

PROJECT NAME: MARYLAND ZOO RED PANDA EXHIBIT BALTIMORE CITY ESD NO. XXXX

AS-BUILT DATA FOR DRY POND
*TO BE COMPLETED BY THE PROJECT CONTRACTOR

FEATURE	DESIGN	*AS-BUILT
FACILITY DETAIL	MWS-L-8-8-V	
FACILITY LxW	9' x 9'	
TOP OF FACILITY	300.25	
MIN. TOP OF GRADE (3" MULCH)	300.40	
BOTTOM OF FACILITY (INTERNAL)	295.00	
BOTTOM OF FACILITY (EXTERNAL)	294.34	
INLET SIZE & TYPE		
INLET INVERT	295.25	
MWS INTERNAL WIER LENGTH / ELEVATION	3.5' / 295.25	
ORIFICES AT MWS INTERNAL WEIR QTY/SIZE/ELEVATION	2 / 3" DIA. / 296.25	
PRETREATMENT CHAMBER SIZE & TYPE	STORMBRIX 2'W X 4'L X 3'H	
TOTAL PRETREATMENT CHAMBER UNITS/VOLUME	40 UNITS / 745 C.F.	
PRETREATMENT CHAMBER INVERT	295.25	
OUTLET PIPE SIZE & TYPE	1.5 FT 8" PVC	
OUTLET INVERT	295.00	
OUTLET STRUCTURE COORDINATES (CENTER OF STRUCTURE)	BCSC: N 9,549.49 E -9,005.21 NAD83: N 603,689.19 E 1,412,056.72	

* BYPASS PIPES TO BE CONNECTED AT UPSTREAM ACCESS STRUCTURE

DATE AS-BUILT ACCEPTED BY BALTIMORE CITY: _____

MAINTENANCE AND LIABILITY
MAINTENANCE OF THE STORMWATER MANAGEMENT FACILITY AND APPURTENANT DRAINAGE STRUCTURES SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. THE PROPERTY OWNER SHALL ALSO BE FULLY LIABLE FOR ALL DAMAGE OR INJURIES THAT MAY BE SUSTAINED BY ANY PERSON OR PROPERTY AS A RESULT OF ANY FAILURE OR MALFUNCTION OF THE STORMWATER MANAGEMENT FACILITY AND APPURTENANCES.

PRINT NAME _____ SIGNATURE _____ DATE _____

ADDRESS _____ TELEPHONE NUMBER _____

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

PRINT NAME _____ SIGNATURE _____ DATE _____

ADDRESS _____ TELEPHONE NUMBER _____

CONTRACTOR AS-BUILT NOTE

AS-BUILT PLANS AND CERTIFICATIONS ARE REQUIRED FOR THIS STORMWATER MANAGEMENT FACILITY. THESE MUST BE PREPARED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER. BALTIMORE CITY WILL NOT PERFORM THE INSPECTION OR PREPARE THE AS-BUILT PLANS OR CERTIFICATION. THE STORMWATER MANAGEMENT PERMIT SECURITY WILL NOT BE RELEASED UNTIL THE AS-BUILT PLANS AND CERTIFICATION ARE APPROVED BY BALTIMORE CITY. IN ORDER TO PREPARE THE AS-BUILT PLANS AND CERTIFICATIONS, THIS STORMWATER MANAGEMENT FACILITY MUST BE INSPECTED BY THE ENGINEER AT SPECIFIC STAGES DURING CONSTRUCTION AS REQUIRED BY THE CURRENT BALTIMORE CITY STORMWATER MANAGEMENT POLICY AND DESIGN MANUAL. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING ANY WORK SHOWN ON THESE PLANS.

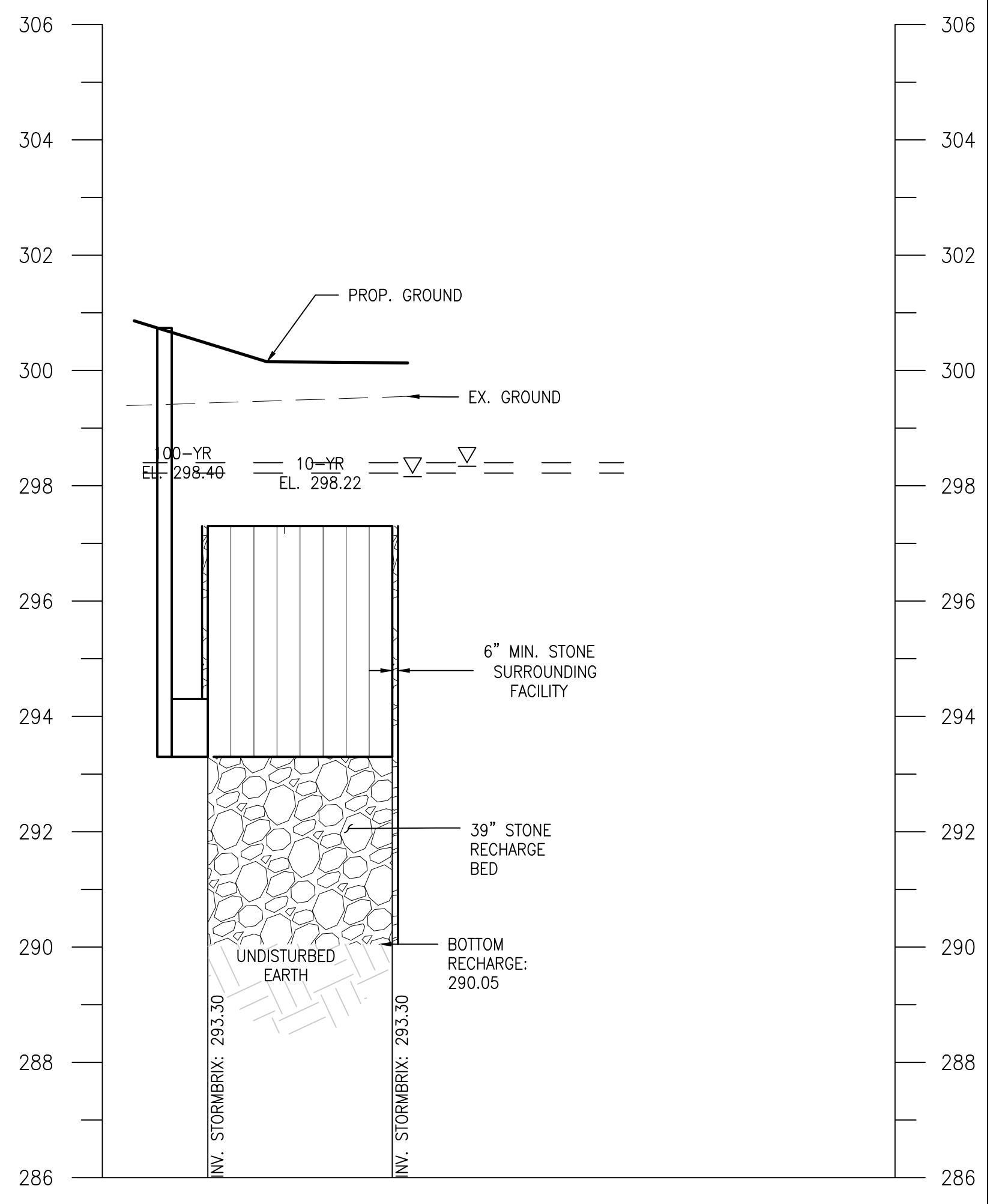
FACILITIES BEING CERTIFIED:
MODULAR WETLAND SYSTEM (MWS-1A)

"CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED ON SUFFICIENT AND APPROPRIATE ONSITE INSPECTIONS AND MATERIAL TESTS CONDUCTED DURING CONSTRUCTION.

- NOTES:**
- ALL MATERIALS AND CONSTRUCTION PRACTICES SHALL BE IN ACCORDANCE WITH THE CURRENT MARYLAND STORMWATER DESIGN MANUAL AND CITY STANDARDS.
 - ROOF DRAINS SHALL NOT BE CONNECTED UNTIL APPROVAL BY THE CITY INSPECTOR, ALL ROOF AREAS ARE FREE OF DEBRIS, AND OUTLET PIPE INSTALLATION HAS BEEN COMPLETED.
 - SEE EROSION AND SEDIMENT CONTROL PLAN FOR EROSION AND SEDIMENT CONTROL MEASURES.
 - SEE LANDSCAPE PLANS FOR FACILITY PLANTING SCHEDULE AND REQUIREMENTS.

LEGEND

	PROPOSED BUILDING
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED 1.5" ASPHALT OVERLAY
	PROPOSED CURB
	PROPOSED CONCRETE WALK
	PROPOSED FENCELINE
	LIMIT OF DISTURBANCE
	PROPOSED UNDERGROUND ELECTR
	PROPOSED SANITARY LINE
	PROPOSED SANITARY CLEANOUT
	PROPOSED STORMDRAIN LINE
	PROPOSED STORMDRAIN MANHOLE
	PROPOSED WATER LINE
	PROPOSED SMALL SECTIONAL VAUL
	PROPOSED WATER VALVE
	PROPOSED DRAINAGE AREA



MWS-1A SECTION B-B
SCALE: HORIZ. 1"=10'
VERT. 1"=2' BCNR # 11595

- AS-BUILT NOTE:**
- THE CONTRACTOR SHALL SUPPLY ALL OF THE FOLLOWING INFORMATION DURING AND AFTER THE CONSTRUCTION OF THE SWM SYSTEM. ALL REQUIRED DOCUMENTS SHALL BE SUBMITTED WITHIN THIRTY (30) DAYS OF THE DATE OF SUBSTANTIAL COMPLETION AS ACCEPTED BY THE OWNER:
- AS-BUILT TOPOGRAPHIC SURVEY BASED ON THE SAME DATUM AND BENCHMARKS AS THE ORIGINAL SURVEY USED IN DESIGN. THE AS-BUILT SURVEY SHALL SHOW THE FOLLOWING:
 - SIZE, ELEVATIONS, AND GRADES OF EXCAVATION FOR BMP(S).
 - SURFACE ELEVATIONS AND GRADES FOR EACH LAYER OF DIFFERENT MATERIAL IN THE BMP(S).
 - INVERT ELEVATIONS FOR ALL UNDERDRAINS, STORM PIPING, AND APPURTENANCE STRUCTURES IN THE BMP(S).
 - SURFACE ELEVATIONS AND SPOT GRADES OF THE COMPLETED BMP(S) IN LOCATIONS TO MATCH THE APPROVED SWM PLANS AND DETAILS. THE SURVEY SHALL BE IN AUTOCAD FORMAT. CONTACT THE ENGINEER FOR CADD STANDARDS TO BE USED.
 - MATERIAL TICKETS FOR ALL MATERIALS USED IN CONSTRUCTION OF THE BMP(S).
 - PHOTOGRAPHS OF CRITICAL INSPECTIONS INCLUDING, BUT NOT LIMITED TO:
 - PHOTOS OF EACH LAYER OF DIFFERENT MATERIAL IN THE BMP(S)
 - PHOTOS OF PLACEMENT OF ALL UNDERDRAINS, STORM PIPING, AND APPURTENANT STRUCTURES IN THE BMP(S).
 - PHOTOS OF THE COMPLETED BMP(S) INCLUDING ALL STABILIZATION AND LANDSCAPING.
 - COMPLETED AS-BUILT TABLES WITH THE INSPECTOR'S INITIALS IN ORIGINAL HANDWRITING - SEE THIS SHEET FOR REQUIRED INFORMATION.
 - AS-BUILT DEPTH TO INVERT OF THE VERTICAL UNDERDRAIN MANIFOLD MUST BE MARKED ON THE CAP.

- SWM SEQUENCE OF CONSTRUCTION**
- THIS SEQUENCE OF CONSTRUCTION SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE SEQUENCE OF CONSTRUCTION AS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL DRAWINGS FOR THIS PROJECT. THE CONTRIBUTING DRAINAGE AREA INTO THESE SWM FACILITIES MUST EITHER BE STABILIZED PRIOR TO BEGINNING WORK, OR THE FLOW INTO THE FACILITY MUST BE DIVERTED AROUND THE CONSTRUCTION AREA. A STORMWATER MANAGEMENT APPROVAL MUST BE OBTAINED PRIOR TO THE CONSTRUCTION OF THIS FACILITY.
 - NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST THREE (3) WORKING DAYS PRIOR TO BEGINNING THIS WORK.
 - NOTIFY AS-BUILT ENGINEER, PROFESSIONAL ENGINEER WHO WILL BE PERFORMING THE AS-BUILT CERTIFICATION, AND GEOTECHNICAL ENGINEER OF THE SWM FACILITY AT LEAST FIVE (5) WORKING DAYS PRIOR TO BEGINNING THE WORK.
 - WITH THE WRITTEN APPROVAL OF THE CITY SEDIMENT CONTROL INSPECTOR, CONSTRUCT THE SWM FACILITIES IN ACCORDANCE WITH THE RESPECTIVE SEQUENCE OF CONSTRUCTION ON SHEET C700 ESC COVER SHEET.
 - PERMANENTLY STABILIZE THE DISTURBED AREAS AND INSTALL PROPOSED LANDSCAPE MATERIAL AS SHOWN ON THE PROPOSED LANDSCAPE PLANS.
 - WITHIN 30 DAYS OF THE COMPLETION OF THE STORMWATER MANAGEMENT FACILITY, SUBMIT FINAL "AS-BUILT" THROUGH PROJECTDOX.

HORIZONTAL DATUM: NAD 83(2011)
VERTICAL DATUM: NAVD 88



PROJECT TEAM:

ARCHITECT:
BUELL KRATZER POWELL, P.C.
1525 LOCUST STREET
PHILADELPHIA, PA 19102
T: 215.557.6509

CIVIL ENGINEER:
CARROLL ENGINEERING, INC
215 SCHILLING CIRCLE, STE 102
HUNT VALLEY, MD 21031
T: 410.785.7423

LANDSCAPE ARCHITECT:
ROBINSON ANDERSON SUMMERS
28 WEST STATE STREET
MEDIA, PA 19063
T: 302.888.1544

STRUCTURAL ENGINEER:
STRUCTURAL DESIGN STUDIO, INC
2225 EAST MURRAY HOLLADAY RD
SALT LAKE CITY, UT 84117
T: 801.274.3950

MEP ENGINEER:
KOVACS, WHITNEY & ASSOCIATES
190 WEST OSTEND ST, STE 300
BALTIMORE, MD 21230
T: 410.244.7191

CLIENT:
MARYLAND ZOO
THE MARYLAND ZOO IN BALTIMORE
1 SAFARI PLACE
BALTIMORE, MD 21217

RED PANDA
THE MARYLAND ZOO
IN BALTIMORE
1 SAFARI PLACE
BALTIMORE, MD 21217

THIS DRAWING IS TO ILLUSTRATE THE WORK TO BE DONE. THE ARCHITECT IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES USED TO DO THE WORK OR THE SAFETY ASPECTS OF CONSTRUCTION, AND NOTHING ON THIS DRAWING EXPRESSED OR IMPLIED CHANGES THIS CONDITION. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS AN ACKNOWLEDGMENT OF THESE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK, AND THE BID PRICE. NO CLAIMS FOR EXTRA CHARGES DUE TO THESE CONDITIONS WILL BE FORTHCOMING.



DATE:
PROJECT NO: 2023-10.04

DRAWN BY	
CHECKED BY	
SUBMISSION	DATE
REVISION	DATE

DRAWING TITLE:
DP-1
SECTIONS

DRAWING NO:
C611

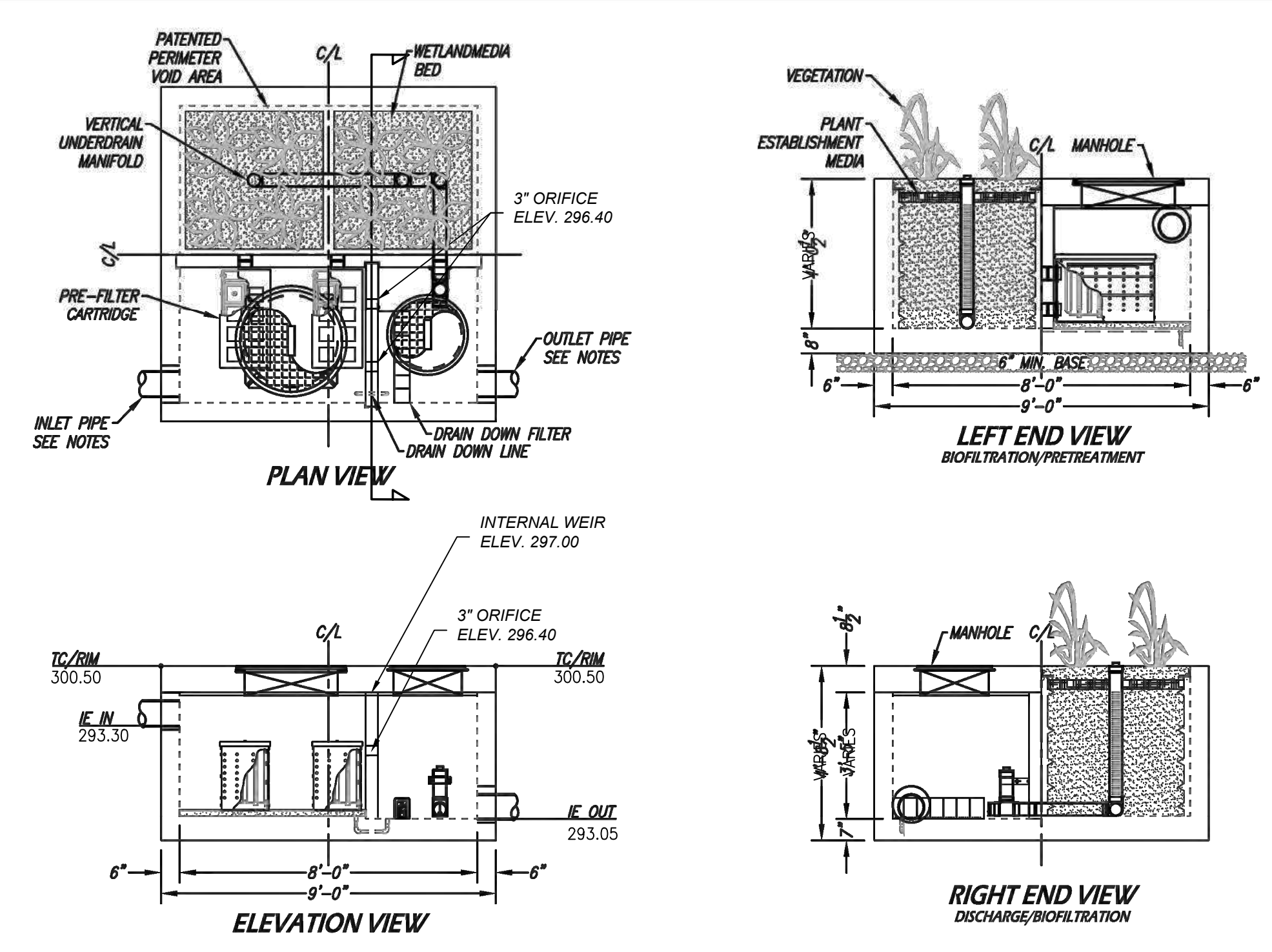
SITE SPECIFIC DATA			
PROJECT NAME	MD. ZOO RED PANDA EXHIBIT		
PROJECT LOCATION	BALTIMORE, MD		
STRUCTURE ID	MWS-1A		
TREATMENT REQUIRED		FLOW BASED (CFS)	
VOLUME BASED (CF)			
TREATMENT HGL AVAILABLE (FT)			
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE			
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	293.30		
INLET PIPE 2			
OUTLET PIPE	293.05		
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	300.50		
SURFACE LOAD	PARKWAY	OPEN PLANTER	PARKWAY
FRAME & COVER	#30"	N/A	#24"
WETLAND MEDIA VOLUME (CY)		4.84	
WETLAND MEDIA DELIVERY METHOD		TBD	
ORIFICE SIZE (DIA. INCHES)		#2.16"	
MAXIMUM PICK WEIGHT (LBS)		TBD	
NOTES:			

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO DETAIL AND INSTALL THE SYSTEM AND APPEARANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL GAPS AROUND PIPES SHALL BE SEALED WATER TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION.

GENERAL NOTES

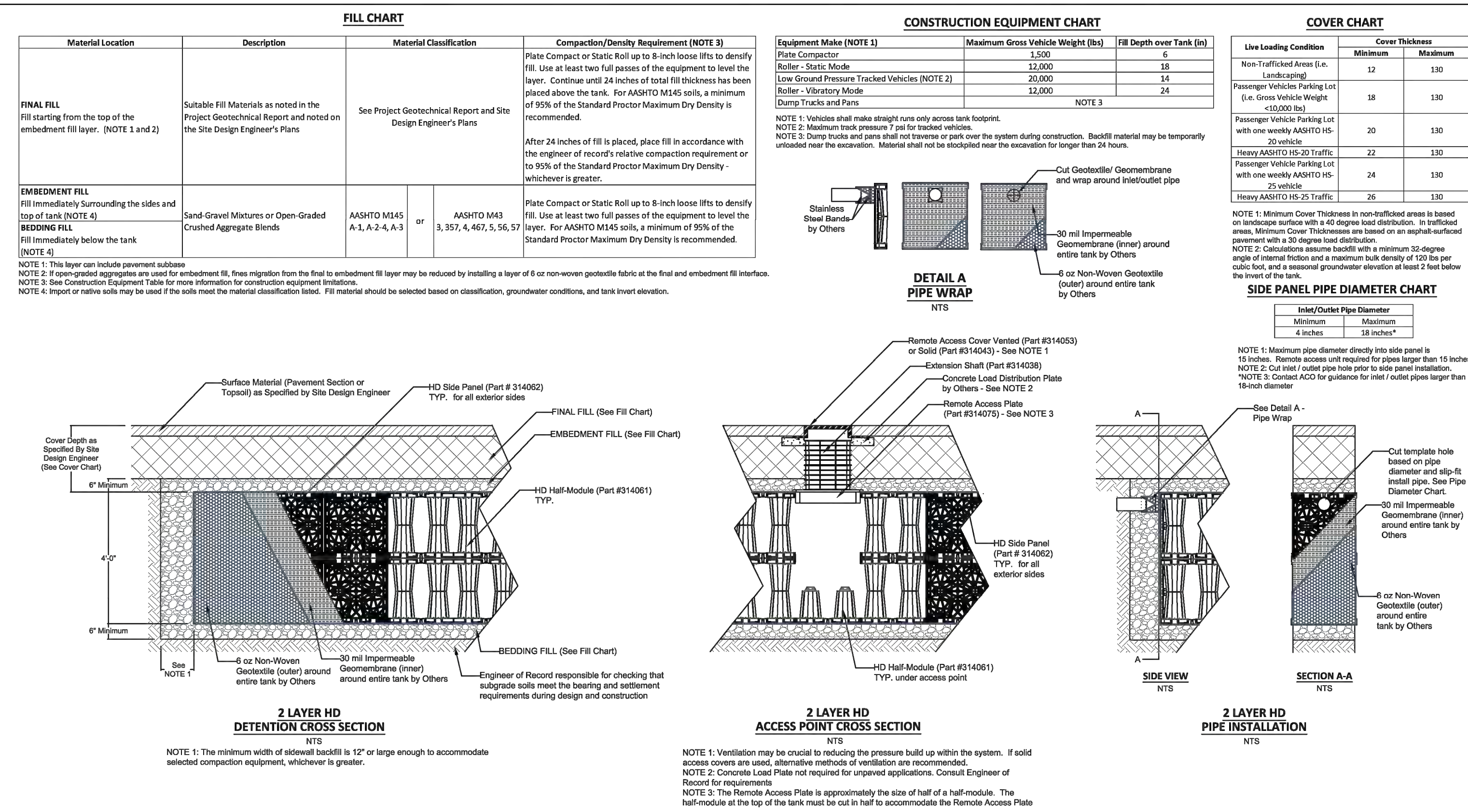
1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF SITE PRIOR TO CONSTRUCTION. DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE WITHOUT NOTICE. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF SITE PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF SITE PRIOR TO CONSTRUCTION.



TREATMENT FLOW (CFS)	0.230
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	TBD
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

MWS-1-8-V STORMWATER BIOFILTRATION SYSTEM STANDARD DETAIL

MODULAR WETLAND STRUCTURE (MWS-1A) DETAIL
NOT TO SCALE



STORMBRIXX STANDARD DETAILS
HD SYSTEM - 2 LAYER - DETENTION

DRAWN BY: **A Frye** CHECKED BY: **J Jonke**

DATE: **04/26/2024** REV. **0**

ACO, INC.

WEST SALES OFFICE: 655 W. BEECHCROFT ST., CASA GRANDE, AZ 85122, Tel: (602) 421-8899, Fax: (602) 421-8899

EAST SALES OFFICE: 4615 N. PINACOCKE DRIVE, MENTOR, OH 44060, Tel: (440) 543-4754, Fax: (440) 639-7235

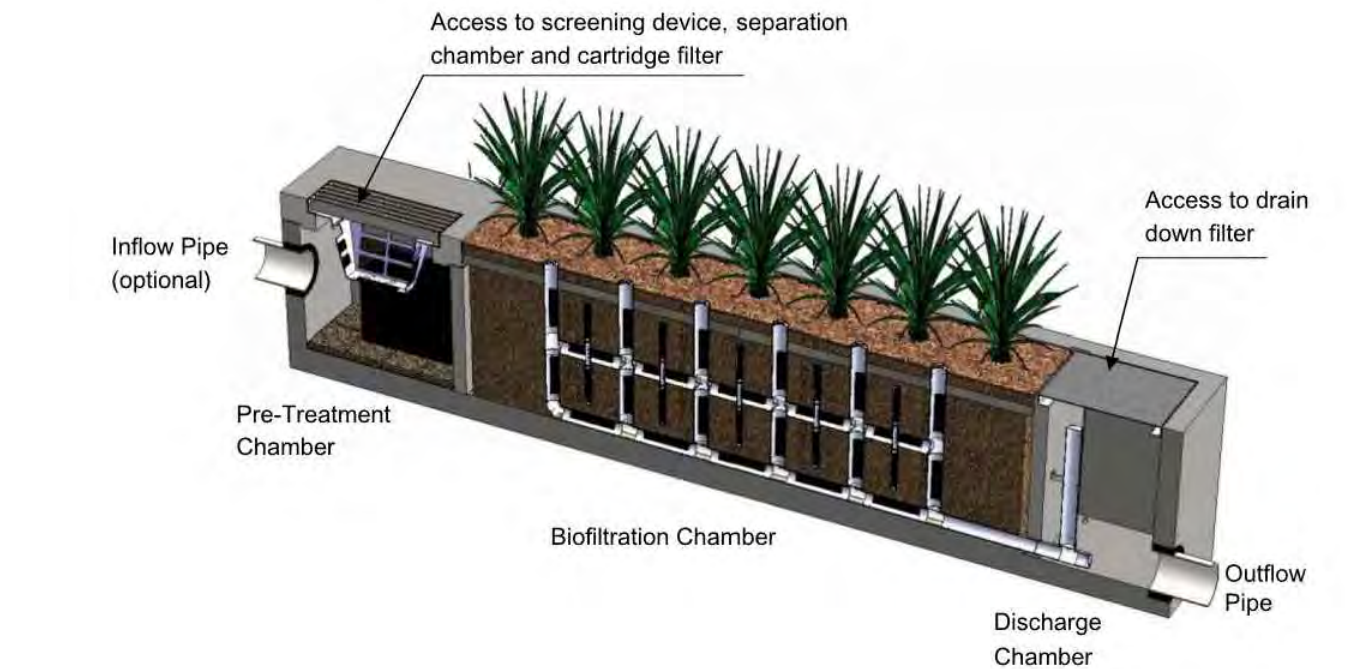
SOUTHEAST SALES OFFICE: 4615 N. PINACOCKE DRIVE, FORT MILL, SC 29715, Tel: (440) 639-7230, Fax: (803) 802-1063

www.acoswm.com

INSPECTION AND MAINTENANCE SCHEDULE - MODULAR WETLAND SYSTEM

1. REMOVE TRASH FROM SCREENING DEVICE - MAINTENANCE INTERVAL IS 6 TO 12 MONTHS.
2. REMOVE SEDIMENT FROM SEPARATION CHAMBER - MAINTENANCE INTERVAL IS 12 TO 24 MONTHS.
3. REPLACE CARTRIDGE FILTER MEDIA - MAINTENANCE INTERVAL IS 12 TO 24 MONTHS.
4. REPLACE DRAIN DOWN FILTER MEDIA - MAINTENANCE INTERVAL IS 12 TO 24 MONTHS.

SYSTEM DIAGRAM



MAINTENANCE PROCEDURES

SCREENING DEVICE

1. REMOVE GRATE OR MANHOLE COVER TO GAIN ACCESS TO THE SCREENING DEVICE IN THE PRE-TREATMENT CHAMBER. VAULT TYPE UNITS DO NOT HAVE SCREENING DEVICE. MAINTENANCE CAN BE PERFORMED WITHOUT ENTRY.
2. REMOVE ALL POLLUTANTS COLLECTED BY THE SCREENING DEVICE. REMOVAL CAN BE DONE MANUALLY OR WITH THE USE OF A VACUUM TRUCK. THE HOSE OF THE VACUUM TRUCK WILL NOT DAMAGE THE SCREENING DEVICE.
3. SCREENING DEVICE CAN EASILY BE REMOVED FROM THE PRE-TREATMENT CHAMBER TO GAIN ACCESS TO SEPARATION CHAMBER AND MEDIA FILTERS BELOW. REPLACE GRATE OR MANHOLE COVER WHEN COMPLETED.

SEPARATION CHAMBER

1. PERFORM MAINTENANCE PROCEDURES OF SCREENING DEVICE LISTED ABOVE BEFORE MAINTAINING THE SEPARATION CHAMBER.
2. WITH A PRESSURE WASHER, SPRAY DOWN POLLUTANTS ACCUMULATED ON WALLS AND CARTRIDGE FILTERS.
3. VACUUM OUT SEPARATION CHAMBER AND REMOVE ALL ACCUMULATED POLLUTANTS. REPLACE SCREENING DEVICE, GRATE OR MANHOLE COVER WHEN COMPLETED.

CARTRIDGE FILTERS

1. PERFORM MAINTENANCE PROCEDURES ON SCREENING DEVICE AND SEPARATION CHAMBER BEFORE MAINTAINING CARTRIDGE FILTERS.
2. ENTER SEPARATION CHAMBER.
3. UNSCREW THE TWO BOLTS HOLDING THE LID ON EACH CARTRIDGE FILTER AND REMOVE LID.
4. REMOVE EACH OF 4 TO 8 MEDIA CAGES HOLDING THE MEDIA IN PLACE.
5. SPRAY DOWN THE CARTRIDGE FILTER TO REMOVE ANY ACCUMULATED POLLUTANTS.
6. VACUUM OUT OLD MEDIA AND ACCUMULATED POLLUTANTS.
7. REINSTALL MEDIA CAGES AND FILL WITH NEW MEDIA FROM MANUFACTURER OR OUTSIDE SUPPLIER. MANUFACTURER WILL PROVIDE SPECIFICATION OF MEDIA AND SOURCES TO PURCHASE.
8. REPLACE THE LID AND TIGHTEN DOWN BOLTS. REPLACE SCREENING DEVICE, GRATE OR MANHOLE COVER WHEN COMPLETED.

DRAIN DOWN FILTER

1. REMOVE HATCH OF MANHOLE COVER OVER DISCHARGE CHAMBER AND ENTER CHAMBER.
2. UNLOCK AND LIFT DRAIN DOWN FILTER HOUSING AND REMOVE OLD MEDIA BLOCK. REPLACE WITH NEW MEDIA BLOCK. LOWER DRAIN DOWN FILTER HOUSING AND LOCK INTO PLACE.
3. EXIT CHAMBER AND REPLACE HATCH OR MANHOLE COVER.

MAINTENANCE NOTES

1. FOLLOWING MAINTENANCE AND/OR INSPECTION, IT IS RECOMMENDED THE MAINTENANCE OPERATOR PREPARE A MAINTENANCE/INSPECTION RECORD. THE RECORD SHOULD INCLUDE ANY MAINTENANCE ACTIVITIES PERFORMED, AMOUNT AND DESCRIPTION OF DEBRIS COLLECTED, AND CONDITION OF THE SYSTEM AND ITS VARIOUS FILTER MECHANISMS.
2. THE OWNER SHOULD KEEP MAINTENANCE/INSPECTION RECORD(S) FOR A MINIMUM OF FIVE YEARS FROM THE DATE OF MAINTENANCE. THESE RECORDS SHOULD BE MADE AVAILABLE TO THE GOVERNING MUNICIPALITY FOR INSPECTION UPON REQUEST AT ANY TIME.
3. TRANSPORT ALL DEBRIS, TRASH, ORGANICS AND SEDIMENTS TO AN APPROVED FACILITY FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REQUIREMENTS.
4. ENTRY INTO CHAMBERS MAY REQUIRE CONFINED SPACE TRAINING BASED ON STATE AND LOCAL REGULATIONS.
5. NO FERTILIZER SHALL BE USED IN THE BIOFILTRATION CHAMBER.
6. IRRIGATION SHOULD BE PROVIDED AS RECOMMENDED BY THE MANUFACTURER AND/OR LANDSCAPE ARCHITECT. THE AMOUNT OF IRRIGATION REQUIRED IS DEPENDENT ON PLANT SPECIES. SOME PLANTS MAY REQUIRE IRRIGATION.

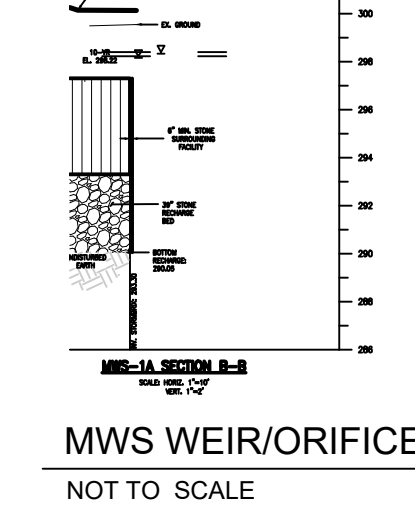
MEDIA MATERIAL SPECIFICATION FOR MODULAR WETLANDS:

MEDIA SHALL CONSIST OF CERAMIC MATERIAL PRODUCED BY EXPANDING AND VITRIFYING SELECT MATERIAL IN A ROTARY KILN. MEDIA MUST BE PRODUCED TO MEET THE REQUIREMENTS OF ASTM C330, ASTM C331, AND AASHTO M195. AGGREGATES MUST HAVE A MINIMUM 24-HOUR WATER ABSORPTION OF 10.5% MASS. MEDIA SHALL NOT CONTAIN ANY ORGANIC MATERIAL. FLOW THROUGH MEDIA SHALL BE HORIZONTAL FROM THE OUTER PERIMETER OF THE CHAMBER TOWARD THE CENTRALIZED AND VERTICALLY EXTENDING UNDERDRAIN. THE RETENTION TIME IN THE MEDIA SHALL BE AT LEAST 3 MINUTES. DOWNWARD FLOW FILTERS ARE NOT ACCEPTABLE ALTERNATIVES. THE THICKNESS OF THE MEDIA SHALL BE AT LEAST 19" FROM INFLUENT END TO EFFLUENT END. THE LOADING RATE ON THE MEDIA SHALL NOT EXCEED 1.1 GALLONS PER MINUTE PER SQUARE FOOT SURFACE AREA. MEDIA MUST BE CONTAINED WITHIN STRUCTURE THAT SPACES THE SURFACE OF THE MEDIA AT LEAST 2" FROM ALL VERTICALLY EXTENDING WALLS OF THE CONCRETE STRUCTURE. MEDIA SHALL BE PROPRIETARY MEDIA FROM MODULAR WETLAND SYSTEM MANUFACTURER OR APPROVED EQUAL.

SIDE PANEL PIPE DIAMETER CHART

Inlet/Outlet Pipe Diameter	Cover Thickness	
	Minimum	Maximum
Non-Trafficked Area (i.e. Landscaping)	12	130
Passenger Vehicle Parking Lot (i.e. Gross Vehicle Weight < 15,000 lbs)	18	130
Passenger Vehicle Parking Lot with one weekly AASHTO HS-20 vehicle	20	130
Heavy AASHTO HS-20 Traffic	22	130
Passenger Vehicle Parking Lot with one weekly AASHTO HS-20 vehicle	24	130
Heavy AASHTO HS-25 Traffic	26	130

MWS WEIR/ORIFICE (MWS-1A) SECTION
NOT TO SCALE



PROJECT TEAM:

ARCHITECT:
BUELL KRATZER POWELL, P.C.
1525 LOCUST STREET
PHILADELPHIA, PA 19102
T: 215.557.6509

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215 SCHILLING CIRCLE, STE 102
HUNT VALLEY, MD 21031
T: 410.785.7423

LANDSCAPE ARCHITECT:
ROBINSON ANDERSON SUMMERS
28 WEST STATE STREET
MEDIA, PA 19063
T: 302.888.1544

STRUCTURAL ENGINEER:
STRUCTURAL DESIGN STUDIO, INC
2225 EAST MURRAY HOLLADAY RD
SALT LAKE CITY, UT 84117
T: 801.274.3950

MEP ENGINEER:
KOVACS, WHITNEY & ASSOCIATES
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SEAL:

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. 14446. EXPIRATION DATE: 5/25/25.

DATE:
PROJECT NO: 2023-10.04

DRAWN BY: []
CHECKED BY: []

SUBMISSION	DATE

REVISION: [] **DATE:** []

DRAWING TITLE:
SWM DETAILS

DRAWING NO:
C620

BCNR # 11595



PROJECT TEAM:
ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509
CIVIL ENGINEER:
 CARROLL ENGINEERING, INC
 215 SCHILLING CIRCLE, STE 102
 HUNT VALLEY, MD 21031
 T: 410.785.7423
LANDSCAPE ARCHITECT:
 ROBINSON ANDERSON SUMMERS
 28 WEST STATE STREET
 MEDIA, PA 19063
 T: 302.888.1544
STRUCTURAL ENGINEER:
 STRUCTURAL DESIGN STUDIO, INC
 2225 EAST MURRAY HOLLADAY RD
 SALT LAKE CITY, UT 84117
 T: 801.274.3950
MEP ENGINEER:
 KOVACS, WHITNEY & ASSOCIATES
 190 WEST OSTEND ST, STE 300
 BALTIMORE, MD 21230
 T: 410.244.7191

OWNER / DEVELOPER / APPLICANT:
 MARYLAND ZOO IN BALTIMORE
 1876 MANSION HOUSE DRIVE
 BALTIMORE MD 21217
 CONTACT: MR. KARL KRANZ
 PHONE: 443-552-3350

SURVEY CONTROL STATEMENT
 HORIZONTAL AND VERTICAL DATUM WERE DERIVED USING
 STATIC GPS METHODS AND PROCESSED USING THE NATIONAL
 GEODETICS SURVEYS OPUS PROGRAM. COR STATIONS USED:
 DL2039 LOYC CORS
 DH8807 LOYC CORS
 HORIZONTAL DATUM: NAD 83(2011)
 VERTICAL DATUM: NAVD 88

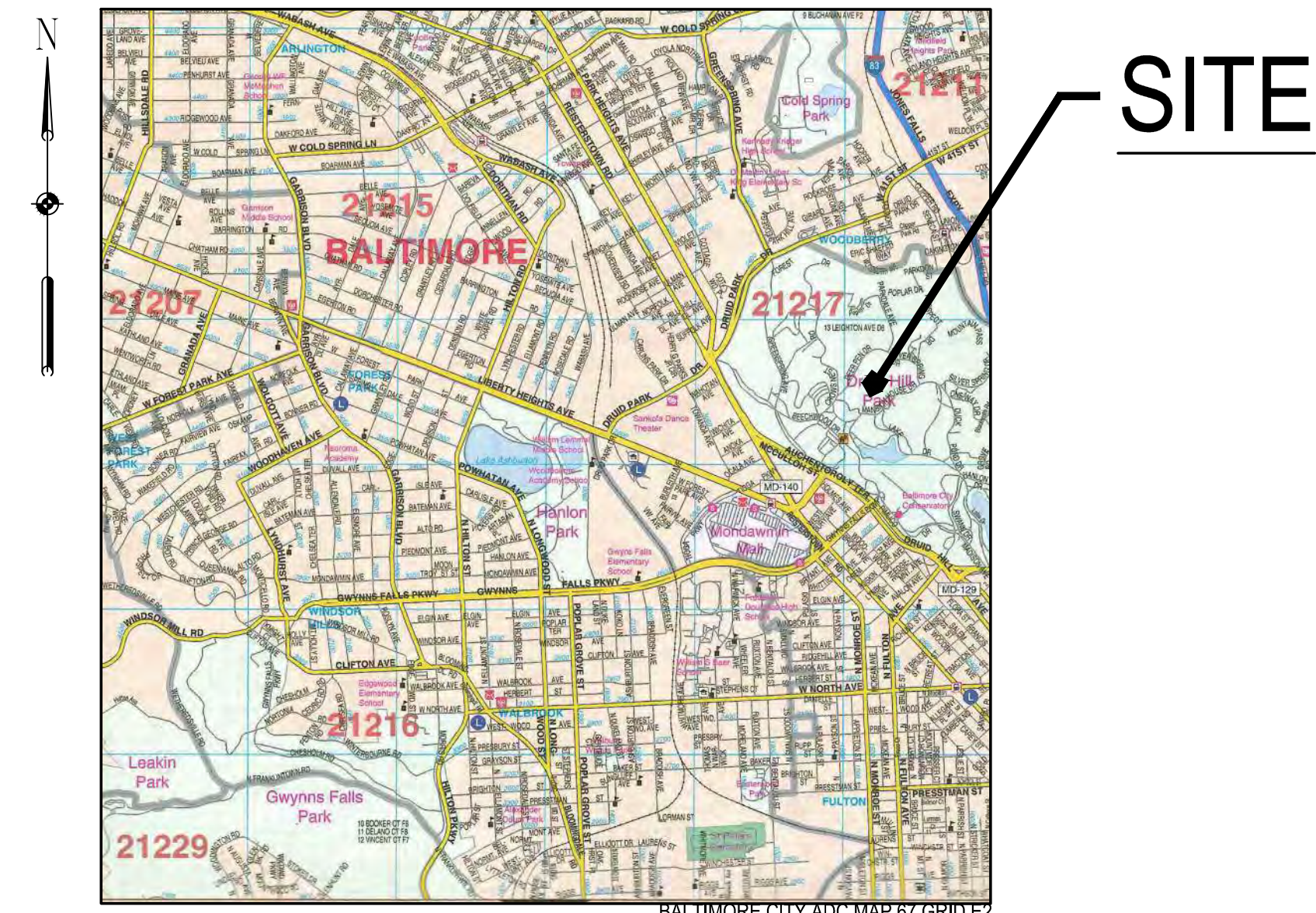
MARYLAND ZOO RED PANDA EXHIBIT

1 SAFARI PLACE BALTIMORE, MARYLAND BCNR # 11595

EROSION AND SEDIMENT CONTROL

INDEX OF SHEETS

SHEET NO.	SHEET DESIGNATION	DESCRIPTION
1	C700	ESC COVER SHEET
2	C701	ESC PLAN
3	C710	ESC DETAILS
4	C720	ESC NOTES
5	C721	ESC NOTES
6	C722	ESC NOTES
7	DA-1	DRAINAGE AREA EXHIBIT
8	SWM-1	EXISTING CONDITIONS SWM EXHIBIT
9	SWM-2	IART EXHIBIT
10	SWM-3	BMP EXHIBIT
11	SWM-4	PROPOSED CONDITIONS SWM EXHIBIT
12	SWM-5	EXISTING CONDITIONS SITE PHOTOS EXHIBIT
13	C100	EXISTING CONDITIONS PLAN
14	C110	BORING PLAN
15	C120	DEMOLITION PLAN
16	C200	PROPOSED CONDITIONS PLAN
17	C210	PROPOSED GRADING PLAN
18	C300	DETAIL REFERENCE PLAN
19	C310	SITE DETAILS
20	C400	PROP UTILITIES PLAN
21	C410	UTILITY PROFILES
22	C411	UTILITY PROFILES
23	C412	UTILITY PROFILES
24	C420	UTILITY DETAILS
25	C421	UTILITY DETAILS
26	C500	STORM DRAIN KEY PLAN
27	C510	STORM DRAIN SCHEDULES
28	C520	STORM DRAIN DETAILS
29	C521	STORM DRAIN DETAILS
30	C522	STORM DRAIN DETAILS
31	C523	STORM DRAIN DETAILS
32	C524	STORM DRAIN DETAILS
33	C525	STORM DRAIN DETAILS
34	C530	STORM DRAIN PROFILES
35	C531	STORM DRAIN PROFILES
36	C532	STORM DRAIN PROFILES
37	C533	STORM DRAIN PROFILES
38	C600	STORMWATER MANAGEMENT PLAN
39	C610	MWS-1A SECTIONS
40	C611	DP-1 SECTIONS
41	C620	SWM DETAILS



VICINITY MAP
 SCALE: 1"=2000'

SEQUENCE OF OPERATIONS/CONSTRUCTION:

1. NOTIFY BALTIMORE COUNTY DEPARTMENT OF PERMITS, APPROVALS AND INSPECTIONS, SEDIMENT CONTROL, (410) 887-3226 AT LEAST 48 HOURS PRIOR TO BEGINNING WORK AND SCHEDULE MEETING WITH ALL PARTIES.
2. PROVIDE LAYOUT OF THE LIMIT OF DISTURBANCE (LOD). THE LOD MUST BE FIELD MARKED PRIOR TO AND INSPECTED AT THE PRE-CONSTRUCTION MEETING. IF APPLICABLE, ORANGE HIGH VISIBILITY FENCE SHALL BE MANUALLY INSTALLED ALONG THE LIMIT OF DISTURBANCE, WHERE THE LIMIT IS WITHIN 50 FEET OF ANY FOREST BUFFER/CONSERVATION EASEMENT. THIS SHALL BE COMPLETED BY AND INSPECTED AT THE PRE-CONSTRUCTION MEETING.
3. CONDUCT ON-SITE PRE-CONSTRUCTION MEETING WITH ALL PARTIES TO DISCUSS ISSUES INCLUDING, BUT NOT LIMITED TO, MEANS AND METHODS, LIMITS OF WORK RESPONSIBILITIES, AND TO INSPECT THE SITE FOR ANY UNFORESEEN CONDITIONS. CLEAR AND GRUB FOR SEDIMENT AND EROSION CONTROL MEASURES ONLY. INSTALL EROSION & SEDIMENT CONTROL DEVICES INCLUDING, BUT NOT LIMITED TO, SUPER SILT FENCE AND STABILIZED CONSTRUCTION ENTRANCE AND STABILIZE DISTURBANCE AS NECESSARY. INSTALL CONSTRUCTION FENCE SURROUNDING AREA OF WORK AND IMMEDIATELY STABILIZE ALL DISTURBANCE.
5. NOTIFY BALTIMORE COUNTY DEPARTMENT OF PERMITS, APPROVALS AND INSPECTIONS, SEDIMENT CONTROL, UPON COMPLETION OF SAID INSTALLATION.
6. WITH THE APPROVAL OF BALTIMORE COUNTY DEPARTMENT OF PERMITS, APPROVALS AND INSPECTIONS, SEDIMENT CONTROL, AND THE SEDIMENT CONTROL INSPECTOR, PROCEED TO ESC SEQUENCE.
7. UPON COMPLETION OF ESC SEQUENCE, PERMANENTLY STABILIZE ALL AREAS DISTURBED DURING CONSTRUCTION.
9. UPON COMPLETING PERMANENT STABILIZATION OF THE ENTIRE SITE WITH ESTABLISHED VEGETATION AND WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS.

STANDARD STABILIZATION NOTE:

*STABILIZATION PRACTICES ON ALL PROJECTS MUST BE IN COMPLIANCE WITH THE REQUIREMENTS OF COMAR 26.17.1.08 G REGULATIONS.

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
 A.) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
 B.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

CONSTRUCTION ENTRANCE NOTE:

WHERE NO CONSTRUCTION ENTRANCE IS PROVIDED CONTRACTOR SHALL MAINTAIN THE SITE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED OUTSIDE THE LOD BY VACUUMING, SCRAPING, AND/OR SWEEPING. CONTRACTOR MUST CLEAN CONSTRUCTION EQUIPMENT PRIOR TO LEAVING THE LOD TO MINIMIZE SEDIMENT TRACK OUT. WASHING EQUIPMENT AND SURFACES TO REMOVE SEDIMENT IS ONLY ACCEPTABLE WHEN, SEDIMENT LADEN WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

DAILY STABILIZATION NOTE:

CONTRACTOR SHALL ONLY DISTURB THAT AREA WHICH CAN BE COMPLETED AND STABILIZED BY THE END OF EACH WORKING DAY. STABILIZATION SHALL BE AS FOLLOWS:
 1. FOR AREAS TO BE PAVED, THE APPLICATION OF BASE STONE.
 2. FOR AREAS TO BE VEGETATIVELY STABILIZED:
 2.a. PERMANENT SEED AND SOIL STABILIZATION MATTING OR SOD FOR STEEP SLOPES, CHANNELS OR SWALES.
 2.b. PERMANENT SEED AND MULCH FOR ALL OTHER AREAS.
 ANY AREAS WHICH CAN NOT BE STABILIZED BY THE END OF EACH WORKING DAY MUST HAVE SILT FENCE INSTALLED ON THE DOWNSLOPE SIDE.

MAINTENANCE NOTE:

CONTRACTOR SHALL INSPECT AND MAINTAIN ALL SEDIMENT CONTROL MEASURES AND DEVICES AFTER EVERY STORM EVENT. MAINTENANCE SHALL INCLUDE, BUT NOT LIMITED TO THE REMOVAL OF ALL ACCUMULATED SEDIMENT. GEOTEXTILE FABRIC SHALL BE REPLACED AS NEEDED TO ENSURE PROPER FUNCTION.

SEDIMENT CONTROL NOTE:

SEDIMENT CONTROLS ARE OFFSET FROM THE LIMIT OF DISTURBANCE (LOD) FOR VISUAL CLARITY. ALL SEDIMENT CONTROLS WILL BE CONSTRUCTED AT THE LOD.

SITE INFORMATION:

- A. AREA DISTURBED: 0.77 ACRES - 33,535 S.F.
 - B. TOTAL CUT: 1,450 CUBIC YARDS
 - C. TOTAL FILL: 650 CUBIC YARDS
- CUT/ FILL TOTALS ARE FOR PERMIT REVIEW ONLY. CONTRACTOR IS RESPONSIBLE FOR CALCULATING CUT/ FILL QUANTITIES FOR ESTIMATION PURPOSES. ENGINEER OFFERS NO GUARANTEE TO QUANTITIES ACTUALLY ENCOUNTERED DURING CONSTRUCTION.

NOTE TO CONTRACTOR:

"EROSION AND SEDIMENT CONTROL SHALL BE STRICTLY ENFORCED. FAILURE TO MAINTAIN SEDIMENT CONTROLS IN AN OPERABLE CONDITION WILL NOT BE ACCEPTABLE"

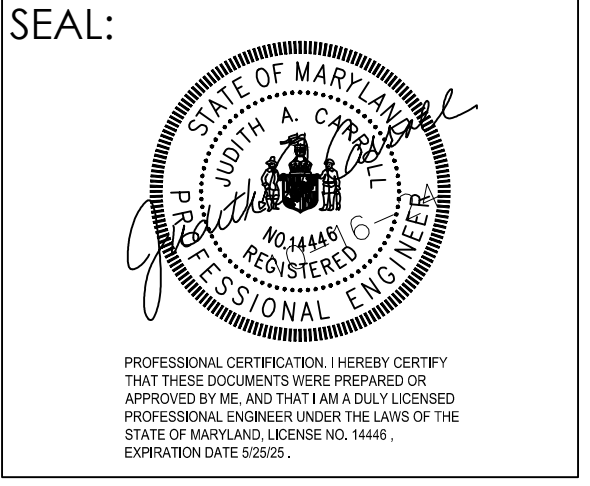
HORIZONTAL DATUM: NAD 83(2011)
 VERTICAL DATUM: NAVD 88

BCNR # 11595

CLIENT:
MARYLAND ZOO
 THE MARYLAND ZOO IN BALTIMORE
 1 SAFARI PLACE
 BALTIMORE, MD 21217

RED PANDA
 THE MARYLAND ZOO
 IN BALTIMORE
 1 SAFARI PLACE
 BALTIMORE, MD 21217

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DATE:	
PROJECT NO:	2023-10.04
DRAWN BY:	
CHECKED BY:	
SUBMISSION:	DATE
REVISION:	DATE

DRAWING TITLE:
 EROSION,
 SEDIMENT, AND
 CONTROL
 COVER SHEET

DRAWING NO:
C700

Q
P
N
M
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A



PROJECT TEAM:

ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509

CIVIL ENGINEER:
 CARROLL ENGINEERING, INC
 215 SCHILLING CIRCLE, STE 102
 HUNT VALLEY, MD 21031
 T: 410.785.7423

LANDSCAPE ARCHITECT:
 ROBINSON ANDERSON SUMMERS
 28 WEST STATE STREET
 MEDIA, PA 19063
 T: 302.888.1544

STRUCTURAL ENGINEER:
 STRUCTURAL DESIGN STUDIO, INC
 2225 EAST MURRAY HOLLADAY RD
 SALT LAKE CITY, UT 84117
 T: 801.274.3950

MEP ENGINEER:
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 190 WEST OSTEND ST., STE 300
 BALTIMORE, MD 21230
 T: 410.244.7191

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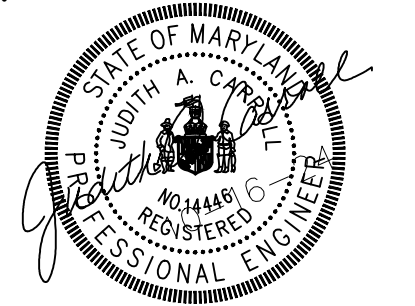
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SEAL:



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14448, EXPIRATION DATE 5/25/25.

DATE:

PROJECT NO: 2023-10.04

DRAWN BY

CHECKED BY

SUBMISSION

DATE

REVISION

DATE

DRAWING TITLE:

EROSION, SEDIMENT, AND CONTROL PLAN

DRAWING NO:

C701

OWNER / DEVELOPER / APPLICANT:

MARYLAND ZOO IN BALTIMORE
 1876 MANSION HOUSE DRIVE
 BALTIMORE MD 21217
 CONTACT: MR. KARL KRANZ
 PHONE: 443-552-3350

LEGEND

- PROPOSED BUILDING
- 100 PROPOSED MAJOR CONTOUR
- gg PROPOSED MINOR CONTOUR
- PROPOSED 1.5" ASPHALT OVERLAY
- PROPOSED CURB
- PROPOSED CONCRETE WALK
- PROPOSED FENCELINE
- LOD LIMIT OF DISTURBANCE
- PROPOSED UNDERGROUND ELECTRIC
- SS PROPOSED SANITARY LINE
- PROPOSED SANITARY CLEANOUT
- PROPOSED STORMDRAIN LINE
- PROPOSED STORMDRAIN MANHOLE
- PROPOSED WATER LINE
- PROPOSED SMALL SECTIONAL VAULT
- PROPOSED WATER VALVE
- PROPOSED DRAINAGE AREA
- PROPOSED SUPER SILT FENCE
- AGIP AT GRADE INLET PROTECTION
- DF DIVERSION FENCE
- SAME DAY STABILIZATION

GENERAL NOTES:

- FIELD RUN TOPOGRAPHIC SURVEY WAS PERFORMED BY CLSI IN FEBRUARY 2024.
- EXISTING UNDERGROUND UTILITIES DESIGNATED ON THE PLANS ARE BASED ON CURRENTLY AVAILABLE INFORMATION AND ARE SHOWN FOR REFERENCE ONLY. THE OWNER AND ENGINEER DISCLAIM ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF SAID INFORMATION BEYOND THE DESIGNATION INDICATED. THE QUALITY LEVEL DESIGNATED IS IN ACCORDANCE WITH ASCE STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA (QI/ASCE 38-02). THE CONTRACTOR SHALL MAKE HIMSELF FAMILIAR WITH THOSE STANDARDS PRIOR TO ANY RELIANCE ON THE INFORMATION SHOWN ON THESE PLANS. PRIOR TO ANY EXCAVATION, IN THE ABSENCE OF QUALITY LEVEL A OR B DESIGNATION, THE CONTRACTOR SHALL VERIFY, TO HIS OWN SATISFACTION, THE EXISTENCE, DEPTH, SIZE, MATERIAL, AND LOCATION OF ALL UNDERGROUND UTILITIES, AND DETERMINE WHETHER THOSE UTILITIES ARE LIVE. ANY EARTHWORK IN LOCATIONS WHERE UTILITIES ARE POSSIBLE SHALL BE DONE WITH EXTREME CAUTION. THE GIVING OF INFORMATION ON THE PLANS WILL NOT RELIEVE THE CONTRACTOR OF HIS OBLIGATION TO SUPPORT AND PROTECT ALL DESIGNATED OR UNDESIGNATED EXISTING UTILITIES AND APPURTENANCES. SHOULD ANY EXISTING UTILITY BE DAMAGED BY THE CONTRACTOR, THE CONTRACTOR SHALL REPAIR THE DAMAGE CAUSED TO THE UTILITY OWNER'S SATISFACTION, AT THE CONTRACTOR'S EXPENSE.
- LIVE UNDERGROUND UTILITIES MAY EXIST WITHIN THE WORK AREA. CONTRACTOR SHALL USE EXTREME CAUTION AND SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
- INFORMATION SHOWN ON THIS DRAWING HAS BEEN PROVIDED AS A GUIDE TO ASSIST THE CONTRACTOR IN ESTABLISHING THE LOCATIONS OF PROPOSED CONSTRUCTION WITH RESPECT TO EXISTING SITE IMPROVEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL CONSTRUCTION SURVEY STAKEOUT REQUIRED AND TO CONFIRM ALL INFORMATION SHOWN HEREON.

NOTE:

- LIMIT OF DISTURBANCE OFFSET TWO FEET FOR VISUAL CLARITY. ESC CONTROLS TO BE PLACED ON THE LIMITS OF DISTURBANCE.
- TOTAL LIMIT OF DISTURBANCE: 33,535 S.F. / 0.77 ACRES
 **PROJECT WILL REQUIRE APPROVAL UNDER BALTIMORE COUNTY SEDIMENT & EROSION CONTROL PLAN.
 **PROJECT WILL REQUIRE A BALTIMORE COUNTY GRADING PERMIT.
- EARTHWORK QUANTITIES:
 CUT: 1,450 CUBIC YARDS
 FILL: 650 CUBIC YARDS
 TOTAL EARTHWORK: 2100 CUBIC YARDS.
- ANY SILT FENCE OR SILT FENCE ON PAVEMENT REMOVED FOR DAILY ACCESS SHALL BE REINSTALLED AT THE END OF EACH WORKING DAY. ANY SEDIMENT INADVERTENTLY TRACKED OUTSIDE OF THE FENCE SHALL BE IMMEDIATELY CLEANED AND SWEEPED.

STABILIZATION SCHEDULE

AREA	SQ.FT.	TYPE OF STABILIZATION	SEQUENCE
A BUILDINGS		EXCAVATED AREA (temporary)	
		COMPLETED STRUCTURE (permanent)	
B ROADWAYS		STONE BASE (temporary)	
		CONC./BITUMINOUS PAVING (permanent)	
C CURBS & SIDEWALKS		TEMPORARY SEEDING (temporary)	
		CONCRETE CURBS/WALKS (permanent)	
D PERVIOUS AREAS		TEMPORARY SEEDING (temporary)	
		SEED/SOD/LANDSCAPING (permanent)	
E SEDIMENT CONTROLS		SEEDING/STONE (temporary)	
		PERMANENT SEED/SOD (permanent)	

AREAS ARE TO BE VEGETATIVELY STABILIZED TO SATISFY THE 3/7 DAY REQUIREMENT AS PER THE BALTIMORE CITY STANDARD EROSION AND SEDIMENT CONTROL NOTES.

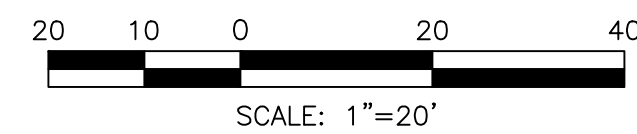
SITE DATA

SITE AREA	AC	SF
LOD	AC	SF
CUT	CY	
FILL	CY	



EROSION, SEDIMENT, AND CONTROL PLAN

SCALE: 1" = 20'



SCALE: 1" = 20'

HORIZONTAL DATUM: NAD 83(2011)
 VERTICAL DATUM: NAVD 88

BCNR # 11595



PROJECT TEAM:

ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509

CIVIL ENGINEER:
 CARROLL ENGINEERING, INC
 215 SCHILLING CIRCLE, STE 102
 HUNT VALLEY, MD 21031
 T: 410.785.7423

LANDSCAPE ARCHITECT:
 ROBINSON ANDERSON SUMMERS
 28 WEST STATE STREET
 MEDIA, PA 19063
 T: 302.888.1544

STRUCTURAL ENGINEER:
 STRUCTURAL DESIGN STUDIO, INC
 2225 EAST MURRAY HOLLADAY RD
 SALT LAKE CITY, UT 84117
 T: 801.274.3950

MEP ENGINEER:
 KOVACS, WHITNEY & ASSOCIATES
 190 WEST OSTEND ST, STE 300
 BALTIMORE, MD 21230
 T: 410.244.7191

OWNER / DEVELOPER / APPLICANT:
 MARYLAND ZOO IN BALTIMORE
 1876 MANSION HOUSE DRIVE
 BALTIMORE MD 21217
 CONTACT: MR. KARL KRANZ
 PHONE: 443-552-3350

CLIENT:
MARYLAND ZOO
 THE MARYLAND ZOO IN BALTIMORE
 1 SAFARI PLACE
 BALTIMORE, MD 21217

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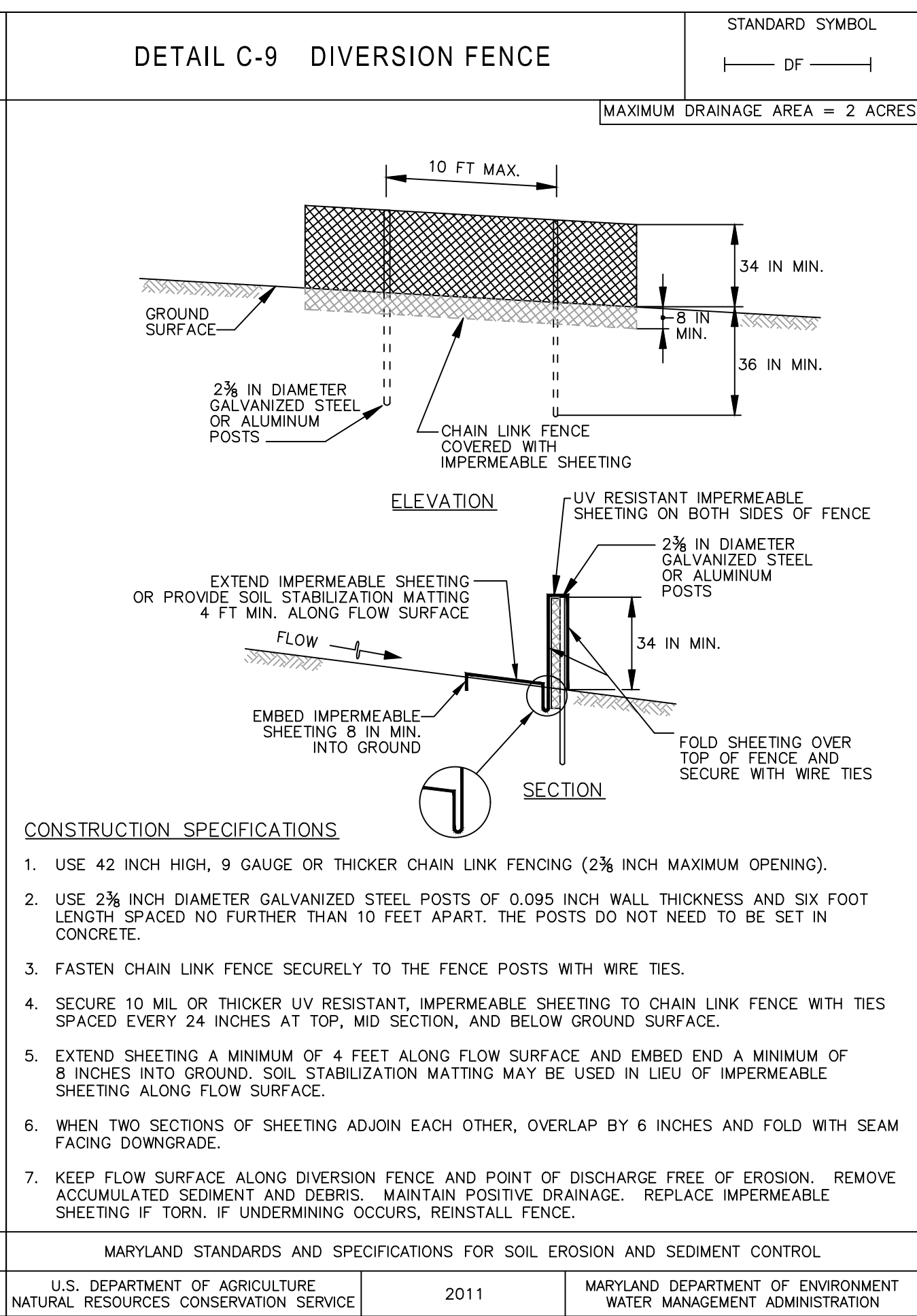
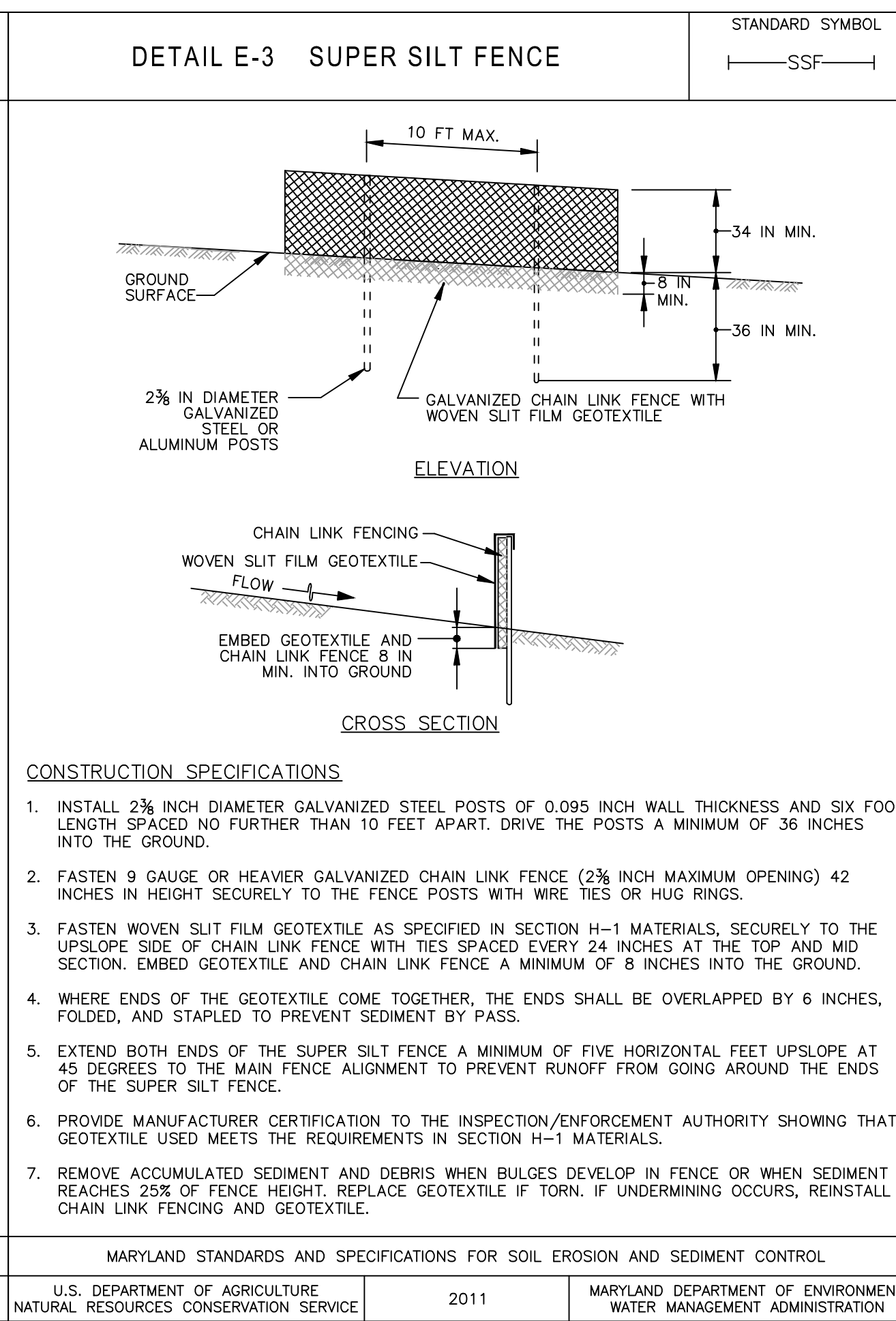
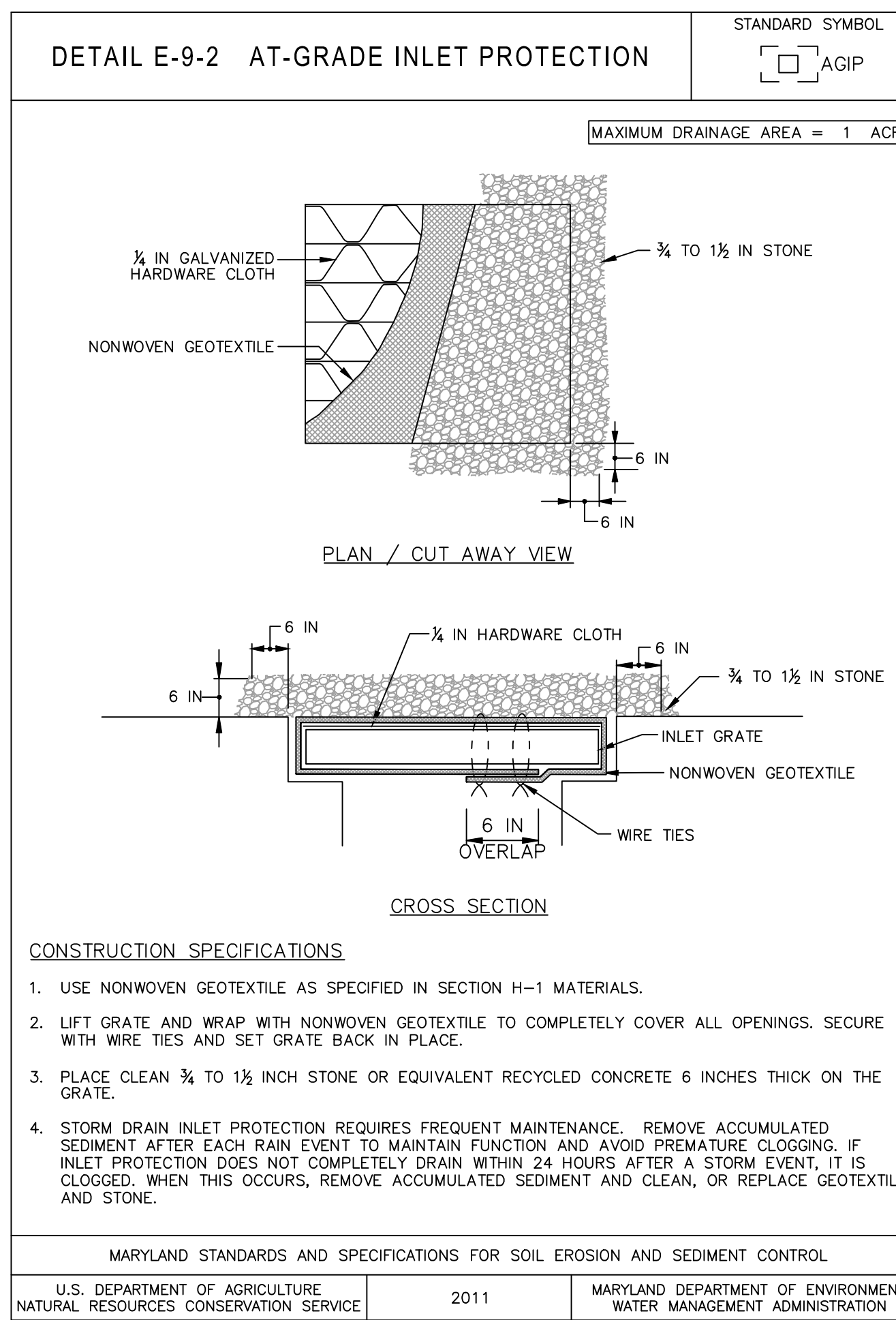
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 1444, EXPIRATION DATE 5/25/25.

DATE:	PROJECT NO: 2023-10.04
DRAWN BY	
CHECKED BY	
SUBMISSION	DATE
REVISION	DATE

DRAWING TITLE:
 EROSION,
 SEDIMENT, AND
 CONTROL
 DETAILS

DRAWING NO:
C710

BCNR # 11595



HORIZONTAL DATUM: NAD 83(2011)
 VERTICAL DATUM: NAVD 88



PROJECT TEAM:

ARCHITECT:
BUELL KRATZER POWELL, P.C.
1525 LOCUST STREET
PHILADELPHIA, PA 19102
T: 215.557.6509

CIVIL ENGINEER:
CARROLL ENGINEERING, INC
215 SCHILLING CIRCLE, STE 102
HUNT VALLEY, MD 21031
T: 410.785.7423

LANDSCAPE ARCHITECT:
ROBINSON ANDERSON SUMMERS
28 WEST STATE STREET
MEDIA, PA 19063
T: 302.888.1544

STRUCTURAL ENGINEER:
STRUCTURAL DESIGN STUDIO, INC
2225 EAST MURRAY HOLLADAY RD
SALT LAKE CITY, UT 84117
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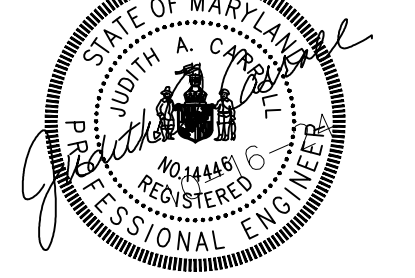
MEP ENGINEER:
KOVACS, WHITNEY & ASSOCIATES
190 WEST OSTEND ST, STE 300
BALTIMORE, MD 21230
T: 410.244.7191

CLIENT:
MARYLAND ZOO
THE MARYLAND ZOO IN BALTIMORE
1 SAFARI PLACE
BALTIMORE, MD 21217

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THE MARYLAND ZOO
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SEAL:



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Table with columns: DATE, PROJECT NO: 2023-10.04, DRAWN BY, CHECKED BY, SUBMISSION, DATE, REVISION, DATE

DRAWING TITLE:
EROSION,
SEDIMENT, AND
CONTROL NOTES

DRAWING NO:
C720

EROSION AND SEDIMENT CONTROL - STANDARD SPECIFICATIONS FOR BALTIMORE CITY PART 1 OF 2

SHEET REVISION DATE: November 15, 2022

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...
EFFECTS ON WATER QUALITY AND QUANTITY: STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL...

- 1. ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUND COVER.
2. IF AN AREA HAS LESS THAN 40 PERCENT GROUND COVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.
3. IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUND COVER, 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.
CRITERIA:
A. INCREMENTAL STABILIZATION - CUT SLOPES
1. EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT.
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.

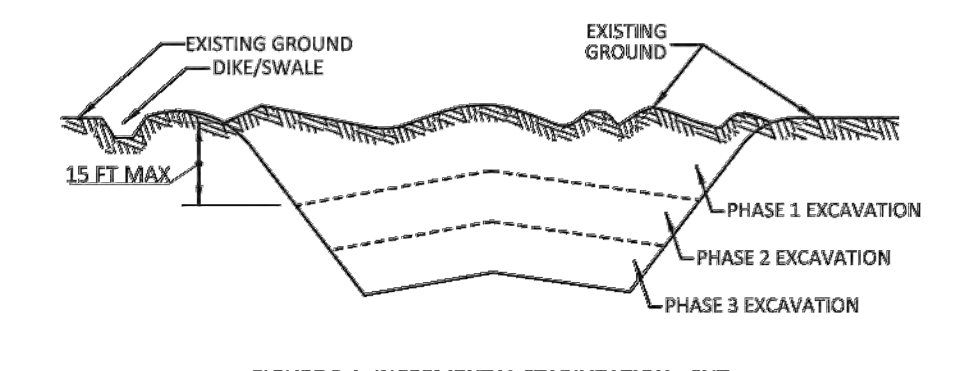


FIGURE B.1: INCREMENTAL STABILIZATION - CUT

- B. INCREMENTAL STABILIZATION - FILL SLOPES
1. CONSTRUCT AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT.
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 PRACTICES(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.
b. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICES(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 AREAS AS NECESSARY.

B-4-1 (CONTINUED)

NOTE: ONCE THE PLACEMENT OF FILL 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).

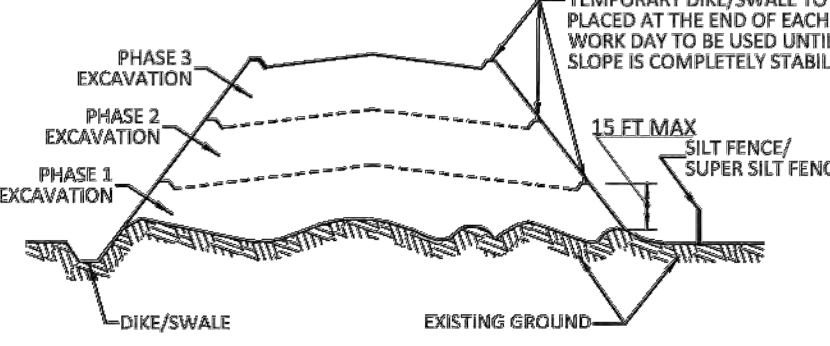


FIGURE B.2: INCREMENTAL STABILIZATION - FILL

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...
2. PERMANENT STABILIZATION
a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE.
b. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
i. SOIL PH BETWEEN 6.0 AND 7.0.
ii. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE...
c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN...
B. TOPSOILING
1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS...
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND.
b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES.
c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION...

B-4-2 (CONTINUED)

- C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE).
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GRASS LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

B-4-3 (CONTINUED)

- 3. ANCHORING
a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER.
i. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES.
ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW.
iii. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED.
iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS.
v. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

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

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.
b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN.
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.
d. SOIL OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL.
2. APPLICATION
a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
i. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1.
ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER.
b. DRILL OR MULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
i. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P2O5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
ii. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING).
iii. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
iv. 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.
b. WOOD CELLULOSE FIBER MULCH (WCFCM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
i. WCFCM IS TO BE DYED GREEN OR COLORED IN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
ii. WCFCM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
iii. WCFCM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY.
iv. WCFCM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
v. WCFCM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
2. APPLICATION
a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LAYER DEPTH 1 TO 2 INCHES.
c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE.
d. WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

HORIZONTAL DATUM: NAD 83(2011)
VERTICAL DATUM: NAVD 88

BCNR # 11595



PROJECT TEAM:

ARCHITECT:
BUELL KRATZER POWELL, P.C.
1525 LOCUST STREET
PHILADELPHIA, PA 19102
T: 215.557.6509

CIVIL ENGINEER:
CARROLL ENGINEERING, INC
215 SCHILLING CIRCLE, STE 102
HUNT VALLEY, MD 21031
T: 410.785.7423

LANDSCAPE ARCHITECT:
ROBINSON ANDERSON SUMMERS
28 WEST STATE STREET
MEDIA, PA 19063
T: 302.888.1544

STRUCTURAL ENGINEER:
STRUCTURAL DESIGN STUDIO, INC
2225 EAST MURRAY HOLLADAY RD
SALT LAKE CITY, UT 84117
T: 801.274.3950

MEP ENGINEER:
KOVACS, WHITNEY & ASSOCIATES
190 WEST OSTEND ST, STE 300
BALTIMORE, MD 21230
T: 410.244.7191

OWNER / DEVELOPER / APPLICANT:
MARYLAND ZOO IN BALTIMORE
1876 MANSION HOUSE DRIVE
BALTIMORE MD 21217
CONTACT: MR. KARL KRANZ
PHONE: 443-552-3350

CLIENT:
MARYLAND ZOO
THE MARYLAND ZOO IN BALTIMORE
1 SAFARI PLACE
BALTIMORE, MD 21217

RED PANDA
THE MARYLAND ZOO
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1 SAFARI PLACE
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SEAL:

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14446, EXPIRATION DATE 09/30/25.

DATE:	
PROJECT NO:	2023-10.04
DRAWN BY:	
CHECKED BY:	
SUBMISSION:	DATE
REVISION:	DATE

DRAWING TITLE:
EROSION,
SEDIMENT, AND
CONTROL NOTES

DRAWING NO:
C722

EROSION AND SEDIMENT CONTROL

SHEET REVISION DATE: NOVEMBER 15, 2022

STABILIZATION SCHEDULE			
AREA	SQ.FT.	TYPE OF STABILIZATION	SEQUENCE
A BUILDINGS		EXCAVATED AREA (temporary)	_____
		COMPLETED STRUCTURE (permanent)	_____
B ROADWAYS		STONE BASE (temporary)	_____
		CONC./BITUMINOUS PAVING (permanent)	_____
C CURBS & SIDEWALKS		TEMPORARY SEEDING (temporary)	_____
		CONCRETE CURBS/WALKS (permanent)	_____
D PERVIOUS AREAS		TEMPORARY SEEDING (temporary)	_____
		SEED/SOD/LANDSCAPING (permanent)	_____
E SEDIMENT CONTROLS		SEEDING/STONE (temporary)	_____
		PERMANENT SEED/SOD (permanent)	_____

AREAS ARE TO BE VEGETATIVELY STABILIZED TO SATISFY THE 3/7 DAY REQUIREMENT AS PER THE BALTIMORE CITY STANDARD EROSION AND SEDIMENT CONTROL NOTES.

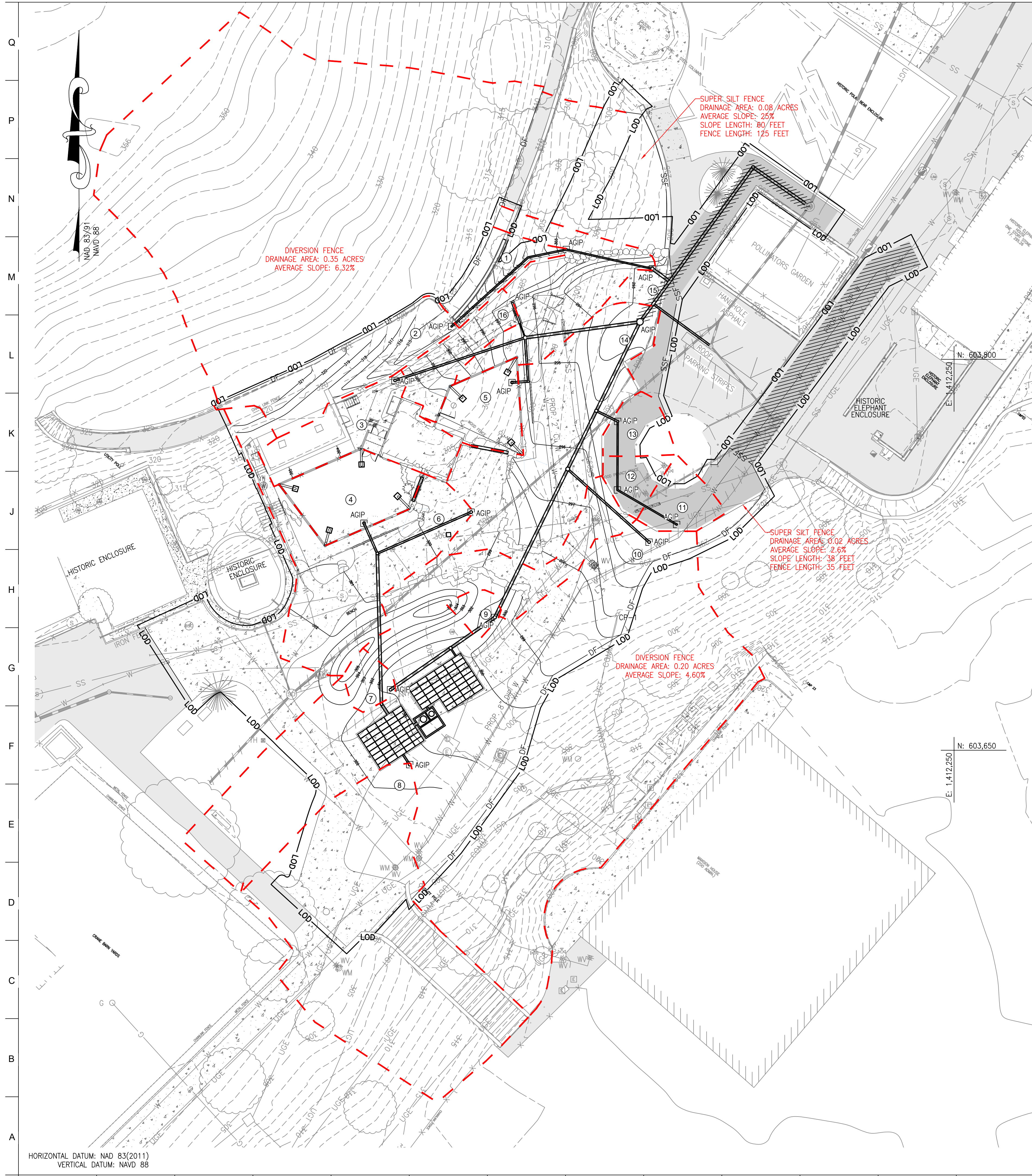
SITE DATA			
SITE AREA		AC	SF
LOD		AC	SF
CUT		CY	
FILL		CY	

Q
P
N
M
L
K
J
H
G
F
E
D
C
B
A

HORIZONTAL DATUM: NAD 83(2011)
VERTICAL DATUM: NAVD 88

BCNR # 11595

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20



HORIZONTAL DATUM: NAD 83(2011)
VERTICAL DATUM: NAVD 88

LEGEND

- 100 PROPOSED BUILDING
- 100 PROPOSED MAJOR CONTOUR
- 99 PROPOSED MINOR CONTOUR
- PROPOSED 1.5" ASPHALT OVERLAY
- PROPOSED CURB
- PROPOSED CONCRETE WALK
- X PROPOSED FENCELINE
- LOD LIMIT OF DISTURBANCE
- PROPOSED UNDERGROUND ELECTRIC
- SS PROPOSED SANITARY LINE
- PROPOSED SANITARY CLEANOUT
- PROPOSED STORMDRAIN LINE
- PROPOSED STORMDRAIN MANHOLE
- W PROPOSED WATER LINE
- PROPOSED SMALL SECTIONAL VAULT
- WV PROPOSED WATER VALVE
- PROPOSED DRAINAGE AREA
- SSF PROPOSED SUPER SILT FENCE
- AGIP AT GRADE INLET PROTECTION
- DF DIVERSION FENCE
- SAME DAY STABILIZATION

OWNER / DEVELOPER / APPLICANT:
MARYLAND ZOO IN BALTIMORE
1876 MANSION HOUSE DRIVE
BALTIMORE MD 21217
CONTACT: MR. KARL KRANZ
PHONE: 443-552-3350

GENERAL NOTES:

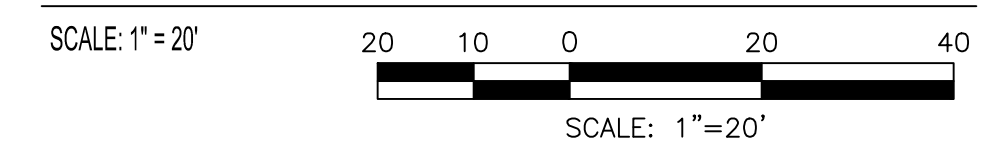
- FIELD RUN TOPOGRAPHIC SURVEY WAS PERFORMED BY CLSI IN FEBRUARY 2024.
- EXISTING UNDERGROUND UTILITIES DESIGNATED ON THE PLANS ARE BASED ON CURRENTLY AVAILABLE INFORMATION AND ARE SHOWN FOR REFERENCE ONLY. THE OWNER AND ENGINEER DISCLAIM ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF SAID INFORMATION BEYOND THE DESIGNATION INDICATED. THE QUALITY LEVEL DESIGNATED IS IN ACCORDANCE WITH ASCE STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA (CI/ASCE 38-02). THE CONTRACTOR SHALL MAKE HIMSELF FAMILIAR WITH THOSE STANDARDS PRIOR TO ANY RELIANCE ON THE INFORMATION SHOWN ON THESE PLANS. PRIOR TO ANY EXCAVATION, IN THE ABSENCE OF QUALITY LEVEL A OR B DESIGNATION, THE CONTRACTOR SHALL VERIFY, TO HIS OWN SATISFACTION, THE EXISTENCE, DEPTH, SIZE, MATERIAL, AND LOCATION OF ALL UNDERGROUND UTILITIES, AND DETERMINE WHETHER THOSE UTILITIES ARE LIVE. ANY EARTHWORK IN LOCATIONS WHERE UTILITIES ARE POSSIBLE SHALL BE DONE WITH EXTREME CAUTION. THE GIVING OF INFORMATION ON THE PLANS WILL NOT RELIEVE THE CONTRACTOR OF HIS OBLIGATION TO SUPPORT AND PROTECT ALL DESIGNATED OR UNDESIGNATED EXISTING UTILITIES AND APPURTENANCES. SHOULD ANY EXISTING UTILITY BE DAMAGED BY THE CONTRACTOR, THE CONTRACTOR SHALL REPAIR THE DAMAGE CAUSED TO THE UTILITY OWNER'S SATISFACTION, AT THE CONTRACTOR'S EXPENSE.
- LIVE UNDERGROUND UTILITIES MAY EXIST WITHIN THE WORK AREA. CONTRACTOR SHALL USE EXTREME CAUTION AND SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
- INFORMATION SHOWN ON THIS DRAWING HAS BEEN PROVIDED AS A GUIDE TO ASSIST THE CONTRACTOR IN ESTABLISHING THE LOCATIONS OF PROPOSED CONSTRUCTION WITH RESPECT TO EXISTING SITE IMPROVEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL CONSTRUCTION SURVEY STAKEOUT REQUIRED AND TO CONFIRM ALL INFORMATION SHOWN HEREON.

NOTE:

- LIMIT OF DISTURBANCE OFFSET TWO FEET FOR VISUAL CLARITY. ESC CONTROLS TO BE PLACED ON THE LIMITS OF DISTURBANCE.
- TOTAL LIMIT OF DISTURBANCE: 33,534 S.F. / 0.77 ACRES
**PROJECT WILL REQUIRED APPROVAL UNDER BALTIMORE COUNTY SEDIMENT & EROSION CONTROL PLAN.
**PROJECT WILL REQUIRE A BALTIMORE COUNTY GRADING PERMIT.
- EARTHWORK QUANTITIES:
CUT: 535 CUBIC YARDS
FILL: 565 CUBIC YARDS
TOTAL EARTHWORK: 1100 CUBIC YARDS.
- ANY SILT FENCE OR SILT FENCE ON PAVEMENT REMOVED FOR DAILY ACCESS SHALL BE REINSTALLED AT THE END OF EACH WORKING DAY. ANY SEDIMENT INADVERTENTLY TRACKED OUTSIDE OF THE FENCE SHALL BE IMMEDIATELY CLEANED AND SWEEPED.

DEVICE NO.	DEVICE	DRAINAGE AREA (ACRES)
1	AGIP	0.02
2	AGIP	0.04
3	AGIP	0.04
4	AGIP	0.03
5	AGIP	0.02
6	AGIP	0.07
7	AGIP	0.01
8	AGIP	0.16
9	AGIP	0.01
10	AGIP	0.24
11	AGIP	0.02
12	AGIP	0.01
13	AGIP	0.02
14	AGIP	0.10
15	AGIP	0.05
16	AGIP	0.02

DRAINAGE AREA EXHIBIT



PROJECT TEAM:

ARCHITECT:
BUELL KRATZER POWELL, P.C.
1525 LOCUST STREET
PHILADELPHIA, PA 19102
T: 215.557.6509

CIVIL ENGINEER:
CARROLL ENGINEERING, INC
215 SCHILLING CIRCLE, STE 102
HUNT VALLEY, MD 21031
T: 410.785.7423

LANDSCAPE ARCHITECT:
ROBINSON ANDERSON SUMMERS
28 WEST STATE STREET
MEDIA, PA 19063
T: 302.888.1544

STRUCTURAL ENGINEER:
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2225 EAST MURRAY HOLLADAY RD
SALT LAKE CITY, UT 84117
T: 801.274.3950

MEP ENGINEER:
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190 WEST OSTEND ST, STE 300
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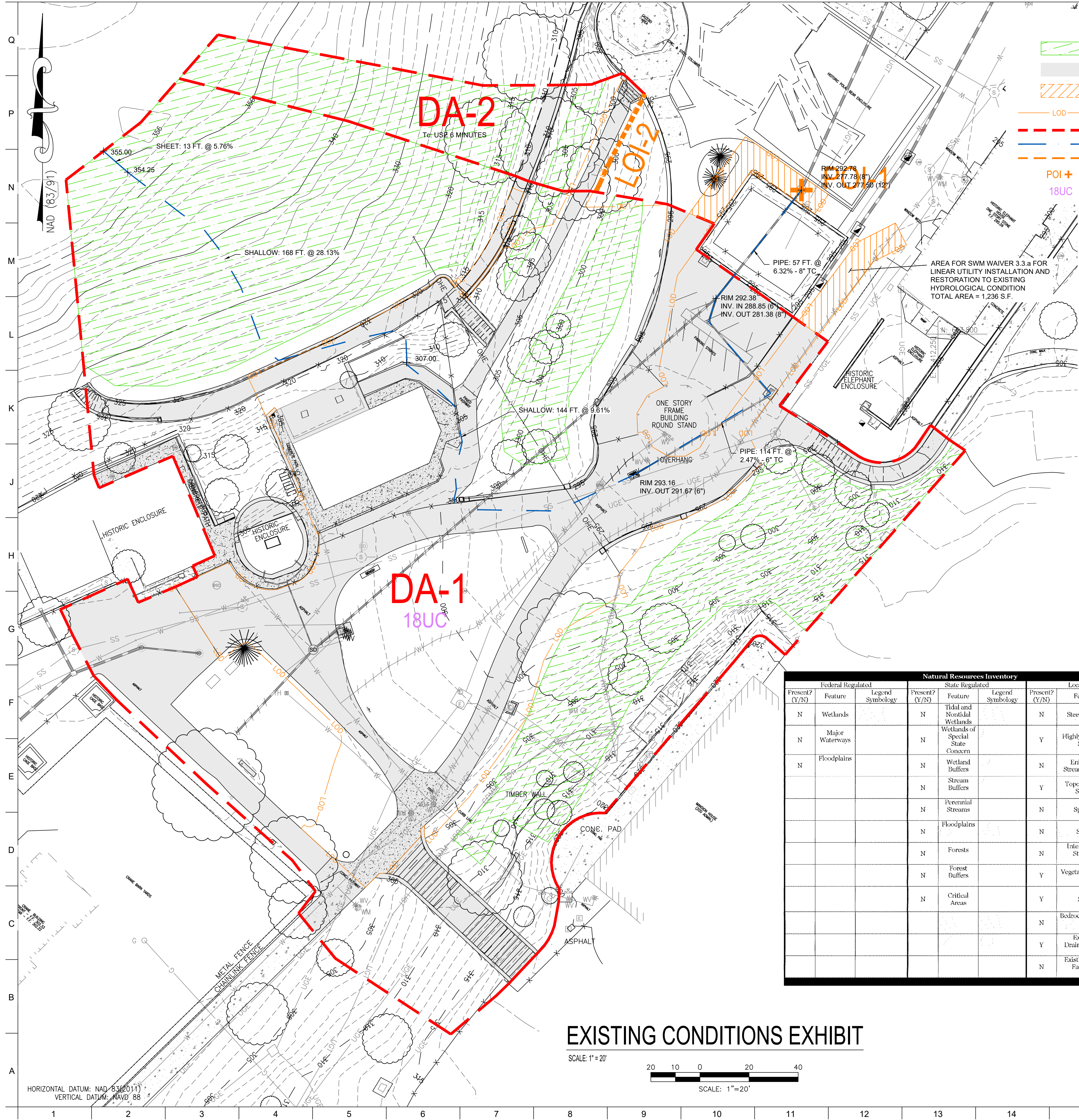
SEAL:

DATE:	
PROJECT NO: 2023-10.04	
DRAWN BY	
CHECKED BY	
SUBMISSION	DATE
REVISION	DATE

DRAWING TITLE:
DRAINAGE AREA EXHIBIT

DRAWING NO:
DA-1

BCNR # 11595



LEGEND

- EXISTING WOODS (GOOD CONDITION)
- EXISTING IMPERVIOUS AREA
- LOD EXCLUDED FROM STUDY AREA SUBJECT TO 3.3.A WAIVER
- LIMIT-OF-DISTURBANCE (STORMWATER STUDY AREA)
- DRAINAGE AREA DELINEATION
- TIME OF CONCENTRATION PATH
- LINE OF INVESTIGATION
- POI +
- 18UC
- HYDROLOGIC SOILS GROUP

OWNER / DEVELOPER / APPLICANT:
 MARYLAND ZOO IN BALTIMORE
 1876 MANSION HOUSE DRIVE
 BALTIMORE, MD 21217
 CONTACT: MR. KARL KRANZ
 PHONE: 443-552-3350

TABLE 3. STORMWATER MANAGEMENT DISCHARGE SUMMARY

REQUIREMENT	EXISTING DISCHARGE (CFS)	PROPOSED DISCHARGE w/SWM (CFS)	NOTES
POI-1	Q ₀	2.16	1.64
	Q ₁₀	6.35	5.52
	Q ₃₀	10.20	9.61
LOI-2	Q ₀	0.0	0.0
	Q ₁₀	0.25	0.19
	Q ₃₀	0.51	0.45
TOTAL *	Q ₀	2.16	1.64
	Q ₁₀	6.60	5.71
	Q ₃₀	10.71	10.06

NOTES:
 * TOTALS ARE THE ALGEBRAIC SUM OF THE DRAINAGE AREAS.

SOIL TYPES

SYMBOL	DESCRIPTION	HSG	Kf
18UC	LEGORE URBAN LAND COMPLEX, 8-15% SLOPE	B	0.32

ALL SOILS WITHIN THE PROJECT AREA ARE 18UC.

EXISTING CONDITION TR-55 DATA SUMMARY

DRAINAGE AREA	OVERALL AREA	IMPERVIOUS AREA	CN	Tc (HR)
DA-1	1.837 AC.	0.586 AC.	74	0.100
DA-2	0.122 AC.	0.013 AC.	62	0.100

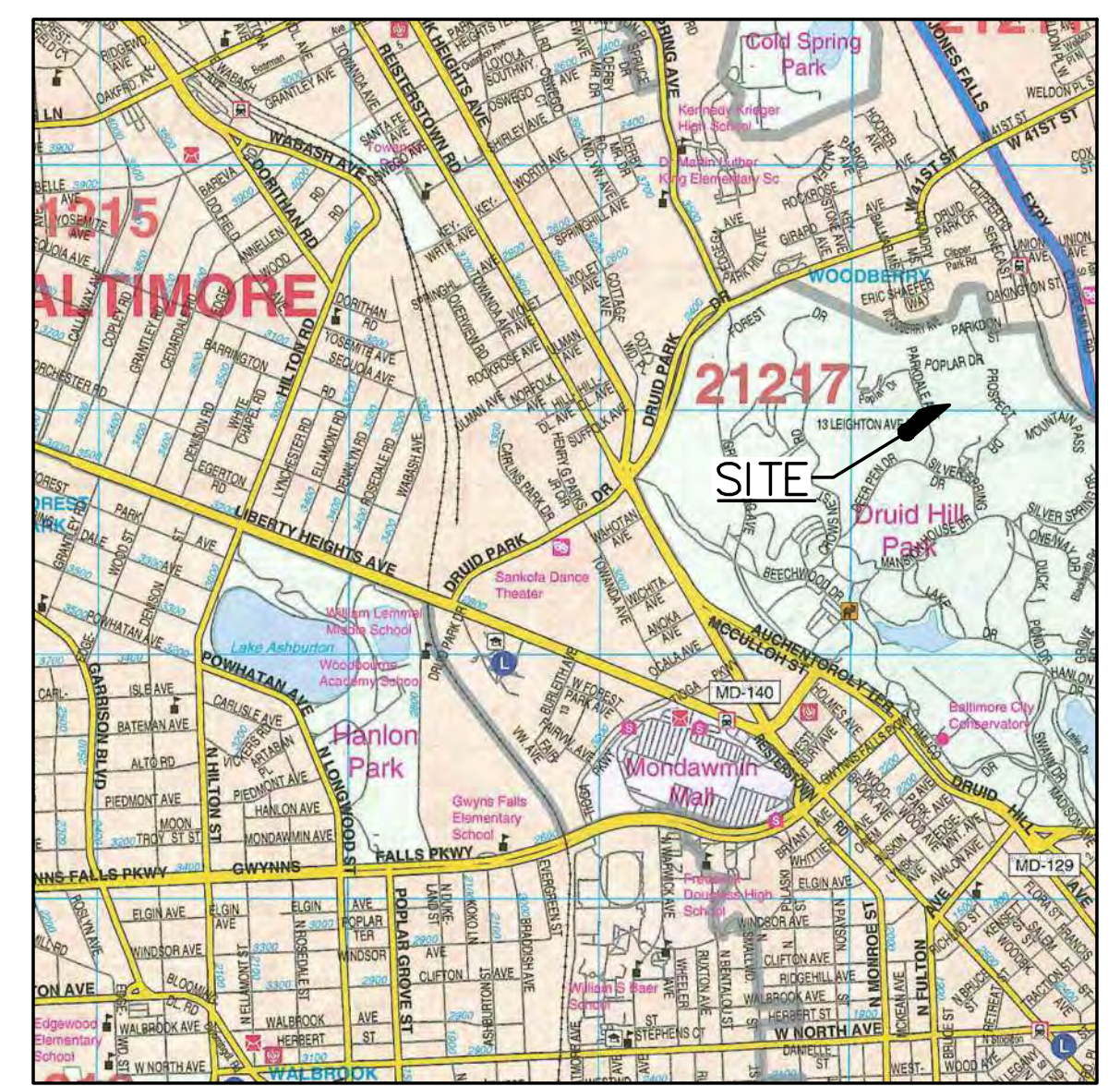
EXISTING CONDITIONS SITE DATA:

LOD DATA:
 TOTAL LOD AREA= 0.770 AC. (33,543 S.F.)
 LOD SUBJECT TO WAIVER= 0.028 AS. (1,236 S.F.)
 LOD FOR SWM= 0.742 AC. (32,307 S.F.)
 SOIL TYPES: HSG "B"
 LAND USE: ZOO
 IMPERVIOUS AREA: 0.322 AC. (14,029 S.F.)
 PERCENT IMPERVIOUS= 0.322/0.742 = 43.4%*

* PROJECT IS REDEVELOPMENT

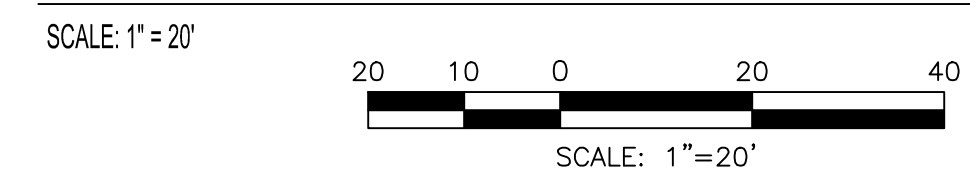
Natural Resources Inventory					
Federal Regulated		State Regulated		Local Regulated	
Present? (Y/N)	Feature	Legend Symbology	Present? (Y/N)	Feature	Legend Symbology
N	Wetlands		N	Tidal and Nontidal Wetlands	
N	Major Waterways		N	Wetlands of Special State Concern	
N	Floodplains		N	Wetland Buffers	
			N	Stream Buffers	
			N	Perennial Streams	
			N	Floodplains	
			N	Forests	
			N	Forest Buffers	
			N	Critical Areas	
			N	Bedrock/Geology	
			N	Steep Slopes	
			N	Highly Erodible Soils	See Soils Table
			N	Enhanced Stream Buffers	
			N	Topography / Slopes	See Plan
			N	Springs	
			N	Sceps	
			N	Intermittent Streams	
			N	Vegetative Cover	See Plan
			N	Soils	See Soils Table
			N	Existing Drainage Area	See Plan
			N	Existing SWM Facilities	See Plan

Updated 3/1/2016



VICINITY MAP
 SCALE: 1"=2000'
 BALTIMORE CITY ADC MAP 77, GRID F5
 PERMITTED USE No. 21009264

EXISTING CONDITIONS EXHIBIT



HORIZONTAL DATUM: NAD 83 (2011)
 VERTICAL DATUM: NAVD 88

BKP

PROJECT TEAM:
ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509
CIVIL ENGINEER:
 CARROLL ENGINEERING, INC
 215 SCHILLING CIRCLE, STE 102
 HUNT VALLEY, MD 21038
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 T: 801.274.3950
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 190 WEST OSTEND ST, STE 300
 BALTIMORE, MD 21230
 T: 410.244.7191

CLIENT:
MARYLAND ZOO
 THE MARYLAND ZOO IN BALTIMORE
 1 SAFARI PLACE
 BALTIMORE, MD 21217

RED PANDA
 THE MARYLAND ZOO
 IN BALTIMORE
 1 SAFARI PLACE
 BALTIMORE, MD 21217

THIS DRAWING IS TO ILLUSTRATE THE WORK TO BE DONE. THE ARCHITECT IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES USED TO DO THE WORK OR THE SAFETY ASPECTS OF CONSTRUCTION, AND NOTHING ON THE DRAWINGS EXPRESSED OR IMPLIED CHANGES THIS CONDITION. CONTRACTOR SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS AN ACKNOWLEDGMENT OF THESE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK, AND THE BID PRICE. NO CLAIMS FOR EXTRA CHARGES DUE TO THESE CONDITIONS WILL BE FORWICOMING.

SEAL:

DATE:
 PROJECT NO: 2023-10.04
 DRAWN BY
 CHECKED BY
 SUBMISSION DATE

REVISION DATE

DRAWING TITLE:
 Existing Conditions
 SWM Exhibit

DRAWING NO:
 SWM-1

BCNR # 11595



PROJECT TEAM:

ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509

CIVIL ENGINEER:
 CARROLL ENGINEERING, INC
 215 SCHILLING CIRCLE, STE 102
 HUNT VALLEY, MD 21031
 T: 410.785.7423

LANDSCAPE ARCHITECT:
 ROBINSON ANDERSON SUMMERS
 28 WEST STATE STREET
 MEDIA, PA 19063
 T: 302.888.1544

STRUCTURAL ENGINEER:
 STRUCTURAL DESIGN STUDIO, INC
 2225 EAST MURRAY HOLLADAY RD
 SALT LAKE CITY, UT 84117
 T: 801.274.3950

MEP ENGINEER:
 KOVACS, WHITNEY & ASSOCIATES
 190 WEST OSTEND ST, STE 300
 BALTIMORE, MD 21230
 T: 410.244.7191

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SEAL:

DATE:
 PROJECT NO: 2023-10.04
 DRAWN BY
 CHECKED BY
 SUBMISSION DATE

DRAWING TITLE:
 IART Exhibit

DRAWING NO:
SWM-2



LEGEND

- EXISTING UNDISTURBED IMPERVIOUS AREA
- REMOVED IMPERVIOUS AREA
- RECONSTRUCTED IMPERVIOUS AREA
- NEW IMPERVIOUS AREA
- PROPOSED FILTER MEDIA AREA
- LOD EXCLUDED FROM STUDY AREA SUBJECT TO 3.3.A WAIVER
- LOD - LIMIT-OF-DISTURBANCE (STORMWATER STUDY AREA)
- DRAINAGE AREA/SUBAREA DELINEATION
- LINE OF INVESTIGATION
- POINT OF INVESTIGATION
- HYDROLOGIC SOILS GROUP

OWNER / DEVELOPER / APPLICANT:
 MARYLAND ZOO IN BALTIMORE
 1876 MANSION HOUSE DRIVE
 BALTIMORE MD 21217
 CONTACT: MR. KARL KRANZ
 PHONE: 443-552-3350

CLASSIFICATION	HATCHING	TOTAL
REMOVED IMPERVIOUS AREA		5,606 SF/0.13 Ac.
RECONSTRUCTED IMPERVIOUS AREA		8,719 SF/0.20 Ac.
NEW IMPERVIOUS AREA		6,394 SF/0.15 Ac.
UNDISTURBED IMPERVIOUS AREA		11,126 SF/0.26 Ac.

SYMBOL	DESCRIPTION	HSG	Kf
18UC	LEGORE URBAN LAND COMPLEX, 8-15% SLOPE	B	0.32

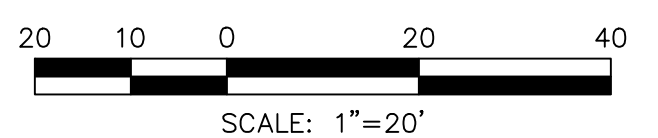
ALL SOILS WITHIN THE PROJECT AREA ARE 18UC.

	SF	AC
A EX. IMP. AREA TREATED BY EXISTING WATER QUALITY FACILITY IMPACTED BY WORK	0	0
B STORMWATER STUDY AREA (SSA)	32,307	0.74
C EXISTING IMPERVIOUS AREA WITHIN SSA	14,325	0.33
D PROPOSED IMPERVIOUS AREA WITHIN SSA	15,113	0.35
E NEW IMPERVIOUS AREA = (D - C) IF REDEVELOPMENT, ELSE = D	788	0.02
F REDEVELOPMENT IMPERVIOUS AREA = (0.5 x (C-A)) IF REDEVELOPMENT, ELSE = 0	7,163	0.16
G TOTAL IMPERVIOUS AREA TO TREAT (A + E + F)	7,951	0.18
H TOTAL IMPERVIOUS AREA TREATED BY SWM	9,442	0.22
I FEE PAID IN LIEU OF TREATMENT IMPERVIOUS AREA VARIANCE TREATMENT IMPERVIOUS AREA	0	0
J TOTAL IMPERVIOUS AREA ACCOUNTED (H + I)	9,442	0.22
K LOD/DEVELOPER AGREEMENT WORK IN RIGHT-OF-WAY FOR MAINTENANCE ACTIVITIES - UTILITY, SIDEWALK, ETC. (NOT INCLUDED IN SSA)	1,236	0.03
L TOTAL LIMIT OF DISTURBANCE (B + K)	33,543	0.77
M WATERSHED NAME: JONES FALLS		

	REQ. (cf)	PRO. (cf)	NOTES
ESDv	835	836	
Rev	16	128	

NOTES
 1. ROUND ACRES TO NO MORE THAN 2 PLACES AFTER THE DECIMAL POINT.

HORIZONTAL DATUM: NAD 83(2011)
 VERTICAL DATUM: NAVD 88



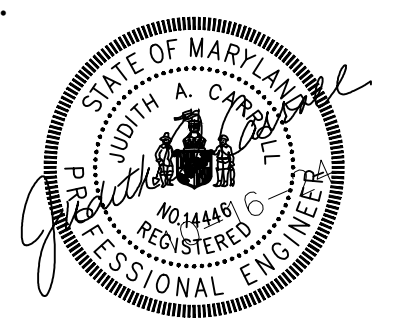
BCNR # 11595



PROJECT TEAM:
ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509
CIVIL ENGINEER:
 CARROLL ENGINEERING, INC
 215 SCHILLING CIRCLE, STE 102
 HUNT VALLEY, MD 21031
 T: 410.785.7423
LANDSCAPE ARCHITECT:
 ROBINSON ANDERSON SUMMERS
 28 WEST STATE STREET
 MEDIA, PA 19063
 T: 302.888.1544
STRUCTURAL ENGINEER:
 STRUCTURAL DESIGN STUDIO, INC
 2225 EAST MURRAY HOLLADAY RD
 SALT LAKE CITY, UT 84117
 T: 801.274.3950
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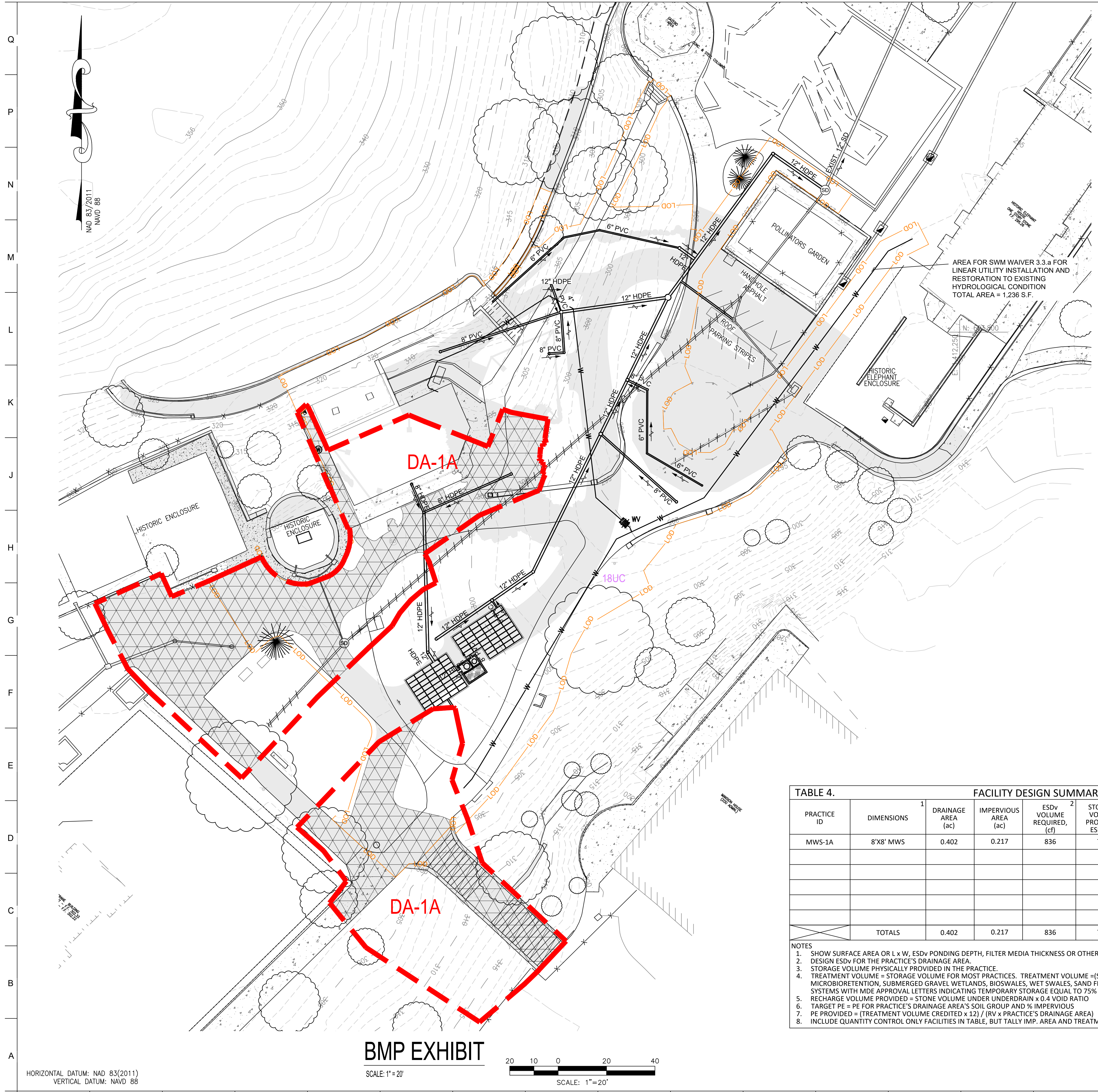
SEAL:

 L. A. CARROLL
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF MARYLAND
 LICENSE NO. 14446
 EXPIRATION DATE 9/25/25

DATE:
 PROJECT NO: 2023-10.04
 DRAWN BY
 CHECKED BY
 SUBMISSION DATE

REVISION DATE

DRAWING TITLE:
 BMP Exhibit

DRAWING NO:
 SWM-3



LEGEND

- PROPOSED CONDITIONS IMPERVIOUS AREA
- TREATED IMPERVIOUS AREA
- PROPOSED FILTER MEDIA AREA
- LOD EXCLUDED FROM STUDY AREA SUBJECT TO 3.3.A WAIVER
- LIMIT-OF-DISTURBANCE (STORMWATER STUDY AREA)
- SUBAREA DELINEATION TO FACILITY
- LINE OF INVESTIGATION
- POI +
- 18UC HYDROLOGIC SOILS GROUP

OWNER / DEVELOPER / APPLICANT:
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 1876 MANSION HOUSE DRIVE
 BALTIMORE MD 21217
 CONTACT: MR. KARL KRANZ
 PHONE: 443-552-3350

TABLE 4. FACILITY DESIGN SUMMARY TABLE

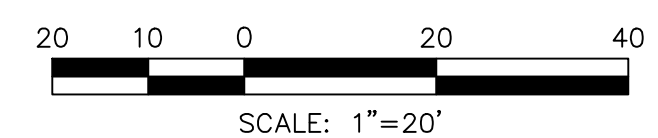
PRACTICE ID	DIMENSIONS ¹	DRAINAGE AREA (ac)	IMPERVIOUS AREA (ac)	ESD _v VOLUME REQUIRED, (cf) ²	STORAGE VOLUME PROVIDED, ESD, (cf) ³	TREATMENT VOLUME CREDITED, ESD, (cf) ⁴	RECHARGE VOLUME PROVIDED (cf) ⁵	TARGET PE (in) ⁶	PE PROVIDED (in) ⁷	IS FACILITY USED FOR 10- & 100-YEAR QUANTITY CONTROL? (Y/N)	NOTES
MWS-1A	8'X8' MWS	0.402	0.217	836	796	836	128	1.06	1.06	Y	MODULAR WETLAND STRUCTURE
TOTALS		0.402	0.217	836	796	836	128				

NOTES
 1. SHOW SURFACE AREA OR L x W, ESD_v PONDING DEPTH, FILTER MEDIA THICKNESS OR OTHER RELEVANT DESIGN DATA.
 2. DESIGN ESD_v FOR THE PRACTICE'S DRAINAGE AREA.
 3. STORAGE VOLUME PHYSICALLY PROVIDED IN THE PRACTICE.
 4. TREATMENT VOLUME = STORAGE VOLUME FOR MOST PRACTICES. TREATMENT VOLUME = (STORAGE VOLUME PROVIDED / 0.75) FOR MICROBIORETENTION, SUBMERGED GRAVEL WETLANDS, BIOSWALES, WET SWALES, SAND FILTERS, BIORETENTION, AND PROPRIETARY SWM SYSTEMS WITH MDE APPROVAL LETTERS INDICATING TEMPORARY STORAGE EQUAL TO 75% OF ESD_v.
 5. RECHARGE VOLUME PROVIDED = STONE VOLUME UNDER UNDERDRAIN x 0.4 VOID RATIO
 6. TARGET PE = PE FOR PRACTICE'S DRAINAGE AREA'S SOIL GROUP AND % IMPERVIOUS
 7. PE PROVIDED = (TREATMENT VOLUME CREDITED x 12) / (RV x PRACTICE'S DRAINAGE AREA)
 8. INCLUDE QUANTITY CONTROL ONLY FACILITIES IN TABLE, BUT TALLY IMP. AREA AND TREATMENT AS NOT APPLICABLE - N/A

HORIZONTAL DATUM: NAD 83(2011)
 VERTICAL DATUM: NAVD 88

BMP EXHIBIT

SCALE: 1"=20'



BCNR # 11595

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M
L
K
J
H
G
F
E
D
C
B
A

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20



PROJECT TEAM:

ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509

CIVIL ENGINEER:
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 215 SCHILLING CIRCLE, STE 102
 HUNT VALLEY, MD 21031
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LANDSCAPE ARCHITECT:
 ROBINSON ANDERSON SUMMERS
 28 WEST STATE STREET
 MEDIA, PA 19063
 T: 302.888.1544

STRUCTURAL ENGINEER:
 STRUCTURAL DESIGN STUDIO, INC
 2225 EAST MURRAY HOLLADAY RD
 SALT LAKE CITY, UT 84117
 T: 801.274.3950

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SEAL:

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 1446, EXPIRATION DATE 9/25/25.

DATE:
 PROJECT NO: 2023-10.04

DRAWN BY	
CHECKED BY	
SUBMISSION	DATE
REVISION	DATE

DRAWING TITLE:
 Proposed
 SWM Exhibit

DRAWING NO:
SWM-4

LEGEND

- EXISTING WOODS (GOOD CONDITION)
- EXISTING IMPERVIOUS AREA
- LOD EXCLUDED FROM STUDY AREA SUBJECT TO 3.3.A WAIVER
- LIMIT-OF-DISTURBANCE (STORMWATER STUDY AREA)
- DRAINAGE AREA DELINEATION
- TIME OF CONCENTRATION PATH
- LINE OF INVESTIGATION
- POINT OF INVESTIGATION
- 18UC HYDROLOGIC SOILS GROUP

OWNER / DEVELOPER / APPLICANT:
 MARYLAND ZOO IN BALTIMORE
 1876 MANSION HOUSE DRIVE
 BALTIMORE MD 21217
 CONTACT: MR. KARL KRANZ
 PHONE: 443-552-3350

TABLE 3. STORMWATER MANAGEMENT DISCHARGE SUMMARY

REQUIREMENT	EXISTING DISCHARGE (CFS)	PROPOSED DISCHARGE w/SWM (CFS)	NOTES
POI-1	Q _i 2.16	1.64	
	Q _o 6.35	5.52	
	Q ₁₀₀ 10.20	9.61	
LOI-2	Q _i 0.0	0.0	
	Q _o 0.25	0.19	
	Q ₁₀₀ 0.51	0.45	
TOTAL*	Q _i 2.16	1.64	
	Q _o 6.60	5.71	
	Q ₁₀₀ 10.71	10.06	

NOTES:
 * TOTALS ARE THE ALGEBRAIC SUM OF THE DRAINAGE AREAS.

SOIL TYPES

SYMBOL	DESCRIPTION	HSG	Kf
18UC	LEGORE URBAN LAND COMPLEX, 8-15% SLOPE	B	0.32

ALL SOILS WITHIN THE PROJECT AREA ARE 18UC.

PROPOSED CONDITION TR-55 DATA SUMMARY

DRAINAGE AREA	OVERALL AREA	IMPERVIOUS AREA	CN	T _c (HR)
DA-1	1.435 AC.	0.379 AC.	69	0.100
DA-1A	0.403 AC.	0.217 AC.	81	0.100
DA-2	0.122 AC.	0.006 AC.	58	0.100

Natural Resources Inventory

Federal Regulated		State Regulated		Local Regulated	
Present? (Y/N)	Feature Legend Symbology	Present? (Y/N)	Feature Legend Symbology	Present? (Y/N)	Feature Legend Symbology
N	Wetlands	N	Tidal and Nontidal Wetlands	N	Steep Slopes
N	Major Waterways	N	Wetlands of Special State Concern	Y	Highly Erodible Soils See Soils Table
N	Floodplains	N	Wetland Buffers	N	Enhanced Stream Buffers
		N	Stream Buffers	Y	Topography / Slopes See Plan
		N	Parental Streams	N	Springs
		N	Floodplains	N	Seeps
		N	Forests	N	Intermittent Streams
		N	Forest Buffers	Y	Vegetative Cover See Plan
		N	Critical Areas	Y	Soils See Soils Table
				N	Bedrock/Geology
				Y	Existing Drainage Area See Plan
				N	Existing SWM Facilities

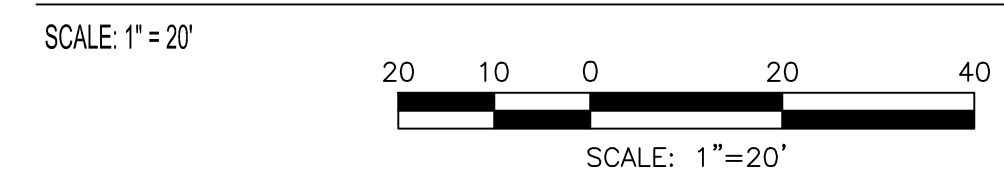
Updated 8/12/2016

PROPOSED CONDITIONS SITE DATA:

LOD DATA:
 TOTAL LOD AREA= 0.770 AC. (33,543 S.F.)
 LOD SUBJECT TO WAIVER= 0.028 AS. (1,236 S.F.)
 LOD FOR SWM= 0.742 AC. (32,307 S.F.)
 SOILS TYPES: HSG "B"
 LAND USE: ZOO
 IMPERVIOUS AREA: 0.347 AC. (15,113 S.F.)
 PERCENT IMPERVIOUS= 0.347/0.742 = 46.8%*

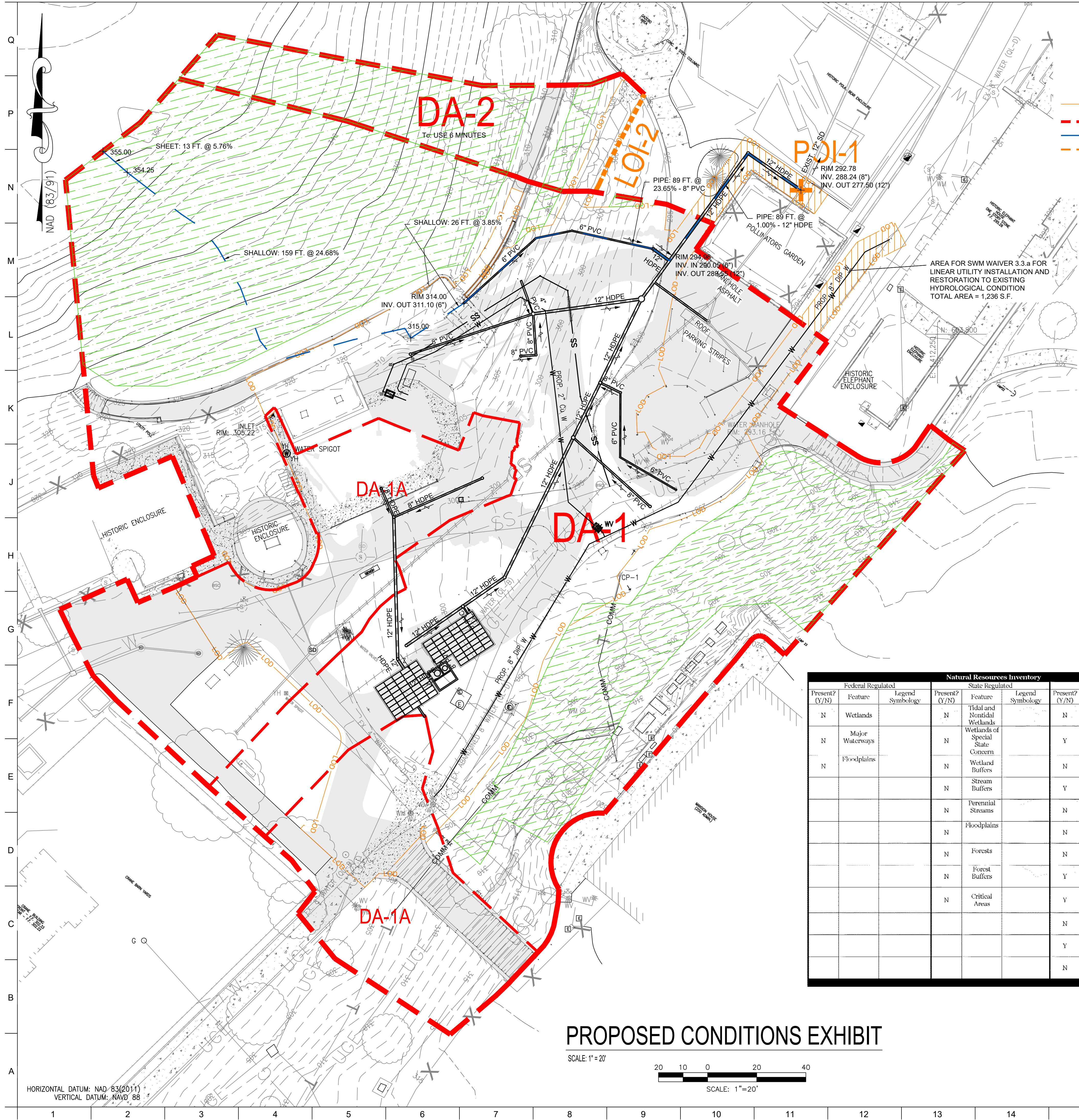
*PROJECT IS REDEVELOPMENT

PROPOSED CONDITIONS EXHIBIT



HORIZONTAL DATUM: NAD 83(2011)
 VERTICAL DATUM: NAVD 88

BCNR # 11595





PROJECT TEAM:
ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509
CIVIL ENGINEER:
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 HUNT VALLEY, MD 21031
 T: 410.785.7423
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 28 WEST STATE STREET
 MEDIA, PA 19063
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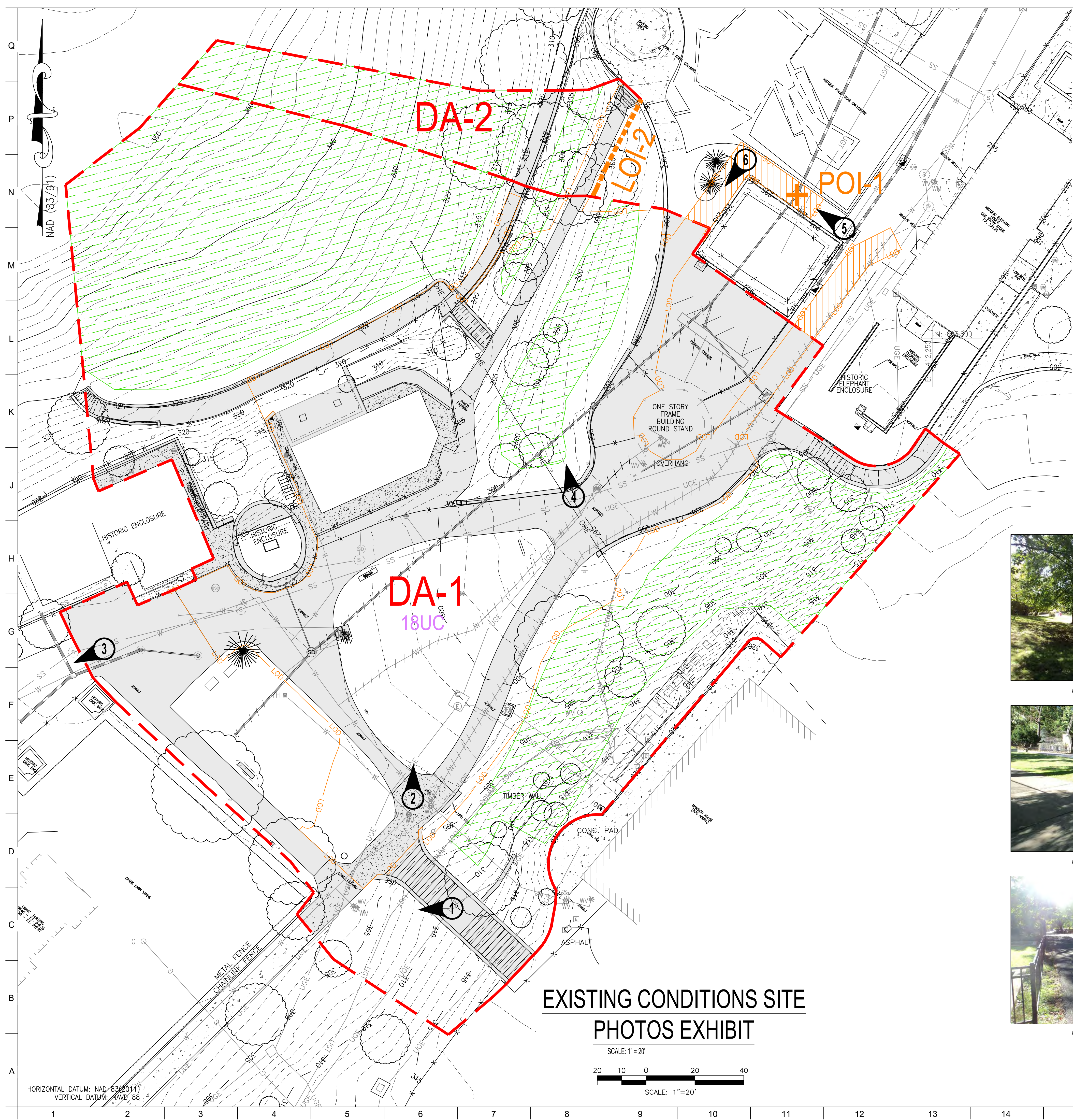
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DATE:	
PROJECT NO: 2023-10.04	
DRAWN BY	
CHECKED BY	
SUBMISSION	DATE
REVISION	DATE

DRAWING TITLE:
 Existing Conditions Site
 Site Photos Exhibit

DRAWING NO:
SWM-5



- LEGEND**
- EXISTING WOODS (GOOD CONDITION)
 - EXISTING IMPERVIOUS AREA
 - LOD EXCLUDED FROM STUDY AREA SUBJECT TO 3.3.A WAIVER
 - LOD
 - DRAINAGE AREA DELINEATION
 - TIME OF CONCENTRATION PATH
 - LINE OF INVESTIGATION
 - POI +
 - 18UC
 - HYDROLOGIC SOILS GROUP



① DRAINAGE AREA DIVIDE

④ LINE OF INVESTIGATION - 2



② SITE AREA

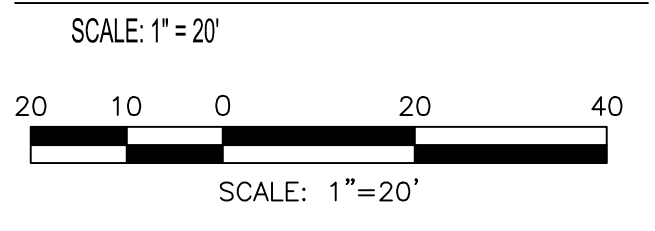
⑤ POINT OF INVESTIGATION - 1



③ DRAINAGE AREA DIVIDE

⑥ OUTFALL PIPE ROUTE

**EXISTING CONDITIONS SITE
 PHOTOS EXHIBIT**



HORIZONTAL DATUM: NAD 83 (2011)
 VERTICAL DATUM: NAVD 88

BCNR # 11595



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ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509
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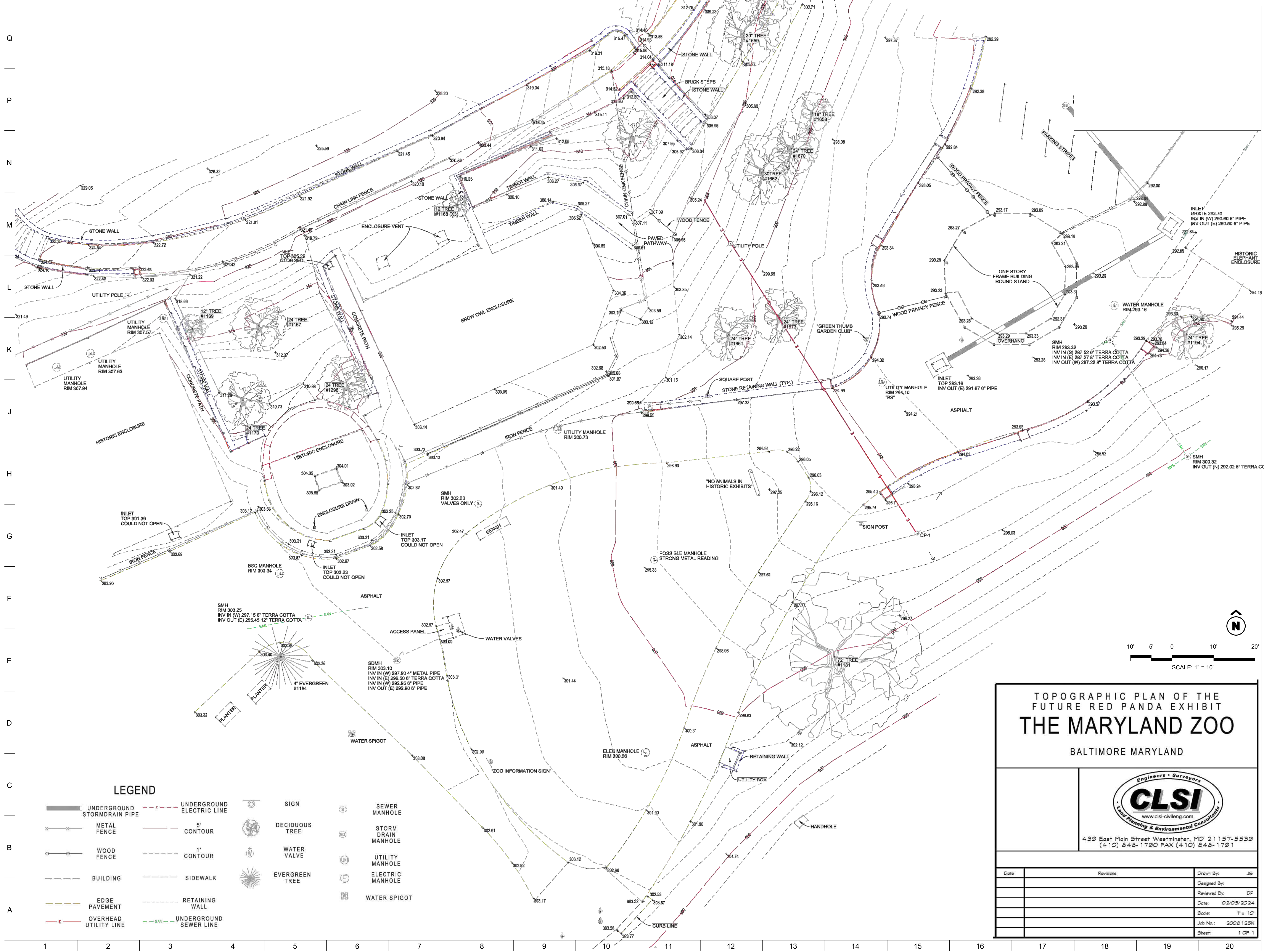


DATE: NOVEMBER 22, 2024
 PROJECT NO: 2023-10.04

DRAWN BY	AV / KS
CHECKED BY	JS / GA
SUBMISSION	DATE
PERMIT SET	11/22/2024
REVISION	DATE

DRAWING TITLE:
 SITE SURVEY

DRAWING NO:
G110



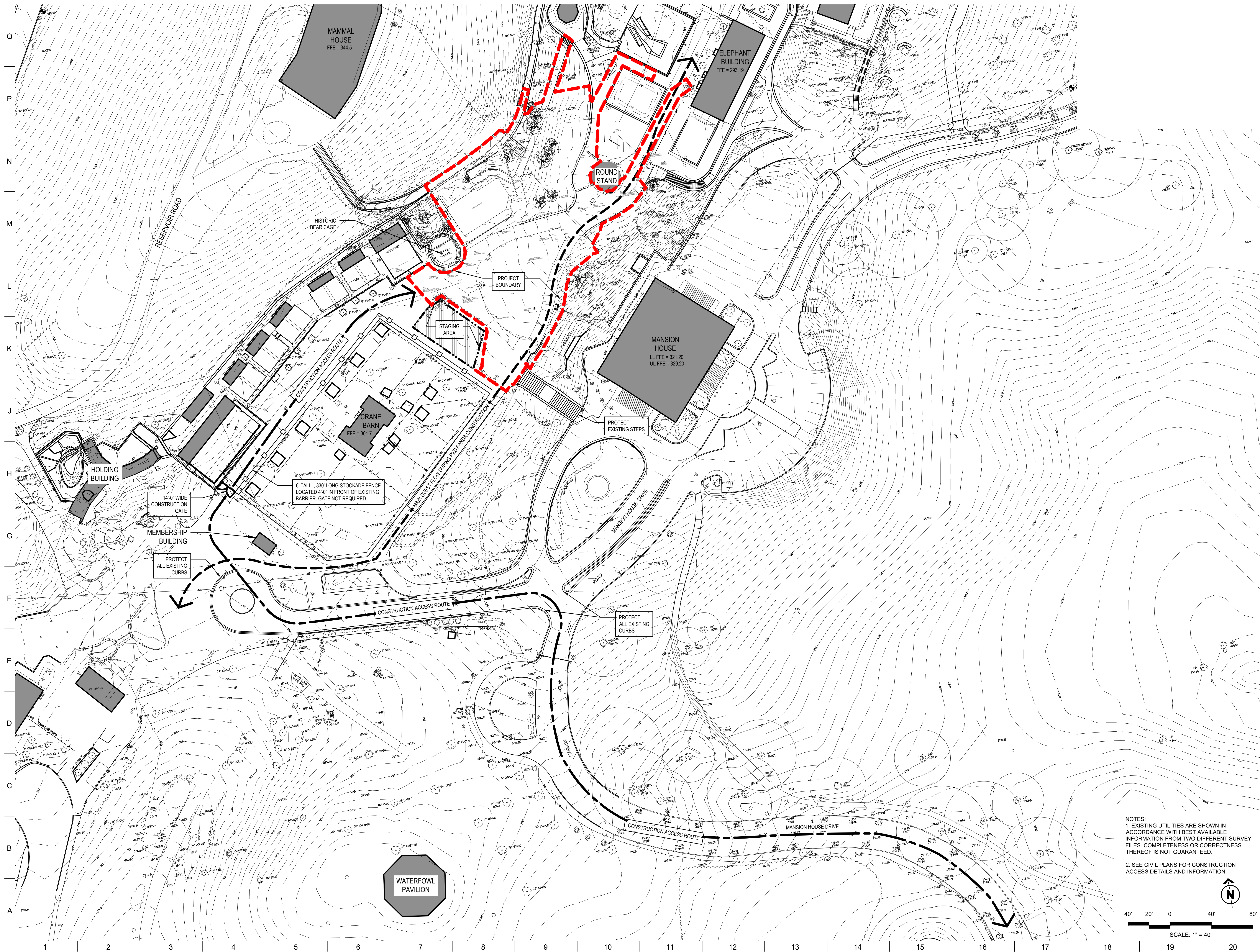
**TOPOGRAPHIC PLAN OF THE
 FUTURE RED PANDA EXHIBIT
 THE MARYLAND ZOO
 BALTIMORE MARYLAND**

439 East Main Street Westminster, MD 21157-5539
 (410) 848-1790 FAX (410) 848-1791

Date	Revisions	Drawn By:	JS
		Designed By:	DP
		Reviewed By:	DP
		Date:	02/05/2024
		Scale:	1" = 10'
		Job No.:	2008125N
		Sheet:	1 OF 1

LEGEND

- | | | | |
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| | | | |



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 BUELL KRATZER POWELL, P.C.
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 28 WEST STATE STREET
 MEDIA, PA 19063
 T: 302.888.1544

STRUCTURAL ENGINEER:
 STRUCTURAL DESIGN STUDIO, INC
 2225 EAST MURRAY HOLLADAY RD
 SALT LAKE CITY, UT 84117
 T: 801.274.3950

MEP ENGINEER:
 KOVACS, WHITNEY & ASSOCIATES
 190 WEST OSTEND ST, STE 300
 BALTIMORE, MD 21230
 T: 410.244.7191

CLIENT:
MARYLAND ZOO
 THE MARYLAND ZOO IN BALTIMORE
 1 SAFARI PLACE
 BALTIMORE, MD 21217

RED PANDA
 THE MARYLAND ZOO
 IN BALTIMORE
 1 SAFARI PLACE
 BALTIMORE, MD 21217

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DATE:	NOVEMBER 22, 2024
PROJECT NO:	2023-10.04
DRAWN BY:	AV / KS
CHECKED BY:	JS / GA
SUBMISSION:	DATE
PERMIT SET:	11/22/2024

REVISION	DATE

DRAWING TITLE:
 SITE ACCESS PLAN

DRAWING NO:
G111

NOTES:

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- SEE CIVIL PLANS FOR CONSTRUCTION ACCESS DETAILS AND INFORMATION.

SCALE: 1" = 40'



PROJECT TEAM:

ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509

CIVIL ENGINEER:
 CARROLL ENGINEERING, INC
 215 SCHILLING CIRCLE, STE 102
 HUNT VALLEY, MD 21031
 T: 410.785.7423

LANDSCAPE ARCHITECT:
 ROBINSON ANDERSON SUMMERS
 28 WEST STATE STREET
 MEDIA, PA 19063
 T: 302.888.1544

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 SALT LAKE CITY, UT 84117
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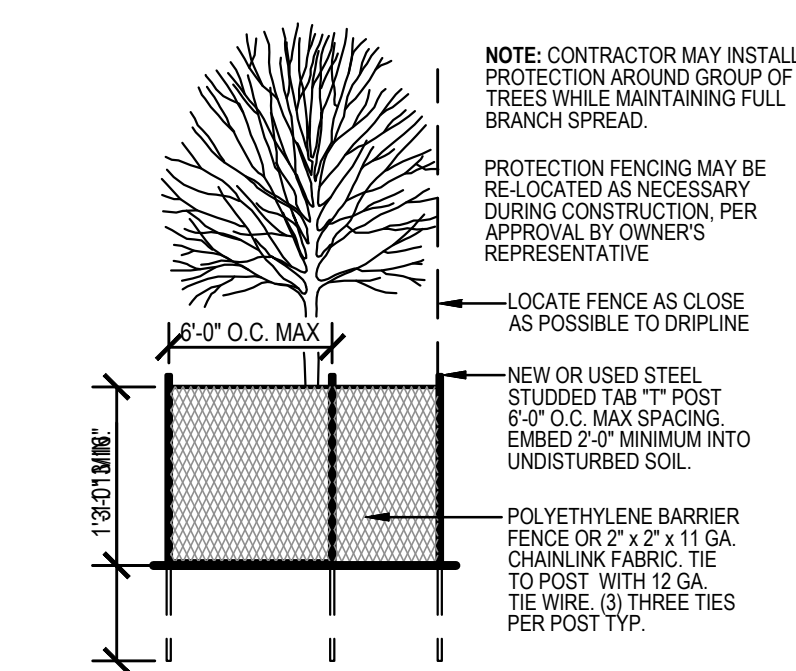
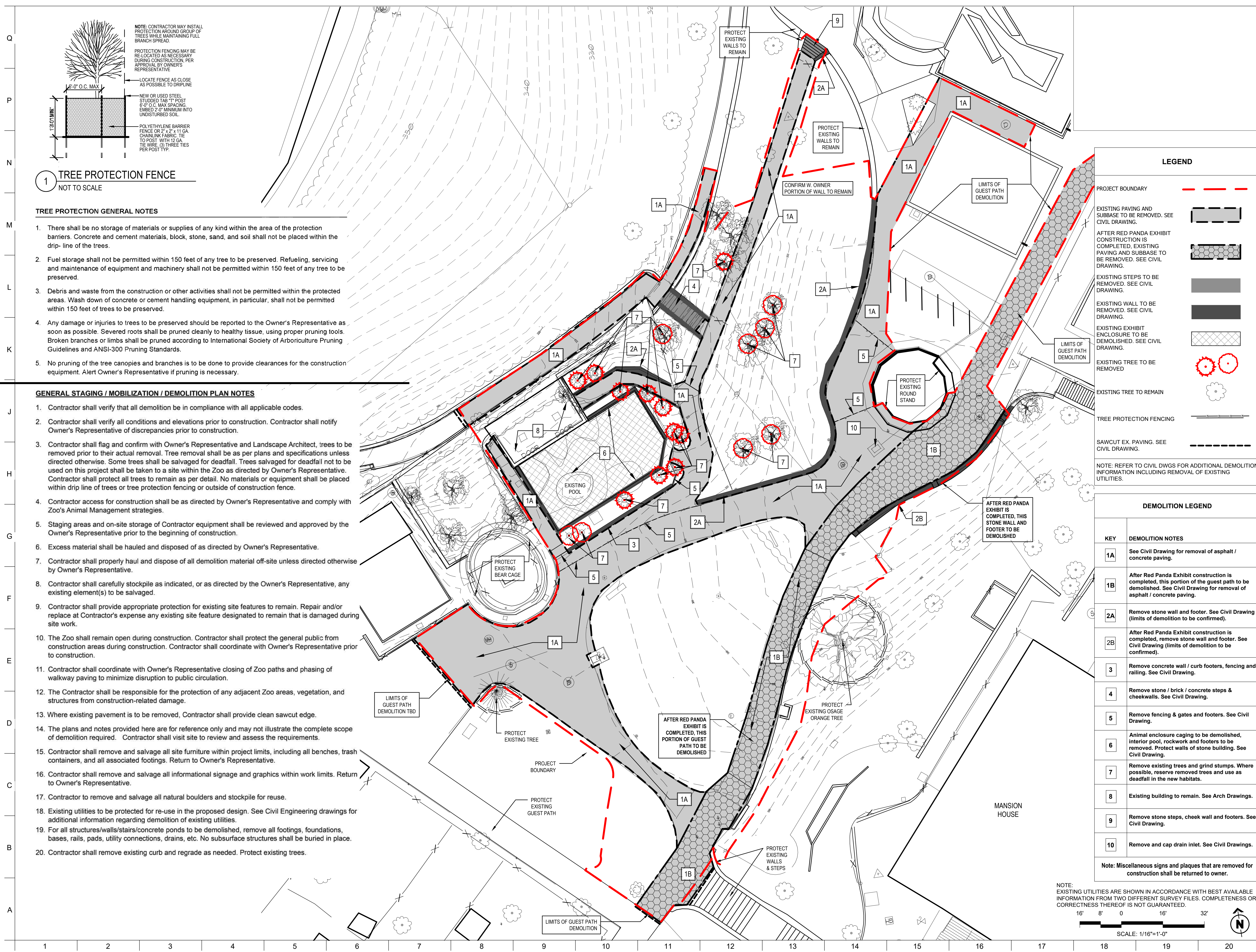


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 PROJECT NO: 2023-10.04
 DRAWN BY AV / KS
 CHECKED BY JS / GA
 SUBMISSION DATE
 PERMIT SET 11/22/2024

REVISION	DATE

DRAWING TITLE:
 SITE DEMOLITION &
 TREE PROTECTION
 PLAN

DRAWING NO:
L100



1 TREE PROTECTION FENCE
 NOT TO SCALE

TREE PROTECTION GENERAL NOTES

- There shall be no storage of materials or supplies of any kind within the area of the protection barriers. Concrete and cement materials, block, stone, sand, and soil shall not be placed within the drip-line of the trees.
- Fuel storage shall not be permitted within 150 feet of any tree to be preserved. Refueling, servicing and maintenance of equipment and machinery shall not be permitted within 150 feet of any tree to be preserved.
- Debris and waste from the construction or other activities shall not be permitted within the protected areas. Wash down of concrete or cement handling equipment, in particular, shall not be permitted within 150 feet of trees to be preserved.
- Any damage or injuries to trees to be preserved should be reported to the Owner's Representative as soon as possible. Severed roots shall be pruned cleanly to healthy tissue, using proper pruning tools. Broken branches or limbs shall be pruned according to International Society of Arboriculture Pruning Guidelines and ANSI-300 Pruning Standards.
- No pruning of the tree canopies and branches is to be done to provide clearances for the construction equipment. Alert Owner's Representative if pruning is necessary.

GENERAL STAGING / MOBILIZATION / DEMOLITION PLAN NOTES

- Contractor shall verify that all demolition is in compliance with all applicable codes.
- Contractor shall verify all conditions and elevations prior to construction. Contractor shall notify Owner's Representative of discrepancies prior to construction.
- Contractor shall flag and confirm with Owner's Representative and Landscape Architect, trees to be removed prior to their actual removal. Tree removal shall be as per plans and specifications unless directed otherwise. Some trees shall be salvaged for deadfall. Trees salvaged for deadfall not to be used on this project shall be taken to a site within the Zoo as directed by Owner's Representative. Contractor shall protect all trees to remain as per detail. No materials or equipment shall be placed within drip line of trees or tree protection fencing or outside of construction fence.
- Contractor access for construction shall be as directed by Owner's Representative and comply with Zoo's Animal Management strategies.
- Staging areas and on-site storage of Contractor equipment shall be reviewed and approved by the Owner's Representative prior to the beginning of construction.
- Excess material shall be hauled and disposed of as directed by Owner's Representative.
- Contractor shall properly haul and dispose of all demolition material off-site unless directed otherwise by Owner's Representative.
- Contractor shall carefully stockpile as indicated, or as directed by the Owner's Representative, any existing element(s) to be salvaged.
- Contractor shall provide appropriate protection for existing site features to remain. Repair and/or replace at Contractor's expense any existing site feature designated to remain that is damaged during site work.
- The Zoo shall remain open during construction. Contractor shall protect the general public from construction areas during construction. Contractor shall coordinate with Owner's Representative prior to construction.
- Contractor shall coordinate with Owner's Representative closing of Zoo paths and phasing of walkway paving to minimize disruption to public circulation.
- The Contractor shall be responsible for the protection of any adjacent Zoo areas, vegetation, and structures from construction-related damage.
- Where existing pavement is to be removed, Contractor shall provide clean sawcut edge.
- The plans and notes provided here are for reference only and may not illustrate the complete scope of demolition required. Contractor shall visit site to review and assess the requirements.
- Contractor shall remove and salvage all site furniture within project limits, including all benches, trash containers, and all associated footings. Return to Owner's Representative.
- Contractor shall remove and salvage all informational signage and graphics within work limits. Return to Owner's Representative.
- Contractor to remove and salvage all natural boulders and stockpile for reuse.
- Existing utilities to be protected for re-use in the proposed design. See Civil Engineering drawings for additional information regarding demolition of existing utilities.
- For all structures/walls/stairs/concrete ponds to be demolished, remove all footings, foundations, bases, rails, pads, utility connections, drains, etc. No subsurface structures shall be buried in place.
- Contractor shall remove existing curb and regrade as needed. Protect existing trees.

LEGEND

PROJECT BOUNDARY: - - - - -

EXISTING PAVING AND SUBBASE TO BE REMOVED. SEE CIVIL DRAWING. [Symbol]

AFTER RED PANDA EXHIBIT CONSTRUCTION IS COMPLETED, EXISTING PAVING AND SUBBASE TO BE REMOVED. SEE CIVIL DRAWING. [Symbol]

EXISTING STEPS TO BE REMOVED. SEE CIVIL DRAWING. [Symbol]

EXISTING WALL TO BE REMOVED. SEE CIVIL DRAWING. [Symbol]

EXISTING EXHIBIT ENCLOSURE TO BE DEMOLISHED. SEE CIVIL DRAWING. [Symbol]

EXISTING TREE TO BE REMOVED. [Symbol]

EXISTING TREE TO REMAIN. [Symbol]

TREE PROTECTION FENCING. [Symbol]

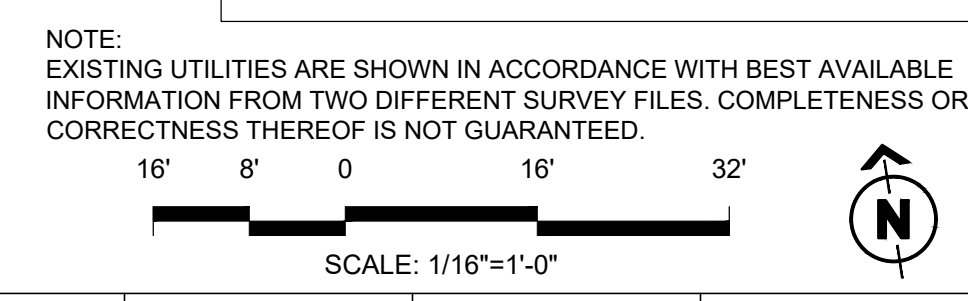
SAWCUT EX. PAVING. SEE CIVIL DRAWING. [Symbol]

NOTE: REFER TO CIVIL DWGS FOR ADDITIONAL DEMOLITION INFORMATION INCLUDING REMOVAL OF EXISTING UTILITIES.

DEMOLITION LEGEND

KEY	DEMOLITION NOTES
1A	See Civil Drawing for removal of asphalt / concrete paving.
1B	After Red Panda Exhibit construction is completed, this portion of the guest path to be demolished. See Civil Drawing for removal of asphalt / concrete paving.
2A	Remove stone wall and footer. See Civil Drawing (limits of demolition to be confirmed).
2B	After Red Panda Exhibit construction is completed, remove stone wall and footer. See Civil Drawing (limits of demolition to be confirmed).
3	Remove concrete wall / curb footers, fencing and railing. See Civil Drawing.
4	Remove stone / brick / concrete steps & cheekwalls. See Civil Drawing.
5	Remove fencing & gates and footers. See Civil Drawing.
6	Animal enclosure caging to be demolished, interior pool, rockwork and footers to be removed. Protect walls of stone building. See Civil Drawing.
7	Remove existing trees and grind stumps. Where possible, reserve removed trees and use as deadfall in the new habitats.
8	Existing building to remain. See Arch Drawings.
9	Remove stone steps, cheek wall and footers. See Civil Drawing.
10	Remove and cap drain inlet. See Civil Drawings.

Note: Miscellaneous signs and plaques that are removed for construction shall be returned to owner.





LEGEND

PROJECT BOUNDARY	
NEW RETAINING WALL	
NEW CONCRETE PAVING	
NEW THEMED CONCRETE PAVING	
NEW ASPHALT PAVING	
NEW MESH CURB	
NEW ROCKWORK	
NEW VIEWRAIL	
NEW EXCLUSION FENCE	
NEW SERVICE GATE	
EXISTING TREES TO REMAIN	

NOTE: REFER TO CIVIL DWGS FOR ADDITIONAL LAYOUT & GRADING INFORMATION INCLUDING PROPOSED UTILITIES.

BKP

PROJECT TEAM:
ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509
CIVIL ENGINEER:
 CARROLL ENGINEERING, INC
 215 SCHILLING CIRCLE, STE 102
 HUNT VALLEY, MD 21031
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LANDSCAPE ARCHITECT:
 ROBINSON ANDERSON SUMMERS
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STRUCTURAL ENGINEER:
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 2225 EAST MURRAY HOLLADAY RD
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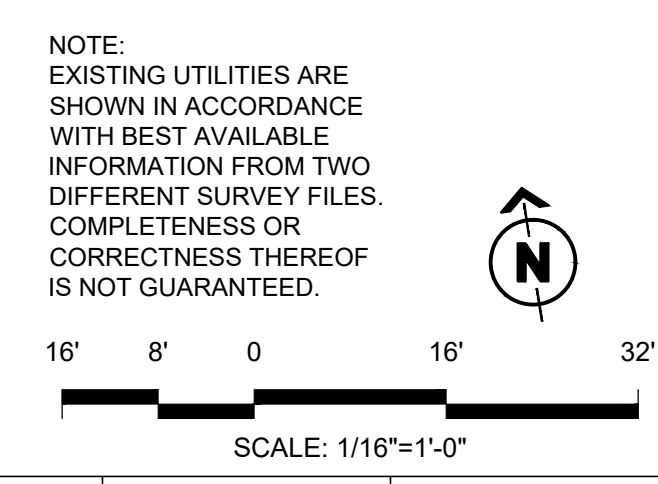
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REVISION	DATE

DRAWING TITLE:
 SITE REFERENCE PLAN

DRAWING NO:
L101



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PROJECT TEAM:
 ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509
 CIVIL ENGINEER:
 CARROLL ENGINEERING, INC
 215 SCHILLING CIRCLE, STE 102
 HUNT VALLEY, MD 21031
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 28 WEST STATE STREET
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 STRUCTURAL ENGINEER:
 STRUCTURAL DESIGN STUDIO, INC
 2225 EAST MURRAY HOLLADAY RD
 SALT LAKE CITY, UT 84117
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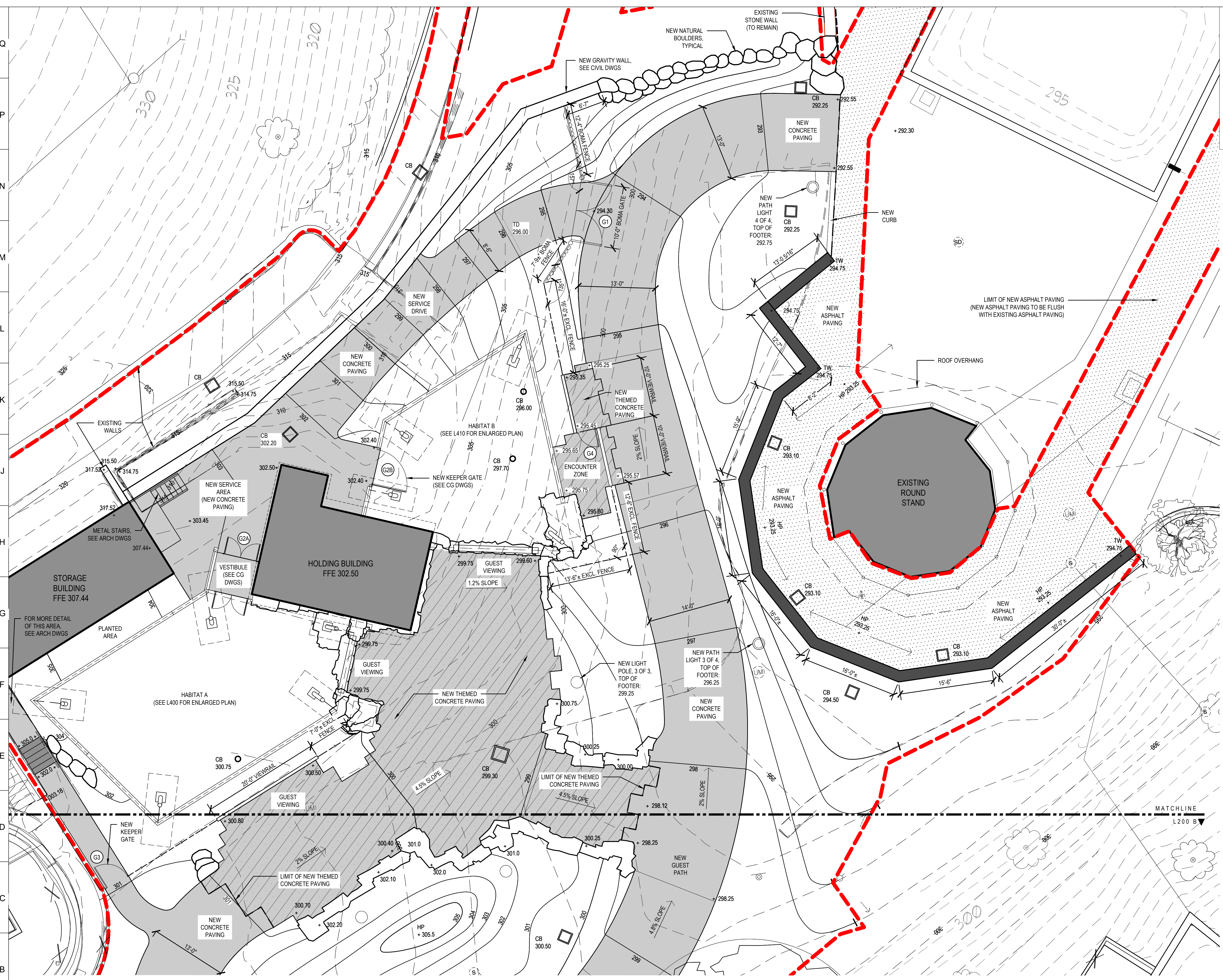
DRAWING TITLE:
 SITE GRADING &
 LAYOUT PLAN A

DRAWING NO:
L200A

LEGEND

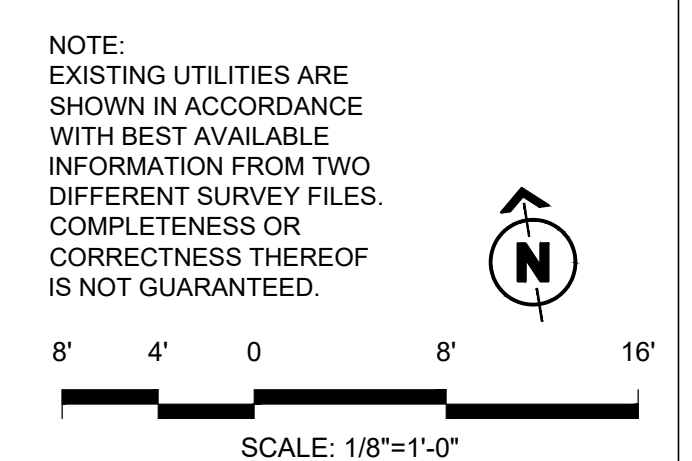
- PROJECT BOUNDARY
- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- PROPOSED CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- NEW CONCRETE PAVING
- NEW THEMED CONCRETE PAVING
- NEW ASPHALT PAVING
- NEW STEPS
- NEW RETAINING WALL AT EXISTING ROUND STAND
- NEW MESH CURB
- NEW ARTIFICIAL ROCKWORK
- NATURAL BOULDERS
- NEW VIEWRAIL
- NEW EXCLUSION FENCE
- NEW BOMA FENCE
- NEW SERVICE GATE
- EXISTING TREES

NOTES:
 1. REFER TO CIVIL DWGS FOR ADDITIONAL LAYOUT & GRADING INFORMATION INCLUDING PROPOSED UTILITIES.
 2. REFER TO L200A FOR GATE SCHEDULE.
 3. SEE ARTIFICIAL ROCKWORK SPECIFICATION FOR IMAGERY OF ARTIFICIAL ROCKWORK.



RED PANDA GATE SCHEDULE

KEY	WIDTH	HEIGHT	GATE MATERIAL	QUANTITY	TYPE	LOCATION
G1	10'-0"	4'-0"	BOMA DRIVE	1	DOUBLE	SERVICE DRIVE
G2A			SEE CG123	2	DOUBLE	HABITAT A VESTIBULE
G2B			SEE CG122	1	SINGLE	HABITAT B SERVICE GATE
G3	4'-0"	42"	WELDED WIRE MESH	1	SINGLE	HISTORIC ENCLOSURE
G4	3'-0"	42"	WOVEN MESH	1	SINGLE	VIEWRAIL AT ENCOUNTER ZONE



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ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509

CIVIL ENGINEER:
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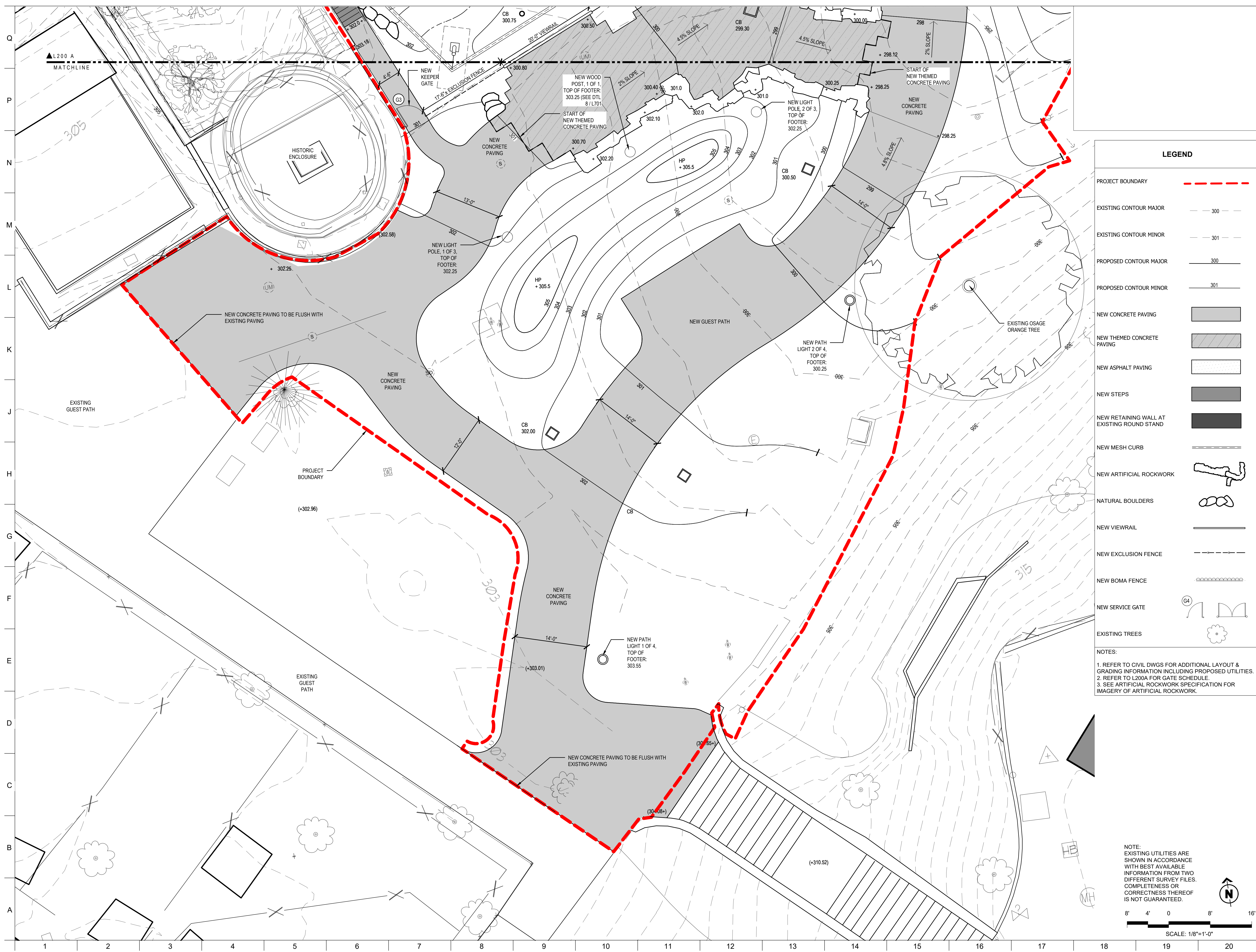
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SUBMISSION	DATE
PERMIT SET	11/22/2024

DRAWING TITLE:
 SITE GRADING &
 LAYOUT PLAN B

DRAWING NO:
L200B



LEGEND

PROJECT BOUNDARY	---
EXISTING CONTOUR MAJOR	--- 300 ---
EXISTING CONTOUR MINOR	--- 301 ---
PROPOSED CONTOUR MAJOR	--- 300 ---
PROPOSED CONTOUR MINOR	--- 301 ---
NEW CONCRETE PAVING	[Solid Gray Box]
NEW THEMED CONCRETE PAVING	[Diagonal Line Box]
NEW ASPHALT PAVING	[Dotted Box]
NEW STEPS	[Dark Gray Box]
NEW RETAINING WALL AT EXISTING ROUND STAND	[Black Box]
NEW MESH CURB	[Double Line]
NEW ARTIFICIAL ROCKWORK	[Rockwork Symbol]
NATURAL BOULDERS	[Boulder Symbol]
NEW VIEWRAIL	[Viewrail Symbol]
NEW EXCLUSION FENCE	[Dashed Line]
NEW BOMA FENCE	[Boma Fence Symbol]
NEW SERVICE GATE	[Gate Symbol]
EXISTING TREES	[Tree Symbol]

NOTES:

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SCALE: 1/8"=1'-0"

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