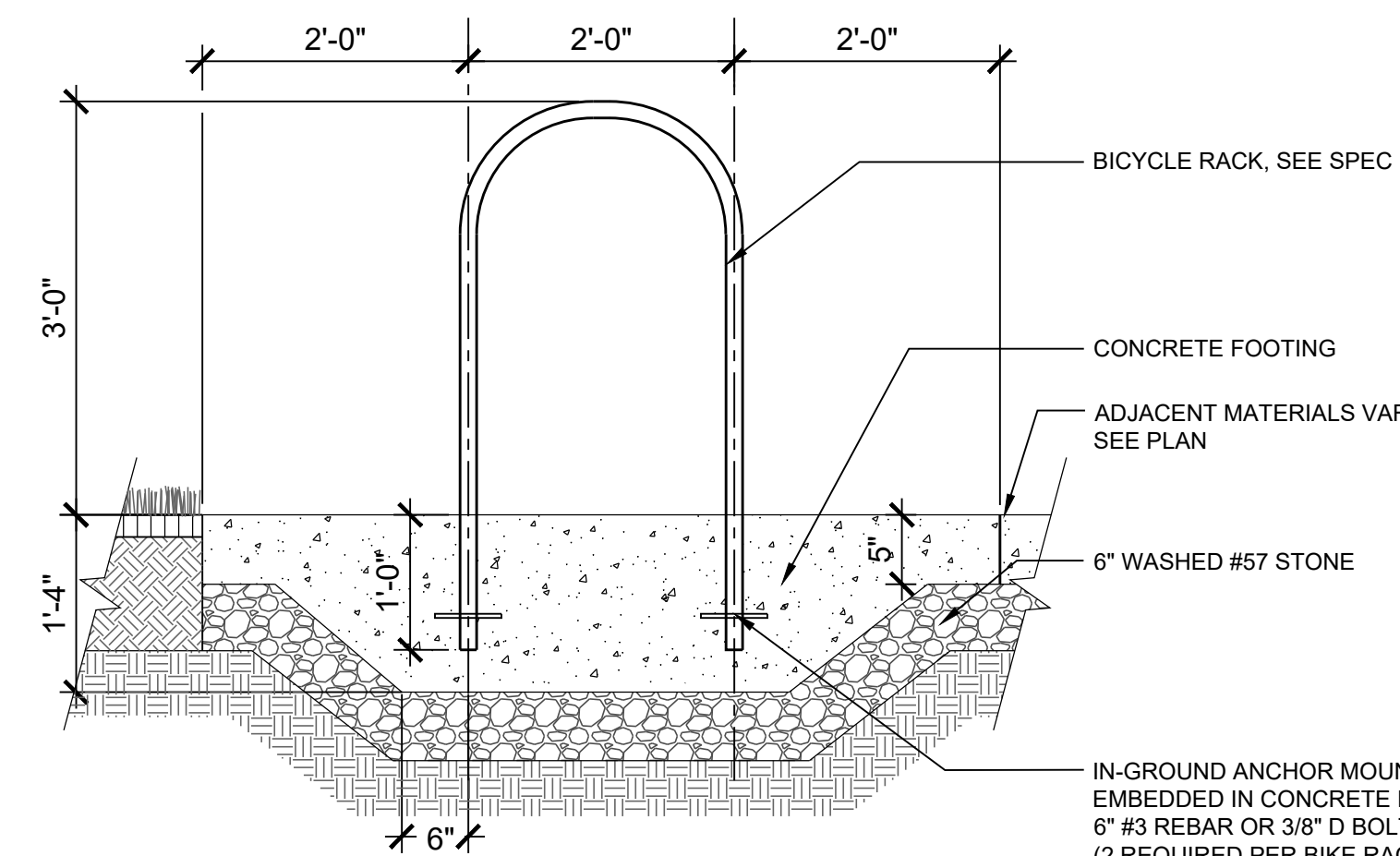
Steelites Series Mode NSDC-45, 45-gallon capacity side-door litter/recycling receptacle
Black plastic liner, four leveling feet, bottom recessed pedestal (Anchor per manufacturer's recommendations)

Litter receptacle color: bronze
Recycling receptacle color: blue
Adjust "RECYCLE" decals as necessary. Submit product data for review.

Total litter receptacles: 10
Total recycling receptacles: 10

5 LITTER / RECYCLING RECEPTACLE - L1

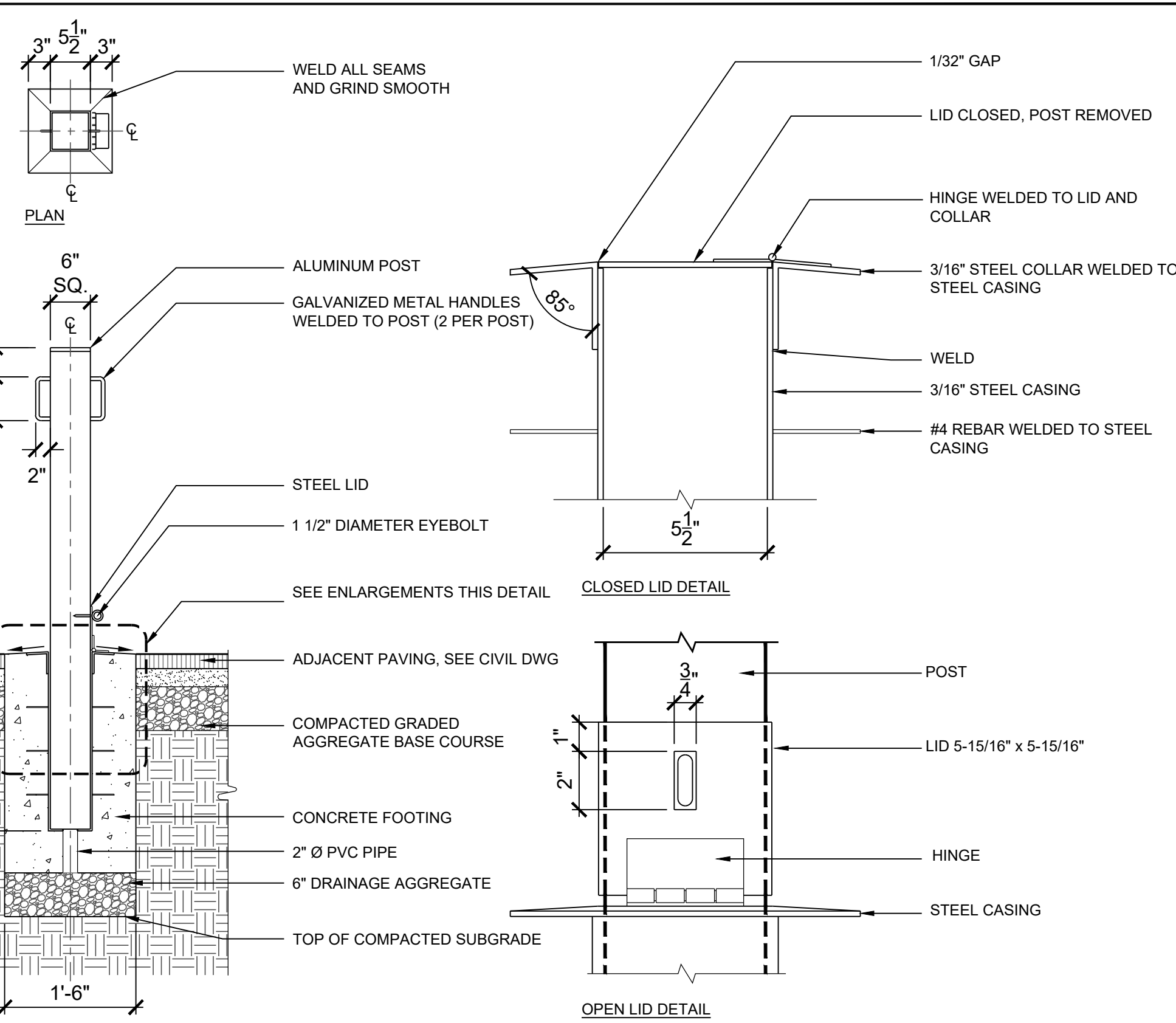
N.T.S.



7 BIKE RACK - BR

3/4"=1'-0"

NOTE:
CONTRACTOR TO PROVIDE SHOP DRAWINGS.



3 REMOVEABLE BOLLARD - BO

N.T.S.

NOTE:
1. ORIENT HANDLES PARALLEL TO DIRECTION OF PATHWAY
2. GRIND ALL EXPOSED SURFACES SMOOTH AND FREE FROM BURRS. PAINT ALL EXPOSED SURFACES WITH 2 COATS 'GLIDDEN GLID GUARD' ALKYD INDUSTRIAL ENAMEL OR APPROVED EQUAL. COLOR TO MATCH BENCH FRAME (BROWN), PROVIDE A SAMPLE FOR APPROVAL.
3. CONTRACTOR TO SUBMIT SHOP DWGS. FOR REVIEW PRIOR TO FABRICATION.



MANUFACTURER INFORMATION:
Landscape Forms
7800 E. Michigan Ave
Kalamazoo, MI 49048
800-430-6209
269-381-0396
www.landscapeforms.com

Model: Charlie Table, 67" [without umbrella hole]
Color: Bronze, Powdercoat

6 PICNIC TABLE - TA

N.T.S.

NOTES:
1. SUBMIT ALL SITE FURNISHING PRODUCT DATA FOR APPROVAL.

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
 CHIEF, DEVELOPMENT AND ZONING DIVISION	DATE 12/20/2023
 CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 12/4/2023
 DIRECTOR	DATE 12/20/2023

REVISIONS	

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

WRX
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE

10/18/23

BLANDAIR REGIONAL PARK - PHASE 6

Hardscape Details	
Drawing No. L2.6	
Scale: As Shown	
Date: 10/2023	SDP Sheet 45 of 54
Des: CB/CO	Drawn: KA Check: SK

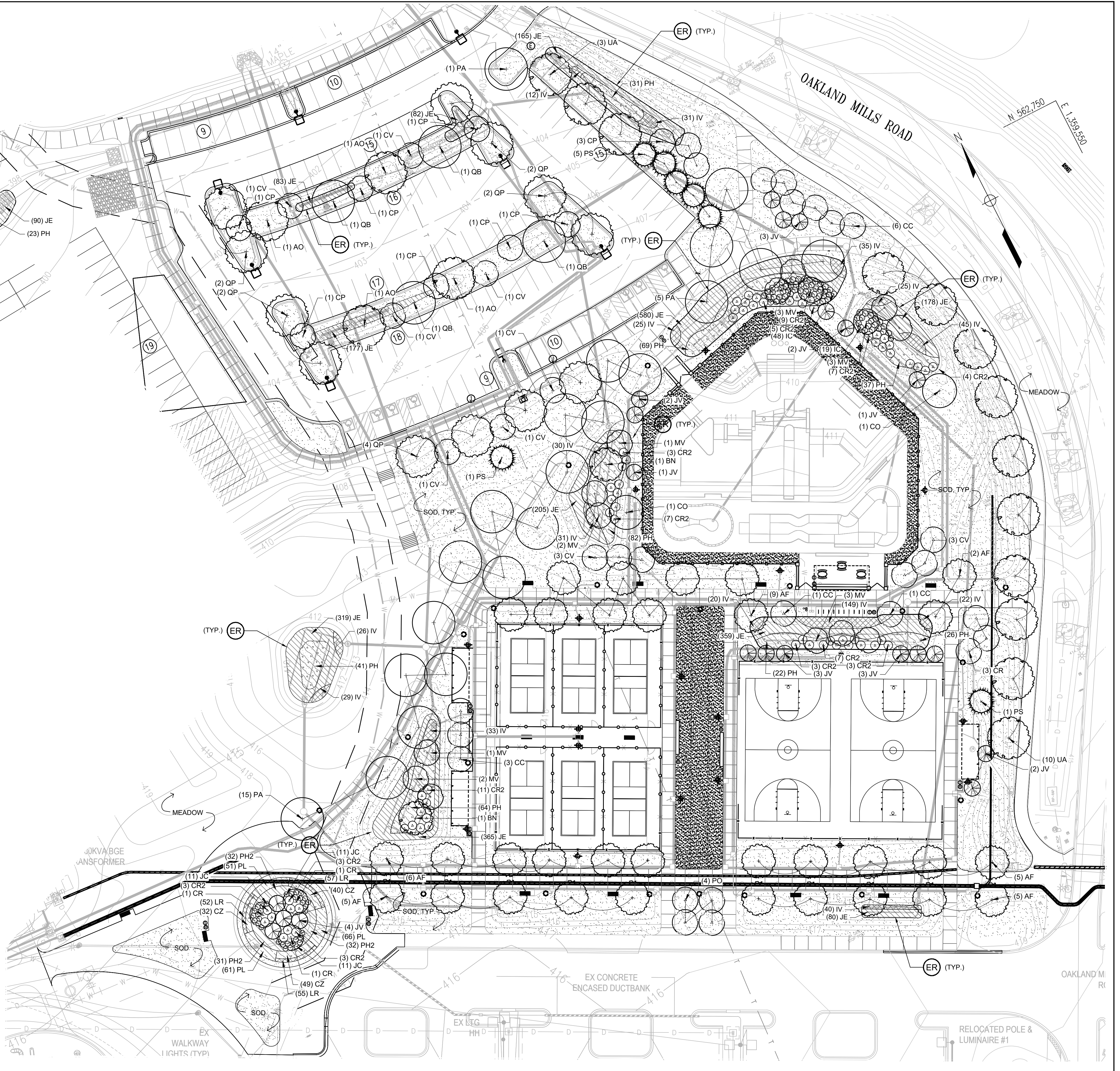
MAHAN RYKIEL ASSOCIATES INC
Whitehall Mill 3300 Clipper Mill Road
Suite 200 Baltimore, MD 21211 410.235.6001

ER $\frac{8}{13.2}$ STEEL EDGE RESTRAINT
 NOTE:
 INSTALL BETWEEN ALL PLANTING & SEEDED/TURF
 AREAS THAT DO NOT ABUT CONCRETE

SOD

PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	119
NUMBER OF TREES REQUIRED	6
NUMBER OF TREES PROVIDED	22.5
SHADE TREES	17
OTHER TREES (2:1 SUBSTITUTION)	11



TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT		
	AF	32	Acer rubrum 'Frank Jr.' Redpoint® Maple	3" Cal.	B&B		
	AO	4	Acer rubrum 'October Glory' October Glory Red Maple	3" Cal.	B&B		
	BN	2	Betula nigra 'BNMT' Dura Health® River Birch	10'-12' Ht.	B&B		
	CC	11	Cercis canadensis Eastern Redbud Multi-trunk	8'-10' Ht.	B&B		
	CO	2	Celtis occidentalis Common Hackberry	3" Cal.	B&B		
	CP	10	Carpinus caroliniana American Hornbeam	2.5" Cal.	B&B		
	CR	6	Cornus x 'Rutgan' Stellar Pink® Dogwood	2.5" Cal.	B&B		
	CV	13	Cataegus viridis 'Winter King' Winter King Hawthorn	2.5" Cal.	B&B		
	JV	21	Juniperus virginiana Eastern Redcedar	8' Ht.	B&B		
	MV	15	Magnolia virginiana Sweetbay Magnolia	8'-10' Ht.	B&B		
	PA	21	Platanus x acerifolia 'Morton Circle' Exclamation!™ London Plane Tree	3" Cal.	B&B		
	PO	4	Prunus x 'Okame' Okame Flowering Cherry	2.5" Cal.	B&B		
	PS	7	Pinus strobus White Pine	8-10' Ht.	B&B		
	QB	4	Quercus bicolor Swamp White Oak	3" Cal.	B&B		
	QP	12	Quercus phellos Willow Oak	3" Cal.	B&B		
	UA	13	Ulmus americana 'Valley Forge' Valley Forge American Elm	3" Cal.	B&B		
SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT	SPD / HT	REMARKS
	CR2	68	Cornus sericea Red Twig Dogwood	#7	Cont.	36"-42"	
	IC	67	Ilex glabra 'Chamzin' Nordic™ Inlberry Holly	#5	Cont.	24"-30"	
	JC	33	Juniperus chinensis 'Pfitzeriana Compacta' Compacta Pfitzer Juniper	#7	Cont.	24"-30"	
GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	ROOT	SPACING	
	CZ	121	Carex verticillata 'Zagreb' Zagreb Tickseed	#1	Cont.	18" o.c.	
	IV	553	Iris versicolor Blue Flag	#1	Cont.	18" o.c.	
	JE	3,008	Juncus effusus Common Rush	#1	Cont.	18" o.c.	
	LR	164	Liriope muscari 'Royal Purple' Royal Purple Lilyturf	#1	Cont.	12" o.c.	
	PH	435	Panicum virgatum 'Heavy Metal' Heavy Metal Switch Grass	#1	Cont.	36" o.c.	
	PH2	95	Pennisetum alopecuroides 'Hamelin' Hamelin Fountain Grass	#1	Cont.	24" o.c.	
	PL	178	Perovskia atriplicifolia 'Little Spire' Little Spire Russian Sage	#1	Cont.	18" o.c.	

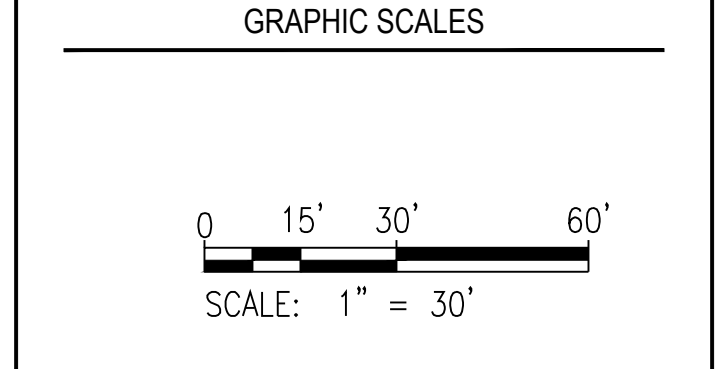
REVISIONS

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



SIGNATURE

DocuSigned by:
 Scott Rykiel

BLANDAIR REGIONAL
 PARK - PHASE 6

Planting Plan
 Drawing No.
L3.1

Scale: As Shown
 Date: 10/2023 SDP Sheet 46 of 54
 Des: CB/CO Drawn: KA Check: SK

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Developed by: *Chad Edmondson* DATE: 12/20/2023

Chief, Development & Planning Division DATE: 12/4/2023

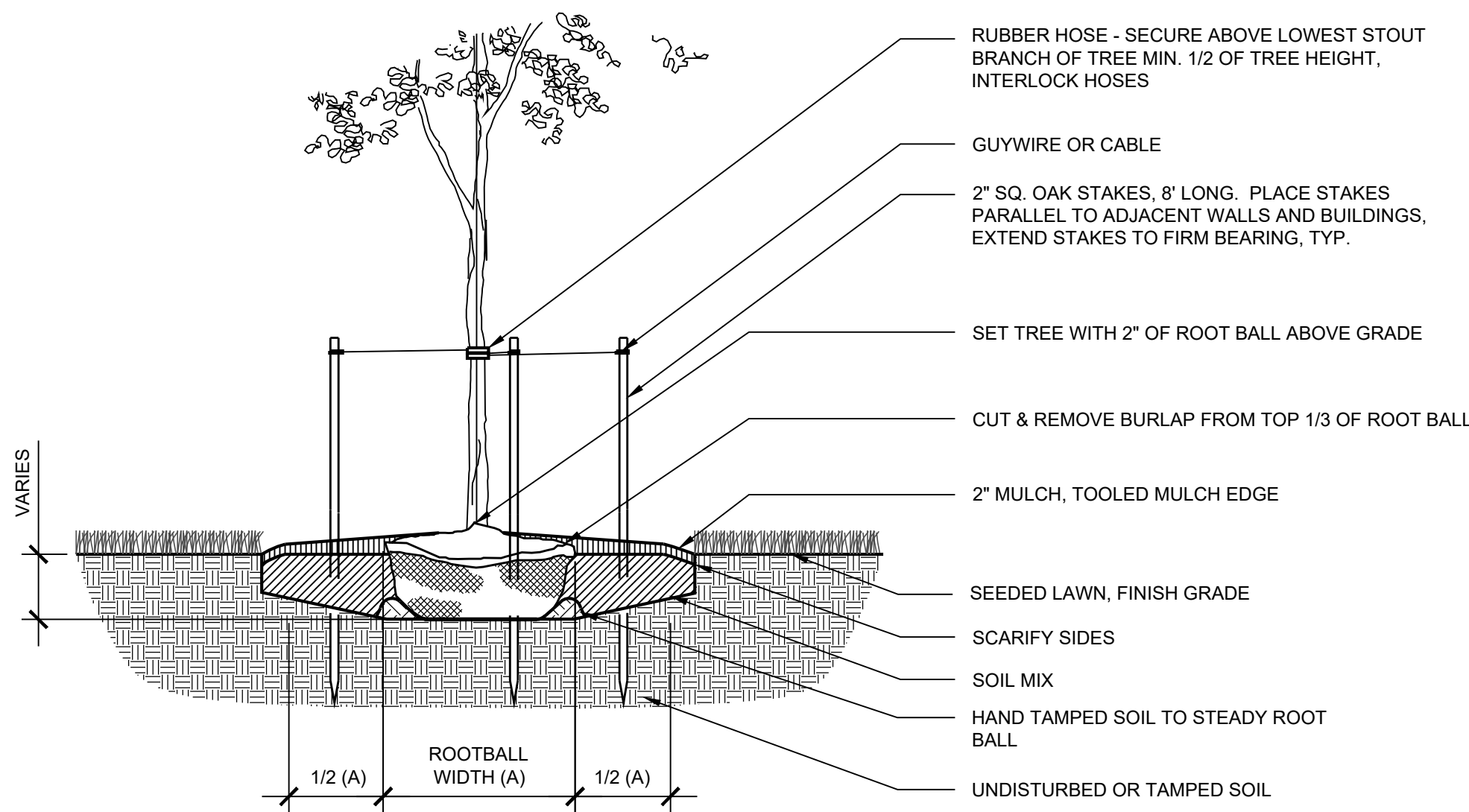
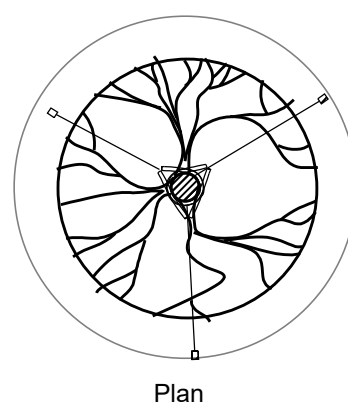
Chief, Division of Land Development DATE: 12/20/2023

DIRECTOR DATE:

MAHAN RYKIEL
 ASSOCIATES INC
 Whitehall Mill 3300 Clipper Mill Road
 Suite 200 Baltimore, MD 21211 410.235.6001

Notes:

- DO NOT CUT CENTRAL LEADER.
- FOR PLANTS IN WIRE BASKETS, REFER TO SPECIFICATIONS.
- DO NOT PLACE MULCH AGAINST TRUNK.
- TREES TO HAVE SINGLE LEADER.
- CUT AND REMOVE TOP HALF OF WIRE BASKETS.

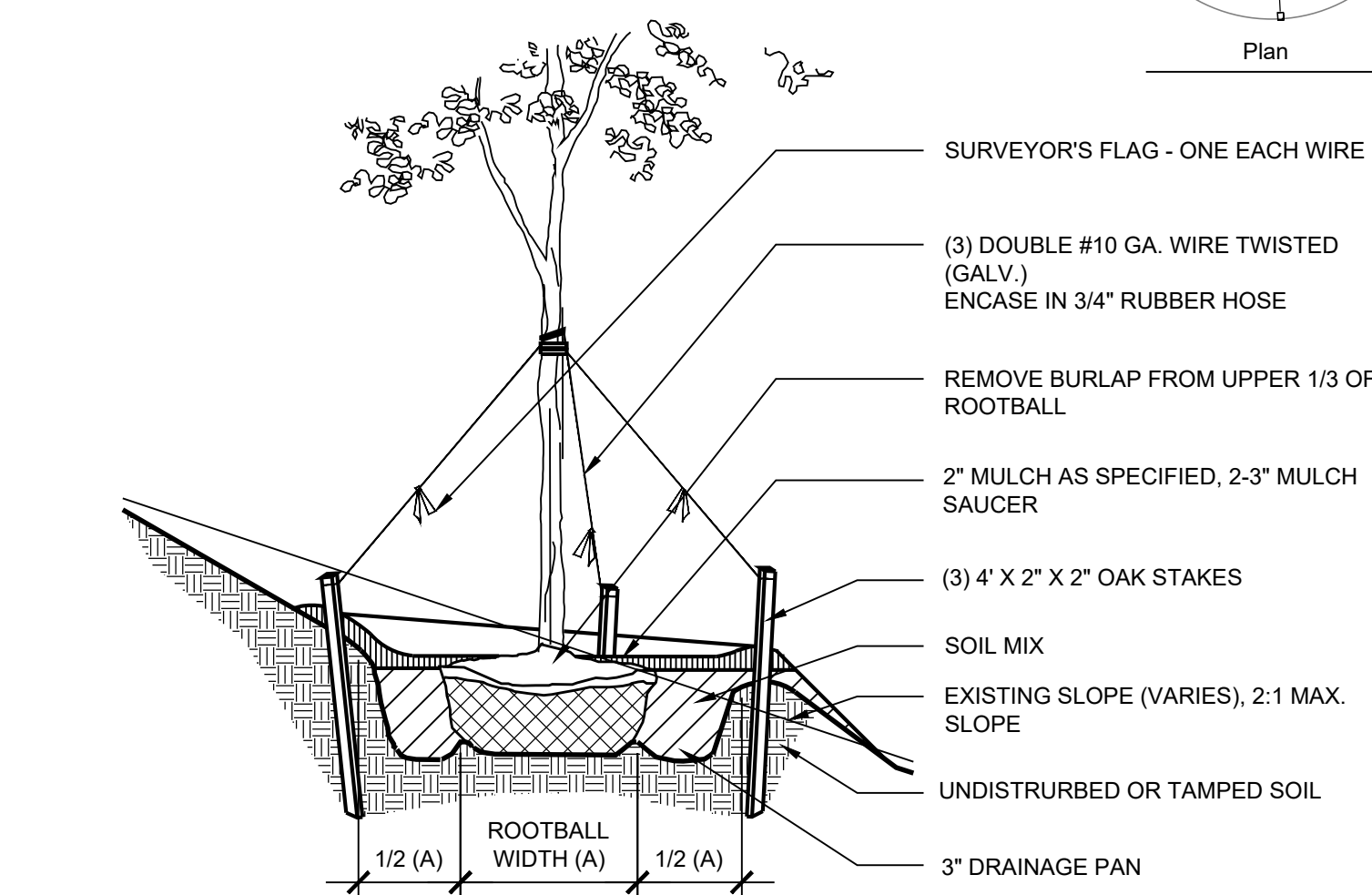
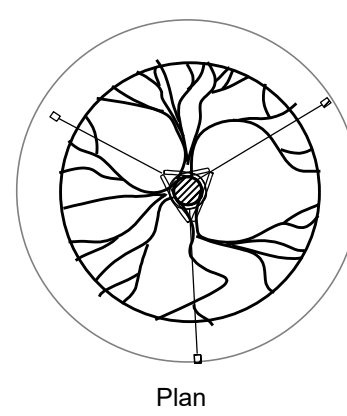


1 TYPICAL DECIDUOUS TREE PLANTING

1/2" = 1'-0"

Notes:

- NEVER CUT CENTRAL LEADER.
- NEVER MULCH AGAINST TRUNK.
- SET TREE WITH 1/8 OF ROOT BALL ABOVE GRADE.
- STAKES, WIRES, AND HOSES SHALL BE REMOVED AFTER ONE YEAR.
- SCARIFY SUBSOIL AND SIDES OF TREE PIT TO A MIN. OF 4" DEPTH.
- TREES UNDER 2-1/2" CAL.: 10" x 2" x 2" STAKES SET VERTICAL, MIN. TWO FEET INTO COMPACTED SUBGRADE.
- TREES TO HAVE SINGLE LEADER.
- CUT AND REMOVE TOP HALF OF WIRE BASKETS.

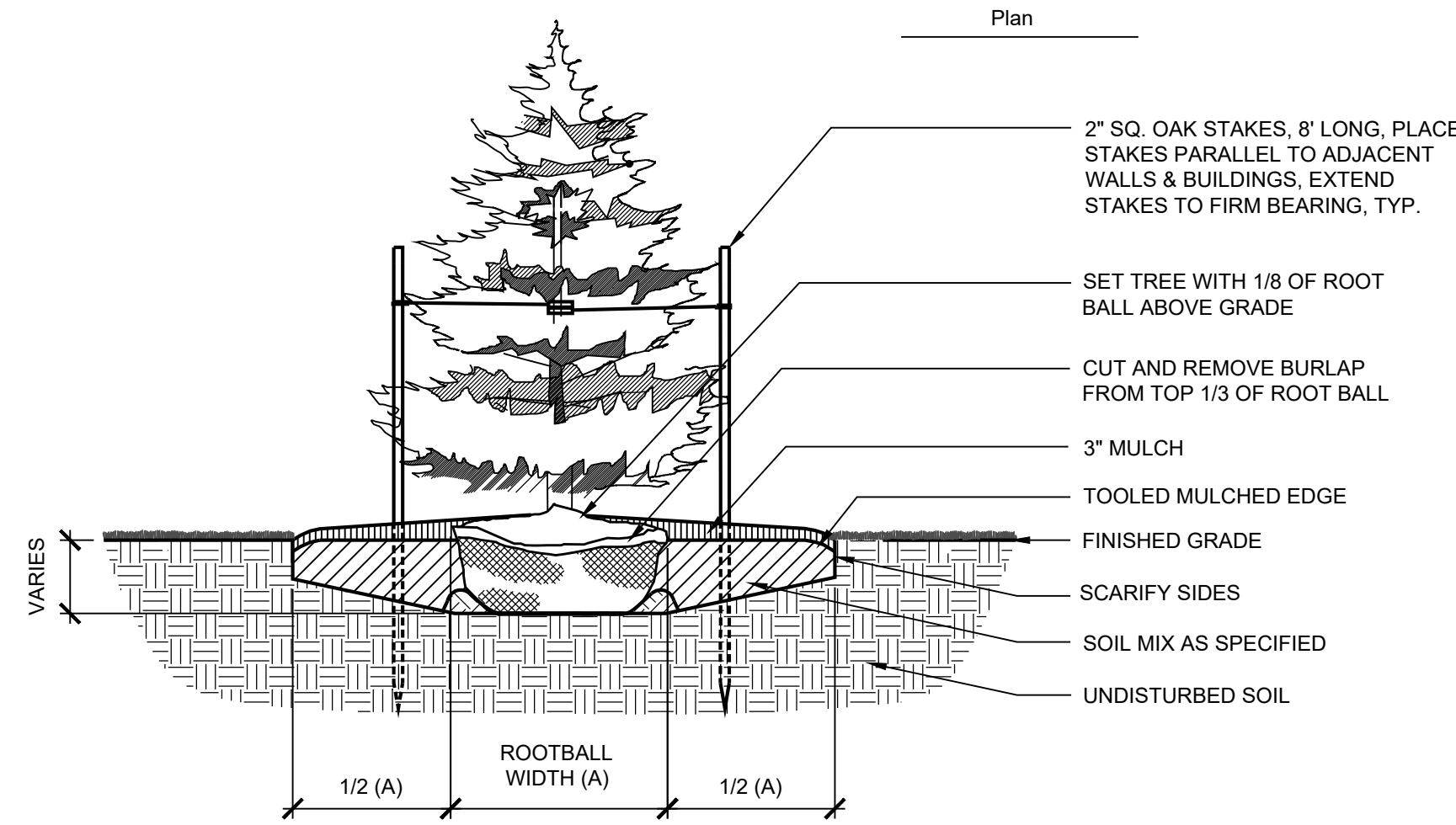
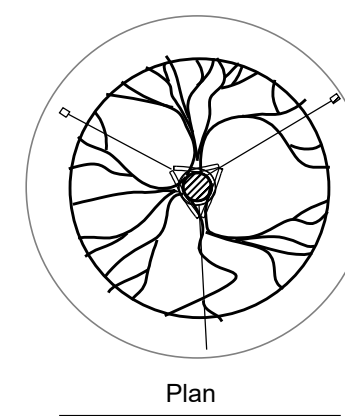


4 TYPICAL DECIDUOUS TREE PLANTING ON SLOPE

1/2" = 1'-0"

Notes:

- NEVER CUT CENTRAL LEADER.
- FOR PLANTS IN WIRE BASKETS, REFER TO SPECIFICATIONS.
- TREES TO HAVE SINGLE LEADER.
- CUT AND REMOVE TOP HALF OF WIRE BASKETS.
- DO NOT PLACE MULCH AGAINST TRUNK.

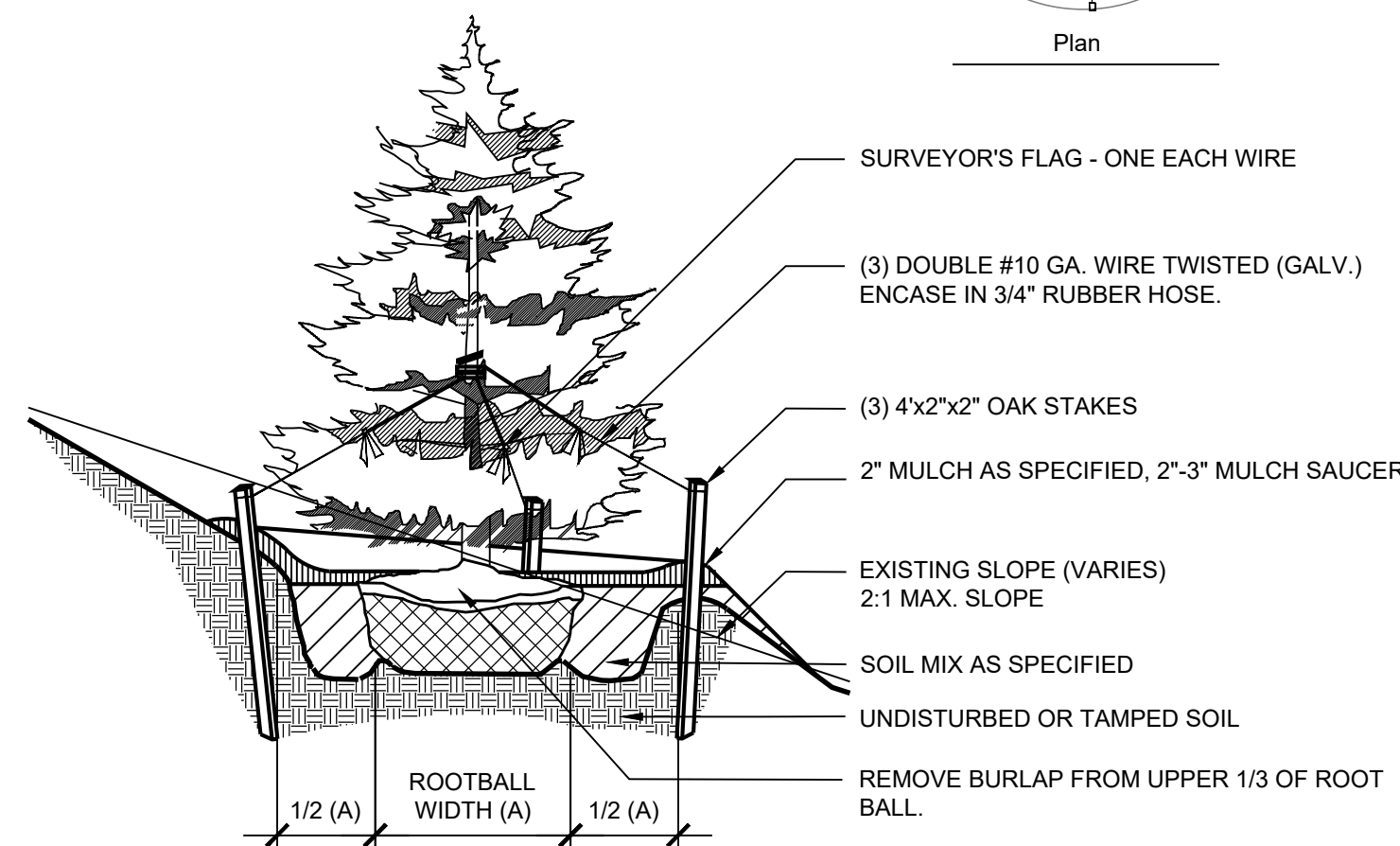
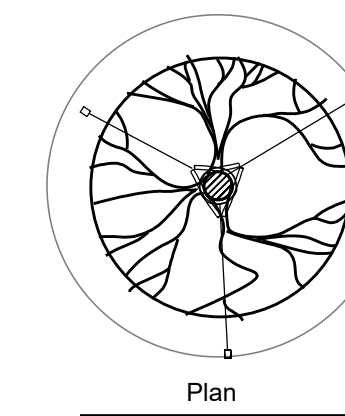


2 TYPICAL EVERGREEN TREE PLANTING

1/2" = 1'-0"

Notes:

- NEVER CUT CENTRAL LEADER.
- FOR PLANTS IN WIRE BASKETS, REFER TO SPECIFICATIONS.
- DO NOT PLACE MULCH AGAINST TRUNK.
- TREES TO HAVE SINGLE LEADER.
- CUT AND REMOVE TOP HALF OF WIRE BASKETS.

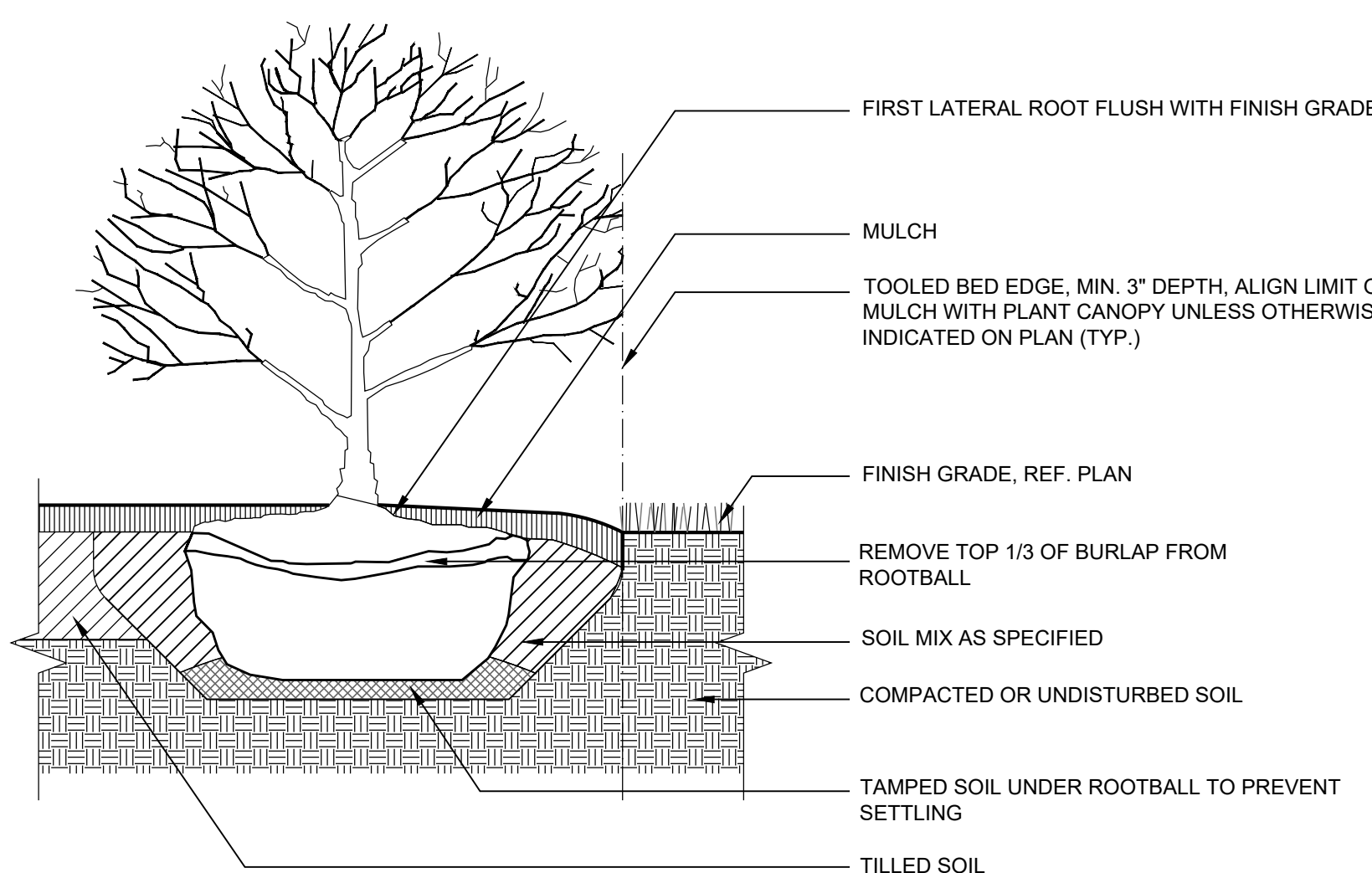


5 TYPICAL EVERGREEN TREE PLANTING ON SLOPE

1/2" = 1'-0"

SEQUENCE OF CONSTRUCTION (GENERAL), REFER TO SPECIFICATIONS

- STAKE OUT PLANT/BED LOCATIONS.
- CUT EDGE OF PLANT BED.
- TILL SOIL AND APPLY AMENDMENTS TO ENTIRE PLANTING AREA.
- APPLY PRE-EMERGENT HERBICIDE (TWO WEEKS PRIOR TO PLANTING).
- INSTALL PLANTS.
- INSTALL FERTILIZER TABLETS IN EACH PLANT PIT.
- PLACE BACKFILL.
- WATER EACH INDIVIDUAL PLANT THOROUGHLY.
- PLACE MULCH OVER ENTIRE PLANT BED.
- WATER ENTIRE PLANT BED THOROUGHLY.

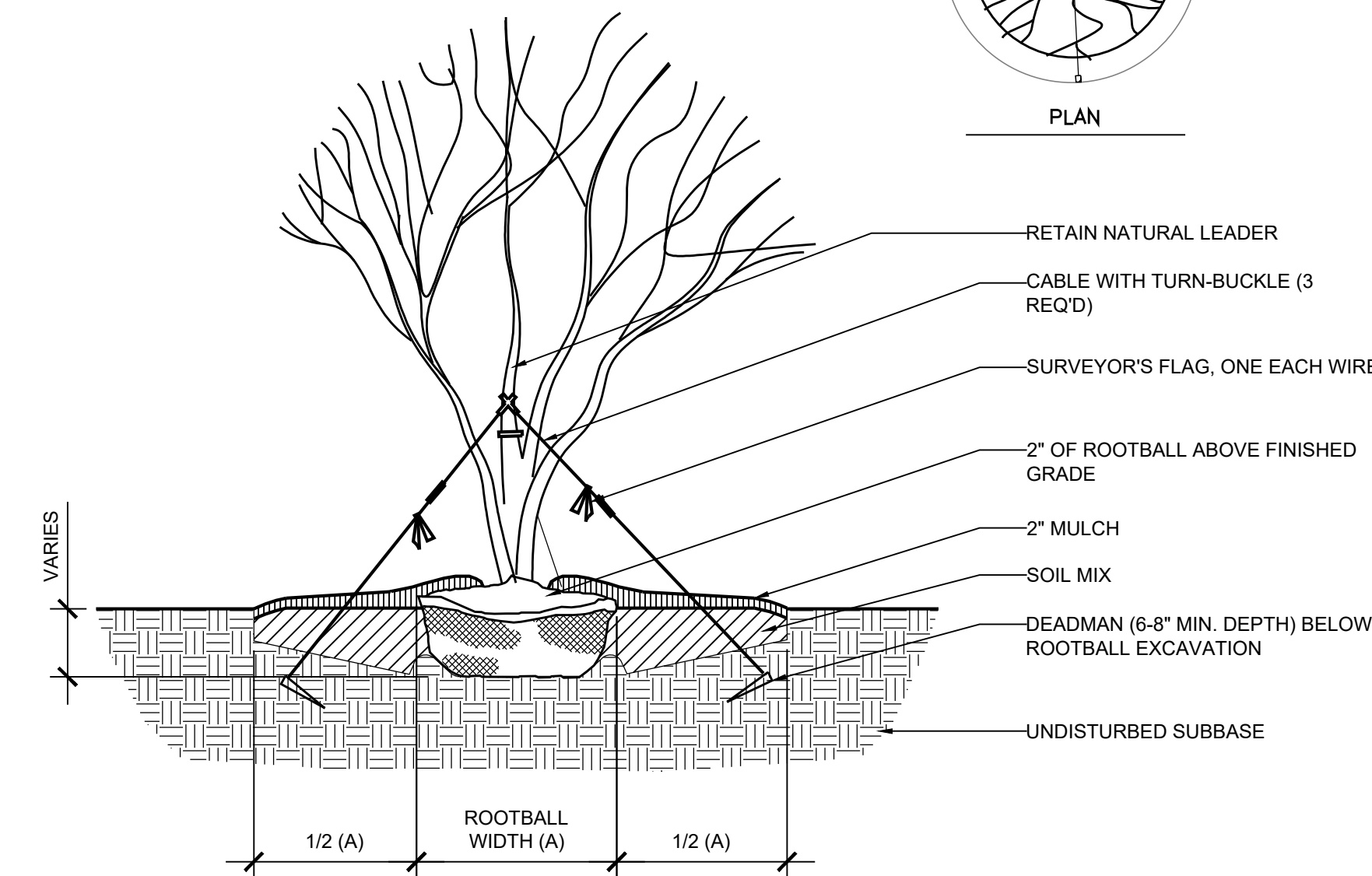
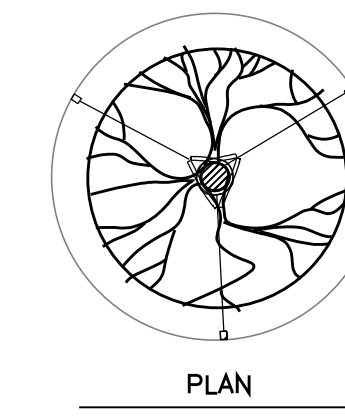


7 TYPICAL SHRUB PLANTING

1" = 1'-0"

Notes:

- FOR B&B TREES, REMOVE TOP 1/3 OF BALL WRAP.
- CUT WIRE BASKET IN AT LEAST FOUR LOCATIONS CIRCLING ROOTBALL.
- DO NOT PLACE MULCH AGAINST TRUNK.

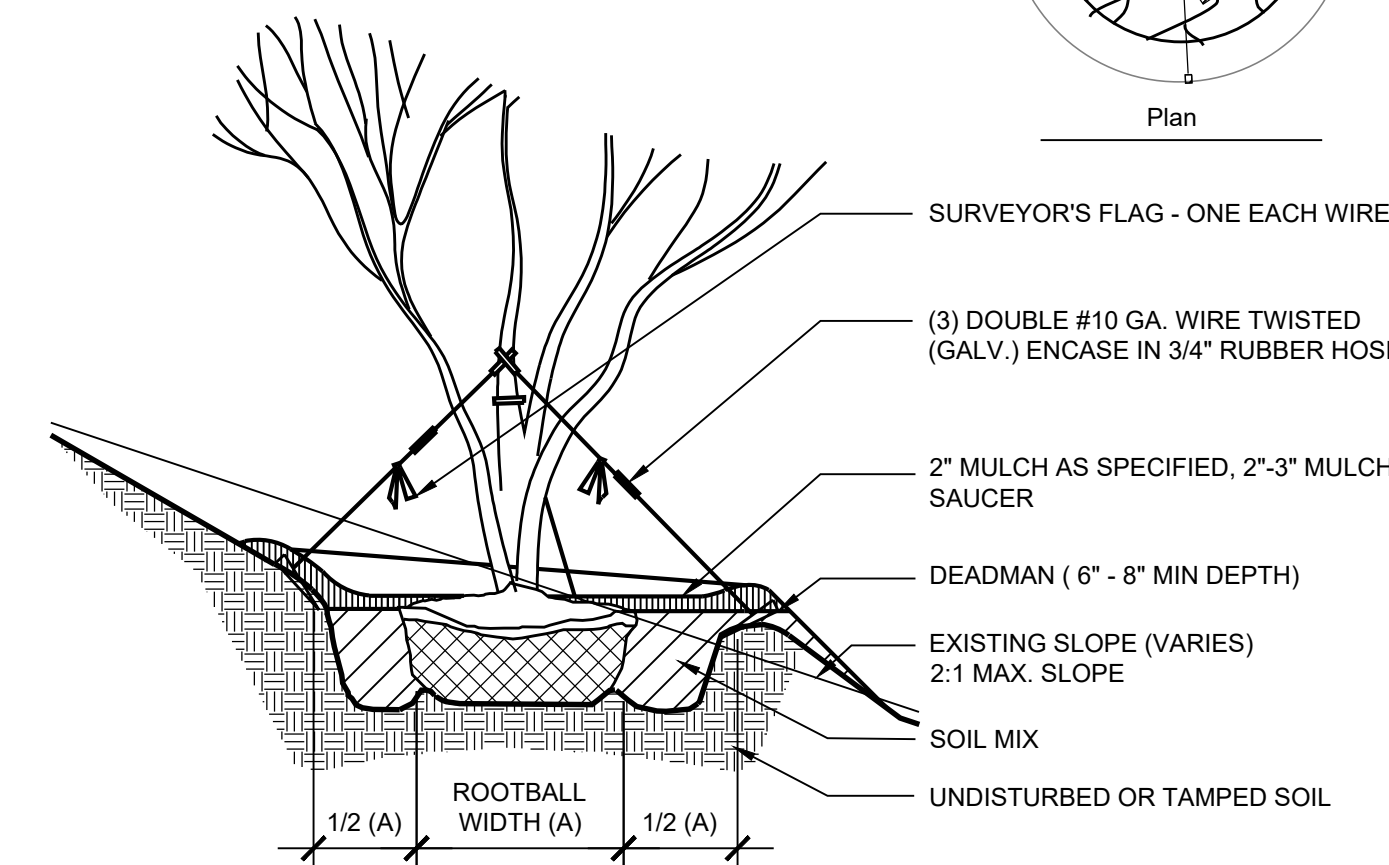
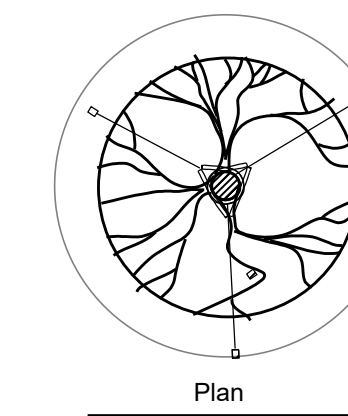


3 TYPICAL FLOWERING TREE PLANTING

1/2" = 1'-0"

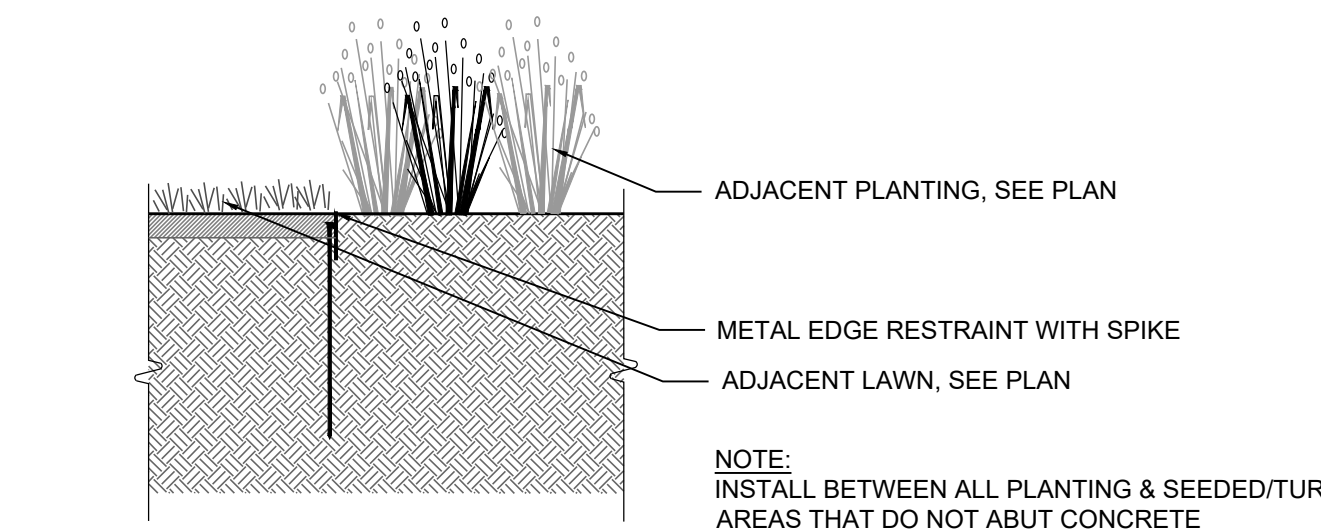
Notes:

- FOR B&B TREES, REMOVE TOP 1/3 OF BALL WRAP.
- CUT WIRE BASKET IN AT LEAST FOUR LOCATIONS CIRCLING ROOTBALL.
- DO NOT PLACE MULCH AGAINST TRUNK.



6 TYPICAL FLOWERING TREE PLANTING ON SLOPE

1/2" = 1'-0"



8 STEEL EDGE RESTRAINT

1" = 1'-0"

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Chad Edmondson</i>	12/20/2023
CHIEF, DEVELOPMENT DIVISION	DATE
<i>Scott Rykiel</i>	12/4/2023
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>Lynnda Eisenberg</i>	12/20/2023
DIRECTOR	DATE

REVISIONS	

HOWARD COUNTY
DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

WRA
Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
TAX MAP 36, GRID 5, PARCEL 3
ZONING: RC-DEO
ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE

STATE OF MARYLAND
SCOTT JON RYKIEL
REGISTERED LANDSCAPE ARCHITECT
NO. 631
10/18/23
Designed by: *Scott Rykiel*

BLANDAIR REGIONAL PARK - PHASE 6

Planting Details
Drawing No.
L3.2
Scale: As Shown
Date: 10/2023 SDP Sheet 47 of 54
Des: CB/CO Drawn: KA Check: SK

MAHAN RYKIEL
ASSOCIATES INC
Whitehall Mill 3300 Clipper Mill Road
Suite 200 Baltimore, MD 21211 410.235.6001

PHASE 6 FCP TABLES
Phase 6 this sheet only

Phase 6 Forest to be Cleared	
Area 1	1,021.4 SF / 0.02 Acres
Phase 6 Forest to be Retained	
No Phase 6 Forest Retention on this sheet	
Phase 6 Other Clearing	
Total	1,516.8 SF / 0.04 Acres

REVISIONS

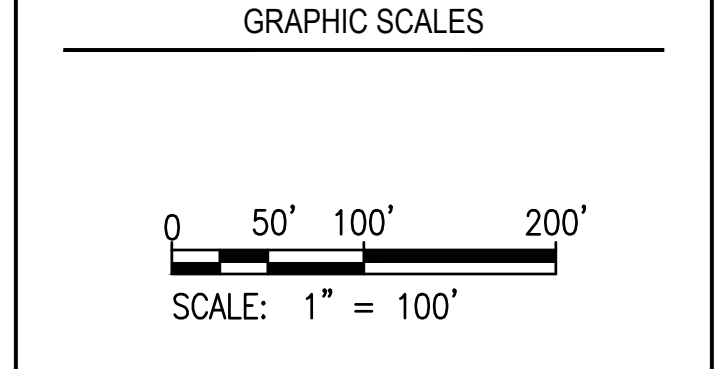
1	PER HO. CO. COMMENTS	3/6/23

HOWARD COUNTY
DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
TAX MAP 36, GRID 5, PARCEL 3
ZONING: RC-DEO
ELECTION DISTRICT 6

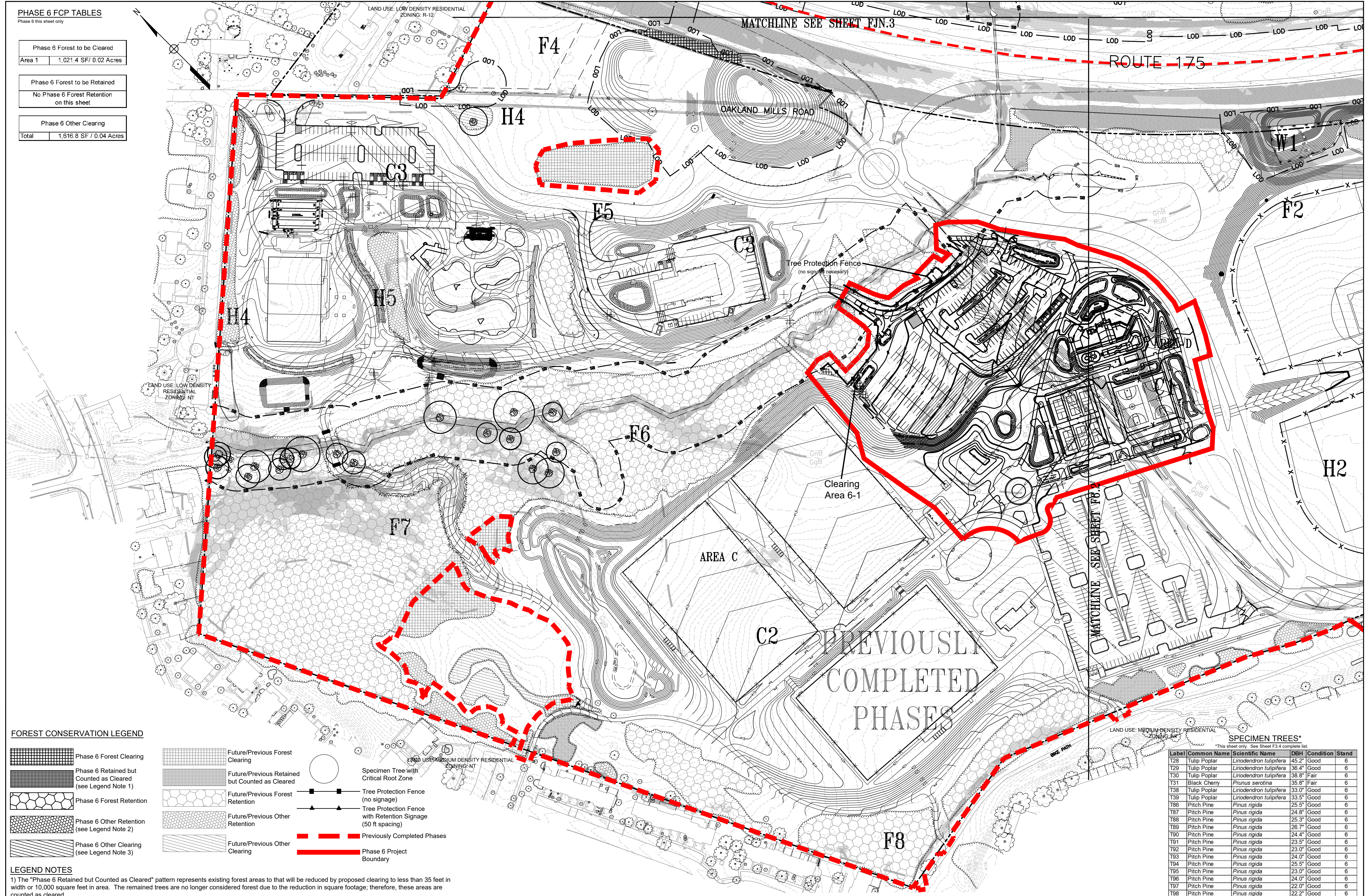


SIGNATURE

DocuSigned by:
Michael McQuade
7B80CA1105F24F2...
MICHAEL MCQUADE
ARBORIST/MD DNR QUALIFIED PROFESSIONAL
10/5/22
DATE

BLANDAIR REGIONAL PARK - PHASE 6

FOREST CONSERVATION PLAN
Drawing No. **F6.1**
Scale: 1" = 100' 48
Date: 10/2023 SDP Sheet 4 of 54
Des: TRH Drawn: TRH Check: MWM



FOREST CONSERVATION LEGEND

	Phase 6 Forest Clearing		Future/Previous Forest Clearing
	Phase 6 Retained but Counted as Cleared (see Legend Note 1)		Future/Previous Retained but Counted as Cleared
	Phase 6 Forest Retention		Future/Previous Forest Retention
	Phase 6 Other Retention (see Legend Note 2)		Future/Previous Other Retention
	Phase 6 Other Clearing (see Legend Note 3)		Future/Previous Other Clearing
	Previously Completed Phases		Phase 6 Project Boundary

LEGEND NOTES

1) The "Phase 6 Retained but Counted as Cleared" pattern represents existing forest areas to that will be reduced by proposed clearing to less than 35 feet in width or 10,000 square feet in area. The remained trees are no longer considered forest due to the reduction in square footage; therefore, these areas are counted as cleared.

2) The "Phase 6 Other Retention" pattern represents existing tree areas (non-forest) less than 35 feet in width or 10,000 square feet in area that will be retained. These areas are not counted as cleared, nor are they counted as retained.

3) The "Phase 6 Other Clearing" pattern represents existing tree areas (non-forest) less than 35 feet in width or 10,000 square feet in area that will be cleared.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

12/20/2023

CHIEF, DEVELOPMENT DIVISION
Chad Edmondson

12/4/2023

CHIEF, DIVISION OF LAND DEVELOPMENT
Linda Eisenberg

12/20/2023

DIRECTOR

SOILS TABLE

SOIL MAP UNIT	SOIL NAME	ERODIBLE*	HYDRIC
GgB	Glenelg loam, 3-8% slopes	No	No
GgC	Glenelg loam, 8-15% slopes	No	No
GhB	Glenelg-Urban land complex, 0-8% slopes	No	No
GnB	Glenville-Baile silt loams, 0-8% slopes	Yes	Partial†
GoB	Glenville-Codorus silt loams, 0-8% slopes	Yes	Partial†
GuB	Glenville-Urban land-Udortheims complex, 0-8% slopes	Partial†	No
MaC	Manor loam, 8-15% slopes	No	No
RuB	Russett and Beltsville soils, 2-5% slopes	Partial†	No

* Erodible soils have a K value greater than 0.35
† Only the Baile component of the Glenville-Baile soil type is hydric.
‡ Only the Glenville and Beltsville components of soil types GuB and RuB are erodible.

VEGETATIVE COMMUNITIES

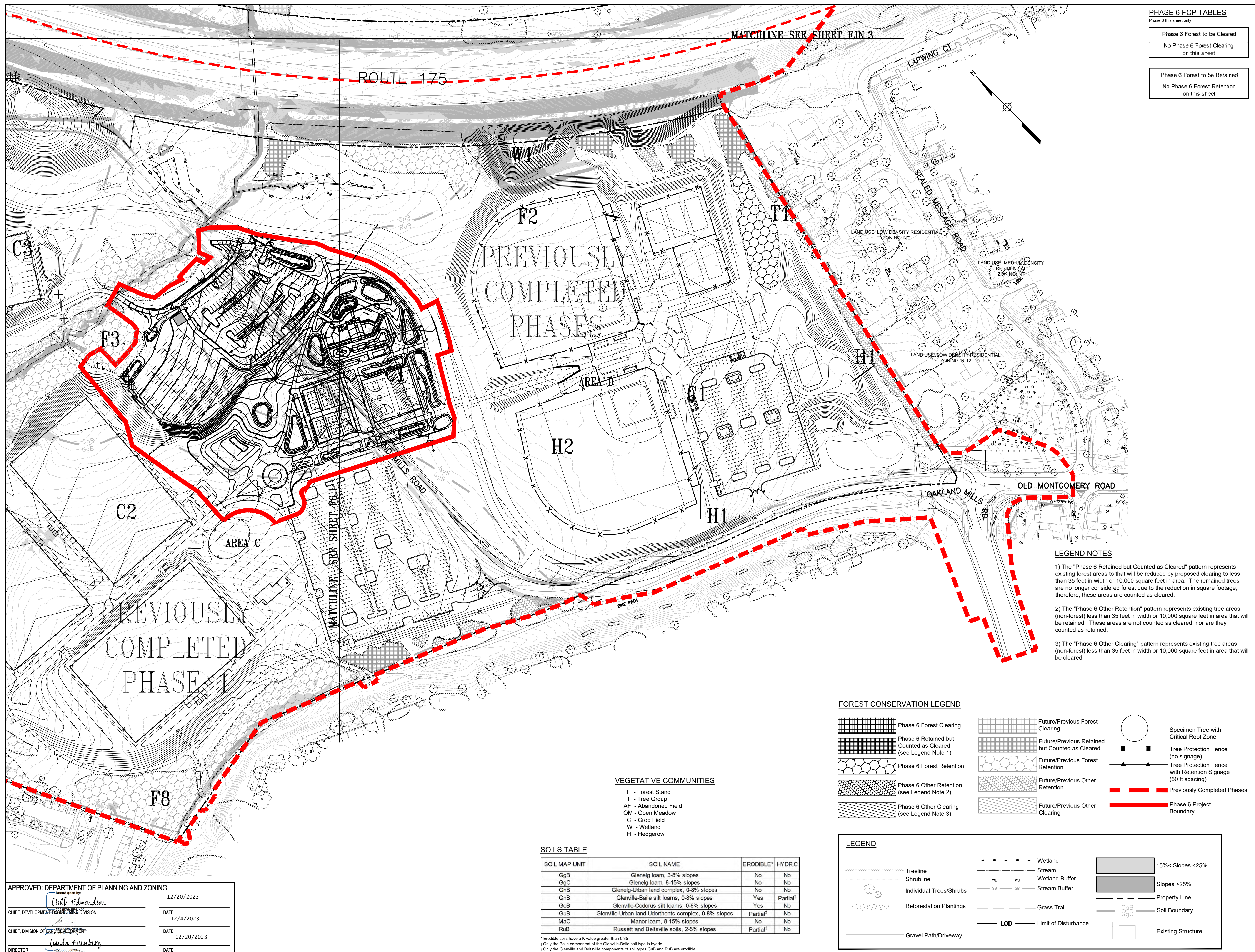
F - Forest Stand
T - Tree Group
AF - Abandoned Field
OM - Open Meadow
C - Crop Field
W - Wetland
H - Hedgerow

LEGEND

	Treeline		Wetland		15%< Slopes <25%
	Shrubline		Stream		Slopes >25%
	Individual Trees/Shrubs		Wetland Buffer		Property Line
	Existing Reforestation Plantings		Stream Buffer		Soil Boundary
	Gravel Path/Driveway		Grass Trail		Limit of Disturbance
			Limit of Disturbance		Existing Structure

SPECIMEN TREES*
*This sheet only. See sheet F3.4 complete list.

Label	Common Name	Scientific Name	DH	Condition	Stand
T28	Tulip Poplar	Liriodendron tulipifera	45.2'	Good	6
T29	Tulip Poplar	Liriodendron tulipifera	36.4'	Good	6
T30	Tulip Poplar	Liriodendron tulipifera	38.8'	Fair	6
T31	Black Cherry	Prunus serotina	35.8'	Fair	6
T38	Tulip Poplar	Liriodendron tulipifera	33.0'	Good	6
T39	Tulip Poplar	Liriodendron tulipifera	33.5'	Good	6
T85	Pitch Pine	Pinus rigida	25.5'	Good	6
T87	Pitch Pine	Pinus rigida	24.8'	Good	6
T88	Pitch Pine	Pinus rigida	25.3'	Good	6
T89	Pitch Pine	Pinus rigida	26.7'	Good	6
T90	Pitch Pine	Pinus rigida	24.4'	Good	6
T91	Pitch Pine	Pinus rigida	23.5'	Good	6
T92	Pitch Pine	Pinus rigida	23.0'	Good	6
T93	Pitch Pine	Pinus rigida	24.0'	Good	6
T94	Pitch Pine	Pinus rigida	25.5'	Good	6
T95	Pitch Pine	Pinus rigida	23.0'	Good	6
T96	Pitch Pine	Pinus rigida	24.0'	Good	6
T97	Pitch Pine	Pinus rigida	22.0'	Good	6
T98	Pitch Pine	Pinus rigida	22.2'	Good	6
T85	Red Maple	Acer rubrum	31.0'	Fair	H4



PHASE 6 FCP TABLES
Phase 6 this sheet only

Phase 6 Forest to be Cleared	No Phase 6 Forest Clearing on this sheet
Phase 6 Forest to be Retained	No Phase 6 Forest Retention on this sheet

REVISIONS

1	PER HO. CO. COMMENTS	3/6/23

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

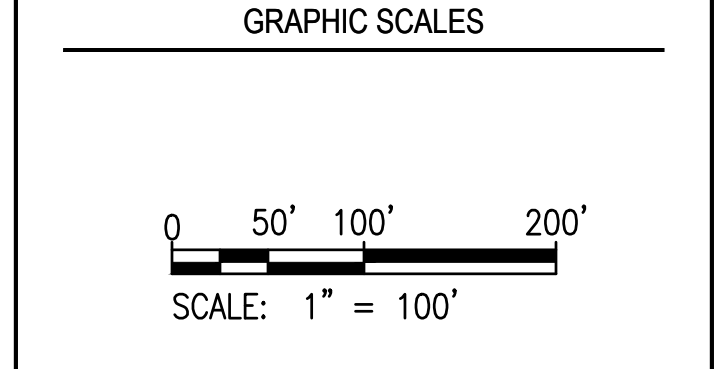
WRA
Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3

 ZONING: RC-DEO

 ELECTION DISTRICT 6



SIGNATURE

DocuSigned by:
Michael McQuade
 7B80CA1105F24F2...
 MICHAEL MCQUADE
 ARBORIST/MD DNR QUALIFIED PROFESSIONAL
 10/5/22
 DATE

BLANDAIR REGIONAL PARK - PHASE 6

FOREST CONSERVATION PLAN
 Drawing No. **F6.2**
 Scale: 1" = 100' 49
 Date: 10/2023 SDP Sheet 4 of 54
 Des: TRH Drawn: TRH Check: MWM

LEGEND NOTES

- 1) The "Phase 6 Retained but Counted as Cleared" pattern represents existing forest areas to that will be reduced by proposed clearing to less than 35 feet in width or 10,000 square feet in area. The remained trees are no longer considered forest due to the reduction in square footage; therefore, these areas are counted as cleared.
- 2) The "Phase 6 Other Retention" pattern represents existing tree areas (non-forest) less than 35 feet in width or 10,000 square feet in area that will be retained. These areas are not counted as cleared, nor are they counted as retained.
- 3) The "Phase 6 Other Clearing" pattern represents existing tree areas (non-forest) less than 35 feet in width or 10,000 square feet in area that will be cleared.

FOREST CONSERVATION LEGEND

	Phase 6 Forest Clearing		Future/Previous Forest Clearing		Specimen Tree with Critical Root Zone
	Phase 6 Retained but Counted as Cleared (see Legend Note 1)		Future/Previous Retained but Counted as Cleared		Tree Protection Fence (no signage)
	Phase 6 Forest Retention		Future/Previous Forest Retention		Tree Protection Fence with Retention Signage (50 ft spacing)
	Phase 6 Other Retention (see Legend Note 2)		Future/Previous Other Retention		Previously Completed Phases
	Phase 6 Other Clearing (see Legend Note 3)		Future/Previous Other Clearing		Phase 6 Project Boundary

VEGETATIVE COMMUNITIES

- F - Forest Stand
- T - Tree Group
- AF - Abandoned Field
- OM - Open Meadow
- C - Crop Field
- W - Wetland
- H - Hedgerow

SOILS TABLE

SOIL MAP UNIT	SOIL NAME	ERODIBLE*	HYDRIC
GgB	Glenelg loam, 3-8% slopes	No	No
GgC	Glenelg loam, 8-15% slopes	No	No
GnB	Glenelg-Urban land complex, 0-8% slopes	No	No
GnH	Glenelg-Baile silt loams, 0-8% slopes	Yes	Partial ¹
GoB	Glenelg-Codorus silt loams, 0-8% slopes	Yes	No
GuB	Glenelg-Urban land-Udorthents complex, 0-8% slopes	Partial ²	No
MaC	Manor loam, 8-15% slopes	No	No
RuB	Russett and Beltsville soils, 2-5% slopes	Partial ²	No

* Erodible soils have a K value greater than 0.35
¹ Only the Baile component of the Glenelg-Baile soil type is hydric
² Only the Glenelg and Beltsville components of soil types GgB and RuB are erodible.

LEGEND

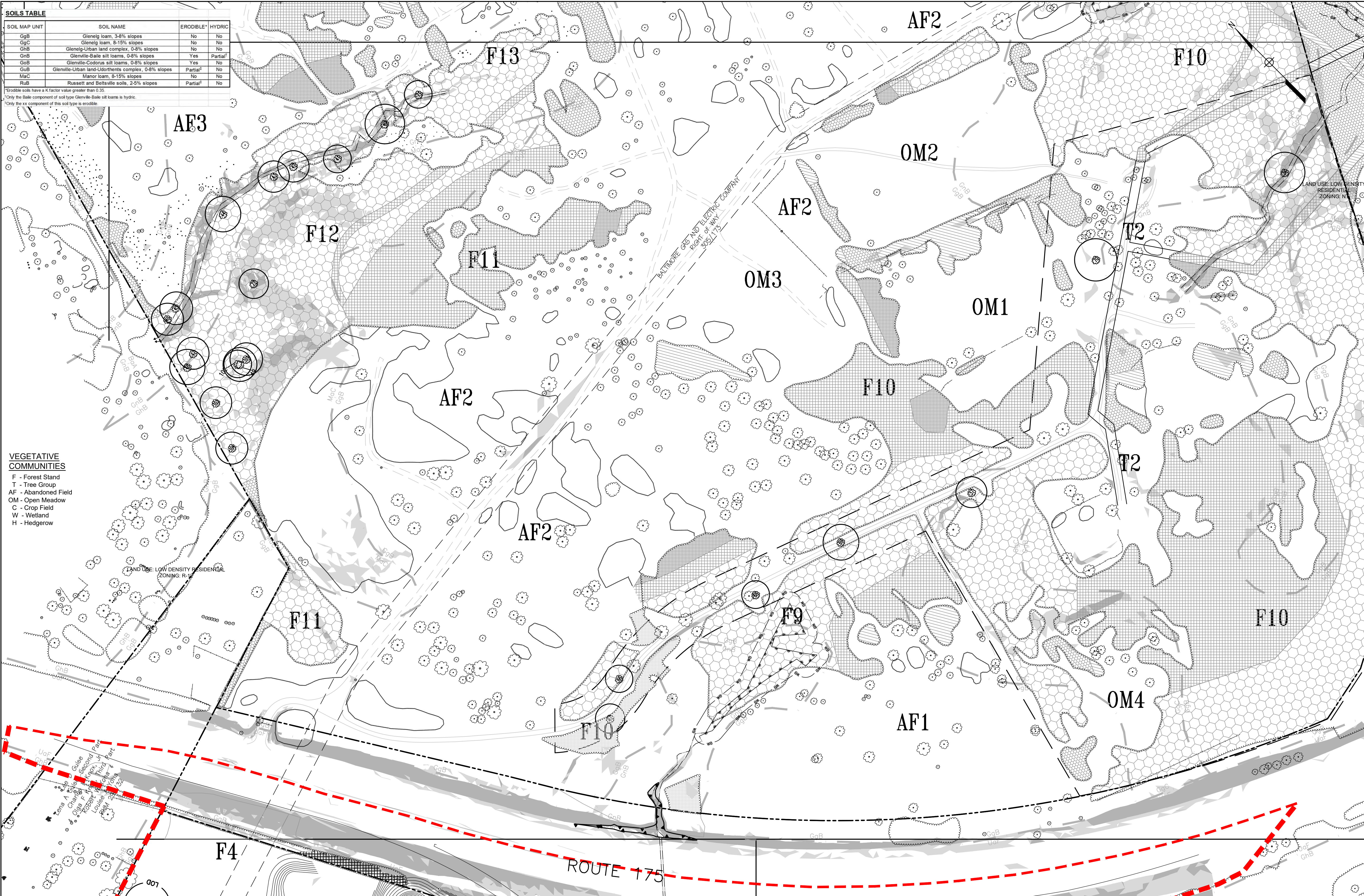
	Treeline		Wetland		15% < Slopes < 25%
	Shrubline		Wetland Buffer		Slopes > 25%
	Individual Trees/Shrubs		Stream Buffer		Property Line
	Reforestation Plantings		Grass Trail		GgB GgC Soil Boundary
	Gravel Path/Driveway		Limit of Disturbance		Existing Structure

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Approved by: *Chad Edmondson* 12/20/2023
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 12/4/2023
 CHIEF, DIVISION OF LAND DEVELOPMENT
 Approved by: *Lynda Eisenberg* 12/20/2023
 DIRECTOR
 DATE:

SOIL MAP UNIT	SOIL NAME	ERODIBLE	HYDRIC
GgB	Glenelg loam, 3-8% slopes	No	No
GgC	Glenelg loam, 8-15% slopes	No	No
GnB	Glenelg-Urban land complex, 0-8% slopes	No	No
GnB	Glenelg-Baile silt loams, 0-8% slopes	Yes	Partial ¹
GoB	Glenelg-Codonus silt loams, 0-8% slopes	Yes	No
GuB	Glenelg-Urban land-Udortheims complex, 0-8% slopes	Partial ¹	No
MaC	Manor loam, 8-15% slopes	No	No
RuB	Russett and Belleville soils, 2-5% slopes	Partial ¹	No

¹Erodible soils have a K factor value greater than 0.35.
²Only the Baile component of soil type Glenelg-Baile silt loams is hydric.
³Only the xx component of this soil type is erodible.

- VEGETATIVE COMMUNITIES**
- F - Forest Stand
 - T - Tree Group
 - AF - Abandoned Field
 - OM - Open Meadow
 - C - Crop Field
 - W - Wetland
 - H - Hedgerow



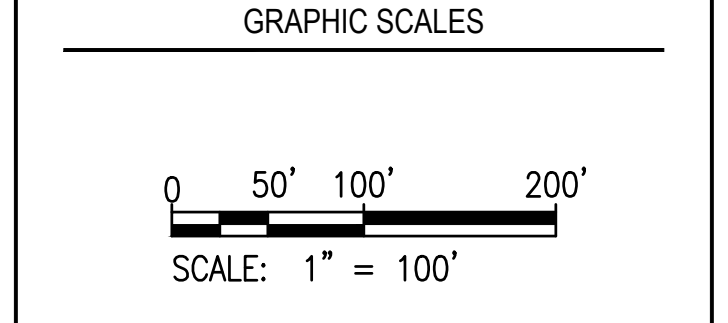
REVISIONS		
1	PER HO. CO. COMMENTS	3/6/23

HOWARD COUNTY
 DEPARTMENT OF RECREATION AND PARKS
 7120 OAKLAND MILLS ROAD
 COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
 3430 COURT HOUSE DRIVE
 ELLICOTT CITY, MD 21043

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231
 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY
 TAX MAP 36, GRID 5, PARCEL 3
 ZONING: RC-DEO
 ELECTION DISTRICT 6



SIGNATURE

DocuSigned by:

 7B80CA1105F24F2...
 MICHAEL MCQUADE
 ARBORIST/MD DNR QUALIFIED PROFESSIONAL
 10/5/22 DATE

BLANDAIR REGIONAL PARK - PHASE 6

FOREST CONSERVATION PLAN
 Drawing No. **F6.3**
 Scale: 1" = 100'
 Date: 10/2023 SDP Sheet 50 of 54
 Des: TRH Drawn: TRH Check: MWM

PHASE 6 FCP TABLES
 Phase 6 this sheet only

Area	Phase 6 Forest to be Cleared	Phase 6 Forest to be Retained
Area 2	76255.6 SF	No Phase 6 Forest Retention on this sheet
Area 3	13128.4 SF	No Phase 6 Forest Retention on this sheet
Area 4	883.3 SF	
Area 5	1596.5 SF	
Area 6	2651.8 SF	
Area 7	1551.5 SF	
Area 8	4400.2 SF	
Area 9	25433.9 SF	
Total	125901.2 SF / 2.89 Acres	

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DESIGN AND CONSTRUCTION
 DIRECTOR

Phase JN Forest to be Cleared

Area	Area	Area
Area 2	76255.6 SF	
Area 3	13128.4 SF	
Area 4	883.3 SF	
Area 5	1596.5 SF	
Area 6	2651.8 SF	
Area 7	1551.5 SF	
Area 8	4400.2 SF	
Area 9	25433.9 SF	
Total	125901.2 SF / 2.89 Acres	

Phase JN Other Retention
 No Other Retention for Phase JN

SPECIMEN TREES*
 *This sheet only. See Sheet F3.4 for complete list.

Label	Common Name	Scientific Name	DBH	Condition	Stand	Save or Remove
T36	Red Maple	Acer rubrum	44.7"	Poor	10	S
T37	White Oak	Quercus alba	34.0"	Good	10	S
T66	Red Maple	Acer rubrum	30.0"	Poor	10	S
T67	White Oak	Quercus alba	32.3"	Fair	10	S
T68	White Oak	Quercus alba	30.5"	Good	10	S
T69	Black Cherry	Prunus serotina	39.3"	Poor	10	S
T41	Red Maple	Acer rubrum	30.7"	Fair	12	S
T42	Red Maple	Acer rubrum	34.5"	Poor	12	S
T43	Pin Oak	Quercus palustris	34.5"	Fair	12	S
T44	Red Maple	Acer rubrum	36.0"	Fair	12	S
T45	Red Maple	Acer rubrum	36.0"	Fair	12	S
T46	Tulip Poplar	Liriodendron tulipifera	38.3"	Good	12	S
T47	Tulip Poplar	Liriodendron tulipifera	38.3"	Good	12	S
T48	Tulip Poplar	Liriodendron tulipifera	38.9"	Good	12	S
T49	Tulip Poplar	Liriodendron tulipifera	37.2"	Good	12	S
T72	Tulip Poplar	Liriodendron tulipifera	32.5"	Good	12	S
T101	Tulip Poplar	Liriodendron tulipifera	35.9"	Good	12	S
T102	Tulip Poplar	Liriodendron tulipifera	30.3"	Good	12	S
T103	Tulip Poplar	Liriodendron tulipifera	34.8"	Good	12	S
T104	Tulip Poplar	Liriodendron tulipifera	35.2"	Good	12	S
T70	Silver Maple	Acer saccharinum	48.5"	Fair	12	S

FOREST CONSERVATION LEGEND

- Phase 6 Forest Clearing
- Phase 6 Retained but Counted as Cleared (see Legend Note 1)
- Phase 6 Forest Retention
- Phase 6 Other Retention (see Legend Note 2)
- Phase 6 Other Clearing (see Legend Note 3)
- Future/Previous Forest Clearing
- Future/Previous Retained but Counted as Cleared
- Future/Previous Forest Retention
- Future/Previous Other Retention
- Future/Previous Other Clearing (no signage)
- Tree Protection Fence (50 ft spacing)
- Tree Protection Fence with Retention Signage (50 ft spacing)
- Limit of Disturbance
- Wetland
- Stream
- Wetland Buffer
- Stream Buffer
- Gravel Path/Driveway
- Grass Trail
- 15% < Slopes < 25%
- Slopes > 25%
- Property Line
- Soil Boundary
- Tree Line
- Shrubline
- Individual Trees/Shrubs
- Reforestation Plantings
- Specimen Tree
- Phase 6 Project Boundary
- Previously Completed Phases
- Limit of Disturbance (LOD)

CONSTRUCTION PERIOD PROTECTION PROGRAM

- 1. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL LOCATE THE LIMITS OF DISTURBANCE (LOD) IN THE FIELD
2. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES, BLAZE ORANGE FENCING SHALL BE INSTALLED AS PER DETAIL THIS SHEET ALONG ALL LIMITS OF DISTURBANCE ADJACENT TO WOODLANDS AND AS INDICATED ON FOREST CONSERVATION PLAN SHEETS FJN.1 THROUGH FJN.3.
3. PROTECTIVE SIGNAGE SHALL BE INSTALLED AS PER DETAIL THIS SHEET AND AS INDICATED ON FOREST CONSERVATION PLAN SHEETS FJN.1 THROUGH FJN.3.
4. TREES TO BE REMOVED SHALL BE TAKEN OUT WITHOUT DAMAGING PROTECTED TREES.
5. ALL EQUIPMENT AND MACHINERY SHALL BE KEPT INSIDE THE BLAZE ORANGE FENCING AND WITHIN THE LOD.
6. ANY TYPE OF DISTURBANCE BEYOND THE LOD IS STRICTLY PROHIBITED.
7. PLACEMENT OF EXCAVATED/BACKFILL MATERIAL AND STORAGE OF EQUIPMENT/MACHINERY SHALL BE AVOIDED WITHIN THE CRITICAL ROOT ZONE AREAS OF SPECIMEN TREES IN ORDER TO MINIMIZE SOIL COMPACTION IN THESE SENSITIVE AREAS.
8. ROOT PRUNING AS PER DETAIL THIS SHEET SHALL BE UTILIZED FOR PROTECTION OF SPECIMEN TREES IN AREAS WHERE SPECIMEN TREE CRITICAL ROOT ZONES ARE LOCATED INSIDE THE LOD.
9. QUALIFIED PROFESSIONAL(S) RESPONSIBLE FOR MONITORING FOREST CONSERVATION REQUIREMENTS AND PERFORMING ANY NECESSARY CONSTRUCTION PERIOD MANAGEMENT SHALL VISIT THE PROJECT SITE ON TWO OCCASIONS:
- THE FIRST VISIT SHALL VERIFY PROPER INSTALLATION OF PROTECTIVE DEVICES AND COMPLETION OF OTHER PROTECTIVE MEASURES AND SHALL OCCUR BEFORE ANY CONSTRUCTION BEGINS.
- THE SECOND VISIT SHALL VERIFY CONTINUED COMPLIANCE WITH THE FOREST CONSERVATION PLAN AND ASSESS THE NEED FOR ADDITIONAL PROTECTIVE MEASURES TO MAINTAIN THE HEALTH OF THE RETENTION AREAS. THIS VISIT WILL OCCUR DURING THE CONSTRUCTION PERIOD.

POST-CONSTRUCTION PERIOD PROTECTION PROGRAM

A POST CONSTRUCTION PROTECTION PROGRAM IS REQUIRED TO GIVE THE FOREST RESOURCES REAVED OR PLANTED AS PART OF THE DEVELOPMENT PROPOSAL A HIGH PROBABILITY OF ACHIEVING THE SURVIVAL RATES REQUIRED FOR RELEASE OF SURETY, AS WELL AS LONG-TERM SURVIVAL. THE POST-CONSTRUCTION PROTECTION PROGRAM PERIOD SHALL BE FOR A MINIMUM OF TWO GROWING SEASONS, AS SPECIFIED IN THE HOWARD COUNTY FOREST CONSERVATION MANUAL.

PRESERVATION REQUIREMENTS

THE AREAS FOR FOREST RETENTION, REFORESTATION OR AFFORESTATION BY AN APPROVED FOREST CONSERVATION PLAN MUST BE PERMANENTLY PROTECTED AND RECORDED AS EITHER NON-DEVELOPABLE OPEN SPACE OR AS CONSERVATION EASEMENTS.

FOREST CONSERVATION WORKSHEET VERSION 2.0

Project Name: Blandair Phase 1-6 Date: 3/9/2023

NET TRACT AREA: A. Total tract area = 107.8, B. Area within 100 year floodplain = 0.0, C. Area to remain in agricultural production = 0.0, D. Net tract area = 107.8

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

Table with columns: ARA, MDR, IDA, HDR, MPD, CIA. Values: 0, 1, 0, 0, 0, 0

E. Afforestation Threshold = 15% x D = 16.2, F. Conservation Threshold = 20% x D = 21.6

EXISTING FOREST COVER: G. Existing forest cover (excluding floodplain) = 28.5, H. Area of forest above afforestation threshold = 12.3, I. Area of forest above conservation threshold = 6.9

BREAK EVEN POINT (BEP): J. Forest retention above threshold with no mitigation (BEP) = 23.0, K. Clearing permitted without mitigation = 5.5

PROPOSED FOREST CLEARING: L. Total area of forest to be cleared = 14.1, M. Total area of forest to be retained = 14.4

PLANTING REQUIREMENTS: N. Reforestation for clearing above conservation threshold = 1.7, P. Reforestation for clearing below conservation threshold = 14.4, Q. Credit for retention above conservation threshold = 0.0, R. Total reforestation required = 16.1, S. Total afforestation required = 0.0, T. Total reforestation and afforestation required = 16.1

FLOODPLAIN MAPPING WAS UPDATED IN THIS AREA AND THE 100-YEAR FLOODPLAIN FOR THE BLANDAIR PROPERTY HAS BEEN DETERMINED TO NO LONGER EXIST.

THE FOREST CONSERVATION PLANS FOR PHASES 1-3 & J WERE APPROVED PRIOR TO THE 2/6/2020 FOREST CONSERVATION ACT. AS SUCH, THEY ARE GRANDFATHERED TO THE PREVIOUS FOREST CONSERVATION REGULATIONS. THE AREA OF PHASE 6 WAS PREVIOUSLY INCLUDED IN THE FOREST CONSERVATION CALCULATIONS FOR PHASES 1-3 & J. THE GROSS AREA IN THE FC WORKSHEET IS ONLY FOR PHASES 1-3, 6 & J.

CURRENT PHASE

PHASE 6 FOREST CONSERVATION TABLE: Total Forest Cleared 1,021.4 SF / 0.02 Acres, Total Forest Retained 0.0 SF / 0.00 Acres, Total Other Clearing 1,616.8 SF / 0.04 Acres, Total Other Retention 0.0 SF / 0.00 Acres

OVERALL FOREST CONSERVATION TABLE: Total Forest Cleared 614,536.7 SF / 14.11 Acres, Total Forest Retained 626,788.8 SF / 14.39 Acres, Total Other Clearing 165,320.7 SF / 3.79 Acres, Total Other Retention 49,388.0 SF / 1.13 Acres

PREVIOUS PHASES

PHASE 1 FOREST CONSERVATION TABLE: Total Forest Cleared 125,176.3 SF / 2.87 Acres, Total Forest Retained 84,750.4 SF / 1.94 Acres, Total Other Clearing 50,244.6 SF / 1.15 Acres, Total Other Retention 4,561.8 SF / 0.10 Acres

PHASE 2 FOREST CONSERVATION TABLE: Total Forest Cleared 146,055.6 SF / 3.35 Acres, Total Forest Retained 17,005.4 SF / 0.39 Acres, Total Other Clearing 18,871.0 SF / 0.43 Acres, Total Other Retention 15,428.0 SF / 0.36 Acres

PHASE J FOREST CONSERVATION TABLE: Total Forest Cleared 185,289.6 SF / 4.26 Acres, Total Forest Retained 44,464.6 SF / 1.02 Acres, Total Other Clearing 73,223.1 SF / 1.68 Acres, Total Other Retention 2,120.1 SF / 0.05 Acres

PHASE 3 FOREST CONSERVATION TABLE: Total Forest Cleared 156,993.9 SF / 3.61 Acres, Total Forest Retained 480,568.5 SF / 11.03 Acres, Total Other Clearing 25,630.3 SF / 0.59 Acres, Total Other Retention 27,278.1 SF / 0.62 Acres

THESE TABLES HAVE BEEN UPDATED AS NEEDED FROM PREVIOUS SUBMITTALS/APPROVALS. NATURAL GROWTH AND DECAY, ALTERATIONS IN CONSTRUCTION, AND OVERLAPPING PROJECT AREAS HAVE GENERATED SMALL DIFFERENCES FROM THOSE PREVIOUSLY LISTED. THE PROVIDED TABLES ARE THE MOST ACCURATE AND UP-TO-DATE VALUES AT THE TIME OF THIS SUBMITTAL.

FUTURE PHASES

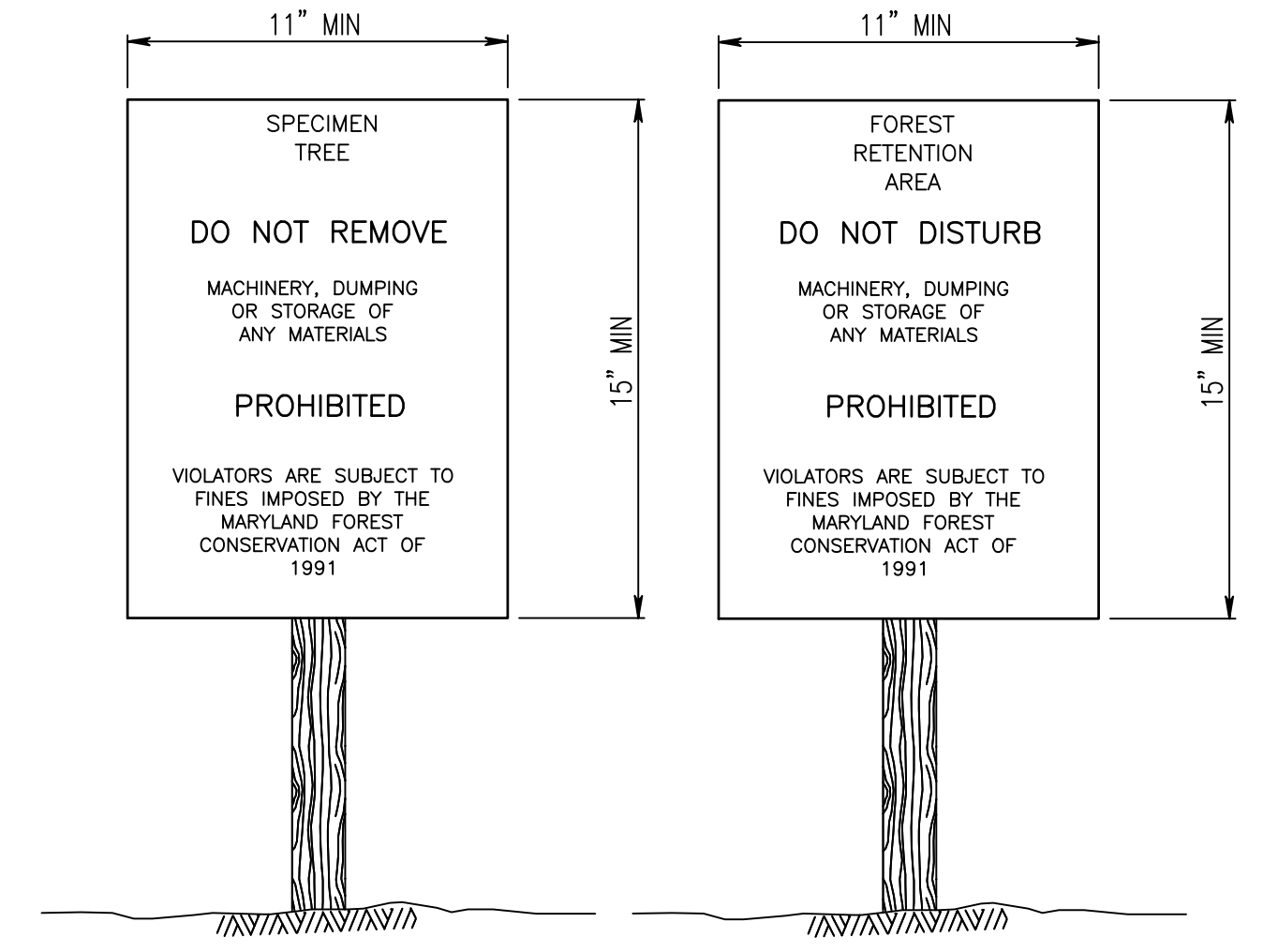
PHASE 4 FOREST CONSERVATION TABLE: Total Forest Cleared SF / Acres, Total Forest Retained SF / Acres, Total Other Clearing SF / Acres, Total Other Retention SF / Acres

PHASE 5 FOREST CONSERVATION TABLE: Total Forest Cleared SF / Acres, Total Forest Retained SF / Acres, Total Other Clearing SF / Acres, Total Other Retention SF / Acres

PHASE JN FOREST CONSERVATION TABLE: Total Forest Cleared 130,402.2 SF / 2.99 Acres, Total Forest Retained 11,738.6 SF / 0.27 Acres, Total Other Clearing 0.0 SF / 0 Acres, Total Other Retention 0.0 SF / 0 Acres

PHASE 7 FOREST CONSERVATION TABLE: Total Forest Cleared SF / Acres, Total Forest Retained SF / Acres, Total Other Clearing SF / Acres, Total Other Retention SF / Acres

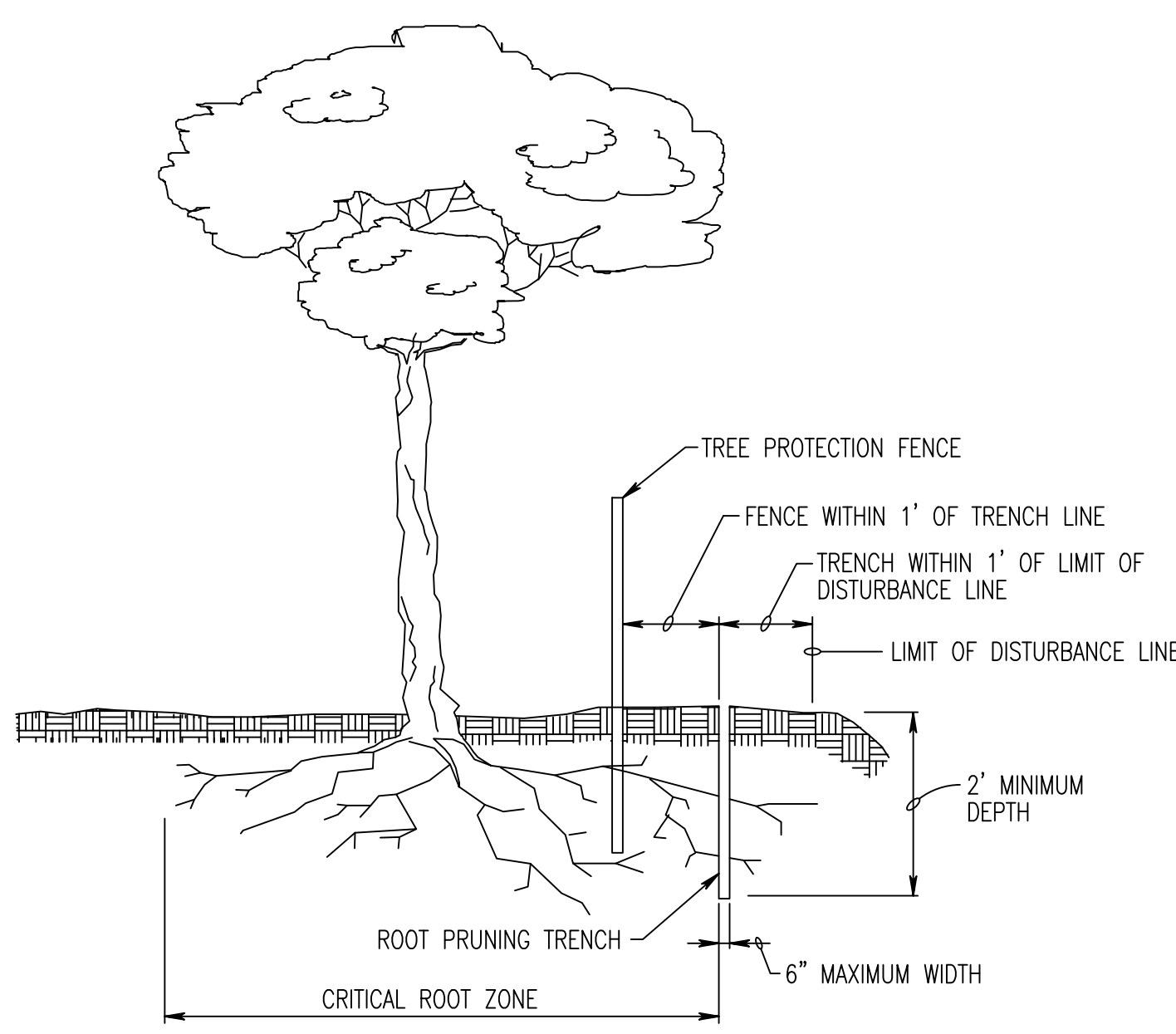
PHASE JN WAS DESIGNED BUT NOT SUBMITTED FOR APPROVAL. PHASE JN IS NOT INCLUDED IN THE OVERALL FOREST CONSERVATION TABLE.



- NOTES: 1. BOTTOM OF SIGN TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE. 2. SIGNS TO BE PLACED APPROXIMATELY 50' APART. CONDITIONS ON SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART. 3. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.

CONSTRUCTION SIGNS

NO SCALE



- NOTES: 1. RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS. 2. BOUNDARIES OF RETENTION AREA TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS. 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE. 4. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS. 5. PROTECTION SIGNAGE IS REQUIRED. 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

SPECIMEN TREE TABLE

Table with columns: Label, Common Name, Scientific Name, DBH, Condition, Stand, Save or Remove. Lists trees T1 through T52.

SPECIMEN TREE TABLE CONT'D

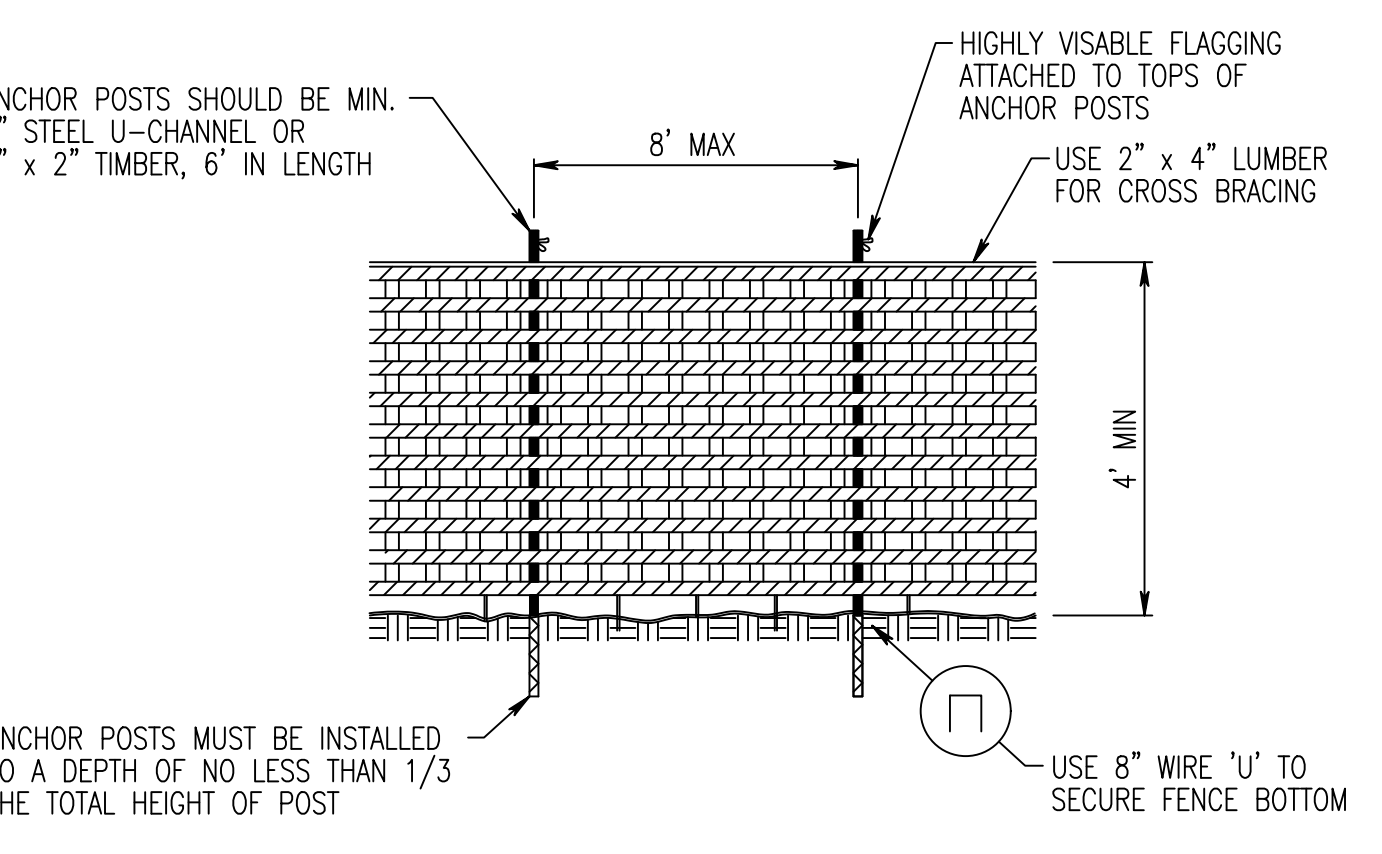
Table with columns: Label, Common Name, Scientific Name, DBH, Condition, Stand, Save or Remove. Lists trees T53 through T106.

*stand "offsite" means tree is located w/in the first 100 ft beyond the property line

APPROVED: DEPARTMENT OF PLANNING AND ZONING. Chief, Development Division: 12/20/2023. Chief, Division of Land Development: 12/4/2023. Director: 12/20/2023.

PLASTIC MESH TREE PROTECTION FENCE

NO SCALE



- NOTES: 1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE, ONLY. 2. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS. 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE. 4. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS. 5. PROTECTION SIGNAGE IS REQUIRED. 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

ROOT PRUNING

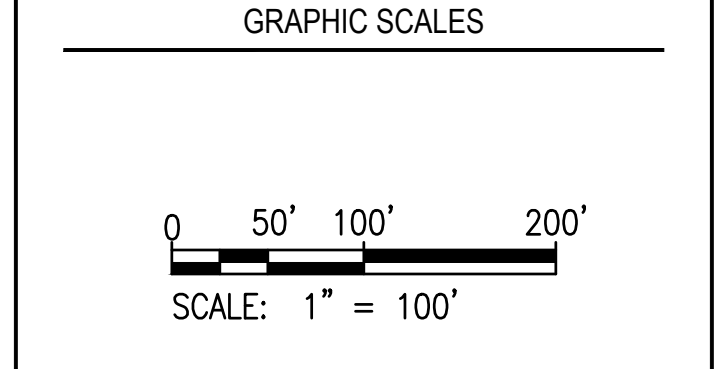
NO SCALE

REVISIONS table with columns: 1, PER HO. CO. COMMENTS, 3/6/23

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MD 21046 DEPARTMENT OF PUBLIC WORKS 3430 COURT HOUSE DRIVE ELLICOTT CITY, MD 21043

WRP Whitman, Requardt & Associates, LLP 801 South Caroline Street, Baltimore, Maryland 21231 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY TAX MAP 36, GRID 5, PARCEL 3 ZONING: RC-DEO ELECTION DISTRICT 6



SIGNATURE: DocuSigned by: Michael McQuade, ARBORIST/MD DNR QUALIFIED PROFESSIONAL, 10/5/22 DATE

BLANDAIR REGIONAL PARK - PHASE 6

FOREST CONSERVATION NOTES AND DETAILS Drawing No. F6.4 Scale: n/a Date: 10/2023 SDP Sheet 51 of 54 Des: TRH Drawn: TRH Check: MWM

REVISIONS	

HOWARD COUNTY

DEPARTMENT OF RECREATION AND PARKS
7120 OAKLAND MILLS ROAD
COLUMBIA, MD 21046

DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLCOTT CITY, MD 21043



PROPERTY

TAX MAP 36, GRID 5, PARCEL 3

ZONING: RC-DEO

ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE


 10/18/23

PROFESSIONAL CERTIFICATION.
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 28799
 EXPIRATION DATE: 8/10/2025

BLANDAIR REGIONAL PARK - PHASE 6

ELECTRICAL DETAILS

Drawing No.

E6.1

Scale: NOT TO SCALE

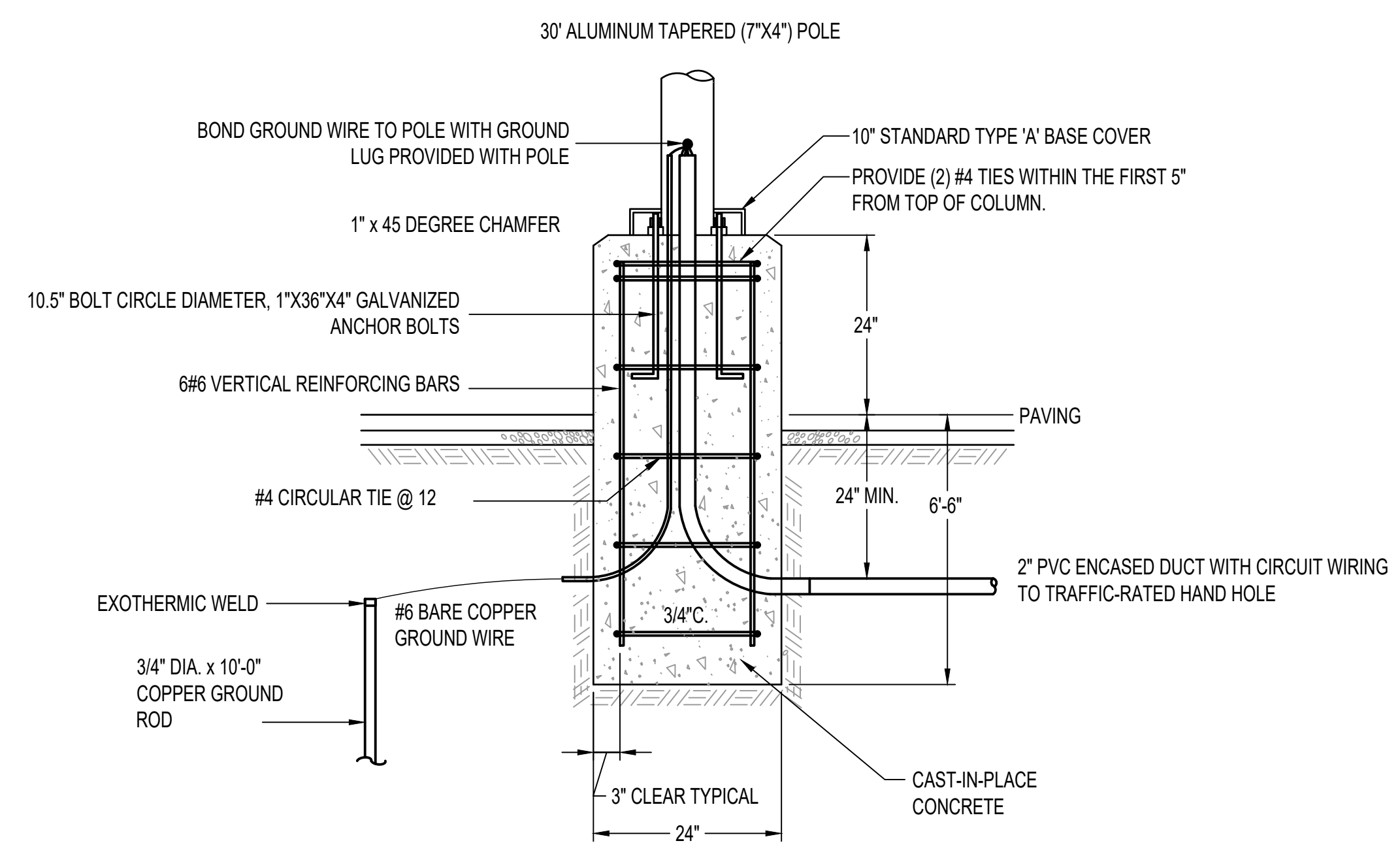
Date: 10/2023	SDP Sheet 52 of 54
Des: ACK	Drawn: ACK
Check: IHK	

GENERAL SHEET NOTES:

- REFER TO DRAWINGS E0.1 FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES.
- REFER TO DRAWINGS E1.1A AND E1.1B FOR ELECTRICAL SITE PLANS.
- REFER TO DRAWING E6.3 FOR HANDHOLE DETAILS.
- REFER TO E7.1 FOR PANEL SCHEDULES.
- REFER TO DRAWING E7.2 FOR LIGHTING FIXTURE SCHEDULE.
- REFER TO DRAWING E7.3 HAND HOLE AND DUCT BANK SCHEDULES.

SHEET KEYNOTES:

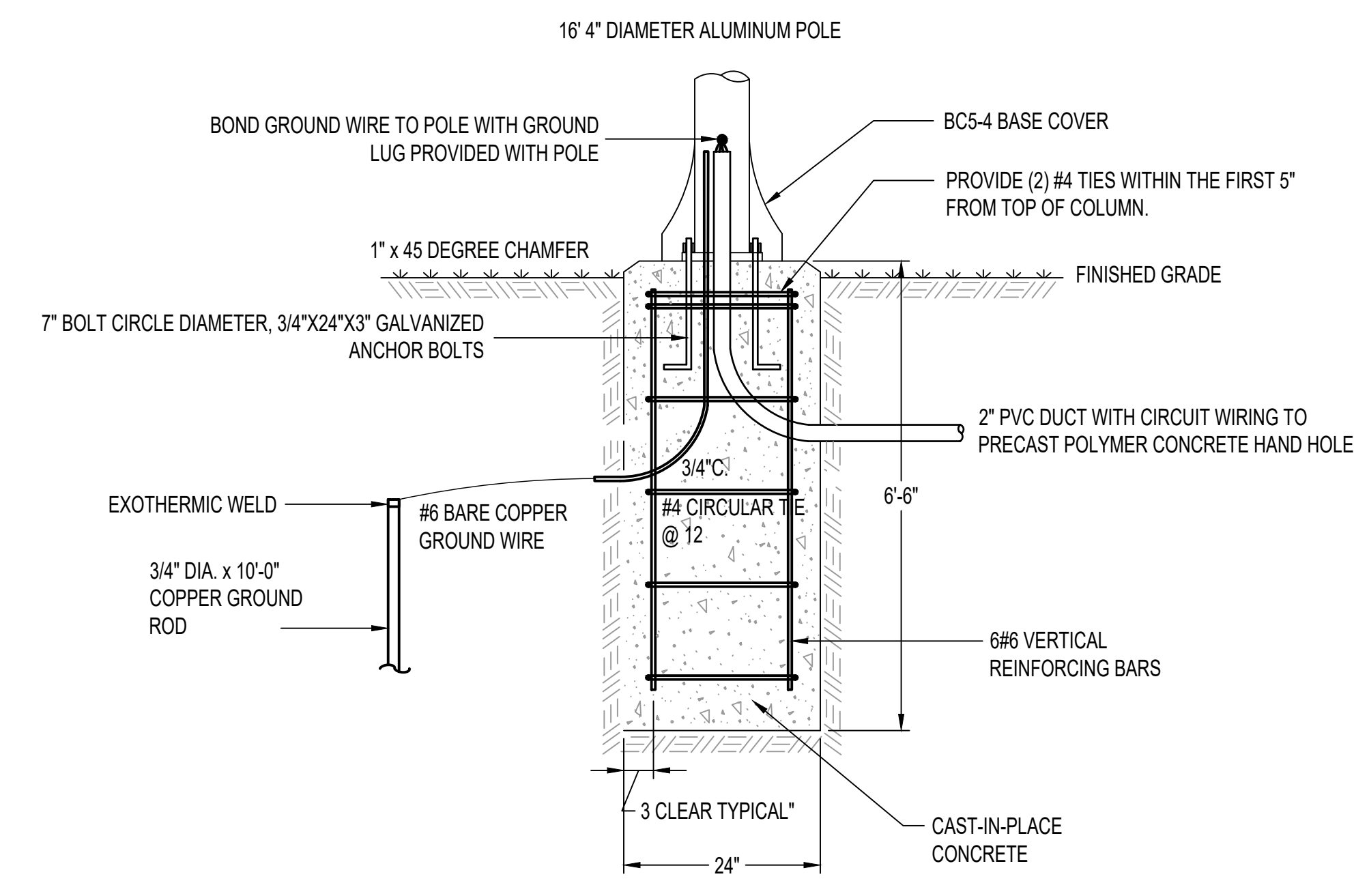
- CONDUITS INSTALLED IN DUCT BANKS WITH SAND ENVELOPE MUST BE SCHEDULE 80 P.V.C.
- DUCT BANKS CONTAINING TWO OR MORE CONDUIT MUST INCLUDE CONDUIT SPACERS INSTALLED 4" ON CENTER.
- SAND ENVELOPE FOR DUCT BANKS MUST EXTEND A MINIMUM OF 4' BEYOND THE EDGES OF THE OUTER CONDUITS.
- TOP OF TOP CONDUIT IN DUCT BANK MUST BE A MINIMUM OF 30" BELOW GRADE.



NOTE:
REFER TO SHEET S0.1 AND SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

ELEVATION/SECTION

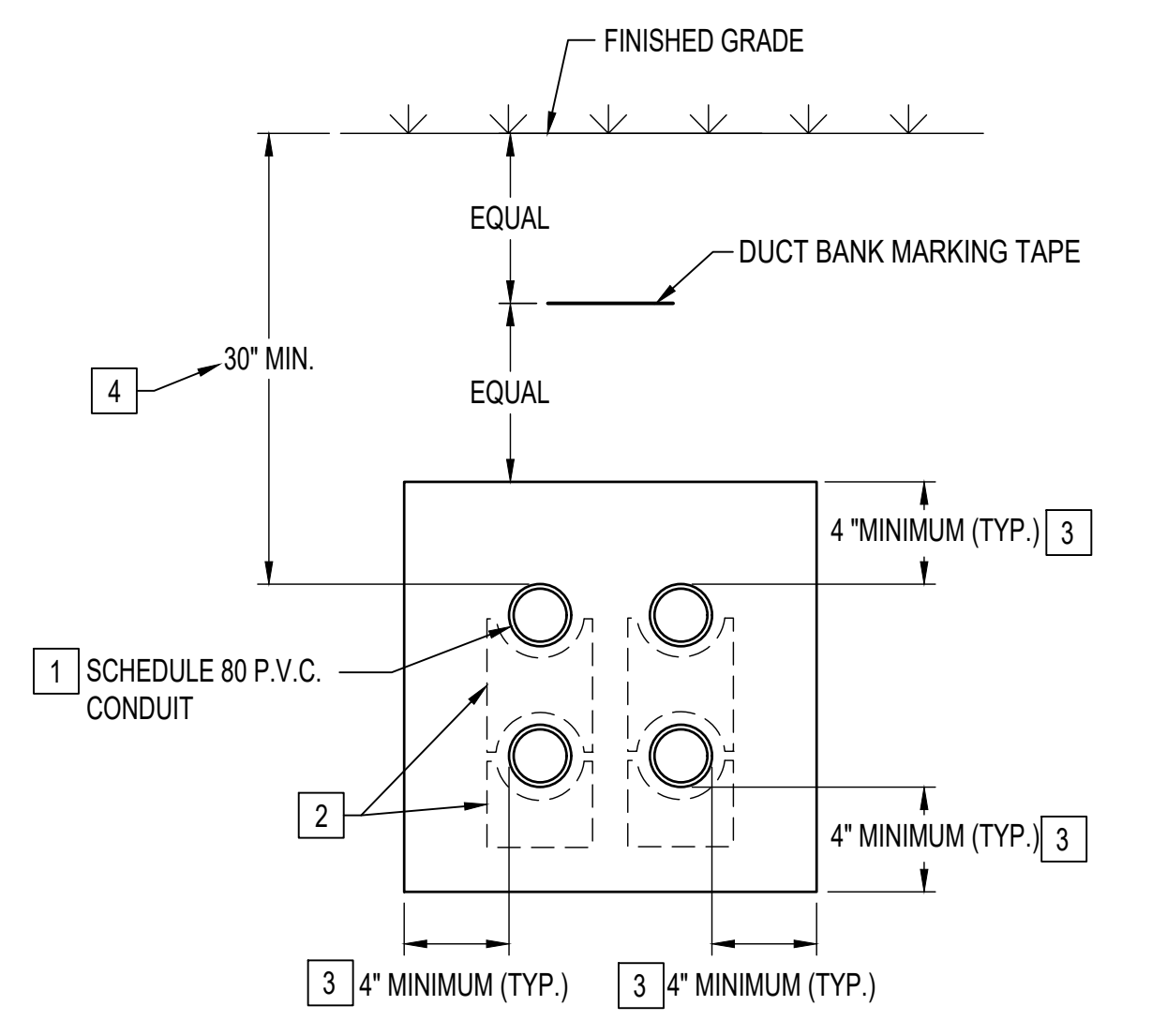
1 DETAIL - PARKING POLE BASE - FIXTURE TYPE J
E6.1 NOT TO SCALE



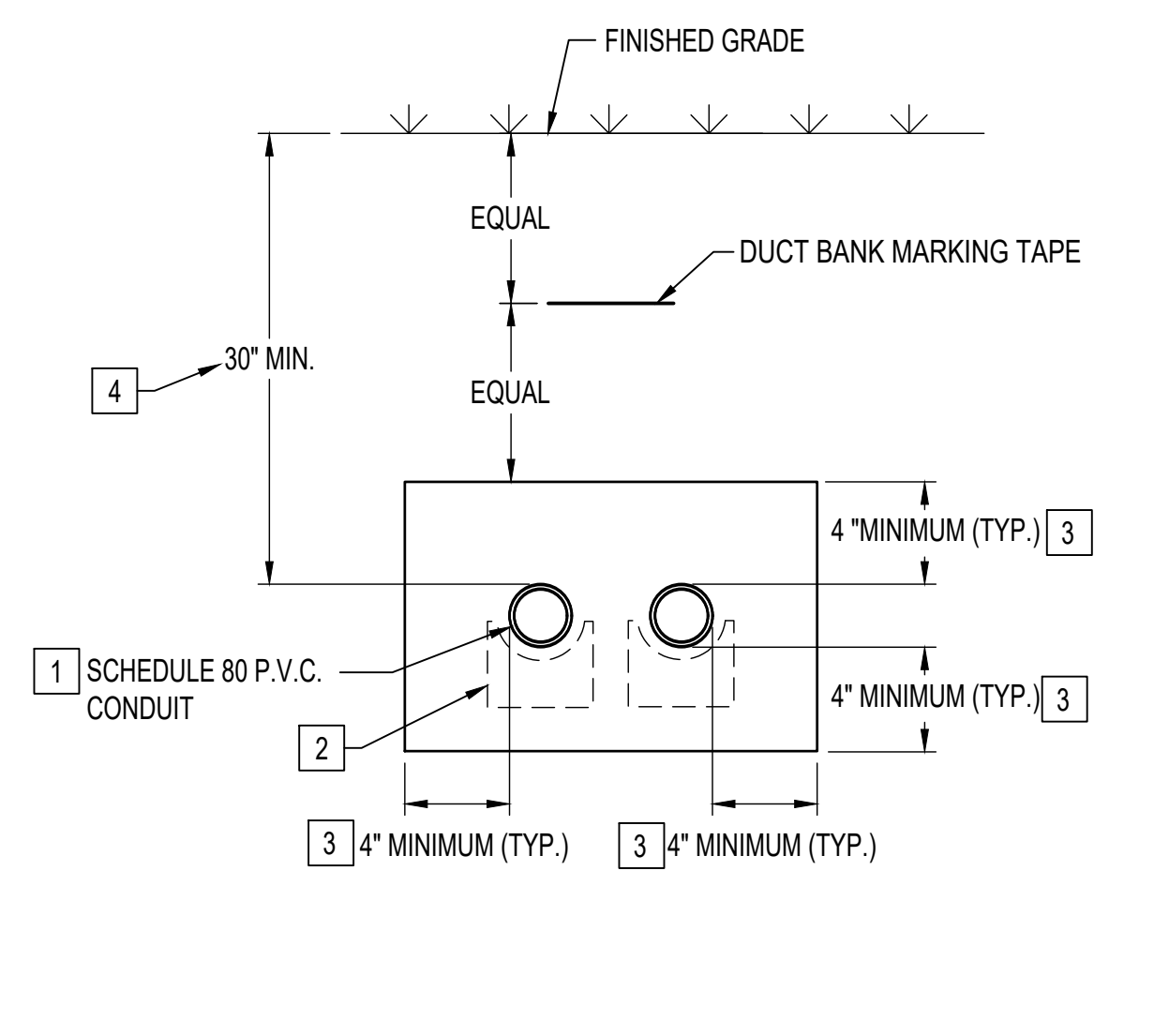
NOTE:
REFER TO SHEET S0.1 AND SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

ELEVATION/SECTION

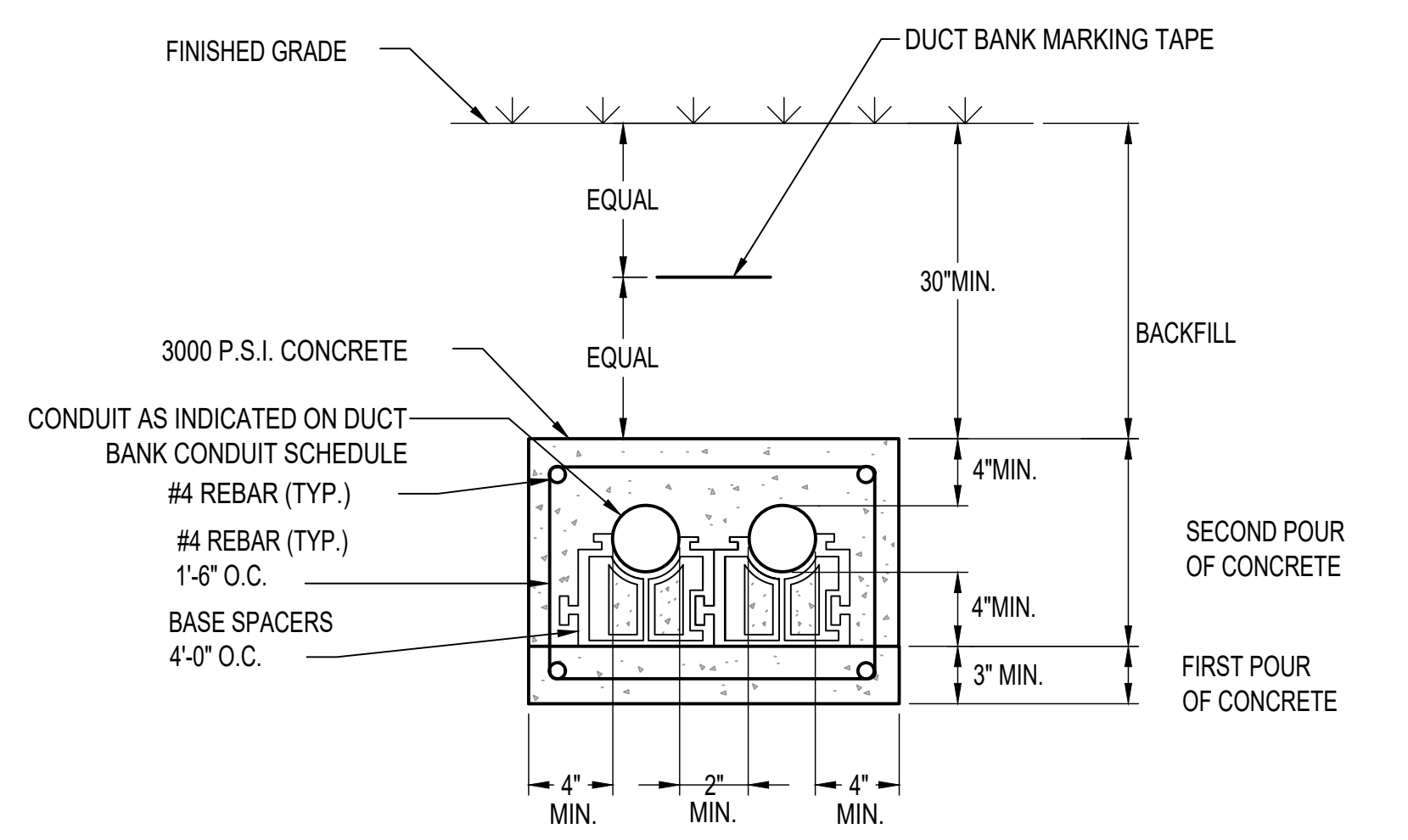
2 DETAIL - WALKWAY POLE BASE - FIXTURE TYPE K
E6.1 NOT TO SCALE



3 TYPICAL UNDERGROUND 4-WAY DUCT BANK WITH SAND ENVELOPE CONSTRUCTION DETAIL
E6.1 NOT TO SCALE



4 TYPICAL UNDERGROUND 2-WAY DUCT BANK WITH SAND ENVELOPE CONSTRUCTION DETAIL
E6.1 NOT TO SCALE



5 TYPICAL UNDERGROUND 2-WAY DUCT BANK WITH CONCRETE ENCASEMENT CONSTRUCTION DETAIL
E6.1 NOT TO SCALE

PR4 - Aluminum Pole

4" ROUND (RD) POLE

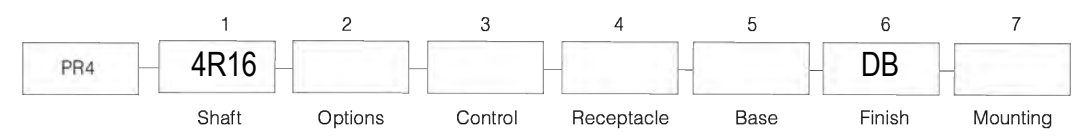


Table with columns: SERIES, 1. SHAFT, OAH, SHAFT, WT, MAXIMUM ALLOWABLE EPA (MPH) (85, 90, 100, 110, 120, 130, 140, 150).

Note: Overall height is measured to top of pole.

2. OPTIONS

May choose one LR Ladder Rest

3. CONTROLS

may choose one PCR Photocontrol/Receptacle

- PHC-120V Auton Type Photoctrl, 120V
PHC-208V Auton Type Photoctrl, 208V
PHC-240V Auton Type Photoctrl, 240V
PHC-277V Auton Type Photoctrl, 277V
SCP Sensor Control Programmable 120-277V
SCP-347V Sensor Control Programmable 347V
SCP-480V Sensor Control Programmable 480V

4. RECEPTACLE

May choose one GFI GFI Receptacle

- DRB Duplex Receptacle
RBC Receptacle Box Cover

5. BASE

SBC 1-piece Cover

- 2PCBC 2-piece Cover
BC1 12.75" x 8.25" 3pc. Cover
BC2 12.75" x 6.25" 3pc. Cover
BC5 14" x 14" Cast Cover
BC6 17" x 17" Cast Cover
BC7 18" x 30" Cast Cover
BC8 17" x 38" Cast Cover
ACBCR 14" x 18" Cast Cover
HB Hinged Base

Note: 1. Optional receptacles standard location are 24" below the top of the pole.

6. FINISH

STANDARD COLOR

- AGN Anodized Aluminum
BL Black
BLT Matte Black
CRT Copper
DB Dark Bronze
DGN Dark Green
LG Light Grey
MAL Matte Aluminum
MG Medium Grey
WH White
TT Titanium
VBU Verdé Blue
WDB Weathered Bronze

PREMIUM COLOR

- SHK Sienna
SPP Salt and Pepper
SFM Seafoam
WCP Weathered Copper
RAL RAL 4 digit Color
CUSTOM Custom Color

7. MOUNTING

- TEN Tenon 2.38" x 4"
TEND Tenon 2.75" x 4"
1A Single Side Arm
2B Double Side Arm
PTF Post Top Fixture
PTA Post Top Arm
PTAD Post Top Adaptor
ND No Drilling

Base casting shall be heat treated to a T-6 condition, and of uniform wall thickness, with no warping or mold shifting.

WARNINGS

Caution must be exercised in the selection of a design wind speed when the pole is to be installed in a special wind region (as indicated by the wind map) or in an area where wind speed is unpredictable.

AAL recommends consulting a local engineer when the pole is to be installed in an area that may be subject to extreme weather and exposure.

Poles installed on structures such as buildings and bridges may be subjected to vibration, oscillations, and other fatigue effects which are not covered by the AAL warranty.

The use of banners or other appendages can severely affect the loading of a pole. No banner or other appendage should be attached to an AAL pole unless approved by AAL.

If the products are to be used on an existing foundation or on other structures, the customer assumes all responsibility for the structural integrity of the existing foundation, anchorage or structures and all the consequences arising therefrom.

CAUTION

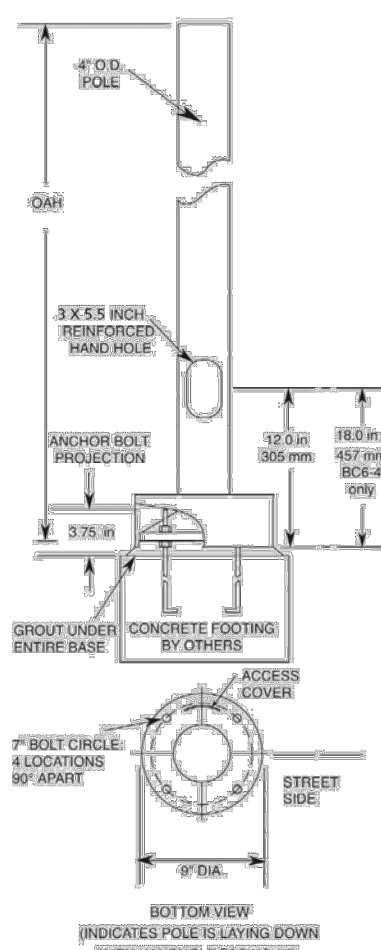
Poles should never be erected without the luminaire installed. Anchor bolts shall be hot dip galvanized steel. Eight galvanized hex nuts and flat washers, and a bolt circle template shall be provided. Anchor bolt for poles are 3/4" x 24" x 3".

CERTIFICATION Certified UL 1598 in accordance with Article 410 of ANSINFPA 70, National Electrical Code.

PR4 - Aluminum Pole

4" ROUND (RD) POLE

DIMENSIONS



ARCHITECTURAL AREA LIGHTING 16555 East Gale Ave. | City of Industry | CA 91745

P 626.988.5686 | F 626.989.2695 | www.aal.net Copyright © 2012 | REV 6.15

SP1 (LED) - Spectra Large Scale

TYPE

- Reliable, efficient operation
Type 2, 3, 4, 5 distributions
3000K, 4000K and 5000K CCT
0-10V dimming ready
Integral surge protection
IP65
Configurable hoods in natural finishes
Configurable pole and arm mounting
Diffused lens option
Scaled family members



Table with columns: 1. LUMINAIRE, 2. HOOD, 3. OPTICAL, 4. COLOR TEMPERATURE, 5. DRIVE CURRENT, 6. COLOR, 7. OPTIONS, 7. MOUNTING.

1. LUMINAIRE

SP1 Spectra large scale. Slips over a 4710mm pole

Table with columns: ANGLD, FLARED, STRAIGHT, DOUBLE, ANG, FLR, STR, DBL

3. OPTICAL SYSTEM

- Y2-32LED (Type 2)
Y3-32LED (Type 3)
Y4-32LED (Type 4)
Y5-32LED (Type 5)
Note: Y3-32LED-4K is DLC compliant

4. COLOR TEMPERATURE

- 3K (3000K Warm White)
4K (4000K Neutral White)
5K (5000K Bright White)

5. DRIVE CURRENT

550 (57 watts)

6. COLOR

- BSL Black Glass Smooth
BLT Black Matte Textured
DBS Dark Bronze Glass Smooth
DBT Dark Bronze Matte Textured
GTT Graphite Matte Textured
LGS Light Grey Glass Smooth
LGT Light Grey Matte Textured
PSS Platinum Silver Smooth
VGT Verde Green Textured
WHS White Glass Smooth
WHF White Matte Textured
WHF Color Option
CC* Custom Color

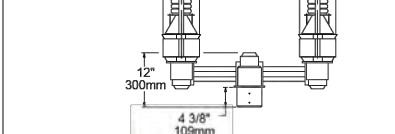
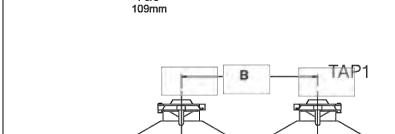
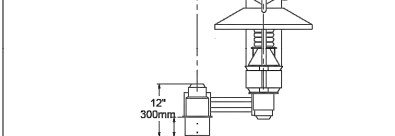
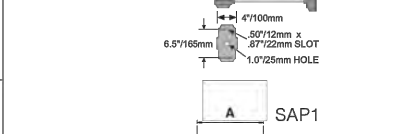
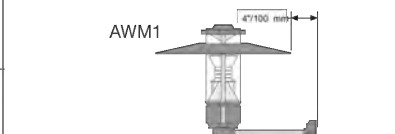
7. OPTIONS

AD5 SP1 adaptor. Designed to slip over a 5710mm O.D. pole
LDL Lighted diffused lens
SCP (Sensor Control Programmable) pole accessory is available to provide occupancy detection for outdoor applications meeting California Title 24. For complete spec sheet and ordering information, visit www.aal.net/products/sensor_control_programmable/

8. MOUNTING (Optional)

All arms regardless of hood diameter have a 4710mm distance from the edge of the shade to the pole centerline or face of the wall.
AWM1 Wall plate is 8.5710mm x 4.75710mm
SAP1 Pole Mount slips over a 4710mm pole
TAP1 Pole Mount slips over a 4710mm pole

Table with columns: Hood Style, A, B, Project (mm), Flange (mm), Weight (kg), Double (mm)



Visit www.aal.net for Arms, Poles & Accessories Specification Guide

SPECIFICATIONS

- Luminaire housings shall be cast aluminum, A356 alloy.
Outer lens shall be clear acrylic and sealed to the housing with a molded silicone gasket on the top and bottom.
Vertical studs shall be 316 stainless steel tubing.
All internal and external hardware shall be stainless steel.

HOOD

- Hoods shall have hemmed or beaded edges for added strength.
The underside of the hoods are painted to match the fixture color.

OPTICAL MODULE

- Light emitting diode (LED) assembly shall be sealed to a die-cast anodized aluminum heat sink with an injection molded silicone rubber gasket and stainless steel bezel, IP65.
LED optics shall be injection molded PMMA acrylic and be mounted to a metal printed circuit board with a uniform conformal coating over the panel surface and electrical features.

ELECTRICAL

- Luminaires shall accept 120 thru 277 50/60Hz input voltage have integral surge protection and wire leads for controls.
Drivers shall be UL recognized, have a minimum starting temperature of -30°C and have a 0-10V dimming interface with a dimming range of 10-100%.
Drivers shall have a power factor >= 90 and THD of <= 20% at full load with an inrush current maximum of <= 20.0 Amps maximum at 230VAC.
Drivers shall not be compatible with current sourcing dimmers, consult factory for current list of known compatible dimming systems.
Approved dimmers include Lutron-Diva ATV, Lutron Nova NTFV and NTFV.
LifeShield™ shall be provided with all configurations for added protection in the event of abnormally excessively high ambient temperature conditions.
Surge protector shall be UL recognized and have a surge current rating of 10,000 Amps using the industry standard 8/20uSec wave and surge rating of 37.2.

SP1 (LED) - Spectra Large Scale

TYPE

- CONTROLS SCP shall have an integral surge protection device with a current rating of 10,000 Amps using the industry standard 8/20uSec wave and surge rating of 37.2.
Sensor not intended for use with additional photo-control, wireless control or dimming systems.

SERVICING

- The electrical assembly shall be mounted to a prewired internal service tray and accessed by loosening two captive bolts and lifting off the top of the Luminaire.

ARM AND POLE MOUNTING

- The pole mounted arm for a single fixture (SAP) and pole mounted arm for two fixtures at 180° (TAP) shall have a cast aluminum post top and fixture filter with two round horizontal stainless steel bars.
The wall mounted arms for a SP1 fixture shall have a cast aluminum wall plate, cover and fixture filter with two round horizontal stainless steel bars. The cover shall secure to the wall plate with four stainless steel set screws.

FINISH

- Luminaire finish shall consist of a five stage pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TOC polyester powder coat finish.
Luminaire finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

CERTIFICATION

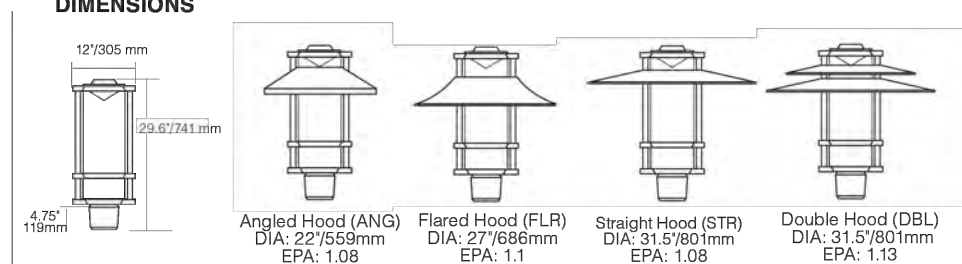
- Luminaires shall be listed with ETL for outdoor, wet location use, UL1598, UL 8750 and Canadian CSA Std. C22.2 no.250. IP65.

WARRANTY / TERMS AND CONDITIONS OF SALE

Download: http://www.hubbelllighting.com/resources/warranty/

AAL reserves the right to change product specifications without notice.

DIMENSIONS



SP1 HEIGHT: 29.6741mm WEIGHT: 42 lbs

PERFORMANCE DATA (32 LEDs, 550 MA DRIVE CURRENT, 57 WATTS)

Table with columns: TYPE, LENS, LUMENS, LPW, B U G, LUMENS, LPW, B U G, LUMENS, LPW, B U G, AMPS@ 120VAC, AMPS@ 277VAC

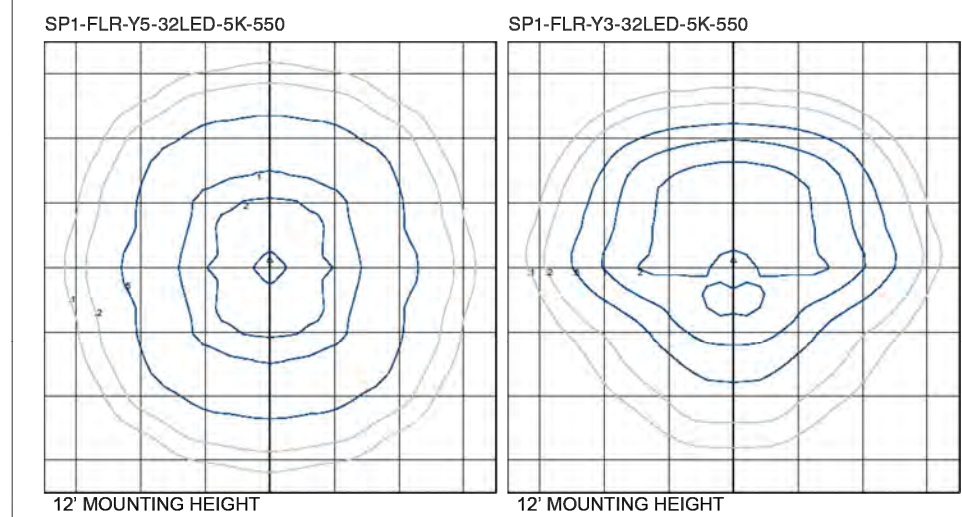


Table with columns: AMBIENT TEMP, 0, 25,000, 50,000, 100,000, PROJECTED LUMEN MAINTENANCE



APPROVED: DEPARTMENT OF PLANNING AND ZONING

Table with columns: Name, Title, Date. Includes signatures for Chad Edmondson and Lynda Eversberg.

Table with columns: REVISIONS

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MD 21046 DEPARTMENT OF PUBLIC WORKS 3430 COURT HOUSE DRIVE ELLICOTT CITY, MD 21043

WRM Whitman, Reardon & Associates, LLP 801 South Caroline Street, Baltimore, Maryland 21231 Phone: 410-235-3450 Fax: 410-243-5716

PROPERTY TAX MAP 36, GRID 5, PARCEL 3 ZONING: RC-DEO ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE STATE OF MARYLAND PROFESSIONAL ENGINEER No. 28799 10/18/23 PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 2289 EXPIRATION DATE: 8/10/2025

BLANDAIR REGIONAL PARK - PHASE 6

ELECTRICAL WALKWAY LIGHT DETAILS Drawing No. E6.2A Scale: NOT TO SCALE Date: 10/2023 SDP Sheet 53 of 54 Des: ACK Drawn: ACK Check: IHK

FILENAME: N:\42038-006\CAD\N_42038006E62.DWG PLOT DATE: 10/12/2023 10:56:40 PM PAGE SETUP: WRA-PDF C82624_PLOT STYLE: WRA_ANNOTCTE PAPER SIZE: ARCH FULL BLEED D 36x60 X 24.00 (INCHES)

DESCRIPTION

LED technology combined with the Icon luminaires unique form creates the choice solution for modern site lighting applications. The Icon luminaires gentle curve and sleek profile creates a shape that is beyond common. Two unique arm choices combined with structural element options provide no limitations in bridging to the architectural application.

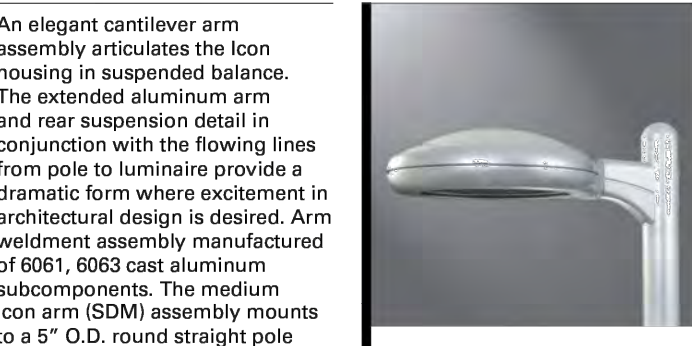
SPECIFICATION FEATURES

Construction HOUSING: Heavy-wall, one-piece, die-cast aluminum housing has precise tolerance control and repeatability in manufacturing. Integral aluminum heat sink provides superior heat transfer in +40°C ambient environment. DOOR: One-piece, die-cast aluminum construction with tool-less release latch. Door swings down and is retained on heavy duty leaf/pin hinge. GASKET: Continuous gasket provided to seal housing to door. HARDWARE: Tool-less release button latches are stainless steel/aluminum construction, painted to match housing and allow access to internal housing and electrical components.

Optics Choice of twelve patented, high-efficiency AccuLED Optics™ distributions. Optics are precisely designed to shape the light output, maximizing efficiency and application spacing. AccuLED Optics technology creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (4- 275K) CCT and minimum 70 CRI. Optional 3000K CCT, 70 or 80 CRI. For the ultimate level of spill light control, an optional house-side shield accessory can be field or factory installed. The house-side shield is designed to seamlessly integrate with the SL2, SL3 or SL4 optics.

Electrical LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz.

Table with columns: Catalog #, Project, Comments, Prepared by, Type, Date. Catalog # ICM-E06-LED-E1-SL4-GM, Type J.



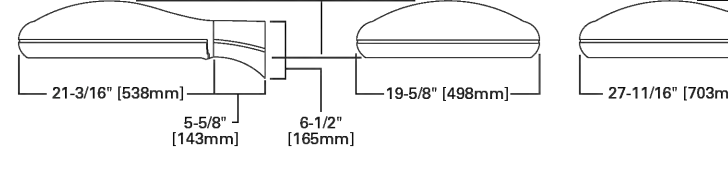
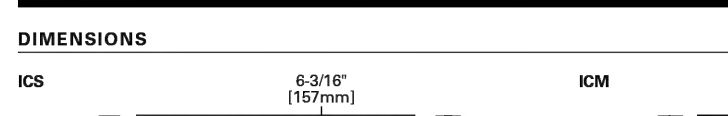
ICM 1 - 6 LightBARs ICS 1 - 4 LightBARs Solid State LED ARCHITECTURAL AREA/SITE LUMINAIRE

ICM 1 - 6 LightBARs ICS 1 - 4 LightBARs Solid State LED ARCHITECTURAL AREA/SITE LUMINAIRE. An elegant cantilever arm assembly articulates the Icon housing in suspended balance. The extended aluminum arm and rear suspension detail in conjunction with the flowing lines from pole to luminaire provide a dramatic form where excitement in architectural design is desired. Arm weldment assembly manufactured of 6061, 6063 cast aluminum subcomponents. The medium Icon arm (SDM) assembly mounts to a 5" O.D. round straight pole equipped with a 4" O.D. by 10" tall tenon. The Small Icon Arm (SIS) Fits 4" O.D. tenon or slugs over 4" round straight pole. Arm secures to pole with provided stainless steel hex head fasteners and includes a removable side cap for wire access and inspection.

ENERGY DATA Electronic LED Driver >80% Power Factor <20% Total Harmonic Distortion 120-277V/60 & 60Hz, 247V/60Hz, 480V/60Hz <40°C Minimum Temperature 40°C Ambient Temperature Rating

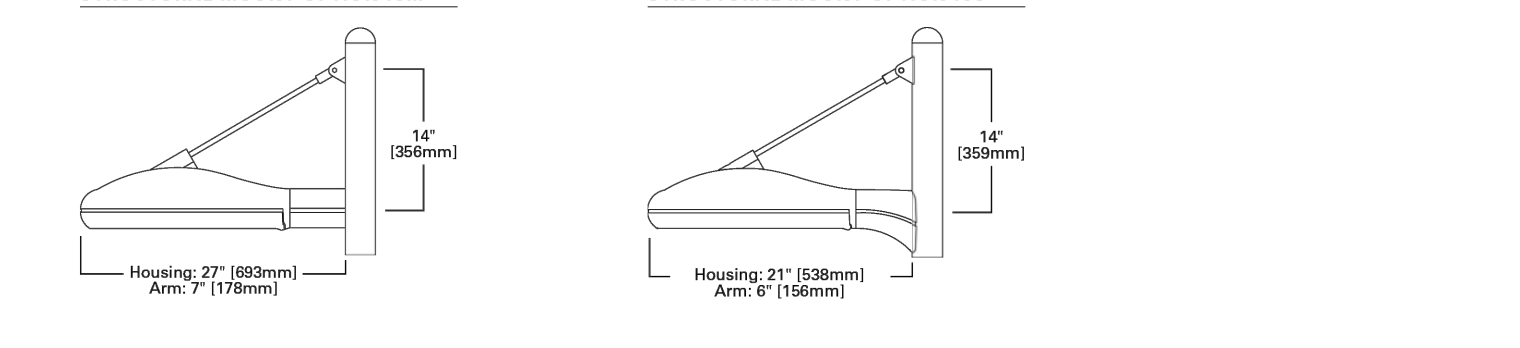
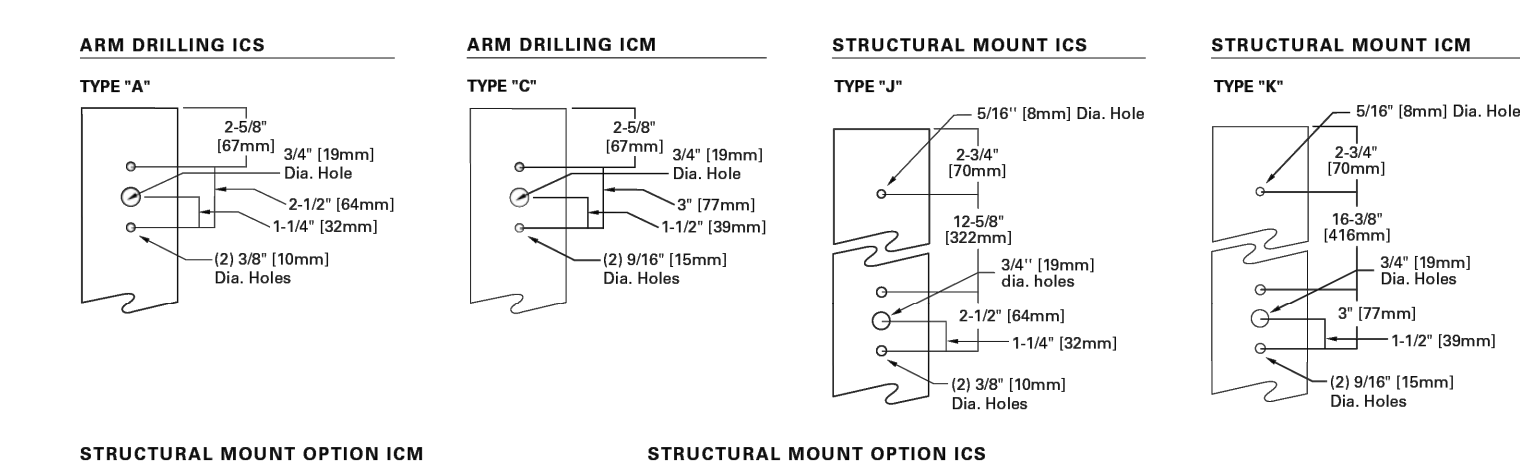
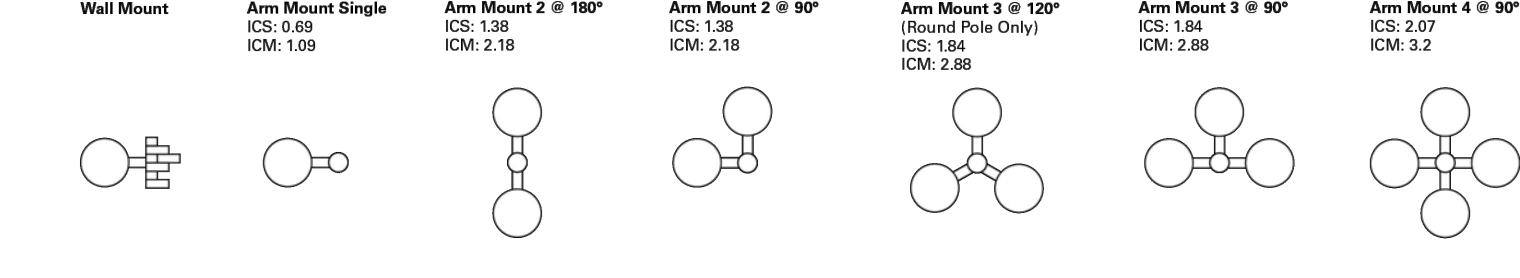
EPA Effective Projected Area (Sq. Ft.) ICS Icon Small: Single 0.05 Single Structural: 0.21 ICM Icon Medium: Single 1.05 Single Structural: 1.11

SHIPPING DATA Approximate Net Weight: ICS Icon Small: 37 lbs. (16.82 kgs.) ICM Icon Medium: 50 lbs. (22.73 kgs.)

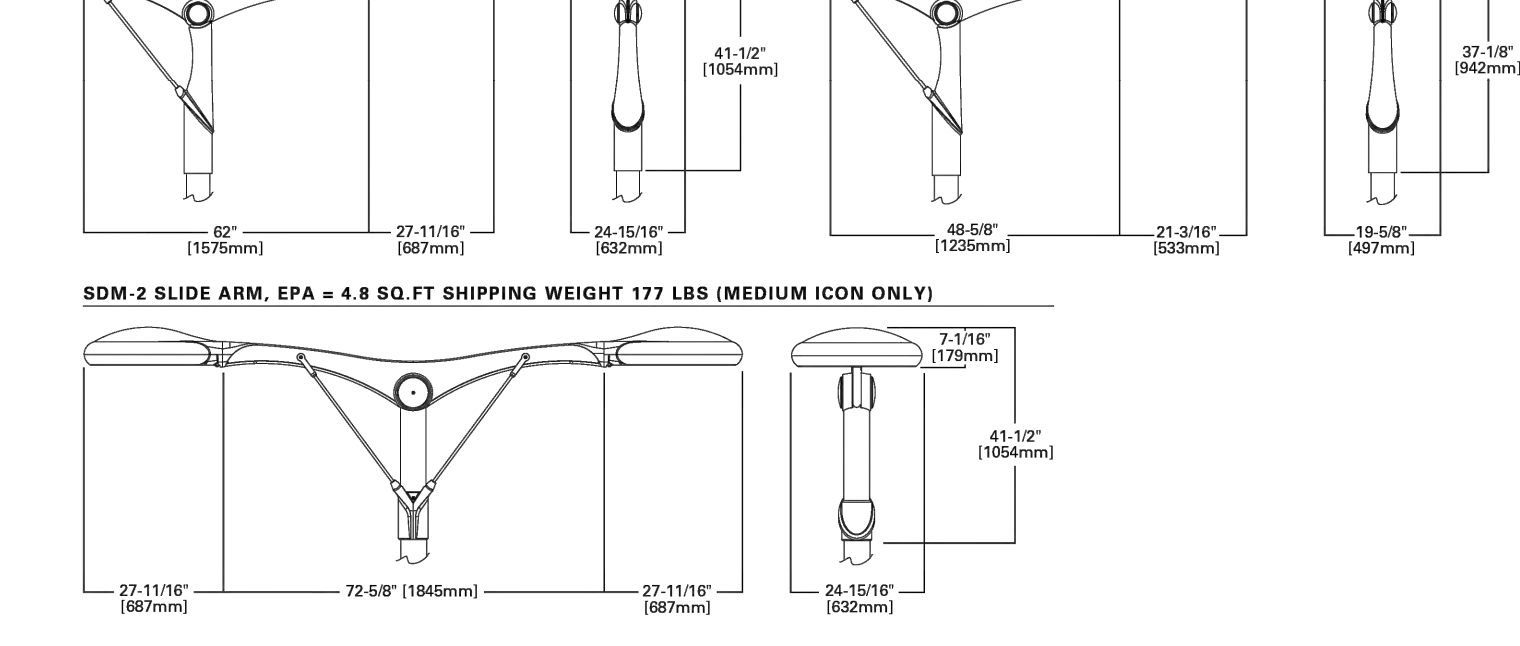


COOPER Lighting Solutions

MOUNTING CONFIGURATIONS AND EPAS



SDM-1 SLIDE ARM, EPA = 3.5 SQ.FT SHIPPING WEIGHT 108 LBS (MEDIUM ICON ONLY) SDS SLIDE ARM, EPA = 2.9 SQ.FT SHIPPING WEIGHT 88 LBS (SMALL ICON ONLY)

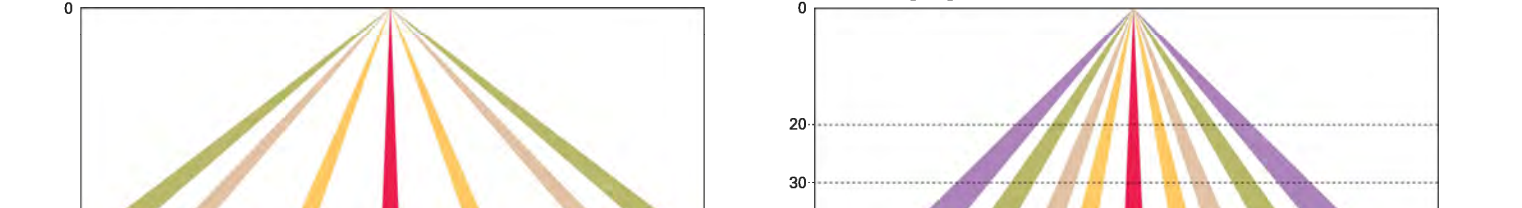
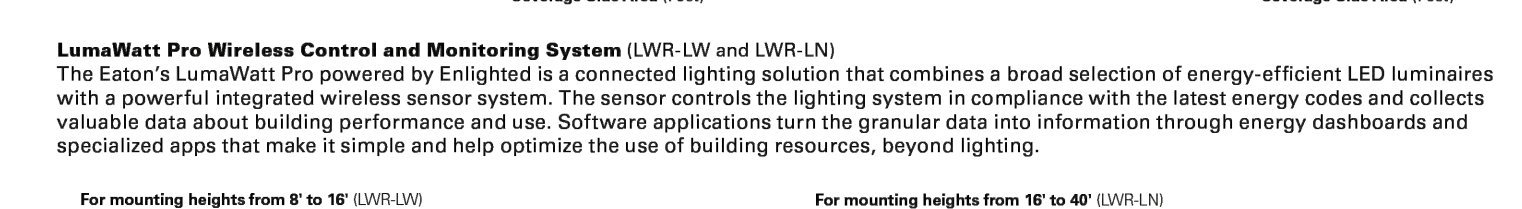
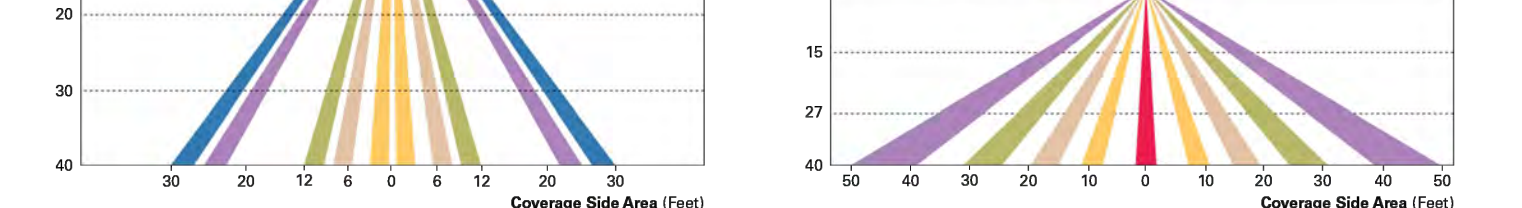
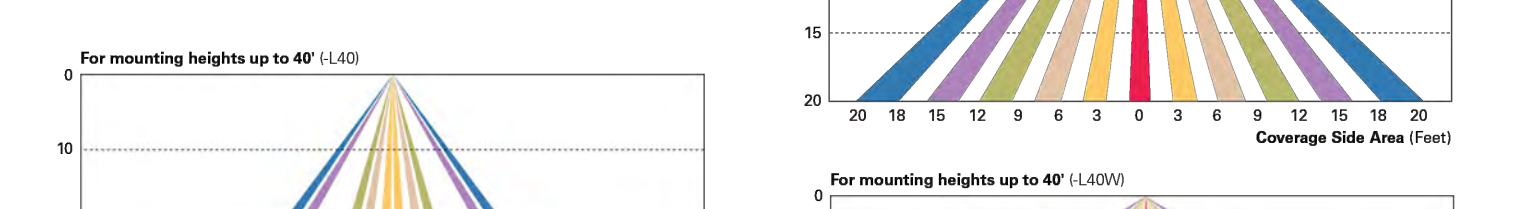
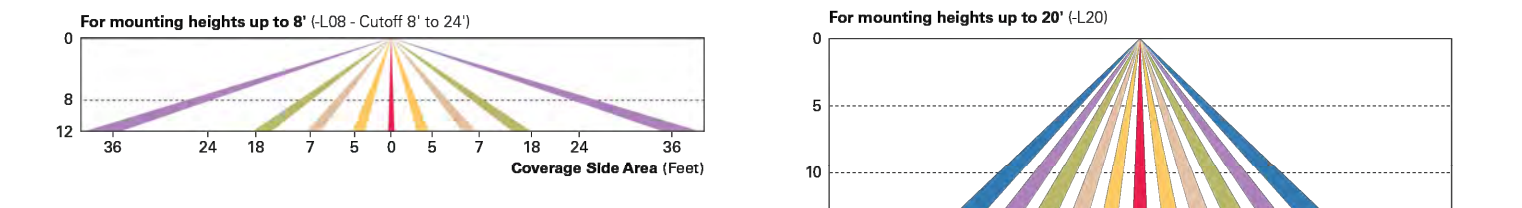


COOPER Lighting Solutions

CONTROL OPTIONS

0-10V (DIM) The DIM option provides 0-10V a dimming driver and dimming wire leads for use with a lighting control panel or other control method. Photocentral (PC, PER and PER7) Optional button-type photocentral (PC) and photocentral receptacles (PER and PER7) provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PER7 receptacle. Dimming Occupancy Sensor (MS/DIM-LXX, MS/X-LXX and MS-LXX) These sensors are factory installed in the luminaire housing. When the MS/DIM-LXX sensor option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MS/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of five minutes. The MS-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity. The MS/X-LXX is also preset for five minutes and only controls the specified number of light engines to maintain steady output from the remaining light engines.

These occupancy sensors includes an integral photocell that can be activated with the FSIR-100 accessory for "dusk-to-dawn" control or daylight harvesting - the factory preset is OFF. The FSIR-100 is a wireless tool utilized for changing the dimming level, time delay, sensitivity and other parameters. A variety of sensor lens are available to optimize the coverage pattern for mounting heights from 8'-40'.



WaveLine Wireless Outdoor Lighting Control Module (WOLC-7P-10A) The 7-pin wireless outdoor lighting control module enables WaveLine to control outdoor area, site and flood lighting. WaveLine controls outdoor lighting using schedules to provide ON, OFF and dimming controls based on astronomical or time schedules based on a 7 day week.

LumaWatt Pro Wireless Control and Monitoring System (LWR-LW and LWR-LN) The Eaton's LumaWatt Pro powered by Enlighted is a connected lighting solution that combines a broad selection of energy-efficient LED luminaires with a powerful integrated wireless sensor system. The sensor controls the lighting system in compliance with the latest energy codes and collects valuable data about building performance and use. Software applications turn the granular data into information through energy dashboards and specialized apps that make it simple and help optimize the use of building resources, beyond lighting.



COOPER Lighting Solutions

Invue

Table with columns: Catalog #, Project, Comments, Prepared by, Type, Date. Catalog # ART7L30AGMC1XDXGV, Type J.

FEATURES • Tapered aluminum shaft with polished finish • Anchor bolt per ASTM A576 with (1) nut, (1) flat washer • Cast aluminum alloy base with aluminum bolt covers • Three and four-bolt anchorage configurations • 10'-45' mounting heights • Drilled or tenon (specify) • Options to meet Buy American and other domestic preference requirements



ART ALUMINUM ROUND TAPERED

DESIGN CONSIDERATIONS - VIBRATIONS AND NON-GROUND MOUNTED INSTALLATIONS The information contained herein is for general guidance only and is not a replacement for professional judgment. Design considerations for wind-induced vibrations and non-ground mounted installations (e.g., installations on bridges or buildings) are not included in this document. Consult with a professional, and local and federal standards, before ordering to ensure product is appropriate for the intended purpose and installation location. Refer to the Cooper Lighting Solutions Light Pole White Paper for risk factors and design considerations. Last revised: 2020. NOTE: The Limited Warranty for this product specifically excludes fatigue failure or similar damage resulting from vibration, harmonic oscillation or resonance.

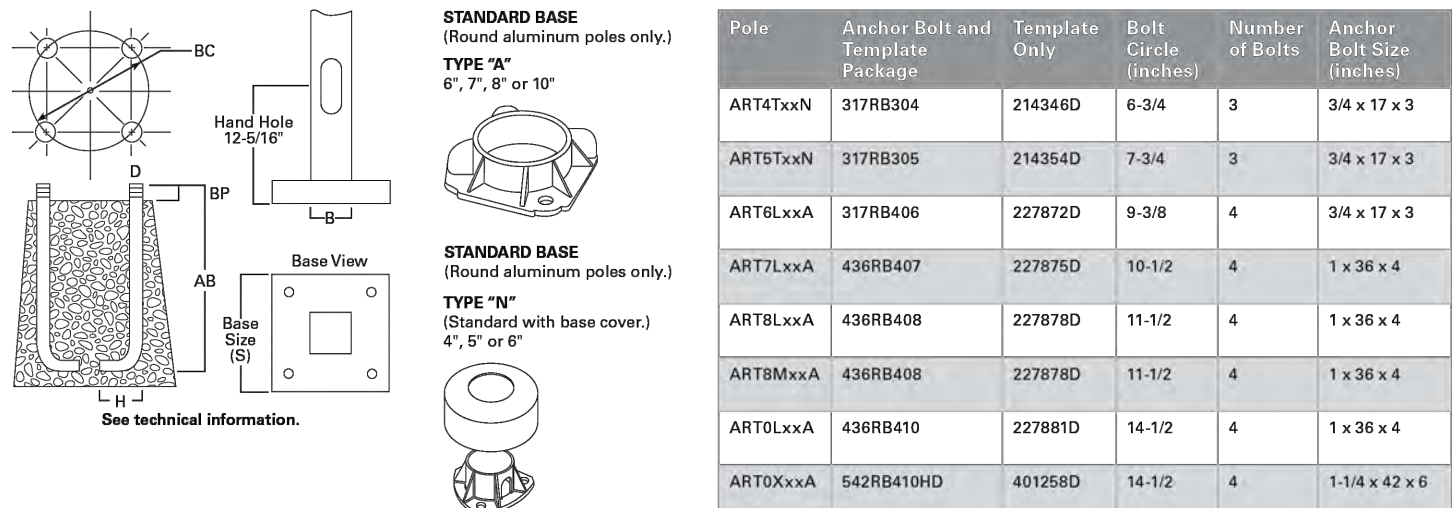
Specifications and dimensions subject to change without notice. Consult your lighting representative at Cooper Lighting Solutions or visit www.cooperlighting.com for available options, accessories and ordering information.

ORDERING INFORMATION

Table with columns: Product Family, Shaft Size, Wall Thickness, Mounting Height, Base Type, Finish, Mounting Type, Number and Location, Options (Add as Suffix).

NOTES: 1. All shaft sizes nominal. 2. Base cover not included (order as option). 3. Square poles are 3 at 90°, round poles are 3 at 120°. 4. Tapered Hub is located 5' below the pole top and on the same side of pole as hand hole, unless specified otherwise. 5. Outlet is located 4' above base and on same side of pole as hand hole, unless otherwise specified. 6. Drains not included, provision only. 7. Additional hand hole is located 12' below pole top and 90° from standard hand hole location, unless otherwise specified. 8. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1930 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCE website for more information. Components shipped separately may be inspected and analyzed under domestic preference requirements.

ANCHORAGE DATA



COOPER Lighting Solutions

ART ALUMINUM ROUND TAPERED

Table with columns: Mounting Height, Catalog Number, Wall Thickness, Bolt Circle Diameter, Anchor Bolt Projection, Shaft Taper, Anchor Bolt Diameter, Net Weight, Maximum Effective Projected Area, Max. Fixture Load.

Effective Projected Area (18' Above Pole Top)

Table with columns: Mounting Height, Catalog Number, Wall Thickness, Bolt Circle Diameter, Anchor Bolt Projection, Shaft Taper, Anchor Bolt Diameter, Net Weight, Maximum Effective Projected Area, Max. Fixture Load.

NOTES: 1. Catalog number includes pole with hardware kit. Anchor bolts not included. Before installing, make sure proper anchor bolts and templates are obtained from Cooper Lighting Solutions. 2. Net area is availability for rectangular areas must be specified. Hand hole position relative to drill location. 3. Shaft size, anchor bolts and projections may vary slightly. All dimensions nominal. 4. EPAs based on shaft properties with wind normal to flat. EPAs calculated using base wind velocity as indicated plus 35% gust factor. 5. Fixture installed vibration dampers.

COOPER Lighting Solutions

APPROVED: DEPARTMENT OF PLANNING AND ZONING. Chief, Development Engineering Division: Chad Edmondson. Chief, Division of Planning and Zoning: Lynda Eversberg.

Table with columns: REVISIONS.

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS 7120 OAKLAND MILLS ROAD COLUMBIA, MD 21046 DEPARTMENT OF PUBLIC WORKS 3430 COURT HOUSE DRIVE ELLICOTT CITY, MD 21043

Whitman, Reardon & Associates, LLP 801 South Caroline Street, Baltimore, Maryland 21231

TAX MAP 36, GRID 5, PARCEL 3 ZONING: RC-DEO ELECTION DISTRICT 6

GRAPHIC SCALES

SIGNATURE: [Signature]

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 2289. EXPIRATION DATE: 8/20/2025.

BLANDAIR REGIONAL PARK - PHASE 6

ELECTRICAL PARKING LIGHT DETAILS Drawing No. E6.2B Scale: NOT TO SCALE Date: 10/2023 SDP Sheet 54 of 54 Des: ACK Drawn: ACK Check: IHK