HISTORIC LONDON TOWN AND GARDEN SITE IMPROVEMENTS

BEFORE YOU DIG CALL 1-800-257-7777 OR DIAL 811



DEPARTMENT OF PUBLIC WORKS

ANNE ARUNDEL COUNTY, MARYLAND

PROJECT NO. P468700 PROPOSAL NO. P468717

September 2024

REACH 1 Abcutecy Constitution Constitutio

LOCATION MAP

SITE ANALYSIS

		REACH 1	REACH 2
1.	TOTAL SITE AREA:	XX	XX
	1.1 PROPOSED DISTURBED AREA:	XX	XX
2.	TOTAL AREA TO BE STABILIZED:	XX	XX
	2.1 TOTAL EX. IMPERVIOUS AREA:	XX	XX
	2.2 TOTAL EX. IMPERVIOUS AREA TO REMAIN:	XX	XX
	2.3 TOTAL PR. IMPERVIOUS AREA:	XX	XX
	2.4 TOTAL PR. STONE REVETMENT:	XX	XX
	2.5 TOTAL TO BE STABILIZED WITH VEGETATION:	XX	XX
NOT	F·		

THE EARTHWORK QUANTITIES SHOWN HEREON ARE FOR INFORMATION PURPOSES ONLY. BAYLAND MAKES NO GUARANTEES OF ACCURACY OF QUANTITIES OR BALANCE OF SITE. THE DEVELOPER AND CONTRACTOR SHALL TAKE FULL RESPONSIBILITY OF ACTUAL EARTHWORK QUANTITIES ENCOUNTERED DURING CONSTRUCTION.

CONSULTANT'S CERTIFICATION

THE DEVELOPER'S PLAN TO CONTROL SILT AND EROSION IS ADEQUATE TO CONTAIN THE SILT AND EROSION ON THE PROPERTY COVERED BY THE PLAN. I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THIS SITE, AND WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASCD PLAN SUBMITTAL GUIDELINES AND THE CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL. I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER / DEVELOPER

MD P.E. LICENSE NO.: 21194						
NAME: SEPEHR BAHARLOU						
FIRM NAME: BAYLAND CONSULTANTS & DESIGNERS, INC.						
ADDRESS: 7455 NEW RIDGE ROAD, SUITE T						
CITY: HANOVER STATE: MD ZIP CODE: 21076						

PR	OJECT INFORMA	ΓΙΟΝ
1.	OWNER/DEVELOPER:	ANNE ARUNDEL COUNTY DPW CONTACT: MEL HARLINSKI
2.	OWNER/DEVELOPER INFORMATION:	2662 RIVA ROAD — 3RD FLOOR ANNAPOLIS, MD 21401
3.	ENGINEER:	BAYLAND CONSULTANTS & DESIGNERS, IN
4.	ENGINEER INFORMATION:	7455 NEW RIDGE ROAD, SUITE T HANOVER, MARYLAND 21076 PH: 410-694-9401
5.	TAX MAP:	25
6.	PARCEL:	055 271
7.	PLAT REF:	N/A N/A
8.	DEED REF:	2983/829 2979/812
9.	DISTRICT:	03
10.	ZONING:	OS - OPEN SPACE
11.	USE:	EXEMPT
12.	PROPERTY AREA:	238 ACRES
13.	SUBWATERSHED:	MD WESTERN SHORE
14.	WATERSHED:	CHESAPEAKE BAY

24-WL-0248

STANDARD RESPONSIBILITY NOTES

1. I (WE) CERTIFY THAT:

- a. ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS SEDIMENT AND EROSION CONTROL PLAN, AND FURTHER, AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON—SITE EVALUATION BY THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT (AASCD) BOARD OF SUPERVISORS OR THEIR AUTHORIZED
- b. ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.
- RESPONSIBLE PERSONNEL ON SITE:

GRADED AREAS ON THE PROJECT SITE.

- c. IF APPLICABLE, THE APPROPRIATE ENCLOSURE WILL BE CONSTRUCTED AND MAINTAINED ON SEDIMENT BASIN(S) INCLUDED IN THIS PLAN. SUCH STRUCTURE(S) WILL BE IN COMPLIANCE WITH THE ANNE ARUNDEL COUNTY CODE.
- 2. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, RIGHT, AND/OR RIGHTS-OF-WAY THAT MAY BE REQUIRED FOR THE SEDIMENT AND EROSION CONTROL PRACTICES, STORM WATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORM WATER ONTO OR ACROSS ADJACENT OR DOWNSTREAM PROPERTIES INCLUDED
- 3. FOR INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT AND/OR TEMPORARY STABILIZATION PER THE AASCD VEGETATIVE ESTABLISHMENT SHALL BE COMPLETED WITHIN THREE CALENDAR DAYS FOR THE SURFACE OF ALL CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN DAYS FOR ALL OTHER DISTURBED OR
- 4. THE GRADING AND SEDIMENT CONTROL APPROVAL ON THIS PLAN EXTENDS ONLY TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE.
- 5. THE APPROVAL OF THIS PLAN FOR SEDIMENT AND EROSION CONTROL DOES NOT RELIEVE THE DEVELOPER/CONSULTANT FROM COMPLYING WITH FEDERAL, STATE OR COUNTY REQUIREMENTS PERTAINING TO ENVIRONMENTAL ISSUES.
- 6. THE DEVELOPER MUST REQUEST THAT THE SEDIMENT AND EROSION CONTROL INSPECTOR APPROVE WORK COMPLETED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE GRADING OR BUILDING PERMIT, AND THE ORDINANCE
- 7. ALL MATERIAL SHALL BE TAKEN TO A SITE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN.
- 8. FIRST PHASE INSPECTION AND APPROVAL OF THE SEDIMENT AND EROSION CONTROL INSPECTOR SHALL BE REQUIRED UPON COMPLETION OF THE INSTALLATION OF EROSION AND SEDIMENT CONTROLS PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THE INITIAL APPROVAL BY THE SEDIMENT AND EROSION CONTROL INSPECTOR IS GIVEN. INSPECTION AND PERMITS MAY ALSO REQUIRE THAT AN INSPECTION AND CERTIFICATION OF THE INSTALLATION OF SEDIMENT CONTROL ALSO BE PERFORMED BY A DESIGN PROFESSIONAL PRIOR TO CONSTRUCTION COMMENCING.
- 9. APPROVAL FROM THE INSPECTOR MUST BE REQUESTED ON FINAL STABILIZATION OF ALL SITES PRIOR TO REMOVAL OF SEDIMENT AND EROSION CONTROLS.

10. EXISTING TOPOGRAPHY MUST BE FIELD VERIFIED BY RESPONSIBLE PERSONNEL TO THE SATISFACTION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO COMMENCING WORK.

SIGNAT	JRE OF DEVE	LOPER \ OWNER	DATE:
PRINT:	NAME:		
	TITLE:		
	AFFILIATION:	ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC	WORKS
	ADDRESS:	2662 RIVA ROAD, ANNAPOLIS, MARYLAND 21401	
	TELEPHONE	NUMBER:	
	EMAIL ADDRE	·SS:	

GENERAL CONSTRUCTION NOTES

GENERAL SITE NOTES

MEAN TIDAL RANGE IS APPROXIMATELY 0.97 FEET BASED UPON NOAA TIDE STATION 8575512 IN

TOPOGRAPHIC AND HYDROGRAPHIC SURVEYS WERE PERFORMED BY BAYLAND CONSULTANTS AND

DESIGNERS, INC. ON MARCH 20-21,2023, MAY 26, 2023, JUNE 20, 2023, JULY 6, 2023, AND

5. VERTICAL CONTROL IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD'88).

464399.1475 1442939.041 35.9833 YELLOW PLASTIC CAP

464255.8473 1442992.622 37.6773 YELLOW PLASTIC CAP

464288.2773 1443159.035 36.6266 YELLOW PLASTIC CAP

7. PROPERTY LINES SHOWN ARE BASED ON ANNE ARUNDEL COUNTY CADASTRAL DATA.

10. THE PROJECT IS WITHIN THE 100' CRITICAL AREA BUFFER MODIFICATION AREA

12. ANNE ARUNDEL SOIL CONSERVATION DISTRICT (AASCD) NO. TBD; G.P. NO. TBD.

Sheet Number

8. THE PROJECT SITE IS WITHIN FEMA FLOODPLAIN LIMITS (ZONE VE). MAP #24003C0233F

. CONTOURS SHOWN OUTSIDE OF LIMIT OF WORK ARE BASED ON 2017 COUNTY LIDAR

9. THE PROJECT SITE IS WITHIN RESOURCE CONSERVATION AREA (RCA) CHESAPEAKE BAY CRITICAL

11. MARYLAND WETLANDS LICENSE NO. XX-WL-XXXX. U.S. ARMY CORPS OF ENGINEERS PERMIT

COVER SHEET

GENERAL NOTES

KEY SHEET & SITE ACCESS PLAN

EXISTING CONDITIONS & DEMOLITION PLAN

PARKING LOT SITE PLAN

BOARDWALK & PIER SITE PLAN

BOARDWALK STRINGER LAYOUT

PIER STRINGER LAYOUT

BOARDWALK & PIER PROFILE

BOARDWALK & PIER DETAILS

BOARDWALK & PIER DETAILS

FLOATING PIER DETAILS

STORMWATER SITE PLAN

SPSC PROFILE

SWM CROSS SECTIONS & DETAILS

SPSC DETAILS

SPSC DATA TABLES & CASCADE DETAILS

SOUTH RIVER SHORELINE SITE PLAN

SOUTH RIVER SHORELINE SITE PLAN

ALMSHOUSE CREEK SHORELINE SITE PLAN

SHORELINE CROSS SECTIONS & DETAILS

PLANTING PLAN

BUFFER MANAGEMENT PLAN & PLANTING NOTES

PHASE I EROSION & SEDIMENT CONTROL PLAN

PHASE II EROSION & SEDIMENT CONTROL PLAN

EROSION & SEDIMENT CONTROL NOTES & DETAILS

MARYLAND STATE PROGRAMMATIC GENERAL PERMIT (TRACKING NO. NAB-20XX-XXXXX)

TOPOGRAPHY AND BATHYMETRY. BASEMAP COMPILED FROM ANNE ARUNDEL COUNTY 2020

3. HORIZONTAL CONTROL IS BASED ON THE MARYLAND COORDINATE SYSTEM (NAD83/1991).

CONTROL POINTS SET BY BAYLAND ON MARCH 20-21, 2023.

FEBRUARY 8, 2024. SURVEYS PERFORMED WITH REAL TIME KINEMATIC (RTK) GLOBAL POSITIONING

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ANNE ARUNDEL COUNTY
 STANDARD SPECIFICATIONS AND/OR DETAILS FOR CONSTRUCTION.
- 2. THE EXISTING UTILITIES AND OBSTRUCTIONS SHOWN ARE FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS SATISFACTION PRIOR TO CONSTRUCTION. NECESSARY PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SERVICES AND MAINS AND ANY DAMAGE TO THEM SHALL BE REPAIRED IMMEDIATELY AT HIS OWN EXPENSE.
- 3. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 1-800-257-7777 A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION, BORING, PILE DRIVING AND/OR DIGGING FOR THE LOCATION OF GAS, ELECTRIC, TELEPHONE, WATER AND SEWER LINES.
- 4. MECHANICAL EXCAVATION SHALL NOT BE CONDUCTED WITHIN 3 FEET HORIZONTALLY OR WITHIN 2 FEET VERTICALLY OF KNOWN UTILITY LOCATIONS. HAND OR SOFT DIGGING SHALL BE DONE WITHIN THESE LIMITS. UNDERGROUND UTILITIES, ONCE UNCOVERED, SHALL BE PROTECTED FROM BEING STRUCK BY
- 5. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NATURALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLETE SUCH WORK.
- 6. WORK IS TO BE CONFINED TO WITHIN THE LIMITS OF DISTURBANCE SHOWN ON THE SITE PLAN. DEBRIS IN THE NEAR SHORE AREA WILL BE REMOVED AND DISPOSED OF OFF-SITE. AFTER SHORELINE CLEANUP, MATERIALS ARE TO BE BROUGHT TO THE SITE BY EITHER LAND ACCESS OR BY WATER ACCESS AS IT IS SHOWN ON THE PLANS. CONSTRUCTION WILL BE COMPLETED BY CLEANING UP THE WORK AREA, REMOVING TEMPORARY ACCESS, RAKING, FERTILIZING, SEEDING AND MULCHING DISTURBED AREAS.
- 7. DISTURBANCES THAT DO NOT DRAIN TO A SEDIMENT CONTROL DEVICE SHALL BE STABILIZED BY THE END OF THE WORKDAY. NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORKDAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE. SLOPES SHALL BE STABILIZED IMMEDIATELY WITH TOPSOIL, SEED AND EROSION CONTROL MATTING (IF REQUIRED). SEE NOTE 13.
- 8. ALL STONE USED FOR THE PROTECTIONS WORK SHALL BE DURABLE QUARRIED STONE. THE STONE SHALL BE HARD AND ANGULAR, FREE FROM EITHER LAMINATIONS, WEAK CLEAVAGES, OR UNDESIRABLE WEATHERING, AND OF SUCH CHARACTER THAT IT WILL NOT DISINTEGRATE FROM THE ACTION OF AIR, SALT, WATER, OR HANDLING. SEDIMENTARY STONE WILL GENERALLY BE UNACCEPTABLE. INDIVIDUAL STONES SHALL BE RECTANGULAR IN CROSS SECTION AND FREE FROM THIN, SLABBY PIECES HAVING A MAXIMUM DIMENSION OF NO MORE THAN THREE AND ONE—HALF TIMES THE MINIMUM DIMENSION. ALL STONE SHALL BE SUPPLIED FROM THE SAME QUARRY.
- 9. THE WORK INSTALLED AS A PART OF THE PROJECT WILL CONTAIN NO FAULTY MATERIALS, OR ANY CARELESS, OR UNSKILLED WORKMANSHIP.
- 10. THE CONTRACTOR SHALL CORRECT, REPAIR, OR REMOVE AND REPLACE WITH PROPER WORK AT NO COST TO THE COUNTY ANY WORK FOUND NOT TO BE AS PER THE GUARANTEE. THE CONTRACTOR SHALL ALSO MAKE GOOD ALL DAMAGES CAUSED TO OTHER WORK OR MATERIALS IN THE PROCESS OF FULFILLING THE GUARANTEE.
- 11. CONTRACTOR MAY UTILIZE STOCKPILE AREAS AS DELINEATED ON PLANS.

12.1. END OF THE WORK DAY FOR AREAS WITHIN WATERWAYS.

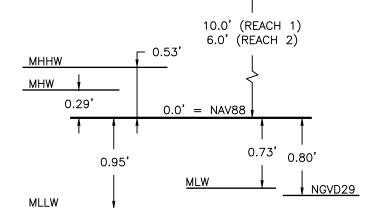
- 12. ALL DISTURBED AREAS SHALL HAVE PERMANENT OR TEMPORARY STABILIZATION COMPLETED WITHIN:
- 12.2. THREE CALENDAR DAYS ON SLOPES GREATER THAN 3:1 AND TO THE SURFACE OF ALL PERIMETER SEDIMENT CONTROLS.
 12.3. SEVEN CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS.
 13. ALL DISTURBED AREAS WITH SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH TEMPORARY SOIL STABILIZATION MATTING THAT HAS A SUFFICIENT DESIGN
- SEDIMENT AND EROSION CONTROL PLANS.

 14. ALL ROADS SHALL BE CLEANED AND CLEARED BY THE END OF EACH WORK DAY. ANY MUD OR ROCKS TRACKED ON THE ROADWAYS SHALL BE SWEPT BEFORE THE END OF EACH WORK DAY.

SHEAR STRESS FOR THE APPLICATION OR AS SHOWN ON THE APPROVED

- 15. ALL STAKING, RESTAKING, AND CUT SHEETS SHALL BE PERFORMED BY A REGISTERED LAND SURVEYOR OR PROFESSIONAL ENGINEER AT THE CONTRACTOR'S EXPENSE.
- 16. ALL CONSTRUCTION TO BE PERFORMED IN ACCORDANCE WITH STATE OF MARYLAND OCCUPATIONAL SAFETY LAWS.
- 17. CONTRACTOR MUST ENSURE THAT COPIES OF FEDERAL, STATE, AND COUNTY PERMITS ARE POSTED ON SITE PRIOR TO THE START OF ANY WORK.
- 18. CONTRACTOR SHALL RESTORE ALL AREAS IMPACTED BY CONSTRUCTION ACTIVITY. THIS SHALL INCLUDE BUT NOT LIMITED TO GRASS AREAS, ROADS, AND PAVED AREAS, ETC.

100 YR FLOOD ELEV. (ZONE VE & AE)



DATUM CONVERSIONS

NOTE:
DATUM COMPARISON BASED ON NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) VDATUM FROM SITE LOCATION (LONG) -76°32'26.9", (LAT) 38°56'27.4".

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. 21194, EXPIRATION DATE: 04/20/2026.

WETLAND LICENSE:

GRADING PERMIT

60% DESIGN

HISTORIC LONDON TOWN AND

GARDEN SITE IMPROVEMENTS

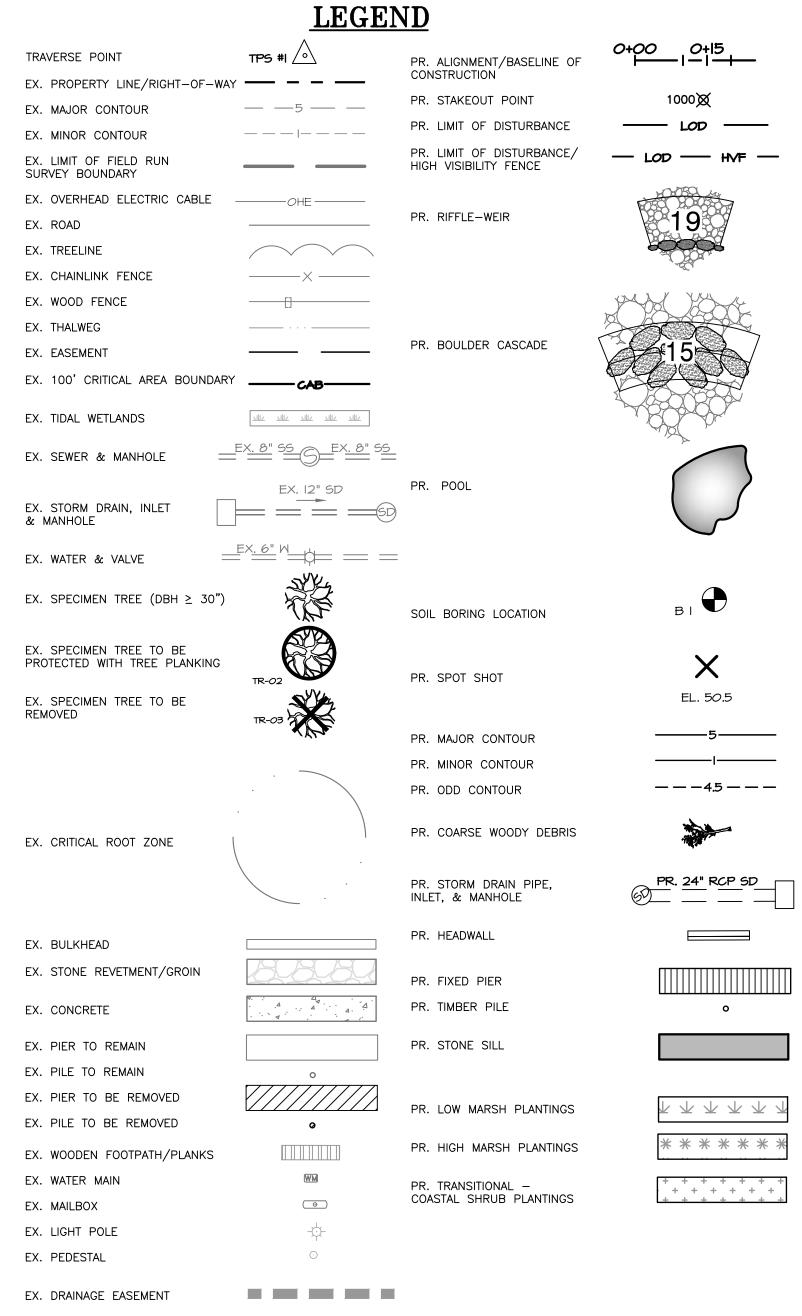
COVER SHEET



www.baylandinc.com

BAYLAND JOB NO. 5_20002

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ANNE ARUNDEL COUNTY						NTY		
			DI	EPARTMENT	OF PL	JBLIC	WORK	S
REVISED		APPROVED	DATE	APPROVED	DATE	SCALE:	AS SHOWN	T
DATE	BY					DESIGNED BY	′:DG/DP/JH 9/10/2	4
						DRAWN BY:	DG/DP/JH 9/10/2	:4
		CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY	:AJ/MB/SB 9/10/2	4
		APPROVED	DATE	APPROVED	DATE	SHEET NO.	1 OF 29	1
						PROJECT NO	. P468700	1
		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROPOSAL N	O. P468717	7



 $\overline{}$

EX. CONCRETE

EX. SIGN

SEQUENCE OF CONSTRUCTION

PRE-CON	STRUCTION:	WORK DAYS	
1	ESTABLISH ALL PERMITS HAVE BEEN OBTAINED. PERMITS SHALL BE DISPLAYED ON SITE AT ALL TIMES THROUGHOUT THE DURATION OF THE PROJECT.	1	DAY
2	THE CONTRACTOR SHALL CALL "MISS UTILITY" (1-800-257-7777) A MINIMUM OF TWO WEEKS IN ADVANCE OF ANY EXCAVATION, BORING, PILE DRIVING AND/OR DIGGING FOR THE LOCATION OF GAS, ELECTRIC, TELEPHONE, WATER AND SEWER LINES. NOTIFY THE ANNE ARUNDEL COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS (410-222-7780) AT LEAST 48 HOURS BEFORE COMMENCING WORK, AND M.D.E. INSPECTIONS AND COMPLIANCE (410-537-3510) AT LEAST TEN (10) DAYS PRIOR TO COMMENCING TIDAL WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS.	1	DAY
3	PRIOR TO BEGINNING EXCAVATION, THE CONTRACTOR MUST VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES WITHIN THE PROJECTED WORK AREA.	1	DAY
4	HOLD A PRE-CONSTRUCTION MEETING BETWEEN PROJECT REPRESENTATIVES INCLUDING BUT NOT LIMITED TO AACO REPRESENTATIVES, LONDON TOWN REPRESENTATIVES, ENGINEER, CONTRACTORS, UTILITY REPRESENTATIVES, INSPECTOR, ETC.	1	DAY
PHASE IA	SUBTOTAL CONSTRUCTION:	4	DAYS
		7	DAVC
5	BEGIN PIER & PILE DEMOLITIONS ALONG THE SOUTH RIVER AND ALMSHOUSE CREEK BY WATER. INSTALL TURBIDITY CURTAINS ONCE DEMOLITION IS COMPLETE. CLEAR MINIMUM AREA NECESSARY TO INSTALL ANY REQUIRED CONSTRUCTION ACCESS AND EROSION & SEDIMENT CONTROL MEASURES. THIS SHALL INCLUDE BUT NOT BE LIMITED TO STABILIZED CONSTRUCTION ENTRANCE, TEMPORARY CONSTRUCTION ACCESS ROUTE, REINFORCED SILT FENCE, STOCKPILE AREAS, AND ANY OTHER SEDIMENT EROSION CONTROLS AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR.	7	DAYS
6	BEGIN SOUTH RIVER AND AMLHOUSE CREEK CONSTRUCTION. NOTIFY THE COUNTY PROJECT MANAGER TO PERFORM ROAD CLOSURE NOTIFICATIONS. CONTRACTOR SHALL COMPLY WITH COUNTY'S POLICY REQUIREMENTS FOR SERVICE INTERRUPTIONS. BRING IN AND PLACE SAND/GRAVEL/COBBLE/RIPRAP MATERIAL IN ACCORDANCE WITH "GENERAL CONSTRUCTION NOTES (NOTE 8)". PLACE SAND FILL AND GRADE AS SHOWN ON THE PLANS. NO MORE AREA SHALL BE DISTURBED BY GRADING/EXCAVATION THAN CAN BE PROTECTED BY THE SAND/GRAVEL/COBBLE STRUCTURES AND/OR STABILIZED BY THE END OF EACH WORKING DAY. THE INTENTION OF THIS RESTRICTION IS TO ENSURE GRADING OPERATIONS DO NOT OUT—PACE STABILIZATION EFFORTS. STOCKPILE ALL MATERIAL SUITABLE FOR REUSE AND/OR AS DIRECTED BY THE ENGINEER. INSTALL THE MODIFIED TYPE D INLET AS SOON AS POSSIBLE TO AVOID BLOCKAGE BY SAND PLACEMENT. INSTALL MARSH PLANTINGS AND SHRUBS AS SHOWN ON THE PLANS. INSTALL GOOSE AND DEER PROTECTION FENCING.	60	DAYS
	SUBTOTAL	67	DAYS
PHASE IB	CONSTRUCTION:		
7	DECIN CRADING OF THE HIDDER HALF OF THE STEP DOOL STORMWATER CONVEYANCE (SDSC) SYSTEM DETWEEN THE SDSC ALIGNMENT STATIONS OF 75 AND 2400 STAVE OUT ALL DOADDWALK	15	DAYS
,	BEGIN GRADING OF THE UPPER HALF OF THE STEP-POOL STORMWATER CONVEYANCE (SPSC) SYSTEM. BETWEEN THE SPSC ALIGNMENT STATIONS 0+75 AND 2+00. STAKE OUT ALL BOARDWALK PILES CENTER POINTS AND STONE WEIR AND CASCADE FOOTPRINTS. STABILIZE THE NEW CUT SLOPES WITH BOULDER OUTCROPS AS INDICATED ON THE PLANS. AT THE TIME OF EACH INDIVIDUAL BOULDER OUTCROP INSTALLATION, DRIVE BOARDWALK PILES PRIOR TO PLACING ROCK, AND WORK ROCK AROUND PILES AS NECESSARY. RELOCATE UTILITIES AS MARKED ON THESE PLANS.	13	DATS
8	DRIVE ALL BOARDWALK PILES CHANNELWARD OF THE EX. BULKHEAD.	7	DAYS
9	BEGIN GRADING OF THE SPSC STARTING FROM THE EX. BULKHEAD UP TO PREVIOUS GRADING EFFORTS COMPLETED IN STEP 7 ABOVE. RESTAKE OUT ALL BOARDWALK PILES CENTER POINTS AND STONE WEIR AND CASCADE FOOTPRINTS IF PREVIOUS STAKES HAVE BEEN DISTURBED. STABILIZE THE NEW CUT SLOPES WITH BOULDER OUTCROPS AS INDICATED ON THE PLANS. AT THE TIME OF EACH INDIVIDUAL BOULDER OUTCROP, WEIR, OR CASCADE INSTALLATION, DRIVE BOARDWALK PILES PRIOR TO PLACING ROCK, AND WORK ROCK AROUND PILES AS NECESSARY. BRING IN AND PLACE SAND/GRAVEL/COBBLE/BOULDER MATERIAL IN ACCORDANCE WITH "GENERAL CONSTRUCTION NOTES (NOTE 8)." PLACE FILL AND GRADE AS SHOWN ON THE PLANS. PLANT THE SPSC AS INDICATED ON THE PLANS.	10	DAYS
10	COMPLETE BOARDWALK CONSTRUCTION.	30	DAYS
	SUBTOTAL	62	DAYS
PHASE II	CONSTRUCTION:		
11	DURING DRY WEATHER FORECAST, REMOVE EXISTING DRIVEWAY CULVERT, INSTALL MICRO BIORETENTION, 4" PVC UNDERDRAIN, TYPE D INLET, 12" HPDE OUTFALL PIPE AND OUTFALL PROTECTION AS SHOWN ON THE PLANS.	5	DAYS
12	RAISE GRAVEL DRIVEWAY AND GRADE FILL AREA AS SHOWN ON THE PLANS. STABILIZE DISTURBED AREAS WITH SEED.	5	DAYS
13	REMOVE & REPLACE 635 SF OF SIDEWALK AND GRADE GRAVEL PARKING LOT AS SHOWN ON THE PLANS. STABILIZE ANY DISTURBED AREAS AT THE END OF EACH WORK DAY.	10	DAYS
14	REMOVE LEFTOVER STOCKPILED MATERIALS, IF ANY, TO AN APPROVED DISPOSAL SITE. PERMANENTLY STABILIZE DISTURBED AREAS. PLANT MICRO BIORETENTION DURING APPROPRIATE CALENDAR PERIOD.	5	DAYS
15	ONCE THE AREA HAS BEEN 95% STABILIZED AND WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES. IMMEDIATELY STABILIZE ANY DISTURBED AREAS THAT RESULT FROM THE SEDIMENT CONTROL DEVICES.	1	DAY
	SUBTOTAL	26	DAYS
	TOTAL	159	DAYS

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.

60% DESIGN ≝

ABBREVIATIONS

HEADWALL

MANHOLE

OUTFALL

PAGE

PLAT BOOK

PROPOSED

RIFFLE-WEIR

INVERT

EXD EXISTING CONDITIONS & DEMOLITION

HIGH VISIBILITY FENCE

LIMIT OF DISTURBANCE

REINFORCED CONCRETE PIPE

SCE STABILIZED CONSTRUCTION ENTRANCE

REINFORCED SILT FENCE

STORM DRAIN

TO BE REMOVED

UPSTREAM

WATER MAIN

XS CROSS-SECTION

TRAVERSE POINT

VALLEY WIDE WEIR

STATION

STA

SANITARY SEWER

ANNE ARUNDEL COUNTY

BOULDER CASCADE

POLYETHYLENE PIPE

DOWNSTREAM

DRAWING

ELEVATION

ENDWALL

EXISTING

CORRUGATED METAL PIPE

CORRUGATED HIGH DENSITY

DIAMETER AT BREAST HEIGHT

EROSION SEDIMENT CONTROL

ACRES

BUILDING

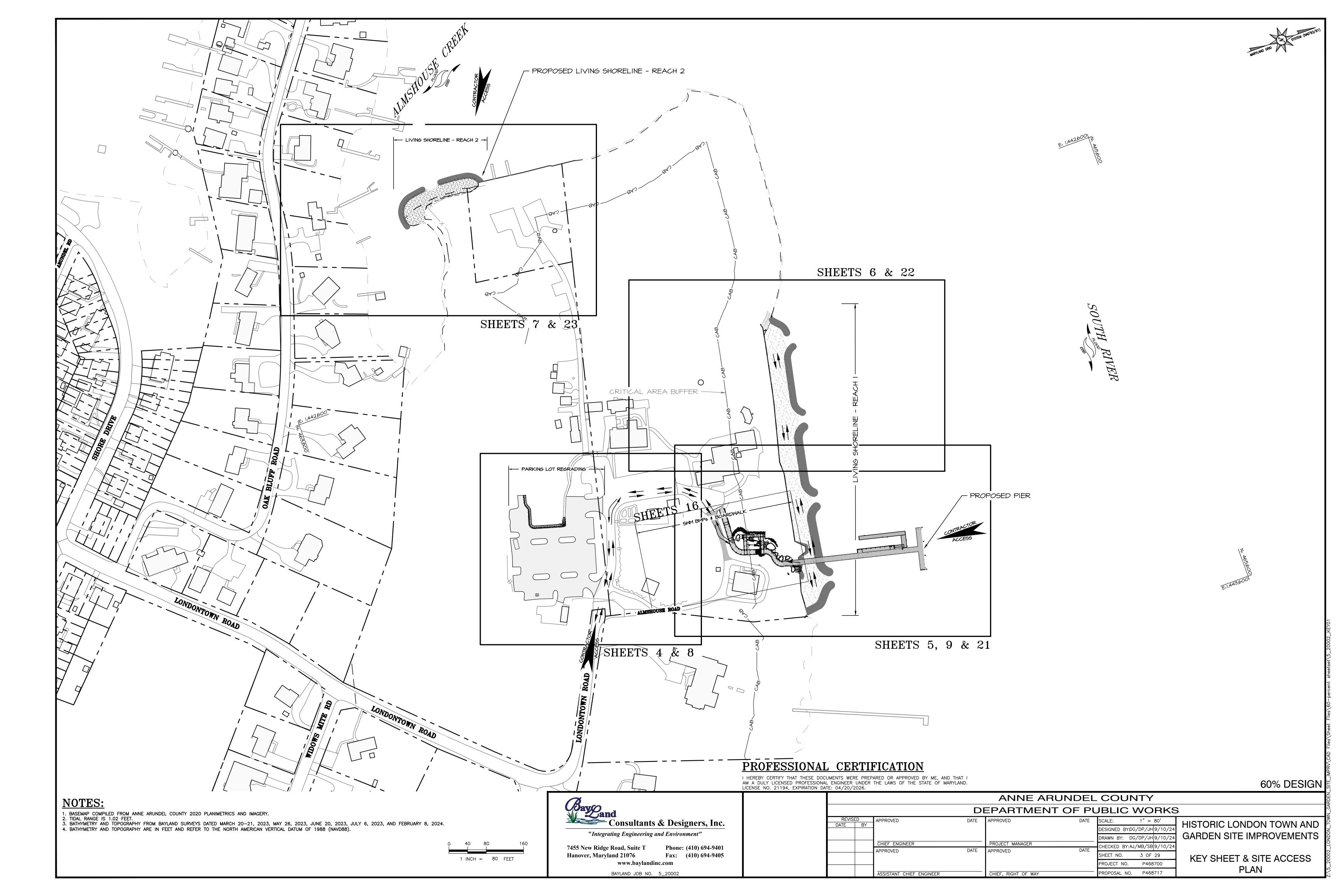
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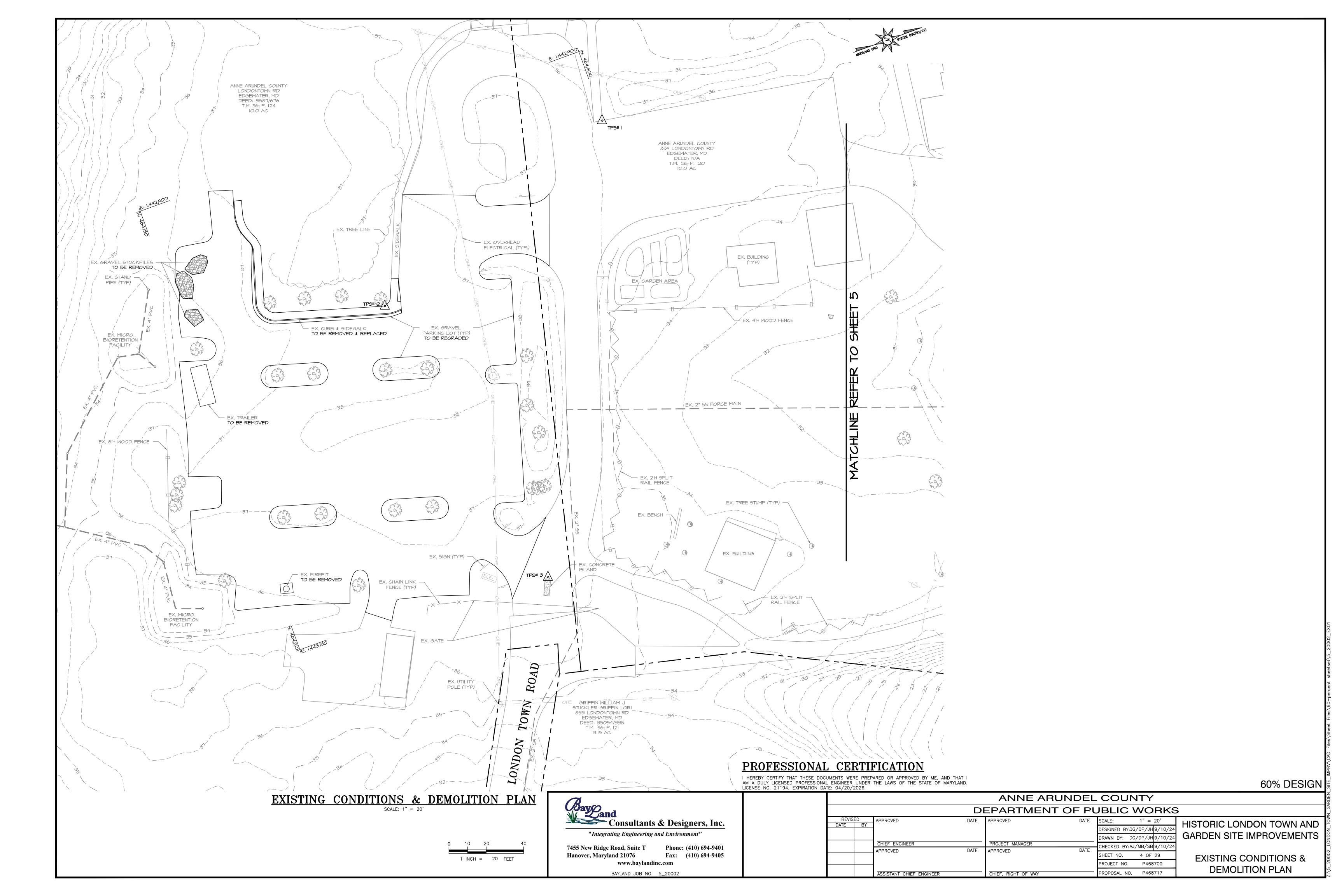
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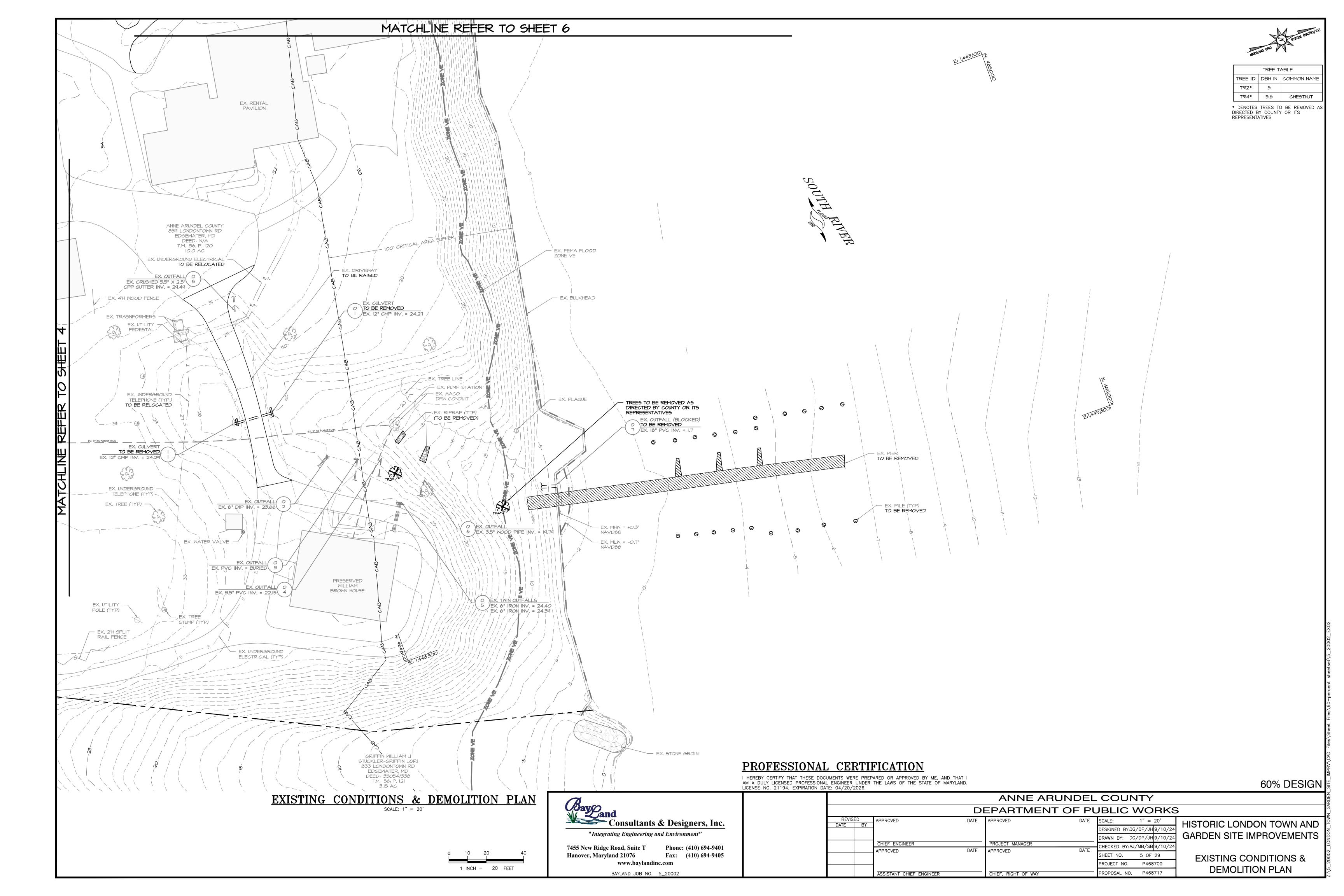
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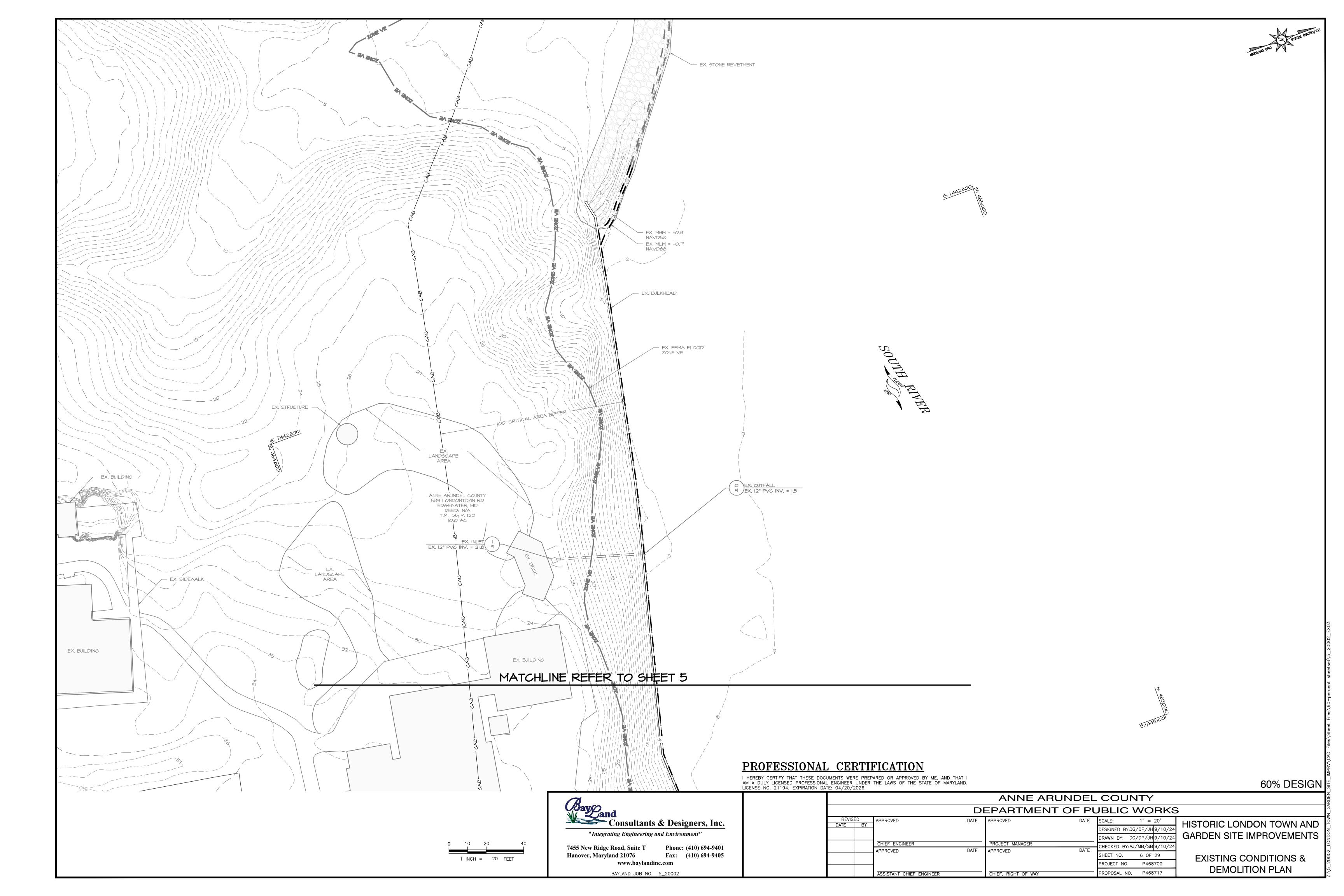
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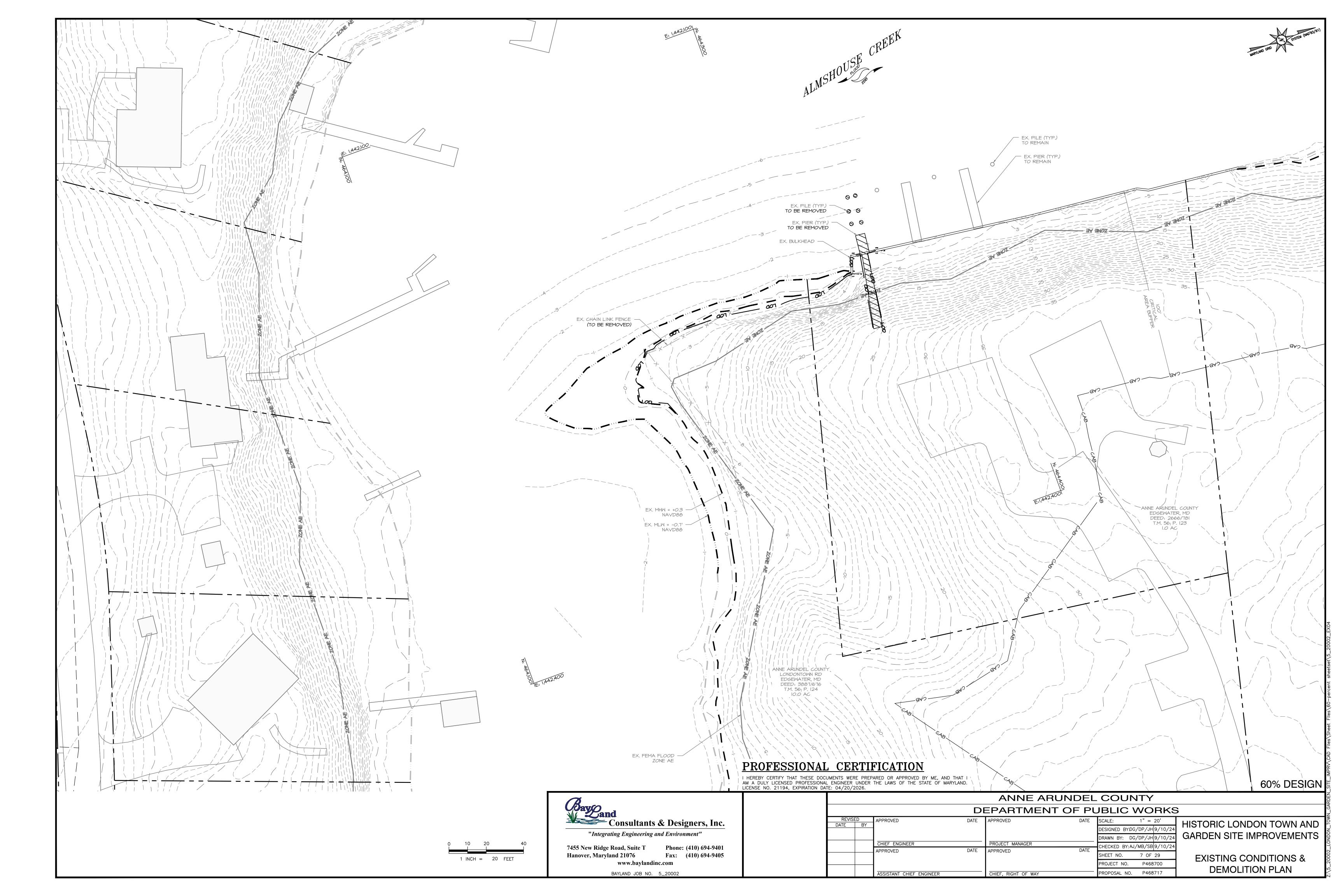
LICENSE NO. 2	21194, EXPIRATION DATE: 04/20/2026.			00% DESIGN				
		ANNE ARUNDEL COUNTY						
Coay Cand		DEPARTMENT OF PUBLIC WORKS						
Consultants & Designers, Inc.	REVISED APPROVED DATE BY	DATE APPROVED	DATE SCALE: AS SHOWN	MOT				
"Integrating Engineering and Environment"			DESIGNED BY:DG/DP/JH 9/10/24 DRAWN BY: DG/DP/JH 9/10/24	HISTORIC LONDON TOWN AND				
7455 New Ridge Road, Suite T Phone: (410) 694-9401	CHIEF ENGINEER	PROJECT MANAGER	CHECKED BY:AJ/MB/SB 9/10/24	GARDEN SITE IMPROVEMENTS				
Hanover, Maryland 21076 Fax: (410) 694-9405	APPROVED	DATE APPROVED	SHEET NO. 2 OF 29	0000				
www.baylandinc.com			PROJECT NO. P468700	GENERAL NOTES				
BAYLAND JOB NO. 5 20002	ASSISTANT CHIEF ENGINE	FFR	PROPOSAL NO. P468717	· · · · · · · · · · · · · · · · · · ·				

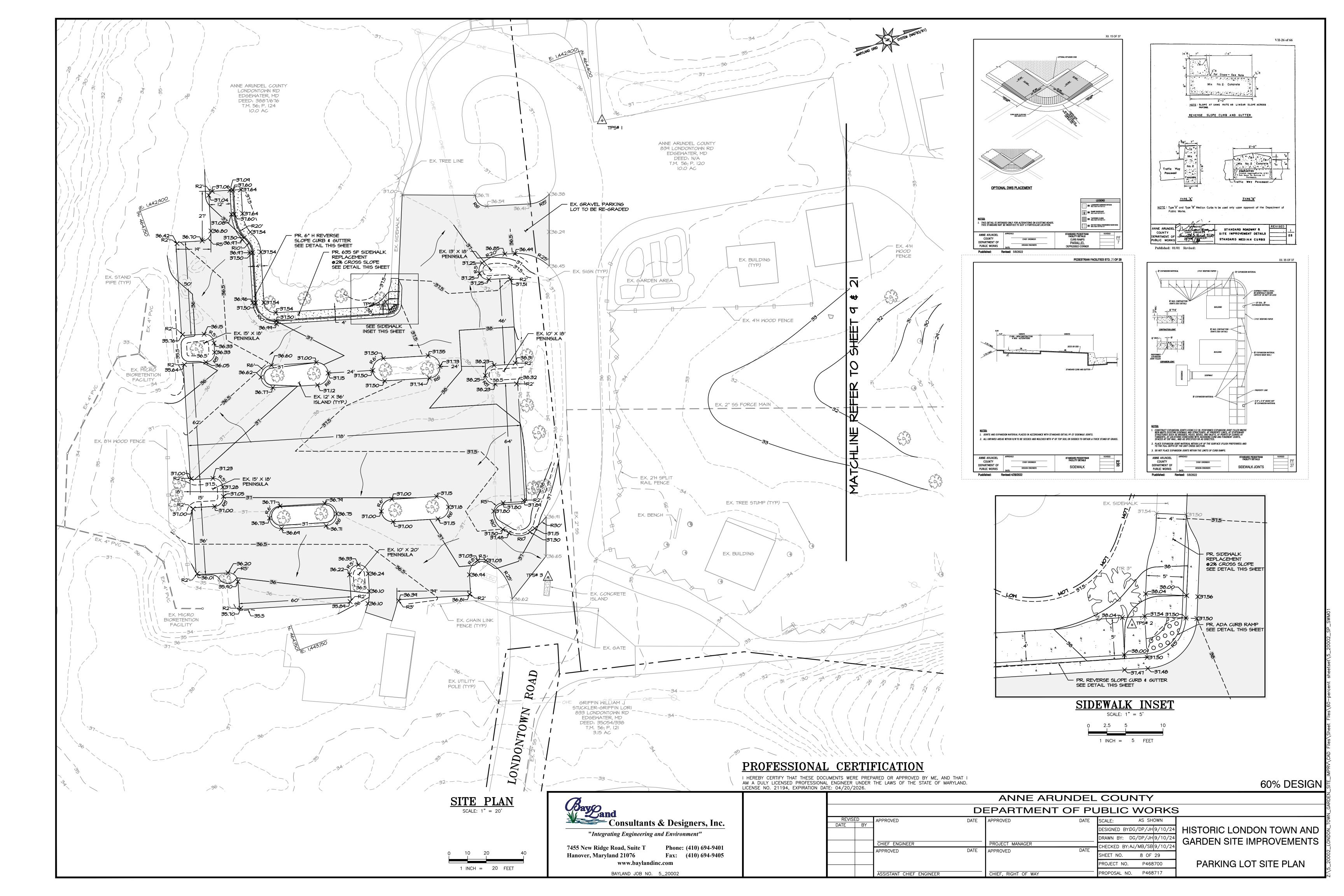


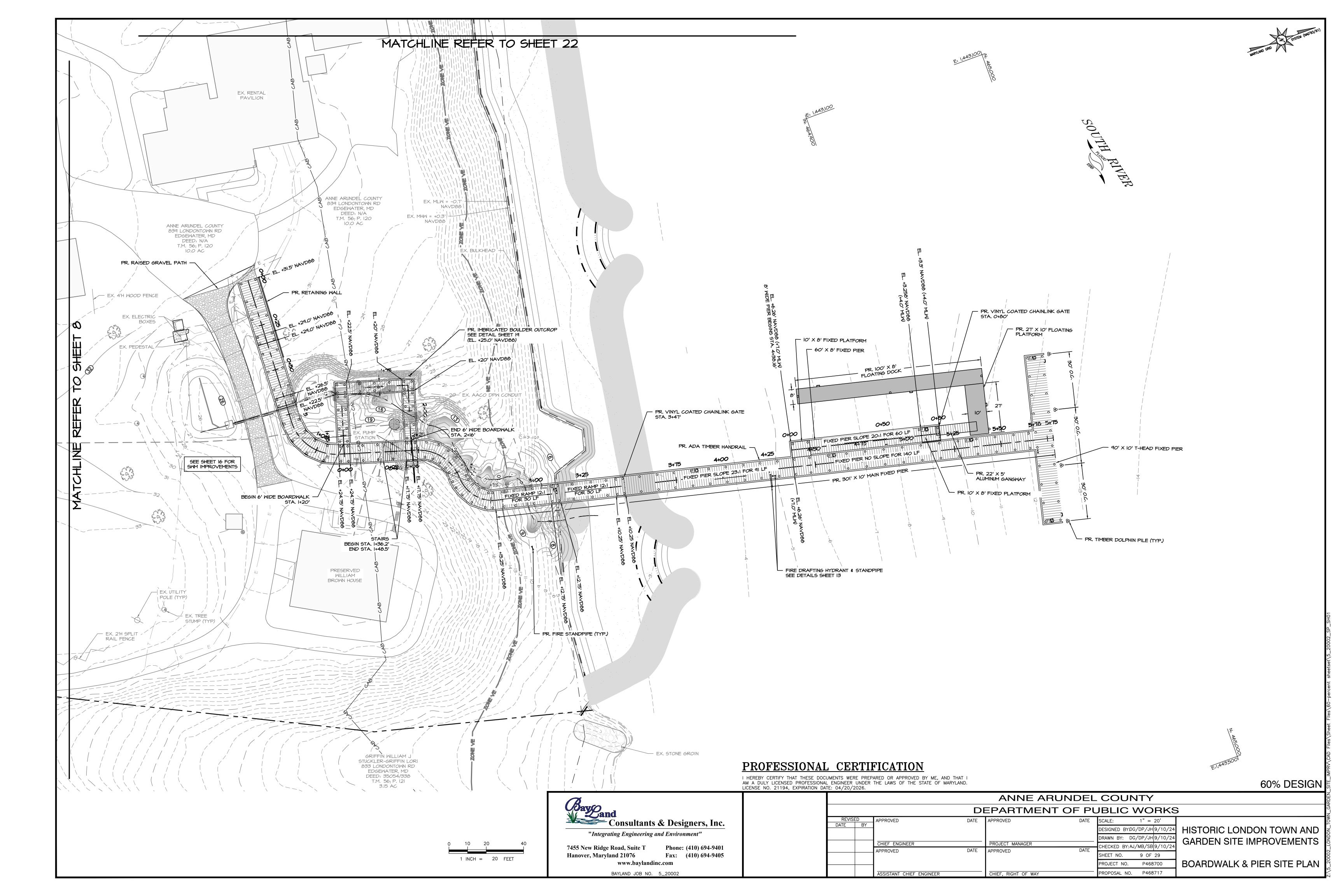


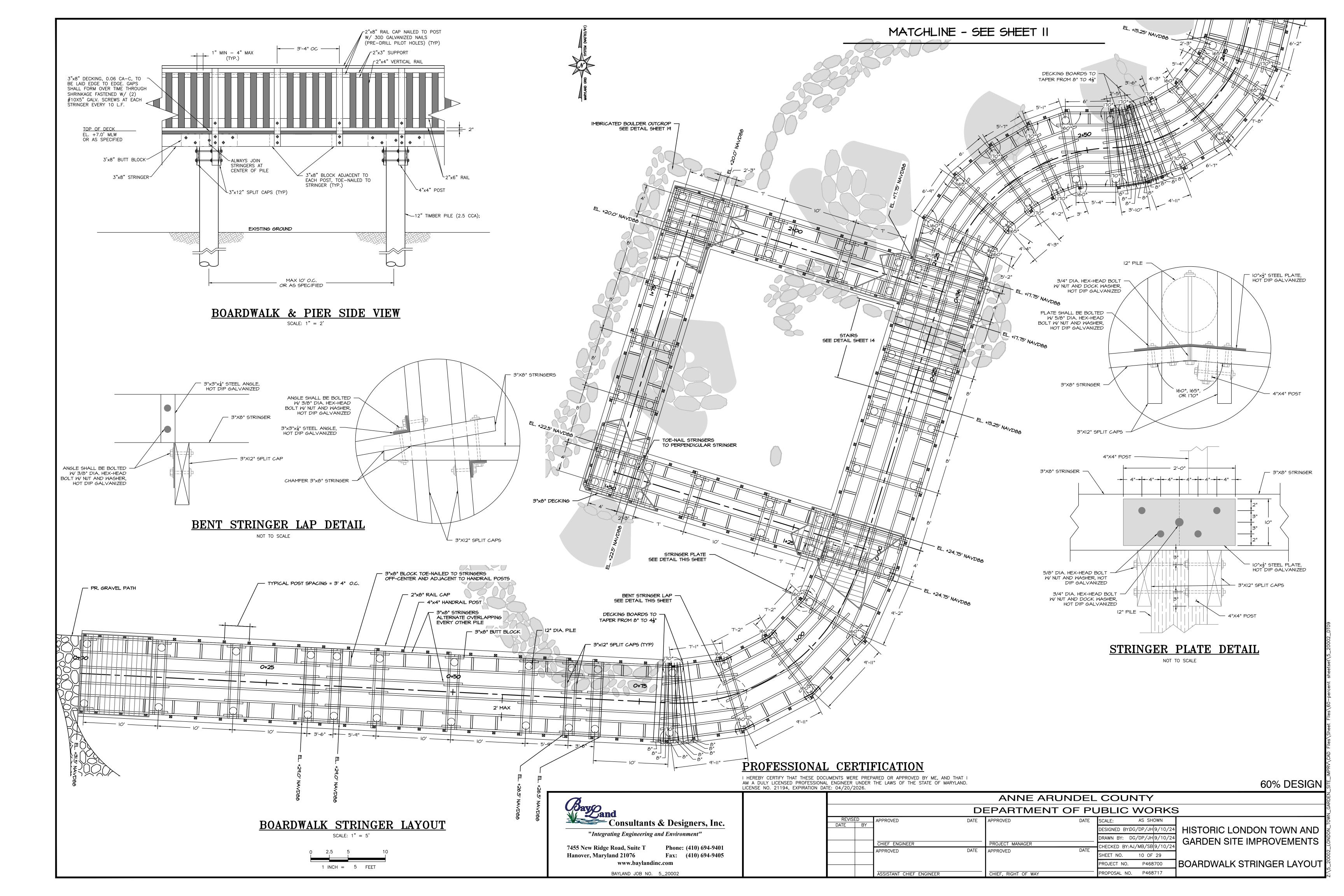


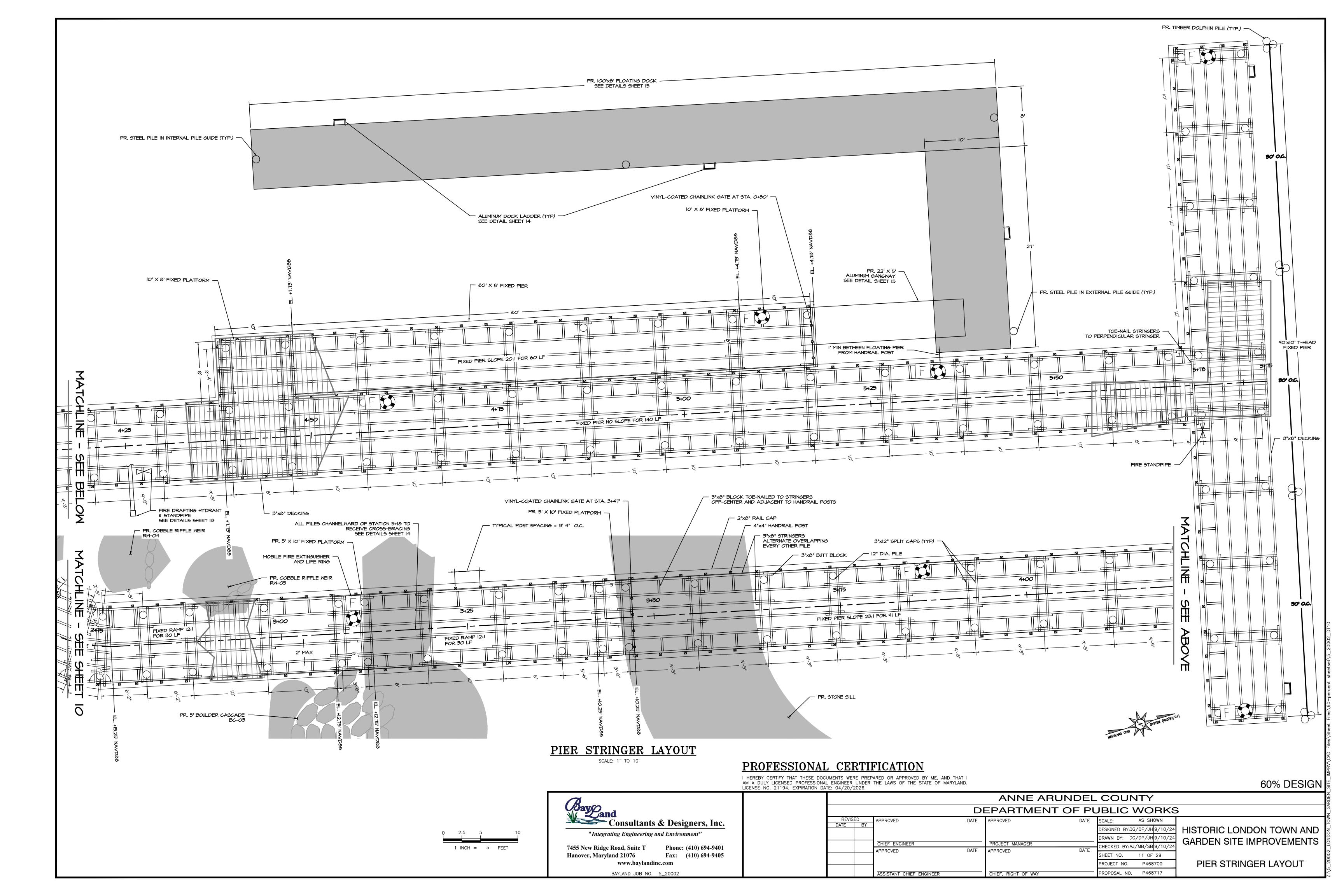


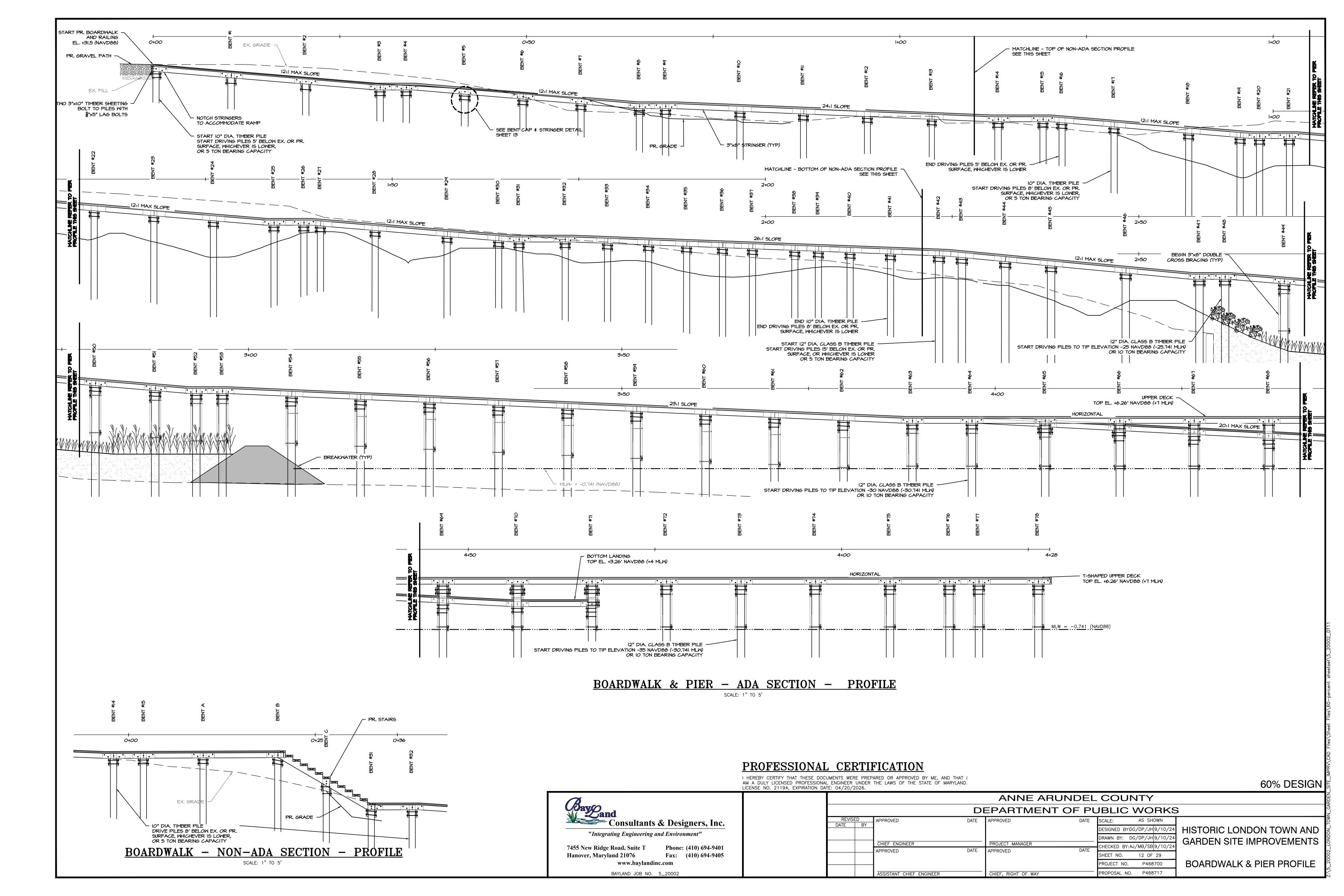


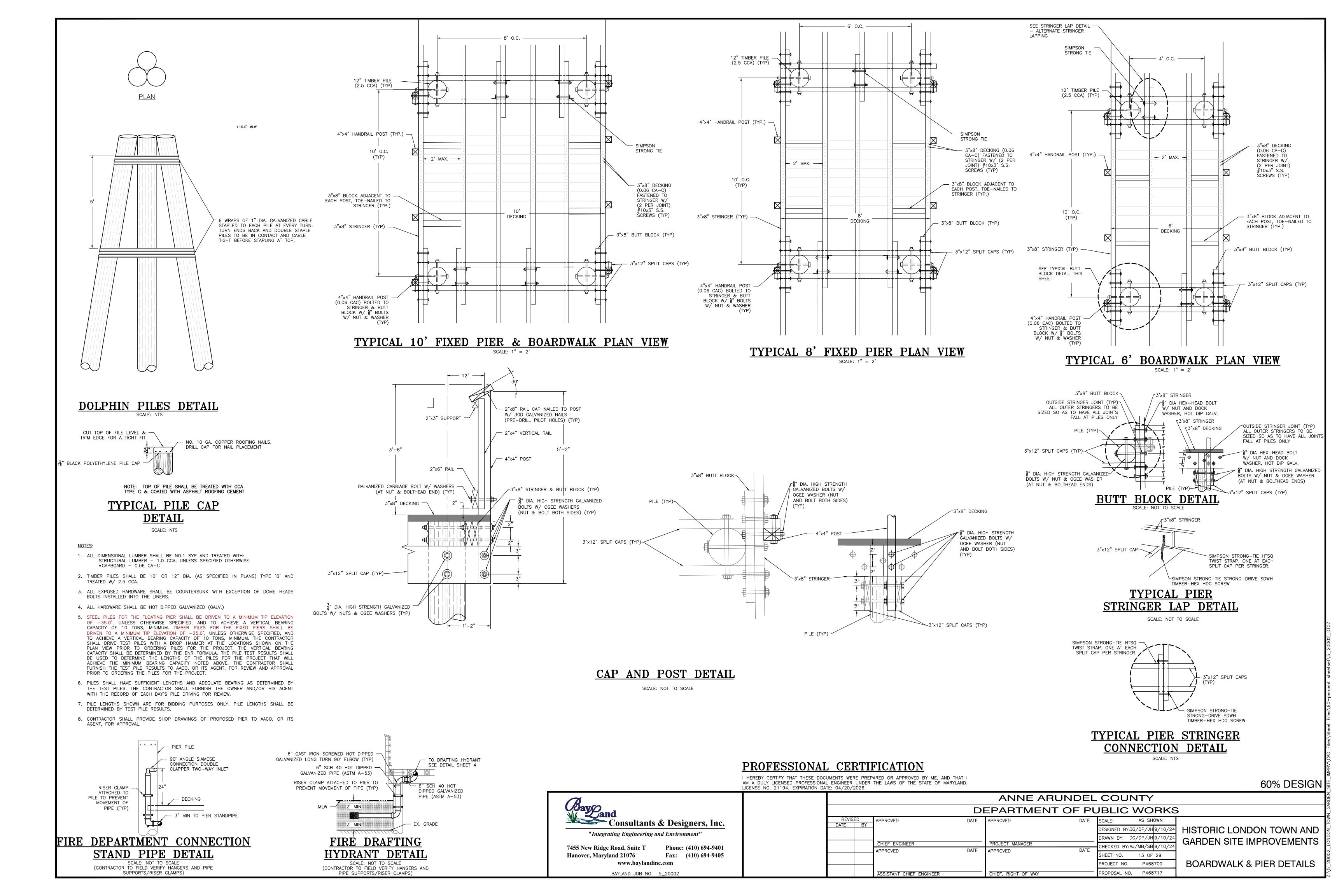


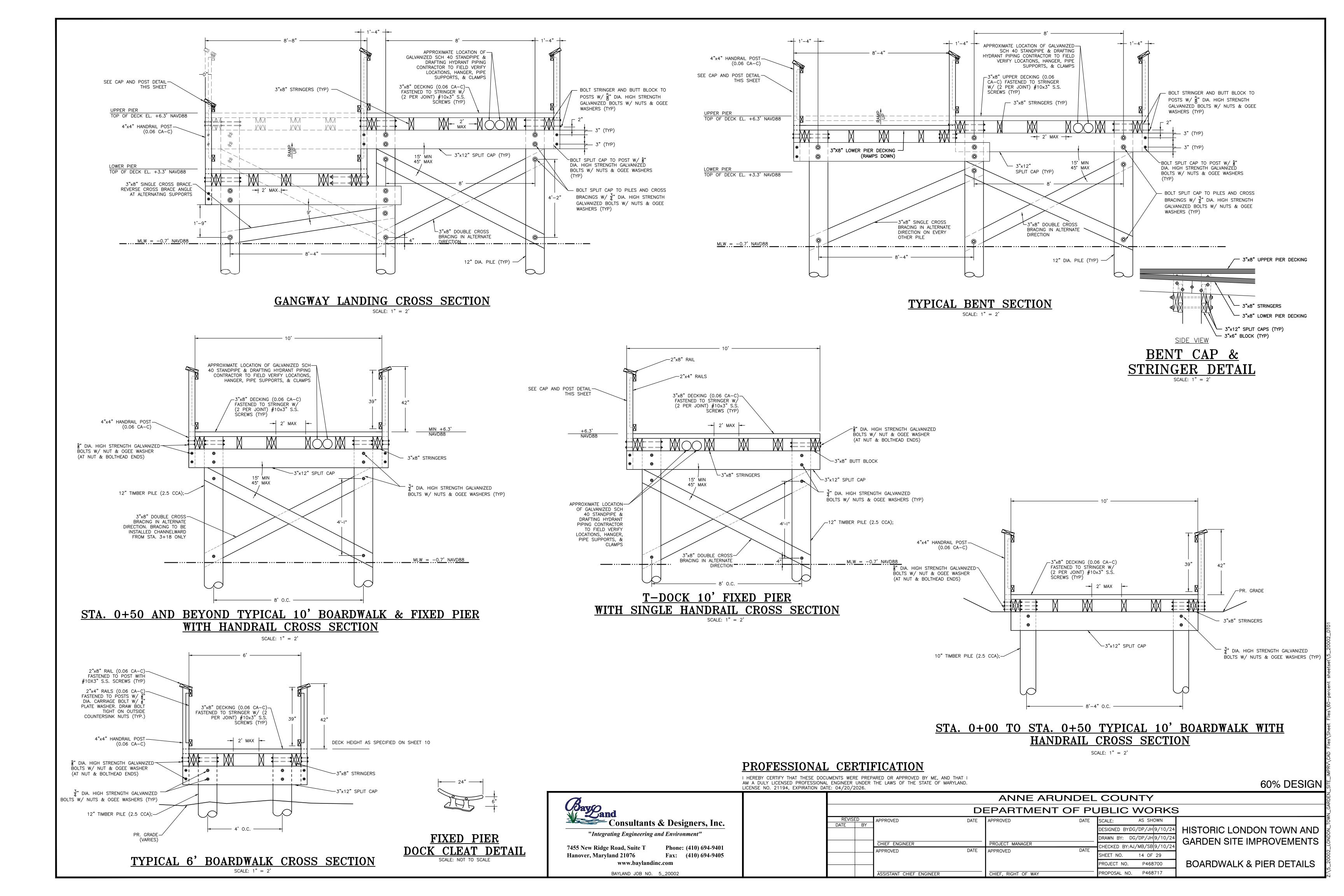


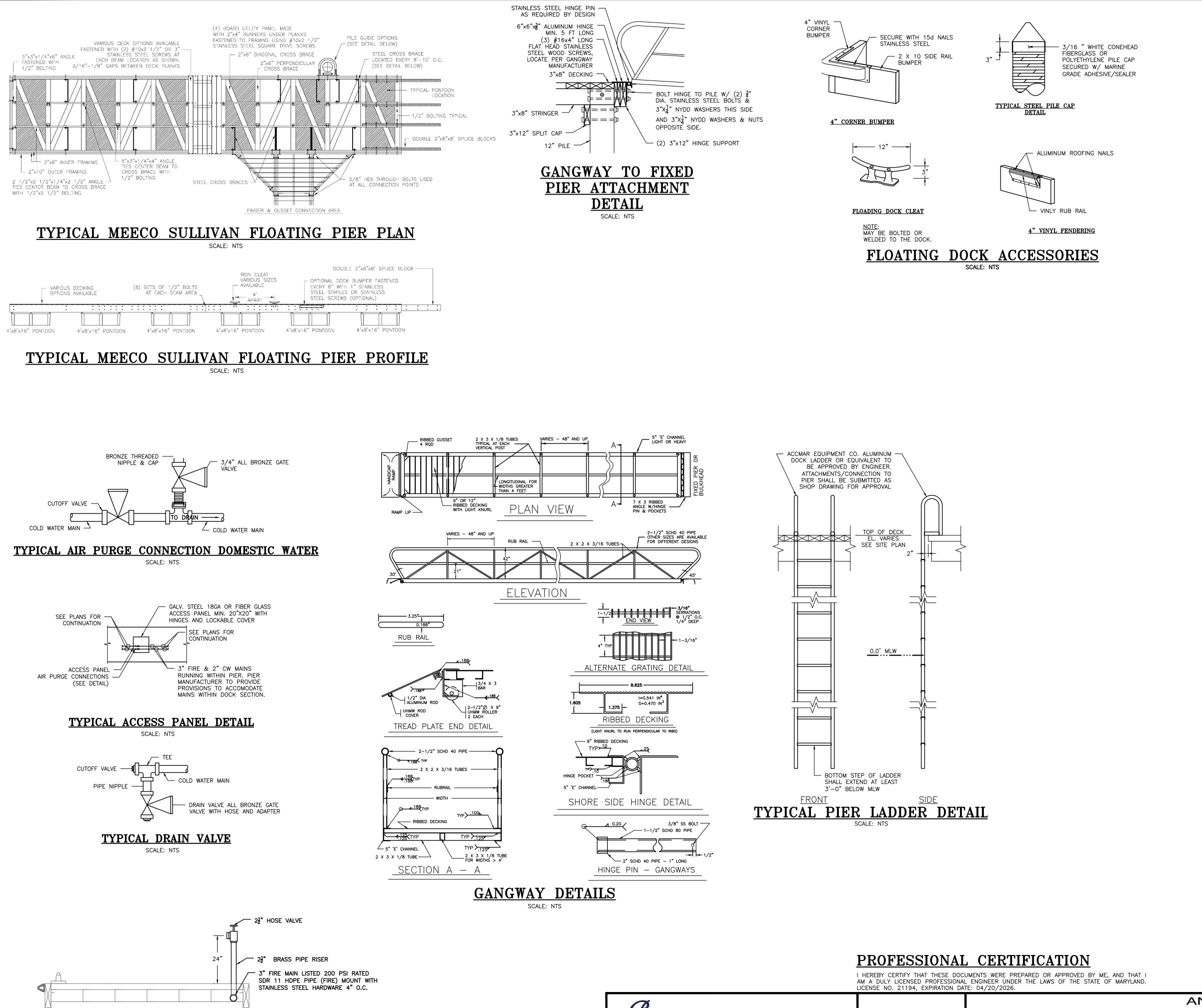












TYPICAL FIRE HOSE VALVE & WATER SUPPLY DETAIL

SCALE: NTS

FLOATING DOCK GENERAL NOTES

GENERAL

1. THE NEW FLOATING DOCK LAYOUT SHALL MATCH THE PROPOSED PLAN. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO START OF WORK.

2. THE NEW FLOATING DOCK SHALL BE ALUMINUM SECTIONS AND SHALL MEET THE SPECIFIED DESIGN AND PERFORMANCE CRITERIA.

3. ALL WORK IS NEW UNLESS OTHERWISE NOTED.

DESIGN LOAD

<u>DEAD LOAD</u> ACTUAL WEIGHT OF THE DOCK INCLUDING ALL PERMANENT COMPONENTS SUCH AS PILE GUIDES, BUMPERS, CLEATS, PEDESTAL AND LIGHTS, ETC.

SUPERIMPOSED DEAD LOAD
ELECTRICAL & COMMUNICATION CONDUITS, CABLES, WATER & FIRE LINES, ETC COORDINATE WITH ELECTRICAL SCHEDULES AND MECHANICAL PLANS.

LIVE LOAD
UNIFORMLY DISTRIBUTED LIVE LOAD OF 30 PSF. THE MINIMUM FREEBOARD FOR 30 PSF LIVE LOAD PLUS DEAD LOAD SHALL BE 18± INCHES.

LIVE POINT LOAD
400 LBS CONCENTRATED LIVE LOAD ON ONE SQUARE FOOT OF DECK SURFACE.

SEE SPECIFICATION FOR ADDITIONAL PERFORMANCE REQUIREMENTS.

HORIZONTAL IMPACT LOADS
IMPACTS FORCE BY A 70-FOOT LENGTH BOAT STRIKING DOCK FINGER AT 10 DEGREE ANGLE AT A SPEED OF 3 FT/SEC.

LATERAL LOAD OF 140 KIPS DUE TO WIND (105 MPH) FROM ANY DIRECTION.

MINIMUM 2 FT. WAVE HEIGHT WITH 2.5 SECOND PERIOD'S. WAVE GENERATED BY BOAT, WAKE, OR WIND.

ICE LOADS
FORCES IMPOSED BY NON-MOVING ICE: LATERAL LOAD OF 100 LBS. PER LINEAR FOOT OF DOCK FROM ANY

PERFORMANCE CRITERIA

MAXIMUM CROSS SLOPE UNDER ALL LOADING CONDITIONS SHALL NOT EXCEED 2% (1 INCH PER 50 FEET).

MAXIMUM LONGITUDINAL SLOPE

UNDER ALL LOADING CONDITIONS, MAIN WALKWAY SHALL NOT EXCEED 1/2 INCH PER 6 FEET. UNDER ALL LOADING CONDITIONS, FINGER DOCKS SHALL NOT EXCEED 1/8 INCH PER FOOT, NOT TO EXCEED 1 INCH IN 10 FEET.

FREEBOARD
FOR A 400 LB LIVE LOAD ONE FOOT FROM END OF DOCK, DOCK SHALL NOT LOSE MORE THAN 4 INCHES OF

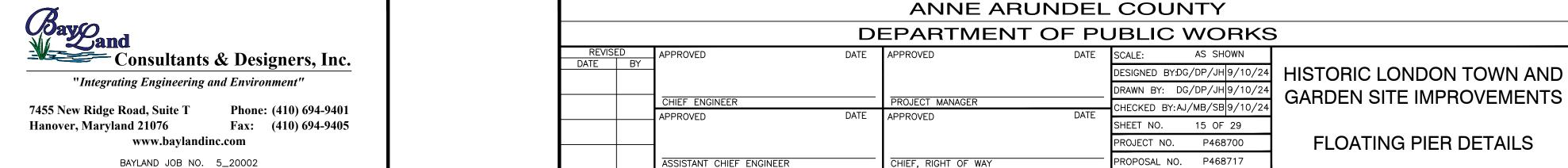
MATERIALS
ALUMINUM STRUCTURAL MATERIAL: 6061-T6 ALUMINUM

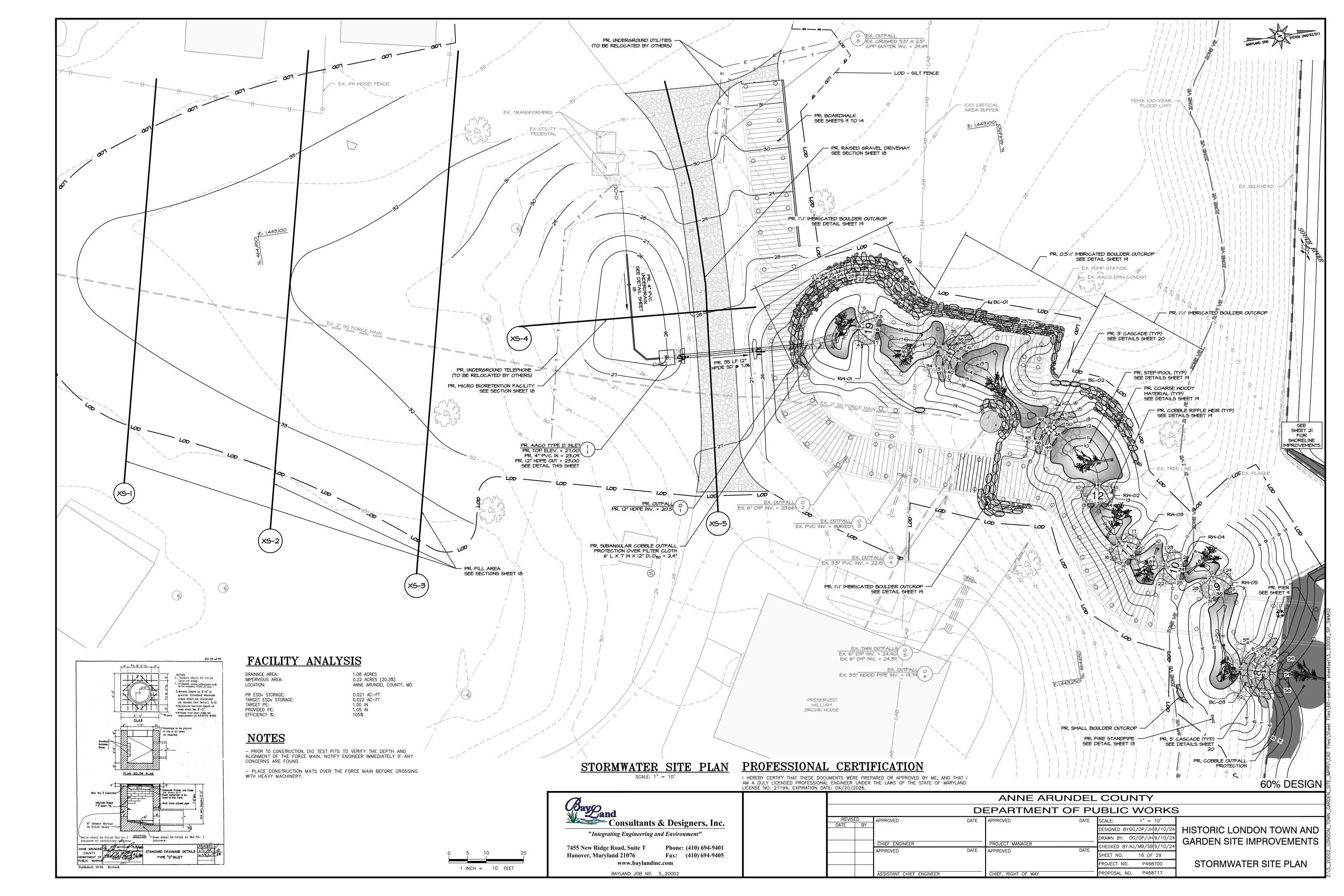
HARDWARE: ALL EXPOSED HARDWARE SHALL BE STAINLESS STEEL. ALL OTHER COMPONENTS SHALL BE HOT-DIPPED GALVANIZED.

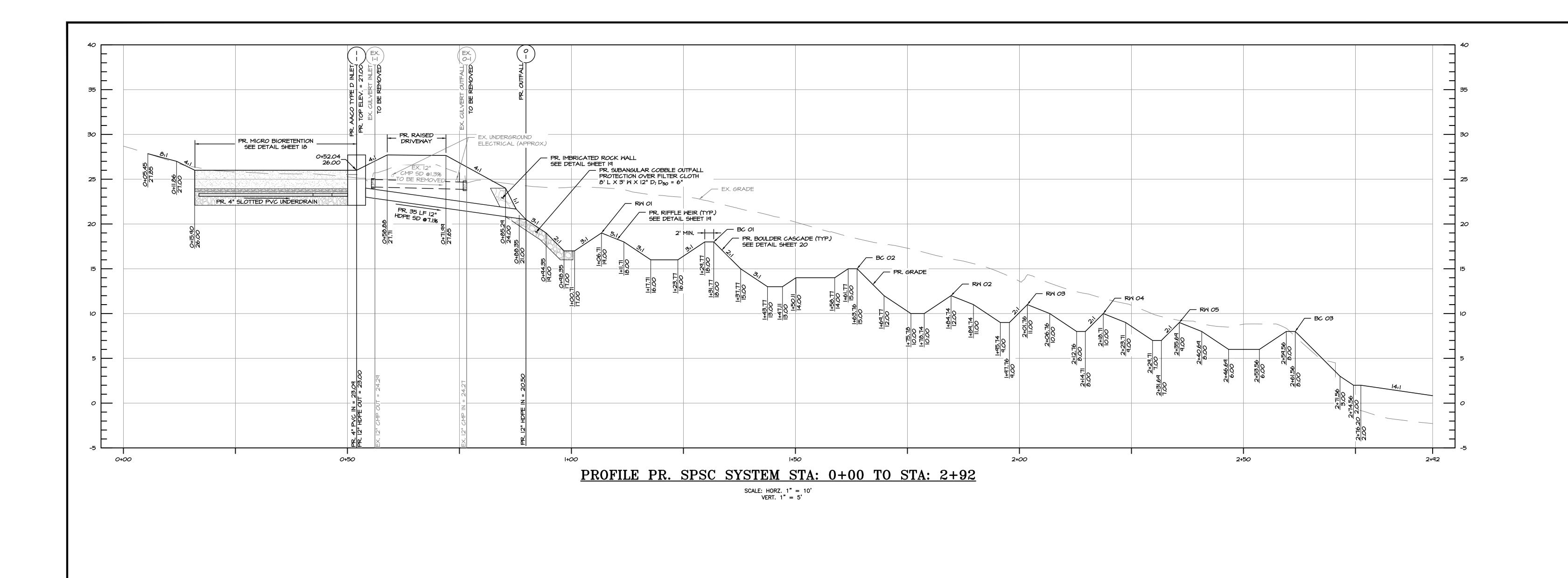
DECKING: IPE HARDWOOD OR CHOSEN ALTERNATIVE

60% DESIGN

FLOATING PIER DETAILS



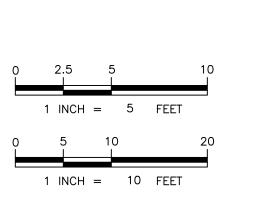




PROFESSIONAL CERTIFICATION

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. 21194, EXPIRATION DATE: 04/20/2026.

60% DESIGN



Bayeand Consultants	& Designers, Inc.					
"Integrating Engineering and Environment"						
7455 New Ridge Road, Suite T	Phone: (410) 694-9401					
Hanover, Maryland 21076	Fax: (410) 694-9405					

www.baylandinc.com

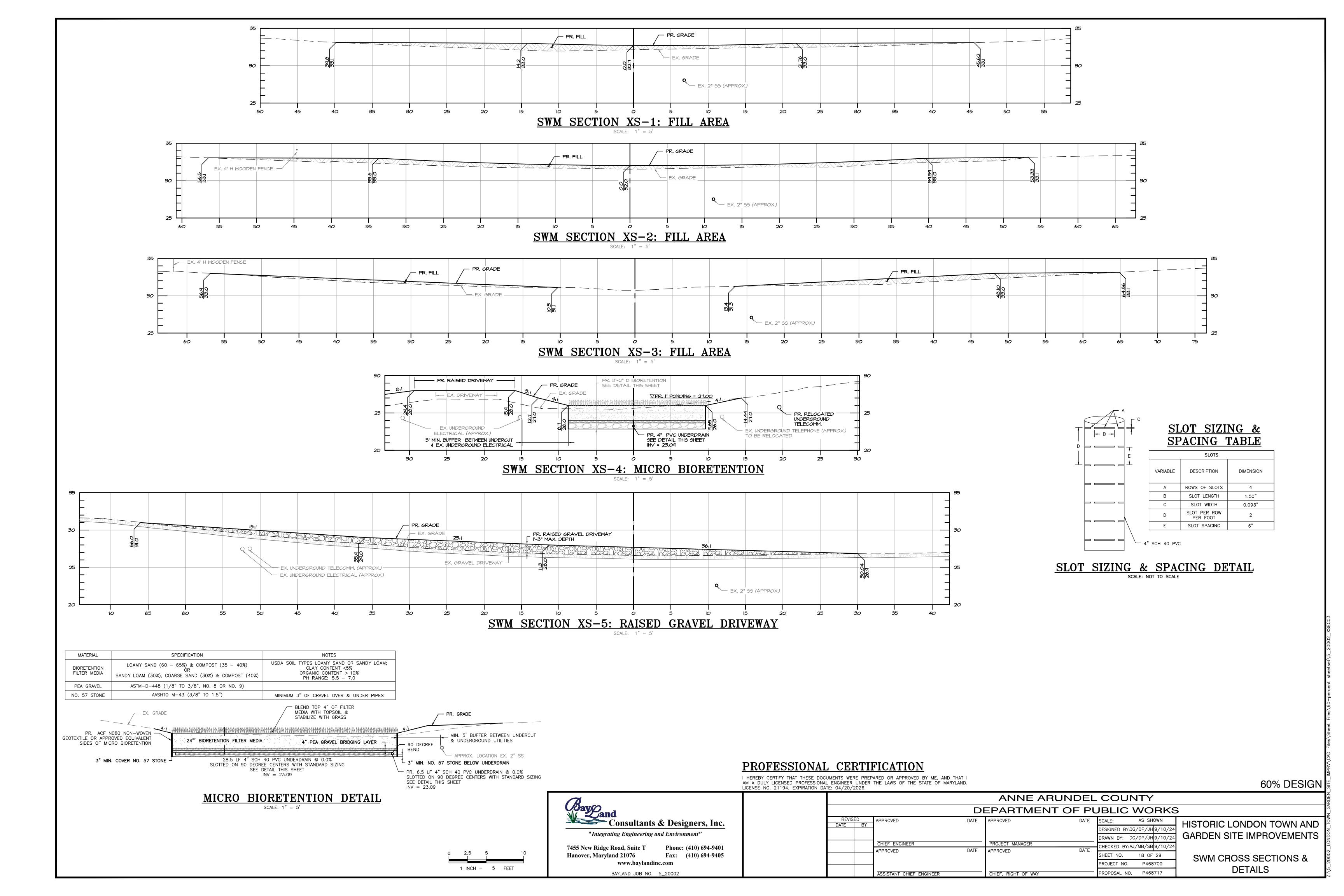
BAYLAND JOB NO. 5_20002

			DI	EPARTMENT	r of Pu	JBLIC \	WORK
REVISI	T	APPROVED	DATE	APPROVED	DATE	SCALE:	AS SHOWN
DATE	BY					DESIGNED BY:DG	/DP/JH9/10/2
						DRAWN BY: DG	/DP/JH 9/10/2
		CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY:AJ	/MB/SB9/10/2
		APPROVED	DATE	APPROVED	DATE		
						SHEET NO.	17 OF 29
		4				PROJECT NO.	P468700
		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROPOSAL NO.	P468717

ANNE ARUNDEL COUNTY

HISTORIC LONDON TOWN AND GARDEN SITE IMPROVEMENTS

SPSC PROFILE



RIFFLE-WEIR AND BOULDER CASCADE CONSTRUCTION SPECIFICATIONS

FOR THE PURPOSES OF THESE SPECIFICATIONS, THE "COUNTY" SHALL REFER TO ANNE ARUNDEL COUNTY STAFF OR A DESIGNATED REPRESENTATIVE.

THE CONTRACTOR WILL NOT BE GRANTED AN EXTENSION OF EXTRA TIME OR EXTRA COMPENSATION DUE TO DELAY CAUSED BY SAMPLING, TESTING, APPROVAL OR DISAPPROVAL OF THE MATERIALS UNDER THE REQUIREMENTS OF THESE SPECIFICATIONS. THE MATERIAL SHALL BE AS SPECIFIED ON THE RIFFLE-WEIR ROCK SIZE TABLE AND HEREIN. IF SUFFICIENT MATERIAL IS NOT AVAILABLE FROM THE SITE, THE CONTRACTOR SHALL OBTAIN MATERIAL FROM A QUARRY AND PROVIDE A CERTIFICATE VERIFYING THAT THE STONE MEETS THE SPECIFIED REQUIREMENTS AND/OR A SAMPLE OF STONE TO THE COUNTY FOR APPROVAL PRIOR TO INSTALLATION. T WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ALL NECESSARY ARRANGEMENTS WITH THE SOURCE OF SUPPLY IN A TIMELY FASHION, SO THAT THE CONTRACTOR SHALL MAINTAIN AN ADEQUATE SUPPLY OF ALL MATERIALS AND THAT WORK SHALL NOT BE UNNECESSARILY DELAYED DUE TO INSUFFICIENT SUPPLY.

- . BOULDERS BOULDERS SHALL BE AS SPECIFIED ON THE RIFFLE-WEIR ROCK SIZE TABLE. BOULDERS SHALL BE SANDSTONE, OBLONG, AND FLAT IN APPEARANCE, AND RED. BROWN, OR PURPLE IN COLOR, NO WHITE BOULDERS SHALL BE ALLOWED. IN GENERAL, FOOTER ROCKS SHALL BE SELECTED TO BE THE LARGEST ROCKS AVAILABLE. FOOTER ROCKS SHALL BE PLACED AT THE BOTTOM AND DOWNSTREAM SIDE OF THE RIFFLE. BOULDERS MUST HAVE A MINIMUM DRY UNIT WEIGHT OF 160 LBS/CF. GRANITE BOULDERS MAY BE SUBSTITUTED FOR SANDSTONE WITH COUNTY APPROVAL IN WRITING.
- 2. SUBANGULAR SILICA COBBLE SUBANGULAR SILICA COBBLE SHALL MEET THE STONE SIZES SPECIFIED IN THE RIFFLE-WEIR ROCK SIZE TABLE. COBBLE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE OF STONE SIZE SO THAT 50% OF THE PIECES BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE. A WELL GRADED MIXTURE IS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE LARGE VOIDS BETWEEN THE STONES. COBBLE SHALL BE DARK BROWN OR DARK GRAY IN COLOR. NO WHITE STONE SHALL BE ALLOWED. THE ROCK SHALL BE FREE FROM LAMINATIONS AND WEAK CLEAVAGES AND SHALL NOT DISINTEGRATE FROM THE ACTION OF AIR, WATER, HANDLING OR PLACING. SUBANGULAR SILICA COBBLE MUST HAVE A MINIMUM DRY UNIT WEIGHT OF 145
- RIPRAP RIPRAP SHALL BE AS SPECIFIED IN SECTION 901.02.01 OF THE MARYLAND DEPARTMENT OF TRANSPORTATION. STATE HIGHWAY ADMINISTRATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, LATEST EDITION AND ANY ADDENDA THERETO. RIPRAP SHALL BE COMPOSED OF A WELL-GRADED MIXTURE OF STONE SIZE SO THAT 50% OF THE PIECES BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE. A WELL GRADED MIXTURE IS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE LARGE VOIDS BETWEEN THE STONES. RIPRAP MUST BE OF APPROPRIATE COLOR; NO WHITE STONE SHALL BE ALLOWED. RIPRAP SHALL BE GRANITE WITH A MINIMUM DRY UNIT WEIGHT OF 160 LBS/CF.
- I. BANK RUN GRAVEL FILTER BANK RUN GRAVEL FILTER SHALL MEET THE AGGREGATE GRADING REQUIREMENTS AS SPECIFIED IN AGGREGATE BASE AND SUBBASE COURSES OF AACO SPECIFICATION 02621.02.C OR AS DIRECTED BY THE COUNTY. IT SHALL BE A MIX OF EQUAL PARTS BANK RUN GRAVEL SUBBASE COURSE AND COARSE AGGREGATE FOR BASE COURSE.
- 5. SUITABLE FILL SUITABLE FILL SHALL BE FROM ON-SITE EXCAVATIONS (IF OF PROPERTY QUALITY) OR FROM OFF SITE BORROW SOURCES. ALL FILL AND/OR BACKFILL MATERIAL SHALL BE FREE FROM VEGETATIVE MANNER, ORGANICS, FROZEN MATERIAL, ROCKS/STONES GREATER THAN ONE AND A HALF INCHES IN ANY DIMENSION, WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR OTHER DELETERIOUS MATERIALS. THE MATERIAL SHALL NOT CONTAIN MICA IN QUANTITIES, WHICH, IN THE JUDGEMENT OF THE ENGINEER ARE SUFFICIENT TO AFFECT COMPACTION CHARACTERISTICS AND SHALL BE A MINIMUM OF 85 POUNDS PER CUBIC FOOT FOR THE MAXIMUM DRY DENSITY ACCORDING TO AASHTO T-180, METHOD C
- . SELECT BORROW SELECT SHALL BE AS SPECIFIED IN SECTION 916 OF THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION'S (MDSHA) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, LATEST EDITION AND ANY ADDENDA THERETO. SELECT BORROW SHALL BE USED IN ALL AREAS OF STREAM FILL UNDERNEATH OF PROPOSED STRUCTURES AND WHERE DESIGNATED ON THE PLANS.
- SAND SAND IF APPROVED FOR USE BY THE COUNTY SHALL MEET AASHTO-M-6 OR ASTM-C-33. STANDARD, 0.02 INCHES TO 0.04 INCHES IN SIZE. SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE (AASHTO) #10 IS NOT ACCEPTABLE. NO CALCIUM CARBONATE OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO ROCK DUST BE BE SUBSTITUTED FOR SAND.
- 3. COMPOST COMPOST SHALL HAVE A PH BETWEEN 5.0 AND 7.0. IT SHALL BE STABLE AND NOT REHEAT UPON RESTACKING. COMPOST SHALL HAVE A MOISTURE CONTENT BETWEEN 30 AND 55 PERCENT, AND A PARTICLE SIZE OF 0.5 INCHES OR LESS. COMPOST SHALL BE SOURCE-SEPARATED COMPOST (TYPE B), APPROVED BY THE MARYLAND DEPARTMENT OF AGRICULTURE (MDA). COMPOST SHALL BE PRODUCED BY AN MDA CERTIFIED COMPOST OPERATOR AND HAVE A SOLUBLE SALT CONCENTRATION NOT TO EXCEED 5 DS (MMHOS/CM). THE SOURCE-SEPARATED COMPOST SHALL BE ONE OF THE FOLLOWING TYPES: TREE LEAF COMPOST
- B. NON-TREE LEAF COMPOST. WHEN COMPOST IS FROM LAWN CLIPPINGS, IT SHALL BE TESTED IN CONFORMANCE WITH COMAR 15.18.04.05.
- 3. MATERIALS FOR SALVAGED TOPSOIL SHALL MEET THE REQUIREMENTS OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT STABILIZATION AND TOPSOIL. INVASIVE SPECIES AND THE TOPSOIL THAT SUPPORTED THEIR GROWTH SHALL BE DISPOSED OF.
- 9. FOR ANCHOR STAKE AND SOIL STABILIZATION MATTING REQUIREMENTS. SHEET 29.

<u>SUBMITTALS</u>

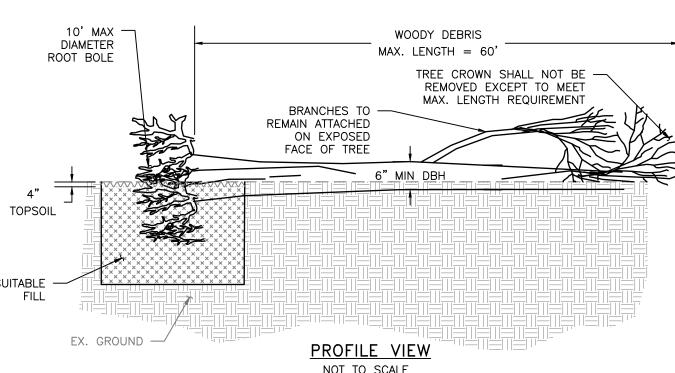
CONSTRUCTION

MATERIALS |

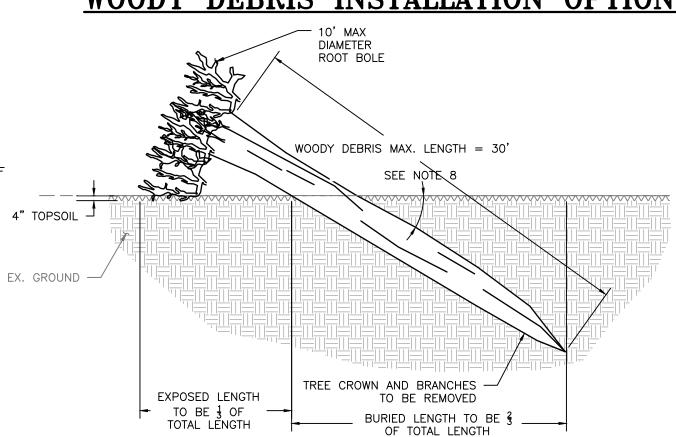
- 1. THE CONTRACTOR SHALL PROVIDE CERTIFICATIONS OF COMPLIANCE STATING THAT ALL ITEMS FURNISHED ARE IN ACCORDANCE WITH AND MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- . PRIOR TO THE START OF WORK ON THIS ITEM, THE CONTRACTOR SHALL SUBMIT THE SOURCE OF SUPPLY OF STONE TO THE COUNTY FOR REVIEW AND APPROVAL. IF REQUIRED BY THE COUNTY, THE CONTRACTOR AND THE COUNTY OR ITS REPRESENTATIVE WILL JOINTLY VISIT THE SOURCE SITES TO DETERMINE WHETHER THE STONE MEETS THE SPECIFIED REQUIREMENTS AND WHETHER THERE ARE SUFFICIENT QUANTITIES OF THE STONE TO MEET THE PROJECT REQUIREMENTS. THE CONTRACTOR WILL NOT BE GRANTED AN EXTENSION OF TIME OR EXTRA COMPENSATION DUE TO DELAY CAUSED BY SAMPLING, TESTING, APPROVAL OR DISAPPROVAL OF MATERIAL UNDER THE REQUIREMENTS OF THESE SPECIFICATIONS. THE CONTRACTOR SHALL SUBMIT TO THE COUNTY A CERTIFICATE VERIFYING THE FOLLOWING:
- A. STONE CLASSIFICATION B. STONE DENSITY (I.E., WEIGHT PER CUBIC FOOT)
- WEIGHT OF STONE BEING SUPPLIED.
- . STONE QUALITY SHALL MEET ALL OF THE ABOVE SPECIFICATIONS.
- 3. THE CONTRACTOR SHALL PROVIDE PHOTOGRAPHIC DOCUMENTATION OF ALL ROCK INCLUDING BOULDERS, SUBANGULAR COBBLE AND RIPRAP TO VERIFY COLOR REQUIREMENTS.
- 4. THE CONTRACTOR SHALL PROVIDE A CERTIFICATION FOR REVIEW AND APPROVAL THAT VERIFIES THE BANK RUN GRAVEL MEETS THE REQUIRED GRADATION. MATERIAL MAY NOT BE INSTALLED WITHOUT PRIOR
- 5. IF USED, THE CONTRACTOR SHALL OBTAIN A COMPOST SAMPLE AND SUBMIT THE SAMPLE AND CERTIFICATE WITH THE SOURCES AND SPECIFICATIONS OF THE COMPOST TO THE COUNTY FOR APPROVAL.
- 6. THE CONTRACTOR SHALL FURNISH SPECIFICATIONS AND A SOURCE OF SOIL STABILIZATION MATTING TO THE COUNTY FOR REVIEW AND APPROVAL
- 7. ANY UNAPPROVED MATERIAL BROUGHT TO THE PROJECT SITE THAT IS NOT APPROVED WILL BE REMOVED AND REPLACED AT NO EXPENSE TO THE COUNTY.
- . THE RIFFLE-WEIRS AND BOULDER CASCADES SHALL BE INSTALLED ACCORDING TO THE SEQUENCE OF CONSTRUCTION, THE CONSTRUCTION DRAWINGS, THESE SPECIFICATIONS, AND AS DIRECTED BY THE COUNTY.
- 2. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO CONSTRUCT, INSTALL, AND MAINTAIN THE RIFFLE-WEIRS AND BOULDER CASCADES AS SHOWN ON THE CONTRACT DRAWINGS AND DESCRIBED IN THESE SPECIFICATIONS OR AS DIRECTED BY THE COUNTY.
- 3. THE CONTRACTOR SHALL REVIEW THE DETAILS AND SPECIFICATIONS WITH THE ENGINEER PRIOR TO
- 4. THE CONTRACTOR SHALL STAKE OUT THE EXTENTS OF EACH STRUCTURE AND IF REQUIRED, REVIEW THE STAKEOUT WITH THE COUNTY PRIOR TO CONSTRUCTION. AT A MINIMUM, THE FIRST RIFFLE-WEIR OR BOULDER CASCADE STRUCTURE STAKEOUT MUST BE REVIEWED AND APPROVED BY THE COUNTY PRIOR TO
- . SUITABLE FILL SHALL BE USED FOR FILLING THE FACILITY BOTTOM TO ACHIEVE THE GRADE NECESSARY FOR THE INSTALLATION OF THE STRUCTURES. SUITABLE FILL SHALL BE PLACED IN LIFTS NO MORE THAN EIGHT (8) INCHES THICK AND COMPACTED. A 80% SAND/ 20% WOODCHIP CONSTRUCTION ACCESS ROAD IS TO BE INSTALLED IN A PORTION OF THE EXISTING CHANNEL UNDER RIFFLE-WEIRS AND BOULDER CASCADES. SAND SHALL REMAIN IN PLACE WITH SUITABLE FILL USED TO FILL REMAINDER OF FACILITY BOTTOM AS NEEDED.
- 6. ONE ROW OF WEDGE BOULDERS SHALL BE PLACED BEGINNING AT THE DOWNSTREAM INVERT OF THE RIFFLE-WEIR OR BOULDER CASCADE AS SHOWN ON THE CONSTRUCTION DRAWINGS. 6 INCHES OF BANK RUN GRAVEL FILTER SHALL BE PLACED UNDER THE BOULDERS. BOULDERS SHALL BE ARRANGED HORIZONTALLY IN THE CENTER OF THE CHANNEL AND THE ARMS ON EITHER SIDE OF THE CHANNEL SHALL BE EXTENDED PARABOLICALLY AT APPROXIMATELY A 12 DEGREE ANGLE LONGITUDINALLY TO THE CENTER OF THE POOL OR AS DIRECTED BY THE ENGINEER. THE BOULDERS SHALL BE ARRANGED TO MAXIMIZE INTERLOCKING. THE FACE OF THE BOULDERS SHALL BE TILTED DOWNSTREAM TO OCCUPY HALF OF THE INCLINE MADE UP OVER THE ENTIRE LENGTH OF THE RIFFLE-WEIR OR BOULDER CASCADE.
- . ONCE THE BOULDERS HAVE BEEN PLACED, FILL WITH RIFFLE-WEIR MIX TO FORM THE BACKSIDE OF THE RIFFLE-WEIR OR BOULDER CASCADE. CLASS III RIPRAP SHALL BE SPACED REGULARLY THROUGHOUT THE BACKSIDE OF THE RIFFLE-WEIR OR BOULDER CASCADE. A MINIMUM OF SIX (6) INCHES OF BANKRUN GRAVEL MATERIAL SHALL BE USED TO SEPARATE THE SUITABLE FILL OR EXISTING GRADE AND THE BACKSIDE OF THE RIFFLE-WEIR OR BOULDER CASCADE. SMALL RIFFLE-WEIR MIX APRONS SHALL BE PLACED FROM THE BOULDERS TO THE DOWNSTREAM POOL INVERT AS WELL AS FROM THE UPSTREAM RIFFLE-WEIR INVERT TO 4 FEET UPSTREAM OF THE RIFFLE-WEIR OR BOULDER CASCADE UPSTREAM INVERT. SMALL AND LARGE STONES SHALL BE MIXED TO MINIMIZE VOID SPACE.
- 3. RIFFLE—WEIR MIX SHOULD BE PLACED IN VERTICAL LIFTS OF NO MORE THAN TWELVE (12) INCHES THICK. STREAMBED MATERIAL SHALL BE WASHED INTO THE MIX AFTER EACH LAYER IS PLACED TO MINIMIZE VOID SPACE IN THE MIXTURE EXCEPT FOR THE TOP 4 INCHES WHICH DO NOT REQUIRE STREAMBED MATERIAL.

STONE SHALL BE PLACED IN A MANNER SO THAT IT SHINGLES IN A DOWNSTREAM DIRECTION, MINIMIZES VOID SPACE AND PROMOTES INTERLOCKING. DUMPING OF STONE WILL NOT BE PERMITTED. EACH LIFT SHALL BE COMPACTED BY TRACKING OVER WITH EQUIPMENT. CONTRACTOR SHALL TRACK OVER THE MIX MULTIPLE TIMES TO UNIFORMLY COMPACT. VOID SPACE MUST BE MINIMIZED TO THE SATISFACTION OF THE ENGINEER PRIOR TO ACCEPTANCE OF EACH CONSTRUCTED STRUCTURE. STRUCTURES OBSERVED LUMPING DUE TO INADEQUATE COMPACTION AT ANY POINT DURING CONSTRUCTION OR DURING THE WARRANTY PERIOD WILL BE REQUIRED TO BE REBUILT AT NO ADDITIONAL COST TO THE COUNTY.

- 9. OBSERVE DURING AND AFTER STORMS TO NOTE FLOW OVER WEIRS AND CASCADES AND ADDITIONAL SMALL ROCK AND STREAMBED MATERIAL IN STRATEGIC LOCATIONS TO FILL VOIDS INCLUDING ALONG THE SHOULDERS OF THE WEIRS AND CASCADES. WITHIN THE BASEFLOW PATH, THE TOP 4 INCHES OF THE COBBLE MIX DO NOT REQUIRE STREAMBED MATERIAL.
- 10. INSTALL WOODY DEBRIS IN POOLS AT THE COUNTY'S DIRECTION. WOODY DEBRIS SHALL BE INSTALLED WITH A MINIMUM 10 FEET LATERAL AND VERTICAL CLEARANCE FROM ALL UTILITIES.
- 11. ONCE THE RIFFLE-WEIR-POOL OR BOULDER-CASCADE-POOL COMBINATION IS COMPLETE, THE ENTIRE SURFACE SHALL BE STABILIZED. ANY DISTURBED AREA SHALL BE TEMPORARILY STABILIZED IN ACCORDANCE WITH CONTRACT DOCUMENTS AT THE END OF EACH WORKING DAY.
- 12. SURFACE ELEVATIONS OF THE STRUCTURES SHALL CONFORM TO THE PROPOSED DESIGN STORMWATER BMP PROFILES AND CROSS SECTIONS SPECIFIED IN THE CONTRACT DOCUMENTS. TOLERANCES OF THE FINISHED STRUCTURE ARE AS FOLLOWS:
- SURFACE ELEVATION: +/- 0.2 FEET +/- 0.1 PERCENT
- 13. PLACED MATERIAL NOT CONFORMING TO THE SPECIFIED LIMITS SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE COUNTY AT NO ADDITIONAL COST



WOODY DEBRIS INSTALLATION OPTION 1



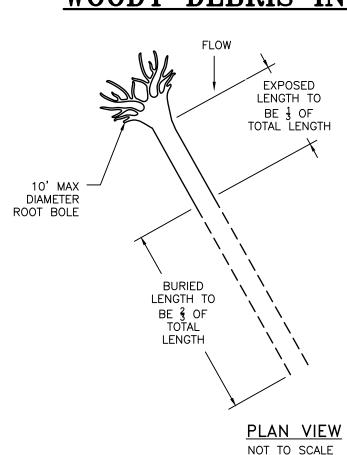
PROFILE VIEW

WOODY DEBRIS INSTALLATION OPTION 1 IS PREFERRED. WOODY

DEBRIS INSTALLATION OPTION 2 MAY BE USED IN WET AREAS.

WOODY DEBRIS DETAILS

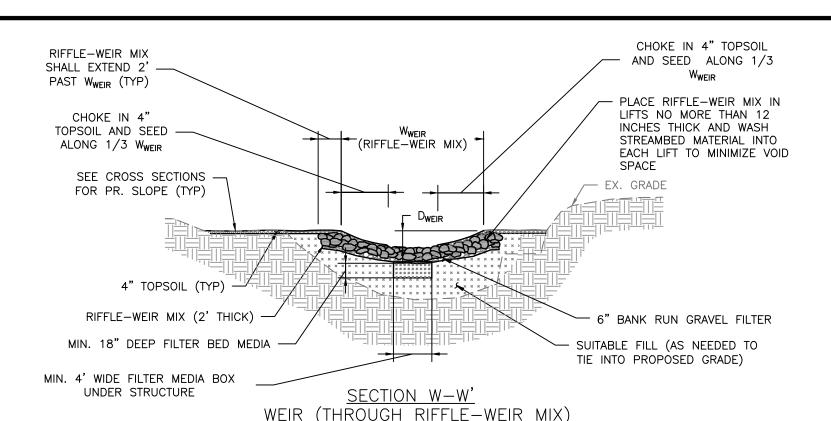
NOT TO SCALE WOODY DEBRIS INSTALLATION OPTION 2



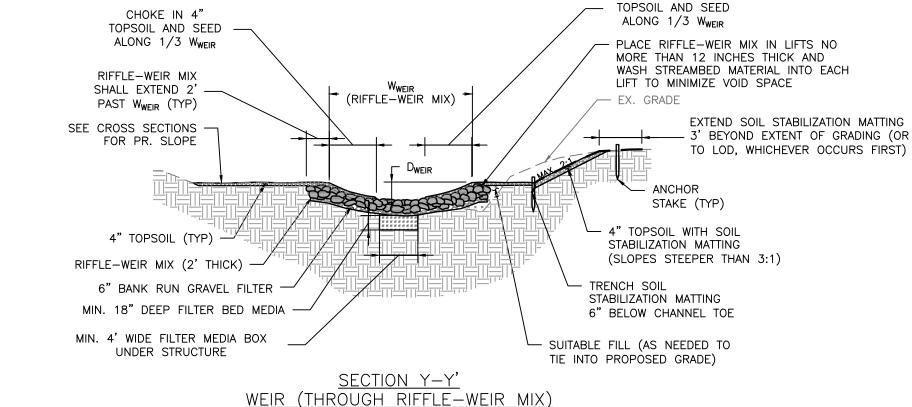
- WOODY DEBRIS NOTES: . EXISTING TREES TO BE REMOVED WITHIN THE LIMIT OF DISTURBANCE SHALL NOT BE DISPOSED OF OFFSITE WITHOUT PERMISSION FROM THE COUNTY.
- WOODY DEBRIS SHALL BE PLACED AT THE DIRECTION OF THE COUNTY IN THE FIELD. . WOODY DEBRIS SHALL BE PLACED A MINIMUM OF 10 FEET LATERAL AND VERTICAL CLEARANCE FROM ALL UTILITIES.
- BE PRUNED FROM PORTION OF TREE TO BE BURIED BELOW TIMBER FOR USE IN PROPOSED WOODY DEBRIS STRUCTURE SHALL BE HARVESTED ON SITE. NO INVASIVE SPECIES SHALL

4. IF REQUIRED BY THE ENGINEER/COUNTY, BRANCHES SHALL

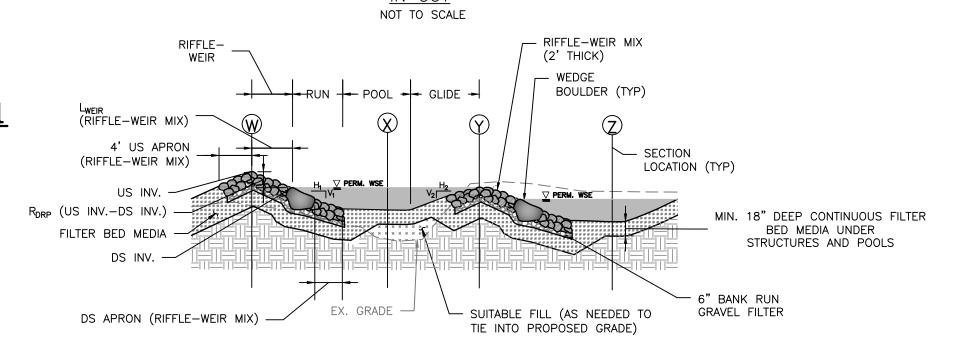
- 6. WOODY DEBRIS SHALL ALWAYS BE ORIENTED WITH THE ROOT BOLE UPSTREAM. ANGLE OF INSTALLATION MAY RANGE FROM 30 DEGREES TO
- VERTICAL (90 DEGREES) AS DIRECTED BY THE COUNTY. WOODY DEBRIS INSTALLATION OPTION 1 IS PREFERRED. WOODY DEBRIS INSTALLATION OPTION 2 MAY BE USED IN SOFT/WET AREAS.



IN FILL NOT TO SCALE



CHOKE IN 4"



PROFILE VIEW (SHOWN AT THALWEG)

NOT TO SCALE

EX. GRADE

PR. 4" TOPSOIL

FOOTER ROCK

PR. SUITABLE FILL

UNDISTURBED EARTH -

1' MIN OF GABION STONE

NON-WOVEN GEOTEXTILE FABRIC ACF

NO80 OR APPROVED EQUIVALENT

EXTEND FABRIC 12" MIN BELOW

- EX. TOP OF SLOPE

4" TOPSOIL (TYP) SEE PLAN VIEW GRADING FOR POOL SIDE SLOPES AND WOODY DEBRIS (TYP) DEPTH. POOL SIDE SLOPES SHALL NOT BE GRADED STEEPER THAN 3:1 MIN. 18" DEEP FILTER BED MEDIA MIN. 4' WIDE FILTER MEDIA BOX SECTION Z UNDER STRUCTURE THROUGH POOL IN CUT NOT TO SCALE RIFFLE-WEIR MIX -APPLY 4" TOPSOIL AND STAKEOUT POINT A (SEE STRUCTURE TABLE SHEET 20) SEED ALONG 1/3 Wweir STAKEOUT POINT B (SEE STRUCTURE TABLE SHEET 20) STAKEOUT POINT C (SEE STRUCTURE TABLE SHEET RIFFLE-WEIR CROSS SECTION VIEWS WERE C/L SAMPLED THROUGH TOP OF BANK (TYP) (FOR CROSS SECTION VIEWS SEE THIS SHEET) RIFFLE-WEIR APPLY 4" TOPSOIL AND SEED ALONG _(RIFFLE-WEIR 1/3 W_{WEIR} DESIGN SECTION LOCATION: RIFFLE WEIR SHALL MEET DESIGN WIDTH DIMENSION FROM DATA TABLE (DWG DE-03/SHEET 5) AT MIDPOINT (MIDDLE OF LWEIR) ALONG RIFFLE-WEIR WEIR WIDTH MAY TAPER BY UP TO 10% STAKEOUT POINT F (SEE STRUCTURE TABLE SHEET WIDER UPSTREAM AND 10% NARROWER DOWNSTREAM WEDGE BOULDER (TYP) STAKEOUT POINT D (SEE STRUCTURE TABLE SHEET 20 STAKEOUT POINT E (SEE STRUCTURE TABLE SHEET 20) PLACE RIFFLE-WEIR MIX BETWEEN BOULDERS. TAPER TO POOL BOTTOM - DEEPEST POINT IN POOL STAKEOUT POINT A PROPOSED STRUCTURE STAKEOUT LOCATION (TYP) FOR RIFFLE WEIR DATA TABLES, SEE SHEET 20. CONCRETE SAND MAY BE SUBSTITUTED

THROUGH POOL IN FILL

NOT TO SCALE

EX. GRADE

WOODY DEBRIS (TYP)

SUITABLE FILL (AS

PROPOSED GRADE)

NEEDED TO TIE INTO

RIFFLE-WEIR DETAILS

PERMANENT STABILIZATION FOR DISTURBED FLOODPLAIN/TERRACE ADJACENT TO THE RESTORED STREAM CHANNEL WILL CONSIST OF PLACING A MINIMUM OF 2 INCHES OF COMPOST ALONG REACH 1 IN ACCORDANCE WITH THESE DETAILS. BIODEGRADABLE SOIL STABILIZATION MATTING WITH 4 INCHES OF TOPSOIL SHALL BE USED WHERE SLOPES ARE GREATER THAN 3:1 AND AT THE DIRECTION OF THE COUNTY

FOR SUITABLE FILL WITH WRITTEN APPROVAL FROM THE COUNTY.

IMBRICATED BOULDER OUTCROP SIZE TABLE

4" TOPSOIL (TYP)

SEE PLAN VIEW GRADING FOR

DEPTH. POOL SIDE SLOPES

POOL SIDE SLOPES AND

SHALL NOT BE GRADED

MIN. 4' WIDE FILTER MEDIA BOX

UNDER STRUCTURE

STEEPER THAN 3:1

MIN. 18" DEEP FILTER BED MEDIA

ROCK TYPE	SIZE	% BY WEIGHT	MINIMUM DENSITY (LB/CF)	
	GREATER THAN 2' X 2' X 3'	10		
IMBRICATED ROCK & FOOTERS	1.5' X 2' X 3' TO 2' X 2' X 3'	80	160	
	LESS THAN 1.5' X 2' X 3'	10		
GABION STONE	4" - 7"	100	150	

IMBRICATED BOULDER OUTCROP WALL NOTES

- 1. ALL MATERIALS SHALL BE UNDERLAIN BY ACF NO80 NON-WOVEN POLYPROPYLENE GEOTEXTILE FABRIC OR EQUAL.
- 2. WHEN BACKFILLING, ALL MATERIAL SHALL BE COMPACTED FIRMLY IN ALL VOIDS TO SECURE STONE. ALL SOIL SHALL BE COMPACTED TO MD-378 STANDARDS.
- 3. IMBRICATED ROCK WALL SHALL BE CONSTRUCTED SUCH THAT ALL ROCKS SECURELY INTERLOCK AND SHALL NOT ROCK OR ROTATE IN PLACE. ALL ROCKS

EXCEPT BOTTOM FOOTER ROCKS SHALL BE SUPPORTED BY A FOOTER ROCK.

- 4. IMBRICATED ROCK SHALL BE OBLONG AND FLAT IN APPEARANCE WITH TWO PARALLEL FACES, AND SHALL BE STACKABLE.
- 5. ALL ROCK SHALL BE SANDSTONE THAT IS RED, TAN, BROWN, OR PURPLE IN COLOR. ROCKS NOT MEETING SPECIFICATIONS SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER.
- 6. PROPOSED RIPRAP TOE PROTECTION SHALL EXTEND TO EXISTING GROUTED RIPRAP TOE PROTECTION. PROPOSED RIPRAP TOE PROTECTION SHALL EXTEND 3' FROM THE IMBRICATED ROCK WALL WHERE NO EXISTING GROUTED RIPRAP TOE PROTECTION IS PRESENT.

IMBRICATED BOULDER OUTCROP **DATA TABLE**

WALL DIMENSIONS:	
WALL HEIGHT (FEET)	8.0
1/3 X WALL HEIGHT (FEET)	2.67
LONGEST AXIS LENGTH (FEET)	3.0
	•
100-YR STORM HYDRAULICS:	
VELOCITY (FEET PER SECOND)	8.80
MAX SHEAR STRESS (POUNDS PER SQUARE FOOT)	2.35
FACTOR OF SAFETY	1.5
DESIGN VELOCITY (FEET PER SECOND)	13.2
DESIGN SHEAR STRESS (POUNDS PER SQUARE FOOT)	3.5
MIN STONE SIDE LENGTH (FEET)	1.5

PROFESSIONAL CERTIFICATION

--| 12" -

FOOTER ROCKS 2' MIN.

DEPTH FROM TOP OF

TOE PROTECTION

IMBRICATED BOULDER OUTCROP DETAIL

SCALE: NOT TO SCALE

- IMBRICATED ROCK

AS SPECIFIED ON SHEET 16

-PR. BOTTOM OF BANK

EX. GROUTED RIPRAP

- PR. CL I RIPRAP TOE

NECESSARY

PROTECTION ADDED AS

CUT FABRIC 2" BELOW

FINISHED GRADE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 21194, EXPIRATION DATE: 04/20/2026.

60% DESIGN

Bay and Consultants	& Designers, Inc.
"Integrating Engineering o	and Environment"
7455 New Ridge Road, Suite T	Phone: (410) 694-9401
Hanover, Maryland 21076	Fax: (410) 694-9405

www.baylandinc.com

BAYLAND JOB NO. 5_20002

					ANNE ARUN	DEL	COUN	1TY	
	REVISE		APPROVED	DATE	APPROVED	DATE	SCALE:	AS SHOWN	
	DATE	BY	-				DESIGNED BY:DG	G/DP/JH 9/10/24	HISTORIC LONDON TOWN AND
							DRAWN BY: DG	G/DP/JH9/10/24	
			CHIEF ENGINEER		PROJECT MANAGER		CHECKED BY:AJ	/MB/SB 9/10/24	GARDEN SHE IMPROVEMENTS
ŀ			APPROVED	DATE	APPROVED	DATE	SHEET NO.	19 OF 29	
			4				PROJECT NO.	P468700	SPSC DETAILS
			ASSISTANT CHIFF FNGINFFR		CHIFF. RIGHT OF WAY		PROPOSAL NO.	P468717	

RIFFLE-WEIR DATA TABLE

	ALL WEIRS
RIFFLE LENGTH (LWEIR, FEET)	10
DROP ACROSS RIFFLE (RDRP, FEET)	1
RIFFLE WIDTH (WWEIR, FEET)	15
RIFFLE DEPTH (DWEIR, FEET)	1
RUN SLOPE (H1: V1, FEET/FEET)	3:1
GLIDE SLOPE (H2: V2, FEET/FEET)	3:1
RIFFLE WIDTH TO DEPTH RATIO (WWEIR: DWEIR, FEET/FEET)	15.0

CROSS-SECTIONAL DIMENSIONS AND LONGITUDINAL SPACING OF FEATURES VARY. SEE CROSS-SECTIONS AND PROFILES FOR DIMENSIONS OF EACH INDIVIDUAL STRUCTURE. STRUCTURES SHALL BE CONSTRUCTED PER THE PROFILE AND CROSS-SECTIONS.

RIFFLE-WEIR STRUCTURE TABLE

2. GLIDE SLOPE SHALL BE NO STEEPER THAN 3:1.

STRUCTURE ID	POINT ID	STATION	OFFSET	NORTHING	EASTING	ELEVATION
	А	0+68.62	-0.001'	464,605.4749	1,443,147.9930	19.0
	В	0+67.37	4.976'	464,604.4898	1,443,152.9479	20.0
DW 04	С	0+69.77	-4.816'	464,607.5634	1,443,143.4319	20.0
RW-01	D	0+73.64	-0.138'	464,610.2275 1,443,149.5		18.0
	E	0+75.67	2.997'	464,609.4891	1,443,153.0299	19.0
	F	0+73.15	-3.652'	464,611.6661	1,443,146.2899	19.0
	Α	1+49.99	-0.000'	464,662.2960	1,443,199.6731	12.0
	В	1+49.00	4.955'	464,657.2480	1,443,199.4749	13.0
DW 00	С	1+50.87	-4.924'	464,667.1276	1,443,201.0223	13.0
RW-02	D	1+55.00	0.000'	464,661.5424	1,443,204.6160	11.0
	E	1+55.78	3.478'	464,657.9490	1,443,204.4255	12.0
	F	1+55.06	-3.522'	464,664.9465	1,443,205.5215	12.0
	Α	1+67.54	0.000'	464,665.6303	1,443,215.8076	11.0
	В	1+68.28	4.833'	464,661.9979	1,443,219.0990	12.0
D.W. 67	С	1+67.86	-5.139'	464,670.1374	1,443,213.3245	12.0
RW-03	D	1+72.53	0.162'	464,668.6169	1,443,219.8189	10.0
	E	1+72.31	3.714'	464,665.9425	1,443,222.1694	11.0
	F	1+73.71	-3.230'	464,671.7173	1,443,218.0683	11.0
	Α	1+81.75	-1.026'	464,676.8496	1,443,223.4917	10.0
	В	1+81.90	4.005'	464,675.4378	1,443,228.3238	11.0
	С	1+83.13	-5.930'	464,679.3393	1,443,219.1163	11.0
RW-04	D	1+86.78	0.004'	464,681.4533	1,443,225.4424	9.0
	E	1+86.11	3.478'	464,680.4104	1,443,228.8467	10.0
	F	1+88.25	-3.117'	464,683.1737	1,443,222.3251	10.0
	Α	1+95.30	0.041'	464,688.9132	1,443,228.7088	9.0
	В	1+93.01	4.847'	464,684.4198	1,443,230.9786	10.0
	С	1+96.65	-4.705'	464,693.8094	1,443,227.5384	10.0
RW-05	D	2+00.42	0.102'	464,690.6333	1,443,233.4037	8.0
	E	2+02.62	3.215'	464,687.4346	1,443,234.9674	9.0
	F	1+99.95	-3.416'	464,694.0851	1,443,232.5308	9.0

NOTES: 1. THE LEFT SIDE OF THE SPSC CENTERLINE LOOKING DOWNSTREAM IS REPRESENTED BY NEGATIVE OFFSET VALUES.

BOULDER CASCADE DATA TABLE

	BC-01	BC-02	BC-03
CASCADE LENGTH (LCASCADE, FEET)NOTE 2	6.0	6.0	13.0
CASCADE WIDTH (WCASCADE, FEET)NOTE 2	17.0	17.0	15.4
DROP ACROSS CASCADE (CDRP, FEET)NOTE 2	3.0	3.0	6.0
RUN SLOPE (H1: V1, FEET/FEET)	3:1	3: 1	3:1
GLIDE SLOPE (H2: V2, FEET/FEET)	3:1	3: 1	16:1
POOL LENGTH (LPOOL, FEET)	28.0	18.0	N/A
POOL DEPTH (DPOOL, FEET)NOTE 1	2.0	2.0	N/A

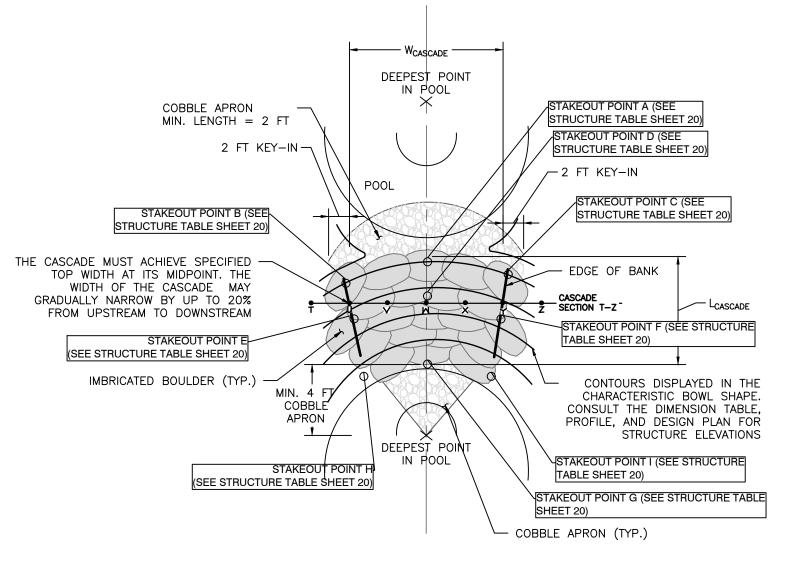
CASCADE LENGTH AND DEPTH REFER TO THE HORIZONTAL AND VERTICAL DISTANCE FROM THE START OF THE CASCADE TO THE PERMANENT WATER SURFACE ELEVATION. CROSS-SECTIONAL DIMENSIONS AND LONGITUDINAL SPACING OF FEATURES VARY. SEE CROSS-SECTIONS AND PROFILES

FOR DIMENSIONS OF EACH INDIVIDUAL STRUCTURE. STRUCTURES SHALL BE CONSTRUCTED PER THE PROFILE AND

GLIDE SLOPE SHALL BE NO STEEPER THAN 3:1. 4. CASCADE SLOPE SHALL BE NO STEEPER THAN 3:1.

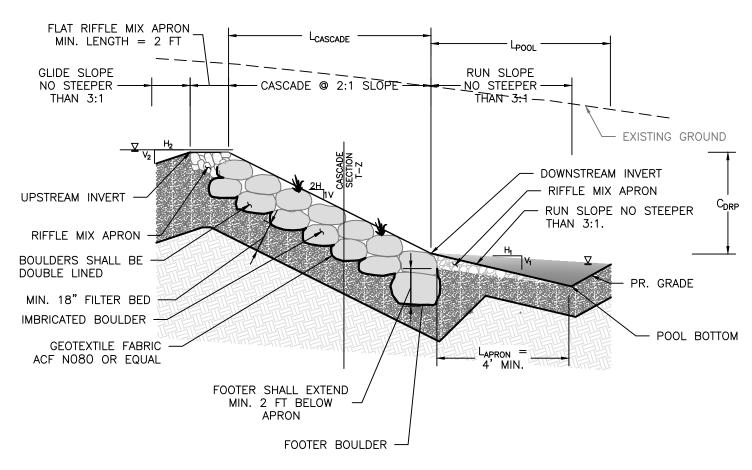
CASCADE STRUCTURE TABLE

STRUCTURE	POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
SINOCIONE	ID	STATION	OITSLI	NONTHING	LASTING	LLLVATION
	Α	0+91.84	-0.409'	464,626.0756	1,443,156.9065	18.0
	В	0+89.96	7.690'	464,621.6784	1,443,163.9059	19.0
	С	0+95.50	-8.225'	464,633.1561	1,443,151.6248	19.0
	D	0+94.80	0.269'	464,628.4797	1,443,158.7591	16.5
BC-01	E	0+93.89	7.685'	464,624.4566	1,443,165.0379	17.5
	F	0+97.54	-6.564'	464,634.4732	1,443,154.3202	17.5
	G	0+97.78	0.835'	464,630.7360	1,443,160.7114	15.0
	Н	0+97.76	7.320'	464,627.2348	1,443,166.1700	16.0
	1	0+99.74	-5.069'	464,635.7904	1,443,157.0156	16.0
	Α	1+25.67	-0.269'	464,650.2763	1,443,180.0940	15.0
	В	1+29.17	8.044'	464,644.6945	1,443,186.5658	16.0
	С	1+26.83	-8.676'	464,657.7991	1,443,176.0382	16.0
	D	1+28.53	-0.469'	464,652.1238	1,443,182.3937	13.5
BC-02	E	1+30.29	6.539'	464,647.2839	1,443,188.0808	14.5
	F	1+33.85	-7.775'	464,658.7203	1,443,178.8933	14.5
	G	1+31.95	-0.559'	464,654.0339	1,443,184.7714	12.0
	Н	1+31.44	5.769'	464,649.8732	1,443,189.5957	13.0
	1	1+35.15	-5.682'	464,659.6416	1,443,181.7483	13.0
	Α	2+23.67	-0.551'	464,692.7802	1,443,253.8142	8.0
	В	2+25.34	6.967'	464,691.7293	1,443,261.4645	9.0
	С	2+14.42	-7.157'	464,695.6902	1,443,246.6613	9.0
	D	2+30.20	-0.815'	464,698.9827	1,443,255.6273	5.3
BC-03	E	2+30.95	5.138'	464,698.1884	1,443,261.5781	6.3
	F	2+30.98	-6.769'	464,701.2267	1,443,250.0649	6.3
	G	2+36.76	-0.335'	464,705.2206	1,443,257.4554	2.0
	Н	2+36.83	3.939'	464,704.6472	1,443,261.6917	3.0
	1	2+38.01	-4.470'	464,706.7632	1,443,253.4685	3.0



PLANVIEW (BC-01 & BC-02)

SCALE: NTS



PLANVIEW (BC-03)

- W_{CASCADE} -DEEPEST POINT

IN POOL

STAKEOUT POINT A (SEE

STRUCTURE TABLE SHEET 20

STRUCTURE TABLE SHEET 20

STRUCTURE TABLE SHEET 2

STAKEOUT POINT F (SEE STRUCTURE

CONTOURS DISPLAYED IN THE

STRUCTURE ELEVATIONS

CHARACTERISTIC BOWL SHAPE.

CONSULT THE DIMENSION TABLE,

PROFILE, AND DESIGN PLAN FOR

STAKEOUT POINT I (SEE STRUCTURE

STAKEOUT POINT G (SEE STRUCTURE TABLE

STAKEOUT POINT D (SEE

__ 2 FT KEY-IN

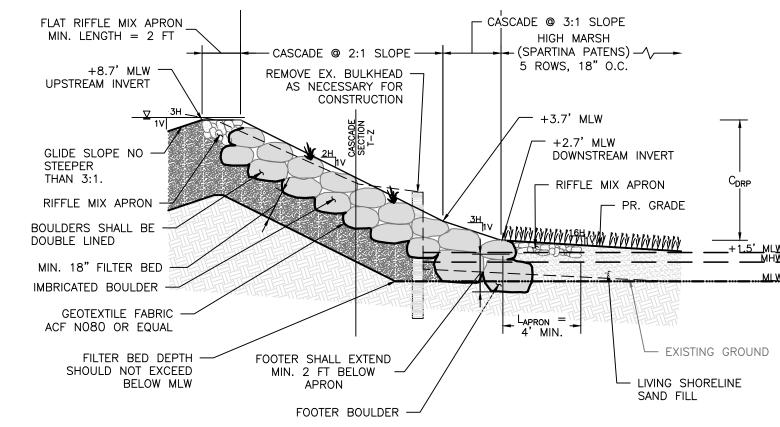
- EDGE OF BANK

TABLE SHEET 20)

TABLE SHEET 20)

— COBBLE APRON (TYP.)

SCALE: NTS



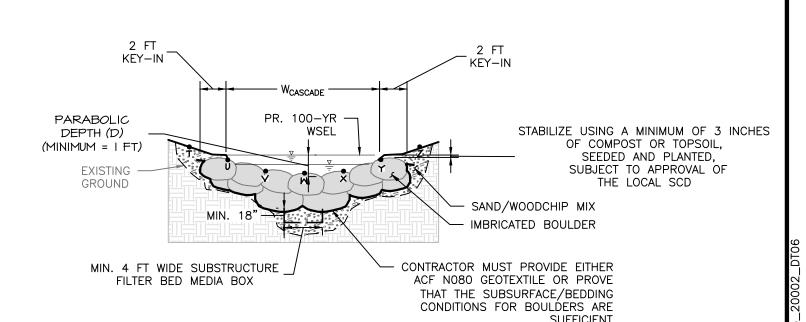
PROFILE VIEW (BC-03)

PROFILE VIEW (BC-01 & BC-02)

RIFFLE-WEIR ROCK SIZE TABLE

STRUCTURE ID	ROCK TYPE	ROCK SIZE	% MIX BY PART
	RIFFLE-WEIR MIX #1	COBBLE (RANGE=4" TO 9"; D/50=6.0"; D/100=9.5")	75
LONDON TOWN RIFFLE WEIRS &	THE LE WEIN MIX #	2" GRAVEL	15
BOULDER CASCADES		GREATER THAN 6'X2'X2'	10
	WEDGE BOULDERS	3'X2'X1.25' TO 6'X2'X2'	80
		LESS THAN 3'X2'X1.25'	10

THE PERCENT OF MIX SHOWN FOR BOULDERS REFERS TO THE MAXIMUM ALLOWABLE ROCK SIZE DISTRIBUTION. THE MINIMUM DRY UNIT WEIGHT FOR ALL STONE SHALL BE 160 LB/CF. CLASS III RIPRAP MAY BE USED IN PLACE OF BOULDERS WITH COUNTY AND ENGINEER APPROVAL. 4. GRANITE BOULDERS CAN BE SUBSTITUTED FOR SANDSTONE BOULDERS IF APPROVED BY THE COUNTY AND ENGINEER. GRANITE BOULDERS MUST MEET THE BOULDER SIZING REQUIREMENTS IN THE COBBLE-SANDSTONE STEP ROCK SIZE TABLE AND MUST HAVE A MINIMUM DRY UNIT WEIGHT OF 145 LB/CF. 5. CLASS 0 AND I RIPRAP CAN BE SUBSTITUTED FOR SUBANGULAR SILICA STONE IF APPROVED BY THE COUNTY AND ENGINEER. RIPRAP MUST MEET THE SILICA STONE SIZING REQUIREMENTS IN THE RIFFLE-WEIR ROCK SIZE



BOULDER CASCADE TYPICAL CROSS SECTION T-Z

CONCRETE SAND MAY BE SUBSTITUTED FOR SUITABLE FILL WITH WRITTEN APPROVAL FROM THE COUNTY.

STRUCTURE STAKEOUT LOCATION (TYP.) SEE STRUCTURE TABLE THIS SHEFT

2 FT KEY-IN-

STAKEOUT POINT B (SEE-

STRUCTURE TABLE SHEET 20)

THE CASCADE MUST ACHIEVE

SPECIFIED TOP WIDTH AT ITS

MIDPOINT. THE WIDTH OF THE

(SEE STRUCTURE TABLE SHEET 20)

CASCADE MAY GRADUALLY NARROW

BY UP TO 20% FROM UPSTREAM TO

IMBRICATED BOULDER (TYP.)

COBBLE APRON

DOWNSTREAM

MIN. 4 F7

COBBLE APRON

(SEE STRUCTURE TABLE SHEET 20)

STAKEOUT POINT H

STAKEOUT POINT E

MIN. LENGTH = 2 FT

REFER TO CASCADE SPECIFICATIONS, AND ROCK SIZE TABLE ON SHEET 19

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. 21194, EXPIRATION DATE: 04/20/2026.

60% DESIGN



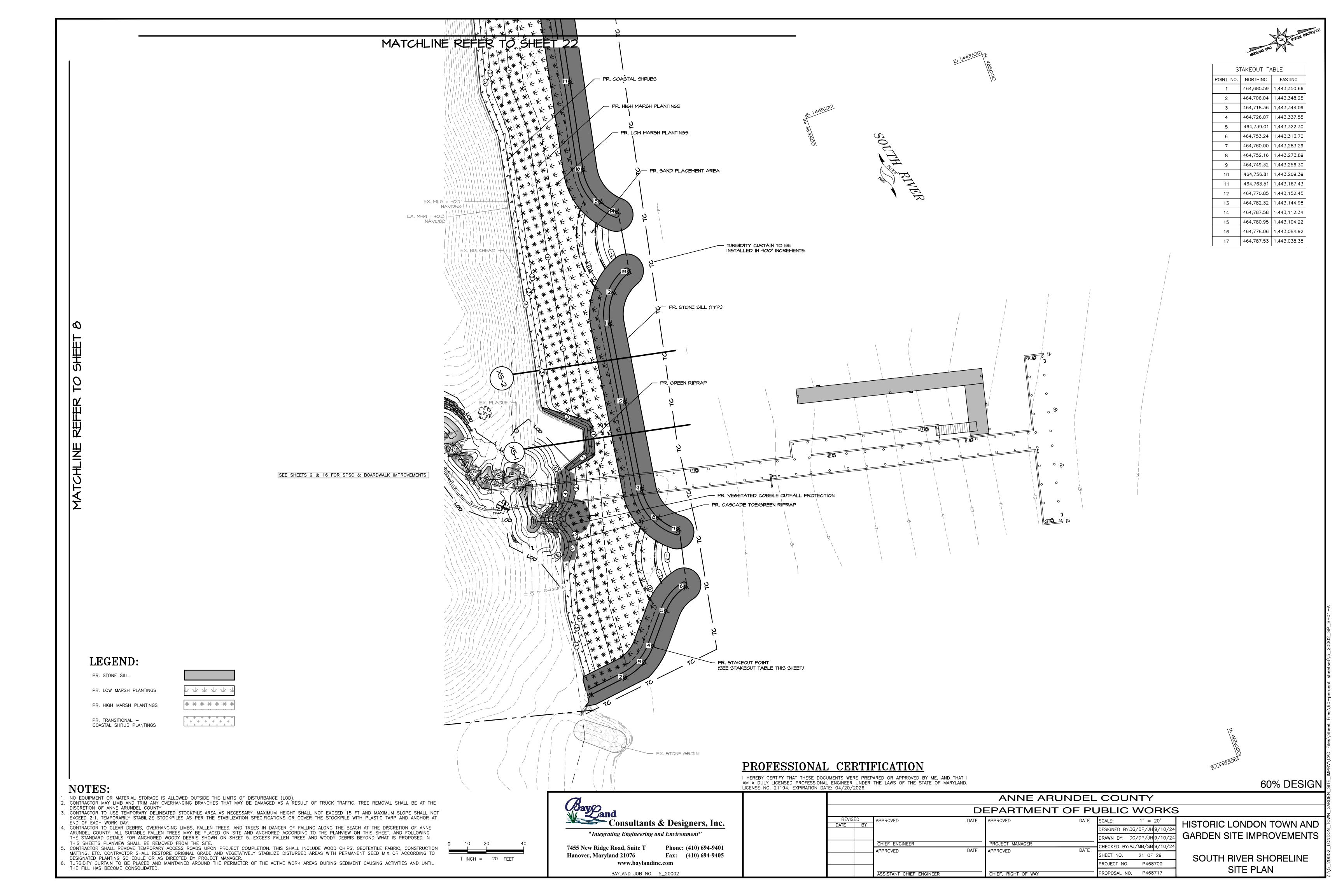
Phone: (410) 694-9401 7455 New Ridge Road, Suite T Hanover, Maryland 21076 Fax: (410) 694-9405 www.baylandinc.com

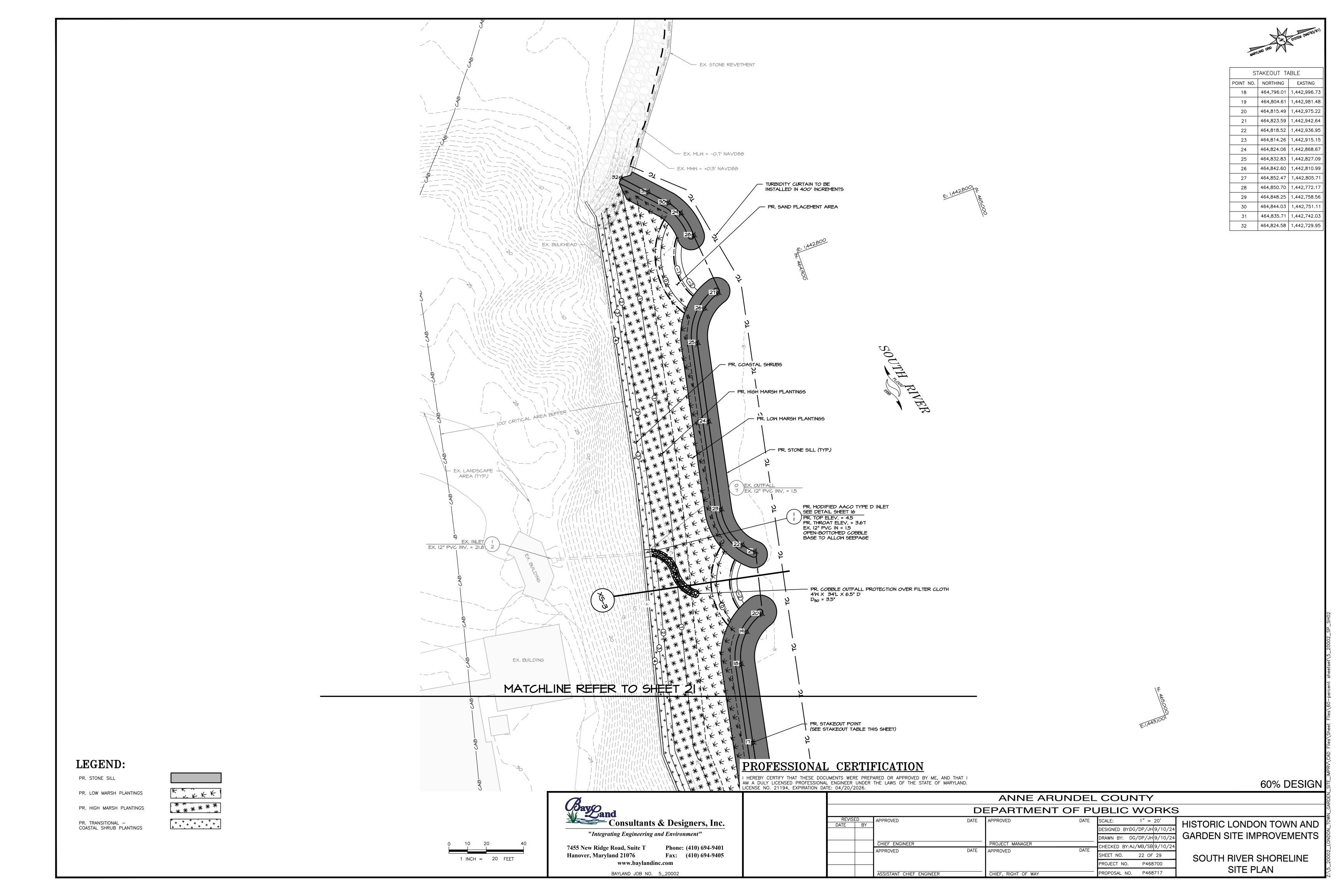
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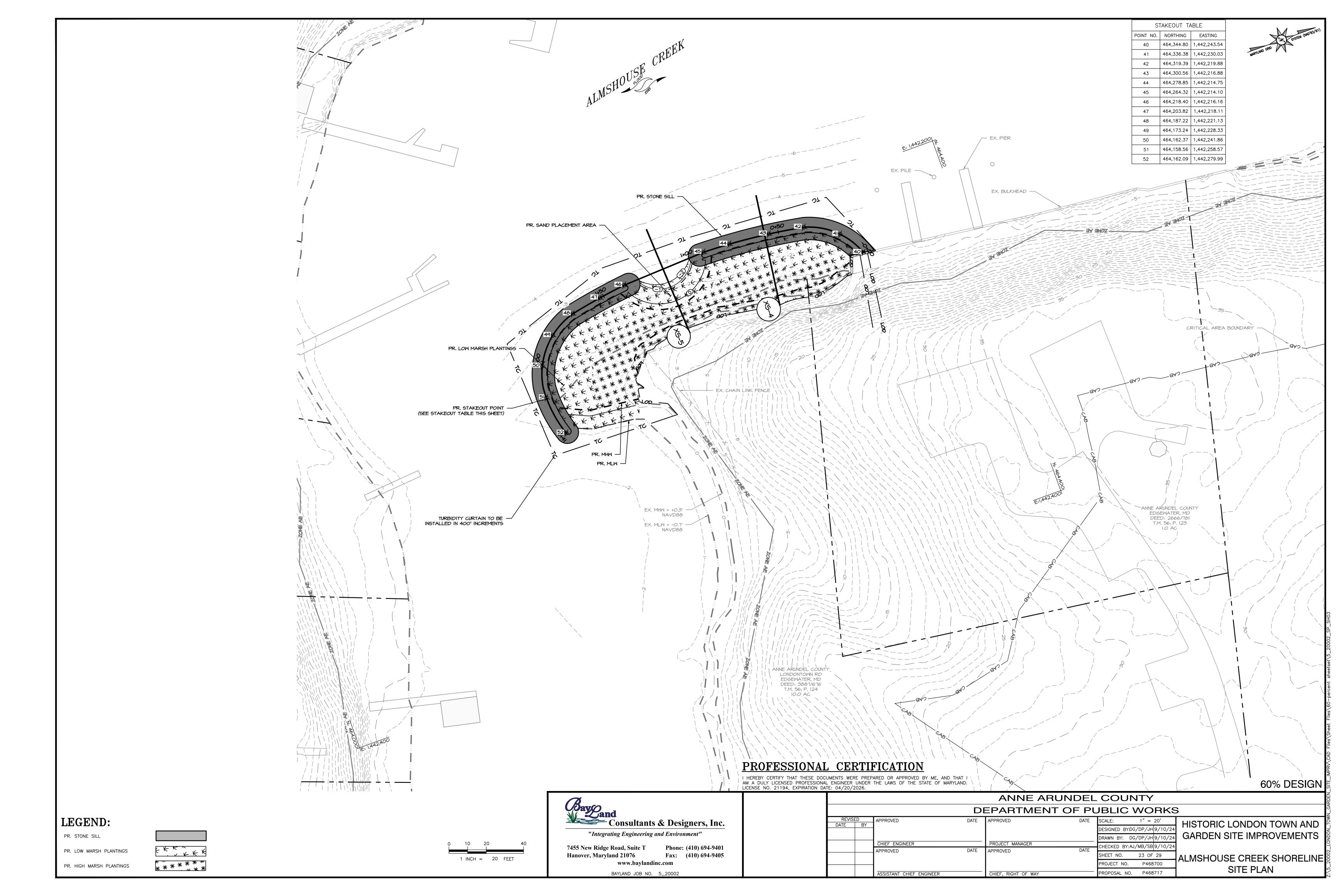
				ANNE ARI	JNDEL		VTY	
			D	EPARTMENT	OF PU	JBLIC	WORKS	3
REVISE DATE	ED BY	APPROVED	DATE	APPROVED	DATE	SCALE:	AS SHOWN	HI
							G/DP/JH 9/10/24 G/DP/JH 9/10/24	
		CHIEF ENGINEER APPROVED	DATE	PROJECT MANAGER APPROVED	DATE	CHECKED BY:A	J/MB/SB 9/10/24	
						SHEET NO. PROJECT NO.	20 OF 29 P468700	
		ASSISTANT CHIEF ENGINEER		CHIEF, RIGHT OF WAY		PROPOSAL NO.	P468717	

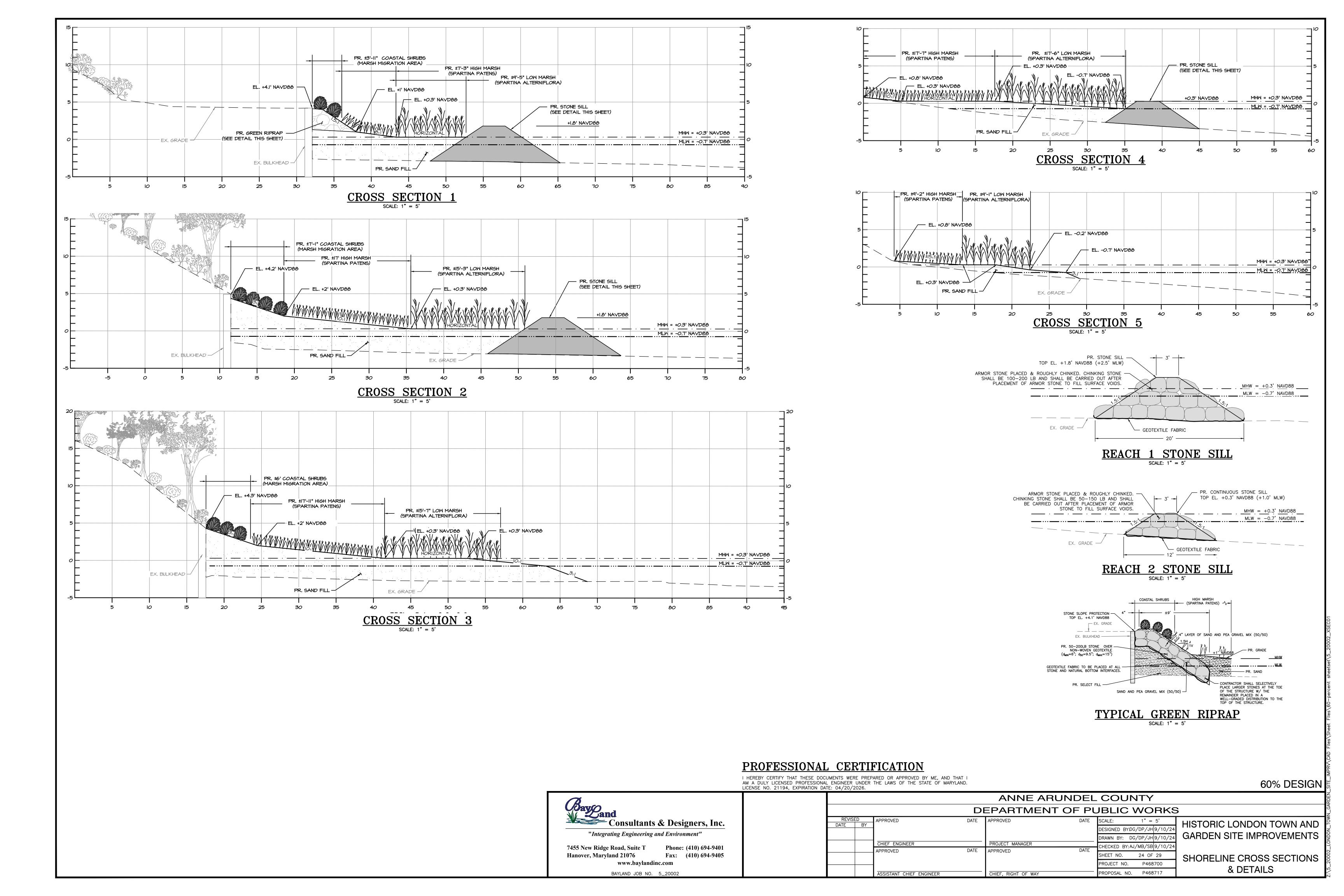
HISTORIC LONDON TOWN AND GARDEN SITE IMPROVEMENTS

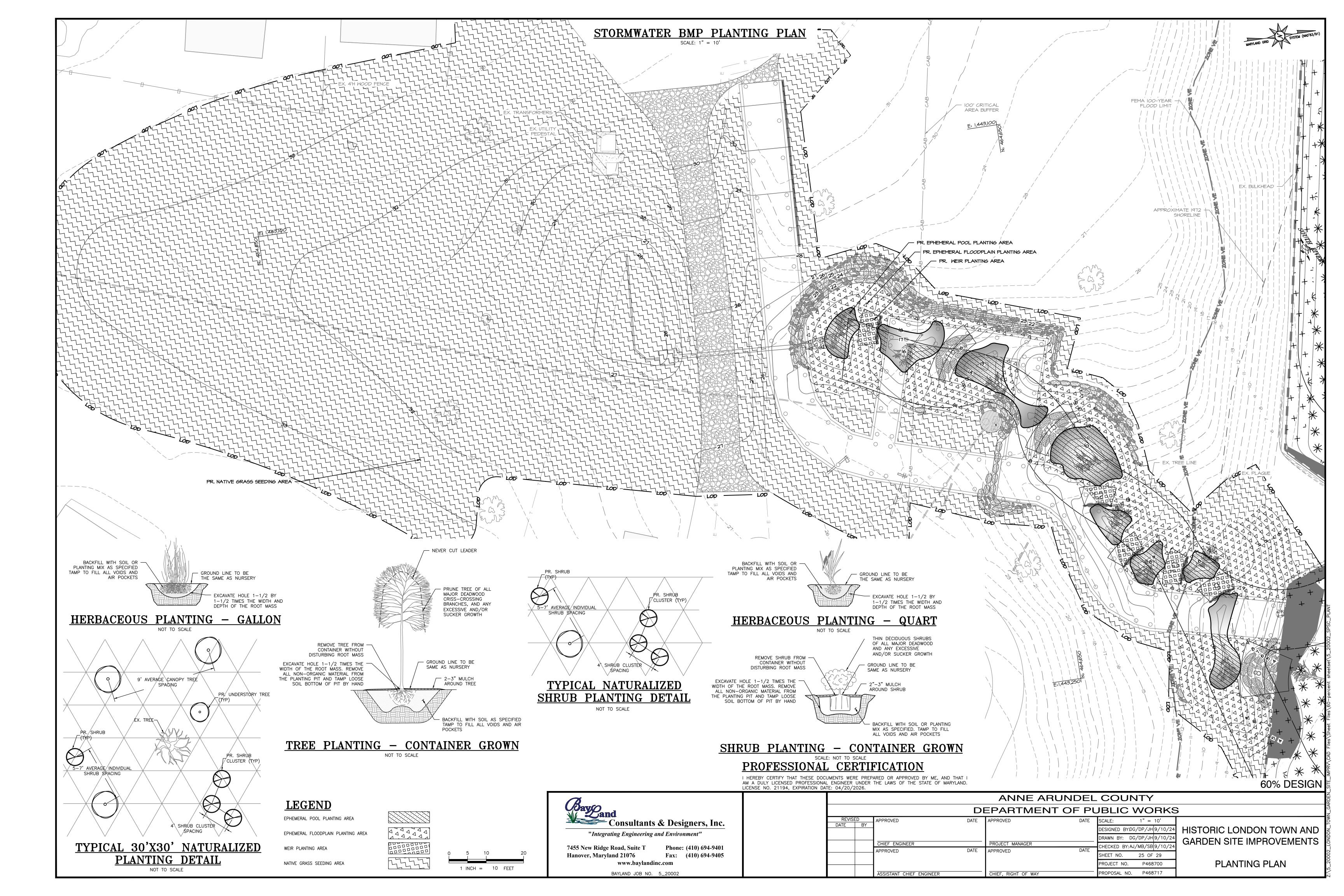
> SPSC DATA TABLES & CASCADE DETAILS











Planting Zone	Total Area (SF)	Common Name	Scientific Name	Wetland Indicator	Туре	Size	Distribution	Avg Spacing (ft)	Quantity	Credit Area (SF per plant)	Total Credit Area (SF)	Description
		Blueflag Iris	Iris versicolor	OBL	Herbaceous	Gal	Random	4	15	8	120	Within shallow ephemerally flooded areas
Ephemeral Pools	938	New York Fern	Thelypteris noveboracensis	OBL	Herbaceous	Gal	Random	4	15	8	120	
Lphemeral roots	930	Swamp Milkweed	Asclepias incarnata	OBL	Herbaceous	Gal	Randon	4	15	8	120	
		Tussock Sedge	Carex stricta	OBL	Herbaceous	Gal	Random	4	15	8	120	
		Pagoda Dogwood	Cornus alternifolia	FACW	Large Shrub	Gal, 4'	Random	5	16	50	800	
E.h		Smooth Alder	Alnus serrulata	FACW, FAC	Understory tree	3/4" calip., 6'	Random	8	7	75	525	Within 2 feet of elevation of ephemerally flooded areas
Ephemeral Floodplain	1,977	Waxmyrtle	Morella cerifera	FACW	Understory tree	3/4" calip., 6'	Random	8	7	75	525	
		American Holly	Ilex opaca	FACW	Canopy tree	3/4" calip., 6'	Random	14	3	100	300	
		Black Gum	Nyssa sylvatica	FACW	Canopy tree	3/4" calip., 6'	Random	14	3	100	300	
		Butterfly Weed	Asclepias tuberosa	FACU	Herbaceous	Gal	Random	4	9	8	72	
Moine	FF4	Catchfly	Silene armeria	OBL	Herbaceous	Gal	Random	4	9	8	72	\\\(\frac{1}{2} \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Weirs	551	Catmint	Nepeta	-	Herbaceous	Gal	Random	4	9	8	72	Within weirs
		Blazing Star	Liatris spicata	FACW	Herbaceous	Gal	Random	4	9	8	72	
		Dwarf Huckleberry	Gaylussacia dumosa		Small Shrub	Gal, 18"	Random	5	79	25	1,975	Upland forest and
		Black Huckleberry	Gaylussacia baccata		Small Shrub	Gal, 18"	Random	5	79	25	1,975	
		Mountain Laurel	Kalmia latifolia		Understory tree	Gal, 18"	Random	8	31	75	2,325	
		Winterberry	Ilex verticillata		Understory tree	Gal, 18"	Random	8	31	75	2,325	
Upland Forestation	17,650	American Holly	Ilex opaca		Canopy tree	2" calip., 6'	Random	14	11	200	2,200	areas within the Critical Area
		Cornus florida	Flowering dogwood		Canopy tree	2" calip., 6'	Random	14	11	200	2,200	Boundary
		Eastern red cedar	Juniperus virginiana		Canopy tree	2" calip., 6'	Random	14	11	200	2,200	
		Southern Red Oak	Quercus falcata		Canopy tree	2" calip., 6'	Random	14	11	200	2,200	
		American Beech	Fagus grandifolia		Canopy tree	2" calip., 6'	Random	14	11	200	2,200	
Critical Area Mitigation (SF)	on Required	Total Mitigation Provided (SF)		Percent Mi	itigation (%)							
22,089				103.3%								

	ER MANAGEMENT		N
<u> </u>	<u>ite area summ<i>a</i></u>	<u> </u>	
<u> </u>	LOD IN BUFFER		
	SHORE EROSION CONTROL		
TE	MPORARY DISTURBANCE		
	TEMPORARY IMPACT AREA	1,391	SF
	EX. LOT COVERAGE AREA	0	SF
	PR. LOT COVERAGE AREA	0	SF
PE	ERMANENT DISTURBANCE		
	PERMANENT IMPACT AREA	2,834	SF
	EX. LOT COVERAGE AREA	0	SF
	PR. LOT COVERAGE AREA	305	SF
ТС	OTAL SHORE EROSION CONTROL LOD	4,225	SF
E	K. LOT COVERAGE AREA	0	SF
Pf	R. LOT COVERAGE AREA	305	SF
	RIPARIAN WATER ACCESS		
TE	EMPORARY DISTURBANCE		
	TEMPORARY IMPACT AREA	0	SF SF
	EX. LOT COVERAGE AREA	0	SF
	PR. LOT COVERAGE AREA		<u>اد</u>
Pt	ERMANENT DISTURBANCE	6 100	
	PERMANENT IMPACT AREA	6,108	SF
	EX. LOT COVERAGE AREA	0	SF
	PR. LOT COVERAGE AREA	6,108	SF
TC	OTAL RIPARIAN WATER ACCESS LOD	6,108	SF
EX	K. LOT COVERAGE AREA	0	SF
Pf	R. LOT COVERAGE AREA	6,108	SF
TOTAL	LOD III DUESED	10,333	SF
	LOD IN BUFFER OT COVERAGE AREA	0	SF
	OT COVERAGE AREA	6,413	SF
L			
	LOD OUT OF BUFFER		
TOTAL	LOD OUT OF BUFFER	28,678	SF
	OT COVERAGE AREA	5,249	SF
	ATIVE LOT COVERAGE AREA	5,249	SF
L			
TOTAL LOD	ABOVE MEAN HIGH WATER	39,011	SF
TOTAL EX.	LOT COVERAGE AREA	5,249	SF
1	LOT COVERAGE PERCENT	13.46	%
TOTAL FX		i l	
	MULATIVE LOT COVERAGE AREA	11,662	SF

GENERAL PLANTING NOTES

- 1. ALL PLANT SPECIES SHALL BE NATIVE TO THE CHESAPEAKE AND ATLANTIC COASTAL BAYS REGION BASED ON THE U.S. FISH AND WILDLIFE SERVICE, PUBLICATION, NATIVE PLANTS FOR WILDLIFE HABITAT AND CONSERVATION LANDSCAPING.
- 2. SPECIES CLASSIFICATION (CANOPY TREE, UNDERSTORY TREE, ETC.) IS IN ACCORDANCE WITH MATURE HEIGHTS AS SET FORTH IN THE U.S. FISH AND WILDLIFE SERVICE PUBLICATION, NATIVE PLANTS FOR WILDLIFE HABITAT AND CONSERVATION LANDSCAPING.
- 3. ALL PLANT MATERIALS SHALL BE NURSERY GROWN AND SHALL CONFORM TO AMERICAN ASSOCIATION OF NURSERYMEN, INC. STANDARDS.
- 4. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL UTILITY LOCATIONS PRIOR TO PLANTING MATERIAL. IF CONFLICTS ARISE, BAYLAND, INC. MUST BE NOTIFIED PRIOR TO ANY GROUND BREAKING.
- 5. MARSH PLANTING WILL BE ACCOMPLISHED BETWEEN APRIL 1 AND JUNE 30 (SPRING PLANTING SEASON) OR AUGUST 15 AND OCTOBER 15 (FALL PLANTING SEASON).
- 6. SHRUBS SHALL BE PLANTED FROM MARCH 1 TO JUNE 15 AND FROM SEPTEMBER 15 TO DECEMBER 15. PLANTING MAY BE CONTINUED DURING THE WINTER MONTHS PROVIDING THERE IS NO FROST IN THE GROUND AND FROST FREE TOPSOIL PLANTING MIXTURES ARE USED.
- 7. NO CONTAINER-GROWN MATERIAL SHALL BE PLANTED IF NOT ACCLIMATED TO THE CURRENT WEATHER
- CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR GENERAL MAINTENANCE INCLUDING WATERING. 8. ALL PLANTING MATERIAL AND PLANTING METHODS SHALL CONFORM TO CONSTRUCTION SPECIFICATIONS.
- 9. DISTURBED AREAS WITHIN THE LIMITS OF DISTURBANCE SHALL BE STABILIZED PER THE DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT.
- 10. IF A MINIMUM COVERAGE OF 85% IS NOT ACHIEVED IN THE MARSH PLANTING AREA AFTER THE SECOND GROWING SEASON, A REINFORCEMENT PLANTING WILL BE REQUIRED.

BAYLAND JOB NO. 5_20002

SOUTH RIVER LIVING SHORELINE PLANTING SCHEDULE

Planting Zone	Total Area (SF)	Common Name	Scientific Name	Туре	Size	Distribution	Avg Spacing (ft)	Quantity	Desc.
Low Marsh	9,732	Lowmarsh Cordgrass	Spartina alterniflora	Herbaceous	Gal	Random	2	2,433	Between MLW and MHW
High Marsh	10,586	Highmarsh Cordgrass	Spartina patens	Herbaceous	Gal	Random	3	1,177	Between MHW and 2.3' elev.
		Wax Myrtle	Myrica cerifera	Large Shrub	Gal, 4'	Random	5	25	
		Black Needlerush	Juncus roemerianus	Herbaceous	Qt	Random	2	153	Fill
Transition - Coastal	3,041	Salt Bush	Borrichia frutescens	Large Shrub	Gal, 4'	Random	5	25	placement
Bush		Salt Cedar	Haloxylon recurvum	Understory Tree	3/4" calip., 6'	Random	8	10	areas above 2.3' elev.
		High-tide Bush	Baccharis halimifolia	Large Shrub	Gal, 4'	Random	5	25	

ALMSHOUSE CREEK LIVING SHORELINE PLANTING SCHEDULE

Planting Zone	Total Area (SF)	Common Name	Scientific Name	Туре	Size	Distribution	Avg Spacing (ft)	Quantity	Desc.
Low Marsh	4,012	LOWMARSH CORDGRASS	SPARTINA ALTERNIFLORA	HERBACEOUS	GAL	RANDOM	2	1,003	Between MLW and MHW
High Marsh	2,634	HIGHMARSH CORDGRASS	SPARTINA PATENS	HERBACEOUS	GAL	RANDOM	3	293	Above MHW to elev. 0.8

SEQUENCE OF IMPLEMENTATION

- 1. CONTRACTOR SHALL ARRANGE PRE-PLANTING MEETINGS WITH COUNTY PLANNING & ZONING DEPARTMENT STAFF AT LEAST 5 DAYS IN ADVANCE OF DISTURBANCES OF ANY LAND ON SITE.
- 2. REMOVE\ELIMINATE TURF GRASS AND TILL UNFORESTED AREAS TO BE PLANTED TO A DEPTH OF 12 INCHES.
- 3. USE TREE SHELTER TUBES WITH MESH TOPS FOR SEEDLINGS PLANTING TO REDUCE ANIMAL DAMAGE.
- 4. MULCH AROUND LANDSCAPING STOCK TO REDUCE COMPETITION FROM INVASIVE SPECIES.
- 5. MONITOR THE PLANTINGS OFTEN TO REDUCE PLANT STRESS SUCH AS WATER DEFICIENCY, NUTRIENT DEFICIENCY, INVASIVE SPECIES COMPETITION, PEST DAMAGE, AND DISEASE.
- 6. THE CONTRACTOR SHALL OBSERVE: MINIMAL SITE PREPARATION/DISTURBANCE, PROTECTION OF PLANTS AFTER DELIVERY UNTIL THEY ARE PLANTED, PROPER DIGGING AND HANDLING OF PLANT MATERIALS, PROPER EXCAVATION OF PLANTING AREAS, PLANTING OPERATIONS, STABILIZATION OF THE PLANTING AREAS WITH MULCH AFTER PLANTING, STAKING AND PRUNING, AND INSTALLATION OF BUFFER PROTECTION SIGNAGE.

BUFFER MANAGEMENT & PROTECTION STANDARDS

- 1. REMOVAL OF VEGETATION WITHIN THE 100-FOOT BUFFER AND EXPANDED BUFFER IS PROHIBITED, CUTTING AND CLEARING OF NATURAL VEGETATION WITHIN THE BUFFER AND EXPANDED BUFFER SHALL BE AS SHOWN ON THIS BUFFER MANAGEMENT PLAN AS SUBMITTED AND OR AS SUBSEQUENTLY AMENDED, SUBJECT TO APPROVAL BY THE COUNTY PLANNING AND ZONING OFFICE. ADDITIONAL INFORMATION CAN BE OBTAINED BY CONTACTING THE PLANNING AND ZONING OFFICE AT 2664 RIVA ROAD, ANNAPOLIS
- 2. THE BUFFER ON THIS PARCEL SHALL BE PLANTED IN ACCORDANCE WITH THIS PLAN. ALL EXISTING AND PLANTED VEGETATION WITHIN THE BUFFER SHALL BE MAINTAINED AND SURVIVAL OF PLANTED AND NATURALLY OCCURRING REGENERATED AREAS OF THE BUFFER SHALL BE AS DESCRIBED IN THIS PLAN.
- 3. NEW LAWN AREAS SHALL NOT BE CREATED WITHIN THE BUFFER OR EXPANDED BUFFER UNLESS SPECIFICALLY ADDRESSED IN THIS BUFFER MANAGEMENT PLAN.
- 4. THE CONTRACTOR SHALL OBSERVE MINIMAL SITE PREPARATION/DISTURBANCE, PROTECTION, OF PLANTS AFTER DELIVERY UNTIL THEY ARE PLANTED. PROPER DIGGING AND HANDLING OF PLANT MATERIALS. PROPER EXCAVATION OF PLANTING AREAS. PLANTING OPERATIONS, STABILIZATION OF THE PLANTING AREAS WITH MULCH AFTER PLANTING, STAKING, PRUNING, AND INSTALLATION OF BUFFER PROTECTION SIGNAGE.

LANDSCAPE NOTES

- 1. ALL PLANT SPECIES SHALL BE NATIVE TO THE CHESAPEAKE AND ATLANTIC COASTAL BAYS REGION BASED ON THE U.S. FISH AND WILDLIFE SERVICE PUBLICATION, NATIVE PLANTS FOR WILDLIFE HABITAT AND CONSERVATION LANDSCAPING.
- 2. SPECIES CLASSIFICATION (CANOPY TREE, UNDERSTORY TREE, ETC.) IS IN ACCORDANCE WITH MATURE HEIGHTS AS SET FORTH IN THE U.S. FISH AND WILDLIFE SERVICE PUBLICATION, NATIVE PLANTS FOR WILDLIFE HABITAT AND CONSERVATION
- 3. SPECIES HAVE BEEN SELECTED BASED ON AN ANALYSIS OF SURROUNDING NATIVE FOREST AND DEVELOPED WOODLAND
- 4. UNLESS SPECIFIC PLANTING LOCATIONS ARE SHOWN, ALL WOODY PLANTINGS SHALL BE INSTALLED IN A NATURALIZED LAYOUT TO SIMULATE NATURAL PATTERNS OF DISTRIBUTION AND GROWTH.
- 5. THE QUANTITY OF ANY SINGLE SPECIES DOES NOT EXCEED 20 PERCENT OF THE OVERALL PLANTING.

MONITORING & SURVIVAL REQUIREMENTS

- 1. PLANTINGS SHALL BE MONITORED TWICE A YEAR FOR A PERIOD OF TWO YEARS AFTER PLANT INSTALLATION.
- 2. MONITORING SHALL BE PERFORMED ONCE DURING APRIL/MAY AND ONCE AUGUST/SEPTEMBER DURING EACH MONITORING YEAR
- 3. MONITORING SHALL INCLUDE AN ASSESSMENT OF PLANT SURVIVAL, GENERAL CONDITION OF PLANTED VEGETATION, INVASIVE SPECIES PRESENCE, EVIDENCE OF PESTS OR PREDATION, AND RECOMMENDATIONS TO IMPROVE PLANT CONDITION.
- 4. AT THE END OF THE 2-YEAR MONITORING PERIOD, PLANT SURVIVAL SHALL BE 100% IN ACCORDANCE WITH ANNE ARUNDEL COUNTY CODE AND COMAR 27.01.09.01-20. ANY SURVIVAL DEFICIENCY SHALL BE REQUIRED TO BE REPLACED TO MEET THE
- 5. THE REQUIREMENT FOR REPLACEMENT PLANTINGS MAY EXTEND THE MONITORING PERIOD BEYOND 2-YEARS.

MAINTENANCE REQUIREMENTS

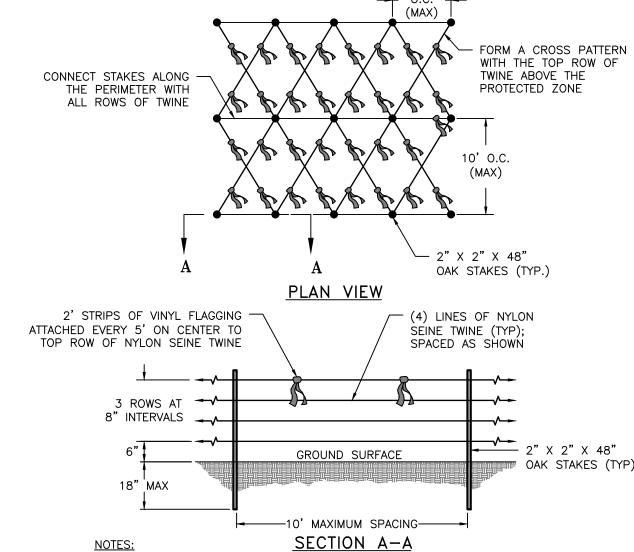
- 1. CONTRACTOR SHALL MONITOR PLANTINGS OFTEN TO REDUCE STRESS SUCH AS WATER AND/OR NUTRIENT DEFICIENCY, INVASIVE SPECIES, PEST DAMAGE, AND DISEASE.
- 2. WATER ONLY AS NECESSARY BUT AT LEAST ONCE EVERY 5 DAYS WITHOUT RAINFALL FROM MAY THROUGH SEPTEMBER
- FOR THE FIRST GROWING SEASON AFTER PLANTING.
- 3. USE OF LOW NITROGEN AND SLOW RELEASE FERTILIZER MAY BE UTILIZED. APPLICATION SHALL BE COMPLETED IN EARLY SPRING OR LATE FALL.
- 4. INSPECTIONS FOR SURVIVAL SHALL BE PERFORMED IN ACCORDANCE WITH MONITORING AND SURVIVAL REQUIREMENTS.

5. DEER PROTECTION SHALL BE REMOVED AT THE CLOSE OF THE REQUIRED MONITORING PERIOD.

WITH TREE IN CENTER. CREATE ENCLOSURE BY FASTENING 11-INCH RELEASABLE CABLE TIES (ONE AT TOP AND ONE 6 IN. MIN. ABOVE THE GROUND AT EACH POST)

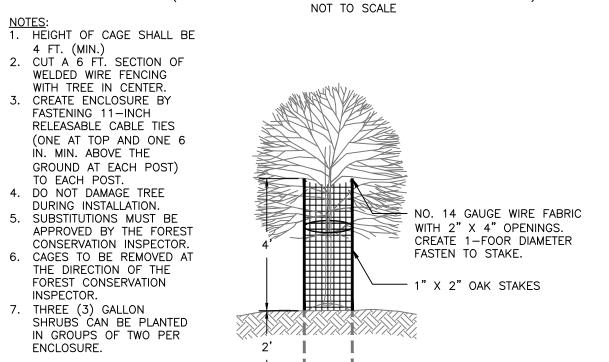
- TO FACH POST. 4. DO NOT DAMAGE TREE DURING INSTALLATION.
- APPROVED BY THE FOREST CONSERVATION INSPECTOR. 6. CAGES TO BE REMOVED AT THE DIRECTION OF THE FOREST CONSERVATION
- INSPECTOR. 7. THREE (3) GALLON SHRUBS CAN BE PLANTED IN GROUPS OF TWO PER ENCLOSURE.

PROPOSAL NO. P468717



- 1. OAK STAKES SHALL BE SPACED A MAXIMUM OF 10' O/C. WITH A MINIMUM OF TWO ROWS OF STAKES INSTALLED ALONG THE INNER AND OUTER PERIMETERS
- OF THE PLANTING TERRACE. 2. THE SEINE NYLON TWINE SHALL BE STRUNG FROM EACH STAKE TO EVERY ADJACENT STAKE WITHIN THE SAME ROW AND ADJACENT ROWS TO FORM A
- CRISS-CROSS PATTERN. 3. THE FIRST ROW OF SEINE NYLON TWINE SHALL BE PLACED A MINIMUM OF 6" OFF THE GROUND SURFACE, WITH EACH SUBSEQUENT ROW 8" IN SEPARATION.
- 4. THE SEINE NYLON TWIN SHALL BE SECURELY FASTENED TO THE STAKE AT THE APPROPRIATE ELEVATION ON THE POST. 5. 2' STRIPS OF FLUORESCENT COLORED VINYL FLAGGING SHALL BE SECURELY FASTENED TO THE SEINE NYLON TWINE AT A MAXIMUM 5' O/C BETWEEN THE
- OAK STAKES. THE FLAGGING SHALL BE TIED TO THE SEINE NYLON TWINE IN THE MIDDLE TO PRODUCE TWO STREAMERS OF NYLON TWINE EACH APPROXIMATELY 12" IN LENGTH. 6. THE GOOSE EXCLUSION FENCING SHALL COMPLETELY ENCLOSE THE PLANTING
- TERRACE AND PREVENT GOOSE ACCESS TO THE WATER FROM LAND AND VISE 7. THE FENCING MUST REMAIN IN PLACE UNTIL THE VEGETATION HAS HAD TIME
- TO BECOME ESTABLISHED. AFTER TWO GROWING SEASONS THE FENCING SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.

GOOSE EXCLUSION FENCE DETAIL (TO BE INSTALLED ABOVE & AROUND SHORELINE PLANTINGS)



PROFESSIONAL CERTIFICATION

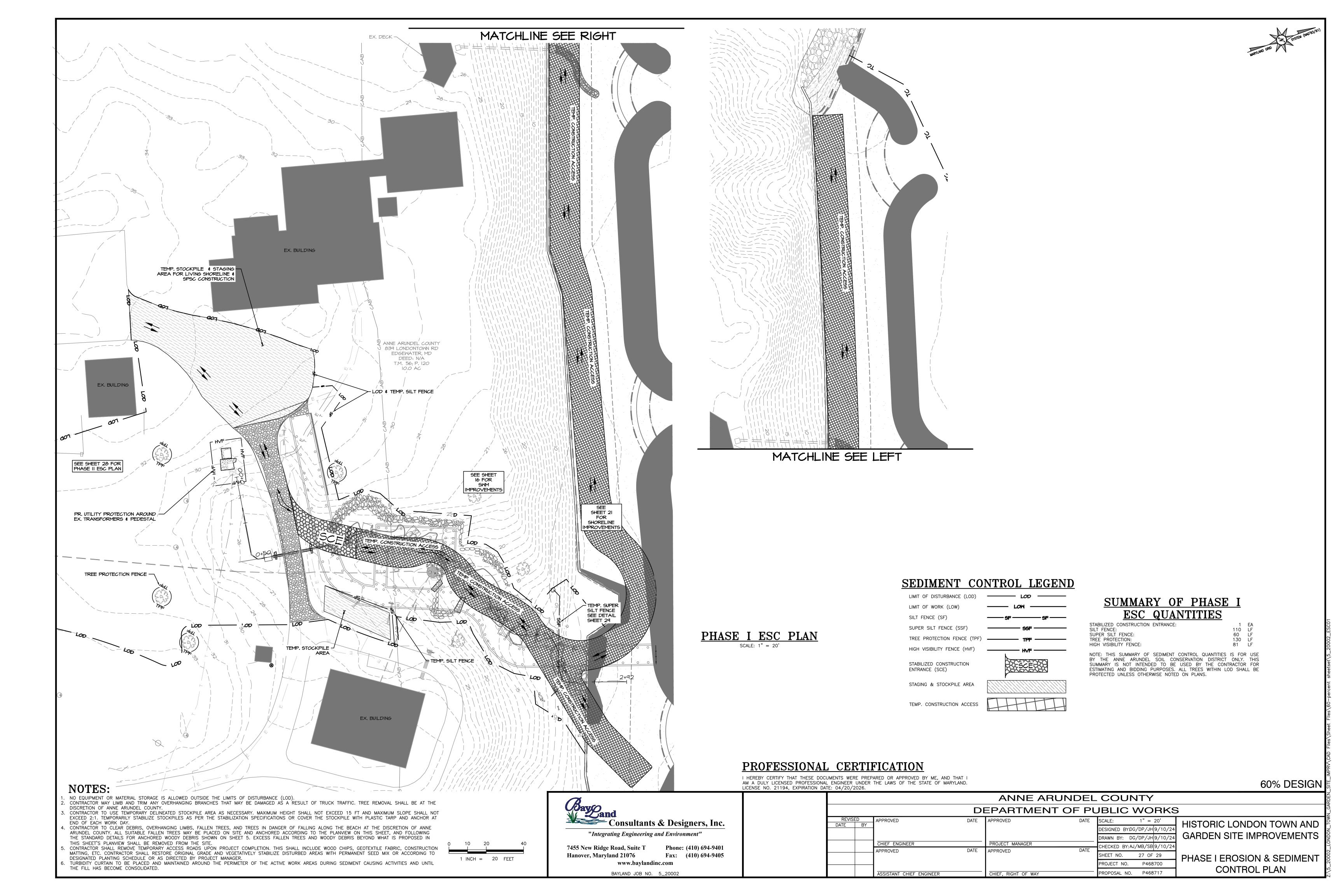
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. TREE/SHRUB PLANTING DEER PROTECTION NOT TO SCALE

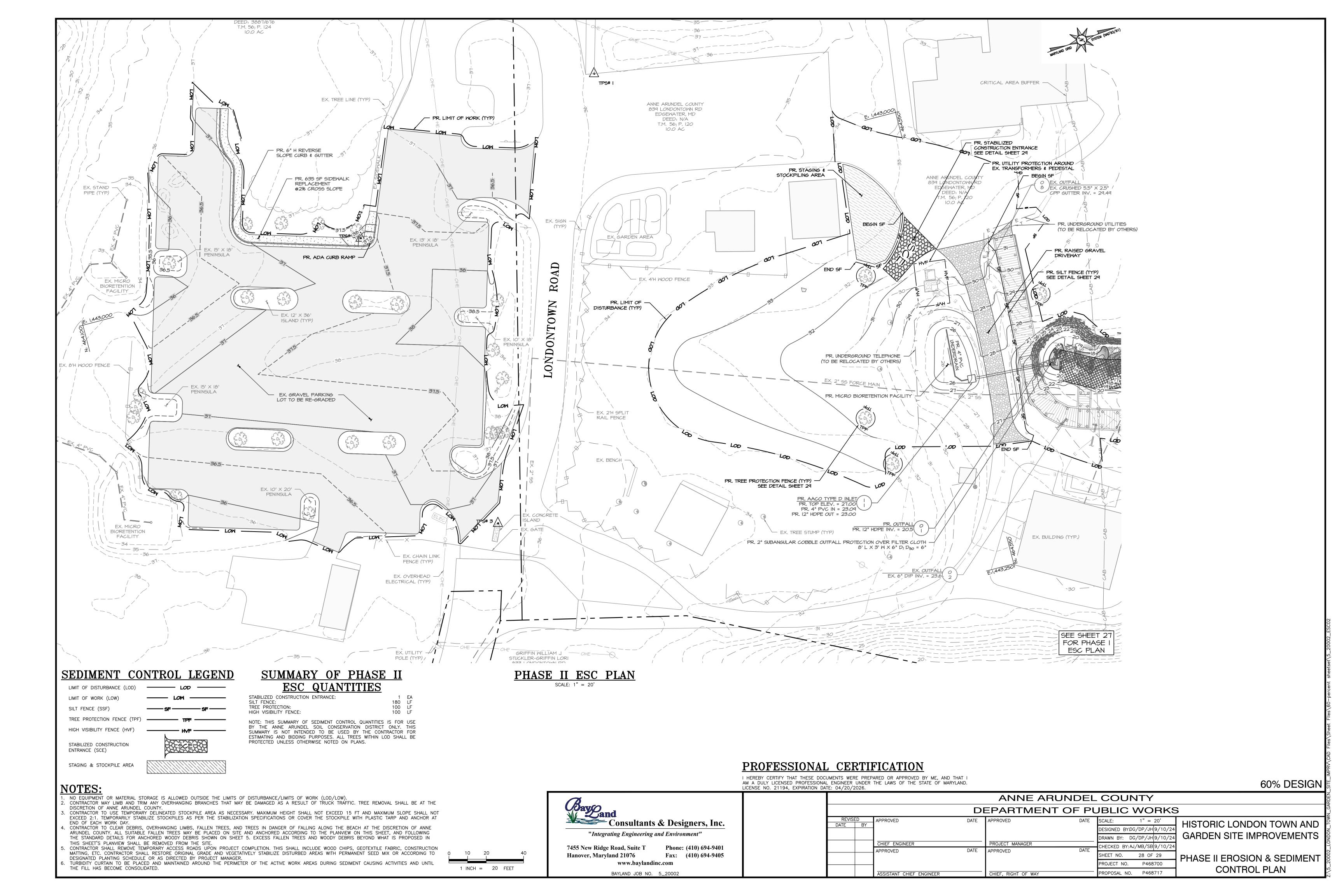
60% DESIGN

LICENSE NO. 21194, EXPIRATION DATE: 04/20/2026. ANNE ARUNDEL COUNTY Consultants & Designers, Inc. DEPARTMENT OF PUBLIC WORKS APPROVED DATE APPROVED DATE SCALE: HISTORIC LONDON TOWN AND DESIGNED BY:DG/DP/JH|9/10/ "Integrating Engineering and Environment" GARDEN SITE IMPROVEMENTS DRAWN BY: DG/DP/JH|9/10/2 PROJECT MANAGER CHIEF ENGINEER CHECKED BY:AJ/MB/SB 9/10/2 7455 New Ridge Road, Suite T Phone: (410) 694-9401 PPROVED APPROVED Hanover, Maryland 21076 Fax: (410) 694-9405 SHEET NO. 26 OF 29 BUFFER MANAGEMENT PLAN & www.baylandinc.com PROJECT NO. P468700 PLANTING NOTES

CHIEF, RIGHT OF WAY

ASSISTANT CHIEF ENGINEER





ANNE ARUNDEL SOIL CONSERVATION **DISTRICT DETAILS & SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT**

FOLLOWING INITIAL SOIL DISTURBANCES OR REDISTURBANCE. PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE CALENDAR DAYS FOR THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO VERTICAL (3:1) AND SEVEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT

1.PERMANENT SEEDING:

A.SOIL TESTS: LIME AND FERTILIZER WILL BE APPLIED PER SOIL TESTS RESULTS FOR SITES GREATER THAN 5 ACRES. SOIL TESTS WILL BE DONE AT COMPLETION OF INITIAL ROUGH GRADING OR AS RECOMMENDED BY THE SEDIMENT CONTROL INSPECTOR. RATES AND ANALYSES WILL BE PROVIDED TO THE GRADING INSPECTOR AS WELL AS THE CONTRACTOR.

OCCURRENCE OF ACID SULFATE SOILS (GRAYISH BLACK COLOR) WILL REQUIRE COVERING WITH A MINIMUM OF 12 INCHES OF CLEAN SOIL WITH 6 INCHES MINIMUM CAPPING OF TOP SOIL. NO STOCKPILING OF MATERIAL IS ALLOWED. IF NEEDED, SOIL TESTS SHOULD BE DONE BEFORE AND AFTER A 6-WEEK INCUBATION PERIOD TO ALLOW OXIDATION OF SULFATES.

THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

- a. SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
- b. SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM). THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (> 30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERECIA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (< 30% SILT PLUS CLAY) WOULD BE ACCEPTABLE. d. SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT
- e. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION. f. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS FROM THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR AMENDMENTS MADE AS RECOMMENDED BY A CERTIFIED
- B.SEEDBED PREPARATION: AREA TO BE SEEDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3-5 INCHES. THE TOP LAYER SHALL BE LOOSENED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. FOR SITES LESS THAN 5 ACRES, APPLY 100 POUNDS DOLOMITIC LIMESTONE AND 21 POUNDS OF 10-10-10 FERTILIZER PER 1.000 SQUARE FEET. HARROW OR DISK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF AT LEAST 3-5 INCHES ON SLOPES FLATTER THAN 3:1.
- C.SEEDING: APPLY 5-6 POUNDS PER 1,000 SQUARE FEET OF TALL FESCUE BETWEEN FEBRUARY AND APRIL 30 OR BETWEEN AUGUST 15 AND OCTOBER 31. APPLY SEED UNIFORMLY ON A MOIST FIRM SEEDBED WITH A CYCLONE SEEDER. CULTIPACKER SEEDER OR HYDROSEEDER (SLURRY INCLUDES SEEDS AND FERTILIZER, RECOMMENDED ON STEEP SLOPES ONLY). MAXIMUM SEED DEPTH SHOULD BE 1/4 INCH IN CLAYEY SOILS AND 1/2 INCH IN SANDY SOILS WHEN USING OTHER THAN THE HYDROSEEDER METHOD. IRRIGATE WHERE NECESSARY TO SUPPORT ADEQUATE GROWTH UNTIL VEGETATION IS FIRMLY ESTABLISHED. IF OTHER SEED MIXES ARE TO BE USED, SELECT FROM TABLE B3 AND B5 OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND
- D.MULCHING: MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. DURING THE TIME PERIODS WHEN SEEDING IS NOT PERMITTED. MULCH SHALL BE APPLIED IMMEDIATELY AFTER GRADING. MULCH SHALL BE UNROTTED, UNCHOPPED, SMALL GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 POUNDS PER 1,000 SQUARE FEET (2 BALES). APPLY MUCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH-ANCHORING TOOL IS USED, APPLY 2.5 TONS PER ACRE. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE COMPLETELY FREE OF PROHIBITED NOXIOUS WEEDS. SPREAD MULCH UNIFORMLY, MECHANICALLY OR BY HAND, TO A DEPTH OF 1-2
- E.SECURING STRAW MULCH: STRAW MULCH SHALL BE SECURED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE MOVEMENT BY WIND OR WATER. THE FOLLOWING METHODS ARE PERMITTED:
- i. USE A MULCH-ANCHORING TOOL WHICH IS DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A MINIMUM DEPTH OF 2 INCHES. THIS IS THE MOST EFFECTIVE METHOD FOR SECURING MULCH, HOWEVER, IT IS LIMITED TO RELATIVELY FLAT AREAS WHERE EQUIPMENT CAN
- ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. IF MIXED WITH WATER, USE 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. iii. LIQUID BINDERS MAY BE USED. APPLY AT HIGHER RATES AT THE EDGES WHERE WIND CATCHES
- MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF SLOPES. THE REMAINDER OF THE AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. BINDERS LISTED IN THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR APPROVED EQUAL SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURERS.
- iv. LIGHTWEIGHT PLASTIC NETTING MAY BE USED TO SECURE MULCH. THE NETTING WILL BE STAPLED TO THE GROUND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

LIME: 100 POUNDS OF DOLOMITIC LIMESTONE PER 1,000 SQUARE FEET. FERTILIZER: 15 POUNDS OF 10-10-10 PER 1.000 SQUARE FEET.

SEED: PERENNIAL RYE - 0.92 POUNDS PER 1,000 SQUARE FEET (FEBRUARY 1 THROUGH APRIL 30 OR AUGUST 15 THROUGH OCTOBER 31). MILLET - 0.92 POUNDS PER 1,000 SQUARE FEET (MAY 1 THROUGH AUGUST 15) MULCH: SAME AS 1 D AND E ABOVE.

3.NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILL IS TO BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS, EACH LAYER HAVING A LOOSE THICKNESS OF NOT MORE THAN 8 INCHES. ALL COMPACTION REQUIREMENTS ARE IN ACCORDANCE TO ANNE ARUNDEL COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION AS WELL AS THE AA COUNTY DESIGN MANUAL AND STANDARD DETAILS. FILLS FOR POND EMBANKMENTS SHALL BE COMPACTED AS PER MD-378 CONSTRUCTION SPECIFICATIONS. ALL OTHER FILLS SHALL BE COMPACTED SUFFICIENTLY SO AS TO BE STABLE AND PREVENT EROSION AND SLIPPAGE.

4.PERMANENT SOD:

INSTALLATION OF SOD SHOULD FOLLOW PERMANENT SEEDING DATES. SEEDBED PREPARATION FOR SOD SHALL BE AS NOTED IN SECTION (B) ABOVE. PERMANENT SOD IS TO BE TALL FESCUE, STATE APPROVED SOD; LIME AND FERTILIZER PER PERMANENT SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE SOIL PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ABUTTING. JOINTS ARE TO BE STAGGERED BETWEEN ROWS. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES STEEPER THAN 3:1, AS SHOWN, ARE TO BE PERMANENTLY SODDED OR PROTECTED WITH AN APPROVED EROSION CONTROL NETTING. ADDITIONAL WATERING FOR ESTABLISHMENT MAY BE REQUIRED. SOD IS NOT TO BE INSTALLED ON FROZEN GROUND. SOD SHALL NOT BE TRANSPLANTED WHEN MOISTURE CONTENT (DRY OR WET AND/OR EXTREME TEMPERATURE MAY ADVERSELY AFFECT ITS SURVIVAL. IN THE ABSENCE OF ADEQUATE RAINFALL, IRRIGATION SHOULD BE PERFORMED TO ENSURE ESTABLISHMENT OF SOD.

SEDIMENT CONTROL PLANS FOR MINING OPERATIONS MUST INCLUDE THE FOLLOWING SEEDING DATES AND MIXTURES:

FOR SEEDING DATES OF FEBRUARY 1 THROUGH APRIL 30 AND AUGUST 15 THROUGH OCTOBER 31 USE SEED MIXTURE OF TALL FESCUE AT THE RATE OF 2 POUNDS PER 1,000 SQUARE FEET AND SERICEA LESPEDEZA AT THE MINIMUM RATE OF 0.5 POUNDS PER 1,000 SQUARE FEET.

6.TOPSOIL SHALL BE APPLIED AS PER THE STANDARD AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS FROM THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

7.USE OF THESE VEGETATIVE ESTABLISHMENT SPECIFICATIONS DOES NOT PRECLUDE THE PERMITTEE OR CONTRACTOR FROM MEETING ALL OF THE REQUIREMENTS SET FORTH IN THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

STABILIZATION FOR SPSC PROJECTS (STANDARD AACO SCD NOTES)

TEMPORARY STABILIZATION NOTES (INCLUDE ONE OF THE FOLLOWING): TEMPORARY STABILIZATION FOR ANY AREA OF EARTH DISTURBANCE AROUND THE POOLS AND RIFFLE ZONES OF A SPSC (E.G., STEP POOL STORM CONVEYANCE SYSTEM) SHALL BE CONSIDERED ACHIEVED WHEN UNIFORMLY COVERING THE AREA WITH 2 TO 4 INCHES OF WOOD CHIPS. ANNUAL RYE MAY BE UTILIZED FOR THE TEMPORARY SEEDING APPLICATION PERIOD FOUND UNDER THE ANNE ARUNDEL SOIL CONSERVATION DISTRICT'S (AASCD) VEGETATIVE ESTABLISHMENT SPECIFICATION OR 2011 STANDARDS AND SPECIFICATIONS FOR SOIL ERÓSION AND SEDIMENT CONTROL.

PERMANENT STABILIZATION NOTES (INCLUDE ONE OF THE FOLLOWING):

- PERMANENT STABILIZATION FOR AN AREA OF EARTH DISTURBANCE OF A SPSC SHALL BE CONSIDERED ACHIEVED WHEN THE AREA IS COVERED WITH 2 TO 4 INCHES OF COMPOST (APPLIED OVER ANY WOOD CHIPS USED FOR TEMPORARY STABILIZATION) OR 2 TO 4 INCHES OF WOOD CHIPS TRACKED INTO SOIL AND A (NATIVE PLANTS) PLANTING PLAN HAS BEEN IMPLEMENTED, REGARDLESS OF SOIL TREATMENT
- PERMANENT STABILIZATION FOR AN AREA OF EARTH DISTURBANCE OF A SPSC SHALL BE CONSIDERED ACHIEVED WHEN THE BANKS AND FLOODPLAIN ARE COVERED WITH FULLY BIODEGRADABLE STABILIZATION MATTING INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND A (NATIVE PLANTS) PLANTING PLAN HAS BEEN IMPLEMENTED.
- ALL DISTURBED AREAS SHALL RECEIVE HYDROSEEDING OR FLEXIBLE GROWTH MEDIUM (FGM) AFTER THE ESTABLISHMENT OF FINAL GRADES AND MICROTOPOGRAPHY (IF APPLICABLE) IN ACCORDANCE WITH THE PROJECT LANDSCAPING PLANS.

TOP SOIL SPECIFICATIONS

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.

<u>CRITERIA</u> A. SOIL PREPARATION

- . TEMPORARY STABILIZATION a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT. SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
- b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS. c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

- a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE: i. SOIL PH BETWEEN 6.0 AND 7.0.
- ii. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM) iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE. SANDY SOIL (LESS THAN 30 iv. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT. v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.

- b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE
- d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES. AND READY THE AREA FOR SEED APPLICATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
- TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
- TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
- 3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
- a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH. b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH. d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- 4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
- 5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
- a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 11/2 INCHES IN DIAMETER.
- b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED. c. TOPSOIL SUBSTITUTES OR AMENDMENTS. AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN
- 6. TOPSOIL APPLICATION
- a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL. b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS
- c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

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

SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

- FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
- 3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDÉ). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
- 4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
- WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, SEEDING FOR PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING. ONCE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUNDCOVER TO BE CONSIDERED ADEQUATELY STABILIZED.

EXCAVATION NOTES

TRANSPORT TO THE DISPOSAL AREA.

AT A MINIMUM ANY SATURATED SEDIMENT SHALL BE PARTIALLY DEWATERED ON-SITE BEFORE

- THE DISPOSAL SITE SHALL HAVE AN ACTIVE GRADING PERMIT AND AN ACTIVE AND APPROVED EROSION CONTROL PERMIT WHICH IS TO BE GIVEN TO THE EROSION CONTROL INSPECTOR AT THE PRE-CONSTRUCTION MEETING.
- WET MATERIAL SHALL BE TRANSPORTED IN LINED OR WATER TIGHT TRUCKS, ADEQUATELY COVERED/TARPED OVER THE TOP. SUFFICIENT FREEBOARD MUST BE MAINTAINED TO PREVENT SPILLING OVER THE SIDES.
- CONTRACTOR SHALL KEEP STREET FREE OF ANY MATERIAL. IF NECESSARY, CONTRACTOR MAY REQUIRED TO PERFORM ROUTINE STREET SWEEPING AND/OR STREET CLEANING.

STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION: A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES. PURPOSE: TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CONDITIONS WHERE PRACTICE APPLIES: STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE. CRITERIA:

- 1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN. 2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE
- PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING. 3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE. 4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- 5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- 6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE. 7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT

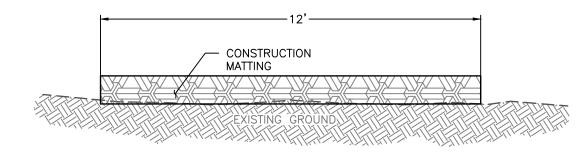
AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY

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

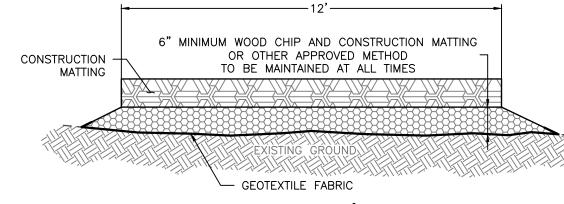
MAINTENANCE: THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE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

BEST MANAGEMENT PRACTICES FOR WORKING IN NON TIDAL WETLANDS. WETLAND BUFFERS, WATERWAYS & 100 YEAR FLOODPLAINS

- 1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NON TIDAL WETLANDS, NON TIDAL WETLAND BUFFERS, WATERWAYS OR THE 100-YEAR FLOODPLAIN.
- 2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NON TIDAL WETLANDS, NON TIDAL WETLAND BUFFERS, WATERWAYS OR THE 100 YEAR FLOODPLAIN.
- 3. DO NOT USE EXCAVATED MATERIAL AS BACK FILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACK FILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- 4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NON TIDAL WETLANDS, NON TIDAL WETLAND BUFFERS, OR WATERWAYS OR THE 100 YEAR FLOOD
- REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NON TIDAL WETLANDS, NON TIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANEN' MODIFICATION OF THE 100 YEAR FLOOD PLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
- 6. RECTIFY ANY NON TIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS OR 100 YEAR FLOOD PLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- 7. ALL STABILIZATION IN THE NON TIDAL WETLAND AND NON TIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS(LOLIUM MULTIFLORUM), MILLET(SETARIA ITALICA), BARLEY(HORDEUM SP.), OATS (UNIOLA SP), AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NON TIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE
- 8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- 9. TO PROTECT AQUATIC SPECIES, IN STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM: USE I WATERS.
- 10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
- 11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIP RAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.



TEMPORARY MATTING CONSTRUCTION ACCESS ROAD OVER BURIED CULTURAL DEPOSITS



TEMPORARY STAGING/STOCKPILE AREA OVER BURIED CULTURAL DEPOSITS

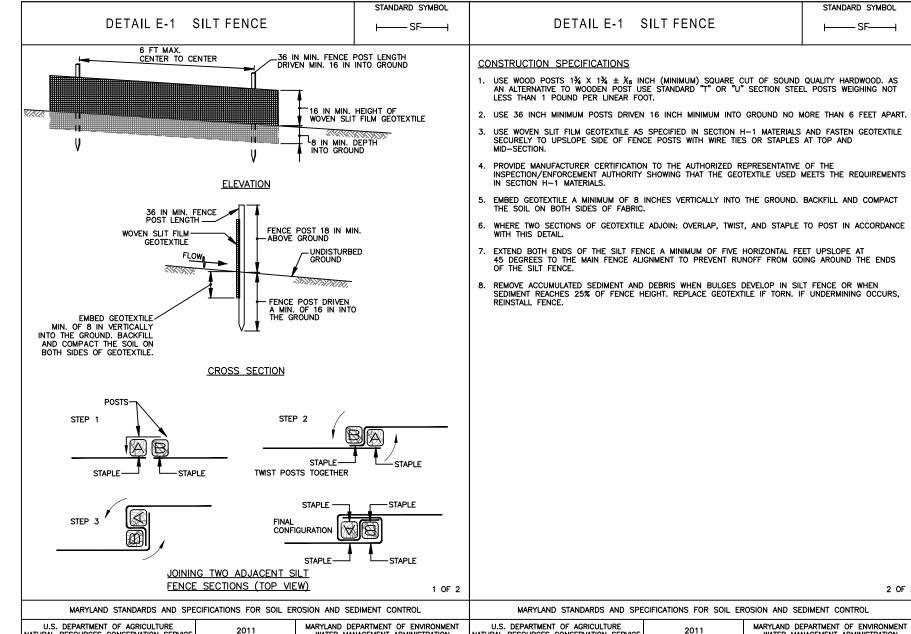
NOTE: CONTRACTOR SHALL REPLENISH WOOD CHIPS AS DIRECTED Y THE ENGINEER DURING CONSTRUCTION TO MAINTAIN MINIMUM DIMENSIONS AND TO PREVENT MUD, WATER, CONSTRUCTION DEBRIS AND OTHER MATERIALS FROM ACCUMULATING ON THE CONSTRUCTION ACCESS ROAD.

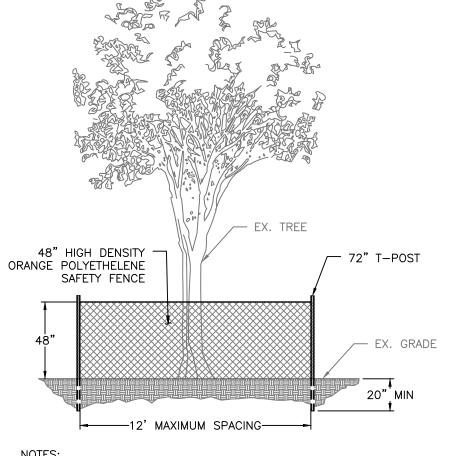
PROFESSIONAL CERTIFICATION

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. 21194, EXPIRATION DATE: 04/20/2026.

HIGH VISIBILITY

FENCE DETAIL

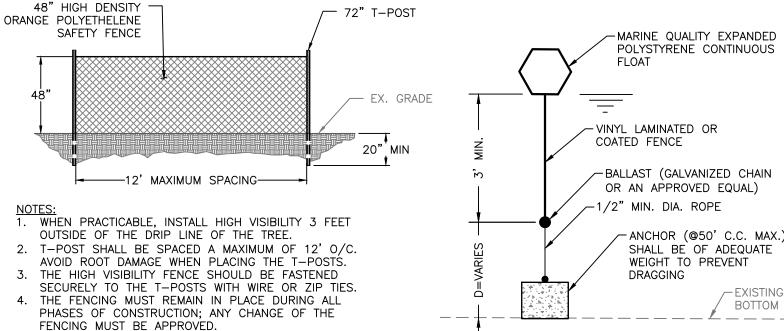




WHEN PRACTICABLE, INSTALL HIGH VISIBILITY 3 FEET

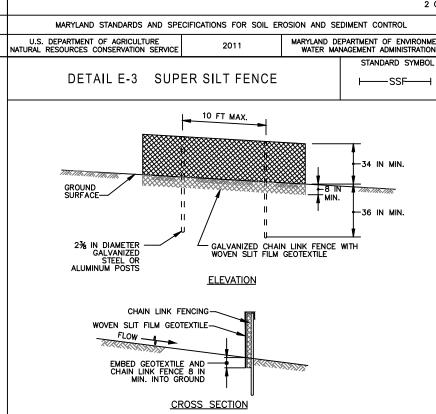
- OUTSIDE OF THE DRIP LINE OF THE TREE. 2. T-POST SHALL BE SPACED A MAXIMUM OF 12' O/C.
- AVOID ROOT DAMAGE WHEN PLACING THE T-POSTS. 3. THE HIGH VISIBILITY FENCE SHOULD BE FASTENED SECURELY TO THE T-POSTS WITH WIRE OR ZIP TIES. 4. THE FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; ANY CHANGE OF THE PROTECTIVE FENCING MUST BE APPROVED.

TREE PROTECTION DETAIL



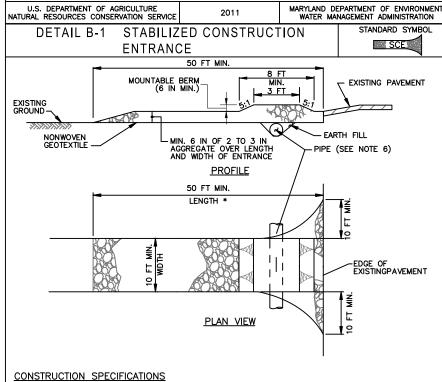
TYPE II - TURBIDITY CURTAIN DETAIL NOT TO SCALE

NOTE: TURBIDITY CURTAIN AS REQUIRED BY THE INSPECTOR TO PROTECT ACTIVE SHORELINE WORK AREA - LIMITED TO 400' AT ANY ONE TIME.



CONSTRUCTION SPECIFICATIONS . INSTALL 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 (23/4 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- . 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



PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEE FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT. . PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.

. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL MARYLAND DEPARTMENT OF ENVIRONMEN
WATER MANAGEMENT ADMINISTRATION

60% DESIGN



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BAYLAND JOB NO. 5_20002

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS APPROVED DATE APPROVED DATE SCALE: AS SHOWN DESIGNED BY:DG/DP/JH|9/10/2 DRAWN BY: DG/DP/JH|9/10/2 PROJECT MANAGER CHIEF ENGINEER CHECKED BY:AJ/MB/SB|9/10/2 PPROVED **APPROVED** SHEET NO. 29 OF 29 PROJECT NO. P468700 ASSISTANT CHIEF ENGINEER CHIEF, RIGHT OF WAY PROPOSAL NO.

HISTORIC LONDON TOWN AND GARDEN SITE **IMPROVEMENTS EROSION & SEDIMENT CONTROL NOTES & DETAILS**

NOTES:

TURBIDITY CURTAIN TO BE INSTALLED IN 400' INTERVALS PRIOR TO AND MAINTAINED DURING SAND PLACEMENT AND ANY OTHER SEDIMENT CAUSING ACTIVITY, PHASED ACCORDINGLY. NO EQUIPMENT OR MATERIAL STORAGE IS ALLOWED OUTSIDE OF THE LIMIT OF DISTURBANCE (LOD).