



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.

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. 14446, EXPIRATION DATE 9/25/25.

DATE: JANUARY 14, 2025
 PROJECT NO: 2023-10.04
 DRAWN BY: MJE
 CHECKED BY: CMS
 SUBMISSION: DATE
 BID SET: 01/14/2025

REVISION: DATE

DRAWING TITLE:
 EROSION AND SEDIMENT CONTROL PLAN

DRAWING NO:
C701

LEGEND

- 100 PROPOSED BUILDING
- PROPOSED MAJOR CONTOUR
- 99 PROPOSED MINOR CONTOUR
- PROPOSED ASPHALT
- PROPOSED CURB
- PROPOSED CONCRETE WALK
- X PROPOSED FENCELINE
- LOD LIMIT OF DISTURBANCE
- UGE 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
- SSF PROPOSED SUPER SILT FENCE
- SFOP SILT FENCE ON PAVEMENT
- SF SILT FENCE
- DF DIVERSION FENCE
- CF TEMPORARY CONSTRUCTION FENCE
- AGIP AT GRADE INLET PROTECTION
- SAME DAY STABILIZATION
- SP FB SUMP PIT / FILTER BAG
- LOW LIMIT OF WORK
- SCE STABILIZED CONSTRUCTION ENTRANCE

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.

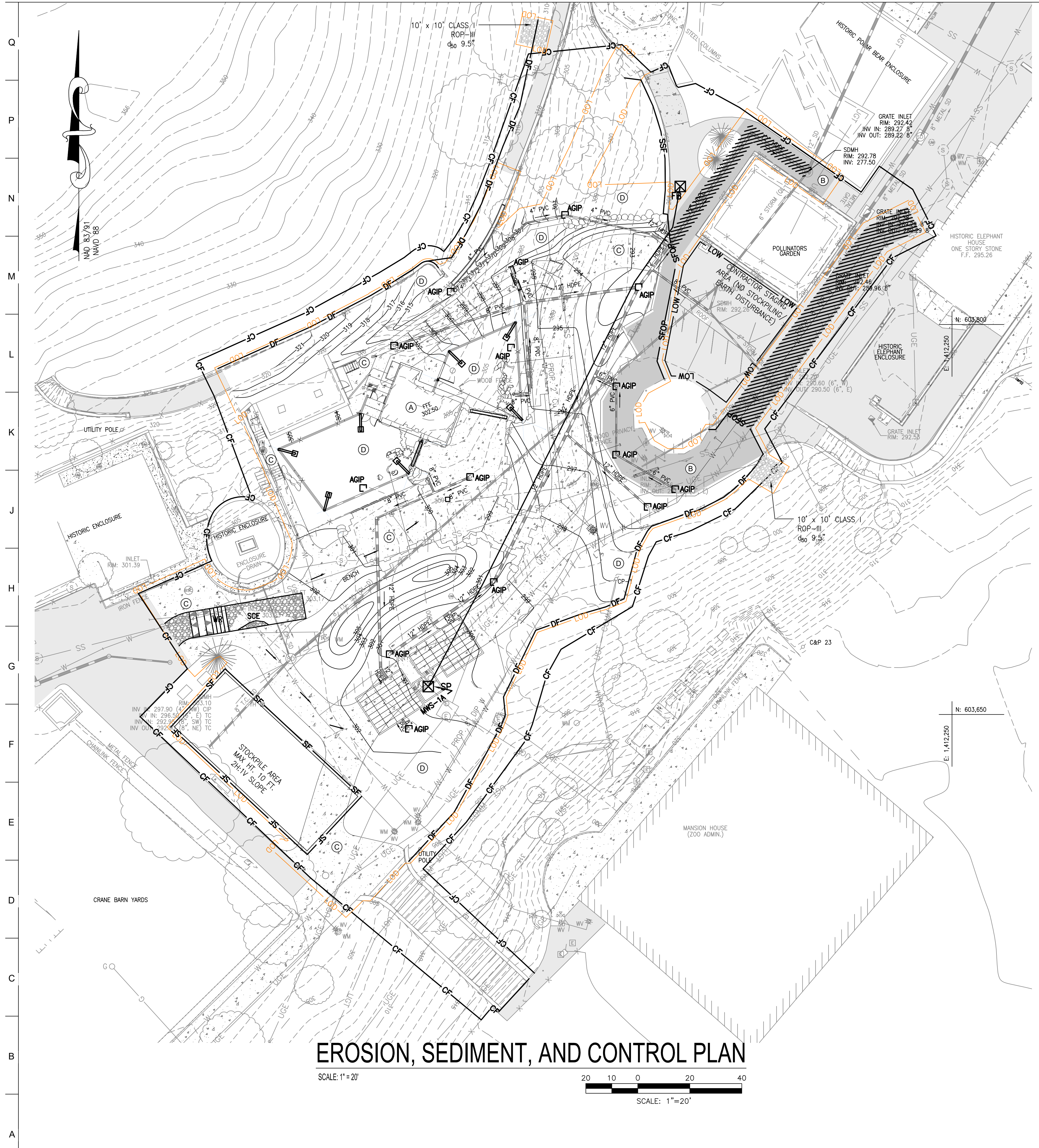
NOTE:

- LIMIT OF DISTURBANCE OFFSET TWO FEET FOR VISUAL CLARITY. ESC CONTROLS TO BE PLACED ON THE LIMITS OF DISTURBANCE.
- TOTAL LIMIT OF DISTURBANCE: 33,535 S.F. / 0.77 ACRES
 **PROJECT WILL REQUIRE MDE APPROVAL.
- 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	2,265	EXCAVATED AREA (temporary)	6
		COMPLETED STRUCTURE (permanent)	7
B ROADWAYS	3,365	STONE BASE (temporary)	9
		CONC./BITUMINOUS PAVING (permanent)	9
C CURBS & SIDEWALKS	11,210	TEMPORARY SEEDING (temporary)	7,8
		CONCRETE CURBS/WALKS (permanent)	9
D PERVIOUS AREAS	16,695	TEMPORARY SEEDING (temporary)	7,8
		SEED/SOD/LANDSCAPING (permanent)	9
E SEDIMENT CONTROLS		SEEDING/STONE (temporary)	4,5
		PERMANENT SEED/SOD (permanent)	15

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	743.98	AC		SF
LOD	0.77	AC	33,535	SF
CUT	1,625	CY		
FILL	525	CY		



EROSION, SEDIMENT, AND CONTROL PLAN

SCALE: 1"=20'

SCALE: 1"=20'

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

BCNR # 11545



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 HOLDING ON THE DRAWING 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 FORTHCOMING.

SEAL:

DATE:	JANUARY 14, 2025
PROJECT NO:	2023-10-04
DRAWN BY:	MJE
CHECKED BY:	CMS
SUBMISSION:	DATE
BID SET:	01/14/2025
REVISION:	DATE

DRAWING TITLE:
 EROSION AND SEDIMENT CONTROL DETAILS

DRAWING NO:
C710

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

DETAIL C-9 DIVERSION FENCE STANDARD SYMBOL DF

MAXIMUM DRAINAGE AREA = 2 ACRES

CONSTRUCTION SPECIFICATIONS

- USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2 1/2 INCH MAXIMUM OPENING).
- 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.
- FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
- SECURE 10 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.
- 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.
- WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
- 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 SHEETING.

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

DETAIL E-3 SUPER SILT FENCE STANDARD SYMBOL SSF

CONSTRUCTION SPECIFICATIONS

- INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 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.
- FASTEN WOVEN SILT 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.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- 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.

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

DETAIL E-9-2 AT-GRADE INLET PROTECTION STANDARD SYMBOL AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE

CONSTRUCTION SPECIFICATIONS

- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
- PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
- 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.

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

DETAIL B-2 WASH RACK OPTION STANDARD SYMBOL WRT

CONSTRUCTION SPECIFICATIONS

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

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

DETAIL E-2 SILT FENCE ON PAVEMENT STANDARD SYMBOL SFOP

CONSTRUCTION SPECIFICATIONS

- USE NOMINAL 2 INCH x 4 INCH LUMBER.
- USE WOVEN SILT FILM GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- SPACE UPRIGHT SUPPORTS NO MORE THAN 10 FEET APART.
- PROVIDE A TWO FOOT OPENING BETWEEN EVERY SET OF SUPPORTS AND PLACE STONE IN THE OPENING OVER GEOTEXTILE.
- KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. ATTACH LATHE.
- PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT-LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION.
- SECURE BOARDS TO PAVEMENT WITH 40D 5 INCH MINIMUM LENGTH NAILS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.

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

DETAIL F-2 SUMP PIT STANDARD SYMBOL SP

CONSTRUCTION SPECIFICATIONS

- USE 12 INCH OR LARGER DIAMETER CORRUGATED METAL, HDPE, OR PVC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER. BOTTOM OF PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
- WRAP PIPE WITH 1/2 INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
- EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
- SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
- BACKFILL PIT AROUND THE PIPE WITH 3/4 TO 1 1/2 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
- DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
- A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

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

DETAIL F-4 FILTER BAG STANDARD SYMBOL FB

CONSTRUCTION SPECIFICATIONS

- TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
- PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
- CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
- REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
- USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

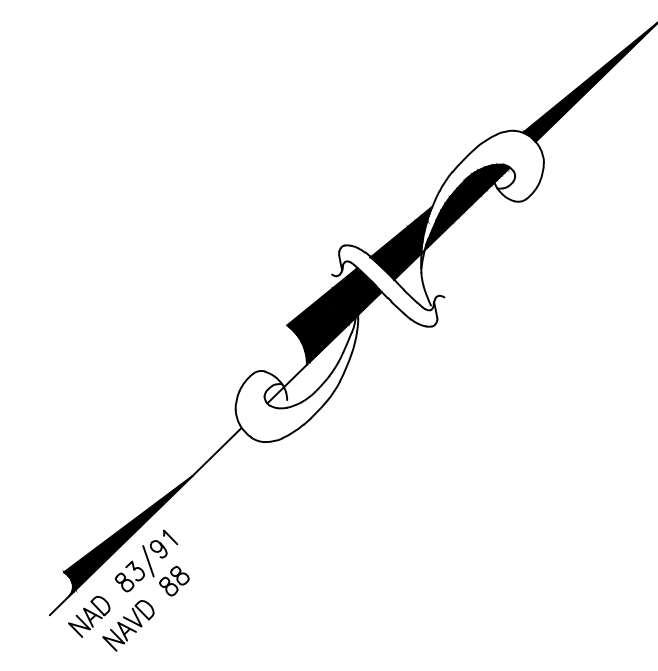
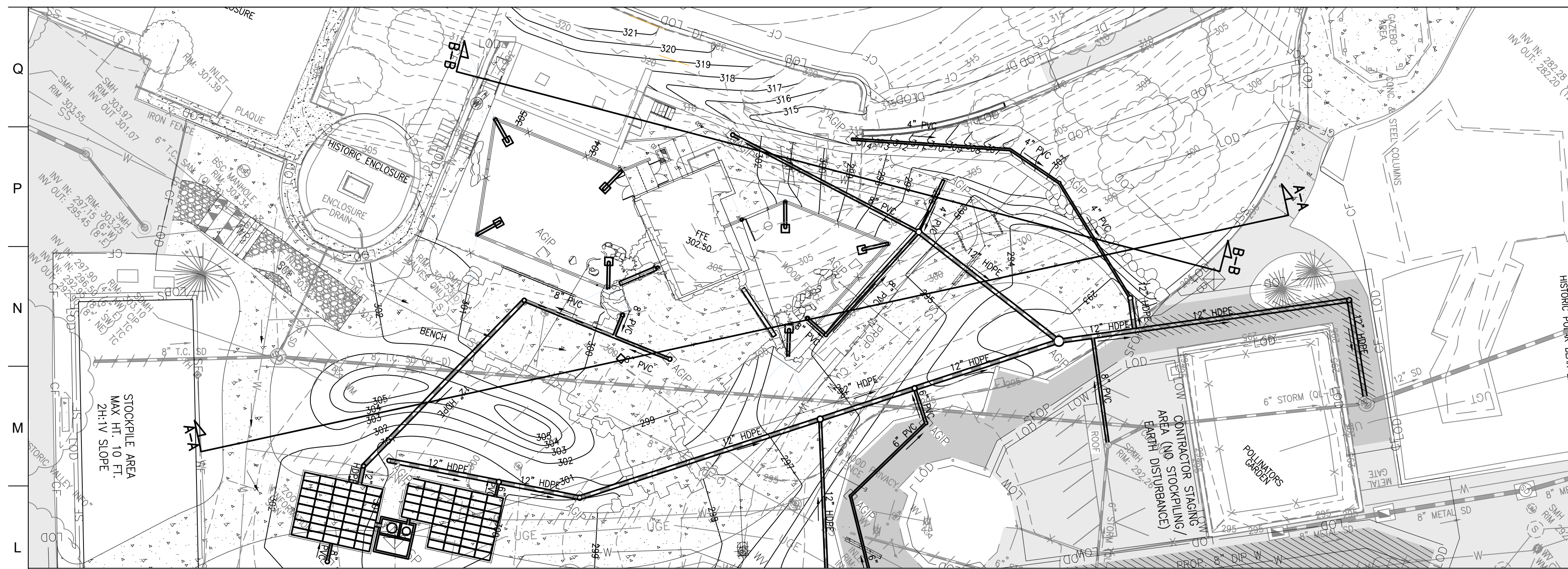
GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL./MIN./FT ²	ASTM D-4491
PERMITTIVITY (SEC ⁻¹)	1.2 SEC ⁻¹	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632

- REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

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

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

BCNR # 11545



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

BKP

PROJECT TEAM:

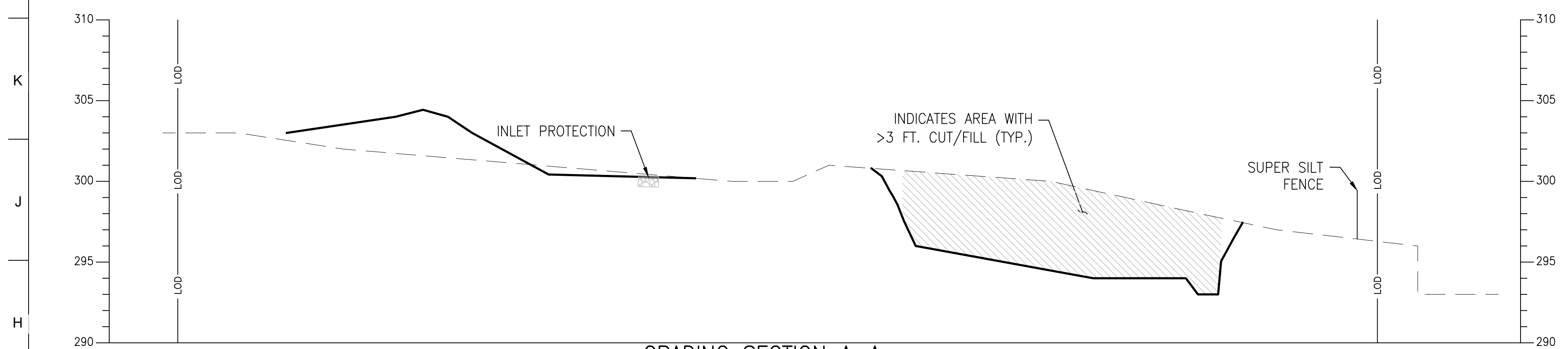
ARCHITECT:
 BUELL KRATZER POWELL, P.C.
 1525 LOCUST STREET
 PHILADELPHIA, PA 19102
 T: 215.557.6509

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

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

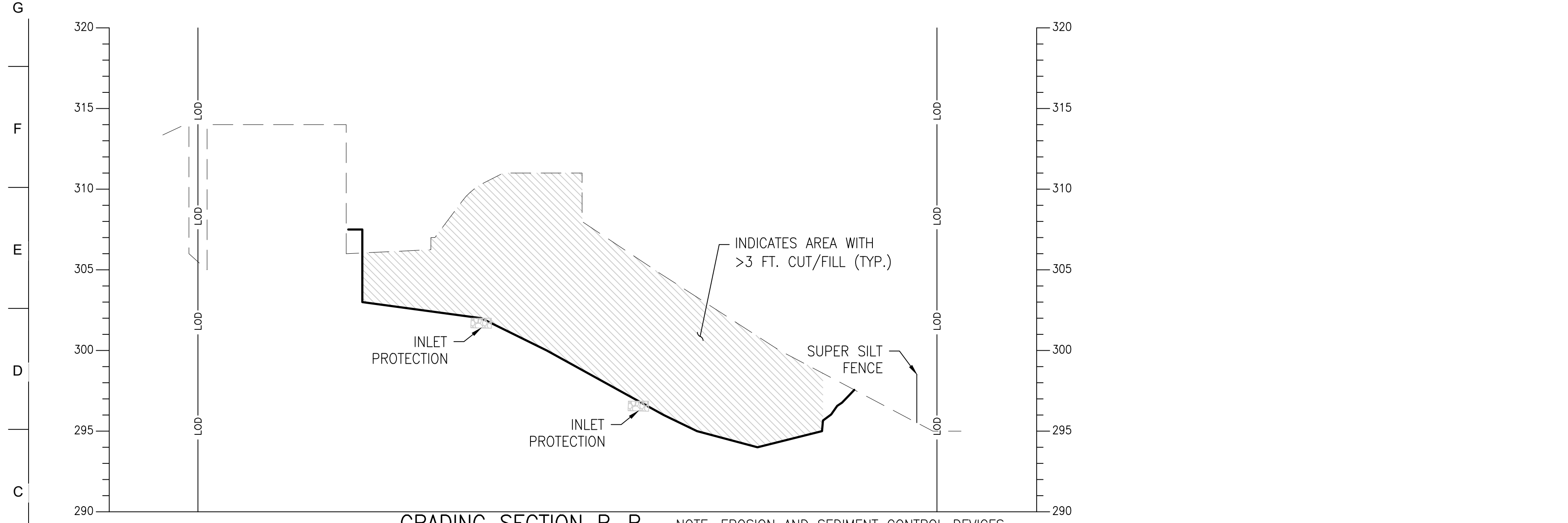
STRUCTURAL ENGINEER:
 STRUCTURAL DESIGN STUDIO, INC
 2225 EAST MURRAY HOLLADAY RD
 SALT LAKE CITY, UT 84117
 T: 801.274.3950

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



GRADING SECTION A-A
 SCALE: HORIZ. 1"=20'
 VERT. 1"=5'

NOTE: EROSION AND SEDIMENT CONTROL DEVICES DEPICTED ON THIS PLAN ARE FOR LOCATION REFERENCE ONLY AND NOT DRAWN TO VERTICAL SCALE.



GRADING SECTION B-B
 SCALE: HORIZ. 1"=20'
 VERT. 1"=5'

NOTE: EROSION AND SEDIMENT CONTROL DEVICES DEPICTED ON THIS PLAN ARE FOR LOCATION REFERENCE ONLY AND NOT DRAWN TO VERTICAL SCALE.

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

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.

SEAL:

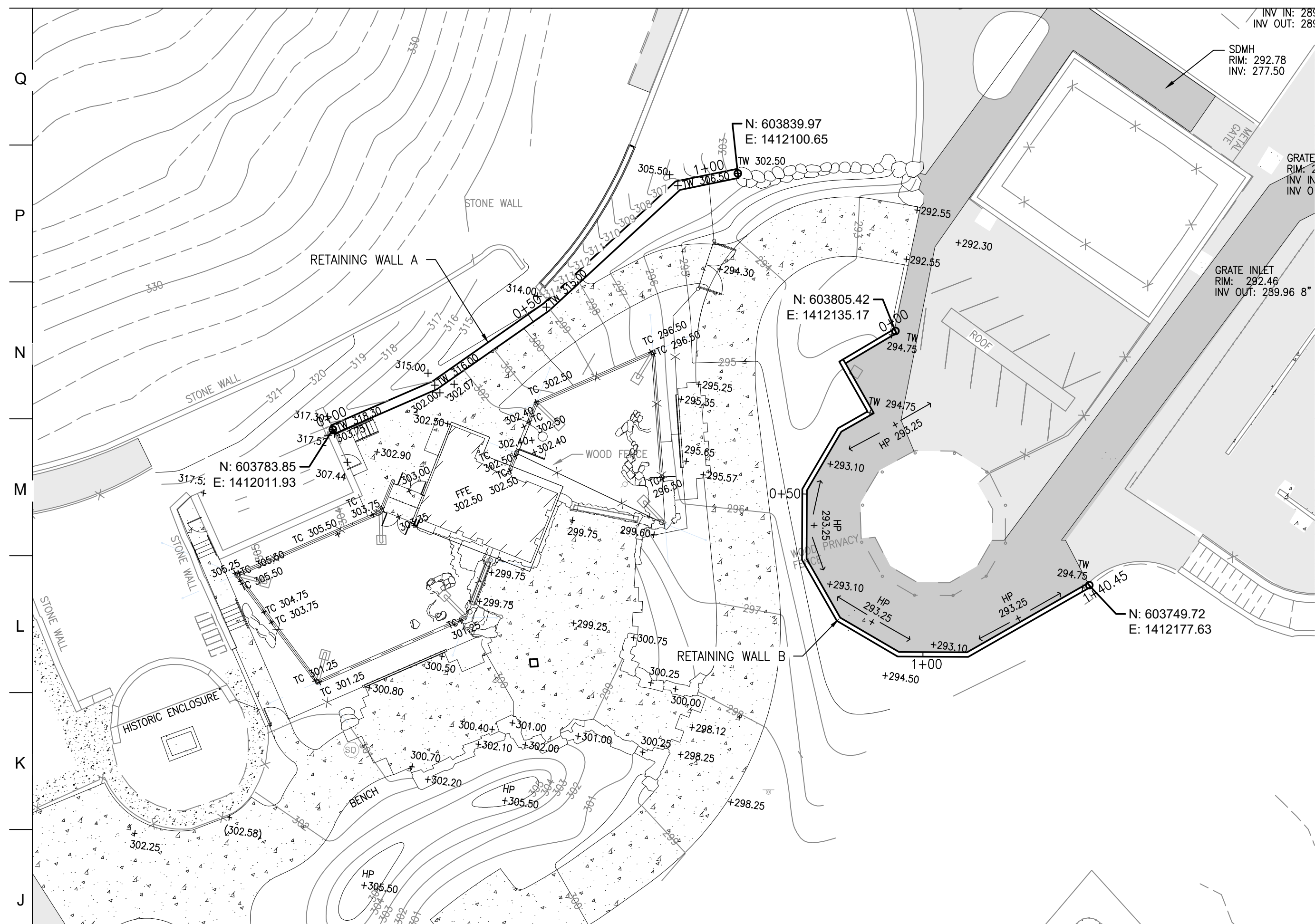
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 14446, EXPIRATION DATE 9/25/25.

DATE:	JANUARY 14, 2025
PROJECT NO:	2023-10.04
DRAWN BY:	MJE
CHECKED BY:	CMS
SUBMISSION:	DATE
BID SET:	01/14/2025
REVISION:	DATE

DRAWING TITLE:
 EROSION AND
 SEDIMENT
 CONTROL NOTES

DRAWING NO:
C722

BCNR # 11545



WALL PLAN

SCALE: 1"=20'

LEGEND

- PROPOSED BUILDING
- 100 PROPOSED MAJOR CONTOUR
- 99 PROPOSED MINOR CONTOUR
- PROPOSED ASPHALT
- PROPOSED CURB
- PROPOSED CONCRETE WALK
- PROPOSED FENCELINE
- LIMIT OF DISTURBANCE

NAD 83/91
NAVD 88

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

PROJECT TEAM:

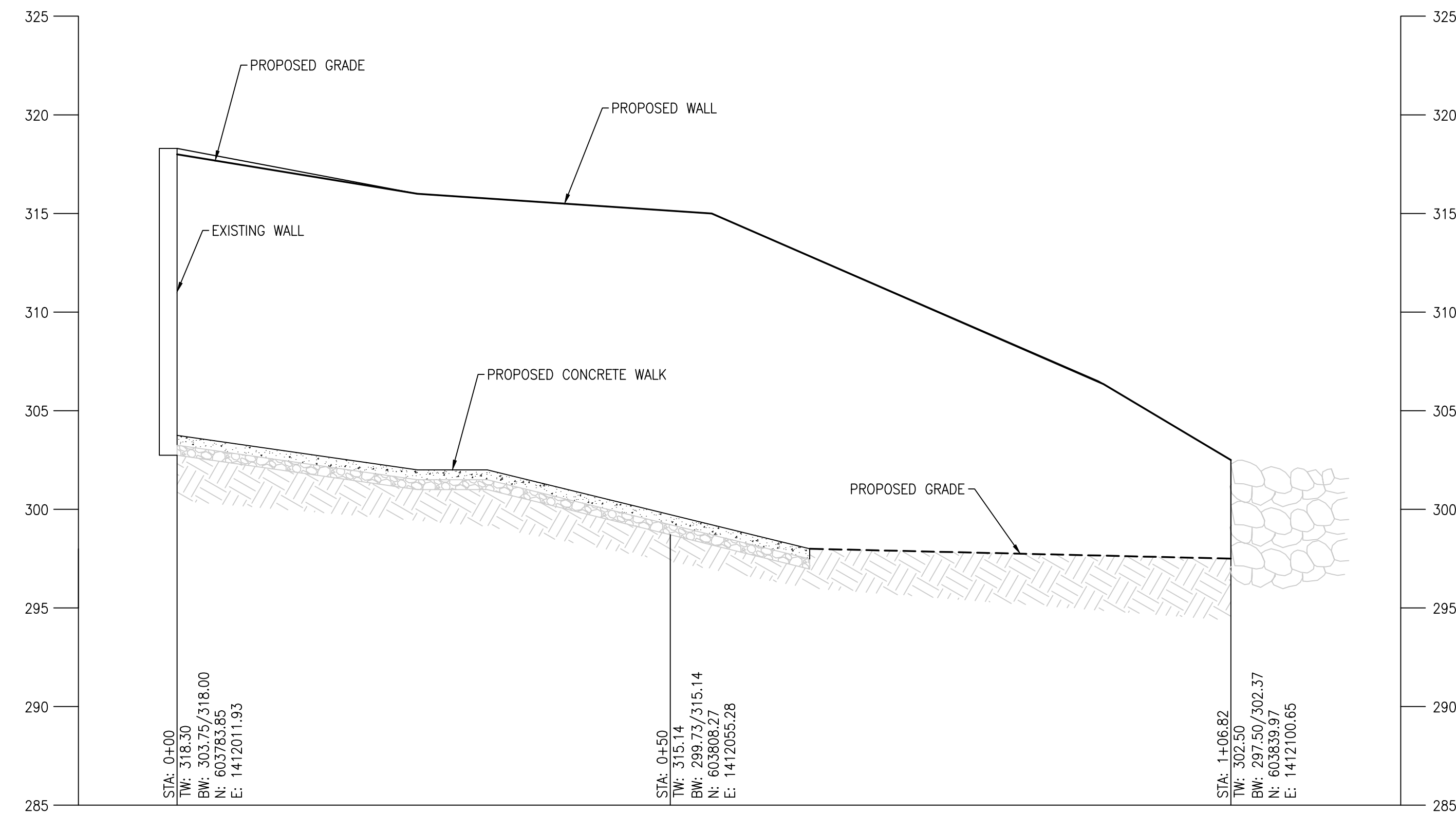
ARCHITECT:
BUELL KRATZER POWELL, P.C.
1525 LOCUST STREET
PHILADELPHIA, PA 19102
T: 215.557.6509

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

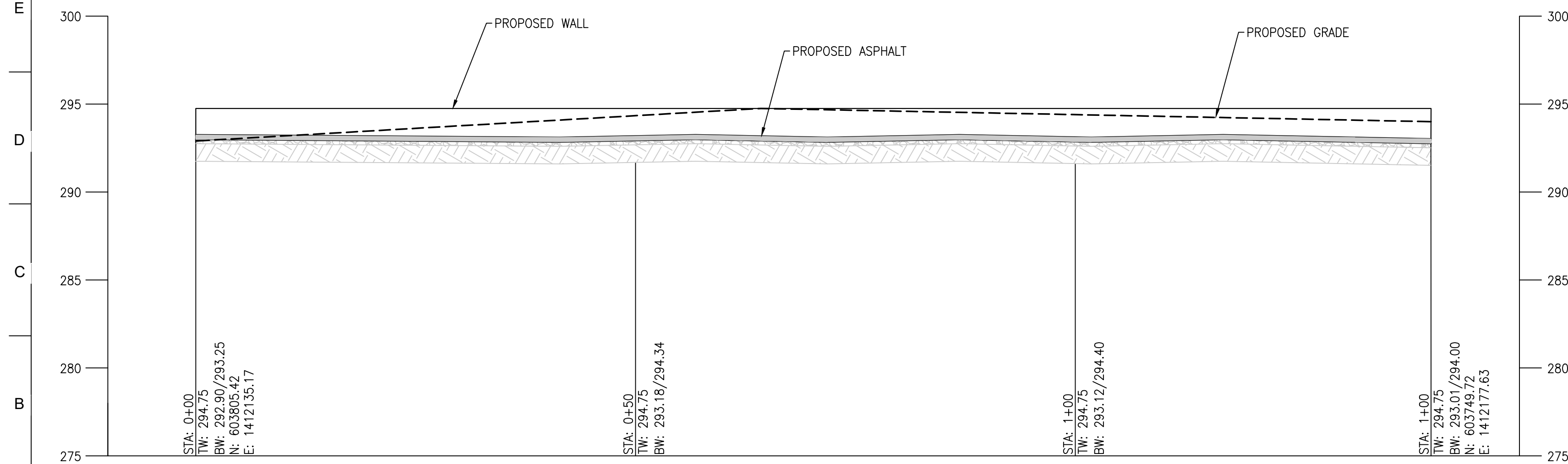
STRUCTURAL ENGINEER:
STRUCTURAL DESIGN STUDIO, INC
2225 EAST MURRAY HOLLADAY RD
SALT LAKE CITY, UT 84117
T: 801.274.3950

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



RETAINING WALL A - PROFILE

HORIZ. 1"=10'
VERT. 1"=5'



RETAINING WALL B - PROFILE

HORIZ. 1"=10'
VERT. 1"=5'

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

ALL WORK SHALL CONFORM TO CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS SPECIFICATIONS FOR MATERIALS, HIGHWAYS, BRIDGES, UTILITIES, AND INCIDENTAL STRUCTURES 2006, AND SUPPLEMENTARY SPECIFICATIONS IN THE CONTRACT DOCUMENTS.

20 10 0 20 40
SCALE: BCNR # 11545

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.

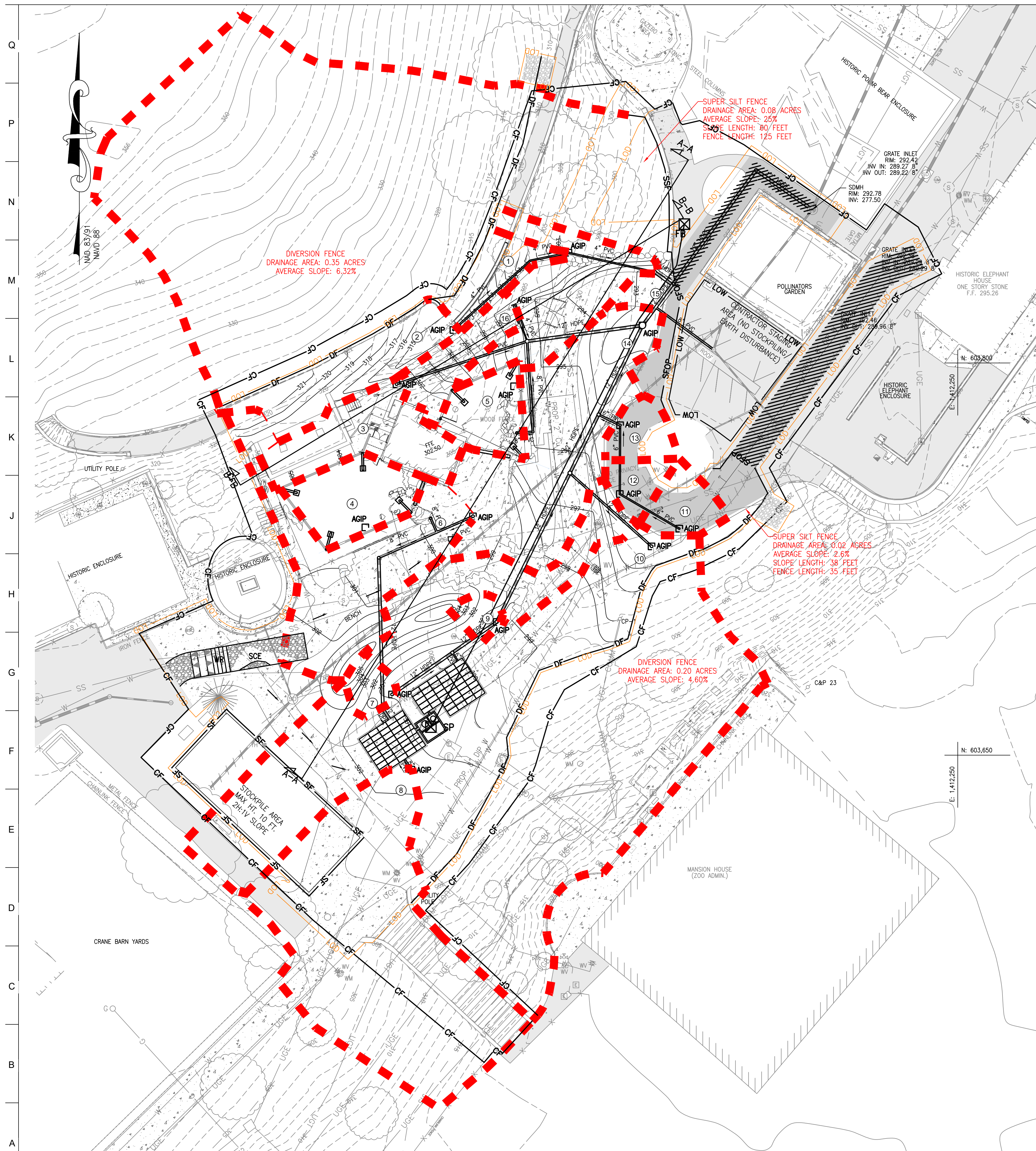
SEAL:

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. 14446, EXPIRATION DATE 5/25/25.

DATE:	JANUARY 14, 2025
PROJECT NO:	2023-10-04
DRAWN BY:	MJE
CHECKED BY:	CMS
SUBMISSION:	DATE
BID SET:	01/14/2025
REVISION:	DATE

DRAWING TITLE:
RETAINING WALL PLAN AND PROFILES

DRAWING NO:
C800



LEGEND

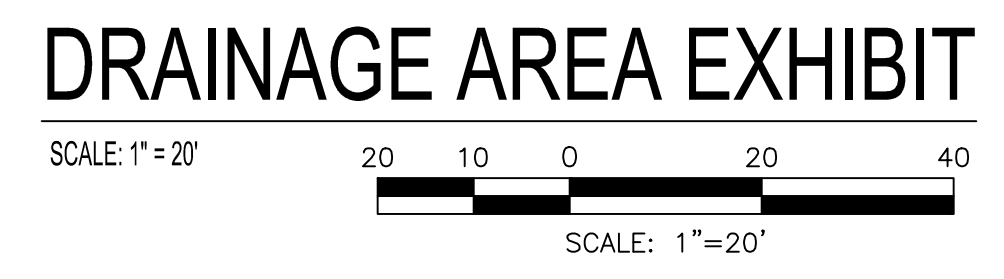
[Symbol]	PROPOSED BUILDING
[Symbol]	PROPOSED MAJOR CONTOUR
[Symbol]	PROPOSED MINOR CONTOUR
[Symbol]	PROPOSED ASPHALT
[Symbol]	PROPOSED CURB
[Symbol]	PROPOSED CONCRETE WALK
[Symbol]	PROPOSED FENCELINE
[Symbol]	LIMIT OF DISTURBANCE
[Symbol]	PROPOSED UNDERGROUND ELECTRIC
[Symbol]	PROPOSED SANITARY LINE
[Symbol]	PROPOSED SANITARY CLEANOUT
[Symbol]	PROPOSED STORMDRAIN LINE
[Symbol]	PROPOSED STORMDRAIN MANHOLE
[Symbol]	PROPOSED WATER LINE
[Symbol]	PROPOSED SMALL SECTIONAL VAULT
[Symbol]	PROPOSED WATER VALVE
[Symbol]	PROPOSED SUPER SILT FENCE
[Symbol]	SILT FENCE ON PAVEMENT
[Symbol]	SILT FENCE
[Symbol]	DIVERSION FENCE
[Symbol]	TEMPORARY CONSTRUCTION FENCE
[Symbol]	AT GRADE INLET PROTECTION

- 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 REQUIRE 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.

DRAINAGE AREA TABULATION

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



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

BCNR # 11545



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.

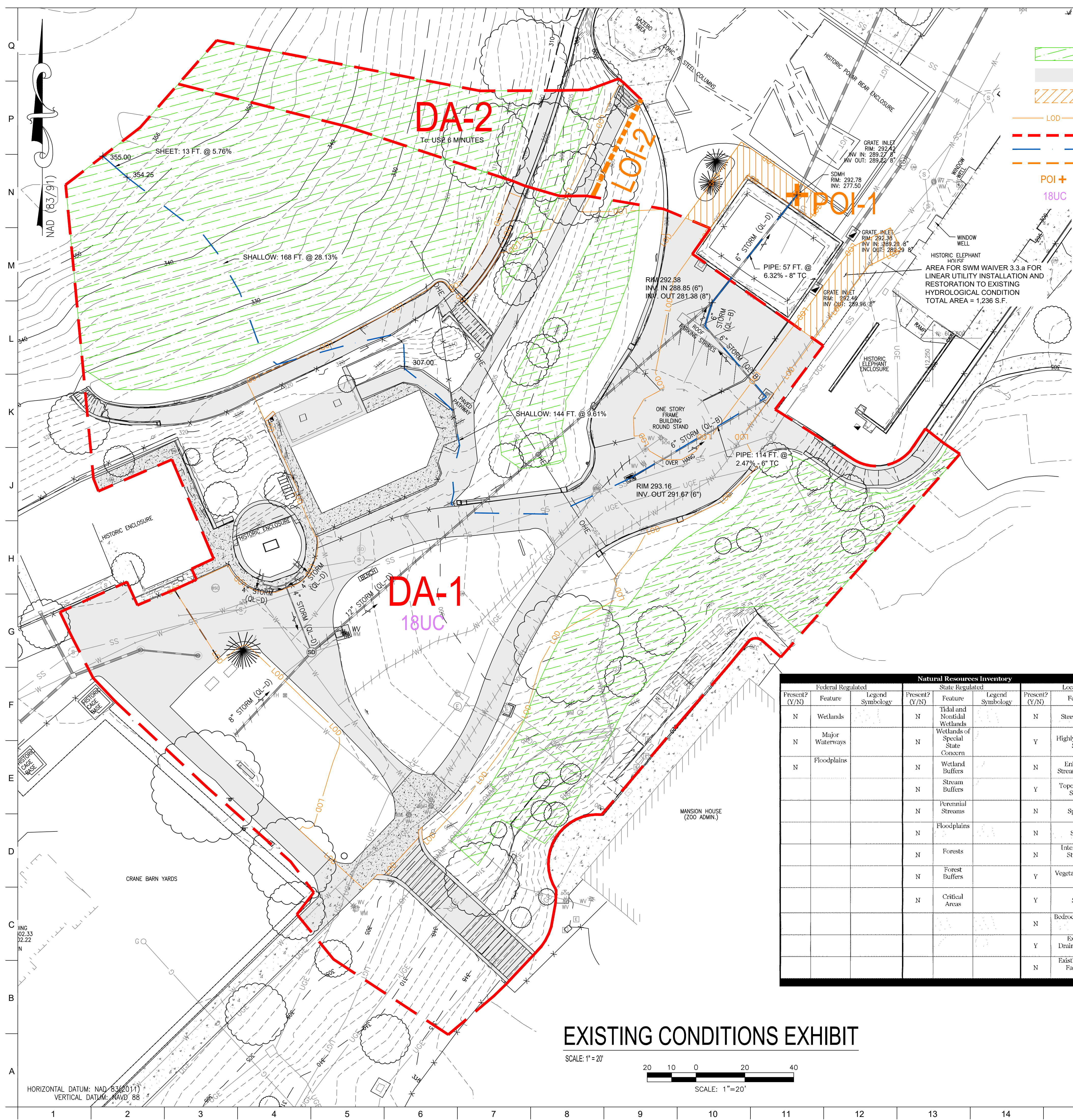
SUBMITTAL OF A BID TO PERFORM THIS WORK IS AN ACKNOWLEDGMENT OF THESE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK, AND THE BID PRICE. NO CLAIMS FOR EXTRA CHARGES DUE TO THESE CONDITIONS WILL BE FORTHCOMING.

SEAL:

DATE:	JANUARY 14, 2025
PROJECT NO:	2023-10.04
DRAWN BY:	MJE
CHECKED BY:	CMS
SUBMISSION:	DATE
BID SET:	01/14/2025
REVISION:	DATE

DRAWING TITLE:
 DRAINAGE AREA EXHIBIT

DRAWING NO:
 DA-1



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 _i	2.16	1.61
	Q _{so}	6.35	5.52
LOI-2	Q _i	10.20	9.64
	Q _{so}	0.00	0.00
TOTAL *	Q _i	0.25	0.21
	Q _{so}	0.51	0.47
TOTAL *	Q _i	2.16	1.61
	Q _{so}	6.60	5.73
TOTAL *	Q _i	10.71	10.11
	Q _{so}		

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.

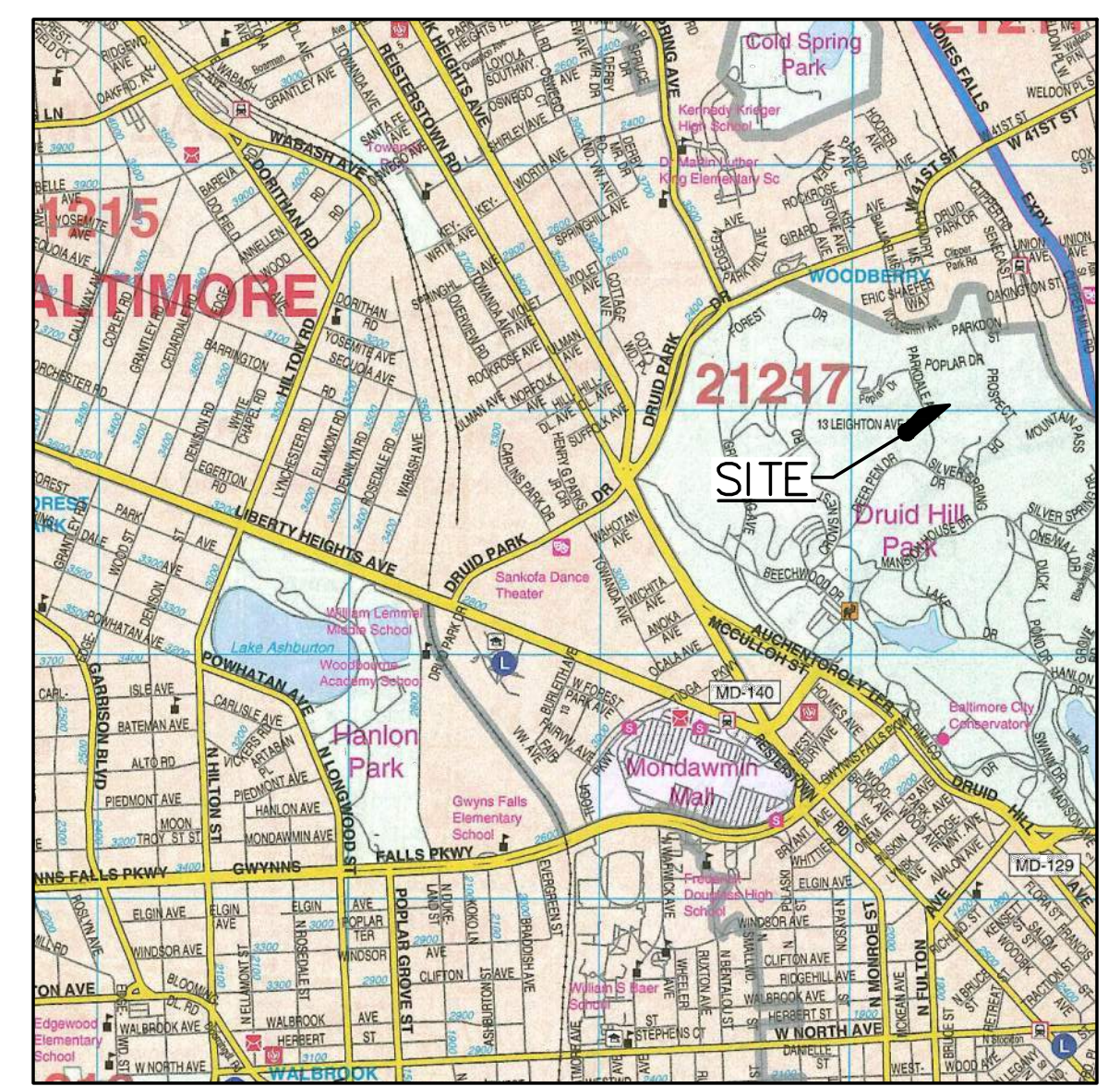
EXISTING CONDITION TR-55 DATA SUMMARY				
DRAINAGE AREA	OVERALL AREA	IMPERVIOUS AREA	CN	Tc (HR)
DA-1	1.837 AC.	0.586 AC.	74	0.100
DA-2	0.122 AC.	0.013 AC.	62	0.100

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.)
 SOILS TYPES: HSG "B"
 LAND USE: ZOO
 IMPERVIOUS AREA: 0.322 AC. (14,029 S.F.)
 PERCENT IMPERVIOUS= 0.322/0.742 = 43.4%*

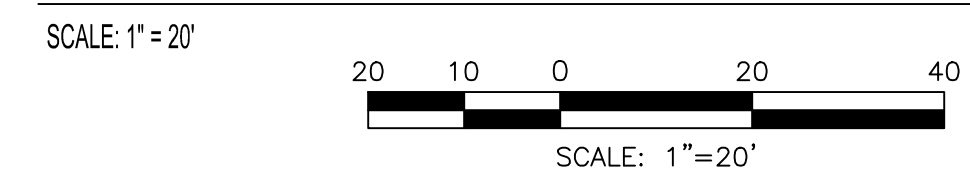
* PROJECT IS REDEVELOPMENT

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	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	Bedrock/Geology	
			N	Existing Drainage Area	See Plan
			N	Existing SWM Facilities	



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

EXISTING CONDITIONS EXHIBIT



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
 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 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 FORWARDED.

SEAL:

DATE: JANUARY 14, 2025	
PROJECT NO: 2023-10.04	
DRAWN BY: MJE	
CHECKED BY: CMS	
SUBMISSION DATE	
BID SET	01/14/2025
REVISION	DATE

DRAWING TITLE:
 Existing Conditions
 SWM Exhibit

DRAWING NO:
 SWM-1

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.

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. 14446, EXPIRATION DATE 9/25/25.

DATE: JANUARY 14, 2025
 PROJECT NO: 2023-10.04
 DRAWN BY: MJE
 CHECKED BY: CMS
 SUBMISSION: DATE
 BID SET: 01/14/2025

REVISION: 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
- POI - 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

CLASSIFICATION	HATCHING	TOTAL
REMOVED IMPERVIOUS AREA		5,726 SF/0.13 Ac.
RECONSTRUCTED IMPERVIOUS AREA		8,610 SF/0.20 Ac.
NEW IMPERVIOUS AREA		6,474 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

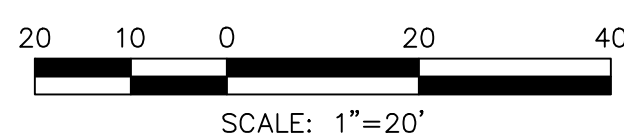
ALL SOILS WITHIN THE PROJECT AREA ARE 18UC.

	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	15,084	0.35
E NEW IMPERVIOUS AREA = (D - C) IF REDEVELOPMENT, ELSE = D	759	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)	7,922	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		

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

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

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



BCNR # 11545



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
 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.

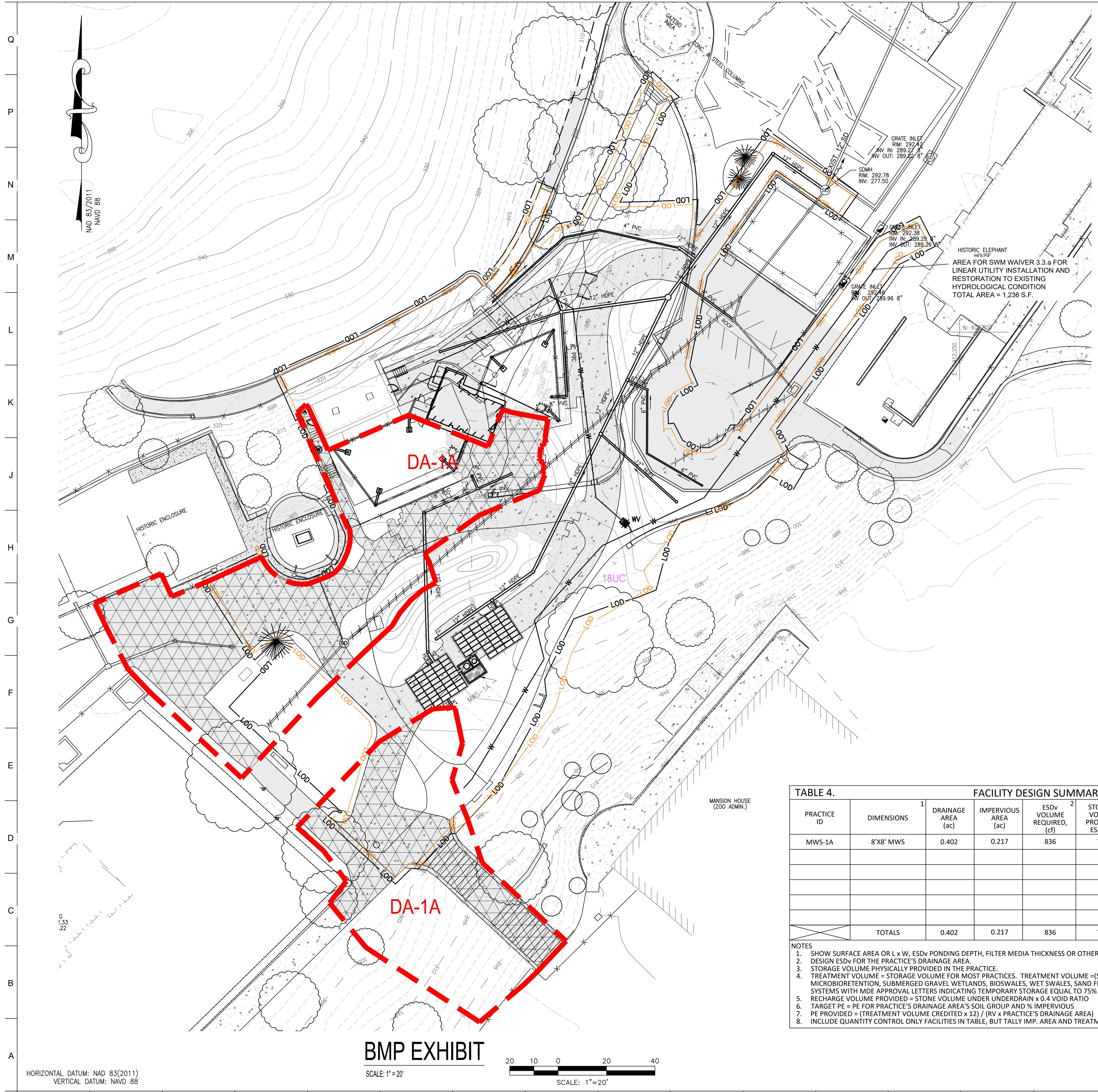
SEAL:

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 9/25/25.

DATE: JANUARY 14, 2025
 PROJECT NO: 2023-10-04
 DRAWN BY: MJE
 CHECKED BY: CMS
 SUBMISSION: DATE
 BID SET: 01/14/2025
 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
 - POINT OF INVESTIGATION
 - 18UC HYDROLOGIC SOILS GROUP

TABLE 4. FACILITY DESIGN SUMMARY TABLE

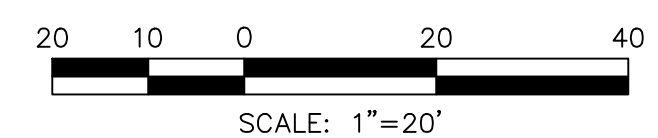
PRACTICE ID	DIMENSIONS ¹	DRAINAGE AREA (ac)	IMPERVIOUS AREA (ac)	ESDv VOLUME REQUIRED, (cf) ²	STORAGE VOLUME PROVIDED, ESD, (cf) ³	TREATMENT VOLUME CREDITED, ESD, (cf) ⁴	RECHARGE VOLUME PROVIDED (cf) ⁵	TARGET PE (in) ⁶	PE PROVIDED (in) ⁷	IS FACILITY USED FOR 10- & 100-YEAR QUANTITY CONTROL? (Y/N)	NOTES
MWS-1A	8'x8' MWS	0.402	0.217	836	796	1,061	128	1.06	1.35	Y	MODULAR WETLAND STRUCTURE
TOTALS		0.402	0.217	836	796	1,061	128				

NOTES
 1. SHOW SURFACE AREA OR L x W, ESDv PONDING DEPTH, FILTER MEDIA THICKNESS OR OTHER RELEVANT DESIGN DATA.
 2. DESIGN ESDv 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 ESDv.
 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

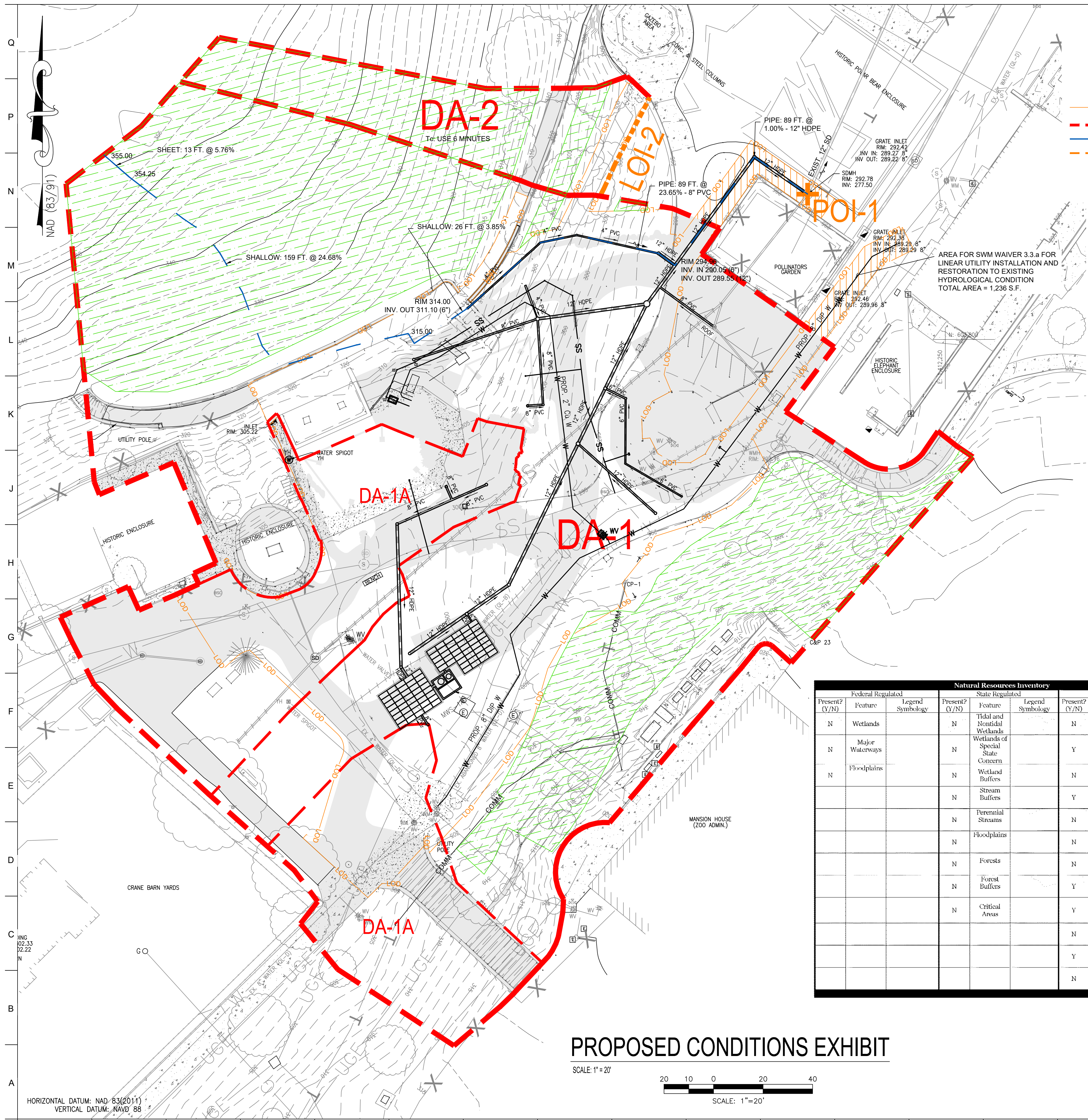
HORIZONTAL DATUM: NAD 83(2011)
 VERTICAL DATUM: NAVD 88

BMP EXHIBIT

SCALE: 1"=20'



BCNR # 11545



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
Q ₁	2.16	1.64	
POI-1	Q ₁₀	6.35	5.52
	Q ₁₀₀	10.20	9.61
LOI-2	Q ₁	0.0	0.0
	Q ₁₀	0.25	0.19
TOTAL *	Q ₁	2.16	1.64
	Q ₁₀	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

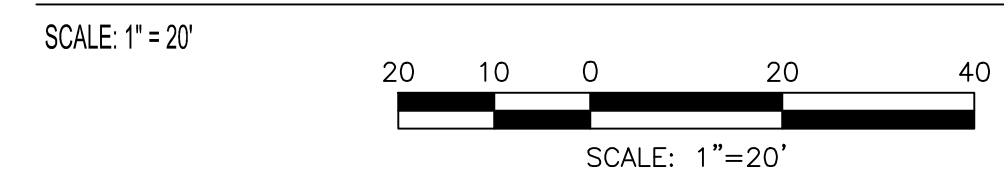
Natural Resources Inventory					
Federal Regulated		State Regulated		Local Regulated	
Present? (Y/N)	Feature Legend Symbology	Present? (Y/N)	Feature Legend Symbology	Present? (Y/N)	Feature Legend Symbology
N	Wetlands	N	Tidal and Nontidal Wetlands	N	Steep Slopes
N	Major Waterways	N	Wetlands of Special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

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 # 11545



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 THE 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: JANUARY 14, 2025	
PROJECT NO: 2023-10.04	
DRAWN BY: MJE	
CHECKED BY: CMS	
SUBMISSION DATE	
BID SET	01/14/2025
REVISION	DATE

DRAWING TITLE:
 Proposed SWM Exhibit

DRAWING NO:
SWM-4



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
 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 FORNCOMING.

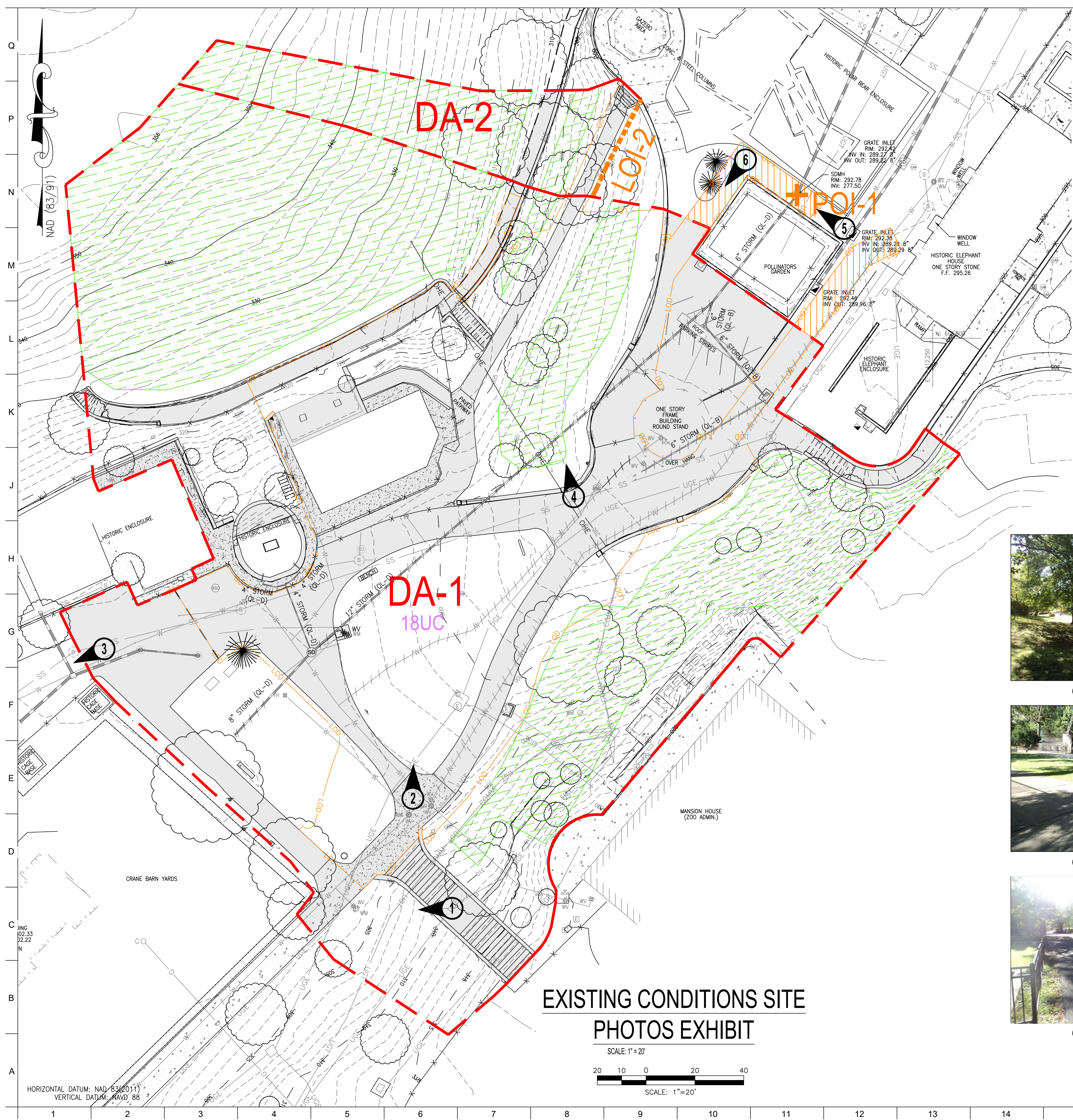
SEAL:

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. 16446. EXPIRATION DATE 2025.

DATE:	JANUARY 14, 2025
PROJECT NO:	2023-10.04
DRAWN BY:	MJE
CHECKED BY:	CMS
SUBMISSION:	DATE
BID SET:	01/14/2025
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



**EXISTING CONDITIONS SITE
 PHOTOS EXHIBIT**

SCALE: 1" = 20'

SCALE: 1" = 20'

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

BCNR # 11545



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 KNOWING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS AN ACKNOWLEDGEMENT 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 FORWARDED.

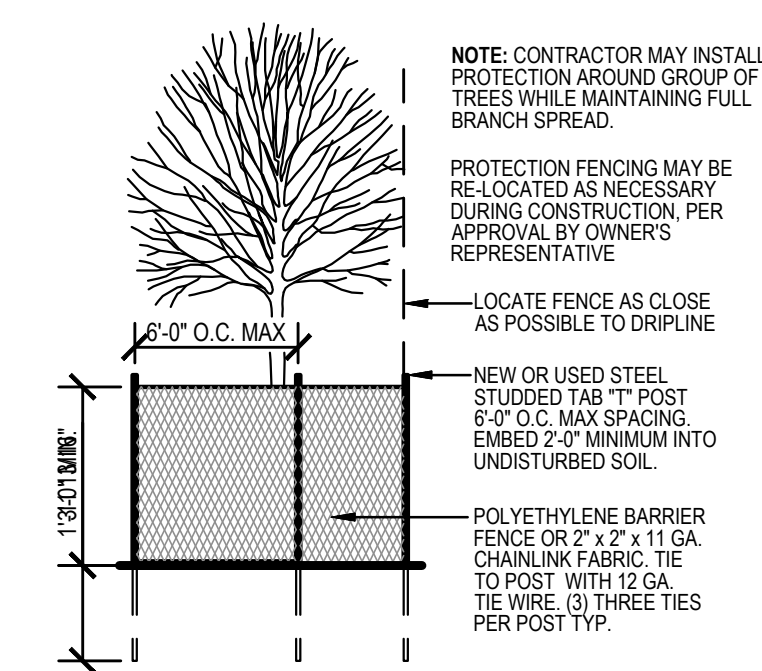
SEAL:

DATE: JANUARY 14, 2025	
PROJECT NO: 2023-10.04	
DRAWN BY: AV / KS	
CHECKED BY: JS / GA	
SUBMISSION DATE:	
BID SET: 01/14/2025	
REVISION:	DATE:

DATE: JANUARY 14, 2025	
PROJECT NO: 2023-10.04	
DRAWN BY: AV / KS	
CHECKED BY: JS / GA	
SUBMISSION DATE:	
BID SET: 01/14/2025	
REVISION:	DATE:

DRAWING TITLE:
 SITE DEMOLITION &
 TREE PROTECTION
 PLAN

DRAWING NO:
 L100



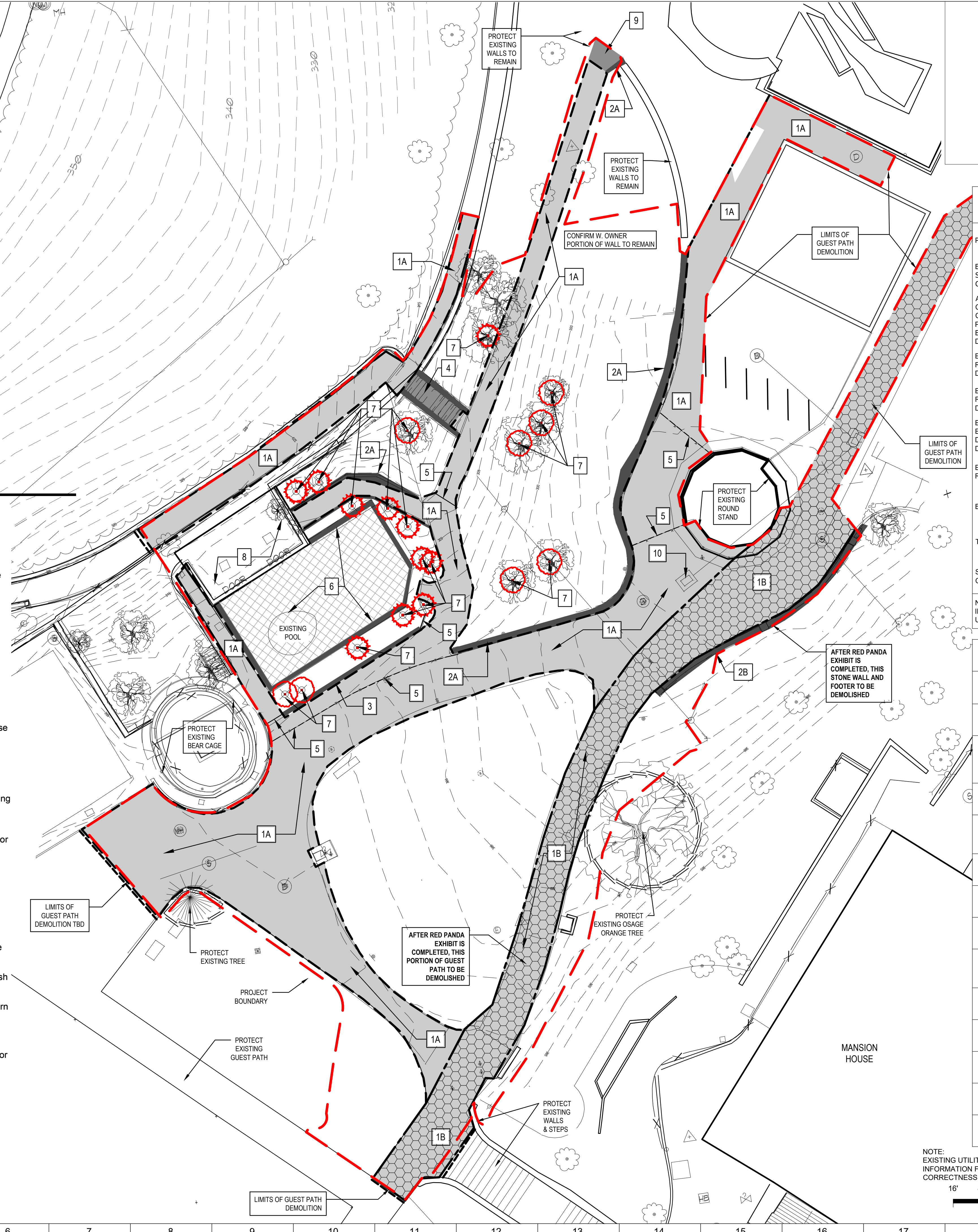
1 TREE PROTECTION FENCE
 NOT TO SCALE

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 be 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

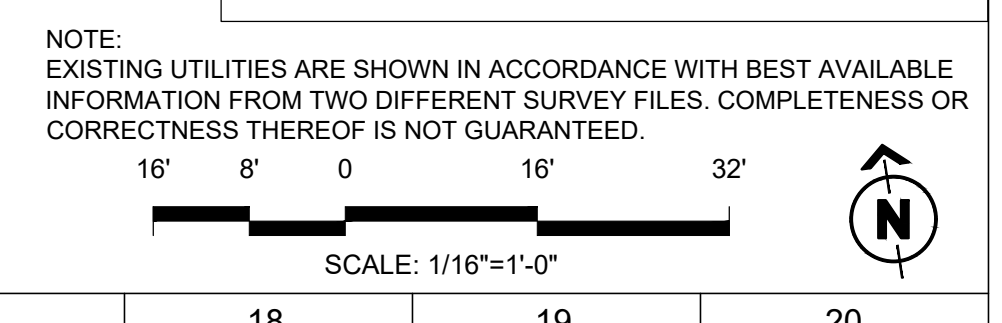
PROJECT BOUNDARY	---
EXISTING PAVING AND SUBBASE TO BE REMOVED. SEE CIVIL DRAWING.	[Pattern]
AFTER RED PANDA EXHIBIT CONSTRUCTION IS COMPLETED, EXISTING PAVING AND SUBBASE TO BE REMOVED. SEE CIVIL DRAWING.	[Pattern]
EXISTING STEPS TO BE REMOVED. SEE CIVIL DRAWING.	[Pattern]
EXISTING WALL TO BE REMOVED. SEE CIVIL DRAWING.	[Pattern]
EXISTING EXHIBIT ENCLOSURE TO BE DEMOLISHED. SEE CIVIL DRAWING.	[Pattern]
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.



I:\RRA\INST\Maryland Zoo\MZB-Red Panda\CAD\BID SET\MZB-RP_100_BID.dwg, 1/10/2025 9:56:48 AM



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 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 FORWARDED.

SEAL:

DATE:	JANUARY 14, 2025
PROJECT NO:	2023-10.04
DRAWN BY:	AV / KS
CHECKED BY:	JS / GA
SUBMISSION DATE:	
BID SET:	01/14/2025
REVISION:	DATE

DRAWING TITLE:
 SITE REFERENCE PLAN

DRAWING NO:
L101

LEGEND

PROJECT BOUNDARY	
NEW SEAT WALL, SEE CIVIL DWGS FOR DETAILS	
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.

